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Spectrum of Doubly Ionized Xenon (Xe III)

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Abstract

The spectrum of doubly ionized xenon has been investigated. The study is based on photographic recordings of xenon spectra in the 490–8900 Å range. The number of classified lines has been increased from about 300 to about 1400. The lines have been classified as transitions between 73 even levels belonging to the $5s^25p^4$, $5s^25p^36p$, $4f$, $5f$ and $5s^05p^6$ configurations, and 83 odd levels belonging to the $5s5p^5$, $5s^25p^36s$, $7s$, $5d$ and $6d$ configurations. In particular, the classifications include most of the Xe III laser lines. The experimentally observed level structures are compared with the results of Hartree–Fock calculations and least-squares fits. A comparison is also made between the results of the present analysis and the published data on the Xe $N_{4,5}OO$ Auger spectrum.

1. Introduction

The doubly ionized xenon atom, Xe^{2+} ($Z = 54$), is isoelectronic with neutral tellurium. The ground configuration in this sequence is $5s^25p^4$. Although there has been a great demand, e.g., from laser and collision physics, for improved data on the Xe III spectrum and energy level system for many years, very little work has been reported since the 1930's when Boyce [1], Humphreys [2] and Humphreys *et al.* [3] undertook extensive studies of the spectrum. A few reports have appeared treating the lower levels of the spectrum [4–6] and the $5s^05p^6\ ^1S_0$ level [7, 8].

A large number of strong xenon laser lines were reported some 20 years ago [9]. Primarily due to the work of the group in La Plata, the laser lines were classified as originating in doubly and trebly ionized xenon, but no further classifications were possible due to the lack of relevant spectroscopic data.

In the present investigation we have recorded xenon spectra photographically in the 490–6900 Å range. When analysing the vast amount of experimental data we have made extensive use of Hartree–Fock calculations and parametric fits. Configuration-interaction (CI) effects, including Rydberg series CI, have been included in the calculations. The configurations studied are $5s^25p^4$, $5s5p^5$, $5s^05p^6$, $5s^25p^36p$, $6s$, $7s$, $5d$, $6d$ and $4f$. The lowest term of the $5f$ configuration has also been located. The number of classified lines has been increased from about 300 to, in all, 1400. These lines originate from transitions between 73 even- and 83 odd-parity levels. As a consequence of the present analysis it has been possible to classify the majority of the laser lines ascribed to Xe III.

The extended analysis of the Xe III spectrum also has some consequences for the interpretation of the Auger spectrum following ionization in the $4d$ subshell of neutral xenon.

2. Experimental

The vacuum-ultraviolet part of the spectrum was recorded in Lund. Two different light sources were used: a direct-current hollow-cathode discharge [10] and a theta-pinch discharge [11]. The hollow-cathode source gives a Xe III spectrum of better quality as regards resolution and obtainable wavelength accuracy, while the theta-pinch exposures were of great value in the determination of the ionization stages of the observed lines. The spectrum was photographed on a 3 m normal-incidence spectrograph with a plate factor of 2.77 Å/mm in the first diffraction order [12]. The wavelength range above 2000 Å was recorded on a 3.4 m Ebert plane-grating spectrograph in La Plata. This instrument has a plate factor of 5 Å/mm in the first diffraction order. The results of the wavelength measurements in air have been discussed previously [13]. The spectrum was excited in a laser-tube-like source (without end-mirrors) about 1 m in length and with an inner diameter of 3 mm. The tube has inner electrodes and was viewed end-on [14].

The wavelengths and intensities of all classified Xe III lines are given in Table I. In the long-wavelength end of the spectrum, outside the range covered by the present recording, a few lines have been included from an unpublished xenon line-list by Humphreys [15]. The quality of the recorded spectra does not permit very accurate wavelength determination. Most lines are fairly wide. The overall wavelength accuracy is estimated to be 0.05 Å in the air region and 0.02 Å in the vacuum-ultraviolet wavelength region.

The intensity figures are visual estimates of photographic density, and are on a uniform scale only within limited wavelength ranges. For the lines quoted from Humphreys' list the intensities are on a completely different scale.

All the experimentally established Xe III levels are given in Tables II and III. The level values were determined by a least-squares procedure in which the appropriately weighted wave numbers of the identified lines were used as input. All level designations are in LS notation. In most cases the names given to the levels were taken from least-squares fits of the theoretical energy expressions to the experimentally observed level values. In general, the calculated purities of the states

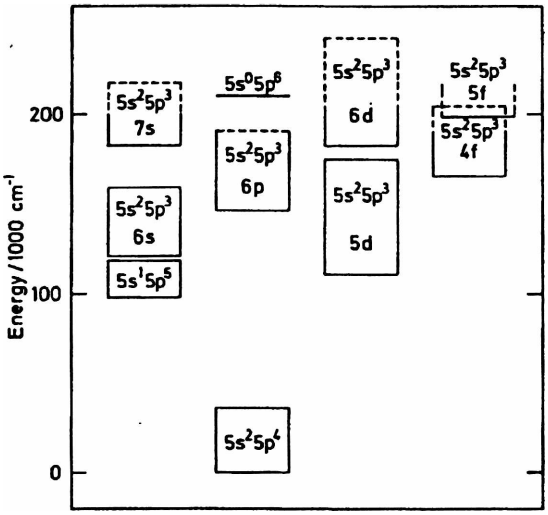

Fig. 1. Gross structure of the observed Xe III configurations. Broken lines indicate that not all levels of the configuration have been located.

(Tables II and III) are low, showing that the coupling conditions in the configurations investigated are intermediate.

3. Analysis

When performing the analysis of the experimental data we were guided by theoretical predictions of the level structures. Such predictions were obtained by diagonalization of the appropriate energy matrices, including CI matrix elements. The radial parts of the matrix elements were determined in Hartree–Fock calculations. Approximate scaling factors were determined from comparisons with calculations for similar structures. Figure 1 shows the relative positions and extensions of the configurations studied. The levels in $5s^2 5p^4$, $5s5p^5$ and $5s^0 5p^6$ were known from earlier investigations, though the designation of one level, $5s5p^5\ ^1P_1$ has been revised. The $5s^2 5p^3 nl$ configurations can be considered as being built on the ground configuration of Xe IV, $5s^2 5p^3$, with the addition of an outer electron. The parent configuration gives three terms, namely ^4S, ^2D and ^2P. Almost all levels of the $5s^2 5p^3 6p$, $6s$ and $5d$ configurations have been experimentally established or verified in this work. In the $4f$ configuration, five of the levels based on the ^2P parent term are missing and in the $5s^2 5p^3 7s$ and $6d$ configurations only levels based on the ^4S and ^2D parent terms have been located. In the $5f$ configuration, only the levels belonging to the lowest term, $(^4S)^5F$, have been located with certainty.

Figure 1 shows that there is severe overlapping of configurations of the same parity. This leads to heavy mixing of states belonging to different configurations, even if the matrix elements connecting the states are small. Such mixing occurs between $6s$ and $5d$, $7s$ and $6d$ and between $6p$ and $4f$ states.

3.1. *Even configurations*

When interpreting the observed energy-level structure of the even-parity configurations, the total energy matrix for the $5s^2 5p^4 + 5s^2 5p^3(6p + 4f + 5f) + 5s5p^4 5d + 5s^0 5p^6$ configurations was diagonalized. The calculated energy-level values were fitted to the observed ones by least-squares fits in which some of the energy parameters were treated as free parameters (Tables IV and V).

As is evident from Fig. 1, there are large energy separations between the levels of the ground configuration and the excited configurations. In cases like this, it is customary to diagonalize the energy matrix and to perform a least-squares fit for the ground configuration separately. However, it was found that a least-squares fit to the levels of the ground configuration, omitting the effective configuration-interaction parameter α, gives a large discrepancy between the observed and the calculated positions of the $5s^2 5p^4\ ^1D_2$ level. The radial integral in the CI matrix element between the s^2p^4 and s^0p^6 configurations is very large ($\sim 67\,000\ \mathrm{cm}^{-1}$). A simple perturbation calculation indicates that this interaction gives rise to a large shift ($\sim 8000\ \mathrm{cm}^{-1}$) of the $^1S_0$ level of the ground configuration. In a similar way, it was found that the interaction between the ground configuration and a "pure" $5s5p^4 5d$ configuration gives rise to large shifts ($\sim 4000\ \mathrm{cm}^{-1}$) of the ^3P and ^1D levels, but not to the $^1S_0$ level. Evidently, large specific level shifts may occur from these interactions between distant configurations. It was also found that the $5s^0 5p^6\ ^1S_0$ state interacts strongly with the $^1S_0$ state of the $5s5p^4 5d$ configuration and a substantial mixing of these two states occurs.

In the light of the above discussion we decided to include the ground configuration and the high-lying $5s5p^4 5d$ configuration in the energy matrix of the even configurations. CI effects between all the configurations were taken into account. In particular, it was found that the large specific deviation of the $p^4\ ^1D_2$ level was removed in this way, even with the configuration interaction parameters fixed at their HF values. As none of the levels belonging to the $5s5p^4 5d$ configuration has been established experimentally, the energy parameters of this configuration were held fixed at their HF values during the fitting process (except the $F^2(5p, 5p)$ integral which was scaled to 0.8 times the HF value.)

The level structure of the $5s^2 5p^3 6p$ and $4f$ configurations is given in Fig. 2. The positions of the observed levels of the lowest term of the $5f$ configuration are also indicated. It turns out that $4f$ is almost as low a configuration as $6p$. This reflects the fact that Xe III is close to the lanthanides and $4f$ is no longer hydrogenic. All levels are given in LS notation. Generally the designations given represent the largest contribution to the eigenvector. However, for many levels the purities are very low, the largest component amounting to only about 30% in some cases. In one case we have used the second largest eigenvector component to name the level. Thus the LS designations often have very little physical significance.

3.2. *Odd configurations*

The odd-parity configurations were also interpreted by means of energy matrix diagonalizations and parametric least-squares fits to the energy levels. The energy matrix included the $5s5p^5 + 5s^2 5p^3(6s + 7s + 5d + 6d)$ configurations (Tables VI and VII).

The detailed structure of the $5s5p^5$ and the $5s^2 5p^3(5d + 6s)$ configurations is shown in Fig. 3. The experimentally established part of the $5s^2 5p^3(6d + 7s)$ configurations is shown in Fig. 4. As can be seen from the figures, there are a number of fortuitous coincidences between $6s$ and $5d$ levels, and between $7s$ and $6d$ levels causing severe mixing of the corresponding states.

All levels are given in LS notation, but, as for the even-parity levels, the designations often have very little physical significance because of the severe mixing of states with

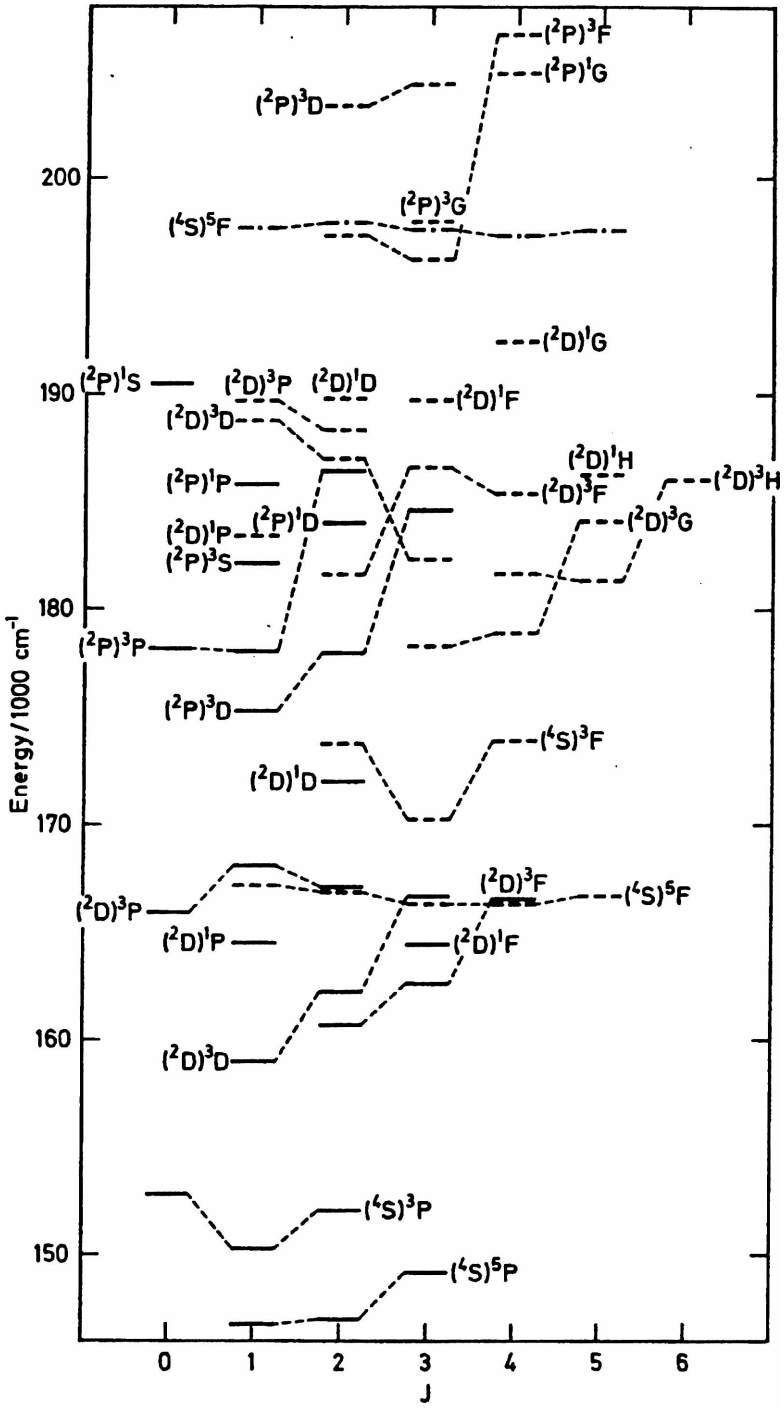

Fig. 2. Structure of the $5s^2 5p^3(6p + 4f)$ configurations of Xe III. The position of the lowest $5f$ term is also indicated. $6p$ levels are indicated by fully drawn lines, $4f$ levels by dashed and $5f$ levels by broken lines with dots in the centre. All levels are given in the LS coupling scheme.

different L and S values. To avoid duplication of labels it has sometimes been necessary to use the second largest or even the third largest eigenvector component to name the level.

There is also strong mixing between $5s5p^5$ and $5s^2 5p^3 5d$ states. Primarily this mixing is not caused by close level coincidences, but rather by large matrix elements connecting the states. The mixing is most pronounced for the singlets. In fact, there is no level having $5s5p^5\ {}^1P$ as its largest eigenvector component. On the other hand, there are five levels having a substantial $5s5p^5\ {}^1P$ contribution to their eigenvectors. As will be discussed below, this mixing has some consequences for the Auger spectrum following ionization of an inner $4d$ electron.

A general observation regarding $p^3 d$ configurations seems to be that the ${}^3S$ term of the lowest d configuration is predicted far below its observed position. In the $4p^3 4d$ configuration of Kr III [16], Rb IV [17], Sr V [18], and Y VI [19] the discrepancy is of the order of 3000 cm^{-1}. The discrepancy is also present in lighter elements, for instance in the $2p^3 3d$ configuration of Ne III [20]. It was shown in Refs [17] and [18] that, to a large extent, the discrepancy in the $4p^3 4d$ configurations of Sr V and Rb IV could be accounted for by the introduction of Rydberg-series configuration interactions, in

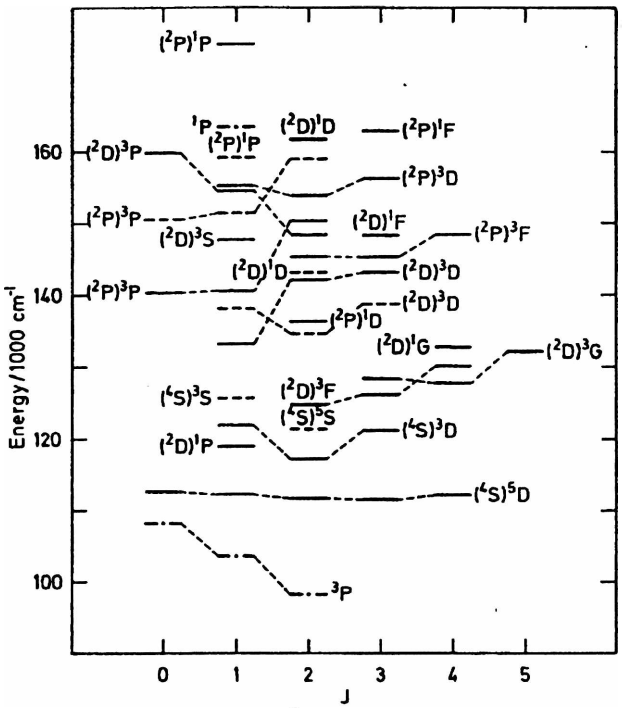

Fig. 3. Structure of the $5s5p^5 + 5s^25p^3(5d + 6s)$ configurations of Xe III. $5p^5$ levels are indicated by broken lines with dots in the centre, $6s$ levels by dashed and $5d$ by fully drawn lines. All levels are given in the *LS* coupling scheme.

particular the $4d \leftrightarrow 5d$ interaction, in the theoretical predictions of the level structure.

In Xe III the deviation between the observed and the calculated positions of the $5p^35d\ ^3S_1$ level is 700 cm^{-1}, even when using fitted values of the energy parameters. When introducing the Rydbergseries configuration interaction the deviation decreases to 170 cm^{-1}. At the same time the overall mean error of the fit decreases by approximately 20%. The $5d \leftrightarrow 6d$ R^3 CI integral could not be treated as an adjustable parameter at the same time as the R^1 and R^2 CI integrals. The R^3 integral was therefore optimized in a series of separate calculations and kept fixed in the final calculation.

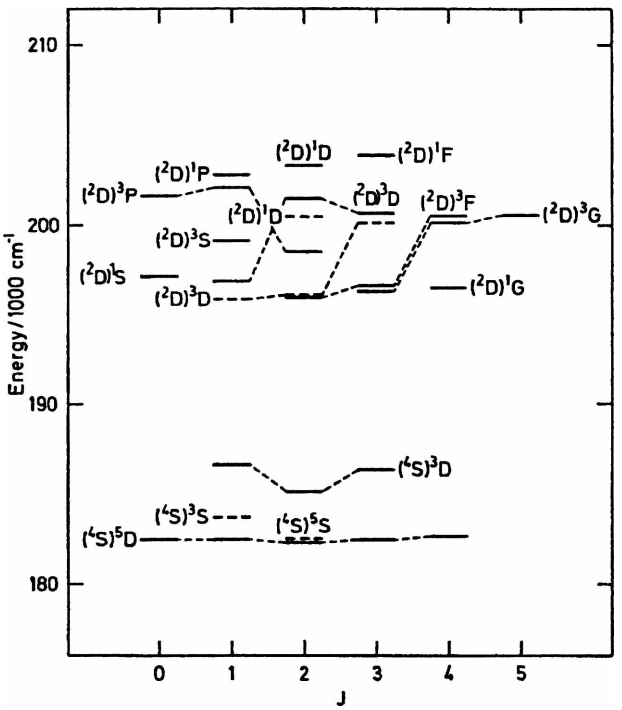

Fig. 4. Structure of the $5s^25p^3(6d + 7s)$ configurations of Xe III. Only levels based on the ^4S and ^2D parent terms are experimentally established and indicated in the figure. $6d$ levels are indicated by fully drawn lines and $7s$ levels by dashed lines. All levels are given in the *LS* coupling scheme.

In general there is good agreement between the g_J factors determined in the least-square fit and those obtained experimentally by Humphreys *et al.* [3] (Table VI). We have no reasonable explanation for the small observed g_J factors of the two $J = 1$ levels at 133 234 and 138 145 cm^{-1}.

4. Discussion

Recently, much effort has been devoted to the construction of VUV lasers. One recently observed [21] VUV laser transition is the transition at 1089 Å in Xe^{2+} connecting the odd level at 119 026 cm^{-1} above the ground state, and the even-parity $5s^05p^6\ ^1S_0$ state at 210 857 cm^{-1}. The lower state, previously designated as $5s5p^5\ ^1P_1$, is considered to decay rapidly to the ground state while the upper state can be populated by Auger processes.

As already pointed out, there is considerable mixing between the $5s5p^5$ and the $5s^25p^35d$ states, and in the present analysis the lower level has been designiated $5s^25p^3(^2D)5d\ ^1P_1$. The purity of the state is only 44% and the $5s5p^5\ ^1P_1$ contribution is 28%. The $5s5p^5\ ^1P_1$ state is mixed into a number of different $5d$ states and this opens many different decay modes for the upper $5s^05p^6\ ^1S_0$ state. This fact probably has to be taken into account when discussing the possible efficiency of the laser action of this particular transition.

The present analysis, in particular as regards the mixing between the $5s5p^5$ and the $5s^25p^35d$ states, also has consequences for the intrepretation of the Auger spectrum of xenon following the ionization of a $4d$ electron, the $N_{4,5}OO$ spectrum (Fig. 5). The spectrum shown was recorded by Werme *et al.* [22], but has also been extensively studied by Southworth *et al.* [23], and Aksela *et al.* [24].

The spectrum consists of lines corresponding to the Xe^{2+} ion being left in different final states. There are two lines possible for each final state, corresponding to the fine structure of the initial hole in the $4d$ shell. One group of strong lines corresponds to the ion being left in the $5s^25p^4$ configuration, another group to the $5s5p^5$ final states and a third group corresponds to the ion being left with an empty $5s$ shell, i.e., the configuration $5s^05p^6$. The additional strong lines are satellites and are mainly caused by final-state configuration interaction, i.e., in the terminology of the present study, by the mixing between the $5s5p^5$ and the $5s^25p^35d$ (and possibly $6s$) states.

A detailed comparison between the Auger data and the present optical data is given in Table VIII. The energy of the $5s^25p^4\ ^3P_2$ ground level is set to zero. The agreement in relative energies is very good; the deviation never exceeding the estimated uncertainties in the Auger values (≈ 0.05 eV). The largest discrepancy is found for the $(^2P)6s\ ^1P_1$ level. However, the identification of this state in the Auger spectrum is tentative as it is based on a single line. Moreover, this line is doubly classified. It can also be seen that those $5d$ levels which have a significant $5s5p^5$ contribution to the eigenvector give rise to strong satellite lines in the Auger spectrum.

The new classifications for the Xe^{2+} laser lines are sum-

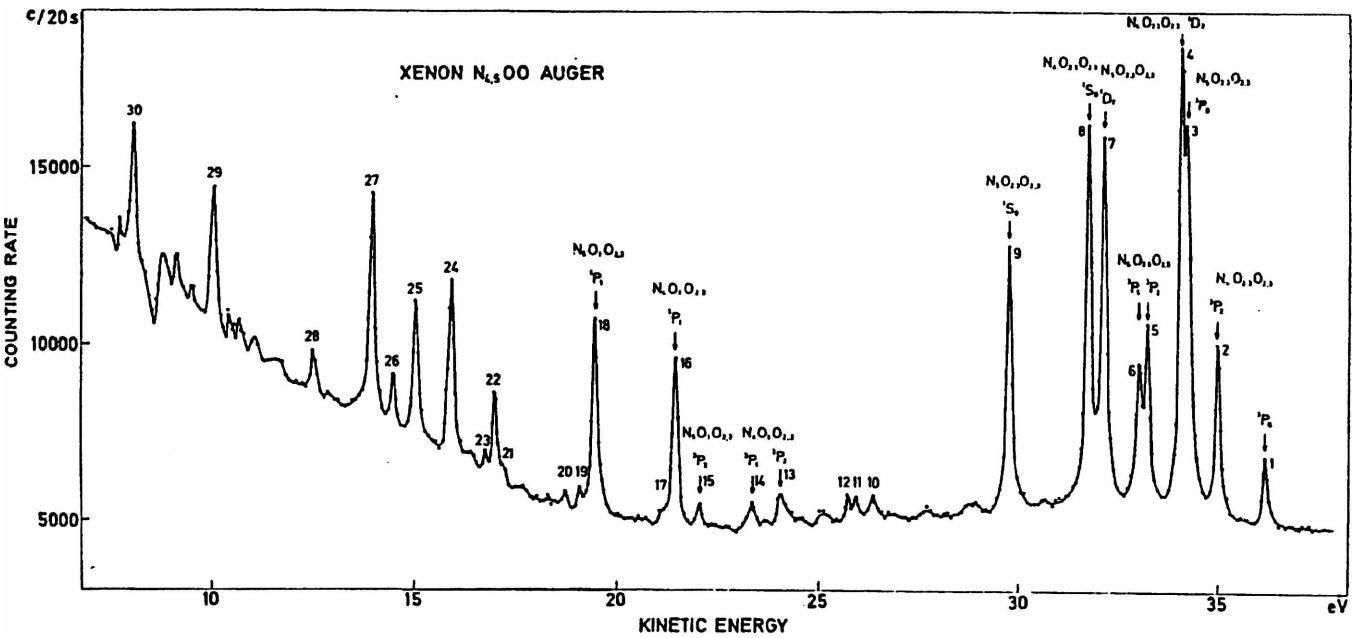

Fig. 5. Xenon $N_{4,5}OO$ Auger spectrum, from Ref. [22] (with permission from the authors).

marized in Table IX. The laser data are taken from the compilation by Beck et al. [9]. Table IX includes all laser lines ascribed with certainty or with some doubt to Xe^{2+}. Only very few lines remain unclassified. We have also included a laser line at 3349 Å, which, with a question mark, has been ascribed to Xe^{3+}, but in the present analysis has been classified as a Xe^{2+} line.

Based on a revised analysis and isoelectronic comparisons, Gallardo *et al.* [5] determined the value of 250 400 ± 300 cm^{-1} (31.05 ± 0.04 eV) for the ionization energy of Xe^{2+}. Their value, which was about 9000 cm^{-1} lower than the previously accepted value [25], is in fairly good agreement with the later value by Dutil and Marmet [26]. Using electron-impact ionization of xenon they arrived at the value of 31.24 ± 0.10 eV. The present analysis does not indicate any need for revising the value of the ionization energy.

Acknowledgements

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Table I. *Observed spectral lines of Xe III. Wavelengths in air are given for lines with λ > 2000 Å. The intensity figures are visual estimates from the photographic density of the lines. An intensity figure in parenthesis indicates that the experimental data for the line stem from the unpublished wavelength list of Dr Humphreys. The calculated wavenumbers have been obtained from the level values given in Tables II and III by means of the Ritz combination principle. Only that part of the calculated wavenumber which differs from the observed is given. Level designations are given in LS notation*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	calc	Classification
(2)	H	8869.40	11 271.62	.23	$(^4S)6d\ ^3D_1-(^4S)5f\ ^5F_2$
(2)		8369.9	11 944.3	3.63	$(^2P)6p\ ^3D_3-(^2D)6d\ ^1G_4$
(1)	h	8241.1	12 131.0	.83	$(^2P)6p\ ^1D_2-(^2D)7s\ ^3D_2$
(2)	h	8239.3	12 133.6	.35	$(^4S)6d\ ^3D_2-(^2P)4f\ ^3F_2$
(20)	h	8047.28	12 423.14	.55	$(^2D)4f\ ^3G_5-(^2D)6d\ ^1G_4$
(100)	h, b	8038.26	12 437.08	.51	$(^4S)4f\ ^3F_4-(^4S)6d\ ^3D_3$
(5)	b	8020.07	12 465.29	4.92	$(^4S)6d\ ^3D_2-(^4S)5f\ ^5F_3$
(4)		7902.9	12 650.1	49.92	$(^4S)4f\ ^3F_2-(^4S)6d\ ^3D_3$
(1)		7790.5	12 832.6	.39	$(^4S)6d\ ^3D_2-(^2P)4f\ ^3G_3$
(10)		7777.1	12 854.7	5.03	$(^4S)4f\ ^3F_2-(^4S)6d\ ^3D_1$
(10)	h	7589.40	13 172.65	3.12	$(^2P)5d\ ^3D_2-(^2D)6p\ ^3P_2$
(1)	H	7483.2	13 359.6	60.20	$(^2P)5d\ ^1P_1-(^2D)4f\ ^3P_2$
(5)	Hw	7353.0	13 596.1	7.10	$(^2D)4f\ ^1F_3-(^2D)6d\ ^1D_2$
(10)	h	7311.15	13 673.97	.47	$(^4S)7s\ ^5S_2-(^2P)4f\ ^3F_3$
(10)	Hw	7127.3	14 026.7	7.68	$(^2D)4f\ ^1H_5-(^2D)6d\ ^3G_4$
(100)	H	6949.93	14 384.67	5.31	$(^2D)4f\ ^3H_6-(^2D)6d\ ^3G_5$
0		6918.74	14 449.53	8.91	$(^2D)4f\ ^1H_5-(^2D)6d\ ^3G_5$
0		6895.69	14 497.83	.38	$(^2D)5d\ ^3P_0-(^2P)6p\ ^3D_1$
0		6858.44	14 576.55	.56	$(^2D)4f\ ^3H_4-(^2D)6d\ ^3G_3$
1		6850.12	14 594.27	.24	$(^4S)6d\ ^5D_4-(^4S)5f\ ^5F_4$
4		6847.83	14 599.14	.32	$(^2D)6p\ ^1D_2-(^4S)6d\ ^3D_1$
0		6826.81	14 644.09	3.86	$(^2D)4f\ ^3F_4-(^2D)6d\ ^3G_4$
0	h	6815.76	14 667.85	.80	$(^2D)4f\ ^3F_2-(^2D)6d\ ^3G_3$
4		6799.47	14702.97	.93	$(^4S)6d\ ^5D_1-(^2P)4f\ ^3F_2$
22	a	6780.40	14 744.34	.34	$(^4S)6d\ ^5D_4-(^4S)5f\ ^5F_5$
4		6767.94	14 771.47	.71	$(^2P)5d\ ^1P_1-(^2D)4f\ ^1D_2$
4		6767.94	14 771.47	.51	$(^4S)7s\ ^5S_2-(^2P)4f\ ^3F_2$
2	h	6759.44	14 790.04	89.77	$(^4S)6d\ ^5D_3-(^2P)4f\ ^3F_2$
15		6733.87	14 846.22	.09	$(^4S)6d\ ^5D_3-(^4S)5f\ ^5F_4$
6		6722.74	14 870.78	.75	$(^4S)4f\ ^3F_3-(^4S)6d\ ^3D_2$
0		6710.60	14 897.68	.94	$(^2D)4f\ ^3F_3-(^2D)6d\ ^3D_2$
2		6698.81	14 923.92	.97	$(^2D)4f\ ^3H_4-(^2D)6d\ ^3F_3$
2		6665.55	14 998.39	.44	$(^2P)5d\ ^1F_3-(^2P)6p\ ^3D_2$
2		6657.74	15 015.96	.21	$(^2D)4f\ ^3F_2-(^2D)6d\ ^3F_3$
15		6656.17	15 019.50	.03	$(^2D)4f\ ^1P_1-(^2D)6d\ ^3P_2$
15		6656.17	15 019.50	8.94	$(^2D)4f\ ^3F_4-(^2D)6d\ ^3F_4$
3	a	6638.35	15 059.84	.68	$(^4S)6d\ ^5D_1-(^4S)5f\ ^5F_1$
8		6625.46	15089.14	.06	$(^4S)6d\ ^5D_0-(^4S)5f\ ^5F_1$
2		6622.88	15 095.00	.02	$(^2P)6p\ ^1D_2-(^2D)6d\ ^3S_1$
15		6619.33	15 103.11	.08	$(^4S)7s\ ^5S_2-(^4S)5f\ ^5F_3$
7		6611.28	15 121.49	.34	$(^4S)6d\ ^5D_3-(^4S)5f\ ^5F_3$
2		6608.30	15 128.32	.26	$(^4S)7s\ ^5S_2-(^4S)5f\ ^5F_1$
3		6585.26	15 181.25	.28	$(^2D)4f\ ^3H_5-(^2D)6d\ ^1G_4$
(6)	Hw	6558.5	15 243.2	.49	$(^2D)4f\ ^3F_4-(^2D)6d\ ^3D_3$
3	a	6556.35	15 248.17	7.94	$(^4S)6d\ ^5D_2-(^4S)5f\ ^5F_3$
2		6541.47	15 282.86	.93	$(^2D)4f\ ^3F_2-(^2D)6d\ ^3D_1$
7		6530.17	15 309.32	.06	$(^4S)6d\ ^5D_1-(^4S)5f\ ^5F_2$
7		6530.17	15 309.32	.20	$(^4S)4f\ ^5F_1-(^4S)7s\ ^5S_2$
2		6513.62	15 348.20	.59	$(^2P)5d\ ^1F_3-(^2D)4f\ ^3G_3$
2		6513.62	15 348.20	.41	$(^4S)4f\ ^5F_1-(^4S)6d\ ^5D_0$
7		6501.08	15 377.81	.64	$(^4S)7s\ ^5S_2-(^4S)5f\ ^5F_2$
7		6501.08	15 377.81	.78	$(^4S)4f\ ^5F_1-(^4S)6d\ ^5D_1$
1		6493.33	15 396.16	5.90	$(^4S)6d\ ^5D_3-(^4S)5f\ ^5F_2$
3		6484.78	15 416.46	.42	$(^2D)6p\ ^3P_2-(^4S)7s\ ^5S_2$
1		6462.19	15 470.37	.55	$(^4S)7s\ ^5S_2-(^2P)4f\ ^3G_3$
3		6456.10	15 484.96	5.00	$(^2D)6p\ ^3P_2-(^4S)6d\ ^5D_1$
2		6454.53	15 488.71	.81	$(^4S)6d\ ^5D_3-(^2P)4f\ ^3G_3$

Table I. *Continued*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	calc	Classification
1		6409.67	15 597.11	.15	$(^2P)5d\ ^3D_3-(^2D)6p\ ^1D_2$
1		6407.53	15 602.34	.65	$(^4S)4f\ ^5F_2-(^4S)7s\ ^5S_2$
1		6396.07	15 630.28	1.17	$(^2D)4f\ ^1P_1-(^2D)6d\ ^3S_1$
3		6367.63	15 700.09	.25	$(^2D)6p\ ^3P_1-(^4S)7s\ ^3S_1$
5		6359.46	15 720.26	.68	$(^4S)4f\ ^5F_5-(^4S)6d\ ^5D_3$
3		6341.26	15 765.37	.37	$(^2D)6p\ ^3D_3-(^4S)6d\ ^5D_3$
6		6333.90	15 783.69	.63	$(^2D)6p\ ^3D_3-(^4S)7s\ ^5S_2$
2		6283.74	15 909.68	.66	$(^2D)6p\ ^3F_4-(^4S)6d\ ^5D_3$
1	a	6275.94	15 929.46	.68	$(^2P)5d\ ^1F_3-(^2D)4f\ ^3G_4$
2		6273.33	15 936.09	.07	$(^2D)4f\ ^3G_5-(^2D)6d\ ^3G_4$
1		6268.33	15 948.82	.78	$(^2D)6s\ ^1D_2-(^2D)6p\ ^3D_1$
7		6260.10	15 969.79	.82	$(^2P)5d\ ^3P_2-(^4S)4f\ ^5F_3$
14		6259.05	15 972.47	.53	$(^4S)4f\ ^5F_5-(^4S)6d\ ^5D_4$
13		6238.19	16 025.88	.81	$(^2D)5d\ ^1F_3-(^2D)6p\ ^1F_3$
5		6221.64	16 068.51	.52	$(^2D)5d\ ^3P_2-(^2D)6p\ ^1F_3$
10		6205.96	16 109.10	8.68	$(^4S)4f\ ^5F_3-(^4S)7s\ ^5S_2$
10		6205.96	16 109.10	.21	$(^4S)4f\ ^5F_4-(^4S)6d\ ^5D_3$
1		6203.81	16 114.66	.97	$(^2D)4f\ ^3D_3-(^2D)6d\ ^3P_2$
1		6196.42	16 133.88	.88	$(^4S)4f\ ^3F_3-(^4S)6d\ ^3D_3$
1		6129.10	16 311.11	.15	$(^2D)4f\ ^3G_5-(^2D)6d\ ^3F_4$
0	a	6111.90	16 356.99	.95	$(^2P)5d\ ^3D_2-(^4S)4f\ ^3F_3$
0	a	6111.78	16 357.34	.30	$(^2D)4f\ ^3G_5-(^2D)6d\ ^3G_5$
3		6110.35	16 361.14	.06	$(^4S)4f\ ^5F_4-(^4S)6d\ ^5D_4$
(1)		6060.35	16 496.13	.10	$(^2D)5d\ ^1D_2-(^2D)4f\ ^3G_3$
1	a	6026.51	16 588.78	.92	$(^2P)5d\ ^3D_1-(^2D)6p\ ^1D_2$
(1)		5970.0	16 745.8	.92	$(^4S)6p\ ^5P_1-5s5p^5\ ^1P_1$
(10)	H	5961.15	16 770.64	.76	$(^4S)6d\ ^3D_1-(^2P)4f\ ^3D_2$
(1)		5913.6	16 905.5	6.16	$(^4S)4f\ ^5F_2-(^4S)7s\ ^3S_1$
3		5857.55	17 067.27	6.76	$(^2D)4f\ ^1P_1-(^2D)7s\ ^1D_2$
3		5857.55	17 067.27	.08	$(^2D)5d\ ^3D_1-(^4S)6p\ ^3P_1$
2		5780.51	17 294.73	.68	$(^2P)5d\ ^3F_2-(^2D)6p\ ^3F_3$
1		5761.94	17 350.45	.45	$(^2D)5d\ ^3P_1-(^2D)6p\ ^1D_2$
4		5754.03	17 374.33	.33	$(^2D)4f\ ^3G_4-(^2D)6d\ ^3G_3$
6		5748.67	17 390.50	.31	$(^2D)6s\ ^3D_2-(^4S)6p\ ^3P_2$
3		5701.24	17 535.20	.06	$(^2D)5d\ ^3D_3-(^2D)6p\ ^3F_2$
1		5663.85	17 650.96	.90	$(^2D)4f\ ^3G_4-(^2D)6d\ ^1G_4$
1		5657.24	17 671.58	.59	$(^2D)4f\ ^3G_3-(^2D)6d\ ^3F_2$
1		5653.87	17 682.09	1.76	$(^2P)5d\ ^3P_2-(^2D)6p\ ^3P_1$
1		5641.26	17 721.64	.74	$(^2D)4f\ ^3G_4-(^2D)6d\ ^3F_3$
2		5610.18	17 819.79	.75	$(^2P)5d\ ^3F_4-(^4S)4f\ ^5F_4$
4		5604.33	17 838.39	.54	$(^2P)5d\ ^3F_4-(^4S)4f\ ^5F_3$
1	a	5565.83	17 961.78	.22	$(^2D)5d\ ^1F_3-(^4S)4f\ ^5F_3$
5		5552.78	18 004.02	3.93	$(^2D)5d\ ^3P_2-(^4S)4f\ ^5F_3$
2		5548.05	18 019.37	.30	$(^2P)5d\ ^3F_4-(^2D)6p\ ^3F_4$
8		5524.33	18 096.73	.62	$(^2P)5d\ ^3D_2-(^2D)6p\ ^1D_2$
2		5510.53	18 142.06	1.99	$(^2D)5d\ ^1F_3-(^2D)6p\ ^3F_4$
3		5509.65	18 144.95	.28	$(^2D)5d\ ^3S_1-(^2D)6p\ ^3P_0$
2		5503.98	18 163.65	.59	$(^2P)5d\ ^3F_4-(^2D)6p\ ^3D_3$
1		5481.19	18 239.14	.01	$(^4S)6d\ ^3D_2-(^2P)4f\ ^3D_2$
2		5470.94	18 273.34	.22	$(^2D)4f\ ^3D_3-(^2D)6d\ ^3D_3$
1		5462.12	18 302.82	.83	$(^2D)4f\ ^3G_3-(^2D)6d\ ^3F_3$
5		5453.06	18 333.25	.21	$(^2P)5d\ ^3D_1-(^4S)4f\ ^3F_2$
10		5413.49	18 467.23	.25	$(^2D)5d\ ^1F_3-(^4S)4f\ ^5F_2$
17		5401.01	18 509.93	.96	$(^2D)5d\ ^3P_2-(^4S)4f\ ^5F_2$
6		5386.64	18 559.31	.20	$(^2P)5d\ ^3P_0-(^2D)6p\ ^3D_1$
1		5384.15	18 567.89	.76	$(^2P)6s\ ^1P_1-(^2P)6p\ ^3D_2$
3	a	5372.83	18 607.01	6.74	$5s5p^5\ ^1P_1-(^2P)6p\ ^3S_1$
2		5371.01	18 613.32	.26	$(^2D)5d\ ^3G_3-(^4S)6p\ ^5P_2$
14		5367.03	18 627.09	.03	$(^2D)5d\ ^3D_2-(^2D)6p\ ^3F_2$
1		5364.39	18 636.29	.20	$(^2P)5d\ ^1F_3-(^2D)4f\ ^3F_2$
6		5347.87	18 693.83	.80	$(^2D)4f\ ^3H_5-(^2D)6d\ ^3G_4$
5		5347.17	18 696.27	.19	$(^2D)5d\ ^3P_2-(^2D)6p\ ^3P_2$
1		5322.80	18 781.90	.60	$(^2P)6p\ ^3D_3-(^2D)6d\ ^1D_2$
7		5310.97	18 823.73	.71	$(^2D)5d\ ^3D_1-(^4S)6p\ ^3P_2$
4		5292.92	18 887.93	.83	$(^2D)5d\ ^3F_4-(^4S)6p\ ^5P_3$
1		5242.67	19 068.96	.89	$(^2D)4f\ ^3H_5-(^2D)6d\ ^3F_4$
16		5238.92	19 082.58	.67	$(^2D)5d\ ^3S_1-(^4S)4f\ ^5F_2$
1		5233.96	19 100.70	1.23	$(^2P)6s\ ^3P_2-(^2P)6p\ ^3P_1$

Table I. *Continued*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
3		5233.10	19 103.81	.73	$(^2D)5d\ ^3D_3-(^2D)6p\ ^3D_2$
1		5229.99	19 115.17	.03	$(^2D)4f\ ^3H_5-(^2D)6d\ ^3G_5$
11		5223.62	19 138.51	.51	$(^2P)5d\ ^3F_2-(^2D)6p\ ^1F_3$
1		5203.67	19 211.88	.77	$(^2D)6s\ ^1D_2-(^2D)6p\ ^3D_2$
1		5148.03	19 419.49	.51	$(^2P)5d\ ^1F_3-(^2D)4f\ ^3D_3$
6		5142.98	19 438.59	.57	$(^2D)5d\ ^3D_3-(^2D)6p\ ^3F_3$
1		5114.53	19 546.72	.61	$(^2D)6s\ ^1D_2-(^2D)6p\ ^3F_3$
14		5107.33	19 574.24	.15	$(^2D)5d\ ^3D_1-(^4S)6p\ ^3P_0$
9		5041.40	19 830.25	.25	$(^2P)5d\ ^3D_1-(^2P)6p\ ^3D_1$
1	b	5040.06	19 835.52	6.26	$(^2P)6p\ ^1D_2-(^2D)6d\ ^1F_3$
2		5038.62	19 841.20	0.92	$(^2P)5d\ ^3D_2-(^4S)4f\ ^3F_2$
3		5023.01	19 902.85	3.09	$(^2D)4f\ ^1P_1-(^2D)6d\ ^1D_2$
23		5008.53	19 960.40	.37	$(^2P)5d\ ^3P_1-(^2D)6p\ ^3F_2$
0		4996.10	20 010.02	9.98	$(^4S)4f\ ^5F_3-(^4S)6d\ ^3D_3$
1		4952.53	20 186.06	5.89	$(^2D)4f\ ^3G_3-(^2D)6d\ ^3P_2$
5		4927.51	20 288.55	.58	$(^2D)5d\ ^3S_1-(^2D)6p\ ^3P_1$
1	a	4926.72	20 291.83	.35	$(^2D)6p\ ^3D_2-(^4S)6d\ ^5D_1$
1		4918.87	20 324.22	.16	$(^2D)5d\ ^1D_2-(^2P)6p\ ^3S_1$
2		4881.05	20 481.70	.70	$5s5p^5\ ^1P_1-(^2P)6p\ ^1D_2$
21		4869.40	20 530.66	.55	$(^2D)5d\ ^3D_2-(^2D)6p\ ^3F_3$
8	a	4796.51	20 842.69	.65	$(^2D)5d\ ^3F_3-(^4S)6p\ ^5P_2$
25		4794.49	20 851.44	.49	$(^2D)6s\ ^3D_1-(^2D)6p\ ^3D_1$
3	h	4781.08	20 909.92	.78	$(^2P)6p\ ^3D_1-(^2D)7s\ ^3D_2$
10		4757.32	21 014.39	.36	$(^2P)5d\ ^3F_3-(^4S)4f\ ^5F_4$
18		4748.94	21 051.47	.60	$(^2P)5d\ ^1F_3-(^2P)6p\ ^1D_2$
10		4743.90	21 073.83	.93	$(^2P)5d\ ^3F_2-(^4S)4f\ ^5F_3$
16		4723.60	21 164.40	.42	$(^4S)6s\ ^3S_1-(^4S)6p\ ^5P_1$
20	b	4712.58	21 213.89	.92	$(^2P)5d\ ^3F_3-(^2D)6p\ ^3F_4$
6		4697.42	21 282.35	.41	$(^2D)5d\ ^3D_3-(^2D)6p\ ^1F_3$
2	a	4685.19	21 337.87	.96	$(^2P)5d\ ^3D_2-(^2P)6p\ ^3D_1$
20		4683.55	21 345.38	.36	$(^4S)6s\ ^3S_1-(^4S)6p\ ^5P_2$
1	h	4680.73	21 358.24	.21	$(^2P)5d\ ^3F_3-(^2D)6p\ ^3D_3$
18	a	4673.67	21 390.46	.44	$(^2D)6s\ ^1D_2-(^2D)6p\ ^1F_3$
3		4671.81	21 399.01	8.98	$(^2P)5d\ ^3F_2-(^2D)6p\ ^3D_3$
8		4671.60	21 399.98	400.37	$(^2D)5d\ ^3P_0-(^2P)6p\ ^3S_1$
17	a	4657.78	21 463.47	.45	$(^2D)6s\ ^1D_2-(^2D)6p\ ^1P_1$
1	h	4656.73	21 468.32	.35	$(^2D)4f\ ^3D_3-(^2D)6d\ ^1F_3$
5		4644.17	21 526.33	.27	$(^2D)6p\ ^3D_2-(^4S)7s\ ^3S_1$
1		4643.60	21 529.01	.04	$(^2P)5d\ ^3P_1-(^2D)6p\ ^3D_2$
15		4641.40	21 539.18	.18	$(^2P)5d\ ^3F_3-(^4S)4f\ ^5F_2$
8		4632.64	21 579.95	.96	$(^2P)5d\ ^3F_2-(^4S)4f\ ^5F_2$
2	a	4631.65	21 584.56	.65	$(^2D)4f\ ^3G_4-(^2D)6d\ ^3G_5$
6		4620.42	21 636.98	.95	$(^2P)5d\ ^1F_3-(^2P)6p\ ^3D_3$
2		4614.83	21 663.19	2.97	$(^2D)5d\ ^1D_2-(^2D)4f\ ^1P_1$
2		4601.60	21 725.47	.41	$(^2P)5d\ ^3F_3-(^2D)6p\ ^3P_2$
2	h	4592.98	21 766.29	.19	$(^2P)5d\ ^3F_2-(^2D)6p\ ^3P_2$
2		4578.03	21 837.33	.32	$(^2D)5d\ ^1F_3-(^4S)4f\ ^3F_3$
7		4569.12	21 879.95	80.02	$(^2D)5d\ ^3P_2-(^4S)4f\ ^3F_3$
1	a	4555.51	21 945.28	.39	$(^2D)6p\ ^1F_3-(^4S)6d\ ^3D_3$
9	a	4537.38	22 032.99	3.10	$(^2D)6s\ ^3D_3-(^2D)6p\ ^3F_2$
2	h	4528.24	22 077.47	.52	$(^2P)6p\ ^3D_2-(^2D)7s\ ^3D_3$
2	h	4528.24	22 077.47	.49	$(^2D)6p\ ^1P_1-(^4S)6d\ ^3D_1$
1		4525.63	22 090.20	.16	$(^2D)5d\ ^3F_2-(^4S)6p\ ^5P_1$
14	a	4503.41	22 199.20	.12	$(^2D)5d\ ^1D_2-(^2P)6p\ ^1D_2$
5	a	4492.80	22 251.62	.69	$(^2P)6s\ ^3P_1-(^4S)4f\ ^3F_2$
5	a	4492.80	22 251.62	.66	$(^2D)4f\ ^3F_2-(^2D)6d\ ^1F_3$
4	a	4488.90	22 270.95	1.09	$(^2D)5d\ ^3F_2-(^4S)6p\ ^5P_2$
2		4480.05	22 314.95	.98	$(^4S)4f\ ^3F_4-(^2D)6d\ ^3G_3$
8	b	4470.90	22 360.61	.63	$5s5p^5\ ^1P_1-(^2P)6p\ ^1P_1$
5		4468.16	22 374.33	.38	$(^2D)5d\ ^3D_2-(^2D)6p\ ^1F_3$
7		4453.60	22 447.47	.39	$(^2D)5d\ ^3D_2-(^2D)6p\ ^1P_1$
1		4453.29	22 449.03	.24	$(^2P)5d\ ^1F_3-(^2D)4f\ ^3F_4$
15		4434.17	22 545.83	.81	$(^2D)6s\ ^3D_1-(^2D)6p\ ^3F_2$
3		4417.97	22 628.50	.43	$(^2P)5d\ ^3D_1-(^2P)6p\ ^3P_1$
2		4417.78	22 629.48	.50	$(^2P)5d\ ^1D_2-(^2D)6p\ ^3D_1$
8		4413.06	22 653.67	.63	$(^2P)5d\ ^3D_1-(^2P)6p\ ^3P_0$
13		4395.17	22 745.84	.97	$(^2P)6s\ ^1P_1-(^2P)6p\ ^3S_1$
4		4387.72	22 784.50	.46	$(^2D)5d\ ^1D_2-(^2P)6p\ ^3D_3$

Table I. *Continued*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
4		4387.47	22 785.80	.87	$(^2P)5d\ ^3F_2-(^2D)6p\ ^3P_1$
4		4386.01	22 793.35	.48	$5s5p^5\ ^1P_1-(^2P)6p\ ^3P_2$
3		4373.06	22 860.88	.93	$(^2D)6p\ ^3D_2-(^4S)6d\ ^3D_2$
3		4357.63	22 941.83	.80	$(^2D)5d\ ^3F_3-(^4S)6p\ ^5P_3$
2		4319.85	23 142.47	.51	$(^4S)4f\ ^3F_2-(^2D)6d\ ^3D_1$
7		4309.32	23 199.03	.03	$(^2D)5d\ ^3D_3-(^4S)4f\ ^5F_4$
6		4308.01	23 206.07	.12	$(^2D)4f\ ^3G_3-(^2D)6d\ ^3D_2$
6		4308.01	23 206.07	.04	$(^2P)6s\ ^3P_2-(^2P)6p\ ^3S_1$
1	a	4305.83	23 217.82	.82	$(^2D)5d\ ^3D_3-(^4S)4f\ ^5F_3$
1	a	4297.96	23 260.34	.82	$(^2P)6p\ ^3D_1-(^2D)6d\ ^3P_2$
4		4289.33	23 307.13	.07	$(^2D)6s\ ^1D_2-(^4S)4f\ ^5F_4$
5	a	4287.58	23 316.65	.56	$(^2D)5d\ ^3P_1-(^2P)6p\ ^3D_2$
20		4285.89	23 325.85	.86	$(^2D)6s\ ^1D_2-(^4S)4f\ ^5F_3$
4		4278.91	23 363.90	.39	$(^2P)5d\ ^1F_3-(^2P)6p\ ^3P_2$
4		4274.14	23 389.97	.96	$(^2D)5d\ ^3P_1-(^2P)6p\ ^3P_1$
17		4272.58	23 398.50	.59	$(^2D)5d\ ^3D_3-(^2D)6p\ ^3F_4$
12		4263.40	23 448.88	.91	$(^2P)6s\ ^3P_2-(^2D)4f\ ^3D_3$
2		4246.38	23 542.86	.88	$(^2D)5d\ ^3D_3-(^2D)6p\ ^3D_3$
16		4240.24	23 576.96	.99	$(^2D)5d\ ^1F_3-(^2D)6p\ ^1D_2$
2	a	4235.76	23 601.90	.77	$(^2D)6s\ ^3D_3-(^2D)6p\ ^3D_2$
13		4226.97	23 650.97	.91	$(^2D)6s\ ^1D_2-(^2D)6p\ ^3D_3$
0		4225.96	23 656.63	.76	$(^2P)5d\ ^1F_3-(^2D)4f\ ^3F_3$
10		4216.71	23 708.53	.57	$(^2D)5d\ ^3G_3-(^4S)6p\ ^3P_2$
24		4213.99	23 723.82	.85	$(^2D)5d\ ^3D_3-(^4S)4f\ ^5F_2$
14		4209.58	23 748.63	.73	$(^2P)6s\ ^3P_1-(^2P)6p\ ^3D_1$
13		4203.89	23 780.83	.72	$(^2P)5d\ ^3P_1-(^2D)6p\ ^1P_1$
2	a	4202.39	23 789.32	.22	$(^2D)6p\ ^3F_3-(^4S)6d\ ^3D_3$
9		4194.87	23 831.96	.89	$(^2D)6s\ ^1D_2-(^4S)4f\ ^5F_2$
4		4181.15	23 910.15	.08	$(^2D)5d\ ^3D_3-(^2D)6p\ ^3P_2$
16		4176.53	23 936.61	.61	$(^2D)6s\ ^3D_3-(^2D)6p\ ^3F_3$
2		4167.60	23 987.89	.85	$(^2D)6p\ ^1D_2-(^2D)6d\ ^3F_2$
2		4162.37	24 018.04	.12	$(^2D)6s\ ^1D_2-(^2D)6p\ ^3P_2$
5	b	4154.66	24 062.61	.73	$(^2P)5d\ ^3D_2-(^2P)6p\ ^3D_2$
4	b	4152.74	24 073.73	.87	$(^2P)5d\ ^3P_0-(^2D)6p\ ^1P_1$
8	a	4152.04	24 077.78	8.05	$(^2D)5d\ ^1D_2-(^2P)6p\ ^1P_1$
3	b	4150.78	24 085.10	4.77	$(^2P)6s\ ^1P_1-(^2D)4f\ ^1P_1$
22	a	4145.74	24 114.33	.48	$(^2D)6s\ ^3D_1-(^2D)6p\ ^3D_2$
5		4143.92	24 124.92	5.34	$(^2D)6s\ ^1D_2-(^4S)4f\ ^5F_1$
13	b	4141.99	24 136.16	.13	$(^2P)5d\ ^3D_2-(^2P)6p\ ^3P_1$
12		4132.40	24 192.21	.41	$(^2D)5d\ ^3S_1-(^2D)6p\ ^1D_2$
12		4110.05	24 323.78	.82	$(^2P)5d\ ^1D_2-(^2D)6p\ ^3F_2$
20		4109.08	24 329.51	.56	$(^2D)6s\ ^3D_2-(^2D)6p\ ^3D_1$
5	b	4095.03	24 412.98	.88	$(^2P)5d\ ^3D_2-(^2D)4f\ ^3G_3$
21		4078.70	24 510.72	.90	$(^2D)5d\ ^1D_2-(^2P)6p\ ^3P_2$
7		4072.97	24 545.20	4.85	$(^2P)6s\ ^3P_2-(^2D)4f\ ^1P_1$
25		4060.45	24 620.88	.92	$(^2P)6s\ ^1P_1-(^2P)6p\ ^1D_2$
5		4058.15	24 634.84	.85	$(^2D)5d\ ^3D_2-(^2D)6p\ ^3D_3$
22		4050.07	24 683.98	4.04	$(^4S)6s\ ^3S_1-(^4S)6p\ ^3P_1$
14		4043.23	24 725.74	.85	$(^2P)6s\ ^3P_0-(^2P)6p\ ^3D_1$
4	a	4032.91	24 789.01	.26	$(^2D)6p\ ^3D_1-(^4S)7s\ ^3S_1$
1		4030.46	24 804.08	.28	$(^2D)5d\ ^1D_2-(^2D)4f\ ^3F_3$
15		4028.56	24 815.78	.82	$(^2D)5d\ ^3D_2-(^4S)4f\ ^5F_2$
2		4026.82	24 826.50	.92	$(^2P)5d\ ^3P_2-(^2P)6p\ ^3D_1$
7		4021.60	24 858.72	.73	$(^4S)5d\ ^3D_1-(^4S)6p\ ^5P_1$
4		3998.55	25 002.02	.06	$(^2D)5d\ ^3D_2-(^2D)6p\ ^3P_2$
21		3992.85	25 037.71	.80	$(^2D)6s\ ^1D_2-(^2D)6p\ ^3P_1$
3		3992.54	25 039.65	.66	$(^4S)5d\ ^3D_1-(^4S)6p\ ^5P_2$
12		3985.96	25 080.99	1.00	$(^2P)6s\ ^3P_2-(^2P)6p\ ^1D_2$
8		3969.91	25 182.39	.45	$(^2D)5d\ ^1D_2-(^2D)4f\ ^3D_2$
8		3965.45	25 210.71	.76	$(^2P)5d\ ^3P_1-(^2D)6p\ ^3P_0$
25		3950.59	25 305.54	.54	$(^4S)6s\ ^5S_2-(^4S)6p\ ^5P_1$
3		3950.12	25 308.55	.56	$(^2P)6p\ ^3D_1-(^2D)7s\ ^1D_2$
3		3941.50	25 363.90	.99	$(^2D)5d\ ^3P_2-(^4S)4f\ ^3F_2$
2		3932.81	25 419.94	20.11	$(^2P)6p\ ^3D_2-(^2D)6d\ ^1D_2$
25		3922.55	25 486.43	.47	$(^4S)6s\ ^5S_2-(^4S)6p\ ^5P_2$
8		3915.31	25 533.55	.69	$(^2D)5d\ ^1F_3-(^4S)4f\ ^3F_4$
8		3903.67	25 609.69	.77	$(^2D)5d\ ^3F_2-(^4S)6p\ ^3P_1$
19		3895.05	25 666.36	.34	$(^2P)6s\ ^3P_2-(^2P)6p\ ^3D_3$

Table I. *Continued*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
2		3890.98	25 693.21	2.74	$(^2D)6p\ ^3F_2-(^4S)6d\ ^3D_3$
13		3884.99	25 732.82	.84	$(^4S)5d\ ^3D_3-(^4S)6p\ ^5P_2$
18		3880.46	25 762.86	.97	$(^2D)5d\ ^3D_1-(^2D)6p\ ^3D_1$
20		3877.82	25 780.40	.44	$(^2D)6s\ ^3D_3-(^2D)6p\ ^1F_3$
7		3861.51	25 889.29	.42	$(^2P)6p\ ^3D_2-(^2D)6d\ ^1F_3$
19		3861.04	25 892.44	.49	$(^2P)5d\ ^1D_2-(^2D)6p\ ^3D_2$
2		3860.19	25 898.14	7.85	$(^2D)6p\ ^3F_2-(^4S)6d\ ^3D_1$
14		3854.28	25 937.85	.95	$(^2D)5d\ ^3F_3-(^4S)6p\ ^3P_2$
8		3847.40	25 984.23	.33	$(^2P)5d\ ^3D_3-(^2D)4f\ ^3D_3$
18		3841.87	26 021.63	.73	$(^2D)5d\ ^3D_2-(^2D)6p\ ^3P_1$
20		3841.53	26 023.94	.88	$(^2D)6s\ ^3D_2-(^2D)6p\ ^3F_2$
8		3829.71	26 104.26	.07	$(^4S)4f\ ^3F_4-(^2D)6d\ ^3G_4$
3		3823.15	26 149.05	.15	$(^2P)5d\ ^3P_1-(^4S)4f\ ^5F_2$
2		3819.49	26 174.10	.06	$5s5p^5\ ^1P_1-(^2D)4f\ ^3P_1$
7		3816.78	26 192.69	.79	$(^2P)5d\ ^3D_1-(^2D)4f\ ^3F_2$
3		3811.74	26 227.32	.34	$(^2P)5d\ ^1D_2-(^2D)6p\ ^3F_3$
4	w	3802.98	26 287.73	.92	$(^4S)4f\ ^3F_3-(^2D)6d\ ^1G_4$
8		3801.71	26 296.51	.66	$5s5p^5\ ^1P_1-(^2D)4f\ ^1D_2$
2		3792.74	26 358.70	.76	$(^4S)4f\ ^3F_3-(^2D)6d\ ^3F_3$
15		3791.67	26 366.14	.16	$(^2D)6s\ ^3D_1-(^2D)6p\ ^1P_1$
28		3781.00	26 440.54	.66	$(^4S)6s\ ^3S_1-(^4S)6p\ ^3P_2$
24		3776.32	26 473.31	.50	$(^2P)6s\ ^3P_1-(^2P)6p\ ^3D_2$
2	b	3775.49	26 479.13	.16	$(^4S)4f\ ^3F_4-(^2D)6d\ ^3F_4$
15		3772.53	26 499.91	.86	$(^2P)6s\ ^1P_1-(^2P)6p\ ^1P_1$
1		3772.25	26 501.87	2.15	$(^2D)6p\ ^1D_2-(^2D)6d\ ^3P_2$
12		3768.93	26 525.22	.30	$(^4S)4f\ ^3F_4-(^2D)6d\ ^3G_5$
14		3765.85	26 546.91	.90	$(^2P)6s\ ^3P_1-(^2P)6p\ ^3P_1$
19		3762.28	26 572.10	.10	$(^2P)6s\ ^3P_1-(^2P)6p\ ^3P_0$
5		3757.98	26 602.51	.58	$(^2D)5d\ ^1D_2-(^2D)4f\ ^3P_2$
3		3751.44	26 648.88	.91	$(^2P)5d\ ^3F_3-(^2D)6p\ ^1D_2$
18		3745.71	26 689.65	.69	$(^2P)5d\ ^3F_2-(^2D)6p\ ^1D_2$
2		3743.74	26 703.69	.70	$(^4S)4f\ ^3F_4-(^2D)6d\ ^3D_3$
2		3739.60	26 733.25	.24	$(^2P)5d\ ^3D_1-(^2P)6p\ ^3S_1$
5	b	3728.91	26 809.89	10.19	$(^2P)6p\ ^1D_2-(^2P)6d\ ^3D_1$
1		3721.82	26 860.96	1.03	$(^2D)5d\ ^3P_2-(^2P)6p\ ^3D_1$
1		3721.03	26 866.66	.57	$(^2P)5d\ ^1F_3-(^2D)4f\ ^1D_2$
10		3711.91	26 932.67	.71	$(^2P)6s\ ^1P_1-(^2P)6p\ ^3P_2$
8		3708.94	26 954.24	.33	$(^2D)5d\ ^3P_1-(^2D)4f\ ^3F_2$
10		3708.15	26 959.98	.93	$(^2P)6s\ ^3P_2-(^2P)6p\ ^1P_1$
1		3707.63	26 963.76	.76	$5s5p^5\ ^1P_1-(^2P)6p\ ^1S_0$
6		3689.83	27 093.83	.91	$(^2D)5d\ ^3D_3-(^4S)4f\ ^3F_3$
3		3687.04	27 114.33	.30	$(^2D)6p\ ^1D_2-(^2D)6d\ ^3S_1$
23		3676.63	27 191.10	.11	$(^4S)6s\ ^3S_1-(^4S)6p\ ^3P_0$
2		3675.17	27 201.90	.95	$(^2D)6s\ ^1D_2-(^4S)4f\ ^3F_3$
16		3654.61	27 354.93	5.06	$(^2P)5d\ ^3P_1-(^2D)6p\ ^3P_1$
8		3653.09	27 366.31	.40	$(^2D)5d\ ^3F_2-(^4S)6p\ ^3P_2$
13		3649.57	27 392.71	.78	$(^2P)6s\ ^3P_2-(^2P)6p\ ^3P_2$
10		3644.14	27 433.52	.74	$(^2D)5d\ ^3S_1-(^2P)6p\ ^3D_1$
15		3640.99	27 457.26	.29	$(^2D)5d\ ^3D_1-(^2D)6p\ ^3F_2$
11		3636.02	27 494.79	.78	$(^2D)5d\ ^3P_1-(^2P)6p\ ^3S_1$
15		3632.14	27 524.16	.02	$(^2P)6s\ ^3P_0-(^2P)6p\ ^3P_1$
8		3628.52	27 551.62	.69	$(^2P)5d\ ^3P_2-(^2P)6p\ ^3D_2$
25		3624.06	27 585.52	.62	$(^4S)6s\ ^5S_2-(^4S)6p\ ^5P_3$
21	a	3623.13	27 592.60	.55	$(^2D)6s\ ^3D_2-(^2D)6p\ ^3D_2$
4		3621.59	27 604.34	.25	$(^2P)6s\ ^1P_1-(^2D)4f\ ^3D_2$
11		3620.00	27 616.46	.42	$(^2P)5d\ ^3D_3-(^2P)6p\ ^1D_2$
8		3618.86	27 625.16	.09	$(^2P)5d\ ^3P_2-(^2P)6p\ ^3P_1$
10		3615.86	27 648.08	.21	$(^2P)5d\ ^3P_0-(^2D)6p\ ^3P_1$
0		3610.97	27 685.52	6.16	$(^2P)6s\ ^3P_2-(^2D)4f\ ^3F_3$
22	a	3609.46	27 697.10	.07	$(^2D)6s\ ^3D_3-(^4S)4f\ ^5F_4$
8	h	3609.07	27 700.09	.50	$(^2P)5d\ ^3D_2-(^2D)4f\ ^3F_2$
22	a	3607.02	27 715.84	.86	$(^2D)6s\ ^3D_3-(^4S)4f\ ^5F_3$
12		3601.87	27 755.46	.46	$(^2D)5d\ ^1P_1-(^4S)6p\ ^5P_1$
17		3596.59	27 796.21	.20	$(^2D)6s\ ^3D_1-(^2D)6p\ ^3P_0$
5		3593.38	27 821.04	.05	$(^2D)6p\ ^3P_1-(^2D)7s\ ^3D_1$
8		3591.98	27 831.88	.99	$(^4S)5d\ ^3D_3-(^4S)6p\ ^5P_3$
5		3584.27	27 891.75	.48	$(^2D)5d\ ^1D_2-(^2D)4f\ ^3P_1$
5		3584.27	27 891.75	.67	$(^2D)6p\ ^3P_1-(^2D)6d\ ^3F_2$

Table I. *Continued*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
25		3583.65	27 896.57	.63	$(^2D)6s\ ^3D_3-(^2D)6p\ ^3F_4$
25		3579.70	27 927.36	.40	$(^2D)6s\ ^3D_2-(^2D)6p\ ^3F_3$
6	b	3578.54	27 936.41	.39	$(^2D)5d\ ^1P_1-(^4S)6p\ ^5P_2$
5		3574.40	27 968.76	.96	$(^2D)5d\ ^1D_2-(^2D)4f\ ^1F_3$
2		3568.63	28 013.98	4.08	$(^2D)5d\ ^1D_2-(^2D)4f\ ^1D_2$
17		3565.19	28 041.01	0.91	$(^2D)6s\ ^3D_3-(^2D)6p\ ^3D_3$
4		3564.86	28 043.61	.63	$(^2D)6p\ ^1D_2-(^2D)7s\ ^3D_3$
10		3562.99	28 058.33	.74	$(^2D)5d\ ^3P_0-(^2D)4f\ ^3D_1$
14		3562.22	28 064.39	.33	$(^2P)6s\ ^3P_2-(^2D)4f\ ^3D_2$
14		3561.37	28 071.09	.17	$(^2P)5d\ ^1D_2-(^2D)6p\ ^1F_3$
10		3561.23	28 072.19	.04	$(^2P)5d\ ^3D_1-(^2D)4f\ ^1P_1$
18		3552.12	28 144.19	.18	$(^2P)5d\ ^1D_2-(^2D)6p\ ^1P_1$
5		3546.88	28 185.77	.89	$(^2D)5d\ ^3D_2-(^4S)4f\ ^3F_3$
10		3544.86	28 201.83	.77	$(^2P)5d\ ^3D_3-(^2P)6p\ ^3D_3$
20		3542.35	28 221.81	.89	$(^2D)6s\ ^3D_3-(^4S)4f\ ^5F_2$
12		3539.94	28 241.02	0.94	$(^2P)5d\ ^3D_2-(^2P)6p\ ^3S_1$
12		3539.94	28 241.02	.82	$(^4S)4f\ ^3F_3-(^2D)6d\ ^3P_2$
7		3531.82	28 305.95	6.17	$(^4S)6d\ ^5D_1-5s^05p^6\ ^1S_0$
3		3531.62	28 307.55	.55	$(^2P)5d\ ^1P_1-(^2P)4f\ ^3D_2$
16		3522.80	28 378.42	.34	$(^4S)5d\ ^3D_1-(^4S)6p\ ^3P_1$
11		3519.11	28 408.18	.12	$(^2D)6s\ ^3D_3-(^2D)6p\ ^3P_2$
13	b	3509.77	28483.78	.81	$(^2P)5d\ ^3D_2-(^2D)4f\ ^3D_3$
11		3501.65	28 549.82	.89	$(^2D)6p\ ^1D_2-(^2D)7s\ ^1D_2$
4		3494.82	28 605.62	.62	$(^2P)5d\ ^3F_3-(^4S)4f\ ^3F_4$
8		3494.51	28 608.16	.20	$(^2P)5d\ ^3D_1-(^2P)6p\ ^1D_2$
6		3488.13	28 660.48	.40	$(^2D)6p\ ^1D_2-(^2D)6d\ ^3D_3$
4		3479.14	28 734.54	.59	$(^2D)6s\ ^3D_1-(^4S)4f\ ^5F_2$
10		3472.35	28 790.72	.63	$(^2D)6p\ ^3P_1-(^2D)6d\ ^3D_1$
14		3468.22	28 825.01	.15	$(^4S)6s\ ^5S_2-(^4S)6p\ ^3P_1$
15		3467.22	28 833.32	.58	$(^2D)5d\ ^3D_3-(^2D)6p\ ^1D_2$
15		3467.22	28 833.32	.58	$(^2D)5d\ ^3P_1-(^2D)4f\ ^1P_1$
16		3454.27	28 941.41	.62	$(^2D)6s\ ^1D_2-(^2D)6p\ ^1D_2$
11		3451.23	28 966.90	7.69	$(^2D)5d\ ^3P_0-(^2D)4f\ ^3P_1$
15	a	3444.39	29 024.43	.38	$(^2P)6s\ ^1P_1-(^2D)4f\ ^3P_2$
20	a	3444.24	29 025.69	.95	$(^2D)5d\ ^3D_1-(^2D)6p\ ^3D_2$
8		3435.74	29 097.50	.58	$(^4S)4f\ ^5F_2-(^2D)6d\ ^3F_2$
2		3414.54	29 278.15	.56	$(^2D)6p\ ^3D_3-(^2D)6d\ ^3F_2$
8		3403.91	29 369.58	.73	$(^2D)5d\ ^3P_1-(^2P)6p\ ^1D_2$
7		3399.87	29 404.48	.34	$(^2P)6s\ ^1P_1-(^2D)4f\ ^3D_1$
2	b	3395.53	29 442.06	1.82	$(^2D)6p\ ^3D_3-(^2D)7s\ ^3D_2$
3		3392.58	29 467.66	.71	$(^2P)5d\ ^1F_3-(^2D)4f\ ^1G_4$
10		3390.64	29 484.52	.46	$(^2P)6s\ ^3P_2-(^2D)4f\ ^3P_2$
4		3386.23	29 522.92	.38	$(^2D)6p\ ^1D_2-(^2D)6d\ ^3D_2$
12	b	3384.10	29 541.50	.40	$(^4S)5d\ ^3D_2-(^4S)6p\ ^5P_1$
10		3383.92	29 543.07	2.59	$(^2D)6p\ ^3P_2-(^2D)6d\ ^3F_3$
10		3383.92	29 543.07	.10	$(^2D)5d\ ^1F_3-(^2P)6p\ ^3D_2$
4		3381.64	29 562.99	.39	$(^2D)6p\ ^3D_3-(^2D)6d\ ^3G_3$
9		3379.03	29 585.82	.80	$(^2D)5d\ ^3P_2-(^2P)6p\ ^3D_2$
3		3376.98	29 603.78	.61	$(^4S)4f\ ^5F_3-(^2D)6d\ ^3F_2$
9		3370.65	29 659.38	.20	$(^2D)5d\ ^3P_2-(^2P)6p\ ^3P_1$
3		3365.70	29703.00	.09	$(^4S)4f\ ^5F_1-(^2D)6d\ ^3D_1$
3		3365.32	29 706.35	.68	$(^2D)6p\ ^3F_4-(^2D)6d\ ^3G_3$
2		3363.50	29 722.42	.33	$(^4S)5d\ ^3D_2-(^4S)6p\ ^5P_2$
8		3362.77	29 728.87	.83	$(^4S)4f\ ^5F_2-(^2D)6d\ ^3F_3$
3		3358.50	29 766.67	.87	$(^4S)4f\ ^5F_3-(^2D)7s\ ^3D_2$
15		3357.99	29 771.19	.23	$(^2D)6s\ ^3D_2-(^2D)6p\ ^1F_3$
4		3353.54	29 810.70	.30	$(^2D)6p\ ^3P_2-(^2D)6d\ ^3D_1$
6		3350.35	29 839.08	8.96	$(^2D)6p\ ^3D_3-(^2D)6d\ ^1G_4$
12		3349.76	29 844.33	.24	$(^2D)6s\ ^3D_2-(^2D)6p\ ^1P_1$
2		3345.49	29 882.42	3.03	$(^2D)5d\ ^1G_4-(^2D)6p\ ^3F_3$
7		3344.93	29 887.43	.44	$(^4S)4f\ ^5F_3-(^2D)6d\ ^3G_3$
4		3344.27	29 893.32	.25	$(^2D)5d\ ^1F_3-(^2D)4f\ ^3G_3$
16	a	3340.67	29 925.54	.56	$(^2D)5d\ ^3D_2-(^2D)6p\ ^1D_2$
14	a	3340.37	29 928.23	.21	$(^2P)5d\ ^3D_3-(^2P)6p\ ^3P_2$
13		3340.06	29 931.00	.03	$(^2P)5d\ ^3F_2-(^2P)6p\ ^3D_1$
12	b	3339.50	29 936.02	5.95	$(^2D)5d\ ^3P_2-(^2D)4f\ ^3G_3$
15	a	3338.99	29 940.59	.50	$(^2D)6s\ ^3D_1-(^2D)6p\ ^3P_1$
7		3336.24	29 965.27	.35	$(^2D)6p\ ^3P_0-(^2D)7s\ ^3D_1$

Table I. *Continued*

Intensity[i]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
8		3334.23	29 983.34	.25	$(^2D)6p\ ^3F_4-(^2D)6d\ ^1G_4$
15	a	3331.65	30 006.56	.58	$(^2P)5d\ ^1D_2-(^4S)4f\ ^5F_3$
5		3326.39	30 054.00	.09	$(^2D)6p\ ^3F_4-(^2D)6d\ ^3F_3$
8		3320.07	30 111.21	.24	$(^4S)4f\ ^3F_2-(^2D)6d\ ^1F_3$
8		3320.07	30 111.21	.27	$(^2P)6s\ ^3P_1-(^2D)4f\ ^3F_2$
7		3319.55	30 115.93	.90	$(^2P)5d\ ^3D_2-(^2P)6p\ ^1D_2$
6		3317.45	30 134.99	.97	$(^4S)5d\ ^3D_1-(^4S)6p\ ^3P_2$
12		3314.87	30 158.45	.52	$(^2D)5d\ ^3S_1-(^2P)6p\ ^3D_2$
6		3314.26	30 163.99	4.01	$(^4S)4f\ ^5F_3-(^2D)6d\ ^1G_4$
11	a	3306.80	30 232.04	1.92	$(^2D)5d\ ^3S_1-(^2P)6p\ ^3P_1$
11	a	3306.46	30 235.15	4.85	$(^4S)4f\ ^5F_3-(^2D)6d\ ^3F_3$
8		3304.05	30 257.20	.12	$(^2D)5d\ ^3S_1-(^2P)6p\ ^3P_0$
14		3301.54	30 280.20	.16	$(^4S)6p\ ^3P_2-(^4S)6d\ ^5D_2$
14		3295.94	30 331.65	.64	$(^2P)5d\ ^1D_2-(^2D)6p\ ^3D_3$
5		3288.54	30 399.90	400.07	$(^4S)4f\ ^3F_3-(^2D)6d\ ^3D_3$
16		3287.91	30 405.73	.98	$(^2D)6p\ ^3P_1-(^2D)6d\ ^3P_2$
13		3287.80	30 406.75	.76	$(^4S)6p\ ^3P_2-(^4S)6d\ ^5D_3$
14		3285.82	30 425.07	.02	$(^4S)6p\ ^3P_2-(^4S)7s\ ^5S_2$
8		3284.64	30 436.00	5.89	$(^2P)6s\ ^1P_1-(^2D)4f\ ^1D_2$
14		3280.50	30 474.41	.34	$(^2D)5d\ ^1F_3-(^2D)4f\ ^3G_4$
3		3279.13	30 487.14	.13	$(^2P)5d\ ^3D_1-(^2P)6p\ ^1P_1$
12		3278.44	30 493.55	.60	$(^4S)6p\ ^3P_2-(^4S)6d\ ^5D_1$
13		3276.39	30 512.63	.61	$(^2P)5d\ ^1D_2-(^4S)4f\ ^5F_2$
3		3269.40	30 577.87	.88	$(^2D)5d\ ^3D_3-(^4S)4f\ ^3F_2$
22		3268.98	30 581.79	.78	$(^4S)6s\ ^5S_2-(^4S)6p\ ^3P_2$
20		3267.05	30 599.86	.75	$(^2P)5d\ ^3D_3-(^2D)4f\ ^3D_2$
1		3261.46	30 652.21	1.72	$(^2P)6s\ ^3P_1-(^2P)6p\ ^3S_1$
5		3257.85	30 686.27	5.92	$(^2D)6s\ ^1D_2-(^4S)4f\ ^3F_2$
2		3256.52	30 698.80	.84	$(^2P)5d\ ^1D_2-(^2D)6p\ ^3P_2$
12		3256.25	30 701.35	.25	$(^2P)5d\ ^3D_2-(^2P)6p\ ^3D_3$
7		3248.62	30 773.45	.36	$(^2P)6s\ ^3P_2-(^2D)4f\ ^3P_1$
22		3246.85	30 790.23	.29	$(^2D)5d\ ^3D_3-(^4S)4f\ ^3F_4$
12		3244.13	30 816.04	.08	$(^2D)6p\ ^1D_2-(^2D)6d\ ^1P_1$
25		3242.86	30 828.11	.14	$(^4S)5d\ ^3D_3-(^4S)6p\ ^3P_2$
10		3240.47	30 850.85	.84	$(^2P)6s\ ^3P_2-(^2D)4f\ ^1F_3$
25		3236.84	30 855.45	.41	$(^4S)5d\ ^3D_1-(^4S)6p\ ^3P_0$
13		3235.73	30 896.04	5.96	$(^2P)6s\ ^3P_2-(^2D)4f\ ^1D_2$
12		3227.16	30 978.08	.08	$(^4S)6p\ ^3P_0-(^4S)7s\ ^3S_1$
12		3222.99	31 018.16	.12	$(^2D)6p\ ^3P_1-(^2D)6d\ ^3S_1$
2		3214.12	31 103.76	2.98	$(^2P)6s\ ^1P_1-(^2P)6p\ ^1S_0$
7		3199.22	31 248.62	.66	$(^2D)5d\ ^3P_1-(^2P)6p\ ^1P_1$
14		3196.51	31 275.11	.07	$(^2D)5d\ ^1P_1-(^4S)6p\ ^3P_1$
15		3196.25	31 277.65	.64	$(^2D)5d\ ^3D_1-(^2D)6p\ ^1P_1$
16		3185.21	31 386.06	.22	$(^2D)6p\ ^1D_2-(^2D)6d\ ^1D_2$
11		3184.27	31 395.32	.39	$(^2D)6p\ ^1P_1-(^2D)7s\ ^3D_1$
7		3177.11	31 466.07	.02	$(^2D)6p\ ^1P_1-(^2D)6d\ ^3F_2$
7		3169.75	31 539.13	.03	$(^2D)6p\ ^1F_3-(^2D)6d\ ^3F_2$
9		3164.47	31 591.75	.95	$(^2D)6s\ ^3D_3-(^4S)4f\ ^3F_3$
8		3160.66	31 629.84	.28	$(^2D)6p\ ^1P_1-(^2D)7s\ ^3D_2$
8		3160.66	31 629.84	8.83	$(^2P)6s\ ^3P_0-(^2P)6p\ ^3S_1$
7		3156.67	31 669.81	.85	$(^2D)5d\ ^3D_2-(^4S)4f\ ^3F_2$
10		3155.51	31 681.46	.51	$(^2D)5d\ ^3P_1-(^2P)6p\ ^3P_2$
11		3153.44	31 702.25	.29	$(^2D)6p\ ^1F_3-(^2D)7s\ ^3D_2$
13		3153.00	31 706.67	.64	$(^2D)6s\ ^3D_2-(^4S)4f\ ^5F_3$
15		3151.83	31 718.45	.52	$(^2P)5d\ ^1D_2-(^2D)6p\ ^3P_1$
18		3150.97	31 727.10	6.87	$(^2D)5d\ ^1G_4-(^2D)6p\ ^1F_3$
14		3150.83	31 728.51	.52	$(^4S)6p\ ^3P_2-(^4S)7s\ ^3S_1$
15		3150.69	31 729.92	.90	$(^2P)5d\ ^3P_2-(^2P)6p\ ^3S_1$
11		3141.63	31 821.42	.48	$(^4S)5d\ ^3D_2-(^4S)6p\ ^5P_3$
20		3138.28	31 855.39	.53	$(^2D)6p\ ^1D_2-(^2D)6d\ ^1F_3$
3		3126.77	31 972.65	.77	$(^2P)5d\ ^3P_2-(^2D)4f\ ^3D_3$
9		3124.95	31 991.27	0.52	$(^2P)6s\ ^3P_1-(^2D)4f\ ^1P_1$
3		3124.60	31 994.85	.83	$(^2P)5d\ ^3D_2-(^2P)6p\ ^1P_1$
9		3122.15	32 019.96	.88	$(^2P)5d\ ^3D_3-(^2D)4f\ ^3P_2$
5		3121.01	32 031.65	.70	$(^2D)6s\ ^3D_2-(^2D)6p\ ^3D_3$
10		3120.52	32 036.68	.78	$(^4S)6p\ ^3P_1-(^4S)6d\ ^5D_2$
12		3114.41	32 099.53	.43	$(^2D)6p\ ^1F_3-(^2D)6d\ ^1G_4$
6		3107.56	32 170.28	.27	$(^2D)6p\ ^1F_3-(^2D)6d\ ^3F_3$

Table I. *Continued*

Intensity[i]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
9		3106.47	32 181.57	.64	$(^4S)6p\ ^3P_1-(^4S)7s\ ^5S_2$
13		3106.34	32 182.92	.95	$(^2D)6s\ ^1D_2-(^2P)6p\ ^3D_1$
13		3103.47	32 212.68	.67	$(^2D)6s\ ^3D_2-(^4S)4f\ ^5F_2$
10		3102.69	32 220.78	.85	$(^4S)6p\ ^3P_1-(^4S)6d\ ^5D_0$
9		3102.36	32 224.21	.03	$(^4S)4f\ ^5F_2-(^2D)6d\ ^3S_1$
11		3099.87	32 250.09	.23	$(^4S)6p\ ^3P_1-(^4S)6d\ ^5D_1$
18		3091.05	32 342.11	.15	$(^2D)5d\ ^3G_3-(^2D)6p\ ^3F_2$
11		3090.00	32 353.10	.06	$(^2D)5d\ ^3P_1-(^2D)4f\ ^3D_2$
3		3088.87	32 364.93	.97	$(^2D)6p\ ^1P_1-(^2D)6d\ ^3D_1$
18		3083.53	32 420.98	1.08	$(^2D)5d\ ^3F_4-(^2D)6p\ ^3F_3$
4	b	3082.89	32 427.71	.68	$(^2P)5d\ ^3D_2-(^2P)6p\ ^3P_2$
11		3080.42	32 453.71	.72	$(^2D)6p\ ^3P_1-(^2D)7s\ ^1D_2$
6		3073.51	32 526.67	.67	$(^2P)6s\ ^3P_1-(^2P)6p\ ^1D_2$
2		3068.57	32 579.03	.21	$(^2D)6p\ ^1P_1-(^2D)6d\ ^1S_0$
18		3065.19	32 614.96	5.02	$(^2P)5d\ ^3F_3-(^2P)6p\ ^3D_2$
1		3055.26	32 720.95	1.06	$(^2P)5d\ ^3D_2-(^2D)4f\ ^3F_3$
14		3054.48	32 729.31	.20	$(^2P)5d\ ^3F_2-(^2P)6p\ ^3P_1$
6		3051.21	32 764.39	.76	$(^2P)6p\ ^3P_0-(^2P)6d\ ^3D_1$
7		3048.86	32 789.64	.96	$(^2P)6p\ ^3P_1-(^2P)6d\ ^3D_1$
12		3042.04	32 863.15	.36	$(^2P)6p\ ^3D_2-(^2P)6d\ ^3D_1$
12		3026.52	33 031.66	.70	$(^2D)5d\ ^1P_1-(^4S)6p\ ^3P_2$
25		3023.83	33 061.04	.01	$(^4S)5d\ ^3D_2-(^4S)6p\ ^3P_1$
18		3023.65	33 063.01	.18	$(^4S)6p\ ^3P_2-(^4S)6d\ ^3D_2$
6		3020.33	33 099.35	.23	$(^2P)5d\ ^3D_2-(^2D)4f\ ^3D_2$
2		3015.77	33 149.40	.42	$(^2P)5d\ ^3F_4-(^2D)4f\ ^3H_4$
11		3015.41	33 153.36	.36	$(^4S)4f\ ^5F_2-(^2D)7s\ ^3D_3$
11		3014.59	33 162.38	.43	$(^2D)6p\ ^3P_0-(^2D)6d\ ^3S_1$
15	a	3014.13	33 167.44	6.89	$(^2D)5d\ ^3D_2-(^2P)6p\ ^3D_1$
1	b	3009.03	33 223.65	.57	$(^2D)5d\ ^3P_2-(^2D)4f\ ^3F_2$
5		3004.65	33 272.08	.11	$(^2D)5d\ ^1F_3-(^2D)4f\ ^3H_4$
18	a	3004.26	33 276.40	.31	$(^4S)6p\ ^5P_3-(^4S)6d\ ^5D_2$
11		3001.52	33 306.77	.79	$(^4S)4f\ ^5F_5-(^2D)6d\ ^3G_4$
9		2999.29	33 331.54	.62	$(^2D)6s\ ^3D_3-(^2D)6p\ ^1D_2$
11	a	2999.03	33 334.43	.33	$(^2D)6p\ ^3D_3-(^2D)7s\ ^3D_3$
9		2997.50	33 351.44	.48	$(^2D)6p\ ^3D_3-(^2D)6d\ ^3G_4$
8		2994.95	33 379.84	.92	$(^4S)6s\ ^3S_1-(^2D)6p\ ^3D_1$
14		2994.67	33 382.96	.86	$(^2D)6p\ ^3F_3-(^2D)6d\ ^3F_2$
4		2994.37	33 386.30	.27	$(^2P)5d\ ^3D_3-(^2D)4f\ ^1F_3$
15		2992.89	33 402.81	.91	$(^4S)6p\ ^5P_3-(^4S)6d\ ^5D_3$
11		2991.49	33 418.44	.58	$(^2D)6s\ ^3D_2-(^2D)6p\ ^3P_1$
14		2991.25	33 421.12	.17	$(^4S)6p\ ^5P_3-(^4S)7s\ ^5S_2$
3		2990.82	33 425.93	6.20	$(^2D)6p\ ^3P_1-(^2D)6d\ ^3D_2$
7		2990.33	33 431.40	.39	$(^2P)5d\ ^3D_3-(^2D)4f\ ^1D_2$
11		2986.11	33 478.65	.62	$(^2D)6p\ ^3F_4-(^2D)7s\ ^3D_3$
14		2985.53	33 485.15	.15	$(^4S)6p\ ^3P_1-(^4S)7s\ ^3S_1$
16		2984.58	33 495.81	.77	$(^2D)6p\ ^3F_4-(^2D)6d\ ^3G_4$
8		2981.32	33 532.44	.48	$(^2D)6p\ ^3P_1-(^2D)6d\ ^3P_0$
3		2980.09	33 546.27	.12	$(^2D)6p\ ^3F_3-(^2D)7s\ ^3D_2$
3		2980.09	33546.27	.27	$(^2P)5d\ ^3F_3-(^2D)4f\ ^3G_4$
10		2976.75	33 583.91	.90	$(^2D)6p\ ^3P_2-(^2D)6d\ ^3D_3$
6	b	2974.90	33 604.80	.86	$(^2P)5d\ ^3P_2-(^2P)6p\ ^1D_2$
9		2971.26	33 645.96	6.07	$(^2D)5d\ ^3D_1-(^4S)4f\ ^5F_2$
11		2971.17	33 646.98	7.07	$(^2D)6p\ ^3D_2-(^2D)7s\ ^3D_1$
19		2970.49	33 654.69	.77	$(^4S)6p\ ^5P_3-(^4S)6d\ ^5D_4$
10		2970.08	33 659.33	.39	$(^4S)4f\ ^5F_3-(^2D)7s\ ^3D_3$
10		2970.08	33 659.33	.62	$(^4S)4f\ ^5F_2-(^2D)7s\ ^1D_2$
23		2969.77	33 662.84	.28	$(^2D)5d\ ^1G_4-(^4S)4f\ ^5F_3$
9		2969.43	33 666.70	.69	$(^2D)6p\ ^3F_3-(^2D)6d\ ^3G_3$
12		2968.57	33 676.45	.54	$(^4S)4f\ ^5F_3-(^2D)6d\ ^3G_4$
10		2968.43	33 678.04	.18	$(^4S)4f\ ^5F_4-(^2D)7s\ ^3D_3$
10	a	2966.92	33 695.18	.33	$(^4S)4f\ ^5F_4-(^2D)6d\ ^3G_4$
11		2964.93	33 717.79	.70	$(^2D)6p\ ^3D_2-(^2D)6d\ ^3F_2$
13		2964.17	33 726.44	.57	$(^2D)6p\ ^3D_3-(^2D)6d\ ^3F_4$
4		2960.87	33 764.03	.02	$(^2D)5d\ ^3P_2-(^2P)6p\ ^3S_1$
13		2960.34	33 770.07	.14	$(^4S)4f\ ^5F_2-(^2D)6d\ ^3D_3$
6		2960.07	33 773.15	.19	$(^2D)5d\ ^3P_1-(^2D)4f\ ^3P_2$
15	a	2959.36	33 781.25	0.98	$(^4S)6p\ ^3P_0-(^4S)6d\ ^3D_1$
9	a	2959.28	33 782.17	.14	$(^2D)5d\ ^1P_1-(^4S)6p\ ^3P_0$

Table I. *Continued*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
17		2954.93	33 831.90	2.31	$(^2D)5d\ ^3D_1-(^2D)6p\ ^3P_2$
10	a	2954.17	33 840.60	.60	$(^2D)6p\ ^3D_3-(^2D)7s\ ^1D_2$
10	a	2954.10	33 841.40	.49	$(^2P)5d\ ^3F_4-(^2D)4f\ ^3D_3$
7		2953.94	33 843.23	.05	$(^2D)5d\ ^1G_4-(^2D)6p\ ^3F_4$
6		2953.86	33 844.15	.33	$(^2D)6s\ ^3D_1-(^2D)6p\ ^1D_2$
3		2951.53	33 870.87	.86	$(^2D)6p\ ^3F_4-(^2D)6d\ ^3F_4$
19		2948.07	33 910.62	.81	$(^2D)5d\ ^3G_3-(^2D)6p\ ^3D_2$
17		2947.51	33 917.06	.00	$(^2D)6p\ ^3F_4-(^2D)6d\ ^3G_5$
18		2945.23	33 943.32	.26	$(^2D)6p\ ^3F_3-(^2D)6d\ ^1G_4$
10		2944.68	33949.66	.69	$(^2D)6p\ ^3P_1-(^2D)6d\ ^3P_1$
7		2944.56	33 951.04	.11	$(^2D)6p\ ^3D_3-(^2D)6d\ ^3D_3$
7		2943.43	33 964.07	.17	$(^2D)5d\ ^1F_3-(^2D)4f\ ^3D_3$
11	b	2942.06	33 979.89	80.32	$(^2D)6p\ ^1P_1-(^2D)6d\ ^3P_2$
12		2941.39	33 987.63	.34	$(^2D)5d\ ^1G_4-(^2D)6p\ ^3D_3$
17		2940.21	34 001.27	.53	$(^2D)6p\ ^3D_2-(^2D)6d\ ^3G_3$
10		2939.73	34 006.82	.88	$(^2D)5d\ ^3P_2-(^2D)4f\ ^3D_3$
12		2939.11	34 013.99	4.10	$(^2D)6p\ ^3F_3-(^2D)6d\ ^3F_3$
15	b	2935.86	34 051.64	.62	$(^4S)4f\ ^5F_3-(^2D)6d\ ^3F_4$
10		2935.72	34 053.27	.33	$(^2D)6p\ ^1F_3-(^2D)6d\ ^3P_2$
18		2932.76	34 087.63	.53	$(^4S)5d\ ^5D_0-(^4S)6p\ ^5P_1$
10	b	2932.09	34 095.42	.40	$(^2D)6p\ ^3F_4-(^2D)6d\ ^3D_3$
18		2930.27	34 116.60	.56	$(^4S)4f\ ^5F_4-(^2D)6d\ ^3G_5$
4		2927.13	34 153.20	.15	$(^2D)5d\ ^3P_1-(^2D)4f\ ^3D_1$
11		2926.07	34 165.57	.65	$(^4S)4f\ ^5F_3-(^2D)7s\ ^1D_2$
11		2923.96	34 190.22	.21	$(^2P)5d\ ^3P_2-(^2P)6p\ ^3D_3$
16		2923.53	34 195.25	.33	$(^2D)5d\ ^3G_5-(^4S)4f\ ^5F_4$
15		2917.60	34 264.75	.91	$(^2D)5d\ ^3F_4-(^2D)6p\ ^1F_3$
8		2916.63	34 276.14	.17	$(^4S)4f\ ^5F_3-(^2D)6d\ ^3D_3$
7		2915.04	34 294.84	.96	$(^4S)4f\ ^5F_4-(^2D)6d\ ^3D_3$
18		2914.14	34 305.43	.66	$(^2D)5d\ ^3F_2-(^2D)6p\ ^3D_1$
20		2912.38	34 326.16	.31	$(^4S)6p\ ^3P_2-(^4S)6d\ ^3D_3$
19		2911.91	34 331.70	.58	$(^4S)5d\ ^5D_1-(^4S)6p\ ^5P_1$
6		2911.48	34 336.77	.73	$(^2D)5d\ ^3S_1-(^2P)6p\ ^3S_1$
12		2910.37	34 349.86	8.94	$(^2D)6p\ ^3D_2-(^2D)6d\ ^3F_3$
3		2910.09	34 353.17	.07	$(^2P)5d\ ^1F_3-(^4S)5f\ ^5F_4$
15		2906.56	34 394.89	.88	$(^2D)5d\ ^3G_5-(^2D)6p\ ^3F_4$
7		2904.17	34 423.19	.16	$(^2P)5d\ ^3D_1-(^2D)4f\ ^1D_2$
5		2902.29	34 445.49	.88	$(^2D)6p\ ^3P_2-(^2D)6d\ ^3D_2$
4		2897.70	34 500.05	.22	$(^2P)5d\ ^3P_1-(^2P)6p\ ^3D_1$
14		2896.65	34 512.56	.52	$(^4S)5d\ ^5D_1-(^4S)6p\ ^5P_2$
2		2896.07	34 519.47	.36	$(^2P)5d\ ^3D_2-(^2D)4f\ ^3P_2$
6		2895.04	34531.75	.42	$(^4S)6p\ ^3P_2-(^4S)6d\ ^3D_1$
18		2891.72	34 571.39	.53	$(^2D)5d\ ^3F_3-(^2D)6p\ ^3F_2$
8		2889.97	34 592.33	.47	$(^2D)6p\ ^1P_1-(^2D)6d\ ^3S_1$
2		2886.93	34 628.75	.32	$(^2P)5d\ ^1F_3-(^4S)5f\ ^5F_3$
12		2886.68	34 631.75	2.11	$(^4S)4f\ ^5F_2-(^2D)6d\ ^3D_2$
5		2879.36	34 719.79	.91	$(^2D)6p\ ^3P_1-(^2D)6d\ ^1P_1$
4		2873.29	34 793.13	.37	$(^2P)5d\ ^3P_0-(^2P)6p\ ^3D_1$
4		2872.75	34 799.67	.69	$(^2D)5d\ ^3D_3-(^2P)6p\ ^3D_2$
25		2871.69	34 812.52	.68	$(^2D)5d\ ^3G_4-(^2D)6p\ ^3F_3$
25		2871.69	34 812.52	3.08	$(^2D)6p\ ^3D_3-(^2D)6d\ ^3D_2$
17		2871.27	34 817.61	.64	$(^4S)5d\ ^3D_2-(^4S)6p\ ^3P_2$
17		2871.10	34 819.67	.80	$(^4S)6p\ ^3P_1-(^4S)6d\ ^3D_2$
3		2869.52	34 838.84	.45	$(^2P)6s\ ^3P_1-(^2P)6p\ ^3P_2$
3		2868.45	34 851.84	.98	$(^2D)5d\ ^3D_1-(^2D)6p\ ^3P_1$
8		2864.62	34 898.43	9.32	$(^2P)5d\ ^3D_2-(^2D)4f\ ^3D_1$
2		2863.86	34 907.69	.73	$(^2D)6s\ ^1D_2-(^2P)6p\ ^3D_2$
25		2862.42	34 925.25	.10	$(^4S)5d\ ^5D_2-(^4S)6p\ ^5P_1$
3		2856.67	34 995.55	.79	$(^2P)5d\ ^1F_3-(^2P)4f\ ^3G_3$
4		2850.27	35 074.12	.24	$(^4S)6s\ ^3S_1-(^2D)6p\ ^3F_2$
10		2847.92	35 103.06	2.82	$(^2D)5d\ ^3P_2-(^2D)4f\ ^1P_1$
14		2847.67	35 106.15	.04	$(^4S)5d\ ^5D_2-(^4S)6p\ ^5P_2$
7		2845.06	35 138.35	.14	$(^4S)4f\ ^5F_3-(^2D)6d\ ^3D_2$
4		2844.12	35 149.96	.84	$(^2D)5d\ ^3D_3-(^2D)4f\ ^3G_3$
5		2838.81	35 215.71	.74	$(^2D)6p\ ^3F_2-(^2D)7s\ ^3D_1$
8		2833.12	35 286.43	.37	$(^2D)6p\ ^3F_2-(^2D)6d\ ^3F_2$
6		2832.97	35 288.30	.33	$(^2D)6s\ ^3D_3-(^4S)4f\ ^3F_4$
2		2832.83	35 290.04	.05	$(^2D)6p\ ^3P_1-(^2D)6d\ ^1D_2$

Table I. *Continued*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
17		2827.46	35 357.06	.01	$(^4S)5d\ ^5D_3-(^4S)6p\ ^5P_2$
14		2825.99	35 375.45	.46	$(^4S)6p\ ^5P_2-(^4S)6d\ ^5D_2$
8	b	2817.36	35 483.81	.79	$(^2P)5d\ ^3P_2-(^2P)6p\ ^1P_1$
16		2815.92	35 501.95	2.06	$(^4S)6p\ ^5P_2-(^4S)6d\ ^5D_3$
1		2815.27	35 510.15	.00	$(^2P)6s\ ^3P_1-(^2D)4f\ ^3D_2$
13	a	2814.46	35 520.37	.32	$(^4S)6p\ ^5P_2-(^4S)7s\ ^5S_2$
8		2811.61	35 556.37	.40	$(^4S)6p\ ^5P_1-(^4S)6d\ ^5D_2$
7	b	2810.46	35 570.92	.20	$(^2D)6p\ ^3F_2-(^2D)6d\ ^3G_3$
3		2809.53	35 582.69	.74	$(^2D)6s\ ^3D_2-(^4S)4f\ ^3F_3$
10	a	2809.06	35 588.65	.62	$(^2D)6s\ ^3D_1-(^4S)4f\ ^3F_2$
10	a	2809.06	35 588.65	.90	$(^4S)6p\ ^5P_2-(^4S)6d\ ^5D_1$
7		2808.57	35 594.86	.80	$(^2D)6p\ ^1F_3-(^2D)7s\ ^3D_3$
7		2808.46	35 596.25	.26	$(^2D)5d\ ^1F_3-(^2P)6p\ ^1D_2$
12		2807.22	35 611.97	.95	$(^2D)6p\ ^1F_3-(^2D)6d\ ^3G_4$
6		2806.40	35 622.38	.35	$(^2P)5d\ ^1D_2-(^2D)6p\ ^1D_2$
4		2805.09	35 639.01	8.97	$(^2D)5d\ ^3P_2-(^2P)6p\ ^1D_2$
3		2802.19	35 675.90	.54	$(^2D)5d\ ^3S_1-(^2D)4f\ ^1P_1$
17		2800.20	35 701.25	.26	$(^4S)6p\ ^5P_1-(^4S)7s\ ^5S_2$
9		2797.87	35 730.98	.94	$(^2D)5d\ ^3D_3-(^2D)4f\ ^3G_4$
12		2797.12	35 740.56	.46	$(^4S)6p\ ^5P_1-(^4S)6d\ ^5D_0$
14		2794.84	35 769.71	.84	$(^4S)6p\ ^5P_1-(^4S)6d\ ^5D_1$
3		2792.47	35 800.07	1.02	$(^2D)5d\ ^1D_2-(^4S)5f\ ^5F_1$
7		2785.80	35 885.78	.74	$(^2P)5d\ ^3D_2-(^2D)4f\ ^1F_3$
6		2785.33	35 891.83	.67	$(^2D)5d\ ^3D_2-(^2P)6p\ ^3D_2$
7		2784.93	35 896.99	7.16	$(^2D)6p\ ^3F_3-(^2D)6d\ ^3P_2$
17		2783.33	35 917.62	.61	$(^2D)6p\ ^3F_2-(^2D)6d\ ^3F_3$
10		2782.69	35 925.89	.81	$(^4S)4f\ ^5F_2-(^2D)6d\ ^1P_1$
4		2782.30	35 930.92	.87	$(^2P)5d\ ^3D_2-(^2D)4f\ ^1D_2$
11		2779.64	35 965.30	.07	$(^2D)5d\ ^3D_2-(^2P)6p\ ^3P_1$
13		2777.94	35 987.31	.04	$(^2D)6p\ ^1F_3-(^2D)6d\ ^3F_4$
16		2776.96	36 000.01	5999.97	$(^2D)5d\ ^3F_2-(^2D)6p\ ^3F_2$
6	a	2774.79	36 028.16	.06	$(^2D)6p\ ^1P_1-(^2D)7s\ ^1D_2$
0		2774.44	36 032.71	.53	$(^2P)5d\ ^3D_3-(^2D)4f\ ^1G_4$
16		2772.40	36059.22	8.92	$(^2P)5d\ ^3F_4-(^2P)6p\ ^3D_3$
16		2772.40	36 059.22	.33	$(^4S)6p\ ^5P_3-(^4S)6d\ ^3D_2$
10		2769.17	36 101.28	.07	$(^2D)6p\ ^1F_3-(^2D)7s\ ^1D_2$
15		2766.18	36 140.30	.20	$(^2D)5d\ ^3F_3-(^2D)6p\ ^3D_2$
5		2765.95	36 143.30	.31	$(^2D)5d\ ^1D_2-(^2P)4f\ ^3G_3$
6		2763.01	36 181.76	.53	$(^2D)5d\ ^3F_4-(^4S)4f\ ^5F_4$
6		2763.01	36 181.76	.61	$(^2D)5d\ ^1F_3-(^2P)6p\ ^3D_3$
9	b	2762.73	36 185.43	.33	$(^2D)6p\ ^3F_2-(^2D)6d\ ^3D_1$
15		2761.58	36 200.49	.32	$(^2D)5d\ ^3F_4-(^4S)4f\ ^5F_3$
13		2760.72	36 211.77	.58	$(^2D)6p\ ^1F_3-(^2D)6d\ ^3D_3$
13		2760.72	36211.77	.69	$(^2D)5d\ ^3S_1-(^2P)6p\ ^1D_2$
11		2759.19	36 231.85	2.01	$(^2D)6p\ ^3D_2-(^2D)6d\ ^3P_2$
3		2757.56	36 253.26	2.79	$(^2P)5d\ ^3F_3-(^2D)4f\ ^3F_2$
13		2754.88	36 288.53	.05	$(^4S)6p\ ^3P_1-(^4S)6d\ ^3D_1$
14		2747.86	36 381.23	.09	$(^2D)5d\ ^3F_4-(^2D)6p\ ^3F_4$
16		2740.78	36 475.21	.04	$(^2D)5d\ ^3F_3-(^2D)6p\ ^3F_3$
4		2739.19	36 496.38	5.95	$(^4S)4f\ ^5F_2-(^2D)6d\ ^1D_2$
14		2736.99	36 525.71	.38	$(^2D)5d\ ^3F_4-(^2D)6p\ ^3D_3$
9		2728.20	36 643.39	2.91	$(^4S)6s\ ^3S_1-(^2D)6p\ ^3D_2$
11	a	2727.20	36 656.83	.51	$(^2D)5d\ ^3G_4-(^2D)6p\ ^1F_3$
1	w, b	2725.69	36 677.13	6.93	$(^2D)6p\ ^3D_3-(^2D)6d\ ^1D_2$
2		2718.10	36 779.54	.03	$(^2D)6p\ ^3P_2-(^2D)6d\ ^1F_3$
2		2714.05	36 834.42	.01	$(^2P)5d\ ^3F_2-(^2P)6p\ ^3S_1$
10	a	2713.39	36 843.38	4.15	$(^2D)6p\ ^3D_2-(^2D)6d\ ^3S_1$
0		2711.34	36 871.24	.22	$(^2P)5d\ ^3F_4-(^2D)4f\ ^3F_4$
6		2710.94	36 876.68	7.23	$(^2D)5d\ ^3P_0-(^4S)5f\ ^5F_1$
12		2708.45	36 910.58	.06	$(^2D)6p\ ^3D_1-(^2D)7s\ ^3D_1$
3		2704.41	36 965.71	.27	$(^4S)4f\ ^5F_2-(^2D)6d\ ^1F_3$
2		2702.31	36 994.44	3.90	$(^2D)5d\ ^1F_3-(^2D)4f\ ^3F_4$
0		2701.71	37 002.66	1.98	$(^4S)4f\ ^5F_3-(^2D)6d\ ^1D_2$
5		2701.50	37 005.53	4.76	$(^4S)6p\ ^5P_1-(^4S)7s\ ^3S_1$
15	b	2696.51	37 074.01	.23	$(^4S)5d\ ^3D_1-(^2D)6p\ ^3D_1$
15	b	2696.51	37 074.01	3.55	$(^2D)6p\ ^1F_3-(^2D)6d\ ^3D_2$
3		2695.65	37 085.83	.18	$(^4S)4f\ ^3F_2-(^2P)6d\ ^3D_1$
3		2695.65	37 085.83	.66	$(^2D)6s\ ^3D_1-(^2P)6p\ ^3D_1$

Table I. *Continued*

Intensity[i]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
5		2694.12	37 106.89	.82	$(^2D)6p\ ^1P_1-(^2D)6d\ ^3P_0$
12	a	2691.44	37143.84	.95	$(^2D)6p\ ^3D_1-(^2D)7s\ ^3D_2$
4		2691.22	37 146.88	.24	$(^2D)6p\ ^3D_3-(^2D)6d\ ^1F_3$
5		2685.51	37 225.86	.00	$(^2P)5d\ ^3P_1-(^2P)6p\ ^3D_2$
6		2678.55	37 322.58	.41	$(^2D)6s\ ^3D_2-(^2D)6p\ ^1D_2$
6		2678.55	37 322.58	.47	$(^4S)6p\ ^5P_3-(^4S)6d\ ^3D_3$
6		2670.25	37 438.58	.64	$(^2D)6p\ ^3F_3-(^2D)7s\ ^3D_3$
20		2669.01	37 455.98	.79	$(^2D)6p\ ^3F_3-(^2D)6d\ ^3G_4$
20		2669.01	37 455.98	6.16	$(^4S)5d\ ^5D_3-(^4S)6p\ ^5P_3$
10	a	2667.94	37 471.00	.30	$(^4S)4f\ ^5F_3-(^2D)6d\ ^1F_3$
7		2661.00	37 568.72	.64	$(^2D)5d\ ^3F_2-(^2D)6p\ ^3D_2$
5		2659.36	37 591.88	.55	$(^2P)5d\ ^3P_0-(^2P)6p\ ^3P_1$
9		2658.27	37607.30	.15	$(^4S)5d\ ^5D_0-(^4S)6p\ ^3P_1$
2		2641.13	37 851.34	.20	$(^4S)5d\ ^5D_1-(^4S)6p\ ^3P_1$
9		2639.15	37 879.74	.64	$(^2D)6p\ ^3D_1-(^2D)6d\ ^3D_1$
13		2634.21	37 950.77	.75	$(^2D)5d\ ^3P_2-(^2P)6p\ ^3P_2$
7		2626.98	38 055.21	.41	$(^2D)6p\ ^3F_3-(^2D)6d\ ^3D_3$
4		2624.52	38 090.88	.62	$(^2D)5d\ ^3S_1-(^2P)6p\ ^1P_1$
8	w	2619.85	38 158.77	.48	$(^4S)6p\ ^5P_2-(^4S)6d\ ^3D_2$
0		2616.90	38 201.79	.42	$(^2D)5d\ ^1F_3-(^2D)4f\ ^3F_3$
1		2616.63	38 205.73	.67	$(^2D)5d\ ^3G_3-(^2D)6p\ ^3F_4$
1		2613.99	38 244.31	.13	$(^2D)5d\ ^3P_2-(^2D)4f\ ^3F_3$
1		2611.03	38 287.67	.21	$(^2P)6s\ ^3P_0-(^2D)4f\ ^3D_1$
5		2610.57	38 294.41	.25	$(^2D)6p\ ^1P_1-(^2D)6d\ ^1P_1$
7	b	2607.50	38 339.50	.42	$(^4S)6p\ ^5P_1-(^4S)6d\ ^3D_2$
15	a	2600.12	38 448.31	7.72	$5s5p^5\ ^3P_0-(^4S)6p\ ^5P_1$
7	a	2595.03	38 523.72	.47	$(^2D)5d\ ^3S_1-(^2P)6p\ ^3P_2$
7		2594.53	38 531.14	0.93	$(^2D)5d\ ^3G_3-(^4S)4f\ ^5F_2$
10		2591.69	38 573.36	.13	$(^2D)5d\ ^3G_4-(^4S)4f\ ^5F_4$
8		2591.24	38 580.06	79.59	$(^2D)5d\ ^1F_3-(^2D)4f\ ^3D_2$
12		2590.42	38 592.27	1.92	$(^2D)5d\ ^3G_4-(^4S)4f\ ^5F_3$
9		2578.62	38 768.86	.55	$(^4S)5d\ ^3D_1-(^2D)6p\ ^3F_2$
13		2578.37	38 772.62	.69	$(^2D)5d\ ^3G_4-(^2D)6p\ ^3F_4$
2		2574.61	38 829.24	.47	$(^2D)6p\ ^1D_2-(^2P)6d\ ^3D_1$
7		2572.33	38 863.66	.68	$(^2P)5d\ ^1D_2-(^2P)6p\ ^3D_1$
7		2572.33	38 863.66	4.39	$(^2D)6p\ ^1P_1-(^2D)6d\ ^1D_2$
5		2570.26	38 894.96	.59	$(^4S)6s\ ^3S_1-(^2D)6p\ ^1P_1$
9		2568.81	38 916.91	.98	$(^2D)5d\ ^3G_4-(^2D)6p\ ^3D_3$
9		2568.81	38 916.91	7.39	$(^2D)6p\ ^3F_3-(^2D)6d\ ^3D_2$
3		2550.55	39 195.51	.02	$(^2D)5d\ ^3S_1-(^2D)4f\ ^3D_2$
2		2544.10	39 294.87	.32	$(^2P)5d\ ^3F_2-(^2P)6p\ ^3D_3$
3		2541.88	39 329.19	8.81	$(^2D)6s\ ^1D_2-(^2D)4f\ ^3D_3$
1		2541.028	39 342.34	.15	$(^2D)6p\ ^3F_2-(^2D)7s\ ^3D_3$
1		2538.918	39 375.03	4.70	$(^2P)5d\ ^3P_2-(^2D)4f\ ^1F_3$
7		2536.868	39 406.85	.71	$(^2D)6p\ ^1F_3-(^2D)6d\ ^1F_3$
7		2533.318	39 462.07	1.72	$(^4S)5d\ ^3D_3-(^2D)6p\ ^3F_2$
7		2523.967	39 608.25	7.83	$(^4S)5d\ ^5D_1-(^4S)6p\ ^3P_2$
5		2521.428	39 648.14	7.88	$(^2D)6s\ ^3D_3-(^2D)4f\ ^3G_3$
6		2515.117	39 747.61	.32	$(^2D)5d\ ^3F_2-(^2D)6p\ ^1F_3$
0	h	2514.09	39 763.89	.53	$(^2P)5d\ ^3D_3-(^2P)4f\ ^3F_3$
1		2513.337	39 775.76	.71	$(^2D)6p\ ^3D_2-(^2D)6d\ ^3P_1$
1		2511.288	39 808.22	7.66	$(^4S)6p\ ^5P_1-(^4S)6d\ ^3D_1$
4		2509.74	39 832.81	.51	$5s5p^5\ ^1P_1-(^2P)4f\ ^3D_2$
11		2504.907	39 909.61	.04	$(^2D)6s\ ^3D_1-(^2P)6p\ ^3P_0$
12		2501.037	39 971.36	0.95	$(^2D)5d\ ^1P_1-(^2D)6p\ ^3D_1$
9		2486.727	40 201.37	.34	$(^4S)5d\ ^5D_2-(^4S)6p\ ^3P_2$
7		2485.006	40 229.20	8.98	$(^2D)6s\ ^3D_3-(^2D)4f\ ^3G_4$
6		2483.464	40 254.18	.29	$(^2D)5d\ ^3F_3-(^4S)4f\ ^5F_3$
8		2479.876	40 312.42	.74	$(^2D)5d\ ^3D_2-(^2D)4f\ ^3D_3$
7		2479.130	40 324.56	.63	$(^4S)6s\ ^3S_1-(^2D)6p\ ^3P_0$
0		2477.062	40 358.21	.27	$(^4S)5d\ ^5D_1-(^4S)6p\ ^3P_0$
7		2472.377	40 434.68	5.05	$(^2D)5d\ ^3F_3-(^2D)6p\ ^3F_4$
10		2471.319	40 452.00	.31	$(^4S)5d\ ^5D_3-(^4S)6p\ ^3P_2$
7	b	2468.393	40 499.94	500.10	$(^2D)5d\ ^3D_1-(^4S)4f\ ^3F_2$
2		2464.555	40 563.01	.73	$(^2D)6s\ ^3D_2-(^2P)6p\ ^3D_1$
10		2463.557	40 579.44	.34	$(^2D)5d\ ^3F_3-(^2D)6p\ ^3D_3$
10		2463.061	40 587.61	.90	$(^2P)5d\ ^3F_2-(^2P)6p\ ^1P_1$
11		2452.644	40 759.98	60.32	$(^2D)5d\ ^3F_3-(^4S)4f\ ^5F_2$

Table I. *Continued*

Intensity[i]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
10		2447.083	40 852.60	.86	$(^2D)5d\ ^3D_3-(^2P)6p\ ^1D_2$
8		2446.503	40 862.29	.77	$(^2P)5d\ ^3P_1-(^2D)4f\ ^3F_2$
11		2441.523	40 945.63	6.55	$(^2D)5d\ ^3F_3-(^2D)6p\ ^3P_2$
6	w	2439.516	40 979.32	.97	$(^2P)5d\ ^3F_3-(^2P)6p\ ^3P_2$
12		2436.491	41 030.18	.39	$(^4S)5d\ ^3D_3-(^2D)6p\ ^3D_2$
3		2423.918	41 243.00	.42	$(^2P)5d\ ^3F_4-(^2D)4f\ ^1F_3$
9		2422.767	41 262.59	3.03	$(^4S)6s\ ^3S_1-(^4S)4f\ ^5F_2$
14	b	2422.139	41 273.29	.35	$(^2P)5d\ ^3F_3-(^2D)4f\ ^3F_3$
7		2419.740	41 314.20	.13	$(^2P)5d\ ^3F_2-(^2D)4f\ ^3F_3$
8		2418.744	41 331.22	.33	$(^2D)5d\ ^3P_2-(^2D)4f\ ^3P_1$
12		2416.744	41 365.41	.23	$(^4S)5d\ ^3D_3-(^2D)6p\ ^3F_3$
9		2414.544	41 403.10	.21	$(^2P)5d\ ^3P_1-(^2P)6p\ ^3S_1$
4		2414.230	41 408.49	.68	$(^2D)5d\ ^3D_2-(^2D)4f\ ^1P_1$
4		2414.230	41 408.49	.82	$(^2D)5d\ ^3P_2-(^2D)4f\ ^1F_3$
2		2414.104	41 410.64	1.23	$(^2D)5d\ ^1F_3-(^2D)4f\ ^1D_2$
6		2412.505	41 438.10	.21	$(^2D)5d\ ^3D_3-(^2P)6p\ ^3D_3$
1		2406.229	41 546.16	.25	$(^2D)6s\ ^1D_2-(^2P)6p\ ^3D_3$
9		2403.792	41 588.28	.45	$(^2P5d\ ^1D_2-(^2P)6p\ ^3D_2$
8		2397.566	41 696.27	.36	$(^2P)5d\ ^3P_0-(^2P)6p\ ^3S_1$
10		2394.083	41 756.92	.90	$(^4S)5d\ ^3D_2-(^2D)6p\ ^3D_1$
4	b	2392.376	41 786.71	.59	$(^2D)5d\ ^3G_5-(^4S)4f\ ^3F_4$
11		2388.573	41 853.25	.35	$(^2P)5d\ ^3D_1-(^2P)4f\ ^3F_2$
8	b	2385.902	41 900.09	1.00	$(^2D)5d\ ^3G_3-(^4S)4f\ ^3F_3$
11		2385.673	41 904.11	.05	$(^2D)5d\ ^3S_1-(^2D)4f\ ^3P_1$
13		2383.947	41 946.77	.90	$(^2P)5d\ ^1F_3-(^2P)4f\ ^1G_4$
11		2382.087	41 967.19	.34	$5s5p^5\ ^3P_0-(^4S)6p\ ^3P_1$
3		2379.783	42 007.82	.79	$(^2D)5d\ ^3F_2-(^2D)6p\ ^3D_3$
0		2378.714	42 026.69	.65	$(^2D)5d\ ^3S_1-(^2D)4f\ ^1D_2$
18	b	2369.595	42 188.42	.76	$(^2D)5d\ ^3F_2-(^4S)4f\ ^5F_2$
12		2366.115	42 250.46	.50	$(^2D)5d\ ^3D_3-(^2D)4f\ ^3F_4$
14		2365.416	42 262.94	3.01	$(^2P)5d\ ^3D_2-(^2P)4f\ ^3F_3$
0		2359.159	42 375.02	.00	$(^2D)5d\ ^3F_2-(^2D)6p\ ^3P_2$
11		2354.456	42 459.67	.48	$(^2P)5d\ ^3D_1-(^4S)5f\ ^5F_2$
8	b	2353.936	42 469.04	8.93	$(^4S)6s\ ^3S_1-(^2D)6p\ ^3P_1$
8		2350.563	42529.98	30.18	$(^2D)5d\ ^3D_2-(^2P)6p\ ^3D_3$
1		2339.398	42 732.94	3.30	$(^2D)6p\ ^3P_1-(^2P)6d\ ^3D_1$
9		2338.884	42 742.34	.02	$(^2P)5d\ ^3P_1-(^2D)4f\ ^1P_1$
7		2333.555	42 839.94	.83	$(^2D)6s\ ^1D_2-(^2P)6p\ ^1P_1$
0		2326.369	42 972.26	1.63	$(^2D)5d\ ^3P_1-(^4S)5f\ ^5F_1$
3		2323.455	43 026.14	.74	$(^2D)6s\ ^3D_3-(^2D)4f\ ^3H_4$
5		2320.992	43 071.79	.65	$(^2P)5d\ ^3F_3-(^2D)4f\ ^3P_2$
10		2316.583	43 153.76	4.06	$(^2D)6p\ ^3F_2-(^2D)6d\ ^1F_3$
12		2313 392	43 213.29	.28	$5s5p^5\ ^3P_1-(^4S)6p\ ^5P_1$
11		2312.276	43 234.14	3.94	$(^2D)5d\ ^1P_1-(^2D)6p\ ^3D_2$
7		2309.922	43 278.20	.17	$(^2P)5d\ ^3P_1-(^2P)6p\ ^1D_2$
5		2305.502	43 361.15	.05	$(^2P)5d\ ^3D_2-(^2P)4f\ ^3F_2$
5		2305.502	43 361.15	.92	$(^2D)6s\ ^3D_2-(^2P)6p\ ^3P_1$
9		2303.735	43 394.42	.21	$5s5p^5\ ^3P_1-(^4S)6p\ ^5P_2$
9		2303.735	43 394.42	.67	$(^2D)5d\ ^3F_2-(^2D)6p\ ^3P_1$
9		2300.876	43 448.33	.21	$(^2D)6s\ ^3D_1-(^2D)4f\ ^3F_2$
9		2300.716	43 451.35	.22	$(^4S)5d\ ^3D_2-(^2D)6p\ ^3F_2$
9		2300.353	43 458.22	.02	$(^2D)5d\ ^3D_3-(^2D)4f\ ^3F_3$
1		2298.540	43 492.48	.39	$(^2P)5d\ ^3F_2-(^2D)4f\ ^3D_1$
12	b	2290.834	43 638.77	.67	$(^2D)6s\ ^3D_2-(^2D)4f\ ^3G_3$
2		2288.009	43 692.65	.62	$(^2P)5d\ ^3D_2-(^4S)5f\ ^5F_3$
7		2286.634	43 718.91	.81	$(^2D)6s\ ^3D_3-(^2D)4f\ ^3D_3$
5		2283.828	43 772.63	.79	$(^2D)5d\ ^3F_4-(^4S)4f\ ^3F_4$
1		2273.709	43 967.41	.18	$(^2P)5d\ ^3D_2-(^4S)5f\ ^5F_2$
3		2273.488	43 971.70	.73	$(^2P)6s\ ^1P_1-(^2P)4f\ ^3D_2$
2		2272.609	43 988.70	.65	$(^2D)6s\ ^3D_1-(^2P)6p\ ^3S_1$
11	w	2271.382	44 012.46	.37	$(^2D)5d\ ^1F_3-(^2D)4f\ ^1G_4$
8		2271.055	44 018.80	.94	$(^4S)5d\ ^3D_1-(^2D)6p\ ^3P_0$
4		2268.923	44 060.15	.09	$(^2P)5d\ ^3D_2-(^2P)4f\ ^3G_3$
5		2258.847	44 256.68	.62	$(^2D)5d\ ^3D_2-(^2P)6p\ ^3P_2$
0		2249.630	44 437.97	8.04	$(^2P)5d\ ^3F_3-(^2D)4f\ ^1F_3$
6		2247.556	44 478.99	.82	$(^2P)5d\ ^3F_2-(^2D)4f\ ^1F_3$
5		2247.335	44 483.36	.16	$(^2P)5d\ ^3F_3-(^2D)4f\ ^1D_2$
8		2245.280	44 524.07	3.94	$(^2P)5d\ ^3F_2-(^2D)4f\ ^1D_2$

Table I. *Continued*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
11		2243.970	44 550.06	49.99	$(^2D)5d\ ^3D_2-(^2D)4f\ ^3F_3$
2		2235.349	44 721.86	.92	$(^2D)5d\ ^3D_1-(^2P)6p\ ^3D_2$
7		2231.673	44 795.52	.32	$(^2D)5d\ ^3D_1-(^2P)6p\ ^3P_1$
6		2230.419	44 820.69	.52	$(^2D)5d\ ^3D_1-(^2P)6p\ ^3P_0$
3		2227.588	44 877.64	.60	$(^2D)6p\ ^3P_0-(^2P)6d\ ^3D_1$
9		2225.071	44 928.41	.16	$(^2D)5d\ ^3D_2-(^2D)4f\ ^3D_2$
5		2223.640	44 957.33	.34	$(^4S)5d\ ^3D_1-(^4S)4f\ ^5F_2$
2		2220.544	45 019.99	.89	$(^4S)5d\ ^3D_2-(^2D)6p\ ^3D_2$
9		2214.382	45 145.26	4.48	$(^4S)5d\ ^3D_3-(^4S)4f\ ^5F_3$
0		2213 799	45 157.14	.10	$(^2P)5d\ ^3P_1-(^2P)6p\ ^1P_1$
9		2210.420	45 226.17	.22	$(^2P)5d\ ^1D_2-(^2D)4f\ ^3F_2$
3		2205.587	45 325.27	.24	$(^4S)5d\ ^3D_3-(^2D)6p\ ^3F_4$
5		2204.333	45 351.04	0.90	$(^2D)6s\ ^3D_3-(^2P)6p\ ^1D_2$
0		2203.682	45 364.44	.36	$(^2D)6s\ ^1D_2-(^2D)4f\ ^3P_2$
7		2202.695	45 384.76	.96	$(^2D)5d\ ^3G_3-(^4S)4f\ ^3F_2$
6		2199.514	45 450.39	.25	$(^2P)5d\ ^3P_0-(^2P)6p\ ^1P_1$
6		2199.287	45 455.09	4.77	$(^2P)6s\ ^3P_2-(^2P)4f\ ^3D_3$
1		2198.583	45 469.64	.53	$(^4S)5d\ ^3D_3-(^2D)6p\ ^3D_3$
10		2197.801	45 485.82	.63	$(^2D)5d\ ^1P_1-(^2D)6p\ ^1P_1$
1		2194.292	45 558.56	.83	$(^2D)5d\ ^3F_2-(^4S)4f\ ^3F_3$
1		2192.428	45 597.28	.37	$(^2D)5d\ ^3G_3-(^4S)4f\ ^3F_4$
12	w	2189.828	45 651.42	0.51	$(^4S)5d\ ^3D_3-(^4S)4f\ ^5F_2$
3		2185.701	45 751.90	.97	$(^2P)5d\ ^3P_2-(^2P)4f\ ^3F_3$
7		2179.684	45 863.84	.61	$(^2D)6s\ ^3D_1-(^2P)6p\ ^1D_2$
9		2172.779	46 009.58	.53	$(^2P)5d\ ^1D_2-(^2D)4f\ ^3D_3$
3		2165.526	46 163.67	.24	$(^4S)5d\ ^3D_1-(^2D)6p\ ^3P_1$
3		2165.526	46 163.67	4.39	$(^2D)5d\ ^3G_4-(^4S)4f\ ^3F_4$
7		2160.935	46 261.74	.50	$(^2P)5d\ ^3P_1-(^2D)4f\ ^3D_2$
8		2156.896	46 348.36	.29	$(^2D)5d\ ^3D_2-(^2D)4f\ ^3P_2$
7		2147.683	46 547.15	.08	$(^4S)5d\ ^5D_1-(^2D)6p\ ^3D_1$
0		2144.189	46 623.00	2.71	$(^2D)5d\ ^3D_3-(^2D)4f\ ^1F_3$
2		2142.129	46 667.82	.83	$(^2D)5d\ ^3D_3-(^2D)4f\ ^1D_2$
7		2139.375	46 727.90	.23	$(^2D)5d\ ^3G_5-(^2D)4f\ ^3G_4$
7		2139.375	46 727.90	8.25	$(^2D)5d\ ^3D_2-(^2D)4f\ ^3D_1$
6		2139.236	46 730.93	.74	$(^2D)6s\ ^1D_2-(^2D)4f\ ^1F_3$
9		2138.432	46 748.50	.54	$(^2D)6s\ ^3D_3-(^2D)4f\ ^3F_4$
3		2130.809	46 915.73	.66	$(^2D)5d\ ^1P_1-(^2D)6p\ ^3P_0$
1		2128.473	46 967.20	.23	$(^2P)5d\ ^3D_3-(^2P)4f\ ^3D_2$
4		2123.163	47 084.65	.30	$(^2P)5d\ ^3F_3-(^2D)4f\ ^1G_4$
2		2122.205	47 105.90	.47	$(^2P)5d\ ^1D_2-(^2D)4f\ ^1P_1$
9		2118.036	47 198.62	.56	$(^4S)5d\ ^3D_2-(^2D)6p\ ^1F_3$
7		2114.762	47 271.68	.57	$(^4S)5d\ ^3D_2-(^2D)6p\ ^1P_1$
1		2106.354	47 456.31	.14	$(^2P)5d\ ^3P_2-(^4S)5f\ ^5F_2$
0		2099.545	47 614.26	.34	$(^2D)5d\ ^3F_3-(^4S)4f\ ^3F_2$
9		2096.570	47 681.81	.63	$(^2P)5d\ ^3P_1-(^2D)4f\ ^3P_2$
3		2095.350	47 709.56	.59	$(^2D)6s\ ^3D_2-(^2D)4f\ ^3D_3$
6		2095.126	47 714.67	.68	$(^2D)5d\ ^3D_2-(^2D)4f\ ^1F_3$
5		2093.862	47 743.47	.37	$(^2D)5d\ ^1F_3-(^2P)4f\ ^3F_3$
9		2091.996	47 786.06	.08	$(^2D)5d\ ^3P_2-(^2P)4f\ ^3F_3$
7		2090.225	47 826.52	.76	$(^2D)5d\ ^3F_3-(^4S)4f\ ^3F_4$
9		2084.598	47 955.61	6.06	$(^2D)6s\ ^3D_3-(^2D)4f\ ^3F_3$
2		2084.461	47 958.77	9.01	$(^2P)5d\ ^3D_1-(^2P)4f\ ^3D_2$
6		2083.088	47 990.37	.19	$(^2P)5d\ ^3D_3-(^2P)4f\ ^3D_3$
5		2079.995	48 061.73	.58	$(^2P)5d\ ^3P_1-(^2D)4f\ ^3D_1$
0		2077.610	48 116.88	7.06	$(^4S)6s\ ^3S_1-(^4S)4f\ ^3F_2$
7		2075.090	48 175.32	.39	$(^2D)6s\ ^3D_1-(^2P)6p\ ^3P_2$
7		2072.866	48 226.99	.97	$(^2P)5d\ ^1D_2-(^2P)6p\ ^3D_3$
0		2072.247	48 241.41	.40	$(^4S)5d\ ^5D_1-(^2D)6p\ ^3F_2$
7		2067.384	48 354.87	.73	$(^2P)5d\ ^3P_0-(^2D)4f\ ^3D_1$
9		2067.175	48 359.74	.68	$(^2D)5d\ ^3D_1-(^2D)4f\ ^3F_2$
3		2060.702	48 511.63	.72	$(^2P)5d\ ^3D_3-(^2P)4f\ ^1G_4$
0		2060.385	48 519.10	.01	$5s5p^5\ ^3P_2-(^4S)6p\ ^5P_1$
6		2055.034	48 645.42	.02	$(^2D)5d\ ^1G_4-(^2D)4f\ ^3H_5$
8		2052.729	48 700.03	699.95	$5s5p^5\ ^3P_2-(^4S)6p\ ^5P_2$
5		2052.166	48713.39	.44	$(^2D)5d\ ^3F_4-(^2D)4f\ ^3G_4$
7		2051.875	48 720.31	.54	$(^2D)5d\ ^3P_1-(^2P)4f\ ^3D_2$
8		2046.555	48 846.93	.94	$(^2D)6s\ ^3D_1-(^2D)4f\ ^3D_2$
1		2044.430	48 897.70	.73	$(^2D)5d\ ^1F_3-(^4S)5f\ ^5F_4$

Table I. *Continued*

Intensity[1]	λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
2	2043.286	48 925.07	.15	$(^2P)5d\ ^3F_4-(^4S)5f\ ^5F_5$
1	2041.276	48 973.24	.17	$(^2D)5d\ ^1G_4-(^2D)4f\ ^3H_4$
7	2039.314	49 020.36	.57	$(^4S)5d\ ^3D_3-(^4S)4f\ ^3F_3$
6	2038.394	49 042.48	.79	$(^2D)5d\ ^3F_2-(^4S)4f\ ^3F_2$
7	2037.670	49 059.89	.97	$(^2D)5d\ ^1P_1-(^2D)6p\ ^3P_1$
8	2031.996	49 196.86	.86	$(^2D)5d\ ^3G_5-(^2D)4f\ ^3H_5$
9	2029.216	49 264.25	3.67	$(^2P)5d\ ^3P_0-(^2D)4f\ ^3P_1$
8	2029.023	49 268.94	.97	$(^2D)5d\ ^3D_3-(^2D)4f\ ^1G_4$
10	2026.062	49 340.94	1.68	$(^2D)6s\ ^3D_2-(^2P)6p\ ^1D_2$
2	2021.304	49 457.06	6.84	$(^2D)5d\ ^3S_1-(^2P)4f\ ^3F_2$
6	2020.914	49 466.60	.71	$(^2P)5d\ ^3D_2-(^2P)4f\ ^3D_2$
5	2018.714	49 520.52	.55	$(^2P)5d\ ^1D_2-(^2P)6p\ ^1P_1$
2	2017.911	49 540.22	.45	$(^2D)5d\ ^1F_3-(^2P)4f\ ^3G_3$
2	2016.174	49 582.89	3.16	$(^2D)5d\ ^3P_2-(^2P)4f\ ^3G_3$
8	2013.859	49 639.88	40.00	$(^4S)5d\ ^3D_2-(^4S)4f\ ^5F_2$
4	2006.317	49 826.46	.24	$(^4S)5d\ ^3D_2-(^2D)6p\ ^3P_2$
1	2001.085	49 956.71	.93	$(^2D)5d\ ^3G_3-(^2D)4f\ ^3G_3$
0	1997.497	50 062.65	.97	$(^2D)5d\ ^3S_1-(^4S)5f\ ^5F_2$
6	1997.330	50 066.83	7.07	$(^4S)5d\ ^3D_1-(^2D)6p\ ^1D_2$
7	1990.182	50 246.66	.78	$(^2P)5d\ ^1D_2-(^2D)4f\ ^3F_3$
1	1989.377	50 267.00	.07	$(^2D)6s\ ^3D_1-(^2D)4f\ ^3P_2$
10	1985.405	50 367.56	.32	$(^2P)5d\ ^3D_3-(^2P)4f\ ^3F_4$
5	1983.985	50 403.61	.59	$(^4S)5d\ ^5D_2-(^2D)6p\ ^3D_2$
2	1980.606	50 489.61	.67	$(^2P)5d\ ^3D_2-(^2P)4f\ ^3D_3$
2	1979.266	50 523.78	.95	$(^2D)5d\ ^3G_4-(^2D)4f\ ^3G_3$
8	1978.705	50 538.10	.02	$(^2D)5d\ ^3G_3-(^2D)4f\ ^3G_4$
1	1974.445	50 647.15	.02	$(^2D)6s\ ^3D_1-(^2D)4f\ ^3D_1$
4	1973.829	50 662.96	3.22	$5s5p^5\ ^3P_0-(^2D)6p\ ^3D_1$
1	1970.899	50 738.26	.43	$(^4S)5d\ ^5D_2-(^2D)6p\ ^3F_3$
7	1970.059	50 759.90	60.24	$(^4S)5d\ ^3D_3-(^2D)6p\ ^1D_2$
4	1969.474	50 774.98	5.09	$(^2D)5d\ ^3D_1-(^2P)6p\ ^1D_2$
6	1967.905	50 815.46	.30	$(^2P)5d\ ^3F_3-(^2P)4f\ ^3F_3$
1	1966.733	50 845.75	.91	$(^4S)5d\ ^3D_2-(^2D)6p\ ^3P_1$
7	1966.345	50 855.78	6.08	$(^2P)5d\ ^3F_2-(^2P)4f\ ^3F_3$
7	1956.759	51 104.92	5.04	$(^2D)5d\ ^3G_4-(^2D)4f\ ^3G_4$
2	1956.154	51 120.73	.75	$(^2D)6s\ ^3D_3-(^2D)4f\ ^1F_3$
1	1945.419	51 402.81	.75	$(^2D)5d\ ^1G_4-(^2D)4f\ ^3G_5$
12	1942.913	51 469.11	.31	$(^2P)6s\ ^1P_1-5s^05p^6\ ^1S_0$
4	1941.329	51 511.11	.21	$(^2D)5d\ ^3F_4-(^2D)4f\ ^3H_4$
6	1935.038	51 678.58	.57	$(^2D)6s\ ^3D_1-(^2D)4f\ ^1D_2$
11	1930.083	51 811.25	.36	$(^4S)5d\ ^3D_1-(^4S)4f\ ^3F_2$
6	1929.158	51 836.09	.16	$(^2D)5d\ ^3F_3-(^2P)6p\ ^3D_2$
5	1927.622	51 877.40	.48	$(^2P)6s\ ^3P_1-(^2P)4f\ ^3D_2$
2	1926.291	51 913.24	.34	$(^2P)5d\ ^3F_3-(^2P)4f\ ^3F_2$
4	1924.757	51 954.60	.12	$(^2P)5d\ ^3F_2-(^2P)4f\ ^3F_2$
4	1924.757	51 954.60	.59	$(^2D)5d\ ^3G_5-(^2D)4f\ ^3G_5$
8	1924.197	51 969.74	.66	$(^2P)5d\ ^3F_3-(^4S)5f\ ^5F_4$
5	1921.644	52 038.77	.63	$5s5p^5\ ^3P_2-(^4S)6p\ ^3P_1$
5	1916.211	52 186.31	.31	$(^2D)5d\ ^3F_3-(^2D)4f\ ^3G_3$
2	1915.595	52 203.09	.27	$(^2D)5d\ ^3F_4-(^2D)4f\ ^3D_3$
2	1912.564	52 285.82	.69	$(^2P)5d\ ^3F_2-(^4S)5f\ ^5F_3$
0	1911.131	52 325.03	.01	$(^2D)6s\ ^3D_2-(^2D)4f\ ^3D_2$
1	1910.626	52 338.88	.87	$(^4S)6s\ ^3S_1-(^2P)6p\ ^3D_2$
0	1907.038	52 437.33	.47	$(^4S)6s\ ^3S_1-(^2P)6p\ ^3P_0$
6	1904.599	52 504.50	.54	$(^4S)5d\ ^3D_3-(^4S)4f\ ^3F_2$
0	1901.779	52 582.35	.26	$(^4S)5d\ ^5D_2-(^2D)6p\ ^1F_3$
4	1900.693	52 612.39	.38	$(^2P)5d\ ^3F_3-(^2P)4f\ ^3G_3$
9	1899.216	52 653.31	4.02	$(^2D)5d\ ^3D_1-(^2P)6p\ ^1P_1$
9	1899.216	52 653.31	.16	$(^2P)5d\ ^3F_2-(^2P)4f\ ^3G_3$
7	1899.156	52 654.98	5.27	$(^4S)5d\ ^5D_2-(^2D)6p\ ^1P_1$
10	1896.921	52 717.02	6.95	$(^4S)5d\ ^3D_3-(^4S)4f\ ^3F_4$
11	1895.099	52 767.68	.40	$(^2D)5d\ ^3F_3-(^2D)4f\ ^3G_4$
0	1892.723	52 833.94	.23	$(^4S)5d\ ^5D_3-(^2D)6p\ ^1F_3$
7	1888.374	52 955.62	.67	$(^2P)5d\ ^3P_2-(^2P)4f\ ^3D_2$
8	1888.083	52 963.76	.80	$(^2D)5d\ ^1P_1-(^2D)6p\ ^1D_2$
11	1886.426	53 010.29	.07	$(^4S)5d\ ^3D_2-(^4S)4f\ ^3F_3$
3	1883.687	53 087.38	6.87	$(^2D)5d\ ^3D_1-(^2P)6p\ ^3P_2$
1	1882.957	53 107.97	8.01	$(^2D)6s\ ^1D_2-(^2P)4f\ ^3F_3$

Table I. *Continued*

Intensity[1]	λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
1	1878.049	53 246.74	.80	$(^2D)5d\ ^3G_5-(^2D)4f\ ^3F_4$
8	1875.878	53 308.36	.40	$(^4S)5d\ ^3D_1-(^2P)6p\ ^3D_1$
10	1875.772	53 311.38	.14	$(^2D)5d\ ^1G_4-(^2D)4f\ ^1H_5$
10	1874.915	53 335.76	.79	$(^2D)5d\ ^3G_3-(^2D)4f\ ^3H_4$
9	1872.254	53 411.57	.47	$(^2P)5d\ ^1D_2-(^2D)4f\ ^1F_3$
9	1870.665	53 456.94	.59	$(^2P)5d\ ^1D_2-(^2D)4f\ ^1D_2$
0	1869.447	53 491.76	.79	$(^4S)5d\ ^5D_1-(^2D)6p\ ^3P_0$
10	1866.547	53 574.85	.66	$(^2D)5d\ ^3G_4-(^2D)4f\ ^3H_5$
10	1865.157	53 614.80	.76	$(^2D)5d\ ^3F_2-(^2D)4f\ ^3G_3$
4	1860.631	53 745.21	.14	$(^2D)6s\ ^3D_2-(^2D)4f\ ^3P_2$
8	1860.181	53 758.21	.42	$(^2D)5d\ ^3D_1-(^2D)4f\ ^3D_2$
9	1859.877	53 766.99	7.01	$(^2D)6s\ ^3D_3-(^2D)4f\ ^1G_4$
2	1856.569	53 862.81	.98	$(^2D)5d\ ^3G_5-(^2D)4f\ ^1H_5$
9	1855.196	53 902.66	.81	$(^2D)5d\ ^3G_4-(^2D)4f\ ^3H_4$
11	1854.375	53 926.53	.58	$(^2D)5d\ ^3G_5-(^2D)4f\ ^3H_6$
10	1853.884	53 940.82	.79	$(^2D)5d\ ^3F_4-(^2D)4f\ ^3G_5$
9	1852.583	53 978.68	.63	$(^2P)5d\ ^3P_2-(^2P)4f\ ^3D_3$
6	1850.903	54 027.68	.85	$(^2D)5d\ ^3G_3-(^2D)4f\ ^3D_3$
8	1848.989	54 083.60	.49	$(^4S)5d\ ^5D_4-(^4S)4f\ ^5F_4$
9	1848.695	54 092.20	1.94	$(^2D)5d\ ^3D_2-(^2P)4f\ ^3F_3$
5	1837.300	54 427.68	.34	$(^4S)5d\ ^5D_4-(^2D)6p\ ^3D_3$
4	1837.223	54 429.98	30.19	$(^4S)5d\ ^5D_1-(^4S)4f\ ^5F_2$
15	1835.811	54 471.84	2.03	$(^4S)5d\ ^5D_4-(^4S)4f\ ^5F_5$
9	1835.532	54 480.13	79.59	$(^4S)5d\ ^5D_0-(^4S)4f\ ^5F_1$
9	1834.255	54 518.04	7.68	$(^4S)5d\ ^5D_2-(^4S)4f\ ^5F_3$
1	1833.588	54 537.87	.62	$(^2D)6s\ ^1D_2-(^4S)5f\ ^5F_3$
1	1831.680	54 594.69	.87	$(^2D)5d\ ^3G_4-(^2D)4f\ ^3D_3$
9	1830.939	54 616.78	.43	$(^4S)5d\ ^5D_1-(^2D)6p\ ^3P_2$
9	1827.883	54 708.10	.09	$(^2D)5d\ ^1P_1-(^4S)4f\ ^3F_2$
9	1827.367	54 723.55	.64	$(^4S)5d\ ^5D_1-(^4S)4f\ ^5F_1$
12	1826.490	54 749.82	.86	$(^4S)5d\ ^5D_3-(^4S)4f\ ^5F_4$
12	1826.490	54 749.82	.74	$(^4S)5d\ ^3D_2-(^2D)6p\ ^1D_2$
9	1825.867	54 768.49	.65	$(^4S)5d\ ^5D_3-(^4S)4f\ ^5F_3$
11	1823.391	54 842.88	.73	$(^4S)5d\ ^5D_2-(^2D)6p\ ^3D_3$
10	1821.334	54 904.82	5.09	$(^2D)6s\ ^1D_2-(^2P)4f\ ^3G_3$
11	1819.857	54 949.37	.41	$(^4S)5d\ ^5D_3-(^2D)6p\ ^3F_4$
9	1817.397	55 023.74	.71	$(^4S)5d\ ^5D_2-(^4S)4f\ ^5F_2$
11	1815.085	55 093.85	.70	$(^4S)5d\ ^5D_3-(^2D)6p\ ^3D_3$
10	1814.503	55 111.51	.53	$(^2D)6s\ ^3D_2-(^2D)4f\ ^1F_3$
3	1812.301	55 178.48	.55	$(^2D)5d\ ^3D_1-(^2D)4f\ ^3P_2$
11	1811.263	55 210.08	09.94	$(^4S)5d\ ^5D_2-(^2D)6p\ ^3P_2$
11	1810.520	55 232.75	3.01	$(^2D)5d\ ^3F_4-(^2D)4f\ ^3F_4$
7	1807.746	55 317.51	.16	$(^4S)5d\ ^5D_2-(^4S)4f\ ^5F_1$
4	1805.316	55 391.96	2.05	$(^4S)5d\ ^5D_0-(^2D)6p\ ^3P_1$
10	1804.117	55 428.78	.78	$5s5p^5\ ^3P_1-(^2D)6p\ ^3D_1$
8	1803.073	55 460.87	.91	$(^4S)5d\ ^5D_3-(^2D)6p\ ^3P_2$
9	1799.900	55 558.64	.50	$(^2D)5d\ ^3D_1-(^2D)4f\ ^3D_1$
7	1799.769	55 562.68	.50	$(^2D)5d\ ^3S_1-(^2P)4f\ ^3D_2$
10	1799.691	55 565.08	.17	$(^2D)5d\ ^3F_3-(^2D)4f\ ^3H_4$
6	1790.544	55 848.96	9.19	$(^2D)5d\ ^3F_4-(^2D)4f\ ^1H_5$
7	1789.258	55 889.09	.02	$(^2D)5d\ ^3D_2-(^2P)4f\ ^3G_3$
8	1786.678	55 969.79	70.03	$(^2D)5d\ ^1F_3-(^2P)4f\ ^3D_3$
2	1785.311	56 012.64	.74	$(^2D)5d\ ^3P_2-(^2P)4f\ ^3D_3$
8	1784.661	56 033.05	.18	$(^4S)5d\ ^3D_1-(^2P)6p\ ^3D_2$
3	1780.067	56 177.66	.89	$5s5p^5\ ^3P_0-(^2D)6p\ ^1P_1$
9	1778.783	56 218.22	.12	$(^2D)5d\ ^3P_1-5s^05p^6\ ^1S_0$
2	1788.425	56 229.54	.62	$(^4S)5d\ ^5D_2-(^2D)6p\ ^3P_1$
11	1777.910	56 245.82	.29	$(^2D)5d\ ^3G_3-(^2P)6p\ ^3D_3$
6	1777.551	56 257.19	.24	$(^2D)5d\ ^3F_3-(^2D)4f\ ^3D_3$
9	1775.174	56 332.50	.39	$(^2D)5d\ ^3G_4-(^2D)4f\ ^3G_5$
9	1774.033	56 368.75	.88	$(^2P)5d\ ^3F_4-(^2P)4f\ ^1G_4$
5	1771.778	56 440.47	.53	$(^2D)5d\ ^3F_4-(^2D)4f\ ^3F_3$
0	1770.919	56 467.87	.45	$(^2D)5d\ ^3D_1-(^2D)4f\ ^3P_1$
10	1770.174	56 491.62	.56	$(^2D)5d\ ^1F_3-(^2P)4f\ ^1G_4$
10	1770.099	56 494.01	.03	$(^4S)5d\ ^3D_2-(^4S)4f\ ^3F_2$
10	1767.089	56 590.26	.05	$(^2D)5d\ ^3D_1-(^2D)4f\ ^1D_2$
6	1760.178	56 812.45	.31	$(^2D)5d\ ^3G_4-(^2P)6p\ ^3D_3$
0	1759.622	56 830.40	.14	$(^4S)6s\ ^5S_2-(^2D)4f\ ^3G_3$

Table I. *Continued*

Intensity[1]	λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
10	1757.396	56 902.37	.37	$(^2D)5d\ ^3F_2-(^2D)4f\ ^3F_2$
11	1752.626	57 057.24	.59	$(^2D)5d\ ^3G_3-(^2D)4f\ ^3F_4$
4	1752.318	57 067.27	.17	$(^2D)5d\ ^1G_4-(^2D)4f\ ^1F_3$
4	1752.022	57 076.90	.50	$(^4S)5d\ ^3D_3-(^2D)4f\ ^3G_3$
5	1750.609	57 122.99	3.09	$5s5p^5\ ^3P_1-(^2D)6p\ ^3F_2$
9	1735.371	57 642.56	.60	$(^2D)5d\ ^3G_4-(^2D)4f\ ^3F_4$
7	1734.368	57 657.90	.59	$(^4S)5d\ ^3D_3-(^2D)4f\ ^3G_4$
3	1733.536	57 685.55	.68	$(^2D)5d\ ^3F_2-(^2D)4f\ ^3D_3$
5	1728.420	57 856.31	5.89	$(^4S)6s\ ^3S_1-(^2D)4f\ ^1P_1$
9	1727.429	57 889.49	.33	$(^2D)5d\ ^3F_3-(^2P)6p\ ^1D_2$
7	1724.983	57 971.60	.73	$(^2D)5d\ ^3G_3-(^2P)6p\ ^3P_2$
2	1724.776	57 978.54	.38	$(^4S)5d\ ^5D_4-(^4S)4f\ ^3F_3$
8	1722.358	58 059.92	.78	$(^2P)5d\ ^3F_2-(^2P)4f\ ^3D_2$
12	1717.515	58 223.66	4.48	$(^2P)5d\ ^3F_4-(^2P)4f\ ^3F_4$
5	1717.005	58 240.95	.78	$(^2D)5d\ ^3G_4-(^2D)4f\ ^1H_5$
5	1716.290	58 265.21	.11	$(^2D)5d\ ^3G_3-(^2D)4f\ ^3F_3$
3	1713.867	58 347.59	.16	$(^2D)5d\ ^1F_3-(^2P)4f\ ^3F_4$
10	1712.522	58 393.42	.77	$(^4S)5d\ ^5D_2-(^4S)4f\ ^3F_3$
12	1705.178	58 644.89	.74	$(^4S)5d\ ^5D_3-(^4S)4f\ ^3F_3$
1	1704.946	58 652.88	.37	$(^2D)6s\ ^3D_3-(^4S)5f\ ^5F_4$
8	1703.820	58 691.66	.76	$5s5p^5\ ^3P_1-(^2D)6p\ ^3D_2$
9	1699.754	58 832.03	.12	$(^2D)5d\ ^3G_4-(^2D)4f\ ^3F_3$
10	1699.515	58 840.31	39.78	$5s5p^5\ ^3P_0-(^4S)4f\ ^5F_1$
4	1696.936	58 929.74	.91	$(^2D)5d\ ^1P_1-(^2P)6p\ ^3D_2$
7	1694.820	59 003.30	.31	$(^2D)5d\ ^1P_1-(^2P)6p\ ^3P_1$
7	1694.134	59 027.21	8.51	$(^2D)5d\ ^1P_1-(^2P)6p\ ^3P_0$
9	1693.703	59 042.24	1.96	$(^2P)5d\ ^3F_3-(^2P)4f\ ^3D_3$
5	1691.798	59 108.71	.76	$(^2D)6s\ ^3D_1-(^2P)4f\ ^3F_2$
9	1685.823	59 318.20	7.77	$(^2D)5d\ ^3F_2-(^2P)6p\ ^1D_2$
2	1684.194	59 375.59	.06	$(^2P)6s\ ^3P_1-5s^05p^6\ ^1S_0$
6	1678.873	59 563.78	.49	$(^2P)5d\ ^3F_3-(^2P)4f\ ^1G_4$
11	1675.824	59 672.13	0.95	$(^4S)5d\ ^3D_1-(^2D)4f\ ^3F_2$
11	1674.633	59 714.57	.89	$(^2D)6s\ ^3D_1-(^4S)5f\ ^5F_2$
9	1673.566	59 752.66	.24	$5s5p^5\ ^3P_0-(^2D)6p\ ^3P_1$
9	1672.557	59 788.71	.73	$(^2P)5d\ ^1D_2-(^2P)4f\ ^3F_3$
7	1669.355	59 903.37	.12	$(^2D)5d\ ^3F_2-(^2P)6p\ ^3D_3$
9	1663.390	60 118.18	7.76	$(^4S)6s\ ^5S_2-(^2D)4f\ ^3F_2$
6	1661.093	60 201.31	.11	$(^2D)5d\ ^3F_3-(^2P)6p\ ^3P_2$
1	1661.029	60 203.63	.67	$(^2D)5d\ ^3D_3-(^2P)4f\ ^3D_2$
4	1660.808	60 211.67	.39	$(^4S)5d\ ^3D_1-(^2P)6p\ ^3S_1$
10	1656.612	60 364.15	.12	$(^4S)5d\ ^3D_3-(^2D)4f\ ^3F_2$
3	1656.069	60 383.96	4.41	$(^4S)5d\ ^5D_3-(^2D)6p\ ^1D_2$
10	1653.039	60 494.65	.49	$(^2D)5d\ ^3F_3-(^2D)4f\ ^3F_3$
10	1647.338	60 704.01	3.82	$(^4S)6s\ ^3S_1-(^2P)6p\ ^3P_2$
8	1647.010	60 716.09	5.85	$(^4S)5d\ ^3D_2-(^2P)6p\ ^3D_2$
2	1646.504	60 734.75	.51	$5s5p^5\ ^3P_2-(^2D)6p\ ^3D_1$
10	1642.767	60 872.91	.66	$(^2D)5d\ ^3F_3-(^2D)4f\ ^3D_2$
3	1642.395	60 886.68	.77	$(^2P)5d\ ^1D_2-(^2P)4f\ ^3F_2$
3	1637.572	61 066.01	.00	$(^4S)5d\ ^3D_2-(^2D)4f\ ^3G_3$
11	1635.382	61 147.81	.43	$(^4S)5d\ ^3D_3-(^2D)4f\ ^3D_3$
3	1634.072	61 196.81	.71	$(^2D)5d\ ^3F_2-(^2P)6p\ ^1P_1$
7	1633.489	61 218.65	.34	$(^2P)5d\ ^1D_2-(^4S)5f\ ^5F_3$
10	1633.255	61 227.42	6.63	$(^2D)5d\ ^3D_3-(^2P)4f\ ^3D_3$
10	1631.429	61 295.96	.64	$(^2D)5d\ ^3D_2-(^2P)4f\ ^3D_2$
6	1629.312	61 375.60	.37	$(^4S)6s\ ^3S_1-(^2D)4f\ ^3D_2$
1	1628.148	61 419.48	.09	$(^2P)5d\ ^3F_3-(^2P)4f\ ^3F_4$
1	1626.309	61 488.93	.79	$(^2D)6s\ ^3D_2-(^2P)4f\ ^3F_3$
3	1626.183	61 493.68	2.90	$(^2P)5d\ ^1D_2-(^4S)5f\ ^5F_2$
5	1624.678	61 550.66	.20	$(^4S)5d\ ^3D_1-(^2D)4f\ ^1P_1$
6	1623.748	61 585.90	.81	$(^2P)5d\ ^1D_2-(^2P)4f\ ^3G_3$
8	1622.595	61 629.67	.56	$(^2D)5d\ ^3F_2-(^2P)6p\ ^3P_2$
7	1621.407	61 674.84	.75	$(^4S)5d\ ^5D_4-(^4S)4f\ ^3F_4$
8	1619.484	61 748.05	.16	$(^2D)5d\ ^3D_3-(^2P)4f\ ^1G_4$
3	1616.083	61 878.00	7.74	$(^4S)5d\ ^5D_2-(^4S)4f\ ^3F_2$
6	1612.970	61 997.45	6.81	$(^2D)5d\ ^3G_4-(^2D)4f\ ^1F_3$
6	1612.970	61 997.45	.01	$(^4S)6s\ ^5S_2-(^2D)4f\ ^1P_1$
5	1610.658	62 086.42	.35	$(^4S)5d\ ^3D_1-(^2P)6p\ ^1D_2$
2	1606.393	62 251.26	.48	$(^2D)5d\ ^3F_4-(^2D)4f\ ^1G_4$

Table I. *Continued*

Intensity[i]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
9		1605.322	62 292.78	.79	$(^2D)5d\ ^3F_3-(^2D)4f\ ^3P_2$
10		1605.106	62 301.19	.10	$(^2D)5d\ ^3F_2-(^2D)4f\ ^3D_2$
8		1604.074	62 341.26	.12	$(^4S)5d\ ^5D_3-(^4S)4f\ ^3F_4$
10		1603.241	62 373.67	.48	$5s5p^5\ ^3P_1-(^2D)6p\ ^3P_0$
9		1601.817	62 429.09	8.83	$5s5p^5\ ^3P_2-(^2D)6p\ ^3F_2$
11		1598.260	62 568.05	7.67	$(^2D)5d\ ^1P_1-(^2D)4f\ ^3F_2$
11	w	1596.687	62 629.68	8.98	$(^2P)5d\ ^3P_1-(^2P)4f\ ^3D_2$
10		1592.466	62 795.69	.50	$(^4S)6s\ ^3S_1-(^2D)4f\ ^3P_2$
4		1589.351	62 918.75	.40	$(^2D)6s\ ^3D_2-(^4S)5f\ ^5F_3$
12		1585.770	63 060.83	.07	$(^2D)5d\ ^3S_1-5s^05p^6\ ^1S_0$
9		1584.577	63 108.33	.12	$(^2D)5d\ ^1P_1-(^2P)6p\ ^3S_1$
10		1579.476	63 312.15	1.88	$5s5p^5\ ^3P_1-(^4S)4f\ ^5F_2$
9		1578.154	63 365.16	4.87	$(^4S)5d\ ^3D_3-(^2P)6p\ ^3D_3$
9		1574.847	63 498.22	.12	$5s5p^5\ ^3P_1-(^2D)6p\ ^3P_2$
9		1572.188	63 605.62	.33	$5s5p^5\ ^3P_1-(^4S)4f\ ^5F_1$
6		1570.865	63 659.19	.17	$(^2D)5d\ ^3F_3-(^2D)4f\ ^1F_3$
9		1569.753	63 704.28	.29	$(^2D)5d\ ^3F_3-(^2D)4f\ ^1D_2$
10		1569.338	63 721.14	.24	$(^2D)5d\ ^3F_2-(^2D)4f\ ^3P_2$
12		1562.547	63 998.06	7.50	$5s5p^5\ ^3P_2-(^2D)6p\ ^3D_2$
9		1562.006	64 020.25	.24	$(^2D)5d\ ^3D_1-(^2P)4f\ ^3F_2$
10		1560.437	64 084.60	.40	$(^4S)6s\ ^3S_1-(^2D)4f\ ^3P_1$
11		1560.011	64 102.10	1.19	$(^2D)5d\ ^3F_2-(^2D)4f\ ^3D_1$
7		1558.178	64 177.53	.16	$(^4S)5d\ ^3D_3-(^2D)4f\ ^3F_4$
5		1557.460	64 207.12	.00	$(^4S)6s\ ^3S_1-(^2D)4f\ ^1D_2$
8		1554.426	64 332.43	.34	$5s5p^5\ ^3P_2-(^2D)6p\ ^3F_3$
10		1553.907	64 353.91	.62	$(^4S)5d\ ^3D_2-(^2D)4f\ ^3F_2$
10		1551.651	64 447.50	6.92	$(^2D)5d\ ^1P_1-(^2D)4f\ ^1P_1$
9		1549.961	64 517.77	.79	$5s5p^5\ ^3P_1-(^2D)6p\ ^3P_1$
9		1548.008	64 599.14	8.79	$(^2D)5d\ ^1G_4-(^4S)5f\ ^5F_4$
7		1547.346	64 626.80	.37	$(^2D)5d\ ^3D_1-(^4S)5f\ ^5F_2$
9		1546.952	64 643.24	.07	$(^2D)5d\ ^3G_4-(^2D)4f\ ^1G_4$
2		1540.970	64 894.18	.06	$(^4S)5d\ ^3D_2-(^2P)6p\ ^3S_1$
8		1538.863	64 983.05	.07	$(^2D)5d\ ^1P_1-(^2P)6p\ ^1D_2$
7		1538.220	65 010.22	.13	$(^2D)5d\ ^3F_2-(^2D)4f\ ^3P_1$
2		1536.812	65 069.76	.68	$(^4S)5d\ ^3D_1-(^2D)4f\ ^3D_2$
9		1536.386	65 087.81	.62	$(^2D)5d\ ^3F_2-(^2D)4f\ ^1F_3$
7		1535.328	65 132.65	.74	$(^2D)5d\ ^3F_2-(^2D)4f\ ^1D_2$
3		1535.224	65 137.09	6.93	$(^4S)5d\ ^3D_2-(^2D)4f\ ^3D_3$
6		1533.416	65 213.86	4.42	$(^2D)6s\ ^3D_1-(^2P)4f\ ^3D_2$
2		1532.765	65 241.58	.51	$(^2D)5d\ ^1G_4-(^2P)4f\ ^3G_3$
0		1530.558	65 335.64	.39	$(^4S)5d\ ^5D_0-(^2P)6p\ ^3P_1$
7		1526.586	65 505.65	6.04	$(^4S)5d\ ^5D_1-(^2P)6p\ ^3D_2$
4		1524.280	65 604.76	.64	$(^4S)5d\ ^5D_1-(^2P)6p\ ^3P_0$
5		1521.501	65 724.58	.67	$(^2D)6s\ ^3D_3-(^2P)4f\ ^3D_3$
5		1520.619	65 762.71	.85	$(^4S)5d\ ^3D_3-(^2D)4f\ ^3D_2$
0		1515.558	65 982.31	.48	$(^2D)5d\ ^3F_4-(^2P)4f\ ^3F_3$
6		1511.119	66 176.14	.17	$5s5p^5\ ^3P_2-(^2D)6p\ ^1F_3$
5		1509.841	66 232.15	.87	$(^4S)5d\ ^3D_2-(^2D)4f\ ^1P_1$
3		1509.530	66 245.78	6.20	$(^2D)6s\ ^3D_3-(^2P)4f\ ^1G_4$
7		1509.458	66 248.96	9.18	$5s5p^5\ ^3P_2-(^2D)6p\ ^1P_1$
5		1508.178	66 305.15	.44	$(^2D)5d\ ^3F_3-(^2D)4f\ ^1G_4$
3		1504.900	66 449.59	.70	$(^4S)5d\ ^5D_2-(^2D)4f\ ^3G_3$
0		1503.997	66 489.51	.81	$(^4S)5d\ ^3D_1-(^2D)4f\ ^3P_2$
1		1501.157	66 615.30	.40	$(^4S)5d\ ^5D_4-(^2D)4f\ ^3G_4$
4		1497.708	66 768.67	9.02	$(^4S)5d\ ^3D_2-(^2P)6p\ ^1D_2$
8		1495.446	66 869.67	.76	$(^4S)5d\ ^3D_1-(^2D)4f\ ^3D_1$
4		1488.474	67 182.92	.98	$(^4S)5d\ ^3D_3-(^2D)4f\ ^3P_2$
7		1486.291	67 281.56	.76	$(^4S)5d\ ^5D_3-(^2D)4f\ ^3G_4$
6		1484.688	67 354.20	.36	$(^4S)5d\ ^3D_2-(^2P)6p\ ^3D_3$
9	w	1482.243	67 465.34	.26	$5s^25p^4\ ^1S_0-5s5p^5\ ^3P_1$
2		1474.781	67 806.69	7.06	$(^2D)5d\ ^3G_3-(^2P)4f\ ^3F_3$
7		1472.727	67 901.25	.31	$(^4S)5d\ ^3D_1-(^2D)4f\ ^1D_2$
9		1471.312	67 966.57	.40	$(^2D)5d\ ^1P_1-(^2D)4f\ ^3D_2$
1		1468.378	68 102.35	1.80	$(^2D)6s\ ^3D_3-(^2P)4f\ ^3F_4$
6		1468.178	68 111.62	.59	$5s5p^5\ ^3P_2-(^4S)4f\ ^5F_3$
2		1462.549	68 373.79	4.07	$(^2D)5d\ ^3G_4-(^2P)4f\ ^3F_3$
5		1461.206	68 436.61	.64	$5s5p^5\ ^3P_2-(^2D)6p\ ^3D_3$
4		1458.806	68 549.23	.36	$(^4S)5d\ ^3D_3-(^2D)4f\ ^1F_3$

Table I. *Continued*

Intensity[i]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
6		1457.845	68 594.40	.48	$(^4S)5d\ ^3D_3-(^2D)4f\ ^1D_2$
8		1457.351	68 617.66	.62	$5s5p^5\ ^3P_2-(^4S)4f\ ^5F_2$
1		1455.769	68 692.20	.49	$(^2D)6s\ ^3D_2-(^2P)4f\ ^3D_2$
7		1453.408	68 803.79	.85	$5s5p^5\ ^3P_2-(^2D)6p\ ^3P_2$
3		1451.141	68 911.30	.07	$5s5p^5\ ^3P_2-(^4S)4f\ ^5F_1$
7		1450.093	68 961.10	.42	$(^2D)5d\ ^3G_3-(^4S)5f\ ^5F_4$
8		1447.580	69 080.82	.80	$(^4S)5d\ ^3D_2-(^2P)6p\ ^3P_2$
5		1447.487	69 085.26	.02	$(^4S)5d\ ^5D_4-(^2D)4f\ ^3H_5$
8		1446.268	69 143.49	.80	$(^4S)5d\ ^5D_1-(^2D)4f\ ^3F_2$
2		1441.199	69 386.67	.53	$(^2D)5d\ ^1P_1-(^2D)4f\ ^3P_2$
2		1440.650	69 413.11	.17	$(^4S)5d\ ^5D_4-(^2D)4f\ ^3H_4$
7		1440.089	69 440.17	.20	$(^4S)5d\ ^5D_0-(^2P)6p\ ^3S_1$
1		1438.259	69 528.49	.43	$(^2D)5d\ ^3G_4-(^4S)5f\ ^5F_4$
6		1436.707	69 603.61	4.14	$(^2D)5d\ ^3G_3-(^2P)4f\ ^3G_3$
7		1435.045	69 684.23	.25	$(^4S)5d\ ^5D_1-(^2P)6p\ ^3S_1$
2		1434.820	69 695.13	.57	$5s5p^5\ ^3P_0-(^2P)6p\ ^3P_1$
3		1433.956	69 737.16	.32	$(^4S)5d\ ^5D_2-(^2D)4f\ ^3F_2$
9		1432.185	69 823.37	.53	$5s5p^5\ ^3P_2-(^2D)6p\ ^3P_1$
8		1428.810	69 988.31	.29	$(^4S)5d\ ^5D_3-(^2D)4f\ ^3F_2$
7		1427.844	70 035.68	6.44	$(^2D)5d\ ^3F_3-(^2P)4f\ ^3F_3$
10		1425.999	70 126.29	.56	$(^2P)5d\ ^3P_1-5s^05p^6\ ^1S_0$
6		1425.200	70 165.59	.91	$5s5p^5\ ^3P_1-(^4S)4f\ ^3F_2$
8		1418.027	70 520.51	.63	$(^4S)5d\ ^5D_2-(^2D)4f\ ^3D_3$
10		1414.921	70 675.30	.43	$(^2D)5d\ ^1P_1-(^2D)4f\ ^3P_1$
0.5		1413.006	70 771.09	.60	$(^4S)5d\ ^5D_3-(^2D)4f\ ^3D_3$
0.5		1412.846	70 779.11	.00	$(^4S)5d\ ^5D_0-(^2D)4f\ ^1P_1$
15		1412.466	70 798.14	.04	$(^2D)5d\ ^1P_1-(^2D)4f\ ^1D_2$
4		1407.990	71 023.22	.05	$(^4S)5d\ ^5D_1-(^2D)4f\ ^1P_1$
8		1405.042	71 172.27	.48	$(^4S)5d\ ^3D_2-(^2D)4f\ ^3P_2$
2		1404.681	71 190.55	.80	$(^2D)5d\ ^3F_3-(^4S)5f\ ^5F_4$
3		1404.586	71 195.37	.63	$(^4S)5d\ ^3D_3-(^2D)4f\ ^1G_4$
8		1402.224	71 315.26	.15	$(^4S)5d\ ^5D_0-(^2P)6p\ ^1D_2$
4		1399.271	71 465.79	4.88	$(^2D)5d\ ^3F_2-(^2P)4f\ ^3F_3$
4		1399.271	71 465.79	.13	$(^2D)5d\ ^1P_1-(^2P)6p\ ^1S_0$
4		1399.271	71 465.79	6.05	$(^2D)5d\ ^3F_3-(^4S)5f\ ^5F_3$
2	u	1397.573	71 552.63	.43	$(^4S)5d\ ^3D_2-(^2D)4f\ ^3D_1$
1		1392.122	71 832.78	3.52	$(^2D)5d\ ^3F_3-(^2P)4f\ ^3G_3$
5		1391.936	71 842.37	.75	$(^4S)5d\ ^5D_4-(^2D)4f\ ^3G_5$
11		1389.129	71 987.53	.68	$5s5p^5\ ^3P_2-(^4S)4f\ ^3F_3$
9		1380.055	72 460.90	1.38	$(^4S)5d\ ^3D_2-(^2D)4f\ ^3P_1$
3		1378.128	72 562.23	.92	$(^2D)5d\ ^3F_2-(^2P)4f\ ^3F_2$
10		1377.722	72 583.58	.98	$(^4S)5d\ ^3D_2-(^2D)4f\ ^1D_2$
8		1375.295	72 711.67	2.00	$(^2D)6s\ ^3D_1-5s^05p^6\ ^1S_0$
3		1374.809	72 737.36	8.07	$(^4S)5d\ ^5D_2-(^2P)6p\ ^3D_3$
0.5	h	1370.076	72 988.64	9.04	$(^4S)5d\ ^5D_3-(^2P)6p\ ^3D_3$
8		1366.709	73 168.47	9.05	$(^2D)5d\ ^3F_2-(^4S)5f\ ^5F_2$
3		1364.977	73 261.32	.96	$(^2D)5d\ ^3F_2-(^2P)4f\ ^3G_3$
11		1356.358	73 726.86	7.35	$5s5p^5\ ^3P_2-(^2D)6p\ ^1D_2$
10		1355.012	73 800.10	.38	$5s5p^5\ ^3P_0-(^2P)6p\ ^3S_1$
6		1347.545	74 209.01	.14	$(^2D)5d\ ^3F_4-(^2P)4f\ ^3D_3$
5		1344.320	74 387.03	.73	$5s5p^5\ ^3P_1-(^2P)6p\ ^3D_2$
6		1342.928	74 464.17	.50	$(^4S)5d\ ^5D_2-(^2P)6p\ ^3P_2$
11		1342.534	74 486.02	.33	$5s5p^5\ ^3P_1-(^2P)6p\ ^3P_0$
9		1341.518	74 542.43	.53	$(^4S)5d\ ^5D_1-(^2D)4f\ ^3D_2$
5		1338.153	74 729.85	30.67	$(^2D)5d\ ^3F_4-(^2P)4f\ ^1G_4$
4		1337.652	74 757.88	.88	$(^4S)5d\ ^5D_2-(^2D)4f\ ^3F_3$
11		1333.145	75 010.60	.76	$(^2D)5d\ ^3G_3-(^2P)4f\ ^3D_2$
3		1330.927	75 135.60	6.05	$(^4S)5d\ ^5D_2-(^2D)4f\ ^3D_2$
1		1327.475	75 331.01	.50	$(^4S)5d\ ^3D_1-(^2P)4f\ ^3F_2$
2		1325.014	75 470.91	1.65	$5s5p^5\ ^3P_2-(^4S)4f\ ^3F_2$
6		1320.689	75 718.03	.61	$(^4S)5d\ ^5D_0-(^2D)4f\ ^3P_2$
2		1316.873	75 937.45	.63	$(^4S)5d\ ^3D_1-(^4S)5f\ ^5F_2$
8		1316.442	75 962.30	.66	$(^4S)5d\ ^5D_1-(^2D)4f\ ^3P_2$
1		1314.390	76 080.92	.99	$(^4S)5d\ ^3D_3-(^4S)5f\ ^5F_4$
10		1314.088	76 098.41	.57	$(^4S)5d\ ^5D_0-(^2D)4f\ ^3D_1$
4	u	1309.881	76 342.84	.62	$(^4S)5d\ ^5D_1-(^2D)4f\ ^3D_1$
10		1309.818	76 346.46	.95	$5s^25p^4\ ^1S_0-(^4S)5d\ ^5D_1$
2		1309.656	76 355.92	6.24	$(^4S)5d\ ^3D_3-(^4S)5f\ ^5F_3$

Table I. *Continued*

Intensity[1]		λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
9		1306.260	76 554.46	5.25	$(^2D)5d\ ^3G_3-(^2P)4f\ ^1G_4$
4		1305.721	76 586.02	.27	$(^2D)5d\ ^3F_4-(^2P)4f\ ^3F_4$
0		1305.475	76 600.49	.73	$(^2D)5d\ ^3G_4-(^2P)4f\ ^3D_3$
2		1303.385	76 723.29	.71	$(^4S)5d\ ^3D_3-(^2P)4f\ ^3G_3$
2		1299.234	76 968.45	.69	$5s5p^5\ ^3P_2-(^2P)6p\ ^3D_1$
7		1294.672	77 239.62	40.14	$(^2D)5d\ ^3F_3-(^2P)4f\ ^3D_2$
6		1294.477	77 251.26	.56	$(^4S)5d\ ^5D_1-(^2D)4f\ ^3P_1$
4		1292.427	77 373.82	4.17	$(^4S)5d\ ^5D_1-(^2D)4f\ ^1D_2$
11		1281.633	78 025.43	.49	$5s5p^5\ ^3P_1-(^2D)4f\ ^3F_2$
2		1278.311	78 228.25	.22	$(^2D)5d\ ^1P_1-(^2P)4f\ ^3F_2$
3		1277.742	78 263.07	.10	$(^2D)5d\ ^3F_3-(^2P)4f\ ^3D_3$
10		1272.819	78 565.77	.94	$5s5p^5\ ^3P_1-(^2P)6p\ ^3S_1$
2		1269.293	78 784.02	.63	$(^2D)5d\ ^3F_3-(^2P)4f\ ^1G_4$
7		1267.171	78 915.95	6.13	$(^4S)5d\ ^3D_2-(^2P)4f\ ^3F_3$
10		1253.650	79 767.06	6.86	$5s5p^5\ ^3P_2-(^2P)6p\ ^3P_1$
0		1251.484	79 905.14	4.74	$5s5p^5\ ^3P_1-(^2D)4f\ ^1P_1$
7		1249.319	80 043.61	.61	$5s5p^5\ ^3P_2-(^2D)4f\ ^3G_3$
3		1247.610	80 153.27	.43	$(^4S)5d\ ^5D_4-(^2D)4f\ ^1G_4$
2		1244.235	80 370.66	.92	$(^4S)5d\ ^3D_2-(^4S)5f\ ^5F_1$
10		1242.875	80 458.63	.76	$5s5p^5\ ^3P_0-(^2D)4f\ ^3D_1$
1		1238.955	80 713.18	.21	$(^4S)5d\ ^3D_2-(^2P)4f\ ^3G_3$
2	u	1237.316	80 820.08	19.80	$(^4S)5d\ ^5D_3-(^2D)4f\ ^1G_4$
12	u	1232.070	81 164.24	3.74	$5s^25p^4\ ^1D_2-5s5p^5\ ^3P_2$
0.5		1228.991	81 367.53	.70	$5s5p^5\ ^3P_0-(^2D)4f\ ^3P_1$
2		1227.943	81 437.00	.16	$(^4S)5d\ ^3D_1-(^2P)4f\ ^3D_2$
12		1205.929	82 923.60	.08	$5s^25p^4\ ^1S_0-(^2D)5d\ ^1P_1$
2		1202.593	83 153.65	.29	$(^4S)5d\ ^3D_3-(^2P)4f\ ^3D_3$
4		1200.033	83 331.02	.23	$5s5p^5\ ^3P_2-(^2D)4f\ ^3F_2$
11		1198.683	83 424.86	.22	$5s5p^5\ ^3P_1-(^2D)4f\ ^3D_2$
2		1195.107	83 674.55	.82	$(^4S)5d\ ^3D_3-(^2P)4f\ ^1G_4$
11		1188.853	84 114.69	.54	$5s5p^5\ ^3P_2-(^2D)4f\ ^3D_3$
1		1186.249	84 299.35	.83	$(^4S)5d\ ^5D_2-(^2P)4f\ ^3F_3$
2		1185.767	84 333.60	.88	$(^2D)5d\ ^1P_1-(^2P)4f\ ^3D_2$
1		1182.729	84 550.21	.80	$(^4S)5d\ ^5D_3-(^2P)4f\ ^3F_3$
4		1179.186	84 804.29	.35	$(^4S)5d\ ^5D_1-(^2P)4f\ ^3F_2$
8		1178.630	84 844.30	.36	$5s5p^5\ ^3P_1-(^2D)4f\ ^3P_2$
1		1177.617	84 917.28	.05	$(^4S)5d\ ^5D_0-(^4S)5f\ ^5F_1$
2		1174.243	85 161.27	.10	$(^4S)5d\ ^5D_1-(^4S)5f\ ^5F_1$
7		1173.857	85 189.24	8.89	$(^4S)5d\ ^5D_4-(^4S)5f\ ^5F_5$
0.5		1173.370	85 224.64	.31	$5s5p^5\ ^3P_1-(^2D)4f\ ^3D_1$
9		1173.146	85 240.89	.43	$(^4S)6s\ ^3S_1-5s^05p^6\ ^1S_0$
2		1170.988	85 397.97	.87	$(^4S)5d\ ^5D_2-(^2P)4f\ ^3F_2$
2		1170.812	85 410.79	.48	$(^4S)5d\ ^5D_1-(^4S)5f\ ^5F_2$
9		1166.789	85 705.29	.16	$(^4S)5d\ ^5D_3-(^4S)5f\ ^5F_4$
8		1166.467	85 728.92	9.44	$(^4S)5d\ ^5D_2-(^4S)5f\ ^5F_3$
0.5		1166.228	85 746.53	.63	$5s5p^5\ ^3P_2-(^2P)6p\ ^1D_2$
1		1163.061	85 980.05	.41	$(^4S)5d\ ^5D_3-(^4S)5f\ ^5F_3$
2		1160.992	86 133.25	.26	$5s5p^5\ ^3P_1-(^2D)4f\ ^3P_1$
10		1158.329	86 331.26	.98	$5s5p^5\ ^3P_2-(^2P)6p\ ^3D_3$
11		1156.475	86 469.69	.47	$5s^25p^4\ ^1D_2-5s5p^5\ ^3P_1$
7		1135.613	88 058.15	.41	$5s5p^5\ ^3P_2-(^2P)6p\ ^3P_2$
0		1131.838	88 351.89	.79	$5s5p^5\ ^3P_2-(^2D)4f\ ^3F_3$
12		1130.348	88 468.32	.11	$5s^25p^4\ ^3P_1-5s5p^5\ ^3P_2$
2		1127.018	88 729.74	.96	$5s5p^5\ ^3P_2-(^2D)4f\ ^3D_2$
7		1124.428	88 934.09	.74	$(^4S)5d\ ^3D_1-5s^05p^6\ ^1S_0$
10		1109.257	90 150.46	.09	$5s5p^5\ ^3P_2-(^2D)4f\ ^3P_2$
10		1092.168	91 561.03	.60	$5s5p^5\ ^3P_2-(^2D)4f\ ^1D_2$
20		1088.954	91 831.25	.46	$(^2D)5d\ ^1P_1-5s^05p^6\ ^1S_0$
1		1077.844	92 777.81	.46	$(^4S)5d\ ^5D_3-(^2P)4f\ ^3D_3$
18		1066.393	93 774.02	3.85	$5s^25p^4\ ^3P_1-5s5p^5\ ^3P_1$
1		1060.529	94 292.61	.18	$5s5p^5\ ^3P_1-(^4S)5f\ ^5F_2$
9		1058.136	94 505.83	6.68	$5s^25p^4\ ^1D_2-(^4S)5d\ ^5D_3$
11		1055.326	94 757.44	.65	$5s^25p^4\ ^1D_2-(^4S)5d\ ^5D_2$
11		1048.755	95 351.18	.16	$5s^25p^4\ ^1D_2-(^4S)5d\ ^5D_1$
15		1047.799	95 438.18	.12	$5s^25p^4\ ^3P_0-5s5p^5\ ^3P_1$
13		1017.682	98 262.53	.47	$5s^25p^4\ ^3P_2-5s5p^5\ ^3P_2$
2		1016.188	98 406.97	7.59	$(^4S)5d\ ^5D_1-5s^05p^6\ ^1S_0$
12		1014.825	98 539.15	.40	$5s^25p^4\ ^3P_1-5s5p^5\ ^3P_0$

Table I. *Continued*

Intensity[1]	λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
6	1002.087	99 791.73	.71	$5s5p^5\ ^3P_1-(^2P)4f\ ^3D_2$
12	981.097	101 926.8	7.29	$5s^25p^4\ ^1D_2-(^2D)5d\ ^1P_1$
(1)	979.980	102 043.	2.55	$5s^25p^4\ ^1S_0-(^2D)6s\ ^3D_1$
12	974.133	102 655.4	.54	$5s^25p^4\ ^3P_1-(^4S)5d\ ^5D_1$
15	971.818	102 899.9	.59	$5s^25p^4\ ^3P_1-(^4S)5d\ ^5D_0$
10	965.548	103 568.2	.20	$5s^25p^4\ ^3P_2-5s5p^5\ ^3P_1$
(1)	960.325	104 131.	0.85	$5s^25p^4\ ^1D_2-(^4S)5d\ ^3D_3$
10	958.591	104 319.8	.82	$5s^25p^4\ ^3P_0-(^4S)5d\ ^5D_1$
11	953.983	104 823.7	4.02	$5s^25p^4\ ^1D_2-(^4S)5d\ ^3D_1$
2	930.702	107 445.7	.72	$5s^25p^4\ ^3P_1-(^4S)5d\ ^3D_2$
1	917.258	109 020.6	1.04	$5s^25p^4\ ^1D_2-(^2D)5d\ ^3F_3$
10	915.487	109 231.5	.67	$5s^25p^4\ ^3P_1-(^2D)5d\ ^1P_1$
13	901.745	110 896.1	5.95	$5s^25p^4\ ^3P_0-(^2D)5d\ ^1P_1$
7	898.870	111 250.8	.42	$5s^25p^4\ ^1D_2-(^2D)5d\ ^3G_3$
13	896.014	111 605.4	.41	$5s^25p^4\ ^3P_2-(^4S)5d\ ^5D_3$
6	895.401	111 681.8	.58	$5s^25p^4\ ^3P_1-(^4S)6s\ ^5S_2$
13	894.003	111 856.5	.38	$5s^25p^4\ ^3P_2-(^4S)5d\ ^5D_2$
11	891.835	112 128.4	.39	$5s^25p^4\ ^3P_1-(^4S)5d\ ^3D_1$
13	889.284	112 450.0	49.90	$5s^25p^4\ ^3P_2-(^4S)5d\ ^5D_1$
10	878.789	113 793.0	2.67	$5s^25p^4\ ^3P_0-(^4S)5d\ ^3D_1$
2	870.342	114 897.4	6.97	$5s^25p^4\ ^3P_1-(^2D)5d\ ^3F_2$
1	863.385	115 823.2	2.70	$5s^25p^4\ ^3P_1-(^4S)6s\ ^3S_1$
6	861.064	116 135.4	.28	$5s^25p^4\ ^1D_2-(^2D)5d\ ^3D_1$
13	852.947	117 240.6	.08	$5s^25p^4\ ^3P_2-(^4S)5d\ ^3D_2$
2	851.152	117 487.8	6.98	$5s^25p^4\ ^3P_0-(^4S)6s\ ^3S_1$
3	850.563	117 569.2	8.68	$5s^25p^4\ ^1D_2-(^2D)6s\ ^3D_2$
11	840.151	119 026.2	.03	$5s^25p^4\ ^3P_2-(^2D)5d\ ^1P_1$
0	838.441	119 269.0	8.74	$5s^25p^4\ ^1D_2-(^2P)5d\ ^1D_2$
(1)	838.244	119 297.	.96	$5s^25p^4\ ^1S_0-(^2P)5d\ ^3D_1$
(3)	826.132	121 046.	.76	$5s^25p^4\ ^1D_2-(^2D)6s\ ^3D_1$
12	824.878	121 230.1	29.58	$5s^25p^4\ ^3P_2-(^4S)5d\ ^3D_3$
15	823.202	121 476.9	5.94	$5s^25p^4\ ^3P_2-(^4S)6s\ ^5S_2$
8	822.640	121 559.8	.47	$5s^25p^4\ ^1D_2-(^2D)6s\ ^3D_3$
(4)	820.166	121 926.	2.75	$5s^25p^4\ ^3P_2-(^4S)5d\ ^3D_1$
(2)	811.138	123 284.	5.23	$5s^25p^4\ ^1S_0-(^2P)6s\ ^1P_1$
10	810.110	123 440.0	39.66	$5s^25p^4\ ^3P_1-(^2D)5d\ ^3D_1$
(2)	808.860	123 631.	2.20	$5s^25p^4\ ^1D_2-(^2P)5d\ ^3P_1$
11	801.978	124 691.6	.33	$5s^25p^4\ ^3P_2-(^2D)5d\ ^3F_2$
2	800.835	124 869.6	73.06	$5s^25p^4\ ^3P_1-(^2D)6s\ ^3D_2$
(0)	800.228	124 964.	5.53	$5s^25p^4\ ^1D_2-(^2D)5d\ ^3D_2$
11	799.333	125 104.2	3.93	$5s^25p^4\ ^3P_0-(^2D)5d\ ^3D_1$
11	796.067	125 617.5	.06	$5s^25p^4\ ^3P_2-(^4S)6s\ ^3S_1$
9	793.968	125 949.6	.47	$5s^25p^4\ ^1D_2-(^2D)6s\ ^1D_2$
0	793.282	126 058.5	7.51	$5s^25p^4\ ^1D_2-(^2D)5d\ ^3D_3$
12	792.896	126 120.0	19.77	$5s^25p^4\ ^3P_2-(^2D)5d\ ^3F_3$
4	790.056	126 573.2	.12	$5s^25p^4\ ^3P_1-(^2P)5d\ ^1D_2$
(1)	784.785	127 423.	4.46	$5s^25p^4\ ^1S_0-5s5p^5\ ^1P_1$
8	780.027	128 200.6	1.40	$5s^25p^4\ ^1D_2-(^2P)5d\ ^3F_2$
(4)	779.782	128 241.	2.18	$5s^25p^4\ ^1D_2-(^2P)5d\ ^3F_3$
13	779.124	128 349.3	.15	$5s^25p^4\ ^3P_2-(^2D)5d\ ^3G_3$
13	779.124	128 349.3	51.13	$5s^25p^4\ ^3P_1-(^2D)6s\ ^3D_1$
8	769.140	130 015.3	.41	$5s^25p^4\ ^3P_0-(^2D)6s\ ^3D_1$
2	765.442	130 643.5	.43	$5s^25p^4\ ^3P_1-(^2P)5d\ ^3P_0$
(7)	765.120	130 698.	.68	$5s^25p^4\ ^1D_2-(^2D)5d\ ^3S_1$
9	763.729	130 936.5	.57	$5s^25p^4\ ^3P_1-(^2P)5d\ ^3P_1$
(5)	761.790	131 270.	1.40	$5s^25p^4\ ^1D_2-(^2D)5d\ ^3P_2$
1	761.532	131 314.2	.10	$5s^25p^4\ ^1D_2-(^2D)5d\ ^1F_3$
6	756.031	132 269.7	.91	$5s^25p^4\ ^3P_1-(^2D)5d\ ^3D_2$
(6)	754.144	132 601.	0.85	$5s^25p^4\ ^3P_0-(^2P)5d\ ^3P_1$
5	750.451	133 253.2	.84	$5s^25p^4\ ^3P_1-(^2D)6s\ ^1D_2$
4	750.160	133 305.0	.51	$5s^25p^4\ ^1D_2-(^2P)5d\ ^3P_2$
2	744.142	134 382.9	3.70	$5s^25p^4\ ^1D_2-(^2P)6s\ ^3P_1$
13	742.570	134 667.5	.42	$5s^25p^4\ ^3P_2-(^2D)6s\ ^3D_2$
7	737.977	135 505.6	.77	$5s^25p^4\ ^3P_1-(^2P)5d\ ^3F_2$
12	733.314	136 367.3	.48	$5s^25p^4\ ^3P_2-(^2P)5d\ ^1D_2$
5	731.023	136 794.6	.47	$5s^25p^4\ ^1D_2-(^2P)5d\ ^3D_2$
12	727.042	137 543.6	0.64	$5s^25p^4\ ^1D_2-(^2D)5d\ ^3P_1$
(1)	724.623	138 003.	.06	$5s^25p^4\ ^3P_1-(^2D)5d\ ^3S_1$

Table I. *Continued*

Intensity[1]	λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
(5)	723.873	138 146.	5.49	$5s^25p^4\ ^3P_2-(^2D)6s\ ^3D_1$
(−1)	723.055	138 302.	.17	$5s^25p^4\ ^1D_2-(^2P)5d\ ^3D_1$
(2d)	721.630	138 575.	.77	$5s^25p^4\ ^3P_1-(^2D)5d\ ^3P_2$
13	721.199	138 658.1	.20	$5s^25p^4\ ^3P_2-(^2D)6s\ ^3D_3$
12	719.694	138 947.9	9.42	$5s^25p^4\ ^1S_0-(^2P)5d\ ^1P_1$
2	717.911	139 293.0	.94	$5s^25p^4\ ^1D_2-(^2P)5d\ ^3D_3$
(2)	715.986	139 668.	7.33	$5s^25p^4\ ^3P_0-(^2D)5d\ ^3S_1$
(4)	711.190	140 609.	.88	$5s^25p^4\ ^3P_1-(^2P)5d\ ^3P_2$
4	710.680	140 710.3	.95	$5s^25p^4\ ^3P_1-(^2P)6s\ ^3P_0$
4	710.575	140 731.1	0.93	$5s^25p^4\ ^3P_2-(^2P)5d\ ^3P_1$
2	705.777	141 687.8	8.07	$5s^25p^4\ ^3P_1-(^2P)6s\ ^3P_1$
12	705.095	141 824.9	9.37	$5s^25p^4\ ^1D_2-(^2P)6s\ ^3P_2$
3	703.906	142 064.5	.27	$5s^25p^4\ ^3P_2-(^2D)5d\ ^3D_2$
10	702.795	142 289.0	.44	$5s^25p^4\ ^1D_2-(^2P)6s\ ^1P_1$
5	699.069	143 047.5	8.20	$5s^25p^4\ ^3P_2-(^2D)6s\ ^1D_2$
12	698.550	143 153.7	6.24	$5s^25p^4\ ^3P_2-(^2D)5d\ ^3D_3$
7	697.584	143 352.0	.35	$5s^25p^4\ ^3P_0-(^2P)6s\ ^3P_1$
10	693.971	144 098.3	.84	$5s^25p^4\ ^3P_1-(^2P)5d\ ^3D_2$
8	691.036	144 710.3	1.25	$5s^25p^4\ ^1D_2-(^2D)5d\ ^1D_2$
12	690.400	144 843.7	5.01	$5s^25p^4\ ^3P_1-(^2D)5d\ ^3P_1$
1	688.239	145.298.3	300.13	$5s^25p^4\ ^3P_2-(^2P)5d\ ^3F_2$
10	688.044	145 339.6	40.91	$5s^25p^4\ ^3P_2-(^2P)5d\ ^3F_3$
(5)	686.792	145 604.	6.55	$5s^25p^4\ ^3P_1-(^2P)5d\ ^3D_1$
10	685.599	145 857.9	8.76	$5s^25p^4\ ^1D_2-(^2P)5d\ ^1F_3$
13	682.926	146 428.7	.67	$5s^25p^4\ ^1D_2-5s5p^5\ ^1P_1$
12	682.563	146 506.6	9.29	$5s^25p^4\ ^3P_0-(^2D)5d\ ^3P_1$
6	679.022	147 270.7	.82	$5s^25p^4\ ^3P_0-(^2P)5d\ ^3D_1$
9	676.602	147 797.4	.41	$5s^25p^4\ ^3P_2-(^2D)5d\ ^3S_1$
9	673.991	148 369.9	70.13	$5s^25p^4\ ^3P_2-(^2D)5d\ ^3P_2$
7	673.798	148 412.5	.84	$5s^25p^4\ ^3P_2-(^2D)5d\ ^1F_3$
(1)	670.550	149 132.	3.74	$5s^25p^4\ ^3P_1-(^2P)6s\ ^3P_2$
1	668.476	149 593.9	.82	$5s^25p^4\ ^3P_1-(^2P)6s\ ^1P_1$
8	664.878	150 403.5	4.24	$5s^25p^4\ ^3P_2-(^2P)5d\ ^3P_2$
2	662.516	150 939.8	.41	$5s^25p^4\ ^3P_1-(^2D)5d\ ^3P_0$
1	661.125	151 257.4	8.09	$5s^25p^4\ ^3P_0-(^2P)6s\ ^1P_1$
1	660.133	151 484.6	2.43	$5s^25p^4\ ^3P_2-(^2P)6s\ ^3P_1$
0	657.831	152 014.8	5.62	$5s^25p^4\ ^3P_1-(^2D)5d\ ^1D_2$
12	650.479	153 732.9	3.04	$5s^25p^4\ ^3P_1-5s5p^5\ ^1P_1$
10	646.667	154 639.2	.37	$5s^25p^4\ ^3P_2-(^2D)5d\ ^3P_1$
8	639.419	156 392.0	.68	$5s^25p^4\ ^3P_2-(^2P)5d\ ^3D_3$
(1)	633.089	157 956.	3.63	$5s^25p^4\ ^1D_2-(^2P)5d\ ^1P_1$
7	629.216	158 927.9	8.10	$5s^25p^4\ ^3P_2-(^2P)6s\ ^3P_2$
1	627.403	159 387.1	8.18	$5s^25p^4\ ^3P_2-(^2P)6s\ ^1P_1$
(0)	611.511	163 529.	7.40	$5s^25p^4\ ^3P_2-5s5p^5\ ^1P_1$
(1)	590.707	169 289.	5.30	$5s^25p^4\ ^1D_2-(^4S)6d\ ^3D_3$

Table I. *Continued*

Intensity[1]	λ (Å)	σ (cm⁻¹) obs	σ (cm⁻¹) calc	Classification
(3)	574.738	173 992.	1.88	$5s^25p^4\ ^3P_1-(^4S)7s\ ^3S_1$
(5)	570.365	175 326.	.54	$5s^25p^4\ ^3P_1-(^4S)6d\ ^3D_2$
(1)	569.292	175 657.	6.16	$5s^25p^4\ ^3P_0-(^4S)7s\ ^3S_1$
(3)	565.620	176 797.	4.79	$5s^25p^4\ ^3P_1-(^4S)6d\ ^3D_1$
(5)	560.355	178.458.	9.06	$5s^25p^4\ ^3P_0-(^4S)6d\ ^3D_1$
(0)	559.256	178 809.	8.31	$5s^25p^4\ ^1D_2-(^2D)7s\ ^3D_1$
(0)	559.030	178 881.	78.94	$5s^25p^4\ ^1D_2-(^2D)6d\ ^3F_2$
(−1)	549.447	182 001.	5.39	$5s^25p^4\ ^1D_2-(^2D)6d\ ^3S_1$
(4)	548.444	182 334.	7.88	$5s^25p^4\ ^3P_2-(^4S)6d\ ^5D_2$
(−1)	548.021	182 475.	82.74	$5s^25p^4\ ^3P_2-(^4S)7s\ ^5S_2$
(−1)	548.021	182 475.	64.48	$5s^25p^4\ ^3P_2-(^4S)6d\ ^5D_3$
(0)	547.790	182 552.	1.32	$5s^25p^4\ ^3P_2-(^4S)6d\ ^5D_1$
(5)	544.108	183 787.	6.24	$5s^25p^4\ ^3P_2-(^4S)7s\ ^3S_1$
(4)	540.190	185 120.	.90	$5s^25p^4\ ^3P_2-(^4S)6d\ ^3D_2$
(1)	538.490	185 704.	7.17	$5s^25p^4\ ^1D_2-(^2D)6d\ ^1P_1$
(0)	537.287	186 120.	12.68	$5s^25p^4\ ^3P_1-(^2D)7s\ ^3D_1$
(−1)	537.106	186 183.	.31	$5s^25p^4\ ^3P_1-(^2D)6d\ ^3F_2$
(3)	536.844	186 274.	7.31	$5s^25p^4\ ^1D_2-(^2D)6d\ ^1D_2$
(5)	536.524	186 385.	4.04	$5s^25p^4\ ^3P_2-(^4S)6d\ ^3D_3$
(4)	535.476	186 750.	46.62	$5s^25p^4\ ^1D_2-(^2D)6d\ ^1F_3$
(−2)	534.537	187 078.	82.27	$5s^25p^4\ ^3P_1-(^2D)6d\ ^3D_1$
(−1) a	533.910	187 297.	6.50	$5s^25p^4\ ^3P_1-(^2D)6d\ ^1S_0$
(2)	529.955	188 695.	7.62	$5s^25p^4\ ^3P_1-(^2D)6d\ ^3P_2$
(−1)	529.826	188 741.	6.54	$5s^25p^4\ ^3P_0-(^2D)6d\ ^3D_1$
(1)	528.235	189 310.	09.76	$5s^25p^4\ ^3P_1-(^2D)6d\ ^3S_1$
(2)	524.258	190 746.	5.35	$5s^25p^4\ ^3P_1-(^2D)7s\ ^1D_2$
(−1)	523.644	190 969.	74.04	$5s^25p^4\ ^3P_0-(^2D)6d\ ^3S_1$
(0)	521.315	191 823.	4.12	$5s^25p^4\ ^3P_1-(^2D)6d\ ^3P_0$
(1)	520.194	192 236.	41.32	$5s^25p^4\ ^3P_1-(^2D)6d\ ^3P_1$
(−2)	516.578	193 582.	1.68	$5s^25p^4\ ^3P_1-(^2D)6d\ ^1D_2$
(1)	510.252	195 982.	77.67	$5s^25p^4\ ^3P_2-(^2D)6d\ ^3F_2$
(1)	509.519	196 264.	1.50	$5s^25p^4\ ^3P_2-(^2D)6d\ ^3G_3$
(2)	508.625	196 608.	.91	$5s^25p^4\ ^3P_2-(^2D)6d\ ^3F_3$
(−2)	507.960	196 866.	76.63	$5s^25p^4\ ^3P_2-(^2D)6d\ ^3D_1$
(−1)	503.802	198 491.	.98	$5s^25p^4\ ^3P_2-(^2D)6d\ ^3P_2$
(0)	499.923	200 031.	3.45	$5s^25p^4\ ^3P_2-(^2D)7s\ ^3D_3$
(2)	498.378	200 651.	0.23	$5s^25p^4\ ^3P_2-(^2D)6d\ ^3D_3$
(−2)	497.457	201 022.	4.94	$5s^25p^4\ ^3P_1-(^2P)6d\ ^3D_1$
(2)	496.260	201 507.	12.20	$5s^25p^4\ ^3P_2-(^2D)6d\ ^3D_2$
(0)	493.092	202 802.	5.90	$5s^25p^4\ ^3P_2-(^2D)6d\ ^1P_1$
(−2)	490.579	203 841.	5.36	$5s^25p^4\ ^3P_2-(^2D)6d\ ^1F_3$

[1] Meaning of the letters in the column "Intensity": a = affected, b = blend, h = hazy (diffuse), H = very hazy, u = unsymmetric and w = wide.

Table II. *Even levels of Xe III. All levels are given in LS notation. The numbers in parentheses indicate the purities (in %) of the states*

Designation		E (cm^{-1})
$5s^2 5p^4$	$^3P_2$	0.00 (86)
	$^3P_1$	9 794.36 (98)
	$^3P_0$	8 130.08 (79)
	$^1D_2$	17 098.73 (86)
	$^1S_0$	36 102.94 (78)
$5s^2 5p^3(^4S)6p$	$^5P_3$	149 061.57 (84)
	$^5P_2$	146 962.42 (66)
	$^5P_1$	146 781.48 (73)
	$^3P_2$	152 057.72 (64)
	$^3P_1$	150 301.10 (57)
	$^3P_0$	152 808.17 (89)
$(^2D)6p$	$^3F_4$	166 554.82 (82)
	$^3F_3$	162 594.81 (56)
	$^3F_2$	160 691.30 (54)
	$^3D_3$	166 699.11 (66)
	$^3D_2$	162 259.97 (47)
	$^3D_1$	158 996.98 (38)
	$^3P_2$	167 066.32 (55)
	$^3P_1$	168 086.00 (62)
	$^3P_0$	165 941.69 (84)
	$^1F_3$	164 438.64 (49)
	$^1D_2$	171 989.82 (70)
	$^1P_1$	164 511.65 (41)
$(^2P)6p$	$^3D_3$	184 594.45 (57)
	$^3D_2$	177 955.93 (59)
	$^3D_1$	175 231.15 (66)
	$^3P_2$	186 320.88 (27)
	$^3P_1$	178 029.33 (59)
	$^3P_0$	178 054.53 (83)
	$^3S_1$	182 134.14 (58)
	$^1D_2$	184 009.10 (44)
	$^1P_1$	185 888.03 (37)
	$^1S_0$	190 491.16 (67)
$5s^2 5p^3(^4S)4f$	$^5F_5$	166 743.80 (84)
	$^5F_4$	166 355.27 (64)
	$^5F_3$	166 374.06 (74)

Table II. *Continued*

Designation		E (cm^{-1})
	$^5F_2$	166 880.09 (81)
	$^5F_1$	167 173.54 (87)
	$^3F_4$	173 946.53 (65)
	$^3F_3$	170 250.15 (42)
	$^3F_2$	173 734.12 (77)
$(^2D)4f$	$^3H_6$	186 086.52 (100)
	$^3H_5$	181 356.80 (36)
	$^3H_4$	181 684.94 (56)
	$^3G_5$	184 114.53 (81)
	$^3G_4$	178 887.17 (58)
	$^3G_3$	178 306.08 (51)
	$^3F_4$	185 406.74 (42)
	$^3F_3$	186 614.26 (67)
	$^3F_2$	181 593.70 (41)
	$^3D_3$	182 377.01 (42)
	$^3D_2$	186 992.43 (25)
	$^3D_1$	188 792.52 (92)
	$^3P_2$	188 412.56 (38)
	$^3P_1$	189 701.46 (79)
	$^3P_0$	
	$^1H_5$	186 022.92 (62)
	$^1G_4$	192 425.21 (76)
	$^1F_3$	189 778.94 (55)
	$^1D_2$	189 824.07 (50)
	$^1P_1$	183 472.95 (70)
$(^2P)4f$	$^3G_3$	197 953.29 (29)
	$^3F_4$	206 760.00 (30)
	$^3F_3$	196 156.21 (51)
	$^3F_2$	197 254.25 (43)
	$^3D_3$	204 382.87 (43)
	$^3D_2$	203 359.91 (51)
	$^3D_1$	
	$^1G_4$	204 904.40 (34)
$5s^2 5p^3(^4S)5f$	$^5F_5$	197 460.67 (89)
	$^5F_4$	197 310.57 (74)
	$^5F_3$	197 585.82 (56)
	$^5F_2$	197 860.38 (68)
	$^5F_1$	197 611.00 (90)
$5s^0 5p^6$	$^1S_0$	210 857.49 (56)

Table III. *Odd levels of Xe III. All levels are given in LS notation. The numbers in parentheses indicate the purities (in %) of the states*

Designation		E (cm^{-1})	
$5s5p^5$	$^3P_2$	98 262.47 (75)	
	$^3P_1$	103 568.20 (62)	
	$^3P_0$	108 333.76 (55)	
	$^1P_1$	163 527.40 (27)	
		$n = 6$	$n = 7$
$5s^25p^3(^4S)ns$	$^5S_2$	121 475.94 (87)	182 482.74 (45)
	$^3S_1$	125 617.06 (78)	183 786.24 (84)
$(^2D)ns$	$^3D_3$	138 658.20 (83)	200 033.45 (99)
	$^2D_2$	134 667.42 (33)	196 140.93 (38)
	$^3D_1$	138 145.49 (49)	195 907.04 (57)
	$^1D_2$	143 048.20 (54)	200 539.71 (64)
$(^2P)ns$	$^3P_2$	158 928.10 (53)	
	$^3P_1$	151 482.43 (46)	
	$^3P_0$	150 505.31 (87)	
	$^1P_1$	159 388.18 (32)	
		$n = 5$	$n = 6$
$5s^25p^3(^4S)nd$	$^5D_4$	112 271.78 (88)	182 716.33 (85)
	$^5D_3$	111 605.41 (80)	182 464.48 (79)
	$^5D_2$	111 856.38 (78)	182 337.88 (42)
	$^5D_1$	112 449.90 (87)	182 551.32 (85)
	$^5D_0$	112 693.95 (69)	182 521.94 (86)
	$^3D_3$	121 229.58 (37)	186 384.04 (71)
	$^3D_2$	117 240.08 (27)	185 120.90 (62)
	$^3D_1$	121 922.75 (51)	186 589.15 (76)
$(^2D)nd$	$^3G_5$	132 159.94 (100)	200 471.83 (100)
	$^3G_4$	127 782.14 (40)	200 050.60 (43)
	$^3G_3$	128 349.15 (66)	196 261.50 (58)

Table III. *Continued*

Designation		E (cm^{-1})	
	$^1G_4$	132 711.78 (73)	196 538.07 (31)
	$^3F_4$	130 173.73 (71)	200 425.68 (82)
	$^3F_3$	126 119.77 (58)	196 608.91 (43)
	$^3F_2$	124 691.33 (52)	195 977.67 (47)
	$^1F_3$	148 412.84 (42)	203 845.36 (71)
	$^3D_3$	143 156.24 (38)	200 650.23 (64)
	$^3D_2$	142 064.27 (24)	201 512.20 (44)
	$^3D_1$	133 234.01 (36)	196 876.63 (45)
	$^1D_2$	161 809.98 (39)	203 376.04 (54)
	$^3P_2$	148 370.13 (39)	198 491.98 (22)
	$^3P_1$	154 639.37 (20)	202 035.68 (46)
	$^3P_0$	160 733.77 (43)	201 618.48 (62)
	$^1P_1$	119 026.03 (44)	202 805.90 (37)
	$^3S_1$	147 797.41 (49)	199 104.12 (45)
	$^1S_0$		197 090.86 (58)
$(^2P)nd$	$^3F_4$	148 535.52 (70)	
	$^3F_3$	145 340.91 (56)	
	$^3F_2$	145 300.13 (50)	
	$^1F_3$	162 957.50 (40)	
	$^3D_3$	156 392.68 (33)	
	$^3D_2$	153 893.20 (28)	
	$^3D_1$	155 400.90 (45)	
	$^1D_2$	136 367.48 (15)	
	$^3P_2$	150 404.24 (54)	
	$^3P_1$	140 730.93 (44)	
	$^3P_0$	140 437.79 (42)	
	$^1P_1$	175 052.36 (64)	

Table IV. *Comparison between observed and calculated energy-level values (in cm^{-1}) and calculated percentage compositions for the $5s^25p^4 + 5s^25p^3(6p + 4f + 5f) + 5s^05p^6 + (5s5p^45d)^a$ configurations of Xe III. Eigenvector components larger than 5% are given. Observed [3] and calculated g_J factors are listed*

J	E(obs)	E(calc)	obs − calc	g_J(obs)	g_J(calc)	Percentage composition
6	186 087	185 871	215		1.167	100 $(^2D)4f\,^3H$
5	166 744	166 592	152		1.37	84 $(^4S)4f\,^5F$ + 11 $(^2P)4f\,^3G$
	181 357	181 345	12		1.11	36 $(^2D)4f\,^3H$ + 22 $(^2D)4f\,^1H$ + 17 $(^2P)4f\,^3G$ + 15 $(^2D)4f\,^3G$ + 9 $(^4S)4f\,^5F$
	184 115	184 477	−363		1.18	81 $(^2D)4f\,^3G$ + 13 $(^2D)4f\,^3H$
	186 023	186 324	−301		1.01	62 $(^2D)4f\,^1H$ + 38 $(^2D)4f\,^3H$
	197 461	197 583	−123		1.38	89 $(^4S)5f\,^5F$ + 7 $(^2P)5f\,^3G$
4	166 355	166 084	271		1.30	64 $(^4S)4f\,^5F$ + 17 $(^2D)6p\,^3F$ + 7 $(^2P)4f\,^3F$ + 5 $(^2P)4f\,^3G$
	166 555	166 999	−444		1.26	82 $(^2D)6p\,^3F$ + 13 $(^4S)4f\,^5F$
	173 947	174 182	−235		1.21	65 $(^4S)4f\,^3F$ + 9 $(^2D)4f\,^3F$ + 8 $(^4S)4f\,^5F$ + 6 $(^2D)4f\,^3H$ + 6 $(^2P)4f\,^1G$
	178 887	179 265	−378		1.11	58 $(^2D)4f\,^3G$ + 9 $(^4S)4f\,^5F$ + 6 $(^2P)4f\,^3G$ + 6 $(^2P)4f\,^1G$ + 6 $(^4S)4f\,^3F$ + 6 $(^2P)4f\,^3F$ + 5 $(^2D)4f\,^3F$
	181 685	181 834	−149		0.96	56 $(^2D)4f\,^3H$ + 23 $(^2D)4f\,^3F$ + 8 $(^2P)4f\,^3G$
	185 407	185 544	−137		1.14	42 $(^2D)4f\,^3F$ + 20 $(^2D)4f\,^3H$ + 16 $(^2D)4f\,^3G$ + 12 $(^4S)4f\,^3F$
	192 425	192 122	303		1.03	76 $(^2D)4f\,^1G$ + 6 $(^2D)4f\,^3G$ + 5 $(^2D)4f\,^3F$
	197 311	197 619	−309		1.31	74 $(^4S)5f\,^5F$ + 8 $(^2P)4f\,^3G$
	204 904	205 178	−273		1.06	34 $(^2P)4f\,^1G$ + 17 $(^2P)4f\,^3G$ + 10 $(^2D)4f\,^3H$ + 9 $(^2P)4f\,^3F$ + 7 $(^4S)5f\,^3F$ + 7 $(^4S)4f\,^3F$
	206 760	206 576	184		1.07	30 $(^2P)4f\,^3F$ + 30 $(^2P)4f\,^1G$ + 10 $(^2D)4f\,^1G$ + 9 $(^2D)4f\,^3G$ + 7 $(^2P)4f\,^3G$ + 5 $(^2D)4f\,^3F$
3	149 062	148 836	225	1.57	1.61	84 $(^4S)6p\,^5P$ + 12 $(^2P)6p\,^3D$
	162 595	162 680	−85		1.16	56 $(^2D)6p\,^3F$ + 17 $(^2D)6p\,^1F$ + 14 $(^2P)6p\,^3D$ + 10 $(^4S)6p\,^5P$
	164 439	164 862	−424		1.13	49 $(^2D)6p\,^1F$ + 32 $(^2D)6p\,^3D$ + 16 $(^2D)6p\,^3F$
	166 374	166 433	−59		1.20	74 $(^4S)4f\,^5F$ + 7 $(^2P)4f\,^3F$
	166 699	166 812	−113		1.23	66 $(^2D)6p\,^3D$ + 21 $(^2D)6p\,^1F$ + 12 $(^2D)6p\,^3F$
	170 250	170 166	85		1.05	42 $(^4S)4f\,^3F$ + 12 $(^2D)4f\,^3F$ + 11 $(^2P)4f\,^1F$ + 10 $(^2D)4f\,^3G$ + 8 $(^4S)4f\,^5F$ + 5 $(^2P)4f\,^3D$ + 5 $(^2P)4f\,^3G$
	178 306	178 780	−474		0.89	51 $(^2D)4f\,^3G$ + 13 $(^4S)4f\,^3F$ + 12 $(^2P)4f\,^3G$ + 6 $(^4S)4f\,^5F$
	182 377	181 721	656		1 25	42 $(^2D)4f\,^3D$ + 12 $(^2P)4f\,^3D$ + 12 $(^4S)4f\,^3F$
	184 594	184 505	90		1.27	57 $(^2P)6p\,^3D$ + 9 $(^2D)6p\,^3F$ + 8 $(^2D)4f\,^3D$ + 7 $(^2D)6p\,^1F$
	186 614	186 511	103		1.10	67 $(^2D)4f\,^3F$ + 15 $(^4S)4f\,^3F$ + 7 $(^2P)4f\,^3F$ + 5 $(^2D)4f\,^3D$
	189 779	189 591	188		1.03	55 $(^2D)4f\,^1F$ + 18 $(^2P)4f\,^1F$ + 9 $(^2D)4f\,^3D$
	196 156	196 050	106		1.11	51 $(^2P)4f\,^3F$ + 17 $(^2P)4f\,^3D$ + 12 $(^2P)4f\,^1F$ + 6 $(^4S)5f\,^5F$
	197 586	197 457	129		0.96	56 $(^4S)5f\,^5F$ + 21 $(^2P)4f\,^3G$
	197 953	197 931	23		1.11	29 $(^2P)4f\,^3G$ + 25 $(^4S)5f\,^5F$ + 16 $(^2P)4f\,^1F$ + 12 $(^2D)4f\,^1F$ + 8 $(^2D)4f\,^3G$
	204 383	204 551	−168		1.22	43 $(^2P)4f\,^3D$ + 24 $(^2D)4f\,^3D$ + 14 $(^2P)4f\,^1F$ + 6 $(^2P)4f\,^3F$
2	0	−146	146		1.44	86 $p^4\,^3P$ + 11 $p^4\,^1D$
	17 099	17 246	−148		1.06	86 $p^4\,^1D$ + 11 $p^4\,^3P$
	146 962	146 789	173	1.70	1.67	66 $(^4S)6p\,^5P$ + 14 $(^4S)6p\,^3P$ + 7 $(^2P)6p\,^3P$ + 6 $(^2P)6p\,^3D$
	152 058	151 885	173	1.50	1.48	64 $(^4S)6p\,^3P$ + 19 $(^4S)6p\,^5P$ + 8 $(^2P)6p\,^1D$
	160 691	160 864	−173		0.95	54 $(^2D)6p\,^3F$ + 15 $(^2D)6p\,^3D$ + 10 $(^4S)6p\,^3P$ + 9 $(^2P)6p\,^3D$
	162 260	162 342	−82		1.18	47 $(^2D)6p\,^3D$ + 16 $(^2D)6p\,^3D$ + 10 $(^2P)6p\,^3P$ + 10 $(^2D)6p\,^3P$ + 6 $(^2P)6p\,^1D$ + 6 $(^4S)6p\,^5P$
	166 880	166 832	48		1.02	81 $(^4S)4f\,^5F$ + 7 $(^2P)4f\,^3D$
	167 066	167 057	9		1.36	55 $(^2D)6p\,^3P$ + 20 $(^2D)6p\,^3D$ + 10 $(^2D)6p\,^1D$ + 5 $(^2P)6p\,^3P$
	171 990	172 231	−242		1.10	70 $(^2D)6p\,^1D$ + 20 $(^2D)6p\,^3P$
	173 734	173 626	108		0.72	77 $(^4S)4f\,^3F$ + 6 $(^2P)4f\,^3F$ + 5 $(^2P)4f\,^1D$
	177 956	177 530	426		1.18	59 $(^2P)6p\,^3D$ + 19 $(^2P)6p\,^1D$ + 14 $(^2P)6p\,^3P$
	181 594	181 005	588		0.86	41 $(^2D)4f\,^3F$ + 15 $(^2D)4f\,^1D$ + 14 $(^2D)4f\,^3D$ + 7 $(^2P)4f\,^1D$ + 7 $(^2P)4f\,^3D$ + 6 $(^4S)4f\,^5F$
	184 009	183 888	121		1.00	44 $(^2P)6p\,^1D$ + 17 $(^2P)6p\,^3D$ + 14 $(^2D)6p\,^3F$ + 8 $(^2D)4f\,^3F$
	186 321	186 108	213		1.34	27 $(^2P)6p\,^3P$ + 27 $(^2D)4f\,^3P$ + 11 $(^2P)6p\,^1D$ + 7 $(^2D)6p\,^3D$
	186 992	187 118	−125		1.03	31 $(^2D)4f\,^3F$ + 25 $(^2D)4f\,^3D$ + 12 $(^2P)6p\,^3P$ + 10 $(^2D)4f\,^1D$ + 6 $(^2P)4f\,^3D$
	188 413	188 681	−268		1.28	38 $(^2D)4f\,^3P$ + 25 $(^2D)4f\,^3D$ + 12 $(^2P)6p\,^3P$ + 8 $(^2P)4f\,^3D$
	189 824	190 397	−573		1.10	50 $(^2D)4f\,^1D$ + 21 $(^2D)4f\,^3D$ + 7 $(^2D)4f\,^3P$
	197 254	197 145	109		0.81	43 $(^2P)4f\,^3F$ + 22 $(^4S)5f\,^5F$ + 17 $(^4S)5f\,^3F$ + 6 $(^2P)4f\,^3D$
	197 860	197 695	165		0.94	68 $(^4S)5f\,^5F$ + 11 $(^2P)4f\,^3F$ + 7 $(^4S)5f\,^3F$
	203 360	202 682	678		1.10	51 $(^2P)4f\,^3D$ + 16 $(^2D)4f\,^3P$ + 13 $(^4S)5f\,^3F$ + 7 $(^2D)4f\,^1D$
1	9 794	9 739	55		1.50	98 $p^4\,^3P$
	146 781	146 609	173	2.28	2.19	73 $(^4S)6p\,^5P$ + 9 $(^4S)6p\,^3P$ + 6 $(^2P)6p\,^3P$
	150 301	150 097	204	1.59	1.55	57 $(^4S)6p\,^3P$ + 14 $(^4S)6p\,^5P$ + 10 $(^2P)6p\,^1P$ + 6 $(^2D)6p\,^3P$
	158 997	159 349	−352		1.01	38 $(^2D)6p\,^3D$ + 26 $(^2D)6p\,^1P$ + 12 $(^4S)6p\,^3P$ + 5 $(^4S)6p\,^5P$
	164 512	164 853	−341		0.97	41 $(^2D)6p\,^1P$ + 32 $(^2D)6p\,^3D$ + 8 $(^2P)6p\,^3S$ + 6 $(^2P)6p\,^3D$ + 6 $(^2D)6p\,^3P$ + 5 $(^4S)6p\,^3P$
	167 174	166 984	190		0.06	87 $(^4S)4f\,^5F$ + 10 $(^2P)4f\,^3D$
	168 086	168 301	−215		1.42	62 $(^2D)6p\,^3P$ + 12 $(^2D)6p\,^1P$ + 11 $(^4S)6p\,^3P$ + 5 $(^2P)6p\,^3S$
	175 231	175 094	137		0.66	66 $(^2P)6p\,^3D$ + 20 $(^2P)6p\,^1P$ + 6 $(^2D)6p\,^1P$
	178 029	177 703	327		1.40	59 $(^2P)6p\,^3P$ + 18 $(^2P)6p\,^1P$ + 12 $(^2P)6p\,^3S$ + 7 $(^2P)6p\,^3D$
	182 134	181 990	144		1.80	58 $(^2P)6p\,^3S$ + 17 $(^2D)6p\,^3P$ + 11 $(^2P)6p\,^3P$ + 7 $(^2D)6p\,^1P$

Table IV. *Continued*

J	E(obs)	E(calc)	obs − calc	g_J(obs)	g_J(calc)	Percentage composition
	183 473	183 352	121		0.91	70 $(^2D)4f\,^1P$ + 12 $(^2P)4f\,^3D$
	185 888	186 233	−345		0.99	37 $(^2P)6p\,^1P$ + 15 $(^2P)6p\,^3P$ + 14 $(^2D)6p\,^3D$ + 8 $(^2P)6p\,^3D$
	188 793	188 447	345		0.54	92 $(^2D)4f\,^3D$
	189 701	190 482	−780		1.37	79 $(^2D)4f\,^3P$ + 10 $(^2D)4f\,^1P$ + 5 $(^2P)4f\,^3D$
	197 611	197 587	24		0.05	90 $(^4S)5f\,^5F$ + 7 $(^2P)5f\,^3D$
0	8 130	8 271	−141			79 $p^4\,^3P$ + 19 $p^4\,^1S$
	36 103	36 012	91			78 $p^4\,^1S$ + 19 $p^4\,^3P$
	152 808	152 577	231			89 $(^4S)6p\,^3P$ + 6 $(^2P)6p\,^3P$
	165 942	166 239	−297			84 $(^2D)6p\,^3P$ + 13 $(^2P)6p\,^1S$
	178 055	177 654	400			83 $(^2P)6p\,^3P$ + 13 $(^2P)6p\,^1S$
	190 491	190 484	7			67 $(^2P)6p\,^1S$ + 15 $(^2D)6p\,^3P$ + 7 $(^4S)6p\,^3P$ + 6 $(^2P)6p\,^3P$ + 5 $(^2D)4f\,^3P$
		191 529				91 $(^2D)4f\,^3P$
	210 857	210 861	−3			56 $p^4\,^1S$ + 39 $(^1D)5d\,^1S$

[a] No levels of $5s5p^4 5d$ have been established experimentally but the configuration is included in the theoretical treatment of the even configurations (see Section 3.1).

Table V. *Energy parameters (in cm^{-1}) for the $5s^25p^4 + 5s^25p^3(6p + 4f + 5f) + 5s^05p^6 + 5s5p^45d$ configurations of Xe III. Mean error of the least-squares fit $\sigma = [\Sigma(E_{obs} - E_{calc})^2/(N - P)]^{1/2} = 331\ cm^{-1}$ with $N = 73$ known levels and $P = 22$ adjustable parameters*

Parameter	HF(E_{av})	Fitted	Fitted/HF
$5s^25p^4$			
E_{av}		16905 ± 160	
$F^2(5p, 5p)$	50596	43681 ± 1300	0.863 ± 0.026
ζ_{5p}	6626	7995 ± 300	1.207 ± 0.045
$5s^25p^36p$			
E_{av}		167407 ± 70	
$F^2(5p, 5p)$	52840	39889 ± 630	0.755 ± 0.012
$F^2(5p, 6p)$	12549	11964 ± 760	0.953 ± 0.061
$G^0(5p, 6p)$	2072	2007 ± 80	0.969 ± 0.039
$G^2(5p, 6p)$	2982	2443 ± 600	0.819 ± 0.200
ζ_{5p}	7301	8688 ± 150	1.190 ± 0.021
ζ_{6p}	939	1526 ± 120	1.625 ± 0.130
$5s^25p^34f$			
E_{av}		187817 ± 110	
$F^2(5p, 5p)$	51553	38033 ± 720	0.738 ± 0.014
$F^2(5p, 4f)$	29252	24040 ± 900	0.822 ± 0.031
$G^2(5p, 4f)$	22845	18859 ± 720	0.825 ± 0.032
$G^4(5p, 4f)$	15446	9950 ± 920	0.644 ± 0.060
ζ_{5p}	6920	8421 ± 190	1.217 ± 0.027
ζ_{4f}	48	0 ± 60	0.000 ± 1.250
$5s^25p^35f$			
E_{av}		216345 ± 180	
$F^2(5p, 5p)$	52207	41766 (fix)	0.800
$F^2(5p, 5f)$	12582	12582 (fix)	1.0
$G^2(5p, 5f)$	8811	8811 (fix)	1.0
$G^4(5p, 5f)$	6274	6274 (fix)	1.0
ζ_{5p}	7102	7102 (fix)	1.0
ζ_{5f}	33	33 (fix)	1.0
p^6			
E_{av}		251540 ± 590	
$5s5p^45d$			
E_{av}		263000 (fix)	
$F^2(5p, 5p)$	51463	41170 (fix)	0.800
$F^2(5p, 5d)$	36501	36501 (fix)	1.0
$G^1(5s, 5p)$	68320	68320 (fix)	1.0
$G^1(5s, 5d)$	26862	26862 (fix)	1.0
$G^1(5p, 5d)$	41701	41701 (fix)	1.0

Table V. *Continued*

Parameter	HF(E_{av})	Fitted	Fitted/HF
$G^3(5p, 5d)$	25951	25951 (fix)	1.0
ζ_{5p}	6893	6893 (fix)	1.0
ζ_{5d}	381	381 (fix)	1.0
Configuration interaction integrals			
p^4–$6p$			
$R^2(5p5p, 5p6p)$	5419(.349)[a]	5419 (fix)	1.0
p^4 – $4f$			
$R^2(5p5p, 5p4f)$	−32918(−.940)	−32918 (fix)	1.0
p^4–$5f$			
$R^2(5p5p, 5p5f)$	−20304(−.911)	−20304 (fix)	1.0
p^4–$5d$			
$R^1(5s5p, 5p5d)$	51463(.998)	51463 (fix)	1.0
$R^2(5s5p, 5d5p)$	37121(.996)	37121 (fix)	1.0
p^4–p^6			
$R^1(5s5s, 5p5p)$	67375(1.000)	67375 (fix)	1.0
$6p$–$4f$			
$R^2(5p6p, 5p4f)$	3107(.197)	3107 (fix)	1.0
$R^2(5p6p, 4f5p)$	−2428(−.220)	−2428 (fix)	1.0
$6p$–$5f$			
$R^2(5p6p, 5p5f)$	−4503(−.530)	−4503 (fix)	1.0
$R^2(5p6p, 5f5p)$	2450(−.360)	2450 (fix)	1.0
$6p$–$5d$			
$R^1(5s6p, 5p5d)$	7831(.331)	7831 (fix)	1.0
$R^2(5s6p, 5d5p)$	−2443(−.199)	−2443 (fix)	1.0
$4f$–$5f$			
$R^2(5p4f, 5p5f)$	15068(.859)	8670 ± 5160	0.575 ± 0.340
$R^2(5p4f, 5f5p)$	13820(.896)	13159 ± 1584	0.952 ± 0.120
$R^4(5p4f, 5f5p)$	9594(.960)	9594 (fix)	1.0
$4f$–$5d$			
$R^1(5s4f, 5p5d)$	−37462(−.894)	−17636 (fix)	0.471
$R^2(5s4f, 5d5p)$	−24234(−.941)	−24234 (fix)	1.0
$5f$–$5d$			
$R^1(5s5f, 5p5d)$	−16823(−.720)	−7920 (fix)	0.471
$R^2(5s5f, 5d5p)$	−14589(−.910)	−14589 (fix)	1.0
$5d$–p^6			
$R^1(5s5d, 5p5p)$	50988(.998)	50988 (fix)	1.0

[a] The values in parentheses are a measure of the amount of cancellation which occurred in forming the integral. These numbers are the ratio of the true R^k value to an R^k value calculated using the absolute value of each wavefunction.

Table VI. *Comparison between observed and calculated energy-level values (in cm^{-1}) and calculated percentage compositions for the $5s5p^5 + 5s^25p^3(6s + 7s + 5d + 6d)$ configurations of Xe III. Eigenvector components larger than 5% are given. Observed [3] and calculated g_J factors are listed*

J	E(obs)	E(calc)	obs − calc	g_J(obs)	g_J(calc)	Percentage composition
5	132160	132443	−283		1.20	100 $(^2D)5d^3G$
	200472	200436	35		1.20	100 $(^2D)6d^3G$
4	112272	112250	21		1.47	88 $(^4S)5d^5D$ + 10 $(^2P)5d^3F$
	127782	127735	47		1.16	40 $(^2D)5d^3G$ + 27 $(^2D)5d^3F$ + 16 $(^2P)5d^3F$ + 9 $(^2D)5d^1G$ + 7 $(^4S)5d^5D$
	130174	130702	−528		1.20	71 $(^2D)5d^3F$ + 22 $(^2D)5d^3G$
	132712	132800	−88		1.02	73 $(^2D)5d^1G$ + 25 $(^2D)5d^3G$
	148536	148459	76		1.21	70 $(^2P)5d^3F$ + 13 $(^2D)5d^1G$ + 12 $(^2D)5d^3G$
	182716	182754	−37		1.46	85 $(^4S)6d^5D$ + 12 $(^2P)6d^3F$
	196538	196411	127		1.13	42 $(^2D)6d^3G$ + 31 $(^2D)6d^1G$ + 15 $(^2P)6d^3F$ + 10 $(^4S)6d^5D$
	200051	200074	−24		1.06	43 $(^2D)6d^3G$ + 42 $(^2D)6d^1G$ + 15 $(^2D)6d^3F$
	200426	200451	−25		1.21	82 $(^2D)6d^3F$ + 16 $(^2D)6d^1G$
3	111605	111401	204		1.44	80 $(^4S)5d^5D$ + 6 $(^2P)5d^3F$ + 6 $(^2P)5d^3D$
	121230	121363	−133		1.29	37 $(^4S)5d^3D$ + 25 $(^2D)5d^3D$ + 15 $(^4S)5d^5D$ + 6 $(^2D)5d^3G$ + 6 $(^2P)5d^3F$ + 5 $(^2D)5d^3F$
	126120	126121	−1		1.12	58 $(^2D)5d^3F$ + 11 $(^4S)5d^3D$ + 11 $(^2D)5d^3D$ + 10 $(^2P)5d^3F$ + 8 $(^2D)5d^3G$

Table VI. *Continued*

J	E(obs)	E(calc)	obs − calc	g_J(obs)	g_J(calc)	Percentage composition
	128 349	128 385	−35		0.87	66 $(^2D)5d^3G$ + 18 $(^2D)5d^3F$ + 7 $(^4S)5d^5D$
	138 658	139 048	−389	1.33	1.33	83 $(^2D)6s^3D$ + 8 $(^2D)5d^3D$
	143 156	143 110	46	1.22	1.22	38 $(^2D)5d^3D$ + 21 $(^4S)5d^3D$ + 12 $(^2P)5d^3F$ + 10 $(^2D)5d^3G$ + 7 $(^2P)5d^1F$ + 6 $(^2D)6s^3D$
	145 341	145 259	83		1.14	56 $(^2P)5d^3F$ + 11 $(^2P)5d^3D$ + 7 $(^2D)6s^3D$ + 6 $(^2D)5d^3F$ + 6 $(^2D)5d^3D$ + 5 $(^4S)5d^3D$
	148 413	148 691	−278		1.16	42 $(^2D)5d^1F$ + 31 $(^2P)5d^3D$ + 10 $(^4S)5d^3D$
	156 393	156 261	132		1.15	33 $(^2P)5d^3D$ + 32 $(^2P)5d^1F$ + 15 $(^2D)5d^1F$ + 6 $(^2D)5d^3F$ + 5 $(^2D)5d^3D$
	162 958	163 174	−216		1.04	40 $(^2P)5d^1F$ + 35 $(^2D)5d^1F$ + 7 $(^2P)5d^3D$ + 5 $(^4S)5d^3D$ + 5 $(^2D)6d^1F$
	182 464	182 430	34		1.44	79 $(^4S)6d^5D$ + 6 $(^2P)6d^3D$ + 6 $(^2P)6d^3F$
	186 384	186 311	74		1.28	71 $(^4S)6d^3D$ + 9 $(^2P)6d^1F$ + 6 $(^4S)6d^5D$
	196 262	196 304	−42		0.93	58 $(^2D)6d^3G$ + 11 $(^4S)6d^3D$ + 11 $(^2D)6d^3F$ + 8 $(^2P)6d^1F$ + 7 $(^2D)6d^3D$
	196 609	196 640	−31		1.13	43 $(^2D)6d^3F$ + 13 $(^2D)6d^3G$ + 11 $(^2D)6d^3D$ + 9 $(^2P)6d^3D$ + 9 $(^4S)6d^3D$ + 6 $(^2D)6d^1F$ + 6 $(^2P)6d^3F$
	200 033	200 054	−21		1.33	99 $(^2D)7s^3D$
	200 650	200 815	−165		1.25	64 $(^2D)6d^3D$ + 30 $(^2D)6d^3F$
	203 845	203 921	−76		1.04	71 $(^2D)6d^1F$ + 11 $(^2D)6d^3D$ + 5 $(^2D)6d^3G$
2	98 262	98 217	45		1.50	75 $p^5\ ^3P$ + 16 $(^2D)5d^3P$ + 8 $(^2P)5d^3P$
	111 856	111 593	264		1.40	78 $(^4S)5d^5D$ + 6 $(^2P)5d^3D$
	117 240	117 130	110		1.09	27 $(^4S)5d^3D$ + 17 $(^2D)5d^3D$ + 16 $(^2D)5d^3F$ + 15 $(^4S)5d^5D$ + 12 $(^2P)5d^3D$ + 6 $(^2P)5d^3F$
	121 476	121 343	133	1.95	1.93	87 $(^4S)6s^5S$ + 10 $(^2P)6s^3P$
	124 691	124 721	−30		0.86	52 $(^2D)5d^3F$ + 18 $(^2D)5d^3D$ + 16 $(^4S)5d^3D$ + 11 $(^2P)5d^3F$
	134 667	134 767	−99	1.18	1.20	33 $(^2D)6s^3D$ + 20 $(^2D)6s^1D$ + 12 $(^2P)5d^1D$ + 11 $(^2P)6s^3P$ + 6 $(^4S)6s^5S$ + 6 $(^2D)5d^1D$
	136 367	136 137	231	0.90	1.08	22 $(^2D)6s^3D$ + 16 $(^2D)5d^3D$ + 15 $(^2P)5d^1D$ + 15 $(^2D)5d^1D$ + 10 $(^2P)5d^3F$ + 8 $(^2P)5d^3D$
	142 064	141 824	241	1.12	1.17	24 $(^2D)5d^3D$ + 22 $(^4S)5d^3D$ + 18 $(^2P)5d^3D$ + 11 $(^2D)6s^3D$ + 10 $(^2P)5d^1D$ + 6 $(^2P)6s^3P$
	143 048	143 109	−61	0.96	1.02	54 $(^2D)6s^1D$ + 19 $(^2D)6s^3D$ + 12 $(^2P)5d^3F$ + 5 $(^2P)5d^1D$
	145 300	145 112	188	0.81	0.85	50 $(^2P)5d^3F$ + 18 $(^2D)5d^3F$ + 13 $(^2P)5d^3P$ + 8 $(^2D)5d^1D$
	148 370	148 590	−220		1.37	39 $(^2D)5d^3P$ + 14 $p^5\ ^3P$ + 10 $(^2P)5d^3P$ + 9 $(^2D)5d^3D$ + 6 $(^2P)5d^1D$ + 6 $(^2P)5d^3D$
	150 404	150 246	159		1.37	54 $(^2P)5d^3P$ + 12 $(^2D)5d^3P$ + 6 $(^2D)5d^1D$ + 5 $(^2P)6s^3P$
	153 893	153 614	279		1.22	28 $(^2P)5d^3D$ + 12 $(^2D)5d^1D$ + 11 $(^2D)5d^3P$ + 11 $(^2P)6s^3P$ + 10 $(^4S)5d^3D$ + 6 $(^2P)5d^1D$ + 6 $(^2D)5d^3D$
	158 928	159 117	−189		1.41	53 $(^2P)6s^3P$ + 18 $(^2D)5d^3P$ + 8 $(^2D)6s^3D$ + 8 $(^2D)6s^1D$
	161 810	162 283	−473		1.04	39 $(^2D)5d^1D$ + 20 $(^2P)5d^1D$ + 19 $(^2P)5d^3D$ + 7 $(^4S)5d^3D$
	182 338	182 357	−19		1.66	42 $(^4S)6d^5D$ + 41 $(^4S)7s^5S$ + 5 $(^2P)7s^3P$
	182 483	182 450	33		1.69	45 $(^4S)7s^5S$ + 38 $(^4S)6d^5D$ + 6 $(^2P)7s^3P$
	185 121	185 220	−99		1.16	62 $(^4S)6d^3D$ + 10 $(^2P)6d^1D$ + 6 $(^2D)6d^3D$ + 6 $(^4S)6d^5D$
	195 978	195 970	7		0.95	47 $(^2D)6d^3F$ + 11 $(^2D)7s^3D$ + 7 $(^4S)6d^3D$ + 7 $(^2D)6d^1D$
	196 141	196 103	38		1.16	38 $(^2D)7s^3D$ + 20 $(^2D)7s^1D$ + 13 $(^2D)6d^3F$ + 13 $(^2P)7s^3P$ + 7 $(^4S)7s^5S$
	198 492	198 506	−14		1.26	37 $(^2D)6d^3D$ + 22 $(^2D)6d^3P$ + 10 $(^4S)6d^3D$ + 9 $(^2P)6d^3P$
	200 540	200 520	20		1.06	64 $(^2D)7s^1D$ + 34 $(^2D)7s^3D$
	201 512	201 507	5		1.22	44 $(^2D)6d^3D$ + 30 $(^2D)6d^3P$ + 13 $(^2D)6d^1D$ + 6 $(^2D)6d^3F$
	203 376	203 194	183		1.13	54 $(^2D)6d^1D$ + 30 $(^2D)6d^3P$ + 7 $(^2D)6d^3F$
1	103 568	103 639	−71		1.45	62 $p^5\ ^3P$ + 14 $(^2D)5d^3P$ + 8 $(^2P)5d^3P$
	112 450	112 328	122		1.48	87 $(^4S)5d^5D$ + 6 $p^5\ ^3P$
	119 026	118 935	91		1.01	44 $(^2D)5d^1P$ + 28 $p^5\ ^1P$ + 7 $(^2P)5d^3P$ + 7 $p^5\ ^3P$ + 6 $(^4S)5d^3D$
	121 923	122 282	−359		0.60	51 $(^4S)5d^3D$ + 31 $(^2D)5d^3D$ + 5 $(^2P)5d^3D$
	125 617	125 594	23	1.77	1.80	78 $(^4S)6s^3S$ + 7 $(^2P)6s^1P$
	133 234	133 412	−178	0.38	0.65	36 $(^2D)5d^3D$ + 25 $(^2D)6s^3D$ + 22 $(^2P)5d^3D$ + 6 $(^4S)6s^3S$
	138 145	138 128	17	0.50	0.70	49 $(^2D)6s^3D$ + 17 $(^2D)5d^3D$ + 9 $(^2P)5d^3D$ + 6 $(^2P)6s^1P$ + 6 $(^4S)6s^3S$ + 5 $(^4S)5d^3D$
	140 731	140 464	267		1.53	44 $(^2P)5d^3P$ + 19 $(^2D)5d^3S$ + 18 $(^2D)5d^3P$
	147 797	147 630	168		1.70	49 $(^2D)5d^3S$ + 20 $(^2P)6s^3P$ + 18 $(^2D)5d^3P$
	151 482	151 584	−102	1.47	1.46	46 $(^2P)6s^3P$ + 22 $(^2P)6s^1P$ + 15 $(^2D)5d^3S$ + 12 $(^2P)5d^3P$
	154 639	154 546	93		1.30	20 $(^2D)5d^3P$ + 18 $p^5\ ^1P$ + 15 $(^2P)5d^3P$ + 13 $(^2P)6s^1P$ + 9 $(^2D)\ 5d^3S$ + 7 $p^5\ ^3P$ + 7 $(^2D)5d^1P$
	155 401	155 333	68		0.64	45 $(^2P)5d^3D$ + 16 $(^4S)5d^3D$ + 12 $(^2P)5d^1P$ + 8 $(^2D)5d^3D$ + 6 $(^4S)6d^3D$
	159 388	159 126	262		1.20	32 $(^2P)6s^1P$ + 20 $(^2P)6s^3P$ + 14 $(^2D)5d^3P$ + 13 $(^2D)6s^3D$ + 6 $p^5\ ^3P$ + 6 $(^2P)5d^3P$
	163 527	163 844	−316		0.99	33 $(^2D)5d^1P$ + 27 $p^5\ ^1P$ + 10 $(^2P)6s^1P$ + 7 $(^2P)5d^3D$ + 7 $(^2P)5d^3P$
	175 052	174 482	570		0.99	64 $(^2P)5d^1P$ + 8 $p^5\ ^1P$ + 6 $(^2P)6d^1P$ + 5 $(^4S)5d^3D$
	182 551	182 496	55		1.45	85 $(^4S)6d^5D$ + 8 $(^2P)6d^3P$
	183 786	183 795	−9		1.84	84 $(^4S)7s^3S$ + 8 $(^2P)7s^1P$
	186 589	186 645	−56		0.60	76 $(^4S)6d^3D$ + 5 $(^2P)6d^3D$ + 5 $(^2P)6d^1P$
	195 907	195 948	−41		0.77	57 $(^2D)7s^3D$ + 11 $(^2D)6d^3D$ + 8 $(^4S)7s^3S$ + 7 $(^2P)7s^1P$
	196 877	196 881	−5		0.74	45 $(^2D)6d^3D$ + 18 $(^2D)7s^3D$ + 12 $(^2D)6d^1P$
	199 104	199 122	−18		1.58	45 $(^2D)6d^3S$ + 21 $(^2D)6d^3P$ + 10 $(^2P)6d^3P$ + 7 $(^2D)6d^1P$
	202 036	202 066	−31		1.16	46 $(^2D)6d^3P$ + 22 $(^2D)6d^1P$ + 22 $(^2D)6d^3D$
	202 806	202 589	217		1.45	38 $(^2D)6d^3S$ + 37 $(^2D)6d^1P$ + 16 $(^2D)6d^3P$
0	108 334	108 380	−46			55 $p^5\ ^3P$ + 22 $(^4S)5d^5D$ + 12 $(^2D)5d^3P$ + 10 $(^2P)5d^3P$
	112 694	112 591	103			69 $(^4S)5d^5D$ + 20 $p^5\ ^3P$ + 9 $(^2D)5d^3P$
		126 871				85 $(^2D)\ 5d^1S$ + 8 $(^2P)5d^3P$
	140 438	140 556	−118			42 $(^2P)5d^3P$ + 31 $(^2D)5d^3P$ + 12 $(^2D)5d^1S$ + 8 $(^2P)6s^3P$
	150 505	150 324	181			87 $(^2P)6s^3P$ + 10 $(^2P)5d^3P$
	160 734	160 743	−9			43 $(^2D)5d^3P$ + 28 $(^2P)5d^3P$ + 20 $p^5\ ^3P$
	182 522	182 482	40			86 $(^4S)6d^5D$ + 11 $(^2P)6d^3P$
	197 091	197 024	67			58 $(^2D)6d^1S$ + 19 $(^2D)6d^3P$ + 15 $(^2P)6d^3P$ + 8 $(^4S)6d^5D$
	201 618	201 847	−228			62 $(^2D)6d^1P$ + 32 $(^2D)6d^1S$

Table VII. *Energy parameters (in cm^{-1}) for the $5s5p^5 + 5s^25p^3(5d + 6d + 6s + 7s)$ configurations of Xe III. Mean error of the least-squares fit $\sigma = [\Sigma (E_{obs} - E_{calc})^2/(N - P)]^{1/2} = 217\,cm^{-1}$ with $N = 83$ known levels and $P = 30$ adjustable parameters*

Parameter	HF(E_{av})	Fitted	Fitted/HF
p^5			
E_{av}		123 209 ± 430	
$G^1(5s, 5p)$	67 295	47 314 ± 950	0.703 ± 0.014
ζ_{5p}	6 605	7 760 ± 310	1.175 ± 0.047
6s			
E_{av}		140 786 ± 90	
$F^2(5p, 5p)$	52 231	41 089 ± 630	0.787 ± 0.012
$G^1(5p, 6s)$	4 544	3 795 ± 250	0.835 ± 0.055
ζ_{5p}	7 169	8 078 ± 190	1.127 ± 0.027
7s			
E_{av}		200 200 ± 160	
$F^2(5p, 5p)$	52 644	40 033 ± 1320	0.760 ± 0.025
$G^1(5p, 7s)$	1 376	1 072 ± 300	0.779 ± 0.220
ζ_{5p}	7 261	8 072 ± 490	1.112 ± 0.360
5d			
E_{av}		136 928 ± 130	
$F^2(5p, 5p)$	51 522	39 438 ± 440	0.765 ± 0.009
$F^2(5p, 5d)$	35 641	29 232 ± 440	0.820 ± 0.012
$G^1(5p, 5d)$	40 265	28 868 ± 570	0.717 ± 0.014
$G^3(5p, 5d)$	25 050	16 810 ± 560	0.671 ± 0.022
ζ_{5p}	6 933	8 308 ± 100	1.198 ± 0.014
ζ_{5d}	358	467 ± 60	1.304 ± 0.170
6d			
E_{av}		200 589 ± 140	
$F^2(5p, 5p)$	52 621	40 006 ± 630	0.760 ± 0.012
$F^2(5p, 6d)$	8 853	6 757 ± 820	0.763 ± 0.093
$G^1(5p, 6d)$	6 482	2 384 ± 580	0.368 ± 0.089
$G^3(5p, 6d)$	4 400	1 089 ± 710	0.248 ± 0.160
ζ_{5p}	7 239	8 456 ± 240	1.168 ± 0.033
ζ_{6d}	98	161 ± 52	1.643 ± 0.530
Configuration interaction integrals			
p^5–6s			
$R^1(5p5p, 5s6s)$	375(.014)[a]	375 (fix)	1.0
p^5–7s			
$R^1(5p5p, 5s7s)$	−318(−.021)	−318 (fix)	1.0
p^5–5d			
$R^1(5p5p, 5s5d)$	50 086(.998)	33 048 ± 300	0.660 ± 0.006
p^5–6d			
$R^1(5p5p, 5s6d)$	20 212(.919)	16 016 ± 1760	0.792 ± 0.087
6s–7s			
$R^1(5p6s, 7s5p)$	2 426(.370)	2 426 (fix)	1.0
6s–5d			
$R^2(5p6s, 5p5d)$	−9 991(−.507)	−9 991 (fix)	1.0
$R^1(5p6s, 5d5p)$	−2 966(−.141)	−2 966 (fix)	1.0
6s–6d			
$R^2(5p6s, 5p6d)$	3 214(.379)	3 214 (fix)	1.0
$R^1(5p6s, 6d5p)$	271(.031)	271 (fix)	1.0
7s–5d			
$R^2(5p7s, 5p5d)$	−4 994(−.453)	−4 994 (fix)	1.0
$R^1(5p7s, 5d5p)$	−2 042(−.167)	−2 042 (fix)	1.0
7s–6d			
$R^2(5p7s, 5p6d)$	−2 138(−.384)	−2 138 (fix)	1.0
$R^1(5p7s, 6d5p)$	−148(−.029)	−148 (fix)	1.0
5d–6d			
$R^2(5p5d, 5p6d)$	11 112(.756)	11 638 ± 1720	1.047 ± 0.160
$R^1(5p5d, 6d5p)$	15 402(.901)	14 647 ± 1150	0.951 ± 0.075
$R^3(5p5d, 6d5p)$	9 957(.943)	5 000 (fix)	0.502

[a] The values in parentheses are a measure of the amount of cancellation which occurred in forming the integral. These numbers are the ratio of the true R^k value to an R^k value calculated using the absolute value of each wavefunction.

Table VIII. *Comparison between xenon $N_{4,5}OO$ Auger spectrum and optical spectrum of Xe^{2+}. Optical data: Present work. Auger data: L. O. Werme, T. Bergmark and K. Siegbahn [22]*

Auger data			Optical data			Energy difference
Line No.	Intensity	Energy eV	Classification	%$5s5p^5$ ^1P	%$5s5p^5$ ^3P	Optical-Auger eV[a]
1, 3	15, 86	0	$5s^25p^4\ ^3P_2$			0.00
2, 6	43, 39	1.21	$^3P_1$			0.00
–, 5	–, 48	1.00	$^3P_0$			+0.01
4, 7	104, 97	2.12	$^1D_2$			0.00
8, 9	100, 73	4.49	$^1S_0$			0.00
13, 15	11, 7	12.17	$5s5p^5\ ^3P_2$	–	75	+0.01
14, –	10, –	12.85	$^3P_1$	5	62	−0.01
16, 18	62, 80	14.76	$(^2D)5d\ ^1P_1$	28	7	0.00
17, 19	3, 8	15.13	$(^4S)5d\ ^3D_1$	2	1	−0.01
20, 23	7, 11	17.44	$(^2P)5d\ ^3P_1$	2	–	+0.01
22, 25	41, 74	19.17	$(^2D)5d\ ^3P_1$	18	7	0.00
–, 26[b]	–, 31	19.73	$(^2P)6s\ ^1P_1$	1	6	+0.03
24, 27	90, 134	20.27	$5s5p^5\ ^1P_1$	27	2	0.00
26, 28	31, 25	21.70	$(^2P)5d\ ^1P_1$	8	1	0.00
29, 30	107, 133	26.13	$5s^05p^6\ ^1S_0$			+0.01

[a] 1 eV = 8065.545 cm^{-1}.
[b] Doubly classified.

Table IX. *Classification of Xe^{2+} laser lines. Data on laser lines are from Beck et al. [9]*

Laser data		Spontaneous data	
Wavelength	Comment[a]	Intensity	Classification
2477.18	Xe^{2+}?	0	$(^4S)5d\ ^5D_1-(^4S)6p\ ^3P_0$
2691.939			Xe IV[b]
3079.738			
3305.99	Xe^{2+}?		Xe IV[c]
3349.74	Xe^{3+}?	12	$(^2D)6s\ ^3D_2-(^2D)6p\ ^1P_1$
3454.248		16	$(^2D)6s\ ^1D_2-(^2D)6p\ ^1D_2$
3596.61		17	$(^2D)6s\ ^3D_1-(^2D)6p\ ^3P_0$
3669.21			Xe IV[b]
3745.71		18	$(^2P)5d\ ^3F_2-(^2D)6p\ ^1D_2$
3780.990		28	$(^4S)6s\ ^3S_1-(^4S)6p\ ^3P_2$
4050.05		22	$(^4S)6s\ ^3S_1-(^4S)6p\ ^3P_1$
4060.48		25	$(^2P)6s\ ^1P_1-(^2P)6p\ ^1D_2$
4214.01		24	$(^2D)5d\ ^3D_3-(^4S)4f\ ^5F_2$
4240.24		16	$(^2D)5d\ ^1F_3-(^2D)6p\ ^1D_2$
4272.59		17	$(^2D)5d\ ^3D_3-(^2D)6p\ ^3F_4$
4285.88		20	$(^2D)6s\ ^1D_2-(^4S)4f\ ^5F_3$
4413.14		8	$(^2P)5d\ ^3D_1-(^2P)6p\ ^3P_0$
4434.15		15	$(^2D)6s\ ^3D_1-(^2D)6p\ ^3F_2$
4673.68		18a	$(^2D)6s\ ^1D_2-(^2D)6p\ ^1F_3$
4683.54		20	$(^4S)6s\ ^3S_1-(^4S)6p\ ^5P_2$
4723.57		16	$(^4S)6s\ ^3S_1-(^4S)6p\ ^5P_1$
4748.95		18	$(^2P)5d\ ^1F_3-(^2P)6p\ ^1D_2$
4869.46		21	$(^2D)5d\ ^3D_2-(^2D)6p\ ^3F_3$
5238.93		16	$(^2D)5d\ ^3S_1-(^4S)4f\ ^5F_2$
5401.04		17	$(^2D)5d\ ^3P_2-(^4S)4f\ ^5F_2$
5524.42	Xe^{2+}?	8	$(^2P)5d\ ^3D_2-(^2D)6p\ ^1D_2$
6176.6			
6238.24		13	$(^2D)5d\ ^1F_3-(^2D)6p\ ^1F_3$
6343.5			
7148.94			
8571.6			

[a] ? Ionisation stage of laser line uncertain.
[b] Ref. [27].
[c] Ref. [13].