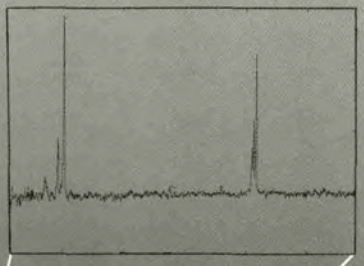
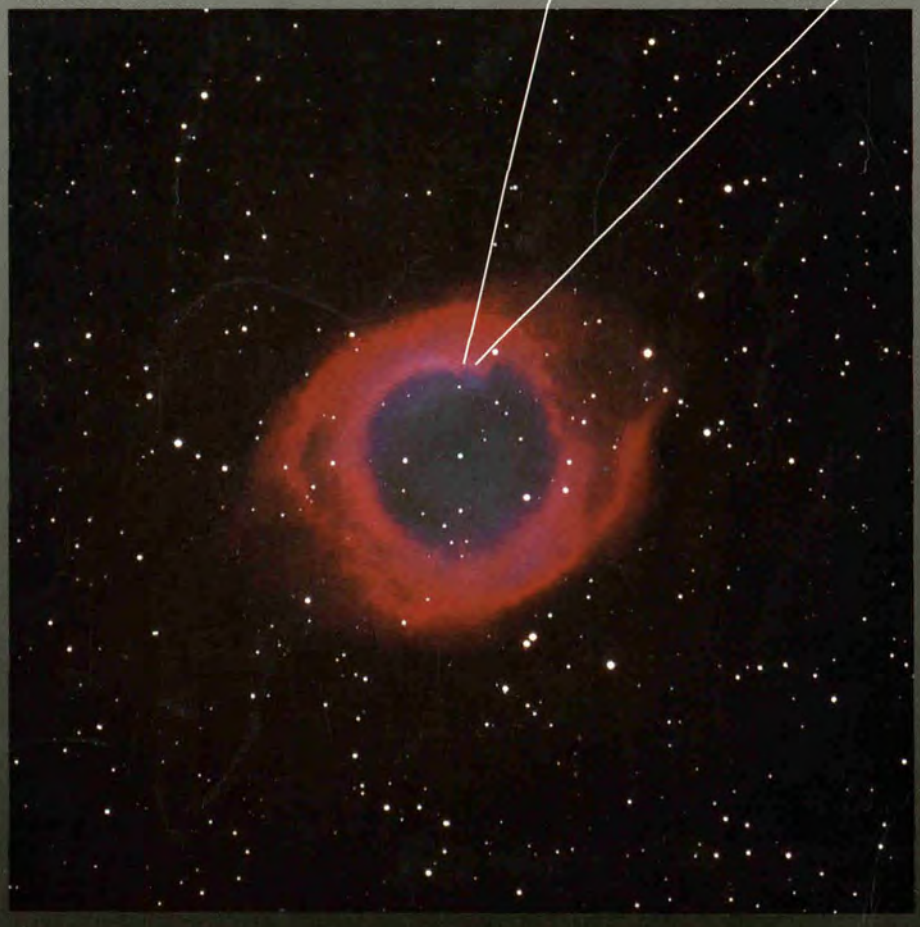
STRASBOURG-ESO CATALOGUE OF GALACTIC PLANETARY NEBULAE

PART II





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THE STRASBOURG-ESO CATALOGUE of GALACTIC PLANETARY NEBULAE

Part II

THE CATALOGUE

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H 1-62, PK 359−6°1, AS 290, ESO 456-76, He 2-367, MHα 77-52, SaSt 2-19, VV' 368, Wray 16-389, IRAS 18100-3220

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −84.0 ± 5.0	STPP83
1950:	18 10 01.7	-32 20 34	IRAS	*opt. St.*	ATS91		
	18 10 02.0	-32 20 34	PK67				
2000:	18 13 18.0	-32 19 43	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	570	*J*		12*μm*	0.62	2
[OIII]	436.3	–	[*NII*]	658.4	432	*H*		25*μm*	4.64	3
	495.9	–	[*SII*]	671.7	22	*K*	> 9.5	60*μm*	4.88	3
HeI	587.6	4		673.1	38	*L*		100*μm*	18.47	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.99 ± .10	ASTR91			*Photom.*	AIGI74			

Central Star:
B 15.09 *V* 14.92 *Qual:* B TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, Al73, HLSW77, He67, Sa76, SaSt72, StAc87, TAGS89, W75, Wr66

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000.1+17.2

PC 12, PK 0+17°1, ESO 586-01, He 2-180, Sa 2-152, IRAS 16409-1851

			Disc.: Minkowski 1957	*Diameter* (″)		*Rvel:* −44.0 ± 11.0	STPP83
1950:	16 40 58.3	-18 51 40	IRAS	*opt.* 4.6	CaKa71		
	16 40.9	-18 51	Sa75				
2000:	16 43.8	-18 57	.	*radio* 1.8	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-24						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1042	*J*		12*μm*	0.26	1
[OIII]	436.3	–	[*NII*]	658.4	336	*H*		25*μm*	4.00	3
	500.7	327	[*SII*]	671.7	9	*K*	> 10.0	60*μm*	3.98	3
HeI	587.6	31		673.1	27	*L*		100*μm*	9.39	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.91 ± .00	SK89			*Photom.*	AIGI74	*Radio* 2*cm*		
								(*mJy*) 6*cm*	19	ZPB89

Central Star: AG82 214 —
B 15.39 *V* 15.26 *Qual:* A SK89

Distance (kpc) stat.: 8.88 (CaKa71); 5.75 (Ac78); 6.1 (Ma84); 6.21 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, AlKe85, CS83, CaWy76, He67, Iw73, Pe91, Sh85, StTy90, TASG91, W88

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000.1+04.3

H 1-16, PK 0+4°2, ESO 520-02, He 2-231, Sa 2-206, VV' 201, Wray 16-276, IRAS 17262-2623

			Disc.: Haro 1952	*Diameter* (″)		*Rvel*: +54.0 ± 5.0	STPP83
1950:	17 26 17.1	-26 23 44	IRAS	*opt.* 5.	PK67		
	17 26 17	-26 23.7	HLSW77				
2000:	17 29 24	-26 26.0	.	*radio* 1.8	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13

*He*II	468.6 *nm*	16	$H\alpha$	656.3 *nm*	1557
[*O*III]	436.3	–	[*N*II]	658.4	193
	500.7	2283	[*S*II]	671.7	18
*He*I	587.6	49		673.1	30

$\lg F_{H\beta}(mW.m^{-2})$ $-13.1 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.68	3
25μm	5.96	3
60μm	5.13	3
100μm	10.27	1

Radio (*mJy*)	*2cm*		
	6cm	58.4	PBOZ88

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, ArKo68, He67, Ka76, PAKS89, Sa75, VKDA65, Vo70, Wr66

000.1+02.6

Al 2-J, PK 0+2°1, IRAS 17322-2721

			Disc.: Allen 1979	*Diameter* (″)			
1950:	17 32 17.0	-27 21 15	IRAS	*opt.* 9.	ATS91		
	17 32 27.2	-27 22 10	AI79				
2000:	17 35 35.4	-27 24 03	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-14

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	83	[*S*II]	671.7	
*He*I	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.63	3
25μm	1.14	2
60μm	1.84	1
100μm	22.03	1

Radio (*mJy*)	*2cm*	42	PFMA82
	6cm		

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: PAKS91

000.1–01.1

M 3-43, PK 0−1°1, Bl G, ESO 455-48, VV' 265, 19W122, IRAS 17472-2924

				Diameter (″)		*Rvel:* +20.0 ± 11.0 STPP83
		Disc.: Minkowski 1948				
1950:	17 47 12.9	-29 24 26	IRAS	*opt.* 3.6	MLG88	
	17 47 12.8	-29 24 29	PK67		CaKa71	
2000:	17 50 24.2	-29 25 18	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
HeII	468.6 *nm*	100:	$H\alpha$	656.3 *nm*	4313
[*OIII*]	436.3	–	[*NII*]	658.4	6750
	500.7	1333	[*SII*]	671.7	233
HeI	587.6	–		673.1	300

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.97	1
25μm	4.89	3
60μm	37.92	1
100μm	638.30	1

Central Star: AG82 267 — $m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 3.6 (CaKa71); 2.6 (Ac78); 0.9 (Ma84); 5.8 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, Al79, KFL88, LHSW81, PAKS89, Pe91, Sa76, TeOu88, W88, WoDe79

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000.1–02.3

Bl 3-10, PK 0−2°2, ESO 456-16, Sa 2-265, IRAS 17519-2957

				Diameter (″)		
		Disc.: Blanco 1964				
1950:	17 51 58.7	-29 57 20	IRAS	*opt.* 9.0	MLG88	
	17 52 09	-29 57.6	HLSW77		KFL88	
2000:	17 55 21	-29 58.0	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09					
HeII	468.6 *nm*	112	$H\alpha$	656.3 *nm*	875
[*OIII*]	436.3	–	[*NII*]	658.4	37
	500.7	1875	[*SII*]	671.7	13
HeI	587.6	–		673.1	7

IR Class: .		
J		
H		
K	> 9.9	
L		
Photom.	AIGI75	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.67	3
25μm	1.74	3
60μm	15.20	1
100μm	84.85	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .2$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)

Bibliography: *PK67*, AcMa77, Al79, KPK81, MaC83, PAKS91, Sa75

000.1–05.6

H 2-40, PK 0–5°1, ESO 456-59, Sa 3-120, VV' 351, Wray 16-374

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 12.4 MLG88	
				CaKa71	
1950:	18 05 11	-31 37.9	Sa76		
2000:	18 08 26	-31 37.4	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	491
[*O*III]	436.3	–	[*N*II]	658.4	640
	500.7	440:	[*S*II]	671.7	72:
*He*I	587.6	–		673.1	58:

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .4$ ASTR91

Central Star: AG82 287 —
$m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 5.79 (CaKa71); 6.4 (Ma84)

Bibliography: *PK67*, AG82, AST89, AcMa77, Iw73, KFL88, KrK68, PAKS89, StAc87, Wr66

000.2–01.9

M 2-19, PK 0–1°5, BI N, ESO 456-07, He 2-302, Sa 3-88, VV 125, VV' 279, Wray 16-325, IRAS 17505-2943

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* -45.0 ± 11.0 STPP83
1950:	17 50 34.2	-29 43 12	IRAS	*opt.* 8.2	MLG88	
	17 50 34	-29 43.2	HLSW77		CaKa71	
2000:	17 53 46	-29 43.8	.	*radio* 5.	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1295
[*O*III]	436.3	–	[*N*II]	658.4	598
	500.7	267	[*S*II]	671.7	49
*He*I	587.6	44		673.1	70

$\lg F_{H\beta}(mW.m^{-2})$ $-12.56 \pm .01$ SK89

IRAS Fluxes (*Jy*)

		Qual.
12μm	2.23	1
25μm	0.99	3
60μm	2.83	3
100μm	59.16	1

Radio (*mJy*) *2cm* — *6cm* 14 ZPB89

Central Star:
V 17.3 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 3.66 (CaKa71); 3.17 (Ac78); 1.0 (Ma84); 8.18 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al79, He67, KFL88, KrK68, Sa76, StAc87, W75, Wr66

000.2–04.6

Wray 16-363, PK 0–4°3, Sa 3-117

			Disc.: Wray 1966	*Diameter* (″)	
				opt. 6.4 KFL88	
1950:	18 01 30.2	-31 03 04	Wr66		
2000:	18 04 44.2	-31 02 50	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-03					
HeII 468.6 *nm*	–	*Hα* 656.3 *nm*	859		
[OIII] 436.3	–	[NII] 658.4	1102		
500.7	581	[SII] 671.7	90		
HeI 587.6	38:	673.1	85		
$\lg F_{H\beta}(mW.m^{-2})$	$-13.2 \pm .4$ ASTR91				

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: AST89, Ko78, PAKS89, Sa76, StAc87, We77

000.3+12.2

IC 4634, PK 0+12°1, ARO 50, ESO 587-01, He 2-189, Sa 2-164, StWr 4-1, VV 85, VV' 151, IRAS 16585-2145

			Disc.: Fleming 1893	*Diameter* (″)		*Rvel:* -33.1 ± 4.8 STPP83
1950:	16 58 33.9	-21 45 14	IRAS	*opt.* 8.4 CaKa71		*Expansion Velocities* (*km/s*)
	16 58 34.0	-21 45 14	AK90			[OIII] 14.4 We89
2000:	17 01 33.5	-21 49 33	.	*radio* 5.5 AK90		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII 468.6 *nm*	–	*Hα* 656.3 *nm*	382			*J*	10.90	12*μm*	0.90	3
[OIII] 436.3	6	[NII] 658.4	15			*H*	11.28	25*μm*	12.02	3
500.7	999	[SII] 671.7	1.7			*K*	10.58	60*μm*	12.33	3
HeI 587.6	20	673.1	3			*L*		100*μm*	5.60	3
$\lg F_{H\beta}(mW.m^{-2})$	$-10.89 \pm .01$ KM81, SK89					*Photom.* PeTo87		*Radio* 2*cm*	125	MiAl82
IUE Spectra:	*LW*(3) *SW*(3)					*Spectr.* PPOJ86		(*mJy*) 6*cm*	118	ZPB89

Central Star: AG82 221 — BD -21 4483; HD 153655; GCRV 9805
B 13.72 *V* 13.94 *Qual:* B SK89 , TASG91

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) stat.: 3.8 (CaKa71); 3.95 (MiAl75); 3.68 (Ca76); 2.94 (Ac78); 1.75 (Da82); 1.40 (AGNR84); 2.5 (Ma84); 2.77 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac75, Ac76, AcMa77, Al65, Al68, AlCz83, AlEp76, AlLi68, AlMi72, All76, Ar68, Ar70, ArKo68, BLTA81, Ca82, CaNo73, CaRu74, CoBa74, CoBa80, DFHM67, De71, FaMa86, FaMa87, FeAl87, GPY79, Gol87, Gr71, Gu70, HLSW80, He67, He71, He90, Hi69, Hi71, Hig71, Is84, IwKa65, Iy86, JoJo91, Ka69, Ka70, Ka76, Ka80, Ka86, Kal76, Kh76, Khr76, Khro76, Ko77, Kos76, LNP89, MaFa85, MaFa86, MaPo80, Mar81, Mi73, MiWe79, PM87, PPFS87, PPT88, PaPe88, Pe71, Pe91, Ph84, RRA82, SGBO84, Sa75, Sa84, SaMi78, Sh85, SlOr65, Sm71, Sm73, StKa89, StTy90, StWr72, TCS67, Te68, Th68, ThDa70, VKDa65, Vo70, VoCo90, Webs69, Wh85, ZTPS89, ZuAl86

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000.3+06.9

Trz 41

			Disc.: Terzan 1985	*Diameter (")*	*Rvel:* −46. ± 60. 91..3001
				opt. 11.6 91..3001	
1950:	17 17.3	-24 49	90..2002		
2000:	17 20.4	-24 52	.		

85.23023 Terzan A. *The Messenger,42, 4-7,1985* A photometric study of the bright cloud B in Sagittarius : 17 new diffuse objects.

90..2002 Djorgovski S., Thompson D.J., De Carvalho R.R., Mould J.R. *Astron. J. 100,599* A rich, nearby galaxy cluster in Sagittarius

91..3001 Thompson D.J., Djorgovski S., De Carvalho R.R. *Pub. Astron. Soc. Pac. 103,487* New planetary nebulae in the direction of the galactic bulge

000.3−02.8

M 3-47, PK 0−2°5, ESO 456-22, Sa 3-100, VV' 296

			Disc.: Minkowski 1948	*Diameter (")*	*Rvel:* −16.0 ± 5.0 STPP83
				opt. St. ATS91	
1950:	17 54 29.3	-30 01 45	HLSW77		
2000:	17 57 41.7	-30 02 02	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1327
[*O*III]	436.3	–	[*N*II]	658.4	2344
	500.7	929	[*S*II]	671.7	217
*He*I	587.6	98		673.1	190

$\lg F_{H\beta}(mW.m^{-2})$ −14.0 ± .3 ASTR91

Bibliography: *PK67*, AST89, AcMa77, KFL88, Sa76, StAc87, WoDe79

000.3−04.6

M 2-28, PK 0−4°1, ESO 456-49, He 2-338, Sa 2-293, VV 144, VV' 336, Wray 16-366, IRAS 18018-3058

			Disc.: Minkowski 1947	*Diameter (")*	*Rvel:* −17.0 ± 11.0 STPP83
1950:	18 01 49.2	-30 58 33	IRAS	*opt.* 4.8 KFL88	
	18 01 48	-30 58.5	HLSW77	CaKa71	
2000:	18 05 02	-30 58.3	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

*He*II	468.6 *nm*	17	*Hα*	656.3 *nm*	740
[*O*III]	436.3	–	[*N*II]	658.4	1231
	500.7	715	[*S*II]	671.7	68
*He*I	587.6	38		673.1	90

$\lg F_{H\beta}(mW.m^{-2})$ −12.60 ± .04 SK89, ASTR91

IRAS Fluxes (Jy) *Qual.*

12μm	2.26	1
25μm	0.79	2
60μm	2.88	3
100μm	52.13	1

Radio *2cm*
(mJy) *6cm* 10 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.88 (CaKa71); 5.67 (Ac78); 3.7 (Ma84); 9.45 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, PAKS89, Sa75, Wr66

000.4–01.9

M 2-20, PK 0–1°6, BI P, ESO 456-12, He 2-304, Sa 2-262, VV 127, VV' 282, Wray 16-326, IRAS 17512-2935

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel*: +75.0 ± 11.0 STPP83	
1950:	17 51 14.0	-29 35 38	IRAS	*opt.* 6.6	MLG88		
	17 51 13.6	-29 35 38	PK67		KFL88		
2000:	17 54 25.3	-29 36 09	.	*radio* 16.4	RP91		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1133	12μm	2.67	1
[OIII]	436.3	–	[*NII*]	658.4	417	25μm	3.84	3
	500.7	620	[*SII*]	671.7	19	60μm	6.20	3
HeI	587.6	48		673.1	35	100μm	186.30	1
lg$F_{H\beta}(mW.m^{-2})$		−12.3 ± .2	W83, ASTR91			*Radio* (*mJy*)	*2cm*	
							6cm 3.2	RP91

Central Star: AG82 270 —		
V 16.1 *Qual:* D TASG91	WC 5-6	W75
	WC	Me91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88); ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: *PK67*, AG82, AcMa77, Al79, HLSW77, He67, PAKS91, Sa75, Wr66, ZuAl86

000.4–02.9

M 3-19, PK 0–2°6, ESO 456-26, Sa 3-103, VV' 301, Wray 16-339, IRAS 17551-3000

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel*: +158.0 ± 11.0STPP83	
1950:	17 55 07.1	-30 00 27	IRAS	*opt.* 5.7	MLG88		
	17 55 07.1	-30 00 27	PK67		CaKa71		
2000:	17 58 19.5	-30 00 41	.	*radio* 7.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	803	12μm	4.44	1
[OIII]	436.3	18	[*NII*]	658.4	79	25μm	1.47	3
	500.7	573	[*SII*]	671.7		60μm	5.09	3
HeI	587.6	49		673.1	16	100μm	63.03	1
lg$F_{H\beta}(mW.m^{-2})$		−12.9 ± .2	ASTR91			*Radio* (*mJy*)	*2cm*	
							6cm 5.5	ZPB89

Central Star:
V 16.9 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 5.05 (CaKa71); 4.60 (Ac78); 2.2 (Ma84); 7.80 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, HLSW77, KFL88, Sa76, StAc87, TAGS89, W75, W88, WoDe79, Wr66

000.5–01.6

Al 2-Q, PK 0–1°7, IRAS 17502-2916

			Disc.: Allen 1979	*Diameter* (″)		*Rvel:* −67.0 ± .	KFL88
1950:	17 50 14.2	-29 16 34	IRAS	*opt. St.*	CS90		
	17 50 13.7	-29 16 31	Al79				
2000:	17 53 24.9	-29 17 07	.	*radio* 16.4	RP91		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-14					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	620
[OIII]	436.3	–	[NII]	658.4	110:
	500.7	286	[SII]	671.7	
HeI	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.51	1
25μm	0.82	1
60μm	3.30	3
100μm	103.40	1

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: Iy87, PAKS91

000.5–03.1

KFL 1

			Disc.: Kinman et al 1988	*Diameter* (″)		*Rvel:* −51.0 ± .	KFL88
1950:	17 56 03.3	-30 02 38	KFL88	*opt.* 8.2	KFL88		
2000:	17 59 15.7	-30 02 48	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29					
HeII	468.6 *nm*	42	*Hα*	656.3 *nm*	807
[OIII]	436.3	–	[NII]	658.4	51
	500.7	612	[SII]	671.7	
HeI	587.6	36		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	−13.98 ± .10	KFL88, ASTR91	*Radio* (*mJy*)	*2cm*
				6cm 2.1 ZPB89

Central Star:
B 18.4 *V* 17.3 *Qual:* C TASG91

Notes: Monochromatic images (KFL88)

000.6–01.3

Bl 3-15, PK 0–1°2, ESO 455-58

			Disc.: Blanco 1964	*Diameter* (″)			
				opt. 3.0	MLG88		
1950:	17 49 24	-29 05.9	LHSW81				
2000:	17 52 35	-29 06.6	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	4774
[OIII]	436.3	–	[NII]	658.4	6096
	495.9	–	[SII]	671.7	378
HeI	587.6	74:		673.1	543

$\lg F_{H\beta}(mW.m^{-2})$	−14.6 ± .3	ASTR91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, Al79, KFL88, PAKS89, Sa76

000.6–02.3

H 2-32, PK 0–2°3, BI 3-12, ESO 456-20, Sa 3-98, VV' 290, Wra 16-232

Disc.: Haro 1952	*Diameter* (″)	*Rvel:* +145.0 ± 11.0STPP83
	opt. St. CS90	
1950: 17 53 12.4 -29 37 42 PK67		
2000: 17 56 24.2 -29 38 05 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1140
[OIII]	436.3	–	[NII]	658.4	218
	495.9	–	[SII]	671.7	19
HeI	587.6	–		673.1	26

$\lg F_{H\beta}(mW.m^{-2})$ −13.20 ± .10 ASTR91

Notes: Possibly a HII region.

Bibliography: *PK67*, ACPS87, AcMa77, AlGl75, GPGV83, HLSW77, KFL88, MaC83, Sa76, StAc87, W75, W88, WoDe79, Wr66

000.7+04.7

H 2-11, PK 0+4°1, ESO 520-04, VV' 200, IRAS 17263-2546

Disc.: Haro 1952	*Diameter* (″)	
1950: 17 26 20.4 -25 46 48 IRAS	*opt.* 2.7 HLSW77	
17 26 20.2 -25 47 03 ZPB89		
2000: 17 29 26.0 -25 49 23 .	*radio* 1.5 PBOZ88	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-26

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	3427
[OIII]	436.3	–	[NII]	658.4	2950
	500.7	466	[SII]	671.7	
HeI	587.6	134		673.1	51:

$\lg F_{H\beta}(mW.m^{-2})$ −13.9 ± .3 ASTR91

IR Class: .

J		
H		
K	> 9.1	
L		

Photom. AlGl74

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.50	3
25μm	6.56	3
60μm	7.20	3
100μm	7.56	1

Radio (*mJy*) *2cm* 42 PFMA82; *6cm* 27.7 PBOZ88

Central Star: AG82 244 — SS73 87
m_{pg} > 21. *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). ESO-NTT images by Schwartz H.E. and Melnick J. Status of the object is not clear.

Bibliography: *PK67*, AG82, AST89, AcMa77, Al78, PAKS89, Sa76, SaSt73, StAc87, VKDA65, Vo70

000.7+03.2

He 2-250, PK 0+3°1, ESO 520-09, Th 3-66, Sa 3-64, M 4-5, Wray 17-92, IRAS 17318-2634

			Disc.: Henize 1964	*Diameter (″)*		*Rvel:* −200.0 ± 11.0STPP83	
1950:	17 31 48.0	-26 34 00	IRAS	*opt.* 5.2	CaKa71		
	17 31 47.7	-26 34 01	GPGV83				
2000:	17 34 54.7	-26 35 57	.	*radio* 5.	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

HeII	468.6 *nm*	26	*Hα*	656.3 *nm*	1434
[*OIII*]	436.3	–	[*NII*]	658.4	1002
	500.7	979	[*SII*]	671.7	61
HeI	587.6	50		673.1	81

$\lg F_{H\beta}(mW.m^{-2})$ −13.4 ± .2 ASTR91

IRAS Fluxes (Jy)		*Qual.*
12*μm*	2.01	1
25*μm*	2.01	3
60*μm*	4.51	3
100*μm*	16.15	1

Radio (mJy) 2cm; 6cm 15 GPGV83

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.58,10.24 (CaKa71); 5.02 (Ac78); 4.20 (AGNR84); 2.7 (Ma84)

Bibliography: *PK67*, AGR89, AST89, HLSW77, He67, PAKS89, Sa76, StAc87, W88, WeHe67, Wr66

000.7−02.7

M 2-21, PK 0−2°4, ESO 456-24, He 2-315, Sa 2-271, VV 131, VV' 300, Wray 16-337, IRAS 17548-2944

			Disc.: Minkowski 1947	*Diameter (″)*		*Rvel:* −138.5 ± 12.5STPP83	
1950:	17 54 51.9	-29 44 12	IRAS	*opt.* 7.2	MLG88		
	17 54 57.8	-29 44 06	Mi76		KFL88		
2000:	17 58 09.8	-29 44 21	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22

HeII	468.6 *nm*	25	*Hα*	656.3 *nm*	616
[*OIII*]	436.3	13	[*NII*]	658.4	29
	500.7	1411	[*SII*]	671.7	3
HeI	587.6	23		673.1	4

$\lg F_{H\beta}(mW.m^{-2})$ −12.10 ± .03 W83

IR Class: .

J		
H		
K	> 9.7	
L		
Photom.	AIGI75	

IRAS Fluxes (Jy)		*Qual.*
12*μm*	1.02	3
25*μm*	1.51	3
60*μm*	7.78	1
100*μm*	99.13	1

Radio (mJy) 2cm 20 MiAl82; 6cm

Central Star:
B 15.8 *V* 14.7 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 6.14 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, AlKe87, HLSW77, He67, He90, KPK81, Ka76, PAKS89, Pe91, Po80, Sa75, StTy90, TAGS89, VDKA75, VKDA73, Vo71, Vor70, W75, W88, WoDe79, Wr66

76..9019 Webster B.L. *Mon. Not. R. Astron. Soc. 174,513* The masses and chemical composition of P.N. in the galactic bulge and Magellanic clouds.

000.7–03.7

M 3-22, PK 0–3°1, ESO 456-39, H 1-48, Sa 2-283, VV' 320, IRAS 17590-3014

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* −54.0 ± 5.0 STPP83
1950:	17 59 05.5	-30 14 26	IRAS	*opt.* 7.3 MLG88	
	17 59 06	-30 14.4	HLSW77	KFL88, CaKa71	
2000:	18 02 19	-30 14.3	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13					
HeII	468.6 *nm*	118	$H\alpha$	656.3 *nm*	625
[*OIII*]	436.3	15:	[*NII*]	658.4	–
	500.7	981	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$	−12.61 ± .01 SK89				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	5.37	1
25μm	2.34	3
60μm	1.81	3
100μm	69.59	1
Radio 2*cm*		
(*mJy*) 6*cm*	5	ZPB89

Central Star:
B 18.2 *V* > 17.8 *Qual:* C SK89

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 5.21 (CaKa71); 5.07 (Da82); 3.30 (AGNR84); 3.0 (Ma84); 7.64 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, CaRu74, Iw73, LNP89, PAKS89, Pe91, Sa75, Sh85

000.7–07.4

M 2-35, PK 0–7°1, ESO 457-04, He 2-384, Sa 2-324, StWr 2-16, VV 168, VV' 384, Wray 16-403, IRAS 18143-3158

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* −21.0 ± 11.0 STPP83
1950:	18 14 22.6	-31 58 04	IRAS	*opt.* 5. : ATS91	
	18 14 21.5	-31 57 45	HLSW80		
2000:	18 17 36.9	-31 56 35	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
HeII	468.6 *nm*	13	$H\alpha$	656.3 *nm*	454
[*OIII*]	436.3	–	[*NII*]	658.4	747
	500.7	701	[*SII*]	671.7	63
HeI	587.6	22		673.1	67
$\lg F_{H\beta}(mW.m^{-2})$	−12.57 ± .10 ASTR91				

IR Class: .		*IRAS Fluxes* (*Jy*)		*Qual.*
J		12μm	0.45	1
H		25μm	0.43	1
K	> 9.6	60μm	0.73	3
L		100μm	3.39	1
Photom.	AIGI74			

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, He67, KAS91, PAKS89, Sa75, StWr72, W75, Wr66

000.8–01.5

Bl O, PK 0–1°3, ESO 456-11, Sa 3-90, IRAS 17506-2858

			Disc.: Blanco 1961	*Diameter* (″)	
1950:	17 50 38.0	-28 58 38	IRAS	*opt. St.* ATS91	
	17 50 40	-28 58.8	HLSW77		
2000:	17 53 51	-28 59.4	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	2080	12μm	3.21	1
[*OIII*]	436.3	–	[*NII*]	658.4	1379	25μm	3.68	3
	495.9	–	[*SII*]	671.7	83	60μm	4.77	3
HeI	587.6	–		673.1	168	100μm	307.90	1
$\lg F_{H\beta}(mW.m^{-2})$		$-13.14 \pm .02$	SK89					

Central Star:
V 17.6 *Qual:* D TASG91

Notes: Possibly a H II region

Bibliography: *PK67*, AST89, Al79, Sa76, StAc87, W75

000.8–07.6

H 2-46, PK 0–7°2, ESO 457-07, Sa 2-327, VV' 388, IRAS 18152-3156

			Disc.: Haro 1952	*Diameter* (″)	
1950:	18 15 16.6	-31 56 09	IRAS	*opt.* 4. : ATS91	
	18 15 22	-31 56.1	HLSW80		
2000:	18 18 37	-31 54.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	382	*J*		12μm	0.45	1
[*OIII*]	436.3	–	[*NII*]	658.4	300	*H*		25μm	0.44	1
	500.7	981	[*SII*]	671.7	18	*K*	> 9.6	60μm	0.81	3
HeI	587.6	19		673.1	25	*L*		100μm	2.78	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.84 \pm .10$	ASTR91			*Photom.*	AlGl74			

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, PAKS89, Sa75, W75

000.9–02.0

Bl 3-13, PK 0−2°1, ESO 456-18, Sa 3-94, Wray 16-329, IRAS 17528-2910

			Disc.: Blanco 1964	*Diameter* (″)		*Rvel:* 270 ± 80	ATS91
1950:	17 52 51.3	-29 10 51	IRAS	*opt.* 5.2	MLG88		
	17 52 50.7	-29 10 53	Mi76		KFL88		
2000:	17 56 01.8	-29 11 17	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1492	*J*		12μm	3.44	1
[OIII]	436.3	–	[NII]	658.4	–	*H*		25μm	1.68	3
	500.7	1102	[SII]	671.7		*K*	> 10.6	60μm	18.84	1
HeI	587.6	65		673.1		*L*		100μm	212.20	1
lg$F_{H\beta}(mW.m^{-2})$		−13.8 ± .3	ASTR91			*Photom.*	AIGI74	*Radio* *2cm*	16	MiAl82
								(*mJy*) *6cm*	10	Mi79

Central Star:
B 17.0 *V* 16.2 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, Al79, HLSW77, KPK81, Ka76, PAKS89, Sa76, StAc87, VDKA75, VKDA73, Vo71, Vor70, Wr66, ZTPS89

000.9–04.8

M 3-23, PK 0−4°2, ESO 456-54, He 2-348, Sa 2-297, VV' 346, Wray 16-370, IRAS 18038-3034

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −156.0 ± 5.0	STPP83
1950:	18 03 52.6	-30 34 44	IRAS	*opt.* 11.4	KFL88		
	18 03 52	-30 34.6	HLSW77		CaKa71		
2000:	18 07 05	-30 34.2	.	*radio* 12.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	87	*Hα*	656.3 *nm*	615		12μm	0.48	2
[OIII]	436.3	13	[NII]	658.4	28		25μm	3.33	3
	500.7	1327	[SII]	671.7	7		60μm	4.02	3
HeI	587.6	–		673.1	6		100μm	38.82	1
lg$F_{H\beta}(mW.m^{-2})$		−12.2 ± .2	ASTR91				*Radio* *2cm*		
							(*mJy*) *6cm*	28	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.77 (CaKa71); 2.6 (Ma84); 4.21 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, PAKS89, Sa75, Wr66

001.0+01.9

K 1-4, PK 1+1°1, ESO 520-16, He 2-264, Sa 3-69, Wray 17-95, IRAS 17374-2700

			Disc.: Kohoutek 1962	*Diameter* (″)		
1950:	17 37 25.7	-27 00 58	IRAS	*opt.* 37.	CaKa71	
	17 37 20.4	-26 59 15	PK67			
2000:	17 40 28.1	-27 00 47	.	*radio* 46.	ZPB89	

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1985-07-19					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[OIII]	436.3	–	[*NII*]	658.4	305
	500.7	43:	[*SII*]	671.7	24:
HeI	587.6	–		673.1	52:

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.24	3
25μm	3.83	3
60μm	1.75	1
100μm	18.13	1

Radio (*mJy*)			
2cm			
6cm	25	ZPB89	

Central Star: AG82 252 — m_{pg} 20.3 *Qual:* P PK67

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 1.8 (CaKa71); 2.2 (Ma84); 1.92 (CKS91)

Bibliography: *PK67*, AG82, Al79, HLSW77, He67, Iw73, KrK68, PAKS89, Sa76, StAc87, VoCo90, WeHe67, Wr66, ZTPS89

001.0–02.6

Sa 3-104, PK 1–2°2, IRAS 17552-2920

			Disc.: Sanduleak 1976	*Diameter* (″)		
1950:	17 55 13.2	-29 20 35	IRAS	*opt.* 5.2	MLG88	
	17 55 14	-29 20.6	Sa76		KFL88	
2000:	17 58 25	-29 20.8	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1058
[OIII]	436.3	–	[*NII*]	658.4	292
	500.7	146	[*SII*]	671.7	
HeI	587.6	51		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-13.03 \pm .10$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.39	3
25μm	3.45	3
60μm	1.74	3
100μm	92.57	1

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88). South-West component of a close pair seen on FC.

Bibliography: Ko78, We77, ZTPS89

001.1–01.6

Sa 3-92, PK 1–1°4, Al 2-S = PK 1-1° 5

			Disc.: Sanduleak 1976	*Diameter* (″)	
				opt. 6.0 MLG88	
1950:	17 51 41.4	-28 48 26	Sa76		
2000:	17 54 51.9	-28 48 55	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1815
[*O*III]	436.3	–	[*N*II]	658.4	3567
	500.7	906	[*S*II]	671.7	335
*He*I	587.6	75		673.1	370

$\lg F_{H\beta}(mW.m^{-2})$ $-13.9 \pm .3$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: ACPS87, Al79, KFL88, Ko78, We77

001.2+02.1

He 2-262, PK 1+2°1, ESO 520-15, Sa 3-68, Wray 17-94, IRAS 17371-2641

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* -172.0 ± 5.0 STPP83
1950:	17 37 07.9	-26 41 48	IRAS	*opt.* 4. CaKa71	
	17 37 09	-26 42.8	Sa76		
2000:	17 40 16	-26 44.3	.	*radio* 3.1 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2058
[*O*III]	436.3	–	[*N*II]	658.4	276
	500.7	842	[*S*II]	671.7	18
*He*I	587.6	60		673.1	30

$\lg F_{H\beta}(mW.m^{-2})$ $-13.73 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.19	3
25μm	3.00	3
60μm	2.51	1
100μm	27.07	1

Radio (*mJy*) *2cm* *6cm* 26 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.42 (CaKa71); 1.5 (Ma84); 5.77 (CKS91)

Bibliography: *PK67*, AST89, HLSW77, He67, PAKS89, PBOZ88, StAc87, W88, WeHe67, Wr66

001.2–03.0

H 1-47, PK 1–3°1, ESO 456-35, He 2-323, VV' 312, Wray 16-347, IRAS 17574-2921

			Disc.: Haro 1952	*Diameter* (″)		*Rvel*: +109.2 ± 4.3 STPP83	
1950:	17 57 26.1	-29 21 48	IRAS	*opt.* 5.	PK67		
	17 57 26.3	-29 21 46	GPGV83				
2000:	18 00 37.7	-29 21 51	.	*radio* 2.5	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-03						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1036	*J*		12μm	1.31	1
[*OIII*]	436.3	–	[*NII*]	658.4	716	*H*		25μm	5.50	3
	495.9	–	[*SII*]	671.7	29	*K*	> 9.7	60μm	7.00	3
HeI	587.6	–		673.1	50	*L*		100μm	83.75	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.61 ± .10	ASTR91			*Photom.*	AIGI74	*Radio* (*mJy*)	*2cm*	
									6cm 10	GPGV83

Central Star:
B 16.8 *V* 16.2 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.30 (AGNR84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Gr71, Gr72, HLSW77, He67, KFL88, Ka76, PAKS89, Sa76, SaSt73, StAc87, VKDA65, Vo70, W88, Wr66, ZTPS89

77....94 Johnson H.M. *Astrophys. J. 216,776-783* Fabry-Perot interferometry of stellar P.N.

001.2–03.9

ShWi 2-5, PK 358–3°8, KFL 5

			Disc.: Shaw et al 1985	*Diameter* (″)			
				opt. 4.0	KFL88		
1950:	18 00 42	-29 51.6	85..3143				
2000:	18 03 54	-29 51.4	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29					
HeII	468.6 *nm*	37	$H\alpha$	656.3 *nm*	776
[*OIII*]	436.3	50	[*NII*]	658.4	113
	500.7	936	[*SII*]	671.7	
HeI	587.6	38		673.1	
$\lg F_{H\beta}$		−12.87 ± .04	KFL88, SK89, ASTR91		

Central Star:
B 18.5 *V* 16.5 *Qual:* C SK89 , TASG91

Notes: Likely a galactic bulge PN (AKSR91). Wrong galactic denomination (358-3.8) appears in the literature.

Bibliography: AST89, PAKS89, Sh85

85..3143 Shaw R.A., Wirth A. *Publ. Astron. Soc. Pac. 97, 1071-1074* Seven new planetary nebulae in the direction of Baade's window.

001.3–01.2

Bl M, PK 1−1°1, ESO 456-10, Sa 3-89, Wray 17-101, IRAS 17506-2826

			Disc.: Blanco 1961	*Diameter* (″)			
1950:	17 50 37.4	-28 26 46	IRAS	*opt.* 4.2	CaKa71		
	17 50 37	-28 26.7	HLSW77				
2000:	17 53 47	-28 27.3	.	*radio* 4.5	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	4010
[*OIII*]	436.3	–	[*NII*]	658.4	3846
	500.7	164	[*SII*]	671.7	123
HeI	587.6	246		673.1	121
$\lg F_{H\beta}(mW.m^{-2})$		$-13.96 \pm .01$	SK89, ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.31	1
25μm	3.24	3
60μm	5.50	2
100μm	334.20	1
Radio (*mJy*) *2cm*		
6cm	17	ZPB89

Notes: Likely a galactic bulge PN (AKSR91). FC wrong in PK67
Distance (kpc) stat.: 4.13 (CaKa71); 1.0 (Ma84); 8.01 (CKS91)

Bibliography: *PK67*, AST89, Al79, AmGu71, KFL88, Sa76, StAc87, W88, Wr66

001.4+05.3

H 1-15, PK 1+5°2, ESO 520-01, He 2-229, Sa 2-201, VV' 197, Wray 17-84, IRAS 17255-2448B

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* $+36.0 \pm 5.0$	STPP83
1950:	17 25 33.9	-24 48 44	IRAS	*opt.* 5.	CaKa71		
	17 25 33	-24 48.7	HLSW77				
2000:	17 28 37	-24 51.1	.	*radio* 4.3	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	785
[*OIII*]	436.3	–	[*NII*]	658.4	150
	500.7	374	[*SII*]	671.7	9
HeI	587.6	36		673.1	11
$\lg F_{H\beta}(mW.m^{-2})$		$-12.7 \pm .3$	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.28	1
25μm	2.70	3
60μm	2.80	3
100μm	33.90	1
Radio (*mJy*) *2cm*		
6cm	13	ZPB89

Central Star:
B 16.8 *V* 16.3 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 7.96 (CaKa71); 5.6 (Ma84); 8.96 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, PAKS89, PBOZ88, Sa75, W88, Wr66

001.4–03.4

ShWi 2-1, PK 358–3°4

			Disc.: Shaw et al 1985	*Diameter* (″)	*Rvel:* −117.0 ± . KFL88
				opt. 13. 85..3143	
1950:	17 59 16	-29 25.2	85..3143		
2000:	18 02 27	-29 25.1	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-12					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	19
	500.7	77	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	−13.32 ± .06 SK89

Radio	*2cm*
(*mJy*)	*6cm*< 1.5 89..1285

Central Star:
B 16.1 *V* 15.8 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Wrong galactic denomination (358-3.4) appears in the literature.

Bibliography: PAKS91

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89..1285 Zijlstra A.A., Pottasch S.R. *Astron. Astrophys. 216, 245-252* Low mass planetary nebulae near the galactic centre.

001.5–06.7

SwSt 1, PK 1–6°2, AS 295B, ESO 457-02, He 2-377, Sa 2-319, VV 164, VV' 378, Wray 16-397, IRAS 18129-3053

			Disc.: Swings et al 1940	*Diameter* (″)	*Rvel:* −18.6 ± 2.6 STPP83	
1950:	18 12 57.5	-30 53 12	IRAS	*opt.* 5. PK67	*Expansion Velocities* (*km/s*)	
	18 12 58.6	-30 53 11	AK90		[OIII] 13.0	Ac76
2000:	18 16 12.2	-30 52 07	.	*radio* 1.3 AK90	[NII] 14.5	89.50036

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13						*IR Class:* D		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	0.5	$H\alpha$	656.3 *nm*	sat.	*J*	9.10	12μm	17.45	3
[*OIII*]	436.3	–	[*NII*]	658.4	153	*H*	8.50	25μm	86.00	3
	500.7	35	[*SII*]	671.7	0.7	*K*	7.94	60μm	23.85	3
HeI	587.6	8		673.1	1.9	*L*		100μm	5.87	3

$\lg F_{H\beta}(mW.m^{-2})$	−10.33 ± .10 ASTR91	*Photom.*	PPFS87	*Radio*	*2cm* 240 MiAl82
IUE Spectra:	*LW*(3) *SW*(4) *FES*(1)	*Spectr.*	79....19	(*mJy*)	*6cm* 130 AK90

Central Star: AG82 300 — CD -30 15469; HD 167362; MWC 288; CPD -30 5412
B 11.77 *V* 11.76 *Qual:* B 79.30005, TASG91

WC 9 82.30028
Of-WR(C) Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: >3.52 (MiAl75); 3.20 (Ac78); 2.1 (Ma84); 1.37 (CKS91)

Bibliography: *PK67*, ABBW82, AG82, AGNR85, AGR89, AST89, Ac75, AcMa77, AiRo81, AiRo82, Al73, Al77, AlEp76, AlGl74, AlSw76, All76, Ca82, CePe83, CePe85, CoBa74, FeAl87, FeBr90, GrNe90, HLSW80, He67, KPK81, KVLS81, Ka76, Mi73, Mi79, MiWe79, OlRa86, PAKS89, PFMA82, PM87, PPT88, PaPe88, Pe71, Pe83, Pe89, Pe91, Sa75, Sa84, SaSt72, SmAl69, StKa89, StWr72, TAGS89, VDKA75, VKDA73, Vo71, VoCo90, Vor70, Wa77, We89, WeHe67, Wr66, ZTPS89, ZuAl86

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001.6–01.3

Bl Q, PK 1–1°2, ESO 456-14, Sa 3-91, Wray 17-102, IRAS 17513-2812

			Disc.: Blanco 1961	*Diameter* (″)		
1950:	17 51 23.7	-28 12 11	IRAS	*opt.* 4.5	MLG88	
	17 51 25	-28 12.2	HLSW77		KFL88	
2000:	17 54 35	-28 12.7	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	3482	*J*		12μm	3.41	1
[*OIII*]	436.3	–	[*NII*]	658.4	1296	*H*		25μm	3.49	3
	500.7	1364	[*SII*]	671.7	83	*K*	> 9.9	60μm	15.40	2
HeI	587.6	163		673.1	189	*L*		100μm	111.10	2
$\lg F_{H\beta}(mW.m^{-2})$		−13.9 ± .3	ASTR91			*Photom.*	AIGI75			

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)

Bibliography: *PK67*, AST89, Al79, Sa76, StAc87, Wr66

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001.7+05.7

H 1-14, PK 1+5°1, ESO 519-19, Sa 2-200, VV' 196, IRAS 17249-2423

			Disc.: Haro 1952	*Diameter* (″)		*Rvel*: +34.0 ± 25.0 STPP83
1950:	17 24 58.4	-24 23 02	IRAS	*opt.* 6.6	CaKa71	
	17 25 00	-24 22.9	PK67			
2000:	17 28 04	-24 25.3	.	*radio* 6.5	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	28	*Hα*	656.3 *nm*	1123		12μm	0.38	1
[*OIII*]	436.3	19	[*NII*]	658.4	–		25μm	0.74	2
	500.7	1446	[*SII*]	671.7			60μm	0.97	3
HeI	587.6	38		673.1			100μm	37.03	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.2 ± .2	ASTR91				*Radio* (*mJy*)	*2cm*	
								6cm 22	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 7.81 (CaKa71); 7.00 (Ac78); 6.6 (Ma84); 6.33 (CKS91)

Bibliography: *PK67*, AcMa77, Iw73, LHSW81, Sa75

001.7–01.6

H 2-31, PK 1–1°3, ESO 456-19, Sa 3-95, VV' 288

		Disc.: Haro 1952	*Diameter* (″)	
			opt. St. CS90	
1950:	17 52 53	-28 13.8 HLSW77		
2000:	17 56 03	-28 14.2 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3067
[*OIII*]	436.3	–	[*NII*]	658.4	2185
	495.9	–	[*SII*]	671.7	102
HeI	587.6	–		673.1	182

$\lg F_{H\beta}(mW.m^{-2})$ $-14.4 \pm .3$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, PAKS89, Sa76, StAc87

001.7–04.4

H 1-55, PK 1–4°1, ESO 456-56, He 2-347, VV' 345, Wray 16-373

		Disc.: Haro 1952	*Diameter* (″)	*Rvel:* -52.0 ± 11.0 STPP83	
			opt. 5. PK67		
1950:	18 04 02.7	-29 41 49 GPGV83			
2000:	18 07 14.6	-29 41 24 .	*radio* 2.5 ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	666	*IR Class:* .
[*OIII*]	436.3	–	[*NII*]	658.4	616	*J*
	500.7	16	[*SII*]	671.7	26	*H*
HeI	587.6	17		673.1	45	*K* > 9.6
						L

$\lg F_{H\beta}(mW.m^{-2})$ $-12.61 \pm .05$ SK89, ASTR91

Photom. AIGI74

Radio	*2cm*	10	MiAl82
(*mJy*)	*6cm*	5.3	GPGV83

Central Star:
B 17.03 *V* 16.57 *Qual:* A SK89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 7.10 (AGNR84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Gr71, Gr72, HLSW77, He67, KFL88, Ka76, Ka86, Mi76, PAKS89, Pe91, Sa76, SaSt73, Sh85, StAc87, StKa89, VKDA65, Vo70, Wr66

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001.7–04.6

H 1-56, PK 1–4°2, ESO 456-57, He 3-1592, Sa 2-299, VV' 347, IRAS 18047-2945

				Disc.: Haro 1952	*Diameter* (″)		*Rvel*: −106.0 ± 11.0STPP83
1950:	18 04 42.2	-29 45 04	IRAS		*opt.* 3.	CaKa71	
	18 04 41.9	-29 45 02	GPGV83				
2000:	18 07 53.9	-29 44 35	.		*radio* 2.5	ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	2.5	$H\alpha$	656.3 *nm*	470	*J*		12μm	1.51	1
[*OIII*]	436.3	–	[*NII*]	658.4	21	*H*		25μm	1.91	3
	500.7	631	[*SII*]	671.7	1.0:	*K*	> 9.5	60μm	2.31	3
HeI	587.6	19		673.1	1.8:	*L*		100μm	52.88	1
lg$F_{H\beta}(mW.m^{-2})$		−12.14 ± .04	SK89, ASTR91			*Photom.*	AIGI74	*Radio*	*2cm*	
								(*mJy*)	*6cm* 7.8	GPGV83

Central Star:
B 16.6 *V* 17.0 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 8.68 (CaKa71); 6.72 (Ac78); 6.00 (AGNR84); 3.6 (Ma84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al73, CaWy76, PAKS89, Pe91, Sa75, W88

001.8–03.8

ShWi 2-7, PK 358–3°10

			Disc.: Shaw et al 1985	*Diameter* (″)		
				opt. 12.	85..3143	
1950:	18 01 53	-29 19.7	85..3143			
2000:	18 05 04	-29 19.4	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-12					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	395
[*OIII*]	436.3	–	[*NII*]	658.4	304
	500.7	306	[*SII*]	671.7	39
HeI	587.6	42		673.1	42
lg$F_{H\beta}(mW.m^{-2})$		−12.61 ± .02	SK89		

Central Star:
B 15.54 *V* 14.74 *Qual:* B TASG91

Notes: Wrong galactic denomination (358-3.10) appears in the literature.

Bibliography: PAKS91

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002.0–02.0

H 1-45, PK 2−2°1, ESO 456-27, He 2-317, Sa 2-272, VV' 303, Wray 16-340, IRAS 17552-2814

				Disc.: Haro 1952	*Diameter* (″)	*Rvel*: +4.0 ± 11.0 STPP83	
1950:	17 55 13.4	-28 14 40	IRAS		*opt.* 6.0 MLG88		
	17 55 12	-28 14.6	HLSW77				
2000:	17 58 22	-28 14.8	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22						*IR Class:* D		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1606	*J*	9.26	12μm	7.96	3
[*OIII*]	436.3	–	[*NII*]	658.4	–	*H*	7.73	25μm	3.59	1
	500.7	1035	[*SII*]	671.7		*K*	6.52	60μm	4.45	1
HeI	587.6	84		673.1		*L*	4.82	100μm	24.72	3
lg$F_{H\beta}(mW.m^{-2})$		−12.8 ± .3	ASTR91			*Photom.*	AIGI74	*Radio* (*mJy*) 2*cm*	11	PFMA82
								6*cm*	5	PFMA82

Central Star:
V 16.8 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 5.35 (CKS91)

Bibliography: *PK67*, ABBW82, ACPS87, AST89, AcMa77, He67, Hig71, KFL88, PAKS89, Sa75, VKDA65, Vo70, VoCo90, W75, Wr66

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002.0–06.2

M 2-33, PK 2−6°1, ESO 456-80, He 2-372, Sa 2-317, StWr 2-11, VV 162, VV' 375, Wray 16-394, IRAS 18118-3016

				Disc.: Minkowski 1947	*Diameter* (″)	*Rvel*: −112.0 ± 11.0STPP83	
1950:	18 11 53.3	-30 16 34	IRAS		*opt.* 5.8 MLG88		
	18 11 53.8	-30 16 32	Mi76		KFL88, 90....46		
2000:	18 15 06.5	-30 15 33	.		*radio* 4. ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	408		12μm	0.39	1
[*OIII*]	436.3	–	[*NII*]	658.4	15		25μm	2.28	2
	500.7	605	[*SII*]	671.7	1.9		60μm	2.99	3
HeI	587.6	20		673.1	2.4		100μm	3.40	1
lg$F_{H\beta}(mW.m^{-2})$		−11.6 ± .3	ASTR91				*Radio* 2*cm*	19	MiAI82
							(*mJy*) 6*cm*	12	GPGV83

Central Star:
B 14.4 *V* 14.4 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 8.49 (CaKa71); 6.54 (Ac78); 4.70 (AGNR84); 4.9 (Ma84); 6.77 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlKe85, AlKe87, CaWy76, HLSW77, He67, He90, Iw73, Ka76, Kh79, PAKS91, Pe91, Sa75, StKa89, StTy90, StWr72, VDKA75, Vo71, Vor70, W75, W88, Wr66

77.10292 Kharadze E.K., Bartaya R.A., Vorontsov-Velyaminov B.A., Kostyakova E.B., Dokuchaeva O.D., Arhipova V.P. *Astron. Tsirk. 947,6* The new absolute intensities of the emission lines of 15 PN, seen in the galactic-centre direction.

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002.0−13.4

IC 4776, PK 2−13°1, ARO 522, ESO 396-02, He 2-421, Sa 2-363, StWr 2-23, VV 204, VV' 446, Wray 16-418, Y-C 2-27, IRAS 18425-3323

				Disc.: Fleming 1896	*Diameter* (″)		*Rvel:* +18.9 ± 0.7 STPP83		
1950:	18 42 33.6	-33 23 48	IRAS		*opt.* 7.5	CaKa71	*Expansion Velocities* (*km/s*)		
	18 42 34.1	-33 23 52	Mi73			CJA87			
2000:	18 45 51.1	-33 20 40	.		*radio* 1.6	Is84	[NII]	14.5	89.50036

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	sat.	*J*	11.10	12μm	0.86	3
[OIII]	436.3	6	[NII]	658.4	48	*H*	11.62	25μm	10.96	3
	495.9	197	[SII]	671.7	3	*K*	10.90	60μm	6.80	3
HeI	587.6	17		673.1	5	*L*		100μm	2.52	3
$\lg F_{H\beta}$	−10.72 ± .05	O63 , Ka80 , W83				*Photom.*	Wh85	*Radio* *2cm*	69	MiAl82
IUE Spectra:	*LW*(3)	*SW*(4)						(*mJy*) *6cm*	64.1	Is84

Central Star: AG82 329 — CD -33 13537; GCRV 11192; HD 173283
B 14.3 *V* 14.1 *Qual:* C WRPA86, SK89 , TASG91 *Spectrum:* WC 6 ? Al176

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 4.05 (CaKa71); 5.01 (MiAl75); 4.95 (Ca76); 3.53 (Ac78); 2.48 (Da82); 1.01 (PhPo84); 2.00 (AGNR84); 3.3 (Ma84); 3.90 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Ac80, AcMa77, Al65, Al68, AlCz83, AlLi68, AlMi72, Ca82, CaWy76, CeGi73, CePe83, CoBa74, De71, FaMa86, FaMa87, FeAl87, Gr71, GrNe90, HLSW80, He67, He71, He90, Hi71, IwKa65, Iy86, KAC76, KVLS81, Ka76, Ka79, Ka86, Kh84, LNP89, MaFa85, MaFa86, MaPo80, PAKS89, PAKS91, PM87, PPFS87, Pe91, PiKh79, Sa75, SaMi78, Sh85, SlOr65, SmAl69, StKa89, StWr72, TAGS89, VoCo90, Wa70, We89, Webs69, Wr66, ZuAl86

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88.50100 Bianchi L. *Proceedings of a celebratory symposium held at Goddard Space Flight Center, Gre enbelt, Maryland, USA, 12-15 april 1988. A decade of UV astronomy with the IUE s atellite. ESA SP-281 vol.2,173-176* Study of the nuclei of planetary nebulae at UV wavelengths.

89.50036 Bianchi L., Grewing M., Barnsted J., Diesch C. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 182* Kinematical properties of planetary nebulae.

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002.1+03.3

PBOZ 24, IRAS 17347-2519

				Disc.: Pottasch et al 1988	*Diameter* (″)				
1950:	17 34 45.4	-25 19 04	IRAS		*opt. St.*	CS90			
	17 34 46.0	-25 19 01	PBOZ88						
2000:	17 37 51.2	-25 20 44	.		*radio* 4.8	PBOZ88			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.94	1
25μm	1.71	3
60μm	3.20	3
100μm	16.26	1

Radio *2cm*		
(*mJy*) *6cm*	5	PBOZ88

002.1-02.2

M 3-20, PK 2−2°2, ESO 456-32, He 2-319, Sa 2-276, VV' 307, Wray 16-343, IRAS 17561-2813

				Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +55.0 ± 11.0 STPP83	
1950:	17 56 10.1	-28 13 39	IRAS		*opt.* 6.6	MLG88	*Expansion Velocities* (*km/s*)	
	17 56 09.7	-28 13 38	Mi76			KFL88	[OIII] 23.5	We89
2000:	17 59 19.4	-28 13 48	.					

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	774	*J*		12μm	2.42	1
[OIII]	436.3	–	[*NII*]	658.4	39	*H*		25μm	1.78	3
	500.7	1356	[*SII*]	671.7	10:	*K*	> 9.4	60μm	17.58	1
HeI	587.6	28		673.1	10:	*L*		100μm	202.90	1
lg$F_{H\beta}(mW.m^{-2})$		−12.40 ± .04	W83, ASTR91			*Photom.*	AIGI74	*Radio* (*mJy*)	*2cm* 4	MiAI82
									6cm 40	Ca82

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 3.7 (Ma84); 4.66 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, AlKe85, AlKe87, HLSW77, He67, Ka70, Ka76, Ka80, Mi79, PAKS89, Ru70, Sa75, StKa89, VKDA65, Vo70, W75, W88, Wr66

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002.1-04.2

H 1-54, PK 2−4°1, AS 272, ESO 456-55, He 2-346, MHα 82-21, Sa 2-298, VV' 344, Wray 16-372, IRAS 18039-2913

				Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −116.0 ± 11.0STPP83
1950:	18 03 56.3	-29 13 32	IRAS		*opt.* 4.8	MLG88	
	18 03 56.1	-29 13 20	Mi76			KFL88, 90....46	
2000:	18 07 07.2	-29 12 56	.		*radio* 1.2	ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	532	*J*		12μm	2.43	1
[OIII]	436.3	–	[*NII*]	658.4	115	*H*		25μm	4.84	3
	500.7	436	[*SII*]	671.7	2.2	*K*	> 9.5	60μm	1.59	2
HeI	587.6	21		673.1	5	*L*		100μm	64.19	1
lg$F_{H\beta}(mW.m^{-2})$		−11.88 ± .03	W83			*Photom.*	AIGI74	*Radio* (*mJy*)	*2cm* 20	MiAI82
									6cm 31	GPGV83

Central Star:
B 15.7 *V* 15.4 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 3.00 (AGNR84); 4.90 (CKS91); 5.46 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, Al73, AlKe85, HLSW77, He67, KAS91, Ka76, Ka79, PAKS89, Sa75, TAGS89, VKDA65, ViFr85, Vo70, W75, Wr66

69..9077 Herbig G.H. *Contr. Lick Obs. 299,1045* Emission-line objects projected upon the galactic bulge.
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90....46 Dopita M.A., Henry J.P., Tuohy I.R., Webster B.L., Roberts E.H., Byun Y.-I., Cowie L.L., Songaila A. *Astrophys. J.,365,640* High-resolution imaging and the H-R diagram of galactic bulge planetary nebulae.

002.2+00.5

Te 2337

			Disc.: Terzan 1989	*Diameter* (″)	
				opt. 28. ATS91	
1950:	17 45 38.3	-26 42 35	89.30002		
2000:	17 48 45.7	-26 43 31	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1990-06-24

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	1500:
	495.9	–	[*SII*]	671.7	
HeI	587.6	–		673.1	

89.30002 Terzan A. *Private communication*

002.2–02.5

KFL 2

			Disc.: Kinman et al 1988	*Diameter* (″)	*Rvel:* −101.0 ± . KFL88
				opt. 5.4 KFL88	
1950:	17 57 50.1	-28 16 16	KFL88		
2000:	18 00 59.8	-28 16 19	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29

HeII	468.6 *nm*	71	$H\alpha$	656.3 *nm*	811
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	821	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −14.34 ± . KFL88

Radio (*mJy*) *2cm* / *6cm* 1.4 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).

002.2–02.7

M 2-23, PK 2–2°4, ESO 456-34, He 2-326, My 112, Sa 2-281, VV 136, VV'316, Wray 16-350, IRAS 17585-2825

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* +224.1 ± 10.1STPP83
1950:	17 58 31.8	-28 25 45	IRAS	*opt.* 8.5 MLG88	
	17 58 32.7	-28 25 46	Mi76	KFL88	
2000:	18 01 42.7	-28 25 45	.	*radio* 0.7 ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	451
[*OIII*]	436.3	8	[*NII*]	658.4	27
	500.7	1078	[*SII*]	671.7	0.8
HeI	587.6	22		673.1	1.7

$\lg F_{H\beta}(mW.m^{-2})$ −11.57 ± .03 W83

IRAS Fluxes (*Jy*) *Qual.*

12μm	1.93	3
25μm	9.31	3
60μm	1.64	3
100μm	126.70	1

Radio (*mJy*) *2cm* 62 MiAl82 / *6cm* 41 GPGV83

Central Star:
B 16.7 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 2.60 (AGNR84); 3.90 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, Ac80, AcMa77, AlKe85, AlKe87, HLSW77, He67, He90, KAS91, Ka70, Ka76, Ka79, Ka80, Kal76, PAKS89, Pe91, Ro87, Sa75, TAGS89, VKDA65, Vo70, VoCo90, W75, Wr66, ZTPS89

76..9019 Webster B.L. *Mon. Not. R. Astron. Soc. 174,513* The masses and chemical composition of P.N. in the galactic bulge and Magellanic clouds.
90..3007 Copetti M.V.F. *Publ. Astron. Soc. Pac. 102, 77-78* Integrated photometry of nine planetary nebulae.

002.2-06.3

H 1-63, PK 2−6°2, ESO 457-03, He 2-380, Sa 2-321, VV' 381, Wray 15-1853, IRAS 18131-3008

			Disc.: Haro 1952	*Diameter* (″)		*Rvel*: −1.0 ± 11.0 STPP83
1950:	18 13 06.2	-30 08 40	IRAS	*opt.* 7.0	MLG88	
	18 13 06.1	-30 08 40	Mi73		KFL88	
2000:	18 16 18.6	-30 07 36	.	*radio* < 2.2	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10					
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	437
[*O*III]	436.3	4	[*N*II]	658.4	56
	500.7	457	[*S*II]	671.7	1.0
*He*I	587.6	19		673.1	1.9
$\lg F_{H\beta}(mW.m^{-2})$	−11.4 ± .3 ASTR91				

IR Class: .		
J		
H		
K	> 9.2	
L		
Photom.	AIGI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.31	3
25μm	8.02	3
60μm	2.11	3
100μm	3.92	1
Radio 2*cm*	20	Mi79
(*mJy*) 6*cm*	9	ZPB89

Central Star: AG82 301 —
B 14.7 *V* 14.7 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 5.7 (Ma84)

Bibliography: *PK67*, AG82, AGR89, AcMa77, HLSW80, He67, KPK81, Ka76, Mi76, MiAl82, PAKS91, Sa75, VDKA75, VKDA73, Vo71, VoCo90, Vor70, W75, Wr66, ZTPS89

77.10292 Kharadze E.K., Bartaya R.A., Vorontsov-Velyaminov B.A., Kostyakova E.B., Dokuchaeva O.D., Arhipova V.P. *Astron. Tsirk. 947,6* The new absolute intensities of the emission lines of 15 PN, seen in the galactic-centre direction.

002.2-09.4

Cn 1-5, PK 2−9°1, Em 1, ESO 457-12, He 2-402, Sa 2-337, StWr 2-17, Wray 16-412, IRAS 18259-3132

			Disc.: Cannon 1921	*Diameter* (″)		*Rvel*: −29.7 ± 4.0 STPP83
1950:	18 25 57.5	-31 32 02	IRAS	*opt.* 7.	CK88	*Expansion Velocities* (*km/s*)
	18 25 57.2	-31 32 00	PK67			[OIII] 18.0 Ac76
2000:	18 29 11.7	-31 30 00	.	*radio* 7.	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10					
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	sat.
[*O*III]	436.3	3	[*N*II]	658.4	–
	495.9	268	[*S*II]	671.7	16
*He*I	587.6	24		673.1	29
$\lg F_{H\beta}(mW.m^{-2})$	−11.21 ± .03 W83, ASTR91				

IR Class: .		
J		
H		
K	> 10.4	
L		
Photom.	AIGI75	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.69	3
25μm	7.47	3
60μm	9.37	3
100μm	6.67	3
Radio 2*cm*		
(*mJy*) 6*cm*	44	ZPB89

Central Star: AG82 312 — CD -31 18259; HD 170124; CSI -31 18259
B 15.5 *V* 15.2 *Qual:* C TASG91 *Spectrum:* WC 4 Me91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.93 (CKS91)

Bibliography: *PK67*, AG82, AKSJ89, AST89, Ac75, AcMa77, Do73, Gr71, Gr72, HLSW80, He67, KAS91, Ka76, PAKS89, Sa75, Sa84, StWr72, TAGS89, W75, We89, Wr66, ZuAl86

77....94 Johnson H.M. *Astrophys. J. 216,776-783* Fabry-Perot interferometry of stellar P.N.

002.3+02.2

Te 5

Disc.: Terzan 1980	*Diameter* (″)	
	opt. 8. ATS91	
1950: 17 39 24.2 -25 44 05 89.30002		
2000: 17 42 30.1 -25 45 29 .		
Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-20		
HeII 468.6 *nm* – | $H\alpha$ 656.3 *nm* 4199:		
[*OIII*] 436.3 – | [*NII*] 658.4 4282:		
500.7 792 | [*SII*] 671.7 605		
HeI 587.6 – | 673.1 476		
$\lg F_{H\beta}(mW.m^{-2})$ $-13.8 \pm .4$ ASTR91		

Notes: This object is not to confuse with the globular cluster Terzan 5 appearing in an other list

80.23001 Terzan A., Ju K.H. *The Messenger 20,6-7* A photometric study of the bright cloud B in Sagittarius: III.
89.30002 Terzan A. *Private communication*

002.3-03.4

H 2-37, PK 2–3°2, ARO 268, ESO 456-46, Sa 2-291, VV' 333

Disc.: Haro 1952	*Diameter* (″)	
	opt. 4.2 KFL88 CaKa71	
1950: 18 01 18 -28 37.9 HLSW77		
2000: 18 04 28 -28 37.7 .		
Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13		
HeII 468.6 *nm* – | $H\alpha$ 656.3 *nm* 559		
[*OIII*] 436.3 – | [*NII*] 658.4 198		
500.7 811 | [*SII*] 671.7 12		
HeI 587.6 21 | 673.1 18		
$\lg F_{H\beta}(mW.m^{-2})$ $-12.81 \pm .10$ ASTR91		

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.26 (CaKa71); 2.0 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Hi71, PAKS89, Pe91, Ru70, Sa75, VKDA65, Vo70, W75, W88

002.3–07.8

M 2-41, PK 2–7°1, ESO 457-10, He 2-392, Sa 2-330, StWr 2-13, VV 176, VV' 397, Wray 16-408, IRAS 18194-3045

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* −82.0 ± 25.0 STPP83
1950:	18 19 24.9	-30 45 05	IRAS	*opt.* 14.2 CaKa71	
	18 19 21.2	-30 45 01	Mi76		
2000:	18 22 34.6	-30 43 29	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	77	$H\alpha$	656.3 *nm*	333	12μm	0.31	1
[*OIII*]	436.3	–	[*NII*]	658.4	499	25μm	0.37	1
	500.7	1089	[*SII*]	671.7	49	60μm	0.81	3
HeI	587.6	12:		673.1	43	100μm	3.42	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.5 ± .2 ASTR91				*Radio* (*mJy*)	*2cm* < 10 *6cm*	MiAl82

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.20 (CaKa71); 3.75 (Ac78); 3.9 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, HLSW80, He67, Iw73, Ka76, KrK68, PAKS89, Sa75, StWr72, VDKA75, VKDA73, W75, Wr66

002.4+05.8

NGC 6369, PK 2+5°1, ARO 51, ESO 520-03, He 2-232, My 101, Sa 2-207, VV 101, VV' 199, Wray 16-277, IRAS 17262-2343

			Disc.: Herschel 1784	*Diameter* (″)	*Rvel:* −101.0 ± 2.0 MWF88
1950:	17 26 17.4	-23 43 14	IRAS	*opt.* 38. CJA87	*Expansion Velocities* (*km/s*)
	17 26 17.9	-23 43 12	Mi73		[OIII] 41.6 MWF88
2000:	17 29 20.8	-23 45 32	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11 N						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	5	$H\alpha$	656.3 *nm*	1158	*J*	10.32	12μm	9.04	3
[*OIII*]	436.3	8	[*NII*]	658.4	183	*H*	10.38	25μm	65.52	3
	500.7	1484	[*SII*]	671.7	10	*K*	9.40	60μm	109.30	3
HeI	587.6	36		673.1	17	*L*		100μm	57.04	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.32 ± .03 O63, Pe71				*Photom.* PeTo87 *Spectr.* PPOJ86		*Radio* (*mJy*)	*2cm* 1718 *6cm* 2002	MiAl82 Ca82

Central Star: AG82 243 — CD -23 13397; GCRV 10105; HD 158269
B 16.99 *V* 15.94 *Qual:* B GaPo88, SK89 , TASG91 *Spectrum:* WC 4 ATS91

Notes: Multiple-shell PN; monochromatic images (JDK86, CJA87)
Distance (kpc) indiv.: ext. 1.5 (Po83); kinem. 2.0 (GPG86)
Distance (kpc) stat.: 1.5 (CaKa71); 1.08 (75..9005); 1.10 (Ca76); 1.2 (Ac78); 0.42 (Da82); 0.33 (AGNR84); 0.6 (Ma84); 0.66 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AKSJ89, AST89, Ac75, Ac76, AcMa77, Al65, AlKe87, AlLi68, CaNo73, Ch89, CoBa80, DFHM67, De71, Do73, GMS72, Ga87, GaPo89, Gi83, Gr71, Gu88, HLSW77, He67, He71, He90, Hi71, Hi73, IsWe87, Iw73, IwKa65, JoJo91, KAS91, Ka69, Ka70, Ka76, Kal76, Kh79, KrK68, LH91, LNP89, MaPe88, MaPo80, MiAl75, OlRa86, PAKS89, PPT88, Pe91, PeF73, PeFr72, Phi84, PiKh79, Po87, Ri69, Ru70, SKC74, STPP83, Sa75, SaMi78, Sab86, Sh85, Si75, SlOr65, StKa89, StTy90, TAGS89, TBB74, TCS67, TPZ87, Th68, Th74, ThDa70, Vo70, VoCo90, We86, We89, Wr66, ZTPS89, ZuAl86

66..9019 Le Marne A.E. *Obs. 86,148* Observations of planetary nebulae at 408 MHz.
69..9011 Thompson A.R., Colvin R.S. *Obs. Owens Vall. Rad. Obs. 12* Attempt to detect neutral hydrogen.
69..9031 Aller H.L. *Sky Tel. 38,377-379* The planetary nebulae. VIII.
70..9032 Thompson A.R., Colvin R.S. *Astrophys. J. 160,363* Attempt to detect neutral hydrogen in P.N.
72..9004 Willner S.P., Becklin E.E., Visvanathan N. *Astrophys. J. 175,699* Observations of P.N. at 1,65 to 3.4 micron.
74..9047 Kaler J.B. *Astron. J. 79,595* P.N. with multiple shells.

75..9005 Ciatti F., Mammano A. *Astron. Astrophys. 38,435* Ejection of nebulae by BQ radio stars with infrared excesses.
75..9022 Braz M.A., Jardin J.O., Kaufmann P. *Astron. Astrophys. 43,153* Characteristics of P.N. and H2 regions based on lambda 1,35 cm continuum measurements.
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002.4−03.2

Wray 17-107, PK 2−3°7, Sa 3-115

			Disc.: Wray 1966		*Diameter* (″)		
					opt. 12.	ATS91	
1950:	18 00 54.6	-28 28 06	Wr66				
2000:	18 04 04.6	-28 27 55	.				
Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-24							
*He*II	468.6 *nm*	–	*H*α	656.3 *nm*	485		
[OIII]	436.3	–	[NII]	658.4	701		
	500.7	511	[SII]	671.7	137		
*He*I	587.6	–		673.1	95		
$\lg F_{H\beta}(mW.m^{-2})$		$-13.2 \pm .4$	ASTR91				

Bibliography: KFL88, Ko78, Sa76, We77

002.4–03.7

M 1-38, PK 2–3°5, ESO 456-52, He 2-344, SaSt 2-18, VV 148, VV' 340, Wray 16-368, IRAS 18029-2840

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* −70.0 ± 11.0 STPP83
1950:	18 02 54.7	-28 40 51	IRAS	*opt.* 3.3 PK67	
	18 02 55.6	-28 40 54	Mi76		
2000:	18 06 05.9	-28 40 34	.	*radio* 3.5 ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	711	*J*		12*μm*	0.60	2
[OIII]	436.3	–	[*NII*]	658.4	447	*H*	9.3	25*μm*	6.43	3
	495.9	–	[*SII*]	671.7	21	*K*	9.0	60*μm*	5.21	3
HeI	587.6	3		673.1	44	*L*		100*μm*	92.20	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.98 ± .03 ViFr85, ASTR91				*Photom.* AlGl75		*Radio* (*mJy*)	*2cm* 40 MiAl82	
									6cm 24 GPGV83	

Central Star:
B 14.90 *V* 14.45 *Qual:* A TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.40 (AGNR84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, AlKe87, CoBa80, HLSW77, He67, KFL88, Ka76, PAKS89, Pe91, Sa76, SaSt72, StAc87, StKa89, TAGS89, VKDA65, Vo70, W75, W88, Wr66

002.5–01.7

Pe 2-11, PK 2–1°1, ESO 456-30, Sa 3-106, VV' 305

			Disc.: Perek 1960	*Diameter* (″)	
				opt. 5.1 MLG88	
				CaKa71	
1950:	17 55 22.5	-27 36 52	PK67		
2000:	17 58 31.2	-27 37 05	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	492
[OIII]	436.3	–	[*NII*]	658.4	1068
	500.7	278	[*SII*]	671.7	109
HeI	587.6	–		673.1	133
$\lg F_{H\beta}(mW.m^{-2})$		−13.9 ± .2 ASTR91			

Central Star: AG82 276 —
$m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). FC wrong in PK67 and in AG82. Monochromatic images (MLG88); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 4.46 (CaKa71); 1.3 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, HLSW77, KFL88, MaC83, Pe91, Sa76, StAc87, W88

002.5–05.4

KFL 14

			Disc.: Kinman et al 1988	*Diameter* (″)		*Rvel:* +107.0 ± .	KFL88
				opt. 17.1	KFL88		
1950:	18 09 49.1	-29 26 02	KFL88				
2000:	18 13 00.5	-29 25 12	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03					
HeII	468.6 *nm*	141	$H\alpha$	656.3 *nm*	893
[*OIII*]	436.3	–	[*NII*]	658.4	204
	500.7	1519	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	−12.62 ± .	KFL88	
Radio (*mJy*)	*2cm*		
	6cm	1.5	ZPB89

Central Star:
B 18.6 *V* 17.7 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (KFL88)

002.6+08.1

H 1-11, PK 2+8°1, ESO 587-07, He 2-214, Sa 2-189, VV' 180, IRAS 17182-2215

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* +2.0 ± 25.0	STPP83
1950:	17 18 17.0	-22 15 41	IRAS	*opt.* 6.4	CK88		
	17 18.3	-22 16	HLSW80				
2000:	17 21.3	-22 19	.	*radio* 6.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	627
[*OIII*]	436.3	–	[*NII*]	658.4	28
	500.7	929	[*SII*]	671.7	
HeI	587.6	26		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	−12.3 ± .4	ASTR91	
Radio (*mJy*)	*2cm*		
	6cm	13	ZPB89

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.28	1
25μm	2.30	3
60μm	4.50	3
100μm	8.90	1

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 9.49 (CaKa71); 7.45 (Ac78); 6.7 (Ma84); 7.44 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, CaWy76, He67, Iw73, Kon78, PAKS89, Pe91, Sa75, W88

002.6+04.2

Th 3-27, PK 2+4°1, ARO 254, ESO 520-10, Sa 2-219, IRAS 17329-2423

			Disc.: The 1964	*Diameter* (″)			
1950:	17 32 54.7	-24 23 39	IRAS	*opt.* 10. :	ATS91		
	17 32 54.6	-24 24 30	Mi76				
2000:	17 35 58.5	-24 26 22	.	*radio* 3.2	RP91		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	904
[*OIII*]	436.3	–	[*NII*]	658.4	1317
	500.7	1071	[*SII*]	671.7	58
HeI	587.6	46		673.1	77

$\lg F_{H\beta}(mW.m^{-2})$	−12.9 ± .4	ASTR91	
IR Class: .			
J			
H			
K	> 7.9		
L			
Photom.		AI74	
Radio (*mJy*)	*2cm*	24	MiAl82
	6cm	13.5	RP91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.35	1
25μm	3.36	3
60μm	6.91	3
100μm	11.28	1

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, HLSW77, Hi71, PAKS89, Ru70, Sa75

002.6+02.1

Te 1580

			Disc.: Terzan 1989	*Diameter* (″)	
				opt. 11. ATS91	
1950:	17 40 33.8	-25 35 27	89.30002		
2000:	17 43 39.5	-25 36 45	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-24

*He*II	468.6 *nm*	78	$H\alpha$	656.3 *nm*	1654:
[*O*III]	436.3	–	[*N*II]	658.4	1396:
	500.7	1705	[*S*II]	671.7	276
*He*I	587.6	–		673.1	238

$\lg F_{H\beta}(mW.m^{-2})$ $-13.7 \pm .4$ ASTR91

89.30002 Terzan A. *Private communication*

002.6–03.4

M 1-37, PK 2−3°3, ESO 456-50, He 2-339, VV 146, VV' 338, Wray 16-367, IRAS 18022-2822

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* +241.0 ± 11.0STPP83
1950:	18 02 16.9	-28 22 22	IRAS	*opt. St.* CS90	
	18 02 16.0	-28 22 21	GPGV83		
2000:	18 05 25.9	-28 22 04	.	*radio* 2.5 ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-03

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	659
[*O*III]	436.3	–	[*N*II]	658.4	417
	495.9	–	[*S*II]	671.7	16
*He*I	587.6	5		673.1	28

$\lg F_{H\beta}(mW.m^{-2})$ $-12.07 \pm .02$ ViFr85

IR Class: .

J	
H	
K	> 10.5
L	

Photom. AIGI74

IRAS Fluxes (*Jy*) *Qual.*

12μm	2.53	1
25μm	8.47	3
60μm	9.20	2
100μm	94.20	1

Radio (*mJy*) *2cm* *6cm* 15 GPGV83

Central Star:
B 15.34 *V* 14.99 *Qual:* B TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.20 (AGNR84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW77, He67, KFL88, PAKS89, Ro87, Sa76, SaSt73, StAc87, TAGS89, VKDA65, Vo70, W75, W88, Wr66

002.7–04.8

M 1-42, PK 2–4°2, ESO 456-67, He 2-359, Sa 2-305, StWr 2-8, VV 153, VV' 357, Wray 16-380, IRAS 18079-2859

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −92.0 ± 3.0	MWF88
1950:	18 07 57.4	-28 59 43	IRAS	*opt.* 9.0	KFL88	*Expansion Velocities* (*km/s*)	
	18 07 54.0	-28 59 42	Mi73		CaKa71	[OIII] 25.0	MWF88
2000:	18 11 04.8	-28 59 01	.	*radio* 9.0	ZPB89	[NII] < 6.0	MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10					
HeII	468.6 *nm*	16	*Hα* 656.3 *nm*	524	
[*OIII*]	436.3	2.2:	[*NII*] 658.4	246	
	500.7	590	[*SII*] 671.7	12	
HeI	587.6	31	673.1	17	
$\lg F_{H\beta}(mW.m^{-2})$		−11.62 ± .03	W83		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.24	1
25μm	0.95	3
60μm	7.11	3
100μm	7.56	2
Radio 2*cm*	25	MiAl82
(*mJy*) 6*cm*	24	ZPB89

Central Star: AG82 291 — *B* 18.3 *V* 17.4 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.6 (CaKa71); 2.83 (Ac78); 4.12 (Da82); 2.80 (AGNR84); 4.3 (Ma84)

Bibliography: PK67, AG82, AGR89, AKSJ89, AST89, AcMa77, AlKe87, Ca82, HLSW77, He67, He90, KAS91, Ka70, Ka76, Kh79, LNP89, Ma81, Mi76, Mi79, PAKS89, Pe91, Po80, STPP83, Sa75, StKa89, StTy90, StWr72, TAGS89, VDKA75, VKDA65, VKDA73, Vo70, Vo71, Vor70, W75, W88, We89, Wr66

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76..9019 Webster B.L. *Mon. Not. R. Astron. Soc. 174,513* The masses and chemical composition of P.N. in the galactic bulge and Magellanic clouds.
77.10292 Kharadze E.K., Bartaya R.A., Vorontsov-Velyaminov B.A., Kostyakova E.B., Dokuchaeva O.D., Arhipova V.P. *Astron. Tsirk. 947,6* The new absolute intensities of the emission lines of 15 PN, seen in the galactic-centre direction.
84.16765 Webster B.L. *Proc. Astron. Soc. Aust. 5, 535-536* Carbon abundances in planetary nebulae in the galactic bulge.

002.7–52.4

IC 5148-50, PK 2–52°1, ESO 344-05, IRAS 21565-3937

			Disc.: Hoffmeister 1961	*Diameter* (″)		*Rvel:* −23.0 ± 6.0	MWF88
1950:	21 56 34.3	-39 37 29	IRAS	*opt.* 113.	CJA87	*Expansion Velocities* (*km/s*)	
	21 56.5	-39 37	PK67			[OIII] 53.3	MWF88
2000:	21 59.5	-39 23	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	169	
[*OIII*]	436.3	–	[*NII*] 658.4	79	
	500.7	410	[*SII*] 671.7		
HeI	587.6	–	673.1		
$\lg F_{H\beta}(mW.m^{-2})$		−11.4 ± .5	ASTR91		
IUE Spectra:		*LW*(0)	*SW*(3)		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.36	1
60μm	2.36	3
100μm	5.89	3

Central Star: AG82 437 — *V* 16.5 Ka85 *Spectrum:* hg O(H) Me91

Notes: Multiple-shell PN; monochromatic images (CJA87)
Distance (kpc) stat.: 1.06 (CKS91)

Bibliography: PK67, AG82, AST89, Ac75, Ac76, CaWy76, Do73, KSK90, KrK68, MGT91, MGTW87, STPP83, We89, ZiPo91

002.8+01.8

Te 1567

Disc.: Terzan 1989 1950: 17 42 22.6 -25 37 03 89.30002 2000: 17 45 28.4 -25 38 13 .	*Diameter* (″) *opt.* 10. ATS91	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-24					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2293
[*O*III]	436.3	–	[*N*II]	658.4	2815:
	500.7	1297	[*S*II]	671.7	580
*He*I	587.6	166		673.1	486

$\lg F_{H\beta}(mW.m^{-2})$ $-13.8 \pm .4$ ASTR91

89.30002 Terzan A. *Private communication*

002.8+01.7

H 2-20, PK 2+1°1, ESO 520-23, VV' 241, Wray 17-97

Disc.: Haro 1952 1950: 17 42 35.6 -25 36 42 Mi76 2000: 17 45 41.4 -25 37 51 .	*Diameter* (″) *opt.* 3.8 CaKa71	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2806
[*O*III]	436.3	–	[*N*II]	658.4	2536
	500.7	30:	[*S*II]	671.7	50
*He*I	587.6	58		673.1	96

$\lg F_{H\beta}(mW.m^{-2})$ $-13.48 \pm .10$ ASTR91

Radio *2cm* 1 MiAl82
(*mJy*) *6cm*

Central Star: AG82 258 — SS73 101

Notes: Likely a galactic bulge PN (AKSR91). In PK67 and AG82, FC and coordinates correspond to A-star (SaSt73, 83..3115, AG82, StAc87). Star IRAS 17425-2538 near the PN. ESO-NTT images by Schwartz H.E. and Melnick J.

Distance (kpc) stat.: 4.28 (CaKa71); 1.0 (Ma84); 7.9 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Dr80, HLSW77, Ko89, Li78, PAKS89, PFMA82, PiKh79, RPZM90, Sa76, VKDA65, Vo70, Wr66

83..3115 Lutz J.H., Kaler J.B. *Publ. Astron. Soc. Pac. 95, 739-744* Misclassified and misidentified planetary nebulae and nuclei.

86...534 Simon M., Cassar L., Chen W.P. *Astrophys. J., Suppl. Ser. 62, 673-679* Lunar occultations of IRAS point sources, 1986-1990.

002.8–02.2

Pe 2-12, PK 2–2°3, ESO 456-36, Sa 3-110, VV' 314, Wray 17-105, IRAS 17580-2738

			Disc.: Perek 1960	*Diameter* (″)	
1950:	17 58 01.6	-27 38 25	IRAS	*opt.* 5. CaKa71	
	17 58 01	-27 38.4	HLSW77		
2000:	18 01 10	-27 38.4	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	797
[*OIII*]	436.3	–	[*NII*]	658.4	778
	495.9	–	[*SII*]	671.7	38
HeI	587.6	–		673.1	37
$\lg F_{H\beta}(mW.m^{-2})$	$-13.36 \pm .10$	ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.21	1
25μm	1.29	3
60μm	6.59	3
100μm	186.30	1
Radio (*mJy*) *2cm*		
6cm	2	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.22 (CaKa71); 1.1 (Ma84); 12.1 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, KFL88, KrK68, Sa76, StAc87, VKDA65, Vo70, W88, Wr66

002.9+06.5

PM 1-149, PBOZ 6, IRAS 17248-2254

			Disc.: Preite-Martinez 1988	*Diameter* (″)	
1950:	17 24 52.1	-22 54 54	IRAS		
	17 24 51.9	-22 54 53	PBOZ88		
2000:	17 27 53.7	-22 57 20	.	*radio* < 4. PBOZ88	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.37	1
25μm	1.15	3
60μm	2.39	3
100μm	5.72	1
Radio (*mJy*) *2cm*		
6cm	3.6	PBOZ88

Notes: Status of the object is not clear

Bibliography: PM88

002.9–03.9

H 2-39, PK 2–3°6, ESO 456-58, Sa 2-301, VV' 350

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 3.7 KFL88	
1950:	18 04.9	-28 24	Sa75		
2000:	18 08.1	-28 24	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12					
HeII	468.6 *nm*	35	$H\alpha$	656.3 *nm*	753
[*OIII*]	436.3	19	[*NII*]	658.4	–
	500.7	1509	[*SII*]	671.7	
HeI	587.6	20		673.1	
$\lg F_{H\beta}(mW.m^{-2})$	$-12.91 \pm .10$	ASTR91			

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, KAS91, MaC83, PAKS89, W75

003.0–02.6

KFL 4

Disc.: Kinman et al 1988 1950: 17 59 42.7 -27 41 08 KFL88 2000: 18 02 51.5 -27 41 02 .	*Diameter* (″) *opt.* 3.0 KFL88	*Rvel:* +17.0 ± . KFL88
Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29 *He*II 468.6 *nm* 34 | *Hα* 656.3 *nm* 772 [*O*III] 436.3 – | [*N*II] 658.4 – 500.7 1190 | [*S*II] 671.7 *He*I 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ −13.70 ± . KFL88		*Radio* *2cm* (*mJy*) *6cm* 1.1 89..1285

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)

89..1285 Zijlstra A.A., Pottasch S.R. *Astron. Astrophys. 216, 245-252* Low mass planetary nebulae near the galactic centre.

003.1+03.4

H 2-17, PK 3+3°1, ARO 257, ESO 520-14, He 2-263, VV' 228, Wray 17-93, IRAS 17370-2424

Disc.: Haro 1952 1950: 17 37 02.9 -24 24 10 IRAS 17 37 03.0 -24 24 11 Mi76 2000: 17 40 07.0 -24 25 45 .	*Diameter* (″) *opt.* 3.6 CaKa71 *radio* 4. ZPB89	*Rvel:* +87.0 ± 5.0 STPP83
Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30 *He*II 468.6 *nm* – | *Hα* 656.3 *nm* 1353 [*O*III] 436.3 – | [*N*II] 658.4 969 495.9 – | [*S*II] 671.7 77 *He*I 587.6 – | 673.1 101	*IR Class:* . *J* *H* *K* 10.0 *L* *Photom.* AlGl74	*IRAS Fluxes* (*Jy*) *Qual.* 12μm 1.83 1 25μm 2.73 3 60μm 4.09 3 100μm 14.68 1
$\lg F_{H\beta}(mW.m^{-2})$ −13.39 ± .10 ASTR91		*Radio* *2cm* 11 MiAl82 (*mJy*) *6cm* 9.6 ZPB89

Central Star: AG82 251 — SS73 93
m_{pg} > 21. *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 5.88 (CaKa71); 5.63 (Da82); 4.50 (AGNR84); 7.2 (Ma84); 10.4 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, AcMa77, HLSW77, He67, Hi71, LNP89, Ma81, Mi79, PAKS89, PBOZ88, Ru70, Sa76, SaSt73, StAc87, VKDA65, Vo70, W66, WeHe67, Wr66

003.1+02.9

Hb 4, PK 3+2°1, ARO 94, ESO 520-17, He 2-266, Sa 2-228, VV 110, VV' 232, Wray 16-296, IRAS 17388-2440

			Disc.: Hubble 1921	*Diameter (")*		*Rvel:* −62.6 ± 3.6	STPP83
1950:	17 38 49.0	-24 40 44	IRAS	*opt.* 6.2	PK67	*Expansion Velocities (km/s)*	
	17 38 48.4	-24 40 42	AK90			[OIII] 23.0	RRA82
2000:	17 41 52.7	-24 42 08	.	*radio* 7.5	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-04						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	16	$H\alpha$	656.3 *nm*	1262	*J*	11.23	12μm	1.34	3
[*OIII*]	436.3	–	[*NII*]	658.4	436	*H*	11.76	25μm	10.30	3
	500.7	1444	[*SII*]	671.7	21	*K*	10.62	60μm	20.85	3
HeI	587.6	41		673.1	37	*L*		100μm	12.78	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.95 ± .01	W83, SK89			*Photom.*	PM87	*Radio* 2*cm*	148	MiAl82
						Spectr.	86..2654	(*mJy*) 6*cm*	170	AK90

Central Star: AG82 253 — *B* 18.4 *V* > 17. *Qual:* D SK89 *Spectrum:* WC 4-5 ATS91

Distance (kpc) stat.: 2.9 (CaKa71); 4.70 (MiAl75); 4.59 (Ca76); 1.45 (Ac78); 1.30 (Da82); 1.20 (AGNR84); 2.2 (Ma84) 2.10 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, AcMa77, AlKe87, AlLi68, BLTA81, Ca82, DFHM67, De71, HLSW77, He67, He71, He90, Hi71, Hig71, Is84, IwKa65, KAS91, Ka70, Ka76, LNP89, MaPo80, Mi73, MiWe79, PAKS89, PBOZ88, PiKh79, PrPe89, SGBO84, Sa75, Sa84, Sh85, StTy90, VKDA65, Vo70, VoCo90, We89, Wr66

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003.2−04.4

KFL 12

			Disc.: Kinman et al 1988	*Diameter (")*		*Rvel:* +124.0 ± .	KFL88
1950:	18 07 21.0	-28 20 01	KFL88	*opt.* 2.8	KFL88		
2000:	18 10 30.8	-28 19 22	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02								
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	677			
[*OIII*]	436.3	17	[*NII*]	658.4	–			
	500.7	917	[*SII*]	671.7				
HeI	587.6	30		673.1				
$\lg F_{H\beta}(mW.m^{-2})$		−13.43 ± .15	KFL88, ASTR91			*Radio* 2*cm*		
						(*mJy*) 6*cm*	2	ZPB89

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (KFL88)

003.2–06.2

M 2-36, PK 3–6°1, Em 5, ESO 457-05, He 2-385, Sa 2-325, StWr 2-10, VV 169, VV' 385, Wray 16-404, IRAS 18144-2909

				Diameter (″)	*Rvel:* +100.4 ± 10.1STPP83
		Disc.: Minkowski 1947			
1950:	18 14 28.9	-29 09 33	IRAS	*opt.* 8.1 MLG88	
	18 14 31	-29 09.5	HLSW80	KFL88, CaKa71	
2000:	18 17 42	-29 08.3	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10					
HeII	468.6 *nm*	5	$H\alpha$	656.3 *nm*	399
[*OIII*]	436.3	–	[*NII*]	658.4	179
	500.7	808	[*SII*]	671.7	12
HeI	587.6	23		673.1	20
$\lg F_{H\beta}(mW.m^{-2})$		−11.2 ± .3	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.27	1
25μm	2.34	3
60μm	4.97	3
100μm	9.64	1
Radio (*mJy*) *2cm*		
6cm	13	ZPB89

Central Star:
B 15.47 *V* 15.73 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 5.49 (CaKa71); 4.39 (Ac78); 4.60 (Da82); 2.70 (AGNR84); 4.0 (Ma84); 6.06 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, He67, Iw73, Ka76, Kh76, Kh79, LNP89, Ma81, Mi76, Mi79, MiAl82, PAKS91, Pe91, Sa75, StWr72, VDKA75, VKDA73, Vo71, Vor70, W75, W88, Wr66

77.10292 Kharadze E.K., Bartaya R.A., Vorontsov-Velyaminov B.A., Kostyakova E.B., Dokuchaeva O.D., Arhipova V.P. *Astron. Tsirk. 947,6* The new absolute intensities of the emission lines of 15 PN, seen in the galactic-centre direction.
84.16765 Webster B.L. *Proc. Astron. Soc. Aust. 5, 535-536* Carbon abundances in planetary nebulae in the galactic bulge.

003.3–04.6

Ap 1-12, PK 3–4°7, AS 283, ESO 456-69, He 2-360, MHα 304-120, , Wray 16-381, IRAS 18084-2823

				Diameter (″)	*Rvel:* +152.0 ± 5.0 STPP83
		Disc.: Apriamasvili 1961			
1950:	18 08 25.1	-28 23 22	IRAS	*opt.* 12. CaKa71	
	18 08 25.3	-28 23 21	Mi76		
2000:	18 11 35.2	-28 22 37	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27					
HeII	468.6 *nm*	–	$H\alpha$	656.3 nm	551
[*OIII*]	436.3	–	[*NII*]	658.4	315
	495.9	–	[*SII*]	671.7	12
HeI	587.6	1.4		673.1	22
$\lg F_{H\beta}(mW.m^{-2})$		−11.4 ± .2	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.45	1
25μm	8.49	3
60μm	9.84	3
100μm	40.02	1
Radio (*mJy*) *2cm*	< 1	MiAl82
6cm	< 13	Mi79

Central Star: SS73 140
B 13.37 *V* 13.29 *Qual:* A TASG91

Notes: Likely a galactic bulge PN (AKSR91). Status of the object is not clear.
Distance (kpc) stat.: 3.29 (CaKa71); 5.00 (Da82); 2.2 (Ma84); 5.41 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al73, CaRu74, HLSW77, He67, Iw73, KFL88, LNP89, PAKS89, Sa76, SaSt73, StAc87, TAGS89, VKDA65, Vo70, W75, WeHe67, WoDe79, Wr66

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003.3–07.5

KFL 19

			Disc.: Kinman et al 1988	*Diameter* (″)	*Rvel:* +32.0 ± . KFL88
				opt. 7.8 KFL88	
1950:	18 19 57.2	-29 44 59	KFL88		
2000:	18 23 09.0	-29 43 25	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	420
[OIII]	436.3	–	[NII]	658.4	–
	500.7	828	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −13.17 ± . KFL88

Radio *2cm*
(*mJy*) *6cm* 0.8 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).

003.4–04.8

H 2-43, PK 3–4°9, AS 288, ESO 456-75, He 2-366, MHα 304-119, VV' 367, Wray 16-388, IRAS 18095-2820

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* −21.0 ± 3.0 STPP83
1950:	18 09 34.9	-28 20 49	IRAS	*opt.* 9. CaKa71	
	18 09 38.2	-28 20 50	GPGV83		
2000:	18 12 48.0	-28 20 01	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27

HeII	468.6 *nm*	23	$H\alpha$	656.3 *nm*	735
[OIII]	436.3	31	[NII]	658.4	–
	500.7	146	[SII]	671.7	
HeI	587.6	36		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.1 ± .2 ASTR91

IR Class: .

J		
H	10.3	
K	8.44	
L	> 7.2	
Photom.	AIGI74	

IRAS Fluxes (*Jy*) *Qual.*

12μm	1.24	3
25μm	1.10	3
60μm	4.33	1
100μm	49.29	1

Radio *2cm*
(*mJy*) *6cm*< 0.9 GPGV83

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.13 (CaKa71); 2.90 (AGNR84); 2.6 (Ma84),5.07 (CKS91)

Bibliography: *PK67*, ABBW82, AST89, AcMa77, Al73, CaRu74, HLSW77, He67, Iw73, KFL88, PAKS89, Sa76, StAc87, VKDA65, Vo70, W75, WeHe67, WoDe79, Wr66, WrAl78

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003.5–02.4

IC 4673, PK 3–2°3, ESO 521-15, He 2-333, M 1-36, Sa 2-286, VV 142, VV' 330, Wray 16-357, IRAS 18001-2706

			Disc.: Barnard 1896	*Diameter* (″)		*Rvel:* −15.0 ± 2.0	MWF88
1950:	18 00 11.0	-27 06 35	IRAS	*opt.* 14.8	CJA87	*Expansion Velocities* (*km/s*)	
	18 00 10.0	-27 06 24	Mi73		CaKa71	[OIII] 25.0	MWF88
2000:	18 03 18.0	-27 06 16	.	*radio* 17.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	67	$H\alpha$	656.3 *nm*	816	12μm	2.56	1
[*O*III]	436.3	12	[*N*II]	658.4	98	25μm	7.77	3
	500.7	1217	[*S*II]	671.7	20	60μm	15.02	3
*He*I	587.6	27		673.1	23	100μm	20.06	2
$\lg F_{H\beta}(mW.m^{-2})$		−11.84 ± .03	SK89, W83			*Radio* 2*cm* > 41		ZPB89
						(*mJy*) 6*cm* 62		ZPB89

Central Star: AG82 283 —
B 18.0 *V* 17.6 *Qual:* D SK89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.21 (CaKa71); 3.62 (MiAl75); 3.54 (Ca76); 2.5 (Ac78); 3.31 (Da82); 2.30 (AGNR84); 3.4 (Ma84); 3.19 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, AlKe87, Ca82, CaRu74, He67, He90, KFL88, Ka76, LHSW81, LNP89, MaPo80, MiAl82, PAKS89, Pe71, Pe91, PiKh79, STPP83, Sa75, Sh85, StTy90, VKDA65, Vo70, W75, We89, Wr66

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003.5–04.6

NGC 6565, PK 3–4°5, ARO 68, BD -28 14266, ESO 456-70, GCRV 10632, He 2-362, HD 166468, Sa 2-307, StWr 2-9, VV 155, VV' 360,, IRAS 18087-2811

			Disc.: Pickering 1880	*Diameter* (″)		*Rvel:* −20.0 ± 4.0	MWF88
1950:	18 08 43.5	-28 11 30	IRAS	*opt.* 13.6	MLG88	*Expansion Velocities* (*km/s*)	
	18 08 43.3	-28 11 23	Mi73		KFL88, CaKa71	[OIII] 14.5	MWF88
2000:	18 11 52.9	-28 10 38	.	*radio* 1.5	Is84	[NII] 22.0	MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	22	$H\alpha$	656.3 *nm*	402	12μm	1.53	1
[*O*III]	436.3	7	[*N*II]	658.4	477	25μm	1.76	3
	500.7	1340	[*S*II]	671.7	40	60μm	6.85	3
*He*I	587.6	15		673.1	53	100μm	9.96	3
$\lg F_{H\beta}$		−11.22 ± .03	KM81, W83, SK89			*Radio* 2*cm*	28	MiAl82
IUE Spectra:		*LW*(2)	*SW*(2)			(*mJy*) 6*cm*	38	Is84

Central Star: AG82 292 —
V 18.50 *Qual:* B JK89

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88); ESO-2.2m images by Baessgen M. and Bremer M. ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: ext. 1.3 (Po83);); ext. 1.00 (86..1120)
Distance (kpc) stat.: 2.5 (CaKa71); 4.57 (MiAl75); 4.67 (Ca76); 3.0 (Ac78); 3.54 (Da82); 2.50 (AGNR84); 3.5 (Ma84)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, AcMa77, Al65, AlLi68, AlMi72, BFM80, Ca82, CePe83, DFHM67, De71, Fe82, FeAl87, GPY79, Ga87, GaPo88, GaPo89, Go87, Gol87, Gr71, Gr72, Gu70, Gu88, HLSW77, He67, He71, Hi71, Hig71, Ii81, IwKa65, KAC76, KAS91, Ka70, Ka76, Ka78, KaJa89, Kal86, Kh79, LNP89, MaPo80, Mar81, MiWe79, PAKS89, PM87, Pe71, Pe75, Pe91, Po87, PrPo83, Ri69, STPP83, Sa75, SaMi78, Sab86, Sh85, SlOr65, StKa89, StWr72, TASG91, VDKA75, VKDA65, VKDA73, ViFr85, Vo70, Vo71, Vor70, We89, WoDe79, Wr66, ZuAl86

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003.6+03.1

M 2-14, PK 3+3°2, ESO 520-18, He 2-267, Sa 2-229, VV 109, VV' 231, Wray 16-297, IRAS 17389-2409

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* −35.0 ± 11.0 STPP83
1950:	17 38 54.2	-24 09 54	IRAS	*opt. St.*	CS90	
	17 38.9	-24 10	HLSW77			
2000:	17 42.0	-24 11	.	*radio* 2.2	PBOZ88	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-04						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1127	*J*		12μm	0.81	3
[*OIII*]	436.3	–	[*NII*]	658.4	1256	*H*		25μm	9.88	3
	500.7	215	[*SII*]	671.7	14	*K*	> 8.9	60μm	11.06	3
HeI	587.6	52		673.1	35	*L*		100μm	10.58	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.2 ± .3 ASTR91				*Photom.*	AI74	*Radio* 2cm		
								(*mJy*) 6cm	39	PBOZ88

Bibliography: *PK67*, AcMa77, AlKe85, ArKo68, He67, Sa75, VKDA65, VKDa65, Vo70, VoCo90, Wr66

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003.6–02.3

M 2-26, PK 3–2°2, ESO 521-14, He 2-332, Sa 3-113, VV 139, VV' 322, Wray 17-106?, IRAS 18001-2659

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* −52.0 ± 5.0 STPP83
1950:	18 00 07.1	-26 59 09	IRAS	*opt.* 9.2 MLG88	
	18 00 04.2	-26 58 38	PK67	CaKa71	
2000:	18 03 12.0	-26 58 31	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	24:	$H\alpha$ 656.3 *nm*		852
[OIII]	436.3	–	[NII] 658.4		507
	500.7	611	[SII] 671.7		43
HeI	587.6	48	673.1		48

$\lg F_{H\beta}(mW.m^{-2})$	−12.9 ± .2 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.48	3
25μm	1.10	2
60μm	3.85	3
100μm	35.37	2

Radio (*mJy*)	*2cm*		
	6cm	5	ZPB89

Central Star: AG82 281 —

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 3.14 (CaKa71); 1.3 (Ma84); 8.22 (CKS91)

Bibliography: *PK67*, AG82, AST89, AcMa77, He67, KFL88, KrK68, LHSW81, Sa76, StAc87, VKDA65, Vo70, W75, Wr66

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003.7+07.9

H 2-8, PK 3+7°1, ESO 588-02, VV' 187

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 4.2 CaKa71	
1950:	17 21 46.2	-21 31 04	PK67		
2000:	17 24 46.0	-21 33 44	.		

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1986-07-13					
HeII	468.6 *nm*	–	$H\alpha$ 656.3 *nm*		100
[OIII]	436.3	–	[NII] 658.4		88
	500.7	174	[SII] 671.7		
HeI	587.6	–	673.1		11

Central Star: AG82 238 —
$m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 20.54 (CaKa71); 25.3 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, CaWy76, Iw73, LHSw81, PAKS89, Sa76

003.7–04.6

M 2-30, PK 3–4°8, ESO 456-74, He 2-365, VV 157, VV' 366, Sa 2-312, StWr 2-7, Wray 16-386, IRAS 18094-2758

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* +174.0 ± 11.0	STPP83
1950:	18 09 25.9	-27 58 59	IRAS	*opt.* 9.0	MLG88		
	18 09 24.9	-27 59 01	Mi76		KFL88		
2000:	18 12 34.1	-27 58 13	.	*radio* 3.5	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	35	$H\alpha$	656.3 *nm*	587	*J*		12μm	1.26	1
[*OIII*]	436.3	9	[*NII*]	658.4	27	*H*		25μm	1.78	3
	500.7	1415	[*SII*]	671.7	2.5	*K*	> 9.7	60μm	3.05	3
HeI	587.6	18		673.1	3	*L*		100μm	42.16	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.95 ± .03	W83			*Photom.*	AlGl75	*Radio* (*mJy*)	*2cm* 13 / *6cm* 14	MiAl82 / ZPB89

Central Star:
B 17.7 *V* 17.1 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 8.75 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, AlKe87, HLSW77, He67, He90, KAS91, Ka70, Ka76, Mi79, PAKS89, Pe91, Po80, Sa75, StTy90, StWr72, TAGS89, VDKA75, VKDA65, VKDA73, Vo70, Vor70, W75, W88, WoDe79, Wr66

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003.8+05.3

H 2-15, PK 3+5°1, ESO 520-08, He 2-249, VV' 217, IRAS 17314-2251

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −59.0 ± 5.0	STPP83
1950:	17 31 24.3	-22 51 20	IRAS	*opt.* 4.4	CaKa71		
	17 31 25.0	-22 51 22	Mi76				
2000:	17 34 26.8	-22 53 20	.	*radio* 3.4	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	615		12μm	0.42	1
[*OIII*]	436.3	–	[*NII*]	658.4	1330		25μm	0.43	1
	500.7	714	[*SII*]	671.7	72		60μm	1.08	3
HeI	587.6	51		673.1	92		100μm	7.84	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.35 ± .10	ASTR91				*Radio* (*mJy*)	*2cm* 11 / *6cm* 2	MiAl82 / ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.8 (CaKa71); 6.93 (Da82); 4.90 (AGNR84); 7.5 (Ma84); 15.2 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW77, He67, Ma81, Mi79, PAKS89, Pe91, Sa76, SaSt73, StAc87, VKDA65, Vo70, W88, WeHe67

003.8–04.3

H 1-59, PK 3–4°3, ESO 456-68, Sa 2-306, StWr 2-6, VV' 356

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 6.0 MLG88	
				CaKa71	
1950:	18 08 20.3	-27 46 59	Mi76		
2000:	18 11 29.2	-27 46 16	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10

*He*II	468.6 *nm*	78	$H\alpha$	656.3 *nm*	506
[*O*III]	436.3	–	[*N*II]	658.4	113
	500.7	1118	[*S*II]	671.7	15
*He*I	587.6	19		673.1	17

$\lg F_{H\beta}(mW.m^{-2})$ $-12.54 \pm .06$ W83

Radio (*mJy*) *2cm* < 1 MiAl82, *6cm*

Central Star:
B 18.2 *V* 16.2 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 5.10 (CaKa71); 2.6 (Ma84); 9.35 (CKS91)

Bibliography: *PK67*, AcMa77, AlKe87, AmGu71, HLSW77, He90, KFL88, PAKS91, Pe91, Po80, Sa75, StKa89, StWr72, W75, WoDe79

76..9019 Webster B.L. *Mon. Not. R. Astron. Soc. 174,513* The masses and chemical composition of P.N. in the galactic bulge and Magellanic clouds.

003.8–04.5

H 2-41, PK 3–4°4, ESO 456-71, Sa 2-309, VV' 363, IRAS 18092-2752

			Disc.: Haro 1952	*Diameter* (″)	
1950:	18 09 17.9	-27 52 56	IRAS	*opt.* 8.1 MLG88	
	18 09 14.7	-27 53 01	PK67	KFL88, CaKa71	
2000:	18 12 23.8	-27 52 14	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

*He*II	468.6 *nm*	43	$H\alpha$	656.3 *nm*	512
[*O*III]	436.3	–	[*N*II]	658.4	66
	500.7	504	[*S*II]	671.7	
*He*I	587.6	27		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.7 \pm .2$ ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	1.35	1
25μm	0.45	2
60μm	1.31	3
100μm	48.28	1

Radio (*mJy*) *2cm*, *6cm* 2 ZPB89

Central Star: AG82 294 —

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 4.38 (CaKa71); 1.60 (AGNR84); 2.5 (Ma84); 8.55 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, AmGu71, CaRu74, HLSW77, Iw73, KrK68, LNP89, Sa75, W75, WoDe79

003.8–17.1

Hb 8, PK 3–17°1, ESO 397-02, He 2-426, Sa 2-381, StWr 2-24, VV 218, VV' 475, Y-C 2-33, IRAS 19022-3316

			Disc.: Hubble 1921	*Diameter* (″)		*Rvel:* −172.1 ± 7.7 STPP83	
1950:	19 02 17.5	-33 16 22	IRAS	*opt.* 5.	CaKa71		
	19 02 20.5	-33 16 15	Mi76				
2000:	19 05 36.4	-33 11 39	.	*radio* 0.8	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	345
[*OIII*]	436.3	10	[*NII*]	658.4	27
	500.7	1406	[*SII*]	671.7	1.8
HeI	587.6	17		673.1	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.82 ± .03	W83		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.90	3
60μm	0.47	1
100μm	1.25	1
Radio 2*cm*	11	MiAl82
(*mJy*) 6*cm*	5.9	GPGV83

Central Star: AG82 343 —

Distance (kpc) stat.: 7.93 (CaKa71); 5.5 (Ac78); 6.90 (AGNR84); 5.3 (Ma84); 9.15 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Ac75, Ac76, AcMa77, AlKe85, Ca82, CaWy76, CeGi73, De71, Do73, FaMa88, HLSW77, He67, Iw73, KPK81, Ka80, Mi79, Pe91, Sa75, StWr72, W75, W88

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87.50003 Stenholm B., Acker A. *Proceedings of Frascati workshop, Vulcano Island, september 8-12, 1986. Ed. by A. Preite Martinez. Planetary and Proto-Planetary Nebulae: from IRAS to ISO, 25- 33* Status of the spectroscopic survey of planetary nebulae.

003.9+01.6

Te 2111

			Disc.: Terzan 1989	*Diameter* (″)		
				opt. 8.	ATS91	
1950:	17 45 23.9	-24 40 32	89.30002			
2000:	17 48 28.3	-24 41 29	.			

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1990-06-24					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	111
	500.7	10	[*SII*]	671.7	14
HeI	587.6	5		673.1	19

89.30002 Terzan A. *Private communication*

003.9–02.3

M 1-35, PK 3–2°1, ESO 521-17, He 2-336, Sa 2-287, VV 141, VV' 328, Wray 15-1830, IRAS 18005-2643

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +82.0 ± 11.0 STPP83	
1950:	18 00 35.6	-26 43 45	IRAS	*opt.* 4.5	KFL88		
	18 00 31.9	-26 43 34	Mi76		CaKa71		
2000:	18 03 39.3	-26 43 25	.	*radio* 4.4	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20					
HeII 468.6 *nm*	4:	$H\alpha$ 656.3 *nm*	1455		
[*OIII*] 436.3	–	[*NII*] 658.4	866		
500.7	887	[*SII*] 671.7	38		
HeI 587.6	64	673.1	68		
$\lg F_{H\beta}(mW.m^{-2})$	$-12.35 \pm .04$	W83, ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.44	3
25μm	7.25	2
60μm	14.05	3
100μm	154.50	1
Radio (*mJy*) *2cm*	60	MiAl82
6cm	54	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.20 (CaKa71); 2.73 (Ac78); 0.7 (Ma84); 3.97 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, AlKe87, He67, Ka76, LHSW81, PAKS89, Pe91, Po80, Sa75, StKa89, VKDA65, Vo70, VoCo90, W75, W88, Wr66

76..9019 Webster B.L. *Mon. Not. R. Astron. Soc. 174,513* The masses and chemical composition of P.N. in the galactic bulge and Magellanic clouds.

003.9–03.1

KFL 7

			Disc.: Kinman et al 1988	*Diameter* (″)		*Rvel*: −91.0 ± . KFL88	
				opt. 5.0	KFL88		
1950:	18 03 42.0	-27 06 41	KFL88				
2000:	18 06 50.0	-27 06 18	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29					
HeII 468.6 *nm*	87	$H\alpha$ 656.3 *nm*	601		
[*OIII*] 436.3	–	[*NII*] 658.4	–		
500.7	591	[*SII*] 671.7			
HeI 587.6	–	673.1			
$\lg F_{H\beta}(mW.m^{-2})$	$-13.69 \pm .05$	KFL88, ASTR91			

Radio (*mJy*) *2cm*		
6cm	1.9	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).

003.9–14.9

Hb 7, PK 3–14°1, ARO 523, Cn 1-6, AS 330, ESO 458-09, He 2-425, Sa 2-375, StWr 2-20, VV 212, VV' 463, Wray 16-422, Y-C 2-31, IRAS 18523-3219

			Disc.: Hubble 1921	*Diameter* (″)		*Rvel:* −65.4 ± 4.8 STPP83
1950:	18 52 23.3	-32 19 42	IRAS	*opt.* 4.	CaKa71	
	18 52 23.8	-32 19 49	Mi76			
2000:	18 55 38.7	-32 15 55	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IR Class:* S		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	0.3	$H\alpha$	656.3 *nm*	348	*J*		12μm	0.28	2
[OIII]	436.3	4	[*NII*]	658.4	–	*H*	9.3	25μm	3.90	3
	500.7	831	[*SII*]	671.7	0.4	*K*	9.3	60μm	1.93	3
HeI	587.6	15		673.1	0.7	*L*		100μm	1.12	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.25 ± .10	ASTR91			*Photom.*	AlGl74	*Radio* 2*cm*	29	MiAl82
								(*mJy*) 6*cm*	35	Ca82

Central Star: AG82 335 — CD -32 14673; GCRV 11357; HD 175194
B 13.90 *V* 13.97 *Qual:* B TASG91 *Spectrum:* O Al176

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 5.54 (CaKa71); 8.0 (Ca76); 1.55 (Ac78); 3.31 (Da82); 2.70 (AGNR84); 4.8 (Ma84) 5.54 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, Ac75, Ac76, AcMa77, Al65, AlKe85, AlLi68, CeGi73, De71, Do73, He67, Hi71, IwKa65, Ka70, Ka76, LNP89, Mi79, PAKS89, Sa75, SlOr65, StWr72, TAGS89, Wr66

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004.0–03.0

M 2-29, PK 4–3°1, ESO 521-27, He 2-345, Sa 2-296, VV 149, VV' 343, Wray 17-109, IRAS 18035-2655

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* −114.0 ± 11.0STPP83
1950:	18 03 32.6	-26 55 22	IRAS	*opt.* 3.6	KFL88	
	18 03 34.7	-26 55 43	Mi76		90....46	
2000:	18 06 42.4	-26 55 21	.	*radio* 3.5	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	1.9:	$H\alpha$	656.3 *nm*	525		12μm	0.85	2
[OIII]	436.3	11	[*NII*]	658.4	34		25μm	2.00	3
	500.7	516	[*SII*]	671.7	3		60μm	2.28	3
HeI	587.6	25		673.1	3		100μm	74.51	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.18 ± .10	ASTR91				*Radio* 2*cm*	2	MiAl82
							(*mJy*) 6*cm*	8	ZPB89

Central Star:
B 15.60 *V* 15.54 *Qual:* B TASG91

Notes: Likely a galactic bulge PN (AKSR91). Galactic halo planetary nebula (91.30050)
Distance (kpc) stat.: 4.22 (CaKa71); 3.86 (Ac78); 1.2 (Ma84); 8.55 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, He67, KAS91, LHSW81, PAKS89, Pe91, Sa75, StTy90, VKDA65, Vo70, W88, Wr66

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91.30050 Peimbert M. *Elements and the cosmos, eds R. TERLEVICH et al. Cambridge Univ. Press*

004.0–05.8

Pe 1-12, PK 4–5°3, ESO 457-06, VV' 386

Disc.: Perek 1960 1950: 18 14 32.4 -28 18 29 Mi76 2000: 18 17 42.1 -28 17 19 .	*Diameter* (″) *opt.* 9.6 MLG88 KFL88, CaKa71	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10							
*He*II	468.6 *nm*	98		*Hα*	656.3 *nm*	410	
[*O*III]	436.3	–		[*N*II]	658.4	–	
	500.7	608		[*S*II]	671.7		
*He*I	587.6	12			673.1		
$\lg F_{H\beta}(mW.m^{-2})$	$-12.8 \pm .2$ ASTR91						

Radio 2*cm* 3 MiAl82
(*mJy*) 6*cm* < 12 Mi79

Central Star:
B 17.7 *V* 17.2 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 5.66 (CaKa71); 5.9 (Ma84); 6.42 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, HLSW80, Iw73, Sa76

004.0–11.1

M 3-29, PK 4–11°1, Em 2, ESO 458-01, He 2-416, Sa 2-355, StWr 2-14, VV' 434, Wray 16-416, IRAS 18362-3043

Disc.: Minkowski 1948 1950: 18 36 13.7 -30 43 22 IRAS 18 36 12.9 -30 43 21 Mi76 2000: 18 39 25.8 -30 40 36 .	*Diameter* (″) *opt.* 8.2 CaKa71	*Rvel:* $+50.3 \pm 5.4$ STPP83 *Expansion Velocities* (*km/s*) [OIII] 7.0 Ac76

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10							*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–		*Hα*	656.3 *nm*	319	12*μm*	0.47	1
[*O*III]	436.3	2.2		[*N*II]	658.4	65	25*μm*	0.36	1
	500.7	599		[*S*II]	671.7	3	60*μm*	1.05	3
*He*I	587.6	14			673.1	3	100*μm*	1.66	1
$\lg F_{H\beta}(mW.m^{-2})$	$-11.6 \pm .2$ ASTR91						*Radio* 2*cm* 11 MiAl82 (*mJy*) 6*cm* < 12 Mi79		

Central Star: AG82 323 —
B 15.42 *V* 15.50 *Qual:* B TASG91

Distance (kpc) stat.: 4.64 (CaKa71); 3.43 (Ac78); 4.49 (Da82); 3.0 (Ma84); 5.74 (CKS91)

Bibliography: *PK67*, AG82, AKSJ89, AST89, Ac75, AcMa77, CaRu74, CaWy76, Do73, HLSW80, He67, Iw73, KAS91, PAKS89, Sa75, Sa84, StWr72, TAGS89, We89, Wr66

004.1–03.8

KFL 11

Disc.: Kinman et al 1988 1950: 18 07 04.1 -27 17 14 KFL88 2000: 18 10 12.3 -27 16 36 .	*Diameter* (″) *opt.* 3.2 KFL88	*Rvel:* −63.0 ± . KFL88
Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02 *HeII* 468.6 *nm* – | *Hα* 656.3 *nm* 695 [*OIII*] 436.3 – | [*NII*] 658.4 127 500.7 910 | [*SII*] 671.7 *HeI* 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ −13.52 ± . KFL88		*Radio* *2cm* (*mJy*) *6cm* 2.5 ZPB89
Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (KFL88)		

004.2–03.2

KFL 10

Disc.: Kinman et al 1988 1950: 18 04 53.8 -26 54 29 KFL88 2000: 18 08 01.5 -26 54 01 .	*Diameter* (″) *opt.* 6.0 KFL88	*Rvel:* −121.0 ± . KFL88
Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01 *HeII* 468.6 *nm* – | *Hα* 656.3 *nm* 710 [*OIII*] 436.3 – | [*NII*] 658.4 – 500.7 1152 | [*SII*] 671.7 *HeI* 587.6 29 | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ −13.27 ± . KFL88		*Radio* *2cm* (*mJy*) *6cm* 3.5 ZPB89
Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (KFL88)		

004.2–04.3

H 1-60, PK 4−4°1, ESO 522-03, Sa 2-310, VV' 362

Disc.: Haro 1952 1950: 18 09 16.2 -27 29 42 Mi76 2000: 18 12 24.7 -27 28 55 .	*Diameter* (″) *opt.* 5.7 KFL88 CaKa71	
Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10 *HeII* 468.6 *nm* – | *Hα* 656.3 *nm* 481 [*OIII*] 436.3 – | [*NII*] 658.4 – 500.7 1098 | [*SII*] 671.7 *HeI* 587.6 18 | 673.1	*IR Class:* . *J* *H* *K* > 9.2 *L* *Photom.* AlGl75	
$\lg F_{H\beta}(mW.m^{-2})$ −12.5 ± .2 ASTR91		*Radio* *2cm* 10 MiAl82 (*mJy*) *6cm*
Central Star: *B* 16.7 *V* 16.4 *Qual:* C TASG91		*Spectrum:* WC ? ATS91
Notes: Likely a galactic bulge PN (AKSR91). *Distance (kpc) stat.:* 7.88 (CaKa71); 4.0 (Ma84); 9.84 (CKS91)		

Bibliography: *PK67*, AST89, AcMa77, AmGu71, CaWy76, LHSW81, PAKS89, Pe91, Sa75, VKDA65, Vo70, W88, WoDe79

004.2–05.9

M 2-37, PK 4–5°5, ESO 457-08, He 2-387, Sa 3-131, VV 170, VV' 390, Wray 15-1858, IRAS 18154-2809

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* +57.0 ± 5.0 STPP83
1950:	18 15 29.1	-28 09 11	IRAS	*opt.* 7.2 CaKa71	
	18 15 29.3	-28 09 20	Mi76		
2000:	18 18 38.7	-28 08 05	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	525
[*OIII*]	436.3	–	[*NII*]	658.4	181
	500.7	92	[*SII*]	671.7	13
HeI	587.6	32		673.1	10

$\lg F_{H\beta}(mW.m^{-2})$	$-12.9 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.14	1
25μm	1.51	1
60μm	1.04	3
100μm	29.99	1

Central Star:
B 17.6 *V* 16.8 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.55 (CaKa71); 3.8 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, HLSW80, He67, Iw73, PAKS89, Sa76, StAc87, Wr66

004.3+01.8

H 2-24, PK 4+1°1, ESO 520-29, Sa 3-77, VV' 254

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 4.6 CaKa71	
1950:	17 45 32.5	-24 15 39	Mi76		
2000:	17 48 36.4	-24 16 36	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-25					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1381
[*OIII*]	436.3	–	[*NII*]	658.4	494
	500.7	480	[*SII*]	671.7	98
HeI	587.6	94		673.1	84

$\lg F_{H\beta}(mW.m^{-2})$	$-13.61 \pm .10$ ASTR91

Radio (*mJy*)			
2cm	12	MiAl82	
6cm	13	Mi79	

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.96 (CaKa71); 6.27 (Da82); 4.10 (AGNR84); 6.3 (Ma84); 8.7 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW77, Ma81, PAKS89, Pe91, Sa76, StAc87, VKDA65, Vo70, W88

004.3–02.6

H 1-53, PK 4–2°1, ARO 269, ESO 521-24, He 2-342, VV' 341, IRAS 18027-2630

			Disc.: Haro 1952	*Diameter* (″)	*Rvel*: +75.0 ± 5.0 STPP83
1950:	18 02 44.4	-26 30 13	IRAS	*opt. St.* CS90	
	18 02 50.0	-26 30 01	Mi76		
2000:	18 05 57.1	-26 29 42	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1352	*J*		12μm	6.09	1
[*OIII*]	436.3	–	[*NII*]	658.4	1173	*H*		25μm	18.04	3
	500.7	491	[*SII*]	671.7	4:	*K*	> 10.4	60μm	12.71	3
HeI	587.6	56		673.1	12:	*L*		100μm	178.30	1
lg$F_{H\beta}(mW.m^{-2})$		−12.56 ± .10 ASTR91				*Photom.* AIGI74		*Radio* (*mJy*) *2cm*	25 MiAI82	
								6cm		

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, He67, Hi71, KFL88, LHSW81, PAKS89, Ru70, Sa76, SaSt73, StAc87, VKDA65, Vo70, VoCo90, W75, WeHe67

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004.5+06.8

H 2-12, PK 4+6°1, ESO 588-04, VV' 208, IRAS 17276-2126

			Disc.: Haro 1952	*Diameter* (″)	
1950:	17 27 37.4	-21 26 36	IRAS	*opt.* 5.4 PK67	
	17 27 36	-21 26.6	PK67		
2000:	17 30 36	-21 28.8	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-20 C						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1617	12μm	0.46	3
[*OIII*]	436.3	–	[*NII*]	658.4	3494	25μm	2.21	2
	500.7	295	[*SII*]	671.7	424	60μm	4.49	3
HeI	587.6	31		673.1	1036	100μm	6.14	1
lg$F_{H\beta}(mW.m^{-2})$		−13.8 ± .3 ASTR91						

Central Star: V843 Oph

Notes: Brightest knot in the SNR 1604 Kepler (Bo76)? Peculiar object.
Distance (kpc) stat.: 12.9 (Ma84)

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004.6+06.0

H 1-24, PK 4+6°2, ARO 253, ESO 588-05, He 2-244, VV' 215, IRAS 17306-2144

			Disc.: Haro 1952	*Diameter* (″)	*Rvel*: +160.0 ± 5.0 STPP83
1950:	17 30 37.7	-21 44 24	IRAS	*opt.* 8.6 CaKa71	
	17 30 37.5	-21 44 16	Mi76		
2000:	17 33 37.8	-21 46 18	.	*radio* 4.7 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27					
HeII 468.6 *nm*	–	*Hα* 656.3 *nm*	866		
[*OIII*] 436.3	–	[*NII*] 658.4	182		
500.7	315	[*SII*] 671.7	3		
HeI 587.6	51	673.1	6		
$\lg F_{H\beta}(mW.m^{-2})$	$-12.6 \pm .2$ ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*	
12μm	0.32	1	
25μm	2.26	3	
60μm	5.53	3	
100μm	6.55	1	
Radio (*mJy*)	*2cm* 8	MiAl82	
	6cm 15	ZPB89	

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.94 (CaKa71); 3.5 (Ma84); 5.84 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Hi71, Iw73, LHSw81, Mi79, PAKS89, Ru70, Sa76, SaSt73, StAc87, VKDA65, Vo70

004.7–11.8

He 2-418, PK 4–11°2, ESO 458-04, Sa 2-360, StWr 2-15, Wray 16-417

			Disc.: Henize 1964	*Diameter* (″)	
				opt. 13. CaKa71	
1950:	18 41 01.2	-30 21 32	HLSW80		
2000:	18 44 13.4	-30 18 27	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03

HeII	468.6 *nm*	88	$H\alpha$	656.3 *nm*	319
[*OIII*]	436.3	11	[*NII*]	658.4	–
	500.7	524	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.4 \pm .2$ ASTR91

Central Star:
B 15.48 *V* 15.68 *Qual:* B TASG91

Distance (kpc) stat.: 5.43 (CaKa71); 5.8 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, CaWy76, He67, Iw73, Sa75, StWr72, TAGS89, WeHe67, Wr66

004.8+02.0

H 2-25, PK 4+2°1, ESO 520-30, VV' 258, IRAS 17459-2342

			Disc.: Haro 1952	*Diameter* (″)	
1950:	17 45 58.9	-23 42 02	IRAS	*opt.* 4.4 CaKa71	
	17 45 57.5	-23 42 00	Mi76		
2000:	17 49 00.6	-23 42 55	.	*radio* 4.9 RP91	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1522
[*OIII*]	436.3	–	[*NII*]	658.4	598
	500.7	58	[*SII*]	671.7	21
HeI	587.6	–		673.1	46

$\lg F_{H\beta}(mW.m^{-2})$ $-13.35 \pm .10$ ASTR91

IRAS Fluxes (Jy) *Qual.*

12μm	0.74	1
25μm	2.11	3
60μm	3.39	1
100μm	41.00	1

Radio *2cm*
(*mJy*) *6cm* 3.5 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.32 (CaKa71); 5.23 (Da82); 4.00 (AGNR84); 6.3 (Ma84); 11.4 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW77, Ma81, Mi79, MiAl82, PAKS89, Sa76, SaSt73, StAc87, VKDA65, Vo70, W88

004.8–05.0

M 3-26, PK 4–5°1, ESO 522-10, He 2-378, Sa 2-320, VV' 379, Wray 16-398, IRAS 18130-2715

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −9.8 ± 13.3	STPP83
1950:	18 13 00.8	-27 15 54	IRAS	*opt.* 8.6	MLG88		
	18 13 03.3	-27 16 01	Mi76	KFL88, CaKa71			
2000:	18 16 11.4	-27 14 57	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	32	*Hα*	656.3 *nm*	434	12μm	0.67	3
[*O*III]	436.3	–	[*N*II]	658.4	28	25μm	0.67	2
	500.7	631	[*S*II]	671.7	4	60μm	2.63	2
*He*I	587.6	28		673.1	4	100μm	44.71	1
lg$F_{H\beta}(mW.m^{-2})$		−11.9 ± .4	ASTR91			*Radio* (*mJy*)	*2cm*	
							6cm 8	ZPB89

Central Star:
B 16.9 *V* 17.2 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 4.97 (CaKa71); 4.07 (Ac78); 3.1 (Ma84); 7.48 (CKS91)

Bibliography: *PK67*, AcMa77, AmGu71, He67, Iw73, Ka76, Kh76, LHSW81, PAKS91, Sa75, VDKA75, VKDA73, Vor70, W75, Wr66

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004.8–22.7

He 2-436, PK 4–22°1, ESO 398-07, Sa 2-391, StWr 2-25, IRAS 19288-3419

			Disc.: Henize 1964	*Diameter* (″)			
1950:	19 28 50.1	-34 19 27	IRAS	*opt.* 10.	PK67		
	19 28 51.5	-34 18 59	Mi73				
2000:	19 32 07.3	-34 12 33	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	464	*J*		12μm	0.47	2
[*O*III]	436.3	–	[*N*II]	658.4	35	*H*		25μm	0.63	3
	500.7	869	[*S*II]	671.7		*K*	> 9.5	60μm	0.40	1
*He*I	587.6	27		673.1		*L*		100μm	1.00	1
lg$F_{H\beta}(mW.m^{-2})$		−12.17 ± .03	W83			*Photom.*	AlGl74	*Radio* (*mJy*)	*2cm* 11	MiAl82
									6cm 23	MiAl75

Central Star:
Spectrum: WC 4-5 ATS91

Distance (kpc) stat.: >5.01 (MiAl75); 4.5 (Ma84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, He67, LHSW81, PAKS89, Pe71, Sa75, StWr72, W75, WeHe67

91.13501 Oliveira-Abans M., Faundez-Abans M. *Rev. Mex. Astron.,22,3* Extinction distances to the planetary nebulae NGC 6565 and He 2-436.

004.9+04.9

M 1-25, PK 4+4°1, ARO 255, ESO 588-13, He 2-259, Sa 2-224, VV 108, VV' 226, IRAS 17355-2206

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +25.9 ± 16.2 STPP83	
1950:	17 35 30.0	-22 06 59	IRAS	*opt.* 4.6	CaKa71		
	17 35 29.5	-22 06 58	AK90				
2000:	17 38 30.3	-22 08 38	.	*radio* 3.2	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	852	12μm	0.78	3
[OIII]	436.3	–	[*NII*]	658.4	663	25μm	6.35	3
	500.7	518	[*SII*]	671.7	14	60μm	8.51	3
HeI	587.6	41		673.1	27	100μm	6.73	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.92 ± .10	ASTR91			*Radio* (*mJy*) *2cm*	57	MiAl82
						6cm	57	AK90

Central Star:
B 17.9 *Qual:* D TASG91 *Spectrum:* WC 5-6 ATS91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.4 (CaKa71); 6.51 (MiAl75); 6.37 (Ca76); 4.4 (Ac78); 2.32 (Da82); 2.00 (AGNR84); 3.6 (Ma84); 3.96 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, AlLi68, AlMi72, Ca82, He67, Hi71, Is84, KAS91, Ka70, Ka76, LHSw81, LNP89, MaPo80, Mi73, MiWe79, PAKS89, Pe91, Ru70, Sa75, TAGS89, VKDA65, Vo70, W88

004.9–04.9

M 1-44, PK 4–4°2, ESO 522-11, He 2-379, VV 165, VV' 380, Wray 16-399, IRAS 18131-2705

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: −75.0 ± 11.0 STPP83	
1950:	18 13 09.6	-27 05 38	IRAS	*opt.* 3.8	CaKa71		
	18 13 09.5	-27 05 37	Mi76				
2000:	18 16 17.4	-27 04 33	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	590	*J*	10.13	12μm	0.69	1
[OIII]	436.3	–	[*NII*]	658.4	474	*H*	9.48	25μm	1.67	2
	500.7	25:	[*SII*]	671.7	32	*K*	9.33	60μm	6.59	3
HeI	587.6	57		673.1	48	*L*		100μm	41.58	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.00 ± .03	W83			*Photom.*	Wh85	*Radio* (*mJy*) *2cm*		
								6cm	9	ZPB89

Central Star: AG82 302 — SS73 150
Spectrum: K2 III 77..1136

Notes: Likely a galactic bulge PN (AKSR91). K star very near (2″), but association very doubtful (83..3115). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 6.19 (CaKa71); 5.13 (Ac78); 1.8 (Ma84); 10.2 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, AlGl75, AlKe87, Dr80, He67, KFL88, Ka76, LHSW81, PM87, PPFS87, Pe91, Sa76, SaSt73, StAc87, StKa89, VKDA65, Vo70, W75, W88, Wr66

77..1136 Lutz J.H. *Astron. Astrophys. 60,93* Peculiar central stars of PN.
83..3115 Lutz J.H., Kaler J.B. *Publ. Astron. Soc. Pac. 95, 739-744* Misclassified and misidentified planetary nebulae and nuclei.

005.0+04.4

H 1-27, PK 5+4°1, ARO 258, ESO 588-16, He 2-265, Sa 2-227, VV' 229, IRAS 17372-2217

			Disc.: Haro 1952	*Diameter* (″)	*Rvel*: +17.0 ± 5.0 STPP83
1950:	17 37 13.7	-22 17 46	IRAS	*opt.* 5.2 CaKa71	
	17 37 17.0	-22 17 45	Mi76		
2000:	17 40 18.1	-22 19 18	.	*radio* 0.8 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	800
[*OIII*]	436.3	–	[*NII*]	658.4	361
	500.7	797	[*SII*]	671.7	9
HeI	587.6	47		673.1	14

$\lg F_{H\beta}(mW.m^{-2})$	$-12.7 \pm .3$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.47	1
25μm	6.00	3
60μm	6.70	3
100μm	7.47	1

Radio (*mJy*)			
2cm	11	MiAl82
6cm	18	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.57 (CaKa71); 4.11 (Da82); 3.00 (AGNR84); 4.7 (Ma84); 7.6 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, He67, Hi71, LHSw81, LNP89, Ma81, Mi79, PAKS89, Ru70, Sa75, VKDA65, Vo70

005.0+03.0

Pe 1-9, PK 5+3°1, ESO 520-22, Sa 3-71, VV' 244

			Disc.: Perek 1960	*Diameter* (″)	
				opt. 12.4 CaKa71	
1950:	17 42 34.8	-23 01 17	PK67		
2000:	17 45 36.9	-23 02 26	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1090
[*OIII*]	436.3	–	[*NII*]	658.4	170
	500.7	249	[*SII*]	671.7	26
HeI	587.6	66:		673.1	41

$\lg F_{H\beta}(mW.m^{-2})$	$-13.2 \pm .4$	ASTR91

Central Star: AG82 258 —
$m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). FC unclear in PK67 and in AG82; PN is a nebulous object West of the star indicated on the FC.
Distance (kpc) stat.: 4.15 (CaKa71); 3.5 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, HLSW77, Iw73, MaC83, PAKS89, Sa76, StAc87

005.0–03.9

H 2-42, PK 5–3°2, ESO 522-02, VV' 365

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 11.8 MLG88	
				KFL88, CaKa71	
1950:	18 09 16	-26 33.7	LHSW81		
2000:	18 12 23	-26 32.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

HeII	468.6 *nm*	71:	$H\alpha$	656.3 *nm*	825:
[*OIII*]	436.3	–	[*NII*]	658.4	101
	500.7	561	[*SII*]	671.7	
HeI	587.6	40		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .4$ ASTR91

Central Star: AG82 295 —
m_{pg} 20.6 *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 4.25 (CaKa71); 3.1 (Ma84)

Bibliography: *PK67*, AG82, AST89, AcMa77, Iw73, MaC83, PAKS89, Sa76, TASG91, VKDA65, Vo70

005.1–03.0

H 1-58, PK 5–3°1, ESO 521-34, Sa 2-303, VV' 354, Wray 17-111, IRAS 18061-2603

			Disc.: Haro 1952	*Diameter* (″)	
1950:	18 06 08.8	-26 03 04	IRAS	*opt.* 6.3 MLG88	
	18 06 07	-26 03.0	LHSW81	KFL88	
2000:	18 09 13	-26 02.4	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1530
[*OIII*]	436.3	–	[*NII*]	658.4	478
	500.7	165	[*SII*]	671.7	5:
HeI	587.6	32		673.1	9:

$\lg F_{H\beta}(mW.m^{-2})$ $-12.5 \pm .2$ KFL88, ASTR91

IR Class: .

J		
H		
K	> 9.6	
L		

Photom. AIGI74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.95	2
25μm	10.15	3
60μm	7.97	1
100μm	57.90	2

Central Star:
B 18.5 *V* 17.4 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, KAS91, PAKS89, Sa75, TAGS89, VoCo90, Wr66

86...534 Simon M., Cassar L., Chen W.P. *Astrophys. J., Suppl. Ser. 62, 673-679* Lunar occultations of IRAS point sources, 1986-1990.

89...516 Cassar L., Chen W.P., Simon M. *Astrophys. J., Suppl. Ser. 69, 651-665* Lunar occultations of IRAS point sources, 1991-2000.

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005.1–08.9

Hf 2-2, PK 5−8°1, ESO 457-16, He 2-407, Sa 3-135, Wray 16-414, IRAS 18293-2845

			Disc.: Hoffleit 1953	*Diameter* (″)	
1950:	18 29 20.3	-28 45 37	IRAS	*opt.* 18.6 CaKa71	
	18 29 21	-28 45.6	HLSW80		
2000:	18 32 31	-28 43.4	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19					
*He*II 468.6 *nm*	–	$H\alpha$ 656.3 *nm*	467		
[*O*III] 436.3	–	[*N*II] 658.4	37		
500.7	231	[*S*II] 671.7			
*He*I 587.6	30	673.1			
$\lg F_{H\beta}(mW.m^{-2})$	$-12.3 \pm .4$ ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.50	1
25μm	0.50	2
60μm	1.79	3
100μm	11.22	1

Central Star: AG82 315 — m_{pg} 18.0 *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.01 (CaKa71); 4.5 (Ma84)

Bibliography: *PK67*, AG82, AST89, He67, Iw73, KrK68, PAKS89, Pe91, Sa76, StAc87, Wr66

88..3093 Kaler J.B. *Publ. Astron. Soc. Pac. 100, 620-625* Extreme carbon enrichment in a planetary nebula.
90..3002 Aller L.H. *Publ. Astron. Soc. Pac.,102,1097* The chemical compositions of gaseous nebulae.

005.2+05.6

M 3-12, PK 5+5°1, ESO 588-10, He 2-255, Sa 2-221, VV' 222, IRAS 17334-2129

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel*: $+17.8 \pm 10.1$ STPP83
1950:	17 33 24.3	-21 29 25	IRAS	*opt.* 6. CaKa71	
	17 33.4	-21 29	LHSw81		
2000:	17 36.4	-21 31	.	*radio* 7.5 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11					
*He*II 468.6 *nm*	13	$H\alpha$ 656.3 *nm*	640		
[*O*III] 436.3	–	[*N*II] 658.4	86		
500.7	633	[*S*II] 671.7	5		
*He*I 587.6	35	673.1	6		
$\lg F_{H\beta}(mW.m^{-2})$	$-12.3 \pm .2$ ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.37	1
25μm	0.86	2
60μm	3.98	3
100μm	5.52	1
Radio (*mJy*) *2cm*		
6cm	12.5 ZPB89	

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.51 (CaKa71); 4.60 (Ac78); 3.25 (Da82); 2.50 (AGNR84); 3.1 (Ma84); 7.71 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, CaRu74, He67, Iw73, Ka76, LNP89, PAKS89, Sa75, VKDA65, Vo70

005.2+04.2

M 3-13, PK 5+4°2, ESO 588-17, VV' 230, IRAS 17385-2211

			Disc.: Minkowski 1948	*Diameter* (″)	
1950:	17 38 35.8	-22 11 36	IRAS	*opt. St.* CS90	
	17 38 36	-22 11.6	LHSw81		
2000:	17 41 37	-22 13.0	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2600	*J*		12μm	1.20	3
[*OIII*]	436.3	48	[*NII*]	658.4	268	*H*		25μm	2.65	3
	500.7	320	[*SII*]	671.7		*K*	> 9.3	60μm	1.50	3
HeI	587.6	46		673.1		*L*		100μm	34.00	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.55 ± .10	ASTR91			*Photom.* AI74				

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, PAKS89, Sa76, SaSt73, StAc87, VKDA65, Vo70, ZTPS89

005.2–18.6

StWr 2-21, PK 5–18°1, ESO 397-07, Sa 2-383

			Disc.: Stock et al 1972	*Diameter* (″)	
				opt. 5. ATS91	
1950:	19 11 08.9	-32 39 31	StWr72		
2000:	19 14 23.3	-32 34 18	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03					
HeII	468.6 *nm*	30	$H\alpha$	656.3 *nm*	390
[*OIII*]	436.3	–	[*NII*]	658.4	8
	500.7	1065	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		−13.05 ± .10	ASTR91		

Bibliography: AcMa77, Ko78, Sa75, We77

005.4–01.9

PBOZ 34, IRAS 18023-2513

			Disc.: Pottasch et al 1988	*Diameter* (″)	
1950:	18 02 20.3	-25 13 53	IRAS	*opt. St.* ATS91	
	18 02 18.3	-25 12 54	PBOZ88		
2000:	18 05 23.5	-25 12 37	.	*radio* < 1.6PBOZ88	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-03						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	18.62	1
[*OIII*]	436.3	–	[*NII*]	658.4	33	25μm	11.27	1
	500.7	7	[*SII*]	671.7		60μm	8.41	3
HeI	587.6	–		673.1		100μm	463.00	1
						Radio (*mJy*) *2cm*		
						6cm	52 PBOZ88	

Notes: Likely a galactic bulge PN (AKSR91).

005.5+06.1

M 3-11, PK 5+6°1, ESO 588-09, He 2-254, Sa 3-66, VV' 221, IRAS 17323-2055

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +1.0 ± 11.0	STPP83
1950:	17 32 20.9	-20 55 29	IRAS	*opt.* 7.2	CaKa71		
	17 32 22	-20 55.4	LHSw81				
2000:	17 35 21	-20 57.3	.	*radio* 7.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	855
[*OIII*]	436.3	–	[*NII*]	658.4	519
	500.7	45	[*SII*]	671.7	33
HeI	587.6	33		673.1	32
$\lg F_{H\beta}(mW.m^{-2})$	$-12.7 \pm .2$	ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.32	1
25μm	0.44	2
60μm	2.12	3
100μm	5.78	1
Radio (*mJy*) *2cm*		
6cm	10	ZPB89

Central Star:
B 17.9 *V* 17.2 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.02 (CaKa71); 4.09 (Ac78); 4.49 (Da82); 3.00 (AGNR84); 3.1 (Ma84); 6.90 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlLi68, CaRu74, He67, Iw73, LNP89, PAKS89, Sa76, StAc87, VKDA65, Vo70

005.5+02.7

H 1-34, PK 5+2°1, ESO 520-28, VV' 253, IRAS 17451-2245

			Disc.: Haro 1952	*Diameter* (″)			
1950:	17 45 06.2	-22 45 50	IRAS	*opt. St.*	ATS91		
	17 45 06	-22 45.8	HLSW77				
2000:	17 48 08	-22 46.8	.	*radio* < 2	RP91		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1561
[*OIII*]	436.3	–	[*NII*]	658.4	1029
	500.7	181	[*SII*]	671.7	
HeI	587.6	37		673.1	
$\lg F_{H\beta}(mW.m^{-2})$	$-13.26 \pm .10$	ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.66	1
25μm	7.85	3
60μm	13.26	3
100μm	16.48	1
Radio (*mJy*) *2cm*		
6cm	13.2	RP91

Notes: Likely a galactic bulge PN (AKSR91). Eastern component of a close pair seen on the FC.

Bibliography: *PK67*, AST89, AcMa77, PAKS89, Sa76, StAc87, VKDA65, Vo70

005.5–02.5

M 3-24, PK 5−2°1, ESO 521-30, He 2-350, Sa 2-300, VV'348, Wray 17-110, IRAS 18048-2524

				Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* +128.0 ± 11.0STPP83
1950:	18 04 50.2	-25 24 32	IRAS		*opt.* 10.2 CaKa71	
	18 04 48	-25 24.5	LHSW81			
2000:	18 07 54	-25 24.0	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

HeII	468.6 *nm*	15	$H\alpha$	656.3 *nm*	860
[*OIII*]	436.3	–	[*NII*]	658.4	259
	500.7	843	[*SII*]	671.7	19
HeI	587.6	37		673.1	28

$\lg F_{H\beta}(mW.m^{-2})$ $-12.2 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	2.33	1
25μm	1.97	1
60μm	4.88	3
100μm	162.30	1

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.62 (CaKa71); 2.20 (Ac78); 1.1 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, AlKe85, He67, KFL88, PAKS89, Sa75, VKDA65, Vo70, Wr66

005.5–04.0

H 2-44, PK 5−4°1, ESO 522-07, Sa 3-124, VV' 371, IRAS 18105-2609

				Disc.: Haro 1952	*Diameter* (″)	
1950:	18 10 35.5	-26 09 44	IRAS		*opt.* 6.6 KFL88	
	18 10 34	-26 09.6	LHSW81		CaKa71	
2000:	18 13 41	-26 08.7	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-20

HeII	468.6 *nm*	85	$H\alpha$	656.3 *nm*	893
[*OIII*]	436.3	25:	[*NII*]	658.4	–
	500.7	1064	[*SII*]	671.7	
HeI	587.6	–		673.1	16:

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	1.59	1
25μm	0.73	3
60μm	1.19	2
100μm	81.55	1

Central Star:
B 18.2 *V* 17.4 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.38 (CaKa71); 2.7 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Iw73, PAKS89, Sa76, StAc87, VKDA65, Vo70

005.6–04.7

KFL 16

			Disc.: Kinman et al 1988	*Diameter* (″)	*Rvel:* +17.0 ± . KFL88
				opt. 12.4 KFL88	
1950:	18 13 46.8	-26 24 31	KFL88		
2000:	18 16 53.7	-26 23 24	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03

*He*II	468.6 *nm*	110	$H\alpha$	656.3 *nm*	502
[*O*III]	436.3	–	[*N*II]	658.4	115
	500.7	729	[*S*II]	671.7	22
*He*I	587.6	29		673.1	25

$\lg F_{H\beta}(mW.m^{-2})$ −13.14 ± . KFL88

Radio (*mJy*) *2cm* 2 ZPB89 *6cm*

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (KFL88)

005.7–03.6

KFL 13

			Disc.: Kinman et al 1988	*Diameter* (″)	*Rvel:* −71.0 ± . KFL88
				opt. 14.2 KFL88	
1950:	18 09 39.0	-25 45 12	KFL88		
2000:	18 12 45.0	-25 44 23	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03

*He*II	468.6 *nm*	46	$H\alpha$	656.3 *nm*	839
[*O*III]	436.3	–	[*N*II]	658.4	272
	500.7	549	[*S*II]	671.7	
*He*I	587.6	44		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.79 ± . KFL88

Radio (*mJy*) *2cm* 3 ZPB89 *6cm*

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (KFL88)

005.7–05.3

M 2-38, PK 5−5°1, ARO 272, ESO 522-17, He 2-388, Sa 2-328, VV 172, VV' 392, Wray 16-406, IRAS 18163-2636

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* −72.3 ± 14.4 STPP83
1950:	18 16 18.4	-26 36 38	IRAS	*opt.* 9.3 MLG88	
	18 16 18.0	-26 36 37	Mi76	KFL88, CaKa71	
2000:	18 19 25.1	-26 35 19	.	*radio* 7.4 RP91	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09

*He*II	468.6 *nm*	101	$H\alpha$	656.3 *nm*	568
[*O*III]	436.3	–	[*N*II]	658.4	111
	500.7	950	[*S*II]	671.7	12
*He*I	587.6	14		673.1	19

$\lg F_{H\beta}(mW.m^{-2})$ −12.6 ± .2 ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.33	1
25μm	1.36	3
60μm	2.44	3
100μm	38.51	1

Radio (*mJy*) *2cm* 8 ZPB89 *6cm*

Central Star:
B 18.5 *V* 17.4 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 5.21 (CaKa71); 4.47 (Ac78); 3.7 (Ma84); 6.90 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Hi71, Iw73, KrK68, LHSW81, PAKS89, Ru70, Sa75, Wr66

005.8+05.1

H 2-16, PK 5+5°2, ARO 256, ESO 588-15, He 2-261, Sa 2-226, VV' 227, IRAS 17369-2112

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −56.0 ± 5.0	STPP83
1950:	17 36 54.4	-21 12 40	IRAS	*opt.* 16.8	CaKa71		
	17 36 55.0	-21 12 32	Mi76				
2000:	17 39 54.6	-21 14 06	.	*radio* 18.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	91:	*Hα*	656.3 *nm*	572	12μm	0.40	1
[OIII]	436.3	–	[*NII*]	658.4	790	25μm	0.64	3
	500.7	1556	[*SII*]	671.7	109	60μm	1.26	3
HeI	587.6	–		673.1	85	100μm	6.16	1
lg$F_{H\beta}(mW.m^{-2})$	−12.9 ± .4	ASTR91				*Radio* (*mJy*)	*2cm*	
							6cm 3	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.87 (CaKa71); 4.53 (Da82); 3.60 (AGNR84); 5.4 (Ma84); 5.22 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, He67, Hi71, Iw73, KrK68, LHSw81, LNP89, Ma81, Mi79, PAKS89, Ru70, Sa75

005.8−06.1

NGC 6620, PK 5−6°1, ARO 99, ESO 522-22, He 2-394, Sa 2-332, StWr 2-4, VV 173, VV' 394, Wray 16-410, IRAS 18198-2650

			Disc.: Pickering 1880	*Diameter* (″)		*Rvel:* +72.6 ± 0.4	STPP83
1950:	18 19 49.9	-26 51 00	IRAS	*opt.* 8.0	MLG88		
	18 19 46.8	-26 50 50	Mi73		KFL88, CaKa71		
2000:	18 22 54.2	-26 49 17	.	*radio* 5.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	22	*Hα*	656.3 *nm*	436	12μm	1.65	3
[OIII]	436.3	6	[*NII*]	658.4	406	25μm	2.00	3
	500.7	1244	[*SII*]	671.7	30	60μm	4.01	3
HeI	587.6	18		673.1	46	100μm	25.60	1
lg$F_{H\beta}(mW.m^{-2})$	−11.73 ± .01	W83, SK89				*Radio* (*mJy*)	*2cm* 12	MiAl82
							6cm 3.5	ZPB89

Central Star:
V 19.6 *Qual:* D JK89

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 6.3 (CaKa71); 8.32 (Ca76); 5.92 (Ac78); 6.05 (Da82); 4.30 (AGNR84); 4.0 (Ma84); 8.75 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, Al65, AlKe87, AlLi68, Ca82, CaNo73, CaRu74, DFHM67, De71, Gr71, He67, He71, He90, Hi71, Hig71, Is84, Iw73, IwKa65, KAS91, Ka76, KaJa89, Kh79, LHSW81, LNP89, MiAl75, PAKS89, Pe91, Sa75, Sh85, StTy90, StWr72, VDKA75, VKDA73, Vo71, Vor70, Wr66

77..10292 Kharadze E.K., Bartaya R.A., Vorontsov-Velyaminov B.A., Kostyakova E.B., Dokuchaeva O.D., Arhipova V.P. *Astron. Tsirk. 947,6* The new absolute intensities of the emission lines of 15 PN, seen in the galactic-centre direction.

79..2620 Lutz J.H., Carnochan D.J. *Mon. Not. R. Astron. Soc. 189,701-708* Observations of the central stars of PN with the sky-survey telescope of the TD-1 satellite.

005.9–02.6

MaC 1-10, PK 5–2°2, PM 1-213, IRAS 18061-2505

		Disc.: Mac Connell 1978		*Diameter* (″)	
1950:	18 06 06.1	-25 05 08	IRAS	*opt.* 10. 78..1561	
	18 06 07.5	-25 05 09	78..1561		
2000:	18 09 12.5	-25 04 35	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-02						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	5.92	3
[*OIII*]	436.3	–	[*NII*]	658.4	185	25μm	20.62	3
	495.9	–	[*SII*]	671.7	19	60μm	22.64	3
HeI	587.6	–		673.1	54	100μm	164.60	1

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: Iy87, PM88

78..1561 Macconnell D.J. *Astron. Astrophys. Suppl. Ser. 33,219-222* Discoveries on southern, red-sensitive objective-prism plates .I. A new list ofsuspected Planetary Nebulae.

006.0+03.1

M 1-28, PK 6+3°2, ESO 589-06, He 2-285, Sa 3-76, VV 115, VV' 250, IRAS 17446-2205

		Disc.: Minkowski 1946		*Diameter* (″)	*Rvel*: +18.0 ± 5.0 STPP83	
1950:	17 44 37.9	-22 05 25	IRAS	*opt.* 14.8 CaKa71		
	17 44 37.4	-22 05 19	Mi76			
2000:	17 47 38.3	-22 06 20	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	965	12μm	2.40	1
[*OIII*]	436.3	–	[*NII*]	658.4	3494	25μm	0.41	1
	500.7	1050	[*SII*]	671.7	246	60μm	2.77	3
HeI	587.6	–		673.1	230	100μm	11.75	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.3 ± .4 ASTR91				*Radio* 2*cm*	22	MiAl82
						(*mJy*) 6*cm*	20	Mi79

Central Star:
B 21.6 *V* 20.8 *Qual:* D KJL88

Distance (kpc) stat.: 2.29 (CaKa71); 2.89 (Da82); 2.40 (AGNR84); 3.5 (Ma84); 3.97 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, CaRu74, He67, Iw73, KrK68, LHSw81, Ma81, Sa76, StAc87, VKDA65, Vo70

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89.50080 Kwitter K.B., Jacoby G.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 303* New identifications of faint central stars in extended PN.

006.0+02.8

Th 4-3, PK 6+2°1, ARO 259, ESO 589-07, Sa 3-78, IRAS 17456-2215

			Disc.: The 1964	*Diameter* (″)	
1950:	17 45 37.0	-22 15 54	IRAS	*opt. St.* ATS91	
	17 45 36.0	-22 15 53	Mi76		
2000:	17 48 37.1	-22 16 49	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1060	*J*		12μm	1.83	1
[*OIII*]	436.3	–	[*NII*]	658.4	646	*H*		25μm	1.73	3
	495.9	–	[*SII*]	671.7	25:	*K*	> 9.2	60μm	2.54	1
HeI	587.6	–		673.1	24:	*L*		100μm	20.16	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.4 ± .3	ASTR91			*Photom.*	AI74	*Radio* (*mJy*)	*2cm* 7 *6cm*	MiAI82

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, Hi71, LHSw81, Ru70, Sa76, StAc87

006.0–03.6

M 2-31, PK 6–3°3, ESO 522-06, He 2-368, Sa 2-313, StWr 2-1, VV 158, VV' 369, Wray 16-390, IRAS 18101-2530

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel*: +157.3 ± 10.1STPP83	
1950:	18 10 10.0	-25 30 58	IRAS	*opt.* 5.1 MLG88		
	18 10 10.5	-25 30 57	GPGV83	KFL88, 90....46		
2000:	18 13 16.1	-25 30 06	.	*radio* 4. ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	762	*J*		12μm	1.45	1
[*OIII*]	436.3	5	[*NII*]	658.4	170	*H*		25μm	3.35	3
	500.7	1224	[*SII*]	671.7	15	*K*	> 9.9	60μm	5.36	3
HeI	587.6	34		673.1	26	*L*		100μm	78.18	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.11 ± .02	ViFr85			*Photom.*	AIGI75	*Radio* (*mJy*)	*2cm* *6cm* 51	GPGV83

Central Star:

Spectrum: WC ATS91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 2.30 (AGNR84)

Bibliography: *PK67*, AGR89, AcMa77, He67, LHSW81, PAKS91, Sa75, StWr72, Wr66

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006.0-41.9

PRMG 1

Disc.: Pena et al 1989 1950: 21 02 44.5 -37 20 19 89.13504 2000: 21 05 53.5 -37 08 17 .	*Diameter* (″) *opt.* 8.2 89.13504	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	339
[OIII]	436.3	–	[*N*II]	658.4	–
	500.7	1184	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.3 \pm .4$ ASTR91
IUE Spectra: *LW*(0) *SW*(1)

Central Star:
B 17.2 *V* 17.5 *Qual:* C TASG91

Notes: Galactic halo planetary nebula (89.13504)

89.13504 Pena M., Ruiz M.T., Maza J., Gonzalez L.E. *Rev. Mex. Astron. Astrofis. 17, 25-30* A new halo planetary nebula.

006.1+08.3

M 1-20, PK 6+8°1, ESO 588-03, He 2-235, Sa 2-204, VV 102, VV' 203, IRAS 17260-1913

Disc.: Minkowski 1946 1950: 17 26 00.4 -19 13 32 IRAS 17 26 00.7 -19 13 32 AK90 2000: 17 28 57.6 -19 15 53 .	*Diameter* (″) *opt.* 7. ATS91 *radio* 1.9 AK90	*Rvel:* $+91.7 \pm 10.1$ STPP83	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	627
[OIII]	436.3	5	[*N*II]	658.4	78
	495.9	326	[*S*II]	671.7	3
*He*I	587.6	29		673.1	6

$\lg F_{H\beta}(mW.m^{-2})$ $-11.93 \pm .01$ SK89

IR Class: N

J	11.92	12μm	1.13
H	12.02	25μm	3.94
K	10.90	60μm	2.38
L		100μm	4.59

Photom. PM87

IRAS Fluxes (*Jy*) *Qual.*

Radio (*mJy*) *2cm* *6cm* 51 AK90

Central Star: AG82 242 —
B 17.7 *V* 17.1 *Qual:* C SK89 , TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.40 (AGNR84); 3.36 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, AlGl74, ArKo68, BlPu81, GPGV83, He67, LHSw81, PAKS91, PrPe89, Sa75, Sh85, ViFr85, ZTPS89

006.2+01.0

HaTr 8, PK 6+1°1

Disc.: Hartl et al 1983	*Diameter* (″)	
	opt. 12. 85..1131	
1950: 17 52 53.8 -22 58 37 83.28035		
2000: 17 55 55.9 -22 59 01 .		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-05-29					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	70
	500.7	vis	[*SII*]	671.7	
HeI	587.6	–		673.1	

Bibliography: Ko89

83.28035 Hartl H., Tritton S.B. *Mitteil. Astron. Gesellschaft 60, 328-330* Neuentdeckte sudliche Planetarische Nebel.
85..1131 Hartl H., Tritton S.B. *Astron. Astrophys. 145, 41-44,1985* New planetary nebulae of low surface brightness detected on UK-Schmidt plates.

006.2–03.7

KFL 15

Disc.: Kinman et al 1988	*Diameter* (″)	*Rvel:* +123.0 ± . KFL88
	opt. 8.5 KFL88	
1950: 18 11 14.0 -25 21 46 KFL88		
2000: 18 14 19.4 -25 20 50 .		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	827
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	1080	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −13.72 ± . KFL88	*Radio* *2cm*
	(*mJy*) *6cm* 11.2 ZPB89

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (KFL88)

006.3+04.4

H 2-18, PK 6+4°1, ESO 589-01, Sa 2-232, VV' 234

Disc.: Haro 1952	*Diameter* (″)	*Rvel:* −116.0 ± 25.0STPP83
	opt. 3.8 CaKa71	
1950: 17 40 29.3 -21 08 34 GPGV83		
2000: 17 43 28.9 -21 09 53 .	*radio* 3. ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IR Class:* .
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	749	*J*
[*OIII*]	436.3	8:	[*NII*]	658.4	30	*H*
	500.7	1427	[*SII*]	671.7		*K* > 9.6
HeI	587.6	25		673.1	9:	*L*
						Photom. AI74

$\lg F_{H\beta}(mW.m^{-2})$ −13.15 ± .10 ASTR91	*Radio* *2cm*
	(*mJy*) *6cm* 11 GPGV83

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 7.77 (CaKa71); 6.59 (Ac78); 5.00 (AGNR84); 3.9 (Ma84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, AlKe85, AlKe87, He90, LHSw81, PAKS89, Pe91, Sa75, ZTPS89

006.3+03.3

H 2-22, PK 6+3°1, ESO 589-05, Sa 3-75, VV' 251, IRAS 17445-2146

			Disc.: Haro 1952	*Diameter* (″)	
1950:	17 44 33.2	-21 46 25	IRAS	*opt.* 6.2 CaKa71	
	17 44 34	-21 46.4	LHSw81		
2000:	17 47 34	-21 47.4	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1021	12μm	1.69	1
[*OIII*]	436.3	–	[*NII*]	658.4	995	25μm	0.63	3
	495.9	–	[*SII*]	671.7	66	60μm	2.52	3
HeI	587.6	37:		673.1	84	100μm	8.33	1
$\lg F_{H\beta}(mW.m^{-2})$		$-13.4 \pm .4$ ASTR91						

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.91 (CaKa71); 2.5 (Ma84)

Bibliography: *PK67*, AG82, AST89, AcMa77, Sa76, StAc87

006.4+02.0

M 1-31, PK 6+2°5, ESO 589-16, He 2-299, Sa 2-260, Ve 59, VV 123, VV' 275, IRAS 17496-2221

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: $+73.0 \pm 5.0$ STPP83
1950:	17 49 40.2	-22 21 18	IRAS	*opt. St.* CS90		
	17 49 40.2	-22 21 18	Mi76			
2000:	17 52 41.5	-22 21 57	.	*radio* 7.0 ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1043	*J*		12μm	1.17	3
[*OIII*]	436.3	–	[*NII*]	658.4	516	*H*		25μm	11.68	3
	500.7	737	[*SII*]	671.7	11	*K*	> 8.9	60μm	11.07	3
HeI	587.6	48		673.1	20	*L*		100μm	34.90	1
$\lg F_{H\beta}(mW.m^{-2})$		$-11.9 \pm .2$ ASTR91				*Photom.* AI74		*Radio* (*mJy*)	*2cm* 57 ZPB89 *6cm* 59 ZPB89	

Central Star:
B 19.0 *Qual:* D TASG91 *Spectrum:* WC ? ATS91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.22 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, LHSw81, MiAl82, PAKS89, Sa75, TAGS89, VDKA75, VKDA65, VKDA73, Vo70, Vor70

006.4–04.6

Pe 2-13, PK 6–4°1, ESO 522-14, Sa 3-129, VV' 387, IRAS 18150-2539

			Disc.: Perek 1960	*Diameter* (″)	
1950:	18 15 02.8	-25 39 26	IRAS	*opt.* 6.6 MLG88	
	18 15 08	-25 39.4	LHSW81	KFL88, CaKa71	
2000:	18 18 14	-25 38.2	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-20

						IRAS Fluxes (*Jy*)		*Qual.*
HeII	468.6 *nm*	93	$H\alpha$	656.3 *nm*	785	12μm	2.29	1
[*OIII*]	436.3	–	[*NII*]	658.4	44	25μm	0.72	3
	500.7	1422	[*SII*]	671.7		60μm	1.63	3
HeI	587.6	9:		673.1		100μm	10.92	2

$\lg F_{H\beta}(mW.m^{-2})$ $-12.1 \pm .4$ ASTR91

Central Star:
B 19.0 *V* 17.3 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 7.90 (CaKa71); 6.0 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Iw73, PAKS89, Sa76, StAc87

86...534 Simon M., Cassar L., Chen W.P. *Astrophys. J., Suppl. Ser. 62, 673-679* Lunar occultations of IRAS point sources, 1986-1990.
89...516 Cassar L., Chen W.P., Simon M. *Astrophys. J., Suppl. Ser. 69, 651-665* Lunar occultations of IRAS point sources, 1991-2000.

006.5–03.1

H 1-61, PK 6–3°1, ESO 522-04, He 2-364, VV' 364, Wray 16-387, IRAS 18094-2450

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* $+53.0 \pm 5.0$ STPP83	
1950:	18 09 29.6	-24 50 51	IRAS	*opt. St.* ATS91		
	18 09 29	-24 50.8	LHSW81			
2000:	18 12 34	-24 50.0	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02

						IR Class: .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1328	*J*	12μm	1.02	3
[*OIII*]	436.3	–	[*NII*]	658.4	1096	*H*	25μm	11.81	3
	500.7	378	[*SII*]	671.7		*K* > 10.2	60μm	10.73	3
HeI	587.6	61		673.1		*L*	100μm	87.67	1

$\lg F_{H\beta}(mW.m^{-2})$ $-13.42 \pm .10$ ASTR91

Photom. AIGI74

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, Al78, He67, Sa76, SaSt73, StAc87, VoCo90, Wr66

006.7-02.2

M 1-41, PK 6−2°1, He 2-355, Ve 62, VV 152, VV' 355, Wray 17-112, IRAS 18064-2413

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −4.7 ± 2.6	STPP83
1950:	18 06 26.8	-24 13 09	IRAS	*opt.* 8.4	CaKa71		
	18 06 26.1	-24 13 03	PK67				
2000:	18 09 29.9	-24 12 28	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1671
[*OIII*]	436.3	–	[*NII*]	658.4	4809
	500.7	1421	[*SII*]	671.7	157
HeI	587.6	–		673.1	259

$\lg F_{H\beta}(mW.m^{-2})$ −13.5 ± .4 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.27	3
25μm	10.74	3
60μm	38.18	3
100μm	238.60	1

Radio (*mJy*) *2cm* *6cm* 350 ZPB89

Central Star: AG82 289 —

Spectrum: (WN) ? 77..4052

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 3.20 (CaKa71); 1.4 (Ma84); 0.84 (CKS91)

Bibliography: *PK67*, AG82, AST89, Ac80, AcMa77, FaMa88, He67, KVLS81, Ka86, PAKS91, Sa76, StAc87, StKa89, Wr66, ZPB90

77..4052 Dopita M.A. *Astrophys. Space Sci. 48,437-444* P.K. 6-2.1, a remarkable nitrogen rich southern PN.

006.8+04.1

M 3-15, PK 6+4°2, ESO 589-02, He 2-279, Sa 2-240, VV' 243, IRAS 17425-2056

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +100.2 ± 10.1	STPP83
1950:	17 42 32.3	-20 56 55	IRAS	*opt.* 4.2	CaKa71		
	17 42 32.4	-20 56 52	PK67				
2000:	17 45 31.7	-20 58 02	.	*radio* 5.	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09					
HeII	468.6 *nm*	8	*Hα*	656.3 *nm*	1402
[*OIII*]	436.3	–	[*NII*]	658.4	224
	500.7	1064	[*SII*]	671.7	12
HeI	587.6	55		673.1	25

$\lg F_{H\beta}(mW.m^{-2})$ −12.45 ± .10 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.53	2
25μm	5.66	3
60μm	8.02	3
100μm	10.39	1

Radio (*mJy*) *2cm* *6cm* 65 GPGV83

Central Star:

Spectrum: WC Me91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.34 (CaKa71); 4.47 (Ac78); 1.90 (AGNR84); 1.5 (Ma84)

Bibliography: *PK67*, AGR89, AcMa77, AlKe87, He67, He90, Ka76, LHSw81, PAKS91, Pe91, Sa75, StKa89, VKDA65, Vo70

006.8+02.3

Th 4-7, PK 6+2°3, ARO 263, ESO 589-15, Sa 2-257, IRAS 17493-2150

			Disc.: The 1964	*Diameter* (″)	
1950:	17 49 19.9	-21 50 32	IRAS	*opt.* 6. CS90	
	17 49 22.0	-21 50 33	Mi76		
2000:	17 52 22.6	-21 51 13	.	*radio* 7.9 RP91	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	52	$H\alpha$	656.3 *nm*	1078	*J*	12μm	2.25	1
[*OIII*]	436.3	6:	[*NII*]	658.4	243	*H*	25μm	0.85	3
	500.7	1661	[*SII*]	671.7	22	*K* > 9.2	60μm	1.61	1
HeI	587.6	28		673.1	39	*L*	100μm	33.47	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.1 ± .2 ASTR91				*Photom.* AI74	*Radio* (*mJy*)	*2cm* 34 MiAI82 *6cm* 18.4 RP91	

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AcMa77, Hi71, LHSw81, Ru70, Sa75, VKDA65, Vo70

006.8+02.0

Pe 2-10, PK 6+2°4, ESO 589-19, VV' 280

			Disc.: Perek 1960	*Diameter* (″)	
				opt. 3.8 CaKa71	
1950:	17 50 36	-21 58.1	LHSw81		
2000:	17 53 37	-21 58.7	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1908
[*OIII*]	436.3	–	[*NII*]	658.4	488
	500.7	377	[*SII*]	671.7	14
HeI	587.6	75		673.1	37
$\lg F_{H\beta}(mW.m^{-2})$		−13.51 ± .10 ASTR91			

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.38 (CaKa71); 1.0 (Ma84)

Bibliography: *PK67*, AcMa77, MaC83, Sa76, VKDA65, Vo70

006.8–03.4

H 2-45, PK 6–3°2, ESO 522-08, Sa 2-315, VV' 374, IRAS 18114-2443

			Disc.: Haro 1952	*Diameter* (″)	
1950:	18 11 29.5	-24 43 21	IRAS	*opt.* 4.6 CaKa71	
	18 11 24	-24 44.5	LHSW81		
2000:	18 14 29	-24 43.6	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	851	12μm	0.92	3
[OIII]	436.3	15	[NII]	658.4	–	25μm	1.64	1
	500.7	1073	[SII]	671.7		60μm	6.20	1
HeI	587.6	33		673.1		100μm	71.15	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.89 \pm .10$ ASTR91

Central Star:
B 18.2 *V* 17.4 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.65 (CaKa71); 2.3 (Ma84)

Bibliography: *PK67*, AcMa77, Sa75

006.8–08.6

Al 1, PK 6–8°1, ESO 523-02, Wray 15-1876, IRAS 18318-2708

			Disc.: Wray 1966	*Diameter* (″)	
1950:	18 31 50.0	-27 08 56	IRAS	*opt.* 13. We77	
	18 31 47	-27 08.8	Wa70		
2000:	18 34 55	-27 06.4	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	106	*Hα*	656.3 *nm*	383	12μm	0.27	1
[OIII]	436.3	–	[NII]	658.4	–	25μm	0.77	1
	500.7	472	[SII]	671.7		60μm	1.06	3
HeI	587.6	–		673.1		100μm	24.34	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.4 \pm .4$ ASTR91

Central Star: AG82 321 —
B > 18. 74..9009

Notes: Likely a galactic bulge PN (AKSR91). ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, AST89, AcMa77, Ko78, PAKS89, Wr66

73..9033 Allen D.A. *Observatory 93,85* A new Planetary Nebula
74..9009 Allen D.A. *Mon. Not. R. Astron. Soc. 168,27P* 3 double emission nebulae.

006.8–19.8

Wray 16-423, PK 6–19°1, ESO 459-17, Sa 2-389, StWr 2-18

			Disc.: Wray 1966	*Diameter* (″)		
				opt. St.	CS90	
1950:	19 18 58.3	-31 36 25	Wr66			
2000:	19 22 10.6	-31 30 40	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22

HeII	468.6 *nm*	13	$H\alpha$	656.3 *nm*	329
[*OIII*]	436.3	12	[*NII*]	658.4	19
	500.7	1198	[*SII*]	671.7	2.3:
HeI	587.6	18		673.1	3:

$\lg F_{H\beta}(mW.m^{-2})$ $-12.0 \pm .3$ ASTR91

Bibliography: AST89, AcMa77, Ko78, PAKS89, Sa75, StWr72, We77

007.0+06.3

M 1-24, PK 7+6°2, ESO 588-12, He 2-258, Sa 2-223, VV 107, VV' 225, IRAS 17352-1935

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* -7.0 ± 25.0	STPP83
1950:	17 35 14.1	-19 35 56	IRAS	*opt.* 6.4	CaKa71		
	17 35 15	-19 36.0	LHSw81				
2000:	17 38 12	-19 37.7	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	793
[*OIII*]	436.3	–	[*NII*]	658.4	109
	500.7	533	[*SII*]	671.7	4
HeI	587.6	30		673.1	8

$\lg F_{H\beta}(mW.m^{-2})$ $-12.0 \pm .2$ ASTR91

IRAS Fluxes (Jy)		*Qual.*
12μm	0.36	2
25μm	7.72	3
60μm	11.51	3
100μm	6.55	3

Central Star:
B 16.4 *V* 16.0 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.88 (CaKa71); 4.70 (Ac78); 3.8 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, PAKS89, Sa75, TAGS89, VoCo90

007.0–06.0

H 1-66, PK 7−6°1, AS 303, ESO 522-24, He 2-397, MHα 366-101, Sa 2-333, StWr 2-2, VV' 401, IRAS 18218-2543

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* +42.0 ± 25.0 STPP83
1950:	18 21 52.0	-25 43 39	IRAS	*opt.* 8.2 CaKa71	
	18 21 51	-25 43.6	LHSW81		
2000:	18 24 57	-25 41.9	.	*radio* 6.5 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09

HeII	468.6 *nm*	65	*Hα*	656.3 *nm*	456
[OIII]	436.3	15	[*NII*]	658.4	98
	500.7	1203	[*SII*]	671.7	10
HeI	587.6	15		673.1	13

$\lg F_{H\beta}(mW.m^{-2})$ −12.4 ± .2 ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.29	1
25μm	0.96	3
60μm	2.34	3
100μm	4.38	1

Radio (*mJy*) *2cm* 6 ZPB89 *6cm*

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.42 (CaKa71); 4.61 (Ac78); 4.0 (Ma84); 8.21 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, Al73, He67, Iw73, KAS91, PAKS89, Sa75, StWr72

69..9077 Herbig G.H. *Contr. Lick Obs. 299,1045* Emission-line objects projected upon the galactic bulge.

007.0–06.8

VY 2-1, PK 7−6°2, ESO 522-27, He 2-400, Sa 2-336, StWr 2-5, VV 181, VV' 405, Wray 15-1872, IRAS 18248-2608

			Disc.: Vyssotsky 1945	*Diameter* (″)	*Rvel:* +115.0 ± 25.0STPP83
1950:	18 24 52.7	-26 08 46	IRAS	*opt.* 7. PK67	
	18 24 53.2	-26 08 36	Mi76		
2000:	18 27 59.5	-26 06 41	.	*radio* 3.7 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	458
[OIII]	436.3	–	[*NII*]	658.4	163
	500.7	593	[*SII*]	671.7	7
HeI	587.6	23		673.1	12

$\lg F_{H\beta}(mW.m^{-2})$ −11.50 ± .10 ASTR91

IR Class: .

J		
H		
K	> 9.9	
L		

Photom. AIGI74

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.27	1
25μm	3.94	3
60μm	6.40	3
100μm	5.41	2

Radio (*mJy*) *2cm* 44 MiAI82 *6cm* 37 ZPB89

Central Star:
B 16.6 *Qual:* D TASG91 *Spectrum:* WC ? ATS91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.9 (Ma84)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, Ca82, De71, He67, KAS91, KPK81, Ka70, Ka76, LHSW81, Mi79, PAKS89, Sa75, StWr72, TAGS89, VKDA65, Vo70, Wr66

007.2+01.8

Hb 6, PK 7+1°1, ARO 96, ESO 589-20, He 2-305, Sa 2-264, Ve 60, VV 128, VV' 285, IRAS 17521-2144

			Disc.: Hubble 1921	*Diameter* (″)		*Rvel*: +9.2 ± 3.3	STPP83
1950:	17 52 06.5	-21 44 14	IRAS	*opt.* 5.	CaKa71	*Expansion Velocities* (*km/s*)	
	17 52 06.8	-21 44 10	Mi73			[OIII] 20.0	RRA82
2000:	17 55 07.2	-21 44 38	.	*radio* 6.	ZPB89		

Intens. (*Hβ* = 100) OHP-CAR+CCD 1986-08-01						*IR Class*: S+D		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	39	*Hα*	656.3 *nm*	1486	*J*	10.52	12*μm*	1.88	3
[OIII]	436.3	–	[NII]	658.4	841	*H*	10.02	25*μm*	22.43	3
	500.7	1731	[SII]	671.7	} 138.	*K*	9.38	60*μm*	31.25	3
HeI	587.6	59		673.1	}	*L*		100*μm*	27.86	1
lg$F_{H\beta}$(*mW.m*$^{-2}$)		−12.05 ± .01	SK89			*Photom.*	Wh85	*Radio* 2*cm*	241	MiAl82
						Spectr.	86..2654	(*mJy*) 6*cm*	243	ZPB89

Central Star: AG82 271 — AS Sgr; HV 1146; AN 265.1904
B > 16.4 *V* > 14.7 72.30001

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.6 (CaKa71); 4.37 (MiAl75); 4.26 (Ca76); 1.44 (Ac78); 1.10 (Da82); 1.00 (AGNR84); 1.9 (Ma84); 1.66 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, Al73, AlKe87, BLTA81, Bo76, Ca82, DFHM67, De71, He67, He71, He90, Hi71, Hig71, Is84, IwKa65, Ka76, Kh76, Kh79, Kon78, LH91, LHSw81, LNP89, MaPo80, MiWe79, PM87, PPFS87, PiKh79, SGBO84, Sa75, Sa84, SaMi78, StKa89, ThDa70, VDKA75, VKDA65, VKDA69, VKDA73, Vo70, Vo71, VoCo90, Vor70, We89, ZTPS89

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72.30001 Shao C.Y., Liller W. *Private communication* UBV observations of the central stars of planetary nebulae
73..9070 Higgs L.A. *Mem. Soc. R. Sci. Liege 5,89* The observation spectra radio data.
73..9103 Arhipova V.P. *Perem. Zvez 19,273* On the light variability of P.N. 7+1 degre 1 identified irregular variable AS Sge.
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86..2654 Roche P.F., Aitken D.K. *Mon. Not. R. Astron. Soc. 221, 63-76* The infrared spectral properties of planetary nebulae.

007.5+07.4

M 1-22, PK 7+7°1, ESO 588-08, He 2-252, Sa 2-217, VV 104, VV' 219, IRAS 17322-1832

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +13.2 ± 10.1	STPP83
1950:	17 32 14.4	-18 32 33	IRAS	*opt.* 9.	CaKa71		
	17 32 14	-18 32.4	LHSw81				
2000:	17 35 10	-18 34.3	.	*radio* 6.	ZPB89		

Intens. (*Hβ* = 100) ESO-B.C+IDS 1986-07-10							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	20	*Hα*	656.3 *nm*	413		12*μm*	0.31	1
[OIII]	436.3	4:	[NII]	658.4	259		25*μm*	0.32	1
	500.7	542	[SII]	671.7	20		60*μm*	1.95	3
HeI	587.6	30		673.1	26		100*μm*	3.77	1
lg$F_{H\beta}$(*mW.m*$^{-2}$)		−12.2 ± .3	ASTR91				*Radio* 2*cm*		
							(*mJy*) 6*cm*	3.5	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.42 (CaKa71); 4.56 (Ac78); 4.4 (Ma84); 9.68 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, AlLi68, He67, Iw73, KAS91, PAKS89, Sa75

007.5+04.3

Th 4-1, PK 7+4°1, ESO 589-04, He 2-282, Sa 3-63

			Disc.: The 1964	*Diameter* (″)	*Rvel:* −108.0 ± 5.0 STPP83
				opt. St. CS90	
1950:	17 43 22	-20 12.8	LHSw81		
2000:	17 46 20	-20 13.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-20

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1310
[*O*III]	436.3	56	[*N*II]	658.4	–
	500.7	279	[*S*II]	671.7	
*He*I	587.6	39		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −13.0 ± .3 ASTR91

Central Star:
B 18.6 *V* 18.2 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, He67, PAKS89, Sa76, StAc87

007.6+06.9

M 1-23, PK 7+6°1, ESO 588-11, He 2-256, Sa 2-222, VV 105, VV' 223, IRAS 17344-1844

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* −65.4 ± 10.1 STPP83
1950:	17 34 25.5	-18 44 56	IRAS	*opt. 7.* CaKa71	
	17 34 26	-18 45.0	LHSw81		
2000:	17 37 22	-18 46.8	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09

*He*II	468.6 *nm*	35	$H\alpha$	656.3 *nm*	636
[*O*III]	436.3	–	[*N*II]	658.4	111
	500.7	844	[*S*II]	671.7	14
*He*I	587.6	28		673.1	16

$\lg F_{H\beta}(mW.m^{-2})$ −12.2 ± .2 ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.30	1
25μm	1.24	3
60μm	3.35	3
100μm	4.11	1

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.59 (CaKa71); 4.43 (Ac78); 3.7 (Ma84)

Bibliography: *PK67*, AcMa77, He67, Iw73, PAKS91, Sa75

007.8–03.7

M 2-34, PK 7–3°1, ESO 522-12, He 2-382, Sa 3-127, VV 166, VV' 382, Wray 16-402

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* +70.0 ± 11.0 STPP83
				opt. 8.4 CaKa71	
1950:	18 14 13	-24 00.0	LHSW81		
2000:	18 17 16	-23 58.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-20

HeII	468.6 *nm*	20	$H\alpha$	656.3 *nm*	949
[*OIII*]	436.3	26:	[*NII*]	658.4	654
	500.7	703	[*SII*]	671.7	48
HeI	587.6	41		673.1	74

$\lg F_{H\beta}(mW.m^{-2})$ $-12.9 \pm .4$ ASTR91

Central Star:

Spectrum: WC 4-5 ATS91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.78 (CaKa71); 3.17 (Ac78); 2.0 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, PAKS89, Sa76, StAc87, VKDA65, VKda65, Vo70, Wr66

007.8–04.4

H 1-65, PK 7–4°1, ARO 273, AS 301, ESO 522-18, He 2-389, MHα 304-145, VV' 393, Wray 16-407, IRAS 18170-2416

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* +161.0 ± 11.0STPP83
1950:	18 17 04.9	-24 16 26	IRAS	*opt.* 8. : CS90	
	18 17 05.0	-24 16 27	Mi76		
2000:	18 20 08.8	-24 15 06	.	*radio* 2.5 ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	596
[*OIII*]	436.3	–	[*NII*]	658.4	402
	495.9	–	[*SII*]	671.7	19
HeI	587.6	–		673.1	36

$\lg F_{H\beta}(mW.m^{-2})$ $-11.9 \pm .2$ ASTR91

IR Class: .

J		
H		
K	> 9.8	
L		

Photom. AIGI74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.29	1
25μm	6.16	3
60μm	7.02	3
100μm	48.97	1

Radio (*mJy*) *2cm* | *6cm* 10 GPGV83

Central Star:
B 15.09 *V* 14.67 *Qual:* B TASG91

Notes: Likely a galactic bulge PN (AKSR91). Status of the object is not clear.
Distance (kpc) stat.: 5.20 (AGNR84); 7.71 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al73, AlKe87, He67, Hi71, LHSW81, Ru70, Sa76, SaSt73, StAc87, StKa89, TAGS89, VKDA65, Vo70, Wr66

69. .9077 Herbig G.H. *Contr. Lick Obs. 299,1045* Emission-line objects projected upon the galactic bulge.

007.9+10.1

MaC 1-4, PK 7+10°1

			Disc.: Mac Connell 1978	*Diameter* (″)	
				opt. St. 78..1561	
1950:	17 23 44.4	-16 45 57	78..1561		
2000:	17 26 38.1	-16 48 29	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02

HeII	468.6 *nm*	14	*Hα*	656.3 *nm*	847
[*OIII*]	436.3	42	[*NII*]	658.4	–
	500.7	170	[*SII*]	671.7	
HeI	587.6	38		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.95 \pm .10$ ASTR91

Central Star:
B 17.3 *V* 16.4 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).

78..1561 Macconnell D.J. *Astron. Astrophys. Suppl. Ser. 33,219-222* Discoveries on southern, red-sensitive objective-prism plates .I. A new list ofsuspected Planetary Nebulae.

008.0+03.9

NGC 6445, PK 8+3°1, ARO 67, He 2-290, Sa 2-248, ESO 589-09, VV 118, VV' 260, IRAS 17462-1959

			Disc.: Pickering 1882	*Diameter* (″)	*Rvel:* $+16.2 \pm 0.5$ STPP83
1950:	17 46 17.2	-19 59 43	IRAS	*opt.* 33. CaKa71	*Expansion Velocities* (*km/s*)
	17 46 17.2	-19 59 41	Mi73		[OIII] 38.0 Sm71
2000:	17 49 15.3	-20 00 34	.	*radio* > 34. ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11 N

HeII	468.6 *nm*	57	*Hα*	656.3 *nm*	626
[*OIII*]	436.3	13	[*NII*]	658.4	754
	500.7	2015	[*SII*]	671.7	42
HeI	587.6	16		673.1	47

$\lg F_{H\beta}(mW.m^{-2})$ $-11.22 \pm .01$ O63, Pe71
IUE Spectra: *LW*(2) *SW*(2)

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.50	3
25μm	15.01	3
60μm	44.44	3
100μm	43.23	3

Radio (*mJy*)	*2cm*	322	MiAl82
	6cm	368	MiAl75

Central Star: AG82 266 — HD 161944; CSI -20 -17462
B 19.04 *V* 19.00 *Qual:* B GaPo88, JK89 *Spectrum:* Contin. Al68

Notes: Monochromatic images (JDK86, Ba87); ESO-2.2m and 3.6m images by Baessgen M. and Bremer M. ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: ext. 2.5 (Po83); ext. 2.0 (Sab86)
Distance (kpc) stat.: 1.1-1.8 (CaKa71); 1.30 (MiAl75); 1.43 (Ca76); 1.35 (Ac78); 1.23 (Da82); 0.78 (AGNR84); 1.0 (Ma84); 1.37 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AKSJ89, AST89, Ac80, AcMa77, Ak70, Al65, Al76, AlEp76, AlLi68, AlMi72, All76, Ba89, Ca82, CaKo68, CaNo73, CePe83, CePe85, CoBa74, DFHM67, Da75, De71, FaMa88, FeAl87, GPG86, GPY79, Gr71, Gr72, Gu70, Gu88, HaSe66, HaZu91, He67, He71, Hi71, Hig71, Ii81, Iw73, IwKa65, KAC76, KAS91, KSK90, Ka69, Ka70, Ka76, Ka79, Ka80, Ka83, KaJa89, Kal83, Kh76, Kh79, Khr76, Khro76, Kle78, Kr69, KrK68, LH91, LNP89, MaFa85, MaPo80, MiWe79, PAKS89, PPOJ86, PSK78, Pa90, Pe75, Pe91, PeSe80, PeTo83, Ph84, PhMa88, PhPo84, Phi84, PiKh79, Po87, PrPo83, RRA82, Ri69, SGBO84, SKC74, Sa75, Sa84, SaMi78, Sabb86, SlOr65, Sm73, StKa89, Te68, Th68, Th74, ThCo67, ThDa70, VKDA69, Vo70, WPSD88, We89, ZTPS89, ZuAl86

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008.1–04.7

M 2-39, PK 8–4°1, ESO 522-20, He 2-391, Sa 2-329, VV 174, VV' 395, Wra y 15-1866, IRAS 18189-2412

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel*: +71.0 ± 5.0 STPP83	
1950:	18 18 58.3	-24 12 11	IRAS	*opt.* 3.2	CaKa71		
	18 18 57.5	-24 12 09	Mi76				
2000:	18 22 01.2	-24 10 40	.				

Intens. ($H\beta$ = 100) ESO-B.C+IDS 1986-07-10						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	567	*J*		12μm	0.33	1
[OIII]	436.3	13	[*NII*]	658.4	77	*H*	10.0	25μm	1.62	3
	500.7	537	[*SII*]	671.7	3	*K*	9.5	60μm	1.49	2
HeI	587.6	23		673.1	4	*L*		100μm	50.23	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.13 ± .10	ASTR91			*Photom.*	AI74	*Radio* 2*cm*	8	MiAl82
IUE Spectra:		*LW*(0) *SW*(1)						(*mJy*) 6*cm*	8	Mi79

Central Star:
B 16.2 *V* 15.8 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.7,7.5 (CaKa71); 7.54 (Da82); 5.60 (AGNR84); 8.8 (Ma84),11.7 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, He67, KPK81, Ka70, Ka76, LHSW81, LNP89, Ma81, PAKS89, Sa75, TAGS89, VKDA65, Vo70, Wr66

008.2+06.8

He 2-260, PK 8+6°1, AS 235, ESO 588-14, SaSt 2-15, IRAS 17360-1815

			Disc.: Henize 1964	*Diameter* (″)	
1950:	17 36 01.5	-18 15 58	IRAS	*opt.* 10. PK67	
	17 36 01.6	-18 15 57	AK90		
2000:	17 38 57.3	-18 17 35	.	*radio* 1. AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	581
[*O*III]	436.3	–	[*N*II]	658.4	213
	495.9	–	[*S*II]	671.7	4
*He*I	587.6	4		673.1	10
$\lg F_{H\beta}(mW.m^{-2})$		$-12.13 \pm .10$	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.59	3
25μm	8.12	3
60μm	2.93	3
100μm	4.22	1
Radio (*mJy*) *2cm*		
6cm	13	AK90

Central Star:
B 14.48 *V* 14.27 *Qual:* A TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.94 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al73, BlPu81, CoBa80, He67, LHSw81, PAKS89, Sa76, SaSt72, StAc87, TAGS89

008.2–04.8

M 2-42, PK 8–4°2, ESO 522-21, He 2-393, Sa 2-331, VV 177, VV' 398, Wray 16-409, IRAS 18194-2410

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* $+157.0 \pm 25.0$STPP83
1950:	18 19 28.9	-24 10 57	IRAS	*opt.* 3.8 CaKa71	
	18 19 28.1	-24 11 00	Mi76		
2000:	18 22 31.7	-24 09 28	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	589
[*O*III]	436.3	4	[*N*II]	658.4	95
	500.7	929	[*S*II]	671.7	9
*He*I	587.6	25		673.1	12
$\lg F_{H\beta}(mW.m^{-2})$		$-12.12 \pm .10$	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.38	1
25μm	0.73	3
60μm	1.68	3
100μm	32.02	1
Radio (*mJy*) *2cm*	< 1	MiAl82
6cm	14	ZPB89

Central Star:
B 18.2 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.7 (CaKa71); 4.58 (Ac78); 2.3 (Ma84); 8.75 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, He67, KAS91, Ka70, Ka76, LHSW81, PAKS89, Sa75, VKDA65, Vo70, Wr66

008.3–01.1

M 1-40, PK 8–1°1, AS 278, ESO 590-02, He 2-352, MHα 79-25, Sa 2-302, VV 151, VV' 352, IRAS 18054-2217

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −32.0 ± 11.0 STPP83	
1950:	18 05 24.7	-22 17 24	IRAS	*opt.* 5.	CaKa71		
	18 05 24.2	-22 17 23	Mi76				
2000:	18 08 25.4	-22 16 53	.	*radio* 4.3	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	35	$H\alpha$	656.3 *nm*	2144	12μm	2.70	3
[*O*III]	436.3	–	[*N*II]	658.4	2950	25μm	24.45	3
	500.7	1878	[*S*II]	671.7	92	60μm	43.10	3
*He*I	587.6	54		673.1	181	100μm	306.80	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.71 ± .01 SK89				*Radio* (*mJy*)	*2cm* 175 MiAl82	
							6cm 208 ZPB89	

Central Star: AG82 288 — *B* 19.0 *V* 18.3 *Qual:* D SK89

Distance (kpc) stat.: 2.8 (CaKa71); 2.43 (Ac78); 1.06 (Da82); 0.99 (AGNR84); 1.9 (Ma84); 1.81 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, AcMa77, Al73, AmGu71, Ca82, He67, KAS91, KPK81, Ka76, LHSw81, LNP89, Ma81, Mi79, PAKS89, PiKh79, Sa75, Sh85, VKDA65, Vo70, VoCo90, WeHe67

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008.3–07.3

NGC 6644, PK 8–7°2, ESO 522-23, He 2-408, Sa 2-343, VV 188, VV' 417, Wray 16-415, IRAS 18295-2510

			Disc.: Pickering 1885	*Diameter* (″)		*Rvel:* +193.9 ± 1.3 STPP83	
1950:	18 29 30.2	-25 10 01	IRAS	*opt.* 2.6	CaKa71		
	18 29 29.9	-25 09 59	GPGV83		CJA87		
2000:	18 32 34.8	-25 07 44	.	*radio* 3.	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	15	$H\alpha$	656.3 *nm*	348	*J*		12μm	1.82	3
[*O*III]	436.3	12	[*N*II]	658.4	53	*H*		25μm	7.56	3
	495.9	465	[*S*II]	671.7	1.4	*K*	> 9.9	60μm	4.79	3
*He*I	587.6	18		673.1	3	*L*		100μm	18.39	1
$\lg F_{H\beta}$		−10.99 ± .03 Kle78, Bark78, SK89				*Photom.*	AlGl74	*Radio* (*mJy*)	*2cm*	
IUE Spectra:		*LW*(4) *SW*(5)							*6cm* 98 Is84	

Central Star: AG82 316 — CD -25 13223; GCRV 10995; HD 170839 *B* 16.6 *V* 15.6 *Qual:* D SK89

Notes: Likely a galactic bulge PN (AKSR91). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 6.2-7.0 (CaKa71); 2.83 (Ac78); 1.70 (AGNR84); 1.7 (Ma84); 2.50 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, Ac80, AcMa77, Al65, Al68, AlLi68, BFM80, Ba78, Bar78, Ca82, CePe85, Cu74, De71, FaMa88, Fe82, FeBr90, GPG86, GPY79, Go87, Gol87, Gr71, Gu88, He67, Ii81, IwKa65, KAC76, KAS91, Ka70, Ka76, Ka78, Ka79, Ka80, Ka81, Ka86, Kal80, Kal86, Kh84, LHSW81, MaPo80, NPP80, PAKS91, Pe91, PrPo83, Ro87, SK85, Sa75, SaMi78, Sh85, StKa89, StTy90, VKDA65, VKDA69, Vo70, VoCo90, W88, Wr66, ZTPS89

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88.30252 *IUE ESA Newsletter 29, 45-98 = 0* Merged log of IUE observations.
89.50082 Aller L.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 306* Are Zanstra temperatures always real ?
90..1032 Pottasch S.R. *Astron. Astrophys. 236,231* Planetary nebulae as standard candles : the distance to the galactic center.

008.4–03.6

H 1-64, PK 8–3°1, ESO 522-15, He 2-386, Sa 3-130, VV' 389, Wray 15-1857, IRAS 18153-2326

				Diameter (″)		*Rvel:* +84.0 ± 5.0 STPP83
			Disc.: Haro 1952			
1950:	18 15 23.7	-23 26 17	IRAS	*opt.* 7.6	CaKa71	
	18 15 21	-23 26.1	LHSw81			
2000:	18 18 24	-23 24.9	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	968
[*OIII*]	436.3	–	[*NII*]	658.4	631
	500.7	60	[*SII*]	671.7	56
HeI	587.6	43		673.1	58
$\lg F_{H\beta}(mW.m^{-2})$	$-13.2 \pm .4$ ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.18	1
25μm	0.59	2
60μm	2.23	3
100μm	60.92	1

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.03 (CaKa71); 3.65 (Da82); 2.1 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, KrKo68, LHSW81, PAKS89, Sa76, StAc87, Wr66

008.6–02.6

MaC 1-11, PK 8–2°1

				Diameter (″)	
			Disc.: Mac Connell 1978		
				opt. St.	78..1561
1950:	18 11 49.1	-22 44 53	78..1561		
2000:	18 14 50.8	-22 43 55	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-30					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1582
[*OIII*]	436.3	–	[*NII*]	658.4	49
	500.7	995	[*SII*]	671.7	
HeI	587.6	52		673.1	
$\lg F_{H\beta}(mW.m^{-2})$	$-13.45 \pm .10$ ASTR91				

Notes: Likely a galactic bulge PN (AKSR91).

78..1561 Macconnell D.J. *Astron. Astrophys. Suppl. Ser. 33,219-222* Discoveries on southern, red-sensitive objective-prism plates .I. A new list ofsuspected Planetary Nebulae.

008.6–07.0

He 2-406, PK 8−7°1, ARO 280, ESO 522-31, Sa 2-342, Wray 16-413, IRAS 18288-2448

			Disc.: Henize 1964	*Diameter* (″)	
1950:	18 28 48.1	-24 48 35	IRAS	*opt.* 3. : ATS91	
	18 28 49	-24 48.5	LHSW81		
2000:	18 31 53	-24 46.3	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
HeII	468.6 *nm*	15	$H\alpha$	656.3 *nm*	646
[*OIII*]	436.3	–	[*NII*]	658.4	1154
	500.7	807	[*SII*]	671.7	83
HeI	587.6	32		673.1	85
$\lg F_{H\beta}(mW.m^{-2})$		−13.19 ± .10 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.31	1
25μm	0.38	1
60μm	0.78	3
100μm	19.91	1

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, CePe83, He67, Hi71, KAS91, PAKS89, Ru70, Sa75, WeHe67, Wr66

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008.8+05.2

Th 4-2, PK 8+5°1, ESO 589-03, He 2-281, Sa 3-72, IRAS 17432-1838

			Disc.: The 1964	*Diameter* (″)	*Rvel:* +44.0 ± 5.0 STPP83
1950:	17 43 12.9	-18 38 26	IRAS	*opt.* 19. CaKa71	
	17 43 13	-18 38.5	LHSw81		
2000:	17 46 09	-18 39.6	.	*radio* 5.6 RP91	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19 NE					
HeII	468.6 *nm*	44	$H\alpha$	656.3 *nm*	699
[*OIII*]	436.3	–	[*NII*]	658.4	365
	500.7	596	[*SII*]	671.7	55
HeI	587.6	58:		673.1	50
$\lg F_{H\beta}(mW.m^{-2})$		−13.0 ± .4 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.47	1
25μm	0.47	1
60μm	1.36	3
100μm	4.99	1
Radio (*mJy*) *2cm*		
6cm	2.2 RP91	

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.89 (CaKa71); 2.5 (Ma84)

Bibliography: *PK67*, AST89, He67, Iw73, KrK68, PAKS89, Sa76, StAc87, WeHe67

009.0+04.1

Th 4-5, PK 9+4°1, ESO 589-11, He 2-293, Sa 2-252, IRAS 17475-1902

			Disc.: The 1964	*Diameter* (″)		*Rvel*: −18.0 ± 5.0	STPP83
1950:	17 47 31.9	-19 02 22	IRAS	*opt.* 6.4	CaKa71		
	17 47 31.6	-19 02 24	BIPu81				
2000:	17 50 28.4	-19 03 12	.	*radio* 7.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11

HeII	468.6 *nm*	40	$H\alpha$	656.3 *nm*	806
[*OIII*]	436.3	–	[*NII*]	658.4	178
	500.7	856	[*SII*]	671.7	12
HeI	587.6	34		673.1	19

$\lg F_{H\beta}(mW.m^{-2})$ −13.0 ± .2 ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.27	1
25μm	1.84	3
60μm	5.23	3
100μm	13.42	3

Radio (*mJy*) *2cm* | *6cm* 16 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.38 (CaKa71); 4.4 (Ma84); 7.70; 6.51 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, KrK68, LHSw81, PAKS89, Sa75, WeHe67

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009.3+04.1

Th 4-6, PK 9+4°2, ARO 262, ESO 589-12, Sa 2-254, IRAS 17480-1846

			Disc.: The 1964	*Diameter* (″)			
1950:	17 48 00.5	-18 46 01	IRAS	*opt. St.*	CS90		
	17 48 00.8	-18 46 00	Mi76				
2000:	17 50 57.3	-18 46 46	.	*radio* 5.	RP91		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-11

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	588
[*OIII*]	436.3	–	[*NII*]	658.4	32
	500.7	1078	[*SII*]	671.7	
HeI	587.6	24		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.83 ± .10 ASTR91

IR Class: .

J		
H		
K	> 9.4	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*)

		Qual.
12μm	2.91	1
25μm	0.61	3
60μm	0.85	1
100μm	8.22	1

Radio (*mJy*) *2cm* | *6cm* 6 RP91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AcMa77, Hi71, LHSw81, PAKS91, Ru70, Sa75

009.3+02.8

Th 4-9, PK 9+2°1, ARO 266, ESO 589-21, IRAS 17530-1929

				Disc.: The 1964	*Diameter* (″)	
1950:	17 53 02.6	-19 29 04	IRAS		*opt. St.* CS90	
	17 53 00.0	-19 28 00	Mi76			
2000:	17 55 57.4	-19 28 24	.			

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-05-30

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	55
	500.7	107	[*S*II]	671.7	
*He*I	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.00	3
25μm	1.85	3
60μm	1.41	1
100μm	15.78	1

Radio (*mJy*) *2cm* < 1 MiAl82; *6cm*

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AcMa77, Hi71, LHSw81, Ru70, Sa76

009.4–05.0

NGC 6629, PK 9–5°1, ARO 30, ESO 522-26, He 2-399, Sa 2-335, VV 179, VV' 403, Wray 15-1869, IRAS 18226-2313

				Disc.: Herschel 1868	*Diameter* (″)	*Rvel*: +14.0 ± 3.0 MWF88
1950:	18 22 40.6	-23 13 58	IRAS		*opt.* 15.5 CaKa71	*Expansion Velocities* (*km/s*)
	18 22 41.2	-23 13 45	Mi73		CJA87	[OIII] < 6.0 MWF88
2000:	18 25 43.5	-23 11 59	.			[NII] 6.5 MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	584
[*O*III]	436.3	5	[*N*II]	658.4	32
	500.7	772	[*S*II]	671.7	
*He*I	587.6	22		673.1	

$\lg F_{H\beta}$ $-10.91 \pm .06$ KM81, W83, SK89

IUE Spectra: *LW*(2) *SW*(1)

IR Class: .

J

H

K

L

Spectr. PPOJ86

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.55	3
25μm	34.02	3
60μm	37.20	3
100μm	22.64	3

Radio (*mJy*) *2cm* 234 MiAl82; *6cm* 275 ZPB89

Central Star: AG82 308 — CD -23 14350; GCRV 10893; HD 169460
B 13.26 *V* 12.93 *Qual:* A GaPo88, SK89 , TASG91 *Spectrum:* Of(H) Me91

Distance (kpc) indiv.: ext. 1.6 (Po83); kinem. 2.0 (GPG86); ext. 1.4 (Sab86)
Distance (kpc) stat.: 1.9 (CaKa71); 2.36 (MiAl75); 2.31 (Ca76); 1.85 (Ac78); 1.18-3.76 (Da82); 0.95 (AGNR84); 1.6 (Ma84); 1.95 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, Ac75, Ac76, AcMa77, Al65, Al68, AlKe85, AlKe87, AlLi68, AlMi72, All76, ArKo68, Ca82, Ca84, Cu74, DFHM67, De71, Dr80, GMS72, Gol87, Gr71, Gr72, He67, He71, He86, He90, Hi71, Hig71, Hu78, IwKa65, KAC76, Ka69, Ka70, Ka76, Ka78, Ka80, Kal76, Kh79, Kh84, Kos76, KuMe89, LH91, LHSW81, LNP89, MKHH88, MMMK90, MaFa85, MaPo80, Mar81, Me89, MiSa77, MiWe79, PAKS89, PWWD77, PWWF78, Pe91, PeTo83, PhMa88, PhPo84, Phi84, PiKh79, Po78, SK85, SKC74, STPP83, Sa75, Sa84, SaMi78, Sabb86, Sc81, Sh85, SlOr65, StKa89, StTy90, TPZ87, Te68, Th68, ThCo67, ThDa70, VKDA65, VKda65, ViFr85, Vo70, VoCo90, We89, Wr66, ZTPS89, ZuAl86

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009.4–09.8

M 3-32, PK 9−9°1, ESO 523-06, He 2-420, Sa 2-362, VV' 445, IRAS 18416-2524

		Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +46.0 ± 25.0 STPP83
1950:	18 41 38.3	-25 24 42	IRAS	*opt.* 6. CaKa71	
	18 41 38	-25 24.7	LHSW81		
2000:	18 44 43	-25 21.6	.	*radio* 7.5 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	13	*Hα*	656.3 *nm*	476	*J*	12μm	0.25	1
[*OIII*]	436.3	5:	[*NII*]	658.4	42	*H*	25μm	1.27	3
	500.7	773	[*SII*]	671.7	3	*K* > 11.8	60μm	3.87	3
HeI	587.6	23		673.1	9	*L*	100μm	2.46	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.9 ± .2 ASTR91				*Photom.* AIGI74	*Radio* 2*cm*		
							(*mJy*) 6*cm*	12 ZPB89	

Central Star:
B 17.4 *V* 17.1 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.74 (CaKa71); 5.16 (Ac78); 4.6 (Ma84); 6.56 (CKS91)

Bibliography: *PK67*, AcMa77, CaWy76, He67, Iw73, Sa75

009.6+14.8

NGC 6309, PK 9+14°1, ARO 66, He 2-206, Sa 2-181, VV 96, VV' 171, IRAS 17112-1251

			Disc.: Pickering 1882	*Diameter* (″)		*Rvel:* −47.6 ± 2.8	STPP83
1950:	17 11 15.2	-12 51 13	IRAS	*opt.* 15.5	PK67	*Expansion Velocities* (*km/s*)	
	17 11 14.9	-12 51 11	Mi73		CaKa71, Sh85	[OIII] 34.0	Sa84
2000:	17 14 03.6	-12 54 37	.	*radio* 30.6	RP91		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-08						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	87	*Hα*	656.3 *nm*	547	*J*	11.69	12*μm*	1.35	3
[OIII]	436.3	–	[*N*II]	658.4	25	*H*	11.70	25*μm*	17.43	3
	500.7	1181	[*S*II]	671.7		*K*	10.96	60*μm*	24.14	3
HeI	587.6	15		673.1		*L*		100*μm*	14.84	3
$\lg F_{H\beta}$	−11.24 ± .03	CD61 , KIe78, W83				*Photom.*	PeTo87	*Radio* 2*cm*	146	MiAl82
IUE Spectra:	*LW*(4)	*SW*(5)						(*mJy*) 6*cm*	102	RP91

Central Star: AG82 234 — CSI -12-17112 0; HD 155752
B 16.58 *Qual:* B GaPo88

Notes: Proper motion in 10^{-4}″/yr: $\mu_\alpha = 71 \pm 37$, $\mu_\delta = 133 \pm 41$ (Cu74). Monochromatic images (JDK86, CJA87, Ba87); ESO-NTT images by Schwartz H.E. and Melnick J. ESO-2.2m images by Baessgen M. and Bremer M.

Distance (kpc) stat.: 2.8-3.5 (CaKa71); 2.83 (MiAl75); 2.95 (Ca76); 2.6 (Ac78); 1.83 (Da82); 1.13 (PhPo84); 1.30 (AGNR84); 2.1 (Ma84); 2.53 (CKS91)

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09371+1212.

009.6+10.5

A 41, PK 9+10°1, A55 29, He 2-236, Sa 2-205, VV' 202, IRAS 17262-1510

			Disc.: Abell 1955	*Diameter* (″)	
1950:	17 26 13.4	-15 10 47	IRAS	*opt.* 18.4 CaKa71	
	17 26.2	-15 11	PK67		
2000:	17 29.1	-15 13	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10					
*He*II 468.6 *nm*	–	*Hα* 656.3 *nm*	414		
[OIII] 436.3	–	[*N*II] 658.4	41		
500.7	234	[*S*II] 671.7	15		
*He*I 587.6	19	673.1	14		
$\lg F_{H\beta}(mW.m^{-2})$	$-12.24 \pm .01$ SK89				
IUE Spectra:	*LW*(2) *SW*(2)				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.29	1
25μm	0.31	1
60μm	0.56	3
100μm	2.72	1
Radio 2*cm*		
(*mJy*) 6*cm*	5	ZPB89

Central Star: AG82 245 — CSI -15 -17262; UBV 14903; MT Ser; NSV 8841		
B 16.56 *V* 16.53 *Qual:* B GaPo88, SK89 c	sdO + MV O(H)	89.50118 Me91

Notes: Likely a galactic bulge PN (AKSR91). Eclipsing binary nucleus; $P = 0.113^d$ (83...485). Monochromatic images (83...485); ESO-NTT images by Schwartz H.E. and Melnick J.

Distance (kpc) stat.: 4.51 (CaKa71); 5.4 (Ma84); 4.60 (CKS91)

Bibliography: *PK67*, AG82, AST89, Ab66, AcMa77, Al89, ArKo68, Dr80, He67, Iw73, Kh79, PAKS89, Sa75, Sh85, TAGS89, TASG91, ZuAl86

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009.6–10.6

M 3-33, PK 9−10°1, ESO 523-09, He 2-423, Sa 2-367, VV' 452, Wray 16-420, IRAS 18451-2532

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel*: +173.9 ± 10.1STPP83
1950:	18 45 07.6	-25 32 19	IRAS	*opt.* 5.	CaKa71	
	18 45 07	-25 32.2	LHSW81			
2000:	18 48 12	-25 28.8	.	*radio* 6.	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

*He*II	468.6 *nm*	19	$H\alpha$	656.3 *nm*	380
[*O*III]	436.3	7	[*N*II]	658.4	–
	500.7	1090	[*S*II]	671.7	
*He*I	587.6	13		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.0 ± .2 ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.29	1
25μm	1.17	3
60μm	2.47	3
100μm	2.28	1

Radio (*mJy*) *2cm* 7.5 ZPB89

Central Star:
B 15.7 *V* 15.9 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 7.4 (CaKa71); 5.47 (Ac78); 5.6 (Ma84); 8.31 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, CaWy76, He67, Iw73, PAKS89, Pe91, Sa75, TAGS89, W88, WeHe67, Wr66

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009.8–04.6

H 1-67, PK 9−4°1, ESO 522-25, He 2-398, Sa 2-334, VV' 402, IRAS 18220-2236

			Disc.: Haro 1952	*Diameter* (″)		*Rvel*: −13.0 ± 5.0 STPP83
1950:	18 22 04.4	-22 36 34	IRAS	*opt.* 5.6	CaKa71	
	18 22 03	-22 36.6	LHSW81			
2000:	18 25 04	-22 34.9	.	*radio* 6.8	RP91	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20

*He*II	468.6 *nm*	55	$H\alpha$	656.3 *nm*	666
[*O*III]	436.3	8	[*N*II]	658.4	220
	500.7	1156	[*S*II]	671.7	27
*He*I	587.6	17		673.1	36

$\lg F_{H\beta}(mW.m^{-2})$ −12.24 ± .10 ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.32	1
25μm	1.06	3
60μm	1.80	3
100μm	37.61	1

Radio (*mJy*) *2cm* 11 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.19 (CaKa71); 2.5 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, KrK68, PAKS89, Sa75, VKDA65, Vo70

009.8–07.5

GJJC 1, IRAS 18333-2357

				Diameter (″)	Rvel
		Disc.: Gillett et al 1989		*opt.* 8.5 89...191	*Rvel:* −32.0 ± . 89..9344
1950:	18 33 20.3	-23 57 52	IRAS		
	18 33 20.3	-23 57 52	89...191		
2000:	18 36 23.4	-23 55 20	.		

IRAS Fluxes (Jy)		*Qual.*
$12\mu m$	0.68	3
$25\mu m$	8.60	3
$60\mu m$	21.17	3
$100\mu m$	14.60	3

Central Star:
U 13.5 *B* 14.8 *V* 14.3 *Qual:* C 89...191

Notes: Planetary nebula in the globular cluster M22. Close binary nucleus? (89...191). Monochromatic images (89...191). FC is given in the last plate.

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010.1+00.7

NGC 6537, PK 10+0°1, ARO 52, ESO 590-01, He 2-340, My 115, Sa 2-294, VV 147, VV' 339, IRAS 18021-1950

				Diameter (″)	
		Disc.: Pickering 1882		*opt.* 10. CaKa71	*Rvel:* −16.0 ± 3.0 STPP83
1950:	18 02 12.0	-19 50 52	IRAS		*Expansion Velocities (km/s)*
	18 02 15.5	-19 50 30	Mi73		[OIII] 18.0 MWF88
2000:	18 05 13.4	-19 50 14	.	*radio* > 9. ZPB 89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-02

*He*II	468.6 *nm*	78	*Hα*	656.3 *nm*	1495
[OIII]	436.3	17	[*N*II]	658.4	1584
	500.7	1172	[*S*II]	671.7	} 104.
*He*I	587.6	40		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.40 ± .03 Kal83
IUE Spectra: *LW*(0) *SW*(1)

IR Class: N	
J	10.32
H	10.36
K	9.34
L	
Photom.	Wh85
Spectr.	PPOJ86

IRAS Fluxes (Jy)		*Qual.*
$12\mu m$	7.72	3
$25\mu m$	58.30	3
$60\mu m$	189.90	3
$100\mu m$	166.10	3

Radio *2cm* 557 MiAl82
(mJy) *6cm* 610 ZPB89

Central Star: AG82 284 — HD 312582; GCRV 10524; CSI -19 -18023
B > 19.8 *V* > 18.8 GaPo88, JK89

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: kinem. 1.5 (Ac78); kinem. 2.4 (GPG86)
Distance (kpc) stat.: 2.3 (CaKa71); 2.95 (MiAl75); 2.5 (Ca76); 1.24 (Ac78); 0.65 (Da82); 0.58 (AGNR84); 0.9 (Ma84); 0.90 (CKS91)

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010.4+04.5

M 2-17, PK 10+4°1, ESO 589-14, He 2-298, Sa 2-255, VV 122, VV' 274, IRAS 17491-1735

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* −21.0 ± 11.0 STPP83	
1950:	17 49 09.3	-17 35 22	IRAS	*opt.* 6.4	CaKa71		
	17 49 09.6	-17 35 34	Mi76				
2000:	17 52 04.6	-17 36 15	.	*radio* 8.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11					
HeII	468.6 *nm*	17	$H\alpha$	656.3 *nm*	593
[*OIII*]	436.3	–	[*NII*]	658.4	98
	500.7	604	[*SII*]	671.7	6
HeI	587.6	30		673.1	8

$\lg F_{H\beta}(mW.m^{-2})$	$-12.3 \pm .2$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.28	1
25μm	0.84	3
60μm	4.07	3
100μm	6.49	1

Radio (*mJy*)			
	2cm	< 6	MiAl82
	6cm	10	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.94 (CaKa71); 4.06 (Ac78); 2.7 (Ma84); 6.60 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Ka76, LHSw81, PAKS89, Sa75, VDKA75, VKDA73, Vor70

010.6+03.2

Th 4-10, PK 10+3°1, ESO 589-23, He 2-311, Sa 3-99, IRAS 17541-1806

			Disc.: The 1964	*Diameter* (″)		*Rvel:* +29.3 ± 3.1 STPP83	
1950:	17 54 11.1	-18 06 24	IRAS	*opt. St.*	ATS91		
	17 54 11	-18 06.4	LHSw81				
2000:	17 57 07	-18 06.7	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	748
[*OIII*]	436.3	–	[*NII*]	658.4	474
	500.7	347	[*SII*]	671.7	16
HeI	587.6	44		673.1	32

$\lg F_{H\beta}(mW.m^{-2})$	$-12.87 \pm .10$	ASTR91

IR Class: .		
J		
H		
K	> 9.6	
L		
Photom.	AlGl74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.42	1
25μm	1.10	2
60μm	2.54	3
100μm	61.02	1

Central Star:
B 18.5 *V* 18.3 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, He67, Sa76, StAc87, W75, WeHe67

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010.7+07.4

Sa 2-230, PK 10+7°1, IRAS 17391-1554

			Disc.: Sanduleak 1975	*Diameter* (″)	
1950:	17 39 09.0	-15 54 46	IRAS	*opt.* 10. ATS91	
	17 39 10	-15 54.8	Sa75		
2000:	17 42 03	-15 56.2	.	*radio* 3.2 RP91	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31					
HeII	468.6 *nm*	110	*Hα* 656.3 *nm*	517	
[*OIII*]	436.3	–	[*NII*] 658.4	29:	
	500.7	849	[*SII*] 671.7		
HeI	587.6	–	673.1		
$\lg F_{H\beta}(mW.m^{-2})$	$-13.0 \pm .2$ ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.28	1
25μm	0.97	3
60μm	1.38	3
100μm	13.09	1
Radio (*mJy*) *2cm*		
6cm	3.8 RP91	

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: AcMa77, Ko78, We77

010.7–06.4

IC 4732, PK 10–6°1, ARO 71, ESO 523-01, He 2-410, Sa 2-345, VV 191, VV' 424, Y-C 2-24, IRAS 18308-2241

			Disc.: Fleming 1901	*Diameter* (″)	*Rvel:* -145.4 ± 0.9 STPP83
1950:	18 30 53.4	-22 41 01	IRAS	*opt.* 4. CaKa71	
	18 30 53.2	-22 41 01	Mi73	Sh85, CJA87	
2000:	18 33 54.6	-22 38 40	.	*radio* 1.2 Is84	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28					
HeII	468.6 *nm*	1.8	*Hα* 656.3 *nm*	518	
[*OIII*]	436.3	16	[*NII*] 658.4	27	
	495.9	501	[*SII*] 671.7	2.2	
HeI	587.6	23	673.1	3	
$\lg F_{H\beta}$	$-11.54 \pm .03$ O63 , Kle78, W83, ASTR91				

IR Class: .	
J	
H	
K	> 9.6
L	
Photom.	CoBa74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.42	2
25μm	2.55	3
60μm	0.96	3
100μm	23.52	1
Radio (*mJy*) *2cm*	39 MiAl82	
6cm	56 MiAl75	

Central Star: AG82 320 — BD -22 18309; HD 171131; NSV 11021; CSI -22 -18309
$B > 16.5$ $V > 16.2$ SK85

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.9-6.0 (CaKa71); 6.02 (MiAl75); 6.3 (Ca76); 4.8 (Ac78); 2.27 (Da82); 2.20 (AGNR84); 3.4 (Ma84); 5.11 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, Al65, Al68, AlGl74, AlKe85, AlKe87, AlLi68, AlMi72, Ca82, CeGi73, Cu74, De71, FaMa88, Gol87, Gr71, He67, He71, He90, Hi71, Hig71, IwKa65, KPK81, Ka69, Ka70, Ka76, Ka78, Ka79, Ka80, Kal76, Kh76, Khr76, Khro76, Kos76, LHSW81, LNP89, MaPo80, MiWe79, Pe71, Pe91, PiKh79, Sa75, SaMi78, SlOr65, StKa89, StTy90, TASG91, Th68, ThCo67, VKDA65, VKDA69, Vo70

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010.7–06.7

Pe 1-13, PK 10–6°2, ESO 523-03, Sa 2-348, VV' 427, IRAS 18318-2245

			Disc.: Perek 1960	*Diameter* (″)		
1950:	18 31 51.6	-22 45 43	IRAS	*opt.* 7.6	CaKa71	
	18 31 50	-22 45.8	LHSW81			
2000:	18 34 51	-22 43.4	.	*radio* 5.6	RP91	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

*He*II	468.6 *nm*	102	$H\alpha$ 656.3 *nm*	462	
[*O*III]	436.3	14:	[*N*II] 658.4	–	
	500.7	908	[*S*II] 671.7		
*He*I	587.6	–	673.1		

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .2$ ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.35	1
25μm	0.82	3
60μm	0.98	3
100μm	21.20	1

Radio (*mJy*) *2cm* | *6cm* 3 ZPB89

Central Star:
B 18.0 *V* 17.3 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 7.34 (CaKa71); 6.6 (Ma84); 9.10 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Iw73, KrK68, PAKS89, Sa75

010.8+18.0

M 2-9, PK 10+18°2, MHα 362-8, VV 92, VV' 161, IRAS 17028-1004

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* $+88.0 \pm 2.3$ STPP83	
1950:	17 02 51.8	-10 04 31	IRAS	*opt.* 17.2	CaKa71	*Expansion Velocities* (*km/s*)	
	17 02 52.5	-10 04 31	Mi73			[OIII] 31.	We89
2000:	17 05 37.8	-10 08 32	.	*radio* 46.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29 N

*He*II	468.6 *nm*	–	$H\alpha$ 656.3 *nm*	840	
[*O*III]	436.3	–	[*N*II] 658.4	460	
	500.7	90	[*S*II] 671.7	24	
*He*I	587.6	25	673.1	36	

IR Class: D

J	13.28
H	12.65
K	11.78
L	10.80

Photom. PPFS87

IRAS Fluxes (*Jy*) *Qual.*

12μm	50.50	3
25μm	110.20	3
60μm	123.60	3
100μm	75.84	3

$\lg F_{H\beta}(mW.m^{-2})$ $-11.66 \pm .$ Pe71
IUE Spectra: *LW*(4) *SW*(3)

Radio (*mJy*) *2cm* 44 ZPB89 | *6cm* 36 ZPB89

Central Star: AG82 227 —
B 16.29 *V* 15.65 *Qual:* B SK89 *Spectrum:* Descr. 72..9022

Notes: Monochromatic images (JDK86, Ba87); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 3.45 (CaKa71); 3.33 (MiAl75); 3.25 (Ca76); 2.75 (Ac78); 2.37 (Da82); 2.30 (AGNR84); 3.3 (Ma84); 1.69 (CKS91)

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010.8–01.8

NGC 6578, PK 10–1°1, ARO 70, ESO 590-12, He 2-381, Sa 2-322, VV 163, VV' 376, IRAS 18132-2028

			Disc.: Pickering 1882	*Diameter* (″)		*Rvel*: +4.5 ± 1.8	STPP83
1950:	18 13 17.5	-20 28 09	IRAS	*opt.* 8.5	CJA87		
	18 13 18.6	-20 28 04	Mi73		CaKa71		
2000:	18 16 17.3	-20 26 59	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28						*IR Class*: P		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	878	*J*	9.27	12*μm*	12.48	1
[*O*III]	436.3	3	[*N*II]	658.4	36	*H*	7.96	25*μm*	16.10	3
	500.7	893	[*S*II]	671.7	2.1	*K*	7.16	60*μm*	37.31	3
*He*I	587.6	39		673.1	3	*L*		100*μm*	355.00	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.55 ± .05	W83, SK89			*Photom.*	Wh85	*Radio* 2*cm*	143	MiAl82
						Spectr.	PPOJ86	(*mJy*) 6*cm*	170	Ca82

Central Star: AG82 303 — *B* 16.30 *V* 15.82 *Qual:* B GaPo88, SK89 , TASG91 *Spectrum:* WC early Me91

Distance (kpc) indiv.: ext. 2.2 (Po83); kinem. 2.0 (GPG86); ext. 1.7 (Sab86)
Distance (kpc) stat.: 2.1-3.3 (CaKa71); 3.44 (MiAl75); 3.59 (Ca76); 2.9 (Ac78); 1.44 (Da82); 1.20 (AGNR84); 2.1 (Ma84); 2.31 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, Ak70, Al65, AlKe87, AlLi68, AlMi72, Ca84, CoBa80, DFHM67, De71, Ga87, GaPo89, Gr71, He67, He71, He90, Hi69, Hi71, Hig71, IwKa65, Ka70, Ka76, Kh79, LHSw81, LNP89, MaPe88, MaPo80, MiWe79, PM87, PPFS87, Pe71, Pe91, PiKh79, Ro87, Sa75, Sh85, SlOr65, StTy90, VKDA69, Vo70, VoCo90, WeHe67

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89...516 Cassar L., Chen W.P., Simon M. *Astrophys. J., Suppl. Ser. 69, 651-665* Lunar occultations of IRAS point sources, 1991-2000.
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011.0+06.2

M 2-15, PK 11+6°1, He 2-284, Sa 2-242, VV 114, VV' 249, IRAS 17440-1616

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel*: +3.7 ± 10.1	STPP83
1950:	17 44 00.3	-16 16 23	IRAS	*opt.* 5.8	CaKa71		
	17 44 01.0	-16 16 20	Mi76				
2000:	17 46 54.3	-16 17 24	.	*radio* 7.5	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-11							*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	22	*Hα*	656.3 *nm*	511		12*μm*	0.32	1
[*O*III]	436.3	–	[*N*II]	658.4	42		25*μm*	1.69	3
	500.7	811	[*S*II]	671.7	7		60*μm*	4.02	3
*He*I	587.6	30		673.1	7		100*μm*	4.60	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.18 ± .01	SK89				*Radio* 2*cm*	6	MiAl82
							(*mJy*) 6*cm*	19	ZPB89

Central Star: *B* 17.8 *V* 18.2 *Qual:* D SK89

Distance (kpc) stat.: 7.78 (CaKa71); 6.59 (Ac78); 5.00 (Da82); 3.50 (AGNR84); 5.4 (Ma84); 7.55 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, He67, Iw73, Ka76, Kon78, LNP89, Ma81, Mi79, PAKS91, Sa75, Sh85, VKDA73, Vo71, Vor70

011.0+05.8

NGC 6439, PK 11+5°1, ARO 95, He 2-287, Sa 2-245, VV 117, VV' 256, Y-C 2-21, IRAS 17454-1627

			Disc.: Pickering 1882	*Diameter* (″)		*Rvel:* −93.8 ± 1.8	STPP83
1950:	17 45 26.4	-16 27 50	IRAS	*opt.* 5.	CJA87	*Expansion Velocities* (*km/s*)	
	17 45 26.3	-16 27 47	AK90		CaKa71	[OIII] 24.0	RRA82
2000:	17 48 19.8	-16 28 44	.	*radio* 4.	AK90		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-11						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	23	$H\alpha$	656.3 *nm*	474	*J*	11.97	12μm	0.38	3
[*OIII*]	436.3	8	[*NII*]	658.4	221	*H*	12.09	25μm	4.93	3
	500.7	1145	[*SII*]	671.7	11	*K*	11.41	60μm	7.79	3
HeI	587.6	23		673.1	21	*L*		100μm	4.47	1
lg$F_{H\beta}$ −11.68 ± .03O63, W83, SK89, ASTR91						*Photom.*	Wh85	*Radio* 2*cm*	52	MiAl82
						Spectr.	PPOJ86	(*mJy*) 6*cm*	55	AK90

Central Star: AG82 265 — HD 161801; CSI -16 -17453
B 20.2 *Qual:* D GaPo88

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: ext. 1.3 (Po83); ext. 1.0 (Sab86)
Distance (kpc) stat.: 4.5-5.0 (CaKa71); 6.20 (MiAl75); 6.35 (Ca76); 5.0 (Ac78); 2.80 (Da82); 2.30 (AGNR84); 3.8 (Ma84); 4.12 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, AlKe87, AlLi68, Ca82, CaKo68, CeGi73, CoBa74, DFHM67, De71, FaMa88, Gr71, Gu88, HaSe66, He67, He71, He90, Hi71, Hig71, Ii81, Is84, IwKa65, Iy86, Ka70, Ka76, Ka78, Kh76, Kh79, Kos76, Kr69, LNP89, MaPo80, Mi73, PAKS91, PM87, PPFS87, Pe91, Ph84, PiKh79, Po87, SGBO84, Sa75, Sa84, Sabb86, Sh85, StTy90, Te68, VDKA75, VKDA69, VKDA73, Vo71, Vor70, W69, WRPA86, We89

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011.0–05.1

M 1-47, PK 11−5°1, ESO 591-02, He 2-403, Sa 2-338, VV 184, VV' 409, IRAS 18261-2148

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −72.2 ± 10.1	STPP83
1950:	18 26 10.9	-21 48 55	IRAS	*opt.* 4.6	CaKa71		
	18 26 11	-21 48.9	LHSw81				
2000:	18 29 11	-21 46.9	.	*radio* 5.5	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-12								*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	4	$H\alpha$	656.3 *nm*	366			12μm	0.25	1
[*OIII*]	436.3	14	[*NII*]	658.4	–			25μm	1.61	3
	500.7	1257	[*SII*]	671.7				60μm	1.90	3
HeI	587.6	19		673.1				100μm	4.46	1
lg$F_{H\beta}(mW.m^{-2})$		−11.91 ± .10		ASTR91				*Radio* 2*cm*		
								(*mJy*) 6*cm*	14	ZPB89

Central Star:
B 15.4 *V* 15.3 *Qual:* C TASG91

Distance (kpc) stat.: 6.08 (CaKa71); 4.63 (Ac78); 2.8 (Ma84); 7.64 (CKS91)

Bibliography: *PK67*, AcMa77, He67, Sa75

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011.1+11.5

M 2-13, PK 11+11°1, He 2-230, Sa 2-203, VV 100, VV' 198, IRAS 17257-1323

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel*: +85.8 ± 19.9 STPP83
1950:	17 25 45.0	-13 23 59	IRAS	*opt.* 7. ATS91	
	17 25 44.6	-13 23 57	AK90		
2000:	17 28 34.1	-13 26 20	.	*radio* 1.5 AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	550
[OIII]	436.3	3	[NII]	658.4	307
	500.7	941	[SII]	671.7	12
HeI	587.6	23		673.1	21

$\lg F_{H\beta}(mW.m^{-2})$ $-12.31 \pm .03$ SK89, ASTR91

IR Class: .

J	
H	
K	> 11.7
L	
Photom.	AIGI74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.37	3
60μm	3.40	3
100μm	7.10	1

Radio (*mJy*) *2cm* | *6cm* 13 AK90

Central Star: AG82 241 —
B 19.4 *V* 18.8 *Qual:* D SK89

Distance (kpc) stat.: 7.62 (CKS91)

Bibliography: *PK67*, AG82, AKSJ89, AST89, AcMa77, Alle73, BlPu81, He67, KAS91, PAKS91, Sa75, Sh85

011.1+07.0

Sa 2-237, PK 11+7°1

			Disc.: Sanduleak 1975	*Diameter* (″)	
				opt. St. CS90	
1950:	17 41 49	-15 44.0	Sa75		
2000:	17 44 42	-15 45.2	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-25 SE					
HeII	468.6 *nm*	50	$H\alpha$	656.3 *nm*	649
[OIII]	436.3	–	[NII]	658.4	4656
	500.7	1678	[SII]	671.7	325
HeI	587.6	45		673.1	383

$\lg F_{H\beta}(mW.m^{-2})$ $-13.3 \pm .3$ ASTR91

Central Star:
B 16.08 *V* 15.50 *Qual:* B TASG91

Bibliography: AST89, AcMa77, Ko78, PAKS89, PM87, PPFS87, We77

011.3+02.8

Th 4-11, PK 11+2°1, ARO 267, ESO 589-25, He 2-322, IRAS 17572-1740

			Disc.: The 1964	*Diameter* (″)	
				opt. 5. PK67	
1950:	17 57 13.5	-17 40 37	IRAS		
	17 57 14.0	-17 40 24	AK90		
2000:	18 00 09.0	-17 40 29	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1454
[OIII]	436.3	–	[NII]	658.4	128
	500.7	117	[SII]	671.7	16
HeI	587.6	52		673.1	12

$\lg F_{H\beta}(mW.m^{-2})$ $-13.12 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	7.04	3
25μm	4.86	3
60μm	2.96	3
100μm	15.70	1

Radio (*mJy*) *2cm* | *6cm*< 0.2 AK90

Bibliography: *PK67*, AST89, AcMa77, Ar70, BlPu81, He67, Hi71, LHSw81, Mi76, PAKS89, Ru70, Sa76, SaSt73, StAc87

011.3–09.4

H 2-48, PK 11−9°1, AS 957, ESO 523-07, He 2-422, MHα 152-1, My 121, SaSt 2-23, VV' 449, Wray 16-419, Y-C 2-30, IRAS 18435-2330

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −21.0 ± .	85..1601
1950:	18 43 32.6	-23 30 07	IRAS	*opt.* 2.	CaKa71	*Expansion Velocities* (*km/s*)	
	18 43 32	-23 30.1	LHSW81			[OIII] 5.0	85..1601
2000:	18 46 34	-23 26.8	.	*radio* 1.7	ZPB89	[NII] 2.5	85..1601

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31

						IR Class: N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	483	*J*	11.35	12*μm*	1.49	3
[OIII]	436.3	2.1	[*N*II]	658.4	199	*H*	11.45	25*μm*	17.05	3
	500.7	63	[*S*II]	671.7	3	*K*	10.95	60*μm*	4.71	3
*He*I	587.6	11		673.1	6	*L*		100*μm*	11.53	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.31 ± .10	ASTR91			*Photom.*	Wh85	*Radio* 2*cm*		
								(*mJy*) 6*cm*	66	ZPB89

Central Star:
B 13.78 *V* 13.41 *Qual:* B TASG91

Distance (kpc) stat.: 2.94 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al73, AlGl74, CoBa74, He67, Ka76, PFMA82, PM87, PPFS87, Sa76, SaSt72, StAc87, TAGS89, VoCo90, Wa70, Wa77, We89, WeHe67, Wr66, ZTPS89

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76..1052 Marsh K.A., Purton C.R., Feldman P.A. *Astron. Astrophys. 49,211-215* Radio observations of eight early-type emission-line stars.
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011.7–00.0

M 1-43, PK 11−0°1, ESO 590-05, He 2-363, VV 156, Sa 3-122, VV' 361

			Disc.: Minkowski 1946	*Diameter* (″)			
				opt. 5.2	CaKa71		
1950:	18 08 52	-18 46.8	LHSw81				
2000:	18 11 48	-18 46.0	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	2320
[OIII]	436.3	–	[*N*II]	658.4	180
	500.7	656	[*S*II]	671.7	
*He*I	587.6	74		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		−13.4 ± .3	ASTR91		

Central Star:
B 17.2 *V* 16.0 *Qual:* C TASG91

Distance (kpc) stat.: 3.15 (CaKa71); 0.7 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, PAKS89, Sa76, StAc87, TAGS89

011.7–00.6

NGC 6567, PK 11–0°2, ARO 69, ESO 590-08, He 2-369, Sa 2-314, VV 160, VV' 372, IRAS 18108-1905

			Disc.: Pickering 1882	*Diameter* (″)		*Rvel*: +119.3 ± 0.7 STPP83	
1950:	18 10 48.4	-19 05 27	IRAS	*opt.* 7.6	CaKa71	*Expansion Velocities* (*km/s*)	
	18 10 48.2	-19 05 13	Mi73		CJA87	[OIII] 18.4	Sa84
2000:	18 13 45.1	-19 04 19	.			[NII] 36.	Sa84

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	2.1	$H\alpha$	656.3 *nm*	530	*J*	12μm	2.71	3
[OIII]	436.3	10	[NII]	658.4	18	*H*	25μm	7.26	3
	500.7	1038	[SII]	671.7	0.9	*K*	60μm	27.66	1
HeI	587.6	23		673.1	1.9	*L*	100μm	379.00	1
$\lg F_{H\beta}$	$-10.93 \pm .03$	CD61 , W83, SK89				*Photom.* CoBa80	*Radio* 2*cm*		
IUE Spectra:	*LW*(1)	*SW*(1)				*Spectr.* PPOJ86	(*mJy*) 6*cm* 176		MiAl75

Central Star: AG82 297 — BD -19 18107; HD 166935; CSI -19 -18107
B 14.42 *V* 14.36 *Qual:* A GaPo88, SK89 , TASG91 *Spectrum:* WC Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J. ESO-2.2m images by Baessgen M. and Bremer M.

Distance (kpc) indiv.: ext. 1.1 (Ac78); ext. 1.00 (Po80); ext. 1.3 (Po83); ext. 1.68 (86..1120); kinem. 1.6 (GPG86); stand. 1.5 (Sab86)

Distance (kpc) stat.: 1.8-2.2 (CaKa71); 3.55 (MiAl75); 3.5 (Ca76); 1.15 (Ac78); 1.48 (Da82); 0.2 (PhPo84); 1.20 (AGNR84); 2.1 (Ma84); 2.37 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac80, AcMa77, Al65, Al68, AlKe87, AlLi68, AlMi72, All76, Ba78, Bar78, Bark78, Ca82, CePe83, De71, FaMa88, FeAl87, Ga87, GaPo89, Gol87, Gr71, Gu70, HaSe66, He67, He71, He90, Hi69, Hi71, Hig71, Ii81, IwKa65, Ka69, Ka70, Ka76, Ka78, Ka79, Ka80, Ka86, Kal76, Kal80, Kh76, Kh79, Khr76, Khro76, Kle78, Kos76, Kr69, LHSw81, MaPe88, MaPo80, MiAl82, MiWe79, NPP80, PM87, PPFS87, Pe71, Pe91, Ph84, PiKh79, Po87, RRA82, Ri69, SGBO84, Sa75, SaMi78, Sh85, SlOr65, Sm71, Sm73, StKa89, Te68, VKDA69, Vo70, We89, ZuAl86

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011.7–06.6

M 1-55, PK 11−6°1, ESO 591-10, He 2-414, SaSt 2-22, VV 195, VV' 431, IRAS 18335-2151

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −22.0 ± 5.0 STPP83
1950:	18 33 34.2	-21 51 37	IRAS	*opt. St.*	ATS91	
	18 33 34	-21 51.5	LHSw81			
2000:	18 36 34	-21 49.0	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-04						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	493	*J*	12μm	1.22	3
[*OIII*]	436.3	–	[*NII*]	658.4	347	*H*	25μm	5.62	3
	495.9	–	[*SII*]	671.7	15	*K* > 10.1	60μm	5.13	3
HeI	587.6	–		673.1	31	*L*	100μm	4.88	2
$\lg F_{H\beta}(mW.m^{-2})$		−11.88 ± .05	ASTR91			*Photom.* AIGI74			

Central Star:		
B 13.94 *V* 13.90 *Qual:* A TASG91	O ?	ATS91
	.	Me91

Bibliography: *PK67*, AST89, AcMa77, He67, PAKS89, Sa76, SaSt72, StAc87, TAGS89, VDKA75, ZTPS89

69..9077 Herbig G.H. *Contr. Lick Obs. 299,1045* Emission-line objects projected upon the galactic bulge.

011.9+04.2

M 1-32, PK 11+4°1, He 2-309, Sa 2-268, VV 130, VV' 292, IRAS 17534-1628

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −72.8 ± 14.0 STPP83
1950:	17 53 26.2	-16 28 42	IRAS	*opt.* 7.6	CaKa71	
	17 53 26.0	-16 28 39	Mi76			
2000:	17 56 19.5	-16 29 01	.	*radio* 9.	ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	933	*J*	12μm	4.17	3
[*OIII*]	436.3	–	[*NII*]	658.4	1849	*H*	25μm	15.71	3
	500.7	398	[*SII*]	671.7	57	*K*	60μm	17.86	3
HeI	587.6	55		673.1	88	*L*	100μm	9.42	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.2 ± .2	ASTR91				*Radio* 2*cm*	63	MiAl82
IUE Spectra:		*LW*(0)	*SW*(1)			*Spectr.* PPOJ86	(*mJy*) 6*cm*	61	ZPB89

Central Star: AG82 274 —	
B 18.3 *V* 17.0 *Qual:* C TASG91	*Spectrum:* WC 4-6 ATS91

Distance (kpc) stat.: 2.91 (CaKa71); 2.16 (Ac78); 0.8 (Ma84); 4.00 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, He67, Ka76, Kh76, Kh79, Sa75, VDKA75, VKDA73, Vo71, Vor70

88.30252 *IUE ESA Newsletter 29, 45-98 = 0* Merged log of IUE observations.

012.2+04.9

PM 1-188, HuBi 1, IRAS 17514-1555

			Disc.: Preite-Martinez 1988	*Diameter* (″)	
1950:	17 51 28.1	-15 55 21	IRAS	*opt.* 4. 90..1005	
	17 51 28.0	-15 55 20	PM88		
2000:	17 54 20.8	-15 55 51	.		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.83	3
25μm	15.34	3
60μm	14.79	3
100μm	7.97	1

Central Star:
B 15.42 *V* 14.60 90..1005 *Spectrum:* (WC 11) 90..1005

Notes: Low-excitation nebula (90..1005).

90..1005 Hu J.Y., Bibo E.A. *Astron. Astrophys. 234,435* Discovery of a new cool WR star in a low excitation Planetary Nebula

012.5–09.8

M 1-62, PK 12−9°1, ESO 523-10, He 2-424, Sa 2-369, VV 207, VV' 457, IRAS 18474-2237

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* +34.0 ± 25.0 STPP83
1950:	18 47 25.7	-22 37 54	IRAS	*opt.* 3.6 CaKa71	
	18 47 25	-22 37.9	LHSW81		
2000:	18 50 26	-22 34.4	.	*radio* 1.5 RP91	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11

*He*II	468.6 *nm*	8	$H\alpha$	656.3 *nm*	440
[*O*III]	436.3	11	[*N*II]	658.4	–
	500.7	1299	[*S*II]	671.7	
*He*I	587.6	15		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.95 ± .10 ASTR91

IR Class: .

J		
H		
K	> 9.7	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.38	1
25μm	0.38	1
60μm	0.77	3
100μm	10.82	1

Radio 2*cm*
(*mJy*) 6*cm* 12.8 RP91

Central Star:
B 16.9 *V* 17.4 *Qual:* D TASG91 *Spectrum:* WC ? ATS91

Distance (kpc) stat.: 8.51 (CaKa71); 5.95 (Ac78); 4.4 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, CaWy76, CeGi73, He67, PAKS89, Sa75

012.6–02.7

M 1-45, PK 12−2°1, ARO 276, ESO 590-18, He 2-395, VV 178, VV' 399, IRAS 18201-1918

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* +126.0 ± 11.0STPP83	
1950:	18 20 09.0	-19 18 42	IRAS	*opt. St.*	CS90		
	18 20 11.0	-19 18 41	Mi76				
2000:	18 23 08.1	-19 17 06	.	*radio* 2.5	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1205	*J*		12μm	0.48	1
[*OIII*]	436.3	–	[*NII*]	658.4	933	*H*		25μm	7.53	3
	495.9	–	[*SII*]	671.7	35	*K*	> 10.1	60μm	9.57	3
HeI	587.6	9:		673.1	69	*L*		100μm	16.65	2
$\lg F_{H\beta}(mW.m^{-2})$		−12.89 ± .10	ASTR91			*Photom.*	AlGl74	*Radio* (*mJy*) *2cm*	16	MiAl82
								6cm	19	GPGV83

Central Star:
B 18.0 *V* 16.8 *Qual:* C TASG91

Distance (kpc) stat.: 3.80 (AGNR84)

Bibliography: *PK67*, AGR89, AcMa77, He67, Hi71, LHSw81, Ru70, Sa76, SaSt73, StAc87

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013.0–04.3

Pe 2-14, PK 13−4°1, ESO 591-04, Sa 2-340, VV' 412, IRAS 18271-1942

			Disc.: Perek 1960	*Diameter* (″)			
1950:	18 27 06.5	-19 42 45	IRAS	*opt.* 5.	CaKa71		
	18 27 02	-19 42.7	LHSw81				
2000:	18 30 00	-19 40.6	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	20	*Hα*	656.3 *nm*	517	12μm	0.35	1
[*OIII*]	436.3	5:	[*NII*]	658.4	71	25μm	0.52	1
	500.7	590	[*SII*]	671.7	8	60μm	1.91	3
HeI	587.6	35		673.1	10	100μm	54.83	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.76 ± .10	ASTR91					

Distance (kpc) stat.: 6.07 (CaKa71); 3.1 (Ma84)

Bibliography: *PK67*, AKSJ89, AcMa77, KAS91, PAKS89, Sa75

013.1+04.1

M 1-33, PK 13+4°1, He 2-321, Sa 2-275, VV 134, VV' 309, Y-C 2-22, IRAS 17561-1532

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* −37.3 ± 10.1 STPP83
1950:	17 56 07.0	-15 32 03	IRAS	*opt.* 4.8 CaKa71	*Expansion Velocities* (*km/s*)
	17 56 07	-15 32.1	Sa75		[OIII] 12.5 84..2707
2000:	17 58 59	-15 32.3	.	*radio* 3.8 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03					
HeII	468.6 *nm*	3	$H\alpha$	656.3 *nm*	949
[*OIII*]	436.3	–	[*NII*]	658.4	406
	500.7	1073	[*SII*]	671.7	19
HeI	587.6	44		673.1	35

$\lg F_{H\beta}(mW.m^{-2})$ −12.09 ± .10 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.61	3
25μm	8.14	3
60μm	10.99	3
100μm	14.59	1

Radio *2cm* (*mJy*) *6cm* 60 ZPB89

Central Star:
B 18.6 *Qual:* D TASG91

Distance (kpc) stat.: 4.35 (CaKa71); 3.2 (Ac78); 1.2 (Ma84); 3.62 (CKS91)

Bibliography: *PK67*, AcMa77, CeGi73, He67, Ka76, Ka80, Kal80, Kon78, Kon83, Sa84, StKa89, VoCo90, We89

84..2707 Sabbadin F. *Mon. Not. R. Astron. Soc. 209, 889-894* High dispersion spectra of compact planetary nebulae.

013.3+32.7

Sn 1, PK 13+32°1

			Disc.: Shane	*Diameter* (″)	*Rvel:* −87.0 ± 25.0 STPP83
				opt. 6.: ATS91	*Expansion Velocities* (*km/s*)
1950:	16 18 30.4	-00 09 06	AK90		[OIII] 10.0 83..1561
2000:	16 21 04.4	-00 16 11	.	*radio* 3. AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03					
HeII	468.6 *nm*	0.3	$H\alpha$	656.3 *nm*	393
[*OIII*]	436.3	8	[*NII*]	658.4	–
	500.7	1107	[*SII*]	671.7	
HeI	587.6	15		673.1	

$\lg F_{H\beta}$ −11.73 ± .01 Bark78, Kle78, SK89
IUE Spectra: *LW*(1) *SW*(3)

IR Class: N

J	13.31
H	13.93
K	13.26
L	

Photom. PeTo87

Radio *2cm* (*mJy*) *6cm* 7 AK90

Central Star: AG82 205 —
B 14.50 *V* 14.72 *Qual:* A TASG91, SK89

Distance (kpc) stat.: 12.53 (CKS91)

Bibliography: *PK67*, AG82, AST89, Ac80, Ba78, Bar78, BlPu81, CS83, ChLo76, CoBa74, FaMa88, Ii81, JoJo91, Ka78, Ka79, Ka80, Ka86, Kal80, Kon78, Kon83, KrK68, NPP80, Pe91, SK85, Sa84, Sc81, Sh85, StKa89, StTy90, TAGS89, We89, ZiPo91

83..1561 Sabbadin F., Bianchini A., Hamzaoglu E. *Astron. Astrophys., Suppl. Ser. 52, 395-398* Internal motions in ten planetary nebulae.

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87..1602 De Grijp M.H.K., Miley G.K., Lub J. *Astron. Astrophys., Suppl. Ser. 70, 95-114* Warm IRAS sources. I. A catalogue of AGN candidates from the point source catalog.

013.4–03.9

M 1-48, PK 13–3°1, ESO 591-03, He 2-404, Sa 2-339, VV 185, VV' 411, IRAS 18265-1908

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +140.0 ± 25.0STPP83	
1950:	18 26 33.5	-19 08 53	IRAS	*opt.* 4.8	CaKa71		
	18 26 33.0	-19 07 47	Mi76				
2000:	18 29 29.8	-19 05 45	.	*radio* 5.5	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	13	*Hα*	656.3 *nm*	600	12*μm*	22.78	3
[*OIII*]	436.3	–	[*NII*]	658.4	1159	25*μm*	19.08	3
	500.7	725	[*SII*]	671.7	75	60*μm*	4.05	3
HeI	587.6	35		673.1	107	100*μm*	73.99	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.74 ± .10	ASTR91			*Radio* 2*cm*	12	MiAl82
						(*mJy*) 6*cm*	6	ZPB89

Distance (kpc) stat.: 4.22 (CaKa71); 3.16 (Ac78); 7.3 (Ma84); 9.93 (CKS91)

Bibliography: *PK67*, AcMa77, He67, Ka76, Kh76, Kh79, KrK68, LHSw81, Mi79, OlRa86, Sa75, VDKA75, VKDA73, Vo71, Vor70

89...516 Cassar L., Chen W.P., Simon M. *Astrophys. J., Suppl. Ser. 69, 651-665* Lunar occultations of IRAS point sources, 1991-2000.

013.7–10.6

Y-C 2-32, PK 13–10°1, ESO 592-06, Sa 2-376, IRAS 18525-2153

			Disc.: Cesco et al 1973	*Diameter* (″)			
1950:	18 52 30.0	-21 53 38	IRAS	*opt.* 15. :	CS90		
	18 52 30.8	-21 53 33	CeGi73				
2000:	18 55 30.7	-21 49 39	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	5	*Hα*	656.3 *nm*	437	12*μm*	0.25	1
[*OIII*]	436.3	4	[*NII*]	658.4	–	25*μm*	0.96	3
	500.7	883	[*SII*]	671.7		60*μm*	1.89	3
HeI	587.6	22		673.1		100*μm*	1.46	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.8 ± .2	ASTR91					

Central Star:
B 16.6 *V* 16.7 *Qual:* C TASG91

Bibliography: AcMa77, Ko78, Sa75, We77

013.8–02.8

SaWe 3

Disc.: Saurer et al 1987		*Diameter* (″)	
		opt. 110. 87..1594	*Expansion Velocities (km/s)*
1950: 18 23 07.5	-18 13 53 87..1594		[OIII] 12.5 87..1594
2000: 18 26 03.1	-18 12 06 .		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	650
[*O*III]	436.3	–	[*N*II]	658.4	3780
	500.7	393	[*S*II]	671.7	207
*He*I	587.6	–		673.1	207

$\lg F_{H\beta}(mW.m^{-2})$ $-12.3 \pm .5$ ASTR91

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013.8–07.9

PC 21, PK 13–7°1, ESO 591-16, Sa 2-364, Y-C 2-28

Disc.: Peimbert et al 1961		*Diameter* (″)	
		opt. 13.2 CaKa71	
1950: 18 42 37	-20 38.2 LHSw81		
2000: 18 45 35	-20 35.0 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11

*He*II	468.6 *nm*	98	$H\alpha$	656.3 *nm*	419
[*O*III]	436.3	16	[*N*II]	658.4	–
	500.7	654	[*S*II]	671.7	
*He*I	587.6	6		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.0 \pm .2$ KSK90, ASTR91

Central Star:
B 18.4 *Qual:* D TASG91

Distance (kpc) stat.: 5.3-6.3 (CaKa71); 5.5 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, CeGi73, Iw73, PAKS89, Sa75

014.0–05.5

V-V 3-5, PK 14–5°1, ESO 591-09, He 3-1716, Sa 1-7, Sa 2-351, V-V Anon.2, IRAS 18335-1922

	Disc.: Voroncov-Vel'JAMINOV et al 1972			*Diameter* (″)	
1950:	18 33 32.8	-19 22 03	IRAS	*opt. St.* We77	
	18 33 34.7	-19 22 00	AK90		
2000:	18 36 31.6	-19 19 27	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27

HeII	468.6 *nm*	29	*Hα* 656.3 *nm*	719	
[*OIII*]	436.3	37	[*NII*] 658.4	28	
	500.7	1075	[*SII*] 671.7		
HeI	587.6	48	673.1		

$\lg F_{H\beta}(mW.m^{-2})$ $-12.65 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.33	2
25μm	1.10	3
60μm	3.77	3
100μm	36.28	1

Radio (*mJy*) *2cm* *6cm* < 10 AK90

Central Star:
B 13.66 *V* 13.27 *Qual:* A TASG91 *Spectrum:* A ATS91

Bibliography: AST89, AcMa77, Ka76, Ko78, PAKS89, Sa75, TAGS89, VDKA75, VKDA73

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74...313 Sanduleak N. *Publ. Astron. Soc. Pac. 86,215-216* New southern planetary nebulae previously classified as emission-line stars.

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85..1590 Kozok J.R. *Astron. Astrophys., Suppl. Ser. 61, 387-405* Photometric observations of emission B-stars in the southern Milky Way.

014.2+04.2

Sa 3-111, PK 14+4°1, IRAS 17582-1430

			Disc.: Sanduleak 1973	*Diameter* (″)	
1950:	17 58 15.6	-14 30 21	IRAS	*opt.* 6. ATS91	
	17 58 16	-14 30.3	PK67		
2000:	18 01 07	-14 30.3	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-24

HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	2289	
[*OIII*]	436.3	–	[*NII*] 658.4	1539	
	500.7	357	[*SII*] 671.7	78	
HeI	587.6	140	673.1	89	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.8 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.45	3
25μm	4.53	3
60μm	6.63	3
100μm	12.28	1

Bibliography: Ko78, Sa76, We77

014.2-07.3

M 3-31, PK 14−7°1, ESO 591-15, He 2-419, Sa 2-361, VV' 444, IRAS 18410-1958

				Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* −88.6 ± 4.7 STPP83
1950:	18 41 02.8	-19 58 01	IRAS		*opt.* 7. : CS90	
	18 41 04	-19 58.0	LHSw81			
2000:	18 44 02	-19 54.9	.		*radio* 0.9 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	−	$H\alpha$	656.3 *nm*	492	*J*	12μm	0.56	3
[*OIII*]	436.3	4	[*NII*]	658.4	53	*H*	25μm	1.77	3
	500.7	665	[*SII*]	671.7	0.4:	*K* > 9.0	60μm	0.48	1
HeI	587.6	21		673.1	1.0:	*L*	100μm	14.21	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.11 ± .10	ASTR91			*Photom.* AI74	*Radio* (*mJy*)	*2cm* *6cm* 9	ZPB89

Central Star: *B* 17.7 *V* 17.4 *Qual:* C TASG91

Distance (kpc) stat.: 8.65 (CKS91)

Bibliography: *PK67*, AcMa77, He67, Sa75

77....94 Johnson H.M. *Astrophys. J. 216,776-783* Fabry-Perot interferometry of stellar P.N.

014.3-05.5

V-V 3-6, PK 14−5°2, ESO 591-11, Sa 2-352, V-V Anon. 3, Y-C 2-25, IRAS 18342-1904

				Disc.: Voroncov-Vel'JAMINOV et al 1972	*Diameter* (″)	
1950:	18 34 13.9	-19 04 58	IRAS		*opt. St.* We77	
	18 34 14.5	-19 04 57	AK90			
2000:	18 37 11.1	-19 02 22	.		*radio* 1. AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	6	$H\alpha$	656.3 *nm*	651		12μm	0.36	1
[*OIII*]	436.3	11	[*NII*]	658.4	93		25μm	0.78	3
	495.9	439	[*SII*]	671.7	4		60μm	0.63	1
HeI	587.6	28		673.1	7		100μm	29.85	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.45 ± .10	ASTR91				*Radio* (*mJy*)	*2cm* *6cm* 10	AK90

Distance (kpc) stat.: 8.12 (CKS91)

Bibliography: AcMa77, CeGi73, Ka76, Ko78, VDKA75, VKDA73

72..9054 Vorontsov-Velyaminov B.A., Kostjakova E.B., Dokuchaeva O.D., Arhipova V.P. *Astron. Tsirk. 716,7-8* Six new Planetary Nebulae.

75..3501 Vorontsov-Vel'Yamonov B.A., Kostyakova E.B., Dokuchaeva O.D., Arkhipova V.P. *Sov. Astron. 19,163-168* Planetary Nebulae near the galactic center.

014.6–04.3

M 1-50, PK 14–4°1, ESO 591-07, He 2-409, Sa 2-344, VV 189, VV' 421, Y-C 2-23, IRAS 18304-1818

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel*: +27.1 ± 10.1 STPP83
1950:	18 30 24.9	-18 18 55	IRAS	*opt.* 5.6 CaKa71	
	18 30 25.2	-18 18 49	Mi76		
2000:	18 33 20.9	-18 16 30	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11

*He*II	468.6 *nm*	21	*Hα*	656.3 *nm*	668
[OIII]	436.3	10	[*N*II]	658.4	37
	500.7	1667	[*S*II]	671.7	3
*He*I	587.6	23		673.1	5

$\lg F_{H\beta}(mW.m^{-2})$ $-12.0 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)

12μm	0.37	1
25μm	3.93	3
60μm	5.91	3
100μm	44.19	1

Qual.

Radio (*mJy*)

2*cm*	40	MiAl82
6*cm*	50	Ca82

Central Star: AG82 317 —

Spectrum: Contin.? VDKA75

Distance (kpc) stat.: 5.53 (CaKa71); 4.55 (Ac78); 2.80 (Da82); 2.30 (AGNR84); 3.9 (Ma84); 4.36 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, AcMa77, CeGi73, He67, KAS91, Ka76, Kh79, LHSw81, LNP89, Ma81, Mi79, PAKS89, Sa75, VKDA73, Vo71, Vor70

68..9090 Gurzadian G.A. *I.A.U. Symp. 34,332* The possibility of beta decay in the atmosphere of nuclei of P.N.

014.7–11.8

SaWe 4

			Disc.: Saurer et al 1987	*Diameter* (″)	
				opt. 85. 87..1594	
1950:	18 59 16.9	-21 31 14	87..1594		
2000:	19 02 16.1	-21 26 51	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05

*He*II	468.6 *nm*	96	*Hα*	656.3 *nm*	400
[OIII]	436.3	–	[*N*II]	658.4	–
	500.7	400	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .5$ ASTR91

87..1594 Saurer W., Weinberger R. *Astron. Astrophys., Suppl. Ser. 69, 527-531 + erratum vol 70, 531,1987* The -33 < delta < -17 zone : probing SRC J film copies for planetary nebulae.

014.8–25.6

HDW 12, PK 14–25°1, HaWe 14

			Disc.: Hartl et al 1983	*Diameter* (″)	
				opt. 46. 87..1593	
1950:	19 55 10.3	-26 36 24	83.28034		
2000:	19 58 13.2	-26 28 15	.		

Central Star: AG82 391 —
B 17.7 87..1593

Bibliography: AG82, Ko89

83.28034 Hartl H., Dengel J., Weinberger R. *Mitteil. Astron. Gesellschaft 60, 325-327* Alte Planetarische Nebel: neue Kandidaten.

87..1593 Hartl H., Weinberger R. *Astron. Astrophys., Suppl. Ser. 69, 519-525* Planetary nebulae of low surface brightness: gleanings from the "POSS".

014.9+06.4

K 2-5, PK 14+6°1, ARO 265

Disc.: Kohoutek 1963	*Diameter* (″)	
	opt. 24.6 CaKa71	
1950: 17 51 36.0 -12 47 47 Mi76		
2000: 17 54 25.0 -12 48 18 .		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	868
[*O*III]	436.3	–	[*N*II]	658.4	1016
	500.7	724	[*S*II]	671.7	184
*He*I	587.6	–		673.1	196

$\lg F_{H\beta}(mW.m^{-2})$ $-13.5 \pm .4$ ASTR91

Radio *2cm* 7 MiAl82
(*mJy*) *6cm* < 3 ZPB89

Central Star:
U 20.91 *B* 22.21 *V* 21.71 *Qual:* B KJL88

Distance (kpc) stat.: 4.14 (CaKa71); 5.7 (Ma84); 3.52 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Iw73, KrK68, MaC83, Ru70, Sa76

89..2283 Kwitter K.B., Jacoby G.H. *Astron. J. 98, 2159-2162* Properties of central stars in 13 faint, extended planetary nebulae.

89.50080 Kwitter K.B., Jacoby G.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 303* New identifications of faint central stars in extended PN.

014.9–03.1

SaSt 3-166

Disc.: Sanduleak et al 1973	*Diameter* (″)	
	opt. 13.: ATS91	
1950: 18 26 16.7 -17 29 14 SaSt73		
2000: 18 29 11.4 -17 27 13 .		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-21

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	875
[*O*III]	436.3	–	[*N*II]	658.4	682
	495.9	–	[*S*II]	671.7	76:
*He*I	587.6	32		673.1	49:

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .4$ ASTR91

Notes: Object not identified on the FC

015.4–04.5

M 1-53, PK 15–4°1, ESO 591-08, He 2-412, Sa 2-349, VV 193, VV' 428, IRAS 18328-1738

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel*: +63.0 ± 25.0 STPP83
1950:	18 32 53.1	-17 38 39	IRAS	*opt.* 6. CaKa71	*Expansion Velocities* (*km/s*)
	18 32 53.5	-17 38 38	Mi76		[OIII] 13.0 84..2707
2000:	18 35 48.3	-17 36 08	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

*He*II	468.6 *nm*	4	$H\alpha$	656.3 *nm*	641
[*O*III]	436.3	7	[*N*II]	658.4	–
	500.7	1172	[*S*II]	671.7	
*He*I	587.6	27		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.2 \pm .2$ ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.31	1
25μm	2.81	3
60μm	6.03	3
100μm	47.61	1

Radio (*mJy*) *2cm* 17 MiAl82; *6cm* 55 Ca82

Central Star:
B 15.52 *V* 14.30 *Qual:* B TASG91

Distance (kpc) stat.: 4.46 (CaKa71); 3.41 (Ac78); 2.68 (Da82); 2.20 (AGNR84); 3.6 (Ma84); 4.27 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, He67, KAS91, Ka76, Kh79, LHSw81, LNP89, Ma81, Mi79, PAKS89, Sa75, Sa84, TAGS89, VDKA75, VKDA73, Vo71, Vor70, We89

84..2707 Sabbadin F. *Mon. Not. R. Astron. Soc. 209, 889-894* High dispersion spectra of compact planetary nebulae.

015.6–03.0

A 44, PK 15–3°1, A55 32, ARO 278, VV' 413

			Disc.: Abell 1955	*Diameter* (″)	*Rvel*: +44.0 ± 6.0 MWF88
				opt. 53. CaKa71	*Expansion Velocities* (*km/s*)
1950:	18 27 17.5	-16 47 32	Mi76		[OIII] 6.0 MWF88
2000:	18 30 11.3	-16 45 27	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1165
[*O*III]	436.3	–	[*N*II]	658.4	1687
	500.7	1404	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.0 \pm .4$ ASTR91

Radio (*mJy*) *2cm* 10 MiAl82; *6cm* 10 ZPB89

Distance (kpc) stat.: 1.7 (CaKa71); 1.8 (Ma84); 2.05 (CKS91)

Bibliography: *PK67*, Ab66, AcMa77, CaRu74, Hi71, Iw73, KJL88, Kh79, KrK68, Mi79, Ru70, Sa76, We89

015.9+03.3

M 1-39, PK 15+3°1, He 2-351, VV 150, VV' 349, IRAS 18046-1329

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel*: +128.0 ± 11.0STPP83
1950:	18 04 40.9	-13 29 14	IRAS	*opt.* 5. PK67	
	18 04 41	-13 29.3	Sa76		
2000:	18 07 31	-13 28.9	.	*radio* 4. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2380
[OIII]	436.3	–	[NII]	658.4	2667
	500.7	69	[SII]	671.7	48
HeI	587.6	40		673.1	93

$\lg F_{H\beta}(mW.m^{-2})$	$-13.04 \pm .10$	ASTR91

IR Class: .		
J		
H		
K	> 9.8	
L		
Photom.	AIGI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.73	3
25μm	29.70	3
60μm	27.69	3
100μm	26.97	1

Radio (*mJy*)			
	2cm	98	PFMA82
	6cm	98	ZPB89

Distance (kpc) stat.: 2.69 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al78, He67, SaSt73, StAc87

85.11762 Kondratyeva L.N. *Astrofizika 22, 153-156* Low-excitation planetary nebulae.

016.0+13.5

A 42, PK 16+13°1, A55 30, VV' 213, IRAS 17288-0816

			Disc.: Abell 1955	*Diameter* (″)	
1950:	17 28 50.3	-08 16 48	IRAS	*opt.* 60. CaKa71	
	17 28.8	-08 17	PK67		
2000:	17 31.5	-08 19	.		

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1986-07-10 NW					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100:
[OIII]	436.3	–	[NII]	658.4	–
	500.7	171:	[SII]	671.7	
HeI	587.6	–		673.1	

IR Class: .	
J	
H	
K	
L	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.08	3
25μm	1.39	3
60μm	0.78	3
100μm	2.75	1

Central Star: AG82 246 —
m_{pg} 20.3 *Qual*: P PK67

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.68 (CaKa71); 5.1 (Ma84)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Iw73, Kh79, KrK68, PAKS89, PM87, PPFS87

016.0–04.3

M 1-54, PK 16−4°1, He 2-413, Sa 2-350, VV 194, VV' 430, IRAS 18332-1702

		Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −40.6 ± 10.1 STPP83
1950:	18 33 14.3	-17 02 29	IRAS	*opt.* 13. CaKa71	
	18 33 14.4	-17 02 30	Mi76		
2000:	18 36 08.4	-16 59 59	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
HeII	468.6 *nm*	23	$H\alpha$	656.3 *nm*	604
[*OIII*]	436.3	4	[*NII*]	658.4	1013
	500.7	1110	[*SII*]	671.7	46
HeI	587.6	23		673.1	64
$\lg F_{H\beta}(mW.m^{-2})$		−11.6 ± .2 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.27	1
25μm	1.44	3
60μm	7.90	3
100μm	50.18	1
Radio (*mJy*) *2cm*	41	MiAl82
6cm	38	Ca82

Distance (kpc) stat.: 2.5 (CaKa71); 2.00 (Ac78); 3.28 (Da82); 2.40 (AGNR84); 3.2 (Ma84)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, CaRu74, He67, Ii81, Iw73, KAS91, Ka70, Ka76, Kh79, LNP89, Ma81, Mi79, PAKS89, Sa75, VDKA75, VKDA73, VKDa65, Vo70, Vo71, Vor70

016.1–04.7

M 1-56, PK 16−4°2, He 2-415, Sa 2-353, VV 196, VV' 432, IRAS 18348-1708

		Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* +88.0 ± 25.0 STPP83
1950:	18 34 52.4	-17 08 25	IRAS	*opt.* 10. PK67	
	18 34 52.2	-17 08 25	Mi76		
2000:	18 37 46.3	-17 05 47	.	*radio* 1.4 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11					
HeII	468.6 *nm*	14	$H\alpha$	656.3 *nm*	617
[*OIII*]	436.3	13	[*NII*]	658.4	237
	500.7	1988	[*SII*]	671.7	13
HeI	587.6	23		673.1	21
$\lg F_{H\beta}(mW.m^{-2})$		−12.18 ± .10 ASTR91			

IR Class: .

J		
H		
K	10.5	
L		
Photom.	AlGl74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.47	3
25μm	4.65	3
60μm	3.82	3
100μm	31.04	1
Radio (*mJy*) *2cm*	20	MiAl82
6cm	21	ZPB89

Central Star:
B 16.7 *V* 16.2 *Qual:* C TASG91

Distance (kpc) stat.: 4.5 (Ma84); 5.55 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, He67, KAS91, KPK81, Ka76, Kh76, Mi79, PAKS89, Sa75, VDKA75, VKDA73, Vo71, Vor70

016.4–01.9

M 1-46, PK 16−1°1, ARO 387, He 2-401, SaSt 2-21, VV 182, VV' 406, IRAS 18250-1534

		Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* +30.0 ± 3.0 MWF88
1950:	18 25 03.8	-15 34 52 IRAS	*opt.* 11.	CaKa71	*Expansion Velocities* (*km/s*)
	18 25 04.5	-15 34 53 Mi73			[OIII] 7.0 MWF88
2000:	18 27 56.8	-15 32 57 .	*radio* 12.	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-26						*IR Class:* S+D		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	4	$H\alpha$	656.3 *nm*	650	*J*	10.60	12μm	1.04	3
[OIII]	436.3	–	[*NII*]	658.4	292	*H*	10.12	25μm	18.33	3
	500.7	56	[*SII*]	671.7	8	*K*	9.65	60μm	23.92	3
HeI	587.6	20		673.1	14	*L*		100μm	223.30	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.5 ± .2 ASTR91				*Photom.*	Wh85	*Radio* 2*cm*	83	MiAl82
								(*mJy*) 6*cm*	81	ZPB89

Central Star: AG82 310 —
B 13.19 *V* 12.83 *Qual:* A TASG91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 1.8,2.2 (CaKa71); 2.96 (MiAl75); 2.15 (Da82); 1.60 (AGNR84); 2.4 (Ma84); 3.55 (CKS91); 3.78 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, Al78, AlKe85, AlLi68, AlMi72, Ca82, He67, Hi71, Iw73, Ka76, Kh76, Kh79, LNP89, MaPo80, MiWe79, PAKS89, PM87, PPFS87, Sa76, SaSt72, StAc87, TAGS89, VDKA75, VKDA73, Vo71, VoCo90, Vor70, We89

74..9058 Milne D.K., Aller L.H. *IAU Symp. 60,411* Measurements on P.N.
85.11762 Kondratyeva L.N. *Astrofizika 22, 153-156* Low-excitation planetary nebulae.

016.9–02.0

Sa 3-134, PK 16−2°1, IRAS 18264-1509

		Disc.: Sanduleak 1976	*Diameter* (″)		
1950:	18 26 28.8	-15 09 45 IRAS	*opt. St.*	CS90	
	18 26 28	-15 09.7 Sa76			
2000:	18 29 20	-15 07.7 .			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-30							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1730		12μm	1.51	1
[OIII]	436.3	–	[*NII*]	658.4	611		25μm	1.91	3
	500.7	1675	[*SII*]	671.7	28		60μm	17.98	1
HeI	587.6	66		673.1	44		100μm	120.30	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.34 ± .10 ASTR91							

Bibliography: Ko78, We77

017.3–21.9

A 65, PK 17−21°1, ARO 26, ESO 526-03, Sh 2-52, VV' 513, IRAS 19435-2315

			Disc.: Abell 1964	*Diameter* (″)	*Rvel*: +13.0 ± 4.0	MWF88
1950:	19 43 35.4	-23 15 38	IRAS	*opt.* 100. CaKa71	*Expansion Velocities* (*km/s*)	
	19 43 34.3	-23 15 36	Ka83		[OIII] 11.0	MWF88
2000:	19 46 33.8	-23 08 12	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-11					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	231
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	318	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	−11.63 ± .05	Ka83, ASTR91
IUE Spectra:	*LW*(0) *SW*(1)	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.71	1
60μm	1.35	3
100μm	3.05	3

Radio (*mJy*)	*2cm* < 1	MiAl82
	6cm < 15	Ca82

Central Star: AG82 384 — UBV 16806; CSI -23 -19436
U 15.01 *B* 15.99 *V* 15.90 Ab66 *Spectrum:* Op k 64...352

Notes: Close binary nucleus, $P \simeq 1.0^d$ (BoLi90). Monochromatic images (BoLi90)
Distance (kpc) stat.: 1.5 (CaKa71); 1.80 (MiAl75); 1.75 (Ca76); 1.21 (Da82); 3.00 (AGNR84); 1.5 (Ma84) 1.66 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, All76, ChLo72, Gu70, HLSW80, He71, He86, Hi69, Hi71, Hi73, Hig71, Iw73, KSK90, Ka85, Kh79, KrK68, Lo77, Ma74, MeHa75, Mi73, Mi79, PAKS91, PiKh79, Sabb86, We89, ZPB89

64...352 Greenstein J.L., Minkowski R. *Astrophys. J. 140,1601-1603,1964* The central stars of planetary nebulae of low surface brightness.
90....25 Borkowski K.J., Sarazin C. *Astrophys. J.,360,173* Interaction of planetary nebulae with the interstellar medium.
90..2050 Fich M., Treffers R.R., Dahl G.P. *Astron. J. 99, 622-637* Fabry-Perot H-alpha observations of galactic H II regions.

017.6–10.2

A 51, PK 17−10°1, A55 38, ARO 300, VV' 471, IRAS 18581-1816

			Disc.: Abell 1955	*Diameter* (″)	*Rvel*: +23.0 ± 10.0	MWF88
1950:	18 58 06.4	-18 16 31	IRAS	*opt.* 67. CaKa71	*Expansion Velocities* (*km/s*)	
	18 58 06.0	-18 16 33	Ka83		[OIII] 42.0	MWF88
2000:	19 01 01.1	-18 12 15	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03					
HeII	468.6 *nm*	63:	$H\alpha$	656.3 *nm*	278
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	365	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	−11.80 ± .10	Ka83
IUE Spectra:	*LW*(0) *SW*(2) *FES*(1)	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.45	3
60μm	2.90	3
100μm	3.44	2

Radio (*mJy*)	*2cm* 26	MiAl82
	6cm	

Central Star: AG82 337 — UBV 16133; CSI -18 -18581
U 14.26 *B* 15.30 *V* 15.42 Ab66

sd O8k 64...352
OH Me91

Notes: Monochromatic images (JDK86)
Distance (kpc) stat.: 1.77 (CaKa71); 2.7 (Ma84); 1.49 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, All76, Dr80, Gu88, HeAu87, Hi71, Iw73, Ka85, Kh79, KrK68, LHSw81, Mi76, Ru70, Sa76, Sabb86, We89, ZuAl86

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81...205 Kaler J.B. *Astrophys. J. 250,L31-L34* Large high-excitation PN.

017.7–02.9

M 1-52, PK 17–2°1, ARO 283, Sa 2-346, VV 192, VV' 46, IRAS 18311-1454

			Disc.: Minkowski 1946	*Diameter (″)*		*Rvel:* +133.0 ± 5.0 STPP83	
1950:	18 31 07.5	-14 54 52	IRAS	*opt.* 6.6	CaKa71		
	18 31 07.0	-14 54 48	Mi76				
2000:	18 33 58.4	-14 52 26	.	*radio* 8.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	30	$H\alpha$	656.3 *nm*	802	12μm	0.44	1
[*OIII*]	436.3	–	[*NII*]	658.4	57	25μm	0.87	3
	500.7	1021	[*SII*]	671.7	9	60μm	1.90	2
HeI	587.6	24		673.1	16	100μm	108.10	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.8 ± .2 ASTR91				*Radio (mJy)*	*2cm*	
							6cm 8	ZPB89

Distance (kpc) stat.: 4.33 (CaKa71); 2.1 (Ma84); 6.9 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Hi71, PAKS89, Ru70, Sa75

017.9–04.8

M 3-30, PK 17–4°1, ARO 288, Sa 3-143, VV' 438, IRAS 18383-1536

			Disc.: Minkowski 1948	*Diameter (″)*		*Rvel:* +71.0 ± 25.0 STPP83	
1950:	18 38 23.3	-15 36 34	IRAS	*opt.* 17.2	CaKa71		
	18 38 23.0	-15 36 40	Mi76				
2000:	18 41 15.1	-15 33 47	.	*radio* 22.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	73:	$H\alpha$	656.3 *nm*	764	12μm	0.25	1
[*OIII*]	436.3	–	[*NII*]	658.4	146	25μm	1.04	3
	500.7	733	[*SII*]	671.7		60μm	2.47	3
HeI	587.6	44:		673.1		100μm	29.20	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.29 ± .02 SK89				*Radio (mJy)*	*2cm* 10	MiAl82
							6cm 7	ZPB89

Central Star: AG82 326 — *V* 17.9 *Qual:* B 84...100	OVI 84...100 WC early Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.88 (CaKa71); 2.60 (Ac78); 3.85 (Da82); 2.90 (AGNR84); 4.3 (Ma84); 4.44 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, AcMa77, Hi71, Iw73, KrK68, LNP89, Ma81, Mi79, PAKS89, Ru70, Sa76, StAc87, TAGS89, TASG91, ZuAl86

84...100 Kaler J.B., Shaw R.A. *Astrophys. J. 278, 195-200* The O VI nucleus of the planetary nebula M3-30.
89.50113 Kaler J.B., Feibelman W.A., Shaw R.A., Henrichs H. *Proceedings of the 131st symposium of the IAU, held in Mexico city, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 456* Stalled winds: interactions between nebulae and stellar winds.
91..3002 Kaler J.B., Shaw R.A., Feibelman W.A., Imhoff C.L. *Publ. Astron. Soc. Pac. 103,67* PB6 and its central star

018.0+20.1

Na 1, PK 18+20°1, Sa 2-179, IRAS 17102-0312

			Disc.: Nassau 1964	*Diameter* (″)		*Rvel:* +22.0 ± 25.0 STPP83	
1950:	17 10 14.9	-03 12 30	IRAS	*opt.* 5.	Sh85	*Expansion Velocities* (*km/s*)	
	17 10 13.8	-03 12 27	Mi76			[OIII] 30.0	We89
2000:	17 12 51.3	-03 15 57	.	*radio* 8.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
HeII	468.6 *nm*	16	*Hα*	656.3 *nm*	554
[*OIII*]	436.3	9	[*NII*]	658.4	–
	500.7	1515	[*SII*]	671.7	
HeI	587.6	20		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-11.98 \pm .03$	Kal83

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.29	3
60μm	2.77	3
100μm	1.68	1
Radio 2*cm*	18	ZPB89
(*mJy*) 6*cm*	22	ZPB89

Central Star: AG82 232Bis —
B 16.89 *V* 16.60 *Qual:* B SK89 , TASG91

Distance (kpc) stat.: 5.41 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Alle73, CoBa74, KHM86, KPK81, Kon78, Kon83, KrK68, Mi79, MiAl82, PAKS89, SK85, Sa75, StKa89

87..1602 De Grijp M.H.K., Miley G.K., Lub J. *Astron. Astrophys., Suppl. Ser. 70, 95-114* Warm IRAS sources. I. A catalogue of AGN candidates from the point source catalog.

018.6–02.2

M 3-54, PK 18–2°1, Sa 3-137, VV' 420, IRAS 18302-1346

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +157.0 ± 5.0 STPP83	
1950:	18 30 13.9	-13 46 39	IRAS	*opt. St.*	CS90		
	18 30 13.7	-13 46 38	AK90				
2000:	18 33 03.7	-13 44 20	.	*radio* 5.5	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19					
HeII	468.6 *nm*	47:	*Hα*	656.3 *nm*	1671
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	1557	[*SII*]	671.7	
HeI	587.6	36		673.1	5:

$\lg F_{H\beta}(mW.m^{-2})$	$-13.4 \pm .3$	ASTR91

IR Class: .		
J		
H		
K	> 9.6	
L		
Photom.	AIGI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.31	1
25μm	0.96	3
60μm	2.46	1
100μm	106.70	1
Radio 2*cm*		
(*mJy*) 6*cm*	8	AK90

Notes: FC unclear in PK67, AG82, and excerpts from preliminary draft of the Strasbourg-ESO catalogue, Mexico, 1987.
Distance (kpc) stat.: 8.55 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, BlPu81, PAKS89, Sa76, StAc87

018.9+04.1

M 3-52, PK 18+4°1, VV' 358

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −16.0 ± 5.0	STPP83
				opt. 11.6	CaKa71		
1950:	18 07 40	-10 29.8	PK67				
2000:	18 10 26	-10 29.1	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-11					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	166
	500.7	62	[*SII*]	671.7	
HeI	587.6	–		673.1	

Radio	*2cm*		
(*mJy*)	*6cm*	3	ZPB89

Distance (kpc) stat.: 5.37 (CaKa71); 5.2 (Ma84); 6.59 (CKS91)

Bibliography: *PK67*, AcMa77, Iw73, MaC83, Sa76

018.9+03.6

M 4-8, PK 18+3°1, ARO 270, Sa 3-123, IRAS 18093-1043

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +28.0 ± 5.0	STPP83
1950:	18 09 19.3	-10 43 52	IRAS	*opt. St.*	CS90		
	18 09 23.1	-10 43 45	AK90				
2000:	18 12 09.6	-10 42 58	.	*radio* 1.3	AK90		

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1985-07-27					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	36
	495.9	–	[*SII*]	671.7	2.3:
HeI	587.6	–		673.1	2.2:

IR Class: .		
J		
H		
K	> 8.2	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.37	2
25μm	3.60	3
60μm	2.72	1
100μm	24.29	1

Radio	*2cm*	16	MiAl82
(*mJy*)	*6cm*	19	AK90

Bibliography: *PK67*, AcMa77, Hi71, Mi76, PAKS89, Ru70, Sa76, StAc87

019.2–02.2

M 4-10, PK 19–2°1, ARO 284, Sa 2-347, IRAS 18313-1314

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +50.0 ± 5.0	STPP83
1950:	18 31 22.4	-13 14 53	IRAS	*opt. St.*	CS90		
	18 31 24.5	-13 14 47	AK90				
2000:	18 34 13.8	-13 12 24	.	*radio* 1.2	AK90		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02					
HeII	468.6 *nm*	4	*Hα*	656.3 *nm*	1654
[*OIII*]	436.3	8	[*NII*]	658.4	195
	500.7	1780	[*SII*]	671.7	13
HeI	587.6	–		673.1	24

$\lg F_{H\beta}(mW.m^{-2})$	$-12.80 \pm .10$	ASTR91

IR Class: .		
J		
H		
K	> 9.4	
L		
Photom.	AIGI75	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.36	1
25μm	3.75	3
60μm	15.28	1
100μm	139.00	1

Radio	*2cm*		
(*mJy*)	*6cm*	33	AK90

Distance (kpc) stat.: 4.11 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Mi76, Ru70, Sa75

019.4–05.3

M 1-61, PK 19−5°1, Sa 2-365, VV 205, VV' 448, IRAS 18430-1430

		Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +40.8 ± 10.1 STPP83
1950:	18 43 05.0	-14 30 51	IRAS	*opt. St.* CS90	
	18 43 04.4	-14 30 51	AK90		
2000:	18 45 55.1	-14 27 37	.	*radio* 1.8 AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-04-26					
*He*II	468.6 *nm*	1.6	$H\alpha$	656.3 *nm*	647
[OIII]	436.3	4	[NII]	658.4	170
	500.7	914	[SII]	671.7	4
*He*I	587.6	28		673.1	8
$\lg F_{H\beta}(mW.m^{-2})$		−11.43 ± .10 ASTR91			

IR Class: S		*IRAS Fluxes* (*Jy*)		*Qual.*
J		12μm	2.19	3
H	8.44	25μm	26.55	3
K	8.46	60μm	16.98	3
L		100μm	5.77	2
Photom. AIGI74		*Radio* (*mJy*)	*2cm*	
			6cm 97	AK90

Central Star:
B 17.1 *Qual:* D TASG91 *Spectrum:* WC ? ATS91

Distance (kpc) stat.: 2.37 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, BlPu81, Ii81, KAS91, Ka76, PAKS89, Sa75, TAGS89, VKDA69, Vo70, VoCo90

68..9041 Kostjakova E.B., Arhipova V.P., Dokuchajeva O.D. *Astr. Cirk.437* New measurements absolute intensities of emis sion lines for P.N.

84.10366 Kondratev'A L.N. *Astron. Tsirk. 1354* Spectral observations of three planetary nebulae.

019.4–13.6

DeHt 3, PK 19−13°1, ESO 593-09

		Disc.: Dengel et al 1980	*Diameter* (″)		
			opt. 32.	80..1011	
1950:	19 14 10.2	-18 06 59	80..1011		
2000:	19 17 04.6	-18 01 34	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-15					
*He*II	468.6 *nm*	18:	$H\alpha$	656.3 *nm*	318
[OIII]	436.3	18:	[NII]	658.4	420
	500.7	804	[SII]	671.7	80:
*He*I	587.6	–		673.1	39:
$\lg F_{H\beta}(mW.m^{-2})$		−12.1 ± .3 ASTR91			

Bibliography: LHSw81, MWH81, PAKS91

79.30008 Dengel H., Hartl H., Weinberger R. *Mitt. Astron. Gesell. 45,182-185* Das Innsbrucker Poss-Durchmusterungsprogramm.

80..1011 Dengel J., Hartl H., Weinberger R. *Astron. Astrophys. 85,356-358* A search for Planetary Nebulae on the "POSS".

019.4–19.6

K 2-7, PK 19−19°1, ESO 594-10

			Disc.: Kohoutek 1962	*Diameter* (″)	
				opt. 140. CaKa71	
1950:	19 37.6	-20 34	PK67		
2000:	19 40.5	-20 27	.		

Central Star: AG82 377 —
m_{pg} 19.3 *Qual:* P PK67

Distance (kpc) stat.: 1.27 (CaKa71); 2.6 (Ma84)

Bibliography: *PK67*, AG82, LHSw81, ZPB89

019.7+03.2

M 3-25, PK 19+3°1, Sa 2-318, VV' 377, IRAS 18125-1011

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +174.5 ± 10.1STPP83	
1950:	18 12 30.7	-10 11 11	IRAS	*opt.* 3.9	PK67	*Expansion Velocities* (*km/s*)	
	18 12 31	-10 11.2	Sa75			[OIII] 12.0	We89
2000:	18 15 17	-10 10.2	.	*radio* 1.3	ZPB89	[NII] 22.0	We89

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2164
[OIII]	436.3	–	[NII]	658.4	813
	500.7	1768	[SII]	671.7	24
HeI	587.6	78		673.1	54

$\lg F_{H\beta}(mW.m^{-2})$ −12.83 ± .10 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.68	3
25μm	19.25	3
60μm	14.81	3
100μm	32.11	1

Radio (*mJy*) *2cm* | *6cm* 76 ZPB89

Distance (kpc) stat.: 3.2 (Ac78); 2.57 (CKS91)

Bibliography: *PK67*, AcMa77, AlLi68, PeSe80, Sa84, VoCo90

84..1287 Sabbadin F., Bianchini A., Hamzaoglu E. *Astron. Astrophys. 136, 200-205* Internal motions of fourteen planetary nebulae.

019.7–04.5

M 1-60, PK 19−4°1, Sa 2-359, VV 203, VV' 443, IRAS 18408-1347

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* +76.0 ± 25.0 STPP83	
1950:	18 40 49.5	-13 47 53	IRAS	*opt.* 10.	CS90		
	18 40 48.2	-13 47 52	AK90				
2000:	18 43 38.1	-13 44 48	.	*radio* 2.5	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	977
[OIII]	436.3	–	[NII]	658.4	579
	500.7	1212	[SII]	671.7	15
HeI	587.6	40		673.1	29

$\lg F_{H\beta}(mW.m^{-2})$ −12.28 ± .10 ASTR91

IR Class: .

J		
H		
K	9.8	
L		
Photom.	AlGl74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.51	3
25μm	5.58	3
60μm	8.46	3
100μm	42.51	1

Radio (*mJy*) *2cm* 49 MiAl82 | *6cm* 48 AK90

Central Star: *Spectrum:* WC ATS91

Distance (kpc) stat.: 3.66 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, KAS91, Ka70, Ka76, Mi76, PAKS89, Sa75, VKDa65, Vo70

019.8+05.6

CTS 1

			Disc.: Capellaro et al 1989	*Diameter* (″)	
				opt. 3. 89.50014	
1950:	18 04.3	-08 56	89.50014		
2000:	18 07.0	-08 56	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-03

*He*II	468.6 *nm*	28	$H\alpha$	656.3 *nm*	1575
[*O*III]	436.3	–	[*N*II]	658.4	275
	500.7	1323	[*S*II]	671.7	27
*He*I	587.6	59		673.1	44

$\lg F_{H\beta}(mW.m^{-2})$ $-13.22 \pm .10$ ASTR91

89.50014 Capellaro E., Turatto M., Sabbadin F. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 61* A new planetary nebula.

019.8–23.7

A 66, PK 19–23°1, A55 53, ARO 339, ESO 595-04, VV' 519, IRAS 19545-2144

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 267. CaKa71	
1950:	19 54 33.3	-21 44 56	IRAS		
	19 54 34.8	-21 44 43	Mi76		
2000:	19 57 31.8	-21 36 37	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-11

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	78
	500.7	248	[*S*II]	671.7	
*He*I	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.40	1
60μm	0.40	1
100μm	1.93	3

Radio (*mJy*)	*2cm*	51	MiAl82
	6cm	56	Ca82

Central Star: AG82 389 — UBV 16998; CSI -21 -19546
U 16.84 *B* 17.71 *V* 17.39 Ab66

Distance (kpc) stat.: 0.66 (CaKa71); 0.58 (Da82); 0.61 (AGNR84); 1.2 (Ma84); 0.57 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, Gu70, Hi71, Kh79, LHSw81, MeHa75, Mi79, PAKS91, Ru70, ZPB89

77..1133 Phillips J.P., Reay N.K. *Astron. Astrophys. 59,91-110* On the structural development of the shells of novae and P.N.

019.9+00.9

M 3-53, PK 19+0°1, Sa 3-132, VV' 400, IRAS 18213-1108

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* +35.0 ± 11.0 STPP83
1950:	18 21 19.9	-11 08 25	IRAS	*opt.* 4.6 CaKa71	
	18 21 21	-11 08.4	Sa76		
2000:	18 24 08	-11 06.7	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	3074
[*OIII*]	436.3	–	[*NII*]	658.4	4928
	500.7	812	[*SII*]	671.7	242
HeI	587.6	120		673.1	406

$\lg F_{H\beta}(mW.m^{-2})$ $-14.3 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.60	1
25μm	2.78	3
60μm	26.87	1
100μm	234.30	1

Distance (kpc) stat.: 3.78 (CaKa71); 3.22 (Ac78); 0.9 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, PAKS89, StAc87

020.2–00.6

A 45, PK 20–0°1, A55 33, VV' 415

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 285. CaKa71	
1950:	18 27.5	-11 39	PK67		
2000:	18 30.3	-11 37	.		

Central Star: AG82 313 —
U 20.5 *B* 21.5 *V* 21.1 *Qual:* D KJL88

Distance (kpc) stat.: 0.7 (CaKa71); 1.6 (Ma84)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Cu74, Kh79, KrK68, MaC83, Sa76, TrSa78

89.50080 Kwitter K.B., Jacoby G.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 303* New identifications of faint central stars in extended PN.

020.7–05.9

Sa 1-8, PK 20–5°1, AS 326, MHα 204-32, Sa 2-370, IRAS 18479-1334

			Disc.: Sanduleak 1974	*Diameter* (″)	
1950:	18 47 54.7	-13 34 38	IRAS	*opt.* 8. ATS91	
	18 47 54.8	-13 34 36	AK90		
2000:	18 50 44.3	-13 31 02	.	*radio* 5.6 AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	545
[*OIII*]	436.3	4	[*NII*]	658.4	–
	500.7	836	[*SII*]	671.7	
HeI	587.6	22		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-12.3 \pm .2$ ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	2.31	3
60μm	3.11	3
100μm	4.49	1
Radio 2*cm*		
(*mJy*) 6*cm*	11	AK90

Central Star:
B 14.41 *V* 14.16 *Qual:* A TASG91

Distance (kpc) stat.: 8.02 (CKS91)

Bibliography: AcMa77, Ko78, Sa75, We77

74...313 Sanduleak N. *Publ. Astron. Soc. Pac. 86,215-216* New southern planetary nebulae previously classified as emission-line stars.

020.9–01.1

M 1-51, PK 21–1°1, He 2-411, VV 190, VV' 423, IRAS 18307-1109

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* $+3.0 \pm 11.0$ STPP83
1950:	18 30 42.2	-11 09 46	IRAS	*opt.* 9.5 CaKa71	
	18 30 42	-11 09.7	Sa76		
2000:	18 33 29	-11 07.4	.	*radio* 15. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2718
[*OIII*]	436.3	–	[*NII*]	658.4	3735
	500.7	533	[*SII*]	671.7	97:
HeI	587.6	107		673.1	169
$\lg F_{H\beta}(mW.m^{-2})$		$-13.0 \pm .4$ ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.64	3
25μm	23.33	3
60μm	31.38	3
100μm	267.40	1
Radio 2*cm*		
(*mJy*) 6*cm*	319	ZPB89

Central Star:
Spectrum: WC ATS91

Distance (kpc) stat.: 2.67 (CaKa71); 2.3 (Ac78); 1.2 (Ma84); 1.75 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, He67, KAS91, PAKS89, SaSt73, StAc87, VKDA69, Vo70, VoCo90

68..9041 Kostjakova E.B., Arhipova V.P., Dokuchajeva O.D. *Astr. Cirk.437* New measurements absolute intensities of emis sion lines for P.N.

021.1–05.9

M 1-63, PK 21−5°1, Sa 2-371, VV 209, VV' 459, IRAS 18486-1314

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel*: +25.5 ± 10.1 STPP83
1950:	18 48 41.5	-13 14 16	IRAS	*opt.* 4.2 CaKa71	*Expansion Velocities* (*km/s*)
	18 48 41.6	-13 14 14	Mi76		[OIII] 7.5 84..1287
2000:	18 51 30.7	-13 10 37	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09					
HeII	468.6 *nm*	20	$H\alpha$	656.3 *nm*	427
[*OIII*]	436.3	14	[*NII*]	658.4	570
	500.7	1303	[*SII*]	671.7	48
HeI	587.6	19		673.1	75

$\lg F_{H\beta}(mW.m^{-2})$ $-12.4 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.30	1
25μm	0.40	3
60μm	1.64	3
100μm	23.96	1
Radio (*mJy*) 2*cm*	9	MiAl82
6*cm*		

Distance (kpc) stat.: 6.78 (CaKa71); 5.37 (Ac78); 3.2 (Ma84); 9.68 (CKS91)

Bibliography: *PK67*, AcMa77, Ka76, PAKS91, Sa75, Sa84, VKDa65, Vo70, We89

84..1287 Sabbadin F., Bianchini A., Hamzaoglu E. *Astron. Astrophys. 136, 200-205* Internal motions of fourteen planetary nebulae.

021.2–03.9

We 1-7, PK 21−3°1, IRAS 18413-1216

			Disc.: Weinberger 1977	*Diameter* (″)	
1950:	18 41 18.2	-12 16 02	IRAS	*opt.* 17. 77..1547	
	18 41 19.4	-12 16 04	77..1547		
2000:	18 44 07.4	-12 12 58	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-03					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	69	[*SII*]	671.7	
HeI	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.27	1
25μm	0.73	3
60μm	0.96	2
100μm	44.02	1

Central Star: AG82 328 —
$B > 21.$ 77..1547

Bibliography: AG82, Iy87, Ko78, MWH81, MaC83, We77

77..1547 Weinberger R. *Astron. Astrophys. Suppl. Ser. 30,343-348* New Planetary Nebulae of low surface brightness.

021.7–00.6

M 3-55, PK 21–0°2, ARO 282, Sa 3-138, VV' 422

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* +26.0 ± 11.0 STPP83
				opt. 7.2 CaKa71	
1950:	18 30 28.9	-10 17 26	Mi76		
2000:	18 33 14.7	-10 15 07	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1759
[*O*III]	436.3	–	[*N*II]	658.4	4251
	500.7	451	[*S*II]	671.7	185
*He*I	587.6	–		673.1	259

$\lg F_{H\beta}(mW.m^{-2})$ $-14.2 \pm .4$ ASTR91

Central Star: AG82 318 — m_{pg} 20.7 *Qual:* P PK67

Distance (kpc) stat.: 3.56 (CaKa71); 3.13 (Ac78); 1.4 (Ma84)

Bibliography: *PK67*, AG82, AST89, AcMa77, Hi71, KrK68, MaC83, PAKS89, Ru70, Sa76, StAc87

021.8–00.4

M 3-28, PK 21–0°1, ARO 281, Sa 3-136, VV' 418, IRAS 18299-1008

			Disc.: Minkowsi 1948	*Diameter* (″)	*Rvel:* +21.0 ± 11.0 STPP83
1950:	18 29 55.7	-10 08 22	IRAS	*opt.* 9. CaKa71	
	18 29 55.6	-10 08 05	Mi76		
2000:	18 32 41.2	-10 05 48	.	*radio* 5. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	2532
[*O*III]	436.3	–	[*N*II]	658.4	4265
	500.7	1973	[*S*II]	671.7	83
*He*I	587.6	61		673.1	110

$\lg F_{H\beta}(mW.m^{-2})$ $-13.7 \pm .4$ ASTR91

IUE Spectra: *LW*(0) *SW*(1)

IRAS Fluxes (*Jy*) *Qual.*

12μm	3.53	1
25μm	2.56	3
60μm	46.94	3
100μm	320.60	1

Radio *2cm* (*mJy*) *6cm* 33 ZPB89

Notes: Monochromatic images (JDK86)

Distance (kpc) stat.: 2.8 (CaKa71); 2.27 (Ac78); 0.9 (Ma84); 4.86 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, AlGl74, AlLi68, Hi71, Iw73, JoJo91, KrK68, MiAl82, PAKS89, PhMa88, Ru70, Sa76, StAc87

78..2518 Calvet N., Cohen M. *Mon. Not. R. Astron. Soc. 182,687-704* Studies of bipolar nebulae. V. The general phenomenon.

86...266 Deguchi S., Claussen M.J., Goldsmith P.F. *Astrophys. J. 303, 810-815* HCN emission from bipolar reflection nebulae.

88.30831 Bujarrabal V., Gomez-Gonzalez J., Bachiller R., Martin-Pintado J. *Astron. Astrophys. 204, 242-252* Proto-planetary nebulae: the case of CRL 618.

022.0–03.1

M 1-58, PK 22–3°1, Sa 2-357, VV 201, VV' 440

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* +60.0 ± 25.0 STPP83
				opt. 6.4 CaKa71	
1950:	18 40 10.3	-11 09 54	Mi76		
2000:	18 42 57.0	-11 06 53	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05

HeII	468.6 *nm*	56	$H\alpha$	656.3 *nm*	739
[*OIII*]	436.3	10	[*NII*]	658.4	76
	500.7	1435	[*SII*]	671.7	9
HeI	587.6	21		673.1	14

$\lg F_{H\beta}(mW.m^{-2})$ −12.3 ± .2 ASTR91

Radio (*mJy*) *2cm* 40 MiAl82; *6cm* 60 Ca82

Distance (kpc) stat.: 2.6-3.4 (CaKa71); 2.79 (Ac78); 2.58 (Da82); 2.10 (AGNR84); 3.4 (Ma84); 4.02 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Gr71, Ka70, Ka76, Kal76, Ma81, Mi79, Sa75, VKDA69, VKDa65, Vo70

77..3547 Kostyakova E.B. *Soviet Astron. 21,462-468* The physical differences between the PN of the galactic-center group and the planetaries of the common field.

022.1–02.4

M 1-57, PK 22–2°1, ARO 287, Sa 2-356, VV 199, VV' 436, IRAS 18375-1042

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* +92.4 ± 17.3 STPP83
1950:	18 37 34.0	-10 42 38	IRAS	*opt.* 8.4 CaKa71	
	18 37 34.0	-10 42 37	Mi76		
2000:	18 40 20.2	-10 39 47	.	*radio* 8. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

HeII	468.6 *nm*	42	$H\alpha$	656.3 *nm*	1184
[*OIII*]	436.3	16	[*NII*]	658.4	1478
	500.7	2257	[*SII*]	671.7	73
HeI	587.6	25		673.1	133

$\lg F_{H\beta}(mW.m^{-2})$ −12.3 ± .2 ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	1.27	3
25μm	13.13	3
60μm	16.04	2
100μm	151.20	1

Radio (*mJy*) *2cm* 60 MiAl82; *6cm* 70 ZPB89

Central Star:
B 17.3 *V* 16.3 *Qual:* C TASG91

Distance (kpc) stat.: 2.3-2.9 (CaKa71); 2.16 (Ac78); 2.62 (Da82); 2.00 (AGNR84); 3.1 (Ma84); 3.9 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, Ca82, Hi71, KAS91, Ka76, LNP89, Ma81, Mi79, PAKS89, Ru70, Sa75, TAGS89, VKDA69, Vo70

68..9041 Kostjakova E.B., Arhipova V.P., Dokuchajeva O.D. *Astr. Cirk.437* New measurements absolute intensities of emission lines for P.N.

022.5+04.8

MA 2, PK 22+4°1

			Disc.: Maehara 1982	*Diameter* (″)	
				opt. 10. ATS91	
1950:	18 12 31	-06 58.2	82.30016		
2000:	18 15 13	-06 57.2	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	660
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	350	[*SII*]	671.7	
HeI	587.6	60:		673.1	

Bibliography: Ko89

82.30016 Maehara H. *Contributions from the Bosscha Observatory N.71* A search for galactic emission-line objects.

022.5+01.0

MaC 1-13, PK 22+1°1, IRAS 18258-0845

			Disc.: Mac Connell 1978	*Diameter* (″)	
				opt. 17. 78..1561	
1950:	18 25 50.0	-08 45 24	IRAS		
	18 25 51.1	-08 45 23	78..1561		
2000:	18 28 35.1	-08 43 24	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1263
[*OIII*]	436.3	–	[*NII*]	658.4	3130
	500.7	637	[*SII*]	671.7	363
HeI	587.6	–		673.1	384

$\lg F_{H\beta}(mW.m^{-2})$	$-13.6 \pm .4$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.63	1
25μm	1.00	3
60μm	10.06	3
100μm	65.37	1

Bibliography: ACPS87, Iy87

78..1561 Macconnell D.J. *Astron. Astrophys. Suppl. Ser. 33,219-222* Discoveries on southern, red-sensitive objective-prism plates .I. A new list ofsuspected Planetary Nebulae.

023.0+04.3

MA 3, PK 23+4°1

			Disc.: Maehara 1982	*Diameter* (″)	
				opt. 5. ATS91	
1950:	18 15 08	-06 49.6	82.30016		
2000:	18 17 50	-06 48.4	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1199
[*OIII*]	436.3	–	[*NII*]	658.4	37
	500.7	664	[*SII*]	671.7	
HeI	587.6	45		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-13.6 \pm .3$	ASTR91

Bibliography: Ko89

82.30016 Maehara H. *Contributions from the Bosscha Observatory N.71* A search for galactic emission-line objects.

023.3–07.6

MaC 1-16, PK 23–7°1

		Disc.: Mac Connell 1978	*Diameter* (″)		
			opt. 10.	78..1561	
1950:	18 58 33.8	-12 02 43	PK67		
2000:	19 01 21.3	-11 58 24	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-04

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	649	
[*O*III]	436.3	21	[*N*II]	658.4	901	
	500.7	803	[*S*II]	671.7	} 206.	
*He*I	587.6	40		673.1		

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .2$ ASTR91

78..1561 Macconnell D.J. *Astron. Astrophys. Suppl. Ser. 33,219-222* Discoveries on southern, red-sensitive objective-prism plates .I. A new list ofsuspected Planetary Nebulae.

023.8–01.7

K 3-11, PK 23–1°2, Sa 3-144, IRAS 18383-0858

		Disc.: Kohoutek 1964	*Diameter* (″)		
1950:	18 38 22.4	-08 58 55	IRAS	*opt. St.*	CS90
	18 38 23.1	-08 58 52	AK90		
2000:	18 41 07.3	-08 55 59	.	*radio* 3.	AK90

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	4243
[*O*III]	436.3	–	[*N*II]	658.4	2620
	495.9	–	[*S*II]	671.7	117
*He*I	587.6	–		673.1	350

$\lg F_{H\beta}(mW.m^{-2})$ $-14.1 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.45	1
25μm	7.32	3
60μm	7.01	3
100μm	12.18	2

Radio (*mJy*) *2cm* | *6cm* 17 AK90

Distance (kpc) stat.: 7.36 (CKS91)

Bibliography: *PK67*, AST89, BlPu81, Ko65, PAKS89, Sa76, Sa86, StAc87

023.9+01.2

MA 13, PK 23+1°1

		Disc.: Maehara 1982	*Diameter* (″)		
			opt. St.	ATS91	
1950:	18 27 48	-07 29.8	82.30016		
2000:	18 30 30	-07 27.7	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	4133
[*O*III]	436.3	–	[*N*II]	658.4	4016
	495.9	–	[*S*II]	671.7	139
*He*I	587.6	–		673.1	251

$\lg F_{H\beta}(mW.m^{-2})$ $-14.3 \pm .3$ ASTR91

IR Class: .
J
H
K
L

Bibliography: Ko89

82.30016 Maehara H. *Contributions from the Bosscha Observatory N.71* A search for galactic emission-line objects.

023.9–02.3

M 1-59, PK 23−2°1, ARO 289, Sa 2-358, VV 202, VV' 442, IRAS 18405-0907

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* +99.0 ± 11.4	STPP83
1950:	18 40 35.3	-09 07 53	IRAS	*opt.* 4.6	CaKa71	*Expansion Velocities* (*km/s*)	
	18 40 35.8	-09 07 51	AK90			[OIII] 13.0	84..1287
2000:	18 43 20.2	-09 04 49	.	*radio* 4.8	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	17	*Hα*	656.3 *nm*	1014	*J*		12μm	1.35	3
[OIII]	436.3	7	[*NII*]	658.4	811	*H*		25μm	7.03	3
	500.7	1357	[*SII*]	671.7	29	*K*	9.8	60μm	23.40	3
HeI	587.6	40		673.1	55	*L*		100μm	26.71	3
$\lg F_{H\beta}(mW.m^{-2})$		−12.00 ± .10	ASTR91			*Photom.*	AIGI74	*Radio*	*2cm* 105	MiAl82
IUE Spectra:		*LW*(1) *SW*(1)						(*mJy*)	*6cm* 108	AK90

Distance (kpc) indiv.: ext. 1.45 (Ac78); ext. 1.00 (Po80)
Distance (kpc) stat.: 2.9 (CaKa71); 5.56 (MiAl75); 5.44 (Ca76); 2.14 (Ac78); 1.45 (Da82); 1.30 (AGNR84); 2.5 (Ma84); 2.19 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlMi72, Ca82, Gr71, Hi71, Is84, Ka70, Ka76, Kal76, Kal78, KrK68, LNP89, MaPo80, Mi73, MiWe79, Ru70, Sa75, Sa84, Sab86, VKDA69, VKDa65, Vo70, VoCo90, We89

68..9060 The P.S. *I.A.U. Symp. 34,36* A preliminary report of a survey of P.N. In south hemisphere.
84..1287 Sabbadin F., Bianchini A., Hamzaoglu E. *Astron. Astrophys. 136, 200-205* Internal motions of fourteen planetary nebulae.

024.1+03.8

M 2-40, PK 24+3°1, ARO 275, MA 5, VV 175, VV' 396, IRAS 18187-0603

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* +89.0 ± 5.0	STPP83
1950:	18 18 42.9	-06 03 25	IRAS	*opt.* 5.	CaKa71		
	18 18 43.0	-06 03 26	Mi76				
2000:	18 21 23.8	-06 01 58	.	*radio* 5.5	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1202	*J*	12.99	12μm	0.57	3
[OIII]	436.3	–	[*NII*]	658.4	636	*H*	13.57	25μm	7.93	3
	500.7	245	[*SII*]	671.7	14	*K*	12.33	60μm	10.77	3
HeI	587.6	39		673.1	18	*L*	9.70	100μm	8.62	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.5 ± .2	ASTR91			*Photom.*	PPFS87	*Radio*	*2cm* 44	MiAl82
								(*mJy*)	*6cm* 53	PFMA82

Distance (kpc) stat.: 4.82 (CaKa71); 1.6 (Ma84); 5.43 (CKS91)

Bibliography: *PK67*, AcMa77, Al78, Hi71, PM87, Ru70, Sa76, SaSt73, StAc87

82.30016 Maehara H. *Contributions from the Bosscha Observatory N.71* A search for galactic emission-line objects.

024.2+05.9

M 4-9, PK 24+5°1, MA 1, Sa 3-125, IRAS 18116-0500

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −21.0 ± 25.0 STPP83	
1950:	18 11 37.4	-05 00 17	IRAS	*opt.* 44.	CaKa71		
	18 11 39	-05 00.3	PK67				
2000:	18 14 19	-04 59.4	.	*radio* 47.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-20 NW						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1170	12*μm*	0.30	1
[OIII]	436.3	–	[NII]	658.4	1567	25*μm*	0.77	3
	500.7	624	[SII]	671.7	135	60*μm*	7.83	3
HeI	587.6	–		673.1	100	100*μm*	11.33	3
$\lg F_{H\beta}(mW.m^{-2})$		−12.8 ± .4 ASTR91				*Radio* (*mJy*)	*2cm*	
							6cm 42	ZPB89

Central Star: AG82 298 —
m_{pg} 20.3 *Qual:* P PK67

Notes: Monochromatic images (JDK86)
Distance (kpc) stat.: 1.46 (CaKa71); 1.31 (Ac78); 1.5 (Ma84); 1.78 (CKS91)

Bibliography: *PK67*, AG82, AST89, AlLi68, CaRu74, Iw73, KrK68, PAKS89, Sa76, StAc87

82.30016 Maehara H. *Contributions from the Bosscha Observatory N.71* A search for galactic emission-line objects.
91..1049 Forveille T., Huggins P.J. *Astron. Astrophys. 248,599* The structure of the CO envelopes of planetary nebulae.
91.17255 Dinerstein H.L., Haas M.R., Werner M.W. *Bull. American Astron. Soc.,23,915* Far-infrared line emission from the neutral envelopes around planetary nebulae.

024.2−05.2

M 4-11, PK 24−5°1, Sa 2-373, IRAS 18515-1009

			Disc.: Shapley	*Diameter* (″)		*Rvel:* +19.0 ± 25.0 STPP83	
1950:	18 51 32.3	-10 09 02	IRAS	*opt.* 21.	PK67		
	18 51 32	-10 09.0	Sa75				
2000:	18 54 17	-10 05.2	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	59	*Hα*	656.3 *nm*	427	12*μm*	0.25	1
[OIII]	436.3	–	[NII]	658.4	33:	25*μm*	0.98	3
	500.7	586	[SII]	671.7		60*μm*	2.99	3
HeI	587.6	21		673.1		100*μm*	29.11	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.36 ± .10 KSK90, ASTR91						

Central Star:
V 18.7 KSK90

Distance (kpc) stat.: 4.20 (Ac78)

Bibliography: *PK67*, AST89, AcMa77, KJL88, KrK68, PAKS89

89..2283 Kwitter K.B., Jacoby G.H. *Astron. J. 98, 2159-2162* Properties of central stars in 13 faint, extended planetary nebulae.
89.50080 Kwitter K.B., Jacoby G.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 303* New identifications of faint central stars in extended PN.

024.3–03.3

Pe 1-17, PK 24–3°1, Sa 3-147, VV' 454, IRAS 18450-0912

			Disc.: Perek 1960	*Diameter* (″)	
1950:	18 45 03.8	-09 12 28	IRAS	*opt.* 5. CaKa71	
	18 45 04	-09 12.5	PK67		
2000:	18 47 48	-09 09.1	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

*He*II	468.6 *nm*	70	$H\alpha$	656.3 *nm*	943
[OIII]	436.3	–	[*N*II]	658.4	1033
	500.7	1485	[*S*II]	671.7	74
*He*I	587.6	26		673.1	103

$\lg F_{H\beta}(mW.m^{-2})$ $-13.44 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.32	1
25μm	1.52	3
60μm	3.19	2
100μm	56.55	1

Radio (*mJy*) *2cm* 6 ZPB89 / *6cm*

Distance (kpc) stat.: 3.9,6.1 (CaKa71); 3.2 (Ma84); 7.92 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, Iw73, KAS91, KrK68, PAKS89, Sa76, StAc87

024.8–02.7

M 2-46, PK 24–2°1, Sa 3-146, VV 206, VV' 451, IRAS 18437-0831

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* $+83.0 \pm 11.0$ STPP83
1950:	18 43 47.1	-08 31 27	IRAS	*opt.* 4.4 CaKa71	
	18 43 51	-08 31.3	Sa76		
2000:	18 46 35	-08 28.0	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1118
[OIII]	436.3	–	[*N*II]	658.4	1114
	500.7	42	[*S*II]	671.7	38
*He*I	587.6	31		673.1	67

$\lg F_{H\beta}(mW.m^{-2})$ $-12.93 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.38	1
25μm	0.98	3
60μm	4.56	3
100μm	10.81	2

Radio (*mJy*) *2cm* 3 ZPB89 / *6cm*

Distance (kpc) stat.: 5.03 (CaKa71); 4.35 (Ac78); 1.4 (Ma84); 12.0 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, KAS91, PAKS89, StAc87

025.0–11.6

A 60, PK 25–11°1, A55 47, ARO 314, VV' 493

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 74. CaKa71	
1950:	19 16 30.0	-12 20 26	Mi76		
2000:	19 19 17.5	-12 14 52	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	454
[OIII]	436.3	–	[*N*II]	658.4	–
	500.7	969	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.0 \pm .5$ ASTR91

Radio (*mJy*) *2cm* < 1 MiAl82 / *6cm* 11 Mi79

Central Star: AG82 364 — m_{pg} 18.5 *Qual:* P PK67

Distance (kpc) stat.: 1.98 (CaKa71); 1.66 (Da82); 1.70 (AGNR84); 3.1 (Ma84); 1.71 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ab66, AcMa77, Hi71, Iw73, Kh79, KrKo68, Ru70, Sa76, ZPB89

025.3+40.8

IC 4593, PK 25+40°1, ARO 27, VV 79, VV' 133

Disc.: Fleming 1907	*Diameter* (″)	*Rvel:* +22.0 ± 0.5 STPP83	
	opt. 13. CJA87	*Expansion Velocities* (*km/s*)	
		CaKa71	[OIII] 12.5 Vi69
1950: 16 09 23.3 +12 12 08 Mi73			[NII] 12 83..3038
2000: 16 11 44.3 +12 04 27 .			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11						*IR Class:* N	
*He*II	468.6 *nm*	3	*Hα*	656.3 *nm*	288	*J* 10.63	
[*O*III]	436.3	–	[*N*II]	658.4	22	*H* 10.94	
	500.7	496	[*S*II]	671.7		*K* 10.53	
*He*I	587.6	14		673.1	0.4:	*L*	
$\lg F_{H\beta}$ −10.58 ± .02 60...353, Kle78, W83						*Photom.* PPFS87	*Radio* 2cm 83 MiAl82
IUE Spectra: *LW*(3) *SW*(9)						*Spectr.* PPOJ86	(*mJy*) 6cm 104 Ca82

Central Star: AG82 199 — AG +12 1684; BD +12 2966; GCRV 9312; HD 145649; PLX 3676; NSV 7526; CSV 101560; SV* ZI 1218; TD1 18957
B 11.05 *V* 11.20 *Qual:* A TASG91, SK85 *Spectrum:* O5 f(H) Me91

Notes: Multiple-shell PN; monochromatic images (CJA87, Ba87); ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: wind 0.85 (85....32)
Distance (kpc) stat.: 3.6 (CaKa71); 3.30 (MiAl75); 3.11 (Ca76); 1.95 (Ac78); 2.10 (Da82); 3.76 (PhPo84); 1.50 (AGNR84); 2.4 (Ma84); 3.19 (CKS91)

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025.3–04.6

K 4-8, PK 25–4°1, Sa 2-374, IRAS 18516-0851

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	18 51 38.0	-08 51 16	IRAS	*opt. St.* CS90	
	18 51 36.1	-08 57 22	BIPu81		
2000:	18 54 20.1	-08 53 32	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	414
[*OIII*]	436.3	11	[*NII*]	658.4	43
	500.7	1321	[*SII*]	671.7	2.0
HeI	587.6	19		673.1	5
$\lg F_{H\beta}(mW.m^{-2})$	$-12.35 \pm .10$ ASTR91				

IR Class: .		*IRAS Fluxes* (*Jy*)		*Qual.*
J		12μm	0.44	3
H		25μm	0.69	3
K	> 10.0	60μm	0.89	2
L		100μm	29.83	1
Photom. AIGI74				

Bibliography: *PK67*, AST89, AcMa77, Ko65, Mi73, PAKS89, Sa75

025.4–04.7

IC 1295, PK 25–4°2, ARO 8, VV 213, VV' 465, IRAS 18519-0853

			Disc.: Curtis 1919	*Diameter* (″)		*Rvel:* −36.0 ± 25.0 STPP83	
1950:	18 51 54.3	-08 53 29	IRAS	*opt.* 90.	CJA87		
	18 51 52.6	-08 53 40	PK67				
2000:	18 54 36.5	-08 49 49	.	*radio* 109.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11 N					
HeII	468.6 *nm*	53	$H\alpha$	656.3 *nm*	319
[OIII]	436.3	–	[*N*II]	658.4	28:
	500.7	1438	[*S*II]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		−11.7 ± .4 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.26	1
25μm	0.96	3
60μm	2.60	3
100μm	17.07	1
Radio (*mJy*) *2cm*	46	MiAl82
6cm	44	ZPB89

Central Star: AG82 334 — m_{pg} 15.5 *Qual:* P PK67

Notes: Multiple-shell PN; monochromatic images (JDK86, CJA87)
Distance (kpc) stat.: 0.7-1.6 (CaKa71); 1.10 (MiAl75); 1.03 (Ca76); 1.25 (Ac78); 1.08 (Da82); 1.05 (AGNR84); 0.7 (Ma84); 1.02 (CKS91)

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025.8–17.9

NGC 6818, PK 25–17°1, ARO 12, Sa 2-392, VV 241, VV' 511, IRAS 19411-1416

			Disc.: Herschel 1787	*Diameter* (″)		*Rvel:* −13.0 ± 3.0 MWF88	
1950:	19 41 08.1	-14 16 27	IRAS	*opt.* 20.	CJA87	*Expansion Velocities* (*km/s*)	
	19 41 09.0	-14 16 21	Mi73		CaKa71	[OIII] 27.6	MWF88
2000:	19 43 58.0	-14 09 07	.			[NII] 31	Sa84

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-11					
HeII	468.6 *nm*	72	$H\alpha$	656.3 *nm*	298
[OIII]	436.3	22	[*N*II]	658.4	49
	500.7	1495	[*S*II]	671.7	4
HeI	587.6	7		673.1	6
$\lg F_{H\beta}$		−10.48 ± .03 Ka80 , KM81, W83			
IUE Spectra:		*LW*(5) *SW*(6)			

IR Class: N		*Photom.* PeTo87	*Spectr.* PPOJ86
J	10.90		
H	11.27		
K	10.81		
L			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.56	3
25μm	16.92	3
60μm	19.53	3
100μm	12.46	3
Radio (*mJy*) *2cm*	270	MiAl82
6cm	281	MiAl75

Central Star: AG82 381 — *B* 16.90 *Qual:* B GaPo88 *Spectrum:* WNb ? 70..9056

Notes: Monochromatic images (CJA87)
Distance (kpc) indiv.: stand. 2.2 (70..9096)
Distance (kpc) stat.: 4.1 (CaKa71); 2.07 (MiAl75); 2.2 (Ca76); 1.6 (Ac78); 1.29 (Da82); 4.45 (PhPo84); 0.95 (AGNR84); 1.5 (Ma84); 1.87 (CKS91)

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025.9–00.9

Pe 1-14, PK 25–0°1, VV' 439

				Disc.: Perek 1960	*Diameter* (″)		
					opt. 4.6	CaKa71	
1950:	18 39.4	-06 44		Sa76			
2000:	18 42.1	-06 41		.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1997
[*O*III]	436.3	–	[*N*II]	658.4	3326
	500.7	898	[*S*II]	671.7	
*He*I	587.6	–		673.1	289

$\lg F_{H\beta}(mW.m^{-2})$ $-14.2 \pm .3$ ASTR91

Distance (kpc) stat.: 3.81 (CaKa71); 0.9 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, KrK68, MaC83, PAKS89

025.9–02.1

Pe 1-15, PK 25–2°1, Sa 3-145, VV' 450, IRAS 18436-0717

				Disc.: Perek 1960	*Diameter* (″)		
1950:	18 43 41.9	-07 17 47		IRAS	*opt.* 5.	CaKa71	
	18 43 42.4	-07 17 49		AK90			
2000:	18 46 24.6	-07 14 34		.	*radio* 4.8	AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1019
[*O*III]	436.3	–	[*N*II]	658.4	51
	500.7	1013	[*S*II]	671.7	
*He*I	587.6	41		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.00 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	1.80	1
25μm	1.23	3
60μm	2.64	3
100μm	202.00	1

Radio (*mJy*) *2cm* *6cm* 8 AK90

Central Star:
B 17.3 *V* 16.2 *Qual:* C TASG91

Distance (kpc) stat.: 2.9-4.5 (CaKa71); 3.66 (Da82); 2.90 (AGNR84); 1.9 (Ma84); 8.17 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, CaRu74, Is84, Iw73, LNP89, PAKS89, Sa76, StAc87

025.9–10.9

Na 2, PK 26−11°1, AS 350, MHα 319-34, Sa 2-387, IRAS 19155-1111

			Disc.: Nassau 1964	*Diameter* (″)	
1950:	19 15 32.3	-11 11 51	IRAS	*opt.* 16. : CS90	
	19 15 33.1	-11 11 42	Mi76		
2000:	19 18 19.3	-11 06 12	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02					
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	554
[*O*III]	436.3	–	[*N*II]	658.4	659
	500.7	1415	[*S*II]	671.7	20:
*He*I	587.6	33		673.1	17:
$\lg F_{H\beta}(mW.m^{-2})$		−12.2 ± .4 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.46	1
25μm	0.33	1
60μm	0.93	3
100μm	1.32	1
Radio (*mJy*) *2cm*	< 1 MiAl82	
6cm		

Central Star: AG82 360 — AS 350 *Spectrum:* WR Wa70

Bibliography: *PK67*, AcMa77, Al73, Alle73, Sa75

026.0–01.8

Pe 2-15, PK 26−1°2, VV' 447

			Disc.: Perek 1960	*Diameter* (″)	
				opt. 3. CaKa71	
1950:	18 42 45.7	-07 00 09	AK90		
2000:	18 45 27.5	-06 56 57	.	*radio* 2.5 AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	893
[*O*III]	436.3	–	[*N*II]	658.4	80
	500.7	1541	[*S*II]	671.7	17:
*He*I	587.6	39:		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		−13.70 ± .10 ASTR91			

IR Class: .		
J		
H		
K	> 9.8	
L		
Photom.	Al74	

Radio (*mJy*) *2cm*		
6cm	9	AK90

Distance (kpc) stat.: 5.85 (CaKa71); 1.4 (Ma84); 10.5 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, BlPu81, PAKS89, Sa76

026.3–02.2

Pe 1-16, PK 26–2°1, ARO 291, Sa 2-366, Th 1-C, VV' 453, IRAS 18448-0657

			Disc.: Perek 1960	*Diameter* (″)		
1950:	18 44 51.6	-06 57 25	IRAS	*opt.* 7.6	CaKa71	
	18 44 50.6	-06 57 17	Mi73			
2000:	18 47 32.3	-06 53 56	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09

						IRAS Fluxes (*Jy*)		*Qual.*
HeII	468.6 *nm*	76	*Hα*	656.3 *nm*	606	12μm	4.71	1
[*OIII*]	436.3	–	[*NII*]	658.4	159	25μm	2.72	1
	500.7	1481	[*SII*]	671.7	19	60μm	2.95	3
HeI	587.6	18		673.1	28	100μm	113.40	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.4 \pm .3$ ASTR91

Central Star:
B 16.5 *V* 15.5 *Qual:* C TASG91

Distance (kpc) stat.: 3.27 (CaKa71); 1.2 (Ma84)

Bibliography: *PK67*, AcMa77, Hi71, KrKo68, PAKS91, Ru70, Sa75

026.5–03.0

Pe 1-19, PK 26–2°3, ARO 293, Sa 2-368, VV' 456, IRAS 18470-0705

			Disc.: Perek 1960	*Diameter* (″)		
1950:	18 47 03.5	-07 05 07	IRAS	*opt.* 4.4	CaKa71	
	18 48 03.0	-07 05 06	Mi76			
2000:	18 50 44.9	-07 01 32	.	*radio* 4.3	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09

						IRAS Fluxes (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	594	12μm	0.25	1
[*OIII*]	436.3	–	[*NII*]	658.4	29	25μm	0.76	3
	500.7	822	[*SII*]	671.7	2.1:	60μm	1.86	2
HeI	587.6	24		673.1	3:	100μm	95.04	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.56 \pm .10$ ASTR91
IUE Spectra: *LW*(1) *SW*(1)

Radio (*mJy*) *2cm* *6cm* 6 ZPB89

Central Star:
B 16.7 *V* 16.4 *Qual:* C TASG91

Distance (kpc) stat.: 5.10 (CaKa71); 1.4 (Ma84); 10.5 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Hi71, PAKS89, Ru70, Sa75

026.6–01.5

K 4-5, PK 26–1°1, IRAS 18429-0621

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	18 42 56.3	-06 21 48	IRAS	*opt.* 20. : CS90	
	18 42 54.1	-06 21 42	AK90		
2000:	18 45 35.1	-06 18 29	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01					
HeII	468.6 *nm*	60	$H\alpha$	656.3 *nm*	507
[*OIII*]	436.3	–	[*NII*]	658.4	1482
	500.7	1430	[*SII*]	671.7	190
HeI	587.6	–		673.1	168

$\lg F_{H\beta}(mW.m^{-2})$ $-13.0 \pm .3$ ASTR91

IR Class: .

J		
H		
K	> 9.7	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.91	1
25μm	1.59	3
60μm	24.04	1
100μm	168.50	1

Radio *2cm* (*mJy*) *6cm*< 0.3 AK90

Bibliography: *PK67*, BlPu81, Ko65, Sa76, Sa86

027.3–02.1

Pe 1-18, PK 27–2°1, Sa 3-148, Th 1-D, VV' 455, IRAS 18461-0559

			Disc.: Perek 1960	*Diameter* (″)	
1950:	18 46 06.2	-05 59 34	IRAS	*opt.* 6.8 CaKa71	
	18 46 06	-05 59.5	Sa76		
2000:	18 48 47	-05 56.1	.	*radio* 1.2 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2703
[*OIII*]	436.3	–	[*NII*]	658.4	999
	500.7	1484	[*SII*]	671.7	23
HeI	587.6	74		673.1	53

$\lg F_{H\beta}(mW.m^{-2})$ $-13.1 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.13	3
25μm	11.12	3
60μm	8.90	3
100μm	114.20	1

Radio *2cm* (*mJy*) *6cm* 42 ZPB89

Distance (kpc) stat.: 3.1 (CaKa71); 1.5 (Ma84); 3.56 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, PAKS89, StAc87

027.3–03.4

A 49, PK 27–3°1, A55 37, VV' 461

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 35. CaKa71	
1950:	18 50.8	-06 33	PK67		
2000:	18 53.5	-06 29	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	576
[*O*III]	436.3	–	[*N*II]	658.4	558
	500.7	1205	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.1 \pm .4$ ASTR91

Central Star: AG82 332 —
$m_{pg} > 21.$ *Qual:* P PK67

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 1.8-3.2 (CaKa71); 2.1 (Ma84)

Bibliography: *PK67*, AG82, AST89, Ab66, AcMa77, Iw73, Kh79, KrK68, MaC83, PAKS89, Sa76

027.4–03.5

Vy 1-4, PK 27–3°2, Sa 2-372, Th 1-E, VV 211, VV' 462, IRAS 18513-0630

			Disc.: Vyssotsky 1942	*Diameter* (″)	*Rvel:* $+110.0 \pm 25.0$STPP83
1950:	18 51 19.9	-06 30 11	IRAS	*opt.* 15. CS90	
	18 51 20.7	-06 30 08	AK90		
2000:	18 54 01.9	-06 26 20	.	*radio* 4. AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05

*He*II	468.6 *nm*	12	$H\alpha$	656.3 *nm*	485
[*O*III]	436.3	10	[*N*II]	658.4	4
	495.9	436	[*S*II]	671.7	
*He*I	587.6	21		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.09 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)

	IRAS Fluxes (*Jy*)	*Qual.*
12μm	0.29	1
25μm	2.42	3
60μm	2.92	3
100μm	35.27	1

Radio (*mJy*) *2cm* *6cm* 22 AK90

Central Star:
B 15.8 *V* 15.6 *Qual:* C TASG91

Distance (kpc) stat.: 10.0 (CKS91)

Bibliography: *PK67*, AcMa77, BlPu81, De71, Ka76, Sa75

027.6+16.9

DeHt 2, PK 27+16°1

		Disc.: Dengel et al 1980		*Diameter* (″)	
				opt. 94. 80..1011	
1950:	17 39 10.5	+03 08 27	80..1011		
2000:	17 41 40.6	+03 07 02	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-15

*He*II	468.6 *nm*	124:	$H\alpha$	656.3 *nm*	333
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	214:	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .5$ ASTR91

Central Star: AG82 254 — *B* 14.96 *V* 14.95 *Qual:* A TASG91 *Spectrum:* O ATS91

Bibliography: AG82, Iy87

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89.50003 Acker A. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 39-48* Catalogues of planetary nebulae.

027.6+04.2

M 2-43, PK 27+4°1, ARO 277, MA 9, Sa 3-133, VV 180, VV' 404, IRAS 18240-0244

		Disc.: Minkowski 1947		*Diameter* (″)		*Rvel*: +95.0 ± 5.0 STPP83	
1950:	18 24 03.2	-02 44 49	IRAS	*opt.* 15.	CS90		
	18 24 03.0	-02 44 48	AK90				
2000:	18 26 40.0	-02 42 57	.	*radio* 1.5	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19

						IR Class: D		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	5370	*J*	10.64	12μm	15.74	3
[*O*III]	436.3	–	[*N*II]	658.4	1162	*H*	10.34	25μm	53.82	3
	500.7	629	[*S*II]	671.7		*K*	8.85	60μm	21.31	3
*He*I	587.6	108		673.1	23:	*L*	5.98	100μm	9.79	1

$\lg F_{H\beta}(mW.m^{-2})$ $-13.1 \pm .3$ ASTR91

Photom. PPFS87

Radio (*mJy*) 2*cm* 233 MiAl82; 6*cm* 148 AK90

Central Star: *Spectrum:* WC 8 ATS91

Distance (kpc) stat.: 1.43 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al74, Hi71, Mi73, PAKS89, PM87, Ru70, Sa76, StAc87, VoCo90, ZTPS89

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90..1038 Zhang C.Y., Kwok S. *Astron. Astrophys. 237,479* IRAS spectroscopic observations of young planetary nebulae.

027.6–09.6

IC 4846, PK 27−9°1, ARO 103, AS 348, VV 226, VV' 488, Sa 2-385, IRAS 19137-0908

			Disc.: Fleming 1901	*Diameter* (″)		*Rvel:* +151.0 ± 3.0 STPP83	
1950:	19 13 43.9	-09 08 01	IRAS	*opt.* 2.	CaKa71	*Expansion Velocities* (*km/s*)	
	19 13 44.3	-09 07 59	AK90			[OIII] 13.1	89.50036
2000:	19 16 28.2	-09 02 36	.	*radio* 2.9	AK90		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	1.1	$H\alpha$	656.3 *nm*	393	*J*	12.16	12μm	0.34	1
[*OIII*]	436.3	6	[*NII*]	658.4	26	*H*	12.44	25μm	3.92	3
	495.9	369	[*SII*]	671.7	1.7	*K*	11.75	60μm	3.11	3
HeI	587.6	21		673.1	4	*L*	(10.66)	100μm	1.73	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.34 ± .02	O63 , SK89			*Photom.*	KHM86	*Radio*	*2cm* 44	MiAl82
IUE Spectra:		*LW*(2) *SW*(2)						(*mJy*)	*6cm* 43	AK90

Central Star: AG82 357 — GCRV 11715; HD 180324; BD -09 5069; AS 348
B 15.19 *V* 15.19 *Qual:* B SK89 , TASG91 *Spectrum:* Of Al77

Distance (kpc) stat.: 9.7-10.4 (CaKa71); 11.12 (MiAl75); 11.1 (Ca76); 2.84 (Ac78); 2.10 (AGNR84); 3.3 (Ma84) 3.28 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac80, AcMa77, Al65, Al73, Al76, AlCz79, AlCz83, AlEp76, AlGl74, AlLi68, Alle82, BFM80, Ba78, Bar78, Bark78, Ca82, CePe83, Cu74, DFHM67, De71, FaMa88, Fe82, FeAl87, GPY79, Gol87, Gu70, He71, He90, Hi71, Hig71, Ii81, Is84, IwKa65, KAC76, KPK81, Ka66, Ka70, Ka76, Ka78, Ka79, Ka80, Ka86, Kal76, Kal80, Kh76, Kh84, Khr76, Khro76, Kle78, Kos76, MaPo80, Mi73, MiS77, MiSa77, MiWe79, NPP80, PAKS91, PPT88, Pe75, Pe91, PiKh79, SGBO84, Sa75, Sa84, SaHa82, SaMi78, Sh85, StKa89, StTy90, VKDA69, Vo70, We89, ZTPS89, ZuAl86

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78.16757 Aller L.H. *Proc. Astron. Soc. Aust. 3,213-219* Chemical compositions of planetary and diffuse nebulae.
80....55 Czyzak S.J., Sonneborn G., Aller L.H., Shectman S.A. *Astrophys. J. 241,719-724* Nebular and auroral transitions of (Ar IV) in some PN.
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027.7+00.7

M 2-45, PK 27+0°1, ARO 286, Sa 3-141, Th 1-B, VV 198, VV' 43, IRAS 18367-0422

			Disc.: Minkowski 1947	*Diameter* (″)			
1950:	18 36 42.8	-04 22 39	IRAS	*opt.* 6.4	CaKa71		
	18 36 43.0	-04 22 36	Mi76				
2000:	18 39 21.8	-04 19 50	.	*radio* 7.5	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18						*IR Class:* S		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3117	*J*	13.83	12μm	5.45	1
[*OIII*]	436.3	–	[*NII*]	658.4	1036	*H*	12.26	25μm	12.77	3
	500.7	826	[*SII*]	671.7	47	*K*	11.91	60μm	20.68	3
HeI	587.6	78		673.1	84	*L*		100μm	381.60	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.6 ± .4	ASTR91			*Photom.*	PPFS87	*Radio*	*2cm* 146	MiAl82
								(*mJy*)	*6cm* 154	ZPB89

Central Star: AG82 324 —
$m_{pg} > 21.$ *Qual:* P PK67

Distance (kpc) stat.: 3.19 (CaKa71); 1.63 (Da82); 1.40 (AGNR84); 2.5 (Ma84); 2.42 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, AcMa77, Hi71, Is84, LNP89, Ma81, Mi79, PAKS89, PM87, Ru70, Sa76, StAc87, VoCo90

028.0+10.2

WeSb 3, PK 28+10°1

		Disc.: Weinberger et al 1981	*Diameter* (″)	
			opt. 36. 81..1143	
1950:	18 03 27.4	+00 22 16	81..1143	
2000:	18 06 00.7	+00 22 37	.	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-15

*He*II	468.6 *nm*	117:	*Hα*	656.3 *nm*	417:
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	217:	[*S*II]	671.7	
*He*I	587.6	92:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .4$ ASTR91

Central Star: AG82 286 —
B 16.8 81..1143

Bibliography: AG82, Iy87

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028.2–04.0

Pe 1-20, PK 28–4°1, ARO 298, Sa 2-377, Th 1-G, VV' 468, IRAS 18546-0604

		Disc.: Perek 1960	*Diameter* (″)	
1950:	18 54 36.1	-06 04 02	IRAS	*opt.* 6.4 CaKa71
	18 54 36.6	-06 03 43	Mi76	
2000:	18 57 17.2	-05 59 41	.	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03

*He*II	468.6 *nm*	101	*Hα*	656.3 *nm*	534
[*O*III]	436.3	–	[*N*II]	658.4	46
	500.7	1303	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.34	1
25μm	0.57	3
60μm	0.88	2
100μm	45.96	1
Radio 2*cm*	26	MiAl82
(*mJy*) 6*cm*	< 5	ZPB89

Distance (kpc) stat.: 5.55 (CaKa71); 2.93 (Da82); 2.30 (AGNR84); 3.4 (Ma84); 6.08 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, CaRu74, Hi71, Iw73, KrK68, LNP89, Ru70, Sa75

028.5+05.1

K 3-2, PK 28+5°1, IRAS 18224-0132

			Disc.: Kohoutek 1964	*Diameter* (″)		*Rvel*: +42.0 ± 3.0	STPP83
1950:	18 22 24.7	-01 32 39	IRAS	*opt.* 10.	CS90		
	18 22 25.0	-01 32 36	AK90				
2000:	18 25 00.5	-01 30 53	.	*radio* 2.8	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3363
[OIII]	436.3	–	[*NII*]	658.4	2582
	500.7	145:	[*SII*]	671.7	118
HeI	587.6	104		673.1	135

$\lg F_{H\beta}(mW.m^{-2})$ $-13.7 \pm .3$ ASTR91

IR Class: N

J	13.20	*IRAS Fluxes* (*Jy*)		*Qual.*
H	13.27	12μm	0.33	3
K	12.43	25μm	5.55	3
L		60μm	4.46	3
Photom.	PPFS87	100μm	7.28	1

Radio 2cm (*mJy*) 6cm 31 AK90

Distance (kpc) stat.: 2.50 (AGNR84); 5.08 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AlGl74, Alle73, BlPu81, Is84, KHM86, KPK81, Ko65, PAKS89, PM87, Sa76, Sa86, StAc87

77....94 Johnson H.M. *Astrophys. J. 216,776-783* Fabry-Perot interferometry of stellar P.N.
79....18 Johnson H.M., Balick B., Thompson A.R. *Astrophys. J. 233,919-924* VLA observations of stellar P.N.
85..2006 Kwok S. *Astron. J. 90, 49-58* High-resolution radio observations of compact planetary nebulae.
89.50001 Terzian Y. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed. S. Torres-Peimbert. Planetary nebulae, 17-28* Radio images of planetary nebulae.

028.5+01.6

M 2-44, PK 28+1°1, Sa 2-354, Th 1-A, VV 197, VV' 433, IRAS 18349-0308

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel*: +106.0 ± 25.0	STPP83
1950:	18 34 58.4	-03 08 48	IRAS	*opt.* 7.4	CaKa71	*Expansion Velocities* (*km/s*)	
	18 34 59	-03 08.6	Sa75			[OIII] 12.0	84..2707
2000:	18 37 36	-03 06.0	.	*radio* 8.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02

HeII	468.6 *nm*	53	$H\alpha$	656.3 *nm*	1216
[OIII]	436.3	7	[*NII*]	658.4	384
	500.7	1667	[*SII*]	671.7	36
HeI	587.6	28		673.1	60

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)

12μm	1.03	3
25μm	4.54	3
60μm	8.69	3
100μm	46.41	1

Qual.

Radio 2cm (*mJy*) 6cm 54 ZPB89

Distance (kpc) stat.: 2.92 (CaKa71); 2.42 (Ac78); 0.8 (Ma84); 4.47 (CKS91)

Bibliography: *PK67*, AcMa77, AlLi68, Ka76, Sa84, We89

84..2707 Sabbadin F. *Mon. Not. R. Astron. Soc. 209, 889-894* High dispersion spectra of compact planetary nebulae.
84.10366 Kondratev'A L.N. *Astron. Tsirk. 1354* Spectral observations of three planetary nebulae.

028.7+02.7

K 3-7, PK 28+2°1, ARO 285, MA 19, Sa 3-140, IRAS 18316-0230

			Disc.: Kohoutek 1964	*Diameter* (″)			
1950:	18 31 36.7	-02 30 03	IRAS	*opt.* 8.	CS90		
	18 31 36.9	-02 30 01	AK90				
2000:	18 34 13.6	-02 27 37	.	*radio* 6.3	AK90		

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	53	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-14.0 \pm .4$	ASTR91

IR Class: .		
J		
H		
K	> 9.6	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.29	1
25μm	3.62	3
60μm	5.44	3
100μm	71.31	1
Radio 2*cm*		
(*mJy*) 6*cm*	30	AK90

Distance (kpc) stat.: 6.06 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Hi71, Ko65, Mi76, Ru70, Sa76, Sa86, StAc87

82.30016 Maehara H. *Contributions from the Bosscha Observatory N.71* A search for galactic emission-line objects.

028.7–03.9

Pe 1-21, PK 28–3°1, Sa 3-150, Th 1-H, VV' 469, IRAS 18551-0531

			Disc.: Perek 1960	*Diameter* (″)			
1950:	18 55 09.1	-05 31 47	IRAS	*opt.* 8.6	CaKa71		
	18 55 10	-05 31.7	Sa76				
2000:	18 57 50	-05 27.6	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28					
HeII	468.6 *nm*	101	$H\alpha$	656.3 *nm*	726
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	668	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-13.2 \pm .4$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.89	3
60μm	1.70	2
100μm	38.36	1
Radio 2*cm*		
(*mJy*) 6*cm*	< 3	ZPB89

Distance (kpc) stat.: 4.14 (CaKa71); 2.70 (AGNR84); 2.5 (Ma84); 5.07 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, CaRu74, Iw73, KrK68, LNP89, StAc87

029.0+00.4

A 48, PK 29+0°1, A55 36, VV' 441, IRAS 18401-0316

			Disc.: Abell 1955	*Diameter* (″)	
1950:	18 40 07.7	-03 16 23	IRAS	*opt.* 40. CaKa71	
	18 40.2	-03 16	Sa76		
2000:	18 42.8	-03 13	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-05						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	3.83	1
[*OIII*]	436.3	–	[*NII*]	658.4	27	25μm	2.53	3
	500.7	11	[*SII*]	671.7		60μm	20.68	1
HeI	587.6	4		673.1		100μm	826.80	1

Notes: Monochromatic images (JDK86)
Distance (kpc) stat.: 1.73 (CaKa71); 1.8 (Ma84)

Bibliography: *PK67*, Ab66, AcMa77, CaRu74, Iw73, Ka69, KrK68, MeHa75, Te66, ZuAl86

66..9019 Le Marne A.E. *Obs. 86,148* Observations of planetary nebulae at 408 MHz.
70..9029 Aller L.H. *Sky Tel.40,25-27* The planetary nebulae. XIV.

029.2–00.0

TDC 1, IR 29.211

			Disc.: Thompson et al 1991	*Diameter* (″)	*Rvel:* −55. ± 60. 91..3001
				opt. 5.6 91..3001	
1950:	18 42 15.8	-03 23 43	91..3001		
2000:	18 44 53.4	-03 20 34	.	*radio* 6. 88...328	

88...328 Jones T.J., Garwood R., Dickey J.M. *Astrophys. J. 328, 559-568,1988* Compact radio sources in the Galactic plane.
91..3001 Thompson D.J., Djorgovski S., De Carvalho R.R. *Pub. Astron. Soc. Pac. 103,487* New planetary nebulae in the direction of the galactic bulge

029.2–05.9

NGC 6751, PK 29–5°1, ARO 101, Sa 2-382, Th 1-J, VV 219, VV' 477, IRAS 19032-0604

			Disc.: Fleming 1907	*Diameter* (″)		*Rvel:* −38.5 ± 2.8	STPP83
1950:	19 03 15.2	-06 04 11	IRAS	*opt.* 20.5	CJA87	*Expansion Velocities* (*km/s*)	
	19 03 15.0	-06 04 07	Mi73		CaKa71	[OIII] 40.0	Sa84
2000:	19 05 55.6	-05 59 28	.			[NII] 38	We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01 E					*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm* 366	*J*	12.18	12μm	3.96	3
[*O*III]	436.3	–	[*N*II]	658.4 231	*H*	12.19	25μm	18.44	3
	500.7	1295	[*S*II]	671.7 13	*K*	11.25	60μm	23.64	3
*He*I	587.6	18:		673.1 15	*L*	9.30	100μm	8.80	2
$\lg F_{H\beta}(mW.m^{-2})$		−11.26 ± .01	CD61 , SK85		*Photom.*	PPFS87	*Radio* 2*cm*	54	MiAl82
IUE Spectra:		*LW*(1)	*SW*(2)		*Spectr.*	PPOJ86	(*mJy*) 6*cm*	63	Ca82

Central Star: AG82 344 — CSI -06 -19031 0; HD 177656; EM* CDS 1043
B 15.78 *V* 15.45 *Qual:* B TASG91 *Spectrum:* WC 4 Me91

Notes: Monochromatic images (CJA87, Hua90); ESO-NTT images by Schwartz H.E. and Melnick J. FC is given on the last plate.
Distance (kpc) indiv.: kinem. 1.4 (Ac78); ext. 1.5 (Po83)
Distance (kpc) stat.: 2.57 (CaKa71); 2.76 (MiAl75); 2.56 (Ca76); 2.05 (Ac78); 2.69 (Da82); 1.90 (PhPo84); 1.70 (AGNR84); 2.8 (Ma84); 2.56 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, Ac80, AcMa77, Al65, Al68, Al76, Al77, Al82, AlCz79, AlCz83, AlEp76, AlLi68, AlMi72, All76, ArKo68, Bo68, Ca84, CaKo68, CaNo73, CaRu74, CePe83, Ch89, CoBa74, Cu74, DFHM67, De71, Dr80, Gr71, Gr72, Gr89, Gu70, Gu88, HaSe66, HaZu91, He71, He90, Hi71, Hig71, Ii81, Iw73, IwKa65, KHM86, KSDN68, KVLS81, Ka70, Ka76, Ka80, Ka86, Kal80, Kh76, Kh79, Khr76, Khro76, Ko77, Kr69, KrK68, LNP89, MaFa85, MaPo80, MiS77, MiWe79, PBBE84, PM87, PSK78, PWWD77, PWWF78, Pa90, Pe91, PeTo83, Ph84, PhMa88, PiKh79, PrPo83, PrPo87, RRA82, Ri69, SGBO84, Sa75, SaMi78, Sab86, Sabb86, Sc81, Sh85, Sm73, SmAl69, StKa89, StTy90, TAGS89, Te68, VKDa65, Vo70, VoCo90, Wa70, Webs69, ZuAl86

70..9028 Aller L.H. *Sky Tel.39,368-371* The planetary nebulae. XIII.
70..9056 Hack M., Struve O. *Trieste Oss. Astr.1970,1* Stellar spectroscopic peculiar stars.
70..9102 Gurzadian G.A. *Planetary Nebulae Reidel D. Publ. Comp. Dodrecht NL 282* The origin of P.N.
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84..1370 Tylenda R. *Astron. Astrophys. 138, 317-324* Planetary nebulae with massive nuclei. II. Discussion of observed candidates.
84..2730 Sabbadin F. *Mon. Not. R. Astron. Soc. 210, 341-358* Spatiokinematical models of five planetary nebulae.
86..1311 Gieseking F., Solf J. *Astron. Astrophys. 163, 174-176* Bipolar mass outflow in the planetary nebula NGC 6751.
86..2599 De Freitas Pacheco J.A., Codina S.J., Viadana L. *Mon. Not. R. Astron. Soc. 220, 107-117* New colour and Zanstra temperatures for 15 central stars of planetary nebulae.
86.13521 Landaberry S.0j.C., Pacheco J.A.F., Viadana L., Bazzanella B. *Rev. Mex. Astron. 12, 191-192* Photoelectric scanner observations of central stars of planetary nebulae.
89..1349 Phillips J.P., Mampaso A. *Astron. Astrophys. 218, 257-263* A CO J-2 —> 1 survey of type I post-main-sequence nebulae.
89.50051 Chu Y.H., Jacoby G.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 198* Internal motions of faint PN halos.
90..1003 Hua C.T., Louise R. *Astron. Astrophys. 235,403* The emission line nebulosity near the Planetary Nebula NGC 6751
91....40 Chu Y.-H., Manchado A., Kwitter K.B. *Astrophys. J.,376,150* The multiple-shell structure of the planetary nebula NGC 6751.
91..1019 Zijlstra A.A., Gaylard M.J., Te Lintel Hekkert P., Menzies J., Nyman L.-A., Schwarz H.E. *Astron. Astrophys. 243,9,1991 (L).* IRAS 07027-7934 : the link between OH/IR stars and carbon-rich planetary nebulae.

029.8–07.8

LSA 1

Disc.: Lundstrom et a 1988	*Diameter* (″)	
	opt. 14. 88..1266	
1950: 19 11 14.9 -06 24 03 88..1266		
2000: 19 13 55.8 -06 18 51 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28

*He*II	468.6 *nm*	56:	*Hα*	656.3 *nm*	509
[OIII]	436.3	–	[NII]	658.4	60
	500.7	1505	[SII]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.0 \pm .2$ ASTR91

Bibliography: AST89, PAKS89

88..1266 Lundstrom I., Stenholm B., Acker A. *Astron. Astrophys. 196, 233-235* A newly identified planetary nebula in Aquila.

030.6+06.2

Sh 2-68, PK 30+6°1, HDW 9, Simeiz 291, YM 15

Disc.: Fesen et al 1983	*Diameter* (″)	
	opt. 400. 83.28034	*Expansion Velocities* (*km/s*)
1950: 18 22 25.7 +00 49 55 83..3100	83..3100	[OIII] 5 We89
2000: 18 24 58.5 +00 51 38 .		[NII] 5 We89
IUE Spectra: *LW*(0) *SW*(2)		

Central Star: AG82 307Bis —
B 16.0 83..3100

Notes: Possibly a HII region.

Bibliography: IsWe87, Ko89, We86

74..4002 Felli M., Perinotto M. *Astrophys. Space Sci. 26,115-122* On the nature of some non radio emitting Sharpless H II regions.
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85.23513 Iyengar K.V.K. *J. Astrophys. Astron. 6, 227-231* Far infrared emission from three new planetary nebulae.
86....60 Churchwell E., Koornneef J. *Astrophys. J. 300, 729-736* Pre-main-sequence stars in the Serpens molecular cloud.
86...257 Snell R.L., Bally J. *Astrophys. J. 303, 683-701* Compact radio sources associated with molecular outflows.
86..9017 Torrelles J.M., Ho P.T.P., Moran J.M., Rodriguez L.F., Canto J. *Astrophys. J. 307, 787-794* Ammonia observations of regions with molecular outflows.
86..9241 Mozurkewich D., Schwartz P.R., Smith H. *Astrophys. J. 311, 371-379* Luminosities of sources associated with molecular outflows.
88.17782 Burov A.B., Vdovin F.V., Zinchenko I.I., Kislyakov A.G., Krasil'Nikov A.A., Kukina E.P., Lapinov A.V., Pirogov L.E. *Pis'ma Astron. Zu. 14, 492-502* HCN line J = 1 - 0 survey of molecular clouds associated with Sharpless H II regions. Results of observations.
89..1521 Forbes D. *Astron. Astrophys., Suppl. Ser. 77, 439-445* Photometry and spectroscopy of stars in northern H II regions.
89..4546 Zinchenko I.I., Lapinov A.V., Pirogov L.E. *Astron. Zu. 66, 1142-1153* HCN J=1-0 survey of molecular clouds associated with Sharpless H II regions. Spectral analysis.
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90..1011 Hippelein H., Weinberger R. *Astron. Astrophys. 232,129* The expansion of highly evolved planetary nebulae.
90..2050 Fich M., Treffers R.R., Dahl G.P. *Astron. J. 99, 622-637* Fabry-Perot H-alpha observations of galactic H II regions.
90..4502 Zinchenko I.I., Krasil'Nikov A.A., Kukina E.P., Lapinov A.V. And Pirogov L.E. *Astron. Zu.,67,908* HCO+ J=1-0 observations of molecular clouds associated with Sharpless regions.

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030.8+03.4

A 47, PK 30+3°1, A55 35, ARO 138, VV' 429, IRAS 18328-0016

			Disc.: Abell 1955	*Diameter* (″)	
1950:	18 32 51.3	-00 16 21	IRAS	*opt.* 16. CaKa71	
	18 32 48.0	-00 16 00	Mi76		
2000:	18 35 22.1	-00 13 31	.		

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	0.36	2
60μm	3.09	3
100μm	18.01	2

Central Star: AG82 322 — m_{pg} 21.0 *Qual:* P PK67

Distance (kpc) stat.: 4.81 (CaKa71); 5.5 (Ma84)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Hi71, Iw73, KrK68, MiAl82, Sa76

031.0+04.1

K 3-6, PK 30+4°1, IRAS 18307+0009

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	18 30 43.9	+00 09 25	IRAS	*opt. St.* CS90	
	18 30 43.9	+00 09 26	AK90		
2000:	18 33 17.4	+00 11 46	.	*radio* 0.74 AK90	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-11

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	11
	500.7	75	[*SII*]	671.7	
HeI	587.6	6		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.9 \pm .3$ ASTR91

IR Class: .

J		
H		
K	> 8.6	
L		

Photom. AI74

IRAS Fluxes (Jy)		*Qual.*
12μm	1.36	3
25μm	15.65	3
60μm	7.79	3
100μm	8.70	1

Radio (*mJy*) *2cm* *6cm* 55 AK90

Distance (kpc) stat.: 2.80 (CKS91)

Bibliography: *PK67*, BlPu81, Ko65, PAKS91, Sa86, VoCo90

90..1038 Zhang C.Y., Kwok S. *Astron. Astrophys. 237,479* IRAS spectroscopic observations of young planetary nebulae.

031.0–10.8

M 3-34, PK 31−10°1, ARO 322, Sa 2-390, VV' 498, IRAS 19243-0641

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +37.0 ± 25.0 STPP83	
1950:	19 24 20.3	-06 41 14	IRAS	*opt.* 5.6	CaKa71	*Expansion Velocities* (*km/s*)	
	19 24 20.7	-06 41 00	Mi76			[OIII] 14.0	84..2707
2000:	19 27 01.7	-06 34 54	.	*radio* 8.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31					
*He*II	468.6 *nm*	27	$H\alpha$	656.3 *nm*	439
[*O*III]	436.3	11	[*N*II]	658.4	–
	500.7	1599	[*S*II]	671.7	
*He*I	587.6	16		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-11.8 \pm .3$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.34	1
25μm	3.54	3
60μm	4.46	3
100μm	2.28	3
Radio 2*cm*	31	MiAl82
(*mJy*) 6*cm*	29	ZPB89

Central Star: AG82 369 —
B 16.2 *V* 16.3 *Qual:* C TASG91

Distance (kpc) stat.: 6.82 (CaKa71); 5.04 (Ac78); 4.4 (Ma84); 5.99 (CKS91)

Bibliography: *PK67*, AG82, AST89, AcMa77, AlLi68, CaWy76, Hi71, Iw73, Ru70, Sa75, Sa84, TAGS89, We89

84..2707 Sabbadin F. *Mon. Not. R. Astron. Soc. 209, 889-894* High dispersion spectra of compact planetary nebulae.
84.10366 Kondratev'A L.N. *Astron. Tsirk. 1354* Spectral observations of three planetary nebulae.

031.2+05.9

K 3-3, PK 31+5°1, IRAS 18246+0112

			Disc.: Kohoutek 1964	*Diameter* (″)			
1950:	18 24 37.0	+01 12 34	IRAS	*opt.* 9.2	CaKa71		
	18 24 37.1	+01 12 37	PK67				
2000:	18 27 09.5	+01 14 30	.	*radio* 11.	ZPB89		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-11					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	73	[*S*II]	671.7	
*He*I	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.35	3
25μm	3.08	3
60μm	9.36	3
100μm	5.54	2
Radio 2*cm*		
(*mJy*) 6*cm*	34	ZPB89

Distance (kpc) stat.: 9.35 (CaKa71); 11.5 (Ma84); 4.10 (CKS91)

Bibliography: *PK67*, AGR89, CaWy76, Iw73, Ko65, PAKS91, Sa86, TTP87, TuTe84

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86..1489 Sivagnanam P., Le Squeren A.M. *Astron. Astrophys. 168, 374-376* OH circumstellar masers in association with IRAS sources.

031.3–00.5

HaTr 10, PK 31–0°2, S 2-68

			Disc.: Hartl et al 1983	*Diameter* (″)	
				opt. 25. 85..1131	
1950:	18 47 49	-01 43.7	83.28035		
2000:	18 50 25	-01 40.1	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-01					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	486
	500.7	57	[*SII*]	671.7	32
HeI	587.6	–		673.1	28

Bibliography: Ko89

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85..1131 Hartl H., Tritton S.B. *Astron. Astrophys. 145, 41-44,1985* New planetary nebulae of low surface brightness detected on UK-Schmidt plates.

031.7+01.7

PC 20, PK 31+1°1, ARO 140, IRAS 18404-0019

			Disc.: Peimbert et al 1961	*Diameter* (″)	
1950:	18 40 29.2	-00 19 37	IRAS	*opt.* 10. CS90	
	18 40 29.3	-00 19 37	Mi76		
2000:	18 43 03.4	-00 16 35	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2194
[*OIII*]	436.3	–	[*NII*]	658.4	1760
	500.7	793	[*SII*]	671.7	153
HeI	587.6	94		673.1	215

IR Class: .		*IRAS Fluxes* (*Jy*)		*Qual.*
J		12μm	1.31	1
H		25μm	1.68	3
K	9.5	60μm	6.64	3
L		100μm	217.20	1
Photom.	AIGI74			

Bibliography: *PK67*, AcMa77, Hi71, Sa76, StAc87

031.9–00.3

WeSb 4, PK 31–0°1

			Disc.: Weinberger et al 1981	*Diameter* (″)	
				opt. 30. 81..1143	
1950:	18 48 05.2	-01 06 48	81..1143		
2000:	18 50 40.2	-01 03 14	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-05					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	618
	500.7	58	[*SII*]	671.7	31
HeI	587.6	–		673.1	32

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032.0–03.0

K 3-18, PK 32−3°1, ARO 299, Sa 3-152, IRAS 18579-0216

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	18 57 57.8	-02 16 18	IRAS	*opt.* 4. CaKa71	
	18 57 58.0	-02 16 13	Mi76		
2000:	19 00 34.3	-02 11 57	.	*radio* 0.9 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18					
HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	2336	
[*OIII*]	436.3	–	[*NII*] 658.4	807	
	500.7	37:	[*SII*] 671.7		
HeI	587.6	–	673.1		
$\lg F_{H\beta}(mW.m^{-2})$		−14.2 ± .3 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.98	3
25μm	15.99	3
60μm	7.45	3
100μm	83.72	1
Radio 2*cm*	30	MiAl82
(*mJy*) 6*cm*	11	ZPB89

Distance (kpc) stat.: 9.50 (CaKa71); 6.2 (Ma84); 9.19 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Hi71, Iw73, Ko65, MaC83, PAKS89, Ru70, Sa76, Sa86, StAc87, VoCo90, ZTPS89

032.1+07.0

PC 19, PK 32+7°2, ARO 136, IRAS 18221+0227

			Disc.: Peimbert et al 1961	*Diameter* (″)	*Rvel:* +20.0 ± 25.0 STPP83
1950:	18 22 07.4	+02 27 38	IRAS	*opt.* 14. ATS91	
	18 22 13.6	+02 27 45	AK90		
2000:	18 24 44.5	+02 29 27	.	*radio* 2.7 AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29					
HeII	468.6 *nm*	5	*Hα* 656.3 *nm*	777	
[*OIII*]	436.3	12	[*NII*] 658.4	20	
	500.7	1547	[*SII*] 671.7	3	
HeI	587.6	30	673.1	4	
$\lg F_{H\beta}(mW.m^{-2})$		−11.6 ± .2 ASTR91			

IR Class: .		
J		
H		
K	9.7	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.37	1
25μm	2.27	3
60μm	1.67	1
100μm	3.89	1
Radio 2*cm*	13	MiAl82
(*mJy*) 6*cm*	26	AK90

Distance (kpc) stat.: 5.71 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Mi76

032.5–03.2

K 3-20, PK 32–3°2, Sa 3-153, IRAS 18595-0153

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	18 59 35.6	-01 53 06	IRAS	*opt. St.* CS90	
	18 59 34.1	-01 53 03	BIPu81		
2000:	19 02 10.0	-01 48 40	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1306	*J*		12μm	0.34	1
[*OIII*]	436.3	–	[*NII*]	658.4	832	*H*		25μm	1.44	3
	500.7	39	[*SII*]	671.7	18	*K*	> 9.5	60μm	2.79	3
HeI	587.6	28		673.1	49	*L*		100μm	50.88	1
$\lg F_{H\beta}(mW.m^{-2})$		$-13.23 \pm .10$	ASTR91			*Photom.*	AI74			

Central Star:
V 17.0 *Qual:* D TASG91

Bibliography: *PK67*, AST89, Ko65, PAKS89, Sa76, Sa86, StAc87

032.7+05.6

K 3-4, PK 32+5°1, ARO 279, IRAS 18284+0223

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	18 28 27.7	+02 23 11	IRAS	*opt.* 11.8 CaKa71	
	18 28 29.5	+02 23 26	Mi73		
2000:	18 31 00.5	+02 25 36	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-11							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	730		12μm	0.25	1
[*OIII*]	436.3	–	[*NII*]	658.4	414		25μm	0.50	3
	500.7	1428	[*SII*]	671.7	23		60μm	1.81	3
HeI	587.6	34		673.1	42		100μm	4.90	1
$\lg F_{H\beta}(mW.m^{-2})$		$-13.0 \pm .2$	ASTR91				*Radio* 2*cm*	23	MiAl82
							(*mJy*) 6*cm*	21	Mi79

Distance (kpc) stat.: 1.3-1.4 (CaKa71); 2.90 (AGNR84); 6.5 (Ma84); 3.73 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Hi71, Iw73, KPK81, Ko65, KrK68, PAKS91, Ru70, Sa86

032.7–02.0

M 1-66, PK 32–2°1, Sa 2-378, VV 216, VV' 470, IRAS 18558-0107

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* +42.6 ± 10.1 STPP83	
1950:	18 55 51.1	-01 07 53	IRAS	*opt.* 10.	CS90		
	18 55 51.2	-01 07 53	AK90				
2000:	18 58 26.2	-01 03 45	.	*radio* 2.7	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	11	$H\alpha$	656.3 *nm*	886	*J*		12μm	0.46	3
[*OIII*]	436.3	12	[*NII*]	658.4	218	*H*		25μm	4.33	3
	500.7	1779	[*SII*]	671.7	5	*K*	> 10.0	60μm	3.63	3
HeI	587.6	30		673.1	9	*L*		100μm	97.90	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.1 ± .3	ASTR91			*Photom.*	AIGI74	*Radio* 2*cm*		
								(*mJy*) 6*cm*	59	AK90

Distance (kpc) stat.: 3.44 (CKS91)

Bibliography: *PK67*, AcMa77, AlLi68, BlPu81, Sa75

87.30057 Kwok S. *Physics Reports 156, n) 3, 113-146* Effects of mass loss on the late stages of stellar evolution.

032.9+07.8

K 3-1, PK 32+7°1

			Disc.: Kohoutek 1964	*Diameter* (″)			
				opt. 8.	CS90		
1950:	18 20 52.1	+03 34 51	AK90				
2000:	18 23 21.7	+03 36 28	.	*radio* 5.	AK90		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29						*IR Class:* .			
HeII	468.6 *nm*	78	$H\alpha$	656.3 *nm*	559	*J*			
[*OIII*]	436.3	11	[*NII*]	658.4	–	*H*			
	500.7	826	[*SII*]	671.7		*K*	> 8.2		
HeI	587.6	7		673.1		*L*			
$\lg F_{H\beta}(mW.m^{-2})$		−12.89 ± .10	ASTR91			*Photom.*	AI74	*Radio* 2*cm*	
								(*mJy*) 6*cm*	< 5 AK90

Distance (kpc) stat.: 10.1 (CKS91)

Bibliography: *PK67*, BlPu81, Ko65

032.9–02.8

K 3-19, PK 32–2°2, ARO 301, Sa 2-379, IRAS 18590-0123

			Disc.: Kohoutek 1964	*Diameter* (″)			
1950:	18 59 01.6	-01 23 27	IRAS	*opt. St.*	CS90		
	18 59 01.3	-01 23 28	AK90				
2000:	19 01 36.6	-01 19 07	.	*radio* 1.2	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1557	*J*		12μm	0.38	3
[*OIII*]	436.3	10:	[*NII*]	658.4	528	*H*		25μm	2.65	3
	500.7	1905	[*SII*]	671.7	15	*K*	> 10.2	60μm	2.56	3
HeI	587.6	55		673.1	25	*L*		100μm	57.77	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.2 ± .3	ASTR91			*Photom.*	AIGI74	*Radio* (*mJy*)	*2cm*	
									6cm 23	AK90

Distance (kpc) stat.: 5.11 (CKS91)

Bibliography: *PK67*, AcMa77, BlPu81, Hi71, Ko65, Mi76, Ru70, Sa75, Sa86

033.0–05.3

A 55, PK 33–5°1, A55 43, VV' 480, IRAS 19078-0225

			Disc.: Abell 1955	*Diameter* (″)			
1950:	19 07 48.9	-02 25 21	IRAS	*opt.* 62.	CaKa71		
	19 07 54.0	-02 26 00	ZPB89				
2000:	19 10 30.4	-02 21 02	.	*radio* 48.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	680		12μm	0.29	1
[*OIII*]	436.3	–	[*NII*]	658.4	494		25μm	0.25	1
	500.7	1191	[*SII*]	671.7			60μm	1.64	3
HeI	587.6	–		673.1			100μm	19.29	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.9 ± .4	ASTR91				*Radio* (*mJy*)	*2cm*	
								6cm 6	ZPB89

Central Star: AG82 347 — m_{pg} 20.5 *Qual:* P PK67

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 1.5 (CaKa71); 1.8 (Ma84); 2.50 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Iw73, Kh79, KrK68, Sa76

033.1–06.3

NGC 6772, PK 33–6°1, ARO 102, Sa 2-384, VV 224, VV' 486, IRAS 19119-0247

		Disc.: Pickering 1879	*Diameter* (″)		*Rvel:* 0.0 ± 4.0 MWF88
1950:	19 11 59.3	-02 47 39 IRAS	*opt.* 64.	CaKa71	*Expansion Velocities* (*km/s*)
	19 11 51.6	-02 47 41 Ka83			[OIII] 10.2 MWF88
2000:	19 14 28.4	-02 42 26 .	*radio* 90.	ZPB89	[NII] 25 We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	519
[*O*III]	436.3	–	[*N*II]	658.4	270
	500.7	1217	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-11.67 \pm .02$ O63

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.77	3
60μm	8.60	3
100μm	11.73	3

Radio	*2cm*	96	MiAl82
(*mJy*)	*6cm*	73	ZPB89

Central Star: AG82 355 —
B 19.02 *V* 18.68 *Qual:* A GaPo88, JK89

Notes: Monochromatic images (JDK86, CJA87); ESO-NTT images by Schwartz H.E. and Melnick J. KPNO-2.1m monochromatic images by Balick B.
Distance (kpc) indiv.: kinem. 1.3: (Ac78); ext. 1.3 (Po83); ext. 1.2 (Sab86)
Distance (kpc) stat.: 1.1-1.3 (CaKa71); 0.91 (MiAl75); 1.23 (Ca76); 1.25 (Ac78); 1.20 (Da82); 0.86 (AGNR84); 1.4 (Ma84); 1.25 (CKS91)

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84..1312 Reay N.K., Pottasch S.R., Atherton P.D., Taylor K. *Astron. Astrophys. 137, 113-116* The magnitudes and temperatures of central stars of planetary nebulae.
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033.2–01.9

Sa 3-151, PK 33–1°1, IRAS 18563-0037

			Disc.: Sanduleak 1976	*Diameter* (″)	
1950:	18 56 18.7	-00 37 02	IRAS	*opt. St.* ATS91	
	18 56 17	-00 37.1	Sa76		
2000:	18 58 51	-00 32.9	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1990-06-24						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	1.73	1
[OIII]	436.3	–	[*NII*]	658.4	–	25μm	1.69	3
	500.7	82	[*SII*]	671.7		60μm	13.60	1
HeI	587.6	1.8		673.1		100μm	103.20	1

Central Star:
B 14.89 *V* 14.00 *Qual:* B TASG91 *Spectrum:* A ATS91

Bibliography: Ko78, We77

033.8–02.6

NGC 6741, PK 33–2°1, ARO 53, J 475, Sa 2-380, VV 217, VV' 474, IRAS 19000-0031

			Disc.: Pickering 1885	*Diameter* (″)		*Rvel:* +41.3 ± 1.4 STPP83	
1950:	19 00 02.3	-00 31 23	IRAS	*opt.* 8.	CJA87	*Expansion Velocities* (*km/s*)	
	19 00 02.0	-00 31 12	Mi73		CaKa71	[OIII] 23.0	Sa84
2000:	19 02 36.3	-00 26 47	.	*radio* 6.	ZPB 89	[NII] 21.5	Sa84

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	33	$H\alpha$	656.3 *nm*	600	*J*	11.04	12μm	1.56	3
[OIII]	436.3	13	[*NII*]	658.4	654	*H*	11.42	25μm	12.53	3
	500.7	1655	[*SII*]	671.7	23	*K*	10.68	60μm	20.26	1
HeI	587.6	20		673.1	43	*L*	7.45	100μm	96.24	1
$\lg F_{H\beta}(mW.m^{-2})$		$-11.32 \pm .03$	W83, 85..3094			*Photom.*	PPFS87	*Radio* 2*cm*	183	MiAl82
IUE Spectra:		*LW*(2)	*SW*(2)	*FES*(1)		*Spectr.*	PPOJ86	(*mJy*) 6*cm*	220	MiAl75

Central Star: AG82 340 —
B > 20.3 GaPo88

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: ext. 2.1 (Ac78); ext. 1.4 (Po83); dust 1.40 (85..3094); stand. 1.7 (Sab86)
Distance (kpc) stat.: 2.57 (CaKa71); 3.43 (MiAl75); 3.70 (Ca76); 1.6 (Ac78); 1.25 (Da82); 1.38 (PhPo84); 1.10 (AGNR84); 1.7 (Ma84); 2.05 (CKS91)

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034.0+02.2

K 3-13, PK 34+2°1, ARO 290, IRAS 18428+0158

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	18 42 52.7	+01 58 12	IRAS	*opt. St.* CS90	
	18 42 53.0	+01 58 11	AK90		
2000:	18 45 24.5	+02 01 23	.	*radio* 3.7 AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3158
[*O*III]	436.3	–	[*N*II]	658.4	1538
	500.7	1529	[*S*II]	671.7	146
*He*I	587.6	–		673.1	175
$\lg F_{H\beta}(mW.m^{-2})$		$-14.1 \pm .3$ ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.08	1
25μm	3.02	3
60μm	3.56	3
100μm	23.16	1
Radio (*mJy*) *2cm*		
6cm	34 AK90	

Distance (kpc) stat.: 5.10 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Ko65, Mi73, Ru70, Sa86

034.1–10.5

HDW 11, PK 34–10°1, HaWe 13

			Disc.: Hartl et al 1983	*Diameter* (″)	
				opt. 47. 87..1593	
1950:	19 28 29.2	-03 48 47	83.28034		
2000:	19 31 07.0	-03 42 24	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-13					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	100:	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star: AG82 371 —
B 16.6 87..1593

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

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034.3+06.2

K 3-5, PK 34+6°1, IRAS 18292+0402

		Disc.: Kohoutek 1964	*Diameter* (″)		
1950:	18 29 16.8	+04 02 53	IRAS	*opt.* 9.8 CaKa71	*Expansion Velocities* (*km/s*)
	18 29 16.8	+04 02 59	PK67		[OIII] 23.0 RRA82
2000:	18 31 45.9	+04 05 12	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29					
HeII	468.6 *nm*	66	$H\alpha$	656.3 *nm*	817
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	321	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-13.0 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.14	3
60μm	1.45	3
100μm	21.95	1
Radio 2*cm*		
(*mJy*) 6*cm*	3	ZPB89

Distance (kpc) stat.: 8.7 (CaKa71); 7.4 (Ma84)

Bibliography: *PK67*, CaWy76, Iw73, Ko65, Zi75

034.5–06.7

NGC 6778, PK 34–6°1, ARO 72, Sa 2-388, VV 227, VV' 491, IRAS 19158-0141

		Disc.: Pickering 1882	*Diameter* (″)	*Rvel:* $+91.0 \pm 3.0$ STPP83	
1950:	19 15 49.5	-01 41 19	IRAS	*opt.* 15.8 CaKa71	*Expansion Velocities* (*km/s*)
	19 15 49.4	-01 41 24	Mi73		[OIII] 20.0 Sa84
2000:	19 18 25.0	-01 35 53	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02					
HeII	468.6 *nm*	16	$H\alpha$	656.3 *nm*	434
[*OIII*]	436.3	–	[*NII*]	658.4	309
	500.7	579	[*SII*]	671.7	24
HeI	587.6	31		673.1	27

$\lg F_{H\beta}(mW.m^{-2})$	$-11.16 \pm .03$ Kal83, W83
IUE Spectra:	*LW*(1) *SW*(1)

IR Class: N	
J	11.98
H	12.46
K	11.34
L	
Photom.	Wh85

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.56	3
25μm	1.57	3
60μm	14.07	3
100μm	10.03	3
Radio 2*cm*	53	MiAl82
(*mJy*) 6*cm*	55	Ca82

Central Star: AG82 362 — PLX 4502; HD 180871; CSI -01 -19156
B 16.91 *Qual:* B GaPo88

Notes: Monochromatic images (CJA87); ESO-NTT images by Schwartz H.E. and Melnick J. KPNO-2.1m monochromatic images by Balick B.
Distance (kpc) indiv.: ext. 1.0 (Po83)
Distance (kpc) stat.: 2.43 (CaKa71); 2.73 (MiAl75); 3.0 (Ca76); 2.32 (Ac78); 2.85 (Da82); 8.09 (PhPo84); 1.90 (AGNR84); 2.2 (Ma84); 3.12 (CKS91)

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034.6+11.8

NGC 6572, PK 34+11°1, ARO 7, VV 159, VV' 370, IRAS 18096+0650

			Disc.: Struve 1825	*Diameter* (″)		*Rvel*: −8.5 ± 0.4	STPP83
1950:	18 09 40.4	+06 50 26	IRAS	*opt.* 10.8	CJA87	*Expansion Velocities* (*km/s*)	
	18 09 41.7	+06 50 37	Mi73		CaKa71	[OIII] 16.0	Sa84
2000:	18 12 07.5	+06 51 25	.	*radio* 8.	ZPB 89	[NII] 16	Sa84

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-11						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	297	*J*	8.09	12μm	24.26	3
[*O*III]	436.3	9	[*N*II]	658.4	62	*H*	8.88	25μm	169.40	3
	495.9	399	[*S*II]	671.7	1.1	*K*	8.08	60μm	95.43	3
*He*I	587.6	18		673.1	2.2	*L*		100μm	29.56	3
lg$F_{H\beta}$ −9.82 ± .02KM81, Kal83, W83, SK89						*Photom.* PPFS87		*Radio* 2*cm*		
IUE Spectra: *LW*(12) *SW*(15)						*Spectr.* 87..1381		(*mJy*) 6*cm* 1260		87...336

Central Star: AG82 296 — AG +6 2201; BD +06 3649; GCRV 10650; HD 166802; PLX 4174; EM* CDS 964
B 13.10 *Qual:* B GaPo88 *Spectrum:* Of/WR(H) Me91

Notes: Monochromatic images (JDK86)
Distance (kpc) indiv.: ext. 0.6 (Ac78); kinemat. 0.75 (Ac78); ext. 0.57 (Po80); ext. 0.7 (Po83); expans. 0.42 (Po83); kinem. <2.1 (GPG86)
Distance (kpc) stat.: 1.8 (CaKa71); 1.96 (MiAl75); 1.73 (Ca76); 0.67 (Ac78); 0.47 (Da82); 1.04 (PhPo84); 0.43 (AGNR84); 0.8 (Ma84); 0.71 (CKS91)

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035.1–00.7

Ap 2-1, PK 35–0°1, ARO 143

			Disc.: Apriamasvili 1962	*Diameter* (″)	
				opt. 32.8 CaKa71	
1950:	18 55.6	+01 33	PK67		
2000:	18 58.1	+01 37	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-05						*IR Class:* S		
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	*J*	12.86	
[*OIII*]	436.3	–	[*NII*]	658.4	52	*H*	11.11	
	495.9	–	[*SII*]	671.7	12	*K*	10.21	
HeI	587.6	–		673.1	13	*L*	7.98	
						Photom. PPFS87		

Radio	*2cm* 28	MiAl82
(*mJy*)	*6cm* 262	ZPB89

Central Star:
B 16.96 *V* 15.16 *Qual:* B TASG91

Notes: Possibly a HII region. Monochromatic images (JDK86)
Distance (kpc) stat.: 1.74 (CaKa71); 1.42 (Da82); 0.92 (AGNR84); 1.6 (Ma84),1.42 (CKS91),0.75 (CKS91)

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035.7–05.0

K 3-26, PK 35–5°1, ARO 309, IRAS 19120+0008

			Disc.: Kohoutek 1964	*Diameter* (″)	
				opt. 10. ATS91	
1950:	19 12 05.0	+00 08 19	IRAS		
	19 12 06.0	+00 08 22	AK90		
2000:	19 14 39.5	+00 13 37	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	76	$H\alpha$	656.3 *nm*	639	12μm	0.25	1
[*OIII*]	436.3	–	[*NII*]	658.4	32	25μm	0.74	3
	500.7	809	[*SII*]	671.7	11	60μm	1.70	3
HeI	587.6	31		673.1	16	100μm	2.84	1

$\lg F_{H\beta}(mW.m^{-2})$	$-12.9 \pm .2$ ASTR91	*Radio*	*2cm*
		(*mJy*)	*6cm*< 0.5 AK90

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035.9–01.1

Sh 2-71, PK 36–1°1, ARO 31, V-V 1-9, VV'473, IRAS 18594+0204

			Disc.: Sharpless 1959	*Diameter (″)*		*Rvel:* +24.7 ± 3.0	STPP83
1950:	18 59 28.8	+02 04 48	IRAS	*opt.* 100.	CaKa71	*Expansion Velocities (km/s)*	
	18 58 28.7	+02 05 05	Ka83			[OIII] 16.0	Sa84
2000:	19 01 00.1	+02 09 23	.	*radio* 114.	ZPB89	[NII] 21.5	SOB85

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11 DA						*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1088	12μm	1.42	3
[*O*III]	436.3	–	[*N*II]	658.4	3888	25μm	2.26	3
	500.7	1423	[*S*II]	671.7	154:	60μm	4.50	3
*He*I	587.6	–		673.1	127:	100μm	102.20	1
lg$F_{H\beta}(mW.m^{-2})$		−11.60 ± .05	Ka83			*Radio* 2*cm*	119	MiAl82
						(*mJy*) 6*cm*	83	Ca82

Central Star: AG82 339 —
U 14.97 *B* 14.59 *V* 13.75 79.14506 *Spectrum:* B 79.14506

Notes: Monochromatic images (JDK86)
Distance (kpc) stat.: 0.83 (CaKa71); 0.76 (MiAl75); 0.65 (Ac78); 0.74 (Da82); 0.74 (AGNR84); 1.0 (Ma84) 0.16 (CKS91); 1.0 (CKS91)

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036.0+17.6

A 43, PK 36+17°1, A55 31, , ARO 181, VV' 284, IRAS 17511+1037

			Disc.: Abell 1955	*Diameter (″)*		*Rvel:* −42.0 ± 11.5	STPP83
1950:	17 51 10.8	+10 37 58	IRAS	*opt.* 80.	CaKa71		
	17 51 11.1	+10 37 53	Ka83				
2000:	17 53 32.4	+10 37 20	.				

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-23						*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	333:	12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4	–	25μm	0.68	3
	500.7	611	[*S*II]	671.7		60μm	2.09	3
*He*I	587.6	–		673.1		100μm	2.30	3
lg$F_{H\beta}(mW.m^{-2})$		−12.25 ± .01	Ka83			*Radio* 2*cm*	1	MiAl82
IUE Spectra:	*LW*(1)	*SW*(3)				(*mJy*) 6*cm*		

Central Star: AG82 269 — CSI +10 -17512; UBV 15230
U 13.50 *B* 14.62 *V* 14.75 *Qual:* A Ab66, SK85
O7 fk All76
O(H)? Me91

Distance (kpc) stat.: 1.64 (CaKa71); 2.7 (Ma84); 1.62 (CKS91)

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036.1–57.1

NGC 7293, PK 36−57°1, ARO 17, VV 275, VV' 563, IRAS 22267-2102

			Disc.: Curtis 1918	*Diameter* (″)		*Rvel:* −28.2 ± 3.0	STPP83	
1950:	22 26 46.5	-21 02 14	IRAS	*opt.* 980.	CJA87	*Expansion Velocities* (*km/s*)		
	22 26 55.0	-21 05 38	Ka83			[OIII]	14.0	Sa84
2000:	22 29 38.7	-20 50 15	.	*radio* 660.	ZPB89	[NII]	24	87..2547

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-13 N

						IRAS Fluxes (*Jy*)		*Qual.*
*He*II	468.6 *nm*	--	$H\alpha$	656.3 *nm*	189	12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4	353	25μm	0.32	1
	500.7	592	[*S*II]	671.7	14:	60μm	1.67	2
*He*I	587.6	35:		673.1		100μm	12.37	3

$\lg F_{H\beta}(mW.m^{-2})$	−9.37 ± .02	O62	
IUE Spectra:	*LW*(12)	*SW*(15)	*FES*(2)

Radio *2cm*
(*mJy*) *6cm* 1292 Ca82

Central Star: AG82 441 — USNO 271; GCRV 14134; WD 2201 -21. 1; PLX 5437; CSI -21 -22270
U 11.81 *B* 13.10 *V* 13.50 *Qual:* A 72.30001, TASG91 *Spectrum:* hg O(H) Me91

Notes: Multiple-shell PN; monochromatic images (CJA87, Ba87).
Distance (kpc) indiv.: stand. 0.08 (70..9096); spect. 0.30 (MKHH88)
Distance (kpc) stat.: 0.15 (CaKa71); 0.18 (MiAl75); 0.16 (Ca76); 0.12 (Ac78); 0.15 (Da82); 0.18 (AGNR84); 0.2 (Ma84)

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036.9–01.1

HaTr 11, PK 36–1°2

				Disc.: Hartl et al 1983	*Diameter* (″)	
					opt. 12. 85..1131	
1950:	19 00 28.9	+02 57 54	83.28035			
2000:	19 02 59.3	+03 02 21	.			

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-02					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	130
	500.7	109	[*S*II]	671.7	17
*He*I	587.6	–		673.1	17

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036.9–02.6

HaTr 13, PK 36–2°1

				Disc.: Hartl et al 1983	*Diameter* (″)	
					opt. 21. 85..1131	
1950:	19 05 30.9	+02 16 36	83.28035			
2000:	19 08 02.1	+02 21 24	.			

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-05					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	94
	500.7	106	[*S*II]	671.7	
*He*I	587.6	–		673.1	

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037.5–05.1

A 58, PK 37–5°1, A55 45, ARO 150, VV' 489, IRAS 19158+0141

			Disc.: Abell 1955	*Diameter* (″)	
1950:	19 15 48.7	+01 41 27	IRAS	*opt.* 40. CaKa71	
	19 15 48.5	+01 41 20	Mi76		
2000:	19 18 20.4	+01 46 51	.		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	4.99	3
25μm	29.49	3
60μm	40.65	3
100μm	18.26	3

Radio (*mJy*)	*2cm* < 1	MiAl82
	6cm	

Central Star: AG82 361 — V605 Aql; NOVA AQL 1919; C* 2719; AN 7.1920
Spectrum: WC early Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.68 (CaKa71); 3.8 (Ma84)

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037.7–34.5

NGC 7009, PK 37−34°1, ARO 16, VV 259, VV' 541, EM* CDS 1211, IRAS 21014-1133

			Disc.: Herschel 1782	*Diameter (″)*		*Rvel:* −44.0 ± 3.0	MWF88
1950:	21 01 27.4	-11 33 48	IRAS	*opt.* 28.5	CJA87	*Expansion Velocities (km/s)*	
	21 01 27.6	-11 33 54	Mi73		CaKa71	[OIII] 20.6	MWF88
2000:	21 04 10.8	-11 21 57	.			[NII] 20.0	MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27 E						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	7	$H\alpha$	656.3 *nm*	438	*J*	8.96	12μm	6.33	3
[OIII]	436.3	8	[*NII*]	658.4	–	*H*	9.45	25μm	56.70	3
	495.9	435	[*SII*]	671.7	1.7	*K*	8.84	60μm	91.10	3
HeI	587.6	19		673.1	3	*L*		100μm	48.06	3
$\lg F_{H\beta}(mW.m^{-2})$		−9.78 ± .03	71..9003, W83			*Photom.*	Wh85	*Radio*	*2cm* 649	MiAl82
IUE Spectra:		*LW*(22)	*SW*(31)	*FES*(1)		*Spectr.*	PPOJ86	(*mJy*)	*6cm* 750	MiAl75

Central Star: AG82 419 — BD -11 5511; GCRV 13233; HD 200516; TD1 27614
B 12.66 *V* 12.78 *Qual:* B GaPo88, TASG91 *Spectrum:* O(H) Me91

Notes: Proper motion in 10^{-4}″/yr: $\mu_\alpha = 13 \pm 62$, $\mu_\delta = -5 \pm 39$ (Cu74). Angular expansion 0″.7/100yr (66..9012). Multiple-shell PN; monochromatic images (CJA87, Ba87); ESO-NTT images by Schwartz H.E. and Melnick J.

Distance (kpc) indiv.: stand. 0.45 (Ac78); wind 0.77 (85....32); expans. 0.60 (Po83); stand. 0.5 (Sab86); spect. 2.5 (MKHH88)

Distance (kpc) stat.: 1.4 (CaKa71); 1.32 (MiAl75); 1.30 (Ca76); 0.93 (Ac78); 0.76 (Da82); 0.42 (PhPo84); 0.59 (AGNR84); 0.9 (Ma84); 1.20 (CKS91)

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037.8–06.3

NGC 6790, PK 37−6°1, ARO 33, VV 229, VV' 496

Disc.: Pickering 1882	*Diameter* (″)	*Rvel:* +40.4 ± 1.7 STPP83	
	opt. 7. CJA87	*Expansion Velocities (km/s)*	
1950: 19 20 24.7 +01 24 56 AK90	PK67	[OIII] 15.0 Sa84	
2000: 19 22 56.9 +01 30 46 .	*radio* 1.8 AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31

						IR Class: N			
*He*II	468.6 *nm*	3	$H\alpha$	656.3 *nm*	545	*J*	9.97		
[OIII]	436.3	11	[NII]	658.4	71	*H*	10.40		
	500.7	1274	[SII]	671.7	1.3	*K*	9.36		
*He*I	587.6	32		673.1	2.3	*L*			

$\lg F_{H\beta}(mW.m^{-2})$ −10.90 ± .05 KM81, Kal83 — *Photom.* PeTo87 — *Radio* *2cm* 256 MiAl82

IUE Spectra: *LW*(4) *SW*(7) — *Spectr.* 87..1381 — (*mJy*) *6cm* 240 AK90

Central Star: AG82 366 — GCRV 11824; HD 182083; BD +01 3979; SON 9934; NSV 11959
m_{pg} 11.1 *Qual:* P PK67 *Spectrum:* WN? 81.27751

Distance (kpc) indiv.: ext. 1.3 (Ac78); ext. 1.2 (Po83)
Distance (kpc) stat.: 4.9 (CaKa71); 4.72 (MiAl75); 3.7 (Ca76); 1.59 (Ac78); 1.13 (Da82); 1.19 (PhPo84); 0.95 (AGNR84); 1.5 (Ma84); 1.54 (CKS91)

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037.9–03.4

A 56, PK 37–3°2, A55 44, ARO 146, VV' 483

				Disc.: Abell 1955	*Diameter* (″)	
					opt. 181. CaKa71	
1950:	19 10 36.0	+02 47 40	Mi76			
2000:	19 13 06.6	+02 52 49	.			

Central Star: AG82 352 —
B 19.7 Alle82

Distance (kpc) stat.: 0.89 (CaKa71); 1.7 (Ma84)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Al89, CaWy76, Gu70, Hi71, Iw73, Jo80, Kh79, KrK68, Mi73, ZPB89

038.1-25.4

A 70, PK 38-25°1, A55 57, ARO 351, VV' 536

			Disc.: Abell 1955	*Diameter (")*	*Rvel:* -79.0 ± 18.0 MWF88
				opt. 42. CaKa71	*Expansion Velocities (km/s)*
1950:	20 28 52.7	-07 15 32	Ka83		[OIII] 37.8 MWF88
2000:	20 31 33.1	-07 05 21	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-17					
HeII 468.6 *nm*	–	*Hα* 656.3 *nm*	300		
[*OIII*] 436.3	–	[*NII*] 658.4	553		
500.7	804	[*SII*] 671.7			
HeI 587.6	–	673.1			
$\lg F_{H\beta}(mW.m^{-2})$ $-12.34 \pm .10$ Ka83				*Radio* *2cm* 4 MiAl82	
IUE Spectra: *LW*(1) *SW*(1)				(*mJy*) *6cm* < 3 ZPB89	

Central Star: AG82 410 —
m_{pg} 19.1 *Qual:* P PK67

Notes: Monochromatic images (JDK86)
Distance (kpc) stat.: 2.48 (CaKa71); 3.5 (Ma84); 2.35 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Ab66, AcMa77, CaWy76, FeAl87, Gr72, Gu70, Hi71, Iw73, KSK90, KaJa89, Kh79, KrK68, Mi73, Mi79, PAKS89, Ru70, Sabb86, We89, ZuAl86

68..9098 Gurzadian G.A. *I.A.U. Symp. 34,450* Kinematics., dynamics.
77..1133 Phillips J.P., Reay N.K. *Astron. Astrophys. 59,91-110* On the structural development of the shells of novae and P.N.

038.2+12.0

Cn 3-1, PK 38+12°1, Anon. 18h15m, ARO 97, SaSt 2-20, VV 171, VV' 391, IRAS 18152+1007

			Disc.: Cannon 1926	*Diameter (")*	*Rvel:* $+4.0 \pm 25.0$ STPP83	
				opt. 4.5 81..1008	*Expansion Velocities (km/s)*	
1950:	18 15 12.4	+10 07 52	IRAS		[OIII] 10.	83..1561
	18 15 10.7	+10 08 02	Mi73			
2000:	18 17 32.6	+10 09 14	.	*radio* 3.7 Is84		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-16						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
HeII 468.6 *nm*	0.9:	*Hα* 656.3 *nm*	703			*J*	11.09	12μm	0.81	3
[*OIII*] 436.3	–	[*NII*] 658.4	–			*H*	11.29	25μm	14.39	3
500.7	22	[*SII*] 671.7	11			*K*	10.87	60μm	10.23	3
HeI 587.6	9	673.1	15			*L*		100μm	4.58	3
$\lg F_{H\beta}$ $-10.94 \pm .02$ O62 , Bark78, KM81						*Photom.* PPFS87		*Radio* *2cm* 62		MiAl82
IUE Spectra: *LW*(4) *SW*(3)						*Spectr.* 86..2654		(*mJy*) *6cm* 64.8		Is84

Central Star: AG82 305 —
B 12.3 *V* 12.5 *Qual:* C 81..1008, TASG91 *Spectrum:* WR/Of 77...110

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 5.0-6.9 (CaKa71); 5.39 (MiAl75); 5.95 (Ca76); 2.0 (Ac78); 2.64 (Da82); 2.20 (AGNR84); 2.9 (Ma84); 3.58 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac80, AcMa77, Al77, AlCz79, AlCz83, AlKe85, AlKe87, All76, Ar70, Ba78, Bar78, Ca82, CaNo73, CaRu74, CoBa74, DFHM67, De71, Gol87, Gu70, Gu88, HaSe66, He71, Hi69, Hi71, Hig71, Ii81, Iw73, KVLS81, Ka70, Ka76, Ka79, Ka80, Ka81, Ka86, Kal78, Kal80, Kh76, Kh79, Kh84, Khr76, Khro76, Kle78, Kon83, Kr69, LNP89, LePo88, MaFa85, MaFa86, MaPo80, Mar81, NPP80, PM87, PPT88, Pe75, Pe91, PeTo87, PrPo83, Sa84, SaMi78, SaSt72, SmAl69, StKa89, TTP87, Te66, ThDa70, TuTe84, VKda65, Vo70, VoCo90, We89, ZTPS89

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77...110 Lutz J.H. *Astrophys. J. 211,469-474* Cassegrain image-tube scanner observations of the central stars of planetary nebulae.

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81.....8 French H.B. *Astrophys. J. 246,434-443* The ionization structure and abundance of argon in gaseous nebulae.
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86..2654 Roche P.F., Aitken D.K. *Mon. Not. R. Astron. Soc. 221, 63-76* The infrared spectral properties of planetary nebulae.
88.30252 *IUE ESA Newsletter 29, 45-98 = 0* Merged log of IUE observations.
89..3076 Gussie G.T., Taylor A.R. *Publ. Astron. Soc. Pac. 101, 873-876 + erratum vol. 102, 232* Radial and expansion velocities of compact planetary nebulae.
90.13504 Maciel W.J., De Freitas Pacheco J.A. *Rev. Mex. Astron.,21,517* Strongly metal deficient planetary nebulae.
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038.4-03.3

K 4-19, PK 38−3°1, IRAS 19108+0319

			Disc.: Kohoutek 1964	*Diameter (″)*	
1950:	19 10 52.3	+03 19 49	IRAS	*opt. St.* CS90	
	19 10 52.6	+03 19 53	PK67		
2000:	19 13 22.6	+03 25 03	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01						*IR Class:* .		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	982	*J*		12μm	0.25	1
[OIII]	436.3	–	[NII]	658.4	471	*H*		25μm	1.57	3
	495.9	–	[SII]	671.7	45	*K*	> 9.7	60μm	2.28	3
*He*I	587.6	–		673.1	57	*L*		100μm	48.75	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.22 ± .10	ASTR91			*Photom.*	AIGI74			

Central Star:
B 15.55 *V* 14.72 *Qual:* B TASG91

Bibliography: *PK67*, Ko65, Sa86

038.7+01.9

YM 16, PK 38+2°1, ARO 141, RCW 181

			Disc.: Sharpless 1959	*Diameter (″)*	
				opt. 304. CaKa71	
1950:	18 52 29.9	+05 58 48	Mi76		
2000:	18 54 56.8	+06 02 41	.		

Distance (kpc) stat.: 0.51 (CaKa71); 0.9 (Ma84)

Bibliography: *PK67*, AcMa77, CaWy76, ChLo72, Gr72, Hi71, Iw73, Jo80, KrK68, Ma74, MaC83, ZPB89

038.7–03.3

M 1-69, PK 38–3°2, ARO 187, VV 223, VV' 485, IRAS 19113+0332

		Disc.: Minkowski 1946	*Diameter (")*		*Rvel:* +7.0 ± 25.0 STPP83
1950:	19 11 23.6	+03 32 26 IRAS	*opt. St.* CS90		*Expansion Velocities (km/s)*
	19 11 24.0	+03 32 33 Mi76			[OIII] 25.0 We89
2000:	19 13 53.8	+03 37 45 .			[NII] 30.0 We89

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02						*IR Class:* .		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	11	$H\alpha$	656.3 *nm*	834	*J*		12μm	0.25	1
[*OIII*]	436.3	6	[*NII*]	658.4	183	*H*		25μm	3.50	3
	495.9	443	[*SII*]	671.7	12	*K*	> 9.5	60μm	4.79	3
HeI	587.6	37		673.1	21	*L*		100μm	38.85	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.25 ± .10 ASTR91				*Photom.* AI74				

Bibliography: *PK67*, AcMa77, Hi71, Ka70

74.28751 Sherwood W.A. *Publ. R. Obs. Edinburgh. 9,85-116* Galactic structure at l"=40.

039.5–02.7

M 2-47, PK 39–2°1, ARO 147, VV 222, VV' 484, IRAS 19110+0432

		Disc.: Minkowski 1947	*Diameter (")*		*Rvel:* +36.0 ± 11.4 STPP83
1950:	19 11 04.5	+04 32 47 IRAS	*opt.* 6.4 CaKa71		*Expansion Velocities (km/s)*
	19 11 05.8	+04 32 55 Mi76			[OIII] 11.5 84..1287
2000:	19 13 34.5	+04 38 06 .	*radio* 6. ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-02							*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	3	$H\alpha$	656.3 *nm*	1051		12μm	0.34	1
[*OIII*]	436.3	–	[*NII*]	658.4	51		25μm	5.66	3
	500.7	737	[*SII*]	671.7			60μm	7.06	3
HeI	587.6	51		673.1			100μm	41.23	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.4 ± .2 ASTR91					*Radio* 2*cm*	44	MiAl82
							(*mJy*) 6*cm*	45	ZPB89

Central Star: AG82 353 —
B 18.3 *V* 17.3 *Qual:* C TASG91

Distance (kpc) stat.: 4.1 (CaKa71); 4.54 (Ca76); 3.5 (Ac78); 2.24 (Da82); 1.80 (AGNR84); 2.9 (Ma84) 4.74 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, Ca82, CaRu74, Hi71, Kon78, Kon83, LNP89, Ma81, Mi79, Sa84, StKa89, We89

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039.8+02.1

K 3-17, PK 39+2°1, ARO 297, IRAS 18538+0703

		Disc.: Kohoutek 1964		*Diameter* (″)	
1950:	18 53 52.4	+07 03 26	IRAS	*opt.* 14.8 CaKa71	
	18 53 52.5	+07 03 24	Mi73		
2000:	18 56 18.2	+07 07 23	.	*radio* 8. ZPB89	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-05-30						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	*J*	12μm	4.65	3
[*OIII*]	436.3	–	[*NII*]	658.4	69	*H*	25μm	40.48	3
	500.7	24	[*SII*]	671.7	0.8	*K*	60μm	48.08	3
HeI	587.6	–		673.1	4	*L*	100μm	112.70	1
						Spectr. PPOJ86	*Radio* (*mJy*)	*2cm*	
								6cm 345	ZPB89

Distance (kpc) stat.: 3.11 (CaKa71); 0.94 (Da82); 0.76 (AGNR84); 2.4 (Ma84); 1.52 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, CaRu74, Hi71, Iw73, Ko65, KrK68, LNP89, PM87, Ru70, Sa86, VoCo90

040.3–00.4

A 53, PK 40–0°1, A55 41, ARO 183, VV' 478, IRAS 19043+0619

		Disc.: Abell 1955		*Diameter* (″)	
1950:	19 04 20.1	+06 19 09	IRAS	*opt.* 31. CaKa71	
	19 04 19.2	+06 19 13	Ka83		
2000:	19 06 45.8	+06 23 56	.		

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-08-02						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	2.31	1
[*OIII*]	436.3	–	[*NII*]	658.4	318	25μm	1.44	3
	500.7	100	[*SII*]	671.7	17	60μm	75.46	1
HeI	587.6	–		673.1	19	100μm	152.00	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.61 \pm .05$ Ka83				*Radio* (*mJy*)	*2cm* 76	MiAl82
IUE Spectra:		*LW*(0) *SW*(1)					*6cm*	

Central Star: AG82 345 —
m_{pg} 20.9 *Qual:* P PK67

Notes: Monochromatic images (JDK86)
Distance (kpc) stat.: 1.8 (CaKa71); 1.6 (Ma84); 1.90 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Hi71, Iw73, KSK90, Kh79, KrK68, MeHa75, Mi76, PiKh79, Ru70, Sabb86, ZuAl86

040.4–03.1

K 3-30, PK 40–3°1, ARO 312, IRAS 19140+0507

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 14 02.8	+05 07 38	IRAS	*opt. St.* CS90	
	19 13 59.6	+05 07 56	AK90		
2000:	19 16 27.6	+05 13 19	.	*radio* 3.3 AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02						*IR Class:* .		*IRAS Fluxes* (*Jy*)	*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1108	*J*		12μm 1.14	3
[*OIII*]	436.3	–	[*NII*]	658.4	42	*H*		25μm 1.49	3
	500.7	1063	[*SII*]	671.7		*K*	> 9.5	60μm 1.75	3
HeI	587.6	43		673.1		*L*		100μm 28.39	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.89 ± .10	ASTR91			*Photom.* AI74		*Radio* *2cm*	
								(*mJy*) *6cm* 23	AK90

Distance (kpc) stat.: 6.29 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Ko65, Mi76, Ru70, Sa86

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041.2–00.6

HaTr 14, PK 41–0°1

			Disc.: Hartl et al 1983	*Diameter* (″)	
				opt. 18. 85..1131	
1950:	19 06 47.6	+07 00 50	83.28035		
2000:	19 09 13.5	+07 05 43	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-03					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	450:
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	230:	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		−13.6 ± .4	ASTR91		

Bibliography: Ko89

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85. .1131 Hartl H., Tritton S.B. *Astron. Astrophys. 145, 41-44,1985* New planetary nebulae of low surface brightness detected on UK-Schmidt plates.

041.8+04.4

K 3-15, PK 41+4°1, ARO 294, IRAS 18493+0951

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	18 49 20.4	+09 51 18	IRAS	*opt. St.* CS90	
	18 49 19.1	+09 51 13	AK90		
2000:	18 51 41.5	+09 54 52	.	*radio* < 0.3 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-22						*IR Class:* .		*IRAS Fluxes* (*Jy*)	*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	811	*J*		12μm 1.83	3
[*OIII*]	436.3	–	[*NII*]	658.4	162	*H*		25μm 2.74	3
	500.7	30	[*SII*]	671.7		*K*	> 9.8	60μm 0.60	2
HeI	587.6	14:		673.1		*L*		100μm 4.91	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.76 ± .10	ASTR91			*Photom.* AI74		*Radio* *2cm*	
								(*mJy*) *6cm* 4	AK90

Bibliography: *PK67*, AcMa77, BlPu81, Hi71, Ko65, Mi76, Ru70, Sa86

87..2215 Lewis B.M., Eder J., Terzian Y. *Astron. J. 94, 1025-1034* OH/IR stars without OH masers: nondetection statistics.

041.8–02.9

NGC 6781, PK 41–2°1, ARO 32, VV 228, VV' 492, IRAS 19160+0626

			Disc.: Herschel 1830	*Diameter (")*	*Rvel:* +4.3 ± 3.7 STPP83
1950:	19 16 02.8	+06 26 51	IRAS	*opt.* 108. PK67	*Expansion Velocities (km/s)*
	19 16 01.7	+06 26 52	Ka83	CaKa71, CJA87	[OIII] 12.0 Sa84
2000:	19 18 28.3	+06 32 23	.	*radio* 130. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-03 C

HeII	468.6 *nm*	64	$H\alpha$	656.3 *nm*	648
[*OIII*]	436.3	–	[*NII*]	658.4	301
	500.7	1055	[*SII*]	671.7	56
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.21 ± .04 CD61

IRAS Fluxes (Jy)		*Qual.*
12μm	0.31	1
25μm	2.56	3
60μm	44.56	3
100μm	76.99	3

Radio			
(*mJy*)	*2cm* 287	MiAl82	
	6cm 310	ZPB89	

Central Star: AG82 363 —
B 17.10 *V* 16.78 *Qual:* B GaPo88, JK89

Notes: Monochromatic images (JDK86, CJA87, Ba87); Monochromatic images by Hua C.T. and Louise R.

Distance (kpc) indiv.: kinem. 1.6 (Ac78); ext. 1.5 (Po83); ext. 1.6 (Sab86)

Distance (kpc) stat.: 0.5-0.9 (CaKa71); 0.87 (MiAl75); 0.67 (Ca76); 0.80 (Ac78); 0.67 (Da82); 0.64 (AGNR84); 0.9 (Ma84); 0.70 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ab66, AcMa77, Al65, AlLi68, AlMi72, Ba89, Ca82, CaKo68, CaNo73, CaWy76, Ch89, ChLo76, Cu74, DFHM67, De71, Gr71, Gr72, Gu70, Gu88, HaSe66, HaZu91, He71, He90, Hi71, Hi73, Hig71, Ii81, Iw73, IwKa65, Jo80, KAC76, KHM86, KSK90, Ka69, Ka70, Ka76, Ka78, KaJa89, Kh79, Kr69, KrK68, LNP89, MaPo80, MeHa75, Mi73, MiSa77, MiWe79, PBBE84, PSK78, Pa90, Pe91, Ph84, Phi84, PiKh79, RRA82, Ri69, SGBO84, SOB85, SaMi78, Sabb86, SlOr65, Sm71, StKa89, StSh83, TCS67, Te66, Te68, Th68, Th74, ThDa70, TuTe84, We89, ZuAl86

65..9018 Kaftan-Kassim M.A. *Astron. J. 70,680* Flux densities measurements at 1415 and 750 MHz.
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68..9011 Swany K.S., O'Dell C.R. *Astrophys. J. 151,L61* Thermal emission by particles in NGC 7027.
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72..9003 Terzian Y., Sanders O. *Astron. J. 77,950* Expected infrared spectra.
72..9013 Hua C.T., Louise R. *Astron. Astrophys. 21,193-198* Nouvelles observations de quelques nebuleuses planetaires.
74...450 Bussoletti E., Epchtein N., Baluteau J.P. *Astron. Astrophys. 34,141-146* A calculation of infrared spectra from dust in planetary nebulae.
82..1521 Louise R. *Astron. Astrophys., Suppl. Ser. 47,575-589* Observations et etude morphologique des nebuleuses annulaires en (OIII).
83..4552 Antokhin I.I., Bochkarev N.G. *Astron. Zu. 60,448-465* Geometry, gas-cloud kinematics, line profiles, and rapid profile variability inactive nuclei and quasars.
85.28027 Barnstedt J., Gutekunst M., Bianchi L., Grewing M. *Mitteil. Astron. Gesellschaft 63, 212* Narrow-band observations of planetary nebulae with a photon-counting imaging detector.
89..4098 Manchado A., Pottasch S.R., Mampaso A. *Astrophys. Space Sci. 157, 23-29* Abundance gradient for 13 planetary nebulae in the galaxy.
90....16 Zuckerman B., Kastner J.H., Balick B., Gatley I. *Astrophys. J.,357,59,1990 (L).* Molecules in NGC 6781 and other runglike planetary nebulae.

042.0+05.4

K 3-14, PK 42+5°1, AS 324, MHα 352-9, IRAS 18461+1032

			Disc.: Kohoutek 1964	*Diameter* (″)			
1950:	18 46 11.1	+10 32 23	IRAS	*opt. St.*	CS90		
	18 46 11.2	+10 32 25	AK90				
2000:	18 48 32.8	+10 35 50	.	*radio* 1.	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1156	*J*		12μm	0.25	1
[OIII]	436.3	–	[*N*II]	658.4	681	*H*		25μm	1.34	3
	495.9	–	[*S*II]	671.7	29	*K*	> 9.2	60μm	0.57	2
HeI	587.6	12		673.1	57	*L*		100μm	4.17	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.8 ± .3	ASTR91			*Photom.*	AI74	*Radio* 2*cm*		
								(*mJy*) 6*cm*	4.8	AK90

Central Star:
V 16.2 *Qual:* D TASG91

Distance (kpc) stat.: 12.6 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al73, BlPu81, Ko65, PAKS89, Sa86

042.5–14.5

NGC 6852, PK 42–14°1, ARO 167, K 1-18, IRAS 19581+0135

			Disc.: Kohoutek 1963	*Diameter* (″)		*Rvel:* −11.0 ± 5.0	MWF88
1950:	19 58 07.0	+01 35 23	IRAS	*opt.* 28.	CJA87	*Expansion Velocities* (*km/s*)	
	19 58 07.6	+01 35 33	Mi76		PK67	[OIII] 43.1	MWF88
2000:	20 00 39.7	+01 43 52	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-12							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	123	*Hα*	656.3 *nm*	242		12μm	0.25	1
[OIII]	436.3	–	[*N*II]	658.4	25		25μm	0.86	3
	500.7	951	[*S*II]	671.7			60μm	1.03	3
HeI	587.6	–		673.1			100μm	1.26	2
$\lg F_{H\beta}(mW.m^{-2})$		−11.7 ± .4	ASTR91				*Radio* 2*cm*	13	MiAI82
							(*mJy*) 6*cm*	20	Ca82

Central Star:
B 17.70 *V* 17.90 *Qual:* A KJL88

Distance (kpc) stat.: 2.76 (Da82); 2.30 (AGNR84); 3.4 (Ma84); 2.71 (CKS91)

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89.50080 Kwitter K.B., Jacoby G.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 303* New identifications of faint central stars in extended PN.

042.9–06.9

NGC 6807, PK 42–6°1, ARO 74, VV 234, VV' 502, IRAS 19320+0534

			Disc.: Pickering 1882	*Diameter* (″)		*Rvel*: −67.7 ± 3.3 STPP83
1950:	19 32 05.8	+05 34 25	IRAS	*opt.* 2.	CaKa71	*Expansion Velocities* (*km/s*)
	19 32 05.7	+05 34 25	AK90			[OIII] 13.0 Sa84
2000:	19 34 33.5	+05 41 02	.	*radio* 0.8	AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-03						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	386	*J*	12.37	12μm	0.53	3
[*OIII*]	436.3	13	[*NII*]	658.4	27	*H*	12.81	25μm	4.92	3
	500.7	1152	[*SII*]	671.7	2.0	*K*	12.06	60μm	1.42	3
HeI	587.6	22		673.1	3	*L*	(10.72)	100μm	1.99	2
$\lg F_{H\beta}(mW.m^{-2})$		−11.48 ± .01	Ka80			*Photom.*	KHM86	*Radio* *2cm*	28	MiAl82
								(*mJy*) *6cm*	29	AK90

Central Star: AG82 375 — LF 1 +05 175; BD +05 4196
B 16.3 *Qual:* D TASG91

Distance (kpc) stat.: 9.94 (CaKa71); 12.58 (MiAl75); 13.18 (Ca76); 5.1 (Ac78); 3.67 (Da82); 3.40 (AGNR84); 5.5 (Ma84); 5.14 (CKS91)

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84..2707 Sabbadin F. *Mon. Not. R. Astron. Soc. 209, 889-894* High dispersion spectra of compact planetary nebulae.

043.0–03.0

M 4-14, PK 43–3°1, ARO 120

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel*: +48.0 ± 11.0 STPP83
				opt. 7.4	CaKa71	
1950:	19 18 35.7	+07 31 17	Mi73			
2000:	19 21 01.1	+07 36 59	.	*radio* 7.	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-13					
HeII	468.6 *nm*	86	$H\alpha$	656.3 *nm*	907
[*OIII*]	436.3	–	[*NII*]	658.4	1606
	500.7	1568	[*SII*]	671.7	
HeI	587.6	43		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		−12.7 ± .3	ASTR91		

Radio *2cm*
(*mJy*) *6cm* 8 ZPB89

Distance (kpc) stat.: 3.7 (CaKa71); 2.97 (Ac78); 1.6 (Ma84); 6.69 (CKS91)

Bibliography: *PK67*, AcMa77, AlLi68, He71, Hi71, Hig71, Iw73, PAKS91, Pe91, Te66, TuTe84

043.1+37.7

NGC 6210, PK 43+37°1, ARO 5, EM* CDS 904;VV 82, VV' 143, IRAS 16423+2353

		Disc.: Struve 1827	*Diameter (")*		*Rvel:* -36.2 ± 1.1 STPP83
1950:	16 42 23.4	+23 53 27 IRAS	*opt.* 16.2 CaKa71		*Expansion Velocities (km/s)*
	16 42 23.5	+23 53 17 Mi73			[OIII] 21.0 We89
2000:	16 44 29.4	+23 47 48 .			[NII] 35.5 Sa84

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27

HeII	468.6 *nm*	2.3	$H\alpha$	656.3 *nm*	254
[OIII]	436.3	6	[NII]	658.4	23
	495.9	365	[SII]	671.7	1.7
HeI	587.6	14		673.1	3

IR Class: N

		IRAS Fluxes (Jy)	*Qual.*
J	9.79	12μm 2.06	3
H	10.40	25μm 25.85	3
K	9.86	60μm 34.94	3
L	6.69	100μm 15.10	3

$\lg F_{H\beta}$ $-10.09 \pm .01$ 60...353, Kle78, KM81

IUE Spectra: *LW*(7) *SW*(13)

Photom. PPFS87
Spectr. PPOJ86

Radio *2cm* 184 MiAl82
(*mJy*) *6cm* 311 MiAl75

Central Star: AG82 216 — AG +23 1564; BD +24 3048A; GCRV 9624; HD 151121; IDS 16403+23.59A; PLX 3808
B 12.44 *V* 12.66 *Qual:* B SK85 , TASG91

O6 PWWF78
O(H) Me91

Notes: Monochromatic images (CJA87, Ba87).
Distance (kpc) stat.: 2.04 (CaKa71); 2.07 (MiAl75); 2.15 (Ca76); 1.05 (Ac78); 1.19 (Da82); 0.13 (PhPo84); 0.92 (AGNR84); 1.3 (Ma84); 2.03 (CKS91)

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043.1+03.8

M 1-65, PK 43+3°1, ARO 142, VV 215, VV' 467, IRAS 18541+1048

			Disc.: Monkowski 1946	*Diameter* (″)		*Rvel:* +20.0 ± 11.0 STPP83	
1950:	18 54 12.0	+10 48 07	IRAS	*opt.* 3.6	CaKa71	*Expansion Velocities* (*km/s*)	
	18 54 11.9	+10 48 14	Mi76				
2000:	18 56 33.3	+10 52 14	.	*radio* 4.0	ZPB89	[NII] 11.5	We89

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-11						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	785	*J*		12μm	0.26	1
[OIII]	436.3	–	[*N*II]	658.4	253	*H*		25μm	3.51	3
	500.7	17	[*S*II]	671.7	12	*K*	12.5	60μm	2.55	3
*He*I	587.6	10		673.1	20	*L*		100μm	6.05	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.15 ± .06	ASTR91			*Photom.*	CoBa74	*Radio* 2*cm*		
								(*mJy*) 6*cm*	22	ZPB89

Central Star: AG82 336 —
B 15.30 *V* 14.89 *Qual:* B TASG91

Distance (kpc) stat.: 6.73 (CaKa71); 5.20 (Ac78); 2.3 (Ma84); 6.54 (CKS91)

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043.3+11.6

M 3-27, PK 43+11°1, ARO 137, VV' 410, IRAS 18255+1427

		Disc.: Minkowski 1948	*Diameter* (″)	*Rvel*: −6.0 ± 25.0 STPP83	
1950:	18 25 30.9	+14 27 07	IRAS	*opt.* 1. CK88	*Expansion Velocities* (*km/s*)
	18 25 31.6	+14 27 11	Mi76		[OIII] 13.5 84..2707
2000:	18 27 48.3	+14 29 07	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	644	*J*		12μm	0.25	1
[*OIII*]	436.3	89	[*NII*]	658.4	–	*H*		25μm	1.86	3
	500.7	396	[*SII*]	671.7	2.1	*K*	> 9.8	60μm	0.98	3
HeI	587.6	42		673.1	4	*L*		100μm	1.38	1
lg$F_{H\beta}$($mW.m^{-2}$)		−11.83 ± .02 Bark78				*Photom.* AlGl74		*Radio* 2*cm*	47	MiAl82
IUE Spectra:		*LW*(1) *SW*(1)						(*mJy*) 6*cm*		

Central Star: AG82 311 —
B 15.60 *V* 15.50 *Qual:* B 81..1008, TASG91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.98 (CKS91)

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81..3031 Hawley S.A. *Publ. Astron. Soc. Pac. 93,93-96* A peculiar emission-line object from the Tololo survey.
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90..3003 Tamura S., Shibata K.M. *Publ. Astron. Soc. Pac.,102,1301* Expansion analyses on low-excitation planetary nebulae with stellar images
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043.3+02.2

PM 1-276, CTSS 1, IRAS 18599+1013

		Disc.: Preite-Martinez 1988	*Diameter* (″)		
1950:	18 59 56.2	+10 13 08	IRAS	*opt.* 14. 90..1004	
	18 59 56	+10 13.0	90..1004		
2000:	19 02 18	+10 17.4	.		

			IRAS Fluxes (*Jy*)	*Qual.*
			12μm 0.26	1
			25μm 2.78	3
			60μm 5.51	3
			100μm 8.85	1

Central Star:
B 19.5 *V* 18.5 *Qual:* C 90..1004

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043.5–13.4

A 67, PK 43–13°1, A55 54, ARO 117, VV' 520

Disc.: Abell 1955	*Diameter* (″)	
	opt. 67. CaKa71	
1950: 19 55 58.5 +02 54 12 Mi73		
2000: 19 58 29.3 +03 02 23 .		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-12

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	255
[*O*III]	436.3	–	[*N*II]	658.4	110:
	500.7	1020	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.0 \pm .4$ ASTR91		*Radio* *2cm* 6 MiAl82
		(*mJy*) *6cm* < 2 ZPB89

Central Star: AG82 390 — m_{pg} 19.3 *Qual:* P PK67

Distance (kpc) stat.: 2.32 (CaKa71); >1.87 (MiAl75); 2.30 (AGNR84); 3.2 (Ma84); 1.99 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, Ab66, AcMa77, Ca82, He71, Hi69, Hi71, Hi73, Hig71, Iw73, Kh79, PAKS91, PiKh79

044.0+05.2

K 3-16, PK 44+5°1, ARO 295

Disc.: Kohoutek 1964	*Diameter* (″)	
	opt. 8.: CS90	
1950: 18 50 42.0 +12 12 17 AK90		
2000: 18 53 01.6 +12 16 01 .	*radio* 4. AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1517
[*O*III]	436.3	–	[*N*II]	658.4	282
	500.7	888	[*S*II]	671.7	39
*He*I	587.6	70		673.1	47

$\lg F_{H\beta}(mW.m^{-2})$ $-13.6 \pm .3$ ASTR91	*IR Class:* .	
	J	
	H	
	K > 9.5	
	L	
	Photom. AI74	*Radio* *2cm* 6 MiAl82
		(*mJy*) *6cm* 6 AK90

Distance (kpc) stat.: 10.8 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, BlPu81, Hi71, Ko65, Mi76, PAKS89, Sa86

044.1+05.8

CTSS 2

			Disc.: Capellaro et al 1990	*Diameter (″)*	
				opt. St. 90..1004	
1950:	18 48 25	+12 33.0	90..1004		
2000:	18 50 44	+12 36.6	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-20

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	834
[OIII]	436.3	76	[NII]	658.4	–
	500.7	434	[SII]	671.7	
HeI	587.6	31		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.5 \pm .3$ ASTR91

Central Star:
B 17.2 *V* 16.5 *Qual:* C TASG91

90..1004 Capellaro E., Turatto M., Salvadori L., Sabbadin F. *Astron. Astrophys. Suppl. Ser. 86,503* Four newly identified Planetary Nebulae in the Palomar plate 18h48m +12

044.3+10.4

We 3-1, PK 44+10°1

			Disc.: Weinberger 1978	*Diameter (″)*	
				opt. 135. 78.10519	*Expansion Velocities (km/s)*
1950:	18 31 46.2	+14 46 55	78.10519		[OIII] 33.0 We89
2000:	18 34 02.5	+14 49 18	.		[NII] 36.0 We89

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-02

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	–
	500.7	110	[SII]	671.7	
HeI	587.6	–		673.1	

Bibliography: MWH81

78.10519 Weinberger R. *Observatory 98,137-138* A possible new Planetary Nebula in Hercules.

044.3–05.6

K 3-36, PK 44–5°1, IRAS 19302+0721

			Disc.: Kohoutek 1964	*Diameter (″)*	
				opt. 12. ATS91	
1950:	19 30 13.9	+07 21 23	IRAS		
	19 30 13.1	+07 21 29	AK90		
2000:	19 32 38.8	+07 27 58	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03

HeII	468.6 *nm*	50	*Hα*	656.3 *nm*	534
[OIII]	436.3	–	[NII]	658.4	–
	500.7	548	[SII]	671.7	
HeI	587.6	28		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.7 \pm .2$ ASTR91

IRAS Fluxes (Jy) *Qual.*

12μm	0.26	1
25μm	0.43	3
60μm	1.66	3
100μm	2.58	3

Radio (*mJy*) *2cm* $6cm < 0.2$ AK90

Central Star:
B 17.2 *V* 17.3 *Qual:* C TASG91

Bibliography: *PK67*, BlPu81, Ko65

045.4-02.7

Vy 2-2, PK 45−2°1, ARO 151, M 1-70, VV 230, VV' 497, IRAS 19219+0947

			Disc.: Vyssotsky 1945	*Diameter* (″)		*Rvel:* −71.4 ± 3.9 STPP83	
1950:	19 21 59.1	+09 47 58	IRAS	*opt.* 14.	ATS91	*Expansion Velocities* (*km/s*)	
	19 21 59.0	+09 47 59	Mi73			[OIII] 17.5	We89
2000:	19 24 21.9	+09 53 55	.	*radio* 0.5	ZPB 89	[NII] 25.0	We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	1.0:	$H\alpha$	656.3 *nm*	1383	*J*	10.11	12μm	15.45	3
[*OIII*]	436.3	5	[*NII*]	658.4	135	*H*	10.52	25μm	94.18	3
	500.7	812	[*SII*]	671.7	0.8:	*K*	9.69	60μm	42.64	3
HeI	587.6	51		673.1	1.9	*L*	7.54	100μm	10.32	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.56 ± .03	Ka80 , SK89			*Photom.*	PPFS87	*Radio* 2*cm*		
IUE Spectra:		*LW*(2)	*SW*(2)					(*mJy*) 6*cm*	50	PFMA82

Central Star: AG82 367 —
B 15.51 *V* 14.60 *Qual:* B SK89 , TASG91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 1.90 (Ac78); 2.16 (CKS91)

Bibliography: *PK67*, AG82, AKSJ89, AST89, AcMa77, AiRo81, AiRo82, Al73, Al74, Al89, AlSw76, All73, CoBa74, De71, FaMa88, HaZu91, Hi71, JoJo91, KAS91, Ka70, Ka76, Kal78, LePo88, MaFa85, OlRa86, PAKS89, PBBE84, PM87, PPT88, PeTo87, PiKh79, Ro87, SK85, SOB85, Sa84, Sabb86, Sh85, TAGS89, TPZ87, TTP87, Vo70, VoCo90, Wa77, ZTPS89, ZuAl86

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78...121 Ahern F.J. *Astrophys. J. 223,901-907* Photoelectric spectrophotometry of compact nebulae.
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79...135 Davis L.E., Seaquist E.R., Purton C.R. *Astrophys. J. 230,434-441* OH emission from early-type emission-line stars with large infrared excesses.
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045.6+24.3

K 1-14, PK 45+24°1, ARO 48, IRAS 17404+2128

			Disc.: Kohoutek 1963	*Diameter* (″)	
1950:	17 40 29.4	+21 28 18	IRAS	*opt.* 47. CaKa71	
	17 40 29.5	+21 28 11	Ka83		
2000:	17 42 37.1	+21 26 50	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-20						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	116:	$H\alpha$	656.3 *nm*	sat.	12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4	–	25μm	0.34	3
	500.7	309:	[*S*II]	671.7		60μm	0.96	3
*He*I	587.6	–		673.1		100μm	1.37	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.40 \pm .01$ Ka83
IUE Spectra: *LW*(0) *SW*(2)

Central Star: AG82 255 — *V* 16.4 Ka85 *Spectrum:* IUE obsns AG82

Notes: Visual binary nucleus (81...205). Monochromatic images (JDK86)
Distance (kpc) stat.: 3.0 (CaKa71); 5.3 (Ma84); 3.38 (CKS91)

Bibliography: *PK67*, AcMa77, CaWy76, Dr80, Gu88, He71, Hi69, Hi71, Hi73, Hig71, Iw73, KSK90, Ka69, KrK68, LePo88, Li78, Mi73, Sabb86, TASG91, Te66, TrSa78

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045.6+01.5

K 3-22, PK 45+1°1

			Disc.: Kohoutek 1964	*Diameter* (″)	
				opt. St. CS90	
1950:	19 07 06.3	+11 55 54	BIPu81		
2000:	19 09 26.5	+12 00 48	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3850
[*O*III]	436.3	–	[*N*II]	658.4	154:
	500.7	103:	[*S*II]	671.7	
*He*I	587.6	113:		673.1	

Notes: Possibly a HII region.

Bibliography: *PK67*, ACPS87, Al74, Ko65, Sa86

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045.7–04.5

NGC 6804, PK 45–4°1, ARO 34, VV 233, VV' 500, IRAS 19291+0907

			Disc.: Pease 1917	*Diameter (″)*	*Rvel:* −12.0 ± 3.8 STPP83
1950:	19 29 11.6	+09 07 06	IRAS	*opt.* 35. CJA87	*Expansion Velocities (km/s)*
	19 29 12.0	+09 07 13	Mi73	CaKa71	[OIII] 24.0 Sa84
2000:	19 31 35.8	+09 13 38	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-03					
HeII	468.6 *nm*	94	$H\alpha$	656.3 *nm*	447
[OIII]	436.3	–	[NII]	658.4	–
	500.7	670	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	−11.30 ± .04 CD61

IRAS Fluxes (Jy)		*Qual.*
12μm	0.69	3
25μm	13.47	3
60μm	19.41	3
100μm	14.09	3

Radio	*2cm*	126	MiAl82
(mJy)	*6cm*	132	Ca82

Central Star: AG82 373 — PLX 4568; CSI +09 -19291; HD 183932
B 14.47 *V* 14.37 *Qual:* A TASG91

O9 All76
O(H) Me91

Notes: Multiple-shell PN; monochromatic images (CJA87)
Distance (kpc) indiv.: kinem. 1.1 (Ac78); ext. 1.6 (Ac78); ext. 2.0 (Po83); ext. 1.4 (Sab86)
Distance (kpc) stat.: 1.2-1.6 (CaKa71); 1.53 (MiAl75); 1.74 (Ca76); 1.28 (Ac78); 1.16 (Da82); 1.10 (AGNR84); 1.6 (Ma84); 1.71 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ab66, AcMa77, Al68, AlKe87, AlLi68, AlMi72, Bo68, Ca84, CaKo68, CaNo73, CaRu74, Ch89, Cu74, DFHM67, De71, Dr80, Gie83, Gr71, Gu70, Gu88, HaSe66, He71, He90, Hi71, Hig71, Ii81, Iw73, IwKa65, KSDN68, Ka69, Ka70, Ka76, Ka81, Ka86, Kal83, Kh76, Kh79, Khr76, Khro76, Kos76, Kr69, KrK68, LNP89, MaPe88, MaPo80, MiSa77, MiWe79, PSK78, Pe91, Phi84, PiKh79, Ri69, SGBO84, SaHa82, SaMi78, Sabb86, Sc81, Sm71, StSh83, Te68, Te80, ThDa70, TrSa78, VKDA69, Vo70, We89, ZuAl86

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68..9086 Liller W., Shao C.H. *I.A.U. Symp. 34,320* Photometric observations of the central stars of P.N.
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045.9–01.9

K 3-33, PK 45−1°1, IRAS 19200+1035

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 20 03.2	+10 35 07	IRAS	*opt. St.* CS90	
	19 20 04.6	+10 35 33	AK90		
2000:	19 22 26.6	+10 41 21	.	*radio* 1.1 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-14						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	2333	*J*	12μm	3.41	3
[*OIII*]	436.3	–	[*NII*]	658.4	1567	*H*	25μm	5.98	2
	500.7	217:	[*SII*]	671.7	} 200.	*K* > 9.1	60μm	3.46	3
HeI	587.6	–		673.1		*L*	100μm	68.47	1
$\lg F_{H\beta}(mW.m^{-2})$		$-14.2 \pm .3$ ASTR91				*Photom.* AI74	*Radio* (*mJy*)	*2cm*	
								6cm 17	AK90

Notes: Possibly a HII region.
Distance (kpc) stat.: 6.12 (CKS91)

Bibliography: *PK67*, BlPu81, Ko65, Sa86, ZTPS89

88...506 Eder J., Lewis B.M., Terzian Y. *Astrophys. J., Suppl. Ser. 66,183-207* New OH/IR stars from color-selected iras sources: 1612 MHz observations.

046.3–03.1

PB 9, PK 46−3°1, ARO 152, IRAS 19253+1018

			Disc.: Peimbert et al 1960	*Diameter* (″)	
1950:	19 25 21.7	+10 18 10	IRAS	*opt.* 12. : CS90	
	19 25 22.3	+10 18 11	AK90		
2000:	19 27 44.7	+10 24 20	.	*radio* 9.0 AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	7	*Hα*	656.3 *nm*	1238	12μm	0.25	1
[*OIII*]	436.3	11	[*NII*]	658.4	16	25μm	2.10	3
	500.7	1392	[*SII*]	671.7		60μm	3.83	3
HeI	587.6	39		673.1		100μm	4.42	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.6 \pm .4$ ASTR91				*Radio* (*mJy*)	*2cm*	
							6cm 40	AK90

Distance (kpc) stat.: 4.66 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al74, Hi71, Mi76, PAKS89

65..9024 Apriamasvili S. *Astron. Tsirk. 318,1* 3 new planetary nebulae.

046.4-04.1

NGC 6803, PK 46−4°1, ARO 73, VV 232, VV' 499, IRAS 19289+0956

			Disc.: Pickering 1882	*Diameter* (″)		*Rvel*: +13.1 ± 1.8	STPP83
1950:	19 28 54.3	+09 56 57	IRAS	*opt.* 5.5	CJA87	*Expansion Velocities* (*km/s*)	
	19 28 53.5	+09 57 00	Mi73		CaKa71	[OIII] 14.5	Sa84
2000:	19 31 16.4	+10 03 24	.	*radio* 2.4	Is84	[NII] 20	Sa84

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-28						*IR Class*: N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	5	$H\alpha$	656.3 *nm*	411	*J*	11.34	12μm	0.77	3
[OIII]	436.3	6	[NII]	658.4	128	*H*	11.82	25μm	10.55	3
	500.7	1028	[SII]	671.7	7	*K*	10.95	60μm	12.15	3
*He*I	587.6	26		673.1	11	*L*		100μm	3.72	2
$\lg F_{H\beta}$ −11.18 ± .01 CD61 , 71..9003, Kle78						*Photom.* Wh85		*Radio* 2*cm* 110		MiAl82
IUE Spectra: *LW*(1) *SW*(1)						*Spectr.* PPOJ86		(*mJy*) 6*cm* 88.7		Is84

Central Star: AG82 372 — HD 183889; CSI +09 -19289; EM* CDS 1073
V 15.2 *Qual:* B Kle78 *Spectrum:* WN? 81.27751

Distance (kpc) indiv.: kinem. 2.1: (Ac78); ext. 1.1: (Ac78); ext. 1.60 (Po80); ext. 1.7 (Po83); kinem. 3.0 (GPG86)
Distance (kpc) stat.: 3.11 (CaKa71); 4.94 (MiAl75); 5.0 (Ca76); 1.6 (Ac78); 1.68 (Da82); 1.64 (PhPo84); 1.50 (AGNR84); 2.5 (Ma84); 2.98 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac80, AcMa77, Al65, Al68, Al76, AlCz73, AlCz83, AlLi68, AlMi72, All76, ArKo68, BLTA81, Bar78, Bark78, Ca82, CePe85, CoBa74, CoBa80, DFHM67, Da75, De71, FaMa88, FeAl87, GMS72, GPY79, Ga87, GaPo89, Gol87, Gr71, Gu70, Gu88, He71, He90, Hi71, Hig71, Ii81, IwKa65, Iy86, KAC76, KVLS81, Ka66, Ka69, Ka70, Ka76, Ka78, Ka79, Ka80, Ka81, Ka86, Kal76, Kh76, Kh79, Kh84, Khr76, Khro76, Ko77, Kos76, LNP89, MaFa85, MaPe88, MaPo80, MiWe79, PM87, PPFS87, PPT88, Pe75, Pe91, PeSe80, Ph84, PiKh79, PrPo87, RRA82, SGBO84, SaMi78, Sab86, Sabb86, SlOr65, Sm71, Sm73, SmAl69, StKa89, StTy90, TASG91, TP77, Te68, TuTe84, VKDa65, Vi69, Vo70, VoCo90, Wa70, We89, ZTPS89, ZuAl86

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046.8+03.8

CTSS 3, Sh 2-78

				Disc.: Capellaro et al 1990	*Diameter* (″)	
					opt. 600. 90..1004	
1950:	19 00 50	+14 02.5	90..1004			
2000:	19 03 08	+14 07.0	.			

Central Star:
B 17.98 *V* 17.78 *Qual:* A 90..1004

90..1004 Capellaro E., Turatto M., Salvadori L., Sabbadin F. *Astron. Astrophys. Suppl. Ser. 86,503* Four newly identified Planetary Nebulae in the Palomar plate 18h48m +12

046.8+02.9

CTSS 4

				Disc.: Capellaro et al 1990	*Diameter* (″)	
					opt. 10. 90..1004	
1950:	19 04 05	+13 40.0	90..1004			
2000:	19 06 23	+13 44.7	.			

90..1004 Capellaro E., Turatto M., Salvadori L., Sabbadin F. *Astron. Astrophys. Suppl. Ser. 86,503* Four newly identified Planetary Nebulae in the Palomar plate 18h48m +12

047.0+42.4

A 39, PK 47+42°1, A55 27, ARO 180, VV' 140, IRAS 16255+2801

				Disc.: Abell 1955	*Diameter* (″)	
1950:	16 25 34.0	+28 01 32	IRAS		*opt.* 174. CaKa71	*Expansion Velocities* (*km/s*)
	16 25 32.2	+28 01 12	Ka83			[OIII] 32 We89
2000:	16 27 33.4	+27 54 35	.			[NII] 37 We89

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.50	1
25μm	0.25	1
60μm	0.90	3
100μm	1.46	3

$\lg F_{H\beta}(mW.m^{-2})$ $-11.79 \pm .02$ Ka83
IUE Spectra: *LW*(1) *SW*(2)

Central Star: AG82 209 — CSI +28 -16255; UBV 13929
U 14.10 *B* 15.34 *V* 15.69 *Qual:* A Ab66, 72.30001, Dr80

sd O 64...352
hg O(H) Me91

Distance (kpc) stat.: 0.98 (CaKa71); 1.9 (Ma84); 1.16 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, All76, Ca84, ChLo76, Gr71, Gu70, HeAu87, Hi71, KSK90, Ka76, Ka85, Kale76, Kh79, KrK68, Sabb86, Sc81, TASG91, ZiPo91

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66..9024 Mathews W.G. *Astrophys. J. 143,176* Model of planetary nebulae.
72.30001 Shao C.Y., Liller W. *Private communication* UBV observations of the central stars of planetary nebulae
81...205 Kaler J.B. *Astrophys. J. 250,L31-L34* Large high-excitation PN.
82.10001 Kaler J.B. *Sky Telesc. 63,129-133* Bubbles from dying stars.
86...522 Green R.F., Schmidt M., Liebert J. *Astrophys. J., Suppl. Ser. 61,305-352* The Palomar-Green catalog of ultraviolet-excess stellar objects.
90..1011 Hippelein H., Weinberger R. *Astron. Astrophys. 232,129* The expansion of highly evolved planetary nebulae.

047.1+04.1

K 3-21, PK 47+4°1

Disc.: Kohoutek 1964 1950: 19 00 23.1 +14 24 26 PK67 2000: 19 02 40.3 +14 28 52 .	*Diameter (″)* *opt.* 7.2 CaKa71	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	728
[OIII]	436.3	–	[*N*II]	658.4	1121
	500.7	980	[*S*II]	671.7	122
*He*I	587.6	–		673.1	99

$\lg F_{H\beta}(mW.m^{-2})$ $-13.6 \pm .2$ ASTR91

Central Star:
B 18.6 *V* 16.9 *Qual:* C TASG91

Distance (kpc) stat.: 9.81 (CaKa71); 10.5 (Ma84)

Bibliography: *PK67*, AST89, CaWy76, Iw73, Ko65, PAKS89, Sa86

047.1–04.2

A 62, PK 47–4°1, A55 50, ARO 155, VV' 501

Disc.: Abell 1955 1950: 19 30 56.0 +10 30 29 Ka83 2000: 19 33 18.3 +10 37 01 .	*Diameter (″)* *opt.* 161. CaKa71	*Expansion Velocities (km/s)* [OIII] 13 We89 [NII] 24 We89

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1990-06-23

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100:
[OIII]	436.3	–	[*N*II]	658.4	128:
	500.7	108	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.01 \pm .06$ Ka83

Central Star: AG82 374 —
m_{pg} 18.8 *Qual:* P PK67

Distance (kpc) stat.: 0.71 (CaKa71); 1.1 (Ma84); 0.49 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, CaWy76, Hi71, IsWe87, Iw73, Jo80, KSK90, Kh79, KrK68, LePo88, Mi76, TrSa78, We86, ZPB89

90..1011 Hippelein H., Weinberger R. *Astron. Astrophys. 232,129* The expansion of highly evolved planetary nebulae.

048.0–02.3

PB 10, PK 48–2°1, Ap 4-1, ARO 153, IRAS 19258+1213

			Disc.: Peimbert et al 1960	*Diameter* (″)			
1950:	19 25 53.8	+12 13 21	IRAS	*opt.* 10.	ATS91		
	19 25 54.1	+12 13 25	AK90				
2000:	19 28 14.4	+12 19 36	.	*radio* 8.0	AK90		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	54	$H\alpha$	656.3 *nm*	1463	*J*		12μm	0.56	3
[*OIII*]	436.3	–	[*NII*]	658.4	234	*H*		25μm	5.73	3
	500.7	1659	[*SII*]	671.7	24	*K*	> 9.0	60μm	8.06	3
HeI	587.6	32		673.1	36	*L*		100μm	34.60	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.7 ± .2	ASTR91			*Photom.*	AI74	*Radio* (*mJy*)	*2cm*	
									6cm 50	AK90

Distance (kpc) stat.: 4.69 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Mi76

77.31001 Stephenson C.B., Sanduleak N. *Publ. Warner & Swasey Obs. 2,4* New position determinations, and other data, for 1280 known Halpha-emission stars in the milky way.

048.1+01.1

K 3-29, PK 48+1°2, IRAS 19132+1358

			Disc.: Kohoutek 1964	*Diameter* (″)			
1950:	19 13 12.6	+13 58 29	IRAS	*opt. St.*	CS90		
	19 13 12.5	+13 58 30	AK90				
2000:	19 15 30.5	+14 03 49	.	*radio* 1.	AK90		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3117	*J*		12μm	2.52	3
[*OIII*]	436.3	–	[*NII*]	658.4	1515	*H*		25μm	15.40	3
	500.7	2073	[*SII*]	671.7	45	*K*	> 10.2	60μm	9.34	3
HeI	587.6	–		673.1	74	*L*		100μm	64.34	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.80 ± .10	ASTR91			*Photom.*	AI74	*Radio* (*mJy*)	*2cm*	
									6cm 58	AK90

Distance (kpc) stat.: 2.83 (CKS91)

Bibliography: *PK67*, BlPu81, Ko65, Sa86

048.5+04.2

K 4-16, PK 48+4°2, ARO 303, IRAS 19025+1542

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 02 32.1	+15 42 48	IRAS	*opt. St.* CS90	
	19 02 35.7	+15 43 00	AK90		
2000:	19 04 51.4	+15 47 36	.	*radio* 3. AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01					
HeII	468.6 *nm*	66	$H\alpha$	656.3 *nm*	976
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	1273	[*SII*]	671.7	
HeI	587.6	24:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-13.26 \pm .10$	ASTR91

IR Class: .		
J		
H		
K	> 8.3	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.29	1
25μm	0.26	3
60μm	0.49	1
100μm	5.59	1

Radio (*mJy*)			
2cm			
6cm	3	AK90	

Distance (kpc) stat.: 15.1 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Ko65, Mi76, Ru70

86.10300 Shchelkanova A.Yu. *Astron. Tsirk. 1451,3* Preliminary results of investigation of compact emission-line objects.

048.7+02.3

K 3-24, PK 48+2°1, ARO 305, IRAS 19098+1504

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 09 49.5	+15 04 03	IRAS	*opt.* 6.2 CaKa71	
	19 09 49.5	+15 03 56	Mi76		
2000:	19 12 06.1	+15 09 01	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1824
[*OIII*]	436.3	–	[*NII*]	658.4	2874
	500.7	1245	[*SII*]	671.7	82:
HeI	587.6	–		673.1	134:

$\lg F_{H\beta}(mW.m^{-2})$	$-14.1 \pm .4$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.46	1
25μm	0.37	3
60μm	1.57	3
100μm	9.83	1

Radio (*mJy*)			
2cm			
6cm	3	MiAl82	

Distance (kpc) stat.: 5.86 (CaKa71); 6.38 (Ca76); 4.14 (Da82); 3.10 (AGNR84); 3.6 (Ma84); 6.34 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, CaRu74, Hi71, Iw73, Ko65, LNP89, PAKS89, Ru70, Sa86

048.7+01.9

He 2-429, PK 48+1°1, ARO 148, M 4-13, IRAS 19113+1454

			Disc.: Henize 1964	*Diameter (")*	*Rvel:* +14.0 ± 11.0 STPP83
1950:	19 11 21.5	+14 54 06	IRAS	*opt.* 4.2 CaKa71	
	19 11 21.2	+14 54 18	Mi76		
2000:	19 13 38.0	+14 59 30	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02						*IR Class:* .	*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1596	*J*	12μm	0.71	3
[OIII]	436.3	–	[NII]	658.4	1515	*H*	25μm	4.37	3
	500.7	661	[SII]	671.7	51	*K* > 9.9	60μm	7.22	3
HeI	587.6	67		673.1	97	*L*	100μm	10.11	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.91 ± .10 ASTR91				*Photom.* AI74			

Central Star:

Spectrum: WC ATS91

Distance (kpc) stat.: 3.61 (CaKa71); 2.80 (Ac78); 0.8 (84 ..1511); 3.38 (CKS91)

Bibliography: *PK67*, AcMa77, AlLi68, He67, Hi71, Kh76, Kon78, Kon83, KrK68, Ma84, PPT88, TTP87, TuTe84

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048.7-01.5

DeHt 4, PK 48−1°1

			Disc.: Dengel et al 1980	*Diameter (")*	
				opt. 40. 80..1011	
1950:	19 24 07.4	+13 13 38	80..1011		
2000:	19 26 26.4	+13 19 42	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-06						
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	237	
[OIII]	436.3	–	[NII]	658.4	363	
	495.9	–	[SII]	671.7	} 391.	
HeI	587.6	–		673.1		
$\lg F_{H\beta}(mW.m^{-2})$		−12.9 ± .4 ASTR91				

Central Star: AG82 368 —

Notes: Peculiar object; ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, KJL88

80. .1011 Dengel J., Hartl H., Weinberger R. *Astron. Astrophys. 85,356-358* A search for Planetary Nebulae on the "POSS".

049.3+88.1

H 4-1, PK 49+88°1, ARO 179

Disc.: Haro 1951 1950: 12 57 02.7 +27 54 24 AK90 2000: 12 59 27.6 +27 38 14 .	*Diameter* (″) *opt.* 2.7 81..1008	*Rvel:* −141.0 ± 12.0STPP83 *Expansion Velocities* (*km/s*) [OIII] 11. SSB86
Intens. (*Hβ* = 100) OHP-CAR+CCD 1987-05-21 *He*II 468.6 *nm* 10: | *Hα* 656.3 *nm* 355 [OIII] 436.3 9: | [NII] 658.4 84 500.7 659 | [SII] 671.7 2.2: *He*I 587.6 15 | 673.1	*IR Class:* . *J* *H* *K* > 11.5 *L*	
lg$F_{H\beta}$($mW.m^{-2}$) −12.27 ± .10 ASTR91 *IUE Spectra:* *LW*(4) *SW*(4)	*Photom.* AI74	*Radio* *2cm* (*mJy*) *6cm*< 0.3 AK90

Central Star:
V 19.5 *Qual:* D 81..1008

Notes: Galactic halo planetary nebula (77...257)
Distance (kpc) stat.: 11.87 (CaKa71); 9.9 (Ac78); 12.7 (Ma84); 17.8 (CKS91)

Bibliography: PK67, Ac80, AcMa77, Bar78, Bark78, BlPu81, CaWy76, CePe85, CoBa74, FaMa88, FeAl87, Gol87, Hi71, Iw73, Jo80, Ka73, Ka76, Ka79, Ka80, Ka81, Ka86, Kal80, Kh89, Kle78, Ma88, SSAG87, SaMi78, StKa89, StTy90, We86, We89, ZiPo91

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76..3102 Webster B.L. *Publ. Astron. Soc. Pac. 88,669-671* A P.N. in a red globular cluster in the large Magellanic cloud.
76.12263 Perinotto M. *Mem. Soc. Astron. Ital. 47,177-209* Le nebulose planetarie.
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78.30034 Hawley S.A., Miller J.S. *IAU Symposium 76,245-246* Improved abundances in 3 halo P.N.
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80..4057 Aldrovandi S.M.V. *Astrophys. Space Sci. 71,393-404* Photoionization models and chemical abundances of three halo PN.
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84...185 Barker T., Cudworth K.M. *Astrophys. J. 278, 610-614* Chemical abundances in a new halo planetary nebula.
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049.4+02.4

He 2-428, PK 49+2°1, ARO 186, M 4-12, IRAS 19108+1541

			Disc.: Henize 1964	*Diameter (")*	
1950:	19 10 49.5	+15 41 31	IRAS	*opt.* 9.6 CaKa71	
	19 10 49.5	+15 41 32	Mi76		
2000:	19 13 05.4	+15 46 42	.	*radio* 8. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	778
[OIII]	436.3	–	[NII]	658.4	363
	500.7	353	[SII]	671.7	71
HeI	587.6	–		673.1	59
$\lg F_{H\beta}(mW.m^{-2})$		$-13.6 \pm .4$ ASTR91			

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	0.52	3
60μm	3.61	3
100μm	9.02	1
Radio (*mJy*) *2cm*		
6cm	7	ZPB89

Distance (kpc) stat.: 2.7 (CaKa71); 1.7 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, Hi71, Iw73, PAKS89

050.1+03.3

M 1-67, PK 50+3°1, ARO 10, He 2-427, Sh 2-80, VV 220, VV' 481, IRAS 19092+1646

			Disc.: Merrill 1938	*Diameter (")*	
1950:	19 09 15.2	+16 46 28	IRAS	*opt.* 81. CaKa71	
	19 09 16.7	+16 46 29	Mi73		
2000:	19 11 31.2	+16 51 32	.	*radio* 90. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-12-03					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	681
[OIII]	436.3	–	[NII]	658.4	–
	495.9	–	[SII]	671.7	
HeI	587.6	287		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-9.7 \pm .4$ ASTR91			
IUE Spectra:		*LW*(0)	*SW*(1)		

IR Class: S		*IRAS Fluxes (Jy)*		*Qual.*
J	8.28	12μm	1.13	3
H	8.01	25μm	13.10	3
K	7.61	60μm	42.78	3
L	7.2	100μm	33.05	3
Photom.	AI74	*Radio* (*mJy*) *2cm*	230	MiAI82
		6cm	237	MiAI75

Central Star: AG82 350 — WR 124; CSI +16 -19093; NSV 11797; LS II +164
U 12.16 *B* 12.20 *V* 11.16 *Qual:* A 64...125, 72.30001 *Spectrum:* WN 8 75.12001

Notes: Merill's star. Binary nucleus, $P = 2.4^d$ (?) (82..1142). Monochromatic images (JDK86); KPNO-2.1m monochromatic images by Balick B.

Distance (kpc) stat.: 0.8 (CaKa71); 0.79 (MiAl75); 0.65 (Ac78); 0.84 (Da82); 0.66 (AGNR84); 1.0 (Ma84); 0.68 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac80, AcMa77, Al73, Al77, AlMi72, All76, Bar78, Bark78, CaWy76, ChLo72, ChLo76, Cu74, Dr80, He67, He71, Hi71, Hig71, Iw73, Jo80, Ka69, Ka79, Ka80, Ka86, Ko78, KrKo68, LNP89, Ma74, MaPo80, Me89, MiWe79, PWWF78, Pe91, PiKh79, SKC74, SSAG87, SaMi78, SmAl69, StKa89, TASG91, Te66, Te80, TrSa78, VoCo90, Wa70

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89..9389 Moffat A.F.J. *Astrophys. J. 347, 373-391* Wolf-Rayet stars in the Magellanic Clouds. VII. Spectroscopic binary search among the WNL stars and the WN6/7-WN8/9 dichotomy.
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91.27751 Vanbeveren D. *Space Sci. Reviews,56,249* Massive close binaries : observations and evolutionay computations.

050.4+05.2

A 52, PK 50+5°1, A55 40, ARO 144, VV' 476, IRAS 19023+1752

				Disc.: Abell 1955		*Diameter (")*		
1950:	19 02 19.2	+17 52 31	IRAS			*opt.* 37.	CaKa71	
	19 02 19.2	+17 52 36	Mi76					
2000:	19 04 32.2	+17 57 10	.					

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-05					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	–
	500.7	125	[SII]	671.7	
HeI	587.6	–		673.1	

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	0.89	3
60μm	1.38	3
100μm	2.23	1

Central Star: AG82 342 —
m_{pg} 18.4 *Qual:* P PK67

Distance (kpc) stat.: 2.45 (CaKa71); 3.1 (Ma84)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Hi71, Iw73, Kh79, KrK68

050.4–01.6

K 4-28, PK 50–1°1, IRAS 19279+1441

				Disc.: Kohoutek 1964		*Diameter (")*		
1950:	19 27 59.4	+14 41 01	IRAS			*opt. St.*	CS90	
	19 27 59.1	+14 41 01	AK90					
2000:	19 30 16.6	+14 47 21	.			*radio* 0.6	AK90	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1990-06-23					
HeII	468.6 *nm*	1.5	$H\alpha$	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	11
	500.7	7	[SII]	671.7	
HeI	587.6	–		673.1	

IR Class: .		
J		
H		
K	> 9.7	
L		
Photom.	AI74	

IRAS Fluxes (Jy)		*Qual.*
12μm	0.37	1
25μm	3.84	3
60μm	2.52	1
100μm	85.90	1

Radio	*2cm*		
(mJy)	*6cm*	19	AK90

Distance (kpc) stat.: 4.99 (CKS91)

Bibliography: *PK67*, BlPu81, Ko65, MaC83, Sa86

051.0+03.0

He 2-430, PK 51+3°1, ARO 308, AS 345, MHα 305-11, IRAS 19118+1726

			Disc.: Henize 1964	*Diameter* (″)		
1950:	19 11 49.4	+17 26 15	IRAS	*opt.* 5.	ATS91	
	19 11 50.9	+17 26 20	Mi76			
2000:	19 14 04.7	+17 31 34	.	*radio* 1.7	AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1736	*J*		12μm	0.47	2
[*OIII*]	436.3	–	[*NII*]	658.4	814	*H*		25μm	8.64	3
	500.7	752	[*SII*]	671.7	19	*K*	> 9.6	60μm	6.04	3
HeI	587.6	65		673.1	37	*L*		100μm	6.44	1
lg$F_{H\beta}(mW.m^{-2})$		−12.81 ± .10	ASTR91			*Photom.*	CoBa74	*Radio* (*mJy*)	2*cm*	
									6*cm* 40	AK90

Distance (kpc) stat.: 3.97 (CKS91)

Bibliography: *PK67*, AcMa77, Al73, Al74, He67, Hi71, Is84, Ru70

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051.0+02.8

WhMe 1, PK 51+2°1, IRAS 19127+1717

			Disc.: Whitelock et al 1986	*Diameter* (″)		
1950:	19 12 45.5	+17 17 25	IRAS	*opt. St.*	86..2788	
	19 12 46	+17 17.5	86..2788			
2000:	19 15 00	+17 22.8	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-24							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	5010		12μm	12.15	3
[*OIII*]	436.3	164	[*NII*]	658.4	471		25μm	18.79	3
	500.7	1425	[*SII*]	671.7			60μm	8.50	3
HeI	587.6	170		673.1	31		100μm	7.37	1
lg$F_{H\beta}(mW.m^{-2})$		−13.52 ± .10	ASTR91						
IUE Spectra:		*LW*(0)	*SW*(2)						

Central Star:
B 14.56 *V* 13.42 *Qual:* A 86..2788 *Spectrum:* ? + B9V 86..2788

Notes: Possible binary nucleus (86..2788)

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051.0–04.5

PC 22, PK 51–4°1, ARO 160, VV' 508, IRAS 19397+1343

		Disc.: Apriamasvili 1959		*Diameter* (″)	
1950:	19 39 44.5	+13 43 30	IRAS	*opt.* 20. : CS90	
	19 39 44.2	+13 43 32	AK90		
2000:	19 42 03.1	+13 50 39	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05

*He*II	468.6 *nm*	110	$H\alpha$	656.3 *nm*	458
[*O*III]	436.3	14	[*N*II]	658.4	89
	500.7	1138	[*S*II]	671.7	20
*He*I	587.6	–		673.1	21

$\lg F_{H\beta}(mW.m^{-2})$ $-12.4 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.61	3
60μm	1.97	3
100μm	2.25	1

Radio (*mJy*) *2cm* 11 MiAl82; *6cm* < 0 AK90

Central Star:
B 18.8 *V* 18.1 *Qual:* C TASG91

Bibliography: *PK67*, AcMa77, Hi71, Mi76

051.3+01.8

PM 1-295, TCSS 1, IRAS 19170+1706

		Disc.: Preite-Martinez 1988		*Diameter* (″)	*Rvel:* $-13. \pm 50.$ 90..2003
1950:	19 17 04.8	+17 06 12	IRAS	*opt.* 20. 90..2003	
	19 17 04	+17 06.2	90..2003		
2000:	19 19 18	+17 11.8	.		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.38	1
25μm	5.83	2
60μm	12.52	3
100μm	19.76	1

Central Star:
B 16.7 *V* 15.1 *Qual:* C 90..2003

Bibliography: PM88

90..2003 Turatto M., Cappellaro E., Sabbadin F., Salvadori L. *Astron. J. 99,1170* The optical counterpart of the IRAS Planetary Nebula canditate 19170+1706

051.4+09.6

Hu 2-1, PK 51+9°1, Anon. 18h47m, ARO 100, VV 208, VV' 458, IRAS 18476+2047

			Disc.: Humason 1922	*Diameter (")*		*Rvel:* +14.0 ± 3.1	STPP83
1950:	18 47 38.4	+20 47 05	IRAS	*opt.* 2.6	81..1008	*Expansion Velocities (km/s)*	
	18 47 38.6	+20 47 07	AK90			[OIII] 9.5	We89
2000:	18 49 47.5	+20 50 39	.	*radio* 1.8	AK90	[NII] 17.0	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-01						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	sat.	*J*	10.46	12μm	2.08	3
[OIII]	436.3	3	[NII]	658.4	70	*H*	11.05	25μm	12.18	3
	495.9	151	[SII]	671.7		*K*	10.31	60μm	6.99	3
HeI	587.6	17		673.1		*L*	8.81	100μm	4.38	1
$\lg F_{H\beta}$	−10.80 ± .02	Kle78, Bark78, KM81				*Photom.*	PPFS87	*Radio* 2cm	95	MiAl82
IUE Spectra:	*LW*(2)	*SW*(4)				*Spectr.*	86..2654	(*mJy*) 6cm	110	AK90

Central Star: AG82 330 — *B* 13.32 *V* 13.31 *Qual:* B 81..1008, SK85 , TASG91 *Spectrum:* WN b? 81.27751

Distance (kpc) indiv.: ext. 1.0: (Ac78)
Distance (kpc) stat.: 6.6 (CaKa71); 6.76 (Ca76); 1.3 (Ac78); 1.18 (Da82); 1.50 (AGNR84); 1.9 (Ma84); 2.50 (CKS91)

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90.13504 Maciel W.J., De Freitas Pacheco J.A. *Rev. Mex. Astron.,21,517* Strongly metal deficient planetary nebulae.

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051.5+06.1

K 1-17, PK 51+6°1, ARO 83, IRAS 19014+1916

			Disc.: Kohoutek 1963	*Diameter* (″)	
1950:	19 01 26.4	+19 16 48	IRAS	*opt.* 45. CaKa71	
	19 01 26.0	+19 16 53	Mi73		
2000:	19 03 37.2	+19 21 23	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-01						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	18	$H\alpha$	656.3 *nm*	100	12μm	0.39	1
[*OIII*]	436.3	–	[*NII*]	658.4	–	25μm	0.72	3
	500.7	137	[*SII*]	671.7		60μm	0.95	3
HeI	587.6	–		673.1		100μm	2.01	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.9 \pm .3$ KSK90

Central Star: AG82 341 —
m_{pg} 19.2 *Qual:* P PK67

Distance (kpc) stat.: 2.6 (CaKa71); 3.9 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, He71, Hi71, Hi73, Hig71, Iw73, Ka69, KrK68, Te66, Th68, ThCo67

051.9+25.8

K 1-15, PK 51+25°1, ARO 98

			Disc.: Kohoutek 1963	*Diameter* (″)	
				opt. 43. CaKa71	
1950:	17 42 57.8	+27 21 17	Mi73		
2000:	17 44 57.1	+27 20 07	.		

Central Star: AG82 261 —
m_{pg} 20.3 *Qual:* P PK67

Distance (kpc) stat.: 3.77 (CaKa71); 7.2 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, He71, Hi69, Hi71, Hig71, Iw73, Ka69, KrK68, LePo88, Te66

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051.9–03.8

M 1-73, PK 51−3°1, ARO 158, He 2-443, VV 238, VV' 506, IRAS 19388+1449

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* +6.9 ± 10.1 STPP83
1950:	19 38 51.4	+14 49 52	IRAS	*opt.* 5. CaKa71	*Expansion Velocities* (*km/s*)
	19 38 51.4	+14 49 50	Mi76		[OIII] 11.0 84..2707
2000:	19 41 09.1	+14 56 54	.	*radio* 6. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	1.9	*Hα*	656.3 *nm*	582	12*μm*	0.46	3
[OIII]	436.3	–	[NII]	658.4	234	25*μm*	9.31	3
	500.7	325	[SII]	671.7	6	60*μm*	11.35	3
HeI	587.6	30		673.1	11	100*μm*	5.56	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.7 ± .2 ASTR91				*Radio* 2*cm*	34	MiAl82
						(*mJy*) 6*cm*	43	ZPB89

Central Star:
B 15.01 *V* 14.54 *Qual:* B TASG91

Distance (kpc) stat.: 4.5 (CaKa71); 3.26 (Ac78); 1.9 (Ma84); 4.67 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlLi68, He67, Hi71, Is84, Ka70, Ka76, Kal76, Kal78, Sa84, VKDa65, Vo70, We89

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052.2+07.6

K 4-10, PK 52+7°1, IRAS 18569+2032

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	18 56 54.4	+20 32 51	IRAS	*opt.* 30.: ATS91	
	18 56 53.7	+20 32 52	AK90		
2000:	18 59 03.1	+20 37 02	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-20						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	556	*J*		12*μm*	0.25	1
[OIII]	436.3	–	[NII]	658.4	–	*H*		25*μm*	0.36	2
	500.7	1305	[SII]	671.7		*K*	> 9.2	60*μm*	0.46	3
HeI	587.6	22:		673.1		*L*		100*μm*	1.69	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.1 ± .3 ASTR91				*Photom.*	AI74	*Radio* 2*cm*		
								(*mJy*) 6*cm*	< 0	AK90

Bibliography: *PK67*, BlPu81, Ko65

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052.2–04.0

M 1-74, PK 52−4°1, ARO 162, He 2-445, VV 240, VV' 510, IRAS 19400+1502

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +10.0 ± 25.0	STPP83
1950:	19 40 02.2	+15 02 02	IRAS	*opt.* 5.	ATS91	*Expansion Velocities* (*km/s*)	
	19 40 01.3	+15 01 57	Mi73			[OIII] 12.	We89
2000:	19 42 18.8	+15 09 05	.	*radio* 1.0	ZPB89	[NII] 22.0	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-30						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	−	$H\alpha$	656.3 *nm*	614	*J*		12μm	0.71	3
[*OIII*]	436.3	8:	[*NII*]	658.4	62	*H*		25μm	6.02	3
	500.7	1153	[*SII*]	671.7	5	*K*	12.8	60μm	3.47	3
HeI	587.6	24		673.1	8	*L*		100μm	2.78	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.75 ± .02	Bark78			*Photom.*	CoBa74	*Radio* 2*cm*	37	MiAl82
IUE Spectra:		*LW*(1)	*SW*(1)					(*mJy*) 6*cm*	29	ZPB89

Central Star: AG82 380 —
B 18.5 *V* 18.1 *Qual:* D TASG91 *Spectrum:* WN b? 68.43751

Distance (kpc) stat.: 4.12 (CKS91)

Bibliography: *PK67*, AG82, AKSJ89, AST89, Ac80, AcMa77, Al74, Al77, AlCz79, AlCz83, AlLi68, All76, Ba78, Bar78, FaM86, FaMa86, FaMa87, Gol87, He67, He90, Hi71, Ii81, KAS91, KVLS81, Ka70, Ka76, Ka79, Ka80, Ka81, Kal80, Kh84, Kle78, Ma88, MaFa85, MaFa86, NPP80, PAKS89, PFMA82, Pe91, SOB85, Sa84, SaMi78, SmAl69, StKa89, TAGS89, VKDa65, Vo70, Wa77

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80....55 Czyzak S.J., Sonneborn G., Aller L.H., Shectman S.A. *Astrophys. J. 241,719-724* Nebular and auroral transitions of (Ar IV) in some PN.
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84..2664 Clements E.D., Argyle R.W. *Mon. Not. R. Astron. Soc. 209,1-6* Optical positions and proper motions of radio stars
90..3003 Tamura S., Shibata K.M. *Publ. Astron. Soc. Pac.,102,1301* Expansion analyses on low-excitation planetary nebulae with stellar images

052.5–02.9

Me 1-1, PK 52−2°2, ARO 104, He 2-441, VV' 505, VV 237, IRAS 19368+1549

			Disc.: Merrill 1942	*Diameter* (″)		*Rvel*: −6.0 ± 7.0	STPP83
1950:	19 36 53.3	+15 49 52	IRAS	*opt.* 8.	ATS91	*Expansion Velocities* (*km/s*)	
	19 36 53.5	+15 49 54	Mi73			[OIII] 9.0	84..1287
2000:	19 39 10.0	+15 56 50	.	*radio* 4.7	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	5	$H\alpha$	656.3 *nm*	299	12μm	0.43	3
[*OIII*]	436.3	10	[*NII*]	658.4	229	25μm	1.30	3
	495.9	324	[*SII*]	671.7	14	60μm	2.15	3
HeI	587.6	21		673.1	25	100μm	30.57	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.39 ± .01	O63			*Radio* 2*cm*	30	MiAl82
						(*mJy*) 6*cm*	44	ZPB89

Central Star:
B 15.57 *V* 14.12 *Qual:* B TASG91

Distance (kpc) stat.: 2.20 (CaKa71); 3.87 (Ca76); 4.0 (Ac78); 3.84 (Da82); 2.50 (AGNR84); 3.8 (Ma84); 4.62 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlKe85, AlKe87, AlLi68, Ca82, DFHM67, De71, Gol87, He67, He71, He90, Hi71, Hig71, Ii81, IwKa65, KAC76, Ka70, Ka76, Ka78, Kh76, Kh79, Kh84, Khr76, Khro76, Kos76, LNP89, Ma81, Mi79, Pe91, Sa84, StKa89, VKDa65, Vo70, We89

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052.9+02.7

K 3-31, PK 52+2°1, ARO 315, IRAS 19168+1856

			Disc.: Kohoutek 1964	*Diameter (")*	
1950:	19 16 50.6	+18 56 47	IRAS	*opt. St.* CS90	
	19 16 50.5	+18 56 46	AK90		
2000:	19 19 02.6	+19 02 21	.	*radio* 1.5 AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1865
[OIII]	436.3	–	[NII]	658.4	597
	500.7	1896	[SII]	671.7	
HeI	587.6	83		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.8 \pm .3$ ASTR91

IR Class: .

J		
H		
K	> 9.7	
L		
Photom.	AI74	

IRAS Fluxes (Jy) *Qual.*

12μm	0.79	3
25μm	4.80	3
60μm	3.22	3
100μm	9.32	1

Radio (*mJy*) *2cm* | *6cm* 39 AK90

Distance (kpc) stat.: 3.94 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Hi71, Ko65, Mi76, PAKS89, Ru70, Sa86

052.9–02.7

K 3-41, PK 52–2°1, ARO 328, IRAS 19370+1613

			Disc.: Kohoutek 1964	*Diameter (")*	
1950:	19 37 00.2	+16 13 55	IRAS	*opt. St.* CS90	
	19 37 02.4	+16 14 20	AK90		
2000:	19 39 18.4	+16 21 17	.	*radio* 0.5 AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	717
[OIII]	436.3	–	[NII]	658.4	–
	500.7	1502	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-14.2 \pm .3$ ASTR91

IR Class: .

J		
H		
K	> 9.4	
L		
Photom.	AI74	

IRAS Fluxes (Jy) *Qual.*

12μm	0.25	1
25μm	0.69	3
60μm	1.19	3
100μm	28.84	1

Radio (*mJy*) *2cm* | *6cm* 1 AK90

Distance (kpc) stat.: 20.5 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Kal76, Ko65, Mi73, Ru70, Sa86

053.2–01.5

K 3-38, PK 53−1°1, IRAS 19330+1706

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 33 03.3	+17 06 19	IRAS	*opt.* 4. CaKa71	
	19 33 03.4	+17 06 22	PK67		
2000:	19 35 18.3	+17 13 02	.	*radio* 4.7 ZPB89	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-03					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	–
	500.7	113	[SII]	671.7	
HeI	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.89	1
25μm	2.59	3
60μm	5.48	3
100μm	43.34	1

Radio (*mJy*)			
2cm			
6cm	31	ZPB89	

Distance (kpc) stat.: 4.92 (CaKa71); 1.3 (Ma84); 5.77 (CKS91); 5.64 (CKS91)

Bibliography: *PK67*, AGR89, Is84, Ko65, Sa86

053.3+24.0

Vy 1-2, PK 53+24°1, ARO 182, VV 129, VV' 291, IRAS 17524+2800

			Disc.: Vyssotsky 1942	*Diameter* (″)	*Rvel:* −101.9 ± 3.9 STPP83
1950:	17 52 24.7	+28 00 26	IRAS	*opt.* 4.6 CaKa71	*Expansion Velocities* (*km/s*)
	17 52 24.7	+28 00 29	PK67		[OIII] 16.5 We89
2000:	17 54 23.0	+28 00 00	.		[NII] 11.0 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-31					
HeII	468.6 *nm*	30	$H\alpha$	656.3 *nm*	348
[OIII]	436.3	7	[NII]	658.4	28
	500.7	1167	[SII]	671.7	4
HeI	587.6	16		673.1	5

$\lg F_{H\beta}(mW.m^{-2})$	−11.53 ± .01	Bark78, Ka80
IUE Spectra:	*LW*(1)	*SW*(2)

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.65	3
60μm	2.19	3
100μm	0.87	2

Central Star: AG82 272 —
B 17.3 *V* 17.6 *Qual:* D SK85

Distance (kpc) stat.: 7.6-8.3 (CaKa71); 5.7 (Ac78); 4.7 (Ma84)

Bibliography: *PK67*, AG82, Ac80, AcMa77, Ba78, Bar78, CaWy76, CoBa74, De71, FaMa88, Gu88, Hi71, Ii81, Iw73, Ka70, Ka76, Ka78, Ka79, Ka81, Ka86, Kal80, Kon78, Kon83, LePo88, NPP80, Pe91, PiKh79, RRA82, SGBO84, SSAG87, Sa84, Sabb86, Sh85, StKa89, StTy90, TASG91, VKDA69, Vo70

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053.3+03.0

A 59, PK 53+3°1, A55 48, ARO 84, VV' 494, IRAS 19164+1928

			Disc.: Abell 1955	*Diameter (″)*	
1950:	19 16 28.5	+19 28 59	IRAS	*opt.* 87. CaKa71	
	19 16 29.5	+19 28 23	Mi73		
2000:	19 18 40.9	+19 33 56	.	*radio* 75. ZPB89	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-05

						IRAS Fluxes (Jy)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	0.33	1
[*O*III]	436.3	–	[*N*II]	658.4	220	25μm	0.25	1
	500.7	62	[*S*II]	671.7	33	60μm	1.32	3
*He*I	587.6	–		673.1	18	100μm	7.00	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.5 \pm .3$ KSK90

Radio (*mJy*) *2cm* / *6cm* 18 ZPB89

Central Star:
B 22.21 *V* 21.15 *Qual:* A KJL88

Distance (kpc) stat.: 1.25 (CaKa71); 1.8 (Ma84); 1.41 (CKS91)

Bibliography: *PK67*, Ab66, AcMa77, Hi71, Hig71, Iw73, Kh79, KrK68, Th68, ThCo67

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053.8-03.0

A 63, PK 53–3°1, A55 51, ARO 161, VV' 509

			Disc.: Abell 1955	*Diameter (″)*	
				opt. 40. CaKa71	
1950:	19 39 55.2	+16 58 00	Mi76		
2000:	19 42 10.5	+17 05 08	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	705
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	242	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .4$ ASTR91
IUE Spectra: *LW*(1) *SW*(3)

Radio (*mJy*) *2cm* < 1 MiAl82 / *6cm*

Central Star: AG82 379 — UU Sge; UBV 16747; CSI +16 -19399; HV 5452
U 14.35 *B* 15.05 *V* 14.67 Ab66 *Spectrum:* sdO + K-MV 86.30753

Notes: Eclipsing binary nucleus, $P = 0.465^d$ (78...115). Monochromatic images (BoLi90).
Distance (kpc) stat.: 2.19 (CaKa71); 2.7 (Ma84)

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91...501 Iben I. Jr. *Astrophys. J., Suppl. Ser.,76,55* Single and binary star evolution.

054.1–12.1

NGC 6891, PK 54−12°1, ARO 37, VV 253, VV' 529, IRAS 20127+1233

			Disc.: Copeland 1884	*Diameter (″)*	*Rvel:* +42.4 ± 1.0 STPP83
1950:	20 12 47.2	+12 33 02	IRAS	*opt.* 15. CaKa71	*Expansion Velocities (km/s)*
	20 12 48.0	+12 32 54	Mi73		[OIII] 7.0 We89
2000:	20 15 09.3	+12 42 07	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12					
HeII	468.6 *nm*	−	$H\alpha$	656.3 *nm*	353
[OIII]	436.3	5	[NII]	658.4	12
	500.7	868	[SII]	671.7	
HeI	587.6	18		673.1	

IR Class: N		*IRAS Fluxes (Jy)*		*Qual.*
J	10.84	12μm	0.83	3
H	11.12	25μm	10.38	3
K	10.55	60μm	14.71	3
L		100μm	7.15	3
Photom.	Wh85	*Radio 2cm*	97	MiAl82
Spectr.	PPOJ86	(*mJy*) *6cm*	140	Ca82

$\lg F_{H\beta}$ −10.65 ± .03 CD61 , Kle78, W83
IUE Spectra: *LW*(2) *SW*(14)

Central Star: AG82 403 — BD +12 4266; GCRV 12622; HD 192563; EM* CDS 1140
B 12.30 *V* 12.42 *Qual:* B SK85 , TASG91 *Spectrum:* Of (H) Me91

Notes: Multiple-shell PN; monochromatic images (CJA87); ESO-2.2m images by Baessgen M. and Bremer M.

Distance (kpc) indiv.: ext. 0.67 (Po80); wind 0.83 (85....32); spect. 3.8 (MKHH88)

Distance (kpc) stat.: 3.0 (CaKa71); 3.02 (MiAl75); 3.40 (Ca76); 2.16 (Ac78); 1.81 (Da82); 1.42 (PhPo84); 1.35 (AGNR84); 2.1 (Ma84); 3.19 (CKS91)

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73..9068 Kostjakova E.B. *Mem. Soc. R. Sci. Liege 5,73* Study of the P.N. in near U.V.
73..9095 Kostjakova E.B., Arhipova V.P., Saveleva M.V. *Mem. Soc. R. Sci. Liege 5,473* On the variability of P.N.
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054.4–02.5

M 1-72, PK 54−2°1, ARO 159, He 2-444, VV 239, VV' 507, IRAS 19393+1738

			Disc.: Minkowski 1946	*Diameter* (″)	
1950:	19 39 19.2	+17 38 10	IRAS	*opt.* 10. PK67	
	19 39 19.4	+17 38 12	AK90		
2000:	19 41 33.9	+17 45 17	.	*radio* 0.7 AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
HeII	468.6 *nm*	–	$H\alpha$ 656.3 *nm*	1748	
[OIII]	436.3	–	[NII] 658.4	843	
	500.7	160	[SII] 671.7	5	
HeI	587.6	39	673.1	7	
$\lg F_{H\beta}(mW.m^{-2})$		−12.5 ± .3 ASTR91			

IR Class: .		
J		
H		
K	> 9.7	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.10	3
25μm	12.56	3
60μm	4.95	3
100μm	2.15	1
Radio (*mJy*) *2cm*		
6cm	26 AK90	

Central Star:
B 18.9 *V* 17.7 *Qual:* D TASG91

Distance (kpc) stat.: 4.26 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Hi71, Mi76, MiWe79, PAKS89, TAGS89, VoCo90

055.1–01.8

K 3-43, PK 55−1°1, IRAS 19382+1842

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 38 13.1	+18 42 11	IRAS	*opt.* 2.8 CaKa71	
	19 38 12.0	+18 42 18	AK90		
2000:	19 40 25.1	+18 49 18	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-04					
HeII	468.6 *nm*	93	$H\alpha$ 656.3 *nm*	1094	
[OIII]	436.3	–	[NII] 658.4	116	
	500.7	1638	[SII] 671.7		
HeI	587.6	–	673.1		
$\lg F_{H\beta}(mW.m^{-2})$		−14.2 ± .3 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.32	1
25μm	0.65	3
60μm	0.97	2
100μm	37.03	1
Radio (*mJy*) *2cm*		
6cm	< 0 AK90	

Central Star:
Spectrum: late-type, var. 87..1532

Distance (kpc) stat.: 6.32 (CaKa71); 1.5 (Ma84)

Bibliography: *PK67*, BlPu81, Ko65, Sa86

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055.2+02.8

He 2-432, PK 55+2°1, ARO 321, IRAS 19212+2102

			Disc.: Henize 1964	*Diameter* (″)			
1950:	19 21 15.2	+21 02 07	IRAS	*opt.* 5.	CK88		
	19 21 15.1	+21 02 08	AK90				
2000:	19 23 24.8	+21 08 00	.	*radio* 2.3	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3100
[*OIII*]	436.3	–	[*NII*]	658.4	684
	500.7	1215	[*SII*]	671.7	
HeI	587.6	75		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-13.4 \pm .3$	ASTR91		

IR Class: .		*IRAS Fluxes* (*Jy*)		*Qual.*
J		12μm	0.41	3
H		25μm	2.59	3
K	> 9.8	60μm	1.77	3
L		100μm	10.44	1
Photom.	AI74	*Radio* (*mJy*)	*2cm*	
			6cm 32	AK90

Distance (kpc) stat.: 6.25 (CaKa71); 2.20 (Da82); 1.90 (AGNR84); 4.68 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, CaRu74, He67, Hi71, Is84, LNP89, Mi76, PAKS89, Ru70

055.3+06.6

A 54, PK 55+6°1, A55 42, ARO 184, VV' 479

			Disc.: Abell 1955	*Diameter* (″)			
				opt. 56.	CaKa71		
1950:	19 06 32.6	+22 54 00	Mi76				
2000:	19 08 39.3	+22 58 51	.				

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-05					
HeII	468.6 *nm*	60:	$H\alpha$	656.3 *nm*	410
[*OIII*]	436.3	–	[*NII*]	658.4	95:
	500.7	525	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-13.05 \pm .10$	KSK90, ASTR91		

Radio (*mJy*)	*2cm*		
	6cm	< 2	ZPB89

Distance (kpc) stat.: 2.41 (CaKa71); 4.1 (Ma84); 2.71 (CKS91)

Bibliography: *PK67*, Ab66, AcMa77, Gu70, He71, Hi71, Iw73, KJL88, Ka69, Kh79, Te66

055.3+02.7

He 1-1, PK 55+2°2, ARO 188, He 2-433, IRAS 19216+2100

			Disc.: Henize 1961	*Diameter* (″)			
1950:	19 21 37.8	+21 00 46	IRAS	*opt.* 5.4	CaKa71		
	19 21 37.1	+21 00 46	Mi73				
2000:	19 23 46.8	+21 06 40	.	*radio* 8.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12					
HeII	468.6 *nm*	66	$H\alpha$	656.3 *nm*	1527
[*OIII*]	436.3	–	[*NII*]	658.4	1650
	500.7	2189	[*SII*]	671.7	193
HeI	587.6	39		673.1	232
$\lg F_{H\beta}(mW.m^{-2})$		$-13.4 \pm .3$	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.48	3
60μm	2.59	3
100μm	9.63	1
Radio (*mJy*) *2cm*		
6cm	14	ZPB89

Distance (kpc) stat.: 3.6 (Ma84); 6.17 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Gr71, He67, Hi71, Iw73, PAKS89, Ru70

055.4+16.0

A 46, PK 55+16°1, A55 34, ARO 119, VV' 419

Disc.: Abell 1955 1950: 18 29 18.7 +26 54 05 Ka83 2000: 18 31 18.9 +26 56 17 .	*Diameter (″)* *opt.* 63. CaKa71	
Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-21 *He*II 468.6 *nm* – | *Hα* 656.3 *nm* 631 [*O*III] 436.3 – | [*N*II] 658.4 – 500.7 588 | [*S*II] 671.7 *He*I 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ $-11.85 \pm .11$ Ka83 *IUE Spectra:* *LW*(1) *SW*(3)		
Central Star: AG82 314 — UBV 15775; FB172; V477 Lyr; CSI +26 -18292 *U* 13.58 *B* 14.69 *V* 14.96 *Qual:* B Ab66, SK85 , TASG91		O9 k All76 O(H) Me91

Notes: Eclipsing binary nucleus, $P = 0.472^d$ (80.20251, BoLi 90). Monochromatic images (BoLi90)
Distance (kpc) stat.: 1.97 (CaKa71); 3.1 (Ma84); 2.19 (CKS91)

Bibliography: *PK67*, AG82, Ac82, AcMa77, CoBa74, Dr80, Fe82, Gr71, GrNe90, He71, HeAu87, Hi69, Hi71, Hig71, Iw73, KSK90, Kh79, KrK68, LePo88, Li82, MeHa75, Mi73, Sh85, TrSa78, ZuAl86

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88..9244 Tout C.A., Eggleton P.P. *Astrophys. J. 334, 357-361* The formation of Algols without catastrophes.
89.50075 Bond H.E. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimnert. Planetary nebulae, 251-260* Close-binary and pulsating central stars.
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055.5–00.5

M 1-71, PK 55–0°1, ARO 156, He 2-439, VV 236, VV' 504, IRAS 19342+1935

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +50.6 ± 10.1 STPP83	
1950:	19 34 14.5	+19 35 35	IRAS	*opt.* 3.8	PK67	*Expansion Velocities* (*km/s*)	
	19 34 14.6	+19 35 45	Mi76			[OIII] 16.5	We89
2000:	19 36 26.6	+19 42 30	.	*radio* 2.9	ZPB89	[NII] 25.0	We89

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1245
[*O*III]	436.3	5	[*N*II]	658.4	440
	495.9	458	[*S*II]	671.7	6
*He*I	587.6	61		673.1	12

$\lg F_{H\beta}(mW.m^{-2})$ $-12.29 \pm .10$ ASTR91

IUE Spectra: *LW*(0) *SW*(1)

IRAS Fluxes (*Jy*)		*Qual.*
12μm	4.25	3
25μm	32.90	3
60μm	20.98	3
100μm	58.06	1

Radio *2cm*
(*mJy*) *6cm* 204 ZPB89

Central Star:
Spectrum: WC ? ATS91

Distance (kpc) stat.: 1.66 (CKS91)

Bibliography: *PK67*, AcMa77, AlLi68, He67, Hi71, Kon78, Kon83, OlRa86, StKa89, VoCo90

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055.6+02.1

He 1-2, PK 55+2°3, ARO 189, He 2-435, IRAS 19244+2103

			Disc.: Henize 1961	*Diameter* (″)			
1950:	19 24 27.6	+21 03 19	IRAS	*opt.* 5.	PK67		
	19 24 28.0	+21 03 30	Mi76				
2000:	19 26 37.8	+21 09 35	.	*radio* 4.7	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-20

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1295
[*O*III]	436.3	–	[*N*II]	658.4	832
	495.9	–	[*S*II]	671.7	36
*He*I	587.6	–		673.1	135

$\lg F_{H\beta}(mW.m^{-2})$ $-12.9 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.33	2
25μm	5.33	3
60μm	6.27	3
100μm	10.42	1

Radio *2cm*
(*mJy*) *6cm* 15 ZPB89

Central Star:
B 17.7 *V* 16.7 *Qual:* C TASG91

Distance (kpc) stat.: 8.27

Bibliography: *PK67*, AcMa77, Fe68, He67, Hi71, Kon83, StKa89

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81.....3 Kaler J.B. *Astrophys. J. 244,54-65* (S II) in nebular spectra, and relative sulfur-to-oxygen ratios.

84.30005 Kondratjeva L.N. *Trudy Astrofiz. Inst. Alma Ata 44,90-42* Tsentral'nye zvezdy nekotonyh planetaryh tumannastej.

056.0+02.0

K 3-35, PK 56+2°1, ARO 323, IRAS 19255+2123

			Disc.: Kohoutek 1964	*Diameter (″)*	
1950:	19 25 34.3	+21 23 52	IRAS	*opt. St.* CS90	
	19 25 34.6	+21 23 53	AK90		
2000:	19 27 44.0	+21 30 03	.	*radio* 1.7 AK90	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1463	12μm	2.44	3
[*OIII*]	436.3	–	[*NII*]	658.4	4433	25μm	29.34	3
	500.7	904	[*SII*]	671.7	50	60μm	48.16	3
HeI	587.6	–		673.1	143	100μm	15.97	3
lg$F_{H\beta}(mW.m^{-2})$		$-13.9 \pm .3$ ASTR91				*Radio (mJy)*	*2cm* *6cm* 40	AK90

Notes: Possibly a compact H II region (85..1263)
Distance (kpc) stat.: 3.98 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Ko65, LH91, Mi76, Ru70, Sa86, VoCo90, ZTPS89

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91..2507 Zijlstra A.A. *Mon. Not. R. Astron. Soc.,248,11,1991 (P).* The nature of G 25.5+0.2

056.4–00.9

K 3-42, PK 56–0°1

			Disc.: Kohoutek 1964	*Diameter (″)*	
				opt. 3.4 CaKa71	
1950:	19 37 24.4	+20 12 04	AK90		
2000:	19 39 35.7	+20 19 02	.	*radio* 1.2 AK90	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-05								
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100			
[*OIII*]	436.3	–	[*NII*]	658.4	20			
	500.7	20	[*SII*]	671.7				
HeI	587.6	3		673.1				
						Radio (mJy)	*2cm* *6cm* 19	AK90

Distance (kpc) stat.: 4.06 (CaKa71); 0.8 (Ma84); 5.73 (CKS91)

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056.8–06.9

K 3-51, PK 56–6°1, ARO 340, IRAS 20003+1728

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	20 00 20.3	+17 28 17	IRAS	*opt.* 15. : CS90	
	20 00 20.6	+17 28 23	AK90		
2000:	20 02 36.1	+17 36 49	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27					
HeII	468.6 *nm*	92	$H\alpha$ 656.3 *nm*	712	
[OIII]	436.3	–	[NII] 658.4	–	
	500.7	800	[SII] 671.7		
HeI	587.6	–	673.1		
$\lg F_{H\beta}(mW.m^{-2})$	$-12.4 \pm .4$ ASTR91				

IR Class: .	
J	
H	
K	> 9.9
L	
Photom.	AI74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.28	1
25μm	0.51	3
60μm	0.40	2
100μm	2.45	1
Radio (*mJy*) *2cm*		
6cm	< 0 AK90	

Bibliography: *PK67*, AST89, AcMa77, Hi71, Ko65, Mi76, Ru70

057.2–08.9

NGC 6879, PK 57–8°1, ARO 107, He 2-455, VV 249, VV' 525, IRAS 20081+1646

			Disc.: Pickering 1883	*Diameter* (″)	*Rvel:* +9.0 ± 8.1 STPP83
1950:	20 08 10.0	+16 46 24	IRAS	*opt.* 5. CaKa71	*Expansion Velocities* (*km/s*)
	20 08 09.9	+16 46 24	Mi73	CJA87	[OIII] 21.5 Sa84
2000:	20 10 26.6	+16 55 20	.	*radio* 5. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-28					
HeII	468.6 *nm*	3	$H\alpha$ 656.3 *nm*	286	
[OIII]	436.3	6	[NII] 658.4	9	
	500.7	858	[SII] 671.7		
HeI	587.6	15	673.1		
$\lg F_{H\beta}$	$-11.58 \pm .03$ CD61 , Kal83, W83				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.59	3
60μm	2.69	3
100μm	1.48	1
Radio (*mJy*) *2cm*	42 MiAl82	
6cm	18 ZPB89	

Central Star: AG82 398 — GCRV 12528; CSI +16 -20082
B 14.9 *V* 14.8 *Qual:* C TASG91 *Spectrum:* Of/WR ? AII76

Distance (kpc) stat.: 8.2 (CaKa71); 7.2 (Ca76); 5.1 (Ac78); 3.99 (Da82); 3.20 (AGNR84); 3.7 (Ma84) 7.39 (CKS91)

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83..1561 Sabbadin F., Bianchini A., Hamzaoglu E. *Astron. Astrophys., Suppl. Ser. 52, 395-398* Internal motions in ten planetary nebulae.
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057.9–01.5

He 2-447, PK 57−1°1, VES 47, IRAS 19431+2112

			Disc.: Henize 1964	*Diameter* (″)			
1950:	19 43 12.0	+21 12 44	IRAS	*opt.* 5. :	ATS91		
	19 43 11.7	+21 12 43	AK90				
2000:	19 45 22.1	+21 20 03	.	*radio* 1.2	AK90		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-20						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	10:	*Hα*	656.3 *nm*	1681	*J*		12μm	2.01	2
[OIII]	436.3	–	[*N*II]	658.4	708	*H*		25μm	13.51	3
	500.7	427	[*S*II]	671.7		*K*	> 9.6	60μm	7.82	3
HeI	587.6	50:		673.1		*L*		100μm	43.52	1
lg$F_{H\beta}(mW.m^{-2})$		−13.11 ± .10	ASTR91			*Photom.*	AI74	*Radio* (*mJy*)	*2cm*	
									6cm 60	AK90

Distance (kpc) stat.: 2.87 (CKS91)

Bibliography: *PK67*, BlPu81, He67, ZTPS89

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058.3–10.9

IC 4997, PK 58−10°1, ARO 38, He 2-464, VV 256, VV' 532, IRAS 20178+1634

			Disc.: Fleming 1896	*Diameter* (″)		*Rvel*: −66.2 ± 1.3	STPP83
1950:	20 17 51.4	+16 34 21	IRAS	*opt.* 1.6	81..1008	*Expansion Velocities* (*km/s*)	
	20 17 51.4	+16 34 22	GPG86		CaKa71	[OIII] 14.5	Sa84
2000:	20 20 08.8	+16 43 53	.	*radio* 1.6	Is84	[NII] 21.5	We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	806	*J*	9.84	12μm	2.48	3
[OIII]	436.3	43	[*N*II]	658.4	70	*H*	10.26	25μm	26.75	3
	500.7	437	[*S*II]	671.7	3	*K*	9.43	60μm	9.97	3
HeI	587.6	42		673.1	6	*L*		100μm	3.34	3
lg$F_{H\beta}(mW.m^{-2})$		−10.53 ± .02	O62 , Kle78			*Photom.*	PeTo87	*Radio*	*2cm* 100	MiAl82
IUE Spectra:		*LW*(9)	*SW*(12)			*Spectr.*	83..9040	(*mJy*)	*6cm* 127	MiAl75

Central Star: AG82 405 — CSI +16-20178 0; HD 193538; QV Sge
B 14.6 *V* 14.4 *Qual:* C Kle78, 81..1008 *Spectrum:* Of/WR KVLS81

Notes: Young PN; rapid variability of nebular spectrum (78.30029, 79...286, 81..1131, 82.....2).
Distance (kpc) stat.: 8.84 (MiAl75); 10.8 (Ca76); 1.5 (Ac78); 1.21 (Da82); 1.30 (AGNR84); 2.3 (Ma84) 2.55 (CKS91)

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058.6+06.1

A 57, PK 58+6°1, A55 46, ARO 149, VV' 490

			Disc.: Abell 1955	*Diameter (″)*	
				opt. 37. CaKa71	
1950:	19 15.0	+25 32	PK67		
2000:	19 17.1	+25 37	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-17

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	361
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	1011	[*S*II]	671.7	
*He*I	587.6	89:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.3 \pm .4$ ASTR91

Central Star: AG82 359 — UBV 16325; CSI +25 -19150
U 16.97 *B* 17.86 *V* 17.66 Ab66

Distance (kpc) stat.: 3.25 (CaKa71); 5.0 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, Hi69, Hi71, Iw73, Kh79, KrK68

058.6–05.5

WeSb 5, PK 58−5°1

		Disc.: Weinberger et al 1981		*Diameter* (″)	
				opt. 150. 81..1143	
1950:	19 59 29.1	+19 46 18	81..1143		
2000:	20 01 42.0	+19 54 41	.		

Central Star: AG82 395 —
B 17.4 81..1143

Notes: Elliptical, homogeneous disk, not resolved on the POSS.

Bibliography: AG82

81..1143 Weinberger R., Sabbadin F. *Astron. Astrophys. 100,66-67* Detection of six new extended Planetary Nebulae by means of interference filterphotography.

058.9+01.3

K 3-40, PK 58+1°1, VES 16, IRAS 19342+2333

		Disc.: Kohoutek 1964		*Diameter* (″)			
1950:	19 34 15.0	+23 33 03	IRAS	*opt. St.*	CS90		
	19 34 14.7	+23 33 02	AK90				
2000:	19 36 21.8	+23 39 47	.	*radio* 4.	AK90		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-21					
HeII 468.6 *nm*	–	$H\alpha$	656.3 *nm*	1158	
[OIII] 436.3	–	[NII]	658.4	154	
500.7	531	[SII]	671.7	31:	
HeI 587.6	49		673.1		
$\lg F_{H\beta}(mW.m^{-2})$	$-12.9 \pm .2$	ASTR91			

IR Class: .		*IRAS Fluxes* (*Jy*)		*Qual.*
J		12μm	0.25	1
H		25μm	2.94	3
K	> 8.6	60μm	4.67	3
L		100μm	53.60	1
Photom.	AI74	*Radio* (*mJy*)	*2cm*	
			6cm 20	AK90

Distance (kpc) stat.: 7.07 (CKS91)

Bibliography: *PK67*, BlPu81, Ko65, Sa86

059.0+04.6

K 3-34, PK 59+4°1

		Disc.: Kohoutek 1964		*Diameter* (″)	
				opt. 9.6 CaKa71	
1950:	19 21 58.5	+25 12 54	PK67		
2000:	19 24 02.8	+25 18 49	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-23				
HeII 468.6 *nm*	32	$H\alpha$	656.3 *nm*	380
[OIII] 436.3	–	[NII]	658.4	713
500.7	970	[SII]	671.7	59
HeI 587.6	28		673.1	
$\lg F_{H\beta}(mW.m^{-2})$	$-12.9 \pm .2$	ASTR91		

Distance (kpc) stat.: 6.10 (CaKa71); 5.7 (Ma84)

Bibliography: *PK67*, Iw73, Ko65, Sa86

059.0-01.7

He 1-3, PK 59−1°1, ARO 164, He 2-448, IRAS 19462+2201

			Disc.: Henize 1961	*Diameter* (″)	
1950:	19 46 16.6	+22 01 02	IRAS	*opt.* 8. PK67	
	19 46 15.5	+22 02 28	Mi76		
2000:	19 48 25.1	+22 10 00	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1109
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	1450	[*SII*]	671.7	
HeI	587.6	32		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.27	2
25μm	2.81	3
60μm	4.24	3
100μm	36.94	1

$\lg F_{H\beta}(mW.m^{-2})$ $-13.1 \pm .2$ ASTR91

Central Star: AG82 385 —
$B > 12.0$ $V > 11.6$ 72.30001

Notes: FC wrong in PK67 (83..3115).

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059.4+02.3

K 3-37, PK 59+2°1, ARO 325, IRAS 19316+2425

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 31 40.5	+24 25 48	IRAS	*opt. St.* CS90	
	19 31 40.9	+24 25 52	AK90		
2000:	19 33 46.7	+24 32 27	.	*radio* 2.5 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-17					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1202
[*OIII*]	436.3	–	[*NII*]	658.4	25:
	500.7	1406	[*SII*]	671.7	
HeI	587.6	44		673.1	

IR Class: .

J		
H		
K	> 9.2	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.84	3
60μm	1.25	3
100μm	6.97	1

$\lg F_{H\beta}(mW.m^{-2})$ $-13.10 \pm .10$ ASTR91

Radio (*mJy*) *2cm* *6cm* 17 AK90

Distance (kpc) stat.: 7.15 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Ko65, Mi76, Ru70, Sa86

059.7–18.7

A 72, PK 59−18°1, A55 59, ARO 173, VV' 538, IRAS 20476+1322

			Disc.: Abell 1955	*Diameter* (″)	*Rvel:* −58.6 ± 23.0 STPP83
1950:	20 47 39.1	+13 22 10	IRAS	*opt.* 127. CaKa71	
	20 47 40.1	+13 22 15	Ka83		
2000:	20 50 02.0	+13 33 28	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	127	$H\alpha$	656.3 *nm*	443	12μm	0.23	2
[OIII]	436.3	–	[*NII*]	658.4	–	25μm	0.55	3
	500.7	1748	[*SII*]	671.7		60μm	2.44	3
HeI	587.6	–		673.1		100μm	3.90	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.88 ± .07 Ka83						
IUE Spectra:		*LW*(0) *SW*(2)						

Central Star: AG82 414 — UBV 18031; CSI +13 -20477
U 14.55 *B* 15.79 *V* 16.12 Ab66 *Spectrum:* IUE obsns AG82

Notes: Monochromatic images (JDK86)
Distance (kpc) stat.: 0.79 (CaKa71); 1.1 (Ma84); 1.14 (CKS91)

Bibliography: *PK67*, AcMa77, CaWy76, ChLo76, Gu70, Gu88, He71, HeAu87, Hi71, Iw73, Jo80, KSK90, Ka85, Kh79, KrK68, MeHa75, Mi76, PAKS91, SSAG87, Sabb86, ZuAl86

73..9036 Brown S., Lee P. *Publ. Astron. Soc. Pac. 85,317* Radial velocity of A 77 and A 72.
81...205 Kaler J.B. *Astrophys. J. 250,L31-L34* Large high-excitation PN.

059.9+02.0

K 3-39, PK 59+2°2, ARO 326, IRAS 19338+2448

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 33 49.3	+24 48 08	IRAS	*opt. St.* CS90	
	19 33 48.9	+24 48 07	AK90		
2000:	19 35 54.4	+24 54 50	.	*radio* 1. AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-18						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2522	*J*		12μm	1.08	3
[OIII]	436.3	–	[*NII*]	658.4	1011	*H*		25μm	9.42	3
	495.9	–	[*SII*]	671.7		*K*	> 9.3	60μm	5.26	3
HeI	587.6	–		673.1		*L*		100μm	5.55	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.7 ± .3 ASTR91				*Photom.*	AI74	*Radio* 2*cm*		
								(*mJy*) 6*cm*	11 AK90	

Distance (kpc) stat.: 7.67 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Ko65, Mi76, Ru70, Sa86

060.0–04.3

A 68, PK 60–4°1, A55 55, ARO 166, VV' 522, IRAS 19579+2134

				Disc.: Abell 1955	*Diameter* (″)	
1950:	19 57 59.1	+21 34 36	IRAS		*opt.* 38. CaKa71	
	19 58 00.0	+21 34 40	Mi76			
2000:	20 00 10.8	+21 42 58	.			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.38	1
25μm	0.25	1
60μm	0.85	3
100μm	2.88	1

Central Star: AG82 394 —
U 13.42 *B* 13.52 *V* 13.26 KSDN68

Distance (kpc) stat.: 2.43 (CaKa71); 3.2 (Ma84)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Hi71, Iw73, Kh79, KrK68

060.1–07.7

NGC 6886, PK 60–7°2, ARO 109, He 2-458, VV 252, VV' 528, IRAS 20104+1950

				Disc.: Copeland 1884	*Diameter* (″)	*Rvel:* −35.8 ± 1.1 STPP83
1950:	20 10 29.4	+19 50 17	IRAS		*opt.* 5.5 CJA87	*Expansion Velocities* (*km/s*)
	20 10 29.4	+19 50 18	GPG86		CaKa71	[OIII] 20.0 We89
2000:	20 12 42.9	+19 59 22	.			[NII] 25.5 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29

HeII	468.6 *nm*	37	$H\alpha$	656.3 *nm*	424
[OIII]	436.3	18	[NII]	658.4	346
	495.9	552	[SII]	671.7	13
HeI	587.6	18		673.1	16

IR Class: N

		IRAS Fluxes (*Jy*)		*Qual.*
J	11.36	12μm	1.21	3
H	12.02	25μm	10.50	3
K	11.21	60μm	11.95	3
L		100μm	7.53	3

$\lg F_{H\beta}(mW.m^{-2})$ −11.31 ± .01 Kle78, Ka80
IUE Spectra: *LW*(3) *SW*(3)

Photom. PPFS87
Spectr. 86..2654

Radio (*mJy*) *2cm* 102 MiAl82, *6cm* 105 MiAl75

Central Star: AG82 402 — GCRV 12572; CSI +19 -20105
V 18. All76

Notes: Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) indiv.: stand. 1.75 (70..9096); ext. 2.0 (Po83); kinem. 1.7 (GPG86)
Distance (kpc) stat.: 5.7 (CaKa71); 4.96 (MiAl75); 4.0 (Ca76); 3.10 (Ac78); 1.79 (Da82); 0.38 (PhPo84); 1.60 (AGNR84); 2.8 (Ma84); 3.1 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac80, AcMa77, Al65, Al68, Al82, AlCz79, AlEp76, AlLi68, AlMi72, AlWa70, Ar70, ArKo68, BLTA81, CWA69, CaNo73, CaRu74, CePe83, CePe85, CoBa74, CoBa80, DFHM67, Da75, De71, FaM86, FaMa86, FaMa87, FeAl87, GMS72, GPY79, Ga87, GaPo89, Gie83, Go87, Gol87, Gr71, Gr72, Gu70, Gu88, HaZu91, He67, He71, HeAu87, Hi71, Hi73, Hig71, Ii81, Is84, Iw73, IwKa65, KHM86, Ka66, Ka69, Ka70, Ka76, Ka78, Ka79, Ka81, Ka86, KaJa89, Kal80, Kal86, Kh76, Kh79, Kh84, Khr76, Khro76, Ko77, Kos76, LNP89, Ma88, MaFa85, MaFa86, MaPe88, MaPo80, Mi73, MiWe79, PBBE84, PM87, PPOJ86, Pe91, PeFr73, Ph84, PrPo83, RRA82, SGBO84, SSAG87, Sa84, SaMi78, Sab86, Sabb86, Sm71, Sm73, StKa89, TASG91, TPZ87, TTP87, Te66, Te68, ThDa70, TuTe84, VKda65, Vi69, Vo70, VoCo90, ZuAl86

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72..9007 Leibovitz E.M. *Mon. Not. R. Astron. Soc. 157,97* The emission spectrum of the ion CIV, polarization of CIV.
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060.3–07.3

He 1-5, PK 60–7°1, ARO 169, He 2-457, He 3-1844, IRAS 20097+2010

			Disc.: Henize 1961	*Diameter* (″)		*Rvel:* +39.1 ± 4.5	STPP83
1950:	20 09 42.4	+20 10 54	IRAS	*opt.* 29.	CJA87	*Expansion Velocities* (*km/s*)	
	20 09 42.9	+20 11 04	Mi76		CaKa71	[OIII] 34.0	Sa84
2000:	20 11 55.9	+20 20 06	.			[NII] 34	73...206

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-14					*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	265	*J*		12μm	0.44	1
[*O*III]	436.3	–	[*N*II]	658.4	454	*H*	7.3	25μm	0.25	1
	500.7	185	[*S*II]	671.7	69:	*K*	7.1	60μm	0.62	3
*He*I	587.6	–		673.1	42:	*L*		100μm	8.51	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.43 \pm .10$		78...107		*Photom.* CoBa74				
IUE Spectra:		*LW*(1) *SW*(1)								

Central Star: AG82 400 — CSV 5066; LS II +20 19; FG Sge; CSI +20 -20097
Spectrum: var.; G8-K0 Ia 82..1531

Notes: Pulsating nucleus (78....47) with a period; P(1979) of about $110^d \pm 5$ (79.14670, 80..1022). Multiple-shell PN; monochromatic images (CJA87)
Distance (kpc) indiv.: spect. 2.0 (70...367)
Distance (kpc) stat.: 2.54 (CaKa71); 2.30 (Ac78); 2.8 (Ma84); 3 .48 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac80, AcMa77, Al73, Bo76, CePe83, Ch89, Dr80, Fe68, GMS72, He67, Hi71, Iw73, Ka76, Kh89, KrK68, LePo88, Li78, Li82, PFMA82, RRA82, SGBO84, SSAG87, SaHa82, StKa89, TaAp88, Te80, TrSa78, Wa70, We89, ZuAl86

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060.4+01.5

PM 1-310, HuDo 1, IRAS 19367+2458

		Disc.: Preite-Martinez 1988	*Diameter (")*		
1950:	19 36 47.0	+24 58 37	IRAS	*opt. St.* 91.30001	
	19 36 46.9	+24 58 36	91.30001		
2000:	19 38 52.3	+25 05 31	.		

IRAS Fluxes (Jy)		*Qual.*
12μm	2.05	3
25μm	8.42	3
60μm	6.03	3
100μm	9.81	1

Central Star: *V* 18.6 91.30001 *Spectrum:* (WC 11) 91.30001

Bibliography: PM88

91.30001 Hu J.Y., Dong Y.S. *Science Bulletin of Academica Sinica ..... in press* Discovery of a new planetary nebula with (WC11) core star: IRAS 19367+2458

060.5+01.8

He 2-440, PK 60+1°1, VES 26, IRAS 19360+2508

		Disc.: Henize 1964	*Diameter (")*		
1950:	19 36 03.2	+25 08 46	IRAS	*opt.* 3. : ATS91	
	19 36 03.2	+25 08 48	AK90		
2000:	19 38 08.3	+25 15 40	.	*radio* 2.2 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-24

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1680
[*O*III]	436.3	–	[*N*II]	658.4	712
	500.7	369	[*S*II]	671.7	25:
*He*I	587.6	61		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.80 \pm .10$ ASTR91

IR Class: S

J		
H	8.9	
K	9.0	
L		
Photom.	AI74	

IRAS Fluxes (Jy)		*Qual.*
12μm	0.57	3
25μm	6.66	3
60μm	4.73	3
100μm	9.89	1

Radio *2cm* *6cm* 43 AK90 (*mJy*)

Distance (kpc) stat.: 3.96 (CKS91)

Bibliography: *PK67*, BlPu81, He67

87.30057 Kwok S. *Physics Reports 156, n) 3, 113-146* Effects of mass loss on the late stages of stellar evolution.

060.5–00.3

K 3-45, PK 60–0°1, IRAS 19442+2404

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 44 16.2	+24 04 30	IRAS	*opt.* 6.8 CaKa71	
	19 44 08.7	+24 03 43	PK67		
2000:	19 46 15.7	+24 11 07	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-17					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	564
[*OIII*]	436.3	–	[*NII*]	658.4	855
	500.7	236:	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-13.8 \pm .4$ ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.30	1
25μm	0.39	1
60μm	2.24	3
100μm	62.33	1

Distance (kpc) stat.: 4.13 (CaKa71); 1.9 (Ma84)

Bibliography: *PK67*, Ko65, Sa86

060.8–03.6

NGC 6853, PK 60–3°1, ARO 14, He 2-452, M 27, VV 246, VV' 521, IRAS 19574+2234

			Disc.: Huggins 1864	*Diameter* (″)	*Rvel:* -41.8 ± 0.8 STPP83
1950:	19 57 25.4	+22 34 43	IRAS	*opt.* 402. CJA87	*Expansion Velocities* (*km/s*)
	19 57 26.6	+22 34 45	Mi73	PK67	[OIII] 15.0 Sa84
2000:	19 59 36.2	+22 43 01	.		[NII] 31.5 Sa84

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-18					
HeII	468.6 *nm*	70	$H\alpha$	656.3 *nm*	262
[*OIII*]	436.3	9:	[*NII*]	658.4	255
	500.7	1106	[*SII*]	671.7	21:
HeI	587.6	–		673.1	24:
$\lg F_{H\beta}(mW.m^{-2})$		$-9.46 \pm .06$ 61...352			
IUE Spectra:		*LW*(12) *SW*(18) *FES*(1)			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.45	1
25μm	3.13	2
60μm	19.79	3
100μm	58.40	2

Central Star:	AG82 393 — GCRV 12336; PLX 4735; CSI +22 -19572	O7 AII76
U 12.43	*B* 13.66 *V* 13.94 *Qual:* B KSDN68, 72.30001	O(H) Me91

Notes: Visual companion to the central star (73..9005). Extended IRAS (87.50004). Multiple-shell PN; monochromatic images (CJA87, Ba87); Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) indiv.: ext. 0.32 (Po80); ext. 0.25 (Po83)
Distance (kpc) stat.: 0.4 (Ma84); 0.26 (CKS91)

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061.0+08.0

K 3-27, PK 61+8°1, IRAS 19125+2835

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	19 12 30.7	+28 35 26	IRAS	*opt.* 16.4 CaKa71	
	19 12 30.9	+28 35 27	Ka83		
2000:	19 14 30.1	+28 40 43	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-02

HeII 468.6 *nm*	133	$H\alpha$ 656.3 *nm*	328	*IRAS Fluxes* (*Jy*)	*Qual.*
[OIII] 436.3	38	[NII] 658.4	–	12μm 0.25	1
500.7	271	[SII] 671.7		25μm 0.67	3
HeI 587.6	–	673.1	12:	60μm 0.74	3
				100μm 1.41	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.11 \pm .03$ Ka83
IUE Spectra: *LW*(0) *SW*(1)

Central Star: AG82 356 —
V 17.2 Ka85

Distance (kpc) stat.: 4.86 (CaKa71); 5.7 (Ma84); 4.71 (CKS91)

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061.3+03.6

He 2-437, PK 61+3°1, ARO 154, M 4-15, IRAS 19309+2646

			Disc.: Henize 1964	*Diameter* (″)	
1950:	19 30 54.6	+26 46 09	IRAS	*opt.* 7.2 CaKa71	
	19 30 54.9	+26 46 13	Mi76		
2000:	19 32 57.6	+26 52 44	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-19

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	929
[*O*III]	436.3	18:	[*N*II]	658.4	222
	500.7	171	[*S*II]	671.7	29
*He*I	587.6	40		673.1	32

$\lg F_{H\beta}(mW.m^{-2})$ $-12.7 \pm .2$ ASTR91

IUE Spectra: *LW*(1) *SW*(1)

IRAS Fluxes (*Jy*) *Qual.*

12μm	3.85	3
25μm	8.29	3
60μm	12.14	3
100μm	9.56	3

Distance (kpc) stat.: 7.79 (CaKa71); 7.0 (Ma84)

Bibliography: *PK67*, AcMa77, He67, Hi71, Iw73, Te66, ZTPS89

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061.4–09.5

NGC 6905, PK 61–9°1, ARO 75, He 2-466, VV 257, VV' 535, IRAS 20201+1956

			Disc.: Herschel 1831	*Diameter* (″)	*Rvel*: -8.4 ± 1.7 STPP83
1950:	20 20 09.0	+19 56 37	IRAS	*opt.* 40. CaKa71	*Expansion Velocities* (*km/s*)
	20 20 08.5	+19 56 39	Mi73	CJA87	[OIII] 43.5 Sa84
2000:	20 22 22.4	+20 06 18	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12 N

*He*II	468.6 *nm*	91	*Hα*	656.3 *nm*	319
[*O*III]	436.3	7:	[*N*II]	658.4	3:
	500.7	958	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-10.92 \pm .03$ CD61

IUE Spectra: *LW*(6) *SW*(6)

IR Class: .

J

H

K

L

Spectr. PPOJ86

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.39	3
25μm	6.20	3
60μm	8.57	3
100μm	7.46	3

Radio *2cm* 70 MiAl82

(*mJy*) *6cm* 62 MiAl75

Central Star: AG82 408 — CSI +19-20201 0; HD 193949; PLX 4855

B 16.3 *V* 15.7 *Qual:* C TASG91

WC-OVI SmAl69

WC 3 Me91

Notes: Monochromatic images (84..4088, CJA87, Ba87); ESO-2.2m images by Baessgen M. and Bremer M.

Distance (kpc) indiv.: kinem. 1.0 (Ac78)

Distance (kpc) stat.: 1.4-1.8 (CaKa71); 1.55 (MiAl75); 1.79 (Ca76); 1.27 (Ac78); 1.63 (Da82); 0.21 (PhPo84); 1.30 (AGNR84); 1.8 (Ma84); 1.73 (CKS91)

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061.8+02.1

He 2-442, PK 61+2°1, ARO 157, M 4-16

			Disc.: Henize 1964	*Diameter* (″)	*Rvel*: +55.0 ± 11.0 STPP83
				opt. 10. PK67	
1950:	19 37.6	+26 24	PK67		
2000:	19 39.7	+26 31	.	*radio* 0.4 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-21

*He*II	468.6 *nm*	50	*Hα*	656.3 *nm*	sat.
[OIII]	436.3	26	[*N*II]	658.4	–
	500.7	496	[*S*II]	671.7	28:
*He*I	587.6	27		673.1	38:

$\lg F_{H\beta}(mW.m^{-2})$ −12.79 ± .10 ASTR91

Radio (*mJy*) *2cm* 6 AK90

Notes: M star very near but without association (ACPS87)
Distance (kpc) stat.: 9.18 (CKS91)

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86.10284 Yudin B.F. *Astron. Tsirk. 1497* IR observations of He 2-442, He 2-446, He 2-467, He 2-468.
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061.9+41.3

DdDm 1, PK 61+41°1, KO 1, DDDM 1, IRAS 16385+3848

			Disc.: Dolidze et al 1966	*Diameter* (″)	
1950:	16 38 33.8	+38 48 04	IRAS	*opt.* 0.6 87..2542	
	16 38 34.7	+38 48 05	AK90		
2000:	16 40 18.1	+38 42 20	.	*radio* 1 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-19

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	sat.
[OIII]	436.3	5	[*N*II]	658.4	39
	500.7	437	[*S*II]	671.7	3
*He*I	587.6	13		673.1	4

$\lg F_{H\beta}(mW.m^{-2})$ −11.57 ± .10 ASTR91
IUE Spectra: *LW*(2) *SW*(3)

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.25	1
25μm	0.41	3
60μm	0.40	1
100μm	1.00	1

Radio (*mJy*) *2cm* 6 AK90

Central Star: AG82 212 —
B 15.18 *V* 15.47 *Qual:* B 87..2542, TASG91

Notes: Galactic halo planetary nebula
Distance (kpc) stat.: 11.0 (CKS91)

Bibliography: AG82, AcMa77, FaMa88, Kh89, Ko78, Ma88, We77, ZiPo91

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89.13536 Pena M. *Rev. Mex. Astron. Astrofis. 18, 184* A new halo planetary nebula.
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062.4+09.5

NGC 6765, PK 62+9°1, ARO 185, M 1-68, VV 221, VV' 482, IRAS 19091+3027

		Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −72.0 ± 25.0 STPP83
1950:	19 09 10.0	+30 27 37	IRAS	*opt.* 40.	CaKa71	*Expansion Velocities* (*km/s*)
	19 09 11	+30 27.9	PK67		CJA87	[OIII] 35.0 83..1561
2000:	19 11 07	+30 32.9	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-16

*He*II	468.6 *nm*	76	$H\alpha$	656.3 *nm*	300
[*O*III]	436.3	22:	[*N*II]	658.4	352
	500.7	1244	[*S*II]	671.7	83
*He*I	587.6	–		673.1	30

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.18	3
60μm	1.28	3
100μm	1.37	1

$\lg F_{H\beta}(mW.m^{-2})$ −11.90 ± .10 Ka83

Central Star: AG82 349 — *V* 16. 81..1002

Notes: Monochromatic images (CJA87)
Distance (kpc) stat.: 2.8 (CaKa71); 2.36 (Ac78); 4.1 (Ma84); 2.31 (CKS91)

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062.4–00.2

M 2-48, PK 62−0°1, ARO 190, He 2-449, VV 243, VV' 515, IRAS 19483+2546

			Disc.: Minkowski 1947	*Diameter* (″)	
1950:	19 48 22.9	+25 46 47	IRAS	*opt.* 8. PK67	
	19 48 23.1	+25 46 41	Mi76		
2000:	19 50 28.1	+25 54 22	.	*radio* 3.1 ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-23					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1476
[OIII]	436.3	–	[NII]	658.4	3988
	500.7	1317	[SII]	671.7	212
HeI	587.6	–		673.1	124:

$\lg F_{H\beta}(mW.m^{-2})$	$-13.3 \pm .4$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.03	1
25μm	0.76	3
60μm	7.42	3
100μm	35.86	1

Radio (*mJy*)			
2cm			
6cm	19	ZPB89	

Distance (kpc) stat.: 3.42 (CaKa71); 1.6 (Ma84); 6.97 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71

063.1+13.9

NGC 6720, PK 63+13°1, ARO 9, M 57, VV 214, VV' 466, IRAS 18517+3257

			Disc.: Messier et al 1779	*Diameter* (″)	*Rvel:* -19.2 ± 0.7 STPP83
1950:	18 51 43.7	+32 57 56	IRAS	*opt.* 76. CJA87	*Expansion Velocities* (*km/s*)
	18 51 44.2	+32 57 52	PK67	PK67	[OIII] 26.5 Sa84
2000:	18 53 35.7	+33 01 40	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-14 E					
HeII	468.6 *nm*	18	$H\alpha$	656.3 *nm*	299
[OIII]	436.3	9:	[NII]	658.4	297
	500.7	1064	[SII]	671.7	
HeI	587.6	13		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-10.08 \pm .03$	CD61
IUE Spectra:	*LW*(7)	*SW*(9) *FES*(2)

IR Class: .
J
H
K
L
Spectr. PPOJ86

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.82	3
25μm	10.15	3
60μm	52.27	3
100μm	54.62	3

Central Star: AG82 333 — PLX 4377; CSI +32 -18517; HD 175353
B 15.03 *V* 15.29 *Qual:* B TASG91 *Spectrum:* O(H) Me91

Notes: Multiple-shell PN; monochromatic images (83...190, JDK 86, CJA87, Ba87); Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) indiv.: stand.0.33 (70..9096); ext. 0.40 (Ac78); ext. 0.50 (Po80); ext. 0.35 (Po83)
Distance (kpc) stat.: 0.7 (Ma84); 0.872 (CKS91)

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063.8-03.3

K 3-54, PK 63−3°1, ARO 343, IRAS 20028+2518

				Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	20 02 53.8	+25 18 08	IRAS		*opt. St.* CS90	
	20 02 52.0	+25 18 01	AK90			
2000:	20 04 58.6	+25 26 37	.		*radio* 0.8 AK90	

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1988-06-18						*IR Class*: .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	40:	$H\alpha$	656.3 *nm*	100	*J*	12μm	0.41	3
[OIII]	436.3	–	[NII]	658.4	63	*H*	25μm	1.16	3
	495.9	–	[SII]	671.7		*K* > 9.3	60μm	0.51	1
HeI	587.6	–		673.1		*L*	100μm	17.11	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.3 ± .3	ASTR91			*Photom.* CoBa74	*Radio* (*mJy*) 2*cm*		
							6*cm*	7	AK90

Notes: Possibly a HII region.
Distance (kpc) stat.: 9.46 (CKS91)

Bibliography: *PK67*, AcMa77, Al74, BlPu81, Hi71, Is84, Ko65, Mi76, Ru70, Sa86, ZTPS89

064.6+48.2

NGC 6058, PK 64+48°1, ARO 49, VV 76, VV' 129, IRAS 16027+4049

				Disc.: Curtis 1918	*Diameter* (″)	*Rvel:* +2.7 ± 3.3 STPP83
1950:	16 02 43.1	+40 49 06	IRAS		*opt.* 23. CJA87	*Expansion Velocities* (*km/s*)
	16 02 43.4	+40 49 04	Ka83		PK67	[OIII] 27.5 We89
2000:	16 04 26.9	+40 40 57	.			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-20						*IR Class*: .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	80	$H\alpha$	656.3 *nm*	346	*J*	12μm	0.25	1
[OIII]	436.3	–	[NII]	658.4	–	*H*	25μm	0.74	3
	500.7	1125	[SII]	671.7		*K*	60μm	1.91	3
HeI	587.6	–		673.1		*L*	100μm	1.58	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.77 ± .03	CD61 , Ka83						
IUE Spectra:		*LW*(1)	*SW*(1)			*Spectr.* PPOJ86			

Central Star: AG82 195 — CSI +40 -16027; GCRV 9247; PLX 3646
U 12.37 *B* 13.55 *V* 13.91 *Qual:* A Dr80, SK85 , TASG91 *Spectrum:* O(H) Me91

Notes: Multiple-shell PN; monochromatic images (AG82, JDK86, CJA87)
Distance (kpc) stat.: 2.9-3.4 (CaKa71); 2.7 (Ca76); 2.6 (Ac78); 2.72 (Da82); 2.10 (AGNR84); 4.1 (Ma84) 3.5 (CKS91)

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064.7+05.0

BD+30 3639, PK 64+5°1, ARO 11, He 2-438, VV 235, VV' 503, IRAS 19327+3024

			Disc.: Campbell 1893	*Diameter* (″)		*Rvel*: −31.4 ± 0.8 STPP83	
1950:	19 32 47.2	+30 24 18	IRAS	*opt.* 7.5	CJA87	*Expansion Velocities* (*km/s*)	
	19 32 47.5	+30 24 20	GPG86		CaKa71	[OIII] 23.0	Sa84
2000:	19 34 45.2	+30 30 59	.	*radio* 8.	ZPB 89	[NII] 28	Sa84

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-18						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	sat.	*J*	8.90	12μm	89.39	3
[*OIII*]	436.3	11	[*NII*]	658.4	–	*H*	8.73	25μm	234.50	3
	500.7	9	[*SII*]	671.7	5	*K*	7.77	60μm	161.70	3
HeI	587.6	8		673.1	16	*L*		100μm	70.08	3
lg$F_{H\beta}(mW.m^{-2})$		−10.03 ± .01	70...259, 71..9003			*Photom.* PeTo87		*Radio* 2*cm*		
IUE Spectra:		*LW*(7) *SW*(9)				*Spectr.* 87..1381		(*mJy*) 6*cm* 630		87...336

Central Star: AG82 376 — AG +30 1906; BD +30 3639; GCRV 11983; HD 184738; LS II +30 04; PLX 4591; DC 17895; LF 2 +30 158
B 11.96 *V* 12.50 *Qual:* B TASG91 *Spectrum:* WC 9 Me91

Notes: Campbell's star. Multiple-shell PN; monochromatic images (CJA87, Ba87)
Distance (kpc) indiv.: ext. 0.7 (Ac78); ext. 0.80 (Po80); ext. 0.6 (Po83); wind 0.24 (85....32)
Distance (kpc) stat.: 1.3 (CaKa71); 1.9 (Ca76); 0.65 (Ac78); 0.73 (Da82); 6.51 (PhPo84); 0.66 (AGNR84); 0.6 (Ma84); 1.16 (CKS91)

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064.9+15.5

M 1-64, PK 64+15°1, ARO 82, VV 210, VV' 460, IRAS 18482+3510

		Disc.: Minkowski 1946	*Diameter (″)*	*Rvel:* -25.0 ± 3.8 STPP83	
1950:	18 48 14.8	+35 10 55	IRAS	*opt.* 17.2 CaKa71	
	18 48 14.0	+35 11 02	Hig71		
2000:	18 50 01.7	+35 14 35	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-21					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	445
[*OIII*]	436.3	–	[*NII*]	658.4	362
	500.7	618	[*SII*]	671.7	103
HeI	587.6	19		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-11.5 \pm .2$ ASTR91

IRAS Fluxes (Jy)		*Qual.*
12μm	0.41	1
25μm	0.25	1
60μm	0.52	3
100μm	1.21	1

Radio	*2cm*		
(*mJy*)	*6cm*	2	ZPB89

Central Star: AG82 331 —

Notes: Monochromatic images (JDK86)
Distance (kpc) stat.: 3.4 (CaKa71); 2.47 (Ac78); 3.1 (Ma84); 5.59 (CKS91)

Bibliography: *PK67*, AG82, Ac80, AcMa77, CaWy76, ChLo76, CoBa74, He71, Hi69, Hi71, Iw73, Ka69, Ka70, Ka76, Ka79, Ka80, Kal76, Kale76, KrK68, LePo88, Te66, Th68, ThCo67, VKDa65, Vo70

064.9–02.1

K 3-53, PK 64–2°1, ARO 341, IRAS 20012+2652

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	20 01 17.9	+26 52 23	IRAS	*opt.* 6. CS90	
	20 01 17.8	+26 52 25	AK90		
2000:	20 03 22.4	+27 00 54	.	*radio* 0.8 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-12-02					*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm* 3025	*J*		12μm	2.97	3
[*OIII*]	436.3	–	[*NII*]	658.4 425	*H*		25μm	14.92	3
	500.7	2165	[*SII*]	671.7	*K*	> 10.0	60μm	8.82	3
HeI	587.6	115		673.1	*L*		100μm	34.40	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.6 ± .3 ASTR91			*Photom.* AI74		*Radio* 2*cm*		
							(*mJy*) 6*cm*	50 AK90	

Distance (kpc) stat.: 2.88 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Ko65, Mi76, Ru70, Sa86, VoCo90

065.0–27.3

Ps 1, PK 65–27°1, ARO 111, Ku 648, VV 265, VV' 550, IRAS 21274+1156

			Disc.: Pease 1928	*Diameter* (″)	*Rvel:* −140.6 ± 16.9STPP83
1950:	21 27 29.4	+11 56 38	IRAS	*opt.* 1. PK67	
	21 27 34.4	+11 57 15	83..1351		
2000:	21 29 59.4	+12 10 26	.	*radio* 3. ZPB 89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-18						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	479	12μm	0.41	1
[*OIII*]	436.3	–	[*NII*]	658.4	4:	25μm	0.27	1
	500.7	271	[*SII*]	671.7		60μm	0.75	3
HeI	587.6	19		673.1		100μm	1.20	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.10 ± .03 78.30034, 79.13502				*Radio* 2*cm*	5 MiAl82	
IUE Spectra:		*LW*(5) *SW*(8)				(*mJy*) 6*cm*	3 83..1351	

Central Star: AG82 426Bis —
B 14.76 *V* 14.95 84..2586

Notes: PN in the globular cluster M15. FC shows the CCD image by Auriere et al (78..1071).
Distance (kpc) indiv.: stand. 13.5 (MaPo80); stand. 9.6 (Sab86)
Distance (kpc) stat.: 24.95 (CaKa71); 13.5 (Ac78); 9.30 (AGNR84); 9.3 (Ma84); 8.38 (CKS91)

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91.11752 Spergel D.N. *Astrofizika,352,221* Evacuation of gas from globular clusters by winds from millisecond pulsars.

065.1–03.5

We 1-9, PK 65–3°1, IRAS 20069+2618

				Diameter (″)	
			Disc.: Weinberger 1977		
1950:	20 06 58.6	+26 18 02	IRAS	*opt.* 24. 77..1547	
	20 06 58.8	+26 18 02	77..1547		
2000:	20 09 04.5	+26 26 53	.		

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-07-28					
HeII 468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	
[OIII] 436.3	–	[NII]	658.4	67	
500.7	69:	[SII]	671.7		
HeI 587.6	–		673.1		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.39	1
25μm	0.25	1
60μm	1.53	3
100μm	3.61	1

Central Star: AG82 397 —
$B > 21.$ 77..1547

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065.2–05.6

He 1-6, PK 65–5°1, ARO 171, He 2-462, IRAS 20152+2512

				Diameter (″)	*Rvel:* -22.0 ± 11.0 STPP83
			Disc.: Henize 1961		
1950:	20 15 17.0	+25 12 55	IRAS	*opt.* 18.8 CaKa71	
	20 15 13.9	+25 12 22	Mi76		
2000:	20 17 21.5	+25 21 44	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-18					
HeII 468.6 *nm*	–	$H\alpha$	656.3 *nm*	459	
[OIII] 436.3	–	[NII]	658.4	589	
500.7	755	[SII]	671.7	85:	
HeI 587.6	18:		673.1	42:	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.37	1
25μm	0.25	1
60μm	0.57	3
100μm	10.38	1

$\lg F_{H\beta}(mW.m^{-2})$ $-12.4 \pm .2$ KSK90, ASTR91

Distance (kpc) stat.: 3.4-5.6 (CaKa71); 4.68 (Ac78); 6.9 (Ma84)

Bibliography: *PK67*, AcMa77, Fe68, He67, Hi71, Iw73, KaJa89, KrK68

065.9+00.5

NGC 6842, PK 65+0°1, ARO 106, He 2-451, Sh 1-72, Sh 2-95, VV 245, VV' 518, IRAS 19530+2909

			Disc.: Curtis 1919	*Diameter (″)*		*Rvel:* −5.0 ± 25.0	STPP83
1950:	19 53 01.1	+29 09 18	IRAS	*opt.* 57.	CJA87	*Expansion Velocities (km/s)*	
	19 53 01.4	+29 09 23	Ka83		PK67	[OIII] 35.0	83..1561
2000:	19 55 02.3	+29 17 21	.	*radio* 36.	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-02						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	410	12μm	0.26	1
[*OIII*]	436.3	–	[*NII*]	658.4	57:	25μm	1.20	3
	500.7	562	[*SII*]	671.7		60μm	6.50	3
HeI	587.6	–		673.1		100μm	44.03	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.73 ± .03	O63			*Radio* (*mJy*)	*2cm* *6cm* > 19	ZPB89

Central Star: AG82 388 — PLX 4708; CSI +29 -19529
U 14.75 *B* 15.65 *V* 15.98 72.30001

Notes: Monochromatic images (JDK86, CJA87)
Distance (kpc) indiv.: ext. 2.3 (87..1516)
Distance (kpc) stat.: 1.4-1.6 (CaKa71); 1.37 (Ca76); 1.27 (Ac78); 1.28 (Da82); 1.40 (AGNR84); 1.7 (Ma84) 1.36 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ab66, AcMa77, Ak70, CaNo73, CaRu74, ChLo72, ChLo76, DFHM67, De71, Gr71, Gu70, He67, He71, Hi71, Hi73, Hig71, Iw73, KSK90, Ka70, Ka76, KrK68, LNP89, Ma74, MeHa75, PiKh79, Sa84, Sabb86, TASG91, We89, ZuAl86

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066.7-28.2

NGC 7094, PK 66-28°1, ARO 194, K 1-19, IRAS 21344+1233

			Disc.: Kohoutek 1963	*Diameter* (″)	*Rvel*: −87.4 ± 40.6 STPP83
1950:	21 34 27.1	+12 33 48	IRAS	*opt.* 94. CJA87	*Expansion Velocities* (*km/s*)
	21 34 28.0	+12 33 48	Ka83	CaKa71	[OIII] 45.0 SSB86
2000:	21 36 52.9	+12 47 18	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12 DA					
HeII	468.6 *nm*	51:	$H\alpha$ 656.3 *nm*	302:	
[OIII]	436.3	–	[*NII*] 658.4	–	
	500.7	490	[*SII*] 671.7		
HeI	587.6	–	673.1		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.12	3
60μm	3.69	3
100μm	3.16	3

$\lg F_{H\beta}(mW.m^{-2})$	−11.77 ± .06	Ka83	*Radio* 2*cm* 17	MiAl82
IUE Spectra:	*LW*(2) *SW*(3)		(*mJy*) 6*cm* < 10	Ca82

Central Star: AG82 434 —
U 12.39 *B* 13.58 *V* 13.68 *Qual:* B TASG91, 72.30001 *Spectrum:* O(H) Me91

Notes: Monochromatic images (JDK86, CJA87); KPNO-2.1m images by Balick B.
Distance (kpc) indiv.: wind 1.07 (85....32)
Distance (kpc) stat.: 1.5 (CaKa71); 1.27 (Ac78); 1.47 (Da82); 2.9 (Ma84); 1.35 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, Ca84, CePe83, ChLo76, Gr71, Gu88, HaZu91, HeAu87, Hi71, Iw73, KSK90, Ka70, Ka76, Ka85, KrK68, LNP89, Mi73, Mi76, Mi79, PBBE84, Ru70, SSAG87, Sabb86, TAGS89, We89, ZPB89, ZuAl86

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066.9+02.2

K 4-37, PK 66+2°1

			Disc.: Kohoutek 1964	*Diameter* (″)	
				opt. 12.: CS90	
1950:	19 49 02.4	+30 54 48	BIPu81		
2000:	19 51 00.6	+31 02 31	.		

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1988-12-02					
HeII	468.6 *nm*	–	$H\alpha$ 656.3 *nm*	100	
[OIII]	436.3	–	[*NII*] 658.4	494	
	500.7	54:	[*SII*] 671.7	29:	
HeI	587.6	–	673.1	33:	

IR Class: .		
J		
H		
K	> 9.3	
L		
Photom.	AI74	

Bibliography: *PK67*, Ko65, Sa86

066.9–05.2

PC 24, PK 66–5°1, ARO 192, He 1-7, He 2-463, IRAS 20175+2650

				Disc.: Peimbert et al 1961	*Diameter* (″)	
1950:	20 17 32.3	+26 50 40	IRAS		*opt.* 5. PK67	
	20 17 32.2	+26 50 44	PK67			
2000:	20 19 38.1	+27 00 14	.		*radio* 5. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-24					
HeII	468.6 *nm*	9	$H\alpha$	656.3 *nm*	958
[*OIII*]	436.3	3:	[*NII*]	658.4	23
	500.7	1118	[*SII*]	671.7	8
HeI	587.6	38		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-12.0 \pm .2$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.30	1
25μm	1.79	3
60μm	3.68	3
100μm	2.81	1

Radio (*mJy*)	*2cm*		
	6cm	18	ZPB89

Distance (kpc) stat.: 3.10 (CKS91); 7.77 (CKS91)

Bibliography: *PK67*, AcMa77, Fe68, He67, Hi71, Ka70

067.9–00.2

K 3-52, PK 67–0°1, IRAS 20011+3024

				Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	20 01 12.0	+30 24 06	IRAS		*opt. St.* CS90	
	20 01 11.5	+30 24 04	AK90			
2000:	20 03 11.4	+30 32 34	.		*radio* 0.7 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-24					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	957
[*OIII*]	436.3	–	[*NII*]	658.4	1517
	500.7	339	[*SII*]	671.7	65:
HeI	587.6	137		673.1	117:

$\lg F_{H\beta}(mW.m^{-2})$	$-13.6 \pm .3$	ASTR91

IR Class: .		
J		
H		
K	> 9.5	
L		
Photom.		AI74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.68	3
25μm	16.76	3
60μm	37.20	3
100μm	17.62	3

Radio (*mJy*)	*2cm*		
	6cm	65	AK90

Distance (kpc) stat.: 2.46 (CKS91)

Bibliography: *PK67*, BlPu81, Ko65, LH91, Sa86, VoCo90, ZTPS89

068.3–02.7

He 2-459, PK 68–2°1, ARO 347, VES 123, IRAS 20119+2924

			Disc.: Henize 1964	*Diameter* (″)	
1950:	20 11 55.5	+29 24 44	IRAS	*opt.* 5. ATS91	
	20 11 55.7	+29 24 46	AK90		
2000:	20 13 57.8	+29 33 56	.	*radio* 1.3 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-21					*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm* 2128	*J*	12μm	4.54	3
[OIII]	436.3	–	[*NII*]	658.4 1769	*H*	25μm	37.67	3
	495.9	–	[*SII*]	671.7 77	*K* > 9.8	60μm	39.06	3
HeI	587.6	–		673.1 113	*L*	100μm	11.54	2
$\lg F_{H\beta}(mW.m^{-2})$		$-12.73 \pm .10$ ASTR91			*Photom.* CoBa74 *Spectr.* 86..2654	*Radio* (*mJy*)	*2cm* *6cm* 64	AK90

Central Star:
Spectrum: WC 9 ATS91

Distance (kpc) stat.: 3.35 (CKS91)

Bibliography: *PK67*, AcMa77, Al74, BlPu81, He67, Hi71, Kon83, LH91, PFMA82, PPT88, Ru70, TTP87, TuTe84, VoCo90, Wa77, ZTPS89

74..17001 Coyne S.J., Lee T.A., De Graeve E. *Vatican Obs. Publ. 1,n.5,181-195* A survey for H alf emission objects in the Milky Way [VES 1-132].

83..17002 Macconnell D.J., Coyne G.V. *Vatican Obs. Publ. 2,N.5,69-72* A survey for H-alpha emission objects in the Milky Way. VI. Revised catalogue of part I-V.

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86..10300 Shchelkanova A.Yu. *Astron. Tsirk. 1451,3* Preliminary results of investigation of compact emission-line objects.

90..1038 Zhang C.Y., Kwok S. *Astron. Astrophys. 237,479* IRAS spectroscopic observations of young planetary nebulae.

068.6+01.1

He 1-4, PK 68+1°2, ARO 191, AS 375, He 2-453, MHα 92-31

			Disc.: Henize 1961	*Diameter* (″)	*Rvel*: $+11.6 \pm 37.8$ STPP83	
				opt. 22.4 CaKa71		
1950:	19 57 20.0	+31 47 03	PK67			
2000:	19 59 17.7	+31 55 18	.			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-24					
HeII	468.6 *nm*	15:	$H\alpha$	656.3 *nm*	1205
[OIII]	436.3	30:	[*NII*]	658.4	778
	500.7	951	[*SII*]	671.7	250
HeI	587.6	34:		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-12.2 \pm .3$ ASTR91			

Central Star:
B 21.1 *V* 21.1 *Qual:* C KJL88

Notes: Monochromatic images (JDK86, Ba87)
Distance (kpc) stat.: 2.26 (CaKa71); 1.84 (Ac78); 3.20 (Da82); 1.9 (Ma84); 3.28 (CKS91)

Bibliography: *PK67*, AGNR84, AGR89, AcMa77, Al73, CaRu74, He67, Hi71, Iw73, KrK68

69..9071 Perek L., Kohoutek L. *Bull. Astron. Inst. Czech. 20,381* Errata: catalogue of galactic P.N.

89.50080 Kwitter K.B., Jacoby G.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 303* New identifications of faint central stars in extended PN.

90..2506 Breitschwerdt D., Kahn F.D. *Mon. Not. R. Astron. Soc.,244,521* Dynamical evolution of planetary nebulae. II. Ionisation of shells in planetarynebulae and the formation of low-ionization knots.

068.7+14.8

Sp 4-1, PK 68+14°1

			Disc.: Stephenson 1985	*Diameter* (″)	
				opt. St. 85..3129	
1950:	18 58 44.9	+38 17 03	85..3129		
2000:	19 00 27.7	+38 21 21	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-04

HeII	468.6 *nm*	2.4	*Hα*	656.3 *nm*	377	
[*OIII*]	436.3	5	[*NII*]	658.4	26	
	500.7	596	[*SII*]	671.7	} 3.	
HeI	587.6	20		673.1	}	

$\lg F_{H\beta}(mW.m^{-2})$ $-11.84 \pm .10$ ASTR91

IR Class: .

J
H
K
L

Central Star:

Spectrum: WC ? ATS91

Bibliography: Ko89

85..3129 Stephenson C.B. *Publ. Astron. Soc. Pac. 97, 930-931,1985* Two planetary-like nebulae, including the remnant of nova Delphini 1967.

068.7+03.0

PC 23, PK 68+3°1, ARO 165, He 2-450, IRAS 19499+3251

			Disc.: Peimbert et al 1961	*Diameter* (″)	
1950:	19 49 57.7	+32 51 33	IRAS	*opt.* 5. : ATS91	
	19 49 57.2	+32 51 31	AK90		
2000:	19 51 52.7	+32 59 18	.	*radio* 2.1 ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-24

HeII	468.6 *nm*	32	*Hα*	656.3 *nm*	991	
[*OIII*]	436.3	22	[*NII*]	658.4	231	
	500.7	1689	[*SII*]	671.7	57	
HeI	587.6	32		673.1		

$\lg F_{H\beta}(mW.m^{-2})$ $-12.65 \pm .10$ ASTR91

IR Class: .

J
H
K > 9.2
L
Photom. AI74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.26	1
25μm	1.51	3
60μm	1.27	3
100μm	7.96	1

Radio *2cm*
(*mJy*) *6cm* 21 AK90

Distance (kpc) stat.: 6.68 (CKS91)

Bibliography: *PK67*, AcMa77, BlPu81, He67, Hi71, PPT88, TuTe84, ZTPS89

068.7+01.9

K 4-41, PK 68+1°1, IRAS 19546+3214

			Disc.: Kohoutek 1964	*Diameter (")*	
1950:	19 54 39.0	+32 14 02	IRAS	*opt. St.* CS90	
	19 54 37.2	+32 14 08	AK90		
2000:	19 56 34.0	+32 22 12	.	*radio* 3. AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-19					
HeII 468.6 *nm*	–	*Hα* 656.3 *nm*	967		
[OIII] 436.3	–	[NII] 658.4	47:		
500.7	1148	[SII] 671.7			
HeI 587.6	40	673.1			
$\lg F_{H\beta}(mW.m^{-2})$	$-12.98 \pm .10$ ASTR91				

IR Class: .		*IRAS Fluxes (Jy)*		*Qual.*
J		12μm	7.83	3
H		25μm	5.59	3
K	> 10.5	60μm	3.09	3
L		100μm	51.17	1
Photom. AI74		*Radio* *2cm*		
		(*mJy*) *6cm*	15 AK90	

Distance (kpc) stat.: 7.93 (CKS91)

Bibliography: *PK67*, AGR89, Alle73, BlPu81, Ko65, Sa86

90..1038 Zhang C.Y., Kwok S. *Astron. Astrophys. 237,479* IRAS spectroscopic observations of young planetary nebulae.

068.8-00.0

M 1-75, PK 68−0°1, ARO 168, He 2-454, VV 248, VV' 524, IRAS 20027+3118

			Disc.: Minkowski 1946	*Diameter (")*	*Rvel:* -9.0 ± 11.0 STPP83
1950:	20 02 45.2	+31 18 49	IRAS	*opt.* 14.6 CaKa71	
	20 02 45.1	+31 18 51	PK67		
2000:	20 04 43.9	+31 27 26	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-01 W					
HeII 468.6 *nm*	–	*Hα* 656.3 *nm*	675		
[OIII] 436.3	–	[NII] 658.4	1929		
500.7	762	[SII] 671.7	147		
HeI 587.6	61	673.1	192		
$\lg F_{H\beta}(mW.m^{-2})$	$-12.8 \pm .2$ ASTR91				

IRAS Fluxes (Jy)		*Qual.*
12μm	0.35	1
25μm	1.82	3
60μm	4.80	3
100μm	31.30	1

Central Star: AG82 396 —
$m_{pg} > 21.$ *Qual:* P PK67

Notes: Monochromatic images (JDK86, 88..1178)
Distance (kpc) stat.: 2.6-3.7 (CaKa71); 3.90 (Ca76); 2.8 (Ac78); 3.21 (Da82); 2.40 (AGNR84); 3.1 (Ma84) 3.89 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, AlKe87, CaRu74, He67, He90, Hi71, Iw73, KrK68, LNP89, MeHa75, Pa90, Pe91

88..1178 Hua C.T. *Astron. Astrophys. 193, 273-280* Narrow-band imagery of three planetary nebulae: A2, IC 289 and M 1-75.

069.2+03.8

K 3-46, PK 69+3°1, ARO 334, IRAS 19481+3338

			Disc.: Kohoutek 1964		*Diameter* (″)		
1950:	19 48 09.3	+33 38 46	IRAS		*opt.* 23.	CaKa71	
	19 48 06.0	+33 38 16	PK67				
2000:	19 50 00.2	+33 45 55	.				

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-24						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	500:	12μm	0.69	1
[*OIII*]	436.3	–	[*NII*]	658.4	3200	25μm	0.25	1
	500.7	446	[*SII*]	671.7	423	60μm	0.73	3
HeI	587.6	–		673.1		100μm	5.87	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.8 \pm .4$	ASTR91					

Distance (kpc) stat.: 2.15 (CaKa71); 3.2 (Ma84)

Bibliography: *PK67*, AcMa77, Hi71, Iw73, Ko65, KrK68, Ru70

069.2+02.8

K 3-49, PK 69+2°1, ARO 338, IRAS 19520+3314

			Disc.: Kohoutek 1964		*Diameter* (″)		
1950:	19 52 04.9	+33 14 14	IRAS		*opt.* 3.	ATS91	
	19 52 05.2	+33 14 05	AK90				
2000:	19 54 00.4	+33 22 00	.		*radio* < 0.2	AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-24						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1727	*J*		12μm	0.52	3
[*OIII*]	436.3	–	[*NII*]	658.4	1037	*H*		25μm	4.98	3
	500.7	34:	[*SII*]	671.7		*K*	> 9.6	60μm	2.00	3
HeI	587.6	–		673.1		*L*		100μm	29.86	1
$\lg F_{H\beta}(mW.m^{-2})$		$-13.16 \pm .10$	ASTR91			*Photom.*	AI74	*Radio* (*mJy*)	*2cm* 7 *6cm*	AK90

Distance (kpc) stat.: 1.71 (Da82);

Bibliography: *PK67*, AcMa77, AmGu71, BlPu81, Hi71, Ko65, Ru70, Te66

86.10300 Shchelkanova A.Yu. *Astron. Tsirk. 1451,3* Preliminary results of investigation of compact emission-line objects.

069.4–02.6

NGC 6894, PK 69–2°1, ARO 110, HE 2-460, VV 254, VV' 530, IRAS 20143+3024

		Disc.: Herschel 1823	*Diameter* (″)		*Rvel*: −58.0 ± 6.0 STPP83
1950:	20 14 23.3	+30 24 37 IRAS	*opt.* 40.	CJA87	*Expansion Velocities* (*km/s*)
	20 14 22.8	+30 24 36 PK67		PK67	[OIII] 43.0 SOB85
2000:	20 16 23.9	+30 33 54 .	*radio* 55.	ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-31 C

HeII	468.6 *nm*	29:	*Hα*	656.3 *nm*	719		
[OIII]	436.3	–	[*NII*]	658.4	702		
	500.7	709	[SII]	671.7	} 256.		
HeI	587.6	27		673.1			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.75	3
60μm	6.83	3
100μm	7.16	2

$\lg F_{H\beta}(mW.m^{-2})$ −11.41 ± .05 CD61 , Ka83

IUE Spectra: *LW*(0) *SW*(1)

Radio *2cm*
(*mJy*) *6cm* 61 ZPB89

Central Star: AG82 404 — GCRV 12649; VES 128; CSI +30 -20144 2
m_{pg} 18.1 *Qual:* P PK67

Notes: Multiple-shell PN; monochromatic images (JDK86, CJA87, Ba87)
Distance (kpc) indiv.: ext. 1.5-1.9 (73...125); ext. 1.1 (Ac78); ext. 1.5 (Po83); dust 1.09 (85..3094); ext. 1.9 (Sab86)
Distance (kpc) stat.: 1.4-1.5 (CaKa71); 1.68 (Ca76); 1.41 (Ac78); 1.20 (AGNR84); 1.5 (Ma84); 1.65 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ab66, AcMa77, Al65, Al89, AlKe87, AlLi68, Ba89, CaKo68, CaNo73, CaRu74, Ch89, ChLo76, Cu74, DFHM67, De71, FaMa88, Gr71, Gu70, Gu88, HaSe66, HaZu91, He67, He71, He90, Hi71, Hi73, Hig71, Ii81, Iw73, IwKa65, KAC76, KSK90, Ka70, Ka76, Ka78, Ka86, KaJa89, Kh79, Kr69, KrK68, LNP89, MeHa75, MiSa77, PSK78, Pe91, PeTo83, PhMa88, PiKh79, Sa84, SaMi78, Sabb86, StKa89, StSh83, Te68, ThDa70, TrSa78, We89, ZuAl86

68..9017 Gordon C. *Astrophys. Lett. 1,121* Comments on Seaton distance scale.
72..9001 Lutz J.H. *Colloque Albany 1972* Interstellar dust., distances P.N.
72..9051 Lutz J.H. *Bull. Amer. Astron. Soc. 4,234* Interstellar dust and distances to P.N.
73...125 Lutz J.H. *Astrophys. J. 181,135* Interstellar dust and distances to planetary nebulae.
73..9019 Lutz J.H. *Astrophys. J. 185,391* Erratum: interstellar dust and distances to P.N.
74..9044 Lutz J.H. *IAU Albany 52,29* The ratio of total to selective absorption in the direction of selected P.N.
74..9047 Kaler J.B. *Astron. J. 79,595* P.N. with multiple shells.
74.17001 Coyne S.J., Lee T.A., De Graeve E. *Vatican Obs. Publ. 1,n.5,181-195* A survey for H alf emission objects in the Milky Way [VES 1-132].
83..4552 Antokhin I.I., Bochkarev N.G. *Astron. Zu. 60,448-465* Geometry, gas-cloud kinematics, line profiles, and rapid profile variability inactive nuclei and quasars.
83.17002 Macconnell D.J., Coyne G.V. *Vatican Obs. Publ. 2,N.5,63-72* A survey for H-alpha emission objects in the Milky Way. VI. Revised catalogue of part I-V.
85...149 Kaler J.B. *Astrophys. J. 290, 531-541* Spectrophotometry of 12 planetary nebulae.
85..3094 Kaler J.B., Lutz J.H. *Publ. Astron. Soc. Pac. 97, 700-706* Dust-distances to planetary nebulae.
86..1099 Tylenda R. *Astron. Astrophys. 156, 217-222* Outer haloes of planetary nebulae as probes of a fast luminosity decline in their nuclei.
87..2772 Clegg R.E.S. *Mon. Not. R. Astron. Soc. 229, short comm. 31p-39p* Collisional effects in He I lines and helium abundances in planetary nebulae.
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90..2014 Frank A., Balick B. *Astron. J.,100,1903* Stellar wind paleontology: shells and halos of planetary nebulae.
90..2506 Breitschwerdt D., Kahn F.D. *Mon. Not. R. Astron. Soc.,244,521* Dynamical evolution of planetary nebulae. II. Ionisation of shells in planetarynebulae and the formation of low-ionization knots.

069.6–03.9

K 3-58, PK 69–3°1, ARO 348

Disc.: Kohoutek 1964 1950: 20 19 56.0 +29 49 46 PK67 2000: 20 21 58.4 +29 59 24 .	*Diameter* (″) *opt.* 7.8 CaKa71	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-18

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	846
[*O*III]	436.3	–	[*N*II]	658.4	875
	500.7	1067	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.3 \pm .2$ ASTR91

Distance (kpc) stat.: 6.6 (CaKa71); 5.7 (Ma84)

Bibliography: *PK67*, AcMa77, Hi71, Iw73, Ko65, Ru70, Sa86

069.7–00.0

K 3-55, PK 69+0°1

Disc.: Kohoutek 1964 1950: 20 04 58.3 +32 07 49 AK90 2000: 20 06 56.2 +32 16 33 .	*Diameter* (″) *opt.* 5. : ATS91 *radio* 8.2 AK90	

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1987-05-24

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	97
	500.7	45	[*S*II]	671.7	9:
*He*I	587.6	–		673.1	13:

Radio *2cm*
(*mJy*) *6cm* 90 AK90

Distance (kpc) stat.: 3.31 (CKS91)

Bibliography: *PK67*, Alle73, BlPu81, Kh89, Ko65, Sa86

071.6–02.3

M 3-35, PK 71−2°1, ARO 172, He 2-465, VV' 534, IRAS 20190+3219

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −176.3 ± 15.1STPP83	
1950:	20 19 04.2	+32 19 45	IRAS	*opt.* 5.	PK67	*Expansion Velocities* (*km/s*)	
	20 19 04.7	+32 19 49	AK90			[OIII] 17.0	We89
2000:	20 21 03.7	+32 29 24	.	*radio* 1.5	AK90	[NII] 30.0	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-18						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1537	*J*	11.42	12μm	6.31	3
[OIII]	436.3	7:	[*NII*]	658.4	34:	*H*	11.16	25μm	23.42	3
	500.7	1123	[*SII*]	671.7	7:	*K*	9.97	60μm	6.58	3
HeI	587.6	48		673.1	13:	*L*	(7.87)	100μm	36.02	1
lg$F_{H\beta}(mW.m^{-2})$		−12.45 ± .06	Bark78			*Photom.*	KHM86	*Radio* 2*cm*		
								(*mJy*) 6*cm*	130	AK90

Central Star: AG82 407 — VES 131; UBV M 44556; GEN +6.20055131
$B > 17.6$ $V > 15.7$ 72.30001

Distance (kpc) stat.: 1.76 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac80, AcMa77, AlLi68, Bar78, BlPu81, Gu88, He67, Hi71, Ii81, KPK81, Ka86, Kle78, Kon78, PPT88, Pe91, SSAG87, Sa84, SaMi78, StKa89, TTP87, TuTe84, VoCo90, ZTPS89

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74.17001 Coyne S.J., Lee T.A., De Graeve E. *Vatican Obs. Publ. 1,n.5,181-195* A survey for H alf emission objects in the Milky Way [VES 1-132].

83.17002 Macconnell D.J., Coyne G.V. *Vatican Obs. Publ. 2,N.5,63-72* A survey for H-alpha emission objects in the Milky Way. VI. Revised catalogue of part I-V.

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85..2006 Kwok S. *Astron. J. 90, 49-58* High-resolution radio observations of compact planetary nebulae.

87..2215 Lewis B.M., Eder J., Terzian Y. *Astron. J. 94, 1025-1034* OH/IR stars without OH masers: nondetection statistics.

89.17804 Arkhipova V.P., Yesipov V.F., Shchelkanova A. Yu. *Pis'ma Astron. Zu. 15, 714-722* The investigation of compact planetary nebulae.

90..1038 Zhang C.Y., Kwok S. *Astron. Astrophys. 237,479* IRAS spectroscopic observations of young planetary nebulae.

072.1+00.1

K 3-57, PK 72+0°1, IRAS 20108+3411

			Disc.: Kohoutek 1964	*Diameter* (″)			
1950:	20 10 52.6	+34 11 28	IRAS	*opt.* 6.	ATS91		
	20 10 52.0	+34 11 27	AK90				
2000:	20 12 47.6	+34 20 32	.	*radio* 6.3	AK90		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-18						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	70:	*Hα*	656.3 *nm*	1598	12μm	0.52	3
[OIII]	436.3	–	[*NII*]	658.4	710	25μm	4.07	3
	500.7	1574	[*SII*]	671.7		60μm	4.18	3
HeI	587.6	50:		673.1		100μm	47.25	1
lg$F_{H\beta}(mW.m^{-2})$		−13.1 ± .2	ASTR91			*Radio* 2*cm*		
						(*mJy*) 6*cm*	60	AK90

Distance (kpc) stat.: 4.02 (CKS91)

Bibliography: *PK67*, BlPu81, Ko65, Sa86

072.7–17.1

A 74, PK 72–17°1, A55 61, ARO 193, VV' 546

			Disc.: Abell 1955	*Diameter* (″)	*Rvel:* +18.0 ± 4.0 86..1089
				opt. 830. CaKa71	*Expansion Velocities* (*km/s*)
1950:	21 14 38.1	+23 56 15	PK67		[OIII] 27 86..1089
2000:	21 16 52.3	+24 08 51	.		[NII] 26 86..1089

Central Star: AG82 425 — UBV 18389; FB 176; CSI +23 -21146
U 15.72 *B* 16.91 *V* 17.11 Ab66 *Spectrum:* sd Op All76

Notes: FC wrong in PK67, AG82 and 90.50001. The position of the central star communicated by D. Schoenberner is shown on FC.
Distance (kpc) stat.: 0.26 (CaKa71); 0.6 (Ma84)

Bibliography: *PK67*, AcMa77, Dr80, Hi71, IsWe87, Iw73, Kh79, KrK68, Mi76, We86, We89

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90.50001 Acker A., Marcout J. *Proceedings of the Strasbourg workshop, col de Steige 1989,5* The Strasbourg-ESO catalogue of galactic planetary nebulae: true and misclassified planetary nebulae

073.0–02.4

K 3-76, PK 73–2°1

			Disc.: Kohoutek 1972	*Diameter* (″)	
				opt. 4.3 Ko72	
1950:	20 23 09.1	+33 24 22	AK90		
2000:	20 25 07.1	+33 34 12	.	*radio* < 0.2 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-22

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1900
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	1511	[*S*II]	671.7	
*He*I	587.6	63:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −13.6 ± .3 ASTR91

Radio *2cm*
(*mJy*) *6cm* 12 AK90

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

074.5+02.1

NGC 6881, PK 74+2°1, ARO 108, He 2-456, VV 250, VV' 526, IRAS 20090+3715

			Disc.: Pickering 1881	*Diameter* (″)		*Rvel:* −14.4 ± 2.3 STPP83	
1950:	20 09 01.8	+37 15 45	IRAS	*opt.* 4.	81..1008	*Expansion Velocities* (*km/s*)	
	20 09 01.6	+37 15 44	AK90		PK67, CaKa71	[OIII] 16.5	We89
2000:	20 10 52.4	+37 24 42	.	*radio* 2.6	AK90		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-28						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	36	*Hα*	656.3 *nm*	985	*J*	11.62	12μm	2.78	3
[*OIII*]	436.3	12	[*NII*]	658.4	603	*H*	11.96	25μm	19.30	3
	500.7	1851	[*SII*]	671.7	14	*K*	11.03	60μm	19.62	3
HeI	587.6	33		673.1	31	*L*	8.53	100μm	66.91	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.24 ± .03	Kal83, ASTR91			*Photom.* PPFS87		*Radio* *2cm*		
						Spectr. 86..2654		(*mJy*) *6cm* 120		AK90

Central Star: AG82 401 — GCRV 12543; CSI +37 -20091
V 18.36 *Qual:* B JK89

Distance (kpc) indiv.: ext. >3.2 (Ac78)
Distance (kpc) stat.: 3.9-5.0 (CaKa71); 5.19 (Ca76); 3.57 (Ac78); 1.45 (Da82); 1.10 (AGNR84); 1.7 (Ma84) 2.47 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, Ak70, Al74, AlKe87, AlLi68, CaKo68, CaRu74, CoBa74, CoBa80, DFHM67, De71, FaMa88, Gr71, Gu70, Gu88, HaSe66, HaZu91, He67, He71, He90, Hi71, Hig71, Ii81, Is84, IwKa65, Ka70, Ka76, KaJa89, Kh76, Kh79, Khr76, Khro76, Ko77, Kr69, LNP89, PBBE84, PM87, PPOJ86, PSK78, Pe91, Ph84, PiKh79, RRA82, SGBO84, SK85, Sa84, SaMi78, Sh85, Sm71, Te68, ThDa70, VKDA69, Vo70, VoCo90, W69, ZuAl86

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74..9015 Baratta G.B., Cassatella A., Viotti R. *Astrophys. J. 187,651-659* On the problem of V1016 Cygni and the evolutionary stage of the symbiotic stars.

81..1008 Kohoutek L., Martin W. *Astron. Astrophys. 94,365-372* Study of selected stellar PN.

84..1597 Wendker H.J. *Astron. Astrophys., Suppl. Ser. 58, 291-316* The Cygnus X region. XV. A 4.8 GHz continuum survey with the 100 m-telescope.

84..2707 Sabbadin F. *Mon. Not. R. Astron. Soc. 209, 889-894* High dispersion spectra of compact planetary nebulae.

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87..3071 Kaler J.B., Pratap P., Kwitter K.B. *Publ. Astron. Soc. Pac. 99, 952-956* Spectrophotometry of the compact planetary nebulae NGC 6879 and NGC 6881.

87.30057 Kwok S. *Physics Reports 156, n) 3, 113-146* Effects of mass loss on the late stages of stellar evolution.

075.6+04.3

Anon. 20h02m, PK 75+4°1, ARO 342

			Disc.: Anon.	*Diameter* (″)			
				opt. 28.	CaKa71		
1950:	20 02.6	+39 26	PK67				
2000:	20 04.4	+39 35	.				

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-19					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	287
[*OIII*]	436.3	–	[*NII*]	658.4	380
	500.7	393	[*SII*]	671.7	
HeI	587.6	–		673.1	7:
$\lg F_{H\beta}(mW.m^{-2})$		−12.6 ± .4	ASTR91		

Distance (kpc) stat.: 3.27 (CaKa71); 4.2 (Ma84); 3.90 (CKS91)

Bibliography: *PK67*, AcMa77, AmGu71, Hi71, KrK68, Ru70

075.7+35.8

Sa 4-1, PK 75+35°1

			Disc.: Sanduleak 1983	*Diameter* (″)	
				opt. 13. 83..3101	
1950:	17 12 30	+49 19.0	83..3101		
2000:	17 13 48	+49 15.6	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-15

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	569:
[OIII]	436.3	–	[NII]	658.4	–
	500.7	1543	[SII]	671.7	
*He*I	587.6	29:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .2$ ASTR91

IUE Spectra: *LW*(1) *SW*(3)

Central Star: AG82 234Bis — *B* 14.79 *V* 14.31 *Qual:* A TASG91 *Spectrum:* O(H) Me91

Bibliography: FeBr90, Ko89

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89..9441 Feibelman W.A., Bruhweiler F.C. *Astrophys. J. 347, 901-909* Terminal velocity of wind, mass loss and absorption lines of the central star of the planetary nebula 75+35 1.

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076.3+01.1

A 69, PK 76+1°1, A55 56, ARO 15, VV' 533

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 22. PK67	
1950:	20 18.1	+38 15	PK67		
2000:	20 19.9	+38 25	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-19

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	141:
[OIII]	436.3	–	[NII]	658.4	706
	500.7	235:	[SII]	671.7	47:
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-14.1 \pm .3$ KSK90

Central Star: AG82 406 — $m_{pg} > 21.$ *Qual:* P PK67

Distance (kpc) stat.: 1.7 (CaKa71); 0.3 (Ma84); 4.17 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, CaWy76, Hi69, Hi71, Hig71, Iw73, Jo80, KrK68

076.4+01.8

KjPn 3, PK 76+1°2, K 4-52

		Disc.: Kazaryan et al 1971		*Diameter* (″)	
				opt. 6. Ko72	
1950:	20 15 25.8	+38 40 54	71..9082		
2000:	20 17 15.2	+38 50 16	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-23					
HeII	468.6 *nm*	59:	$H\alpha$	656.3 *nm*	606
[*OIII*]	436.3	80:	[*NII*]	658.4	–
	500.7	46:	[*SII*]	671.7	
HeI	587.6	28:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-13.3 \pm .2$	ASTR91

Notes: Possibly a H II region

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

71. .9082 Kazaryan M.A., Parsamian E.S. *Astron. Tsirk. 602,6-8* New Planetary Nebulae.

077.5+03.7

KjPn 1, PK 77+3°1, AS 389, K 4-51, MHα 328-107, IRAS 20107+4038

		Disc.: Kazaryan et al 1971		*Diameter* (″)	
1950:	20 10 47.9	+40 38 38	IRAS	*opt.* 5.6 Ko72	
	20 10.4	+40 41	71..9082		
2000:	20 12.2	+40 50	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-24					
HeII	468.6 *nm*	30	$H\alpha$	656.3 *nm*	995
[*OIII*]	436.3	12:	[*NII*]	658.4	53:
	500.7	1307	[*SII*]	671.7	
HeI	587.6	42		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-12.9 \pm .2$	ASTR91

IR Class: .		*IRAS Fluxes* (*Jy*)		*Qual.*
J		12μm	2.79	3
H		25μm	11.90	3
K	> 9.3	60μm	55.09	3
L		100μm	67.74	3
Photom.	AI74			

Bibliography: AcMa77, Ko71, Ko78, MWH81, Sa86, We77

71. .9082 Kazaryan M.A., Parsamian E.S. *Astron. Tsirk. 602,6-8* New Planetary Nebulae.

077.6+14.7

A 61, PK 77+14°1, A55 49, VV' 495

			Disc.: Abell 1955	*Diameter* (″)		*Rvel:* −48.0 ± .	86..1089
				opt. 200.	CaKa71	*Expansion Velocities* (*km/s*)	
1950:	19 17.7	+46 09	PK67			[OIII] 32.	86..1089
2000:	19 19.2	+46 15	.			[NII] 30	86..1089

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-07

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	560
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	950:	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star: AG82 365 — UBV 16374; CSI +46 -19177
U 15.82 *B* 17.05 *V* 17.39 Ab66

Distance (kpc) stat.: 0.85 (CaKa71); 1.7 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, CaWy76, Dr80, Jo80, Kh79, KrK68, TASG91, We89, ZPB89

76..9061 Smith H. *Mon. Not. R. Astron. Soc. 175,419* Differential deceleration of nebular shells and the displacement of central stars.

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077.7+03.1

KjPn 2, PK 77+3°2, K 3-75, IRAS 20136+4025

			Disc.: Kazaryan et al 1971	*Diameter* (″)			
1950:	20 13 41.7	+40 25 55	IRAS	*opt.* 3.5 :	Ko72		
	20 13.5	+40 31	71..9082				
2000:	20 15.3	+40 41	.				

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-24

*He*II	468.6 *nm*	100:	*Hα*	656.3 *nm*	980
[*O*III]	436.3	–	[*N*II]	658.4	1050
	500.7	2700	[*S*II]	671.7	63
*He*I	587.6	–		673.1	97

$\lg F_{H\beta}(mW.m^{-2})$ −13.8 ± .3 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.77	2
25μm	1.90	3
60μm	13.34	3
100μm	50.64	2

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

71..9082 Kazaryan M.A., Parsamian E.S. *Astron. Tsirk. 602,6-8* New Planetary Nebulae.

078.3–02.7

K 4-53, PK 78−2°1, IRAS 20403+3729

			Disc.: Kohoutek 1972	*Diameter* (″)			
1950:	20 40 22.1	+37 29 42	IRAS	*opt.* 20.	Ko72		
	20 40 21.0	+37 29 42	Ko72				
2000:	20 42 15.6	+37 40 31	.				

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-24

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	840
[*O*III]	436.3	–	[*N*II]	658.4	108
	500.7	812	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.9 ± .4 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	3.72	3
60μm	4.59	3
100μm	269.90	1

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

078.5+18.7

A 50, PK 78+18°1, A55 39, NGC, 6742, VV' 472

Disc.: Abell 1955 1950: 18 58.0 +48 24 PK67 2000: 18 59.3 +48 28 .	*Diameter* (″) *opt.* 27. CaKa71	*Rvel:* −159.0 ± 11.0STPP83
Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-16 *He*II 468.6 *nm* 47 | *Hα* 656.3 *nm* 250 [*O*III] 436.3 – | [*N*II] 658.4 59 500.7 981 | [*S*II] 671.7 10: *He*I 587.6 13: | 673.1 9:		
$\lg F_{H\beta}(mW.m^{-2})$ −11.9 ± .3 ASTR91		*Radio* *2cm* (*mJy*) *6cm* 1 ZPB89
Central Star: AG82 338 — m_{pg} 20.0 *Qual:* P PK67		
Distance (kpc) stat.: 2.7 (CaKa71); 2.8 (Ma84); 5.04 (CKS91)		

Bibliography: *PK67*, AG82, Ab66, AcMa77, CaWy76, FaMa88, Gu70, Gu88, Iw73, KSK90, Ka83, KaJa89, Kh79, LePo88, Pe91, Sabb86

66. .9024 Mathews W.G. *Astrophys. J. 143,176* Model of planetary nebulae.
81. . .202 Kaler J.B., Hartkopf W.I. *Astrophys. J. 249,602-606* Two constrasting Abell planetary nebulae.

078.6+05.2

Dd 1, PK 78+5°1, K 3-74

Disc.: Dolidze 1971 1950: 20 07 01.2 +42 21 18 Ko72 2000: 20 08 43.2 +42 30 09 .	*Diameter* (″) *opt.* 20. Ko72	
Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-23 *He*II 468.6 *nm* 29: | *Hα* 656.3 *nm* 630 [*O*III] 436.3 – | [*N*II] 658.4 398 500.7 937 | [*S*II] 671.7 } 60. *He*I 587.6 – | 673.1 }		
$\lg F_{H\beta}(mW.m^{-2})$ −13.0 ± .3 KSK90, ASTR91		*Radio* *2cm* (*mJy*) *6cm* 6 AK90

Bibliography: AcMa77, KaJa89, Ko71, Ko78, Sa86, We77

71. 10251 Dolidze M.W. *Astron. Tsirk. 629,6-7* Emission objects in Cygni.

078.9+00.7

Sd 1, PK 78+0°1, K 3-77, KjPn 5

			Disc.: Sherwood 1969	*Diameter* (″)	
				opt. 7.6 Ko72	
1950:	20 27 30	+40 05.3	Ko72		
2000:	20 29 19	+40 15.4	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-02

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	313
[*O*III]	436.3	–	[*N*II]	658.4	202
	500.7	332	[*S*II]	671.7	
*He*I	587.6	14		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.0 \pm .2$ ASTR91

Central Star: AG82 409 —

Notes: Close to the molecular cloud CRL 2591 associated with a HII region.
Distance (kpc) stat.: 5.56 (CKS91)

Bibliography: AcMa77, Ko71, Ko78, OlRa86, Sa86, We77, ZTPS89

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87..1532 Sabbadin F., Falomo R., Ortolani S. *Astron. Astrophys., Suppl. Ser. 67, 541-544* Spectroscopic observations of genuine and misclassified planetary nebulae.

079.6+05.8

M 4-17, PK 79+5°1, ARO 346, IRAS 20073+4334

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* -26.0 ± 25.0 STPP83	
				opt. 15.2 CaKa71		
1950:	20 07 22.0	+43 34 50	IRAS			
	20 07 22.2	+43 34 54	PK67			
2000:	20 09 02.0	+43 43 46	.			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-19

*He*II	468.6 *nm*	22:	$H\alpha$	656.3 *nm*	504
[*O*III]	436.3	6:	[*N*II]	658.4	326
	500.7	1024	[*S*II]	671.7	
*He*I	587.6	33		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.4 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.25	1
25μm	0.55	3
60μm	3.85	3
100μm	210.70	1

Distance (kpc) stat.: 2.68 (CaKa71); 2.1 (Ac78); 1.8 (Ma84)

Bibliography: *PK67*, AcMa77, AlLi68, Hi71, Iw73, KrK68, MeHa75, Ru70

079.9+06.4

K 3-56, PK 79+6°1, ARO 345, IRAS 20052+4405

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	20 05 17.6	+44 05 38	IRAS	*opt.* 4. CaKa71	
	20 05 17.0	+44 05 37	PK67		
2000:	20 06 55.5	+44 14 21	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-21					
HeII 468.6 *nm*	77	*Hα* 656.3 *nm*	826	*IR Class:* .	*IRAS Fluxes* (*Jy*) *Qual.*
[*OIII*] 436.3	–	[*NII*] 658.4	–	*J*	12μm 0.25 1
500.7	560	[*SII*] 671.7		*H*	25μm 0.31 3
HeI 587.6	–	673.1		*K* > 9.2	60μm 17.68 1
				L	100μm 157.00 1
$\lg F_{H\beta}(mW.m^{-2})$ −12.9 ± .2 ASTR91				*Photom.* AI74	

Distance (kpc) stat.: 18.43 (CaKa71); 20.3 (Ma84)

Bibliography: *PK67*, AcMa77, CaWy76, Hi71, Iw73, Ko65, Ru70, Sa86

86.10300 Shchelkanova A.Yu. *Astron. Tsirk. 1451,3* Preliminary results of investigation of compact emission-line objects.

081.2–14.9

A 78, PK 81−14°1, A55 64, ARO 174, VV' 554

			Disc.: Abell 1955	*Diameter* (″)	*Rvel*: +17.0 ± 10.0 STPP83
				opt. 107. CaKa71	*Expansion Velocities* (*km/s*)
1950:	21 33 20.1	+31 28 18	Ka83		[OIII] 27. We89.
2000:	21 35 29.5	+31 41 45	.		

$\lg F_{H\beta}(mW.m^{-2})$ −12.04 ± .04 Ka83		
IUE Spectra: *LW*(4) *SW*(8)		
Central Star: AG82 433 — CSI +31-21334 0; UBV 18570		O5fek AII76
U 11.86 *B* 13.02 *V* 13.21 *Qual:* A Ab66, TASG91		Of/WR(C) Me91

Notes: Possible visual binary nucleus (79..3104)
Distance (kpc) indiv.: dust. 1.63 (84...469); wind 0.70 (85....32)
Distance (kpc) stat.: 1.83 (CaKa71); 4.0 (Ma84); 1.61 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, Ca84, CePe85, Ch89, ChLo76, CoBa74, Cu74, Dr80, FeBr90, Gr89, GrNe90, He83, HeAu87, Hi71, KVLS81, Ka85, Kh79, Kh89, Kle78, KrK68, Li82, PWWD77, PWWF78, PaPe88, Pe83, Pe89, SSAG87, Sabb86, Sc81, SmAl69, TaAp88, Wa70, ZPB89

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73..9119 Smith L.F. *IAU Symp. 49,126* Nuclei of P.N.
77..2620 Cohen M., Hudson H.S., O'Dell S.L., Stein W.A. *Mon. Not. R. Astron. Soc. 181,233* A study of the PN Abell 30 and Abell 78.
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78.30030 Gilra D.P., Pottasch S.R., Wesselius P.R., Van Duinen R.J. *IAU Symp. 76,210-210* Ultraviolet photometric variations in the central star of IC 418.
78.30051 Cohen M., Hudson H.S., O'Dell S.L., Stein W.A. *IAU Symposium 76,356-356* A study of the P.N. Abell 30 and Abell 78.
79.....7 Scalo J.M., Shields G.A. *Astrophys. J. 228,521-530* Iron condensation and the formation of planetary nebulae.
79..3104 Jacoby G.H. *Publ. Astron. Soc. Pac. 91,754-760* Unusual structure in the PN Abell 30 and Abell 78.
79.17260 Bentley A.F., Hackwell J.A. *Bull. American Astron. Soc. 11,46* Infrared color temperatures for the low surface brightness PN A 30 and A 78.
79.30018 Heap S.R. *IAU Symposium 83,99-102* Winds in hoot, sublimous stars.
81...205 Kaler J.B. *Astrophys. J. 250,L31-L34* Large high-excitation PN.

81.17256 Jacoby G.H., Ford H.C. *Bull. American Astron. Soc. 13,854* The hydrogen depleted planetary nebulae Abell 30 and Abell 78.

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082.1+07.0

NGC 6884, PK 82+7°1, ARO 57, VV 251, VV' 527, IRAS 20088+4618

			Disc.: Copeland 1884	*Diameter (")*		*Rvel:* −35.6 ± 1.0 STPP83	
1950:	20 08 48.7	+46 18 38	IRAS	*opt.* 6.	81..1008	*Expansion Velocities (km/s)*	
	20 08 49.0	+46 18 42	GPG86		PK67, CaKa71	[OIII] 23	Sa84
2000:	20 10 23.6	+46 27 39	.	*radio* 3.1	Is84		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-28						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	21	*Hα*	656.3 *nm*	392	*J*	10.62	12μm	1.21	3
[*O*III]	436.3	9	[*N*II]	658.4	50	*H*	11.15	25μm	13.05	3
	495.9	485	[*S*II]	671.7	2.1	*K*	10.29	60μm	17.40	3
*He*I	587.6	20		673.1	3	*L*		100μm	15.08	1
$\lg F_{H\beta}$	−11.11 ± .02	CD61 , 71..9003, SK85				*Photom.* PPFS87		*Radio 2cm*		
IUE Spectra:	*LW*(1)	*SW*(2)				*Spectr.* 86..2654		(*mJy*) *6cm*	175	Is84

Central Star: AG82 399 —
B 16.1 *V* > 15.6 *Qual:* D SK85 *Spectrum:* WNb? 81.27751

Notes: Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) indiv.: ext. 2.0 (Po83); kinem. 1.8 (GPG86); ext. 1.4 (Sab86)
Distance (kpc) stat.: 4.8 (CaKa71); 3.62 (Ca76); 2.8 (Ac78); 1.12 (Da82); 1.40 (AGNR84); 1.7 (Ma84) 2.1 (CKS91)

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082.5+11.3

NGC 6833, PK 82+11°1, ARO 105, VV 244, VV' 516

Disc.: Pickering 1883 1950: 19 48 20.8 +48 50 01 AK90 2000: 19 49 46.5 +48 57 40 .	*Diameter* (″) *opt.* 2. CaKa71 *radio* 0.5 AK90	*Rvel:* −108.8 ± 1.7 STPP83 *Expansion Velocities* (*km/s*) [OIII] 13 Sa84

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	sat.
[*OIII*]	436.3	13	[*NII*]	658.4	26
	495.9	245	[*SII*]	671.7	
HeI	587.6	16		673.1	

IR Class: N

J	12.26
H	12.61
K	11.98
L	(10.65)

Photom. KHM86

$\lg F_{H\beta}$ −11.25 ± .02 Kale76, Bark78, ASTR91
IUE Spectra: *LW*(3) *SW*(2)

Radio *2cm*
(*mJy*) *6cm* 21 AK90

Central Star: AG82 387 —
B 14.6 *V* 14.5 *Qual:* C TASG91

Distance (kpc) stat.: 10.09 (CaKa71); 9.1 (Ca76); 7.88 (Ac78); 1.16 (Da82); 3.10 (AGNR84); 2.6 (Ma84) 4.76 (CKS91)

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083.5+12.7

NGC 6826, PK 83+12°1, ARO 13, VV 242, VV' 514, IRAS 19434+5024

		Disc.: Herschel 1793	*Diameter (")*		*Rvel:* −6.2 ± 0.6 STPP83
1950:	19 43 27.9	+50 24 11 IRAS	*opt.* 25. CaKa71		*Expansion Velocities (km/s)*
	19 43 27.2	+50 24 10 PK67			[OIII] 11. We89
2000:	19 44 48.3	+50 31 30 .			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-20

*He*II	468.6 *nm*	4	*Hα*	656.3 *nm*	344
[*O*III]	436.3	–	[*N*II]	658.4	–
	495.9	242	[*S*II]	671.7	
*He*I	587.6	19		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −9.98 ± .02 60...353, Kle78

IUE Spectra: *LW*(20) *SW*(27)

IR Class: N

J	9.94	*IRAS Fluxes (Jy)*		*Qual.*	
H	10.18	12μm	4.93	3	
K	9.8	25μm	39.33	3	
L	> 7.5	60μm	46.79	3	
Photom.	PeTo87	100μm	21.32	3	
Spectr.	PPOJ86				

Central Star: AG82 383 — AG +50 1416; BD +50 2869; GCRV 12124; HD 186924; PLX 4649; SAO 31951; TD1 25412; DC 37693; EM* CDS 1096

B 10.33 *V* 10.41 *Qual:* B 72.30001, SK85 , TASG91 *Spectrum:* O3f(H) Me91

Notes: Multiple-shell PN; monochromatic images (JDK86, CJA87, Ba87); Monochromatic images by Hua C.T. and Louise R.

Distance (kpc) indiv.: wind 1.09 (85....32)

Distance (kpc) stat.: 0.7-1.3 (CaKa71); 1.6 (Ca76); 1.02 (Ac78); 1.08 (Da82); 0.76 (PhPo84); 0.80 (AGNR84); 0.7 (Ma84); 1.57 (CKS91)

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083.9–08.4

K 3-81, PK 83−8°1

			Disc.: Kohoutek 1972	*Diameter* ($''$)		
				opt. 10.:	ATS91	
1950:	21 20 16.2	+37 54 24	Ko72			
2000:	21 22 16.6	+38 07 15	.			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-02

						IR Class: .	
*He*II	468.6 *nm*	67	*H*α	656.3 *nm*	364	*J*	
[OIII]	436.3	29	[*N*II]	658.4	–	*H*	
	500.7	1138	[*S*II]	671.7		*K*	> 9.2
*He*I	587.6	8:		673.1		*L*	

$\lg F_{H\beta}(mW.m^{-2})$ −12.8 ± .2 ASTR91 — *Photom.* AI74

Central Star:
B 15.49 *V* 15.75 *Qual:* B TASG91

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78.16757 Aller L.H. *Proc. Astron. Soc. Aust. 3,213-219* Chemical compositions of planetary and diffuse nebulae.
86.10300 Shchelkanova A.Yu. *Astron. Tsirk. 1451,3* Preliminary results of investigation of compact emission-line objects.
89.17804 Arkhipova V.P., Yesipov V.F., Shchelkanova A. Yu. *Pis'ma Astron. Zu. 15, 714-722* The investigation of compact planetary nebulae.

084.0+09.5

K 3-73, PK 84+9°1

Disc.: Kohoutek 1972 1950: 20 02 31.8 +49 10 36 Ko72 2000: 20 03 59.0 +49 19 09 .	*Diameter* (″) *opt.* 16. Ko72	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-02

*He*II	468.6 *nm*	30:	$H\alpha$	656.3 *nm*	359
[*O*III]	436.3	–	[*N*II]	658.4	55:
	500.7	880	[*S*II]	671.7	
*He*I	587.6	16:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.60 \pm .10$ KSK90, ASTR91

Central Star:
B 20.8 KSK90

Bibliography: AcMa77, KaJa89, Ko71, Ko78, We77

89.17804 Arkhipova V.P., Yesipov V.F., Shchelkanova A. Yu. *Pis'ma Astron. Zu. 15, 714-722* The investigation of compact planetary nebulae.

084.2+01.0

K 4-55, PK 84+1°1

Disc.: Kohoutek 1972 1950: 20 43 25.8 +44 28 18 Ko72 2000: 20 45 10.0 +44 39 16 .	*Diameter* (″) *opt.* 27. Ko72	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-03 W

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	800
[*O*III]	436.3	–	[*N*II]	658.4	5700
	500.7	1400	[*S*II]	671.7	425
*He*I	587.6	–		673.1	288

$\lg F_{H\beta}(mW.m^{-2})$ $-13.3 \pm .4$ ASTR91

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

084.2–04.2

K 3-80, PK 84–4°1

Disc.: Kohoutek 1972 1950: 21 05 46.2 +40 58 48 Ko72 2000: 21 07 40.0 +41 10 57 .	*Diameter* (″) *opt.* 5.8 Ko72	
Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-03 *He*II 468.6 *nm* – | $H\alpha$ 656.3 *nm* 745 [OIII] 436.3 – | [NII] 658.4 – 500.7 1022 | [SII] 671.7 *He*I 587.6 41 | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ $-13.4 \pm .2$ ASTR91		

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86.10300 Shchelkanova A.Yu. *Astron. Tsirk. 1451,3* Preliminary results of investigation of compact emission-line objects.

084.9+04.4

A 71, PK 85+4°1, A55 58, ARO 352, Sh 2-116, VV' 537

Disc.: Abell 1955 1950: 20 30 46.5 +47 10 48 Ka83 2000: 20 32 23.2 +47 21 04 .	*Diameter* (″) *opt.* 157. CaKa71	*Expansion Velocities* (*km/s*) [OIII] 10 We89 [NII] 20 We89
Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-08-02 *He*II 468.6 *nm* – | $H\alpha$ 656.3 *nm* 100: [OIII] 436.3 – | [NII] 658.4 242: 500.7 68: | [SII] 671.7 *He*I 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ $-11.75 \pm .02$ Ka83		
Central Star: AG82 412 — UBV 17830; CSI +47 -20308 *U* 18.66 *B* 19.32 *V* 18.95 Ab66		
Notes: Monochromatic images (JDK86) *Distance (kpc) stat.:* 0.7 (CaKa71); 0.9 (Ma84); 0.72 (CKS91)		

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90..1011 Hippelein H., Weinberger R. *Astron. Astrophys. 232,129* The expansion of highly evolved planetary nebulae.

90..2050 Fich M., Treffers R.R., Dahl G.P. *Astron. J. 99, 622-637* Fabry-Perot H-alpha observations of galactic H II regions.

084.9–03.4

NGC 7027, PK 84–3°1, ARO 40, Sh 2-113, VV 261, VV' 543

		Disc.: Webb 1879	*Diameter (")*		*Rvel:* +8.8 ± 0.6 STPP83
			opt. 14. CJA87		*Expansion Velocities (km/s)*
1950:	21 05 09.5	+42 02 03	82..1149		[OIII] 21.5 We89
2000:	21 07 01.7	+42 14 10	.	*radio* 15. ZPB 89	[NII] 23.5 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-31						*IR Class:* N		
*He*II	468.6 *nm*	41	*Hα*	656.3 *nm*	sat.	*J*	7.44	
[*O*III]	436.3	15	[*N*II]	658.4	–	*H*	7.47	
	495.9	sat.	[*S*II]	671.7	4	*K*	6.47	
*He*I	587.6	20		673.1	10	*L*		
$\lg F_{H\beta}(mW.m^{-2})$		$-10.12 \pm .01$ 82...287				*Photom.* PeTo87	*Radio 2cm*	
IUE Spectra:		*LW*(14) *SW*(19)				*Spectr.* 87..1381	(*mJy*) *6cm* 5700	73..9007

Central Star: AG82 421 — AG +42 1976; BD +41 4004; GCRV 13282; PLX 5083; HD 201272; SAO 50463
V 16.25 *Qual:* B 88..9151, 90.00003

Notes: Monochromatic images (CJA87, Ba87); Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) indiv.: stand. 1 to 1.5 (82..1149); ext. 1.9 (Sab86); exp. 0.94 (86...162)
Distance (kpc) stat.: 1.8 (CaKa71); 1.3 (Ca76); 1.09 (Ac78); 0.18 (Da82); 0.30 (PhPo84); 0.82 (AGNR84); 0.7 (Ma84); 0.27 (CKS91)

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086.1+05.4

We 1-10, PK 86+5°1

				Diameter (″)		*Expansion Velocities* (*km/s*)		
		Disc.: Weinberger 1977		*opt.* 190.	77..1547	[OIII]	26	We89
1950:	20 30 19.2	+48 42 27	77..1547			[NII]	18	We89
2000:	20 31 52.7	+48 52 41	.					

Central Star: AG82 411 —
B 18.1 77..1547

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77..1547 Weinberger R. *Astron. Astrophys. Suppl. Ser. 30,343-348* New Planetary Nebulae of low surface brightness.

086.5–08.8

Hu 1-2, PK 86–8°1, Anon.21h31m, ARO 89, VV 267, VV' 553, IRAS 21311+3924

				Diameter (″)		*Rvel:* −9.0 ± 8.1 STPP83		
		Disc.: Humason 1921		*opt.* 8.3	81..1008	*Expansion Velocities* (*km/s*)		
1950:	21 31 07.4	+39 24 44	IRAS			[OIII]	29.0	We89
	21 31 07.4	+39 24 40	PK67			[NII]	32	We89
2000:	21 33 08.0	+39 38 01	.	*radio* 1.7	Is84			

Intens. (*Hβ* = 100) OHP-CAR+CCD 1986-08-02						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	78	*Hα*	656.3 *nm*	408	*J*	11.37	12*μm*	0.52	3
[OIII]	436.3	18	[*N*II]	658.4	261	*H*	11.76	25*μm*	3.96	3
	500.7	796	[*S*II]	671.7	8	*K*	11.18	60*μm*	4.45	3
HeI	587.6	15		673.1	17	*L*		100*μm*	2.04	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.21 ± .01	O63, Kale76			*Photom.* PPFS87		*Radio* 2*cm*		
IUE Spectra:		*LW*(5) *SW*(6)						(*mJy*) 6*cm*	336	Is84

Central Star: AG82 432 —
V 17.32 *Qual:* B JK89

Notes: Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) indiv.: ext. 1.5 (Po83); ext. 1.6 (Sab86)
Distance (kpc) stat.: 5.24 (CaKa71); 5.6 (Ca76); 3.98 (Ac78); 1.42 (Da82); 1.30 (AGNR84); 2.2 (Ma84); 1.48 (CKS91)

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087.4–03.8

We 2-245, PK 87–3°1

			Disc.: Weinberger 1977	*Diameter* ('')	
				opt. 35. We77	
1950:	21 16 14.9	+43 36 00	We77		
2000:	21 18 07.0	+43 48 40	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-04

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	336
[*O*III]	436.3	–	[*N*II]	658.4	108:
	495.9	–	[*S*II]	671.7	} 128.
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .4$ ASTR91

Bibliography: Ko78, MWH81

088.7+04.6

K 3-78, PK 88+4°1, IRAS 20438+5011

			Disc.: Kohoutek 1972	*Diameter* ('')	
1950:	20 43 49.4	+50 11 38	IRAS	*opt.* 3.2 Ko72	
	20 43 49.4	+50 11 40	AK90		
2000:	20 45 22.6	+50 22 39	.	*radio* 4.8 ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-04

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	380
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	509	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-14.1 \pm .3$ ASTR91

IRAS Fluxes (Jy)		*Qual.*
12μm	0.30	2
25μm	1.74	3
60μm	3.13	3
100μm	5.45	1

Radio (*mJy*) *2cm*
6cm 15 AK90

Distance (kpc) stat.: 7.83 (CKS91)

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

088.7–01.6

NGC 7048, PK 88–1°1, ARO 41, Hb 9, VV 262, VV' 545, IRAS 21124+4604

			Disc.: Curtis 1919	*Diameter* (″)		*Rvel:* −50.2 ± 8.1	STPP83
1950:	21 12 27.8	+46 04 46	IRAS	*opt.* 61.	CJA87	*Expansion Velocities* (*km/s*)	
	21 12 27.7	+46 04 50	PK67		CaKa71	[OIII] 15.	We89
2000:	21 14 15.2	+46 17 19	.	*radio* 70.	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-03

*He*II	468.6 *nm*	67	$H\alpha$	656.3 *nm*	365
[OIII]	436.3	–	[*N*II]	658.4	516
	500.7	965	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.41 ± .01 O63

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.91	3
60μm	5.51	3
100μm	16.58	1

Radio (*mJy*) *2cm* | *6cm* 37 ZPB89

Central Star: AG82 424 — *V* 19.12 *Qual:* A JK89

Notes: Monochromatic images (84..4088, JDK86, CJA87, Ba87)
Distance (kpc) indiv.: ext. 1.3-2.5 (Ac78); ext. 1.5 (Sab86); ext. 1.6 (87..1516)
Distance (kpc) stat.: 1.0-1.2 (CaKa71); 1.16 (Ca76); 1.3 (Ac78); 1.18 (Da82); 0.95 (AGNR84); 1.2 (Ma84) 1.60 (CKS91)

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089.0+00.3

NGC 7026, PK 89+0°1, ARO 59, EM* CDS 1218, VV 260, VV' 542, IRAS 21046+4739

		Disc.: Copeland 1880	*Diameter (")*		*Rvel:* −40.6 ± 0.6 STPP83
1950:	21 04 36.0	+47 39 02 IRAS	*opt.* 20.	CaKa71	*Expansion Velocities (km/s)*
	21 04 35.5	+47 39 02 GPG86		CJA87	[OIII] 38 We89
2000:	21 06 18.5	+47 51 07 .			[NII] 52.5 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-01						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	30	$H\alpha$	656.3 *nm*	485	*J*	10.56	12μm	2.39	3
[*O*III]	436.3	–	[*N*II]	658.4	174	*H*	10.86	25μm	18.35	3
	500.7	985	[*S*II]	671.7	14	*K*	10.00	60μm	42.74	3
*He*I	587.6	25		673.1	21	*L*	> 8.2	100μm	30.91	3
$\lg F_{H\beta}(mW.m^{-2})$		−10.90 ± .02	60...353, 85..3094			*Photom.*	PeTo87			
IUE Spectra:		*LW*(1)	*SW*(2)			*Spectr.*	PPOJ86			

Central Star: AG82 420 — CSI +47 -21046; HD 201192; PLX 5080	O VI 84...100
B 15.33 *V* 14.20 *Qual:* B SK85	WC 3 Me91

Notes: Monochromatic images (AG82, JDK86, CJA87, Ba87)

Distance (kpc) indiv.: stand. 1.7 (70..9096); ext. 1.8-2.2 (73...125); ext. 1.7 (Ac78); ext. 1.80 (Po80); ext. 2.3 (Po83); dust 1.57 (85..3094); kinem. 2.5 (GPG86); ext. 1.4 (Sab86)

Distance (kpc) stat.: 1.6 (CaKa71); 2.30 (Ca76); 1.67 (Ac78); 1.27 (Da82); 0.52 (PhPo84); 0.95 (AGNR84); 0.9 (Ma84); 1.90 (CKS91)

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089.3–02.2

M 1-77, PK 89–2°1, ARO 42, VV 263, VV' 547, IRAS 21173+4606

			Disc.: Minkowski 1946	*Diameter (")*			
1950:	21 17 19.2	+46 06 06	IRAS	*opt.* 7.	CaKa71	*Expansion Velocities (km/s)*	
	21 17 19	+46 06.1	PK67			[OIII] 6.5	Sa84
2000:	21 19 08	+46 18.8	.	*radio* 8.	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-12-03						*IR Class:* D		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	770	*J*	10.69	12μm	2.41	3
[*OIII*]	436.3	–	[*NII*]	658.4	234	*H*	10.20	25μm	14.39	3
	495.9	–	[*SII*]	671.7	15	*K*	9.30	60μm	13.28	3
HeI	587.6	–		673.1	14	*L*	7.46	100μm	8.34	2
$\lg F_{H\beta}(mW.m^{-2})$		$-11.9 \pm .2$	ASTR91			*Photom.*	PPFS87	*Radio* 2*cm*		
								(*mJy*) 6*cm*	25	ZPB89

Central Star:
B 12.72 *V* 12.12 *Qual:* A 83..1191, TASG91 *Spectrum:* OB ? ATS91

Notes: Peculiar object
Distance (kpc) indiv.: ext. 2.5 (87..1516)
Distance (kpc) stat.: 2.83 (CaKa71); 0.7 (Ma84); 5.50 (CKS91)

Bibliography: *PK67*, AcMa77, Al73, Al74, He71, Hi71, Hig71, Kh89, Ko71, Ko72, PM87, Wa70, We89

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88..1516 Huemer G., Weinberger R. *Astron. Astrophys., Suppl. Ser. 72, 383-390* Candidates for promising extinction distances: SH 1-89, NGC 7048 and M 1-77.

089.8–00.6

Sh 1-89, PK 89–0°1, ARO 357, VV' 544, IRAS 21123+4733

			Disc.: Sharpless 1959	*Diameter (")*			
1950:	21 12 21.7	+47 33 39	IRAS	*opt.* 35.	CaKa71	*Expansion Velocities (km/s)*	
	21 12.3	+47 32	PK67			[OIII] 7.5	SOB85
2000:	21 14.1	+47 44	.			[NII] 16	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-03						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	118	$H\alpha$	656.3 *nm*	639	12μm	0.89	1
[*OIII*]	436.3	–	[*NII*]	658.4	823	25μm	0.25	1
	500.7	433	[*SII*]	671.7		60μm	2.14	3
HeI	587.6	–		673.1		100μm	20.15	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.1 \pm .3$	KSK90, ASTR91					

Central Star: AG82 423 —
m_{pg} 19.7 *Qual:* P PK67

Notes: Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) indiv.: ext. 2.0 (87..1516)
Distance (kpc) stat.: 0.9-1.8 (CaKa71); 1.6 (Ma84); 1.94 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, ChLo72, Hi71, Iw73, KrK68, MeHa75, Ru70, Sa84, ZuAl86

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089.8–05.1

IC 5117, PK 89−5°1, ARO 112, VV 266, VV' 552, IRAS 21306+4422

			Disc.: Fleming 1905	*Diameter (″)*		*Rvel:* −26.1 ± 1.3 STPP83	
1950:	21 30 37.2	+44 22 31	IRAS	*opt.* 1.2	81..1008	*Expansion Velocities (km/s)*	
	21 30 36.7	+44 22 28	AK90			[OIII] 16.5	We89
2000:	21 32 30.9	+44 35 47	.	*radio* 1.5	AK90	[NII] 21.5	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-02					
HeII 468.6 *nm*	12	*Hα* 656.3 *nm*	429		
[OIII] 436.3	17	[NII] 658.4	94		
495.9	551	[SII] 671.7			
HeI 587.6	22	673.1			

IR Class: N		*IRAS Fluxes (Jy)*		*Qual.*
J	12.08	12μm	11.27	3
H	11.82	25μm	47.07	3
K	10.58	60μm	24.39	3
L		100μm	8.76	3

$\lg F_{H\beta}(mW.m^{-2})$ −11.37 ± .01 Kle78	*Photom.* KHM86	*Radio 2cm*	
IUE Spectra: *LW*(2) *SW*(2)	*Spectr.* 86...187	*(mJy) 6cm* 175	AK90

Central Star: AG82 431 — CSI +44-21305 0; HD 205211; EM* CDS 1256
B 17.5 *V* 16.7 *Qual:* D SK85 *Spectrum:* WR Wa70

Distance (kpc) indiv.: ext. 2.5 (Po83); ext. 1.7 (Sab86)
Distance (kpc) stat.: 7.78 (CaKa71); 8.5 (Ca76); 2.28 (Ac78); 1.00 (Da82); 0.80 (AGNR84); 1.7 (Ma84) 1.33 (CKS91)

Bibliography: PK67, AG82, AGNR85, Ac80, AcMa77, AiRo81, AiRo82, Al65, Al68, Al82, AlCz79, AlCz83, AlEp76, AlLi68, AlWa70, Alle73, Ar70, ArKo68, BLTA81, CWA69, ChLo76, CoBa74, CoBa80, Cu74, DFHM67, De71, FaM86, FaMa86, FaMa87, GPG86, GPY79, Gol87, Gr71, Gu70, Gu88, HaZu91, He71, He90, Hi71, Hi73, Hig71, Ii81, Is84, IwKa65, KPK81, KVLS81, Ka66, Ka69, Ka70, Ka76, Ka79, Ka80, Ka81, Ka86, Kal78, Kal80, Kh76, Kh84, Khr76, Khro76, Kos76, LNP89, LePo88, Ma88, MaFa85, MaFa86, MiS77, NPP80, PBBE84, PPT88, Pe91, PeF73, PeFr72, PeFr73, Ph84, Phi84, PiKh79, RRA82, SGBO84, SOB85, SSAG87, SWPD87, Sa84, SaHa82, SaMi78, Sabb86, Sc81, Sh85, StKa89, TASG91, TPZ87, Te80, ThDa70, VKDa65, VKda65, Vo70, VoCo90, WPSD88, ZTPS89, ZuAl86

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091.6+01.8

We 1-11, PK 91+1°1, IRAS 21092+5035

			Disc.: Weinberger 1977	*Diameter* (″)	
1950:	21 09 14.8	+50 35 10	IRAS	*opt.* 25. 77..1547	
	21 09 13.8	+50 34 48	77..1547		
2000:	21 10 52.5	+50 47 07	.		

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1988-06-19						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100:	12μm	0.25	1
[*OIII*]	436.3	–	[*NII*]	658.4	150:	25μm	0.29	1
	500.7	171:	[*SII*]	671.7		60μm	2.18	3
HeI	587.6	–		673.1		100μm	31.38	1

Central Star: AG82 422 — *B* > 21. Ko72

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091.6–04.8

K 3-84, PK 91–4°1, IRAS 21369+4546

			Disc.: Kohoutek 1972	*Diameter* (″)	
1950:	21 36 56.1	+45 46 56	IRAS	*opt.* 8. ATS91	
	21 36 55.2	+45 46 54	Ko72		
2000:	21 38 48.9	+46 00 29	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-02						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	9:	$H\alpha$	656.3 *nm*	432	12μm	0.56	1
[*OIII*]	436.3	6:	[*NII*]	658.4	664	25μm	0.25	1
	500.7	958	[*SII*]	671.7	45:	60μm	0.76	3
HeI	587.6	22		673.1	49:	100μm	2.21	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.4 \pm .2$	ASTR91					

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

092.1+05.8

K 3-79, PK 92+5°1

Disc.: Kohoutek 1972				*Diameter* (″)	
				opt. 11.5 Ko72	
1950:	20 51 46.2	+53 34 18	Ko72		
2000:	20 53 13.7	+53 45 43	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-02

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1200
[*O*III]	436.3	–	[*N*II]	658.4	900
	500.7	1280	[*S*II]	671.7	240:
*He*I	587.6	–		673.1	204:

$\lg F_{H\beta}(mW.m^{-2})$ $-13.8 \pm .4$ ASTR91

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

093.3–00.9

K 3-82, PK 93–0°1, IRAS 21291+4946

Disc.: Kohoutek 1972				*Diameter* (″)		
1950:	21 29 06.2	+49 46 52	IRAS	*opt.* 19. Ko72	*Expansion Velocities* (*km/s*)	
	21 29 07	+49 46.9	Ko72		[OIII] 20.	We89
2000:	21 30 52	+50 00.1	.	*radio* 25. ZPB89	[NII] 19	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29

*He*II	468.6 *nm*	160	*Hα*	656.3 *nm*	620
[*O*III]	436.3	–	[*N*II]	658.4	137
	500.7	938	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.0 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.34	1
25μm	2.35	3
60μm	4.08	3
100μm	22.75	1

Radio	*2cm*		
(*mJy*)	*6cm*	30	ZPB89

Central Star: AG82 428 —
B 19.5 Ko72

Distance (kpc) indiv.: ext. 1.9 (87.28024)
Distance (kpc) stat.: 2.68 (CKS91)

Bibliography: AG82, AcMa77, Ko71, Ko78, SSB86, Sa86, We77

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093.3–02.4

M 1-79, PK 93–2°1, ARO 365, VV 268, VV'555, IRAS 21351+4842

			Disc.: Minkowski 1946	*Diameter (")*		*Rvel:* −24.0 ± 25.0 STPP83	
1950:	21 35 11.7	+48 42 26	IRAS	*opt.* 33.	CaKa71	*Expansion Velocities (km/s)*	
	21 35 11.7	+48 42 41	Kal83			[OIII] 19.0	84..2592
2000:	21 37 00.6	+48 56 12	.	*radio* 30.	ZPB89	[NII] 23.	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-01					
HeII	468.6 *nm*	34	$H\alpha$ 656.3 *nm*	318	
[OIII]	436.3	–	[NII] 658.4	551	
	500.7	699	[SII] 671.7		
HeI	587.6	36	673.1		

$\lg F_{H\beta}(mW.m^{-2})$	$-11.73 \pm .01$	Kal83

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	0.36	3
60μm	2.84	3
100μm	5.04	1

Radio	*2cm*		
(mJy)	*6cm*	19	ZPB89

Central Star: AG82 435 —
V 19.11 *Qual:* A JK89

Distance (kpc) indiv.: ext. 2.0 (87.28024)
Distance (kpc) stat.: 1.32 (CaKa71); 1.15 (Ac78); 1.0 (Ma84); 2.63 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, Hi71, Iw73, KaJa89, Kle78, MeHa75, Pe91, Ru70, SOB85, Sa84, Te80, Zi75

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093.4+05.4

NGC 7008, PK 93+5°2, ARO 39, VV 258, VV' 540, IRAS 20590+5420

			Disc.: Pease 1917	*Diameter (")*		*Rvel:* −74.2 ± 2.0 STPP83	
1950:	20 59 04.9	+54 20 49	IRAS	*opt.* 86.	CJA87	*Expansion Velocities (km/s)*	
	20 59 05.1	+54 20 41	PK67		CaKa71	[OIII] 40.0	Sa84
2000:	21 00 32.7	+54 32 29	.	*radio* 95.	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-20 W					
HeII	468.6 *nm*	103	$H\alpha$ 656.3 *nm*	553	
[OIII]	436.3	10:	[NII] 658.4	70	
	500.7	728	[SII] 671.7		
HeI	587.6	8:	673.1		

$\lg F_{H\beta}(mW.m^{-2})$	$-10.86 \pm .01$	CD61 , Kal83
IUE Spectra:	*LW*(5)	*SW*(5)

IR Class: .	
J	
H	
K	
L	
Spectr.	PPOJ86

IRAS Fluxes (Jy)		*Qual.*
12μm	1.50	3
25μm	24.45	3
60μm	44.27	3
100μm	35.43	3

Radio	*2cm*		
(mJy)	*6cm*	217	ZPB89

Central Star: AG82 417 — PLX 5049; CSI +54 -20591; GCRV 13203
U 12.99 *B* 13.75 *V* 13.23 *Qual:* A 72.30001, SK85

O7 All76
O(H) Me91

Notes: Monochromatic images (84..4088, JDK86, CJA87, Ba87)
Distance (kpc) indiv.: ext. 1.3 (Ac78); ext. 0.79 (Po80); ext. 1.1 (Po83)
Distance (kpc) stat.: 0.6-1.1 (CaKa71); 0.8 (Ca76); 0.82 (Ac78); 0.79 (Da82); 0.71 (AGNR84); 0.9 (Ma84) 0.86 (CKS91)

Bibliography: PK67, AG82, AGNR85, AGR89, Ab66, AcMa77, Al65, Al68, AlCz73, AlEp76, AlLi68, BOS74, Ba89, Bo68, Ca84, CaKo68, CaWy76, CePe83, CePe85, ChLo76, Cu74, DFHM66, DFHM67, De71, Dr80, FaMa88, GPY79, Gie83, Gr71, Gu70, Gu88, HaSe66, HaZu91, He71, HeAu87, Hi71, Hi73, Hig71, Ii81, Iw73, IwKa65, Jo80, KHM86, KSDN68, Ka69, Ka70, Ka76, Ka81, Ka85, Kh79, Kr69, LH91, LNP89, LePo88, MeHa75, MiS77, MiSa77, PBBE84, PSK78, PWWD77, PWWF78, PaPe88, Pe75, Pe91, PeTo83, Ph84, PhMa88, Phi84, PiKh79, RRA82, Ru70, SGBO84, SKC74, SaHa82, SaMi78, Sab86, Sabb86, Sc81, Sh85, StKa89, StSh83, TASG91, TCS67, Te68, Th68, ThDa70, VoCo90, ZTPS89, ZuAl86

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093.5+01.4

M 1-78, PK 93+1°1, ARO 358, VV 264, VV' 548, IRAS 21190+5140

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −88.1 ± 1.6 STPP83
1950:	21 19 05.7	+51 40 39	IRAS	*opt.* 6.4	CaKa71	
	21 19 05.7	+51 40 38	Kal83			
2000:	21 20 44.9	+51 53 25	.	*radio* 3.8	Is84	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-20						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3305	*J*	12μm	39.23	3
[*OIII*]	436.3	–	[*NII*]	658.4	639	*H*	25μm	377.50	3
	500.7	298	[*SII*]	671.7		*K*	60μm	589.60	3
HeI	587.6	–		673.1		*L*	100μm	408.20	3
$\lg F_{H\beta}(mW.m^{-2})$		−12.88 ± .24	Kal83						
						Spectr. PPOJ86	*Radio* (*mJy*)	*2cm*	
								6cm 884	ZPB89

Notes: Possibly a H II region
Distance (kpc) stat.: 4.7 (CaKa71); 4.43 (Ac78); 3.1 (Ma84); 0.70 (CKS91)

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094.0+27.4

K 1-16, PK 94+27°1, IRAS 18216+6419

	Disc.: Kohoutek 1963	*Diameter* (″)	
1950:	18 21 36.3 +64 19 42 IRAS	*opt.* 114. CaKa71	*Expansion Velocities* (*km/s*)
	18 21 35.3 +64 20 30 Ka83		[OIII] 22.5 We89
2000:	18 21 50.6 +64 22 05 .	*radio* 94. ZPB89	[NII] 23 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-06-19					*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	123:	$H\alpha$	656.3 *nm* 230	12μm	1.12	1
[OIII]	436.3	–	[*N*II]	658.4 –	25μm	0.25	1
	500.7	301:	[*S*II]	671.7	60μm	1.32	1
*He*I	587.6	–		673.1	100μm	1.15	3

$\lg F_{H\beta}(mW.m^{-2})$ $-12.00 \pm .04$ Ka83
IUE Spectra: *LW*(2) *SW*(19) *FES*(2)

Central Star: AG82 307 — DS Dra
U 13.45 *B* 14.74 *V* 15.08 *Qual:* A 72.30001, TASG91 *Spectrum:* hg O(C) 84....70

Notes: Low amplitude pulsating nucleus, dominant period of 28.3min, similar to the hot pulsator PG 1159-035 (84....70).
Distance (kpc) indiv.: wind 0.38 (85....32)
Distance (kpc) stat.: 1.3 (CaKa71); 2.5 (Ma84); 1.00 (CKS91)

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85....32 Kaler J.B., Mo J.-E., Pottasch S.R. *Astrophys. J. 288, 305-309* Wind distances for planetary nebulae.
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094.5–00.8

K 3-83, PK 94−0°1, IRAS 21339+5040

			Disc.: Kohoutek 1972	*Diameter* (″)	
1950:	21 33 58.6	+50 40 50	IRAS	*opt.* 6. : ATS91	
	21 33 58.8	+50 40 48	Ko72		
2000:	21 35 44.1	+50 54 16	.	*radio* 5. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-02					
HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	1700	
[*OIII*]	436.3	–	[*NII*] 658.4	3600	
	500.7	900	[*SII*] 671.7		
HeI	587.6	–	673.1		
$\lg F_{H\beta}(mW.m^{-2})$		$-14.4 \pm .3$ ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.27	1
25μm	0.20	3
60μm	2.03	3
100μm	443.20	1
Radio 2*cm*		
(*mJy*) 6*cm*	6	ZPB89

Distance (kpc) stat.: 9.54 (CKS91)

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

095.1-02.0

M 2-49, PK 95−2°1, ARO 367, VV 269, VV' 556, IRAS 21414+5011

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* −134.0 ± 25.0STPP83	
1950:	21 41 29.6	+50 11 29	IRAS	*opt.* 8.	CS90	*Expansion Velocities* (*km/s*)	
	21 41 29.3	+50 11 28	AK90			[OIII] 12.0	We89
2000:	21 43 17.6	+50 25 15	.	*radio* 2.5	AK90	[NII] 29.5	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-20					*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm* 734	*J*		12μm	0.58	3
[*OIII*]	436.3	–	[*NII*]	658.4 65	*H*		25μm	1.83	3
	500.7	1217	[*SII*]	671.7	*K*	> 8.1	60μm	1.95	1
HeI	587.6	29		673.1	*L*		100μm	90.86	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.96 ± .10	ASTR91		*Photom.*	CoBa74	*Radio* 2*cm*		
							(*mJy*) 6*cm*	35	AK90

Distance (kpc) stat.: 2.87 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Al74, BlPu81, Hi71, Is84, Ru70, SOB85, Sa84

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095.2+07.8

A 73, PK 95+7°1, A55 60, ARO 356, VV' 539, IRAS 20551+5714

			Disc.: Abell 1955	*Diameter* (″)			
1950:	20 55 08.4	+57 14 26	IRAS	*opt.* 73.	CaKa71	*Expansion Velocities* (*km/s*)	
	20 55 07.5	+57 14 21	Ka83			[OIII] 20.	SSB86
2000:	20 56 26.3	+57 25 56	.			[NII] 22.5	SSB86

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1988-01-25						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100:	12μm	0.31	1
[*OIII*]	436.3	–	[*NII*]	658.4	111:	25μm	0.25	1
	500.7	82:	[*SII*]	671.7		60μm	0.95	3
HeI	587.6	–		673.1		100μm	4.00	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.82 ± .08	Ka83					

Central Star: AG82 416 —
m_{pg} 21.1 *Qual:* P PK67

Notes: Monochromatic images (JDK86)
Distance (kpc) stat.: 1.72 (CaKa71); 2.8 (Ma84); 1.86 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Hi71, Iw73, Kh79, KrK68, Ru70, We89, ZuAl86

095.2+00.7

K 3-62, PK 95+0°1, ARO 362, IRAS 21301+5220

			Disc.: Kohoutek 1964	*Diameter* (″)		*Rvel:* −53.0 ± 4.0 STPP83	
1950:	21 30 09.0	+52 20 33	IRAS	*opt.* 3. :	ATS91	*Expansion Velocities* (*km/s*)	
	21 30 09.0	+52 20 34	AK90			[OIII] 16.0	RRA82
2000:	21 31 50.1	+52 33 51	.	*radio* 2.5	AK90		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-28					*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2239	*J*	12.42	12μm	2.05	3
[*O*III]	436.3	–	[*N*II]	658.4	349	*H*	12.00	25μm	13.00	3
	500.7	1255	[*S*II]	671.7		*K*	10.89	60μm	6.42	3
*He*I	587.6	80		673.1		*L*		100μm	32.61	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.07 ± .10	ASTR91			*Photom.*	KHM86	*Radio*	*2cm*	
IUE Spectra:		*LW*(0)	*SW*(1)					(*mJy*)	*6cm* 115	AK90

Central Star: AG82 429 —
Spectrum: Contin. AG82

Distance (kpc) stat.: 2.27 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Al74, Alle73, BlPu81, ChLo76, CoBa74, Hi71, Ka76, Kh84, Ko65, Kon83, PPT88, Ru70, Sa84, Sa86, VoCo90, We89

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89.50001 Terzian Y. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed. S. Torres-Peimbert. Planetary nebulae, 17-28* Radio images of planetary nebulae.

096.3+02.3

K 3-61, PK 96+2°1, ARO 361, IRAS 21284+5414

			Disc.: Kohoutek 1964	*Diameter* (″)			
1950:	21 28 24.1	+54 14 14	IRAS	*opt.* 6.1	PK67		
	21 28 23.8	+54 14 17	PK67				
2000:	21 30 00.6	+54 27 30	.	*radio* 6.	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	835	12μm	0.27	1
[*O*III]	436.3	–	[*N*II]	658.4	60	25μm	0.98	3
	500.7	830	[*S*II]	671.7		60μm	2.09	3
*He*I	587.6	40		673.1		100μm	5.01	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.2 ± .2	ASTR91			*Radio*	*2cm*	
						(*mJy*)	*6cm* 14	ZPB89

Central Star: AG82 427 —
$B > 15.9$ $V > 14.8$ 72.30001
Spectrum: WC ATS91

Distance (kpc) stat.: 1.09 (CaKa71); 1.1 (Ma84); 7.34 (CKS91)

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83..3115 Lutz J.H., Kaler J.B. *Publ. Astron. Soc. Pac. 95, 739-744* Misclassified and misidentified planetary nebulae and nuclei.

096.4+29.9

NGC 6543, PK 96+29°1, ARO 6, VV 143, VV' 335

			Disc.: Herschel 1786	*Diameter* (″)		*Rvel:* −66.1 ± 0.4 STPP83	
				opt. 19.5	CJA87	*Expansion Velocities* (*km/s*)	
1950:	17 58 34.2	+66 38 05	PK67		CaKa71	[OIII] 19.5	We89
2000:	17 58 33.4	+66 37 59	.	*radio* 15.	75...238	[NII] 20	We89

Intens. (*Hβ* = 100) OHP-CAR+CCD 1986-12-21						*IR Class:* N	
HeII	468.6 *nm*	6	*Hα*	656.3 *nm*	293	*J* 8.28	
[OIII]	436.3	–	[*N*II]	658.4	–	*H* 8.99	
	495.9	–	[*S*II]	671.7	1.3	*K* 8.44	
HeI	587.6	23		673.1	3	*L*	
lg$F_{H\beta}$($mW.m^{-2}$) −9.61 ± .02 60...353, Kal83						*Photom.* PPFS87	
IUE Spectra: *LW*(9) *SW*(9)						*Spectr.* 87..1381	

Central Star: AG82 279 — AG +66 812; BD +66 1066; GCRV 10447; HD 164963; PLX 4128.0; EM* CDS 945; DC 36017
B 11.23 *V* 11.14 *Qual:* B Dr80, SK85 , TASG91 *Spectrum:* Of/WR(H) Me91

Notes: Multiple-shell PN; monochromatic images (JDK86, CJA87, Ba87)
Distance (kpc) indiv.: wind 0.89 (85....32)
Distance (kpc) stat.: 1.5 (CaKa71); 1.54 (Ca76); 0.65 (Ac78); 0.64 (Da82); 4.14 (PhPo84); 0.55 (AGNR84); 0.7 (Ma84); 0.98 (CKS91)

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097.5+03.1

A 77, PK 97+3°1, A55 63, ARO 363, Sh 2-128, VV' 551, IRAS 21306+5540

			Disc.: Abell 1955	*Diameter (″)*	*Rvel:* −113.4 ± 23.0STPP83
1950:	21 30 37.1	+55 40 05	IRAS	*opt.* 40. PK67	*Expansion Velocities (km/s)*
	21 30 36.2	+55 39 27	Kal83		[OIII] 7.5 SSB86
2000:	21 32 10.7	+55 52 46	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-01						*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	91:	$H\alpha$	656.3 *nm*	6432	12μm	8.86	3
[OIII]	436.3	–	[*N*II]	658.4	–	25μm	94.77	3
	500.7	1777	[*S*II]	671.7		60μm	714.60	3
*He*I	587.6	–		673.1		100μm	958.00	3
$\lg F_{H\beta}(mW.m^{-2})$		−12.40 ± .10	Kal83					

Central Star: AG82 430 —
B 16.86 *V* 15.70 *Qual:* B SK85 , TASG91

Notes: Monochromatic images (JDK86). Possibly a H II region
Distance (kpc) stat.: 1.4 (CaKa71); 1.5 (Ma84); 0.94 (CKS91)

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097.6–02.4

M 2-50, PK 97–2°1, ARO 368, VV 271, VV' 558, IRAS 21559+5127

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* −136.0 ± 25.0STPP83	
1950:	21 55 55.7	+51 28 00	IRAS	*opt.* 4.	CaKa71	*Expansion Velocities* (*km/s*)	
	21 55 51.2	+51 27 20	PK67			[OIII] 24.0	We89
2000:	21 57 41.8	+51 41 41	.	*radio* 4.5	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-01-21					
HeII 468.6 *nm*	–	*Hα* 656.3 *nm*	618		
[*OIII*] 436.3	13:	[*NII*] 658.4	–		
500.7	1319	[*SII*] 671.7			
HeI 587.6	27:	673.1			
$\lg F_{H\beta}(mW.m^{-2})$	−12.48 ± .03	Bark78			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.18	3
60μm	0.59	3
100μm	10.84	1
Radio 2cm		
(*mJy*) *6cm*	6.5	ZPB89

Distance (kpc) stat.: 5.36 (CaKa71); 4.83 (Ac78); 1.5 (Ma84); 10.0 (CKS91)

Bibliography: *PK67*, Ac80, AcMa77, Bar78, FaMa88, Hi71, Ii81, Ka79, Ka80, Ka81, Ka86, Kal80, Kle78, Kon78, Pe91, Ru70, SOB85, Sa84, SaMi78, StKa89

098.1+02.4

K 3-63, PK 98+2°1, ARO 366, IRAS 21375+5532

			Disc.: Kohoutek 1964	*Diameter* (″)		
1950:	21 37 34.9	+55 32 27	IRAS	*opt.* 7.	CaKa71	
	21 37 34.5	+55 32 27	Kal83			
2000:	21 39 11.6	+55 46 04	.			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-01-23					
HeII 468.6 *nm*	134:	*Hα* 656.3 *nm*	746		
[*OIII*] 436.3	–	[*NII*] 658.4	–		
500.7	966	[*SII*] 671.7			
HeI 587.6	30:	673.1			
$\lg F_{H\beta}(mW.m^{-2})$	−12.97 ± .06	Kal83			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.20	3
60μm	1.30	3
100μm	7.26	1
Radio 2cm		
(*mJy*) *6cm*	29	ZPB89

Central Star:
B 15.78 *V* 15.12 *Qual:* B SK85

Distance (kpc) stat.: 3.89 (CaKa71); 1.7 (Ma84); 5.78 (CKS91)

Bibliography: *PK67*, AcMa77, Gu88, Hi71, Ko65, Kon83, Ru70, Sa86, Sh85, TASG91

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098.2+04.9

K 3-60, PK 98+4°1, IRAS 21259+5726

			Disc.: Kohoutek 1964	*Diameter* (″)	
1950:	21 25 58.1	+57 26 01	IRAS	*opt.* 3. : ATS91	
	21 25 57.8	+57 26 00	AK90		
2000:	21 27 26.4	+57 39 06	.	*radio* 1.9 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-22					
HeII	468.6 *nm*	33	$H\alpha$	656.3 *nm*	1794
[*OIII*]	436.3	–	[*NII*]	658.4	504
	500.7	1586	[*SII*]	671.7	
HeI	587.6	38		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		−13.17 ± .18 Kal83			

IR Class: .		*IRAS Fluxes* (*Jy*)		*Qual.*
J		12μm	1.98	3
H		25μm	5.69	3
K	> 8.4	60μm	5.04	3
L		100μm	32.57	1
Photom.	AI74	*Radio* 2*cm*		
		(*mJy*) 6*cm*	43 AK90	

Distance (kpc) stat.: 3.89 (CKS91)

Bibliography: *PK67*, AlKe87, BlPu81, He90, Ko65, Pe91, Sa86, ZTPS89

100.0–08.7

Me 2-2, PK 100−8°1, Anon.22h29m, ARO 373, IRAS 22296+4732

			Disc.: Merrill 1941	*Diameter* (″)	*Rvel:* −152.0 ± 5.0 STPP83
1950:	22 29 38.3	+47 32 41	IRAS	*opt.* 5. ATS91	*Expansion Velocities* (*km/s*)
	22 29 37.7	+47 32 37	AK90		[OIII] 8.0 We89
2000:	22 31 43.6	+47 48 04	.	*radio* 1.2 AK90	[NII] 15.5 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-01					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	sat.
[*OIII*]	436.3	6	[*NII*]	658.4	161
	495.9	331	[*SII*]	671.7	0.5:
HeI	587.6	25		673.1	0.8:
$\lg F_{H\beta}(mW.m^{-2})$		−11.16 ± .04 Kale76, Bark78			
IUE Spectra:		*LW*(3) *SW*(4)			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.23	3
25μm	4.11	3
60μm	1.38	3
100μm	1.30	1
Radio 2*cm*		
(*mJy*) 6*cm*	40 AK90	

Central Star: AG82 442 —
B 15.4 *V* 16.1 *Qual:* C SK85

Distance (kpc) stat.: 1.90 (AGNR84); 5.00 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac80, AcMa77, AI74, AlKe85, AlKe87, Ba78, Bar78, FaMa88, Gol87, He90, Hi71, Is84, KHM86, KPK81, Ka70, Ka76, Ka78, Ka79, Ka80, Ka86, Kal76, Kal78, Kal80, Kh76, Kh79, Khr76, Kle78, LePo88, MaFa85, NPP80, PM87, PPFS87, PPT88, Pe91, PeSe80, PeTo83, PhMa88, Ru70, Sa84, Sh85, StKa89, TASG91, Te80, VKDA69, Vo70, ZTPS89

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83..3095 Torres-Peimbert S., Peimbert M. *Publ. Astron. Soc. Pac. 95, 601-602* Spectrophotometry of planetary nebulae of type I.

84..2707 Sabbadin F. *Mon. Not. R. Astron. Soc. 209, 889-894* High dispersion spectra of compact planetary nebulae.

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100.6–05.4

IC 5217, PK 100–5°1, ARO 85, VV 274, VV' 561, IRAS 22219+5042

			Disc.: Fleming 1904	*Diameter* (")		*Rvel*: −98.6 ± 0.4 STPP83	
1950:	22 21 55.9	+50 42 44	IRAS	*opt.* 6.6	CJA87	*Expansion Velocities (km/s)*	
	22 21 55.7	+50 42 47	GPG86		CaKa71	[OIII] 17.5	We89
2000:	22 23 55.8	+50 58 01	.	*radio* 2.0	Is84	[NII] 28	84.28021

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-01						*IR Class*: N		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	9	$H\alpha$	656.3 *nm*	372	*J*	11.75	12μm	0.38	3
[OIII]	436.3	12	[*N*II]	658.4	–	*H*	12.29	25μm	3.22	3
	500.7	1219	[*S*II]	671.7	3	*K*	11.51	60μm	4.53	3
*He*I	587.6	17		673.1	3	*L*		100μm	1.70	1
lg$F_{H\beta}$ −11.17 ± .01 71..9003, Bark78, Kle78						*Photom.* PeTo87		*Radio* 2cm		
IUE Spectra: *LW*(2) *SW*(4) *FES*(1)						*Spectr.* 86..2654		(*mJy*) 6cm 47.5		Is84

Central Star: AG82 439 — CSI +50-22218 0; HD 212534; EM* CDS 1337
B 15.4 *V* 15.5 Kle78 *Spectrum:* WNb? 70..9056

Notes: Monochromatic images (Ba87)
Distance (kpc) indiv.: ext. 1.5 (Po83); ext. 1.1 (Sab86)
Distance (kpc) stat.: 3.9 (CaKa71); 4.33 (Ca76); 3.27 (Ac78); 1.62 (Da82); 1.08 (PhPo84); 1.40 (AGNR84); 2.8 (Ma84); 4.65 (CKS91)

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71..9029 Robbins R.R., Daltabuit E., Cox D.P. *Astrophys. J. 169,L69* Reduced He abundance nebulae.
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101.8+08.7

A 75, PK 101+8°1, ARO 359, IRAS 21251+6240

			Disc.: Abell 1964	*Diameter (″)*	
1950:	21 25 11.4	+62 40 34	IRAS	*opt.* 56. CaKa71	*Expansion Velocities (km/s)*
	21 25 11.3	+62 40 23	Ka83		[OIII] 42.0 SOB85
2000:	21 26 24.1	+62 53 27	.	*radio* 57. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-01-25						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	230	12μm	0.25	1
[*OIII*]	436.3	–	[*NII*]	658.4	22:	25μm	0.61	3
	500.7	408	[*SII*]	671.7	35:	60μm	1.60	3
HeI	587.6	–		673.1	11:	100μm	8.06	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.00 \pm .10$ Ka83				*Radio 2cm*		
						(*mJy*) *6cm*	17	ZPB89

Central Star: AG82 426 —
m_{pg} 18.0 *Qual:* P PK67 *Spectrum:* IUE obsns 82.10001

Notes: Multiple-shell PN; monochromatic images (JDK86, CJA87)
Distance (kpc) stat.: 2.19 (CaKa71); 3.5 (Ma84); 1.83 (CKS91)

Bibliography: *PK67*, Ab66, Ac82, AcMa77, Gu88, Iw73, KSK90, Kh79, KrK68, Ru70, Sa84, Sabb86, We89, ZuAl86

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102.8–05.0

A 80, PK 102–5°1, A55 66, ARO 375, VV' 565

			Disc.: Abell 1955	*Diameter (″)*	
				opt. 135. CaKa71	*Expansion Velocities (km/s)*
1950:	22 32 43.8	+52 10 32	Ka83		[OIII] 18. SSB86
2000:	22 34 45.8	+52 26 04	.		[NII] 23 SSB86

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-12-23					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	227
	495.9	–	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-11.80 \pm .12$ Ka83			

Central Star: AG82 444 —
U 18.40 *B* 19.38 *V* 19.61 *Qual:* A KJL88

Notes: Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) stat.: 0.8 (CaKa71); 1.1 (Ma84); 1.74 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, Ab66, AcMa77, CaWy76, ChLo76, Hi71, Iw73, Jo80, KSK90, Kh79, KrK68, MeHa75, PiKh79, Ru70, We89, ZPB89

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102.9-02.3

A 79, PK 102−2°1, A55 65, ARO 372, VV' 562

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 54. CaKa71	*Expansion Velocities* (*km/s*)
1950:	22 24 21.5	+54 34 23	Ka83		[OIII] 12.5 SSB86
2000:	22 26 17.4	+54 49 41	.		[NII] 12.5 SSB86

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-08-01

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	480
	500.7	293	[*SII*]	671.7	79
HeI	587.6	–		673.1	83

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .3$ Ka83

Central Star: AG82 440 —
m_{pg} 18.7 *Qual:* P PK67

Notes: Monochromatic images (83..1022, JDK86, Ba87)
Distance (kpc) stat.: 1.1 (CaKa71); 1.3 (Ma84); 1.78 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Gu70, Hi71, Iw73, Kh79, KrK68, Pa90, PiKh79, Ru70, SK85, Sh85, We89, ZuAl86

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103.2+00.6

M 2-51, PK 103+0°1, ARO 369, VV 272, VV' 559, IRAS 22142+5713

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* -11.0 ± 25.0 STPP83
1950:	22 14 16.6	+57 13 42	IRAS	*opt.* 39. CaKa71	*Expansion Velocities* (*km/s*)
	22 14 15.6	+57 13 42	Ka83		[OIII] 10.5 SOB85
2000:	22 16 03.3	+57 28 41	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-01-23

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	481
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	958	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-11.97 \pm .04$ Kal83

IRAS Fluxes (*Jy*)

12μm	0.25	1
25μm	0.36	3
60μm	3.99	3
100μm	9.38	3

Central Star: AG82 437Bis —
B 19.2 *V* 20.4 KSK90

Notes: Foreground M star seen inside the PN. Monochromatic images (JDK86, Ba87)
Distance (kpc) stat.: 1.1-1.5 (CaKa71); 1.65 (Ac78); 1.5 (Ma84); 1.92 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Iw73, KaJa89, KrK68, MeHa75, Pa90, Ru70, SK85, Sa84, Sh85, TASG91, Te80

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103.7+00.4

M 2-52, PK 103+0°2, ARO 371, VV 273, VV' 560, IRAS 22187+5721

			Disc.: Minkowski 1947	*Diameter (")*	*Rvel:* −92.0 ± 25.0 STPP83
1950:	22 18 42.6	+57 21 16	IRAS	*opt.* 14. CaKa71	*Expansion Velocities (km/s)*
	22 18 41.8	+57 21 11	PK67		[OIII] 7.5 SOB85
2000:	22 20 31.1	+57 36 18	.	*radio* 14. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-01-23

HeII	468.6 *nm*	97:	*Hα*	656.3 *nm*	1159:
[OIII]	436.3	–	[NII]	658.4	2072
	500.7	1266	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.3 ± .2 ASTR91

IRAS Fluxes (Jy) *Qual.*

12μm	0.25	1
25μm	0.20	3
60μm	28.18	1
100μm	34.18	1

Radio (mJy) *2cm* *6cm* 14 ZPB89

Distance (kpc) stat.: 2.53 (CaKa71); 2.35 (Ac78); 1.5 (Ma84); 4.41 (CKS91)

Bibliography: *PK67*, AcMa77, Hi71, Iw73, Ru70, Sa84, We89

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104.1+07.9

NGC 7139, PK 104+7°1, ARO 54, VV 270, VV' 557

			Disc.: Curtis 1918	*Diameter (")*	*Rvel:* −54.4 ± 3.4 STPP83
				opt. 77. CJA87	*Expansion Velocities (km/s)*
1950:	21 44 51.2	+63 33 21	Ka83	CaKa71	[OIII] 19.5 We89
2000:	21 46 10.2	+63 47 15	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-01-23

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	432
[OIII]	436.3	–	[NII]	658.4	308
	500.7	769	[SII]	671.7	
HeI	587.6	38:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.80 ± .02 O63

Radio (mJy) *2cm* *6cm* < 3 ZPB89

Central Star: AG82 436 — *V* 18.72 *Qual:* B JK89

Notes: Monochromatic images (CJA87, Ba87); Monochromatic images by Hua C.T. and Louise R. Source IRAS 21448+6333 at a distance of 33"

Distance (kpc) indiv.: ext. 1.3 (Ac78); ext. 0.8 (Sab86); ext. 2.4 (88..1101)

Distance (kpc) stat.: 1.28 (CaKa71); 1.39 (Ca76); 1.15 (Ac78); 1.35 (Da82); 1.20 (AGNR84); 1.6 (Ma84) 1.38 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, Al69, Ba89, CaKo68, Cu74, DFHM67, De71, Gr71, Gr72, Gu70, Gu88, HaSe66, He71, Hi69, Hi71, Hi73, Hig71, Ii81, Iw73, KSK90, Ka69, Ka70, Ka76, Ka78, KaJa89, Kh79, Kr69, KrK68, MeHa75, MiSa77, PSK78, PiKh79, SOB85, Sa84, SaMi78, Sabb86, Sm71, TCS67, Te68, Th68, ZuAl86

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104.1+01.0

Bl 2-1, PK 104+0°1, ARO 370, IRAS 22184+5759

			Disc.: Blanco 1964	*Diameter (″)*	
1950:	22 18 28.7	+57 59 07	IRAS	*opt. St.* ATS91	
	22 18 28.4	+57 59 09	AK90		
2000:	22 20 16.6	+58 14 16	.	*radio* 1.6 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-12-03						*IR Class:* .		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2504	*J*		12μm	2.43	3
[OIII]	436.3	–	[*N*II]	658.4	319	*H*		25μm	7.21	3
	500.7	1439	[*S*II]	671.7		*K*	> 9.2	60μm	4.91	1
HeI	587.6	84		673.1		*L*		100μm	19.58	1
lg$F_{H\beta}(mW.m^{-2})$		−13.6 ± .3 ASTR91				*Photom.* AI74		*Radio* 2*cm*		
								(*mJy*) 6*cm*	54 AK90	

Distance (kpc) stat.: 3.24 (CKS91)

Bibliography: *PK67*, AcMa77, BlPu81, Hi71, Ru70, ZTPS89

104.2–29.6

Jn 1, PK 104–29°1, ARO 195, VV' 578

			Disc.: Jones 1941	*Diameter (″)*	*Rvel:* −67.0 ± . 86..1089
				opt. 320. CaKa71	*Expansion Velocities (km/s)*
1950:	23 33 24.1	+30 11 26	Ka83		[OIII] 15. 86..1089
2000:	23 35 53.6	+30 28 02	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-01-25					
HeII	468.6 *nm*	44:	$H\alpha$	656.3 *nm*	132:
[OIII]	436.3	–	[*N*II]	658.4	44:
	500.7	488	[*S*II]	671.7	
HeI	587.6	–		673.1	
lg$F_{H\beta}(mW.m^{-2})$		−11.48 ± .03 Ka83			
IUE Spectra:		*LW*(0) *SW*(2)			

Central Star: AG82 454 —
U 14.47 *B* 15.72 *V* 16.13 72.30001 *Spectrum:* Of/WR(C)? Me91

Distance (kpc) stat.: 0.47 (CaKa71); 0.9 (Ma84); 0.71 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, CaWy76, Gr72, HeAu87, Hi71, Iw73, Jo80, KSK90, Ka85, KrK68, LePo88, MeHa75, Sabb86, We89, ZPB89

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90..1206 Schonberner D., Napiwotzki R. *Astron. Astrophys. 231, L33-L35* Spectroscopic investigation of old planetaries. I. Detection of two new "PG 1159" central stars.
91..1023 Werner K., Heber U., Hunger K. *Astron. Astrophys. 244,437* Non-LTE analysis of four PG1159 stars.

104.4–01.6

M 2-53, PK 104−1°1, ARO 374, VV 276, VV' 564, IRAS 22303+5554

		Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* −62.0 ± 25.0 STPP83
1950:	22 30 21.0	+55 54 52 IRAS	*opt.* 14.8 CaKa71		*Expansion Velocities* (*km/s*)
	22 30 21.4	+55 54 55 PK67			[OIII] 11.0 84..1287
2000:	22 32 17.7	+56 10 23 .	*radio* 20. ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-01						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	433	12μm	0.25	1
[OIII]	436.3	–	[*N*II]	658.4	814	25μm	0.40	3
	500.7	957	[*S*II]	671.7		60μm	2.58	3
*He*I	587.6	27		673.1		100μm	5.43	3

$\lg F_{H\beta}(mW.m^{-2})$	−12.6 ± .3 KSK90, ASTR91	*Radio* 2*cm*	
IUE Spectra:	*LW*(1) *SW*(1)	(*mJy*) 6*cm* 11	ZPB89

Central Star: AG82 443 —
B 21.2 KSK90 *Spectrum:* WNa? 68.43751

Distance (kpc) stat.: 1.89 (CaKa71); 1.64 (Ac78); 0.9 (Ma84); 3.74 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, All76, CoBa74, Hi71, KVLS81, KaJa89, Ru70, Sa84, SmAl69, We89

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84..1287 Sabbadin F., Bianchini A., Hamzaoglu E. *Astron. Astrophys. 136, 200-205* Internal motions of fourteen planetary nebulae.

104.8–06.7

M 2-54, PK 104−6°1, ARO 377, EM* CDS 1406, VV 279, VV' 569, IRAS 22495+5134

		Disc.: Minkowski 1947	*Diameter* (″)		
1950:	22 49 30.3	+51 34 45 IRAS	*opt.* 4. : ATS91		*Expansion Velocities* (*km/s*)
	22 49.5	+51 35 PK67			[OIII] 9.0 We89
2000:	22 51.6	+51 51 .			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	421	12μm	0.54	3
[OIII]	436.3	–	[*N*II]	658.4	217	25μm	12.37	3
	495.9	–	[*S*II]	671.7		60μm	7.18	3
*He*I	587.6	–		673.1		100μm	3.12	3

$\lg F_{H\beta}(mW.m^{-2})$	−12.01 ± .07 Kal83	*Radio* 2*cm*	
		(*mJy*) 6*cm* 8	AK90

Central Star: AG82 447 — CSI +51-22495 0; LS III +51 42
B 12.17 *V* 12.08 *Qual:* A SK85 , TASG91 *Spectrum:* B ATS91

Notes: Possibly a H II region
Distance (kpc) stat.: 9.28 (CKS91)

Bibliography: *PK67*, ACPS87, AG82, AcMa77, Al73, Al74, BlPu81, Hi71, Ko71, Ko72, Ru70, Sh85, VoCo90, Wa70

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106.5–17.6

NGC 7662, PK 106–17°1, ARO 20, VV 285, VV' 575, IRAS 23234+4215

			Disc.: Herschel 1784	*Diameter* (″)		*Rvel:* −13.2 ± 0.7	STPP83
1950:	23 23 29.8	+42 15 37	IRAS	*opt.* 17.	CJA87	*Expansion Velocities* (*km/s*)	
	23 23 29.4	+42 15 36	PK67			[OIII] 27.5	We89
2000:	23 25 53.8	+42 32 06	.	*radio* 26.	ZPB89	[NII] 29	Sa84

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-23						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	17	$H\alpha$	656.3 *nm*	282	*J*	9.19	12μm	3.84	3
[OIII]	436.3	18	[NII]	658.4	8	*H*	9.40	25μm	35.05	3
	495.9	425	[SII]	671.7		*K*	8.89	60μm	37.36	3
HeI	587.6	13		673.1		*L*	7.8	100μm	17.18	3
$\lg F_{H\beta}$	−9.99 ± .01	60...353, 71..9003, Kle78				*Photom.*	PPFS87	*Radio*	*2cm*	
IUE Spectra:	*LW*(29)	*SW*(37)				*Spectr.*	84...265	(*mJy*)	*6cm* 631	ZPB89

Central Star: AG82 451 — AG +42 2277; BD +41 4773; GCRV 14695; HD 220733; PLX 5676; NSV 14555
B 13.6 *V* 13.2 *Qual:* D SK85

Notes: Multiple-shell PN; monochromatic images (83...190, JDK86, CJA87, Ba87); Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) indiv.: stand. 0.64 (70..9096); exp. 0.98 (Po80); ext. 0.53 (Po80)
Distance (kpc) stat.: 1.6 (CaKa71); 2.0 (Ca76); 1.15 (Ac78); 0.84 (Da82); 3.01 (PhPo84); 0.67 (AGNR84); 0.8 (Ma84); 1.16 (CKS91)

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107.4–00.6

K 4-57, PK 107−0°1, IRAS 22465+5813

			Disc.: Kohoutek 1972	*Diameter (″)*	
1950:	22 46 34.5	+58 13 14	IRAS	*opt. St.* CS90	
	22 46 34.8	+58 13 12	Ko72		
2000:	22 48 34.9	+58 29 04	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-22

HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	834	
[*OIII*]	436.3	–	[*NII*] 658.4	35:	
	500.7	91	[*SII*] 671.7		
HeI	587.6	–	673.1		

IRAS Fluxes (Jy)		*Qual.*
12μm	1.95	3
25μm	1.26	3
60μm	2.29	1
100μm	31.09	1

$\lg F_{H\beta}(mW.m^{-2})$ $-13.6 \pm .3$ ASTR91

Notes: Possibly a H II region

Bibliography: AcMa77, Al74, Ko71, Ko78, Sa86

107.4–02.6

K 3-87, PK 107−2°2, IRAS 22529+5626

			Disc.: Kohoutek 1972	*Diameter (″)*	
1950:	22 52 57.2	+56 26 08	IRAS	*opt.* 3.5 Ko72	
	22 53 01.8	+56 26 30	Ko72		
2000:	22 55 06.9	+56 42 31	.	*radio* 6. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-23

HeII	468.6 *nm*	92	*Hα* 656.3 *nm*	722	
[*OIII*]	436.3	–	[*NII*] 658.4	47:	
	500.7	518	[*SII*] 671.7		
HeI	587.6	–	673.1		

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	0.62	3
60μm	2.17	2
100μm	11.60	1

$\lg F_{H\beta}(mW.m^{-2})$ $-13.4 \pm .2$ ASTR91

Radio (mJy) 2cm / 6cm 4.5 ZPB89

Distance (kpc) stat.: 9.20 (CKS91)

Bibliography: AcMa77, Ko78, Sa86, We77

107.6–13.3

Vy 2-3, PK 107−13°1, VV 284, VV 284, VV' 574, IRAS 23206+4637

			Disc.: Miller 1945	*Diameter* (″)		*Rvel:* −49.6 ± 3.8	STPP83
1950:	23 20 36.5	+46 37 35	IRAS	*opt.* 4.2	81..1008	*Expansion Velocities* (*km/s*)	
	23 20 36.0	+46 37 29	Kal83		CaKa71	[OIII] 14	We89
2000:	23 22 58.0	+46 53 57	.	*radio* 4.6	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-28					
HeII 468.6 *nm*	3	$H\alpha$ 656.3 *nm*	sat.		
[OIII] 436.3	9	[*NII*] 658.4	–		
500.7	990	[*SII*] 671.7			
HeI 587.6	14	673.1			
$\lg F_{H\beta}(mW.m^{-2})$	−11.96 ± .03	Kal83, ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.73	3
60μm	1.38	3
100μm	1.02	1
Radio 2*cm*		
(*mJy*) 6*cm*	3	ZPB89

Central Star: AG82 450 —
B 14.32 *V* 14.72 *Qual:* B SK85 , TASG91

Notes: Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) stat.: 9.80 (CaKa71); 7.1 (Ac78); 7.4 (Ma84); 11.7 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, AlKe85, AlKe87, CaWy76, ChLo76, CoBa74, De71, Hi71, Iw73, Ka76, Ka80, Kon78, Kon83, RRA82, Ru70, SGBO84, SOB85, Sa84, Sh85, StKa89

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107.7+07.8

IsWe 2

			Disc.: Ishida et al 1987	*Diameter* (″)		*Rvel:* −8. ± 2.	IsWe87
				opt. 900.	IsWe87	*Expansion Velocities* (*km/s*)	
1950:	22 11 56.0	+65 39 01	IsWe87			[OIII] 8	IsWe87
2000:	22 13 22.8	+65 53 55	.			[NII] 12	IsWe87

Central Star:
U 17.02 *B* 18.06 *V* 17.71 IsWe87

Distance (kpc) stat.: 0.25

107.7-02.2

M 1-80, PK 107−2°1, Anon. 22h54m, ARO 113, VV 281, VV' 571, IRAS 22542+5653

		Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −58.0 ± 9.7 STPP83
1950:	22 54 14.8	+56 53 17 IRAS	*opt.* 8.	CaKa71	*Expansion Velocities* (*km/s*)
	22 54 14.6	+56 53 19 PK67			[OIII] 16.0 We89
2000:	22 56 19.7	+57 09 21 .	*radio* 8.	ZPB89	[NII] 34.0 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29

*He*II	468.6 *nm*	43	$H\alpha$	656.3 *nm*	434
[*O*III]	436.3	14	[*N*II]	658.4	200
	500.7	1222	[*S*II]	671.7	
*He*I	587.6	12		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.0 ± .2 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.27	1
25μm	0.83	3
60μm	1.27	3
100μm	15.99	1

Radio (*mJy*) *2cm* *6cm* 25 ZPB89

Central Star: AG82 448 —

Spectrum: Contin. AG82

Distance (kpc) stat.: 2.5-3.5 (CaKa71); 6.22 (Ca76); 2.5 (Ac78); 6.38 (Da82); 3.90 (AGNR84); 1.6 (Ma84); 5.50 (CKS91)

Bibliography: *PK67*, AGR89, Ac80, AcMa77, Al73, AlKe87, AlLi68, ChLo76, DFHM67, De71, He71, He90, Hi71, Hi73, Hig71, Ka76, Ka79, Ka81, Kh76, Kh79, Khr76, Ko71, Kon78, Kon83, LNP89, MaFa85, Pe91, PeSe80, Ru70, Sa84, StKa89, VKDA69, Vo70

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107.8+02.3

NGC 7354, PK 107+2°1, ARO 55, VV 278, VV' 567, IRAS 22384+6101

			Disc.: Lord Rosse 1862		*Diameter (")*	*Rvel:* -41.0 ± 2.0	85...525
1950:	22 38 28.1	+61 01 26	IRAS		*opt.* 23. CJA87	*Expansion Velocities (km/s)*	
	22 38 28.1	+61 01 25	GPG86			[OIII] 25.0	We89
2000:	22 40 20.1	+61 17 06	.			[NII] 27	83..1510

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-28						*IR Class:* .	*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	46	$H\alpha$	656.3 *nm*	870	*J*	12μm	3.56	3
[OIII]	436.3	12	[NII]	658.4	174	*H*	25μm	35.20	3
	500.7	1455	[SII]	671.7		*K*	60μm	48.98	3
HeI	587.6	27		673.1		*L*	100μm	28.76	3
$\lg F_{H\beta}(mW.m^{-2})$	$-11.58 \pm .01$	O63, 85..3094				*Spectr.* PPOJ86			

Central Star: AG82 445 —
$V > 16.2$ SK85

Notes: Monochromatic images (JDK86, CJA87, Ba87); Monochromatic images by Hua C.T. and Louise R.

Distance (kpc) indiv.: ext. >5.4 (73...125); dust 3.43 (85..3094); kinem. 1.5 (GPG86); ext. 1.7 (Sab86)

Distance (kpc) stat.: 1.6 (CaKa71); 1.68 (Ca76); 1.6 (Ac78); 0.88 (Da82); 0.64 (AGNR84)0.8 (Ma84) 1.27 (CKS91)

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73...125 Lutz J.H. *Astrophys. J. 181,135* Interstellar dust and distances to planetary nebulae.
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74..9059 Terzian Y. *IAU Symp. 60,417* Fine structure in P.N.
75...238 Scott P.F. *Mon. Not. R. Astron. Soc. 170,487-495* High resolution observations of planetary nebulae at 5 GHz.
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91..4004 Louise R., Kherous A. *Astrophys. Space Sci.,176,149* Observations of photometric profiles of two planetary nebulae.

108.4–76.1

BoBn 1, PK 108−76°1

		Disc.: Boeshaar et al 1977	*Diameter* (″)	*Rvel:* +196.0 ± 10.0STPP83	
			opt. 3. 78...119	*Expansion Velocities* (*km/s*)	
1950:	00 34 47	-13 58.7 77...257		[OIII] 7.5 SSB86	
2000:	00 37 18	-13 42.2 .			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21					
*He*II	468.6 *nm*	20	*Hα*	656.3 *nm*	154
[OIII]	436.3	7:	[*N*II]	658.4	18
	500.7	347	[*S*II]	671.7	
*He*I	587.6	8		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	−12.70 ± .10 ASTR91	*Radio* 2cm	
IUE Spectra:	*LW*(1) *SW*(2)	(*mJy*) 6cm< 0.3	ZPB89

Central Star: AG82 5Bis —

Notes: Galactic halo planetary nebula

Bibliography: Ac80, FaMa88, FeAl87, Ka79, Kh89, Kle78, Ko78, Ma88, PAKS91, PrPo83, ViFr85, We89, ZiPo91

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78.30033 Kaler J.B. *IAU Symposium 76,235-244* The abundances of He, N, Ne, Ar and Cl.
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90..1017 Torres-Peimbert S., Peimbert M., Pena M. *Astron. Astrophys. 233,540* Planetary nebulae with a high degree of ionization : NGC 2242 and NGC 4361.

110.1+01.9

PM 1-339, MRMG 1, IRAS 22568+6141

		Disc.: Preite-Martinez 1988	*Diameter* (″)	*Rvel:* −80. ± . 89.13501	
			opt. 5.5 89.13501	*Expansion Velocities* (*km/s*)	
1950:	22 56 51.6	+61 41 39 IRAS		[OIII] 70. 89.13501	
	22 56 51.2	+61 41 37 89.13501			
2000:	22 58 51.6	+61 57 42 .			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.84	3
25μm	15.87	3
60μm	20.82	3
100μm	46.54	1

Bibliography: PM88

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110.6–12.9

K 1-20, PK 110−12°1, Anon.23h24m, ARO 384

Disc.: Kohoutek 1963 1950: 23 36 42.0 +47 56 00 ZPB89 2000: 23 39 08.6 +48 12 37 .	*Diameter* (″) *opt.* 33. CaKa71	

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-12-22

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	183	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.93 \pm .09$ Ka83

Radio *2cm*
(*mJy*) *6cm* < 3 ZPB89

Central Star: AG82 455 —
m_{pg} 20.7 *Qual:* P PK67

Distance (kpc) stat.: 4.0 (CaKa71); 6.1 (Ma84); 4.18 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, CaWy76, Hi71, Iw73, KSK90, KrK68, Ru70

111.0+11.6

DeHt 5, PK 111+11°1

Disc.: Dengel et al 1980 1950: 22 18 21.8 +70 40 55 80..1011 2000: 22 19 33.7 +70 56 01 .	*Diameter* (″) *opt.* 530. 80..1011	*Expansion Velocities* (*km/s*) [OIII] 5. 86..1089 [NII] 5 86..1089

Central Star: AG82 438 —
B 15.1 80..1011

Notes: Monochromatic images (RM91)

Bibliography: AG82, IsWe87, We89

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111.2+07.0

KjPn 6, PK 111+6°1, K 4-58, IRAS 22472+6645

		Disc.: Kazaryan et al 1971		*Diameter (")*		*Rvel:* −68.3 ± 3.0 STPP83
1950:	22 47 16.2	+66 45 45	IRAS	*opt.* 6. :	Ko72	
	22 46.2	+66 47	71..9082			
2000:	22 47.9	+67 03	.	*radio* 10.	ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-23						*IR Class:* .		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	56:	$H\alpha$	656.3 *nm*	850	*J*		12μm	0.25	1
[*OIII*]	436.3	–	[*NII*]	658.4	806	*H*		25μm	0.23	3
	500.7	137:	[*SII*]	671.7		*K*	> 8.8	60μm	1.10	3
HeI	587.6	–		673.1		*L*		100μm	5.04	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.2 ± .4 ASTR91				*Photom.*	AI74	*Radio* 2cm		
								(*mJy*) 6cm	5	ZPB89

Distance (kpc) stat.: 6.63 (CKS91)

Bibliography: AcMa77, Ko71, Ko78, MWH81, Sa86, We77

71..9082 Kazaryan M.A., Parsamian E.S. *Astron. Tsirk. 602,6-8* New Planetary Nebulae.

111.8-02.8

Hb 12, PK 111−2°1, ARO 381, VV 286, VV'576, IRAS 23239+5754

		Disc.: Hubble 1921		*Diameter (")*		*Rvel:* −5.0 ± 2.3 STPP83
1950:	23 23 57.6	+57 54 24	IRAS	*opt.* 1.	81..1008	*Expansion Velocities (km/s)*
	23 23 57.3	+57 54 24	AK90			[OIII] 14 We89
2000:	23 26 14.8	+58 10 54	.	*radio* 0.7	AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	sat.	*J*	9.40	12μm	20.86	3
[*OIII*]	436.3	13	[*NII*]	658.4	–	*H*	9.66	25μm	71.22	3
	495.9	151	[*SII*]	671.7		*K*	8.74	60μm	35.79	3
HeI	587.6	29		673.1		*L*	6.27	100μm	12.97	3
$\lg F_{H\beta}$	−10.98 ± .05 O63, 76...515, ASTR91					*Photom.*	PPFS87	*Radio* 2cm		
IUE Spectra:	*LW*(4) *SW*(3)					*Spectr.*	87..1381	(*mJy*) 6cm	45	AK90

Central Star: AG82 452 — *Spectrum:* WN 7? 78..1076
B 14.5 *V* 13.8 *Qual:* C TASG91, 81..1008

Distance (kpc) stat.: 1.85 (CaKa71); 3.13 (Ca76); 2.3 (Ac78); 1.60 (AGNR84); 0.5 (Ma84); 2.24 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, AiRo81, AiRo82, Al74, Al77, AlCz79, AlCz83, AlKe85, AlLi68, All76, AmGu71, Bar78, Bark78, CoBa74, De71, FaM86, FaMa86, FaMa87, FeAl87, Gol87, Gu88, Hi71, Ii81, KAC76, KVLS81, Ka70, Ka76, Kal76, Kal80, Kh76, Kh79, Kh84, Khr76, Kos76, LePo88, Ma88, MaFa85, MaFa86, OlRa86, PFMA82, PM87, PPT88, Pe91, PeF73, PeFr72, PeFr73, PiKh79, PrPo83, RRA82, Ro87, Ru70, SGBO84, SK85, SOB85, Sa84, SaHa82, SaMi78, Sh85, SmAl69, StKa89, TPZ87, Te80, VKda65, Vo70, VoCo90, WPSD88, Wa77, ZTPS89, ZuAl86, ZuGa88

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79....18 Johnson H.M., Balick B., Thompson A.R. *Astrophys. J. 233,919-924* VLA observations of stellar P.N.

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81..1521 Swings J.P. *Astron. Astrophys. Suppl. Ser. 43,331-335* Multichannel spectrophotometry of peculiar emission-line objects with infrared excess
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112.5+03.7

K 3-88, PK 112+3°1

	Disc.: Kohoutek 1972	*Diameter (")* *opt.* 5.1 Ko72
1950: 23 10 11.0 +64 23 00 AK90		
2000: 23 12 15.1 +64 39 19 .		

Rvel: −54.7 ± 4.0 STPP83

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-03

HeII	468.6 *nm*	−	*Hα*	656.3 *nm*	1888
[OIII]	436.3	−	[NII]	658.4	1725
	500.7	2075	[SII]	671.7	
HeI	587.6	−		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −14.3 ± .3 ASTR91

Radio *2cm*
(*mJy*) *6cm*< 0.3 AK90

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

112.5–00.1

KjPn 8, PK 112–0°1, K 3-89

Disc.: Kazaryan et al 1971 1950: 23 22.1 +60 40 71..9082 2000: 23 24.3 +60 57 .	*Diameter* (″) *opt.* 3.8 Ko72	*Rvel:* −40.6 ± 10.0 STPP83 *Expansion Velocities* (*km/s*) [OIII] 5. SSB86 [NII] 7.5 SSB86
Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-03 *HeII* 468.6 *nm* – | *Hα* 656.3 *nm* 493: [*OIII*] 436.3 22: | [*NII*] 658.4 1315: 500.7 315 | [*SII*] 671.7 122 *HeI* 587.6 41 | 673.1 93		
$\lg F_{H\beta}(mW.m^{-2})$ −13.4 ± .2 ASTR91		*Radio* *2cm* (*mJy*) *6cm* < 1 ZPB89

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77, We89

71..9082 Kazaryan M.A., Parsamian E.S. *Astron. Tsirk. 602,6-8* New Planetary Nebulae.

112.9–10.2

A 84, PK 112–10°1, A55 70, ARO 115, VV' 581, IRAS 23452+5107

Disc.: Abell 1955 1950: 23 45 14.5 +51 07 18 IRAS 23 45 16.0 +51 07 17 Ka83 2000: 23 47 44.9 +51 23 57 .	*Diameter* (″) *opt.* 120. PK67	*Expansion Velocities* (*km/s*) [OIII] 16. SSB86 [NII] 25 SSB86
		IRAS Fluxes (*Jy*) *Qual.* 12*μm* 0.26 1 25*μm* 0.25 1 60*μm* 0.73 3 100*μm* 1.59 2
$\lg F_{H\beta}(mW.m^{-2})$ −11.74 ± .05 Ka83		

Central Star: AG82 458 — UBV 20433; CSI +51 -23452
U 17.67 *B* 18.67 *V* 18.49 Ab66

Notes: Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) stat.: 1.0 (CaKa71); 1.1 (Ma84); 1.56 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, Ca84, ChLo76, DFHM67, He71, Hi69, Hi71, Hi73, Hig71, Iw73, KSK90, KaJa89, Kh79, KrK68, MeHa75, Sabb86, We89, ZPB89

113.6–06.9

A 83, PK 113–6°1, A55 69, ARO 385, VV' 580

Disc.: Abell 1955 1950: 23 44.3 +54 28 PK67 2000: 23 46.8 +54 45 .	*Diameter* (″) *opt.* 47. PK67	
Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-23 *HeII* 468.6 *nm* – | *Hα* 656.3 *nm* 431 [*OIII*] 436.3 – | [*NII*] 658.4 69: 500.7 523 | [*SII*] 671.7 *HeI* 587.6 – | 673.1		
lg$F_{H\beta}(mW.m^{-2})$ $-12.5 \pm .4$ ASTR91		*Radio* *2cm* (*mJy*) *6cm* < 3 ZPB89
Central Star: AG82 457 — $m_{pg} > 21.$ *Qual:* P PK67		
Distance (kpc) stat.: 2.36 (CaKa71); 3.8 (Ma84)		

Bibliography: *PK67*, AG82, Ab66, AcMa77, He71, Hi71, Iw73, Kh79, Ru70

114.0–04.6

A 82, PK 114–4°1, A55 68, ARO 114, VV' 579, IRAS 23433+5646

Disc.: Abell 1955 1950: 23 43 21.1 +56 46 53 IRAS 23 43 20.6 +56 47 21 Ka83 2000: 23 45 47.5 +57 04 01 .	*Diameter* (″) *opt.* 94. CaKa71 *radio* 81. ZPB89	*Rvel:* -30.5 ± 3.3 STPP83 *Expansion Velocities* (*km/s*) [OIII] 25. SSB86 [NII] 32.5 SSB86
Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-12-22 *HeII* 468.6 *nm* – | *Hα* 656.3 *nm* 100 [*OIII*] 436.3 – | [*NII*] 658.4 39: 500.7 132 | [*SII*] 671.7 *HeI* 587.6 – | 673.1		*IRAS Fluxes* (*Jy*) *Qual.* 12μm 0.25 1 25μm 0.25 1 60μm 0.59 3 100μm 12.90 1
lg$F_{H\beta}(mW.m^{-2})$ $-11.72 \pm .12$ Ka83 *IUE Spectra:* *LW*(0) *SW*(2)		
Central Star: AG82 456 — *B* 16.20 *V* 14.92 *Qual:* A KJL88		
Notes: Monochromatic images (JDK86, Ba87) *Distance (kpc) stat.:* 1.2 (CaKa71); 2.0 (Ma84); 1.87 (CKS91)		

Bibliography: *PK67*, AG82, Ab66, AcMa77, Cu74, DFHM67, Dr80, He71, HeAu87, Hi69, Hi71, Hig71, Iw73, KSK90, Ka85, KaJa89, Kh79, KrK68, MeHa75, Sabb86, We89, ZuAl86

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116.2+08.5

M 2-55, PK 116+8°1, ARO 382, VV 287, VV' 577, IRAS 23296+7005

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* −22.6 ± 2.9 STPP83
1950:	23 29 41.1	+70 05 38	IRAS	*opt.* 39. CaKa71	
	23 29 41.0	+70 05 40	Ka83		
2000:	23 31 51.1	+70 22 14	.	*radio* 40. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-29					
HeII	468.6 *nm*	59:	$H\alpha$ 656.3 *nm*		387
[OIII]	436.3	–	[NII] 658.4		325
	500.7	660	[SII] 671.7		30:
HeI	587.6	18	673.1		19:
$\lg F_{H\beta}(mW.m^{-2})$		−12.16 ± .01 Ka83			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.33	3
60μm	3.34	3
100μm	4.95	3
Radio (*mJy*) *2cm*		
6cm	19 ZPB89	

Central Star: AG82 453 —
B 21.2 *V* 21.1 KSK90

Distance (kpc) stat.: 1.79 (CaKa71); 1.80 (Ac78); 1.9 (Ma84); 2.21 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, AlLi68, FaMa88, Hi71, Iw73, KaJa89, KrK68, MeHa75, Pe91, PeTo83, PhMa88, Ru70, Sabb86, Te80

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117.5+18.9

IC 1454, PK 117+18°1, A55 67, A 81, ARO 376, VV' 568, IRAS 22419+8010

			Disc.: Abell 1955	*Diameter* (″)	
1950:	22 41 56.9	+80 10 53	IRAS	*opt.* 28.5 CJA87	*Expansion Velocities* (*km/s*)
	22 42 12.0	+80 11 00	ZPB89		[OIII] 46. SSB86
2000:	22 42 35.8	+80 26 45	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-01					
HeII	468.6 *nm*	35:	$H\alpha$ 656.3 *nm*		242
[OIII]	436.3	–	[NII] 658.4		–
	500.7	703	[SII] 671.7		
HeI	587.6	–	673.1		
$\lg F_{H\beta}(mW.m^{-2})$		−12.17 ± .03 Kle78			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.61	1
25μm	0.25	1
60μm	0.48	3
100μm	1.45	1
Radio (*mJy*) *2cm*		
6cm	1.3 ZPB89	

Central Star: AG82 446 —
m_{pg} 18.8 *Qual:* P PK67

Notes: Multiple-shell PN; monochromatic images (CJA87, Ba87)
Distance (kpc) stat.: 2.63 (CaKa71); 3.3 (Ma84); 4.2 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, Ba89, CaWy76, Hi71, Iw73, KSK90, Ka76, Ka83, Kh79, KrK68, Pe91, Ru70, Sabb86, Sh85, We89

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118.0–08.6

Vy 1-1, PK 118−8°1, ARO 90, VV 2, VV' 4, IRAS 00160+5335

			Disc.: Vyssotsky 1942	*Diameter* (″)	*Rvel:* −50.4 ± 3.8 STPP83
1950:	00 16 01.4	+53 35 36	IRAS	*opt.* 5.2 SK85	*Expansion Velocities* (*km/s*)
	00 16 00.0	+53 36 00	AK90		[OIII] 10.0 We89
2000:	00 18 40.7	+53 52 39	.	*radio* 6. AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-02						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	3	$H\alpha$	656.3 *nm*	330	*J*	12.56	12μm	0.27	1
[*O*III]	436.3	5	[*N*II]	658.4	–	*H*	12.74	25μm	1.40	3
	500.7	858	[*S*II]	671.7		*K*	12.08	60μm	1.95	3
*He*I	587.6	18		673.1		*L*		100μm	1.63	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.54 ± .01 Kle78				*Photom.* PPFS87		*Radio* 2*cm*		
IUE Spectra:		*LW*(1) *SW*(0)						(*mJy*) 6*cm*	23 AK90	

Central Star: AG82 3 —
B 13.94 *V* 14.19 *Qual:* B SK85 , TASG91

Notes: Spectroscopic binary nucleus? (Dr80)
Distance (kpc) stat.: 1.90 (Ac78); 2.50 (AGNR84); 6.19 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac80, AcMa77, Al74, Alle73, BOS74, CS83, DFHM67, De71, FaMa88, Gol87, Gr71, He71, Hi71, Hig71, Ii81, Is84, KPK81, Ka70, Ka76, Ka79, Ka80, Ka81, Kal76, Kale76, Kh76, Kon78, Kon83, Li78, MaFa85, PM87, PiKh79, RRA82, Ru70, SGBO84, SOB85, Sa84, SaHa82, Sh85, StKa89, VKDa65, Vo70

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118.7+08.2

A 86, PK 118+8°2, A55 73, ARO 245, VV' 584

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 63. PK67	
1950:	23 59.0	+70 26	PK67		
2000:	00 01.6	+70 43	.		

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-12-22							
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100:		
[*O*III]	436.3	–	[*N*II]	658.4	–		
	500.7	129:	[*S*II]	671.7			
*He*I	587.6	–		673.1			
						Radio 2*cm*	
						(*mJy*) 6*cm*	< 5 ZPB89

Central Star: AG82 460 —

Bibliography: *PK67*, AG82, Ab66, AcMa77, Hi71, Kh79, KrK68, Ru70

118.8–74.7

NGC 246, PK 118−74°1, ARO 43, VV 4, VV' 7, IRAS 00445-1207

Disc.: Herschel 1785	*Diameter* (″)	*Rvel:* −46.0 ± 6.0 STPP83
1950: 00 44 32.3 -12 07 54 IRAS	*opt.* 245. CJA87	*Expansion Velocities* (*km/s*)
00 44 32.9 -12 08 44 Ka83	CaKa71	[OIII] 39.0 We89
2000: 00 47 03.8 -11 52 22 .	*radio* 280. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-22						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	94	$H\alpha$	656.3 *nm*	228	*J*	12μm	0.25	1
[OIII]	436.3	30	[*N*II]	658.4	–	*H*	25μm	2.43	3
	500.7	549	[*S*II]	671.7		*K*	60μm	9.11	1
*He*I	587.6	–		673.1		*L*	100μm	19.24	1

$\lg F_{H\beta}(mW.m^{-2})$ −10.53 ± .05 Kle78		*Radio* *2cm* 248 MiAl82	
IUE Spectra: *LW*(6) *SW*(8)	*Spectr.* PPOJ86	(*mJy*) *6cm* 247 Mi79	

Central Star: AG82 8 — BD -12 134; PLX 152; CSI -12 -00445; PHL 829; TD1 31081; UBV 644	WC OVI 78.30024
U 10.41 *B* 11.60 *V* 11.96 *Qual:* A KSDN68, 72.30001	O(C) Me91

Notes: Visual companion to the central star: $m_{pv} = 14.3, \rho = 3''8, \theta = 129°$ (73..9005), Sp=G8-K (All76, 79...19, 78.30024)

Distance (kpc) indiv.: spect. 0.47 (Po80); expans. 0.57 (Po83)

Distance (kpc) stat.: 0.4-0.7 (CaKa71); 0.50 (MiAl75); 0.47 (Ca76); 0.37 (Ac78); 0.46 (Da82); 0.45 (AGNR84); 0.4 (Ma84); 0.47 (CKS91)

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119.3+00.3

BV 5-1, PK 119+0°1, ARO 199, IRAS 00172+6242

		Disc.: Bohm-Vitense 1956	*Diameter* (″)	*Rvel*: −72.2 ± 4.2 STPP83	
1950:	00 17 14.4	+62 42 15 IRAS	*opt.* 18. : ATS91	*Expansion Velocities* (*km/s*)	
	00 17 15.0	+62 42 22 AK90			
2000:	00 19 59.3	+62 59 00 .		[NII] 11.0	88..2252

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-03-10						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	100:	*Hα*	656.3 *nm*	667:	12*μm*	0.67	1
[*O*III]	436.3	–	[*N*II]	658.4	2267	25*μm*	0.28	3
	500.7	674	[*S*II]	671.7	205	60*μm*	1.70	1
*He*I	587.6	60:		673.1	210	100*μm*	23.56	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.70 ± .03 Kal83				*Radio* (*mJy*)	*2cm*	
							6cm< 0.5	AK90

Central Star: *V* 22.3 *Qual:* D JK89

Distance (kpc) stat.: 2.19 (CKS91)

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119.4+06.5

A 1, PK 119+6°1, A55 1, ARO 198, VV' 2

		Disc.: Abell 1955	*Diameter* (″)		
			opt. 47. CaKa71		
1950:	00 09 54.0	+68 54 00 ZPB89			
2000:	00 12 36.3	+69 10 41 .			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-20								
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	495:			
[*O*III]	436.3	–	[*N*II]	658.4	220:			
	500.7	305:	[*S*II]	671.7				
*He*I	587.6	–		673.1				
$\lg F_{H\beta}(mW.m^{-2})$		−13.6 ± .3 KSK90				*Radio* (*mJy*)	*2cm*	
							6cm 5.5	ZPB89

Central Star: AG82 1 — m_{pg} 20.5 *Qual:* P PK67

Distance (kpc) stat.: 2.45 (CaKa71); 3.7 (Ma84); 2.51 (CKS91)

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Hu 1-1, PK 119–6°1, ARO 18, VV 3, VV' 5, IRAS 00255+5541

			Disc.: Humason 1921	*Diameter* (″)		*Rvel:* −53.7 ± 3.0	STPP83
1950:	00 25 30.4	+55 41 18	IRAS	*opt.* 5.	CaKa71	*Expansion Velocities* (*km/s*)	
	00 25 30.2	+55 41 20	PK67			[OIII] 15.5	We89
2000:	00 28 15.5	+55 57 55	.	*radio* 10.	ZPB89	[NII] 27.5	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-08-02

*He*II	468.6 *nm*	21	$H\alpha$	656.3 *nm*	411
[*O*III]	436.3	13	[*N*II]	658.4	275
	500.7	1296	[*S*II]	671.7	
*He*I	587.6	24		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.60 ± .02 Kale76, Bark78

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.29	2
25μm	1.29	3
60μm	3.85	3
100μm	2.48	1

Radio (*mJy*) *2cm* *6cm* 26 ZPB89

Central Star: AG82 4 — *V* 19.15 *Qual:* B JK89 *Spectrum:* A ? Kale76

Notes: Spectroscopic binary nucleus? (Dr80)
Distance (kpc) stat.: 5.05 (CaKa71); 6.3 (Ca76); 4.7 (Ac78); 6.04 (Da82); 4.30 (AGNR84); 1.9 (Ma84); 6.74 (CKS91)

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120.0+09.8

NGC 40, PK 120+9°1, ARO 1, VV 1, VV' 3, IRAS 00102+7214

			Disc.: Fleming 1912	*Diameter* (")		*Rvel:* −20.4 ± 0.9 STPP83	
1950:	00 10 16.8	+72 14 37	IRAS	*opt.* 48.	83..2756	*Expansion Velocities (km/s)*	
	00 10 16.5	+72 14 39	PK67			[OIII] 29.0	Sa84
2000:	00 13 01.0	+72 31 20	.			[NII] 26	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-07-31						*IR Class:* .	*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	287	*J*	12μm	14.49	3
[OIII]	436.3	–	[NII]	658.4	246	*H*	25μm	71.90	3
	495.9	–	[SII]	671.7		*K*	60μm	64.76	3
HeI	587.6	121		673.1	253	*L*	100μm	27.51	2
$\lg F_{H\beta}(mW.m^{-2})$		−10.66 ± .05	55....57						
IUE Spectra:		*LW*(6)	*SW*(9)	*FES*(1)		*Spectr.* PPOJ86			

Central Star: AG82 2 — Em* CDS 11; CSI+72-00102 0; HD 826; PLX 31; DC 22918
U 11.14 *B* 11.82 *V* 11.58 *Qual:* B Dr80, TASG91 *Spectrum:* WC 8 Me91

Notes: Monochromatic images (84..4088, JDK86, CJA87, Ba87)
Distance (kpc) indiv.: kinem. 0.9 (Ac78); ext. 1.1 (Ac78); ext. 0.62 (Po80); ext. 0.8 (Po83); ext. 0.8 (Sab86); ext. 1.0 (87..1357)
Distance (kpc) stat.: 1.0 (CaKa71); 1.26 (Ca76); 0.91 (Ac78); 1.07 (Da82); 2.07 (PhPo84); 0.70 (AGNR84); 0.8 (Ma84); 1.24 (CKS91)

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120.2–05.3

Sh 2-176, PK 120–5°1

				Disc.: Sabbadin et al 1977	*Diameter (″)*	*Rvel:* −37. ± . 86..1089
					opt. 720. 77..1191	*Expansion Velocities (km/s)*
1950:	00 29.1	+57 06	83...109			[OIII] 19. 86..1089
2000:	00 31.9	+57 23	.			

Central Star: AG82 5 —
B 18.1 83...109

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121.6+03.5

We 1-1, PK 121+3°1, IRAS 00359+6607

				Disc.: Weinberger 1977	*Diameter (″)*	*Rvel:* −77.3 ± 5.0 STPP83
1950:	00 35 55.9	+66 07 13	IRAS		*opt.* 19. 77..1547	
	00 35 55.2	+66 07 12	ZPB89			
2000:	00 38 53.6	+66 23 41	.			

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1988-01-25

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	80:
	500.7	56:	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −14.7 ± .3 KSK90

IRAS Fluxes (Jy) *Qual.*

12μm	0.25	1
25μm	0.25	1
60μm	0.69	3
100μm	4.81	1

Radio (mJy) 2cm 6cm 1.5 ZPB89

Central Star: AG82 6 —
B > 21. 77..1547

Distance (kpc) stat.: 5.74 (CKS91)

Bibliography: AG82, Iy87, Ko78, MWH81, We77

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121.6-00.0

BV 5-2, PK 121+0°1, ARO 201, Sh 2-179, IRAS 00374+6234

		Disc.: Bohm-Vitense 1956		*Diameter (″)*	*Rvel:* −39.0 ± 25.0 STPP83
1950:	00 37 26.7	+62 34 51	IRAS	*opt.* 40.: CS90	
	00 37 26.0	+62 34 49	AK90		
2000:	00 40 21.6	+62 51 16	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-12-03					
HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	452	
[OIII]	436.3	–	[NII] 658.4	381	
	500.7	740	[SII] 671.7		
HeI	587.6	29	673.1		
$\lg F_{H\beta}(mW.m^{-2})$		−11.8 ± .3 ASTR91			

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	0.25	1
60μm	0.93	3
100μm	7.01	2
Radio	*2cm*	
(*mJy*)	*6cm*< 0.3	AK90

Bibliography: *PK67*, AcMa77, BlPu81, ChLo72, Hi71, Ma74, Ru70

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122.1-04.9

A 2, PK 122−4°1, A55 2, ARO 202, VV' 6, IRAS 00426+5741

		Disc.: Abell 1955		*Diameter (″)*	*Rvel:* −41.8 ± 3.1 STPP83
1950:	00 42 40.7	+57 41 19	IRAS	*opt.* 36. CJA87	*Expansion Velocities (km/s)*
	00 42 42.0	+57 41 00	ZPB89		[OIII] 34. SSB86
2000:	00 45 36.1	+57 57 23	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-21					
HeII	468.6 *nm*	39:	*Hα* 656.3 *nm*	530	
[OIII]	436.3	–	[NII] 658.4	54	
	500.7	1057	[SII] 671.7	36	
HeI	587.6	–	673.1	27	
$\lg F_{H\beta}(mW.m^{-2})$		−12.37 ± .03 Ka83			

IRAS Fluxes (Jy)		*Qual.*
12μm	0.27	1
25μm	0.25	1
60μm	0.62	3
100μm	4.38	1
Radio	*2cm*	
(*mJy*)	*6cm* 2.3	ZPB89

Central Star: AG82 7 —
B 20.07 *Qual:* A JK89

Notes: Multiple-shell PN; monochromatic images (CJA87, 88..1178)
Distance (kpc) stat.: 2.58 (CaKa71); 3.0 (Ma84); 3.93 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, ChLo76, Hi71, Iw73, KSK90, KaJa89, Kh79, Kle78, KrK68, Ru70, SK85, Sabb86, Sh85, We89

88..1178 Hua C.T. *Astron. Astrophys. 193, 273-280* Narrow-band imagery of three planetary nebulae: A2, IC 289 and M 1-75.

89.50028 Turatto M., Cappellaro E., Sabbadin F. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 172* CCD images of selected planetary nebulae.

123.6+34.5

IC 3568, PK 123+34°1, ARO 56, VV 63, VV' 111, IRAS 12317+8250

			Disc.: Aitken 1900	*Diameter* (″)	*Rvel:* −41.1 ± 0.8 STPP83
1950:	12 31 44.9	+82 50 24	IRAS	*opt.* 10. CJA87	*Expansion Velocities* (*km/s*)
	12 31 46.6	+82 50 22	PK67		[OIII] 7.8 Sa84
2000:	12 33 06.7	+82 33 50	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-01-23					
HeII 468.6 *nm*	–	*Hα* 656.3 *nm*	330		
[*OIII*] 436.3	11:	[*NII*] 658.4	–		
500.7	1095	[*SII*] 671.7			
HeI 587.6	22	673.1			
$\lg F_{H\beta}(mW.m^{-2})$	−10.82 ± .01	60...353, Kale76			
IUE Spectra:	*LW*(5)	*SW*(8)			

IR Class: N		*IRAS Fluxes* (*Jy*)		*Qual.*
J	10.80	12μm	0.77	3
H	10.48	25μm	7.13	3
K	10.46	60μm	8.57	3
L		100μm	4.48	3
Photom. PPFS87				
Spectr. 83..9040				

Central Star: AG82 147 — AG +82 365; BD +83 357; GCRV 7565; HD 109540
B 13.73 *V* 13.45 *Qual:* B TASG91 *Spectrum:* O3(H) Me91

Notes: Multiple-shell PN; monochromatic images (CJA87, Ba87)
Distance (kpc) indiv.: ext. 0.48 (Po80); wind 1.31 (85....32)
Distance (kpc) stat.: 2.65 (CaKa71); 2.7 (Ca76); 2.1 (Ac78); 2.73 (Da82); 0.29 (PhPo84); 1.50 (AGNR84); 2.1 (Ma84); 2.71 (CKS91)

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124.0+10.7

EGB 1, PK 124+10°1, ELO 103+73, HaWe 1

				Disc.: Ellis et al 1984		*Diameter* (″)	
						opt. 270. 87..1593	
1950:	01 03 31.2	+73 17 22		84..3036			
2000:	01 07 08.1	+73 33 24		.			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-02

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	545
[OIII]	436.3	–	[NII]	658.4	197
	500.7	424	[SII]	671.7	112:
*He*I	587.6	167:		673.1	106:

Central Star: AG82 9Bis — EQ 0103 +73
U 15.37 *B* 16.42 *V* 16.45 *Qual:* A 84..3036, TASG91

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89.30093 Saurer W., Pfitscher K. *Astron. Gesellschaft abstract ser. No 3, 77* Planetary nebulae: variability of central stars, determination of distances.

124.3–07.7

WeSb 1, PK 124–7°1

		Disc.: Weinberger et al 1981		*Diameter* (″)	
				opt. 150. 81..1143	
1950:	00 57 55.7	+54 47 30	81..1143		
2000:	01 00 53.9	+55 03 39	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-03

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	653:
[OIII]	436.3	–	[NII]	658.4	–
	500.7	600	[SII]	671.7	
HeI	587.6	–		673.1	

Notes: Monochromatic images (91..1513)

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91..1513 Rosado M., Moreno M.A. *Astron. Astrophys., Suppl. Ser.,88,245* Deep narrow band interference filter photographs of selected extended planetarynebulae.

125.9–47.0

PHL 932, PK 125–47°1, IRAS 00572+1528

		Disc.: Arp et al 1967		*Diameter* (″)	
1950:	00 57 16.7	+15 28 14	IRAS	*opt.* 275. CaKa71	
	00 57.3	+15 28	67..9003		
2000:	01 00.0	+15 44	.		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.29	1
25μm	0.27	1
60μm	0.71	3
100μm	1.65	2

IUE Spectra: *LW*(2) *SW*(2)

Central Star: AG82 9 — PHL 932
U 10.73 *B* 11.83 *V* 12.14 67..9003 *Spectrum:* hg O(H) Me91

Distance (kpc) stat.: 0.59 (CaKa71); 0.5 (Ac78); 1.1 (Ma84); 0.82 (CKS91)

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126.3+02.9

K 3-90, PK 126+3°1, IRAS 01215+6523

			Disc.: Kohoutek 1972	*Diameter* (″)	*Rvel:* −49.4 ± 5.0 STPP83
1950:	01 21 33.5	+65 23 02	IRAS	*opt.* 9. Ko72	*Expansion Velocities* (*km/s*)
	01 21 33.0	+65 23 00	Ko72		[OIII] 15. SSB86
2000:	01 24 58.9	+65 38 37	.	*radio* 10. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-22

HeII	468.6 *nm*	89	*Hα*	656.3 *nm*	560
[*OIII*]	436.3	27:	[*NII*]	658.4	–
	500.7	314	[*SII*]	671.7	7:
HeI	587.6	–		673.1	14:

$\lg F_{H\beta}(mW.m^{-2})$ −12.6 ± .2 ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.41	1
25μm	1.22	3
60μm	0.95	3
100μm	2.99	1

Radio (*mJy*) 2*cm* 12 ZPB89; 6*cm* 13.9 ZPB89

Distance (kpc) stat.: 5.76 (CKS91)

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128.0−04.1

Simeiz 22, PK 128−4°1, Sh 2-188

			Disc.: Sharpless 1959	*Diameter* (″)	*Rvel:* −26. ± 10. 70..3502
				opt. 340. 82.13501	*Expansion Velocities* (*km/s*)
1950:	01 27 25	+58 06.5	82.13501		[OIII] 40. 82.13501
2000:	01 30 40	+58 22.0	.		

Central Star:
U 16.43 *B* 17.43 *V* 17.44 *Qual:* A KJL88

Notes: Possible SNR or HII region or old PN (78..3276).
Distance (kpc) stat.: 0.22 (84..1332)

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72..3501 Esipov V.F., Kaplan S.A., Lozinskaya T.A., Podstrigach T.S. *Sov. Astron. 16,81-86* Spectrophotometric investigations of filamentary nebulae.

73..3501 Lozinskaya T.A. *Sov. Astron. 16,945-948* Interferometry of the Medusa nebula (YM 29).

74..3501 Lozinskaya T.A., Esipov V.F. *Sov. Astron. 17,449-451* Nature of the nebula Simeiz 59.

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129.2–02.0

We 2-5, PK 129–2°1

			Disc.: Weinberger 1977	*Diameter* (″)	
				opt. 195. We77	
1950:	01 39.2	+59 55	We77		
2000:	01 42.6	+60 10	.		

Distance (kpc) stat.: 0.813 (CKS91)

Bibliography: Ko78, MWH81, ZPB89

129.5+04.5

K 3-91, PK 129+4°1

			Disc.: Kohoutek 1972	*Diameter* (″)	
				opt. 10. Ko72	
1950:	01 54 47.4	+66 19 29	ZPB89		
2000:	01 58 35.9	+66 34 04	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-22

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	308
[*OIII*]	436.3	–	[*NII*]	658.4	482
	500.7	355	[*SII*]	671.7	58:
HeI	587.6	–		673.1	92:

$\lg F_{H\beta}(mW.m^{-2})$ $-14.54 \pm .$ KSK90

Radio *2cm*
(*mJy*) *6cm* 1.5 ZPB89

Central Star:
$V > 20.5$ JK89

Distance (kpc) stat.: 8.44 (CKS91)

Bibliography: AcMa77, KaJa89, Ko71, Ko78, Sa86, We77

130.2+01.3

IC 1747, PK 130+1°1, ARO 91, VV 7, VV' 10, IRAS 01539+6304

			Disc.: Fleming 1905	*Diameter* (″)	*Rvel:* −66.5 ± 3.3 STPP83
1950:	01 53 57.8	+63 04 39	IRAS	*opt.* 13. CJA87	*Expansion Velocities* (*km/s*)
	01 53 57.9	+63 04 42	GPG86	CaKa71	[OIII] 27.5 Sa84
2000:	01 57 35.7	+63 19 19	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-21

*He*II	468.6 *nm*	16	$H\alpha$	656.3 *nm*	950
[*O*III]	436.3	7:	[*N*II]	658.4	–
	500.7	1352	[*S*II]	671.7	4:
*He*I	587.6	33		673.1	13

$\lg F_{H\beta}(mW.m^{-2})$ −11.49 ± .03 O63, 85..3094

IR Class: N

J	11.57	
H	12.03	
K	11.20	
L	8.31	
Photom.	PPFS87	
Spectr.	PPOJ86	

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.68	3
25μm	3.74	3
60μm	8.16	3
100μm	3.73	1

Central Star: AG82 12 — CSI +63-01538 0; HD 11758; EM* CDS 226; EQ 0154 +630

B 15.8 *V* 15.4 *Qual:* C Kle78

O VI 84...100
WC 4 Me91

Notes: Monochromatic images (Ba87)

Distance (kpc) indiv.: ext. 2.5-3.4 (73...125); ext. 2.5 (Ac78); ext. 1.10 (Po80); ext. 3.0 (Po83); dust 2.42 (85..3094); kinem. 2.5 (GPG86); ext. 1.8 (Sab86)

Distance (kpc) stat.: 2.11 (CaKa71); 3.5 (Ca76); 2.10 (Ac78); 1.86 (Da82); 1.80 (PhPo84); 1.20 (AGNR84); 0.9 (Ma84); 2.94 (CKS91)

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65..9026 Chopinet M. *Ann. Obs. Bordeaux 18,103* Contribution a l'etude des 16 nebuleuses planetaires a la camera electronique.

69..9026 Aller L.H., Czyzak S.J. *Proc. Astron. Soc. Austr. 1,218* Forbidden lines., electron temperature gaseous nebulae.

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130.3–11.7

M 1-1, PK 130−11°1, ARO 58, VV 5, VV' 8, IRAS 01342+5012

	Disc.: Minkowski 1946		*Diameter* (″)		*Rvel:* −38.0 ± 1.9 STPP83
1950:	01 34 13.0	+50 12 55 IRAS	*opt.* 6.	CaKa71	*Expansion Velocities* (*km/s*)
	01 34 12.9	+50 12 57 PK67			[OIII] 39.0 We89
2000:	01 37 19.4	+50 28 13 .	*radio* 5.	ZPB89	[NII] 38.0 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-20

HeII	468.6 *nm*	93	$H\alpha$	656.3 *nm*	596
[OIII]	436.3	7:	[NII]	658.4	20
	500.7	437	[SII]	671.7	
HeI	587.6	3:		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.00	3
60μm	0.77	3
100μm	1.44	1

$\lg F_{H\beta}(mW.m^{-2})$ −11.94 ± .03 Bark78

IUE Spectra: *LW*(1) *SW*(2)

Radio *2cm* (*mJy*) *6cm* 8 ZPB89

Central Star: AG82 10 —
B 16.5 *V* 16.2 *Qual:* C TASG91

Notes: Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) stat.: 7.1-8.3 (CaKa71); 6.1 (Ca76); 5.33 (Ac78); 2.90 (Da82); 2.40 (AGNR84); 6.1 (Ma84) 7.93 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac80, AcMa77, AlCz79, AlCz83, AlEp76, AlLi68, Alle73, ArKo68, Bar78, CS83, CaWy76, CoBa74, FaM86, FaMa86, FaMa87, FeAl87, Gr89, Gu88, He71, He90, Hi71, Hig71, Ii81, Is84, Iw73, KAC76, Ka70, Ka76, Ka79, Ka86, Kal80, Kh76, Kh79, Khr76, Kle78, LNP89, MaFa85, MaFa86, Pe91, PeF73, PeFr73, PiKh79, Ru70, SOB85, Sa84, SaMi78, VKDa65, Vo70, ZuAl86

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130.4+03.1

K 3-92, PK 130+3°1, IRAS 02000+6443

			Disc.: Kohoutek 1972	*Diameter* (″)	*Rvel:* −61.7 ± 2.8 STPP83
1950:	02 00 01.1	+64 43 31	IRAS	*opt.* 12.2 Ko72	*Expansion Velocities* (*km/s*)
	01 59 54.6	+64 43 12	ZPB89		[OIII] 5.0 SSB86
2000:	02 03 40.4	+64 57 36	.		[NII] 7.5 SSB86

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-28					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1400
[*OIII*]	436.3	–	[*NII*]	658.4	1300
	500.7	1867	[*SII*]	671.7	
HeI	587.6	167:		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12*μm*	0.27	1
25*μm*	0.48	1
60*μm*	0.63	3
100*μm*	5.49	1

$\lg F_{H\beta}(mW.m^{-2})$ −13.50 ± . KSK90

Radio 2*cm* (*mJy*) 6*cm* 2.0 ZPB89

Central Star:
V 20.6 KSK90

Distance (kpc) stat.: 6.81 (CKS91)

Bibliography: AcMa77, KaJa89, Ko71, Ko78, Sa86, We77, We89

130.9–10.5

NGC 650-51, PK 130−10°1, ARO 2 , M 76, VV 6 , VV'9, IRAS 01391+5119

			Disc.: Curtis 1918	*Diameter* (″)	*Rvel:* −19.1 ± 1.2 STPP83
1950:	01 39 09.6	+51 19 19	IRAS	*opt.* 67. PK67	*Expansion Velocities* (*km/s*)
	01 39.2	+51 19	All76		[OIII] 38.5 Sa84
2000:	01 42.4	+51 34	.	*radio* 100. ZPB89	[NII] 40 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-19					
HeII	468.6 *nm*	68	*Hα*	656.3 *nm*	649
[*OIII*]	436.3	9	[*NII*]	658.4	490
	500.7	1186	[*SII*]	671.7	115
HeI	587.6	15		673.1	10

IRAS Fluxes (*Jy*)		*Qual.*
12*μm*	0.28	1
25*μm*	2.79	3
60*μm*	6.80	3
100*μm*	9.29	3

$\lg F_{H\beta}(mW.m^{-2})$ −10.68 ± .01 KIe78
IUE Spectra: *LW*(2) *SW*(3)

Radio 2*cm* (*mJy*) 6*cm* ▷ 102 ZPB89

Central Star: AG82 11 —
B 16.1 *V* 15.9 *Qual:* C SK85

Notes: Visual companion to the central star: $m_{pv} = 17.7, \rho = 1''4, \theta = 190°$ (73..9005). Monochromatic images (AG82, 84..4088, 85..4072, CJA87, Ba87)
Distance (kpc) indiv.: kinem. 1.2 (Ac78)
Distance (kpc) stat.: 0.74 (CKS91)

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87.13591 Peimbert M., Torres-Peimbert S. *Rev. Mex. Astron. Astrofis. 14, 540-558* Chemical composition of type I planetary nebulae. Collisional excitation effects on He I line intensities.
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88.10754 Brazell O. *J. Br. Astron. Soc. 98, 362-365* Planetary nebulae.
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89..4098 Manchado A., Pottasch S.R., Mampaso A. *Astrophys. Space Sci. 157, 23-29* Abundance gradient for 13 planetary nebulae in the galaxy.
89.31626 Heap S.R., Corcoran M.F., Hintzen P., Smith E. *Bull. American Astron. Soc. 21, 1199-1200* Properties of the hottest central stars of planetary nebulae.
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131.4–05.4

BV 5-3, PK 131–5°1, ARO 203

Disc.: Bohm-Vitense 1956 1950: 01 49 42.0 +56 09 36 AK90 2000: 01 53 02.5 +56 24 22 .	*Diameter* (″) *opt.* 24. : ATS91	*Rvel:* −59.0 ± 25.0 STPP83

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-03-10

*He*II	468.6 *nm*	87:	*Hα*	656.3 *nm*	384
[OIII]	436.3	–	[NII]	658.4	144
	500.7	671	[SII]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.40 ± .07 Ka83

Radio *2cm*
(*mJy*) *6cm*< 0.3 AK90

Central Star:
B 18. Ka83

Bibliography: *PK67*, AcMa77, BlPu81, CS83, Hi71, Ru70, Sabb86, ZPB89

87..1532 Sabbadin F., Falomo R., Ortolani S. *Astron. Astrophys., Suppl. Ser. 67, 541-544* Spectroscopic observations of genuine and misclassified planetary nebulae.

131.5+02.6

A 3, PK 131+2°1, A55 3, ARO 204, Sh 2-189, VV'12

Disc.: Abell 1955 1950: 02 08 24.0 +63 55 00 ZPB89 2000: 02 12 11.6 +64 09 04 .	*Diameter* (″) *opt.* 60. CaKa71	*Expansion Velocities* (*km/s*) [OIII] 30. SSB86 [NII] 35 SSB86

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1988-12-03

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	77
	500.7	140	[SII]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.61 ± .10 Ka83

Radio *2cm*
(*mJy*) *6cm* 2.7 ZPB89

Central Star: AG82 14 —
m_{pg} 18.8 *Qual:* P PK67

Notes: Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) stat.: 2.0 (Ma84); 2.56 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, ChLo72, ChLo76, Hi71, Iw73, KSK90, Ka76, Kh79, KrK68, Ma74, Ru70, Sabb86, We89

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90..2050 Fich M., Treffers R.R., Dahl G.P. *Astron. J. 99, 622-637* Fabry-Perot H-alpha observations of galactic H II regions.

132.4+04.7

K 3-93, PK 132+4°1

Disc.: Kohoutek 1972	*Diameter* (″)	
	opt. 10. Ko72	
1950: 02 22 29.4 +65 34 24 Ko72		
2000: 02 26 30.3 +65 47 53 .		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-28

HeII	468.6 *nm*	21:	*Hα*	656.3 *nm*	859
[*OIII*]	436.3	–	[*NII*]	658.4	812
	500.7	953	[*SII*]	671.7	82:
HeI	587.6	29:		673.1	94:

$\lg F_{H\beta}(mW.m^{-2})$ $-13.6 \pm .2$ ASTR91

Bibliography: AcMa77, Ko71, Ko78, Sa86, We77

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133.1-08.6

M 1-2, PK 133−8°1, VV 8, ARO 116, VV' 11, IRAS 01555+5239

Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* -12.1 ± 2.0 STPP83
1950: 01 55 32.6 +52 39 10 IRAS	*opt.* 18.: ATS91	*Expansion Velocities* (*km/s*)
01 55 32.5 +52 39 10 Kal83		[OIII] 18.0 We89
2000: 01 58 49.3 +52 53 44 .		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-21

HeII	468.6 *nm*	9:	*Hα*	656.3 *nm*	1421
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	176	[*SII*]	671.7	
HeI	587.6	46		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-11.90 \pm .02$ Bark78, Kal83

IUE Spectra: *LW*(1) *SW*(2)

IR Class: .	*IRAS Fluxes* (*Jy*)		*Qual.*
J	12μm	1.53	3
H 10.1	25μm	2.70	3
K 9.8	60μm	1.85	3
L 8.2	100μm	2.16	1
Photom. CoBa74	*Radio* 2*cm*		
	(*mJy*) 6*cm* < 10		79....18

Central Star: AG82 13 — CSI +52-01555 0; LS V +52 1; V741 Per
B 15.17 *V* 13.44 *Qual:* A TASG91 *Spectrum:* O + G2 Ib 83..9268

Notes: Binary nucleus (83..9268, 86..2788)

Bibliography: *PK67*, AG82, AcMa77, Al73, Al74, Al84, AlGl75, All73, All82, Bar78, CS83, Dr80, FeAl87, GMS72, Gol87, He71, Hi71, Hig71, Ii81, KFS88, KPK81, Ka69, Ka70, Ka76, Kh76, Khr76, Li78, LuTu87, Me89, PiKh79, RRA82, Ru70, SK85, STB84, Sa84, SeTa90, Sh85, Te80, VKDa65, Vo70

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68..9048 Kohoutek L. *Bull. Astron. Inst. Czech. 19,371* Spectrophotometry of a superdense P.N. M3-27.
68..9092 O Dell C.R. *I.A.U. Symp. 34,261* Observations aspects of the evolution of P.N., their central stars.
69..9060 Kohoutek L. *Mem. Soc. R. Sci. Liege 17,299* Some physical characteristics of very young planetary nebulae and of their nuclei.
71...386 Gillet F.C., Knacke R.F., Stein W.A. *Astrophys. J. 163,L57* Infrared studies of galactic nebulae. II. The compact nebulae: IC 4997, VV8 andFG Sge.
71..4001 Gerola H., Salem M., Panagia N. *Astrophys. Space Sci. 10,383-392* On the spectrum of a gaseous nebula of pure hydrogen.
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72...384 Swings J.P., Allen A. *Publ. Astron. Soc. Pac. 84,523* Photometry of symbiotic and VV Cep stars in the near infrared (with a note on MWC 56).
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76.25009 Ciatti F., Mammano A. *Mem. Soc. R. Sci. Liege 9,379* BQ Stars: new observations and perspectives.
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81..3028 Grauer A.D., Bond H.E. *Publ. Astron. Soc. Pac. 93,630-632* High-speed photometry of, and speculations on, the central star of M 1-2
83...545 Blair W.P., Stencel R.E., Feibelman W.A., Michalitsianos A.G. *Astrophys. J., Suppl. Ser. 53, 573-590* Spectrophotometric observations of symbiotic stars and related objects.
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84....60 Van Breugel W., Heckman T., Butcher H., Miley G. *Astrophys. J. 277, 82-91* Extended optical line emission from 3C 293: radio jets propagating through a rotating gaseous disk.
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86..2788 Whitelock P.A., Menzies J.W. *Mon. Not. R. Astron. Soc. 223, 497-503* A new binary planetary nebula.
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89.14504 Hric L., Skopal A. *IAU Inform. Bull. Var. Stars,3364* Call for a campaign of long-term photometry of symbiotic stars.
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136.1+04.9

A 6, PK 136+4°1, A55 5, ARO 207, IRAS 02545+6417

			Disc.: Abell 1955	*Diameter* (″)	
1950:	02 54 34.1	+64 17 41	IRAS	*opt.* 186. CaKa71	
	02 54 42.0	+64 18 00	ZPB89		
2000:	02 58 53.0	+64 29 58	.	*radio* 190. ZPB89	

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1988-01-25						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100:	12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4	92:	25μm	0.25	1
	500.7	250	[*S*II]	671.7		60μm	0.53	2
*He*I	587.6	–		673.1	58:	100μm	3.81	3

$\lg F_{H\beta}(mW.m^{-2})$ $-12.43 \pm .06$ Ka83

Central Star: AG82 17 —
m_{pg} 19.6 *Qual:* P PK67

Distance (kpc) stat.: 0.81 (CaKa71); 1.5 (Ma84); 0.96 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, CaWy76, ChLo76, Hi71, Iw73, Jo80, KSK90, Kh79, KrK68, Ru70

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136.3+05.5

HFG 1, PK 136+5°1

			Disc.: Heckathorn et al 1982	*Diameter* (″)	*Rvel:* -26.0 ± 1.0	86..1089
				opt. 500. 82..1158	*Expansion Velocities* (*km/s*)	
1950:	02 59 34	+64 41.8	82.17255		[OIII] 13.	86..1089
2000:	03 03 49	+64 53.5	.		[NII] 15	86..1089
IUE Spectra:	*LW*(2)	*SW*(4)				

Central Star: AG82 18Bis — V664 Cas
B 13.76 *V* 13.38 *Qual:* A TASG91

Notes: Close binary nucleus, $P = 0.582^d$ (89.50086); cataclysmic binary (90..1009). Monochromatic images (82..1158)

Bibliography: IsWe87, Ko89, We86, We89

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82.17255 Heckathorn J.N., Fesen R.A., Gull T.R. *Bull. American Astron. Soc. 14,637* Discovery of a large high-excitation planetary nebula, G 136+5.

83.30809 Heckathorn J.N., Fesen R.A., Gull T.R. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae, 545-546* Discovery of a large high-excitation planetary nebula.

85..1061 Heckarthorn J.N., Fesen R.A. *Astron. Astrophys. 143, 475-477* Ultraviolet observations of the central star in the planetary nebula 136+5.1.

86..1089 Gieseking F., Hippelein H., Weinberger R. *Astron. Astrophys. 156, 101-105* Late stages of the expansion of planetary nebulae.

87.31570 Grauer A.D., Bond H.E., Ciardullo R., Fleming T.A. *Bull. American Astron. Soc. 19.643* The close-binary nucleus of the planetary nebula HFG 1.

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90.23751 Acker A., Fresneau A., Jasniewicz G. *J. Astronomes Francais,38,16* Etude d'objets evolues dans la galaxie.

138.1+04.1

HDW 2, PK 138+4°1, HaWe 2

				Disc.: Hartl et al 1983	*Diameter (″)*	
					opt. 340. 87..1593	*Expansion Velocities (km/s)*
1950:	03 06 51.7	+62 36 43	83.28034			[OIII] 13 We89
2000:	03 11 00.5	+62 48 03	.			

Central Star:
B 12.98 *V* 12.61 *Qual:* A TASG91 *Spectrum:* A ATS91

Notes: It is not clear if the A-type star observed is the true central star of the nebula

Bibliography: Ko89

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87..1593 Hartl H., Weinberger R. *Astron. Astrophys., Suppl. Ser. 69, 519-525* Planetary nebulae of low surface brightness: gleanings from the "POSS".

138.8+02.8

IC 289, PK 138+2°1, ARO 86, Hb 1, VV 9, VV' 15, IRAS 03062+6107

				Disc.: Hubble 1921	*Diameter (″)*	*Rvel:* -20.0 ± 4.0 STPP83
					opt. 35. CJA87	*Expansion Velocities (km/s)*
1950:	03 06 16.0	+61 07 35	IRAS			[OIII] 25.5 Sa84
	03 06 16.4	+61 07 39	PK67			
2000:	03 10 19.2	+61 19 01	.			

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-19

HeII	468.6 *nm*	109	*Hα*	656.3 *nm*	659
[OIII]	436.3	8	[*NII*]	658.4	5
	500.7	460	[*SII*]	671.7	
HeI	587.6	–		673.1	

IRAS Fluxes (Jy)		*Qual.*
12μm	1.17	3
25μm	14.35	3
60μm	14.31	3
100μm	9.45	3

$\lg F_{H\beta}(mW.m^{-2})$ $-11.69 \pm .01$ O63, 76...515
IUE Spectra: *LW*(2) *SW*(2)

Central Star: AG82 19 — NSV 1056
$B > 15.1$ $V > 15.9$ SK85

Notes: Multiple-shell PN; monochromatic images (CJA87, 88..1178, Ba87)
Distance (kpc) indiv.: ext. 2.8-4.8 (73...125); dust 2.71 (85..3094)
Distance (kpc) stat.: 1.4-1.5 (CaKa71); 1.43 (Ca76); 1.24 (Ac78); 1.35 (Da82); 0.91 (AGNR84); 1.3 (Ma84) 1.43 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ab66, AcMa77, Ak70, Al68, AlLi68, All76, BOS74, Ba89, CS83, CaNo73, CaRu74, CePe83, Ch89, DFHM67, De71, Dr80, FeAl87, Gr71, Gr72, Gu88, HaZu91, He71, Hi71, Hi73, Hig71, Iw73, KAC76, Ka69, Ka70, Ka76, Kale76, KrK68, LNP89, MeHa75, Ph84, RRA82, Ru70, SGBO84, SaHa82, Sabb86, Sh85, ThDa70, TrSa78, We89

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76...515 Kaler J.B., Aller L.H., Czyzak S.J., Epps H.W. *Astrophys. J. Suppl. Ser. 31,163-186* The spectrum of NGC 7027.
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88.32008 Bidelman W.P. *Bull. Inf. Centre Donnees Stellaires 35,52-56* IRAS point source catalogue cross-identifications.
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89.31626 Heap S.R., Corcoran M.F., Hintzen P., Smith E. *Bull. American Astron. Soc. 21, 1199-1200* Properties of the hottest central stars of planetary nebulae.

141.7-07.8

A 5, PK 141−7°1, A55 4, ARO 206, VV' 14

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 127. CaKa71	*Expansion Velocities* (*km/s*)
1950:	02 48 44.8	+50 23 35	Ka83		
2000:	02 52 13.4	+50 35 52	.		[NII] 15 SSB86
$\lg F_{H\beta}(mW.m^{-2})$	−12.9 ± .2	Ka83			

Central Star: AG82 16 —
U 20.6 *B* 21.4 *V* 21.4 *Qual:* D KJL88

Distance (kpc) stat.: 1.04 (CaKa71); 1.7 (Ma84); 1.65 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, CaWy76, ChLo76, Hi71, Iw73, Jo80, KSK90, Kh79, KrK68, MeHa75, Ru70, We89, ZPB89

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142.1+03.4

K 3-94, PK 142+3°1, IRAS 03319+5953

			Disc.: Kohoutek 1972	*Diameter* (″)			
1950:	03 31 59.4	+59 53 52	IRAS	*opt.* 7.1	Ko72	*Expansion Velocities* (*km/s*)	
	03 32 01.2	+59 53 51	AK90			[OIII] 10.	SSB86
2000:	03 36 07.9	+60 03 47	.	*radio* 10.	88...536	[NII] 10	SSB86

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-23						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II 468.6 *nm*	50:	*H*α	656.3 *nm*	601		12μm	0.25	1
[OIII] 436.3	–	[*N*II]	658.4	704		25μm	0.26	3
500.7	741	[*S*II]	671.7	} 138.		60μm	0.92	3
*He*I 587.6	–		673.1			100μm	17.68	1
$\lg F_{H\beta}(mW.m^{-2})$	−12.9 ± .2 ASTR91					*Radio* 2cm		
						(*mJy*) 6cm	5.5	ZPB89

Distance (kpc) stat.: 6.51 (CKS91)

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143.6+23.8

EGB 4

	Disc.: Ellis et al 1984	*Diameter* (″)	
		opt. 111. 84..3036	
1950: 06 23.8	+71 06	84..3036	
2000: 06 29.6	+71 04	.	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-23

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	235
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	25	[*S*II]	671.7	
*He*I	587.6	32		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-10.5 \pm .4$ ASTR91

Central Star: PG 0623+71
B 12.79 *V* 12.77 *Qual:* A TASG91

Notes: Cataclysmic binary nucleus (89.50075) surrounded by a possible PN

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144.3–15.5

A 4, PK 144−15°1, ARO 205, VV' 13, IRAS 02421+4222

			Disc.: Abell 1964	*Diameter* (″)	
1950:	02 42 11.8	+42 22 15	IRAS	*opt.* 20. CaKa71	
	02 42 12.0	+42 19 59	ZPB89		
2000:	02 45 25.8	+42 32 36	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-20						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	43	$H\alpha$	656.3 *nm*	448	12μm	0.25	1
[*OIII*]	436.3	–	[*NII*]	658.4	42	25μm	0.25	1
	500.7	1054	[*SII*]	671.7		60μm	0.92	3
HeI	587.6	–		673.1		100μm	1.23	2
lg$F_{H\beta}(mW.m^{-2})$		−12.49 ± .03 Ka83				*Radio* 2*cm*		
						(*mJy*) 6*cm*	< 2	ZPB89

Central Star: AG82 15 — m_{pg} 19.9 *Qual:* P PK67

Distance (kpc) stat.: 4.66 (CaKa71); 6.1 (Ma84); 5.60 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, CS83, CaWy76, ChLo76, Hi71, Iw73, KSK90, Kh79, KrK68, Ru70, Sabb86

144.5+06.5

NGC 1501, PK 144+6°1, ARO 44, VV 16, VV' 22, IRAS 04026+6047

			Disc.: Herschel 1787	*Diameter* (″)	*Rvel:* +36.2 ± 1.4 STPP83
1950:	04 02 41.0	+60 47 09	IRAS	*opt.* 52. CJA87	*Expansion Velocities* (*km/s*)
	04 02.7	+60 47	AII76	CaKa71	[OIII] 37.0 Sa84
2000:	04 07.0	+60 55	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-20						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	824	12μm	1.22	3
[*OIII*]	436.3	–	[*NII*]	658.4	–	25μm	5.55	3
	500.7	932	[*SII*]	671.7		60μm	15.16	3
HeI	587.6	77		673.1		100μm	10.17	3
lg$F_{H\beta}(mW.m^{-2})$		−11.28 ± .06 CD61						
IUE Spectra:		*LW*(1) *SW*(2)						

Central Star: AG82 26 — PLX 894; GCRV 2334; CSI +60 -04027
U 14.34 *B* 15.17 *V* 14.39 *Qual:* B Dr80, SK85 , TASG91

WC 6-7, OVI AII76
WC early Me91

Notes: Monochromatic images (CJA87)
Distance (kpc) indiv.: ext. 2.0: (Ac78); ext. 1.4 (Po83); ext. 1.2 (Sab86)
Distance (kpc) stat.: 1.1-1.3 (CaKa71); 1.16 (Ca76); 1.15 (Ac78); 1.10 (Da82); 0.90 (AGNR84); 1.1 (Ma84) 1.16 (CKS91)

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146.7+07.6

M 4-18, PK 146+7°1, ARO 213, IRAS 04215+6000

			Disc.: Minkowski 1959	*Diameter (")*		*Rvel:* −17.0 ± 12.0 STPP83	
1950:	04 21 30.6	+60 00 22	IRAS	*opt.* 4.	Sh85	*Expansion Velocities (km/s)*	
	04 21 31.1	+60 00 24	AK90			[OIII] 7.5	84..1287
2000:	04 25 50.8	+60 07 12	.	*radio* 4.	ZPB89	[NII] 17.0	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-20						*IR Class:* .	*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1646	*J*	12μm	4.21	3
[*OIII*]	436.3	–	[*NII*]	658.4	–	*H*	25μm	9.50	3
	495.9	–	[*SII*]	671.7	} 124.	*K*	60μm	4.00	3
HeI	587.6	36		673.1	}	*L*	100μm	2.08	2
$\lg F_{H\beta}(mW.m^{-2})$		−11.89 ± .03	Kal83, ASTR91				*Radio* 2*cm*	15	ZPB89
IUE Spectra:		*LW*(2) *SW*(1)				*Spectr.* 86...187	(*mJy*) 6*cm*	22	AK90

Central Star: AG82 31 —
B 14.22 *V* 13.96 *Qual:* A SK85 *Spectrum:* WC 11 Me91

Distance (kpc) stat.: 7.15 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, AiRo81, AiRo82, Al74, AlGl75, CS83, FeAl87, Hi71, KVLS81, Ka86, Kal86, Ru70, Sa84, Sabb86, StKa89, VoCo90, Wa77, ZTPS89, ZuAl86

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147.4–02.3

M 1-4, PK 147−2°1, ARO 209, VV 11, VV' 17, IRAS 03379+5207

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −33.0 ± 3.9 STPP83	
1950:	03 37 58.2	+52 07 22	IRAS	*opt.* 4.	CaKa71	*Expansion Velocities* (*km/s*)	
	03 37 59.1	+52 07 25	AK90			[OIII] 13.0	We89
2000:	03 41 43.4	+52 17 00	.	*radio* 6.0	AK90		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-20						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2112	12μm	0.54	3
[*O*III]	436.3	–	[*N*II]	658.4	86	25μm	3.35	3
	500.7	1436	[*S*II]	671.7	} 23.	60μm	3.67	3
*He*I	587.6	68		673.1		100μm	17.14	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.14 ± .05	Kal83			*Radio* 2*cm*		
IUE Spectra:		*LW*(2)	*SW*(2)			(*mJy*) 6*cm*	90	AK90

Central Star: AG82 22 —
V 16.7 *Qual:* D SK85

Distance (kpc) indiv.: kinem. 2.3: (Ac78)
Distance (kpc) stat.: 3.82 (CaKa71); 2.7 (Ac78); 1.70 (Da82); 1.60 (AGNR84); 0.8 (Ma84); 2.99 (CKS91)

Bibliography: PK67, AG82, AGR89, AcMa77, AlEp76, AlKe85, AlKe87, AlLi68, CS83, CaRu74, CoBa74, Gol87, He90, Hi71, Is84, KAC76, Ka70, Ka76, Ka78, Ka86, LNP89, Pe91, Ph84, RRA82, Ru70, SGBO84, Sa84, Sh85, StKa89

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85...149 Kaler J.B. *Astrophys. J. 290, 531-541* Spectrophotometry of 12 planetary nebulae.
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147.8+04.1

M 2-2, PK 147+4°1, ARO 211, VV 18, VV' 24, IRAS 04091+5649

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* −7.0 ± 25.0	STPP83
1950:	04 09 10.4	+56 49 19	IRAS	*opt.* 6.1	CJA87	*Expansion Velocities* (*km/s*)	
	04 09 10.2	+56 49 16	Kal83			[OIII] 14.0	84..1287
2000:	04 13 15.0	+56 56 54	.	*radio* 7.	ZPB89		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-03-10						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	844	12μm	0.47	3
[OIII]	436.3	6:	[*NII*]	658.4	20:	25μm	3.45	3
	500.7	1181	[*SII*]	671.7		60μm	5.37	3
HeI	587.6	34		673.1	6:	100μm	3.31	3
$\lg F_{H\beta}(mW.m^{-2})$		−12.22 ± .02	Kal83			*Radio* (*mJy*) 2*cm*	38	ZPB89
						6*cm*	54	ZPB89

Notes: Multiple-shell PN; monochromatic images (CJA87)
Distance (kpc) stat.: 2.69 (CaKa71); 2.17 (Ac78); 1.4 (Ma84); 4.36 (CKS91)

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148.4+57.0

NGC 3587, PK 148+57°1, ARO 25, M 97, VV 59, VV'107, IRAS 11119+5517

			Disc.: Lord Rosse 1850	*Diameter* (″)		*Rvel:* +6.0 ± 3.1	STPP83
1950:	11 11 55.1	+55 17 25	IRAS	*opt.* 170.	CJA87	*Expansion Velocities* (*km/s*)	
	11 11 53.3	+55 17 21	80..2080		CaKa71	[OIII] 29.0	Sa84
2000:	11 14 46.5	+55 01 00	.	*radio* 170.	ZPB89	[NII] 40	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-07 C						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	66:	*Hα*	656.3 *nm*	281	12μm	0.25	1
[OIII]	436.3	36:	[*NII*]	658.4	–	25μm	0.27	1
	500.7	846	[*SII*]	671.7		60μm	2.07	3
HeI	587.6	15		673.1		100μm	6.47	3
$\lg F_{H\beta}(mW.m^{-2})$		−10.42 ± .02	Kale76					
IUE Spectra:		*LW*(3)	*SW*(2)					

Central Star: AG82 135 —
U 14.36 *B* 15.66 *V* 16.01 *Qual:* B 72.30001, Dr80, TASG91

Notes: Multiple-shell PN; monochromatic images (CJA87, Ba87); Monochromatic images by Hua C.T. and Louise R.
Distance (kpc) indiv.: expans. 0.43 (Po83); expans. 0.5 (Po83)
Distance (kpc) stat.: 0.61 (CKS91)

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72..9008 Johnson H.M. *18 Symp. Inter. Astrophys. Liege 1972,5,121* Flux density at 31 GHz,85 GHz.

72..9013 Hua C.T., Louise R. *Astron. Astrophys. 21,193-198* Nouvelles observations de quelques nebuleuses planetaires.

72..9015 Proisy P. *Astron. Astrophys. 20,115* Etude photometrique de NGC 3587 en H alpha.

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78..1080 Pottasch S.R., Wesselius P.R., Van Duinen R.J. *Astron. Astrophys. 70,629-634* Ultraviolet observations of P.N.

78.30004 Gurzadyan G.A. *IAU Symposium 76,79-91* Ultraviolet observations of P.N.

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83.22017 Gieseking F. *Sterne und Weltraum 22, 224-228* Planetarische Nebel.

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85..2792 Sabbadin F., Bianchini A., Ortolani S., Strafella F. *Mon. Not. R. Astron. Soc. 217, 539-549* The structure of NGC 3587, the Owl nebula.

86..1099 Tylenda R. *Astron. Astrophys. 156, 217-222* Outer haloes of planetary nebulae as probes of a fast luminosity

decline in their nuclei.

86..4519 Kolesnik I.G., Pilyugin L.S. *Astron. Zu. 63, 279-287* The influence of stellar duplicity on the form of planetary nebulae.

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89..9166 Apparao K.M.V., Tarafdar S.P. *Astrophys. J. 344, 826-829* X-ray observations of planetary nebulae with the EXOSAT satellite.

89.25008 Eicher D.J. *Astronomy 17, No 4, 68-70* The art of observing planetaries.

91..4001 Gurzadyan G.A., Egikyan A.G. *Astrophys. Space Sci.,175,15* Pseudo-resonance absorption lines in planetary nebulae : discovery ?

149.0+04.4

K 4-47, PK 149+4°1, IRAS 04166+5611

				Diameter (″)		
			Disc.: Kohoutek 1969			
1950:	04 16 40.5	+56 11 02	IRAS	*opt. St.*	Ko69	
	04 16 41.1	+56 11 04	AK90			
2000:	04 20 45.2	+56 18 12	.	*radio* 0.25	AK90	

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1989-03-24						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	*J*		12μm	0.51	3
[OIII]	436.3	–	[*N*II]	658.4	129	*H*		25μm	2.41	3
	500.7	88:	[*S*II]	671.7	14:	*K*	> 7.9	60μm	7.12	3
HeI	587.6	–		673.1	14:	*L*		100μm	5.07	3
						Photom.	AI74	*Radio* 2cm		
								(*mJy*) 6cm	7.7	AK90

Distance (kpc) stat.: 8.53 (CKS91)

Bibliography: AcMa77, Ko78, MWH81, Sa86, VoCo90, We77

69..9071 Perek L., Kohoutek L. *Bull. Astron. Inst. Czech. 20,381* Errata: catalogue of galactic P.N.

69.13001 Kohoutek L. *Bull. Astron. Inst. Czech. 20,307-312* Hamburg Schmidt-camera survey of faint planetary nebulae.

149.4–09.2

HDW 3, PK 149–9°1, HaWe 4

				Diameter (″)		
			Disc.: Hartl et al 1983	*opt.* 540.	87..1593	
1950:	03 23 48.9	+45 13 54	83.28034			
2000:	03 27 15.4	+45 24 19	.			

Central Star: AG82 20 —
U 16.0 *B* 16.9 *V* 17.0 *Qual:* C 87..1593

Bibliography: AG82, IsWe87, Ko89, We86

83.28034 Hartl H., Dengel J., Weinberger R. *Mitteil. Astron. Gesellschaft 60, 325-327* Alte Planetarische Nebel: neue Kandidaten.

87..1593 Hartl H., Weinberger R. *Astron. Astrophys., Suppl. Ser. 69, 519-525* Planetary nebulae of low surface brightness: gleanings from the "POSS".

89.30093 Saurer W., Pfitscher K. *Astron. Gesellschaft abstract ser. No 3, 77* Planetary nebulae: variability of central stars, determination of distances.

149.7-03.3

IsWe 1

			Disc.: Ishida et al 1987	*Diameter* (″)	*Rvel:* −1.5 ± 0.5 IsWe87
				opt. 780. IsWe87	*Expansion Velocities* (*km/s*)
1950:	03 45 25.7	+49 51 07	IsWe87		[OIII] 5. IsWe87
2000:	03 49 05.9	+50 00 15	.		

Central Star:
U 15.71 *B* 16.45 *V* 16.56 IsWe87 *Spectrum:* O(C) Me91

151.4+00.5

K 3-64, PK 151+0°1

			Disc.: Kohoutek 1969	*Diameter* (″)	
				opt. 7.5 Ko69	
1950:	04 09 37.9	+51 43 25	We77		
2000:	04 13 27.2	+51 51 02	.		

Intens. (*Hβ* = 100) OHP-CAR+CCD 1989-03-23

HeII	468.6 *nm*	24:	*Hα*	656.3 *nm*	516	
[OIII]	436.3	–	[NII]	658.4	258	
	500.7	552	[SII]	671.7	} 141.	
HeI	587.6	–		673.1		

$\lg F_{H\beta}(mW.m^{-2})$ −13.1 ± .4 ASTR91

Bibliography: AcMa77, Ko78, Sa86

69..9071 Perek L., Kohoutek L. *Bull. Astron. Inst. Czech. 20,381* Errata: catalogue of galactic P.N.
69.13001 Kohoutek L. *Bull. Astron. Inst. Czech. 20,307-312* Hamburg Schmidt-camera survey of faint planetary nebulae.

153.7+22.8

A 16, PK 153+22°1, A55 11, ARO 222, VV' 47

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 105. CJA87	
1950:	06 39 18.9	+61 50 26	Ka83		
2000:	06 43 55.3	+61 47 25	.		

Intens. (*Hα* = 100) OHP-CAR+CCD 1988-01-21

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	–
	500.7	117:	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.31 ± .06 Ka83

Central Star: AG82 67 —
B 18.0 *V* 17.4 *Qual:* C TASG91

Notes: Multiple-shell PN; monochromatic images (CJA87)
Distance (kpc) stat.: 1.18 (CaKa71); 2.3 (Ma84); 1.35 (CKS91)

Bibliography: *PK67*, AG82, Ab66, ChLo76, Gu70, Hi71, KSK90, Kh79, KrK68, Ru70, Sabb86, ZPB89

70..9100 Gurzadian G.A. *Planetary Nebulae Reidel D. Publ. Comp. Dodrecht NL 233* The stability of the forms of the gaseous envelopes.

153.7–01.4

K 3-65, PK 153−1°1, IRAS 04122+4842

			Disc.: Kohoutek 1969	*Diameter* (″)	
1950:	04 12 12.3	+48 42 18	IRAS	*opt.* 2. Ko69	
	04 12 12.6	+48 42 14	AK90		
2000:	04 15 54.5	+48 49 40	.	*radio* 5. AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-25					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1269
[*OIII*]	436.3	–	[*NII*]	658.4	1190
	500.7	1207	[*SII*]	671.7	243
HeI	587.6	74:		673.1	95

$\lg F_{H\beta}(mW.m^{-2})$	$-14.2 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.39	1
25μm	0.29	1
60μm	0.81	3
100μm	3.19	1

Radio (*mJy*)			
2cm			
6cm	4	AK90	

Distance (kpc) stat.: 10.5 (CKS91)

Bibliography: AcMa77, Ko78, Sa86, We77

69..9071 Perek L., Kohoutek L. *Bull. Astron. Inst. Czech. 20,381* Errata: catalogue of galactic P.N.
69.13001 Kohoutek L. *Bull. Astron. Inst. Czech. 20,307-312* Hamburg Schmidt-camera survey of faint planetary nebulae.

156.9–13.3

HaWe 5

			Disc.: Hartl et al 1987	*Diameter* (″)	
				opt. 34. 87..1593	
1950:	03 42 10.1	+37 39 27	87..1593		
2000:	03 45 26.7	+37 48 48	.		

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1989-10-02					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	107	[*SII*]	671.7	15:
HeI	587.6	–		673.1	18:

Central Star:
B 17.1 *V* 17.7 *Qual:* C 87..1593, TASG91

87..1593 Hartl H., Weinberger R. *Astron. Astrophys., Suppl. Ser. 69, 519-525* Planetary nebulae of low surface brightness: gleanings from the "POSS".

158.8+37.1

A 28, PK 158+37°1, A55 18, VV' 78

			Disc.: Abell 1955	*Diameter* (″)	*Rvel:* $-2.0 \pm .$ 86..1089
				opt. 270. CaKa71	*Expansion Velocities* (*km/s*)
1950:	08 37 37.8	+58 24 37	Ka83		[OIII] 4. 86..1089
2000:	08 41 34.6	+58 13 54	.		[NII] 3 We89

$\lg F_{H\beta}(mW.m^{-2})$	$-11.82 \pm .07$ Ka83
IUE Spectra:	*LW*(0) *SW*(2)

Central Star: AG82 105 —
V 17.4 Ka85 *Spectrum:* IUE obsns AG82

Distance (kpc) stat.: 0.93 (CaKa71); 2.4 (Ma84); 0.91 (CKS91)

Bibliography: *PK67*, Ab66, AcMa77, HeAu87, KSK90, Kh79, LePo88, Sabb86, ZPB89, ZiPo91

86..1089 Gieseking F., Hippelein H., Weinberger R. *Astron. Astrophys. 156, 101-105* Late stages of the expansion of planetary nebulae.

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158.9+17.8

PuWe 1, PK 158+17°1

		Disc.: Purgathofer et al 1980		*Diameter* (″)	
				opt. 1200. 80..1019	*Expansion Velocities* (*km/s*)
1950:	06 15 23.2	+55 37 59	Ka83		[OIII] 27.0 86..1089
2000:	06 19 34.3	+55 36 43	.		[NII] 27.0 86..1089
$\lg F_{H\beta}(mW.m^{-2})$	$-10.85 \pm .10$	Ka83			*Radio* 2*cm* < 3 ZPB89
IUE Spectra:	*LW*(2)	*SW*(3)			(*mJy*) 6*cm* < 2 ZPB89

Central Star: AG82 61 —
B 15.3 80..1019 *Spectrum:* sd O 80..1019

Notes: The optical double star at the centre of this large PN (80..1019) is shown on the FC.
Distance (kpc) stat.: 0.141 (CKS91)

Bibliography: ACPS87, AG82, GrNe90, IsWe87, KSK90, Sabb86, We89

80..1019 Purgathofer A., Weinberger R. *Astron. Astrophys. 87,L5-L6* A huge new nearby Planetary Nebula.
86..1089 Gieseking F., Hippelein H., Weinberger R. *Astron. Astrophys. 156, 101-105* Late stages of the expansion of planetary nebulae.
89.30093 Saurer W., Pfitscher K. *Astron. Gesellschaft abstract ser. No 3, 77* Planetary nebulae: variability of central stars, determination of distances.

159.0-15.1

IC 351, PK 159−15°1, ARO 19, VV 12, VV' 18, IRAS 03443+3453

		Disc.: Barnard 1891		*Diameter* (″)		*Rvel:* -9.1 ± 1.4 STPP83	
1950:	03 44 20.2	+34 53 34	IRAS	*opt.* 7.	CJA87	*Expansion Velocities* (*km/s*)	
	03 44 20.2	+34 53 35	AK90		CaKa71	[OIII] 15.0	We89
2000:	03 47 32.9	+35 02 49	.	*radio* 7.0	AK90		

Intens. (*Hβ* = 100) OHP-CAR+CCD 1986-12-20						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	42	*Hα*	656.3 *nm*	566	*J*	13.07	12*μm*	0.25	1
[*OIII*]	436.3	12	[*NII*]	658.4	–	*H*	13.40	25*μm*	1.63	3
	500.7	1230	[*SII*]	671.7		*K*	12.51	60*μm*	2.17	3
HeI	587.6	15		673.1		*L*		100*μm*	8.23	1
$\lg F_{H\beta}(mW.m^{-2})$	$-11.42 \pm .01$	60...353, Bark78				*Photom.* PPFS87		*Radio* 2*cm*		
IUE Spectra:	*LW*(2)	*SW*(6)						(*mJy*) 6*cm*	27 AK90	

Central Star: AG82 23 —
B 15.9 *V* 15.8 *Qual:* C TASG91 *Spectrum:* WR-Of SmAl69

Notes: Monochromatic images (86..2202)
Distance (kpc) stat.: 5.01 (CaKa71); 5.2 (Ca76); 3.9 (Ac78); 2.92 (Da82); 2.80 (AGNR84); 3.0 (Ma84) 5.56 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac80, AcMa77, Al65, Al68, Al76, Al77, Al82, AlCz79, AlCz83, AlLi68, AlWa70, All76, Alle73, Alle82, Ar70, ArKo68, BOS74, Ba78, Bar78, Bo68, CS83, CWA69, CaKo68, CaWy76, CePe83, CePe85, CoBa74, Cu74, DFHM67, Da75, De71, Dr80, FaM86, FaMa86, FaMa87, Fe82, FeAl87, FeBr90, GPY79, Go87, Gr71, Gu70, Gu88, HaSe66, He71, He90, Hi71, Hig71, Ii81, Is84, Iw73, IwKa65, KVLS81, Ka66, Ka69, Ka70, Ka76, Ka78, Ka79, Ka80, Ka81, Ka86, Kal80, Kh76, Kh84, Khr76, Kle78, Kos76, Kr69, LNP89, Ma88, MaFa85, MaFa86, MiS77, MiSa77, NPP80, PM87, PSK78, Pe75, Pe83, Pe91, Ph84, PiKh79, PrPo83, RRA82, Ru70, SGBO84, Sa84, SaMi78, Sabb86, Sm71, Sm73, StKa89, TP77, Te68, TuTe84, VKDa65, Vi69, Vo70, Wa70, ZuAl86

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65...136 Aller L.H., Walker F.M. *Astrophys. J. 141,1318* Spectrophotometric studies of gaseous nebulae. V. Measurements of line intensities in planetary nebulae with an electronic camera.
67..9022 Kaler J.B. *Astrophys. J. 149,383* Efficiency of Bown fluorescence mechanisms.
69..9031 Aller H.L. *Sky Tel. 38,377-379* The planetary nebulae. VIII.

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72..9035 Harrington J.P. *Astrophys. J. 176,127* Bowen fluorescence mechanism in P.N.

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76..3103 Hawley S.A., Duncan D.K. *Publ. Astron. Soc. Pac. 88,672-676* A determination of R from optical and radio observations of planetary nebulae.

78...102 Ford H.C., Jacoby G.H. *Astrophys. J. 219,437-444* Planetary nebulae in local group galaxies. V. The Andromeda galaxy.

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80....52 Dinerstein H.L. *Astrophys. J. 237,486-490* Infrared line measurements and the abundance of sulfur in planetary nebulae.

80...330 Kallman T., McCray R. *Astrophys. J. 242,615-627* Efficiency of the bowen fluorescence mechanism in static nebulae.

80.50311 Marionni P.A., Harrington J.P. *The Universe at ultraviolet wavelengths. The first two years of IUE. Proceeding s of a symposium held at NASA Goddard Space Flight Center, Greenbelt, Maryland, May 7-9, 1980. Ed. R.D. Chapman . NASA CP-2171.633-639* Elemental abundances in high-excitation planetary nebulae.

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86....94 Likkel L., Aller L.H. *Astrophys. J. 301, 825-833* Observations of the Bowen fluorescent mechanism in pllanetary nebulae.

86..2202 Hua C.T., Grundseth B. *Astron. J. 92, 853-858* Small-scale study of the planetary nebula IC 351.

88..1178 Hua C.T. *Astron. Astrophys. 193, 273-280* Narrow-band imagery of three planetary nebulae: A2, IC 289 and M 1-75.

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160.5–00.5

We 1-2, PK 160–0°1

	Disc.: Weinberger 1977	*Diameter* (″)	
		opt. 92. 77..1547	
1950:	04 43 07.0 +44 22 38 77..1547		
2000:	04 46 42.7 +44 28 00 .		

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-12-23		
HeII 468.6 *nm* – | $H\alpha$ 656.3 *nm* 100		
[OIII] 436.3 – | [NII] 658.4 70:		
495.9 – | [SII] 671.7		
HeI 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ $-13.4 \pm .3$ KSK90		*Radio* *2cm*
		(*mJy*) *6cm* 2 ZPB89

Central Star: AG82 36 —
U 20.37 *B* 21.33 *V* 20.87 *Qual:* B KJL88

Distance (kpc) stat.: 0.53 (CKS91)

Bibliography: AG82, Ko78, MWH81, We77

77..1547 Weinberger R. *Astron. Astrophys. Suppl. Ser. 30,343-348* New Planetary Nebulae of low surface brightness.

161.2–14.8

IC 2003, PK 161–14°1, ARO 76, VV 15, VV' 21, IRAS 03531+3343

	Disc.: Hubble 1920	*Diameter* (″)	*Rvel:* -15.5 ± 2.2 STPP83
1950:	03 53 10.1 +33 43 50 IRAS	*opt.* 8.6 CJA87	*Expansion Velocities* (*km/s*)
	03 53 10.0 +33 43 50 AK90	CaKa71	[OIII] 21.5 Sa84
2000:	03 56 22.0 +33 52 30 .	*radio* 9. AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-01-23		*IR Class:* N	*IRAS Fluxes* (*Jy*) *Qual.*
HeII 468.6 *nm* 65 | $H\alpha$ 656.3 *nm* 365		*J* 12.18	12μm 0.47 3
[OIII] 436.3 12 | [NII] 658.4 –		*H* 12.38	25μm 4.14 3
500.7 983 | [SII] 671.7 } 3.		*K* 11.85	60μm 3.41 3
HeI 587.6 8 | 673.1 }		*L*	100μm 11.71 1
$\lg F_{H\beta}(mW.m^{-2})$ $-11.19 \pm .01$ Bark78, Kle78		*Photom.* PPFS87	*Radio* *2cm*
IUE Spectra: *LW*(1) *SW*(2)		*Spectr.* 83...453	(*mJy*) *6cm* 50 AK90

Central Star: AG82 25 —	WC 7-8 All76
B 14.7 *V* 15.0 *Qual:* C TASG91	WC early Me91

Distance (kpc) stat.: 4.66 (CaKa71); 5.54 (Ca76); 4.4 (Ac78); 3.11 (Da82); 2.40 (AGNR84); 2.4 (Ma84) 4.68 (CKS91)

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163.1–00.8

We 1-3, PK 163–0°1

	Disc.: Weinberger 1977	*Diameter* (″)	
		opt. 115. 77..1547	
1950: 04 50 59.7	+42 11 47	77..1547	
2000: 04 54 31.5	+42 16 37	.	
$\lg F_{H\beta}(mW.m^{-2})$ −13.2 ± . KSK90			

Central Star: AG82 37 —
U 20.23 *B* 21.24 *V* 21.01 *Qual:* A KJL88

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164.8+31.1

JnEr 1, PK 164+31°1, ARO 121, VV 47, VV' 74, IRAS 07539+5333

		Disc.: Jones et al 1939	*Diameter* (″)	*Rvel*: −84.3 ± 8.8 STPP83	
1950:	07 53 58.1	+53 33 23 IRAS	*opt.* 380. CaKa71	*Expansion Velocities* (*km/s*)	
	07 53 59.9	+53 33 24 Ka83		[OIII] 22.0	We89
2000:	07 57 52.6	+53 25 18 .		[NII] 41	We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-23 E					*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm* 900	12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4 3513	25μm	0.25	1
	500.7	2225	[*S*II]	671.7	60μm	0.40	1
*He*I	587.6	–		673.1	100μm	2.20	3

$\lg F_{H\beta}(mW.m^{-2})$ −11.27 ± .2 Kale76
IUE Spectra: *LW*(0) *SW*(2)

Central Star: AG82 95 —
U 15.26 *B* 16.53 *V* 16.83 *Qual:* A 88..3016

Notes: Often incorrectly named as NGC 2474-5 (nearby pair of galaxies)
Distance (kpc) stat.: 0.3-0.6 (CaKa71); 0.65 (Ac78); 0.9 (Ma84); 0.57 (CKS91)

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165.5–06.5

K 3-67, PK 165–6°1, IRAS 04364+3639

			Disc.: Kohoutek 1969	*Diameter* (″)	*Rvel:* −77.0 ± 1.4 STPP83
1950:	04 36 27.1	+36 39 49	IRAS	*opt. St.* Ko69	*Expansion Velocities* (*km/s*)
	04 36 27.5	+36 39 52	AK90		[OIII] 20.5 We89
2000:	04 39 47.9	+36 45 42	.	*radio* 2.2 AK90	[NII] 22.5 We89

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-21						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1750	*J*	12*μm*	0.26	1
[*OIII*]	436.3	12	[*NII*]	658.4	–	*H*	25*μm*	2.54	3
	500.7	1224	[*SII*]	671.7		*K* > 11.7	60*μm*	2.98	3
HeI	587.6	56		673.1	43	*L*	100*μm*	1.94	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.13 ± .10 ASTR91				*Photom.* AI74	*Radio* (*mJy*) *2cm*		
							6cm	42 AK90	

Central Star: AG82 34 — *B* 18.5 *Qual:* D TASG91 *Spectrum:* O(C) Me91

Distance (kpc) stat.: 3.49 (Da82); 2.20 (AGNR84); 7.6 (CKS91); 3.40 (CKS91)

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165.5–15.2

NGC 1514, PK 165–15°1, ARO 21, VV 17, VV' 23, IRAS 04061+3038

			Disc.: Pickering 1879	*Diameter* (″)	*Rvel:* +59.8 ± 4.4 STPP83
1950:	04 06 09.6	+30 38 49	IRAS	*opt.* 132. CJA87	*Expansion Velocities* (*km/s*)
	04 06 08.3	+30 38 43	66.32011		[OIII] 25.0 SaHa82
2000:	04 09 17.1	+30 46 35	.	*radio* 160. ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-19							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	502		12*μm*	0.25	1
[*OIII*]	436.3	–	[*NII*]	658.4	–		25*μm*	1.03	2
	500.7	1189	[*SII*]	671.7			60*μm*	10.17	3
HeI	587.6	20		673.1	4		100*μm*	21.97	2
$\lg F_{H\beta}(mW.m^{-2})$		−10.98 ± .03 Kale76							
IUE Spectra:		*LW*(5) *SW*(6)							

Central Star: AG82 28 — AG +30 402; BD +30 623; HD 281679; PLX 915; SAO 57020; FB 33; FB 34
U 9.87 *B* 9.93 *V* 9.42 *Qual:* A 72.30001, SK85 , TASG91 *Spectrum:* sdO + A0 III 78.30024

Notes: Binary nucleus (67...204, 68..9086, 68..9087, 72...146, Ac76, Li82). Multiple-shell PN; monochromatic images (82..1159, 82..1521, CJA87, Ba87)

Distance (kpc) indiv.: ext. 1.0 (Ac78); spect. 0.66 (Ac78); spect. 0.40 (Po80); ext. 0.81 (Po80); ext. 0.8 (Sab86)

Distance (kpc) stat.: 0.78 (CaKa71); 0.7 (Ca76); 0.59 (Ac78); 0.67 (Da82); 0.65 (AGNR84); 0.8 (Ma84)

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166.1+10.4

IC 2149, PK 166+10°1, ARO 23, VV 26, VV' 37, IRAS 05526+4605

			Disc.: Fleming 1906	*Diameter* (″)		*Rvel:* −30.7 ± 2.1	STPP83
1950:	05 52 40.3	+46 05 52	IRAS	*opt.* 8.5	PK67	*Expansion Velocities* (*km/s*)	
	05 52 40.8	+46 05 53	GPG86			[OIII] 10.0	SaHa82
2000:	05 56 23.9	+46 06 17	.	*radio* 7.	75...238	[NII] 20	Sa84

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-12-21					*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm* 100	*J*	10.20	12*μm*	2.17	3
[OIII]	436.3	–	[*N*II]	658.4 0:	*H*	10.46	25*μm*	17.15	3
	495.9	–	[*S*II]	671.7	*K*	9.90	60*μm*	14.17	3
HeI	587.6	–		673.1	*L*		100*μm*	5.34	3
$\lg F_{H\beta}(mW.m^{-2})$ −10.55 ± .01 KM81, Kal83					*Photom.* PeTo87				
IUE Spectra: *LW*(9) *SW*(10)					*Spectr.* 87..1381				

Central Star: AG82 51 — BD +46 1067; GCRV 3681; HD 39659; PLX 1357
B 11.28 *V* 11.59 *Qual:* A SK85

O4 (f) 77....41
Of(H) Me91

Notes: Monochromatic images (Ba87)
Distance (kpc) indiv.: ext. 0.7 (Ac78); ext. 1.2 (Po83); wind 1.09 (85....32); ext. 0.7 (Sab86)
Distance (kpc) stat.: 2.66 (CaKa71); 3.24 (Ca76); 1.0 (Ac78); 1.12 (Da82); 1.25 (PhPo84); 1.10 (AGNR84); 0.7 (Ma84); 1.59 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac80, Ac82, AcMa77, Al65, Al68, Al70, All76, Ar68, Ar70, ArKo68, BFM80, Ba78, Ba89, Bar78, Bark78, Bo68, Ca84, CaRu74, CePe83, CePe85, CoBa74, CoBa80, DFHM66, DFHM67, Da75, De71, Dr80, FaMa86, FaMa87, Fe82, FeAl87, FeBr90, GMS72, GPY79, Gi83, Gol87, Gr71, Gr89, GrNe90, Gu70, Gu88, HaSe66, He71, He83, He86, HeAu87, Hi69, Hi71, Hi73, Hig71, Hu78, IwKa65, Ka66, Ka69, Ka70, Ka76, Ka79, Ka80, Ka81, Ka86, Kal76, Kal78, Kal80, Kal86, Kh76, Khr76, Kle78, Ko77, Kos76, Kr69, LNP89, MaFa85, MaFa86, MaPo80, Mar81, NPP80, PPOJ86, PPT88, PaPe88, Pe75, Pe83, Pe89, Pe91, PeF73, PeFr72, PeFr73, Ph84, Phi84, PiKh79, PrPo83, RRA82, Ru70, SGBO84, SKC74, SSAG87, SWPD87, SaMi78, Sabb86, Sh85, Sm73, SmAl69, StKa89, StSh83, TP77, Te68, Th68, ThCo67, ThDa70, VKda65, Vi69, Vo70, VoCo90, WPSD88, We89, ZuAl86

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166.4–06.5

CRL 618, PK 166−6°1, IRAS 04395+3601

		Disc.: Westbrook et al 1975		*Diameter* (″)		
1950:	04 39 34.1	+36 01 15	IRAS	*opt.* 12.	We77	
	04 39 33.8	+36 01 15	75..9035			
2000:	04 42 53.4	+36 06 53	.	*radio* 1.0	ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-19						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1575	12μm	470.80	3
[*OIII*]	436.3	–	[*NII*]	658.4	122	25μm	1106.00	3
	500.7	21:	[*SII*]	671.7		60μm	1036.00	3
HeI	587.6	13:		673.1		100μm	339.90	3
$\lg F_{H\beta}(mW.m^{-2})$		$-12.7 \pm .2$	ASTR91			*Radio* (*mJy*)	*2cm* 132	ZPB89
							6cm 18.4	ZPB89

Central Star: AG82 35 — AFGL 618
V 17.0 75..9035 *Spectrum:* BO - O9.5 ? 75..9035

Distance (kpc) stat.: 3.30 (AGNR84); 3.53 (CKS91)

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167.0-00.9

A 8, PK 167−0°1, A55 7, ARO 216, VV' 28

Disc.: Abell 1955 1950: 05 03 11.4 +39 04 09 Ka83 2000: 05 06 37.9 +39 08 08 .	*Diameter* (″) *opt.* 60. CaKa71	*Rvel:* +58.2 ± 6.5 STPP83
Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-12-22 *HeII* 468.6 *nm* − | *Hα* 656.3 *nm* 100 [*OIII*] 436.3 − | [*NII*] 658.4 − 500.7 70: | [*SII*] 671.7 *HeI* 587.6 − | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ −13.0 ± .3 Ka83		

Central Star: AG82 40 —
m_{pg} 20.2 *Qual:* P PK67

Distance (kpc) stat.: 1.78 (CaKa71); 2.6 (Ma84),1.6 (CKS91)

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167.4-09.1

K 3-66, PK 167−9°1, IRAS 04333+3333

Disc.: Kohoutek 1969 1950: 04 33 21.8 +33 33 24 IRAS 04 33 22.1 +33 33 27 AK90 2000: 04 36 37.2 +33 39 30 .	*Diameter* (″) *opt. St.* Ko69 *radio* 2.1 AK90	*Rvel:* −67.5 ± 1.7 STPP83 *Expansion Velocities* (*km/s*) [OIII] 16.5 We89 [NII] 30.5 We89
Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-21 *HeII* 468.6 *nm* − | *Hα* 656.3 *nm* 1519 [*OIII*] 436.3 − | [*NII*] 658.4 − 500.7 287 | [*SII*] 671.7 } 17. *HeI* 587.6 33 | 673.1 }		*IRAS Fluxes* (*Jy*) *Qual.* 12μm 0.40 1 25μm 1.53 3 60μm 0.96 3 100μm 2.58 1
$\lg F_{H\beta}(mW.m^{-2})$ −12.24 ± .10 ASTR91		*Radio* *2cm* (*mJy*) *6cm* 18 AK90

Central Star: AG82 32 —
B 16.26 *V* 15.36 *Qual:* B TASG91 *Spectrum:* Contin. Ko69

Distance (kpc) stat.: 6.68 (CKS91)

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88.32008 Bidelman W.P. *Bull. Inf. Centre Donnees Stellaires 35,52-56* IRAS point source catalogue cross-identifications.

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170.3+15.8

NGC 2242

			Disc.: Shaw et al 1987	*Diameter* (″)
1950:	06 30 27.9	+44 48 58	87..3004	*opt.* 22. 87..3004
2000:	06 34 07.4	+44 46 37	.	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1988-12-02

*He*II	468.6 *nm*	102	*Hα*	656.3 *nm*	267
[*O*III]	436.3	20	[*N*II]	658.4	–
	500.7	191	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.1 \pm .3$ ASTR91
IUE Spectra: *LW*(3) *SW*(5)

Central Star:
B 17.4 *V* 17.6 *Qual:* C TASG91

Notes: Galactic halo planetary nebula (91.30050)

87..3004 Shaw R.A., Bidelman W.P. *Publ. Astron. Soc. Pac. 99, 27-30* NGC 2242: a newly-discovered planetary nebula.
91.30050 Peimbert M. *Elements and the cosmos, eds R. TERLEVICH et al. Cambridge Univ. Press*

170.7+04.6

K 3-69, PK 170+4°1, IRAS 05378+3913

			Disc.: Kohoutek 1969	*Diameter* (″)	*Rvel:* +22.9 ± 4.0 STPP83
1950:	05 37 53.2	+39 13 37	IRAS	*opt. St.* Ko69	
	05 37 54.0	+39 13 39	AK90		
2000:	05 41 22.1	+39 15 08	.	*radio* 0.45 AK90	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-04

*He*II	468.6 *nm*	54	*Hα*	656.3 *nm*	842
[*O*III]	436.3	–	[*N*II]	658.4	213
	500.7	1215	[*S*II]	671.7	13:
*He*I	587.6	33		673.1	14:

$\lg F_{H\beta}(mW.m^{-2})$ $-13.25 \pm .10$ ASTR91

IR Class: .

J	
H	
K	> 9.8
L	
Photom.	AI74

IRAS Fluxes (*Jy*)		*Qual.*
12*μm*	0.44	2
25*μm*	1.40	3
60*μm*	2.91	3
100*μm*	2.68	3

Radio (*mJy*) *2cm*
6cm 8 AK90

Distance (kpc) stat.: 7.95 (CKS91)

Bibliography: AcMa77, Ko78, MWH81, We77

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171.3-25.8

Ba 1, PK 171−25°1, ARO 87, VV 14, VV' 20, IRAS 03506+1920

			Disc.: Baade 1935	*Diameter* (″)	*Rvel*: −19.9 ± 8.6 STPP83
1950:	03 50 40.3	+19 20 49	IRAS	*opt.* 38. CaKa71	*Expansion Velocities* (*km/s*)
	03 50 36.0	+19 19 00	ZPB89		[OIII] 35.5 SSB86
2000:	03 53 29.7	+19 27 51	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-23					
HeII 468.6 *nm*	–	$H\alpha$	656.3 *nm*	266	
[*OIII*] 436.3	–	[*NII*]	658.4	–	
500.7	326	[*SII*]	671.7		
HeI 587.6	–		673.1		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.40	3
60μm	0.58	2
100μm	2.35	1

$\lg F_{H\beta}(mW.m^{-2})$	−12.44 ± .02 KIe78	*Radio* (*mJy*)	*2cm* 12 MiAl82
			6cm 8 ZPB89

Central Star: AG82 24 —
B 18.7 KSK90

Notes: Monochromatic images (AG82)
Distance (kpc) stat.: 3.49 (CaKa71); 2.51 (71..9002); 2.22 (Ac78); 2.43 (Da82); 2.40 (AGNR84); 3.6 (Ma84) 2.46 (CKS91)

Bibliography: *PK67*, AGNR85, AGR89, AcMa77, CS83, CaWy76, ChLo76, DFHM67, De71, Hi69, Hi71, Hig71, Ka76, Ka83, Kal80, Kh76, Kh79, Khr76, KrK68, MaPo80, Mi73, MiAl75, MiWe79, Ru70, SSAG87, Sabb86, We89

71..9002 Robbins R.R., Robinson E.L. *Astrophys. J. 167,249* Capture cascade intensity of the He singlets in nebulae.
73..9006 D'Odorico S., Rubin V.C., Ford W.K. *Astron. Astrophys. 22,469* Line intensities and radial velocities for 12 planetary nebulae.

173.5+03.2

Pu 2

			Disc.: Purgathofer 1980	*Diameter* (″)	*Rvel*: +45.0 ± 5.2 STPP83
				opt. 20. 80..1015	
1950:	05 39 12	+36 07.7	80..1015		
2000:	05 42 34	+36 09.1	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-02					
HeII 468.6 *nm*	–	$H\alpha$	656.3 *nm*	500	
[*OIII*] 436.3	–	[*NII*]	658.4	–	
500.7	592	[*SII*]	671.7		
HeI 587.6	–		673.1		

$\lg F_{H\beta}(mW.m^{-2})$	−13.6 ± .4 ASTR91

Central Star: AG82 55 —
B 20.9 *V* 19.9 *Qual:* C KJL88

Notes: FC and α wrong in 80..1015 and AG82.

Bibliography: AG82, SSAG87

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89.50080 Kwitter K.B., Jacoby G.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 303* New identifications of faint central stars in extended PN.

173.7+02.7

PP 40, PK 173+2°1, GM 1-66

Disc.: Turner et al 1985 1950: 05 37 32 +35 41.1 85..2007 2000: 05 40 53 +35 42.6 .	*Diameter* (″) *opt.* 30. : CS90 *radio* 30. 85..2007	
Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-10-05 *He*II 468.6 *nm* – | *Hα* 656.3 *nm* 2645 [*O*III] 436.3 – | [*N*II] 658.4 – 495.9 – | [*S*II] 671.7 } 512. *He*I 587.6 – | 673.1 } 512. $\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .4$ ASTR91		

Notes: Cometary nebula with a symmetric radio shape (85..2007)

Bibliography: Ko89

85..2007 Turner K.C., Terzian Y. *Astron. J. 90, 59-64* Studies of small galactic nebulae.

173.7–05.8

K 2-1, PK 173–5°1, ARO 175

Disc.: Kohoutek 1963 1950: 05 03 56.2 +30 46 07 Ka83 2000: 05 07 08.7 +30 50 03 .	*Diameter* (″) *opt.* 132. CaKa71	*Rvel:* $+19.2 \pm 4.5$ STPP83
Intens. ($H\alpha = 100$) OHP-CAR+CCD 1986-12-22 *He*II 468.6 *nm* – | *Hα* 656.3 *nm* 100: [*O*III] 436.3 – | [*N*II] 658.4 – 500.7 176: | [*S*II] 671.7 *He*I 587.6 – | 673.1 $\lg F_{H\beta}(mW.m^{-2})$ $-11.81 \pm .02$ Ka83		

Central Star: AG82 41 —
m_{pg} 18.8 *Qual:* P PK67

Notes: Status of the object is not clear; possibly identical to the diffuse nebula SS 38
Distance (kpc) stat.: 0.89 (CaKa71); 1.4 (Ma84); 1.1 (CKS91)

Bibliography: *PK67*, ACPS87, AG82, AcMa77, CaWy76, Hi71, Iw73, Jo80, KSK90, KrKo68, Ru70, Sabb86, ZPB90

80..1002 Purgathofer A., Perinotto M. *Astron. Astrophys. 81,215-217* Kinematics of PN.I.

174.2–14.6

H 3-29, PK 174–14°1, ARO 214, IRAS 04343+2456

			Disc.: Mayall 1964	*Diameter* (″)		*Rvel*: −19.9 ± 2.0 STPP83
1950:	04 34 20.5	+24 56 38	IRAS	*opt.* 20.	La82	
	04 34 18.0	+24 57 00	ZPB89			
2000:	04 37 20.8	+25 03 00	.	*radio* 17.	ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-21					
HeII 468.6 *nm*	93	$H\alpha$	656.3 *nm*	881	
[*OIII*] 436.3	–	[*NII*]	658.4	–	
500.7	572	[*SII*]	671.7		
HeI 587.6	–		673.1		
$\lg F_{H\beta}(mW.m^{-2})$	−12.49 ± .03	Kal83			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	2.04	3
60μm	1.54	3
100μm	7.82	1
Radio 2*cm*	7	MiAl82
(*mJy*) 6*cm*	18	ZPB89

Central Star: AG82 33 — GL Tau
$B > 18.8$ $V > 18.6$ 72.30001

Notes: Possibly associated to the the variable GL Tau (Bo76)
Distance (kpc) stat.: 2.60 (AGNR84); 4.60 (CKS91)

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74...266 Romano G. *Comm. 27 IAU Bull. Var. Stars 886* GL Tau.
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83..6521 Maghakian T.Yu. *Astrofizika 19, 371-373* On the nature of GL Tauri.
87.10311 Kardopolov V.I. *Astron. Tsirk. 1522, 7* On photometric behaviour of GI Tauri and GK Tauri.
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88.32008 Bidelman W.P. *Bull. Inf. Centre Donnees Stellaires 35,52-56* IRAS point source catalogue cross-identifications.
89.50028 Turatto M., Cappellaro E., Sabbadin F. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 172* CCD images of selected planetary nebulae.

178.3–02.5

K 3-68, PK 178–2°1, IRAS 05284+2856

			Disc.: Kohoutek 1969	*Diameter* (″)		*Rvel*: +65.0 ± 4.8 STPP83
1950:	05 28 25.2	+28 56 31	IRAS	*opt.* 10.	Ko69	
	05 28 25.2	+28 56 30	ZPB89			
2000:	05 31 35.6	+28 58 41	.	*radio* 12.	ZPB89	

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-22					
HeII 468.6 *nm*	78	$H\alpha$	656.3 *nm*	548	
[*OIII*] 436.3	–	[*NII*]	658.4	–	
500.7	750	[*SII*]	671.7		
HeI 587.6	–		673.1		
$\lg F_{H\beta}(mW.m^{-2})$	−12.9 ± .4	ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.47	3
60μm	0.56	1
100μm	2.96	1
Radio 2*cm*		
(*mJy*) 6*cm*	5	ZPB89

Central Star: AG82 45 —

Distance (kpc) stat.: 5.95 (CKS91)

Bibliography: AG82, AGR89, AcMa77, AlKe87, He90, Ko78, MWH81, Pe91, SSAG87, Sa86, We77

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181.5+00.9

Pu 1, PK 181+1°1

			Disc.: Purgathofer 1978	*Diameter* (″)	*Rvel:* +38.6 ± 5.1 STPP83
				opt. 65. 78..1082	
1950:	05 49 39	+28 05.8	78..1082		
2000:	05 52 48	+28 06.4	.		

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1988-01-25

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100:
[*O*III]	436.3	–	[*N*II]	658.4	76:
	500.7	257	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .3$ KSK90

Central Star: AG82 50 —
U 20.58 *B* 21.13 *V* 21.16 *Qual:* A KJL88

Distance (kpc) stat.: 2.01 (CKS91)

Bibliography: AG82

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89..2283 Kwitter K.B., Jacoby G.H. *Astron. J. 98, 2159-2162* Properties of central stars in 13 faint, extended planetary nebulae.

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183.8+05.5

WeSb 2, PK 183+5°1

			Disc.: Weinberger et al 1981	*Diameter* (″)	
				opt. 135. 81..1143	
1950:	06 13 01.2	+28 23 09	81..1143		
2000:	06 16 11.0	+28 22 05	.		

81..1143 Weinberger R., Sabbadin F. *Astron. Astrophys. 100,66-67* Detection of six new extended Planetary Nebulae by means of interference filterphotography.

184.0–02.1

M 1-5, PK 184–2°1, ARO 123, ARO 219, VV 24, VV' 35, IRAS 05437+2420

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +37.4 ± 4.7	STPP83
1950:	05 43 46.3	+24 20 58	IRAS	*opt.* 2.	La82	*Expansion Velocities* (*km/s*)	
	05 43 46.0	+24 20 58	AK90			[OIII] 5.0	84..1286
2000:	05 46 50.0	+24 22 02	.	*radio* 2.3	AK90		

	IR Class: .		*IRAS Fluxes* (*Jy*)		*Qual.*
	J		12μm	2.11	3
	H		25μm	8.96	3
	K	> 9.7	60μm	4.28	3
	L		100μm	2.26	1
$\lg F_{H\beta}(mW.m^{-2})$ −12.05 ± .01 Bark78	*Photom.*	CoBa74	*Radio* 2*cm*	50	MiAl82
IUE Spectra: *LW*(1) *SW*(0)			(*mJy*) 6*cm*	70	AK90

Distance (kpc) stat.: 2.06 (Da82); 1.80 (AGNR84); 2.92 (CKS91)

Bibliography: *PK67*, AGR89, Ac80, AcMa77, Al74, Ba78, Bar78, CS83, CaRu74, Hi71, Is84, KPK81, Ka79, Ka80, Ka81, Ka86, Kal80, Kle78, Kon78, Kon83, LNP89, Mi73, NPP80, PPT88, Pe91, Ru70, Sa84, SaMi78, StKa89, TBB74, TTP87, Te80, We89, ZTPS89

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90..3003 Tamura S., Shibata K.M. *Publ. Astron. Soc. Pac.,102,1301* Expansion analyses on low-excitation planetary nebulae with stellar images

184.6+00.6

K 3-70, PK 184+0°1, IRAS 05556+2518

			Disc.: Kohoutek 1969	*Diameter* (″)		*Rvel*: +26.9 ± 4.5	STPP83
1950:	05 55 39.0	+25 18 35	IRAS	*opt.* 1.8	Ko69		
	05 55 40.0	+25 18 31	AK90				
2000:	05 58 45.3	+25 18 44	.	*radio* 1.5	AK90		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-26							
HeII	468.6 *nm*	51:	*Hα*	656.3 *nm*	1005	*IRAS Fluxes* (*Jy*)	*Qual.*
[OIII]	436.3	–	[*NII*]	658.4	2163	12μm 0.27	1
	500.7	978	[*SII*]	671.7	} 152.	25μm 0.35	1
HeI	587.6	31:		673.1		60μm 1.26	3
						100μm 8.44	1
$\lg F_{H\beta}(mW.m^{-2})$ −13.49 ± .10 ASTR91						*Radio* 2*cm*	
						(*mJy*) 6*cm* 6	AK90

Distance (kpc) stat.: 12.2 (CKS91)

Bibliography: AcMa77, Ko78, MWH81, Sa86, We77

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184.8+04.4

K 3-71, PK 184+4°1

			Disc.: Kohoutek 1969	*Diameter* (″)	*Rvel:* +18.0 ± 2.5 STPP83
				opt. 3.1 Ko69	*Expansion Velocities* (*km/s*)
1950:	06 10 47.4	+26 53 51	We77		[OIII] 12.5 SSB86
2000:	06 13 55.0	+26 52 57	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1989-03-25

*He*II	468.6 *nm*	88	$H\alpha$	656.3 *nm*	721
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	590	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −13.62 ± .10 ASTR91

Distance (kpc) stat.: 5.12 (CKS91)

Bibliography: AcMa77, Ko78, MWH81, Sa86, We89

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69.13001 Kohoutek L. *Bull. Astron. Inst. Czech. 20,307-312* Hamburg Schmidt-camera survey of faint planetary nebulae.
80..1002 Purgathofer A., Perinotto M. *Astron. Astrophys. 81,215-217* Kinematics of PN.I.
87..3128 Tamura S., Shaw R.A. *Publ. Astron. Soc. Pac. 99, 1264-1268* Spectroscopic analyses of the stellar planetary nebulae K 3-66, K 3-67, and K 3-71.

189.1+19.8

NGC 2371-72, PK 189+19°1, ARO 45, VV 37, VV' 61, IRAS 07224+2935

			Disc.: Pease 1917	*Diameter* (″)	*Rvel:* +20.6 ± 2.7 82...525
1950:	07 22 25.2	+29 35 25	IRAS	*opt.* 44. CaKa71	*Expansion Velocities* (*km/s*)
	07 22 26.2	+29 35 35	KVLS81		[OIII] 42.5 Sa84
2000:	07 25 35.3	+29 29 36	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-19

*He*II	468.6 *nm*	123	$H\alpha$	656.3 *nm*	397
[*O*III]	436.3	11	[*N*II]	658.4	27
	500.7	838	[*S*II]	671.7	11
*He*I	587.6	5		673.1	17

$\lg F_{H\beta}(mW.m^{-2})$ −10.99 ± .01 Kle78
IUE Spectra: *LW*(4) *SW*(4)

IRAS Fluxes (*Jy*)

12μm	0.61	3
25μm	5.63	3
60μm	8.36	3
100μm	9.42	3

Central Star: AG82 80 —
U 13.28 *B* 14.48 *V* 14.85 *Qual:* A KSDN68, 72.30001, TASG91

O VI 84...100
WC early Me91

Notes: Monochromatic images (CJA87)
Distance (kpc) indiv.: ext. 0.50 (Po80); wind 1.64 (85....32)
Distance (kpc) stat.: 1.1 (CaKa71); 1.58 (Ca76); 1.21 (Ac78); 1.38 (Da82); 1.30 (AGNR84); 1.5 (Ma84) 1.54 (CKS91)

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82.10025 Louise R. *Sky Telesc. 64,19* Odd planetary nebula structures.
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90..3001 Morris M., Reipurth B. *Publ. Astron. Soc. Pac.,102,446* The optical form of the bipolar preplanetary nebula IRAS 09371+1212.
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189.8+07.7

M 1-7, PK 189+7°1, ARO 127, VV 30, VV' 46, IRAS 06342+2403

		Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* +2.4 ± 9.2 STPP83
1950:	06 34 17.6	+24 03 13 IRAS	*opt.* 8.8	CaKa71	*Expansion Velocities* (*km/s*)
	06 34 17.8	+24 03 12 Mi76			[OIII] 12.0 Sa84
2000:	06 37 21.0	+24 00 36 .	*radio* 11.	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20					
HeII 468.6 *nm*	19	$H\alpha$ 656.3 *nm*	428		
[*OIII*] 436.3	7	[*NII*] 658.4	465		
500.7	1315	[*SII*] 671.7	20		
HeI 587.6	14	673.1	23		
$\lg F_{H\beta}(mW.m^{-2})$	$-12.05 \pm .03$ Ka83				
IUE Spectra:	*LW*(0) *SW*(1)				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.81	3
60μm	4.98	3
100μm	4.85	3
Radio 2*cm*	18	MiAl82
(*mJy*) 6*cm*	13	ZPB89

Central Star: AG82 64Bis — *V* 19.64 *Qual:* A JK89 *Spectrum:* O VI, WC 8 Al176

Distance (kpc) stat.: 3.73 (CaKa71); 2.59 (Ac78); 5.95 (Da82); 3.80 (AGNR84); 5.7 (Ma84) 5.91 (CKS91)

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91..1049 Forveille T., Huggins P.J. *Astron. Astrophys. 248,599* The structure of the CO envelopes of planetary nebulae.

190.3–17.7

J 320, PK 190−17°1, ARO 60, VV 20, VV' 29, IRAS 05028+1038

		Disc.: Jonckheere 1916		*Diameter (")*		*Rvel:* −23.4 ± 0.7 STPP83	
1950:	05 02 48.2	+10 38 22	IRAS	*opt.* 6.4	CaKa71	*Expansion Velocities (km/s)*	
	05 02 48.4	+10 38 20	AK90			[OIII] 15.0	We89
2000:	05 05 34.3	+10 42 21	.	*radio* 7.1	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	4	$H\alpha$	656.3 *nm*	394	*J*	12.45	12μm	0.25	1
[OIII]	436.3	15	[NII]	658.4	9:	*H*	13.0	25μm	1.20	3
	500.7	1336	[SII]	671.7	0.4:	*K*	12.4	60μm	2.00	3
*He*I	587.6	17		673.1	0.9:	*L*		100μm	6.30	1
lg$F_{H\beta}$	−11.39 ± .01	60...353, Bark78, Kle78				*Photom.*	PeTo87	*Radio* 2cm	34	MiAl82
IUE Spectra:	*LW*(1)	*SW*(2)						(*mJy*) 6cm	23	AK90

Central Star: AG82 39 —
B 14.45 *V* 14.42 *Qual:* A SK85 , TASG91 *Spectrum:* WC AlKe85

Notes: Proper motion in 10^{-4}"/yr: $\mu_\alpha = -2 \pm 40$, $\mu_\delta = 16 \pm 47$ (Cu74). Monochromatic images (Ba87); ESO-NTT images by Schwartz H.E. and Melnick J.

Distance (kpc) stat.: 5.45 (CaKa71); 5.83 (MiAl75); 5.8 (Ca76); 4.01 (Ac78); 4.20 (Da82); 2.90 (AGNR84); 4.1 (Ma84); 6.06 (CKS91)

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192.5+07.2

HDW 6, PK 192+7°1, HaWe 8

Disc.: Hartl et al 1983	*Diameter (″)*	
	opt. 76. 87..1593	
1950: 06 37 10.2 +21 27 45 83.28034		
2000: 06 40 09.8 +21 24 57 .		

Intens. ($H\alpha = 100$) OHP-CAR+CCD 1988-12-02

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	234	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star: AG82 65 —
B 19. 87..1593

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193.6–09.5

H 3-75, PK 193–9°1, ARO 218

Disc.: Mayall 1964	*Diameter (″)*	*Rvel:* +9.5 ± 19.0 STPP83
	opt. 24. La82	
1950: 05 37 56.1 +12 19 47 AK90		
2000: 05 40 44.4 +12 21 17 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19 N

*He*II	468.6 *nm*	21	$H\alpha$	656.3 *nm*	427	*IR Class:* N+S	
[*O*III]	436.3	–	[*N*II]	658.4	84	*J* 12.13	
	500.7	1359	[*S*II]	671.7	14	*H* 11.50	
*He*I	587.6	12		673.1	16	*K* 11.32	
						L	

$\lg F_{H\beta}(mW.m^{-2})$ −12.25 ± . CS83
IUE Spectra: *LW*(0) *SW*(1)

Photom. Wh85

Radio *2cm* 5 MiAl82
(*mJy*) *6cm* 24 Mi79

Distance (kpc) stat.: 2.70 (AGNR84)

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89.50116 Lutz J., Lame N.J. *Proceedings of the 131st symposium of the IAU, held in Mexico city, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 462* CCD images of three planetary nebulae with binary nuclei.

194.2+02.5

J 900, PK 194+2°1, ARO 92, VV 28, VV'44, IRAS 06230+1749

			Disc.: Jonckheere 1916	*Diameter (")*		*Rvel:* +47.2 ± 0.4	STPP83
1950:	06 23 02.0	+17 49 14	IRAS	*opt.* 9.	PK67	*Expansion Velocities (km/s)*	
	06 23 02.1	+17 49 14	AK90			[OIII] 18	Sa84
2000:	06 25 57.2	+17 47 27	.	*radio* 6.	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20						*IR Class:* N+D		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	35	$H\alpha$	656.3 *nm*	449	*J*	10.98	12μm	2.25	3
[OIII]	436.3	10	[NII]	658.4	80	*H*	10.92	25μm	9.79	3
	500.7	1127	[SII]	671.7	3	*K*	9.98	60μm	7.79	3
*He*I	587.6	12		673.1	6	*L*		100μm	3.47	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.32 ± .02	60...353, Kal83			*Photom.*	Wh85	*Radio* 2*cm*	86	MiAl82
IUE Spectra:		*LW*(4)	*SW*(4)			*Spectr.*	87..1381	(*mJy*) 6*cm*	100	AK90

Central Star: AG82 63 — *V* 17.8 *Qual:* C WRPA86 *Spectrum:* WC ? ATS91

Distance (kpc) indiv.: ext. 2.0 (Po83); ext. 1.2 (Sab86)
Distance (kpc) stat.: 2.16 (CaKa71); 3.17 (MiAl75); 3.4 (Ca76); 2.25 (Ac78); 1.82 (Da82); 0.17 (PhPo84); 1.50 (AGNR84); 2.1 (Ma84); 2.76 (CKS91)

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M. *Astrophys. J. 341, 246-269* The infrared emission bands. III. Southern IRAS sources.
89...481 Rowlands N., Houck J.R., Herter T., Gull G.E., Skrutskie M.F. *Astrophys. J. 341, 901-907* Electron temperatures in the high-excitation zones of planetary nebulae.
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196.6–10.9

NGC 2022, PK 196−10°1, ARO 61, VV 23, VV' 34, IRAS 05393+0903

Disc.: Herschel 1785	*Diameter* (″)	*Rvel*: +14.0 ± 2.0 MWF88
1950: 05 39 22.1 +09 03 48 IRAS	*opt.* 19. CJA87	*Expansion Velocities* (*km/s*)
05 39 22.0 +09 03 54 Mi73	CaKa71	[OIII] 26. We89
2000: 05 42 06.4 +09 05 18 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20 N

*He*II	468.6 *nm*	104	*Hα*	656.3 *nm*	398	*IR Class:* N	
[OIII]	436.3	10	[*N*II]	658.4	–	*J*	12.14
	500.7	755	[*S*II]	671.7		*H*	12.09
*He*I	587.6	–		673.1		*K*	11.35
						L	

$\lg F_{H\beta}(mW.m^{-2})$ −11.13 ± .03 O63, KM81	*Photom.* Wh85	*IRAS Fluxes* (*Jy*)	*Qual.*
IUE Spectra: *LW*(7) *SW*(8)	*Spectr.* PPOJ86	12μm 0.82	3
		25μm 10.70	3
		60μm 9.64	3
		100μm 5.89	3
		Radio 2*cm* 96 MiAl82	
		(*mJy*) 6*cm* 91 Mi79	

Central Star: AG82 49 — HD 37882; PLX 1306
B 15.89 *Qual:* B GaPo88

Notes: Multiple-shell PN; monochromatic images (CJA87, Ba87)
Distance (kpc) indiv.: ext. 1.3 (Po83); ext. 1.8 (Sab86)
Distance (kpc) stat.: 2.20 (CaKa71); 2.48 (MiAl75); 2.4 (Ca76); 2.1 (Ac78); 2.36 (Da82); 4.65 (PhPo84); 1.50 (AGNR84); 2.2 (Ma84); 2.49 (CKS91)

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197.2–14.2

K 1-7, PK 197−14°1, A 10, ARO 176

Disc.: Kohoutek 1963 1950: 05 29 06.0 +06 54 00 ZPB89 2000: 05 31 47.8 +06 56 09 .	*Diameter* (″) *opt.* 34. CaKa71 *radio* 20. ZPB89	*Rvel:* +57.6 ± 3.5 85..1535
Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-22 *He*II 468.6 *nm* − | *Hα* 656.3 *nm* 668 [*O*III] 436.3 − | [*N*II] 658.4 − 500.7 940 | [*S*II] 671.7 } 94. *He*I 587.6 − | 673.1 }		
$\lg F_{H\beta}(mW.m^{-2})$ −12.13 ± .05 Ka83		*Radio* *2cm* 9 MiAl82 (*mJy*) *6cm* 2.5 ZPB89
Central Star: AG82 46 — m_{pg} 20.2 *Qual:* P PK67		
Distance (kpc) stat.: 2.50 (CaKa71); 3.0 (Ma84); 5.03; 5.76 (CKS91)		

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197.4–06.4

WeDe 1, PK 197−6°1

Disc.: Weinberger et al 1983 1950: 05 56 38.4 +10 41 32 83...109 2000: 05 59 24.8 +10 41 41 .	*Diameter* (″) *opt.* 925. 83...109	*Rvel:* +16.0 ± . 86..1089 *Expansion Velocities* (*km/s*) [NII] 16 86..1089
Central Star: AG82 53 — *U* 15.8 *B* 17.1 *V* 17.4 83...109		*Spectrum:* hg O(H) Me91

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197.8+17.3

NGC 2392, PK 197+17°1, ARO 24, VV 38, VV' 63, IRAS 07262+2100

			Disc.: Lasell 1853	*Diameter (")*		*Rvel:* +75.0 ± 2.1	STPP83
1950:	07 26 13.2	+21 00 56	IRAS	*opt.* 19.5	CJA87	*Expansion Velocities (km/s)*	
	07 26 13.2	+21 00 51	Mi73			[OIII] 52.5	We89
2000:	07 29 10.7	+20 54 37	.			[NII] 53	We89

Intens. ($H\beta$ = 100) ESO-B.C+IDS 1986-01-20 N						*IR Class:* .		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	29	$H\alpha$	656.3 *nm*	395	*J*		12μm	0.86	3
[OIII]	436.3	23	[NII]	658.4	160	*H*	9.2	25μm	9.04	3
	500.7	1406	[SII]	671.7	9	*K*	9.3	60μm	20.45	3
*He*I	587.6	11		673.1	14	*L*		100μm	16.12	3
$\lg F_{H\beta}(mW.m^{-2})$		−10.39 ± .02	55....57, SK85			*Photom.* CoBa74		*Radio* 2*cm* 251		MiAl82
IUE Spectra:		*LW*(17)	*SW*(23)	*FES*(1)		*Spectr.* 87..1381		(*mJy*) 6*cm* 244		Mi79

Central Star: AG82 81 — AG +21 821; BD +21 1609; GCRV 4981; HD 59088; PLX 1765; NSV 3604; CSV 100874; SV* ZI 631; EM* CDS 689; DC 13050; CSI +21 01609

U 9.30 *B* 10.38 *V* 10.53 *Qual:* A KSDN68, SK85

O6 f 77....41
Of(H) Me91

Notes: Multiple-shell PN; monochromatic images (CJA87, Ba87)

Distance (kpc) indiv.: stand. 0.55 (70..9096); ext. 0.70 (Po80); expans. 0.5-1.6? (Po83); ext. 0.7 (Sab86); spect. 2.7 (MKHH88)

Distance (kpc) stat.: 1.09 (CaKa71); 1.17 (MiAl75); 1.24 (Ca76); 0.94 (Ac78); 1.22 (Da82); 0.28 (PhPo84); 0.97 (AGNR84); 1.1 (Ma84); 1.25 (CKS91)

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197.8–03.3

A 14, PK 197–3°1, A55 10, ARO 125, VV' 39

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 33. CaKa71	
1950:	06 08 21.1	+11 47 30	Mi76		
2000:	06 11 08.8	+11 46 47	.		

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1986-01-19 N

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	417
	500.7	54:	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Radio (*mJy*) *2cm* 4 MiAl82; *6cm* < 2 ZPB89

Central Star: AG82 59 — CSI +11 -06084; UBV 6225
U 15.74 *B* 15.75 *V* 15.24 Ab66 *Spectrum:* F7 V? Ab66

Distance (kpc) stat.: 2.41 (CaKa71); 2.56 (Da82); 2.8 (Ma84); 3.32 (CKS91)

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198.6–06.3

A 12, PK 198–6°1, ARO 220, IRAS 05595+0939

			Disc.: Abell 1964	*Diameter* (″)	
1950:	05 59 35.6	+09 39 03	IRAS	*opt.* 37. PK67	
	05 59 37.7	+09 39 07	Mi73		
2000:	06 02 22.8	+09 39 03	.	*radio* 35. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	509	12μm	1.50	3
[*OIII*]	436.3	–	[*NII*]	658.4	475	25μm	0.99	3
	500.7	1218	[*SII*]	671.7	70	60μm	3.26	3
HeI	587.6	–		673.1	63	100μm	2.77	3
$\lg F_{H\beta}(mW.m^{-2})$		$-11.58 \pm .10$ KSK90, ASTR91				*Radio* (*mJy*) 2*cm*	32	MiAl82
						6*cm*	36	ZPB89

Central Star: AG82 56 —
m_{pg} 19.7 *Qual:* P PK67

Distance (kpc) stat.: 2.16 (MiAl75); 2.08 (Da82); 1.70 (AGNR84); 2.6 (Ma84); 2.04 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ab66, AcMa77, Alle82, Ca82, Hi71, LNP89, Ma81, MaPo80, Mi79, PAKS91, PiKh79, Ru70

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200.7+08.4

A 19, PK 200+8°1, A55 14, ARO 130, VV' 51

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 67. CaKa71	
1950:	06 57 06.0	+14 41 00	Mi76		
2000:	06 59 56.6	+14 36 47	.		

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1986-01-20								
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100			
[*OIII*]	436.3	–	[*NII*]	658.4	–			
	500.7	215	[*SII*]	671.7				
HeI	587.6	–		673.1				
$\lg F_{H\beta}(mW.m^{-2})$		$-12.9 \pm .3$ KSK90				*Radio* 2*cm*	3	MiAl82
IUE Spectra:		*LW*(0) *SW*(1)				(*mJy*) 6*cm*	< 2	ZPB89

Distance (kpc) stat.: 2.20 (CaKa71); 3.2 (Ma84); 2.29 (CKS91)

Bibliography: *PK67*, Ab66, AcMa77, Gu70, Hi71, Iw73, KJL88, Kh79, KrK68, Mi79, PAKS91

201.7+02.5

K 4-48, PK 201+2°1, IRAS 06371+1109

			Disc.: Kohoutek 1969	*Diameter* (″)	
1950:	06 37 09.5	+11 09 21	IRAS	*opt. St.* Ko69	
	06 37 09.1	+11 09 18	AK90		
2000:	06 39 55.8	+11 06 30	.	*radio* 2.2 AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-13						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1097	*J*	12μm	0.29	2
[*OIII*]	436.3	–	[*NII*]	658.4	788	*H*	25μm	1.16	3
	500.7	1684	[*SII*]	671.7	14	*K* > 9.5	60μm	3.66	3
HeI	587.6	34		673.1	23	*L*	100μm	19.19	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.94 ± .10	ASTR91			*Photom.* AI74	*Radio* (*mJy*) *2cm*		
							6cm	14	AK90

Distance (kpc) stat.: 7.78 (CKS91)

Bibliography: AST89, AcMa77, Ko78, MWH81, PAKS89, Sa86, We77

69..9071 Perek L., Kohoutek L. *Bull. Astron. Inst. Czech. 20,381* Errata: catalogue of galactic P.N.
69.13001 Kohoutek L. *Bull. Astron. Inst. Czech. 20,307-312* Hamburg Schmidt-camera survey of faint planetary nebulae.

201.9–04.6

We 1-4, PK 201–4°1

			Disc.: Weinberger 1977	*Diameter* (″)	
				opt. 40. 77..1547	
1950:	06 11 51.0	+07 35 30	77..1547		
2000:	06 14 33.6	+07 34 32	.		

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1986-01-20 NE					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	363
	495.9	–	[*SII*]	671.7	125
HeI	587.6	–		673.1	

Radio (*mJy*) *2cm* / *6cm* < 3 ZPB89

Central Star: AG82 60 —
B > 21.1 77..1547

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, Ko78, MWH81, We77

77..1547 Weinberger R. *Astron. Astrophys. Suppl. Ser. 30,343-348* New Planetary Nebulae of low surface brightness.

204.0–08.5

A 13, PK 204–8°1, A55 9, ARO 124, VV' 38, YM 28

Disc.: Abell 1955 1950: 06 02 08.4 +03 56 42 Ka83 2000: 06 04 46.7 +03 56 27 .	*Diameter* (″) *opt.* 153. CaKa71	*Expansion Velocities* (*km/s*) [OIII] 20. SSB86 [NII] 22.5 SSB86
$\lg F_{H\beta}(mW.m^{-2})$ −12.62 ± .14 Ka83		*Radio* 2cm 7 MiAl82 (*mJy*) 6cm < 26 MiAl75

Central Star: AG82 58 — CSI +03 -06022; UBV 6150
U 19.06 *B* 20.06 *V* 19.87 Ab66

Notes: Monochromatic images (RM91)
Distance (kpc) stat.: 0.78 (CaKa71); >0.95 (MiAl75); 0.96 (Da82); 1.8 (Ma84); 1.18 (CKS91)

Bibliography: *PK67*, AcMa77, CaWy76, Hi71, Iw73, Jo80, KSK90, Kh79, KrK68, MeHa75, Mi73, Mi79, We89, ZPB89

66..9024 Mathews W.G. *Astrophys. J. 143,176* Model of planetary nebulae.

83.30786 Schonberner D., Weidemann V. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae, 359-371* Evolution and mass distribution of central stars of planetary nebulae.

89.50027 Rosado M., Moreno M. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 171* Deep narrow band interference filter photographs of selected extended planetarynebulae.

204.1+04.7

K 2-2, PK 204+4°1, ARO 128

Disc.: Kohoutek 1963 1950: 06 49 45.2 +10 01 30 Mi76 2000: 06 52 30.4 +09 57 48 .	*Diameter* (″) *opt.* 415. CaKa71	*Rvel:* +28.0 ± . 86..1089 *Expansion Velocities* (*km/s*) [OIII] 10. 86..1089
Intens. (*Hα* = 100) ESO-B.C+CCD 1989-06-02 *He*II 468.6 *nm* – | *Hα* 656.3 *nm* 100 [*O*III] 436.3 – | [*N*II] 658.4 94 500.7 106 | [*S*II] 671.7 *He*I 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ −11.12 ± .10 Ka83		*Radio* 2cm < 54 MiAl82 (*mJy*) 6cm 54 Ca82

Central Star: AG82 69 —
U 12.8 *B* 14.3 *V* 15.0 *Qual:* D KJL88

Distance (kpc) stat.: 0.33 (CaKa71); 0.45 (Da82); 0.48 (AGNR84); 1.0 (Ma84); 0.44 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, CaWy76, Hi71, IsWe87, Jo80, KSK90, KaJa89, Mi79, Phi84, Sabb86, We86, We89, ZPB89

86..1089 Gieseking F., Hippelein H., Weinberger R. *Astron. Astrophys. 156, 101-105* Late stages of the expansion of planetary nebulae.

89.50080 Kwitter K.B., Jacoby G.H. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 303* New identifications of faint central stars in extended PN.

204.8–03.5

K 3-72, PK 204−3°1

		Disc.: Kohoutek 1969	*Diameter* (″)		
			opt. 10.5	Ko69	*Expansion Velocities* (*km/s*)
1950:	06 21 14.7	+05 31 51	We77		[OIII] 13. SSB86
2000:	06 23 54.9	+05 30 12	.		[NII] 16 SSB86

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1986-12-10

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[OIII]	436.3	–	[*N*II]	658.4	380:
	495.9	–	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Radio *2cm*
(*mJy*) *6cm* 1.5 ZPB89

Bibliography: AcMa77, Ko78, MWH81, Sa86, We89

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89.50028 Turatto M., Cappellaro E., Sabbadin F. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 172* CCD images of selected planetary nebulae.

205.1+14.2

A 21, PK 205+14°1, A55 16, A 21, ARO 388, Sh 2-274 , YM 29

		Disc.: Johnson et al 1971	*Diameter* (″)		
			opt. 615.	Ab66	
1950:	07 26 14.5	+13 20 44	Ka83		
2000:	07 29 02.9	+13 14 30	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-23

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	250:
[OIII]	436.3	–	[*N*II]	658.4	425:
	500.7	147	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-10.4 \pm .2$ Ka83
IUE Spectra: *LW*(1) *SW*(1)

Radio *2cm* 407 MiAl82
(*mJy*) *6cm* 327 Mi79

Central Star: AG82 82 — CSI +13 -07262; UBV 7228
U 14.41 *B* 15.67 *V* 15.99 Ab66

Distance (kpc) stat.: 0.21 (Ac78); 0.25 (Da82); 0.26 (AGNR84); 0.5 (Ma84); 0.24 (CKS91)

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205.8–26.7

MaC 2-1, PK 205–26°1

			Disc.: Mac Connell 1982	*Diameter* (″)	
				opt. St. 82..1530	
1950:	05 01 15.1	-06 13 43	82..1530		
2000:	05 03 41.8	-06 09 34	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-11

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	227
[OIII]	436.3	–	[NII]	658.4	–
	500.7	899	[SII]	671.7	
*He*I	587.6	12		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.46 \pm .10$ ASTR91

Central Star:
B 16.6 *V* 16.7 *Qual:* C TASG91

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206.4–40.5

NGC 1535, PK 206−40°1, ARO 22, VV 19, VV' 25, IRAS 04119-1251

		Disc.: Herschel 1785	*Diameter (")*		*Rvel:* −3.2 ± 1.4 STPP83
1950:	04 11 55.4	-12 51 54 IRAS	*opt.* 21. CJA87		*Expansion Velocities (km/s)*
	04 11 57.0	-12 51 42 Mi73			[OIII] 20. We89
2000:	04 14 17.2	-12 44 11 .			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-12 N						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	17	*Hα*	656.3 *nm*	285	*J*	11.05	12μm	1.43	3
[*O*III]	436.3	14	[*N*II]	658.4	–	*H*	11.28	25μm	9.05	3
	500.7	1253	[*S*II]	671.7		*K*	10.72	60μm	16.34	3
*He*I	587.6	9		673.1		*L*		100μm	10.12	3
lg$F_{H\beta}$	−10.42 ± .02	55....57, W83, 85..3062				*Photom.* Wh85		*Radio* 2*cm* 141 MiAl82		
IUE Spectra:	*LW*(12)	*SW*(16)				*Spectr.* PPOJ86		(*mJy*) 6*cm* 171 Mi79		

Central Star: AG82 29 — BD -13 842; GCRV 2426; HD 26847; TD1 31084
B 12.19 *V* 12.18 *Qual:* A JK89, TASG91

O5 PWWF78
O(H) Me91

Notes: Angular expans. 0".2/100yr (66..9012); Proper motion in 10^{-4}"/yr: $\mu_\alpha = 89 \pm 44$, $\mu_\delta = -15 \pm 14$ (Cu74). Multiple-shell PN; monochromatic images (CJA87, Ba87); ESO-NTT images by Schwartz H.E. and Melnick J.

Distance (kpc) indiv.: stand. 1.5 (Sab86); spect. 2.1 (MKHH88)

Distance (kpc) stat.: 2.14 (CaKa71); 2.20 (MiAl75); 2.2 (Ca76); 1.55 (Ac78); 1.70 (Da82); 1.18 (PhPo84); 1.20 (AGNR84); 1.6 (Ma84); 2.28 (CKS91)

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central stars of planetary nebulae.
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89.50036 Bianchi L., Grewing M., Barnsted J., Diesch C. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 182* Kinematical properties of planetary nebulae.
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208.5+33.2

A 30, PK 208+33°1, IRAS 08440+1803

			Disc.: Abell 1964	*Diameter (″)*	
1950:	08 44 03.4	+18 03 47	IRAS	*opt.* 127. CaKa71	*Expansion Velocities (km/s)*
	08 44 04.4	+18 03 35	Ka83		[OIII] 40.0 83.30788
2000:	08 46 54.4	+17 52 33	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-23						*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	200	12μm	2.11	3
[*O*III]	436.3	–	[*N*II]	658.4	1000	25μm	41.55	3
	500.7	3000	[*S*II]	671.7		60μm	89.75	3
*He*I	587.6	–		673.1		100μm	50.46	3

$\lg F_{H\beta}(mW.m^{-2})$ $-12.19 \pm .04$ Ka83
IUE Spectra: *LW*(4) *SW*(6)

Central Star: AG82 107 — CSI +18 -08440; UBV 8495
U 13.32 *B* 14.32 *V* 14.38 *Qual:* A Ab66, 72.30001, Dr80

O VI 84...100
Of/WR(C)? Me91

Notes: Visual companion to the central star: $m_{pv} = 17.0, \rho = 5''3, \theta = 142°$ (73..9005, 79..3104). Monochromatic images (Ba87)
Distance (kpc) indiv.: dust 1.41 (84...469); wind 0.90 (85....32)
Distance (kpc) stat.: 1.48 (CaKa71); 3.1 (Ma84); 1.69 (CKS91)

Bibliography: *PK67*, AG82, Ac82, All76, BOS74, Ba89, CePe85, Ch89, CoBa74, FeBr90, Gr89, GrNe90, Gu88, HaZu91, He83, HeAu87, KVLS81, Kh79, Kh89, KrK68, LH91, LePo88, Li82, Me89, Pe83, Pe89, SGBO84, Sa84, Sabb86, Sc81, SmAl69, TASG91, TaAp88, VoCo90, Wa70, We89, ZPB89, ZiPo91, ZuAl86

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72.30001 Shao C.Y., Liller W. *Private communication* UBV observations of the central stars of planetary nebulae
73..9005 Cudworth K.M. *Publ. Astron. Soc. Pac. 85,401* Visual binaries in P.N.
76..9008 Balick B., Terzian Y. *Astrophys. J. 204,441* Radio synthesis observations of P.N. 2. A search for sub-arcsecond structure.

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78.30012 Moseley H., Harper D.A. *IAU Symposium 76,124-125* Observations of cool dust in P.N.
78.30051 Cohen M., Hudson H.S., O'Dell S.L., Stein W.A. *IAU Symposium 76,356-356* A study of the P.N. Abell 30 and Abell 78.
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79..3104 Jacoby G.H. *Publ. Astron. Soc. Pac. 91,754-760* Unusual structure in the PN Abell 30 and Abell 78.
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80....48 Moseley H. *Astrophys. J. 238,892-904* Observations of cool dust in PN.
80.11018 Hazard C., Terlevich R., Morton D.C., Sargent W.L.W., Ferland G. *Nature 285,463-464* Evidence for highly processed material ejected from Abell 30.
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81.17256 Jacoby G.H., Ford H.C. *Bull. American Astron. Soc. 13,854* The hydrogen depleted planetary nebulae Abell 30 and Abell 78.
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83....48 Iben I., Kaler J.B., Truran J.W., Renzini A. *Astrophys. J. 264, 605-612* On the evolution of those nuclei of planetary nebulae that experience a final helium shell flash.
83....91 Jacoby G.H., Ford H.C. *Astrophys. J. 266, 298-308* The hydrogen-depleted planetary nebulae Abell 30 and Abell 78.
83..2644 Reay N.K., Atherton P.D., Taylor K. *Mon. Not. R. Astron. Soc. 203, 1079-1085* Kinematic structure of planetary nebulae. I. The highly evolved nebula Abell 30.
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83.30763 Barlow M.J. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae, 105-128.* Observations of dust in planetary nebulae.
83.30771 Renzini A. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae, 267-280* Red giants as precursors of planetary nebulae.
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85....32 Kaler J.B., Mo J.-E., Pottasch S.R. *Astrophys. J. 288, 305-309* Wind distances for planetary nebulae.
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89...516 Cassar L., Chen W.P., Simon M. *Astrophys. J., Suppl. Ser. 69, 651-665* Lunar occultations of IRAS point sources, 1991-2000.
89..1379 Hutsemekers D., Surdej J. *Astron. Astrophys. 219, 237-238* Revisited mass-loss rates for a sample of central stars of planetary nebulae.
89..9344 Cohen J.G., Gillett F.C. *Astrophys. J. 346, 803-807* The peculiar planetary nebula in M 22.
89.50022 Clegg R.E.S. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 139-156* Abundances in planetary nebulae.
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90..2607 Sorrell W.H. *Mon. Not. R. Astron. Soc. 243, 570-587* The lambda 2175-A feature from irradiated graphitic particles.
90.12252 Blanco A., Borghesi A., Orofino V., Bussoletti E., Fonti E., Fonti S., ColangeliL. *Mem. Soc. Astron. Ital.,61,41* The unidentified infrared bands and space observations with ISO.
91....34 Feibelman W.A., Bruhweiler F.C., Johansson S. *Astrophys. J.,373,649* Ultraviolet high-excitation Fe II fluorescence lines excited by O VI, C IV and HI resonance as seen in IUE spectra.
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91..1030 Likkel L., Forveille T., Omont A., Morris M. *Astron. Astrophys. 246,153* CCO observations of cold IRAS objects : AGB and post-AGB stars.

210.0+03.9

We 2-34, PK 210+3°1

			Disc.: Weinberger 1977	*Diameter* (″)	
				opt. 230. We77	
1950:	06 57.8	+04 25	We77		
2000:	07 00.5	+04 21	.		

Bibliography: Ko78, MWH81, ZPB89

210.3+01.9

M 1-8, PK 210+1°1, ARO 129, VV 31, VV' 49

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* +52.0 ± 25.0 STPP83		
				opt. 18. CaKa71	*Expansion Velocities* (*km/s*)		
1950:	06 50 56.5	+03 12 11	Mi76		[OIII] 11.0		84..1287
2000:	06 53 33.8	+03 08 24	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20

*He*II	468.6 *nm*	45	$H\alpha$	656.3 *nm*	616
[*O*III]	436.3	–	[*N*II]	658.4	673
	500.7	1319	[*S*II]	671.7	26
*He*I	587.6	16		673.1	30

$\lg F_{H\beta}(mW.m^{-2})$ $-12.37 \pm .$ CS83

Radio *2cm* 17 MiAl82
(*mJy*) *6cm* 23 Mi79

Central Star:
V 21.38 *Qual:* B JK89

Distance (kpc) stat.: 2.16 (CaKa71); 1.80 (Ac78); 3.10 (Da82); 2.40 (AGNR84); 3.5 (Ma84); 3.39 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, CaRu74, CoBa74, FaMa88, Hi71, Iw73, KaJa89, Kon78, KrK68, Ma81, PAKS91, Pe91, PeTo83, Sa84, StKa89, TuTe84, We89, ZPB89

83..3095 Torres-Peimbert S., Peimbert M. *Publ. Astron. Soc. Pac. 95, 601-602* Spectrophotometry of planetary nebulae of type I.

84..1287 Sabbadin F., Bianchini A., Hamzaoglu E. *Astron. Astrophys. 136, 200-205* Internal motions of fourteen planetary nebulae.

87.13591 Peimbert M., Torres-Peimbert S. *Rev. Mex. Astron. Astrofis. 14, 540-558* Chemical composition of type I planetary nebulae. Collisional excitation effects on He I line intensities.

89.50028 Turatto M., Cappellaro E., Sabbadin F. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 172* CCD images of selected planetary nebulae.

211.2–03.5

M 1-6, PK 211–3°1, ARO 126, Sa 3-1, VV 29, VV' 45, IRAS 06331-0003

			Disc.: Minkowski 1946	*Diameter (")*	
1950:	06 33 11.7	-00 03 06	IRAS	*opt.* 5. PK67	
	06 33 11.0	-00 03 11	Mi76		
2000:	06 35 44.7	-00 05 41	.	*radio* 2.9 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18						*IR Class:* D		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1274	*J*	11.71	12μm	2.66	3
[*O*III]	436.3	–	[*N*II]	658.4	604	*H*	11.39	25μm	11.75	3
	500.7	122	[*S*II]	671.7	5	*K*	10.24	60μm	5.91	3
*He*I	587.6	24		673.1	11	*L*		100μm	3.15	1
lg$F_{H\beta}(mW.m^{-2})$		−12.28 ± .10	ASTR91			*Photom.* PPFS87		*Radio* 2cm		
						Spectr. 86..2654		(*mJy*) 6cm	86 ZPB89	

Central Star:
B 16.76 *V* 15.84 *Qual:* B TASG91

Distance (kpc) stat.: 1.60 (AGNR84); 3.0 (Ma84); 2.65 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al74, Ca82, CoBa74, Hi71, Iw73, KPK81, Kh76, Kon83, Mi79, PAKS89, PM87, PPT88, Sa76, StAc87, StKa89, TAGS89, TBB74, ZTPS89

79..3515 Kondratjeva L.N. *Soviet Astron. 23,193-197* Spectral studies of planetary nebulae of small angular size. Objects of low excitation.

83..1176 Kwok S., Purton C.R. *Astron. Astrophys. 122, 346-348* Radio structure of the low excitation planetary nebula M1-6.

83.30759 Bignell R.C. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae 69-78* High resolution maps with the VLA.

85.13257 Shibata K., Tamura S. *Publ. Astron. Soc. Jap. 37, 325-332* Chemical abundances of stellar planetary nebula, M1-9, near the galactic peripheery.

86..2654 Roche P.F., Aitken D.K. *Mon. Not. R. Astron. Soc. 221, 63-76* The infrared spectral properties of planetary nebulae.

87..3128 Tamura S., Shaw R.A. *Publ. Astron. Soc. Pac. 99, 1264-1268* Spectroscopic analyses of the stellar planetary nebulae K 3-66, K 3-67, and K 3-71.

89..3076 Gussie G.T., Taylor A.R. *Publ. Astron. Soc. Pac. 101, 873-876 + erratum vol. 102, 232* Radial and expansion velocities of compact planetary nebulae.

211.4+18.4

HDW 7, PK 211+18°1, HaWe 10

			Disc.: Hartl et al 1983	*Diameter (")*	
				opt. 94. 87..1593	
1950:	07 52 27.6	+09 41 09	83.28034		
2000:	07 55 11.3	+09 33 11	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-02					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	305:	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star: AG82 94 —
B 16.6 87..1593 *Spectrum:* hg O(H) Me91

Bibliography: AG82, Ko89, TASG91

83.28034 Hartl H., Dengel J., Weinberger R. *Mitteil. Astron. Gesellschaft 60, 325-327* Alte Planetarische Nebel: neue Kandidaten.

87..1593 Hartl H., Weinberger R. *Astron. Astrophys., Suppl. Ser. 69, 519-525* Planetary nebulae of low surface brightness: gleanings from the "POSS".

211.9+22.6

EGB 5, PK 211+22°1

				Disc.: Ellis et al 1984	*Diameter* (″)	
					opt. 170. 84..3036	
1950:	08 08 30	+11 06.0	84..3036			
2000:	08 11 15	+10 57.0	.			

Central Star: AG82 98Bis — EQ 0808 +11
B 14.26 *V* 14.27 *Qual:* B TASG91 *Spectrum:* hg O(H) Me91

Notes: Wrong galactic denomination (212+23.1) appears in the literature.

Bibliography: Ko89

84..3036 Ellis G.L., Grayson E.T., Bond H.E. *Publ. Astron. Soc. Pac. 96, 283-286* A search for faint planetary nebulae on Palomar Sky Survey prints.

212.0+04.3

M 1-9, PK 212+4°1, ARO 131, VV 32, VV' 53, IRAS 07026+0251

				Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +136.0 ± 10.1STPP83	
1950:	07 02 41.9	+02 51 38	IRAS		*opt.* 12.	CS90	*Expansion Velocities* (*km/s*)	
	07 02 42.2	+02 51 35	AK90				[OIII] 7.	We89
2000:	07 05 19.1	+02 46 59	.		*radio* 2.3	AK90	[NII] 19.0	We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	487
[OIII]	436.3	3	[*N*II]	658.4	111
	500.7	551	[*S*II]	671.7	2.3
*He*I	587.6	20		673.1	4

$\lg F_{H\beta}(mW.m^{-2})$ $-11.66 \pm .03$ CS83, ASTR91

IR Class: N

J	12.60	
H	12.97	
K	12.1	
L	(10.97)	
Photom.	KHM86	

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.32	3
25μm	1.86	3
60μm	1.12	3
100μm	6.56	1

Radio (*mJy*) *2cm* 26 MiAl82; *6cm* 27 AK90

Central Star:
B 15.7 *V* 15.6 *Qual:* C TASG91

Distance (kpc) stat.: 5.60 (Ac78); 4.88 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al74, CoBa74, Hi71, KPK81, Kal80, Kon78, Kon83, Mi73, MiAl75, MiWe79, PAKS91, PM87, PPFS87, PPT88, Pe71, Pe91, SSAG87, SSB86, StKa89, TAGS89, TBB74, Wh85, ZTPS89

85..2006 Kwok S. *Astron. J. 90, 49-58* High-resolution radio observations of compact planetary nebulae.

85.13257 Shibata K., Tamura S. *Publ. Astron. Soc. Jap. 37, 325-332* Chemical abundances of stellar planetary nebula, M1-9, near the galactic peripheery.

87..3128 Tamura S., Shaw R.A. *Publ. Astron. Soc. Pac. 99, 1264-1268* Spectroscopic analyses of the stellar planetary nebulae K 3-66, K 3-67, and K 3-71.

89.50001 Terzian Y. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed. S. Torres-Peimbert. Planetary nebulae, 17-28* Radio images of planetary nebulae.

214.9+07.8

A 20, PK 214+7°1, A55 15, ARO 132, VV' 60, IRAS 07203+0151

				Diameter (″)	
			Disc.: Abell 1955		
1950:	07 20 23.4	+01 51 29	IRAS	*opt.* 67. CaKa71	
	07 20 22.1	+01 51 27	Ka83		
2000:	07 22 57.8	+01 45 37	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-16						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	88	$H\alpha$	656.3 *nm*	430	12μm	0.25	1
[OIII]	436.3	–	[NII]	658.4	–	25μm	0.44	3
	500.7	678	[SII]	671.7		60μm	0.50	3
HeI	587.6	–		673.1		100μm	1.00	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.04 \pm .05$ Ka83				*Radio* 2*cm* 12 MiAl82		
IUE Spectra:		*LW*(0) *SW*(2)				(*mJy*) 6*cm* 14 Mi79		

Central Star: AG82 79 — CSI +01 -07204; UBV 7149
U 15.17 *B* 16.29 *V* 16.56 Ab66 *Spectrum:* O(H) Me91

Distance (kpc) stat.: 1.73 (CaKa71); 1.81 (Da82); 1.80 (AGNR84); 3.0 (Ma84); 1.96 (CKS91)

Bibliography: *PK67*, AGNR85, AGR89, AcMa77, All76, Ca84, Dr80, Gu88, HeAu87, Hi71, Iw73, KSK90, Ka85, Kh79, KrK68, LNP89, Mi76, PAKS91, Sabb86, TASG91, ZPB89

81...205 Kaler J.B. *Astrophys. J. 250,L31-L34* Large high-excitation PN.

215.2–24.2

IC 418, PK 215–24°1, ARO 3, VV 22, VV' 32, IRAS 05251-1244

				Diameter (″)	*Rvel:* $+61.0 \pm 2.0$ MWF88
			Disc.: Fleming 1891		
1950:	05 25 09.5	-12 44 18	IRAS	*opt.* 12. CJA87	*Expansion Velocities* (*km/s*)
	05 25 09.5	-12 44 15	Mi73	CaKa71, IsWe87	[OIII] < 6.0 MWF88
2000:	05 27 28.3	-12 41 48	.		[NII] 12 We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19 N						*IR Class:* N,		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	sat.	*J*	7.75	12μm	38.27	3
[OIII]	436.3	0.2:	[NII]	658.4	178	*H*	8.33	25μm	199.20	3
	500.7	149	[SII]	671.7	2.4	*K*	7.50	60μm	103.60	3
HeI	587.6	13		673.1	5	*L*	5.68	100μm	31.24	3
$\lg F_{H\beta}$ $-9.58 \pm .02$KM81, W83, 85..3062, SK89						*Photom.* PPFS87		*Radio* 2*cm* 1529 MiAl82		
IUE Spectra:		*LW*(18) *SW*(20)				*Spectr.* 87..1381		(*mJy*) 6*cm* 1613 MiAl75		

Central Star: AG82 43 — BD -12 1172; GCRV 3288; HD 35914; PLX 1239; EM* CDS 500; TD1 4662
B 10.00 *V* 10.17 *Qual:* A SK89 *Spectrum:* Of(H) Me91

Notes: Monochromatic images (Ba87); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: stand. 0.33 (Ac78); wind 0.88 (85....32); spect. 2.0 (MKHH88)
Distance (kpc) stat.: 1.71 (CaKa71); 1.92 (MiAl75); 1.80 (Ca76); 0.36 (Ac78); 0.41 (Da82); 5.74 (PhPo84); 0.38 (AGNR84); 0.8 (Ma84); 0.61 (CKS91)

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215.5–30.8

A 7, PK 215–30°1, A55 6, ARO 215, VV' 27

Disc.: Abell 1955	*Diameter (″)* *opt.* 760. CaKa71	*Rvel:* +18.0 ± 7.5 STPP83
1950: 05 00 52.4 -15 40 24 Mi76 2000: 05 03 08.0 -15 36 13 .		
IUE Spectra: *LW*(2) *SW*(2)		
Central Star: AG82 38 — UBV 4868; CSI -15 -05009; FB 43 *U* 13.81 *B* 15.15 *V* 15.44 *Qual:* A Ab66, 72.30001		DAO 80.30013 hg O(H) Me91
Distance (kpc) stat.: 0.29 (CaKa71); 0.26 (Ac78); 0.21 (Da82); 0.23 (AGNR84); 0.5 (Ma84); 0.22 (CKS91)		

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215.6+11.1

K 1-11, PK 215+11°1, A 22, ARO 133

Disc.: Kohoutek 1963 1950: 07 33 30.0 +02 49 00 Mi76 2000: 07 36 06.7 +02 42 17 .	*Diameter (″)* *opt.* 84. PK67	*Rvel:* +26.8 ± 2.8 85..1535
Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-16 *He*II 468.6 *nm* – | *Hα* 656.3 *nm* 100 [*O*III] 436.3 – | [*N*II] 658.4 135 500.7 215 | [*S*II] 671.7 *He*I 587.6 – | 673.1		
		Radio *2cm* < 3 MiAl82 (*mJy*) *6cm* < 12 Ca82

Central Star: AG82 84 — CSI +02 -07335; UBV 7306; DDO 45; 1A 0733 +02
U 18.07 *B* 19.24 *V* 19.59 Ab66

Distance (kpc) stat.: 0.67 (CaKa71); 2.1 (Ma84)

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215.6+03.6

NGC 2346, PK 215+3°1, ARO 80, M 1-10, Sa 2-5, VV 33, VV' 54, IRAS 07068-0043

Disc.: Minkowski 1946 1950: 07 06 49.4 -00 43 32 IRAS 07 06 49.2 -00 43 24 Mi73 2000: 07 09 22.1 -00 48 17 .	*Diameter (″)* *opt.* 52. CaKa71 CJA87	*Rvel:* +20.0 ± 3.0 MWF88 *Expansion Velocities (km/s)* [OIII] 8.0 We89 [NII] 12.5 We89
Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-19 *He*II 468.6 *nm* 34 | *Hα* 656.3 *nm* 236 [*O*III] 436.3 7 | [*N*II] 658.4 388 500.7 1088 | [*S*II] 671.7 } 16. *He*I 587.6 16 | 673.1 }	*IR Class:* S+D *J* 10.65 *H* 9.93 *K* 8.79 *L* *Photom.* Wh85	*IRAS Fluxes (Jy)* *Qual.* 12μm 0.47 3 25μm 0.88 3 60μm 7.97 3 100μm 13.40 3
$\lg F_{H\beta}(mW.m^{-2})$ −11.33 ± .02 76...515 *IUE Spectra:* *LW*(10) *SW*(17)		*Radio* *2cm* 12 MiAl82 (*mJy*) *6cm* 86 MiAl75

Central Star: AG82 74 — AG -00 965; CSI -00 -7068 0; V651 Mon; HD 293373
B 11.78 *V* 11.47 *Qual:* A TASG91 *Spectrum:* ? + A2 V 81...203

Notes: Absolute proper motion in 10^{-4}″/yr: $\mu_\alpha = -140 \pm 80$, $\mu_\delta = -260 \pm 80$ (71.34481). Spectroscopic binary nucleus (78..2522, 78..2525); $P = 15.991^d$ (82..1164). Evolution of the light curve (83..2734, 85.14613, 85..1022, 86..1195). Monochromatic images (CJA87, Ba87, BoLi90)

Distance (kpc) indiv.: kinem. 1.7: (Ac78); spect.0.64 (Po80); ext. 0.90 (Po80,Po83); ext. 1.06 (86..1120); mean value 0.80 (86.13556)

Distance (kpc) stat.: 1.4 (CaKa71); 1.28 (MiAl75); 1.36 (Ca76); 1.15 (Ac78); 1.30 (Da82); 1.10 (AGNR84); 1.5 (Ma84); 1.36 (CKS91)

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216.0–00.2

A 18, PK 216−0°1, A55 13, ARO 224, VV' 50

Disc.: Abell 1955 1950: 06 53 43.8 -02 49 10 Mi76 2000: 06 56 14.3 -02 53 08 .	*Diameter* (″) *opt.* 73. CaKa71	
Intens. ($H\alpha$ = 100) ESO-B.C+CCD 1988-03-14 *HeII* 468.6 *nm* – | $H\alpha$ 656.3 *nm* 100 [*OIII*] 436.3 – | [*NII*] 658.4 – 500.7 78 | [*SII*] 671.7 *HeI* 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .4$ KSK90		*Radio* 2*cm* 15 MiAl82 (*mJy*) 6*cm* < 11 Mi79
Central Star: *U* 20.46 *B* 21.36 *V* 20.90 *Qual:* B KJL88		
Distance (kpc) stat.: 1.30 (CaKa71); 1.7 (Ma84); 1.57 (CKS91)		

Bibliography: *PK67*, Ab66, AcMa77, Hi71, KrK68, MaC83, Ru70, Sa76

216.3–04.4

We 1-5, PK 216–4°1

Disc.: Weinberger 1977 1950: 06 39 06.5 -04 59 44 77..1547 2000: 06 41 34.5 -05 02 39 .	*Diameter* (″) *opt.* 15. 77..1547	
Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-11 *He*II 468.6 *nm* 97 | *Hα* 656.3 *nm* 408 [*O*III] 436.3 – | [*N*II] 658.4 – 500.7 251 | [*S*II] 671.7 *He*I 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ $-13.28 \pm .10$ KSK90, ASTR91		*Radio* *2cm* (*mJy*) *6cm* < 1 ZPB89
Central Star: AG82 66 — *B* 19.7 *V* 19.1 KSK90		
Notes: ESO-NTT images by Schwartz H.E. and Melnick J.		

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217.1+14.7

A 24, PK 217+14°1, A55 17, ARO 134, VV' 73

Disc.: Abell 1955 1950: 07 49 01.6 +03 08 11 Mi73 2000: 07 51 38.5 +03 00 27 .	*Diameter* (″) *opt.* 355. CaKa71 *radio* 296. ZPB89	*Rvel:* $+12.7 \pm 4.0$ STPP83 *Expansion Velocities* (*km/s*) [OIII] 14.0 RRA82
Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-16 *He*II 468.6 *nm* – | *Hα* 656.3 *nm* 239 [*O*III] 436.3 – | [*N*II] 658.4 1518 500.7 105 | [*S*II] 671.7 *He*I 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ $-11.35 \pm .10$ Ka83		*Radio* *2cm* 99 MiAl82 (*mJy*) *6cm* 55 Ca82
Central Star: AG82 93 — CSI +03 -07491; UBV 7572 *U* 15.82 *B* 16.97 *V* 17.18 Ab66		
Notes: Visual binary nucleus (73..9005). Monochromatic images (91..1513) *Distance (kpc) stat.:* 0.35 (CaKa71); 0.51 (MiAl75); 0.49 (Ca76); 0.36 (Ac78); 0.49 (Da82); 0.52 (AGNR84); 0.9 (Ma84); 0.53 (CKS91)		

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac82, AcMa77, Alle82, CaWy76, Cu74, Dr80, Gr71, Gr72, Hi71, Iw73, Jo80, KSK90, Kh79, KrK68, LePo88, Li78, Li82, Me89, MeHa75, Mi79, MiWe79, Ph84, Phi84, PiKh79, SGBO84, Sabb86, TASG91, We89

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217.4+02.0

St 3-1, PK 217+2°1, IRAS 07043-0300

				Disc.: Stephenson 1978	*Diameter* (″)	
1950:	07 04 20.5	-03 00 28	IRAS		*opt.* 15. 79..3002	
	07 04.3	-03 00	78..3006			
2000:	07 06.8	-03 05	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28					
HeII	468.6 *nm*	26	*Hα*	656.3 *nm*	468
[*OIII*]	436.3	–	[*NII*]	658.4	332
	500.7	947	[*SII*]	671.7	37
HeI	587.6	18		673.1	36
$\lg F_{H\beta}(mW.m^{-2})$	$-12.2 \pm .2$	ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.31	2
60μm	0.84	3
100μm	1.21	1

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218.9–10.7

HDW 5, PK 218–10°1, HaWe 7

				Disc.: Hartl et al 1983	*Diameter* (″)	
					opt. 94. 87..1593	
1950:	06 21 15.5	-10 11 45	83.28034			
2000:	06 23 37.3	-10 13 23	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-14					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	444
[*OIII*]	436.3	–	[*NII*]	658.4	249
	500.7	50	[*SII*]	671.7	84
HeI	587.6	–		673.1	67
$\lg F_{H\beta}(mW.m^{-2})$	$-11.8 \pm .3$	ASTR91			

Central Star:
B 16.55 *V* 16.29 *Qual:* B TASG91 *Spectrum:* hg O(H) Me91

Notes: Wrong galactic denomination (219-10.1) appears in the literature

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219.1+31.2

A 31, PK 219+31°1, A55 20, ARO 135, Sh 2-290, VV' 81, IRAS 08515+0905

			Disc.: Abell 1955	*Diameter* (″)	*Rvel:* +41.0 ± . 86..1089
1950:	08 51 34.0	+09 05 06	IRAS	*opt.* 970. CaKa71	*Expansion Velocities* (*km/s*)
	08 51 31.7	+09 05 25	Ka83		[OIII] 10.0 We89
2000:	08 54 13.1	+08 53 59	.		[NII] 35 We89

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.30	1
60μm	0.42	2
100μm	1.78	3

$\lg F_{H\beta}(mW.m^{-2})$ $-10.54 \pm .3$ Ka83
IUE Spectra: *LW*(1) *SW*(5)

Central Star: AG82 109 — CSI +09 -08515; UBV 8615; FB 53
U 13.92 *B* 15.20 *V* 15.51 Ab66

sd O6 All76
hg O(H) Me91

Distance (kpc) stat.: 0.21 (CaKa71); 0.5 (Ma84); 0.23 (CKS91)

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220.3–53.9

NGC 1360, PK 220–53°1, ARO 208, CD -26 1339, ESO 482-07, M 1-3, VV 10, VV' 16, IRAS 03311-2601

		Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +41.8 ± 4.0 STPP83
1950:	03 31 07.5	-26 01 49	IRAS	*opt.* 385. CJA87	*Expansion Velocities* (*km/s*)
	03 31 07.6	-26 02 15	Ka83	CaKa71	[OIII] 28.0 Sa84
2000:	03 33 15.4	-25 52 12	.	*radio* 370. ZPB89	

Intens. ($H\beta$ = 100) ESO-B.C+IDS 1986-01-22 DA						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	92	$H\alpha$	656.3 *nm*	214	12μm	0.36	1
[*OIII*]	436.3	–	[*NII*]	658.4	–	25μm	0.41	3
	500.7	556	[*SII*]	671.7		60μm	1.44	2
*He*I	587.6	–		673.1		100μm	8.11	3
$\lg F_{H\beta}(mW.m^{-2})$ −10.20 ± .10 Kle78						*Radio* 2*cm* 725 MiAl82		
IUE Spectra: *LW*(3) *SW*(6)						(*mJy*) 6*cm* 503 Ca82		

Central Star: AG82 21 — CPD -26 389; PHL 1556; CD -26 1340	sd O Po78
U 9.64 *B* 10.96 *V* 11.35 *Qual:* A 72.30001, SK85	O(H) Me91

Distance (kpc) indiv.: stand. 0.55 (Sab86); spect. 0.63 (MKHH88)
Distance (kpc) stat.: 0.34 (CaKa71); 0.28 (MiAl75); 0.30 (Ca76); 0.26 (Ac78); 0.26 (Da82); 0.93 (PhPo84); 0.28 (AGNR84); 0.5 (Ma84); 0.35 (CKS91)

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221.3–12.3

IC 2165, PK 221−12°1, ARO 62, Sa 2-1, VV 27, VV'43, IRAS 06194-1257

			Disc.: Fleming 1898	*Diameter* (″)	*Rvel*: +53.9 ± 2.3 STPP83
1950:	06 19 24.3	-12 57 44	IRAS	*opt.* 9. CJA87	*Expansion Velocities* (*km/s*)
	06 19 24.2	-12 57 40	Mi73	CaKa71	[OIII] 20.0 Sa84
2000:	06 21 42.6	-12 59 10	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	48	*Hα*	656.3 *nm*	473	*J*	10.69	12*μm*	1.30	3
[OIII]	436.3	16	[NII]	658.4	52	*H*	11.12	25*μm*	9.56	3
	500.7	1260	[SII]	671.7	1.9	*K*	10.35	60*μm*	7.49	3
HeI	587.6	13		673.1	4	*L*		100*μm*	2.05	2
$\lg F_{H\beta}$ −10.90 ± .02Kale76, TP77, KM81, SK89						*Photom.* PeTo87		*Radio* 2*cm* 186 MiAl82		
IUE Spectra: *LW*(10) *SW*(10) *FES*(1)						*Spectr.* 83..2599		(*mJy*) 6*cm* 188 MiAl75		

Central Star: AG82 62 —
V 17.9 *Qual:* B WRPA86

Notes: Monochromatic images (85..2180); ESO-NTT images by Schwartz H.E. and Melnick J. ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: stand. 2.9 (70..9096); ext. 1.9 (Po83); ext. 2.0 (Sab86)
Distance (kpc) stat.: 3.1-3.9 (CaKa71); 3.54 (MiAl75); 3.6 (Ca76); 3.1 (Ac78); 1.37 (Da82); 5.91 (PhPo84); 1.20 (AGNR84); 1.9 (Ma84); 2.03 (CKS91)

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221.5+46.3

EGB 6, PK 221+46°1, BN 0950+13, PG 0950+139

			Disc.: Ellis et al 1984	*Diameter* (″)	
				opt. 720. 84..3036	*Expansion Velocities* (*km/s*)
1950:	09 50.3	+13 59	84..3036		[OIII] 35.0 We89
2000:	09 53.0	+13 45	.		[NII] 41.0 We89

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-30

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	353
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	751	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-10.6 \pm .6$ ASTR91

Central Star: AG82 122Bis — EQ 0950 +13
U 14.50 *B* 15.75 *V* 16.04 *Qual:* A 84..3036, TASG91 *Spectrum:* hg O(H) Me91

Notes: Wrong galactic denomination (204+46.1) appears in the literature

84..3036 Ellis G.L., Grayson E.T., Bond H.E. *Publ. Astron. Soc. Pac. 96, 283-286* A search for faint planetary nebulae on Palomar Sky Survey prints.

221.7+05.3

M 3-3, PK 221+5°1, ARO 236, Sa 2-8, VV' 62, Y-C 38

Disc.: Minkowski 1948 1950: 07 24 06.1 -05 15 49 Ka83 2000: 07 26 34.0 -05 21 54 .	*Diameter* (″) *opt.* 12.2 CaKa71	*Rvel:* +95.0 ± 25.0 STPP83 *Expansion Velocities* (*km/s*) [OIII] 10.0 SOB85
Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19 *He*II 468.6 *nm* 33 | *Hα* 656.3 *nm* 501 [*O*III] 436.3 – | [*N*II] 658.4 1672 500.7 1131 | [*S*II] 671.7 *He*I 587.6 14 | 673.1		
lg$F_{H\beta}(mW.m^{-2})$ −12.31 ± .02 Ka83, SK89		*Radio* 2*cm* 5 MiAl82 (*mJy*) 6*cm* < 1 ZPB89

Distance (kpc) stat.: 3.46 (CaKa71); >4.62 (MiAl75); 3.43 (Ac78); 1.89 (Da82); 2.5 (Ma84); 5.75 (CKS91)

Bibliography: *PK67*, AcMa77, CaRu74, CoBa74, Hi71, KSK90, KaJa89, Mi73, PAKS91, Pe71, Pe91, PeTo83, Ru70, Sa75, Sa84, Sh85, We89

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224.3+15.3

K 1-13, PK 224+15°1, A 25, ARO 246

Disc.: Kohoutek 1963 1950: 08 04 14.3 -02 44 01 Mi76 2000: 08 06 45.2 -02 52 43 .	*Diameter* (″) *opt.* 165. CaKa71	*Rvel:* +16.0 ± . 86..1089 *Expansion Velocities* (*km/s*) [OIII] 22. 86..1089
lg$F_{H\beta}(mW.m^{-2})$ −12.5 ± .3 KSK90		*Radio* 2*cm* 52 MiAl82 (*mJy*) 6*cm* < 14 Mi79

Central Star: AG82 97 — CSI -02 -08042; UBV 7761
U 17.65 *B* 18.80 *V* 18.94 Ab66

Distance (kpc) stat.: 1.04 (CaKa71); 2.1 (Ma84); 0.75 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, Hi71, Kh79, KrK68, MeHa75, Ru70, We89, ZPB89

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86..1089 Gieseking F., Hippelein H., Weinberger R. *Astron. Astrophys. 156, 101-105* Late stages of the expansion of planetary nebulae.

224.9+01.0

We 1-6, PK 224+1°1

			Disc.: Weinberger 1977	*Diameter* (″)	
				opt. 62. 77..1547	
1950:	07 15 03.6	-10 05 13	77..1547		
2000:	07 17 26.1	-10 10 40	.		
					Radio *2cm*
					(*mJy*) *6cm* 0.8 ZPB89

Central Star: AG82 78 —
B 16.8 77..1547 *Spectrum:* hg O(H) Me91

Distance (kpc) stat.: 3.20 (CKS91)

Bibliography: AG82, Ko78, MWH81, MaC83, We77

77..1547 Weinberger R. *Astron. Astrophys. Suppl. Ser. 30,343-348* New Planetary Nebulae of low surface brightness.
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226.4–03.7

PB 1, PK 226–3°1, ARO 225, Sa 2-2, IRAS 07004-1338

			Disc.: Peimbert et al 1960	*Diameter* (″)	
1950:	07 00 28.8	-13 38 11	IRAS	*opt.* 10. CS90	
	07 00 28.6	-13 38 24	Mi73		
2000:	07 02 46.7	-13 42 50	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21

*He*II	468.6 *nm*	40	*Hα*	656.3 *nm*	sat.
[*O*III]	436.3	14	[*N*II]	658.4	–
	500.7	1413	[*S*II]	671.7	
*He*I	587.6	17		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.02 \pm .$ CS83

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.37	3
60μm	2.30	3
100μm	5.53	1

Radio *2cm* 10 MiAl82
(*mJy*) *6cm* 18 MiAl75

Central Star:
B 16.7 *V* 16.2 *Qual:* C TASG91

Bibliography: *PK67*, AST89, AcMa77, Al74, Hi71, PM87, Pe71, Ru70, Sa75, TAGS89

226.7+05.6

M 1-16, PK 226+5°1, ARO 239, Sa 2-11, VV 41, VV' 66, IRAS 07349-0932

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel*: +49.0 ± 25.0 STPP83	
1950:	07 34 55.3	-09 32 01	IRAS	*opt.* 3.	PK67	*Expansion Velocities* (*km/s*)	
	07 34 55.4	-09 32 00	AK90			[OIII] 10.	SSB86
2000:	07 37 18.9	-09 38 48	.	*radio* 3.6	AK90		

Intens. ($H\beta$ = 100) ESO-B.C+IDS 1986-01-19						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	22	$H\alpha$	656.3 *nm*	601	*J*	13.00	12μm	0.32	3
[*OIII*]	436.3	11	[*NII*]	658.4	1370	*H*	13.22	25μm	2.33	3
	500.7	1465	[*SII*]	671.7	17	*K*	12.22	60μm	9.45	3
HeI	587.6	21		673.1		*L*		100μm	7.59	3
lg$F_{H\beta}(mW.m^{-2})$	−12.02 ± .03	SK89, ASTR91				*Photom.*	Wh85	*Radio*	2cm 20	MiAl82
IUE Spectra:	*LW*(0) *SW*(1)							(*mJy*)	6cm 31	AK90

Central Star: AG82 85 —
B > 17.9 *V* 16.9 *Qual:* C SK89

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 9.79 (MiAl75); 9.56 (Ca76); 8.4 (Ac78); 3.45 (Da82); 3.00 (AGNR84); 5.5 (Ma84) 5.45 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, Ca82, CaWy76, CoBa74, Hi71, Is84, Iy86, KPK81, Kh79, Kon78, Kon83, KrKo68, LNP89, Ma81, MaPo80, Mi73, Mi79, PM87, PPFS87, Pe71, PiKh79, Ru70, Sa75, Sh85, StKa89, TBB74, We89

85..2006 Kwok S. *Astron. J. 90, 49-58* High-resolution radio observations of compact planetary nebulae.
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89.50001 Terzian Y. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed. S. Torres-Peimbert. Planetary nebulae, 17-28* Radio images of planetary nebulae.

228.2−22.1

DeHt 1, PK 228−22°1, LoTr 1

			Disc.: Dengel et al 1980	*Diameter* (″)			
				opt. 132.	80..2605		
1950:	05 53 00.9	-22 54 27	80..1011				
2000:	05 55 06.4	-22 54 01	.				

lg$F_{H\beta}(mW.m^{-2})$	−12.6 ± .	KSK90					
IUE Spectra:	*LW*(0) *SW*(1)						

Central Star: AG82 52 —

Notes: Close binary nucleus (89.17368, BoLi90). Monochromatic images (BoLi90)

Bibliography: AG82, KJL88

80..1011 Dengel J., Hartl H., Weinberger R. *Astron. Astrophys. 85,356-358* A search for Planetary Nebulae on the "POSS".
80..2605 Longmore A.J., Tritton S.B. *Mon. Not. R. Astron. Soc. 193,521-524* A second list of new planetary nebulae found on United Kingdom 1.2m Schmidt telescope plates.
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228.8+05.3

M 1-17, PK 228+5°1, ARO 240, Sa 2-12, VV 42, VV' 67, IRAS 07380-1125

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel*: +100.0 ± 25.0STPP83
1950:	07 38 01.2	-11 25 32	IRAS	*opt.* 3. PK67	*Expansion Velocities* (*km/s*)
	07 38 00.7	-11 25 29	AK90		[OIII] 5. SSB86
2000:	07 40 22.2	-11 32 30	.	*radio* 2.5 AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22

*He*II	468.6 *nm*	11	$H\alpha$	656.3 *nm*	464
[*O*III]	436.3	12	[*N*II]	658.4	396
	500.7	1551	[*S*II]	671.7	22
*He*I	587.6	20		673.1	41

$\lg F_{H\beta}(mW.m^{-2})$ $-12.12 \pm .12$ CS83, ASTR91

IR Class: .

J		
H		
K	> 9.6	
L		
Photom.	AI74	

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.33	3
25μm	1.88	3
60μm	4.66	3
100μm	3.58	3

Radio (*mJy*) *2cm* 15 MiAl82; *6cm* 17 AK90

Central Star: *B* 18.5 *Qual:* D TASG91

Distance (kpc) stat.: 10.15 (MiAl75); 9.91 (Ca76); 8.7 (Ac78); 3.69 (Da82); 3.20 (AGNR84); 5.8 (Ma84); 7.36 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, CaWy76, FaMa88, Hi71, Is84, KPK81, Ka80, Kal80, Kh79, Kon78, Kon83, LNP89, MaPo80, Mi73, PAKS91, PM87, Pe71, Pe91, Ru70, Sa75, StKa89, We89

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229.6–02.7

K 1-10, PK 229–2°1, ARO 230

			Disc.: Kohoutek 1963	*Diameter* (″)	
				opt. 62. CaKa71	
1950:	07 10 20.0	-16 00 36	Mi73		
2000:	07 12 35.4	-16 05 43	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-15

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	534
	500.7	55	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Radio (*mJy*) *2cm* < 1 MiAl82; *6cm* < 9 Ca82

Central Star: AG82 76 — m_{pg} > 21. *Qual:* P PK67

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 1.56 (CaKa71); 2.1 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, Hi71, Iw73, KrK68, MaC83, Mi79, Ru70, Sa76, ZPB89

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231.4+04.3

M 1-18, PK 231+4°1, Sa 2-15, VV 44, VV' 70

Disc.: Minkowski 1946	*Diameter (")*	*Rvel:* +18.0 ± 25.0 STPP83
	opt. 30. CaKa71	*Expansion Velocities (km/s)*
1950: 07 39 45.0 -14 14 05 ZPB89		[OIII] 13. SSB86
2000: 07 42 03.3 -14 21 12 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	470
[*OIII*]	436.3	–	[*NII*]	658.4	848
	500.7	1207	[*SII*]	671.7	54
HeI	587.6	–		673.1	25

$\lg F_{H\beta}(mW.m^{-2})$ −12.23 ± . Pe71	*Radio* *2cm* 6 MiAl82	
	(*mJy*) *6cm* 1.2 ZPB89	

Central Star: AG82 89 —
B 20.9 *Qual:* C GaPo88

Distance (kpc) stat.: 2.11 (CaKa71); 1.76 (Ac78); 2.58 (Da82); 2.1 (Ma84); 4.39 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, CaRu74, Iw73, Mi73, MiAl75, PAKS91, Sa75, We89, Zi75

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231.8+04.1

NGC 2438, PK 231+4°2, ARO 46, Sa 2-13, VV 43, VV' 69, IRAS 07395-1437

Disc.: Herschel 1827	*Diameter (")*	*Rvel:* +74.0 ± 4.0 MWF88
1950: 07 39 33.8 -14 37 04 IRAS	*opt.* 64. CJA87	*Expansion Velocities (km/s)*
07 39 32.4 -14 37 02 Ka83		[OIII] 22.4 MWF88
2000: 07 41 50.3 -14 44 08 .	*radio* 80. ZPB89	[NII] 20.0 We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22 N					
HeII	468.6 *nm*	4:	*Hα*	656.3 *nm*	308
[*OIII*]	436.3	–	[*NII*]	658.4	577
	500.7	758	[*SII*]	671.7	64
HeI	587.6	13		673.1	51

IR Class: .	*IRAS Fluxes (Jy)*	*Qual.*
J	12μm 0.25	1
H	25μm 1.06	3
K	60μm 6.77	3
L	100μm 9.16	3

$\lg F_{H\beta}$ −11.04 ± .06 O63 , Pe71, Kale76	*Spectr.* PPOJ86	*Radio* *2cm* 66 MiAl82
IUE Spectra: *LW*(0) *SW*(1)		(*mJy*) *6cm* 67 ZPB89

Central Star: AG82 87 —
B 17.7 *Qual:* D GaPo88, KSK90

Notes: Multiple-shell PN; monochromatic images (CJA87, Ba87); ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 2.0 (Po83)
Distance (kpc) stat.: 0.98 (CaKa71); 1.17 (MiAl75); 1.15 (Ca76); 0.90 (Ac78); 1.17 (Da82); 1.00 (AGNR84); 1.5 (Ma84); 1.20 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, Ac80, AcMa77, Ak70, Al68, AlEp76, AlMi72, All76, Ca82, Ch89, Cu74, DFHM66, DFHM67, De71, FeAl87, Gr71, Gu70, Gu88, HaZu91, He71, HeAu87, Hi71, Hig71, Iw73, IwKa65, KHM86, Ka69, Ka70, Ka76, Ka79, Ka80, Ka85, Ka86, KaJa89, Kal80, Kh79, Kle78, KrK68, LNP89, MaPo80, Mi73, MiS77, MiSa77, MiWe79, NPP80, PAKS91, PBBE84, Pe91, PeFr73, Phi84, PiKh79, Po87, SSB86, STPP83, Sa75, SaMi78, Sab86, Sabb86, SlOr65, TCS67, TP77, Th68, ThDa70, TrSa78, WRPA86, ZuAl86

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71..9012 Turner B.E. *Astrophys. Lett. 8,73* Anomalous OH emission from new types of galactic objects.
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73..9054 Goss W.M., Nguyen Quang-Rieu, Winnberg A. *Astron. Astrophys. 29,435-439* Microwave characteristics of OH 0739-14 and the planetary nebula NGC 2438.
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74..9018 Wynn-Williams C.G., Becklin E.E., Neugebauer G. *Astrophys. J. 187,473-485* Infrared studies of H II regions and OH sources.
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75..9047 Yngvesson K.S., Cardiasmenos A.G., Shanley J.F., Rydbeck O.E.H., Ellder J. *Astrophys. J. 195,91* Maser radiometer observations of water vapor and OH in weak galactic OH sources.
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232.0+05.7

SaSt 2-3, PK 232+5°1, MWC 574

Disc.: Sanduleak et al 1972 1950: 07 45 44.8 -14 00 12 AK90 2000: 07 48 03.6 -14 07 43 .	*Diameter* (″) *opt. St.* We77	
Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-20 *HeII* 468.6 *nm* – | *Hα* 656.3 *nm* 653 [*OIII*] 436.3 – | [*NII*] 658.4 262 495.9 – | [*SII*] 671.7 13 *HeI* 587.6 – | 673.1 17		
$\lg F_{H\beta}(mW.m^{-2})$ $-12.1 \pm .3$ ASTR91		*Radio* *2cm* (*mJy*) *6cm*< 1.4 AK90
Central Star: *B* 13.58 *V* 13.26 *Qual:* A TASG91		

Bibliography: AlGl75, Ko78, SaSt72

232.4-01.8

M 1-13, PK 232−1°1, ESO 559-06, ARO 23, Sa 2-7, VV 36, VV' 59, IRAS 07190-1802

				Diameter (″)		*Rvel:* +46.0 ± 25.0 STPP83
		Disc.: Minkowski 1946				
1950:	07 19 01.2	-18 02 51	IRAS	*opt.* 10.	PK67	
	07 19 01.6	-18 02 52	AK90			
2000:	07 21 14.9	-18 08 36	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21					
HeII	468.6 *nm*	23	$H\alpha$	656.3 *nm*	487
[*OIII*]	436.3	11	[*NII*]	658.4	673
	500.7	1385	[*SII*]	671.7	18
HeI	587.6	17		673.1	20
$\lg F_{H\beta}(mW.m^{-2})$		−11.85 ± .06	Kal83		

IRAS Fluxes (*Jy*)		*Qual.*	
12μm	0.25	1	
25μm	0.70	3	
60μm	4.51	3	
100μm	9.37	1	
Radio	*2cm* 11		MiAl82
(*mJy*)	*6cm* 23		MiAl75

Distance (kpc) stat.: 5.01 (MiAl75); 4.90 (Ca76); 4.3 (Ac78); 4.93 (Da82); 3.00 (AGNR84); 4.5 (Ma84) 5.32 (CKS91)

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232.8-04.7

M 1-11, PK 232−4°1, ARO 229, ESO 558-14, SaSt 2-1, VV 34, VV' 55, IRAS 07090-1946

				Diameter (″)		*Rvel:* +28.9 ± 16.2 STPP83
		Disc.: Minkowski 1946				
1950:	07 09 05.9	-19 46 01	IRAS	*opt. St.*	CaKa71	
	07 09 05.9	-19 46 00	AK90			
2000:	07 11 16.6	-19 51 03	.	*radio* 2.2	AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18					
HeII	468.6 *nm*	−	$H\alpha$	656.3 *nm*	884
[*OIII*]	436.3	−	[*NII*]	658.4	571
	500.7	10	[*SII*]	671.7	1.5
HeI	587.6	8		673.1	4
$\lg F_{H\beta}(mW.m^{-2})$		−11.84 ± .01	Kal83, SK89		
IUE Spectra:		*LW*(2) *SW*(1)			

IR Class: D,			
J	10.84		
H	10.05		
K	8.89		
L	6.87		
Photom.	PPFS87		
Spectr.	86...187		

IRAS Fluxes (*Jy*)		*Qual.*	
12μm	12.91	3	
25μm	63.51	3	
60μm	31.70	3	
100μm	7.86	3	
Radio	*2cm* 94		MiAl82
(*mJy*)	*6cm* 113		AK90

Central Star: AG82 75 —
B 14.76 *V* 13.95 *Qual:* A SK89 , TASG91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 4.45 (Ac78); 2.12 (CKS91)

Bibliography: *PK67*, ABBW82, AG82, AST89, AcMa77, AiRo81, AiRo82, Al73, Al74, AlSw76, All73, CS83, CoBa74, Hi71, Iw73, Kon83, Mi73, MiAl75, MiWe79, PAKS89, PFMA82, PM87, Pe71, PiKh79, Ro87, Ru70, SK85, Sa76, SaSt72, Sh85, StAc87, StKa89, TAGS89, TBB74, VoCo90, Wa77, Wh85, ZTPS89, ZuAl86

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233.0–10.1

SaWe 1

			Disc.: Saurer et al 1987			*Diameter* (″)	
						opt. 55. 87..1594	
1950:	06 48 34.2	-22 22 34	87..1594				
2000:	06 50 41.0	-22 26 09	.				
Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-13							
*He*II	468.6 *nm*	–		$H\alpha$	656.3 *nm*	229	
[*O*III]	436.3	–		[*N*II]	658.4	32	
	500.7	466		[*S*II]	671.7		
*He*I	587.6	–			673.1		
$\lg F_{H\beta}(mW.m^{-2})$		$-12.8 \pm .4$	ASTR91				

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233.5–16.3

A 15, PK 233–16°1, ARO 221, ESO 490-01, IRAS 06249-2520

			Disc.: Abell 1964	*Diameter* (″)	*Rvel*: +35.0 ± 3.0 85..1535
1950:	06 24 59.6	-25 20 54	IRAS	*opt.* 34. CaKa71	
	06 24 59.9	-25 21 01	Ka83		
2000:	06 27 02.2	-25 22 54	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-12					
HeII 468.6 *nm*	153	$H\alpha$ 656.3 *nm*	572	*IRAS Fluxes* (*Jy*)	*Qual.*
[*OIII*] 436.3	–	[*NII*] 658.4	–	12μm 0.25	1
500.7	264	[*SII*] 671.7		25μm 0.37	3
HeI 587.6	–	673.1		60μm 0.49	3
				100μm 1.00	1
$\lg F_{H\beta}(mW.m^{-2})$ −12.47 ± .04 Ka83				*Radio* 2*cm* 17	MiAl82
IUE Spectra: *LW*(0) *SW*(3)				(*mJy*) 6*cm*< 2.5	ZPB89

Central Star: AG82 64 — CSI -25-06250; UBV 6450	sd Op 64...352
B 15.89 *V* 16.16 *Qual:* B GaPo88, TASG91	; O(H) Me91

Distance (kpc) stat.: 3.37 (CaKa71); 2.41 (Da82); 2.10 (AGNR84); 3.1 (Ma84); 3.66 (CKS91)

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234.3–06.6

K 2-3, PK 234–6°1, ARO 227, ESO 558-11

			Disc.: Kohoutek 1963	*Diameter* (″)	*Rvel*: +65.2 ± 8.0 85..1535
1950:	07 04 49.3	-21 57 30	Mi73	*opt.* 63. CaKa71	
2000:	07 06 57.2	-22 02 14	.		
					Radio 2*cm*< 13 MiAl82
					(*mJy*) 6*cm*< 11 Mi79

Central Star: AG82 73 —
$m_{pg} > 21.$ *Qual:* P PK67

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 1.67 (CaKa71); 2.4 (Ma84)

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234.8+02.4

NGC 2440, PK 234+2°1, ARO 47, ESO 560-09, Sa 2-14, VV 45, VV' 71, IRAS 07396-1805

			Disc.: Herschel 1790	*Diameter* (″)		*Rvel:* +63.0 ± 3.0	MWF88
1950:	07 39 41.5	-18 05 27	IRAS	*opt.* 16.	PK67	*Expansion Velocities* (*km/s*)	
	07 39 41.5	-18 05 26	Mi73			[OIII] 22.5	We89
2000:	07 41 55.4	-18 12 33	.	*radio* 18.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22 N						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	61	*Hα*	656.3 *nm*	464	*J*	10.33	12*μm*	3.59	3
[*O*III]	436.3	22	[*N*II]	658.4	1236	*H*	10.50	25*μm*	28.01	3
	500.7	1790	[*S*II]	671.7	8	*K*	9.68	60*μm*	43.47	3
*He*I	587.6	12		673.1	14	*L*		100*μm*	26.30	2
$\lg F_{H\beta}$ −10.50 ± .01TP77, Kle78, 85..3062, SK89						*Photom.* PeTo87		*Radio* 2*cm* 325		ZPB89
IUE Spectra: *LW*(24) *SW*(28)						*Spectr.* 87..1381		(*mJy*) 6*cm* 370		ZPB89

Central Star: AG82 88 — BD -17 2105; HD 62166; GCRV 5132; CSI -17 02105
V 17.65 *Qual:* B 88..9151, 90.00003

Notes: Monochromatic images (CJA87, Ba87); ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: stand. 1.1 (70..9096); ext. 1.0 (Ac78); ext. 1.6,2.5 (Po83); ext. 2.19 (86..1120); kinem. 2.3 (GPG86); expans. 0.7 (Po87)
Distance (kpc) stat.: 0.9 (CaKa71); 1.35 (MiAl75); 1.38 (Ca76); 1.13 (Ac78); 1.01 (Da82); 1.13 (PhPo84); 0.74 (AGNR84); 1.1 (Ma84); 1.34 (CKS91)

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234.9–01.4

M 1-14, PK 235–1°1, ARO 237, ESO 559-11, Sa 2-9, VV 39, VV' 64, IRAS 07257-2007

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* +131.0 ± 25.0STPP83
1950:	07 25 46.0	-20 07 13	IRAS	*opt. St.*	CS90	
	07 25 45.6	-20 07 12	AK90			
2000:	07 27 56.5	-20 13 23	.	*radio* 4.7	AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	552	*J*		12μm	0.53	3
[*O*III]	436.3	1.6:	[*N*II]	658.4	159	*H*		25μm	4.89	3
	500.7	372	[*S*II]	671.7	3	*K*	> 10.0	60μm	3.56	3
*He*I	587.6	19		673.1	4	*L*		100μm	19.28	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.56 ± .03	TP77, ASTR91			*Photom.*	AI74	*Radio* (*mJy*) *2cm*	37	MiAl82
								6cm	60	AK90

Central Star:
B 14.65 *V* 14.18 *Qual:* B TASG91

Distance (kpc) stat.: 5.11 (Ac78); 3.95 (CKS91)

Bibliography: PK67, AST89, Ac80, AcMa77, Ca82, HLSW80, Hi71, KSDN68, Ka79, Ka80, Ka81, Ka86, Kal78, Kal80, Kh76, Kle78, Kon78, Mi73, MiAl75, MiWe79, NPP80, PAKS91, PM87, PPFS87, Pe71, Pe91, Ru70, Sa75, StKa89, TAGS89

235.3–03.9

M 1-12, PK 235–3°1, ARO 233, ESO 559-03, SaSt 2-2, VV 35, VV' 58, IRAS 07172-2138

			Disc.: Minkowski 1946	*Diameter* (″)	
1950:	07 17 12.8	-21 38 19	IRAS	*opt. St.* CS90	
	07 17 12.7	-21 38 19	AK90		
2000:	07 19 21.4	-21 43 55	.	*radio* 1.8 AK90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	533
[*OIII*]	436.3	–	[*NII*]	658.4	312
	500.7	16	[*SII*]	671.7	2.3
HeI	587.6	6		673.1	5

$\lg F_{H\beta}(mW.m^{-2})$ $-11.60 \pm .10$ ASTR91

IR Class: S+D

J	11.80	*IRAS Fluxes* (*Jy*)		*Qual.*
H	11.41	12μm	2.20	3
K	10.31	25μm	12.40	3
L		60μm	5.59	3
Photom.	Wh85	100μm	11.35	1
Spectr.	86..2654	*Radio* (*mJy*) *2cm*	12	MiAl82
		6cm	41	AK90

Central Star:
B 14.44 *V* 14.08 *Qual:* B TASG91

Notes: δ wrong in PK67
Distance (kpc) stat.: 3.75 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, Al74, Ca82, CoBa74, HLSW80, Hi71, KAS91, Kon83, Mi73, Mi79, PAKS89, PFMA82, PM87, PPFS87, Ru70, Sa76, SaSt72, StAc87, StKa89, TAGS89, Wa77, ZTPS89

79..3515 Kondratjeva L.N. *Soviet Astron. 23,193-197* Spectral studies of planetary nebulae of small angular size. Objects of low excitation.

83.30803 Adams S., Barlow M.J. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae, 537-538* An optical and ultraviolet study of nine low-excitation planetary nebulae.

84.30005 Kondratjeva L.N. *Trudy Astrofiz. Inst. Alma Ata 44,30-42* Tsentral'nye zvezdy nekotonyh planetaryh tumannastej.

86..2654 Roche P.F., Aitken D.K. *Mon. Not. R. Astron. Soc. 221, 63-76* The infrared spectral properties of planetary nebulae.

90..1038 Zhang C.Y., Kwok S. *Astron. Astrophys. 237,479* IRAS spectroscopic observations of young planetary nebulae.

236.0–10.6

HaWe 9

			Disc.: Hartl et al 1983	*Diameter* (″)	
				opt. 148. 87..1593	
1950:	06 52 26	-25 17.3	83.28034		
2000:	06 54 29	-25 21.2	.		

Central Star:
B 19.8 87..1593

Notes: Status of the object not clear; could be a emission-line galaxy. The measured central star may be a field star.

Bibliography: TASG91

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236.7+03.5

K 1-12, PK 236+3°1, ARO 243, ESO 560-16

Disc.: Kohoutek 1963 1950: 07 47 58.9 -19 10 30 Mi76 2000: 07 50 11.9 -19 18 09 .	*Diameter* (″) *opt.* 37. CaKa71	*Rvel:* +58.8 ± 6.6 85..1535
Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22 SE *HeII* 468.6 *nm* 97: | $H\alpha$ 656.3 *nm* 218 [OIII] 436.3 – | [NII] 658.4 197 500.7 701 | [SII] 671.7 *HeI* 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ −12.8 ± .4 ASTR91		*Radio* *2cm* 2 MiAl82 (*mJy*) *6cm* < 3 ZPB89

Central Star: AG82 92 —
$m_{pg} > 21.$ *Qual:* P PK67

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.2 (CaKa71); 2.64 (Da82); 2.50 (AGNR84); 3.9 (Ma84); 2.63 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, HLSW80, Hi71, Iw73, KrKo68, Ma81, MaC83, Mi79, PAKS91, Ru70, Sa76

85..1535 Kohoutek L., Pauls R. *Astron. Astrophys., Suppl. Ser. 60, 87-90* Spectroscopic verification of suspected planetary nebulae. I.

238.0+34.8

A 33, PK 238+34°1, A55 22, ARO 65, VV' 91

Disc.: Abell 1955 1950: 09 36 37.1 -02 34 57 Ka83 2000: 09 39 09.0 -02 48 33 .	*Diameter* (″) *opt.* 270. CaKa71	*Rvel:* +60.1 ± 4.0 STPP83 *Expansion Velocities* (*km/s*) [OIII] 32.0 Sa84
Intens. ($H\beta = 100$) OHP-CAR+CCD 1986-12-23 *HeII* 468.6 *nm* – | $H\alpha$ 656.3 *nm* 280 [OIII] 436.3 – | [NII] 658.4 – 500.7 353: | [SII] 671.7 *HeI* 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ −11.3 ± .3 Ka83 *IUE Spectra:* *LW*(2) *SW*(4)		*Radio* *2cm* 51 MiAl82 (*mJy*) *6cm* 22 Ca82
Central Star: AG82 118 — CSI -02 -09366; UBV 9180; FB 58 *U* 14.28 *B* 15.43 *V* 15.50 *Qual:* A Ab66, SK89 , TASG91		sd Op All76 O(H) Me91

Notes: Visual companion to the central star: $m_{pv} = 17.0, \rho = 1''8, \theta = 212°$ (73..9005). Monochromatic images (83..1022)
Distance (kpc) stat.: 0.61 (CaKa71); 0.80 (MiAl75); 0.78 (Ca76); 0.58 (Ac78); 0.69 (Da82); 0.74 (AGNR84); 1.6 (Ma84); 0.75 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac82, AcMa77, AlMi72, Ca84, ChLo76, Cu74, Dr80, Gr71, Gu88, He71, HeAu87, Hi69, Hi71, Hi73, Hig71, Hu78, Iw73, KSK90, Ka76, Ka85, Kale76, Kh79, KrK68, LePo88, Li78, Li82, Me89, Mi73, Mi79, MiWe79, PWWF78, Ph84, Phi84, PiKh79, Po78, RRA82, SGBO84, SK85, SaHa82, Sabb86, Sh85, SlOr65, TaAp88, We89, ZPB89, ZiPo91

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83..1022 Hua C.T., Nguyen-Trong T. *Astron. Astrophys. 117,272-276* Morphological study of three Abell's planetary nebulae: A 33, A 36, and A 79.

83..1404 McLean B.J., Viner M.R., Hughes V.A. *Astron. Astrophys. 128,434-437* The nature of the radio source in M 3.
83.30778 Mendez R.H., Kudritzki R.P., Simon K.P. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae, 343-357* Non-LTE model atmosphere analysis of central stars.
83.30787 Hua C.T., Louise R. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae 507-508* High-spatial resolution observations of planetary nebulae.
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85..1008 Mendez R.H., Kudritzki R.P., Simon K.P. *Astron. Astrophys. 142, 289-296* SIT vidicon and IDS spectra of central stars of planetary nebulae.
86...522 Green R.F., Schmidt M., Liebert J. *Astrophys. J., Suppl. Ser. 61,305-352* The Palomar-Green catalog of ultraviolet-excess stellar objects.

238.9+07.3

Sa 2-21, PK 238+7°2, ESO 561-16

		Disc.: Sanduleak 1975	*Diameter* (″)	
			opt. 40. 75..9025	
1950:	08 06.5	-19 05 Sa75		
2000:	08 08.7	-19 14 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	270
[OIII]	436.3	–	[*N*II]	658.4	158
	500.7	736	[*S*II]	671.7	27
*He*I	587.6	–		673.1	22

$\lg F_{H\beta}(mW.m^{-2})$ $-11.9 \pm .3$ ASTR91

Radio	*2cm*		
(*mJy*)	*6cm*	2.4	ZPB89

Central Star: AG82 98 —

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 3.34 (CKS91)

Bibliography: AG82, AcMa77, Ko78, PAKS91, We77

75..9025 Sanduleak N. *Publ. Astron. Soc. Pac. 87,705* A new Planetary Nebula in Puppis.

239.6+13.9

NGC 2610, PK 239+13°1, ARO 64, Sa 2-27, VV 48, VV' 77, IRAS 08310-1558

			Disc.: Reynolds 1914	*Diameter* (″)		*Rvel*: +89.0 ± 3.0	MWF88
1950:	08 31 04.7	-15 58 41	IRAS	*opt.* 38.	CJA87	*Expansion Velocities* (*km/s*)	
	08 31 04.9	-15 58 38	Ka83			[OIII] 14.0	MWF88
2000:	08 33 23.5	-16 08 56	.	*radio* 49.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	65:	*Hα*	656.3 *nm*	272	12μm	0.28	1
[OIII]	436.3	–	[*NII*]	658.4	–	25μm	2.18	3
	500.7	326	[*SII*]	671.7		60μm	2.22	3
HeI	587.6	–		673.1		100μm	2.02	3
lg$F_{H\beta}$ −11.38 ± .02		O63, Pe71, Kale76, SK89				*Radio* 2*cm*	32	MiAl82
IUE Spectra:		*LW*(1) *SW*(1)				(*mJy*) 6*cm*	30	ZPB89

Central Star: AG82 104 —
B 15.60 *V* 15.90 *Qual:* A SK89

Notes: Multiple-shell PN; monochromatic images (CJA87, Ba87); ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) stat.: 1.81 (CaKa71); 2.04 (MiAl75); 2.15 (Ca76); 1.66 (Ac78); 1.99 (Da82); 1.24 (PhPo84); 1.70 (AGNR84); 2.6 (Ma84); 2.19 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ab66, AcMa77, AlMi72, All76, Ba89, CS83, Ca82, Ca84, CaNo73, CaRu74, CePe83, Ch89, CoBa74, Cu74, DFHM67, De71, FeAl87, Gr71, GrNe90, Gu70, Gu88, HaZu91, He71, HeAu87, Hi71, Hig71, Iw73, IwKa65, Ka69, Ka70, Ka76, Ka79, Ka85, Ka86, Kh79, Kle78, KrK68, LNP89, MaPo80, Mi73, MiSa77, MiWe79, Pe91, PiKh79, SSB86, STPP83, Sa75, SaMi78, Sabb86, Sh85, SlOr65, TP77, TrSa78, VKDA69, Vo70, We89, ZuAl86

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84.31689 Chu Y.H., Kwitter K.B., Jacoby G.H., Kaler J. *Bull. American Astron. Soc. 16, 995* The internal motions in multiple shell planetary nebulae.
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91..4001 Gurzadyan G.A., Egikyan A.G. *Astrophys. Space Sci.,175,15* Pseudo-resonance absorption lines in planetary nebulae : discovery ?

239.6–12.0

ESO 427-19, PK 239−12°1

			Disc.: Holmberg et al 1978	*Diameter* (″)		
				opt. 30. :	CS90	
1950:	06 53 14.5	-29 03 34	FrWe84			
2000:	06 55 12.1	-29 07 28	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23					
HeII	468.6 *nm*	155	*Hα*	656.3 *nm*	340
[OIII]	436.3	–	[*NII*]	658.4	–
	500.7	919	[*SII*]	671.7	
HeI	587.6	–		673.1	
lg$F_{H\beta}(mW.m^{-2})$		−12.6 ± .3	ASTR91		

Central Star: AG82 69Bis —
B 19. FrWe84

Bibliography: HLSW78

240.3+07.0

Y-C 2-5, PK 240+7°1, Sa 2-22, IRAS 08084-2022

			Disc.: Cesco et al 1973	*Diameter (″)*	
1950:	08 08 28.2	-20 22 34	IRAS	*opt.* 8. CeGi73	
	08 08 29.0	-20 22 36	We77		
2000:	08 10 41.7	-20 31 33	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-30					
HeII	468.6 *nm*	76	$H\alpha$	656.3 *nm*	355
[OIII]	436.3	17	[NII]	658.4	–
	500.7	924	[SII]	671.7	
HeI	587.6	6		673.1	

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	0.53	3
60μm	0.90	3
100μm	1.00	1

$\lg F_{H\beta}(mW.m^{-2})$	$-12.3 \pm .2$	ASTR91

Radio (*mJy*)			
2cm			
6cm	4.5	ZPB89	

Central Star:
B 15.54 *V* 15.65 *Qual:* B TASG91

Distance (kpc) stat.: 7.74 (CKS91)

Bibliography: AcMa77, Ko78, Sa75

240.3–07.6

M 3-2, PK 240–7°1, ARO 231, ESO 428-05, He 2-2, Sa 3-2, VV' 56

			Disc.: Minkowski 1948	*Diameter (″)*	*Rvel:* $+84.0 \pm 11.0$ STPP83
				opt. 7.6 CaKa71	
1950:	07 12 49.2	-27 45 01	Mi76		
2000:	07 14 49.5	-27 50 18	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18					
HeII	468.6 *nm*	95	$H\alpha$	656.3 *nm*	547
[OIII]	436.3	–	[NII]	658.4	1573
	500.7	492	[SII]	671.7	49
HeI	587.6	23		673.1	41

$\lg F_{H\beta}(mW.m^{-2})$	$-12.61 \pm .02$	SK89

Radio (*mJy*)			
2cm	< 1	MiAl82	
6cm			

Central Star:
V 21.1 *Qual:* D JK89

Distance (kpc) stat.: 3.9,5.0 (CaKa71); 4.12 (Ac78); 3.2 (Ma84); 8.82 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, CS83, HLSW77, He67, Hi71, Iw73, KSK90, KaJa89, KrK68, PAKS89, Ru70, Sa76, Sh85, StAc87, TASG91, WeHe67

241.0+02.3

M 3-4, PK 241+2°1, ARO 81, ESO 494-02, Sa 2-19, VV' 75, Wray 19-3, IRAS 07530-2330

				Diameter (″)	*Rvel:* +74.0 ± 25.0 STPP83
		Disc.: Minkowski 1948			
1950:	07 53 02.6	-23 30 10	IRAS	*opt.* 13.8 CaKa71	
	07 53 03.1	-23 29 47	Mi73		
2000:	07 55 11.2	-23 37 46	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23

*He*II	468.6 *nm*	74	*Hα*	656.3 *nm*	343
[*O*III]	436.3	–	[*N*II]	658.4	124
	500.7	1239	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-11.40 \pm .$ Pe71

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.36	1
25μm	0.25	1
60μm	0.90	3
100μm	8.15	1

Radio (*mJy*)			
	2cm	< 2	ZPB89
	6cm	1	ZPB89

Central Star:
B 16.68 *V* 15.72 *Qual:* B TASG91

Distance (kpc) stat.: 2.53 (CaKa71); 4.06 (MiAl75); 2.73 (Ac78); 4.38 (Da82); 3.20 (AGNR84); 4.6 (Ma84) 6.33 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Ca82, HLSW77, He71, Hi69, Hi71, Hig71, Iw73, Ma81, MaPo80, Mi79, MiAl82, PAKS91, Ru70, Sa75, Th68, ThCo67, Wr66

242.6–11.6

M 3-1, PK 242–11°1, ARO 534, ESO 427-30, He 2-1, Sa 2-3, StWr 3-1, VV' 52, Wray 16-1, IRAS 07009-3131

				Diameter (″)	*Rvel:* +69.5 ± 14.7 STPP83
		Disc.: Minkowski 1948			
1950:	07 00 57.9	-31 31 07	IRAS	*opt.* 11.2 CaKa71	
	07 00 55.5	-31 31 14	Mi73		
2000:	07 02 49.7	-31 35 41	.	*radio* 11. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	372
[*O*III]	436.3	7	[*N*II]	658.4	81
	500.7	931	[*S*II]	671.7	8
*He*I	587.6	15		673.1	10

$\lg F_{H\beta}(mW.m^{-2})$ $-11.31 \pm .02$ 85..3062, SK89

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.42	3
60μm	1.70	3
100μm	1.26	2

Radio (*mJy*)			
	2cm	16	ZPB89
	6cm	24	ZPB89

Central Star: AG82 71 —
B 15.38 *V* 15.55 *Qual:* B SK89 , TASG91

Distance (kpc) stat.: 3.86 (CaKa71); 4.64 (MiAl75); 4.53 (Ca76); 3.48 (Ac78); 4.04 (Da82); 2.90 (AGNR84); 4.3 (Ma84); 4.53 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, CS83, Ca82, He67, Hi71, Iw73, Ka86, LNP89, LePo88, MaPo80, MiAl82, PAKS91, Pe71, Pe91, PiKh79, Ru70, Sa75, Sh85, StWr72, TAGS89, WeHe67, Wr66

85..3062 Gutierrez-Moreno A., Moreno H., Cortes G. *Publ. Astron. Soc. Pac. 97, 397-403* Studies of southern planetary nebulae. I. Fluxes from bright planetary nebulae.

86..3053 Gutierrez-Moreno A., Moreno H., Cortes G. *Publ. Astron. Soc. Pac. 98, 488-498* Studies of southern planetary nebulae. II. Electron temperatures and densities.

88..3171 Gutierrez-Moreno A., Moreno H. *Publ. Astron. Soc. Pac. 100, 1497-1504* Studies of southern planetary nebulae. III. Chemical abundances.

89..1352 Bassgen M., Grewing M. *Astron. Astrophys. 218, 273-276* Spectroscopic search for halos of planetary nebulae.

243.3–01.0

NGC 2452, PK 243−1°1, ARO 93, ESO 493-11, He 2-4, RCW 17, Sa 2-16, VV 46, VV' 72, Wray 15-85, IRAS 07453-2712

			Disc.: Herschel 1837	*Diameter* (″)		*Rvel:* +65.0 ± 3.0	MWF88
1950:	07 45 23.4	-27 12 37	IRAS	*opt.* 19.	CaKa71	*Expansion Velocities* (*km/s*)	
	07 45 23.2	-27 12 37	KVLS81			[OIII] 31.7	MWF88
2000:	07 47 26.1	-27 20 06	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22 N						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	65	$H\alpha$	656.3 *nm*	350	*J*	12.27	12μm	0.45	3
[*O*III]	436.3	16	[*N*II]	658.4	226	*H*	12.37	25μm	5.02	3
	500.7	1575	[*S*II]	671.7	19	*K*	12.39	60μm	6.60	3
*He*I	587.6	11		673.1	31	*L*		100μm	9.79	1
$\lg F_{H\beta}$ −11.49 ± .05 O63, Pe71, SK89						*Photom.* PPFS87		*Radio* *2cm*	54	MiAl82
IUE Spectra: *LW*(2) *SW*(2)								(*mJy*) *6cm*	55	Ca82

Central Star: AG82 90 — GCRV 5190; GRS 243.50 -01.00	WC 7.8, O IV	AII76
B 17.71 *Qual:* B GaPo88	WC 3	Me91

Notes: Monochromatic images (Ba87); ESO-NTT images by Schwartz H.E. and Melnick J. ESO-2.2m images by Baessgen M. and Bremer M.

Distance (kpc) indiv.: ext. 3.0 (Ac78); ext. 2.00 (Po80); ext. 3.0 (Po83); ext. 3.57 (86..1120)

Distance (kpc) stat.: 1.7 (CaKa71); 2.81 (MiAl75); 2.82 (Ca76); 2.65 (Ac78); 2.61 (Da82); 2.44 (PhPo84); 1.80 (AGNR84); 2.7 (Ma84)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac80, AcMa77, Ak70, Al68, Al76, Al77, AlCz79, AlCz83, AlEp76, Ba89, CaRu74, CePe83, ChLo72, CoBa74, DFHM67, De71, FeAl87, GPY79, Ga87, GaPo89, Go87, Gr71, Gr72, Gr89, Gu70, Gu88, He67, He71, He90, Hi71, Hig71, Iw73, IwKa65, KAC76, Ka69, Ka70, Ka76, Ka79, Ka80, Ka86, Kal80, Kh79, Kle78, KrK68, LNP89, Lo77, Ma74, MaFa85, MaPe88, MaPo80, Mi73, MiWe79, PM87, Pa90, Pe75, Pe91, PeTo83, PhMa88, PiKh79, Po87, PrPo83, SSAG87, STPP83, Sa75, SaMi78, Sab86, Sabb86, Sh85, SmAl69, StKa89, TP77, ViFr85, WRPA86, We89, WeHe67, Wr66, ZuAl86

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84..9353 Kastner S.O., Bhatia A.K. *Astrophys. J. 287,945-951* On bowen enhancement of the N III spectrum under solar and nebular conditions.

84.13515 Rodriguez L.F., Garcia-Baretto J.A. *Rev. Mex. Astron. 9, 153-157* On the abundance of atomic and molecular hydrogen in the outer parts of young planetary nebulae.

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89..1352 Bassgen M., Grewing M. *Astron. Astrophys. 218, 273-276* Spectroscopic search for halos of planetary nebulae.
89.31626 Heap S.R., Corcoran M.F., Hintzen P., Smith E. *Bull. American Astron. Soc. 21, 1199-1200* Properties of the hottest central stars of planetary nebulae.
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243.8–37.1

PRTM 1

			Disc.: Pena et al 1990	*Diameter* (″)	
				opt. 23. 90..1006	
1950:	05 01 21.9	-39 49 54	90..1006		
2000:	05 03 01.7	-39 45 44	.		
IUE Spectra:	*LW*(0)	*SW*(3)			

Central Star:
V 15.6 *Qual:* C 90..1006 *Spectrum:* O(H) Me91

Notes: Could be a galactic halo object (90..1006). Wrong galactic denomination (242+37.1) appears in the discovery paper.

90..1006 Pena M., Ruiz M.T., Torres-Peimbert S., Maza J. *Astron. Astrophys. 237,454* A newly discovered carbon poor Planetary Nebula: PN 242-37 1

244.5+12.5

A 29, PK 244+12°1, A55 19, ESO 563-09, VV' 79

			Disc.: Abell 1955	*Diameter* (″)	
				opt. 400. CaKa71	*Expansion Velocities* (*km/s*)
1950:	08 38.0	-20 43	PK67		[OIII] 25 We89
2000:	08 40.2	-20 54	.		

Intens. (*Hα* = 100) ESO-B.C+CCD 1988-03-13

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	462
	495.9	–	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star: AG82 106 — UBV 8351; CSI -20 -08380
U 17.04 *B* 18.12 *V* 18.35 Ab66

Distance (kpc) stat.: 0.42 (CaKa71); 0.8 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, Gr72, IsWe87, Kh79, KrK68, LePo88, MeHa75, PAKS89, TASG91, We86, ZPB89

90..1011 Hippelein H., Weinberger R. *Astron. Astrophys. 232,129* The expansion of highly evolved planetary nebulae.

245.4+01.6

M 3-5, PK 245+1°1, ARO 244, ESO 430-10, He 2-6, Sa 2-20, VV' 76, Wray 16-10, IRAS 08004-2733

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel*: +64.0 ± 25.0 STPP83	
1950:	08 00 25.3	-27 33 28	IRAS	*opt.* 6.8	CaKa71		
	08 00 25.2	-27 33 31	Mi76				
2000:	08 02 28.8	-27 41 58	.	*radio* 7.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	33	$H\alpha$	656.3 *nm*	531	12μm	0.42	1
[*OIII*]	436.3	13	[*NII*]	658.4	629	25μm	0.50	3
	500.7	1262	[*SII*]	671.7	11	60μm	2.91	3
HeI	587.6	14		673.1	13	100μm	2.86	3
$\lg F_{H\beta}(mW.m^{-2})$	$-12.20 \pm .01$	SK89				*Radio* 2*cm*	4	MiAl82
						(*mJy*) 6*cm*	10	ZPB89

Central Star: AG82 96 —
B > 18.9 *V* > 17.9 SK89 *Spectrum:* O7 73..9022

Distance (kpc) stat.: 3.0 (CaKa71); 2.50 (Ac78); 4.48 (Da82); 3.20 (AGNR84); 4.9 (Ma84); 7.14 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, HLSW77, He67, Hi71, Hi73, KrK68, LNP89, Ma81, Mi79, PAKS91, Pe71, PiKh79, Ru70, Sa75, Sh85, WeHe67, Wr66

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73..9022 Goy G. *Astron. Astrophys. Suppl. Ser. 12,277* Un nouveau catalogue general d'etoiles de type O.

248.7+29.5

A 34, PK 248+29°1, A55 23, VV' 93

			Disc.: Abell 1955	*Diameter* (″)			
				opt. 290.	CaKa71	*Expansion Velocities* (*km/s*)	
1950:	09 43 10.0	-12 56 22	Ka83			[OIII] 32	We89
2000:	09 45 35.1	-13 10 14	.				

$\lg F_{H\beta}(mW.m^{-2})$	$-11.84 \pm .05$	Ka83				*Radio* 2*cm*	12	MiAl82
IUE Spectra:	*LW*(0)	*SW*(1)				(*mJy*) 6*cm* <	29	Mi79

Central Star: AG82 121 — CSI -12 -09432; UBV 9230
U 15.04 *B* 16.06 *V* 16.32 Ab66 *Spectrum:* hg O(H) Me91

Distance (kpc) stat.: 0.67 (CaKa71); 1.4 (Ma84); 0.72 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, Ca84, Dr80, HeAu87, KSK90, Ka85, Kh79, KrK68, LePo88, Sabb86, Te66, ZPB89

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76..9061 Smith H. *Mon. Not. R. Astron. Soc. 175,419* Differential deceleration of nebular shells and the displacement of central stars.
90..1011 Hippelein H., Weinberger R. *Astron. Astrophys. 232,129* The expansion of highly evolved planetary nebulae.

248.8–08.5

M 4-2, PK 248−8°1, ARO 539, ESO 368-03, He 2-3, Sa 2-1, Wray 16-4, IRAS 07270-3539

		Disc.: Minkowski 1948		*Diameter* (″)	
1950:	07 27 05.9	-35 39 03	IRAS	*opt.* 6.2 CaKa71	
	07 27.1	-35 39	PK67		
2000:	07 28.9	-35 45	.	*radio* 6. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22					
HeII	468.6 *nm*	77	$H\alpha$ 656.3 *nm*		358
[*OIII*]	436.3	15	[*NII*] 658.4		19
	500.7	897	[*SII*] 671.7		1.8
HeI	587.6	3	673.1		1.9
$\lg F_{H\beta}(mW.m^{-2})$		$-11.7 \pm .2$ ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.47	3
60μm	0.99	3
100μm	1.63	1
Radio (*mJy*) *2cm*		
6cm	19	ZPB89

Central Star: AG82 83 —

Distance (kpc) stat.: 5.2 (CaKa71); 3.6 (Ma84); 6.9 (CKS91)

Bibliography: *PK67*, AG82, AST89, AcMa77, HLSW77, He67, Hi71, Hi73, Iw73, PAKS91, Ru70, Sa75, TAGS89, WeHe67, Wr66

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249.0+06.9

SaSt 1-1, PK 249+6°1, AS 201, MHA 382-43, IRAS 08296-2735

		Disc.: Sanduleak et al 1972		*Diameter* (″)	
1950:	08 29 36.9	-27 35 20	IRAS	*opt. St.* We77	
	08 29 36.8	-27 35 20	72..9043		
2000:	08 31 42.8	-27 45 32	.		

IUE Spectra: *LW*(1) *SW*(3)			
IRAS Fluxes (*Jy*)		*Qual.*	
12μm	1.00	3	
25μm	2.81	3	
60μm	2.46	3	
100μm	1.12	2	
Radio (*mJy*) *2cm*			
6cm	< 0.3	AK90	

Central Star: AG82 102 —
B 13. 72..9043 *Spectrum:* G2III 87..4105

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, Al78, Al80, Al84, All82, KFS88, Ko78, LuTu87, SeTa90, WrAl78

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82.50513 Allen D.A. *Proceedings of IAU Coll. N. 70 held at the Observatoire de Hte Provence 26-28 a ugust 1981. Ed. by M. Friedjung and R. Viotti. The nature of symbiotic stars, 11 5-116.* X-ray observations of symbiotic stars.

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88.17781 Arkhipova V.P., Noskova R.I. *Pis'ma Astron. Zu. 14, 445-455* He 2-467 = LT Del - the yellow symbiotic star with a period about 500 days.

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249.3–05.4

A 23, PK 249−5°1, ARO 542, ESO 368-10, IRAS 07415-3435

				Disc.: Abell 1964	*Diameter* (″)	
1950:	07 41 36.0	-34 35 47	IRAS		*opt.* 54. CaKa71	
	07 41 26.9	-34 38 00	Mi73			
2000:	07 43 18.9	-34 45 13	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1800
[*OIII*]	436.3	–	[*NII*]	658.4	1400
	500.7	2400	[*SII*]	671.7	
HeI	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.74	1
25μm	0.28	1
60μm	0.99	3
100μm	13.13	1

Radio (*mJy*)			
	2cm	6	MiAl82
	6cm	< 10	Mi79

Distance (kpc) stat.: 1.63 (CaKa71); 2.14 (Da82); 2.0 (Ma84); 2.27 (CKS91)

Bibliography: *PK67*, Ab66, AcMa77, HLSW77, Hi71, Iw73, MaC83, Ru70, Sa76

250.3+00.1

A 26, PK 250+0°1, ARO 545, ESO 369-05, IRAS 08070-3231

				Disc.: Abell 1964	*Diameter* (″)	
1950:	08 07 05.2	-32 31 35	IRAS		*opt.* 40. CaKa71	
	08 07 03.8	-32 31 24	Mi76			
2000:	08 09 01.3	-32 40 15	.			

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-15					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	102
	500.7	91	[*SII*]	671.7	27
HeI	587.6	–		673.1	23

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.33	1
25μm	0.31	1
60μm	0.69	3
100μm	11.14	1

Radio (*mJy*)			
	2cm	< 10	MiAl82
	6cm	2.4	ZPB89

Distance (kpc) stat.: 1.84 (CaKa71); 2.0 (Ma84); 3.34 (CKS91)

Bibliography: *PK67*, Ab66, AcMa77, CaRu74, HLSW77, Hi71, Kh79, KrK68, MaC83, PAKS91, Ru70, Sa76

251.1–01.5

K 1-21, PK 251–1°1, ESO 369-04

Disc.: Kohoutek 1971	*Diameter* (″)	
	opt. 28. Ko71	
1950: 08 02 19.8 -34 07 30 Ko71		
2000: 08 04 14.5 -34 16 04 .		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	633
[*O*III]	436.3	–	[*N*II]	658.4	729
	500.7	852	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.9 \pm .3$ ASTR91

Radio *2cm*
(*mJy*) *6cm* 5 ZPB89

Distance (kpc) stat.: 3.50 (CKS91)

Bibliography: AST89, AcMa77, HLSW77, Ko78, MaC83, PAKS89, We77

252.6+04.4

K 1-1, PK 252+4°1, A 27, ESO 431-14

Disc.: Kohoutek 1962	*Diameter* (″)	
	opt. 43. CaKa71	
1950: 08 29 51.9 -31 55 54 Mi73		
2000: 08 31 52.6 -32 06 07 .		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-12

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	584
[*O*III]	436.3	–	[*N*II]	658.4	680
	500.7	325	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.36 \pm .$ Pe71

Radio *2cm* < 6 MiAl82
(*mJy*) *6cm* < 5 ZPB89

Central Star: AG82 103 —
B 15.20 *V* 13.93 *Qual:* B TASG91 *Spectrum:* G-K ATS91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 1.70 (CaKa71); >2.00 (MiAl75); 2.19 (Da82); 1.9 (Ma84); 2.34 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ab66, CaRu74, HLSW80, Iw73, KSK90, KaJa89, KrK68, MaC83, Sa76

79...135 Davis L.E., Seaquist E.R., Purton C.R. *Astrophys. J. 230,434-441* OH emission from early-type emission-line stars with large infrared excesses.

253.5+10.7

K 1-2, PK 253+10°1, ESO 432-14, IRAS 08556-2846

		Disc.: Kohoutek 1962	*Diameter* (″)	*Rvel*: +66.0 ± 4.0 STPP83	
1950:	08 55 39.7	-28 46 00	IRAS	*opt.* 58. CaKa71	
	08 55.7	-28 45	Sa76		
2000:	08 57.8	-28 57	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-14					
HeII	468.6 *nm*	112:	*Hα* 656.3 *nm*	394	
[*OIII*]	436.3	–	[*NII*] 658.4	151	
	500.7	583	[*SII*] 671.7		
HeI	587.6	–	673.1		
$\lg F_{H\beta}(mW.m^{-2})$	−12.5 ± .4 ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.44	3
60μm	0.36	2
100μm	1.14	3

Central Star: AG82 110 — VW Pyx
U 15.4 *B* 16.6 *V* 16.6 *Qual:* B 72.30001, 82..2587

Notes: Close binary nucleus $P = 0.676^d$ (88.17337). Monochromatic images (BoLi90); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.2 (CaKa71); 3.3 (Ma84);

Bibliography: *PK67*, AG82, Ac82, Al89, Dr80, Iw73, KrK68, Mi79, PAKS91

72.30001 Shao C.Y., Liller W. *Private communication* UBV observations of the central stars of planetary nebulae

78..1069 Gilra D.P., Pottasch S.R., Wesselius P.R., Van Duinen R.J. *Astron. Astrophys. 63,297-301* Ultraviolet observations of P.N. 3. Variability of the central star.

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89.50115 Bond H.E. *Proceedings of the 131st symposium of the IAU, held in Mexico city, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 461* Morphologies of planetary nebulae with close-binary nuclei.

89.50116 Lutz J., Lame N.J. *Proceedings of the 131st symposium of the IAU, held in Mexico city, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 462* CCD images of three planetary nebulae with binary nuclei.

89.50118 Mallik D.C.V. *Proceedings of the 131st symposium of the IAU, held in Mexico city, Mexico, oct ober 5-9 1987. Ed S. Torres-Peimbert. Planetary nebulae, 493* Initial masses.

253.9+05.7

M 3-6, PK 254+5°1, ARO 553, He 2-12, Sa 2-29, VV' 80, Wray 16-25, IRAS 08386-3211

			Disc.: Minkowski 1948	*Diameter* (")	*Rvel*: +49.7 ± 16.6 STPP83
1950:	08 38 39.1	-32 11 53	IRAS	*opt.* 8.2 CaKa71	
	08 38 42.9	-32 11 26	Mi73		
2000:	08 40 44.3	-32 22 09	.	*radio* 11. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21						*IR Class*: N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	1.9:	$H\alpha$	656.3 *nm*	463	*J*	11.41	12μm	0.68	3
[*OIII*]	436.3	1.2:	[*NII*]	658.4	3:	*H*	11.73	25μm	12.22	3
	500.7	808	[*SII*]	671.7	0.4:	*K*	11.04	60μm	16.50	3
HeI	587.6	19		673.1	0.8:	*L*		100μm	8.01	3
						Photom. Wh85		*Radio* *2cm* 57 MiAl82		
lg$F_{H\beta}(mW.m^{-2})$ −10.78 ± . CS83								(*mJy*) *6cm* 75 ZPB89		
IUE Spectra: *LW*(2) *SW*(2)										

Central Star:
B 13.40 *V* 13.91 *Qual:* B TASG91 *Spectrum:* Of ? ATS91

Notes: Coordinates wrong in PK67
Distance (kpc) stat.: 2.62,2.72 (CaKa71); 1.98 (Ac78); 2.02 (Da82); 1.60 (AGNR84); 2.6 (Ma84); 3.29 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, AlMi72, Ca82, FeAl87, Gr71, GrNe90, HLSW80, He67, Hi71, KAS91, LNP89, Mi79, MiWe79, PAKS89, PM87, PPFS87, Sa75, TAGS89, VoCo90, WeHe67, Wr66

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254.6+00.2

Ns 238, PK 254+0°1, ESO 370-09, IRAS 08189-3602

			Disc.: Nordstrom 1975	*Diameter* (")	
1950:	08 18 54.1	-36 03 00	IRAS	*opt.* 56. 75...211	
	08 19 03	-36 04.2	FrWe84		
2000:	08 20 57	-36 13.8	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22 S							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	935		12μm	53.50	3
[*OIII*]	436.3	–	[*NII*]	658.4	723		25μm	361.30	3
	500.7	517	[*SII*]	671.7	10		60μm	1783.00	3
HeI	587.6	25		673.1	10		100μm	2059.00	3
lg$F_{H\beta}(mW.m^{-2})$ −10.9 ± .3 ASTR91									
IUE Spectra: *LW*(1) *SW*(1) *FES*(1)									

Central Star: AG82 99 —
B 10.5 75...211

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, Ko78, LH91, OlRa86, PAKS91, We77

75...211 Nordstrom B. *Astron. Astrophys. Suppl. Ser. 21,193-239* A spectral survey of the southern Milky Way. II. O-B5 stars, l=237 to 281.

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255.3–59.6

Lo 1, PK 255–59°1, ESO 247-13, K 1-26

			Disc.: Longmore 1977	*Diameter* (″)	
				opt. 373. Lo77	
1950:	02 55 09.8	-44 22 20	77..1134		
2000:	02 56 58.3	-44 10 19	.		
IUE Spectra:	*LW*(1)	*SW*(2)			

Central Star: AG82 18 —
V 15.4 Ka85 *Spectrum:* hg O(H) Me91

Bibliography: AG82, HLSW78, IsWe87, Ko78, LePo88, We77, We86, ZiPo91

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85..1008 Mendez R.H., Kudritzki R.P., Simon K.P. *Astron. Astrophys. 142, 289-296* SIT vidicon and IDS spectra of central stars of planetary nebulae.

85..1536 West R.M., Kohoutek L. *Astron. Astrophys., Suppl. Ser. 60, 91-97,1985* Spectroscopic verification of suspected planetary nebulae. II.

88.50100 Bianchi L. *Proceedings of a celebratory symposium held at Goddard Space Flight Center, Gre enbelt, Maryland, USA, 12-15 april 1988. A decade of UV astronomy with the IUE s atellite. ESA SP-281 vol.2,173-176* Study of the nuclei of planetary nebulae at UV wavelengths.

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255.7+03.3

Wray 16-22, PK 255+3°1, ESO 370-18, Sa 2-28

			Disc.: Wray 1966	*Diameter* (″)	
				opt. 20.: CS90	
1950:	08 34 19.3	-35 05 23	We77		
2000:	08 36 16.3	-35 15 51	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1991-06-10

*He*II	468.6 *nm*	15:	$H\alpha$	656.3 *nm*	331
[*O*III]	436.3	–	[*N*II]	658.4	310
	500.7	155	[*S*II]	671.7	102
*He*I	587.6	–		673.1	67

Bibliography: AcMa77, Ko78, Sa75, Sa76, Wr66

257.1–02.6

Vo 2, PM 1-38, IRAS 08143-3942

			Disc.: Volk 1988	*Diameter* (″)	
1950:	08 14 22.6	-39 42 33	IRAS	*opt.* 8. ATS91	
	08 14 22.6	-39 42 33	88.30003		
2000:	08 16 10.1	-39 51 51	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-30

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2572
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	1817	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-14.1 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.29	3
25μm	2.82	3
60μm	2.76	3
100μm	13.11	1

88.30003 Volk K. *Private communication* Four new planetary nebulae discovered by IRAS

257.5+00.6

VBRC 1, PK 257+0°1, ESO 313-01, RCW 21, Wray 19-11

Disc.: Van Den BERGH et al 1973

1950: 08 29 06 -38 09.7 Sa76
2000: 08 30 58 -38 19.9 .

Diameter (″)
opt. 61. 73..9025

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-15

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	368
[OIII]	436.3	–	[*N*II]	658.4	1549
	500.7	665	[*S*II]	671.7	83
*He*I	587.6	–		673.1	59

$\lg F_{H\beta}(mW.m^{-2})$ $-12.0 \pm .4$ ASTR91

Bibliography: AST89, AcMa77, Ko78, PAKS89, Wr66

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86..1568 Brand J., Blitz L., Wouterloot J.G.A. *Astron. Astrophys., Suppl. Ser. 65, 537-550* The velocity field of the outer Galaxy in the southern hemisphere. I. Catalogueof nebulous objects.

258.0–15.7

Wray 17-1, PK 258–15°1, ESO 256-19, Lo 3, Sa 2-6, StWr 3-2, IRAS 07133-4652

Disc.: Wray 1966

1950: 07 13 22.9 -46 52 21 IRAS
07 13 22 -46 52.1 Lo77
2000: 07 14 48 -46 57.4 .

Diameter (″)
opt. 82. Lo77

Expansion Velocities (*km/s*)
[OIII] 15.6 MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24 SW

*He*II	468.6 *nm*	76	$H\alpha$	656.3 *nm*	309
[OIII]	436.3	–	[*N*II]	658.4	53
	500.7	1283	[*S*II]	671.7	
*He*I	587.6	–		673.1	

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.25	1
25μm	0.89	3
60μm	0.73	3
100μm	3.37	1

$\lg F_{H\beta}(mW.m^{-2})$ $-11.4 \pm .4$ ASTR91

Central Star: AG82 77 —

Spectrum: O(C) Me91

Bibliography: AG82, AcMa77, HLSW78, Ko78, PAKS91, Sa75, StWr72, We77, Wr66

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85..1008 Mendez R.H., Kudritzki R.P., Simon K.P. *Astron. Astrophys. 142, 289-296* SIT vidicon and IDS spectra of central stars of planetary nebulae.

90..2011 Bond H.E., Meakes M.G. *Astron. J.,100,788* The pulsating nucleus of the planetary nebula Longmore 4.

91..1023 Werner K., Heber U., Hunger K. *Astron. Astrophys. 244,437* Non-LTE analysis of four PG1159 stars.

258.1–00.3

He 2-9, PK 258−0°1, AS 200, ESO 312-05, MHα 392-16, Sa 2-26, Wray 16-21, IRAS 08266-3913

			Disc.: Henize 1964	*Diameter* (″)			
1950:	08 26 38.9	-39 13 42	IRAS	*opt.* 4.4	CaKa71		
	08 26 38.0	-39 13 41	Mi73				
2000:	08 28 28.0	-39 23 43	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1413	*J*	11.20	12μm	2.18	3
[*OIII*]	436.3	7:	[*NII*]	658.4	338	*H*	11.18	25μm	14.24	3
	500.7	771	[*SII*]	671.7	8	*K*	10.13	60μm	8.95	3
HeI	587.6	43		673.1	14	*L*		100μm	7.48	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.24 \pm .02$	SK89, ASTR91			*Photom.*	Wh85	*Radio* (*mJy*)	*2cm* 172 MiAl82 *6cm* 170 Ca82	

Central Star: AG82 101 —
B 17.55 *V* 16.25 *Qual:* B SK89

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 3.63 (CaKa71); 1.20 (AGNR84); 0.8 (Ma84); 1.84 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, Al73, HLSW77, He67, MiAl75, MiWe79, PAKS91, PM87, PPFS87, Pe71, PiKh79, Sa75, Sh85, TAGS89, TASG91, VoCo90, WeHe67, Wr66

259.1+00.9

He 2-11, PK 259+0°1, ESO 313-05, Wray 16-23

			Disc.: Henize 1964	*Diameter* (″)			
1950:	08 35 17	-39 15.9	Sa76	*opt.* 65.	CaKa71		
2000:	08 37 08	-39 26.4	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18					
HeII	468.6 *nm*	47:	*Hα*	656.3 *nm*	1207
[*OIII*]	436.3	–	[*NII*]	658.4	146
	500.7	1070	[*SII*]	671.7	46:
HeI	587.6	67:		673.1	70:
$\lg F_{H\beta}(mW.m^{-2})$		$-12.14 \pm .03$	SK89		

Central Star:
B > 19.2 *V* 18.9 *Qual:* C SK89

Distance (kpc) stat.: 1.11 (CaKa71); 1.2 (Ma84); 0.88 (CKS91)

Bibliography: *PK67*, AST89, HLSW77, He67, Iw73, KrK68, MaC83, PAKS89, Sh85, StAc87, WeHe67, Wr66

86..1568 Brand J., Blitz L., Wouterloot J.G.A. *Astron. Astrophys., Suppl. Ser. 65, 537-550* The velocity field of the outer Galaxy in the southern hemisphere. I. Catalogueof nebulous objects.

260.7+00.9

Vo 3, PM 1-41, IRAS 08355-4027

			Disc.: Volk 1988	*Diameter* (″)	
1950:	08 35 35.1	-40 27 31	IRAS	*opt.* 36. 88.30003	
	08 40 26	-40 33.3	HLSW78		
2000:	08 42 16	-40 44.1	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2510	12μm	0.62	3
[*O*III]	436.3	–	[*N*II]	658.4	125:	25μm	7.47	3
	500.7	1075	[*S*II]	671.7		60μm	7.17	3
*He*I	587.6	–		673.1		100μm	10.46	3

88.30003 Volk K. *Private communication* Four new planetary nebulae discovered by IRAS

260.7–03.3

Wray 16-20

			Disc.: Wray 1966	*Diameter* (″)	
				opt. 60. : CS90	
1950:	08 21 57.5	-43 02 59	Wr66		
2000:	08 23 40.4	-43 12 44	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	338
[*O*III]	436.3	–	[*N*II]	658.4	1551
	500.7	80	[*S*II]	671.7	211
*He*I	587.6	–		673.1	200

$\lg F_{H\beta}(mW.m^{-2})$	$-12.5 \pm .4$ ASTR91

Bibliography: Sa76, We77

261.0+32.0

NGC 3242, PK 261+32°1, ARO 4, ESO 568-05, VV 57, VV' 98, IRAS 10223-1823

			Disc.: Herschel 1785	*Diameter* (″)		*Rvel*: +4.6 ± 0.6	STPP83
1950:	10 22 21.6	-18 23 21	IRAS	*opt.* 25.	CJA87	*Expansion Velocities* (*km/s*)	
	10 22 21.3	-18 23 23	Mi73			[OIII] 20	We89
2000:	10 24 45.9	-18 38 38	.			[NII] 27.5	87..2264

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24 N						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	17	*Hα*	656.3 *nm*	352	*J*		12μm	4.50	3
[*O*III]	436.3	11	[*N*II]	658.4	–	*H*	> 8.7	25μm	35.58	2
	495.9	698	[*S*II]	671.7	0.3:	*K*	8.9	60μm	53.38	3
*He*I	587.6	13		673.1	0.4	*L*	8.0	100μm	29.61	3
lg$F_{H\beta}$ −9.79 ± .02 CD61 , Kale76, SK89						*Photom.* CoBa74		*Radio* 2*cm* 739		MiAl82
IUE Spectra: *LW*(23) *SW*(28)						*Spectr.* 87..1381		(*mJy*) 6*cm* 896		MiAl75

Central Star: AG82 127 — BD -17 3140; GC 14298; GCRV 6542; HD 90255; PLX 2442; SAO 155965; NSV 4848; TD1 14821
B 12.02 *V* 12.31 *Qual:* B GaPo88, SK89 *Spectrum:* O(H) Me91

Notes: Angular expansion 0".008/yr (66..9012). Proper motion in 10^{-4}"/yr: $\mu_\alpha = -3 \pm 51$, $\mu_\delta = -31 \pm 39$ (Cu74). Multiple-shell PN; monochromatic images (CJA87, Ba87); ESO-NTT images by Schwartz H.E. and Melnick J.

Distance (kpc) indiv.: stand. 0.28 (70..9096); ext. 0.50 (Po80); wind 1.14 (85....32); expans. 0.76 (Po83); ext. 0.7 (Sab86); spect. 2.0 (MKHH88)

Distance (kpc) stat.: 0.86,1.08 (CaKa71); 1.03 (MiAl75); 1.1 (Ca76); 0.81 (Ac78); 0.73 (Da82); 0.54 (PhPo84); 0.52 (AGNR84); 0.8 (Ma84); 1.08 (CKS91)

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261.6+03.0

He 2-15, PK 261+2°1, AS 204, ESO 313-17, MHα 392-12, Sa 2-32 , Wray 16-32, IRAS 08516-3952

				Disc.: Henize 1964	*Diameter* (″)	
1950:	08 51 38.2	-39 52 17	IRAS		*opt.* 24. CaKa71	
	08 51 37.7	-39 52 09	Mi76			
2000:	08 53 30.6	-40 03 34	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20

*He*II	468.6 *nm*	51	*Hα*	656.3 *nm*	1240
[*O*III]	436.3	–	[*N*II]	658.4	4450
	500.7	1323	[*S*II]	671.7	194
*He*I	587.6	22		673.1	249

$\lg F_{H\beta}(mW.m^{-2})$ $-12.33 \pm .02$ SK89

IR Class: N

J	12.57	
H	12.37	
K	11.26	
L		

Photom. Wh85

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.34	3
25μm	2.41	3
60μm	12.36	3
100μm	15.24	2

Radio (*mJy*): *2cm* 103 MiAl82; *6cm* 105 Ca82

Central Star:
B > 17.7 *V* > 17.8 SK89

Distance (kpc) stat.: 1.74 (CaKa71); 2.28 (Da82); 1.40 (AGNR84); 2.1 (Ma84); 1.98 (CKS91); 2.14 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Al73, CS83, HLSW77, He67, Iw73, Iy86, KaJa89, KrK68, LNP89, Ma81, Mi79, PAKS91, PM87, PPFS87, Sa75, Sh85, WeHe67, Wr66

88..9031 Ashley M.C.B., Hyland A.R. *Astrophys. J. 331, 532-538* Detection of highly ionized silicon in the planetary nebulae NGC 6302 and NGC 6537.

261.9+08.5

NGC 2818, PK 261+8°1, ARO 508, ESO 372-13, Hb 2, He 2-23, My 45, Sa 2-39, StWr 4-6, VV 51, VV' 88, Wray 16-38, IRAS 09140-3625

				Disc.: Herschel 1838	*Diameter* (″)	*Rvel:* -1.0 ± 3.0 MWF88
1950:	09 14 00.4	-36 25 03	IRAS		*opt.* 50. CaKa71	*Expansion Velocities* (*km/s*)
	09 13 59.4	-36 24 58	Mi73		CJA87	[OIII] 35.5 We89
2000:	09 16 00.5	-36 37 32	.			[NII] 36 We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24 S

*He*II	468.6 *nm*	51	*Hα*	656.3 *nm*	431
[*O*III]	436.3	22:	[*N*II]	658.4	929
	500.7	1501	[*S*II]	671.7	79
*He*I	587.6	15:		673.1	77

$\lg F_{H\beta}$ $-11.32 \pm .07$ O63, Pe71, SK89

IUE Spectra: *LW*(2) *SW*(3) *FES*(1)

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.32	1
25μm	1.00	3
60μm	2.30	3
100μm	2.89	3

Radio (*mJy*): *2cm* 36 MiAl82; *6cm* 33 Ca82

Central Star:
B 19.45 *Qual:* B GaPo88

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 1.4 (Ac78); ext. 1.8 (Po83); ext. 1.1 (Sab86); cluster 3.57 (84..9316)
Distance (kpc) stat.: 1.4 (CaKa71); 1.72 (MiAl75); 2.07 (Ca76); 1.46 (Ac78); 2.02 (Da82); 2.22 (PhPo84); 1.60 (AGNR84); 2.3 (Ma84)

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262.6–04.6

Wray 17-18, PK 262–4°1, ESO 259-06, LoTr 2

			Disc.: Wray 1966	*Diameter* (″)	
				opt. 20. 80..2605	
1950:	08 22 15	-45 21.4	FrWe84		
2000:	08 23 54	-45 31.2	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24

*He*II	468.6 *nm*	49:	*Hα*	656.3 *nm*	638
[*O*III]	436.3	–	[*N*II]	658.4	70:
	500.7	1259	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .4$ ASTR91

Bibliography: AG82, Iy87, PAKS91, We77, Wr66

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263.0–05.5

PB 2, PK 263–5°1, ESO 259-04, He 2-8, Sa 2-24, Wray 16-18, IRAS 08190-4613

			Disc.: Peimbert et al 1960	*Diameter* (″)	
1950:	08 19 04.5	-46 13 26	IRAS	*opt.* 3. CaKa71	
	08 19 03.3	-46 10 39	Mi76		
2000:	08 20 39.8	-46 20 13	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20

*He*II	468.6 *nm*	9	*Hα*	656.3 *nm*	538
[*O*III]	436.3	11	[*N*II]	658.4	172
	500.7	1244	[*S*II]	671.7	9
*He*I	587.6	18		673.1	16

$\lg F_{H\beta}(mW.m^{-2})$ $-11.93 \pm .10$ Pe71, ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.33	3
25μm	1.08	3
60μm	1.44	3
100μm	5.13	1

Radio (*mJy*)	*2cm*	7	MiAl82
	6cm	40	MiAl75

Distance (kpc) stat.: 10.76 (CaKa71); 9.24 (MiAl75); 9.06 (Ca76); 2.78 (Da82); 2.50 (AGNR84); 4.7 (Ma84); 4.40 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlGl74, HLSW78, He67, LNP89, MaPo80, PAKS91, Sa75, WeHe67, Wr66

263.2+00.4

K 2-15, PK 263+0°1, ESO 260-08, IRAS 08470-4243

		Disc.: Kohoutek 1971	*Diameter* (″)		
1950:	08 47 00.0	-42 43 12	IRAS	*opt.* 170.	Ko71
	08 46 51	-42 42.6	Ko71		
2000:	08 48 39	-42 53.8	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21 DA					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	523
[*OIII*]	436.3	–	[*NII*]	658.4	159
	500.7	176	[*SII*]	671.7	62
HeI	587.6	–		673.1	50

IRAS Fluxes (*Jy*)		*Qual.*
12μm	14.62	3
25μm	97.10	3
60μm	952.40	3
100μm	1814.00	3

$\lg F_{H\beta}(mW.m^{-2})$ $-11.3 \pm .4$ ASTR91

Central Star: AG82 108 — *V* 11.3 Ko71 *Spectrum:* O(H) Me91

Notes: Possibly a H II region

Bibliography: ACPS87, AG82, AcMa77, HLSW78, Ko78, MaC83, PAKS91, Sa76, StAc87

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263.3–08.8

ESO 209-15, PK 263–8°1

		Disc.: Holmberg et al 1978	*Diameter* (″)		
			opt. 24.	La82	
1950:	08 03 41.5	-48 14 52	FrWe84		
2000:	08 05 11.0	-48 23 30	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-13					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	393
[*OIII*]	436.3	–	[*NII*]	658.4	219
	500.7	1025	[*SII*]	671.7	43
HeI	587.6	–		673.1	35

$\lg F_{H\beta}(mW.m^{-2})$ $-12.7 \pm .3$ ASTR91

Bibliography: AST89, HLSW78, PAKS89

264.1–08.1

He 2-7, PK 264–8°1, ESO 209-19, StWr 3-3, Wray 16-16, IRAS 08100-4834

			Disc.: Henize 1964	*Diameter* (″)		*Rvel*: +88.0 ± 4.0	MWF88
1950:	08 10 02.4	-48 34 17	IRAS	*opt.* 45.	CaKa71	*Expansion Velocities* (*km/s*)	
	08 10 02.1	-48 34 13	Mi76			[OIII] 15.3	MWF88
2000:	08 11 31.9	-48 43 14	.			[NII] 18.5	MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	3	$H\alpha$	656.3 *nm*	414	*J*	12.49	12μm	0.25	1
[*O*III]	436.3	11	[*N*II]	658.4	75	*H*	12.84	25μm	0.80	3
	500.7	1294	[*S*II]	671.7	5	*K*	11.93	60μm	2.11	3
*He*I	587.6	15		673.1	7	*L*		100μm	4.07	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.39 ± .02	Pe71, 85..3062			*Photom.*	Wh85	*Radio* 2*cm*	40	MiAl82
								(*mJy*) 6*cm*	47	Ca82

Central Star:
B 16.8 *V* 16.9 *Qual:* D TASG91

Distance (kpc) stat.: 1.7 (CaKa71); 1.82 (MiAl75); 1.78 (Ca76); 1.66 (Da82); 2.10 (AGNR84); 3.2 (Ma84) 1.73 (CKS91)

Bibliography: *PK67*, AGR89, AST89, HLSW78, He67, Iy86, Ka76, Ka86, LNP89, Ma81, MaPo80, Mi79, MiWe79, PAKS91, PPFS87, Pe91, Sa75, SaMi78, StWr72, TAGS89, We89, WeHe67, Wr66

85..3062 Gutierrez-Moreno A., Moreno H., Cortes G. *Publ. Astron. Soc. Pac. 97, 397-403* Studies of southern planetary nebulae. I. Fluxes from bright planetary nebulae.

86..3053 Gutierrez-Moreno A., Moreno H., Cortes G. *Publ. Astron. Soc. Pac. 98, 488-498* Studies of southern planetary nebulae. II. Electron temperatures and densities.

88..3171 Gutierrez-Moreno A., Moreno H. *Publ. Astron. Soc. Pac. 100, 1497-1504* Studies of southern planetary nebulae. III. Chemical abundances.

264.4–03.6

Wray 17-20

			Disc.: Wray 1966	*Diameter* (″)			
				opt. 60. :	CS90		
1950:	08 32 50.0	-46 15 16	Wr66				
2000:	08 34 28.9	-46 25 39	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-01					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	127
	500.7	192	[*S*II]	671.7	86
*He*I	587.6	–		673.1	57

Bibliography: We77

264.4–12.7

He 2-5, PK 264–12°1, ESO 209-01, Sa 2-17, StWr 3-4, Wray 16-8, IRAS 07460-5107

				Disc.: Henize 1964	*Diameter* (″)		
1950:	07 46 01.0	-51 07 34	IRAS		*opt.* 3.	CaKa71	*Expansion Velocities* (*km/s*)
	07 46 01.1	-51 07 41	Mi76				[OIII] 10. MKHH88
2000:	07 47 20.6	-51 15 11	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	361	*J*	12.14	12μm	0.23	3
[*OIII*]	436.3	3	[*NII*]	658.4	65	*H*	12.61	25μm	2.17	3
	500.7	605	[*SII*]	671.7	1.1	*K*	11.81	60μm	1.59	3
HeI	587.6	16		673.1	2.1	*L*		100μm	7.27	1
$\lg F_{H\beta}$	$-11.29 \pm .03$	85..3062, SK89, ASTR91				*Photom.*	Wh85	*Radio*	2*cm* 25	MiAl82
IUE Spectra:	*LW*(2) *SW*(3)							(*mJy*)	6*cm* 29	Ca82

Central Star: AG82 91 — *B* 14.65 *V* 14.74 *Qual:* A SK89 , TASG91 *Spectrum:* Of(H) Me91

Distance (kpc) stat.: 11.54 (CaKa71); 9.79 (MiAl75); 9.56 (Ca76); 3.38 (Da82); 3.00 (AGNR84); 5.4 (Ma84) 5.34 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, FeBr90, HLSW78, He67, Iy86, Ka86, LNP89, Ma81, MaPo80, Mi79, PAKS91, PPFS87, Pe71, Pe91, PiKh79, STB84, Sa75, Sh85, StWr72, TAGS89, We89, WeHe67, Wr66

85..3062 Gutierrez-Moreno A., Moreno H., Cortes G. *Publ. Astron. Soc. Pac. 97, 397-403* Studies of southern planetary nebulae. I. Fluxes from bright planetary nebulae.

86..3053 Gutierrez-Moreno A., Moreno H., Cortes G. *Publ. Astron. Soc. Pac. 98, 488-498* Studies of southern planetary nebulae. II. Electron temperatures and densities.

88..3171 Gutierrez-Moreno A., Moreno H. *Publ. Astron. Soc. Pac. 100, 1497-1504* Studies of southern planetary nebulae. III. Chemical abundances.

265.1–02.2

Ve 26, PK 265–2°1, ESO 260-05, He 2-13, Sa 2-31, Wray 16-27, IRAS 08417-4555

				Disc.: Velghe 1957	*Diameter* (″)		
1950:	08 41 46.6	-45 55 47	IRAS		*opt.* 5.	PK67	
	08 41 43	-45 57.6	Sa75				
2000:	08 43 24	-46 08.5	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-20						*IR Class:* S		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1562	*J*		12μm	4.39	3
[*OIII*]	436.3	–	[*NII*]	658.4	4823	*H*	9.5	25μm	25.96	3
	500.7	1425	[*SII*]	671.7	79	*K*	8.9	60μm	25.06	3
HeI	587.6	113		673.1	138	*L*		100μm	49.54	1
$\lg F_{H\beta}(mW.m^{-2})$	$-13.7 \pm .3$	ASTR91				*Photom.*	AlGl74			

Notes: FC and coordinates wrong in PK67. The correct position provided by J. Menzies; corresponds to the south-west component of the close pair shown on the FC.

Bibliography: *PK67*, AcMa77, HLSW78, He67, Ka76, PPFS87, Pe71, VoCo90, WeHe67, Wr66

265.1–04.2

ESO 259-10, PK 265–4°1, LoTr 3

		Disc.: Holmberg et al 1978	*Diameter* (″)		*Rvel:* +49.0 ± 3.0 MWF88
			opt. 28. 80..2605		*Expansion Velocities (km/s)*
1950:	08 32 29.9	-47 06 17 FrWe84			[OIII] 12.0 MWF88
2000:	08 34 07.0	-47 16 38 .			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24 S

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	434
[*O*III]	436.3	–	[*N*II]	658.4	308
	500.7	1102	[*S*II]	671.7	41
*He*I	587.6	–		673.1	36

$\lg F_{H\beta}(mW.m^{-2})$ −12.3 ± .3 ASTR91

Bibliography: HLSW78, Iy87, We89

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265.7+04.1

NGC 2792, PK 265+4°1, ARO 507, ESO 314-06, He 2-20, Sa 2-36, VV 50, VV' 86, Wray 16-36, IRAS 09105-4213

		Disc.: Herschel 1835	*Diameter* (″)		*Rvel:* +14.0 ± 3.0 MWF88
			opt. 13. CJA87		*Expansion Velocities (km/s)*
1950:	09 10 34.1	-42 13 15 IRAS		CaKa71	[OIII] 19.5 MWF88
	09 10 33.7	-42 13 08 Mi73			
2000:	09 12 26.6	-42 25 31 .			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-27

*He*II	468.6 *nm*	85	*Hα*	656.3 *nm*	601
[*O*III]	436.3	15	[*N*II]	658.4	7
	500.7	1065	[*S*II]	671.7	
*He*I	587.6	7		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.31 ± .08 Pe71

IUE Spectra: *LW*(1) *SW*(2)

IR Class: N

J	11.81	*IRAS Fluxes (Jy)*		*Qual.*
H	11.78	12μm	0.81	3
K	11.00	25μm	10.41	3
L		60μm	10.25	3
Photom.	Wh85	100μm	8.50	3

Radio (*mJy*) *2cm* 97 MiAl82; *6cm* 122 Ca82

Central Star: AG82 112 — HD 79384; CD -41 4893; GCRV 6026
B 17.22 *Qual:* B GaPo88

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 2.6 (Ac78); ext. 2.5 (Po83); ext. 1.9 (86..1120)
Distance (kpc) stat.: 2.0-2.8 (CaKa71); 2.62 (MiAl75); 3.1 (Ca76); 2.54 (Ac78); 1.88 (Da82); 6.65 (PhPo84); 1.40 (AGNR84); 1.8 (Ma84); 3.02 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac80, AcMa77, Al65, AlMi72, BLTA81, CS83, Ca84, CePe83, CoBa80, De71, FaM86, FaMa86, FeAl87, Ga87, GaPo89, Go87, Gr71, Gu88, HLSW77, He67, He71, Hi71, Hi73, Iw73, IwKa65, Iy86, Ka70, Ka76, Ka79, Ka86, Kle78, KrK68, LNP89, MaFa85, MaFa86, MaPe88, MaPo80, MiWe79, PAKS91, PPFS87, Pe91, PiKh79, Po87, PrPo83, SK89, STPP83, SWPD87, Sa75, SaMi78, Sab86, Sh85, SlOr65, TASG91, TP77, ViFr85, WPSD88, We89, WeHe67, Wr66, ZuGa88

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84..2541 Storey J.W.V. *Mon. Not. R. Astron. Soc. 206, 521-527* Molecular hydrogen observations of southern planetary nebulae.

85..1554 Gathier R. *Astron. Astrophys., Suppl. Ser. 60, 399-423* VBLUW-photometry of stars in small fields around 13 planetary nebulae.

86..1120 Gathier R., Pottasch S.R., Pel J.W. *Astron. Astrophys. 157, 171-190* Distances to planetary nebulae.

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89..1352 Bassgen M., Grewing M. *Astron. Astrophys. 218, 273-276* Spectroscopic search for halos of planetary nebulae.

89.50052 Bassgen M., Bassgen G., Grewing M., Cerrato S., Bianchi L. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 199* Spectroscopic investigations of halos of planetary nebulae.

268.4+02.4

PB 5, PK 268+2°1, ESO 261-04, He 2-24, Sa 2-40, Wray 16-39, IRAS 09143-4516

				Diameter (″)		
		Disc.: Peimbert et al 1960				
1950:	09 14 20.6	-45 16 09	IRAS	*opt.* 5.	PK67	
	09 14 21.0	-45 16 12	Mi73			
2000:	09 16 10.2	-45 28 46	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24						*IR Class:* N+D		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	37	$H\alpha$	656.3 *nm*	1382	*J*	12.18	12μm	5.97	3
[*OIII*]	436.3	18	[*NII*]	658.4	399	*H*	11.79	25μm	21.05	3
	500.7	1979	[*SII*]	671.7	14	*K*	10.44	60μm	12.80	3
HeI	587.6	40		673.1	21	*L*		100μm	7.19	3
$\lg F_{H\beta}$	$-12.52 \pm .01$	Pe71, SK89, ASTR91				*Photom.*	Wh85	*Radio* (*mJy*)	*2cm* 116 MiAl82 *6cm* 107 Ca82	

Central Star: AG82 115 —
$B > 19.7$ V 18.7 *Qual:* D SK89

Bibliography: *PK67*, AG82, AcMa77, AlGl74, Fe68, HLSW78, He67, Ka76, MiAl75, MiWe79, PAKS91, PM87, PPFS87, PiKh79, Sa75, Sh85, VoCo90, W66, W75, WeHe67, Wr66, ZTPS89

269.7−03.6

PB 3, PK 269−3°1, ESO 211-04, He 2-16, Sa 2-33, Wray 16-33, IRAS 08527-5020

				Diameter (″)		
		Disc.: Peimbert et al 1960				
1950:	08 52 43.9	-50 20 52	IRAS	*opt.* 7.	CaKa71	
	08 52 43.0	-50 20 51	Mi76			
2000:	08 54 17.9	-50 32 19	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	27	$H\alpha$	656.3 *nm*	1008	12μm	0.42	3
[*OIII*]	436.3	19	[*NII*]	658.4	1163	25μm	4.14	3
	500.7	1933	[*SII*]	671.7	65	60μm	6.90	3
HeI	587.6	—		673.1	105	100μm	42.42	1
$\lg F_{H\beta}(mW.m^{-2})$	$-12.21 \pm .04$	W69, ASTR91				*Radio* (*mJy*)	*2cm* 59 MiAl82 *6cm* 70 Ca82	

Distance (kpc) stat.: 3.7 (CaKa71); 2.36 (Da82); 2.00 (AGNR84); 3.2 (Ma84); 3.73 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Gr71, HLSW78, He67, Iw73, Ka70, Ka76, LNP89, Ma81, Mi79, MiWe79, PAKS91, Sa75, WeHe67, Wr66

270.1+24.8

K 1-28, PK 270+24°1, ESO 436-41

			Disc.: Kohoutek 1977	*Diameter* (″)	
				opt. 54. 77..1134	
1950:	10 32 10.6	-28 55 44	77..1134		
2000:	10 34 30.6	-29 11 16	.		
					Radio *2cm*
					(*mJy*) *6cm* < 3 ZPB89

Central Star: AG82 129 —
B 16.7 77..1134

Bibliography: AG82, Ko78

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272.1+12.3

NGC 3132, PK 272+12°1, ARO 504, ESO 316-27, He 2-40, Sa 2-53, StWr 4-8, VV 54, VV' 94, IRAS 10049-4011

			Disc.: Herschel 1835	*Diameter* (″)		*Rvel:* −10.0 ± 3.0 MWF88		
1950:	10 04 54.6	-40 11 28	IRAS	*opt.* 30. CJA87		*Expansion Velocities* (*km/s*)		
	10 04 55.1	-40 11 29	Mi73			[OIII] 14.7 MWF88		
2000:	10 07 01.8	-40 26 10	.			[NII] 21.0 MWF88		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18						*IR Class:* N+S		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	5	$H\alpha$	656.3 *nm*	319	*J*	9.71	12μm	0.87	3
[OIII]	436.3	4	[*N*II]	658.4	393	*H*	9.70	25μm	4.46	3
	500.7	1021	[*S*II]	671.7	32	*K*	9.54	60μm	38.95	3
*He*I	587.6	14		673.1	32	*L*		100μm	43.17	3
$\lg F_{H\beta}(mW.m^{-2})$ −10.45 ± .06 W69, Pe71						*Photom.* Wh85		*Radio* *2cm* 198 MiAl82		
IUE Spectra: *LW*(6) *SW*(10)						*Spectr.* PPOJ86		(*mJy*) *6cm* 235 MiAl75		

Central Star: AG82 124 — CD -39 6137; CPD -39 4199; HD 87892; CSI -40 -10049; HD 87877
U 10.29 *B* 10.15 *V* 10.07 72.30001, 77..1146 *Spectrum:* A2 V 78..2525

Notes: Visual binary nucleus (77..1146). Multiple-shell PN; monochromatic images (CJA87); ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: spect. 0.67 (Po80); ext. 0.70 (Po80); ext. 0.54 (86..1120); ext. 0.6 (Sab86)
Distance (kpc) stat.: 0.7-1.5 (CaKa71); 1.06 (MiAl75); 1.24 (Ca76); 0.85 (Ac78); 1.03 (Da82); 0.80 (AGNR84); 1.1 (Ma84); 1.25 (CKS91)

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272.4–05.9

MeWe 1-1

		Disc.: Melmer et al 1990	*Diameter (″)*		
			opt. 110. 90..2581		
1950:	08 52 10.0	-53 53 42 90..2581			
2000:	08 53 36.7	-54 05 09 .			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	393
[OIII]	436.3	–	[*N*II]	658.4	315
	500.7	711	[*S*II]	671.7	
*He*I	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-12.4 \pm .5$ ASTR91			

Central Star:
B 19.4 90..2581

90..2581 Melmer D., Weinberger R. *Mon. Not. R. Astron. Soc. 243, 236-240,1990* New old PN in the southern sky.

273.2–03.7

He 2-18, PK 273–3°1, ESO 166-02, Sa 2-35, Wray 16-35, IRAS 09071-5307

		Disc.: Henize 1964	*Diameter (″)*	*Rvel:* $+40.0 \pm 19.0$ STPP83	
1950:	09 07 07.6	-53 07 02 IRAS	*opt.* 11. CaKa71	*Expansion Velocities (km/s)*	
	09 07 08.0	-53 06 55 Mi76		[OIII] 15.0 Sa84	
2000:	09 08 40.8	-53 19 08 .			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19					
*He*II	468.6 *nm*	18	$H\alpha$	656.3 *nm*	543
[OIII]	436.3	–	[*N*II]	658.4	537
	500.7	1178	[*S*II]	671.7	32
*He*I	587.6	18		673.1	30
$\lg F_{H\beta}(mW.m^{-2})$		$-12.54 \pm .05$ W69			

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	0.25	1
60μm	1.29	3
100μm	4.28	1
Radio (mJy) 2cm	< 5	MiAl82
6cm		

Distance (kpc) stat.: 3.8 (CaKa71); 3.6 (Ac78); 3.1 (Ma84)

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273.6+06.1

HBDS 1, PK 273+6°1

				Disc.: Heber et al 1984	*Diameter* (″)	
					opt. 90. 84.28020	
1950:	09 50.8	-46 03	84.28020			
2000:	09 52.7	-46 17	.			

Central Star: LSS 1362
U 11.11 *B* 12.26 *V* 12.47 88..1202 *Spectrum:* O(H) Me91

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88..1202 Heber U., Werner K., Drilling J.S. *Astron. Astrophys. 194, 223-229,1988* High-resolution spectroscopy of central stars of planetary nebulae : LSS 1362.
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274.1+02.5

He 2-34, PK 274+2°1, ESO 212-13, Wray 16-56, IRAS 09394-4909

				Disc.: Henize 1964	*Diameter* (″)	
					opt. St. ATS91	
1950:	09 39 24.8	-49 09 03	IRAS			
	09 39 21	-49 09.0	HLSw77			
2000:	09 41 10	-49 22.7	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	2136
[*O*III]	436.3	18	[*N*II]	658.4	238
	500.7	360	[*S*II]	671.7	12:
*He*I	587.6	46		673.1	7:

$\lg F_{H\beta}(mW.m^{-2})$ $-13.17 \pm .10$ ASTR91

IR Class: D

J	9.58	12μm	11.84
H	7.50	25μm	7.81
K	5.73	60μm	1.36
L	3.44	100μm	9.48

Photom. PPFS87

IRAS Fluxes (*Jy*)		*Qual.*
12μm	11.84	3
25μm	7.81	3
60μm	1.36	3
100μm	9.48	1

Central Star:
B 18.2 *V* 16.5 *Qual:* C TASG91

Notes: FC incorrect in PK67

Bibliography: *PK67*, ABBW82, AGR89, AST89, AiRo81, AiRo82, Al73, AlGl74, AlSw76, All73, CoBa80, He67, Ma84, OlRa86, PAKS89, PM87, Sa76, SaSt73, StAc87, TAGS89, W66, WeHe67, Wr66, ZTPS89

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274.3+09.1

Lo 4, PK 274+9°1, ESO 263-02

			Disc.: Longmore 1977	*Diameter (″)*	*Rvel:* +33.0 ± 20.0 STPP83
				opt. 48. Lo77	
1950:	10 03 44	-44 07.1	80..1013		
2000:	10 05 46	-44 21.7	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-24

HeII	468.6 *nm*	92	$H\alpha$	656.3 *nm*	286
[OIII]	436.3	–	[NII]	658.4	–
	500.7	310	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .2$ KSK90, ASTR91

Central Star: AG82 123 — *B* 22.0 *V* 20.5 KSK90 *Spectrum:* O(C) Me91

Notes: Multiperiodic pulsating nucleus (90..2011)

Bibliography: AG82, Ko78, TASG91, We77

80..1013 West R.M., Schuster H.E. *Astron. Astrophys. 88,350-353* Two southern Planetary Nebulae: ESO 263-PN02 and SchuWe-3.

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85..1008 Mendez R.H., Kudritzki R.P., Simon K.P. *Astron. Astrophys. 142, 289-296* SIT vidicon and IDS spectra of central stars of planetary nebulae.

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91..1023 Werner K., Heber U., Hunger K. *Astron. Astrophys. 244,437* Non-LTE analysis of four PG1159 stars.

274.6+03.5

He 2-37, PK 274+3°1, ESO 213-01, Sa 2-50, Wray 16-59, IRAS 09455-4844

			Disc.: Henize 1964	*Diameter (″)*	*Rvel:* +12.0 ± 5.0 MWF88
				opt. 23. CaKa71	*Expansion Velocities (km/s)*
1950:	09 45 33.1	-48 44 15	IRAS		[OIII] 30.7 MWF88
	09 45 32.6	-48 44 22	Mi76		
2000:	09 47 24.3	-48 58 19	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18

HeII	468.6 *nm*	46	$H\alpha$	656.3 *nm*	521
[OIII]	436.3	–	[NII]	658.4	650
	500.7	1869	[SII]	671.7	45
HeI	587.6	9:		673.1	48

$\lg F_{H\beta}(mW.m^{-2})$ $-12.4 \pm .3$ ASTR91

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	0.80	3
60μm	1.24	3
100μm	7.97	1

Radio (mJy) 2cm 20 MiAl82, 6cm

Distance (kpc) stat.: 2.51 (CaKa71); 2.3 (Ma84); 2.98 (CKS91)

Bibliography: PK67, AST89, AcMa77, Ca82, HLSw77, He67, Iw73, KrK68, Mi79, PAKS89, Sa75, WPSD88, We89, WeHe67, Wr66

274.6+02.1

He 2-35, PK 274+2°2, ESO 212-14, Sa 2-48, Wray 16-57, IRAS 09398-4944

				Disc.: Henize 1964	*Diameter* (″)	
1950:	09 39 49.2	-49 44 15	IRAS		*opt.* 5. PK67	
	09 39 47.9	-49 44 02	Mi73			
2000:	09 41 36.4	-49 57 45	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	567
[*O*III]	436.3	3	[*N*II]	658.4	24
	500.7	958	[*S*II]	671.7	
*He*I	587.6	22		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.03 \pm .10$ Pe71, ASTR91

IR Class: .

J	
H	
K	> 10.3
L	

Photom. AlGl74

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.25	1
25μm	2.04	3
60μm	2.32	3
100μm	8.42	1

Radio (*mJy*) *2cm* 18 MiAl82; *6cm* 24 Mi79

Central Star:
B 16.4 *V* 16.2 *Qual:* C TASG91 *Spectrum:* WC ? ATS91

Distance (kpc) stat.: 7.81 (MiAl75); 7.63 (Ca76); 4.67 (Da82); 5.9 (Ma84); 6.62 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, HLSw77, He67, LNP89, MaPo80, PAKS89, Sa75, TAGS89, W66, W75, WeHe67, Wr66

275.0–04.1

PB 4, PK 275–4°1, ESO 166-06, He 2-22, Sa 2-38, Wray 16-37, IRAS 09136-5440

				Disc.: Peimbert et al 1960	*Diameter* (″)	
1950:	09 13 36.3	-54 40 08	IRAS		*opt.* 10.2 CaKa71	
	09 13 36.5	-54 40 07	Mi76			
2000:	09 15 07.6	-54 52 39	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24

*He*II	468.6 *nm*	24	*Hα*	656.3 *nm*	513
[*O*III]	436.3	–	[*N*II]	658.4	24
	500.7	990	[*S*II]	671.7	1.0
*He*I	587.6	20		673.1	0.7

$\lg F_{H\beta}$ $-11.66 \pm .02$ W69, TP77, SK89

IR Class: N?

J	10.37
H	10.26
K	10.16
L	

Photom. PPFS87

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.30	3
25μm	2.72	3
60μm	7.61	3
100μm	6.22	3

Radio (*mJy*) *2cm* 29 MiAl82; *6cm* 71 Ca82

Central Star: AG82 114 —
B 15.97 *V* 16.12 *Qual:* A SK89 , TASG91

Distance (kpc) stat.: 3.5 (CaKa71); 3.82 (MiAl75); 3.73 (Ca76); 2.51 (Da82); 4.84 (PhPo84); 1.90 (AGNR84); 2.9 (Ma84); 3.65 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Ac80, AcMa77, FaMa88, Gr71, HLSw77, He67, Iw73, Ka70, Ka76, Ka78, Ka79, Ka80, Ka86, Kle78, LNP89, MaFa85, MaPo80, MiWe79, PAKS91, PM87, Pe71, PiKh79, Sa75, Sh85, TAGS89, WeHe67, Wr66

275.2–02.9

He 2-28, PK 275–2°1, ESO 166-09, Sa 2-43, Wray 16-44, IRAS 09205-5356

			Disc.: Henize 1964	*Diameter* (″)	
1950:	09 20 32.6	-53 56 51	IRAS	*opt.* 10. CaKa71	
	09 20 31.5	-53 56 55	Mi76		
2000:	09 22 06.4	-54 09 47	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20

HeII	468.6 *nm*	14	$H\alpha$	656.3 *nm*	550
[*OIII*]	436.3	–	[*NII*]	658.4	413
	500.7	1140	[*SII*]	671.7	46
HeI	587.6	21		673.1	48

$\lg F_{H\beta}(mW.m^{-2})$ $-12.54 \pm .05$ W69

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.47	1
25μm	0.25	3
60μm	1.34	3
100μm	5.75	1

Radio (*mJy*) *2cm* < 1 MiAl82; *6cm* 20 Mi79

Central Star:
B 17.6 *V* 17.0 *Qual:* C TASG91

Distance (kpc) stat.: 3.8 (CaKa71); 5.12 (Da82); 3.10 (AGNR84); 4.7 (Ma84); 5.03 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, HLSw77, He67, Iw73, Ka70, Ka76, LNP89, Ma81, PAKS91, Sa75, WeHe67, Wr66

275.2–03.7

He 2-25, PK 275–3°1, ESO 166-07, SaSt 1-2, Wray 16-40, IRAS 09164-5426

			Disc.: Henize 1964	*Diameter* (″)	
1950:	09 16 28.5	-54 26 44	IRAS	*opt.* 5. PK67	
	09 16 28.8	-54 26 49	72..9043		
2000:	09 18 01.3	-54 39 29	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3101
[*OIII*]	436.3	174	[*NII*]	658.4	–
	500.7	531	[*SII*]	671.7	
HeI	587.6	64		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.58 \pm .01$ SK89

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.96	3
25μm	5.43	3
60μm	2.30	3
100μm	3.07	1

Central Star: AG82 116 —
B 17.08 *V* 16.96 *Qual:* B SK89

Notes: FC incorrect in PK67. ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 0.77 (CKS91)

Bibliography: *PK67*, AG82, AST89, Al78, AlGl74, HLSw77, He67, PAKS89, PM87, PPFS87, Sa76, Sh85, StAc87, TASG91, W66, W75, WeHe67, Wr66, ZTPS89

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275.3–04.7

He 2-21, PK 275–4°2, ESO 166-05, Sa 2-37, Wray 15-344

			Disc.: Henize 1964	*Diameter* (″)			
				opt. 2.4	CaKa71		
1950:	09 12 22.9	-55 15 53	Mi76				
2000:	09 13 52.2	-55 28 21	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20

*He*II	468.6 *nm*	28	*Hα*	656.3 *nm*	518
[*O*III]	436.3	13	[*N*II]	658.4	–
	500.7	1318	[*S*II]	671.7	
*He*I	587.6	14		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-12.08 \pm .10$	Pe71, ASTR91	*Radio*	*2cm*	12 MiAl82
			(*mJy*)	*6cm*	16 MiAl75

Distance (kpc) stat.: 13.32 (CaKa71); 12.69 (MiAl75); 12.44 (Ca76); 4.65 (Da82); 7.2 (Ma84); 7.30 (CKS91)

Bibliography: *PK67*, AGNR84, AGR89, AcMa77, HLSw77, He67, LNP89, MaPo80, Sa75, WeHe67, Wr66

275.5–01.3

Pe 2-4, PK 275–1°1, ESO 166-18, He 2-31, Sa 2-46, VV' 90, Wray 16-48, IRAS 09291-5256

			Disc.: Perek 1960	*Diameter* (″)			
				opt. 7.	CaKa71		
1950:	09 29 09.2	-52 56 49	IRAS				
	09 29 09	-52 56.7	Sa75				
2000:	09 30 49	-53 10.0	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1496
[*O*III]	436.3	–	[*N*II]	658.4	339
	500.7	1844	[*S*II]	671.7	12
*He*I	587.6	42		673.1	23

$\lg F_{H\beta}(mW.m^{-2})$	$-13.0 \pm .2$	ASTR91	*IRAS Fluxes* (*Jy*)		*Qual.*
			12μm	0.25	1
			25μm	1.41	3
			60μm	2.94	3
			100μm	5.74	3

Distance (kpc) stat.: 4.03 (CaKa71); 1.9 (Ma84)

Bibliography: *PK67*, AcMa77, HLSw77, He67, PAKS91, WeHe67, Wr66

275.8–02.9

He 2-29, PK 275–2°2, ESO 166-10, Sa 2-44, Wray 16-46, IRAS 09231-5423

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* $+25.0 \pm 6.0$	MWF88
				opt. 14.	CaKa71	*Expansion Velocities* (*km/s*)	
1950:	09 23 11.0	-54 23 17	IRAS			[OIII] 23.6	MWF88
	09 23 10.0	-54 23 21	Mi76				
2000:	09 24 44.8	-54 36 20	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20

*He*II	468.6 *nm*	72	*Hα*	656.3 *nm*	593
[*O*III]	436.3	23	[*N*II]	658.4	576
	500.7	2006	[*S*II]	671.7	41
*He*I	587.6	15		673.1	46

$\lg F_{H\beta}(mW.m^{-2})$	$-12.17 \pm .05$	W69	*IRAS Fluxes* (*Jy*)		*Qual.*		
			12μm	0.37	2		
			25μm	0.84	3		
			60μm	1.35	3		
			100μm	5.54	1		
			Radio	*2cm*	19	MiAl82	
			(*mJy*)	*6cm*	24	Mi79	

Distance (kpc) stat.: 2.8 (CaKa71); 4.04 (Da82); 2.70 (AGNR84); 4.0 (Ma84); 3.96 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Gr71, Gr72, HLSw77, He67, Iw73, Ka70, Ka76, KrK68, LNP89, Ma81, PAKS91, Sa75, We89, WeHe67, Wr66

277.1–03.8

NGC 2899, PK 277–3°1, ESO 166-13, Gum 27, He 2-30, My 48, RCW 43, Sa 2-45, Wray 16-47, IRAS 09255-5553

			Disc.: Henize 1964	*Diameter* (″)		*Rvel*: +3.0 ± 4.0	MWF88
1950:	09 25 30.5	-55 53 11	IRAS	*opt.* 90.	CaKa71	*Expansion Velocities* (*km/s*)	
	09 25 31.3	-55 53 13	Mi76			[OIII] 23.5	We89
2000:	09 27 03.5	-56 06 18	.			[NII] 25	We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23 DA						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	48	$H\alpha$	656.3 *nm*	340	12μm	0.27	3
[OIII]	436.3	–	[*NII*]	658.4	1354	25μm	1.42	3
	500.7	759	[*SII*]	671.7	100	60μm	5.13	3
HeI	587.6	–		673.1	89	100μm	10.91	3
lg$F_{H\beta}$($mW.m^{-2}$)		−11.35 ± .02	W69, SK89			*Radio* 2*cm*	75	MiAl82
IUE Spectra:		*LW*(0) *SW*(2)				(*mJy*) 6*cm*	86	Ca82

Central Star:
$B > 16.4$ $V > 15.9$ SK89

Distance (kpc) stat.: 1.03 (CaKa71); 1.03 (MiAl75); 1.01 (Ca76); 0.88 (Ac78); 0.86 (Da82); 0.94 (AGNR84); 1.5 (Ma84); 1.0 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, ChLo72, Gr71, Gr72, Gr89, HLSw77, HaZu91, He67, He71, Iw73, Ka70, Ka76, KaJa89, KrK68, LNP89, LePo88, Ma74, MaPo80, MeHa75, MiWe79, PAKS91, PBBE84, Pa90, Ph84, RRA82, SGBO84, STPP83, SWPD87, Sa75, Sa84, SaHa82, SaMi78, Sh85, StKa89, WPSD88, WeHe67, Wr66

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73..9060 Ringuelet A.E., Mendez R.H. *Publ. Astron. Soc. Pac. 85,96* Spectral observations of southern P.N. Part 1.

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75..9013 Glushkov Y.L., Denisyuk E.K., Karyagina Z.V. *Astr. Cirk. Urss 852,3* 11. The spectrum of high-excitation nebulae SH2-71.

83..1022 Hua C.T., Nguyen-Trong T. *Astron. Astrophys. 117,272-276* Morphological study of three Abell's planetary nebulae: A 33, A 36, and A 79.

87..1606 Louise R., Macron A., Pascoli G., Maurice E. *Astron. Astrophys., Suppl. Ser. 70, 201-227* Photometric and spectrophotometric observations of 10 southern planetary nebulae.

89.50033 Lopez J.A., Falcon L.H., Ruiz M.T., Roth M. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 179* NGC 2899: na evolved bipolar planetary nebula.

89.50104 Kahn F.D. *Proceedings of the 131st symposium of the IAU, held in Mexico city, Mexico, oct ober 5-9, 1987. Ed S. Ttorres-Peimbert. Planetary nebulae, 411-424* Models of planetary nebulae: generalisation of the multiple winds model.

90..1525 Pascoli G. *Astron. Astrophys., Suppl. Ser. 83, 27-39* Morphology of bipolar planetary nebulae. I. Two-dimensional spectrophotometry.

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277.7–03.5

Wray 17-31, PK 277–3°2, ESO 166-21, RCW 44, Sa 3-10, VBRC 2

			Disc.: Wray 1966	*Diameter* (″)			
				opt. 110.	73..9025		
1950:	09 29 53.9	-56 04 24	Wr66				
2000:	09 31 27.1	-56 17 41	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	402
[*O*III]	436.3	–	[*N*II]	658.4	866
	500.7	444	[*S*II]	671.7	122
*He*I	587.6	–		673.1	72

$\lg F_{H\beta}(mW.m^{-2})$ $-12.1 \pm .4$ ASTR91

Bibliography: ACPS87, AcMa77, HLSw77, Ko78, MaC83, Sa76, We77, We89

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89.50045 Riuz M.T. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 192* The planetary ESO 166 - PN 21.

278.1–05.9

NGC 2867, PK 278–5°1, ARO 509, ESO 126-08, He 2-27, StWr 3-6, VV 52, VV' 89, Wray 16-43, IRAS 09200-5805

			Disc.: Herschel 1834	*Diameter* (″)		*Rvel:* $+12.0 \pm 4.0$	MWF88		
1950:	09 20 00.8	-58 05 46	IRAS	*opt.* 14.	CaKa71	*Expansion Velocities* (*km/s*)			
	09 20 00.9	-58 05 58	KVLS81			[OIII]	18.9	MWF88	
2000:	09 21 25.6	-58 18 48	.			[NII]	23.5	MWF88	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23 N

						IR Class: N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	29	*Hα*	656.3 *nm*	384	*J*	10.43	12μm	2.16	3
[OIII]	436.3	13	[*N*II]	658.4	84	*H*	10.91	25μm	14.86	3
	500.7	1460	[*S*II]	671.7	6	*K*	10.05	60μm	16.99	3
*He*I	587.6	13		673.1	10	*L*	8.17	100μm	7.22	3

$\lg F_{H\beta}$ $-10.58 \pm .01$ W69, KM81, 85..3062, SK89

IUE Spectra: *LW*(3) *SW*(3)

Photom. PPFS87
Spectr. PPOJ86

Radio (*mJy*) *2cm* 265 MiAl82, *6cm* 252 Ca82

Central Star: AG82 117 — HD 81119; CSI -58 -09200
B 16.62 *Qual:* B GaPo88 *Spectrum:* WC 3 Me91

Notes: Multiple-shell PN; monochromatic images (CJA87)

Distance (kpc) indiv.: kinem. 1.3 (Ac78); ext. 1.4: (Ac78); ext. 2.0 (Po83); ext. >2.0 (86..1120); ext. 1.7 (Sab86)

Distance (kpc) stat.: 1.9-2.3 (CaKa71); 2.21 (MiAl75); 2.30 (Ca76); 1.65 (Ac78); 1.22 (Da82); 2.64 (PhPo84); 0.99 (AGNR84); 1.6 (Ma84); 1.83 (CKS91)

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91....46 Cheng K.P., Feibelman W.A., Bruhweiler F.C. *Astrophys. J.,377,235* Ultraviolet Fe VII absorption and Fe II emission lines of central stars of planetary nebulae.

91..3002 Kaler J.B., Shaw R.A., Feibelman W.A., Imhoff C.L. *Publ. Astron. Soc. Pac. 103,67* PB6 and its central star

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278.5–04.5

He 2-32, PK 278–4°1, ESO 166-19, Sa 3-9, Wray 16-49, IRAS 09294-5723

				Disc.: Henize 1964	*Diameter* (″)	
1950:	09 29 26.7	-57 23 29	IRAS		*opt.* 35. CaKa71	
	09 29 26	-57 23.7	HLSw77			
2000:	09 30 56	-57 37.0	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	865	*J*	12μm	0.71	1
[*OIII*]	436.3	–	[*NII*]	658.4	4041	*H*	25μm	0.25	1
	500.7	1216	[*SII*]	671.7	227	*K* > 10.2	60μm	0.58	3
HeI	587.6	–		673.1	214	*L*	100μm	25.77	1
$\lg F_{H\beta}(mW.m^{-2})$	$-13.1 \pm .4$ ASTR91					*Photom.* AlGl74			

Distance (kpc) stat.: 2.06 (CaKa71); 2.2 (Ma84)

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278.6–06.7

He 2-26, PK 278–6°1, ESO 126-06, My 47, Sa 2-41, StWr 3-5, Wray 16-41, IRAS 09181-5859

				Disc.: Henize 1964	*Diameter* (″)	
1950:	09 18 06.4	-58 59 14	IRAS		*opt. St.* CS90	
	09 18 06.4	-58 59 23	Mi76			
2000:	09 19 27.9	-59 12 08	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	6	*Hα*	656.3 *nm*	413	*J*	12.52	12μm	0.30	3
[*OIII*]	436.3	12	[*NII*]	658.4	71	*H*	13.11	25μm	1.98	3
	500.7	1412	[*SII*]	671.7	3	*K*	12.20	60μm	1.52	3
HeI	587.6	17		673.1	5	*L*		100μm	1.73	1
$\lg F_{H\beta}$	$-11.47 \pm .01$ W69, Pe71, ASTR91					*Photom.* Wh85		*Radio* (*mJy*)	*2cm* 30 MiAl82 *6cm* 40 Ca82	

Distance (kpc) stat.: 2.06 (MiAl75); 2.01 (Ca76); 2.04 (Da82); 4.7 (Ma84); 1.96 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, AlGl74, HLSW78, He67, Iy86, Ka70, Ka76, LNP89, MaPo80, Mi79, MiWe79, PAKS91, PM87, PPFS87, Sa75, StWr72, TAGS89, W66, W75, WeHe67, Wr66

278.8+04.9

PB 6, PK 278+5°1, ESO 213-07, He 2-43, Sa 2-58, Wray 16-68, IRAS 10113-5005

		Disc.: Peimbert et al 1960		*Diameter* (″)		
1950:	10 11 18.4	-50 05 04	IRAS	*opt.* 11.	CaKa71	
	10 11 18.8	-50 05 07	Mi76			
2000:	10 13 16.2	-50 20 01	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-12 C							*IR Class:* N?		*IRAS Fluxes (Jy)*		*Qual.*	
*He*II	468.6 *nm*	143	*Hα*	656.3 *nm*	529		*J*	13.9 :	12μm	0.92	3	
[*O*III]	436.3	16	[*N*II]	658.4	390		*H*	13.7 :	25μm	6.00	3	
	500.7	1026	[*S*II]	671.7			*K*	13.4 :	60μm	5.06	3	
*He*I	587.6	9		673.1			*L*		100μm	1.82	1	
lg$F_{H\beta}$($mW.m^{-2}$)	−11.87 ± .02	Pe71, TP77					*Photom.*	PM87	*Radio*	*2cm*	12	MiAl82
IUE Spectra:	*LW*(0)	*SW*(2)							(*mJy*)	*6cm*	30	Ca82

Central Star:	O VI, IUE spect 91..3002
B 17.4 *V* 17.6 *Qual:* C TASG91	WC 3 ATS91

Distance (kpc) stat.: 4.81 (CaKa71); 4.49 (MiAl75); 4.40 (Ca76); 4.01 (Ac78); 4.29 (Da82); 2.60 (AGNR84); 4.0 (Ma84); 4.38

Bibliography: *PK67*, AGR89, AST89, Ac80, AcMa77, FaMa88, Fe68, HLSw77, He67, Iw73, KSK90, Ka70, Ka76, Ka79, Ka86, Kle78, LNP89, MaFa85, MaPo80, PAKS91, Pe91, PeSe80, PeTo83, PhMa88, PrPe89, Sa75, WeHe67, Wr66

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279.6–03.1

He 2-36, PK 279−3°1, ESO 167-03, Sa 2-49, Wray 15-428, IRAS 09418-5703

		Disc.: Henize 1964		*Diameter* (″)		*Rvel:* −7.1 ± 2.0 STPP83
1950:	09 41 49.9	-57 03 03	IRAS	*opt.* 22.	CaKa71	
	09 41 50.7	-57 03 12	Mi76			
2000:	09 43 26.0	-57 17 00	.			

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1986-01-20						*IR Class:* N+S		*IRAS Fluxes (Jy)*		*Qual.*	
*He*II	468.6 *nm*	18	*Hα*	656.3 *nm*	100	*J*	9.76	12μm	0.42	3	
[*O*III]	436.3	–	[*N*II]	658.4	15	*H*	9.55	25μm	4.88	3	
	500.7	260	[*S*II]	671.7		*K*	9.35	60μm	6.40	3	
*He*I	587.6	–		673.1		*L*		100μm	8.82	1	
lg$F_{H\beta}$($mW.m^{-2}$)	−11.81 ± .01	SK89				*Photom.*	Wh85	*Radio*	*2cm*	67	MiAl82
IUE Spectra:	*LW*(2)	*SW*(5)						(*mJy*)	*6cm*	90	Ca82

Central Star: AG82 120 — CD -56 2932; CPD -56 2466; LS 1340
B 11.88 *V* 11.30 *Qual:* A SK89 , TASG91 A *Spectrum:* sdO + A2 III 78..2525

Notes: Spectroscopic binary nucleus? (Dr80, 85..2221). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.18 (Da82); 1.70 (AGNR84); 2.7 (Ma84); 2.40 (CKS91)

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85..2508 Augensen H.J. *Mon. Not. R. Astron. Soc. 213, 399-405* A search for radial velocity variations in the central stars of southern planetary nebulae and planetary-like objects.
86.17451 Lutz J., Balick B., Kaler J., Shaw R., Heathcote S., Weller W. *Bull. American Astron. Soc. 18, 951* He 2-36: planetary nebula with a jet ?
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280.0+02.9

Ste 2-1, PK 280+2°1, Sa 2-56, IRAS 10100-5223

				Disc.: Stenholm 1975	*Diameter* (″)	
1950:	10 10 03.7	-52 23 25	IRAS		*opt.* 20. : CS90	
	10 10 04	-52 23.4	We77			
2000:	10 11 58	-52 38.3	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21					
*He*II	468.6 *nm*	75	$H\alpha$	656.3 *nm*	592
[*O*III]	436.3	19	[*N*II]	658.4	–
	500.7	879	[*S*II]	671.7	
*He*I	587.6	6		673.1	
$\lg F_{H\beta}(mW.m^{-2})$	$-11.9 \pm .3$	ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.72	3
60μm	0.58	3
100μm	9.18	1

Bibliography: AcMa77, Ko78, PAKS91, Sa75

75..9007 Stenholm B. *Astron. Astrophys. 39,307-318* Wolf-Rayet stars and galactic structure.

281.0–05.6

IC 2501, PK 281–5°1, ARO 510, He 2-33, Sa 2-47, StWr 3-7, VV 53, VV'92, Wray 16-54, IRAS 09373-5951

			Disc.: Fleming 1904	*Diameter* (″)		*Rvel:* +32.7 ± 1.0 STPP83
1950:	09 37 20.7	-59 51 55	IRAS	*opt.* 2.	CaKa71	
	09 37 20.9	-59 51 52	Mi76			
2000:	09 38 47.5	-60 05 28	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23 N

HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	379	
[*OIII*]	436.3	6	[*NII*] 658.4	114	
	500.7	866	[*SII*] 671.7	3	
HeI	587.6	17	673.1	5	

$\lg F_{H\beta}$ −10.67 ± .01W69, Pe71, KM81, SK89

IUE Spectra: *LW*(3) *SW*(2)

IR Class: N,

J	10.04	*IRAS Fluxes* (*Jy*)		*Qual.*	
H	10.79	12*μm*	4.06	3	
K	9.55	25*μm*	27.09	3	
L	8.09	60*μm*	19.02	3	
Photom. PPFS87		100*μm*	6.06	3	
		Radio (*mJy*)	*2cm* 236	MiAl82	
			6cm 261	MiAl75	

Central Star: AG82 119 — HD 83832; CD -59 2483
B 14.42 *V* 14.48 *Qual:* B SK89

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: ext. 1.7 (Ac78); ext. 1.7 (Sab86)
Distance (kpc) stat.: 6.74 (CaKa71); 8.10 (MiAl75); 7.91 (Ca76); 1.33 (Ac78); 0.83 (Da82); 0.75 (AGNR84); 2.0 (Ma84); 1.30 (CKS91)

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87.28020 Scwerdtfeger H.M., Hering R., Walter H.C. *Mitteil. Astron. Gesellschaft 70, 300-304* Optical positions of radio stars

87.28023 Bassgen M., Cerrato S., Grewing M. *Mitteil. Astron. Gesellschaft 70, 347-350* Mass loss from the progenitors of planetary nebulae.

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89.29003 Jeffery C.S. *Quart. J. R. Astron. Soc. 30, 195-210* The analysis of astronomical spectra.

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90..1536 Costa E., Loyola P. *Astron. Astrophys., Suppl. Ser. 83, 235-236* Optical positions of radiostars. II.

282.9+03.8

He 2-48, PK 282+3°1, ESO 168-05, Sa 2-60, Wray 17-45

			Disc.: Henize 1964	*Diameter* (″)	
				opt. 14. CaKa71	
1950:	10 29 33	-53 18.0	HLSw77		
2000:	10 31 32	-53 33.5	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	359
[*O*III]	436.3	–	[*N*II]	658.4	230
	500.7	960	[*S*II]	671.7	
*He*I	587.6	23		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.9 \pm .2$ ASTR91

Distance (kpc) stat.: 4.90 (CaKa71); 5.1 (Ma84)

Bibliography: *PK67*, AcMa77, He67, Iw73, KrK68, PAKS91, Sa75, WeHe67, Wr66

283.3+03.9

He 2-50, PK 283+3°1, ESO 168-08, Sa 2-62, Wray 16-72, IRAS 10323-5325

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* $+79.0 \pm 19.0$ STPP83
1950:	10 32 20.2	-53 25 45	IRAS	*opt.* 11.8 CaKa71	
	10 32 18.0	-53 25 27	Mi76		
2000:	10 34 18.3	-53 40 59	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21

*He*II	468.6 *nm*	34	*Hα*	656.3 *nm*	469
[*O*III]	436.3	11	[*N*II]	658.4	491
	500.7	1398	[*S*II]	671.7	27
*He*I	587.6	17		673.1	26

$\lg F_{H\beta}(mW.m^{-2})$ $-12.39 \pm .$ Pe71

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.25	3
60μm	1.43	3
100μm	4.18	2

Radio (*mJy*)	*2cm*	10	MiAl82
	6cm	< 10	MiAl75

Distance (kpc) stat.: 3.79 (CaKa71); >3.41 (MiAl75); 3.1 (Ac78); 2.8 (Ma84); 5.1 (CKS91)

Bibliography: *PK67*, AcMa77, HLSw77, He67, Iw73, Ka76, KrK68, PAKS91, Sa75, WeHe67, Wr66

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69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.

283.6+25.3

K 1-22, PK 283+25°1, ESO 378-01, V-V 3-1, IRAS 11242-3405

		Disc.: Kohoutek 1971	*Diameter* (″)		*Rvel:* −14.0 ± 4.0 STPP83
1950:	11 24 14.8	-34 05 32	IRAS	*opt.* 180. Ko71	*Expansion Velocities* (*km/s*)
	11 24 17.5	-34 05 44	Ka83		[OIII] 28.0 75..9041
2000:	11 26 44.4	-34 22 15	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-05-31

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	214	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.42 ± .10 Ka83

IUE Spectra: *LW*(0) *SW*(1)

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.26	1
25μm	0.25	1
60μm	0.46	1
100μm	1.32	3

Central Star: AG82 136 — Tol 53
V 17.4 Ka85 *Spectrum:* IUE obsns. AG82

Distance (kpc) stat.: 1.00 (CKS91)

Bibliography: AcMa77, KSK90, Ko78, LePo88, RRA82, SGBO84, Sa84, SaHa82, TASG91, We77, We89, ZPB89

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75..9041 Smith M.G., Gull T.R. *Astron. Astrophys. 44,223* Spectroscopic observations of the P.N. 283 +25.1.
76...525 Smith M.G., Aguirre C., Zemelman M. *Astrophys. J., Suppl. Ser. 32,217-231* Emission-line galaxies and quasars. II. The classification systems and List N.1, declination <-27.5, b>+20. [Tol]

283.8+02.2

My 60, PK 283+2°1, ESO 168-06, He 2-49, PB 7, Sa 2-61, Wray 16-71, IRAS 10296-5505

		Disc.: Mayall 1951	*Diameter* (″)		
1950:	10 29 37.7	-55 05 36	IRAS	*opt.* 7.6 CaKa71	
	10 29 36.0	-55 05 27	Mi76		
2000:	10 31 33.1	-55 20 54	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22

*He*II	468.6 *nm*	67	*Hα*	656.3 *nm*	549
[*O*III]	436.3	14	[*N*II]	658.4	–
	500.7	1375	[*S*II]	671.7	0.8:
*He*I	587.6	7		673.1	1.6:

$\lg F_{H\beta}(mW.m^{-2})$ −11.78 ± .01 Pe71, SK89

IR Class: N

J	12.43	
H	12.43	
K	11.59	
L		

Photom. Wh85

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.37	3
25μm	4.72	3
60μm	4.43	3
100μm	21.48	1

Radio (*mJy*) *2cm* 62 MiAl82; *6cm* 60 Ca82

Central Star: AG82 128 —
B 17.6 *V* 17.2 *Qual:* C SK89 , TASG91

Distance (kpc) stat.: 4.25 (CaKa71); 4.96 (MiAl75); 4.84 (Ca76); 2.62 (Da82); 2.10 (AGNR84); 3.4 (Ma84); 4.16 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, HLSw77, He67, Iy86, LNP89, MaPo80, MiWe79, PM87, PPFS87, PiKh79, Sa75, Sh85, WeHe67, Wr66

283.8–04.2

He 2-39, PK 283–4°1, ESO 127-03, Sa 2-52, Wray 16-64, IRAS 10022-6029

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −23.0 ± 20.0 STPP83
1950:	10 02 13.9	-60 29 11	IRAS	*opt.* 10.4 CaKa71	
	10 02 14	-60 29.2	HLSW75		
2000:	10 03 50	-60 43.8	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19					
HeII	468.6 *nm*	59	$H\alpha$	656.3 *nm*	428
[*OIII*]	436.3	19	[*NII*]	658.4	211
	500.7	1446	[*SII*]	671.7	18
HeI	587.6	8		673.1	20
$\lg F_{H\beta}(mW.m^{-2})$	−12.4 ± .2 ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.47	3
60μm	0.67	3
100μm	6.73	1

Central Star:
B 17.9 *V* 16.4 *Qual:* C TASG91

Distance (kpc) stat.: 4.43 (CaKa71); 3.69 (Ac78); 3.4 (Ma84)

Bibliography: *PK67*, AcMa77, Fe68, He67, Iw73, Ka76, PAKS91, Sa75, WeHe67, Wr66, Zi75

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283.9+09.7

ESO 215-04, PK 283+9°1, DS 1

			Disc.: Holmberg et al 1978	*Diameter* (″)	
				opt. 300. La82	
1950:	10 52.5	-48 31	83...423		
2000:	10 54.7	-48 47	.		

Central Star: AG82 131bis — LSS 2018; CPD -48 3606; CD -48 6027; KU Vel		
U 10.93 *B* 12.09 *V* 12.26 83...423	sdO + MV	86.30753
	O(H)	Me91

Notes: Close binary nucleus, $P = 0.357^d$ (85...376). Monochromatic images (BoLi 90)

Bibliography: HLSW78, Iy87

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84...195 Schonberner D., Drilling J.S. *Astrophys. J. 278, 702-710* Effective temperatures and luminosities of very hot O type subdwarfs.
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84.20311 Drilling J.S. *Circ. Bureau Central Telegrammes 3947* LSS 2018.
84.28019 Drilling J.S. *Mitteil. Astron. Gesellschaft 62, 251* LSS 2018 - a new binary central star.
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87.14585 Kholopov P.N., Samus N.N., Kazarovets E.V., Kireeva N.N. *IAU Inform. Bull. Var. Stars N. 3058* The 68th name-list of variable stars.
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89.50119 Iben I., Tutukov A.V. *Proceedings of the 131st symposium of the IAU held in Mexico city, Mexico, octo ber 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 505-522* Binary stars and planetary nebulae.
90....17 De Kool M. *Astrophys. J.,358,189* Common evolution and double cores of planetary nebulae.
90..4002 Herrero A., Mendez R.H., Manchado A. *Astrophys. Space Sci.,169,183* NLTE analysis of high-resolution spectra of CSPN.
91...503 Drilling J.S. *Astrophys. J., Suppl. Ser.,76,1033* UBV photometry of OB+ stars in the southern Milky Way.
91..1012 Rauch T., Heber U., Hunger K., Werner K., Neckel T. *Astron. Astrophys. 241,457* NLTE-analysis of sublimous O stars : KS 292.

283.9–01.8

Hf 4, PK 283−1°1, ESO 127-12, He 2-45, Sa 3-12, Wray 16-69, IRAS 10138-5836

		Disc.: Hoffleit 1953	*Diameter (″)*	*Rvel:* +22.0 ± 12.0 MWF88
1950:	10 13 50.7	-58 36 13 IRAS	*opt.* 21. CaKa71	*Expansion Velocities (km/s)*
	10 13 50	-58 36.2 Sa76		[OIII] < 10.0 MWF88
2000:	10 15 35	-58 51.2 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1248
[*O*III]	436.3	–	[*N*II]	658.4	3465
	500.7	1010	[*S*II]	671.7	341
*He*I	587.6	–		673.1	317

$\lg F_{H\beta}(mW.m^{-2})$ −13.22 ± .04 SK89

IRAS Fluxes (Jy)

		Qual.
12μm	0.40	1
25μm	1.52	3
60μm	7.80	3
100μm	81.04	1

Central Star: AG82 126 —

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.35 (CaKa71); 1.9 (Ma84)

Bibliography: *PK67*, AG82, AST89, HLSW75, He67, Iw73, KrK68, Ma74, PAKS89, StAc87, We89, WeHe67, Wr66, Zi75

285.4+02.2

Pe 2-7, PK 285+2°1, ESO 168-13, Sa 2-66, VV' 103, Wray 16-77, IRAS 10393-5553

		Disc.: Perek 1960	*Diameter (″)*	
1950:	10 39 19.5	-55 53 29 IRAS	*opt. St.* CS90	
	10 39 20	-55 53.6 HLSw77		
2000:	10 41 20	-56 09.3 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23

*He*II	468.6 *nm*	78	*Hα*	656.3 *nm*	739
[*O*III]	436.3	29	[*N*II]	658.4	74
	500.7	1786	[*S*II]	671.7	13
*He*I	587.6	10		673.1	14

$\lg F_{H\beta}(mW.m^{-2})$ −12.98 ± .10 ASTR91

IR Class: .

J	
H	
K	> 9.7
L	
Photom.	AIGI74

IRAS Fluxes (Jy)

		Qual.
12μm	0.25	1
25μm	1.46	3
60μm	1.58	3
100μm	21.75	1

Bibliography: *PK67*, AcMa77, PAKS91, Sa75, Wr66

285.4+01.5

Pe 1-1, PK 285+1°1, ESO 168-10, He 2-52, Sa 2-64, VV'101, Wray 16-75, IRAS 10364-5631

			Disc.: Perek 1960	*Diameter* (″)	
1950:	10 36 29.0	-56 31 18	IRAS	*opt.* 3. CaKa71	
	10 36 34.5	-56 30 55	PK67		
2000:	10 38 32.5	-56 46 33	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1143
[OIII]	436.3	4	[*N*II]	658.4	461
	500.7	1257	[*S*II]	671.7	8
*He*I	587.6	41		673.1	16

$\lg F_{H\beta}(mW.m^{-2})$ $-12.26 \pm .01$ SK89, ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	1.82	3
25μm	18.35	3
60μm	11.90	3
100μm	8.32	2

Central Star: AG82 130 —

Spectrum: WC 4-6 ATS91

Notes: FC incorrect in PK67
Distance (kpc) stat.: 7.79 (CaKa71); 2.2 (Ma84); 2.22 (CKS91)

Bibliography: *PK67*, AG82, AKSJ89, AST89, AcMa77, Fe68, HLSw77, He67, KAS91, Ka76, PAKS89, Sa75, VoCo90, W75, WeHe67, Wr66

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73..9060 Ringuelet A.E., Mendez R.H. *Publ. Astron. Soc. Pac. 85,96* Spectral observations of southern P.N. Part 1.

285.4–01.1

Pe 2-5, PK 285–1°1, ESO 127-22, VV' 99

			Disc.: Perek 1960	*Diameter* (″)	
				opt. 90.: ATS91	
1950:	10 26 53	-58 48.8	HLSW75		
2000:	10 28 43	-59 04.2	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-12

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	733
[OIII]	436.3	–	[*N*II]	658.4	226
	500.7	92	[*S*II]	671.7	99
*He*I	587.6	–		673.1	30

$\lg F_{H\beta}(mW.m^{-2})$ $-12.2 \pm .4$ ASTR91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: *PK67*, AcMa77, KrK68, MaC83, PAKS91, Sa76

285.4–05.3

IC 2553, PK 285–5°1, ESO 127-10, He 2-42, Sa 2-55, VV 55, VV' 95, Wray 16-67, IRAS 10077-6222

			Disc.: Fleming 1893	*Diameter* (″)		*Rvel*: +37.3 ± 6.3 STPP83
1950:	10 07 47.2	-62 22 01	IRAS	*opt.* 9. CaKa71		
	10 07 47.9	-62 21 55	Mi76			
2000:	10 09 21.7	-62 36 41	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24						*IR Class*: N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	22	$H\alpha$	656.3 *nm*	401	*J*	11.07	12μm	1.11	3
[OIII]	436.3	10	[*NII*]	658.4	53	*H*	11.49	25μm	11.18	3
	500.7	1317	[*SII*]	671.7	3	*K*	10.71	60μm	16.69	3
HeI	587.6	15		673.1	5	*L*		100μm	8.56	3
lg$F_{H\beta}$ −10.82 ± .02W69, KM81, 85..3062, SK89						*Photom.* Wh85		*Radio* 2*cm* 121 MiAl82		
IUE Spectra: *LW*(1) *SW*(3)								(*mJy*) 6*cm* 92 Ca82		

Central Star: AG82 125 — HD 88367; CSI -62 -10077
B 15.4 *V* 15.5 *Qual:* C SK89

Distance (kpc) stat.: 1.0-1.1 (CaKa71); 4.10 (MiAl75); 3.95 (Ca76); 3.0 (Ac78); 1.79 (Da82); 1.70 (AGNR84); 2.8 (Ma84); 2.62 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, Ak70, AlGl74, De71, Fe68, FeAl87, Gr71, HLSW75, He67, Iw73, IwKa65, Iy86, Ka70, Ka76, Ka86, LNP89, MaPo80, Mar81, MiWe79, PAKS91, PM87, PPFS87, Pe71, Pe91, PeFr73, PiKh79, Sa75, Sh85, TAGS89, TASG91, VoCo90, WeHe67, Wr66

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88..3171 Gutierrez-Moreno A., Moreno H. *Publ. Astron. Soc. Pac. 100, 1497-1504* Studies of southern planetary nebulae. III. Chemical abundances.

285.6–02.7

He 2-47, PK 285–2°1, ESO 127-16, My 59, SaSt 2-5, Wray 15-558, IRAS 10214-6017

			Disc.: Henize 1964	*Diameter* (″)		
1950:	10 21 24.4	-60 17 28	IRAS	*opt.* 5. PK67		
	10 21 24.0	-60 17 22	Mi76			
2000:	10 23 09.1	-60 32 35	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30						*IR Class*: N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	556	*J*	10.73	12μm	3.45	3
[OIII]	436.3	–	[*NII*]	658.4	458	*H*	10.72	25μm	46.49	3
	500.7	12	[*SII*]	671.7	4	*K*	10.04	60μm	31.22	3
HeI	587.6	7		673.1	8	*L*		100μm	16.58	2
lg$F_{H\beta}(mW.m^{-2})$ −11.12 ± .05 W69, ASTR91						*Photom.* Wh85		*Radio* 2*cm* 187 MiAl82		
								(*mJy*) 6*cm* 170 Mi79		

Central Star:
B 13.32 *V* 12.98 *Qual:* A TASG91

Distance (kpc) stat.: >5.15 (MiAl75); 2.0 (Ma84)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AiRo81, AiRo82, Al78, AlGl74, Alle73, Ca82, CoBa80, HLSW75, He67, KAS91, Ka76, MiWe79, PAKS89, PM87, PPFS87, Pe71, Sa76, SaSt72, StAc87, TAGS89, VoCo90, W66, W75, WeHe67, Wr66, ZuAl86

285.7+01.2

Pe 1-2, PK 285+1°2, ESO 168-12, HFE 15, *He 2-53*, Sa 2-65, VV' 102, , Wray 16-76, IRAS 10375-5650

				Disc.: Henize 1964	*Diameter* (″)	
1950:	10 37 35.4	-56 50 37	IRAS		*opt.* 5. CaKa71	
	10 37 34	-56 50.5	HLSw77			
2000:	10 39 32	-57 06.2	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21

*He*II	468.6 *nm*	17	$H\alpha$	656.3 *nm*	1215
[*O*III]	436.3	10	[*N*II]	658.4	57
	500.7	1743	[*S*II]	671.7	
*He*I	587.6	34		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.42	3
25μm	6.02	3
60μm	6.45	3
100μm	23.02	1

lg$F_{H\beta}(mW.m^{-2})$ $-12.79 \pm .10$ ASTR91

Distance (kpc) stat.: 5.20 (CaKa71); 2.1 (Ma84)

Bibliography: *PK67*, AcMa77, He67, PAKS91, Sa75, WeHe67, Wr66

72..9010 Johnson H.M. *Astrophys. J. 175,L105* Identification of the 100 miron source no 15.

285.7–14.9

IC 2448, PK 285–14°1, ARO 506, ESO 061-01, He 2-19, Sa 2-34, StWr 3-8, VV 49, VV'84, Wray 16-34, IRAS 09066-6944

				Disc.: Fleming 1898	*Diameter* (″)	*Rvel:* -24.0 ± 4.0 STPP83
1950:	09 06 37.7	-69 44 20	IRAS		*opt.* 9. CJA87	*Expansion Velocities* (*km/s*)
	09 06 37.3	-69 44 07	Mi76			[OIII] 11.5 89.50036
2000:	09 07 06.2	-69 56 17	.			[NII] 13.5 We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-24

*He*II	468.6 *nm*	46	$H\alpha$	656.3 *nm*	348
[*O*III]	436.3	16	[*N*II]	658.4	2.5
	500.7	1253	[*S*II]	671.7	
*He*I	587.6	8		673.1	

IR Class: N

J	11.65	
H	11.88	
K	11.20	
L		
Photom.	Wh85	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.57	3
25μm	3.97	3
60μm	5.48	3
100μm	2.80	3

lg$F_{H\beta}$ $-10.85 \pm .02$W69, TP77, KM81, SK89

IUE Spectra: *LW*(4) *SW*(6)

Radio (*mJy*) *2cm* 74 MiAl82; *6cm* 67 Ca82

Central Star: AG82 111 — HD 78991; CSI -69 -09066
B 13.97 *V* 14.22 *Qual:* B GaPo88, SK89 , TASG91 *Spectrum:* O(H) Me91

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: spect. 3.5 (MKHH88)
Distance (kpc) stat.: 3.5-4.2 (CaKa71); 4.17 (MiAl75); 4.01 (Ca76); 2.81 (Ac78); 2.54 (Da82); 1.90 (AGNR84); 2.9 (Ma84); 3.95 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Ac80, AcMa77, Al65, AlMi72, CaWy76, CePe83, CePe85, De71, FeAl87, FeBr90, GPY79, Go87, Gr71, Gr89, GrNe90, Gu88, HLSw77, He67, He71, Hi71, Iw73, IwKa65, Iy86, Ka70, Ka76, Ka79, Ka80, Ka86, Kal86, Kle78, KuMe89, LNP89, MMMK90, MaFa85, MaFa86, MaPe88, MaPo80, Mar81, Me89, MiWe79, PAKS91, PM87, PaPe88, Pe71, Pe83, Pe91, PeSe80, PiKh79, PrPo83, Sa75, SaMi78, Sh85, SlOr65, StWr72, TAGS89, WRPA86, WeHe67, Webs69, Wr66, ZuAl86

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80.50312 Torres-Peimbert S., Pena M., Daltabuit E. *The Universe at ultraviolet wavelengths. The first two years of IUE. Proceeding s of a symposium held at NASA Goddard Space Flight Center, Greenbelt, Maryland, May 7-9, 1980. Ed. R.D. Chapman . NASA CP-2171.641-647* The high-excitation planetary nebulae.

85..1601 Ortolani S., Sabbadin F. *Astron. Astrophys., Suppl. Ser. 62, 17-21* High resolution spectra of compact planetary nebulae.

87..1606 Louise R., Macron A., Pascoli G., Maurice E. *Astron. Astrophys., Suppl. Ser. 70, 201-227* Photometric and spectrophotometric observations of 10 southern planetary nebulae.
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89..1352 Bassgen M., Grewing M. *Astron. Astrophys. 218, 273-276* Spectroscopic search for halos of planetary nebulae.
89.50036 Bianchi L., Grewing M., Barnsted J., Diesch C. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 182* Kinematical properties of planetary nebulae.
89.50052 Bassgen M., Bassgen G., Grewing M., Cerrato S., Bianchi L. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 199* Spectroscopic investigations of halos of planetary nebulae.
89.50117 Pottasch S.R. *Proceedings of the 131st symposium of the IAU, held in Mexico city, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 481-492* The position of the central stars of PN on the HR diagram.
90.11752 Golovaty V.V., Pronik V.I. *Astrofizika,32,99* The energy distribution in Lyman continuum and the effective temperatures of planetary nebulae nuclei.

286.0–06.5

He 2-41, PK 286−6°1, ESO 092-11, Sa 2-54, Wray 16-66, IRAS 10059-6339

			Disc.: Henize 1964	*Diameter* (″)	
1950:	10 05 54.7	-63 39 48	IRAS	*opt. St.* CS90	
	10 05 54.0	-63 39 50	Mi76		
2000:	10 07 23.3	-63 54 32	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	478	*J*		12μm	0.26	1
[*OIII*]	436.3	7	[*NII*]	658.4	80	*H*		25μm	0.74	3
	500.7	982	[*SII*]	671.7	2.1	*K*	> 10.3	60μm	0.57	3
HeI	587.6	19		673.1	3	*L*		100μm	2.83	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.97 ± .03	Pe71, ASTR91			*Photom.*	AlGl74	*Radio* (*mJy*)	*2cm* 21	MiAl82
									6cm 41	Ca82

Distance (kpc) stat.: >4.46 (MiAl75); 3.6 (Ma84)

Bibliography: *PK67*, AcMa77, CaWy76, HLSW75, He67, MiWe79, PAKS91, Sa75, W66, W75, WeHe67, Wr66

286.2–06.9

Wray 17-40, IRAS 10055-6407

			Disc.: Wray 1966	*Diameter* (″)	
1950:	10 05 32.8	-64 07 06	IRAS	*opt.* 60. : CS90	
	10 05 27.8	-64 07 05	Wr66		
2000:	10 06 55.6	-64 21 46	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	395	12μm	0.42	1
[*OIII*]	436.3	–	[*NII*]	658.4	219	25μm	0.25	1
	500.7	308	[*SII*]	671.7	30	60μm	1.18	3
HeI	587.6	18		673.1	33	100μm	2.20	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.1 ± .3	ASTR91					

Central Star:
B 16.97 *V* 16.97 *Qual:* B TASG91

Bibliography: We77

86..1568 Brand J., Blitz L., Wouterloot J.G.A. *Astron. Astrophys., Suppl. Ser. 65, 537-550* The velocity field of the outer Galaxy in the southern hemisphere. I. Catalogueof nebulous objects.

286.3+02.8

He 2-55, PK 286+2°1, ESO 169-03, Sa 2-68, Wray 16-79, IRAS 10466-5547

			Disc.: Henize 1964	*Diameter* (″)	
1950:	10 46 40.4	-55 47 18	IRAS	*opt.* 18. CaKa71	
	10 46 40	-55 47.5	HLSw77		
2000:	10 48 43	-56 03.4	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-14

HeII	468.6 *nm*	85	$H\alpha$	656.3 *nm*	421
[OIII]	436.3	11	[NII]	658.4	–
	500.7	680	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.5 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.25	1
25μm	1.26	3
60μm	1.32	3
100μm	13.97	1

Central Star:
B 17.6 *V* 17.4 *Qual:* C TASG91 *Spectrum:* WC 3 ATS91

Distance (kpc) stat.: 2.97 (CaKa71); 2.6 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Fe68, He67, Iw73, KrK68, PAKS89, Sa75, WeHe67, Wr66

286.3–04.8

NGC 3211, PK 286–4°1, ARO 512, ESO 127-15, He 2-46, Sa 2-59, VV 56, VV' 97, Wray 16-70, IRAS 10162-6225

			Disc.: Herschel 1837	*Diameter* (″)	*Rvel:* -22.0 ± 2.0 MWF88
1950:	10 16 12.6	-62 25 10	IRAS	*opt.* 16. CaKa71	*Expansion Velocities* (*km/s*)
	10 16 12.5	-62 25 06	Mi76		[OIII] 26.5 MWF88
2000:	10 17 50.4	-62 40 09	.		[NII] 31.0 MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19 N

HeII	468.6 *nm*	80	$H\alpha$	656.3 *nm*	363
[OIII]	436.3	22	[NII]	658.4	24
	500.7	1674	[SII]	671.7	3
HeI	587.6	4		673.1	4

$\lg F_{H\beta}$ $-11.06 \pm .01$ W69, KM81, SK89
IUE Spectra: *LW*(5) *SW*(5)

IR Class: N

J	11.99
H	12.04
K	11.34
L	
Photom.	Wh85
Spectr.	PPOJ86

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.59	3
25μm	6.55	3
60μm	6.26	3
100μm	8.91	1

Radio (*mJy*) *2cm* 83 MiAl82; *6cm* 80 Ca82

Central Star: AG82 126Bis — HD 89516; CSI -62 -10162
B 18.00 *Qual:* B GaPo88

Notes: Multiple-shell PN; monochromatic images (CJA87); ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 2.5 (Po83); ext. 1.91 (86..1120)
Distance (kpc) stat.: 2.2-3.1 (CaKa71); 3.22 (MiAl75); 3.0 (Ca76); 2.3 (Ac78); 2.50 (Da82); 4.58 (PhPo84); 1.70 (AGNR84); 2.5 (Ma84)

Bibliography: *PK67*, AGR89, Ac80, AcMa77, Al65, AlMi72, BFM80, CePe83, CePe85, De71, FaM86, FaMa86, Fe82, FeAl87, Ga87, GaPo89, Go87, Gr71, Gu88, HLSW75, He67, He71, Hi71, Iw73, IwKa65, Iy86, Ka70, Ka76, Ka79, Ka80, Ka86, Kle78, LNP89, Ma81, Ma88, MaFa85, MaFa86, MaPe88, MaPo80, Mar81, Mi79, MiWe79, PAKS91, PM87, PPFS87, Pe71, Pe83, Pe91, PeSe80, Po87, PrPo83, STPP83, Sa75, SaMi78, Sab86, Sabb86, Sh85, SlOr65, TP77, ViFr85, WRPA86, We89, WeHe67, Wr66

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85..1554 Gathier R. *Astron. Astrophys., Suppl. Ser. 60, 399-423* VBLUW-photometry of stars in small fields around 13 planetary nebulae.
86..1120 Gathier R., Pottasch S.R., Pel J.W. *Astron. Astrophys. 157, 171-190* Distances to planetary nebulae.
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89..1352 Bassgen M., Grewing M. *Astron. Astrophys. 218, 273-276* Spectroscopic search for halos of planetary nebulae.
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89.50125 Torres-Peimbert S. *Proceedings of the 131st symposium of the IAU, held in Mexico city, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae 1-7* Recent UV and optical observations of planetary nebulae.
90..1039 Szczerba R. *Astron. Astrophys. 237,495* A distance-independent test of planetary nebulae nuclei evolution.
90..4010 Sanchez-Saavedra M.L., Battaner E., Florido E. *Astrophys. Space Sci.,171,239* Statistical study of optical galactic warps.

286.5+11.6

Lo 5, PK 286+11°1, ESO 215-35

Disc.: Longmore 1977 1950: 11 11 32 -47 49.2 Lo77 2000: 11 13 51 -48 05.6 .	*Diameter* (″) *opt.* 215. Lo77	
Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-14 *He*II 468.6 *nm* – | $H\alpha$ 656.3 *nm* 383 [OIII] 436.3 – | [NII] 658.4 293 500.7 739 | [SII] 671.7 *He*I 587.6 – | 673.1		
$\lg F_{H\beta}(mW.m^{-2})$ $-11.1 \pm .5$ ASTR91		
Central Star: AG82 134 —		

Bibliography: AG82, AST89, HLSW78, Ko78, PAKS89, We77

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87.22504 Harrington R.S., Harrington B.J. *Mercury 16, 77-79-87* Barnard's star: a status report on an intriguing neighbor.
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286.8–29.5

K 1-27, PK 286–29°1, ESO 033-33, IRAS 05587-7540

			Disc.: Kohoutek 1977	*Diameter* (″)	*Rvel:* +75.0 ± 75.0 STPP83
1950:	05 58 46.3	-75 40 31	IRAS	*opt.* 46. 77..1134	
	05 58 50	-75 40.5	77..1134		
2000:	05 57 02	-75 40.3	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	138	$H\alpha$	656.3 *nm*	338	12μm	0.26	1
[*OIII*]	436.3	–	[*NII*]	658.4	–	25μm	0.24	3
	500.7	213	[*SII*]	671.7		60μm	0.72	3
HeI	587.6	–		673.1		100μm	1.23	1

$\lg F_{H\beta}(mW.m^{-2})$ −12.7 ± .3 ASTR91
IUE Spectra: *LW*(0) *SW*(3)

Central Star: AG82 54 — FRL 246
V 16.7 Ka85 *Spectrum:* O(He) Me91

Bibliography: AG82, Ko78, LePo88, PAKS91

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84.31002 Kudritzki R.P., Mendez R.H., Simon K.P. *IAU Symposium 105, held in Geneva, Switzerland, september, 12-16, 1983. Eds A. Maeder, A. Renzini. Observational tests of the stellar evolution theory, 205-208* Non-LTE analysis of central stars.

85..1008 Mendez R.H., Kudritzki R.P., Simon K.P. *Astron. Astrophys. 142, 289-296* SIT vidicon and IDS spectra of central stars of planetary nebulae.

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288.4+00.3

Hf 38, PK 288+0°1, ESO 128-19, He 2-56, Sa 2-69, Wray 16-80, IRAS 10525-5853

			Disc.: Hoffleit 1953	*Diameter* (″)	*Rvel:* +64.0 ± 4.0 MWF88
1950:	10 52 33.4	-58 53 47	IRAS	*opt.* 25. CaKa71	*Expansion Velocities* (*km/s*)
	10 52 33	-58 53.8	HLSW75		[OIII] < 6.0 MWF88
2000:	10 54 35	-59 09.8	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19 N						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	58	$H\alpha$	656.3 *nm*	707	12μm	0.40	3
[*OIII*]	436.3	–	[*NII*]	658.4	1316	25μm	2.19	3
	500.7	1873	[*SII*]	671.7	125	60μm	6.00	1
HeI	587.6	18		673.1	116	100μm	58.12	1

$\lg F_{H\beta}(mW.m^{-2})$ −12.3 ± .3 ASTR91

Distance (kpc) stat.: 2.36 (CaKa71); 2.2 (Ma84)

Bibliography: *PK67*, AcMa77, He67, Iw73, KrK68, Ma74, MeHa75, PAKS91, Sa75, We89, WeHe67, Wr66

288.4–02.4

Pe 1-3, PK 288–2°1, ESO 128-09, He 2-54, Sa 2-67, VV'104, Wray 16-78

Disc.: Perek 1960 1950: 10 42 38.1 -61 23 54 Mi76 2000: 10 44 31.5 -61 39 41 .	*Diameter* (″) *opt.* 8. CaKa71	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	651
[*O*III]	436.3	–	[*N*II]	658.4	887
	500.7	1312	[*S*II]	671.7	33
*He*I	587.6	20		673.1	41

$\lg F_{H\beta}(mW.m^{-2})$ −12.29 ± .05 W69		*Radio* *2cm* < 5 MiAl82 (*mJy*) *6cm* 24 Mi79

Distance (kpc) stat.: 3.5 (CaKa71); 4.60 (Da82); 3.10 (AGNR84); 4.7 (Ma84)

Bibliography: *PK67*, AGR89, AcMa77, Fe68, HLSW75, He67, Iw73, Ka70, Ka76, Ma81, PAKS91, Sa75, WeHe67, Wr66

288.7+08.1

ESO 216-02, PK 288+8°1

Disc.: Holmberg et al 1977 1950: 11 15 52 -51 53.7 We77 2000: 11 18 10 -52 10.1 .	*Diameter* (″) *opt.* 36. We77	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-15 NE

*He*II	468.6 *nm*	83	*Hα*	656.3 *nm*	218
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	622	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.6 ± .5 ASTR91		

Central Star:
B 15.59 *V* 15.68 *Qual:* B TASG91

Bibliography: AST89, HLSw77, Ko78

288.8–05.2

He 2-51, PK 288–5°1, ESO 092-23, Sa 2-63, Wray 16-74, IRAS 10340-6403

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* +8.0 ± 3.0 MWF88
1950:	10 34 01.8	-64 03 46	IRAS	*opt.* 9.1	PK67	*Expansion Velocities* (*km/s*)
	10 34 02.3	-64 03 30	Mi76			[OIII] < 10.0 MWF88
2000:	10 35 45.9	-64 19 04	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20

HeII	468.6 *nm*	41	*Hα*	656.3 *nm*	529
[*OIII*]	436.3	–	[*NII*]	658.4	430
	500.7	1187	[*SII*]	671.7	53
HeI	587.6	19		673.1	54

$\lg F_{H\beta}(mW.m^{-2})$ −12.38 ± .01 SK89

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.46	1
25μm	0.25	1
60μm	1.55	3
100μm	9.45	1

Radio (*mJy*) *2cm* 95 MiAl82; *6cm* 57 Ca82

Central Star:
B 17.15 *V* 15.66 *Qual:* A SK89 , TASG91

Distance (kpc) stat.: 4.52 (CaKa71); 2.97 (Da82); 2.00 (AGNR84); 3.0 (Ma84); 4.34 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Gr71, HLSW75, He67, Iw73, Ka70, Ka76, Ma81, Mi79, PAKS91, PM87, PPFS87, Sa75, Sa84, SaHa82, Sh85, TAGS89, W69, We89, WeHe67, Wr66, Zi75

288.9–00.8

Hf 39, PK 288–0°1, ESO 128-18, He 3-519, Wray 15-682, IRAS 10520-6010

			Disc.: Hoffleit 1953	*Diameter* (″)		
1950:	10 52 00.1	-60 10 44	IRAS	*opt.* 72.	PK67	
	10 51 59	-60 10.7	Mi76			
2000:	10 53 59	-60 26.7	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-12

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	533
[*OIII*]	436.3	–	[*NII*]	658.4	9
	500.7	24	[*SII*]	671.7	
HeI	587.6	138		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −9.7 ± .3 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.24	3
25μm	15.30	3
60μm	36.61	3
100μm	75.39	1

Central Star: AG82 131 — HD 305696; CPD -59 2824; SS73 25
B 12.53 *V* 11.16 *Qual:* A TASG91 *Spectrum:* Be pec. SaSt73,

Notes: FC incorrect in PK67. Peculiar emission-line central star (ATS91)

Bibliography: *PK67*, AG82, AcMa77, Dr80, HLSW75, Ma74, Sa76, Wa70, Wr66

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289.6–01.6

He 2-57, PK 289−1°1, ESO 128-20, Sa 3-13

Disc.: Henize 1964 1950: 10 54 03 -61 12.0 HLSW75 2000: 10 56 03 -61 28.0 .	*Diameter* (″) *opt.* 20. CaKa71	
Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30 *He*II 468.6 *nm* – | *Hα* 656.3 *nm* 1509 [*O*III] 436.3 – | [*N*II] 658.4 194 500.7 489 | [*S*II] 671.7 *He*I 587.6 – | 673.1 lg$F_{H\beta}(mW.m^{-2})$ −12.9 ± .3 ASTR91		
Distance (kpc) stat.: 2.58 (CaKa71); 2.2 (Ma84)		

Bibliography: *PK67*, AST89, AlGl74, He67, Iw73, KrK68, MaC83, PAKS89, Sa76, StAc87, WeHe67

289.8+07.7

He 2-63, PK 289+7°1, ESO 170-01, Sa 2-73, StWr 4-15, Wray 16-88, Y-C 2-10

Disc.: Henize 1964 1950: 11 21 40.8 -52 34 52 Mi76 2000: 11 24 00.4 -52 51 21 .	*Diameter* (″) *opt.* 3. CaKa71	
Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18 *He*II 468.6 *nm* 45 | *Hα* 656.3 *nm* 370 [*O*III] 436.3 15 | [*N*II] 658.4 27 500.7 1132 | [*S*II] 671.7 *He*I 587.6 11 | 673.1 lg$F_{H\beta}(mW.m^{-2})$ −12.48 ± .12 Pe71, ASTR91		*Radio* *2cm* 16 MiAl82 (*mJy*) *6cm* 12 MiAl75
Distance (kpc) stat.: 16.72 (CaKa71); 11.76 (MiAl75); 11.48 (Ca76); 5.73 (Da82); 4.60 (AGNR84); 7.8 (Ma84) 9.07 (CKS91)		

Bibliography: *PK67*, AGR89, AcMa77, AlGl74, CaWy76, CeGi73, HLSw77, He67, Iw73, PAKS91, Sa75, StWr72, WeHe67, Wr66

290.1–00.4

Hf 48, PK 290−0°1, ESO 128-29, He 2-60, Sa 2-71, Wray 16-85

Disc.: Hoffleit 1953 1950: 11 01 51 -60 19.9 HLSW75 2000: 11 03 56 -60 36.1 .	*Diameter* (″) *opt.* 19. CaKa71	
Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23 *He*II 468.6 *nm* 64 | *Hα* 656.3 *nm* 1017 [*O*III] 436.3 – | [*N*II] 658.4 6083 500.7 1353 | [*S*II] 671.7 237 *He*I 587.6 – | 673.1 206 lg$F_{H\beta}(mW.m^{-2})$ −12.7 ± .3 ASTR91		
Distance (kpc) stat.: 2.50 (CaKa71); 2.0 (Ma84)		

Bibliography: *PK67*, AcMa77, Gr71, He67, Iw73, KrK68, Ma74, PAKS91, Pa90, Sa75, WPSD88, WeHe67, Wr66

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90..1525 Pascoli G. *Astron. Astrophys., Suppl. Ser. 83, 27-39* Morphology of bipolar planetary nebulae. I. Two-dimensional spectrophotometry.

290.5+07.9

Fg 1, PK 290+7°1, ARO 554, ESO 170-06, He 2-66, Sa 2-75, StWr 4-16, VV 60, VV' 108, Wray 16-91, Y-C 2-11, IRAS 11262-5239

			Disc.: Fleming 1907	*Diameter* (″)	*Rvel:* +29.0 ± 3.0 MWF88	
1950:	11 26 14.6	-52 39 31	IRAS	*opt.* 16. CaKa71	*Expansion Velocities* (*km/s*)	
	11 26 14.6	-52 39 34	Mi76		[OIII] 14.5	MWF88
2000:	11 28 35.9	-52 56 06	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18					
HeII	468.6 *nm*	8	*Hα* 656.3 *nm*	367	
[OIII]	436.3	–	[*NII*] 658.4	46	
	500.7	714	[*SII*] 671.7	6	
HeI	587.6	16	673.1	7	

$\lg F_{H\beta}(mW.m^{-2})$		
$-11.06 \pm .06$	Pe71	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.34	3
25μm	1.39	3
60μm	10.13	3
100μm	10.26	3
Radio (*mJy*) *2cm*	53	MiAl82
6cm	55	MiAl75

Distance (kpc) stat.: 1.6-2.4 (CaKa71); 2.28 (MiAl75); 3.10 (Ca76); 2.0 (Ac78); 2.16 (Da82); 1.50 (AGNR84); 2.4 (Ma84); 3.1 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlGl74, AlMi72, CeGi73, De71, Fe68, Gr71, HLSw77, He67, Hi71, Iw73, IwKa65, Ka70, Ka76, KrK68, LNP89, MaPo80, MeHa75, MiWe79, PAKS91, Pa90, PhMa88, STPP83, Sa75, SaMi78, StWr72, We89, WeHe67, Wr66

71..9086 Kazarian M.A. *Soob. Byurakan Obs. 43,13* Colorimetric investigation of the nuclei of P.N.
87..1606 Louise R., Macron A., Pascoli G., Maurice E. *Astron. Astrophys., Suppl. Ser. 70, 201-227* Photometric and spectrophotometric observations of 10 southern planetary nebulae.
90..1525 Pascoli G. *Astron. Astrophys., Suppl. Ser. 83, 27-39* Morphology of bipolar planetary nebulae. I. Two-dimensional spectrophotometry.

291.3-26.2

Vo 1, IRAS 07027-7934

			Disc.: Volk 1988	*Diameter* (″)	
1950:	07 02 45.3	-79 34 23	IRAS	*opt. St.* 88.30003	
	07 02 45.3	-79 34 23	90..2503		
2000:	06 59 27.4	-79 38 47	.		

$\lg F_{H\beta}(mW.m^{-2})$		
$-13.17 \pm .$	90..2503	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	22.69	3
25μm	81.96	3
60μm	41.97	3
100μm	13.57	3

Central Star:
B 16.7 *V* 15.8 90..2503 *Spectrum:* WC 10 ? 88.30003

Notes: Very low excitation PN (88.30003)

88.30003 Volk K. *Private communication* Four new planetary nebulae discovered by IRAS
90..2503 Menzies J.W., Wolstencroft R.D. *Mon. Not. R. Astron. Soc. 247,177* IRAS 07027-7934: a probable new (WC11) star

291.4+19.2

ESO 320-28, PK 291+19°1, LoTr 4

Disc.: Holmberg et al 1978 1950: 11 49 58 -42 00.9 FrWe84 2000: 11 52 29 -42 17.6 .	*Diameter* (″) *opt.* 32. 80..2605	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23 SW					
HeII	468.6 *nm*	107	$H\alpha$	656.3 *nm*	376
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	466	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$	$-12.8 \pm .4$ ASTR91				

Central Star: AG82 141 — *Spectrum:* O(He) Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

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291.6–04.8

IC 2621, PK 291−4°1, ARO 513, ESO 093-04, He 2-59, Sa 2-70, VV 58, VV' 105, Wray 16-81, IRAS 10583-6458

Disc.: Fleming 1907 1950: 10 58 23.8 -64 58 48 IRAS 10 58 23.5 -64 58 47 Mi76 2000: 11 00 19.6 -65 14 55 .	*Diameter* (″) *opt.* 5. CJA87	*Rvel:* $+13.6 \pm 6.6$ STPP83

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	36	$H\alpha$	656.3 *nm*	492	*J*	11.14	12μm	6.57	3
[*OIII*]	436.3	18	[*NII*]	658.4	272	*H*	11.18	25μm	32.02	3
	500.7	1604	[*SII*]	671.7	5	*K*	10.30	60μm	24.40	3
HeI	587.6	18		673.1	7	*L*		100μm	13.37	3
$\lg F_{H\beta}$	$-11.29 \pm .01$ KM81, 85..3062, SK89					*Photom.* Wh85		*Radio* *2cm* 175 MiAl82		
IUE Spectra: *LW*(2) *SW*(2)						*Spectr.* AiRo82		(*mJy*) *6cm* 195 Ca82		

Central Star: AG82 133 — HD 95541; CSI -64 -10584
B 16.4 *V* 15.4 *Qual:* D SK89

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 3.11 (CaKa71); 4.95 (MiAl75); 4.84 (Ca76); 1.1 (Ac78); 1.19 (Da82); 1.10 (AGNR84); 2.1 (Ma84); 1.87 (CKS91)

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291.7+03.7

He 2-64, PK 291+3°1, ESO 170-05, Wray 16-89

Disc.: Henize 1964				*Diameter* ('')	*Rvel:* +72.0 ± 20.0 STPP83
				opt. 8.4 CaKa71	
1950:	11 25 05	-57 01.4	HLSw77		
2000:	11 27 24	-57 17.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28

*He*II	468.6 *nm*	–	*H*α	656.3 *nm*	597
[OIII]	436.3	–	[*N*II]	658.4	370
	500.7	43	[*S*II]	671.7	40
*He*I	587.6	13:		673.1	45

$\lg F_{H\beta} (mW.m^{-2})$ $-12.6 \pm .2$ ASTR91

Central Star: AG82 137 —
Spectrum: Contin. 69..9047

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 5.74 (CaKa71); 4.78 (Ac78); 4.6 (Ma84)

Bibliography: *PK67*, AG82, AST89, AlGl74, He67, Iw73, Ka76, PAKS89, Sa76, StAc87, WeHe67, Wr66

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292.4+04.1

PB 8, PK 292+4°1, ESO 170-07, He 2-69, My 68, Sa 2-77, Wray 16-95, IRAS 11309-5649

Disc.: Peimbert et al 1960				*Diameter* ('')	
1950:	11 30 56.4	-56 49 38	IRAS	*opt.* 5. CaKa71	*Expansion Velocities* (*km/s*)
	11 30 57.5	-56 49 43	Mi76		[OIII] 8.0 MKHH88
2000:	11 33 18.8	-57 06 18	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22

*He*II	468.6 *nm*	3	*H*α	656.3 *nm*	376
[OIII]	436.3	–	[*N*II]	658.4	68
	500.7	400	[*S*II]	671.7	1.6
*He*I	587.6	19		673.1	3

$\lg F_{H\beta} (mW.m^{-2})$ $-11.41 \pm .01$ SK89
IUE Spectra: *LW*(0) *SW*(2)

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.31	3
25μm	5.57	3
60μm	9.31	3
100μm	4.50	3

Radio	*2cm*	11	MiAl82
(*mJy*)	*6cm*	26	MiAl75

Central Star: AG82 138 —
U 12.79 *B* 13.94 *V* 13.60 *Qual:* A 72.30001, SK89 *Spectrum:* Of/WR(H) Me91

Distance (kpc) stat.: 6.66 (CaKa71); 7.36 (MiAl75); 7.19 (Ca76); 3.99 (Da82); 3.10 (AGNR84); 5.1 (Ma84); 6.31 (CKS91)

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292.6+01.2

NGC 3699, PK 292+1°1, ESO 129-21, He 2-65, Hf 62, Sa 2-74, Wray 16-90, IRAS 11256-5940

			Disc.: Hoffleit 1953	*Diameter* (″)		*Rvel:* −22.0 ± 4.0	MWF88
1950:	11 25 40.4	-59 40 57	IRAS	*opt.* 45.	CaKa71	*Expansion Velocities* (*km/s*)	
	11 25 42.0	-59 41 00	Mi76			[OIII] 26.6	MWF88
2000:	11 27 59.2	-59 57 32	.			[NII] 28.0	MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	49	*Hα*	656.3 *nm*	452	12μm	0.31	2
[*O*III]	436.3	–	[*N*II]	658.4	869	25μm	4.21	3
	500.7	1790	[*S*II]	671.7	19	60μm	6.88	3
*He*I	587.6	12		673.1	18	100μm	10.08	3
lg$F_{H\beta}$($mW.m^{-2}$)	−11.21 ± .01	Pe71, SK89				*Radio* *2cm*	62	MiAl82
						(*mJy*) *6cm*	67	Ca82

Distance (kpc) stat.: 1.31 (CaKa71); 1.65 (MiAl75); 1.62 (Ca76); 1.30 (Ac78); 1.27 (Da82); 1.60 (AGNR84); 2.0 (Ma84); 1.60 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlGl74, HLSw77, He67, Iw73, Ka76, KaJa89, KrK68, LNP89, Ma74, MaPo80, MeHa75, MiWe79, PAKS91, Ph84, PhMa88, RRA82, SGBO84, STPP83, SWPD87, Sa75, Sa84, SaHa82, SaMi78, WPSD88, We89, WeHe67, Wr66

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292.7+01.9

Wray 16-93, IRAS 11285-5900

			Disc.: Wray 1966	*Diameter* (″)			
1950:	11 28 30.2	-59 00 40	IRAS	*opt.* 12.:	ATS91		
	11 28 29.7	-59 00 30	Wr66				
2000:	11 30 48.7	-59 17 04	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-20						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	132	*Hα*	656.3 *nm*	1047	12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4	–	25μm	0.72	3
	500.7	561	[*S*II]	671.7		60μm	0.85	3
*He*I	587.6	–		673.1		100μm	16.47	1
lg$F_{H\beta}$($mW.m^{-2}$)	−12.8 ± .4	ASTR91						

Notes: Object not identified on the FC

Bibliography: MaC83, Sa76, We77

292.8+01.1

He 2-67, PK 292+1°2, ESO 129-22, Sa 2-76, Wray 16-92, IRAS 11265-5950

				Disc.: Henize 1964	*Diameter* (″)	
1950:	11 26 31.9	-59 50 20	IRAS		*opt.* 5. PK67	
	11 26 30.5	-59 50 00	Mi76			
2000:	11 28 48.0	-60 06 33	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19

HeII	468.6 *nm*	16	*Hα*	656.3 *nm*	640
[*OIII*]	436.3	6	[*NII*]	658.4	473
	500.7	1414	[*SII*]	671.7	19
HeI	587.6	25		673.1	35

$\lg F_{H\beta}(mW.m^{-2})$ $-11.98 \pm .05$ Pe71, ASTR91

IR Class: N

J	12.87
H	13.36
K	12.26
L	

Photom. Wh85

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.71	3
25μm	2.64	3
60μm	4.68	3
100μm	21.53	1

Radio (*mJy*)			
	2cm	43	MiAl82
	6cm	41	MiAl75

Distance (kpc) stat.: >6.77 (MiAl75); 2.50 (AGNR84); 4.3 (Ma84)

Bibliography: *PK67*, AGR89, AcMa77, AlGl74, Fe68, HLSw77, He67, Iy86, Ka76, MGT91, MGTW87, MiWe79, PAKS91, PM87, PPFS87, Sa75, WeHe67, Wr66

293.6+10.9

BlDz 1, PK 293+10°1, ESO 217-11, IRAS 11506-5034

				Disc.: Blaauw et al 1975	*Diameter* (″)	*Rvel:* -10.0 ± 8.0 STPP83
1950:	11 50 37.8	-50 34 24	IRAS		*opt.* 82. 75...826	
	11 50.6	-50 34	75...826			
2000:	11 53.1	-50 51	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-14 S

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	338
[*OIII*]	436.3	–	[*NII*]	658.4	209
	500.7	1391	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-11.6 \pm .5$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.25	2
25μm	0.25	1
60μm	0.62	3
100μm	1.58	1

Central Star: AG82 142 —
B 18.0 75...826

Distance (kpc) stat.: 1.10 (MiAl75); 1.00 (Ac78)

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293.6+01.2

He 2-70, PK 293+1°1, ESO 129-26, Sa 2-78, Wray 16-96, IRAS 11328-6000

			Disc.: Henize 1964	*Diameter* (″)	
1950:	11 32 50.5	-60 00 24	IRAS	*opt.* 35. CaKa71	
	11 32 52	-60 00.3	HLSw77		
2000:	11 35 13	-60 16.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19					
HeII	468.6 *nm*	71	$H\alpha$ 656.3 *nm*		705
[*OIII*]	436.3	–	[*NII*] 658.4		4043
	500.7	1303	[*SII*] 671.7		216
HeI	587.6	37	673.1		214
$\lg F_{H\beta}(mW.m^{-2})$		$-12.2 \pm .3$ ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.45	3
60μm	1.70	1
100μm	35.00	1

Distance (kpc) stat.: 1.88 (CaKa71); 1.9 (Ma84)

Bibliography: *PK67*, AcMa77, Fe68, Gr72, He67, Iw73, KrK68, PAKS91, Sa75, WeHe67, Wr66

294.1+43.6

NGC 4361, PK 294+43°1, ARO 26, ESO 573-19, VV 62, VV' 110, IRAS 12219-1830

			Disc.: Herschel 1868	*Diameter* (″)	*Rvel*: +9.0 ± 2.0 MWF88
1950:	12 21 56.6	-18 30 41	IRAS	*opt.* 63. CJA87	*Expansion Velocities* (*km/s*)
	12 21 55.0	-18 30 32	Mi73		[OIII] 32.0 We89
2000:	12 24 31.0	-18 47 09	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27 N					
HeII	468.6 *nm*	112	$H\alpha$ 656.3 *nm*		323
[*OIII*]	436.3	–	[*NII*] 658.4		–
	500.7	275	[*SII*] 671.7		
HeI	587.6	–	673.1		
$\lg F_{H\beta}(mW.m^{-2})$		$-10.53 \pm .03$ O62 , Kale76			
IUE Spectra:		*LW*(3) *SW*(6)			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.45	2
25μm	9.21	2
60μm	9.12	3
100μm	6.84	3
Radio 2*cm*	206	MiAl82
(*mJy*) 6*cm*	207	MiAl75

Central Star: AG82 145 — HD 107969; BD -17 3614; GCRV 7449
U 11.53 *B* 12.85 *V* 13.21 *Qual:* A 72.30001, Dr80, SK89 *Spectrum:* O(H) Me91

Notes: PN could be a galactic halo object (91.30050). Spectroscopic binary nucleus? (Me80). Multiple-shell PN; monochromatic images (CJA87); ESO-NTT images by Schwartz H.E. and Melnick J. ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: stand. 1.4 (Sab86); spect. 1.2 (MKHH88)
Distance (kpc) stat.: 1.0 (CaKa71); 0.72 (MiAl75); 0.92 (Ca76); 0.78 (Ac78); 0.91 (Da82); 1.92 (PhPo84); 0.66 (AGNR84); 0.9 (Ma84); 0.88 (CKS91)

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294.1+14.4

Lo 6, PK 294+14°1

Disc.: Longmore 1977

1950: 11 58 10 -47 16.5 Lo77
2000: 12 00 44 -47 33.2 .

Diameter (″)
opt. 62. Lo77

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	295
[OIII]	436.3	–	[*N*II]	658.4	341
	500.7	882	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .4$ ASTR91

Central Star: AG82 143 —

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, Ko78, We77

294.6+04.7

NGC 3918, PK 294+4°1, ARO 514, ESO 170-13, He 2-74, Sa 2-81, VV 61, VV' 109, Wray 16-101, IRAS 11478-5654

Disc.: Herschel 1834

1950: 11 47 48.4 -56 54 12 IRAS
11 47 50.1 -56 54 10 Mi76
2000: 11 50 18.9 -57 10 51 .

Diameter (″)
opt. 19. CaKa71

Rvel: -17.0 ± 3.0 MWF88

Expansion Velocities (km/s)

[OIII]	24.2	MWF88
[NII]	26.5	We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21 N

*He*II	468.6 *nm*	16	$H\alpha$	656.3 *nm*	374
[OIII]	436.3	15	[*N*II]	658.4	194
	500.7	1667	[*S*II]	671.7	6
*He*I	587.6	15		673.1	10

$\lg F_{H\beta}$ $-10.04 \pm .02$W69, TP77, KM81, SK89
IUE Spectra: *LW*(17) *SW*(21)

IR Class: N

J	9.13	*Photom.*	PPFS87
H	9.62	*Spectr.*	PPOJ86
K	8.85		
L	7.50		

IRAS Fluxes (Jy) *Qual.*

12μm	6.76	3
25μm	60.94	3
60μm	53.98	3
100μm	20.35	3

Radio (*mJy*) *2cm* 765 MiAl82
6cm 859 Ca82

Central Star: AG82 140 — HD 102854; CPD -56 4818; GCRV 7159
B 15.69 *Qual:* B GaPo88 *Spectrum:* IUE obsns AG82

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 1.0 (Ac78); ext. 1.3 (Po83); ext. 2.24 (86..1120); ext. 1.0 (Sab86)
Distance (kpc) stat.: 1.4-1.5 (CaKa71); 1.77 (MiAl75); 1.7 (Ca76); 0.78 (Ac78); 0.58 (Da82); 3.95 (PhPo84); 0.54 (AGNR84); 0.9 (Ma84); 1.01 (CKS91)

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294.9–00.6

He 2-72, PK 294–0°1, ESO 129-29, Hf 69, Sa 2-79

			Disc.: Henize 1964	*Diameter* (″)	
				opt. 68. PK67	
1950:	11 39 15	-62 12.3	HLSw77		
2000:	11 41 38	-62 28.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	674
[OIII]	436.3	–	[NII]	658.4	1045
	500.7	920	[SII]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.3 \pm .4$ ASTR91

Bibliography: *PK67*, AcMa77, He67, KrK68, Ma74, MaC83, PAKS91, Sa75

294.9–04.3

He 2-68, PK 294–4°1, ESO 094-03, SaSt 2-6, Wray 16-94, IRAS 11295-6541

			Disc.: Henize 1964	*Diameter* (″)	
1950:	11 29 30.9	-65 41 39	IRAS	*opt. St.* CS90	
	11 29 31.8	-65 41 40	Mi76		
2000:	11 31 46.5	-65 58 14	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	891	*J*	12.21	12μm	0.94	3
[*OIII*]	436.3	–	[*NII*]	658.4	515	*H*	12.19	25μm	5.99	3
	500.7	147	[*SII*]	671.7	4	*K*	11.31	60μm	3.44	3
HeI	587.6	20		673.1	10	*L*		100μm	6.33	1
$\lg F_{H\beta}(mW.m^{-2})$		$-11.84 \pm .07$	W69, ASTR91			*Photom.* Wh85		*Radio* *2cm*	37	MiAl82
								(*mJy*) *6cm*	34	Ca82

Notes: The PN is located south of the bright component of a close pair shown on the FC.
Distance (kpc) stat.: 5.1 (Ma84)

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295.3–09.3

He 2-62, PK 295–9°1, Sa 2-72, StWr 1-4, Wray 16-86, IRAS 11157-7033

			Disc.: Henize 1964	*Diameter* (″)	
1950:	11 15 45.2	-70 33 05	IRAS	*opt. St.* CS90	
	11 15 45	-70 33.1	HLSw77		
2000:	11 17 43	-70 49.5	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	396	*J*		12μm	0.25	1
[*OIII*]	436.3	10	[*NII*]	658.4	77	*H*		25μm	1.21	3
	500.7	964	[*SII*]	671.7	1.5	*K*	> 10.1	60μm	0.86	3
HeI	587.6	17		673.1	4	*L*		100μm	1.20	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.06 \pm .10$	ASTR91			*Photom.* AlGl74				

Bibliography: *PK67*, AcMa77, HLSW78, He67, PAKS91, Sa75, StWr72, W66, W75, WeHe67, Wr66

296.3–03.0

He 2-73, PK 296–3°1, ESO 094-07, Sa 2-80, Wray 16-100, IRAS 11462-6451

			Disc.: Henize 1964	*Diameter* (″)	
1950:	11 46 12.2	-64 51 53	IRAS	*opt.* 4. CaKa71	
	11 46 12.8	-64 51 53	Mi76		
2000:	11 48 38.7	-65 08 34	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18

HeII	468.6 *nm*	18	$H\alpha$ 656.3 *nm*		809
[OIII]	436.3	10	[*NII*] 658.4		344
	500.7	1842	[*SII*] 671.7		13
HeI	587.6	29	673.1		24

$\lg F_{H\beta}$ $-11.95 \pm .02$ W69, SK89, ASTR91

IR Class: N

J	12.02
H	12.48
K	11.60
L	

Photom. PM87

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.68	3	
25μm	8.19	3	
60μm	7.11	3	
100μm	12.23	1	
Radio (*mJy*)	*2cm* 62	MiAl82	
	6cm 76	Ca82	

Central Star: AG82 139 — *B* 17.2 *V* 16.1 *Qual:* C SK89

Distance (kpc) stat.: 4.7 (CaKa71); 2.01 (Da82); 1.80 (AGNR84); 3.4 (Ma84); 3.17 (CKS91)

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296.4–06.9

He 2-71, PK 296–6°1, ESO 063-18, SaSt 2-7, Wray 16-98, IRAS 11369-6835

			Disc.: Henize 1964	*Diameter* (″)	
1950:	11 36 54.1	-68 35 31	IRAS	*opt.* 5. PK67	
	11 36 54.1	-68 35 30	Mi76		
2000:	11 39 11.4	-68 52 08	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28

HeII	468.6 *nm*	–	$H\alpha$ 656.3 *nm*		551
[OIII]	436.3	–	[*NII*] 658.4		198
	500.7	91	[*SII*] 671.7		2.2
HeI	587.6	11	673.1		4

$\lg F_{H\beta}(mW.m^{-2})$ $-11.65 \pm .05$ W69, ASTR91

IR Class: .

J	
H	
K	> 9.6
L	

Photom. AlGl74

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.70	3	
25μm	6.16	3	
60μm	1.74	3	
100μm	2.10	1	
Radio (*mJy*)	*2cm* 31	MiAl82	
	6cm $<$ 12	Mi79	

Distance (kpc) stat.: 7.8 (Ma84)

Bibliography: *PK67*, AKSJ89, AST89, Al78, HLSW78, He67, KAS91, Ka70, Ka76, PAKS89, Pe71, Sa76, SaSt72, StAc87, W66, W75, WeHe67, ZTPS89

296.6–20.0

NGC 3195, PK 296–20°1, ARO 51, ESO 019-02, He 2-44, My 56, Sa 2-57, VV' 96, IRAS 10099-8036

			Disc.: Herschel 1835	*Diameter* (″)		*Rvel:* −7.0 ± 3.0	MWF88
1950:	10 09 57.4	-80 36 39	IRAS	*opt.* 42.	CJA87	*Expansion Velocities* (*km/s*)	
	10 09 58	-80 36.7	HLSw77		CaKa71	[OIII] 25.5	MWF88
2000:	10 09 22	-80 51.5	.			[NII] 30.0	MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22 N						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	21	*Hα*	656.3 *nm*	377	12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4	358	25μm	0.92	3
	500.7	755	[*S*II]	671.7	42	60μm	6.02	3
*He*I	587.6	21		673.1	39	100μm	6.44	3
lg$F_{H\beta}$	−11.06 ± .02	64.50001, W69, SK89				*Radio* 2*cm*	29	MiAl82
IUE Spectra:	*LW*(1)	*SW*(1)				(*mJy*) 6*cm*	35	MiAl75

Central Star:
B 16.1 *V* > 15.3 *Qual:* D SK89

Distance (kpc) stat.: 1.5-1.8 (CaKa71); 1.97 (MiAl75); 1.9 (Ca76); 1.99 (Da82); 1.70 (AGNR84); 2.4 (Ma84) 1.96 (CKS91)

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70..9049 Arkhipova V.P. *L'astronomie 84,141* Planetary nebulae.
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297.4+03.7

He 2-78, PK 297+3°1, ESO 130-07, Sa 3-17, Wray 16-107, IRAS 12065-5825

			Disc.: Henize 1964	*Diameter* (″)			
1950:	12 06 33.0	-58 25 56	IRAS	*opt.* 3.	CaKa71		
	12 06 33	-58 25.9	HLSW78				
2000:	12 09 11	-58 42.6	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	911	12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4	548	25μm	1.46	3
	500.7	36	[*S*II]	671.7	13	60μm	1.27	3
*He*I	587.6	16		673.1	18	100μm	11.83	1
lg$F_{H\beta}(mW.m^{-2})$	−12.60 ± .10	ASTR91						

Distance (kpc) stat.: 8.85 (CaKa71); 3.8 (Ma84)

Bibliography: *PK67*, AST89, He67, Ka76, PAKS89, Sa76, StAc87, WeHe67, Wr66

298.0+34.8

CTIO 1230-275, PK 298+34°1

			Disc.: Smith et al 1976	*Diameter* (″)	
				opt. 7. 76...525	
1950:	12 30.6	-27 32	76...525		
2000:	12 33.2	-27 49	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15

*He*II	468.6 *nm*	34	$H\alpha$	656.3 *nm*	333
[*O*III]	436.3	112	[*N*II]	658.4	–
	500.7	354	[*S*II]	671.7	
*He*I	587.6	19		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.02 \pm .10$ ASTR91

Central Star:
B 17.2 *V* 16.8 *Qual:* C TASG91

Distance (kpc) stat.:)

Bibliography: AST89, PAKS89, PAKS91, PPT88

76...525 Smith M.G., Aguirre C., Zemelman M. *Astrophys. J., Suppl. Ser. 32,217-231* Emission-line galaxies and quasars. II. The classification systems and List N.1, declination <-27.5, b>+20. [Tol]

298.1–00.7

He 2-77, PK 298–0°1, ARO 555, ESO 095-01, Sa 3-16, Wray 16-106, IRAS 12063-6259

			Disc.: Henize 1964	*Diameter* (″)	
1950:	12 06 23.0	-62 59 14	IRAS	*opt.* 22. IsWe87	
	12 06 23	-62 50.4	PK67		
2000:	12 09 01	-63 07.1	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	4944
[*O*III]	436.3	–	[*N*II]	658.4	586
	500.7	579	[*S*II]	671.7	129
*He*I	587.6	209		673.1	147

$\lg F_{H\beta}(mW.m^{-2})$ $-13.28 \pm .18$ SK89

IR Class: N+D

J	9.27	*IRAS Fluxes* (*Jy*)		*Qual.*
H	8.68	12μm	50.11	3
K	7.51	25μm	407.40	3
L		60μm	1824.00	3
		100μm	2233.00	3

Photom. Wh85
Spectr. 87.50017

Radio (*mJy*) 2*cm* 2341 MiAl82; 6*cm* 2301 Ca82

Notes: Possibly a H II region
Distance (kpc) stat.: 0.33 (AGNR84); 0.6 ((Ma84); 1.33 (CKS91)

Bibliography: *PK67*, ACPS87, AGR89, AST89, AcMa77, AlGl74, CoBa80, Do73, HLSw77, He67, Hi71, Mi76, Mi79, OlRa86, PAKS89, PM87, PPFS87, Sa76, StAc87, We86, WeHe67, Wr66

87..1091 Antonopoulou E., Pottasch S.R. *Astron. Astrophys. 173,108-114* IRAS measurements of HII regions.
87.50017 De Muizon M., Preite Martinez A., Heydari-Malayeri M. *Proceedings of the Frascati worksop, Vulcano Island, september 8-12, 1986. Ed. by A. Preite Martinez. Planetary and Proto-Planetary Neubulae, from IRAS to ISO, 185-196* Infrared and optical spectroscopy of the suspected planetary nebula He 2-77.
89...390 Cohen M., Tielens A.G.G.M., Bregman J., Witteborn F.C., Rank D.M., Allamandola L.J., Wooden D.H., De Muizon M. *Astrophys. J. 341, 246-269* The infrared emission bands. III. Southern IRAS sources.
90.....5 Simpson J.P., Rubin R.H. *Astrophys. J.,354,165* IRAS low-resolution spectral observations of H II regions.
90..1050 Jourdain De Muizon M., D'Hendecourt L.B., Geballe T.R. *Astron. Astrophys. 227, 526-541* Polycyclic aromatic hydrocarbons in the near-infrared spectra of 24 IRAS sources.
90.12252 Blanco A., Borghesi A., Orofino V., Bussoletti E., Fonti E., Fonti S., ColangeliL. *Mem. Soc. Astron. Ital.,61,41* The unidentified infrared bands and space observations with ISO.

298.2–01.7

He 2-76, PK 298–1°2, ESO 094-14, Sa 3-15, Wray 16-105, IRAS 12057-6355

			Disc.: Henize 1964	*Diameter* (″)	
1950:	12 05 47.5	-63 55 26	IRAS	*opt.* 17.8 CaKa71	
	12 05 48	-63 55.5	HLSw77		
2000:	12 08 26	-64 12.2	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	74:	*Hα*	656.3 *nm*	1448	12μm	0.30	1
[*O*III]	436.3	–	[*N*II]	658.4	3292	25μm	1.11	3
	500.7	2119	[*S*II]	671.7	240	60μm	2.89	3
*He*I	587.6	69		673.1	264	100μm	65.71	1
lg$F_{H\beta}(mW.m^{-2})$		−12.8 ± .3 ASTR91						

Distance (kpc) stat.: 2.29 (CaKa71); 1.6 (Ma84)

Bibliography: *PK67*, AST89, AlGl74, He67, Iw73, KrK68, PAKS89, PhMa88, Sa76, StAc87, WeHe67, Wr66

298.3–04.8

NGC 4071, PK 298–4°1, ESO 094-12, He 2-75, Sa 2-82, Wray 16-104, IRAS 12016-6701

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* +11.0 ± 3.0 MWF88
1950:	12 01 38.4	-67 01 50	IRAS	*opt.* 63. CaKa71	*Expansion Velocities* (*km/s*)
	12 01 39.5	-67 01 53	Mi76		[OIII] 14.1 MWF88
2000:	12 04 15.3	-67 18 35	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	63:	*Hα*	656.3 *nm*	294	12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4	259	25μm	0.25	1
	500.7	786	[*S*II]	671.7	30:	60μm	2.20	3
*He*I	587.6	–		673.1	24:	100μm	5.48	2
lg$F_{H\beta}(mW.m^{-2})$		−11.66 ± .01 W69, SK89				*Radio* 2*cm*	23	MiAl82
						(*mJy*) 6*cm*	26	MiAl75

Central Star:
B 18.2 *V* 19.2 *Qual:* C SK89

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 1.4 (Ac78); ext. 0.8 (Sab86)
Distance (kpc) stat.: 1.03,1.4 (CaKa71); 1.61 (MiAl75); 1.58 (Ca76); 1.34 (Ac78); 1.45 (Da82); 1.50 (AGNR84); 2.4 (Ma84); 1.58 (CKS91)

Bibliography: *PK67*, AGR89, AST89, Ac75, Ac76, AcMa77, Ca82, Do73, Gr71, Gr72, HLSw77, He67, Iw73, KSK90, Ka70, Ka76, KrK68, MaPo80, MeHa75, PAKS89, Pa90, Ph84, RRA82, SGBO84, STPP83, Sa75, Sa84, SaHa82, Sh85, WPSD88, We89, WeHe67, Wr66

74..9035 Bohuski T.J., Smith M.G. *Astrophys. J. 193,197-203* Old P.N. and the relation between size and expansion velocity.
87..1606 Louise R., Macron A., Pascoli G., Maurice E. *Astron. Astrophys., Suppl. Ser. 70, 201-227* Photometric and spectrophotometric observations of 10 southern planetary nebulae.
89.50003 Acker A. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 39-48* Catalogues of planetary nebulae.
90..1525 Pascoli G. *Astron. Astrophys., Suppl. Ser. 83, 27-39* Morphology of bipolar planetary nebulae. I. Two-dimensional spectrophotometry.

299.0+18.4

K 1-23, PK 299+18°1, ESO 268-12, V-V 3-2

	Disc.: Kohoutek 1971	*Diameter* (″)	
		opt. 42. Ko71	
1950:	12 28 11	-43 57.8	Ko71
2000:	12 30 53	-44 14.4	.

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-16 N

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	297
[*O*III]	436.3	–	[*N*II]	658.4	135
	500.7	1259	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-11.7 \pm .3$ ASTR91

Central Star: AG82 146 —
V 18.7 Ko71

Bibliography: AG82, AST89, AcMa77, HLSw77, Ko78, PAKS89, We77

72..9054 Vorontsov-Velyaminov B.A., Kostjakova E.B., Dokuchaeva O.D., Arhipova V.P. *Astron. Tsirk. 716,7-8* Six new Planetary Nebulae.

299.4–04.1

HaTr 1, PK 299–4°1

	Disc.: Hartl et al 1983	*Diameter* (″)	
		opt. 72. 85..1131	
1950:	12 13 49.3	-66 28 58	83.28035
2000:	12 16 33.3	-66 45 38	.

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-30

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	708
[*O*III]	436.3	–	[*N*II]	658.4	300
	500.7	231	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.0 \pm .4$ ASTR91

Bibliography: Ko89

83.28035 Hartl H., Tritton S.B. *Mitteil. Astron. Gesellschaft 60, 328-330* Neuentdeckte sudliche Planetarische Nebel.

85..1131 Hartl H., Tritton S.B. *Astron. Astrophys. 145, 41-44,1985* New planetary nebulae of low surface brightness detected on UK-Schmidt plates.

299.5+02.4

He 2-82, PK 299+2°1, ESO 131-01, Sa 3-19, Wray 16-112

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −10.0 ± 12.0 MWF88
				opt. 24. CaKa71	*Expansion Velocities* (*km/s*)
1950:	12 21 08	-59 56.6	HLSW75		[OIII] 20.0 MWF88
2000:	12 23 53	-60 13.2	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	610
[*O*III]	436.3	–	[*N*II]	658.4	486
	500.7	807	[*S*II]	671.7	83
*He*I	587.6	–		673.1	82

$\lg F_{H\beta}(mW.m^{-2})$ −12.6 ± .3 ASTR91

Distance (kpc) stat.: 2.25 (CaKa71); 2.0 (Ma84)

Bibliography: *PK67*, AST89, Gr71, Gr72, He67, Iw73, KrK68, MGT91, PAKS89, Sa76, StAc87, We89, WeHe67, Wr66

299.8–01.3

He 2-81, PK 299−1°1, ESO 095-08, Sa 3-18, Wray 16-111, IRAS 12202-6344

			Disc.: Henize 1964	*Diameter* (″)	
				opt. 6.4 CaKa71	
1950:	12 20 12.2	-63 44 48	IRAS		
	12 20 16	-63 45.5	HLSw77		
2000:	12 23 03	-64 02.1	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1638
[*O*III]	436.3	–	[*N*II]	658.4	3361
	500.7	1826	[*S*II]	671.7	
*He*I	587.6	60		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −13.6 ± .2 ASTR91

IR Class: .

J		
H		
K	8.5	
L		

Photom. AlGl74

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.50	3
25μm	0.67	3
60μm	3.08	3
100μm	98.72	1

Distance (kpc) stat.: 3.43 (CaKa71); 0.9 (Ma84)

Bibliography: *PK67*, AST89, He67, PAKS89, Sa76, StAc87, WeHe67, Wr66

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300.2+00.6

He 2-83, PK 300+0°1, ESO 131-08, Sa 3-21, Wray 16-114, IRAS 12259-6148

				Disc.: Henize 1964	*Diameter* (″)	
1950:	12 25 55.3	-61 48 59	IRAS		*opt.* 5.6 CaKa71	
	12 25 57	-61 49.0	HLSW75			
2000:	12 28 46	-62 05.6	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	3231
[*O*III]	436.3	–	[*N*II]	658.4	3671
	500.7	57:	[*S*II]	671.7	87
*He*I	587.6	61		673.1	144

$\lg F_{H\beta}(mW.m^{-2})$ $-13.5 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.00	3
25μm	15.90	3
60μm	14.02	3
100μm	67.56	1

Distance (kpc) stat.: 3.11 (CaKa71); 0.7 (Ma84)

Bibliography: *PK67*, AST89, He67, MGT91, MGTW87, PAKS89, Sa76, StAc87, WeHe67, Wr66

300.4–00.9

He 2-84, PK 300–0°1, ESO 095-09, Sa 2-84, Wray 16-115

				Disc.: Henize 1964	*Diameter* (″)	*Rvel:* -44.0 ± 20.0 STPP83
1950:	12 25 57	-63 28.0	HLSw77		*opt.* 28. CaKa71	
2000:	12 28 47	-63 44.6	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-18

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1887
[*O*III]	436.3	–	[*N*II]	658.4	3001
	500.7	2481	[*S*II]	671.7	225
*He*I	587.6	51		673.1	331

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .4$ ASTR91

Distance (kpc) stat.: 1.85 (CaKa71); 1.54 (Ac78); 1.6 (Ma84)

Bibliography: *PK67*, AcMa77, AlGl74, He67, Iw73, Ka76, KrK68, PAKS91, Sa75, WPSD88, WeHe67, Wr66

69..9023 Webster L.B. *Obs. 89,19* Observations of southern P.N.
69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.
89.23048 Eckert W., Hofstadt D., Melnick J. *The Messenger 57, 66-68* EFOSC 2.

300.5–01.1

He 2-85, PK 300−1°1, ESO 095-11, Sa 2-85, Wray 16-116, IRAS 12272-6336

				Disc.: Henize 1964	*Diameter* (″)	
1950:	12 27 16.8	-63 36 25	IRAS		*opt.* 10.2 CaKa71	
	12 27 17	-63 36.4	HLSw77			
2000:	12 30 08	-63 53.0	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	41	$H\alpha$	656.3 *nm*	1356	12μm	0.82	3
[*O*III]	436.3	10	[*N*II]	658.4	328	25μm	8.72	3
	500.7	1736	[*S*II]	671.7	21	60μm	11.98	3
*He*I	587.6	26		673.1	35	100μm	77.67	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.55 \pm .02$ SK89						

Central Star:
B 17.75 *V* 16.59 *Qual:* B SK89

Distance (kpc) stat.: 3.03 (CaKa71); 1.6 (Ma84); 3.04 (CKS91)

Bibliography: *PK67*, AcMa77, Gr71, He67, PAKS91, Sa75, Sh85, WeHe67, Wr66

300.7–02.0

He 2-86, PK 300−2°1, ESO 095-13, Sa 2-86, Wray 16-117, IRAS 12276-6435

				Disc.: Henize 1964	*Diameter* (″)	
1950:	12 27 38.5	-64 35 29	IRAS		*opt.* 3.6 CaKa71	
	12 27 38.7	-64 34 35	Mi76			
2000:	12 30 30.4	-64 51 10	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	2.3:	$H\alpha$	656.3 *nm*	1443	*J*	11.79	12μm	2.01	3
[*O*III]	436.3	–	[*N*II]	658.4	643	*H*	12.03	25μm	27.72	3
	500.7	1070	[*S*II]	671.7	10	*K*	10.89	60μm	23.02	3
*He*I	587.6	52		673.1	21	*L*		100μm	15.21	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.26 \pm .05$ W69, ASTR91				*Photom.* Wh85		*Radio* 2*cm* 49 MiAl82		
						Spectr. PPOJ86		(*mJy*) 6*cm* 125 Mi79		

Central Star:
B 19.0 *Qual:* D TASG91 *Spectrum:* WC ATS91

Distance (kpc) stat.: 3.54 (CaKa71); 1.45 (Da82); 1.40 (AGNR84); 2.6 (Ma84):2.31 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSw77, He67, Iy86, Ka70, Ka76, LNP89, Ma81, PAKS89, PM87, PPFS87, Sa75, TAGS89, VoCo90, WeHe67, Wr66

74...283 Weaver B.Wm. *Astrophys. J. 189,263-267* The coalsack. III. A search for T Tau stars.

300.8–03.4

ESO 095-12, PK 300–3°1, IRAS 12275-6557

				Disc.: Holmberg et al 1977	*Diameter* (″)	*Rvel:* +57.0 ± 20.0 FrWe84
1950:	12 27 31.3	-65 57 42	IRAS		*opt.* 18. We77	
	12 27 31.8	-65 57 51	FrWe84			
2000:	12 30 24.6	-66 14 26	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-15					
*He*II	468.6 *nm*	98	$H\alpha$	656.3 *nm*	311
[*O*III]	436.3	–	[*N*II]	658.4	99
	500.7	1356	[*S*II]	671.7	23:
*He*I	587.6	–		673.1	33:

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.29	1
25μm	0.27	3
60μm	0.78	1
100μm	7.32	1

Bibliography: AST89, HLSw77, Ko78, MaC83, PAKS89

86..3156 Kaler J.B., Kwitter K.B. *Publ. Astron. Soc. Pac. 98, 1291-1293* Limited analysis of two ESO planetary nebulae and ESO galaxy.

302.2+02.5

Wray 16-120, PK 302+2°1, ESO 131-15, IRAS 12429-6003

				Disc.: Wray 1966	*Diameter* (″)
1950:	12 42 57.8	-60 03 49	IRAS		*opt.* 12. We77
	12 42 58.7	-60 03 51	We77		
2000:	12 45 54.9	-60 20 15	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-12					
*He*II	468.6 *nm*	96	$H\alpha$	656.3 *nm*	1309
[*O*III]	436.3	–	[*N*II]	658.4	87
	500.7	1312	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.18	3
60μm	1.19	3
100μm	26.61	1

Bibliography: Ko78, Sa76, Wr66

302.3–01.3

DuRe 1, We 21

				Disc.: Duerbeck et al 1990	*Diameter* (″)	*Rvel:* −137. ± 20. 90..1202
					opt. 75. 90..1202	
1950:	12 42 51.1	-63 53 14	90..1202			
2000:	12 45 51.2	-64 09 38	.			

Central Star: Wr 47a
B 17.25 *V* 15.30 *Qual:* A 90..1202 *Spectrum:* WN 8 90..1202

Notes: Status of the object is not clear; could be a Pop I star (91..1005).

90..1202 Duerbek H.W., Reipurth B. *Astron. Astrophys. 231, L11-L14* We 21: A WN 8 star in a planetary nebula.
91..1005 Crawford I.A., Barlow M.J. *Astron. Astrophys. 251,L39* The distance to the WN8 star We 21

302.6–00.9

Wray 16-121, PK 302–0°2, ARO 529, ESO 095-17, Lo 7, RCW 70, Sa 2-87, VBRC 4

			Disc.: Wray 1966	*Diameter* (″)	
				opt. 48. 73..9025	
1950:	12 45 29.8	-63 33 35	We77	Lo77	
2000:	12 48 31.1	-63 49 57	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-14

*He*II	468.6 *nm*	54	$H\alpha$	656.3 *nm*	1123
[OIII]	436.3	–	[NII]	658.4	4455
	500.7	1437	[SII]	671.7	258
*He*I	587.6	–		673.1	220

$\lg F_{H\beta}(mW.m^{-2})$ $-12.7 \pm .3$ ASTR91

Bibliography: AcMa77, HLSw77, Ko78, PAKS91, Sa75, Wr66

73..9025 Van Den Bergh S., Racine R., Van Agt S., Barnes T., Coutts C., Madore B., Skill A. *Astrophys. J. 179,863* New southern Planetary Nebulae.

303.6+40.0

A 35, PK 303+40°1, A55 24, Sh 2-313, VV' 112

			Disc.: Abell 1955	*Diameter* (″)	*Rvel*: -6.6 ± 3.8 STPP83
				opt. 770. CaKa71	*Expansion Velocities* (*km/s*)
1950:	12 51 01.3	-22 35 26	Mi76		[OIII] 4.0 RRA82
2000:	12 53 41.4	-22 51 42	.	*radio* 700. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-13

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	498
[OIII]	436.3	–	[NII]	658.4	419
	500.7	209	[SII]	671.7	126
*He*I	587.6	–		673.1	74

$\lg F_{H\beta}(mW.m^{-2})$ $-11.3 \pm .2$ Ka83

IUE Spectra: *LW*(2) *SW*(3)

Central Star: AG82 148 — BD -22 3467; CD -22 9659; SAO 181201; CPD -22 5522:LW Hya

U 10.88 *B* 10.53 *V* 9.63 81.....5 *Spectrum:* ? + G8 IV 90..1001

Notes: Close binary nucleus, $P = 0.76^d$? (88..1003, 90..1001). Proper motion 0.086 ± 0.025 arcsec (81.....5). Monochromatic images (81.....5).

Distance (kpc) indiv.: spect. 0.36 (81.....5)

Distance (kpc) stat.: 0.26 (CaKa71); 0.22 (Ac78); 0.21 (Da82); 0.22 (AGNR84); 0.5 (Ma84); 0.22 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ab66, AcMa77, Al89, ChLo72, Gr72, GrNe90, IsWe87, Ka80, Kle78, KrK68, KrKo68, LePo88, Ma74, Me89, Mi79, PAKS91, Ph84, Phi84, Po83, SGBO84, Sa84, We86, We89, ZiPo91

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304.2+05.9

Wray 16-122, PK 304+5°2, ESO 173-01, IRAS 12577-5637

			Disc.: Wray 1966	*Diameter* (″)	
1950:	12 57 42.7	-56 37 42	IRAS	*opt.* 36. We77	
	12 57 41.6	-56 37 19	We77		
2000:	13 00 41.4	-56 53 28	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-16 N

*He*II	468.6 *nm*	192	$H\alpha$	656.3 *nm*	802
[*O*III]	436.3	–	[*N*II]	658.4	84
	500.7	2900	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.4 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.25	1
25μm	0.25	1
60μm	0.71	3
100μm	8.02	1

Bibliography: AST89, Ko78, MaC83, PAKS89, Sa76, Wr66

304.5–04.8

IC 4191, PK 304–4°1, ESO 096-02, He 2-89, Sa 2-89, VV 64, VV' 113, Wray 16-124, IRAS 13054-6722

		Disc.: Fleming 1907	*Diameter (″)*	*Rvel:* −12.7 ± 6.5 STPP83	
1950:	13 05 27.6	-67 22 40 IRAS	*opt.* 5. PK67	*Expansion Velocities (km/s)*	
	13 05 28.0	-67 22 33 Mi76		[OIII] 12.0 Ac76	
2000:	13 08 48.4	-67 38 33 .			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	12	*Hα*	656.3 *nm*	380	*J*	10.81	12*μm*	1.58	3
[*OIII*]	436.3	8	[*NII*]	658.4	139	*H*	11.35	25*μm*	18.33	3
	495.9	567	[*SII*]	671.7	5	*K*	10.41	60*μm*	20.76	3
HeI	587.6	19		673.1	11	*L*		100*μm*	7.86	2
$\lg F_{H\beta}$ −11.00 ± .02W69, KM81, 85..3062, SK89						*Photom.* Wh85		*Radio* 2*cm* 152 MiAl82		
								(*mJy*) 6*cm* 170 Ca82		

Central Star: AG82 150 — HD 113981; CSI -67 -13054
B 16.8 *V* 16.4 *Qual:* D SK89

Distance (kpc) indiv.: ext. 2.1 (Ac78)
Distance (kpc) stat.: 2.1-3.7 (CaKa71); 3.16 (MiAl75); 2.68 (Ca76); 2.25 (Ac78); 1.59 (Da82); 1.20 (AGNR84); 2.0 (Ma84); 2.51 (CKS91)

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304.8+05.1

He 2-88, PK 304+5°1, ESO 173-04, Sa 2-88, Wray 16-123

		Disc.: Henize 1964	*Diameter (″)*		
			opt. 10. PK67		
1950:	13 02 45	-57 23.3 HLSW75			
2000:	13 05 48	-57 39.4 .			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15						*IR Class:* .		
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	565	*J*		
[*OIII*]	436.3	5	[*NII*]	658.4	–	*H*		
	500.7	502	[*SII*]	671.7		*K*	> 9.4	
HeI	587.6	19		673.1		*L*		
$\lg F_{H\beta}(mW.m^{-2})$ −12.0 ± .4 ASTR91						*Photom.* AlGl74		

Central Star:
B 15.6 *V* 15.3 *Qual:* C TASG91

Bibliography: *PK67*, AST89, AcMa77, He67, MGT91, MGTW87, PAKS89, Sa75, TAGS89, W66, WeHe67, Wr66

305.1+01.4

He 2-90, PK 305+1°1, ESO 132-01, Sa 2-90, Wray 16-125, IRAS 13064-6103

			Disc.: Henize 1964	*Diameter* (″)	
1950:	13 06 26.9	-61 03 40	IRAS	*opt.* 10. PK67	
	13 06 26.8	-61 03 35	PFMA82		
2000:	13 09 36.1	-61 19 34	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20						*IR Class:* D		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	856	*J*	10.77	12μm	49.40	3
[*OIII*]	436.3	5	[*NII*]	658.4	141	*H*	9.74	25μm	83.76	3
	500.7	205	[*SII*]	671.7		*K*	7.85	60μm	19.76	3
HeI	587.6	29		673.1		*L*	4.44	100μm	50.15	1
$\lg F_{H\beta}(mW.m^{-2})$		$-11.45 \pm .01$ SK89				*Photom.* PPFS87		*Radio* *2cm*	140	PFMA82
IUE Spectra:		*LW*(1) *SW*(0)						(*mJy*) *6cm*	25	PFMA82

Central Star: AG82 151 —
B 16.2 *V* 15.6 *Qual:* C TASG91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: *PK67*, ABBW82, AG82, AST89, AcMa77, AiRo81, AiRo82, Al73, AlGl74, AlSw76, All73, CePe83, CoBa80, He67, MGT91, MGTW87, OlRa86, PAKS91, PM87, Sa75, Sh85, Sm72, TAGS89, VoCo90, W66, WeHe67, Wr66, ZTPS89, ZuAl86

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305.6–13.1

ESO 040-11, PK 305–13°1, IRAS 13299-7531

			Disc.: Holmberg et al 1977	*Diameter* (″)	*Rvel:* -16.0 ± 13.0 STPP83
1950:	13 29 58.1	-75 31 08	IRAS	*opt.* 72. We77	
	13 29 59	-75 31.1	FrWe84		
2000:	13 34 15	-75 46.5	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-23							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	112	*Hα*	656.3 *nm*	403		12μm	0.26	1
[*OIII*]	436.3	–	[*NII*]	658.4	–		25μm	0.46	3
	500.7	675	[*SII*]	671.7			60μm	1.51	3
HeI	587.6	–		673.1			100μm	2.42	2
$\lg F_{H\beta}(mW.m^{-2})$		$-12.3 \pm .4$ ASTR91							

Central Star: AG82 153 —
B 16.77 *V* 16.45 *Qual:* B TASG91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, HLSw77, Ko78

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305.7–03.4

Wray 17-59, PK 305–3°1, ESO 096-07, Sa 2-91, IRAS 13160-6553

			Disc.: Wray 1966	*Diameter* (″)		
1950:	13 16 03.4	-65 53 23	IRAS	*opt.* 24.	We77	
	13 16 06.5	-65 53 23	Wr66			
2000:	13 19 30.3	-66 09 08	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-24					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	410
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	862	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-12.3 \pm .4$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.50	3
25μm	0.30	1
60μm	1.15	3
100μm	44.41	1

Bibliography: AcMa77, HLSW75, Ko78, Sa75

306.4–00.6

Th 2-A, PK 306–0°1, ESO 096-09, He 2-92, Sa 2-92, Wray 16-127, IRAS 13192-6305

			Disc.: The 1962	*Diameter* (″)		*Rvel:* -45.0 ± 18.0 MWF88
1950:	13 19 14.7	-63 05 19	IRAS	*opt.* 23.	CaKa71	*Expansion Velocities* (*km/s*)
	13 19 15.3	-63 05 15	Mi76			[OIII] 17.5 MWF88
2000:	13 22 34.8	-63 20 56	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15 N					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1322
[*OIII*]	436.3	–	[*NII*]	658.4	703
	500.7	3192	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-12.8 \pm .3$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.32	1
25μm	2.96	3
60μm	5.00	3
100μm	217.20	1

Radio (*mJy*)			
2cm	28	MiAl82	
6cm	60	Mi79	

Central Star:
B 15.35 *V* 14.47 *Qual:* B TASG91

Distance (kpc) stat.: 2.15 (CaKa71)2.43 (Da82); 1.70 (AGNR84); 2.5 (Ma84); 2.45 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW75, He67, Iw73, KrK68, LNP89, MGT91, MGTW87, Ma81, PAKS89, Sa75, Sm72, TAGS89, We89, WeHe67, Wr66

307.2–03.4

NGC 5189, PK 307–3°1, ARO 515, ESO 096-16, Gum 47, He 2-94, IC 4274, Sa 2-95, RCW 76, Th 2-C, VV 65, VV' 114, Wray 16-131, IRAS 13300-6543

			Disc.: Fleming 1901	*Diameter* (″)	*Rvel:* −9.2 ± 4.3 STPP83
1950:	13 30 01.6	-65 43 12	IRAS	*opt.* 140. CaKa71	*Expansion Velocities* (*km/s*)
	13 30 10	-65 43.1	KVLS81		[OIII] 36.0 Sa84
2000:	13 33 42	-65 58.5	.		[NII] 24.5 84..2514

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-23 DA

*He*II	468.6 *nm*	55	$H\alpha$	656.3 *nm*	350
[*O*III]	436.3	13	[*N*II]	658.4	366
	500.7	1428	[*S*II]	671.7	39
*He*I	587.6	9		673.1	42

$\lg F_{H\beta}(mW.m^{-2})$ −10.52 ± .02 ViFr85

IUE Spectra: *LW*(4) *SW*(6)

IRAS Fluxes (*Jy*) *Qual.*

12μm	1.26	3
25μm	13.47	3
60μm	33.73	3
100μm	31.29	3

Radio *2cm* 459 MiAl82
(*mJy*) *6cm* 413 Ca82

Central Star: AG82 154 — CSI -65-13298 0; HD 117622; EM* CDS 877; GUM 47
B 14.92 *Qual:* B GaPo88

O VI 84...100
WC 2 Me91

Notes: Binary nucleus ? (83..1002). ESO-3.6m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: kinem. 0.9 (Ac78); ext. 1.6 (Ac78); ext. 0.8 (Po83); ext. 1.73 (86..1120); ext. 1.3 (Sab86)
Distance (kpc) stat.: 0.60 (CaKa71); 0.59 (MiAl75); 0.58 (Ca76); 0.85 (Ac78); 0.51 (Da82); 0.49 (AGNR84); 0.7 (Ma84)

Bibliography: *PK67*, AG82, AGNR85, AGR89, Ac75, Ac76, Ac82, AcMa77, Ak70, Al70, AlMi72, All76, CaWy76, CePe83, CePe85, ChLo72, CoBa80, De71, Do73, FeAl87, FeBr90, Ga87, GaPo89, Gr71, Gr72, HLSW75, He67, He71, HeAu87, Hi71, Iw73, IwKa65, Jo80, Ka76, KaJa89, KrK68, LNP89, LePo88, Ma74, Ma81, MaPo80, Mi76, Mi79, MiWe79, Pa90, PaPe88, Pe71, Pe83, Pe89, PeTo83, Ph84, PhMa88, Phi84, PiKh79, RRA82, SGBO84, SK89, Sa75, SaHa82, Sh85, Sm72, SmAl69, WPSD88, Wa70, We89, WeHe67, Wr66, ZuAl86

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307.2–09.0

He 2-97, PK 307–9°1, Sa 2-98, StWr 1-6, Wray 16-135, IRAS 13413-7113

				Disc.: Henize 1964		*Diameter* (″)			
1950:	13 41 21.7	-71 13 47	IRAS			*opt.* 5.	PK67		
	13 41 24.0	-71 13 47	Mi76						
2000:	13 45 24.1	-71 28 49	.						

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	1.2:	$H\alpha$	656.3 *nm*	440	*J*	11.90	12μm	0.93	3
[*O*III]	436.3	2.4	[*N*II]	658.4	93	*H*	12.20	25μm	8.94	3
	500.7	674	[*S*II]	671.7	0.8	*K*	11.51	60μm	3.91	3
*He*I	587.6	24		673.1	2.1	*L*		100μm	5.38	1
$\lg F_{H\beta}(mW.m^{-2})$		$-11.44 \pm .01$	W69, SK89			*Photom.*	Wh85	*Radio* (*mJy*)	*2cm* 19	MiAl82
									6cm 30	MiAl75

Central Star: AG82 158 —
B 15.39 *V* 15.35 *Qual:* B SK89 , TASG91

Distance (kpc) stat.: >7.20 (MiAl75); 4.9 (Ma84)

Bibliography: *PK67*, AG82, AST89, AcMa77, AlGl74, Ca82, Fe68, He67, Iy86, Ka70, Ka76, MiWe79, PAKS89, PM87, PPFS87, Pe71, PiKh79, Sa75, Sh85, StWr72, TAGS89, W66, WeHe67, Webs69, Wr66

307.3+05.0

Wray 16-128, PK 307+5°1, ESO 173-12, Sa 2-93, IRAS 13212-5715

			Disc.: Wray 1966	*Diameter (″)*	
1950:	13 21 12.2	-57 15 48	IRAS	*opt.* 18. We77	
	13 21 11	-57 15.7	Wr66		
2000:	13 24 22	-57 31.3	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-12-16					
HeII	468.6 *nm*	86	$H\alpha$	656.3 *nm*	467
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	446	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-12.0 \pm .3$ ASTR91			

IRAS Fluxes (Jy)		*Qual.*
12μm	0.25	1
25μm	2.47	3
60μm	2.80	3
100μm	17.55	1

Bibliography: AST89, AcMa77, Ko78, Sa75

307.5–04.9

MyCn 18, PK 307–4°1, ARO 530, ESO 097-01, He 2-95, Sa 2-96, RCW 77, VV 66, VV' 115, Wray 16-132, IRAS 13359-6707

			Disc.: Mayall et al 1940	*Diameter (″)*	*Rvel:* -55.0 ± 5.5 STPP83
1950:	13 35 55.5	-67 07 41	IRAS	*opt.* 4. CK88	*Expansion Velocities (km/s)*
	13 35 54.4	-67 07 33	Mi76		[OIII] 10 We89
2000:	13 39 34.1	-67 22 46	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15					
HeII	468.6 *nm*	0.5	$H\alpha$	656.3 *nm*	1117
[*OIII*]	436.3	0.8	[*NII*]	658.4	–
	500.7	294	[*SII*]	671.7	5
HeI	587.6	22		673.1	9
$\lg F_{H\beta}(mW.m^{-2})$		$-11.13 \pm .05$ W69			

IR Class: N		*Photom.* Wh85
J	11.28	
H	11.51	
K	10.68	
L		

IRAS Fluxes (Jy)		*Qual.*
12μm	1.80	3
25μm	20.66	3
60μm	24.28	3
100μm	13.24	3
Radio 2*cm*	102	MiAl82
(*mJy*) 6*cm*	106	Mi79

Central Star: AG82 155 — *B* 14.4 *Qual:* D TASG91 *Spectrum:* Of(H) Me91

Distance (kpc) indiv.: ext. 1.9 (Ac78); ext. 0.8 (Sab86)
Distance (kpc) stat.: 2.3,2.86 (CaKa71); 3.25 (MiAl75); 3.18 (Ca76); 2.4 (Ac78); 1.78 (Da82); 1.60 (AGNR84); 2.8 (Ma84); 3.14 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, Ac75, Ac76, AcMa77, AlGl74, BLTA81, Ca82, ChLo72, Do73, Gr71, Gr72, HLSW75, He67, Hi71, Iw73, Iy86, KAS91, Ka70, Ka76, KrK68, LNP89, MGT91, MGTW87, MKHH88, Ma74, Ma81, MaPo80, MiWe79, PAKS89, PM87, PPFS87, Pe71, PiKh79, Sa75, Sa84, Sm72, TAGS89, VoCo90, WPSD88, WeHe67, Webs69, Wr66

308.2+07.7

MeWe 1-3

			Disc.: Melmer et al 1990	*Diameter* (″)	
				opt. 18. 90..2581	
1950:	13 24 56.6	-54 26 25	90..2581		
2000:	13 28 05.0	-54 41 57	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-27					
*He*II	468.6 *nm*	78	$H\alpha$	656.3 *nm*	373
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	512	[*S*II]	671.7	
*He*I	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$	$-12.8 \pm .4$	ASTR91			

Central Star:
B 17.3 *V* 17.0 *Qual:* C 90..2581, TASG91

90..2581 Melmer D., Weinberger R. *Mon. Not. R. Astron. Soc. 243, 236-240,1990* New old PN in the southern sky.

308.6–12.2

He 2-105, PK 308–12°1, ESO 041-03, Sa 3-24, IRAS 14107-7358

			Disc.: Henize 1964	*Diameter* (″)	
1950:	14 10 42.5	-73 58 50	IRAS	*opt.* 31. CaKa71	
	14 10 43.4	-73 58 52	PK67		
2000:	14 15 25.8	-74 12 50	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	383
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	358	[*S*II]	671.7	
*He*I	587.6	24		673.1	
$\lg F_{H\beta}(mW.m^{-2})$	$-11.55 \pm .01$	SK89			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.29	1
60μm	2.22	3
100μm	2.84	3
Radio 2*cm*	10	MiAl82
(*mJy*) 6*cm*	14	Mi79

Central Star: AG82 165 —
B 14.76 *V* 14.78 *Qual:* B SK89 , TASG91

Notes: FC wrong in PK67. ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.46 (CaKa71); 2.59 (Da82); 2.40 (AGNR84); 3.6 (Ma84); 2.74 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, HLSW75, He67, Iw73, KrKo68, MGT91, MGTW87, Ma81, Mi76, PAKS89, Sa76, Sh85, StAc87, TAGS89, WeHe67

309.0+00.8

He 2-96, PK 309+0°1, ESO 133-01, Sa 2-97, Wray 16-133, IRAS 13391-6107

			Disc.: Henize 1964	*Diameter* (″)	
1950:	13 39 10.9	-61 07 23	IRAS	*opt.* 4. CaKa71	
	13 39 10	-61 07.4	HLSW75		
2000:	13 42 36	-61 22.5	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-20					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1293
[*OIII*]	436.3	3	[*NII*]	658.4	295
	500.7	1110	[*SII*]	671.7	8
HeI	587.6	44		673.1	18
$\lg F_{H\beta}(mW.m^{-2})$		$-12.37 \pm .10$	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.41	3
25μm	14.88	3
60μm	21.56	3
100μm	90.93	1

Distance (kpc) stat.: 3.91 (CaKa71); 0.9 (Ma84)

Bibliography: *PK67*, AcMa77, He67, PAKS91, PM87, PPFS87, Sa75, Sa76, Sm72, VoCo90, We77, WeHe67, Wr66

309.0–04.2

He 2-99, PK 309–4°1, ESO 097-08, Sa 3-23, Wray 16-139, IRAS 13487-6608

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* -2.0 ± 20.0 STPP83
1950:	13 48 45.5	-66 08 42	IRAS	*opt.* 17. CaKa71	
	13 48 46.7	-66 08 40	KVLS81		
2000:	13 52 31.0	-66 23 28	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-13					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	481
[*OIII*]	436.3	–	[*NII*]	658.4	420
	495.9	–	[*SII*]	671.7	62
HeI	587.6	–		673.1	56
$\lg F_{H\beta}(mW.m^{-2})$		$-11.91 \pm .01$	W69, SK89		
IUE Spectra:		*LW*(4)	*SW*(4)		

IR Class: .	
J	
H	
K	
L	
Photom. CoBa80	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.19	3
25μm	9.16	3
60μm	11.75	3
100μm	7.12	1
Radio 2*cm*	11	MiAl82
(*mJy*) 6*cm*	18	Ca82

Central Star: AG82 159 — CSI -66-13488 0; LSS 3169
B 14.22 *V* 14.00 *Qual:* B TASG91 *Spectrum:* WC 9 Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.5 (CaKa71); 2.3 (Ac78); 3.45 (Da82); 2.90 (AGNR84); 4.2 (Ma84); 3.73 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, All76, HLSW75, He67, Iw73, Ka76, KrK68, LNP89, MGT91, MGTW87, Ma81, Mi76, Mi79, PAKS91, Pe71, PiKh79, Sa76, Sh85, Sm72, SmAl69, StAc87, TAGS89, WeHe67, Webs69, Wr66, ZuAl86

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89...530 Kaler J.B., Shaw R.A., Feibelman W.A., Lutz J.H. *Astrophys. J., Suppl. Ser. 70, 213-237* A Case study of a WC planetary nebula nucleus: Henize 2-99.
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91..1019 Zijlstra A.A., Gaylard M.J., Te Lintel Hekkert P., Menzies J., Nyman L.-A., Schwarz H.E. *Astron. Astrophys. 243,9,1991 (L).* IRAS 07027-7934 : the link between OH/IR stars and carbon-rich planetary nebulae.
91..1023 Werner K., Heber U., Hunger K. *Astron. Astrophys. 244,437* Non-LTE analysis of four PG1159 stars.

309.1–04.3

NGC 5315, PK 309–4°2, ESO 097-09, He 2-100, Sa 2-100, VV 68, VV' 118, Wray 16-140, IRAS 13501-6616

			Disc.: Copeland 1883	*Diameter* (″)	*Rvel*: −33.9 ± 8.2 STPP83
1950:	13 50 11.1	-66 16 05	IRAS	*opt.* 6. CaKa71	*Expansion Velocities* (*km/s*)
	13 50 12.3	-66 16 07	KVLS81		[OIII] = 40.0 We89
2000:	13 53 57.9	-66 30 52	.		[NII] 37.5 We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	369	*J*	12*μm*	7.47	3
[*OIII*]	436.3	3	[*NII*]	658.4	266	*H*	25*μm*	71.95	3
	500.7	840	[*SII*]	671.7	6	*K*	60*μm*	83.99	3
*He*I	587.6	24		673.1	11	*L*	100*μm*	35.66	3
$\lg F_{H\beta}$ −10.42 ± .01W69, TP77, KM81, SK89						*Photom.* CoBa80	*Radio* 2*cm* 366 MiAl82		
IUE Spectra: *LW*(6) *SW*(7)						*Spectr.* PPOJ86	(*mJy*) 6*cm* 480 Ca82		

Central Star: AG82 160 — HD 120800; CSI -65 2513 40; CPD -65 2513; GCRV 8191
B 14.58 *V* 14.40 *Qual:* B GaPo88, TASG91 *Spectrum:* WC 4 Me91

Distance (kpc) indiv.: kinem. 2.6 (Ac78); ext. 1.3 (Po83); ext. 2.6 (86..1120)
Distance (kpc) stat.: 2.4-4.0 (CaKa71); 4.05 (MiAl75); 3.63 (Ca76); 2.8 (Ac78); 0.69 (Da82); 1.98 (PhPo84); 0.67 (AGNR84); 1.2 (Ma84); 1.24 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AKSJ89, AST89, Ac75, Ac76, Ac80, AcMa77, AiRo81, AiRo82, Ak70, All76, CePe83, De71, Do73, FaMa88, FeAl87, FeBr90, Ga87, GaPo89, Go87, Gr71, HLSW75, He67, HeAu87, IwKa65, KAS91, Ka70, Ka76, Ka79, Ka80, Ka86, Kal78, Kal80, Kle78, LNP89, MaFa85, MaPe88, Mar81, Mi76, Mi79, MiWe79, NPP80, OlRa86, PAKS89, PM87, PPFS87, PaPe88, Pe91, PeF73, PeFr72, PeFr73, PeSe80, PeTo83, PhMa88, Phi84, PiKh79, Po87, PrPo83, Sa75, Sa84, Sab86, Sabb86, Sh85, Sm72, SmAl69, StKa89, TAGS89, ViFr85, VoCo90, WRPA86, WeHe67, Webs69, Wr66, ZuAl86

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89.50073 Kaler J.B. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 229-239* Magnitudes< spectra, and temperatures of planetary nuclei.

309.2+01.3

VBRC 5, PK 309+1°1, ESO 133-02, SuWt 1

Disc.: Van Den BERG et al 1973				*Diameter* ('')	*Rvel:* -59.0 ± 10.0 STPP83
				opt. 68. 73..9025	
1950:	13 40 34	-60 34.6	73..9025	76..9003	
2000:	13 43 59	-60 49.7	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-30

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1360
[*O*III]	436.3	–	[*N*II]	658.4	3290
	500.7	950	[*S*II]	671.7	290
*He*I	587.6	–		673.1	300

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .4$ ASTR91

Central Star: AG82 157 —

Bibliography: ACPS87, AG82, AcMa77, Ko78, MaC83, We77

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309.5–02.9

MaC 1-2

Disc.: Mac Connell 1978				*Diameter* ('')	
				opt. St. 78..1561	
1950:	13 50 46.1	-64 44 44	78..1561		
2000:	13 54 27.1	-64 59 28	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-20

*He*II	468.6 *nm*	22	*Hα*	656.3 *nm*	1337
[*O*III]	436.3	–	[*N*II]	658.4	1781
	500.7	1541	[*S*II]	671.7	62
*He*I	587.6	55		673.1	86

$\lg F_{H\beta}(mW.m^{-2})$ $-13.3 \pm .3$ ASTR91

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310.3+24.7

Lo 8, PK 310+24°1, ESO 382-63, K 1-29

			Disc.: Longmore 1977	*Diameter* (″)	*Rvel:* −3.0 ± 2.7 85..1535
				opt. 115. 77..1134	
1950:	13 22 45.1	-37 20 40	77..1134	Lo77	
2000:	13 25 37.3	-37 36 16	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-05-28

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	169	[*S*II]	671.7	
*He*I	587.6	–		673.1	

IUE Spectra: *LW*(1) *SW*(3)

Central Star: AG82 152 — *B* 12.66 *V* 12.88 *Qual:* A TASG91 *Spectrum:* O(H) Me91

Bibliography: AG82, CePe85, FeBr90, Ko78, We77

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310.4+01.3

Vo 4, IRAS 13499-6019

			Disc.: Volk 1988		
1950:	13 49 54.4	-60 19 06	IRAS		
	13 49 54.4	-60 19 06	88.30003		
2000:	13 53 23.3	-60 33 52	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	3511
[*O*III]	436.3	–	[*N*II]	658.4	939
	500.7	1711	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −14.4 ± .4 ASTR91

IRAS Fluxes (Jy)

		Qual.
12μm	1.22	1
25μm	2.55	3
60μm	3.92	3
100μm	19.75	3

88.30003 Volk K. *Private communication* Four new planetary nebulae discovered by IRAS

310.7–02.9

He 2-103, PK 310–2°1, ESO 097-11, Sa 2-103, Wray 16-144

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −30.0 ± 2.0 MWF88
				opt. 20. CaKa71	*Expansion Velocities* (*km/s*)
1950:	14 01 50.9	-64 26 37	Mi76		[OIII] < 6.0 MWF88
2000:	14 05 36.9	-64 40 57	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15

*He*II	468.6 *nm*	13:	*Hα*	656.3 *nm*	543
[*O*III]	436.3	–	[*N*II]	658.4	468
	500.7	971	[*S*II]	671.7	46
*He*I	587.6	20		673.1	46

$\lg F_{H\beta}(mW.m^{-2})$ −12.11 ± .02 W69, SK89

IR Class: .

J	
H	
K	9.6
L	

Photom. AlGl74

Radio *2cm* 5 MiAl82
(*mJy*) *6cm* 18 Mi79

Notes: IRAS 14019-6426 very near.
Distance (kpc) stat.: 2.1 (CaKa71); 2.1 (Ac78); 3.45 (Da82); 2.70 (AGNR84); 4.0 (Ma84); 3.39 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW75, He67, Iw73, Ka70, Ka76, MGT91, MGTW87, Ma81, PAKS89, STPP83, Sa75, Sm72, We89, WeHe67, Wr66

69..9023 Webster L.B. *Obs. 89,19* Observations of southern P.N.
69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.

310.8–05.9

LoTr 7, PK 310–5°1

			Disc.: Longmore et al 1980	*Diameter* (″)	
				opt. 16. 80..2605	
1950:	14 11 21	-67 18.0	80..2605		
2000:	14 15 23	-67 32.0	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20

*He*II	468.6 *nm*	94	*Hα*	656.3 *nm*	564
[*O*III]	436.3	–	[*N*II]	658.4	37
	500.7	1093	[*S*II]	671.7	10
*He*I	587.6	19		673.1	7

$\lg F_{H\beta}(mW.m^{-2})$ −12.3 ± .2 ASTR91

Bibliography: AST89, Iy87, PAKS89

80..2605 Longmore A.J., Tritton S.B. *Mon. Not. R. Astron. Soc. 193,521-524* A second list of new planetary nebulae found on United Kingdom 1.2m Schmidt telescope plates.

311.0+02.4

SuWt 2

			Disc.: Schuster et al 1976	*Diameter* (″)	*Rvel:* −40.0 ± 9.0 STPP83
				opt. 65. 76..9003	
1950:	13 52.3	-59 08	76..9003		
2000:	13 55.8	-59 23	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-14

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	439
	500.7	95	[*S*II]	671.7	43
*He*I	587.6	–		673.1	41

Central Star: AG82 161 — *B* 12.78 *V* 12.29 *Qual:* A TASG91 *Spectrum:* B9 V 76..3101

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, Ko78, MaC83, We77

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76..9003 Schuster M.E., West R.M. *Astron. Astrophys. 46,139-141* Two new peculiar Southern emission objects.
76..9021 Schuster H.E., West R.M. *Astron. Astrophys. 48,483* Two new peculiar Southern emission objects (Erratum).

311.1+03.4

He 2-101, PK 311+3°1, ESO 133-07, Wray 16-141, IRAS 13515-5812

			Disc.: Henize 1964	*Diameter* (″)	
1950:	13 51 31.1	-58 12 34	IRAS	*opt. St.* CS90	
	13 51 31	-58 12.6	PK67		
2000:	13 54 56	-58 27.3	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1127
[*O*III]	436.3	36:	[*N*II]	658.4	–
	500.7	135	[*S*II]	671.7	
*He*I	587.6	54		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −13.17 ± .10 ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	1.43	3
25μm	1.16	3
60μm	0.53	1
100μm	19.35	1

Central Star: V704 Cen

Bibliography: *PK67*, ABBW82, ACPS87, AST89, Al73, Al84, AlGl74, AlSw76, Bo76, CoBa80, Dr80, HLSW75, He67, LuTu87, MGT91, MGTW87, Sa76, Sm72, StAc87, W66, WeHe67, Wr66

87..3056 Whitelock P.A. *Publ. Astron. Soc. Pac. 99, 573-591* Symbiotic Miras.

311.4+02.8

He 2-102, PK 311+2°1, ESO 133-08, Sa 2-101, Wray 16-142, IRAS 13547-5839

			Disc.: Henize 1964	*Diameter (")*			
1950:	13 54 46.8	-58 39 56	IRAS	*opt.* 9.	CaKa71		
	13 54 45.9	-58 39 54	Mi76				
2000:	13 58 13.3	-58 54 30	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-21						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	41	$H\alpha$	656.3 *nm*	732	*J*	12.98	12μm	0.25	1
[*OIII*]	436.3	5	[*NII*]	658.4	–	*H*	12.96	25μm	3.05	3
	500.7	1235	[*SII*]	671.7		*K*	12.34	60μm	5.03	3
HeI	587.6	17		673.1		*L*		100μm	26.59	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.08 \pm .01$	SK89			*Photom.*	Wh85	*Radio* 2*cm*	39	MiAl82
								(*mJy*) 6*cm*	33	MiAl75

Central Star:
B 17.30 *V* 17.24 *Qual:* B SK89 , TASG91

Distance (kpc) stat.: 3.51 (CaKa71); 5.44 (MiAl75); 5.31 (Ca76); 3.89 (Da82); 2.60 (AGNR84); 4.0 (Ma84) 4.84 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlGl74, HLSW75, He67, Iy86, LNP89, MGT91, MGTW87, Ma81, MaPo80, Mi79, PAKS91, PM87, PPFS87, Pe71, Sa75, Sh85, WeHe67, Wr66

312.3+10.5

NGC 5307, PK 312+10°1, ARO 516, ESO 221-11, He 2-98, Sa 2-99, StWr 4-14, VV 67, VV' 117, Wray 16-138, IRAS 13478-5057

			Disc.: Herschel 1836	*Diameter (")*		*Rvel:* $+40.0 \pm 4.0$	MWF88
1950:	13 47 51.3	-50 57 29	IRAS	*opt.* 12.5	CaKa71	*Expansion Velocities (km/s)*	
	13 47 51.6	-50 57 26	Mi76		CJA87	[OIII] 10.8	MWF88
2000:	13 51 03.4	-51 12 16	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-22						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	44	$H\alpha$	656.3 *nm*	437	*J*	11.84	12μm	0.40	1
[*OIII*]	436.3	16	[*NII*]	658.4	–	*H*	12.02	25μm	5.21	3
	500.7	1378	[*SII*]	671.7		*K*	11.38	60μm	7.39	3
HeI	587.6	10		673.1		*L*		100μm	4.23	3
$\lg F_{H\beta}$	$-11.18 \pm .02$	TP77, KM81, W83, SK89				*Photom.*	Wh85	*Radio* 2*cm*	79	MiAl82
IUE Spectra:	*LW*(0)	*SW*(2)						(*mJy*) 6*cm*	95	Ca82

Central Star:
B 14.67 *V* 14.66 *Qual:* A SK89 , TASG91

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) stat.: 3.7 (CaKa71); 3.12 (MiAl75); 3.2 (Ca76); 2.5 (Ac78); 2.20 (Da82); 2.47 (PhPo84); 1.60 (AGNR84); 2.3 (Ma84); 3.20 (CKS91)

Bibliography: *PK67*, AGR89, AST89, Ac80, AcMa77, AlGl74, AlMi72, CaNo73, De71, Gol87, Gr71, Gu88, HLSw77, He67, He71, Hi71, Iw73, IwKa65, Iy86, Ka70, Ka76, Ka79, Ka80, Ka86, Kle78, KrK68, LNP89, Ma81, MaFa85, MaFa86, Mar81, Mi79, MiWe79, PAKS91, PM87, PPFS87, Pe71, Pe91, PeSe80, SGBO84, STPP83, Sa75, Sa84, SaHa82, SaMi78, Sh85, SlOr65, StWr72, TAGS89, WeHe67, Wr66

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87..2185 Raga A.C., Mateo M. *Astron. J. 94, 684-699* Narrow-band imaging of the Herbig-Haro object HH 46/47.

312.6–01.8

He 2-107, PK 312–1°1, ESO 097-16, Sa 3-26, Wray 16-151, IRAS 14149-6253

			Disc.: Henize 1964	*Diameter* (″)			
1950:	14 14 55.5	-62 53 19	IRAS	*opt.* 10.	CaKa71		
	14 14 55.1	-62 53 22	Mi76				
2000:	14 18 42.6	-63 07 11	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-03						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1178	*J*	12.28	12μm	0.73	2
[OIII]	436.3	–	[*NII*]	658.4	956	*H*	12.53	25μm	11.07	3
	500.7	56	[*SII*]	671.7	11	*K*	11.61	60μm	16.06	3
HeI	587.6	47		673.1	19	*L*		100μm	82.54	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.19 \pm .07$	W69, SK89			*Photom.*	Wh85	*Radio* 2*cm*	36	MiAl82
								(*mJy*) 6*cm*	65	Mi79

Central Star: AG82 167 —
B 15.89 *V* 15.11 *Qual:* A SK89

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 2.6 (CaKa71); 2.65 (Da82); 2.00 (AGNR84); 3.1 (Ma84); 3.97 (CKS91)

Bibliography: *PK67*, AGR89, AST89, HLSW75, He67, Iy86, Ka70, Ka76, LNP89, MGT91, MGTW87, Ma81, MiWe79, PAKS89, PM87, PPFS87, PiKh79, Sa76, Sh85, Sm72, StAc87, TAGS89, TASG91, WeHe67, Wr66

313.8–12.6

LoTr 11, PK 313–12°1

			Disc.: Longmore et al 1980	*Diameter* (″)			
				opt. 112.	80..2605		
1950:	15 15 58	-72 03.3	80..2605				
2000:	15 21 10	-72 14.1	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-14					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[OIII]	436.3	–	[*NII*]	658.4	–
	500.7	238	[*SII*]	671.7	
HeI	587.6	–		673.1	

Central Star: AG82 176 —

Bibliography: AG82, PAKS91

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315.0–00.3

He 2-111, PK 315–0°1, ESO 134-07, Sa 2-106, Wray 16-156, IRAS 14295-6036

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* -11.0 ± 4.0 MWF88
1950:	14 29 32.9	-60 36 36	IRAS	*opt.* 32. CJA87	*Expansion Velocities* (*km/s*)
	14 29 31.4	-60 36 33	Mi76		[OIII] 12.0 MWF88
2000:	14 33 18.3	-60 49 45	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15 N

*He*II	468.6 *nm*	91	$H\alpha$	656.3 *nm*	986
[*O*III]	436.3	–	[*N*II]	658.4	5114
	500.7	1498	[*S*II]	671.7	213
*He*I	587.6	30		673.1	231

$\lg F_{H\beta}(mW.m^{-2})$ $-12.01 \pm .01$ SK89

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.28	1
25μm	3.08	3
60μm	11.21	1
100μm	117.20	1

Radio (*mJy*)	*2cm*	56	MiAl82
	6cm	73	MiAl75

Central Star:
B 16.3 *V* 16.7 *Qual:* D SK89

Notes: Multiple-shell PN; monochromatic images (CJA87).
Distance (kpc) stat.: 2.31 (CaKa71); 3.56 (MiAl75); 2.01 (Ca76); 2.3 (Ac78); 2.04 (Da82); 1.80 (AGNR84); 2.8 (Ma84); 3.48 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, Ac75, Ac76, AcMa77, Ca82, Ch89, Do73, Gr71, Gr89, HLSW75, He67, KAS91, Ka76, KrKo68, MGT91, MGTW87, MaPo80, MeHa75, MiWe79, PAKS89, PM87, Pe71, PrPe89, STPP83, SWPD87, Sa75, Sa84, Sh85, Sm72, Te80, WPSD88, We89, WeHe67, Wr66

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315.1–13.0

He 2-131, PK 315–13°1, MWC 236, ESO 068-08, My 90, SaSt 2-9, Wray 15-1329, IRAS 15318-7144

			Disc.: Henize 1964	*Diameter* (″)	*Rvel*: −1.2 ± 4.4 STPP83
1950:	15 31 53.1	-71 45 00	IRAS	*opt.* 6. CaKa71	*Expansion Velocities* (*km/s*)
	15 31 54.0	-71 45 00	Mi76		[OIII] 12.0 We89
2000:	15 37 11.8	-71 54 54	.		[NII] 11 We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27						*IR Class*: N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	0.3	*Hα*	656.3 *nm*	sat.	*J*	9.55	12μm	6.48	3
[OIII]	436.3	–	[*NII*]	658.4	–	*H*	9.69	25μm	104.90	3
	500.7	7	[*SII*]	671.7	4	*K*	9.07	60μm	62.70	3
HeI	587.6	5		673.1	14	*L*		100μm	21.12	3
lg$F_{H\beta}$ −10.16 ± .01 W69, TP77, KM81						*Photom.* Wh85		*Radio* *2cm* 296 MiAl82		
IUE Spectra: *LW*(5) *SW*(4)						*Spectr.* PPOJ86		(*mJy*) *6cm* 325 Ca82		

Central Star: AG82 183 — CPC 21.1 2955; CPD -71 1889; HD 138403; SAO 257300; MWC 236
B 10.61 *V* 11.01 *Qual:* A TASG91
O8(f) p 79....13
Of(H) Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: ext. 0.70 (Po80); ext. 1.0 (Po83); wind 0.84 (85....32); ext. 0.59 (86..1120); ext.1.2 (85.13514)
Distance (kpc) stat.: 2.6-4.5 (CaKa71); 4.01 (MiAl75); 3.92 (Ca76); 0.91 (Da82); 1.39 (PhPo84); 0.86 (AGNR84); 1.6 (Ma84); 1.41 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, Ac80, AcMa77, AiRo81, AiRo82, Al73, AlGl74, BLTA81, Bo68, CePe83, CePe85, CoBa80, Dr80, FeAl87, Ga87, GaPo89, HLSW75, HaSe66, HaZu91, He67, He83, He86, HeAu87, Hu78, KHM86, Ka70, Ka76, Ka79, Ka86, Kal78, Kal80, Kh76, Kh79, Kle78, Kr69, LNP89, MGT91, MGTW87, MKHH88, MaFa85, MaFa86, MaPe88, MaPo80, Mar81, Me89, MiWe79, OlRa86, PAKS89, PBBE84, PM87, PPFS87, PWWD77, PWWF78, Pe71, Pe83, PeFr72, PeFr73, Phi84, PiKh79, Po87, PrPo83, Sa76, SaSt72, StAc87, StKa89, StWr72, TAGS89, Te68, VoCo90, Wa70, WeHe67, Webs69, Wr66, ZuAl86

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315.4+09.4

He 2-104, PK 315+9°1, ESO 221-31, Wray 16-147, IRAS 14085-5112

				Disc.: Henize 1964	*Diameter (″)*	*Rvel:* −105.0 ± 25.0STPP83
1950:	14 08 33.6	-51 12 19	IRAS		*opt.* 5. PK67	
	14 08 33.5	-51 12 19	PK67			
2000:	14 11 52.2	-51 26 24	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16						*IR Class:* D		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	18	$H\alpha$ '	656.3 *nm*	825	*J*	10.56	12μm	8.56	3
[*OIII*]	436.3	37	[*NII*]	658.4	77	*H*	8.48	25μm	9.09	3
	500.7	292	[*SII*]	671.7	7	*K*	6.64	60μm	6.83	3
HeI	587.6	27		673.1	7	*L*	4.20	100μm	9.78	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.73 ± .01	SK89			*Photom.* PPFS87		*Radio*	2cm< 10	MiAl82
IUE Spectra:		*LW*(1)	*SW*(1)					(*mJy*)	6cm< 15	Mi79

Central Star: AG82 163 — SS73 43
B 17.9 *Qual:* D SK89 *Spectrum:* Symbiot.? 89..3096

Distance (kpc) stat.: 7.92 (Ac78)6.3 (Ma84)

Bibliography: *PK67*, ABBW82, ACPS87, AG82, AKSJ89, AST89, Al73, Al80, Al84, AlGl74, All73, All82, HLSw77, He67, KAS91, KFS88, LuTu87, Mi76, PAKS89, PM87, Pe71, Sa76, SaSt73, Sh85, StAc87, TAGS89, W66, WeHe67, Wr66, WrAl78

73..9059 Swings J.R. *Astrophys. Lett. 15,71* Spectra of southern stellar P.N. and peculiar emission line stars with infraredexcesses.
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76.25004 Sahade J. *Mem. Soc. R. Sci. Liege 9,303* Symbiotic objects.
83..2713 Roche P.F., Allen D.A., Aitken D.K. *Mon. Not. R. Astron. Soc. 204,1009-1015* Symbiotic stars: spectrophotometry at 3-4 and 8-13 micron .
84.16772 Norris R.P., Allen D.A., Haynes R.F., Wright A.E. *Proc. Astron. Soc. Aust. 5, 562-565* A search for OH emission from symbiotic stars.
86..1400 Gutierrez-Moreno A., Moreno H., Cortes G. *Astron. Astrophys. 166, 143-147* Spectrophotometric observations of two symbiotic stars.
87..3056 Whitelock P.A. *Publ. Astron. Soc. Pac. 99, 573-591* Symbiotic Miras.

87.17445 Lutz J.H. *Bull. American Astron. Soc. 19, 753* IUE and optical observations of the symbiotic star/nebula He 2-104.
89..2694 Schild H. *Mon. Not. R. Astron. Soc. 240, 63-68* AGB stellar evolution and symbiotic stars.
89..3096 Lutz J.H., Kaler J.M., Shaw R.A., Schwarz H.E., Aspin C. *Publ. Astron. Soc. Pac. 101, 966-977* He 2-104: a link between symbiotic stars and planetary nebulae?
89..9115 Schwarz H.E., Aspin C., Lutz J.H. *Astrophys. J. 344, L29-L31* He 2-104: a symbiotic proto-planetary nebula ?
89.10755 Schwarz H., Aspin C., Lutz J. *J. Br. Astron. Soc. 99, 51* A southern 'Crab'.
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89.30018 Robredo J-F. *Ciel et Espace No 235, 22-23* Decouverte: une "nebuleuse du Crabe" dans l'hemisphere sud.
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90.12255 Munari U. *Mem. Soc. Astron. Ital.,61,91* The extreme, probably symbiotic Mira V 407 Cyg and its relevand its relevance to the study of OH/IR sources.
90.13503 De Freitas Pacheco J.A., Dell'Aglio Da Costa R. *Rev. Mex. Astron.,21,515* The peculiar object He 2-104
91..1054 Burgarella D., Clampin M., Paresce F. *Astron. Astrophys. 249,199* Observations of the inner core of the Southern Crab.

315.4+05.2

He 2-109, PK 315+5°1, ESO 175-07, Sa 2-104, Wray 16-152

			Disc.: Henize 1964	*Diameter* (″) opt. 7.4 CaKa71
1950:	14 17 20	-55 14.2	HLSW75	
2000:	14 20 49	-55 27.9	.	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-01-19

*He*II	468.6 *nm*	16	*Hα*	656.3 *nm*	632
[*O*III]	436.3	–	[*N*II]	658.4	584
	500.7	1390	[*S*II]	671.7	40
*He*I	587.6	24		673.1	41

$\lg F_{H\beta}(mW.m^{-2})$ $-12.72 \pm .01$ SK89

Central Star:
$B > 19.2$ $V > 18.9$ SK89

Distance (kpc) stat.: 5.88 (CaKa71); 4.3 (Ma84); 6.31 (CKS91)

Bibliography: *PK67*, AcMa77, He67, Iw73, KSK90, PAKS91, Sa75, Sh85, Wr66

315.7+05.5

LoTr 8, PK 315+5°2

			Disc.: Longmore et al 1980	*Diameter* (″) opt. 19. 80..2605
1950:	14 18 31	-54 48.6	80..2605	
2000:	14 21 59	-55 02.3	.	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-12

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	711
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	1636	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.5 \pm .4$ ASTR91

Central Star: AG82 168 —

Bibliography: AG82, Iy87

Bibliography: AG82, Iy87

80..2605 Longmore A.J., Tritton S.B. *Mon. Not. R. Astron. Soc. 193,521-524* A second list of new planetary nebulae found on United Kingdom 1.2m Schmidt telescope plates.

315.7−01.2

LoTr 9, PK 315−1°1

			Disc.: Longmore et al 1980	*Diameter* (″)			
				opt. 28.	80..2605		
1950:	14 37 26	-61 07.1	80..2605				
2000:	14 41 18	-61 19.9	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-12					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	422
	500.7	35	[SII]	671.7	
HeI	587.6	–		673.1	

Bibliography: PAKS91

80..2605 Longmore A.J., Tritton S.B. *Mon. Not. R. Astron. Soc. 193,521-524* A second list of new planetary nebulae found on United Kingdom 1.2m Schmidt telescope plates.

316.1+08.4

He 2-108, PK 316+8°1, ESO 221-36, SaSt 2-8, Wray 16-149, IRAS 14147-5156

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −8.0 ± 4.5	STPP83
1950:	14 14 46.6	-51 56 49	IRAS	*opt.* 11.	CaKa71	*Expansion Velocities* (*km/s*)	
	14 14 47.5	-51 56 50	Mi76			[OIII] 12.	We89
2000:	14 18 09.4	-52 10 40	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-03						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	8	$H\alpha$	656.3 *nm*	438	*J*	11.86	12μm	0.59	3
[OIII]	436.3	–	[NII]	658.4	128	*H*	11.74	25μm	9.69	3
	500.7	175	[SII]	671.7	3	*K*	11.12	60μm	16.73	3
HeI	587.6	21		673.1	4	*L*		100μm	7.90	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.43 ± .02	TP77, SK89			*Photom.*	PM87	*Radio* 2*cm*	43	MiAl82
IUE Spectra:		*LW*(1) *SW*(2)						(*mJy*) 6*cm*	33	MiAl75

Central Star: AG82 166 — CPD -51 6744
B 12.86 *V* 12.72 *Qual:* A SK89 , TASG91 *Spectrum:* Of(H) Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: spect. 8.3 (MKHH88)
Distance (kpc) stat.: 3.9 (CaKa71); >2.70 (MiAl75); 2.98 (Ac78); 2.50 (AGNR84); 3.9 (Ma84); 4.30 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Ac75, Ac76, Ac80, AlGl74, CoBa80, Do73, FeAl87, HLSw77, He67, Iw73, Ka70, Ka76, Ka79, Ka80, Ka86, Kal78, Kle78, KuMe89, LNP89, MMMK90, Ma81, MaFa85, MaFa86, MaPe88, Me89, Mi79, PAKS89, Pe71, PiKh79, PrPe89, Sa76, Sa84, SaSt72, Sh85, StAc87, TAGS89, W69, WeHe67, Webs69, Wr66, ZuAl86

78.30033 Kaler J.B. *IAU Symposium 76,235-244* The abundances of He, N, Ne, Ar and Cl.
83.30803 Adams S., Barlow M.J. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae, 537-538* An optical and ultraviolet study of nine low-excitation planetary nebulae.

316.3–01.3

LoTr 10, PK 316–1°1

		Disc.: Longmore et al 1980		*Diameter* (″)	
				opt. 54. 80..2605	
1950:	14 42 28	-61 01.2	80..2605		
2000:	14 46 21	-61 13.8	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-13					
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	196
	500.7	63	[*S*II]	671.7	30
*He*I	587.6	–		673.1	21

80..2605 Longmore A.J., Tritton S.B. *Mon. Not. R. Astron. Soc. 193,521-524* A second list of new planetary nebulae found on United Kingdom 1.2m Schmidt telescope plates.

317.1–05.7

He 2-119, PK 317–5°1, ESO 099-01, Sa 2-115, Wray 16-168, IRAS 15064-6429

		Disc.: Henize 1964		*Diameter* (″)	*Rvel:* −11.0 ± 19.0 STPP83
				opt. 53. CaKa71	
1950:	15 06 24.1	-64 29 07	IRAS		
	15 06 23.1	-64 28 57	Mi76		
2000:	15 10 39.9	-64 40 19	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27					
*He*II	468.6 *nm*	36:	*Hα*	656.3 *nm*	452
[*O*III]	436.3	–	[*N*II]	658.4	492
	500.7	848	[*S*II]	671.7	57
*He*I	587.6	21		673.1	53
$\lg F_{H\beta}(mW.m^{-2})$		−11.8 ± .3 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*	
12μm	0.59	3	
25μm	1.52	3	
60μm	8.79	3	
100μm	9.83	3	
Radio (*mJy*)	*2cm* 62	MiAl82	
	6cm 94	Ca82	

Distance (kpc) stat.: 1.16 (CaKa71); 0.97 (Ac78); 1.43 (Da82); 1.10 (AGNR84); 1.7 (Ma84); 1.36 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, AlGl74, HLSW75, He67, Iw73, Ka76, KrK68, LNP89, Lo77, MGT91, MGTW87, Ma81, MeHa75, Mi79, PAKS89, Sa75, WeHe67, Wr66

69..9023 Webster L.B. *Obs. 89,19* Observations of southern P.N.

69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.

317.8+03.3

VBRC 6, PK 317+3°1, ESO 176-01, Wray 17-68, IRAS 14379-5602

		Disc.: Van Den BERGH et al 1973		*Diameter* (″)			
1950:	14 37 58.8	-56 02 27	IRAS	*opt.* 45.	73..9025		
	14 37 58	-56 02.3	HLSw77				
2000:	14 41 36	-56 15.1	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-13					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	737
[OIII]	436.3	–	[*NII*]	658.4	1817
	500.7	605	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-13.1 \pm .4$	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.43	1
25μm	0.36	1
60μm	1.05	3
100μm	18.34	1

Bibliography: AcMa77, Ko78, MaC83, We77, Wr66

73..9025 Van Den Bergh S., Racine R., Van Agt S., Barnes T., Coutts C., Madore B., Skill A. *Astrophys. J. 179,863* New southern Planetary Nebulae.

318.3–02.0

He 2-114, PK 318–2°1, ESO 135-02, Sa 2-109, Wray 16-159, IRAS 15000-6041

		Disc.: Henize 1964		*Diameter* (″)		*Rvel:* -37.0 ± 2.0	MWF88
1950:	15 00 05.7	-60 41 23	IRAS	*opt.* 37.	CaKa71	*Expansion Velocities* (*km/s*)	
	15 00 09.7	-60 41 39	Mi76			[OIII] 7.5	MWF88
2000:	15 04 08.8	-60 53 21	.			[NII] 12.0	MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	39	*Hα*	656.3 *nm*	451
[OIII]	436.3	–	[*NII*]	658.4	622
	500.7	841	[*SII*]	671.7	21:
HeI	587.6	27		673.1	16:
$\lg F_{H\beta}(mW.m^{-2})$		$-12.28 \pm .02$	SK89		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.01	1
25μm	0.38	1
60μm	3.08	3
100μm	38.46	1

Radio (*mJy*)			
	2*cm*	18	MiAl82
	6*cm*	11	Mi79

Central Star:
$B > 16.9$ SK89

Distance (kpc) stat.: 1.33 (CaKa71); 1.11 (Ac78); 2.98 (Da82); 2.70 (AGNR84); 4.1 (Ma84); 2.60 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Gr71, Gr72, He67, Iw73, Ka76, KaJa89, KrK68, MGT91, MGTW87, Ma81, Pa90, STPP83, Sa75, Sh85, WPSD88, We89, WeHe67, Wr66

69..9023 Webster L.B. *Obs. 89,19* Observations of southern P.N.
69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.
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73..9097 Greig W.E. *Mem. Soc. R. Sci. Liege 5,481* B nebulae., the southern blue filament.
74..9027 Holmberg E.B., Lauberts A., Schuster H.E.West R.M. *Astron. Astrophys. Suppl. Ser. 18,463* The ESO/Uppsala survey of the ESO (B) atlas of south sky 1.
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87..1606 Louise R., Macron A., Pascoli G., Maurice E. *Astron. Astrophys., Suppl. Ser. 70, 201-227* Photometric and spectrophotometric observations of 10 southern planetary nebulae.
90..1525 Pascoli G. *Astron. Astrophys., Suppl. Ser. 83, 27-39* Morphology of bipolar planetary nebulae. I. Two-dimensional spectrophotometry.

318.3–02.5

He 2-116, PK 318–2°2, ESO 135-03, Sa 3-37, Wray 16-163, IRAS 15020-6109

			Disc.: Henize 1964	*Diameter* (″)	
1950:	15 02 01.2	-61 09 40	IRAS	*opt.* 51. CaKa71	
	15 01 59.4	-61 09 48	Mi76		
2000:	15 06 00.8	-61 21 24	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	620
[*OIII*]	436.3	–	[*NII*]	658.4	1314
	500.7	490	[*SII*]	671.7	183
HeI	587.6	–		673.1	157
$\lg F_{H\beta}(mW.m^{-2})$		$-12.3 \pm .3$ ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.31	1
25μm	0.25	1
60μm	2.75	3
100μm	9.75	1
Radio (*mJy*) *2cm*	6	MiAl82
6cm	< 10	Mi79

Distance (kpc) stat.: 1.18 (CaKa71); 2.39 (Da82); 1.1 (Ma84); 2.35 (CKS91)

Bibliography: *PK67*, AST89, He67, Iw73, KrK68, MGT91, MGTW87, MeHa75, PAKS89, Sa76, Sm72, StAc87, WeHe67, Wr66

73..9097 Greig W.E. *Mem. Soc. R. Sci. Liege 5,481* B nebulae., the southern blue filament.
74..9027 Holmberg E.B., Lauberts A., Schuster H.E.West R.M. *Astron. Astrophys. Suppl. Ser. 18,463* The ESO/Uppsala survey of the ESO (B) atlas of south sky 1.

318.4+41.4

A 36, PK 318+41°1, A55 25, ESO 577-24, VV' 116, IRAS 13379-1938

			Disc.: Abell 1955	*Diameter* (″)	*Rvel*: $+36.8 \pm 3.3$ STPP83
1950:	13 37 54.8	-19 38 06	IRAS	*opt.* 370. CaKa71	*Expansion Velocities* (*km/s*)
	13 37 57.4	-19 37 47	Ka83		[OIII] 36.0 Sa84
2000:	13 40 41.2	-19 52 57	.	*radio* 360. ZPB89	

Intens. ($H\alpha = 100$) ESO-B.C+IDS 1986-01-24 DA					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	32:
	500.7	117	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-10.86 \pm .03$ Kale76			
IUE Spectra:		*LW*(10) *SW*(9)			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.54	1
60μm	2.23	1
100μm	8.64	3
Radio (*mJy*) *2cm*		
6cm	215	Ca82

Central Star: AG82 156 — CSI -19 -13379; UBV 12237; FB 138
U 9.98 *B* 11.28 *V* 11.53 *Qual:* A Ab66, 72.30001 *Spectrum:* O(H) Me91

Notes: Spectroscopic binary nucleus, *P* of a few days (Me80). Monochromatic images (83..1022)
Distance (kpc) indiv.: stand. 0.4 (Sab86)
Distance (kpc) stat.: 0.47 (CaKa71); 0.39 (Ac78); 0.31 (Da82); 0.33 (AGNR84); 0.6 (Ma84); 0.38 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, All76, Ca84, CePe85, CoBa74, Cu74, Do73, Dr80, FeBr90, Gr71, Gr72, GrNe90, Gu88, HeAu87, IsWe87, KSK90, Ka76, Ka85, Kh79, KrK68, MMMK90, Mi76, Mi79, PAKS89, PPT88, PaPe88, Pe83, Ph84, Phi84, RRA82, SGBO84, SaHa82, Sabb86, Sc81, We86, We89, ZTPS89, ZiPo91

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71..9026 Lasker B.M., Hesser J.E. *Astrophys. J. 164,303* Hight frequency stellar oscillations. V. Power spectra for the central stars ofP.N.
72..9008 Johnson H.M. *18 Symp. Inter. Astrophys. Liege 1972,5,121* Flux density at 31 GHz,85 GHz.
72.30001 Shao C.Y., Liller W. *Private communication* UBV observations of the central stars of planetary nebulae
73..9031 Bohuski T.J., Smith M.G. *Bull. Amer. Astron. Soc. 5,13* Expansion velocity in old P.N.
73..9057 Johnson H.M. *Mem. Soc. Roy. Liege. TOME5,121* Flux density of 7 P.N. at 31 GHz or 85 GHz.
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74..9035 Bohuski T.J., Smith M.G. *Astrophys. J. 193,197-203* Old P.N. and the relation between size and expansion velocity.

81..1137 Mendez R.H., Kudritzki R.P., Gruschinske J., Simon K.P. *Astron. Astrophys. 101,323-331* A spectral description and non-LTE analysis of 6 central stars of PN.
81..3030 Henize K.G., Fairall A.P. *Publ. Astron. Soc. Pac. 93,435-436* The spectrum of PN K 1-27.
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83.30787 Hua C.T., Louise R. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae 507-508* High-spatial resolution observations of planetary nebulae.
84..4088 Louise R., Hua C.T. *Astrophys. Space Sci. 105, 139-150* Monochromatic observations of planetary nebulae.
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86..2599 De Freitas Pacheco J.A., Codina S.J., Viadana L. *Mon. Not. R. Astron. Soc. 220, 107-117* New colour and Zanstra temperatures for 15 central stars of planetary nebulae.
86.13521 Landaberry S.0j.C., Pacheco J.A.F., Viadana L., Bazzanella B. *Rev. Mex. Astron. 12, 191-192* Photoelectric scanner observations of central stars of planetary nebulae.
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90..4002 Herrero A., Mendez R.H., Manchado A. *Astrophys. Space Sci.,169,183* NLTE analysis of high-resolution spectra of CSPN.

318.4–03.0

ESO 135-04, PK 318−3°1, Zo 1, IRAS 15047-6133

				Diameter (″)		
		Disc.: Holmberg et al 1974				
1950:	15 04 44.7	-61 33 14	IRAS	*opt.* 20.	La82	
	15 04 39	-61 32.6	La82			
2000:	15 08 43	-61 44.1	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-13

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	918
[*O*III]	436.3	–	[*N*II]	658.4	1230
	500.7	752	[*S*II]	671.7	165
*He*I	587.6	56		673.1	81

$\lg F_{H\beta}(mW.m^{-2})$ $-13.4 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.25	1
25μm	0.39	1
60μm	1.38	3
100μm	7.39	1

Bibliography: Ko78, MaC83, PAKS91, We77

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84.23001 Zodet *The Messenger 38,42* ESO Photographer finds new celestial object

319.2+06.8

He 2-112, PK 319+6°1, ESO 222-13, Sa 2-107, Wray 16-157, Y-C 2-15, IRAS 14370-5222

			Disc.: Henize 1964	*Diameter* (″)		
1950:	14 37 02.1	-52 22 07	IRAS	*opt.* 14.6	CaKa71	
	14 37 00.7	-52 22 00	Mi76			
2000:	14 40 30.0	-52 34 51	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	37	$H\alpha$	656.3 *nm*	912	*J*	12.25	12μm	0.74	3
[*OIII*]	436.3	16	[*NII*]	658.4	896	*H*	12.34	25μm	6.35	3
	500.7	2005	[*SII*]	671.7	39	*K*	11.48	60μm	8.20	3
HeI	587.6	32		673.1	54	*L*		100μm	8.08	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.15 \pm .$	Pe71			*Photom.*	Wh85	*Radio* (*mJy*)	*2cm* 60	MiAl82
									6cm 82	MiAl75

Central Star:
B 18.1 *Qual:* D TASG91

Distance (kpc) stat.: 2.42 (CaKa71); 3.10 (MiAl75); 3.03 (Ca76); 2.48 (Da82); 1.80 (AGNR84); 2.5 (Ma84) 3.02 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, Al80, Ca82, CeGi73, HLSw77, He67, Iw73, Iy86, KAS91, LNP89, MaPo80, MiWe79, PAKS89, PM87, PPFS87, Sa75, TAGS89, WeHe67, Wr66

86..2788 Whitelock P.A., Menzies J.W. *Mon. Not. R. Astron. Soc. 223, 497-503* A new binary planetary nebula.

319.6+15.7

IC 4406, PK 319+15°1, ARO 517, ESO 272-06, He 2-110, Sa 2-105, StWr 4-12, VV 69, VV' 120, Wray 16-153, IRAS 14192-4355

			Disc.: Fleming 1901	*Diameter* (″)		*Rvel:* -41.0 ± 2.0	MWF88
1950:	14 19 15.8	-43 55 26	IRAS	*opt.* 35.	PK67	*Expansion Velocities* (*km/s*)	
	14 19 15.5	-43 55 27	Mi73			[OIII] 6.0	MWF88
2000:	14 22 26.5	-44 09 06	.			[NII] 14.0	MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01 N								*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	5	$H\alpha$	656.3 *nm*	390			12μm	0.33	3
[*OIII*]	436.3	7	[*NII*]	658.4	595			25μm	2.69	3
	500.7	1267	[*SII*]	671.7	15			60μm	21.08	3
HeI	587.6	18		673.1	16			100μm	25.35	3
$\lg F_{H\beta}$	$-10.74 \pm .03$	64.50001, Pe71, W83						*Radio* (*mJy*)	*2cm* 84	MiAl82
IUE Spectra:	*LW*(3)	*SW*(2)							*6cm* 110	Ca82

Central Star: AG82 169 — CD -43 9005; GCRV 8390; HD 125720
B 17.44 *Qual:* B GaPo88 *Spectrum:* WR Wa70

Notes: Binary nucleus ? (Li82). ESO-NTT images by Schwartz H.E. and Melnick J. ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) stat.: 1.2-2.2 (CaKa71); 1.67 (MiAl75); 2.36 (Ca76); 1.48 (Ac78); 1.88 (Da82); 0.26 (PhPo84); 1.20 (AGNR84); 1.7 (Ma84); 2.36

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90..1039 Szczerba R. *Astron. Astrophys. 237,495* A distance-independent test of planetary nebulae nuclei evolution.
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91..4003 Guzadyan G.A., Egikyan A.G., Terzian Y. *Astrophys. Space Sci.,176,9* Planetary nebula with a peculiar spectrum in the ultraviolet : CN 3-4.

320.1–09.6

He 2-138, PK 320−9°1, ESO 100-03, MWC 238, SaSt 2-10, Wray 15-1377, IRAS 15513-6600

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −46.5 ± 3.0 STPP83
1950:	15 51 19.0	-66 00 23	IRAS	*opt.* 7. CaKa71	*Expansion Velocities* (*km/s*)
	15 51 19.2	-66 00 26	Mi76		[OIII] 11. MKHH88
2000:	15 56 01.3	-66 09 11	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-26

						IR Class: .	*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	315	*J*	12*μm*	2.16	3
[*O*III]	436.3	–	[*N*II]	658.4	213	*H*	25*μm*	48.18	3
	495.9	–	[*S*II]	671.7	10	*K*	60*μm*	43.81	3
*He*I	587.6	–		673.1	20	*L*	100*μm*	19.58	3
lg$F_{H\beta}$	−10.70 ± .02	TP77, W83, SK89				*Photom.* CoBa80	*Radio* 2*cm*	122	PFMA82
IUE Spectra:	*LW*(4)	*SW*(5)					(*mJy*) 6*cm*	76	MiAl75

Central Star:
B 10.78 *V* 10.90 *Qual:* A SK89 , TASG91 *Spectrum:* O(H) Me91

Distance (kpc) indiv.: spect. 5.0 (MKHH88)
Distance (kpc) stat.: 3.8 (CaKa71); 4.89 (MiAl75); 4.77 (Ca76); 3.5 (Ac78); 2.24 (Da82); 1.90 (AGNR84); 3.1 (84 ..1511); 3.55 (CKS91)

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89.30882 Parthasarathy M., Pottasch Sr. *Astron. Astrophys. 225, 521-527* The far-infrared (IRAS) excess in BQ and related stars.
89.50006 Moreno H., Gutierrez-Moreno A., Cortes G. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 51* Two southern low excitation planetary nebulae.

320.3-28.8

He 2-434, PK 320−28°1, ESO 046-03, IRAS 19275-7439

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* +38.0 ± 4.5 STPP83
1950:	19 27 30.9	-74 39 26	IRAS	*opt.* 10. PK67	*Expansion Velocities* (*km/s*)
	19 27 33.2	-74 39 25	Mi76		[OIII] = 6.0 Ac76
2000:	19 33 50.9	-74 32 59	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02					
HeII 468.6 *nm*	–	$H\alpha$	656.3 *nm*	347	
[*OIII*] 436.3	11	[*NII*]	658.4	14	
500.7	1077	[*SII*]	671.7		
HeI 587.6	14		673.1		
$\lg F_{H\beta}(mW.m^{-2})$	−11.43 ± .05	W83, ViFr85			
IUE Spectra:	*LW*(1)	*SW*(1)			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.97	3
60μm	1.75	3
100μm	1.22	1
Radio 2*cm*	18	MiAl82
(*mJy*) 6*cm*		

Central Star: AG82 370 —
B 14.99 *V* 14.96 *Qual:* B TASG91

Bibliography: *PK67*, AG82, Ac75, Ca82, Do73, HLSw77, He67, Ka76, MGT91, MGTW87, MiWe79, Pe71, Sa84, TAGS89, We89, WeHe67

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320.9+02.0

He 2-117, PK 321+2°2, ESO 176-12, RCW 90, Sa 2-113, Wray 16-164, IRAS 15022-5547

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −29.0 ± 9.0 STPP83
1950:	15 02 14.5	-55 47 40	IRAS	*opt.* 5. PK67	
	15 02 14.5	-55 47 45	Mi76		
2000:	15 05 59.3	-55 59 21	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16					
HeII 468.6 *nm*	–	$H\alpha$	656.3 *nm*	2090	
[*OIII*] 436.3	–	[*NII*]	658.4	639	
500.7	943	[*SII*]	671.7		
HeI 587.6	93		673.1	60	
$\lg F_{H\beta}(mW.m^{-2})$	−12.50 ± .02	W69, SK89			

IR Class: N		*Photom.* PM87	*Spectr.* PPOJ86
J	10.91		
H	11.09		
K	9.97		
L			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.69	3
25μm	44.83	3
60μm	42.04	3
100μm	20.15	1
Radio 2*cm*	222	MiAl82
(*mJy*) 6*cm*	267	79..1509

Central Star: AG82 172 —
V > 17.9 SK89

Distance (kpc) stat.: 3.3,3.9 (CaKa71); 2.4 (Ac78); 0.99 (Da82); 0.93 (AGNR84); 1.7 (Ma84); 1.43 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, ChLo72, HLSw77, He67, Ka70, Ka76, LNP89, Ma74, Ma81, Mi79, MiWe79, OlRa86, PAKS89, PPFS87, PiKh79, PrPe89, Sa75, Sh85, VoCo90, WeHe67, Web69, Webs69, Wr66

79..1509 Turner B.E. *Astron. Astrophys. Suppl. Ser. 37,1-332* A survey of OH near the galactic plane.
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89...428 Volk K.M., Kwok S. *Astrophys. J. 342, 345-363* Evolution of protoplanetary nebulae.

321.0+08.3

MeWe 1-5

			Disc.: Melmer et al 1990	*Diameter* (″)	
				opt. 27. 90..2581	
1950:	14 43 08.2	-50 10 53	90..2581		
2000:	14 46 35.0	-50 23 27	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-30

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	543
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	1707	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.7 \pm .4$ ASTR91

Central Star:
B 20.6 90..2581

90..2581 Melmer D., Weinberger R. *Mon. Not. R. Astron. Soc. 243, 236-240,1990* New old PN in the southern sky.

321.0+03.9

He 2-113, PK 321+3°1, He 3-1044, GL 4205, Wray 15-1269, IRAS 14562-5406

			Disc.: Henize 1967	*Diameter* (″)	
1950:	14 56 15.1	-54 06 16	IRAS	*opt. St.* ATS91	
	14 56 15	-54 06.2	Sa76		
2000:	14 59 54	-54 18.1	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	763	
[*O*III]	436.3	–	[*N*II]	658.4	465	
	500.7	15	[*S*II]	671.7	} 100.	
*He*I	587.6	38		673.1		

$\lg F_{H\beta}(mW.m^{-2})$ $-11.83 \pm .02$ W83, ASTR91
IUE Spectra: *LW*(1) *SW*(1)

IR Class: D		*IRAS Fluxes* (*Jy*)		*Qual.*
J	9.95	12*μm*	92.41	3
H	8.99	25*μm*	310.50	3
K	7.46	60*μm*	176.60	3
L	4.25	100*μm*	71.30	3
Photom. PPFS87		*Radio* 2*cm* 160		PFMA82
Spectr. 80..2583		(*mJy*) 6*cm* 115		PFMA82

Central Star:
B 12.97 *V* 12.28 *Qual:* A TASG91 *Spectrum:* WC 11 Me91

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321.0–03.8

HaTr 2, PK 321−3°1, IRAS 15261-6051

				Disc.: Hartl et al 1983	*Diameter* (″)	
1950:	15 26 09.9	-60 51 22	IRAS		*opt.* 12. 85..1131	
	15 26 10.0	-60 51 23	83.28035			
2000:	15 30 18.6	-61 01 39	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	89	$H\alpha$	656.3 *nm*	779	12μm	0.26	1
[*OIII*]	436.3	–	[*NII*]	658.4	–	25μm	0.88	3
	500.7	730	[*SII*]	671.7		60μm	1.90	3
HeI	587.6	–		673.1		100μm	32.90	1
$\lg F_{H\beta}(mW.m^{-2})$		$-13.7 \pm .4$	ASTR91					

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321.3+02.8

He 2-115, PK 321+2°1, ESO 176-10, Sa 2-112, Wray 16-162, IRAS 15015-5459

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −63.0 ± 7.0	STPP83
1950:	15 01 33.1	-54 59 25	IRAS	*opt.* 3.	CaKa71		
	15 01 34.2	-54 59 34	Mi76				
2000:	15 05 16.7	-55 11 12	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1723	*J*	11.61	12*μm*	2.95	3
[*OIII*]	436.3	–	[*NII*]	658.4	518	*H*	11.28	25*μm*	21.40	3
	500.7	714	[*SII*]	671.7	6	*K*	10.52	60*μm*	12.71	3
HeI	587.6	56		673.1	13	*L*		100*μm*	52.67	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.39 ± .03	W69, SK89			*Photom.*	Wh85	*Radio* (*mJy*)	*2cm* 96 MiAl82 *6cm* 156 Mi79	

Central Star: AG82 171 —
B 17.92 *V* 16.24 *Qual:* B SK89

Distance (kpc) stat.: 4.6,6.3 (CaKa71); 4.6 (Ac78); 1.23 (Da82); 1.20 (AGNR84); 2.0 (Ma84); 1.94 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, AcMa77, Ca82, Gr71, HLSw77, He67, Iy86, KAS91, Ka70, Ka76, LNP89, MiWe79, PAKS89, PM87, PPFS87, PiKh79, Sa75, Sh85, Sm72, TAGS89, TASG91, VoCo90, WeHe67, Web69, Webs69, Wr66

321.3−16.7

He 2-185, PK 321−16°1, ESO 070-01, Sa 2-162, StWr 1-5, Wray 16-244, IRAS 16557-7001

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −6.0 ± 7.0	STPP83
1950:	16 55 46.0	-70 01 38	IRAS	*opt.* 5.	ATS91		
	16 55 45.4	-70 01 40	Mi76				
2000:	17 01 16.9	-70 06 06	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-14						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	1.0	*Hα*	656.3 *nm*	345	*J*		12*μm*	0.25	1
[*OIII*]	436.3	8	[*NII*]	658.4	18	*H*		25*μm*	0.93	3
	500.7	1080	[*SII*]	671.7	2.2	*K*	> 9.4	60*μm*	0.82	3
HeI	587.6	18		673.1	5	*L*		100*μm*	1.14	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.51 ± .01	W69, SK89			*Photom.*	AlGl74	*Radio* (*mJy*)	*2cm* 17 MiAl82 *6cm* 18 MiAl75	

Central Star: AG82 219 —
B 15.97 *V* 16.46 *Qual:* B SK89

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: >5.26 (MiAl75); 5.45 (Ac78); 4.9 (Ma84)

Bibliography: *PK67*, AG82, AGR89, AcMa77, Dr80, HLSW75, He67, Ka70, Ka76, Li78, MGT91, MGTW87, PAKS91, Pe71, PiKh79, Sa75, Sh85, StWr72, TASG91, W66, WeHe67, Web69, Webs69, Wr66

83..3115 Lutz J.H., Kaler J.B. *Publ. Astron. Soc. Pac. 95, 739-744* Misclassified and misidentified planetary nebulae and nuclei.

321.8+01.9

He 2-120, PK 321+1°1, ESO 177-01, Sa 2-116, Wray 16-169, IRAS 15081-5528

			Disc.: Henize 1964	*Diameter (″)*		*Rvel:* -20.0 ± 6.0	MWF88
1950:	15 08 11.0	-55 28 32	IRAS	*opt.* 27.	CaKa71	*Expansion Velocities (km/s)*	
	15 08 10.4	-55 28 34	Mi76			[OIII] 7.0	MWF88
2000:	15 11 56.1	-55 39 51	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27 W						*IR Class:* N+D		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	621	*J*	12.21	12μm	1.31	1
[OIII]	436.3	–	[NII]	658.4	1471	*H*	12.44	25μm	0.70	3
	500.7	710	[SII]	671.7	144	*K*	11.32	60μm	5.85	3
HeI	587.6	29:		673.1	136	*L*		100μm	137.70	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.22 \pm .00$ SK89				*Photom.*	Wh85	*Radio* 2cm	25	MiAl82
								(mJy) 6cm	26	Mi79

Central Star:
V 21.2 *Qual:* C WRPA86

Distance (kpc) indiv.: kinem. 1.2: (Ac78)
Distance (kpc) stat.: 1.70 (CaKa71); 1.3 (Ac78); 2.51 (Da82); 2.20 (AGNR84); 3.2 (Ma84); 2.63 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Gr71, Gr72, HLSw77, He67, Iw73, Iy86, KaJa89, KrK68, LNP89, Ma81, MeHa75, PAKS89, PM87, PPFS87, STPP83, Sa75, Sm72, W69, We89, WeHe67, Web69, Wr66

90..1039 Szczerba R. *Astron. Astrophys. 237,495* A distance-independent test of planetary nebulae nuclei evolution.

322.1–06.6

He 2-136, PK 322–6°1, ESO 136-05, My 91, Sa 2-126, Wray 16-190, IRAS 15478-6221

			Disc.: Henize 1964	*Diameter (″)*		*Rvel:* -135.0 ± 9.0	STPP83
1950:	15 47 48.8	-62 21 48	IRAS	*opt.* 10.	PK67		
	15 47 47.9	-62 21 54	Mi76				
2000:	15 52 09.7	-62 30 53	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01							*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	47	*Hα*	656.3 *nm*	364		12μm	0.25	1
[OIII]	436.3	14	[NII]	658.4	34		25μm	1.42	3
	500.7	120	[SII]	671.7	2.5		60μm	1.34	3
HeI	587.6	4		673.1	3		100μm	12.16	1
$\lg F_{H\beta}(mW.m^{-2})$		$-11.70 \pm .03$ W69, Pe71					*Radio* 2cm	20	MiAl82
							(mJy) 6cm	23	Ca82

Central Star: AG82 189 —
B 17.3 *V* 17.2 *Qual:* D TASG91

Distance (kpc) stat.: >4.53 (MiAl75); 5.11 (Ac78); 4.5 (Ma84)

Bibliography: *PK67*, AG82, AST89, AcMa77, HLSW75, He67, Ka70, Ka76, MGT91, MGTW87, Mi79, PiKh79, Sa75, TAGS89, Web69, Wr66

322.4–00.1

Pe 2-8, PK 322–0°1, ESO 177-03, He 2-124, Pe -0 1, Sa 3-28, VV' 123, Wray 16-177, IRAS 15198-5658

			Disc.: Perek 1960	*Diameter* (″)		
1950:	15 19 50.2	-56 58 50	IRAS	*opt.* 1.6	CaKa71	
	15 19 48.9	-56 58 39	Mi76			
2000:	15 23 42.2	-57 09 18	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15						*IR Class:* N,		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	6184	*J*	11.63	12*μm*	16.70	1
[*OIII*]	436.3	–	[*NII*]	658.4	1366	*H*	11.47	25*μm*	70.93	3
	500.7	1124	[*SII*]	671.7	13	*K*	10.12	60*μm*	35.43	3
HeI	587.6	150		673.1	47	*L*		100*μm*	238.20	1
$\lg F_{H\beta}(mW.m^{-2})$		$-13.75 \pm .05$	W69			*Photom.*	PM87	*Radio* 2*cm*	221	MiAl82
								(*mJy*) 6*cm*	100	MiAl82

Distance (kpc) stat.: 4.1,5.2 (CaKa71); 1.40 (Da82); 0.96 (AGNR84); 2.9 (Ma84); 2.24 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Fe68, HLSw77, He67, Ka70, Ka76, LNP89, Mi79, OlRa86, PAKS89, PPFS87, PrPe89, Sa76, Sm72, StAc87, VoCo90, WeHe67, Wh85, Wr66

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89...428 Volk K.M., Kwok S. *Astrophys. J. 342, 345-363* Evolution of protoplanetary nebulae.

322.4–02.6

Mz 1, PK 322–2°1, ARO 531, ESO 135-11, He 2-130, My 89, RCW 93, Sa 2-123, VV 73, VV' 125, Wray 16-183, IRAS 15302-5859

			Disc.: Menzel 1922	*Diameter* (″)		*Rvel:* -33.0 ± 4.0	MWF88
1950:	15 30 13.0	-58 59 05	IRAS	*opt.* 26.	CaKa71	*Expansion Velocities* (*km/s*)	
	15 30 13.8	-58 58 57	Mi76			[OIII] < 6.0	MWF88
2000:	15 34 16.7	-59 08 59	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31 E						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	513	12*μm*	0.48	2
[*OIII*]	436.3	–	[*NII*]	658.4	1033	25*μm*	1.40	3
	500.7	907	[*SII*]	671.7	78	60*μm*	14.45	3
HeI	587.6	27		673.1	80	100*μm*	92.96	1
$\lg F_{H\beta}(mW.m^{-2})$		$-11.31 \pm .03$	W69, Pe71			*Radio* 2*cm*	67	MiAl82
						(*mJy*) 6*cm*	61	Ca82

Central Star: AG82 182 —

Distance (kpc) indiv.: ext. 1.3 (Ac78); ext. 1.1 (Sab86)
Distance (kpc) stat.: 1.5-1.8 (CaKa71); 2.34 (MiAl75); 2.31 (Ca76); 1.65 (Ac78); 2.12 (Da82); 1.70 (AGNR84); 2.4 (Ma84); 2.28 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, AlMi72, ChLo72, De71, Dr80, Gr71, Gr72, Gu70, He67, Hi71, Iw73, Ka70, Ka76, KaJa89, KrK68, LNP89, Lo77, MGT91, MGTW87, Ma74, MaPo80, MeHa75, MiWe79, Pa90, STPP83, Sa75, Sm72, WPSD88, We89, WeHe67, Web69, Wr66

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322.5–05.2

NGC 5979, PK 322–5°1, ESO 136-03, He 2-135, Sa 2-124, VV 74, VV' 126, Wray 16-187, IRAS 15434-6103

				Disc.: Herschel 1835	*Diameter* (″)	*Rvel*: +23.0 ± 3.0 STPP83
1950:	15 43 26.0	-61 03 50	IRAS		*opt.* 8. CaKa71	
	15 43 26.0	-61 03 48	Mi76			
2000:	15 47 40.8	-61 13 03	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01

						IR Class: N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	102	$H\alpha$	656.3 *nm*	368	*J*	11.86	12μm	0.67	3
[*O*III]	436.3	14	[*N*II]	658.4	16:	*H*	11.71	25μm	10.44	3
	500.7	815	[*S*II]	671.7		*K*	11.06	60μm	9.96	3
*He*I	587.6	2.4		673.1		*L*		100μm	4.90	2
						Photom.	Wh85	*Radio* 2*cm*	102	MiAl82
lg$F_{H\beta}(mW.m^{-2})$		−11.22 ± .02	W69, SK89					(*mJy*) 6*cm*	117	Ca82

Central Star: AG82 186 — HD 140586; CSI -61 -15434
B 16.3 *V* 15.3 *Qual:* C SK89

Distance (kpc) stat.: 3.81 (CaKa71); 4.14 (MiAl75); 4.04 (Ca76); 3.3 (Ac78); 1.78 (Da82); 1.50 (AGNR84); 2.6 (Ma84); 2.81 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, CoBa80, De71, HLSW75, He67, IwKa65, Ka70, Ka76, LNP89, MaPo80, MiWe79, PM87, PPFS87, PiKh79, Sa75, Sh85, TAGS89, TASG91, Webs69, Wr66

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323.1–02.5

He 2-132, PK 323–2°1, ESO 136-01, Sa 3-30, Wray 16-184, IRAS 15339-5834

				Disc.: Henize 1964	*Diameter* (″)	*Rvel*: −131.0 ± 10.0STPP83
1950:	15 33 58.2	-58 34 52	IRAS		*opt.* 18. CaKa71	
	15 33 57.9	-58 35 02	Mi76			
2000:	15 38 00.5	-58 44 51	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-02

								IRAS Fluxes (*Jy*)		*Qual.*
*He*II	468.6 *nm*	43	$H\alpha$	656.3 *nm*	766			12μm	0.25	1
[*O*III]	436.3	–	[*N*II]	658.4	10:			25μm	2.85	3
	500.7	738	[*S*II]	671.7				60μm	6.75	3
*He*I	587.6	31		673.1				100μm	93.99	1
lg$F_{H\beta}(mW.m^{-2})$		−12.37 ± .02	W69, SK89					*Radio* 2*cm*	10	MiAl82
								(*mJy*) 6*cm*	25	Mi79

Central Star:
B 17.41 *V* 17.04 *Qual:* B SK89

Distance (kpc) stat.: 2.4 (CaKa71); 2.6 (Ac78); 3.44 (Da82); 2.50 (AGNR84); 3.7 (Ma84); 3.40 (CKS91)

Bibliography: *PK67*, AGR89, AST89, HLSW75, He67, Iw73, KSK90, Ka70, Ka76, KrK68, LNP89, Ma81, PAKS89, Sa76, Sh85, Sm72, StAc87, WeHe67, Web69, Wr66

323.9+02.4

He 2-123, PK 323+2°1, ESO 177-02, Sa 2-119, Wray 16-175, IRAS 15186-5357

				Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −12.0 ± 10.0 STPP83
1950:	15 18 36.1	-53 57 34	IRAS		*opt.* 4.6 CaKa71	
	15 18 35.2	-53 57 34	Mi76			
2000:	15 22 19.7	-54 08 17	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	992
[*O*III]	436.3	–	[*N*II]	658.4	862
	500.7	233	[*S*II]	671.7	16
*He*I	587.6	47		673.1	28

$\lg F_{H\beta}(mW.m^{-2})$ −12.03 ± .01 W69, SK89

IR Class: N

J	12.30	
H	12.40	
K	11.50	
L		
Photom.	PM87	

IRAS Fluxes (*Jy*)

		Qual.
12*μm*	0.93	3
25*μm*	4.99	3
60*μm*	17.53	3
100*μm*	10.57	1

Radio (*mJy*) *2cm* 51 MiAl82; *6cm* 110 Mi79

Central Star: AG82 177 —
B 17.6 *V* 16.8 *Qual:* C SK89

Distance (kpc) stat.: 3.2,4.2 (CaKa71); 2.5 (Ac78); 1.64 (Da82); 1.50 (AGNR84); 2.9 (Ma84); 2.61 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, AcMa77, Ca82, HLSw77, He67, KAS91, Ka70, Ka76, LNP89, Ma81, MiWe79, PAKS89, PiKh79, PrPe89, Sa75, Sh85, Sm72, WeHe67, Web69, Wr66

324.0+03.5

PM 1-89, MGP 2, IRAS 15154-5258

				Disc.: Preite-Martinez 1988	*Diameter* (″)	
1950:	15 15 27.7	-52 58 57	IRAS		*opt.* 27. 89..1351	
	15 15 27.7	-52 58 57	89..1351			
2000:	15 19 08.9	-53 09 50	.			

IRAS Fluxes (*Jy*)

		Qual.
12*μm*	2.25	3
25*μm*	12.93	3
60*μm*	14.20	3
100*μm*	8.58	1

Central Star:
B 16.2 89..1351 *Spectrum:* WC 4 Me91

Bibliography: PM88

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324.1+09.0

ESO 223-10, PK 324+9°1, IRAS 14582-4809

				Disc.: Holmberg et al 1977	*Diameter* (″)	*Rvel:* −55.0 ± 19.0 FrWe84
1950:	14 58 13.8	-48 09 17	IRAS		*opt.* 18. We77	
	14 58 13.8	-48 09 14	FrWe84			
2000:	15 01 40.5	-48 21 03	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-23					
HeII	468.6 *nm*	95	*Hα*	656.3 *nm*	448
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	643	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	−12.8 ± .4 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.41	3
60μm	0.84	3
100μm	8.91	1

Central Star: AG82 170Bis —
B 17.2 *V* 17.1 *Qual:* C TASG91 *Spectrum:* O ? FrWe84

Bibliography: HLSw77, Ko78

86..3156 Kaler J.B., Kwitter K.B. *Publ. Astron. Soc. Pac. 98, 1291-1293* Limited analysis of two ESO planetary nebulae and ESO galaxy.

324.2+02.5

He 2-125, PK 324+2°1, ESO 177-04, Sa 3-29, Wray 16-178, IRAS 15198-5340

				Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −27.0 ± 9.0 STPP83
1950:	15 19 51.5	-53 40 45	IRAS		*opt.* 3. CaKa71	
	15 19 51.7	-53 40 46	Mi76			
2000:	15 23 35.8	-53 51 25	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-02					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1107
[*OIII*]	436.3	–	[*NII*]	658.4	907
	495.9	–	[*SII*]	671.7	32
HeI	587.6	–		673.1	63

$\lg F_{H\beta}(mW.m^{-2})$	−12.60 ± .05 W69

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.32	1
25μm	4.64	3
60μm	5.49	3
100μm	13.77	1

Radio (*mJy*)	*2cm*	18	MiAl82
	6cm		

Central Star: AG82 179 —
B 17.0 PiKh79

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: kinem. 2.1: (Ac78)
Distance (kpc) stat.: 5.5 (CaKa71); 2.9 (Ac78); 2.60 (AGNR84); 1.8 (Ma84); 6.60 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Ca82, Gr71, HLSw77, He67, Ka70, Ka76, Mi79, MiWe79, PAKS89, Sa76, Sm72, StAc87, WeHe67, Web69, Webs69, Wr66

324.8–01.1

He 2-133, PK 324–1°1, ESO 177-10, Sa 3-31, Wray 15-1341?, IRAS 15380-5626

			Disc.: Henize 1964	*Diameter* (″)			
1950:	15 38 02.5	-56 26 52	IRAS	*opt.* 4.	CaKa71		
	15 38 00.9	-56 27 11	Mi76				
2000:	15 41 57.5	-56 36 46	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	3429	*J*	11.35	12μm	1.76	2
[*OIII*]	436.3	–	[*NII*]	658.4	1644	*H*	11.46	25μm	35.61	3
	500.7	1282	[*SII*]	671.7	47:	*K*	10.34	60μm	22.59	3
HeI	587.6	124		673.1	120	*L*	8.42	100μm	302.50	1
$\lg F_{H\beta}(mW.m^{-2})$		$-13.28 \pm .05$	W69			*Photom.*	PPFS87	*Radio*	*2cm* 216	MiAl82
IUE Spectra:		*LW*(1)	*SW*(1)					(*mJy*)	*6cm* 210	Ca82

Central Star: AG82 184 —

Notes: FC wrong in PK67 and AG82 : HD 139636 = CPD -56 6854 is a nearby A star; ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 3.6 (CaKa71); 1.09 (Da82); 1.00 (AGNR84); 1.7 (Ma84); 1.57 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Dr80, HLSw77, He67, Ka70, Ka76, Ko89, LNP89, Li78, Mi79, MiWe79, PM87, Pe71, PiKh79, Sa76, Sm72, StAc87, VoCo90, WeHe67, Webs69, Wr66

83..3115 Lutz J.H., Kaler J.B. *Publ. Astron. Soc. Pac. 95, 739-744* Misclassified and misidentified planetary nebulae and nuclei.

325.0+03.2

He 2-129, PK 325+3°1, ESO 177-05, Sa 2-122, Wray 16-182, IRAS 15218-5240

			Disc.: Henize 1964	*Diameter* (″)			
1950:	15 21 50.4	-52 40 05	IRAS	*opt.* 1.6	CaKa71		
	15 21 50.6	-52 40 11	Mi76				
2000:	15 25 32.6	-52 50 43	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1233	12μm	0.26	1
[*OIII*]	436.3	–	[*NII*]	658.4	167	25μm	2.78	3
	500.7	1451	[*SII*]	671.7	9:	60μm	3.38	3
HeI	587.6	48		673.1	13:	100μm	11.33	2
$\lg F_{H\beta}(mW.m^{-2})$		$-12.68 \pm .05$	W69			*Radio* *2cm* 35		MiAl82
						(*mJy*) *6cm* 35		Ca82

Distance (kpc) stat.: 14.6 (CaKa71); 2.62 (Da82); 2.50 (AGNR84); 10.3 (Ma84); 4.21 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSw77, He67, Ka70, Ka76, Mi79, PAKS89, PM87, PrPe89, Sa75, Sm72, WeHe67, Wr66

325.4–04.0

He 2-141, PK 325–4°1, ESO 136-11, Sa 2-129, Wray 16-195, IRAS 15550-5815

			Disc.: Henize 1964	*Diameter* (″)		*Rvel*: −46.0 ± 9.0	STPP83
1950:	15 55 01.5	-58 15 18	IRAS	*opt.* 14.	CaKa71		
	15 55 02.3	-58 15 19	Mi76				
2000:	15 59 09.2	-58 23 51	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	81	$H\alpha$	656.3 *nm*	426	12μm	0.25	1
[*OIII*]	436.3	16	[*NII*]	658.4	111	25μm	3.50	3
	500.7	1418	[*SII*]	671.7	6	60μm	3.55	3
HeI	587.6	8		673.1	8	100μm	35.91	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.64 ± .02	W83			*Radio* (*mJy*)	*2cm* 44	MiAl82
							6cm 51	Ca82

Central Star: AG82 191 — *B* 13.9 PiKh79

Distance (kpc) stat.: 2.9 (CaKa71); 3.38 (MiAl75); 3.44 (Ca76); 3.1 (Ac78); 3.27 (Da82); 2.00 (AGNR84); 2.8 (Ma84); 3.44 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, Gr72, HLSW75, He67, Iw73, Ka70, Ka76, KrK68, LNP89, MaPo80, MiWe79, PM87, Pe71, Sa75, Sm72, W69, WeHe67, Web69, Webs69, Wr66

325.8+04.5

He 2-128, PK 325+4°1, ESO 224-03, Sa 2-121, Wray 16-181, IRAS 15214-5109

			Disc.: Henize 1964	*Diameter* (″)		*Rvel*: −79.0 ± 9.0	STPP83
1950:	15 21 29.7	-51 09 11	IRAS	*opt.* 5.	PK67		
	15 21 29.7	-51 09 08	Mi76				
2000:	15 25 08.0	-51 19 41	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	687	12μm	0.46	2
[*OIII*]	436.3	–	[*NII*]	658.4	258	25μm	4.62	3
	500.7	440	[*SII*]	671.7	4:	60μm	1.96	3
HeI	587.6	26		673.1	7:	100μm	6.33	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.00 ± .05	W69			*Radio* (*mJy*)	*2cm* 29	MiAl82
							6cm 40	Mi79

Central Star: AG82 181 — *B* 15.98 PiKh79

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 4.7 (Ma84)

Bibliography: *PK67*, AG82, AST89, AcMa77, AlGl74, Ca82, HLSw77, He67, Ka70, Ka76, PAKS89, PM87, PPFS87, Pe71, Sa75, Sm72, TASG91, W66, WeHe67, Web69, Webs69, Wr66, ZTPS89

325.8–12.8

He 2-182, PK 325–12°1, MWC 242, ESO 101-16, Sa 2-157, StWr 1-2, Wray 16-238, IRAS 16498-6409

			Disc.: Henize 1964	*Diameter (″)*		*Rvel:* −91.0 ± 9.0 STPP83
1950:	16 49 48.5	-64 09 35	IRAS	*opt.* 3.	MKHH88	*Expansion Velocities (km/s)*
	16 49 49.3	-64 09 39	Mi76			[OIII] 21.5 MKHH88
2000:	16 54 35.3	-64 14 31	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20

						IR Class: N		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	sat.	*J*	11.34	12*μm*	0.80	3
[OIII]	436.3	3	[*N*II]	658.4	83	*H*	11.78	25*μm*	7.52	3
	495.9	108	[*S*II]	671.7	1.2	*K*	11.05	60*μm*	2.05	3
*He*I	587.6	17		673.1	3	*L*		100*μm*	8.86	1
						Photom.	Wh85	*Radio* 2*cm*	62	MiAl82
lg$F_{H\beta}$($mW.m^{-2}$)		−10.96 ± .01	W69, SK89					(*mJy*) 6*cm*	62	Ca82
IUE Spectra:		*LW*(0)	*SW*(4)							

Central Star: AG82 218 — CSI -64-16498 0; HD 151895
B 13.35 *V* 13.42 *Qual:* A SK89 , TASG91 *Spectrum:* O(H) Me91

Distance (kpc) indiv.: spect. 7.4 (MKHH88)
Distance (kpc) stat.: 3.8 (Ma84);

Bibliography: *PK67*, AG82, AST89, AcMa77, Al73, AlGl74, Fe68, HLSW75, He67, Iy86, Ka70, Ka76, KuMe89, MGT91, MGTW87, MMMK90, Me89, Mi79, PAKS89, PM87, PPFS87, PiKh79, Sa75, Sh85, StWr72, TAGS89, W66, We89, WeHe67, Web69, Webs69, Wr66, ZTPS89

85...274 Wolff S.C., Heasley J.N. *Astrophys. J. 292, 589-600* The determination of the helium abundance in main-sequence B stars.

326.0–06.5

He 2-151, PK 326–6°1, ESO 137-09, Wray 15-1440, IRAS 16114-5946

			Disc.: Henize 1964	*Diameter (″)*		*Rvel:* −128.2 ± 6.7 STPP83
1950:	16 11 27.5	-59 46 34	IRAS	*opt.* 3.	MKHH88	*Expansion Velocities (km/s)*
	16 11 25.4	-59 46 34	Mi76			[OIII] 4. MKHH88
2000:	16 15 42.0	-59 54 03	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-26

						IR Class: N?		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	468	*J*	12.28	12*μm*	1.47	3
[OIII]	436.3	–	[*N*II]	658.4	188	*H*	12.15	25*μm*	22.39	3
	495.9	–	[*S*II]	671.7	4	*K*	11.94	60*μm*	6.86	3
*He*I	587.6	–		673.1	9	*L*		100*μm*	11.58	1
						Photom.	PM87	*Radio* 2*cm*	6	MiAl82
lg$F_{H\beta}$($mW.m^{-2}$)		−11.96 ± .02	W69, ASTR91					(*mJy*) 6*cm* <	10	MiAl75
IUE Spectra:		*LW*(0)	*SW*(1)							

Central Star: AG82 202 —
B 13.30 *V* 13.08 *Qual:* A TASG91 *Spectrum:* O(H) Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: spect. 8.0 (MKHH88)
Distance (kpc) stat.: >7.60 (MiAl75); 7.88 (Ac78); 8.4 (Ma84)

Bibliography: *PK67*, AG82, AST89, AlGl74, HLSW75, He67, Ka70, Ka76, KuMe89, MGTW87, MMMK90, Me89, Mi79, MiWe79, PAKS89, Pe71, PiKh79, PrPe89, Sa76, StAc87, TAGS89, VoCo90, W66, We89, WeHe67, Web69, Webs69, Wr66

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326.1−01.9

VBe 3, PK 326−1°2, IRAS 15489-5615

		Disc.: Van Den BERGH 1979		*Diameter* (″)	
1950:	15 48 59.0	-56 15 30	IRAS	*opt.* 12. 79.....2	
	15 49.0	-56 15	79.....2		
2000:	15 53.0	-56 24	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01

*He*II	468.6 *nm*	118	$H\alpha$	656.3 *nm*	691
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	689	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.30	1
25μm	0.65	3
60μm	11.85	1
100μm	97.03	1

Bibliography: Iy87

79.....2 Van Den Bergh S. *Astrophys. J. 227,497-498* Optical identification of the peculiar supernova remnant G 326.3-1.8.

326.7+42.2

IC 972, PK 326+42°1, A55 26, A 37, VV' 119

		Disc.: Abell 1955		*Diameter* (″)	*Rvel:* -26.6 ± 4.0 STPP83
				opt. 42. CJA87 PK67	*Expansion Velocities* (*km/s*)
1950:	14 01 41.8	-16 59 13	Mi76		[OIII] 16.0 RRA82
2000:	14 04 26.1	-17 13 34	.		

Intens. ($H\beta = 100$) OHP-CAR+CCD 1987-05-21

*He*II	468.6 *nm*	41	$H\alpha$	656.3 *nm*	375
[*O*III]	436.3	–	[*N*II]	658.4	209
	500.7	1136	[*S*II]	671.7	53:
*He*I	587.6	34:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.04 \pm .01$ Kale76, Ka83

Radio (*mJy*) *2cm* 6 MiAl82; *6cm* < 10 Mi79

Central Star: AG82 162 — *B* 17.91 *Qual:* B GaPo88

Notes: Monochromatic images (JDK86, Ba87)
Distance (kpc) stat.: 2.41 (CaKa71); 2.00 (Ac78); 3.8 (Ma84); 2.47 (CKS91)

Bibliography: *PK67*, AG82, Ab66, AcMa77, CS83, CaWy76, CoBa74, Iw73, KSK90, Ka76, KaJa89, Kh79, KrK68, PAKS91, Pe91, SGBO84, Sa84, Sabb86, We89, ZiPo91

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85...149 Kaler J.B. *Astrophys. J. 290, 531-541* Spectrophotometry of 12 planetary nebulae.

327.1–01.8

He 2-140, PK 327–1°2, ESO 178-04, Wray 16-194, IRAS 15541-5533

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −60.0 ± 9.0 STPP83
1950:	15 54 11.9	-55 33 14	IRAS	*opt.* 2.6	CaKa71	
	15 54 11.4	-55 33 17	Mi76			
2000:	15 58 09.0	-55 41 53	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27

HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	1239	
[*OIII*]	436.3	–	[*NII*] 658.4	1331	
	500.7	44	[*SII*] 671.7	24	
HeI	587.6	29	673.1	48	

$\lg F_{H\beta}(mW.m^{-2})$ −12.45 ± .04 W69, ASTR91

IR Class: N

J	12.15	
H	12.10	
K	11.24	
L		
Photom.	PM87	

IRAS Fluxes (*Jy*) *Qual.*

12μm	1.63	3
25μm	14.25	3
60μm	13.57	3
100μm	118.20	1

Radio (*mJy*) *2cm* | *6cm* 80 Ca82

Central Star:
V 17.2 *Qual:* D TASG91

Distance (kpc) stat.: 4.4 (CaKa71); 3.6 (Ac78); 1.77 (Da82); 1.70 (AGNR84); 2.9 (Ma84); 2.82 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, Gr71, Gr72, HLSw77, He67, KAS91, Ka70, Ka76, Ma81, Mi79, MiAl82, PAKS89, PrPe89, Sa76, SaSt73, Sm72, StAc87, TAGS89, VoCo90, WeHe67, Web69, Wr66

327.1–02.2

He 2-142, PK 327–2°1, ESO 178-05, SaSt 2-11, Wray 16-198, IRAS 15559-5546

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −73.0 ± 9.0 STPP83
1950:	15 55 56.9	-55 46 57	IRAS	*opt.* 3.6	CaKa71	
	15 55 59.5	-55 46 57	Mi76			
2000:	15 59 58.2	-55 55 26	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-03

HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	1048	
[*OIII*]	436.3	–	[*NII*] 658.4	1054	
	500.7	7	[*SII*] 671.7	10	
HeI	587.6	11	673.1	22	

$\lg F_{H\beta}(mW.m^{-2})$ −11.84 ± .01 W69, SK89
IUE Spectra: *LW*(0) *SW*(1)

IRAS Fluxes (*Jy*) *Qual.*

12μm	13.84	3
25μm	31.01	3
60μm	15.55	3
100μm	93.88	1

Radio (*mJy*) *2cm* 68 MiAl82 | *6cm* 65 Ca82

Central Star: AG82 192 — WC 9 ATS91
B 15.88 *V* 15.15 *Qual:* B SK89 . ATS91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 3.7 (CaKa71); 7.78 (MiAl75); 7.60 (Ca76); 5.5 (Ac78); 2.14 (Da82); 2.00 (AGNR84); 3.7 (Ma84); 3.41 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Gr71, Gr72, HLSw77, He67, Ka70, Ka76, LNP89, MaC83, MaPo80, MiWe79, PAKS89, PM87, Pe71, PiKh79, Sa76, SaSt72, Sh85, Sm72, StAc87, TAGS89, TASG91, VoCo90, W83, WeHe67, Web69, Webs69, Wr66, ZTPS89

327.5+13.3

He 2-118, PK 327+13°1, ESO 273-16, Sa 2-114, StWr 4-11, Wray 16-165, IRAS 15029-4248

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −164.0 ± 9.0 STPP83	
1950:	15 02 55.5	-42 48 23	IRAS	*opt.* 5.	PK67		
	15 02 55.2	-42 48 24	Mi73				
2000:	15 06 13.8	-42 59 59	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	315	*J*		12*μm*	0.25	1
[*OIII*]	436.3	11	[*NII*]	658.4	36	*H*		25*μm*	1.67	3
	500.7	1190	[*SII*]	671.7	1.2	*K*	> 9.5	60*μm*	1.01	3
HeI	587.6	15		673.1	3	*L*		100*μm*	5.99	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.70 ± .01	W69, SK89			*Photom.*	AlGl74	*Radio* (*mJy*)	*2cm* 5 MiAl82 *6cm* < 10 Mi79	

Central Star: AG82 173 —
B > 18.2 *V* 18.7 *Qual:* D SK89

Distance (kpc) stat.: 7.74 (Ac78); 8.4 (Ma84)

Bibliography: *PK67*, AG82, AKSJ89, AST89, AcMa77, HLSw77, He67, KAS91, Ka70, Ka76, PAKS89, Pe71, PiKh79, Sa75, Sh85, StWr72, TAGS89, TASG91, W66, WeHe67, Web69, Webs69, Wr66

327.7−05.4

KoRe 1

			Disc.: Koester et al 1989	*Diameter* (″)			
				opt. 14.2	89.30812		
1950:	16 15 06	-57 51.2	89.30812				
2000:	16 19 16	-57 58.4	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1990-06-23					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	69	[*SII*]	671.7	
HeI	587.6	–		673.1	

Central Star:
V 19.3 89.30812

Notes: In the field of the galactic cluster NGC 6087 (89.30812)

89.30812 Koester D., Reimers D. *Astron. Astrophys. 223, 326-328,1989* Discovery of a planetary nebula in the field of the open cluster NGC 6087.

327.8+10.0

NGC 5882, PK 327+10°1, ARO 505, ESO 274-07, He 2-122, Sa 2-118, StWr 4-13, VV 71, VV' 122, Wray 16-171, IRAS 15134-4527

		Disc.: Herschel 1834	*Diameter (")*	*Rvel:* +9.7 ± 4.6 STPP83	
1950:	15 13 25.5	-45 28 00 IRAS	*opt.* 14. CaKa71	*Expansion Velocities (km/s)*	
	15 13 24.9	-45 27 56 Mi76		[OIII] 11. We89	
2000:	15 16 49.9	-45 38 57 .		[NII] 23.5 85..1601	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	6	$H\alpha$	656.3 *nm*	374	*J*	10.31	12μm	2.99	3
[OIII]	436.3	4	[*N*II]	658.4	30	*H*	10.39	25μm	34.20	3
	500.7	1048	[*S*II]	671.7	0.9	*K*	9.65	60μm	49.47	3
*He*I	587.6	19		673.1	2.0	*L*	7.98	100μm	22.62	3
$\lg F_{H\beta}$ −10.37 ± .02W69, TP77, KM81, SK89						*Photom.* PPFS87		*Radio 2cm*		
						Spectr. PPOJ86		(*mJy*) *6cm* 334 Mi79		

Central Star: AG82 175 — HD 13556; CD -45 9789; CPD -45 7306; GCRV 8827
B 13.30 *V* 13.43 *Qual:* B SK89 *Spectrum:* Of(H) Me91

Distance (kpc) indiv.: ext. 1.3 (Po83); ext. 0.9 (Sab86)
Distance (kpc) stat.: 2.0-3.3 (CaKa71); 2.63 (MiAl75); 2.30 (Ca76); 1.9 (Ac78); 0.92 (Da82); 1.20 (PhPo84); 0.89 (AGNR84); 1.6 (Ma84); 1.68 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, Ac75, Ac76, Ac80, AcMa77, AlMi72, BLTA81, Ca82, CaNo73, CePe83, CoBa80, De71, Do73, FaM86, FaMa86, FaMa87, Fe68, FeAl87, Gr71, GrNe90, HLSw77, He67, He71, Hi71, Iw73, IwKa65, Iy86, KAS91, Ka69, Ka70, Ka76, Ka78, Ka79, Ka80, Ka86, Kal78, Kal80, Kh79, Kle78, LNP89, MKHH88, Ma81, Ma88, MaFa85, MaFa86, MaPo80, Mar81, Me89, MiWe79, NPP80, OlRa86, PAKS89, PM87, Pe71, Pe91, PeF73, PeFr72, PeFr73, Phi84, PiKh79, Sa75, Sa84, Sabb86, Sh85, SlOr65, StWr72, TAGS89, TCS67, Th68, ViFr85, VoCo90, WeHe67, Web69, Webs69, Wh85, Wr66

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86..3053 Gutierrez-Moreno A., Moreno H., Cortes G. *Publ. Astron. Soc. Pac. 98, 488-498* Studies of southern planetary nebulae. II. Electron temperatures and densities.

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89.50036 Bianchi L., Grewing M., Barnsted J., Diesch C. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 182* Kinematical properties of planetary nebulae.

91..1008 Banerjee D.P.K., Anandarao B.G., Jain S.K., Mallik D.C.V. *Astron. Astrophys. 240,137* Kinematic studies of five galactic planetary nebulae.

327.8–01.6

He 2-143, PK 327−1°1, ESO 178-07, Sa 2-130, Wray 16-200, IRAS 15570-5457

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −35.0 ± 10.0 STPP83	
1950:	15 57 02.9	-54 57 15	IRAS	*opt.* 5.2	CaKa71		
	15 57 03.3	-54 57 14	Mi76				
2000:	16 00 59.6	-55 05 39	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	37	$H\alpha$	656.3 *nm*	3140	*J*	11.80	12μm	1.49	3
[*O*III]	436.3	–	[*N*II]	658.4	2188	*H*	11.68	25μm	18.07	3
	500.7	2478	[*S*II]	671.7	66	*K*	10.75	60μm	15.90	3
*He*I	587.6	83		673.1	129	*L*		100μm	175.80	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.02 ± .05	W69			*Photom.*	PM87	*Radio* 2*cm*	65	MiAl82
								(*mJy*) 6*cm*	120	Ca82

Distance (kpc) stat.: 3.6 (CaKa71); 2.79 (Ac78); 1.59 (Da82); 1.40 (AGNR84); 2.7 (Ma84); 2.54 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSw77, He67, Ka70, Ka76, LNP89, Ma81, Mi79, MiWe79, PrPe89, Sa75, Sm72, WeHe67, Web69, Wr66

327.8–06.1

He 2-158, PK 327−6°1, ESO 137-22, Sa 2-142, StWr 2-46, Wray 16-218, IRAS 16193-5812

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −39.0 ± 9.0 STPP83	
1950:	16 19 18.4	-58 12 25	IRAS	*opt.* 2.	CaKa71		
	16 19 18.7	-58 12 26	Mi76				
2000:	16 23 30.7	-58 19 24	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27								*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	415			12μm	0.47	1
[*O*III]	436.3	–	[*N*II]	658.4	168			25μm	0.83	3
	500.7	525	[*S*II]	671.7	7			60μm	1.27	3
*He*I	587.6	18		673.1	12			100μm	18.17	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.12 ± .05	W69					*Radio* 2*cm*	< 1	MiAl82
								(*mJy*) 6*cm*	< 10	Mi79

Central Star: AG82 206 — *B* 15.4 PiKh79

Distance (kpc) stat.: 10.9,17.1 (CaKa71); 8.06 (Ac78); 10.0 (Ma84); 19.7 (CKS91)

Bibliography: *PK67*, AG82, AST89, AcMa77, HLSW75, He67, Iw73, Ka70, Ka76, MGT91, MGTW87, PAKS89, Sa75, StWr72, WeHe67, Web69, Webs69, Wr66

327.8–07.2

He 2-163, PK 327−7°1, ESO 137-30, Sa 2-145, StWr 2-47, Wray 16-222, IRAS 16252-5902

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −45.0 ± 9.0	STPP83
1950:	16 25 13.8	-59 02 45	IRAS	*opt.* 20.	CaKa71		
	16 25 13.9	-59 02 48	Mi76				
2000:	16 29 30.4	-59 09 22	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	454	12*μm*	0.40	1
[*O*III]	436.3	–	[*N*II]	658.4	195	25*μm*	0.33	1
	500.7	1528	[*S*II]	671.7		60*μm*	0.59	3
*He*I	587.6	–		673.1		100*μm*	18.11	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.12 ± .05	W69			*Radio*	*2cm* 3	MiAl82
						(*mJy*)	*6cm* < 10	Mi79

Distance (kpc) stat.: 3.1 (CaKa71); 2.2 (Ac78); 3.1 (Ma84); 4.73 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, HLSW75, He67, Iw73, Ka70, Ka76, KrK68, MGT91, MGTW87, PAKS89, Sa75, StWr72, WeHe67, Web69, Wr66

327.9–04.3

He 2-147, PK 327−4°1, ESO 178-13, Wray 16-208, IRAS 16099-5651

			Disc.: Henize 1964	*Diameter* (″)			
1950:	16 09 55.1	-56 51 51	IRAS	*opt. St.*	ATS91		
	16 09 56	-56 51.9	Mi76				
2000:	16 14 01	-56 59.5	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-23						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	854	12*μm*	4.04	3
[*O*III]	436.3	53	[*N*II]	658.4	1009	25*μm*	2.84	3
	500.7	1125	[*S*II]	671.7	56	60*μm*	0.49	1
*He*I	587.6	34		673.1	78	100*μm*	30.79	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.34 ± .07	ASTR91					

Notes: Status of the object not clear; possibly a symbiotic star (Al80)

Bibliography: *PK67*, ACPS87, AST89, Al73, Al84, AlGl74, All73, All82, HLSw77, He67, KFS88, LuTu87, MaC83, Sa76, Sm72, StAc87, TAGS89, W66, WeHe67, Wr66

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328.2+01.3

Lo 10, PK 328+1°1

				Disc.: Longmore 1977		*Diameter (″)*	
						opt. 12. Lo77	
1950:	15 45 46	-52 21.4	Lo77				
2000:	15 49 33	-52 30.5	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	502
[*OIII*]	436.3	–	[*NII*]	658.4	205
	500.7	340	[*SII*]	671.7	100:
HeI	587.6	–		673.1	85:

Central Star: AG82 187 —

Notes: FC wrong in AG82; PN is a faint nebula west of the star shown on the FC. ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, Ko78, MaC83, PAKS89, We77

328.9–02.4

He 2-146, PK 328–2°1, ESO 178-10, Sa 2-133, Wray 16-205, IRAS 16067-5449

				Disc.: Henize 1964		*Diameter (″)*	*Rvel:* +62.0 ± 4.0 MWF88
1950:	16 06 44.4	-54 49 49	IRAS			*opt.* 22. CaKa71	*Expansion Velocities (km/s)*
	16 06 43.1	-54 49 44	Mi76				[OIII] < 6.0 MWF88
2000:	16 10 41.0	-54 57 32	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03 S					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	972
[*OIII*]	436.3	–	[*NII*]	658.4	86
	500.7	359	[*SII*]	671.7	33:
HeI	587.6	28		673.1	24

$\lg F_{H\beta}(mW.m^{-2})$	$-12.86 \pm .04$	SK89

IRAS Fluxes (Jy)		*Qual.*
12μm	2.24	3
25μm	8.68	1
60μm	88.31	1
100μm	166.40	1

Radio	*2cm*	146	MiAl82
(*mJy*)	*6cm*	186	Ca82

Distance (kpc) stat.: 1.9 (CaKa71); 1.8 (Ac78); 1.62 (Da82); 1.10 (AGNR84); 1.7 (Ma84); 2.012 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, HLSw77, He67, Iw73, Ka70, Ka76, KrK68, Ma81, Mi79, MiWe79, STPP83, Sa75, Sm72, W69, We89, WeHe67, Web69, Wr66

69..9023 Webster L.B. *Obs. 89,19* Observations of southern P.N.

69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.

329.0+01.9

Sp 1, PK 329+2°1, ARO 518, RCW 100, IRAS 15479-5122

			Disc.: Shapley 1936	*Diameter* (″)	*Rvel:* −31.0 ± 3.0 MWF88
1950:	15 47 55.9	-51 22 27	IRAS	*opt.* 72. CaKa71	*Expansion Velocities* (*km/s*)
	15 47 56.8	-51 22 24	Mi76		[OIII] 29.3 MWF88
2000:	15 51 41.3	-51 31 23	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-20

*He*II	468.6 *nm*	98	*Hα*	656.3 *nm*	1044
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	716	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.49 ± .01 W69, SK89

IUE Spectra: *LW*(0) *SW*(2)

IRAS Fluxes (*Jy*)		*Qual.*
12*μm*	1.54	1
25*μm*	4.74	2
60*μm*	13.95	3
100*μm*	167.40	1

Radio	*2cm*	70	MiAl82
(*mJy*)	*6cm*	75	Ca82

Central Star: AG82 188 — *B* 14.46 *V* 14.03 *Qual:* A SK89 *Spectrum:* O(H) Me91

Notes: Coordinates wrong in PK67. Close binary nucleus, $P = 2.91^d$ (BoLi90). Monochromatic images (BoLi90)

Distance (kpc) indiv.: ext. 1.3 (Ac78); ext. 1.6 (Sab86)

Distance (kpc) stat.: 1.18 (CKS91) 1.6 (Ma84)

Bibliography: *PK67*, AG82, AGNR84, AGNR85, AGR89, Ac75, Ac76, AcMa77, AlMi72, Ca76, ChLo72, Do73, Gu70, HLSW75, He67, HeAu87, Hi71, Hi73, Iw73, Ka70, Ka76, Ka83, Ka85, Kh79, KrK68, LNP89, MKHH88, Ma74, Ma81, MaPo80, Me89, Mi79, MiAl75, MiWe79, PiKh79, STPP83, Sa75, Sh85, SlOr65, We89, Web69

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83..17444 Kaler J.B., Feibelman W.A. *Bull. American Astron. Soc. 15, 931* Ultraviolet spectra of the nuclei of large planetary nebulae.

90..3007 Copetti M.V.F. *Publ. Astron. Soc. Pac. 102, 77-78* Integrated photometry of nine planetary nebulae.

329.3–02.8

Mz 2, PK 329−2°2, ESO 178-15, He 2-150, Sa 2-137, VV 78, VV' 132, Wray 16-210, IRAS 16105-5449

			Disc.: Menzel 1922	*Diameter* (″)	*Rvel:* −30.0 ± 3.0 MWF88
1950:	16 10 33.5	-54 49 30	IRAS	*opt.* 23. CaKa71	*Expansion Velocities* (*km/s*)
	16 10 33.5	-54 49 31	Mi76		[OIII] 18.0 MWF88
2000:	16 14 32.1	-54 57 04	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16

*He*II	468.6 *nm*	78	*Hα*	656.3 *nm*	429
[*O*III]	436.3	19	[*N*II]	658.4	244
	500.7	1975	[*S*II]	671.7	28
*He*I	587.6	6		673.1	31

$\lg F_{H\beta}(mW.m^{-2})$ −11.65 ± .02 W69, Pe71

IRAS Fluxes (*Jy*)		*Qual.*
12*μm*	0.49	3
25*μm*	4.75	3
60*μm*	8.20	3
100*μm*	11.42	3

Radio	*2cm*	50	MiAl82
(*mJy*)	*6cm*	75	MiAl75

Distance (kpc) stat.: 1.8 (CaKa71); 2.42 (MiAl75); 2.36 (Ca76); 2.2 (Ac78); 2.12 (Da82); 1.60 (AGNR84); 2.3 (Ma84); 2.34 (CKS91)

Bibliography: *PK67*, AST89, Ac75, Ac76, AcMa77, Ca82, De71, Do73, Gr71, Gr72, Gu70, HLSw77, He67, Iw73, Ka70, Ka76, KrK68, LNP89, MaPo80, MiWe79, PAKS89, STPP83, Sa75, Sa84, Sm72, We89, WeHe67, Web69, Wr66

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87..1298 Pascoli G. *Astron. Astrophys. 180, 191-200* La nature des nebuleuses planetaires bipolaires.

329.4–02.7

He 2-149, PK 329–2°1, ESO 178-14, Sa 2-136, IRAS 16104-5440

				Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −113.0 ± 10.0STPP83
1950:	16 10 25.4	-54 40 04	IRAS		*opt.* 3. CaKa71	
	16 10 26.6	-54 40 06	Mi76			
2000:	16 14 24.7	-54 47 40	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	696
[*OIII*]	436.3	8:	[*NII*]	658.4	45
	500.7	949	[*SII*]	671.7	2.4:
HeI	587.6	32		673.1	2.4:

$\lg F_{H\beta}(mW.m^{-2})$	−12.58 ± .05	W69

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.37	1
25μm	0.89	3
60μm	2.27	3
100μm	114.70	1

Radio	*2cm*	6	MiAl82
(*mJy*)	*6cm*	< 10	Mi79

Central Star:
B 17.1 *V* 16.1 *Qual:* C TASG91

Distance (kpc) stat.: 4.6,7.6 (CaKa71); 5.9 (Ac78); 8.4 (Ma84); 12.8 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, HLSw77, He67, KAS91, Ka70, Ka76, PAKS89, Sa75, Sm72, TAGS89, WeHe67, Web69

329.5+01.7

VBRC 7, PK 329+1°1, ARO 532, ESO 225-03, Wray 16-191

				Disc.: Van Den BERGH et al 1973	*Diameter* (″)
					opt. 100. 73..9025
1950:	15 51.4	-51 15	73..9025		
2000:	15 55.1	-51 24	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	226
[*OIII*]	436.3	–	[*NII*]	658.4	263:
	500.7	228:	[*SII*]	671.7	
HeI	587.6	–		673.1	

Central Star:
B 14.28 *V* 13.57 *Qual:* A TASG91

Bibliography: AcMa77, HLSW75, Hi71, Ko78, MaC83, TAGS89, We77, Wr66

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329.5–02.2

Wray 17-75, HeFa 1

			Disc.: Wray 1966	*Diameter* (″)	
				opt. 24. 83.30015	
1950:	16 08 38	-54 15.9	83.30015		
2000:	16 12 34	-54 23.6	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01

*He*II	468.6 *nm*	96	$H\alpha$	656.3 *nm*	512
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	922	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .4$ ASTR91

Central Star:
B 15.84 *V* 15.79 *Qual:* B TASG91

Bibliography: Wr66

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330.2+05.9

Lo 9, PK 330+5°1, K 1-30

			Disc.: Longmore 1977	*Diameter* (″)	
				opt. 107. 77..1134	
				Lo77	
1950:	15 38 39.6	-47 31 12	77..1134		
2000:	15 42 13.4	-47 40 45	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-15

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	192
	500.7	142	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star: AG82 185 —
B 19.5 77..1134

Bibliography: AG82, Ko78, MaC83, We77

77..1134 Kohoutek L. *Astron. Astrophys. 59,137-139* New southern Planetary Nebulae.

330.6–02.1

He 2-153, PK 330–2°1, ESO 178-17, Sa 2-140, Wray 16-212

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* -40.2 ± 10.2 STPP83
				opt. 13. CaKa71	
1950:	16 13 19.3	-53 24 41	Mi76		
2000:	16 17 14.0	-53 32 03	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16

*He*II	468.6 *nm*	13	$H\alpha$	656.3 *nm*	453
[*O*III]	436.3	11	[*N*II]	658.4	824
	500.7	727	[*S*II]	671.7	54
*He*I	587.6	26		673.1	65

$\lg F_{H\beta}(mW.m^{-2})$ $-12.18 \pm .05$ W69

Radio *2cm* 1 MiAl82
(*mJy*) *6cm* < 10 Mi79

Distance (kpc) stat.: 2.4 (CaKa71); 2.6 (Ac78); 1.2 (Ma84); 7.63 (CKS91); 5.23 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, Fe68, Gr71, Gr72, HLSw77, He67, KAS91, Ka70, Ka76, PAKS89, Sa75, Sm72, WeHe67, Web69, Wr66

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330.6–03.6

He 2-159, PK 330−3°1, ESO 179-04, Sa 2-143, Wray 16-219, IRAS 16203-5429

				Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −89.3 ± 8.2 STPP83
1950:	16 20 21.1	-54 29 06	IRAS		*opt.* 10. CaKa71	
	16 20 21.9	-54 29 09	Mi76			
2000:	16 24 21.1	-54 36 03	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27

HeII	468.6 *nm*	31:	*Hα*	656.3 *nm*	522
[*OIII*]	436.3	−	[*NII*]	658.4	−
	500.7	1181	[*SII*]	671.7	
HeI	587.6	15		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.32	1
25μm	0.28	1
60μm	1.83	3
100μm	37.55	1

$\lg F_{H\beta}(mW.m^{-2})$ −12.17 ± .05 W69

Radio (*mJy*) 2cm 21 MiAl82; 6cm 25 Mi79

Distance (kpc) stat.: 3.0,3.5 (CaKa71); 3.5 (Ac78); 4.69 (Da82); 2.90 (AGNR84); 4.3 (Ma84); 4.81 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Gr71, Gr72, HLSW75, He67, Iw73, Ka70, Ka76, MGT91, MGTW87, Ma81, PAKS89, Sa75, Sm72, WeHe67, Web69, Wr66

69..9023 Webster L.B. *Obs. 89,19* Observations of southern P.N.
69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.

330.7+04.1

Cn 1-1, PK 330+4°1, ESO 225-01, Wray 15-1364, IRAS 15476-4836

				Disc.: Cannon 1921	*Diameter* (″)	
1950:	15 47 38.5	-48 36 01	IRAS		*opt.* 1. IsWe87	
	15 47 38.5	-48 36 00	Mi76			
2000:	15 51 16.3	-48 45 01	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27

HeII	468.6 *nm*	12	*Hα*	656.3 *nm*	591
[*OIII*]	436.3	139	[*NII*]	658.4	88
	500.7	1215	[*SII*]	671.7	3
HeI	587.6	35		673.1	9

IRAS Fluxes (*Jy*)		*Qual.*
12μm	19.53	3
25μm	38.58	3
60μm	17.42	3
100μm	9.85	3

$\lg F_{H\beta}$ −11.79 ± .06 W69, SK89, ASTR91

IUE Spectra: *LW*(3) *SW*(5)

Radio (*mJy*) 2cm 34 MiAl82; 6cm < 10 Mi79

Central Star: HD 330036; CD -48 10371
B 11.95 *V* 11.14 *Qual:* A SK89 *Spectrum:* sdO+F5III-IV 84...314

Bibliography: *PK67*, ABBW82, AST89, Al73, Al80, Al84, AlGl74, AlGl75, All82, CePe85, Dr80, FeAl87, HLSW75, HaZu91, KFS88, Ka70, Ka76, Ko78, Li78, LuTu87, MGT91, MGTW87, Me89, OlRa86, PAKS89, PBBE84, PM87, Pe71, Sa76, Sh85, StAc87, TAGS89, TASG91, Te80, VoCo90, W66, We86, Web69, Webs69, Wr66, WrAl78, ZTPS89

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72..9043 Sanduleak N., Stephenson C.B. *Publ. Astron. Soc. Pac. 84,816-817* Peculiar southern emission line objects with strong (O III) lam 4363.
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81..2620 Allen D.A. *Mon. Not. R. Astron. Soc. 197,739-743* X-ray observations of symbiotic stars.
82.50513 Allen D.A. *Proceedings of IAU Coll. N. 70 held at the Observatoire de Hte Provence 26-28 a ugust 1981. Ed. by M. Friedjung and R. Viotti. The nature of symbiotic stars, 11 5-116.* X-ray observations of symbiotic stars.
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84...314 Lutz J.H. *Astrophys. J. 279, 714-720* Ultraviolet and optical spectroscopy of CN 1-1 (= HDE 330036).
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84..4012 Allen D.A. *Astrophys. Space Sci. 99, 101-125* Symbiotic stars.
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85.17542 Mead J.M. *Abatsumanakaja Astrof. Obs. Gora Kanobili Bull. 59, 227-236* The generation of infrared and ultraviolet astronomical data bases and retrieval systems.
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89..1219 Bhatt H.C. *Astron. Astrophys. 214, 331-332* Cn 1-1: a bipolar type I planetary nebula.
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330.9+04.3

Wray 16-189, PK 330+4°2, Sa 2-125, IRAS 15478-4817

				Disc.: Wray 1966	*Diameter* (″)	
1950:	15 47 53.9	-48 17 20	IRAS		*opt.* 15. ATS91	
	15 47 42.8	-48 17 03	Wr66			
2000:	15 51 19.9	-48 26 03	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-20

*He*II	468.6 *nm*	–	*H*α	656.3 *nm*	1427
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	1208	[*S*II]	671.7	
*He*I	587.6	54		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.6 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	3.48	3
25μm	1.83	3
60μm	0.92	2
100μm	44.72	1

Central Star:
V 17.7 *Qual:* D TASG91

Bibliography: AcMa77, Ko78, Sa75, We77

331.0–02.7

He 2-157, PK 331–2°1, ESO 179-03, Wray 16-217, IRAS 16183-5333

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −70.0 ± 9.0 STPP83
1950:	16 18 19.5	-53 33 53	IRAS	*opt.* 3.	CK88	
	16 18 17.1	-53 33 53	Mi76			
2000:	16 22 13.1	-53 40 56	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	981	12*μm*	2.81	1
[*OIII*]	436.3	–	[*NII*]	658.4	890	25*μm*	4.10	3
	500.7	148	[*SII*]	671.7	11	60*μm*	3.20	3
HeI	587.6	30		673.1	23	100*μm*	66.20	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.34 ± .05 W69				*Radio* 2*cm*	25	MiAl82
						(*mJy*) 6*cm*	30	Mi79

Central Star:
B 18.2 *V* 17.6 *Qual:* C TASG91

Distance (kpc) stat.: 3.31 (Da82); 5.4 (Ma84)

Bibliography: *PK67*, AKSJ89, AST89, AlGl74, HLSW75, He67, KAS91, Ka76, LNP89, MGT91, MGTW87, Ma81, PAKS89, PM87, PrPe89, Sa76, SaSt73, Sm72, StAc87, W66, WeHe67, Web69, Wr66

331.1–05.7

PC 11, PK 331–5°1, ESO 179-11, He 2-172, He 3-1223, StWr 2-43, Wray 16-228, IRAS 16336-5536

			Disc.: Peimbert et al 1961	*Diameter* (″)		
1950:	16 33 37.6	-55 36 26	IRAS	*opt.* 5.	PK67	
	16 33 37.1	-55 36 25	Mi76			
2000:	16 37 42.1	-55 42 26	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28						*IR Class:* S		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	566	*J*	10.7	12*μm*	2.18	3
[*OIII*]	436.3	38	[*NII*]	658.4	30	*H*	10.6	25*μm*	9.34	3
	500.7	1407	[*SII*]	671.7	0.9	*K*	10.2	60*μm*	1.92	3
HeI	587.6	24		673.1	1.8	*L*		100*μm*	21.31	1
$\lg F_{H\beta}$		−11.48 ± .04 W69, Pe71, ASTR91				*Photom.*	AlGl74	*Radio* 2*cm*	32	PFMA82
IUE Spectra:		*LW*(1) *SW*(2)						(*mJy*) 6*cm*	11	PFMA82

Central Star: HD 149427; CD -55 6825
B 13.23 *V* 12.68 *Qual:* A TASG91

Distance (kpc) stat.: >6.75 (MiAl75); 8.56 (Ac78); 6.2 (Ma84)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, Al73, All82, Dr80, HLSW75, He67, KAS91, Ka70, Ka76, Ko78, MGT91, MGTW87, MaC83, Mi79, MiAl82, PAKS89, PiKh79, Sa76, StAc87, StWr72, TAGS89, VoCo90, W66, WeHe67, Web69, Webs69, Wr66, WrAl78, ZTPS89

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331.3+16.8

NGC 5873, PK 331+16°1, ARO 533, ESO 328-34, He 2-121, Sa 2-117, StWr 4-7, VV 70, VV' 121, Wray 16-170, IRAS 15096-3756

				Disc.: Copeland 1883	*Diameter* (″)		*Rvel*: −128.3 ± 1.7 STPP83
1950:	15 09 38.9	-37 56 21	IRAS		*opt.* 7.	CaKa71	*Expansion Velocities* (*km/s*)
	15 09 38.0	-37 56 16	Mi73				[OIII] 40.0 Ac76
2000:	15 12 50.5	-38 07 29	.		*radio* 1.1	Is84	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	51	*Hα*	656.3 *nm*	309	*J*	12.20	12*μm*	0.30	1
[OIII]	436.3	13	[*N*II]	658.4	19	*H*	12.33	25*μm*	2.14	3
	500.7	1158	[*S*II]	671.7		*K*	11.73	60*μm*	1.60	3
*He*I	587.6	8		673.1	0.8:	*L*		100*μm*	1.12	1
$\lg F_{H\beta}$ −11.09 ± .03KM81, W83, 85..3062, SK89						*Photom.* Wh85		*Radio* 2*cm* 42 MiAl82		
IUE Spectra: *LW*(0) *SW*(2)								(*mJy*) 6*cm* 39 Is84		

Central Star: AG82 174 — HD 134743; CD -37 10033; GCRV 8789
B 15.7 *V* 15.5 *Qual:* D SK89 *Spectrum:* WC ? ATS91

Distance (kpc) stat.: 4.9-10.5 (CaKa71); 6.10 (MiAl75); 5.23 (Ca76); 4.8 (Ac78); 2.49 (Da82); 2.30 (AGNR84); 3.8 (Ma84); 5.14 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, Ac75, AcMa77, AlGl74, CS83, Ca82, Ca84, CaRu74, CaWy76, De71, Do73, Gr71, HLSW77, He67, Hi71, Iw73, IwKa65, Iy86, KAS91, Ka70, Ka76, Ka86, LNP89, MGT91, MGTW87, MaPo80, Mar81, MiWe79, PAKS89, PM87, PPFS87, Pe71, Pe91, PiKh79, Sa75, Sa84, Sh85, StWr72, TAGS89, W69, We89, WeHe67, Web69, Webs69, Wr66

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331.4+00.5

He 2-145, PK 331+0°1, ARO 556, ESO 225-05, Pe 1-4, Sa 3-34, VV' 130, Wray 16-204, IRAS 16051-5053

				Disc.: Henize 1964	*Diameter* (″)		
1950:	16 05 06.6	-50 53 47	IRAS		*opt.* 10.5	CaKa71	
	16 05 13.0	-50 54 08	Mi76				
2000:	16 08 59.4	-51 02 02	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-02						*IR Class:* P		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	5257	*J*	11.99	12*μm*	3.07	1
[OIII]	436.3	–	[*N*II]	658.4	8671	*H*	10.85	25*μm*	2.67	3
	500.7	5371	[*S*II]	671.7		*K*	10.05	60*μm*	44.75	2
*He*I	587.6	–		673.1		*L*		100*μm*	201.00	2
$\lg F_{H\beta}(mW.m^{-2})$		−13.22 ± .05	W69			*Photom.* Wh85		*Radio* 2*cm* < 1		MiAl82
								(*mJy*) 6*cm*		

Notes: Possibly a H II region
Distance (kpc) stat.: 1.2 (Ma84)

Bibliography: *PK67*, AcMa77, HLSW75, He67, Hi71, Hi73, Iw73, Ka70, Ka76, KrK68, MGT91, MGTW87, Mi79, PAKS89, PM87, PPFS87, Sa76, Sm72, StAc87, We77, WeHe67, Wr66

331.4–03.5

He 2-162, PK 331−3°1, ESO 179-06, Wray 16-221, IRAS 16238-5354

			Disc.: Henize 1964	*Diameter* (″)	*Rvel*: +33.0 ± 9.0 STPP83
1950:	16 23 52.6	-53 54 48	IRAS	*opt.* 5. MKHH88	*Expansion Velocities* (*km/s*)
	16 23 53.6	-53 54 47	Mi76		[OIII] 8.5 MKHH88
2000:	16 27 51.6	-54 01 27	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-26						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	543	*J*		12μm	0.43	3
[*OIII*]	436.3	–	[*NII*]	658.4	367	*H*		25μm	1.50	3
	500.7	12	[*SII*]	671.7	2.4:	*K*	> 9.5	60μm	4.87	1
HeI	587.6	2.5		673.1	3:	*L*		100μm	61.19	1
lg$F_{H\beta}(mW.m^{-2})$		−12.10 ± .05 W83, ASTR91				*Photom.* AlGl74		*Radio* *2cm*	16	MiAl82
IUE Spectra:		*LW*(0) *SW*(1)						(*mJy*) *6cm*	28	Mi79

Central Star: AG82 208 — SS73 57
B 13.55 *V* 13.41 *Qual:* A TASG91 *Spectrum:* O(H) Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: spect. 4.0 (MKHH88)
Distance (kpc) stat.: 5.6 (Ma84)

Bibliography: *PK67*, AG82, AST89, HLSW75, He67, Ka70, Ka76, KuMe89, MGT91, MGTW87, MMMK90, Me89, PAKS89, Pe71, PiKh79, Sa76, SaSt73, Sm72, StAc87, TAGS89, VoCo90, W66, W69, We89, WeHe67, Web69, Webs69, Wr66

331.5–02.7

He 2-161, PK 331−2°2, ESO 179-05, Sa 2-144, Wray 16-220, IRAS 16206-5315

			Disc.: Henize 1964	*Diameter* (″)	*Rvel*: −98.0 ± 9.0 STPP83
1950:	16 20 38.0	-53 15 34	IRAS	*opt.* 10. CaKa71	
	16 20 41.7	-53 15 41	Mi76		
2000:	16 24 37.2	-53 22 34	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	789		12μm	2.46	1
[*OIII*]	436.3	–	[*NII*]	658.4	128		25μm	1.01	3
	500.7	377	[*SII*]	671.7	11		60μm	3.59	2
HeI	587.6	31		673.1	16		100μm	85.47	1
lg$F_{H\beta}(mW.m^{-2})$		−12.10 ± .05 W69					*Radio* *2cm*	14	MiAl82
							(*mJy*) *6cm*	32	Mi79

Distance (kpc) stat.: 2.7 (CaKa71); 2.2 (Ac78); 4.05 (Da82); 2.60 (AGNR84); 4.0 (Ma84); 5.27 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Ca82, HLSW75, He67, Iw73, Ka70, Ka76, LNP89, Ma81, PAKS89, Sa75, Sm72, WPSD88, WeHe67, Web69, Wr66

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331.5–03.9

He 2-165, PK 331–3°2, ESO 179-08, Sa 2-147, Wray 16-224, IRAS 16260-5402

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −18.0 ± 2.0 MWF88
1950:	16 26 00.4	-54 02 57	IRAS	*opt.* 50. CaKa71	*Expansion Velocities* (*km/s*)
	16 26 00.8	-54 03 05	Mi76		[OIII] 7.5 MWF88
2000:	16 29 59.6	-54 09 37	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10					
HeII	468.6 *nm*	37	$H\alpha$	656.3 *nm*	431
[*OIII*]	436.3	–	[*NII*]	658.4	643
	500.7	583	[*SII*]	671.7	69
HeI	587.6	–		673.1	56

$\lg F_{H\beta}(mW.m^{-2})$	$-11.91 \pm .05$ W69

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.42	1
25μm	0.15	2
60μm	1.75	3
100μm	46.57	1
Radio 2*cm*	14	MiAl82
(*mJy*) 6*cm*	< 8	Mi79

Distance (kpc) indiv.: kinem. 1.4: (Ac78)
Distance (kpc) stat.: 1.4 (CaKa71); 1.38 (Ac78); 1.6 (Ma84); 2.01 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, HLSW75, He67, Iw73, Ka70, Ka76, KrK68, PAKS89, STPP83, Sa75, Sm72, We89, WeHe67, Web69, Wr66

331.7–01.0

Mz 3, PK 331–1°1, ESO 225-09, He 2-154, RCW 101, VV 80, VV' 136, Wray 16-213, IRAS 16133-5151

			Disc.: Menzel 1922	*Diameter* (″)	*Rvel:* −21.2 ± 4.6 STPP83
1950:	16 13 22.3	-51 51 46	IRAS	*opt.* 25. CaKa71	
	16 13 23.3	-51 51 44	Mi76		
2000:	16 17 13.6	-51 59 06	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27 N					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1254
[*OIII*]	436.3	–	[*NII*]	658.4	1579
	500.7	23	[*SII*]	671.7	17
HeI	587.6	26		673.1	34

$\lg F_{H\beta}(mW.m^{-2})$	$-11.09 \pm .05$ W69

IR Class: D	
J	9.26
H	7.32
K	5.50
L	2.87
Photom.	PPFS87
Spectr.	PPOJ86

IRAS Fluxes (*Jy*)		*Qual.*
12μm	88.76	3
25μm	343.40	3
60μm	277.00	3
100μm	112.60	3
Radio 2*cm*	580	PFMA82
(*mJy*) 6*cm*	649	Ca82

Central Star: AG82 203 —
B 17.6 *Qual:* D TASG91 *Spectrum:* O9.5-BO 78....82

Notes: ESO-NTT images by Schwartz H.E. and Melnick J. ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 4.5 (Ac78)
Distance (kpc) stat.: 1.4 (CaKa71); 1.47 (MiAl75); 1.44 (Ca76); 2.10 (Ac78); 0.85 (Da82); 0.63 (AGNR84); 1.0 (Ma84); 1.27 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, AcMa77, AiRo81, AiRo82, ChLo72, FaMa88, Gr71, Gr89, Gu70, HLSW75, HaZu91, He67, Iw73, KAS91, Ka70, Ka76, Kh76, KrK68, LNP89, Lo77, Ma74, MaFa85, MaPo80, MiAl82, MiWe79, OlRa86, PAKS89, PBBE84, PM87, Pe71, Pe91, PeTo83, PhMa88, Ro87, Sa76, Sa84, Sm72, StAc87, TAGS89, VoCo90, WPSD88, We89, WeHe67, Web69, Wh85, Wr66, ZTPS89, ZuAl86

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332.0–03.3

He 2-164, PK 332–3°1, ESO 179-07, Sa 2-146, Wray 16-223, IRAS 16259-5316

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −77.0 ± 9.0	STPP83
1950:	16 25 55.8	-53 16 41	IRAS	*opt.* 16.	CaKa71		
	16 25 56.8	-53 16 32	Mi76				
2000:	16 29 53.2	-53 23 04	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

HeII	468.6 *nm*	104	$H\alpha$	656.3 *nm*	619
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	946	[*SII*]	671.7	
HeI	587.6	8:		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.13 ± .03 W69, Pe71

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.38	2
25μm	4.37	3
60μm	5.34	3
100μm	81.46	1

Radio	*2cm*	24	MiAl82
(*mJy*)	*6cm*	97	Ca82

Distance (kpc) stat.: 2.4 (CaKa71); 2.0 (Ac78); 2.29 (Da82); 1.50 (AGNR84); 2.3 (Ma84); 2.77 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW75, He67, Iw73, Ka70, Ka76, KrK68, LNP89, Ma81, Mi79, MiWe79, PAKS89, PM87, PPFS87, Sa75, Sm72, WeHe67, Web69, Wr66

332.2+03.5

Wray 16-199, PK 332+3°1, Sa 3-32, IRAS 15567-4807

			Disc.: Wray 1966	*Diameter* (″)			
1950:	15 56 43.1	-48 07 08	IRAS	*opt.* 8. :	ATS91		
	15 56 43.7	-48 07 08	Wr66				
2000:	16 00 21.9	-48 15 35	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1990-06-21

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	73	[*SII*]	671.7	
HeI	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	2.36	3
60μm	2.85	3
100μm	13.04	1

Notes: Object not identified on the FC

Bibliography: Ko78, Sa76, We77

332.3–04.2

He 2-170, PK 332−4°1, ESO 179-10, Sa 2-149, StWr 2-42, Wray 16-227, IRAS 16313-5344

			Disc.: Henize 1964	*Diameter* (″)		*Rvel*: +64.0 ± 9.0	STPP83
1950:	16 31 22.2	-53 44 02	IRAS	*opt.* 5.	PK67		
	16 31 22.9	-53 43 59	Mi76				
2000:	16 35 21.5	-53 50 09	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	0.6:	*Hα*	656.3 *nm*	538	12*μm*	0.33	1
[*OIII*]	436.3	4	[*NII*]	658.4	97	25*μm*	3.19	3
	500.7	1113	[*SII*]	671.7	2.4	60*μm*	3.13	1
HeI	587.6	26		673.1	4	100*μm*	36.67	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.03 ± .03	W69, ASTR91			*Radio* (*mJy*)	*2cm* 14	MiAl82
							6cm 15	Mi79

Central Star: AG82 211 —
B 16.4 PiKh79

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 7.1 (Ma84)

Bibliography: *PK67*, AG82, AKSJ89, AST89, AcMa77, AlGl74, Fe68, HLSW75, He67, KAS91, Ka70, Ka76, MGT91, MGTW87, PAKS89, PM87, PPFS87, Sa75, Sm72, StWr72, W66, WeHe67, Web69, Webs69, Wr66

332.8–16.4

HaTr 6, PK 332−16°1

			Disc.: Hartl et al 1983	*Diameter* (″)			
				opt. 36.	85..1131		
1950:	17 47 21.8	-60 22 35	83.28035				
2000:	17 51 53.0	-60 23 20	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-02					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	470
[*OIII*]	436.3	–	[*NII*]	658.4	109
	500.7	1165	[*SII*]	671.7	
HeI	587.6	–		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		−13.3 ± .4	ASTR91		

Central Star: AG82 267Bis —

Bibliography: Ko89

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85..1131 Hartl H., Tritton S.B. *Astron. Astrophys. 145, 41-44,1985* New planetary nebulae of low surface brightness detected on UK-Schmidt plates.

332.9–09.9

He 3-1333

		Disc.: Henize 1976		*Diameter (")*	
				opt. St. ATS91	
1950:	17 04 48.0	-56 51 01	76...524		
2000:	17 09 01.5	-56 54 51	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	571
[*O*III]	436.3	–	[*N*II]	658.4	1197
	495.9	–	[*S*II]	671.7	274
*He*I	587.6	274		673.1	145

$\lg F_{H\beta}(mW.m^{-2})$ $-12.02 \pm .10$ ASTR91

IUE Spectra: *LW*(2) *SW*(1)

Radio *2cm* 25 PFMA82

(*mJy*) *6cm* 26 PFMA82

Central Star: AG82 229 — CPD -56 8032; GCRV 66771

B 12.13 *V* 11.50 *Qual:* A TASG91 *Spectrum:* WC 11 81.27751

Bibliography: ABBW82, AG82, AST89, AlGl75, FeAl87, KVLS81, OlRa86, TAGS89, VoCo90, ZuAl86

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87..9126 Cohen M., Jones B.F. *Astrophys. J. 321, L151-L157* Optical spectroscopy of IRAS sources with infrared emission bands: IRAS 21282+5050 and the diffuse interstellar bands.

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90..2508 Pollacco D.L., Tadhunter C.N., Hill P.W. *Mon. Not. R. Astron. Soc.,245,204* The evolutionary status of the peculiar variable star V348 Sagitarii.
90..2516 Menzies J.W., Wolstencroft R.D. *Mon. Not. R. Astron. Soc.,247,177* IRAS 07027-7934 : a probable new WC 11 star.
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333.4+01.1

He 2-152, PK 333+1°1, ESO 225-08, Pe 1-5, Sa 2-139, VV' 135, Wray 16-211, IRAS 16116-4905

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* -63.5 ± 7.1 STPP83
1950:	16 11 37.4	-49 05 52	IRAS	*opt.* 11. CaKa71	
	16 11 37.4	-49 05 56	Mi76		
2000:	16 15 20.3	-49 13 25	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16

*He*II	468.6 *nm*	96	$H\alpha$	656.3 *nm*	1226
[*O*III]	436.3	–	[*N*II]	658.4	3157
	500.7	1196	[*S*II]	671.7	44
*He*I	587.6	71		673.1	80

$\lg F_{H\beta}(mW.m^{-2})$ $-12.07 \pm .05$ W69

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.33	3
25μm	17.36	3
60μm	57.09	3
100μm	67.74	1

Radio (*mJy*) *2cm* 141 MiAl82; *6cm* 196 Mi79

Distance (kpc) stat.: 2.05,2.3 (CaKa71); 2.6 (Ac78); 1.39 (Da82); 1.20 (AGNR84); 2.0 (Ma84); 2.2 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, Ca82, Gr71, Gr72, HLSW75, He67, KAS91, Ka70, Ka76, LNP89, MGT91, MGTW87, Ma81, MiWe79, PAKS89, PM87, PPFS87, Sa75, VoCo90, WeHe67, Web69, Wr66

333.4–04.0

HaTr 3, PK 333–4°1

			Disc.: Hartl et al 1983	*Diameter* (″)	
				opt. 42. 85..1131	
1950:	16 35 41.4	-52 43 21	83.28035		
2000:	16 39 37.5	-52 49 14	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-04

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1010
[*O*III]	436.3	–	[*N*II]	658.4	520
	500.7	3240	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.5 \pm .4$ ASTR91

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334.3–01.4

MeWe 1-6

			Disc.: Melmer et al 1990	*Diameter* (″)	
				opt. 17. 90..2581	
1950:	16 27 18.5	-50 20 46	90..2581		
2000:	16 31 06.8	-50 27 13	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-01					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	193
	500.7	56	[SII]	671.7	
HeI	587.6	–		673.1	

90..2581 Melmer D., Weinberger R. *Mon. Not. R. Astron. Soc. 243, 236-240,1990* New old PN in the southern sky.

334.3–09.3

IC 4642, PK 334–9°1, ESO 180-04, He 2-201, Sa 2-176, Sp 2, IRAS 17075-5520

			Disc.: Fleming 1901	*Diameter* (″)		*Rvel:* +44.0 ± 3.0	MWF88
1950:	17 07 35.9	-55 20 25	IRAS	*opt.* 16.5	CaKa71	*Expansion Velocities* (*km/s*)	
	17 07 37.2	-55 20 24	Mi76			[OIII] 34.6	MWF88
2000:	17 11 45.4	-55 24 02	.			[NII] 16.	89.50036

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20						*IR Class:* N?		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	109	*Hα*	656.3 *nm*	406	*J*	11.87	12*μm*	1.47	3
[OIII]	436.3	10	[NII]	658.4	–	*H*	11.50	25*μm*	7.97	3
	500.7	498	[SII]	671.7		*K*	11.20	60*μm*	8.19	3
HeI	587.6	3		673.1		*L*		100*μm*	3.74	3
$\lg F_{H\beta}(mW.m^{-2})$		$-11.29 \pm .03$	W83, SK89			*Photom.*	PM87	*Radio* 2*cm*	36	MiAl82
IUE Spectra:		*LW*(4)	*SW*(4)					(*mJy*) 6*cm*	60	Ca82

Central Star: AG82 232 — CD -55 7079; GCRV 9902; HD 154952
B 16.09 *Qual:* B GaPo88 *Spectrum:* Absorpt.lines 69..9047

Distance (kpc) stat.: 2.8-4.0 (CaKa71); 3.25 (MiAl75) 2.7 (Ma84); 2.98 (CKS91)

Bibliography: *PK67*, AGNR84, AGR89, AST89, Ac78, AcMa77, Al65, Ca76, CePe83, CePe85, De71, FeAl87, Gr71, Gu88, HLSw77, He67, Iw73, IwKa65, Ka70, Ka76, Ka81, Kh76, Khr76, KrK68, LNP89, Ma81, MaPo80, Mi79, MiWe79, PAKS89, Pe71, PiKh79, PrPe89, STPP83, Sa75, SaMi78, Sabb86, Sh85, StKa89, StWr72, TAGS89, TASG91, TaAp88, W69, We89, WeHe67, Web69, Webs69, Wr66, ZuAl86

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69..9023 Webster L.B. *Obs. 89,19* Observations of southern P.N.

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69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.

83.30804 Penn C.J., Flower D.R., Barlow M.J., Seaton M.J., Aller L.H. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae, 439* Why is IC 4642 of such high-excitation class?

89.50036 Bianchi L., Grewing M., Barnsted J., Diesch C. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 182* Kinematical properties of planetary nebulae.

334.8–07.4

SaSt 2-12, PK 334–7°1, He 3-1312, IRAS 16590-5351

		Disc.: Sanduleak et al 1972		*Diameter* (″)	
1950:	16 59 00.8	-53 51 39	IRAS	*opt. St.* We77	
	16 59 00.2	-53 51 31	We77		
2000:	17 03 02.6	-53 55 46	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-13						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	430	12μm	0.34	3
[*OIII*]	436.3	5	[*NII*]	658.4	133	25μm	1.81	3
	500.7	153	[*SII*]	671.7	0.9	60μm	0.41	2
HeI	587.6	17		673.1	4	100μm	16.28	1
$\lg F_{H\beta}(mW.m^{-2})$		$-11.51 \pm .04$	87.13603, ASTR91					

Central Star: AG82 222 — CPD -53 8315
B 12.26 *V* 11.54 *Qual:* A TASG91 *Spectrum:* F-G ? ATS91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, Ko78, PAKS91, SaSt72

76...524 Henize K.G. *Astrophys. J., Suppl. Ser. 30,491-550* Observations of southern emission-line stars.
87.13603 Freitas Pacheco J.A., Veliz J.G. *Rev. Mex. Astron. Astrofis. 15, 89-93* Physical characteristics of low-excitation planetary nebulae: HE 2-277 and HE 1312.

335.2–03.6

HaTr 4, PK 335–3°1

		Disc.: Hartl et al 1983		*Diameter* (″)	
				opt. 23. 85..1131	
1950:	16 41 08.0	-51 06 48	83.28035		
2000:	16 45 00.1	-51 12 18	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-04					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	643
[*OIII*]	436.3	–	[*NII*]	658.4	29
	500.7	437	[*SII*]	671.7	
HeI	587.6	42		673.1	
$\lg F_{H\beta}(mW.m^{-2})$		$-12.9 \pm .3$	ASTR91		

Central Star:
B 17.46 *V* 17.06 *Qual:* B TASG91

Notes: Close binary nucleus, $P = 1.71^d$ (BoLi90). Monochromatic images (BoLi90)

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85..1131 Hartl H., Tritton S.B. *Astron. Astrophys. 145, 41-44,1985* New planetary nebulae of low surface brightness detected on UK-Schmidt plates.

335.4+09.2

ESO 330-02, PK 335+9°1, K 1-31

			Disc.: Holmberg et al 1975	*Diameter* (″)	
				opt. 29. 77..1134	
1950:	15 49 48.3	-41 41 33	FrWe84		
2000:	15 53 12.6	-41 50 26	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	850
[*O*III]	436.3	–	[*N*II]	658.4	382
	500.7	964	[*S*II]	671.7	132
*He*I	587.6	100		673.1	91

$\lg F_{H\beta}(mW.m^{-2})$ $-13.4 \pm .4$ ASTR91

Central Star: AG82 190 — *B* 21. 77..1134

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: Ko78, We77

77..1134 Kohoutek L. *Astron. Astrophys. 59,137-139* New southern Planetary Nebulae.

335.4–01.1

He 2-169, PK 335–1°1, ESO 226-15, Sa 3-36, Wray 15-1508, IRAS 16304-4914

			Disc.: Henize 1964	*Diameter* (″)	
1950:	16 30 26.7	-49 14 57	IRAS	*opt.* 22. CaKa71	
	16 30 29.0	-49 15 06	Mi76		
2000:	16 34 14.9	-49 21 20	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	2057
[*O*III]	436.3	–	[*N*II]	658.4	6007
	500.7	743	[*S*II]	671.7	341
*He*I	587.6	–		673.1	461

$\lg F_{H\beta}(mW.m^{-2})$ $-13.38 \pm .05$ W69

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.87	1
25μm	3.18	3
60μm	10.02	3
100μm	390.10	1

Radio (*mJy*)	*2cm*	76	MiAl82
	6cm	128	Ca82

Notes: The PN is a nebulosity extended in the east-west; direction north of the group of; three stars shown in the FC.

Distance (kpc) stat.: 2.1 (CaKa71); 1.69 (Da82); 1.40 (AGNR84); 2.5 (Ma84); 2.35 (CKS91)

Bibliography: *PK67*, AGR89, AST89, HLSw77, He67, Iw73, Ka70, Ka76, KrK68, LNP89, Ma81, Mi79, MiWe79, PAKS89, PM87, PPFS87, Sa76, StAc87, WPSD88, WeHe67, Wr66

89.22019 Neckel T. *Sterne und Weltraum 28, 295* Der Sudliche Krebs-Nebel.

335.5+12.4

DS 2, PK 335+12°1

				Disc.: Drilling 1983	*Diameter* (″)	
					opt. 180. 83...423	
1950:	15 39.7	-39 10	83...423			
2000:	15 43.0	-39 20	.			

Central Star: AG82 185Bis — LSE 125
U 11.27 *B* 12.40 *V* 12.44 *Qual:* B 83...423, TASG91 *Spectrum:* O(H) Me91

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84...195 Schonberner D., Drilling J.S. *Astrophys. J. 278, 702-710* Effective temperatures and luminosities of very hot O type subdwarfs.
87..2738 Kilkenny D. *Mon. Not. R. Astron. Soc. 228, 713-719* Photometry of faint blue stars -VII. More southern stars.

335.6–04.0

MeWe 1-8

				Disc.: Melmer et al 1990	*Diameter* (″)	
					opt. 24. 90..2581	
1950:	16 44 47.8	-51 03 59	90..2581			
2000:	16 48 40.2	-51 09 14	.			

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-05-31

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100
[OIII]	436.3	–	[NII]	658.4	–
	500.7	100	[SII]	671.7	
HeI	587.6	–		673.1	

Central Star:
B 20.3 90..2581

90..2581 Melmer D., Weinberger R. *Mon. Not. R. Astron. Soc. 243, 236-240,1990* New old PN in the southern sky.

335.9–03.6

MeWe 1-7

				Disc.: Melmer et al 1990	*Diameter* (″)	
					opt. 8.8 90..2581	
1950:	16 44 06.3	-50 37 15	90..2581			
2000:	16 47 57.4	-50 42 33	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31

HeII	468.6 *nm*	70	*Hα*	656.3 *nm*	806
[OIII]	436.3	–	[NII]	658.4	–
	500.7	545	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.7 \pm .2$ ASTR91

Central Star:
B 21.1 90..2581

90..2581 Melmer D., Weinberger R. *Mon. Not. R. Astron. Soc. 243, 236-240,1990* New old PN in the southern sky.

336.2+01.9

Pe 1-6, PK 336+1°1, ESO 276-03, He 2-160, Sa 3-35, VV' 137, IRAS 16202-4635

			Disc.: Perek 1960	*Diameter (″)*		*Rvel:* −76.0 ± 10.0 STPP83
1950:	16 20 16.1	-46 35 19	IRAS	*opt.* 12.	PK67	
	16 20 16.5	-46 35 17	Mi76			
2000:	16 23 54.7	-46 42 12	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-02						*IR Class:* N		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1365	*J*	13.60	12μm	4.46	1
[*O*III]	436.3	–	[*N*II]	658.4	41:	*H*	13.40	25μm	1.53	3
	500.7	991	[*S*II]	671.7		*K*	12.50	60μm	5.15	2
*He*I	587.6	65:		673.1	29:	*L*		100μm	40.91	1
lg$F_{H\beta}(mW.m^{-2})$		−13.07 ± .05	W69			*Photom.*	PM87	*Radio* 2*cm*	13	MiAl82
								(*mJy*) 6*cm*	40	Ca82

Distance (kpc) stat.: 2.8-3.6 (CaKa71); 3.6 (Ac78); 3.54 (Da82); 2.50 (AGNR84); 4.0 (Ma84); 5.24 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSw77, He67, Iw73, KFS88, Ka70, Ka76, KrK68, LNP89, Ma81, Mi79, PAKS89, PrPe89, Sa76, StAc87, WeHe67, Web69

336.2–06.9

PC 14, PK 336−6°1, ESO 227-05, He 2-195, Sa 2-171, Wray 15-1611, Y-C 2-20, IRAS 17023-5226

			Disc.: Peimbert et al 1961	*Diameter (″)*		*Rvel:* −49.3 ± 9.0 STPP83
1950:	17 02 23.1	-52 26 13	IRAS	*opt.* 7.	CaKa71	
	17 02 16.5	-52 25 58	CeGi73			
2000:	17 06 14.7	-52 29 59	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20								*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	569			12μm	2.93	3
[*O*III]	436.3	6	[*N*II]	658.4	70			25μm	2.04	3
	500.7	1202	[*S*II]	671.7	11			60μm	3.42	3
*He*I	587.6	25		673.1	16			100μm	6.22	3
lg$F_{H\beta}$		−11.73 ± .02	W69, Pe71, SK89					*Radio* 2*cm*	20	MiAl82
								(*mJy*) 6*cm*	30	Mi79

Central Star: AG82 225 — *B* 17.2 *V* 16.5 *Qual:* C SK89 *Spectrum:* WN? CeGi73

Distance (kpc) stat.: 4.66 (CaKa71); 3.7 (Ac78); 3.92 (Da82); 2.90 (AGNR84); 4.5 (Ma84); 5.74 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, AcMa77, HLSw77, He67, Ka70, Ka76, LNP89, Lo77, Ma81, Mi76, PAKS89, PM87, PiKh79, PrPe89, Sa75, Sh85, WeHe67, Web69, Webs69, Wr66

336.3–05.6

He 2-186, PK 336–5°1, ESO 227-01, Sa 2-161, Wray 15-1585, IRAS 16556-5137

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −67.0 ± 9.0	STPP83
1950:	16 55 39.9	-51 37 35	IRAS	*opt.* 3.	CaKa71		
	16 55 40.5	-51 37 36	Mi76				
2000:	16 59 35.7	-51 42 05	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	55	$H\alpha$	656.3 *nm*	558	*J*	12.60	12μm	0.25	2
[OIII]	436.3	15	[*NII*]	658.4	453	*H*	12.20	25μm	1.47	3
	500.7	1858	[*SII*]	671.7	24	*K*	11.90	60μm	1.40	3
HeI	587.6	19		673.1	42	*L*		100μm	30.21	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.19 ± .02	W69, SK89			*Photom.*	PM87	*Radio* (*mJy*)	*2cm* 12	MiAl82
									6cm 21	Mi79

Central Star: AG82 220 —
B 18.34 *V* 16.62 *Qual:* B SK89

Distance (kpc) stat.: 8.18 (CaKa71); 7.3 (Ac78); 4.10 (Da82); 3.50 (AGNR84); 6.2 (Ma84); 6.48 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, HLSw77, He67, Ka70, Ka76, LNP89, Ma81, PAKS91, PiKh79, PrPe89, Sa75, Sh85, WeHe67, Web69, Webs69, Wr66

336.8–07.2

K 2-17, PK 336–7°1, ESO 227-06, IRAS 17056-5209

			Disc.: Kohoutek 1977	*Diameter* (″)		
1950:	17 05 38.3	-52 09 15	IRAS	*opt.* 38.	77..1134	
	17 05 38.2	-52 09 16	77..1134			
2000:	17 09 35.9	-52 13 03	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20 C						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	576	12μm	0.25	1
[OIII]	436.3	–	[*NII*]	658.4	–	25μm	0.54	3
	500.7	820	[*SII*]	671.7		60μm	0.63	1
HeI	587.6	–		673.1		100μm	12.98	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.5 ± .4	ASTR91					

Central Star: AG82 230 —
B 18. 77..1134

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, AST89, Ko78, PAKS89, PAKS91

77..1134 Kohoutek L. *Astron. Astrophys. 59,137-139* New southern Planetary Nebulae.

336.9+08.3

StWr 4-10, PK 336+8°1, ESO 330-08, Sa 1-3, Sa 2-132, Wray 15-1407, IRAS 15587-4125

			Disc.: Wray 1966	*Diameter* (″)	
1950:	15 58 47.4	-41 25 15	IRAS	*opt. St.* ATS91	
	15 58 48	-41 25.2	Wr66		
2000:	16 02 13	-41 33.5	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-12						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	849	12μm	0.33	1
[*OIII*]	436.3	–	[*NII*]	658.4	–	25μm	0.65	3
	500.7	981	[*SII*]	671.7		60μm	0.66	3
HeI	587.6	30		673.1		100μm	4.65	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.63 \pm .10$	ASTR91					

Central Star:
B 15.94 *V* 15.45 *Qual:* B TASG91

Bibliography: AcMa77, Ko78, PAKS91, Sa75, StWr72, We77

74...313 Sanduleak N. *Publ. Astron. Soc. Pac. 86,215-216* New southern planetary nebulae previously classified as emission-line stars.

336.9–11.5

MeWe 1-10

			Disc.: Melmer et al 1990	*Diameter* (″)	
				opt. 60. 90..2581	
1950:	17 30 21.6	-54 26 47	90..2581		
2000:	17 34 28.3	-54 28 47	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-04					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	182	[*SII*]	671.7	
HeI	587.6	–		673.1	

Central Star:
B 19.2 90..2581

90..2581 Melmer D., Weinberger R. *Mon. Not. R. Astron. Soc. 243, 236-240,1990* New old PN in the southern sky.

337.4+01.6

Pe 1-7, PK 337+1°1, ESO 276-04, He 2-166, VV' 139, Wray 15-1495, IRAS 16268-4556

			Disc.: Perek 1960	*Diameter (″)*	*Rvel:* −33.0 ± 9.0 STPP83
1950:	16 26 48.4	-45 56 22	IRAS	*opt.* 5. PK67	
	16 26 48.1	-45 56 22	Mi76		
2000:	16 30 25.6	-46 02 51	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-27

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1700
[*OIII*]	436.3	–	[*NII*]	658.4	1752
	500.7	6	[*SII*]	671.7	15
HeI	587.6	22		673.1	34

$\lg F_{H\beta}(mW.m^{-2})$ −12.51 ± .02 W83, SK89

IRAS Fluxes (Jy)		*Qual.*
12μm	6.51	3
25μm	49.55	3
60μm	47.64	3
100μm	266.10	1

Radio (mJy) 2cm 119 MiAl82; 6cm 117 Ca82

Central Star: AG82 210 — SS73 58
B 17.9 *V* 16.7 *Qual:* C TASG91 *Spectrum:* WC 9 ATS91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 6.89 (Ac78); 2.6 (Ma84)

Bibliography: *PK67*, AG82, AKSJ89, AST89, AcMa77, AlGl74, Gr72, HLSw77, He67, KAS91, Ka76, Mi79, OlRa86, PAKS89, PM87, Pe71, PiKh79, Sa76, SaSt73, StAc87, TAGS89, VoCo90, W66, W69, WeHe67, Web69, Webs69, Wr66

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85..2570 Whitelock P.A., Catchpole R.M. *Mon. Not. R. Astron. Soc. 212, 873-878* The infrared spectra of red variables - I. Super-lithium-rich stars.
88..1353 Van Der Hucht K.A., Hidayat B., Admiranto A.G., Supelli K.R., Doom C. *Astron. Astrophys. 199, 217-234* The galactic distribution and subtype evolution of Wolf-Rayet stars. III.
89...428 Volk K.M., Kwok S. *Astrophys. J. 342, 345-363* Evolution of protoplanetary nebulae.

337.4−09.1

Wray 16-266, PK 337−9°1, ESO 180-07, IRAS 17186-5243

			Disc.: Wray 1966	*Diameter (″)*	
1950:	17 18 36.9	-52 43 45	IRAS	*opt.* 18. We77	
	17 18 36.5	-52 43 39	We77		
2000:	17 22 36.9	-52 46 30	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-03

HeII	468.6 *nm*	105	$H\alpha$	656.3 *nm*	464
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	695	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −13.0 ± .3 ASTR91

IRAS Fluxes (Jy)		*Qual.*
12μm	0.42	1
25μm	0.62	3
60μm	0.99	3
100μm	1.93	1

Bibliography: Ko78, Sa76, Wr66

337.5–05.1

He 2-187, PK 337–5°1, ESO 227-02, Wray 15-1594, IRAS 16577-5018

			Disc.: Henize 1964	*Diameter* (″)	
1950:	16 57 44.7	-50 18 37	IRAS	*opt.* 6. CaKa71	
	16 57 45.9	-50 18 36	Mi76		
2000:	17 01 37.5	-50 22 57	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	817
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	481	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.42 \pm .05$ W69

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.25	1
25μm	1.05	3
60μm	1.99	3
100μm	40.71	1

Central Star:
B 12.90 *V* 12.74 *Qual:* A TASG91

Distance (kpc) stat.: 5.62 (CaKa71); 4.8 (Ac78); 3.2 (Ma84)

Bibliography: *PK67*, AST89, HLSw77, He67, Iw73, Ka70, Ka76, Ko78, Mi79, PAKS89, PiKh79, Sa76, StAc87, TAGS89, WeHe67, Web69, Webs69, Wr66

337.6–04.2

MeWe 1-9

			Disc.: Melmer et al 1990	*Diameter* (″)	
				opt. 17. 90..2581	
1950:	16 53 39.4	-49 42 14	90..2581		
2000:	16 57 29.0	-49 46 52	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	531
[*O*III]	436.3	–	[*N*II]	658.4	518
	500.7	780	[*S*II]	671.7	80
*He*I	587.6	39		673.1	65

$\lg F_{H\beta}(mW.m^{-2})$ $-13.1 \pm .2$ ASTR91

Central Star:
B 21.9 90..2581

90..2581 Melmer D., Weinberger R. *Mon. Not. R. Astron. Soc. 243, 236-240,1990* New old PN in the southern sky.

338.1–08.3

NGC 6326, PK 338–8°1, ARO 519, ESO 228-01, He 2-208, VV' 174, Sa 2-39, StWr 2-39, VV 97, Wray 16-262, IRAS 17168-5142

			Disc.: Herschel 1835	*Diameter* (″)		*Rvel:* +9.0 ± 4.0	MWF88
1950:	17 16 48.3	-51 42 16	IRAS	*opt.* 12.5	CaKa71	*Expansion Velocities* (*km/s*)	
	17 16 49.1	-51 42 20	Mi76		CJA87	[OIII] 16.5	MWF88
2000:	17 20 46.2	-51 45 19	.			[NII] 16.	MWF88

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-13						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	54	*Hα*	656.3 *nm*	418	*J*	12.13	12*μm*	0.30	2
[OIII]	436.3	13	[*N*II]	658.4	42	*H*	12.48	25*μm*	2.71	3
	500.7	1266	[*S*II]	671.7	7	*K*	11.67	60*μm*	5.93	3
*He*I	587.6	13		673.1	9	*L*		100*μm*	4.64	2
$\lg F_{H\beta}$	−11.08 ± .02	KM81, W83, SK89				*Photom.*	Wh85	*Radio* 2*cm*	61	MiAl82
IUE Spectra:	*LW*(1)	*SW*(1)				*Spectr.*	PPOJ86	(*mJy*) 6*cm*	73	Ca82

Central Star: AG82 235 — CD -51 10820; GCRV 9994; HD 156531
B 16.75 *Qual:* B GaPo88

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 0.8 (Po83)
Distance (kpc) stat.: 2.7-3.2 (CaKa71); 3.40 (MiAl75); 3.58 (Ca76); 2.4 (Ac78); 2.64 (Da82); 1.80 (AGNR84); 2.5 (Ma84); 3.47 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AcMa77, Al65, AlMi72, Ca84, CaNo73, De71, Fe68, Gr71, Gu88, HLSw77, He67, He71, Iw73, IwKa65, Iy86, Ka70, Ka76, KrKo68, LNP89, MaPo80, Mar81, MiWe79, PAKS91, PM87, PPFS87, Pe71, PiKh79, STPP83, Sa75, Sa84, SaMi78, Sab86, Sh85, SlOr65, StWr72, TASG91, ViFr85, W69, We89, Web69, Webs69, Wr66

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338.8+05.6

He 2-155, PK 338+5°1, Sa 2-141, ESO 331-01, Wray 16-215, IRAS 16158-4208

			Disc.: Henize 1964	*Diameter* (″)		*Rvel:* −26.5 ± 8.8 STPP83
1950:	16 15 53.5	-42 08 25	IRAS	*opt.* 14.5	CaKa71	
	16 15 54.7	-42 08 23	Mi73			
2000:	16 19 23.1	-42 15 36	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	9	*Hα*	656.3 *nm*	602	12*μm*	0.35	1
[OIII]	436.3	5	[*N*II]	658.4	147	25*μm*	0.82	3
	500.7	1215	[*S*II]	671.7	15	60*μm*	5.59	3
*He*I	587.6	25		673.1	20	100*μm*	38.49	1
$\lg F_{H\beta}(mW.m^{-2})$	−11.59 ± .05	W69, SK89				*Radio* 2*cm*	47	MiAl82
						(*mJy*) 6*cm*	70	Ca82

Central Star:
B 16.7 *V* 16.3 *Qual:* C SK89

Distance (kpc) stat.: 2.9 (CaKa71); 2.0 (Ac78); 2.73 (Da82); 1.80 (AGNR84); 2.7 (Ma84); 3.12 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, HLSw77, He67, Iw73, Ka70, Ka76, KrK68, LNP89, Lo77, Ma81, Mi79, MiWe79, PM87, Pe71, Sa75, Sh85, TASG91, WeHe67, Web69, Wr66

69..9023 Webster L.B. *Obs. 89,19* Observations of southern P.N.
69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.

339.9+88.4

LoTr 5, PK 339+88°1

Disc.: Longmore et al 1980 1950: 12 53 08 +26 09.7 80..2605 2000: 12 55 34 +25 53.5 .	*Diameter* (″) *opt.* 525. 80..2605	*Expansion Velocities* (*km/s*) [OIII] 27 We89
$\lg F_{H\beta}(mW.m^{-2})$ −12.1 ± .2 Ka83 *IUE Spectra:* *LW*(5) *SW*(4)		

Central Star: AG82 149 — AG 26 1312; BD 26 2405; HD 112313; SAO 82570; IN Com
V 14.9 Ka85 *Spectrum:* sdO + G5 III 83...391

Notes: Binary nucleus (83..1317, BoLi90); triple system? (87..1292). G5 III companion: B = 9.6, V = 8.8 (80..2605). Monochromatic images (80..2605)
Distance (kpc) indiv.: spect. 0.40 (80..2605)
Distance (kpc) stat.: 6.29 (CKS91)

Bibliography: AG82, IsWe87, KSK90, LePo88, Me89, PPT88, PaPe88, We86

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89.17775 Noskova R.I. *Pis'ma Astron. Zu. 15, 346-352* On the periodic light variability of IN Com - The peculiar central star of the planetary nebula LT 5.

89.50073 Kaler J.B. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 229-239* Magnitudes< spectra, and temperatures of planetary nuclei.

89.50075 Bond H.E. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimnert. Planetary nebulae, 251-260* Close-binary and pulsating central stars.

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91..2006 Malasan H.L., Yamasaki A., Kondo M. *Astron. J.,101,2131* The central star of planetary nebula LT-5: a triple system.

340.4−14.1

Sa 1-6, PK 340−14°1, ESO 182-02, Sa 2-278, StWr 2-4l, Wray 15-1818

			Disc.: Wray 1966	*Diameter* (″)	
				opt. 11.: ATS91	
1950:	17 56 57.6	-52 44 17	We77		
2000:	18 00 59.2	-52 44 22	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-14

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	365
[*O*III]	436.3	7	[*N*II]	658.4	27
	500.7	375	[*S*II]	671.7	7
*He*I	587.6	17		673.1	8

$\lg F_{H\beta}(mW.m^{-2})$ $-12.3 \pm .2$ ASTR91

Central Star:
B 16.38 *V* 16.24 *Qual:* B TASG91

Bibliography: AcMa77, HLSW75, Ko78, PAKS91, Sa75, StWr72, Wr66

74...313 Sanduleak N. *Publ. Astron. Soc. Pac. 86,215-216* New southern planetary nebulae previously classified as emission-line stars.

340.8+12.3

Lo 11, PK 340+12°1, ESO 389-09, K 1-32, IRAS 16000-3552

			Disc.: Longmore 1977	*Diameter* (″)	
1950:	16 00 06.0	-35 52 37	IRAS	*opt.* 60. 77..1134	
	16 00 06.2	-35 52 39	77..1134	Lo77	
2000:	16 03 22.1	-36 00 54	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-16

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	60
	500.7	190	[*S*II]	671.7	
*He*I	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.59	3
60μm	1.75	3
100μm	3.89	2

Radio (*mJy*) *2cm* *6cm* 3.5 ZPB89

Central Star: AG82 194 —
B 19. 77..1134

Distance (kpc) stat.: 2.46 (CKS91)

Bibliography: AG82, Ko78, PAKS91, We77

77..1134 Kohoutek L. *Astron. Astrophys. 59,137-139* New southern Planetary Nebulae.

340.8+10.8

Lo 12, PK 340+10°1, ESO 389-14, K 1-33

			Disc.: Longmore 1977	*Diameter* (″)	
				opt. 79. 77..1134	
1950:	16 05 08.1	-37 00 53	77..1134	Lo77	
2000:	16 08 26.3	-37 08 48	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-16

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	43
	500.7	83	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star: AG82 196 —
B 18.5 77..1134

Bibliography: AG82, Ko78, We77

77..1134 Kohoutek L. *Astron. Astrophys. 59,137-139* New southern Planetary Nebulae.

340.9–04.6

Sa 1-5, PK 340–4°1, ESO 278-05, Sa 2-177, Wray 15-1633, IRAS 17077-4721

			Disc.: Sanduleak 1974	*Diameter* (″)	
				opt. St. We77	
1950:	17 07 43.1	-47 21 24	IRAS		
	17 07 42.7	-47 21 22	Wr66		
2000:	17 11 27.4	-47 25 01	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28

*He*II	468.6 *nm*	4	$H\alpha$	656.3 *nm*	919
[*O*III]	436.3	–	[*N*II]	658.4	48
	500.7	1405	[*S*II]	671.7	
*He*I	587.6	32		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.40 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.30	1
25μm	0.47	3
60μm	1.28	1
100μm	39.84	1

Bibliography: AcMa77, Ko78, La82, Sa75

74...313 Sanduleak N. *Publ. Astron. Soc. Pac. 86,215-216* New southern planetary nebulae previously classified as emission-line stars.

341.2–24.6

Lo 18, PK 341–24°1

			Disc.: Longmore 1977	*Diameter* (″)	
				opt. 43. Lo77	
1950:	19 05 38	-55 39.5	Lo77		
2000:	19 09 45	-55 34.6	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-14

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	228
	500.7	115	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star: AG82 346 —

Bibliography: AG82, Ko78, PAKS91, We77

85..1536 West R.M., Kohoutek L. *Astron. Astrophys., Suppl. Ser. 60, 91-97,1985* Spectroscopic verification of suspected planetary nebulae. II.

341.5–09.1

He 2-248, PK 341–9°1, ESO 228-06, Sa 2-218, StWr 2-38, Wray 16-290

			Disc.: Henize 1964	*Diameter* (″)	
				opt. St. ATS91	
1950:	17 32 16.3	-49 23 43	Mi76		
2000:	17 36 07.6	-49 25 36	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	384
[*OIII*]	436.3	10	[*NII*]	658.4	9
	500.7	1042	[*SII*]	671.7	2.3
HeI	587.6	19		673.1	3

$\lg F_{H\beta}(mW.m^{-2})$	$-12.15 \pm .08$ Pe71, ASTR91	*IR Class:* .	
		J	
		H	
		K	> 10.0
		L	
		Photom. AlGl74	*Radio* 2cm < 1 MiAl82
		Spectr. PPOJ86	(*mJy*) 6cm 13 Mi79

Central Star:
B 15.28 *V* 15.41 *Qual:* B TASG91

Distance (kpc) stat.: 6.7 (Ma84)

Bibliography: *PK67*, AcMa77, HLSw77, He67, PAKS91, Sa75, StWr72, W66, W75, WeHe67, Wr66

341.6+13.7

NGC 6026, PK 341+13°1, ESO 389-07, He 2-144, Sa 2-131, StWr 4-4, VV' 128, Wray 16-201, IRAS 15581-3424

			Disc.: De Vaucouleurs 1955	*Diameter* (″)	*Rvel:* -103.0 ± 5.0 MWF88
1950:	15 58 07.6	-34 24 13	IRAS	*opt.* 40. CJA87	*Expansion Velocities* (*km/s*)
	15 58 07.4	-34 24 16	Mi76		[OIII] 24.5 MWF88
2000:	16 01 20.9	-34 32 38	.	*radio* 42. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03					
HeII	468.6 *nm*	50	$H\alpha$	656.3 *nm*	411
[*OIII*]	436.3	–	[*NII*]	658.4	25
	500.7	605	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$	$-11.65 \pm .01$ SK89	*IRAS Fluxes* (*Jy*)	*Qual.*
IUE Spectra:	*LW*(2) *SW*(2)	12μm 0.25	1
		25μm 1.17	3
		60μm 2.96	3
		100μm 4.65	3
		Radio 2cm 19 MiAl82	
		(*mJy*) 6cm 22 ZPB89	

Central Star: AG82 193 —
B 13.35 *V* 13.29 *Qual:* A SK89 *Spectrum:* IUE obsns AG82

Notes: Multiple-shell PN; monochromatic images (CJA87)
Distance (kpc) stat.: 2.73 (CaKa71); 2.27 (Ac78); 1.48 (Da82); 1.30 (AGNR84); 1.9 (Ma84); 2.38 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, CS83, CePe83, Ch89, FeAl87, Gr71, GrNe90, HLSW77, He67, Iw73, KSK90, KrK68, LNP89, Ma81, Mi79, MiWe79, STPP83, Sa75, Sh85, StWr72, We89, WeHe67, Wr66

341.8+05.4

NGC 6153, PK 341+5°1, ARO 501, ESO 331-06, He 2-167, RCW 112, Sa 2-148, VV 81, VV' 141, Wray 16-225, IRAS 16280-4008

			Disc.: Copeland 1883	*Diameter* (")		*Rvel:* +37.0 ± 3.0	MWF88
1950:	16 28 05.8	-40 08 50	IRAS	*opt.* 24.	CaKa71	*Expansion Velocities* (*km/s*)	
	16 28 05.0	-40 08 58	Mi73		CJA87	[OIII] 17.5	We89
2000:	16 31 30.9	-40 15 22	.			[NII] 17.	We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-04						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	19	$H\alpha$	656.3 *nm*	858	*J*	10.34	12μm	6.90	3
[*O*III]	436.3	–	[*N*II]	658.4	77	*H*	10.48	25μm	52.07	3
	500.7	1073	[*S*II]	671.7		*K*	9.59	60μm	119.50	3
*He*I	587.6	42		673.1		*L*		100μm	52.11	3
$\lg F_{H\beta}(mW.m^{-2})$		−10.84 ± .02	64.50001, W83			*Photom.*	Wh85	*Radio*	2*cm* 559	MiAl82
IUE Spectra:		*LW*(4) *SW*(4)				*Spectr.*	PPOJ86	(*mJy*)	6*cm* 477	MiAl75

Central Star: AG82 210Bis — HD 148687; CD -39 10464; GCRV 9495
B 16.14 *Qual:* B GaPo88

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 1.8 (Po83); ext. 1.6 (Sab86)
Distance (kpc) stat.: 1.5-1.9 (CaKa71); 1.54 (MiAl75); 1.6 (Ca76); 1.5 (Ac78); 0.96 (Da82); 0.73 (AGNR84); 1.0; 1.28 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Ak70, Al65, AlMi72, AmGu71, Ca82, CaNo73, CoBa80, De71, FaMa88, Gol87, Gr71, Gu70, HLSw77, HaZu91, He67, He71, Hi71, Iw73, IwKa65, KHM86, Ka69, Ka70, Ka76, Ka78, Kh79, KrK68, LNP89, Ma84, MaPo80, MeHa75, MiWe79, OlRa86, PBBE84, PM87, PPFS87, Pe71, Pe91, PeF73, PeFr72, PeFr73, Phi84, Po87, SK89, STPP83, SWPD87, Sa75, SaMi78, Sh85, SlOr65, Th68, ThCo67, VoCo90, WPSD88, WRPA86, WeHe67, Wr66, Zi75, ZuGa88

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69..9023 Webster L.B. *Obs. 89,19* Observations of southern P.N.
69..9047 Jones D.H.P., Evans D.S., Catchpole R.M. *Obs. 89,18,1969* Observation of 17 southern planetary nebulae.
84...119 Pottasch S.R., Beintema D.A., Raimond E., Baud B., Van Duinen R., Habing H.J., Houck J.R., De Jong T., Jennings R.E., Olnon F.M., Wesselius P.R. *Astrophys. J. 278, L33-L35* IRAS spectra of planetary nebulae.
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85.10504 Pottasch S.R. *Observatory 105, 5-6* Fine-structure lines.
86..1080 Pottasch S.R., M. Dennefeld., Mo Jing-Er. *Astron. Astrophys. 155, 397-401* Abundances in the planetary nebula NGC 6153.
87..4197 Banerjee D.P.K., Anandarao B.G., Desai J.N., Jog N.S., Kikani P.K., Mahadkar R.K., Manian K.S.B., Pathan F.M., Shah N.C., Thomas M. *Astrophys. Space Sci. 139, 327-335* A high-resolution Fabry-Perot spectrometer for emission line studies in planetary nebulae and other extended astronomical objects.
88..1462 Anandarao B.G., Banerjee D.P.K. *Astron. Astrophys. 202, 215-218* High resolution observations of the planetary nebulae NGC 6153 and IC 4593.
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90..1030 Loup C., Forveille T., Nyman L.A., Omont A. *Astron. Astrophys. 227, L29-L32* CO observations of very cold southern circumstellar shells and pre-planetary nebulae.

342.1+27.5

Me 2-1, PK 342+27°1, ARO 88, ESO 514-12, He 2-126, Sa 2-120, StWr 4-2 , VV 72, VV' 124, Wray 16-176, Y-C 2-18, IRAS 15193-2326

			Disc.: Merrill 1942	*Diameter (")*		*Rvel:* +45.5 ± 5.3 STPP83	
1950:	15 19 23.0	-23 26 50	IRAS	*opt.* 6.	CaKa71	*Expansion Velocities (km/s)*	
	15 19 23.1	-23 26 50	AK90			[OIII] 13.0	Ac76
2000:	15 22 19.3	-23 37 31	.	*radio* 7.	AK90		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31

						IR Class: N		*IRAS Fluxes (Jy)*		*Qual.*
*He*II	468.6 *nm*	87	$H\alpha$	656.3 *nm*	303	*J*	12.92	12μm	0.25	1
[OIII]	436.3	21	[*N*II]	658.4	25	*H*	12.84	25μm	2.78	3
	500.7	1414	[*S*II]	671.7	1.9:	*K*	12.22	60μm	1.68	3
*He*I	587.6	3		673.1	3:	*L*		100μm	1.04	1

$\lg F_{H\beta}$ −11.34 ± .02KM81, Kal83, W83, SK89 — *Photom.* PeTo87 — *Radio* 2*cm* 39 MiAl82; (*mJy*) 6*cm* 30 AK90

IUE Spectra: *LW*(4) *SW*(4)

Central Star: AG82 178 — CD -23 12238
B 18.85 *Qual:* B GaPo88 *Spectrum:* IUE Sp., P Cyg AG82

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 6.6 (CaKa71); 5.71 (MiAl75); 6.20 (Ca76); 4.3 (Ac78); 3.40 (Da82); 2.60 (AGNR84); 4.0 (Ma84); 6.60 (CKS91)

Bibliography: *PK67*, AGNR85, AGR89, AST89, Ac75, AcMa77, Al82, AlCz79, AlEp76, AlMi72, BLTA81, CS83, CaRu74, CaWy76, CeGi73, CePe85, CoBa74, DFHM67, Da75, De71, Do73, FaMa88, FeAl87, FeBr90, GMS72, Go87, Gr71, Gu88, HLSW80, He67, He71, Hi69, Hi71, Hig71, Is84, Iw73, IwKa65, Iy86, JoJo91, KHM86, Ka70, Ka73, Ka76, Ka86, Kal86, Kale76, Kh76, Kh79, Khr76, Kle78, LNP89, MaPo80, Mar81, Mi73, MiWe79, PAKS89, PM87, PPFS87, PPT88, Pe71, Pe83, Pe91, PiKh79, PrPo83, SWPD87, Sa75, Sa84, SaMi78, Sh85, StKa89, StWr72, TAGS89, TASG91, VKDa65, Vo70, WPSD88, We89, Wr66, ZTPS89, ZuAl86, ZuGa88

70...260 Aller L.H., Czyzak S.J. *Astrophys. J. 160,929* Spectrophotometric studies of gaseous nebulae - 16 - the moderately high excitation planetaries IC 2003, NGC 2022, CD-23 12238.

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79..1509 Turner B.E. *Astron. Astrophys. Suppl. Ser. 37,1-332* A survey of OH near the galactic plane.

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80.50302 Peimbert M. *The Universe at ultraviolet wavelengths. The first two years of IUE. Proceeding s of a symposium held at NASA Goddard Space Flight Center, Greenbelt, Maryland, May 7-9, 1980. Ed. R.D. Chapman. NASA CP-2171.557-565* New insights into the physical state of gaseous nebulae.

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81...207 Aller L.H., Keyes C.D., Czyzak S.J. *Astrophys. J. 250,596-604* The optical and ultraviolet spectra of the high excitation planetary nebula, CD-23 12238 = Me 2-1.

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90..1039 Szczerba R. *Astron. Astrophys. 237,495* A distance-independent test of planetary nebulae nuclei evolution.

342.1+10.8

NGC 6072, PK 342+10°1, ARO 500, ESO 389-15, My 93, Sa 2-134, VV 77, IRAS 16097-3606

			Disc.: Hubble 1921	*Diameter (″)*	*Rvel:* +7.0 ± 2.0 MWF88
1950:	16 09 42.0	-36 06 12	IRAS	*opt.* 70. CaKa71	*Expansion Velocities (km/s)*
	16 09 41.6	-36 06 01	Mi73		[OIII] < 6.0 MWF88
2000:	16 12 58.8	-36 13 39	.		[NII] 10.0 MWF88

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-03 S						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	41	$H\alpha$	656.3 *nm*	619	12μm	0.38	3
[*OIII*]	436.3	–	[*NII*]	658.4	970	25μm	2.87	3
	500.7	1360	[*SII*]	671.7		60μm	24.89	3
HeI	587.6	26		673.1		100μm	31.17	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.22 ± .01 W83, SK89				*Radio* 2*cm*	160	MiAl82
IUE Spectra:		*LW*(1) *SW*(1)				(*mJy*) 6*cm*	152	Ca82

Central Star: AG82 200 —
B 19.31 *Qual:* B GaPo88

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 1.8 (Po83); ext. 1.9 (Sab86)
Distance (kpc) stat.: 1.30 (CaKa71); 1.07 (MiAl75); 1.04 (Ca76); 1.0 (Ac78); 1.16 (Da82); 0.87 (AGNR84); 1.3 (Ma84); 1.01 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, AlMi72, CaNo73, De71, Gr71, HLSW77, HaZu91, He67, He71, Hi71, Hi73, Iw73, KHM86, KSK90, Ka70, Kh79, KrK68, LNP89, Lo77, MaPo80, MeHa75, MiWe79, PBBE84, PPOJ86, Phi84, PiKh79, STPP83, SWPD87, Sa75, Sh85, SlOr65, Te68, Th68, ThCo67, WPSD88, We89, Wr66, ZuGa88

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90..2009 Healy A.P., Huggins P.J. *Astron. J.,100,511* The molecular envelopes of evolved planetary nebulae.

342.5−14.3

Sp 3, PK 342−14°1, ESO 229-06,, IRAS 18033-5101

			Disc.: Shapley 1936	*Diameter (″)*	*Rvel:* +45.5 ± 5.0 STPP83
1950:	18 03 19.5	-51 01 34	IRAS	*opt.* 35.5 PK67	*Expansion Velocities (km/s)*
	18 03 22.8	-51 01 35	Mi76		[OIII] 22.0 Ac76
2000:	18 07 19.2	-51 01 12	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	348	12μm	0.37	3
[*OIII*]	436.3	–	[*NII*]	658.4	83	25μm	2.20	3
	500.7	69	[*SII*]	671.7	4	60μm	11.84	3
HeI	587.6	22		673.1	6	100μm	12.52	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.1 ± .3 ASTR91				*Radio* 2*cm*	3	MiAl82
						(*mJy*) 6*cm*	61	Ca82

Central Star: AG82 285 —
B 12.48 *V* 12.59 *Qual:* A TASG91

Distance (kpc) stat.: 2.8; 1.88 (CKS91)

Bibliography: *PK67*, AG82, AGNR84, AGR89, Ac75, Ac78, AcMa77, HLSW75, He67, LNP89, MGT91, MGTW87, Ma81, Ma84, Mi79, PAKS91, Sa75, Sa84, StWr72, We89, Wr66

342.7+00.7

H 1-3, PK 342+0°1, ESO 277-17, Sa 3-38, VV' 146, Wray 16-239

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 16. CaKa71	
1950:	16 49 59	-42 34.4	HLSw77		
2000:	16 53 32	-42 39.3	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-03

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1263
[*O*III]	436.3	–	[*N*II]	658.4	3374
	500.7	758	[*S*II]	671.7	329
*He*I	587.6	–		673.1	334

$\lg F_{H\beta}(mW.m^{-2})$ $-12.93 \pm .04$ SK89

Distance (kpc) stat.: 2.28 (CaKa71); 1.4 (Ma84); 1.53 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Iw73, Ka76, KaJa89, KrK68, PAKS89, Sa76, StAc87, Wr66

342.8–06.6

Cn 1-4, PK 342–6°1, ESO 278-10, He 2-224, PC 16, Sa 2-197, StWr 2-33, W ray 16-274, IRAS 17240-4653

			Disc.: Cannon 1921	*Diameter* (″)	*Rvel:* -88.0 ± 5.0 STPP83	
1950:	17 24 03.6	-46 53 13	IRAS	*opt.* 8. ATS91		
	17 24 04	-46 53.1	HLSw77			
2000:	17 27 48	-46 55.6	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-12

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	384	*IR Class:* .	*IRAS Fluxes* (*Jy*)	*Qual.*
[*O*III]	436.3	14	[*N*II]	658.4	24	*J*	12*μm* 0.25	1
	500.7	1308	[*S*II]	671.7	3	*H*	25*μm* 1.18	3
*He*I	587.6	19		673.1	5	*K* > 9.7	60*μm* 1.13	3
						L	100*μm* 21.34	1

$\lg F_{H\beta}(mW.m^{-2})$ $-11.8 \pm .3$ ASTR91

Photom. AIGI74

Central Star:
B 16.3 *V* 16.2 *Qual:* D TASG91

Bibliography: *PK67*, AcMa77, He67, PAKS91, Sa75, StWr72, Wr66

342.9–02.0

Pe 1-8, PK 342–2°1, ESO 278-03, He 2-198, Sa 2-173, VV' 159, Wray 16-249, IRAS 17027-4409

			Disc.: Henize 1964	*Diameter* (″)	*Rvel*: −1.0 ± 3.0 MWF88
1950:	17 02 44.0	-44 09 07	IRAS	*opt.* 19. CaKa71	*Expansion Velocities* (*km/s*)
	17 02 46	-44 09.2	HLSw77		[OIII] 26.9 MWF88
2000:	17 06 23	-44 13.2	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-14						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	40	$H\alpha$	656.3 *nm*	997	12μm	1.46	1
[*O*III]	436.3	–	[*N*II]	658.4	41	25μm	5.51	3
	500.7	1096	[*S*II]	671.7	13	60μm	12.12	3
*He*I	587.6	19		673.1	36	100μm	213.50	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.6 ± .2 ASTR91						

Distance (kpc) stat.: 2.2 (Ma84)

Bibliography: *PK67*, AcMa77, He67, Iw73, KrK68, Sa75, We89, WeHe67, Wr66

342.9–04.9

He 2-207, PK 342–4°1, ESO 278-08, Sa 2-183, Wray 16-261, IRAS 17158-4550

			Disc.: Henize 1964	*Diameter* (″)	*Rvel*: −38.0 ± 5.0 STPP83
1950:	17 15 50.0	-45 50 10	IRAS	*opt.* 35. PK67	
	17 15 51	-45 50.1	HLSw77		
2000:	17 19 32	-45 53.2	.		

Intens. ($H\beta = 100$) eso-b.c+ccd 1988-03-14						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	50	$H\alpha$	656.3 *nm*	531	12μm	0.34	2
[*O*III]	436.3	–	[*N*II]	658.4	775	25μm	2.43	3
	500.7	1561	[*S*II]	671.7	96	60μm	2.99	3
*He*I	587.6	16		673.1	109	100μm	26.62	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.8 ± .3 ASTR91						

Bibliography: *PK67*, AcMa77, He67, KrK68, Lo77, PAKS91, PhMa88, Sa75, WeHe67, Wr66

343.0–01.7

Vd 1-9, PK 343–1°1, ESO 278-01, IRAS 17020-4352

			Disc.: Vandervort 1964	*Diameter* (″)	
1950:	17 02 02.1	-43 52 15	IRAS	*opt. St.* CS90	
	17 02 03	-43 53.4	HLSw77		
2000:	17 05 39	-43 57.5	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3105	12μm	1.44	1
[*O*III]	436.3	–	[*N*II]	658.4	258	25μm	2.22	3
	500.7	1125	[*S*II]	671.7		60μm	22.27	1
*He*I	587.6	65		673.1		100μm	218.70	1
$\lg F_{H\beta}(mW.m^{-2})$		−14.0 ± .3 ASTR91						

Bibliography: *PK67*, MaC83, Sa76

343.3–00.6

HaTr 5, PK 343–0°1

			Disc.: Hartl et al 1983	*Diameter* (″)	
				opt. 120. 85..1131	
1950:	16 57 54.0	-43 01 35	83.28035		
2000:	17 01 28.1	-43 05 56	.		

Central Star:
B 17.8 *V* 16.4 *Qual:* C TASG91

Bibliography: Ko89

83.28035 Hartl H., Tritton S.B. *Mitteil. Astron. Gesellschaft 60, 328-330* Neuentdeckte sudliche Planetarische Nebel.
85..1131 Hartl H., Tritton S.B. *Astron. Astrophys. 145, 41-44,1985* New planetary nebulae of low surface brightness detected on UK-Schmidt plates.

343.4+11.9

H 1-1, PK 343+11°1, ESO 389-16, Sa 2-135, StWr 4-5, VV' 134, Wray 16-209

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 2.4 CaKa71	
1950:	16 10 13	-34 28.1	HLSW77		
2000:	16 13 28	-34 35.7	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16

HeII	468.6 *nm*	19	$H\alpha$	656.3 *nm*	430
[*OIII*]	436.3	24	[*NII*]	658.4	–
	500.7	1600	[*SII*]	671.7	
HeI	587.6	12		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.38 \pm .01$ SK89

IR Class: .

J	
H	
K	> 9.6
L	

Photom. AIGI74

Central Star: AG82 201 — HARO 1-1
B 16.87 *V* 17.30 *Qual:* B SK89

Distance (kpc) stat.: 14.65 (CaKa71); 8.8 (Ma84); 16.2 (CKS91)

Bibliography: *PK67*, AG82, AST89, AcMa77, CaWy76, Kon83, PAKS89, Sa75, Sh85, StWr72, Wr66

91..3008 Kaler J.B., Hayes J, Bell D., Stanghellini L. *Publ. Astron. Soc. Pac.,103,561* A spectroscopic study of the three symbiotic stars He 2-171, Ap 1-9 and Ap 1-11.

343.5–07.8

PC 17, PK 343−7°1, ESO 279-01, He 2-246, Sa 2-216, StWr 2-34, Wray 16-288, IRAS 17319-4657

			Disc.: Peimbert et al 1961	*Diameter* (″)	
1950:	17 31 57.8	-46 57 57	IRAS	*opt.* 5. CaKa71	
	17 31 56.3	-46 57 57	Mi76		
2000:	17 35 41.2	-46 59 51	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	489
[*O*III]	436.3	5	[*N*II]	658.4	3
	500.7	1062	[*S*II]	671.7	
*He*I	587.6	21		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	1.98	3
60μm	3.17	3
100μm	3.98	1

$\lg F_{H\beta}(mW.m^{-2})$	$-11.95 \pm .05$	Pe71, ASTR91	*Radio* (*mJy*) *2cm*	13 MiAl82
			6cm	

Central Star:
B 15.16 *V* 14.61 *Qual:* B TASG91

Distance (kpc) stat.: 7.52 (CaKa71); 4.8 (Ma84); 8.1 (CKS91)

Bibliography: *PK67*, AcMa77, CaWy76, HLSW75, He67, Iw73, Mi79, PAKS91, Sa75, StWr72, WeHe67, Wr66

343.6+03.7

SuWt 3, PK 343+3°1

			Disc.: Schuster et al 1980	*Diameter* (″)	*Rvel:* -194.0 ± 15.0STPP83
				opt. 20. 80..1013	
1950:	16 40 57	-39 57.8	80..1013		
2000:	16 44 24	-40 03.3	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15 N					
*He*II	468.6 *nm*	35	$H\alpha$	656.3 *nm*	524
[*O*III]	436.3	–	[*N*II]	658.4	575
	500.7	163	[*S*II]	671.7	93
*He*I	587.6	–		673.1	60

$\lg F_{H\beta}(mW.m^{-2})$	$-13.3 \pm .4$	ASTR91

Central Star: AG82 213 —
B 20.5 *V* 20.5 80..1013

Bibliography: AG82

80..1013 West R.M., Schuster H.E. *Astron. Astrophys. 88,350-353* Two southern Planetary Nebulae: ESO 263-PN02 and SchuWe-3.

343.9+00.8

H 1-5, PK 344+0°1, ESO 332-15, Sa 3-39, VV' 149, Wray 16-243, IRAS 16538-4133

			Disc.: Haro 1952	*Diameter* (″)	
1950:	16 53 52.6	-41 33 20	IRAS	*opt.* 5.2 CaKa71	
	16 53 53	-41 33.3	Sa76		
2000:	16 57 24	-41 37.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1983-05-03						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	8640	12μm	2.35	3
[*OIII*]	436.3	–	[*NII*]	658.4	3663	25μm	39.59	3
	500.7	1532	[*SII*]	671.7	172	60μm	40.89	3
HeI	587.6	142		673.1	347	100μm	69.69	1
$\lg F_{H\beta}(mW.m^{-2})$		$-13.9 \pm .3$ ASTR91						

Distance (kpc) stat.: 3.52 (CaKa71); 0.9 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, HLSw77, PAKS89, StAc87, VoCo90, Wr66

344.2+04.7

Vd 1-1, PK 344+4°1, ESO 331-08, He 2-178, Sa 2-151, Wray 16-231, IRAS 16391-3848

			Disc.: Vandervort 1964	*Diameter* (″)	*Rvel:* -142.1 ± 3.5 STPP83
1950:	16 39 08.9	-38 48 54	IRAS	*opt. St.* CS90	
	16 39 09	-38 48.8	HLSw77		
2000:	16 42 33	-38 54.5	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	680	*J*		12μm	0.25	1
[*OIII*]	436.3	3	[*NII*]	658.4	150	*H*		25μm	4.57	3
	500.7	402	[*SII*]	671.7	3	*K*	> 9.7	60μm	4.97	1
HeI	587.6	24		673.1	5	*L*		100μm	65.18	1
$\lg F_{H\beta}(mW.m^{-2})$		$-12.16 \pm .10$ ASTR91				*Photom.* AlGl74				

Central Star:
B 16.9 *V* 16.7 *Qual:* C TASG91

Bibliography: *PK67*, AST89, AcMa77, Fe68, He67, PAKS89, Sa75, W66, W75, WeHe67, Wr66

77....94 Johnson H.M. ***Astrophys. J. 216,776-783*** Fabry-Perot interferometry of stellar P.N.

344.2–01.2

H 1-6, PK 344–1°1, ESO 278-04, He 2-199, Sa 3-40, VV' 160, Wray 16-250

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 12. CaKa71	
1950:	17 03 26	-42 37.3	HLSw77		
2000:	17 07 00	-42 41.3	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1560
[*OIII*]	436.3	–	[*NII*]	658.4	2467
	500.7	845	[*SII*]	671.7	209
HeI	587.6	–		673.1	237
$\lg F_{H\beta}(mW.m^{-2})$		$-13.2 \pm .4$ ASTR91			

Distance (kpc) stat.: 2.65 (CaKa71); 1.4 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, KrK68, PAKS89, Sa76, StAc87, Wr66

344.4+02.8

Vd 1-5, PK 344+2°1, ESO 332-04, Sa 2-156

	Disc.: Vandervort 1964	*Diameter* (″)	
		opt. St. ATS91	
1950:	16 47 06	-39 57.9	HLSw77
2000:	16 50 33	-40 03.0	.

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11

HeII	468.6 *nm*	28	*Hα*	656.3 *nm*	971
[*OIII*]	436.3	–	[*NII*]	658.4	35
	500.7	1695	[*SII*]	671.7	
HeI	587.6	30		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.51 \pm .10$ ASTR91

IR Class: .

J	
H	
K	> 9.9
L	

Photom. AIGI75

Bibliography: *PK67*, AcMa77, PAKS89, Sa75

344.4–06.1

Wray 16-278, PK 344–6°1, Sa 2-208

	Disc.: Wray 1966	*Diameter* (″)	
		opt. St. CS90	
1950:	17 26 23.2	-45 20 31	Wr66
2000:	17 30 04.0	-45 22 50	.

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-21

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	409
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	729	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.5 \pm .3$ ASTR91

Bibliography: AcMa77, Ko78, Sa75, We77

344.8+03.4

Vd 1-3, PK 344+3°1, ESO 332-02, Sa 3-37

	Disc.: Vandervort 1964	*Diameter* (″)	
		opt. St. ATS91	
1950:	16 46 07	-39 16.0	HLSw77
2000:	16 49 33	-39 21.2	.

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	436
[*OIII*]	436.3	–	[*NII*]	658.4	224
	500.7	97	[*SII*]	671.7	43
HeI	587.6	–		673.1	59

$\lg F_{H\beta}(mW.m^{-2})$ $-13.39 \pm .10$ ASTR91

Bibliography: *PK67*, AST89, PAKS89, Sa76, StAc87

345.0+04.3

Vd 1-2, PK 345+4°1, ESO 332-01, IRAS 16433-3831

				Diameter (″)	
			Disc.: Vandervort 1964		
1950:	16 43 20.5	-38 31 36	IRAS	*opt. St.* ATS91	
	16 43 21	-38 31.6	HLSw77		
2000:	16 46 45	-38 37.0	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	886	*J*		12μm	0.48	3
[*OIII*]	436.3	–	[*NII*]	658.4	297	*H*		25μm	7.28	3
	495.9	–	[*SII*]	671.7	5:	*K*	> 9.5	60μm	1.99	3
HeI	587.6	–		673.1	20:	*L*		100μm	11.88	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.25 ± .10	ASTR91			*Photom.*	AIGI74			

Bibliography: *PK67*, AST89, PAKS89, Sa76, SaSt73, StAc87, ZTPS89

345.0+03.4

Vd 1-4, PK 345+3°1, ESO 332-03, He 3-1261, Sa 2-154, Wray 16-235, IRAS 16469-3903

				Diameter (″)	
			Disc.: Vandervort 1964		
1950:	16 46 59.6	-39 03 13	IRAS	*opt.* 5. : ATS91	
	16 47 00	-39 03.2	HLSw77		
2000:	16 50 25	-39 08.3	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	649		12μm	0.42	3
[*OIII*]	436.3	16	[*NII*]	658.4	136		25μm	0.86	3
	500.7	1551	[*SII*]	671.7	5:		60μm	1.23	1
HeI	587.6	27		673.1	10:		100μm	65.23	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.99 ± .10	ASTR91						

Bibliography: *PK67*, AST89, AcMa77, Al73, Al78, PAKS89, Sa75, Wr66

345.0–04.9

Cn 1-3, PK 345–4°1, ESO 278-09, He 2-220, PC 15, Sa 2-195, StWr 2-30, Wray 16-272, IRAS 17225-4408

				Diameter (″)	*Rvel:* −78.0 ± 5.0 STPP83
			Disc.: Cannon 1921		
1950:	17 22 34.7	-44 08 51	IRAS	*opt.* 5. PK67	
	17 22 34	-44 08.9	HLSw77		
2000:	17 26 12	-44 11.5	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-12						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	322	*J*		12μm	1.20	3
[*OIII*]	436.3	3	[*NII*]	658.4	66	*H*		25μm	16.10	3
	500.7	573	[*SII*]	671.7	1.4	*K*	> 9.7	60μm	6.08	3
HeI	587.6	20		673.1	3	*L*		100μm	7.45	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.09 ± .10	ASTR91			*Photom.*	AIGI74			

Central Star:
B 14.6 *V* 14.3 *Qual:* D TASG91

Bibliography: *PK67*, AcMa77, AmGu71, He67, Sa75, StWr72, VoCo90, Wr66

345.2–01.2

H 1-7, PK 345–1°1, AS 219, ESO 332-24, He 2-200, Sa 2-174, VV' 164, Wray 16-254, IRAS 17069-4149

			Disc.: Haro 1952	*Diameter* (″)	
1950:	17 06 54.4	-41 49 07	IRAS	*opt.* 8.5 PK67	
	17 06 55.4	-41 49 06	PK67		
2000:	17 10 27.5	-41 52 49	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1488
[*OIII*]	436.3	2.1	[*NII*]	658.4	794
	500.7	969	[*SII*]	671.7	36
HeI	587.6	53		673.1	65
$\lg F_{H\beta}(mW.m^{-2})$		$-11.9 \pm .2$ ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.26	3
25μm	25.85	3
60μm	58.81	2
100μm	33.18	2

Central Star: AG82 231 —

Bibliography: *PK67*, AG82, AST89, AcMa77, Al73, HLSw77, He67, Ka76, OlRa86, PAKS89, PM87, PPFS87, Sa75, VoCo90, Wr66

89.30882 Parthasarathy M., Pottasch Sr. *Astron. Astrophys. 225, 521-527* The far-infrared (IRAS) excess in BQ and related stars.

345.2–08.8

Tc 1, PK 345–8°1, MWC 267, ESO 279-07, He 2-274, SaSt 2-16, StWr 2-35, Wray 15-1771, IRAS 17418-4604

			Disc.: Thackeray 1950	*Diameter* (″)	*Rvel:* -83.0 ± 5.0 STPP83
1950:	17 41 52.4	-46 04 13	IRAS	*opt.* 9.6 PK67	*Expansion Velocities* (*km/s*)
	17 41 52.6	-46 04 10	Mi76		[OIII] 4.0 We89
2000:	17 45 35.6	-46 05 21	.		[NII] 12.5 We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	351
[*OIII*]	436.3	–	[*NII*]	658.4	135
	500.7	104	[*SII*]	671.7	3
HeI	587.6	13		673.1	4
$\lg F_{H\beta}(mW.m^{-2})$		$-10.65 \pm .02$ SK89			
IUE Spectra:		*LW*(2) *SW*(7)			

IR Class: N		*IRAS Fluxes* (*Jy*)		*Qual.*
J	10.32	12μm	2.02	3
H	10.14	25μm	11.88	3
K	9.20	60μm	13.38	3
L		100μm	4.72	3
Photom.	Wh85	*Radio* (*mJy*)	*2cm* 130 MiAl82	
			6cm 134 Ca82	

Central Star: AG82 257 — CD -46 11816; CPD -46 8876; HD 161044
B 11.20 *V* 11.38 *Qual:* A SK89 *Spectrum:* Of(H) Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: spect. 3.8 (MKHH88)
Distance (kpc) stat.: 2.08 (CaKa71); 2.52 (MiAl75); 2.47 (Ca76); 2.01 (Ac78); 0.59 (Da82); 1.40 (AGNR84); 1.0 (Ma84); 2.64 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AKSJ89, AST89, AcMa77, Al73, CoBa80, FeAl87, Gr71, GrNe90, HLSW75, He67, KAS91, KM81, KrK68, KuMe89, LNP89, MGT91, MGTW87, MMMK90, MaPo80, Mar81, Me89, MiWe79, PAKS89, PM87, PPFS87, Pe71, PiKh79, Sa76, SaSt72, Sh85, StAc87, StWr72, TAGS89, TASG91, VoCo90, WeHe67, Wr66, ZuAl86

83..3131 Feibelman W.A. *Publ. Astron. Soc. Pac. 95, 886-888* IUE observations of the low-excitation planetary nebula Tc-1.

83.30803 Adams S., Barlow M.J. *IAU Symposium 103, held at University College, London, U.K. August 9-13, 1982. Ed. by D.R. Flower. Planetary Nebulae, 537-538* An optical and ultraviolet study of nine low-excitation planetary nebulae.

85..1536 West R.M., Kohoutek L. *Astron. Astrophys., Suppl. Ser. 60, 91-97,1985* Spectroscopic verification of suspected planetary nebulae. II.

89.30882 Parthasarathy M., Pottasch Sr. *Astron. Astrophys. 225, 521-527* The far-infrared (IRAS) excess in BQ and related stars.

89.50036 Bianchi L., Grewing M., Barnsted J., Diesch C. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 182* Kinematical properties of planetary nebulae.

89.50044 Cristiani S., Sabbadin F., Ortolani S. *Proceedings of the 131st symposium of the IAU, held in Mexico City, Mexico, oct ober 5-9, 1987. Ed S. Torres-Peimbert. Planetary nebulae, 191* High and low resolution spectra of selected planetary nebulae.

345.3-10.2

MeWe 1-11

			Disc.: Melmer et al 1990	*Diameter* (″)	
				opt. 55. 90..2581	
1950:	17 49 02.6	-46 41 14	90..2581		
2000:	17 52 47.2	-46 41 54	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-04

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[OIII]	436.3	–	[*N*II]	658.4	164
	500.7	176	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star:
B 18.4 *V* 17.3 *Qual:* C 90..2581, TASG91

90..2581 Melmer D., Weinberger R. *Mon. Not. R. Astron. Soc. 243, 236-240,1990* New old PN in the southern sky.

345.4+00.1

IC 4637, PK 345+0°1, ESO 332-21, He 2-193, Sa 2-168, VV 89, VV' 156, Wray 15-1607

			Disc.: Fleming 1901	*Diameter* (″)	*Rvel:* +11.2 ± 4.9 STPP83
				opt. 18.5 CaKa71	*Expansion Velocities* (*km/s*)
1950:	17 01 39.2	-40 48 52	Mi73		[OIII] 21.0 MKHH88
2000:	17 05 09.0	-40 52 57	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	633
[OIII]	436.3	6:	[*N*II]	658.4	29
	500.7	988	[*S*II]	671.7	
*He*I	587.6	26:		673.1	

IR Class: .
J
H
K
L
Photom. CoBa80

$\lg F_{H\beta}(mW.m^{-2})$ $-11.23 \pm .01$ SK89
IUE Spectra: *LW*(0) *SW*(2)

Radio *2cm* 117 MiAl82
(*mJy*) *6cm* 401 Ca82

Central Star: AG82 224 — CD -40 11127; CPD -40 7710; GCRV 9841; HD 154072
B 12.88 *V* 12.50 *Qual:* A SK89 , TASG91 *Spectrum:* O(H) Me91

Distance (kpc) indiv.: spect. 1.5 (MKHH88)
Distance (kpc) stat.: 2.3 (CaKa71); 2.29 (MiAl75); 2.24 (Ca76); 1.5 (Ac78); 1.03 (Da82); 0.81 (AGNR84); 1.4 (Ma84); 2.37 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Ac75, Ac76, AcMa77, De71, Do73, HLSw77, He67, KrK68, KuMe89, MMMK90, MaPo80, Me89, Mi79, PAKS89, Pe71, PiKh79, Sa75, Sh85, TAGS89, We89, WeHe67, Wr66

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345.5+15.1

Lo 13, PK 345+15°1

			Disc.: Longmore 1977	*Diameter* (″)	
				opt. 71. Lo77	
1950:	16 06 35	-30 46.2	Lo77		
2000:	16 09 44	-30 54.0	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-16					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	227	[*S*II]	671.7	
*He*I	587.6	–		673.1	

		Radio 2*cm*
		(*mJy*) 6*cm* < 2 ZPB89

Central Star: AG82 197 — *Spectrum:* O(H) Me91

Bibliography: AG82, Ko78, PAKS91, We77

85..1008 Mendez R.H., Kudritzki R.P., Simon K.P. *Astron. Astrophys. 142, 289-296* SIT vidicon and IDS spectra of central stars of planetary nebulae.

345.6+06.7

He 2-175, PK 345+6°1, ESO 391-01, Sa 2-150, Wray 16-229, IRAS 16361-3628

			Disc.: Henize 1964	*Diameter* (″)	*Rvel:* −32.0 ± 5.0 STPP83
1950:	16 36 08.0	-36 28 24	IRAS	*opt.* 6.6 CaKa71	
	16 36 08	-36 28.5	HLSW77		
2000:	16 39 28	-36 34.4	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
*He*II	468.6 *nm*	13	$H\alpha$	656.3 *nm*	981
[*O*III]	436.3	–	[*N*II]	658.4	1432
	500.7	1563	[*S*II]	671.7	61
*He*I	587.6	44		673.1	108

$\lg F_{H\beta}(mW.m^{-2})$	−12.72 ± .01 SK89

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.32	1
25μm	2.01	3
60μm	8.61	3
100μm	9.17	3

Distance (kpc) stat.: 7.73 (CaKa71); 6.4 (Ma84); 6.08 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, Gr71, Gr72, He67, Iw73, KAS91, Ka76, KrK68, PAKS89, Sa75, WeHe67, Wr66

91..3008 Kaler J.B., Hayes J, Bell D., Stanghellini L. *Publ. Astron. Soc. Pac.,103,561* A spectroscopic study of the three symbiotic stars He 2-171, Ap 1-9 and Ap 1-11.

345.9+03.0

Vd 1-6, PK 345+3°2, ESO 332-07, Sa 2-159, Wray 16-241, IRAS 16510-3839

				Disc.: Vandervort 1964	*Diameter* (″)	
1950:	16 51 04.4	-38 39 28	IRAS		*opt.* 20. : ATS91	
	16 51 02	-38 39.3	HLSw77			
2000:	16 54 27	-38 44.1	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11					
HeII	468.6 *nm*	89	$H\alpha$	656.3 *nm*	1253
[*OIII*]	436.3	–	[*NII*]	658.4	1030
	500.7	1599	[*SII*]	671.7	115
HeI	587.6	44		673.1	126
$\lg F_{H\beta}(mW.m^{-2})$		$-12.9 \pm .3$ ASTR91			

IR Class: .		*IRAS Fluxes* (*Jy*)		*Qual.*
J		12μm	0.36	1
H		25μm	1.76	3
K	> 9.3	60μm	4.26	1
L		100μm	31.34	1
Photom.	AIGI75			

Bibliography: *PK67*, AST89, AcMa77, PAKS89, Sa75, Wr66

345.9–11.2

ESO 279-14, PK 345−11°1

				Disc.: Holmberg et al 1975	*Diameter* (″)	
					opt. 24. We77	
1950:	17 55 52	-46 38.7	We77			
2000:	17 59 37	-46 38.9	.			

Bibliography: HLSW75, Ko78

346.0+08.5

He 2-171, PK 346+8°1, ESO 390-07, Wray 16-226, IRAS 16307-3459

				Disc.: Henize 1964	*Diameter* (″)	*Rvel:* -83.0 ± 25.0 STPP83
1950:	16 30 46.9	-34 59 13	IRAS		*opt.* 10. PK67	
	16 30 47	-34 59.2	HLSW77			
2000:	16 34 04	-35 05.4	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-28					
HeII	468.6 *nm*	60	$H\alpha$	656.3 *nm*	1277
[*OIII*]	436.3	32	[*NII*]	658.4	127
	500.7	365	[*SII*]	671.7	3
HeI	587.6	22		673.1	6
$\lg F_{H\beta}(mW.m^{-2})$		$-12.2 \pm .4$ ASTR91			

IR Class: D		*IRAS Fluxes* (*Jy*)		*Qual.*
J	9.52	12μm	7.47	3
H	7.64	25μm	4.58	3
K	6.26	60μm	0.75	3
L	4.46	100μm	4.97	1
Photom.	AIGI74	*Radio* 2*cm*	7	PFMA82
		(*mJy*) 6*cm*	10	PFMA82

Notes: Status of the object not clear; possibly a symbiotic star

Bibliography: *PK67*, AKSJ89, AST89, Al80, Al84, All82, He67, KAS91, KFS88, LuTu87, PAKS89, STB84, Sa76, SaSt73, SeTa90, StAc87, W66, WeHe67, Wr66, WrAl78, ZTPS89

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81..2620 Allen D.A. *Mon. Not. R. Astron. Soc. 197,739-743* X-ray observations of symbiotic stars.

82.50513 Allen D.A. *Proceedings of IAU Coll. N. 70 held at the Observatoire de Hte Provence 26-28 a ugust 1981. Ed. by M. Friedjung and R. Viotti. The nature of symbiotic stars, 11 5-116.* X-ray observations of symbiotic stars.

83..2713 Roche P.F., Allen D.A., Aitken D.K. *Mon. Not. R. Astron. Soc. 204,1009-1015* Symbiotic stars: spectrophotometry at 3-4 and 8-13 μm.

84.16772 Norris R.P., Allen D.A., Haynes R.F., Wright A.E. *Proc. Astron. Soc. Aust. 5, 562-565* A search for OH emission from symbiotic stars.

87..3056 Whitelock P.A. *Publ. Astron. Soc. Pac. 99, 573-591* Symbiotic Miras.

87.16757 Hall P.J., Wark R.M., Wright A.E. *Proc. Astron. Soc. Aust. 7, 50-54* A search for 43.122 GHz SiO emission from symbiotic stars.

89..2521 Allen D.A., Hall P.J., Norris R.P., Troup E.R., Wark R.M., Wright A.E. *Mon. Not. R. Astron. Soc. 236, 363-374* Detection of new southern SiO maser sources associated with Mira and symbiotic stars.

91..3008 Kaler J.B., Hayes J, Bell D., Stanghellini L. *Publ. Astron. Soc. Pac.,103,561* A spectroscopic study of the three symbiotic stars He 2-171, Ap 1-9 and Ap 1-11.

346.2–08.2

IC 4663, PK 346–8°1, ESO 279-06, He 2-273, Sa 2-236, StWr 2-32, VV 111, VV' 239, Wray 16-303, IRAS 17417-4453

			Disc.: Fleming 1901	*Diameter* (″)		*Rvel:* −48.7 ± 9.0 STPP83	
1950:	17 41 47.6	-44 53 07	IRAS	*opt.* 13.	PK67	*Expansion Velocities* (*km/s*)	
	17 41 48.4	-44 53 00	Mi76			[OIII] 15.0	Ac76
2000:	17 45 28.6	-44 54 12	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	93	*Hα*	656.3 *nm*	460	*J*	13.67	12*μm*	0.51	3
[OIII]	436.3	7	[*N*II]	658.4	33	*H*	13.44	25*μm*	6.02	3
	500.7	1033	[*S*II]	671.7	20	*K*	12.90	60*μm*	11.44	3
*He*I	587.6	13		673.1	9	*L*		100*μm*	5.68	3
$\lg F_{H\beta}(mW.m^{-2})$		−11.44 ± .01	SK89			*Photom.*	PM87	*Radio* 2*cm*	35	MiAl82
IUE Spectra:		*LW*(1) *SW*(1)						(*mJy*) 6*cm*	45	Ca82

Central Star: AG82 256 — HD 161028; CSI -44 -17417
B 16.0 *V* 15.2 *Qual:* C SK89 *Spectrum:* IUE obsns AG82

Notes: ESO-2.2m monochromatic images by Baessgen M. and Bremer M.
Distance (kpc) stat.: 3.52 (MiAl75); 3.44 (Ca76); 3.0 (Ac78); 3.53 (Da82); 2.10 (AGNR84); 3.2 (Ma84) 3.43 (CKS91)

Bibliography: *PK67*, AGR89, Ac75, AcMa77, De71, HLSW75, He67, LNP89, MaPo80, MiWe79, PAKS91, Pe71, PiKh79, PrPe89, Sa75, Sa84, Sh85, StWr72, TASG91, We89, Wr66

346.3–06.8

Fg 2, PK 346–6°1, ESO 279-04, He 2-257, Sa 2-225, StWr 2-31, VV 106, VV' 224, Wray 16-293, IRAS 17356-4408

			Disc.: Fleming 1909	*Diameter* (″)		*Rvel:* +35.0 ± 4.0 STPP83	
1950:	17 35 41.4	-44 08 01	IRAS	*opt.* 5.	PK67		
	17 35.7	-44 08	Sa75				
2000:	17 39.3	-44 10	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	37	*Hα*	656.3 *nm*	410	*J*		12*μm*	0.26	1
[OIII]	436.3	10	[*N*II]	658.4	115	*H*		25*μm*	2.40	3
	500.7	1626	[*S*II]	671.7	9	*K*	> 9.7	60*μm*	3.72	3
*He*I	587.6	15		673.1	15	*L*		100*μm*	21.53	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.80 ± .10	ASTR91			*Photom.*	AIGI74			

Distance (kpc) stat.: 3.81 (Ac78)

Bibliography: *PK67*, AST89, AcMa77, De71, HLSW75, He67, StWr72, Wr66

346.9+12.4

K 1-3, PK 346+12°1, A 38, ESO 452-01, Wray 19-45

			Disc.: Kohoutek 1962	*Diameter* (″)	*Rvel:* −12.8 ± 6.0 STPP83
				opt. 92. PK67	*Expansion Velocities* (*km/s*)
1950:	16 20 06.0	-31 38 00	Mi76		[OIII] 17.0 RRA82
2000:	16 23 17.3	-31 44 57	.		

Intens. (*Hα* = 100) ESO-B.C+IDS 1985-07-27 NE					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100:
[OIII]	436.3	–	[*NII*]	658.4	4280:
	495.9	–	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.3 ± . KSK90		*Radio* *2cm* < 2 MiAl82
		(*mJy*) *6cm* < 9 Mi79

Central Star: AG82 207 —
m_{pg} 20.5 *Qual:* P 62.13001

Distance (kpc) stat.: 1.04 (CaKa71); 0.88 (Ac78); 1.51 (Da82); 3.0 (Ma84); 0.59 (CKS91)

Bibliography: *PK67*, Ab66, CaWy76, Iw73, Jo80, Kh79, KrK68, LHSW81, Ph84, SGBO84, Sa76, Sa84, We89, Wr66, ZPB89

62.13001 Kohoutek L. *Bull. Astron. Inst. Czech. 13,120,1962* New planetary nebulae.
74..9035 Bohuski T.J., Smith M.G. *Astrophys. J. 193,197-203* Old P.N. and the relation between size and expansion velocity.

347.4+05.8

H 1-2, PK 347+5°1, AS 208, ESO 391-03, He 2-181, MHα 300-58, Sa 2-153, VV' 144, Wray 16-234, IRAS 16456-3542

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* −102.0 ± 5.0 STPP83
1950:	16 45 36.0	-35 42 01	IRAS	*opt. St.* ATS91	
	16 45 34	-35 42.0	HLSW77		
2000:	16 48 53	-35 47.2	.	*radio* 0.8 ZPB89	

Intens. (*Hβ* = 100) ESO-B.C+CCD 1988-03-12					
HeII	468.6 *nm*	11	*Hα*	656.3 *nm*	1322
[OIII]	436.3	23	[*NII*]	658.4	204
	495.9	694	[*SII*]	671.7	8
HeI	587.6	55		673.1	14

$\lg F_{H\beta}(mW.m^{-2})$ −12.08 ± .10 ASTR91	*IR Class:* .	*IRAS Fluxes* (*Jy*) *Qual.*
	J	12*μm* 4.88 3
	H	25*μm* 29.61 3
	K > 9.9	60*μm* 10.96 3
	L	100*μm* 6.82 1
	Photom. AIGI74	*Radio* *2cm*
		(*mJy*) *6cm* 62 ZPB89

Distance (kpc) stat.: 2.60 (CKS91); 2.60 (CKS91)

Bibliography: *PK67*, AcMa77, Al73, He67, PAKS91, Sa75, VoCo90, Wr66, ZTPS89

347.7+02.0

Vd 1-8, PK 347+1°1, ESO 332-18, Sa 2-167, IRAS 17011-3749

		Disc.: Vandervort 1964		*Diameter* (″)	
1950:	17 01 11.0	-37 49 09	IRAS	*opt. St.* ATS91	
	17 01 10	-37 49.1	HLSw77		
2000:	17 04 34	-37 53.2	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2265	*J*		12μm	0.58	2
[*OIII*]	436.3	–	[*NII*]	658.4	385	*H*		25μm	5.48	3
	500.7	2163	[*SII*]	671.7	23:	*K*	> 9.7	60μm	3.84	3
HeI	587.6	62		673.1	43:	*L*		100μm	27.90	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.74 ± .10	ASTR91			*Photom.* AIGI75				

Bibliography: *PK67*, AST89, AcMa77, PAKS89, Sa75

90..2022 Smith H.A., Beall J.H., Swain M.R. *Astron. J. 99, 273-287* Infrared emission from X-ray binaries: IRAS observations.

348.0+06.3

MGP 1, RPZM 2-1, Wray 15-1537, IRAS 16455-3455

		Disc.: Manchado et al 1989		*Diameter* (″)	
1950:	16 45 30.2	-34 55 44	IRAS		
	16 45 30.2	-34 55 44	RPZM90		
2000:	16 48 48.4	-35 00 57	.	*radio* 3.8 RPZM90	

			IRAS Fluxes (*Jy*)		*Qual.*
			12μm	0.29	1
			25μm	1.61	3
			60μm	1.56	3
			100μm	7.70	1
$\lg F_{H\beta}(mW.m^{-2})$	−13.38 ± .	89..1351	*Radio* (*mJy*)	*2cm* *6cm* 10.2	RPZM90

Central Star:
B 18.2 89..1351

Notes: Very high excitation nebula (89..1351, RPZM90)

89..1351 Manchado A., Garcia-Lario P., Pottasch S.R. *Astron. Astrophys. 218, 267-272* IRAS 16455-3455 and IRAS 15154-5258: two new southern planetary nebulae.

348.0–13.8

IC 4699, PK 348–13°1, ARO 521, ESO 280-08, He 2-383, Sa 2-326, StWr 2-36, VV 167, VV' 383, Wray 16-405, IRAS 18148-4600

			Disc.: Fleming 1901	*Diameter* (″)	*Rvel:* −123.7 ± 2.8 STPP83
1950:	18 14 49.2	-46 00 15	IRAS	*opt.* 5. CaKa71	*Expansion Velocities* (*km/s*)
	18 14 48.5	-46 00 16	Mi76		[OIII] 10. Sa84
2000:	18 18 31.3	-45 59 03	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09					
HeII	468.6 *nm*	27	$H\alpha$ 656.3 *nm*	316	
[*OIII*]	436.3	13	[*NII*] 658.4	–	
	500.7	1240	[*SII*] 671.7		
HeI	587.6	13	673.1		
$\lg F_{H\beta}(mW.m^{-2})$		−11.69 ± .01 SK89			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.25	1
25μm	0.65	3
60μm	1.49	3
100μm	1.44	1
Radio 2*cm*	6	MiAl82
(*mJy*) 6*cm*	20	Ca82

Central Star: AG82 304 — HD 167672; CSI -46 -18148
B 14.82 *V* 15.10 *Qual:* B SK89 , TASG91

Distance (kpc) stat.: 5.73 (CaKa71); 6.50 (MiAl75); 7.66 (Ca76); 5.2 (Ac78); 3.40 (AGNR84); 5.2 (Ma84) 7.39 (CKS91)

Bibliography: *PK67*, AG82, AGR89, Ac75, Ac76, AcMa77, AlMi72, De71, Do73, HLSw77, He67, He71, Hi71, IwKa65, LNP89, MaPo80, MiWe79, PAKS91, PM87, PPFS87, Pe71, Sa75, Sh85, SlOr65, StWr72, Wr66

348.4–04.1

H 1-21, PK 348–4°1, ESO 333-13, Sa 2-213, VV' 211, Wray 16-284, IRAS 17292-4056

			Disc.: Haro 1952	*Diameter* (″)	
1950:	17 29 14.5	-40 56 25	IRAS	*opt. St.* ATS91	
	17 29 17	-40 56.3	HLSw77		
2000:	17 32 48	-40 58.4	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15					
HeII	468.6 *nm*	–	$H\alpha$ 656.3 *nm*	1025	
[*OIII*]	436.3	–	[*NII*] 658.4	635	
	500.7	1526	[*SII*] 671.7	36	
HeI	587.6	38	673.1	57	
$\lg F_{H\beta}(mW.m^{-2})$		−12.80 ± .10 ASTR91			

IR Class: .		
J		
H		
K	> 9.4	
L		
Photom. AIGI75		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.27	1
25μm	0.49	3
60μm	0.97	1
100μm	9.38	1

Bibliography: *PK67*, AcMa77, PAKS91, Sa75, Wr66

348.8–09.0

He 2-306, PK 348−9°1, ESO 279-12, Sa 2-267, StWr 2-29, Wray 16-330, IRAS 17529-4302

			Disc.: Henize 1964	*Diameter* (″)	
1950:	17 52 58.2	-43 02 56	IRAS	*opt.* 3. CaKa71	
	17 52 57	-43 02.9	HLSW75		
2000:	17 56 33	-43 03.3	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22 C

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	370
[*O*III]	436.3	–	[*N*II]	658.4	35
	500.7	453	[*S*II]	671.7	2.2
*He*I	587.6	20		673.1	3

$\lg F_{H\beta}(mW.m^{-2})$ $-11.8 \pm .3$ ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.27	1
25μm	1.83	3
60μm	2.81	3
100μm	3.16	3

Central Star:
B 16.4 *V* 16.8 *Qual:* D TASG91

Distance (kpc) stat.: 11.73 (CaKa71); 7.1 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, MGT91, MGTW87, PAKS89, Sa75, StWr72, TAGS89, WeHe67, Wr66

349.2–03.5

H 2-14, PK 349−3°1, ESO 333-11, Sa 3-62, RPZM 2-22, VV' 210, IRAS 17288-3949

			Disc.: Haro 1952	*Diameter* (″)	
1950:	17 28 50.9	-39 49 14	IRAS	*opt.* 20.: ATS91	
	17 28 51	-39 49.2	HLSw77		
2000:	17 32 20	-39 51.3	.	*radio* 15. RPZM90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

*He*II	468.6 *nm*	67	$H\alpha$	656.3 *nm*	601
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	593	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.7 \pm .3$ ASTR91

IR Class: .

J	
H	
K	> 10.3
L	

Photom. AIGI75

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.25	1
25μm	1.20	3
60μm	2.20	3
100μm	64.00	1

Radio (*mJy*) *2cm* *6cm* 4.9 RPZM90

Bibliography: *PK67*, AST89, AcMa77, ArKo68, MaC83, PAKS89, Sa76, StAc87

349.3–01.1

NGC 6337, PK 349−1°1, ESO 333-05, H 1-10, He 2-215, Sa 2-191, Sh 1-6, VV' 181, Wray 16-267, IRAS 17188-3826

			Disc.: Herschel 1834	*Diameter* (″)	*Rvel:* −71.0 ± 4.0 MWF88
1950:	17 18 50.3	-38 26 11	IRAS	*opt.* 51. CJA87	*Expansion Velocities* (*km/s*)
	17 18 50.0	-38 26 06	Mi73		[OIII] 7.8 MWF88
2000:	17 22 16.1	-38 28 58	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15					
HeII	468.6 *nm*	67	$H\alpha$	656.3 *nm*	588
[*OIII*]	436.3	–	[*NII*]	658.4	190
	500.7	1008	[*SII*]	671.7	33
HeI	587.6	22		673.1	29

$\lg F_{H\beta}(mW.m^{-2})$ −11.35 ± . Pe71

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.31	3
25μm	10.99	3
60μm	31.18	3
100μm	301.70	1
Radio (*mJy*) *2cm*	126	MiAl82
6cm	103	Ca82

Central Star: AG82 236 —
B 15.5 *V* 14.90 *Qual:* A SK89

Notes: Multiple-shell PN; monochromatic images (CJA87)
Distance (kpc) stat.: 1.32 (CaKa71); 1.47 (MiAl75); 1.43 (Ca76); 1.23 (Ac78); 1.40 (Da82); 1.10 (AGNR84); 1.7 (Ma84); 1.34 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AcMa77, Al69, Fe68, Gr71, HLSw77, He67, Iw73, KrK68, LNP89, MaPo80, PAKS91, PiKh79, STPP83, Sa75, Sh85, TASG91, We89, Wr66, ZuAl86

72..9010 Johnson H.M. *Astrophys. J. 175,L105* Identification of the 100 miron source no 15.

349.3–04.2

Lo 16, PK 349−4°1, IRAS 17322-4009

			Disc.: Longmore 1977	*Diameter* (″)	
1950:	17 32 12.8	-40 09 31	IRAS	*opt.* 83. Lo77	
	17 32 10	-40 10.1	Lo77		
2000:	17 35 40	-40 12.0	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15					
HeII	468.6 *nm*	30:	$H\alpha$	656.3 *nm*	823
[*OIII*]	436.3	–	[*NII*]	658.4	22
	500.7	962	[*SII*]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −11.9 ± .3 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.37	2
25μm	1.29	3
60μm	7.95	3
100μm	14.19	3

Central Star: AG82 248 —
B 17.3 *V* 16.8 *Qual:* C TASG91

Bibliography: AG82, Ko78, MaC83, PAKS91, We77

349.5+01.0

NGC 6302, PK 349+1°1, ARO 502, ESO 392-05, Gum 60, He 2-204, RCW 124, Sa 2-180, Sh 1-3, Sh 2-6, VV 94, VV' 168, Wray 16-259, IRAS 17103-3702

			Disc.: Fleming 1896	*Diameter* (″)		*Rvel:* −39.0 ± 2.1	STPP83
1950:	17 10 21.7	-37 02 45	IRAS	*opt.* 44.5	CaKa71	*Expansion Velocities* (*km/s*)	
	17 10 21.1	-37 02 38	Mi73			[OIII] 8.0	Sa84
2000:	17 13 44.3	-37 06 06	.	*radio* 10.	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20					
HeII	468.6 *nm*	59	*Hα*	656.3 *nm*	704
[*OIII*]	436.3	24	[*NII*]	658.4	1758
	500.7	1354	[*SII*]	671.7	64
HeI	587.6	37		673.1	99

$\lg F_{H\beta}(mW.m^{-2})$	−10.55 ± . Pe71	*IR Class:* N	
IUE Spectra:	*LW*(11) *SW*(14)	*Photom.* PeTo87	
		Spectr. 86..2654	

IRAS Fluxes (*Jy*)		*Qual.*
J	9.01	
H	9.22	
K	8.12	
L		
12μm	32.08	3
25μm	335.90	3
60μm	849.70	3
100μm	537.40	3
Radio 2*cm* 3034		MiAl82
(*mJy*) 6*cm* 3100		ZPB89

Central Star: AG82 233 — CD -36 11341; CPC 18 8579; GCRV 9926; HD 155520
$B > 21.1$ *Qual:* B GaPo88

Notes: ESO-NTT images by Schwartz H.E. and Melnick J. ESO-2.2m images by Baessgen M. and Bremer M.

Distance (kpc) stat.: 0.95 (CaKa71); 0.70 (MiAl75); 0.78 (Ca76); 0.65 (Ac78); 0.40 (Da82); 0.18 (PhPo84); 0.28 (AGNR84); 0.4 (Ma84); 0.525 (CKS91)

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349.8+04.4

M 2-4, PK 349+4°1, ESO 391-07, He 2-188, Sa 2-163, VV 84, VV' 150, Wray 16-2456, IRAS 16578-3445

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* −184.0 ± 11.0	STPP83
1950:	16 57 48.9	-34 45 20	IRAS	*opt.* 5.	PK67		
	16 57 47.7	-34 45 17	GPGV83				
2000:	17 01 06.3	-34 49 39	.	*radio* 2.	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	813	*J*	12.40	12*μm*	0.56	3
[*OIII*]	436.3	–	[*NII*]	658.4	232	*H*	13.14	25*μm*	5.00	3
	500.7	792	[*SII*]	671.7	13	*K*	12.10	60*μm*	5.77	3
HeI	587.6	25		673.1	22	*L*		100*μm*	12.59	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.84 ± .10	ASTR91			*Photom.*	PM87	*Radio* (*mJy*)	*2cm*	
									6cm 32.0	GPGV83

Central Star:
B 17.6 *V* 17.0 *Qual:* D TASG91

Distance (kpc) stat.: 2.90 (AGNR84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, AlGl74, Fe68, HLSW77, He67, Ka76, PAKS89, PrPe89, Sa75, TAGS89, Wr66

91..3008 Kaler J.B., Hayes J, Bell D., Stanghellini L. *Publ. Astron. Soc. Pac.,103,561* A spectroscopic study of the three symbiotic stars He 2-171, Ap 1-9 and Ap 1-11.

350.1–03.9

H 1-26, PK 350–3°1, ESO 334-01, He 2-253, Sa 2-220, VV' 220, Wray 16-291, IRAS 17330-3920

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −37.0 ± 5.0	STPP83
1950:	17 33 00.8	-39 20 06	IRAS	*opt.* 18.	CaKa71		
	17 33 02	-39 20.2	HLSw77				
2000:	17 36 30	-39 22.0	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	28	*Hα*	656.3 *nm*	819	12*μm*	0.66	3
[*OIII*]	436.3	–	[*NII*]	658.4	40	25*μm*	5.32	3
	500.7	1155	[*SII*]	671.7		60*μm*	10.18	3
HeI	587.6	25		673.1		100*μm*	45.51	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.4 ± .3	ASTR91					

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.92 (CaKa71); 2.5 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Gr71, He67, Iw73, KrK68, PAKS89, Sa75, Wr66

350.5–05.0

H 1-28, PK 350−5°1, ESO 334-05, He 2-268, Sa 2-231, VV4 233, Wray 15-1760, IRAS 17394-3935

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* −45.0 ± 5.0 STPP83	
1950:	17 39 26.0	-39 35 01	IRAS	*opt.* 7.8 CaKa71		
	17 39 25	-39 35.1	HLSw77			
2000:	17 42 54	-39 36.5	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-04						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	40	*Hα*	656.3 *nm*	741	12μm	0.31	1
[OIII]	436.3	–	[NII]	658.4	1095	25μm	0.41	1
	500.7	493	[SII]	671.7	94	60μm	1.49	3
HeI	587.6	65		673.1	91	100μm	42.15	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.2 ± .4 ASTR91						

Distance (kpc) stat.: 3.65 (CaKa71); 1.7 (Ma84)

Bibliography: *PK67*, AcMa77, He67, Sa75, Wr66

350.8–02.4

H 1-22, PK 350−2°1, ESO 333-12, He 2-241, Sa 2-212, VV' 212, Wray 16-283, IRAS 17289-3755

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* −213.0 ± 5.0 STPP83	
1950:	17 28 56.9	-37 55 17	IRAS	*opt. St.* ATS91		
	17 28 55	-37 55.5	HLSw77			
2000:	17 32 20	-37 57.6	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1441	*J*		12μm	1.45	1
[OIII]	436.3	–	[NII]	658.4	467	*H*		25μm	3.35	3
	500.7	386	[SII]	671.7	17	*K*	> 9.6	60μm	4.96	3
HeI	587.6	53		673.1	35	*L*		100μm	137.40	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.88 ± .10 ASTR91				*Photom.* AIGI74				

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AcMa77, Gr71, He67, PAKS91, Sa75, Wr66

350.9+04.4

H 2-1, PK 350+4°1, MWC 247, ESO 392-02, He 2-194, SaSt 2-14, VV' 155, Wray 16-247, IRAS 17013-3355

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −20.0 ± 5.5 STPP83
1950:	17 01 18.3	-33 55 11	IRAS	*opt.* 5.6	CaKa71	*Expansion Velocities* (*km/s*)
	17 01 19.4	-33 55 05	Mi73			[OIII] 13.0 MKHH88
2000:	17 04 36.8	-33 59 12	.	*radio* 2.2	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-26					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	617
[*OIII*]	436.3	3:	[*NII*]	658.4	252
	500.7	68	[*SII*]	671.7	5
HeI	587.6	10		673.1	9

$\lg F_{H\beta}(mW.m^{-2})$ $-11.46 \pm .02$ SK89, ASTR91
IUE Spectra: *LW*(0) *SW*(1)

IR Class: S

		IRAS Fluxes (*Jy*)		*Qual.*
J	10.08	12μm	2.27	3
H	8.94	25μm	15.18	3
K	8.58	60μm	7.87	3
L		100μm	7.13	1

Photom. PPFS87

Radio	*2cm*	66	PFMA82
(*mJy*)	*6cm*	61	ZPB89

Central Star: AG82 223 — *B* 13.66 *V* 13.26 *Qual:* A SK89 , TASG91 *Spectrum:* O(H) Me91

Notes: Likely a galactic bulge PN (AKSR91). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: spect. 4.6 (MKHH88)
Distance (kpc) stat.: 4.62 (CaKa71); 3.62 (Ac78); 2.25 (Da82); 1.90 (AGNR84); 3.4 (Ma84); 3.73 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AST89, Ac75, Ac76, AcMa77, Al73, AlGl74, Ca82, CoBa80, Do73, HLSW77, He67, He90, Ka76, KuMe89, LNP89, MMMK90, Ma81, Me89, Mi79, MiAl82, MiWe79, PAKS89, PM87, Pe71, PiKh79, Sa76, SaSt72, Sh85, StAc87, TAGS89, VoCo90, W66, We89, WeHe67, Wr66, ZTPS89

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351.0–10.4

HaTr 9, PK 351–10°2

			Disc.: Hartl et al 1983	*Diameter* (″)		
				opt. 162.	85..1131	
1950:	18 05 24.4	-41 48 56	83.28035			
2000:	18 08 57.9	-41 48 25	.			

Bibliography: Ko89

83.28035 Hartl H., Tritton S.B. *Mitteil. Astron. Gesellschaft 60, 328-330* Neuentdeckte sudliche Planetarische Nebel.
85..1131 Hartl H., Tritton S.B. *Astron. Astrophys. 145, 41-44,1985* New planetary nebulae of low surface brightness detected on UK-Schmidt plates.

351.1+04.8

M 1-19, PK 351+4°1, ESO 392-01, He 2-191, Sa 2-165, VV' 153, Wray 15-1601, IRAS 17005-3325

				Diameter (″)		*Rvel:* −40.0 ± 11.0 STPP83
		Disc.: Minkowski 1946				
1950:	17 00 30.6	-33 25 35	IRAS	*opt.* 8. :	CS90	
	17 00 30	-33 25.7	HLSW77			
2000:	17 03 47	-33 29.9	.	*radio* 2.6	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-08					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	702
[*OIII*]	436.3	–	[*NII*]	658.4	214
	500.7	546	[*SII*]	671.7	4
HeI	587.6	27		673.1	11

$\lg F_{H\beta}(mW.m^{-2})$ −12.0 ± .3 ASTR91

IR Class: .

J		
H		
K	> 10.1	
L		
Photom.	AIGI74	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.41	1
25μm	3.69	3
60μm	4.79	3
100μm	6.62	1

Radio (*mJy*)			
2cm			
6cm	26	ZPB89	

Central Star:
B 16.9 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.54 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, ArKo68, He67, PAKS89, Sa75, Wr66

351.2+05.2

M 2-5, PK 351+5°1, ESO 391-08, He 2-190, SaSt 2-13, VV 86, VV' 152, Wray 16-246, IRAS 16590-3305

				Diameter (″)		*Rvel:* −98.0 ± 11.0 STPP83
		Disc.: Minkowski 1947				
1950:	16 59 03.0	-33 05 49	IRAS	*opt.* 5.	CaKa71	
	16 59 03.2	-33 05 47	GPGV83			
2000:	17 02 19.1	-33 10 04	.	*radio* 5.	ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	685
[*OIII*]	436.3	–	[*NII*]	658.4	733
	500.7	26	[*SII*]	671.7	17
HeI	587.6	22		673.1	24

$\lg F_{H\beta}(mW.m^{-2})$ −12.10 ± .10 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.55	3
25μm	1.70	3
60μm	5.29	3
100μm	6.75	1

Radio (*mJy*)			
2cm			
6cm	12	GPGV83	

Central Star:
B 16.4 *V* 16.2 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.77 (CaKa71); 3.49 (Ac78); 4.70 (AGNR84); 1.5 (Ma84); 8.06 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, He67, KAS91, PAKS89, Sa76, SaSt72, StAc87, TAGS89, WeHe67, Wr66

85.13266 Ogura K., Hidayat B. *Publ. Astron. Soc. Jap. 37, 537-543* A survey of southern Bok globules for H-alpha emission stars.

88...539 Clemens D.P., Barvainis R. *Astrophys. J., Suppl. Ser. 68, 257-286* A catalog of small, optically selected molecular clouds: optical, infrared, andmillimeter properties.

351.3+07.6

H 1-4, PK 351+7°1, ESO 453-09, Sa 2-158, VV' 147, Wray 16-240

			Disc.: Haro 1952	*Diameter* (″)	
				opt. St. CS90	
1950:	16 50 24	-31 35.7	HLSW80		
2000:	16 53 37	-31 40.6	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-16

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	475
[*O*III]	436.3	6	[*N*II]	658.4	23
	500.7	638	[*S*II]	671.7	
*He*I	587.6	19		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.25 \pm .10$ ASTR91

IR Class: .

J	
H	
K	> 9.9
L	

Photom. AIGI74

Central Star:
B 16.3 *V* 16.3 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AcMa77, PAKS91, Sa75, Wr66

351.6–06.2

H 1-37, PK 351–6°1, ESO 334-09, He 2-291, Sa 2-251, VV' 262, Wray 16-314, IRAS 17472-3916

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* -16.0 ± 5.0 STPP83
1950:	17 47 15.2	-39 16 40	IRAS	*opt.* 8.6 CaKa71	
	17 47 16	-39 16.6	HLSw77		
2000:	17 50 44	-39 17.4	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13

*He*II	468.6 *nm*	87	$H\alpha$	656.3 *nm*	392
[*O*III]	436.3	6:	[*N*II]	658.4	323
	500.7	975	[*S*II]	671.7	22
*He*I	587.6	11		673.1	26

$\lg F_{H\beta}(mW.m^{-2})$ $-12.1 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.25	1
25μm	1.16	3
60μm	2.04	3
100μm	17.08	1

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.23 (CaKa71); 3.9 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, PAKS89, Sa75, Wr66

351.7–10.9

Wray 16-385, PK 351−10°1, Sa 2-311, StWr 2-28

			Disc.: Wray 1966	*Diameter* (″)	
				opt. 8. ATS91	
1950:	18 09 20.0	-41 31 15	Wr66		
2000:	18 12 52.9	-41 30 26	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1990-06-24

*He*II	468.6 *nm*	–	*H*α	656.3 *nm*	449
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	1298	[*S*II]	671.7	
*He*I	587.6	12		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.6 ± .4 ASTR91

Central Star:
B 16.4 *V* 16.3 *Qual:* C TASG91

Bibliography: AcMa77, Ko78, Sa75, StWr72, We77

351.9+09.0

PC 13, PK 351+9°1, ESO 453-06, Sa 2-155, StWr 4-3, Wray 16-236, IRAS 16471-3014

			Disc.: Peimbert et al 1961	*Diameter* (″)	
				opt. 7.: ATS91	
1950:	16 47 07.0	-30 14 53	IRAS		
	16 47 06	-30 14.8	HLSW80		
2000:	16 50 17	-30 19.9	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-12

*He*II	468.6 *nm*	60	*H*α	656.3 *nm*	581
[*O*III]	436.3	14	[*N*II]	658.4	3
	500.7	1225	[*S*II]	671.7	
*He*I	587.6	13		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.3 ± .2 ASTR91

IR Class: .

J		
H		
K	> 9.4	
L		

Photom. AIGI74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.35	1
25μm	0.92	3
60μm	1.57	3
100μm	21.38	1

Central Star:
B 16.7 *V* 16.0 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AcMa77, PAKS91, Sa75, StWr72, Wr66

351.9–01.9

Wray 16-286, PK 351−1°1, ESO 393-06, Sa 2-215, IRAS 17296-3641

			Disc.: Wray 1966	*Diameter* (″)	
1950:	17 29 38.3	-36 41 46	IRAS	*opt. St.* CS90	
	17 29 37.3	-36 41 48	Wr66		
2000:	17 33 00.5	-36 43 53	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-28

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1829
[*O*III]	436.3	–	[*N*II]	658.4	419
	500.7	1259	[*S*II]	671.7	27
*He*I	587.6	61		673.1	41

$\lg F_{H\beta}(mW.m^{-2})$ $-13.08 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	1.69	1
25μm	5.47	3
60μm	13.09	1
100μm	181.70	1

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: AcMa77, Ko78, La82, Sa75, We77

352.0–04.6

H 1-30, PK 352−4°1, ESO 334-06, He 2-272, VV' 237, Sa 2-23, Wray 16-301, IRAS 17416-3807

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* -8.0 ± 5.0 STPP83
1950:	17 41 41.5	-38 07 42	IRAS	*opt.* 5.4 CaKa71	
	17 41 41	-38 07.6	HLSw77		
2000:	17 45 07	-38 08.8	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-16

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1015
[*O*III]	436.3	–	[*N*II]	658.4	2021
	500.7	1320	[*S*II]	671.7	78
*He*I	587.6	47		673.1	135

$\lg F_{H\beta}(mW.m^{-2})$ $-13.13 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.35	1
25μm	1.07	3
60μm	2.62	3
100μm	35.42	1

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.97 (CaKa71); 2.2 (Ma84)

Bibliography: *PK67*, AcMa77, ArKo68, He67, PAKS91, Sa75, Wr66

352.1+05.1

M 2-8, PK 352+5°1, ESO 453-18, He 2-197, Sa 2-170, VV 91, VV' 158, Wray 16-248, IRAS 17022-3228

				Disc.: Minkowski 1947	*Diameter* (″)		*Rvel*: +26.8 ± 11.8 STPP83
1950:	17 02 15.8	-32 28 05	IRAS		*opt.* 4.2	CaKa71	
	17 02 16	-32 28.1	HLSW80				
2000:	17 05 31	-32 32.1	.		*radio* 3.7	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-08					
HeII	468.6 *nm*	23	$H\alpha$	656.3 *nm*	607
[*OIII*]	436.3	–	[*NII*]	658.4	384
	500.7	957	[*SII*]	671.7	21
HeI	587.6	33		673.1	25
$\lg F_{H\beta}(mW.m^{-2})$		−12.5 ± .3	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.26	1
25μm	2.08	3
60μm	5.20	3
100μm	6.60	1
Radio (*mJy*) *2cm*		
6cm	18	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.67 (CaKa71); 5.18 (Ac78); 3.1 (Ma84); 7.45 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, PAKS89, Sa75, Wr66

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71. .9086 Kazarian M.A. *Soob. Byurakan Obs. 43,13* Colorimetric investigation of the nuclei of P.N.

352.6+03.0

H 1-8, PK 352+3°2, ARO 549, ESO 392-06, Sa 2-182, VV' 170

				Disc.: Haro 1952	*Diameter* (″)		
					opt. 3.4	CaKa71	
1950:	17 11 26	-33 21.4	HLSW77				
2000:	17 14 43	-33 24.8	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-16					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2722
[*OIII*]	436.3	–	[*NII*]	658.4	2384
	500.7	1075	[*SII*]	671.7	63
HeI	587.6	117		673.1	113
$\lg F_{H\beta}(mW.m^{-2})$		−13.34 ± .10	ASTR91		

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.26 (CKS91)

Bibliography: *PK67*, ACPS87, AcMa77, AlGl74, Ca82, Hi71, Ma81, Ma84, MaC83, Mi73, Mi79, MiAl82, PAKS91, Ru70, Sa75, ZTPS89

352.6+00.1

H 1-12, PK 352+0°1, ESO 392-12, He 2-222, Sa 3-51, VV' 190, Wray 16-273, IRAS 17230-3459

				Diameter (″)		
			Disc.: Haro 1952			
1950:	17 23 04.5	-34 59 06	IRAS	*opt.* 6.8	CaKa71	
	17 23 04	-34 59.2	HLSW77			
2000:	17 26 24	-35 01.8	.	*radio* 11.	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	12557
[OIII]	436.3	–	[*NII*]	658.4	1954:
	500.7	1866	[*SII*]	671.7	103:
HeI	587.6	266		673.1	206:

$\lg F_{H\beta}(mW.m^{-2})$ $-14.2 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	5.20	3
25μm	55.63	3
60μm	31.40	2
100μm	958.10	1

Radio (*mJy*) *2cm* *6cm* = 719 ZPB89

Distance (kpc) stat.: 3.17 (CaKa71); 0.9 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, PAKS89, Sa76, StAc87, VoCo90, Wr66

89..2224 Green D.A. *Astron. J. 98, 1358-1362* Observations of 11 small-diameter galactic plane radio sources: a search for young SNRs.

352.8–00.2

H 1-13, PK 352–0°1, ESO 393-01, He 2-227, Sa 3-55, VV' 195, Wray 15-1712, IRAS 17251-3505

				Diameter (″)		
			Disc.: Haro 1952			
1950:	17 25 07.4	-35 05 07	IRAS	*opt.* 9.6	CaKa71	
	17 25 07	-35 05.3	HLSW77			
2000:	17 28 27	-35 07.7	.	*radio* 14.	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	3581
[OIII]	436.3	–	[*NII*]	658.4	984:
	500.7	1575	[*SII*]	671.7	47
HeI	587.6	89		673.1	69

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	3.97	3
25μm	55.72	3
60μm	79.17	1
100μm	2620.00	1

Radio (*mJy*) *2cm* *6cm* > 620 ZPB89

Distance (kpc) stat.: 2.49 (CaKa71); 0.8 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, KrK68, PAKS89, Sa76, StAc87, VoCo90, Wr66

352.9+11.4

K 2-16, PK 352+11°2, ESO 453-02, Wray 17-76, IRAS 16416-2758

				Disc.: Kohoutek 1977	*Diameter* (″)	
1950:	16 41 41.6	-27 58 34	IRAS		*opt.* 23. 77..1134	
	16 41 41.7	-27 58 36	77..1134			
2000:	16 44 49.1	-28 04 05	.			

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-16						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100	*J*	11.01	12*μm*	9.18	3
[*OIII*]	436.3	–	[*NII*]	658.4	84	*H*	11.88	25*μm*	36.87	3
	495.9	–	[*SII*]	671.7		*K*	11.55	60*μm*	29.38	3
HeI	587.6	–		673.1		*L*		100*μm*	8.03	3
						Photom. PPFS87				

Central Star: AG82 215 —
B 13.18 *V* 12.75 *Qual:* A TASG91 *Spectrum:* WC 11 ATS91

Bibliography: AG82, Ko78, PAKS91, PM87, VoCo90, Wr66, ZTPS89

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352.9–07.5

Fg 3, PK 352–7°1, ARO 520, ESO 334-10, He 2-320, Sa 2-277, StWr 2-26, VV 133, VV' 308, Wray 16-346, IRAS 17567-3849

				Disc.: Fleming 1911	*Diameter* (″)	*Rvel:* +4.6 ± 2.0 STPP83
1950:	17 56 43.4	-38 49 46	IRAS		*opt.* 2. CaKa71	
	17 56 44.4	-38 49 45	Mi73			
2000:	18 00 12.0	-38 49 52	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	sat.	*J*	10.91	12*μm*	3.08	3
[*OIII*]	436.3	1.7	[*NII*]	658.4	115	*H*	10.99	25*μm*	29.90	3
	495.9	138	[*SII*]	671.7	2.3	*K*	10.50	60*μm*	20.27	3
HeI	587.6	17		673.1	5	*L*		100*μm*	7.74	3
$\lg F_{H\beta}(mW.m^{-2})$		−10.9 ± .3 ASTR91				*Photom.* Wh85		*Radio* (*mJy*)	*2cm* 92 MiAl82	
									6cm 107 Ca82	

Central Star:
B 14.3 *V* 14.3 *Qual:* C TASG91

Distance (kpc) stat.: 7.02 (CaKa71); 0.91 (Ac78); 2.0 (Ma84); 2.25 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, AlGl74, De71, HLSw77, He67, Hi71, IwKa65, Iy86, Mi79, MiWe79, PAKS89, PM87, PPFS87, Sa75, SlOr65, StWr72, TAGS89, VoCo90, Wr66

353.2–05.2

H 1-38, PK 353–5°1, ESO 393-35, Sa 3-81, VV' 264, Wray 16-315

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 7. CaKa71	
1950:	17 47 20	-37 23.1	HLSW77		
2000:	17 50 45	-37 23.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	576
[*O*III]	436.3	–	[*N*II]	658.4	928
	500.7	485	[*S*II]	671.7	90
*He*I	587.6	52		673.1	77

$\lg F_{H\beta}(mW.m^{-2})$ $-13.6 \pm .4$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 7.04 (CaKa71); 5.7 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Iw73, PAKS89, Sa76, StAc87, Wr66, Zi75

353.3+06.3

M 2-6, PK 353+6°2, ESO 453-16, He 2-192, Sa 2-166, VV 88, VV' 154, IRAS 17012-3049

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* -88.7 ± 14.4 STPP83
1950:	17 01 13.3	-30 49 41	IRAS	*opt.* 8. : CS90		
	17 01 05.9	-30 49 21	GPGV83			
2000:	17 04 18.4	-30 53 29	.	*radio* 1.6 ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	511
[*O*III]	436.3	4	[*N*II]	658.4	86
	500.7	693	[*S*II]	671.7	3
*He*I	587.6	20		673.1	5

$\lg F_{H\beta}(mW.m^{-2})$ $-11.9 \pm .2$ ASTR91

IR Class: .

J		
H		
K	> 8.6	
L		
Photom.	AlGl75	

IRAS Fluxes (*Jy*) *Qual.*

12μm	44.30	3
25μm	30.92	3
60μm	5.57	3
100μm	15.28	1

Radio (*mJy*) *2cm* *6cm* 17 GPGV83

Central Star:
B 16.67 *V* 16.40 *Qual:* B TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.10 (AGNR84)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, AlKe87, AmGu71, Fe68, HLSW80, He67, He90, KAS91, PAKS89, Pe91, Sa75, StKa89, Wr66

353.5–04.9

H 1-36, PK 353–4°1, ESO 393-31, He 2-289, Sa 2-249, VV' 259, IRAS 17463-3700

			Disc.: Haro 1952	*Diameter (")*		*Rvel:* −120.9 ± 3.1 STPP83	
1950:	17 46 23.6	-37 00 34	IRAS	*opt. St.*	ATS91		
	17 46 24.1	-37 00 35	AK90				
2000:	17 49 48.2	-37 01 27	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-15						*IR Class:* .		*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	54	$H\alpha$	656.3 *nm*	415	*J*		12μm	18.13	1
[*OIII*]	436.3	44	[*NII*]	658.4	165	*H*	10.3	25μm	28.16	3
	500.7	1350	[*SII*]	671.7	5	*K*	8.6	60μm	5.75	3
HeI	587.6	15		673.1	12	*L*	5.53	100μm	35.80	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.50 ± .02	W83, ASTR91			*Photom.*	AIGI75	*Radio* 2*cm*	90	PFMA82
IUE Spectra:		*LW*(1)	*SW*(1)					(*mJy*) 6*cm*	50	AK90

Central Star:
V 16.8 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91). Possibly a symbiotic star.
Distance (kpc) stat.: 2.54 (CKS91)

Bibliography: *PK67*, ABBW82, AcMa77, Al80, Al84, All82, FeAl87, HLSW77, He67, KFS88, LuTu87, PAKS91, Sa75, SeTa90, Wa77, WrAl78

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353.7+06.3

M 2-7, PK 353+6°1, ESO 453-17, He 2-196, Sa 2-169, VV 90, VV' 157, Wray 15-1509, IRAS 17020-3028

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* −56.0 ± 11.0 STPP83
1950:	17 02 01.2	-30 28 10	IRAS	*opt.* 7.8 CaKa71	
	17 02 02	-30 28.4	HLSW80		
2000:	17 05 14	-30 32.5	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20					
HeII 468.6 *nm*	–	*Hα* 656.3 *nm*	580		
[*OIII*] 436.3	–	[*NII*] 658.4	252		
500.7	209	[*SII*] 671.7	33		
HeI 587.6	30	673.1	35		
$\lg F_{H\beta}(mW.m^{-2})$	−12.6 ± .2 ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.45	1
25μm	0.34	2
60μm	1.21	3
100μm	19.75	1
Radio (*mJy*)	*2cm*	
	6cm 7 : ZPB89	

Central Star:
B 14.72 *V* 13.96 *Qual:* A TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.82 (CaKa71); 4.92 (Ac78); 4.4 (Ma84); 7.09 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, AmGu71, He67, Iw73, PAKS89, PAKS91, Sa75, TAGS89, Wr66

353.7–12.8

Wray 16-411, IRAS 18232-4031

			Disc.: Wray 1966	*Diameter* (″)	
1950:	18 23 12.1	-40 31 42	IRAS	*opt.* 30. CS90	
	18 23 11.0	-40 31 40	Wr66		
2000:	18 26 41.5	-40 29 51	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-05					
HeII 468.6 *nm*	111	*Hα* 656.3 *nm*	321		
[*OIII*] 436.3	–	[*NII*] 658.4	–		
500.7	319	[*SII*] 671.7			
HeI 587.6	–	673.1			
$\lg F_{H\beta}(mW.m^{-2})$	−12.4 ± .3 ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.27	1
25μm	0.57	3
60μm	0.97	3
100μm	1.97	1

Bibliography: We77

354.2+04.3

M 2-10, PK 354+4°1, ESO 454-01, He 2-205, VV 95, VV' 169, Wray 15-1647, IRAS 17108-3116

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel*: −75.0 ± 11.0 STPP83
1950:	17 10 53.4	-31 16 18	IRAS	*opt.* 4. CaKa71	
	17 10 53.5	-31 16 16	GPGV83		
2000:	17 14 07.0	-31 19 42	.	*radio* 4. ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1026
[*O*III]	436.3	–	[*N*II]	658.4	848
	500.7	147	[*S*II]	671.7	27
*He*I	587.6	37		673.1	43

$\lg F_{H\beta}(mW.m^{-2})$ −12.62 ± .10 ASTR91

IR Class: .

J	
H	
K	> 10.1
L	

Photom. AIGI75

IRAS Fluxes (*Jy*)

		Qual.
12μm	0.34	1
25μm	1.40	3
60μm	4.21	3
100μm	61.16	1

Radio (*mJy*) *2cm* | *6cm* 9.1 GPGV83

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 7.57 (CaKa71); 6.35 (Ac78); 5.60 (AGNR84); 3.9 (Ma84)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, AlKe87, HLSW77, He67, He90, KAS91, PAKS89, Pe91, Sa76, SaSt73, StAc87, StKa89, Wr66

354.4–07.8

H 1-52, PK 354−7°1, ESO 335-01, Sa 2-292, VV' 332, Wray 16-364

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 12. CaKa71	
1950:	18 01 32	-37 38.4	HLSw77		
2000:	18 04 57	-37 38.2	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09

*He*II	468.6 *nm*	27	$H\alpha$	656.3 *nm*	401
[*O*III]	436.3	–	[*N*II]	658.4	250
	500.7	1104	[*S*II]	671.7	27
*He*I	587.6	20		673.1	23

$\lg F_{H\beta}(mW.m^{-2})$ −12.5 ± .2 ASTR91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.96 (CaKa71); 4.7 (Ma84)

Bibliography: *PK67*, AcMa77, Iw73, PAKS91, Sa75, Wr66

354.5+03.3

Th 3-4, PK 354+3°1, ESO 454-07, Sa 3-44, IRAS 17156-3135

			Disc.: The 1964	*Diameter* (″)	
1950:	17 15 37.4	-31 35 59	IRAS	*opt. St.* ATS91	
	17 15 38	-31 36.0	HLSW77		
2000:	17 18 52	-31 39.1	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2318	*J*		12μm	1.30	3
[OIII]	436.3	–	[NII]	658.4	821	*H*		25μm	9.97	3
	500.7	2005	[SII]	671.7	52:	*K*	> 9.7	60μm	7.51	3
HeI	587.6	87:		673.1		*L*		100μm	39.21	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.4 ± .3 ASTR91				*Photom.* AIGI75				

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, PAKS89, Sa76, StAc87

354.9+03.5

Th 3-6, PK 355+3°3, ESO 454-09, Sa 3-45, IRAS 17161-3109

			Disc.: The 1964	*Diameter* (″)	
1950:	17 16 06.9	-31 09 36	IRAS	*opt. St.* ATS91	
	17 16 07	-31 09.5	HLSW77		
2000:	17 19 21	-31 12.6	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1878	*J*		12μm	1.38	1
[OIII]	436.3	–	[NII]	658.4	1439	*H*		25μm	0.82	3
	500.7	249	[SII]	671.7	84	*K*	> 9.9	60μm	2.74	2
HeI	587.6	57		673.1	105	*L*		100μm	30.04	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.67 ± .10 ASTR91				*Photom.* AIGI75				

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, PAKS89, Sa76, StAc87

355.1+02.3

Th 3-11, PK 355+2°3, ESO 454-18, Sa 3-47, IRAS 17212-3140

			Disc.: The 1964	*Diameter* (″)	
1950:	17 21 12.4	-31 40 39	IRAS	*opt. St.* CS90	
	17 21 12	-31 40.6	PK67		
2000:	17 24 27	-31 43.3	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-05-31						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	2.84	1
[OIII]	436.3	–	[NII]	658.4	102	25μm	3.54	3
	495.9	–	[SII]	671.7		60μm	3.92	1
HeI	587.6	–		673.1		100μm	78.79	1

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AlGI74, HLSW77, Ko89, MaC83, Sa76

355.1–02.9

H 1-31, PK 355–2°4, ESO 393-21, He 2-276, Sa 2-238, VV' 240, Wray 16-305, IRAS 17422-3432

				Disc.: Haro 1952	*Diameter* (″)		*Rvel*: +86.0 ± 11.0 STPP83
1950:	17 42 14.1	-34 32 49	IRAS		*opt.* 5.	PK67	
	17 42 12.6	-34 32 45	GPGV83				
2000:	17 45 32.3	-34 33 56	.		*radio* 0.7	ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	6	$H\alpha$	656.3 *nm*	921	*J*		12μm	1.57	1
[*OIII*]	436.3	12	[*NII*]	658.4	164	*H*		25μm	3.26	3
	500.7	1948	[*SII*]	671.7	7	*K*	9.6	60μm	1.27	3
HeI	587.6	35		673.1	14	*L*		100μm	11.26	1
lg$F_{H\beta}(mW.m^{-2})$		−12.63 ± .10	ASTR91			*Photom.*	AIGI75	*Radio* (*mJy*)	*2cm*	
									6cm 16	GPGV83

Notes: Likely a galactic bulge PN (AKSR91). East component of a close pair visible on the FC.
Distance (kpc) stat.: 3.70 (AGNR84)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, HLSW77, He67, KAS91, PAKS89, Sa75, TeOu88, Wr66

355.1–06.9

M 3-21, PK 355–6°1, ESO 394-21, He 2-328, Sa 2-284, VV' 319, Wray 16-352, IRAS 17591-3639

				Disc.: Minkowski 1948	*Diameter* (″)		*Rvel*: −68.6 ± 3.8 STPP83
1950:	17 59 08.9	-36 39 19	IRAS		*opt.* 5.	PK67	
	17 59 08.0	-36 38 55	Mi73				
2000:	18 02 31.5	-36 38 51	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	6	$H\alpha$	656.3 *nm*	308	*J*		12μm	0.40	3
[*OIII*]	436.3	8	[*NII*]	658.4	92	*H*		25μm	5.20	3
	495.9	521	[*SII*]	671.7	3	*K*	> 9.1	60μm	4.18	3
HeI	587.6	18		673.1	6	*L*		100μm	2.88	1
lg$F_{H\beta}(mW.m^{-2})$		−11.42 ± .01	Pe71, SK89			*Photom.*	AIGI75	*Radio* (*mJy*)	*2cm* 22	MiAl82
									6cm 30	Ca82

Central Star: AG82 280 — CSI -36-17592 0; GCRV 10455; V567 Sgr; HV7117
B 16.2 *V* 15.3 *Qual:* C SK89

Notes: Likely a galactic bulge PN (AKSR91). Variable nucleus ? (Bo76). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 7.20 (MiAl75); 7.04 (Ca76); 6.2 (Ac78); 3.66 (Da82); 3.00 (AGNR84); 4.9 (Ma84)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AKSJ89, AST89, AcMa77, Al73, Dr80, He67, KAS91, Ka76, LHSW81, LNP89, MaPo80, PAKS89, PiKh79, Sa75, Sh85, W75, Wr66

72.14502 Hoffleit D. *IAU Inform. Bull. Var. Stars 660* New and suspected variable stars in VSF 193.

355.2–02.5

H 1-29, PK 355–2°2, ESO 193-16, He 2-270, Sa 2-233, VV' 235, Wray 16-299, IRAS 17409-3416

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −18.0 ± 5.0 STPP83
1950:	17 40 54.4	-34 16 20	IRAS	*opt. St.*	CS90	
	17 40 55	-34 16.2	HLSW77			
2000:	17 44 14	-34 17.5	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	871	*J*		12μm	1.90	1
[*OIII*]	436.3	–	[*NII*]	658.4	263	*H*		25μm	1.50	3
	500.7	1167	[*SII*]	671.7	8	*K*	> 9.9	60μm	1.53	1
HeI	587.6	35		673.1	15	*L*		100μm	16.55	1
lg$F_{H\beta}(mW.m^{-2})$		−12.64 ± .10	ASTR91			*Photom.*	AlGl74			

Central Star: *Spectrum:* WC ATS91

Notes: Likely a galactic bulge PN (AKSR91). South-east component of a close pair visible on the FC.

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, He67, KAS91, PAKS89, Sa75, TeOu88, Wr66

355.4–02.4

M 3-14, PK 355–2°1, ARO 552, ESO 393-19, He 2-271, Sa 2-234, VV' 236, Wray 16-300, IRAS 17410-3405

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −76.0 ± 11.0 STPP83
1950:	17 41 01.9	-34 05 28	IRAS	*opt.* 7.2	CaKa71	
	17 41 01.6	-34 05 25	Mi73			
2000:	17 44 20.5	-34 06 41	.	*radio* 2.8	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-08							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	14	*Hα*	656.3 *nm*	1166		12μm	4.43	1
[*OIII*]	436.3	–	[*NII*]	658.4	1196		25μm	3.31	3
	500.7	1065	[*SII*]	671.7	43		60μm	7.33	3
HeI	587.6	51		673.1	72		100μm	13.69	1
lg$F_{H\beta}(mW.m^{-2})$		−12.4 ± .2	ASTR91				*Radio* (*mJy*)	*2cm* 30 MiAl82	
								6cm 30 ZPB89	

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.68 (CaKa71); 3.28 (Ac78); 1.6 (Ma84); 5.65 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, ArKo68, HLSW77, He67, Hi71, KAS91, Ka76, PAKS89, Ru70, Sa75, TeOu88, Wr66

355.4–04.0

Hf 2-1, PK 355–4°1, ESO 393-37, Pe 1-10, Sa 2-253, VV' 266, Wray 16-316, IRAS 17478-3454

			Disc.: Hoffleit 1953	*Diameter* (″)	
1950:	17 47 51.7	-34 54 37	IRAS	*opt.* 9.4 CaKa71	
	17 47 51.9	-34 54 40	Mi76		
2000:	17 51 12.3	-34 55 26	.	*radio* 12. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13					
HeII	468.6 *nm*	79	$H\alpha$ 656.3 *nm*		427
[*OIII*]	436.3	9	[*NII*] 658.4		144
	500.7	1400	[*SII*] 671.7		18
HeI	587.6	8	673.1		19
$\lg F_{H\beta}(mW.m^{-2})$	$-12.2 \pm .2$ ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.80	1
25μm	1.78	3
60μm	2.52	3
100μm	51.76	1
Radio (*mJy*) *2cm*	14	MiAl82
6cm	9	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.86 (CaKa71); 2.4 (Ma84); 6.11 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, HLSW77, Iw73, Ka76, PAKS89, Sa75, TeOu88, VDKA75, VKDA73, Vor70, Wr66, Zi75

355.6–02.7

H 1-32, PK 355–2°3, ESO 393-23, He 2-278, Sa 2-241, VV' 245, Wray 16-307, IRAS 17427-3402

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* -188.0 ± 5.0 STPP83
1950:	17 42 47.1	-34 02 40	IRAS	*opt.* 5. PK67	
	17 42 47.5	-34 02 38	GPGV83		
2000:	17 46 06.3	-34 03 46	.	*radio* 1. ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-08					
HeII	468.6 *nm*	–	$H\alpha$ 656.3 *nm*		997
[*OIII*]	436.3	–	[*NII*] 658.4		158
	500.7	1498	[*SII*] 671.7		
HeI	587.6	26:	673.1		
$\lg F_{H\beta}(mW.m^{-2})$	$-13.5 \pm .3$ ASTR91				

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.73	2
25μm	5.22	3
60μm	1.81	2
100μm	11.24	1
Radio (*mJy*) *2cm*		
6cm	37	GPGV83

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.70 (AGNR84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW77, PAKS89, PM87, Pe91, Sa75, TeOu88, W88, Wr66, ZTPS89

355.7–03.0

H 1-33, PK 355–3°1, ESO 393-26, He 2-283, VV' 248

				Disc.: Haro 1952	*Diameter* (″)	*Rvel:* −117.0 ± 5.0 STPP83
					opt. St. CS90	
1950:	17 44 31	-34 07.0	HLSW77			
2000:	17 47 50	-34 08.0	.		*radio* 2.7 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	986
[*O*III]	436.3	–	[*N*II]	658.4	320
	500.7	1038	[*S*II]	671.7	22
*He*I	587.6	45		673.1	35

$\lg F_{H\beta}(mW.m^{-2})$ −12.74 ± .10 ASTR91

IR Class: .

J	
H	
K	> 9.3
L	

Photom. AIGI74

Radio 2cm
(*mJy*) 6cm 12 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 8.94 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, PAKS89, Sa75, ZTPS89

355.7–03.4

H 2-23, PK 355–3°2, ESO 393-27, He 3-1489, Sa 2-246, VV' 255

				Disc.: Haro 1952	*Diameter* (″)	
					opt. St. ATS91	
1950:	17 45 39	-34 21.0	HLSW77			
2000:	17 48 58	-34 21.9	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-08

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	899
[*O*III]	436.3	–	[*N*II]	658.4	37
	500.7	1356	[*S*II]	671.7	
*He*I	587.6	42		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.78 ± .10 ASTR91

IR Class: .

J	
H	
K	> 10.3
L	

Photom. AIGI74

Central Star:
B 18.4 *V* 17.7 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, Al73, PAKS89, Sa75, TeOu88, W75, Wa70

355.7–03.5

H 1-35, PK 355–3°3, ESO 393-29, He 2-28, My 103, Sa 2-247, VV' 257, Wray 16-311, IRAS 17459-3421

				Disc.: Haro 1952	*Diameter* (″)		*Rvel*: +160.0 ± 11.0STPP83
1950:	17 45 54.1	-34 21 59	IRAS		*opt.* 2.	CK88	
	17 45 54.6	-34 21 59	Mi76				
2000:	17 49 14.0	-34 22 53	.		*radio* 1.1	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-08						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	741	*J*	10.78	12μm	3.88	3
[OIII]	436.3	–	[NII]	658.4	144	*H*	11.10	25μm	32.02	3
	500.7	582	[SII]	671.7	1.4	*K*	10.33	60μm	9.00	3
HeI	587.6	27		673.1	3	*L*		100μm	7.99	1
lg$F_{H\beta}$($mW.m^{-2}$)		−11.45 ± .07	W83, ASTR91			*Photom.*	PM87	*Radio* (*mJy*)	*2cm* 96 MiAl82 *6cm* 72 ZPB89	

Central Star:
B 15.7 *V* 15.4 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.7 (Ma84); 2.51 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, AlGl74, Ca82, HLSW77, He67, KAS91, Ka76, Ka79, Mi79, PAKS89, PrPe89, Sa75, TAGS89, TeOu88, VDKA75, VKDA73, Vo71, VoCo90, Vor70, W75, Wr66

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355.9+03.6

H 1-9, PK 355+3°2, AS 226, ESO 454-14, He 2-213, VV' 176, Wray 15-1689 , MHα 76-33, EM* AS 226, Sa 2-190, IRAS 17183-3017

				Disc.: Haro 1952	*Diameter* (″)		*Rvel*: −148.0 ± 11.2STPP83
1950:	17 18 19.8	-30 17 56	IRAS		*opt.* 7. :	CS90	*Expansion Velocities* (*km/s*)
	17 18 20	-30 17.9	HLSW77				[OIII] 40.0 Ac76
2000:	17 21 32	-30 20.8	.		*radio* 0.7	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	957	*J*		12μm	2.72	3
[OIII]	436.3	–	[NII]	658.4	214	*H*		25μm	14.34	3
	500.7	274	[SII]	671.7		*K*	9.2	60μm	2.85	2
HeI	587.6	27		673.1	3	*L*		100μm	21.01	1
lg$F_{H\beta}$($mW.m^{-2}$)		−12.32 ± .10	ASTR91			*Photom.*	AlGl74	*Radio* (*mJy*)	*2cm* *6cm* 25 ZPB89	

Central Star:
B 16.6 *V* 15.8 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.36 (CKS91)

Bibliography: *PK67*, AST89, Ac75, AcMa77, Al73, He67, PAKS89, PBOZ88, Sa75, Sa84, TAGS89, TeOu88, VoCo90, We89, WeHe67, Wr66

355.9+02.7

Th 3-10, PK 355+2°2, ESO 454-21, Sa 3-48, IRAS 17214-3049

			Disc.: The 1964	*Diameter* (″)	
1950:	17 21 26.3	-30 49 20	IRAS	*opt. St.* CS90	
	17 21 27	-30 49.2	HLSW77		
2000:	17 24 40	-30 51.9	.	*radio* 2. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3433
[*OIII*]	436.3	–	[*NII*]	658.4	2776
	500.7	1403	[*SII*]	671.7	155
HeI	587.6	–		673.1	309

$\lg F_{H\beta}(mW.m^{-2})$ $-14.5 \pm .3$ ASTR91

IR Class: .

J	
H	
K	> 10.3
L	
Photom.	AIGI74

IRAS Fluxes (*Jy*) *Qual.*

12μm	2.62	1
25μm	3.16	3
60μm	4.81	3
100μm	48.22	1

Radio (*mJy*) *2cm* *6cm* 29.5 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.87 (CKS91); 15.64 (CKS91)

Bibliography: *PK67*, AmGu71, MaC83, PAKS89, PBOZ88, Sa76, StAc87

355.9–04.2

M 1-30, PK 355–4°2, ESO 394-05, He 2-295, Sa 2-259, VV 120, VV' 271, Wray 16-322, IRAS 17496-3437

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* -98.0 ± 11.0 STPP83
1950:	17 49 38.7	-34 37 44	IRAS	*opt.* 5. PK67	
	17 49 39.1	-34 37 45	GPGV83		
2000:	17 52 59.0	-34 38 23	.	*radio* 3.5 ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	602
[*OIII*]	436.3	–	[*NII*]	658.4	631
	500.7	153	[*SII*]	671.7	9
HeI	587.6	32		673.1	16

$\lg F_{H\beta}(mW.m^{-2})$ $-11.77 \pm .10$ ASTR91

IR Class: .

J	
H	
K	> 9.9
L	
Photom.	AIGI75

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.50	1
25μm	5.28	3
60μm	8.19	3
100μm	34.55	1

Radio (*mJy*) *2cm* *6cm* 31 GPGV83

Central Star:
B 16.6 *V* 16.4 *Qual:* C TASG91 *Spectrum:* WC ? ATS91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.00 (AGNR84)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, Gr71, Gr72, He67, KAS91, Ka76, LHSW81, PAKS89, Pe91, Sa75, TAGS89, W88, Wr66

356.1+02.7

Th 3-13, PK 356+2°1, ESO 454-24, IRAS 17221-3038

			Disc.: The 1964	*Diameter* (″)	
1950:	17 22 06.1	-30 38 05	IRAS	*opt. St.* CS90	
	17 22 06	-30 38.1	HLSW77		
2000:	17 25 19	-30 40.7	.	*radio* < 2. PBOZ88	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3936	*J*	12μm	1.30	3
[*OIII*]	436.3	–	[*NII*]	658.4	488:	*H*	25μm	8.69	3
	500.7	830	[*SII*]	671.7		*K* 9.9	60μm	3.15	2
HeI	587.6	89		673.1		*L*	100μm	40.17	1
lg$F_{H\beta}(mW.m^{-2})$		−13.8 ± .3 ASTR91				*Photom.* AIGI74	*Radio* (*mJy*)	*2cm*	
								6cm 14.3	PBOZ88

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, PAKS89, Sa76, StAc87, VoCo90, ZTPS89

356.1–03.3

H 2-26, PK 356–3°1, ESO 393-32, Sa 3-79, VV' 261, Wray 17-99

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 4.5 CaKa71	
1950:	17 46 32	-33 59.4	HLSW77		
2000:	17 49 51	-34 00.3	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	609
[*OIII*]	436.3	–	[*NII*]	658.4	1154
	500.7	521	[*SII*]	671.7	126
HeI	587.6	–		673.1	120
lg$F_{H\beta}(mW.m^{-2})$		−13.7 ± .3 ASTR91			

Distance (kpc) stat.: 5.53 (CaKa71); 2.2 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Pe91, Sa76, StAc87, TeOu88, W88, Wr66

356.2–04.4

Cn 2-1, PK 356–4°1, ESO 394-10, He 2-303, Sa 2-263, VV 126, VV' 281, Wra y 16-327, IRAS 17512-3421

				Disc.: Cannon 1922	*Diameter* (″)		*Rvel:* −271.0 ± 25.0STPP83
1950:	17 51 13.5	-34 21 51	IRAS		*opt.* 2.4	CK88	
	17 51 13.6	-34 21 50	Mi76				
2000:	17 54 33.1	-34 22 21	.		*radio* 1.7	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-12						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	5	$H\alpha$	656.3 *nm*	481	*J*	11.86	12μm	1.83	1
[OIII]	436.3	9	[*NII*]	658.4	56	*H*	12.40	25μm	5.60	3
	495.9	542	[*SII*]	671.7	3	*K*	11.63	60μm	4.51	3
HeI	587.6	25		673.1	7	*L*		100μm	35.66	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.63 ± .03	W83			*Photom.*	PM87	*Radio* 2*cm*	78	MiAl82
								(*mJy*) 6*cm*	49	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.29 (Ac78); 2.10 (Da82); 2.00 (AGNR84); 3.6 (Ma84); 3.86 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, AlGl75, AlKe85, AlKe87, Ca82, De71, He67, He90, Ka76, Ka79, Ka80, LHSW81, LNP89, Ma81, MaFa85, Mi79, PAKS91, Pe91, PeSe80, Po80, PrPe89, Sa75, StKa89, VDKA75, VKDA73, Vo71, Vor70, W75, W88, Wr66

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77.10292 Kharadze E.K., Bartaya R.A., Vorontsov-Velyaminov B.A., Kostyakova E.B., Dokuchaeva O.D., Arhipova V.P. *Astron. Tsirk. 947,6* The new absolute intensities of the emission lines of 15 PN, seen in the galactic-centre direction.
86...520 Czyzak S.J., Keyes C.D., Aller L.H. *Astrophys. J., Suppl. Ser. 61, 159-175* Atomic structure calculations and nebular diagnostics.

356.3–06.2

M 3-49, PK 356–6°1, ESO 394-22, He 2-329, Sa 3-112, VV' 318, Wray 16-353

				Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −47.0 ± 5.0 STPP83
					opt. 9.8	CaKa71	
1950:	17 59 11	-35 13.2	LHSW81				
2000:	18 02 32	-35 13.1	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	395
[OIII]	436.3	–	[*NII*]	658.4	617
	500.7	491	[*SII*]	671.7	72
HeI	587.6	43		673.1	81
$\lg F_{H\beta}(mW.m^{-2})$		−12.9 ± .2	ASTR91		

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.52 (CaKa71); 4.8 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, KrK68, Sa76, StAc87, Wr66, Zi75

356.5+05.1

Th 3-3, PK 356+5°1, ESO 454-05, Sa 3-42

			Disc.: The 1964	*Diameter* (″)	
				opt. 17. : ATS91	
1950:	17 14 10	-28 56.3	HLSW77		
2000:	17 17 20	-28 59.5	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	754
[*OIII*]	436.3	–	[*NII*]	658.4	431
	500.7	430	[*SII*]	671.7	51:
HeI	587.6	30		673.1	31:

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .4$ ASTR91

IR Class: .

J	
H	
K	> 10.4
L	

Photom. AIGI75

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, MaC83, PAKS89, Sa76, StAc87, TeOu88

356.5+01.5

Th 3-55, PK 356+1°2, ESO 455-10, Sa 3-58, IRAS 17277-3058

			Disc.: The 1964	*Diameter* (″)	
1950:	17 27 47.5	-30 58 55	IRAS	*opt. St.* ATS91	
	17 27 45	-30 58.9	LHSW81		
2000:	17 30 59	-31 01.1	.	*radio* < 9. RP91	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	2239
[*OIII*]	436.3	–	[*NII*]	658.4	646
	500.7	412	[*SII*]	671.7	
HeI	587.6	58		673.1	78:

$\lg F_{H\beta}(mW.m^{-2})$ $-14.1 \pm .3$ ASTR91

IR Class: .

J	
H	
K	> 10.1
L	

Photom. AIGI75

IRAS Fluxes (*Jy*)		*Qual.*
12*μm*	2.29	1
25*μm*	2.80	3
60*μm*	7.21	2
100*μm*	325.70	1

Radio (*mJy*) *2cm* | *6cm* 6.1 RP91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, Al79, MaC83, PAKS89, Sa76, StAc87, TeOu88

356.5–02.3

M 1-27, PK 356−2°2, ESO 393-24, He 2-280, VV 113, VV' 246, Wray 16-308, IRAS 17434-3307

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −16.5 ±	85..1601
1950:	17 43 26.1	-33 07 30	IRAS	*opt.* 5.3	PK67	*Expansion Velocities* (*km/s*)	
	17 43 28.2	-33 07 30	PK67			[OIII] 8.5	85..1601
2000:	17 46 45.5	-33 08 35	.	*radio* 8.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1380	12*μm*	1.57	3
[*OIII*]	436.3	–	[*NII*]	658.4	929	25*μm*	23.40	3
	495.9	–	[*SII*]	671.7	48	60*μm*	20.43	3
HeI	587.6	–		673.1	87	100*μm*	187.00	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.23 ± .01	SK89			*Radio* 2*cm*		
						(*mJy*) 6*cm*	63	ZPB89

Central Star: AG82 262 — SS73 102
B 15.58 *V* 14.54 *Qual:* B SK89 , TASG91

Notes: Likely a galactic bulge PN (AKSR91). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 4.08 (CKS91)

Bibliography: *PK67*, AG82, AST89, AcMa77, Al79, HLSW77, He67, Ka76, PAKS89, Sa76, SaSt73, Sh85, StAc87, TAGS89, TeOu88, VoCo90, W88, We89, Wr66

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356.5–03.6

H 2-27, PK 356−3°2, ESO 394-02, Sa 3-83, VV' 269, IRAS 17485-3346

			Disc.: Haro 1952	*Diameter* (″)			
1950:	17 48 35.4	-33 46 45	IRAS	*opt. St.*	ATS91		
	17 48 32	-33 46.9	LHSW81				
2000:	17 51 50	-33 47.6	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1459	12*μm*	2.34	1
[*OIII*]	436.3	–	[*NII*]	658.4	887	25*μm*	4.57	1
	500.7	816	[*SII*]	671.7	83	60*μm*	4.96	3
HeI	587.6	77		673.1	123	100*μm*	18.02	2
$\lg F_{H\beta}(mW.m^{-2})$		−14.1 ± .3	ASTR91					

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, PAKS89, Sa76, StAc87

356.5–03.9

H 1-39, PK 356–3°3, ESO 394-07, He 2-300, VV' 277, Wray 16-323, IRAS 17500-3355

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −50.0 ± 11.0 STPP83	
1950:	17 50 02.9	-33 55 23	IRAS	*opt.* 5.	PK67		
	17 50 02	-33 55.4	Sa76				
2000:	17 53 21	-33 56.0	.	*radio* 1.7	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-30						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	909	*J*		12*μm*	1.68	1
[OIII]	436.3	–	[*N*II]	658.4	502	*H*		25*μm*	2.50	3
	500.7	17	[*S*II]	671.7	20	*K*	> 10.5	60*μm*	1.43	2
HeI	587.6	14		673.1	37	*L*		100*μm*	43.64	1
lg$F_{H\beta}$(*mW.m*$^{-2}$)		−12.58 ± .10	ASTR91			*Photom.*	AIGI75	*Radio* 2*cm*		
								(*mJy*) 6*cm*	13	ZPB89

Central Star:
B 16.8 *V* 16.3 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 7.53 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Ka76, LHSW81, PAKS89, PFMA82, SaSt73, StAc87, Wr66

356.6–07.8

H 1-57, PK 356–7°2, ESO 394-31, He 2-353, Sa 3-121, VV' 353, Wray 17-113

		Disc.: Haro 1952	*Diameter* (″)			
1950:	18 06 27	-35 44.8	LHSW81	*opt.* 12.6	CaKa71	
2000:	18 09 49	-35 44.2	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	373
[OIII]	436.3	–	[*N*II]	658.4	269
	500.7	555	[*S*II]	671.7	39:
HeI	587.6	31:		673.1	45:
lg$F_{H\beta}$(*mW.m*$^{-2}$)		−12.7 ± .2	ASTR91		

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.71 (CaKa71); 4.4 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, PAKS89, Sa76, StAc87, Wr66

356.7–04.8

H 1-41, PK 356–4°2, AS 256, ESO 394-13, He 2-308, MHα 304-10, Sa 2-269, VV' 293, Wray 16-333, IRAS 17539-3409

			Disc.: Haro 1952	*Diameter* (″)		*Rvel*: +76.0 ± 5.0	STPP83
1950:	17 53 59.6	-34 09 31	IRAS	*opt.* 9.6	CaKa71		
	17 54 00.1	-34 09 30	Mi76				
2000:	17 57 19.2	-34 09 49	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22					
HeII	468.6 *nm*	21	*Hα*	656.3 *nm*	452
[*OIII*]	436.3	–	[*NII*]	658.4	35
	500.7	868	[*SII*]	671.7	6
HeI	587.6	18		673.1	6

$\lg F_{H\beta}(mW.m^{-2})$	$-11.7 \pm .4$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.36	1
25μm	1.37	3
60μm	2.63	3
100μm	5.42	1

Radio (*mJy*)			
	2cm	11	MiAl82
	6cm	12	ZPB89

Central Star:
B 16.3 *V* 16.2 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.13 (CaKa71); 4.28 (Da82); 2.70 (AGNR84); 4.1 (Ma84); 5.63 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al73, He67, Iw73, Ka76, LHSW81, LNP89, Ma81, Mi79, PAKS89, Sa75, TAGS89, VDKA75, VKDA73, Vor70, Wr66, Zi75

356.7–06.4

H 1-51, PK 356–6°2, ESO 394-26, Sa 3-116, VV' 331, Wray 16-362

			Disc.: Haro 1952	*Diameter* (″)			
				opt. 13.2	CaKa71		
1950:	18 01 09	-34 58.2	LHSW81				
2000:	18 04 30	-34 58.0	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	282
[*OIII*]	436.3	–	[*NII*]	658.4	201
	500.7	404	[*SII*]	671.7	63
HeI	587.6	44		673.1	72

$\lg F_{H\beta}(mW.m^{-2})$	$-12.9 \pm .4$	ASTR91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.01 (CaKa71); 5.1 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Iw73, KrK68, Sa76, StAc87, Wr66, Zi75

356.8+03.3

Th 3-12, PK 356+3°1, ESO 454-23, Sa 3-49, IRAS 17219-2942

				Disc.: The 1964	*Diameter* (″)	*Rvel:* 330 ± 80 ATS91	
1950:	17 21 55.0	-29 42 26	IRAS		*opt. St.* CS90		
	17 21 55	-29 42.6	HLSW77				
2000:	17 25 06	-29 45.2	.		*radio* 1.2 PBOZ88		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1307
[*OIII*]	436.3	–	[*NII*]	658.4	1458
	500.7	47	[*SII*]	671.7	22
HeI	587.6	–		673.1	67

$\lg F_{H\beta}(mW.m^{-2})$ $-13.75 \pm .10$ ASTR91

IR Class: .

J	
H	
K	> 9.6
L	

Photom. AlGl74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.45	1
25μm	2.25	2
60μm	5.89	3
100μm	25.44	1

Radio (*mJy*) *2cm* *6cm* 3.5 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AlGl75, MaC83, PAKS89, Sa76, StAc87, TeOu88

356.8–05.4

H 2-35, PK 356–5°1, ESO 394-17, Sa 3-109, VV' 311

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* −195.0 ± 5.0 STPP83	
1950:	17 56 59	-34 27.6	LHSW81	*opt.* 10.8 CaKa71		
2000:	18 00 19	-34 27.7	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01					
HeII	468.6 *nm*	67	*Hα*	656.3 *nm*	425
[*OIII*]	436.3	–	[*NII*]	658.4	198
	500.7	639	[*SII*]	671.7	41
HeI	587.6	40:		673.1	42

$\lg F_{H\beta}(mW.m^{-2})$ $-12.8 \pm .2$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.72 (CaKa71); 3.9 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Iw73, Ka76, Sa76, SaMi78, StAc87, Zi75

356.8–11.7

Lo 17, PK 356−11°1, ESO 395-07

			Disc.: Longmore 1977	*Diameter* (″)	
				opt. 104. Lo77	
1950:	18 24 24	-37 17.9	Lo77		
2000:	18 27 48	-37 16.0	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1987-07-22

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100:
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	468	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Central Star: AG82 309 — *B* 16.54 *V* 16.15 *Qual:* B TASG91

Bibliography: AG82, Ko78, PAKS89, TAGS89, We77

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356.9+04.5

M 2-11, PK 356+4°1, ESO 454-11, He 2-210, Sa 2-186, VV 98, VV' 177, Wray 16-263, IRAS 17173-2857

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* +77.6 ± 10.1 STPP83	
1950:	17 17 22.7	-28 57 41	IRAS	*opt.* 15.: CS90			
	17 17 23.1	-28 57 40	Mi76				
2000:	17 20 33.3	-29 00 39	.	*radio* 2.7 ZPB89			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09

						IR Class: N		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	36	$H\alpha$	656.3 *nm*	659	*J*	13.35	12μm	1.48	1
[*O*III]	436.3	17	[*N*II]	658.4	283	*H*	13.58	25μm	1.82	3
	500.7	1907	[*S*II]	671.7	19	*K*	12.72	60μm	1.92	3
*He*I	587.6	22		673.1	27	*L*	(11.25)	100μm	11.40	1
						Photom. KHM86		*Radio* 2*cm*	29	MiAl82
lg$F_{H\beta}(mW.m^{-2})$		−12.60 ± .10 ASTR91						(*mJy*) 6*cm*	22	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.1 (Ma84)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, AlGl74, Fe68, HLSW77, He67, JoJo91, KAS91, KPK81, Ka70, Ka76, Mi79, PAKS89, PBOZ88, Sa75, TeOu88, VDKA75, VKDA65, VKDA73, Vo70, Vor70, Wr66

356.9+04.4

M 3-38, PK 356+4°2, ARO 248, ESO 454-13, He 2-211, Sa 2-187, VV' 178, Wray 16-264, IRAS 17178-2900

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −156.0 ± 11.0STPP83	
1950:	17 17 53.6	-29 00 04	IRAS	*opt. St.*	CS90		
	17 17 54.0	-29 00 03	Mi76				
2000:	17 21 04.3	-29 02 59	.	*radio* 1.8	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IR Class:* S		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	24:	$H\alpha$	656.3 *nm*	1239	*J*	11.96	12μm	1.20	3
[OIII]	436.3	–	[*NII*]	658.4	598	*H*	10.83	25μm	6.19	3
	500.7	1939	[*SII*]	671.7	23	*K*	10.54	60μm	8.72	3
HeI	587.6	34:		673.1	46	*L*		100μm	16.40	1
lg$F_{H\beta}(mW.m^{-2})$		−13.46 ± .10	ASTR91			*Photom.*	KHM86	*Radio* (*mJy*)	*2cm*	
									6cm 18.4	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.6 (Ma84); 5.85 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, AlGl74, Fe68, HLSW77, He67, Hi71, KAS91, KPK81, Mi79, PAKS89, PBOZ88, Pe91, Ru70, Sa75, TeOu88, W88, Wr66

80.17255 Kwok S., Purton C.R. *Bull. American Astron. Soc. 12,470* Radio observations of compact planetary nebulae.
85...409 Jewell P.R., Schenewerk M.S., Snyder L.E. *Astrophys. J. 295, 189-194* The detection of rotationally excited OH emission toward the probable young planetary nebula Vy 2-2.

356.9–05.8

M 2-24, PK 356–5°2, ESO 394-20, He 2-327, Sa 2-282, VV 137, VV' 317, Wray 16-351, IRAS 17587-3427

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* +173.0 ± 11.0STPP83	
1950:	17 58 44.5	-34 27 49	IRAS	*opt.* 6.8	CaKa71		
	17 58 43.3	-34 27 49	Mi76				
2000:	18 02 02.9	-34 27 47	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	887	12μm	2.72	3
[OIII]	436.3	48	[*NII*]	658.4	113	25μm	4.12	3
	500.7	422	[*SII*]	671.7	12	60μm	4.34	3
HeI	587.6	36		673.1	15	100μm	5.47	3
lg$F_{H\beta}(mW.m^{-2})$		−12.09 ± .03	W83, ASTR91			*Radio* (*mJy*) *2cm*	15	MiAl82
						6cm	3	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.31 (CaKa71); 4.31 (Ac78); 5.81 (Da82); 4.80 (AGNR84); 7.2 (Ma84); 9.26 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Gu88, He67, Iw73, Ka76, Kh76, Kh79, LHSW81, LNP89, Ma81, Mi79, PAKS89, Pe91, Po80, Sa75, VDKA75, VKDA73, Vo71, Vor70, W75, W88, Wr66, ZTPS89, Zi75

76..9019 Webster B.L. *Mon. Not. R. Astron. Soc. 174,513* The masses and chemical composition of P.N. in the galactic bulge and Magellanic clouds.

357.0+02.4

M 4-4, PK 357+2°5, ESO 454-36, Sa 3-56, Th 3-42, IRAS 17255-3005

		Disc.: Minkowski 1948	*Diameter (″)*	*Rvel:* +29.0 ± 11.0 STPP83	
1950:	17 25 34.5	-30 05 18	IRAS	*opt.* 6.6 CaKa71	
	17 25 38	-30 05.5	HLSW77		
2000:	17 28 50	-30 07.9	.	*radio* < 5.2PBOZ88	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1909	12μm	1.75	1
[*OIII*]	436.3	–	[*NII*]	658.4	1045	25μm	1.43	3
	500.7	1186	[*SII*]	671.7	74	60μm	3.63	1
HeI	587.6	69:		673.1	82	100μm	51.04	1
lg$F_{H\beta}(mW.m^{-2})$		−13.9 ± .3 ASTR91				*Radio* 2*cm*		
						(*mJy*) 6*cm*	9.8	PBOZ88

Central Star: AG82 240 — $m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.14 (CaKa71); 5.24 (Ac78); 3.0 (Ma84)

Bibliography: *PK67*, AG82, AST89, Al79, Iw73, PAKS89, Sa76, StAc87, TeOu88

357.1+04.4

TeJu 18, PBOZ 1, IRAS 17184-2852

		Disc.: Terzan et al 1980	*Diameter (″)*		
1950:	17 18 28.1	-28 52 18	IRAS	*opt.* 8. ATS91	
	17 18 27.8	-28 52 20	PBOZ88		
2000:	17 21 37.9	-28 55 14	.	*radio* < 10.PBOZ88	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31						*IRAS Fluxes (Jy)*		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1613	12μm	2.14	1
[*OIII*]	436.3	–	[*NII*]	658.4	–	25μm	0.63	2
	500.7	966	[*SII*]	671.7		60μm	1.70	3
HeI	587.6	–		673.1		100μm	21.18	1
lg$F_{H\beta}(mW.m^{-2})$		−13.9 ± .4 ASTR91				*Radio* 2*cm*		
						(*mJy*) 6*cm*	4.2	PBOZ88

Notes: Likely a galactic bulge PN (AKSR91).

80.23001 Terzan A., Ju K.H. *The Messenger 20,6-7* A photometric study of the bright cloud B in Sagittarius: III.

357.1+03.6

M 3-7, PK 357+3°1, ESO 454-19, He 2-218, Sa 2-194, VV' 185, Wray 16-270

Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* −191.0 ± 11.0STPP83	
	opt. 5.8 PK67		
1950: 17 21 23.6 -29 21 33 Mi76			
2000: 17 24 34.5 -29 24 14 .	*radio* 4.7 ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	915
[*O*III]	436.3	–	[*N*II]	658.4	156
	500.7	522	[*S*II]	671.7	3
*He*I	587.6	35		673.1	7

$\lg F_{H\beta}(mW.m^{-2})$ −12.29 ± .04 W83

Radio (*mJy*) *2cm* 32 MiAl82; *6cm* 28 ZPB89

Central Star:
B 17.3 *V* 16.4 *Qual:* C TASG91 *Spectrum:* WR ? ATS91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.49 (CaKa71); 3.3 (Ac78); 4.02 (Da82); 3.00 (AGNR84); 4.6 (Ma84); 6.26 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW77, He67, Ma81, Mi79, PAKS89, Pe91, Po80, Sa75, TAGS89, TeOu88, VKDA65, Vo70, W75, W88, WoDe79, Wr66

357.1+01.9

Th 3-24, PK 357+2°7, ESO 455-09

Disc.: The 1964	*Diameter* (″)	
	opt. St. ATS91	
1950: 17 27 39 -30 15.0 LHSW81		
2000: 17 30 51 -30 17.2 .		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1313
[*O*III]	436.3	–	[*N*II]	658.4	2123
	500.7	502	[*S*II]	671.7	262
*He*I	587.6	–		673.1	221

$\lg F_{H\beta}(mW.m^{-2})$ −14.2 ± .3 ASTR91

IR Class: .
J
H
K > 9.8
L
Photom. AlGl75

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, Al79, MaC83, PAKS89, Sa76, TeOu88

357.1–04.7

H 1-43, PK 357–4°3, ESO 394-15, He 2-313, VV' 297, Wray 16-335, IRAS 17549-3347

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* +76.0 ± 11.0 STPP83	
1950:	17 54 56.7	-33 47 24	IRAS	*opt.* 2.	CK88		
	17 54 57	-33 47.4	LHSW81				
2000:	17 58 15	-33 47.6	.	*radio* 3.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-04						*IR Class:* S		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	708	*J*		12μm	0.49	2
[*OIII*]	436.3	–	[*NII*]	658.4	453	*H*	8.58	25μm	9.10	3
	495.9	–	[*SII*]	671.7	11	*K*	8.22	60μm	8.07	3
HeI	587.6	–		673.1	22	*L*		100μm	27.85	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.52 ± .07	ASTR91			*Photom.*	AIGI74	*Radio* (*mJy*)	*2cm*	
									6cm 6	ZPB89

Central Star:
B 15.91 *V* 15.42 *Qual:* A TASG91

Notes: Likely a galactic bulge PN (AKSR91). FC incorrect in PK67.
Distance (kpc) stat.: 13.2 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, PAKS89, Sa76, SaSt73, StAc87, TAGS89, Wr66

357.1–06.1

M 3-50, PK 357–6°1, ESO 394-25, Sa 2-290, VV' 327

		Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +24.0 ± 11.0 STPP83	
			opt. 4.	CaKa71		
1950:	18 00 45	-34 28.7	LHSW81			
2000:	18 04 05	-34 28.5	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20							
HeII	468.6 *nm*	74	$H\alpha$	656.3 *nm*	469		
[*OIII*]	436.3	–	[*NII*]	658.4	826		
	500.7	1040	[*SII*]	671.7	70		
HeI	587.6	–		673.1	74		
$\lg F_{H\beta}(mW.m^{-2})$		−12.96 ± .10	ASTR91				

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 11.15 (CaKa71); 9.50 (Ac78); 8.3 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, CaWy76, Iw73, PAKS89, Pe91, Sa75, W75, W88, Zi75

357.2+07.4

M 4-3, PK 357+7°1, ESO 519-07, He 2-202, Sa 2-175, Th 3-2, Wray 16-256, IRAS 17075-2705

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel*: +156.0 ± 11.0STPP83
1950:	17 07 35.9	-27 05 07	IRAS	*opt.* 8. : CS90	
	17 07 34.7	-27 05 03	GPGV83		
2000:	17 10 41.9	-27 08 44	.	*radio* 1.4 ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-08

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	856
[*O*III]	436.3	–	[*N*II]	658.4	86:
	500.7	956	[*S*II]	671.7	
*He*I	587.6	31		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-12.2 \pm .4$ ASTR91

IR Class: N

J	12.34	
H	11.97	
K	11.42	
L		
Photom.	PM87	

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.27	1
25μm	3.17	3
60μm	1.73	3
100μm	8.78	1

Radio (*mJy*) *2cm* *6cm* 28 GPGV83

Central Star:
B 18.4 *V* 17.9 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.20 (AGNR84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, AlGl74, AlKe87, He67, He90, LHSW81, PAKS89, PrPe89, Sa75, StKa89, TeOu88, W66, W75, W88, WeHe67, Wr66

357.2+02.0

H 2-13, PK 357+2°6, ESO 455-12, VV' 209, Sa 3-59, Wray 17-86

			Disc.: Haro 1952	*Diameter* (″)	
				opt. St. ATS91	
1950:	17 27 55	-30 08.4	LHSW81		
2000:	17 31 07	-30 10.6	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

*He*II	468.6 *nm*	10:	$H\alpha$	656.3 *nm*	1996
[*O*III]	436.3	–	[*N*II]	658.4	529
	500.7	2081	[*S*II]	671.7	41
*He*I	587.6	61		673.1	73

$\lg F_{H\beta}(mW.m^{-2})$ $-13.50 \pm .10$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, Al79, ArKo68, PAKS89, Sa76, StAc87, TeOu88, Wr66

357.2+01.4

Al 2-H, PK 357+1°2

				Disc.: Allen 1979	*Diameter (")*		
					opt. St. CS90		
1950:	17 30 04.3	-30 24 27	AI79				
2000:	17 33 17.0	-30 26 31	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-13

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	678
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	286	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: PAKS91, TeOu88

357.2–04.5

H 1-42, PK 357–4°1, ESO 394-14, He 2-310, Sa 2-270, VV' 294, Wray 16-334, IRAS 17541-3335

				Disc.: Haro 1952	*Diameter (")*	*Rvel:* -79.0 ± 5.0 STPP83	
1950:	17 54 06.7	-33 35 25	IRAS		*opt.* 5.8 CaKa71		
	17 54 07	-33 35.4	LHSW81				
2000:	17 57 25	-33 35.7	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	538
[*O*III]	436.3	6	[*N*II]	658.4	35
	500.7	1261	[*S*II]	671.7	4
*He*I	587.6	23		673.1	6

$\lg F_{H\beta}(mW.m^{-2})$ $-11.7 \pm .3$ ASTR91

IRAS Fluxes (Jy)		*Qual.*
12μm	1.28	1
25μm	3.27	3
60μm	3.05	3
100μm	38.48	1

Radio	*2cm*	32	MiAl82
(*mJy*)	*6cm*	40	Ca82

Central Star:
B 17.3 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.26 (CaKa71); 3.20 (Da82); 2.50 (AGNR84); 4.2 (Ma84); 5.02 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, He67, Ka76, Kh79, LNP89, Ma81, Mi79, PAKS89, Sa75, TAGS89, VDKA75, VKDA73, Vor70, Wr66

77.10292 Kharadze E.K., Bartaya R.A., Vorontsov-Velyaminov B.A., Kostyakova E.B., Dokuchaeva O.D., Arhipova V.P. *Astron. Tsirk. 947,6* The new absolute intensities of the emission lines of 15 PN, seen in the galactic-centre direction.

357.3+04.0

H 2-7, PK 357+4°1, ESO 454-16, Sa 2-192, VV' 183, IRAS 17202-2856

			Disc.: Haro 1952	*Diameter* (″)	
1950:	17 20 15.6	-28 56 21	IRAS	*opt.* 4.5 CaKa71	
	17 20 14.7	-28 56 19	PK67		
2000:	17 23 25.0	-28 59 05	.	*radio* 4.1 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-16

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1318
[OIII]	436.3	–	[*N*II]	658.4	46
	500.7	955	[*S*II]	671.7	
*He*I	587.6	67		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.3 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.77	1
25μm	1.31	3
60μm	2.90	3
100μm	13.43	1

Radio (*mJy*) *2cm* 9 ZPB89; *6cm*

Central Star: AG82 237 — m_{pg} 20.5 *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 9.3 (CaKa71); 8.0 (Ma84); 9.92 (CKS91)

Bibliography: *PK67*, AG82, AcMa77, CaWy76, HLSW77, Iw73, PAKS91, PBOZ88, Sa75, TeOu88, W88

357.3+03.3

M 3-41, PK 357+3°2, ESO 454-25, He 2-223, VV' 191, Wray 17-79, IRAS 17228-2919

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* -69.0 ± 11.0 STPP83
1950:	17 22 48.7	-29 19 17	IRAS	*opt.* 4.3 PK67	
	17 22 48	-29 19.3	HLSW77		
2000:	17 25 59	-29 21.9	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-26

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1155
[OIII]	436.3	–	[*N*II]	658.4	765
	495.9	–	[*S*II]	671.7	37
*He*I	587.6	15		673.1	67

$\lg F_{H\beta}(mW.m^{-2})$ $-12.96 \pm .10$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.12	1
25μm	2.37	3
60μm	2.93	2
100μm	27.93	1

Radio (*mJy*) *2cm* 16 MiAl82; *6cm* 75 Mi79

Central Star: *B* 17.34 *V* 16.31 *Qual:* B TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.79 (CaKa71); 4.3 (Ac78); 2.07 (Da82); 1.80 (AGNR84); 3.4 (Ma84); 3.23 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al78, He67, LNP89, Ma81, PAKS89, PFMA82, Sa76, SaSt73, StAc87, TeOu88, VKDA65, Vo70, W88, Wr66

357.4–03.2

M 2-16, PK 357–3°2, ESO 394-04, He 2-297, Sa 2-256, VV 121, VV' 273, Wray 16-320, IRAS 17492-3245

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* +106.0 ± 11.0	STPP83
1950:	17 49 17.0	-32 45 09	IRAS	*opt.* 5.4	CaKa71		
	17 49 17.7	-32 45 12	Mi76				
2000:	17 52 34.4	-32 45 52	.	*radio* 2.2	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-14						*IR Class:* N		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	12	$H\alpha$	656.3 *nm*	869	*J*	13.16	12μm	2.52	1
[*OIII*]	436.3	–	[*NII*]	658.4	668	*H*	13.54	25μm	5.89	1
	500.7	1095	[*SII*]	671.7	34	*K*	12.40	60μm	4.90	3
HeI	587.6	41		673.1	58	*L*		100μm	70.50	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.53 ± .10	ASTR91			*Photom.*	Wh85	*Radio* 2cm	18	MiAl82
								(*mJy*) 6cm	25	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.64 (CaKa71); 3.95 (Ac78); 1.8 (Ma84); 6.60 (CKS91)

Bibliography: *PK67*, AcMa77, He67, Ka76, LHSW81, PAKS91, PM87, PPFS87, Pe91, Sa75, VDKA75, VKDA73, Vor70, W88, Wr66

357.4–03.5

M 2-18, PK 357–3°4, ESO 394-08, He 2-301, Sa 2-261, VV 124, VV' 278, Wray 16-324, IRAS 17503-3258

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* −3.0 ± 11.0	STPP83
1950:	17 50 20.4	-32 58 13	IRAS	*opt.* 5.	PK67		
	17 50 21	-32 58.3	LHSW81				
2000:	17 53 38	-32 58.9	.	*radio* 1.5	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	762	*J*		12μm	1.88	1
[*OIII*]	436.3	3:	[*NII*]	658.4	174	*H*		25μm	2.58	3
	500.7	468	[*SII*]	671.7	6	*K*	> 9.5	60μm	1.97	3
HeI	587.6	28		673.1	11	*L*		100μm	47.94	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.48 ± .10	ASTR91			*Photom.*	AlGl74	*Radio* 2cm		
								(*mJy*) 6cm	17	ZPB89

Central Star:
B 17.7 *V* 17.3 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.49 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al79, He67, Ka76, PAKS89, Sa75, Wr66

357.4–04.6

M 2-22, PK 357–4°2, ESO 394-16, He 2-316, Sa 2-273, VV 132, VV' 302, Wray 16-341, IRAS 17552-3328

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* −92.0 ± 11.0 STPP83
1950:	17 55 14.1	-33 28 25	IRAS	*opt.* 5.2 CaKa71	
	17 55 14.7	-33 28 23	Mi76		
2000:	17 58 32.7	-33 28 37	.	*radio* 5. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-22					
HeII	468.6 *nm*	33	*Hα* 656.3 *nm*		580
[*OIII*]	436.3	–	[*NII*] 658.4		391
	500.7	878	[*SII*] 671.7		28
HeI	587.6	37	673.1		41
$\lg F_{H\beta}(mW.m^{-2})$		−12.6 ± .3 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.22	1
25μm	0.84	3
60μm	2.22	3
100μm	45.54	1
Radio (*mJy*) *2cm*	36	MiAl82
6cm	6.5	ZPB89

Central Star:
B 17.3 *V* 16.5 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.11 (CaKa71); 3.98 (Ac78); 2.2 (Ma84); 8.47 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Ka76, Kh76, LHSW81, PAKS89, Pe91, Sa75, TAGS89, VDKA75, VKDA73, Vor70, W88, Wr66

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357.5+03.2

M 3-42, PK 357+3°4, Sa 3-52, VV' 192, Wray 17-80, IRAS 17238-2913

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* −250.0 ± 11.0STPP83
1950:	17 23 49.7	-29 13 05	IRAS	*opt.* 5.3 PK67	
	17 23 49.1	-29 13 01	Sa76		
2000:	17 26 59.9	-29 15 32	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16					
HeII	468.6 *nm*	43:	*Hα* 656.3 *nm*		779
[*OIII*]	436.3	–	[*NII*] 658.4		876
	500.7	1153	[*SII*] 671.7		104
HeI	587.6	–	673.1		123
$\lg F_{H\beta}(mW.m^{-2})$		−13.4 ± .3 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.84	1
25μm	1.41	3
60μm	2.81	3
100μm	26.52	1
Radio (*mJy*) *2cm*		
6cm	6	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.70 (CaKa71); 6.39 (Ac78); 4.0 (Ma84); 6.83 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al79, Iw73, PAKS89, Pe91, Po80, StAc87, TeOu88, W88, WoDe79, Wr66

357.5+03.1

Th 3-16, PK 357+3°5, ESO 454-28, Sa 3-53

			Disc.: The 1964	*Diameter* (″)	
				opt. 6. CS90	
1950:	17 24 13.4	-29 18 44	PK67		
2000:	17 27 24.3	-29 21 13	.	*radio* 4.5 ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	880
[*O*III]	436.3	–	[*N*II]	658.4	317
	495.9	–	[*S*II]	671.7	59
*He*I	587.6	–		673.1	71

$\lg F_{H\beta}(mW.m^{-2})$ $-13.3 \pm .2$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AGNR84, Al79, AlGl75, GPGV83, HLSW77, PAKS91, Sa76, StAc87, TeOu88, WoDe79

357.6+02.6

H 1-18, PK 357+2°4, ARO 252, ESO 455-03, He 2-234, Sa 2-210, VV' 205, IRAS 17265-2930

			Disc.: Haro 1952	*Diameter* (″)	*Rvel*: -204.0 ± 11.0STPP83
1950:	17 26 31.8	-29 30 29	IRAS	*opt. St.* CS90	
	17 26 32.0	-29 30 30	Mi76		
2000:	17 29 43.3	-29 32 49	.	*radio* 1.5 ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1967
[*O*III]	436.3	–	[*N*II]	658.4	1518
	500.7	1139	[*S*II]	671.7	24
*He*I	587.6	88		673.1	71

$\lg F_{H\beta}(mW.m^{-2})$ $-13.2 \pm .3$ ASTR91

IR Class: S

J	8.92	*IRAS Fluxes* (*Jy*)		*Qual.*	
H	8.06	12μm	2.20	1	
K	7.91	25μm	5.39	3	
L		60μm	6.59	3	
Photom. AIGI74		100μm	35.69	1	
		Radio (*mJy*)	*2cm* 36	MiAl82	
			6cm 32.3	PBOZ88	

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.90 (AGNR84)

Bibliography: *PK67*, AGR89, AcMa77, Al79, AlKe87, GPGV83, He67, He90, Hi71, LHSW81, PAKS91, Pe91, Ru70, Sa75, StKa89, TeOu88, VoCo90

357.6+01.7

H 1-23, PK 357+1°1, ESO 455-16, He 2-242, Sa 2-214, VV' 214, Wray 16-285, IRAS 17296-2958

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* −72.0 ± 11.0 STPP83	
1950:	17 29 37.3	-29 58 10	IRAS	*opt.* 2.8	CaKa71		
	17 29 34.9	-29 58 09	GPGV83				
2000:	17 32 46.9	-30 00 15	.	*radio* 2.5	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-10						*IR Class:* D?		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1592	*J*		12μm	2.52	1
[*OIII*]	436.3	–	[*NII*]	658.4	463	*H*	8.8	25μm	4.90	3
	500.7	1286	[*SII*]	671.7	36	*K*	7.8	60μm	5.87	1
HeI	587.6	75		673.1	71	*L*		100μm	75.08	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.9 ± .3 ASTR91				*Photom.*	AlGl74	*Radio* 2*cm*		
								(*mJy*) 6*cm*	40	PFMA82

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.23 (CaKa71); 3.31 (Ac78); 2.80 (AGNR84); 0.8 (Ma84); 4.72 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Al79, AlGl75, AlKe85, AlKe87, He67, He90, LHSW81, PAKS91, Pe91, Sa75, StKa89, TeOu88, VoCo90, Wr66

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357.6+01.0

TrBr 4, PK 357+1°3, TeJu 21

			Disc.: Terzan et al 1978	*Diameter* (″)		*Rvel:* −122. ± 60. 91..3001	
1950:	17 32 31	-30 19.6	78..5001	*opt.* 30.	78..5001		
2000:	17 35 44	-30 21.5	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-05-30					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	164
	500.7	28	[*SII*]	671.7	
HeI	587.6	–		673.1	

Bibliography: TeOu88

78..5001 Terzan A., Bernard A., Ju K.H. *C.R. Acad. Sci. 287,B 235* Deux objets diffus et une nebuleuse planetaire detectes dans la direction du centre galactique.

91..3001 Thompson D.J., Djorgovski S., De Carvalho R.R. *Pub. Astron. Soc. Pac. 103,487* New planetary nebulae in the direction of the galactic bulge

357.6–03.3

H 2-29, PK 357−3°3, ESO 394-06, Sa 3-87, VV' 276, IRAS 17499-3240

				Disc.: Haro 1952	*Diameter* (″)	
1950:	17 49 57.1	-32 40 04	IRAS		*opt.* 4.8 CaKa71	
	17 50 00.2	-32 40 04	PK67			
2000:	17 53 16.8	-32 40 41	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1015
[*O*III]	436.3	–	[*N*II]	658.4	628
	500.7	104	[*S*II]	671.7	77:
*He*I	587.6	80		673.1	80:

$\lg F_{H\beta}(mW.m^{-2})$ $-13.8 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	6.84	1
25μm	3.49	1
60μm	1.48	3
100μm	38.37	1

Central Star: AG82 268 — $m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 4.45 (CaKa71); 1.2 (Ma84)

Bibliography: *PK67*, AG82, AST89, AcMa77, Al79, LHSW81, Sa76, StAc87, W88

357.9–03.8

H 2-30, PK 358−3°2, ESO 394-11, VV' 287, IRAS 17529-3236

				Disc.: Haro 1952	*Diameter* (″)	
1950:	17 52 57.2	-32 36 58	IRAS		*opt.* 11.2 CaKa71	
	17 52 57.2	-32 37 10	PK67			
2000:	17 56 13.7	-32 37 34	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29

*He*II	468.6 *nm*	81	$H\alpha$	656.3 *nm*	1053
[*O*III]	436.3	–	[*N*II]	658.4	–
	500.7	605	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.4 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.86	1
25μm	0.96	3
60μm	1.83	3
100μm	22.49	1

Central Star: AG82 273 — $m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.14 (CaKa71); 4.7 (Ma84)

Bibliography: *PK67*, AG82, AcMa77, Iw73, Ko89, LHSW81, MaC83, Sa76, Zi75

357.9–05.1

M 1-34, PK 357−5°1, ESO 394-18, He 2-324, Sa 2-279, VV 135, VV' 313, Wray 16-348, IRAS 17580-3317

			Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* +2.0 ± 11.0 STPP83
1950:	17 58 04.8	-33 17 41	IRAS	*opt.* 11.2 CaKa71	
	17 58 04.7	-33 17 43	Mi76		
2000:	18 01 22.4	-33 17 44	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

HeII	468.6 *nm*	20	*Hα*	656.3 *nm*	840
[*OIII*]	436.3	–	[*NII*]	658.4	1442
	500.7	911	[*SII*]	671.7	116
HeI	587.6	33		673.1	134

$\lg F_{H\beta}(mW.m^{-2})$ −12.5 ± .2 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.34	1
25μm	0.39	2
60μm	3.50	3
100μm	27.46	1

Radio (*mJy*) *2cm* 13 MiAl82, *6cm*

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.39 (CaKa71); 3.98 (Ac78); 3.5 (Ma84); 4.99 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, He67, Iw73, KAS91, Ka76, LHSW81, PAKS89, Sa75, VDKA75, VKDA73, Vor70, W75, Wr66, Zi75

358.0+09.3

Th 3-1, PK 358+9°1, ESO 518-11, Sa 2-172

			Disc.: The 1964	*Diameter* (″)	
				opt. 10. : CS90	
1950:	17 02.7	-25 20	Sa75		
2000:	17 05.8	-25 24	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11

HeII	468.6 *nm*	17	*Hα*	656.3 *nm*	410
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	930	[*SII*]	671.7	
HeI	587.6	22		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.5 ± .2 ASTR91

IR Class: .

J	
H	
K	8.6
L	

Photom. AlGl75

Central Star:
B 17.6 *V* 17.8 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, HLSW80, PAKS89

358.0+07.5

TeJu 8

				Disc.: Terzan et al 1980	*Diameter* (″)	*Rvel:* +43. ± 60. 91..3001
					opt. 17. 91..3001	
1950:	17 09.4	-26 22	90..2002			
2000:	17 12.5	-26 26	.			

80.23001 Terzan A., Ju K.H. *The Messenger 20,6-7* A photometric study of the bright cloud B in Sagittarius: III.
90..2002 Djorgovski S., Thompson D.J., De Carvalho R.R., Mould J.R. *Astron. J. 100,599* A rich, nearby galaxy cluster in Sagittarius
91..3001 Thompson D.J., Djorgovski S., De Carvalho R.R. *Pub. Astron. Soc. Pac. 103,487* New planetary nebulae in the direction of the galactic bulge

358.0+02.6

Th 3-23, PK 358+2°2, ESO 455-06, IRAS 17271-2907

				Disc.: The 1964	*Diameter* (″)	
1950:	17 27 11.5	-29 07 57	IRAS		*opt. St.* CS90	
	17 27 13	-29 07.3	LHSW81			
2000:	17 30 24	-29 09.6	.			

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-14					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	37	[*SII*]	671.7	
HeI	587.6	–		673.1	

IRAS Fluxes (*Jy*)		*Qual.*
12μm	1.92	1
25μm	1.81	3
60μm	3.52	1
100μm	37.68	1

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, Al79, MaC83, PAKS91, Sa76

358.0–05.1

Pe 1-11, PK 358–5°1, ESO 394-19, Sa 2-280, VV' 315, Wray 16-349, IRAS 17584-3315

				Disc.: Minkowski 1948	*Diameter* (″)	
1950:	17 58 24.8	-33 15 29	IRAS		*opt.* 8.8 CaKa71	
	17 58 25	-33 15.3	LHSW81			
2000:	18 01 43	-33 15.3	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01					
HeII	468.6 *nm*	58	$H\alpha$	656.3 *nm*	415
[*OIII*]	436.3	–	[*NII*]	658.4	1340
	500.7	1016	[*SII*]	671.7	108
HeI	587.6	–		673.1	95

$\lg F_{H\beta}(mW.m^{-2})$	$-13.2 \pm .4$	ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.35	1
25μm	1.46	3
60μm	2.10	3
100μm	24.42	1

Radio (*mJy*)	*2cm*		
	6cm	8	ZPB89

Notes: Likely a galactic bulge PN (AKSR91). M star seen inside the nebula but physical connection doubtful.
Distance (kpc) stat.: 3.89 (CaKa71); 2.3 (Ma84); 6.43 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, PAKS89, Sa75, W75, Wr66, Zi75

358.2+04.2

M 3-8, PK 358+4°1, ESO 454-22, He 2-219, VV' 186, Wray 16-271, IRAS 17217-2803

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +95.0 ± 11.0 STPP83
1950:	17 21 42.7	-28 03 17	IRAS	*opt.* 5.4	CaKa71	
	17 21 43.2	-28 03 15	Mi76			
2000:	17 24 52.2	-28 05 55	.	*radio* 2.9	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1431
[*OIII*]	436.3	–	[*NII*]	658.4	710
	500.7	596	[*SII*]	671.7	36
HeI	587.6	55:		673.1	50
$\lg F_{H\beta}(mW.m^{-2})$		−13.06 ± .10	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12*μm*	0.67	2
25*μm*	4.05	3
60*μm*	5.01	3
100*μm*	14.62	1
Radio (*mJy*) *2cm*		
6cm	18.2	ZPB89

Central Star:
V 17.5 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.77 (CaKa71); 3.70 (Ac78); 3.98 (Da82); 3.10 (AGNR84); 4.9 (Ma84); 7.09 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al78, HLSW77, He67, LHSW81, LNP89, Ma81, Mi79, PAKS89, PBOZ88, PM87, Pe91, PrPe89, Sa76, SaSt73, StAc87, TAGS89, TeOu88, VKDA65, Vo70, W88, Wr66

358.2+03.6

M 3-10, PK 358+3°1, ARO 250, ESO 454-27, He 2-225, Sa 2-198, VV' 193, Wray 16-275, IRAS 17241-2825

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −96.2 ± 10.1 STPP83
1950:	17 24 09.7	-28 25 23	IRAS	*opt.* 3.2	CaKa71	
	17 24 11.0	-28 25 22	Mi76			
2000:	17 27 20.6	-28 27 51	.	*radio* 3.	ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
HeII	468.6 *nm*	15	*Hα*	656.3 *nm*	957
[*OIII*]	436.3	9	[*NII*]	658.4	209
	500.7	1928	[*SII*]	671.7	11
HeI	587.6	36		673.1	18
$\lg F_{H\beta}(mW.m^{-2})$		−12.51 ± .10	ASTR91		

IR Class: .		
J		
H		
K	9.6	
L		
Photom.	AlGl74	

IRAS Fluxes (*Jy*)		*Qual.*	
12*μm*	0.60	1	
25*μm*	5.11	3	
60*μm*	4.27	3	
100*μm*	16.23	1	
Radio	*2cm* 12		MiAl82
(*mJy*)	*6cm* 44		KPK81

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.63 (CaKa71); 4.76 (Ac78); 4.35 (Da82); 3.60 (AGNR84); 6.1 (Ma84); 5.41 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al79, HLSW77, He67, Hi71, Iw73, Ka76, LNP89, Ma81, Mi79, PAKS89, PBOZ88, Pe91, Sa75, TeOu88, VDKA75, VKDA65, VKDA73, Vo70, W88, WoDe79, Wr66, ZTPS89

358.2+03.5

H 2-10, PK 358+3°2, ESO 454-31, He 2-226, Sa 2-199, VV' 194, Wray 17-82, IRAS 17243-2828

			Disc.: Haro 1952	*Diameter* (″)		*Rvel*: +50.0 ± 11.0 STPP83	
1950:	17 24 22.0	-28 28 39	IRAS	*opt.* 5.	PK67		
	17 24 23	-28 28.7	HLSW77				
2000:	17 27 33	-28 31.2	.	*radio* 2.0	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	1483	*J*		12μm	2.72	1
[*O*III]	436.3	–	[*N*II]	658.4	120	*H*		25μm	1.67	3
	500.7	1717	[*S*II]	671.7	7:	*K*	> 9.5	60μm	2.21	1
*He*I	587.6	50		673.1	9:	*L*		100μm	20.37	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.17 ± .10	ASTR91			*Photom.*	AlGl74	*Radio* (*mJy*)	*2cm*	
									6cm 20	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.15 (CKS91); 7.22 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al79, ArKo68, He67, PAKS89, PBOZ88, Sa75, TeOu88, VKDA65, Vo70, WoDe79, Wr66

358.2–01.1

Bl D, PK 358−1°1, Al 2-L, ESO 455-34, Wray 17-98

			Disc.: Blanco 1961	*Diameter* (″)		
				opt. 13.	CaKa71	
1950:	17 42 49	-31 02.4	LHSW81			
2000:	17 46 03	-31 03.5	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	2011
[*O*III]	436.3	–	[*N*II]	658.4	2579
	500.7	1221	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.29 (CaKa71); 1.1 (Ma84)

Bibliography: *PK67*, Al79, PAKS89, Sa76, TeOu88, Wr66

358.3+03.0

H 1-17, PK 358+3°7, ESO 455-02, He 2-233, Sa 2-209, VV' 204, Wray 17-85, IRAS 17265-2838

				Diameter (″)		*Rvel:* +1.0 ± 11.0 STPP83
			Disc.: Haro 1952			
1950:	17 26 30.6	-28 38 03	IRAS	*opt.* 5.	PK67	
	17 26 31	-28 38.2	LHSW81			
2000:	17 29 41	-28 40.5	.	*radio* 0.9	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	5:	$H\alpha$	656.3 *nm*	1943	*J*		12μm	1.45	3
[OIII]	436.3	14:	[*N*II]	658.4	503	*H*		25μm	11.31	3
	500.7	2337	[*S*II]	671.7	10:	*K*	> 9.7	60μm	6.19	3
*He*I	587.6	57		673.1	29	*L*		100μm	33.88	1
lg$F_{H\beta}(mW.m^{-2})$		−13.05 ± .10	ASTR91			*Photom.*	AIGI74	*Radio* *2cm*		
						Spectr.	PPOJ86	(*mJy*) *6cm*	35	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 3.75 (CKS91); 10.8 (CKS91)

Bibliography: *PK67*, AKSJ89, AST89, AcMa77, Al79, He67, KAS91, PAKS89, Sa75, TeOu88, VKDA65, Vo70, WoDe79, Wr66

358.3+01.2

Bl B, PK 358+1°4, ESO 455-26

				Diameter (″)		
			Disc.: Blanco 1961			
				opt. St.	CS90	
1950:	17 33 49	-29 38.5	PK67			
2000:	17 37 01	-29 40.3	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-04					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	12074
[OIII]	436.3	–	[*N*II]	658.4	11879
	500.7	2616	[*S*II]	671.7	484
*He*I	587.6	411		673.1	889
lg$F_{H\beta}(mW.m^{-2})$		−14.7 ± .3	ASTR91		

Bibliography: *PK67*, Al79, Ko89, LHSW81, MaC83, Sa76, TeOu88

358.3−02.5

Al 2-O, PK 358−2°4, IRAS 17484-3135

				Diameter (″)		*Rvel:* −85.0 ± . KFL88
			Disc.: Allen 1979			
1950:	17 48 29.5	-31 35 19	IRAS			
	17 48 29.9	-31 35 17	Al79			
2000:	17 51 44.7	-31 36 00	.	*radio* 2.4	RPZM90	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-13						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	2.29	1
[OIII]	436.3	–	[*N*II]	658.4	81	25μm	1.37	3
	500.7	84	[*S*II]	671.7		60μm	3.83	2
*He*I	587.6	–		673.1		100μm	103.90	1
						Radio *2cm*		
						(*mJy*) *6cm*	36.8	RPZM90

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: Iy87, PAKS91

358.3–21.6

IC 1297, PK 358–21°1, ESO 337-20, He 2-431, Sa 2-386, StWr 2-27, VV 225, VV' 487, IRAS 19139-3942

			Disc.: Fleming 1894	*Diameter* (″)	*Rvel:* +13.7 ± 3.5 STPP83
1950:	19 13 57.1	-39 42 10	IRAS	*opt.* 7. CaKa71	*Expansion Velocities* (*km/s*)
	19 13 57	-39 42.2	HLSw77		[OIII] 13.0 We89
2000:	19 17 23	-39 36.8	.		[NII] 34.5 We89

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-02					
*He*II	468.6 *nm*	39	$H\alpha$	656.3 *nm*	324
[*O*III]	436.3	8	[*N*II]	658.4	52:
	500.7	1390	[*S*II]	671.7	4
*He*I	587.6	13		673.1	6

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.35	3
25μm	2.86	3
60μm	5.67	3
100μm	3.23	3

$\lg F_{H\beta}$ −10.95 ± .03 W83, 85..3062, SK89
IUE Spectra: *LW*(3) *SW*(3)

Central Star: AG82 358 — CPD -39 8386; GCRV 11718; HD 180206; RU CrA; AN 18.1907; CD -39 13207; HV 1318
B 14.8 *V* 14.2 *Qual:* C SK89 *Spectrum:* WC 4 Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 4.7,5.0 (CaKa71); 5.1 (Ac78); 3.0 (Ma84); 3.76 (CKS91)

Bibliography: *PK67*, AG82, AKSJ89, AST89, Ac75, Ac76, AcMa77, BFM80, Bo76, Ca82, CaWy76, CePe83, CePe85, Ch89, De71, Do73, Dr80, Fe82, FeAl87, Gr71, He67, HeAu87, Iw73, IwKa65, KAS91, Ka86, Kal86, KrK68, PAKS89, Pe83, Pe91, SGBO84, Sa75, Sa84, SaHa82, Sh85, StWr72, TAGS89, TASG91, WeHe67, ZuAl86

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358.4+03.3

Th 3-19, PK 358+3°3, Al 2-C?, ESO 454-34, IRAS 17253-2824

			Disc.: The 1964	*Diameter* (″)			
1950:	17 25 23.6	-28 24 38	IRAS	*opt. St.*	Al79		
	17 25 32.2	-28 24 56	GPGV83				
2000:	17 28 41.8	-28 27 19	.	*radio* 0.6	ZPB 89		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-10						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	*J*		12μm	4.51	3
[*OIII*]	436.3	–	[*NII*]	658.4	8	*H*		25μm	7.12	3
	500.7	114	[*SII*]	671.7		*K*	> 9.4	60μm	1.84	1
HeI	587.6	–		673.1		*L*		100μm	20.16	1
						Photom.	AIGI75	*Radio* (*mJy*) *2cm*		
								6cm	15	GPGV83

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.30 (AGNR84)

Bibliography: *PK67*, AGR89, HLSW77, PBOZ88, Sa76, TeOu88, WoDe79, ZTPS89

358.5+05.4

M 3-39, PK 358+5°1, ESO 519-13, He 2-212, Sa 2-188, VV' 179, Wray 16-265, IRAS 17180-2708

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* +4.0 ± 3.0	MWF88
1950:	17 18 04.0	-27 08 42	IRAS	*opt.* 18.	CaKa71	*Expansion Velocities* (*km/s*)	
	17 18 04.1	-27 08 32	Mi76			[OIII] 25.0	MWF88
2000:	17 21 11.6	-27 11 28	.	*radio* 20.	ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-16							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3154		12μm	2.35	3
[*OIII*]	436.3	–	[*NII*]	658.4	724		25μm	20.31	3
	500.7	2203	[*SII*]	671.7	122		60μm	32.09	3
HeI	587.6	–		673.1	105		100μm	20.15	3
$\lg F_{H\beta}(mW.m^{-2})$		−12.98 ± .06	SK89				*Radio* (*mJy*) *2cm*	284	MiAl82
							6cm	249	ZPB89

Distance (kpc) stat.: 4.3-4.4 (CaKa71); 3.25 (Ac78); 1.22 (Da82); 0.92 (AGNR84); 1.5 (Ma84); 1.94 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Ca82, Fe68, He67, Iw73, Ka76, KrK68, LH91, LNP89, Ma81, Mi79, OlRa86, PAKS91, PBOZ88, PM87, PPOJ86, PrPe89, STPP83, Sa75, VKDA65, Vo70, VoCo90, We89, Wr66, ZTPS89

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358.5+03.7

Al 2-B, PK 358+3°9

			Disc.: Allen 1979		*Diameter* (″)		
					opt. St.	CS90	
1950:	17 24 37.9	-28 08 36	AI79				
2000:	17 27 47.1	-28 11 03	.				
Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-14							
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100		
[*O*III]	436.3	–	[*N*II]	658.4	–		
	500.7	74	[*S*II]	671.7			
*He*I	587.6	–		673.1			

Notes: Likely a galactic bulge PN (AKSR91). Northern object of a close pair not resolved in the FC.

Bibliography: PAKS91, TeOu88

358.5+02.9

Al 2-F, PK 358+2°4

			Disc.: Allen 1979		*Diameter* (″)		
					opt. St.	CS90	
1950:	17 27 20.6	-28 33 41	AI79				
2000:	17 30 30.5	-28 35 57	.				
Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31							
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2038		
[*O*III]	436.3	–	[*N*II]	658.4	–		
	500.7	1888	[*S*II]	671.7			
*He*I	587.6	52		673.1			
$\lg F_{H\beta}(mW.m^{-2})$	$-14.2 \pm .3$	ASTR91					

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: Sa76, Wr66

358.5+02.6

HDW 8, PK 358+2°5, Wray 16-282, HaWe 11

			Disc.: Hartl et al 1983		*Diameter* (″)		
					opt. 37.	87..1593	
1950:	17 28 36.9	-28 39 47	83.28034				
2000:	17 31 46.9	-28 41 57	.				
Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-14							
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2020		
[*O*III]	436.3	–	[*N*II]	658.4	398		
	500.7	1218	[*S*II]	671.7			
*He*I	587.6	116		673.1			
$\lg F_{H\beta}(mW.m^{-2})$	$-12.6 \pm .4$	ASTR91					

Bibliography: Ko89, PAKS91

83.28034 Hartl H., Dengel J., Weinberger R. *Mitteil. Astron. Gesellschaft 60, 325-327* Alte Planetarische Nebel: neue Kandidaten.

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358.5–02.5

M 4-7, PK 358–2°1, ESO 455-54, Al 2-P

			Disc.: Minkowski 1948	*Diameter* (″)	
				opt. 7. ATS91	
1950:	17 48 55	-31 29.4	LHSW81		
2000:	17 52 10	-31 30.1	.	*radio* 5.7 ZPB89	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-13

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	10
	500.7	80	[*S*II]	671.7	
*He*I	587.6	–		673.1	

Radio *2cm*
(*mJy*) *6cm* 33 ZPB89

Notes: Likely a galactic bulge PN (AKSR91). FC incorrect in PK67; true PN is Al 2-P (MaC83).
Distance (kpc) stat.: 5.64 (CKS91)

Bibliography: *PK67*, Al79, CaKa71, Ma84, PAKS91, Sa76, W88

358.5–04.2

H 1-46, PK 358–4°1, ESO 456-31, He 2-318, Sa 2-274, VV' 306, Wray 16-342, IRAS 17557-3221

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* -13.1 ± 10.1 STPP83
1950:	17 55 45.6	-32 21 33	IRAS	*opt. St.* ATS91	
	17 55 46.3	-32 21 33	Mi76		
2000:	17 59 02.4	-32 21 44	.	*radio* 1.2 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-16

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	896
[*O*III]	436.3	–	[*N*II]	658.4	149
	500.7	540	[*S*II]	671.7	4
*He*I	587.6	35		673.1	8

$\lg F_{H\beta}(mW.m^{-2})$ $-12.01 \pm .10$ ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	2.58	1
25μm	5.66	3
60μm	2.71	3
100μm	47.34	1

Radio *2cm* 54 MiAl82
(*mJy*) *6cm* 43 ZPB89

Central Star:
B 16.8 *V* 16.2 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.3 (Ma84); 3.53 (CKS91)

Bibliography: *PK67*, AcMa77, AlGl74, Ca82, HLSW77, He67, KPK81, Ka76, Mi79, PAKS91, PM87, PrPe89, Sa75, VDKA75, VKDA73, Vor70, Wr66

358.5–07.3

NGC 6563, PK 358–7°1, ARO 503, CD -33 12935, ESO 394-33, GCRV 10633, He 2-361, HD 166469, Sa 2-308, StWr 2-22, VV 154, VV' 359,, IRAS 18087-3352

			Disc.: Herschel 1837	*Diameter* (″)	*Rvel*: −29.5 ± 5.1 STPP83
1950:	18 08 43.2	-33 52 53	IRAS	*opt.* 47.5 CaKa71	*Expansion Velocities* (*km/s*)
	18 08 44.6	-33 52 46	Mi73		[OIII] 11.0 Sa84
2000:	18 12 03.2	-33 52 01	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12 N						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	26	*Hα*	656.3 *nm*	320	12μm	0.36	1
[*O*III]	436.3	7	[*N*II]	658.4	257	25μm	1.26	3
	500.7	1118	[*S*II]	671.7	15	60μm	13.64	3
*He*I	587.6	14		673.1	12	100μm	20.55	3
lg$F_{H\beta}$($mW.m^{-2}$)		−10.93 ± .05 O63, W83				*Radio* *2cm*	55	MiAl82
IUE Spectra:		*LW*(1) *SW*(1)				(*mJy*) *6cm*	77	Ca82

Central Star: AG82 293 —
B 17.33 *Qual:* B GaPo88

Notes: Monochromatic images (CJA87); ESO-NTT images by Schwartz H.E. and Melnick J. ESO-2.2m images by Baessgen M. and Bremer M.
Distance (kpc) indiv.: ext. 0.6 (Ac78); ext. 0.8 (Po83)
Distance (kpc) stat.: 1.2 (CaKa71); 1.59 (MiAl75); 1.60 (Ca76); 1.25 (Ac78); 1.41 (Da82); 1.30 (AGNR84); 1.9 (Ma84); 1.63 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, Ac75, Ac76, AcMa77, Ak70, AlMi72, CaNo73, CePe83, De71, Do73, FeAl87, Gr71, Gr72, Gu70, Gu88, He67, He71, HeAu87, Hi71, Iw73, IwKa65, KSK90, Ka70, Ka76, Ka83, Kh79, KrK68, LHSW81, LNP89, MaPo80, MeHa75, MiWe79, PAKS89, Pe71, Pe91, Ph84, PiKh79, RRA82, SGBO84, SK89, Sa75, Sab86, Sabb86, Sh85, SlOr65, StWr72, Te68, Th68, ThCo67, W75, We89, Wr66, ZuAl86

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90..3001 Morris M., Reipurth B. *Publ. Astron. Soc. Pac.,102,446* The optical form of the bipolar preplanetary nebula IRAS 09371+1212.

358.6+07.8

M 3-36, PK 358+7°1, ESO 519-10, He 2-203, Sa 2-178, VV' 167, Wray 16-258, IRAS 17095-2540

			Disc.: Minkowski 1948	*Diameter* (")		*Rvel:* +11.6 ± 10.1 STPP83
1950:	17 09 34.2	-25 40 07	IRAS	*opt.* 4.2	CaKa71	
	17 09 34	-25 40.0	LHSW81			
2000:	17 12 39	-25 43.5	.	*radio* 3.2	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	623
[*OIII*]	436.3	–	[*NII*]	658.4	–
	500.7	877	[*SII*]	671.7	
HeI	587.6	21		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ −12.45 ± .10 ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	0.26	1
25μm	0.92	3
60μm	2.38	3
100μm	4.77	1

Radio *2cm* (*mJy*) *6cm* 3.5 ZPB89

Central Star:
B 17.0 *V* 17.1 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 9.80 (CaKa71); 7.78 (Ac78); 5.9 (Ma84); 14.1 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, CaWy76, Fe68, He67, Iw73, MLG88, PAKS89, Pe91, Sa75, TeOu88, W88, Wr66

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358.6+01.8

M 4-6, PK 358+1°1, ESO 455-20, Sa 3-65, Th 3-68, IRAS 17320-2901

			Disc.: Minkowski 1948	*Diameter* (")		*Rvel:* −292.0 ± 11.0STPP83
1950:	17 32 05.0	-29 01 12	IRAS	*opt. St.*	CS90	
	17 32 03.4	-29 01 16	GPGV83			
2000:	17 35 14.0	-29 03 11	.	*radio* 2.	ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3680
[*OIII*]	436.3	–	[*NII*]	658.4	902
	500.7	2700	[*SII*]	671.7	
HeI	587.6	117		673.1	207

$\lg F_{H\beta}(mW.m^{-2})$ −14.3 ± .3 ASTR91

IRAS Fluxes (*Jy*) *Qual.*

12μm	1.37	3
25μm	4.16	3
60μm	4.28	1
100μm	63.08	1

Radio *2cm* (*mJy*) *6cm* 42 GPGV83

Central Star: AG82 247 —
$m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.60 (AGNR84)

Bibliography: *PK67*, AG82, AGR89, AST89, Al79, LHSW81, PAKS89, Pe91, Ro87, Sa76, StAc87, TeOu88, W88, ZTPS89

358.6–05.5

M 3-51, PK 358–5°4, ESO 394-27, He 2-337, Sa 3-118, VV' 334, Wray 16-365

			Disc.: Minkowski 1948		*Diameter* (″)		*Rvel*: +34.0 ± 11.0 STPP83
					opt. 9.2	CaKa71	
1950:	18 01 39	-32 54.3	LHSW81				
2000:	18 04 56	-32 54.1	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-27

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	599
[*O*III]	436.3	–	[*N*II]	658.4	541
	500.7	740	[*S*II]	671.7	74:
*He*I	587.6	–		673.1	67:

$\lg F_{H\beta}(mW.m^{-2})$ $-13.3 \pm .4$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.56 (CaKa71); 5.07 (Ac78); 4.6 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, PAKS89, Sa76, StAc87, Wr66, Zi75

358.7+05.2

M 3-40, PK 358+5°2, ESO 519-14, He 2-216, Sa 3-46, VV' 182, IRAS 17193-2705

			Disc.: Minkowski 1948		*Diameter* (″)		*Rvel*: +37.0 ± 11.0 STPP83
1950:	17 19 22.9	-27 05 56	IRAS		*opt. St.*	CS90	
	17 19 20.8	-27 05 45	Mi76				
2000:	17 22 28.3	-27 08 35	.		*radio* 2.5	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1873
[*O*III]	436.3	–	[*N*II]	658.4	1433
	495.9	–	[*S*II]	671.7	61
*He*I	587.6	15:		673.1	110

$\lg F_{H\beta}(mW.m^{-2})$ $-13.50 \pm .08$ SK89, ASTR91

IR Class: S+N

J	13.10	*IRAS Fluxes* (*Jy*)		*Qual.*
H	12.42	12μm	0.72	1
K	11.81	25μm	6.19	3
L		60μm	6.73	3
Photom.	KHM86	100μm	10.89	1
		Radio 2*cm*	24	MiAl82
		(*mJy*) 6*cm*	15.1	ZPB89

Central Star:
$B > 18.3$ $V > 17.2$ SK89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.1 (Ma84); 6.91 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Ca82, He67, KPK81, LHSW81, Mi79, PAKS89, PBOZ88, Sa76, Sh85, StAc87, TeOu88, VKDA65, Vo70

358.7–02.7

Al 2-R, PK 358–2°5

			Disc.: Allen 1979	*Diameter* (″)	
				opt. St. CS90	
1950:	17 50 22.8	-31 24 58	AI79		
2000:	17 53 37.4	-31 25 33	.		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-31

*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1993
[*O*III]	436.3	–	[*N*II]	658.4	369
	500.7	1348	[*S*II]	671.7	
*He*I	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-14.5 \pm .3$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91). Faint M star very close to the PN.

Bibliography: KFL88

358.7–05.2

H 1-50, PK 358–5°3, ESO 394-24, He 2-334, Sa 2-288, VV' 325, Wray 16-359, IRAS 18006-3241

			Disc.: Haro 1952	*Diameter* (″)	*Rvel*: +28.0 ± 25.0 STPP83
1950:	18 00 36.8	-32 41 52	IRAS	*opt.* 10. PK67	
	18 00 37	-32 41.8	LHSW81		
2000:	18 03 54	-32 41.6	.	*radio* 1.4 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-31

*He*II	468.6 *nm*	14	$H\alpha$	656.3 *nm*	451
[*O*III]	436.3	12	[*N*II]	658.4	112
	500.7	1763	[*S*II]	671.7	7
*He*I	587.6	20		673.1	12

$\lg F_{H\beta}(mW.m^{-2})$ $-11.68 \pm .10$ ASTR91

IR Class: .

J		
H		
K	> 10.3	
L		

Photom. AIGI75

IRAS Fluxes (*Jy*)

12μm	0.40	3
25μm	3.99	3
60μm	2.87	3
100μm	35.55	1

Radio (*mJy*) *2cm* | *6cm* 31 ZPB89

Central Star:
V 17.1 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.40 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, Sa75, TAGS89, Wr66

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358.8+04.1

SaWe 2, PBOZ 4, IRAS 17238-2738

			Disc.: Saurer et al 1987	*Diameter* (″)	
1950:	17 23 51.9	-27 38 09	IRAS	*opt.* 70. 87..1594	
	17 23 46.5	-27 38 10	87..1594		
2000:	17 26 54.9	-27 40 41	.	*radio* 60 : PBOZ88	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-03-16					
HeII	468.6 *nm*	–	$H\alpha$ 656.3 *nm*	100	
[*OIII*]	436.3	–	[*NII*] 658.4	23	
	500.7	154	[*SII*] 671.7		
HeI	587.6	–	673.1		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.37	1
25μm	1.43	1
60μm	1.51	3
100μm	19.82	1

Radio (*mJy*)			
	2cm		
	6cm	3	ZPB89

Bibliography: Al79, PAKS91

87..1594 Saurer W., Weinberger R. *Astron. Astrophys., Suppl. Ser. 69, 527-531 + erratum vol 70, 531,1987* The -33 < delta < -17 zone : probing SRC J film copies for planetary nebulae.

358.8+04.0

Th 3-15, PK 358+4°2, Al 2-A, ESO 454-26, IRAS 17236-2739

			Disc.: The 1964	*Diameter* (″)	
1950:	17 23 41.5	-27 39 17	IRAS	*opt. St.* CS90	
	17 24 01	-27 41.9	HLSW77		
2000:	17 27 09	-27 44.4	.	*radio* 6. ZPB89	

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-14					
HeII	468.6 *nm*	–	$H\alpha$ 656.3 *nm*	100	
[*OIII*]	436.3	–	[*NII*] 658.4	25	
	500.7	50	[*SII*] 671.7		
HeI	587.6	–	673.1		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.37	3
25μm	2.00	3
60μm	1.10	1
100μm	11.72	1

Bibliography: *PK67*, Al79, MaC83, PAKS91, Sa76, TeOu88

358.8+03.0

Th 3-26, PK 358+3°8, ESO 455-13, He 2-240, Sa 3-60, Wray 17-87, IRAS 17280-2812

			Disc.: The 1964	*Diameter* (″)	*Rvel*: +204.0 ± 5.0 STPP83
1950:	17 28 01.5	-28 12 31	IRAS	*opt.* 6. CaKa71	
	17 28 00	-28 12.8	LHSW81		
2000:	17 31 09	-28 15.0	.	*radio* 6.5 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18					
HeII	468.6 *nm*	54	$H\alpha$ 656.3 *nm*	1282	
[*OIII*]	436.3	–	[*NII*] 658.4	706	
	500.7	1430	[*SII*] 671.7	57	
HeI	587.6	42	673.1	76	
$\lg F_{H\beta}(mW.m^{-2})$		$-13.5 \pm .2$	ASTR91		

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.43	2
25μm	4.31	3
60μm	2.63	1
100μm	29.70	1

Radio (*mJy*)			
	2cm		
	6cm	10	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.58 (CaKa71); 3.2 (Ma84); 7.41 (CKS91)

Bibliography: *PK67*, AST89, Al79, He67, KrK68, PAKS89, Sa76, StAc87, VKDA65, Vo70, W88, WeHe67, WoDe79, Wr66, ZTPS89

358.8–00.0

Te 2022

			Disc.: Terzan 1989	*Diameter* (″)	
				opt. 12. ATS91	
1950:	17 39 30.5	-29 50 13	89.30002		
2000:	17 42 42.5	-29 51 35	.		

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1990-06-24					
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100
[*O*III]	436.3	–	[*N*II]	658.4	–
	495.9	–	[*S*II]	671.7	
*He*I	587.6	–		673.1	39

Central Star:
B 16.95 *V* 14.93 *Qual:* B TASG91

89.30002 Terzan A. *Private communication*

358.9+03.4

H 1-19, PK 358+3°4, ESO 455-05, He 2-237, VV' 206, Wray 16-279, IRAS 17268-2756

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* +65.0 ± 11.0 STPP83	
1950:	17 26 53.3	-27 56 59	IRAS	*opt. St.* CS90		
	17 26 54	-27 57.1	LHSW81			
2000:	17 30 03	-27 59.4	.	*radio* 1.4 ZPB89		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-29						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2028	*J*		12μm	1.97	1
[*O*III]	436.3	–	[*N*II]	658.4	1691	*H*		25μm	6.17	3
	500.7	449	[*S*II]	671.7	41	*K*	> 9.6	60μm	6.50	3
*He*I	587.6	79		673.1	49	*L*		100μm	22.02	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.27 ± .10 ASTR91				*Photom.* AlGl74		*Radio* (*mJy*)	*2cm*	
									6cm 26	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.90 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al79, He67, PAKS89, PBOZ88, PFMA82, Sa76, SaSt73, StAc87, VKDA65, Vo70, WoDe79, Wr66

358.9+03.2

H 1-20, PK 358+3°6, ESO 456-08, He 2-238, Sa 2-211, VV' 207, Wray 16-280, IRAS 17275-2801

			Disc.: Haro 1952	*Diameter* (″)	*Rvel:* +186.0 ± 11.0STPP83
1950:	17 27 35.9	-28 01 53	IRAS	*opt.* 4. CaKa71	
	17 27 34.8	-28 01 51	Mi76		
2000:	17 30 43.9	-28 04 06	.	*radio* 3.3 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	4:	$H\alpha$	656.3 *nm*	1486	12μm	2.70	1
[*O*III]	436.3	5:	[*N*II]	658.4	979	25μm	3.70	3
	500.7	1268	[*S*II]	671.7	34	60μm	5.46	3
*He*I	587.6	63		673.1	67	100μm	20.38	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.03 ± .10 ASTR91				*Radio* (*mJy*) *2cm*	34	MiAl82
						6cm	32	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.68 (CaKa71); 4.97 (Ac78); 2.67 (Da82); 2.30 (AGNR84); 4.1 (Ma84); 4.41 (CKS91)

Bibliography: *PK67*, AGR89, AKSJ89, AST89, AcMa77, Al79, Ca82, He67, KAS91, KPK81, LHSW81, LNP89, Ma81, Mi79, PAKS89, Pe91, Sa75, TeOu88, VKDA65, Vo70, W88, WoDe79, Wr66

358.9–00.7

M 1-26, PK 358−0°2, BI C, AS 270, ESO 455-33, He 2-277, RCW 135, SaSt 2-17, VV 112, VV' 242, Wray 16-306, IRAS 17427-3010

			Disc.: Minkowski 1946	*Diameter* (″)		*Rvel:* −5.0 ± 11.0 STPP83	
1950:	17 42 45.1	-30 10 57	IRAS	*opt.* 4.2	CaKa71	*Expansion Velocities* (*km/s*)	
	17 42 45.1	-30 10 52	AK90			[OIII] 13.5	We89
2000:	17 45 57.6	-30 12 00	.			[NII] 5.5	85..1601

Intens. ($H\beta$ = 100) ESO-B.C+IDS 1984-04-30						*IR Class:* P		*IRAS Fluxes* (*Jy*)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	823	*J*	13.05	12μm	14.40	3
[*O*III]	436.3	–	[*N*II]	658.4	403	*H*	10.09	25μm	177.90	3
	500.7	55	[*S*II]	671.7	3	*K*	8.72	60μm	60.33	3
*He*I	587.6	15		673.1	8	*L*	7.62	100μm	256.40	1
$\lg F_{H\beta}$ −11.15 ± .02 KM81, SK89, ASTR91						*Photom.* PPFS87		*Radio* 2*cm* 420		PFMA82
IUE Spectra: *LW*(2) *SW*(4)						*Spectr.* 79....19		(*mJy*) 6*cm* 400		AK90

Central Star: AG82 260 — HD 316248; MWC 270
B 13.44 *V* 12.72 *Qual:* A SK89 , TASG91 *Spectrum:* Of(H) Me91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) indiv.: ext. 1.8 (Ac78); ext. 1.8 (Sab86); spect. 1.9 (MKHH88)
Distance (kpc) stat.: 2.29 (CaKa71); 4.98 (MiAl75); 4.87 (Ca76); 1.61 (Ac78); 0.87 (Da82); 0.83 (AGNR84); 1.4 (Ma84); 1.01 (CKS91)

Bibliography: *PK67*, ABBW82, AG82, AGR89, AST89, AcMa77, Al73, Al79, AlGl74, AlSw76, All73, Ca82, Ca84, ChLo72, CoBa74, He67, Is84, Ka76, Kh76, Kh79, KuMe89, LHSW81, MMMK90, Ma74, Mar81, Me89, Mi73, MiAl82, OlRa86, PAKS89, PM87, PPT88, Pe71, Pe91, PiKh79, Sa76, SaMi78, SaSt72, Sh85, StAc87, TAGS89, TeOu88, VDKA75, VKDA73, Vo71, VoCo90, Vor70, W88, Wa70, Wa77, WeHe67, Wr66, ZTPS89, ZuAl86

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358.9–03.7

H 1-44, PK 358–3°1, ESO 456-23, He 2-314, RCW 136, Sa 3-101, VV' 299, Wray 16-336, IRAS 17549-3142

				Disc.: Haro 1952	*Diameter* (″)	*Rvel*: +99.0 ± 5.0 STPP83
1950:	17 54 55.4	-31 42 44	IRAS		*opt.* 3.6 CaKa71	
	17 54 56	-31 42.7	HLSW77			
2000:	17 58 11	-31 43.0	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1027	*J*		12μm	1.74	1
[*OIII*]	436.3	–	[*NII*]	658.4	1159	*H*		25μm	1.09	3
	500.7	99	[*SII*]	671.7	49	*K*	9.9	60μm	3.27	3
HeI	587.6	54		673.1	58	*L*		100μm	80.88	1
lg$F_{H\beta}(mW.m^{-2})$		−13.24 ± .10 ASTR91				*Photom.* AIGI75				

Distance (kpc) stat.: 7.47 (CaKa71); 3.2 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Gr71, Gr72, He67, KFL88, Ka76, Pe91, Sa76, StAc87, W88, Wr66

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359.0+02.8

Al 2-G, PK 359+2°5, IRAS 17291-2812

				Disc.: Allen 1979	*Diameter* (″)	
1950:	17 29 08.8	-28 12 17	IRAS		*opt. St.* AI79	
	17 29 13.2	-28 12 23	AI79			
2000:	17 32 22.6	-28 14 30	.			

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-14						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	100	12μm	2.45	1
[*OIII*]	436.3	–	[*NII*]	658.4	–	25μm	1.22	3
	500.7	vis	[*SII*]	671.7		60μm	2.09	1
HeI	587.6	–		673.1		100μm	34.77	1

Notes: Likely a galactic bulge PN (AKSR91).

359.0–04.1

M 3-48, PK 359–4°1, ESO 456-34, Sa 3-108, VV' 310, Wray 16-345

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* −11.0 ± 5.0 STPP83
				opt. 4.9 MLG88	
				CaKa71	
1950:	17 56 41.4	-31 54 27	PK67		
2000:	17 59 56.8	-31 54 34	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01

*He*II	468.6 *nm*	–	*Hα*	656.3 *nm*	472
[*O*III]	436.3	–	[*N*II]	658.4	1074
	500.7	477	[*S*II]	671.7	102
*He*I	587.6	40		673.1	92

$\lg F_{H\beta}(mW.m^{-2})$ −13.41 ± .10 ASTR91

Central Star: AG82 277 — $m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). Faint circular object in star field. Monochromatic images (MLG88); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 7.33 (CaKa71); 4.4 (Ma84)

Bibliography: *PK67*, AG82, AST89, AcMa77, HLSW77, Iw73, KFL88, Pe91, Sa76, StAc87, W88, Wr66, Zi75

359.0–04.8

M 2-25, PK 359–4°3, ESO 456-40, He 2-330, Sa 2-285, VV 138, VV' 321, Wray 16-354, IRAS 17594-3209

			Disc.: Minkowski 1947	*Diameter* (″)	*Rvel:* +20.0 ± 11.0 STPP83
1950:	17 59 28.1	-32 09 31	IRAS	*opt.* 14. CaKa71	
	17 59 31	-32 09.6	HLSW77		
2000:	18 02 47	-32 09.5	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10

*He*II	468.6 *nm*	13	*Hα*	656.3 *nm*	571
[*O*III]	436.3	–	[*N*II]	658.4	855
	500.7	849	[*S*II]	671.7	116
*He*I	587.6	22		673.1	104

$\lg F_{H\beta}(mW.m^{-2})$ −12.5 ± .2 ASTR91

IRAS Fluxes (Jy)

		Qual.
12μm	0.40	1
25μm	0.46	1
60μm	1.55	3
100μm	37.64	1

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.88 (CaKa71); 2.45 (Ac78); 2.0 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, He67, Iw73, KrK68, PAKS89, Sa75, Wr66, Zi75

359.1+15.1

A 40, PK 359+15°1, A55 28, ESO 586-03, VV' 145, IRAS 16456-2055

				Disc.: Abell 1955	*Diameter* (″)	
1950:	16 45 36.7	-20 55 35	IRAS		*opt.* 34. CaKa71	
	16 45 35.8	-20 55 26	Mi76			
2000:	16 48 33.9	-21 00 40	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-03-13					
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	612
[OIII]	436.3	–	[NII]	658.4	–
	500.7	509	[SII]	671.7	
HeI	587.6	–		673.1	

$\lg F_{H\beta}(mW.m^{-2})$ $-13.4 \pm .4$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.27	1
25μm	0.49	2
60μm	1.05	3
100μm	14.55	1

Radio (*mJy*)			
	2cm	14	MiAl82
	6cm	2	ZPB89

Central Star: AG82 217 — *V* 19.7 *Qual:* B WRPA86

Distance (kpc) stat.: 4.06 (CaKa71); 3.14 (Da82); 3.00 (AGNR84); 4.7 (Ma84); 3.82 (CKS91)

Bibliography: *PK67*, AGNR85, AGR89, Ab66, AcMa77, CaWy76, Iw73, Kh79, KrK68, LNP89, Ma81, Mi79, PAKS91

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359.1–01.7

M 1-29, PK 359–1°1, Bl F, ESO 455-47, He 2-292, Sa 2-250, VV 119, VV' 263, Wray 16-313, IRAS 17471-3034

				Disc.: Minkowski 1946	*Diameter* (″)	*Rvel:* -62.0 ± 11.0 STPP83
1950:	17 47 08.0	-30 34 29	IRAS		*opt.* 7.6 MLG88	
	17 47 04.8	-30 34 06	Mi76		KFL88, CaKa71	
2000:	17 50 18.0	-30 34 55	.		*radio* 7. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-13					
HeII	468.6 *nm*	27	*Hα*	656.3 *nm*	1214
[OIII]	436.3	7:	[NII]	658.4	1232
	500.7	1627	[SII]	671.7	65
HeI	587.6	39		673.1	115

$\lg F_{H\beta}(mW.m^{-2})$ $-12.2 \pm .2$ ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.38	3
25μm	8.84	3
60μm	14.18	3
100μm	320.20	1

Radio (*mJy*)			
	2cm	95	MiAl82
	6cm	97	ZPB89

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 2.8 (CaKa71); 2.03 (Ac78); 0.7 (Ma84); 3.07 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al79, He67, Ka76, LHSW81, PAKS89, Pe91, Sa75, TeOu88, VDKA75, VKDA73, Vo71, Vor70, W75, W88, Wr66

359.1–02.3

M 3-16, PK 359–2°2, VV' 272, Sa 2-258, ESO 456-02, Wray 16-321, He 2-296, BI J=K, IRAS 17495-3048

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel*: +81.0 ± 11.0 STPP83
1950:	17 49 33.6	-30 48 46	IRAS	*opt.* 8.2 MLG88	
	17 49 33	-30 49.1	HLSW77	KFL88, CaKa71	
2000:	17 52 47	-30 49.7	.	*radio* 6.5 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-12					
HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	1043	
[*OIII*]	436.3	–	[*NII*] 658.4	172:	
	500.7	806	[*SII*] 671.7	14	
HeI	587.6	33	673.1	18	
$\lg F_{H\beta}(mW.m^{-2})$		−12.5 ± .2 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.06	1
25μm	0.88	3
60μm	2.42	3
100μm	45.58	1
Radio (*mJy*) *2cm*		
6cm	17 ZPB89	

Central Star:
B 18.0 *V* 17.2 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 3.28 (CaKa71); 2.92 (Ac78); 1.4 (Ma84); 6.66 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, Al79, He67, PAKS89, Sa75, W75, Wr66

359.1–02.9

M 3-46, PK 359–2°4, ESO 456-15, Sa 3-93, VV' 283, Wray 17-103, IRAS 17518-3111

			Disc.: Minkowski 1948	*Diameter* (″)	
1950:	17 51 49.2	-31 11 58	IRAS	*opt.* 4.2 MLG88	
	17 51 52	-31 11.9	HLSW77	CaKa71	
2000:	17 55 06	-31 12.4	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19					
HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	1087	
[*OIII*]	436.3	–	[*NII*] 658.4	1871	
	500.7	485	[*SII*] 671.7	123	
HeI	587.6	44	673.1	111	
$\lg F_{H\beta}(mW.m^{-2})$		−14.0 ± .3 ASTR91			

IRAS Fluxes (*Jy*)		*Qual.*
12μm	2.82	1
25μm	1.71	1
60μm	2.09	3
100μm	49.89	1

Central Star:
V 17.9 *Qual:* D TASG91

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 6.05 (CaKa71); 2.6 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, KFL88, MaC83, PAKS89, Pe91, Sa76, StAc87, W88, Wr66

359.2+04.7

Th 3-14, PK 359+4°1, ESO 519-18, Sa 3-50, IRAS 17226-2655

			Disc.: The 1964	*Diameter* (″)	
1950:	17 22 37.3	-26 55 13	IRAS		
	17 22 37	-26 55.2	LHSW81		
2000:	17 25 44	-26 57.8	.	*radio* < 3.3RPZM90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-18						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1276	*J*		12μm	1.48	1
[OIII]	436.3	–	[*NII*]	658.4	628	*H*		25μm	4.91	3
	495.9	–	[*SII*]	671.7	35	*K*	> 9.6	60μm	4.22	3
HeI	587.6	–		673.1	81	*L*		100μm	9.72	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.38 ± .10	ASTR91			*Photom.*	AIGI74	*Radio* (*mJy*)	*2cm*	
									6cm 4	ZPB89

Central Star:
B 16.90 *V* 15.88 *Qual:* B TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, MaC83, PAKS89, PBOZ88, Sa76, StAc87, TAGS89, TeOu88

359.2+01.2

19W32, PK 359+1°3, PM 1-166, IRAS 17358-2854

			Disc.: Wouterloot et al 1979	*Diameter* (″)	*Rvel*: +56.0 ± 5.0 STPP83
1950:	17 35 50.3	-28 54 59	IRAS	*opt.* 24. 80..1016	*Expansion Velocities* (*km/s*)
	17 35 52.4	-28 54 59	80..1016		[OIII] 50. 87.30779
2000:	17 39 02.9	-28 56 37	.		[NII] 50. 87.30779

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1989-06-05 NE						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	3.42	3
[OIII]	436.3	–	[*NII*]	658.4	74	25μm	12.57	3
	500.7	9	[*SII*]	671.7		60μm	23.04	3
HeI	587.6	–		673.1		100μm	355.70	1
						Radio (*mJy*)	*2cm*	
							6cm 21.3	RPZM90

Central Star: AG82 250 —
V 17.2 *Qual:* D TASG91

Notes: ESO-NTT images by Schwartz H.E. and Melnick J.

Bibliography: AG82, Iy87, PM88, We89, WoDe79

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359.2-33.5

CRBB 1, He 3-1863, IRAS 20160-4140

				Diameter (″)		
			Disc.: Mac Carthy 1991			
1950:	20 16 05.3	-41 40 57	IRAS	*opt.* 8.	91.00001	
	20 16 05.2	-41 40 57	91.00001			
2000:	20 19 27.9	-41 31 30	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1991-06-12						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	920	12μm	0.28	1
[*OIII*]	436.3	–	[*NII*]	658.4	234	25μm	1.19	3
	495.9	–	[*SII*]	671.7		60μm	1.42	3
HeI	587.6	–		673.1		100μm	1.72	1

Central Star: CD-41 13967
U 9.60 *B* 10.56 *V* 10.72 *Qual:* A 91.00001 *Spectrum:* O(H) Me91

Notes: FC is given on the last plate.

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359.3+03.6

Al 2-E, PK 359+3°4, IRAS 17270-2728

				Diameter (″)		
			Disc.: Allen 1979			
1950:	17 27 05.6	-27 28 01	IRAS	*opt. St.*	CS90	
	17 27 06.2	-27 28 04	Al79			
2000:	17 30 14.4	-27 30 21	.			

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	86	$H\alpha$	656.3 *nm*	2219	12μm	2.42	1
[*OIII*]	436.3	–	[*NII*]	658.4	619	25μm	2.30	3
	500.7	1724	[*SII*]	671.7		60μm	3.65	3
HeI	587.6	–		673.1		100μm	15.54	1

$\lg F_{H\beta}(mW.m^{-2})$ $-14.7 \pm .3$ ASTR91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: Iy87, MaC83, PAKS91, We77, Wr66

359.3+01.4

Th 3-35, PK 359+1°1, ESO 455-28, 19W27

				Diameter (″)		
			Disc.: The 1964			
				opt. St.	CS90	
1950:	17 35 32.0	-28 41 06	PK67			
2000:	17 38 42.2	-28 42 46	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-11					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	2011
[*OIII*]	436.3	–	[*NII*]	658.4	2025
	500.7	526	[*SII*]	671.7	84:
HeI	587.6	84:		673.1	116:

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, Al79, LHSW81, MaC83, PAKS89, Sa76, WoDe79

81..1502 Isaacman R. *Astron. Astrophys. Suppl. Ser. 43,405-419* A radio search for PN near the galactic center 4: survey data.

359.3–00.9

Hb 5, PK 359–0°1, ARO 389, BI E, ESO 455-42, He 2-286, VV 116, VV' 252, Wray 16-310, IRAS 17447-2958

			Disc.: Hubble 1921	*Diameter* (″)	*Rvel:* −28.0 ± 5.0 STPP83
1950:	17 44 43.8	-29 58 41	IRAS	*opt.* 15. PK67	
	17 44 44.5	-29 58 53	Mi73		
2000:	17 47 56.8	-29 59 53	.	*radio* > 13. ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09 C						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	51	$H\alpha$	656.3 *nm*	1221	*J*	12μm	11.68	3
[*OIII*]	436.3	15	[*NII*]	658.4	1496	*H*	25μm	79.24	3
	500.7	2089	[*SII*]	671.7	17	*K*	60μm	134.50	3
HeI	587.6	29		673.1	32	*L*	100μm	311.80	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.52 ± .04 O63				*Photom.* CoBa80	*Radio* 2*cm* 551		MiAl82
IUE Spectra:		*LW*(1) *SW*(1)				*Spectr.* AiRo82	(*mJy*) 6*cm* 548		Ca82

Central Star: AG82 264 — CD -29 13998; HD 316340
B 18.6 *Qual:* D TASG91

Distance (kpc) indiv.: ext. 2.0 (Ac78); ext. 2.0 (Sab86)
Distance (kpc) stat.: 1.6 (CaKa71); 1.75 (MiAl75); 1.71 (Ca76); 1.9 (Ac78); 0.84 (Da82); 0.69 (AGNR84); 1.2 (Ma84); 1.24 (CKS91)

Bibliography: *PK67*, AG82, AGR89, AKSJ89, AST89, AcMa77, AiRo81, Al79, AlKe87, AlLi68, AlMi72, De71, Gr71, Gr89, Gu70, He67, He90, Hi71, Ii81, Iw73, KAC76, KAS91, KSK90, Ka70, Ka76, Kh79, KrK68, LHSW81, LNP89, MaPo80, MeHa75, MiWe79, PAKS89, PhMa88, SSAG87, Sa75, SaMi78, TAGS89, TeOu88, VDKA75, VKDA73, Vo71, VoCo90, Vor70, WPSD88, WoDe79, Wr66, ZuAl86

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83.28037 Schnur G.F.O., Kohoutek L. *Mitteil. Astron. Gesellschaft 60, 336* Hochaufgeloste Spektroskopie der Zentralobjekte von 5 Planetarischen Nebeln.
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90..3001 Morris M., Reipurth B. *Publ. Astron. Soc. Pac.,102,446* The optical form of the bipolar preplanetary nebula IRAS 09371+1212.
90..4007 Magazzu A., Strazzulla G. *Astrophys. Space Sci.,171,199* IRSPEC observations of planetary nebulae.

359.3–01.8

M 3-44, PK 359–1°2, BI H, ESO 455-51, Sa 3-82, VV' 267, Wray 16-317, IRAS 17480-3023

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* −89.0 ± 11.0 STPP83
1950:	17 48 05.7	-30 23 07	IRAS	*opt.* 4.4 MLG88	
	17 48 06.0	-30 23 09	GPGV83	CaKa71	
2000:	17 51 18.9	-30 23 54	.	*radio* 4. ZPB 89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	3208	12μm	1.06	3
[*OIII*]	436.3	–	[*NII*]	658.4	2356	25μm	16.31	3
	495.9	–	[*SII*]	671.7	133	60μm	17.00	3
HeI	587.6	–		673.1	190	100μm	157.10	1
$\lg F_{H\beta}(mW.m^{-2})$		−14.0 ± .3 ASTR91				*Radio* 2*cm*		
						(*mJy*) 6*cm*	35 GPGV83	

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 4.11 (CaKa71); 3.51 (Ac78); 2.80 (AGNR84); 1.0 (Ma84)

Bibliography: *PK67*, AGR89, AST89, AcMa77, Al79, Gr71, KFL88, LHSW81, PAKS89, RPZM90, Ro87, Sa76, StAc87, Te68, TeOu88, W88, Wr66

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359.3–03.1

M 3-17, PK 359−3°1, ESO 456-21, He 2-307, Sa 3-97, VV' 289, Wray 16-331, IRAS 17531-3103

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* −28.0 ± 11.0 STPP83
1950:	17 53 09.2	-31 03 54	IRAS	*opt.* 5. PK67	
	17 53 12	-31 04.0	HLSW77		
2000:	17 56 26	-31 04.4	.	*radio* 2.9 ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19					
HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	1528	
[*OIII*]	436.3	–	[*NII*] 658.4	773	
	500.7	82	[*SII*] 671.7	18	
HeI	587.6	37	673.1	40	

IR Class: .		*IRAS Fluxes* (*Jy*)	*Qual.*
J		12*μm* 2.41	1
H	9.0	25*μm* 3.02	3
K	8.9	60*μm* 2.46	2
L		100*μm* 90.96	1
Photom. AIGI75		*Radio* 2*cm*	
		(*mJy*) 6*cm* 12 ZPB89	

$\lg F_{H\beta}(mW.m^{-2})$ −13.0 ± .3 ASTR91

Central Star:
B 18.1 *V* 17.1 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 9.10 (CKS91)

Bibliography: *PK67*, AST89, AcMa77, He67, KFL88, Ka76, PAKS89, Sa76, StAc87, Wr66

359.4+02.3

Th 3-32, PK 359+2°4, ESO 455-21

			Disc.: The 1964	*Diameter* (″)	
				opt. St. CS90	
1950:	17 32 06	-28 05.2	LHSW81		
2000:	17 35 15	-28 07.1	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09					
HeII	468.6 *nm*	–	*Hα* 656.3 *nm*	4365	
[*OIII*]	436.3	–	[*NII*] 658.4	3132	
	495.9	–	[*SII*] 671.7	211	
HeI	587.6	–	673.1	422	

$\lg F_{H\beta}(mW.m^{-2})$ −14.43 ± .10 ASTR91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, ACPS87, Al79, MaC83, PAKS91, Sa76

359.4–03.4

H 2-33, PK 359–3°2, ESO 456-25, Sa 3-102, VV' 298, Wray 16-338, IRAS 17549-3107

			Disc.: Haro 1952	*Diameter (″)*			
1950:	17 54 57.2	-31 07 39	IRAS	*opt.* 6.2	MLG88		
	17 54 58.6	-31 07 53	PK67		KFL88, CaKa71		
2000:	17 58 12.7	-31 08 08	.				

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01

						IRAS Fluxes (Jy)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1200	12μm	0.76	3
[*O*III]	436.3	–	[*N*II]	658.4	145	25μm	1.10	3
	500.7	843	[*S*II]	671.7		60μm	2.81	3
*He*I	587.6	–		673.1		100μm	59.86	1

$\lg F_{H\beta}(mW.m^{-2})$ $-13.8 \pm .4$ ASTR91

Radio (*mJy*) *2cm* *6cm* 5 ZPB89

Central Star: AG82 275 — $m_{pg} > 21.$ *Qual:* P PK67

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88); ESO-NTT images by Schwartz H.E. and Melnick J.
Distance (kpc) stat.: 5.56 (CaKa71); 3.5 (Ma84); 7.58 (CKS91)

Bibliography: *PK67*, AG82, AST89, AcMa77, HLSW77, Iw73, Sa76, StAc87, Wr66

359.5+02.6

Al 2-K, PK 359+2°7, IRAS 17310-2754

			Disc.: Allen 1979	*Diameter (″)*			
1950:	17 31 04.5	-27 54 04	IRAS	*opt. St.*	CS90		
	17 31 05.0	-27 54 01	AI79				
2000:	17 34 13.9	-27 56 00	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-14

						IRAS Fluxes (Jy)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	2.55	1
[*O*III]	436.3	–	[*N*II]	658.4	–	25μm	1.61	3
	500.7	vis	[*S*II]	671.7		60μm	2.18	2
*He*I	587.6	–		673.1		100μm	24.32	1

Notes: Likely a galactic bulge PN (AKSR91).

359.6+02.2

Al 2-I, PK 359+2°6, IRAS 17329-2756

			Disc.: Allen 1979	*Diameter (″)*			
1950:	17 32 59.7	-27 56 39	IRAS	*opt. St.*	CS90		
	17 33 05.2	-27 58 55	AI79				
2000:	17 36 14.3	-28 00 46	.				

Intens. ($H\alpha = 100$) ESO-B.C+CCD 1988-08-13

						IRAS Fluxes (Jy)		*Qual.*
*He*II	468.6 *nm*	–	$H\alpha$	656.3 *nm*	100	12μm	3.19	1
[*O*III]	436.3	–	[*N*II]	658.4	–	25μm	1.82	3
	500.7	89	[*S*II]	671.7		60μm	4.01	1
*He*I	587.6	–		673.1		100μm	52.36	1

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: Iy87, PAKS91

359.6–04.8

H 2-36, PK 359–4°4, ESO 456-45, Sa 3-114, VV' 329, Wray 16-361

			Disc.: Haro 1952	*Diameter* (″)	
				opt. 9.9 KFL88	
1950:	18 00 52	-31 39.4	HLSW77		
2000:	18 04 07	-31 39.2	.		

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-08-01

*He*II	468.6 *nm*	96	*Hα*	656.3 *nm*	524
[*O*III]	436.3	–	[*N*II]	658.4	40
	500.7	491	[*S*II]	671.7	20:
*He*I	587.6	34		673.1	33

$\lg F_{H\beta}(mW.m^{-2})$ $-13.0 \pm .2$ ASTR91

IR Class: .

J	
H	9.0
K	8.6
L	

Photom. AIGI75

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, Sa76, StAc87, Wr66

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359.7–01.8

M 3-45, PK 359–1°3, Bl I, ESO 455-53, Sa 3-84, VV' 270, Wray 17-100, IRAS 17489-3004

			Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* +32.0 ± 11.0 STPP83
1950:	17 48 54.8	-30 04 36	IRAS	*opt.* 6.0 MLG88	
	17 48 53	-30 04.6	LHSW81	KFL88, CaKa71	
2000:	17 52 05	-30 05.3	.	*radio* 6.6 RPZM90	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-19

*He*II	468.6 *nm*	24:	*Hα*	656.3 *nm*	1761
[*O*III]	436.3	–	[*N*II]	658.4	139
	500.7	1715	[*S*II]	671.7	27
*He*I	587.6	35		673.1	29

$\lg F_{H\beta}(mW.m^{-2})$ $-13.4 \pm .3$ ASTR91

IRAS Fluxes (*Jy*)

		Qual.
12μm	3.35	1
25μm	1.40	3
60μm	20.18	1
100μm	197.40	1

Radio (*mJy*) *2cm* *6cm* 24.3 RPZM90

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88); Located very near the center of the open cluster OCL 1038 (RPZM90)
Distance (kpc) stat.: 3.59 (CaKa71); 3.10 (Ac78); 1.0 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Al79, PAKS89, Pe91, Sa76, StAc87, W75, W88, Wr66

359.7–02.6

H 1-40, PK 359–2°3, BI 3-8, ARO 29, ESO 456-17, Sa 2-266, VV' 286, Wray 16-328, IRAS 17523-3033

			Disc.: Haro 1952	*Diameter* (″)		*Rvel:* +108.0 ± 11.0	STPP83
1950:	17 52 22.9	-30 33 05	IRAS	*opt.* 3.8	MLG88		
	17 52 22.9	-30 33 06	GPGV83		KFL88, 90....46		
2000:	17 55 36.1	-30 33 32	.	*radio* 1.3	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1988-08-09						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1603	*J*		12μm	2.38	3
[*OIII*]	436.3	–	[*NII*]	658.4	275	*H*		25μm	18.45	3
	500.7	1124	[*SII*]	671.7	9	*K*	> 9.8	60μm	11.91	3
HeI	587.6	69		673.1	19	*L*		100μm	73.48	1
lg$F_{H\beta}(mW.m^{-2})$		−12.59 ± .10	ASTR91			*Photom.*	AlGl75	*Radio*	*2cm* 56	MiAl82
								(*mJy*)	*6cm* < 40	Ca82

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (MLG88)
Distance (kpc) stat.: 7.87 (Ac78); 3.10 (AGNR84); 3.5 (CKS91)

Bibliography: *PK67*, AGR89, AcMa77, Al68, ArKo68, Gr71, HLSW77, He71, Hi71, Hig71, Mi73, MiAl75, PAKS91, Pe91, Ro87, Sa75, Te68, Th68, ThCo67, VoCo90, W75, W88, Wr66

90....46 Dopita M.A., Henry J.P., Tuohy I.R., Webster B.L., Roberts E.H., Byun Y.-I., Cowie L.L., Songaila A. *Astrophys. J.,365,640* High-resolution imaging and the H-R diagram of galactic bulge planetary nebulae.

359.7–04.4

KFL 3

			Disc.: Kinman et al 1988	*Diameter* (″)		*Rvel:* +200.0 ± .	KFL88
1950:	17 59 38.3	-31 24 03	KFL88	*opt.* 13.5	KFL88		
2000:	18 02 52.9	-31 23 57	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-05-29								
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	625			
[*OIII*]	436.3	–	[*NII*]	658.4	326			
	500.7	542	[*SII*]	671.7	41			
HeI	587.6	41		673.1	17			
lg$F_{H\beta}(mW.m^{-2})$		−12.95 ± .	KFL88			*Radio*	*2cm*	
						(*mJy*)	*6cm* 1.4	ZPB89

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (KFL88)

359.8+06.9

M 3-37, PK 359+6°1, ESO 519-12, He 2-209, Sa 2-184, VV' 175, IRAS 17161-2514

			Disc.: Minkowski 1948	*Diameter* (″)		*Rvel:* −67.0 ± 11.0 STPP83
1950:	17 16 08.0	-25 14 11	IRAS	*opt.* 10.	PK67	
	17 16 08	-25 14.2	LHSW81			
2000:	17 19 13	-25 17.3	.	*radio* 11.2	RP91	

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1056
[*OIII*]	436.3	–	[*NII*]	658.4	1344
	500.7	1217	[*SII*]	671.7	107
HeI	587.6	35		673.1	103

$\lg F_{H\beta}(mW.m^{-2})$ −13.2 ± .2 ASTR91

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.40	1
25μm	0.51	1
60μm	2.08	3
100μm	5.09	1

Radio (*mJy*) *2cm* *6cm* 5 ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.81 (CaKa71); 5.75 (Ac78); 9.8 (Ma84); 14.4 (CKS91)

Bibliography: *PK67*, AcMa77, CaWy76, He67, Iw73, PAKS91, Sa75, TeOu88

359.8+05.6

M 2-12, PK 359+5°1, ESO 519-16, He 2-217, VV 99, VV' 184, Wray 17-77, IRAS 17209-2556A

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel:* +73.0 ± 11.0 STPP83
1950:	17 20 55.5	-25 56 40	IRAS	*opt.* 5.	PK67	
	17 20 55.6	-25 56 40	Mi76			
2000:	17 24 01.5	-25 59 23	.	*radio* 4.4	PBOZ88	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1984-04-26					
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	682
[*OIII*]	436.3	–	[*NII*]	658.4	434
	495.9	–	[*SII*]	671.7	19
HeI	587.6	–		673.1	38

$\lg F_{H\beta}(mW.m^{-2})$ −12.25 ± .10 ASTR91

IR Class: .
J
H
K > 9.4
L
Photom. AIGI74

IRAS Fluxes (*Jy*)		*Qual.*
12μm	0.39	1
25μm	4.70	3
60μm	3.90	3
100μm	6.20	1

Radio (*mJy*) *2cm* *6cm* 12.9 PBOZ88

Central Star:
B 15.21 *V* 14.74 *Qual:* A TASG91

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 5.7 (Ma84)

Bibliography: *PK67*, AST89, AcMa77, Al78, He67, Ka76, LHSW81, Mi79, PAKS89, Sa76, SaSt73, StAc87, TAGS89, TeOu88, VKDA65, Vo70, Wr66

359.8+05.2

TeJu 19

			Disc.: Terzan et al 1980	*Diameter* (″)		*Rvel:* −89. ± 60. 91..3001
				opt. 8.	91..3001	
1950:	17 22.2	-26 10	90..2002			
2000:	17 25.3	-26 13	.			

80.23001 Terzan A., Ju K.H. *The Messenger 20,6-7* A photometric study of the bright cloud B in Sagittarius: III.
90..2002 Djorgovski S., Thompson D.J., De Carvalho R.R., Mould J.R. *Astron. J. 100,599* A rich, nearby galaxy cluster in Sagittarius
91..3001 Thompson D.J., Djorgovski S., De Carvalho R.R. *Pub. Astron. Soc. Pac. 103,487* New planetary nebulae in the direction of the galactic bulge

359.8+03.7

Th 3-25, PK 359+3°2, ESO 520-05, He 2-239, Sa 3-57, Wray 16-281, IRAS 17276-2703

				Disc.: The 1964	*Diameter* (″)		*Rvel:* −93.0 ± 5.0 STPP83
1950:	17 27 38.9	-27 03 45		IRAS	*opt.* 7. :	CS90	
	17 27 39	-27 03.7		HLSW77			
2000:	17 30 47	-27 05.9		.	*radio* 1.8	ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-16						*IR Class:* .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	1285	*J*		12μm	3.17	1
[*OIII*]	436.3	–	[*NII*]	658.4	–	*H*		25μm	4.38	1
	500.7	442:	[*SII*]	671.7		*K*	> 10.1	60μm	1.76	3
HeI	587.6	–		673.1		*L*		100μm	11.81	1
$\lg F_{H\beta}(mW.m^{-2})$		−14.1 ± .3 ASTR91				*Photom.*	AIGI74	*Radio* (*mJy*)	*2cm*	
									6cm 18	ZPB89

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 6.42 (CKS91)

Bibliography: *PK67*, AST89, He67, PAKS89, Sa76, StAc87, WeHe67, Wr66

359.8+02.4

Th 3-33, PK 359+2°3, ESO 455-24, Sa 3-67, IRAS 17326-2741

			Disc.: The 1964	*Diameter* (″)		
1950:	17 32 37.2	-27 41 30	IRAS	*opt.* 6.	CS90	
	17 32 38	-27 41.2	LHSW81			
2000:	17 35 47	-27 43.1	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1985-07-15							*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	*Hα*	656.3 *nm*	3909		12μm	0.89	3
[*OIII*]	436.3	–	[*NII*]	658.4	4208		25μm	4.76	3
	495.9	–	[*SII*]	671.7	64:		60μm	8.67	3
HeI	587.6	–		673.1	64:		100μm	30.45	1
$\lg F_{H\beta}(mW.m^{-2})$		−13.9 ± .3 ASTR91							

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, Al79, PAKS89, Sa76, StAc87

359.8–07.2

M 2-32, PK 359−7°1, ESO 394-35, He 2-371, Sa 2-316, StWr 2-19, VV 161, VV' 373, Wray 16-393, IRAS 18115-3237

				Disc.: Minkowski 1957	*Diameter* (″)	*Rvel:* −49.4 ± 10.1 STPP83
1950:	18 11 33.8	-32 37 10	IRAS		*opt.* 10. PK67	
	18 11 34	-32 38.1	LHSW81			
2000:	18 14 50	-32 37.2	.			

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-10						*IR Class:* .	*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	3	$H\alpha$	656.3 *nm*	371	*J*	12μm	4.02	3
[*OIII*]	436.3	12	[*NII*]	658.4	–	*H*	25μm	4.53	3
	500.7	1211	[*SII*]	671.7		*K* > 9.8	60μm	1.84	3
HeI	587.6	16		673.1		*L*	100μm	13.12	1
$\lg F_{H\beta}(mW.m^{-2})$		−11.6 ± .4	ASTR91			*Photom.* AIGI75			

Central Star:
B 15.5 *V* 15.7 *Qual:* C TASG91

Notes: Likely a galactic bulge PN (AKSR91).

Bibliography: *PK67*, AST89, AcMa77, He67, PAKS89, Sa75, StWr72, TAGS89, VoCo90, W75, Wr66

91..2501 Whitelock P., Feast M., Catchpole R. *Mon. Not. R. Astron. Soc.,248,276* IRAS sources and the nature of the Galactic Bulge.

359.9+05.1

M 3-9, PK 359+5°2, ESO 519-17, He 2-221, Sa 2-196, VV' 189, Wray 17-78, IRAS 17226-2609

				Disc.: Minkowski 1948	*Diameter* (″)	*Rvel:* −81.6 ± 4.9 STPP83
1950:	17 22 37.2	-26 09 19	IRAS		*opt.* 17. CaKa71	
	17 22 37.2	-26 09 18	Mi76			
2000:	17 25 43.4	-26 11 54	.		*radio* 17. ZPB89	

Intens. ($H\beta = 100$) ESO-B.C+IDS 1986-07-09						*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	34	$H\alpha$	656.3 *nm*	1063	12μm	0.39	2
[*OIII*]	436.3	–	[*NII*]	658.4	63:	25μm	4.91	3
	500.7	1044	[*SII*]	671.7		60μm	11.64	3
HeI	587.6	31		673.1		100μm	11.16	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.8 ± .2	ASTR91			*Radio* (*mJy*) *2cm*	57	MiAI82
						6cm	19.5	ZPB89

Central Star: AG82 239 —
B 18.86 *Qual:* B GaPo88

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 4.0 (CaKa71); 3.82 (Ac78); 3.41 (Da82); 2.30 (AGNR84); 3.4 (Ma84); 3.29 (CKS91)

Bibliography: *PK67*, AG82, AGNR85, AGR89, AST89, Ac75, Ac76, AcMa77, Fe68, He67, Iw73, LHSW81, LNP89, Ma81, Mi79, PAKS89, PBOZ88, Sa75, TeOu88, VKDA65, Vo70, Wr66

359.9–04.5

M 2-27, PK 359–4°2, ESO 456-44, He 2-335, Sa 2-289, VV 140, VV' 326, Wray 16-360, IRAS 18006-3117

			Disc.: Minkowski 1947	*Diameter* (″)		*Rvel*: +170.4 ± 12.2STPP83	
1950:	18 00 40.6	-31 17 56	IRAS	*opt.* 4.8	KFL88		
	18 00 38.1	-31 17 55	Mi76		90....46		
2000:	18 03 52.5	-31 17 45	.	*radio* 2.5	ZPB 89		

Intens. ($H\beta = 100$) ESO-B.C+CCD 1987-07-20						*IR Class*: .		*IRAS Fluxes* (*Jy*)		*Qual.*
HeII	468.6 *nm*	–	$H\alpha$	656.3 *nm*	1147	*J*		12μm	1.06	3
[OIII]	436.3	–	[NII]	658.4	596	*H*		25μm	7.12	3
	500.7	1070	[SII]	671.7	19	*K*	> 9.7	60μm	6.88	3
HeI	587.6	51		673.1	37	*L*		100μm	51.28	1
$\lg F_{H\beta}(mW.m^{-2})$		−12.20 ± .03	W83, ASTR91			*Photom.*	AIGI75	*Radio* (*mJy*)	*2cm*	
									6cm 50	GPGV83

Notes: Likely a galactic bulge PN (AKSR91).
Distance (kpc) stat.: 2.30 (AGNR84); 4.95 (CKS91)

Bibliography: *PK67*, AGR89, AST89, AcMa77, HLSW77, He67, Ka76, Ka79, Ka80, PAKS89, Pe91, PeSe80, Po80, Ro87, Sa75, VoCo90, W75, W88, Wr66

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359.9–05.4

KFL 9

			Disc.: Kinman et al 1988	*Diameter* (″)		*Rvel*: −19.0 ± .	KFL88
				opt. 11.8	KFL88		
1950:	18 04 04.3	-31 43 19	KFL88				
2000:	18 07 19.4	-31 42 54	.				

Intens. ($H\beta = 100$) ESO-B.C+CCD 1989-06-01								
HeII	468.6 *nm*	99	$H\alpha$	656.3 *nm*	505			
[OIII]	436.3	–	[NII]	658.4	–			
	500.7	556	[SII]	671.7				
HeI	587.6	–		673.1				
$\lg F_{H\beta}(mW.m^{-2})$		−12.93 ± .	KFL88			*Radio* (*mJy*)	*2cm*	
							6cm 3.1	ZPB89

Notes: Likely a galactic bulge PN (AKSR91). Monochromatic images (KFL88)