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Analysis of the First Spectrum of Ruthenium (Ru I)

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The analysis of the first spectrum of ruthenium has been extended with the aid of digital computers. A total of 105 even and 206 odd levels are listed with observed Landé g-factors for 54 even and 148 odd levels. A complete list of approximately 3,400 classified lines in the range 2013 to 11484 A is presented. The ionization limit calculated from a two member series is 59410 cm^{-1} or 7.364 v.

1. Introduction

Constant differences between wave numbers of line pairs in the arc spectrum of ruthenium (Ru I) were found by Kayser [1][1] in 1897. Paulson [2], in 1915, reported 17 recurring differences among the reciprocals of the ruthenium wavelengths in air. The first multiplets and energy levels were found by Meggers and Laporte [3, 4] who investigated the absorption spectrum to identify the ground-state transitions and assigned quantum numbers to 16 even and 24 odd levels. Simultaneously, Sommer [5, 6] published 44 even and 71 odd levels and identified spectral terms with the aid of Zeeman-effect data.

The next contribution to the analysis was by Harrison and McNally [7] who observed Zeeman patterns for 450 lines and published g-values for 38 even and 102 odd levels. With the aid of an interval sorter, McNally later expanded this analysis [8] to include 61 even and 188 odd levels, accounting for 2,380 classified lines. This latter work has never been published, and was not made available to us until the present investigation was well under way.

2. Experimental Procedure

Line lists containing 4,492 ruthenium arc and 1,527 ruthenium spark lines compiled from spectrograms made at NBS [9] were used in this investigation. The observed wavelengths were converted to vacuum wave numbers by digital computers (the IBM 604, SEAC, and IBM 704 at various times) coded to compute the index of refraction of air by means of Edlen's formula [10]. An IBM 604 computer was then utilized to calculate all permitted transitions predicted by the known energy levels. These permitted transitions were compared with the observed lines in order to check the validity of these energy levels. All lines thus classified were removed from the line list to reduce this list to one containing only unclassified lines. Predictions which fell within ± 0.3 cm^{-1} were accepted as coincidences by the computer. Those which fell between ± 0.2 and ± 0.3 cm^{-1} were examined by the author and considered to be valid if adjacent lines in the multiplet were observed. The remaining list of unclassified Ru I lines was then searched for significant differences.

The search for new energy levels was carried out with the aid of electronic digital computers. The major portion of this work was done prior to 1957 with the NBS computer, the SEAC. The technique used is described elsewhere [11]. More recently, the faster IBM 704 computer has become available to us, and a revised and greatly expanded version of the technique used on the SEAC was developed for the newer computer by Coleman and Bozman [12]. The fundamental difference between the two computer techniques is that the earlier search was accomplished with a selected list of level differences, whereas the greater speed of the later machine permitted the use of all possible differences in the search procedure.

The list of unclassified lines remaining after the SEAC search has recently been investigated by means of the 704 routine. This search has yielded only five new even levels and one new odd level. It appears unlikely that more levels will be found with the present line list. More Zeeman data, particularly in the red and infrared regions, are needed for further progress on the classification of lines in this spectrum. New spectrograms devoid of underlying band spectra would also be helpful.

The energy levels, g-values, and percentage compositions for the low even levels calculated by Trees [13] have been very helpful in this analysis. For details of this, his paper in this issue (p. 255) should be consulted. For the rest of the assignments the author is indebted to Russell and Moore for the guidelines laid down in their analysis of the homologous spectrum, Fe I [14], and to C. E. Moore for her invaluable aid in grouping levels into terms and in assigning configurations.

The energy levels listed in table 1 have been adjusted to fit the new line list, but differ only slightly from those reported by McNally [8] in the case of those lines that occur in both lists. The estimated errors in the value of the levels range from ± 0.01

Figures in brackets indicate the literature references on page 216.

cm^{-1} for the low even levels to ± 0.05 cm^{-1} for those high terms that are determined by only a few transitions.

The array of observed terms is presented as table 2. To facilitate comparison, this array is given in the same form as the array of predicted terms published in A.E.L. [15].

The complete list of classified lines is given in table 3. The intensity of the observed line on an arbitrary scale of 1 to 10,000, is listed in column 1. The wavelength in column 2 and the corresponding wave number is listed in column 3. The classification of the observed transition in terms of the energy levels listed in table 1 is given in column 4. A partial list of the 40 most intense remaining unclassified lines is given in table 4.

3. Discussion of Results

3.1. Even Terms

The known parent terms in Ru II have proven a useful guide in assigning the $4d^7\ 5s$ configurations in Ru I. Terms can be assigned on the basis of the intensity of the combinations with a fair degree of certainty for the limits $a\ ^4F$, $a\ ^4P$, $a\ ^2G$, $a\ ^2P$, $a\ ^2D$, and $a\ ^2H$ in Ru II. A striking analogy exists with Fe I, although the term intervals are more irregular in Ru I. For these configurations, the levels are roughly 6000 to 12000 cm^{-1} lower than similar terms in Fe I.

All energy levels of Ru I which have been found are listed in table 1. Term designations have been assigned when possible. The notation is identical with that used by C. E. Moore in the Atomic Energy Level Volumes [15], henceforth referred to as A.E.L. The configuration is given in the first column, term designation in the second, J-value in the third, energy level in the fourth, the term-intervals in the fifth and the observed g-value in the sixth column. The five miscellaneous even levels are designated with letters B through F. Energy levels of odd parity are given in italics. Miscellaneous odd levels are designated by numbers 1° through 63°. The initials in the last column indicate the earliest reference for each level. The meaning of these initials is as follows: P, Paulson [2]; ML, Meggers and Laporte [3,4]; S, Sommer [5,6]; HM, Harrison and McNally [7]; Mc, McNally [8]; and K, this paper.

This table is identical with that published in A.E.L. [15] except for the following changes: The levels $d\ ^3F_2$, $a\ ^1F_3$, $a\ ^1I_6$, $e\ ^5G_4$, $e\ ^3P_2$, F_1 and $63°_3$ have been added, minor typographical errors in the energy level of $y\ ^3H°_5$ and in the g-value for $b\ ^3H_6$ have been corrected and the level formerly designated as A_4 has been designated $f\ ^3F_4$. The majority of the g-values are quoted from Harrison and McNally [7] and McNally [8]. The hitherto unpublished g-values from McNally's thesis together with a few additions contributed by the present author are included in the following paper. More Zeeman observations are needed in the red and infrared regions, where the present spectrograms record only very few lines.

The writer has benefited from consultations with Trees who has furnished theoretical predicted values for all of the low even terms. These calculations are based on parameters derived from known levels and are an excellent guide to the analysis. The general agreement of observation with his predictions is good. His paper [13] should be consulted for further details.

The LS coupling designations represent in general the major composition of each level, but some of the levels are mixed to such an extent that the LS notation should be used with caution. In particular, the designations of the levels $a\ ^3D_2$ at 15054.07 cm^{-1} and $a\ ^1D_2$ at 17045.97 cm^{-1} should, according to Trees' calculations be interchanged. The relative intensities of the observed combinations and the term intervals, however, favor the designations assigned in table 1.

The level at 25200.97 cm^{-1} has been designated as $4d^7(a\ ^2F)5s\ a\ ^1F_3$ despite the absence of any observed combinations with singlet levels. This assignment was made on the strength of Trees' calculations which predict a level at 25210 cm^{-1} composed of 58 percent $4d^7(a\ ^2F)\ 5s\ ^1F_3$ and 16 percent $4d^6 5s^2\ ^3G_3$. The odd terms of similar parentage are unfortunately not well known.

The $a\ ^5D$ term having the configuration $4d^6\ 5s^2$ is about 8000 cm^{-1} higher than the corresponding terms in Fe I. The level $a\ ^5D_4$, corresponding to the ground state of Fe I, occurs at 7483 cm^{-1} in Ru I. The remaining terms of this configuration are only slightly higher (0 to 3,000 cm^{-1}) than the corresponding terms in Fe I. Of the 16 terms predicted for this configuration, 8 have been identified but $d\ ^3P$ and $b\ ^3D$ are each missing one level and $f\ ^3F$ is missing two levels. Of the 8 singlets predicted, only $a\ ^1I$ has been found. According to Trees' predictions, the higher ^1S and ^1D terms will lie above the ionization limit. The other missing singlet terms are ^1S predicted near 33411 cm^{-1}, ^1D near 33905 cm^{-1}, ^1F near 39308 cm^{-1} and two ^1G terms, one near 31719, the other near 48417 cm^{-1}. A high ^3P term predicted near 43571 cm^{-1} is also missing.

The $b\ ^3D_3$ level deviates sufficiently, by 582 cm^{-1}, from Trees' value to cast some doubt upon its validity. A level at 29617.15 cm^{-1} which might possibly be designated as $4d^6\ 5s^2\ b\ ^3D_1$ has not been included in table 1. The agreement with the predicted position, 29621 cm^{-1}, is good, but only three weak combinations with $w\ ^3D°_2$, $z\ ^1D°_2$, and $y\ ^1P°_1$ have been observed and further confirmation is needed.

The $c\ ^3F_2$ and $c\ ^3F_3$ levels deviate by 149 and 173 cm^{-1} from their predicted positions and both are strongly mixed with $4d^7(a\ ^2F)5s$, $d\ ^3F_2$ and $d\ ^3F_3$. The average deviation of the remaining 18 levels of the $4d^6\ 5s^2$ configuration from their predicted positions is 45 cm^{-1}.

All terms of the $4d^8$ configuration have been found with the exception of ^1S. This term should occur at about 38892 cm^{-1}. The $c\ ^3P_0$ level does not agree

well with Trees' calculations. The evidence for this level consists of only three transitions, but since extensive searching revealed no other level with $J=0$ in this region, it was kept in the list with a question mark. The remaining seven levels deviate by less than 37 cm^{-1} from Trees' predictions. The only term from this configuration known in Fe I lies 23500 cm^{-1} above the corresponding term, $b\ ^3F$, in Ru I.

Only the terms $e\ ^7D$ and $f\ ^5D$ from the $4d^6\ 5s(a\ ^6D)6s$ configuration are known, and the latter is incomplete. They are about 6000 cm^{-1} higher than the corresponding terms in Fe I.

The remaining even configurations observed involve a $5d$ electron. The terms with this configuration are found above 47000 cm^{-1} and are difficult to find with certainty because of the limited number of expected transitions. Six of the ten predicted terms with the configuration $4d^7(a\ ^4F)5d$ are represented in the tables, but only one, $e\ ^3G$, is complete. They lie about 6000 cm^{-1} below those in Fe I. Data on the remaining $5d$ configurations are extremely fragmentary. Two terms, $e\ ^5S$ and part of $f\ ^7D$ are known and tentatively assigned to $4d^6\ 5s(a\ ^6D)5d$. They lie almost coincident with the similar terms in Fe I.

A possible level at 55405.64 cm^{-1} may be the missing $4d^7(a\ ^4P)5_p\ \ f\ ^3D_3^\circ$ level. A transition from a level at this position to $y\ ^3D_3^\circ$ would coincide with the position of the strongest remaining unclassified line at 5361 A. Very weak lines at the wavelengths corresponding to combinations with three other levels, $y\ ^5P_3^\circ$, $y\ ^5P_2^\circ$, and 6_3°, have been found. These combinations may, however, be coincidental and the level has not been listed in table 1.

The strongest remaining unclassified lines lie between 4700 and 7500 A. Many of these probably represent transitions between unidentified terms with a $4d^7(a\ ^4F)5d$, $4d^7(a\ ^4P)5d$, or a $4d^6\ 5s(a\ ^6D)5d$ configuration and odd terms from the same limits. These multiplets are characterized by strong transitions on the main diagonal with very weak off-diagonal transitions. The corresponding energy levels are, therefore, difficult to find.

3.2. Odd Terms

All terms of the $4d^7\ 5p$ configuration having as limits in Ru II $a\ ^4F$, $a\ ^4P$, $a\ ^2G$, $a\ ^2D$, and $a\ ^2H$ have been found. The intervals are approximately three times as large as those in Fe I. Those from $a\ ^4F$ lie about 5500 cm^{-1} below the corresponding terms in Fe I. The two levels $z\ ^5G_3^\circ$ and $z\ ^5G_2^\circ$ appear to be perturbed downward.

In the next group, i.e., $4d^7(a\ ^4P)5p$, the lowest term, $z\ ^5S^\circ$, is 13326 cm^{-1} below the analogous term in Fe I; the rest are about 9000 cm^{-1} lower. Also, as in Fe I, the levels of $x\ ^5D^\circ$ appear to be strongly perturbed.

For $4d^7(a\ ^2G)5p$, the terms are about 8000 cm^{-1} below those in Fe I, and the intervals of the terms $y\ ^3G^\circ$ and $z\ ^3H^\circ$ show evidence of severe perturbation.

In the $4d^7(a\ ^2P)5p$ configuration, all levels lie about 9000 cm^{-1} below those that have been found in Fe I. The intervals of the $x\ ^3D^\circ$ term show evidence of strong perturbation.

The terms of the configuration $4d^7(a\ ^2H)5p$ lie about 8000 cm^{-1} below those in Fe I. The intervals of $z\ ^3I^\circ$ indicate strong perturbation.

The levels $x\ ^3P_1^\circ$ and $x\ ^3P_0^\circ$ of the $4d^7(a\ ^2D)5p$ configuration are missing. The remaining terms range 6000 to 15000 cm^{-1} below those in Fe I, and the intervals of the x^3F° term indicate a strong perturbation.

Only two terms, $x\ ^1P^\circ$ and $x\ ^1G^\circ$ of the $4d^7(a\ ^2F)5p$ configuration are suggested and these assignments are tentative. No levels of this configuration have been classified in Fe I.

For the configuration $4d^6\ 5s5p$ the two triads of septet and quintet terms having as limit $a\ ^6D$ in Ru II are well known. These terms are regular and lie from 6500 to 8500 cm^{-1} above the related terms in Fe I.

For the $4d^6\ 5s(a\ ^4D)5p$ configuration, only two terms, $w\ ^5D^\circ$ and $x\ ^5F^\circ$ have been designated and the level $x\ ^5F_1$ is missing. These terms lie about 5000 cm^{-1} above those in Fe I. Similarly, only two terms, $y\ ^5S^\circ$ and $x\ ^5p^\circ$ are ascribed to $4d^6\ 5s(b^4P)5p$. They are about 4000 cm^{-1} above those in Fe I. The unassigned term $t\ ^3D^\circ$ may belong in this group.

One term, $x\ ^1H^\circ$ is ascribed to $4d^6\ 5s(b\ ^2H)5p$ because of its strong combination with $a\ ^1H$.

Five terms are entered in table 1 without configuration assignments: $v\ ^3D^\circ$, $u\ ^3D^\circ$, $t\ ^3D^\circ$, $w\ ^3G^\circ$, and $v\ ^3G^\circ$. All of these are fragmentary but observed g-values are known for seven of the levels involved.

The remaining odd levels have been classed as miscellaneous. These levels lie above 40000 cm^{-1} and most of them are probably fragments of the various remaining $4d^6\ 5s5p$ or $4d^7(a\ ^2F)5p$ configurations. Some possible assignments, made on the basis of the intensities of the observed combinations, are given in parentheses. Very few Zeeman effect data are available in this range, and the overlapping of terms is so great that configuration and term assignments have little significance.

3.3. Ionization Limits

The ionization limit for Ru I was determined by fitting the observed term values for the two series members $4d^7(a\ ^4F)5s\ \ a\ ^5F_5(T_1'=0.0\ cm^{-1})$ and $4d^7(a\ ^4F)6s\ \ e\ ^5F_5(T_2'=41256.40\ cm^{-1})$ to the formulas below. The value of the constant $\alpha=-2.43\times10^{-6}$ cm used is an interpolated value obtained by Catalan and Rico [16]. This interpolation was obtained by drawing a smooth curve through the points given by the available data on a plot of α versus atomic number for the first spectra of the elements Rb through Ag.

$$T_n=R/(n+\mu+\alpha T_n)^2$$
$$T_n=T_\infty-T_n'$$

where: T_n is the energy level of the nth series member measured relative to the ionization limit, T_∞,
T'_n is the energy level of the nth series member measured relative to the ground state,
μ is the quantum defect and is assumed to be constant for the series,
α is a constant,
R is the Rydberg constant, and
n is 1 for the first term, 2 for the second term.

This set of equations is satisfied by a unique value of the ionization limit, T_∞. The value of the ionization limit obtained in this manner is 59410 cm^{-1} or 7.364 ev. This value of the ionization limit agrees well with the value 59417 cm^{-1} obtained by Catalan and Rico by interpolation between data from spectra of neighboring elements in the periodic table.

The author acknowledges C. E. Moore's invaluable help in assigning configurations and in arranging the list of energy levels into appropriate terms and R. E. Trees' excellent calculations of levels and compositions for the low even configurations. The author also thanks W. F. Meggers for his aid in assembling the line list and W. R. Bozman for his help in operating the 704 computer.

4. References

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TABLE 1

Ru I

Config.	Desig.	J	Level	Interval	Obs. g	Earliest reference
$4d^7(a\ ^4\mathrm{F})5s$	$a\ ^5\mathrm{F}$	5	0.00		1.397	P
		4	1190.64	−1190.64	1.349	P
		3	2091.54	−900.90	1.249	P
		2	2713.24	−621.70	1.000	P
		1	3105.49	−392.25	0.000	ML, S
$4d^7(a\ ^4\mathrm{F})5s$	$a\ ^3\mathrm{F}$	4	6545.03		1.284	P
		3	8084.12	−1539.09	1.196	P
		2	9183.66	−1099.54	1.089	P
$4d^6\ 5s^2$	$a\ ^5\mathrm{D}$	4	7483.07		1.447	P
		3	8575.42	−1092.35	1.420	P
		2	9057.64	−482.22	1.232	P
		1	9072.98	−15.34	1.795	ML, S
		0	9492.37	−419.39	0/0	HM
$4d^7(a\ ^4\mathrm{P})5s$	$a\ ^5\mathrm{P}$	3	8770.93		1.624	P
		2	8043.69	727.24	1.536	P
		1	9620.29	−1576.60	1.985	ML, S
$4d^8$	$b\ ^3\mathrm{F}$	4	9120.63		1.255	P
		3	10654.62	−1533.99	1.086	P
		2	11447.31	−792.69	0.764	P
$4d^7(a\ ^2\mathrm{P})5s$	$a\ ^3\mathrm{P}$	2	10623.53		1.534	P
		1	11786.05	−1162.52	1.684	S
		0	11752.62	33.43	0/0	S
$4d^7(a\ ^2\mathrm{G})5s$	$a\ ^3\mathrm{G}$	5	12207.05		1.190	HM
		4	12816.69	−609.64	1.033	S
		3	13699.07	−882.38	0.757	HM
$4d^7(a\ ^4\mathrm{P})5s$	$b\ ^3\mathrm{P}$	2	13645.75		1.315	P
		1	13981.67	−335.92	1.441	S
		0	14827.50	−845.83	0/0	HM
$4d^7(a\ ^2\mathrm{G})5s$	$a\ ^1\mathrm{G}$	4	14700.32		0.992	HM
$4d^7(a\ ^2\mathrm{D})5s$	$a\ ^3\mathrm{D}$	3	16190.61		1.333	HM
		2	15054.07	1136.54	1.162	S
		1	16712.58	−1658.51	0.676	HM
$4d^7(a\ ^2\mathrm{H})5s$	$a\ ^3\mathrm{H}$	6	15550.16		1.164	HM
		5	16240.13	−689.97	1.041	HM
		4	17096.87	−856.74	0.834	HM
$4d^7(a\ ^2\mathrm{D})5s$	$a\ ^1\mathrm{D}$	2	17045.97		1.175	HM
$4d^7(a\ ^2\mathrm{H})5s$	$a\ ^1\mathrm{H}$	5	20055.71		1.007	MC
$4d^7(a\ ^2\mathrm{P})5s$	$a\ ^1\mathrm{P}$	1	20242.01		0.927	HM
$4d^8$	$c\ ^3\mathrm{P}$	2	20933.75		1.343	HM
		1	22292.64	−1358.89	1.35	K
		0	24173.68?	−1881.04?		K
$4d^6\ 5s^2$	$c\ ^3\mathrm{F}$	4	21643.09		1.08	K
		3	22419.46	−776.37	1.070	K
		2	22343.14	76.32	0.697	K
$4d^6\ 5s^2$	$b\ ^3\mathrm{H}$	6	22162.06		1.063	K
		5	22518.88	−356.82	0.99	K
		4	23004.77	−485.89	0.91?	K
$4d^8$	$b\ ^1\mathrm{G}$	4	23392.60		0.950	K
$4d^8$	$b\ ^1\mathrm{D}$	2	23453.47		1.162	K
$4d^6\ 5s^2$	$d\ ^3\mathrm{P}$	2	24927.48			K
		1	27560.59	−2633.11		K
		0				
$4d^7(a^2\ \mathrm{F})5s$	$a\ ^1\mathrm{F}$	3	25200.97			K
$4d^6\ 5s(a\ ^6\mathrm{D})5p$	$z\ ^7\mathrm{D}^\circ$	5	*25214.16*		1.592	HM
		4	*25464.49*	−250.33	1.625	ML, S
		3	*26035.56*	−571.07	1.737	S
		2	*26472.74*	−437.18	1.992	MC
		1	*26780.46*	−307.72		MC
$4d^6\ 5s^2$	$b\ ^3\mathrm{G}$	5	25602.60			K
		4	25642.69	−40.09		K
		3	26075.70	−433.01		K
$4d^7(a\ ^4\mathrm{F})5p$	$z\ ^5\mathrm{D}^\circ$	4	*26312.83*		1.486	ML, S
		3	*27506.59*	−1193.76	1.425	ML, S
		2	*28465.69*	−959.10	1.324	ML, S
		1	*29118.49*	−652.80	0.953	ML, S
		0	*29569.90*	−451.41	0/0	ML
. $4d^7(a\ ^4\mathrm{F})5p$	$z\ ^5\mathrm{F}^\circ$	5	*26816.23*		1.394	ML, S
		4	*28014.79*	−1198.56	1.364	ML, S
		3	*28890.47*	−875.68	1.293	ML, S
		2	*29427.32*	−536.85	1.164	ML, S
		1	*29693.57*	−266.25	0.567	ML, S
$4d^7(a\ ^2\mathrm{F})5s$:	$d\ ^3\mathrm{F}$	4	27289.24			K
		3	27516.57	−227.33		K
		2	26815.67	700.90		K
$4d^7(a\ ^4\mathrm{F})5p$	$z\ ^3\mathrm{G}^\circ$	5	*28495.10*		1.230	ML, S
		4	*29890.91*	−1395.81		ML, S
		3	*31852.90*	−1961.99	0.868	ML, S

TABLE 1—*Continued*

Ru I

Config.	Desig.	J	Level	Interval	Obs. g	Earliest reference
$4d^7(a\ ^4F)5p$	$z\ ^5G°$	6	*28571. 89*		1. 379	ML, S
		5	*30279. 68*	−1707. 79	1. 263	ML, S
		4	*31345. 79*	−1066. 11	1. 111	ML, S
		3	*30537. 06*	808. 73	0. 944	ML, S
		2	*30958. 80*	−421. 74	0. 375	ML, S
$4d^6\ 5s(a\ ^6D)5p$	$z\ ^7F°$	6	*29160. 46*		1. 462	MC
		5	*29468. 04*	−307. 58	1. 474	ML
		4	*29594. 56*	−126. 52	1. 370	HM
		3	*29891. 90*	−297. 34		HM
		2	*30018. 34*	−126. 44	1. 497	HM
		1	*30085. 38*	−67. 04		S
		0	*30115. 25*	−29. 87	0/0	MC
$4d^6\ 5s^2$	$b\ ^3D$	1				
		2	29352. 41			K
		3	29979. 00	626. 59		K
$4d^6\ 5s^2$	$a\ ^1I$	6	29677. 10			K
$4d^6\ 5s(a\ ^6D)5p$	$z\ ^7P°$	4	*30250. 40*		1. 656	S
		3	*31384. 64*	−1134. 24	1. 895	S
		2	*32343. 30*	−958. 66	2. 059	S
$4d^7(a\ ^4F)5p$	$z\ ^3F°$	4	*30348. 45*		1. 276	ML, S
		3	*32391. 95*	−2043. 50	1. 133	ML, S
		2	*33172. 02*	−780. 07	1. 026	S
$4d^7(a\ ^4F)5p$	$z\ ^3D°$	3	*31044. 35*		1. 204	S
		2	*32207. 65*	−1163. 30	1. 032	S
		1	*33580. 22*	−1372. 57	0. 522	S
$4d^7(a\ ^4P)5p$	$z\ ^5S°$	2	*31186. 03*		2. 034	S
$4d^6\ 5s(a\ ^6D)5p$	$y\ ^5D°$	4	*33446. 84*		1. 492	ML, S
		3	*33430. 65*	16. 19	1. 496	ML, S
		2	*33728. 66*	−298. 01	1. 477	S
		1	*34091. 06*	−362. 40	1. 522	ML, S
		0	*34379. 64*	−288. 58	0/0	HM
$4d^6\ 5s(a\ ^6D)5p$	$z\ ^5P°$	3	*34072. 41*		1. 646	S
		2	*34881. 92*	−809. 51	1. 808	S
		1	*35046. 77*	−164. 85	2. 385	HM
$4d^6\ 5s(a\ ^6D)5p$	$y\ ^5F°$	5	*34772. 55*		1. 402	HM
		4	*35471. 15*	−698. 60	1. 364	ML, S
		3	*35806. 62*	−335. 47	1. 276	ML, S
		2	*35963. 87*	−157. 25	1. 069	ML
		1	*36238. 77*	−274. 90	0. 145	ML
$4d^7(a\ ^4P)5p$	$x\ ^5D°$	4	*36542. 62*		1. 481	ML
		3	*37367. 02*	−824. 40	1. 379	ML, S
		2	*37667. 86*	−300. 84	1. 442	S
		1	*38200. 40*	−532. 54	1. 569	S
		0	*37802. 23*	398. 17	0/0	HM
$4d^7(a\ ^4P)5p$	$y\ ^3D°$	3	*36760. 34*		1. 426	HM
		2	*36965. 28*	−204. 94	1. 173	ML, S
		1	*37619. 52*	−654. 24	0. 756	S
$4d^7(a\ ^4P)5p$	$z\ ^3P°$	2	*37118. 90*		1. 469	ML, S
		1	*37346. 74*	−227. 84	1. 311	HM
		0	*37472. 88*	−126. 14	0/0	HM
$4d^7(a\ ^2G)5p$	$y\ ^3F°$	4	*38243. 38*		1. 107	HM
		3	*39433. 70*	−1190. 32	0. 968	S
		2	*40433. 23*	−999. 53	0. 889	HM
$4d^7(a\ ^2G)5p$	$z\ ^3H°$	6	*38897. 50*		1. 174	MC
		5	*38297. 09*	600. 41	1. 048	HM
		4	*39273. 28*	−976. 19	0. 895	HM
$4d^7(a\ ^4P)5p$	$z\ ^3S°$	1	*38587. 14*		1. 566	S
$4d^7(a\ ^4P)5p$	$y\ ^5P°$	3	*38706. 36*		1. 631	ML, S
		2	*39008. 62*	−302. 26	1. 713	S
		1	*39773. 49*	−764. 87	2. 315	HM
$4d^7(a\ ^2G)5p$	$z\ ^1G°$	4	*39037. 18*		1. 115	S
$4d^7(a\ ^2G)5p$	$y\ ^3G°$	5	*39450. 66*		1. 142	HM
		4	*40276. 61*	−825. 95	1. 035	S
		3	*40235. 39*	41. 22	0. 890	S
$4d^7(a\ ^2P)5p$	$y\ ^3P°$	2	*39742. 03*		1. 299	S
		1	*39916. 54*	−174. 51	1. 606	S
		0	*39894. 50*	22. 04	0/0	HM
	$1°(^3F°)$	4	*40439. 25*		1. 196	S
$4d^7(a\ ^2G)5p$	$z\ ^1H°$	5	*40616. 22*		1. 020	MC
$4d^7(a\ ^2P)5p$	$x\ ^3D°$	3	*40768. 15*		1. 159	ML, S
		2	*42007. 26*	−1239. 11	1. 007	S
		1	*41016. 65*	990. 61	0. 895	HM
$4d^7(a\ ^2G)5p$	$z\ ^1F°$	3	*40948. 65*		1. 137	S
$4d^7(a\ ^2D)5p$	$x\ ^3F°$	2	*41182. 94*		0. 877	S
		3	*41260. 04*	77. 10	1. 235	S
		4	*42346. 90*	1086. 86	1. 247	HM

$4d^7(a\ ^4F)6s$	$e\ ^5F$	5	41256. 40	−1762. 17		MC	
		4	43018. 57	−1157. 66		MC	
		3	44176. 23	284. 14		MC	
		2	43892. 09	−451. 82		S	
		1	44343. 91			MC	
$4d^7(a\ ^2D)5p$	$w\ ^3D°$	3	*41482. 66*	−1051. 15	1. 286	S	
		2	*42533. 81*	−360. 61	1. 025	ML	
		1	*42894. 42*		0. 810	HM	
$4d^7(a\ ^2H)5p$	$z\ ^3I°$	7	*42260. 53*	682. 78	1. 146	MC	
		6	*41577. 75*	−1400. 53	1. 013	HM	
		5	*42978. 28*		0. 861	MC	
$4d^7(a\ ^2H)5p$	$x\ ^3G°$	5	*41739. 30*	−1199. 82	1. 197	MC	
		4	*42939. 12*	−1036. 67	1. 07?	K	
		3	*43975. 79*		0. 934	S	
$4d^7(a\ ^2D)5p$	$z\ ^1D°$	2	*41756. 15*		1. 182	HM	
$4d^7(a\ ^4F)6s$	$e\ ^3F$	4	41825. 23	−1290. 24		MC	
		3	43115. 47	−1854. 57		S	
		2	44970. 04			S	
	$v\ ^3D°$	3	*41880. 85*	−1016. 38	1. 163	S	
		2	*42897. 23*			K	
		1					
$4d^7(a\ ^2H)5p$	$z\ ^1I°$	6	*42404. 14?*			K	
$4d^7(a\ ^2P)5p$	$z\ ^1P°$	1	*42415. 81*		0. 965	HM	
$4d^7(a\ ^2P)5p$	$z\ ^1S°$	0	*42620. 80*		0/0	HM	
$4d^6\ 5s^2$	$f\ ^3F$	4	42895. 39			S	
$4d^7(a\ ^2D)5p$	$y\ ^1F°$	3	*42998. 31*		0. 995	HM	
$4d^7(a\ ^2P)5p$	$y\ ^3S°$	1	*43107. 52*		1. 533	MC	
	$u\ ^3D°$	3					
		2	*43509. 17*	−332. 36	1. 158	S	
		1	*43841. 53*		0. 800	HM	
$4d^7(a\ ^2H)5p$	$y\ ^3H°$	6	*43548. 67*	−560. 74	1. 162	K	
		5	*44109. 41*	−552. 60	1. 033	MC	
		4	*44662. 01*		0. 925	MC	
$4d^7(a\ ^2H)5p$	$y\ ^1H°$	5	*43596. 58*		1. 03	K	
	$w\ ^3G°$	5	*43742. 81*	−120. 10	1. 272	ML	
		4	*43862. 91*			K	
		3					
$4d^7(a\ ^2P)5p$	$y\ ^1D°$	2	*43903. 41*		1. 026	MC	
	$2°(^5G°)$	6	*43998. 60*		1. 219	MC	
$4d^7(a\ ^2D)5p$	$x\ ^3P°$	2	*44234. 68*		1. 422	S	
		1					
		0					

$4d^6\ 5s(a\ ^4D)5p$	$w\ ^5D°$	4	*44243. 49*	−827. 91	1. 473	ML, S
		3	*45071. 40*	−719. 01	1. 449	ML, S
		2	*45790. 41*	−400. 99	1. 484	ML, S
		1	*46191. 40*	−274. 95	1. 439	HM
		0	*46466. 35*			K
	$3°(^3P°)$	1	*44301. 14*		1. 350	HM
$4d^6\ 5s(a\ ^4D)5p$	$x\ ^5F°$	5	*44321. 81*	−285. 80	1. 303	ML
		4	*44607. 61*	−193. 20		ML
		3	*44800. 81*	−791. 52		ML
		2	*45592. 33*			K
		1				
	4°	3	*44441. 59*		0. 76	MC
	$5°(^5G°)$	2	*44891. 40*		0. 383	ML
$4d^6\ 5s(b\ ^4P)5p$	$y\ ^5S°$	2	*45197. 37*		2. 224	K
$4d^7(a\ ^2F)5p$:	$x\ ^1F°$	3	*45021. 98*		1. 059	MC
$4d^7(a\ ^2H)5p$	$y\ ^1G°$	4	*45364. 72*		0. 962	MC
	6°	3	*45475. 77*		1. 547	MC
$4d^7(a\ ^2F)5p$:	$x\ ^1G°$	4	*45528. 61*		1. 08	MC
	7°	3	*45549. 51*			
$4d^7(a\ ^4F)6p$:	$w\ ^3F°$	4	*45755. 55*	−1191. 03		MC
		3	*46946. 58*	−301. 40	1. 022	S
		2	*47247. 98*		0. 702	MC
	$t\ ^3D°$	3				
		2	*45923. 36*	−576. 34	1. 089	HM
		1	*46499. 70*		0. 72	MC
	8°	1	*45978. 14*		0. 44	K
	9°	1	*46056. 23*		1. 155	MC
	10°	4	*46067. 24*			MC
	11°	0	*46102. 93*		0/0	HM
	12°	4	*46273. 20*			MC
	13°	4	*46400. 58*			ML, S
$4d^6\ 5s(b\ ^2H)5p$:	$x\ ^1H°$	5	*46495. 05*		1. 030	MC
$4d^7(a\ ^2D)5p$:	$y\ ^1P°$	1	*46528. 26*		1. 05	MC
	14°	4	*46695. 02*			MC
$4d^6\ 5s(b\ ^4P)5p$	$x\ ^5P°$	3	*46746. 35*	−57. 25		MC
		2	*46803. 60*	−696. 94		MC
		1	*47500. 54*			K
	15°	1	*46789. 23*			K

TABLE 1—*Continued*

Ru I

Config.	Desig.	J	Level	Interval	Obs. g	Earliest reference	Config.	Desig.	J	Level	Interval	Obs. g	Earliest reference
$4d^7(a\ ^4F)5d$	$f\ ^5F$	5	46906. 32	−1637. 56		S		28°	3	*47868. 35*		1. 309	MC
		4	48543. 88			K							
		3	48809. 28	−265. 40		K		29°	3	*48003. 00*			MC
		2											
		1						30°	4	*48109. 32*			MC
$4d^7(a\ ^4F)5d$:	$e\ ^5D$	4	46972. 42	−215. 90	1. 36	K		31°	4	*48143. 98*			MC
		3	47188. 32	−1532. 55		MC							
		2	48720. 87	−792. 46?		S		32°	2	*48164. 79*			MC
		1	49513. 33?			MC							
		0						33°	2	*48326. 73*		1. 08	K
$4d^7(a\ ^4F)5d$:	$e\ ^5G$	6	46991. 15	−1530. 62		K	$4d^6\ 5s(a\ ^6D)6s$	$e\ ^7D$	5	48386. 33	−848. 82	1. 602	K
		5	48521. 77	−51. 20		K			4	49235. 15	−781. 55	1. 649	K
		4	49604. 93			K			3	50016. 70	−523. 11		K
		3	49553. 73		1. 35?	MC			2	50539. 81	−79. 09		K
		2							1	50618. 88			K
	16°	3	*47046. 54*		1. 058	MC		34°	3	*48405. 09*		1. 14	MC
$4d^7(a\ ^4F)5d$:	$e\ ^3G$	5	47084. 80	−1642. 88	1. 19	S	$4d^7(a\ ^4F)5d$:	$e\ ^3D$	3	48489. 66	−1268. 22	1. 28	K
		4	48727. 68	−948. 29		K			2	49757. 88			MC
		3	49675. 97			K			1				
	17°	4	*47157. 28*		1. 24	MC		35°	3	*48493. 01*		1. 14?	MC
	18°($^5D°$)	0	*47176. 90*			K		36°	5	*48503. 30*			MC
	19°	4	*47261. 52*		1. 12	MC		37°	3?	*48570. 85*			MC
$4d^7(a\ ^4F)6p$:	$s\ ^3D°$	3	*47339. 32*	−208. 01	1. 377	MC		38°	4	*48597. 45*		1. 208	MC
		2	*47547. 33*		1. 057	MC							
		1						39°	1	*48604. 34*		2. 06	MC
	20°($^5D°$)	2	*47345. 10*		1. 55	MC		40°	3	*48765. 88*			MC
$4d^7(a\ ^4F)5p$:	$e\ ^3P$	2	47458. 76					41°	2	*48779. 15*			MC
	21°	5	*47425. 17*			K		42°	4	*48853. 69*		1. 23	K
	B (^3F)	4	47486. 96			S		43°	3	*48933. 93*			MC
	22°	3	*47526. 09*		1. 134	MC		44°	2	*49037. 35*			K
	23°	3	*47635. 33*		1. 06	MC		45°	1	*49047. 61*			MC
	24°	5	*47642. 87*			K		46°	3	*49141. 42*		1. 03?	MC
	25°	3	*47788. 72*			MC		47°	4	*49165. 05*			MC
	26°	1	*47809. 11*			MC	$4d^7(a\ ^4P)5d$	$e\ ^5P$	3	49291. 06	−881. 78		K
	27°	4	*47817. 84*		1. 32?	MC			2	50172. 84			K
									1				

	48°	3	*49303. 88*?			K		55°	2	*49970. 65*			MC
	49°	1	*49408. 97*			K		56°	2	*50027. 96*			MC
	50°	2	*49417. 50*			K		57°	1	*50192. 07*			MC
	51°	4?	*49447. 53*			K		58°	1	*50338. 99*			MC
$4d^6\ 5s(a\ ^6\mathrm{D})5d$	*e* ^{5}S	2	49489. 56			K	$4d^6\ 5s(a\ ^6\mathrm{D})6s$	*f* ^{5}D	4	50350. 52			K
									3	51364. 82	−1014. 30		K
	C (^{7}F)	5	49592. 90			K			2	52001. 35	−636. 53		K
									1				
$4d^6\ 5s(a\ ^6\mathrm{D})5d$:	*f* ^{7}D	5							0				
		4	49624. 26			K							
		3						59°	3	*50351. 93*			K
		2	51058. 64	−1671. 16		K							
		1	52729. 80			K		60°	1	*50772. 05*			K
	52°	4	*49722. 18*			K		61°	4	*51360. 21*		1. 094	MC
	53°	1	*49761. 61*			K		D	3	52455. 23			K
	54°	3?	*49918. 28*?			K		62°	4	*53717. 63*			K
	v ^{3}G°	3						E	4	54043. 38			K
		4	*49949. 25*	173. 16		MC							
		5	*50122. 41*		1. 16	MC		63°	3	54291. 55			
	F	1	49953. 01?			K	Ru II(^{4}F4½)	***Limit***	----	**59410**			

TABLE 2. Ru I *observed terms**

Configuration $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^{10}\ 4s^2\ 4p^6+$	Observed terms																			
$4d^8$	$c\ ^3P$			$b\ ^3F$		$b\ ^1G$														
		$b\ ^1D$																		
$4d^6\ 5s^2$		$a\ ^5D$																		
	$d\ ^3P?$	$b\ ^3D$		$c\ ^3F$		$b\ ^3G$		$b\ ^3H$												
				$f\ ^3F$						$a\ ^1I$										
	$ns\ (n \geq 5)$									$np\ (n \geq 5)$									$nd\ (n \geq 5)$	
$4d^7(a\ ^4F)nx$				$a, e\ ^5F$								$z\ ^5D°$		$z\ ^5F°$		$z\ ^5G°$				$e\ ^5D:$		$f\ ^5F:$		$e\ ^5G:$
				$a, e\ ^3F$								$z, s:\ ^3D°$		$z, w:\ ^3F°$		$z\ ^3G°$			$e\ ^3P:$	$e\ ^3D:$			$e\ ^3G:$
$4d^7(a\ ^4P)nx$	$a\ ^5P$									$z\ ^5S°$		$y\ ^5P°$		$x\ ^5D°$					$e\ ^5P$				
	$b\ ^3P$									$z\ ^3S°$		$z\ ^3P°$		$y\ ^3D°$									
$4d^6\ 5s(a\ ^6D)nx$		$e\ ^7D$										$z\ ^7P°$		$z\ ^7D°$		$z\ ^7F°$				$f\ ^7D:$			
		$f\ ^5D$										$z\ ^5P°$		$y\ ^5D°$		$y\ ^5F°$			$e\ ^5S$				
$4d^7(a\ ^2G)nx$						$a\ ^3G$										$y\ ^3F°$		$y\ ^3G°$	$z\ ^3H°$				
						$a\ ^1G$										$z\ ^1F°$		$z\ ^1G°$	$z\ ^1H°$				
$4d^7(a\ ^2P)nx$	$a\ ^3P$									$y\ ^3S°$		$y\ ^3P°$		$x\ ^3D°$									
	$a\ ^1P$									$z\ ^1S°$		$z\ ^1P°$		$y\ ^1D°$									
$4d^7(a\ ^2D)nx$		$a\ ^3D$										$x\ ^3P°$		$w\ ^3D°$		$x\ ^3F°$							
		$a\ ^1D$										$y\ ^1P°:$		$z\ ^1D°$		$y\ ^1F°$							
$4d^7(a\ ^2H)nx$								$a\ ^3H$										$x\ ^3G°$	$y\ ^3H°$	$z\ ^3I°$			
								$a\ ^1H$										$y\ ^1G°$	$y\ ^1H°$	$z\ ^1I°$			
$4d^6\ 5s(a\ ^4D)nx$														$w\ ^5D°$		$x\ ^5F°$							
$4d^7(a\ ^2F)nx$				$d\ ^3F:$																			
				$a\ ^1F:$												$x\ ^1F°:$		$x\ ^1G°:$					
$4d^6\ 5s(b\ ^4P)nx$										$y\ ^5S°$		$x\ ^5P°$											
$4d^6\ 5s(b\ ^2H)nx$																			$x\ ^1H°:$				

*For predicted terms in the spectra of the Ru I isoelectronic sequence, see Vol. III, Introduction.

TABLE 3

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
1	2057.07	48597.28	$a\ {}^5F_5$—38°_4	15	2200.280	45434.58	$a\ {}^5F_3$—22°_3
2	2059.86	48531.47	$a\ {}^5F_4$—52°_4	8	2203.67	45364.69	$a\ {}^5F_5$—$y\ {}^1G^\circ_4$
2	2061.06	48503.21	$a\ {}^5F_5$—36°_5	1	2206.61	45304.26	$a\ {}^5F_4$—$x\ {}^1H^\circ_5$
4	2071.43	48260.43	$a\ {}^5F_3$—59°_3	40	2209.08	45253.60	$a\ {}^5F_3$—20°_2
3	2076.43	48144.23	$a\ {}^5F_5$—31°_4	1	2209.356	45247.95	$a\ {}^5F_3$—$s\ {}^3D^\circ_3$
3	2077.77	48113.19	$a\ {}^5F_4$—48°_3	4	2210.655	45221.37	$a\ {}^5F_1$—33°_2
3	2077.93	48109.49	$a\ {}^5F_5$—30°_4	3	2211.214	45209.94	$a\ {}^5F_4$—13°_4
1	2080.12	48058.84	$a\ {}^5F_2$—60°_1	4	2213.823	45156.66	$a\ {}^5F_3$—$w\ {}^3F^\circ_2$
15	2083.78	47974.44	$a\ {}^5F_4$—47°_4	3	2217.46	45082.60	$a\ {}^5F_4$—12°_4
2	2085.43	47936.48	$a\ {}^5F_3$—56°_2	2	2223.749	44955.12	$a\ {}^5F_3$—16°_3
6	2090.22	47826.65	$a\ {}^5F_3$—54°_3	4	2224.162	44946.77	$a\ {}^5P_3$—62°_4
8	2097.24	47666.58	$a\ {}^5F_1$—60°_1	25	2227.640	44876.60	$a\ {}^5F_4$—10°_4
15	2098.46	47638.87	$a\ {}^5F_2$—59°_3	3	2228.702	44855.22	$a\ {}^5F_3$—$w\ {}^3F^\circ_3$
15	2098.82	47630.70	$a\ {}^5F_3$—52°_4	1	2229.76	44833.94	$a\ {}^5F_2$—$s\ {}^3D^\circ_2$
2	2105.53	47478.92	$a\ {}^5F_2$—57°_1	4	2230.708	44814.89	$a\ {}^3F_4$—61°_4
1	2109.91	47380.38	$a\ {}^5F_4$—37°_3	20	2230.804	44812.96	$a\ {}^5F_2$—22°_3
2	2112.33	47326.10	$a\ {}^5F_3$—50°_2	30	2232.08	44787.35	$a\ {}^5F_2$—$x\ {}^5P^\circ_1$
1	2115.21	47261.67	$a\ {}^5F_5$—19°_4	25	2235.836	44712.11	$a\ {}^5F_3$—$x\ {}^5P^\circ_2$
10	2117.418	47212.39	$a\ {}^5F_3$—48°_3	4	2236.261	44703.61	$a\ {}^5F_1$—26°_1
2	2117.745	47205.10	$a\ {}^5F_2$—54°_3	50	2238.35	44661.90	$a\ {}^5F_5$—$y\ {}^3H^\circ_4$
2	2123.67	47073.42	$a\ {}^5F_3$—47°_4	2	2238.700	44654.92	$a\ {}^5F_3$—$x\ {}^5P^\circ_3$
10	2124.74	47049.72	$a\ {}^5F_3$—46°_3	6	2239.856	44631.87	$a\ {}^5F_2$—20°_2
5	2129.10	46953.37	$a\ {}^5F_4$—31°_4	50	2241.075	44607.60	$a\ {}^5F_5$—$x\ {}^5F^\circ_4$
2	2130.67	46918.78	$a\ {}^5F_4$—30°_4	2	2241.278	44603.56	$a\ {}^5F_3$—14°_4
4	2133.12	46864.90	$a\ {}^5F_1$—55°_2	60	2243.23	44564.75	$a\ {}^5F_4$—$w\ {}^3F^\circ_4$
2	2135.51	46812.46	$a\ {}^5F_4$—29°_3	15	2249.44	44441.73	$a\ {}^5F_1$—$s\ {}^3D^\circ_2$
15	2140.88	46695.05	$a\ {}^5F_5$—14°_4	6	2251.820	44394.77	$a\ {}^5F_1$—$x\ {}^5P^\circ_1$
4	2142.66	46656.26	$a\ {}^5F_1$—53°_1	50	2253.65	44358.72	$a\ {}^5F_4$—7°_3
7	2144.00	46627.10	$a\ {}^5F_4$—27°_4	30	2254.71	44337.87	$a\ {}^5F_4$—$x\ {}^1G^\circ_4$
5	2145.328	46598.24	$a\ {}^5F_4$—25°_3	4	2254.953	44333.09	$a\ {}^5F_2$—16°_3
6	2149.59	46505.86	$a\ {}^5F_3$—38°_4	80	2255.53	44321.75	$a\ {}^5F_5$—$x\ {}^5F^\circ_5$
5	2150.09	46495.05	$a\ {}^5F_5$—$x\ {}^1H^\circ_5$	40	2256.187	44308.85	$a\ {}^5F_3$—13°_4
15	2150.824	46479.19	$a\ {}^5F_3$—37°_3	1	2257.40	44285.04	$a\ {}^5F_4$—6°_3
15	2152.411	46444.92	$a\ {}^5F_4$—23°_3	100	2259.529	44243.31	$a\ {}^5F_5$—$w\ {}^5D^\circ_4$
5	2157.54	46334.52	$a\ {}^5F_2$—45°_1	3	2263.079	44173.92	$a\ {}^5F_4$—$y\ {}^1G^\circ_4$
10	2160.394	46273.32	$a\ {}^5F_5$—12°_4	20	2264.696	44142.38	$a\ {}^5F_1$—$w\ {}^3F^\circ_2$
15	2162.202	46234.63	$a\ {}^5D_4$—62°_4	1	2266.41	44109.00	$a\ {}^5F_5$—$y\ {}^3H^\circ_5$
2	2162.855	46220.67	$a\ {}^5F_2$—43°_3	2	2267.379	44090.15	$a\ {}^5F_2$—$x\ {}^5P^\circ_2$
10	2166.231	46148.65	$a\ {}^5F_4$—$s\ {}^3D^\circ_3$	40	2268.34	44071.47	$a\ {}^5F_1$—18°_0
15	2169.775	46073.27	$a\ {}^5F_3$—32°_2	20	2270.322	44033.00	$a\ {}^5F_2$—$x\ {}^5P^\circ_3$
7	2170.060	46067.23	$a\ {}^5F_5$—10°_4	1	2271.446	44011.22	$a\ {}^5F_4$—$x\ {}^1F^\circ_3$
7	2170.126	46065.83	$a\ {}^5F_2$—41°_3	100	2272.091	43998.72	$a\ {}^5F_5$—2°_6
5	2172.396	46017.70	$a\ {}^5F_3$—30°_4	50	2278.198	43880.79	$a\ {}^5F_4$—$w\ {}^5D^\circ_3$
10	2174.811	45966.60	$a\ {}^5F_4$—17°_4	60	2285.382	43742.87	$a\ {}^5F_5$—$w\ {}^3G^\circ_5$
12	2175.978	45941.95	$a\ {}^5F_1$—45°_1	60	2287.695	43698.65	$a\ {}^5F_3$—$w\ {}^5D^\circ_2$
10	2176.452	45931.95	$a\ {}^5F_1$—44°_2	1	2288.478	43683.69	$a\ {}^5F_1$—15°_1
12	2177.43	45911.32	$a\ {}^5F_3$—29°_3	40	2292.333	43610.24	$a\ {}^5F_4$—$x\ {}^5F^\circ_3$
6	2178.389	45891.11	$a\ {}^5F_2$—39°_1	30	2293.044	43596.72	$a\ {}^5F_5$—$y\ {}^1H^\circ_5$
5	2180.06	45855.94	$a\ {}^5F_4$—16°_3	50	2294.054	43577.52	$a\ {}^3F_4$—$v\ {}^3G^\circ_5$
20	2183.687	45779.78	$a\ {}^5F_2$—35°_3	40	2295.560	43548.94	$a\ {}^5F_5$—$y\ {}^3H^\circ_6$
10	2183.829	45776.80	$a\ {}^5F_3$—28°_3	8	2298.11	43500.62	$a\ {}^5F_3$—$x\ {}^5F^\circ_2$
10	2184.835	45755.73	$a\ {}^5F_5$—$w\ {}^3F^\circ_4$ $a\ {}^5F_4$—$w\ {}^3F^\circ_3$	60	2299.289	43478.31	$a\ {}^5F_2$—$w\ {}^5D^\circ_1$
				40	2299.641	43471.66	$a\ {}^5F_4$—$y\ {}^3H^\circ_4$
2	2187.632	45697.23	$a\ {}^5F_3$—25°_3	50	2300.350	43458.26	$a\ {}^5F_3$—7°_3
20	2188.754	45673.81	$a\ {}^5F_1$—41°_2	8	2302.226	43422.85	$a\ {}^5F_1$—$y\ {}^1P^\circ_1$
15	2194.428	45555.73	$a\ {}^5F_4$—$x\ {}^5P^\circ_3$	100	2302.533	43417.06	$a\ {}^5F_4$—$x\ {}^5F^\circ_4$
12	2195.733	45528.66	$a\ {}^5F_5$—$x\ {}^1G^\circ_4$	70	2305.517	43360.88	$a\ {}^5F_1$—$w\ {}^5D^\circ_0$
10	2196.120	45520.63	$a\ {}^5P_3$—63°_3	15	2310.03	43276.17	$a\ {}^3F_3$—61°_4
20	2196.901	45504.45	$a\ {}^5F_4$—14°_4	80	2317.784	43131.40	$a\ {}^5F_4$—$x\ {}^5F^\circ_5$
6	2199.459	45451.54	$a\ {}^5F_2$—32°_2	40	2318.905	43110.56	$a\ {}^5F_3$—$x\ {}^1F^\circ_3$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
40	2320. 23	43085. 94	$a\ ^5F_1$—$w\ ^5D_1^\circ$	1	2421. 580	41282. 82	$a\ ^5D_4$—40_3°
60	2320. 699	43077. 23	$a\ ^5F_2$—$w\ ^5D_2^\circ$	15	2421. 772	41279. 54	$a\ ^5D_0$—60_1°
80	2322. 009	43052. 93	$a\ ^5F_4$—$w\ ^5D_4^\circ$	5	2422. 165	41272. 85	$a\ ^3F_4$—27_4°
60	2325. 952	42979. 95	$a\ ^5F_3$—$w\ ^5D_3^\circ$	50	2422. 574	41265. 88	$a\ ^5D_1$—58_1°
15	2327. 536	42950. 71	$a\ ^5F_1$—9_1°	2	2422. 767	41262. 59	$a\ ^5F_2$—$x\ ^3G_3^\circ$
2	2329. 30	42918. 18	$a\ ^5F_4$—$y\ ^3H_5^\circ$	4	2423. 089	41257. 11	$a\ ^5P_3$—56_2°
60	2331. 43	42878. 98	$a\ ^5F_2$—$x\ ^5F_2^\circ$	30	2423. 877	41243. 69	$a\ ^3F_4$—25_3°
40	2331. 770	42872. 72	$a\ ^5F_1$—8_1°	5	2425. 299	41219. 52	$a\ ^3F_3$—48_3°
1	2331. 98	42868. 86	$a\ ^5D_4$—59_3°	10	2426. 699	41195. 74	$a\ ^5F_1$—3_1°
15	2333. 736	42836. 67	$a\ ^5F_2$—7_3°	10	2428. 323	41168. 19	$a\ ^3F_2$—59_3°
40	2335. 738	42799. 90	$a\ ^5F_3$—5_2°	80	2429. 594	41146. 65	$a\ ^5D_3$—52_4°
1	2336. 53	42785. 39	$a\ ^5F_4$—$x\ ^3G_3^\circ$	5	2430. 62	41129. 28	$a\ ^5F_1$—$x\ ^3P_2^\circ$
6	2337. 98	42758. 86	$a\ ^3F_4$—48_3°	40	2431. 51	41114. 23	$a\ ^5D_4$—38_4°
100	2340. 696	42709. 25	$a\ ^5F_3$—$x\ ^5F_3^\circ$	90	2432. 915	41090. 49	$a\ ^3F_4$—23_3°
40	2342. 02	42685. 11	$a\ ^5F_1$—$w\ ^5D_2^\circ$	20	2433. 064	41087. 97	$a\ ^5D_4$—37_3°
80	2342. 72	42672. 35	$a\ ^5F_4$—$w\ ^3G_4^\circ$	25	2433. 477	41081. 00	$a\ ^3F_3$—47_4°
8	2344. 534	42639. 34	$a\ ^5D_4$—$v\ ^3G_5^\circ$	40	2434. 879	41057. 35	$a\ ^3F_3$—46_3°
100	2348. 318	42570. 64	$a\ ^5F_3$—$y\ ^3H_4^\circ$	2	2437. 078	41020. 30	$a\ ^5D_4$—36_5°
150	2349. 338	42552. 16	$a\ ^5F_4$—$w\ ^3G_5^\circ$	50	2437. 790	41008. 33	$a\ ^3F_2$—57_1°
200	2351. 33	42516. 11	$a\ ^5F_3$—$x\ ^5F_4^\circ$	6	2438. 055	41003. 87	$a\ ^5P_2$—45_1°
6	2352. 84	42488. 83	$a\ ^5F_2$—$x\ ^1F_3^\circ$	1	2439. 408	40981. 13	$a\ ^3F_4$—22_3°
15	2352. 94	42487. 02	$a\ ^5F_1$—$x\ ^5F_2^\circ$	20	2440. 05	40970. 35	$a\ ^5D_2$—56_2°
6	2354. 10	42466. 08	$a\ ^5D_4$—$v\ ^3G_4^\circ$	20	2440. 977	40954. 79	$a\ ^5D_1$—56_2°
90	2360. 093	42358. 26	$a\ ^5F_2$—$w\ ^5D_3^\circ$	7	2441. 200	40951. 05	$a\ ^5P_3$—52_4°
50	2360. 712	42347. 16	$a\ ^5F_5$—$x\ ^3F_4^\circ$	50	2442. 934	40921. 98	$a\ ^5D_4$—34_3°
2	2362. 871	42308. 46	$a\ ^3F_4$—42_4°	1	2443. 46	40913. 17	$a\ ^5D_2$—55_2°
1	2365. 14	42267. 88	$a\ ^3F_3$—59_3°	1	2443. 86	40906. 48	$a\ ^5F_3$—$y\ ^1F_3^\circ$
25	2366. 743	42239. 26	$a\ ^5D_4$—52_4°	1	2444. 189	40900. 97	$a\ ^3G_4$—62_4°
10	2367. 769	42220. 95	$a\ ^3F_4$—40_3°	60	2444. 38	40897. 78	$a\ ^5D_1$—55_2°
80	2370. 169	42178. 20	$a\ ^5F_2$—5_2°	30	2444. 828	40890. 28	$a\ ^5P_2$—43_3°
3	2372. 13	42143. 34	$a\ ^5F_3$—$x\ ^3P_2^\circ$	50	2445. 43	40880. 22	$a\ ^3F_4$—21_5°
100	2375. 272	42087. 60	$a\ ^5F_2$—$x\ ^5F_3^\circ$	2	2446. 600	40860. 67	$a\ ^5D_2$—54_3°
2	2378. 75	42026. 06	$a\ ^3F_4$—37_3°	2	2447. 25	40849. 82	$a\ ^3F_3$—43_3°
6	2386. 678	41886. 47	$a\ ^3F_3$—55_2°	40	2447. 439	40846. 67	$a\ ^5D_0$—58_1°
2	2387. 359	41874. 53	$a\ ^5P_2$—54_3°	10	2447. 566	40844. 54	$a\ ^3F_2$—56_2°
100	2387. 881	41865. 37	$a\ ^3F_3$—$v\ ^3G_4^\circ$	2	2448. 512	40828. 76	$b\ ^3F_4$—$v\ ^3G_4^\circ$
15	2388. 188	41859. 99	$a\ ^3F_4$—34_3°	30	2450. 359	40797. 99	$a\ ^5F_1$—$y\ ^1D_2^\circ$
1	2390. 423	41820. 86	$a\ ^5D_4$—48_3°	100	2450. 560	40794. 64	$a\ ^3F_4$—$s\ ^3D_3^\circ$
90	2392. 249	41771. 48	$a\ ^5F_3$—$w\ ^3G_4^\circ$	2	2452. 06	40769. 69	$a\ ^3F_3$—42_4°
150	2392. 425	41785. 86	$a\ ^5F_1$—5_2°	8	2454. 555	40728. 25	$a\ ^5D_3$—48_3°
60	2392. 963	41776. 47	$a\ ^5D_3$—59_3°	150	2454. 926	40722. 10	$a\ ^5P_2$—40_3°
80	2395. 721	41728. 38	$a\ ^5F_2$—4_3°	30	2456. 279	40699. 67	$a\ ^5D_0$—57_1°
3	2396. 32	41717. 95	$a\ ^5P_2$—53_1°	10	2456. 946	40688. 62	$a\ ^5D_1$—53_1°
20	2397. 406	41699. 05	$a\ ^5D_1$—60_1°	100	2458. 622	40660. 89	$a\ ^5D_4$—31_4°
20	2398. 38	41682. 12	$a\ ^5D_4$—47_4°	30	2460. 73	40626. 06	$a\ ^5D_4$—30_4°
80	2399. 750	41658. 33	$a\ ^5D_4$—46_3°	100	2462. 943	40589. 56	$a\ ^5D_3$—47_4°
25	2403. 173	41598. 99	$a\ ^3F_4$—31_4°	20	2464. 366	40566. 12	$a\ ^5D_3$—46_3°
3	2403. 798	41588. 18	$a\ ^3F_2$—60_1°	100	2464. 699	40560. 64	$a\ ^5P_2$—39_1°
1	2404. 207	41581. 10	$a\ ^5P_3$—59_3°	40	2467. 576	40513. 35	$a\ ^3F_3$—38_4°
50	2405. 180	41564. 28	$a\ ^3F_4$—30_4°	3	2468. 29	40501. 63	$a\ ^3F_4$—16_3°
10	2407. 66	41521. 47	$a\ ^5F_2$—$x\ ^3P_2^\circ$	2	2469. 20	40486. 71	$a\ ^3F_3$—37_3°
60	2408. 290	41510. 61	$a\ ^3G_5$—62_4°	30	2470. 71	40461. 96	$a\ ^5D_3$—44_2°
10	2411. 76	41450. 89	$a\ ^5D_4$—43_3°	50	2471. 48	40449. 36	$a\ ^5P_2$—35_3°
20	2415. 005	41395. 20	$a\ ^5D_3$—55_2°	40	2472. 09	40439. 38	$a\ ^5F_5$—1_4°
4	2416. 247	41373. 92	$a\ ^5D_3$—$v\ ^3G_4^\circ$	80	2474. 029	40407. 69	$a\ ^5P_1$—56_2°
4	2416. 443	41370. 57	$a\ ^5D_4$—42_4°	15	2474. 396	40401. 69	$a\ ^3F_4$—$w\ ^3F_3^\circ$
5	2416. 754	41365. 24	$a\ ^5P_2$—49_1°	30	2474. 846	40394. 35	$a\ ^5F_2$—$y\ ^3S_1^\circ$
4	2418. 065	41342. 82	$a\ ^5D_3$—54_3°	200H	2475. 395	40385. 39	$a\ ^5D_4$—28_3°
2	2418. 607	41333. 56	$a\ ^3F_3$—50_2°	50	2476. 32	40370. 31	$a\ ^5P_3$—46_3°
30	2419. 205	41323. 34	$a\ ^3F_4$—28_3°	100	2476. 869	40361. 36	$a\ ^5P_2$—34_3°

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
1	2477.53	40350.59	$a\ ^5P_1—55^\circ_2$	100	2533.23	39463.44	$a\ ^5D_4—w\ ^3F^\circ_3$
1	2477.910	40344.40	$a\ ^5D_1—50^\circ_2$	1	2533.65	39456.89	$a\ ^5P_2—x\ ^5P^\circ_1$
20	2479.353	40320.93	$a\ ^3F_3—34^\circ_3$	7	2534.605	39442.03	$a\ ^3F_3—22^\circ_3$
15	2480.298	40305.57	$a\ ^5D_4—25^\circ_3$	10	2535.03	39435.41	$a\ ^5D_2—35^\circ_3$
2	2481.56	40285.07	$a\ ^5F_2—y\ ^1P^\circ_3$	20	2535.966	39420.86	$a\ ^3F_2—39^\circ_1$
3	2481.68	40283.12	$a\ ^5P_2—33^\circ_2$	20	2536.20	39417.22	$a\ ^5P_1—44^\circ_2$
2	2481.981	40278.24	$a\ ^5D_3—42^\circ_2$	5	2537.697	39393.97	$a\ ^5P_3—32^\circ_2$
10	2482.077	40276.68	$a\ ^5F_5—y\ ^3G^\circ_4$	10	2537.88	39391.13	$a\ ^5F_3—w\ ^3D^\circ_3$
10	2482.538	40269.20	$a\ ^5D_0—53^\circ_1$	6	2538.42	39382.75	$b\ ^3F_4—36^\circ_5$
3	2486.58	40203.75	$a\ ^5D_3—41^\circ_2$	25	2539.09	39372.36	$b\ ^3F_4—35^\circ_3$
10	2487.390	40190.65	$a\ ^5D_3—40^\circ_3$	3	2540.68	39347.73	$a\ ^5D_2—34^\circ_3$
30	2489.77	40152.24	$a\ ^5D_4—23^\circ_3$	70	2541.28	39338.44	$a\ ^5P_3—30^\circ_4$
70	2489.92	40149.82	$a\ ^3F_4—14^\circ_4$	10	2543.16	39309.36	$a\ ^3F_2—35^\circ_3$
20	2490.441	40141.42	$a\ ^5P_1—53^\circ_1$	50	2543.67	39301.47	$a\ ^5P_2—20^\circ_2$
60	2491.76	40120.17	$a\ ^3F_2—48^\circ_3$	300	2544.22	39292.98	$a\ ^5D_3—28^\circ_3$
80	2494.022	40083.79	$a\ ^5D_2—46^\circ_3$	1	2545.48	39273.53	$a\ ^5F_5—z\ ^3H^\circ_4$
50	2496.56	40043.04	$a\ ^5D_4—22^\circ_3$	30	2545.76	39269.21	$a\ ^5D_2—33^\circ_2$
40	2497.680	40025.09	$a\ ^3F_3—30^\circ_4$	15	2546.14	39263.35	$a\ ^5D_4—x\ ^5P^\circ_3$
30	2497.866	40022.11	$a\ ^5D_3—38^\circ_4$	2	2546.285	39261.12	$a\ ^3F_3—20^\circ_2$
2	2499.550	39995.15	$a\ ^5P_3—40^\circ_3$	150	2546.668	39255.21	$a\ ^3F_3—s\ ^3D^\circ_3$
8	2500.518	39979.66	$a\ ^5D_2—44^\circ_2$	2	2547.080	39248.86	$a\ ^5F_4—1^\circ_4$
30	2500.835	39974.60	$a\ ^5D_1—45^\circ_1$	20	2547.48	39242.70	$a\ ^5D_3—27^\circ_4$
70	2501.48	39964.29	$a\ ^5D_1—44^\circ_2$	3	2548.16	39232.23	$a\ ^5P_3—29^\circ_3$
60	2501.885	39957.82	$a\ ^3F_2—46^\circ_3$	4	2548.856	39221.52	$a\ ^3F_2—34^\circ_3$
25	2502.37	39950.08	$a\ ^3F_4—x\ ^1H^\circ_5$	300	2549.470	39212.07	$a\ ^5D_4—14^\circ_4$
15	2502.87	39942.09	$a\ ^5D_4—21^\circ_5$	300	2549.56	39210.69	$a\ ^3F_4—w\ ^3F^\circ_4$
20	2504.40	39917.70	$a\ ^5D_3—35^\circ_3$	30	2549.965	39204.46	$a\ ^5P_2—w\ ^3F^\circ_2$
20	2504.51	39915.94	$a\ ^5F_3—x\ ^3D^\circ_2$	60	2551.72	39177.50	$a\ ^3F_3—19^\circ_4$
100	2508.270	39856.11	$a\ ^5D_4—s\ ^3D^\circ_3$	25	2552.295	39168.67	$a\ ^5F_5—x\ ^3F^\circ_3$
30	2510.13	39826.58	$a\ ^5P_3—38^\circ_4$	1	2552.94	39158.78	$a\ ^5P_1—41^\circ_2$
1	2510.504	39820.65	$a\ ^5F_2—w\ ^3D^\circ_2$	1	2553.288	39153.44	$a\ ^3G_5—61^\circ_4$
50	2510.965	39813.34	$b\ ^3F_4—43^\circ_3$	20	2553.971	39142.97	$a\ ^3F_2—33^\circ_2$
20	2511.98	39797.25	$a\ ^5P_1—50^\circ_2$	40	2556.004	39111.84	$a\ ^5D_0—39^\circ_1$
1	2512.47	39789.49	$a\ ^5F_3—v\ ^3D^\circ_3$	50	2556.316	39107.07	$a\ ^5D_2—32^\circ_2$
100	2512.81	39784.11	$a\ ^3F_3—28^\circ_3$	4	2556.948	39097.40	$a\ ^5P_3—28^\circ_3$
10	2513.17	39778.41	$a\ ^5D_4—19^\circ_4$	10	2557.701	39085.89	$a\ ^5F_4—y\ ^3G^\circ_4$
3	2513.98	39765.59	$a\ ^5P_2—26^\circ_1$	100	2558.540	39073.07	$a\ ^3F_3—17^\circ_4$
30	2514.45	39758.16	$a\ ^5F_4—z\ ^1F^\circ_3$	5	2559.406	39059.85	$a\ ^5D_3—23^\circ_3$
10	2514.88	39751.36	$a\ ^5D_3—33^\circ_2$	125	2560.265	39046.75	$a\ ^5P_3—27^\circ_4$
80	2515.27	39745.20	$a\ ^5P_2—25^\circ_3$	10	2561.803	39023.31	$b\ ^3F_4—31^\circ_4$
20	2515.98	39733.98	$a\ ^3F_3—27^\circ_4$	1	2562.168	39017.75	$a\ ^5P_3—25^\circ_3$
1	2516.34	39728.30	$a\ ^3P_2—59^\circ_3$	3	2562.55	39011.93	$a\ ^5D_4—x\ ^1H^\circ_5$
			$a\ ^3F_4—12^\circ_4$	50	2563.157	39002.70	$a\ ^5P_2—16^\circ_3$
10	2516.73	39722.14	$a\ ^5P_3—35^\circ_3$	10	2564.39	38983.95	$a\ ^5P_1—39^\circ_1$
				10	2564.41	38983.64	$a\ ^3F_4—x\ ^1G^\circ_4$
80	2517.62	39708.10	$a\ ^5D_2—40^\circ_3$	20	2564.587	38980.95	$a\ ^3F_2—32^\circ_2$
80	2521.61	39645.28	$b\ ^3F_4—40^\circ_3$	20	2565.188	38971.82	$a\ ^5D_3—s\ ^3D^\circ_2$
10	2522.318	39634.15	$a\ ^5P_3—34^\circ_3$	10	2565.804	38962.46	$a\ ^2F_3—16^\circ_3$
30	2525.17	39589.39	$a\ ^5D_3—32^\circ_2$	30	2566.590	38950.53	$a\ ^5D_3—22^\circ_3$
50	2525.63	39582.18	$a\ ^3F_2—40^\circ_3$	40	2567.893	38930.77	$a\ ^3F_4—6^\circ_3$
3	2525.92	39577.64	$a\ ^5F_4—x\ ^3D^\circ_3$	75	2568.772	38917.45	$a\ ^5D_4—13^\circ_4$
200	2526.82	39563.54	$a\ ^5D_4—16^\circ_3$	50	2569.729	38902.95	$a\ ^5P_2—w\ ^3F^\circ_3$
3	2527.347	39555.29	$a\ ^5D_0—45^\circ_1$	30	2570.093	38897.44	$a\ ^5F_5—z\ ^3H^\circ_6$
10	2527.60	39551.33	$a\ ^3F_3—23^\circ_3$	100	2572.282	38864.35	$a\ ^5P_3—23^\circ_3$
50	2528.71	39533.97	$a\ ^5D_3—30^\circ_4$	100	2572.412	38862.38	$a\ ^3F_3—w\ ^3F^\circ_3$
75	2528.874	39531.40	$a\ ^5D_1—39^\circ_1$	30	2575.242	38819.68	$a\ ^3F_4—y\ ^1G^\circ_4$
7	2529.456	39522.31	$a\ ^3F_4—10^\circ_4$	20	2576.954	38793.89	$a\ ^3P_2—50^\circ_2$
75	2530.64	39503.82	$a\ ^5P_2—s\ ^3D^\circ_2$	2	2577.518	38785.40	$a\ ^3P_2—49^\circ_1$
8	2532.01	39482.45	$a\ ^5P_2—22^\circ_3$	100	2578.571	38769.56	$a\ ^5F_2—w\ ^3D^\circ_3$
1	2532.36	39476.99	$b\ ^3F_4—38^\circ_4$				$a\ ^5D_3—20^\circ_2$

TABLE 3—Continued

Intensity	Wave-length	Wave number	Term combination	Intensity	Wave-length	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
20	2578. 948	38763. 90	$a\ {}^5D_3$—$s\ {}^3D^\circ_3$	80	2620. 607	38147. 72	$a\ {}^5P_2$—$w\ {}^5D^\circ_1$
40	2579. 022	38762. 78	$b\ {}^3F_3$—50°_2	15	2620. 870	38143. 89	$a\ {}^5F_3$—$y\ {}^3G^\circ_3$
70	2579. 222	38759. 78	$a\ {}^5P_2$—$x\ {}^5P^\circ_2$	10	2620. 974	38142. 37	$a\ {}^3P_2$—40°_3
100	2579. 536	38755. 06	$a\ {}^5P_3$—22°_3	15	2621. 071	38140. 96	$b\ {}^3F_4$—19°_4
10	2579. 777	38751. 44	$a\ {}^5D_2$—26°_1	1	2622. 191	38124. 67	$b\ {}^3F_3$—41°_2
10	2580. 026	38747. 70	$b\ {}^3F_4$—28°_3	1	2623. 611	38104. 04	$a\ {}^5D_1$—18°_0
100	2580. 803	38736. 04	$a\ {}^5D_1$—26°_1	75	2623. 824	38100. 95	$a\ {}^3D_3$—63°_3
125	2581. 140	38730. 98	$a\ {}^5D_2$—25°_3	5	2625. 081	38082. 70	$a\ {}^5F_4$—$z\ {}^3H^\circ_4$
50	2581. 911	38719. 41	$a\ {}^3F_3$—$x\ {}^5P^\circ_2$	30	2626. 205	38066. 40	$a\ {}^5D_4$—7°_3
3	2582. 785	38706. 31	$a\ {}^5P_1$—33°_2	20	2626. 356	38064. 22	$a\ {}^3F_2$—$w\ {}^3F^\circ_2$
70	2583. 033	38702. 60	$a\ {}^5P_2$—$x\ {}^5P^\circ_3$	50	2626. 478	38062. 45	$a\ {}^3F_4$—$x\ {}^5F^\circ_4$
100	2584. 136	38686. 08	$a\ {}^5D_3$—19°_4	100	2627. 650	38045. 47	$a\ {}^5D_4$—$x\ {}^1G^\circ_4$
25	2585. 340	38668. 06	$b\ {}^3F_4$—25°_3	25	2628. 262	38036. 62	$b\ {}^3F_4$—17°_4
30	2585. 739	38662. 10	$a\ {}^3F_3$—$x\ {}^5P^\circ_3$	25	2628. 536	38032. 65	$a\ {}^5P_3$—$x\ {}^5P^\circ_2$
10	2586. 087	38656. 89	$a\ {}^3F_4$—$x\ {}^1F^\circ_3$	40	2629. 925	38012. 56	$a\ {}^5P_2$—9°_1
5	2588. 193	38625. 44	$a\ {}^3F_2$—26°_1	160	2630. 231	38008. 14	$a\ {}^5D_0$—$x\ {}^5P^\circ_1$
150	2589. 569	38604. 92	$a\ {}^3F_2$—25°_3	100	2631. 304	37992. 65	$a\ {}^5D_4$—6°_3
10	2590. 963	38584. 15	$a\ {}^5D_4$—10°_4	100	2631. 569	37988. 82	$a\ {}^5D_2$—16°_3
100	2591. 116	38581. 87	$a\ {}^5D_3$—17°_4	75	2632. 127	37980. 77	$a\ {}^3P_2$—39°_1
40	2591. 637	38574. 11	$a\ {}^5P_3$—20°_2	75	2632. 496	37975. 44	$a\ {}^5P_3$—$x\ {}^5P^\circ_3$
100	2592. 022	38568. 38	$a\ {}^5P_3$—$s\ {}^3D^\circ_3$	80	2633. 446	37961. 74	$b\ {}^3F_2$—49°_1
10	2593. 619	38544. 64	$a\ {}^5P_1$—32°_2	20	2635. 861	37926. 97	$a\ {}^5P_1$—$s\ {}^3D^\circ_2$
50	2593. 700	38543. 44	$a\ {}^3G_4$—61°_4	75	2636. 663	37915. 43	$a\ {}^3G_5$—$v\ {}^3G^\circ_5$
100	2594. 855	38526. 28	$a\ {}^3F_4$—$w\ {}^5D^\circ_3$	3	2636. 952	37911. 27	$a\ {}^5F_1$—$x\ {}^3D^\circ_1$
5	2595. 419	38517. 91	$a\ {}^3P_2$—46°_3	1	2637. 961	37896. 77	$a\ {}^3F_4$—4°_3
20	2595. 640	38514. 63	$b\ {}^3F_4$—23°_3	75	2638. 515	37888. 82	$a\ {}^5D_2$—$w\ {}^3F^\circ_3$
10	2595. 930	38510. 33	$b\ {}^3F_3$—47°_4	75	2639. 121	37880. 12	$a\ {}^5P_1$—$x\ {}^5P^\circ_1$
75	2597. 322	38489. 69	$a\ {}^5D_2$—$s\ {}^3D^\circ_2$	10	2639. 866	37869. 43	$a\ {}^3P_2$—35°_3
25	2597. 517	38486. 80	$b\ {}^3F_3$—46°_3	60	2640. 324	37862. 86	$a\ {}^3F_2$—16°_3
1	2597. 656	38484. 74	$a\ {}^5P_2$—$y\ {}^1P^\circ_1$	10	2641. 461	37846. 56	$a\ {}^5F_4$—$z\ {}^1G^\circ_4$
25	2598. 361	38474. 30	$a\ {}^5D_1$—$s\ {}^3D^\circ_2$				
20	2598. 574	38471. 15	$a\ {}^5D_3$—16°_3 $b\ {}^3F_2$—54°_3	20 200	2641. 970 2642. 946	37839. 27 37825. 30	$a\ {}^3F_3$—$t\ {}^3D^\circ_2$ $a\ {}^5D_3$—13°_4
1	2598. 75	38468. 54	$a\ {}^5D_2$—22°_3	75	2646. 002	37781. 62	$a\ {}^3P_2$—34°_3
5	2600. 719	38439. 42	$a\ {}^3P_0$—57°_1	75	2647. 314	37762. 89	$a\ {}^3F_2$—$w\ {}^3F^\circ_3$
2	2601. 752	38424. 16	$a\ {}^3P_2$—45°_1	50	2648. 451	37746. 68	$a\ {}^5P_2$—$w\ {}^5D^\circ_2$
2	2602. 977	38406. 07	$a\ {}^3P_1$—57°_1	40	2648. 782	37741. 96	$a\ {}^3G_5$—$v\ {}^3G^\circ_4$
30	2604. 315	38386. 34	$a\ {}^5P_3$—17°_4	25	2649. 506	37731. 65	$a\ {}^5D_2$—15°_1
1	2604. 560	38382. 73	$b\ {}^3F_3$—44°_2	20	2649. 575	37730. 67	$a\ {}^5D_1$—$x\ {}^5P^\circ_2$
100	2605. 347	38371. 14	$a\ {}^5D_3$—$w\ {}^3F^\circ_3$	10	2649. 992	37724. 73	$a\ {}^5P_1$—20°_2
100	2605. 853	38363. 69	$a\ {}^3F_2$—$s\ {}^3D^\circ_2$	30	2650. 395	37719. 00	$a\ {}^5D_4$—$x\ {}^1F^\circ_3$
2	2606. 935	38347. 77	$a\ {}^5F_3$—1°_4	10	2650. 584	37716. 31	$a\ {}^5D_1$—15°_1
50	2607. 348	38341. 69	$a\ {}^5F_3$—$y\ {}^3F^\circ_2$	40	2651. 289	37706. 28	$a\ {}^3F_3$—$w\ {}^5D^\circ_2$
125	2609. 062	38316. 51	$a\ {}^3F_3$—13°_4 $a\ {}^5D_0$—26°_1	20 30	2651. 508 2651. 839	37703. 16 37698. 46	$a\ {}^3P_2$—33°_2 $a\ {}^3F_4$—$w\ {}^5D^\circ_4$
75	2609. 476	38310. 43	$a\ {}^3P_2$—43°_3	25	2651. 874	37697. 96	$a\ {}^5D_3$—12°_4
20	2609. 873	38304. 60	$b\ {}^3F_4$—21°_3	5	2652. 139	37694. 19	$b\ {}^3F_2$—46°_3
80	2611. 045	38287. 41	$a\ {}^5D_2$—20°_2	25	2653. 693	37672. 12	$b\ {}^3F_3$—33°_2
8	2611. 592	38279. 39	$b\ {}^3F_3$—43°_3	5	2654. 470	37661. 10	$a\ {}^3G_3$—61°_4
150	2612. 06	38272. 53	$a\ {}^5D_4$—$w\ {}^3F^\circ_4$	20	2654. 804	37656. 36	$a\ {}^3P_0$—49°_1
20	2612. 895	38260. 30	$a\ {}^5F_4$—$y\ {}^3G^\circ_5$	30	2655. 221	37650. 44	$a\ {}^5F_3$—$y\ {}^3P^\circ_2$
5	2613. 198	38255. 87	$a\ {}^3F_4$—$x\ {}^5F^\circ_3$	75	2656. 563	37631. 42	$a\ {}^3P_1$—50°_2
100	2614. 055	38243. 33	$a\ {}^5F_5$—$y\ {}^3F^\circ_4$	75	2656. 698	37629. 51	$a\ {}^5P_3$—13°_4
75	2614. 585	38235. 57	$a\ {}^5F_2$—$z\ {}^1F^\circ_3$	7	2656. 83	37627. 64	$a\ {}^5P_1$—$w\ {}^3F^\circ_2$
75	2615. 093	38228. 15	$a\ {}^5D_3$—$x\ {}^5P^\circ_2$	75	2657. 163	37622. 93	$a\ {}^3P_1$—49°_1
20	2617. 677	38190. 41	$a\ {}^5D_2$—$w\ {}^3F^\circ_2$	3	2657. 366	37620. 05	$a\ {}^3F_2$—$x\ {}^5P^\circ_2$
70	2617. 790	38188. 76	$a\ {}^5P_1$—26°_1				
20	2618. 737	38174. 96	$a\ {}^5D_1$—$w\ {}^3F^\circ_2$	80	2658. 391	37605. 55	$a\ {}^3F_2$—15°_1
70	2619. 014	38170. 92	$a\ {}^5D_3$—$x\ {}^5P^\circ_3$	10	2658. 768	37600. 22	$b\ {}^3F_2$—45°_1
50	2619. 666	38161. 42	$a\ {}^3F_2$—20°_2	100	2659. 617	37588. 22	$a\ {}^5D_4$—$w\ {}^5D^\circ_3$
5	2620. 062	38155. 65	$a\ {}^3F_2$—$s\ {}^3D^\circ_3$ $a\ {}^3P_2$—41°_2	15 50	2660. 601 2661. 861	37574. 32 37556. 53	$b\ {}^3F_4$—14°_4 $a\ {}^5P_1$—18°_0

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
100	2664.761	37515.66	$a\ ^5F_4$—$y\ ^5P^\circ_3$	125	2709.198	36900.35	$a\ ^5D_3$—6°_3
1	2665.154	37510.13	$b\ ^3F_3$—32°_2	5	2709.755	36892.77	$b\ ^3F_3$—$s\ ^3D^\circ_2$
3	2665.466	37505.74	$a\ ^5P_2$—7°_3	10	2710.732	36879.47	$b\ ^3F_2$—33°_2
25	2665.719	37502.18	$a\ ^5P_3$—12°_4				$a\ ^5P_1$—$t\ ^3D^\circ_1$
20	2666.829	37486.57	$b\ ^3F_2$—43°_3	2	2711.313	36871.57	$b\ ^3F_3$—22°_3
10	2667.484	37477.36	$a\ ^3H_5$—62°_4	10	2712.868	36850.44	$a\ ^5D_1$—$t\ ^3D^\circ_2$
50	2667.969	37470.56	$a\ ^5D_2$—$y\ ^1P^\circ_1$	75	2713.192	36846.04	$a\ ^5P_1$—$w\ ^5D^\circ_0$
40	2668.342	37465.32	$a\ ^3F_3$—7°_3	50	2713.728	36838.76	$a\ ^5D_4$—$x\ ^5F^\circ_5$
2	2670.708	37432.13	$a\ ^5P_2$—6°_3	1	2714.998	36821.53	$a\ ^5P_3$—$x\ ^5F^\circ_2$
80	2673.477	37393.36	$a\ ^5D_1$—$w\ ^5D^\circ_0$	40	2715.233	36818.34	$a\ ^3P_1$—39°_1
80	2673.605	37391.57	$a\ ^3F_3$—6°_3	75	2715.773	36811.02	$a\ ^5F_1$—$y\ ^3P^\circ_1$
3	2674.471	37379.46	$a\ ^3P_2$—29°_3	30	2717.001	36794.39	$a\ ^3F_2$—8°_1
3	2674.827	37374.49	$b\ ^3F_4$—$x\ ^1H^\circ_5$	100	2717.401	36788.97	$a\ ^5F_1$—$y\ ^3P^\circ_0$
1	2676.71	37348.20	$b\ ^3F_3$—29°_3	1h	2718.168	36778.59	$a\ ^5P_3$—7°_3
20	2676.969	37344.59	$a\ ^3F_2$—$y\ ^1P^\circ_1$	250	2719.51	36760.44	$a\ ^5D_4$—$w\ ^5D^\circ_4$
5	2677.881	37331.87	$b\ ^3F_2$—41°_2	70	2721.562	36732.73	$a\ ^5D_2$—$w\ ^5D^\circ_2$
10	2678.175	37327.77	$a\ ^5F_1$—$y\ ^3F^\circ_2$	15	2722.386	36721.61	$a\ ^3P_2$—20°_2
50	2679.763	37305.65	$a\ ^3G_4$—$v\ ^3G^\circ_5$	50	2722.693	36717.47	$a\ ^5D_1$—$w\ ^5D^\circ_2$
1	2680.382	37297.04	$a\ ^5D_0$—15°_1				$b\ ^3F_2$—32°_2
2	2680.533	37294.93	$a\ ^3P_0$—45°_1	10	2722.82	36715.75	$a\ ^3P_2$—$s\ ^3D^\circ_3$
60	2683.676	37251.26	$a\ ^3P_1$—44°_2	100	2724.066	36698.96	$a\ ^5D_0$—$w\ ^5D^\circ_1$
60	2684.089	37245.53	$a\ ^1D_2$—63°_3	1	2725.13	36684.63	$b\ ^3F_3$—$s\ ^3D^\circ_3$
10	2684.452	37240.49	$a\ ^3G_5$—51°_4	2	2726.360	36668.08	$a\ ^5F_1$—$y\ ^5P^\circ_1$
175	2686.291	37215.00	$a\ ^5D_3$—$w\ ^5D^\circ_3$	50	2726.969	36659.90	$a\ ^1G_4$—61°_4
40	2687.138	37203.27	$a\ ^5F_2$—$y\ ^3P^\circ_1$	1h	2727.505	36652.69	$a\ ^3G_3$—59°_3
1	2687.755	37194.73	$a\ ^3H_4$—63°_3	2	2727.953	36646.67	$a\ ^3G_5$—42°_4
50	2688.583	37183.28	$a\ ^5P_1$—$x\ ^5P^\circ_2$	80	2728.836	36634.81	$b\ ^3F_4$—$w\ ^3F^\circ_4$
70	2688.888	37179.06	$a\ ^5D_4$—$y\ ^3H^\circ_4$	2	2729.129	36630.88	$a\ ^3G_4$—51°_4
70	2689.894	37165.15	$a\ ^3P_2$—25°_3	60	2729.455	36626.51	$a\ ^5D_3$—$x\ ^1F^\circ_3$
40	2690.382	37158.41	$a\ ^5P_2$—$x\ ^1F^\circ_3$	1	2729.790	36622.01	$a\ ^5D_3$—$y\ ^5S^\circ_2$
2	2690.725	37153.67	$a\ ^5P_2$—$y\ ^5S^\circ_2$	80	2730.325	36614.84	$a\ ^5F_3$—$y\ ^5P^\circ_3$
25	2690.810	37152.50	$b\ ^3F_4$—12°_4	100	2730.932	36606.70	$a\ ^3F_2$—$w\ ^5D^\circ_2$
			$a\ ^5P_3$—$t\ ^3D^\circ_2$	30	2731.903	36593.69	$a\ ^5P_3$—$y\ ^1G^\circ_4$
50	2692.251	37132.62	$a\ ^3G_4$—$v\ ^3G^\circ_4$	10	2733.086	36577.85	$a\ ^3F_3$—$y\ ^3H^\circ_4$
1	2692.716	37126.21	$b\ ^3P_2$—60°_1	125	2733.578	36571.27	$a\ ^5P_1$—$w\ ^5D^\circ_1$
80	2692.842	37124.47	$a\ ^5D_4$—$x\ ^5F^\circ_4$	1	2734.15	36563.62	$a\ ^5D_0$—9°_1
150	2693.30	37118.16	$a\ ^5D_1$—$w\ ^5D^\circ_1$	250	2735.727	36542.54	$a\ ^5F_5$—$x\ ^5D^\circ_4$
30	2693.653	37113.29	$a\ ^3F_3$—$y\ ^5S^\circ_2$	10	2736.315	36534.69	$a\ ^5D_2$—$x\ ^5F^\circ_2$
50	2697.510	37060.23	$a\ ^5F_2$—$y\ ^5P^\circ_1$	1	2737.145	26523.61	$a\ ^3F_3$—$x\ ^5F^\circ_4$
15	2698.050	37052.81	$a\ ^5F_4$—$y\ ^3F^\circ_4$	20	2737.463	36519.37	$a\ ^5D_1$—$x\ ^5F^\circ_2$
10	2699.712	37030.00	$a\ ^5D_1$—11°_0	150	2739.217	36495.98	$a\ ^5D_3$—$w\ ^5D^\circ_3$
20	2699.793	37028.89	$a\ ^5F_2$—$y\ ^3P^\circ_2$	5	2739.454	36492.83	$a\ ^5D_4$—$x\ ^3G^\circ_3$
40	2699.882	37027.67	$a\ ^5P_2$—$w\ ^5D^\circ_3$	1h	2739.986	36485.74	$a\ ^5D_0$—8°_1
30	2700.477	37019.51	$a\ ^5P_3$—$w\ ^5D^\circ_2$	50	2740.217	36482.67	$a\ ^5P_1$—11°_0
25	2700.671	37016.85	$a\ ^5D_3$—$x\ ^5F^\circ_2$	80	2743.934	36433.25	$a\ ^3F_4$—$z\ ^3I^\circ_5$
70	2701.337	37007.73	$a\ ^3F_2$—$w\ ^5D^\circ_1$	125	2744.448	36426.43	$a\ ^5P_3$—$y\ ^5S^\circ_2$
5	2701.997	36998.69	$a\ ^5D_2$—9°_1	3h	2744.705	36423.01	$a\ ^3P_2$—16°_3
4	2702.401	36993.16	$a\ ^3P_1$—41°_2	75	2745.074	36418.12	$a\ ^5D_2$—6°_3
80	2702.833	36987.25	$a\ ^3F_3$—$w\ ^5D^\circ_3$	15	2745.827	36408.13	$b\ ^3F_4$—$x\ ^1G^\circ_4$
4	2703.120	36983.32	$a\ ^5D_1$—9°_1	75	2746.885	36394.11	$a\ ^3F_4$—$x\ ^3G^\circ_4$
4	2703.311	36980.71	$b\ ^3F_3$—23°_3				
50	2703.796	36974.07	$a\ ^5D_3$—7°_3	1	2747.163	36390.43	$a\ ^3G_5$—38°_4
5	2704.971	36958.01	$a\ ^3G_5$—47°_4	40	2747.963	36379.83	$a\ ^5D_4$—$w\ ^3G^\circ_4$
			$b\ ^3F_2$—34°_3	40	2748.045	36378.75	$a\ ^3P_1$—32°_2
10	2705.323	36953.20	$a\ ^5D_3$—$x\ ^1G^\circ_4$	10	2749.014	36365.93	$a\ ^3F_2$—7°_3
70	2707.477	36923.81	$a\ ^3P_2$—$s\ ^3D^\circ_2$	2	2749.314	36361.96	$b\ ^3F_2$—26°_1
100	2707.969	36917.10	$a\ ^5F_3$—$y\ ^5P^\circ_2$	5h	2749.64	36357.65	$a\ ^3F_3$—4°_3
25	2708.635	36908.02	$a\ ^5P_1$—$y\ ^1P^\circ_1$				$a\ ^5P_1$—8°_1
25	2708.841	36905.21	$a\ ^5D_1$—8°_1	3	2749.824	36355.21	$b\ ^3F_4$—6°_3
			$a\ ^3G_4$—52°_4	50	2750.345	36348.33	$a\ ^3G_4$—47°_4
5	2709.045	36902.44	$a\ ^3P_2$—22°_3	2	2750.864	36341.47	$b\ ^3F_2$—25°_3

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
60	2752. 262	36323. 01	$a\ ^3P_2$—$w\ ^3F_3^\circ$	50	2808. 221	35599. 25	$b\ ^3F_2$—16_3°
1	2753. 761	36303. 24	$a\ ^5P_1$—$t\ ^3D_2^\circ$	150	2810. 029	35576. 34	$a\ ^5F_3$—$x\ ^5D_2^\circ$
10	2753. 968	36300. 51	$a\ ^5P_3$—$w\ ^5D_3^\circ$	250	2810. 551	35569. 74	$a\ ^5F_4$—$y\ ^3D_3^\circ$
10	2754. 358	36295. 37	$a\ ^5F_2$—$y\ ^5P_2^\circ$	20	2810. 695	35567. 92	$a\ ^3P_2$—$w\ ^5D_1^\circ$
60	2754. 603	36292. 14	$a\ ^3F_2$—6_3°	25	2814. 862	35515. 26	$a\ ^5D_4$—$y\ ^1F_3^\circ$
1	2756. 181	36271. 37	$a\ ^3G_3$—55_2°	1	2816. 116	35499. 45	$b\ ^3F_2$—$w\ ^3F_3^\circ$
30	2757. 064	36259. 75	$a\ ^5D_4$—$w\ ^3G_5^\circ$	100	2817. 092	35487. 15	$a\ ^5F_2$—$x\ ^5D_1^\circ$
80	2757. 798	36250. 10	$a\ ^3G_3$—$v\ ^3G_4^\circ$	200	2818. 359	35471. 20	$a\ ^5F_5$—$y\ ^5F_4^\circ$
2	2758. 238	36244. 32	$b\ ^3F_4$—$y\ ^1G_4^\circ$	40	2818. 809	35465. 53	$a\ ^5P_2$—$u\ ^3D_2^\circ$
100	2759. 682	36225. 35	$a\ ^5D_3$—$x\ ^5F_3^\circ$	75	2818. 950	35463. 76	$a\ ^5P_3$—$x\ ^3P_2^\circ$
30	2760. 155	36219. 15	$a\ ^3G_3$—54_3°	5	2819. 562	35456. 06	$a\ ^5D_4$—$x\ ^3G_4^\circ$
100	2762. 304	36190. 97	$a\ ^5P_2$—$x\ ^3P_2^\circ$	1	2820. 667	35442. 17	$a\ ^3G_3$—46_3°
60	2763. 133	36180. 12	$a\ ^3P_2$—$x\ ^5P_2^\circ$	30	2821. 171	35435. 84	$b\ ^3P_1$—50_2°
200	2763. 413	36176. 45	$a\ ^5F_4$—$x\ ^5D_3^\circ$	3	2821. 414	35432. 79	$a\ ^3P_2$—9_1°
50	2763. 900	36170. 07	$a\ ^5P_1$—$w\ ^5D_2^\circ$	100	2822. 034	35425. 01	$a\ ^3F_3$—$u\ ^3D_2^\circ$
10	2764. 229	36165. 77	$a\ ^3P_2$—15_1°	1	2822. 256	35422. 22	$a\ ^1G_4$—$v\ ^3G_5^\circ$
70	2764. 714	36159. 43	$a\ ^3F_3$—$w\ ^5D_4^\circ$	2	2823. 878	35401. 88	$b\ ^3P_2$—45_1°
5	2765. 521	36148. 87	$b\ ^3F_3$—$x\ ^5P_2^\circ$	10	2824. 756	35390. 87	$a\ ^3P_1$—18_0°
1	2765. 853	36144. 54	$a\ ^5D_2$—$x\ ^1F_3^\circ$	5	2827. 518	35356. 30	$b\ ^3F_2$—$x\ ^5P_2^\circ$
50	2766. 223	36139. 70	$a\ ^5D_2$—$y\ ^5S_2^\circ$	100	2827. 857	35352. 07	$a\ ^5F_4$—$x\ ^5D_4^\circ$
1	2767. 389	36124. 48	$a\ ^5D_1$—$y\ ^5S_2^\circ$	200	2829. 149	35335. 92	$a\ ^3F_4$—$v\ ^3D_3^\circ$
50w	2767. 516	36122. 82	$a\ ^3P_2$—$x\ ^5P_3^\circ$	1	2832. 044	35299. 80	$a\ ^3P_2$—$t\ ^3D_2^\circ$
1	2767. 689	36120. 56	$a\ ^5P_3$—5_2°	40	2832. 624	35292. 57	$a\ ^3G_4$—30_3°
1	2767. 938	36117. 31	$a\ ^3G_4$—43_3°	20	2833. 05	35287. 27	$a\ ^5D_3$—$w\ ^3G_4^\circ$
1h	2769. 893	36091. 82	$b\ ^3F_3$—$x\ ^5P_3^\circ$	80	2833. 999	35275. 45	$a\ ^5F_3$—$x\ ^5D_3^\circ$
50	2770. 296	36086. 57	$a\ ^5D_3$—$y\ ^3H_4^\circ$	2	2834. 347	35271. 12	$a\ ^5P_1$—5_2°
100	2770. 698	36081. 33	$b\ ^3F_4$—$x\ ^1F_3^\circ$	2	2835. 415	35257. 84	$a\ ^3F_2$—4_3°
100	2772. 608	36056. 48	$a\ ^3P_0$—26_1°	50	2836. 143	35248. 79	$a\ ^1G_4$—$v\ ^3G_4^\circ$
1h	2774. 101	36037. 08	$a\ ^3G_4$—42_4°	70	2836. 569	35243. 49	$a\ ^5D_2$—3_1°
125	2774. 480	36032. 15	$a\ ^5D_3$—$x\ ^5F_4^\circ$	20	2837. 269	35234. 80	$a\ ^3G_3$—43_3°
70	2775. 175	36023. 13	$a\ ^3G_3$—52_4° $a\ ^3P_1$—26_1°	3	2837. 814	35228. 03	$a\ ^5D_1$—3_1°
2h	2775. 540	36018. 39	$a\ ^3F_2$—$x\ ^1F_3^\circ$	25	2838. 615	35218. 09	$a\ ^3G_5$—21_5° $a\ ^1G_4$—54_3°
80	2775. 902	36013. 70	$a\ ^5D_2$—$w\ ^5D_3^\circ$	1	2839. 677	35204. 92	$a\ ^5P_3$—$x\ ^3G_3^\circ$
		36013. 71	$a\ ^3F_2$—$y\ ^5S_2^\circ$	80	2840. 537	35194. 26	$a\ ^3F_4$—$x\ ^3G_5^\circ$
5	2777. 480	35993. 24	$a\ ^5F_2$—$y\ ^5P_3^\circ$	2	2841. 173	35186. 39	$a\ ^3G_4$—29_3°
70	2780. 759	35950. 80	$b\ ^3F_4$—$w\ ^5D_3^\circ$	2h	2841. 928	35177. 04	$a\ ^5D_2$—$x\ ^3P_2^\circ$
5	2781. 831	35936. 94	$a\ ^3G_5$—31_4°	20	2842. 527	35169. 63	$a\ ^3D_3$—61_4°
80	2782. 205	35932. 11	$a\ ^5P_2$—$x\ ^3G_3^\circ$	20	2842. 749	35166. 88	$a\ ^3P_2$—$w\ ^5D_2^\circ$
3	2784. 320	35904. 82	$a\ ^3P_2$—$y\ ^1P_1^\circ$	70	2843. 170	35161. 67	$a\ ^5D_1$—$x\ ^3P_2^\circ$
30	2784. 516	35902. 29	$a\ ^3G_5$—30_4°	5	2843. 740	35154. 62	$a\ ^3G_3$—42_4°
2	2784. 864	35897. 81	$b\ ^3F_2$—20_2°	25	2845. 537	35132. 43	$a\ ^5P_3$—$y\ ^1D_2^\circ$
75	2785. 334	35891. 75	$a\ ^3F_3$—$x^3G_3^\circ$	60	2846. 318	35122. 79	$b\ ^3F_4$—$w\ ^5D_4^\circ$
80	2785. 649	35887. 69	$a\ ^3F_2$—$w\ ^5D_3^\circ$	20	2846. 537	35120. 08	$a\ ^3H_5$—61_4° $b\ ^3P_2$—40_3°
5	2786. 710	35874. 03	$a\ ^5F_2$—$z\ ^3S_1^\circ$				
100	2787. 823	35859. 71	$a\ ^5P_2$—$y\ ^1D_2^\circ$	30	2846. 750	35117. 46	$a\ ^3F_2$—3_1°
2	2789. 615	35836. 67	$a\ ^5P_3$—$x\ ^5F_4^\circ$	80	2848. 586	35094. 82	$a\ ^5F_1$—$x\ ^5D_1^\circ$
1	2789. 833	35833. 87	$a\ ^5D_2$—5_2°	3	2848. 812	35092. 04	$a\ ^5P_3$—$w\ ^3G_4^\circ$
6	2791. 036	35818. 43	$a\ ^5D_1$—5_2°	1	2849. 775	35080. 18	$a\ ^3G_3$—41_2°
75	2792. 641	35797. 84	$a\ ^5P_2$—$u\ ^3D_1^\circ$	2	2850. 864	35066. 78	$a\ ^3G_3$—40_3°
20	2794. 678	35771. 75	$b\ ^3P_2$—50_2°	15	2851. 104	35063. 83	$a\ ^5P_2$—$y\ ^3S_1^\circ$
30	2795. 508	35761. 13	$a\ ^3P_1$—$s^3D_2^\circ$	10	2851. 866	35054. 46	$a\ ^3G_5$—19_4°
1	2796. 049	35754. 21	$a\ ^3G_4$—37_3°	200	2854. 075	35027. 33	$a\ ^5F_3$—$z\ ^3P_2^\circ$
20	2796. 543	35747. 90	$a\ ^3P_0$—$x\ ^5P_1^\circ$	1	2854. 528	35021. 77	$a\ ^1G_4$—52_4°
40	2796. 697	35745. 93	$b\ ^3F^3$—13_4°	3	2854. 870	35017. 58	$a\ ^3P_1$—$x\ ^5P_2^\circ$
1	2796. 904	35743. 28	$a\ ^5D_2$—$x^5\ F_3^\circ$	30	2856. 044	35003. 18	$a\ ^3P_1$—15_1°
1	2798. 872	35718. 15	$a\ ^3D_2$—60_1°	1	2857. 240	34988. 53	$b\ ^3F_4$—$y\ ^3H_5^\circ$
10	2801. 856	35680. 11	$b\ ^3F_4$—$x\ ^5F_3^\circ$	2	2858. 591	34972. 00	$a\ ^3G_4$—25_3°
125	2802. 805	35668. 03	$a\ ^5D_3$—$w\ ^5D_4^\circ$	1	2858. 849	34968. 84	$a\ ^3P_2$—$x\ ^5F_2^\circ$
40	2803. 496	35659. 24	$a\ ^5D_3$—$x\ ^3P_2^\circ$	100	2860. 014	34954. 60	$a\ ^5F_2$—$x\ ^5D_2^\circ$ $a\ ^5P_2$—$y\ ^1F_3^\circ$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
20	2860.369	34950.26	$a\ ^3G_5$—17°_4	75	2905.651	34405.61	$a\ ^5F_2$—$z\ ^3P^\circ_2$
125	2861.408	34937.57	$a\ ^3F_4$—$w\ ^3D^\circ_3$	50	2905.822	34403.59	$a\ ^3F_4$—$z\ ^1F^\circ_3$
			$b\ ^3F_3$—$x\ ^5F^\circ_2$	60	2906.315	34397.76	$a\ ^5D_4$—$v\ ^3D^\circ_3$
40	2861.718	34933.78	$a\ ^5D_3$—$u\ ^3D^\circ_2$	2	2908.481	34372.14	$a\ ^5P_2$—$z\ ^1P^\circ_1$
1	2862.358	34925.97	$a\ ^3P_2$—7°_3	150	2908.883	34367.39	$a\ ^5F_1$—$z\ ^3P^\circ_0$
30	2863.003	34918.11	$a\ ^5D_2$—$x\ ^3G^\circ_3$				
20	2863.324	34914.19	$a\ ^3F_3$—$y\ ^1F^\circ_3$	30	2909.212	34363.50	$a\ ^5D_3$—$x\ ^3G^\circ_4$
10	2863.975	34906.26	$a\ ^5F_2$—$y\ ^3D^\circ_1$				$a\ ^3D_2$—50°_2
1	2864.618	34898.42	$a\ ^3G_3$—38°_4	5	2909.940	34354.91	$a\ ^3D_2$—49°_1
150	2866.653	34873.65	$a\ ^5F_3$—$y\ ^3D^\circ_2$	20	2910.425	34349.18	$a\ ^5D_0$—$u\ ^3D^\circ_1$
				10	2910.772	34345.09	$b\ ^3P_1$—33°_2
25	2867.465	34863.77	$a\ ^5D_4$—$x\ ^3F^\circ_4$				
25	2868.183	34855.05	$a\ ^3F_3$—$x\ ^3G_4$	5	2910.936	34343.15	$b\ ^3F_2$—$w\ ^5D^\circ_2$
30	2868.310	34853.50	$a\ ^5P_2$—$v\ ^3D_2$	2	2911.148	34340.65	$a\ ^3G_4$—17^4_4
8	2868.412	34852.26	$a\ ^3P_2$—6°_3	50	2912.433	34325.50	$a\ ^3F_2$—$u\ ^3D^\circ_2$
15	2868.544	34850.66	$a\ ^5P_2$—$w\ ^3D^\circ_1$	10	2912.745	34321.83	$a\ ^5D_3$—$v\ ^3D^\circ_2$
				60	2913.163	34316.90	$a\ ^3P_1$—11°_0
2	2868.945	34845.79	$a\ ^5D_2$—$y\ ^1D^\circ_2$				
40	2870.213	34830.40	$a\ ^5D_1$—$y\ ^1D^\circ_2$	50	2914.294	34303.58	$a\ ^3P_0$—9°_1
40	2871.186	34818.59	$a\ ^3G_4$—23°_3	25	2915.614	34288.05	$a\ ^3G_5$—$x\ ^1H^\circ_5$
100	2871.642	34813.07	$a\ ^3F_3$—$v\ ^3D^\circ_2$	150	2916.251	34280.56	$a\ ^5F_4$—$y\ ^5F^\circ_4$
50	2873.370	34792.13	$a\ ^3F_2$—$x\ ^3G^\circ_3$	40	2917.132	34270.21	$a\ ^3P_1$—9°_1
				50	2917.764	34262.79	$a\ ^3F_3$—$x\ ^3F^\circ_4$
25	2874.050	34783.90	$a\ ^5D_2$—$u\ ^3D^\circ_1$				
1000R	2874.984	34772.60	$a\ ^5F_5$—$y\ ^5F^\circ_5$	75	2919.604	34241.20	$a\ ^5F_1$—$z\ ^3P^\circ_1$
10	2875.316	34768.59	$a\ ^5D_1$—$u\ ^3D^\circ_1$	20	2920.254	34233.58	$a\ ^1G_4$—43°_3
40	2877.092	34747.12	$a\ ^3P_0$—$t\ ^3D^\circ_1$	1H	2920.765	34227.59	$a\ ^5P_3$—$y\ ^1F^\circ_3$
1	2877.339	34744.14	$b\ ^3F_2$—$w\ ^5D^\circ_1$	30	2920.949	34225.43	$a\ ^3P_0$—8°_1
				3	2921.140	34223.19	$a\ ^3F_4$—$x\ ^3D^\circ_3$
1	2877.489	34742.33	$b\ ^3F_4$—$w\ ^3G^\circ_4$				
50	2877.826	34738.26	$a\ ^5P_3$—$u\ ^3D^\circ_2$	3	2921.406	34220.08	$b\ ^3P_0$—45°_1
25	2879.358	34719.78	$a\ ^3F_2$—$y\ ^1D^\circ_2$	1	2923.677	34193.50	$a\ ^3G_5$—13^4_4
100	2879.756	34714.98	$a\ ^3F_4$—$x\ ^3F^\circ_3$	5	2923.804	34192.01	$a\ ^3P_1$—8°_1
10	2880.227	34709.30	$a\ ^3G_4$—22°_3	20	2925.067	34177.25	$a\ ^3P_2$—$x\ ^5F^\circ_3$
				2	2925.748	34169.30	$a\ ^3G_3$—28°_3
2	2880.506	34705.94	$a\ ^3G_3$—34°_3	5	2925.841	34168.21	$a\ ^5P_3$—$x\ ^3G^\circ_4$
60	2881.273	34696.70	$a\ ^5F_1$—$x\ ^5D^\circ_0$	60	2927.119	34153.29	$a\ ^1G_4$—42°_3
15	2882.577	34681.01	$b\ ^3P_2$—33°_2	50	2928.487	34137.34	$a\ ^3P_1$—$t\ ^3D^\circ_2$
			$a\ ^5P_1$—3°_1	1	2929.122	34129.94	$a\ ^3G_4$—$w\ ^3F^\circ_3$
5	2882.622	34680.47	$a\ ^3P_1$—$w\ ^5D^\circ_0$	40	2929.434	34126.30	$a\ ^5P_3$—$v\ ^3D^\circ_3$
75	2883.594	34668.78	$a\ ^5F_3$—$y\ ^3D^\circ_3$				
				5H	2932.593	34089.54	$a\ ^3G_3$—25°_3
50	2884.500	34657.89	$a\ ^3F_2$—$u\ ^3D^\circ_1$	75	2934.173	34071.19	$a\ ^3F_4$—$z\ ^1H^\circ_5$
80	2884.843	34653.77	$a\ ^5F_2$—$x\ ^5D^\circ_3$	2	2934.658	34065.56	$a\ ^1G_4$—40°_3
150	2886.528	34633.54	$a\ ^5F_2$—$z\ ^3P^\circ_1$	60	2936.005	34049.93	$a\ ^5D_2$—$y\ ^3S^\circ_1$
70	2887.993	34615.97	$a\ ^5F_4$—$y\ ^5F^\circ_3$	30	2936.247	34047.12	$a\ ^5F_2$—$y\ ^3D^\circ_3$
50	2888.624	34608.41	$a\ ^3G_4$—21°_5				
				30	2937.336	34034.50	$a\ ^5D_1$—$y\ ^3S^\circ_1$
1h	2889.047	34603.34	$a\ ^1G_4$—48°_3	1	2937.850	34028.54	$b\ ^3F_2$—6°_3
10	2890.879	34581.42	$b\ ^3P_0$—49°_1	75	2939.135	34013.67	$a\ ^5F_1$—$z\ ^3P^\circ_2$
50	2891.130	34578.41	$a\ ^3P_2$—$x\ ^1F^\circ_3$	25	2939.676	34007.41	$b\ ^3F_3$—$y\ ^3H^\circ_4$
60	2891.645	34572.26	$a\ ^3H_6$—$v\ ^3G^\circ_5$	80	2939.938	34004.38	$a\ ^3P_1$—$w\ ^5D^\circ_2$
10	2892.470	34562.39	$a\ ^5F_1$—$x\ ^5D^\circ_2$				
				100	2940.352	33999.59	$a\ ^5D_4$—$w\ ^3D^\circ_3$
20	2893.731	34547.34	$b\ ^3F_3$—$x\ ^1F^\circ_3$	1	2941.212	33989.65	$b\ ^3P_2$—23°_3
15	2895.802	34522.63	$a\ ^3G_4$—$s\ ^3D^\circ_3$	10	2941.762	33983.30	$a\ ^3D_2$—44°_3
100	2896.523	34514.04	$a\ ^5F_1$—$y\ ^3D^\circ_1$	60	2943.470	33963.58	$a\ ^5P_2$—$x\ ^3D^\circ_2$
50	2898.533	34490.10	$a\ ^5P_2$—$w\ ^3D^\circ_2$	100	2943.919	33958.40	$a\ ^5D_3$—$w\ ^3D^\circ_2$
3	2898.715	34487.94	$a\ ^3G_5$—14°_4				
				10	2944.380	33953.08	$b\ ^3F_3$—$x\ ^5F^\circ_4$
50	2899.716	34476.04	$b\ ^3F_2$—$t\ ^3D^\circ_2$	100	2946.981	33923.12	$a\ ^3F_3$—$x\ ^3D^\circ_2$
			$b\ ^3F_4$—$y\ ^1H^\circ_5$	2	2948.847	33901.65	$b\ ^3P_2$—$s\ ^3D^\circ_2$
1	2900.669	34464.71	$a\ ^1G_4$—47^4_4	150	2949.492	33894.24	$a\ ^3F_4$—1^4_4
25	2901.784	34451.47	$a\ ^5D_2$—$u\ ^3D^\circ_2$	2	2949.947	33889.01	$a\ ^5P_1$—$u\ ^3D^\circ_2$
50	2901.937	34449.65	$a\ ^3F_3$—$w\ ^3D^\circ_2$				
				50	2950.532	33882.29	$a\ ^3H_5$—$v\ ^3G^\circ_5$
50	2902.087	34447.87	$a\ ^3P_2$—$w\ ^5D^\circ_3$	60	2951.401	33872.31	$a\ ^5F_3$—$y\ ^5F^\circ_2$
25	2902.854	34438.77	$a\ ^3P_0$—$w\ ^5D^\circ_1$	80	2952.489	33859.84	$a\ ^5F_1$—$y\ ^3D^\circ_2$
40	2903.074	34436.16	$a\ ^5D_1$—$u\ ^3D^\circ_2$	1	2952.931	33854.77	$b\ ^3P_2$—$x\ ^5P^\circ_1$
5	2904.191	34422.91	$a\ ^5D_3$—$y\ ^1F^\circ_3$	125	2954.484	33836.97	$a\ ^5D_2$—$w\ ^3D^\circ_1$
10	2904.704	34416.83	$b\ ^3F_3$—$w\ ^5D^\circ_3$				

TABLE 3—Continued

Intensity	Wave-length	Wave number	Term combination	Intensity	Wave-length	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
50	2955. 348	33827. 08	$a\ ^3G_3$—22°_3	$2h$	3007. 88	33236. 32	$a\ ^5P_3$—$x\ ^3D^\circ_2$
20	2955. 593	33824. 28	$a\ ^5D_1$—$v\ ^3D^\circ_2$	75	3008. 262	33232. 10	$a\ ^3F_2$—$z\ ^1P^\circ_1$
20	2955. 833	33821. 53	$a\ ^5D_1$—$w\ ^3D^\circ_1$	75	3008. 797	33226. 19	$b\ ^3F_4$—$x\ ^3F^\circ_4$
5	2956. 133	33818. 10	$a\ ^3P_2$—4°_3	$1h$	3009. 537	33218. 02	$a\ ^3P_2$—$u\ ^3D^\circ_1$
4	2957. 166	33806. 28	$a\ ^3P_1$—$x\ ^5F^\circ_2$	20	3009. 687	33216. 37	$a\ ^5P_2$—$x\ ^3F^\circ_3$
100	2957. 996	33796. 80	$a\ ^3F_3$—$v\ ^3D^\circ_3$	40	3010. 501	33207. 39	$a\ ^3H_5$—51°_4
2	2958. 858	33786. 95	$b\ ^3F_3$—4°_3	3	3011. 607	33195. 19	$b\ ^3P_1$—18°_0
100	2959. 729	33777. 01	$a\ ^5D_4$—$x\ ^3F^\circ_3$ $b\ ^3P_0$—39°_1	75	3012. 915	33180. 78	$a\ ^5D_3$—$z\ ^1D^\circ_2$
40	2960. 965	33762. 91	$a\ ^5P_3$—$w\ ^3D^\circ_2$	75 1	3013. 354 3014. 070	33175. 95 33168. 07	$a\ ^3F_3$—$x\ ^3F^\circ_3$ $a\ ^1G_4$—28°_3
1	2961. 334	33758. 70	$a\ ^3D_3$—$v\ ^3G^\circ_4$				
75	2961. 685	33754. 70	$b\ ^3F_2$—$x\ ^1F^\circ_3$	1	3015. 008	33157. 75	$a\ ^3G_5$—$y\ ^1G^\circ_4$ $b\ ^3P_2$—$x\ ^5P^\circ_3$
100	2963. 714	33731. 59	$a\ F_4{}^3$—$y\ ^3G^\circ_4$	2	3016. 684	33139. 33	$a\ ^5P_2$—$x\ ^3F^\circ_2$
15	2964. 295	33724. 98	$a\ ^3D_2$—41°_2	200	3017. 235	33133. 28	$a\ ^5F_1$—$y\ ^5F^\circ_1$ $a\ ^5D_4$—$z\ ^1H^\circ_5$
150	2965. 168	33715. 06	$a\ ^5F_3$—$y\ ^5F^\circ_3$				
15	2965. 694	33709. 08	$a\ ^3H_5$—$v\ ^3G^\circ_4$	5	3019. 291	33110. 71	$a\ ^3D_2$—32°_2
20	2966. 549	33699. 36	$b\ ^3P_2$—20°_2	15	3019. 367	33109. 88	$a\ ^5P_3$—$v\ ^3D^\circ_3$
1	2967. 064	33693. 51	$b\ ^3P_2$—$s\ ^3D^\circ_3$	$1w$	3020. 218	33100. 55	$b\ ^3P_2$—$x\ ^5P^\circ_3$
50	2967. 342	33690. 36	$a\ ^3F_4$—$y\ ^3G^\circ_3$	150	3020. 871	33093. 40	$a\ ^5F_2$—$y\ ^5F^\circ_3$
30	2968. 398	33678. 37	$a\ ^3G_4$—$x\ ^1H^\circ_5$	20	3025. 085	33047. 30	$a\ ^3G_3$—$x\ ^5P^\circ_3$
30	2968. 468	33677. 58	$a\ ^3P_2$—3°_1	60	3027. 076	33025. 56	$a\ ^3H_4$—$v\ ^3G^\circ_5$
100	2968. 952	33672. 09	$a\ ^3F_3$—$z\ ^1D^\circ_2$	5	3029. 373	33000. 52	$a\ ^5P_1$—$z\ ^1S^\circ_0$
2	2969. 854	33661. 86	$a\ ^1H_5$—62°_4	1	3029. 948	32994. 26	$b\ ^3F_2$—4°_3
1	2971. 261	33645. 92	$a\ ^3G_3$—20°_2	60	3030. 776	32985. 25	$a\ ^5P_3$—$z\ ^1D^\circ_2$
25	2971. 757	33640. 30	$a\ ^3G_3$—$s\ ^3D^\circ_3$	10	3031. 107	32981. 65	$b\ ^3P_0$—26°_1
1	2972. 98	33626. 47	$a\ ^3D_1$—58°_1	50	3031. 899	32973. 03	$a\ ^5P_2$—$x\ ^3D^\circ_1$
100	2973. 976	33615. 21	$a\ ^5D_0$—$y\ ^3s^\circ_1$	100	3033. 449	32956. 18	$a\ ^5D_4$—1°_4
30	2974. 327	33611. 24	$a\ ^3P_2$—$x\ ^3P^\circ_2$	50	3034. 058	32949. 57	$a\ ^5D_2$—$x\ ^3D^\circ_2$
25	2975. 122	33602. 26	$b\ ^3P_2$—$w\ ^3F^\circ_2$	50	3035. 471	32934. 23	$a\ ^5D_1$—$x\ ^3D^\circ_2$
100	2976. 923	33581. 93	$a\ ^5F_4$—$y\ ^5F^\circ_5$	40	3036. 463	32923. 47	$a\ ^5D_0$—$z\ ^1P^\circ_1$
30	2978. 361	33565. 72	$b\ ^3P_1$—$s\ ^3D^\circ_2$	5	3037. 376	32913. 58	$a\ ^5P_1$—$w\ ^3D^\circ_2$
60	2979. 713	33550. 49	$a\ ^3D_2$—39°_1	40	3037. 961	32907. 24	$a\ ^5D_3$—$w\ ^3D^\circ_3$
75	2981. 934	33525. 50	$a\ ^5F_2$—$y\ ^5F^\circ_1$	50	3038. 169	32904. 99	$a\ ^5P_2$—$z\ ^1F^\circ_3$
10	2982. 522	33518. 89	$b\ ^3P_1$—$x\ ^5P^\circ_1$	10	3039. 674	32888. 70	$a\ ^3F_4$—$y\ ^3F^\circ_3$
20	2985. 812	33481. 96	$a\ ^3H_5$—52°_4	25	3039. 952	32885. 69	$a\ ^3P_2$—$u\ ^3D^\circ_2$
25	2986. 328	33476. 18	$a\ ^5D_2$—$w\ ^3D^\circ_2$	100	3040. 319	32881. 72	$a\ ^5F_4$—$z\ ^5P^\circ_3$
2	2987. 269	33465. 63	$a\ ^5D_4$—$z\ ^1F^\circ_3$	40	3041. 906	32864. 56	$a\ ^3F_3$—$z\ ^1F^\circ_3$
30	2987. 694	33460. 87	$a\ ^5D_1$—$w\ ^3D^\circ_2$	100	3042. 480	32858. 36	$a\ ^5F_1$—$y\ ^5F^\circ_2$
6	2987. 928	33458. 25	$a\ ^3G_3$—17°_4	60	3042. 829	32854. 59	$b\ ^3F_3$—$u\ ^3D^\circ_2$
10	2988. 089	33456. 45	$a\ ^3G_4$—12°_4	20	3043. 045	32852. 26	$a\ ^3H_4$—$v\ ^3G^\circ_4$
300	2988. 945	33446. 86	$a\ ^5F_5$—$y\ ^5D^\circ_4$	$1h$	3043. 553	32846. 78	$a\ ^3D_3$—44°_2
50	2989. 652	33438. 95	$a\ ^5P_2$—$w\ ^3D^\circ_3$ $a\ ^3D_2$—35°_3	125	3045. 715	32823. 47	$a\ ^3F_2$—$x\ ^3D^\circ_2$ $a\ ^5D_2$—$v\ ^3D^\circ_3$
40	2990. 289	33431. 83	$a\ ^5D_3$—$x\ ^3D^\circ_2$	2	3047. 187	32807. 61	$b\ ^3P_1$—15°_1
40	2992. 120	33411. 37	$a\ ^3P_1$—$y\ ^5s^\circ_2$	1	3048. 30	32795. 63	$a\ ^5P_1$—$z\ ^1P^\circ_1$
30	2992. 948	33402. 13	$a\ ^5D_0$—$w\ ^3D^\circ_1$	75	3048. 496	32793. 52	$a\ ^5D_4$—$y\ ^3G^\circ_4$
100	2993. 273	33398. 51	$a\ ^3F_3$—$w\ ^3D^\circ_3$	150	3048. 793	32790. 33	$a\ ^5F_3$—$z\ ^5P^\circ_2$
150	2994. 967	33379. 62	$a\ ^5F_3$—$y\ ^5F^\circ_4$	2	3049. 066	32787. 39	$b\ ^3F_2$—$x\ ^3P^\circ_2$
75	2996. 891	33358. 19	$a\ ^5D_2$—$z\ ^1P^\circ_1$	50	3051. 593	32760. 24	$b\ ^3F_4$—$v\ ^3D^\circ_3$
50	2997. 421	33352. 29	$a\ ^3P_2$—$x\ ^3G^\circ_3$	1	3052. 075	32755. 07	$a\ ^3D_2$—26°_1
50	2997. 613	33350. 15	$a\ ^3F_2$—$w\ ^3D^\circ_2$	15	3052. 334	32752. 29	$a\ ^5D_4$—$y\ ^3G^\circ_3$
60	3000. 217	33321. 21	$b\ ^3F_3$—$x\ ^3G^\circ_3$	3	3054. 563	32728. 39	$a\ ^3F_4$—$z\ ^3H^\circ_4$
60	3001. 634	33305. 48	$a\ ^5D_3$—$v\ ^3D^\circ_3$	150	3054. 934	32724. 42	$a\ ^5P_2$—$x\ ^3D^\circ_3$
5	3002. 050	33300. 86	$b\ ^3P_2$—$w\ ^3F^\circ_3$	30	3056. 108	32711. 84	$a\ ^5P_3$—$w\ ^3D^\circ_3$ $a\ ^3G_4$—$x\ ^1G^\circ_4$
20	3003. 473	33285. 09	$a\ ^5D_4$—$x\ ^3D^\circ_3$				
3	3003. 939	33279. 92	$a\ ^3P_2$—$y\ ^1D^\circ_2$	8	3056. 754	32704. 93	$a\ ^3D_1$—50°_2
15	3004. 211	33276. 91	$a\ ^5P_1$—$v\ ^3D^\circ_2$	50	3057. 353	32698. 52	$a\ ^5D_2$—$z\ ^1D^\circ_2$
50	3004. 598	33272. 62	$a\ ^3D_2$—33°_2	75	3058. 650	32684. 66	$a\ ^5D_3$—$x\ ^3F^\circ_3$
300	3006. 588	33250. 60	$a\ ^5F_2$—$y\ ^5F^\circ_2$ $a\ ^3G_4$—10°_4	75	3058. 795	32683. 11	$a\ ^5D_1$—$z\ ^1D^\circ_2$
				1	3059. 733	32673. 09	$b\ ^3P_0$—$x\ ^5P^\circ_1$

TABLE 3—Continued

Intensity	Wave-length	Wave number	Term combination	Intensity	Wave-length	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
25	3062.043	32648.44	$c\ {}^3F_4—63^\circ_3$	80	3118.687	32055.48	$a\ {}^3P_1—u\ {}^3D^\circ_1$
1	3062.914	32639.16	$a\ {}^1G_4—s\ {}^3D^\circ_3$	30	3120.542	32036.42	$a\ {}^3G_5—w\ {}^5D^\circ_4$
20w	3064.22	32625.25	$a\ {}^3H_4—52^\circ_4$	100	3124.164	31999.29	$a\ {}^3F_2—x\ {}^3F^\circ_2$
250	3064.834	32618.71	$b\ {}^3F_4—x\ {}^3G^\circ_5$	25	3124.362	31997.26	$a\ {}^5P_3—x\ {}^3D^\circ_3$
1	3065.882	32607.57	$a\ {}^5D_3—x\ {}^3F^\circ_2$	50	3124.601	31994.81	$a\ {}^1G_4—14^\circ_4$
5	3067.665	32588.61	$a\ {}^3D_3—41^\circ_2$	15	3125.651	31984.06	$a\ {}^3G_4—x\ {}^5F^\circ_3$
50	3069.181	32572.52	$a\ {}^3F_2—z\ {}^1D^\circ_2$	100	3125.958	31980.92	$a\ {}^5F_3—z\ {}^5P^\circ_3$
30	3071.484	32548.09	$a\ {}^3G_4—y\ {}^1G^\circ_4$	15	3126.613	31974.22	$a\ {}^3D_3—32^\circ_2$
80	3073.337	32528.47	$b\ {}^3F_2—x\ {}^3G^\circ_3$	2	3127.258	31967.63	$a\ {}^5D_4—y\ {}^3G^\circ_5$
60	3076.773	32492.15	$a\ {}^3F_4—z\ {}^1G^\circ_4$	2	3128.085	31959.18	$a\ {}^5D_2—x\ {}^3D^\circ_1$
20	3077.057	32489.15	$a\ {}^5P_3—x\ {}^3F^\circ_3$	1	3128.920	31950.65	$a\ {}^5D_4—y\ {}^3F^\circ_3$
30	3077.542	32484.03	$a\ {}^3P_2—y\ {}^3S^\circ_1$	2	3129.135	31948.45	$c\ {}^3F_2—63^\circ_3$
1	3078.679	32472.03	$a\ {}^3D_2—22^\circ_3$	30	3129.601	31943.70	$a\ {}^5D_1—x\ {}^3D^\circ_1$
50	3080.188	32456.12	$b\ {}^3F_2—y\ {}^1D^\circ_2$	75	3129.835	31941.31	$a\ {}^5F_1—z\ {}^5P^\circ_1$
75	3080.898	32448.64	$a\ {}^3P_1—x\ {}^3P^\circ_2$	100	3132.874	31910.33	$a\ {}^3P_2—w\ {}^3D^\circ_2$
60	3083.145	32425.00	$a\ {}^5D_2—w\ {}^3D^\circ_3$	4	3133.511	31903.84	$a\ {}^3H_5—31^\circ_4$
30	3084.521	32410.53	$b\ {}^3P_2—9^\circ_1$				$b\ {}^3P_2—7^\circ_3$
4	3084.877	32406.79	$a\ {}^3D_3—38^\circ_4$	20	3133.687	31902.05	$a\ {}^3G_5—y\ {}^3H^\circ_5$
5	3085.473	32400.53	$a\ {}^3G_5—x\ {}^5F^\circ_4$	1	3134.631	31892.44	$a\ {}^3D_2—w\ {}^3F^\circ_3$
75	3086.076	32394.20	$b\ {}^3F_2—u\ {}^3D^\circ_1$	2	3134.777	31890.95	$a\ {}^5D_2—z\ {}^1F^\circ_3$
20	3086.520	32389.54	$a\ {}^5P_2—y\ {}^3F^\circ_2$	2	3135.066	31888.01	$a\ {}^1D_2—43^\circ_3$
10	3086.771	32386.91	$a\ {}^5P_1—x\ {}^3D^\circ_2$	25	3135.933	31879.20	$b\ {}^3F_3—w\ {}^3D^\circ_2$
30	3086.929	32385.25	$a\ {}^3G_4—x\ {}^1F^\circ_3$	5	3136.349	31874.97	$a\ {}^3H_6—21^\circ_5$
1h	3087.924	32374.82	$a\ {}^3P_2—y\ {}^1F^\circ_3$	100	3136.554	31872.89	$a\ {}^5P_2—y\ {}^3P^\circ_1$
25	3088.078	32373.20	$a\ {}^5D_3—z\ {}^1F^\circ_3$	30	3136.911	31869.26	$a\ {}^3H_5—30^\circ_4$
1	3088.245	32371.45	$a\ {}^1D_2—50^\circ_2$	10	3138.761	31850.48	$a\ {}^3G_3—7^\circ_3$
80	3089.147	32362.00	$b\ {}^3F_4—w\ {}^3D^\circ_3$	50	3139.273	31845.28	$a\ {}^3G_4—y\ {}^3H^\circ_4$
60	3089.802	32355.14	$a\ {}^3F_3—1^\circ_3$	10	3140.086	31837.04	$a\ {}^3H_4—43^\circ_3$
50	3090.225	32350.71	$a\ {}^3H_4—51^\circ_4$	75	3140.485	31832.99	$a\ {}^3F_2—x\ {}^3D^\circ_1$
40	3090.896	32343.69	$b\ {}^3F_3—y\ {}^1F^\circ_3$	125	3140.979	31827.99	$b\ {}^3F_4—z\ {}^1F^\circ_3$
70	3091.867	32333.53	$a\ {}^5F_2—z\ {}^5P^\circ_1$	5	3142.522	31812.36	$a\ {}^3D_3—29^\circ_3$
100	3096.565	32284.48	$b\ {}^3F_3—x\ {}^3G^\circ_4$	1	3142.88	31808.74	$b\ {}^3P_1—w\ {}^5D^\circ_2$
40	3097.225	32277.60	$b\ {}^3P_2—t\ {}^3D^\circ_3$	150	3144.265	31794.72	$a\ {}^1G_4—x\ {}^1H^\circ_5$
75	3097.606	32273.63	$a\ {}^3P_2—v\ {}^3D^\circ_2$	1	3144.502	31792.33	$a\ {}^3P_2—z\ {}^1P^\circ_1$
3	3097.865	32270.93	$a\ {}^3P_2—w\ {}^3D^\circ_1$	1	3144.579	31791.55	$a\ {}^3G_5—2^\circ_6$
250	3099.284	32256.16	$a\ {}^5F_4—y\ {}^5D^\circ_4$	1	3144.640	31790.93	$a\ {}^3G_4—x\ {}^5F^\circ_4$
10	3100.582	32242.65	$b\ {}^3F_3—v\ {}^3D^\circ_2$	15	3144.715	31790 18	$a\ {}^5D_4—z\ {}^3H^\circ_4$
100	3100.836	32240.01	$a\ {}^5F_4—y\ {}^5D^\circ_3$	50	3146.075	31776.44	$a\ {}^5F_1—z\ {}^5P^\circ_2$
10	3102.364	32224.13	$a\ {}^3G_3—t\ {}^3D^\circ_3$	100	3147.214	31764.94	$a\ {}^3F_2—z\ {}^1F^\circ_3$
2	3103.748	32209.76	$b\ {}^3P_1—w\ {}^5D^\circ_1$	10	3148.021	31756.79	$a\ {}^3H_4—42^\circ_4$
50	3104.457	32202.41	$a\ {}^5D_2—x\ {}^3F^\circ_3$	75	3148.493	31752.03	$a\ {}^3F_4—z\ {}^3H^\circ_5$
50	3105.278	32193.90	$a\ {}^3D_2—w\ {}^3F^\circ_2$	4	3150.172	31735.11	$a\ {}^3D_2—15^\circ_1$
50	3105.407	32192.56	$a\ {}^5D_3—x\ {}^3D^\circ_3$	100	3150.699	31729.80	$a\ {}^5P_2—y\ {}^5P^\circ_1$
			$a\ {}^3F_3—y\ {}^3G^\circ_4$	80	3151.363	31723.12	$a\ {}^3P_1—u\ {}^3D^\circ_2$
50	3106.837	32177.74	$a\ {}^5P_3—z\ {}^1F^\circ_3$	2	3151.686	31719.86	$a\ {}^1D_2—40^\circ_3$
150	3107.720	32168.60	$a\ {}^5F_2—z\ {}^5P^\circ_2$	1	3152.611	31710.56	$a\ {}^5D_2—x\ {}^3D^\circ_3$
30	3108.423	32161.32	$a\ {}^3F_4—y\ {}^5P^\circ_3$	1h	3153.583	31700.78	$b\ {}^3P_0—y\ {}^1P^\circ_1$
35	3109.394	32151.28	$a\ {}^3F_3—y\ {}^3G^\circ_3$	150	3153.831	31698.29	$a\ {}^5P_2—y\ {}^3P^\circ_2$
75	3110.536	32139.48	$b\ {}^3F_4—x\ {}^3F^\circ_3$	25	3154.428	31692.29	$b\ {}^3F_3—x\ {}^3F^\circ_4$
50	3111.910	32125.29	$a\ {}^5D_2—x\ {}^3F^\circ_2$	3	3155.895	31677.56	$a\ {}^3D_3—28^\circ_3$
30	3112.299	32121.27	$b\ {}^3P_1—11^\circ_0$	25	3156.821	31668.27	$a\ {}^5P_3—1^\circ_4$
70	3112.676	32117.38	$a\ {}^3P_1—y\ {}^1D^\circ_2$	20	3157.090	31665.57	$a\ {}^3G_3—y\ {}^1G^\circ_4$
80	3113.393	32109.99	$a\ {}^5D_1—x\ {}^3F^\circ_2$	25	3157.414	31662.32	$a\ {}^5P_3—y\ {}^3F^\circ_2$
8	3115.436	32088.93	$a\ {}^3P_0—u\ {}^3D^\circ_1$	20	3157.626	31660.20	$b\ {}^3F_2—y\ {}^3S^\circ_1$
50	3116.657	32076.36	$a\ {}^3F_2—x\ {}^3F^\circ_3$				$a\ {}^5D_3—y\ {}^3G^\circ_3$
25	3116.834	32074.54	$b\ {}^3P_1—9^\circ_1$	15	3157.850	31657.95	$a\ {}^3F_3—y\ {}^3P^\circ_2$
			$c\ {}^3F_4—62^\circ_4$	1	3158.057	31655.88	$a\ {}^3G_5—w\ {}^3G^\circ_4$
3	3117.454	32068.16	$a\ {}^3H_4—47^\circ_4$	125	3158.899	31647.44	$b\ {}^3F_4—x\ {}^3D^\circ_3$
4	3117.631	32066.34	$a\ {}^3D_1—41^\circ_2$	200	3159.935	31637.06	$a\ {}^5F_3—y\ {}^5D^\circ_2$
80	3118.065	32061.88	$b\ {}^3F_2—u\ {}^3D^\circ_2$	1	3160.924	31627.16	$a\ {}^3D_3—27^\circ_4$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
3	3162.223	31614.17	$a\ ^3D_1$—33°_2	3	3209.489	31148.61	$a\ ^3D_3$—$s\ ^3D^\circ_3$
1*h*	3162.589	31610.52	$b\ ^3P_1$—$x\ ^5F^\circ_2$	30	3210.169	31142.01	$a\ ^3P_0$—$w\ ^3D^\circ_1$
25	3163.831	31598.11	$a\ ^3D_3$—25°_3	3	3211.144	31132.56	$a\ ^3P_2$—$z\ ^1D^\circ_2$
25	3165.195	31584.49	$a\ ^3F_2$—$x\ ^3D^\circ_3$	100	3212.983	31114.74	$b\ ^3F_4$—$y\ ^3G^\circ_3$
1	3165.887	31577.59	$a\ ^3H_5$—27°_4	50	3213.355	31111.13	$a\ ^3P_1$—$v\ ^3D^\circ_2$
2	3166.339	31573.08	$a\ ^1G_4$—12°_4	50	3214.335	31101.65	$b\ ^3F_3$—$z\ ^1D^\circ_2$ $a\ ^3G_3$—$x\ ^5F^\circ_3$
5	3167.381	31562.69	$a\ ^5P_1$—$x\ ^3F^\circ_2$				
8	3167.820	31558.32	$a\ ^1D_2$—39°_1	50	3215.910	31086.42	$b\ ^3F_2$—$w\ ^3D^\circ_2$
40	3168.243	31554.10	$a\ ^5D_4$—$z\ ^1G^\circ_4$	100	3216.528	31080.45	$a\ ^5F_3$—$z\ ^3F^\circ_2$
30	3168.489	31551.65	$b\ ^3P_2$—$y\ ^5S^\circ_2$	5	3217.523	31070.84	$a\ ^3D_3$—19°_4
60	3168.560	31550.95	$b\ ^3F_2$—$y\ ^1F^\circ_3$	1	3218.920	31057.35	$a\ ^3D_3$—$w\ ^3F^\circ_2$
80	3170.088	31535.74	$a\ ^3G_5$—$w\ ^3G^\circ_5$	8	3219.148	31055.15	$a\ ^1G_4$—$w\ ^3F^\circ_4$
50	3171.239	31524.30	$a\ ^5D_0$—$x\ ^3D^\circ_1$	50	3220.081	31046.15	$a\ ^3G_4$—$w\ ^3G^\circ_4$
25	3173.110	31505.71	$a\ ^5P_3$—$y\ ^3G^\circ_4$	200	3223.279	31015.35	$a\ ^5F_2$—$y\ ^5D^\circ_2$
25	3173.394	31502.89	$a\ ^3G_3$—$x\ ^1F^\circ_3$	25	3224.658	31002.09	$a\ ^3D_2$—9°_1
60	3174.128	31495.60	$b\ ^3F_4$—$z\ ^1H^\circ_5$	100	3226.380	30985.54	$a\ ^5F_1$—$y\ ^5D^\circ_1$
50	3176.286	31474.21	$a\ ^3D_2$—$y\ ^1P^\circ_1$	75	3227.889	30971.06	$a\ ^5P_3$—$y\ ^3P^\circ_2$
25	3178.736	31449.95	$b\ ^3F_2$—$v\ ^3D^\circ_2$	40	3228.158	30968.48	$b\ ^3F_2$—$z\ ^1P^\circ_1$
2	3179.025	31447.09	$a\ ^1D_2$—35°_3	150	3228.531	30964.90	$a\ ^5P_2$—$y\ ^5P^\circ_2$
30	3179.263	31444.73	$a\ ^3D_3$—23°_3	2	3228.724	30963.05	$a\ ^3G_3$—$y\ ^3H^\circ_4$
5	3181.189	31425.70	$b\ ^3P_2$—$w\ ^5D^\circ_3$	50	3229.768	30953.04	$a\ ^3F_3$—$z\ ^1G^\circ_4$
1	3183.137	31406.47	$a\ ^3H_4$—36°_5	30	3230.621	30944.87	$a\ ^3H_6$—$x\ ^1H^\circ_5$
2	3183.513	31402.76	$a\ ^3H_5$—24°_5	80	3232.753	30924.46	$a\ ^3F_3$—$y\ ^5P^\circ_2$
1	3184.177	31396.21	$a\ ^5P_1$—$x\ ^3D^\circ_1$ $a\ ^3H_4$—35°_3	5	3233.519	30917.14	$a\ ^3H_5$—17°_4
				10	3234.428	30908.45	$a\ ^3G_3$—$x\ ^5F^\circ_4$
50	3184.847	31389.60	$a\ ^3G_5$—$y\ ^1H^\circ_5$	100	3238.537	30869.23	$a\ ^3D_2$—$t\ ^3D^\circ_2$
10	3185.447	31383.69	$a\ ^3P_2$—$x\ ^3D^\circ_2$	30	3238.780	30866.92	$a\ ^5F_2$—$z\ ^3D^\circ_1$
200	3186.042	31377.83	$a\ ^5F_2$—$y\ ^5D^\circ_1$	30	3239.596	30859.14	$a\ ^3P_2$—$w\ ^3D^\circ_3$ $a\ ^5D_2$—$y\ ^3P^\circ_1$
1	3186.584	31372.49	$a\ ^3G_3$—$w\ ^5D^\circ_3$				
1	3187.822	31360.31	$a\ ^5D_1$—$y\ ^3F^\circ_2$	10	3239.686	30858.28	$a\ ^5D_3$—$y\ ^3F^\circ_3$
				1	3239.928	30855.98	$a\ ^3D_3$—16°_3
40	3187.939	31359.16	$a\ ^5F_2$—$z\ ^5P^\circ_3$ $a\ ^1D_2$—34°_3	100	3241.236	30843.53	$a\ ^5D_1$—$y\ ^3P^\circ_1$
				1*h*	3241.786	30838.29	$b\ ^1D_1$—63°_3
200	3188.340	31355.22	$a\ ^5F_3$—$y\ ^5D^\circ_4$	40	3242.159	30834.75	$a\ ^3P_1$—$z\ ^1S^\circ_0$
25	3188.609	31352.57	$b\ ^3F_3$—$x\ ^3D^\circ_2$	25	3242.850	30828.18	$a\ ^1G_4$—$x\ ^1G^\circ_4$ $b\ ^3F_3$—$w\ ^3D^\circ_3$
30	3188.916	31349.56	$a\ ^3F_3$—$y\ ^3F^\circ_3$				
30	3189.297	31345.81	$a\ ^5F_5$—$z\ ^5G^\circ_4$	100	3243.506	30821.94	$a\ ^3F_4$—$x\ ^5D^\circ_3$
20	3189.726	31341.60	$a\ ^3G_5$—$y\ ^3H^\circ_6$	10	3244.334	30814.08	$a\ ^5D_4$—$z\ ^3H^\circ_5$
200	3189.979	31339.11	$a\ ^5F_3$—$y\ ^5D^\circ_3$	15	3244.456	30812.92	$a\ ^5P_1$—$y\ ^3F^\circ_2$
20	3191.778	31321.45	$a\ ^3P_1$—$y\ ^3S^\circ_1$	2	3246.257	30795.82	$b\ ^3P_2$—4°_3
100	3192.068	31318.60	$b\ ^3F_4$—1°_4	15	3248.841	30771.33	$a\ ^3G_5$—$z\ ^3I^\circ_5$ $a\ ^3H_4$—28°_3
40	3193.509	31304.47	$a\ ^1H_5$—61°_4				
100	3194.746	31292.35	$a\ ^3G_4$—$y\ ^3H^\circ_5$	50	3250.002	30760.34	$a\ ^5D_4$—$y\ ^3F^\circ_4$
15	3195.317	31286.75	$b\ ^3H_4$—63°_3	5	3250.458	30756.02	$a\ ^3D_3$—$w\ ^3F^\circ_3$
1	3195.909	31280.96	$a\ ^1D_2$—33°_2	50	3251.327	30747.80	$a\ ^3P_1$—$w\ ^3D^\circ_2$
200	3196.606	31274.14	$a\ ^5F_1$—$y\ ^5D^\circ_0$	10	3251.893	30742.45	$a\ ^3G_3$—4°_3
				10	3252.540	30736.34	$a\ ^3D_2$—$w\ ^5D^\circ_2$
40	3198.329	31257.29	$a\ ^3P_2$—$v\ ^3D^\circ_3$	10	3252.898	30732.96	$a\ ^3F_2$—$y\ ^3P^\circ_1$
15	3199.119	21249.58	$a\ ^3F_2$—$y\ ^3F^\circ_2$	15	3252.993	30732.06	$a\ ^3G_5$—$x\ ^3G^\circ_4$
1	3199.528	31245.58	$b\ ^3P_2$—5°_2	80	3254.539	30717.46	$a\ ^5F_2$—$y\ ^5D^\circ_3$
70	3201.512	31226.22	$b\ ^3F_3$—$v\ ^3D^\circ_3$	80	3254.707	30715.87	$a\ ^5D_2$—$y\ ^5P^\circ_1$
3	3201.812	31223.29	$a\ ^5D_4$—$y\ ^5P^\circ_3$	75	3256.334	30700.53	$a\ ^5D_1$—$y\ ^5P^\circ_1$
40	3202.598	31215.63	$b\ ^3P_1$—$y\ ^5S^\circ_2$	5	3256.611	30697.92	$a\ ^5D_3$—$z\ ^3H^\circ_4$
75	3204.071	31201.28	$a\ ^5F_4$—$z\ ^3F^\circ_3$	75	3258.042	30684.43	$a\ ^5D_2$—$y\ ^3P^\circ_2$
50	3205.318	31189.14	$a\ ^3F_3$—$z\ ^3H^\circ_4$	100	3259.677	30669.04	$a\ ^5D_1$—$y\ ^3P^\circ_2$
2	3205.736	31185.07	$a\ ^3H_5$—21°_5	10	3260.167	30664.43	$a\ ^1G_4$—$y\ ^1G^\circ_4$
2	3206.491	31177.73	$a\ ^5D_2$—$y\ ^3G^\circ_3$	400	3260.367	30662.55	$a\ ^5F_4$—$z\ ^3G^\circ_3$
6	3207.635	31166.61	$a\ ^5D_3$—$y\ ^3P^\circ_2$	60	3261.128	30655.40	$b\ ^3P_2$—3°_1
25	3208.419	31159.00	$a\ ^3G_4$—$x\ ^3G^\circ_3$	5	3263.131	30636.58	$a\ ^3P_2$—$x\ ^3F^\circ_3$
6	3208.732	31155.96	$b\ ^3F_4$—$y\ ^3G^\circ_4$	100	3263.856	30629.78	$a\ ^3P_1$—$z\ ^1P^\circ_1$
8	3208.813	31155.17	$b\ ^3P_2$—$x\ ^5F^\circ_3$	100	3264.561	30623.16	$a\ ^5F_1$—$y\ ^5D^\circ_2$
1	3209.303	31150.41	$b\ ^3P_0$—8°_1	100	3264.663	30622.21	$a\ ^3F_3$—$y\ ^5P^\circ_3$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}	
2	3265. 649	30612. 96	$a\ ^3D_3$—$x\ ^5P^\circ_2$
125	3266. 453	30605. 42	$b\ ^3F_3$—$x\ ^3F^\circ_3$
200	3268. 214	30588. 93	$b\ ^3P_2$—$x\ ^3P^\circ_2$
2	3271. 490	30558. 31	$a\ ^3F_2$—$y\ ^3P^\circ_2$
2	3272. 806	30546. 02	$a\ ^3H_4$—24°_5
200	3273. 082	30543. 44	$a\ ^5P_2$—$z\ ^3S^\circ_1$
3	3273. 612	30538. 50	$a\ ^3H_4$—23°_3
			$a\ ^3D_2$—$x\ ^5F^\circ_2$
200	3274. 691	30528. 43	$b\ ^3F_3$—$x\ ^3F^\circ_2$
125	3277. 564	30501. 67	$a\ ^1G_4$—$x\ ^1F^\circ_3$
100	3280. 462	30474. 73	$a\ ^5F_1$—$z\ ^3D^\circ_1$
8	3281. 593	30464. 23	$a\ ^3D_1$—18°_0
75	3281. 861	30461. 74	$a\ ^5D_3$—$z\ ^1G^\circ_4$
10	3282. 605	30454. 84	$a\ ^3H_5$—14°_4
150	3284. 935	30433. 24	$a\ ^5D_3$—$y\ ^5P^\circ_2$
25	3285. 377	30429. 14	$a\ ^3H_4$—22°_3
25	3285. 915	30424. 16	$a\ ^5D_0$—$y\ ^3P^\circ_1$
100h	3289. 244	30393. 37	$a\ ^3P_2$—$x\ ^3D^\circ_1$
75	3291. 119	30376. 05	$a\ ^5D_2$—$y\ ^3F^\circ_3$
60	3291. 657	30371. 09	$a\ ^1G_4$—$w\ ^5D^\circ_3$
500	3294. 109	30348. 48	$a\ ^5F_5$—$z\ ^3F^\circ_4$
100	3296. 116	30330. 00	$b\ ^3F_4$—$y\ ^3G^\circ_5$
			$b\ ^3P_2$—$x\ ^3G^\circ_3$
80	3296. 645	30325. 14	$a\ ^3P_2$—$z\ ^1F^\circ_3$
80	3297. 259	30319. 49	$b\ ^3P_1$—3°_1
100	3297. 960	30313. 05	$b\ ^3F_4$—$y\ ^3F^\circ_3$
30	3298. 408	30308. 93	$b\ ^3F_2$—$z\ ^1D^\circ_2$
100	3299. 336	30300. 40	$a\ ^5F_3$—$z\ ^3F^\circ_3$
8	3299. 788	30296. 26	$a\ ^5P_1$—$y\ ^3P^\circ_1$
500	3301. 593	30279. 69	$a\ ^5F_5$—$z\ ^5G^\circ_5$
75	3301. 911	30276. 78	$a\ ^3G_3$—$x\ ^3G^\circ_3$
5	3302. 182	30274. 29	$a\ ^5P_1$—$y\ ^3P^\circ_0$
100	3303. 998	30257. 65	$b\ ^3P_2$—$y\ ^1D^\circ_2$
1	3304. 288	30255. 00	$a\ ^3H_5$—$x\ ^1H^\circ_5$
40	3304. 502	30253. 04	$b\ ^3P_1$—$x\ ^3P^\circ_2$
40	3304. 637	30251. 80	$a\ ^5F_3$—$z\ ^7P^\circ_2$
50	3304. 789	30250. 41	$a\ ^3F_2$—$y\ ^3F^\circ_3$
20	3304. 820	30250. 13	$a\ ^5F_5$—$z\ ^7P^\circ_4$
1	3305. 653	30242. 50	$a\ ^3H_4$—$s\ ^3D^\circ_3$
300	3306. 179	30237. 69	$a\ ^5P_3$—$y\ ^5P^\circ_2$
75	3307. 985	30221. 18	$a\ ^3P_1$—$x\ ^3D^\circ_2$
50	3308. 624	30215. 35	$a\ ^3F_4$—$y\ ^3D^\circ_3$
10	3309. 834	30204. 30	$a\ ^3G_3$—$y\ ^1D^\circ_2$
8	3310. 082	30202. 04	$a\ ^1D_2$—$w\ ^3F^\circ_2$
75	3310. 958	30194. 05	$a\ ^5F_4$—$z\ ^7P^\circ_3$
2	3312. 313	30181. 70	$a\ ^3G_4$—$y\ ^1F^\circ_3$
2	3314. 512	30161. 67	$a\ ^3G_4$—$z\ ^3I^\circ_5$
20	3314. 770	30159. 33	$a\ ^3F_3$—$y\ ^3F^\circ_4$
40	3315. 052	30156. 76	$a\ ^5P_2$—$x\ ^5D^\circ_1$
80	3315. 255	30154. 91	$a\ ^5F_4$—$z\ ^5G^\circ_4$
20	3315. 438	30153. 25	$a\ ^5P_1$—$y\ ^5P^\circ_1$
2	3315. 994	30148. 19	$a\ ^3D_2$—$x\ ^1F^\circ_3$
150	3316. 380	30144. 68	$a\ ^3P_2$—$x\ ^3D^\circ_3$
20	3316. 908	30139. 89	$a\ ^3G_5$—$x\ ^3F^\circ_4$
100	3317. 883	30131. 03	$a\ ^5D_3$—$y\ ^5P^\circ_3$
40	3318. 821	30122. 51	$a\ ^3G_4$—$x\ ^3G^\circ_4$
40	3318. 900	30121. 80	$a\ ^5P_1$—$y\ ^3P^\circ_2$
60	3319. 527	30116. 11	$a\ ^5F_3$—$z\ ^3D^\circ_2$
25	3319. 801	30113. 62	$b\ ^3F_3$—$x\ ^3D^\circ_3$
60	3321. 248	30100. 50	$a\ ^1G_4$—$x\ ^5F^\circ_3$
5h	3321. 644	30096. 92	$a\ ^1P_1$—58°_1
1	3323. 213	30082. 71	$a\ ^3D_3$—12°_4
100	3324. 999	30066. 55	$a\ ^5F_1$—$z\ ^3F^\circ_2$
			$a\ ^1H_5$—$v\ ^3G^\circ_5$
25	3328. 456	30035. 32	$b\ ^3F_2$—$w\ ^3D^\circ_3$
125	3332. 641	29997. 61	$a\ ^3F_4$—$x\ ^5D^\circ_4$
150	3335. 689	29970. 20	$a\ ^3P_1$—$z\ ^1D^\circ_2$
60	3336. 631	29961. 73	$a\ ^1G_4$—$y\ ^3H^\circ_4$
60	3337. 829	29950. 98	$a\ ^5D_2$—$y\ ^5P^\circ_2$
500	3339. 555	29935. 50	$a\ ^5P_3$—$y\ ^5P^\circ_3$
			$a\ ^5D_1$—$y\ ^5P^\circ_2$
60	3341. 090	29921. 75	$b\ ^3P_1$—$y\ ^1D^\circ_2$
150	3341. 665	29916. 60	$b\ ^3F_4$—$z\ ^1G^\circ_4$
6	3342. 709	29907. 26	$a\ ^1G_4$—$x\ ^5F^\circ_4$
1	3343. 431	29900. 80	$a\ ^1D_2$—$w\ ^3F^\circ_3$
1	3344. 266	29893. 33	$a\ ^1H_5$—$v\ ^3G^\circ_4$
75	3344. 535	29890. 93	$a\ ^5F_5$—$z\ ^3G^\circ_4$
75	3345. 316	29883. 95	$a\ ^5D_4$—$x\ ^5D^\circ_3$
100	3347. 617	29863. 41	$b\ ^3P_2$—$u\ ^3D^\circ_2$
50	3348. 017	29859. 84	$b\ ^3P_1$—$u\ ^3D^\circ_1$
75	3348. 704	29853. 72	$a\ ^5F_4$—$z\ ^3D^\circ_3$
30	3350. 550	29837. 27	$a\ ^3D_2$—5°_2
2	3351. 695	29827. 08	$a\ ^3H_5$—10°_4
100	3351. 930	29824. 99	$a\ ^3F_2$—$y\ ^5P^\circ_2$
10	3352. 970	29815. 74	$a\ ^3D_1$—$y\ ^1P^\circ_1$
60	3353. 310	29812. 71	$b\ ^3F_2$—$x\ ^3F^\circ_3$
100	3353. 648	29809. 71	$a\ ^3P_2$—$y\ ^3F^\circ_2$
50	3356. 201	29787. 03	$a\ ^3D_1$—$t\ ^3D^\circ_1$
25	3356. 476	29784. 59	$b\ ^3F_3$—1°_4
3	3357. 15	29778. 61	$b\ ^3F_3$—$y\ ^3F^\circ_2$
200	3359. 095	29761. 37	$a\ ^5F_3$—$z\ ^3G^\circ_3$
1	3359. 507	29757. 72	$a\ ^1D_2$—$x\ ^5P^\circ_2$
50	3361. 145	29743. 22	$a\ ^1D_2$—15°_1
100	3362. 007	29735. 60	$b\ ^3F_2$—$x\ ^3F^\circ_2$
50	3362. 337	29732. 68	$a\ ^3D_3$—$t\ ^3D^\circ_2$
60	3364. 100	29717. 10	$c\ ^3F_4$—61°_4
250	3368. 455	29678. 67	$a\ ^5F_2$—$z\ ^3F^\circ_3$
50	3369. 674	29667. 94	$a\ ^5D_3$—$y\ ^3F^\circ_4$
125	3371. 863	29648. 68	$a\ ^5D_2$—$y\ ^5P^\circ_3$
75	3373. 986	29630. 03	$a\ ^5F_2$—$z\ ^7P^\circ_2$
125	3374. 656	29624. 14	$a\ ^5P_2$—$x\ ^5D^\circ_2$
50	3374. 901	29621. 99	$b\ ^3F_3$—$y\ ^3G^\circ_4$
15	3376. 058	29611. 84	$a\ ^3P_2$—$y\ ^3G^\circ_3$
1	3377. 633	29598. 03	$a\ ^3H_4$—14°_4
125	3378. 034	29594. 52	$a\ ^5F_5$—$z\ ^7F^\circ_4$
25	3379. 033	29585. 77	$b\ ^3F_4$—$y\ ^5P^\circ_3$
40	3379. 267	29583. 72	$a\ ^3F_3$—$x\ ^5D^\circ_2$
100	3379. 608	29580. 74	$b\ ^3F_3$—$y\ ^3G^\circ_3$
100	3380. 173	29575. 79	$a\ ^5P_2$—$y\ ^3D^\circ_1$
50	3380. 916	29569. 29	$b\ ^3F_2$—$x\ ^3D^\circ_1$
125	3385. 161	29532. 21	$a\ ^3G_5$—$x\ ^3G^\circ_5$
2	3385. 403	29530. 10	$a\ ^3G_4$—$x\ ^3F^\circ_4$
30	3385. 480	29529. 43	$a\ ^5D_2$—$z\ ^3S^\circ_1$
50	3385. 704	29527. 48	$b\ ^3P_1$—$u\ ^3D^\circ_2$
50	3386. 254	29522. 68	$a\ ^3F_2$—$y\ ^5P^\circ_3$
50	3387. 232	29514. 16	$a\ ^5D_1$—$z\ ^3S^\circ_1$
200	3388. 710	29501. 29	$b\ ^3F_2$—$z\ ^1F^\circ_3$
150	3389. 503	29494. 38	$a\ ^5F_2$—$z\ ^3D^\circ_2$
16	3390. 899	29482. 24	$a\ ^1D_2$—$y\ ^1P^\circ_1$
60	3391. 895	29473. 58	$b\ ^3P_0$—3°_1
2	3392. 027	29472. 44	$a\ ^5P_3$—$y\ ^3F^\circ_4$

TABLE 3—Continued

Intensity	Wave-length	Wave number	Term combination
	A	cm^{-1}	
300	3392. 533	29468. 04	$a\ {}^5F_5$—$..\ {}^7F_5^\circ$
2	3393. 259	29461. 74	$b\ {}^3P_2$—$y\ {}^3S_1^\circ$
50	3399. 383	29408. 66	$a\ {}^1G_4$—$y\ {}^3H_5^\circ$
4	3399. 983	29403. 47	$a\ {}^3F_2$—$z\ {}^3S_1^\circ$
4	3400. 594	29398. 19	$a\ {}^3H_4$—$x\ {}^1H_5^\circ$
20	3400. 750	29396. 84	$a\ {}^3P_1$—$x\ {}^3F_2^\circ$
20	3401. 508	29390. 29	$a\ {}^3D_1$—11_0°
500	3401. 740	29388. 29	$a\ {}^5P_1$—$y\ {}^5P_2^\circ$
6	3403. 779	29370. 69	$a\ {}^3G_5$—$z\ {}^3I_6^\circ$
3	3405. 147	29358. 89	$a\ {}^3D_3$—7_3°
50	3405. 885	29352. 52	$b\ {}^3P_2$—$y\ {}^1F_3^\circ$
60	3406. 598	29346. 38	$a\ {}^5F_4$—$z\ {}^5G_3^\circ$
2	3406. 914	29343. 66	$a\ {}^3D_1$—9_1°
1h	3407. 581	29337. 91	$a\ {}^3D_3$—$x\ {}^1G_4^\circ$
400	3409. 279	29323. 30	$a\ {}^5P_2$—$x\ {}^5D_3^\circ$
20	3409. 573	29320. 77	$b\ {}^3F_2$—$x\ {}^3D_3^\circ$
300	3411. 637	29303. 04	$a\ {}^5P_2$—$z\ {}^3P_1^\circ$
10	3412. 076	29299. 27	$a\ {}^3G_3$—$y\ {}^1F_3^\circ$
100	3412. 799	29293. 06	$a\ {}^5F_3$—$z\ {}^7P_3^\circ$ $a\ {}^3P_2$—$y\ {}^3P_1^\circ$
4	3413. 719	29285. 16	$a\ {}^3D_3$—6_3°
4	3413. 983	29282. 90	$a\ {}^3F_3$—$x\ {}^5D_3^\circ$
100	3414. 641	29277. 26	$a\ {}^5D_4$—$y\ {}^3D_3^\circ$
6	3414. 843	29275. 53	$a\ {}^1G_4$—$x\ {}^3G_3^\circ$
80	3416. 188	29264. 00	$a\ {}^3P_0$—$x\ {}^3D_1^\circ$
1000R	3417. 332	29254. 20	$a\ {}^5F_3$—$z\ {}^5G_4^\circ$
20	3417. 648	29251. 50	$b\ {}^3P_2$—$v\ {}^3D_2^\circ$
50	3417. 975	29248. 70	$b\ {}^3P_2$—$w\ {}^3D_1^\circ$
2	3418. 154	29247. 17	$a\ {}^3D_2$—3_1°
50	3419. 248	29237. 81	$a\ {}^5F_1$—$z\ {}^7P_2^\circ$
300	3420. 090	29230. 61	$a\ {}^3P_1$—$x\ {}^3D_1^\circ$
8	3422. 414	29210. 77	$a\ {}^3D_1$—$t\ {}^3D_2^\circ$
30	3425. 952	29180. 60	$a\ {}^3D_2$—$x\ {}^3P_2^\circ$
10	3426. 434	29176. 50	$b\ {}^3F_4$—$z\ {}^3H_5^\circ$ $a\ {}^3H_4$—12_4°
1500R	3428. 319	29160. 45	$a\ {}^5F_5$—$z\ {}^7F_6^\circ$
80	3428. 628	29157. 83	$a\ {}^5F_4$—$z\ {}^3F_4^\circ$
200	3429. 547	29150. 01	$a\ {}^3P_2$—$y\ {}^5P_1^\circ$
2	3430. 387	29142. 88	$a\ {}^5D_2$—$x\ {}^5D_1^\circ$
500	3430. 764	29139. 67	$a\ {}^5F_2$—$z\ {}^3G_3^\circ$
150	3432. 204	29127. 45	$a\ {}^5D_1$—$x\ {}^5D_1^\circ$
400	3432. 755	29122. 77	$b\ {}^3F_4$—$y\ {}^3F_4^\circ$
600	3433. 255	29118. 53	$a\ {}^3P_2$—$y\ {}^3P_2^\circ$
200	3435. 183	29102. 19	$a\ {}^5F_1$—$z\ {}^3D_2^\circ$
20	3436. 330	29092. 47	$a\ {}^5D_3$—$x\ {}^5D_2^\circ$
3000R	3436. 737	29089. 03	$a\ {}^5F_4$—$z\ {}^5G_5^\circ$
400	3438. 369	29075. 22	$a\ {}^5P_2$—$z\ {}^3P_2^\circ$
500	3440. 207	29059. 69	$a\ {}^5D_4$—$x\ {}^5D_4^\circ$ $a\ {}^5F_4$—$z\ {}^7P_4^\circ$
40	3443. 153	29034. 83	$a\ {}^3F_3$—$z\ {}^3P_2^\circ$
20	3445. 296	29016. 77	$a\ {}^3F_2$—$x\ {}^5D_1^\circ$
6	3445. 939	29011. 35	$a\ {}^3D_3$—$x\ {}^1F_3^\circ$
50	3446. 070	29010. 25	$a\ {}^1D_2$—9_1°
50	3446. 490	29006. 71	$a\ {}^3D_3$—$y\ {}^5S_2^\circ$
500	3448. 959	28985. 95	$b\ {}^3F_2$—$y\ {}^3F_2^\circ$
1	3450. 821	28970. 31	$a\ {}^3H_4$—10_4°
1	3451. 224	28966. 93	$a\ {}^5P_1$—$z\ {}^3S_1^\circ$
400	3452. 906	28952. 82	$a\ {}^5F_3$—$z\ {}^3D_3^\circ$
30	3455. 385	28932. 05	$a\ {}^1D_2$—8_1°
200	3456. 621	28921. 70	$a\ {}^5P_2$—$y\ {}^3D_2^\circ$
2	3457. 688	28912. 78	$b\ {}^3P_1$—$w\ {}^3D_1^\circ$
40	3459. 585	28896. 93	$a\ {}^5P_3$—$x\ {}^5D_3^\circ$
2	3460. 647	28888. 06	$b\ {}^3P_2$—$w\ {}^3D_2^\circ$
60	3461. 930	28877. 35	$a\ {}^1D_2$—$t\ {}^3D_2^\circ$
300	3463. 143	28867. 24	$a\ {}^5F_3$—$z\ {}^5G_2^\circ$
4	3465. 292	28849. 33	$a\ {}^3D_2$—$y\ {}^1D_2^\circ$
75	3467. 051	28834. 70	$a\ {}^3G_3$—$w\ {}^3D_2^\circ$
1	3467. 876	28827. 84	$c\ {}^3P_2$—53_1°
2	3470. 001	28810. 18	$a\ {}^3P_2$—$y\ {}^3F_3^\circ$
150	3472. 244	28791. 58	$a\ {}^5D_3$—$x\ {}^5D_3^\circ$
20	3472. 669	28788. 05	$b\ {}^3F_2$—$y\ {}^3G_3^\circ$
10	3472. 739	28787. 47	$a\ {}^3D_2$—$u\ {}^3D_1^\circ$
700	3473. 752	28779. 08	$b\ {}^3F_3$—$y\ {}^3F_3^\circ$
100	3474. 845	28770. 03	$b\ {}^3P_2$—$z\ {}^1P_1^\circ$
2	3479. 794	28729. 11	$a\ {}^5D_1$—$x\ {}^5D_0^\circ$
600	3481. 308	28716. 61	$a\ {}^5P_2$—$y\ {}^3D_3^\circ$
80	3482. 347	28708. 05	$a\ {}^5D_0$—$x\ {}^5D_1^\circ$
200	3483. 174	28701. 23	$a\ {}^5F_4$—$z\ {}^7F_3^\circ$
200	3483. 294	28700. 24	$a\ {}^5F_4$—$z\ {}^3G_4^\circ$
50	3486. 211	28676. 23	$a\ {}^3F_3$—$y\ {}^3D_3^\circ$
50	3486. 799	28671. 39	$a\ {}^5F_2$—$z\ {}^7P_3^\circ$
4	3487. 461	28665. 95	$a\ {}^3G_4$—$w\ {}^3D_3^\circ$
15	3489. 750	28647. 15	$a\ {}^3P_1$—$y\ {}^3F_2^\circ$
20	3490. 729	28639. 12	$b\ {}^3P_1$—$z\ {}^1S_0^\circ$
50	3493. 227	28618. 64	$b\ {}^3F_3$—$z\ {}^3H_4^\circ$
150	3494. 254	28610. 22	$a\ {}^5D_2$—$x\ {}^5D_2^\circ$
150	3495. 985	28596. 06	$a\ {}^5P_3$—$x\ {}^5D_3^\circ$
100	3496. 130	28594. 88	$a\ {}^5D_1$—$x\ {}^5D_2^\circ$
100	3497. 935	28580. 12	$a\ {}^5P_1$—$x\ {}^5D_1^\circ$
6000R	3498. 944	28571. 88	$a\ {}^5F_5$—$z\ {}^5G_6^\circ$
2	3500. 528	28558. 95	$a\ {}^3H_6$—$y\ {}^3H_5^\circ$
60	3501. 365	28552. 12	$b\ {}^3P_1$—$w\ {}^3D_2^\circ$
2	3502. 039	28546. 63	$a\ {}^5D_1$—$y\ {}^3D_1^\circ$
80	3502. 423	28543. 51	$a\ {}^5D_3$—$z\ {}^3P_2^\circ$
3h	3507. 327	28503. 59	$a\ {}^1D_2$—7_3°
2	3508. 371	28495. 11	$a\ {}^5F_5$—$z\ {}^3G_5^\circ$
100	3509. 716	28484. 19	$a\ {}^3F_2$—$x\ {}^5D_2^\circ$
4	3510. 314	28479. 34	$c\ {}^3F_4$—$v\ {}^3G_5^\circ$ $c\ {}^3P_1$—60_1°
20	3511. 131	28472. 71	$a\ {}^5F_2$—$z\ {}^5S_2^\circ$
10	3511. 561	28469. 22	$b\ {}^3F_2$—$y\ {}^3P_1^\circ$
40	3512. 885	28458. 49	$a\ {}^3F_3$—$x\ {}^5D_4^\circ$
2	3513. 299	28455. 14	$a\ {}^3D_2$—$u\ {}^3D_2^\circ$
5	3514. 12	28448. 49	$a\ {}^3H_6$—2_6°
1000	3514. 491	28445. 49	$a\ {}^5F_3$—$z\ {}^5G_3^\circ$
60	3514. 757	28443. 33	$a\ {}^3G_4$—$x\ {}^3F_3^\circ$
40	3515. 682	28435. 85	$a\ {}^3F_2$—$y\ {}^3D_1^\circ$
40	3515. 897	28434. 11	$b\ {}^3P_1$—$z\ {}^1P_1^\circ$
6	3516. 194	28431. 71	$a\ {}^3H_4$—$x\ {}^1G_4^\circ$
20	3517. 417	28421. 82	$a\ {}^3H_5$—$y\ {}^3H_4^\circ$
2	3518. 009	28417. 04	$a\ {}^3D_3$—$x\ {}^5F_4^\circ$
60	3518. 991	28409. 11	$a\ {}^3G_5$—$z\ {}^1H_5^\circ$
500	3519. 641	28403. 87	$a\ {}^5F_4$—$z\ {}^7F_4^\circ$
300	3520. 134	28399. 89	$a\ {}^5D_1$—$z\ {}^3P_0^\circ$
40	3521. 972	28385. 07	$a\ {}^3P_2$—$y\ {}^5P_2^\circ$
40	3522. 284	28382. 56	$b\ {}^3F_3$—$z\ {}^1G_4^\circ$
4	3524. 161	28367. 44	$a\ {}^3H_5$—$x\ {}^5F_4^\circ$
50	3524. 905	28361. 45	$b\ {}^3P_2$—$x\ {}^3D_2^\circ$
10	3525. 657	28355. 40	$b\ {}^3H_4$—61_4°
10	3525. 829	28354. 02	$b\ {}^3F_3$—$y\ {}^5P_2^\circ$
80	3526. 578	28348. 00	$a\ {}^5P_3$—$z\ {}^3P_2^\circ$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
250	3528.679	28331.12	$a\ {}^5F_2$—$z\ {}^3D^\circ_3$	40	3575.054	27963.62	$a\ {}^3P_2$—$z\ {}^3S^\circ_1$
50	3529.292	28326.20	$b\ {}^3F_2$—$y\ {}^5P^\circ_1$	70	3577.540	27944.19	$a\ {}^3D_2$—$y\ {}^1F^\circ_3$
2	3529.621	28323.56	$a\ {}^5D_4$—$y\ {}^5F^\circ_3$	30	3578.686	27935.24	$a\ {}^3F_2$—$z\ {}^3P^\circ_2$
200	3531.389	28309.38	$a\ {}^5D_2$—$x\ {}^5D^\circ_3$	100	3579.773	27926.76	$a\ {}^5F_3$—$z\ {}^7F^\circ_2$
10	3531.808	28306.02	$c\ {}^3F_4$—$v\ {}^3G^\circ_4$	150	3584.198	27892.28	$a\ {}^5D_1$—$y\ {}^3D^\circ_2$
300	3532.810	28297.99	$a\ {}^1G_4$—$y\ {}^1F^\circ_3$	30	3585.812	27879.73	$a\ {}^3F_3$—$y\ {}^5F^\circ_2$
25	3533.917	28289.13	$a\ {}^5D_2$—$z\ {}^3P^\circ_1$	300	3587.204	27868.91	$a\ {}^3H_5$—$y\ {}^3H^\circ_5$
50	3535.059	28279.99	$b\ {}^3P_0$—$y\ {}^3S^\circ_1$	2000R	3589.220	27853.26	$a\ {}^5F_1$—$z\ {}^5G^\circ_2$
60	3535.32	28277.90	$a\ {}^1G_4$—$z\ {}^3I^\circ_5$	10	3590.525	27843.13	$a\ {}^3D_2$—$v\ {}^3D^\circ_2$
200	3535.382	28277.41	$a\ {}^5F_4$—$z\ {}^7F^\circ_5$	60	3590.884	27840.35	$a\ {}^3D_2$—$w\ {}^3D^\circ_1$
200	3535.836	28273.77	$a\ {}^5D_1$—$z\ {}^3P^\circ_1$	2	3591.333	27836.87	$b\ {}^3P_2$—$w\ {}^3D^\circ_3$
60	3536.572	28267.89	$a\ {}^3H_4$—$y\ {}^1G^\circ_4$	3000R	3593.029	27823.73	$a\ {}^5F_2$—$z\ {}^5G^\circ_3$
400	3537.941	28256.95	$a\ {}^5F_3$—$z\ {}^3F^\circ_4$	50	3596.057	27800.30	$a\ {}^5F_3$—$z\ {}^7F^\circ_3$
200	3539.254	28246.47	$b\ {}^3F_4$—$x\ {}^5D^\circ_3$	2000R	3596.185	27799.32	$a\ {}^5F_3$—$z\ {}^3G^\circ_4$
400	3539.368	28245.56	$a\ {}^5F_2$—$z\ {}^5G^\circ_2$	10	3598.225	27783.55	$a\ {}^3G_3$—$w\ {}^3D^\circ_3$
50	3540.210	28238.84	$a\ {}^1G_4$—$x\ {}^3G^\circ_4$	20	3598.478	27781.60	$a\ {}^3F_2$—$y\ {}^3D^\circ_2$
2	3540.673	28235.15	$b\ {}^3P_2$—$v\ {}^3D^\circ_3$	30	3599.400	27774.48	$b\ {}^3P_1$—$z\ {}^1D^\circ_2$
50	3541.040	28232.22	$a\ {}^3G_5$—1°_4	1000	3599.769	27771.64	$a\ {}^5P_3$—$x\ {}^5D^\circ_4$
200	3541.622	28227.58	$a\ {}^3F_4$—$y\ {}^5F^\circ_5$	150	3601.487	27758.39	$a\ {}^3H_5$—2°_6
2	3545.713	28195.02	$a\ {}^5P_2$ $y\ {}^5F^\circ_1$	2	3601.955	27754.78	$a\ {}^1D_2$—$x\ {}^5F^\circ_3$
10	3545.797	28194.35	$a\ {}^5P_3$—$y\ {}^3D^\circ_2$	200	3605.640	27726.42	$a\ {}^5P_1$—$z\ {}^3P^\circ_1$
4	3546.014	28192.62	$a\ {}^3H_6$—$w\ {}^3G^\circ_5$	20	3606.153	27722.47	$a\ {}^3F_3$—$y\ {}^5F^\circ_3$
100	3546.982	28184.93	$a\ {}^5D_3$—$y\ {}^3D^\circ_3$	6	3607.414	27712.78	$a\ {}^3D_3$—$y\ {}^1D^\circ_2$
50	3547.184	28183.33	$a\ {}^3F_2$—$x\ {}^5D^\circ_3$	150	3608.729	27702.69	$a\ {}^5D_2$—$y\ {}^3D^\circ_3$
50	3547.380	28181.77	$a\ {}^5P_1$—$x\ {}^5D^\circ_0$ $a\ {}^3G_3$—$v\ {}^3D^\circ_3$	60	3609.102	27699.82	$a\ {}^5F_4$—$z\ {}^5F^\circ_3$
				4	3612.934	27670.44	$c\ {}^3P_2$—39°_1
10	3547.760	28178.75	$a\ {}^3D_1$—5°_2	5	3616.056	27646.55	$a\ {}^1G_4$—$x\ {}^3F^\circ_4$
6	3549.632	28163.89	$a\ {}^3P_0$—$y\ {}^3P^\circ_1$	150	3616.954	27639.69	$b\ {}^3F_4$—$y\ {}^3D^\circ_3$
30	3549.737	28163.06	$a\ {}^3F_2$—$z\ {}^3P^\circ_1$	2	3618.570	27627.35	$c\ {}^3F_2$—55°_2
200	3550.271	28158.82	$a\ {}^5F_3$—$z\ {}^7P^\circ_4$	200	3619.201	27622.53	$a\ {}^3G_4$—1°_4 $a\ {}^3H_5$—$w\ {}^3G^\circ_4$
50	3550.635	28155.93	$a\ {}^1D_2$—$x\ {}^1F^\circ_3$				
10	3551.220	28151.29	$a\ {}^1D_2$—$y\ {}^5S^\circ_2$	150	3620.288	27614.24	$b\ {}^3P_2$—$x\ {}^3F^\circ_3$
20	3553.672	28131.87	$a\ {}^3G_4$—$z\ {}^1F^\circ_3$	60	3623.634	27588.74	$b\ {}^3F_3$—$y\ {}^3F^\circ_4$
200	3553.850	28130.46	$a\ {}^3P_1$—$y\ {}^3P^\circ_1$	50	3623.694	27588.28	$b\ {}^3P_0$—$z\ {}^1P^\circ_1$
10	3554.274	28127.11	$a\ {}^5D_0$—$y\ {}^3D^\circ_1$	10h	3623.855	27587.06	$a\ {}^1H_5$—24°_5
2	3555.827	28114.82	$b\ {}^3G_5$—62°_4	300	3625.197	27576.85	$a\ {}^3P_2$—$x\ {}^5D^\circ_1$
6	3556.393	28110.35	$b\ {}^3P_2$—$z\ {}^1D^\circ_2$	300	3626.740	27565.11	$a\ {}^3H_4$—$y\ {}^3H^\circ_4$
125	3556.634	28108.44	$a\ {}^3P_1$—$y\ {}^3P^\circ_0$	100	3627.285	27560.97	$a\ {}^3G_3$—$x\ {}^3F^\circ_3$
125	3557.062	28105.06	$a\ {}^3H_4$—$x\ {}^1F^\circ_3$	20	3631.414	27529.63	$c\ {}^3F_3$—$v\ {}^3G^\circ_4$
4	3559.643	28084.68	$a\ {}^1P_1$—33°_3	150	3631.710	27527.39	$a\ {}^3F_4$—$z\ {}^5P^\circ_3$
50	3559.883	28082.79	$a\ {}^3P_2$—$y\ {}^5P^\circ_3$	20	3632.412	27522.07	$a\ {}^3D_1$—$x\ {}^3P^\circ_2$
20	3560.029	28081.64	$a\ {}^3H_5$—$x\ {}^5F^\circ_5$	150	3633.916	27510.68	$a\ {}^3H_4$—$x\ {}^5F^\circ_4$
30	3560.175	28080.49	$a\ {}^5F_1$—$z\ {}^5S^\circ_2$	1000R	3634.931	27503.00	$a\ {}^5F_3$—$z\ {}^7F^\circ_4$
40H	3561.570	28069.49	$a\ {}^3G_5$—$y\ {}^3G^\circ_4$	150	3635.512	27498.61	$a\ {}^5P_1$—$z\ {}^3P^\circ_2$
100H	3561.900	28066.89	$b\ {}^3P_0$—$w\ {}^3D^\circ_1$	250	3637.461	27483.87	$a\ {}^3G_3$—$x\ {}^3F^\circ_2$
60	3562.618	28061.23	$a\ {}^5D_2$—$z\ {}^3P^\circ_2$	150	3638.011	27479.72	$a\ {}^3D_2$—$w\ {}^3D^\circ_2$
20	3563.148	28057.06	$a\ {}^3G_3$—$z\ {}^1D^\circ_2$	1	3639.140	27471.19	$c\ {}^3P_2$—34°_3
20	3563.611	28053.41	$a\ {}^3D_2$—$y\ {}^3S^\circ_1$	150	3640.638	27459.89	$a\ {}^3G_4$—$y\ {}^3G^\circ_4$
10	3563.827	28051.71	$b\ {}^3F_3$—$y\ {}^5P^\circ_3$	2	3644.582	27430.17	$b\ {}^3H_5$—$v\ {}^3G^\circ_4$
100	3564.364	28047.49	$a\ {}^5P_1$—$x\ {}^5D^\circ_2$	4	3644.852	27428.14	$a\ {}^3H_6$—$z\ {}^3I^\circ_5$
30	3564.504	28046.38	$a\ {}^3H_6$—$y\ {}^1H^\circ_5$ $c\ {}^3P_1$—58°_1	40	3645.674	27421.96	$b\ {}^3F_4$—$x\ {}^5D^\circ_4$
150	3564.570	28045.87	$a\ {}^5D_1$—$z\ {}^3P^\circ_2$	150	3646.111	27418.67	$a\ {}^3G_4$—$y\ {}^3G^\circ_3$ $c\ {}^3F_2$—53°_1
60	3564.809	28043.99	$a\ {}^3D_3$—$x\ {}^3P^\circ_2$				
100	3567.157	28025.53	$b\ {}^3P_1$—$x\ {}^3D^\circ_2$	2	3649.196	27395.49	$a\ {}^1D_2$—4°_3
10	3567.751	28020.86	$a\ {}^3P_0$—$y\ {}^5P^\circ_1$	2	3649.538	27392.92	$c\ {}^3P_2$—33°_2
50	3568.527	28014.77	$a\ {}^5F_5$—$z\ {}^5F^\circ_4$	175	3650.324	27387.03	$a\ {}^3F_3$—$y\ {}^5F^\circ_4$
1000	3570.606	27998.46	$a\ {}^3H_6$—$y\ {}^3H^\circ_6$	100	3652.311	27372.13	$a\ {}^5F_2$—$z\ {}^7F^\circ_1$
60	3571.767	27989.36	$a\ {}^5P_3$—$y\ {}^3D^\circ_3$	7	3652.488	27370.80	$b\ {}^3P_2$—$x\ {}^3D^\circ_1$
150	3572.022	27987.36	$a\ {}^3P_1$—$y\ {}^5P^\circ_1$	2	3652.667	27369.46	$a\ {}^1H_5$—21°_5
10	3573.666	27974.48	$a\ {}^3H_4$—$w\ {}^5D^\circ_3$	30	3653.698	27361.74	$a\ {}^3D_2$—$z\ {}^1P^\circ_1$
200	3574.601	27967.17	$a\ {}^5D_3$—$x\ {}^5D^\circ_4$	150	3654.405	27356.44	$a\ {}^3H_5$—$y\ {}^1H^\circ_5$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
4	3655. 936	27344. 99	$a\ ^5P_1$—$y\ ^3D^\circ_2$	2000R	3730. 432	26798. 93	$a\ ^5F_3$—$z\ ^5F^\circ_3$
6	3655. 984	27344. 63	$a\ ^3H_4$—4°_3	50	3730. 592	26797. 78	$a\ ^3F_3$—$z\ ^5P^\circ_2$
150	3657. 169	27335. 77	$a\ ^5F_3$—$z\ ^5F^\circ_2$	40	3730. 899	26795. 57	$a\ ^1D_2$—$u\ ^3D^\circ_1$
30	3659. 470	27318. 58	$a\ ^3D_3$—$u\ ^3D^\circ_2$	100	3732. 020	26787. 52	$b\ ^3P_2$—$y\ ^3F^\circ_3$
			$b\ ^1D_2$—60°_1	4	3732. 744	26782. 33	$a\ ^1G_4$—$w\ ^3D^\circ_3$
60	3660. 813	27308. 56	$a\ ^3H_5$—$y\ ^3H^\circ_6$	100	3733. 041	26780. 20	$a\ ^3F_2$—$y\ ^5F^\circ_2$
2000R	3661. 364	27304. 45	$a\ ^5F_4$—$z\ ^3G^\circ_5$	40	3735. 020	26766. 01	$a\ ^3H_4$—$w\ ^3G^\circ_4$
50	3661. 570	27302. 91	$b\ ^3P_2$—$z\ ^1F^\circ_3$	2	3736. 823	26753. 09	$b\ ^3F_2$—$x\ ^5D^\circ_1$
800	3663. 378	27289. 44	$a\ ^5D_4$—$y\ ^5F^\circ_5$	300	3737. 407	26748. 91	$a\ ^5D_2$—$y\ ^5F^\circ_2$
2	3667. 982	27255. 19	$a\ ^1D_2$—3°_1	50	3737. 758	26746. 40	$a\ ^5D_0$—$y\ ^5F^\circ_1$
30	3668. 742	27249. 54	$a\ ^3G_3$—$z\ ^1F^\circ_3$	150	3738. 630	26740. 16	$a\ ^3G_3$—1°_4
600	3669. 546	27243. 57	$a\ ^3G_5$—$y\ ^3G^\circ_5$	200	3738. 914	26738. 13	$a\ ^3H_5$—$z\ ^3I^\circ_5$
80	3671. 212	27231. 21	$a\ ^5D_3$—$y\ ^5F^\circ_3$	250	3739. 470	26734. 16	$a\ ^3G_3$—$y\ ^3F^\circ_2$
10	3672. 059	27224. 92	$a\ ^3H_4$—$x\ ^5F^\circ_5$	10	3741. 006	26723. 18	$a\ ^3P_2$—$z\ ^3P^\circ_1$
100	3672. 378	27222. 56	$a\ ^3P_1$—$y\ ^5P^\circ_2$	1000R	3742. 287	26714. 03	$a\ ^5F_2$—$z\ ^5F^\circ_2$
2	3674. 002	27210. 53	$c\ ^3F_4$—42°_4	400	3742. 798	26710. 39	$a\ ^3H_6$—$z\ ^3I^\circ_7$
2	3674. 634	27205. 85	$a\ ^1H_5$—19°_4	60	3743. 328	26706. 60	$a\ ^3D_3$—$v\ ^3D^\circ_2$
40	3675. 253	27201. 26	$b\ ^3P_1$—$x\ ^3F^\circ_2$	40	3743. 956	26702. 12	$a\ ^3D_2$—$z\ ^1D^\circ_2$
2	3676. 376	27192. 96	$a\ ^5P_3$—$y\ ^5F^\circ_2$	125	3744. 219	26700. 25	$a\ ^5P_3$—$y\ ^5F^\circ_4$
60	3676. 663	27190. 84	$a\ ^3D_1$—$y\ ^1D^\circ_2$	125	3744. 396	26698. 99	$a\ ^3H_5$—$x\ ^3G^\circ_4$
40	3676. 952	27188. 70	$a\ ^1D_2$—$x\ ^3P^\circ_2$	500	3745. 592	26690. 46	$a\ ^3G_5$—$z\ ^3H^\circ_6$
10	3677. 976	27181. 13	$a\ ^5D_2$—$y\ ^5F^\circ_1$	50	3746. 218	26686. 00	$b\ ^3F_4$—$y\ ^5F^\circ_3$
10	3678. 056	27180. 54	$a\ ^1G_4$—$v\ ^3D^\circ_3$	40	3751. 856	26645. 90	$a\ ^3H_4$—$w\ ^3G^\circ_5$
200	3678. 314	27178. 63	$a\ ^5F_2$—$z\ ^7F^\circ_3$	60	3752. 787	26639. 29	$a\ ^1H_5$—14°_4
10	3680. 052	27165. 80	$a\ ^5D_1$—$y\ ^5F^\circ_1$	150	3753. 546	26633. 91	$a\ ^3G_4$—$y\ ^3G^\circ_5$
1	3682. 644	27146. 68	$a\ ^3H_4$—$w\ ^5D^\circ_4$	200	3755. 094	26622. 93	$a\ ^3F_2$—$y\ ^5F^\circ_2$
16	3683. 573	27139. 83	$b\ ^3F_2$—$z\ ^3S^\circ_1$	50	3755. 728	26618. 43	$a\ ^5P_1$—$y\ ^5F^\circ_1$
40	3685. 050	27128. 95	$a\ ^3D_1$—$u\ ^3D^\circ_1$	300	3755. 937	26616. 95	$a\ ^3G_4$—$y\ ^3F^\circ_3$
100	3685. 944	27122. 37	$b\ ^3P_2$—$x\ ^3D^\circ_3$	200	3759. 838	26589. 33	$a\ ^5D_4$—$z\ ^5P^\circ_3$
20	3686. 588	27117. 63	$b\ ^3H_4$—$v\ ^3G^\circ_5$	400	3760. 019	26588. 05	$a\ ^5F_1$—$z\ ^5F^\circ_1$
4	3688. 776	27101. 55	$a\ ^1H_5$—17°_4	200	3761. 511	26577. 51	$a\ ^3G_3$—$y\ ^3G^\circ_4$
50	3693. 589	27066. 24	$a\ ^3G_5$—$z\ ^3H^\circ_4$	50	3764. 037	26559. 67	$a\ ^1G_4$—$x\ ^3F^\circ_3$
10	3693. 634	27065. 91	$c\ ^3F_2$—49°_1	10	3765. 808	26547. 18	$a\ ^1P_1$—15°_1
200	3696. 583	27044. 31	$a\ ^3P_2$—$x\ ^5D^\circ_2$	150	3767. 353	26536. 30	$a\ ^3G_3$—$y\ ^3G^\circ_3$
60	3697. 857	27035. 00	$b\ ^3P_1$—$x\ ^3D^\circ_1$	2	3770. 463.	26514. 41	$c\ ^3F_3$—43°_3
150	3700. 980	27012. 18	$a\ ^3H_4$—$y\ ^3H^\circ_5$	2	3772. 386	26500. 89	$c\ ^3F_4$—31°_4
60	3701. 312	27009. 76	$a\ ^5F_1$—$z\ ^7F^\circ_0$	60	3773. 175	26495. 35	$a\ ^3P_2$—$z\ ^3P^\circ_2$
2	3701. 833	27005. 96	$a\ ^1P_1$—$w\ ^3F^\circ_2$	400	3777. 588	26464. 40	$a\ ^5F_1$—$z\ ^5D^\circ_0$
50	3702. 228	27003. 08	$a\ ^5P_2$—$z\ ^5P^\circ_1$				$b\ ^3F_3$—$z\ ^3P^\circ_2$
6	3702. 920	26998. 03	$c\ ^3F_3$—50°_2	60	3777. 758	26463. 21	$a\ ^1D_2$—$u\ ^3D^\circ_2$
60	3703. 203	26995. 97	$a\ ^3P_2$—$y\ ^3D^\circ_1$	150	3778. 711	26456. 54	$a\ ^3G_4$—$z\ ^3H^\circ_4$
30	3705. 347	26980. 35	$a\ ^5F_2$—$z\ ^5F^\circ_1$	10	3779. 426	26451. 53	$b\ ^3P_1$—$y\ ^3F^\circ_2$
3	3705. 400	26979. 96	$a\ ^5F_1$—$z\ ^7F^\circ_1$	50	3779. 969	26447. 73	$a\ ^3P_0$—$x\ ^5D^\circ_1$
4	3709. 089	26953. 13	$a\ ^3D_2$—$x\ ^3D^\circ_2$	150	3781. 171	26439. 32	$a\ ^1H_5$—$x\ ^1H^\circ_5$
20	3710. 302	26944. 32	$b\ ^3H_4$—$v\ ^3G^\circ_4$	30	3781. 660	26435. 91	$c\ ^3F_2$—41°_2
100	3712. 299	26929. 82	$a\ ^1D_2$—$x\ ^3G^\circ_3$	120	3782. 749	26428. 30	$d\ ^3F_4$—62°_4
50	3714. 644	26912. 82	$a\ ^5F_1$—$z\ ^7F^\circ_2$	6	3784. 749	26414. 33	$a\ ^3P_1$—$x\ ^5D^\circ_1$
125	3715. 559	26906. 20	$a\ ^5D_2$—$y\ ^5F^\circ_2$	1000	3786. 065	26405. 15	$a\ ^5F_2$—$z\ ^5D^\circ_1$
150	3716. 173	26901. 75	$a\ ^3F_4$—$y\ ^5D^\circ_4$	1500R	3790. 521	26374. 11	$a\ ^5F_3$—$z\ ^5D^\circ_2$
300	3716. 998	26895. 78	$a\ ^5D_3$—$y\ ^5F^\circ_4$	2	3793. 916	26350. 51	$b\ ^3F_4$—$y\ ^5F^\circ_4$
40	3717. 674	26890. 89	$a\ ^5D_1$—$y\ ^5F^\circ_2$	125	3794. 924	26343. 51	$a\ ^5P_1$—$y\ ^5F^\circ_2$
50	3718. 400	26885. 64	$a\ ^3F_4$—$y\ ^5D^\circ_3$	100	3795. 185	26341. 70	$a\ ^3P_2$—$y\ ^3D^\circ_2$
300	3719. 325	26878. 95	$a\ ^3H_4$—$x\ ^3G^\circ_3$	250	3798. 054	26321. 80	$a\ ^5F_1$—$z\ ^5F^\circ_2$
4	3721. 929	26860. 15	$c\ ^3F_4$—36°_5	3000R	3798. 899	26315. 95	$a\ ^5F_4$—$z\ ^5D^\circ_3$
10	3722. 303	26857. 45	$a\ ^1D_2$—$y\ ^1D^\circ_2$	3000R	3799. 353	26312. 80	$a\ ^5F_5$—$z\ ^5D^\circ_4$
150	3724. 967	26838. 24	$a\ ^5P_2$—$z\ ^5P^\circ_2$	150	3800. 261	26306. 51	$a\ ^5D_3$—$z\ ^5P^\circ_2$
50	3725. 482	26834. 53	$a\ ^3P_0$—$z\ ^3s^\circ_1$	100	3803. 191	26286. 25	$a\ ^1P_1$—$y\ ^1P^\circ_1$
300	3726. 096	26830. 11	$a\ ^3G_5$—$z\ ^1G^\circ_4$	100	3805. 432	26270. 77	$b\ ^3P_2$—$y\ ^3P^\circ_1$
5000R	3726. 926	26824. 14	$a\ ^5F_4$—$z\ ^5F^\circ_4$	125	3808. 689	26248. 30	$a\ ^1G_4$—$z\ ^1F^\circ_3$
9000R	3728. 026	26816. 22	$a\ ^5F_5$—$z\ ^5F^\circ_5$	300	3812. 739	26220. 42	$a\ ^3G_4$—$z\ ^1G^\circ_4$
							$b\ ^3F_2$—$x\ ^5D^\circ_2$

TABLE 3—Continued

Intensity	Wave-length	Wave number	Term combination
	A	cm^{-1}	
10	3813. 164	26217. 50	$a\ ^1H_5$—12°_4
150	3814. 848	26205. 93	$a\ ^3D_2$—$x\ ^3F^\circ_3$
200	3817. 293	26189. 14	$a\ ^3H_6$—$x\ ^3G^\circ_5$
50	3817. 948	26184. 65	$a\ ^3D_1$—$v\ ^3D^\circ_2$
30	3818. 354	26181. 87	$a\ ^3D_1$—$w\ ^3D^\circ_1$
400	3819. 039	26177. 17	$a\ ^5F_2$—$z\ ^5F^\circ_3$
100	3819. 764	26172. 20	$b\ ^3F_2$—$y\ ^3D^\circ_1$
10h	3820. 964	26163. 98	$a\ ^3H_5$—$z\ ^1I^\circ_6$
10	3821. 650	26159. 28	$a\ ^1F_3$—61°_4
300	3822. 091	26156. 27	$a\ ^3D_3$—$x\ ^3F^\circ_4$
2	3823. 035	26149. 81	$c\ ^3F_2$—35°_3
200	3824. 938	26136. 80	$a\ ^3P_2$—$y\ ^3D^\circ_3$; $b\ ^3H_4$—46°_3
60	3826. 103	26128. 84	$a\ ^3D_2$—$x\ ^3F^\circ_2$
4	3826. 259	26127. 77	$b\ ^3P_2$—$y\ ^5P^\circ_1$
125	3828. 719	26110. 99	$a\ ^5P_3$—$z\ ^5P^\circ_2$
50	3829. 336	26106. 78	$a\ ^3H_5$—$x\ ^3F^\circ_4$
20	3829. 493	26105. 71	$b\ ^3F_3$—$y\ ^3D^\circ_3$
50	3830. 875	26096. 29	$b\ ^3P_2$—$y\ ^3P^\circ_2$
200	3831. 795	26090. 03	$a\ ^3G_5$—$z\ ^3H^\circ_5$
5	3834. 229	26073. 47	$c\ ^3F_3$—35°_3
150	3835. 062	26067. 80	$a\ ^1G_4$—$x\ ^3D^\circ_3$
20	3835. 983	26061. 54	$a\ ^1D_2$—$y\ ^3S^\circ_1$
3	3836. 968	26054. 85	$b\ ^1G_4$—51°_4
150	3838. 069	26047. 38	$a\ ^5P_2$—$y\ ^5D^\circ_1$
80	3838. 725	26042. 93	$a\ ^3G_3$—$y\ ^3P^\circ_2$
400	3839. 699	26036. 32	$a\ ^3G_5$—$y\ ^3F^\circ_4$
125	3840. 823	26028. 70	$a\ ^5P_2$—$z\ ^5P^\circ_3$
100	3840. 989	26027. 58	$a\ ^3H_6$—$z\ ^3I^\circ_6$
30	3842. 671	26016. 18	$a\ ^3P_1$—$x\ ^5D^\circ_0$
150	3843. 152	26012. 93	$a\ ^5F_1$—$z\ ^5D^\circ_1$
300	3846. 672	25989. 13	$a\ ^5D_2$—$z\ ^5P^\circ_1$
50	3846. 801	25988. 26	$a\ ^3F_3$—$z\ ^5P^\circ_3$
2	3847. 491	25983. 60	$c\ ^3F_2$—33°_2
40	3848. 944	25973. 79	$a\ ^5D_1$—$z\ ^5P^\circ_1$
400	3850. 441	25963. 69	$a\ ^5D_4$—$y\ ^5D^\circ_4$
125	3852. 132	25952. 29	$a\ ^1D_2$—$y\ ^1F^\circ_3$
10	3852. 565	25949. 37	$z\ ^7D^\circ_1$—$f\ ^7D_1$; $a\ ^1P_1$—$w\ ^5D^\circ_1$
20	3852. 835	25947. 56	$a\ ^5D_4$—$y\ ^5D^\circ_3$
100	3854. 720	25934. 87	$b\ ^3P_1$—$y\ ^3P^\circ_1$
5	3855. 579	25929. 09	$b\ ^3H_4$—43°_3
300	3856. 458	25923. 18	$a\ ^5F_3$—$z\ ^5F^\circ_4$
60	3856. 972	25919. 72	$b\ ^3F_2$—$x\ ^5D^\circ_3$
1000	3857. 551	25915. 83	$a\ ^1G_4$—$z\ ^1H^\circ_5$
30	3857. 998	25912. 83	$b\ ^3P_1$—$y\ ^3P^\circ_0$
60	3858. 687	25908. 20	$a\ ^3D_1$—$z\ ^1S^\circ_0$
100	3859. 696	25901. 43	$a\ ^3H_4$—$y\ ^1F^\circ_3$
200	3860. 725	25894. 53	$a\ ^3D_2$—$z\ ^1F^\circ_3$
30	3861. 453	25889. 65	$a\ ^3G_4$—$y\ ^5P^\circ_3$
1000	3862. 690	25881. 36	$a\ ^3H_4$—$z\ ^3I^\circ_5$
40	3864. 851	25866. 89	$a\ ^3P_0$—$y\ ^3D^\circ_1$
150	3865. 419	25863. 09	$a\ ^3F_2$—$z\ ^5P^\circ_1$
6	3865. 742	25860. 92	$a\ ^1P_1$—11°_0
4	3867. 186	25851. 27	$a\ ^1D_2$—$v\ ^3D^\circ_2$
1500	3867. 844	25846. 87	$a\ ^3F_4$—$z\ ^3F^\circ_3$
100	3871. 231	25824. 26	$a\ ^5D_2$—$z\ ^5P^\circ_2$
10	3871. 695	25821. 16	$a\ ^3D_1$—$w\ ^3D^\circ_2$
6	3872. 381	25816. 59	$a\ ^3D_3$—$x\ ^3D^\circ_2$
4	3872. 730	25814. 26	$a\ ^1P_1$—9°_1
200	3873. 537	25808. 88	$a\ ^5D_1$—$z\ ^5P^\circ_2$
150	3876. 102	25791. 81	$b\ ^3P_1$—$y\ ^5P^\circ_1$
100	3876. 679	25787. 97	$b\ ^3P_2$—$y\ ^3F^\circ_3$
4	3877. 575	25782. 01	$c\ ^3F_4$—21°_5
60	3880. 833	25760. 36	$b\ ^3P_1$—$y\ ^3P^\circ_2$
125	3882. 034	25752. 39	$a\ ^5F_2$—$z\ ^5D^\circ_2$
100	3884. 075	25738. 86	$a\ ^1G_4$—1°_4
100	3884. 718	25734. 60	$a\ ^3G_3$—$y\ ^3F^\circ_3$
2	3887. 308	25717. 46	$b\ ^3G_4$—61°_4
100	3887. 826	25714. 03	$a\ ^3D_2$—$x\ ^3D^\circ_3$
125	3890. 216	25698. 23	$a\ ^3F_2$—$z\ ^5P^\circ_2$
60	3891. 425	25690. 25	$a\ ^3D_3$—$v\ ^3D^\circ_3$
500	3892. 230	25684. 93	$a\ ^5P_2$—$y\ ^5D^\circ_2$
40	3892. 773	25681. 35	$a\ ^1P_1$—$t\ ^3D^\circ_2$
50	3894. 255	25671. 58	$b\ ^3F_2$—$z\ ^3P^\circ_2$
125	3897. 249	25651. 86	$b\ ^3F_4$—$y\ ^5F^\circ_5$
125	3898. 366	25644. 51	$a\ ^3F_3$—$y\ ^5D^\circ_2$
150	3901. 257	25625. 50	$a\ ^5F_4$—$z\ ^5F^\circ_5$
15	3902. 824	25615. 22	$a\ ^3P_2$—$y\ ^5F^\circ_1$
20	3905. 993	25594. 43	$c\ ^3P_2$—$y\ ^1P^\circ_1$
125	3908. 768	25576. 26	$a\ ^1G_4$—$y\ ^3G^\circ_4$
600	3909. 085	25574. 19	$a\ ^3G_3$—$z\ ^3H^\circ_4$
40	3911. 147	25560. 71	$a\ ^3P_1$—$z\ ^3P^\circ_1$
125	3912. 117	25554. 37	$a\ ^5D_0$—$z\ ^5P^\circ_1$
2	3912. 992	25548. 66	$a\ ^1P_1$—$w\ ^5D^\circ_2$
200	3914. 859	25536. 47	$a\ ^5P_2$—$z\ ^3D^\circ_1$
4	3917. 706	25517. 92	$b\ ^3F_2$—$y\ ^3D^\circ_2$
150	3920. 923	25496. 98	$a\ ^5D_3$—$z\ ^5P^\circ_3$
10	3922. 338	25487. 78	$a\ ^1D_2$—$w\ ^3D^\circ_2$
1000	3923. 486	25480. 32	$a\ ^3G_4$—$z\ ^3H^\circ_5$
60	3924. 636	25472. 86	$a\ ^1H_5$—$x\ ^1G^\circ_4$
1000	3925. 930	25464. 46	$a\ ^5F_5$—$z\ ^7D^\circ_4$
3	3926. 46	25461. 02	$b\ ^1G_4$—42°_4
600	3931. 787	25426. 53	$a\ ^5P_1$—$z\ ^5P^\circ_1$; $a\ ^3G_4$—$y\ ^3F^\circ_4$
300	3933. 566	25415. 03	$a\ ^5F_3$—$z\ ^5D^\circ_3$
2	3935. 363	25403. 43	$c\ ^3F_4$—16°_3
4	3936. 168	25398. 23	$c\ ^3F_3$—27°_4
250	3937. 919	25386. 94	$a\ ^5P_2$—$y\ ^5D^\circ_3$
10	3939. 126	25379. 16	$a\ ^3D_2$—$y\ ^3F^\circ_2$
200	3941. 672	25362. 76	$b\ ^3P_2$—$y\ ^5P^\circ_2$; $a\ ^3F_3$—$y\ ^5D^\circ_4$
200	3942. 078	25360. 15	$a\ ^5F_1$—$z\ ^5D^\circ_2$
200	3944. 200	25346. 51	$a\ ^3F_3$—$y\ ^5D^\circ_3$
1000	3945. 586	25337. 61	$a\ ^3H_5$—$z\ ^3I^\circ_6$
60	3946. 321	25332. 89	$a\ ^3P_1$—$z\ ^3P^\circ_2$
60	3949. 417	25313. 03	$b\ ^3F_2$—$y\ ^3D^\circ_3$
150	3950. 041	25309. 03	$a\ ^1H_5$—$y\ ^1G^\circ_4$; $b\ ^3F_3$—$y\ ^5F^\circ_2$
200	3950. 230	25307. 82	$a\ ^3F_4$—$z\ ^3G^\circ_3$
150	3950. 410	25306. 67	$a\ ^5D_1$—$y\ ^5D^\circ_0$
125	3951. 212	25301. 53	$a\ ^5P_3$—$z\ ^5P^\circ_3$
20	3952. 290	25294. 63	$a\ ^3D_1$—$x\ ^3D^\circ_2$
200	3952. 703	25291. 99	$a\ ^3D_3$—$w\ ^3D^\circ_3$
10h	3953. 849	25284. 66	$b\ ^3G_3$—61°_4
40	3957. 228	25263. 07	$b\ ^3H_6$—21°_5
100	3957. 448	25261. 66	$a\ ^5P_1$—$z\ ^5P^\circ_2$
500	3964. 908	25214. 13	$a\ ^5F_5$—$z\ ^7D^\circ_5$
100	3969. 794	25183. 10	$a\ ^3P_2$—$y\ ^5F^\circ_3$
4	3970. 404	25179. 23	$a\ ^3P_1$—$y\ ^3D^\circ_2$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
150	3974. 504	25153. 26	$a\ ^5D_3$—$y\ ^5D^\circ_2$	60	4062. 854	24606. 29	$a\ ^1H_5$—$y\ ^3H^\circ_4$
2	3976. 729	25139. 18	$b\ ^3H_4$—31°_4	200	4062. 989	24605. 47	$b\ ^3P_1$—$z\ ^3S^\circ_1$
500	3978. 449	25128. 32	$a\ ^5P_2$—$z\ ^3F^\circ_3$	20	4063. 325	24603. 44	$c\ ^3F_2$—$w\ ^3F^\circ_3$
500	3979. 420	25122. 18	$a\ ^5F_4$—$z\ ^5D^\circ_4$	200	4064. 105	24598. 72	$a\ ^5D_0$—$y\ ^5D^\circ_1$
60	3981. 895	25106. 57	$c\ ^3F_3$—22°_3	600	4064. 456	24596. 59	$a\ ^5D_3$—$z\ ^3F^\circ_2$
50	3982. 217	25104. 54	$b\ ^3H_4$—30°_3	6	4066. 222	24585. 91	$z\ ^7D^\circ_2$—$f\ ^7D^\circ_2$
20	3984. 678	25089. 04	$b\ ^3P_0$—$y\ ^3P^\circ_1$	200	4067. 610	24577. 52	$a\ ^3D_3$—$x\ ^3D^\circ_3$
1000	3984. 862	25087. 88	$a\ ^3F_3$—$z\ ^3F^\circ_2$	600	4068. 367	24572. 95	$a\ ^1G_4$—$z\ ^3H^\circ_4$
400	3987. 797	25069. 41	$a\ ^3D_3$—$x\ ^3F^\circ_3$	150	4071. 398	24554. 65	$b\ ^3P_2$—$x\ ^5D^\circ_1$
60	3989. 194	25060. 63	$b\ ^3P_2$—$y\ ^5P^\circ_3$	20	4071. 865	24551. 84	$a\ ^1H_5$—$x\ ^5F^\circ_4$
4	3991. 793	25044. 32	$c\ ^3P_2$—8°_1	125	4072. 996	24545. 02	$a\ ^3F_2$—$y\ ^5D^\circ_2$
100	3993. 532	25033. 41	$a\ ^5D_2$—$y\ ^5D^\circ_1$	60	4073. 116	24544. 30	$a\ ^3G_3$—$y\ ^3F^\circ_4$
10	3994. 562	25026. 96	$b\ ^3P_1$—$y\ ^5P^\circ_2$	3	4075. 978	24527. 06	$c\ ^3F_3$—$w\ ^3F^\circ_3$
200	3995. 982	25018. 06	$a\ ^5D_1$—$y\ ^5D^\circ_1$	800	4076. 730	24522. 54	$a\ ^5D_2$—$z\ ^3D^\circ_1$
100	3996. 504	25014. 80	$a\ ^5D_2$—$z\ ^5P^\circ_3$	100	4079. 277	24507. 23	$a\ ^5D_1$—$z\ ^3D^\circ_1$
4	3999. 488	24996. 13	$c\ ^3F_2$—$s\ ^3D^\circ_3$	1500	4080. 599	24499. 29	$a\ ^3F_4$—$z\ ^3D^\circ_3$
4	4000. 103	24992. 29	$a\ ^3D_3$—$x\ ^3F^\circ_2$	100	4082. 789	24486. 15	$a\ ^3P_0$—$y\ ^5F^\circ_1$
4	4000. 550	24989. 50	$c\ ^3P_2$—$t\ ^3D^\circ_2$	4	4083. 868	24479. 68	$b\ ^3G_4$—$v\ ^3G^\circ_5$
6	4005. 089	24961. 18	$a\ ^1D_2$—$x\ ^3D^\circ_2$	100	4085. 353	24470. 78	$a\ ^5P_1$—$y\ ^5D^\circ_1$
200	4005. 646	24957. 71	$a\ ^5P_3$—$y\ ^5D^\circ_2$	300	4085. 432	24470. 31	$a\ ^3D_1$—$x\ ^3F^\circ_2$
150	4006. 602	24951. 75	$b\ ^3F_4$—$z\ ^5P^\circ_3$	40	4088. 370	24452. 72	$a\ ^3P_1$—$y\ ^5F^\circ_1$
100	4007. 533	24945. 96	$b\ ^3P_0$—$y\ ^5P^\circ_1$	150	4091. 062	24436. 63	$a\ ^1D_2$—$w\ ^3D^\circ_3$
125	4008. 266	24941. 39	$b\ ^3P_2$—$z\ ^3S^\circ_1$	10	4093. 792	24420. 34	$b\ ^3H_4$—21°_5
20	4011. 732	24919. 85	$c\ ^3F_3$—$s\ ^3D^\circ_3$	250	4097. 022	24401. 09	$a\ ^5P_3$—$z\ ^3F^\circ_2$
125	4013. 502	24908. 86	$a\ ^5D_4$—$z\ ^3F^\circ_3$	1000	4097. 787	24396. 53	$a\ ^3F_2$—$z\ ^3D^\circ_1$
40	4013. 736	24907. 40	$a\ ^3F_2$—$y\ ^5D^\circ_1$	150	4100. 365	24381. 19	$a\ ^5F_3$—$z\ ^7D^\circ_2$
40	4014. 153	24904. 82	$c\ ^3F_2$—$w\ ^3F^\circ_2$	40	4101. 226	24376. 07	$a\ ^3H_5$—$z\ ^1H^\circ_5$
20	4016. 740	24888. 78	$a\ ^3F_2$—$z\ ^5P^\circ_3$	300	4101. 742	24373. 01	$a\ ^5D_2$—$y\ ^5D^\circ_3$
60	4019. 551	24871. 37	$a\ ^5D_3$—$y\ ^5D^\circ_4$	150	4102. 281	24369. 81	$a\ ^5D_4$—$z\ ^3G^\circ_3$
150	4020. 994	24862. 45	$a\ ^3D_2$—$y\ ^3P^\circ_1$	2	4104. 049	24359. 31	$b\ ^3F_2$—$y\ ^5F^\circ_3$
800	4022. 168	24855. 19	$a\ ^5D_3$—$y\ ^5D^\circ_3$	50	4105. 909	24348. 27	$a\ ^5P_2$—$z\ ^3F^\circ_2$
30	4022. 680	24852. 03	$c\ ^3F_4$—$x\ ^1H^\circ_5$	2	4106. 217	24346. 45	$b\ ^3G_5$—$v\ ^3G^\circ_4$
600	4023. 832	24844. 91	$a\ ^5F_4$—$z\ ^7D^\circ_3$	200	4107. 837	24336. 84	$a\ ^1G_4$—$z\ ^1G^\circ_4$
50	4024. 300	24842. 02	$c\ ^3F_3$—19°_4	100	4108. 055	24335. 55	$a\ ^3G_5$—$x\ ^5D^\circ_4$
100	4024. 689	24839. 62	$a\ ^3F_4$—$z\ ^7P^\circ_3$	60	4109. 640	24326. 17	$b\ ^3F_4$—$y\ ^5D^\circ_4$
2	4025. 465	24834. 83	$a\ ^1D_2$—$v\ ^3D^\circ_3$	2000	4112. 741	24307. 83	$a\ ^3F_3$—$z\ ^3F^\circ_3$
10	4026. 492	24828. 50	$c\ ^3F_3$—$w\ ^3F^\circ_2$	150	4113. 380	24304. 05	$a\ ^3D_1$—$x\ ^3D^\circ_1$
40	4028. 434	24816. 53	$b\ ^3F_3$—$y\ ^5F^\circ_4$	60	4114. 128	24299. 63	$a\ ^5P_2$—$z\ ^7P^\circ_2$
200	4031. 003	24800. 71	$a\ ^3F_4$—$z\ ^5G^\circ_4$	4	4117. 76	24278. 20	$z\ ^7D^\circ_2$—$f\ ^7D_2$
200	4032. 207	24793. 31	$a\ ^5F_2$—$z\ ^5D^\circ_3$	200	4118. 500	24273. 84	$a\ ^5F_4$—$z\ ^7D^\circ_4$
50	4032. 509	24791. 45	$b\ ^3F_2$—$y\ ^5F^\circ_1$	6	4119. 458	24268. 19	$c\ ^3P_2$—$x\ ^1F^\circ_3$
1	4033. 724	24783. 98	$a\ ^3H_4$—$v\ ^3D^\circ_3$ $b\ ^3H_4$—25°_3	300	4120. 986	24259. 19	$a\ ^3F_3$—$z\ ^7P^\circ_2$
				100	4121. 126	24258. 37	$a\ ^3P_2$—$z\ ^5P^\circ_2$
80	4037. 738	24759. 35	$a\ ^5P_1$—$y\ ^5D^\circ_0$	5	4122. 786	24248. 60	$a\ ^3D_3$—1°_4
300	4039. 215	24750. 29	$a\ ^1G_4$—$y\ ^3G^\circ_5$	300	4123. 061	24246. 99	$a\ ^3F_2$—$y\ ^5D^\circ_3$
50	4040. 474	24742. 58	$b\ ^3H_5$—19°_4	75	4123. 801	24242. 63	$a\ ^3D_3$—$y\ ^3F^\circ_2$ $b\ ^1G_4$—23°_3
6	4041. 259	24737. 78	$c\ ^3F_3$—17°_4				
20	4041. 980	24733. 36	$a\ ^1G_4$—$y\ ^3F^\circ_3$	30	4126. 407	24227. 32	$b\ ^3F_3$—$z\ ^5P^\circ_2$
2	4044. 262	24719. 41	$a\ ^3D_2$—$y\ ^5P^\circ_1$	200	4127. 439	24221. 27	$a\ ^5F_3$—$z\ ^5D^\circ_4$
2	4044. 710	24716. 67	$b\ ^1G_4$—30°_4	200	4127. 869	24218. 74	$b\ ^3P_1$—$x\ ^5D^\circ_1$
150	4045. 770	24710. 19	$a\ ^1D_2$—$z\ ^1D^\circ_2$	2	4128. 664	24214. 08	$a\ ^1D_2$—$x\ ^3F^\circ_3$
20	4046. 883	24703. 40	$c\ ^3F_2$—16°_3	20	4131. 215	24199. 13	$a\ ^3H_5$—1°_4
150	4049. 418	24687. 93	$a\ ^3D_2$—$y\ ^3P^\circ_2$	1	4133. 614	24185. 08	$c\ ^3F_2$—$y\ ^1P^\circ_1$
1000	4051. 402	24675. 84	$a\ ^5P_3$—$y\ ^5D^\circ_4$	50	4134. 854	24177. 83	$a\ ^3P_1$—$y\ ^5F^\circ_2$
200	4052. 194	24671. 02	$a\ ^5D_2$—$y\ ^5D^\circ_2$	200	4137. 223	24163. 99	$a\ ^5P_2$—$z\ ^3D^\circ_2$
600	4054. 050	24659. 73	$a\ ^5P_3$—$y\ ^5D^\circ_3$	4	4137. 948	24159. 76	$z\ ^7D^\circ_4$—$f\ ^7D^\circ_4$
10	4054. 713	24655. 69	$a\ ^5D_1$—$y\ ^5D^\circ_2$	2	4139. 192	24152. 49	$b\ ^3H_4$—17°_4 $z\ ^3G^\circ_4$—E_4
1	4057. 562	24638. 38	$b\ ^3H_5$—17°_4				
25	4058. 852	24630. 55	$b\ ^3H_4$—23°_3	4	4140. 276	24146. 17	$z\ ^7D^\circ_2$—$e\ ^7D_1$
4	4059. 427	24627. 06	$c\ ^3F_3$—16°_3	2H	4141. 856	24136. 96	$a\ ^1D_2$—$x\ ^3F^\circ_2$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
2000	4144. 160	24123. 54	$a\ ^3F_3$—$z\ ^3D^\circ_2$	100	4246. 342	23543. 05	$a\ ^1G_4$—$y\ ^3F^\circ_4$
1500	4145. 737	24114. 36	$a\ ^5D_2$—$z\ ^3F^\circ_2$	125	4246. 736	23540. 87	$a\ ^1H_5$—$y\ ^1H^\circ_5$
600	4146. 770	24108. 36	$a\ ^5P_1$—$y\ ^5D^\circ_2$	30	4248. 150	23533. 03	$a\ ^3D_2$—$z\ ^3S^\circ_1$
200	4148. 376	24099. 02	$a\ ^5D_1$—$z\ ^3F^\circ_2$	3	4250. 615	23519. 39	$a\ ^3H_4$—$z\ ^1H^\circ_5$
100	4150. 303	24087. 83	$a\ ^5D_0$—$z\ ^3D^\circ_1$	2	4255. 397	23492. 96	$a\ ^1H_5$—$y\ ^3H^\circ_6$
10	4150. 620	24085. 99	$a\ ^3D_3$—$y\ ^3G^\circ_4$	10	4255. 716	23491. 20	$b\ ^3P_1$—$z\ ^3P^\circ_0$
2	4152. 922	24072. 64	$b\ ^1D_2$—22°_3	2	4255. 887	23490. 25	$b\ ^3H_4$—$x\ ^1H^\circ_5$
30	4153. 865	24067. 18	$a\ ^5F_2$—$z\ ^7D^\circ_1$	200	4258. 989	23473. 14	$b\ ^3P_2$—$z\ ^3P^\circ_2$
25H	4156. 254	24053. 34	$a\ ^1H_5$—$y\ ^3H^\circ_5$	100	4260. 007	23467. 53	$a\ ^3P_2$—$y\ ^5D^\circ_1$
50	4157. 734	24044. 78	$a\ ^3D_3$—$y\ ^3G^\circ_3$	1	4262. 472	23453. 96	$z\ ^7D^\circ_3$—$e\ ^5S_2$
4	4158. 260	24041. 74	$b\ ^3H_4$—16°_3	30	4263. 403	23448. 84	$a\ ^3P_2$—$z\ ^5P^\circ_3$
6	4158. 967	24037. 66	$z\ ^5D^\circ_4$—$f\ ^5D_4$	40	4265. 618	23436. 66	$a\ ^5P_3$—$z\ ^3D^\circ_2$
80	4159. 168	24036. 49	$a\ ^3H_5$—$y\ ^3G^\circ_4$	4	4265. 990	23434. 62	$b\ ^3F_2$—$z\ ^5P^\circ_2$
250	4161. 655	24022. 13	$b\ ^3P_2$—$x\ ^5D^\circ_2$	2	4269. 053	23417. 81	$b\ ^3F_3$—$z\ ^5P^\circ_3$
10	4164. 387	24006. 37	$d\ ^3P_2$—43°_3				
				6	4272. 957	23396. 41	$a\ ^1F_3$—38°_4
150	4166. 879	23992. 01	$a\ ^3F_4$—$z\ ^5G^\circ_3$	1	4274. 639	23387. 21	$a\ ^1D_2$—$y\ ^3F^\circ_2$
2000	4167. 514	23988. 36	$a\ ^3F_2$—$z\ ^3F^\circ_2$	30	4277. 272	23372. 81	$b\ ^3P_0$—$x\ ^5D^\circ_1$
6	4168. 758	23981. 20	$z\ ^7D^\circ_3$—$e\ ^7D_3$				$a\ ^5F_3$—$z\ ^7D^\circ_4$
200	4170. 050	23973. 77	$b\ ^3P_2$—$y\ ^3D^\circ_1$	1	4278. 272	23367. 35	$a\ ^5F_1$—$z\ ^7D^\circ_2$
4	4170. 592	23970. 65	$a\ ^1D_2$—$x\ ^3D^\circ_1$				$c\ ^3P_2$—3°_1
1	4170. 908	23968. 84	$a\ ^3G_3$—$x\ ^5D^\circ_2$	30	4278. 698	23365. 02	$b\ ^3P_1$—$z\ ^3P^\circ_1$
4	4171. 686	23964. 37	$a\ ^1F_3$—47°_4	30H	4281. 941	23347. 33	$a\ ^3H_6$—$z\ ^3H^\circ_6$
1	4172. 464	23959. 90	$a\ ^5P_1$—$z\ ^3D^\circ_1$	80	4282. 219	23345. 81	$a\ ^3F_4$—$z\ ^3G^\circ_4$
20	4173. 396	23954. 55	$a\ ^3D_2$—$y\ ^5P^\circ_2$	6	4282. 972	23341. 71	$b\ ^3G_3$—50°_2
10	4175. 299	23943. 63	$a\ ^3G_4$—$y\ ^3D^\circ_3$	1	4283. 113	23340. 94	$a\ ^5P_2$—$z\ ^7P^\circ_3$
30	4175. 436	23942. 85	$a\ ^1H_5$—2°_6				
				400	4284. 330	23334. 31	$a\ ^5D_2$—$z\ ^3F^\circ_3$
6h	4175. 614	23941. 83	$b\ ^3H_4$—$w\ ^3F^\circ_3$	200	4287. 048	23319. 51	$b\ ^3P_2$—$y\ ^3D^\circ_2$
200	4182. 455	23902. 67	$a\ ^1D_2$—$z\ ^1F^\circ_3$	30	4290. 551	23300. 47	$a\ ^3F_3$—$z\ ^7P^\circ_3$
100	4182. 646	23901. 58	$a\ ^5D_4$—$z\ ^7P^\circ_3$	6	4292. 274	23291. 12	$b\ ^3G_4$—43°_3
60	4182. 832	23900. 51	$a\ ^3H_6$—$y\ ^3G^\circ_5$	150	4293. 284	23285. 64	$a\ ^5D_2$—$z\ ^7P^\circ_2$
10	4185. 465	23885. 48	$c\ ^3F_4$—$x\ ^1G^\circ_4$				
				200	4294. 793	23277. 46	$a\ ^5D_3$—$z\ ^3G^\circ_3$
4	4188. 380	23868. 85	$b\ ^1G_4$—19°_4	150	4295. 932	23271. 29	$b\ ^3F_4$—$z\ ^3F^\circ_3$
150	4189. 463	23862. 68	$a\ ^5D_4$—$z\ ^5G^\circ_4$	10	4296. 694	23267. 16	$a\ ^1P_1$—$u\ ^3D^\circ_2$
6	4191. 022	23853. 81	$c\ ^3F_3$—12°_4	1000	4297. 714	23261. 64	$a\ ^3F_3$—$z\ ^5G^\circ_4$
1	4192. 582	23844. 93	$b\ ^3G_5$—51°_4	10	4301. 154	23243. 04	$a\ ^3D_3$—$y\ ^3F^\circ_3$
4	4193. 723	23838. 44	$z\ ^7D^\circ_1$—$e\ ^7D_1$				
				400	4307. 604	23208. 23	$a\ ^3F_2$—$z\ ^3F^\circ_3$
200	4196. 863	23820. 61	$b\ ^3P_1$—$x\ ^5D^\circ_0$	1	4308. 404	23203. 92	$a\ ^3D_1$—$y\ ^3P^\circ_1$
400	4197. 572	23816. 58	$a\ ^5D_3$—$z\ ^3F^\circ_3$	50	4309. 215	23199. 56	$z\ ^7D^\circ_3$—$e\ ^7D_4$
400	4198. 864	23809. 26	$a\ ^5P_2$—$z\ ^3G^\circ_3$	16	4312. 494	23181. 92	$a\ ^3D_1$—$y\ ^3P^\circ_0$
3000	4199. 892	23803. 43	$a\ ^3F_4$—$z\ ^3F^\circ_4$	1	4312. 902	23179. 72	$a\ ^3H_4$—$y\ ^3G^\circ_4$
20	4205. 678	23770. 68	$z\ ^7D^\circ_4$—$e\ ^7D_4$				
				60	4314. 308	23172. 17	$z\ ^7D^\circ_5$—$e\ ^7D_5$
800	4206. 020	23768. 75	$a\ ^3F_3$—$z\ ^3G^\circ_3$	50	4316. 643	23159. 64	$a\ ^3F_2$—$z\ ^7P^\circ_2$
150	4207. 626	23759. 68	$z\ ^7D^\circ_1$—$e\ ^7D_2$	150	4318. 441	23150. 00	$a\ ^5D_2$—$z\ ^3D^\circ_2$
1500	4212. 062	23734. 66	$a\ ^3F_4$—$z\ ^5G^\circ_5$	10	4319. 132	23146. 29	$a\ ^3D_2$—$x\ ^5D^\circ_1$
300	4214. 445	23721. 24	$b\ ^3P_2$—$x\ ^5D^\circ_3$	150	4319. 871	23142. 33	$a\ ^5P_2$—$z\ ^5S^\circ_2$
100	4214. 553	23720. 63	$a\ ^3D_1$—$y\ ^3F^\circ_2$				
				8	4320. 585	23138. 51	$a\ ^3H_4$—$y\ ^3G^\circ_3$
200	4217. 263	23705. 38	$a\ ^3F_4$—$z\ ^7P^\circ_4$	8	4320. 826	23137. 22	$b\ ^3P_1$—$z\ ^3P^\circ_2$
160	4220. 675	23686. 22	$b\ ^3P_1$—$x\ ^5D^\circ_2$	20	4321. 307	23134. 64	$a\ ^5D_1$—$z\ ^3D^\circ_2$
1	4223. 347	23671. 24	$a\ ^3H_4$—$x\ ^3D^\circ_3$	20	4322. 971	23125. 74	$a\ ^1F_3$—33°_3
120	4225. 095	23661. 44	$a\ ^1P_1$—$y\ ^1D^\circ_2$	2h	4323. 469	23123. 07	$b\ ^3G_4$—40°_3
20	4226. 668	23652. 64	$a\ ^1F_3$—42°_4	150	4325. 059	23114. 57	$b\ ^3P_2$—$y\ ^3D^\circ_3$
100	4229. 312	23637. 85	$b\ ^3P_1$—$y\ ^3D^\circ_1$	150	4326. 822	23105. 15	$a\ ^3P_2$—$y\ ^5D^\circ_2$
250	4230. 309	23632. 28	$a\ ^5D_3$—$z\ ^3D^\circ_2$	100	4327. 425	23101. 93	$a\ ^3F_3$—$z\ ^5S^\circ_2$
100	4232. 321	23621. 05	$a\ ^5P_3$—$z\ ^3F^\circ_3$	16	4328. 563	23095. 86	$a\ ^3P_1$—$z\ ^5P^\circ_2$
60	4236. 675	23596. 77	$a\ ^1G_4$—$z\ ^3H^\circ_5$	100	4331. 168	23081. 97	$a\ ^5P_3$—$z\ ^3G^\circ_3$
6	4239. 660	23580. 16	$c\ ^3F_2$—$t\ ^3D^\circ_2$	40	4332. 505	23074. 85	$b\ ^1D_2$—$y\ ^1P^\circ_1$
4	4240. 031	23578. 09	$a\ ^1F_3$—41°_3	10	4332. 649	23074. 08	$b\ ^3F_3$—$y\ ^5D^\circ_2$
400	4241. 058	23572. 38	$a\ ^5P_3$—$z\ ^7P^\circ_2$	1	4335. 125	23060. 90	$a\ ^3D_1$—$y\ ^5P^\circ_1$
400	4243. 058	23561. 27	$a\ ^5D_4$—$z\ ^3D^\circ_3$	80	4336. 431	23053. 96	$a\ ^5D_4$—$z\ ^5G^\circ_3$
60	4244. 834	23551. 42	$a\ ^3D_3$—$y\ ^3P^\circ_2$	200	4337. 268	23049. 51	$a\ ^3F_4$—$z\ ^7F^\circ_4$

TABLE 3—Continued

Intensity	Wave-length	Wave number	Term combination	Intensity	Wave-length	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
20	4338. 675	23042. 03	$c\ ^3P_2$—$x\ ^3G^\circ_3$	150	4473. 909	22345. 55	$a\ ^3F_4$—$z\ ^5F^\circ_3$
40	4340. 351	23033. 14	$a\ ^3H_5$—$z\ ^3H^\circ_4$	2	4475. 640	22336. 91	$b\ ^1D_2$—$w\ ^5D^\circ_2$
30*H*	4341. 050	23029. 43	$a\ ^3D_1$—$y\ ^3P^\circ_2$				$a^3\ H_4$—$y\ ^2F^\circ_3$
400	4342. 073	23024. 00	$a\ ^3F_2$—$z\ ^3D^\circ_2$	2	4475. 880	22335. 71	$z\ ^5F^\circ_4$—$f\ ^5D_4$
100	4346. 484	23000. 64	$a\ ^5P_2$—$z\ ^3D^\circ_3$	4*h*	4476. 475	22332. 74	$c\ ^3F_4$—$x\ ^3G^\circ_3$
200	4349. 704	22983. 61	$b\ ^3P_1$—$y\ ^3D^\circ_2$	4	4477. 97	22325. 28	$a\ ^1F_3$—22°_3
250	4354. 130	22960. 25	$a\ ^3F_3$—$z\ ^3D^\circ_3$	60	4479. 393	22318. 19	$b\ ^3P_2$—$y\ ^5F^\circ_2$
100	4354. 804	22956. 69	$a\ ^3P_2$—$z\ ^3D^\circ_1$	150	4480. 434	22313. 01	$a\ ^3D_2$—$x\ ^5D^\circ_3$
1000	4361. 204	22923. 00	$a\ ^3F_4$—$z\ ^7F^\circ_5$	60	4482. 031	22305. 06	$a\ ^3P_1$—$y\ ^5D^\circ_1$
10	4362. 707	22915. 11	$a\ ^5P_2$—$z\ ^5G^\circ_2$	1	4483. 824	22296. 14	$a\ ^3D_1$—$y\ ^5P^\circ_2$
10	4364. 108	22907. 75	$c\ ^3P_2$—$u\ ^3D^\circ_1$	1	4484. 674	22291. 91	$a\ ^1P_1$—$w\ ^3D^\circ_2$
4	4368. 761	22883. 36	$a\ ^1H_5$—$x\ ^3G^\circ_4$	1	4486. 801	22281. 34	$b\ ^3F_2$—$y\ ^5D^\circ_2$
40	4370. 418	22874. 68	$a\ ^3F_3$—$z\ ^5G^\circ_2$	150	4488. 377	22273. 52	$a\ ^5P_3$—$z\ ^3D^\circ_3$
60	4371. 209	22870. 54	$a\ ^1D_2$—$y\ ^3P^\circ_1$	140	4490. 220	22264. 38	$a\ ^3F_3$—$z\ ^3F^\circ_4$
2000	4372. 200	22865. 36	$a\ ^5D_4$—$z\ ^3F^\circ_4$	100	4491. 674	22257. 17	$b\ ^3P_1$—$y\ ^5F^\circ_1$
30	4381. 276	22817. 99	$a\ ^3D_3$—$y\ ^5P^\circ_2$	1	4492. 920	22251. 00	$b\ ^3G_3$—33°_2
60	4383. 368	22807. 10	$a\ ^3P_2$—$y\ ^5D^\circ_3$	1	4496. 780	22231. 90	$d\ ^3F_2$—45°_1
400	4385. 393	22796. 57	$a\ ^5D_4$—$z\ ^5G^\circ_5$	200	4498. 138	22225. 19	$b\ ^3F_4$—$z\ ^5G^\circ_4$
400	4385. 650	22795. 23	$a\ ^5D_2$—$z\ ^3G^\circ_3$	40	4508. 043	22176. 35	$a\ ^3H_4$—$z\ ^3H^\circ_4$
80	4386. 272	22792. 00	$b\ ^3P_0$—$y\ ^3D^\circ_1$	60	4508. 553	22173. 85	$a\ ^1P_1$—$z\ ^1P^\circ_1$
1*h*	4388. 106	22782. 48	$c\ ^3F_3$—$x\ ^1F^\circ_3$				$c\ ^3P_2$—$y\ ^3S^\circ_1$
30	4388. 998	22777. 85	$c\ ^3F_3$—$y\ ^5S^\circ_2$	160	4510. 082	22166. 33	$a\ ^3F_3$—$z\ ^7P^\circ_4$
			$b\ ^3G_3$—42°_4	140	4511. 183	22160. 92	$b\ ^3P_2$—$y\ ^5F^\circ_3$
500	4390. 440	22770. 36	$a\ ^5D_3$—$z\ ^5G^\circ_4$	2	4514. 83	22143. 02	$b\ ^3H_5$—$y\ ^3H^\circ_4$
100	4391. 031	22767. 30	$a\ ^5D_4$—$z\ ^7P^\circ_4$	50	4516. 272	22135. 95	$b\ ^1G_4$—$x\ ^1G^\circ_4$
				200	4516. 877	22132. 98	$b\ ^3F_2$ $z\ ^3D^\circ_1$
30	4394. 970	22746. 90	$a\ ^3H_6$—$z\ ^3H^\circ_5$				
2	4396. 700	22737. 94	$b\ ^1D_2$—$w\ ^5D^\circ_1$	160	4517. 794	22128. 49	$a\ ^5D_2$—$z\ ^5S^\circ_2$
150	4397. 803	22732. 24	$b\ ^3F_4$—$z\ ^3G^\circ_3$	160	4520. 931	22113. 14	$a\ ^5D_1$—$z\ ^5S^\circ_2$
1*h*	4398. 733	22727. 44	$a\ ^1D_2$—$y\ ^5P^\circ_1$	2*h*	4525. 931	22088. 71	$b\ ^3H_5$—$x\ ^5F^\circ_4$
60	4399. 597	22722. 97	$a\ ^5P_1$—$z\ ^7P^\circ_2$	4	4529. 044	22073. 53	$z\ ^5D^\circ_4$—$e\ ^7D_5$
2	4402. 286	22709. 09	$z\ ^7D^\circ_1$—$e\ ^5S_2$	200	4530. 860	22064. 68	$c\ ^3P_2$—$y\ ^1F^\circ_3$
40	4404. 815	22696. 05	$a\ ^1D_2$—$y\ ^3P^\circ_2$				$a\ ^3D_2$—$z\ ^3P^\circ_2$
500	4410. 028	22669. 23	$a\ ^3F_2$—$z\ ^3G^\circ_3$	4*h*	4531. 78	22060. 20	$a\ ^1G_4$—$y\ ^3D^\circ_3$
1	4412. 324	22657. 43	$a\ ^3H_5$—$z\ ^3H^\circ_6$	10	4532. 443	22056. 97	$a\ ^3H_5$—$z\ ^3H^\circ_5$
20	4413. 300	22652. 42	$a\ ^1P_1$—$w\ ^3D^\circ_1$	1	4533. 301	22052. 80	$a\ ^3D_3$—$y\ ^3F^\circ_4$
4	4414. 995	22643. 72	$b\ ^3F_2$—$y\ ^5D^\circ_1$	2	4534. 480	22047. 06	$z\ ^5D^\circ_3$—$e\ ^5G_3$
100	4420. 852	22613. 72	$a\ ^3D_2$—$x\ ^5D^\circ_2$				$a\ ^1F_3$—$w\ ^3F^\circ_2$
			$a\ ^5P_3$—$z\ ^7P^\circ_3$	50	4535. 584	22041. 70	$a\ ^5P_2$—$z\ ^7F^\circ_1$
150	4421. 456	22610. 64	$a\ ^5D_3$—$z\ ^5S^\circ_2$	10	4542. 430	22008. 48	$c\ ^3P_1$—3°_1
4	4422. 978	22602. 85	$b\ ^1D_2$—9°_1	150	4543. 690	22002. 37	$a\ ^3F_2$—$z\ ^5S^\circ_2$
				8	4545. 713	21992. 58	$b\ ^3G_4$—23°_3
50	4424. 796	22593. 57	$a\ ^3P_1$—$y\ ^5D^\circ_0$	125	4546. 930	21986. 70	$a\ ^5D_2$—$z\ ^3D^\circ_3$
4	4426. 014	22587. 35	$a\ ^5P_1$—$z\ ^3D^\circ_2$				
250	4428. 441	22574. 97	$a\ ^5P_3$—$z\ ^5G^\circ_4$	200	4547. 278	21985. 02	$a\ ^5D_4$—$z\ ^7F^\circ_5$
4	4430. 309	22565. 45	$a^3\ D_2$—$y\ ^3D^\circ_1$	150	4547. 850	21982. 25	$b\ ^3P_1$—$y\ ^5F^\circ_2$
			$a\ ^3G_5$—$y\ ^5F^\circ_5$	80	4549. 423	21974. 65	$a\ ^5P_2$—$z\ ^7F^\circ_2$
1	4433. 641	22548. 49	$a\ ^3P_2$—$z\ ^3F^\circ_2$	120	4549. 940	21972. 15	$b\ ^1G_4$—$y\ ^1G^\circ_4$
				200	4552. 118	21961. 64	$a\ ^5D_3$—$z\ ^5G^\circ_3$
2*H*	4438. 343	22524. 61	$b\ ^1D_2$—8°_1	1500	4554. 514	21950. 09	$a\ ^3F_4$—$z\ ^3G^\circ_5$
10	4439. 413	22519. 18	$b\ ^3P_0$—$z\ ^3P^\circ_1$	10	4556. 064	21942. 62	$a\ ^3P_1$—$y\ ^5D^\circ_2$
250	4439. 745	22517. 50	$b\ ^3F_3$—$z\ ^3F^\circ_2$	6	4557. 811	21934. 21	$a\ ^3F_3$—$z\ ^7F^\circ_3$
10	4440. 069	22515. 85	$a\ ^3D_3$—$y\ ^5P^\circ_3$	200	4559. 982	21923. 77	$b\ ^3F_4$—$z\ ^3D^\circ_3$
150	4444. 494	22493. 44	$a\ ^5P_2$—$z\ ^5G^\circ_3$	50	4562. 601	21911. 18	$a\ ^3D_2$—$y\ ^3D^\circ_2$
400	4449. 322	22469. 03	$a\ ^5D_3$—$z\ ^3D^\circ_3$	100	4564. 693	21901. 14	$a\ ^5D_2$—$z\ ^5G^\circ_2$
1	4452. 520	22452. 89	$a\ ^3F_3$—$z\ ^5G^\circ_3$	1	4566. 681	21891. 61	$c\ ^3F_2$—$x\ ^3P^\circ_2$
800	4460. 031	22415. 08	$a\ ^5P_3$—$z\ ^5S^\circ_2$	2	4567. 885	21885. 84	$a\ ^5D_1$—$z\ ^5G^\circ_2$
8	4461. 472	22407. 84	$a\ ^5D_4$—$z\ ^3G^\circ_4$	10	4570. 241	21874. 55	$a\ ^3D_1$—$z\ ^3S^\circ_1$
10	4465. 483	22387. 71	$a\ ^1D_2$—$y\ ^3F^\circ_3$	4	4575. 738	21848. 28	$a\ ^5P_2$—$z\ ^7F^\circ_3$
30	4466. 352	22383. 36	$a\ ^5D_3$—$z\ ^5G^\circ_2$	2	4576. 303	21845. 58	$a\ ^1F_3$—16°_3
40	4467. 257	22378. 82	$a\ ^1P_1$—$z\ ^1S^\circ_0$	150	4580. 068	21827. 62	$a\ ^3P_0$—$z\ ^3D^\circ_1$
6	4471. 018	22360. 00	$b\ ^3H_4$—$y\ ^1G^\circ_4$	1000	4584. 440	21806. 81	$a\ ^3F_3$—$z\ ^3G^\circ_4$
4	4472. 257	22353. 80	$a\ ^3H_4$—$y\ ^3G^\circ_5$	60	4587. 099	21794. 16	$a\ ^3P_1$—$z\ ^3D^\circ_1$
30	4473. 324	22348. 47	$a\ ^1H_5$—$z\ ^1I^\circ_6$	15	4589. 574	21782. 41	$b\ ^3G_4$—21°_5

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
$2h$	4590.727	21776.94	$z\ ^7D^\circ_5$— $e\ ^5G_6$	10	4695.253	21292.15	$z\ ^5D^\circ_3$—$e\ ^3D_2$
200	4591.097	21775.19	$a\ ^3F_2$—$z\ ^5G^\circ_2$	1	4698.700	21276.53	$z\ ^5F^\circ_4$—$e\ ^5P_3$
100	4591.546	21773.06	$a\ ^5D_3$—$z\ ^3F^\circ_4$	2	4700.261	21269.46	$z\ ^5S^\circ_2$—D_3
6	4592.005	21770.88	$z\ ^5G^\circ_2$—$f\ ^7D_1$	1	4705.16	21247.32	$a\ ^5P_3$—$z\ ^7F^\circ_2$
200	4592.513	21768.47	$a\ ^3P_2$—$z\ ^3F^\circ_3$	1000	4709.482	21227.82	$b\ ^3F_4$—$z\ ^3F^\circ_4$
10	4592.995	21766.19	$a\ ^5P_3$—$z\ ^5G^\circ_3$	20	4710.968	21221.12	$z\ ^5D^\circ_3$—$e\ ^3G_4$
10	4593.195	21765.24	$a\ ^1P_1$—$x\ ^3D^\circ_2$	80	4711.988	21216.53	$c\ ^3P_1$—$u\ ^3D^\circ_2$
1	4594.641	21758.39	$z\ ^7D^\circ_5$—$e\ ^5D_4$	$16h$	4712.502	21214.21	$z\ ^5D^\circ_3$—$e\ ^5D_2$
150	4596.703	21748.63	$b\ ^1D_2$—$x\ ^1F^\circ_3$	10	4713.370	21210.31	$z\ ^5D^\circ_3$—$e\ ^3G_3$
1	4597.331	21745.66	$a\ ^1F_3$—$w\ ^3F^\circ_3$	1	4714.834	21203.72	$d\ ^3F_4$—35°_3
1	4597.697	21743.93	$b\ ^1D_2$—$y\ ^5S^\circ_2$	6	4715.615	21200.21	$a\ ^3H_4$—$z\ ^3H^\circ_5$
500	4599.082	21737.38	$b\ ^3F_3$—$z\ ^3F^\circ_3$	100	4716.049	21198.26	$b\ ^3F_3$—$z\ ^3G^\circ_3$
150	4601.757	21724.74	$b\ ^3F_2$—$z\ ^3F^\circ_2$	6	4718.840	21185.72	$b\ ^3G_3$—19°_4
30	4602.820	21719.73	$a\ ^3P_2$—$z\ ^7P^\circ_2$	120	4720.920	21176.39	$a\ ^3D_3$—$x\ ^5D^\circ_3$
150	4605.671	21706.28	$a\ ^3D_2$—$y\ ^3D^\circ_3$	1	4721.848	21172.23	$b\ ^3G_3$—$w\ ^3F^\circ_2$
2	4608.673	21692.14	$z\ ^7D^\circ_5$—$f\ ^5F_5$	10	4723.226	21166.05	$c\ ^3F_2$—$u\ ^3D^\circ_2$
10	4610.492	21683.59	$a\ ^1H_5$—$x\ ^3G^\circ_5$	40	4724.799	21159.00	$b\ ^3F_4$—$z\ ^5G^\circ_5$
60	4612.328	21674.95	$a\ ^5D_3$—$z\ ^7P^\circ_4$	4	4727.584	21146.54	$a\ ^3H_4$—$y\ ^3F^\circ_4$
2	4615.425	21660.41	$a\ ^1D_2$—$y\ ^5P^\circ_3$	300	4731.323	21129.83	$b\ ^3F_4$—$z\ ^7P^\circ_4$
2	4616.093	21657.28	$b\ ^3H_4$—$y\ ^3H^\circ_4$	150	4733.319	21120.92	$a\ ^5P_3$—$z\ ^7F^\circ_3$
30	4617.662	21649.92	$a\ ^5P_2$—$z\ ^5F^\circ_1$	300	4733.520	21120.02	$a\ ^5P_3$—$z\ ^3G^\circ_4$
$4h$	4618.024	21648.22	$d\ ^3F_3$—47°_4	10	4740.332	21089.67	$a\ ^3D_1$—$x\ ^5D^\circ_0$
6	4618.799	21644.59	$d\ ^3F_4$—43°_3				$c\ ^3F_3$—$u\ ^3D^\circ_2$
8	4624.322	21618.74	$b\ ^3G_4$—19°_4	125	4743.028	21077.68	$b\ ^3H_5$—$y\ ^1H^\circ_5$
4	4624.464	21618.07	$b\ ^1D_2$—$w\ ^5D^\circ_3$	2	4743.670	21074.83	$a\ ^5P_2$—$z\ ^5D^\circ_1$
20	4626.035	21610.73	$c\ ^3P_1$—$y\ ^1D^\circ_2$	2	4743.984	21073.44	$c\ ^3P_2$—$x\ ^3D^\circ_2$
30	4628.337	21599.98	$c\ ^3P_2$—$w\ ^3D^\circ_2$	4	4744.654	21070.46	$z\ ^7P^\circ_3$—D_3
10	4630.442	21590.16	$b\ ^3H_5$—$y\ ^3H^\circ_5$	1	4745.859	21065.11	$b\ ^3P_1$—$z\ ^5P^\circ_1$
			$z\ ^5F^\circ_4$—$e\ ^5G_3$	2	4749.803	21047.62	$z\ ^5D^\circ_3$—$e\ ^5D_1$
1	4631.74	21584.11	$a\ ^3P_2$—$z\ ^3D^\circ_2$	30	4751.015	21042.25	$a\ ^5D_1$—$z\ ^7F^\circ_0$
2	4633.173	21577.44	$a\ ^5P_3$—$z\ ^3F^\circ_4$	$4h$	4751.454	21040.30	$z\ ^7F^\circ_2$—$f\ ^7D_2$
300	4635.682	21565.76	$a\ ^5P_1$—$z\ ^5S^\circ_2$	30	4752.140	21037.27	$z\ ^5D^\circ_3$—$f\ ^5F_4$
$20h$	4638.419	21553.04	$b\ ^3F_3$—$z\ ^3D^\circ_2$	6	4753.844	21029.73	$b\ ^3H_5$—$y\ ^3H^\circ_6$
20	4639.318	21548.86	$c\ ^3P_1$—$u\ ^3D^\circ_1$	250	4756.244	21019.12	$a\ ^5D_3$—$z\ ^7F^\circ_4$
30	4640.983	21541.13	$a\ ^1D_2$—$z\ ^3S^\circ_1$	500	4757.844	21012.05	$a\ ^5D_4$—$z\ ^3G^\circ_5$
200	4645.09	21522.08	$a\ ^1H_5$—$z\ ^3I^\circ_6$	6	4761.533	20995.77	$d\ ^3P_2$—$t\ ^3D^\circ_2$
6	4646.810	21514.12	$a\ ^1P_1$—$z\ ^1D^\circ_2$	150	4764.406	20983.11	$z\ ^5D^\circ_3$—$e\ ^3D_3$
600	4647.594	21510.49	$a\ ^3F_3$—$z\ ^7F^\circ_4$	4	4766.647	20973.24	$z\ ^7F^\circ_1$—$f\ ^7D_2$
60	4648.158	21507.88	$z\ ^7D^\circ_5$—$e\ ^5D_4$	60	4767.153	20971.02	$b\ ^3H_4$—$x\ ^3G^\circ_3$
4	4650.211	21498.38	$c\ ^3F_2$—$u\ ^3D^\circ_1$	300	4769.306	20961.55	$a\ ^3F_4$—$z\ ^5D^\circ_3$
4	4652.498	21487.81	$a\ ^3D_1$—$x\ ^5D^\circ_1$	125	4773.155	20944.65	$b\ ^3F_2$—$z\ ^3F^\circ_3$
$2h$	4653.322	21484.01	$c\ ^3F_3$—$y\ ^1D^\circ_2$	125	4774.004	20940.92	$a\ ^1P_1$—$x\ ^3F^\circ_2$
70	4653.759	21481.99	$c\ ^3P_2$—$z\ ^1P^\circ_1$	15	4781.112	20909.79	$a\ ^3D_2$—$y\ ^5F^\circ_2$
400	4654.311	21479.44	$a\ ^5D_2$—$z\ ^5G^\circ_3$	50	4781.770	20906.91	$a\ ^3D_1$—$y\ ^3D^\circ_1$
			$a\ ^5P_3$—$z\ ^7P^\circ_4$	20	4783.300	20900.23	$b\ ^3P_1$—$z\ ^5P^\circ_2$
50	4654.780	21477.28	$a\ ^3D_3$—$x\ ^5D^\circ_2$	150	4784.266	20896.01	$b\ ^3F_2$—$z\ ^7P^\circ_2$
60	4656.415	21469.74	$a\ ^3F_4$—$z\ ^5F^\circ_4$	1	4785.079	20892.46	$b\ ^3G_5$—$x\ ^1H^\circ_5$
4	4660.640	21450.28	$b\ ^3G_3$—22°_3	10	4787.357	20882.51	$z\ ^7F^\circ_5$—$f\ ^5D_4$
6	4662.254	21442.85	$a\ ^5D_3$—$z\ ^7F^\circ_2$	$4h$	4790.809	20867.47	$z\ ^5F^\circ_3$—$e\ ^3D_2$
20	4662.494	21441.75	$z\ ^7D^\circ_4$—$f\ ^5F_5$	150	4794.386	20851.90	$a\ ^5D_3$—$z\ ^5F^\circ_2$
100	4669.139	21411.23	$b\ ^3P_0$—$y\ ^5F^\circ_1$	150	4795.575	20846.73	$a\ ^5P_2$—$z\ ^5F^\circ_3$
250	4669.973	21407.41	$a\ ^5D_4$—$z\ ^5F^\circ_3$	150	4798.450	20834.24	$a\ ^5D_2$—$z\ ^7F^\circ_2$
6	4671.368	21401.02	$b\ ^3P_2$—$z\ ^5P^\circ_1$	60	4801.180	20822.39	$c\ ^3P_2$—$z\ ^1D^\circ_2$
300	4674.638	21386.05	$a\ ^3P_1$—$z\ ^3F^\circ_2$	20	4802.91	20814.89	$c\ ^3P_1$—$y\ ^3S^\circ_1$
40	4681.408	21355.12	$c\ ^3F_4$—$y\ ^1F^\circ_3$	200	4804.887	20806.33	$a\ ^3F_3$—$z\ ^5F^\circ_3$
400	4681.780	21353.42	$a\ ^3F_2$—$z\ ^5G^\circ_3$	4	4807.633	20794.45	$z\ ^5F^\circ_4$—$f\ ^5F_3$
300	4684.013	21343.24	$a\ ^3F_3$—$z\ ^5F^\circ_2$	20	4809.714	20785.45	$z\ ^5F^\circ_3$—$e\ ^3G_3$
2	4685.052	21338.51	$a\ ^5P_1$—$z\ ^5G^\circ_2$	4	4810.693	20781.22	$b\ ^1D_2$—$x\ ^3P^\circ_2$
400	4690.114	21315.48	$a\ ^5D_3$—$z\ ^3G^\circ_4$	6	4812.225	20774.60	$a\ ^3D_3$—$y\ ^3D^\circ_2$
$2h$	4692.912	21302.77	$z\ ^5D^\circ_3$—$f\ ^5F_3$				$a\ ^1P_1$—$x\ ^3D^\circ_1$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
6	4812. 849	20771. 91	$z\ ^5D^\circ_4$—$e\ ^3G_5$	80	4914. 195	20343. 53	$z\ ^5D^\circ_2$—$f\ ^5F_3$
20	4813. 231	20770. 26	$b\ ^3F_4$—$z\ ^3G^\circ_4$	20	4917. 341	20330. 52	$z\ ^5F^\circ_2$—$e\ ^3D_2$
200	4815. 531	20760. 34	$b\ ^3F_2$—$z\ ^3D^\circ_2$ $a\ ^3D_1$—$z\ ^3P^\circ_0$	6	4918. 369	20326. 27	$c\ ^3P_2$—$x\ ^3F^\circ_3$
60	4817. 353	20752. 49	$a\ ^3D_2$—$y\ ^5F^\circ_3$	4	4919. 646	20320. 99	$a\ ^1D_2$—$x\ ^5D^\circ_3$
				500	4921. 081	20315. 07	$a\ ^5D_3$—$z\ ^5F^\circ_3$
2	4820. 251	20740. 01	$z\ ^3G^\circ_5$—$e\ ^7D_4$	2	4923. 725	20304. 16	$b\ ^3F_3$—$z\ ^5G^\circ_2$
80	4822. 584	20729. 98	$b\ ^3F_3$—$z\ ^7P^\circ_3$	2	4924. 518	20300. 89	$a\ ^1D_2$—$z\ ^3P^\circ_1$
2	4824. 356	20722. 36	$a\ ^1F_3$—$t\ ^3D^\circ_2$	4	4930. 934	20274. 48	$d\ ^3P_2$—$x\ ^1F^\circ_3$
4	4825. 751	20716. 38	$b\ ^1G_4$—$y\ ^3H^\circ_5$	1	4931. 73	20271. 20	$a\ ^3F_4$—$z\ ^5F^\circ_5$
30h	4826. 207	20714. 42	$z\ ^5F^\circ_3$—$e\ ^5G_4$	1	4932. 37	20268. 57	$z\ ^5F^\circ_5$—$e\ ^3G_5$
30h	4826. 567	20712. 87	$z\ ^5F^\circ_4$—$e\ ^3G_4$	10	4934. 613	20259. 36	$z\ ^5F^\circ_1$—F_1
4h	4827. 648	20708. 24	$a\ ^3F_2$—$z\ ^7F^\circ_3$	150	4935. 640	20255. 14	$z\ ^5D^\circ_2$—$e\ ^5D_2$
40	4828. 683	20703. 80	$c\ ^3F_4$—$x\ ^3F^\circ_4$	50	4936. 244	20252. 67	$a\ ^3D_1$—$y\ ^3D^\circ_2$
2	4831. 633	20691. 16	$b\ ^3F_3$—$z\ ^5G^\circ_4$	125	4937. 219	20248. 67	$z\ ^5F^\circ_2$—$e\ ^3G_3$
1	4836. 412	20670. 71	$b\ ^3G_3$—$x\ ^5P^\circ_3$	200	4938. 444	20243. 64	$a\ ^3F_2$—$z\ ^5F^\circ_2$
40	4838. 161	20663. 24	$z\ ^5F^\circ_3$—$e\ ^5G_3$	1	4940. 131	20236. 73	$d\ ^3F_4$—22°_3
150	4839. 014	20659. 60	$z\ ^5D^\circ_4$—$e\ ^5D_4$	20	4941. 575	20230. 82	$d\ ^3F_2$—16°_3
125	4839. 760	20656. 41	$a\ ^5P_3$—$z\ ^5F^\circ_2$	60	4944. 006	20220. 87	$a\ ^1H_5$—$y\ ^3G^\circ_4$
10	4841. 756	20647. 90	$z\ ^7F^\circ_5$—$e\ ^7D_2$	20	4944. 404	20219. 24	$b\ ^3P_0$—$z\ ^5P^\circ_1$
10	4843. 767	20639. 32	$z\ ^5D^\circ_1$—$e\ ^3D_2$	2	4951. 26	20191. 24	$a\ ^1P_1$—$y\ ^3F^\circ_2$
200	4844. 560	20635. 94	$a\ ^5D_2$—$z\ ^5F^\circ_1$	200	4955. 272	20174. 90	$z\ ^5F^\circ_5$—$e\ ^5G_6$
6	4845. 899	20630. 24	$a\ ^3G_4$—$y\ ^5D^\circ_4$	150	4959. 872	20156. 19	$z\ ^5F^\circ_5$—$e\ ^5D_4$ $z\ ^7F^\circ_5$—$f\ ^7D_4$
10	4847. 871	20621. 85	$a\ ^1D_2$—$x\ ^5D^\circ_2$	1	4962. 872	20144. 00	$d\ ^3P_2$—$w\ ^5D^\circ_3$
15	4848. 166	20620. 60	$a\ ^5D_1$—$z\ ^5F^\circ_1$	15	4964. 885	20135. 83	$d\ ^3F_4$—21°_5
6	4851. 935	20604. 58	$c\ ^3P_1$—$v\ ^3D^\circ_2$				
1	4852. 60	20601. 75	$c\ ^3P_1$—$w\ ^3D^\circ_1$	10	4966. 109	20130. 87	$d\ ^3F_2$—$w\ ^3F^\circ_3$
2	4852. 898	20600. 49	$z\ ^7F^\circ_2$—$e\ ^7D_1$	10	4967. 368	20125. 77	$z\ ^3G^\circ_4$—$e\ ^7D_3$
150	4854. 559	20593. 44	$z\ ^5D^\circ_4$—$f\ ^5F_5$	30	4967. 618	20124. 76	$z\ ^7F^\circ_3$—$e\ ^7D_3$ $z\ ^7F^\circ_3$—C_5
2	4857. 990	20578. 90	$c\ ^3F_3$—$y\ ^1F^\circ_3$	50	4968. 006	20123. 19	$c\ ^3P_1$—$z\ ^1P^\circ_1$
2	4859. 245	20573. 58	$a\ ^1D_2$—$y\ ^3D^\circ_1$				
8	4860. 157	20569. 72	$a\ ^3D_3$—$y\ ^3D^\circ_3$	300	4968. 900	20119. 57	$a\ ^5P_3$—$z\ ^5F^\circ_3$
150	4861. 865	20562. 50	$a\ ^3P_2$—$z\ ^5S^\circ_2$	6	4970. 181	20114. 38	$c\ ^3F_3$—$w\ ^3D^\circ_2$
60	4863. 105	20557. 25	$a\ ^3P_1$—$z\ ^7P^\circ_2$	10	4970. 798	20111. 88	$z\ ^7P^\circ_2$—D_3
75	4865. 090	20548. 87	$c\ ^3P_2$—$w\ ^3D^\circ_3$	10	4971. 414	20109. 39	$b\ ^3P_1$—$y\ ^5D^\circ_1$
1000	4869. 163	20531. 68	$a\ ^5D_4$—$z\ ^5F^\circ_4$	150	4974. 106	20098. 51	$b\ ^3H_6$—$z\ ^3I^\circ_7$
100	4869. 782	20529. 07	$z\ ^5F^\circ_4$—$f\ ^5F_4$	250	4976. 200	20090. 05	$z\ ^5F^\circ_5$—$f\ ^5F_5$
1h	4871. 368	20522. 38	$b\ ^1D_2$—$x\ ^3G^\circ_3$	10h	4977. 208	20085. 98	$z\ ^5F^\circ_2$—$e\ ^5D_1$
4	4871. 588	20521. 46	$z\ ^7F^\circ_2$—$e\ ^7D_2$	50	4977. 982	20082. 86	$b\ ^3P_2$—$y\ ^5D^\circ_2$ $c\ ^3P_2$—$x\ ^3D^\circ_1$
150	4874. 329	20509. 92	$a\ ^3F_2$—$z\ ^5F^\circ_1$	300	4980. 359	20073. 27	$a\ ^5P_1$—$z\ ^5F^\circ_1$
160	4875. 020	20507. 01	$z\ ^5F^\circ_4$—$e\ ^5G_5$				
50	4877. 414	20496. 94	$a\ ^5D_1$—$z\ ^5D^\circ_0$	6h	4983. 103	20062. 22	$z\ ^5F^\circ_2$—$e\ ^5S_2$
30	4877. 885	20494. 96	$a\ ^5P_1$—$z\ ^7F^\circ_0$	150	4983. 443	20060. 85	$a\ ^5D_2$—$z\ ^5D^\circ_1$
50	4882. 654	20474. 95	$z\ ^5F^\circ_4$—$e\ ^3D_3$	30	4984. 695	20055. 81	$b\ ^1D_2$—$u\ ^3D^\circ_2$
40	4885. 016	20465. 05	$a\ ^5P_1$—$z\ ^7F^\circ_1$	160	4987. 262	20045. 49	$a\ ^5D_1$—$z\ ^5D^\circ_1$
6h	4886. 347	20459. 47	$b\ ^3H_5$—$z\ ^3I^\circ_5$	2h	4991. 196	20029. 69	$z\ ^7F^\circ_4$—$f\ ^7D_4$ $a\ ^3G_3$—$y\ ^5D^\circ_2$
1	4887. 538	20454. 49	$z\ ^7F^\circ_1$—$e\ ^7D_2$	200	4992. 741	20023. 49	$a\ ^5D_4$—$z\ ^5D^\circ_3$
30	4888. 605	20450. 02	$b\ ^1D_2$—$y\ ^1D^\circ_2$	10	4994. 898	20014. 85	$c\ ^3P_2$—$z\ ^1F^\circ_3$
10h	4892. 824	20432. 39	$z\ ^7F^\circ_6$—C_5	1	4996. 24	20009. 47	$d\ ^3F_3$—22°_3
4	4894. 208	20426. 61	$b\ ^3P_2$—$z\ ^5P^\circ_3$	10h	4998. 049	20002. 23	$z\ ^3F^\circ_4$—$f\ ^5D_4$
200	4895. 340	20421. 89	$a\ ^5P_2$—$z\ ^5D^\circ_2$	1h	4999. 00	19998. 42	$z\ ^7F^\circ_2$—$e\ ^7D_3$ $z\ ^7F^\circ_4$—C_5
400	4895. 609	20420. 77	$a\ ^3P_2$—$z\ ^3D^\circ_3$	6h	4999. 538	19996. 27	$a\ ^1F_3$—$y\ ^5S^\circ_2$
200	4899. 255	20405. 57	$b\ ^3F_2$—$z\ ^3G^\circ_3$	125	5003. 523	19980. 34	$z\ ^5D^\circ_3$—B_4
100	4901. 071	20398. 01	$a\ ^5P_1$—$z\ ^7F^\circ_2$ $b^3\ P_1$—$y\ ^5D^\circ_0$	100	5005. 243	19973. 48	$b\ ^3H_4$—$z\ ^3I^\circ_5$
80	4901. 855	20394. 75	$z\ ^5D^\circ_1$—$e\ ^5D_1$	125	5010. 600	19952. 13	$z\ ^5D^\circ_3$—$e\ ^3P_2$
600	4903. 066	20389. 71	$b\ ^3F_3$—$z\ ^3D^\circ_3$	250	5011. 234	19949. 60	$a\ ^5P_1$—$z\ ^5D^\circ_0$
				1	5014. 320	19937. 32	$b\ ^3F_2$—$z\ ^7P^\circ_3$
60h	4904. 593	20383. 36	$a\ ^1H_5$—1°_4	200	5014. 957	19934. 79	$a\ ^3F_2$—$z\ ^5D^\circ_1$
150	4905. 030	20381. 55	$a\ ^3F_3$—$z\ ^5D^\circ_2$	2	5015. 997	19930. 66	$a\ ^3F_3$—$z\ ^5F^\circ_4$
200	4907. 895	20369. 65	$a\ ^5D_2$—$z\ ^5F^\circ_2$	8	5016. 816	19927. 40	$c\ ^3F_3$—$x\ ^3F^\circ_4$
100	4911. 598	20354. 29	$a\ ^5D_1$—$z\ ^5F^\circ_2$	150	5018. 961	19918. 89	$z\ ^5F^\circ_3$—$f\ ^5F_3$
60	4913. 278	20347. 33	$b\ ^3F_4$—$z\ ^7F^\circ_5$	80	5020. 315	19913. 52	$a\ ^3P_2$—$z\ ^5G^\circ_3$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
300	5026.197	19890.21	$a\ {}^5D_3$—$z\ {}^5D^\circ_2$	400	5155.140	19392.71	$a\ {}^5D_1$—$z\ {}^5D^\circ_2$
200	5028.162	19882.44	$b\ {}^3F_3$—$z\ {}^5G^\circ_3$	150	5160.008	19374.42	$b\ {}^3F_4$—$z\ {}^3G^\circ_5$
4	5031.895	19867.69	$z\ {}^7F^\circ_1$—F_1	50	5168.062	19344.23	$z\ {}^3G^\circ_4$—$e\ {}^7D_4$
1	5032.34	19865.93	$z\ {}^7F^\circ_3$—$e\ {}^3D_2$	20	5168.636	19342.08	$b\ {}^3H_4$—$x\ {}^3F^\circ_4$
2	5032.900	19863.72	$z\ {}^5F^\circ_2$—$e\ {}^5P_3$	20	5170.078	19336.68	$c\ {}^3F_3$—$z\ {}^1D^\circ_2$
6	5036.986	19847.61	$b\ {}^3G_3$—$t\ {}^3D^\circ_2$	1000	5171.026	19333.14	$a\ {}^5D_4$—$z\ {}^5F^\circ_5$
10	5039.037	19839.53	$c\ {}^3F_4$—$w\ {}^3D^\circ_3$	50	5177.993	19307.13	$d\ {}^3P_2$—$x\ {}^3P^\circ_2$
150	5039.627	19837.21	$z\ {}^5F^\circ_3$—$e\ {}^3G_4$	30	5184.753	19281.95	$a\ {}^3F_2$—$z\ {}^5D^\circ_2$
125	5040.357	19834.33	$c\ {}^3P_2$—$x\ {}^3D^\circ_3$	6	5188.410	19268.36	$a\ {}^3P_2$—$z\ {}^7F^\circ_3$
160	5040.738	19832.83	$a\ {}^5D_2$—$z\ {}^5F^\circ_3$	20	5189.699	19263.58	$b\ {}^3P_0$—$y\ {}^5D^\circ_1$
20	5041.350	19830.43	$z\ {}^5F^\circ_3$—$e\ {}^5D_2$	4	5193.026	19251.23	$a\ {}^3D_1$—$y\ {}^5F^\circ_2$
20	5041.978	19827.96	$b\ {}^3H_5$—$x\ {}^3F^\circ_4$ $a\ {}^3D_2$—$z\ {}^5P^\circ_2$	400	5195.017	19243.86	$a\ {}^5P_3$—$z\ {}^5F^\circ_4$
				50	5197.058	19236.30	$b\ {}^3F_3$—$z\ {}^3G^\circ_4$
100	5045.432	19814.38	$z\ {}^5G^\circ_6$—$e\ {}^7D_5$	150	5199.873	19225.88	$z\ {}^7F^\circ_6$—$e\ {}^7D_5$
200	5047.308	19807.02	$a\ {}^5P_1$—$z\ {}^5F^\circ_2$	100h	5202.127	19217.55	$a\ {}^1H_5$—$z\ {}^3H^\circ_4$
100	5052.955	19784.88	$b\ {}^3P_2$—$y\ {}^5D^\circ_3$ $z\ {}^3G^\circ_4$—$e\ {}^3G_3$	4	5202.897	19214.71	$z\ {}^7F^\circ_4$—$f\ {}^5F_3$
				2h	5205.330	19205.73	$z\ {}^3G^\circ_3$—$f\ {}^7D_2$
1000	5057.340	19767.73	$a\ {}^3F_4$—$z\ {}^5D^\circ_4$	100	5209.502	19190.35	$b\ {}^3P_1$—$z\ {}^3F^\circ_2$
10	5057.68	19766.40	$z\ {}^7P^\circ_4$—$e\ {}^7D_3$	100	5214.079	19173.51	$z\ {}^5F^\circ_4$—$e\ {}^5D_3$
125	5062.658	19746.96	$b\ {}^3P_1$—$y\ {}^5D^\circ_2$	4	5219.072	19155.16	$z\ {}^7P^\circ_3$—$e\ {}^7D_2$
15	5063.196	19744.87	$d\ {}^3F_3$—19°_4	300	5223.550	19138.74	$a\ {}^3G_5$—$z\ {}^5G^\circ_4$
10	5066.668	19731.34	$d\ {}^3F_3$—$w\ {}^3F^\circ_2$	50	5225.086	19133.11	$z\ {}^7F^\circ_4$—$e\ {}^3G_4$
60	5071.013	19714.43	$c\ {}^3P_1$—$x\ {}^3D^\circ_2$ $a\ {}^1D_2$—$y\ {}^3D^\circ_3$	2h	5226.362	19128.44	$z\ {}^3D^\circ_3$—$e\ {}^5P_2$
250	5072.993	19706.74	$a\ {}^3F_2$—$z\ {}^5F^\circ_3$	40	5227.278	19125.09	$c\ {}^3F_4$—$x\ {}^3D^\circ_3$
				10	5236.951	19089.77	$b\ {}^3F_2$—$z\ {}^5G^\circ_3$
4h	5075.641	19696.45	$z\ {}^7F^\circ_4$—$e\ {}^5P_3$	200	5242.386	19069.98	$a\ {}^3P_2$—$z\ {}^5F^\circ_1$ $z\ {}^5F^\circ_4$—$e\ {}^3G_5$
100	5076.087	19694.72	$a\ {}^5P_3$—$z\ {}^5D^\circ_2$				
300	5076.327	19693.79	$b\ {}^3F_3$—$z\ {}^3F^\circ_4$	150	5242.951	19067.92	$z\ {}^3G^\circ_3$—$e\ {}^5G_4$
125	5079.463	19681.63	$z\ {}^5D^\circ_3$—$e\ {}^5D_3$	2h	5244.234	19063.26	$c\ {}^3F_3$—$w\ {}^3D^\circ_3$
2h	5081.466	19673.88	$z\ {}^7P^\circ_3$—$f\ {}^7D_2$	50	5245.453	19058.83	$b\ {}^3H_5$—$z\ {}^3I^\circ_6$
1	5082.91	19668.29	$z\ {}^3F^\circ_4$—$e\ {}^7D_3$	2h	5246.840	19053.79	$z\ {}^7F^\circ_5$—$e\ {}^5G_5$
2h	5083.992	19664.10	$c\ {}^3F_2$—$x\ {}^3D^\circ_2$	10	5250.458	19040.66	$z\ {}^7P^\circ_4$—$e\ {}^5P_3$
1h	5084.58	19661.83	$z\ {}^7F^\circ_3$—$e\ {}^5G_3$	300	5251.664	19036.29	$a\ {}^3G_4$—$z\ {}^3G^\circ_3$
150H	5086.776	19653.34	$z\ {}^5F^\circ_3$—$f\ {}^5F_4$	200	5257.081	19016.67	$z\ {}^5G^\circ_3$—$e\ {}^5G_3$
100	5090.086	19640.56	$z\ {}^7F^\circ_4$—$e\ {}^7D_4$	100	5263.960	18991.82	$z\ {}^3G^\circ_5$—B_4
600	5093.850	19626.05	$a\ {}^5D_0$—$z\ {}^5D^\circ_1$	30	5265.922	18984.74	$z\ {}^7P^\circ_4$—$e\ {}^7D_4$
20	5096.220	19616.92	$c\ {}^3F_4$—$x\ {}^3F^\circ_3$	100	5266.469	18982.77	$c\ {}^3P_2$—$y\ {}^3P^\circ_1$
10h	5100.850	19599.11	$z\ {}^5F^\circ_3$—$e\ {}^3D_3$	100	5266.815	18981.52	$a\ {}^1H_5$—$z\ {}^1G^\circ_4$
200	5101.395	19597.02	$b\ {}^3F_2$—$z\ {}^3D^\circ_3$	2	5269.139	18973.15	$c\ {}^3F_4$—$z\ {}^1H^\circ_5$
125	5101.724	19595.76	$b\ {}^3F_3$—$z\ {}^7P^\circ_4$	4	5271.174	18965.83	$z\ {}^7P^\circ_3$—$f\ {}^5D_4$
100	5106.570	19577.16	$b\ {}^3H_6$—$x\ {}^3G^\circ_5$	1	5271.45	18964.84	$b\ {}^3G_4$—$x\ {}^5F^\circ_4$
200	5107.071	19575.24	$a\ {}^3G_4$—$z\ {}^3F^\circ_3$	1	5273.46	18957.61	$z\ {}^5F^\circ_4$—$e\ {}^5D_4$
2h	5111.249	19559.24	$b\ {}^3G_4$—$x\ {}^1F^\circ_3$	10	5274.042	18955.51	$z\ {}^5G^\circ_5$—$e\ {}^7D_4$
40	5114.590	19546.46	$b\ {}^1G_4$—$x\ {}^3G^\circ_4$	60	5275.756	18949.36	$z\ {}^7F^\circ_4$—$f\ {}^5F_4$
60	5114.996	19544.91	$b\ {}^1D_2$—$y\ {}^1F^\circ_3$	60	5278.375	18939.95	$b\ {}^3F_3$—$z\ {}^7F^\circ_4$
30	5119.866	19526.32	$b\ {}^3P_2$—$z\ {}^3F^\circ_2$	20h	5280.074	18933.86	$c\ {}^3P_0$—$y\ {}^3S^\circ_1$
125	5123.761	19511.48	$b\ {}^3F_2$—$z\ {}^5G^\circ_2$	150	5280.812	18931.21	$a\ {}^5D_3$—$z\ {}^5D^\circ_3$
6	5126.775	19500.01	$a\ {}^1P_1$—$y\ {}^3P^\circ_2$	300	5284.089	18919.47	$a\ {}^3F_4$—$z\ {}^7D^\circ_4$
150	5127.265	19498.14	$a\ {}^5P_1$—$z\ {}^5D^\circ_1$	50	5284.418	18918.30	$z\ {}^7F^\circ_5$—$e\ {}^7D_5$
30	5129.279	19490.49	$a\ {}^3F_4$—$z\ {}^7D^\circ_3$	150	5291.169	18894.16	$b\ {}^3F_4$—$z\ {}^5F^\circ_4$
20	5133.895	19472.96	$a\ {}^3G_3$—$z\ {}^3F^\circ_2$	2	5291.886	18891.60	$z\ {}^5F^\circ_4$—$f\ {}^5F_5$
150	5134.111	19472.14	$z\ {}^5F^\circ_4$—B_4	2	5293.226	18886.82	$z\ {}^3F^\circ_4$—$e\ {}^7D_4$
1000	5136.558	19462.87	$a\ {}^5P_2$—$z\ {}^5D^\circ_3$	200	5304.852	18845.43	$a\ {}^5P_1$—$z\ {}^5D^\circ_2$
40	5142.325	19441.04	$b\ {}^1D_2$—$w\ {}^3D^\circ_1$	50	5305.850	18841.88	$a\ {}^1H_5$—$z\ {}^3H^\circ_6$
400	5142.772	19439.35	$a\ {}^5D_3$—$z\ {}^5F^\circ_4$	50	5306.453	18839.74	$c\ {}^3P_2$—$y\ {}^5P^\circ_1$ $c\ {}^3F_2$—$x\ {}^3F^\circ_2$
400	5147.246	19422.45	$a\ {}^3F_3$—$z\ {}^5D^\circ_3$				
10	5149.753	19413.00	$c\ {}^3F_2$—$z\ {}^1D^\circ_2$	60	5307.284	18836.79	$z\ {}^3G^\circ_4$—$e\ {}^3G_4$
300	5151.070	19408.04	$a\ {}^5D_2$—$z\ {}^5D^\circ_2$	1000	5309.259	18829.78	$a\ {}^5D_4$—$z\ {}^5D^\circ_4$
125	5153.214	19399.96	$a\ {}^3P_1$—$z\ {}^5S^\circ_2$	200	5315.339	18808.24	$c\ {}^3P_2$—$y\ {}^3P^\circ_2$
60	5154.604	19394.73	$a\ {}^3P_2$—$z\ {}^7F^\circ_5$ $a\ {}^1H_5$—$y\ {}^3G^\circ_5$	4	5316.589	18803.82	$a\ {}^3P_2$—$z\ {}^5F^\circ_2$
				1	5317.92	18799.12	$z\ {}^5G^\circ_2$—$e\ {}^3D_2$

TABLE 3—Continued

Intensity	Wave-length	Wave number	Term combination	Intensity	Wave-length	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
6	5318. 749	18796. 18	$c\ {}^3F_4—1^\circ_4$	80	5472. 852	18266. 93	$a\ {}^3P_2—z\ {}^5F^\circ_3$
1	5325. 37	18772. 82	$b\ {}^3F_3—z\ {}^5F^\circ_2$	20*h*	5473. 674	18264. 19	$z\ {}^5G^\circ_5—f\ {}^5F_4$
10*H*	5327. 065	18766. 84	$a\ {}^1P_1—y\ {}^5P^\circ_2$	150	5475. 187	18259. 14	$z\ {}^5G^\circ_4—e\ {}^5G_4$
50	5328. 023	18763. 47	$c\ {}^3F_3—x\ {}^3F^\circ_2$	60	5476. 360	18255. 23	$b\ {}^3H_4—x\ {}^3F^\circ_3$
2	5328. 822	18760. 65	$a\ {}^1D_2—y\ {}^5F^\circ_3$				
				200	5480. 305	18242. 09	$z\ {}^5G^\circ_5—e\ {}^5G_5$ $c\ {}^3P_0—z\ {}^1P^\circ_1$
150	5332. 932	18746. 20	$b\ {}^3P_2—z\ {}^3F^\circ_3$				
250	5335. 924	18735. 68	$a\ {}^5P_3—z\ {}^5D^\circ_3$	4	5481. 130	18239. 34	$z\ {}^7P^\circ_4—e\ {}^3D_3$ $d\ {}^3F_4—x\ {}^1G^\circ_4$
4	5340. 175	18720. 77	$c\ {}^3P_0—w\ {}^3D^\circ_1$				
4	5341. 712	18715. 39	$z\ {}^7P^\circ_2—f\ {}^7D_2$	10	5482. 180	18235. 85	$b\ {}^3F_3—z\ {}^5F^\circ_3$
4	5342. 230	18713. 57	$z\ {}^3D^\circ_3—e\ {}^3D_2$				
				10*h*	5483. 251	18232. 29	$a\ {}^3P_1—z\ {}^7F^\circ_2$
2	5343. 308	18709. 80	$a\ {}^3H_4—y\ {}^5F^\circ_3$	200	5484. 325	18228. 72	$a\ {}^3F_3—z\ {}^5D^\circ_4$
50	5346. 791	18697. 61	$b\ {}^3P_2—z\ {}^7P^\circ_2$	100	5484. 646	18227. 65	$a\ {}^3G_4—z\ {}^3D^\circ_3$
80	5348. 132	18692. 92	$a\ {}^3G_3—z\ {}^3F^\circ_3$	2*h*	5485. 11	18226. 11	$b\ {}^3P_1—z\ {}^3D^\circ_2$
1	5348. 58	18691. 35	$a\ {}^3D_3—z\ {}^5P^\circ_2$	30	5490. 578	18207. 96	$z\ {}^5G^\circ_4—e\ {}^5G_3$
6	5353. 693	18673. 50	$c\ {}^3F_2—x\ {}^3D^\circ_1$				
				2	5490. 824	18207. 15	$b\ {}^3P_2—z\ {}^3G^\circ_3$
20	5354. 952	18669. 11	$a\ {}^3F_4—z\ {}^7D^\circ_5$	100	5494. 36	18195. 43	$z\ {}^3F^\circ_4—f\ {}^5F_4$
100	5359. 644	18652. 77	$z\ {}^3G^\circ_4—f\ {}^5F_4$	160	5496. 696	18187. 69	$a\ {}^1H_5—y\ {}^3F^\circ_4$
50	5362. 094	18644. 25	$a\ {}^3G_3—z\ {}^7P^\circ_2$	4	5498. 999	18180. 08	$d\ {}^3P_2—y\ {}^3S^\circ_1$
125	5365. 604	18632. 05	$z\ {}^7P^\circ_3—e\ {}^7D_3$	150	5501. 024	18173. 39	$z\ {}^3F^\circ_4—e\ {}^5G_5$
20	5373. 281	18605. 43	$c\ {}^3F_2—z\ {}^1F^\circ_3$				
				1	5502. 20	18169. 50	$a\ {}^3D_1—z\ {}^5P^\circ_2$
60	5377. 068	18592. 33	$c\ {}^3F_4—y\ {}^3G^\circ_5$	50	5506. 940	18153. 86	$a\ {}^3G_3—z\ {}^3G^\circ_3$
300	5377. 840	18589. 66	$z\ {}^3G^\circ_5—e\ {}^3G_5$	500	5510. 723	18141. 40	$a\ {}^3G_5—z\ {}^3F^\circ_4$
3*h*	5384. 12	18567. 97	$a\ {}^3G_4—z\ {}^7P^\circ_3$	80	5512. 378	18135. 95	$z\ {}^7P^\circ_4—e\ {}^7D_5$
200	5385. 898	18561. 84	$b\ {}^3P_2—z\ {}^3D^\circ_2$	60	5517. 846	18117. 98	$a\ {}^3D_2—z\ {}^3F^\circ_2$
50	5388. 629	18552. 44	$a\ {}^5D_4—z\ {}^7D^\circ_3$				
				60	5521. 780	18105. 07	$z\ {}^5S^\circ_2—e\ {}^5P_3$
2*h*	5391. 59	18542. 25	$d\ {}^3P_1—11^\circ_0$	4	5524. 148	18097. 31	$b\ {}^3H_5—z\ {}^1H^\circ_5$
40	5395. 385	18529. 21	$a\ {}^3G_4—z\ {}^5G^\circ_4$ $c\ {}^3F_3—z\ {}^1F^\circ_3$	6	5526. 346	18090. 11	$c\ {}^3F_2—y\ {}^3F^\circ_2$ $b\ {}^1G_4—w\ {}^3D^\circ_3$
400	5401. 402	18508. 57	$a\ {}^3G_3—z\ {}^3D^\circ_2$	60	5531. 001	18074. 89	$c\ {}^3P_2—y\ {}^5P^\circ_2$
4	5405. 249	18495. 39	$z\ {}^3G^\circ_4—e\ {}^7D_5$				
				150	5540. 659	18043. 38	$a\ {}^3G_5—z\ {}^7P^\circ_4$
4	5405. 384	18494. 93	$a\ {}^3P_2—z\ {}^5D^\circ_1$	4	5542. 35	18037. 88	$z\ {}^3F^\circ_4—e\ {}^7D_5$
20	5410. 377	18477. 86	$b\ {}^3H_4—w\ {}^3D^\circ_3$	30	5549. 749	18013. 83	$c\ {}^3F_3—y\ {}^3F^\circ_2$
1	5413. 75	18466. 35	$d\ {}^3F_4—w\ {}^3F^\circ_4$	1	5553. 78	18000. 76	$a\ {}^1D_2—z\ {}^5P^\circ_1$
1	5415. 38	18460. 79	$z\ {}^3F^\circ_4—f\ {}^5F_3$	100	5556. 524	17991. 87	$a\ {}^5P_2—z\ {}^7D^\circ_3$
20	5417. 344	18454. 10	$b\ {}^3H_6—z\ {}^1H^\circ_5$				
				400	5559. 744	17981. 45	$a\ {}^5D_4—z\ {}^7D^\circ_4$
250	5418. 864	18448. 92	$a\ {}^5D_2—z\ {}^5D^\circ_3$	150	5569. 036	17951. 44	$a\ {}^3F_3—z\ {}^7D^\circ_3$
5*H*	5419. 13	18448. 02	$z\ {}^5G^\circ_5—e\ {}^3G_4$	15	5570. 71	17946. 05	$b\ {}^3G_5—y\ {}^3H^\circ_6$
1	5420. 15	18444. 55	$b\ {}^3F_2—z\ {}^7F^\circ_3$	2	5572. 30	17940. 93	$a\ {}^3P_0—z\ {}^5F^\circ_1$
4	5424. 722	18429. 00	$a\ {}^5P_2—z\ {}^7D^\circ_2$	10	5578. 688	17920. 39	$b\ {}^3H_5—1^\circ_4$
400	5427. 610	18419. 20	$z\ {}^5G^\circ_6—e\ {}^5G_6$				
				60	5579. 435	17917. 99	$y\ {}^5D^\circ_4—f\ {}^5D_3$
1*h*	5429. 96	18411. 22	$z\ {}^3D^\circ_2—e\ {}^7D_1$ $z\ {}^3G^\circ_5—f\ {}^5F_5$	4*h*	5583. 054	17906. 37	$z\ {}^7P^\circ_3—e\ {}^5P_3$
1	5436. 65	18388. 57	$a\ {}^3F_3—z\ {}^7D^\circ_2$	4	5587. 436	17892. 33	$c\ {}^3F_2—y\ {}^3G^\circ_3$ $z\ {}^7F^\circ_4—B_4$
100	5439. 416	18379. 22	$z\ {}^3F^\circ_4—e\ {}^3G_4$				
60	5440. 206	18376. 55	$a\ {}^3D_2—y\ {}^5D^\circ_3$	20	5595. 208	17867. 48	$b\ {}^1G_4—x\ {}^3F^\circ_3$
4	5444. 621	18361. 65	$b\ {}^3P_1—z\ {}^7P^\circ_2$	50	5600. 530	17850. 50	$z\ {}^7P^\circ_3—e\ {}^7D_4$
6	5448. 471	18348. 67	$c\ {}^3F_3—x\ {}^3D^\circ_3$	125	5603. 144	17842. 17	$a\ {}^3P_2—z\ {}^5D^\circ_2$
2	5449. 51	18345. 18	$a\ {}^1P_1—z\ {}^3S^\circ_1$	150	5606. 748	17830. 70	$z\ {}^7F^\circ_6—e\ {}^5G_6$
100	5452. 728	18334. 35	$z\ {}^5G^\circ_6—f\ {}^5F_5$ $a\ {}^3D_1—z\ {}^5P^\circ_1$	4*h*	5607. 744	17827. 53	$b\ {}^3G_3—y\ {}^1D^\circ_2$
				100	5609. 147	17823. 08	$z\ {}^3G^\circ_3—e\ {}^3G_3$
6	5453. 388	18332. 13	$z\ {}^3D^\circ_2—e\ {}^7D_2$	6	5611. 398	17815. 93	$c\ {}^3F_3—y\ {}^3G^\circ_3$
4	5453. 974	18330. 16	$z\ {}^5G^\circ_4—e\ {}^3G_3$	4	5619. 374	17790. 64	$c\ {}^3F_4—y\ {}^3F^\circ_3$
4	5454. 26	18329. 20	$a\ {}^3P_1—z\ {}^7F^\circ_0$	2*h*	5625. 07	17772. 62	$c\ {}^3P_2—y\ {}^5P^\circ_3$
250	5454. 809	18327. 35	$z\ {}^5S^\circ_2—e\ {}^5D_1$	60*h*	5627. 506	17764. 93	$z\ {}^3D^\circ_3—f\ {}^5F_3$
200	5456. 124	18322. 94	$a\ {}^3F_2—z\ {}^5D^\circ_3$	60	5629. 798	17757. 70	$b\ {}^3H_5—y\ {}^3G^\circ_4$
20	5461. 902	18303. 55	$z\ {}^5S^\circ_2—e\ {}^5S_2$	30*h*	5631. 584	17752. 07	$z\ {}^3G^\circ_3—e\ {}^5G_4$
15	5463. 161	18299. 34	$a\ {}^3P_1—z\ {}^7F^\circ_1$	20	5633. 560	17745. 84	$z\ {}^7F^\circ_6—f\ {}^5F_5$
20	5464. 913	18293. 47	$z\ {}^7P^\circ_4—f\ {}^5F_4$	1000	5636. 233	17737. 42	$a\ {}^5D_3—z\ {}^5D^\circ_4$
4	5470. 266	18275. 57	$z\ {}^7P^\circ_2—e\ {}^7D_1$	6*h*	5638. 716	17729. 61	$b\ {}^1D_2—x\ {}^3F^\circ_2$
40*h*	5471. 526	18271. 36	$z\ {}^7P^\circ_4—e\ {}^5G_5$	100	5641. 671	17720. 33	$a\ {}^3G_4—z\ {}^5G^\circ_3$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
1	5645.74	17707.56	$a\ ^5D_1$—$z\ ^7D^\circ_1$	30	5771.215	17322.57	$c\ ^3F_3$—$y\ ^3P^\circ_2$
60	5647.577	17701.80	$a\ ^5P_3$—$z\ ^7D^\circ_2$	100	5774.384	17313.06	$b\ ^3P_2$—$z\ ^5G^\circ_2$
80h	5647.888	17700.82	$z\ ^3G^\circ_3$—$e\ ^5G_3$	4h	5774.847	17311.68	$z\ ^7F^\circ_4$—$f\ ^5F_5$
125	5649.569	17695.56	$b\ ^3F_4$—$z\ ^5F^\circ_5$	6h	5776.866	17305.63	$z\ ^3D^\circ_3$—$e\ ^5D_1$
10	5650.818	17691.64	$a\ ^1G_4$—$z\ ^3F^\circ_3$	6	5779.961	17296.36	$b\ ^3G_4$—$x\ ^3G^\circ_4$ $z\ ^7F^\circ_3$—$e\ ^5D_3$
1	5652.80	17685.44	$a\ ^3G_3$—$z\ ^7P^\circ_3$ $d\ ^3F_3$—$x\ ^1F^\circ_3$	60	5782.365	17289.17	$a\ ^3F_2$—$z\ ^7D^\circ_2$
80	5653.314	17683.83	$a\ ^3G_5$—$z\ ^3G^\circ_4$	80	5782.572	17288.55	$b\ ^3H_6$—$y\ ^3G^\circ_5$
10	5656.640	17673.44	$z\ ^7P^\circ_2$—$e\ ^7D_3$	20h	5784.091	17284.01	$z\ ^3F^\circ_3$—$e\ ^3G_3$
6	5663.071	17653.37	$c\ ^3P_2$—$z\ ^3S^\circ_1$	1	5784.78	17281.95	$z\ ^3D^\circ_2$—$e\ ^5S_2$
				50	5790.588	17264.62	$a\ ^5P_3$—$z\ ^7D^\circ_3$
100	5665.206	17646.71	$a\ ^3G_3$—$z\ ^5G^\circ_4$				
6	5670.512	17630.20	$c\ ^3F_4$—$z\ ^3H^\circ_4$	50	5792.226	17259.73	$a\ ^3G_3$—$z\ ^5G^\circ_2$
2	5671.93	17625.79	$d\ ^3F_2$—4°_3	6	5798.845	17240.03	$a\ ^3D_3$—$y\ ^5D^\circ_3$
10h	5674.844	17616.74	$z\ ^7F^\circ_5$—$e\ ^3G_5$	10h	5800.011	17236.57	$z\ ^7P^\circ_3$—B_4
30	5676.556	17611.43	$b\ ^3H_4$—$z\ ^1H^\circ_5$	10	5802.016	17230.61	$b\ ^3H_4$—$y\ ^3G^\circ_3$
				150	5804.382	17223.59	$b\ ^1G_4$—$z\ ^1H^\circ_5$
100	5679.623	17601.92	$c\ ^3P_1$—$y\ ^3P^\circ_0$				
4	5681.524	17596.03	$z\ ^3G^\circ_4$—B_4	60h	5807.960	17212.98	$z\ ^3F^\circ_3$—$e\ ^5G_4$
1	5682.26	17593.75	$z\ ^7F^\circ_4$—$e\ ^5D_3$	2	5810.87	17204.36	$b\ ^3P_1$—$z\ ^5S^\circ_2$
50	5688.830	17573.43	$c\ ^3F_2$—$y\ ^3P^\circ_1$	2	5813.014	17198.01	$z\ ^5G^\circ_4$—$f\ ^5F_4$
6	5692.114	17563.29	$b\ ^1D_2$—$x\ ^3D^\circ_1$	400	5814.988	17192.17	$b\ ^3F_4$—$z\ ^5D^\circ_4$
				1	5825.29	17161.77	$z\ ^3F^\circ_3$—$e\ ^5G_3$
100	5693.032	17560.46	$a\ ^1P_1$—$x\ ^5D^\circ_0$				
50	5694.462	17556.05	$b\ ^1G_4$—$z\ ^1F^\circ_3$	30	5825.846	17160.13	$a\ ^5P_1$—$z\ ^7D^\circ_1$
80	5696.35	17550.23	$z\ ^3D^\circ_3$—$e\ ^3D_2$	100	5828.075	17153.57	$a\ ^3D_2$—$z\ ^3D^\circ_2$
600	5699.049	17541.92	$a\ ^5P_3$—$z\ ^5D^\circ_4$	50	5828.408	17152.59	$a\ ^1G_4$—$z\ ^3G^\circ_3$ $d\ ^3F_4$—4°_3
100	5699.58	17540.29	$b\ ^3P_2$—$z\ ^5S^\circ_2$	10	5830.844	17145.42	$d\ ^3F_3$—$y\ ^3H^\circ_4$
150	5702.368	17531.71	$a\ ^3G_4$—$z\ ^3F^\circ_4$				
2	5705.15	17523.16	$z\ ^7F^\circ_5$—$e\ ^5G_6$	100	5833.197	17138.51	$z\ ^3F^\circ_4$—B_4
1h	5711.27	17504.39	$z\ ^7F^\circ_5$—$e\ ^5D_4$	30	5864.624	17046.67	$b\ ^1G_4$—1°_4
150	5712.86	17499.51	$z\ ^3D^\circ_3$—$f\ ^5F_4$	6	5874.378	17018.36	$b\ ^3F_2$—$z\ ^5D^\circ_2$
40	5714.233	17495.31	$b\ ^1D_2$—$z\ ^1F^\circ_3$	4	5875.797	17014.25	$c\ ^3F_3$—$y\ ^3F^\circ_3$
				2h	5886.611	16983.00	$z\ ^7D^\circ_3$—$e\ ^5F_4$
4h	5715.89	17490.24	$z\ ^7F^\circ_4$—$e\ ^3G_5$				
2	5718.96	17480.85	$c\ ^3P_1$—$y\ ^5P^\circ_1$	40	5887.161	16981.41	$a\ ^3D_3$—$z\ ^3F^\circ_2$
40	5723.058	17468.33	$z\ ^3D^\circ_3$—$e\ ^3G_3$	10	5887.692	16979.88	$b\ ^1D_2$—$y\ ^3F^\circ_2$
125	5724.818	17462.96	$a\ ^3G_4$—$z\ ^5G^\circ_5$	10	5888.383	16977.89	$a\ ^5D_2$—$z\ ^7D^\circ_3$
100	5725.740	17460.15	$a\ ^5D_3$—$z\ ^7D^\circ_3$	15H	5888.74	16976.86	$b\ ^3P_1$—$z\ ^5G^\circ_2$
				4	5891.95	16967.61	$b\ ^3D_3$—$w\ ^3F^\circ_3$
40h	5730.589	17445.37	$z\ ^3D^\circ_3$—$e\ ^3D_3$				
1	5731.295	17443.23	$b\ ^3F_2$—$z\ ^5F^\circ_3$	8	5894.721	16959.63	$z\ ^3D^\circ_1$—$e\ ^7D_2$
4h	5732.90	17438.34	$z\ ^7F^\circ_5$—$f\ ^5F_5$ $z\ ^3G^\circ_3$—$e\ ^5P_3$	1	5896.488	16954.55	$z\ ^5P^\circ_1$—$f\ ^5D_2$
10	5734.445	17433.64	$a\ ^3G_4$—$z\ ^7P^\circ_4$	15	5896.894	16953.38	$a\ ^3G_5$—$z\ ^7F^\circ_6$ $d\ ^3P_2$—$v\ ^3D^\circ_3$
				2	5902.284	16937.90	$z\ ^7P^\circ_4$—$e\ ^5D_3$
1H	5735.54	17430.32	$c\ ^3F_2$—$y\ ^5P^\circ_1$				
4	5736.980	17425.94	$a\ ^1P_1$—$x\ ^5D^\circ_2$	80	5904.426	16931.76	$b\ ^3H_5$—$y\ ^3G^\circ_5$
1	5737.43	17424.57	$z\ ^7P^\circ_3$—$f\ ^5F_3$	60	5914.226	16903.70	$y\ ^5D^\circ_4$—$f\ ^5D_4$
40	5740.555	17415.09	$a\ ^5D_2$—$z\ ^7D^\circ_2$	200	5919.340	16889.10	$a\ ^5D_3$—$z\ ^7D^\circ_4$
100	5745.65	17399.65	$a\ ^5D_1$—$z\ ^7D^\circ_2$	500	5921.450	16883.08	$a\ ^3P_2$—$z\ ^5D^\circ_3$
				6h	5924.362	16874.78	$z\ ^3G^\circ_3$—$e\ ^3G_4$
150	5746.002	17398.58	$b\ ^3P_2$—$z\ ^3D^\circ_3$				
150	5747.481	17394.10	$c\ ^3F_4$—$z\ ^1G^\circ_4$	150	5926.862	16867.66	$a\ ^3D_1$—$z\ ^3D^\circ_1$
125	5752.022	17380.37	$a\ ^3F_3$—$z\ ^7D^\circ_4$	6	5928.362	16863.39	$b\ ^3G_3$—$x\ ^3G^\circ_4$
20	5753.621	17375.54	$b\ ^1G_4$—$x\ ^3D^\circ_3$ $b\ ^3G_5$—$z\ ^3I^\circ_5$	2	5929.630	16859.79	$z\ ^7D^\circ_3$—$f\ ^3F_4$
				100	5932.384	16851.96	$b\ ^3F_3$—$z\ ^5D^\circ_3$ $a\ ^3F_2$—$z\ ^7D^\circ_3$
16h	5756.188	17367.79	$z\ ^3F^\circ_2$—$e\ ^7D_2$				
100	5756.832	17365.85	$a\ ^3P_0$—$z\ ^5D^\circ_1$ $z\ ^3F^\circ_3$—$e\ ^3D_2$	150	5936.644	16839.87	$z\ ^3F^\circ_4$—$e\ ^5D_3$
				40	5938.580	16834.38	$z\ ^7P^\circ_4$—$e\ ^3G_5$
60	5758.722	17360.15	$b\ ^3F_3$—$z\ ^5F^\circ_4$ $b\ ^3D_3$—$8\ ^3D^\circ_3$	20	5943.728	16819.80	$d\ ^3F_4$—$y\ ^3H^\circ_5$
				50	5944.386	16817.94	$a\ ^1I_6$—$x\ ^1H^\circ_5$
1	5760.23	17355.61	$b\ ^3G_4$—$y\ ^1F^\circ_3$	125	5951.154	16798.81	$a\ ^3D_2$—$z\ ^3G^\circ_3$
30	5763.659	17345.28	$a\ ^3G_3$—$z\ ^3D^\circ_3$	30	5970.544	16744.26	$b\ ^3G_5$—$x\ ^3F^\circ_4$
4	5766.119	17337.88	$a\ ^3D_2$—$z\ ^3F^\circ_3$	400	5973.370	16736.33	$z\ ^3F^\circ_4$—$e\ ^3G_5$
2	5766.589	17336.47	$b\ ^3G_5$—$x\ ^3G^\circ_4$	100	5973.672	16735.49	$b\ ^3H_6$—$z\ ^3H^\circ_6$
6	5766.905	17335.52	$b\ ^3G_4$—$z\ ^3I^\circ_5$	150	5974.162	16734.11	$c\ ^3P_2$—$x\ ^5D^\circ_2$
100	5767.923	17332.46	$a\ ^3P_1$—$z\ ^5D^\circ_1$	1h	5978.022	16723.31	$a\ ^1P_1$—$y\ D^3_2$

TABLE 3—Continued

Intensity	Wave-length	Wave number	Term combination	Intensity	Wave-length	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
10	5980.643	16715.98	$c\ {}^3P_1$—$y\ {}^5P_2^\circ$	$30h$	6210.31	16097.80	$z\ {}^3F_3^\circ$—$e\ {}^3D_3$
8	5982.243	16711.51	$z\ {}^5G_5^\circ$—$e\ {}^5G_6$	50	6210.75	16096.66	$b\ {}^3G_4$—$x\ {}^3G_5^\circ$
$2h$	5984.966	16703.91	$b\ {}^3D_2$—9_1°	4	6213.63	16089.20	$d\ {}^3P_2$—$x\ {}^3D_1^\circ$
200	5988.676	16693.56	$a\ {}^5P_3$—$z\ {}^7D_4^\circ$	$2H$	6217.35	16079.57	$z\ {}^5F_3^\circ$—$e\ {}^3F_2$
$2h$	5989.594	16691.00	$z\ {}^3G_3^\circ$—$f\ {}^5F_4$	4	6217.52	16079.13	$z\ {}^5F_5^\circ$—$f\ {}^3F_4$
3	5991.194	16686.54	$d\ {}^3F_4$—$x\ {}^3G_3^\circ$	10	6219.58	16073.81	$a\ {}^3G_4$—$z\ {}^5F_3^\circ$
2	5991.485	16685.73	$c\ {}^3P_2$—$y\ {}^3D_1^\circ$	300	6225.22	16059.25	$b\ {}^3F_2$—$z\ {}^5D_3^\circ$
20	5992.580	16682.68	$a\ {}^1D_2$—$y\ {}^5D_2^\circ$	10	6225.67	16058.09	$b\ {}^1G_4$—$y\ {}^3G_5^\circ$
150	5993.658	16679.68	$a\ {}^3P_1$—$z\ {}^5D_2^\circ$	20	6231.81	16042.27	$z\ {}^7D_5^\circ$—$e\ {}^5F_5$
4	6002.889	16654.03	$c\ {}^3F_4$—$z\ {}^3H_5^\circ$	$6h$	6233.68	16037.45	$y\ {}^5F_2^\circ$—$f\ {}^5D_2$
30	6003.872	16651.31	$a\ {}^3G_4$—$z\ {}^7F_5^\circ$ $z\ {}^5G_3^\circ$—$e\ {}^5D_3$	100	6235.63	16032.44	$b\ {}^3H_4$—$z\ {}^1G_4^\circ$
2	6006.972	16642.71	$z\ {}^7D_2^\circ$—$e\ {}^3F_3$	$10h$	6235.97	16031.56	$c\ {}^3P_2$—$y\ {}^3D_2^\circ$
6	6009.108	16636.80	$z\ {}^3G_3^\circ$—$e\ {}^3D_3$	10	6241.62	16017.05	$a\ {}^3D_3$—$z\ {}^3D_3^\circ$
6	6012.776	16626.65	$z\ {}^5G_5^\circ$—$f\ {}^5F_5$	150	6252.067	15990.29	$a\ {}^3D_2$—$z\ {}^3D_3^\circ$
$30h$	6021.840	16601.62	$z\ {}^3D_2^\circ$—$f\ {}^5F_3$	6	6255.293	15982.04	$a\ {}^1F_3$—$x\ {}^3F_2^\circ$
100	6022.302	16600.35	$c\ {}^3F_4$—$y\ {}^3F_4^\circ$	6	6258.00	15975.13	$b\ {}^3G_5$—$z\ {}^3I_6^\circ$
4	6026.344	16589.22	$c\ {}^3F_3$—$y\ {}^5P_2^\circ$	4	6270.07	15944.38	$b\ {}^3D_3$—$t\ {}^3D_2^\circ$ $z\ {}^5P_3^\circ$—$e\ {}^7D_3$
$40h$	6027.497	16586.04	$y\ {}^5D_3^\circ$—$e\ {}^7D_3$	20	6274.503	15933.11	$z\ {}^3D_1^\circ$—$e\ {}^5D_1$
20	6033.341	16569.98	$y\ {}^5D_4^\circ$—$e\ {}^7D_3$	4	6275.12	15931.54	$b\ {}^3G_3$—$x\ {}^3D_2^\circ$
$4h$	6037.735	16557.92	$z\ {}^3F_4^\circ$—$f\ {}^5F_5$	100	6284.49	15907.79	$c\ {}^3P_1$—$x\ {}^5D_1^\circ$
4	6038.734	16555.18	$d\ {}^3P_2$—$w\ {}^3D_3^\circ$	6	6285.68	15904.78	$a\ {}^3D_2$—$z\ {}^5G_2^\circ$
100	6046.376	16534.25	$a\ {}^1D_2$—$z\ {}^3D_1^\circ$	4	6289.34	15895.52	$a\ {}^3G_3$—$z\ {}^7F_4^\circ$
20	6054.071	16513.24	$z\ {}^3D_3^\circ$—$e\ {}^5D_2$	50	6290.100	15893.60	$y\ {}^5F_4^\circ$—$f\ {}^5D_3$
$4h$	6057.453	16504.02	$z\ {}^3F_2^\circ$—$e\ {}^3G_3$	300	6295.220	15880.68	$b\ {}^1G_4$—$z\ {}^3H_4^\circ$
20	6065.189	16482.97	$z\ {}^5P_2^\circ$—$f\ {}^5D_3$	30	6303.242	15860.47	$y\ {}^5D_3^\circ$—$e\ {}^5P_3$
10	6073.90	16459.33	$a\ {}^3D_1$—$z\ {}^3F_2^\circ$ $d\ {}^3F_3$—$x\ {}^3G_3^\circ$	40	6304.49	15857.33	$c\ {}^3F_2$—$x\ {}^5D_1^\circ$
$1h$	6077.79	16448.79	$y\ {}^5D_1^\circ$—$e\ {}^7D_2$	10	6306.79	15851.54	$z\ {}^5D_1^\circ$—$e\ {}^3F_2$
2	6078.831	16445.98	$b\ {}^3H_4$—$y\ {}^3G_5^\circ$	2	6307.60	15849.51	$b\ {}^3D_2$—$x\ {}^1F_3^\circ$
200	6080.08	16442.60	$z\ {}^3D_3^\circ$—B_4	60	6309.66	15844.33	$y\ {}^5D_4^\circ$—$e\ {}^5P_3$
60	6083.522	16433.30	$c\ {}^3P_2$—$x\ {}^5D_3^\circ$	4	6310.37	15842.55	$z\ {}^5G_4^\circ$—$e\ {}^5D_3$
50	6085.121	16428.98	$b\ {}^3H_4$—$y\ {}^3F_3^\circ$	50	6311.10	15840.72	$d\ {}^3P_2$—$x\ {}^3D_3^\circ$
10	6089.426	16417.37	$z\ {}^3F_3^\circ$—$f\ {}^5F_3$	4	6311.39	15839.99	$b\ {}^3G_4$—$w\ {}^3D_3^\circ$
$300h$	6090.522	16414.41	$z\ {}^3D_3^\circ$—$e\ {}^3P_2$	60	6316.73	15826.60	$c\ {}^3P_2$—$y\ {}^3D_3^\circ$
15	6101.560	16384.72	$a\ {}^1D_2$—$y\ {}^5D_3^\circ$	50	6324.24	15807.81	$a\ {}^3G_5$—$z\ {}^5F_4^\circ$
100	6108.97	16364.84	$a\ {}^3G_5$—$z\ {}^5G_6^\circ$	150	6330.62	15791.88	$z\ {}^7D_4^\circ$—$e\ {}^5F_5$
300	6116.770	16343.97	$a\ {}^1G_4$—$z\ {}^3D_3^\circ$ $b\ {}^3F_4$—$z\ {}^7D_4^\circ$	3	6331.52	15789.63	$z\ {}^7D_3^\circ$—$e\ {}^3F_4$
60	6119.844	16335.76	$z\ {}^3F_3^\circ$—$e\ {}^3G_4$	30	6336.10	15778.22	$b\ {}^3H_5$—$z\ {}^3H_5^\circ$
6	6121.032	16332.59	$d\ {}^3P_2$—$x\ {}^3F_3^\circ$	20	6343.07	15760.88	$y\ {}^5D_2^\circ$—$e\ {}^5S_2$
50	6122.376	16329.01	$z\ {}^3F_3^\circ$—$e\ {}^5D_2$	20	6351.90	15738.97	$z\ {}^5G_4^\circ$—$e\ {}^3G_5$
1	6137.77	16288.05	$a\ {}^3G_5$—$z\ {}^3G_5^\circ$ $y\ {}^5D_2^\circ$—$e\ {}^7D_3$	15	6357.75	15724.49	$b\ {}^3H_5$—$y\ {}^3F_4^\circ$
60	6141.527	16278.09	$z\ {}^5P_3^\circ$—$f\ {}^5D_4$	150	6357.95	15723.99	$c\ {}^3F_4$—$x\ {}^5D_3^\circ$
10	6150.073	16255.47	$d\ {}^3P_2$—$x\ {}^3F_2^\circ$	100	6363.41	15710.50	$z\ {}^5D_2^\circ$—$e\ {}^5F_3$
6	6170.237	16202.35	$z\ {}^5F_5^\circ$—$e\ {}^5F_4$	100	6376.45	15678.37	$a\ {}^3G_4$—$z\ {}^3G_5^\circ$
200	6170.605	16201.38	$a\ {}^3D_3$—$z\ {}^3F_3^\circ$	60	6382.98	15662.33	$a\ {}^3D_3$—$z\ {}^3G_3^\circ$
10	6173.127	16194.76	$y\ {}^5F_3^\circ$—$f\ {}^5D_2$	50	6384.66	15658.21	$b\ {}^3F_3$—$z\ {}^5D_4^\circ$
50	6174.210	16191.92	$a\ {}^3G_3$—$z\ {}^3G_4^\circ$	15	6388.06	15649.88	$d\ {}^3F_4$—$x\ {}^3G_4^\circ$
100	6176.774	16185.20	$c\ {}^3P_2$—$z\ {}^3P_2^\circ$	1	6388.79	15648.09	$a\ {}^1G_4$—$z\ {}^3F_4^\circ$
10	6177.736	16182.68	$d\ {}^3F_2$—$y\ {}^1F_3^\circ$	80	6390.21	15644.61	$b\ {}^1G_4$—$z\ {}^1G_4^\circ$
4	6179.973	16176.82	$z\ {}^5P_2^\circ$—$f\ {}^7D_2$	2	6395.89	15630.72	$a\ {}^3D_1$—$z\ {}^7P_2^\circ$
10	6185.835	16161.49	$z\ {}^5F_4^\circ$—$e\ {}^5F_3$	5	6401.40	15617.27	$b\ {}^3G_4$—$x\ {}^3F_3^\circ$
10	6189.488	16151.96	$z\ {}^3F_3^\circ$—$f\ {}^5F_4$	2	6404.86	15608.83	$z\ {}^5D_3^\circ$—$e\ {}^3F_3$
300	6192.552	16143.96	$z\ {}^3D_3^\circ$—$e\ {}^5D_3$	10	6406.07	15605.88	$z\ {}^3G_3^\circ$—$e\ {}^3P_2$
30	6195.33	16136.73	$b\ {}^3G_5$—$x\ {}^3G_5^\circ$	2	6413.33	15588.22	$b\ {}^3P_1$—$z\ {}^5D_0^\circ$
20	6195.97	16135.06	$b\ {}^3H_6$—$z\ {}^3H_5^\circ$	100	6417.56	15577.94	$y\ {}^5F_5^\circ$—$f\ {}^5D_4$
10	6197.15	16131.99	$a\ {}^3D_2$—$z\ {}^5S_2^\circ$	10	6429.55	15548.89	$z\ {}^3F_2^\circ$—$e\ {}^5D_2$
400	6199.42	16126.08	$a\ {}^1D_2$—$z\ {}^3F_2^\circ$	6	6432.10	15542.73	$z\ {}^5F_2^\circ$—$e\ {}^3F_2$
				200	6444.84	15512.00	$z\ {}^5D_3^\circ$—$e\ {}^5F_4$
				4	6445.85	15509.57	$c\ {}^3P_1$—$x\ {}^5D_0^\circ$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
4	6451.88	15495.08	$a\ ^3D_1$—$z\ ^3D^\circ_2$	2	6779.15	14747.04	$b\ ^1D_2$—$x\ ^5D^\circ_1$
8	6456.91	15483.01	$a\ ^3D_2$—$z\ ^5G^\circ_3$	60	6787.20	14729.55	$a\ ^3H_6$—$z\ ^5G^\circ_5$
10	6457.43	15481.76	$d\ ^3F_3$—$y\ ^1F^\circ_3$	1	6792.94	14717.10	$a\ ^1H_5$—$y\ ^5F^\circ_5$
4	6461.19	15472.75	$b\ ^3P_2$—$z\ ^5D^\circ_1$	8	6805.53	14689.88	$a\ ^3G_4$—$z\ ^5D^\circ_3$
8	6472.51	15445.69	$b\ ^3P_1$—$z\ ^5F^\circ_2$	1	6807.00	14686.71	$a\ ^3P_1$—$z\ ^7D^\circ_2$
4	6482.22	15422.55	$d\ ^3F_3$—$x\ ^3G^\circ_4$	8	6812.90	14673.99	$b\ ^3G_5$—$y\ ^3G^\circ_4$
12	6484.49	15417.15	$z\ ^5P^\circ_3$—$e\ ^5S_2$	40	6813.52	14672.65	$c\ ^3P_1$—$y\ ^3D^\circ_2$
3	6492.36	15398.47	$y\ ^5D^\circ_1$—$e\ ^5S_2$	3	6821.73	14654.99	$y\ ^5F^\circ_2$—$e\ ^7D_1$
100	6496.43	15388.82	$z\ ^5D^\circ_3$—$f\ ^3F_4$	100	6823.88	14650.38	$z\ ^5F^\circ_1$—$e\ ^5F_1$
2	6499.78	15380.89	$b\ ^3F_3$—$z\ ^7D^\circ_3$	150	6824.17	14649.75	$z\ ^5D^\circ_2$—$e\ ^3F_3$
30	6519.06	15335.40	$z\ ^3G^\circ_3$—$e\ ^5D_3$	20	6831.44	14634.17	$x\ ^5D^\circ_3$—$f\ ^5D_2$
2	6531.60	15305.96	$b\ ^3G_4$—$z\ ^1F^\circ_3$	30	6831.54	14633.95	$b\ ^3G_4$—$y\ ^3G^\circ_4$
70	6540.24	15285.74	$z\ ^5F^\circ_3$—$e\ ^5F_3$	1	6832.71	14631.45	$z\ ^5P^\circ_2$—$e\ ^5D_1$
15	6544.23	15276.42	$c\ ^3F_2$—$y\ ^3D^\circ_1$ $z\ ^5F^\circ_1$—$e\ ^3F_2$	1	6834.11	14628.45	$b\ ^3D_3$—$x\ ^5F^\circ_4$
				3	6837.04	14622.18	$c\ ^3F_2$—$y\ ^3D^\circ_2$
2	6556.24	15248.43	$c\ ^3F_3$—$x\ ^5D^\circ_2$	2	6843.13	14609.17	$a\ ^3G_5$—$z\ ^5F^\circ_5$
2	6557.83	15244.74	$b\ ^3P_2$—$z\ ^5F^\circ_3$	1	6843.83	14607.67	$z\ ^5P^\circ_2$—$e\ ^5S_2$
6	6559.46	15240.95	$y\ ^3D^\circ_3$—$f\ ^5D_2$	5	6850.84	14592.72	$b\ ^3G_4$—$y\ ^3G^\circ_3$ $y\ ^3G^\circ_5$—E_4
60	6560.45	15238.65	$b\ ^3H_4$—$y\ ^3F^\circ_4$				
15	6569.09	15218.61	$z\ ^5P^\circ_3$—$e\ ^5P_3$	1	6852.93	14588.27	$b\ ^3F_2$—$z\ ^7D^\circ_3$
2	6577.96	15198.08	$a\ ^3G_4$—$z\ ^5F^\circ_4$	1*h*	6858.76	14575.87	$y\ ^5F^\circ_2$—$e\ ^7D_2$
30	6593.75	15161.69	$a\ ^1D_2$—$z\ ^3D^\circ_2$	20	6872.92	14545.84	$c\ ^3F_3$—$y\ ^3D^\circ_2$
10	6596.58	15155.19	$a\ ^3D_3$—$z\ ^5G^\circ_4$	1	6875.15	14541.13	$a\ ^1F_3$—$y\ ^3P^\circ_2$
10	6613.11	15117.30	$c\ ^3F_4$—$y\ ^3D^\circ_3$	3	6883.51	14523.47	$z\ ^3G^\circ_5$—$e\ ^5F_4$
50	6618.22	15105.63	$a\ ^3H_5$—$z\ ^5G^\circ_4$	1	6891.70	14506.21	$d\ ^3P_2$—$y\ ^3F^\circ_3$
2	6620.40	15100.66	$z\ ^5F^\circ_4$—$e\ ^3F_3$	6	6902.25	14484.03	$b\ ^3P_1$—$z\ ^5D^\circ_2$
3	6633.40	15071.06	$z\ ^5P^\circ_2$—E_1	1	6908.25	14471.45	$z\ ^5P^\circ_3$—$f\ ^5F_4$
10	6635.27	15066.82	$z\ ^3F^\circ_3$—$e\ ^3P_2$	200	6911.46	14464.73	$z\ ^5F^\circ_2$—$e\ ^5F_2$
6	6640.88	15054.09	$c\ ^3P_1$—$z\ ^3P^\circ_1$	1	6912.47	14462.62	$y\ ^5F^\circ_5$—$e\ ^7D_4$
7	6649.54	15034.48	$a\ ^1F_3$—$y\ ^3G^\circ_3$	20	6918.50	14450.01	$d\ ^3F_4$—$x\ ^3G^\circ_5$
7	6651.47	15030.12	$c\ ^3P_2$—$y\ ^5F^\circ_2$	2	6920.13	14446.61	$d\ ^3P_1$—$x\ ^3D^\circ_2$
2	6658.83	15013.51	$b\ ^3G_5$—$z\ ^1H^\circ_5$	4	6921.97	14442.77	$z\ ^5P^\circ_1$—$e\ ^5S_2$
200	6663.16	15003.75	$z\ ^5F^\circ_4$—$e\ ^5F_4$	800	6923.21	14440.18	$z\ ^5F^\circ_5$—$e\ ^5F_5$
10	6664.10	15001.64	$z\ ^5F^\circ_3$—$e\ ^5F_2$	2	6926.67	14432.97	$z\ ^5G^\circ_3$—$e\ ^3F_2$
3	6669.72	14989.00	$d\ ^3P_2$—$y\ ^3P^\circ_1$	1	6934.20	14417.30	$c\ ^3F_2$—$y\ ^3D^\circ_3$ $z\ ^5P^\circ_3$—$e\ ^3D_3$
1	6676.62	14973.50	$b\ ^3G_4$—$z\ ^1H^\circ_5$				
2	6688.22	14947.53	$c\ ^3F_3$—$x\ ^5D^\circ_3$	3	6938.13	14409.13	$z\ ^5P^\circ_2$—$e\ ^5P_3$
400	6690.01	14943.54	$z\ ^5D^\circ_4$—$e\ ^5F_5$	1*h*	6952.10	14380.18	$y\ ^5F^\circ_1$—$e\ ^7D_1$
20	6702.08	14916.62	$z\ ^5F^\circ_2$—$e\ ^5F_1$	3	6958.34	14367.28	$d\ ^3F_2$—$x\ ^3F^\circ_2$
2	6706.78	14906.17	$z\ ^5P^\circ_1$—F_1	3	6958.85	14366.23	$y\ ^5F^\circ_3$—$e\ ^5P_2$
				1	6959.78	14364.31	$d\ ^3F_3$—$v\ ^3D^\circ_3$
30	6707.56	14904.44	$b\ ^1G_4$—$z\ ^3H^\circ_5$	20	6960.76	14362.29	$b\ ^3H_4$—$x\ ^5D^\circ_3$
2	6717.57	14882.23	$b\ ^3D_2$—$x\ ^3P^\circ_2$	1	6963.06	14357.54	$b\ ^3G_3$—$y\ ^3F^\circ_2$
80	6718.31	14880.59	$z\ ^5F^\circ_4$—$f\ ^3F_4$	2	6968.43	14346.48	$a\ ^3D_3$—$z\ ^5G^\circ_3$
2	6718.91	14879.26	$y\ ^5F^\circ_4$—$f\ ^5D_4$	1	6971.12	14340.94	$c\ ^3F_3$—$y\ ^3D^\circ_3$
7	6721.81	14872.84	$c\ ^3P_2$—$y\ ^5F^\circ_3$	300	6981.98	14318.64	$z\ ^5D^\circ_3$—$e\ ^3F_4$
1	6724.87	14866.07	$b\ ^3P_0$—$z\ ^5F^\circ_1$	3	6995.49	14290.98	$b\ ^3P_0$—$z\ ^5D^\circ_1$
80	6730.46	14853.72	$a\ ^3D_3$—$z\ ^3D^\circ_3$	1*h*	6997.56	14286.76	$z\ ^3F^\circ_2$—$e\ ^3P_2$
20	6731.79	14850.79	$b\ ^1G_4$—$y\ ^3F^\circ_4$	4	6998.27	14285.31	$z\ ^3G^\circ_4$—$e\ ^5F_3$
3	6733.95	14846.03	$d\ ^3P_2$—$y\ ^5P^\circ_1$	1	7012.87	14255.57	$b\ ^3D_3$—$x\ ^3P^\circ_2$
2	6738.12	14836.84	$b\ ^3G_5$—1°_4	3	7016.13	14248.94	$a\ ^3H_4$—$z\ ^5G^\circ_4$
10	6742.92	14826.28	$c\ ^3P_1$—$z\ ^3P^\circ_2$	4	7017.46	14246.24	$a\ ^3D_1$—$z\ ^5C^\circ_2$
2	6750.39	14809.87	$b\ ^3F_3$—$z\ ^7D^\circ_4$	400	7027.95	14224.98	$z\ ^5F^\circ_3$—$e\ ^3F_3$
10	6751.73	14806.93	$a\ ^1D_2$—$z\ ^3G^\circ_3$	3	7033.12	14214.52	$b\ ^1D_2$—$x\ ^5D^\circ_2$
100	6756.54	14796.39	$z\ ^3F^\circ_3$—$e\ ^5D_3$ $b\ ^3G_4$—1°_4	10*h*	7034.47	14211.79	$y\ ^3F^\circ_4$—D_3
				2	7035.87	14208.97	$y\ ^5F^\circ_2$—$e\ ^5P_2$
50	6766.77	14774.02	$z\ ^5D^\circ_0$—$e\ ^5F_1$	2	7039.85	14200.93	$b\ ^3G_3$—$y\ ^3G^\circ_4$
150	6766.98	14773.56	$z\ ^5D^\circ_1$—$e\ ^5F_2$	1	7042.49	14195.61	$d\ ^3P_1$—$z\ ^1D^\circ_2$
2	6770.15	14766.65	$a\ ^3G_3$—$z\ ^5D^\circ_2$	9	7057.12	14166.18	$b\ ^1D_2$—$y\ ^3D^\circ_1$
100	6775.01	14756.05	$a\ ^3H_4$—$z\ ^3G^\circ_3$	10	7058.42	14163.57	$c\ ^3F_4$—$y\ ^5F^\circ_3$
1*h*	6778.30	14748.89	$z\ ^5F^\circ_2$—$e\ ^5F_3$	60	7060.36	14159.68	$b\ ^3G_3$—$y\ ^3G^\circ_3$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
10*h*	7061. 12	14158. 16	$z\ {}^7F^\circ_2$—$e\ {}^5F_3$	40	7348. 72	13604. 06	1°_4—E_4
100	7061. 25	14157. 90	$a\ {}^3D_3$—$z\ {}^3F^\circ_4$	2*h*	7356. 27	13590. 10	$y\ {}^3D^\circ_3$—$f\ {}^5D_4$
1	7061. 80	14156. 79	$b\ {}^3D_2$—$u\ {}^3D^\circ_2$	100	7377. 77	13550. 50	$z\ {}^7F^\circ_5$—$e\ {}^5F_4$
8	7070. 15	14140. 07	$a\ {}^1D_2$—$z\ {}^5S^\circ_2$	40	7381. 09	13544. 40	$c\ {}^3F_3$—$y\ {}^5F^\circ_2$
1	7073. 70	14132. 98	$d\ {}^3F_2$—$z\ {}^1F^\circ_3$	2	7391. 33	13525. 64	$y\ {}^5F^\circ_2$—$e\ {}^5S_2$ $y\ {}^5D^\circ_4$—$e\ {}^5D_4$
1	7076. 16	14128. 06	$z\ {}^5F^\circ_3$—$e\ {}^5F_4$				
8	7083. 69	14113. 05	$c\ {}^3P_2$—$z\ {}^5P^\circ_1$	800	7393. 93	13520. 88	$z\ {}^7F^\circ_4$—$e\ {}^3F_3$
200	7086. 04	14108. 37	$a\ {}^3H_5$—$z\ {}^3F^\circ_4$	20	7407. 51	13496. 10	$a\ {}^3G_4$—$z\ {}^5D^\circ_4$
200	7087. 32	14105. 82	$a\ {}^3G_5$—$z\ {}^5D^\circ_4$	40	7410. 27	13491. 07	$a\ {}^1D_2$—$z\ {}^5G^\circ_3$
2	7104. 15	14072. 40	$a\ {}^1F_3$—$z\ {}^3H^\circ_4$	10	7419. 59	13474. 12	$x\ {}^5D^\circ_4$—$e\ {}^7D_3$
				1	7425. 44	13463. 51	$c\ {}^3F_2$—$y\ {}^5F^\circ_3$
20*h*	7110. 57	14059. 69	$a\ {}^3D_3$—$z\ {}^7P^\circ_4$				
1*h*	7120. 43	14040. 23	$y\ {}^5D^\circ_4$—B_4	1*h*	7427. 66	13459. 48	$y\ {}^5D^\circ_4$—$f\ {}^5F_5$
2	7120. 74	14039. 61	$a\ {}^3H_5$—$z\ {}^5G^\circ_5$	2	7429. 55	13456. 06	$d\ {}^3P_1$—$x\ {}^3D^\circ_1$
15	7135. 17	14011. 22	$z\ {}^5G^\circ_2$—$e\ {}^3F_2$	20	7438. 32	13440. 20	$a\ {}^3H_4$—$z\ {}^5G^\circ_3$
20	7135. 64	14010. 30	$a\ {}^3H_5$—$z\ {}^7P^\circ_4$	20	7445. 44	13427. 34	$z\ {}^7F^\circ_5$—$f\ {}^3F_4$
				10	7449. 66	13419. 74	$d\ {}^3F_2$—$y\ {}^3G^\circ_3$
6	7140. 81	14000. 15	$z\ {}^7F^\circ_3$—$e\ {}^5F_2$				
70	7141. 71	13998. 39	$a\ {}^1D_2$—$z\ {}^3D^\circ_3$	30*h*	7450. 62	13418. 01	$z\ {}^1G^\circ_4$—D_3
3	7146. 41	13989. 18	$y\ {}^5F^\circ_2$—F_1	40	7453. 62	13412. 61	$y\ {}^3D^\circ_3$—$e\ {}^5P_2$
2*h*	7165. 83	13951. 27	$y\ {}^5F^\circ_3$—$e\ {}^3D_2$	2	7454. 15	13411. 65	$a\ {}^3D_2$—$z\ {}^5D^\circ_2$
15	7167. 76	13947. 52	$a\ {}^3H_4$—$z\ {}^3D^\circ_3$	9	7458. 43	13403. 96	$a\ {}^3D_3$—$z\ {}^7F^\circ_4$
				30	7463. 70	13394. 49	$b\ {}^3G_4$—$z\ {}^1G^\circ_4$
5	7168. 46	13946. 15	$c\ {}^3P_1$—$y\ {}^5F^\circ_1$				
2	7171. 75	13939. 76	$z\ {}^3P^\circ_2$—$f\ {}^7D_2$	5	7465. 77	13390. 78	$x\ {}^5D^\circ_2$—$f\ {}^7D_2$
2*h*	7178. 94	13925. 80	$z\ {}^7P^\circ_4$—$e\ {}^5F_3$	1	7467. 78	13387. 17	$c\ {}^3F_3$—$y\ {}^5F^\circ_3$
15	7182. 20	13919. 47	$a\ {}^1I_6$—$y\ {}^1H^\circ_5$	700	7468. 91	13385. 15	$z\ {}^5G^\circ_2$—$e\ {}^5F_1$
30	7183. 01	13917. 91	$a\ {}^3H_6$—$z\ {}^7F^\circ_5$	800	7485. 75	13355. 04	$z\ {}^5G^\circ_3$—$e\ {}^5F_2$
				30	7486. 07	13354. 47	$a\ {}^3H_5$—$z\ {}^7F^\circ_4$
20	7194. 50	13895. 68	$c\ {}^3F_2$—$y\ {}^5F^\circ_1$				
2	7205. 87	13873. 75	$z\ {}^7F^\circ_2$—$e\ {}^5F_2$	4	7495. 18	13338. 23	$a\ {}^1P_1$—$z\ {}^3D^\circ_1$ $y\ {}^5F^\circ_4$—$f\ {}^5F_3$
10	7212. 57	13860. 86	$b\ {}^3P_2$—$z\ {}^5D^\circ_3$				
150	7219. 26	13848. 02	$b\ {}^3G_5$—$y\ {}^3G^\circ_5$	800	7499. 74	13330. 13	$z\ {}^3G^\circ_5$—$e\ {}^3F_4$
5	7225. 32	13836. 40	$a\ {}^3D_2$—$z\ {}^5F^\circ_3$	2	7516. 05	13301. 20	$a\ {}^1I_6$—$z\ {}^3I^\circ_5$
				30	7519. 59	13294. 94	$b\ {}^3G_5$—$z\ {}^3H^\circ_6$
4	7229. 81	13827. 81	$z\ {}^3F^\circ_4$—$e\ {}^5F_3$	150	7532. 07	13272. 91	$d\ {}^3P_2$—$x\ {}^5D^\circ_1$
4	7233. 96	13819. 88	$y\ {}^5F^\circ_4$—$e\ {}^5P_3$				
400	7238. 90	13810. 45	$z\ {}^5F^\circ_5$—$e\ {}^3F_4$	7	7540. 85	13257. 46	$a\ {}^3G_5$—$z\ {}^7D^\circ_5$
20	7240. 22	13807. 93	$b\ {}^3G_4$—$y\ {}^3G^\circ_5$ $y\ {}^3G^\circ_3$—E_4	6	7544. 19	13251. 59	$a\ {}^3H_4$—$z\ {}^3F^\circ_4$ $d\ {}^3F_3$—$x\ {}^3D^\circ_3$
				2	7549. 87	13241. 62	$z\ {}^5F^\circ_4$—$e\ {}^5F_5$
				700	7559. 62	13224. 54	$z\ {}^3G^\circ_4$—$e\ {}^3F_3$
3	7240. 41	13807. 57	$a\ {}^3G_3$—$z\ {}^5D^\circ_3$				
1	7247. 12	13794. 78	$a\ {}^1G_4$—$z\ {}^3G^\circ_5$	2	7563. 68	13217. 44	$z\ {}^5G^\circ_2$—$e\ {}^5F_3$
1*h*	7247. 54	13793. 98	$y\ {}^5F^\circ_2$—$e\ {}^3D_2$	5	7569. 34	13207. 56	$y\ {}^3D^\circ_2$—$e\ {}^5P_2$
10	7249. 10	13791. 02	$b\ {}^3G_4$—$y\ {}^3F^\circ_3$	10	7575. 08	13197. 55	$b\ {}^3G_3$—$z\ {}^3H^\circ_4$
2	7255. 16	13779. 50	$y\ {}^3D^\circ_3$—$e\ {}^7D_2$	3	7598. 23	13157. 34	$c\ {}^3P_2$—$y\ {}^5D^\circ_1$
				1	7600. 39	13153. 60	$a\ {}^3H_4$—$z\ {}^7P^\circ_4$
1	7255. 47	13778. 91	$d\ {}^3P_2$—$y\ {}^5P^\circ_3$				
10	7267. 76	13755. 61	$b\ {}^3H_4$—$y\ {}^3D^\circ_3$	4	7609. 01	13138. 70	$c\ {}^3P_2$—$z\ {}^5P^\circ_3$
1	7268. 02	13755. 11	$b\ {}^3D_2$—$y\ {}^3S^\circ_1$	100	7612. 97	13131. 86	$z\ {}^3D^\circ_3$—$e\ {}^5F_3$
4*h*	7272. 24	13747. 13	$y\ {}^5F^\circ_3$—$e\ {}^5G_3$	500	7621. 52	13117. 13	$z\ {}^3G^\circ_3$—$e\ {}^3F_2$
3*h*	7289. 76	13714. 10	$y\ {}^5F^\circ_1$—F_1	3*h*	7633. 11	13097. 21	$z\ {}^7F^\circ_2$—$e\ {}^3F_3$
				5	7647. 41	13072. 72	$y\ {}^5F^\circ_4$—$f\ {}^5F_4$
2*h*	7290. 90	13711. 95	$z\ {}^3P^\circ_1$—$f\ {}^7D_2$				
20	7297. 10	13700. 30	$a\ {}^3D_3$—$z\ {}^3G^\circ_4$	50	7658. 43	13053. 91	$z\ {}^3P^\circ_2$—$e\ {}^5P_2$
2	7306. 36	13682. 94	$y\ {}^5F^\circ_3$—$e\ {}^5S_2$	5	7660. 35	13050. 64	$y\ {}^5F^\circ_4$—$e\ {}^5G_5$
30	7312. 63	13671. 20	$c\ {}^3P_1$—$y\ {}^5F^\circ_2$	10	7665. 14	13042. 49	$a\ {}^1F_3$—$y\ {}^3F^\circ_4$
20	7315. 66	13665. 54	$b\ {}^1D_2$—$z\ {}^3P^\circ_2$	20*h*	7677. 45	13021. 58	$y\ {}^3F^\circ_3$—D_3
				20*h*	7687. 50	13004. 55	$z\ {}^3G^\circ_4$—$f\ {}^3F_4$
4	7318. 81	13659. 66	$d\ {}^3P_2$—$z\ {}^3S^\circ_1$				
7	7322. 06	13653. 60	$y\ {}^3D^\circ_3$—$e\ {}^7D_1$	1	7688. 62	13002. 66	$y\ {}^5F^\circ_3$—$f\ {}^5F_3$
150	7323. 57	13650. 78	$a\ {}^3H_5$—$z\ {}^3G^\circ_4$	3	7690. 54	12999. 41	$y\ {}^3D^\circ_1$—$e\ {}^7D_1$
3	7326. 21	13645. 86	$b\ {}^3D_2$—$y\ {}^1F^\circ_3$	2*h*	7691. 61	12997. 60	$y\ {}^3D^\circ_3$—$e\ {}^3D_2$
10	7329. 82	13639. 14	$z\ {}^5G^\circ_3$—$e\ {}^5F_3$	3	7694. 52	12992. 69	$y\ {}^5P^\circ_2$—$f\ {}^5D_2$
				4*h*	7697. 42	12987. 79	$y\ {}^3P^\circ_2$—$f\ {}^7D_1$
1	7334. 43	13630. 57	$b\ {}^3G_4$—$z\ {}^3H^\circ_4$	1	7697. 67	12987. 37	$d\ {}^3F_4$—$y\ {}^3G^\circ_4$
10	7338. 89	13622. 29	$d\ {}^3P_1$—$x\ {}^3F^\circ_2$	9	7701. 42	12981. 05	$a\ {}^3D_1$—$z\ {}^5F^\circ_1$
1	7339. 73	13620. 73	$c\ {}^3F_2$—$y\ {}^5F^\circ_2$	10	7719. 26	12951. 05	$x\ {}^5D^\circ_2$—$e\ {}^7D^\circ_1$
9	7341. 44	13617. 55	$d\ {}^3F_2$—$y\ {}^3F^\circ_2$	500	7722. 89	12944. 96	$a\ {}^3H_6$—$z\ {}^3G^\circ_5$
1	7343. 49	13613. 75	$y\ {}^5F^\circ_5$—$e\ {}^7D_5$	3	7728. 99	12934. 74	$z\ {}^5F^\circ_3$—$e\ {}^3F_4$

TABLE 3—Continued

Intensity	Wave-length	Wave number	Term combination	Intensity	Wave-length	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
20	7729. 87	12933. 27	$z\ {}^5G^\circ_2$—$e\ {}^5F_2$	10	8074. 43	12381. 37	$a\ {}^1D_2$—$z\ {}^5F^\circ_2$
2	7733. 99	12926. 38	$d\ {}^3F_2$—$y\ {}^3P^\circ_2$	2*h*	8083. 23	12367. 89	$b\ {}^3D_3$—$x\ {}^3F^\circ_4$
1	7736. 19	12922. 70	$d\ {}^3F_3$—1°_4	7	8089. 47	12358. 35	$z\ {}^5G^\circ_3$—$f\ {}^3F_4$
2*h*	7737. 17	12921. 07	$y\ {}^5F^\circ_3$—$e\ {}^3G_4$	20	8090. 23	12357. 19	$z\ {}^7F^\circ_5$—$e\ {}^3F_4$
4	7739. 79	12916. 69	$d\ {}^3F_3$—$y\ {}^3F^\circ_2$	2	8091. 05	12355. 94	$d\ {}^3P_1$—$y\ {}^3P^\circ_1$
7	7770. 86	12865. 05	$z\ {}^7P^\circ_4$—$e\ {}^3F_3$	4	8105. 47	12333. 96	$d\ {}^3P_1$—$y\ {}^3P^\circ_0$
2	7774. 98	12858. 23	$x\ {}^5D^\circ_1$—$f\ {}^7D_2$	150	8112. 47	12323. 31	$z\ {}^3G^\circ_3$—$e\ {}^5F_3$
6	7781. 34	12847. 72	$z\ {}^3D^\circ_3$—$e\ {}^5F_2$	1	8144. 33	12275. 11	$a\ {}^3D_3$—$z\ {}^5D^\circ_2$
3*h*	7788. 90	12835. 25	$y\ {}^3P^\circ_0$—$f\ {}^7D_1$	15	8157. 69	12255. 00	$a\ {}^3H_5$—$z\ {}^3G^\circ_5$
2	7789. 58	12834. 13	$z\ {}^3P^\circ_2$—F_1	20	8168. 85	12238. 26	$c\ {}^3P_2$—$z\ {}^3F^\circ_2$
300	7791. 81	12830. 46	$z\ {}^5G^\circ_4$—$e\ {}^5F_3$	15	8173. 91	12230. 69	$z\ {}^7F^\circ_4$—$e\ {}^3F_4$
3	7800. 16	12816. 72	$x\ {}^5D^\circ_0$—$e\ {}^7D_1$	30*h*	8181. 99	12218. 61	$y\ {}^5F^\circ_5$—$e\ {}^5G_6$
1*h*	7802. 32	12813. 17	$y\ {}^3P^\circ_1$—$f\ {}^7D_1$	2	8185. 82	12212. 89	$d\ {}^3P_1$—$y\ {}^5P^\circ_1$
2	7806. 52	12806. 28	$a\ {}^1G_4$—$z\ {}^5D^\circ_3$	8*h*	8194. 54	12199. 89	$y\ {}^5F^\circ_5$—$e\ {}^5D_4$
100	7806. 78	12805. 85	$x\ {}^5D^\circ_3$—$e\ {}^5P_2$	5	8216. 25	12167. 66	$b\ {}^3G_3$—$y\ {}^3F^\circ_4$
5	7809. 19	12801. 90	$b\ {}^3H_4$—$y\ {}^5F^\circ_3$	50	8220. 48	12161. 40	$d\ {}^3F_4$—$y\ {}^3G^\circ_5$
40	7813. 43	12794. 96	$c\ {}^3P_2$—$y\ {}^5D^\circ_2$	2	8231. 96	12144. 44	$d\ {}^3F_4$—$y\ {}^3F^\circ_3$
			$a\ {}^3H_4$—$z\ {}^7F^\circ_3$	4	8237. 46	12136. 33	$z\ {}^3D^\circ_2$—$e\ {}^5F_1$
5	7813. 96	12794. 09	$a\ {}^3H_4$—$z\ {}^3G^\circ_4$	15*h*	8239. 21	12133. 75	$y\ {}^5F^\circ_5$—$f\ {}^5F_5$
5*h*	7815. 38	12791. 76	$z\ {}^7P^\circ_3$—$e\ {}^5F_3$	4	8246. 80	12122. 58	$x\ {}^5D^\circ_3$—$e\ {}^5S_2$
70	7829. 81	12768. 19	$z\ {}^7P^\circ_4$—$e\ {}^5F_4$	3	8251. 32	12115. 94	$a\ {}^1G_4$—$z\ {}^5F^\circ_5$
10	7830. 51	12767. 05	$z\ {}^3F^\circ_4$—$e\ {}^3F_3$	400	8264. 95	12095. 96	$z\ {}^7F^\circ_5$—$e\ {}^5F_5$
100	7833. 37	12762. 39	$z\ {}^3D^\circ_2$—$e\ {}^3F_2$	3*h*	8269. 02	12090. 01	$x\ {}^5D^\circ_2$—$e\ {}^3D_2$
1	7834. 02	12761. 33	$z\ {}^3G^\circ_5$—$e\ {}^5F_5$	2	8281. 00	12072. 52	$a\ {}^1D_2$—$z\ {}^5D^\circ_1$
40	7834. 78	12760. 09	$d\ {}^3F_3$—$y\ {}^3G^\circ_4$	30	8281. 98	12071. 09	$z\ {}^3D^\circ_3$—$e\ {}^3F_3$
3	7838. 42	12754. 17	$c\ {}^3P_1$—$z\ {}^5P^\circ_1$	2	8296. 45	12050. 04	$y\ {}^5P^\circ_2$—$f\ {}^7D_2$
100	7841. 92	12748. 47	$x\ {}^5D^\circ_4$—$e\ {}^5P_3$	2	8297. 23	12048. 90	$y\ {}^3D^\circ_3$—$f\ {}^5F_3$
300	7847. 81	12738. 90	$z\ {}^5G^\circ_5$—$e\ {}^5F_4$	2	8304. 90	12037. 78	$d\ {}^3P_2$—$y\ {}^3D^\circ_2$
20	7853. 76	12729. 25	$y\ {}^3D^\circ_3$—$e\ {}^5S_2$	2	8309. 04	12031. 78	$z\ {}^3S^\circ_1$—$e\ {}^7D_1$
1	7862. 70	12714. 78	$a\ {}^3D_1$—$z\ {}^5F^\circ_2$	2*h*	8320. 13	12015. 74	$y\ {}^5F^\circ_4$—B_4
10	7871. 92	12699. 89	$a\ {}^3D_3$—$z\ {}^5F^\circ_3$	1	8330. 16	12001. 27	$x\ {}^5D^\circ_4$—$f\ {}^5F_4$
3	7875. 27	12694. 49	$b\ {}^3G_5$—$z\ {}^3H^\circ_5$	250	8348. 99	11974. 21	$z\ {}^3D^\circ_3$—$e\ {}^5F_4$
10	7876. 78	12692. 05	$d\ {}^3P_2$—$y\ {}^3D^\circ_1$	7	8350. 23	11972. 43	$x\ {}^5D^\circ_1$—$e\ {}^5P_2$
200	7881. 47	12684. 50	$z\ {}^5G^\circ_6$—$e\ {}^5F_5$	200	8352. 93	11968. 56	$z\ {}^3D^\circ_2$—$e\ {}^5F_3$
400	7890. 40	12670. 14	$z\ {}^3F^\circ_4$—$e\ {}^5F_4$	1	8354. 92	11965. 71	$a\ {}^1P_1$—$z\ {}^3D^\circ_2$
30	7900. 20	12654. 43	$b\ {}^3G_4$—$z\ {}^3H^\circ_5$	4	8376. 90	11934. 31	$z\ {}^3G^\circ_4$—$e\ {}^3F_4$
9	7905. 17	12646. 47	$c\ {}^3P_2$—$z\ {}^3D^\circ_1$	1	8377. 62	11933. 29	$z\ {}^7F^\circ_5$—$e\ {}^3F_4$
20	7906. 10	12644. 98	$z\ {}^7P^\circ_4$—$f\ {}^3F_4$	3	8384. 12	11924. 03	$x\ {}^5D^\circ_3$—$e\ {}^5P_3$
10	7908. 73	12640. 78	$b\ {}^3G^5$—$y\ {}^3F^\circ_4$	10	8388. 96	11917. 15	$d\ {}^3F_3$—$y\ {}^3F^\circ_3$
1	7909. 84	12639. 00	$z\ {}^3P^\circ_2$—$e\ {}^3D_2$	1	8395. 68	11907. 62	$b\ {}^3D_2$—$x\ {}^3F^\circ_3$
7	7917. 53	12626. 73	$z\ {}^7P^\circ_2$—$e\ {}^3F_2$	15	8400. 60	11900. 64	$a\ {}^1I_6$—$z\ {}^3I^\circ_6$
60	7922. 97	12618. 06	$d\ {}^3F_2$—$y\ {}^3F^\circ_3$	80	8435. 77	11851. 03	$z\ {}^3D^\circ_3$—$f\ {}^3F_4$
400	7924. 45	12615. 70	$z\ {}^5G^\circ_5$—$f\ {}^3F_4$	4	8440. 42	11844. 50	$a\ {}^1D_2$—$z\ {}^5F_3$
4	7930. 36	12606. 30	$z\ {}^3P^\circ_1$—F_1	30	8448. 69	11832. 90	$z\ {}^7P^\circ_2$—$e\ {}^5F_3$
3	7941. 08	12589. 28	$c\ {}^3P_1$—$z\ {}^5P^\circ_2$				$d\ {}^3P_2$—$y\ {}^3D^\circ_3$
10	7947. 97	12578. 37	$z\ {}^5G^\circ_3$—$e\ {}^3F_3$	2	8454. 92	11824. 18	$a\ {}^3D_3$—$z\ {}^5F^\circ_4$
200	7948. 15	12578. 08	$z\ {}^3F^\circ_3$—$e\ {}^3F_2$	2	8456. 70	11821. 70	$x\ {}^5D^\circ_2$—$e\ {}^5S_2$
6	7963. 83	12553. 32	$y\ {}^3D^\circ_1$—$e\ {}^5P_2$	200	8473. 66	11798. 03	$z\ {}^3F^\circ_2$—$e\ {}^3F_2$
200	7967. 88	12546. 94	$z\ {}^3F^\circ_4$—$f\ {}^3F_4$	9	8480. 60	11788. 38	$z\ {}^7F^\circ_5$—$e\ {}^5F_5$
6	7994. 63	12504. 96	$x\ {}^5D^\circ_2$—$e\ {}^5P_2$	200	8483. 56	11784. 27	$z\ {}^3F^\circ_3$—$e\ {}^5F_3$
2	7999. 28	12497. 69	$a\ {}^3H_4$—$z\ {}^7F^\circ_4$	6	8490. 45	11774. 70	$a\ {}^3H_5$—$z\ {}^5F^\circ_4$
20	7999. 79	12496. 89	$c\ {}^3P_2$—$y\ {}^5D^\circ_3$	7	8494. 06	11769. 70	$z\ {}^5G^\circ_4$—$e\ {}^3F_3$
4	8009. 64	12481. 52	$z\ {}^5G^\circ_3$—$e\ {}^5F_4$	3	8497. 94	11764. 33	$a\ {}^1F_3$—$y\ {}^3D^\circ_2$
1	8028. 28	12452. 54	$a\ {}^3D_2$—$z\ {}^5D^\circ_3$	2	8503. 42	11756. 75	$d\ {}^3F_3$—$z\ {}^3H^\circ_4$
60	8036. 68	12439. 53	$d\ {}^3P_2$—$x\ {}^5D^\circ_3$	1	8506. 01	11753. 17	$a\ {}^3D_1$—$z\ {}^5D^\circ_2$
2	8043. 36	12429. 20	$c\ {}^3F_4$—$z\ {}^5P^\circ_3$	1*h*	8522. 21	11730. 82	$z\ {}^7P^\circ_3$—$e\ {}^3F_3$
3	8049. 79	12419. 27	$d\ {}^3P_2$—$z\ {}^3P^\circ_1$	5	8523. 23	11729. 42	$y\ {}^3D^\circ_3$—$e\ {}^3D_3$
2	8050. 29	12418. 50	$x\ {}^5D^\circ_1$—$e\ {}^7D_1$	9	8556. 05	11684. 43	$z\ {}^3D^\circ_2$—$e\ {}^5F_2$
1*h*	8055. 05	12411. 16	$z\ {}^3P^\circ_1$—$e\ {}^3D_2$	1	8570. 84	11664. 26	$b\ {}^3D_2$—$x\ {}^3D^\circ_1$
3	8058. 45	12405. 92	$a\ {}^3D_1$—$z\ {}^5D^\circ_1$	4	8585. 67	11644. 12	$y\ {}^5P^\circ_3$—$f\ {}^5D_4$

TABLE 3—Continued

Intensity	Wavelength	Wave number	Term combination	Intensity	Wavelength	Wave number	Term combination
	A	cm^{-1}			A	cm^{-1}	
2	8593.20	11633.91	$z\ ^7P^\circ_3$—$e\ ^5F_4$	4h	9344.62	10698.41	$y\ ^3D^\circ_3$—$e\ ^3P_2$
3	8609.02	11612.53	$a\ ^1G_4$—$z\ ^5D^\circ_4$	15	9396.09	10639.81	$d\ ^3P_1$—$x\ ^5D^\circ_1$
2	8616.83	11602.01	$z\ ^3P^\circ_2$—$e\ ^5D_2$	20	9407.76	10626.61	$z\ ^3F^\circ_3$—$e\ ^5F_4$
10	8637.05	11574.85	$z\ ^7P^\circ_4$—$e\ ^3F_4$	20	9445.03	10584.68	$y\ ^5P^\circ_3$—$e\ ^5P_3$
2	8649.99	11557.53	$x\ ^5D^\circ_1$—$e\ ^3D_2$	1	9452.67	10576.12	$a\ ^3H_5$—$z\ ^5F^\circ_5$
1	8656.55	11548.77	$z\ ^7P^\circ_2$—$e\ ^5F_2$	4	9463.41	10564.12	$b\ ^3D_2$—$y\ ^3P^\circ_1$
10	8658.95	11545.57	$z\ ^5G^\circ_5$—$e\ ^3F_4$	6	9518.09	10503.43	$z\ ^3F^\circ_3$—$f\ ^3F_4$
2	8693.15	11500.15	$z\ ^3F^\circ_3$—$e\ ^5F_2$	3	9535.45	10484.31	$y\ ^3F^\circ_4$—$e\ ^3G_4$
200	8710.84	11476.80	$z\ ^3F^\circ_4$—$e\ ^3F_4$	1	9538.48	10480.98	$y\ ^5P^\circ_2$—$e\ ^5S_2$
100	8724.97	11458.21	$c\ ^3P_2$—$z\ ^3F^\circ_3$	50	9539.87	10479.45	$z\ ^5G^\circ_4$—$e\ ^3F_4$
5	8741.88	11436.05	$c\ ^3P_1$—$y\ ^5D^\circ_2$	1	9557.05	10460.61	$a\ ^1D_2$—$z\ ^5D^\circ_3$
1	8754.37	11419.73	$a\ ^1D_2$—$z\ ^5D^\circ_2$	1	9565.95	10450.88	$c\ ^3P_2$—$z\ ^7P^\circ_3$
2	8757.45	11415.71	$b\ ^3D_2$—$x\ ^3D^\circ_3$	2	9569.01	10447.54	$y\ ^5D^\circ_2$—$e\ ^5F_3$
60	8777.36	11389.82	$z\ ^3D^\circ_1$—$e\ ^3F_2$	60	9585.26	10429.82	$x\ ^5D^\circ_4$—$e\ ^5D_4$
1	8839.92	11309.21	$c\ ^3F_3$—$y\ ^5D^\circ_2$	3	9587.00	10427.93	$y\ ^3D^\circ_3$—$e\ ^5D_3$
20	8856.89	11287.55	$c\ ^3P_1$—$z\ ^3D^\circ_1$	1	9588.83	10425.94	$b\ ^3H_4$—$y\ ^5D^\circ_3$
5	8867.64	11273.86	$c\ ^3P_2$—$z\ ^3D^\circ_2$	1	9593.28	10421.11	$b\ ^3D_2$—$y\ ^5P^\circ_1$
2	8873.76	11266.09	$a\ ^3H_6$—$z\ ^5F^\circ_5$	1	9603.68	10409.82	$a\ ^3H_4$—$z\ ^5D^\circ_3$
1	8876.55	11262.55	$z\ ^3G^\circ_3$—$e\ ^3F^3$	1h	9613.40	10399.29	$y\ ^5P^\circ_1$—$e\ ^5P_2$
1	8893.29	11241.35	$y\ ^5D^\circ_2$—$e\ ^3F_2$	3	9622.37	10389.60	$b\ ^3D_2$—$y\ ^3P^\circ_2$
2	8896.66	11237.09	$c\ ^3F_2$—$z\ ^3D^\circ_1$	15h	9646.43	10363.69	$x\ ^5D^\circ_4$—$f\ ^5F_5$
1	8944.57	11176.90	$x\ ^5D^\circ_3$—$f\ ^5F_4$	30	9694.93	10311.84	$z\ ^3D^\circ_1$—$e\ ^5F_2$
3	8948.51	11171.98	$z\ ^3F^\circ_2$—$e\ ^5F_1$	3h	9722.59	10282.51	$y\ ^5P^\circ_2$—$e\ ^5P_3$
5	8953.57	11165.66	$z\ ^3G^\circ_3$—$e\ ^5F_4$	3h	9726.44	10278.44	$y\ ^3F^\circ_4$—$e\ ^5G_5$
2	9053.45	11042.48	$z\ ^3G^\circ_3$—$f\ ^3F_4$	2	9729.37	10275.34	$b\ ^1D_2$—$y\ ^5D^\circ_2$
2	9066.50	11026.59	$d\ ^3P_1$—$z\ ^3S^\circ_1$	4	9747.44	10256.29	$b\ ^3D_3$—$y\ ^3G^\circ_3$ $y\ ^3P^\circ_1$—$e\ ^5P_2$
1	9079.09	11011.30	$c\ ^3F_3$—$y\ ^5D^\circ_3$				
2h	9081.78	11008.04	$y\ ^5P^\circ_3$—$e\ ^7D_3$	2	9751.24	10252.30	$c\ ^3P_2$—$z\ ^5S^\circ_2$
50	9084.95	11004.20	$z\ ^3F^\circ_2$—$e\ ^5F_3$	1h	9778.20	10224.03	$a\ ^1H_5$—$z\ ^5G^\circ_5$
8	9107.72	10976.68	$z\ ^5G^\circ_5$—$e\ ^5F_5$	60	9791.77	10209.86	$c\ ^3F_4$—$z\ ^3G^\circ_3$
10	9126.45	10954.16	$d\ ^3F_4$—$y\ ^3F^\circ_4$	2h	9820.88	10179.60	$y\ ^5P^\circ_1$—F_1
4	9134.63	10944.35	$x\ ^5D^\circ_4$—B_4	4h	9828.92	10171.27	$y\ ^3F^\circ_3$—$e\ ^5G_4$
15	9155.72	10919.14	$c\ ^3P_2$—$z\ ^3G^\circ_3$	2	9849.75	10149.76	$d\ ^3F_2$—$y\ ^3D^\circ_2$
1	9156.72	10917.95	$a\ ^3H_4$—$z\ ^5F^\circ_4$	150	9887.87	10110.63	$c\ ^3P_2$—$z\ ^3D^\circ_3$
90	9165.22	10907.82	$z\ ^3D^\circ_2$—$e\ ^3F_3$ $z\ ^3F^\circ_4$—$e\ ^5F_5$	2h	9906.39	10091.73	$x\ ^5D^\circ_3$—$e\ ^3P_2$
				2h	9909.98	10088.07	$z\ ^5P^\circ_2$—$e\ ^3F_2$
1	9169.71	10902.48	$z\ ^3S^\circ_1$—$e\ ^5S_2$	3	9916.63	10081.31	$b\ ^3D_2$—$y\ ^3F^\circ_3$
2	9186.16	10882.96	$b\ ^3D_2$—$y\ ^3G^\circ_3$	1	9920.03	10077.85	$d\ ^3F_4$—$x\ ^5D^\circ_3$
150	9189.20	10879.36	$c\ ^3P_1$—$z\ ^3F^\circ_2$	5	9946.83	10050.70	$c\ ^3P_1$—$z\ ^7P^\circ_2$
2	9216.46	10847.18	$y\ ^5P^\circ_3$—$e\ ^5G_3$	15h	10024.99	9972.34	$c\ ^3F_3$—$z\ ^3F^\circ_3$ $z\ ^3G^\circ_3$—$e\ ^3F_4$
7	9232.01	10828.91	$c\ ^3F_2$—$z\ ^3F^\circ_2$				
2	9253.42	10803.85	$d\ ^3F_2$—$y\ ^3D^\circ_1$	30	10082.93	9915.03	$c\ ^3P_1$—$z\ ^3D^\circ_2$
4h	9266.02	10789.16	$b\ ^3D_3$—$x\ ^3D^\circ_3$	1h	10215.71	9786.16	$d\ ^3P_1$—$z\ ^3P^\circ_1$
3	9271.16	10783.18	$y\ ^5P^\circ_3$—$e\ ^5S_2$	8	10228.91	9773.53	$a\ ^1I_6$—$y\ ^3G^\circ_5$
200	9273.15	10780.86	$z\ ^3D^\circ_3$—$e\ ^3F_4$	3	10286.65	9718.67	$b\ ^1D_2$—$z\ ^3F^\circ_2$
5h	9280.75	10772.04	$z\ ^7P^\circ_2$—$e\ ^3F_3$	2	10289.39	9716.09	$y\ ^5P^\circ_1$—$e\ ^5S_2$
1h	9285.60	10766.41	$y\ ^5P^\circ_1$—$e\ ^7D_2$	8	10303.56	9702.72	$c\ ^3F_4$—$z\ ^5G^\circ_4$
1	9287.92	10763.72	$z\ ^3D^\circ_1$—$e\ ^5F_1$	40	10512.58	9509.81	$c\ ^3F_2$—$z\ ^3G^\circ_3$
1	9288.60	10762.93	$a\ ^1F_3$—$y\ ^5F^\circ_2$	4	10630.05	9404.72	$d\ ^3P_1$—$y\ ^3D^\circ_2$ $x\ ^5D^\circ_3$—$e\ ^5P_2$
10	9297.53	10752.59	$c\ ^3F_3$—$z\ ^3F^\circ_2$	6	10649.83	9387.25	$b\ ^3H_4$—$z\ ^3F^\circ_3$
2	9300.70	10748.93	$c\ ^3F_4$—$z\ ^3F^\circ_3$				
1	9307.23	10741.39	$x\ ^3F^\circ_3$—$f\ ^5D_2$	3h	10815.28	9243.65	$y\ ^3F^\circ_4$—B_4 $d\ ^3F_3$—$y\ ^3D^\circ_3$
15	9319.87	10726.82	$d\ ^3F_3$—$y\ ^3F^\circ_4$	8	11199.67	8926.39	$c\ ^3F_3$—$z\ ^5G^\circ_4$
50	9322.77	10723.48	$z\ ^3F^\circ_3$—$e\ ^3F_3$	3	11298.66	8848.18	$b\ ^3H_4$—$z\ ^3G^\circ_3$
3	9325.77	10720.03	$z\ ^3F^\circ_2$—$e\ ^5F_2$	6	11325.88	8826.92	$b\ ^3H_5$—$z\ ^5G^\circ_4$
1	9341.10	10702.44	$y\ ^3P^\circ_1$—$e\ ^7D_1$	3	11483.91	8705.45	$c\ ^3F_4$—$z\ ^3F^\circ_4$

TABLE 4. *Strongest unclassified lines*

Intensity	Wavelength	Wavenumber	Intensity	Wavelength	Wavenumber
	A	cm^{-1}		*A*	cm^{-1}
150	2279. 584	43854. 11	80	4806. 212	20800. 59
80	2306. 911	43334. 68	200	4832. 998	20685. 31
90	2360. 530	42350. 42	125	4910. 236	20359. 94
200	2420. 826	41295. 67	125	4919. 004	20323. 64
100	2450. 560	40794. 65	100	4975. 371	20093. 40
150	2495. 691	40056. 98	300H	5213. 440	19175. 86
125	2560. 845	39037. 91	150	5275. 087	18951. 76
100	2570. 973	38884. 13	200H	5334. 716	18739. 93
100	2601. 456	38428. 53	100	5350. 420	18684. 93
80	2676. 354	37353. 16	600H	5361. 792	18645. 30
250	2735. 669	36543. 32	500H	5401. 047	18509. 78
125	2753. 433	36307. 57	150H	5439. 218	18379. 89
100	2812. 817	35541. 08	250H	5479. 415	18245. 05
75	2998. 346	33342. 00	500	5578. 412	17921. 27
75	3059. 175	32679. 05	100	5603. 552	17840. 87
80	3226. 906	30980. 49	90	6528. 73	15312. 68
100	3327. 700	30042. 14	100	7266. 95	13757. 14
125	3332. 051	30002. 92	300	7475. 40	13373. 53
150	3693. 760	27064. 98	100	7529. 58	13277. 30
100	4738. 410	21098. 23	80	7797. 90	12820. 44

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