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(NASA-CR-161954) BREADBOARD STELLAR TRACKER  
SYSTEM TEST REPORT, VOLUME 2 Final Report  
(Ball Aerospace Systems Div., Boulder)  
264 p HC A12/MF A01

N82-16171

CSCI 14B

Unclas

G3/19 07992

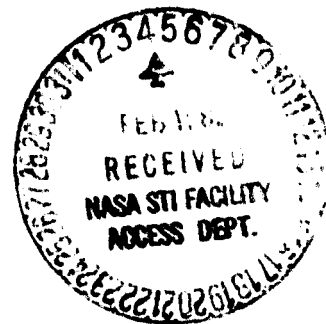


BREADBOARD STELLAR TRACKER SYSTEM  
TEST REPORT

TR81-04      August 1, 1981

VOLUME II

Prepared For  
George C. Marshall Space Flight Center  
Contract No. NAS8-34263



## ACQUISITION COARSE AND FINE MAPS

- COARSE - DARK MAP AT 0°C
- FINE - DARK MAP AT 0°C
- FINE - DARK MAP AT 16°C

# DARK-COARSE MAP

CID TEMP ~ 0°C  
Tr ~ 3.85 sec  
Ti ~ 0.125 sec

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ORIGINAL PAGE IS  
OF POOR QUALITY

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ORIGINAL PAGE IS  
OF POOR QUALITY

TR81-04

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00043C	0004F6	000509	000502	000591	0004F9	0004F7	0004FA	000500	000510	0004FB	0004F7	00050C	000509	000504	000504
000506	000505	00050C	000515	000510	0004F9	000521	000528	000525	00051A	00051C	000507	000512	000502	0004EC	000482
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# DARK FINE MAPS

ORIGINAL PAGE IS  
OF POOR QUALITY

TR81-84

CID TEMP ~ 160  
T<sub>r</sub> ~ 32 msec  
T<sub>i</sub> ~ 460 msec

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00007F	00007E	00005D	00005E	00007B	000051	00007B	00005B	00005D	00007E	00007E	00007C
00007A	00007A	00007B	00005C	000071	00005D	000074	000072	000076	000077	00007E	00008D
00006F	000073	000073	000071	000072	00007A	000071	00007A	00005B	000071	00005D	000077
00007C	00006D	00006F	000076	00007C	00007B	00007D	00007C	00005F	00006F	00006C	00007D
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00006D	00006E	00006B	00006F	000067	00007F	000073	00006A	00006D	000071	00006E	000072
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000065	00006C	000064	00007D	00007C	00007C	00006B	00007D	00006A	00006C	00006B	00006A
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LOCATION 20 20

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00006D	000072	00006D	00007C	00006E	000067	00005B	00006F	00006E	00006C	00006C	000073
00006B	00006B	000065	00007C	00006E	00007D	00006D	00007D	000066	00006B	00006B	00006E
00006A	00006D	00006E	00006C	00006F	00006C	00006B	000071	000067	00006F	00007D	00006A
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LOCATION 15 15

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00007B	00007E	00007D	00007B	00008D	00007C	000076	000081	00007A	000085	00008D	00007F
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00007D	00007D	000073	000074	00006E	00006E	000072	00006F	000072	000076	000074	000075
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000071	00006A	00006D	000075	00006A	000076	00006C	00007D	00006E	000073	00006A	00006F
00007D	00006C	00007D	000072	00007D	00006E	000071	000071	000072	00006D	00006C	000074
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LOCATION 10 10

DARK-FINE MAP

ORIGINAL PAGE IS  
OF POOR QUALITY

TR81-04

CID TEMP ~ 0°C  
Tr ~ 32 msec  
Ti ~ 460 msec

000060	000060	00006F	00006A	000057	00005A	000058	00005E	00004B	00004B	00004B	00004B
000041	000046	000042	000044	00003F	000040	00003E	000041	000030	00003A	00003A	000030
000039	00003A	00003A	00003C	000033	000037	000035	000035	000034	000033	000032	000033
000034	000033	000032	000035	000028	000029	00002A	00002A	00002F	00002F	00002F	000031
000026	000027	000025	000026	000026	000028	000029	00002A	000024	000025	000027	000024
000023	000023	000024	000024	000024	000023	000025	000025	000024	000026	000026	000026
000028	000028	000026	000026	000022	00001F	000021	000022	000023	00001F	000022	000020
000022	000025	000023	000026	000022	000022	000024	000025	000022	00001F	000021	000021
000023	000022	000020	000021	000020	000023	000022	000022	000024	000021	000021	000023
000022	000024	000020	000024	000021	000020	000020	000020	00001F	000020	000020	00001D
000020	000023	000021	00001F	000021	000020	00001F	000021	000024	000024	000023	000023
00001D	00001F	00001D	00001E	00001F	00001E	00001F	00001F	00001C	00001A	00001A	00001B

LOCATION 20 20

000080	000080	000063	00007F	000060	000060	00005E	00005F	000051	000080	000063	000050
000046	000047	000044	000047	000041	000044	000040	000045	00003D	00003D	00003F	000041
000039	000038	000038	000030	000034	000033	000034	000038	000034	000038	000038	00003C
000036	000034	000035	000037	000030	000033	000032	000030	000032	000031	000030	000032
000027	000028	000023	000027	000027	000024	000026	000025	000026	000028	000029	000025
000027	000025	000025	000027	000022	00001F	000024	000024	000024	000025	000025	000023
000025	000022	000025	000025	000026	000025	000022	000023	000022	000026	000026	000024
000028	000023	000025	000028	000022	000022	000021	000024	000023	000021	00001F	000020
000023	000023	000020	000025	000023	000021	000027	000025	00001F	000021	000020	000025
000021	000024	000021	000026	000020	000023	000022	000020	000022	000023	000022	000022
000020	000025	000023	000022	00001F	00001E	000022	000023	000021	000021	000024	000020
000022	000022	000022	000025	000026	000024	000023	000027	000020	000020	000022	000022

LOCATION 15 15

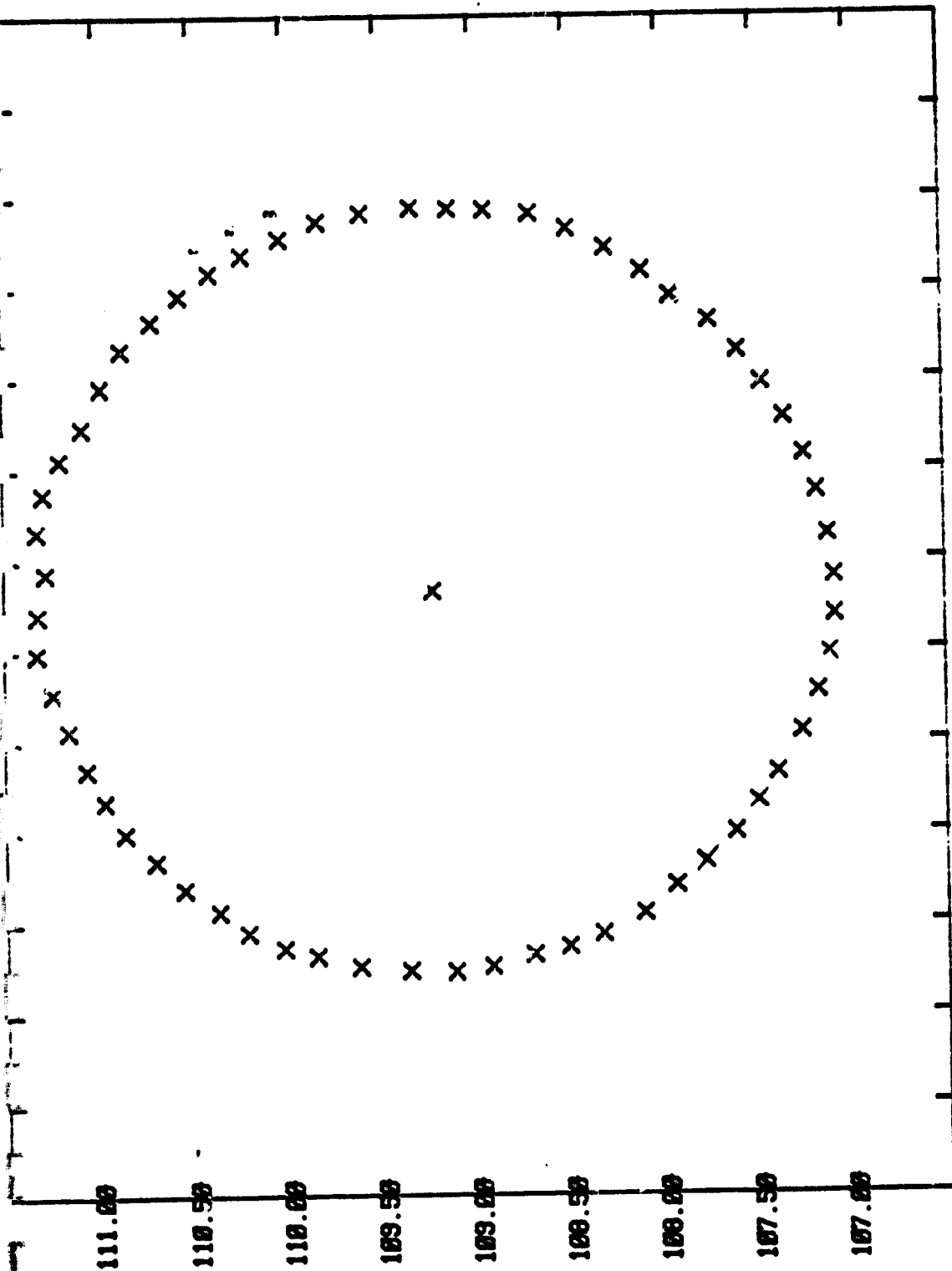
000091	000092	00008F	00008E	000064	000064	000062	000065	000051	000053	00004F	000053
000047	000045	000046	00004C	000041	000045	000043	000047	00003D	00003F	00003F	000043
00003A	00003B	00003B	00003C	000037	000036	000037	000039	000036	000038	000035	000038
000032	000034	000033	000033	000035	000035	000030	000035	000032	000032	000024	000032
000028	000026	00002A	000028	000027	000027	000025	000027	000025	000026	000025	000026
000025	000024	000026	000023	000023	000025	000025	000025	000025	000023	000022	000026
000020	000024	000023	000023	000026	000022	000022	000026	000022	000024	000023	000025
000022	000023	000021	000021	000022	000022	000025	000020	000024	000025	000022	000028
000023	000022	000024	000022	000021	000020	00001F	00001F	00001F	000020	00001F	00001E
000022	00001E	00001D	00001F	000021	000027	000022	000022	000021	000022	00001F	000020
000025	000021	000025	000022	000024	000020	000023	000023	000022	000024	000021	000021
000020	000020	00001E	000020	000020	000020	000021	000020	000021	000022	000023	000021

LOCATION 10 10

SMALL FIELD POINTING ACCURACY

- POSITION # 1 : 0°C (1.0, 2.8, 6.0 Mv)  
: 10°C (1.0, 2.8, 6.0 Mv)  
: 20°C (1.0, 2.8, 6.0 Mv)
- POSITION # 2 : 0°C (1.0, 2.8, 6.0 Mv)  
: 10°C (1.0, 2.8, 6.0 Mv)  
: 20°C (1.0, 2.8, 6.0 Mv)
- POSITION # 3 : 0°C (1.0, 2.8, 6.0 Mv)  
: 10°C (1.0, 2.8 Mv)  
: 20°C (1.0, 2.8 Mv)
- POSITION # 4 : 0°C (1.0, 2.8, 6.0 Mv)  
: 10°C (1.0, 2.8, 6.0 Mv)  
: 20°C (1.0, 2.8, 6.0 Mv)
- CENTER : 0°C (1.0, 2.8, 6.0 Mv)  
: 10°C (1.0, 2.8, 6.0 Mv)  
: 20°C (1.0, 2.8, 6.0 Mv)



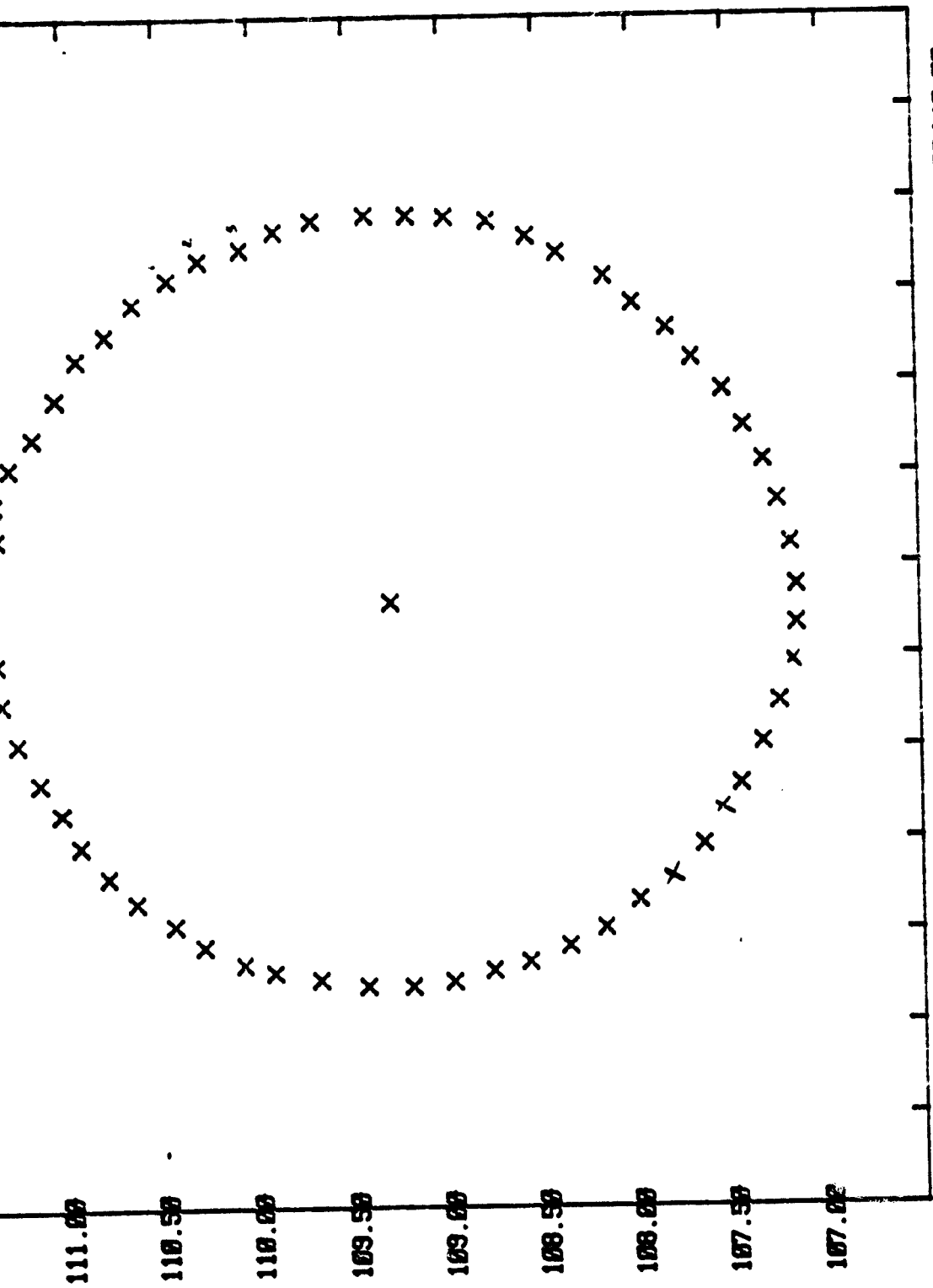


195.00 135.50 136.00 136.50 137.00 137.50 138.00 138.50 139.00 139.50 140.00 140.50

POSITION #1 S.D= 1.716%

12-B-10 F2.8 +1.0M 2 K=.347.275.408.298 10% 0°C



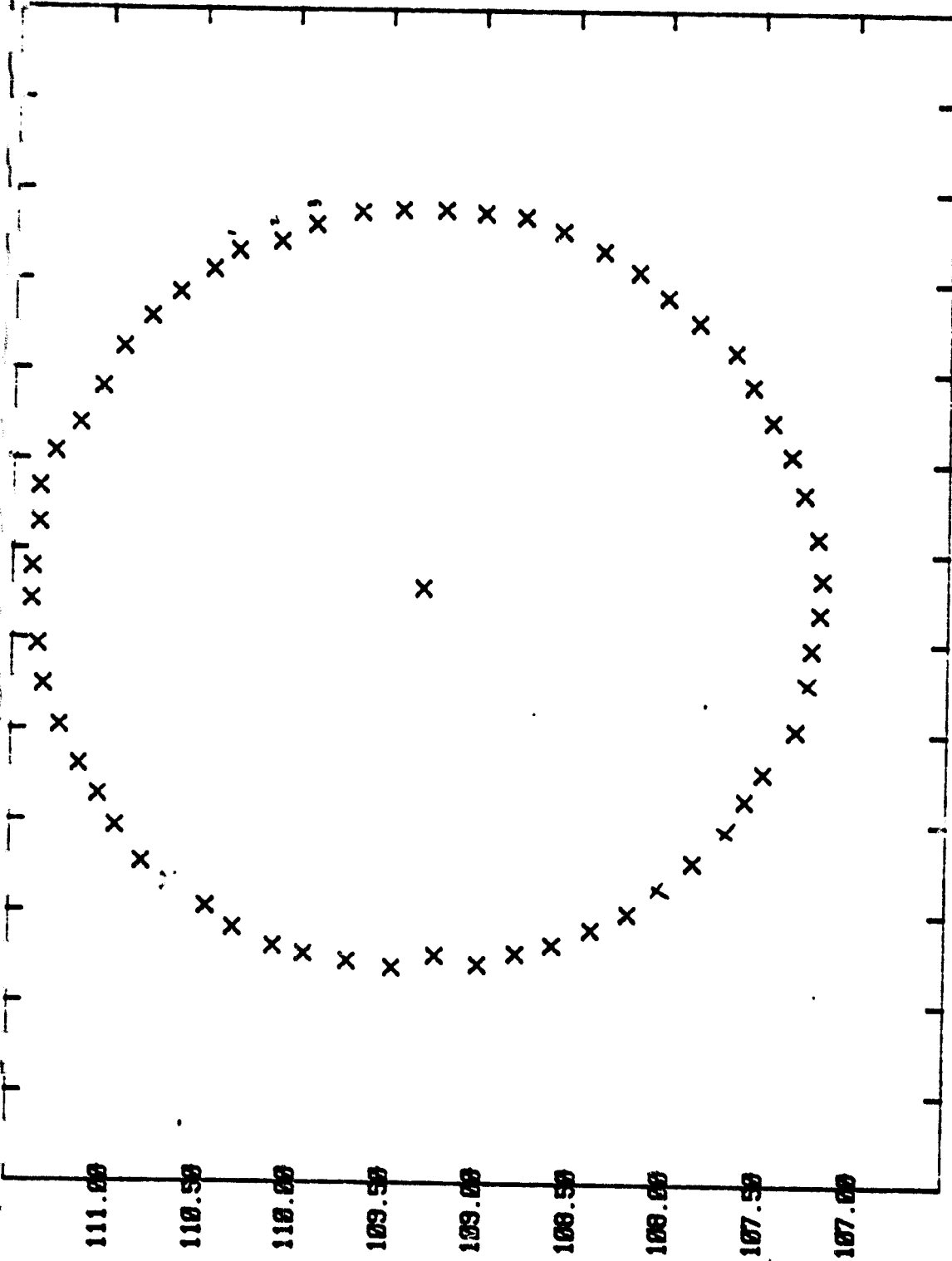


POSITION #1 S.D= 1.721%

10181-04

12-A-03 F2.8 +1.0M 2 K=.347.275.408.298 100% 10°C

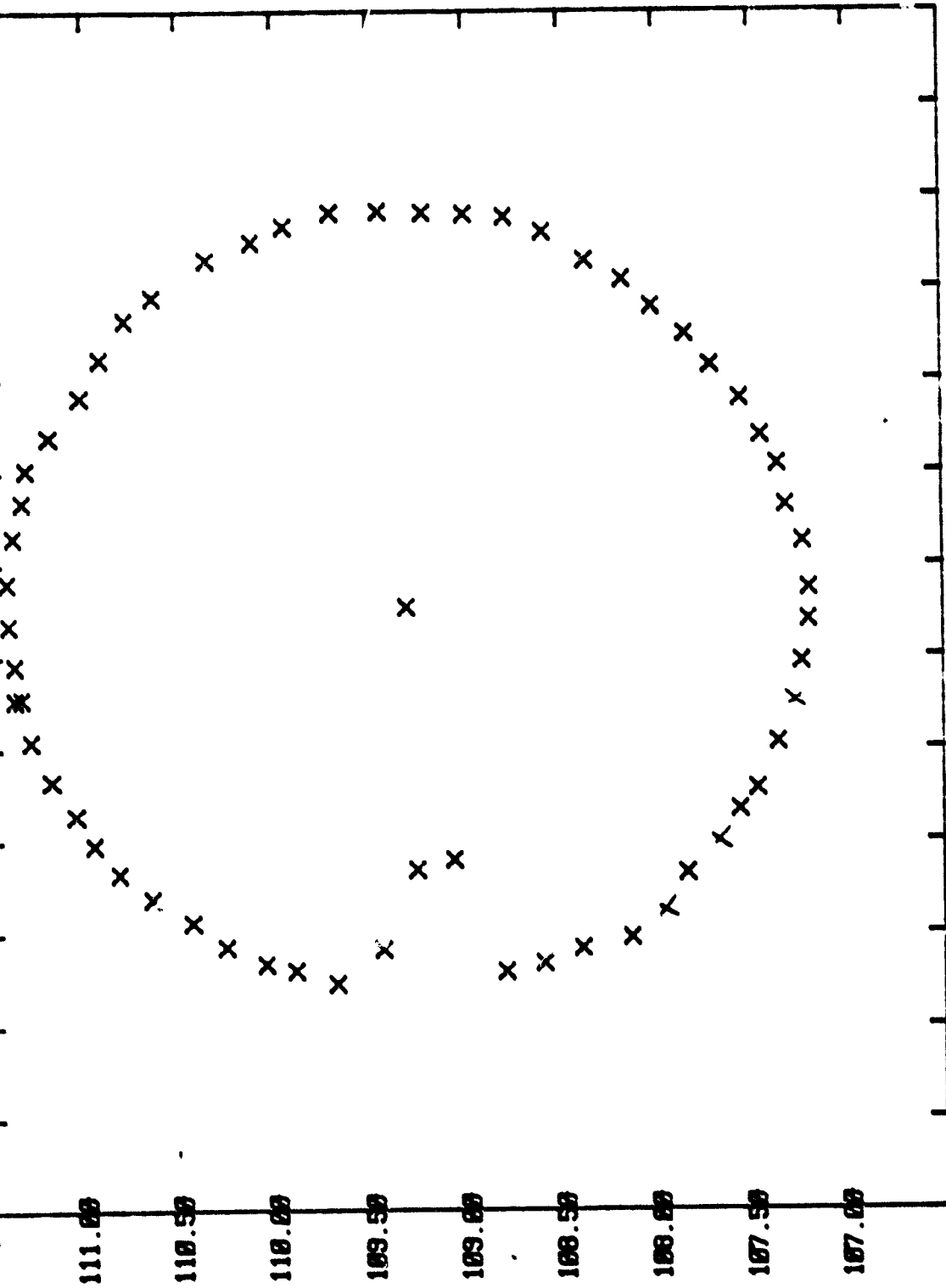




135.00 135.50 136.00 136.50 137.00 137.50 138.00 138.50 139.00 139.50 140.00 140.50

POSITION #1 S.D= 1.577 %

12-A-01 F2.8 +1.0M 2 K=.347.275.408.298 10% 10°C

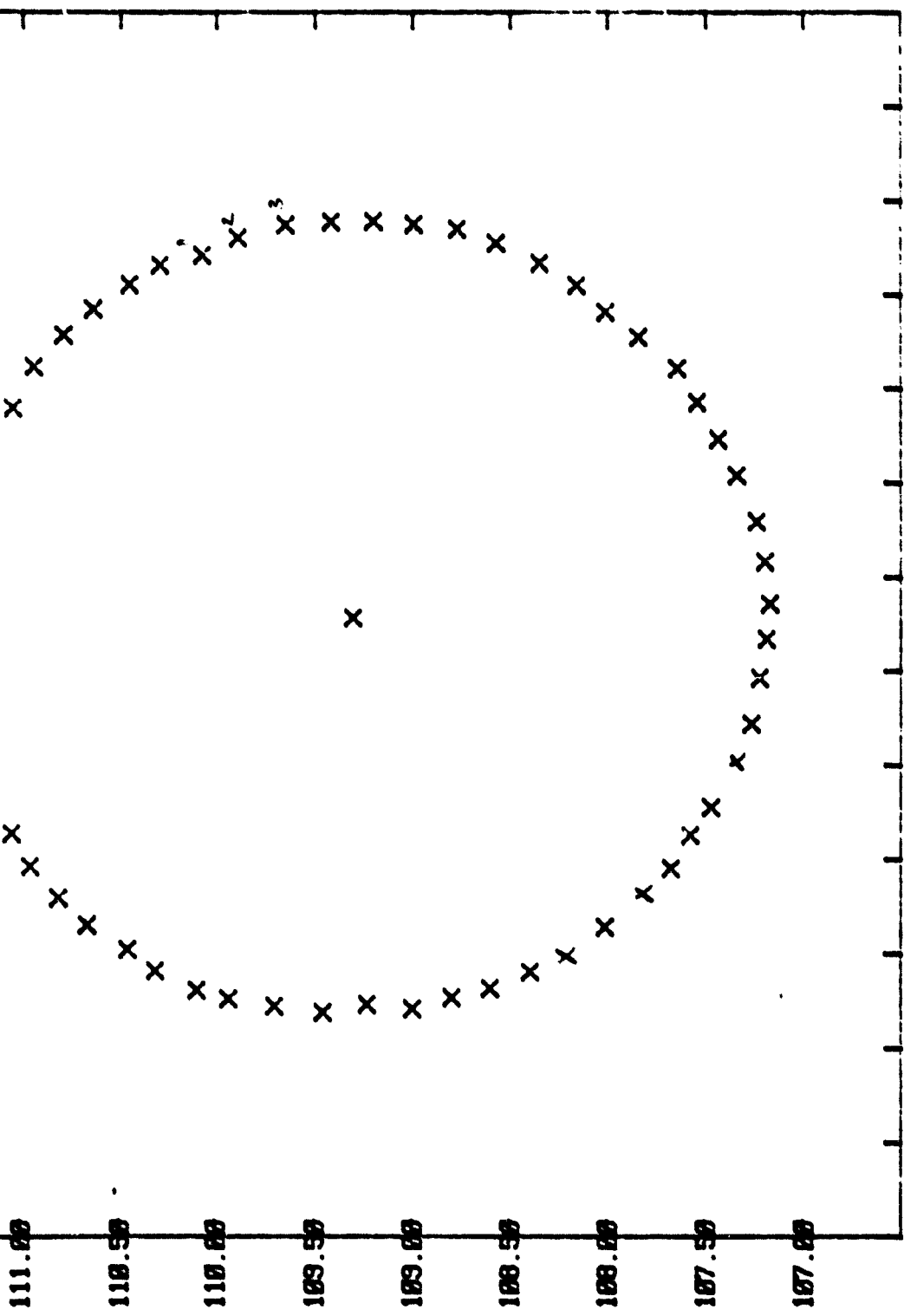


135.00 136.50 138.00 139.50 141.00 142.50 144.00 145.50 147.00 148.50 150.00 151.50 153.00 154.50 156.00 157.50 159.00 160.50 162.00 163.50 165.00 166.50 168.00 169.50 171.00 172.50 174.00 175.50 177.00 178.50 180.00 181.50 183.00 184.50 186.00 187.50 189.00 190.50 192.00 193.50 195.00 196.50 198.00 199.50 201.00 202.50 204.00 205.50 207.00 208.50 210.00 211.50 213.00 214.50 216.00 217.50 219.00 220.50 222.00 223.50 225.00 226.50 228.00 229.50 231.00 232.50 234.00 235.50 237.00 238.50 240.00 241.50 243.00 244.50 246.00 247.50 249.00 250.50 252.00 253.50 255.00 256.50 258.00 259.50 261.00 262.50 264.00 265.50 267.00 268.50 270.00 271.50 273.00 274.50 276.00 277.50 279.00 280.50 282.00 283.50 285.00 286.50 288.00 289.50 291.00 292.50 294.00 295.50 297.00 298.50 300.00

POSITION #1 S.D= 2.603 %

12-A-02 F2.8 +1.0M 2 K=.347.275.408.298 <1% 10° C

12-04

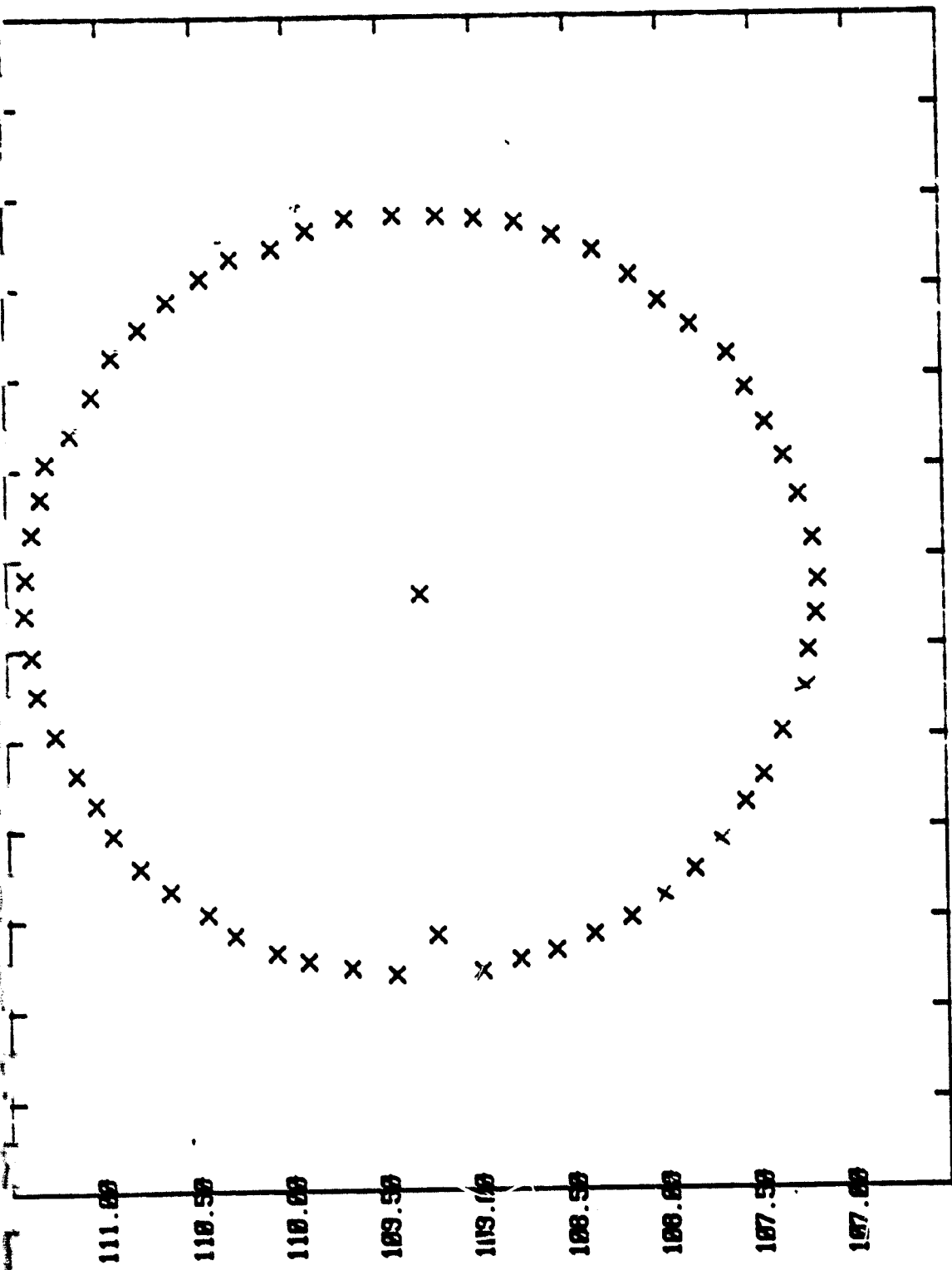


135.00 135.50 136.00 136.50 137.00 137.50 138.00 138.50 139.00 139.50 140.00 140.50

POSITION #1 S.D.= 1.71%

12-A-07 F2.8 +1.0M 2 K=.347.275.408.298 100% 20°C

73144

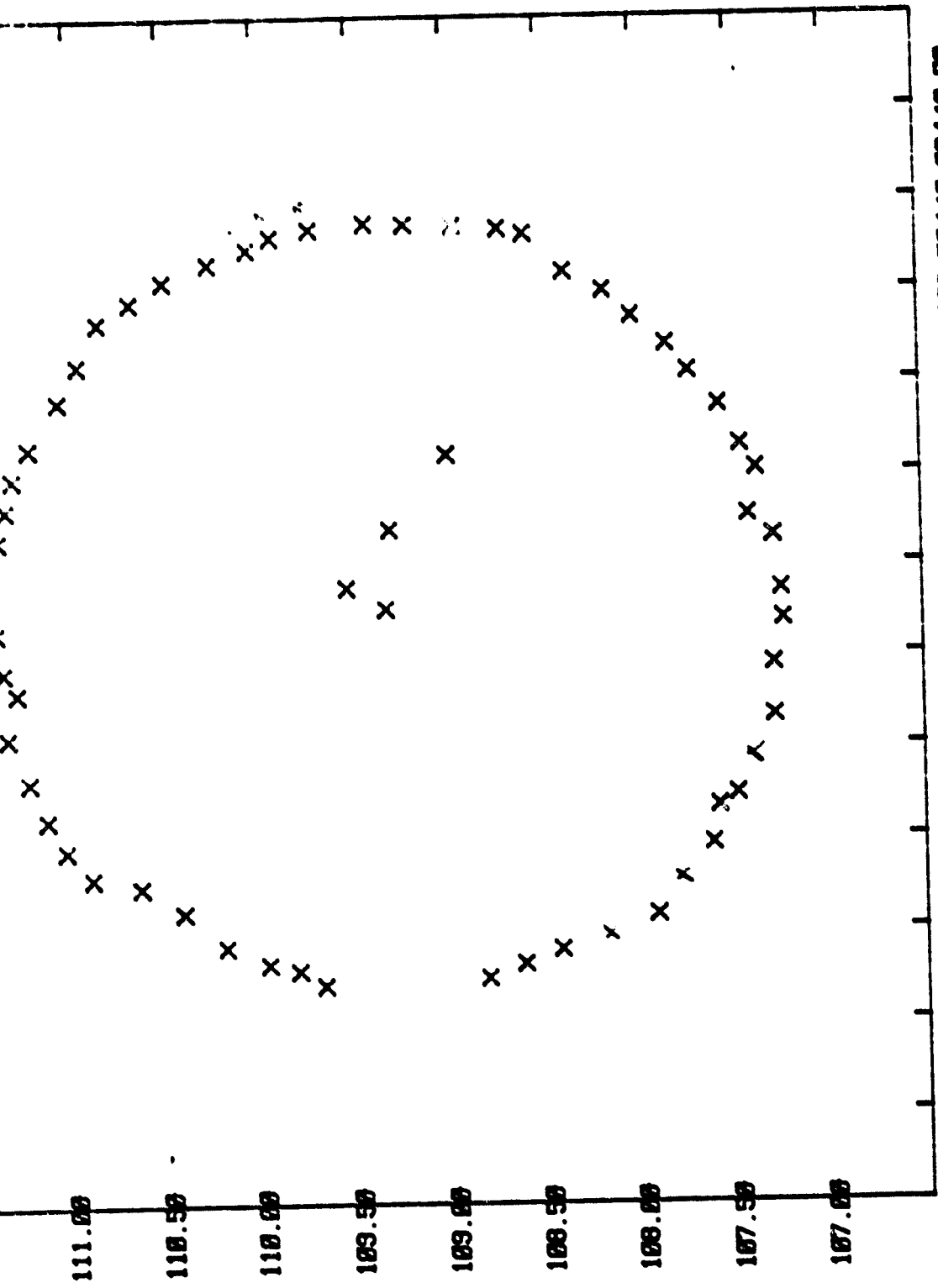


135.00 135.50 136.00 136.50 137.00 137.50 138.00 138.50 139.00 139.50 140.00 140.50

POSITION #1 S.D= 3.177 %

12-A-05 F2.8 +1.0M 2 K=.347.275.408.298 10% 20°C

TR81-04



135.00 136.00 137.00 138.00 139.00 140.00 141.00 142.00 143.00 144.00 145.00

POSITION #1 S.D= 4.541%

12-A-06 F2.8 +1.0M 2 K=.347.275.408.298 <1% 20°C.

	Coarse	Fine	Track
NDRs:	1.0	1.0	16.0
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.1833E+06	.9190E+05	.7352E+06

Constants:	.34700	.27500	.40800	.29800
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.335	1.806	.6948E+05	1.099	139.5	110.0	139.6422	110.2473	.6346E-03	.2245E-02
.352	8.178	.7959E+05	1.147	140.0	110.0	139.7406	110.0392	.1429E-02	.9773E-03
.347	14.372	.8142E+05	1.134	140.0	110.0	139.8365	109.8477	.7037E-03	.1576E-02
.403	20.706	.6966E+05	1.009	140.0	109.5	139.8352	109.6119	.8536E-03	.8145E-03
.352	26.947	.6101E+05	1.037	140.0	109.5	139.9153	109.3721	.1084E-02	.6525E-03
.408	33.236	.5143E+05	1.199	140.0	109.0	139.9131	109.1529	.1495E-02	.6332E-03
.355	39.512	.5212E+05	1.179	140.0	109.0	139.9067	108.9545	.1999E-02	.1255E-02
.383	45.790	.5260E+05	1.133	140.0	109.0	139.8795	108.7185	.2065E-02	.1203E-02
.383	52.081	.6455E+05	.999	140.0	108.5	139.7959	108.5105	.1325E-02	.1302E-02
.434	58.373	.9211E+05	1.238	140.0	108.0	139.6992	108.3108	.1640E-02	.9288E-03
.408	64.574	.8607E+05	1.159	139.5	108.0	139.5627	108.1170	.8652E-03	.1314E-02
.411	70.870	.8942E+05	1.138	139.5	108.0	139.4204	107.9650	.6777E-03	.1413E-02
.403	1.816	.1054E+06	1.204	139.0	108.0	139.2852	107.7797	.9091E-03	.2292E-02
.299	8.171	.1007E+06	1.022	139.0	107.5	139.1205	107.6187	.1268E-02	.1109E-02
.313	14.370	.1011E+06	1.010	139.0	107.5	138.9453	107.4879	.3944E-03	.1523E-02
.260	20.722	.1023E+06	1.253	139.0	107.0	138.7635	107.3771	.1299E-02	.1993E-02
.321	26.966	.8889E+05	1.164	138.5	107.0	138.5512	107.2760	.7326E-03	.1560E-02
.299	33.235	.8346E+05	1.166	138.5	107.0	138.3360	107.2065	.1040E-02	.1326E-02
.299	39.535	.8449E+05	1.190	138.0	107.0	138.1015	107.1459	.5468E-03	.1832E-02
.327	45.788	.8709E+05	1.204	138.0	107.0	137.8756	107.1178	.1290E-02	.6336E-03
.321	52.098	.9240E+05	1.243	138.0	107.0	137.6670	107.1201	.2028E-02	.3130E-02
.293	58.327	.8182E+05	1.147	137.5	107.0	137.4761	107.1690	.1229E-02	.5860E-03
.304	64.624	.8293E+05	1.192	137.0	107.0	137.2380	107.2157	.7109E-03	.1225E-02
.330	70.855	.8907E+05	1.183	137.0	107.0	137.0217	107.2987	.1009E-02	.8350E-03
.332	1.808	.9623E+05	1.025	137.0	107.5	136.7944	107.4249	.6801E-03	.1224E-02
.271	8.168	.9057E+05	.966	136.5	107.5	136.6331	107.5257	.1284E-02	.7566E-03
.369	14.361	.1442E+06	1.205	136.5	108.0	136.4933	107.4759	.6562E-01	.2974E+00
.425	20.736	.1020E+06	1.245	136.0	108.0	136.3197	107.7563	.5107E-03	.8916E-03
.422	26.963	.9979E+05	1.185	136.0	108.0	136.1757	107.9705	.5512E-03	.1409E-02
.417	33.254	.9398E+05	1.188	136.0	108.0	136.0185	108.1437	.1623E-02	.2067E-02
.363	39.543	.6799E+05	1.053	136.0	108.5	135.9225	108.3436	.7554E-03	.1372E-02
.347	45.791	.6663E+05	.991	136.0	108.5	135.8402	108.5476	.8630E-03	.8593E-03
.304	52.076	.5663E+05	1.139	136.0	109.0	135.7380	108.7407	.6391E-03	.1578E-02
.318	58.289	.5497E+05	1.175	136.0	109.0	135.7386	108.9581	.3113E-02	.1494E-02
.341	64.617	.5804E+05	1.197	136.0	109.0	135.7099	109.1606	.8099E-03	.1664E-02

ORIGINAL PAGE IS  
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.302	70.17	.7105E+05	1.07	136.0	110.0	135.6401	109.5202	.2183E-02	.2592E-02
.318	1.827	.1324E+06	1.181	136.0	110.0	135.6401	109.5202	.1430E-02	.7874E-03
.316	8.185	.7952E+05	1.152	136.0	110.0	135.8129	110.0562	.1233E-02	.7791E-03
.352	14.306	.7739E+05	1.174	136.0	110.0	135.9279	110.2605	.1233E-02	.2107E-02
.310	20.754	.7682E+05	1.152	136.0	110.0				
.282	27.004	.4587E+05	.923	136.0	110.5	136.0419	110.4071	.1549E-02	.1351E-02
.327	33.279	.5252E+05	.933	136.0	110.5	136.1720	110.5965	.9911E-03	.2315E-02
.274	39.540	.6147E+05	1.146	136.0	111.0	136.3055	110.7459	.8739E-02	.1770E-02
.288	45.832	.7186E+05	1.067	136.5	111.0	136.4740	110.9052	.9205E-02	.1621E-02
.285	52.098	.7712E+05	1.069	136.5	111.0	136.6491	111.0035	.5616E-03	.1249E-02
.338	58.391	.8792E+05	1.154	137.0	111.0	136.8267	111.1027	.1462E-02	.2094E-02
.330	64.638	.8684E+05	1.136	137.0	111.0	137.0395	111.2088	.1427E-02	.2523E-02
.304	70.898	.8564E+05	1.142	137.0	111.0	137.2541	111.2922	.4718E-03	.6250E-03
.332	1.827	.8767E+05	1.105	137.5	111.0	137.4706	111.3673	.1190E-02	.1154E-02
.288	8.184	.9820E+05	1.063	138.0	111.5	137.6825	111.3550	.9423E-03	.1310E-02
.260	14.386	.9324E+05	1.035	138.0	111.5	137.9075	111.3533	.1442E-02	.2494E-02
.262	20.752	.8944E+05	1.123	138.0	111.0	138.1468	111.3590	.1111E-02	.1680E-02
.310	26.986	.8506E+05	1.112	138.5	111.0	138.3423	111.3291	.9717E-03	.1767E-02
.327	33.265	.8310E+05	1.097	138.5	111.0	138.5389	111.2436	.1023E-02	.1851E-02
.296	39.552	.9170E+05	1.149	139.0	111.0	138.7150	111.1207	.1243E-02	.9235E-03
.243	45.821	.8400E+05	1.111	139.0	111.0	138.9258	111.0126	.7061E-03	.5626E-03
.276	52.069	.7626E+05	1.089	139.0	111.0	139.1413	110.9025	.1229E-02	.1174E-02
.226	58.420	.6274E+05	1.123	139.0	111.0	139.3011	110.7414	.1065E-02	.2226E-02
.276	64.623	.4873E+05	.918	139.5	110.5	139.4330	110.5913	.5890E-03	.1088E-02
.276	70.862	.4235E+05	.903	139.5	110.5	139.5607	110.4203	.4320E-03	.8982E-03

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	1	2	delta r1 3	4	5	6
0	-.00458	-.02192	.00778	-.00016	.00311	.00011
1	.01254	.03219	.01421	.00588	-.01672	.04345
2	-.02091	-.01123	-.00769	-.00243	.00418	.00533
3	.01906	.02755	.02861	.00094	.00588	-.00141
4	-.02012	-.02169	.00974	-.02879	-.03586	-.00657
5	-.01896	-.02221	-.03855	-.02269	-.01236	-.01331
6	.07084	.00025	.01756	.01932	-.00394	.00329
7	.00449	.01011	-.01399	-.01928	-.01158	.00043
8	.02862	-.00641	-.00921	.02155	.03252	.00262
9	-.03426	-.02558	.01113	-.00116	-.00399	-.00130

x0= 137.8051    r0= 109.2546    r0= 2.11033780    std.dev.= .02384398

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	2	1	5	12	15	25	0

ORIGINAL PAGE IS  
OF POOR QUALITY



	1	2	delta r1 3	4	5	6
0	-.00716	-.02445	.00534	-.00209	.00111	-.00160
1	.01114	.03120	.01437	.00582	-.01624	-.04245
2	-.01931	-.00902	-.00488	.00096	.00621	.01001
3	.02431	.03340	.03491	.00767	.01310	.00423
4	-.01206	-.01338		-.02007	-.02700	.00285
5	-.01005	-.01337	-.02982	-.01415	-.00404	-.00531
6		.00738	.02433	.02560	.00191	.00357
7	.00926	.01426	-.01038	-.01623	-.00918	.00221
8	.02981	-.00574	-.00908	.02115	.03172	.00347
9	-.03581	-.02748	.00896	-.00353	-.00648	-.00357

x0= 137.8101    y0= 109.2574    r0= 2.10721636    std.dev.= .01744137

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	1	5	10	14	28	2

ORIGINAL PAGE IS  
OF POOR QUALITY

	Coarse 1.0	Fine 1.0	Track 64.0
Information delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.2757E+06	.9190E+05	.7352E+06

Constants:	.34700	.27500	.40000	.29800
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.170	70.866	.9088E+04	2.717	139.5	110.5	139.5850	110.3967	.1051E-02	.7377E-03
.178	1.806	.1587E+05	2.898	139.5	110.0	139.6836	110.2171	.1119E-02	.1072E-02
.223	8.193	.1853E+05	2.928	140.0	110.0	139.7716	110.0133	.1193E-02	.9443E-03
.209	14.366	.1924E+05	2.929	140.0	110.0	139.8685	109.8187	.7842E-03	.7446E-03
.184	20.721	.1565E+05	2.802	140.0	109.5	139.9130	109.5821	.1014E-02	.7351E-03
.142	26.962	.1383E+05	2.873	140.0	109.0	139.9422	109.3479	.1525E-02	.5822E-02
.187	33.254	.1189E+05	2.976	140.0	109.0	139.9347	109.1216	.1406E-02	.1020E-02
.201	39.542	.1211E+05	2.956	140.0	109.0	139.9302	108.9266	.1413E-02	.1175E-02
.223	45.812	.1200E+05	2.917	140.0	109.0	139.9060	108.6870	.7442E-03	.4907E-03
.282	52.091	.1395E+05	2.796	140.0	108.5	139.8203	108.4882	.8684E-03	.4350E-03
.279	58.367	.2067E+05	3.027	140.0	108.0	139.7153	108.2821	.7271E-03	.9076E-03
.274	64.626	.1919E+05	2.952	139.5	108.0	139.5864	108.0893	.4456E-03	.1480E-02
.220	70.888	.2013E+05	2.927	139.5	108.0	139.4477	107.9382	.1207E-02	.5792E-03
.268	1.830	.2318E+05	3.004	139.0	108.0	139.3114	107.7379	.9095E-03	.1212E-02
.086	8.195	.2094E+05	2.810	139.0	107.5	139.1421	107.5864	.8175E-03	.1224E-02
.144	14.349	.2091E+05	2.805	139.0	107.5	138.9661	107.4610	.5248E-03	.1150E-02
.184	20.722	.2133E+05	3.029	139.0	107.0	138.7745	107.3441	.7296E-03	.1338E-02
.170	26.951	.1841E+05	2.953	138.5	107.0	138.5720	107.2423	.1297E-02	.1136E-02
.175	33.260	.1771E+05	2.955	138.5	107.0	138.3652	107.1764	.5536E-03	.2443E-03
.144	39.529	.1792E+05	2.964	138.0	107.0	138.1283	107.1194	.6490E-03	.5248E-03
.111	45.826	.1867E+05	2.971	138.0	107.0	137.8975	107.0903	.7360E-03	.1922E-02
.173	52.090	.1974E+05	3.005	138.0	107.0	137.6831	107.0906	.4114E-03	.9679E-03
.178	58.361	.1734E+05	2.932	137.5	107.0	137.5005	107.1371	.9458E-03	.3652E-03
.170	64.604	.1778E+05	2.982	137.0	107.0	137.2652	107.1804	.6483E-03	.1505E-02
.100	70.877	.1893E+05	2.962	137.0	107.0	137.0445	107.2677	.8562E-03	.2109E-02
.074	1.830	.2026E+05	2.834	137.0	107.5	136.8205	107.3977	.1665E-02	.1297E-02
.136	8.182	.1900E+05	2.770	136.5	107.5	136.6574	107.5034	.6476E-03	.1250E-02
.201	14.388	.1893E+05	2.821	136.5	107.5	136.4890	107.6241	.8485E-03	.9192E-03
.344	20.726	.2042E+05	2.949	136.5	108.0	136.3342	107.7668	.2814E-03	.1122E-02
.321	26.969	.2219E+05	2.974	136.0	108.0	136.2022	107.9409	.5945E-03	.1451E-02
.271	33.247	.2114E+05	2.970	136.0	108.0	136.0484	108.1106	.7802E-03	.1294E-02
.290	39.544	.1990E+05	2.956	136.0	108.0	135.9239	108.3368	.9574E-03	.1844E-02
.285	45.823	.1407E+05	2.783	136.0	108.5	135.8639	108.5169	.5274E-03	.7638E-03
.313	52.092	.1267E+05	2.919	136.0	109.0	135.8030	108.7036	.1099E-02	.1199E-02
.310	58.380	.1300E+05	2.955	136.0	109.0	135.7530	108.9203	.4481E-03	.9411E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

.316	70.670	.1753E+05	2.047	136.0	109.5	135.7377	109.3594	.1753E-02	.1753E-02
.330	1.844	.1665E+05	2.807	136.0	109.5	135.7582	109.6298	.4575E-03	.1074E-03
.318	8.197	.1885E+05	2.938	136.0	110.0	135.8193	109.8568	.1134E-02	.1110E-02
.265	14.389	.1806E+05	2.962	136.0	110.0	135.8614	110.0301	.1891E-02	.1159E-02
.220	20.750	.1838E+05	2.947	136.0	110.0	135.9445	110.2214	.1675E-02	.1688E-02
.223	26.977	.1040E+05	2.733	136.0	110.5	136.0640	110.3764	.1214E-02	.1051E-03
.260	33.251	.1149E+05	2.724	136.0	110.5	136.1917	110.5613	.1675E-02	.1579E-03
.251	39.535	.1269E+05	2.842	136.5	111.0	136.3434	110.7091	.2651E-03	.1091E-03
.220	45.902	.1484E+05	2.852	136.5	111.0	136.4972	110.8681	.6451E-03	.2074E-03
.192	52.100	.1623E+05	2.861	136.5	111.0	136.6721	110.9770	.1202E-02	.4993E-03
.206	58.362	.1840E+05	2.934	137.0	111.0	136.8504	111.0695	.1932E-02	.6557E-03
.125	64.628	.1817E+05	2.919	137.0	111.0	137.0610	111.1681	.8275E-03	.6365E-02
.130	70.877	.1801E+05	2.938	137.0	111.0	137.2705	111.2490	.6847E-03	.1752E-02
.133	1.830	.1817E+05	2.903	137.5	111.0	137.4921	111.3296	.9675E-03	.1237E-02
.198	8.190	.2311E+05	2.969	138.0	111.5 *	137.7020	111.3457	.1658E-02	.2089E-01
.245	14.378	.2195E+05	2.896	138.0	111.5 *	137.9329	111.3294	.1075E-01	.2031E-01
.262	20.716	.1873E+05	2.910	138.0	111.0	138.1639	111.3246	.6664E-03	.9127E-03
.240	26.976	.1785E+05	2.909	138.5	111.0	138.3685	111.2883	.9205E-03	.9393E-03
.307	33.252	.1756E+05	2.886	138.5	111.0	138.5585	111.2005	.9157E-03	.1536E-02
.226	39.531	.1937E+05	2.921	139.0	111.0	138.7351	111.0810	.1023E-02	.1192E-02
.161	45.803	.1784E+05	2.885	139.0	111.0	138.9559	110.9778	.1621E-02	.1095E-02
.153	52.116	.1585E+05	2.870	139.0	111.0	139.1669	110.8631	.8889E-03	.1638E-02
.187	58.370	.1251E+05	2.862	139.5	111.0	139.3229	110.7020	.7429E-03	.1187E-02
.178	64.654	.1025E+05	2.719	139.5	110.5	139.4614	110.5591	.6348E-03	.4717E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta r1	3	4	5	6
0	-.00028	-.00017	-.01516	.01236	.00256	.00502	
1	-.00340	.01075	.03431	.01228	.00180	.01752	
2	-.04200	-.00960	-.00904	-.00954	-.00252	.01016	
3	.01102	.02084	.03051	.03464	.00226	.01776	
4	.00554	-.01130	-.01978	-.01414	-.01317	.02375	
5	-.00033	-.00781	-.01181	-.02693	-.00020	.00102	
6	-.00456	.00910	.00549	.02457	.02027	.00528	
7	.01094	-.00304	.01163	-.00861	-.01639	-.01573	
8	-.00602	.02510	.01772	-.00046	.01813	.02418	
9	-.00317	-.04417	-.02620	.00460	-.01002	-.00287	

x0= 137.8345    y0= 109.2260    r0= 2.10614419    std.dev.= .01703058

HISTOGRAM DEVIATION >= e

ex	.05	.04	.03	.02	.01	0.00	bad points
	0	2	3	8	20	27	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	3	4	5	6
0	.00037	-.00758	-.01464	.01282	.00295	.00534
1	-.00316	.01094	.03443	.01234	-.00189	-.01799
2	-.04212	-.00976	-.00925	-.00978	-.00279	.00936
3	.01071	.02051	.03019	.03431	.00895	.01697
4	.00528	-.01562	-.01997	-.01429	-.01328	-.02870
5	-.00032	-.00773	-.01168	-.02674	-.00793	.00142
6	-.00417	.00958	.00604	.02516	.02892	.00598
7	.01169	-.00224	.01247	-.00774	-.01549	-.01489
8	-.00507	.02606			.01908	.02511
9	-.00226	-.04329	-.02536	.00539	-.00927	-.00218

n0= 137.8346    r0= 109.2254    r0= 2.10582757    std.dev.= .01715546

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	2	3	8	17	28	2

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 12-B Track data file TDAT011

NDR0:  
 Iteration delay: Coarse 1.0 Fine 1.0 Track 192.0  
 Thresholds: .1160E+00 .4564E+00 .7974E+00  
 .1838E+06 .9190E+05 .7352E+06

Constants: .34700 .27500 .40800 .29800  
 Displacements: 0.00000 0.00000 0.00000 0.00000

temp	angle	dark current	star mas.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.279	1.809	.1280E+05	6.123	139.5	110.0	139.6419	110.2534	.3462E-02	.3505E-01
.304	8.159	.1337E+05	6.117	140.0	110.0	139.7500	110.0430	.2638E-02	.1721E-02
.285	14.374	.1340E+05	6.111	140.0	110.0	139.8531	109.8557	.2257E-02	.4922E-02
.422	20.720	.1329E+05	6.010	140.0	109.5	139.8901	109.5910	.2565E-02	.2069E-02
.408	26.955	.1320E+05	6.051	140.0	109.5	139.9214	109.3540	.2875E-02	.1661E-02
.361	33.248	.1302E+05	6.155	140.0	109.0	139.9104	109.1151	.2642E-02	.5193E-02
.358	39.530	.1296E+05	6.130	140.0	109.0	139.9145	108.9258	.2383E-02	.2161E-02
.332	45.804	.1292E+05	6.094	140.0	109.0	139.8942	108.6910	.1811E-02	.1977E-02
.380	52.089	.1304E+05	5.995	140.0	108.5	139.8035	108.4974	.2602E-02	.1307E-02
.313	58.354	.1317E+05	6.197	139.5	108.0	139.6684	108.3484	.4127E-02	.9251E-01
.355	64.625	.1282E+05	6.160	139.5	108.0	139.5435	108.1003	.1250E-02	.1613E-02
.428	70.880	.1292E+05	6.140	139.5	108.0	139.4087	107.9579	.1574E-02	.5039E-02
.445	1.799	.1327E+05	6.178	139.0	108.0	139.2670	107.7515	.1806E-02	.5992E-02
.296	8.183	.1296E+05	6.018	139.0	107.5	139.0844	107.6049	.3176E-02	.2138E-02
.262	14.377	.1293E+05	6.014	139.0	107.5	138.9064	107.4766	.2393E-02	.1889E-02
.389	20.718	.1309E+05	6.080	139.0	107.5	138.7041	107.3715	.1862E-02	.2190E-02
.377	26.954	.1102E+05	6.174	138.5	107.0	138.5368	107.2738	.2727E-02	.2137E-02
.302	33.237	.1095E+05	6.171	138.5	107.0	138.3264	107.2118	.1362E-02	.3262E-02
.234	39.540	.1083E+05	6.156	138.0	107.0	138.0978	107.1378	.1592E-02	.3022E-02
.215	45.817	.1083E+05	6.167	138.0	107.0	137.8616	107.1094	.3266E-02	.1919E-02
.130	52.095	.1062E+05	6.117	137.5	107.0	137.6579	107.1176	.8822E-03	.2338E-02
.142	58.358	.1061E+05	6.131	137.5	107.0	137.4660	107.1596	.5688E-03	.5447E-02
.111	64.635	.1060E+05	6.139	137.0	107.0	137.2204	107.1903	.2733E-02	.3528E-02
.187	70.816	.1071E+05	6.137	137.0	107.0	136.9977	107.2804	.1540E-02	.2770E-02
.195	1.905	.1098E+05	6.047	137.0	107.5	136.7862	107.4075	.2490E-02	.5866E-02
.201	8.180	.1316E+05	5.980	136.5	107.5	136.6474	107.5128	.2083E-02	.1344E-02
.257	14.371	.1315E+05	6.031	136.5	107.5	136.4817	107.6366	.2224E-02	.1714E-02
.358	20.723	.1356E+05	6.162	136.5	108.0	136.3183	107.7872	.1436E-02	.3938E-02
.335	26.954	.1360E+05	6.142	136.0	108.0	136.1618	107.9353	.4088E-02	.1450E-02
.380	33.247	.1352E+05	6.141	136.0	108.0	136.0050	108.1068	.4069E-02	.3489E-02
.318	39.529	.1280E+05	6.026	136.0	108.5	135.9260	108.3297	.1954E-02	.1398E-02
.324	45.812	.1277E+05	5.957	136.0	108.5	135.8424	108.5328	.1429E-02	.2077E-02
.330	52.081	.1267E+05	6.061	136.0	109.0	135.8102	108.7297	.3289E-02	.2693E-02
.338	58.376	.9117E+04	6.078	135.5	109.0	135.8790	108.9484	.6673E-01	.3527E-02
.341	64.606	.8184E+04	6.080	135.5	109.0	135.8676	109.1427	.2189E-02	.5074E-02

ORIGINAL PAGE IS  
 OF POOR QUALITY

.371	1.309	.1296E+05	5.985	136.0	109.5	135.7458	109.6369	.1527E-02	.2013E-02
.332	8.176	.1321E+05	6.101	136.0	110.0	135.8120	109.8744	.1735E-02	.4527E-02
.338	14.356	.1311E+05	6.113	136.0	110.0	135.8525	110.0409	.2297E-02	.3323E-02
.318	20.712	.1312E+05	6.095	136.0	110.0	135.9382	110.2302	.2419E-02	.2695E-02
.237	26.969	.1260E+05	5.904	136.0	110.5	136.0487	110.3896	.2440E-02	.4761E-02
.265	33.266	.1278E+05	5.906	136.0	110.5	136.1776	110.5724	.8638E-03	.7657E-02
.262	39.540	.1262E+05	6.010	136.5	111.0	136.3312	110.7347	.1474E-02	.4385E-02
.307	45.825	.1278E+05	6.020	136.5	111.0	136.4780	110.8841	.2220E-02	.3669E-02
.307	52.069	.1283E+05	6.018	136.5	111.0	136.6456	110.9811	.2707E-02	.2236E-02
.321	58.379	.1053E+05	6.077	137.0	111.0	136.8263	111.0883	.3941E-02	.2385E-02
.268	64.634	.1050E+05	6.069	137.0	111.0	137.0310	111.1995	.1148E-02	.1995E-02
.282	70.877	.1044E+05	6.073	137.0	111.0	137.2480	111.2726	.2007E-02	.2917E-02
.386	1.815	.1057E+05	6.020	137.5	111.5	137.4590	111.3140	.9189E-02	.2146E-01
.338	8.137	.1045E+05	5.970	137.5	111.5	137.6758	111.3382	.1077E-02	.1694E-02
.375	14.377	.1058E+05	6.010	138.0	111.5	137.8994	111.3450	.2258E-02	.2390E-02
.290	20.748	.1049E+05	6.005	138.0	111.5	138.1479	111.3131	.2126E-02	.2874E-02
.313	26.955	.1041E+05	6.059	138.5	111.0	138.3392	111.3110	.2306E-02	.1203E-02
.327	33.263	.1042E+05	6.047	138.5	111.0	138.5237	111.2245	.1317E-02	.1732E-02
.332	39.510	.1035E+05	6.030	138.5	111.0	138.6987	111.1046	.1025E-02	.2665E-02
.335	45.794	.1239E+05	6.005	139.0	111.0	138.9121	110.9769	.2012E-02	.2589E-02
.304	52.096	.1229E+05	5.990	139.0	111.0	139.1216	110.8677	.2685E-02	.3013E-02
.321	58.373	.1194E+05	6.008	139.5	111.0	139.3143	110.7245	.3512E-02	.3486E-02
.285	64.624	.1138E+05	5.892	139.5	110.5	139.4431	110.5845	.4327E-02	.6326E-02
.327	70.870	.1173E+05	5.878	139.5	110.5	139.5597	110.4209	.1417E-02	.1483E-02

ORIGINAL PAGE IS  
OF POOR  
QUALITY

	1	2	delta r1 3	4	5	6
0	-.01331	-.00734	.02685	-.00252	.00775	-.00222
1	.02186	.04986	.02247	-.04294	-.02348	-.05300
2	-.01824	-.02698	-.02246	-.02638	-.00048	-.00061
3	.02751	.03806	.03570	.01747	.04269	.03221
4	.01092	-.00557	-.00484	-.00412	.01616	.04576
5	.00715	.00566	-.02124	-.13230	-.14059	-.02538
6	.01560	.00923	.02746	.03372	.01426	.01717
7	.01166	.02399	.00170	-.00015	.00428	.01251
8	.00609	.00397	.00719	-.00045	.03581	.00628
9	-.03793	-.04731	-.01474	.00765	.00216	.00437

x0= 137.8205    x0= 109.2432    r0= 2.09608674    std.dev.= .03390471

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	3	5	6	12	11	23	0

ORIGINAL PAGE IS  
OF POOR QUALITY



	1	2	delta ri 3	4	5	6
0		-.00738	.02685	.00249	.00764	-.00246
1	.02149	.04930	.02169		-.02983	-.05443
2	-.02026	-.02938	-.02523	-.02954	-.00398	-.00649
3	.02322	.03337	.03068	.01214	.03699	.02718
4	.00459	-.01210	-.01159	-.01106	.00907	.03854
5	-.00015	-.00167	-.02856		-.14780	
6	.00870	.00256	.02097	.02747	.00926	.01147
7	.00630	.01897	-.00302	-.00451	.00032	.00895
8		.00116	.00476	-.00248	.03406	.00482
9	-.03911	-.04818	-.01536	.00724	.00890	.00422

x0= 137.8170    y0= 109.2421    r0= 2.09975147    std.dev.= .02948345

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	2	2	6	13	7	25	5

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 12-A Track data file IDATA03

	Coarse	Fine	Track
	1.0	1.0	16.0
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.3217E+06	.9190E+05	.7352E+06
Constants:	.34700	.27500	.40800
Displacements:	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
10.151	70.884	.5138E+05	.885	139.5	110.5	139.5705	110.4394	.7555E-03	.8922E-03
10.163	1.795	.7907E+05	1.089	139.5	110.0	139.6756	110.2794	.9011E-03	.1240E-02
10.208	8.172	.8837E+05	1.136	140.0	110.0	139.7353	110.0572	.1473E-03	.7422E-03
10.210	14.366	.8937E+05	1.117	140.0	110.0	139.8325	109.8747	.7652E-03	.6820E-03
10.202	20.716	.8160E+05	1.026	140.0	109.5	139.8871	109.6430	.8101E-02	.5531E-02
10.163	26.935	.7155E+05	1.007	140.0	109.5	139.9159	109.3969	.2099E-02	.9272E-03
10.219	33.251	.6030E+05	1.180	140.0	109.0	139.9117	109.1776	.1261E-02	.1279E-02
10.241	39.515	.6011E+05	1.172	140.0	109.0	139.9026	108.9770	.4170E-03	.1343E-02
10.174	45.792	.6142E+05	1.121	140.0	109.0	139.8802	108.7526	.1464E-02	.1085E-02
10.199	52.067	.7357E+05	.978	140.0	108.5	139.7948	108.5474	.1263E-02	.3774E-03
10.272	58.364	.1543E+06	1.276	140.0	108.0	139.7072	108.4367	.1529E-01	.1786E+00
10.250	64.593	.9337E+05	1.147	139.5	108.0	139.5752	108.1422	.7040E-03	.2232E-02
10.325	70.884	.9881E+05	1.137	139.5	108.0	139.4285	107.9912	.9036E-03	.8985E-03
10.252	1.802	.1124E+06	1.194	139.0	108.0	139.2902	107.8157	.7152E-03	.8836E-03
10.199	8.145	.1112E+06	1.051	139.0	107.5	139.1231	107.6512	.3616E-02	.1831E-01
10.135	14.358	.1100E+06	.994	139.0	107.5	138.9510	107.5207	.1176E-02	.9840E-03
10.174	20.723	.1117E+06	1.024	139.0	107.5	138.7527	107.4144	.1913E-02	.8706E-03
10.163	26.959	.9797E+05	1.145	139.5	107.0	138.5631	107.3115	.1061E-02	.9108E-03
10.163	33.259	.9479E+05	1.154	138.5	107.0	138.3457	107.2411	.1311E-02	.1319E-02
10.160	39.528	.9416E+05	1.180	138.0	107.0	138.1076	107.1771	.1610E-02	.1157E-02
10.174	45.814	.9727E+05	1.198	138.0	107.0	137.8773	107.1481	.7152E-03	.1422E-02
10.185	52.094	.1009E+06	1.233	138.0	107.0	137.6696	107.1526	.1338E-02	.7258E-03
10.171	58.373	.9237E+05	1.141	137.5	107.0	137.4846	107.2033	.1252E-02	.2476E-02
10.163	64.594	.9334E+05	1.182	137.0	107.0	137.2460	107.2448	.1169E-02	.1199E-02
10.179	70.881	.9847E+05	1.171	137.0	107.0	137.0272	107.3327	.7926E-03	.2179E-02
10.219	1.808	.1059E+06	1.004	137.0	107.5	136.8005	107.4528	.9818E-03	.1537E-02
10.185	8.172	.9888E+05	.964	136.5	107.5	136.6476	107.5556	.1462E-02	.9415E-03
10.264	14.364	.1042E+06	1.134	136.5	108.0	136.4721	107.6552	.4286E-03	.3941E-03
10.275	20.722	.1086E+06	1.219	136.0	108.0	136.3217	107.8327	.1881E-02	.1851E-02
10.283	26.977	.1071E+06	1.180	136.0	108.0	136.1731	107.9982	.1113E-02	.4070E-03
10.289	33.263	.1006E+06	1.178	136.0	108.0	136.0200	108.1809	.1666E-02	.1575E-02
10.233	39.542	.7351E+05	1.019	136.0	108.5	135.9224	108.3727	.1059E-02	.1315E-02
10.194	45.810	.7209E+05	.982	136.0	108.5	135.8387	108.5792	.1078E-02	.4511E-03
10.219	52.104	.6437E+05	1.128	136.0	109.0	135.7910	108.7706	.1129E-02	.6094E-03
10.236	58.364	.6303E+05	1.168	136.0	109.0	135.7326	108.9830	.6301E-03	.1307E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

TR8104

10.205	70.873	.8043E+05	1.286	136.0	109.5	135.7121	109.4363	.1087E-02	.1227E-02
10.230	1.823	.9596E+05	1.108	136.0	110.0	135.7451	109.6834	.1054E-02	.1390E-02
10.255	8.192	.8740E+05	1.140	136.0	110.0	135.7859	109.9192	.9619E-03	.1731E-02
10.191	14.374	.8620E+05	1.166	136.0	110.0	135.8317	110.0849	.2004E-02	.2461E-03
10.236	20.754	.8900E+05	1.124	136.0	110.0	135.9284	110.2998	.1536E-02	.1524E-02
10.160	26.990	.5574E+05	.901	136.0	110.5	136.0439	110.4448	.9027E-03	.2105E-03
10.123	33.279	.6341E+05	.941	136.0	110.5	136.1713	110.6433	.1871E-02	.3865E-03
10.143	39.545	.7336E+05	1.142	136.0	111.0	136.3114	110.7913	.1405E-02	.1664E-02
10.149	45.832	.8147E+05	1.065	136.5	111.0	136.4813	110.9379	.8230E-03	.1271E-02
10.199	52.087	.8780E+05	1.068	136.5	111.0	136.6588	111.0325	.8466E-03	.5995E-03
10.129	58.408	.9754E+05	1.141	137.0	111.0	136.8289	111.1388	.2307E-02	.8727E-03
10.168	64.558	.9712E+05	1.121	137.0	111.0	137.0415	111.2503	.2024E-02	.2484E-02
10.216	70.895	.9662E+05	1.121	137.0	111.0	137.2609	111.3352	.1033E-02	.1611E-02
10.157	1.823	.9882E+05	.971	137.5	111.5	137.4785	111.3604	.1205E-02	.1403E-02
10.135	8.187	.1083E+06	1.026	138.0	111.5	137.6852	111.3930	.2182E-02	.1277E-02
10.160	14.389	.1029E+06	1.006	138.0	111.5	137.9131	111.3890	.1612E-02	.1501E-02
10.182	20.762	.9947E+05	1.008	138.0	111.5	138.1613	111.3524	.1050E-02	.5094E-03
10.137	26.970	.9521E+05	1.023	138.5	111.0	138.3503	111.3654	.1343E-02	.2181E-02
10.160	33.242	.9403E+05	1.085	138.5	111.0	138.5491	111.2786	.1108E-02	.1905E-02
10.157	39.530	.1005E+06	1.135	139.0	111.0	138.7131	111.1549	.6267E-03	.2459E-03
10.154	45.818	.9386E+05	1.106	139.0	111.0	138.9238	111.0363	.1181E-02	.1029E-02
10.151	52.080	.8618E+05	1.081	139.0	111.0	139.1404	110.9279	.1291E-02	.5957E-03
10.135	58.375	.7277E+05	1.087	139.0	111.0	139.3018	110.7735	.2949E-02	.1381E-02
10.121	64.653	.5926E+05	.915	139.5	110.5	139.4401	110.6197	.9959E-03	.9430E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

TR81-04

	1	2	delta ri	3	4	5	6
0	-.00181	.00734	-.03195	.00071	.00220	.00372	
1	-.00031	.01065	.03339	.01361	-.02543	-.00047	
2	-.03104	-.01733	-.00674	-.00158	-.00799	.00262	
3	.01019	.02601	.03504	.03390	.00369	.01317	
4	-.00040	-.01223	-.02069	.00386	-.02572	-.02337	
5	-.00278	-.00976	-.01290	-.02357	-.00811	-.00488	
6	-.00486	-.00561	.01222	.02478	.02835	.00326	
7	.01862	.01479	.01063	-.01754	-.01284	-.00007	
8	.01229	-.00841	.00169	-.00336	-.01253	.03997	
9	.01704	-.03236	-.03307	.00588	-.00042	-.00071	

x0= 137.8085    v0= 109.2885    r0= 2.10646009    std.dev.= .01728430

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	0	8	8	16	28	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	-.00290	.00615	-.03323	-.00067	.00074	.00218
1	-.00191	.00900	.03170	.01190		-.00221
2	-.03277	.01903		-.00320	-.00955	.00812
3	.00878	.02470	.03382	.03279	.00266	.01226
4	-.00118	-.01287	-.02123	.00347	-.02603	-.02356
5	-.00286	-.00974	-.01278	-.02336	-.00783	-.00452
6	-.00444	-.00514	.01273	.02530	.02889	.00380
7	.01914	.01530	.01110	-.01711	-.01246	.00073
8	.01251	-.00827	.00174	-.00342	-.01272	.03962
9	.01665	-.03286	-.03370	.00512	-.00122	-.00129

$\mu = 137.8095$      $\sigma = 109.2879$      $r = 2.10705686$      $\text{std. dev.} = .01721284$

HISTOGRAM DEVIATION  $\geq e$

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	0	8	7	14	29	2

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 12-A Track data file TDATA01

	Coarse 1.0	Fine 1.0	Track 64.0
NDRO:			
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.1838E+06	.9190E+05	.7352E+06

	.34700	.27500	.40800	.29800
Constants:				
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
10.168	1.795	.2396E+05	2.870	139.5	110.0	139.6577	110.3169	.4613E-03	.1770E-02
10.179	8.141	.2605E+05	2.915	140.0	110.0	139.7127	110.0869	.1343E-02	.1710E-02
10.185	14.347	.2643E+05	2.895	140.0	110.0	139.8070	109.9034	.1384E-02	.1231E-02
10.168	20.725	.2801E+05	2.900	140.0	110.0	139.8763	109.6624	.1282E-02	.2321E-02
10.143	26.945	.2297E+05	2.780	140.0	109.5	139.8911	109.4363	.1177E-02	.4262E-03
10.126	33.222	.2061E+05	2.948	140.0	109.0	139.8906	109.2073	.8273E-03	.1855E-02
10.165	39.518	.2000E+05	2.946	140.0	109.0	139.8743	108.9965	.1448E-02	.1718E-02
10.216	45.798	.2053E+05	2.902	140.0	109.0	139.8528	108.7810	.6338E-03	.2224E-02
10.151	52.075	.2151E+05	2.768	140.0	108.5	139.7765	108.5839	.5568E-03	.1149E-02
10.179	58.367	.2177E+05	2.755	139.5	108.5	139.6696	108.3648	.7522E-03	.1294E-02
10.269	64.603	.2642E+05	2.927	139.5	108.0	139.5564	108.1666	.5983E-03	.1723E-02
10.247	70.830	.2719E+05	2.927	139.5	108.0	139.4157	108.0102	.2117E-02	.7328E-03
10.196	1.791	.3074E+05	2.965	139.0	108.0	139.2768	107.8466	.0697E-03	.1426E-02
10.216	8.148	.3177E+05	2.923	139.0	108.0	139.1135	107.6458	.9612E-03	.9312E-03
10.112	14.351	.2989E+05	2.784	139.0	107.5	138.9281	107.5497	.5544E-03	.1684E-02
10.154	20.701	.3029E+05	2.806	139.0	107.5	138.7310	107.4432	.1082E-02	.1430E-02
10.076	26.939	.2725E+05	2.926	136.5	107.0	138.5414	107.3404	.1170E-02	.1685E-02
10.135	33.225	.2633E+05	2.932	138.5	107.0	138.3285	107.2712	.1077E-02	.1986E-02
10.045	39.524	.2614E+05	2.950	138.0	107.0	138.0849	107.1955	.3696E-03	.2720E-02
10.126	45.818	.2704E+05	2.970	138.0	107.0	137.8553	107.1716	.1026E-02	.1842E-02
10.143	52.082	.2563E+05	2.918	137.5	107.0	137.6682	107.1818	.9179E-03	.1521E-02
10.135	58.361	.2569E+05	2.923	137.5	107.0	137.4696	107.2235	.5911E-03	.1644E-02
10.151	64.632	.2615E+05	2.945	137.0	107.0	137.2296	107.2651	.1374E-02	.5491E-03
10.165	70.880	.3124E+05	2.884	137.0	107.5	137.0203	107.3591	.1621E-01	.5170E-02
10.118	1.784	.2887E+05	2.786	137.0	107.5	136.7820	107.4719	.4381E-03	.4477E-03
10.073	8.158	.2716E+05	2.762	136.5	107.5	136.6301	107.5717	.2125E-02	.7297E-03
10.266	14.362	.2880E+05	2.918	136.5	108.0	136.4563	107.6694	.1375E-02	.7023E-03
10.283	20.721	.2978E+05	2.981	136.0	108.0	136.3087	107.8441	.1569E-02	.4424E-02
10.247	26.974	.2952E+05	2.942	136.0	108.0	136.1526	108.0021	.5350E-03	.9653E-03
10.247	33.250	.2828E+05	2.942	136.0	108.0	135.9990	108.1892	.1667E-02	.1367E-02
10.202	39.515	.2179E+05	2.789	136.0	108.5	135.9080	108.3893	.9645E-03	.9620E-03
10.160	45.806	.2156E+05	2.766	136.0	108.5	135.8223	108.5931	.9238E-03	.8223E-03
10.196	52.077	.2068E+05	2.902	136.0	109.0	135.7744	108.7819	.1196E-02	.1949E-02
10.177	58.378	.2071E+05	2.940	136.0	109.0	135.7124	108.9853	.1938E-02	.1231E-02
10.199	64.590	.1066E+05	2.894	135.5	109.0	135.7685	109.1147	.1569E-02	.1004E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

10.196	20.717	.2643E+05	2.893	136.0	110.0	135.7288	109.6888	.1277E-02	.1085E-02
10.205	1.788	.2854E+05	2.893	136.0	110.0	135.7288	109.6888	.5510E-03	.1157E-02
10.213	8.156	.2638E+05	2.913	136.0	110.0	135.7695	109.9193	.5183E-03	.7830E-03
10.216	14.351	.2596E+05	2.927	136.0	110.0	135.8126	110.0342	.1004E-02	.5447E-03
10.132	26.961	.1816E+05	2.678	136.0	110.5	136.0302	110.4508	.1169E-02	.6852E-03
10.149	33.245	.2002E+05	2.724	136.0	110.5	136.1602	110.6486	.4479E-03	.1191E-02
10.174	39.526	.2194E+05	2.859	136.5	111.0	136.3090	110.7982	.4198E-02	.4658E-02
10.143	45.811	.2335E+05	2.840	136.5	111.0	136.4697	110.9394	.4512E-03	.7657E-02
10.112	52.083	.2450E+05	2.838	136.5	111.0	136.6474	111.0342	.7827E-03	.3884E-03
10.165	58.376	.2688E+05	2.903	137.0	111.0	136.8103	111.1331	.1007E-02	.3346E-02
10.143	64.649	.2655E+05	2.885	137.0	111.0	137.0252	111.2468	.7752E-03	.1374E-02
10.157	70.891	.2643E+05	2.886	137.0	111.0	137.2467	111.3334	.1592E-02	.1036E-02
10.179	1.798	.2642E+05	2.763	137.5	111.5	137.4692	111.3643	.5916E-03	.3712E-03
10.146	8.160	.2822E+05	2.786	133.0	111.5	137.6789	111.3988	.1031E-01	.2516E-02
10.168	14.352	.2792E+05	2.782	138.0	111.5	137.8969	111.3960	.9666E-03	.7489E-03
10.205	20.739	.2697E+05	2.783	138.0	111.5	138.1446	111.3599	.1406E-02	.1826E-02
10.202	26.968	.2601E+05	2.869	138.5	111.0	138.3441	111.3624	.1436E-02	.1507E-02
10.182	33.259	.2572E+05	2.859	138.5	111.0	138.5378	111.2812	.7886E-03	.1760E-02
10.179	39.546	.2779E+05	2.900	139.0	111.0	138.6968	111.1527	.1131E-02	.1854E-02
10.149	45.799	.2614E+05	2.864	139.0	111.0	138.9036	111.0336	.1269E-02	.1219E-02
10.151	52.115	.2455E+05	2.838	139.0	111.0	139.1245	110.9242	.1883E-02	.1316E-02
10.151	58.370	.2128E+05	2.829	139.5	111.0	139.2929	110.7798	.9304E-03	.4177E-03
10.149	64.621	.1854E+05	2.704	139.5	110.5	139.4293	110.6298	.5724E-03	.7040E-03
10.137	70.880	.1700E+05	2.666	139.5	110.5	139.5567	110.4523	.1550E-02	.1231E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.02326	-.02598	.00179	.01399	.00192	.00007
1	.00286	.02734	.00852	-.00341	.00385	.02714
2	-.02284	.01689	-.01358	-.01932	.00186	.00111
3	.02538	.03010	.02277	.00252	.01255	.00173
4	-.00979	-.01571	.00972	-.01960	.00695	.01134
5	-.00526	-.00563	-.01501	.00510	.06759	.00521
6	.00141	.01698	.03077	.03227	.00585	.01521
7	.00917	.00638	-.01862	-.01552	-.00724	.00572
8	-.01069	.00161	-.00183	-.01074	.03426	.01575
9	-.03919	-.04186	-.00051	.00630	.00777	.00602

x0= 137.7938    v0= 109.3006    r0= 2.09972954    std.dev.= .01869231

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	1	5	7	16	30	0

ORIGINAL PAGE IS  
OF POOR QUALITY



delta ri

	1	2	3	4	5	6
0	.02340	-.02588	.00187	.01402	.00192	-.00091
1	.00277	.02371	.00835	-.00367	-.00411	.00243
2	-.02317	-.01651	-.01398	-.01975	.00232	.00160
3	.02488	.02958	.02224	.00199	.01201	
4	-.01032	-.01623	.00921	-.00009	-.00742	.01090
5	-.00567	-.00601	-.01535	.00479	-.00756	.00640
6	.00123	.01684	.03066	.03221	.00562	.01822
7	.00922	.00647	-.01851	-.01545	-.00707	.00579
8	-.01047		-.00159	-.01049	.03451	.01620
9	-.03894	-.04162	-.00028	.00650	.00796	.00618

x0= 137.7937    x0= 109.3002    r0= 2.09987283    std. dev. = .01896506

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	1	4	9	16	27	2

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 12-A Track data file HM1002

	Coarse 1.0	Fine 1.0	Track 192.0	
NDRO:				
Integration delay:	.1160E+00	.4564E+00	.7974E+00	
Thresholds:	.1838E+06	.9190E+05	.7352E+06	
Constants:	.34700	.27500	.40800	.29800
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
10.135	1.780	.2682E+05	6.104	139.5	110.0	139.6527	110.3656	.5471E-02	.8918E-01
10.115	8.141	.2711E+05	6.078	140.0	110.0	139.7373	110.1113	.3656E-02	.6739E-02
10.137	14.353	.2728E+05	6.059	140.0	110.0	139.8359	109.9394	.2571E-02	.5045E-02
10.151	20.719	.2734E+05	6.068	140.0	110.0	139.9067	109.6992	.4354E-02	.6171E-02
10.132	26.952	.2713E+05	5.989	140.0	109.5	139.9163	109.4440	.2959E-02	.2644E-02
10.078	33.263	.2694E+05	6.134	140.0	109.0	139.9085	109.2141	.3626E-02	.7028E-02
10.121	39.517	.2691E+05	6.126	140.0	109.0	139.8987	108.9985	.4490E-02	.5702E-02
10.123	45.818	.2693E+05	6.090	140.0	109.0	139.8830	108.7847	.4210E-02	.6537E-02
10.137	52.083	.2694E+05	5.979	140.0	109.5	139.8024	108.5853	.1319E-01	.1032E-01
10.157	58.375	.2607E+05	5.943	139.5	109.5	139.6468	108.3659	.2822E-02	.1415E-02
10.216	64.618	.2664E+05	6.120	139.5	108.0	139.5423	108.1496	.3820E-02	.4771E-02
10.182	70.877	.2662E+05	6.108	139.5	108.0	139.3976	108.0179	.2873E-02	.4864E-02
10.174	1.919	.2706E+05	6.125	139.0	108.0	139.2460	107.8407	.3035E-02	.5077E-02
10.101	8.163	.2699E+05	6.033	139.0	107.5	139.0774	107.6858	.5748E-02	.2099E-01
10.090	14.352	.2697E+05	5.977	139.0	107.5	138.8960	107.5553	.8030E-03	.2142E-02
10.101	20.710	.2705E+05	6.006	139.0	107.5	138.6945	107.4483	.1675E-02	.2879E-02
10.087	26.948	.2402E+05	6.010	138.5	107.5	138.5373	107.3618	.1279E-02	.1979E-02
10.101	33.249	.2402E+05	6.167	138.5	107.0	138.3139	107.3218	.1980E-02	.2388E-02
10.090	39.518	.2374E+05	6.147	138.0	107.0	138.1173	107.2330	.2166E-02	.2586E-02
10.081	45.801	.2382E+05	6.160	138.0	107.0	137.8650	107.2010	.3010E-02	.3169E-02
10.126	52.086	.2370E+05	6.123	137.5	107.0	137.6628	107.2043	.1609E-01	.4524E-02
10.126	58.355	.2368E+05	6.113	137.5	107.0	137.4693	107.2422	.2165E-02	.3111E-02
10.084	64.618	.2363E+05	6.104	137.0	107.0	137.2134	107.2685	.3792E-02	.5567E-02
10.115	70.895	.2387E+05	5.994	137.0	107.5	137.0299	107.3664	.1163E-01	.5037E-02
10.115	1.791	.2382E+05	5.957	137.0	107.5	136.7817	107.4759	.5524E-02	.2554E-02
10.107	8.162	.2733E+05	5.985	136.5	107.5	136.6678	107.5691	.4217E-02	.3458E-02
10.236	14.360	.2801E+05	6.136	136.5	108.0	136.4975	107.6137	.3289E-01	.1004E-01
10.196	20.717	.2758E+05	6.110	136.5	108.0	136.3256	107.8470	.3757E-02	.5053E-02
10.236	26.966	.2753E+05	6.102	136.0	108.0	136.1411	107.9629	.1703E-02	.3277E-02
10.202	33.240	.2742E+05	6.132	136.0	108.0	135.9783	108.1420	.2108E-02	.2531E-02
10.216	39.524	.2683E+05	5.962	136.0	108.5	135.9175	108.4008	.3265E-02	.3217E-02
10.179	45.802	.2695E+05	5.936	136.0	108.5	135.8367	108.6402	.4259E-02	.3038E-02
10.188	52.089	.2679E+05	6.028	136.0	109.0	135.7930	108.8002	.4170E-02	.2308E-02
10.174	58.365	.1065E+05	5.996	135.5	109.0	136.4009	109.0713	.1757E-01	.4474E-02
10.208	64.624	.1037E+05	6.032	135.5	109.0	136.3447	109.2634	.1703E-01	.5249E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

TM1002

10.171	1.802	.2770E+05	5.089	136.0	110.0	135.7126	109.6717	.0173E-01	.1141E-02
10.182	8.163	.2727E+05	6.070	136.0	110.0	135.7983	109.8853	.2154E-02	.4344E-02
10.219	14.363	.2722E+05	6.085	136.0	110.0	135.8337	110.0552	.5003E-02	.5531E-02
10.222	20.722	.2725E+05	6.043	136.0	110.0	135.9290	110.2466	.4053E-02	.2297E-02
10.132	26.963	.2715E+05	5.090	136.0	110.5	136.0610	110.4403	.3121E-02	.2105E-02
10.132	33.254	.2717E+05	5.929	136.0	110.5	136.1901	110.6408	.7064E-03	.2477E-02
10.081	39.536	.2694E+05	6.003	136.5	111.0	136.3263	110.8198	.2087E-02	.8405E-02
10.098	45.798	.2703E+05	6.005	136.5	111.0	136.4803	110.9555	.2317E-02	.2747E-02
10.121	52.068	.2713E+05	6.009	136.5	111.0	136.6449	111.0466	.1734E-02	.2314E-02
10.126	58.370	.2391E+05	6.068	137.0	111.0	136.8274	111.1649	.2654E-02	.2982E-02
10.104	64.604	.2384E+05	6.045	137.0	111.0	137.0441	111.2687	.2890E-02	.2433E-02
10.171	70.701	.2392E+05	6.052	137.0	111.0	137.2763	111.3333	.2315E-01	.3331E-01
10.118	70.773	.2384E+05	6.086	137.0	111.0	137.2711	111.3530	.5432E-02	.0673E-02
10.137	1.812	.2380E+05	5.980	137.5	111.5	137.4544	111.3523	.1856E-02	.7754E-03
10.165	8.173	.2376E+05	5.939	137.5	111.5	137.6732	111.3825	.1201E-02	.3153E-02
10.146	14.371	.2385E+05	5.979	138.0	111.5	137.9054	111.3929	.3457E-02	.1477E-02
10.171	20.725	.2376E+05	5.974	138.0	111.5	138.1521	111.3567	.1306E-02	.1754E-02
10.160	26.967	.2364E+05	5.998	138.5	111.5	138.3394	111.3087	.1543E-02	.3015E-02
10.177	33.263	.2367E+05	6.035	138.5	111.0	138.5195	111.2852	.2800E-02	.3489E-02
10.090	39.529	.2360E+05	6.022	138.5	111.0	138.6957	111.1669	.2159E-02	.4721E-02
10.067	45.828	.2671E+05	5.982	139.0	111.0	138.9086	111.0153	.3400E-02	.2880E-02
10.146	52.083	.2661E+05	5.953	139.0	111.0	139.1159	110.9111	.1327E-02	.1965E-02
10.157	58.387	.2618E+05	5.964	139.5	111.0	139.3274	110.7755	.2343E-02	.3071E-02
10.090	64.607	.2616E+05	5.875	139.5	110.5	139.4508	110.6250	.3602E-02	.5249E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.02943	-.00802	.02564	.02821	.01408	.00426
1	.01574	.04290	.02526	-.02848	-.01854	-.04422
2	-.03503	-.02746	-.02217	-.02252	-.00245	-.02868
3	.02189	.03456	.03763	.02438	.05799	.02724
4	.03800	.01868	.08251	.02389	.08500	.11470
5	.04291	.04121	.02506	-.62601	-.58890	.07739
6	.06502	.03984	.05544	.05261	.02358	.03612
7	.05489	.05223	.02631	.03223	.03412	.02110
8	.04161	.00000	.00180	.00752	-.00494	-.01426
9	.01520	-.02819	-.05914	-.02342	.01821	.01022

x0= 137.8307    y0= 109.3110    r0= 2.07574964    std.dev.= .11757054

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	13	5	9	18	8	7	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0		.00307	.03747	.05060	.02659	.01652
1	.02742	.05371		-.02070	-.01267	-.04039
2	-.03378		-.02657	-.03004	-.01249	.04199
3	.00548	.01445		-.00146	.02863	
4	.00252	-.01852	-.02336	-.01794	.04218	.07934
5	-.00394	-.00659	-.00965	.00844	-.01879	-.00225
6		-.00687	.00965	.00210	.00728	
7	.01722	.01693	-.00667	-.00662	-.01547	.02205
8	.01820	-.02081	-.01576	-.02022	.02387	.01756
9	.00984	-.03082	-.05853			

$\mu = 137.8002$      $\sigma = 109.3083$      $r = 2.09388995$      $\text{std. dev.} = .02603350$

HISTOGRAM DEVIATION  $\geq e$

e=	.05	.04	.03	.02	.01	0.00	bad points
	4	3	4	10	13	15	ii

ORIGINAL PAGE IS  
OF POOR QUALITY

	Coarse 1.0	Fine 1.0	Track 16.0
NDRO:			
Integration delay:	.1160E+00	.4564E+00	.1344E-07
Thresholds:	.1830E+06	.9190E+05	.7352E+06

	.34700	.27500	.40800	.29800
Constants:				
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
19.951	8.163	.1090E+06	1.137	140.0	110.0	139.7075	110.0742	.1131E-02	.9209E-03
19.937	14.365	.1096E+06	1.114	140.0	110.0	139.8040	109.8920	.9175E-03	.4406E-03
19.948	20.731	.1155E+06	1.110	140.0	110.0	139.8706	109.6515	.5663E-03	.7949E-03
19.968	26.964	.9464E+05	.991	140.0	109.5	139.8874	109.4186	.1245E-02	.6303E-03
19.948	33.248	.8232E+05	1.177	140.0	109.0	139.8895	109.2007	.1067E-02	.8568E-03
19.970	39.500	.8140E+05	1.174	140.0	109.0	139.8733	108.9951	.1254E-02	.1024E-02
19.970	45.817	.8477E+05	1.119	140.0	109.0	139.8492	108.7695	.1247E-02	.1127E-02
20.007	52.081	.9342E+05	.978	140.0	108.5	139.7721	108.5730	.7141E-03	.1719E-02
19.979	58.370	.9539E+05	.966	139.5	108.5	139.6664	108.3511	.1783E-02	.2168E-02
20.032	64.606	.1134E+06	1.144	139.5	108.0	139.5478	108.1585	.1055E-02	.1471E-02
20.049	70.866	.1177E+06	1.145	139.5	108.0	139.4063	108.0112	.2519E-03	.1676E-02
20.055	1.790	.1323E+06	1.187	139.0	108.0	139.2728	107.8445	.1140E-02	.8159E-03
20.032	8.156	.1372E+06	1.139	139.0	108.0	139.1066	107.6457	.1352E-02	.2504E-02
19.928	14.380	.1327E+06	.994	139.0	107.5	138.9250	107.5416	.5780E-03	.6561E-03
19.951	20.722	.1331E+06	1.016	139.0	107.5	138.7312	107.4367	.1261E-02	.1549E-02
19.959	26.968	.1194E+06	1.142	138.5	107.0	138.5382	107.3406	.9301E-03	.3418E-02
19.934	33.270	.1133E+06	1.217	138.0	107.0	138.2910	107.2389	.1919E-02	.1421E-02
19.954	39.516	.1160E+06	1.182	138.0	107.0	138.0796	107.1968	.1759E-02	.2201E-02
19.903	45.829	.1189E+06	1.202	138.0	107.0	137.8552	107.1693	.1108E-02	.1495E-02
19.937	52.080	.1132E+06	1.141	137.5	107.0	137.6661	107.1870	.1109E-02	.4248E-02
19.903	58.373	.1139E+06	1.143	137.5	107.0	137.4638	107.2236	.5710E-03	.1443E-02
19.970	64.610	.1152E+06	1.171	137.0	107.0	137.2196	107.2654	.2256E-02	.2646E-02
19.973	70.880	.1204E+06	1.174	137.0	107.0	136.9950	107.3579	.3154E-02	.1504E-02
19.976	1.788	.1272E+06	.999	137.0	107.5	136.7751	107.4688	.1901E-02	.2109E-02
19.903	8.191	.1196E+06	.970	136.5	107.5	136.6257	107.5757	.9467E-03	.1065E-02
20.032	14.370	.1230E+06	1.131	136.5	108.0	136.4503	107.6772	.9366E-03	.1569E-02
20.080	20.731	.1292E+06	1.222	136.0	108.0	136.2015	107.8520	.1576E-02	.1775E-02
20.041	26.972	.1266E+06	1.175	136.0	108.0	136.1421	108.0115	.1302E-02	.1954E-02
20.074	33.236	.1186E+06	1.172	136.0	108.0	135.9927	108.2008	.7296E-03	.1899E-02
20.012	39.538	.9426E+05	1.003	136.0	108.5	135.9019	108.3955	.1946E-02	.7470E-03
20.010	45.802	.9679E+05	.984	136.0	108.5	135.8145	108.5995	.7466E-03	.7701E-03
19.987	52.057	.8557E+05	1.129	136.0	109.0	135.7666	108.7938	.2350E-02	.2208E-02
19.993	58.377	.8372E+05	1.172	136.0	109.0	135.7067	108.9973	.1012E-02	.1823E-02
19.970	64.631	.8424E+04	1.108	135.5	109.0	135.7295	109.2284	.1461E-02	.1388E-02
20.024	70.880	.1007E+06	.983	136.0	109.5	135.6879	109.4548	.8621E-03	.5055E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

19.954	8.164	.1071E+06	1.139	136.0	110.0	135.7595	109.9338	.1071E-02	.1344E-02
19.979	14.387	.1063E+06	1.153	136.0	110.0	135.8060	110.0967	.1145E-02	.9277E-03
19.951	20.767	.1093E+06	1.116	136.0	110.0	135.9075	110.3132	.1298E-02	.2649E-02
19.909	26.967	.7512E+05	.996	136.0	110.5	136.0237	110.4567	.1008E-02	.1234E-02
19.920	33.284	.8538E+05	.948	136.0	110.5	136.1517	110.6625	.1291E-02	.1530E-02
19.954	39.532	.9502E+05	1.133	136.0	111.0	136.2862	110.8066	.1303E-02	.4994E-03
19.984	45.830	.1013E+06	1.066	136.5	111.0	136.4611	110.9530	.3487E-03	.2640E-03
19.937	52.121	.1073E+06	1.065	136.5	111.0	136.6371	111.0486	.1587E-02	.1456E-02
19.970	58.400	.1189E+06	1.138	137.0	111.0	136.8041	111.1564	.7471E-03	.9870E-03
19.858	64.635	.1176E+06	1.119	137.0	111.0	137.0208	111.2682	.8087E-03	.1254E-02
19.951	70.898	.1167E+06	1.110	137.0	111.0	137.2409	111.3531	.7971E-03	.2358E-02
19.923	1.816	.1188E+06	.966	137.5	111.5	137.4574	111.3746	.7067E-03	.5310E-03
19.911	8.205	.1252E+06	.990	137.5	111.5	137.6723	111.4078	.1083E-01	.1881E-02
19.954	14.398	.1244E+06	.996	138.0	111.5	137.8880	111.4038	.1004E-02	.4168E-03
19.956	20.759	.1192E+06	.995	138.0	111.5	138.1385	111.3716	.1179E-02	.8229E-03
19.987	26.995	.1211E+06	1.040	138.5	111.5	138.3268	111.3434	.4844E-02	.3168E-01
19.937	33.279	.1144E+06	1.086	138.5	111.0	138.5313	111.2964	.7523E-03	.1035E-02
19.965	39.566	.1213E+06	1.138	139.0	111.0	138.6882	111.1703	.1460E-02	.1088E-02
19.900	45.777	.1146E+06	1.108	139.0	111.0	138.8956	111.0497	.9398E-03	.1016E-02
19.923	52.133	.1079E+06	1.079	139.0	111.0	139.1157	110.9388	.5566E-03	.6631E-03
19.979	58.390	.9505E+05	1.095	139.0	111.0	139.2864	110.7981	.8370E-03	.1685E-02
19.895	64.671	.8571E+05	.923	139.5	110.5	139.4221	110.6389	.1843E-02	.3750E-02
19.945	70.905	.7058E+05	.877	139.5	110.5	139.5508	110.4550	.7671E-03	.2616E-03
19.965	1.827	.9863E+05	1.082	139.5	110.0	139.6548	110.2959	.1026E-02	.2163E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta r1 3	4	5	6
0	-.03535	-.00351	.00798	-.00085	.00074	.00484
1	.02614	.01132	.00316	-.00338	-.03190	-.02114
2	.01465	-.00592	-.01133	-.00157	.02195	.02370
3	.03208	.01676	.00162	.01288	-.00260	-.00807
4	-.02152	.00174	-.02654	-.01192	.00241	-.01133
5	-.00943	-.02022	-.00132	-.04532	.00030	.00030
6	.01871	.02931	.02884	.00219	.02142	.01210
7	.01129	-.01521	-.00763	.00361	.01586	-.00812
8	.00209	-.00256	-.00751	.00484	.02207	.03223
9	-.03674	.00181	.00506	.00615	.00155	.01025

x0= 137.7871. y0= 109.3046 r0= 2.10424566 std.dev.= .01690641

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	1	5	11	13	30	0

ORIGINAL PAGE IS  
OF POOR QUALITY



	delta ri					
	1	2	3	4	5	6
0	-.03508	-.00327	.00820	-.00065	.00092	.00073
1	.02626	.01141	.00322	-.00334	-.03189	.02115
2	.01461	-.00598	-.01141	-.00165	.02185	.02350
3	.03196	.01664	.00149	.01235	-.00277	-.00818
4	-.02163	.00164	-.02662	-.01199	.00236	-.01134
5	-.00944	-.02020	-.00128	-.04525	.00029	.00037
6	.01887	.02949	.02903	.00241	.02167	.01237
7	.01158	-.01490	-.00731	.00395	.01622	-.00775
8		-.00218	-.00713		.02245	-.03186
9	-.03637	.00216	.00540	.00647	.00186	.01053

x0= 137.7870 y0= 109.3043 r0= 2.10411882 std.dev.= .01717975

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	1	5	11	13	28	2

ORIGINAL PAGE IS  
OF POOR QUALITY

NDR01  
 Interpolation delay: .1160E+00  
 Thresholds: .1838E+06

Coarse 1.0  
 Fine 1.0  
 Track 64.0

.4564E+00  
 .9190E+05  
 .1344E-02  
 .7352E+06

Constants: .34700  
 Displacements: 0.00000

.27500  
 0.00000

.40800  
 0.00000

.29800  
 0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
19.982	1.784	.4398E+05	2.874	139.5	110.0	139.6618	110.2989	.1294E-02	.1938E-02
19.984	8.161	.4683E+05	2.915	140.0	110.0	139.7188	110.0703	.1485E-02	.1717E-02
19.984	14.356	.4717E+05	2.898	140.0	110.0	139.8167	109.8901	.7616E-03	.7445E-03
19.976	20.725	.4808E+05	2.883	140.0	109.5 *	139.8825	109.6485	.8565E-02	.1004E-01
19.993	26.952	.4344E+05	2.787	140.0	109.5	139.8978	109.4215	.1618E-02	.9015E-03
19.954	33.263	.4105E+05	2.952	140.0	109.0	139.8947	109.1910	.1656E-02	.1398E-02
19.990	39.511	.4048E+05	2.946	140.0	109.0	139.8802	108.9863	.1196E-02	.1716E-02
20.035	45.764	.4095E+05	2.901	140.0	109.0	139.8577	108.7680	.1146E-02	.1062E-02
19.990	52.982	.4208E+05	2.766	140.0	108.5	139.7814	108.5737	.2146E-02	.1278E-02
19.962	58.177	.4174E+05	2.776	139.5	108.5 *	139.6762	108.3576	.8767E-02	.1828E-02
20.091	64.582	.4691E+05	2.932	139.5	108.0	139.5577	108.1610	.6656E-03	.6004E-03
20.024	70.848	.4781E+05	2.930	139.5	108.0	139.4145	108.0066	.9526E-03	.6663E-03
20.063	1.794	.5138E+05	2.968	139.0	103.0	139.2804	107.8386	.1058E-02	.1601E-02
19.973	8.148	.5246E+05	2.922	139.0	108.0	139.1159	107.6379	.1277E-02	.1830E-02
19.937	14.361	.5055E+05	2.785	139.0	107.5	138.9281	107.5462	.4175E-03	.7954E-03
19.909	20.712	.5090E+05	2.809	139.0	107.5	138.7325	107.4409	.1002E-02	.8464E-03
19.956	26.936	.4674E+05	2.929	138.5	107.0	138.5453	107.3467	.1533E-02	.2342E-02
19.923	33.232	.4585E+05	2.937	138.5	107.0	138.3291	107.2690	.9772E-03	.1269E-02
19.925	39.519	.4542E+05	2.954	138.0	107.0	138.0904	107.1987	.1701E-02	.1158E-02
19.903	45.781	.4588E+05	2.972	138.0	107.0	137.8585	107.1720	.1265E-02	.1539E-02
19.925	52.065	.4450E+05	2.921	137.5	107.0	137.6694	107.1838	.9501E-03	.8019E-03
19.937	58.373	.4452E+05	2.927	137.5	107.0	137.4706	107.2254	.4534E-03	.1383E-02
19.875	64.603	.4489E+05	2.945	137.0	107.0	137.2343	107.2680	.1257E-02	.1977E-02
19.889	70.848	.4789E+05	2.824	137.0	107.5	137.0234	107.3657	.1033E-01	.5226E-02
19.875	1.795	.4756E+05	2.787	137.0	107.5	136.7845	107.4711	.1301E-02	.8871E-03
19.892	8.148	.4756E+05	2.765	136.5	107.5	136.6343	107.5715	.1315E-02	.1086E-02
20.026	14.369	.4920E+05	2.921	136.5	108.0	136.4588	107.6687	.5694E-03	.1070E-02
19.996	20.721	.4945E+05	2.950	136.5	108.0 *	136.3112	107.8454	.3384E-02	.4811E-02
20.032	26.965	.4994E+05	2.941	136.0	108.0	136.1551	108.0019	.1211E-02	.1558E-02
19.998	33.253	.4895E+05	2.944	136.0	108.0	136.0025	108.1881	.1176E-02	.1719E-02
19.934	39.500	.4171E+05	2.789	136.0	108.5	135.9112	108.3380	.6384E-03	.6044E-03
19.962	45.798	.4164E+05	2.768	136.0	108.5	135.8259	108.5935	.1019E-02	.1549E-02
19.948	52.071	.4059E+05	2.905	136.0	109.0	135.7761	108.7813	.5556E-03	.8097E-03
19.965	58.362	.4064E+05	2.941	136.0	109.0	135.7136	108.9868	.7047E-03	.1104E-02
19.973	64.594	.5521E+05	2.874	135.5	109.0	135.9115	109.2287	.3807E-02	.1299E-02

ORIGINAL PAGE IS  
 OF POOR QUALITY

19.917	1.802	.4065E+05	2.895	136.0	110.0	135.7300	109.6858	.1547E-02	.2105E-02
19.956	8.152	.4661E+05	2.917	136.0	110.0	135.7703	109.9179	.1023E-02	.1692E-02
19.976	14.370	.4508E+05	2.935	136.0	110.0	135.8163	110.0833	.6448E-03	.1215E-02
19.911	20.721	.4633E+05	2.895	136.0	110.0	135.9163	110.3057	.1298E-02	.8714E-03
19.869	26.936	.3934E+05	2.687	136.0	110.5	136.0358	110.4500	.7207E-03	.1358E-02
19.895	33.216	.4120E+05	2.732	136.0	110.5	136.1646	110.6499	.1223E-02	.8139E-03
19.889	39.521	.4264E+05	2.850	136.5	111.0	136.3131	110.8031	.1756E-02	.4110E-02
19.883	45.806	.4427E+05	2.848	136.5	111.0	136.4728	110.9438	.7394E-03	.1242E-02
19.900	52.086	.4531E+05	2.845	136.5	111.0	136.6449	111.0374	.1571E-02	.1105E-02
19.917	58.361	.4526E+05	2.908	137.0	111.0	136.8112	111.1424	.6870E-03	.9378E-03
19.897	64.645	.4512E+05	2.887	137.0	111.0	137.0305	111.2562	.1274E-02	.1361E-02
19.861	70.856	.4497E+05	2.887	137.0	111.0	137.2513	111.3446	.8808E-03	.9120E-03
19.920	1.809	.4519E+05	2.767	137.5	111.5	137.4681	111.3690	.7267E-03	.1039E-02
19.875	8.172	.4717E+05	2.801	138.0	111.5	137.6764	111.4033	.8382E-02	.1759E-02
19.895	14.362	.4653E+05	2.787	138.0	111.5	137.8986	111.3984	.8554E-03	.1145E-02
19.858	20.723	.4558E+05	2.787	138.0	111.5	138.1483	111.3641	.1065E-02	.3094E-03
19.895	26.962	.4456E+05	2.800	138.5	111.5	138.3437	111.3157	.9971E-03	.7638E-03
19.931	33.215	.4471E+05	2.866	138.5	111.0	138.5354	111.2898	.9753E-03	.1645E-02
19.928	39.525	.4890E+05	2.906	139.0	111.0	138.6958	111.1614	.6373E-03	.1693E-02
19.909	45.820	.4717E+05	2.869	139.0	111.0	138.9083	111.0431	.1339E-02	.2904E-02
19.937	52.079	.4559E+05	2.843	139.0	111.0	139.1242	110.9316	.1323E-02	.1298E-02
19.914	58.367	.4220E+05	2.840	139.5	111.0	139.2941	110.7860	.1549E-02	.3228E-02
19.917	64.594	.4065E+05	2.721	139.5	110.5	139.4309	110.6368	.1340E-02	.4379E-02
19.990	70.737	.3780E+05	2.673	139.5	110.5	139.5548	110.4621	.6383E-03	.1149E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta ri					
	1	2	3	4	5	6
0	.01272	-.03246	.00127	.01162	.00161	-.00196
1	.00429	.02611	.01128	.00073	-.00417	-.02272
2	-.01802	-.02197	-.01255	-.01778	-.00678	.00153
3	.02420	.03184	.02339	.00380	.01260	-.01221
4	-.00463	-.01164	.01531	-.01506	-.00108	.01703
5	.00073	-.00009	-.00757	.01280	-.20726	.01307
6	.00816	.02403	.03491	.03733	.00819	.02212
7	.01568	.01390	-.01260	-.00816	.00274	.01745
8	-.00422	.00716	.00076	-.00682	-.01240	.02111
9	-.03451	-.03474	.00099	.00700	.00847	.00443

x0= 137.8012    r0= 109.3015    r0= 2.09840560    std.dev.= .03140308

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	0	6	8	19	26	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.01341	-.03179	.00192	.00100	.00218	-.00145
1	.00475	.02651	.01162	-.01796	-.00397	-.02969
2	-.01797	-.02194	-.01266	-.01796	-.00702	.00121
3	.02381	.03138	.02288	.00325	.01199	
4	-.00531	-.01734	.01460	-.01579	-.00181	.01631
5	.00003	-.00077	-.00823	.01218	-.20734	.01254
6	.00769	.02363	.03456	.03705	.00797	.02198
7	.01562	.01391	-.01253	-.00802	.00296	.01774
8	-.00386	.00758	.00124	-.00628	-.01182	.02173
9	-.03386	-.03406	.00168	.00770	.00917	.00514

x0= 137.8007    y0= 109.3010    r0= 2.09841537    std.dev.= .03187319

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	0	6	8	17	26	2

ORIGINAL PAGE IS  
OF POOR QUALITY

Deck 12-A Track data file TDATA06

	Coarse 1.0	Fine 1.0	Track 192.0
NDRII			
Integration delay:	.1160E+00	.4564E+00	.7974E+00
Thresholds:	.1838E+06	.9190E+05	.7352E+06

	.34700	.27500	.40800	.29800
Constants:				
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
19.987	8.155	.5662E+05	6.087	139.5	110.0	139.7294	110.0318	.6111E-02	.5970E-02
20.004	14.361	.5723E+05	6.097	140.0	110.0	139.7959	109.9071	.7389E-02	.7510E-02
19.984	20.718	.5749E+05	6.111	140.0	109.5 *	139.8383	109.6860	.1721E-01	.5654E-02
20.046	26.973	.5738E+05	6.085	140.0	109.5	139.8686	109.4103	.5229E-02	.2538E-02
19.998	33.252	.5724E+05	6.240	140.0	109.0	139.8593	109.2003	.5290E-02	.4990E-02
20.007	39.535	.5720E+05	6.238	140.0	109.0	139.8506	108.9480	.7451E-02	.6948E-02
20.007	45.802	.5718E+05	6.195	140.0	109.0	139.8343	108.7066	.9302E-02	.6440E-02
20.015	52.079	.5650E+05	5.993	140.0	103.5	139.8048	108.5750	.1182E-01	.7320E-02
20.001	58.361	.5570E+05	5.945	139.5	108.5	139.5971	108.3692	.3076E-02	.4622E-02
20.032	64.629	.5642E+05	6.153	139.5	108.0	139.4932	108.1619	.2749E-02	.5922E-02
20.083	70.880	.5654E+05	6.161	139.5	108.0	139.3505	108.0125	.3965E-02	.4181E-02
20.069	1.797	.5705E+05	6.160	139.0	108.0	139.1977	107.8339	.5655E-02	.4745E-02
19.928	8.161	.5740E+05	6.140	139.0	107.5 *	139.0502	107.6984	.1336E-01	.3225E-01
19.883	14.364	.5741E+05	6.105	139.0	107.5	138.8627	107.5607	.3068E-02	.4774E-02
19.925	20.717	.5755E+05	6.144	139.0	107.5	138.6435	107.4470	.4846E-02	.6836E-02
19.942	26.926	.5582E+05	6.183	138.5	107.5	138.5135	107.3669	.3825E-02	.1451E-02
19.951	33.272	.5584E+05	6.343	138.5	107.0	138.2581	107.4161	.1209E-01	.2239E-01
19.948	39.515	.5540E+05	6.343	138.0	107.0	138.1431	107.2815	.8657E-02	.9485E-02
19.911	45.812	.5533E+05	6.365	138.0	107.0	137.8534	107.2467	.4713E-02	.3557E-02
19.934	52.060	.5524E+05	6.301	137.5	107.0 *	137.6495	107.2380	.2951E-01	.2510E-01
19.937	58.364	.5517E+05	6.262	137.5	107.0	137.4441	107.2076	.4595E-02	.6234E-02
19.914	64.623	.5500E+05	6.238	137.0	107.0	137.1606	107.2885	.6653E-02	.9177E-02
19.931	70.880	.5518E+05	6.113	137.0	107.5	136.9910	107.3807	.7405E-02	.6496E-02
19.948	1.801	.5521E+05	6.082	137.0	107.5	136.7340	107.4886	.6274E-02	.3503E-02
19.948	8.149	.5760E+05	6.094	136.5	107.5	136.6681	107.5904	.3713E-02	.3195E-02
20.085	14.367	.5782E+05	6.249	136.5	108.0	136.4687	107.6139	.1885E-01	.7245E-01
20.066	20.725	.5748E+05	6.192	136.5	103.0 *	136.2935	107.8337	.2051E-01	.3601E-01
20.038	26.965	.5711E+05	6.125	136.0	108.0	136.0783	107.9162	.2761E-02	.4235E-02
20.063	33.274	.5704E+05	6.125	136.0	108.0	135.9238	108.1033	.3899E-02	.5734E-02
20.043	39.551	.5653E+05	6.007	136.0	108.5	135.8882	108.4302	.4912E-02	.3259E-02
20.004	45.832	.5653E+05	5.991	136.0	108.5	135.8104	108.6204	.4476E-02	.3306E-02
19.990	52.101	.5697E+05	6.133	136.0	109.0	135.7331	108.8131	.2103E-02	.6053E-02
19.979	58.349	.2974E+05	6.351	135.5	109.0	138.6548	108.9780	.4448E+00	.7613E-01
19.976	64.647	.2972E+05	6.377	135.5	109.0	138.5918	109.2997	.1473E-01	.2533E-01
19.959	70.798	.3000E+05	6.166	135.5	109.5	137.3840	109.5993	.1771E-00	.1543E-01

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19.010	8.151	.5703E+05	6.149	136.0	110.0	135.7779	109.8121	.5830E-02	.7344E-02
20.024	14.379	.5690E+05	6.155	136.0	110.0	135.8148	109.9683	.4085E-02	.2932E-02
19.987	20.749	.5690E+05	6.121	136.0	110.0	135.9127	110.2000	.2026E-02	.4760E-02
19.937	26.957	.5736E+05	6.041	136.0	110.5	136.1010	110.4211	.4178E-02	.5027E-02
19.951	33.267	.5744E+05	6.094	136.0	110.5	136.2399	110.6379	.3524E-02	.5454E-02
19.903	39.528	.5667E+05	6.109	136.5	111.0	136.2930	110.8979	.4454E-02	.5802E-02
19.928	45.810	.5662E+05	6.106	136.5	111.0	136.4436	111.0361	.7065E-02	.4913E-02
19.925	52.102	.5674E+05	6.108	136.5	111.0	136.6157	111.1333	.2673E-02	.4254E-02
19.920	58.370	.5493E+05	6.188	137.0	111.0	136.8233	111.2737	.7614E-02	.2502E-02
19.986	64.615	.5481E+05	6.163	137.0	111.0	137.0668	111.3307	.6770E-02	.3013E-02
19.937	70.823	.5479E+05	6.106	137.0	111.5	137.3078	111.3106	.1303E-01	.4674E-01
19.968	1.794	.5476E+05	6.019	137.5	111.5	137.4225	111.3490	.3680E-02	.2554E-02
19.945	8.159	.5471E+05	5.992	137.5	111.5	137.6405	111.3822	.3626E-02	.2191E-02
19.875	14.359	.5462E+05	6.056	138.0	111.5	137.8955	111.4133	.6634E-02	.2469E-02
19.917	20.715	.5450E+05	6.045	138.0	111.5	138.1461	111.3707	.1729E-02	.4232E-02
19.979	26.973	.5446E+05	6.052	138.5	111.5	138.3140	111.3259	.2942E-02	.4790E-02
19.925	33.265	.5439E+05	6.083	138.5	111.0	138.4821	111.3094	.9720E-02	.2295E-01
19.970	39.542	.5438E+05	6.071	138.5	111.0	138.6480	111.2098	.3359E-02	.6572E-02
19.889	45.809	.5646E+05	6.010	139.0	111.0	138.9064	111.0523	.1077E-02	.4311E-02
19.911	52.091	.5631E+05	5.985	139.0	111.0	139.1038	110.9467	.3188E-02	.5011E-02
19.864	58.368	.5567E+05	5.994	139.5	111.0	139.3329	110.8321	.4051E-02	.6783E-02
19.940	64.643	.5595E+05	5.958	139.5	110.5	139.4440	110.6561	.7184E-02	.1274E-01
19.906	70.827	.5576E+05	5.907	139.5	110.5	139.5601	110.4832	.1703E-02	.1487E-02
19.993	1.790	.5673E+05	6.125	139.5	110.0	139.6488	110.2927	.1552E-01	.5027E-01

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta ri					
	1	2	3	4	5	6
0	.05096	.07647	.06897	.07048	.06389	.03493
1	.12527	.13877	.03149	.04764	.02210	.03990
2	.03518	.03879	.03281	.05488	-.07125	.03433
3	.03430	.04283	.01369	.07344	.04046	.05181
4	-.00271	.02048	.03716	.13054	.14923	.01775
5	.01502	.03198				.05590
6	-.01907	-.01137	-.01603	-.07139	-.05074	.02200
7	.10052	.08222	.06022	.06611	.01859	-.00250
8	.00717	.04046	.03089	.02605	.06239	.02977
9	.02633	.06034	.13368	.10266	.09746	.07094

x0= 137.7500    r0= 109.3282    r0= 2.04972386    std.dev.= .32032344

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	31	4	10	5	7	3	0

ORIGINAL PAGE IS  
OF POOR QUALITY



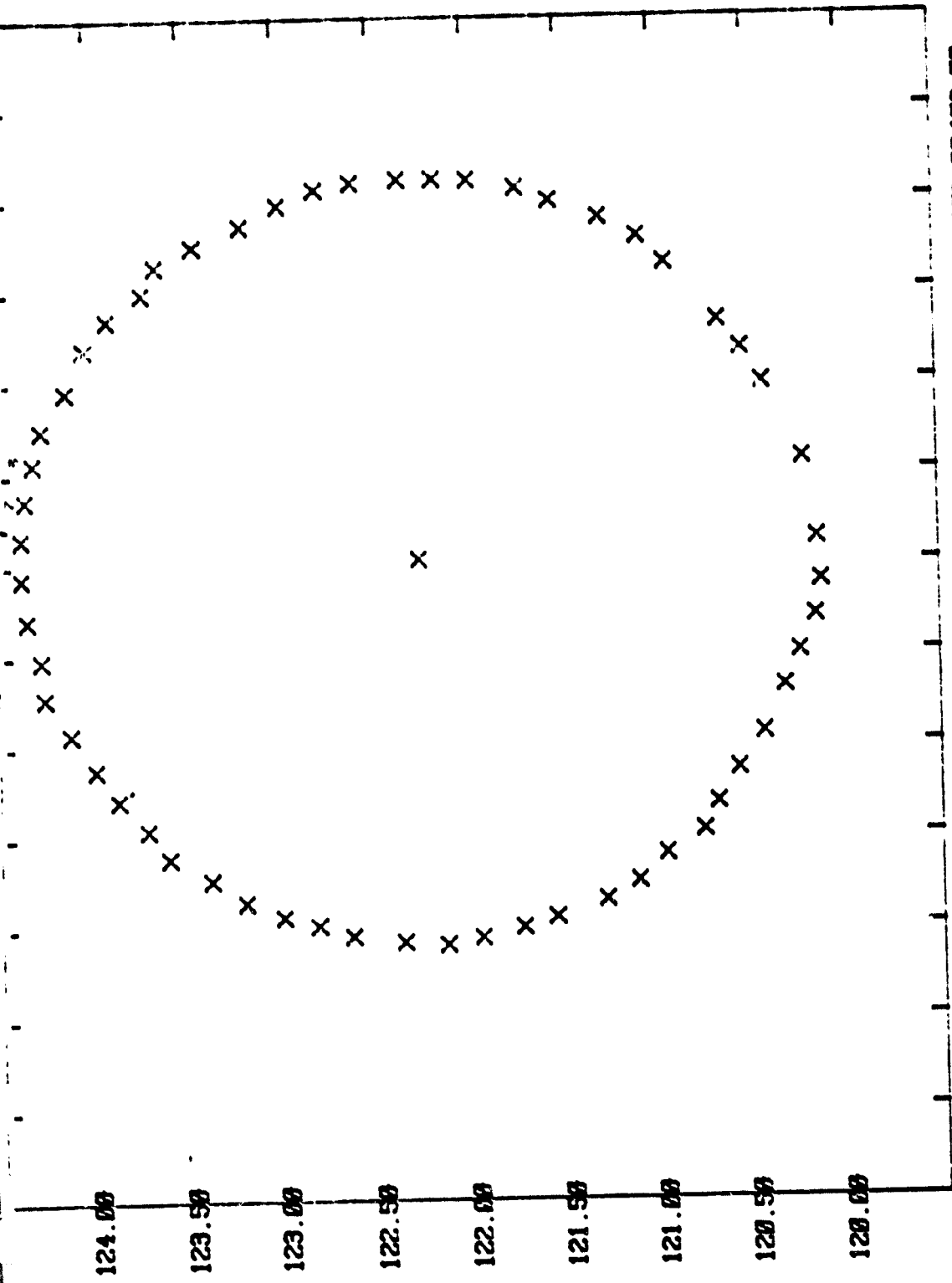
	1	2	delta ri 3	4	5	6
0	-.01042	.01452		.00706	-.00033	.02107
1	.04156		-.03147	-.01456	-.03925	.02933
2		-.01875	-.02296	.00026		-.01718
3	-.01466		-.03154	.03072	-.00057	.01321
4	-.04039			.10590	.11817	-.01207
5	-.01338	.00443				
6	-.04501	-.03747	-.04261	-.09886	-.07933	.06226
7	.06963	-.05009	.02653	.03042		-.04109
8	-.03338	-.00239	-.01426	-.02068		-.02016
9	-.02618	.00604	.07755		.03862	

μ0= 137.7687    σ0= 109.3249    r0= 2.09459376    std.dev.= .04348783

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	9	4	8	7	10	7	15

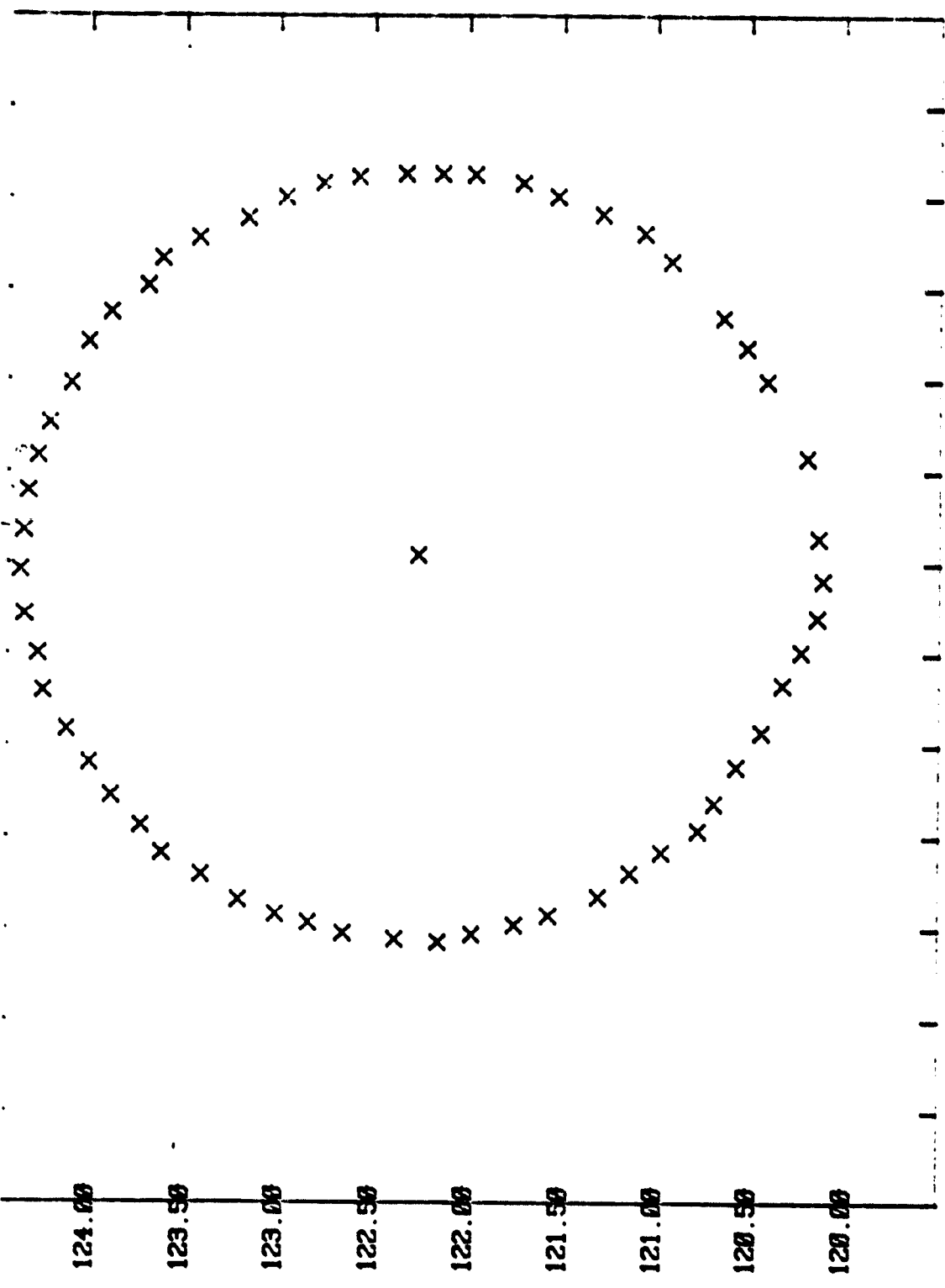
ORIGINAL PAGE IS  
OF POOR QUALITY



148.00 148.50 149.00 149.50 150.00 150.50 151.00 151.50 152.00 152.50 153.00 153.50

POSITION #2 S.D= 1.975%

12-A-11 F2.8 -.5M 2 K=.298.255.367.302 100% 0°C

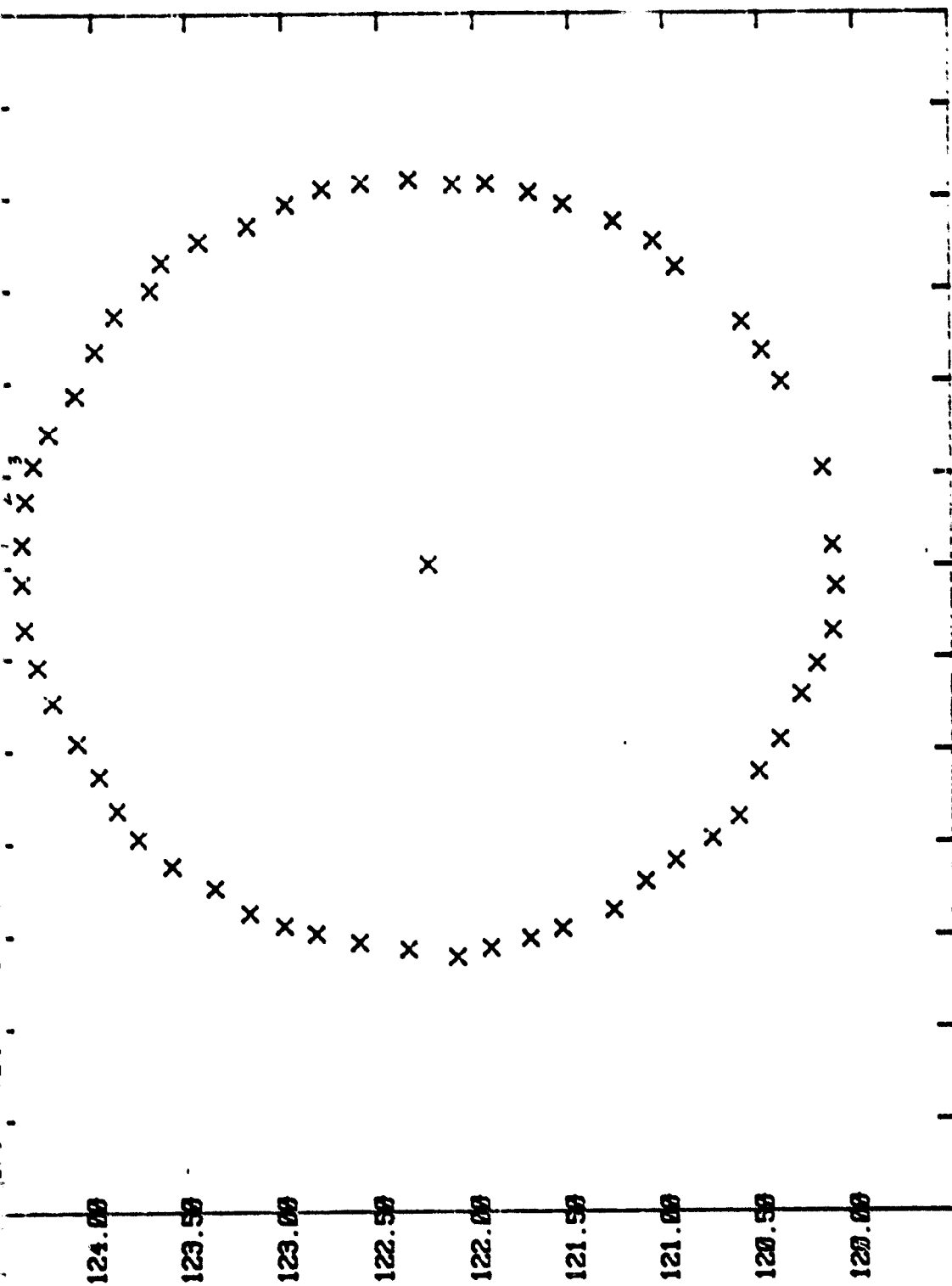


148.00 148.50 149.00 149.50 150.00 150.50 151.00 151.50 152.00 152.50 153.00 153.50

POSITION #2 S.D= 2.000%

15012

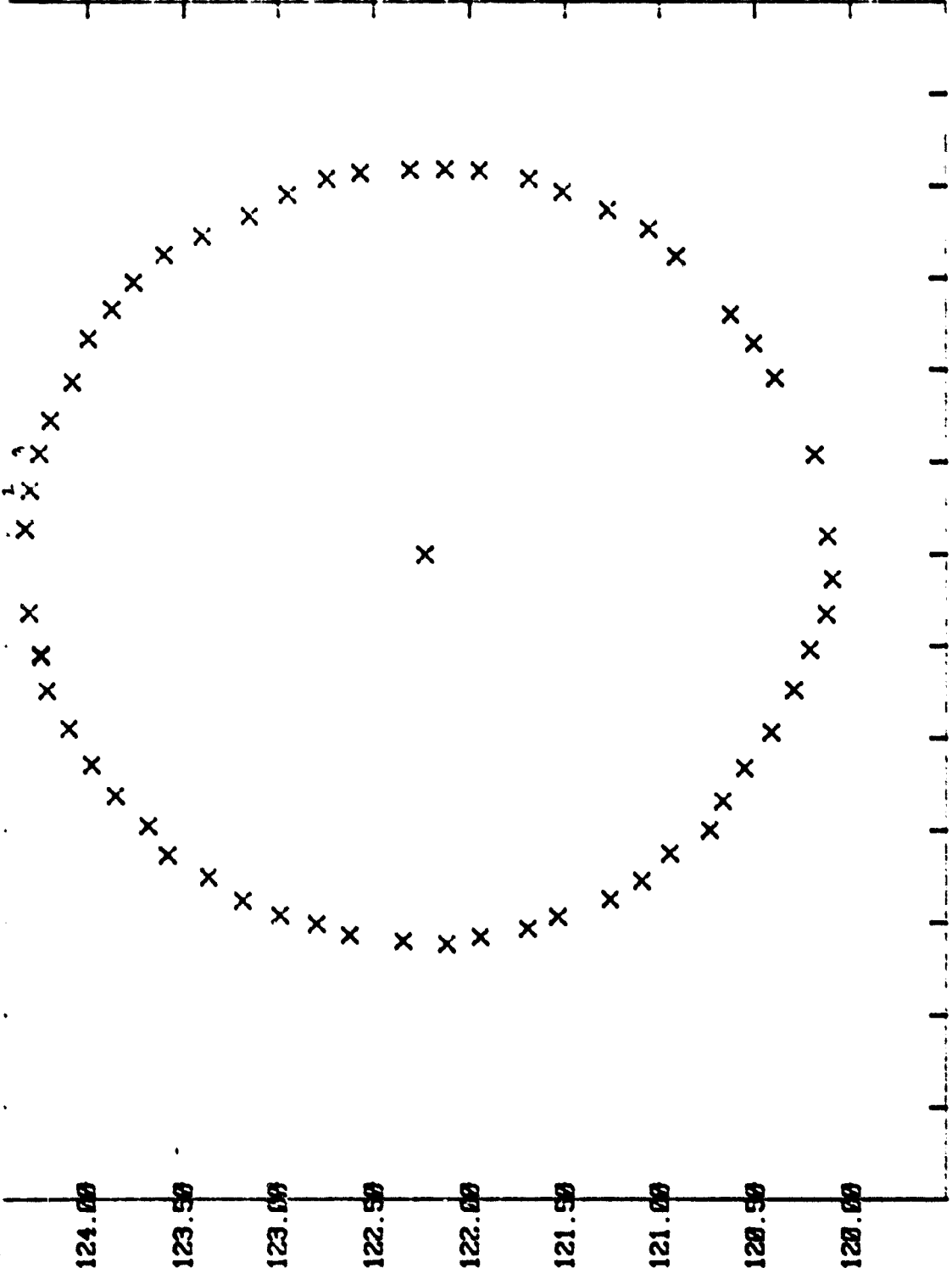
12-A-10 F2.8 - .5M 2 K=.298.255.367.302 10% 0°C



148.00 148.50 149.00 149.50 150.00 150.50 151.00 151.50 152.00 152.50 153.00 153.50

POSITION #2 S.D = 2.358%

27-A-00 F2.8 - .5M 2 K = .298 .255 .367 .302 < 1% 0° C

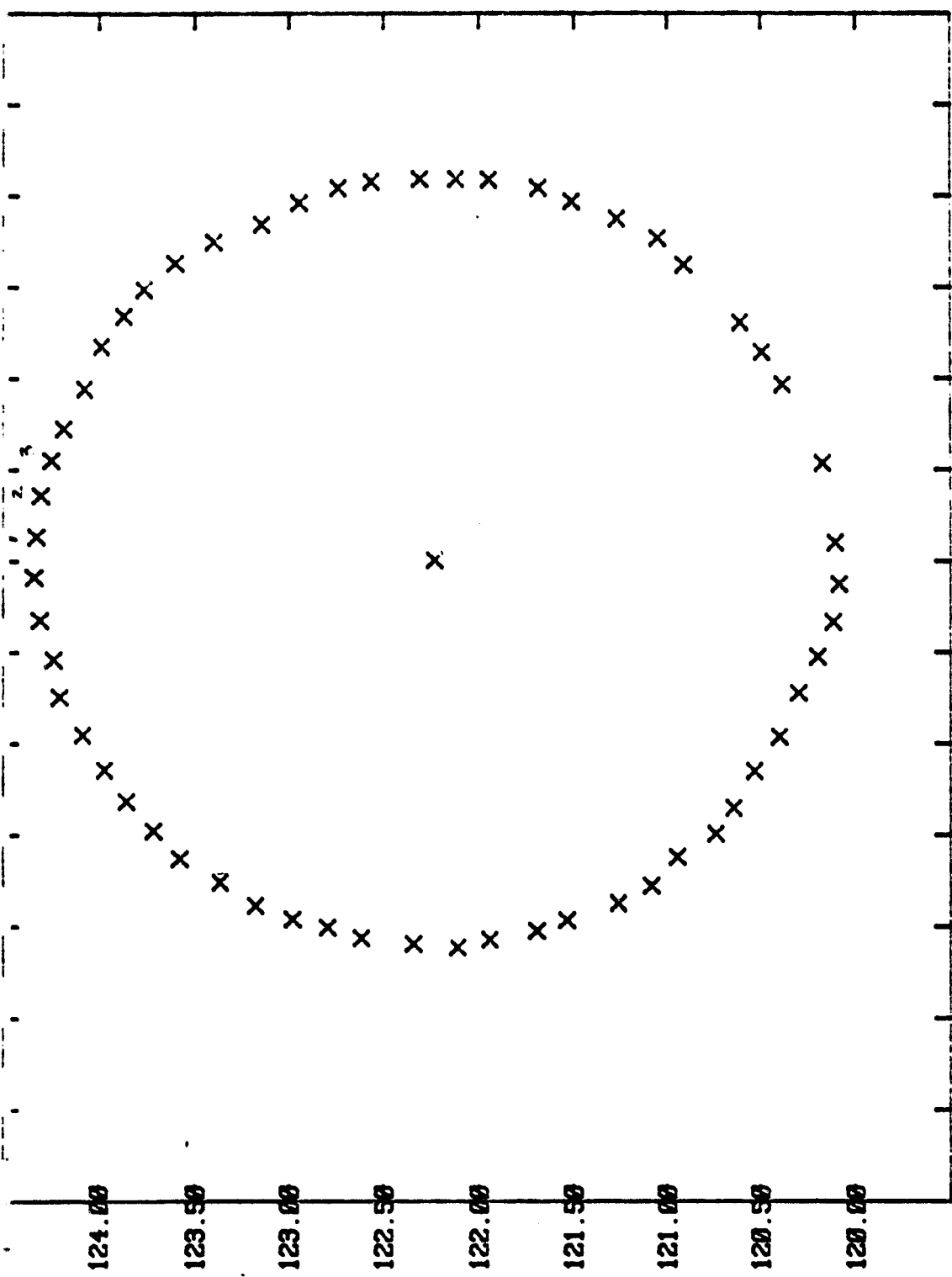


148.00 148.50 149.00 149.50 150.00 150.50 151.00 151.50 152.00 152.50 153.00 153.50

TR81-04

POSITION #2 S.D= 1.953 %

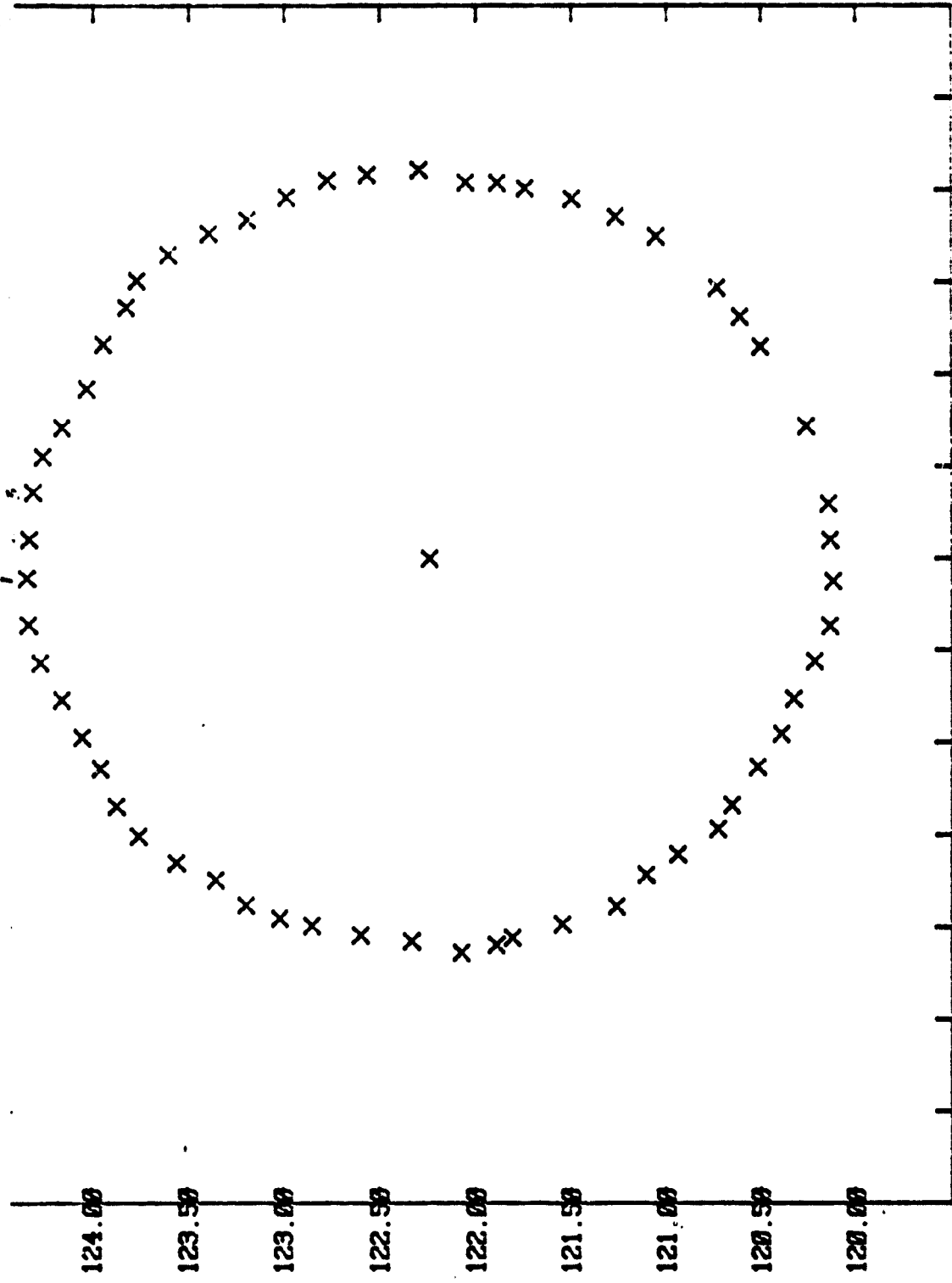
27-A-02 F2.8 -.5M 2 K=.298.255.367.302 100% 10° C



148.00 148.50 149.00 149.50 150.00 150.50 151.00 151.50 152.00 152.50 153.00 153.50

POSITION #2 S.D= 1.927%

27-A-01 F2.8 -.5M 2 K=.298.255.367.302 10% 10°C

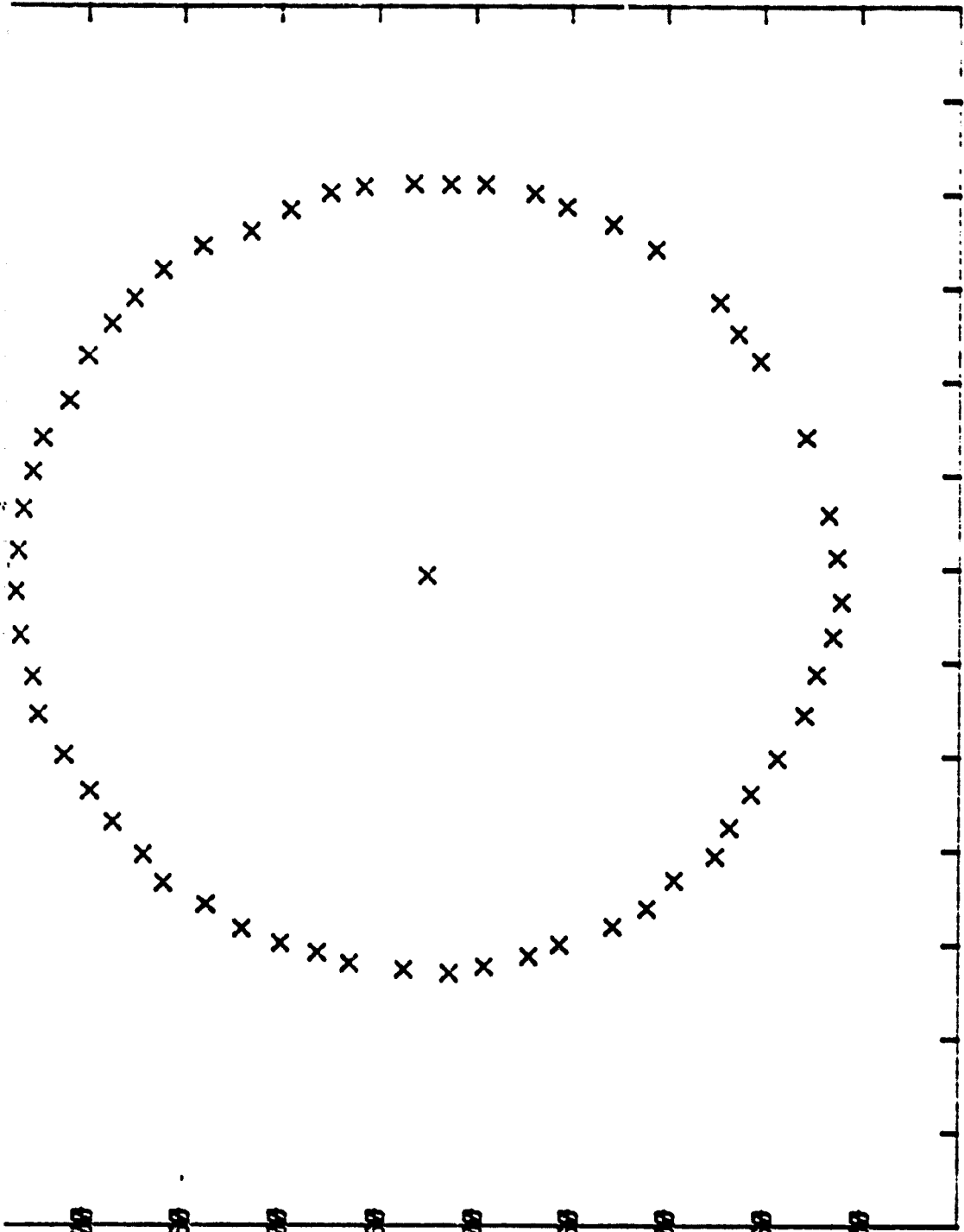


148.00 149.00 150.00 151.00 152.00 153.00 153.50

POSITION #2 S.D= 2.694%

27-A-03 F2.8 - .5M 2 K=.298.255.367.302 <1% 10°C

124.00  
123.50  
123.00  
122.50  
122.00  
121.50  
121.00  
120.50  
120.00



148.00 149.50 149.00 149.50 150.00 150.50 151.00 151.50 152.00 152.50 153.00 153.50

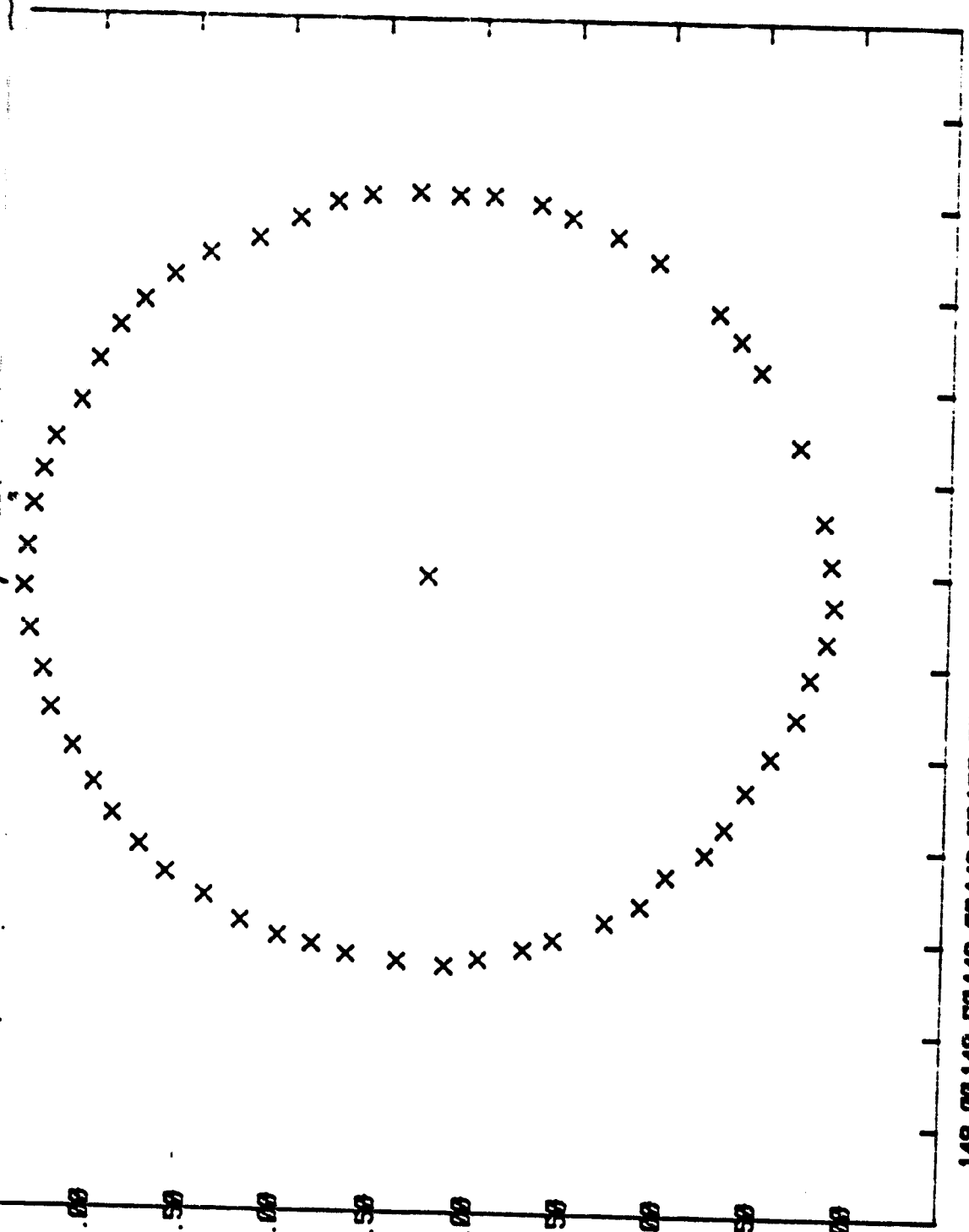
7581-04

POSITION #2 S.D= 1.942 %

27-A-05 F2.8 -.5M 2 K=.298.255.367.302 100% 20°C



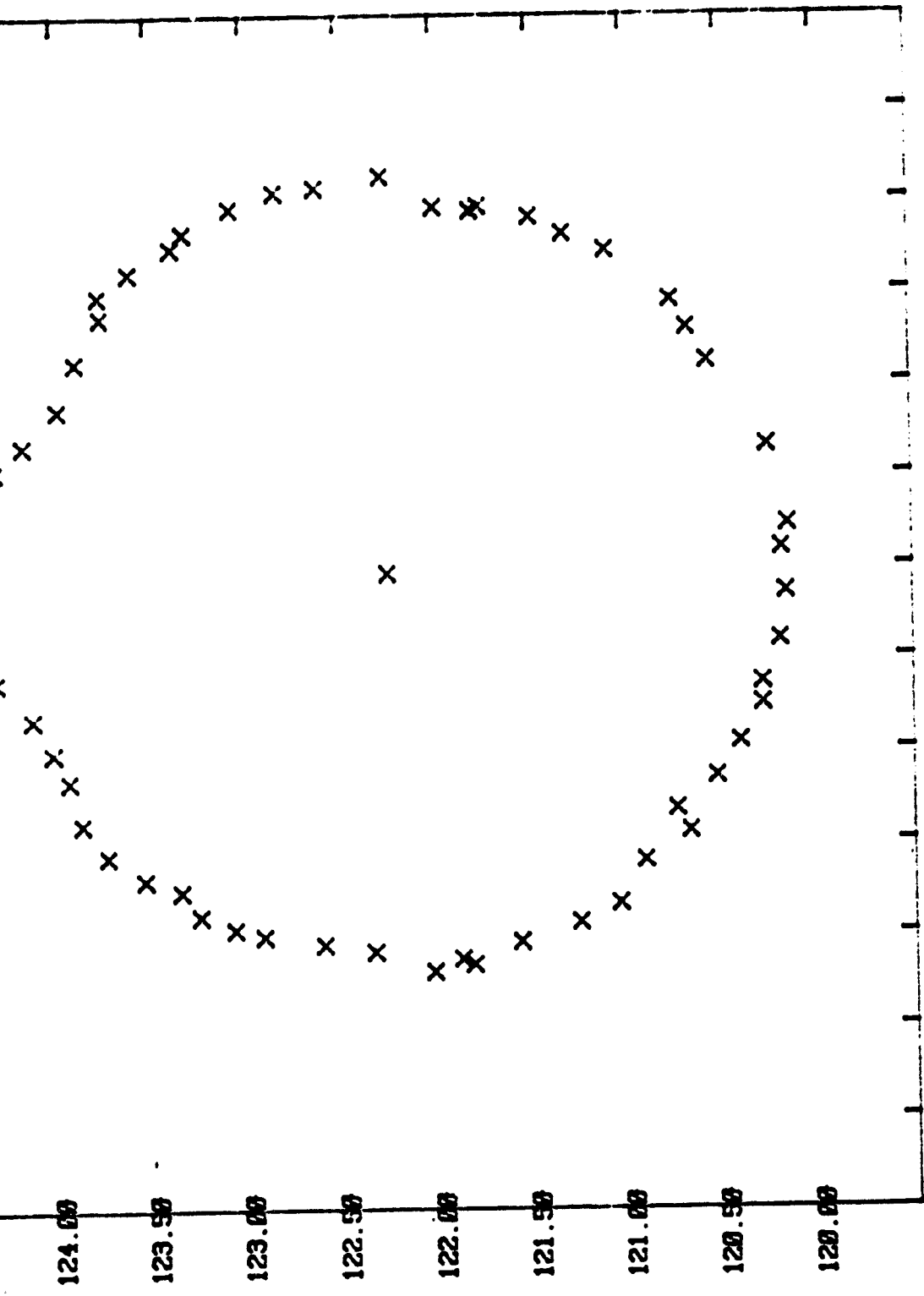
124.00  
123.50  
123.00  
122.50  
122.00  
121.50  
121.00  
120.50  
120.00



148.00 148.50 149.00 149.50 150.00 150.50 151.00 151.50 152.00 152.50 153.00 153.50

POSITION #2 S.D= 1.931%

27-A-04 F2.8 -.5M 2 K=.298.255.367.302 10% 2.0° C



148.00 148.50 149.00 149.50 150.00 150.50 151.00 151.50 152.00 152.50 153.00 153.50

POSITION #2 S.D= 4.941%

TR81-04

27-A-06 F2.8 - .5M 2 K=.298.255.367.302 <1% 20°C

Disk 12-A Track data file TDAT11

	Coarse	Fine	Track
NDRO:	1.0	1.0	16.0
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholdst:	.3217E+06	.9190E+05	.7352E+06

	.29800	.25500	.36700	.30200
Constants:				
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.175	14.366	.6220E+05	.975	151.0	124.5	151.1527	124.3626	.8778E-03	.6328E-03
.198	20.726	.5702E+05	1.006	151.5	124.5	151.3628	124.3404	.8360E-03	.1077E-02
.192	26.961	.5958E+05	1.020	151.5	124.5	151.5639	124.2907	.7943E-03	.8064E-03
.229	33.256	.1007E+06	1.032	152.0	124.0	151.7412	124.2449	.1216E-02	.2014E-02
.223	39.544	.1078E+06	1.033	152.0	124.0	151.9580	124.1198	.5715E-03	.6507E-03
.217	45.831	.1142E+06	1.013	152.0	124.0	152.1901	124.0234	.7101E-03	.5523E-03
.282	52.111	.9735E+05	1.049	152.5	124.0	152.3491	123.8982	.3987E-03	.3730E-03
.313	58.367	.1002E+06	1.050	152.5	124.0	152.4934	123.7031	.9527E-03	.7535E-03
.187	64.619	.9365E+05	.936	152.5	123.5	152.6425	123.6294	.4646E-03	.1206E-02
.105	70.859	.1085E+06	.946	153.0	123.5	152.7512	123.4370	.9417E-03	.4706E-03
.105	1.802	.9754E+05	1.030	153.0	123.0	152.8610	123.1867	.9165E-03	.8157E-03
.142	8.139	.8731E+05	1.012	153.0	123.0	152.9735	122.9760	.8935E-03	.9486E-03
.136	14.346	.6865E+05	1.004	153.0	123.0	153.0594	122.7804	.6680E-03	.8192E-03
.128	20.727	.4526E+05	.877	153.0	122.5	153.0938	122.5968	.5970E-03	.6167E-03
.116	26.946	.4334E+05	.901	153.0	122.5	153.1105	122.3411	.6562E-03	.5942E-03
.125	33.247	.9198E+05	1.032	153.0	122.0	153.1107	122.1571	.9248E-03	.4706E-03
.147	39.547	.8665E+05	1.058	153.0	122.0	153.1045	121.9757	.3920E-03	.1148E-02
.164	45.810	.9507E+05	1.038	153.0	122.0	153.0593	121.7176	.1350E-02	.5641E-03
.150	52.105	.8177E+05	.948	153.0	121.5	152.9863	121.5409	.4377E-03	.1006E-02
.187	58.367	.6746E+05	1.058	153.0	121.0	152.8934	121.2996	.1482E-02	.1152E-01
.158	64.625	.6012E+05	1.072	153.0	121.0	152.7847	121.0756	.4544E-03	.1114E-02
.170	70.852	.4898E+05	1.058	152.5	121.0	152.6389	120.9328	.1062E-02	.6514E-03
.147	1.813	.4546E+05	1.035	152.5	121.0	152.4811	120.7501	.3488E-03	.1195E-02
.142	8.148	.5932E+05	.952	152.5	120.5	152.3706	120.6526	.6813E-03	.9160E-03
.187	14.373	.6200E+05	.913	152.0	120.5	152.1644	120.5295	.1095E-02	.1838E-03
.206	20.714	.6243E+05	.974	152.0	120.5	151.9781	120.4214	.4342E-03	.1328E-02
.209	26.969	.1383E+06	1.145	152.0	120.0	151.7580	120.3451	.8141E-02	.9245E-01
.265	33.265	.9793E+05	1.068	151.5	120.0	151.5589	120.2135	.7068E-03	.6754E-03
.245	39.563	.9117E+05	1.059	151.5	120.0	151.3445	120.1784	.5090E-03	.7764E-03
.282	45.816	.1066E+06	1.048	151.0	120.0	151.1192	120.1457	.1349E-02	.9541E-03
.276	52.093	.1040E+06	1.055	151.0	120.0	150.8827	120.1259	.3754E-03	.1202E-02
.290	58.361	.9002E+05	1.050	150.5	120.0	150.6092	120.1567	.7612E-03	.1231E-02
.302	64.608	.8586E+05	1.059	150.5	120.0	150.4066	120.2447	.6507E-03	.1782E-02
.189	70.866	.6120E+05	.965	150.5	120.5	150.3028	120.3274	.4894E-03	.1541E-02
.217	1.816	.6073E+05	.958	150.0	120.5	150.0935	120.4403	.6930E-03	.9524E-03

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.223	14.466	.6187E+05	.992	149.5	120.5	149.6729	120.6920	.9538E-03	.1474E-02
.212	20.710	.4692E+05	1.091	149.5	121.0	149.5217	120.7676	.8640E-03	.1254E-02
.187	26.985	.4228E+05	1.069	149.5	121.0	149.3939	120.9690	.8029E-03	.1168E-02
.279	33.279	.4291E+05	1.031	149.0	121.0	149.2587	121.1223	.1671E-01	.1125E-01
.237	39.526	.6039E+05	.986	149.0	121.5	149.1466	121.2992	.8585E-03	.5317E-03
.206	45.825	.7963E+05	.945	149.0	121.5	149.0514	121.5632	.9037E-03	.5097E-03
.273	52.090	.9438E+05	1.060	149.0	122.0	148.9980	121.7360	.6209E-03	.5842E-03
.234	58.367	.8652E+05	1.070	149.0	122.0	148.9424	121.9635	.1745E-02	.1446E-02
.243	64.624	.8551E+05	1.050	149.0	122.0	148.9030	122.1401	.5044E-03	.8208E-03
.195	70.890	.3728E+05	.999	149.0	122.5	148.9187	122.3727	.1621E-02	.4271E-03
.206	1.812	.4440E+05	.913	149.0	122.5	148.9527	122.6484	.6108E-03	.1117E-02
.209	8.160	.7275E+05	1.037	149.0	123.0	149.0120	122.8226	.1779E-02	.1403E-02
.178	14.374	.8395E+05	1.050	149.0	123.0	149.0617	123.0049	.8170E-03	.4253E-03
.170	20.724	.8937E+05	1.038	149.0	123.0	149.1424	123.2135	.5605E-03	.5074E-03
.189	26.974	.9514E+05	.969	149.0	123.5	149.2654	123.372	.9164E-03	.1077E-02
.217	33.286	.9252E+05	.957	149.5	123.5	149.3855	123.6089	.1155E-02	.8905E-03
.310	39.528	.1050E+06	1.022	149.5	124.0	149.5410	123.7158	.5631E-03	.1194E-02
.344	45.825	.1043E+06	1.026	149.5	124.0	149.7062	123.8720	.1477E-02	.1200E-02
.344	52.089	.1129E+06	1.053	150.0	124.0	149.8761	123.9956	.1727E-02	.8833E-03
.366	58.375	.1070E+06	1.058	150.0	124.0	150.0735	124.1198	.7486E-03	.7742E-03
.363	64.642	.8967E+05	1.052	150.5	124.0	150.2754	124.2481	.1164E-02	.6932E-03
.260	70.863	.5970E+05	1.029	150.5	124.5	150.4811	124.2652	.1195E-02	.6251E-03
.254	1.823	.5998E+05	.988	150.5	124.5	150.6984	124.3372	.9745E-03	.7097E-03
.189	8.193	.6102E+05	.993	151.0	124.5	150.9339	124.3645	.5751E-03	.6654E-03

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	1	2	3	4	5	6
0	.00936	.00988	.00363	-.01315	-.01569	.01763
1	.01102	-.03604	.02489	-.00468	-.03680	-.01678
2	.00750	.00397	-.00450	-.00301	.00783	.01467
3	-.00153	.01050	.03101	-.00053	.00755	-.02577
4	-.01814	-.01937	-.04013	.02424	.01494	.02901
5	.04713	.03781	-.00909	-.03155	-.03065	-.04549
6	-.02413	.02367	-.01537	.00502	.01338	.00403
7	-.00428	.00544	.02670	.01069	.00942	-.00904
8	.00046	.01025	-.00571	.02329	-.02098	.01329
9	-.01828	-.01047	.02539	-.02149	.00309	.00275

x0= 151.0215    v0= 122.2634    r0= 2.09493661    std.dev.= .02000591

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	3	6	11	17	23	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta ri						
	1	2	3	4	5	6	7
0	.00892	.01039	.00409	.01355	-.01537	.01788	.01788
1	.01116	-.03601	.02484	-.00484	-.03710	-.01740	-.01740
2	.00697	.00334	-.00526	-.00726	.00689	.01361	.01361
3	-.00267		.02969	-.00122	.00610	-.02703	-.02703
4	-.01966	-.02091		.02268	.01340	.02349	.02349
5	.04544	.03637	-.01048	-.03333	-.03180	-.04681	-.04681
6	-.02547	.02271	-.01623		.01274	-.00452	-.00452
7	-.00468	.00516	.02651	.01062	.00947	-.00890	-.00890
8	.00068	.01056	-.00533	.02375	-.02047	-.01774	-.01774
9	-.01769	-.00985	.02602	-.02086	.00451	.00855	.00855

x0= 151.0219    y0= 122.2624    r0= 2.09540081    std.dev.= .01975182

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	2	5	13	16	21	3

ORIGINAL PAGE IS  
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	Coarse	Fine	Track
	1.0	1.0	64.0
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.1838E+06	.9190E+05	.7352E+06

Constants:	.29800	.25500	.36700	.30200
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.158	14.347	.1333E+05	2.761	151.0	124.5	151.1693	124.3484	.1777E-02	.1305E-02
.150	20.721	.1245E+05	2.803	151.5	124.5	151.3871	124.3271	.4648E-03	.2119E-02
.195	26.945	.1269E+05	2.809	151.5	124.5	151.5843	124.2771	.6725E-03	.6610E-03
.234	33.243	.2354E+05	2.813	152.0	124.0	151.7623	124.2181	.9636E-03	.2043E-02
.170	39.532	.2436E+05	2.809	152.0	124.0	151.9815	124.1006	.8958E-03	.9587E-03
.125	45.807	.2525E+05	2.795	152.0	124.0	152.2088	124.0061	.7872E-03	.1149E-02
.063	52.077	.2170E+05	2.843	152.5	124.0	152.3714	123.8881	.6553E-03	.1231E-02
.125	58.358	.2286E+05	2.836	152.5	124.0	152.5156	123.6961	.4631E-03	.1370E-02
.001	64.611	.1985E+05	2.722	152.5	123.5	152.6656	123.6217	.6339E-03	.8475E-03
.013	70.849	.2295E+05	2.742	153.0	123.5	152.7784	123.4258	.8947E-03	.3661E-03
.024	1.808	.2061E+05	2.805	153.0	123.0	152.8854	123.1671	.1594E-02	.1633E-02
.066	8.157	.1842E+05	2.783	153.0	123.0	152.9994	122.9662	.6350E-03	.7541E-03
.066	14.349	.1460E+05	2.773	153.0	123.0	153.0801	122.7711	.7602E-03	.8965E-03
-.018	20.730	.9792E+04	2.652	153.0	122.5	153.1143	122.5814	.9352E-03	.6901E-03
.021	26.964	.9490E+04	2.694	153.0	122.5	153.1305	122.3332	.1155E-02	.1601E-02
.066	33.285	.2073E+05	2.809	153.0	122.0	153.1311	122.1430	.7233E-03	.4464E-03
.060	39.531	.1991E+05	2.831	153.0	122.0	153.1268	121.9657	.1173E-02	.1363E-02
.077	45.819	.2213E+05	2.817	153.0	122.0	153.0812	121.7099	.5341E-03	.8270E-03
.097	52.083	.1762E+05	2.730	153.0	121.5	153.0071	121.5295	.4062E-03	.7782E-03
.128	58.366	.1498E+05	2.842	153.0	121.0	152.9110	121.2877	.8371E-03	.8563E-03
.100	64.626	.1344E+05	2.846	153.0	121.0	152.8051	121.0652	.4634E-03	.4382E-03
.161	70.859	.1117E+05	2.839	152.5	121.0	152.6535	120.9248	.8586E-03	.5525E-03
.156	1.823	.1027E+05	2.811	152.5	121.0	152.5039	120.7427	.5420E-03	.9193E-03
.167	8.152	.1264E+05	2.736	152.5	120.5	152.3454	120.6411	.9371E-03	.6828E-03
.128	14.364	.1316E+05	2.693	152.0	120.5	152.1799	120.5181	.8846E-03	.9537E-03
.139	20.737	.1315E+05	2.754	152.0	120.5	151.9979	120.4113	.8031E-03	.1331E-02
.156	26.950	.2959E+05	2.921	152.0	120.0	151.7767	120.3262	.9501E-02	.7808E-01
.133	33.256	.1955E+05	2.851	151.5	120.0	151.5769	120.1990	.6597E-03	.2656E-02
.133	39.545	.2006E+05	2.846	151.5	120.0	151.3682	120.1662	.5513E-03	.1186E-02
.147	45.819	.2371E+05	2.825	151.0	120.0	151.1355	120.1358	.1206E-02	.7129E-03
.212	52.117	.2337E+05	2.835	151.0	120.0	150.9044	120.1153	.1637E-02	.9651E-03
.133	58.370	.2014E+05	2.834	150.5	120.0	150.7011	120.1430	.9227E-03	.6594E-03
.125	64.636	.1929E+05	2.844	150.5	120.0	150.5115	120.2261	.1437E-02	.1667E-02
.105	70.866	.1322E+05	2.754	150.5	120.5	150.3354	120.3340	.8037E-03	.2011E-03
.086	1.837	.1309E+05	2.738	150.0	120.5	150.0730	120.4329	.9541E-03	.1370E-02

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.041	8.405	.1320E+05	2.777	149.5	121.5	149.6864	120.5637	.3992E-03	.9347E-03
.052	20.743	.1052E+05	2.868	149.5	121.0	149.5353	120.7663	.7934E-03	.1241E-02
.088	26.971	.9678E+04	2.851	149.5	121.0	149.4159	120.9611	.1690E-02	.1649E-02
.119	33.273	.9444E+04	2.815	149.5	121.0	149.3013	121.1255	.4064E-03	.1110E-02
.077	39.557	.1634E+05	2.782	149.0	121.5	149.1718	121.2929	.1844E-01	.1664E-01
.080	45.838	.1723E+05	2.725	149.0	121.5	149.0707	121.5563	.4102E-03	.6692E-03
.116	52.110	.2184E+05	2.845	149.0	122.0	149.0194	121.7359	.6790E-03	.2708E-02
.122	58.380	.2003E+05	2.852	149.0	122.0	148.9666	121.9652	.2174E-02	.1177E-02
.052	64.643	.1988E+05	2.831	149.0	122.0	148.9257	122.1433	.3323E-02	.1715E-02
.018	70.881	.8401E+04	2.691	149.0	122.5	148.9410	122.3703	.8568E-03	.1019E-02
-.024	1.827	.9582E+04	2.692	149.0	122.5	148.9739	122.6407	.8267E-03	.7891E-03
-.041	8.186	.1537E+05	2.807	149.0	123.0	149.0322	122.8262	.1539E-02	.6834E-03
-.052	14.378	.1762E+05	2.817	149.0	123.0	149.0795	123.0010	.1349E-02	.5981E-03
.041	20.721	.1902E+05	2.809	149.0	123.0	149.1568	123.1997	.8675E-03	.1765E-02
.060	26.977	.1929E+05	2.753	149.5	123.5	149.2935	123.3991	.1629E-02	.8623E-03
.015	33.278	.1951E+05	2.743	149.5	123.5	149.4107	123.6075	.4558E-03	.4617E-03
.116	39.543	.2341E+05	2.812	149.5	124.0	149.5619	123.7186	.9940E-03	.9159E-03
.086	45.812	.2286E+05	2.822	149.5	124.0	149.7247	123.8745	.1224E-02	.2007E-02
.069	52.109	.2478E+05	2.837	150.0	124.0	149.9020	123.9919	.9838E-03	.3684E-03
.170	58.383	.2352E+05	2.830	150.0	124.0	150.0869	124.1161	.1295E-02	.2314E-02
.122	64.648	.1984E+05	2.837	150.5	124.0	150.2978	124.2448	.5575E-03	.2148E-02
.049	70.880	.1253E+05	2.813	150.5	124.5	150.4966	124.2729	.1390E-02	.1001E-02
-.015	1.826	.1293E+05	2.778	150.5	124.5	150.7113	124.3421	.5373E-03	.1357E-02
.046	8.163	.1314E+05	2.771	151.0	124.5	150.9558	124.3654	.1645E-02	.8991E-03

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	delta ri					
	1	2	3	4	5	6
0	.00116	.00454	-.00252	-.00497	-.02509	.00994
1	.00979	-.03481	.02634	-.00164	-.03916	-.01325
2	.00663	.00203	-.00575	-.00356	.00911	.01520
3	-.00084	.00889	.03143	-.00593	.00795	-.02098
4	-.01896	-.01860	-.03145	.02905	.01876	.02589
5	.04872	.04392	.00123	-.03816	-.03171	-.04681
6	-.02028	.02259	-.01674	-.02055	.00762	-.00414
7	-.00747	-.00019	.02356	.00839	.00796	-.00643
8	.00366	.01274	-.00642	.02320	-.01445	-.00838
9	-.01839	-.00411	.02832	-.00577	.01703	.01612

x0= 151.0420    y0= 122.2553    r0= 2.09572840    std.dev.= .02011792

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	3	6	11	11	29	0

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	1	2	delta ri	3	4	5	6
0	.00159	.00490	-.00224	-.00477	-.00500	.00532	
1	.00967	-.03505	.02602	-.00203	-.02974	.01394	
2	.00583	.00114	-.00676	-.00465	.00725	.01315	
3	-.00215	.00751	.03000	-.00739	.00645	.02248	
4	-.02047	-.02010		-.02761	.01736	.02455	
5	.04745	.04272	.00010	-.03921	-.03263	.04762	
6	-.02098	.02198	-.01724	-.02094		-.00428	
7	-.00752	-.00013	.02370	.00863	.00830	-.00602	
8	.00413	.01327	-.00584	.02382	-.01381	.00772	
9	-.01773	-.00347	.02894	-.00517	.01758	.01661	

x0= 151.0426    r0= 122.2545    r0= 2.09615254    std.dev.= .02000283

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	3	5	13	9	28	2

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Disk 27-A Track data file TRDATA00

NDRO: Coarse Fine Track  
 1.0 1.0 192.0  
 Integration delay: .1160E+00 .4564E+00 .7974E+00  
 Thresholds: .1838E+06 .9190E+05 .7352E+06

Constants: .29800 .25500 .36700 .30200  
 Displacements: 0.00000 0.00000 0.00000 0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.142	14.361	.1231E+05	6.010	151.0	124.5	151.1218	124.3611	.7980E-03	.9893E-03
.198	20.716	.1211E+05	6.061	151.5	124.5	151.3601	124.3410	.1921E-02	.2093E-02
.170	26.958	.1212E+05	6.072	151.5	124.5	151.5523	124.2983	.1491E-02	.1659E-02
.195	33.267	.1275E+05	6.086	151.5	124.0	151.7236	124.2198	.1540E-02	.9620E-02
.248	39.527	.1385E+05	6.071	152.0	124.0	151.9319	124.0890	.1920E-02	.1903E-02
.187	45.789	.1390E+05	6.045	152.0	124.0	152.1700	123.9896	.1802E-02	.2564E-02
.192	52.079	.1360E+05	6.106	152.5	124.0	152.3599	123.8814	.1057E-02	.4912E-02
.226	58.370	.1368E+05	6.123	152.5	124.0	152.5025	123.6863	.1068E-02	.2335E-02
.102	64.603	.1342E+05	6.015	152.5	123.5	152.6537	123.6281	.2553E-02	.3467E-02
.024	70.863	.1246E+05	6.014	152.5	123.5 *	152.7548	123.4381	.1361E-01	.5123E-02
-.001	1.802	.1087E+05	6.037	153.0	123.0	152.8478	123.1858	.1700E-02	.9546E-03
.013	8.139	.1080E+05	6.010	153.0	123.0	152.9635	122.9804	.2619E-02	.2533E-02
.032	14.354	.1056E+05	6.009	153.0	123.0	153.0495	122.7910	.8703E-03	.3527E-02
.074	20.720	.1031E+05	5.925	153.0	122.5	153.0795	122.5931	.5874E-02	.1329E-01
.029	26.954	.1014E+05	5.938	153.0	122.5	153.0977	122.3360	.1068E-02	.2725E-02
.021	33.263	.1077E+05	6.029	153.0	122.0	153.0718	122.1117	.2730E-02	.2599E-02
.102	39.524	.1076E+05	6.050	153.0	122.0	153.0744	121.9379	.3316E-02	.2792E-02
.091	45.818	.1090E+05	6.055	153.0	122.0 *	153.0275	121.6985	.4843E-02	.4288E-01
.080	52.098	.1062E+05	5.970	153.0	121.5	152.9627	121.5321	.2120E-02	.2220E-02
.074	58.379	.1046E+05	6.053	153.0	121.0 *	152.8676	121.2799	.5939E-02	.8051E-02
.083	64.632	.1040E+05	6.053	153.0	121.0	152.7590	121.0579	.7311E-03	.2297E-02
.125	70.848	.1264E+05	6.051	152.5	121.0	152.6200	120.9380	.2431E-02	.3313E-02
.091	1.798	.1255E+05	6.033	152.5	121.0	152.4698	120.7584	.1462E-02	.2972E-02
.094	8.141	.1281E+05	5.934	152.5	120.5	152.3167	120.5929	.2383E-02	.1812E-02
.091	14.345	.1285E+05	5.868	152.0	120.5	152.1631	120.4847	.2133E-02	.1309E-02
.111	20.719	.1286E+05	5.923	152.0	120.5	151.9939	120.3847	.1116E-02	.1834E-02
.136	26.940	.1319E+05	6.086	151.5	120.0 *	151.7216	120.2740	.2426E-01	.6282E-01
.158	33.258	.1268E+05	6.023	151.5	120.0	151.5238	120.1734	.3005E-02	.3577E-02
.220	39.504	.1273E+05	6.015	151.5	120.0	151.3263	120.1457	.1860E-02	.1633E-02
.260	45.792	.1328E+05	5.986	151.0	120.0	151.1054	120.1229	.9098E-03	.2010E-02
.215	52.072	.1327E+05	5.996	151.0	120.0	150.8838	120.1057	.1855E-02	.2184E-02
.251	58.355	.1095E+05	6.017	150.5	120.0	150.6452	120.1250	.1382E-02	.2816E-02
.206	64.622	.1089E+05	6.024	150.5	120.0	150.4615	120.2089	.1090E-02	.3012E-02
.175	70.855	.1040E+05	5.947	150.5	120.5 *	150.2971	120.3090	.1254E-01	.1743E-02
.116	1.788	.1020E+05	5.933	150.0	120.5	150.0547	120.4017	.2035E-02	.2188E-02

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.13	8.	E+05	5.6	2	5	14	14	0.51	4E-0	.14	02
.105	14.351	.1039E+05	5.943	149.5	120.5	149.6411	120.6210	.1903E-02	.1673E-02	.1673E-02	.1673E-02
.144	20.711	.1030E+05	6.071	149.5	121.0	149.5230	120.7599	.1462E-02	.4959E-02	.4959E-02	.4959E-02
.097	26.946	.1029E+05	6.048	149.5	121.0	149.4026	120.9540	.1721E-02	.2364E-02	.2364E-02	.2364E-02
.189	33.242	.1029E+05	6.024	149.5	121.0	149.2905	121.1129	.5791E-03	.2210E-02	.2210E-02	.2210E-02
.094	39.498	.1060E+05	6.007	149.0	121.5	149.1384	121.2793	.2979E-01	.3524E-01	.3524E-01	.3524E-01
.029	45.817	.1059E+05	5.941	149.0	121.5	149.0345	121.5536	.1898E-02	.2397E-02	.2397E-02	.2397E-02
.063	52.093	.1106E+05	6.058	149.0	122.0 *	148.9822	121.7159	.5723E-02	.4618E-01	.4618E-01	.4618E-01
.102	58.353	.1102E+05	6.055	149.0	122.0	148.9304	121.9324	.2587E-02	.2060E-02	.2060E-02	.2060E-02
.032	64.622	.1096E+05	6.034	149.0	122.0	148.8842	122.1081	.1329E-02	.2023E-02	.2023E-02	.2023E-02
.055	70.877	.9837E+04	5.895	149.0	122.5	148.9266	122.3571	.2700E-02	.1574E-02	.1574E-02	.1574E-02
.069	1.801	.9889E+04	5.885	149.0	122.5	148.9606	122.6163	.2505E-02	.2156E-02	.2156E-02	.2156E-02
.100	8.148	.1026E+05	5.979	149.0	123.0	149.0105	122.8387	.2599E-02	.3641E-02	.3641E-02	.3641E-02
.029	14.361	.1040E+05	5.989	149.0	123.0	149.0507	123.0043	.1379E-02	.2444E-02	.2444E-02	.2444E-02
.083	20.703	.1048E+05	5.989	149.0	123.0	149.1211	123.1893	.1710E-02	.2611E-02	.2611E-02	.2611E-02
.086	26.959	.1082E+05	5.999	149.5	123.5 *	149.2729	123.3726	.1421E-01	.1405E-01	.1405E-01	.1405E-01
.114	33.258	.1069E+05	5.970	149.5	123.5	149.3770	123.5872	.1580E-02	.2656E-02	.2656E-02	.2656E-02
.164	39.524	.1083E+05	6.024	149.5	124.0 *	149.5278	123.7489	.2024E-02	.3709E-01	.3709E-01	.3709E-01
.248	45.774	.1073E+05	5.984	149.5	124.0	149.6786	123.8807	.2290E-02	.2307E-02	.2307E-02	.2307E-02
.237	52.094	.1098E+05	5.993	150.0	124.0	149.8647	123.9769	.1681E-02	.1836E-02	.1836E-02	.1836E-02
.254	58.361	.1090E+05	5.990	150.0	124.0	150.0449	124.0866	.3935E-02	.2209E-02	.2209E-02	.2209E-02
.245	64.600	.1081E+05	6.025	150.5	124.0 *	150.2659	124.2090	.9564E-02	.6369E-02	.6369E-02	.6369E-02
.260	70.855	.1022E+05	6.012	150.5	124.5	150.4551	124.2814	.2125E-02	.2430E-02	.2430E-02	.2430E-02
.170	1.798	.1017E+05	5.972	150.5	124.5	150.6616	124.3489	.1171E-02	.1923E-02	.1923E-02	.1923E-02
.161	8.138	.1250E+05	5.984	151.0	124.5	150.9122	124.3607	.1965E-02	.1295E-02	.1295E-02	.1295E-02

ORIGINAL PAGE IS  
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delta ri

	1	2	3	4	5	6
0	.01822	.02414	.02284	-.00103	-.03912	-.00568
1	.02060	-.02580	.04760	.01324	-.03576	-.01299
2	.01115	-.00155	-.01027	-.03380	-.01264	-.00951
3	-.02090	-.00616	.01436	-.02563	-.01577	.00720
4	.00519	.00538	-.00350	.02539	.02403	.02532
5	.04410	.05226	.00974	-.03586	-.02282	-.03171
6	.02490	.00243	-.03758	-.04060	.00660	-.00655
7	-.00394	.00332	.03045	-.01350	-.01723	-.01428
8	.00107	.01152	-.02935	.01334	.01105	.00845
9	-.02427	-.02153	-.00053	.00587	.03173	.01710

μ= 151.0101    σ= 122.2460    ρ= 2.09989357    std. dev.= .02757977

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	3	9	13	15	19	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.01859	.02462	.02339	-.00042	-.03846	-.00499
1	.02139	-.02511	.04827		-.03522	-.01254
2	.01150		-.01018	-.03386	-.01283	
3	-.02140	-.00688	.01343	-.02671	-.01705	.00574
4	.00358	.00361		.03326	.02177	.02293
5	.04160	.04965	.00707		-.02561	-.03452
6	.02208	-.00038	-.04035	-.04333		-.00210
7		.00098	.02821	-.01558	-.01912	-.01600
8	-.00051	.01010		.01231		.00777
9	.02478	-.02187	-.00069	.00985	.03186	.01737

x0= 151.0090    y0= 122.2446    r0= 2.10095263    std.dev.= .02337596

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	5	6	13	13	14	9

ORIGINAL PAGE IS  
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Disk 21-A Track data file TDATA02

NIRRO: Coarse 1.0 Fine 1.0 Track 16.0  
 Integration delay: .1160E+00 .4564E+00 .1344E-02  
 Thresholds: .1338E+06 .9190E+05 .7352E+06

Constants: .29800 .25500 .36700 .30200  
 Displacements: 0.00000 0.00000 0.00000 0.00000

temp	angle	dark	star	reference		position		standard deviation	
		current	mas.	X	Y	X	Y	X	Y
10.289	14.363	.7035E+05	.996	151.0	124.5	151.1325	124.3250	.1197E-02	.1034E-02
10.255	20.724	.6732E+05	1.023	151.5	124.5	151.3441	124.3008	.5124E-03	.1040E-02
10.266	26.978	.6874E+05	1.038	151.5	124.5	151.5454	124.2504	.5630E-03	.1602E-02
10.295	33.245	.9780E+05	1.030	151.5	124.0	151.7238	124.1940	.5968E-03	.9539E-03
10.297	39.504	.1177E+06	1.030	152.0	124.0	151.9378	124.0812	.6375E-03	.1179E-02
10.311	45.816	.1216E+06	1.014	152.0	124.0	152.1684	123.9942	.1147E-02	.1190E-02
10.323	52.072	.1065E+06	1.056	152.5	124.0	152.3289	123.8708	.6750E-03	.8346E-03
10.210	58.365	.9728E+05	1.044	152.5	123.5	152.4754	123.7473	.1224E-02	.3734E-01
10.146	64.622	.1029E+06	.939	152.5	123.5	152.6222	123.6013	.9991E-03	.5534E-03
10.230	70.848	.1174E+06	.962	153.0	123.5	152.7256	123.4039	.1200E-02	.5273E-03
10.179	1.791	.1066E+06	1.024	153.0	123.0	152.8337	123.1505	.8446E-03	.1397E-02
10.216	8.148	.9524E+05	1.012	153.0	123.0	152.9511	122.9528	.6072E-03	.1369E-02
10.196	14.345	.7451E+05	1.003	153.0	123.0	153.0351	122.7498	.1064E-02	.1497E-02
10.205	20.707	.5245E+05	.878	153.0	122.5	153.0705	122.5730	.9473E-03	.5041E-03
10.182	26.954	.5144E+05	.921	153.0	122.5	153.0857	122.3133	.2306E-03	.1451E-02
10.303	33.252	.9954E+05	1.043	153.0	122.0	153.0869	122.1333	.8868E-03	.7959E-03
10.241	39.527	.9549E+05	1.066	153.0	122.0	153.0826	121.9510	.8079E-03	.9406E-03
10.275	45.775	.1054E+06	1.039	153.0	122.0	153.0369	121.6893	.3885E-03	.1239E-02
10.208	52.065	.9137E+05	.955	153.0	121.5	152.9636	121.5148	.1439E-02	.8444E-03
10.281	58.363	.7471E+05	1.071	153.0	121.0	152.8678	121.2760	.1000E-02	.8804E-03
10.250	64.614	.6897E+05	1.074	153.0	121.0	152.7618	121.0572	.4870E-03	.7469E-03
10.278	70.866	.5803E+05	1.064	152.5	121.0	152.6145	120.9142	.7447E-03	.1072E-02
10.278	1.801	.5227E+05	1.031	152.5	121.0	152.4579	120.7229	.2925E-03	.1265E-02
10.266	8.167	.6660E+05	.943	152.5	120.5	152.2985	120.6303	.1382E-02	.4093E-03
10.286	14.351	.7038E+05	.922	152.0	120.5	152.1410	120.5061	.2884E-03	.5113E-03
10.300	20.707	.6902E+05	.986	152.0	120.5	151.9550	120.3956	.8708E-03	.9233E-03
10.368	26.939	.1065E+06	1.094	152.0	120.0	151.7320	120.2689	.5403E-03	.5487E-03
10.396	33.226	.9715E+05	1.068	151.5	120.0	151.5378	120.1888	.5919E-03	.1374E-02
10.382	39.524	.1005E+06	1.057	151.5	120.0	151.3238	120.1574	.6263E-03	.1270E-02
10.390	45.782	.1132E+06	1.049	151.0	120.0	151.0970	120.1221	.3468E-03	.4054E-03
10.373	52.064	.1148E+06	1.054	151.0	120.0	150.8623	120.0979	.9517E-03	.1423E-02
10.323	58.364	.9965E+05	1.047	150.5	120.0	150.6718	120.1308	.2274E-03	.8437E-03
10.337	64.595	.9564E+05	1.053	150.5	120.0	150.4771	120.2147	.6751E-03	.6807E-03
10.300	70.834	.1210E+06	1.072	150.0	120.0	150.2630	120.3175	.3104E-01	.4334E-01
10.261	1.787	.6991E+05	.973	150.0	120.5	150.0304	120.4131	.8793E-03	.5893E-03

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 OF POOR QUALITY

TR0104

10.267	8.111	.111E+01	.811	111.0	111.5	14.11091	120.571	.111E-01	.775E-03
10.247	14.356	.7931E+05	.983	149.5	120.5	149.6583	120.6709	.547E-03	.775E-03
10.278	20.726	.5561E+05	1.087	149.5	121.0	149.5014	120.7387	.8195E-03	.151E-02
10.252	26.966	.5114E+05	1.075	149.5	121.0	149.3748	120.9466	.5648E-03	.1149E-02
10.283	33.274	.5157E+05	1.029	149.0	121.0	149.2268	121.0924	.1017E-02	.5954E-03
10.289	39.536	.7855E+05	1.021	149.0	121.5	149.1286	121.2731	.1620E-01	.2590E-01
10.272	45.797	.8755E+05	.949	149.0	121.5	149.0122	121.5353	.861E-03	.8504E-03
10.266	52.062	.1163E+06	1.066	149.0	122.0	148.9681	121.6905	.1220E-01	.1937E-01
10.292	58.291	.9614E+05	1.072	149.0	122.0	148.9226	121.9430	.6277E-03	.8917E-03
10.224	64.614	.9436E+05	1.054	149.0	122.0	148.8819	122.1212	.7958E-03	.1219E-02
10.219	70.887	.4534E+05	.922	149.0	122.5	148.8994	122.3443	.5014E-03	.1651E-02
10.216	1.806	.5110E+05	.901	149.0	122.5	148.9324	122.6245	.4700E-03	.7231E-03
10.252	8.184	.7780E+05	1.032	149.0	123.0	148.9924	122.7962	.6234E-03	.1651E-02
10.219	14.377	.9199E+05	1.056	149.0	123.0	149.0431	122.9864	.6773E-03	.8792E-03
10.208	20.730	.9799E+05	1.046	149.0	123.0	149.1190	123.1821	.1021E-02	.2100E-02
10.199	26.996	.1042E+06	.978	149.0	123.5	149.2456	123.3670	.8268E-03	.3521E-03
10.219	33.241	.1017E+06	.955	149.5	123.5	149.3629	123.5805	.5155E-03	.1156E-02
10.323	39.540	.1215E+06	1.031	149.5	124.0	149.5219	123.6793	.7504E-02	.1538E-01
10.306	45.807	.1121E+06	1.023	149.5	124.0	149.6883	123.8493	.2725E-03	.7779E-03
10.337	52.097	.1210E+06	1.050	150.0	124.0	149.8558	123.9728	.6475E-03	.9273E-03
10.314	58.359	.1152E+06	1.061	150.0	124.0	150.0507	124.0948	.1032E-02	.7108E-03
10.345	64.625	.1127E+06	1.059	150.0	124.0	150.2570	124.2115	.5191E-03	.5255E-03
10.339	70.687	.8735E+05	1.060	150.5	124.0	150.4428	124.2724	.1081E-01	.4453E-01
10.278	70.830	.8927E+05	1.060	150.5	124.5	150.4508	124.2755	.1090E-01	.4586E-01
10.227	1.809	.6696E+05	1.001	150.5	124.5	150.6776	124.3060	.7959E-03	.7977E-03

ORIGINAL PAGE IS  
OF POOR QUALITY



	1	2	delta ri 3	4	5	6
0	-.00155	-.00142	-.00775	-.00711	-.02699	.01758
1	.01240	.01780	.02599	.01056	-.04504	.01544
2	.00497	.00375	-.00681	-.00447	.00818	.01514
3	-.00196	.00625	.02601	-.00723	.00744	.01514
4	-.02156	-.02037	.00500	.02268	.00965	.02211
5	.04846	.03646	-.00642	-.04374	-.02764	-.02459
6	-.03303	.02386	-.02005	.01535	.00908	-.00600
7	.00894	.00302	.02624	.00844	.00871	-.01072
8	.00079	.01050	-.00773	.02337	-.02918	-.01578
9	-.01521	-.00782	.01563	.01634	.01721	.00012

x0= 150.9995    y0= 122.2364    r0= 2.09443355    std.dev.= .02006811

HISTOGRAM DEVIATION >= e

xe	.05	.04	.03	.02	.01	0.00	bad points
	1	3	2	14	14	26	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta r1 3	4	5	6
0	.00078	.00096	-.00533	-.00469	-.02476	.01896
1	.01472		.02912	-.00957	-.04324	.01385
2	.00637	.00497	-.00585	-.00271	.00973	.01532
3	.00193	.00598	.02547	-.00900	.00640	.01888
4	-.02298	-.02200	.00317	.02070	.00752	.01856
5	.04612	.03407	-.00886		-.03207	.05297
6	-.03533	.02163	-.02216	.01337		.00260
7		.00182	.02524	.00768	.00827	.01096
8	.00078	.01073	-.00724	.02414		.01456
9	-.01380	-.00619	.01745			.00223

v0= 150.9986    v0= 122.2341    r0= 2.09443203    std.dev.= .01953022

HISTOGRAM DEVIATION D= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	2	4	10	11	25	7

ORIGINAL PAGE IS  
OF POOR QUALITY

TM104

Disk 27-A Track data file TR1001

NDR0:  
 Intermittent delay: Coarse 1.0 Fine 1.0 Track 44.0  
 Threshold: .1160E+00 .4564E+00 .1344E-02  
 .1838E+06 .9190E+05 .7352E+06

Constants:  
 Displacements: .29800 .25500 .36700 .30200  
 0.00000 0.00000 0.00000 0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
10.210	14.354	.2113E+05	2.789	151.0	124.5	151.1333	124.3293	.8177E-03	.3114E-03
10.194	20.719	.2070E+05	2.827	151.5	124.5	151.3552	124.3063	.5951E-03	.1132E-02
10.222	26.961	.2112E+05	2.843	151.5	124.5	151.5503	124.2554	.5571E-03	.5495E-03
10.261	33.231	.2837E+05	2.833	151.5	124.0	151.7246	124.1916	.4857E-03	.1372E-02
10.255	39.507	.3318E+05	2.822	152.0	124.0	151.9395	124.0782	.8147E-03	.4002E-03
10.255	45.749	.3405E+05	2.806	152.0	124.0	152.1736	123.9902	.8748E-03	.1284E-02
10.281	52.077	.3033E+05	2.860	152.5	124.0	152.3400	123.8674	.5610E-03	.8812E-03
10.160	58.355	.2732E+05	2.848	152.5	123.5	152.4870	123.7607	.4381E-03	.8842E-03
10.140	64.601	.2844E+05	2.748	152.5	123.5	152.6293	123.6002	.2724E-03	.8487E-03
10.179	70.863	.3118E+05	2.772	153.0	123.5	152.7395	123.4030	.4657E-02	.2116E-02
10.143	1.815	.2942E+05	2.813	153.0	123.0	152.8438	123.1424	.6078E-03	.9178E-03
10.163	8.162	.2708E+05	2.797	153.0	123.0	152.9613	122.9475	.9253E-03	.9921E-03
10.149	14.359	.2298E+05	2.789	153.0	123.0	153.0428	122.7484	.1155E-02	.7881E-03
10.188	20.714	.1839E+05	2.674	153.0	122.5	153.0734	122.5665	.8138E-03	.4540E-03
10.210	26.958	.1816E+05	2.717	153.0	122.5	153.0922	122.3122	.8066E-03	.1282E-02
10.222	33.265	.2893E+05	2.832	153.0	122.0	153.0931	122.1242	.9297E-03	.1731E-02
10.233	39.529	.2839E+05	2.855	153.0	122.0	153.0891	121.9479	.6753E-03	.1266E-02
10.250	45.809	.3080E+05	2.839	153.0	122.0	153.0424	121.6850	.1183E-02	.7435E-03
10.230	52.057	.2629E+05	2.756	153.0	121.5	152.9678	121.5152	.1187E-02	.7737E-03
10.230	58.307	.2359E+05	2.861	153.0	121.0	152.8723	121.2696	.4371E-03	.1393E-02
10.222	64.613	.2247E+05	2.865	153.0	121.0	152.7672	121.0508	.6897E-03	.1172E-02
10.300	70.859	.1962E+05	2.855	152.5	121.0	152.6192	120.9156	.1403E-02	.5895E-03
10.323	1.813	.1869E+05	2.828	152.5	121.0	152.4643	120.7266	.5555E-03	.1698E-02
10.233	8.151	.2110E+05	2.733	152.5	120.5	152.3067	120.6116	.5278E-03	.1113E-02
10.269	14.364	.2190E+05	2.698	152.0	120.5	152.1436	120.4932	.6017E-03	.1671E-02
10.255	20.725	.2185E+05	2.764	152.0	120.5	151.9631	120.3852	.9619E-03	.1086E-02
10.269	26.958	.3074E+05	2.873	152.0	120.0	151.7421	120.2541	.1281E-02	.9082E-03
10.320	33.263	.2819E+05	2.851	151.5	120.0	151.5345	120.1757	.4973E-03	.9466E-03
10.323	39.523	.2878E+05	2.837	151.5	120.0	151.3293	120.1465	.3928E-03	.5260E-03
10.303	45.828	.3217E+05	2.822	151.0	120.0	151.1008	120.1114	.6278E-03	.9714E-03
10.289	52.097	.3199E+05	2.827	151.0	120.0	150.8710	120.0906	.6529E-03	.8127E-03
10.314	58.364	.2895E+05	2.829	150.5	120.0	150.6637	120.1200	.1091E-02	.1232E-02
10.306	64.639	.2815E+05	2.838	150.5	120.0	150.4751	120.2022	.7058E-03	.9125E-03
10.278	70.848	.2807E+05	2.812	150.5	120.0	150.2757	120.3030	.5347E-03	.8455E-03
10.269	1.819	.2140E+05	2.749	150.0	120.5	150.0371	120.4012	.9491E-03	.1185E-02

ORIGINAL PAGE IS  
 OF POOR QUALITY

TR1001

10.1	1	.4E+0	2.	0	121.5	149.522	120.5	.14E	.2
10.275	14.364	.2183E+05	2.770	149.5	120.5	149.6497	120.6497	.839E-03	.613E-03
10.247	20.743	.1830E+05	2.873	149.5	121.0	149.5061	120.7413	.1167E-02	.112E-02
10.266	26.955	.1827E+05	2.864	149.5	121.0	149.3917	120.9451	.539E-03	.607E-03
10.261	33.242	.1850E+05	2.812	149.0	121.0	149.2238	121.0338	.635E-03	.920E-03
10.306	39.508	.2470E+05	2.819	149.0	121.5	149.1306	121.2687	.219E-01	.2634-01
10.311	45.793	.2546E+05	2.743	149.0	121.5	149.0342	121.5345	.660E-03	.645E-03
10.269	52.078	.3307E+05	2.863	149.0	122.0	148.9761	121.6924	.907E-02	.1714E-01
10.269	58.367	.2857E+05	2.861	149.0	122.0	148.9292	121.9426	.121E-02	.5410E-02
10.244	64.628	.2829E+05	2.842	149.0	122.0	148.8856	122.1154	.850E-03	.901E-03
10.224	70.830	.1659E+05	2.715	149.0	122.5	148.9059	122.3424	.130E-02	.125E-02
10.283	1.798	.1769E+05	2.693	149.0	122.5	148.9383	122.6161	.527E-03	.484E-03
10.230	8.172	.2344E+05	2.815	149.0	123.0	148.9975	122.7975	.972E-03	.105E-02
10.250	14.369	.2621E+05	2.834	149.0	123.0	149.0426	122.9800	.150E-02	.172E-02
10.230	20.719	.2717E+05	2.825	149.0	123.0	149.1159	123.17.5	.106E-02	.153E-02
10.202	26.973	.2815E+05	2.773	149.0	123.5	149.2447	123.3674	.214E-03	.100E-02
10.174	33.229	.2785E+05	2.759	149.5	123.5	149.3697	123.5767	.915E-03	.810E-03
10.264	39.510	.3224E+05	2.833	149.5	124.0	149.5235	123.6982	.796E-02	.395E-01
10.300	45.740	.3119E+05	2.825	149.5	124.0	149.6860	123.8524	.361E-03	.107E-02
10.255	52.059	.3333E+05	2.839	150.0	124.0	149.8578	123.9692	.955E-03	.110E-02
10.325	58.345	.3199E+05	2.844	150.0	124.0	150.0461	124.0883	.1780E-02	.8230E-03
10.334	64.593	.2918E+05	2.851	150.5	124.0	150.2596	124.2116	.440E-02	.4563E-02
10.244	70.873	.2127E+05	2.843	150.5	124.5	150.4606	124.2433	.7056E-03	.178E-02
10.297	1.805	.2140E+05	2.803	150.5	124.5	150.6741	124.3106	.4517E-03	.1155E-02
10.309	8.164	.2172E+05	2.797	151.0	124.5	150.9124	124.3362	.6347E-03	.579E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

TM81-04

	1	2	delta ri 3	4	5	6
0	.00388	.00476	-.00166	-.00976	-.02806	.01377
1	.01376	.03179	.02634	-.00474	-.04531	-.01464
2	.00401	.00234	-.00918	-.00716	.00520	.01132
3	-.00877	.00274	.02788	-.01572	-.00219	-.02047
4	-.02060	-.01855	.01160	.02411	.01128	.02342
5	.04625	.04001	-.00159	-.03718	-.02845	-.04697
6	-.01301	.01462	-.02736	.02004	.00831	-.00641
7	.00049	-.00297	.02384	.00036	.00359	.01277
8	.00187	.01203	-.00343	.01920	-.01350	-.00837
9	-.01585	-.00803	.01774	-.01383	.00732	.01092

x0= 151.0047    y0= 122.2310    r0= 2.09834576    std.dev.= .01891294

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	4	2	11	18	25	0

ORIGINAL PAGE IS  
OF POOR QUALITY

TM81-04

	1	2	delta ri 3	4	5	6
0	.00334	.00584	-.00217	-.01025	-.02852	.01334
1	.01337	.03143	.02601	-.00502	-.04604	-.01482
2	.00388	.00224	-.00922	-.00716	.00524	.01142
3	-.00864	.00243	.02310	-.01547	-.00190	-.02016
4	-.02027	-.01820	.01196	.02448	.01166	.02380
5	.04662	.04037	-.00125	-.03686	-.02815	-.04671
6	-.01278	.01482	-.02721	.02015		-.00839
7		-.00305	.02372	.00320	.00337	-.01304
8	.00156	.01168	-.00381	.01878		-.00885
9	-.01635	-.00855	.01721	-.01437	.00678	.01017

x0= 151.0046    y0= 122.2315    r0= 2.09842896    std.dev.= .01929557

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	4	2	11	18	22	3

ORIGINAL PAGE IS  
OF POOR QUALITY

	Coarse	Fine	Track
	1.0	1.0	192.0
NDRns			
Integration delay:	.1160E+00	.4564E+00	.7774E+00
Thresholds:	.1838E+06	.9190E+05	.7352E+06

Constants:	.29800	.25500	.36700	.30200
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
10.272	8.165	.2754E+05	6.047	151.0	124.5	150.8891	124.3457	.2221E-02	.4772E-02
10.275	14.381	.2757E+05	6.034	151.0	124.5	151.0995	124.3331	.3697E-02	.3865E-02
10.278	20.716	.2729E+05	6.082	151.5	124.5	151.3555	124.3139	.2744E-02	.1211E-02
10.309	26.945	.2736E+05	6.098	151.5	124.5	151.5470	124.2636	.2105E-02	.3651E-02
10.303	33.248	.2773E+05	6.077	151.5	124.0	151.7081	124.1628	.2114E-02	.4175E-02
10.300	39.531	.2896E+05	6.094	152.0	124.0	151.9180	124.0929	.3911E-02	.7678E-02
10.311	45.812	.2899E+05	6.072	152.0	124.0	152.1591	123.9459	.2366E-02	.3213E-02
10.323	52.074	.2856E+05	6.136	152.5	124.0	152.3616	123.8260	.2714E-02	.4998E-02
10.216	58.370	.2830E+05	6.168	152.5	123.5	152.5057	123.7719	.3134E-02	.6303E-02
10.188	64.618	.2891E+05	6.066	152.5	123.5	152.6456	123.6052	.6738E-02	.4463E-02
10.208	70.866	.2893E+05	6.077	152.5	123.5	152.7610	123.3938	.2677E-02	.1127E-02
10.194	1.784	.2550E+05	6.120	153.0	123.0	152.8360	123.1956	.1521E-02	.5327E-02
10.224	3.161	.2537E+05	6.100	153.0	123.0	152.9588	122.9874	.3080E-02	.2177E-02
10.222	14.360	.2506E+05	6.097	153.0	123.0	153.0484	122.7755	.1858E-02	.6472E-02
10.238	20.720	.2478E+05	6.011	153.0	122.5	153.0816	122.5682	.2020E-02	.4215E-02
10.222	26.948	.2476E+05	6.058	153.0	122.5	153.1067	122.2958	.3331E-02	.3722E-02
10.283	33.249	.2450E+05	6.053	153.0	122.0	153.0389	122.0531	.2494E-02	.2153E-02
10.258	39.532	.2453E+05	6.081	153.0	122.0	153.0377	121.8887	.3046E-02	.2689E-02
10.278	45.803	.2470E+05	6.072	153.0	121.5	153.0063	121.7332	.5609E-02	.4391E-01
10.275	52.085	.2473E+05	6.021	153.0	121.5	152.9471	121.4983	.2582E-02	.2974E-02
10.275	58.374	.2459E+05	6.120	153.0	121.0	152.8495	121.2672	.1038E-02	.1900E-02
10.205	64.604	.2702E+05	6.107	152.5	121.0	152.7308	121.0559	.6133E-02	.6672E-02
10.269	70.841	.2780E+05	6.103	152.5	121.0	152.6163	120.9236	.3590E-02	.3264E-02
10.286	1.783	.2772E+05	6.077	152.5	121.0	152.4671	120.7346	.9692E-03	.4920E-02
10.269	8.166	.2782E+05	5.978	152.5	120.5	152.3080	120.6107	.3350E-02	.2423E-02
10.295	14.355	.2783E+05	5.923	152.0	120.5	152.1449	120.5006	.3544E-02	.1869E-02
10.236	20.704	.2786E+05	5.989	152.0	120.5	151.9694	120.3959	.3057E-02	.2996E-02
10.339	26.947	.2821E+05	6.157	151.5	120.0	151.7043	120.2724	.2124E-01	.7142E-01
10.323	33.253	.2768E+05	6.103	151.5	120.0	151.4998	120.1727	.1494E-02	.2584E-02
10.261	39.531	.2765E+05	6.097	151.5	120.0	151.2943	120.1466	.2480E-02	.2544E-02
10.281	45.789	.2827E+05	6.063	151.0	120.0	151.0763	120.1366	.2386E-02	.2204E-02
10.289	52.065	.2822E+05	6.070	151.0	120.0	150.8723	120.1209	.1284E-02	.5325E-02
10.323	58.358	.2479E+05	6.100	150.5	120.0	150.6324	120.1353	.1897E-02	.2773E-02
10.331	64.585	.2485E+05	6.119	150.5	120.0	150.4334	120.2185	.1399E-02	.5017E-02
10.297	70.834	.2482E+05	6.116	150.5	120.0	150.2337	120.1978	.2889E-02	.3947E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

3.26	1.11	.2441E+05	5.949	150.0	120.5	149.8661	120.3922	.1995E-02	.2469E-02
19.255	8.170	.2441E+05	5.949	150.0	120.5	149.8661	120.5159	.1995E-02	.2469E-02
10.283	14.364	.2468E+05	6.061	149.5	120.5	149.6593	120.6537	.1806E-02	.1391E-02
10.295	20.720	.2452E+05	6.166	149.5	121.0	149.5292	120.7285	.1379E-02	.5642E-02
10.320	26.959	.2449E+05	6.148	149.5	121.0	149.3943	120.9306	.2441E-02	.4498E-02
10.278	33.243	.2458E+05	6.122	149.5	121.0	149.2814	121.1060	.2429E-02	.2819E-02
10.272	39.528	.2456E+05	6.098	149.0	121.5 *	149.1145	121.2576	.3489E-01	.4195E-01
10.264	45.773	.2445E+05	6.022	149.0	121.5	149.0125	121.5455	.2587E-02	.1745E-02
10.275	52.071	.2453E+05	6.108	149.0	121.5	148.9408	121.8070	.1569E-02	.4462E-02
10.314	58.361	.2513E+05	6.145	149.0	122.0	148.9022	121.8933	.5184E-02	.5576E-02
10.250	64.582	.2495E+05	6.128	149.0	122.0	148.8595	122.0777	.3794E-02	.4577E-02
10.179	70.869	.2370E+05	5.971	149.0	122.5	148.9203	122.3316	.3283E-02	.4124E-02
10.210	1.766	.2376E+05	5.953	149.0	122.5	148.9544	122.5973	.3715E-02	.2709E-02
10.185	8.126	.2409E+05	6.042	149.0	123.0	149.0066	122.8508	.3266E-02	.2899E-02
10.160	14.356	.2422E+05	6.065	149.0	123.0	149.0438	123.0195	.3339E-02	.5003E-02
10.179	20.725	.2421E+05	6.055	149.0	123.0	149.1154	123.1971	.3725E-02	.4951E-02
10.210	26.957	.2444E+05	6.033	149.0	123.5	149.2529	123.3571	.1383E-01	.1313E-01
10.213	33.235	.2478E+05	6.046	149.5	123.5	149.3479	123.5614	.2188E-02	.3729E-02
10.210	39.524	.2478E+05	6.102	149.5	123.5	149.4912	123.7584	.3821E-02	.5681E-02
10.286	45.820	.2424E+05	6.005	149.5	124.0	149.6543	123.8731	.2883E-02	.3274E-02
10.303	52.068	.2434E+05	6.022	150.0	124.0	149.6563	123.9571	.1197E-02	.2800E-02
10.306	58.367	.2425E+05	6.024	150.0	124.0	150.0264	124.0562	.1398E-02	.9918E-03
10.297	64.607	.2426E+05	6.037	150.0	124.0 *	150.2240	124.1654	.1140E-01	.1133E-01
10.281	70.852	.2411E+05	6.076	150.5	124.5	150.4308	124.2760	.3663E-02	.4240E-02
10.286	1.808	.2412E+05	6.042	150.5	124.5	150.6371	124.3359	.1713E-02	.3268E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

TM81-04



	1	2	delta ri 3	4	5	6
0	.01399	.00132	.01071	.00310	-.04375	-.07804
1	-.02943	-.00116	.05677	.04721	.01459	-.02067
2	.00624	.02698	.01719	.01724	-.04280	-.02250
3	-.02112	-.00704	-.00113	.00698	-.00688	.01023
4	-.00228	-.01019	-.00959	-.00376	.03284	.01953
5	.01073	.02749	.04069	.00172	-.03675	-.01760
6	-.03401	-.02103	.01078	-.03168	-.03970	.02717
7	.00615	.00495	.02696	.04732	-.01753	-.02263
8	-.01411	.00694	.01509	-.02467	.01750	.04293
9	.01873	-.03383	-.03591	-.02015	.01847	.03192

$\bar{x}$ = 150.9954     $\bar{y}$ = 122.2396     $r$ = 2.09474182    std. dev. = .02652060

HISTOGRAM DEVIATION  $\geq e$

e=	.05	.04	.03	.02	.01	0.00	bad points
	2	6	8	12	17	15	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.01200	-.00073	.00860	.00095	-.04591	-.02020
1	-.03158	-.00328	.05467	.04517	.01262	-.02154
2	.00445	.02530	.01562	.01582	-.04406	-.01367
3		-.00793	-.00184	.00583	-.00731	.00005
4	-.00244	-.01023	-.00951		.03317	.01995
5	.01122	.02804	.04129	.00236	-.03609	-.01694
6	-.03335	-.02041	.01138	-.03115	-.03923	
7	.00640	.00507	.02703	.04729	-.01772	-.02798
8	-.01464	.00630	.01432		.01644	.04171
9	.01739	-.03529	-.03749		.01666	.03003

x0= 150.9960    y0= 122.2409    r0= 2.09549522    std.dev.= .02694453

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	2	6	9	7	15	16	5

ORIGINAL PAGE IS  
OF POOR QUALITY.

Disk 27-A Track data file TDATA05

	Coarse	Fine	Track
NDRN:	1.0	1.0	16.0
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.1838E+06	.9190E+05	.7352E+06

Constants:	.29800	.25500	.36700	.30200
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
20.010	8.167	.9225E+05	1.006	151.0	124.5	150.8716	124.3498	.4840E-03	.5717E-03
20.038	14.359	.9199E+05	1.005	151.0	124.5	151.0941	124.3373	.5961E-03	.6790E-03
19.979	20.698	.8870E+05	1.026	151.5	124.5	151.3127	124.3071	.6776E-03	.7162E-03
20.069	26.954	.9003E+05	1.052	151.5	124.5	151.5107	124.2593	.6478E-03	.1125E-02
20.102	33.241	.1206E+06	1.032	151.5	124.0	151.6931	124.2091	.3527E-03	.7950E-03
20.102	39.513	.1403E+06	1.032	152.0	124.0	151.8908	124.0829	.7593E-03	.1298E-02
20.113	45.806	.1450E+06	1.016	152.0	124.0	152.1296	123.9944	.2967E-03	.6058E-03
20.094	52.088	.1273E+06	1.059	152.5	124.0	152.3033	123.8759	.5825E-03	.6896E-03
20.021	58.365	.1197E+06	1.062	152.5	123.5	152.4432	123.7465	.1279E-02	.3743E-01
20.001	64.634	.1247E+06	.963	152.5	123.5	152.5908	123.6037	.6772E-03	.1043E-02
19.968	70.873	.1245E+06	.962	152.5	123.5	152.7166	123.4075	.1063E-02	.1010E-02
19.996	1.777	.1309E+06	1.026	153.0	123.0	152.7971	123.1595	.9024E-03	.4899E-03
19.937	8.155	.1190E+06	1.010	153.0	123.0	152.9130	122.9517	.7999E-03	.3211E-03
19.987	14.361	.9861E+05	1.012	153.0	123.0	153.0031	122.7515	.3385E-03	.1145E-02
19.979	20.720	.7566E+05	.894	153.0	122.5	153.0377	122.5603	.5320E-03	.4503E-03
19.998	26.959	.7442E+05	.935	153.0	122.5	153.0538	122.3213	.6239E-03	.6237E-03
20.032	33.250	.1204E+06	1.053	153.0	122.0	153.0498	122.1324	.8441E-03	.8887E-03
20.032	39.527	.1176E+06	1.078	153.0	122.0	153.0486	121.9524	.6318E-03	.9644E-03
20.026	45.787	.1277E+06	1.050	153.0	122.0	153.0022	121.6918	.9683E-03	.1243E-02
19.968	52.070	.1144E+06	.963	153.0	121.5	152.9302	121.5279	.5989E-03	.7404E-03
20.055	58.364	.9967E+05	1.072	153.0	121.0	152.8338	121.2864	.6357E-03	.9683E-03
20.049	64.624	.7614E+05	1.063	152.5	121.0	152.7019	121.0607	.6490E-03	.6212E-03
20.024	70.859	.7953E+05	1.075	152.5	121.0	152.5794	120.9231	.5469E-03	.7067E-03
20.038	1.776	.7321E+05	1.051	152.5	121.0	152.4212	120.7329	.7062E-03	.7565E-03
20.055	8.163	.8942E+05	.959	152.5	120.5	152.2673	120.6358	.1057E-02	.2217E-02
20.043	14.350	.9209E+05	.932	152.0	120.5	152.1078	120.5203	.9466E-03	.1014E-02
20.032	20.716	.9122E+05	.989	152.0	120.5	151.9191	120.4063	.5435E-03	.1240E-02
20.069	26.954	.1157E+06	1.082	151.5	120.0	151.7010	120.2822	.6155E-03	.1355E-02
20.071	33.234	.1179E+06	1.077	151.5	120.0	151.4992	120.2018	.5135E-03	.9036E-03
20.099	39.518	.1215E+06	1.062	151.5	120.0	151.2876	120.1678	.7679E-03	.7036E-03
20.069	45.784	.1338E+06	1.056	151.0	120.0	151.0590	120.1255	.9119E-03	.2866E-03
20.080	52.068	.1361E+06	1.054	151.0	120.0	150.8243	120.1049	.1370E-02	.7713E-03
20.069	58.367	.1213E+06	1.054	150.5	120.0	150.6395	120.1452	.6739E-03	.1167E-02
20.111	64.622	.1183E+06	1.055	150.5	120.0	150.4402	120.1238	.7614E-03	.3030E-02
20.024	70.841	.9492E+05	1.005	150.0	120.5	150.2178	120.2890	.6323E-03	.1066E-02

ORIGINAL PAGE IS  
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20.03	1.	.005	.9	1	150.0	120.5	149.8031	120.5637	.5459E-03	.7002E-03
20.046	8.166	.9291E+05	.937		149.5	120.5	149.6227	120.6778	.5180E-03	.7347E-03
20.021	14.371	.9250E+05	1.004		149.5	121.0	149.4677	120.7498	.4559E-03	.7487E-03
20.026	20.726	.7654E+05	1.096		149.5	121.0	149.3419	120.9577	.4234E-03	.6188E-03
20.032	26.969	.7294E+05	1.073		149.0	121.0	149.1909	121.0987	.4194E-02	.4997E-03
20.063	33.263	.7357E+05	1.026		149.0	121.5	149.0949	121.2759	.4294E-01	.1363E-01
20.071	39.543	.1035E+06	1.025		149.0	121.5	148.9958	121.5512	.2971E-03	.6027E-03
20.074	45.749	.1118E+06	.958		149.0	122.0	148.9364	121.7117	.7135E-03	.1037E-02
20.071	52.075	.1281E+06	1.05		149.0	122.0	148.8788	121.9453	.4799E-03	.9812E-03
20.046	58.375	.1193E+06	1.066		149.0	122.0	148.8429	122.1277	.9043E-03	.4373E-03
20.038	64.599	.1194E+06	1.050		149.0	122.5	148.8641	122.3591	.9831E-03	.1423E-02
20.041	70.859	.6588E+05	.916		149.0	122.5	148.8956	122.6375	.9607E-03	.1013E-02
20.018	1.801	.7365E+05	.904		149.0	123.0	148.9550	122.8025	.9020E-03	.4675E-03
20.024	8.159	.1014E+06	1.033		149.0	123.0	149.0028	122.9890	.7223E-03	.1107E-02
20.018	14.362	.1143E+06	1.062		149.0	123.0				
19.984	20.721	.1198E+06	1.056		149.0	123.0	149.0817	123.1948	.8240E-03	.1314E-02
19.968	26.962	.1255E+06	.778		149.0	123.5	149.2109	123.3791	.8410E-03	.1006E-02
19.987	33.247	.1227E+06	.966		149.5	123.5	149.3236	123.5921	.6973E-03	.1546E-02
20.069	39.510	.1319E+06	1.041		149.5	124.0	149.4748	123.6998	.1007E-02	.7459E-03
20.102	45.775	.1338E+06	1.029		149.5	124.0	149.6470	123.8624	.3788E-03	.6144E-03
20.094	52.071	.1442E+06	1.043		150.0	124.0	149.8118	123.9772	.7243E-03	.4692E-03
20.052	58.278	.1352E+06	1.067		150.0	124.0	150.0035	124.0986	.5046E-03	.1217E-02
20.099	64.575	.1335E+06	1.054		150.0	124.0	150.2171	124.2255	.5158E-03	.1927E-02
20.052	70.848	.8949E+05	1.048		150.5	124.5	150.4207	124.2535	.3036E-03	.1254E-02
20.055	1.791	.9011E+05	1.005		150.5	124.5	150.6416	124.3245	.9244E-03	.8216E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta ri					
	1	2	3	4	5	6
0	.01149	.00108	-.00373	-.00775	.00022	-.03739
1	.00761	.01585	.01476	.02534	.00892	-.04555
2	-.02089	.00708	.00668	-.00269	-.00512	.01113
3	.01803	-.00103	.00714	.00895	-.00686	.00572
4	-.02355	-.02492	-.02264	.00196	.01733	.00736
5	.02651	.04946	.02944	-.01231	-.00209	-.03444
6	-.05274	-.03287	.01935	-.02536	.01508	.00904
7	-.00952	.00015	.01012	.02783	.00653	.00877
8	-.01153	.00113	.01245	-.00842	.02635	-.01436
9	-.01035	-.01562	-.00822	.02089	-.01500	.00538

x0= 150.9627    v0= 122.2451    r0= 2.09521508    std.dev.= .01922628

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	2	3	11	16	27	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta r1 3	4	5	6
0	.01212	.00172	-.00306	-.00710	.00087	-.03574
1	.00825	.01648		.02594	.00951	.04498
2	-.02034	.00761	.00719	-.00220	-.00466	.01157
3	.01845	-.00064	.00751	.00926	-.00654	.00601
4	-.02327	-.02466	-.02240	.00219	.01754	.00756
5	.02670	.04964	.02962	-.01213	-.00191	-.03427
6	-.05255	-.03267	.01955	-.02514	.01531	
7	-.00924	.00044	.01044	.02816	.00689	.00916
8	-.01112	.00156	.01291	-.00793	.02485	-.01393
9	-.00980	-.01505	-.00763	.02149	-.01438	.00950

x0= 150.9626    y0= 122.2449    r0= 2.09480309    std.dev.= .01941648

HISTOGRAM DEVIATION >= e

e =	.05	.04	.03	.02	.01	0.00	bad points
	1	2	3	11	14	27	2

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 27-A Track data file TDATA4

	Coarse	Fine	Track
	1.0	1.0	64.0
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.1838E+06	.9190E+05	.7352E+06
Constants:	.29800	.25500	.36700
Displacements:	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
20.038	8.173	.4834E+05	2.804	151.0	124.5	150.8698	124.3618	.6543E-03	.8802E-03
20.055	14.373	.4837E+05	2.800	151.0	124.5	151.0655	124.3483	.1021E-02	.4029E-03
20.049	20.729	.4720E+05	2.832	151.5	124.5	151.3158	124.3195	.7215E-03	.5592E-03
20.043	26.972	.4718E+05	2.858	151.5	124.5	151.5075	124.2729	.7720E-03	.1134E-02
20.108	33.264	.5436E+05	2.836	151.5	124.0	151.6853	124.2147	.5454E-03	.1494E-02
20.046	39.533	.5998E+05	2.829	152.0	124.0	151.8852	124.0843	.8503E-03	.1698E-02
20.094	45.737	.6075E+05	2.810	152.0	124.0	152.1175	123.9937	.4885E-03	.1158E-02
20.069	52.067	.5722E+05	2.865	152.5	124.0	152.3049	123.8852	.9794E-03	.1539E-02
20.015	58.364	.5517E+05	2.881	152.5	123.5	152.4451	123.7554	.1912E-02	.3615E-01
19.990	64.607	.5552E+05	2.782	152.5	123.5	152.5958	123.6110	.7376E-03	.1084E-02
19.956	70.748	.5567E+05	2.770	152.5	123.5	152.7086	123.4253	.6237E-03	.4689E-03
19.934	1.766	.5419E+05	2.822	153.0	123.0	152.7932	123.1673	.4768E-03	.1232E-02
19.979	8.145	.5171E+05	2.801	153.0	123.0	152.9069	122.9552	.1046E-02	.7914E-03
19.954	14.373	.4770E+05	2.805	153.0	123.0	152.9990	122.7627	.5644E-03	.1952E-02
19.968	20.710	.4242E+05	2.701	153.0	122.5	153.0349	122.5869	.8597E-03	.1010E-02
19.942	26.946	.4197E+05	2.730	153.0	122.5	153.0511	122.3340	.4352E-03	.3945E-03
19.973	33.236	.5173E+05	2.843	153.0	122.0	153.0401	122.1283	.7638E-03	.3179E-03
20.024	39.531	.5125E+05	2.869	153.0	122.0	153.0401	121.9494	.9129E-03	.1141E-02
19.979	45.790	.5379E+05	2.857	153.0	122.0	152.9989	121.6976	.3824E-03	.1069E-02
19.984	52.071	.5032E+05	2.766	153.0	121.5	152.9251	121.5355	.6436E-03	.5505E-03
20.060	58.364	.4737E+05	2.865	153.0	121.0	152.8290	121.2384	.6337E-03	.1159E-02
19.956	64.526	.4493E+05	2.856	152.5	121.0	152.6961	121.0666	.9539E-03	.9243E-03
20.024	70.859	.4526E+05	2.866	152.5	121.0	152.5764	120.9304	.9735E-03	.1154E-02
20.032	1.776	.4431E+05	2.852	152.5	121.0	152.4219	120.7449	.6049E-03	.1264E-02
19.959	8.166	.4838E+05	2.756	152.5	120.5	152.2723	120.6247	.4669E-03	.1053E-02
20.007	14.350	.4908E+05	2.714	152.0	120.5	152.1082	120.5105	.2073E-03	.1172E-02
20.024	20.714	.4920E+05	2.763	152.0	120.5	151.9264	120.4035	.9600E-03	.1505E-02
20.088	26.958	.6197E+05	2.916	151.5	120.0	151.6889	120.3109	.1275E-02	.7544E-01
20.077	33.250	.5435E+05	2.864	151.5	120.0	151.4918	120.1986	.1114E-02	.9649E-03
20.085	39.514	.5494E+05	2.845	151.5	120.0	151.2996	120.1627	.1038E-02	.1560E-02
20.042	45.792	.5854E+05	2.831	151.0	120.0	151.0565	120.1320	.7939E-03	.1274E-02
20.088	52.059	.5865E+05	2.830	151.0	120.0	150.8321	120.1037	.3531E-03	.1124E-02
20.052	58.299	.5234E+05	2.829	150.5	120.0	150.7301	120.1409	.7148E-03	.1529E-02
20.198	64.581	.5183E+05	2.843	150.5	120.0	150.4934	120.1234	.9291E-03	.1371E-02
20.024	70.052	.4529E+05	2.795	150.0	120.5	150.2147	120.1375	.4629E-03	.1324E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

TN8104

20.029	3.165	.4525E+05	2.720	150.0	120.5	149.8150	120.5470	.7525E-03	.715E-03
20.032	14.361	.4546E+05	2.708	149.5	120.5	149.6154	120.6567	.7831E-03	.7062E-03
19.979	20.713	.4230E+05	2.894	149.5	121.0	149.4705	120.7573	.1011E-02	.1277E-02
19.993	26.981	.4156E+05	2.863	149.5	121.0	149.3488	120.9207	.6844E-03	.543E-03
20.041	33.254	.4184E+05	2.810	149.0	121.0	149.1826	121.0973	.6437E-03	.5443E-03
20.069	39.524	.4790E+05	2.827	149.0	121.5	149.0949	121.2779	.1706E-01	.1701E-01
20.007	45.806	.4893E+05	2.758	149.0	121.5	148.9344	121.5509	.5903E-01	.733E-03
19.996	52.070	.5573E+05	2.968	149.0	122.0	148.9370	121.7027	.8007E-02	.1303E-01
19.990	58.354	.5195E+05	2.858	149.0	122.0	148.8917	121.9434	.1129E-01	.1014E-02
20.032	64.618	.5149E+05	2.841	149.0	122.0	148.8444	122.1214	.8905E-03	.8504E-03
19.945	70.845	.7960E+05	2.713	149.0	122.5	148.8703	122.3594	.7322E-03	.6042E-03
19.931	1.787	.4090E+05	2.699	149.0	122.5	148.9034	122.6284	.8825E-03	.8531E-03
19.970	8.159	.4668E+05	2.818	149.0	123.0	148.9589	122.8077	.0540E-03	.8753E-03
19.934	14.364	.4920E+05	2.839	149.0	123.0	149.0013	122.9837	.1044E-02	.5897E-03
19.937	20.708	.5012E+05	2.837	149.0	123.0	149.0773	123.1840	.9094E-03	.1114E-02
19.948	26.940	.5130E+05	2.776	149.0	123.5	149.2105	123.3799	.7458E-03	.8897E-03
19.976	33.238	.5113E+05	2.777	149.5	123.5	149.3313	123.5844	.3806E-03	.1038E-02
20.032	39.529	.5446E+05	2.851	149.5	124.0	149.4806	123.7112	.7129E-02	.3674E-01
20.057	45.767	.5365E+05	2.822	149.5	124.0	149.6470	123.8666	.7712E-03	.1279E-02
20.052	52.065	.5626E+05	2.831	150.0	124.0	149.8123	123.9725	.7392E-03	.9715E-03
20.099	58.364	.5417E+05	2.848	150.0	124.0	150.0044	124.0900	.9387E-03	.114E-02
20.097	64.583	.5398E+05	2.842	150.0	124.0	150.2121	124.2117	.5221E-03	.9853E-03
20.043	70.841	.4463E+05	2.852	150.5	124.5	150.4206	124.2557	.2652E-03	.9594E-03
20.041	1.787	.4476E+05	2.808	150.5	124.5	150.6365	124.3273	.5949E-03	.5809E-03

ORIGINAL PAGE IS  
OF POOR QUALITY



	1	2	delta r1	3	4	5	6
0	.02290	.01102	.00862	.00420	.00246	.01778	.01778
1	.00027	.02417	.02119	.02739	.01270	.04474	.04474
2	-.02477	.00657	.00584	-.00404	.01352	.00412	.00412
3	.01437	-.00738	.00321	.00206	.01223	.00174	.00174
4	-.01065	-.01537	-.01553	-.02816	.01276	.01276	.01276
5	.03078	.05137	.03619	-.00562	-.00023	.03837	.03837
6	-.04543	-.01234	.01191	-.03270	.02391	.00779	.00779
7	-.00860	.00126	.00684	.02593	-.00050	.00146	.00146
8	-.01488	-.00036	.01002	-.00862	.01451	.01152	.01152
9	-.00808	-.02076	-.01720	.00893	-.01359	.01174	.01174

x0= 150.9618    y0= 122.2458    r0= 2.09514022    std.dev.= .01916549

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	2	5	9	19	24	0

ORIGINAL PAGE IS  
OF POOR  
QUALITY

	delta ri					
	1	2	3	4	5	6
0	.02376	.01191	.00951	.00509	.00325	.03227
1	.00109	.02494	.00605	.01707	.01312	.04445
2	-.02438	.00686	.00274	.00296	.01353	.00401
3	.01413	-.00771	-.01654	.00147	-.01325	.00302
4	-.01151	-.01630	.03494	-.00668	.01341	.01234
5	.02956	.05012	.01083	-.03370	.00212	.03397
6	-.04660	-.01346	.00629	.02547	.02297	
7	-.00933		.01012	-.00841	-.00084	-.00166
8	-.01498	-.00036	-.01654	.00966	.01484	
9	-.00758	-.02018			-.01281	.01247

x0= 150.9616    y0= 122.2447    r0= 2.09531713    std.dev.= .01934211

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	2	4	8	18	22	5

ORIGINAL PAGE IS  
OF POOR  
QUALITY

Disk 27-A Track data file TDATA06

NRRO: Coarse 1.0 Fine 1.0 Track 192.0  
 Integration delay: .1160E+00 .4564E+00 .7974E+00  
 Thresholds: .1838E+06 .9190E+05 .7352E+06

Constants: .29800 .25500 .36700 .30200  
 Displacements: 0.00000 0.00000 0.00000 0.00000

temp	angle	dark	star	reference		position		standard deviation	
		current	mag.	X	Y	X	Y	X	Y
20.041	8.157	.6049E+05	6.051	151.0	124.5	150.8403	124.3737	.2194E-02	.3460E-02
20.049	14.373	.6037E+05	6.044	151.0	124.5	151.0483	124.3700	.3007E-02	.3780E-02
20.102	20.716	.6008E+05	6.084	151.5	124.5	151.3392	124.3560	.4312E-02	.5250E-02
20.032	26.970	.6005E+05	6.112	151.5	124.5	151.5239	124.3088	.4243E-02	.5852E-02
20.097	33.256	.6016E+05	6.101	151.5	124.0	151.6624	124.1606	.4341E-02	.6427E-02
20.077	39.530	.6124E+05	6.159	152.0	124.0	151.8578	123.9844	.5198E-02	.5445E-02
20.116	45.801	.6137E+05	6.150	152.0	124.0	152.1145	123.8908	.2641E-02	.6711E-02
20.088	52.063	.6056E+05	6.163	152.5	124.0	152.3557	123.7531	.4105E-02	.1337E-01
19.979	58.370	.6174E+05	6.305	152.5	123.5	152.4734	123.7345	.2220E-01	.1066E+00
20.015	64.604	.6199E+05	6.219	152.5	123.5	152.5995	123.5946	.7979E-02	.2775E-02
20.057	70.859	.6195E+05	6.198	152.5	123.5	152.7334	123.3775	.5031E-02	.6329E-02
19.979	1.788	.6020E+05	6.271	153.0	123.0	152.8145	123.3135	.4435E-02	.3078E-02
19.968	8.164	.6002E+05	6.243	153.0	123.0	152.9496	123.0620	.5305E-02	.7045E-02
19.934	14.372	.5975E+05	6.249	153.0	123.0	153.0371	122.8277	.6826E-02	.5890E-02
19.962	20.724	.5974E+05	6.241	153.0	122.5	153.0580	122.6175	.2112E-01	.2291E-01
19.973	26.980	.5960E+05	6.270	153.0	122.5	153.1242	122.2661	.4373E-02	.7003E-02
20.001	33.256	.5809E+05	6.096	153.0	122.0	152.9519	121.9732	.1121E-01	.1645E-01
19.998	39.522	.5786E+05	6.108	153.0	122.0	152.9328	121.7999	.4905E-02	.4490E-02
19.976	45.804	.5874E+05	6.153	153.0	121.5	152.9541	121.7532	.5265E-02	.4344E-02
19.998	52.089	.5883E+05	6.094	153.0	121.5	152.8967	121.4907	.6075E-02	.4981E-02
20.046	58.370	.5873E+05	6.218	153.0	121.0	152.8043	121.3180	.3750E-02	.4341E-02
20.046	64.604	.6016E+05	6.168	152.5	121.0	152.7158	121.0888	.3824E-02	.9421E-02
20.018	70.766	.6016E+05	6.186	152.5	121.0	152.6098	120.9302	.3413E-02	.5789E-02
19.993	1.784	.6004E+05	6.155	152.5	121.0	152.4404	120.7529	.1391E-02	.5053E-02
19.965	8.172	.5979E+05	6.010	152.5	120.5	152.2901	120.6679	.4443E-02	.9388E-02
20.035	14.376	.5989E+05	5.934	152.0	120.5	152.1064	120.5618	.3223E-02	.2253E-02
20.063	20.729	.5995E+05	5.989	152.0	120.5	151.9335	120.4691	.3304E-02	.3031E-02
20.063	26.952	.6057E+05	6.191	151.5	120.9	151.6364	120.3376	.3109E-01	.1404E+00
20.060	33.238	.6006E+05	6.137	151.5	120.0	151.4303	120.1783	.7775E-02	.6624E-02
20.130	39.529	.6018E+05	6.130	151.5	120.0	151.2179	120.1509	.3703E-02	.4047E-02
20.071	45.793	.6103E+05	6.111	151.0	120.0	151.0879	120.1853	.5244E-02	.9463E-02
20.052	52.067	.6099E+05	6.113	151.0	120.0	150.8501	120.1652	.3938E-02	.4290E-02
20.105	58.358	.5881E+05	6.204	150.5	120.0	150.5887	120.1989	.4134E-02	.8723E-02
20.094	64.596	.5886E+05	6.211	150.5	120.0	150.3580	120.2932	.3014E-02	.9671E-02
20.043	70.837	.5873E+05	6.154	150.0	120.5	150.2632	120.3623	.6987E-01	.6511E-01

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TR01-04

20.015	1.7	.5	105	5.04	15	1	150	411	F-02	119
20.012	8.169	.5844E+05	6.015	150.0	170.5	149.8493	120.5358	.4194E-02	.5671E-02	
19.987	14.359	.5921E+05	6.205	149.5	120.5	149.6734	120.7478	.5513E-02	.7314E-02	
20.052	20.690	.5883E+05	6.282	149.5	121.0	149.5530	120.6807	.5269E-02	.1290E-01	
19.979	26.937	.5881E+05	6.252	149.5	121.0	149.3942	120.9173	.4797E-02	.6316E-02	
20.024	33.262	.5794E+05	6.120	149.0	121.0	149.1593	121.0546	.3561E-02	.4111E-02	
19.993	39.499	.5832E+05	6.197	149.0	121.5	149.0625	121.2623	.2560E-01	.4318E-01	
20.013	45.790	.5830E+05	6.111	149.0	121.5	148.9530	121.5807	.2570E-02	.4319E-01	
20.038	52.071	.5849E+05	6.208	149.0	121.5	148.8645	121.8905	.4301E-02	.9339E-02	
19.993	58.364	.5873E+05	6.229	149.0	122.0	148.8311	121.8256	.1297E-01	.1700E-01	
20.049	64.586	.5879E+05	6.200	149.0	122.0	148.7922	122.0359	.6295E-02	.8657E-02	
19.945	70.866	.5732E+05	6.019	149.0	122.5	148.9019	122.3445	.3841E-02	.3535E-02	
20.007	1.787	.5730E+05	6.004	149.0	122.5	148.9400	122.8114	.2148E-02	.3579E-02	
19.937	8.161	.5732E+05	6.047	149.0	123.0	148.9856	122.9253	.3011E-02	.2916E-02	
19.934	14.364	.5742E+05	6.061	149.0	123.0	149.0265	123.0784	.3238E-02	.4875E-02	
19.956	20.718	.5740E+05	6.055	149.0	123.0	149.0976	123.2642	.2810E-02	.3840E-02	
19.973	26.950	.5759E+05	6.009	149.0	123.5	149.2315	123.3654	.8797E-02	.5884E-02	
19.982	33.233	.5864E+05	6.066	149.5	123.5	149.2952	123.5478	.3714E-02	.2901E-02	
19.937	39.528	.5860E+05	6.117	149.5	123.5	149.4248	123.7460	.5033E-02	.3154E-02	
20.057	45.901	.5703E+05	5.896	149.5	124.0	149.5999	123.8838	.3077E-02	.5550E-02	
20.111	52.093	.5714E+05	5.918	150.0	124.0	149.8364	123.9479	.4515E-02	.7925E-02	
20.129	58.358	.5701E+05	5.926	150.0	124.0	149.9685	124.0297	.2412E-02	.6092E-02	
20.057	64.616	.5699E+05	5.927	150.0	124.0	150.1724	124.1302	.4081E-02	.2387E-02	
20.046	70.866	.5783E+05	6.060	150.5	124.5	150.3731	124.3153	.3572E-02	.4508E-02	
19.990	1.784	.5783E+05	6.029	150.5	124.5	150.5765	124.3666	.1815E-02	.6222E-02	

ORIGINAL PAGE IS  
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TR81-04

	1	2	delta ri 3	4	5	6
0	.02460	.01999	.03907	.03457	-.06356	.14496
1	-.08996	-.04332	.02609	.02776	.01064	.04756
2	.06063	.06935	.04468	.08121	-.07293	-.05663
3	-.02484	.00171	-.01128	.02835	.03668	.02998
4	-.00817	-.03419	-.04507	-.04615	.04897	.03960
5	-.00694	.01140	.00719	-.03124	-.06664	-.02207
6	-.03872	-.10516	.02438	-.02888	.07457	.05085
7	.02501	.03337	.07835	.08459	-.03539	-.04520
8	-.01229	.00369	.02007	-.04414	.00904	.04103
9	.02281	-.06731	-.07586	-.06499	.04383	.04602

x0= 150.9539    y0= 122.2631    r0= 2.08903408    std.dev.= .05024052

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	17	11	9	12	5	6	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri	3	4	5	6
0	.02604	.02077	.03891	.03380	.06491	.14704	
1	-.09301			.07317	.00547	.04218	
2	.05471	-.06306		.07438		.06356	
3	-.03176	-.00509	-.01791	.02198	.03059	.02431	
4	-.01350	-.03905	-.04944		.04621	.03748	
5	-.00867	.01045	.00708	-.03054		-.02026	
6	-.03621	-.10184		-.02478	.07937		
7	.03087	.03965		.09107	.02875	.03350	
8	-.00567	.01022	.02642	-.03736	.01496	.04757	
9	.02791	-.06272	-.07171	-.06142	.04669	.05026	

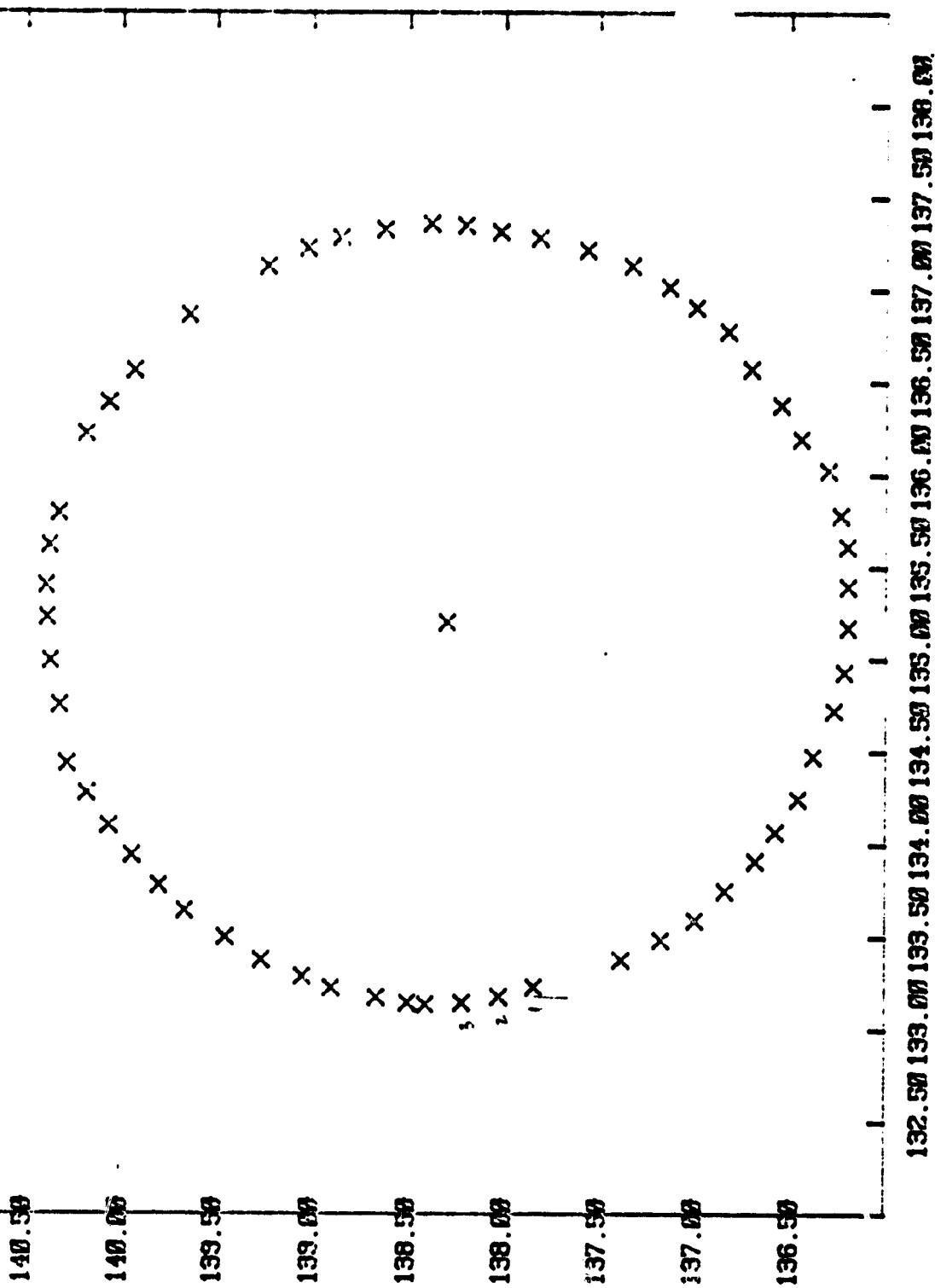
x0= 150.9606    y0= 122.2619    r0= 2.08915377    std.dev.= .04940632

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	14	5	12	10	5	5	9

ORIGINAL PAGE IS  
OF POOR QUALITY

ORIGINAL PAGE IS  
OF POOR QUALITY



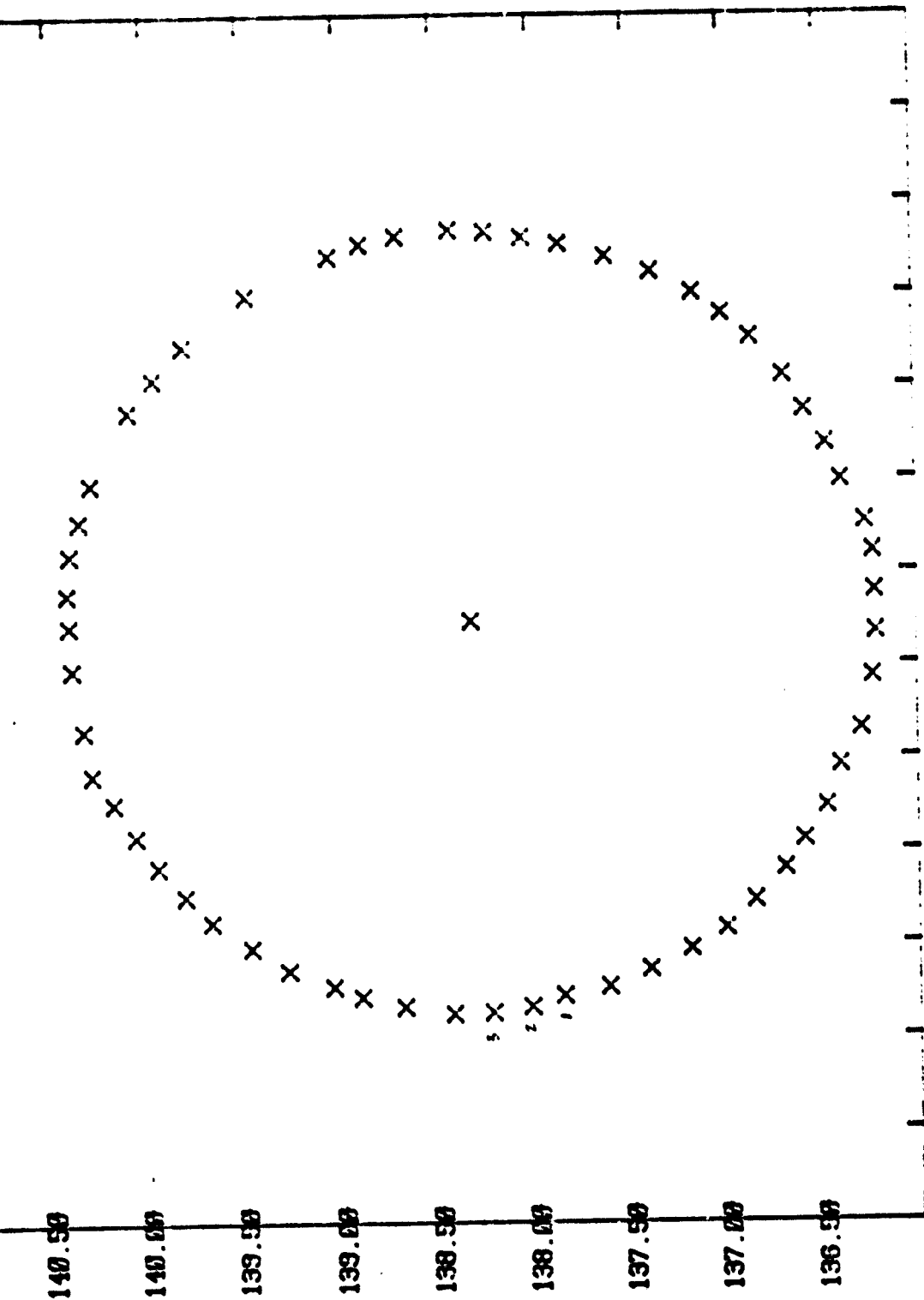
132.50 133.00 133.50 134.00 134.50 135.00 135.50 136.00 136.50 137.00 137.50 138.00

POSITION #3 S.D= 1.313%

27-A-08 F2.8 +.9M 2 K=.337.287.378.28 100% 0° C

ORIGINAL PAGE IS  
OF POOR QUALITY

TR81-84



132.50 133.00 133.50 134.00 134.50 135.00 135.50 136.00 136.50 137.00 137.50 138.00 138.50 139.00 139.50 140.00 140.50

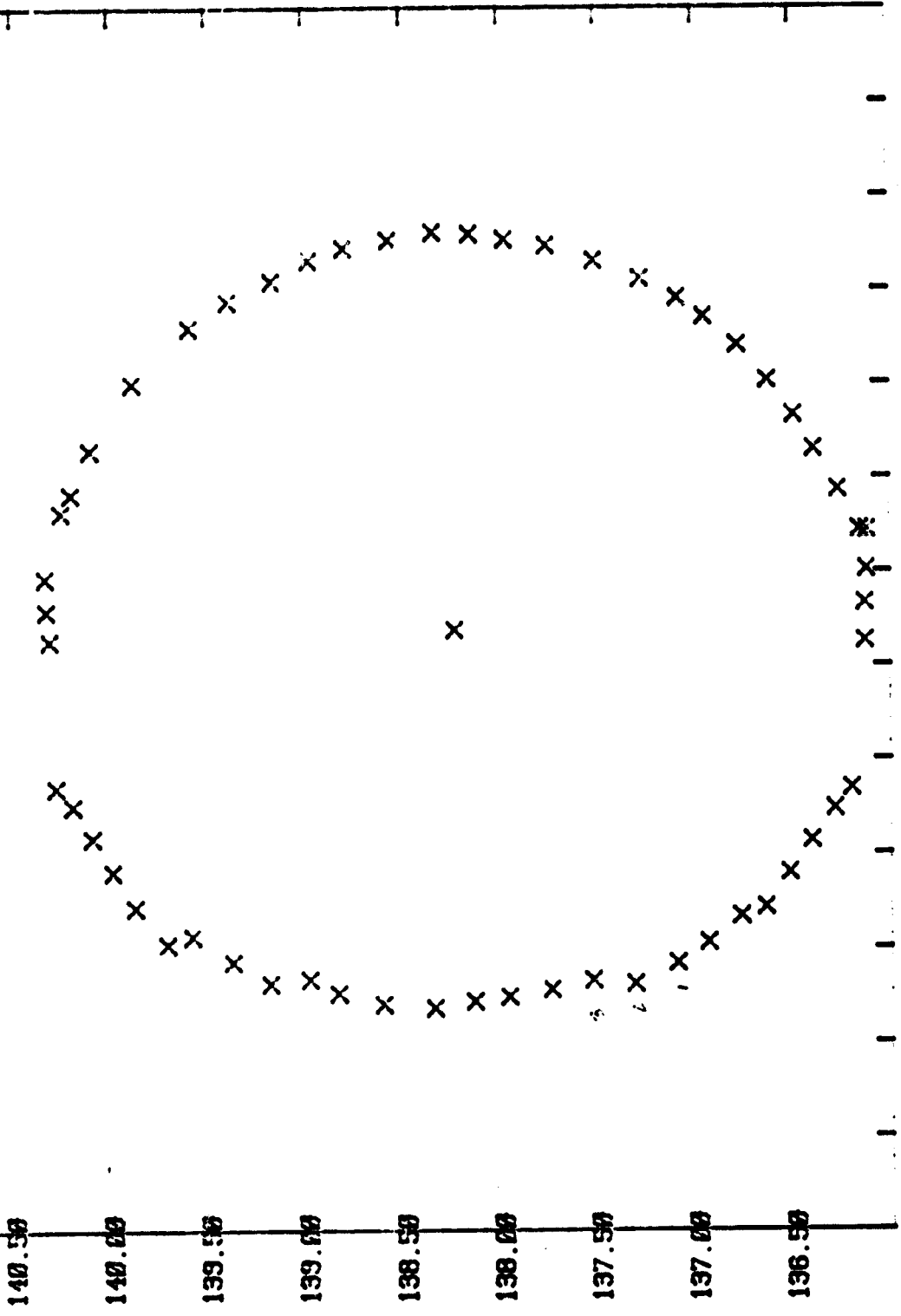
POSITION #3 S.D= 1.3307

27-A-07 F2.8 +.9M 2 K=.337 .287 .378 .28 1M% W' C



ORIGINAL PAGE IS  
OF POOR QUALITY

T781-04



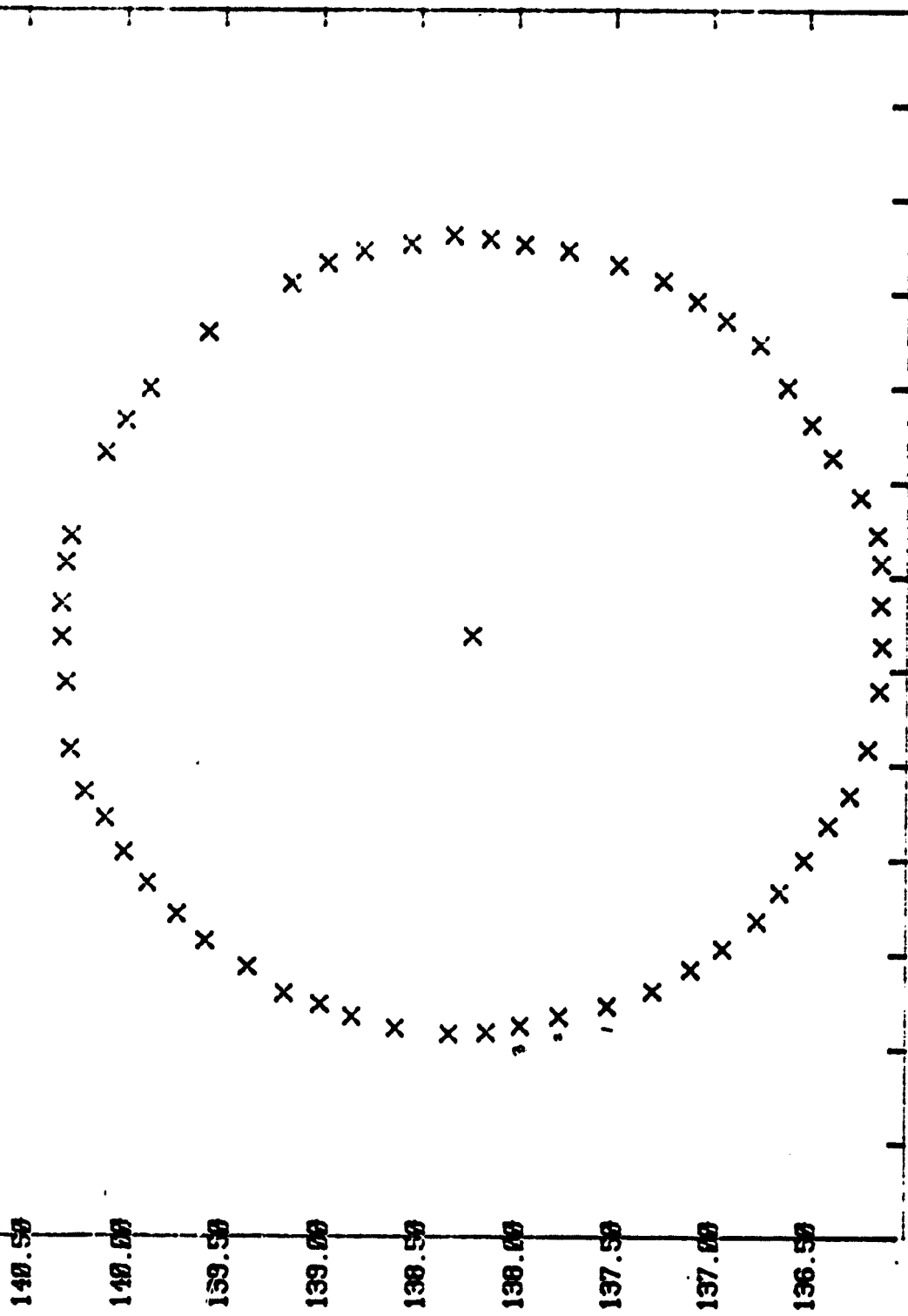
132.50 133.00 133.50 134.00 134.50 135.00 135.50 136.00 136.50 137.00 137.50 138.00 138.50 139.00 139.50 140.00 140.50

POSITION #3 S.D= 4.912%

27-A-09 F2.8 +.9M 2 K=.337.287.378.28 <1% 0°C

ORIGINAL PAGE IS  
OF POOR QUALITY

TR91-04



192.50 193.00 193.50 194.00 194.50 195.00 195.50 196.00 196.50 197.00 197.50 198.00

POSITION #3 S.D= 1.510%

27-A-11 F2.8 +.9M 2 K=.337.287.378.28 100% 10'C

140.50  
 140.00  
 139.50  
 139.00  
 138.50  
 138.00  
 137.50  
 137.00  
 136.50

132.50 133.00 133.50 134.00 134.50 135.00 135.50 136.00 136.50 137.00 137.50 138.00

POSITION #3 S.D= 1.528 %

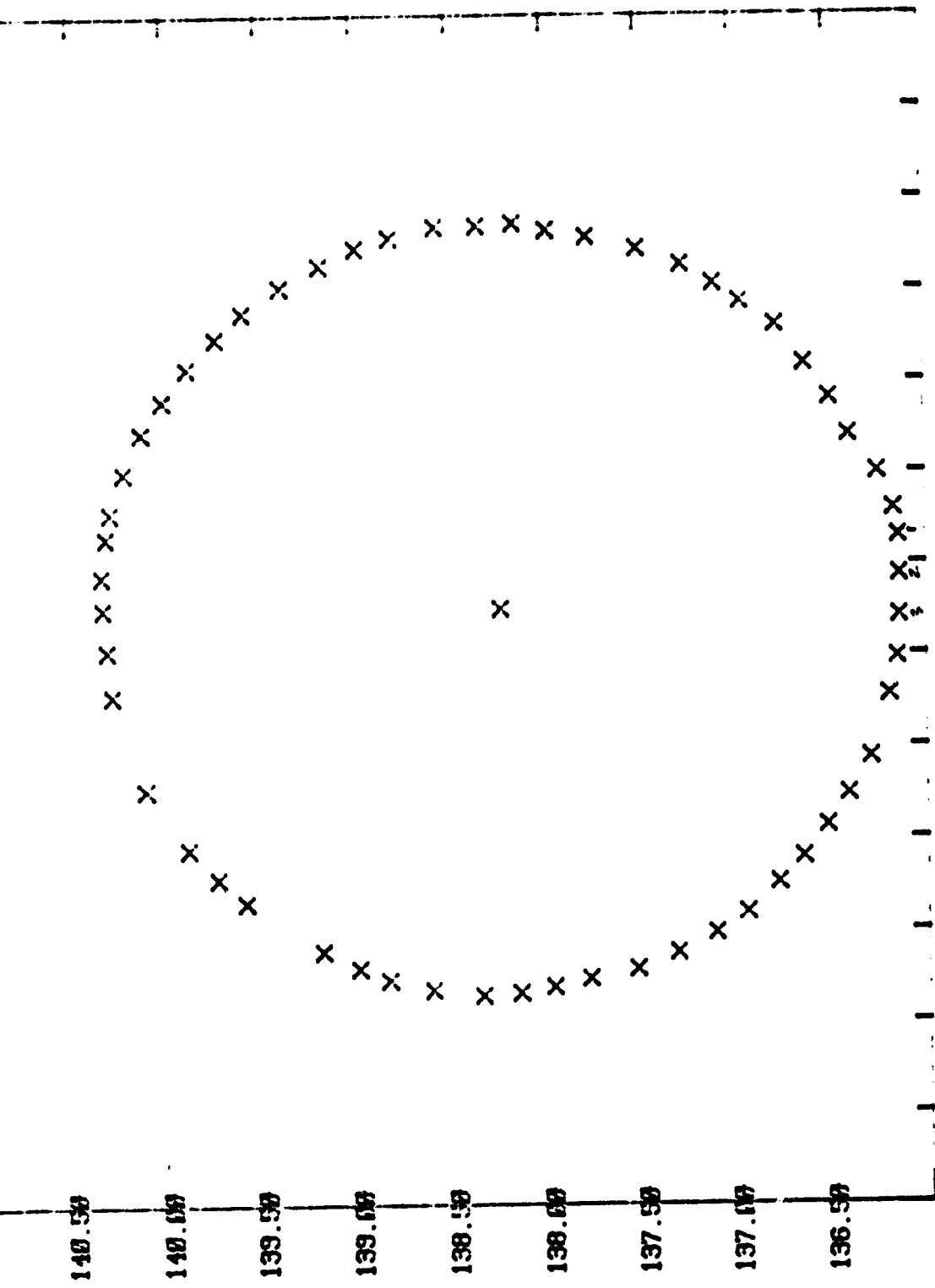
ORIGINAL PAGE IS  
 OF POOR QUALITY

TR81-04

27-A-10 F2.8 +.9M 2 K=.337.287.378.28 10% 10° C

ORIGINAL PAGE IS  
OF POOR QUALITY

TR91-64



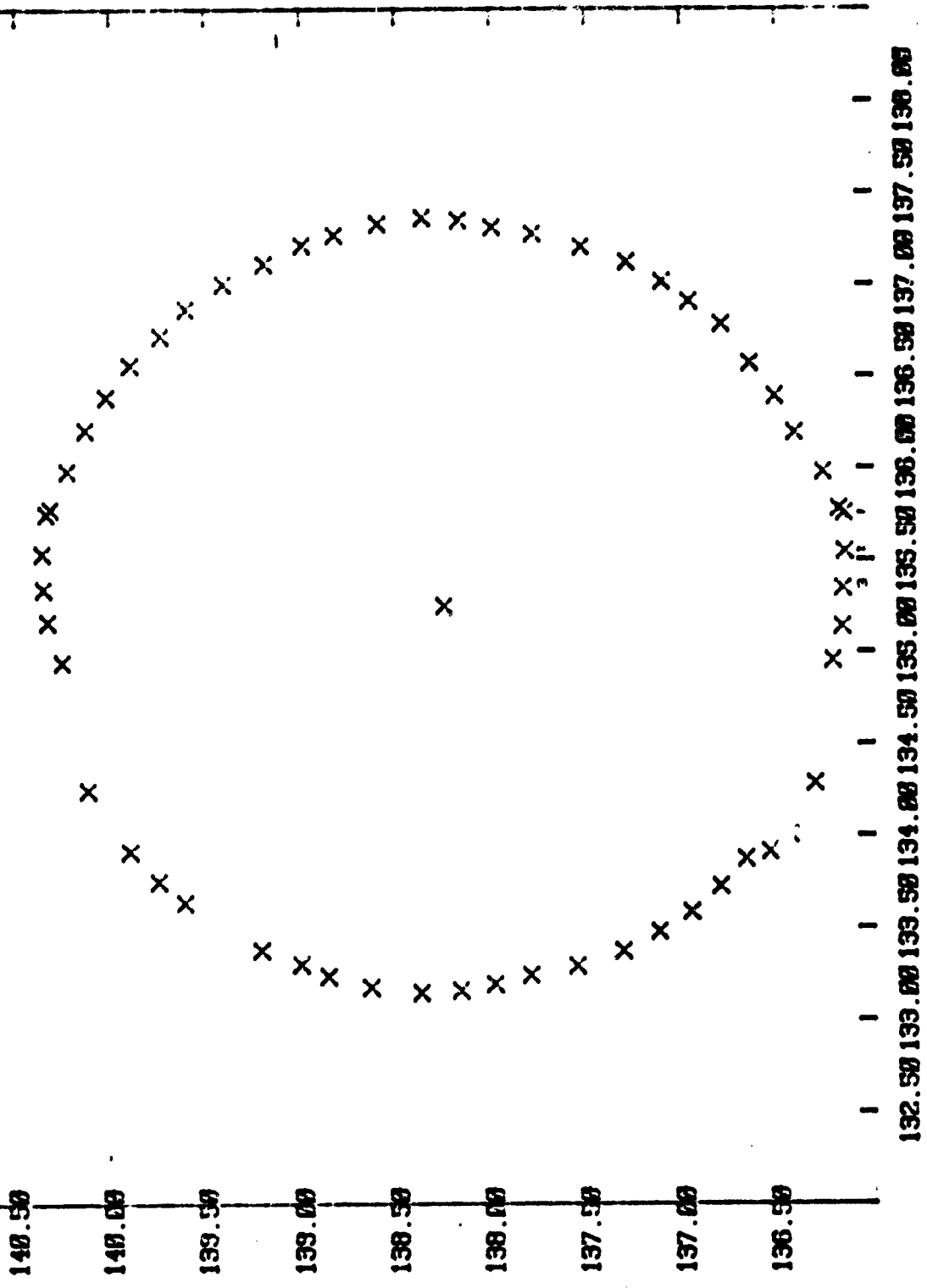
132.50 133.00 133.50 134.00 134.50 135.00 135.50 136.00 136.50 137.00 137.50 138.00

POSITION #3 S.D= 1.444 %

29-A-02 F2.8 +.9M 2 K=.337 .287 .378 .28 100% 20°C

ORIGINAL PAGE IS  
OF POOR QUALITY.

TR81-04



132.50 133.00 133.50 134.00 134.50 135.00 135.50 136.00 136.50 137.00 137.50 138.00

POSITION #3 S.D= 1.952 %

29-A-01 F2.8 +.9M 2. K=.337.287.378.28 10% 20°C

**ORIGINAL TABLE IS OF POOR QUALITY**

constant  
 placement  
 angle  
 temp  
 start  
 reference  
 position  
 standard deviation  
 x  
 y  
 z

constant	placement	angle	temp	start	reference	position	standard deviation
.178	.173	52.081	.178	133.0	137.8367	.122	.0048
.179	.174	52.082	.179	134.0	137.8367	.123	.0048
.180	.175	52.083	.180	135.0	137.8367	.124	.0048
.181	.176	52.084	.181	136.0	137.8367	.125	.0048
.182	.177	52.085	.182	137.0	137.8367	.126	.0048
.183	.178	52.086	.183	138.0	137.8367	.127	.0048
.184	.179	52.087	.184	139.0	137.8367	.128	.0048
.185	.180	52.088	.185	140.0	137.8367	.129	.0048
.186	.181	52.089	.186	141.0	137.8367	.130	.0048
.187	.182	52.090	.187	142.0	137.8367	.131	.0048
.188	.183	52.091	.188	143.0	137.8367	.132	.0048
.189	.184	52.092	.189	144.0	137.8367	.133	.0048
.190	.185	52.093	.190	145.0	137.8367	.134	.0048
.191	.186	52.094	.191	146.0	137.8367	.135	.0048
.192	.187	52.095	.192	147.0	137.8367	.136	.0048
.193	.188	52.096	.193	148.0	137.8367	.137	.0048
.194	.189	52.097	.194	149.0	137.8367	.138	.0048
.195	.190	52.098	.195	150.0	137.8367	.139	.0048
.196	.191	52.099	.196	151.0	137.8367	.140	.0048
.197	.192	52.100	.197	152.0	137.8367	.141	.0048
.198	.193	52.101	.198	153.0	137.8367	.142	.0048
.199	.194	52.102	.199	154.0	137.8367	.143	.0048
.200	.195	52.103	.200	155.0	137.8367	.144	.0048

.375000  
 0.000000

.267000  
 0.000000

.447000  
 0.000000

.375000  
 0.000000

.375000  
 0.000000

REVENUE  
EXPENDITURE

156	45,829	56,116 105	1.054	137,270	17,811	1,077	1,077	1,077
181	52,103	67,718 105	1.273	172,710	17,562	1,077	1,077	1,077
233	50,376	59,078 105	1.067	171,857	17,340	1,077	1,077	1,077
250	49,615	67,016 105	1.140	171,010	17,120	1,077	1,077	1,077
178	70,127	70,000 105	1.161	170,541	16,900	1,077	1,077	1,077
215	1,150	61,211 105	1.100	169,320	16,680	1,077	1,077	1,077
201	11,104	74,747 105	1.061	168,574	16,460	1,077	1,077	1,077
195	14,111	63,017 105	1.057	167,827	16,240	1,077	1,077	1,077
212	20,275	63,008 105	1.057	167,080	16,020	1,077	1,077	1,077
179	76,948	132,281 105	1.150	166,333	15,800	1,077	1,077	1,077
229	13,249	97,658 105	1.161	165,586	15,580	1,077	1,077	1,077
243	19,553	70,798 105	1.111	164,839	15,360	1,077	1,077	1,077
257	45,844	73,678 105	1.117	164,092	15,140	1,077	1,077	1,077
243	52,112	87,608 105	1.172	163,345	14,920	1,077	1,077	1,077
267	58,403	89,508 105	1.178	162,598	14,700	1,077	1,077	1,077
240	64,555	89,708 105	1.213	161,851	14,480	1,077	1,077	1,077
172	70,187	90,728 105	1.200	161,104	14,260	1,077	1,077	1,077
206	1,841	61,128 105	1.012	160,357	14,040	1,077	1,077	1,077
181	11,173	79,278 105	1.077	159,610	13,820	1,077	1,077	1,077
203	14,305	66,477 105	1.072	158,863	13,600	1,077	1,077	1,077
196	20,757	53,118 105	1.109	158,116	13,380	1,077	1,077	1,077
206	23,507	62,208 105	1.086	157,369	13,160	1,077	1,077	1,077
170	33,704	63,048 105	1.074	156,622	12,940	1,077	1,077	1,077
167	37,352	56,788 105	1.077	155,875	12,720	1,077	1,077	1,077
267	58,403	89,508 105	1.178	155,128	12,500	1,077	1,077	1,077
240	64,555	89,708 105	1.213	154,381	12,280	1,077	1,077	1,077
172	70,187	90,728 105	1.200	153,634	12,060	1,077	1,077	1,077
206	1,841	61,128 105	1.012	152,887	11,840	1,077	1,077	1,077
181	11,173	79,278 105	1.077	152,140	11,620	1,077	1,077	1,077
203	14,305	66,477 105	1.072	151,393	11,400	1,077	1,077	1,077
196	20,757	53,118 105	1.109	150,646	11,180	1,077	1,077	1,077
206	23,507	62,208 105	1.086	149,899	10,960	1,077	1,077	1,077
170	33,704	63,048 105	1.074	149,152	10,740	1,077	1,077	1,077
167	37,352	56,788 105	1.077	148,405	10,520	1,077	1,077	1,077

**ORIGINAL FROM IS  
OF FOUR QUALITY**

7101-00

Line	Description	Quantity	Unit Price	Total
1	...	...	...	...
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**REVISION INFORMATION**

Revision No.	Description	Date
0	Original	...
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disk 27-A

Track data file TD01007

Position #3

NRMS	Coarse	Fine	Track
	1.0	1.0	64.0
Integration delay	.1166E+00	.4564E+00	.1341E+02
Thresholds	.1839E+06	.9199E+05	.7352E+06

Countants	.00700	.00700	.00700	.00700
Displacements	(0.00000)	(0.00000)	(0.00000)	(0.00000)

temp	angle	dark current	star	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.057	52.071	.1922E+05	2.893	133.0	138.0	133.2160	137.8565	.1579E-02	.1499E-01
.032	58.373	.1889E+05	2.893	133.0	138.0	133.1596	138.0262	.1109E-02	.5748E-01
.055	64.613	.1919E+05	2.839	133.0	138.0	133.1201	138.2268	.0007E-02	.1592E-01
-.018	70.877	.1900E+05	2.645	133.0	139.5	133.1215	138.4310	.7088E-03	.5481E-01
-.060	1.902	.1226E+05	2.783	133.0	139.0	133.1606	138.6832	.1381E-02	.4724E-01
-.030	8.174	.1568E+05	2.849	133.0	139.0	133.1124	138.9025	.5727E-01	.1093E-02
-.054	14.399	.1670E+05	2.893	133.0	139.0	133.2700	138.0460	.2059E-01	.1171E-01
-.001	20.730	.1937E+05	2.789	133.5	139.0	133.2597	138.2761	.8119E-01	.2601E-02
-.034	26.962	.2040E+05	2.650	133.5	139.5	133.4885	138.4603	.0116E-01	.5211E-01
-.058	33.248	.2000E+05	2.690	133.5	139.5	133.6185	138.6761	.1352E-03	.2111E-01
.086	39.540	.2576E+05	2.856	134.0	140.0	133.7591	139.8106	.1029E-02	.1612E-02
.122	45.005	.2329E+05	2.907	134.0	140.0	133.9165	139.9482	.5750E-03	.2001E-01
.144	52.005	.2251E+05	2.910	134.0	140.0	134.0802	140.0642	.8547E-03	.1174E-02
.128	58.364	.2291E+05	2.917	134.0	140.0	134.2596	140.1808	.1178E-02	.3047E-01
.105	64.589	.1653E+05	2.851	134.5	140.5	134.4131	140.2927	.7537E-03	.1113E-02
.052	70.862	.1177E+05	2.774	134.5	140.5	134.6519	140.3343	.1089E-02	.6491E-01
.055	1.791	.1170E+05	2.780	135.0	140.5	134.9098	140.3877	.6189E-03	.2069E-01
.055	8.177	.1171E+05	2.755	135.0	140.5	135.2115	140.4031	.1302E-02	.8257E-01
.049	14.377	.1076E+05	2.737	135.5	140.5	135.3873	140.4118	.1691E-02	.5054E-01
.125	20.723	.1066E+05	2.720	135.5	140.5	135.6004	140.3964	.6711E-03	.2454E-01
.094	26.962	.1474E+05	2.762	136.0	140.5	136.2271	140.3956	.2024E-03	.2294E-01
.133	33.217	.2329E+05	2.848	136.0	140.0	136.2883	140.3969	.1111E-01	.2713E-01
.136	39.460	.2273E+05	2.862	136.0	140.0	136.1969	140.1970	.2314E-01	.1379E-02
.158	45.797	.2068E+05	2.861	136.5	140.0	136.3599	140.0736	.8711E-03	.2488E-01
.130	52.097	.2198E+05	2.837	136.5	140.0	136.5423	139.9933	.6025E-03	.2259E-01
.130	58.380	.2682E+05	2.846	137.0	140.0	136.7095	139.7946	.9082E-02	.1348E-01
-.018	64.607	.2199E+05	2.738	137.0	139.5	136.8947	139.6305	.2643E-03	.2149E-01
-.072	70.884	.2133E+05	2.709	137.0	139.5	137.0798	139.4790	.5429E-01	.4613E-01
-.041	1.819	.1984E+05	2.823	137.0	139.0	137.1030	139.2520	.1324E-02	.1054E-02
-.046	8.160	.1807E+05	2.848	137.0	139.0	137.2021	139.0357	.1149E-02	.1154E-02
-.052	14.354	.1611E+05	2.892	137.0	139.0	137.2671	138.8205	.2023E-03	.3874E-01
-.021	20.714	.1349E+05	2.681	137.5	138.5	137.3891	138.7795	.6108E-02	.2274E-01
.084	26.947	.1087E+05	2.629	137.5	138.5	137.4117	138.4117	.1249E-02	.1119E-01
.082	33.214	.1144E+05	2.830	137.5	138.0	137.5117	138.1117	.8811E-02	.2411E-01
.060	39.445	.1489E+05	2.829	137.5	138.0	137.6117	137.9117	.9189E-03	.1894E-01

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.100	52,005	.1568E+05	2.709	137.0	137.5	137.194	137.1921	.1120E+02	.1095E+02
.114	58,303	.1413E+05	2.738	137.0	137.5	137.1103	137.3659	.1294E+02	.1210E+02
.119	64,651	.1195E+05	2.824	137.0	137.0	136.9999	137.1455	.1475E+02	.1405E+02
.175	70,877	.1270E+05	2.921	137.0	137.0	136.9827	136.9961	.1792E+02	.1727E+02
.147	1,001	.1437E+05	2.885	137.0	137.0	136.9750	136.9857	.1038E+02	.1014E+02
.123	8,125	.1048E+05	2.773	136.5	137.0	136.9467	136.9391	.1513E+02	.1458E+02
.119	14,347	.1420E+05	2.732	136.5	136.5	136.9377	136.9346	.1724E+02	.1671E+02
.077	21,220	.1418E+05	2.723	136.0	136.5	136.9301	136.9259	.1870E+02	.1829E+02
.021	26,777	.1423E+05	2.727	135.0	136.5	136.9211	136.9227	.1978E+02	.1947E+02
.021	34,290	.2159E+05	2.727	136.0	136.0	136.9200	136.9130	.2139E+02	.2099E+02
.033	31,951	.1427E+05	2.827	135.5	136.0	136.9158	136.9137	.2214E+02	.2184E+02
.033	45,826	.1464E+05	2.825	135.5	136.0	136.9090	136.9111	.2392E+02	.2362E+02
.072	52,106	.1259E+05	2.941	135.0	136.0	136.9050	136.9125	.2592E+02	.2562E+02
.000	50,373	.1261E+05	2.951	135.0	136.0	136.8970	136.9232	.2800E+02	.2770E+02
.147	64,632	.1471E+05	2.907	134.5	136.0	136.8430	136.8957	.3290E+02	.3184E+02
.080	70,866	.1011E+05	2.760	134.5	136.5	136.8475	136.8043	.3750E+02	.3644E+02
.066	1,798	.1318E+05	2.777	134.0	136.5	136.8320	136.8703	.4210E+02	.4104E+02
.072	8,167	.1292E+05	2.757	134.0	136.5	136.8274	136.8657	.4670E+02	.4564E+02
.043	14,366	.1162E+05	2.843	134.0	137.0	136.8225	136.8651	.5130E+02	.5024E+02
.100	20,717	.1241E+05	2.881	134.0	137.0	136.7265	136.8510	.5590E+02	.5484E+02
.077	26,935	.1015E+05	2.854	133.5	137.0	136.6763	136.8036	.6050E+02	.5944E+02
.017	33,263	.1094E+05	2.842	133.5	137.0	136.6757	136.8020	.6510E+02	.6404E+02
.026	39,542	.1360E+05	2.702	133.5	137.5	136.5842	136.8052	.6970E+02	.6864E+02
.029	45,816	.1415E+05	2.749	133.0	137.5	136.5670	136.7916	.7430E+02	.7324E+02

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.199	12,042	13,140	14,177	15,147	16,146	17,169	18,219	19,297	20,405
.200	12,057	13,155	14,192	15,162	16,161	17,184	18,234	19,312	20,420
.201	12,072	13,170	14,207	15,177	16,176	17,199	18,249	19,327	20,435
.202	12,087	13,185	14,222	15,192	16,191	17,214	18,264	19,342	20,450
.203	12,102	13,200	14,237	15,207	16,206	17,229	18,279	19,357	20,465
.204	12,117	13,215	14,252	15,222	16,221	17,244	18,294	19,372	20,480
.205	12,132	13,230	14,267	15,237	16,236	17,259	18,309	19,387	20,495
.206	12,147	13,245	14,282	15,252	16,251	17,274	18,324	19,402	20,510
.207	12,162	13,260	14,297	15,267	16,266	17,289	18,339	19,417	20,525
.208	12,177	13,275	14,312	15,282	16,281	17,304	18,354	19,432	20,540
.209	12,192	13,290	14,327	15,297	16,290	17,319	18,369	19,447	20,555
.210	12,207	13,305	14,342	15,312	16,305	17,334	18,384	19,462	20,570
.211	12,222	13,320	14,357	15,327	16,320	17,349	18,399	19,477	20,585
.212	12,237	13,335	14,372	15,342	16,335	17,364	18,414	19,492	20,600
.213	12,252	13,350	14,387	15,357	16,350	17,379	18,429	19,507	20,615
.214	12,267	13,365	14,402	15,372	16,365	17,394	18,444	19,522	20,630
.215	12,282	13,380	14,417	15,387	16,380	17,409	18,459	19,537	20,645
.216	12,297	13,395	14,432	15,402	16,395	17,424	18,474	19,552	20,660
.217	12,312	13,410	14,447	15,417	16,410	17,439	18,489	19,567	20,675
.218	12,327	13,425	14,462	15,432	16,425	17,454	18,504	19,582	20,690
.219	12,342	13,440	14,477	15,447	16,440	17,469	18,519	19,597	20,705
.220	12,357	13,455	14,492	15,462	16,455	17,484	18,534	19,612	20,720
.221	12,372	13,470	14,507	15,477	16,470	17,499	18,549	19,627	20,735
.222	12,387	13,485	14,522	15,492	16,485	17,514	18,564	19,642	20,750
.223	12,402	13,500	14,537	15,507	16,500	17,529	18,579	19,657	20,765
.224	12,417	13,515	14,552	15,522	16,515	17,544	18,594	19,672	20,780
.225	12,432	13,530	14,567	15,537	16,530	17,559	18,609	19,687	20,795
.226	12,447	13,545	14,582	15,552	16,545	17,574	18,624	19,702	20,810
.227	12,462	13,560	14,597	15,567	16,560	17,589	18,639	19,717	20,825
.228	12,477	13,575	14,612	15,582	16,575	17,604	18,654	19,732	20,840
.229	12,492	13,590	14,627	15,597	16,590	17,619	18,669	19,747	20,855
.230	12,507	13,605	14,642	15,612	16,605	17,634	18,684	19,762	20,870
.231	12,522	13,620	14,657	15,627	16,620	17,649	18,699	19,777	20,885
.232	12,537	13,635	14,672	15,642	16,635	17,664	18,714	19,792	20,900
.233	12,552	13,650	14,687	15,657	16,650	17,679	18,729	19,807	20,915
.234	12,567	13,665	14,702	15,672	16,665	17,694	18,744	19,822	20,930
.235	12,582	13,680	14,717	15,687	16,680	17,709	18,759	19,837	20,945
.236	12,597	13,695	14,732	15,702	16,695	17,724	18,774	19,852	20,960
.237	12,612	13,710	14,747	15,717	16,710	17,739	18,789	19,867	20,975
.238	12,627	13,725	14,762	15,732	16,725	17,754	18,804	19,882	20,990
.239	12,642	13,740	14,777	15,747	16,740	17,769	18,819	19,897	21,005
.240	12,657	13,755	14,792	15,762	16,755	17,784	18,834	19,912	21,020
.241	12,672	13,770	14,807	15,777	16,770	17,799	18,849	19,927	21,035
.242	12,687	13,785	14,822	15,792	16,785	17,814	18,864	19,942	21,050
.243	12,702	13,800	14,837	15,807	16,800	17,829	18,879	19,957	21,065
.244	12,717	13,815	14,852	15,822	16,815	17,844	18,894	19,972	21,080
.245	12,732	13,830	14,867	15,837	16,830	17,859	18,909	19,987	21,095
.246	12,747	13,845	14,882	15,852	16,845	17,874	18,924	20,002	21,110
.247	12,762	13,860	14,897	15,867	16,860	17,889	18,939	20,017	21,125
.248	12,777	13,875	14,912	15,882	16,875	17,904	18,954	20,032	21,140
.249	12,792	13,890	14,927	15,897	16,890	17,919	18,969	20,047	21,155
.250	12,807	13,905	14,942	15,912	16,905	17,934	18,984	20,062	21,170
.251	12,822	13,920	14,957	15,927	16,920	17,949	18,999	20,077	21,185
.252	12,837	13,935	14,972	15,942	16,935	17,964	19,014	20,092	21,200
.253	12,852	13,950	14,987	15,957	16,950	17,979	19,029	20,107	21,215
.254	12,867	13,965	15,002	15,972	16,965	17,994	19,044	20,122	21,230
.255	12,882	13,980	15,017	15,987	16,980	18,009	19,059	20,137	21,245
.256	12,897	13,995	15,032	16,002	17,000	18,024	19,074	20,152	21,260
.257	12,912	14,010	15,047	16,017	17,010	18,039	19,089	20,167	21,275
.258	12,927	14,025	15,062	16,032	17,020	18,054	19,104	20,182	21,290
.259	12,942	14,040	15,077	16,047	17,030	18,069	19,119	20,197	21,305
.260	12,957	14,055	15,092	16,062	17,040	18,084	19,134	20,212	21,320
.261	12,972	14,070	15,107	16,077	17,050	18,099	19,149	20,227	21,335
.262	12,987	14,085	15,122	16,092	17,060	18,114	19,164	20,242	21,350
.263	12,1000	14,1000	15,137	16,107	17,070	18,129	19,179	20,257	21,365

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HISTOGRAM DEVIATION

no	.05	.04	.03	.02	.01	0.00	bad points
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3	004000	004000	004000	004000	004000	004000	004000
4	005000	005000	005000	005000	005000	005000	005000
5	006000	006000	006000	006000	006000	006000	006000
6	007000	007000	007000	007000	007000	007000	007000
7	008000	008000	008000	008000	008000	008000	008000
8	009000	009000	009000	009000	009000	009000	009000
9	010000	010000	010000	010000	010000	010000	010000

100-105,2000 100-105,2000 100-105,2000 100-105,2000 100-105,2000

HISTORICAL REVISION D-6

001 002 003 004 005 006 007 008 009 010

Uo

DISK 21-A track data file ID01011

NAME: course line track  
 Information data: 1.0 1.0 16.0  
 this channel: .1120E+06 .1450E+06 .1331E+06  
.1100E+06 .1200E+06 .1250E+06

Constants: .13700 .13700 .13700 .13700  
 Displacements: 0.000000 0.000000 0.000000 0.000000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
10.222	45.790	.6416E+05	.046	133.0	137.5	133.2241	137.5269	.4264	.01
10.202	52.084	.8397E+05	1.104	133.0	138.0	133.1607	137.5733	.1194	.02
10.196	58.365	.8042E+05	1.130	133.0	138.0	133.1201	137.6240	.2040	.02
10.213	64.623	.8235E+05	1.117	133.0	138.0	133.0907	137.6749	.2752	.02
10.219	70.889	.4232E+05	.214	133.0	138.5	133.0773	137.7254	.2991	.02
10.151	1.797	.5234E+05	.202	133.0	138.5	133.1071	137.7767	.1184	.02
10.182	8.150	.7029E+05	1.066	133.0	139.0	133.1201	137.8274	.2024	.02
10.194	14.364	.7834E+05	1.124	133.0	139.0	133.1331	137.8787	.2778	.02
10.171	20.713	.8545E+05	1.102	133.0	139.0	133.1460	137.9298	.2988	.02
10.174	26.962	.1010E+06	.306	133.5	139.5	133.1590	137.9807	.3020	.02
10.230	33.248	.1031E+06	.067	133.5	139.5	133.5609	139.5794	.2198	.02
10.261	39.537	.1204E+06	1.056	134.0	140.0	133.7086	139.7202	.2910	.02
10.303	45.807	.1089E+06	1.122	134.0	140.0	133.8751	139.8774	.2724	.02
10.295	52.065	.1019E+06	1.159	134.0	140.0	134.0371	139.9994	.1924	.02
10.278	58.352	.1027E+06	1.162	134.0	140.0	134.2132	140.0992	.2054	.02
10.264	64.647	.5988E+05	1.101	134.5	140.0	134.3775	140.1980	.2024	.02
10.252	70.820	.5945E+05	1.070	134.5	140.0	134.5412	140.2969	.1994	.02
10.290	1.794	.4759E+05	1.072	135.0	140.5	134.9330	140.3915	.1104	.02
10.188	8.150	.4074E+05	1.044	135.0	140.5	135.1731	140.4814	.1014	.02
10.236	14.374	.3770E+05	1.085	135.5	140.5	135.3413	140.5714	.2584	.02
10.257	20.718	.3554E+05	1.081	135.5	140.5	135.5052	140.6611	.1194	.02
10.297	26.962	.1059E+06	1.093	136.0	140.0	135.6735	140.7511	.2074	.02
10.306	33.238	.1041E+06	1.108	136.0	140.0	135.8417	140.8410	.1184	.02
10.289	39.532	.1090E+06	1.116	136.0	140.0	136.0101	140.9302	.2024	.02
10.295	45.806	.1016E+06	1.088	136.5	140.0	136.1701	140.9915	.2024	.02
10.323	52.062	.1054E+06	1.059	136.5	140.0	136.3316	141.0775	.1184	.02
10.300	58.370	.1144E+06	1.013	136.5	140.0	136.4925	141.1610	.1184	.02
10.196	64.751	.1120E+06	.932	137.0	139.5	136.6537	141.2501	.2024	.02
10.157	70.867	.1044E+06	.968	137.0	139.5	136.8143	141.3391	.2024	.02
10.216	1.794	.9601E+05	1.093	137.0	139.0	136.9745	141.4284	.2024	.02
10.179	8.157	.2885E+05	1.086	137.0	139.0	137.1351	141.5174	.2024	.02
10.179	14.371	.1040E+05	1.042	137.0	139.0	137.2957	141.6064	.2024	.02
10.202	20.718	.2133E+05	.211	137.0	139.5	137.4563	141.6954	.2024	.02
10.213	26.962	.1134E+05	1.087	137.0	139.5	137.6169	141.7844	.2024	.02
10.213	33.238	.2954E+05	1.112	137.0	139.5	137.7775	141.8734	.2024	.02



ORIGINAL FILE IS  
OF POOR QUALITY

100-4

	1	2	delta	1	2
0	.01500	.01500	.00000	.01500	.01500
1	.00750	.00750	.00000	.00750	.00750
2	.00375	.00375	.00000	.00375	.00375
3	.00188	.00188	.00000	.00188	.00188
4	.00094	.00094	.00000	.00094	.00094
5	.00047	.00047	.00000	.00047	.00047
6	.00023	.00023	.00000	.00023	.00023
7	.00012	.00012	.00000	.00012	.00012
8	.00006	.00006	.00000	.00006	.00006
9	.00003	.00003	.00000	.00003	.00003

mean 15.1087    var 136.2283    cov 2.10220675    std.dev. 11.671864

HISTOGRAM REVIATION

bin	count	bin	count	bin	count
0	1	4	1	8	1
1	1	5	1	9	1
2	1	6	1	10	1
3	1	7	1	11	1
4	1	8	1	12	1
5	1	9	1	13	1
6	1	10	1	14	1
7	1	11	1	15	1
8	1	12	1	16	1
9	1	13	1	17	1
10	1	14	1	18	1
11	1	15	1	19	1
12	1	16	1	20	1
13	1	17	1	21	1
14	1	18	1	22	1
15	1	19	1	23	1
16	1	20	1	24	1
17	1	21	1	25	1
18	1	22	1	26	1
19	1	23	1	27	1
20	1	24	1	28	1
21	1	25	1	29	1
22	1	26	1	30	1
23	1	27	1	31	1
24	1	28	1	32	1
25	1	29	1	33	1
26	1	30	1	34	1
27	1	31	1	35	1
28	1	32	1	36	1
29	1	33	1	37	1
30	1	34	1	38	1
31	1	35	1	39	1
32	1	36	1	40	1
33	1	37	1	41	1
34	1	38	1	42	1
35	1	39	1	43	1
36	1	40	1	44	1
37	1	41	1	45	1
38	1	42	1	46	1
39	1	43	1	47	1
40	1	44	1	48	1
41	1	45	1	49	1
42	1	46	1	50	1
43	1	47	1	51	1
44	1	48	1	52	1
45	1	49	1	53	1
46	1	50	1	54	1
47	1	51	1	55	1
48	1	52	1	56	1
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65	1	69	1	73	1
66	1	70	1	74	1
67	1	71	1	75	1
68	1	72	1	76	1
69	1	73	1	77	1
70	1	74	1	78	1
71	1	75	1	79	1
72	1	76	1	80	1
73	1	77	1	81	1
74	1	78	1	82	1
75	1	79	1	83	1
76	1	80	1	84	1
77	1	81	1	85	1
78	1	82	1	86	1
79	1	83	1	87	1
80	1	84	1	88	1
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85	1	89	1	93	1
86	1	90	1	94	1
87	1	91	1	95	1
88	1	92	1	96	1
89	1	93	1	97	1
90	1	94	1	98	1
91	1	95	1	99	1
92	1	96	1	100	1



ORIGINAL FROM IS  
OF POOR QUALITY

Doc 27-A Tract data file 10/10/80

amount: 1.0 tract: 64.0  
 information delay: .07641406 .134802  
 for each lot: .1038106 .7352106

Constant: .337100 .287100 .378000  
 Discontinuities: 0.000000 0.000000 0.000000

Comp	angle	curr	date	ref	reference	y	function	standard deviation
10.104	76.541	2.8771	.1054106	max	133.5	132.0	132.304	.2704
10.104	46.738	2.764	.2027106		133.0	132.5	132.742	.1711
10.104	52.009	2.822	.2542106		134.0	133.0	133.175	.4321
10.107	59.363	2.937	.2429106		133.0	132.0	132.725	.1114
10.100	64.629	2.914	.2442106		133.0	133.0	133.0510	.1052
10.101	70.886	1.791	.1558106		133.5	133.5	133.0814	.0398
10.112	8.171	2.715	.1752106		133.0	133.5	133.132	.1048
10.110	18.373	2.873	.2098106		133.0	137.0	133.1719	.7008
10.110	18.373	2.918	.2718106		133.0	132.0	133.2380	.8118
10.113	20.703	2.864	.2602106		133.5	132.0	133.3026	.6224
10.121	26.267	2.710	.2792106		133.5	132.5	133.3820	.1014
10.120	33.210	2.700	.2927106		133.5	132.5	133.5640	.1618
10.205	39.525	2.884	.3072106		134.0	140.0	134.700	.1114
10.179	45.792	2.931	.3001106		134.0	140.0	134.8250	.2584
10.179	51.957	2.925	.2858106		134.0	140.0	134.9000	.1014
10.173	56.447	2.989	.2162106		134.0	140.0	134.9100	.1014
10.216	63.574	2.948	.2148106		134.5	140.0	140.2900	.0024
10.210	70.106	2.887	.1118106		140.5	140.0	140.2900	.1192
10.196	1.797	2.877	.2729106		140.5	140.5	140.3100	.2054
10.202	8.182	2.845	.2388106		140.5	140.5	140.3300	.1514
10.182	14.373	2.815	.8032106		140.5	140.5	140.3900	.1058
10.179	20.709	2.809	.7584106		140.5	140.5	140.3900	.1058
10.208	26.954	2.914	.3119106		140.0	140.0	140.3900	.1314
10.206	33.235	2.908	.3026106		140.0	140.0	140.2900	.2584
10.241	37.515	2.910	.3092106		140.0	140.0	140.1900	.1014
10.241	47.014	2.894	.2904106		140.5	140.0	140.3300	.1014
10.247	52.108	2.874	.2904106		140.5	140.0	140.3300	.1014
10.261	58.305	2.823	.2717106		140.5	140.0	140.3300	.1014
10.126	63.616	2.813	.3038106		140.0	140.0	140.3300	.1014
10.154	70.870	2.807	.2901106		140.0	140.0	140.3300	.1014
10.101	1.797	2.808	.2727106		140.0	140.0	140.3300	.1014
10.140	8.182	2.812	.2624106		140.0	140.0	140.3300	.1014
10.205	14.375	2.815	.2517106		140.0	140.0	140.3300	.1014
10.181	20.709	2.826	.2402106		140.0	140.0	140.3300	.1014
10.171	26.971	2.813	.1038106		140.0	140.0	140.3300	.1014



ORIGINAL PAGE IS  
OF POOR QUALITY

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HISTOGRAM REVIATION >= e

0	.05	.04	.03	.02	.01	0.00	bad points
1	0	4	2	7	11	36	0

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ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	3	4	5	6	7	8	9	10
1	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
2	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
3	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
4	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
5	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
6	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
7	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
8	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
9	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000
10	000000	000000	000000	000000	000000	000000	000000	000000	000000	000000

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HISTORICAL DEVIATION >= e

Year	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Deviation	0	0.05	0.04	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00
Bad Points %	0	2	3	4	12	24					

ORIGINAL PAGE IS  
OF POOR QUALITY

1001002

time	angle	current	start mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
20.591	39.562	.594E+05	.979	136.5	136.0	135.6413	136.1413	.1724	.1191
20.592	45.835	.536E+05	.982	135.5	136.0	135.4819	136.1301	.1477	.1018
20.593	52.107	.6339E+05	1.007	135.0	136.0	135.2975	136.1474	.1168	.0789
20.597	59.297	.6819E+05	1.103	135.0	136.0	134.9759	136.1575	.0714	.0519
20.598	64.652	.6538E+05	1.087	135.0	136.0	134.7747	136.1699	.1268	.1131
20.599	1.334	.5957E+05	.905	134.0	136.5	134.6488	136.2094	.0902	.0741
20.601	31.190	.5047E+05	.836	134.0	136.5	134.2372	136.4144	.1508	.1181
20.601	14.105	.5357E+05	.905	134.0	136.5	134.0074	136.5271	.1077	.0814
20.603	30.744	.5747E+05	.970	134.0	137.0	133.7561	136.8354	.1094	.1074
20.607	26.989	.7535E+05	.945	133.5	137.0	133.5945	136.6975	.0566	.0471
20.602	33.273	.7307E+05	.945	134.5	137.0	133.4846	137.1165	.0471	.0411
20.618	39.569	.8512E+05	.911	133.5	137.0	133.3767	137.3275	.0402	.0348
20.615	45.831	.8177E+05	.820	133.0	137.0	133.2891	137.5378	.0544	.0411
20.615	52.117	.1063E+06	.982	133.0	138.0	133.2363	137.7474	.0728	.0511
20.618	58.375	.1042E+06	.996	133.0	138.0	133.1897	137.9135	.1051	.0711
20.613	64.617	.1056E+06	.965	133.0	138.0	133.1575	138.1370	.0474	.0424
20.605	70.884	.6595E+05	.757	133.0	138.5	133.1451	138.3540	.1067	.0784
20.601	1.020	.7307E+05	.754	133.0	138.5	133.1763	138.6197	.0774	.0511
20.613	14.103	.7400E+05	.947	133.0	139.0	133.1580	138.8391	.0504	.0411
20.616	14.476	.6677E+05	1.003	133.0	139.0	133.1491	139.0581	.1111	.0811
20.617	20.774	.1247E+06	1.007	133.0	139.0	133.0917	139.2774	.0911	.0711
20.605	27.111	.1317E+06	.717	133.5	139.5	133.0141	139.4967	.0811	.0611
20.622	33.290	.1337E+06	.717	133.5	139.5	133.0506	139.7154	.0811	.0611
20.624	39.566	.1430E+06	.977	133.0	140.0	133.0754	139.9346	.0811	.0611
20.650	45.837	.1311E+06	1.000	133.0	140.0	133.0438	140.1531	.0911	.0711
20.671	52.123	.1273E+06	1.073	134.0	140.0	133.1073	140.3718	.0911	.0711
20.606	58.404	.1264E+06	1.048	134.0	140.0	133.2775	140.5909	.0911	.0711
20.625	64.681	.5649E+05	.946	134.5	140.0	134.0419	140.8099	.1111	.0811
20.640	70.912	.7083E+05	1.027	135.0	140.0	134.7962	141.0284	.1111	.0811
20.623	1.052	.3399E+05	.918	135.0	140.5	134.6327	141.2471	.0811	.0611
20.667	31.210	.3523E+05	1.026	135.0	140.5	134.5141	141.4657	.0811	.0611
20.650	34.419	.3171E+05	1.031	135.0	140.5	134.4311	141.6843	.0811	.0611
20.609	39.775	.3111E+05	1.022	135.0	140.5	134.3541	141.9029	.0811	.0611
20.616	47.100	.1331E+05	1.111	135.0	140.5	134.2771	142.1215	.0811	.0611

20.53	33.599	.1386E+06	.984	136.0	140.0	136.2248	140.1176	.4132E-03	.6907E-03
20.565	39.599	.1386E+06	.984	136.0	140.0	136.2248	140.1176	.1081E-02	.1137E-02
20.537	45.836	.1298E+06	.940	136.5	140.0	136.3974	140.0096	.1303E-02	.8908E-03
20.568	52.143	.1362E+06	.910	136.5	140.0	136.5738	139.8828	.1196E-02	.7008E-03
20.562	58.413	.1632E+06	.923	137.0	140.0	136.7357	139.7251		
20.520	64.671	.1395E+06	.791	137.0	139.5	136.8771	139.5801	.1317E-02	.3001E-03
20.470	70.880	.1343E+06	.812	137.0	139.5	137.0159	139.3827	.8114E-03	.2438E-03
20.433	1.823	.1251E+06	.945	137.0	139.0	137.1319	139.1762	.1647E-02	.1075E-02
20.491	8.188	.1154E+06	.957	137.0	139.0	137.7285	138.9843	.9787E-03	.8774E-03
20.431	14.416	.1024E+06	.937	137.0	139.0	137.7836	138.8941	.7478E-03	.4098E-03
20.439	20.787	.8450E+05	.686	137.5	138.5	137.3420	138.5665	.1203E-02	.7230E-03
20.487	27.008	.1601E+06	.901	137.5	138.0	137.3296	138.4279	.6970E-01	.1453E+00
20.523	33.288	.1068E+06	.930	137.5	138.0	137.3607	138.1545	.8654E-03	.1304E-02
20.548	39.588	.1045E+06	.926	137.5	138.0	137.3220	137.9821	.7794E-03	.6428E-03
20.534	45.864	.1225E+06	.969	137.0	138.0	137.2869	137.7676	.1182E-02	.4903E-03
20.529	52.136	.9632E+05	.783	137.0	137.5	137.2207	137.9011	.1043E-02	.4321E-03
20.554	58.418	.8469E+05	.955	137.0	137.0	137.1348	137.2693	.1219E-02	.7382E-03
20.546	64.673	.7833E+05	1.024	137.0	137.0	137.0302	137.0951	.8000E-03	.2088E-03
20.546	70.902	.8633E+05	1.019	137.0	137.0	136.9272	136.9537	.7761E-03	.4876E-03
20.492	1.827	.9401E+05	.954	137.0	137.0	136.7999	136.7728	.1710E-02	.1340E-02
20.526	8.223	.1000E+06	.758	136.5	136.5	136.5843	136.6223	.7084E-03	.9099E-03
20.498	14.426	.1002E+06	.749	136.5	136.5	136.4011	136.4917	.1054E-02	.4905E-03
20.484	20.793	.1012E+06	.858	136.0	136.5	136.1988	136.3931	.3269E-03	.4138E-03
20.492	27.034	.1267E+06	1.035	136.0	136.0	135.9922	136.2445	.9208E-03	.1109E-02
20.523	33.322	.1321E+06	1.046	136.0	136.0	135.7903	136.1643	.1088E-02	.8518E-03

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	delta ri					
	1	2	3	4	5	6
0	.03193	.00768	-.00711	.00367	-.00465	.00767
1	-.00975	-.01428	-.01144	-.01178	.00350	-.00717
2	-.00826	-.01101	-.03019	-.01743	.00048	.01498
3	.01413	.01554	.00413	-.00340	-.01751	-.00475
4	.00123	.01099	.01411	.01342	.03731	-.00707
5	-.02370	-.01257	-.00061	.00478	.01148	.00405
6	.00842	.00126	.00134	-.00843	-.00167	-.00604
7	-.00854	.00319	-.00047	.00631	-.02288	.00150
8	-.02280	-.01953	-.00537	.01056	.00755	.00504
9	.02633	-.00882	-.01305	-.02903	.02465	.04134

x0= 135.2586    y0= 138.2410    r0= 2.10231614    std.dev.= .01463532

HISTOGRAM DEVIATION >= e

e	.05	.04	.03	.02	.01	0.00	bad points
	0	1	3	6	17	33	0

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TRE-64

	1	2	3	4	5	6
0	.03146	.00728	-.00347	-.00344	-.00480	.00764
1	-.00951	-.01418	-.01128	-.01157	.00376	-.00188
2	-.00793	-.01065	-.02981	-.01705	.00086	.01446
3	.01449	.01987	.00443	-.00313	-.01529	.00420
4	.00133	.01102	.01408	.01337	.02516	.00729
5	-.02408	-.01303	-.00114	.00398	.01082	.00331
6	.00761	.00039	.00041	-.00942	-.00270	-.00002
7	-.00966	.00204	-.00163	.00514	.00033	.00033
8	-.02396	-.02067	-.00647	.00950	.00654	.00007
9	.02542	-.00966	-.01381	-.02772	.02494	.00081

x0= 135.2594    y0= 138.2410    r0= 2.10271215    std.dev.= .01444098

HISTOGRAM DEVIATION >= e

e=	0	1	2	7	15	34	1
	.05	.04	.03	.02	.01	0.00	bad points

	Loarse	Fine	Track
	1.0	1.0	64.0
Iteration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.1830E+06	.9190E+05	.7352E+06

Constants:	.33700	.28700	.37800	.28000
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
20.582	39.536	-.2535E+04	2.927	135.5	136.0	135.7516	136.1527	.5787E-02	.7574E-03
20.582	45.847	-.1524E+04	2.937	135.5	136.0	135.5442	136.1500	.2070E-02	.5479E-03
20.582	52.134	-.5626E+02	2.991	135.5	136.0	135.3427	136.1618	.2483E-02	.1320E-02
20.565	58.383	.2308E+04	2.999	135.0	136.0	135.1343	136.1640	.2808E-02	.1860E-02
20.551	64.648	.2134E+04	3.041	135.0	136.0	134.9535	136.2126	.2093E-02	.1423E-02
20.515	70.884	.1476E+05	3.015	134.5	136.0	134.3470	136.3119	.4716E-01	.7373E-02
20.464	1.831	.1609E+05	2.925	134.5	136.5	134.0874	136.4412	.5283E-01	.6721E-02
20.526	8.206	.1549E+05	2.854	134.5	136.5	133.9676	136.5804	.8976E-02	.1542E-02
20.576	14.404	.3797E+05	2.838	134.0	136.5	133.8737	136.6727	.1467E-02	.1339E-02
20.467	20.713	.3688E+05	2.930	134.0	137.0	133.7265	136.8045	.1057E-02	.1099E-02
20.551	26.983	.4109E+05	2.903	133.5	137.0	133.5874	136.9611	.1221E-02	.1074E-02
20.523	33.300	.4123E+05	2.901	133.5	137.0	133.4788	137.1291	.1070E-02	.1007E-02
20.501	39.574	.4642E+05	2.809	133.5	137.5	133.3727	137.3455	.6180E-02	.6999E-02
20.464	45.828	.3913E+05	2.790	133.0	137.5	133.2920	137.5621	.1027E-02	.1197E-02
20.487	52.117	.4415E+05	2.945	133.0	138.0	133.2432	137.8062	.1259E-02	.5110E-03
20.557	58.378	.4361E+05	2.952	133.0	138.0	133.1935	137.9972	.1530E-02	.1418E-02
20.520	64.644	.4409E+05	2.913	133.0	138.0	133.1629	138.1703	.1784E-02	.2700E-03
20.475	70.916	.3566E+05	2.707	133.0	138.5	133.1496	138.3792	.1213E-02	.0639E-03
20.498	1.795	.3749E+05	2.728	133.0	138.5	133.1766	138.6420	.8569E-03	.7863E-03
20.453	8.171	.4009E+05	2.896	133.0	139.0	133.2353	138.8649	.4489E-03	.1419E-02
20.431	14.409	.4130E+05	2.940	133.0	139.0	133.3001	139.0112	.6044E-03	.1076E-02
20.450	20.740	.4932E+05	2.850	133.5	139.0	133.3794	139.2136	.1002E-02	.1123E-02
20.442	26.984	.5085E+05	2.695	133.5	139.5	133.5014	139.4101	.4669E-03	.8741E-03
20.473	33.297	.5084E+05	2.700	133.5	139.5	133.6399	139.6157	.9002E-03	.9873E-03
20.574	39.549	.5016E+05	2.893	134.0	140.0	133.7549	139.7579	.1065E-02	.9100E-03
20.554	45.832	.4783E+05	2.954	134.0	140.0	133.9173	139.9091	.2310E-02	.1652E-02
20.602	52.135	.4686E+05	2.971	134.0	140.0	134.0815	140.0244	.1379E-02	.1263E-02
20.562	58.406	.4709E+05	2.991	134.0	140.0	134.2509	140.1239	.1087E-02	.1211E-02
20.579	64.642	.2929E+05	3.014	134.0	140.0	134.3649	140.2213	.5419E-01	.5946E-02
20.484	70.902	.1209E+05	2.974	135.0	140.5	134.9444	140.3161	.9231E-02	.4968E-01
20.495	1.809	.3428E+04	2.879	135.0	140.5	135.1626	140.3350	.3837E-02	.7470E-03
20.540	8.204	.3976E+03	2.852	135.5	140.5	135.3420	140.3570	.4001E-02	.1783E-02
20.534	14.405	-.6631E+03	2.808	135.5	140.5	135.5177	140.3637	.2718E-02	.6097E-03
20.543	20.767	-.8049E+03	2.799	135.5	140.5	135.7570	140.3410	.1409E-02	.1242E-02
20.548	27.003	.6414E+05	2.918	136.0	140.0	135.7794	140.3235	.8593E-02	.8404E-01

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QUALITY  
 SERVICE  
 TRADING

10-1-81

20,543	39,571	.6031E+05	2,926	136.0	140.0	136.2096	140.1283	.7089E-03
20,593	45,839	.5901E+05	2,905	136.5	140.0	136.3878	140.0243	.1042E-02
20,579	52,114	.6020E+05	2,890	136.5	140.0	136.5616	139.8979	.1408E-02
20,593	58,413	.5798E+05	2,896	137.0	140.0	136.7206	139.7381	.1771E-02
20,487	64,653	.5233E+05	2,793	137.0	139.5	136.8640	139.6015	.1570E-02
20,473	70,898	.5169E+05	2,762	137.0	137.5	137.0047	139.4043	.4961E-03
20,506	1,819	.5023E+05	2,885	137.0	139.0	137.1124	139.1890	.6599E-03
20,512	6,199	.4833E+05	2,896	137.0	139.0	137.2140	138.9913	.7647E-03
20,450	14,418	.4613E+05	2,883	137.0	139.0	137.2711	138.8197	.1032E-02
20,475	20,737	.4432E+05	2,670	137.5	138.5	137.3311	138.5924	.2998E-02
20,456	27,000	.4189E+05	2,694	137.5	138.5	137.3625	138.3590	.1253E-02
20,523	33,283	.4790E+05	2,886	137.5	138.0	137.3905	138.1462	.9320E-03
20,504	39,549	.4749E+05	2,891	137.5	138.0	137.3121	137.9919	.1368E-02
20,504	45,863	.5040E+05	2,922	137.0	138.0	137.2761	137.7829	.1673E-02
20,532	52,109	.4899E+05	2,747	137.0	137.5	137.2063	137.5360	.1398E-02
20,498	58,401	.4369E+05	2,902	137.0	137.0	137.1207	137.2853	.1174E-02
20,495	64,674	.4243E+05	2,963	137.0	137.0	137.0129	137.1007	.6768E-03
20,490	70,905	.4379E+05	2,966	137.0	137.0	136.9077	136.9609	.1483E-02
20,509	1,820	.4483E+05	2,915	137.0	137.0	136.7831	136.7920	.1049E-02
20,526	8,191	.5252E+05	2,742	136.5	136.5	136.5694	136.6433	.7399E-02
20,475	14,404	.5270E+05	2,721	136.5	136.5	136.3883	136.5108	.1574E-02
20,518	20,751	.5307E+05	2,805	136.0	136.5	136.1904	136.4004	.1324E-02
20,562	27,005	.5792E+05	2,977	136.0	136.0	135.9795	136.2624	.6192E-03
20,577	33,304	.5891E+05	2,992	136.0	136.0	135.7746	136.1796	.1196E-02





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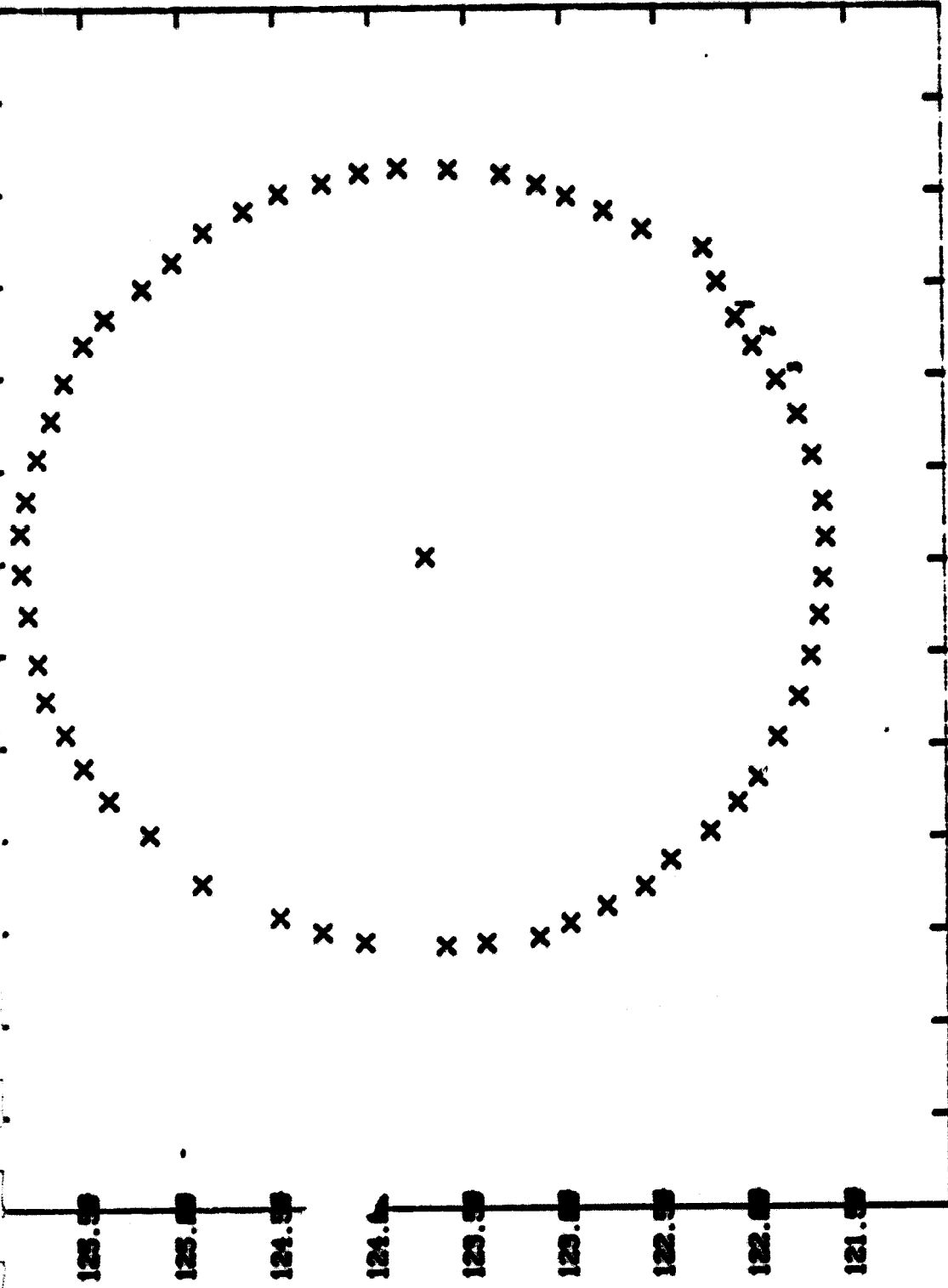
	1	2	delta	3	4	5	6
0	.06167	.02596	-.00420	-.00510	-.03542	-.00100	
1	-.01394	.03383	-.00232	-.00270	.00714	.00275	
2	.00759	-.02329	-.04420	-.02751	-.01215	.00091	
3	.01659	.00364	-.01083	-.00040	-.00717		
4	-.02229	.02049	.01637	.01515		-.00115	
5	-.00033	-.00015	-.02317	-.04162	-.00128	-.00689	
6	-.02037	-.00147	-.00269	-.01625	-.01178	-.00065	
7	-.02403	-.00664	-.00534	-.00472	-.00644	.00138	
8	.01814	-.02215	-.01436	-.00408	-.02067	.00094	
9		-.01770	-.01761	-.02789			

x0= 135.2510 y0= 138.2578 r0= 2.10213733 std.dev.= .01451969

HISTOGRAM DEVIATION >= e

e=	1	3	2	11	12	0.00	26	5
	.05	.04	.03	.02	.01	0.00	bad points	

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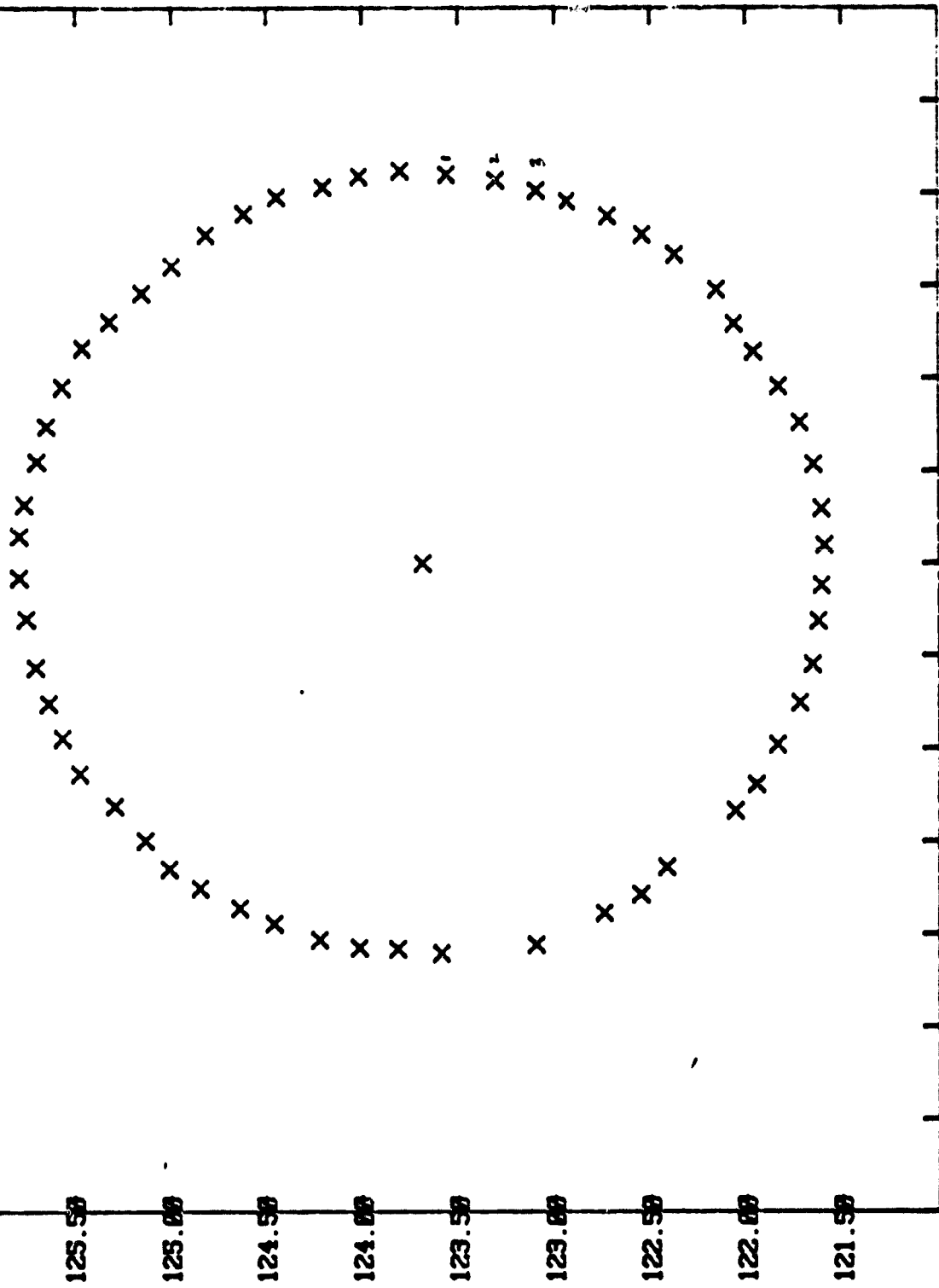
119.00 119.50 120.00 120.50 121.00 121.50 122.00 122.50 123.00 123.50 124.00 124.50

POSITION #4 S.D.= 1.405 %

29-A-00 F2.8 +.8M 2 K=.33.294.37.236 100X 0°C.

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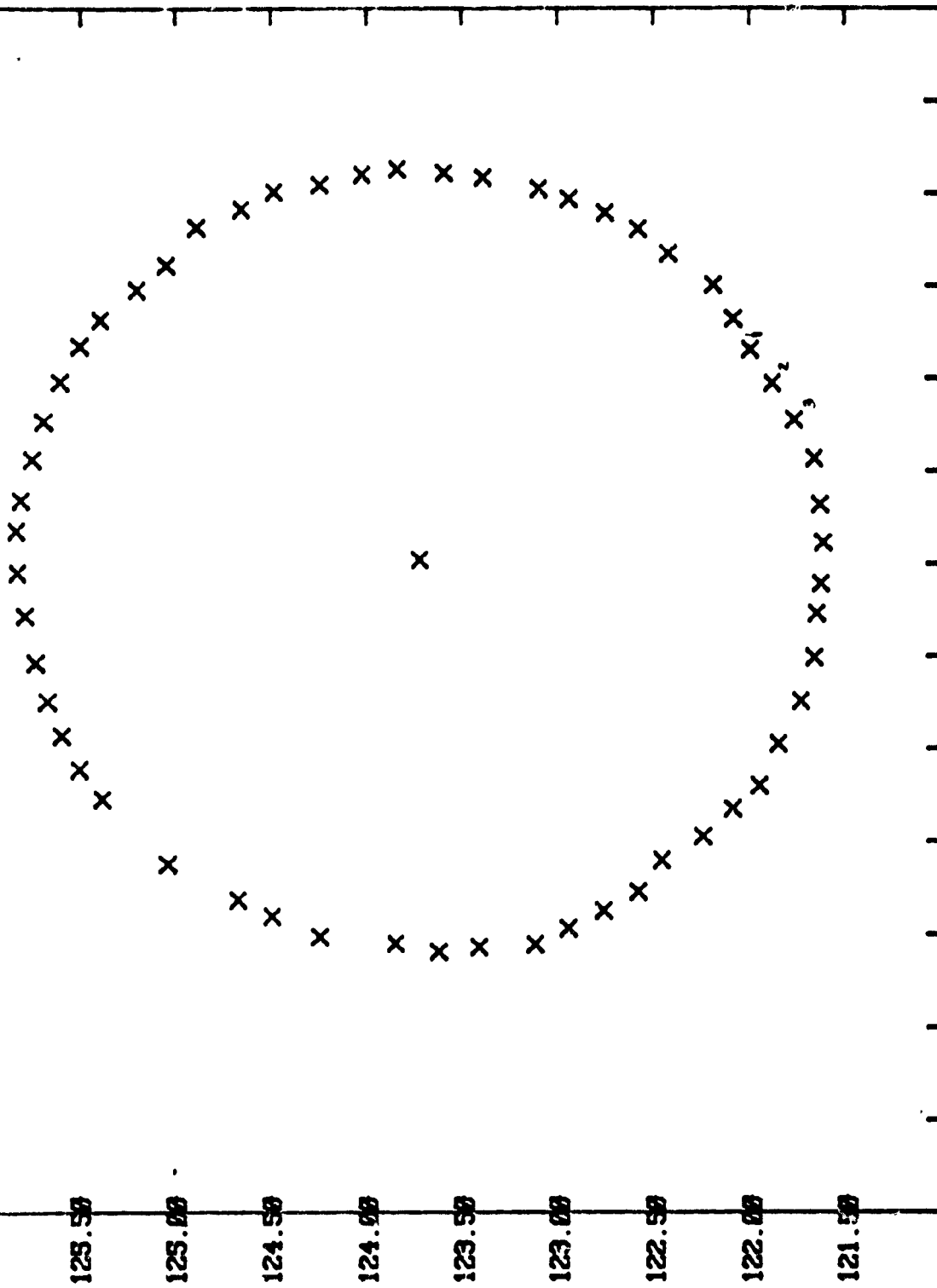
TR81-04



119.00 119.50 120.00 120.50 121.00 121.50 122.00 122.50 123.00 123.50 124.00 124.50

POSITION #4 S.D= 1.492 %

29-A-03 F2.8 +.8M 2 K=.33.294.37.236 10% 0°C



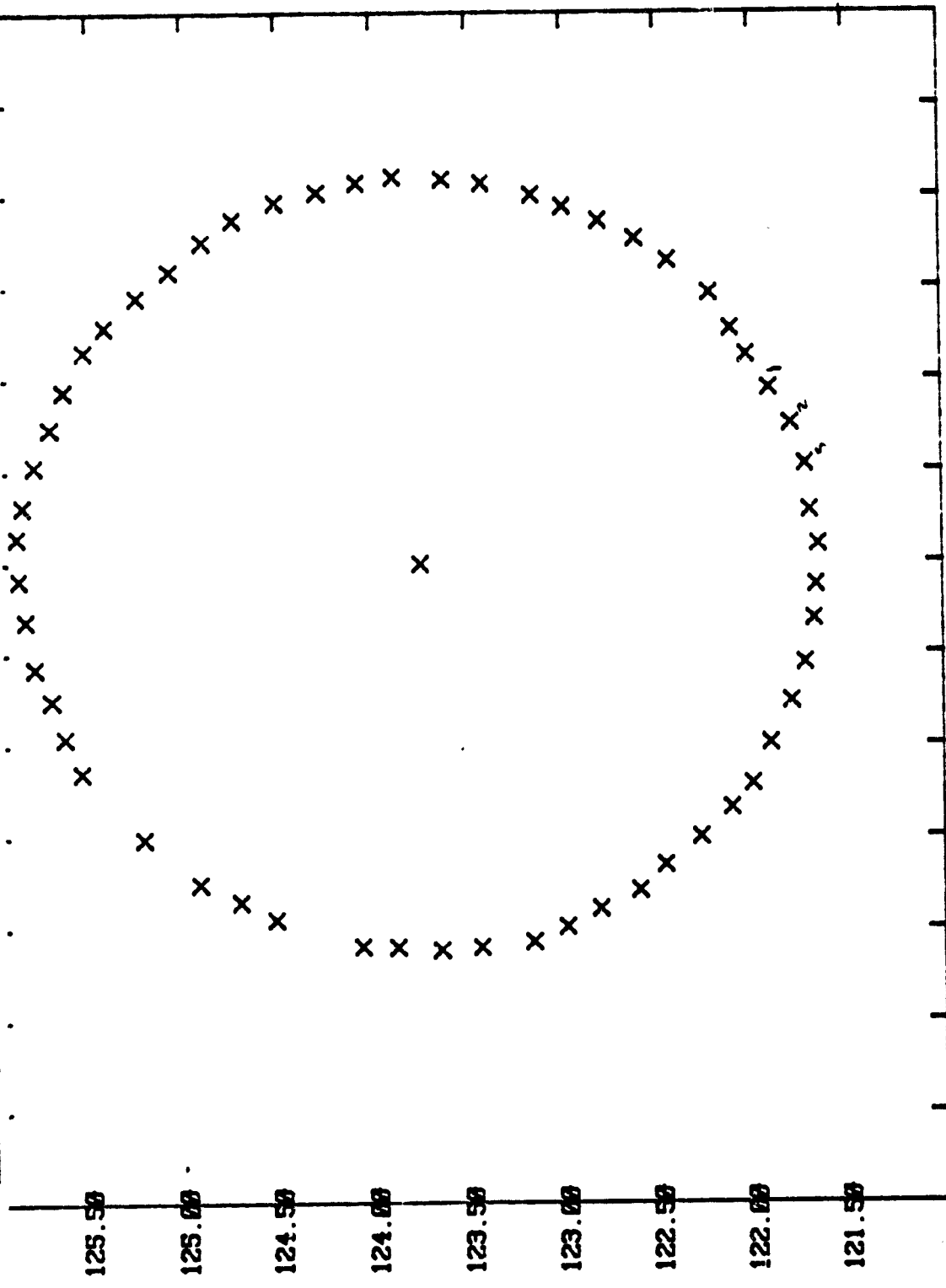
119.00 119.50 120.00 120.50 121.00 121.50 122.00 122.50 123.00 123.50 124.00 124.50

POSITION #4 S.D= 2.170%

29-A-04 F2.8 +.8M 2 K=.33.294.37.236 <1% 0°C

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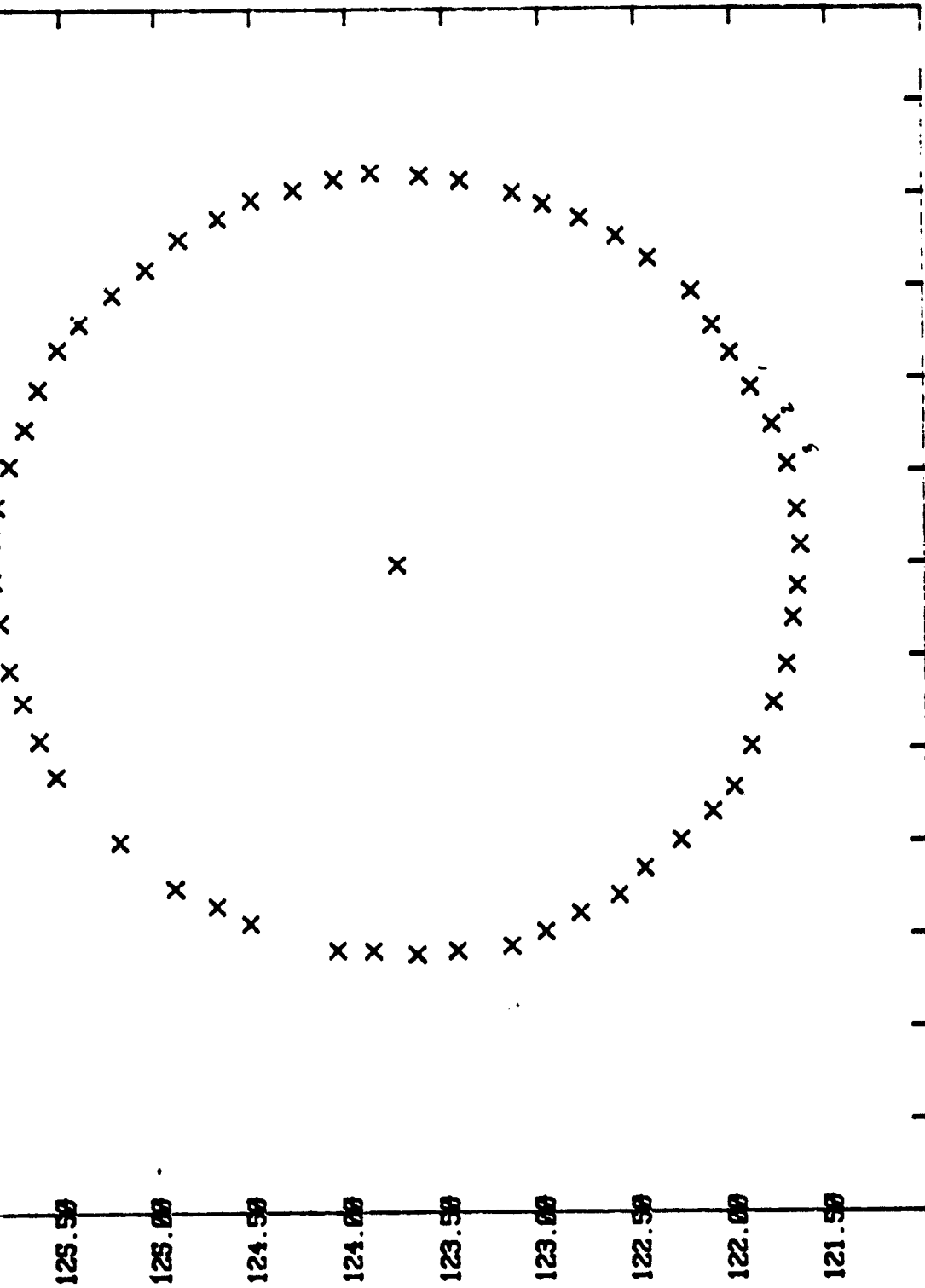
119.00 119.50 120.00 120.50 121.00 121.50 122.00 122.50 123.00 123.50 124.00 124.50

POSITION #4 S.D = 1.368 %

29-A-06 F2.8 +.8M 2 K=.33.294.37.236 100% 10°C

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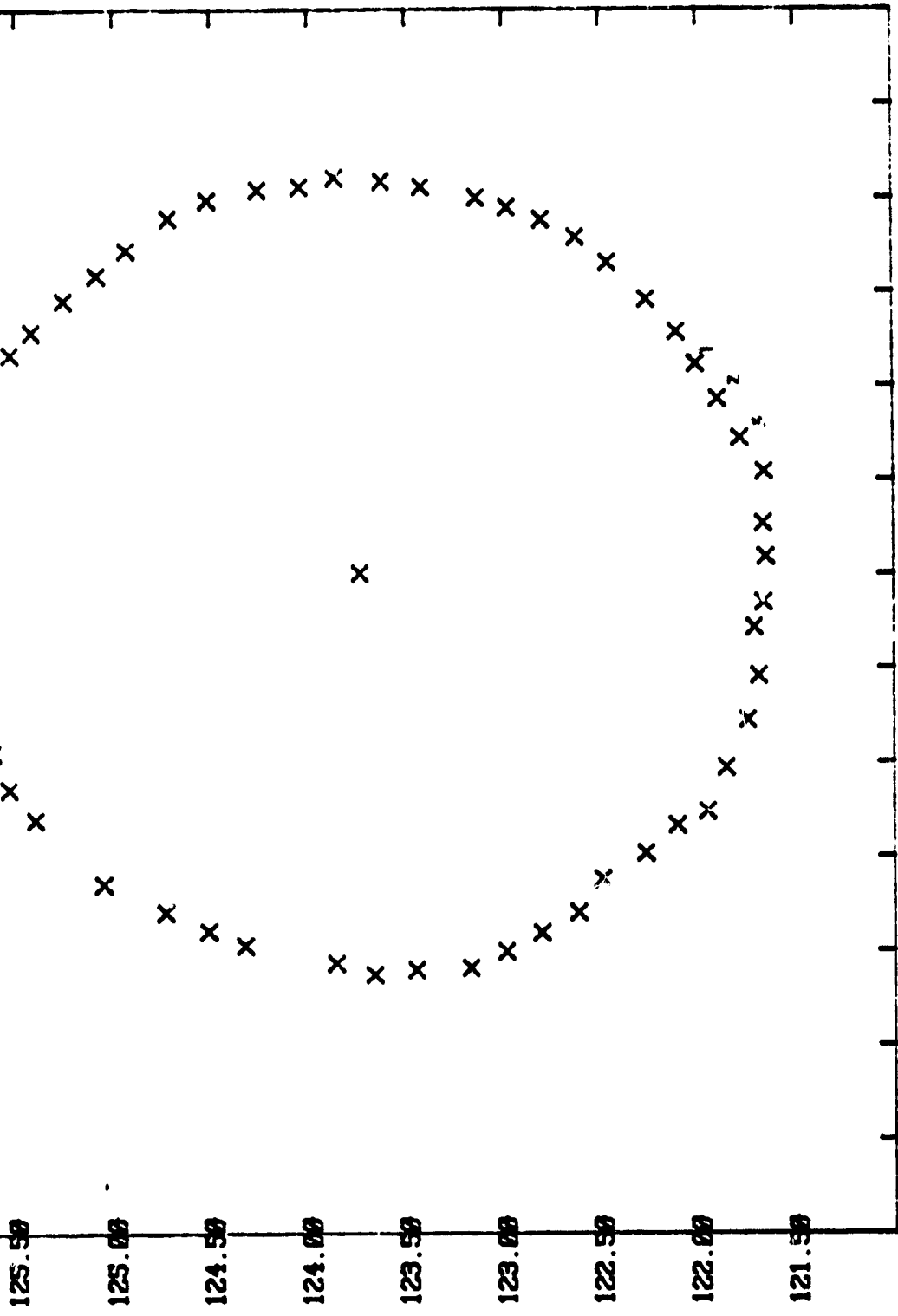
119.00 119.50 120.00 120.50 121.00 121.50 122.00 122.50 123.00 123.50 124.00 124.50

POSITION #4 S.D= 1.453 %

29-A-05 F2.8 +.8M 2 K=.33.294.37.236 10% 10° C

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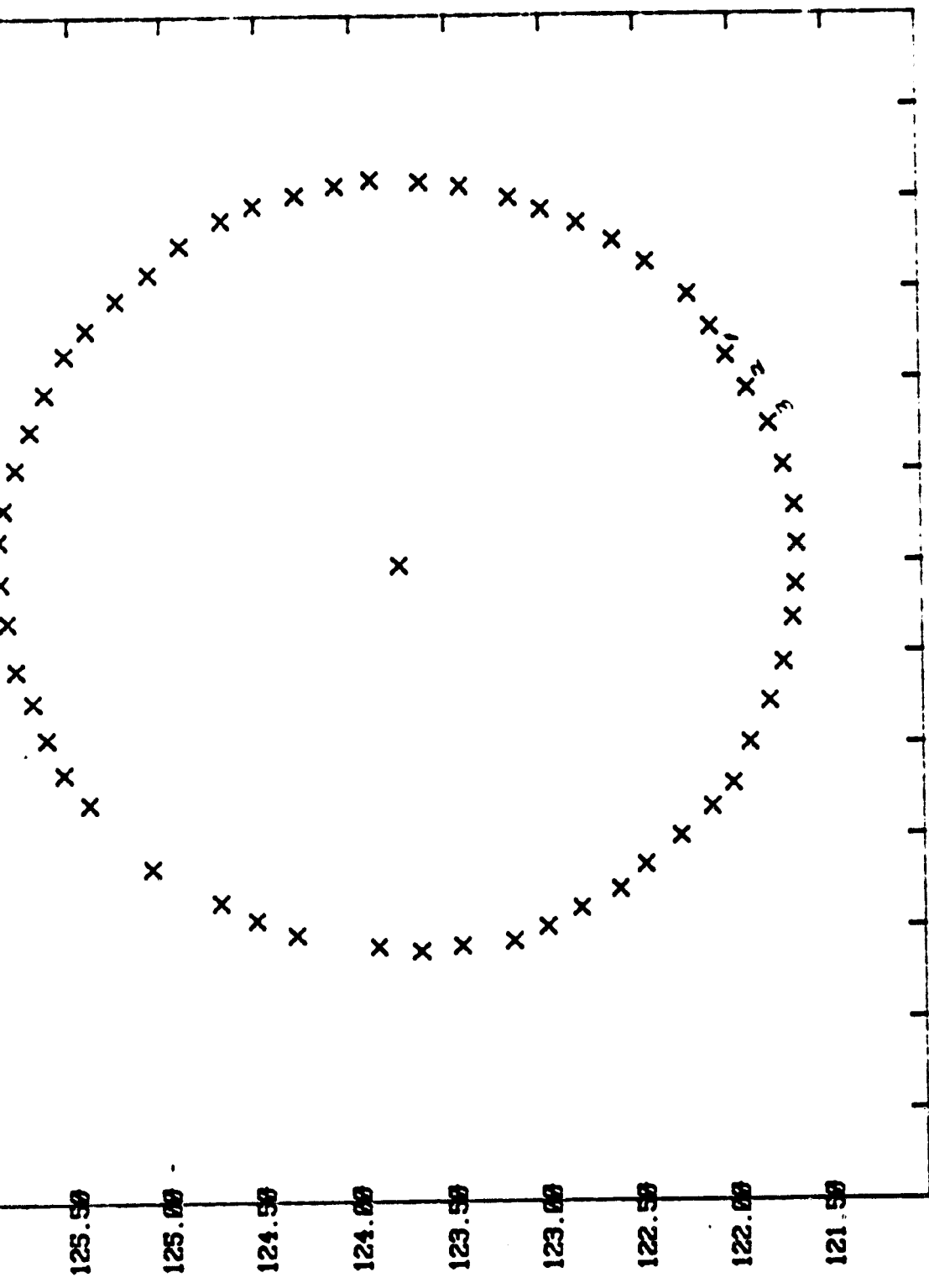
119.00 119.50 120.00 120.50 121.00 121.50 122.00 122.50 123.00 123.50 124.00 124.50

POSITION #4 S.D= 2.881 %

29-A-07 F2.8 +.8M 2 K=.33.294.37.236 <1% 10° C

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119.00 119.50 120.00 120.50 121.00 121.50 122.00 122.50 123.00 123.50 124.00 124.50

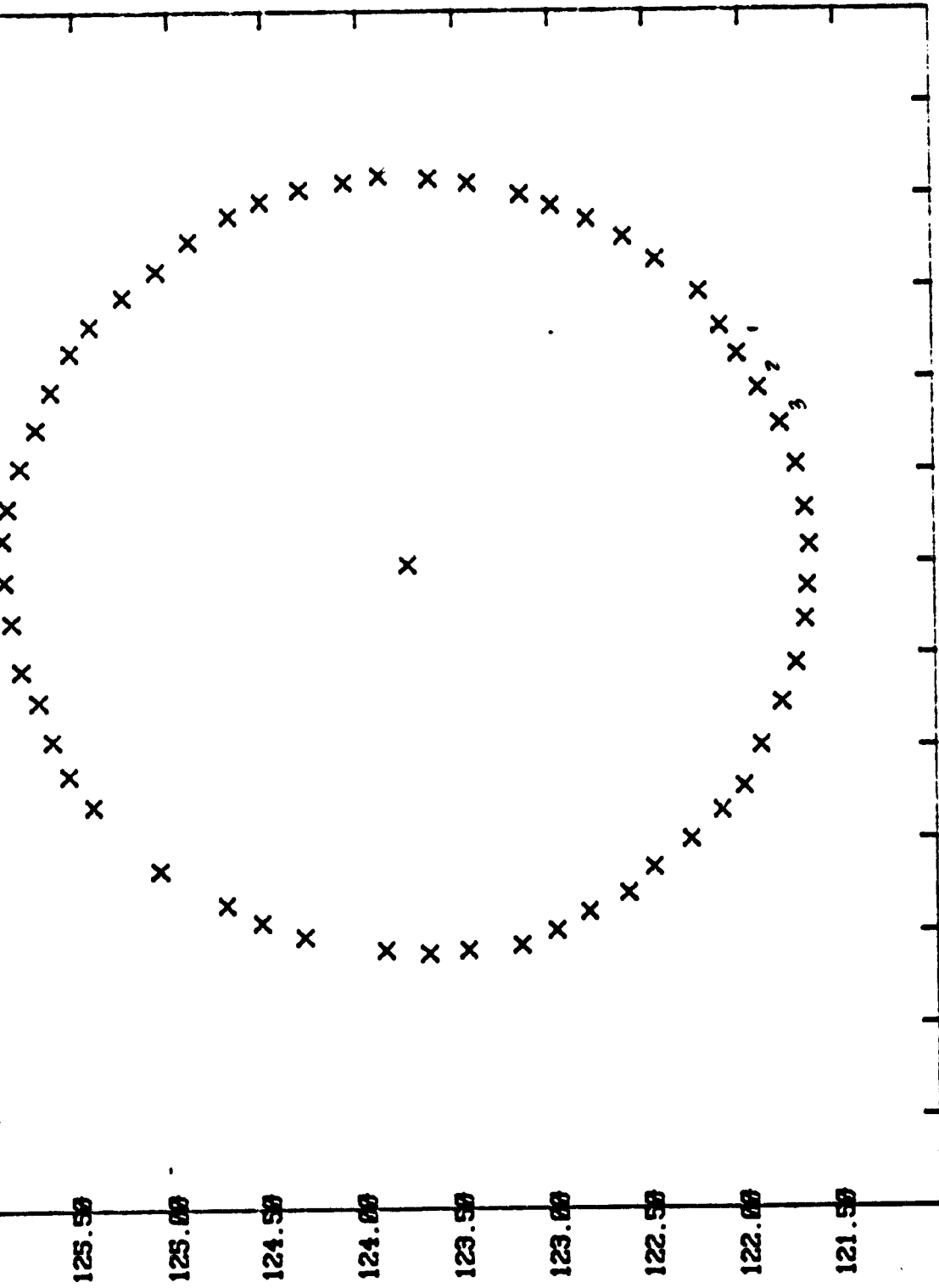
POSITION #4 S.D= 1.329 %

29-A-09 F2.8 +.8M 2 K=.33.294.37.236 100% 20° C



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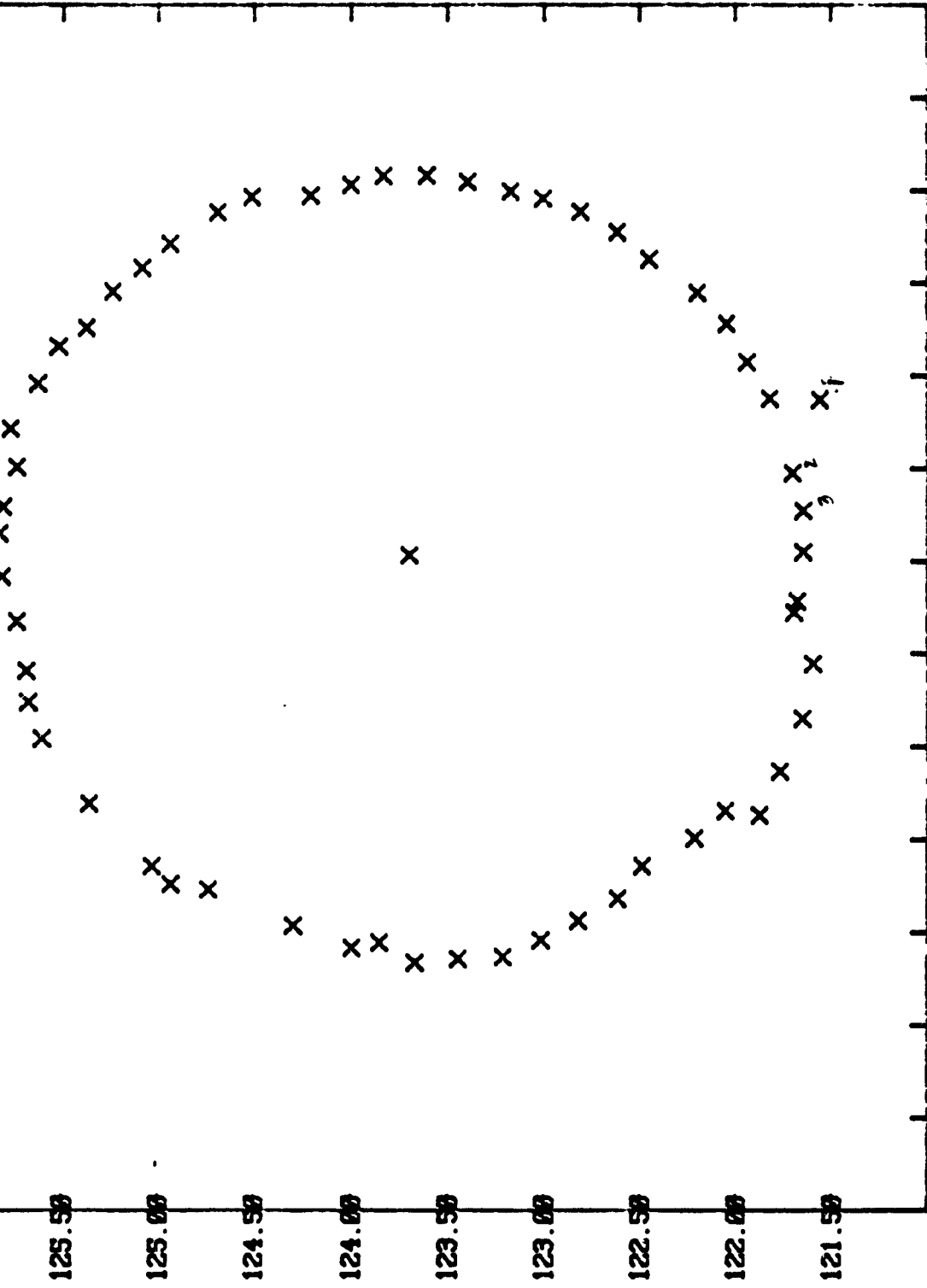
119.00 119.50 120.00 120.50 121.00 121.50 122.00 122.50 123.00 123.50 124.00 124.50

POSITION #4 S.D= 1.454 %

29-A-08 F2.8 +.8M 2 K=.33.294.37.236 10% 20° C

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119.00 119.50 120.00 120.50 121.00 121.50 122.00 122.50 123.00 123.50 124.00 124.50

POSITION #4 S.D= 5.196 %

29-A-11 F2.8 +.8M.2 K=.33.294.37.236 <1% 20°C

Disk 2A-A Track data file TDATA00

Position of

	Coarse 1.0	Fine 1.0	Track 16.0
Integration delay:	.1140E+00	.4564E+00	.1344E-02
Thresholds:	.1838E+06	.9190E+05	.7352E+06

	.33000	.29400	.37000	.23600
Constants:				
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.448	8.201	.7181E+05	1.136	123.5	122.0	123.3125	122.0817	.1871E-02	.8147E-03
.498	14.412	.7973E+05	1.162	123.0	122.0	123.1582	121.9930	.1843E-02	.1120E-02
.462	20.766	.7954E+05	1.151	123.0	122.0	122.9741	121.8716	.1105E-02	.1444E-02
.490	27.014	.8435E+05	1.136	123.0	122.0	122.7840	121.7637	.2036E-02	.2753E-02
.448	33.292	.7379E+05	1.063	122.5	122.0	122.5647	121.6901	.2089E-02	.1492E-02
.467	39.597	.8319E+05	1.006	122.5	121.5	122.3149	121.6372	.1041E-02	.3247E-03
.464	45.846	.7993E+05	1.041	122.0	121.5	122.1199	121.6238	.1655E-02	.8341E-03
.439	52.132	.8192E+05	1.063	122.0	121.5	121.9011	121.6347	.1328E-02	.1269E-02
.495	58.427	.8860E+05	1.109	122.0	121.5	121.6955	121.6568	.2162E-02	.1058E-02
.476	64.668	.7167E+05	1.112	121.5	122.0	121.4774	121.7038	.5979E-03	.1943E-02
.487	70.902	.8339E+05	1.189	121.0	122.0	121.2563	121.7662	.2537E-02	.3552E-02
.470	1.859	.8067E+05	1.161	121.0	122.0	121.0406	121.8792	.7430E-03	.1152E-02
.448	8.237	.7986E+05	1.141	121.0	122.0	120.8242	121.9841	.1446E-02	.1154E-02
.467	14.402	.6960E+05	1.093	120.5	122.0	120.6877	122.0906	.7541E-03	.1120E-02
.504	20.777	.7329E+05	1.105	120.5	122.0	120.5319	122.2397	.2530E-02	.2620E-02
.439	26.990	.4836E+05	.910	120.5	122.5	120.3805	122.4439	.3320E-02	.2564E-02
.467	33.303	.5409E+05	.954	120.0	122.5	120.2359	122.5790	.1647E-02	.1492E-02
.425	39.562	.6562E+05	1.110	120.0	123.0	120.1337	122.7840	.1570E-02	.1315E-02
.417	45.860	.7840E+05	1.141	120.0	123.0	120.0413	122.9774	.1649E-02	.1004E-02
.450	52.128	.8595E+05	1.147	120.0	123.0	119.9638	123.1395	.1739E-02	.9954E-03
.478	58.426	.9320E+05	.991	120.0	123.5	119.9339	123.4168	.8490E-03	.5847E-03
.414	64.661	.9398E+05	1.013	120.0	123.5	119.9172	123.6256	.3374E-02	.1014E-02
.526	70.902	.1038E+06	1.181	120.0	124.0	119.9389	123.8628	.2142E-02	.2190E-02
.540	1.848	.9626E+05	1.210	120.0	124.0	119.9422	124.0490	.3007E-02	.1224E-02
.459	8.205	.9043E+05	1.155	120.0	124.0	119.9972	124.2686	.7559E-03	.5315E-03
.425	14.414	.6324E+05	.967	120.0	124.5	120.0791	124.4920	.2763E-02	.1953E-02
.476	20.787	.4352E+05	1.076	120.0	125.0	120.1702	124.6790	.3423E-02	.3748E-02
.425	27.002	.4031E+05	1.166	120.0	125.0	120.2603	124.8989	.1888E-02	.6912E-03
.487	33.288	.3715E+05	1.122	120.5	125.0	120.3677	125.0470	.1471E-02	.1169E-02
.473	39.567	.4232E+05	1.089	120.5	125.0	120.5260	125.1738	.9354E-03	.1063E-02
.523	45.843	.7532E+05	1.071	121.0	125.5	120.7141	125.3810	.1252E-02	.2815E-02
.481	52.134	.7144E+05	.999	121.0	125.5	120.8910	125.5091	.1295E-02	.2829E-03
.439	58.426	.7099E+05	.997	121.0	125.5	121.0734	125.6017	.1247E-02	.2829E-03
.450	64.667	.9996E+05	1.112	121.0	125.5	121.2950	125.7456	.1311E-02	.2829E-03
.439	70.891	.7355E+05	1.093	121.5	126.0	121.4917	125.7458	.2099E-03	.2829E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

.501	1.111	.12E+0	1.111	122.0	126.0	121.150	125.7	.11E-01	.10E-02
.467	8.206	.8248E+05	1.149	122.0	126.0	121.9447	125.8798	.1089E-02	.1242E-02
.506	14.418	.8303E+05	1.144	122.0	126.0	122.1630	125.8353	.1067E-02	.1301E-02
.456	20.771	.6367E+05	1.099	122.5	126.0	122.3366	125.8041	.9805E-03	.12514E-02
.481	27.019	.7173E+05	1.072	122.5	126.0	122.5649	125.7455	.6132E-03	.1200E-02
.448	33.295	.9206E+05	1.100	123.0	126.0	122.7705	125.6718	.1175E-03	.1199E-02
.498	39.592	.7207E+05	.991	123.0	125.5	122.9787	125.5976	.1047E-02	.1605E-02
.478	45.857	.6415E+05	.963	123.0	125.5	123.1826	125.4956	.1172E-02	.1647E-02
.498	52.128	.5225E+05	1.008	123.5	125.5	123.3204	125.3876	.8034E-03	.1041E-02
.509	58.433	.4371E+05	1.100	123.5	125.0	123.4835	125.1927	.1309E-02	.13064E-02
.529	64.650	.4225E+05	1.093	123.5	125.0	123.6257	125.0365	.8536E-03	.1032E-02
.470	70.898	.5697E+05	1.123	124.0	125.0	123.7939	124.8705	.1687E-02	.1204E-02
.478	1.858	.6953E+05	1.035	124.0	124.5	123.9034	124.6568	.8576E-02	.6821E-02
.481	8.213	.6423E+05	.973	124.0	124.5	123.9976	124.4719	.1767E-02	.1504E-02
.518	14.414	.9271E+05	1.153	124.0	124.0	124.0540	124.2483	.9750E-03	.1184E-02
.478	20.768	.9910E+05	1.173	124.0	124.0	124.1083	124.0527	.8691E-03	.1474E-02
.546	27.012	.1048E+06	1.146	124.0	124.0	124.1332	123.8506	.1894E-02	.1281E-02
.403	33.300	.9121E+05	.978	124.0	123.5	124.1235	123.5866	.1334E-02	.9253E-03
.442	39.582	.9127E+05	1.096	124.0	123.0	124.0981	123.3469	.2190E-02	.1223E-01
.422	45.804	.8546E+05	1.160	124.0	123.0	124.0408	123.1280	.5966E-03	.1493E-02
.445	52.100	.7925E+05	1.163	124.0	123.0	123.9760	122.9731	.1275E-02	.1704E-02
.394	58.413	.6682E+05	1.097	124.0	123.0	123.8962	122.7728	.9019E-03	.1767E-02
.495	64.670	.4670E+05	.934	124.0	122.5	123.7957	122.5702	.1106E-02	.4750E-03
.422	70.898	.1278E+06	1.163	123.5	122.5	123.6926	122.6044	.1916E-01	.6380E+00
.425	1.842	.7619E+05	1.125	123.5	122.0	123.5065	122.1823	.1073E-02	.17097E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta rt					
	1	2	3	4	5	6
0	-.00923	-.02747	-.01561	.00453	.00607	.00728
1	.00282	-.00724	-.00751	-.00837	.00108	.01191
2	.01044	.00696	.00076	-.02117	.01852	.00606
3	.01328	.03596	.00672	.00320	-.01634	.00096
4	-.00728	-.01483	-.02041	.01368	.01454	.02027
5	.00767	.01016	.00042	-.03260	.00053	-.00383
6	.00578	.01478	.00295	-.00728	-.01342	.00377
7	.01857	.00723	-.02672	-.02613	.01226	.00210
8	.01471	.00109	.01467	.01770	.00870	.01294
9	.00779	-.00385	.00453	.01862	-.08632	.04254

μ= 122.0186    σ= 123.7248    ρ= 2.10059381    std.dev.= .01834827

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	1	2	6	19	31	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	Delta ri					
	1	2	3	4	5	6
0	-.01249	-.03064	-.01866	.00161	.00380	.00530
1	.00038	-.00952	-.00962	-.01030	.00066	-.01346
2	.00907	.00572	-.00032	-.02207	.01774	.00542
3	.01275	.03552	.00638	.00293	-.01656	.00077
4	-.00746	-.01501	-.02061	.01344	.01426	-.02062
5	.00720	.00958	-.00027		-.00041	-.00495
6	.00448	.01331	.00134	-.00907	-.01539	.00162
7	.01624	.00477	-.02936	-.02892	.00931	-.00099
8	.01152	-.00221	.01129	.01425	.00520	
9	.00424	-.00740	.00100	.01513		.02919

r0= 122.0202    r0= 123.7243    r0= 2.1024560°    std.dev.= .01405427

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	0	3	5	17	32	3

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 29-A track data file TDATA03

	Coarse	Fine	Track
	1.0	1.0	64.0
NMR01	.1160E+00	.4564E+00	.1344E-02
Integration delay:	.2298E+06	.9190E+05	.7352E+06
Thresholds:			
Constants:	.33000	.29400	.37000
Displacements:	0.00000	0.00000	0.00000

temp	angle	dart current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.347	33.270	.2010E+05	2.762	124.0	123.5	124.1016	123.5606	.1514E-02	.4629E-03
.324	39.531	.1964E+05	2.902	124.0	123.0	124.0685	123.3023	.7337E-03	.5561E-03
.349	45.807	.1830E+05	2.932	124.0	123.0	124.0128	123.0943	.1832E-02	.6274E-03
.307	52.132	.1700E+05	2.929	124.0	123.0	123.9536	122.9367	.1244E-02	.3567E-03
.299	58.378	.1422E+05	2.860	124.0	123.0	123.8739	122.7216	.1417E-02	.1112E-02
.310	64.643	.1003E+05	2.717	124.0	122.5	123.7745	122.5419	.1040E-02	.1647E-02
.366	70.895	.2917E+05	2.967	123.5	122.0	123.6589	122.4584	.1941E-01	.2708E+00
.318	1.827	.1706E+05	2.913	123.5	122.0	123.4776	122.1540	.8773E-03	.1410E-02
.321	8.180	.1621E+05	2.922	123.5	122.0	123.2909	122.0594	.1099E-02	.4240E-03
.389	14.394	.1832E+05	2.935	123.0	122.0	123.1379	121.9610	.1666E-02	.6699E-03
.363	20.750	.1891E+05	2.930	123.0	122.0	122.9557	121.8336	.1153E-02	.1617E-02
.318	26.984	.2029E+05	2.921	123.0	122.0	122.7588	121.7248	.2767E-02	.1657E-02
.361	33.271	.1808E+05	2.813	122.5	121.5	122.5327	121.6526	.7160E-03	.2747E-03
.310	39.545	.1715E+05	2.796	122.5	121.5	122.2934	121.6114	.1166E-02	.9099E-03
.318	45.834	.1691E+05	2.821	122.0	121.5	122.0957	121.5967	.1531E-02	.1166E-02
.341	52.105	.1779E+05	2.844	122.0	121.5	121.8772	121.6109	.1409E-02	.4093E-03
.352	58.388	.1631E+05	2.830	121.5	121.5	121.6860	121.6260	.1431E-02	.5863E-03
.383	64.635	.1614E+05	2.845	121.5	121.5	121.4535	121.6575	.7816E-03	.9767E-03
.352	70.902	.1957E+05	2.967	121.0	122.0	121.2447	121.7223	.1477E-02	.1269E-02
.380	1.816	.1868E+05	2.946	121.0	122.0	121.0196	121.8390	.1676E-02	.6050E-03
.405	8.158	.1857E+05	2.930	121.0	122.0	120.8051	121.9480	.1172E-02	.1845E-02
.372	14.402	.1589E+05	2.882	120.5	122.0	120.6620	122.0577	.9071E-03	.5917E-03
.358	20.723	.1660E+05	2.891	120.5	122.0	120.5074	122.2043	.4149E-03	.1176E-02
.318	27.000	.1046E+05	2.720	120.5	122.5	120.3614	122.4161	.7699E-03	.2529E-03
.302	33.268	.1153E+05	2.724	120.0	122.5	120.2152	122.5925	.4927E-03	.1123E-02
.313	39.551	.1368E+05	2.877	120.0	123.0	120.1149	122.7413	.6189E-03	.1563E-02
.299	45.825	.1674E+05	2.909	120.0	123.0	120.0257	122.9407	.9937E-03	.2094E-03
.324	52.121	.1840E+05	2.917	120.0	123.0	119.9407	123.0987	.1601E-02	.1753E-02
.363	58.406	.2217E+05	2.809	120.0	123.5	119.9165	123.3818	.6824E-02	.5367E-02
.321	64.635	.2071E+05	2.786	120.0	123.5	119.8962	123.5920	.1654E-02	.1007E-02
.436	70.888	.2409E+05	2.953	120.0	124.0	119.9176	123.8186	.4329E-03	.1474E-02
.417	1.831	.2190E+05	2.984	120.0	124.0	119.9241	124.0191	.7759E-03	.1903E-03
.400	8.202	.2079E+05	2.942	120.0	124.0	119.9684	124.2265	.6649E-03	.1825E-02
.397	14.401	.1374E+05	2.764	120.0	124.5	120.0564	124.4629	.1091E-02	.5731E-03
.363	20.738	.1322E+05	2.810	120.0	124.5	120.1404	124.6424	.1111E-03	.5024E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

TM-104

.336	33.283	.9275E+04	2.913	120.5	125.0	120.3493	125.0149	.1311E-02	.2939E-03
.330	39.567	.1003E+05	2.882	120.5	125.0	120.5041	125.1360	.11081E-02	.1170E-02
.363	45.865	.1225E+05	2.883	120.5	125.0	120.6898	125.2929	.1623E-02	.1075E-02
.389	52.106	.1588E+05	2.804	121.0	125.5	120.8635	125.4766	.9216E-03	.3969E-03
.369	58.412	.1606E+05	2.785	121.0	125.5	121.0547	125.5671	.1054E-02	.4619E-03
.369	64.654	.1555E+05	2.836	121.0	125.5	121.2408	125.6392	.9495E-03	.5540E-03
.361	70.888	.1748E+05	2.876	121.5	126.0	121.4355	125.7037	.9320E-03	.8924E-03
.318	1.813	.1786E+05	2.891	121.5	126.0	121.6988	125.7500	.1585E-02	.1434E-02
.391	8.165	.2002E+05	2.931	122.0	126.0	121.9220	125.7847	.1276E-02	.1517E-02
.358	14.415	.1975E+05	2.925	122.0	126.0	122.1497	125.7844	.2143E-02	.1543E-02
.425	20.758	.1681E+05	2.895	122.5	126.0	122.3186	125.7607	.1231E-02	.7043E-02
.400	26.995	.1794E+05	2.871	122.5	126.0	122.5444	125.6998	.8150E-03	.1133E-02
.397	33.279	.1783E+05	2.835	123.0	125.5	122.7395	125.6528	.6754E-03	.8058E-03
.358	39.567	.1668E+05	2.781	123.0	125.5	122.9513	125.5692	.1707E-02	.6111E-03
.400	45.842	.1458E+05	2.766	123.0	125.5	123.1609	125.4646	.1961E-02	.7006E-03
.408	52.114	.1170E+05	2.890	123.5	125.0	123.3051	125.3203	.1388E-02	.5777E-02
.366	58.385	.9972E+04	2.887	123.5	125.0	123.4617	125.1522	.1230E-02	.1481E-02
.363	64.648	.1001E+05	2.875	123.5	125.0	123.6041	124.9990	.7595E-03	.5168E-03
.414	70.891	.1315E+05	2.896	124.0	125.0	123.7738	124.8213	.1042E-02	.4189E-03
.358	1.838	.1364E+05	2.791	124.0	124.5	123.8877	124.6176	.1626E-02	.9780E-03
.389	8.196	.1368E+05	2.771	124.0	124.5	123.9771	124.4444	.8003E-03	.6670E-03
.414	14.405	.2121E+05	2.935	124.0	124.0	124.0323	124.2087	.1774E-02	.1624E-02
.484	20.758	.2249E+05	2.947	124.0	124.0	124.0914	124.0177	.1057E-02	.1111E-02
.428	27.016	.2390E+05	2.927	124.0	124.0	124.1195	123.8018	.1634E-02	.1110E-02

ORIGINAL PAGE IS  
OF POOR QUALITY



	delta r1					
	1	2	3	4	5	6
0	.00762	.00618	.00042	-.00508	.01014	.01410
1	-.03349	.03125	-.02067	-.03080	-.01298	.00547
2	.00449	-.00241	-.00632	-.01924	-.01425	.00252
3	.00545	-.00759	.01012	.00827	.00231	-.02647
4	.01452	.00855	.01011	.04108	.00502	.00514
5	-.01427	.00131	.00117	-.00835	-.01017	.00214
6	.01776	-.01804	-.02806	.01951	.00397	-.00562
7	-.00591	-.01509	-.00064	.00312	-.00154	.01124
8	.00112	.00986	.02417	.00805	-.02898	-.02616
9	.00712	.00641	.01908	.00019	.01946	.02472

mu = 121.9985    sigma = 123.6875    rho = 2.09931350    std. dev. = .01544527

HISTOGRAM DEVIATION >= e

e =	.05	.04	.03	.02	.01	0.00	bad points
	0	1	3	7	17	32	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.00607	.00456	-.00119	-.00677	.00842	.01236
1		.02952	-.02237	-.03247	-.01460	.00121
2	.00301	-.00330	-.00763	-.02047	-.01533	.00152
3	.00456	-.00834	.00956	.00786	.00340	-.02674
4	.01435	.00849	.01015	.04121	.00526	.00546
5	-.01388	.00175	.00167	-.00782	-.00261	.00771
6	.01833	-.01748	-.02752	.02000	.00441	-.00533
7	-.00558	-.01486	-.00053	.00315	-.00158	-.01321
8	.00085	.00247	.02365	-.00868	-.02973	-.02703
9	.00612	.00529	.01727	-.00113	.01807	.01325

μ= 121.9995    σ= 123.6148    σ= 2.09989691    std. dev. = .01492262

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	1	1	10	12	35	1

ORIGINAL PAGE IS  
OF POOR QUALITY

Doc 24-A Track data file TD01A04

NEP01:                    Coarse                    Fine                    Track  
 Integration delay:        1.0                    1.0                    1.0  
 Thresholds:                .1160E+00                .4564E+00                .7274E+00  
                               .1832E+06                .9120E+05                .7352E+06

Constants:                    .33000                    .29400                    .37000                    .23600  
 Displacements:                0.00000                    0.00000                    0.00000                    0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.464	14.404	.134 E+05	6.157	123.0	122.0	123.1542	121.9920	.3802E-02	.2188E-02
.453	20.769	.1343E+05	6.154	123.0	122.0	122.9742	121.8844	.1952E-02	.4614E-02
.470	27.009	.1353E+05	6.150	123.0	122.0	122.7741	121.7702	.4275E-02	.4052E-02
.459	33.286	.1128E+05	6.121	122.5	122.0	122.5680	121.6649	.3105E-02	.2477E-02
.490	39.588	.1123E+05	6.055	122.5	121.5	122.3159	121.6369	.2433E-02	.2113E-02
.453	45.849	.1121E+05	6.050	122.0	121.5	122.1109	121.6201	.2115E-02	.2351E-02
.462	52.127	.1123E+05	6.065	122.0	121.5	121.8913	121.6328	.1074E-02	.1641E-02
.403	58.403	.1102E+05	6.081	121.5	121.5	121.7113	121.6545	.2054E-01	.2344E-02
.439	64.661	.1142E+05	6.169	121.5	122.0	121.4933	121.6625	.1772E-01	.4463E-01
.425	70.873	.1118E+05	6.183	121.0	122.0	121.2563	121.7388	.3554E-02	.5884E-02
.442	1.827	.1112E+05	6.133	121.0	122.0	121.0278	121.8793	.3444E-02	.2513E-02
.478	8.189	.1114E+05	6.108	121.0	122.0	120.8026	121.9579	.2919E-02	.3663E-02
.467	14.394	.1341E+05	6.061	120.5	122.0	120.6795	122.0959	.1798E-02	.4843E-02
.476	20.774	.1346E+05	6.086	120.5	122.0	120.5289	122.2490	.1555E-02	.4210E-02
.422	26.988	.1292E+05	5.878	120.5	122.5	120.4000	122.4651	.2333E-02	.1413E-02
.386	33.267	.1303E+05	5.911	120.0	122.5	120.2306	122.5884	.2123E-02	.1997E-02
.386	39.556	.1353E+05	6.062	120.0	123.0	120.1308	122.7704	.4137E-02	.1571E-02
.394	45.839	.1371E+05	6.083	120.0	123.0	120.0355	122.9523	.3112E-02	.2441E-02
.377	52.140	.1380E+05	6.090	120.0	123.0	119.9484	123.1229	.3442E-02	.2794E-02
.450	58.405	.1402E+05	5.991	120.0	123.5	119.9348	123.4203	.1002E-01	.6353E-02
.355	64.657	.1392E+05	6.007	120.0	123.5	119.9101	123.6769	.3024E-02	.2181E-02
.529	70.895	.1417E+05	6.131	120.0	124.0	119.9529	123.8512	.3099E-02	.5504E-02
.526	1.823	.1409E+05	6.139	120.0	124.0	119.9493	124.0280	.2679E-02	.2254E-02
.473	8.209	.1403E+05	6.093	120.0	124.0	119.9890	124.2477	.2876E-02	.3201E-02
.459	14.423	.1364E+05	5.954	120.0	124.5	120.1021	124.4975	.1739E-02	.1427E-02
.448	20.753	.1360E+05	6.036	120.0	124.5	120.1885	124.6818	.2306E-02	.2011E-02
.464	27.012	.1328E+05	6.075	120.5	125.0	120.2754	124.9127	.1740E-01	.1531E-02
.481	33.284	.1321E+05	6.051	120.5	125.0	120.3793	125.0432	.9953E-03	.3100E-02
.397	39.542	.1328E+05	6.034	120.5	125.0	120.5294	125.1665	.1291E-02	.3392E-02
.476	45.846	.1306E+05	5.997	120.5	125.5	120.7162	125.3843	.2723E-02	.1173E-01
.428	52.128	.1190E+05	5.964	121.0	125.5	120.8894	125.5020	.2331E-02	.2451E-02
.405	58.433	.1024E+05	5.960	121.0	125.5	121.0518	125.5945	.2324E-03	.1710E-02
.408	64.664	.1093E+05	6.035	121.0	125.5	121.2575	125.7673	.1019E-02	.1531E-02
.425	70.873	.1121E+05	6.088	121.5	126.0	121.4375	125.9597	.2321E-02	.2329E-01
.425	1.831	.1122E+05	6.088	121.5	126.0	121.6207	126.2798	.3041E-02	.2361E-02

ORIGINAL PAGE IS  
 OF POOR QUALITY

.501	8.1	.1144E+05	6.095	122.0	126.0	122.1780	125.8259	.1347E-02	.1397E-02
.464	14.401	.1142E+05	6.095	122.0	126.0	122.1780	125.8259	.1347E-02	.1397E-02
.439	20.738	.1114E+05	6.084	122.5	126.0	122.3439	125.8007	.1217E-02	.1462E-02
.439	26.999	.1122E+05	6.064	122.5	126.0	122.5654	125.7431	.1197E-02	.1342E-02
.419	33.281	.1326E+05	6.021	123.0	125.5	122.7702	125.6948	.1147E-02	.1296E-02
.453	39.591	.1317E+05	5.955	123.0	125.5	122.9932	125.6033	.1274E-02	.1392E-02
.453	45.844	.1304E+05	5.924	123.0	125.5	123.1727	125.5040	.1192E-02	.1312E-02
.442	52.123	.1255E+05	5.914	123.5	125.5	123.3124	125.3942	.1150E-02	.1245E-02
.439	58.410	.1242E+05	6.028	123.5	125.0	123.4807	125.1930	.1484E-02	.1797E-02
.428	64.640	.1244E+05	6.012	123.5	125.0	123.6126	125.0461	.1486E-02	.1747E-02
.456	70.888	.1333E+05	6.024	124.0	125.0	123.8182	124.8912	.2605E-02	.3234E-02
.442	1.819	.1367E+05	6.003	124.0	124.5	123.9133	124.6637	.1780E-01	.1650E-01
.506	8.191	.1349E+05	5.929	124.0	124.5	124.0090	124.4831	.2037E-02	.2759E-02
.490	14.406	.1455E+05	6.124	124.0	124.0	124.0517	124.2492	.2311E-01	.3652E-01
.551	20.766	.1433E+05	6.107	124.0	124.0	124.1030	124.0260	.3392E-02	.1024E-02
.504	27.010	.1440E+05	6.096	124.0	124.0	124.1332	123.8346	.1358E-02	.1595E-02
.414	33.297	.1394E+05	5.945	124.0	123.5	124.1139	123.5915	.2623E-02	.2505E-02
.347	39.586	.1392E+05	5.941	124.0	123.5	124.0873	123.3934	.4324E-02	.1489E-02
.434	45.885	.1387E+05	6.070	124.0	123.0	124.0255	123.0982	.1488E-02	.2920E-02
.414	52.132	.1381E+05	6.075	124.0	123.0	123.9716	122.9426	.2542E-02	.2305E-02
.366	58.434	.1363E+05	6.021	124.0	123.0	123.8970	122.7535	.2883E-02	.4479E-02
.400	64.671	.1326E+05	5.877	124.0	122.5	123.8078	122.5822	.1012E-01	.6239E-02
.383	70.905	.1240E+05	5.866	123.5	122.5	123.6749	122.4226	.2559E-02	.1253E-02
.439	1.859	.1299E+05	6.094	123.5	122.0	123.5054	122.1904	.1126E-02	.3987E-02
.506	8.232	.1290E+05	6.095	123.5	122.0	123.3200	122.0868	.2841E-02	.3699E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	Delta ri					
	1	2	3	4	5	6
0	.04366	-.03692	-.01479	.02169	-.00102	.00194
1	.01351	-.01601	.01966	.01137	.00507	.02837
2	.00276	-.00225	-.05345	.01486	.01276	.02530
3	.05405	.00522	.01069	-.02981	-.00657	.00747
4	-.03120	-.03196	.01268	.00713	-.02358	.01343
5	.01551	-.00019	-.00989	-.02073	-.02089	.00049
6	.01003	.00380	-.00685	.00072	.01258	.02478
7	.01548	-.02546	-.03137	.04196	.01117	.02523
8	-.00522	.00041	.01118	-.00749	-.01248	-.00587
9	-.00485	.00552	.01348	-.00294	.02641	-.01829

$\bar{x}$  = 122.0220     $\mu$  = 123.7184     $\sigma$  = 2.10320282    std. dev. = .02074553

HISTOGRAM DEVIATION  $\geq e$

$e$	.05	.04	.03	.02	.01	0.00	bad points
	2	2	5	10	19	22	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta ri					
	1	2	3	4	5	6
0	-.04278	-.03609	-.01384	.02267	-.00001	.00151
1	-.01244			.02045	.00615	.02243
2	.00383	-.00720	-.05241	.01587	.01326	.02787
3	.05499		.01155	-.02899	-.00578	.00168
4	-.03051	-.03131		.00770	-.02304	
5	.01595	.00023	-.00950		-.02056	.00020
6	.01031	.00408	-.00652	.00098	.01293	.02504
7	.01575	-.02518	-.03108	.04228		.02620
8		.00085	.01165	-.00698	-.01193	-.00527
9	-.00421	.00620		-.00218	.02722	-.01745

x0= 122.9222    y0= 123.7188    r0= 2.16253501    std. dev. = .02162773

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	2	2	5	10	12	20	9

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 29-A Track data file 001000.

	Coarse	Fine	Track
MINRO:	1.0	1.0	16.0
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.2296E+06	.9190E+05	.7352E+06

	.33000	.29400	.37000	.23600
Constants:				
Displacements:	0.00000	0.00000	0.00000	0.00000

time	angle	dark		star		reference		position		standard deviation	
		current	mag.	X	Y	X	Y	X	Y		
10.244	20.751	.8862E+05	1.145	123.0	122.0	122.9448	121.9035	.1331E-02	.4934E-03		
10.283	27.019	.9380E+05	1.126	123.0	122.0	122.7479	121.7911	.9856E-03	.5090E-03		
10.286	33.277	.8106E+05	1.053	122.5	122.0	122.5276	121.7160	.1117E-02	.7449E-03		
10.289	39.582	.8919E+05	1.085	122.0	121.5	122.2929	121.6655	.4229E-02	.2151E-02		
10.292	45.862	.8936E+05	1.049	122.0	121.5	122.0889	121.6507	.1401E-02	.4939E-03		
10.303	52.119	.9265E+05	1.070	122.0	121.5	121.8679	121.6639	.5500E-03	.3407E-03		
10.303	58.402	.8564E+05	1.095	121.5	122.0	121.6847	121.6756	.1123E-02	.1085E-02		
10.255	64.653	.8111E+05	1.099	121.5	122.0	121.4434	121.7260	.8066E-03	.8966E-03		
10.320	70.884	.9161E+05	1.162	121.0	122.0	121.2342	121.7994	.7843E-03	.1074E-02		
10.255	1.854	.8952E+05	1.141	121.0	122.0	121.0070	121.9105	.5724E-03	.6336E-03		
10.233	8.191	.8835E+05	1.116	121.0	122.0	120.7853	122.0043	.6225E-03	.1059E-02		
10.272	14.405	.7876E+05	1.072	120.5	122.0	120.6575	122.1176	.6735E-03	.7473E-03		
10.309	20.744	.8257E+05	1.083	120.5	122.0	120.4985	122.2815	.5420E-03	.1029E-02		
10.199	27.007	.5618E+05	.884	120.5	122.5	120.3435	122.4703	.6493E-03	.4273E-03		
10.261	33.251	.6281E+05	.944	120.0	122.5	120.2095	122.6082	.9924E-03	.4508E-03		
10.230	39.596	.7679E+05	1.097	120.0	123.0	120.1075	122.8169	.7538E-03	.8457E-03		
10.269	45.838	.9002E+05	1.124	120.0	123.0	120.0083	122.9963	.8288E-03	.8229E-03		
10.300	52.068	.9703E+05	1.121	120.0	123.0	119.9280	123.1698	.4377E-03	.8934E-03		
10.241	58.383	.1051E+06	.764	120.0	123.5	119.9007	123.4498	.8863E-03	.4846E-03		
10.269	64.657	.1038E+06	1.014	120.0	123.5	119.8833	123.6603	.8908E-03	.6706E-03		
10.362	70.891	.1134E+06	1.166	120.0	124.0	119.9001	123.8858	.1553E-02	.9273E-03		
10.348	1.834	.1055E+06	1.184	120.0	124.0	119.9035	124.0741	.7622E-03	.8453E-03		
10.359	8.198	.9869E+05	1.117	120.0	124.0	119.9652	124.3129	.7041E-03	.6816E-03		
10.331	14.412	.7126E+05	.953	120.0	124.5	120.0484	124.5245	.7767E-03	.7027E-03		
10.328	20.757	.4992E+05	1.072	120.0	125.0	120.1454	124.7178	.6259E-03	.3504E-03		
10.306	27.011	.5067E+05	1.142	120.0	125.0	120.2446	124.9227	.1194E-02	.5443E-03		
10.292	33.295	.4540E+05	1.103	120.5	125.0	120.3344	125.0747	.8545E-03	.8929E-03		
10.342	39.567	.5308E+05	1.067	120.5	125.0	120.4907	125.2148	.1166E-02	.1179E-02		
10.323	45.860	.6859E+05	.960	120.5	125.5	120.6858	125.4076	.5213E-03	.3891E-03		
10.348	52.094	.8614E+05	.984	121.0	125.5	120.8529	125.5429	.2774E-03	.6607E-03		
10.289	58.409	.8313E+05	1.002	121.0	125.5	121.0435	125.6303	.5137E-03	.2387E-03		
10.309	64.633	.9829E+05	1.106	121.0	126.0	121.2467	125.6965	.2989E-03	.5747E-03		
10.278	70.884	.8154E+05	1.080	121.5	126.0	121.4221	125.7794	.2134E-03	.1799E-02		
10.314	1.837	.8254E+05	1.086	121.5	126.0	121.6249	125.8229	.9909E-03	.6724E-03		
10.309	8.195	.9164E+05	1.130	122.0	126.0	121.8080	125.8607	.1541E-02	.2927E-03		

ORIGINAL PAGE IS  
OF POOR QUALITY

10.2	14	.6E+06	1	0	0	1	368	25.6	171	1	02
10.351	20.750	.7325E+05	1.094	122.5	126.0	122.3058	125.9389	.4015E-03	.1884E-03		
10.309	27.006	.8096E+05	1.067	122.5	126.0	122.5279	125.7751	.8623E-03	.6509E-03		
10.281	33.293	.1022E+06	1.082	123.0	126.0	122.7323	125.6960	.1105E-02	.7223E-03		
10.255	39.586	.8474E+05	.995	123.0	125.5	122.9393	125.6266	.7517E-03	.5090E-03		
10.303	45.865	.7734E+05	.946	123.0	125.5	123.1519	125.5198	.1029E-02	.6411E-03		
10.303	52.081	.6344E+05	.980	123.5	125.5	123.2962	125.4066	.5953E-03	.2850E-03		
10.281	58.403	.5481E+05	1.082	123.5	125.0	123.4472	125.2357	.5525E-03	.1273E-02		
10.250	64.622	.5091E+05	1.070	123.5	125.0	123.5915	125.0629	.1279E-02	.4972E-03		
10.314	70.909	.6743E+05	1.106	124.0	125.0	123.7511	124.8941	.3441E-03	.8742E-03		
10.328	1.845	.7459E+05	1.042	124.0	124.5	123.8709	124.6834	.1612E-01	.9936E-02		
10.334	8.211	.7208E+05	.950	124.0	124.5	123.9639	124.5015	.9382E-03	.4439E-03		
10.387	14.416	.1002E+06	1.118	124.0	124.0	124.0194	124.2865	.7054E-03	.4713E-03		
10.331	20.728	.1080E+06	1.152	124.0	124.0	124.0727	124.0761	.1088E-02	.5990E-03		
10.398	27.014	.1142E+06	1.131	124.0	124.0	124.1056	123.8801	.1121E-02	.3815E-03		
10.275	33.288	.1002E+06	.980	124.0	123.5	124.0908	123.6279	.5144E-03	.5124E-03		
10.269	39.593	.1027E+06	.958	124.0	123.5	124.0673	123.4174	.1184E-02	.5213E-03		
10.269	45.793	.9623E+05	1.131	124.0	123.0	124.0039	123.1537	.5834E-03	.6194E-03		
10.278	52.114	.9080E+05	1.147	124.0	123.0	123.9401	122.9930	.6725E-03	.1139E-02		
10.255	58.373	.7852E+05	1.087	124.0	123.0	123.8624	122.8004	.8670E-03	.5208E-03		
10.238	64.568	.5592E+05	.926	124.0	122.5	123.7644	122.6092	.6460E-03	.4821E-03		
10.275	70.880	.5248E+05	.862	123.5	122.5	123.6443	122.4371	.8070E-03	.6848E-03		
10.269	1.834	.8657E+05	1.093	123.5	122.0	123.4655	122.2175	.6600E-03	.3881E-03		
10.292	8.213	.9358E+05	1.151	123.0	122.0	123.2826	122.1054	.4474E-02	.2060E-02		
10.323	14.415	.8806E+05	1.136	123.0	122.0	123.1278	122.0199	.6603E-03	.7916E-03		

ORIGINAL PAGE IS  
OF POOR QUALITY.



	delta ri						
	1	2	3	4	5	6	7
0	-.02080	.00068	.00397	.00628	.00119	.01101	
1	-.00015	-.00477	-.00971	-.01631	.01878	.00467	
2	-.00984	-.01797	.01166	-.00279	.01605	.03776	
3	.00608	.00376	-.01074	.00632	.00376	-.01508	
4	-.02471	.00064	.01478	-.00937	.00384	.01775	
5	.00001	-.02133	.00260	-.00527	.00307	.02076	
6	.00889	-.00809	-.01996	.00031	.01475	.00178	
7	-.02075	-.03055	-.00103	-.00100	.01161	.00113	
8	.00806	.01978	.00469	.00476	.00096	-.00733	
9	.00021	.01028	.01282	.03812	-.00752	-.03823	

x0= 121.9874    r0= 123.7518    r0= 2.10232615    std.dev.= .01357080

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	0	2	7	16	35	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri	3	4	5	6
0	-.02082	.00066	.00396	.00627	.00119	.01101	.00473
1	-.00415	-.00476	-.00970	-.01427	.01830	.01277	.01507
2	-.00982	-.01795	.01169	-.00277	.01607	.00375	.01774
3	.00610	.00378	-.01073	.00634	.00393	.00804	.02027
4	-.02470	.00064	.01478	-.00938	.00257	.01470	.00113
5	-.00001	-.02135	.00257	-.00530	.00026	.01156	.00119
6	.00886	-.00813	-.02001	.00026	.00420	.00091	.00743
7	-.02081	-.03060	-.00107	.00420	.00255	.00255	.00374
8	.00800	.01972	.00454	.02809			
9	.00017	.01024	.01278				

x0= 121.9874    .0= 123.7518    r0= 2.10234356    std.dev.= .01368470

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	0	2	8	15	34	1

ORIGINAL PAGE IS  
OF POOR QUALITY

Doc 29-A Track data file TDATA05

NRRO:  
 Integration delay: .1160E+00  
 Thresholds: .2298E+06

Coarse 1.0 .4564E+00  
 Fine 1.0 .9190E+05  
 Track 64.0 .7352E+06

Constants: .33000 .29400 .37000 .23600  
 Displacements: 0.00000 0.00000 0.00000 0.00000

temp	angle	dart current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
10.252	20.742	.2719E+05	2.926	123.0	122.0	122.9514	121.9016	.1116E-02	.1325E-02
10.233	26.997	.2844E+05	2.919	123.0	122.0	122.7498	121.7904	.9885E-03	.6760E-03
10.233	33.275	.2574E+05	2.857	122.5	122.0	122.5347	121.7112	.5344E-03	.7449E-03
10.275	39.566	.2654E+05	2.822	122.5	121.5	122.2877	121.6628	.8676E-03	.1940E-03
10.252	45.830	.2604E+05	2.840	122.0	121.5	122.0964	121.6455	.1186E-02	.8461E-03
10.236	52.123	.2682E+05	2.862	122.0	121.5	121.8738	121.6596	.4138E-03	.1040E-02
10.236	58.391	.3040E+05	2.916	121.5	122.0	121.7069	121.6461	.3372E-01	.5214E-01
10.205	64.646	.2500E+05	2.901	121.5	122.0	121.4536	121.7209	.9538E-03	.9047E-03
10.266	70.831	.2746E+05	2.952	121.0	122.0	121.2449	121.7906	.5155E-03	.1019E-02
10.247	1.798	.2665E+05	2.923	121.0	122.0	121.0139	121.9049	.6582E-03	.5048E-03
10.230	8.200	.2666E+05	2.899	121.0	122.0	120.7922	121.9978	.1053E-02	.6911E-03
10.241	14.401	.2425E+05	2.860	120.5	122.0	120.6612	122.1107	.5281E-03	.6082E-03
10.241	20.729	.2489E+05	2.876	120.5	122.0	120.5056	122.2750	.5429E-03	.7124E-03
10.199	27.015	.1844E+05	2.686	120.5	122.5	120.3563	122.4672	.8124E-03	.6027E-03
10.177	33.298	.1992E+05	2.736	120.0	122.5	120.2147	122.6025	.6998E-03	.4955E-03
10.199	39.597	.2329E+05	2.874	120.0	123.0	120.1153	122.8080	.9307E-03	.9431E-03
10.216	45.844	.2571E+05	2.891	120.0	123.0	120.0171	122.9873	.9530E-03	.7157E-03
10.196	52.130	.2760E+05	2.893	120.0	123.0	119.9396	123.1651	.7848E-03	.9821E-03
10.179	58.402	.2918E+05	2.758	120.0	123.5	119.9113	123.4481	.3500E-03	.3691E-03
10.210	64.635	.2897E+05	2.803	120.0	123.5	119.8929	123.6549	.6408E-03	.5567E-03
10.289	70.877	.3176E+05	2.945	120.0	124.0	119.9136	123.8795	.1111E-02	.9814E-03
10.337	1.831	.3001E+05	2.957	120.0	124.0	119.9153	124.0667	.4103E-03	.8656E-03
10.337	8.193	.2884E+05	2.897	120.0	124.0	119.9733	124.3070	.7642E-03	.8810E-03
10.269	14.406	.2236E+05	2.741	120.0	124.5	120.0606	124.5205	.9309E-03	.3342E-03
10.269	20.739	.1834E+05	2.849	120.0	125.0	120.1547	124.7024	.1148E-02	.9269E-03
10.227	27.013	.1831E+05	2.914	120.0	125.0	120.2524	124.9183	.1038E-02	.5805E-03
10.255	33.273	.1743E+05	2.886	120.5	125.0	120.3449	125.0819	.7577E-03	.7155E-03
10.244	39.578	.1894E+05	2.856	120.5	125.0	120.5027	125.2021	.8177E-03	.9322E-03
10.261	45.848	.2186E+05	2.769	120.5	125.5	120.6955	125.4044	.7937E-03	.2605E-03
10.269	52.113	.2548E+05	2.778	121.0	125.5	120.8624	125.5375	.7420E-03	.6659E-03
10.264	58.428	.2484E+05	2.792	121.0	125.5	121.0544	125.6207	.6922E-03	.7658E-03
10.258	64.643	.3209E+05	2.914	121.0	126.0	121.2577	125.6695	.7263E-02	.3174E-01
10.244	70.916	.2518E+05	2.876	121.5	126.0	121.4390	125.7689	.6999E-03	.1183E-02
10.269	1.830	.2542E+05	2.880	121.5	126.0	121.6206	125.9177	.8414E-03	.7294E-03
10.247	8.197	.2794E+05	2.916	122.0	126.0	121.8019	126.0511	.9914E-03	.1494E-02

ORIGINAL PAGE IS  
 OF POOR QUALITY

10.238	14.711	.2755E+05	2.888	123.0	123.0	122.3159	125.6317	.9337E-03	.7010E-02
10.239	20.753	.2490E+05	2.888	122.5	126.0	122.3159	125.6317	.9337E-03	.7010E-02
10.252	27.020	.2580E+05	2.865	122.5	126.0	122.5371	125.7642	.1464E-02	.5545E-03
10.282	33.227	.3061E+05	2.874	123.0	126.0	122.7397	125.6335	.1111E-02	.1545E-02
10.241	39.574	.2530E+05	2.783	123.0	125.5	122.9512	125.6184	.5272E-03	.5719E-03
10.244	45.847	.2391E+05	2.742	123.0	125.5	123.1646	125.5157	.7534E-03	.8474E-03
10.250	52.123	.2083E+05	2.788	123.5	125.5	123.3038	125.4040	.7483E-03	.1413E-03
10.272	59.412	.1887E+05	2.877	123.5	125.0	123.4608	125.3253	.1151E-02	.1183E-02
10.230	64.663	.1804E+05	2.852	123.5	125.0	123.5987	125.0433	.7431E-03	.5163E-03
10.230	70.830	.2134E+05	2.879	124.0	125.0	123.7578	124.8343	.1244E-01	.4131E-02
10.241	1.827	.2350E+05	2.815	124.0	124.5	123.9215	124.6767	.1274E-01	.2291E-02
10.262	8.175	.2184E+05	2.735	124.0	124.5	123.9706	124.4952	.3960E-03	.2203E-03
10.227	14.394	.2944E+05	2.896	124.0	124.0	124.0219	124.2743	.1151E-02	.2450E-03
10.323	20.754	.3095E+05	2.923	124.0	124.0	124.0803	124.0637	.7617E-03	.3230E-03
10.343	27.000	.3197E+05	2.906	124.0	124.0	124.1164	123.8696	.1887E-02	.1179E-02
10.236	33.277	.2855E+05	2.767	124.0	123.5	124.1024	123.6203	.3731E-03	.3681E-03
10.241	39.579	.2855E+05	2.750	124.0	123.5	124.0746	123.4129	.6669E-03	.5601E-03
10.191	45.848	.2719E+05	2.898	124.0	123.0	124.0060	123.1395	.9394E-03	.9151E-03
10.194	52.121	.2604E+05	2.914	124.0	123.0	123.9462	122.9805	.7469E-03	.6974E-03
10.227	58.410	.2377E+05	2.858	124.0	123.0	123.8696	122.7875	.1129E-02	.7175E-03
10.219	64.640	.1873E+05	2.708	124.0	122.5	123.7704	122.5984	.7947E-03	.7330E-03
10.227	70.905	.1773E+05	2.663	123.5	122.5	123.6494	122.4317	.5864E-03	.4052E-03
10.244	1.841	.2587E+05	2.893	123.5	122.0	123.4712	122.2074	.6094E-03	.18819E-03
10.252	8.201	.2508E+05	2.898	123.5	122.0	123.2848	122.0998	.1019E-02	.7844E-03
10.203	14.412	.2707E+05	2.911	123.0	122.0	123.1360	122.0086	.7293E-03	.9854E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	-.02580	-.00724	.00171	.00031	-.00035	-.01337
1	-.01656	-.00662	-.00830	-.01417	.01290	.00824
2	-.00834	-.02276	.01472	-.00013	.01785	.03554
3	.00486	.00427	-.01332	.00496	-.00093	.01316
4	.02469	.00170	.01217	-.01331	.00870	.01156
5	-.00065	-.03816	.00112	-.00463	.00332	.01922
6	.01173	-.00899	-.02319	.00331	.02199	.01332
7	-.01734	-.03327	-.00199	.00606	.01191	.00625
8	.00783	.02324	.00911	.00387	-.00203	-.00629
9	.00257	.01104	.00972	.02892	-.01204	.02486

x0= 121.9961    y0= 123.7436    r0= 2.10077643    std.dev.= .01522590

HISTOGRAM DEVIATION >= e

e	.05	.04	.03	.02	.01	0.00	bad points
	0	0	3	9	17	31	0

ORIGINAL PAGE IS  
OF POOR QUALITY

delta r1

	1	2	3	4	5	6
0	-.02448	-.00586	.00314	.00176	.00110	-.01170
1		.00528	-.00704	.01502	.02050	.00914
2	-.00760	-.02220	.01512	.00009	.01709	.02541
3	.00447	.00368	-.01462	.00400	-.00211	.01254
4	-.02623	.00001	.01024	-.01527	.00258	.01912
5	.00295		-.00128	-.00196	.00522	.01252
6	.00936	-.01130	-.02541	.00118	.01998	.01022
7	-.01907	-.03484	-.00338		.01050	.00245
8	.00723	.02282	.00892	.00287	-.00179	.00650
9	.00312	.01176	.01058	.02996	-.01089	.02363

mean = 121.9959    var = 123.7455    cov = 2.10126305    std. dev. = .01452563

HISTOGRAM DEVIATION Δ = e

Δ =	.05	.04	.03	.02	.01	0.00	bad points
	0	0	2	8	18	29	3

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 29-A Track data file TDATA07

NDR01  
 Integration delay: .1160E+00  
 Thresholds: .2298E+06  
  
 Coarse 1.0  
 Fine 1.0  
 Track 100.0  
 .4564E+00  
 .2190E+05  
 .7774E+00  
 .7352E+06  
  
 Constants: .33000  
 Displacements: 0.00000  
  
 .29400  
 0.00000  
  
 .37000  
 0.00000  
  
 .23600  
 0.00000

temp	angle	dart current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
10.303	14.557	.2780E+05	6.185	123.0	122.0	123.1144	121.0078	.2697E-02	.4097E-02
10.289	20.746	.2778E+05	6.194	123.0	122.0	122.9285	121.8969	.3002E-02	.4727E-02
10.272	26.996	.2791E+05	6.193	123.0	122.0	122.7208	121.7948	.1737E-02	.2402E-02
10.297	33.268	.2455E+05	6.185	122.5	122.0	122.5415	121.6612	.3703E-02	.5158E-02
10.266	39.577	.2455E+05	6.132	122.5	121.5	122.2747	121.6662	.2192E-02	.2816E-02
10.275	45.832	.2452E+05	6.109	122.0	121.5	122.0850	121.6553	.4484E-02	.5700E-02
10.323	52.119	.2454E+05	6.132	122.0	121.5	121.8472	121.6676	.3900E-02	.5059E-02
10.266	58.410	.2447E+05	6.181	121.5	121.5	121.7159	121.6376	.2754E-01	.5825E-01
10.292	64.667	.2422E+05	6.183	121.5	122.0	121.4581	121.6430	.1592E-02	.4594E-02
10.281	70.866	.2405E+05	6.202	121.0	122.0	121.2216	121.7527	.3592E-02	.4770E-02
10.297	1.838	.2402E+05	6.162	121.0	122.0	120.9715	121.8612	.2944E-02	.2130E-02
10.264	8.207	.2403E+05	6.145	121.0	122.0	120.7398	121.9584	.1988E-02	.1390E-02
10.306	14.408	.2730E+05	6.078	120.5	122.0	120.6648	122.1122	.1752E-02	.2743E-02
10.244	20.740	.2736E+05	6.106	120.5	122.0	120.5177	122.2719	.2101E-02	.3454E-02
10.261	26.989	.2658E+05	5.869	120.5	122.5	120.3800	122.4939	.2641E-02	.2190E-02
10.247	33.277	.2669E+05	5.936	120.0	122.5	120.2036	122.6189	.4339E-02	.1154E-02
10.168	39.553	.2761E+05	6.111	120.0	123.0	120.0987	122.8104	.1850E-02	.4713E-02
10.264	45.829	.2778E+05	6.124	120.0	123.0	119.9967	122.9950	.3030E-02	.3113E-02
10.213	52.108	.2790E+05	6.139	120.0	123.0	119.7097	123.1811	.2507E-02	.4171E-02
10.258	58.403	.2805E+05	6.098	120.0	123.5	119.6936	123.4573	.3464E-02	.4531E-02
10.196	64.654	.2793E+05	6.059	120.0	123.5	119.8741	123.6727	.2920E-02	.2944E-02
10.342	70.891	.2797E+05	6.131	120.0	124.0	119.6342	123.8693	.2827E-02	.2514E-02
10.351	1.837	.2794E+05	6.136	120.0	124.0	119.9193	124.0362	.1703E-02	.2523E-02
10.339	8.191	.2776E+05	6.074	120.0	124.5	120.0289	124.3349	.1894E-02	.1538E-02
10.261	14.381	.2770E+05	5.997	0.0	124.5	120.1059	124.5211	.1849E-02	.2534E-02
10.303	20.762	.2765E+05	6.091	0.0	125.0	120.2069	124.7384	.3814E-02	.1624E-02
10.320	26.997	.2745E+05	6.123	120.5	125.0	120.2794	124.9526	.2702E-01	.1008E-01
10.300	33.278	.2729E+05	6.088	120.5	125.0	120.3754	125.0603	.4779E-02	.2897E-02
10.241	39.554	.2726E+05	6.057	120.5	125.0	120.5044	125.1914	.2924E-02	.2799E-02
10.244	45.843	.2758E+05	6.029	120.5	125.5	120.6981	125.4007	.2717E-02	.1034E-01
10.295	52.119	.2412E+05	6.019	121.0	125.5	120.9008	125.5387	.2819E-02	.1127E-02
10.261	58.397	.2415E+05	6.040	121.0	125.5	121.0947	125.6725	.2453E-02	.2397E-02
10.286	64.640	.2454E+05	6.147	121.0	125.5	121.2890	125.7885	.2678E-01	.1451E-01
10.320	70.875	.2430E+05	6.143	121.5	126.0	121.4830	125.9091	.2813E-02	.4133E-02
10.250	1.820	.2434E+05	6.153	121.5	126.0	121.6773	126.0347	.1434E-02	.2531E-02

ORIGINAL PAGE IS OF POOR QUALITY

10.267	8.127	.2453E+05	6.133	122.0	126.0	122.257	125.861	.2094E-02	.5297E-03
10.261	14.385	.2453E+05	6.133	122.0	126.0	122.1569	125.8532	.2094E-02	.5297E-03
10.278	20.729	.2414E+05	6.118	122.5	126.0	122.3172	125.8330	.1897E-02	.4144E-03
10.289	27.002	.2417E+05	6.102	122.5	126.0	122.5859	125.7636	.4609E-02	.2128E-02
10.230	33.273	.2622E+05	6.078	123.0	126.0 *	122.7446	125.7165	.6038E-02	.1332E-01
10.289	39.579	.2723E+05	5.998	123.0	125.5	122.9678	125.6303	.2134E-02	.2314E-02
10.314	45.831	.2725E+05	5.958	123.0	125.5	123.1676	125.5695	.3294E-02	.2034E-02
10.269	52.121	.2651E+05	5.991	123.5	125.5	123.2874	125.4117	.1729E-02	.1613E-02
10.295	58.405	.2630E+05	6.042	123.5	125.0	123.4757	125.2470	.3813E-02	.1057E-02
10.255	64.646	.2620E+05	6.015	123.5	125.0	123.5863	125.0851	.1102E-02	.2274E-02
10.241	70.859	.2628E+05	6.041	123.5	125.0	123.7199	124.9369	.2808E-02	.5514E-02
10.297	1.851	.2759E+05	6.035	124.0	124.5 *	123.8925	124.7030	.2094E-01	.2008E-01
10.269	8.192	.2747E+05	5.943	124.0	124.5	123.9869	124.5135	.3016E-02	.3304E-02
10.244	14.391	.2834E+05	6.108	124.0	124.5 *	124.0448	124.3435	.8907E-02	.7058E-02
10.323	20.762	.2341E+05	6.117	124.0	124.0	124.0606	124.0407	.2151E-02	.3315E-02
10.334	26.997	.2846E+05	6.107	124.0	124.0	124.1081	123.8640	.1580E-02	.3063E-02
10.227	33.282	.2810E+05	5.990	124.0	123.5	124.0884	123.6252	.2774E-02	.1699E-02
10.194	39.587	.2802E+05	5.955	124.0	123.5	124.0602	123.4207	.2680E-02	.9869E-03
10.174	45.837	.2798E+05	6.088	124.0	123.0	124.0000	123.1376	.3208E-02	.4895E-02
10.160	52.115	.2791E+05	6.098	124.0	123.0	123.9477	122.9800	.2594E-02	.1759E-02
10.233	58.397	.2779E+05	6.052	124.0	123.0	123.0849	122.8006	.2701E-02	.1869E-02
10.194	64.629	.2717E+05	5.903	124.0	122.5	123.7873	122.6238	.1662E-01	.9879E-02
10.216	70.881	.2643E+05	5.877	123.5	122.5	123.6539	122.4613	.1331E-02	.2131E-02
10.258	1.840	.2770E+05	6.201	123.5	122.0	123.4302	122.3141	.9997E-01	.1949E+00
10.286	8.195	.2714E+05	6.155	123.5	122.0	123.2868	122.1049	.3191E-02	.3992E-02

ORIGINAL PAGE IS  
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	1	2	delta t1	4	5	7
0	-.02973	-.03402	-.01627	.04779	.01075	.01477
1	-.02252	.01971	.01527	.03173	.03391	.02291
2	.00179	-.01753	-.06029	.01337	.01193	.01271
3	.05906	.01558	.02237	-.03429	.00211	.04521
4	-.05561	-.05197	.00092	.00494	-.01354	.00791
5	.02608	.00516	-.03857	-.01409	-.03476	.00314
6	.01813	.01629	-.00786	.01937	.02417	.03666
7	.01219	-.00345	-.01843	-.00217	.03522	.01421
8	.02411	-.01530	.01405	-.00618	-.01298	-.00921
9	-.00731	.00788	.00890	-.00796	-.07926	-.01344

$\bar{x}_0 = 121.9965$      $\bar{x}_0 = 123.7399$      $r_0 = 2.10123229$      $\text{std. dev.} = .02958466$

HISTOGRAM DEVIATION  $\Delta = e$

$\Delta =$	.05	.04	.03	.02	.01	0.00	bad points
	6	2	11	5	20	16	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta ri					
	1	2	3	4	5	6
0	-.04157	-.03788	-.01813	.04582	-.01209	-.01648
1	-.02528		.01363	.03018	.03747	.07758
2	.00054	-.01867	-.05129	.01239	.01117	.03215
3	.05853	.01521	.02702	-.03503	-.00304	-.04551
4	-.05542	-.05168		.00534	-.01908	
5	.02663	.00573		-.01353	-.03421	.00965
6	.01859	.01671	-.00757		.02434	.03673
7	.01219	-.00358	-.01888	-.00332		.03358
8	.03337	-.01621	.01303	-.00732	-.01423	-.01060
9	-.00878	.00634		-.00965		-.02075

u0= 121.9969    u0= 123.7387    r0= 2.10187936    std.dev.= .02881395

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	5	3	9	5	18	12	8

ORIGINAL PAGE IS  
OF POOR QUALITY

NRRO: Coarse Fine Track  
 1.0 1.0 16.0  
 Integration delay: .1160E+00 .4544E+00 .1344E-02  
 Threshold: .3217E+06 .9190E+05 .7352E+06

Constants: .33000 .29400 .37000 .23100  
 Displacements: 0.00000 0.00000 0.00000 0.00000

time	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
20.055	14.371	.1083E+06	1.146	123.0	122.0	123.1269	122.0250	.8257E-03	.4091E-03
20.069	20.766	.1062E+06	1.149	123.0	122.0	122.9432	121.9162	.1177E-02	.4527E-03
20.071	26.965	.1121E+06	1.131	123.0	122.0	122.7478	121.8060	.8165E-03	.1215E-02
20.080	33.292	.1003E+06	1.057	122.5	122.0	122.5237	121.7286	.1155E-02	.6494E-03
20.063	39.555	.1140E+06	1.156	122.0	122.0	122.2999	121.6745	.1156E-02	.9705E-03
20.083	45.832	.1103E+06	1.057	122.0	121.5	122.0885	121.6597	.5694E-03	.4121E-03
20.041	52.106	.1120E+06	1.077	122.0	121.5	121.8678	121.6715	.1017E-02	.7155E-03
20.055	58.397	.1040E+06	1.097	121.5	122.0	121.6823	121.6854	.1059E-02	.1173E-02
20.069	64.620	.9888E+05	1.101	121.5	122.0	121.4423	121.7377	.5298E-03	.5087E-03
20.085	70.870	.1087E+06	1.164	121.0	122.0	121.2314	121.8113	.1210E-02	.9768E-03
20.090	1.838	.1064E+06	1.141	121.0	122.0	121.0050	121.9213	.1095E-02	.1255E-02
20.083	8.199	.1068E+06	1.117	121.0	122.0	120.7830	122.0122	.5408E-03	.1051E-02
20.091	14.421	.725E+05	1.074	120.5	122.0	120.6569	122.1270	.5024E-03	.6071E-03
20.060	20.764	.1018E+06	1.085	120.5	122.0	120.4967	122.2909	.2308E-03	.5525E-03
20.052	26.983	.7519E+05	.830	120.5	122.5	120.3427	122.4784	.5132E-02	.5381E-03
20.004	33.291	.8116E+05	.952	120.0	122.5	120.2067	122.6174	.5405E-03	.6216E-03
19.993	39.561	.9599E+05	1.103	120.0	123.0	120.1079	122.8280	.9215E-03	.1075E-02
20.024	45.842	.1083E+06	1.124	120.0	123.0	120.0066	123.0040	.5534E-03	.1167E-02
20.043	52.103	.1168E+06	1.124	120.0	123.0	119.9292	123.1807	.8769E-03	.2161E-03
20.021	58.390	.1231E+06	.962	120.0	123.5	119.9008	123.4579	.3617E-03	.9516E-03
20.108	64.628	.1628E+06	1.109	120.0	124.0	119.8637	123.6157	.5862E-01	.7899E-01
20.113	70.852	.1312E+06	1.169	120.0	124.0	119.8988	123.8922	.9721E-03	.1235E-02
20.158	1.831	.1235E+06	1.182	120.0	124.0	119.9027	124.0605	.6197E-03	.6870E-02
20.133	8.189	.1161E+06	1.117	120.0	124.0	119.9653	124.3227	.1370E-02	.5094E-03
20.097	14.402	.8979E+05	.955	120.0	124.5	120.0464	124.5339	.5721E-03	.4082E-03
20.113	20.750	.6921E+05	1.080	120.0	125.0	120.1428	124.7261	.7917E-03	.1794E-02
20.108	27.012	.6893E+05	1.147	120.0	125.0	120.2433	124.9415	.1004E-02	.1429E-02
20.091	33.282	.6349E+05	1.105	120.5	125.0	120.3329	125.0841	.5008E-03	.1121E-02
20.074	39.580	.7255E+05	1.069	120.5	125.0	120.4917	125.2267	.8066E-03	.5055E-03
20.071	45.836	.8793E+05	.953	120.5	125.5	120.6848	125.4198	.9324E-03	.5059E-03
20.091	52.095	.1045E+06	.983	121.0	125.5	120.8514	125.5532	.7238E-03	.3597E-03
20.108	58.495	.1008E+06	1.009	121.0	125.5	121.0424	125.6409	.6999E-03	.7634E-03
20.066	64.652	.1160E+06	1.111	121.0	126.0	121.2452	125.7173	.1264E-02	.1037E-02
20.049	70.884	.9942E+05	1.083	121.5	126.0	121.4133	125.7944	.2337E-02	.5894E-03
20.088	1.834	.1011E+06	1.038	121.5	126.0	121.6031	125.8381	.9941E-03	.1094E-02

ORIGINAL PAGE IS  
 OF POOR QUALITY

20.0	9	.9E00	1.	123.0	123.0	123.007	125.0	.1000E-02	.1000E-02
20.060	14.395	.1079E+06	1.127	122.0	124.0	123.135	125.0009	.1000E-03	.1000E-03
20.049	20.772	.9578E+05	1.076	122.5	126.0	123.3042	125.0043	.5000E-03	.1100E-02
20.015	27.001	.9229E+05	1.071	122.5	126.0	122.5057	125.7901	.7000E-03	.8000E-03
20.085	33.293	.1127E+06	1.093	123.0	126.0	122.7319	125.7096	.1000E-02	.2000E-03
20.066	39.581	.1024E+06	1.000	123.0	125.5	122.9374	125.6371	.1400E-02	.2000E-03
20.066	45.845	.9707E+05	.947	123.0	125.5	123.1488	125.5313	.9000E-03	.4000E-03
20.102	52.093	.8363E+05	.975	123.5	125.5	123.2943	125.4181	.7000E-03	.2000E-03
20.094	58.416	.7336E+05	1.084	123.5	125.0	123.4473	125.2503	.1000E-02	.1000E-02
20.024	64.657	.6947E+05	1.074	123.5	125.0	123.5900	125.0747	.6000E-03	.5000E-03
20.024	70.916	.8580E+05	1.110	124.0	125.0	123.7482	124.9063	.6580E-03	.5000E-03
20.083	1.841	.7906E+05	1.056	124.0	125.0	123.8848	124.6098	.9000E-03	.1000E-03
20.099	8.191	.8954E+05	.949	124.0	124.5	123.9629	124.5127	.1000E-02	.2000E-03
20.128	14.414	.1186E+06	1.118	124.0	124.0	124.0170	124.2965	.5400E-03	.1000E-02
20.021	20.775	.1263E+06	1.153	124.0	124.0	124.0700	124.0851	.1370E-02	.1140E-02
20.122	26.994	.1329E+06	1.137	124.0	124.0	124.1018	123.8954	.1317E-02	.6000E-03
20.029	33.311	.1185E+06	.989	124.0	123.5	124.0081	123.6394	.4444E-03	.5000E-03
20.004	39.565	.1210E+06	.954	124.0	123.5	124.0643	123.4306	.5600E-03	.4000E-03
19.982	45.780	.1157E+06	1.135	124.0	123.0	124.0019	123.1659	.6300E-03	.2000E-03
20.029	52.115	.1105E+06	1.153	124.0	123.0	123.9350	123.0031	.1270E-02	.7850E-03
20.001	58.411	.9889E+05	1.092	124.0	123.0	123.8594	122.8151	.1719E-02	.8000E-03
20.035	64.660	.7607E+05	.934	124.0	122.5	123.7618	122.6188	.6424E-03	.4424E-03
20.004	70.873	.7060E+05	.857	123.5	122.5	123.6432	122.4492	.1077E-02	.4150E-03
20.043	1.837	.1053E+06	1.094	123.5	122.0	123.4638	122.2296	.7427E-03	.2144E-03
20.071	8.196	.1151E+06	1.162	123.0	122.0	123.2821	122.1118	.9750E-03	.8000E-03

ORIGINAL PAGE IS  
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	delta ri					
	1	2	3	4	5	6
0	-.02359	-.02254	-.00266	.00149	.00915	.00293
1	-.00810	-.00338	-.00606	-.01067	-.01660	.02093
2	.00435	-.00950	-.01778	.01248	-.00577	.01610
3	.03379	.00344	.02344	-.01282	.00331	-.00285
4	-.01694	-.02449	-.00030	.01197	-.01240	.00261
5	.01530	-.00240	-.01864	.00526	-.00555	.00033
6	.02225	.01175	-.00595	-.01885	-.00163	.01313
7	.00033	-.01808	-.03098	-.00125	.00267	.01153
8	-.00279	.00607	.01731	.00313	.00213	-.00008
9	-.01055	-.00292	.01000	.01332	.02707	.00344

mean = 121.9853    sigma = 123.7634    n = 2.10330939    std. dev. = .01354260

HISTOGRAM DEVIATION >= e

e =	.05	.04	.03	.02	.01	0.00	bad points
	0	0	2	7	20	31	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta r1 3	4	5	6
0	-.02359	-.02246	-.00250	.00175	.00250	.00227
1	-.00758	-.00279	-.00537	-.00990	-.01574	.00177
2	.00534	-.00845	-.01667	.01463	.00453	.01737
3	.03503	.00469		-.01157	.00474	.00714
4	-.01577	-.02336	.00078	.01201	-.01143	.00347
5	.01612	-.00167	-.01798	.00585	-.00502	.00677
6	.02255	.01198	-.00581	.01879	-.00164	.01304
7	.00018	-.01809	-.03125	.00157	.00631	.01114
8	-.00320	.00565	.01689	.00271	.00172	.00046
9	-.01090	-.00323	.00974	.01211	.02295	.00200

$\bar{x}$  = 121.9861      $\bar{y}$  = 123.7635      $r_0$  = 2.10289550     std.dev. = .01329106

HISTOGRAM DEVIATION  $\geq e$

e =	.05	.04	.03	.02	.01	0.00	bad points
	0	0	2	6	18	33	1

ORIGINAL PAGE IS  
OF POOR QUALITY

	Coarse	Fine	Track
	1.0	1.0	64.0
NIRO:			
Integration delay:	.1160E+00	.4574E+00	.1344E+02
Threshold:	.3217E+06	.9190E+05	.7352E+06
Constants:	.33000	.29400	.37000
Displacements:	0.00000	0.00000	0.00000

temp	angle	dark		star		reference		position		standard deviation	
		current	mag.	X	Y	X	Y	X	Y		
20.102	14.397	.4792E+05	2.947	123.0	122.0	123.1289	122.0198	.1402E-02	.6927E-03		
20.111	20.769	.4781E+05	2.952	123.0	122.0	122.9459	121.9127	.4088E-03	.7563E-03		
20.083	26.980	.4904E+05	2.946	123.0	122.0	122.7478	121.8028	.3435E-03	.7434E-03		
20.094	33.265	.4492E+05	2.883	122.5	122.0	122.5292	121.7216	.1259E-02	.1562E-02		
20.074	39.564	.4445E+05	2.890	122.5	122.0	122.2903	121.6755	.9833E-03	.1013E-02		
20.099	45.839	.4509E+05	2.869	122.0	121.5	122.0907	121.6549	.1366E-02	.4359E-03		
20.046	52.109	.4563E+05	2.889	122.0	121.5	121.8695	121.6670	.1049E-02	.3967E-03		
20.049	58.391	.4466E+05	2.921	121.5	122.0	121.6857	121.6784	.7093E-03	.7245E-03		
20.057	64.653	.4347E+05	2.926	121.5	122.0	121.4489	121.7306	.5275E-03	.1212E-02		
19.993	70.880	.4539E+05	2.977	121.0	122.0	121.2379	121.8033	.1341E-02	.5632E-03		
20.015	1.831	.4492E+05	2.946	121.0	122.0	121.0069	121.9149	.5812E-03	.1043E-02		
20.105	8.187	.4492E+05	2.922	121.0	122.0	120.7849	122.0041	.3631E-03	.9294E-03		
20.099	14.380	.4441E+05	2.884	120.5	122.0	120.6564	122.1219	.8894E-03	.8700E-03		
20.088	20.753	.4540E+05	2.902	120.5	122.0	120.5003	122.2873	.7947E-03	.9993E-03		
19.976	26.986	.3948E+05	2.701	120.5	122.5	120.3522	122.4789	.9255E-03	.2965E-03		
20.029	33.294	.4092E+05	2.761	120.0	122.5	120.2102	122.6131	.7012E-03	.6573E-03		
19.993	39.579	.4470E+05	2.902	120.0	123.0	120.1099	122.8227	.3365E-03	.8406E-03		
19.990	45.833	.4724E+05	2.919	120.0	123.0	120.0085	122.9956	.6044E-03	.6322E-03		
19.984	52.122	.4684E+05	2.925	120.0	123.0	119.9310	123.1761	.2131E-03	.1394E-02		
20.038	58.389	.5037E+05	2.779	120.0	123.5	119.9057	123.4580	.5555E-03	.1924E-03		
19.956	64.672	.5033E+05	2.838	120.0	123.5	119.8869	123.6638	.6509E-03	.7773E-03		
20.113	70.873	.5240E+05	2.972	120.0	124.0	119.9957	123.8865	.8068E-03	.6843E-03		
20.161	1.833	.5058E+05	2.980	120.0	124.0	119.9075	124.0719	.8411E-03	.9034E-03		
20.035	8.187	.4525E+05	2.863	120.0	124.5	119.9763	124.3878	.5711E-02	.1151E-01		
20.088	14.402	.4387E+05	2.769	120.0	124.5	120.0544	124.5320	.9624E-03	.5681E-03		
20.085	20.751	.3981E+05	2.886	120.0	125.0	120.1512	124.7236	.1239E-02	.1186E-02		
20.043	26.982	.3990E+05	2.947	120.0	125.0	120.2505	124.9433	.5812E-03	.2919E-03		
20.094	33.293	.3864E+05	2.912	120.5	125.0	120.3419	125.0741	.5029E-03	.1161E-02		
20.035	39.570	.4021E+05	2.882	120.5	125.0	120.4973	125.2164	.4333E-03	.1352E-02		
20.091	45.841	.4299E+05	2.784	120.5	125.5	120.6907	125.4171	.9624E-03	.2964E-03		
20.069	52.128	.4435E+05	2.803	121.0	125.5	120.8584	125.5488	.4509E-03	.5274E-03		
20.049	58.393	.4331E+05	2.823	121.0	125.5	121.0471	125.6439	.5029E-03	.3883E-03		
20.046	64.671	.4733E+05	2.937	121.0	126.0	121.2573	125.7019	.2999E-03	.1293E-02		
20.091	70.898	.4400E+05	2.906	121.5	126.0	121.4925	125.8273	.2931E-03	.1824E-02		
20.099	1.875	.4108E+05	2.909	121.5	126.0	121.7386	125.9034	.1043E-03	.2994E-03		

ORIGINAL PAGE IS  
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20.0	8	.7E+0	2.	0	.0	1	127	25.8	84	.7	03
20.074	14,404	.4423E+05	2.932	122.0	126.0	122,1418	125,8742	.1074E-02	.1440E-02	.1440E-02	
20.097	20,753	.4363E+05	2.915	122.5	126.0	122,3125	125,6875	.1153E-02	.2175E-03		
20.026	27,004	.4419E+05	2.821	122.5	126.0	122,5312	125,7827	.1203E-03	.2331E-03		
20.055	33,306	.5049E+05	2.902	123.0	126.0	122,7386	125,7054	.1264E-03	.254E-03		
20.035	39,601	.4605E+05	2.814	123.0	125.5	122,9439	125,7301	.1225E-03	.304E-03		
20.102	45,858	.4461E+05	2.763	123.0	125.5	123,1540	125,5179	.1313E-03	.327E-03		
20.071	52,121	.4127E+05	2.800	123.5	125.5	123,2929	125,4160	.1244E-03	.334E-03		
20.055	58,327	.3941E+05	2.824	123.5	125.0	123,4545	125,2397	.1403E-03	.360E-03		
20.066	64,645	.3863E+05	2.876	123.5	125.0	123,5929	125,0658	.1305E-03	.1374E-02		
20.043	70,884	.4224E+05	2.906	124.0	125.0	123,7542	124,9030	.1360E-03	.1534E-02		
20.060	1,838	.4074E+05	2.858	124.0	125.0	123,8912	124,6836	.1437E-03	.1030E-02		
20.055	8,197	.4314E+05	2.760	124.0	124.5	123,9669	124,5100	.1584E-03	.3347E-03		
20.122	14,395	.5600E+05	2.952	124.0	124.0	124,0375	124,3171	.1382E-01	.5624E-01		
20.108	20,782	.5184E+05	2.951	124.0	124.0	124,0721	124,0750	.1514E-03	.125E-02		
20.144	27,005	.5301E+05	2.939	124.0	124.0	124,1065	123,8862	.1337E-03	.2384E-03		
20.057	33,291	.4952E+05	2.793	124.0	123.5	124,0213	123,6337	.1377E-02	.3724E-03		
19.973	39,584	.4975E+05	2.768	124.0	123.5	124,0690	123,4263	.1397E-03	.5487E-03		
20.004	45,856	.4870E+05	2.929	124.0	123.0	124,0043	123,1522	.1257E-03	.1005E-02		
20.038	52,120	.4739E+05	2.943	124.0	123.0	123,9423	122,9924	.1301E-03	.5367E-03		
19.959	58,420	.4538E+05	2.891	124.0	123.0	123,8870	122,8058	.1577E-03	.713E-03		
19.979	64,635	.4027E+05	2.738	124.0	122.5	123,7702	122,6125	.1027E-02	.4243E-03		
19.965	70,909	.3870E+05	2.681	123.5	122.5	123,6458	122,4453	.1071E-02	.9301E-03		
20.088	1,823	.4633E+05	2.912	123.5	122.0	123,4697	122,2234	.100E-02	.1234E-02		
20.074	8,188	.4562E+05	2.932	123.5	122.0	123,2812	122,1120	.1691E-03	.7020E-03		

ORIGINAL PAGE IS  
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ORIGINAL PAGE IS  
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TR81-04

	1	2	3	4	5	6
0	.02596	-.01569	-.00781	.00307	.00021	.00001
1	-.00747	-.00009	.00615	-.00782	.01522	.01714
2	.00895	-.00826	-.02436	.01492	.00131	.00001
3	.01364	.00487	.00436	.01262	.00515	.00001
4	.01639	-.02404	-.00173	.00804	.01433	.00730
5	.01693	-.00408	-.02526	.00386	.00995	.00821
6	.02109	.01328	-.00713	-.01679	.00213	.01482
7	.00567	-.02051	-.03528	-.00095	.01027	.01027
8	.01804	.00156	.01581	.00024	.00074	.00116
9	-.00753	.00019	.01249	.00868	.02760	.01214

mean = 121.9919    n = 123.7577    r = 2.10272956    std.dev. = .01451420

HISTOGRAM DEVIATION OF

dev	0	.05	.04	.03	.02	.01	0.00	bad points
	0	0	0	2	10	15	33	0

	1	2	Delta ri	4	5	6
0	-.02538	-.02519	.00640	.00341	.00100	.00153
1	-.00842	-.00101	-.00425	-.00811	-.01350	.01577
2	.00855	-.00872	-.02387	.01437	-.00182	.02141
3	.03803	.00425	.00376	-.01323	.00458	
4	-.01681	-.02451	-.00214	.00767	-.01463	.00709
5	.01679	-.00314	-.02524	.00326	-.00574	.00850
6	.02147	.01373	-.00660	-.01618	-.00150	.01558
7	.00649	-.01964	-.03435	.00002	.01128	.01178
8		.00261	.01686	.00137	.00166	.00018
9	-.00659	.00110	.01334	.00948	.02831	.01150

mean = 121.9910    mode = 123.7576    range = 2.10251641    std. dev. = .01454265

HISTOGRAM DEVIATION  $\Delta = e$

e =	.05	.04	.03	.02	.01	0.00	bad points
	0	0	2	9	15	32	2

ORIGINAL PAGE IS  
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Disk 29-A Track data file TMTA11

NDR0:  
 Integration delay: .1160E+00  
 Thresholds: .3217E+06

Coarse 1.0  
 Fine 1.0  
 Track 192.0

.4564E+00  
 .7974E+00  
 .7352E+06

Constants: .33000  
 Displacements: 0.00000

.29400  
 0.00000

.37000  
 0.00000

.23600  
 0.00000

time	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
20.113	26.963	.5520E+05	6.331	122.5	122.0	122.8712	121.5618	.1142E-01	.1166E-01
20.041	33.288	.5538E+05	6.240	122.5	121.5 *	122.4740	121.6527	.2867E-01	.5496E-01
20.069	39.550	.5513E+05	6.182	122.0	121.5 *	122.2758	121.6439	.4253E-01	.6557E-02
20.077	45.825	.5509E+05	6.156	122.0	121.5	122.0477	121.6460	.8457E-02	.7627E-02
20.111	52.100	.5513E+05	6.188	122.0	121.5	121.7795	121.6754	.7117E-02	.2881E-02
20.077	58.389	.5476E+05	6.186	121.5	121.5	121.7229	121.6907	.4771E-02	.3137E-02
20.080	64.619	.5473E+05	6.260	121.5	122.0	121.4479	121.5907	.8479E-02	.4121E-01
20.102	70.895	.5372E+05	6.227	121.0	122.0	121.1491	121.6483	.4243E-02	.4137E-02
20.055	1.816	.5381E+05	6.200	121.0	122.0	120.8671	121.7626	.7490E-02	.5120E-02
20.043	8.194	.5384E+05	6.179	121.0	122.0	120.6298	121.8683	.4694E-02	.7755E-02
20.083	14.358	.5571E+05	6.078	120.5	122.0	120.6522	122.0511	.9932E-03	.4449E-02
20.063	20.731	.5573E+05	6.099	120.5	122.0	120.5058	122.2145	.4198E-02	.5613E-02
20.012	26.983	.5444E+05	5.828	120.5	122.5	120.3577	122.4870	.1959E-02	.9873E-01
19.982	33.261	.5476E+05	5.893	120.0	122.5	120.1921	122.6139	.1984E-02	.5771E-02
19.982	39.565	.5647E+05	6.140	120.0	123.0	120.0630	122.8227	.3603E-02	.4814E-02
20.012	45.809	.5658E+05	6.151	120.0	123.0	119.9579	123.0131	.4277E-02	.4074E-02
20.026	52.113	.5674E+05	6.159	120.0	123.0	119.8664	123.2098	.3861E-02	.2615E-02
20.018	58.379	.5684E+05	6.012	120.0	123.5	119.8566	123.4458	.6541E-02	.1870E-02
20.026	64.651	.5691E+05	6.047	120.0	123.5	119.8360	123.6627	.8327E-02	.2592E-02
20.116	70.884	.5623E+05	6.041	120.0	124.0	119.9436	123.8482	.6304E-02	.1062E-01
20.156	1.812	.5634E+05	6.070	120.0	124.0	119.9146	123.9952	.2144E-02	.4437E-02
20.088	8.197	.5663E+05	6.082	120.0	124.5 *	120.0384	124.2365	.4069E-01	.3346E-01
20.074	14.404	.5673E+05	6.014	120.0	124.5	120.1356	124.4949	.7196E-02	.4027E-02
20.094	20.739	.5685E+05	6.124	120.0	125.0 *	120.2306	124.7142	.9433E-02	.1591E-01
20.097	26.982	.5651E+05	6.150	120.5	125.0 *	120.2994	124.9343	.3965E-01	.3114E-01
20.055	33.276	.5603E+05	6.074	120.5	125.0	120.3568	125.0297	.5935E-01	.4846E-02
20.088	39.564	.5606E+05	6.039	120.5	125.0	120.4992	125.1544	.3571E-02	.4008E-02
20.057	45.844	.5646E+05	6.067	120.5	125.5	120.6976	125.3590	.5049E-02	.2303E-01
20.043	52.133	.5475E+05	6.029	121.0	125.5	120.8472	125.5093	.3709E-02	.4117E-02
20.029	58.414	.5416E+05	6.041	121.0	125.5	121.0440	125.5973	.4264E-02	.3019E-02
20.052	64.643	.5409E+05	6.095	121.0	125.5	121.2389	125.6683	.3364E-02	.4168E-02
20.069	70.891	.5466E+05	6.130	121.5	126.0	121.4087	125.6759	.9480E-02	.2722E-01
20.066	1.809	.5440E+05	6.165	121.5	126.0	121.6736	125.7276	.2213E-02	.2295E-02
20.029	8.193	.5467E+05	6.134	122.0	126.0	121.9134	125.8040	.5754E-02	.1131E-01
20.069	14.384	.5460E+05	6.123	122.0	126.0	122.1481	125.8143	.3590E-02	.7454E-02

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20.046	20.111	.5809E+05	6.057	123.5	125.0	123.5000	125.7	.4000E-02	.4000E-02
20.055	27.006	.5406E+05	6.030	122.5	125.0	122.5000	125.7250	.4000E-02	.4000E-02
20.007	33.292	.5417E+05	6.104	122.5	125.5	122.7132	125.7604	.4000E-02	.4000E-02
20.046	39.587	.5654E+05	6.000	123.0	125.5	123.9574	125.6226	.4000E-02	.4000E-02
20.057	45.818	.5634E+05	5.952	123.0	125.5	123.1556	125.5199	.4000E-02	.4000E-02
20.038	52.107	.5533E+05	5.981	123.5	125.5	123.2577	125.3810	.4000E-02	.4000E-02
20.066	59.371	.5516E+05	5.991	123.5	125.0	123.4548	125.2398	.4000E-02	.4000E-02
20.046	64.615	.5515E+05	5.979	123.5	125.0	123.5819	125.0825	.4000E-02	.4000E-02
20.111	70.898	.5518E+05	5.939	123.5	125.0	123.7118	124.9401	.4000E-02	.4000E-02
20.035	1.809	.5504E+05	5.954	124.0	124.5	123.8772	124.6837	.4000E-01	.4000E-01
20.069	8.205	.5593E+05	5.880	124.0	124.5	123.9643	124.5101	.4000E-02	.4000E-02
20.116	14.389	.5725E+05	6.067	124.0	124.0	123.9728	124.2159	.4000E-01	.4000E-01
20.113	20.747	.5707E+05	6.063	124.0	124.0	124.0296	124.0027	.4000E-02	.4000E-02
20.111	27.002	.5714E+05	6.051	124.0	124.0	124.0785	123.8306	.4000E-02	.4000E-02
20.024	33.276	.5727E+05	5.988	124.0	123.5	124.0804	123.6086	.4000E-02	.4000E-02
19.937	39.565	.5715E+05	5.970	124.0	123.5	124.0447	123.3984	.4000E-02	.4000E-02
19.937	45.832	.5709E+05	6.102	124.0	123.0	123.9926	123.1734	.4000E-02	.4000E-02
19.996	52.103	.5692E+05	6.097	124.0	123.0	123.9541	123.0088	.4000E-02	.4000E-02
19.976	58.399	.5680E+05	6.054	124.0	123.0	123.8841	122.8134	.4000E-02	.4000E-01
20.004	64.651	.5593E+05	5.893	124.0	122.5	123.7700	122.6187	.4000E-01	.4000E-01
19.997	70.888	.5542E+05	5.891	123.5	122.5	123.6264	122.4509	.4000E-02	.4000E-02
20.049	1.823	.5694E+05	6.265	123.5	122.0	123.4022	122.2816	.4000E+00	.4000E+00
20.024	8.195	.5637E+05	6.206	123.5	122.0	123.2794	122.0446	.4000E-02	.4000E-02
20.069	14.358	.5729E+05	6.203	123.0	122.0	123.0712	121.9357	.4000E-02	.4000E-02
20.041	20.750	.5741E+05	6.215	123.0	122.0	122.8751	121.8163	.4000E-02	.4000E-02

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	1	2	delta r1	4	5	7
0	.20121	-.00261	-.03836	-.06048	-.06392	-.05575
1	.06030	-.09899	.12038	.16190	.00405	.01551
2	-.08575	-.01019	-.00156	.02663	.05148	.03127
3	.03787	-.06395	-.01890	-.07537	-.09412	-.09040
4	-.01671	-.00332	-.02556	-.00061	.03446	.01570
5	.00350	-.04273	-.04896	.00549	.02322	.01973
6	-.00555	.08648	.05578	.06500	.00950	.01745
7	.01267	.02604	.03208	.03754	-.04830	.01579
8	-.00582	-.00482	-.02336	-.02953	-.01977	.01166
9	-.02153	-.04675	-.10552	-.01018	-.04057	.01764

mean = 121.9312    var = 123.6220    cov = 2.10760498    std. dev. = .0581242883

HISTOGRAM DEVIATION  $\sigma = e$

$e =$	.05	.04	.03	.02	.01	0.00	bad points
	18	5	7	9	10	11	0

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	1	2	delta ri 3	4	5	6
0				-.05160	-.07334	-.09242
1		.10307	.12253	.16236	.00386	-.01130
2	-.08986	-.01585	-.00900	.01764	.05103	.01929
3	.02456		-.03412		-.11265	
4		-.02264	-.04514		.01478	.00375
5	-.01558		-.06676		.00750	.00475
6	-.01927	.07390	.04495	.05567	.00132	.02302
7	.00773	.02252		.03765		.01117
8	-.00106	-.00073	-.01610	-.02112	-.01061	
9		-.03555		.00160	-.02986	-.01840

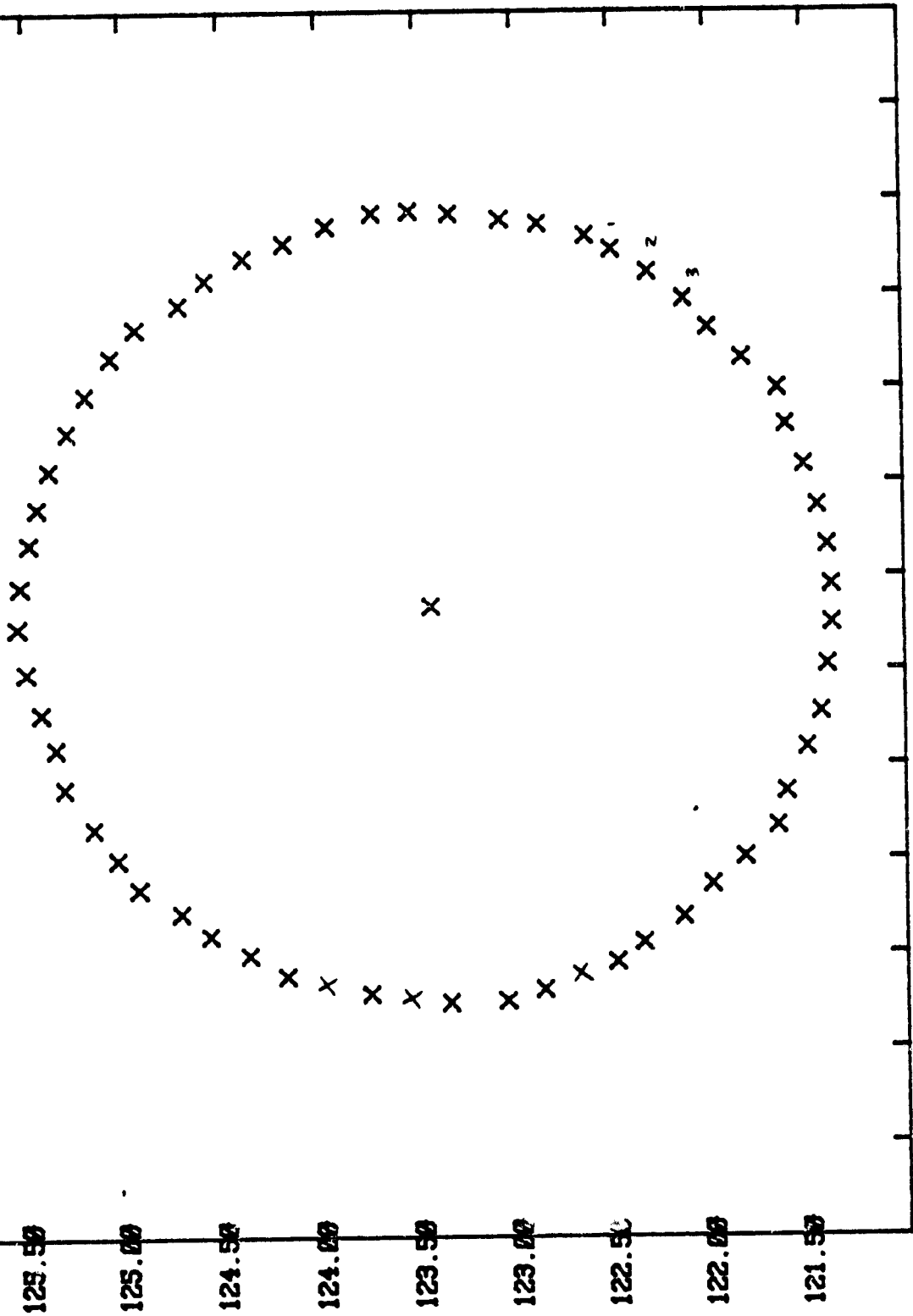
x0= 121.9717    y0= 123.7046    r0= 2.11158752    std.dev.= .05195534

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	12	2	4	7	9	10	16

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ORIGINAL PAGE IS  
OF POOR QUALITY



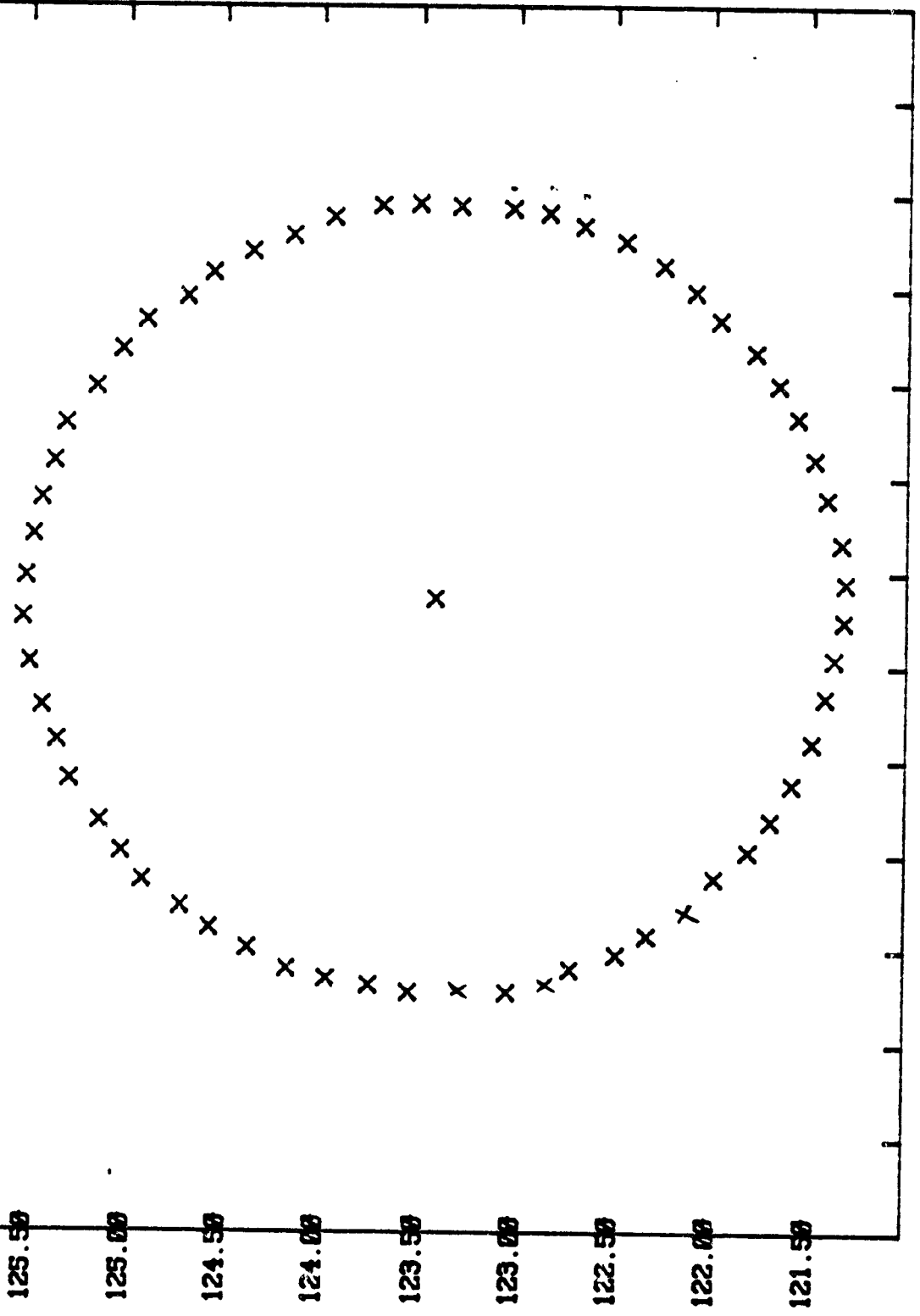
126.00 126.50 127.00 127.50 128.00 128.50 129.00 129.50 130.00 130.50 131.00 131.50

CENTER S.D. = 1.846%

12-B-01 F2.8 +.3M 2 K=.317.255.406.265 100% 100% °C

ORIGINAL PAGE IS  
OF POOR QUALITY

TRB1-04



126.00 126.50 127.00 127.50 128.00 128.50 129.00 129.50 130.00 130.50 131.00 131.50

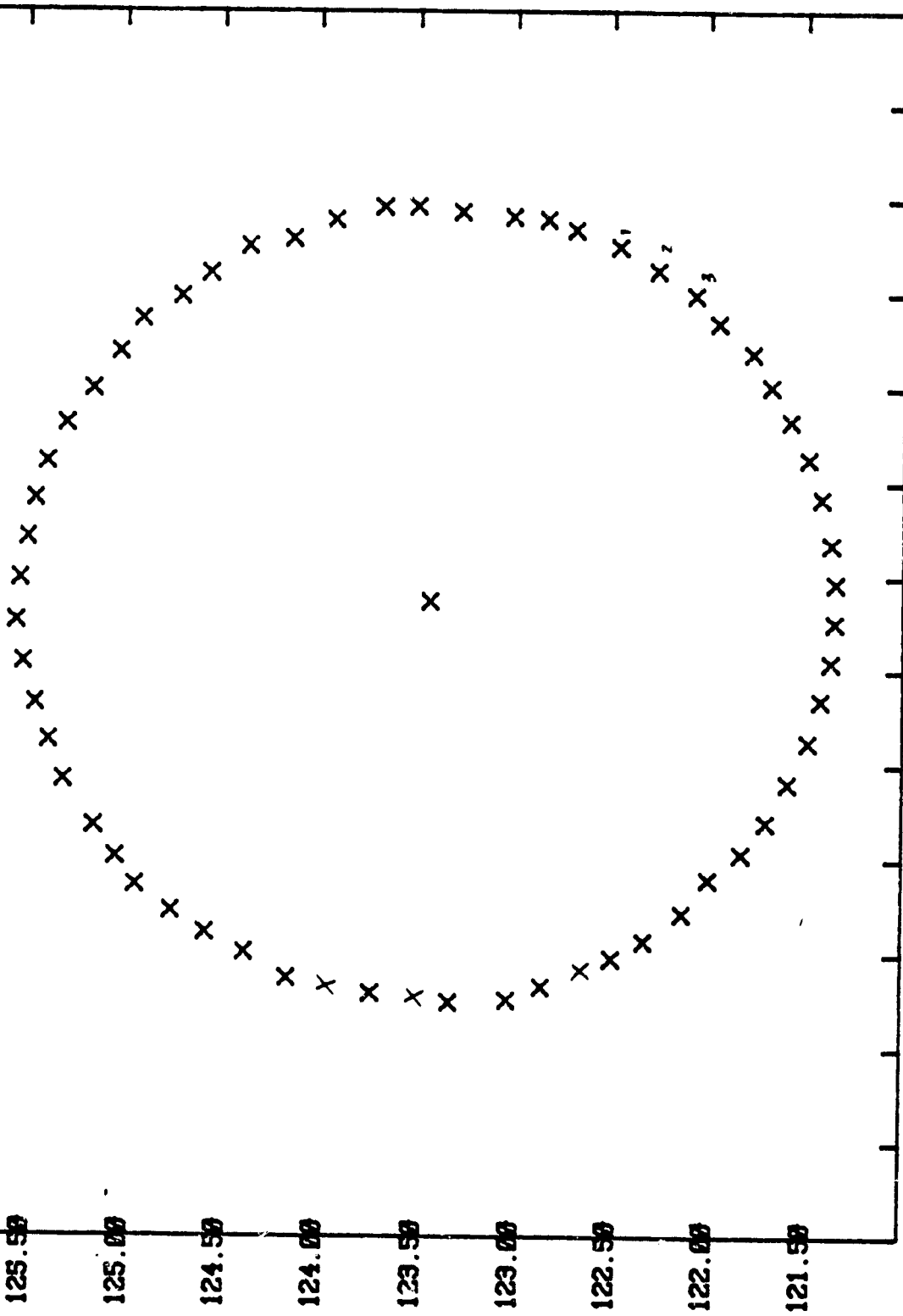
CENTER S.D= 1.614%

12-8-00 F2.8 +.3M 2 K=.317.255.406.265 10% 0°C



ORIGINAL PAGE IS  
OF POOR QUALITY

TR81-04



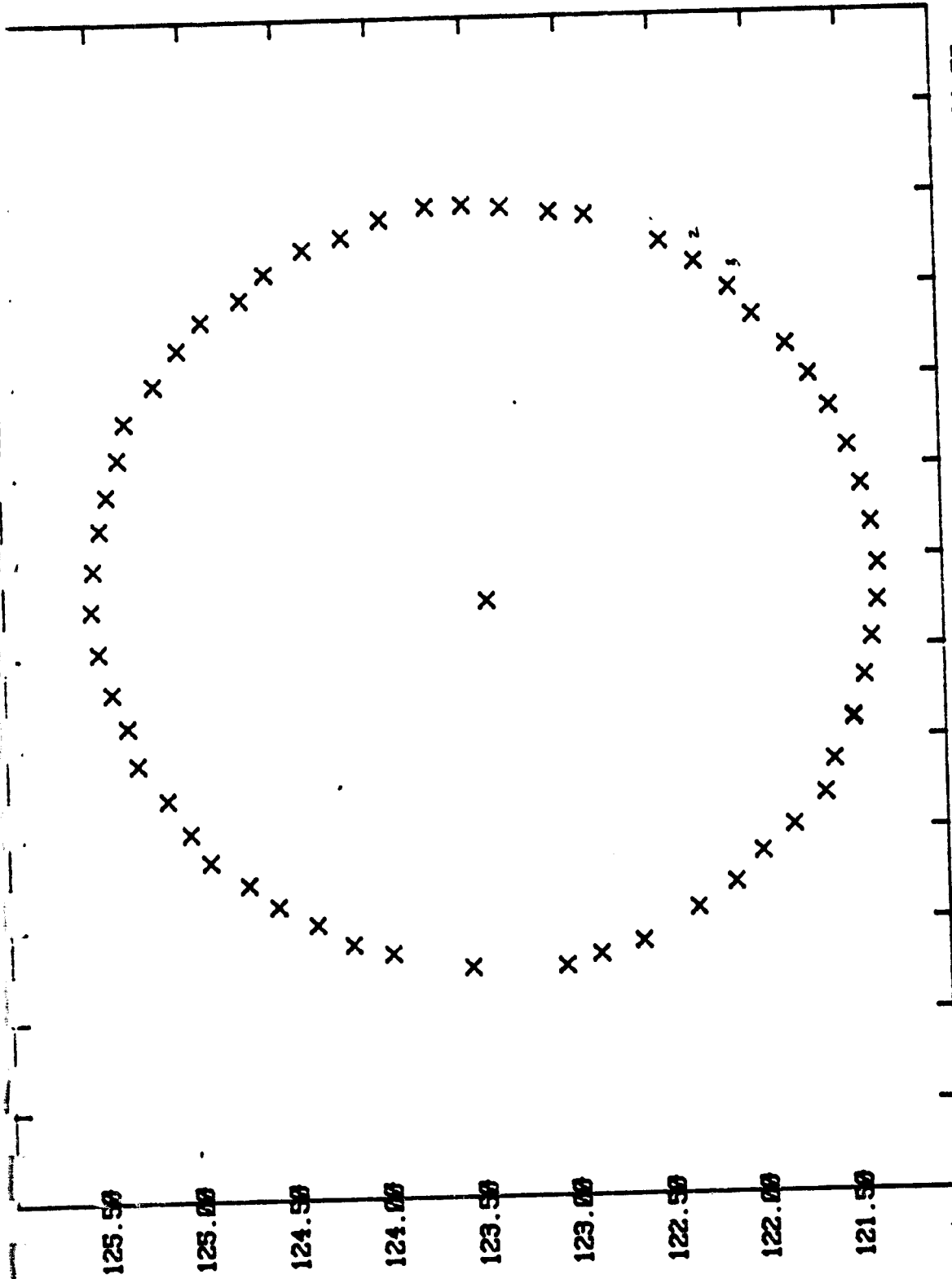
126.00 126.50 127.00 127.50 128.00 128.50 129.00 129.50 130.00 130.50 131.00 131.50

CENTER S.D= 1.733%

12-B-03 F2.8 +.3M 2 K=.317.255.406.265 <1% 0° C

ORIGINAL PAGE IS  
OF POOR QUALITY

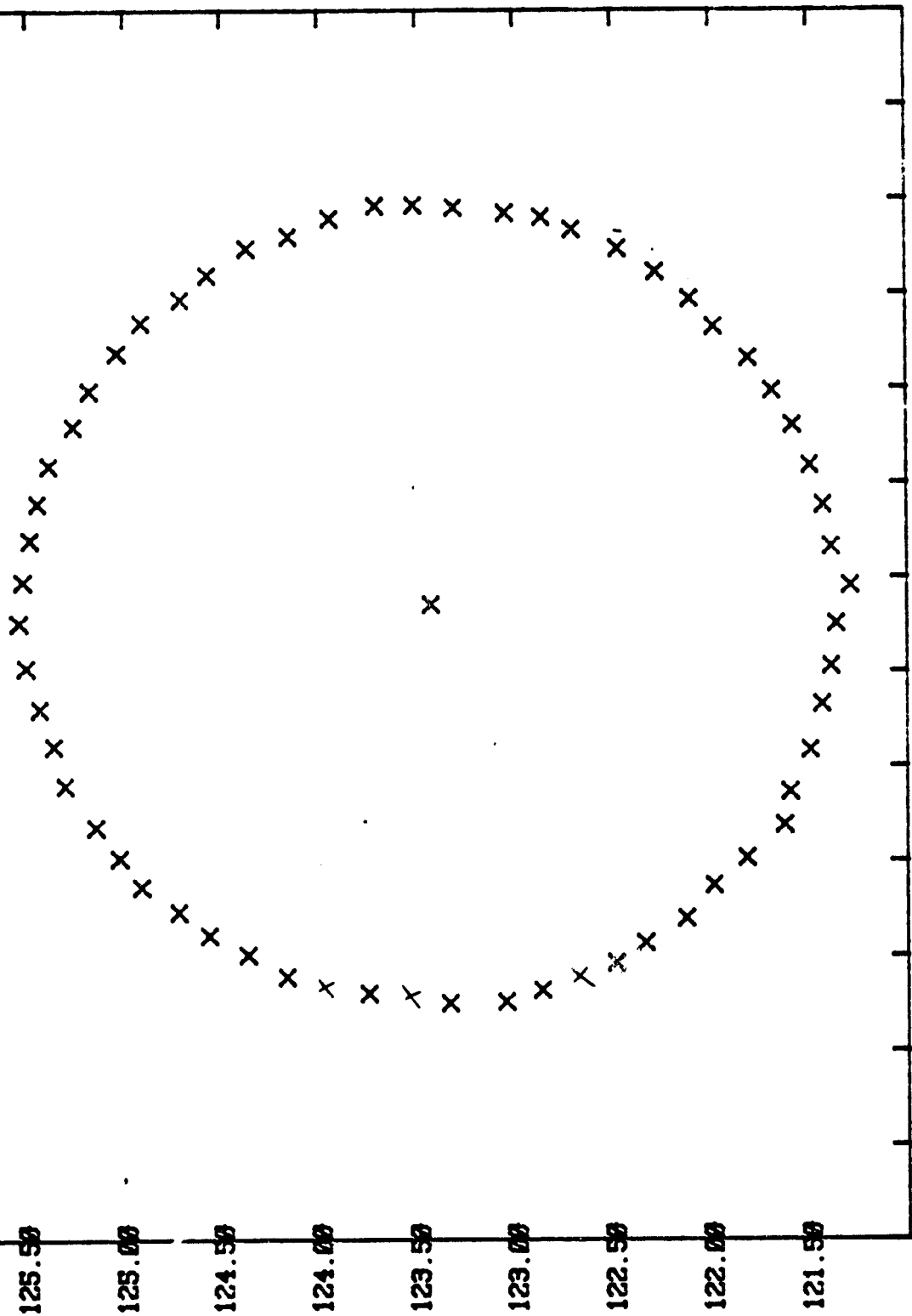
TR81-64



126.00 126.50 127.00 127.50 128.00 128.50 129.00 129.50 130.00 130.50 131.00 131.50

CENTER S.D= 1.729 %

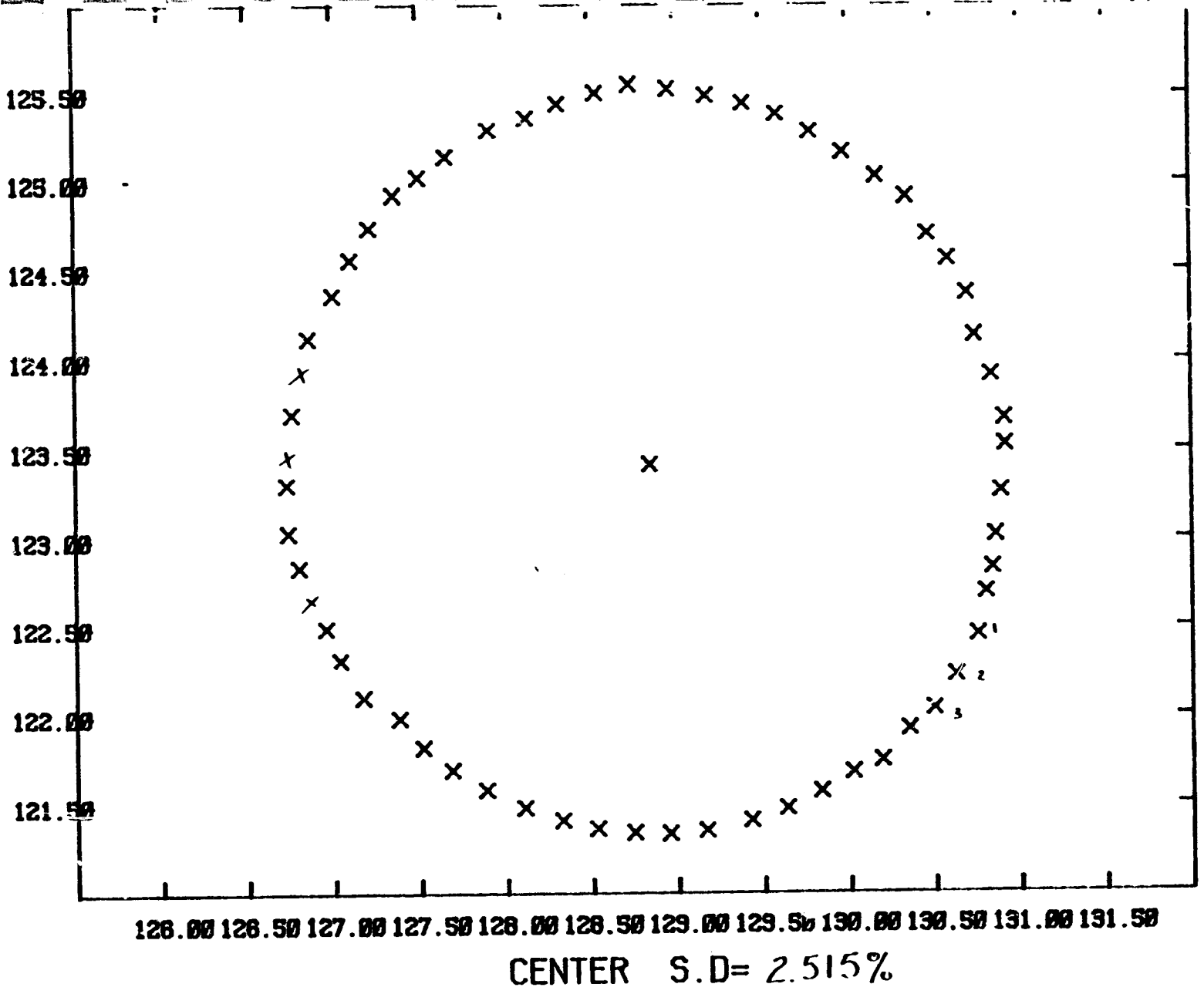
12-B-06 F2.8 +.3M 2 K=.317.255.406.265 100% 10°C



126.00 126.50 127.00 127.50 128.00 128.50 129.00 129.50 130.00 130.50 131.00 131.50

CENTER S.D= 1.753%

12-B-05 F2.8 +.3M 2 K=.317.255.406.265 10% 10° C



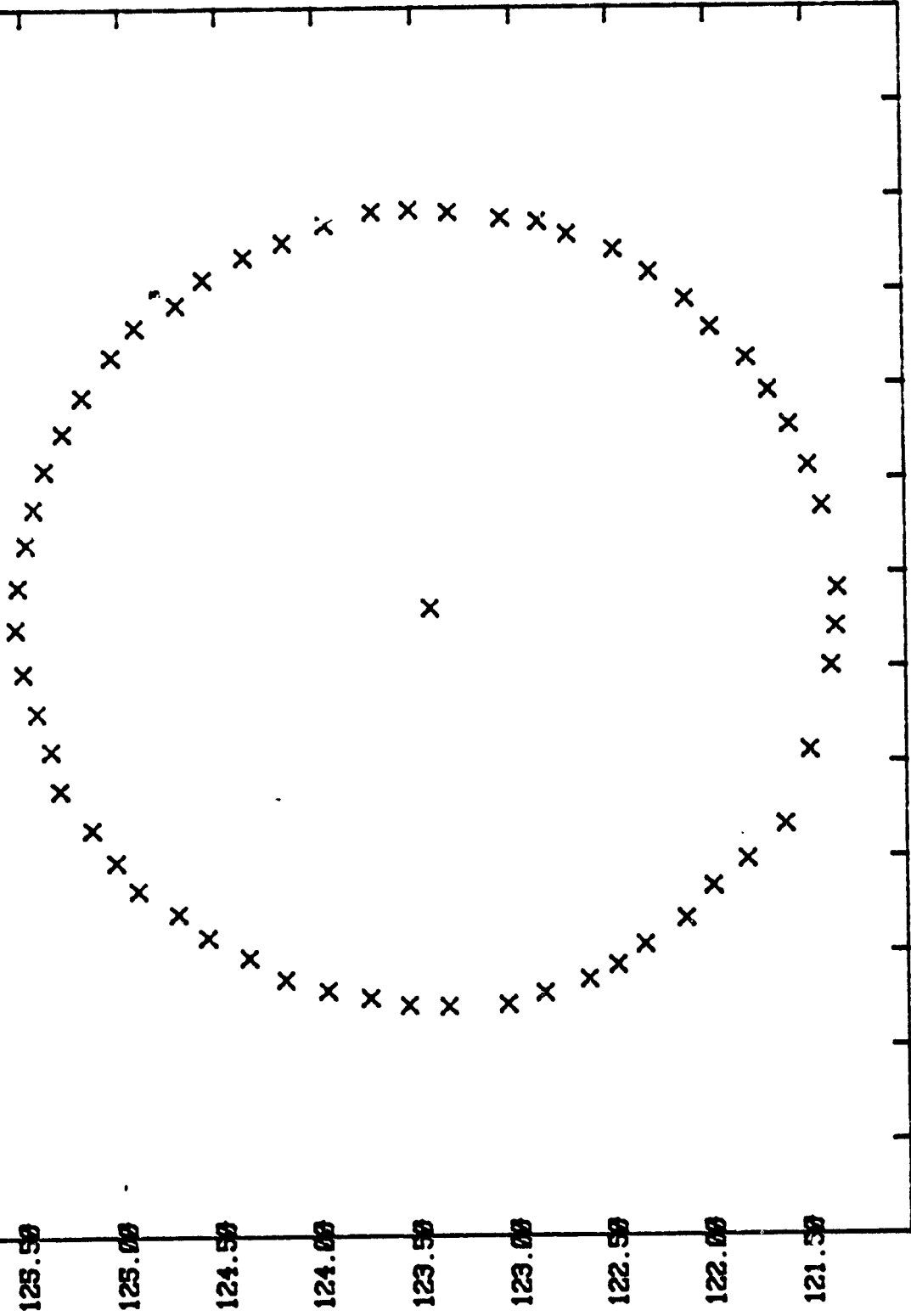
ORIGINAL PAGE IS  
OF POOR QUALITY

TM61-04

12-B-04 F2.8 +.3M 2 K=.317.255.406.265 <1% 10° C

ORIGINAL PAGE IS  
OF POOR QUALITY

TR61-04



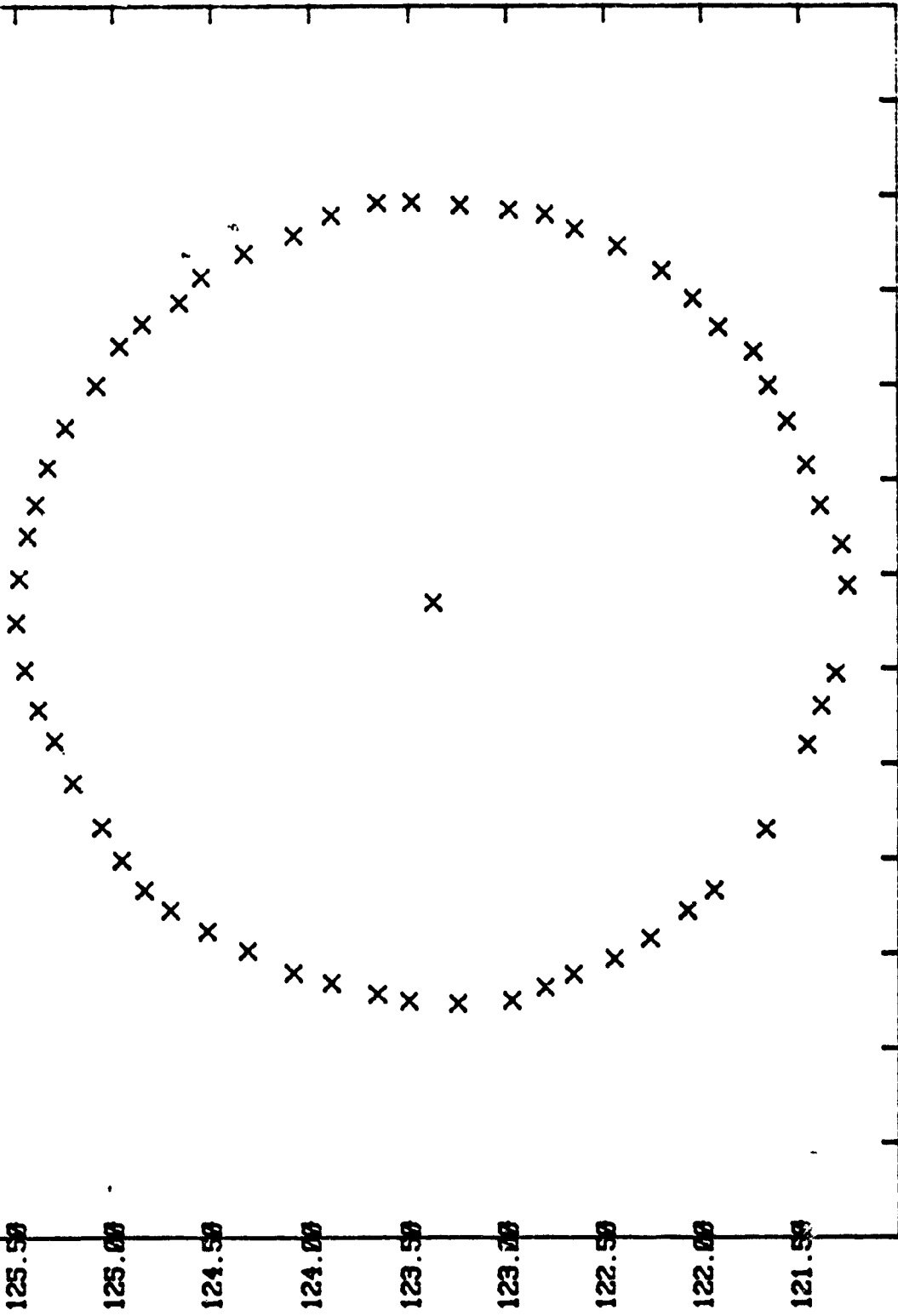
126.00 126.50 127.00 127.50 128.00 128.50 129.00 129.50 130.00 130.50 131.00 131.50

CENTER S.D.= 1.637 %

12-B-07 F2.8 +.3M 2 K=.317.255.406.265 100% 20°C

ORIGINAL PAGE IS  
OF POOR QUALITY

TR91-04



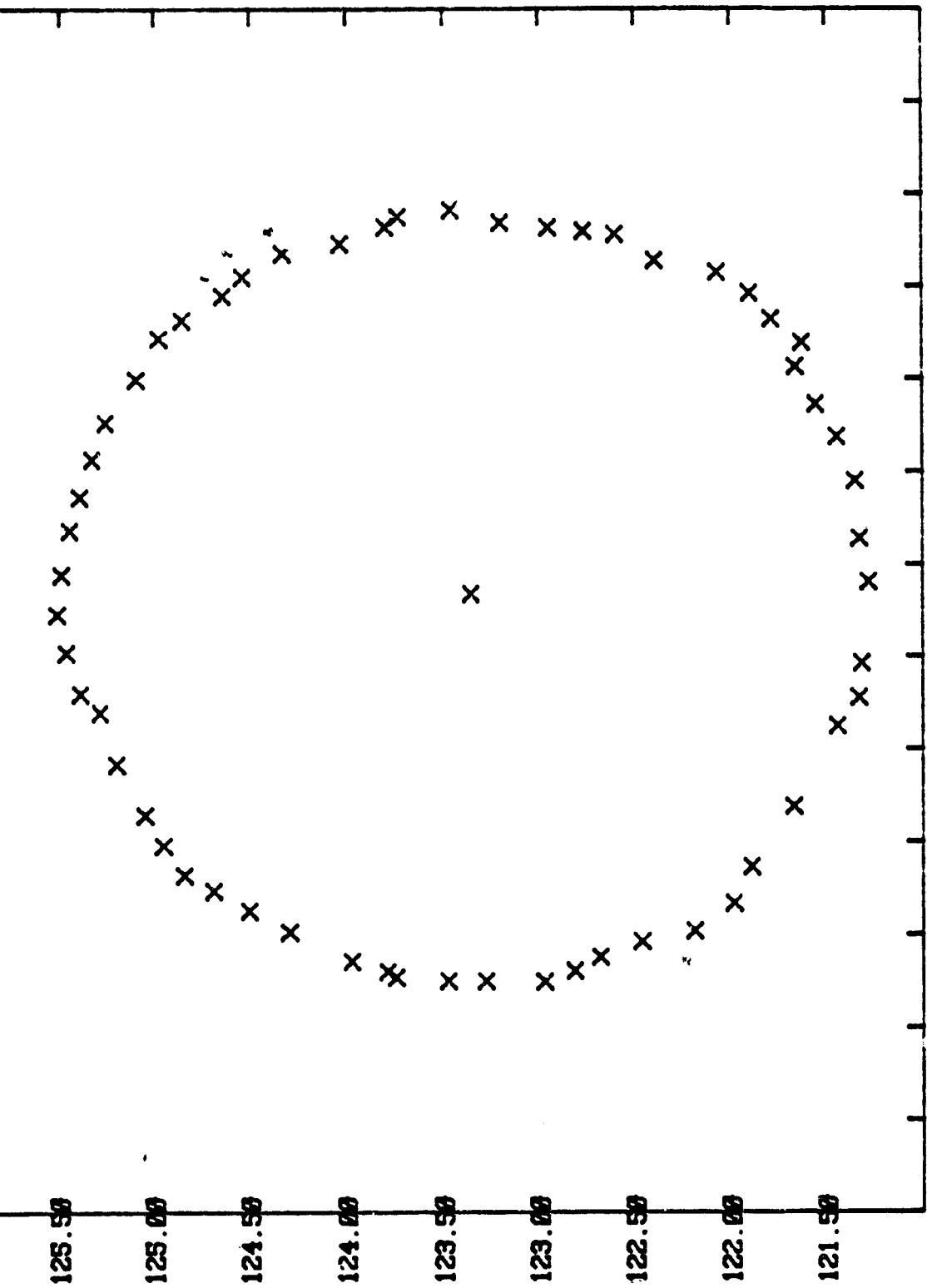
126.00 126.50 127.00 127.50 128.00 128.50 129.00 129.50 130.00 130.50 131.00 131.50

CENTER S.D= 2.439 %

12-B-08 F2.8 +.3M 2 K=.317.255.406.265 10% 20°C

ORIGINAL PAGE IS  
OF POOR QUALITY

TR81-04



126.00 126.50 127.00 127.50 128.00 128.50 129.00 129.50 130.00 130.50 131.00 131.50

CENTER S.D= 4.118 %

12-B-09 F2.8 +.3M 2 K=.317.255.406.265 <1% 20°C

Disk 12-B Track data file TDATA01

	Coarse 1.0	Fine 1.0	Track 16.0
NRRO:			
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.1838E+06	.9190E+05	.7352E+06
Constants:	.31700	.25500	.40600
Displacements:	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.366	58.302	.4060E+05	.747	131.0	122.5	130.7300	122.4086	.6747E-03	.9744E-03
.442	64.640	.8094E+05	.911	130.5	122.0	130.6121	122.3054	.7628E-03	.1015E-02
.425	70.866	.7853E+05	.957	130.5	122.0	130.4679	122.1179	.7317E-03	.7744E-03
.934	1.809	.7446E+05	.966	130.5	122.0	130.3155	121.9932	.6607E-03	.6441E-03
.422	8.168	.9016E+05	.979	130.0	122.0	130.1533	121.8189	.6344E-03	.1257E-02
.394	14.362	.9708E+05	.964	130.0	122.0	129.9889	121.6379	.9636E-03	.3307E-03
.417	20.724	.9052E+05	.867	130.0	121.5	129.7995	121.5974	.6736E-03	.2649E-03
.422	26.768	.7369E+05	.806	129.5	121.5	129.5830	121.5032	.4721E-03	.8154E-03
.417	33.258	.6106E+05	.831	129.5	121.5	129.3670	121.4350	.9578E-03	.8377E-03
.478	39.489	.5930E+05	.872	129.0	121.5	129.1586	121.3870	.7095E-03	.4987E-03
.400	45.765	.6360E+05	.902	129.0	121.5	128.9447	121.3657	.5666E-03	.4629E-03
.422	52.085	.7200E+05	.921	129.0	121.5	128.7428	121.3677	.6401E-03	.4187E-03
.434	58.373	.5825E+05	.845	128.5	121.5	128.5229	121.3933	.6052E-03	.5430E-03
.389	64.609	.6445E+05	.863	128.0	121.5	128.2915	121.4274	.1159E-01	.4692E-02
.478	70.776	.7352E+05	.831	128.0	121.5	128.0950	121.5011	.6036E-03	.7727E-03
.408	1.799	.8378E+05	.847	128.0	121.5	127.8543	121.6106	.8875E-03	.5254E-03
.462	8.178	.8790E+05	.935	127.5	122.0	127.6739	121.6585	.6453E-03	.6454E-03
.439	14.375	.7703E+05	.964	127.5	122.0	127.5072	121.8268	.7754E-03	.9775E-03
.391	20.742	.7612E+05	.962	127.5	122.0	127.3646	121.9968	.4791E-03	.1154E-02
.464	26.963	.9527E+05	.974	127.0	122.0	127.1961	122.1457	.5596E-03	.6389E-03
.456	33.261	.9311E+05	.931	127.0	122.0	127.0597	122.3544	.1177E-02	.7745E-03
.389	39.538	.4401E+05	.761	127.0	122.5	126.9542	122.4923	.7334E-03	.6545E-03
.419	45.835	.6405E+05	.884	127.0	123.0	126.8799	122.6453	.8394E-03	.9271E-03
.388	52.076	.8732E+05	.945	127.0	123.0	126.8088	122.8690	.8494E-03	.1168E-02
.414	58.321	.9802E+05	.980	127.0	123.0	126.7503	123.0586	.6762E-03	.8364E-03
.439	64.622	.1111E+06	.937	127.0	123.0	126.7415	123.3500	.1250E-02	.5249E-03
.391	70.884	.1164E+06	.810	127.0	123.5	126.7467	123.5591	.1093E-02	.7365E-03
.526	1.802	.1300E+06	.951	127.0	124.0	126.7825	123.7545	.1388E-02	.1057E-02
.481	8.174	.1158E+06	1.028	127.0	124.0	126.8287	123.9651	.1464E-02	.9284E-03
.478	14.348	.1049E+06	1.018	127.0	124.0	126.8811	124.1817	.1094E-03	.6719E-03
.434	20.727	.6670E+05	.861	127.0	124.5	126.8221	124.3719	.2040E-03	.1408E-03
.439	26.971	.6732E+05	.832	127.0	124.5	126.8001	124.5723	.1251E-03	.1151E-02
.470	33.253	.4460E+05	.734	127.0	125.0	126.7303	124.7367	.5554E-03	.6351E-03
.506	39.557	.4156E+05	.953	127.5	125.0	126.6181	124.9314	.1011E-03	.8993E-03
.462	45.833	.4024E+05	.950	127.5	125.0	126.5077	125.0390	.1201E-03	.6471E-03

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.467	52.112	.1763E+05	.535	127.5	125.0	127.6822	125.1605	.1057E-02	.1150E-02
.501	59.387	.6627E+05	.960	128.0	125.0	127.8840	125.3187	.9931E-03	.1310E-03
.467	66.626	.7003E+05	.881	128.0	125.5	128.0920	125.3600	.7515E-03	.1128E-03
.512	70.772	.7550E+05	.871	128.0	125.5	128.1912	125.4120	.9775E-03	.1193E-02
.492	1.802	.7748E+05	.817	128.5	125.5	128.4997	125.5065	.1050E-02	.2557E-03
.490	8.181	.9413E+05	.870	129.0	125.5	128.7353	125.5446	.2781E-03	.1274E-03
.495	14.376	.8545E+05	.867	129.0	125.5	128.9538	125.5292	.1934E-02	.1650E-03
.504	20.751	.8070E+05	.852	129.0	125.5	129.1821	125.4867	.1305E-02	.2845E-03
.498	26.963	.7242E+05	.860	129.5	125.5	129.3665	125.4449	.1020E-02	.1046E-03
.473	33.246	.7038E+05	.868	129.5	125.5	129.5691	125.3855	.9027E-03	.9502E-03
.476	39.534	.7157E+05	.953	130.0	125.5	129.7714	125.2904	.8035E-03	.1354E-03
.431	45.777	.5449E+05	.977	130.0	125.0	129.9660	125.1899	.1745E-02	.1131E-02
.453	52.083	.4253E+05	.960	130.0	125.0	130.1671	125.0534	.1213E-02	.1276E-02
.481	58.374	.3946E+05	.947	130.5	125.0	130.3209	124.9267	.6300E-03	.6258E-03
.464	64.619	.4476E+05	.922	130.5	125.0	130.4434	124.7142	.4597E-03	.2104E-03
.464	70.852	.6863E+05	.814	130.5	124.5	130.5753	124.5743	.8584E-03	.2574E-03
.501	1.816	.6780E+05	.842	130.5	124.5	130.6903	124.3738	.1355E-02	.2281E-03
.577	8.181	.1106E+06	1.005	131.0	124.0	130.7696	124.1634	.1409E-02	.5249E-03
.498	14.384	.1199E+06	1.006	131.0	124.0	130.8616	123.9493	.2784E-03	.1100E-02
.518	20.755	.1287E+06	.960	131.0	124.0	130.9282	123.7155	.9703E-03	.1480E-02
.391	26.965	.1093E+06	.829	131.0	123.5	130.9373	123.5267	.7462E-03	.4047E-03
.450	33.241	.1036E+06	.964	131.0	123.0	130.9261	123.3243	.1101E-02	.3754E-03
.462	39.551	.9420E+05	1.006	131.0	123.0	130.8929	123.0596	.4253E-03	.1169E-02
.442	45.804	.8611E+05	.953	131.0	123.0	130.8706	122.8717	.9777E-03	.1387E-02
.481	52.076	.6573E+05	.867	131.0	123.0	130.8055	122.6216	.8142E-03	.9714E-03

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	delta r1					
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0	.02670	.01446	.00720	-.01433	.00497	.00551
1	-.01449	-.01783	-.01952	-.01970	-.01600	-.01551
2	-.02209	-.00727	-.01251	-.01504	.02618	-.00077
3	-.02867	.00005	-.00671	.01898	.02381	.01910
4	.03376	.01063	.00740	-.01215	-.00479	.00770
5	-.02224	-.01084	-.01770	.02372	-.00075	.00157
6	.02326	-.02375	-.01512	.00856	.02367	.00881
7	-.00825	-.00997	-.00573	-.01184	-.00273	.00553
8	.01442	-.03626	-.01142	-.01240	-.02290	-.00107
9	.01993	.01236	-.00211	-.00006	.00030	.00017

0= 128.8387    r0= 123.4352    r0= 2.08828307    std.dev.= .0181714

HISTOGRAM DEVIATION 0 = e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	2	3	12	22	21	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta rj					
	1	2	3	4	5	6
0	.02652	.01475	.00667	-.02453	-.00515	.04721
1	.01430	-.01817	-.01987	-.01596	.01637	.01192
2	-.02247		-.01289	-.01541	.02581	.00075
3	-.02902	-.00028	-.00703	.01368	.02352	.01834
4	.03352	.01043	.00722	-.01251	-.00492	.00750
5	.02231	-.01089	-.01773	.02372	-.00073	-.00124
6	.02332	-.02367	-.01503	.00867	.02378	.00093
7	-.00812	-.00984	-.00561	-.01172	-.00261	.00539
8	.01451	-.03618	-.01135	-.01235	-.02287	.00102
9	.01990	.01231	.00204	-.00017	.02017	.04002

MO= 128.8386    MO= 124.4350    MO= 2.03341515    std.dev.= .01345740

HISTOGRAM DEVIATION  $\geq e$

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	2	3	12	22	20	1

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 12-B

Track data file IDATA00

Center

	Coarse	Fine	Track
NDR0:	1.0	1.0	64.0
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.1838E+06	.9190E+05	.7352E+06
Constants:	.31700	.25500	.40600
Displacements:	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.442	39.540	.1934E+05	2.756	131.0	123.0	130.9253	123.0338	.2664E-02	.5521E-03
.414	45.814	.1761E+05	2.704	131.0	123.0	130.9020	122.8473	.1363E-02	.1668E-02
.383	52.093	.1262E+05	2.568	131.0	122.5	130.8356	122.6640	.9333E-02	.5716E-02
.391	58.379	.8190E+04	2.523	131.0	122.5	130.7550	122.4513	.1203E-02	.1051E-02
.425	64.635	.1771E+05	2.692	130.5	122.0	130.6266	122.2569	.9373E-03	.8342E-03
.417	70.838	.1717E+05	2.724	130.5	122.0	130.4874	122.0894	.1921E-02	.1255E-02
.470	1.798	.1679E+05	2.723	130.5	122.0	130.3360	121.9613	.1092E-02	.1071E-02
.467	8.171	.2076E+05	2.739	130.0	122.0	130.1682	121.7788	.1291E-02	.1359E-02
.459	14.384	.1822E+05	2.657	130.0	121.5	129.9971	121.6615	.1161E-02	.1530E-02
.456	20.728	.1893E+05	2.633	130.0	121.5	129.8194	121.5642	.2053E-02	.9243E-03
.473	26.947	.1466E+05	2.585	129.5	121.5	129.6000	121.4731	.7740E-03	.1344E-02
.456	33.252	.1249E+05	2.616	129.5	121.5	129.3917	121.4679	.1549E-02	.2127E-02
.520	39.555	.1219E+05	2.730	129.0	121.0	129.1535	121.3324	.1083E-02	.1027E-02
.436	45.820	.1313E+05	2.757	129.0	121.0	128.9448	121.3113	.9227E-03	.1855E-02
.425	52.115	.1508E+05	2.786	129.0	121.0	128.7422	121.3179	.7243E-03	.1248E-02
.504	58.367	.1205E+05	2.628	128.5	121.5	128.5393	121.3676	.1493E-02	.1257E-02
.439	64.606	.1263E+05	2.605	128.5	121.5	128.3397	121.4119	.1293E-02	.1777E-02
.445	70.866	.1524E+05	2.598	128.0	121.5	128.0990	121.4764	.5728E-03	.8650E-03
.425	1.823	.1776E+05	2.606	128.0	121.5	127.8774	121.5797	.9552E-03	.1014E-02
.462	8.172	.1567E+05	2.644	127.5	121.5	127.6868	121.6874	.6225E-03	.6233E-03
.473	14.373	.1785E+05	2.733	127.5	122.0	127.5241	121.7993	.1082E-02	.1193E-02
.450	20.734	.1701E+05	2.727	127.5	122.0	127.3817	121.9697	.1020E-02	.9528E-03
.481	26.965	.2094E+05	2.739	127.0	122.0	127.2141	122.1121	.1073E-02	.1215E-02
.419	33.261	.2113E+05	2.698	127.0	122.0	127.0736	122.3145	.1853E-02	.3849E-03
.405	39.551	.9387E+04	2.524	127.0	122.5	126.9753	122.4681	.1082E-02	.1214E-02
.400	45.821	.1332E+05	2.601	127.0	122.5	126.8958	122.6705	.8619E-02	.2486E-01
.408	52.085	.1785E+05	2.699	127.0	123.0	126.8351	122.8464	.1846E-02	.1085E-02
.383	58.373	.2044E+05	2.734	127.0	123.0	126.7718	123.0288	.1038E-02	.1742E-02
.391	64.634	.2309E+05	2.702	127.0	123.0	126.7641	123.3111	.9103E-03	.3591E-02
.389	70.834	.2424E+05	2.575	127.0	123.5	126.7717	123.5337	.1808E-02	.1131E-02
.484	1.831	.2891E+05	2.721	127.0	124.0	126.8114	123.7334	.1831E-02	.1329E-02
.543	8.185	.2562E+05	2.787	127.0	124.0	126.8459	123.9455	.1293E-02	.1184E-02
.554	14.369	.2322E+05	2.782	127.0	124.0	126.8976	124.1475	.1183E-02	.1858E-02
.453	20.760	.1414E+05	2.632	127.0	124.5	127.0094	124.3503	.7827E-01	.1375E-02
.459	26.967	.1389E+05	2.584	127.0	124.5	127.1142	124.5480	.1434E-02	.7120E-01

ORIGINAL PAGE IS  
OF POOR QUALITY

TR0104

.459	39.560	.9192E+04	2.709	127.0	125.0	127.2779	124.7609	.3070E-02	.1540E-02
.478	45.827	.9032E+04	2.708	127.5	125.0	127.5165	125.0125	.2149E-02	.1465E-02
.450	52.074	.1018E+05	2.704	127.5	125.0	127.6762	125.1227	.3672E-03	.1718E-02
.439	58.365	.1407E+05	2.717	128.0	125.0	127.8964	125.2762	.1717E-02	.1796E-02
.473	64.620	.1453E+05	2.648	128.0	125.5	128.1001	125.3416	.1713E-02	.1691E-02
.422	70.873	.1486E+05	2.621	128.5	125.5	128.2987	125.4208	.5342E-02	.1650E-02
.478	1.816	.1599E+05	2.586	128.5	125.5	128.5148	125.4871	.8365E-03	.1751E-03
.456	8.189	.1985E+05	2.636	129.0	125.5	128.7520	125.5244	.1104E-02	.1250E-02
.428	14.387	.1808E+05	2.627	129.0	125.5	128.9689	125.5088	.1463E-02	.6797E-03
.448	20.756	.1679E+05	2.615	129.0	125.5	129.1900	125.4712	.1117E-02	.1654E-02
.498	26.971	.1506E+05	2.630	129.5	125.5	129.3864	125.4293	.5973E-03	.1129E-02
.431	33.245	.1430E+05	2.639	129.5	125.5	129.5806	125.3687	.7806E-03	.1908E-02
.456	39.558	.1545E+05	2.731	130.0	125.0	129.7803	125.3113	.2121E-02	.4119E-02
.419	45.831	.1176E+05	2.726	130.0	125.0	129.9775	125.1573	.1449E-02	.2957E-02
.453	52.083	.9591E+04	2.712	130.0	125.0	130.1739	125.0262	.2378E-02	.2306E-02
.473	58.364	.8889E+04	2.705	130.5	125.0	130.3319	124.9032	.7045E-03	.1460E-02
.481	64.618	.9783E+04	2.681	130.5	125.0	130.4557	124.6933	.1034E-02	.1424E-02
.487	70.887	.1417E+05	2.573	130.5	124.5	130.5835	124.5568	.1744E-02	.2169E-02
.509	1.830	.1415E+05	2.620	130.5	124.5	130.6977	124.3580	.2069E-02	.1668E-02
.511	8.198	.2449E+05	2.766	131.0	124.0	130.7842	124.1475	.1409E-02	.1115E-02
.507	14.361	.2623E+05	2.766	131.0	124.0	130.8810	123.9381	.1959E-02	.1119E-02
.520	20.747	.2846E+05	2.725	131.0	124.0	130.9425	123.7029	.2135E-02	.1451E-02
.428	26.968	.2272E+05	2.590	131.0	123.5	130.9521	123.5097	.1345E-02	.1620E-02
.431	33.252	.2161E+05	2.720	131.0	123.0	130.9394	123.2979	.1201E-02	.1658E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.01081	.02976	.02343	.03546	.02143	.00767
1	-.01991	.00293	-.00237	-.00786	-.01478	-.01670
2	.00988	.01203	.00620	-.02113	-.02396	-.01096
3	-.01165	-.00504	.00328	-.02550	.00633	.00571
4	.01697	.00868	.01162	.03234	.00772	.00135
5	-.01680	-.00678	.00542	.01547	-.00718	-.01034
6	.02154	.00003	-.00917	.00920	.01543	.00337
7	.01467	.02628	.01088	-.00314	-.00372	-.00132
8	.02208	-.01600	-.00704	.00299	-.04194	.01927
9	-.02144	-.02848	-.00010	.01422	.00582	.00614

x0= 128.8590    y0= 123.4112    r0= 2.08962011    std. dev.= .01604190

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	1	2	11	18	28	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.01071	.02967	.02337	.03541	.02141	.00763
1	-.01987	-.00299	-.00228	-.00773	-.01462	-.01651
2	.01010	.01278	.00718	-.02083	-.02363	.01060
3	-.01127	-.00464	.00369	-.02508	.00681	.00645
4	.01742		.01206	.03278	.00815	.00177
5	-.01640	-.00640	.00579	-.01513	.00736	.01008
6	.02181	.00027	-.00895	.00938	-.01528	-.00125
7	.01475	.02633	.01091	-.00814	-.00374	-.00342
8	.02202	-.01609	-.00714	.00677	-.04207	-.01943
9	-.02158	-.02862	-.00024	.01408	.00569	-.00626

mu= 128.8593    y0= 123.4113    r0= 2.08946872    std.dev.= .01613590

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	1	2	11	19	26	1

ORIGINAL PAGE IS  
OF POOR QUALITY

TM01-04

	Coarse	Fine	Track
NDR0:	1.0	1.0	192.0
Integration delay:	.1160E+00	.4564E+00	.7974E+00
Thresholds:	.1938E+06	.9190E+05	.7352E+06

Constants:	.31700	.25500	.40600	.26500
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark	star	reference		position		standard deviation	
		current	mag.	X	Y	X	Y	X	Y
.450	58.367	.1176E+05	5.751	131.0	122.5	130.7507	122.4666	.2677E-02	.1510E-02
.490	64.606	.1074E+05	5.957	130.5	122.0	130.6227	122.2725	.9544E-02	.5230E-01
.464	70.830	.1034E+05	5.952	130.5	122.0	130.4936	122.0675	.2067E-02	.4651E-02
.481	1.808	.1035E+05	5.963	130.5	122.0	130.3452	121.9490	.1984E-02	.1459E-02
.504	8.195	.1068E+05	5.970	130.0	122.0	130.1842	121.7745	.1644E-02	.4406E-02
.467	14.396	.1064E+05	5.924	130.0	121.5	130.0084	121.6902	.1950E-02	.1069E-02
.476	20.740	.1066E+05	5.898	130.0	121.5	129.8288	121.5789	.1399E-02	.1253E-02
.476	26.963	.1042E+05	5.868	129.5	121.5	129.6250	121.4866	.1216E-02	.2524E-02
.470	33.274	.1030E+05	5.892	129.5	121.5	129.4164	121.4161	.1288E-02	.2062E-02
.484	39.528	.1019E+05	5.920	129.0	121.5	129.1749	121.3678	.3077E-02	.1784E-02
.498	45.836	.1022E+05	5.942	129.0	121.5	128.9657	121.3454	.1501E-02	.1370E-02
.520	52.078	.1034E+05	5.977	129.0	121.5	128.7582	121.3477	.7646E-03	.1703E-02
.478	58.370	.1263E+05	5.923	128.5	121.5	128.5464	121.3686	.2053E-02	.2040E-02
.515	64.622	.1270E+05	5.896	128.5	121.5	128.3460	121.4157	.5495E-03	.2111E-02
.504	70.859	.1274E+05	5.863	128.0	121.5	128.1234	121.4793	.1389E-02	.1604E-02
.473	1.802	.1290E+05	5.880	128.0	121.5	127.9082	121.5816	.1415E-02	.2152E-02
.501	8.176	.1205E+05	5.938	127.5	121.5	127.6972	121.6926	.2421E-02	.1455E-02
.434	14.390	.1229E+05	6.012	127.5	122.0	127.5315	121.8185	.2102E-02	.4155E-02
.470	20.750	.1221E+05	5.997	127.5	122.0	127.3959	121.9842	.7944E-03	.2055E-02
.518	26.966	.1250E+05	5.990	127.0	122.0	127.2139	122.1172	.1822E-02	.3761E-02
.473	33.259	.1251E+05	5.947	127.0	122.0	127.0692	122.3172	.1567E-02	.2343E-02
.431	39.520	.1188E+05	5.789	127.0	122.5	126.9769	122.4794	.2216E-02	.2267E-02
.456	45.805	.1197E+05	5.853	127.0	122.5	126.9066	122.6844	.1985E-02	.1251E-02
.445	52.107	.1262E+05	5.968	127.0	123.0	126.8265	122.8413	.2172E-02	.2703E-02
.448	58.364	.1276E+05	6.001	127.0	123.0	126.7570	123.0218	.2498E-02	.2456E-02
.456	64.604	.1294E+05	5.978	127.0	123.0	126.7439	123.3144	.3021E-02	.3819E-02
.464	70.827	.1300E+05	5.880	127.0	123.5	126.7569	123.5461	.2427E-02	.1305E-02
.563	1.794	.1339E+05	6.029	127.0	124.0	126.7905	123.7183	.6276E-02	.7689E-02
.607	8.164	.1320E+05	6.080	127.0	124.0	126.8225	123.9331	.2697E-02	.2144E-02
.568	14.381	.1307E+05	6.068	127.0	124.0	126.8739	124.1411	.2243E-02	.3431E-02
.501	20.713	.1228E+05	5.916	127.0	124.5	127.0095	124.3635	.1466E-02	.2589E-02
.537	26.978	.1228E+05	5.885	127.0	124.5	127.1121	124.5599	.2056E-02	.2884E-02
.526	33.245	.1211E+05	5.968	127.0	125.0	127.2272	124.7389	.3089E-02	.2747E-02
.560	39.532	.1184E+05	5.989	127.5	125.0	127.3651	124.9272	.1006E-02	.2790E-02
.526	45.818	.1184E+05	5.984	127.5	125.0	127.5136	125.0266	.2019E-02	.2117E-02

ORIGINAL PAGE IS OF POOR QUALITY



.515	52.077	.1192E+05	5.985	127.5	125.0	127.6751	125.1358	.1184E-02	.1674E-02
.484	58.364	.1283E+05	5.974	128.0	125.0	127.9186	125.2924	.2493E-02	.1715E-02
.484	64.600	.1287E+05	5.924	128.0	125.5	128.1291	125.3694	.1363E-02	.1670E-02
.473	70.870	.1293E+05	5.914	128.5	125.5	128.3233	125.4424	.2371E-02	.1441E-02
.520	1.801	.1297E+05	5.891	128.5	125.5	128.5402	125.5026	.8277E-03	.1284E-02
.476	8.173	.1070E+05	5.931	129.0	125.5	128.7574	125.5458	.2300E-02	.2131E-02
.473	14.359	.1059E+05	5.917	129.0	125.5	128.9817	125.6255	.1234E-02	.2014E-02
.487	20.746	.1051E+05	5.908	129.0	125.5	129.2002	125.7080	.2255E-02	.1964E-02
.462	26.956	.1038E+05	5.936	129.5	125.5	129.4097	125.7497	.8537E-03	.1916E-02
.425	33.261	.1033E+05	5.945	129.5	125.5	129.6047	125.8884	.2338E-02	.1721E-02
.456	39.536	.1039E+05	6.010	130.0	125.5	129.8084	125.2892	.3754E-02	.1527E-02
.464	45.806	.1017E+05	5.981	130.0	125.0	129.9941	125.1549	.1069E-02	.1693E-02
.490	52.073	.1007E+05	5.977	130.0	125.0	130.1880	125.0235	.2022E-02	.1516E-02
.506	58.375	.9974E+04	5.991	130.5	125.0	130.3629	124.9097	.1295E-02	.1381E-02
.495	64.613	.1001E+05	5.979	130.5	125.0	130.4836	124.7071	.1657E-02	.1220E-02
.467	70.834	.1004E+05	5.877	130.5	124.5	130.6074	124.5611	.1550E-02	.1235E-02
.484	1.784	.1176E+05	5.928	131.0	124.5	130.7405	124.3685	.1370E-01	.1457E-02
.537	8.161	.1317E+05	6.082	131.0	124.0	130.7893	124.1377	.1237E-02	.1162E-02
.577	14.365	.1332E+05	6.088	131.0	124.0	130.8889	123.9229	.1544E-02	.4304E-02
.529	20.727	.1342E+05	6.061	131.0	124.0	130.9579	123.6789	.3074E-02	.4194E-02
.366	26.976	.1274E+05	5.905	131.0	123.5	130.9628	123.5093	.1726E-02	.2716E-02
.442	33.245	.1271E+05	5.998	131.0	123.0	130.9319	123.2752	.1870E-02	.2369E-02
.408	39.512	.1259E+05	6.029	131.0	123.0	130.9064	123.0162	.2583E-02	.1590E-02
.422	45.809	.1250E+05	5.987	131.0	123.0	130.8925	122.8353	.2483E-02	.1224E-02
.492	52.078	.1212E+05	5.868	131.0	122.5	130.8384	122.6486	.1552E-01	.3237E-01

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta ri					
	1	2	3	4	5	6
0	.02665	.01307	.03121	.00115	.02335	-.00331
1	-.00773	-.00871	-.00807	-.01146	-.01043	-.01226
2	-.01265	.01825	-.01269	-.01867	-.00701	-.00899
3	-.03966	.00836	.01146	.01272	-.00556	.02077
4	.04631	.02370	.01107	-.00547	.00409	.01527
5	-.02123	-.01225	-.00064	.02283	-.00422	-.01559
6	-.00535	-.01938	-.00903	.01139	.02679	.00759
7	-.00549	.00083	.00375	-.00435	-.02720	-.01735
8	.01726	-.02645	-.01073	.00919	-.03776	-.00520
9	.01916	.01058	-.01637	-.00660	.02298	.03207

x0= 128.8592    y0= 123.4269    r0= 2.09461284    std.dev.= .01759082

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	1	4	10	22	23	0

ORIGINAL PAGE IS  
OF POOR QUALITY

TR8104

	1	2	delta ri	4	5	7
0	.02944		.03407	.00393	.02601	.00117
1	-.00532	-.00646	-.00599	-.00958	-.00874	-.01144
2	-.01135	-.01785	-.01181	-.01801	-.00658	-.00874
3	-.03959	.00825	.01118	.01231	-.00610	.07013
4	.04559	.02287	.01019	-.00639	.00316	.01434
5	-.02213	-.01309	-.00141	.02215	-.00481	-.01607
6	-.00564	-.01951	-.00899	.01162	.02721	.00821
7	-.00466	.00186	.00498	-.00291	-.02555	-.01550
8	.01928	-.02424	-.00837		-.03511	.00242
9	.02203	.01351	-.01338	-.00358	.02602	

μ= 128.8573    σ= 123.4274    ρ= 2.09356380    std.dev.= .01732696

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	1	3	11	17	25	3

ORIGINAL PAGE IS  
OF POOR QUALITY

	Coarse	Fine	Track
NDR01	1.0	1.0	16.0
Integration delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.2298E+06	.9190E+05	.7352E+06
Constants:	.31700	.25500	.40600
Displacements:	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
9.860	58.344	.4709E+05	.761	131.0	122.5	130.7467	122.4685	.8200E-03	.1151E-02
9.924	64.583	.8650E+05	.926	130.5	122.0	130.6295	122.2859	.5706E-03	.2055E-02
9.874	70.848	.8329E+05	.967	130.5	122.0	130.4851	122.1057	.4804E-03	.4156E-02
9.834	1.792	.8033E+05	.972	130.5	122.0	130.3313	121.9799	.9308E-03	.1230E-02
9.868	8.165	.9701E+05	.989	130.0	122.0	130.1651	121.8058	.1723E-02	.1717E-02
9.857	14.379	.9137E+05	.913	130.0	121.5	129.9979	121.6861	.1215E-02	.2315E-02
9.862	20.720	.9559E+05	.874	130.0	121.5	129.8185	121.5815	.6004E-03	.4597E-03
9.865	26.953	.7925E+05	.814	129.5	121.5	129.5997	121.4905	.1197E-02	.1189E-02
9.879	33.245	.6727E+05	.843	129.5	121.5	129.3843	121.4236	.6315E-03	.7883E-03
9.848	39.544	.6317E+05	.886	129.0	121.5	129.1725	121.3728	.3548E-03	.1774E-02
9.837	45.814	.6772E+05	1.011	129.0	121.0	128.9458	121.3420	.1195E-02	.2603E-02
9.890	52.074	.7631E+05	1.037	129.0	121.0	128.7414	121.3499	.4179E-03	.3113E-02
9.868	58.356	.6273E+05	.856	128.5	121.5	128.5394	121.3826	.5554E-03	.1323E-02
9.876	64.568	.6593E+05	.834	128.5	121.5	128.3332	121.4260	.4478E-03	.6121E-03
9.876	70.712	.7805E+05	.830	128.0	121.5	128.1037	121.4904	.6422E-03	.1250E-02
9.843	70.805	.7797E+05	.838	128.0	121.5	128.0998	121.4908	.1534E-02	.1254E-02
9.857	1.795	.8920E+05	.852	128.0	121.5	127.8729	121.5999	.8129E-03	.4185E-03
9.871	8.177	.9324E+05	.941	127.5	122.0	127.6910	121.6499	.5073E-03	.8376E-03
9.871	14.379	.8310E+05	.972	127.5	122.0	127.5212	121.8167	.4629E-03	.1704E-02
9.846	20.747	.8304E+05	.973	127.5	122.0	127.3775	121.9880	.1567E-02	.1750E-02
9.888	26.982	.1011E+06	.989	127.0	122.0	127.2096	122.1362	.1152E-02	.9420E-02
9.817	33.275	.1007E+06	.943	127.0	122.0	127.0756	122.3410	.9506E-03	.6505E-03
9.789	39.513	.5197E+05	.770	127.0	122.5	126.9703	122.4817	.1075E-02	.6395E-03
9.837	45.751	.7026E+05	.896	127.0	123.0	126.8953	122.6352	.8458E-03	.1305E-02
9.832	52.087	.9198E+05	.959	127.0	123.0	126.8278	122.8641	.8622E-03	.5463E-03
9.792	58.302	.1037E+06	.993	127.0	123.0	126.7672	122.0491	.1204E-02	.1069E-02
9.832	64.588	.1144E+06	.949	127.0	123.0	126.7569	123.3368	.9579E-03	.2113E-02
9.795	70.845	.1213E+06	.815	127.0	123.5	126.7667	123.5495	.1154E-02	.1019E-02
9.916	1.830	.1358E+06	.964	127.0	124.0	126.8097	123.7514	.1013E-02	.9220E-03
9.913	8.199	.1206E+06	1.044	127.0	124.0	126.8457	123.9741	.8701E-03	.3964E-03
9.933	14.372	.1113E+06	1.036	127.0	124.0	126.9014	124.1747	.1253E-02	.1860E-02
9.898	20.752	.7379E+05	.872	127.0	124.5	127.0150	124.3636	.4140E-03	.9174E-03
9.879	26.986	.7404E+05	.839	127.0	124.5	127.1188	124.5663	.6444E-03	.4991E-03
9.865	33.265	.4971E+05	.945	127.0	125.0	127.2890	124.7191	.1304E-02	.1333E-02
9.876	39.556	.4836E+05	.959	127.5	125.0	127.3431	124.9234	.1105E-02	.2953E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

9.864	45.	.5631E+05	.965	127.5	125.0	127.6829	125.1500	.1314E-01	.571E-02
9.867	58.368	.6976E+05	.970	128.0	125.0	127.9102	125.3015	.1065E-01	.1807E-02
9.820	64.612	.7377E+05	.898	128.0	125.5	128.1167	125.3510	.9704E-03	.6772E-03
9.865	70.823	.7565E+05	.848	128.5	125.5	128.3055	125.4305	.985E-03	.8464E-03
9.882	1.826	.8364E+05	.818	128.5	125.5	128.5298	125.4972	.1377E-02	.2024E-03
9.865	8.166	.9909E+05	.873	129.0	125.5	128.7660	125.5336	.8579E-03	.9143E-03
9.893	14.377	.9104E+05	.871	129.0	125.5	128.9874	125.5166	.9451E-03	.1175E-02
9.876	20.757	.8675E+05	.859	129.0	125.5	129.2096	125.4784	.9614E-03	.1067E-02
9.809	26.972	.7866E+05	.864	129.5	125.5	129.3961	125.4369	.1135E-02	.6871E-03
9.846	33.263	.7620E+05	.873	129.5	125.5	129.6004	125.3742	.7644E-03	.1274E-02
9.840	39.555	.7773E+05	.982	130.0	125.0	129.7973	125.3336	.2021E-03	.2344E-02
9.876	45.836	.5853E+05	.987	130.0	125.0	129.9934	125.1742	.2359E-02	.1571E-02
9.851	52.113	.4852E+05	.972	130.0	125.0	130.1961	125.0437	.1820E-02	.1372E-02
9.848	58.380	.4808E+05	.955	130.5	125.0	130.3464	124.9112	.653E-03	.9554E-03
9.885	64.618	.5352E+05	.926	130.5	125.0	130.4659	124.6991	.1594E-02	.3190E-02
9.916	70.869	.7577E+05	.810	130.5	124.5	130.6037	124.5625	.6233E-03	.1434E-02
9.876	1.831	.7597E+05	.876	131.0	124.5	130.7337	124.3610	.7445E-03	.1091E-02
9.927	8.157	.1170E+06	1.020	131.0	124.0	130.7993	124.1558	.6552E-03	.2342E-02
9.938	14.356	.1251E+06	1.016	131.0	124.0	130.8948	123.9451	.8672E-03	.1925E-02
9.910	20.728	.1342E+06	.970	131.0	124.0	130.9572	123.7057	.9872E-03	.1981E-02
9.767	26.972	.1152E+06	.834	131.0	123.5	130.9663	123.5105	.1691E-02	.2074E-02
9.843	33.274	.1093E+06	.977	131.0	123.0	130.9507	123.3038	.8432E-03	.1925E-02
9.809	39.531	.1003E+06	1.019	131.0	123.0	130.9162	123.0528	.9157E-03	.1554E-02
9.871	45.818	.9091E+05	.965	131.0	123.0	130.8986	122.8620	.5105E-03	.1514E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta r i 3	4	5	6
0	.02757	.01706	.00614	-.02456	-.00692	-.00623
1	-.00855	-.01510	-.01714	-.01017	-.00131	-.00770
2	-.01886	-.01917	-.00941	-.00836	-.01186	-.03336
3	.00529	-.02299	.00596	-.00956	.02336	.02851
4	.01872	.03651	.01272	.00646	-.01487	-.00631
5	.00524	-.02212	-.01058	-.01852	.02074	-.00534
6	-.01389	.00956	-.02928	-.01305	.00450	.01621
7	.00170	-.01064	-.01140	-.00825	.03318	.00521
8	.00634	.00968	-.04124	-.00963	.00328	-.01833
9	.00996	.02604	.01850	.00499	.00221	.02552

$\mu_0 = 129.8595$      $\mu_0 = 123.4283$      $\mu_0 = 2.08994412$      $\text{std. dev.} = .01724499$

HISTOGRAM DEVIATION  $\geq e$

e =	.05	.04	.03	.02	.01	0.00	bad points
	0	1	3	10	19	27	0

ORIGINAL PAGE IS  
OF POOR QUALITY

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	3	4	5	6
0	.02775	.01727	.00636	.02432	.00667	.00891
1	-.00831	-.01486	-.01692	-.00907	-.00114	-.00775
2	-.01874	-.01909	-.00937	-.00833	-.01150	-.02131
3	.00519	-.02314	.00575	-.00012	.02305	.02717
4	.01832	.02608	.01202	.00592	.01544	.00693
5	.00460	-.02279	-.01127	.01913	.02402	.00406
6		.00884	-.03000	-.01376	.00392	.00765
7	.00107	-.01123	-.01197	.00877	.02260	.00675
8	.01176	.00934	-.04222	-.00886	.00310	.01896
9	.00482	.02601	.01851	.00505	.00301	.02764

x0= 128.8592    y0= 123.4292    r0= 2.00018540    std.dev.= .01729229

HISTOGRAM DEVIATION >= e

e=	0	1	3	10	17	28	1
	.05	.04	.03	.02	.01	0.00	bad points

NDRN: Coarse 1.0 Fine 1.0 Track 64.0  
 Information delay: .1160E+00 .4564E+00 .1344E-02  
 Thresholds: .133E+06 .9190E+05 .7352E+06

Constants: .31700 .25500 .40600 .26500  
 Displacements: 0.00000 0.00000 0.00000 0.00000

		dark		star		reference		position		standard deviation	
temp	angle	current	mas.	X	Y	X	Y	X	Y		
9.843	58.373	.1597E+05	2.558	131.0	122.5	130.7382	122.4718	.2131E-02	.1775E-02		
9.874	64.614	.2501E+05	2.727	130.5	122.0	130.6142	122.2796	.9196E-03	.1240E-02		
9.848	70.866	.2441E+05	2.764	130.5	122.0	130.4716	122.1043	.9970E-03	.9337E-03		
9.865	1.787	.2391E+05	2.770	130.5	122.0	130.3220	121.9795	.7402E-03	.1054E-02		
9.916	8.155	.2764E+05	2.782	130.0	122.0	130.1560	121.8053	.1595E-02	.3150E-02		
9.916	14.389	.2553E+05	2.714	130.0	121.5	129.9822	121.6868	.1135E-02	.1805E-02		
9.871	20.717	.2675E+05	2.677	130.0	121.5	129.8026	121.5839	.3370E-02	.1670E-02		
9.846	26.955	.2266E+05	2.623	129.5	121.5	129.5876	121.4947	.1365E-02	.5054E-03		
9.848	33.230	.2039E+05	2.651	129.5	121.5	129.3787	121.4269	.1480E-02	.2345E-03		
9.888	39.524	.2019E+05	2.683	129.0	121.5	129.1589	121.3846	.1379E-02	.1782E-02		
9.882	45.814	.2617E+05	2.773	129.0	121.5	128.9543	121.3446	.1894E-01	.8359E-02		
9.871	52.072	.2266E+05	2.734	129.0	121.5	128.7502	121.3624	.6945E-03	.2184E-02		
9.885	58.358	.2003E+05	2.664	128.5	121.5	128.5269	121.3893	.1533E-02	.1506E-02		
9.885	64.552	.2069E+05	2.642	128.5	121.5	128.3274	121.4344	.1231E-02	.9954E-03		
9.854	70.862	.2304E+05	2.638	128.0	121.5	128.0868	121.4984	.5468E-03	.8079E-03		
9.865	1.827	.2539E+05	2.656	128.0	121.5	127.8658	121.6003	.7876E-03	.8382E-03		
9.871	8.150	.3194E+05	2.777	127.5	122.0	127.6933	121.6232	.3070E-01	.5524E-01		
9.860	14.385	.2470E+05	2.778	127.5	122.0	127.5152	121.8204	.8700E-03	.1754E-02		
9.860	20.731	.2444E+05	2.770	127.5	122.0	127.3745	121.9891	.6531E-03	.5448E-03		
9.817	26.970	.2799E+05	2.774	127.0	122.0	127.1987	122.1329	.2073E-02	.1531E-02		
9.871	33.241	.2805E+05	2.735	127.0	122.0	127.0667	122.3409	.1068E-02	.9388E-03		
9.820	39.540	.1708E+05	2.567	127.0	122.5	126.9649	122.4892	.1520E-02	.1084E-02		
9.761	45.821	.2139E+05	2.690	127.0	123.0	126.8917	122.6420	.8703E-03	.8127E-03		
9.803	52.086	.2565E+05	2.744	127.0	123.0	126.8219	122.8659	.1910E-02	.1173E-02		
9.820	58.358	.2825E+05	2.779	127.0	123.0	126.7598	123.0513	.1468E-02	.1095E-02		
9.857	64.613	.3067E+05	2.741	127.0	123.0	126.7575	123.3395	.1212E-02	.2884E-02		
9.826	70.869	.3154E+05	2.622	127.0	123.5	126.7598	123.5585	.1628E-02	.7035E-03		
9.949	1.795	.3568E+05	2.766	127.0	124.0	126.8049	123.7559	.1857E-02	.2553E-02		
9.874	8.166	.3246E+05	2.836	127.0	124.0	126.8384	123.9621	.7210E-03	.7435E-02		
9.885	14.372	.3030E+05	2.818	127.0	124.0	126.8928	124.1746	.1171E-02	.9347E-03		
9.848	20.739	.2148E+05	2.661	127.0	124.5	127.0096	124.3732	.1088E-02	.8945E-02		
9.882	26.959	.2126E+05	2.633	127.0	124.5	127.1107	124.5678	.9643E-03	.9341E-03		
9.865	33.256	.1728E+05	2.738	127.0	125.0	127.2331	124.7274	.6214E-03	.1031E-02		
9.829	39.536	.1658E+05	2.755	127.5	125.0	127.3476	124.9208	.1093E-02	.2121E-02		
9.809	45.831	.1672E+05	2.752	127.5	125.0	127.5194	125.0711	.6347E-03	.1198E-02		

ORIGINAL PAGE IS OF POOR QUALITY



9.841	52.367	.2183E+05	2.757	128.0	125.0	127.9022	125.1999	.3124E-03	.1103E-02
9.848	58.364	.2229E+05	2.683	128.0	125.5	128.1103	125.3604	.4153E-03	.2340E-02
9.874	64.624	.2249E+05	2.655	128.5	125.5	128.3056	125.4365	.1329E-02	.1700E-02
9.851	70.838	.2394E+05	2.630	128.5	125.5	128.5227	125.5035	.1815E-02	.5590E-02
9.834	8.193	.2714E+05	2.672	129.0	125.5	128.7522	125.5398	.8325E-03	.7452E-03
9.882	14.362	.2561E+05	2.672	129.0	125.5	128.9795	125.5217	.7406E-03	.1106E-02
9.898	20.727	.2443E+05	2.659	129.0	125.5	129.2010	125.4840	.1527E-02	.1464E-02
9.862	26.950	.2267E+05	2.672	129.5	125.5	129.3954	125.4441	.7332E-03	.1226E-02
9.851	33.261	.2229E+05	2.682	129.5	125.5	129.5935	125.3641	.9638E-03	.1103E-02
9.882	39.540	.2282E+05	2.799	130.0	125.5	129.8007	125.2885	.8819E-02	.3950E-01
9.857	45.815	.1925E+05	2.767	130.0	125.0	129.9899	125.1702	.9008E-03	.1752E-02
9.879	52.084	.1694E+05	2.754	130.0	125.0	130.1871	125.0360	.9920E-03	.1392E-02
9.862	58.370	.1655E+05	2.749	130.5	125.0	130.3469	124.9154	.9149E-03	.1155E-02
9.879	64.613	.1760E+05	2.727	130.5	125.0	130.4696	124.7084	.5220E-03	.1149E-02
9.871	70.870	.2169E+05	2.627	130.5	124.5	130.6014	124.5681	.9120E-03	.6180E-03
9.865	1.795	.2149E+05	2.670	131.0	124.5	130.7415	124.3698	.1441E-02	.1267E-02
9.921	8.197	.3160E+05	2.809	131.0	124.0	130.8027	124.1535	.1082E-02	.1130E-02
9.846	14.363	.3315E+05	2.810	131.0	124.0	130.8976	123.9404	.1710E-02	.1428E-02
9.868	20.726	.3532E+05	2.772	131.0	124.0	130.9640	123.7089	.6165E-03	.1144E-02
9.823	26.969	.2988E+05	2.635	131.0	123.5	130.9692	123.5146	.9104E-03	.1076E-02
9.778	33.256	.2879E+05	2.759	131.0	123.0	130.9564	123.3062	.5721E-03	.2202E-02
9.784	39.547	.2687E+05	2.799	131.0	123.0	130.9243	123.0466	.1705E-02	.4116E-03
9.792	45.812	.2523E+05	2.751	131.0	123.0	130.9040	122.8594	.2184E-02	.9757E-03
9.812	52.074	.2087E+05	2.633	131.0	122.5	130.8381	122.6665	.1138E-01	.2763E-01

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.02077	.00993	-.00115	-.02860	-.01002	-.01527
1	-.01597	-.02157	-.02030	-.02272	-.00267	-.02005
2	-.02333	-.02603	-.01125	-.00999	.05809	.00426
3	-.02400	.01382	.00383	.02128	.02539	.01267
4	.03881	.01402	.00851	-.01493	-.00528	.00764
5	-.01884	-.00887	-.01467	.01410	-.00842	-.01549
6	.00720	-.02348	-.01226	.00718	.01900	.00228
7	-.01030	-.00801	-.00439	-.00813	-.01592	-.00694
8	.01174	-.03404	-.00893	.01420	-.01552	.01221
9	.03423	.02289	.01221	.01185	.03445	.03264

x0= 128.8562    r0= 123.4313    r0= 2.09172463    std.dev.= .01916037

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	0	5	13	22	19	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.02328	.01270	.00185	-.02542	-.00663	-.01181
1	-.01226	-.01773	-.01636	-.01871		-.01598
2	-.01927	-.02200	-.00730	-.00615		-.00784
3	-.02059	.01703	.00681	.02408	.02300	.02202
4	.04094	.01580	.01302	-.01367	-.00427	.00837
5	-.01836	-.00863	-.01454	.01391	-.00879	-.01601
6	.00649	-.02432	-.01319	.00617	.01794	.00120
7	-.01136	-.00904	-.00535		-.01667	-.00753
8	.01130	-.03427	-.00897	.01440	-.01508	.01292
9	.03522	.02411	.01370	.01365	.03648	

$\bar{x} = 128.8564$      $\bar{y} = 123.4339$      $r = 2.09022737$      $\text{std. dev.} = .01752524$

HISTOGRAM DEVIATION  $\geq e$     \*

e =	.05	.04	.03	.02	.01	0.00	bad points
	0	1	3	9	26	17	4

ORIGINAL PAGE IS  
OF POOR QUALITY

	Coarse	Fine	Track
NDRO:	1.0	1.0	192.0
Integration delay:	.1160E+00	.4564E+00	.7974E+00
Thresholds:	.183E+06	.9190E+05	.7352E+06

Constants:	.31700	.25500	.40600	.26500
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark	star	reference		position		standard deviation	
		current	mag.	X	Y	X	Y	X	Y
9.787	58.367	.2530E+05	5.688	131.0	122.5	130.7496	122.4579	.2186E-02	.1346E-02
9.829	64.628	.2299E+05	5.879	130.5	122.0	130.6175	122.2406	.1157E-01	.5455E-01
9.851	70.820	.2248E+05	5.863	130.5	122.0	130.4951	122.0393	.3659E-02	.4223E-02
9.829	1.816	.2251E+05	5.869	130.5	122.0	130.3481	121.9227	.1489E-02	.6193E-02
9.843	8.172	.2289E+05	5.891	130.0	122.0	130.1871	121.7470	.9631E-03	.1342E-02
9.843	14.375	.2327E+05	5.879	130.0	121.5	130.0149	121.6833	.3803E-02	.1921E-02
9.837	20.726	.2329E+05	5.851	130.0	121.5	129.8301	121.5758	.2174E-02	.1159E-02
9.823	26.954	.2295E+05	5.813	129.5	121.5	129.6308	121.4786	.2200E-02	.2346E-02
9.834	33.258	.2283E+05	5.842	129.5	121.5	129.4204	121.4104	.2075E-02	.3979E-02
9.823	39.522	.2261E+05	5.871	129.0	121.5	129.1626	121.3548	.2538E-02	.1778E-02
9.812	45.811	.2263E+05	5.890	129.0	121.5	128.9473	121.3402	.4506E-02	.2751E-02
9.904	52.069	.2290E+05	5.922	129.0	121.5	128.7376	121.3456	.2300E-02	.1213E-02
9.820	58.355	.2324E+05	5.861	128.5	121.5	128.5253	121.3669	.2439E-02	.1188E-02
9.876	64.580	.2629E+05	5.836	128.5	121.5	128.3219	121.4136	.2155E-02	.1436E-02
9.879	70.866	.2642E+05	5.804	128.0	121.5	128.1010	121.4853	.1832E-02	.1969E-02
9.899	1.790	.2660E+05	5.820	128.0	121.5	127.8810	121.5879	.2828E-02	.1918E-02
9.868	8.167	.2566E+05	5.875	127.5	121.5	127.6821	121.6988	.2306E-02	.3843E-03
9.851	14.376	.2582E+05	5.945	127.5	122.0	127.5150	121.8229	.1440E-02	.3577E-02
9.860	20.717	.2573E+05	5.931	127.5	122.0	127.3774	121.9879	.1902E-02	.3297E-02
9.840	26.954	.2595E+05	5.906	127.0	122.0	127.1693	122.1086	.2818E-02	.5134E-02
9.874	33.236	.2595E+05	5.870	127.0	122.0	127.0347	122.3192	.2488E-02	.3850E-02
9.733	39.542	.2546E+05	5.727	127.0	122.5	126.9540	122.4976	.3556E-02	.1303E-02
9.775	45.807	.2601E+05	5.852	127.0	123.0	126.8780	122.6435	.5041E-02	.3044E-01
9.745	52.099	.2640E+05	5.915	127.0	123.0	126.7987	122.8455	.1898E-02	.2704E-02
9.756	58.385	.2652E+05	5.948	127.0	123.0	126.7364	123.0376	.6594E-03	.2615E-02
9.795	64.592	.2694E+05	5.938	127.0	123.0	126.7307	123.3208	.7529E-02	.3223E-01
9.761	70.866	.2675E+05	5.829	127.0	123.5	126.7395	123.5591	.3194E-02	.2540E-02
9.876	1.805	.2709E+05	5.965	127.0	124.0	126.7633	123.7028	.7087E-02	.1113E-01
9.854	8.161	.2686E+05	6.016	127.0	124.0	126.7996	123.9126	.4341E-02	.2205E-02
9.919	14.391	.2672E+05	6.003	127.0	124.0	126.8594	124.1265	.3363E-02	.4267E-02
9.834	20.731	.2589E+05	5.845	127.0	124.5	127.0056	124.3668	.1219E-02	.2477E-02
9.823	26.960	.2591E+05	5.821	127.0	124.5	127.1111	124.5631	.2060E-02	.1046E-02
9.809	33.249	.2566E+05	5.900	127.0	125.0	127.2223	124.7500	.3890E-02	.1770E-02
9.832	39.531	.2529E+05	5.910	127.5	125.0	127.3609	124.9341	.2167E-02	.4962E-02
9.846	45.804	.2526E+05	5.903	127.5	125.0	127.5064	125.0296	.2631E-02	.2753E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

9.85	52.000	.2550E+05	5.907	127.0	125.0	127.0078	125.1427	.1918E-02	.2510E-02
9.834	58.337	.2626E+05	5.902	128.0	125.0	127.9204	125.2959	.1918E-02	.2240E-02
9.829	64.593	.2631E+05	5.854	128.0	125.5	128.1382	125.3655	.2816E-02	.2097E-02
9.806	70.856	.2650E+05	5.852	128.5	125.5	128.3216	125.4445	.2265E-02	.1654E-02
9.806	1.805	.2651E+05	5.825	128.5	125.5	128.5421	125.5092	.1383E-02	.1930E-02
9.792	8.181	.2330E+05	5.869	129.0	125.5	128.7385	125.5542	.1320E-02	.2794E-02
9.823	14.368	.2320E+05	5.854	129.0	125.5	128.9649	125.5298	.7823E-02	.2883E-02
9.871	20.729	.2314E+05	5.847	129.0	125.5	129.1878	125.4910	.7001E-03	.1269E-02
9.826	26.959	.2296E+05	5.874	129.5	125.5	129.4023	125.4489	.2179E-02	.1803E-02
9.784	33.242	.2294E+05	5.883	129.5	125.5	129.5964	125.3875	.1611E-02	.1379E-02
9.798	39.522	.2291E+05	5.953	130.0	125.5	129.7978	125.2825	.3070E-02	.1584E-02
9.888	45.823	.2272E+05	5.928	130.0	125.0	129.9810	125.1621	.1489E-02	.2044E-02
9.826	52.078	.2254E+05	5.915	130.0	125.0	130.1755	125.0289	.2836E-02	.4247E-02
9.944	58.364	.2252E+05	5.937	130.5	125.0	130.3476	124.9170	.2492E-02	.1601E-02
9.860	64.612	.2257E+05	5.922	130.5	125.0	130.4697	124.7064	.2155E-02	.1698E-02
9.896	70.837	.2237E+05	5.795	130.5	124.5	130.5872	124.5616	.2621E-02	.2644E-02
9.871	1.802	.2248E+05	5.839	130.5	124.5	130.6973	124.3712	.2739E-02	.2158E-02
9.927	8.158	.2714E+05	6.029	131.0	124.0	130.7400	124.1345	.3884E-02	.3811E-02
9.919	14.394	.2723E+05	6.029	131.0	124.0	130.8389	123.9094	.3019E-02	.4546E-02
9.857	20.726	.2738E+05	6.001	131.0	124.0	130.9115	123.6695	.6304E-02	.2333E-02
9.854	26.946	.2660E+05	5.839	131.0	123.5	130.9167	123.5253	.1292E-02	.1820E-02
9.809	33.249	.2656E+05	5.926	131.0	123.0 *	130.8895	123.2887	.9153E-02	.4571E-02
9.803	39.529	.2645E+05	5.956	131.0	123.0	130.8573	123.0207	.9443E-03	.2372E-02
9.865	45.820	.2637E+05	5.917	131.0	123.0	130.8369	122.8379	.1142E-02	.5271E-02
9.848	52.090	.2591E+05	5.795	131.0	122.5 *	130.7967	122.6598	.2141E-01	.3298E-01

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta ri						
	1	2	3	4	5	6	7
0	.04585	.04064	.06274	.03229	.05492	.00359	
1	-.00020	.00277	-.00199	-.00383	-.01172	.01754	
2	-.01768	-.02278	-.02415	-.02753	.02118	-.02065	
3	-.04906	.02774	.01815	.00306	.01361	.02137	
4	.04140	.01492	.00838	-.00080	.00239	.00627	
5	-.03220	-.02372	-.00203	.02057	-.00563	-.01212	
6	-.00631	-.02708	-.00521	.01554	.04202	.01813	
7	.00589	.01146	.01815	-.00139	-.01077	-.00212	
8	.03167	-.01652	-.00553	-.00580	-.06250	-.03433	
9	-.00579	-.01289	-.03849	-.03578	-.01229	.00620	

x0= 129.8378    y0= 123.4201    r0= 2.09445834    std.dev.= .02486158

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	3	5	6	10	15	21	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.04820		.06524	.03483	.05751	.00620
1	.00243	.00539	.00062	-.00125	-.00918	.01504
2	-.01525	-.02042	-.02188	-.02537	-.01913	-.01871
3	-.04724	.02943	.01969	.00449		.02518
4	.04249		.00919		.00302	.00030
5	-.03178	-.02338	-.00175	.02079	-.00549	-.01305
6	-.00616	-.02693	-.00505	.01573	.04225	.01941
7	.00624	.01189	.01466	-.00078	-.01005	-.00178
8	.03261	-.01544	-.00434	-.00448	-.06104	-.03272
9	-.00404	-.01106	-.03653	-.03368	-.01010	

x0= 128.8373    y0= 123.4212    r0= 2.09307170    std.dev.= .02515172

HISTOGRAM DEVIATION > 1 e

dev	.05	.04	.03	.02	.01	0.00	bad points
	3	4	6	8	14	20	5

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 12-B Track data file TDATA07

NPRO:                   Coarse                   Fine                   Track  
 Integration delay:    .1160E+00           .4564E+00           .1344E-02  
 Thresholds:           .3217E+06           .9190E+05           .7352E+06

Constants:            .31700                   .25500                   .40600                   .26500  
 Displacements:        0.00000                0.00000                0.00000                0.00000

temp	angle	dark current	star mag.	referenc		position		standard deviation	
				X	Y	X	Y	X	Y
20.102	52.072	.7117E+05	.958	130.0	125.0	130.1545	125.0490	.1331E-02	.8931E-03
20.113	58.292	.6803E+05	.943	130.5	125.0	130.3102	124.9260	.4216E-03	.1293E-02
20.108	44.604	.7264E+05	.918	130.5	125.0	130.4321	124.7097	.4455E-03	.1270E-02
20.133	70.866	.9464E+05	.809	130.5	124.5	130.5656	124.5693	.5135E-03	.6714E-03
20.094	1.802	.9450E+05	.839	130.5	124.5	130.6807	124.3680	.9178E-03	.1285E-02
20.175	8.180	.1370E+06	.998	131.0	124.0	130.7567	124.1631	.6128E-03	.1011E-02
20.175	14.360	.1472E+06	.998	131.0	124.0	130.8511	123.9448	.7265E-03	.3989E-03
20.150	20.746	.1562E+06	.948	131.0	124.0	130.9183	123.7091	.1394E-02	.5660E-03
20.038	26.949	.1381E+06	.822	131.0	123.5	130.9280	123.5208	.7658E-03	.7155E-03
20.085	33.254	.1317E+06	.959	131.0	123.0	130.9169	123.3167	.8962E-03	.6421E-03
20.125	39.526	.1214E+06	1.000	131.0	123.0	130.8840	123.0546	.7831E-03	.1130E-02
20.074	45.822	.1141E+06	.947	131.0	123.0	130.8628	122.8650	.8945E-03	.7793E-03
20.097	52.075	.9023E+05	.815	131.0	122.5	130.7942	122.6751	.8434E-02	.3131E-01
20.071	58.269	.6579E+05	.745	131.0	122.5	130.7146	122.4739	.6292E-03	.4952E-03
20.144	64.567	.1069E+06	.908	130.5	122.0	130.5941	122.2915	.8503E-03	.7024E-03
20.186	70.863	.1045E+06	.956	130.5	122.0	130.4517	122.1083	.3844E-03	.7733E-03
20.142	1.808	.1004E+06	.963	130.5	122.0	130.2994	121.9802	.4871E-03	.8683E-03
20.113	8.158	.1166E+06	.973	130.0	122.0	130.1372	121.7994	.9743E-03	.1116E-02
20.088	14.373	.1121E+06	.904	130.0	121.5	129.9646	121.6893	.4850E-03	.9664E-03
20.105	20.728	.1186E+06	.859	130.0	121.5	129.7807	121.5056	.4147E-03	.6506E-03
20.128	26.960	.9867E+05	.802	129.5	121.5	129.5651	121.4899	.3931E-03	.3504E-03
20.105	33.245	.8692E+05	.835	129.5	121.5	129.3499	121.4209	.7006E-03	.3092E-03
20.122	39.542	.8541E+05	.875	129.0	121.5	129.1414	121.3714	.6691E-03	.6253E-03
20.108	45.820	.8915E+05	.997	129.0	121.0	128.9127	121.3445	.7117E-03	.7777E-03
20.147	52.054	.8706E+05	.979	128.5	121.0	128.6965	121.3538	.7411E-02	.1752E-02
20.102	58.362	.8368E+05	.847	128.5	121.5	128.5056	121.3787	.4349E-03	.6202E-03
20.091	64.622	.9108E+05	.867	128.0	121.5	128.2716	121.4128	.7011E-03	.7043E-03
20.094	70.880	.1007E+06	.828	128.0	121.5	128.0610	121.4926	.9777E-03	.5706E-03
20.077	1.816	.1110E+06	.839	128.0	121.5	127.8340	121.6008	.7524E-03	.3512E-03
20.116	8.179	.1398E+06	.952	127.5	122.0	127.6743	121.6137	.3152E-01	.5958E-01
20.097	14.388	.1034E+06	.962	127.5	122.0	127.4887	121.8145	.6451E-03	.7013E-03
20.133	20.754	.1076E+06	.958	127.5	122.0	127.3460	121.9882	.4697E-03	.1169E-02
20.094	26.950	.1207E+06	.969	127.0	122.0	127.1743	122.1305	.8070E-03	.8189E-03
20.116	33.242	.1193E+06	.932	127.0	122.0	127.0375	122.3414	.1101E-02	.1175E-02
20.038	39.528	.7123E+05	.756	127.0	122.5	126.8111	122.4810	.7013E-03	.7445E-03

ORIGINAL PAGE IS  
 OF POOR QUALITY



20.0	4E	.5E10	.	0	.0	554	22.6	.00E-03	.1E-03
20.069	52.043	.1142E+06	.936	127.0	123.0	126.7851	122.8612	.00E-03	.7500E-03
20.055	58.358	.1264E+06	.976	127.0	123.0	126.7260	123.0529	.00E-03	.1324E-02
20.094	64.610	.1397E+06	.933	127.0	123.0	126.7180	123.3478	.6707E-03	.1495E-02
20.094	70.849	.1441E+06	.801	127.0	123.5	126.7237	123.5549	.3860E-03	.7659E-03
20.212	1.837	.1588E+06	.941	127.0	124.0	126.7637	123.7499	.7554E-03	.1854E-02
20.192	8.180	.1428E+06	1.020	127.0	124.0	126.8019	123.9605	.1519E-02	.5203E-03
20.198	14.384	.1318E+06	1.012	127.0	124.0	126.8586	124.1790	.7176E-03	.9180E-03
20.142	20.745	.9526E+05	.860	127.0	123.5	126.9782	124.3684	.6197E-03	.4689E-03
20.094	26.966	.9343E+05	.831	127.0	124.5	127.0831	124.5725	.8379E-03	.1047E-02
20.147	33.248	.7269E+05	.928	127.0	125.0	127.2104	124.7233	.5779E-03	.1454E-02
20.102	39.482	.6778E+05	.948	127.5	125.0	127.3331	124.9312	.2724E-03	.4645E-03
20.136	45.827	.6761E+05	.946	127.5	125.0	127.4850	125.0417	.4266E-03	.7210E-03
20.122	52.098	.7526E+05	.934	127.5	125.0	127.6552	125.1616	.7637E-03	.1040E-02
20.125	58.382	.9454E+05	.955	128.0	125.0	127.8671	125.3193	.8941E-03	.1619E-02
20.122	64.632	.9849E+05	.877	128.0	125.5	128.0767	125.3626	.7003E-03	.9690E-03
20.128	70.877	.1037E+06	.861	128.0	125.5	128.2752	125.4351	.6333E-03	.7822E-03
20.175	1.819	.1056E+06	.814	128.5	125.5	128.4844	125.5064	.5561E-03	.6655E-03
20.125	8.178	.1222E+06	.864	129.0	125.5	128.7109	125.5468	.7149E-03	.7655E-03
20.113	14.370	.1141E+06	.863	129.0	125.5	128.9409	125.5331	.1871E-02	.6476E-03
20.158	20.744	.1095E+06	.845	129.0	125.5	129.1679	125.4903	.1432E-02	.9145E-03
20.128	26.994	.1010E+06	.855	129.5	125.5	129.3564	125.4471	.1050E-02	.6763E-03
20.142	33.264	.9860E+05	.861	129.5	125.5	129.5568	125.3883	.7732E-03	.7270E-03
20.167	39.545	.1012E+06	.946	130.0	125.5	129.7549	125.2954	.6258E-03	.1181E-02
20.113	45.810	.8344E+05	.973	130.0	125.0	129.9490	125.1942	.1099E-02	.1953E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta r1 3	4	5	6
0	.00499	.01711	-.03615	-.00999	-.01065	.02352
1	.00099	.02250	.01565	.00561	.00370	.02522
2	.01951	-.02810	.01395	.00587	-.02259	.00230
3	-.00972	-.01416	-.01551	-.01586	-.01007	.00603
4	-.01375	-.01834	-.00310	-.01277	-.01544	.00599
5	-.00013	-.03165	.00336	-.00487	.01756	.02805
6	.01929	.03409	.00990	.00633	-.01272	-.00709
7	.00574	-.02675	-.01493	-.02917	.01888	-.00123
8	-.00717	.02180	-.02356	-.01645	.00903	.02489
9	.01222	-.00492	-.00718	-.00206	-.00790	.00006

x0= 128.8203    r0= 123.4304    r0= 2.09397459    std.dev.= .01782441

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	0	3	11	20	25	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	7
0	.00457	.01678	-.02633	-.00295	-.01055	-.02125
1	.00147	.02318	.01650	.00635	.00499	.02732
2		.02995	.01600	.00812	-.02019	.00439
3	-.00699	-.01130	-.01252	-.01276	-.00689	-.00279
4	-.01047	-.01505	.00019	-.00951	-.01223	
5	.00293	-.02871	.00618	-.00222	.02009	.03045
6	.02150	.03613	.01167	.00791	-.01133	.00590
7	.00672	-.02598	-.01436	-.02877	.01909	-.00122
8	-.00725	.02155	-.02392	-.01690	.00849	.04429
9	.01158	-.00558	-.00784	-.00269	-.00349	.00042

x0= 128.8207    y0= 123.4323    r0= 2.09265852    std.dev.= .01637417

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00 <sup>1</sup>	bad points
	0	0	3	13	16	26	2

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 12-B Track data file TDATA08

NDRO: Coarse Fine Track  
 1.0 1.0 64.0  
 Integration delay: .1160E+00 .4564E+00 .1344E-02  
 Thresholds: .1838E+06 .9190E+05 .7352E+06

Constants: .31700 .25500 .40600 .26500  
 Displacements: 0.00000 0.00000 0.00000 0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
20.189	64.611	.3692E+05	2.967	130.5	125.0	130.4337	124.6629	.6727E-03	.1333E-02
20.191	70.870	.4083E+05	2.823	130.5	124.5	130.5697	124.5480	.3946E-03	.6214E-03
20.184	1.805	.4104E+05	2.863	130.5	124.5	130.6920	124.3331	.8849E-03	.9848E-03
20.254	8.163	.5245E+05	2.992	131.0	124.0	130.7859	124.0839	.9380E-03	.1137E-02
20.231	14.359	.5339E+05	3.036	131.0	124.0	130.8940	123.8877	.1124E-02	.1852E-02
20.251	20.728	.5535E+05	3.008	131.0	124.0	130.9613	123.6603	.9663E-03	.1290E-02
20.116	26.957	.4950E+05	2.841	131.0	123.5	130.9650	123.4851	.8914E-03	.4402E-03
20.108	33.233	.4865E+05	2.934	131.0	123.0	130.9483	123.2360	.1226E-02	.1192E-02
20.111	39.516	.4690E+05	2.989	131.0	123.0	130.9244	122.9906	.1173E-02	.8697E-03
20.091	45.814	.4530E+05	2.973	131.0	123.0	130.8991	122.8044	.8093E-03	.1664E-02
20.099	52.099	.4209E+05	2.810	131.0	122.5	130.8220	122.6481	.8001E-02	.5567E-02
20.139	58.367	.3905E+05	2.766	131.0	122.5	130.7255	122.4341	.5032E-03	.7668E-03
20.150	64.642	.4384E+05	2.898	130.5	122.0	130.5995	122.2064	.5959E-03	.1137E-02
20.189	70.863	.4332E+05	2.961	130.5	122.0	130.4542	122.0462	.1101E-02	.1116E-02
20.203	1.809	.4297E+05	3.008	130.5	122.0	130.3023	121.9126	.9358E-03	.8000E-03
20.189	8.196	.4624E+05	3.003	130.0	122.0	130.1720	121.7362	.3618E-03	.8606E-03
20.181	14.377	.4339E+05	2.901	130.0	121.5	129.9947	121.6605	.7158E-03	.8827E-03
20.181	20.750	.4372E+05	2.863	130.0	121.5	129.8031	121.5667	.8728E-03	.9699E-03
20.195	26.971	.4018E+05	2.811	129.5	121.5	129.5726	121.4683	.6406E-03	.4979E-03
20.215	33.256	.3822E+05	2.837	129.5	121.5	129.3601	121.3954	.8157E-03	.1107E-02
20.153	39.563	.3786E+05	2.918	129.0	121.0	129.1532	121.2845	.6637E-03	.8250E-03
20.170	45.815	.3833E+05	2.948	129.0	121.0	128.9362	121.2577	.1758E-02	.1558E-02
20.175	52.092	.3961E+05	2.937	128.5	121.0	128.6892	121.2642	.1193E-02	.1952E-02
20.158	58.367	.3990E+05	2.923	128.5	121.0	128.4768	121.3164	.8442E-03	.1212E-02
20.184	64.594	.4048E+05	2.833	128.5	121.5	128.3038	121.3906	.4761E-03	.6125E-03
20.212	70.880	.4259E+05	2.819	128.0	121.5	128.0972	121.4628	.5499E-03	.4908E-03
20.172	1.816	.4494E+05	2.830	128.0	121.5	127.8629	121.5768	.1027E-02	.4865E-03
20.240	8.153	.4320E+05	2.878	127.5	121.5	127.6525	121.6764	.3656E-03	.5052E-03
20.167	14.380	.4557E+05	3.013	127.5	122.0	127.4698	121.7718	.7029E-03	.7828E-03
20.217	20.749	.4492E+05	3.009	127.5	122.0	127.3336	121.9404	.4968E-03	.6753E-03
20.150	26.966	.4826E+05	2.952	127.0	122.0	127.2233	122.0753	.2971E-03	.1394E-02
20.167	33.254	.4825E+05	2.899	127.0	122.0	127.0786	122.2718	.2912E-03	.2013E-02
20.128	39.552	.4066E+05	2.765	127.0	122.5	126.9704	122.4521	.1098E-02	.7480E-03
20.128	45.810	.4158E+05	2.822	127.0	122.5	126.8683	122.6616	.1082E-02	.1251E-02
20.147	52.103	.4581E+05	2.958	127.0	123.0	126.8001	122.8963	.1301E-02	.1367E-02

ORIGINAL PAGE IS  
 OF POOR QUALITY

0.1.	58.	.E+05	2.	1	0	17	26	2.	0	1	0
20.099	64.617	.4978E+05	2.914	127.0	123.0	126.7381	123.2514	.1004E-02	.4414E-03		
20.116	70.830	.5086E+05	2.820	127.0	123.5	126.7509	123.5047	.0724E-02	.6567E-03		
20.192	1.805	.5774E+05	2.997	127.0	124.0	126.7831	123.6605	.2238E-01	.2034E-01		
20.220	3.174	.5282E+05	3.040	127.0	124.0	126.8432	123.8923	.1054E-02	.1153E-02		
20.265	14.391	.5124E+05	3.007	127.0	124.0	126.8953	124.0856	.6741E-02	.2154E-02		
20.189	20.734	.4293E+05	2.892	127.0	124.5	127.0144	124.3184	.1854E-02	.7211E-02		
20.167	26.953	.4266E+05	2.832	127.0	124.5	127.1169	124.5127	.1204E-02	.8010E-02		
20.181	33.268	.4243E+05	2.926	127.0	124.5	127.2275	124.7094	.1107E-02	.1097E-02		
20.181	39.547	.3752E+05	2.973	127.5	125.0	127.3350	124.8457	.1044E-02	.1034E-02		
20.240	45.824	.3770E+05	2.951	127.5	125.0	127.4906	124.9520	.6531E-03	.2474E-02		
20.170	52.099	.3847E+05	2.918	127.5	125.0	127.6675	125.0592	.5120E-03	.8214E-02		
20.136	58.367	.4123E+05	2.915	128.0	125.0	127.9000	125.2019	.1040E-02	.9034E-02		
20.189	64.629	.4201E+05	2.875	128.0	125.5	128.1203	125.2997	.6673E-03	.9334E-03		
20.175	70.891	.4274E+05	2.854	128.5	125.5	128.2823	125.3829	.1036E-02	.1257E-02		
20.212	1.838	.4415E+05	2.829	128.5	125.5	128.4943	125.4557	.8906E-03	.8461E-03		
20.181	8.201	.4449E+05	2.863	129.0	125.5	128.7404	125.4984	.6847E-03	.6582E-03		
20.206	14.384	.4338E+05	2.861	129.0	125.5	128.9756	125.4831	.7281E-03	.8791E-03		
20.220	20.726	.4269E+05	2.944	129.0	125.5	129.2021	125.4402	.1203E-02	.5537E-03		
20.158	26.976	.4107E+05	2.874	129.5	125.5	129.3654	125.3966	.6666E-03	.8663E-03		
20.217	33.248	.4037E+05	2.879	129.5	125.5	129.5630	125.3324	.7794E-03	.1081E-02		
20.206	39.546	.4026E+05	2.923	130.0	125.0	129.7755	125.2309	.4593E-03	.1294E-02		
20.192	45.828	.3724E+05	2.933	130.0	125.0	129.9970	125.0840	.1544E-02	.1357E-02		
20.172	52.108	.3594E+05	2.945	130.0	125.0	130.2030	124.9685	.1025E-02	.1120E-02		
20.203	58.362	.3604E+05	2.988	130.5	125.0	130.3199	124.8536	.2356E-03	.1614E-02		

ORIGINAL PAGE IS  
OF POOR QUALITY

	delta ri					
	1	2	3	4	5	6
0	-.04792	-.00748	-.01284	-.02734	.01844	.04171
1	.02221	.01432	.02127	.03873	.01347	.01334
2	.01605	-.00468	-.02655	.01807	-.02586	.04317
3	-.04805	-.04274	.02545	.03229	.03017	.00541
4	-.02848	-.03158	.03528	.00813	.02588	.00012
5	-.00447	.00014	.00719	.00054	.02120	.04702
6	.02834	.01586	-.00081	-.01510	.00829	.02378
7	-.01097	.01342	.02321	-.00250	.03144	.01346
8	-.03035	-.00226	.02193	.03719	.02271	.00821
9	-.00290	-.00607	-.00819	-.03106	.00119	.00431

0= 128.8507    r0= 123.3761    r0= 2.08791971    std.dev.= .02418402

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	6	9	15	11	19	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	-.04790	-.00746	-.01283	-.02732	.01944	.04173
1	.02223	.01434	.02179	.01975	.01349	.01534
2	-.01607	-.00466	-.02654	.01908	-.02405	.04312
3	-.04805	-.04274	.02545	.03228	.03015	.00542
4	-.02850	-.03161	-.03531	.00826	.02404	.00078
5	-.00451	.00010	.00714	.00050	.02115	.04702
6	.02829	.01581		-.01519	-.00834	.02402
7	-.01101	.01338	.02317	-.00254	-.03147	-.02349
8	-.03038	-.00229	.02191	.03717	.02269	.00530
9	-.00291	-.00608	-.00820	-.03106	.00119	-.00430

x0= 129.8507    y0= 123.3761    r0= 2.08793402    std.dev.= .02438785

HISTOGRAM DEVIATION  $\sigma = e$

ee	.05	.04	.03	.02	.01	0.00	bad points
	0	6	9	15	11	18	1

ORIGINAL PAGE IS  
OF POOR QUALITY

Disk 12-B Track data file IDATA02

	Coarse	Fine	Track
	1.0	1.0	192.0
NDROs	.1160E+00	.4564E+00	.7974E+00
Integration delay:	.1838E+06	.9190E+05	.7352E+06

Constants:	.31700	.25500	.40600	.26500
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		Position		standard deviation	
				X	Y	X	Y	X	Y
20.231	64.633	.5333E+05	6.289	130.5	125.0	130.4487	124.6446	.6066E-02	.9643E-02
20.220	70.752	.5275E+05	6.059	130.5	124.5	130.5535	124.5383	.4225E-02	.2774E-02
20.234	1.805	.5291E+05	6.105	130.5	124.5	130.6783	124.3290	.5389E-02	.3237E-02
20.332	8.167	.5408E+05	6.320	130.5	124.0	130.7315	124.0343	.1884E-02	.8662E-02
20.313	14.365	.5704E+05	6.401	131.0	124.0	130.8208	123.7942	.4266E-02	.1097E-01
20.231	20.741	.5661E+05	6.292	131.0	123.5	130.8768	123.6893	.9482E-02	.8090E-01
20.153	26.966	.5638E+05	6.173	131.0	123.5	130.9121	123.4624	.4024E-02	.5772E-02
20.153	26.966	.5638E+05	6.173	131.0	123.5	130.8431	123.1998	.5425E-02	.6676E-02
20.170	33.263	.5625E+05	6.178	131.0	123.0	130.8202	122.9524	.3790E-02	.5372E-02
20.158	39.536	.5613E+05	6.226	131.0	123.0	130.8001	122.7672	.6264E-02	.4833E-02
20.153	45.820	.5615E+05	6.218	131.0	123.0				
20.200	52.100	.5547E+05	6.010	131.0	122.5	130.7799	122.6022	.2467E-01	.1291E-01
20.161	58.367	.5242E+05	5.955	130.5	122.5	130.6409	122.3965	.2885E-02	.3854E-02
20.203	64.611	.5266E+05	6.041	130.5	122.0	130.5720	122.0747	.2320E-01	.4834E-01
20.172	70.877	.5229E+05	6.058	130.5	122.0	130.4610	121.8970	.2328E-02	.4774E-02
20.217	1.819	.5248E+05	6.098	130.5	122.0	130.3213	121.7843	.7964E-03	.7441E-02
20.237	8.175	.5262E+05	6.105	130.0	122.0	130.1939	121.6276	.1835E-02	.3854E-02
20.215	14.382	.5385E+05	6.199	130.0	121.5	130.0662	121.6601	.3538E-02	.3757E-02
20.240	20.724	.5385E+05	6.167	130.0	121.5	129.8605	121.5562	.4373E-02	.4273E-02
20.271	26.963	.5398E+05	6.143	129.5	121.5	129.6529	121.4427	.4328E-02	.1724E-01
20.192	33.271	.5373E+05	6.139	129.5	121.5	129.4456	121.3482	.3963E-02	.5023E-02
20.259	39.530	.5300E+05	6.200	129.0	121.0	129.1340	121.3273	.5537E-02	.1039E-01
20.248	45.818	.5299E+05	6.219	129.0	121.0	128.9002	121.2795	.2917E-02	.8519E-02
20.234	52.076	.5530E+05	6.245	128.5	121.0	128.6933	121.2463	.1013E-02	.6787E-02
20.226	58.368	.5543E+05	6.237	128.5	121.0	128.4614	121.3184	.9739E-02	.1223E-01
20.215	64.618	.5544E+05	6.160	128.5	121.5	128.2758	121.3292	.7704E-02	.6341E-02
20.240	70.877	.5547E+05	6.097	128.0	121.5	128.1240	121.4410	.4791E-02	.5442E-02
20.212	1.805	.5570E+05	6.100	128.0	121.5	127.8845	121.5566	.2808E-02	.4635E-02
20.226	8.188	.5526E+05	6.178	127.5	121.5	127.6930	121.6695	.3215E-02	.4315E-02
20.240	14.369	.5532E+05	6.307	127.5	122.0	127.5117	121.7121	.3027E-02	.1268E-01
20.130	20.715	.5519E+05	6.286	127.5	122.0	127.3650	121.8901	.3414E-02	.6231E-02
20.212	26.990	.5505E+05	6.168	127.0	122.0	127.1674	121.9837	.2005E-02	.4425E-02
20.243	33.254	.5512E+05	6.115	127.0	122.0	127.0186	122.1881	.5143E-02	.5095E-02
20.217	39.536	.5537E+05	6.054	127.0	122.5	126.9629	122.4634	.3624E-02	.1253E-02
20.184	45.816	.5533E+05	6.106	127.0	122.5	126.8789	122.6834	.4732E-02	.5588E-02
20.172	52.120	.5616E+05	6.251	127.0	123.0	126.8063	122.8185	.2184E-02	.4583E-02

ORIGINAL PAGE IS  
OF POOR QUALITY



20.156	64.596	.5474E+05	6.305	126.5	123.0	126.7482	123.2764	.7131E-01	.2721E-02
20.206	70.770	.5661E+05	6.147	127.0	123.5	126.7483	123.4774	.3716E-02	.4205E-01
20.206	1.798	.5641E+05	6.254	127.0	124.0	126.7687	123.6758	.2035E-01	.8707E-01
20.259	8.148	.5621E+05	6.290	127.0	124.0	126.8015	123.7861	.4217E-02	.6757E-02
20.293	14.369	.5619E+05	6.251	127.0	124.0	126.8565	123.9740	.2462E-02	.3246E-02
20.234	20.718	.5570E+05	6.158	127.0	124.5	127.0158	124.3055	.3270E-01	.1079E-01
20.209	26.974	.5551E+05	6.082	127.0	124.5	127.1296	124.5053	.3148E-02	.3241E-02
20.262	33.256	.5560E+05	6.191	127.0	124.5	127.2375	124.6966	.4281E-02	.3101E-02
20.243	39.529	.5517E+05	6.219	127.5	125.0	127.3206	124.8499	.4720E-02	.3667E-02
20.240	45.812	.5504E+05	6.177	127.5	125.0	127.4793	124.9758	.4709E-02	.3363E-02
20.251	52.085	.5498E+05	6.154	127.5	125.0	127.6473	125.0900	.2525E-02	.4815E-02
20.243	58.376	.5542E+05	6.126	128.0	125.0	127.9207	125.1953	.5071E-02	.7693E-01
20.257	64.604	.5573E+05	6.155	128.0	125.5	128.2059	125.2815	.4421E-01	.4072E-01
20.245	70.813	.5604E+05	6.136	128.5	125.5	128.2998	125.3913	.3327E-02	.2704E-02
20.243	1.813	.5602E+05	6.122	128.5	125.5	128.5220	125.4677	.4374E-02	.5477E-02
20.212	8.178	.5442E+05	6.146	129.0	125.5	128.7091	125.5133	.2987E-01	.4189E-02
20.215	14.366	.5389E+05	6.144	129.0	125.5	128.9433	125.4934	.6113E-02	.4711E-02
20.234	20.719	.5387E+05	6.132	129.0	125.5	129.1791	125.4479	.7870E-02	.3425E-02
20.198	26.996	.5381E+05	6.187	129.5	125.5	129.3635	125.3941	.3142E-02	.3473E-02
20.254	33.260	.5382E+05	6.201	129.5	125.5	129.5687	125.3280	.3530E-02	.5538E-02
20.223	39.542	.5362E+05	6.223	130.0	125.0	129.7654	125.2560	.6030E-02	.2844E-02
20.189	45.812	.5346E+05	6.228	130.0	125.0	129.9995	125.0918	.6007E-02	.8189E-02
20.220	52.112	.5342E+05	6.243	130.0	125.0	130.2221	124.9757	.5808E-02	.7524E-02
20.248	58.361	.5348E+05	6.319	130.5	125.0	130.3186	124.8598	.5009E-02	.8258E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta r1 3	4	5	6
0	-.02498	-.00404	-.00549	-.07558	-.05603	-.02905
1	-.00759	-.07520	-.06347	-.03783	-.00343	-.04425
2	.06922	-.09533	.07332	.10926	.00622	-.01797
3	-.00877	.00900	-.03922	-.01243	.02447	-.01660
4	.01272	-.04762	-.05552	-.05394	.01948	-.01497
5	.06959	.04824	-.01730	-.02291	.00713	.02353
6	-.00334	-.00151	-.00094	-.01335	-.01910	-.03979
7	-.03588	-.00637	.03538	.00518	-.02287	-.03717
8	-.06584	.01307	.04343	.06976	.04905	.02702
9	.01461	.01334	.02494	-.00024	.04223	.02221

$\mu = 128.8338$      $\sigma = 123.3566$      $r = 2.09056878$      $\text{std.dev.} = .04122237$

HISTOGRAM DEVIATION  $\geq e$

e=	.05	.04	.03	.02	.01	0.00	bad points
	14	5	6	9	12	14	0

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	delta ri					
	1	2	3	4	5	6
0	-.02708	-.00613	-.00755	-.07758		
1	-.01144	-.07697	-.06515	-.02244		-.04574
2		-.02406	.07262	.10813	.00512	.01899
3		.00814		-.01314	.02381	
4	.01164	-.04818	-.05605	-.05446		.01542
5	.06806	.06767	-.01790	-.02356	.00645	
6	-.00416	-.00237		-.01432	-.02013	
7	-.03664	-.00772	.03397	.00370	-.02442	-.07234
8		.01126	.04154		.04707	.02700
9	.01255	.01125	.02283	-.00236	.04011	.01016

n0= 128.8343    v0= 123.3572    r0= 2.09188914    std.dev.= .04118000

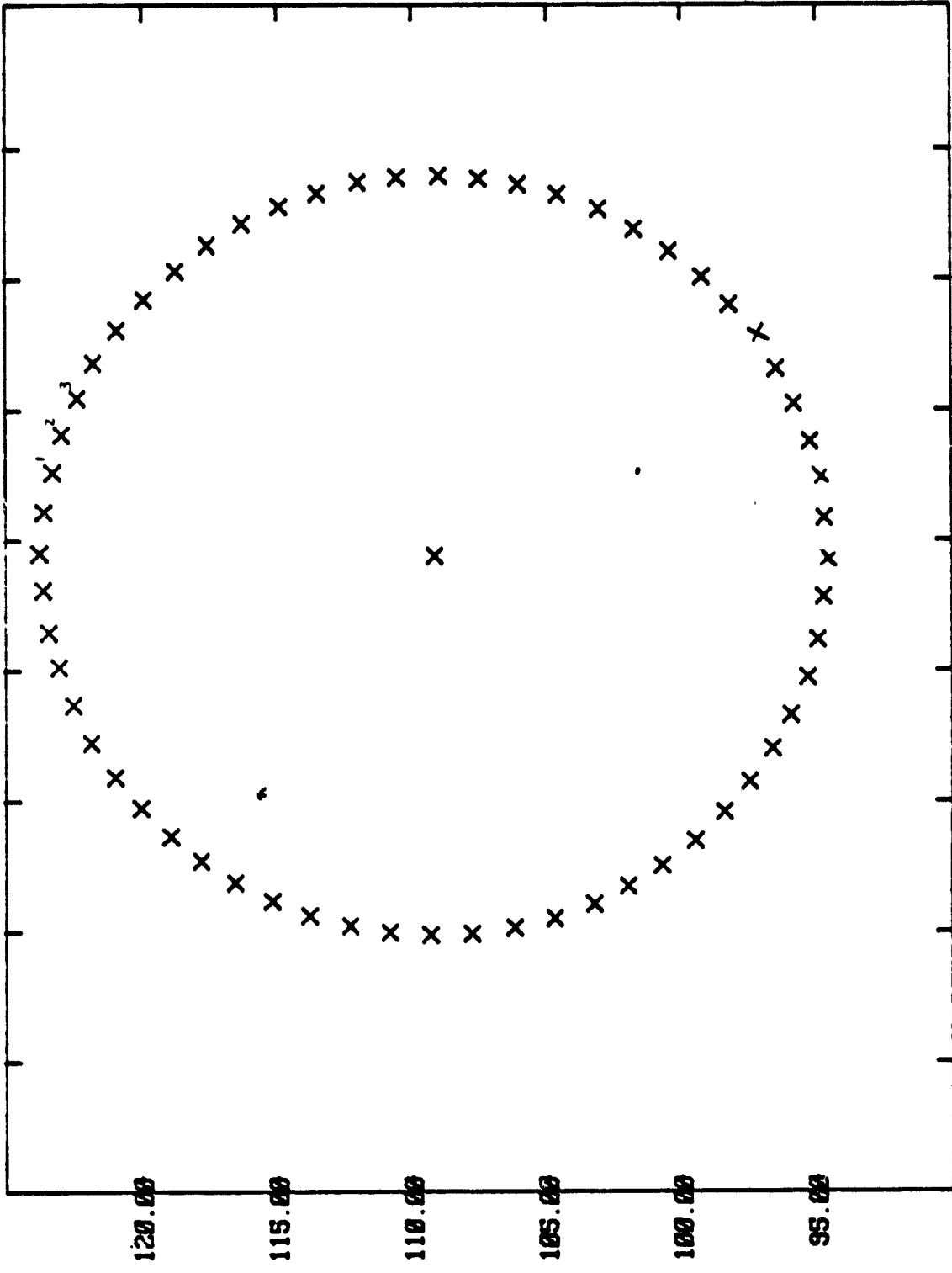
HISTOGRAM DEVIATION  $\geq e$

e=	.05	.04	.03	.02	.01	0.00	bad points
	10	5	4	8	10	10	13

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LARGE FIELD POINTING ACCURACY

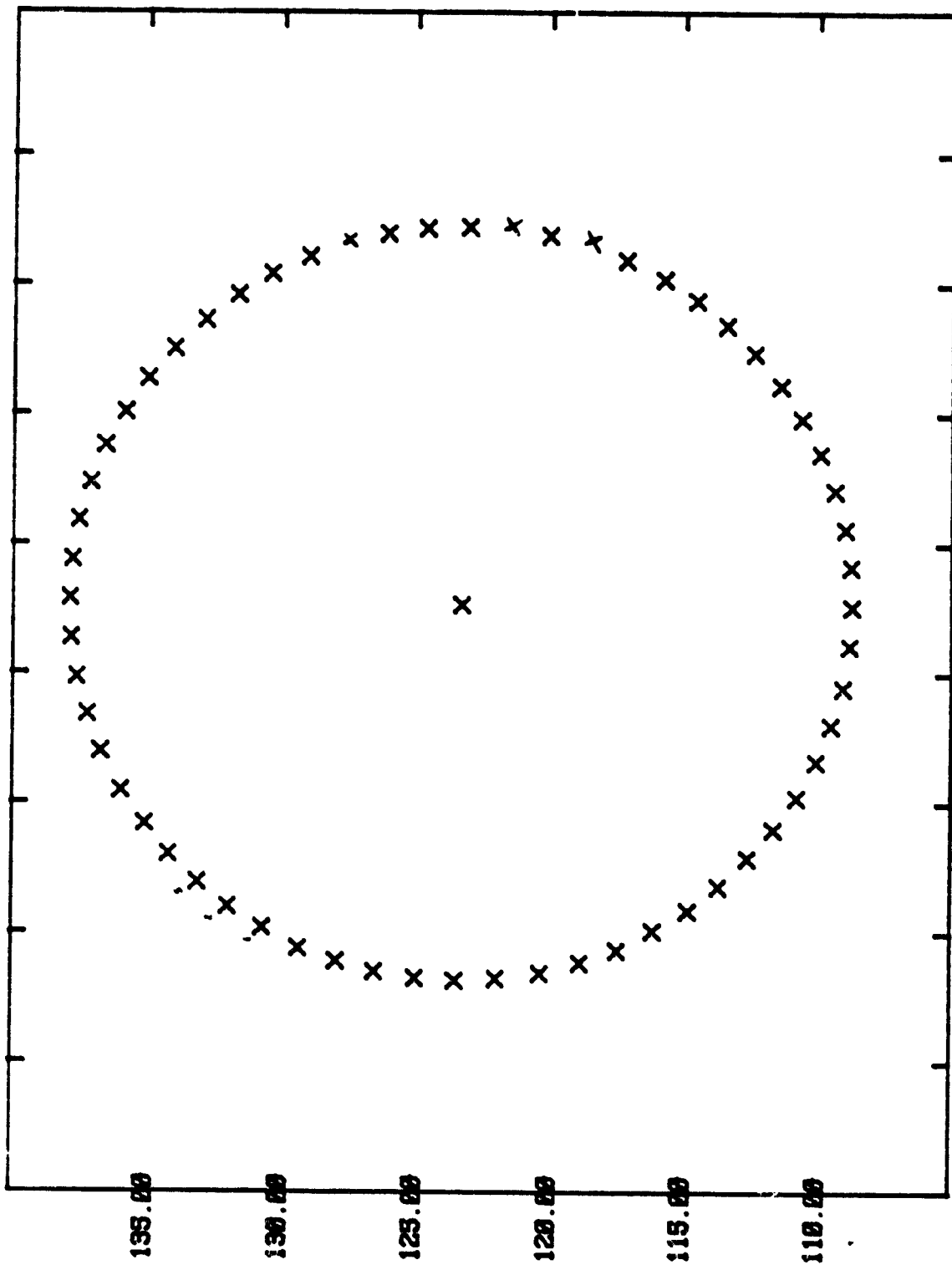
Data accumulation for  $0^{\circ}\text{C}$ , medium star intensity at five locations on the CID array.



115.00 120.00 125.00 130.00 135.00 140.00 145.00 150.00

POSITION #1 S.D. = 2.023%

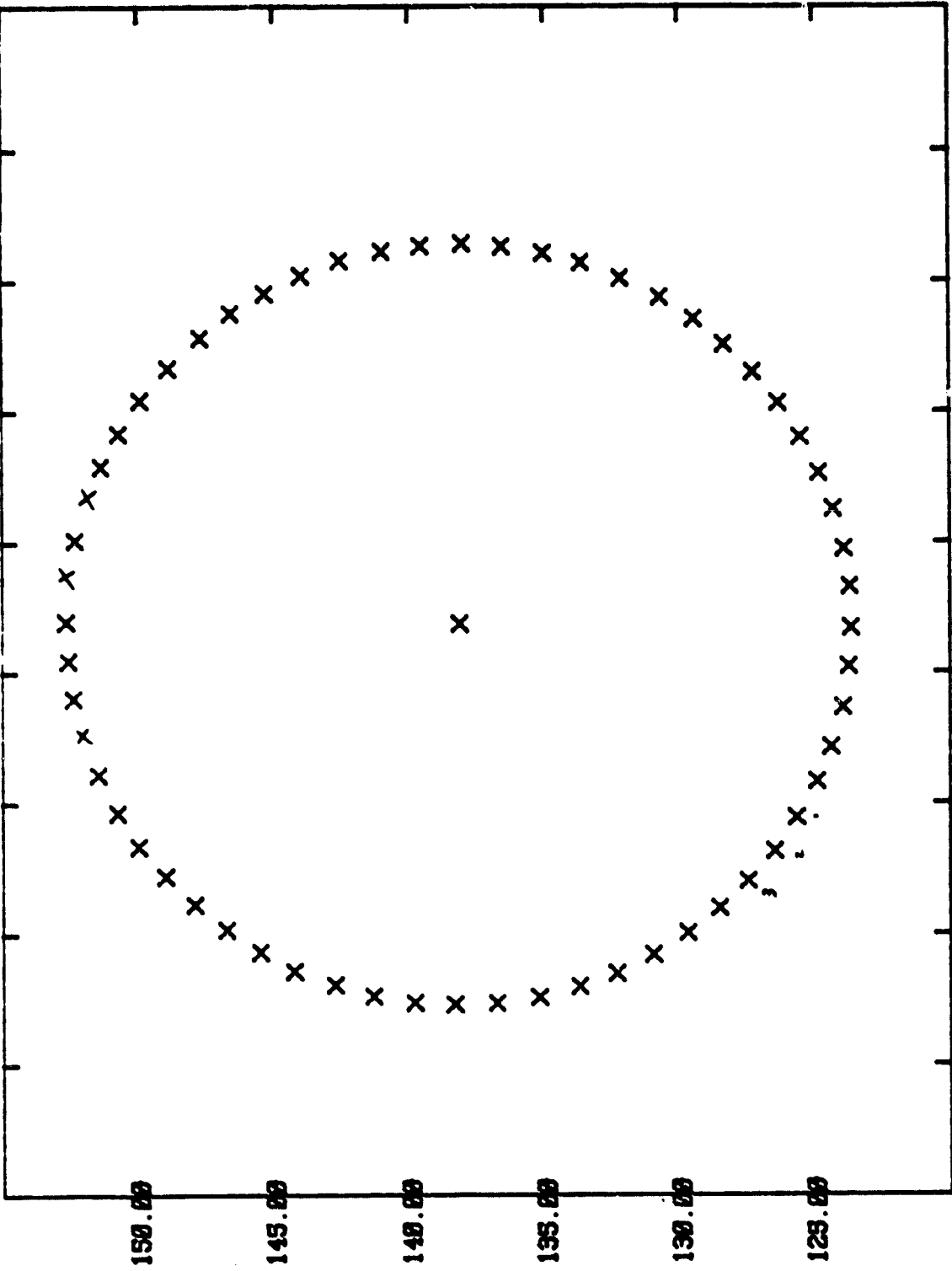
18-A-01 F2.8 +1.6M 2 K=.339.317.363.302 10% Ø°C



130.00 135.00 140.00 145.00 150.00 155.00 160.00 165.00

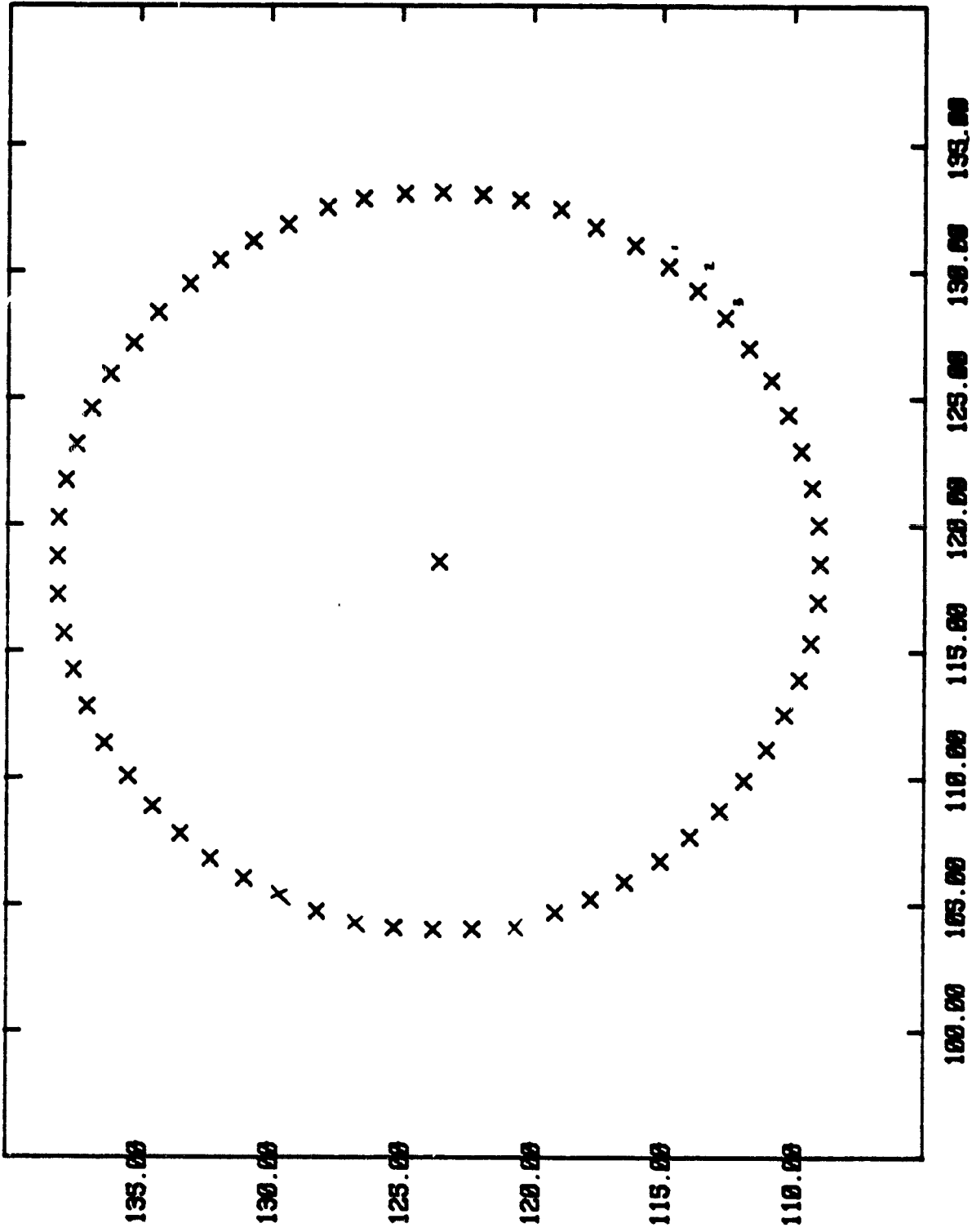
POSITION #2 S.D= 2.183 %

18-A-02 F2.8 0M 2 K=.29.226.347.27 10% 0°C



115.00 120.00 125.00 130.00 135.00 140.00 145.00 150.00  
POSITION #3 S.D= 1.813 %

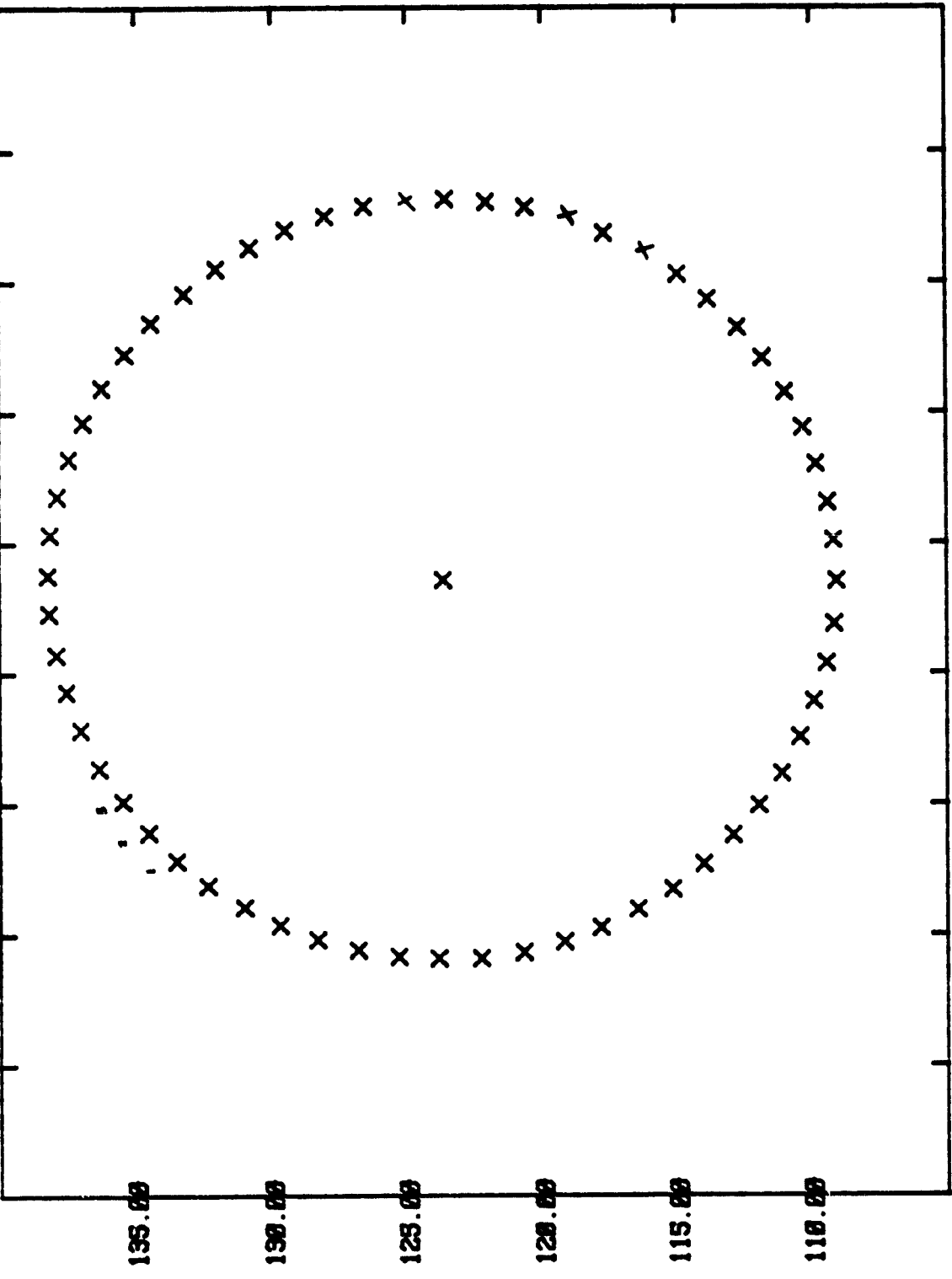
18-A-03 F2.8 -1.1M 2 K=.254.294.316.284 10% 0° C



POSITION #4 S.D= 3.150 %

18-A-04 F2.8 - .8M 2 K=.262.303.362.262 10% 0°C





115.00 120.00 125.00 130.00 135.00 140.00 145.00 150.00

CENTER S.D= 1.992%

18-A-05 F2.8 0M 2 K=.288.276.38.258 10% 0°C

DISK 18-A Track data file TDATA01

NDRO: Coarse Fine Track  
 Integration delay: 1.0 1.0 64.0  
 Thresholds: .1160E+00 .4564E+00 .1344E-02  
 .1838E+06 .9190E+05 .7352E+06

Constants: .33900 .31700 .36300 .30200  
 Displacements: 0.00000 0.00000 0.00000 0.00000

temp	angle	dark current	star mag.	reference		position		standard deviation	
				X	Y	X	Y	X	Y
.173	39.518	.2082E+05	2.755	137.5	123.0 *	137.5897	123.3343	.1824E-02	.2291E-01
.116	45.794	.1946E+05	2.770	139.0	123.0	139.0320	122.9785	.8532E-03	.8970E-03
.150	52.099	.1129E+05	2.539	140.5	122.5	140.4554	122.4150	.4811E-03	.4931E-03
.215	58.378	.2080E+05	2.805	142.0	122.0	141.8001	121.7923	.7463E-03	.1025E-02
.223	64.625	.1190E+05	2.787	143.0	121.0	143.0449	120.9278	.1023E-02	.6102E-03
.223	70.895	.2494E+05	2.837	144.0	120.0	144.2211	119.9364	.5012E-03	.1052E-02
.158	1.798	.1481E+05	2.708	145.5	119.0 *	145.3334	118.7791	.1604E-01	.3209E-02
.195	8.159	.1853E+05	2.742	146.0	117.5 *	146.2901	117.5635	.8158E-02	.2464E-01
.237	14.365	.3342E+05	2.936	147.0	116.0	147.1832	116.3560	.1962E+00	.2388E+00
.094	20.735	.1996E+05	2.783	148.0	115.0	147.7877	114.9100	.5557E-03	.8227E-03
.114	26.977	.1691E+05	2.702	148.0	113.5	148.2813	113.5188	.9015E-03	.6889E-03
.187	33.257	.2418E+05	2.859	149.0	112.0 *	148.6870	111.9927	.5191E-02	.4814E-02
.130	39.543	.1228E+05	2.614	149.0	110.5	148.8875	110.5348	.3821E-02	.2299E-02
.170	45.833	.1183E+05	2.794	149.0	109.0	148.9607	109.0014	.5277E-03	.7175E-03
.175	52.087	.2442E+05	2.685	149.0	107.5	148.8537	107.5133	.7575E-03	.7495E-03
.201	58.365	.1722E+05	2.720	149.5	106.0	148.6213	106.0394	.9404E-03	.7627E-03
.170	64.649	.1643E+05	2.690	149.0	104.5	148.2266	104.5738	.2221E-02	.4395E-02
.088	70.891	.1905E+05	2.740	147.5	103.0	147.6526	103.0994	.7442E-03	.5655E-03
.119	1.788	.2105E+05	2.797	147.0	102.0	146.8878	101.7368	.9472E-03	.6265E-03
.187	8.168	.1936E+05	2.695	146.0	100.5	146.0584	100.4462	.1403E-02	.1115E-02
.206	14.364	.2092E+05	2.811	145.0	99.0	145.0737	99.2361	.1021E-02	.8986E-03
.237	20.725	.2829E+05	2.831	144.0	98.0	144.0158	98.2638	.5851E-01	.9201E-01
.195	26.970	.1513E+05	2.846	143.0	97.0	142.8111	97.2636	.1041E-02	.8818E-03
.201	33.232	.1504E+05	2.628	141.5	96.5	141.5437	96.4933	.7021E-03	.1125E-02
.274	39.536	.2549E+05	2.844	140.0	96.0	140.2053	95.8358	.9312E-03	.8709E-03
.161	45.825	.2313E+05	2.839	139.0	95.0	138.7499	95.2345	.1052E-02	.6710E-03
.161	52.103	.1690E+05	2.753	137.5	95.0	137.2905	94.9207	.8373E-03	.7635E-03
.077	58.372	.1475E+05	2.758	136.0	95.0	135.8327	94.7072	.6391E-03	.4317E-03
.108	64.635	.1260E+05	2.662	134.0	94.5	134.2569	94.5974	.1237E-02	.1211E-02
.128	70.884	.1504E+05	2.792	133.0	95.0	132.8154	94.7255	.1148E-02	.4451E-02
.153	1.795	.1846E+05	2.791	131.0	95.0	131.1635	94.9642	.1863E-03	.1056E-03
.156	8.170	.2546E+05	2.743	130.0	95.5 *	129.7088	95.3624	.1588E-02	.1014E-01
.223	14.360	.2222E+05	2.831	128.5	96.0 *	128.1937	95.9976	.1130E-01	.9141E-01
.161	20.716	.1444E+05	2.690	127.0	96.5	126.9977	96.6463	.7097E-01	.6354E-01
.147	26.994	.1833E+05	2.707	126.0	97.5	125.7372	97.4904	.1297E-02	.1593E-02

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.184	39.520	.2227E+05	2.594	123.5	105.5	123.479	99.5000	.1465E-02	.1494E-02
.187	45.814	.1092E+05	2.718	122.5	101.0	122.5274	100.7271	.2351E-02	.1549E-02
.173	52.115	.1959E+05	2.838	122.0	102.0	121.756	102.0048	.2275E-02	.927E-03
.153	58.356	.2061E+05	2.794	121.0	103.0	121.0533	101.2704	.2578E-03	.4798E-03
.195	64.650	.1001E+05	2.739	120.5	105.0	120.5046	104.7311	.2627E-03	.2670E-03
.189	70.895	.2132E+05	2.782	120.0	106.0	120.1338	106.2145	.9194E-03	.8743E-03
.254	1.805	.2874E+05	2.825	120.0	108.0	119.9157	107.8242	.2113E-01	.2774E-01
.192	8.176	.1834E+05	2.736	120.0	109.5	119.0521	109.3838	.4565E-02	.1041E-01
.130	14.376	.1758E+05	2.748	120.0	111.0	119.9554	110.8437	.4942E-03	.1328E-02
.184	20.730	.1667E+05	2.715	120.0	112.5	120.2077	112.3529	.1256E-02	.1171E-02
.234	26.973	.2197E+05	2.756	120.5	114.0	120.5955	113.8237	.1223E-01	.3414E-01
.161	33.263	.2013E+05	2.769	121.0	115.0	121.1562	115.1851	.4634E-03	.1104E-02
.234	39.538	.1508E+05	2.669	122.0	116.5	121.8740	116.5632	.7226E-03	.7254E-03
.206	45.835	.2422E+05	2.802	123.0	118.0	122.7089	117.8518	.1406E-01	.2851E-01
.161	72.114	.1746E+05	2.676	123.5	119.0	123.6337	118.9726	.5137E-03	.3441E-02
.215	79.98	.2433E+05	2.807	125.0	120.0	124.7048	120.0866	.1165E-02	.2241E-02
.234	85	.1242E+05	2.768	126.0	121.0	125.9183	120.9925	.4763E-03	.2504E-03
.195	96	.2014E+05	2.779	127.0	122.0	127.2310	121.8925	.7077E-03	.2124E-02
.130	1.784	.1118E+05	2.527	128.5	122.5	128.6649	122.5423	.9146E-03	.3897E-03
.156	8.130	.1940E+05	2.753	130.0	123.0	130.1153	123.0597	.4632E-03	.1893E-03
.125	14.362	.5982E+04	2.609	131.5	123.5	131.4597	123.4451	.1461E-02	.1801E-03
.217	20.732	.3733E+05	2.876	133.0	124.0	133.0249	123.5398	.1448E+00	.2617E+00
.276	26.984	.1745E+05	2.747	134.5	124.0	134.4994	123.7592	.1016E-02	.6444E-03
.189	33.259	.2231E+05	2.640	136.0	123.5	136.0909	123.6206	.4645E-03	.7843E-03

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	delta r1					
	1	2	3	4	5	6
0	-.04257	.00264	.00105	.06263	.03050	.00316
1	-.00319	-.01026	.09985	.00140	-.01856	.00217
2	-.01330	-.00385	-.01719	-.00366	.00517	.01152
3	-.03236	-.00380	.01659	-.02439	.01376	-.01359
4	-.02007	.03588	-.02278	-.02825	.01593	.02773
5	.00947	.02286	-.00604	-.01228	-.01707	.00979
6	.02892	.01385	-.00906	.03541	.03038	.01443
7	-.01004	-.00707	-.01528	-.01168	.01120	-.01094
8	-.01183	.00414	.00331	.00668	-.00780	.02614
9	-.00865	-.02375	.01504	-.12472	.02891	.01193

μ= 134.4045    σ= 109.1696    n= 14.56099987    std.dev. = .02272374

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	3	1	6	9	21	20	0

ORIGINAL PAGE IS  
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	delta ri					
	1	2	3	4	5	6
0		-.00346	-.00443	.06344	.02577	.00400
1			-.00056	-.01998	.00301	
2	-.01411	-.00364	-.01650	-.00251	.00675	.01376
3	-.03004	-.00119	.01943		.01690	-.00939
4	-.01687	.03903	-.01974	-.02537	.01857	-.02735
5	.01148		-.01095	-.01151	-.01678	.00950
6	.02815	.01252	-.02044	.03299	.02737	.00887
7			-.00396	-.01730		-.01736
8	-.01859		.00754	-.00078	-.01539	.01349
9	-.01631	-.03135			.02181	-.01879

x0= 134.4021    y0= 109.1745    r0= 14.56322575    std.dev.= .02023319

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	0	4	8	20	15	12

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DISK 18-A track data file TR01002

	Coarse	Fine	Track
	1.0	1.0	64.0
Intersitation delay:	.1160E+00	.4564E+00	.1344E-02
Thresholds:	.1838E+06	.9190E+05	.7352E+06

Constants:	.29000	.72600	.34700	.27000
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark	star	reference		position		standard deviation	
		current	mag.	X	Y	X	Y	X	Y
.013	39.568	.7310E+04	2.595	135.0	130.5	135.2066	130.6167	.3656E-03	.6647E-03
.133	45.821	.2774E+05	2.708	136.0	132.0	136.0195	131.8950	.8132E-03	.1075E-02
.072	52.117	.1239E+05	2.673	137.0	133.0	136.9532	133.0268	.3146E-03	.3548E-03
.043	58.39	.2178E+05	2.669	138.0	134.0	138.0170	134.1197	.4958E-03	.7720E-03
.015	64.664	.1947E+05	2.650	139.0	135.0	139.1964	135.0336	.5966E-03	.5720E-03
.139	70.877	.2331E+05	2.714	140.5	136.0	140.4863	135.9016	.8155E-03	.8106E-03
.097	1.794	.1427E+05	2.612	142.0	136.5	141.9769	136.6352	.8478E-03	.6921E-03
.072	8.188	.1014E+05	2.703	143.5	137.0	143.4102	137.1420	.5339E-03	.6701E-03
.060	14.380	.1989E+05	2.597	145.0	137.5	144.8505	137.5697	.6691E-03	.8418E-03
.057	20.724	.1885E+05	2.700	146.5	138.0	146.3602	137.7730	.4382E-03	.4533E-03
.077	26.972	.2318E+05	2.708	148.0	138.0	147.8849	137.8307	.6912E-03	.6564E-03
.027	33.257	.1930E+05	2.688	149.5	138.0	149.3787	137.7379	.6920E-03	.7574E-03
.125	39.567	.1834E+05	2.590	151.0	137.5	150.8904	137.4924	.8732E-03	.1000E-02
.105	45.822	.9504E+04	2.706	152.5	137.0	152.3532	137.0503	.6203E-03	.7367E-03
.086	52.110	.1460E+05	2.573	154.0	136.5	153.7890	136.5230	.5987E-03	.7040E-03
.153	58.384	.2743E+05	2.715	155.0	136.0	155.0668	135.8101	.5397E-03	.5794E-03
.646	64.671	.1744E+05	2.686	156.5	135.0	156.3501	134.9761	.1993E-03	.5056E-03
.094	70.884	.1755E+05	2.695	157.5	134.0	157.5230	134.0023	.6375E-03	.4633E-03
.105	1.812	.1137E+05	2.673	158.5	133.0	158.6149	132.8277	.5913E-03	.3075E-03
.063	8.169	.2350E+05	2.577	159.5	131.5	159.5994	131.6366	.4756E-03	.1718E-03
.013	14.373	.1039E+05	2.531	160.5	130.5	160.4173	130.4059	.5798E-03	.2414E-03
.091	20.731	.1196E+05	2.719	161.0	129.0	161.0674	128.9658	.2875E-03	.5438E-03
.046	26.959	.2689E+05	2.608	161.5	127.5	161.5912	127.6059	.4637E-03	.5916E-03
.088	33.272	.2626E+05	2.723	162.0	126.0	161.9628	126.0859	.1763E-01	.3103E-01
.069	39.552	.1567E+05	2.639	162.0	124.5	162.1733	124.6185	.2319E-02	.6044E-02
.043	45.822	.2006E+05	2.680	162.0	123.0	162.2160	123.0500	.6044E-03	.6392E-03
.122	52.094	.1911E+05	2.640	162.0	121.5	162.1430	121.6185	.2233E-03	.3677E-03
.133	58.380	.2979E+05	2.737	162.0	120.0	161.8971	120.0671	.8927E-02	.2065E-01
.074	64.661	.1202E+05	2.606	161.5	118.5	161.5306	118.6622	.3760E-02	.6441E-02
.139	70.859	.1349E+05	2.700	161.0	117.0	160.9250	117.1807	.9424E-03	.1075E-02
.150	1.791	.2637E+05	2.747	160.0	116.0	160.2137	115.7414	.2734E-01	.7262E-02
.088	8.167	.1217E+05	2.524	159.5	114.5	159.3965	114.5404	.1031E-02	.1506E-02
.133	14.386	.1316E+05	2.616	158.5	113.5	158.4237	113.4035	.7306E-03	.3025E-03
.105	20.729	.1388E+05	2.647	157.5	112.5	157.3500	112.3306	.4550E-03	.3231E-03
.088	26.962	.2158E+05	2.612	156.0	111.5	156.1063	111.3737	.4511E-03	.7443E-03

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.0	33.	.7E+0	2.	153.5	110.0	153.4910	109.9193	.6919E-03	.5625E-03
.105	39.546	.1715E+05	2.730	153.5	110.0	152.0586	109.3665	.4643E-03	.4997E-03
.136	45.839	.1495E+05	2.630	152.0	109.5	150.5852	108.9679	.5891E-03	.5156E-03
.105	52.106	.1029E+05	2.713	150.5	109.0	149.1219	108.7601	.9954E-03	.3662E-03
.108	58.395	.1047E+05	2.702	149.0	109.0				
.116	64.653	.1412E+05	2.635	147.5	108.5	147.5892	108.7020	.3289E-03	.2800E-03
.105	70.880	.1087E+05	2.716	146.0	109.0	146.0820	108.7890	.3544E-03	.3477E-03
.114	1.798	.9414E+04	2.717	144.5	109.0	144.4734	109.0229	.5714E-03	.2179E-03
.130	8.178	.1771E+05	2.608	143.0	109.5	142.9978	109.4774	.7342E-03	.6605E-03
.116	14.394	.1777E+05	2.711	141.5	110.0	141.6104	110.0134	.3313E-03	.4277E-03
.057	20.755	.1286E+05	2.644	140.0	111.0	140.2473	110.7091	.2789E-01	.9449E-03
.100	26.992	.2242E+05	2.602	139.0	111.5	139.0099	111.5640	.6439E-03	.1544E-03
.144	33.254	.1375E+05	2.592	138.0	112.5	137.8982	112.5287	.6670E-03	.3096E-03
.130	39.548	.2028E+05	2.641	137.0	113.5	136.8071	113.6391	.5699E-03	.5976E-03
.060	45.819	.1545E+05	2.659	136.0	115.0	135.8678	114.7664	.9565E-03	.447E-03
.164	52.099	.2185E+05	2.770	135.0	116.0	135.0855	116.0484	.7969E-03	.5894E-03
.206	58.376	.1153E+05	2.676	134.5	117.5	134.3244	117.3910	.6248E-02	.6458E-02
.116	64.647	.1330E+05	2.672	134.0	119.0	133.8398	118.7744	.2039E-02	.4293E-02
.175	70.880	.1494E+05	2.689	133.5	120.5	133.4348	120.3003	.2323E-02	.1794E-02
.161	1.801	.2160E+05	2.726	133.0	122.0	133.2179	121.9319	.7041E-03	.3022E-02
.128	8.185	.2340E+05	2.638	133.0	123.5	133.1517	123.4484	.1088E-01	.7789E-02
.150	14.386	.9664E+04	2.700	133.0	125.0	133.2483	124.9147	.5148E-03	.5642E-03
.128	20.721	.8752E+04	2.565	133.5	126.5	133.4908	126.4413	.3618E-03	.3831E-03
.243	26.949	.2707E+05	2.727	134.0	128.0	133.9022	127.8498	.5653E-03	.5507E-03
.173	33.257	.1174E+05	2.741	134.5	129.5	134.4068	129.2909	.1014E-01	.1461E-01

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	-.05478	-.02709	-.03060	-.00239	-.02846	.00332
1	-.00328	-.02172	.03920	.02307	.02011	.02285
2	.03327	.00140	.04074	-.00123	.00909	.00153
3	-.04086	-.00414	.03053	-.01556	-.00323	-.01907
4	-.02291	-.04305	-.02518	-.01011	.01239	-.00764
5	.03524	.02501	.00115	.01667	-.01071	-.01104
6	-.02190	-.00421	.01504	.00422	-.00668	-.00367
7	.02682	-.00143	.01567	.03374	.00844	-.02128
8	-.02735	.00451	-.02965	.04737	.00948	.01119
9	-.01408	-.00677	-.00946	.00603	-.01318	.04353

x0= 147.7020    y0= 123.2533    r0= 14.55841160    std.dev.= .02263819

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	5	6	14	12	22	0

ORIGINAL PAGE IS  
OF POOR QUALITY



	1	2	delta ri 3	4	5	6
0	-.05227	-.02477	-.02849	-.00051	-.02680	.00475
1	-.00211	-.02077	.03993	.02359	.02042	.02298
2	.03322	.00118	.04039	-.00171	.00851	.00037
3	-.04158	-.00490	.02976	-.01632	-.00395	
4	-.02348	-.04351	-.02552		.01236	-.00749
5		.02556	.00183	.01776	-.00949	-.00360
6	-.02023	-.00231	.01716	.00655	-.00414	-.00074
7	.02973	.00165	.01889		.01188	.01776
8	-.02377	.00812	-.02602	.05098	.01306	.01470
9	-.01066		-.00627	.00908	-.01029	

x0= 147.7039    y0= 123.2544    r0= 14.55698395    std.dev.= .02182580

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	2	3	2	15	11	21	6

ORIGINAL PAGE IS  
OF POOR QUALITY

DISK 18-A Track data file TDATA03

NDRO:	Coarse	Fine	Track
Integration delay:	1.0	1.0	64.0
Thresholds:	.1160E+00	.4564E+00	.1344E-02
	.7298E+06	.9190E+05	.7352E+06

Constants:	.25400	.29400	.21600	.28400
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark	star	reference		position		standard deviation	
		current	mag.	X	Y	X	Y	X	Y
.248	20.692	.1740E+05	2.787	124.5	125.5	124.4272	125.6637	.5771E-03	.5764E-03
.209	26.955	.9681E+04	2.619	123.0	126.5 *	123.1551	126.4721	.2180E-01	.3700E-02
.217	33.243	.2582E+05	2.746	122.0	127.5	122.0177	127.4514	.9055E-02	.1467E-01
.201	39.504	.1362E+05	2.695	121.0	128.5	120.9763	128.5261	.5314E-03	.3401E-03
.248	45.825	.1940E+05	2.769	120.0	129.5	120.0173	129.7310	.7302E-03	.3489E-03
.153	52.107	.1888E+05	2.609	119.0	131.0 *	119.1839	130.9822	.9902E-02	.6113E-02
.192	58.364	.1232E+05	2.788	118.5	132.5	118.5078	132.3499	.4210E-03	.8401E-03
.220	64.646	.1927E+05	2.776	118.0	133.5	117.9996	133.7431	.1073E-02	.5363E-03
.187	70.898	.1825E+05	2.767	117.5	135.0	117.5937	135.2148	.3422E-03	.5509E-03
.237	1.791	.1108E+05	2.741	117.5	137.0 *	117.3554	136.8252	.2883E-02	.9102E-02
.229	8.186	.9778E+04	2.719	117.5	138.5	117.3210	138.3824	.9386E-03	.4899E-03
.327	14.367	.2592E+05	2.762	117.5	140.0	117.3863	139.8439	.3559E-03	.5477E-03
.248	20.722	.2182E+05	2.848	117.5	141.5	117.6230	141.3808	.1510E-01	.2949E-01
.189	26.965	.1453E+05	2.646	118.0	143.0 *	118.0725	142.7866	.1828E-02	.4681E-02
.229	33.257	.1466E+05	2.799	118.5	144.5 *	118.5840	144.2601	.1665E-02	.4882E-02
.195	39.513	.1853E+05	2.827	119.5	145.5	119.3159	145.5074	.5666E-03	.8270E-03
.178	45.826	.1446E+05	2.617	120.0	147.0 *	120.1711	146.7907	.2233E-02	.6941E-02
.271	52.091	.2990E+05	2.644	121.0	148.0	121.1351	147.9660	.4672E-03	.1813E-02
.257	58.388	.1059E+05	2.644	122.5	149.0 *	122.2108	149.0263	.1142E-01	.8000E-02
.262	64.670	.2100E+05	2.680	123.5	150.0	123.3718	149.9955	.7749E-03	.4834E-03
.192	70.884	.1244E+05	2.623	124.5	151.0	124.6443	150.7786	.4173E-03	.7413E-02
.189	1.806	.2255E+05	2.698	126.0	151.5	126.1233	151.5082	.6602E-03	.5489E-03
.324	8.163	.2465E+05	2.712	127.5	152.0	127.5339	152.0351	.7818E-03	.8093E-03
.296	14.366	.1379E+05	2.666	129.0	152.5	129.0025	152.4355	.1778E-03	.5675E-03
.276	20.727	.1362E+05	2.728	130.5	152.5	130.4706	152.6291	.2819E-03	.7079E-03
.254	26.960	.4390E+04	2.751	132.0	152.5	131.9554	152.6999	.3068E-02	.4343E-03
.282	33.241	.1384E+05	2.697	133.5	152.5	133.4899	152.6025	.7488E-03	.7745E-03
.271	39.533	.1000E+05	2.717	135.0	152.5	135.0782	152.3576	.4274E-03	.3911E-03
.296	45.834	.2569E+05	2.712	136.5	152.0	136.4593	151.9562	.1103E-02	.3486E-03
.201	52.105	.2390E+05	2.668	138.0	151.5	137.8992	151.4058	.5701E-03	.4477E-03
.203	58.364	.1476E+05	2.633	139.0	150.5	139.1859	150.7144	.4171E-03	.1654E-01
.276	64.645	.2039E+05	2.729	140.5	150.0	140.4577	149.9233	.5196E-03	.2481E-03
.288	70.873	.1252E+05	2.683	141.5	149.0	141.7799	148.8979	.7807E-03	.2967E-03
.321	1.798	.3690E+05	2.701	143.0	148.0 *	143.0317	147.7337	.6799E-02	.1771E-02
.296	8.165	.9044E+04	2.558	143.5	146.5	143.7641	146.5795	.5531E-02	.4563E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

.377	14.723	.2840E+05	2.704	145.0	144.0	145.2073	143.9600	.5303E-03	.1017E-02
.217	26.962	.9170E+04	2.563	145.5	142.5	145.7671	142.5738	.4318E-02	.2900E-02
.304	33.249	.1198E+05	2.642	146.0	141.0	146.1065	141.0174	.5176E-03	.6097E-03
.257	39.547	.2118E+05	2.673	146.5	139.5	146.3293	139.5706	.4787E-03	.3874E-03
.268	45.826	.2037E+05	2.669	146.5	138.0	146.4093	138.0557	.2794E-03	.2014E-03
.271	52.100	.1581E+05	2.656	146.5	137.5	146.3040	136.5485	.3424E-03	.7344E-03
.265	58.397	.2034E+05	2.623	146.0	135.0	146.0417	135.0123	.4713E-03	.4721E-03
.296	64.643	.1848E+05	2.711	145.5	133.5	145.6872	133.6309	.4683E-03	.6975E-03
.299	70.891	.2634E+05	2.687	145.0	132.0	145.0861	132.1515	.2043E-02	.2812E-02
.260	1.805	.1385E+05	2.698	144.5	130.5	144.3709	130.7129	.8540E-02	.2110E-01
.324	8.195	.1823E+05	2.731	143.5	129.5	143.5138	129.4657	.5707E-03	.6336E-03
.282	14.369	.1281E+05	2.755	142.5	128.5	142.5541	128.3260	.6005E-03	.5673E-03
.243	20.718	.1904E+05	2.769	141.5	127.0	141.4786	127.2258	.5136E-03	.5172E-03
.206	26.989	.1019E+05	2.655	140.5	126.5	140.3092	126.3012	.3090E-03	.3641E-03
.330	33.261	.2121E+05	2.675	139.0	125.5	138.9946	125.5048	.8581E-03	.4669E-03
.324	39.576	.1215E+05	2.701	137.5	125.0	137.6050	124.8231	.6442E-03	.5139E-03
.282	45.824	.1310E+05	2.731	136.5	124.5	136.2308	124.2904	.4891E-03	.5627E-03
.352	52.101	.2016E+05	2.716	134.5	124.0	134.7245	123.9149	.4816E-03	.8001E-03
.276	58.389	.2031E+05	2.760	133.5	123.5	133.2698	123.6963	.7942E-03	.1029E-02
.231	64.622	.1092E+05	2.721	131.5	123.5	131.7024	123.6526	.8553E-03	.5963E-03
.270	70.884	.1991E+05	2.768	130.5	123.5	130.2231	123.7199	.3004E-03	.7193E-03
.338	1.798	.2581E+05	2.702	128.5	124.0	128.6379	123.9509	.3463E-03	.6053E-03
.327	8.193	.1367E+05	2.658	127.0	124.5	127.1407	124.3942	.3958E-03	.5747E-03
.268	14.359	.1533E+05	2.655	126.0	125.0	125.8251	124.9114	.4506E-03	.6472E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	-.00833	.02469	-.00464	-.01478	-.01430	.01639
1	.01011	-.00470	.01484	.01322	-.01225	.01919
2	.04339	-.01046	.05686	-.01600	-.02348	-.02121
3	-.02097	.01175	-.01654	.02343	-.01782	.00721
4	-.01510	-.01002	-.01547	.00868	-.00578	.00974
5	-.01167	.02347	-.01583	.00781	.03589	.00240
6	.00918	.04737	-.01266	-.00464	.00742	-.00841
7	-.01503	.00072	-.01474	.01788	-.00211	-.01357
8	.02064	.01858	-.01490	-.02147	-.00147	-.01366
9	-.01214	-.03673	-.01294	.02370	.00545	.01095

x0= 131.8547    y0= 138.1627    r0= 14.54760933    std.dev.= .01884822

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	2	2	9	29	17	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	-.00543			-.01190	.01144	.01215
1	.01278	-.00213	.01729	.01552	-.01012	.02016
2		-.00886	.05826	-.01479	-.02248	.02042
3		.01214	-.01635	-.02343	-.01890	.00686
4	-.01558	-.01064	-.01621	.00784	-.00669	.00377
5		.02244	-.01686	.00682	.03495	.00152
6	.00840	.04669	-.01321	-.00506	.00716	-.00850
7	-.01494	.00099	-.01425		-.00120	-.01247
8	.02195	.02009	-.01320	-.01958	.00059	-.01143
9	-.00977	-.03422	-.01032	.02643	.00826	.01381

x0= 131.8559    y0= 138.1642    r0= 14.54666519    std.dev.= .01813333

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	1	2	8	24	18	6

ORIGINAL PAGE IS  
OF POOR QUALITY

## DISK 18-A

Track data file TDATA04

NDR0:	Coarse	Fine	Track
Integration delay:	1.0	1.0	64.0
Thresholds:	.1160E+00	.4564E+00	.1344E-02
	.1938E+06	.9190E+05	.7352E+06

Constants:	.26200	.30300	.36200	.26200
Displacements:	0.00000	0.00000	0.00000	0.00000

temp	angle	dark	star	reference		position		standard deviation	
		current	mag.	X	Y	X	Y	X	Y
.240	8.153	.1548E+05	2.692	130.0	115.0 *	130.2009	114.8000	.6559E-02	.7230E-02
.279	14.372	.1804E+05	2.750	129.5	113.5 *	129.2456	113.6800	.2168E-02	.1769E-01
.299	20.711	.1653E+05	2.664	128.0	112.5 *	128.1613	112.6159	.1665E-02	.1180E-01
.240	26.978	.2456E+05	2.709	127.0	111.5 *	126.9789	111.6785	.4352E-02	.2979E-01
.231	33.228	.1489E+05	2.686	125.5	111.0	125.7146	110.8520	.1012E-02	.9483E-03
.268	39.538	.2067E+05	2.733	124.5	110.0	124.3558	110.2262	.5062E-02	.5359E-02
.302	45.825	.2125E+05	2.722	123.0	109.5 *	122.9308	109.6936	.3671E-02	.2527E-01
.290	52.090	.1325E+05	2.774	121.5	109.5	121.4741	109.2946	.3892E-03	.9102E-03
.271	58.367	.1212E+05	2.723	120.0	109.0	119.9851	109.0367	.6209E-03	.7377E-03
.290	64.657	.9789E+04	2.768	118.5	109.0	118.4609	108.9941	.6821E-03	.1077E-02
.279	70.880	.1258E+05	2.739	117.0	109.0	116.9409	109.0478	.4231E-03	.1003E-02
.293	1.802	.1482E+05	2.718	115.5	109.5	115.3302	109.3452	.6159E-03	.6671E-03
.217	8.169	.2509E+05	2.762	114.0	110.0	113.8906	109.7859	.1910E-02	.2474E-02
.229	14.369	.8741E+04	2.697	112.5	110.5	112.5116	110.3205	.6264E-03	.4271E-03
.237	20.715	.1896E+05	2.702	111.0	111.0 *	111.1336	111.0080	.5030E-02	.9547E-02
.304	26.962	.2822E+05	2.771	110.0	112.0	109.9103	111.8590	.1593E-02	.2360E-02
.299	33.245	.1285E+05	2.734	108.5	113.0 *	108.7323	112.7867	.1361E-01	.1339E-02
.302	39.533	.1979E+05	2.737	107.5	114.0	107.6781	113.9150	.1142E-02	.4849E-03
.245	45.807	.1781E+05	2.708	106.5	115.0	106.7290	115.0285	.5030E-03	.9465E-03
.271	52.094	.1302E+05	2.743	106.0	116.5	105.9130	116.3808	.5455E-03	.4639E-03
.257	58.381	.1714E+05	2.808	105.5	117.5	105.2173	117.6961	.2378E-03	.4444E-03
.229	64.627	.1779E+05	2.692	104.5	119.0	104.7065	119.0570	.5840E-03	.8525E-03
.293	70.884	.1270E+05	2.720	104.5	120.5	104.2768	120.5710	.6721E-03	.5277E-03
.304	1.805	.2447E+05	2.718	104.0	122.0	104.0509	122.2275	.4903E-03	.6515E-03
.248	8.166	.2170E+05	2.775	104.0	123.5	104.0271	123.7269	.4972E-03	.2265E-03
.299	14.378	.1380E+05	2.699	104.0	125.0	104.0918	125.2299	.7842E-03	.5335E-03
.321	20.714	.9867E+04	2.753	104.5	126.5	104.3591	126.6804	.4284E-03	.4473E-03
.380	26.967	.2222E+05	2.752	104.5	128.0	104.7523	128.1845	.4835E-03	.5890E-03
.276	33.241	.1758E+05	2.794	105.5	129.5	105.3117	129.5721	.4494E-03	.3021E-03
.234	39.534	.1832E+05	2.645	106.0	131.0	106.0343	130.9113	.1781E-02	.7605E-03
.375	45.788	.2506E+05	2.741	107.0	132.0 *	106.8332	132.2248	.3594E-02	.4951E-02
.327	52.100	.2298E+05	2.754	108.0	133.5 *	107.8087	133.4087	.2564E-02	.1618E-01
.257	58.373	.8637E+04	2.599	109.0	134.5	108.8877	134.4570	.4552E-03	.1594E-03
.316	64.621	.2514E+05	2.721	110.0	135.5	110.0304	135.3725	.1315E-01	.1593E-01
.386	70.852	.2131E+05	2.790	111.5	136.0	111.3804	136.2398	.6694E-03	.7174E-04

ORIGINAL PAGE IS  
OF POOR QUALITY

TN81-04

.285	1.000	.1500E+05	2.601	115.0	137.0 *	114.0005	135.9001	.7000E-03	.6000E-02
.302	8.180	.1707E+05	2.695	114.5	137.5	114.2667	137.4602	.7413E-03	.4916E-03
.310	14.369	.2043E+05	2.719	115.5	138.0	115.7003	137.8279	.4553E-03	.6525E-03
.290	20.716	.2026E+05	2.721	117.5	138.0 *	117.2128	138.0745	.2987E-02	.4871E-02
.307	27.000	.1902E+05	2.693	118.5	138.0	118.7323	138.0871	.7860E-03	.1487E-03
.262	33.240	.2003E+05	2.720	120.5	139.0 *	120.2249	138.0523	.2143E-02	.4444E-02
.262	39.532	.2142E+05	2.711	121.5	138.0	121.7473	137.7565	.6075E-03	.6868E-03
.274	45.932	.1552E+05	2.665	123.0	137.5	123.1871	137.3455	.4170E-03	.5863E-03
.282	52.095	.1169E+05	2.696	124.5	137.0	124.5758	136.7789	.8634E-03	.1146E-02
.352	58.370	.2661E+05	2.747	126.0	136.0	125.9211	136.0780	.4741E-03	.8984E-03
.229	64.643	.2142E+05	2.682	127.0	135.0	127.1541	135.2290	.5369E-03	.5914E-03
.265	70.898	.2473E+05	2.746	128.5	134.0	128.3603	134.3048	.3352E-01	.4061E-01
.290	1.794	.1036E+05	2.724	129.5	133.0	129.4898	133.0955	.7234E-03	.7050E-03
.400	8.178	.2336E+05	2.749	130.5	132.0	130.4457	131.9246	.6301E-03	.6134E-03
.293	14.371	.2522E+04	2.643	131.5	130.5 *	131.1958	130.6562	.8430E-02	.9074E-02
.375	20.721	-.1064E+04	2.719	132.0	129.5	131.8351	129.3504	.2210E-02	.3995E-03
.383	26.990	.6394E+04	2.836	132.5	128.0	132.5367	127.8619	.2596E-02	.1804E-03
.279	33.256	.8404E+04	2.596	133.0	126.5	132.8571	126.4665	.5789E-03	.5455E-03
.318	39.534	.1123E+05	2.713	133.0	125.0	133.0736	124.9035	.4043E-03	.7159E-03
.310	45.839	.2091E+05	2.657	133.0	123.5	133.1120	123.4532	.3197E-03	.6024E-03
.352	52.087	.2210E+05	2.730	133.0	122.0	133.0372	121.9139	.7221E-03	.9177E-03
.358	58.365	.1227E+05	2.644	133.0	120.5	132.8201	120.4927	.5188E-03	.4521E-03
.302	64.654	.3761E+04	2.731	132.5	119.0	132.4531	118.9313	.9174E-03	.8252E-03
.313	70.877	.8975E+04	2.728	131.5	117.5	131.7469	117.5934	.9127E-03	.4075E-03
.327	1.812	.2704E+05	2.684	131.0	116.0	131.0417	116.0561	.9345E-03	.1657E-02

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.00841	-.00847	-.00418	-.00240	.01819	-.02750
1	-.02850	-.00824	.02406	-.00335	.03227	.00485
2	-.02638	-.01472	.01413	-.01892	.01302	-.02782
3	.01806	-.02469	.00809	.00175	.02856	.00275
4	-.02752	.00428	-.01887	.00443	-.00702	-.03057
5	.02392	.02902	.02034	-.00788	.03186	-.02221
6	.00257	.00695	.03286	-.01533	.04467	.00716
7	-.00123	-.01914	-.02082	-.05081	-.00058	-.02253
8	-.01097	-.05376	-.06377	.07585	.04057	.02534
9	.00075	.01746	.03185	.08802	-.08338	.00479

$\mu = 118.5550$      $\sigma = 123.5470$      $\sigma = 14.55650520$      $\text{std. dev.} = .02986608$

HISTOGRAM DEVIATION  $\geq e$

e=	.05	.04	.03	.02	.01	0.00	bad points
	6	2	6	14	11	21	0

ORIGINAL PAGE IS  
OF POOR QUALITY



delta ri

	1	2	3	4	5	6
0	.00612				.01612	-.02949
1		-.01001	.02241	-.00486	.03090	.00564
2	-.02744	-.01563	.01338	-.01951		-.02810
3	.01791	-.02469	.00822	.00199	.02897	.00801
4	-.02697	.00489	-.01821	.00513	-.00630	-.02995
5	.02463		.02097		.03236	
6	.00286	.00714	.03292	-.01540	.04445	.00679
7	-.00175	-.01981	-.02165	-.05180		.04064
8	-.01242	-.05935	-.06548	.07401	.03963	.02280
9	-.00137	.01928	.02961	.08574	-.02969	.00242

x0= 118.5563 r0= 123.5462 r0= 14.55729580 std.dev.= .03150113

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	6	2	4	13	11	15	9

ORIGINAL PAGE IS  
OF POOR QUALITY

**DISK 18-A**

Track data file TDATA05

	Coarse	Fine	Track
NDR03	1.0	1.0	64.0
Integration delay	.1160E+00	.4564E+00	.1344E-02
Thresholds	.2298E+06	.9190E+05	.7352E+06
Constants:	.28800	.27600	.38000
Displacements:	0.00000	0.00000	0.00000

temp	angle	dark current	star mag.	reference		Position		standard deviation	
				X	Y	X	Y	X	Y
.184	52.065	.2261E+05	2.546	123.0	133.5	122.8469	133.5199	.8514E-03	.6643E-03
.156	58.262	.9014E+04	2.446	124.0	134.5	123.9122	134.5409	.2966E-03	.4061E-03
.091	64.632	.2421E+05	2.510	125.0	135.5	125.1195	135.4975	.4737E-03	.5021E-03
.142	70.870	.1371E+05	2.589	126.5	136.5	126.3944	136.3539	.4059E-03	.5026E-03
.167	1.798	.1349E+05	2.596	128.0	137.0 *	127.8520	137.0276	.2358E-01	.6104E-02
.178	8.149	.1800E+05	2.559	129.5	137.5 *	129.3003	137.5880	.3470E-03	.1060E-02
.164	14.389	.2065E+05	2.570	130.5	138.0	130.7296	137.9620	.6295E-03	.3992E-03
.254	20.727	.3567E+04	2.659	132.5	138.0 *	132.3121	138.2170	.8597E-01	.4509E-02
.226	26.990	.2136E+05	2.606	134.0	138.0 *	133.7495	138.2552	.2530E-02	.1350E-02
.192	33.243	.1062E+05	2.656	135.5	138.0	135.3315	138.1731	.1414E-02	.1812E-02
.198	39.558	.2400E+05	2.610	137.0	138.0 *	136.7941	137.9126	.1027E-01	.1385E-02
.161	45.821	.1886E+05	2.505	138.0	137.5	138.2320	137.4712	.8578E-03	.3472E-03
.144	52.097	.1241E+05	2.594	139.5	137.0	139.6212	136.9245	.7167E-03	.8287E-03
.158	58.361	.2915E+05	2.667	141.0	136.0	140.9542	136.2378	.8464E-02	.1762E-01
.072	64.623	.2374E+05	2.503	142.0	135.5	142.2146	135.3838	.4173E-03	.7075E-03
.116	70.877	.9771E+04	2.420	143.5	134.5	143.4372	134.4190	.6270E-03	.4346E-03
.136	1.798	.1246E+05	2.596	144.5	133.0 *	144.5476	133.2445	.1450E-02	.1282E-01
.167	8.176	.2435E+05	2.630	145.5	132.0	145.4980	132.0343	.8673E-03	.1274E-02
.018	14.395	.1585E+05	2.575	146.5	131.0	146.2908	130.7907	.7052E-03	.6919E-03
.097	20.726	.1928E+05	2.515	147.0	129.5	146.9732	129.4760	.4077E-03	.5124E-03
.206	26.963	.2530E+05	2.607	147.5	128.0	147.4921	128.0078	.5677E-03	.4215E-03
.091	33.244	.1157E+05	2.441	148.0	126.5	147.8806	126.5658	.5041E-02	.2897E-02
.161	39.532	.1175E+05	2.575	148.0	125.0	148.0992	125.0326	.3053E-03	.1290E-02
.133	45.820	.2405E+05	2.508	148.0	123.5	148.1522	123.5572	.5050E-03	.2824E-03
.156	52.117	.2362E+05	2.569	148.0	122.0	148.0557	122.0426	.3691E-03	.1189E-02
.116	58.356	.1707E+05	2.499	148.0	120.5	147.8373	120.5866	.6914E-02	.6108E-02
.077	64.615	.1990E+05	2.563	147.5	119.0	147.4388	119.0748	.8168E-03	.9713E-03
.139	70.891	.2132E+05	2.563	147.0	117.5	146.8519	117.6855	.6397E-03	.5297E-03
.215	1.826	.2550E+05	2.620	146.0	116.0 *	146.0896	116.2216	.4901E-02	.5958E-02
.091	8.193	.1824E+05	2.591	145.5	115.0	145.2725	114.9482	.7311E-03	.8863E-03
.144	14.381	.2011E+05	2.612	144.5	114.0	144.3121	113.8255	.4159E-03	.7671E-03
.142	20.719	.1072E+05	2.573	143.0	113.0	143.2177	112.7006	.3394E-03	.2908E-03
.189	26.976	.3026E+05	2.633	142.0	112.0	142.0484	111.7905	.7150E-03	.1153E-03
.088	33.256	.1915E+05	2.580	140.5	111.0 *	140.7500	110.9503	.3391E-03	.1874E-03
.088	39.554	.9519E+04	2.508	139.5	110.5	139.4130	110.3195	.4341E-03	.5320E-03

**ORIGINAL PAGE IS OF POOR QUALITY**

.156	45.117	.2270E+05	2.657	133.0	109.0	137.1789	109.8201	.4489E-03	.5441E-03
.139	52.117	.1707E+05	2.529	136.5	109.5	136.5243	109.4164	.4489E-03	.5441E-03
.161	58.384	.3414E+04	2.673	135.0	109.0	135.0808	109.1800	.9369E-03	.7339E-03
.147	64.644	.1021E+05	2.652	133.5	109.0	133.5167	109.0898	.4844E-03	.9904E-03
.170	70.891	-.2419E+04	2.699	132.0	109.0	131.8730	109.1634	.2430E-01	.6464E-01
.156	1.834	.1771E+05	2.512	130.5	109.5	130.3677	109.4613	.8730E-03	.5915E-03
.178	8.173	.2350E+05	2.445	129.0	110.0	128.9268	109.9312	.9213E-03	.7170E-03
.091	14.403	.8272E+04	2.437	127.5	110.5	127.5546	110.4320	.4930E-03	.5184E-03
.091	20.771	.2043E+05	2.620	126.0	111.0	126.1545	111.1118	.3001E-03	.8197E-03
.212	26.973	.2850E+05	2.671	125.0	112.0	124.9425	111.9761	.7377E-03	.1235E-02
.116	33.265	.1516E+05	2.612	124.0	113.0	123.7994	112.9205	.9044E-03	.6799E-03
.153	39.565	.1997E+05	2.604	122.5	114.0	122.7124	114.0180	.6864E-03	.6154E-03
.119	45.843	.2045E+05	2.633	121.5	115.0	121.7496	115.1753	.3506E-02	.7211E-02
.153	52.106	.1457E+05	2.541	121.0	116.5	120.9688	116.4789	.4260E-03	.6254E-03
.153	59.367	.2164E+05	2.636	120.5	118.0	120.2692	117.8577	.9049E-03	.6204E-02
.136	64.658	.2011E+05	2.611	119.5	119.0	119.7342	119.2168	.3918E-03	.7220E-03
.212	70.873	.1369E+05	2.628	119.5	120.5	119.3199	120.7158	.2872E-03	.9253E-03
.122	1.823	.1360E+05	2.544	119.0	122.5	119.0918	122.3496	.2693E-02	.3156E-01
.234	8.164	.3079E+05	2.628	119.0	124.0	119.0897	123.8694	.6551E-03	.1185E-02
.150	14.365	.2056E+05	2.609	119.0	125.5	119.1600	125.3345	.2092E-01	.2091E-01
.097	20.727	.1530E+05	2.576	119.5	127.0	119.3983	126.8388	.5921E-03	.6339E-03
.181	26.996	.1415E+05	2.595	120.0	128.5	119.8087	128.3386	.2716E-03	.7861E-03
.184	33.290	.2303E+05	2.653	120.5	130.0	120.3639	129.6979	.5598E-02	.2423E-01
.119	39.545	.2090E+05	2.559	121.0	131.0	121.0634	131.0322	.7826E-03	.6424E-03
.150	45.832	.1399E+05	2.577	122.0	132.5	121.9133	132.3670	.1014E-02	.3311E-03

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta ri 3	4	5	6
0	.01950	-.00072	-.01688	.02490	-.02139	.00343
1	.01342	.03960	.02129	.04120	.03125	-.00765
2	-.00752	-.00424	-.02531	.00513	-.02199	.02192
3	-.01360	.01364	-.01176	.00611	.01174	.01201
4	-.01727	.00340	.01815	-.02272	.02088	.00960
5	-.01336	.02700	.01615	.03081	.00442	-.03405
6	-.00911	.00612	.02147	.05031	.01280	-.04741
7	-.00503	.04149	-.00793	-.01121	-.00783	.02278
8	-.02316	-.01524	.00514	.02404	.00948	-.04732
9	-.02372	-.00872	.00006	-.01629	-.02219	.00643

x0= 133.6029    y0= 123.6728    r0= 14.56180286    std.dev.= .02131811

HISTOGRAM DEVIATION >= e

e=	.05	.04	.03	.02	.01	0.00	bad points
	1	4	4	15	16	20	0

ORIGINAL PAGE IS  
OF POOR QUALITY

	1	2	delta r1 3	4	5	7
0	.01918	-.00107	-.01725	.02451		.00807
1	.01309		.02105	.04103		.00767
2	-.00746		-.02504	.00551		-.02131
3	-.01286	.01449	-.01079	.00719	-.01054	-.01971
4	-.01587	.00489	.01273	-.02106	-.01915	.01046
5	-.01153	.02886	.01903	.03270	.00630	.03218
6	-.00727	.00792	.02322		.01441	-.04459
7	-.00359	.04283	-.00669	-.01008	-.00602	.02358
8	-.02238	-.01458	.00568	.02447		-.04712
9		-.00871	-.00002		-.02241	.00629

x0= 133.6023    y0= 123.6738    r0= 14.56105137    std.dev.= .01992372

HISTOGRAM DEVIATION  $\geq e$

e=	.05	.04	.03	.02	.01	0.00	bad points
	0	4	2	11	17	17	9

ORIGINAL PAGE IS  
OF POOR QUALITY

(NED) NOISE EQUIVALENT DISPLACEMENT DATA

- NDRO = 32
- NDRO = 58
- NDRO = 98
- NDRO = 156
- NDRO = 192
- NDRO = 234
- NDRO = 276
- NDRO = 312
- NDRO = 346
- NDRO = 390
- NDRO = 510

NDRO = #Samples in 2 reads

Track data file IDATA00

NRRO: Coarse 1.0 Fine 1.0 Track 16.0  
 Integration delay: .1160E+00 .4564E+00 .2640E-03  
 Thresholds: .1838E+06 .9190E+05 .7352E+06

Constants: .30000 .30000 .30000 .30000  
 Displacements: 0.00000 0.00000 0.00000 0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.327	8.203	.3492E+05	6.003	91.0	136.0	90.6659	135.9899	.0695	.0751
.341	8.205	.3360E+05	6.068	91.0	136.0	90.7493	136.0862		
.271	8.196	.3582E+05	5.966	91.0	136.0	90.7043	136.0278		
.299	8.185	.3546E+05	6.115	91.0	136.0	90.5925	136.0721		
.369	8.185	.3360E+05	5.941	91.0	136.0	90.6378	135.9992		
.327	8.203	.3492E+05	6.118	91.0	136.0	90.5909	136.0108		
.257	8.179	.3372E+05	5.944	91.0	136.0	90.6986	136.0359		
.327	8.196	.3474E+05	5.891	91.0	136.0	90.7018	136.0901		
.257	8.203	.3564E+05	6.099	91.0	136.0	90.7364	136.0537		
.299	8.196	.3444E+05	6.050	91.0	136.0	90.7500	136.0893		
.257	8.179	.3372E+05	5.944	91.0	136.0	90.7166	135.9339		
.327	8.196	.3480E+05	5.947	91.0	136.0	90.7060	136.1032		
.271	8.205	.3528E+05	6.035	91.0	136.0	90.7608	136.0318		
.341	8.203	.3306E+05	5.922	91.0	136.0	90.7611	136.0925		
.299	8.203	.3576E+05	5.963	91.0	136.0	1590.8271	136.0733		
.327	8.196	.3360E+05	5.863	91.0	136.0	90.7693	136.0715		
.257	8.214	.3618E+05	6.000	91.0	136.0	90.8294	136.0749		
.257	8.196	.3360E+05	5.949	91.0	136.0	90.7730	136.0082		
.327	8.179	.3394E+05	6.053	91.0	136.0	90.6199	136.1190		
.271	8.187	.3414E+05	5.938	91.0	136.0	2090.7140	136.0408		
.257	8.196	.3642E+05	6.032	91.0	136.0	90.7080	136.1085		
.327	8.203	.3510E+05	6.077	91.0	136.0	90.7394	136.0499		
.327	8.187	.3420E+05	5.928	91.0	136.0	90.7277	136.0162		
.355	8.205	.3462E+05	6.023	91.0	136.0	90.7826	136.0484		
.355	8.205	.3612E+05	6.102	91.0	136.0	2090.5625	136.0436		
.285	8.203	.3702E+05	6.111	91.0	136.0	90.5519	135.9485		
.285	8.196	.3456E+05	6.026	91.0	136.0	90.5548	136.0002		
.327	8.196	.3534E+05	6.111	91.0	136.0	90.7192	136.0941		
.271	8.205	.3636E+05	6.184	91.0	136.0	90.6012	136.1091		
.215	8.185	.3534E+05	5.958	91.0	136.0	90.7928	136.0251		
.327	8.205	.3564E+05	6.006	91.0	136.0	90.6760	136.0696		
.285	8.205	.3534E+05	6.118	91.0	136.0	90.5849	136.0385		
.257	8.205	.3426E+05	6.017	91.0	136.0	90.6550	136.0220		
.355	8.179	.3540E+05	5.994	91.0	136.0	90.6398	135.9009		
.327	8.200	.3576E+05	6.105	91.0	136.0	90.7031	136.0197		
.299	8.200	.3408E+05	5.899	91.0	136.0	90.7733	136.0390		
.271	8.179	.3594E+05	6.222	91.0	136.0	90.7595	136.0390		
.327	8.196	.3504E+05	5.888	91.0	136.0	90.6605	136.0199		
.299	8.196	.3582E+05	5.988	91.0	136.0	90.7724	136.0164		
.327	8.205	.3732E+05	6.083	91.0	136.0	90.5113	135.9304		
.257	8.179	.3462E+05	6.190	91.0	136.0	90.5126	136.0452		

ORIGINAL PAGE IS  
 OF POOR QUALITY

.327	8.205	.3528E+05	5.941	91.0	136.0	90.7876	135.9805
.257	8.203	.3486E+05	6.023	91.0	136.0	90.7324	136.0655
.327	8.196	.3432E+05	6.041	91.0	136.0	90.7342	136.0864
.327	8.196	.3282E+05	5.825	91.0	136.0	90.7053	136.0634
.229	8.205	.3510E+05	5.896	91.0	136.0	90.7528	136.0581
.327	8.196	.3498E+05	6.026	91.0	136.0	90.7040	136.0323
.355	8.196	.3546E+05	6.071	91.0	136.0	90.7834	136.1785
.341	8.205	.3480E+05	6.023	91.0	136.0	90.6698	136.0674
.271	8.187	.3510E+05	5.963	91.0	136.0	90.7812	136.0081
.271	8.203	.3570E+05	5.875	91.0	136.0	90.6745	135.9936
.271	8.196	.3600E+05	6.059	91.0	136.0	90.7603	136.0163

ORIGINAL PAGE IS  
OF POOR QUALITY

TM01-04



Track data file TDATA00

NDRO: Coarse 1.0 Fine 1.0 Track 29.0  
 Integration delay: .1160E+00 .4564E+00 .2640E-03  
 Thresholds: .1838E+06 .9190E+05 .7352E+06

Constants: .30000 .30000 .30000 .30000  
 Displacements: 0.00000 0.00000 0.00000 0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.243	8.205	.1665E+05	6.000	91.0	136.0	90.8719	136.0262	.0215	.0208
.327	8.187	.1698E+05	5.998	91.0	136.0	90.8111	136.0181		
.285	8.205	.1601E+05	5.893	91.0	136.0	90.8559	136.0154		
.229	8.187	.1631E+05	5.960	91.0	136.0	90.8501	136.0322		
.397	8.200	.1570E+05	5.965	91.0	136.0	90.8681	136.0531		
.299	8.196	.1643E+05	5.953	91.0	136.0	90.8614	136.0049		
.271	8.200	.1653E+05	5.990	91.0	136.0	90.8884	136.0136		
.215	8.187	.1640E+05	6.002	91.0	136.0	90.8719	136.0211		
.201	8.196	.1576E+05	5.955	91.0	136.0	90.8702	136.0104		
.355	8.179	.1654E+05	5.977	91.0	136.0	90.8589	136.0525		
.327	8.196	.1568E+05	5.998	91.0	136.0	90.8798	136.0087		
.271	8.187	.1612E+05	5.985	91.0	136.0	90.8521	136.0336		
.299	8.200	.1574E+05	5.949	91.0	136.0	90.8512	136.0114		
.299	8.205	.1623E+05	5.961	91.0	136.0	90.8698	135.9717		
.383	8.196	.1631E+05	6.024	91.0	136.0	90.8456	136.0125		
.271	8.179	.1660E+05	5.986	91.0	136.0	90.8467	136.0078		
.327	8.205	.1702E+05	6.041	91.0	136.0	90.8802	136.0364		
.369	8.179	.1607E+05	5.934	91.0	136.0	90.8411	135.9673		
.173	8.187	.1616E+05	5.992	91.0	136.0	90.8055	136.0158		
.397	8.222	.1598E+05	5.981	91.0	136.0	90.8617	136.0310		
.383	8.185	.1563E+05	6.003	91.0	136.0	90.8855	136.0249		
.285	8.203	.1667E+05	5.990	91.0	136.0	90.8850	136.0263		
.327	8.185	.1563E+05	5.933	91.0	136.0	90.8531	136.0353		
.355	8.185	.1557E+05	5.998	91.0	136.0	90.8642	136.0407		
.369	8.187	.1592E+05	5.991	91.0	136.0	<u>90.8928</u>	<u>136.0484</u>		
.327	8.196	.1590E+05	5.982	91.0	136.0	90.8912	136.0000		
.299	8.196	.1618E+05	5.989	91.0	136.0	90.8900	136.0076		
.243	8.179	.1609E+05	5.953	91.0	136.0	90.8908	136.0356		
.327	8.196	.1636E+05	5.972	91.0	136.0	90.8953	136.0378		
.327	8.179	.1583E+05	5.964	91.0	136.0	90.8844	136.0097		
.327	8.187	.1673E+05	5.928	91.0	136.0	90.8463	136.0091		
.271	8.189	.1658E+05	5.998	91.0	136.0	90.8715	136.0488		
.327	8.196	.1627E+05	5.995	91.0	136.0	90.8585	136.0296		
.257	8.196	.1673E+05	6.009	91.0	136.0	90.8541	136.0084		
.285	8.205	.1678E+05	6.023	91.0	136.0	90.8048	136.0075		
.327	8.200	.1599E+05	5.932	91.0	136.0	90.8621	136.0199		
.341	8.196	.1596E+05	5.951	91.0	136.0	90.8387	136.0298		
.327	8.183	.1636E+05	6.071	91.0	136.0	90.8527	135.9886		
.299	8.196	.1574E+05	5.956	91.0	136.0	90.8558	136.0130		
.299	8.187	.1631E+05	6.005	91.0	136.0	90.8540	136.0076		
.355	8.196	.1583E+05	6.003	91.0	136.0	90.8303	136.0212		

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Track data file TDATA00

NDRO: Coarse 1.0 Fine 1.0 Track 48.0  
 Integration delay: .1160E+00 .4564E+00 .2640E-03  
 Thresholds: .1838E+06 .9190E+05 .7352E+06

Constants: .30000 .30000 .30000 .30000  
 Displacements: 0.00000 0.00000 0.00000 0.00000

Temp	Angle	Dark Current	Star Mas.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.271	8.185	.1020E+05	5.937	91.0	136.0	90.9183	136.0518		
.327	8.196	.9868E+04	5.966	91.0	136.0	90.9143	136.0539	.0096	.0083
.355	8.196	.1024E+05	5.947	91.0	136.0	90.8958	136.0342		
.187	8.196	.1002E+05	5.946	91.0	136.0	90.8927	136.0501		
.327	8.205	.1018E+05	5.980	91.0	136.0	90.8939	136.0368		
.327	8.203	.9988E+04	5.964	91.0	136.0	90.9084	136.0523		
.327	8.203	.1000E+05	5.944	91.0	136.0	90.8916	136.0428		
.327	8.196	.9787E+04	5.949	91.0	136.0	90.9095	136.0432		
.299	8.185	.1028E+05	5.986	91.0	136.0	90.9037	136.0356		
.327	8.185	.1022E+05	5.954	91.0	136.0	90.9195	136.0387		
.355	8.196	.1016E+05	5.948	91.0	136.0	90.9132	136.0385		
.243	8.196	.1015E+05	5.960	91.0	136.0	90.8975	136.0384		
.271	8.196	.1019E+05	5.944	91.0	136.0	90.9100	136.0562		
.355	8.179	.9914E+04	5.971	91.0	136.0	90.9118	136.0395		
.285	8.179	.1005E+05	5.939	91.0	136.0	90.9184	136.0654		
.243	8.196	.1029E+05	5.943	91.0	136.0	90.9174	136.0464		
.229	8.196	.9975E+04	5.969	91.0	136.0	90.9164	136.0397		
.397	8.179	.1013E+05	5.978	91.0	136.0	90.9107	136.0558		
.299	8.196	.1010E+05	5.963	91.0	136.0	90.9045	136.0473		
.229	8.196	.1055E+05	6.005	91.0	136.0	90.9079	136.0517		
.201	8.179	.9787E+04	5.931	91.0	136.0	90.9065	136.0472		
.285	8.205	.1031E+05	5.958	91.0	136.0	90.8990	136.0414		
.257	8.196	.1036E+05	5.980	91.0	136.0	90.9139	136.0374		
.271	8.196	.1052E+05	5.946	91.0	136.0	90.9040	136.0490		
.327	8.205	.1016E+05	5.971	91.0	136.0	90.9040	136.0490		
.285	8.185	.1016E+05	5.962	91.0	136.0	90.9157	136.0322		
.257	8.179	.1039E+05	5.976	91.0	136.0	90.9047	136.0414		
.313	8.205	.1020E+05	5.945	91.0	136.0	90.9047	136.0443		
.341	8.205	.9921E+04	5.953	91.0	136.0	90.9151	136.0533		
.243	8.196	.1054E+05	5.969	91.0	136.0	90.8941	136.0512		
.327	8.196	.9881E+04	5.971	91.0	136.0	90.8967	136.0457		
.257	8.203	.1001E+05	5.961	91.0	136.0	90.9005	136.0463		
.299	8.214	.1037E+05	5.984	91.0	136.0	90.9267	136.0499		
.327	8.196	.9975E+04	5.958	91.0	136.0	90.8866	136.0244		
.383	8.214	.9834E+04	5.937	91.0	136.0	90.9071	136.0404		
.383	8.179	.1024E+05	5.936	91.0	136.0	90.9000	136.0375		
.369	8.196	.1030E+05	5.981	91.0	136.0	90.9095	136.0501		
.271	8.196	.1014E+05	5.987	91.0	136.0	90.8950	136.0363		
.271	8.196	.9747E+04	5.944	91.0	136.0	90.9014	136.0508		
.271	8.169	.1040E+05	5.971	91.0	136.0	90.9085	136.0440		
.327	8.179	.1029E+05	5.971	91.0	136.0	90.9151	136.0414		
						90.9141	136.0399		

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.246	8.196	.1020E+05	5.960	91.0	136.0	90.9039	136.0467
.187	8.196	.1020E+05	5.960	91.0	136.0	90.8959	136.0322
.327	8.203	.1040E+05	5.962	91.0	136.0	90.9107	136.0352
.257	8.196	.1018E+05	5.945	91.0	136.0	90.8980	136.0346
.327	8.196	.1024E+05	5.970	91.0	136.0	90.8932	136.0432
.257	8.196	.1007E+05	5.983	91.0	136.0	90.9043	136.0319
.285	8.179	.1046E+05	5.981	91.0	136.0	90.9076	136.0432
.327	8.187	.1053E+05	5.936	91.0	136.0	90.9251	136.0627
.285	8.196	.1008E+05	5.947	91.0	136.0	90.9027	136.0381
.257	8.196	.1036E+05	5.986	91.0	136.0	90.9070	136.0527
.327	8.179	.1017E+05	5.964	91.0	136.0	90.8833	136.0472
.327	8.196	.1032E+05	5.946	91.0	136.0	90.9060	136.0551
.299	8.200	.1055E+05	5.984	91.0	136.0		

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Track data file TRAT000

NRRO: Coarse 1.0 Fine 1.0 Track 78.0  
 Integration delay: .1160E+00 .4564E+00 .2640E-03  
 Thresholds: .1838E+06 .9190E+05 .7352E+06

Constants: .30000 .30000 .30000 .30000  
 Displacements: 0.00000 0.00000 0.00000 0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.215	8.187	.8155E+04	5.964	91.0	136.0	90.9137	136.0495	.0062	.0045
.243	8.179	.7934E+04	5.957	91.0	136.0	90.9126	136.0351		
.285	8.196	.7845E+04	5.934	91.0	136.0	90.9263	136.0453		
.369	8.196	.8135E+04	5.974	91.0	136.0	90.9162	136.0414		
.299	8.196	.7870E+04	5.949	91.0	136.0	90.9169	136.0408		
.327	8.196	.7781E+04	5.949	91.0	136.0	90.9089	136.0364		
.327	8.196	.7947E+04	5.969	91.0	136.0	90.9222	136.0383		
.327	8.205	.8142E+04	5.955	91.0	136.0	90.9250	136.0400		
.187	8.179	.7898E+04	5.950	91.0	136.0	90.9110	136.0392		
.327	8.185	.8035E+04	5.964	91.0	136.0	90.9172	136.0423		
.257	8.205	.7926E+04	5.942	91.0	136.0	90.9159	136.0356		
.285	8.196	.7985E+04	5.960	91.0	136.0	90.9103	136.0347		
.299	8.196	.8178E+04	5.969	91.0	136.0	90.9166	136.0316		
.341	8.179	.8084E+04	5.964	91.0	136.0	90.9211	136.0446		
.341	8.185	.7974E+04	5.969	91.0	136.0	90.9177	136.0401		
.341	8.196	.7974E+04	5.959	91.0	136.0	90.9220	136.0391		
.271	8.203	.8122E+04	5.978	91.0	136.0	90.9172	136.0290		
.243	8.203	.8043E+04	5.959	91.0	136.0	90.9190	136.0351		
.355	8.205	.8117E+04	5.977	91.0	136.0	90.9058	136.0434		
.341	8.179	.7972E+04	5.941	91.0	136.0	90.9290	136.0328		
.327	8.185	.8051E+04	5.961	91.0	136.0	90.9169	136.0362		
.327	8.196	.7878E+04	5.955	91.0	136.0	90.9209	136.0358		
.201	8.179	.7855E+04	5.949	91.0	136.0	90.9205	136.0428		
.187	8.205	.7911E+04	5.950	91.0	136.0	90.9154	136.0357		
.271	8.187	.7888E+04	5.964	91.0	136.0	<u>90.9274</u>	<u>136.0284</u>		
.257	8.196	.7886E+04	5.952	91.0	136.0	90.9274	136.0312		
.187	8.196	.7962E+04	5.959	91.0	136.0	90.9227	136.0396		
.285	8.179	.7776E+04	5.932	91.0	136.0	90.9350	136.0318		
.257	8.203	.8028E+04	5.944	91.0	136.0	90.9193	136.0364		
.229	8.196	.8020E+04	5.938	91.0	136.0	90.9127	136.0264		
.327	8.196	.8053E+04	5.973	91.0	136.0	90.9101	136.0377		
.229	8.196	.8119E+04	5.968	91.0	136.0	90.9165	136.0370		
.257	8.196	.7941E+04	5.935	91.0	136.0	90.9153	136.0299		
.299	8.161	.7842E+04	5.949	91.0	136.0	90.9131	136.0341		
.243	8.203	.8063E+04	5.972	91.0	136.0	90.9285	136.0400		

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## Track data file TRAT000

	Coarse	Fine	Track
NORM:	1.0	1.0	96.0
Integration delay:	.1160E+00	.4564E+00	.2640E-03
Thresholds:	.1838E+06	.9190E+05	.7352E+06

	.30000	.30000	.30000	.30000
Constants:				
Displacements:	0.00000	0.00000	0.00000	0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.187	8.196	.7725E+04	5.957	91.0	136.0	90.9223	136.0363	.0013	.0040
.201	8.203	.7716E+04	5.960	91.0	136.0	90.9254	136.0309		
.201	8.196	.7948E+04	5.973	91.0	136.0	90.9297	136.0433		
.144	8.205	.7822E+04	5.962	91.0	136.0	90.9276	136.0364		
.285	8.179	.7854E+04	5.945	91.0	136.0	90.9197	136.0402		
.327	8.196	.7864E+04	5.959	91.0	136.0	90.9209	136.0410		
.173	8.196	.7693E+04	5.947	91.0	136.0	90.9213	136.0325		
.327	8.196	.7575E+04	5.945	91.0	136.0	90.9231	136.0372		
.271	8.205	.7745E+04	5.936	91.0	136.0	90.9186	136.0354		
.215	8.220	.7735E+04	5.955	91.0	136.0	90.9173	136.0334		
.257	8.205	.7793E+04	5.947	91.0	136.0	90.9184	136.0403		
.187	8.196	.7897E+04	5.959	91.0	136.0	90.9182	136.0437		
.383	8.196	.7871E+04	5.954	91.0	136.0	90.9239	136.0393		
.271	8.196	.7783E+04	5.962	91.0	136.0	90.9207	136.0305		
.327	8.196	.7768E+04	5.960	91.0	136.0	90.9210	136.0319		
.257	8.179	.7797E+04	5.942	91.0	136.0	90.9281	136.0385		
.229	8.196	.7812E+04	5.946	91.0	136.0	90.9183	136.0365		
.201	8.203	.7617E+04	5.942	91.0	136.0	90.9255	136.0393		
.327	8.196	.7847E+04	5.957	91.0	136.0	90.9220	136.0311		
.271	8.179	.7829E+04	5.976	91.0	136.0	90.9203	136.0421		
.271	8.196	.7829E+04	5.951	91.0	136.0	90.9207	136.0389		
.355	8.196	.7871E+04	5.963	91.0	136.0	90.9215	136.0369		
.327	8.179	.7882E+04	5.977	91.0	136.0	90.9168	136.0391		
.285	8.196	.7884E+04	5.961	91.0	136.0	90.9185	136.0429		
.341	8.196	.7755E+04	5.951	91.0	136.0	90.9246	136.0348		
.341	8.196	.7752E+04	5.956	91.0	136.0	90.9235	136.0289		
.257	8.203	.7748E+04	5.940	91.0	136.0	90.9243	136.0401		
.327	8.196	.7903E+04	5.975	91.0	136.0	90.9196	136.0317		
.257	8.179	.7693E+04	5.952	91.0	136.0	90.9300	136.0369		
.201	8.196	.7552E+04	5.948	91.0	136.0	90.9170	136.0317		
.327	8.196	.7963E+04	5.957	91.0	136.0	90.9281	136.0396		
.327	8.203	.7921E+04	5.960	91.0	136.0	90.9209	136.0414		

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Track data file TDAT000

NPRO: Coarse 1.0 Fine 1.0 Track 117.0  
 Integration delay: .1160E+00 .4564E+00 .2640E-03  
 Threshold: .1838E+06 .9190E+05 .7352E+06

Constants: .30000 .30000 .30000 .30000  
 Displacement: 0.00000 0.00000 0.00000 0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard deviation	
				X	Y	X	Y	X	Y
.201	8.179	.9424E+04	5.964	91.0	136.0	90.9190	136.0404	.0043	.0057
.299	8.205	.9526E+04	5.971	91.0	136.0	90.9055	136.0375		
.201	8.205	.9565E+04	5.977	91.0	136.0	90.9127	136.0417		
.257	8.205	.9655E+04	5.970	91.0	136.0	90.9111	136.0468		
.257	8.196	.9495E+04	5.973	91.0	136.0	90.9087	136.0402		
.257	8.203	.9437E+04	5.976	91.0	136.0	90.9182	136.0433		
.215	8.196	.9589E+04	5.980	91.0	136.0	90.9056	136.0419		
.243	8.205	.9477E+04	5.968	91.0	136.0	90.9158	136.0449		
.243	8.205	.9446E+04	5.973	91.0	136.0	90.9118	136.0414		
.187	8.203	.9572E+04	5.962	91.0	136.0	90.9138	136.0364		
.243	8.196	.9585E+04	5.985	91.0	136.0	90.9071	136.0427		
.243	8.196	.9481E+04	5.957	91.0	136.0	90.9141	136.0436		
.173	8.179	.9523E+04	5.968	91.0	136.0	90.9141	136.0425		
.285	8.203	.9456E+04	5.969	91.0	136.0	90.9070	136.0386		
.327	8.196	.9526E+04	5.974	91.0	136.0	90.9123	136.0488		
.327	8.196	.9534E+04	5.966	91.0	136.0	90.9133	136.0405		
.327	8.196	.9398E+04	5.954	91.0	136.0	90.9115	136.0393		
.201	8.196	.9473E+04	5.977	91.0	136.0	90.9144	136.0412		
.201	8.196	.9505E+04	5.966	91.0	136.0	90.9169	136.0361		
.285	8.187	.9568E+04	5.954	91.0	136.0	90.9171	136.0451		
.215	8.205	.9550E+04	5.976	91.0	136.0	90.9181	136.0469		
.229	8.203	.9583E+04	5.978	91.0	136.0	90.9145	136.0398		
.243	8.214	.9524E+04	5.981	91.0	136.0	90.9199	136.0452		
.341	8.196	.9533E+04	5.971	91.0	136.0	90.9086	136.0446		
.187	8.196	.9418E+04	5.951	91.0	136.0	90.9083	136.0368		
.257	8.179	.9572E+04	5.962	91.0	136.0	90.9187	136.0761		
.327	8.196	.9515E+04	5.981	91.0	136.0	90.9115	136.0485		
.327	8.203	.9563E+04	5.993	91.0	136.0	90.9097	136.0425		
.116	8.196	.9519E+04	5.968	91.0	136.0	90.9114	136.0449		
.257	8.196	.9446E+04	5.957	91.0	136.0	90.9145	136.0395		
.257	8.196	.9516E+04	5.982	91.0	136.0	90.9146	136.0378		
.257	8.196	.9531E+04	5.975	91.0	136.0	90.9148	136.0434		
.355	8.196	.9638E+04	5.989	91.0	136.0	90.9142	136.0373		
.257	8.196	.9497E+04	5.970	91.0	136.0	90.9125	136.0376		
.285	8.196	.9578E+04	5.973	91.0	136.0	90.9120	136.0316		
.299	8.214	.9477E+04	5.969	91.0	136.0	90.9151	136.0363		
.257	8.205	.9502E+04	5.977	91.0	136.0	90.9154	136.0390		
.327	8.196	.9484E+04	5.978	91.0	136.0	90.9146	136.0449		

THE DATA FILE IS  
 OF THE QUALITY

## Track data file TDATA00

	Coarse	Fine	Track
NDROI	1.0	1.0	138.0
Integration delay:	.1160E+00	.4564E+00	.2640E-03
Thresholds:	.1838E+06	.9190E+05	.7352E+06

Constants:	.30000	.30000	.30000	.30000
Displacements:	0.00000	0.00000	0.00000	0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.215	8.196	.1090E+05	5.974	91.0	136.0	90.9076	136.0352	.0028	.0046
.187	8.196	.1107E+05	5.977	91.0	136.0	90.9092	136.0398		
.144	8.196	.1099E+05	5.971	91.0	136.0	90.9075	136.0397		
.088	8.196	.1082E+05	5.952	91.0	136.0	90.9087	136.0355		
.201	8.196	.1087E+05	5.969	91.0	136.0	90.9121	136.0435		
.201	8.203	.1095E+05	5.973	91.0	136.0	90.9077	136.0347		
.130	8.203	.1088E+05	5.960	91.0	136.0	90.9057	136.0283		
.144	8.220	.1092E+05	5.968	91.0	136.0	90.9070	136.0363		
.144	8.196	.1096E+05	5.979	91.0	136.0	90.9039	136.0387		
.243	8.205	.1094E+05	5.976	91.0	136.0	90.9092	136.0385		
.285	8.196	.1097E+05	5.977	91.0	136.0	90.9124	136.0383		
.187	8.196	.1094E+05	5.970	91.0	136.0	90.9093	136.0434		
.257	8.179	.1103E+05	5.982	91.0	136.0	90.9089	136.0390		
.299	8.196	.1088E+05	5.963	91.0	136.0	90.9158	136.0389		
.285	8.196	.1090E+05	5.963	91.0	136.0	90.9083	136.0383		
.257	8.179	.1094E+05	5.969	91.0	136.0	90.9142	136.0363		
.229	8.196	.1086E+05	5.969	91.0	136.0	90.9103	136.0322		
.243	8.196	.1091E+05	5.973	91.0	136.0	90.9124	136.0469		
.229	8.196	.1100E+05	5.976	91.0	136.0	90.9043	136.0391		
.201	8.179	.1098E+05	5.973	91.0	136.0	90.9098	136.0337		
.243	8.196	.1098E+05	5.972	91.0	136.0	90.9072	136.0277		
.327	8.196	.1092E+05	5.970	91.0	136.0	90.9100	136.0391		
.257	8.187	.1088E+05	5.965	91.0	136.0	90.9102	136.0309		
.271	8.179	.1096E+05	5.965	91.0	136.0	90.9070	136.0317		
.257	8.203	.1093E+05	5.961	91.0	136.0	90.9104	136.0351		
.144	8.196	.1088E+05	5.970	91.0	136.0	90.9062	136.0319		
.201	8.205	.1099E+05	5.969	91.0	136.0	90.9029	136.0372		
.201	8.196	.1099E+05	5.963	91.0	136.0	90.9107	136.0338		
.257	8.187	.1103E+05	5.974	91.0	136.0	90.9096	136.0365		
.173	8.196	.1097E+05	5.960	91.0	136.0	90.9071	136.0293		

QUALITY PROGRAM  
 OF THE UNIVERSITY



Track data file TDATA00

NDR01  
 Integration delay: Coarse 1.0 Fine 1.0 Track 156.0  
 Thresholds: .1160E+00 .4564E+00 .2640E-03  
 .1838E+06 .9190E+05 .7352E+06

Constants: .30000  
 Displacements: 0.00000 .30000 0.00000 .30000 0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.299	8.196	.1157E+05	5.973	91.0	136.0	90.9081	136.0348	.0028	.0025
.215	8.196	.1169E+05	5.976	91.0	136.0	90.9069	136.0350		
.215	8.196	.1165E+05	5.974	91.0	136.0	90.9007	136.0365		
.271	8.196	.1175E+05	5.982	91.0	136.0	90.9065	136.0337		
.327	8.205	.1168E+05	5.972	91.0	136.0	90.9085	136.0339		
.257	8.196	.1169E+05	5.977	91.0	136.0	90.9106	136.0368		
.327	8.196	.1166E+05	5.974	91.0	136.0	90.9120	136.0369		
.243	8.196	.1168E+05	5.975	91.0	136.0	90.9091	136.0352		
.257	8.196	.1165E+05	5.965	91.0	136.0	90.9090	136.0357		
.257	8.179	.1169E+05	5.974	91.0	136.0	90.9069	136.0323		
.158	8.196	.1173E+05	5.981	91.0	136.0	90.9090	136.0352		
.327	8.196	.1166E+05	5.971	91.0	136.0	90.9078	136.0317		
.257	8.205	.1153E+05	5.958	91.0	136.0	90.9080	136.0350		
.369	8.203	.1158E+05	5.961	91.0	136.0	90.9069	136.0298		
.257	8.179	.1158E+05	5.973	91.0	136.0	90.9076	136.0311		
.257	8.179	.1167E+05	5.979	91.0	136.0	90.9072	136.0342		
.411	8.205	.1159E+05	5.964	91.0	136.0	90.9109	136.0392		
.201	8.196	.1151E+05	5.963	91.0	136.0	90.9087	136.0349		
.187	8.196	.1161E+05	5.972	91.0	136.0	90.9092	136.0390		
.144	8.179	.1167E+05	5.974	91.0	136.0	90.9064	136.0345		
.327	8.179	.1166E+05	5.979	91.0	136.0	90.9135	136.0353		
.271	8.196	.1164E+05	5.974	91.0	136.0	90.9040	136.0345		
.285	8.196	.1167E+05	5.973	91.0	136.0	90.9048	136.0306		
.215	8.196	.1160E+05	5.982	91.0	136.0	90.9033	136.0359		
.299	8.196	.1157E+05	5.972	91.0	136.0	90.9105	136.0401		
.271	8.179	.1161E+05	5.969	91.0	136.0	90.9079	136.0335		
.144	8.179	.1162E+05	5.970	91.0	136.0	90.9072	136.0374		
.229	8.205	.1169E+05	5.974	91.0	136.0	90.9069	136.0309		
.229	8.196	.1160E+05	5.962	91.0	136.0	90.9076	136.0290		
.355	8.196	.1165E+05	5.982	91.0	136.0	90.9065	136.0348		
.158	8.203	.1164E+05	5.960	91.0	136.0	90.9041	136.0315		
.257	8.214	.1162E+05	5.978	91.0	136.0	90.9146	136.0382		

ALL INFORMATION CONTAINED  
 HEREIN IS UNCLASSIFIED  
 DATE 08-14-2014 BY 60322 UCBAW/STP

Track data file TDATA00

	Coarse	Fine	Track
NDRO:	1.0	1.0	173.0
Integration delay:	.1160E+00	.4564E+00	.2640E-03
Thresholds:	.1838E+06	.9190E+05	.7352E+06

Constants:	.30000	.30000	.30000	.30000
Displacements:	0.00000	0.00000	0.00000	0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.243	8.196	.1208E+05	5.983	91.0	136.0	90.9072	136.0337	.0030	.0031
.088	8.196	.1209E+05	5.975	91.0	136.0	90.9093	136.0320		
.215	8.205	.1210E+05	5.973	91.0	136.0	90.9094	136.0389		
.257	8.196	.1226E+05	5.984	91.0	136.0	90.9060	136.0342		
.327	8.196	.1213E+05	5.973	91.0	136.0	90.9094	136.0364		
.243	8.205	.1209E+05	5.974	91.0	136.0	90.9134	136.0359		
.327	8.185	.1208E+05	5.977	91.0	136.0	90.9034	136.0379		
.299	8.179	.1211E+05	5.980	91.0	136.0	90.9113	136.0292		
.257	8.196	.1213E+05	5.986	91.0	136.0	90.9111	136.0373		
.201	8.179	.1208E+05	5.975	91.0	136.0	90.9063	136.0371		
.257	8.196	.1206E+05	5.965	91.0	136.0	90.9094	136.0327		
.271	8.196	.1211E+05	5.967	91.0	136.0	90.9114	136.0352		
.383	8.214	.1212E+05	5.972	91.0	136.0	90.9151	136.0327		
.327	8.196	.1205E+05	5.970	91.0	136.0	90.9107	136.0323		
.215	8.196	.1205E+05	5.972	91.0	136.0	90.9075	136.0294		
.271	8.179	.1218E+05	5.992	91.0	136.0	90.9111	136.0352		
.261	8.196	.1215E+05	5.984	91.0	136.0	90.9062	136.0315		
.285	8.196	.1205E+05	5.967	91.0	136.0	90.9145	136.0366		
.341	8.196	.1212E+05	5.986	91.0	136.0	90.9146	136.0378		
.299	8.187	.1214E+05	5.980	91.0	136.0	90.9097	136.0363		
.271	8.196	.1207E+05	5.971	91.0	5.0	90.9122	136.0340		
.327	8.203	.1211E+05	5.975	91.0	136.0	90.9104	136.0314		
.271	8.196	.1212E+05	5.985	91.0	136.0	90.9108	136.0260		
.299	8.196	.1215E+05	5.981	91.0	136.0	90.9060	136.0326		
.201	8.205	.1209E+05	5.976	91.0	136.0	90.9114	136.0354		
.257	8.203	.1208E+05	5.970	91.0	136.0	90.9135	136.0371		
.243	8.196	.1215E+05	5.980	91.0	136.0	90.9075	136.0336		
.327	8.196	.1210E+05	5.974	91.0	136.0	90.9046	136.0321		
.215	8.196	.1215E+05	5.985	91.0	136.0	90.9114	136.0294		
.243	8.196	.1215E+05	5.983	91.0	136.0	90.9099	136.0332		
.257	8.196	.1209E+05	5.970	91.0	136.0	90.9092	136.0274		

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## Track data file TDATA00

	Coarse	Fine	Track
NIRO:	1.0	1.0	195.0
Integration delay:	.1160E+00	.4564E+00	.2640E-03
Thresholds:	.1838E+06	.9190E+05	.7952E+06

	.30000	.30000	.30000	.30000
Constants:	.30000	.30000	.30000	.30000
Displacements:	0.00000	0.00000	0.00000	0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.355	8.196	.1264E+05	5.981	91.0	136.0	90.9192	136.0388	.0032	.0029
.327	8.214	.1268E+05	5.989	91.0	136.0	90.9148	136.0390		
.243	8.203	.1271E+05	5.984	91.0	136.0	90.9128	136.0348		
.369	8.196	.1265E+05	5.975	91.0	136.0	90.9180	136.0336		
.327	8.196	.1276E+05	5.981	91.0	136.0	90.9188	136.0405		
.299	8.196	.1266E+05	5.983	91.0	136.0	90.9111	136.0359		
.383	8.196	.1270E+05	5.980	91.0	136.0	90.9172	136.0378		
.327	8.205	.1270E+05	5.988	91.0	136.0	90.9152	136.0411		
.257	8.179	.1269E+05	5.977	91.0	136.0	90.9136	136.0327		
.271	8.205	.1268E+05	5.979	91.0	136.0	90.9203	136.0394		
.229	8.196	.1267E+05	5.981	91.0	136.0	90.9132	136.0307		
.257	8.187	.1262E+05	5.981	91.0	136.0	90.9141	136.0369		
.341	8.196	.1271E+05	5.989	91.0	136.0	90.9118	136.0371		
.271	8.203	.1265E+05	5.983	91.0	136.0	90.9095	136.0358		
.201	8.196	.1262E+05	5.978	91.0	136.0	90.9133	136.0369		
.271	8.196	.1254E+05	5.972	91.0	136.0	90.9097	136.0306		
.271	8.189	.1259E+05	5.982	91.0	136.0	90.9185	136.0376		
.285	8.196	.1266E+05	5.975	91.0	136.0	90.9164	136.0349		
.285	8.196	.1267E+05	5.982	91.0	136.0	90.9132	136.0337		
.355	8.196	.1257E+05	5.971	91.0	136.0	90.9199	136.0365		
.285	8.169	.1265E+05	5.977	91.0	136.0	90.9142	136.0334		
.173	8.196	.1280E+05	5.991	91.0	136.0	90.9135	136.0376		
.257	8.222	.1258E+05	5.976	91.0	136.0	90.9189	136.0338		
.327	8.196	.1269E+05	5.982	91.0	136.0	90.9184	136.0402		
.257	8.196	.1266E+05	5.978	91.0	136.0	90.9151	136.0366		
.327	8.196	.1268E+05	5.981	91.0	136.0	90.9141	136.0334		
.327	8.196	.1266E+05	5.979	91.0	136.0	90.9151	136.0381		
.257	8.196	.1266E+05	5.982	91.0	136.0	90.9151	136.0374		
.299	8.205	.1269E+05	5.984	91.0	136.0	90.9175	136.0320		
.369	8.179	.1272E+05	5.984	91.0	136.0	90.9177	136.0310		
.327	8.196	.1270E+05	5.983	91.0	136.0	90.9133	136.0346		
.243	8.196	.1262E+05	5.983	91.0	136.0	90.9107	136.0338		

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## Track data file TDATA00

NDRn:	Coarse	Fine	Track
	1.0	1.0	255.0
Integration delay:	.11A0E+00	.45A4E+00	.2649E-03
Thresholds:	.1R38E+06	.9190E+05	.7352E+06

Constants:	.30000	.30000	.30000	.30000
Displacements:	0.00000	0.00000	0.00000	0.00000

Temp	Angle	Dark Current	Star Mag.	Reference		Position		Standard Deviation	
				X	Y	X	Y	X	Y
.201	8.196	.1287E+05	5.985	91.0	136.0	90.9277	136.0340	.0032	.0029
.201	8.196	.1268E+05	5.985	91.0	136.0	90.9270	136.0285		
.201	8.196	.1276E+05	5.981	91.0	136.0	90.9216	136.0279		
.299	8.196	.1286E+05	5.977	91.0	136.0	90.9237	136.0282		
.285	8.196	.1287E+05	5.989	91.0	136.0	90.9272	136.0303		
.257	8.196	.1278E+05	5.977	91.0	136.0	90.9312	136.0308		
.201	8.200	.1281E+05	5.978	91.0	136.0	90.9305	136.0280		
.243	8.196	.1285E+05	5.983	91.0	136.0	90.9236	136.0294		
.243	8.196	.1278E+05	5.976	91.0	136.0	90.9282	136.0309		
.271	8.179	.1279E+05	5.981	91.0	136.0	90.9229	136.0260		
.271	8.196	.1288E+05	5.984	91.0	136.0	90.9174	136.0282		
.243	8.196	.1284E+05	5.982	91.0	136.0	90.9249	136.0321		
.201	8.196	.1278E+05	5.986	91.0	136.0	90.9223	136.0302		
.229	8.196	.1287E+05	5.985	91.0	136.0	90.9209	136.0333		
.144	8.179	.1282E+05	5.972	91.0	136.0	90.9242	136.0276		
.397	8.179	.1277E+05	5.975	91.0	136.0	90.9243	136.0257		
.130	8.196	.1271E+05	5.973	91.0	136.0	90.9257	136.0305		
.299	8.222	.1286E+05	5.986	91.0	136.0	90.9209	136.0327		
.271	8.196	.1281E+05	5.984	91.0	136.0	90.9267	136.0327		
.215	8.196	.1275E+05	5.973	91.0	136.0	90.9255	136.0298		
.285	8.196	.1279E+05	5.978	91.0	136.0	90.9264	136.0336		
.285	8.196	.1275E+05	5.975	91.0	136.0	90.9280	136.0370		
.201	8.196	.1285E+05	5.988	91.0	136.0	90.9268	136.0315		
.201	8.196	.1278E+05	5.974	91.0	136.0	90.9295	136.0288		
.158	8.196	.1285E+05	5.988	91.0	136.0	90.9249	136.0246		

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DARK FINE MAPS

1. FINE MAP AT 10°C
2. FINE MAP AT 20°C

"Hot spots" on CID array at fine acquisition  
position 1A22hex

DARK-FINE MAP

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001D5B	001B7F	001CE2	001CD0	001BEF	001BF3	001D01	001D40	0015DE	001655	0014F8	0016B6
001CC0	001BE4	001C5E	001FDA	001BBD	001A20	001C7B	001E0F	001BDF	001B4C	001C6A	001DFE
001CAB	001C08	001BD4	001CE9	001B80	001D14	001B52	001C3C	001B59	001CE0	001C68	001D67
001BAC	001ABA	001B47	001C62	001BF4	001B7A	001CD9	001C93	001B6C	001B94	001BC0	001CFC
001B0D	001C42	001C72	001C06	001B36	001BBF	001AA5	001D8D	00159E	001649	00159C	0016A5
001BDB	001A98	001AF6	001C78	001B36	001C4C	001CEE	001C70	001BDF	001C07	001ADA	001D10
001AD5	001B9A	001A73	001CE4	001C3C	001C38	001AAB	001B0D	001CB0	001C6C	001B40	001C66
001B14	001D75	001B79	001CC1	001DOA	001BFC	001B3D	001C90	001C56	001C6A	001A3B	001C0E
001BAB	001B93	001C34	001C56	001BF9	001B8D	001B3B	001C15	001594	0015CB	00162D	00168D
001C98	001D43	001AC1	001D74	001C3D	001C04	001CD2	001C50	0019EF	001CA7	001B85	001CFE
001C13	001C1B	001AE6	001C76	001B6E	001ACA	001CE9	001C78	001C30	001B95	001C54	001CAB
001C25	001C4D	001B25	001DBB	001BF7	001B1B	001BF7	001C06	001A69	001BCB	001C07	001C23

CID TEMP: 10°C

$N_{\text{mpro}}$  : 96

$t_i$  : .5 sec

$\Delta I_{d\text{max}} \sim 3.5 \times 10^5 e^-$

fine position: 1A22<sub>HEX</sub>

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TR81-04

DARK-FINE MAP

00184A	004342	0045CF	004653	0045F2	00449C	0046DE	0046DA	0034DD	003454	0031DF	0034F6
004840	004341	00456A	004CC8	004570	00409C	0044AE	004802	0045DA	0042F0	0044BC	0047D2
0046F6	004569	0043C7	004615	0044E5	0046AA	0042AB	00440D	0043EC	00461E	004495	0047B1
0015A0	004253	004383	0044D3	00465A	0042CE	0045EB	0045F7	00454D	0043EC	004440	0047A7
001363	004523	00458C	0044CC	00420A	004458	004195	0047E5	0032C4	003485	0032E5	003534
004420	004172	0042B2	00454E	004296	0044BD	004698	004513	004468	0044AB	00420B	004620
00424E	00435E	0040CA	0045F7	00456A	0045DD	004183	004242	004696	004632	004358	0045FF
0012C1	004859	004464	00469A	004716	0044E9	004342	004644	004626	0045DA	0040B7	00450D
004453	00448E	0045D2	00462E	0044B0	004311	00436B	00458A	003335	0033C6	003458	00356F
004615	00474D	0041AD	00482E	004525	0044BC	004604	004510	003F7B	004637	0042DC	0045F6
001501	0044EC	0041F2	0044FE	0042B1	004111	00467E	004558	004439	00443B	004568	0045F8
0014C2	004560	00437F	004614	0043D8	004253	004444	00451E	004114	00442A	00449D	00455A

CID TEMP : 20°C

NNDRO : 96

t<sub>i</sub> : 0.5 sec

$\Delta I_{d,max} \sim 9.7 \times 10^5 e^-$

fine position : 1A22 HEV