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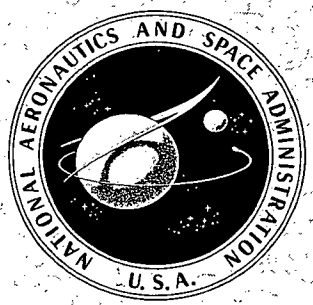
WILLIAMS



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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ATOMIC-EMISSION-LINE WAVELENGTH CALCULATIONS BELOW 2000 ANGSTROMS FOR LITHIUM II THROUGH COBALT XXVI

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FOREWORD

Although spectroscopists and astrophysicists need predictions of spectral wavelengths, no comprehensive tables of such wavelengths have been published. Rather, there have been many limited and often unpublished calculations of predicted lines. This publication is intended to satisfy, at least partially, the need of these scientists and to reduce the duplication in their efforts.

To a large extent, these predicted wavelengths can be credited to the work of a relatively few people who tirelessly catalog identified wavelengths. It is believed that the feedback of these wavelengths will contribute to the progress of their work.

INTRODUCTION

NRL Report 6648 (ref. 1) lists 9386 spectral emission lines with wavelengths less than 2000 angstroms. Since its publication in February 1968, additional emission lines of some of the same elements have been added and the listing has been extended to include emission lines of all elements through iron. The compilation[1] now contains more than 20 800 emission lines with wavelengths less than 2000 angstroms.

These emission-line wavelengths and various other related information have been punched on cards and were used in a computer program to extrapolate and interpolate wavelengths of unlisted lines. The unlisted wavelengths were calculated according to the theory of isoelectronic sequences (ref. 2) by using a second-degree polynomial which was fitted to known wave numbers (reciprocal wavelengths) according to the method of least squares (ref. 3). The program generated 2513 wavelengths for lines of the following ions: Li II; Be I,III,IV; B I to V; C I to III; N I to IV,VI; O I to III,V; F I to IX; Ne II to VIII; Na II to VIII,X; Mg III to IX; Al I,II,IV,VI to XI; Si I to XII,XIV; P I to XIII,XV; S II to VII,X to XIV; Cl I to VIII,XII to XVI; Ar I,III to VII,IX to XI,XIV,XV; K II to XVI,XIX; Ca III to VII,IX,X,XII; Sc III,V to XV; Ti III to XIII; V III to XV; Cr V,VI,VIII to XIII,XVI; Mn VI,IX to XV,XVII,XXIV; Fe V,VII,X to XII,XIV,XV, XVIII; Co VI to XIX,XXVI. The results of the calculations are compiled in this paper.

SYMBOLS

A,B,C,a,b,c	constants
J	total angular momentum
K	multiple of S_l
N	number of samples
R	Rydberg constant
S	parameter representing screening effect due to core electrons of heavy atoms
S_l	standard deviation based on l
s	azimuthal quantum number

[1]Compilation by Raymond L. Kelly, Professor of Physics, U.S. Naval Postgraduate School, Monterey, California.

T	term value
Z	atomic number
λ	wavelength in angstroms
$\Delta\lambda$	wavelength error
σ	wave number

Subscripts:

i	index number
l	number of known wavelengths used to calculate a new wavelength
m,n	principal quantum numbers

Superscript:

o	odd parity

Other notations:

KLAP	storage location in computer program
IND	index number in computer program

METHOD OF CALCULATION

Basically, the program (see appendix) selects wavelengths of the same transition in isoelectronic ions and uses these wavelengths according to empirical quantum mechanical relations to calculate wavelengths for the same transition in other isoelectronic ions.

The Balmer formula and combination principle express wave number (reciprocal of wavelength) as the difference of two terms:

$$\sigma = T_m - T_n = \frac{1}{\lambda}$$

Terms of multielectron ions are related to atomic number Z according to Moseley's expression,

$$T_m = \frac{R(Z - S)^2}{m^2} = A_m Z^2 + B_m Z + C_m$$

Also,

$$T_n = \frac{R(Z - S)^2}{n^2} = A_n Z^2 + B_n Z + C_n$$

Hence,

$$\sigma = \frac{1}{\lambda} = T_m - T_n = aZ^2 + bZ + c$$

This relation shows that for each transition in an isoelectronic sequence the reciprocal of wavelength (ordinate) could be plotted against atomic number (abscissa). A curve plotted through three or more such points would conform closely to a second-degree polynomial and could be used to interpolate and extrapolate wavelengths for other values of Z (other ions).

The computer, however, performs this task without the use of a plot. It calculates the coefficients of a second-degree polynomial which best fits three or more known coordinates according to the method of least squares. The polynomial, in turn, is used to calculate other wavelengths. Wave numbers calculated by the polynomial have the most probable values that can be obtained from the known data by second-order theory.

A fourth-order term which accounts for spin-orbit interaction and a relativistic correction is not given by this theory and was not included in the calculations because it contributes a relatively small correction. It can, however, be the source of a large extrapolation error or a physically inexplicable term requiring special treatment that is impractical for the quantity of data involved here. (See ref. 4.)

PROCEDURES AND RESULTS

One hundred forty-five different groups of data sections were used. Each group consisted of a data section of an ionized element with a relatively low atomic number followed by four data sections of ionized elements with successively higher atomic numbers in the same isoelectronic sequence. The various groups are identified by the element and ionization number of the first data section and are circled in table I. Use of these groups generates wavelengths from 1.474 angstroms through 1954.897 angstroms for Li II through Co XXVI.

From an ion chart,[1] such as shown in table I, it is evident that the groups overlap. For example, the F II group contains three of the same data sections as the Na IV group. It also contains one data section which is contained in the Al VI group. It is therefore possible to obtain as many as three slightly different wavelength calculations for the same spectral line. When two or more such calculations were made, the best calculation was determined by considerations such as (1) the number of known wavelengths used in the calculation, (2) the quality of the polynomial fit, (3) whether a known line has questionable data, and (4) comparative intensities and their modifiers. Use of the grouping pattern shown in table I limited the number of duplicate calculations.

Because of variations in the content and/or format of the compiled data (for example, some configurations omit or displace the $1s^2$ notation; others do not), the program also calculated the wavelengths of some lines that were already in the compiled data. A separate computer program was used to identify such lines. These lines were removed from the list of calculated lines and were used to estimate the error of the calculated lines.

Table II consists of the predicted transitions ordered according to increasing atomic number, ionization stage, and wavelength. Table III is divided into two sections. The first section contains wavelengths that were calculated from four known wavelengths. The second section contains wavelengths that were calculated from three known wavelengths. Both sections are ordered according to increasing wavelength. The data of tables II and III are printed in the same format as that described in the appendix (table V) except that columns 16 to 30 and 72 to 80 are not printed.

ERROR

The program calculated the wavelengths of 560 lines that were already contained in the compiled data. The differences between these wavelengths have been used to estimate the error of the calculated lines.

The standard deviation of the new wavelengths that were generated by three known wavelengths was calculated separately from the new wavelengths that were generated by four known wavelengths. The standard deviations were calculated by the following formula:

$$S_l = \sqrt{\frac{1}{N-1} \sum_{i=1}^{N} \left(\frac{\Delta\lambda_i}{\lambda_i^2} \right)_l^2}$$

[1]Prepared Oct. 1969 by Professor Raymond L. Kelly and used with his permission.

The standard deviation, S_3, for those lines generated by three known wavelengths was 8.24×10^{-5} reciprocal angstroms. There were 399 lines used in the calculation. More than 81 percent of the lines had errors smaller than $0.6745S_3$ (the most probable error in a normal distribution); 86 percent had errors smaller than S_3; 94 percent had errors smaller than $2S_3$; 97.8 percent had errors smaller than $3S_3$.

The standard deviation, S_4, for those lines generated by four known wavelengths was 1.88×10^{-5} reciprocal angstroms. There were 161 lines used in the calculation. Of these lines 87 percent had errors smaller than $0.6745S_4$; 92 percent had errors smaller than S_4; 97.6 percent had errors smaller than $2S_4$.

An estimate of error in angstroms can be obtained by using the formula

$$\Delta\lambda = K\lambda^2$$

where

K an appropriate multiple of S_l

λ wavelength of calculated line in angstroms

Table IV provides a comparison of computed wavelengths with wavelengths taken from published literature. (See refs. 5 to 10.) Generally, shorter wavelengths have greater accuracy.

CONCLUDING REMARKS

Atomic-emission-line wavelengths have been calculated from the wavelengths of previously identified transitions by using the theory of isoelectronic sequences. The wavelengths were calculated in a computer program which used second-degree polynomials that best fit the respective isoelectronic sequences (according to the method of least squares) that the program formed from known transitions.

All possible wavelength predictions from the known data are not included in this publication. Some predicted wavelengths were involuntarily excluded for the following reasons:

(1) Extrapolations were limited to two places at most to insure a reasonable error of calculation.

(2) The grouping pattern was used for speed and efficiency.

(3) The computer program was unable to recognize identical configurations that used inconsistent notations and/or formats.

The loss of predicted wavelengths due to the last two reasons is estimated to be less than 10 percent.

Langley Research Center,
National Aeronautics and Space Administration,
Hampton, Va., September 22, 1971.

APPENDIX

COMPUTER PROGRAM

The program was written in FORTRAN IV language. The following description of its input, operation, and output follows the program sequence closely.

Listed in table V, the first line represents the format of an input data card. The 80 characters and blanks in the line correspond, respectively, to 80 card columns. The type of information stored in the various column areas is explained below the example. (Consult ref. 1 for additional information.) The various quantum mechanical coupling schemes are represented in the term columns by the following notation:

Coupling	Example	Card notation
LS	$^3P^o$	3P*
jK	$\frac{1}{2}\left[\frac{5}{2}\right]^o$	13*K
LK	$F\left[\frac{3}{2}\right]^o$	F2*L
jj	$\left(\frac{1}{2}, \frac{3}{2}\right)^o$	12*J
Literal	21	21 N

In this notation, fractions are represented by the next larger integer. In the punched card data, LS coupling is predominant.

The flow chart and program listing are given in tables VI and VII. The comments at the beginning of the program define many of the program variables. The variables listed there represent information contained in the columns of the data cards. For example, the variable name C3139 stands for columns 31 to 39 and stores information on the lower quantum configuration of the emission line. (The letter M is used instead of C in some instances.)

During the execution of the first part of the program, the information on as many as 600 data cards is read into storage locations. All information on a card is given the same index number and the cards are indexed consecutively. As the cards are read, the program senses when a complete section of data has been read (the data are composed of five sections, for example, Na II, Mg III, Al IV, Si V, and P VI) and stores the first

and last index number of each data section. The first index numbers of sections are represented by N1 to N5 and the last are represented by NA to NE. These index numbers are used subsequently to refer to data of a particular element.

The next part compares the quantum information of each spectral line in the first data section with quantum information of each line in the other sections. If the same transition[1] is found in another section, the index number of the line in that section is stored and immediately the search begins in the next section. The index numbers of the matched transitions are stored in KLAP (IND).

If KLAP (IND) contains three or more index numbers, the third part of the program uses the wavelength information of these indexed lines to calculate the coefficients of a second-degree polynomial that best fits the data according to the method of least squares. This polynomial, in turn, is used to calculate the probable wavelength of any line whose corresponding transition cannot be found in a data section. (For example, if a particular transition is found in Na II, Mg III, and P VI, the wavelengths for that transition in Al IV and Si V will be calculated.) In addition, the polynomial is used to calculate the error of the fit relative to the known wavelengths. As the program proceeds, it prints out the matching index numbers, the transition, and the following information for each of the ions associated with the data sections: (1) ion identification, (2) atomic number, (3) known or calculated wavelength, (4) polynomial fit errors, (5) intensities of known lines, and (6) input data comments. For each new line a card is punched in the format of the input data cards.

If KLAP (IND) does not contain the index numbers of at least three lines, the third part of the program is omitted and the program repeats the comparison process of the second part by using the next transition of the first data section. This process involving the second and third parts of the program is repeated until every transition in the first data section has been compared with the transitions of the other four data sections. At this point the computer, in essence, cycles the data sections (that is, the second data section becomes the first data section, the third becomes second, etc., and the first section becomes the fifth section) and the entire sequence is repeated. The program stops when the data sections have been completely cycled.

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[1]In this program, a transition is described by the upper and lower configurations, terms, J-values, and parent terms. If all this information is given for each of two transitions (of different elements) being compared, it must be identical to be a match. For some transitions, however, the parent terms are not specified. The program will still match these transitions with completely specified transitions if all other quantum numbers match. Whether such a match is erroneous is determined by the fit error and other output data.

Without preventive measures this program would calculate each new line several times instead of once. To prevent this, the quantum identification of a matched transition is altered (statement 203) when its index number is stored. (The quantum identification of the transition in the first data section remains unaltered.)

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TABLE I. - PRESENT STATUS OF OBSERVATION AND ANALYSIS OF ATOMIC SPECTRA

Spectrum Number

		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	XXVII	XXVIII	XXIX	XXX
1	H	(A)																													
2	He	(A)	(A)																												
3	Li	A	(A)	(A)																											
4	Be	(A)	A	c	A																										
5	B	(c)	(B)	(B)	(c)	(A)																									
6	C	(A)	A	A	A	B	A																								
7	N	(A)	(A)	(B)	(A)	(A)	(B)	(A)																							
8	O	(A)	B	A	B	A	B	B	A																						
9	F	(A)	(c)	(B)	(B)	(B)	(B)	(B)	(c)	(A)																					
10	Ne	(B)	A	c	B	B	c	B	B	c	A																				
11	Na	(A)	(B)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(x)	(A)																			
12	Mg	(A)	A	B	B	B	B	B	B	B	c	c	A																		
13	Al	(B)	(A)	(A)	(c)	(B)	(B)	(B)	(B)	(B)	(c)	(c)	x	(A)																	
14	Si	(A)	A	A	A	x	c	c	c	c	c	c	c	x	A																
15	P	(A)	(A)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)		(A)															
16	S	(B)	c	c	c	x	x	x	x	c	c	x	x	x	x		(A)														
17	Cl	(A)	(B)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	x	x	(x)	(c)	(A)												
18	Ar	(A)	A	c	c	c	c	c	c	c	c	c	c	c				x	A												
19	K	(B)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	x	x					(x)	A											
20	Ca	A	B	A	c	c	c	c	c	c	c	c	c	x	x					x	(A)										
21	Sc	(B)	(B)	(c)	(c)	(c)	(B)	(c)	(c)	(c)	(c)	(c)	(c)	(c)						(c)	(x)										
22	Ti	A	(B)	(c)	(c)	(c)	(B)	(B)	(c)	(c)	(c)	(c)	(c)	(c)	(c)						(c)	(x)									
23	V	(B)	(B)	(A)	(B)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)							(x)								
24	Cr	B	B	B	c	x	c	x	c	c	x	x	x	c	c	x	c							x							
25	Mn	A	A	c	B	c	x	c	x	c	c	x	x	x	c	c	x	c							x						
26	Fe	A	B	A	x	c	c	x	c	x	c	c	c	c	x	c	c	x	x	x	x	x			x	x	x				
27	Co	B	c	B	x	x	c	c	x	x	x	x	x			x	x	x	x	x							x				
28	Ni	c	c	B	c	x	x	c	c	x	x	x	x	x	x				c	x	x								x		
29	Cu	A	A	B	x			x			x	x	x							x	x	x							x		
30	Zn	B	B	B	B							x	x	x							x	x								x	
31	Ga	B	B	c	c	c																									
32	Ge	A	A	c	c	c	c																								

Ratings

A Essentially complete

B Many lines and levels

c Some information, possibly old

x Very little information

TABLE II.- CALCULATED LINES

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
LI 2	166.376	1S2	1S 7P	G 1S	1P*	01		
LI 2	167.273	1S2	1S 6P	G 1S	1P*	01		
LI 2	168.773	1S2	1S 5P	G 1S	1P*	01		
LI 2	202.235	1S2	1S 2P	G 1S	3P*	01		
BE 1	1084.565	2S 2P	2P 3P	3P*	3S	11		2P*2
BE 1	1085.234	2S 2P	2P 3P	3P*	3S	01		2P*2
BE 1	1086.069	2S 2P	2P 3P	3P*	3S	21		2P*2
BE 1	1291.136	2P2	2P 3D	1D	1F*	23		2P*2
BE 1	1400.935	2S 2P	2P 3P	3P*	3D	23		2P*2
BE 1	1428.806	2S 2P	2P 3P	3P*	3P	12		2P*2
BE 1	1432.667	2S 2P	2P 3P	3P*	3P	22		2P*2
BE 1	1433.166	2S 2P	2P 3P	3P*	3P	21		2P*2
BE 1	1847.318	2S 2P	2P 4P	1P*	1D	12		2P*2
BE 3	675.578	1S 2P	1S 3D	3P*	3D	23		
BE 4	57.853	1S	8P	G 2S	2P*	12		
BE 4	58.137	1S	7P	G 2S	2P*	12		
B 1	783.803	2S2 2P	2S 2P 3P	G 2P*	2P	22		1P*
B 1	863.549	2S2 2P	2S 2P 3P	G 2P*	2D	12		1P*
B 1	864.137	2S2 2P	2S 2P 3P	G 2P*	2D	23		1P*
B 1	1082.616	2S2 2P	2S 2P 3P	G 2P*	2D	12		3P*
B 1	1085.836	2S2 2P	2S 2P 3P	G 2P*	2D	23		3P*
B 1	1153.965	2S 2P2	2S 2P 3D	2D	2D*	33		1P*
B 1	1166.864	2S2 2P	2S 2P 3P	G 2P*	2P	12		3P*
B 1	1167.621	2S2 2P	2S 2P 3P	G 2P*	2P	11		3P*
B 1	1169.397	2S2 2P	2S 2P 3P	G 2P*	2P	22		3P*
B 1	1170.075	2S2 2P	2S 2P 3P	G 2P*	2P	21		3P*
B 1	1314.892	2S2 2P	2S 2P2	G 2P*	2P	11		
B 1	1425.588	2S 2P2	2S 2P 5D	4P	4D*	34		3P*
B 1	1463.556	2S 2P2	2S 2P 4D	4P	4D*	12		3P*
B 1	1465.454	2S 2P2	2S 2P 4D	4P	4P*	33		3P*
B 1	1467.146	2S 2P2	2S 2P 4D	4P	4P*	21		3P*
B 1	1468.184	2S 2P2	2S 2P 4D	4P	4D*	34		3P*
B 1	1468.535	2S 2P2	2S 2P 4D	4P	4D*	23		3P*
B 1	1476.706	2S 2P2	2S 2P 4D	4P	4P*	32		3P*
B 1	1571.297	2S 2P2	2S 2P 3D	4P	4P*	11		3P*
B 1	1574.152	2S 2P2	2S 2P 3D	4P	4P*	22		3P*
B 1	1581.440	2S 2P2	2S 2P 3D	4P	4P*	12		3P*
B 1	1581.737	2S 2P2	2S 2P 3D	4P	4P*	21		3P*
B 1	1582.686	2S 2P2	2S 2P 3D	4P	4P*	23		3P*
B 1	1583.226	2S 2P2	2S 2P 3D	4P	4P*	32		3P*
B 1	1583.718	2S 2P2	2S 2P 3D	4P	4P*	33		3P*
B 1	1583.755	2S 2P2	2S 2P 4S	4P	4P*	23		3P*
B 1	1607.406	2S 2P2	2S 2P 3D	4P	4D*	12		3P*
B 1	1608.507	2S 2P2	2S 2P 3D	4P	4D*	23		3P*
B 1	1608.814	2S 2P2	2S 2P 3D	4P	4D*	34		3P*
B 1	1609.525	2S 2P2	2S 2P 3D	4P	4D*	33		3P*
B 1	1609.982	2S 2P2	2S 2P 4S	4P	4P*	32		3P*
B 1	1609.992	2S 2P2	2S 2P 4S	4P	4P*	33		3P*
B 1	1666.234	2S 2P2	2S 2P 3D	2P	2D*	12		1P*
B 1	1672.011	2S 2P2	2S 2P 3D	2P	2D*	23		1P*
B 1	1837.385	2P	3D	G 2P*	2D	23		
B 2	544.667	2S2	2S 5P	G 1S	1P*	01		

TABLE II.- CALCULATED LINES – Continued

ION		WAVELENGTH	CONFIGURATION LOWER		CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
B	2	631.735	2S	2P	2P	3P	3P*	3P	12		2P*2
B	2	631.838	2S	2P	2P	3P	3P*	3P	22		2P*2
B	2	631.973	2S	2P	2P	3P	3P*	3P	21		2P*2
B	2	638.759	2S	2P	2S	7D	3P*	3D	23		
B	2	644.564	2S	2P	2P	3P	3P*	3D	22		2P*2
B	2	645.451	2S	2P	2P	3P	3P*	3D	23		2P*2
B	2	652.754	2S	2P	2S	6D	3P*	3D	23		
B	2	652.770	2S	2P	2S	6D	3P*	3D	12		
B	2	676.219	2S	2P	2P	4P	1P*	1D	12		2P*2
B	2	679.901	2S	2P	2S	5D	3P*	3D	12		
B	2	680.245	2S	2P	2S	5D	3P*	3D	23		
B	2	680.693	2S	2P	2S	5D	3P*	3D	01		
B	2	734.999	2S	2P	2S	4D	3P*	3D	01		
B	2	745.016	2P2		2P	5D	3P	3D*	23		2P*2
B	2	806.859	2P2		2P	4D	3P	3D*	23		2P*2
B	2	806.972	2P2		2P	4D	3P	3D*	12		2P*2
B	2	810.661	2S	2P	2P	3P	1P*	1D	12		2P*2
B	2	859.472	2P2		2P	4D	1D	1F*	23		2P*2
B	2	865.729	2P2		2P	3D	1D	1F*	23		2P*2
B	2	883.275	2S	2P	2S	3D	3P*	3D	01		
B	2	987.377	2S	2P	2S	4D	1P*	1D	12		
B	2	987.491	2P2		2P	3D	3P	3D*	12		2P*2
B	2	987.551	2P2		2P	3D	3P	3D*	22		2P*2
B	2	1055.558	2P2		2P	3D	3P	3P*	10		2P*2
B	2	1056.273	2P2		2P	3D	3P	3P*	01		2P*2
B	2	1056.873	2P2		2P	3D	3P	3P*	12		2P*2
B	2	1056.905	2P2		2P	3D	3P	3P*	21		2P*2
B	2	1057.674	2P2		2P	3D	3P	3P*	22		2P*2
B	2	1082.912	2S	2P	2S	3S	3P*	3S	01		
B	2	1211.024	2P2		2P	3S	3P	3P*	12		2P*2
B	2	1211.745	2P2		2P	3S	3P	3P*	11		2P*2
B	2	1211.903	2P2		2P	3S	3P	3P*	22		2P*2
B	2	1212.079	2P2		2P	3S	3P	3P*	10		2P*2
B	2	1213.061	2P2		2P	3S	3P	3P*	01		
B	2	1379.404	2P2		2P	3S	1D	1P*	21		2P*2
B	2	1392.333	2P2		2P	3D	1S	1P*	01		2P*2
B	2	1605.689	2S	2P	2S	3S	1P*	1S	10		

TABLE II.- CALCULATED LINES – Continued

ION		WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
B	2	1618.169	2S 2P	2P2		3P*	3P	11		
B	3	337.254	2S	10P	G	2S	2P*	12		
B	3	339.664	2S	9P	G	2S	2P*	12		
B	3	343.735	2S	8P	G	2S	2P*	12		
B	3	349.505	2S	7P	G	2S	2P*	12		
B	3	359.611	2S	6P	G	2S	2P*	12		
B	3	403.724	2P	10D		2P*	2D	23		
B	3	407.142	2P	9D		2P*	2D	23		
B	3	412.724	2P	8D		2P*	2D	23		
B	3	421.457	2P	7D		2P*	2D	23		
B	3	434.684	2P	6D		2P*	2D	12		
B	3	437.993	2P	6S		2P*	2S	21		
B	3	458.834	2P	5D		2P*	2D	12		
B	3	465.962	2P	5S		2P*	2S	21		
B	3	528.407	2P	4S		2P*	2S	11		
B	3	1596.446	3S	4P		2S	2P*	12		
B	3	1596.546	3S	4P		2S	2P*	11		
B	3	1954.234	3P	4D		2P*	2D	12		
B	3	1954.897	3P	4D		2P*	2D	23		
B	4	48.629	1S2	1S 7P	G	1S	1P*	01		
B	4	384.767	1S 2P	1S 3D		3P*	3D	12		
B	4	385.110	1S 2P	1S 3D		3P*	3D	23		
B	5	37.025	1S	8P	G	2S	2P*	12		
B	5	37.206	1S	7P	G	2S	2P*	12		
C	1	884.402	2S22P2	2S 2P3		1D	1P*	21		
C	1	1105.027	2S22P2	2S 2P3		1D	1D*	22		
C	1	1120.795	2S 2P3	2P4		3D*	3P	10		
C	1	1121.539	2S 2P3	2P4		3D*	3P	21		
C	1	1122.667	2S 2P3	2P4		3D*	3P	22		
C	1	1122.705	2S 2P3	2P4		3D*	3P	32		
C	1	1145.087	2S 2P3	2S 2P2 3D		5S*	5P	21		4P
C	1	1145.272	2S 2P3	2S 2P2 3D		5S*	5P	23		4P
C	1	1145.771	2S 2P3	2S 2P2 3D		5S*	5P	22		4P
C	1	1294.182	2S 2P3	2P4		3P*	3P	21		
C	1	1296.387	2S 2P3	2P4		3P*	3P	22		
C	2	422.288	2S2 2P	2S 2P 3P	G	2P*	2P	22		1P*
C	2	435.721	2S2 2P	2S 2P 3P	G	2P*	2D	12		1P*
C	2	435.808	2S2 2P	2S 2P 3P	G	2P*	2D	23		1P*
C	2	572.062	2S 2P2	2S 2P 3D		2D	2D*	33		1P*
C	2	640.837	2S 2P2	2S 2P 3D		4P	4P*	11		3P*
C	2	641.099	2S 2P2	2S 2P 3D		4P	4P*	22		3P*
C	2	681.747	2S 2P2	2S 2P 4D		2D	2F*	34		3P*
C	2	681.860	2S 2P2	2S 2P 4D		2D	2F*	23		3P*
C	2	719.815	2S 2P2	2S 2P 3D		2P	2D*	12		1P*
C	2	720.333	2S 2P2	2S 2P 3D		2P	2D*	23		1P*
C	2	1033.042	2S 2P2	2S 2P 3S		2D	2P*	32		3P*
C	2	1033.696	2S 2P2	2S 2P 3S		2D	2P*	21		3P*
C	2	1342.821	2S 2P2	2S 2P 3S		2S	2P*	12		3P*
C	2	1344.100	2S 2P2	2S 2P 3S		2S	2P*	11		3P*
C	2	1349.381	2S 2P2	2P3		2S	2P*	12		
C	3	371.053	2S 2P	2S 4D		3P*	3D	01		
C	3	585.568	2P2	2P 3S		3P	3P*	01		

TABLE II.- CALCULATED LINES – Continued

ION		WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
N	1	721.592	2S22P3	2S 2P4	2D*	2P	21		
N	1	722.036	2S22P3	2S 2P4	2D*	2P	32		
N	1	776.549	2S22P3	2S 2P4	2P*	2P	11		
N	1	777.233	2S22P3	2S 2P4	2P*	2P	22		
N	1	881.754	2S22P3	2S 2P4	2P*	2S	21		
N	1	901.929	2S 2P4	2P5	2D	2P*	21		
N	1	904.245	2S 2P4	2P5	2D	2P*	32		
N	1	933.528	2P3	2P2 5D	2D*	2F	34		1D
N	1	937.959	2P3	2P2 4D	2D*	2F	34		1D
N	1	951.300	2P3	2P2 4D	2D*	2D	33		1D
N	1	979.004	2S22P3	2S 2P4	2D*	2D	33		
N	1	981.225	2S22P3	2S 2P4	2D*	2D	22		
N	1	992.327	2P3	2P2 3D	2D*	2D	33		1D
N	1	992.373	2P3	2P2 3D	2D*	2F	34		1D
N	1	993.433	2P3	2P2 3D	2D*	2D	22		1D
N	1	995.513	2P3	2P2 3D	2D*	2P	32		1D
N	1	996.108	2P3	2P2 3D	2D*	2P	21		1D
N	1	1035.857	2P3	2P2 4S	2D*	2D	33		1D
N	1	1044.922	2P3	2P2 4D	2P*	2P	22		1D
N	1	1049.326	2P3	2P2 4D	2P*	2D	23		1D
N	1	1075.931	2S22P3	2S 2P4	2P*	2D	12		
N	1	1082.966	2S22P3	2S 2P4	2P*	2D	23		
N	1	1095.370	2P3	2P2 3D	2P*	2S	21		1D
N	1	1100.069	2P3	2P2 3D	2P*	2D	23		1D
N	1	1103.368	2P3	2P2 3D	2P*	2P	11		1D
N	1	1103.579	2P3	2P2 3D	2P*	2P	22		1D
N	1	1320.104	2S 2P4	2P5	2P	2P*	22		
N	1	1587.581	2S 2P4	2S 2P3 3D	4P	4D*	34		5S*
N	1	1593.658	2S 2P4	2S 2P3 3D	4P	4D*	23		5S*
N	1	1603.098	2S 2P4	2S 2P3 3D	4P	4D*	12		5S*
N	2	391.166	2S22P2	2S 2P2 3P	1D	1F*	23		2D
N	2	391.955	2S22P2	2S 2P2 3P	1D	1D*	22		2D
N	2	431.709	2S22P2	2S 2P2 3P	G 3P	3P*	12		4P
N	2	432.115	2S22P2	2S 2P2 3P	G 3P	3P*	22		4P
N	2	432.736	2S 2P3	2S 2P2 5D	5S*	5P	23		4P
N	2	437.093	2S22P2	2S 2P2 3P	G 3P	3D*	12		4P
N	2	437.151	2S22P2	2S 2P2 3P	G 3P	3D*	23		4P
N	2	437.275	2S22P2	2S 2P2 3P	G 3P	3D*	22		4P
N	2	441.590	2P2	2P 6D	G 3P	3D*	23		
N	2	448.693	2S22P2	2S 2P2 3P	G 3P	3S*	11		4P
N	2	449.015	2S22P2	2S 2P2 3P	G 3P	3S*	21		4P
N	2	453.074	2S 2P3	2S 2P2 4D	5S*	5P	22		4P
N	2	482.873	2S 2P3	2S 2P2 3D	3D*	3P	32		2D
N	2	487.203	2P2	2P 5D	1D	1D*	22		
N	2	495.347	2S 2P3	2S 2P2 3D	3D*	3F	34		2D
N	2	502.648	2S 2P3	2S 2P2 3D	5S*	5D	23		4P
N	2	510.168	2S 2P3	2S 2P2 3D	3D*	3D	33		2D
N	2	515.792	2P2	2P 4D	1D	3F*	22		
N	2	526.782	2S 2P3	2S 2P2 3D	3P*	3P	22		2D
N	2	529.405	2P2	2P 5D	1S	1P*	01		
N	2	534.477	2P2	2P 3D	G 3P	1D*	12		
N	2	536.683	2P2	2P 3D	G 3P	3F*	23		
N	2	559.132	2S 2P3	2S 2P2 3D	3P*	3D	23		2D
N	2	605.490	2P2	2P 4S	1S	1P*	01		
N	2	620.421	2S 2P3	2S 2P2 3S	3D*	3D	33		2D
N	2	645.012	2S 2P3	2S 2P2 3D	3D*	3D	33		4P
N	2	645.349	2S 2P3	2S 2P2 3D	3D*	3D	22		4P
N	2	649.709	2S 2P3	2S 2P2 3D	3D*	3P	32		4P

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
N 2	652.235	2S 2P3	2S 2P2 3D	3D*	3F	34		4P
N 2	652.617	2S 2P3	2S 2P2 3D	3D*	3F	23		4P
N 2	652.947	2S 2P3	2S 2P2 3D	3D*	3F	12		4P
N 2	694.749	2S 2P3	2S 2P2 3S	3P*	3D	23		2D
N 2	725.616	2S 2P3	2S 2P2 3D	3P*	3D	23		4P
N 2	726.103	2S 2P3	2S 2P2 3D	3P*	3D	01		4P
N 2	731.634	2S 2P3	2S 2P2 3D	3P*	3P	22		4P
N 2	787.001	2S 2P3	2P4	3D*	3P	10		
N 2	787.501	2S 2P3	2P4	3D*	3P	21		
N 2	788.436	2S 2P3	2P4	3D*	3P	32		
N 2	788.485	2S 2P3	2P4	3D*	3P	22		
N 2	796.398	2S 2P3	2S 2P2 4S	5S*	5P	23		4P
N 2	911.065	2S 2P3	2P4	3P*	3P	21		
N 2	912.459	2S 2P3	2P4	3P*	3P	22		
N 2	979.782	2S 2P3	2S 2P2 3S	3P*	3P	22		4P
N 2	982.153	2S 2P3	2S 2P2 3S	3P*	3P	10		4P
N 2	982.860	2S 2P3	2S 2P2 3S	3P*	3P	21		4P
N 2	1105.050	2S 2P3	2S 2P2 3D	3S*	3P	12		4P
N 3	268.239	2S 2P2	2P2 3P	4P	4S*	22		3P
N 3	268.333	2S 2P2	2P2 3P	4P	4S*	32		3P
N 3	275.013	2S 2P2	2P2 3P	4P	4D*	34		3P
N 3	276.292	2S 2P2	2P2 3P	4P	4P*	33		3P
N 3	297.591	2S 2P2	2P2 3P	2D	2F*	34		1D
N 3	305.766	2S 2P2	2S 2P 4D	4P	4D*	12		3P*
N 3	351.637	2S 2P2	2S 2P 3D	2D	2F*	34		1P*
N 3	387.553	2P3	2P2 3D	4S*	4P	21		3P
N 3	387.671	2P3	2P2 3D	4S*	4P	22		3P
N 3	387.708	2P3	2P2 3D	4S*	4P	23		3P
N 3	390.731	2S 2P2	2S 2P 3S	2D	2P*	32		1P*
N 3	393.846	2S 2P2	2S 2P 3D	2P	2P*	22		1P*
N 3	399.729	2P3	2P2 3D	2D*	2P	32		1D
N 3	402.308	2P3	2P2 3D	2D*	2F	23		1D
N 3	402.464	2P3	2P2 3D	2D*	2F	34		1D
N 3	407.176	2P3	2P2 3D	2D*	2D	33		1D
N 3	413.998	2S 2P2	2S 2P 4D	2P	2D*	23		3P*
N 3	457.150	2P3	2P2 3S	2D*	2D	33		1D
N 3	458.444	2P3	2P2 3D	2P*	2D	23		1D
N 3	469.104	2P3	2P2 3S	4S*	4P	23		3P
N 3	469.687	2P3	2P2 3S	4S*	4P	22		3P
N 3	509.418	2S 2P2	2S 2P 3D	2P	2P*	22		3P*
N 3	523.047	2P3	2P2 3S	2P*	2D	23		1D
N 3	576.401	2P3	2S 2P 3P	2D*	2P	32		1P*
N 3	660.574	2S 2P2	2S 2P 3S	2P	2P*	22		3P*
N 4	192.003	2S 2P	2S 7D	3P*	3D	23		
N 4	205.904	2S 2P	2S 5D	3P*	3D	01		
N 4	223.711	2S 2P	2S 6D	1P*	1D	12		
N 4	232.444	2S 2P	2S 4S	3P*	3S	21		
N 4	235.799	2S 2P	2S 5D	1P*	1D	12		
N 4	244.350	2P2	2P 4D	1D	1F*	23		2P*2
N 4	270.926	2S 2P	2P 3P	1P*	1D	12		2P*2
N 4	951.321	2S 2P	2P2	1P*	1S	10		
N 6	23.024	1S2	1S 6P	G 1S	1P*	01		
N 6	23.282	1S2	1S 5P	G 1S	1P*	01		
N 6	173.886	1S 2P	1S 3D	3P*	3D	12		

TABLE II.- CALCULATED LINES – Continued

ION		WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
O	1	576.977	2S22P4	2S 2P5	1D	1P*	21		
O	1	644.409	2S22P4	2S 2P5	1S	1P*	01		
O	1	724.627	2P4	2P3 3D	G 3P	3P*	22		2P*
O	1	745.913	2P4	2P3 4S	G 3P	3P*	22		2P*
O	1	803.350	2P4	2P3 3D	G 3P	3D*	23		2D*
O	1	805.795	2P4	2P3 3D	G 3P	3D*	12		2D*
O	1	806.844	2P4	2P3 3D	G 3P	3S*	21		2D*
O	1	910.259	2P4	2P3 3D	1D	1P*	21		2D*
O	2	387.764	2P3	2P2 5D	2D*	2F	34		1D
O	2	418.695	2P3	2P2 4S	G 4S*	4P	21		3P
O	2	432.539	2P3	2P2 4S	2D*	2D	33		1D
O	2	468.749	2P3	2P2 3D	2P*	2P	11		1D
O	2	468.755	2P3	2P2 4S	2D*	2P	21		3P
O	2	574.747	2S 2P4	2S 2P3 3D	4P	4D*	34		5S*
O	2	575.446	2S 2P4	2S 2P3 3D	4P	4D*	23		5S*
O	2	576.110	2S 2P4	2S 2P3 3D	4P	4D*	12		5S*
O	2	661.515	2S 2P4	2P5	2D	2P*	21		
O	2	662.751	2S 2P4	2P5	2D	2P*	32		
O	2	794.980	2S22P3	2S 2P4	2P*	2D	12		
O	2	952.939	2S 2P4	2P5	2P	2P*	22		
O	3	263.594	2P2	2P 4D	G 3P	3P*	10		
O	3	263.627	2P2	2P 4D	G 3P	3P*	11		
O	3	263.765	2P2	2P 4D	G 3P	3P*	21		
O	3	554.903	2S 2P3	2S22P 3P	3D*	3P	21		
O	3	834.220	2S22P2	2S 2P3	G 3P	3D*	11		
O	5	168.131	2S 2P	2P 3P	3P*	3D	22		2P*2
O	5	203.946	2P2	2P 3D	3P	3D*	22		2P*2
O	5	227.565	2P2	2P 3S	3P	3P*	11		2P*2
O	5	227.649	2P2	2P 3S	3P	3P*	10		2P*2
F	1	572.002	2P5	2P4 3D	G 2P*	2D	23		1S
F	1	573.228	2P5	2P4 3D	G 2P*	2D	12		1S
F	1	634.921	2P5	2P4 4D	G 2P*	2P	22		1D
F	1	640.401	2P5	2P4 3D	G 2P*	2D	22		1D
F	1	648.279	2P5	2P4 4D	G 2P*	2D	23		1D
F	1	664.988	2P5	2P4 4D	G 2P*	2P	11		1D
F	1	670.752	2P5	2P4 3D	G 2P*	2P	12		1D
F	1	670.980	2P5	2P4 3S	G 2P*	2S	21		1S
F	1	671.301	2P5	2P4 3D	G 2P*	2P	22		1D
F	1	673.310	2P5	2P4 3S	G 2P*	2S	11		1S
F	1	674.139	2P5	2P4 3D	G 2P*	2D	23		1D
F	1	678.387	2P5	2P4 3D	G 2P*	2P	21		1D
F	1	693.035	2P5	2P4 3D	G 2P*	2S	21		1D
F	1	760.415	2P5	2P4 4D	G 2P*	2P	11		3P
F	1	764.158	2P5	2P4 3D	G 2P*	4P	23		3P
F	1	766.905	2P5	2P4 4D	G 2P*	2P	21		3P
F	1	779.581	2P5	2P4 4D	G 2P*	2D	12		3P
F	1	789.669	2P5	2P4 3D	G 2P*	2P	21		3P
F	1	792.726	2P5	2P4 3D	G 2P*	2P	11		3P
F	1	797.671	2P5	2P4 4S	G 2P*	2P	12		3P

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
F 2	324.629	2P4	2P3 4D	G 3P	3D*	23		2P*
F 2	342.423	2P4	2P3 4D	G 3P	3D*	23		2D*
F 2	351.993	2P4	2P3 3D	G 3P	3D*	12		2P*
F 2	352.264	2P4	2P3 3D	G 3P	3D*	23		2P*
F 2	353.212	2P4	2P3 4D	G 3P	3P*	22		2D*
F 2	353.277	2P4	2P3 4D	G 3P	3P*	12		2D*
F 2	354.850	2P4	2P3 3D	G 3P	3P*	12		2P*
F 2	356.598	2P4	2P3 4D	1D	1F*	23		2P*
F 2	374.957	2P4	2P3 3D	G 3P	3P*	21		2D*
F 2	375.383	2P4	2P3 4D	1D	1P*	21		2D*
F 2	375.745	2P4	2P3 4D	1D	1D*	22		2D*
F 2	376.005	2P4	2P3 4S	G 3P	3D*	23		2D*
F 2	376.024	2P4	2P3 3D	G 3P	3P*	10		2D*
F 2	376.688	2P4	2P3 4D	1D	1F*	23		2D*
F 2	377.638	2P4	2P3 4S	1D	1P*	21		2P*
F 2	378.034	2P4	2P3 3D	G 3P	3D*	01		2D*
F 2	379.851	2P4	2P3 3D	G 3P	3S*	01		2D*
F 2	380.230	2P4	2P3 3D	1D	1P*	21		2P*
F 2	382.891	2P4	2P3 3D	1D	1D*	22		2P*
F 2	392.957	2P4	2P3 4D	G 3P	3D*	01		4S*
F 2	450.129	2P4	2P3 3D	1S	1P*	01		2D*
F 3	220.538	2P3	2P2 5S	G 4S*	4P	23		3P
F 3	223.026	2P3	2P2 4D	G 4S*	4D	21		3P
F 3	224.368	2P3	2P2 4D	G 4S*	4D	23		3P
F 3	244.064	2P3	2P2 4D	2D*	2D	22		3P
F 3	252.356	2S 2P4	2S 2P3 3D	4P	4S*	32		3D*
F 3	253.102	2S 2P4	2S 2P3 3D	4P	4D*	23		3D*
F 3	253.438	2S 2P4	2S 2P3 3D	4P	4D*	12		3D*
F 3	254.458	2S 2P4	2S 2P3 3D	4P	4P*	32		3D*
F 3	254.623	2S 2P4	2S 2P3 3D	4P	4P*	33		3D*
F 3	254.872	2S 2P4	2S 2P3 3D	4P	4P*	21		3D*
F 3	255.971	2P3	2P2 3D	G 4S*	4D	21		3P
F 3	263.287	2P3	2P2 3D	2D*	2F	23		1D
F 4	158.383	2P2	2P 5D	G 3P	3D*	12		
F 4	168.356	2P2	2P 4D	G 3P	3P*	12		
F 4	169.321	2P2	2P 4D	G 3P	3D*	11		
F 4	169.391	2P2	2P 4D	G 3P	3D*	22		
F 4	178.931	2P2	2P 4S	G 3P	3P*	01		
F 4	214.103	2P2	2P 3D	1D	1D*	22		
F 4	219.743	2P2	2P 3D	1D	1P*	21		
F 4	238.670	2S 2P3	2S 2P2 3D	3P*	3D	12		4P
F 4	307.485	2S 2P3	2S 2P2 3S	1P*	1D	12		2D
F 4	419.551	2S2 2P2	2S 2P3	G 3P	3S*	01		
F 5	118.449	2P	6D	G 2P*	2D	12		
F 5	132.221	2S 2P2	2S 2P 4D	4P	4P*	21		3P*
F 5	137.856	2S 2P2	2S 2P 4S	4P	4P*	23		3P*
F 5	166.018	2S 2P2	2S 2P 3D	2P	2P*	11		1P*
F 5	186.860	2S 2P2	2S 2P 3S	4P	4P*	11		3P*
F 5	200.232	2S 2P2	2S 2P 3S	2P	2P*	22		1P*
F 5	200.263	2S 2P2	2S 2P 3S	2P	2P*	11		1P*

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
F 5	768.505	2S 2P2	2P3		2P	2P*	11		
F 6	90.799	2S2	2S	5P	G 1S	1P*	01		
F 6	94.403	2S 2P	2S	6D	3P*	3D	12		
F 6	94.460	2S 2P	2S	6D	3P*	3D	23		
F 6	98.038	2S 2P	2P	4P	3P*	3D	23		
F 6	99.047	2S 2P	2S	5D	3P*	3D	12		
F 6	103.136	2S 2P	2S	6D	1P*	1D	12		
F 6	103.207	2P2	2P	5D	3P	3D*	23		2P*2
F 6	103.223	2P2	2P	5D	3P	3D*	23		
F 6	106.446	2S 2P	2P	4P	1P*	1D	12		2P*2
F 6	106.460	2S 2P	2P	4P	1P*	1D	12		
F 6	108.501	2S 2P	2S	5D	1P*	1D	12		
F 6	108.874	2S 2P	2S	4D	3P*	3D	12		
F 6	112.118	2S 2P	2S	4S	3P*	3S	21		
F 6	113.819	2P2	2P	4D	3P	3D*	12		2P*2
F 6	136.563	2P2	2S	4F	1D	1F*	23		
F 6	145.157	2P2	2P	3D	3P	3P*	11		2P*
F 6	183.743	2P2	2P	3S	1S	1P*	01		2P*2
F 6	189.179	2P2	2P	3S	1S	1P*	01		
F 6	447.229	2S 3P	2S	4D	3P*	3D	01		
F 6	447.342	2S 3P	2S	4D	3P*	3D	12		
F 6	447.559	2S 3P	2S	4D	3P*	3D	23		
F 6	657.226	2S 2P	2P2		1P*	1S	10		
F 7	69.371	2S		10P	G 2S	2P*	12		
F 7	69.975	2S		9P	G 2S	2P*	12		
F 7	70.882	2S		8P	G 2S	2P*	12		
F 7	72.339	2S		7P	G 2S	2P*	12		
F 7	74.513	2S		6P	G 2S	2P*	12		
F 7	75.382	2P		10D	2P*	2D	23		
F 7	76.073	2P		9D	2P*	2D	23		
F 7	77.122	2P		8D	2P*	2D	23		
F 7	78.366	2S		5P	G 2S	2P*	12		
F 7	78.746	2P		7D	2P*	2D	23		
F 7	81.171	2P		6D	2P*	2D	12		
F 7	81.234	2P		6D	2P*	2D	23		
F 7	81.513	2P		6S	2P*	2S	21		
F 7	85.753	2P		5D	2P*	2D	12		
F 7	85.820	2P		5D	2P*	2D	23		
F 7	86.457	2P		5S	2P*	2S	21		
F 7	97.261	2P		4S	2P*	2S	11		
F 7	97.357	2P		4S	2P*	2S	21		
F 7	335.114	3S		4P	2S	2P*	12		
F 7	335.233	3S		4P	2S	2P*	11		
F 7	367.466	3P		4D	2P*	2D	12		
F 7	367.787	3P		4D	2P*	2D	23		
F 7	381.762	3D		4F	2D	2F*	23		
F 7	381.882	3D		4F	2D	2F*	34		
F 8	13.336	1S2	1S	6P	G 1S	1P*	01		
F 9	11.473	1S		7P	G 2S	2P*	12		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NE 2	296.944	2P5	2P4	3D	G 2P*	2D	23		1S
NE 2	297.586	2P5	2P4	3D	G 2P*	2D	12		1S
NE 2	303.666	2P5	2P4	4D	G 2P*	2P	22		1D
NE 2	304.415	2P5	2P4	4D	G 2P*	2D	23		1D
NE 2	306.492	2P5	2P4	4D	G 2P*	2P	11		1D
NE 2	320.193	2P5	2P4	5D	G 2P*	2D	23		3P
NE 2	324.120	2P5	2P4	3D	G 2P*	2D	22		1D
NE 2	327.739	2P5	2P4	3D	G 2P*	2P	21		1D
NE 2	327.784	2P5	2P4	3D	G 2P*	2P	12		1D
NE 2	330.932	2P5	2P4	4D	G 2P*	4P	12		3P
NE 2	331.108	2P5	2P4	4D	G 2P*	2P	21		3P
NE 2	355.961	2P5	2P4	3D	G 2P*	4D	23		3P
NE 2	356.690	2P5	2P4	3D	G 2P*	4D	12		3P
NE 3	195.652	2P4	2P3	4D	G 3P	3D*	23		2P*
NE 3	204.037	2P4	2P3	4D	G 3P	3D*	23		2D*
NE 3	204.427	2P4	2P3	4D	G 3P	3D*	12		2D*
NE 3	205.126	2P4	2P3	4D	G 3P	3P*	22		2D*
NE 3	205.328	2P4	2P3	4D	G 3P	3P*	12		2D*
NE 3	207.099	2P4	2P3	4D	1D	1F*	23		2P*
NE 3	208.190	2P4	2P3	4S	G 3P	3P*	22		2P*
NE 3	215.651	2P4	2P3	4D	1D	1F*	23		2D*
NE 3	215.682	2P4	2P3	4D	1D	1D*	22		2D*
NE 3	215.944	2P4	2P3	4D	1D	1P*	21		2D*
NE 3	217.726	2P4	2P3	3D	G 3P	3D*	23		2P*
NE 3	217.990	2P4	2P3	3D	G 3P	3D*	12		2P*
NE 3	218.275	2P4	2P3	3D	G 3P	3P*	22		2P*
NE 3	218.469	2P4	2P3	4S	G 3P	3D*	23		2D*
NE 3	218.743	2P4	2P3	3D	G 3P	3P*	12		2P*
NE 3	219.908	2P4	2P3	4S	1D	1P*	21		2P*
NE 3	223.085	2P4	2P3	4D	G 3P	3D*	23		4S*
NE 3	223.242	2P4	2P3	4D	G 3P	3D*	01		4S*
NE 3	223.392	2P4	2P3	4D	G 3P	3D*	12		4S*
NE 3	227.307	2P4	2P3	3D	G 3P	3S*	21		2D*
NE 3	227.381	2P4	2P3	3D	G 3P	3P*	21		2D*
NE 3	227.493	2P4	2P3	3D	G 3P	3P*	22		2D*
NE 3	227.693	2P4	2P3	3D	G 3P	3P*	11		2D*
NE 3	227.765	2P4	2P3	3D	G 3P	3P*	10		2D*
NE 3	227.800	2P4	2P3	3D	G 3P	3P*	12		2D*
NE 3	227.890	2P4	2P3	3D	G 3P	3P*	01		2D*
NE 3	228.304	2P4	2P3	3D	G 3P	3S*	01		2D*
NE 3	228.892	2P4	2P3	3D	G 3P	3D*	23		2D*
NE 3	229.177	2P4	2P3	3D	G 3P	3D*	12		2D*
NE 3	229.381	2P4	2P3	3D	G 3P	3D*	01		2D*
NE 3	230.113	2P4	2P3	4S	1D	1D*	22		2D*
NE 3	230.268	2P4	2P3	3D	1D	1F*	23		2P*
NE 3	230.768	2P4	2P3	3D	1D	1P*	21		2P*
NE 3	231.302	2P4	2P3	3D	1D	1D*	22		2P*
NE 3	238.031	2P4	2P3	4S	G 3P	3S*	21		4S*
NE 3	238.373	2P4	2P3	4S	G 3P	3S*	11		4S*
NE 3	240.803	2P4	2P3	3D	1D	1F*	23		2D*
NE 3	241.517	2P4	2P3	3D	1D	1D*	22		2D*
NE 3	241.931	2P4	2P3	3D	1D	1P*	21		2D*
NE 3	260.861	2P4	2P3	3D	1S	1P*	01		2D*
NE 3	376.648	2S22P4	2S 2P5		1D	1P*	21		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NE 4	140.234	2P3	2P2 5D	G 4S*	4P	22		3P
NE 4	140.283	2P3	2P2 5D	G 4S*	4P	23		3P
NE 4	142.793	2P3	2P2 5D	2D*	2D	33		1D
NE 4	148.629	2P3	2P2 4D	G 4S*	4D	21		3P
NE 4	148.955	2P3	2P2 4D	G 4S*	4D	23		3P
NE 4	153.339	2P3	2P2 5D	2P*	2D	23		3P
NE 4	159.783	2S22P3	2S 2P3 3P	G 4S*	4P	23		5S*
NE 4	164.893	2P3	2P2 4D	2P*	2P	11		3P
NE 4	164.996	2P3	2P2 4D	2P*	2P	22		3P
NE 4	172.755	2P3	2P2 3D	G 4S*	4D	21		3P
NE 4	172.854	2S 2P4	2S 2P3 3D	4P	4S*	32		3D*
NE 4	172.862	2P3	2P2 3D	G 4S*	4D	23		3P
NE 4	173.246	2S 2P4	2S 2P3 3D	4P	4D*	23		3D*
NE 4	173.382	2S 2P4	2S 2P3 3D	4P	4D*	12		3D*
NE 4	173.926	2S 2P4	2S 2P3 3D	4P	4P*	32		3D*
NE 4	173.981	2S 2P4	2S 2P3 3D	4P	4P*	33		3D*
NE 4	174.119	2S 2P4	2S 2P3 3D	4P	4P*	21		3D*
NE 4	176.045	2P3	2P2 3D	2D*	2D	22		1D
NE 4	177.008	2P3	2P2 3D	2D*	2F	23		1D
NE 4	185.758	2P3	2P2 3D	2D*	2F	23		3P
NE 4	212.899	2P3	2P2 3S	2D*	2D	22		1D
NE 4	220.980	2P3	2P2 3S	2D*	2P	22		3P
NE 4	240.782	2S 2P4	2S 2P3 3S	2D	2D*	33		3D*
NE 5	106.291	2P2	2P 6D	G 3P	3D*	23		
NE 5	108.945	2S 2P3	2S 2P2 5D	5S*	5P	23		4P
NE 5	110.146	2P2	2P 5D	G 3P	3D*	12		
NE 5	110.373	2P2	2P 5D	G 3P	3D*	23		
NE 5	110.422	2P2	2P 5D	G 3P	3P*	22		
NE 5	113.709	2P2	2P 5D	1D	1F*	23		
NE 5	114.280	2P2	2P 5D	1D	1D*	22		
NE 5	117.164	2S 2P3	2S 2P2 4D	5S*	5P	22		4P
NE 5	117.546	2P2	2P 4D	G 3P	3P*	12		
NE 5	118.280	2P2	2P 5D	1S	1P*	01		
NE 5	118.398	2P2	2P 4D	G 3P	3D*	11		
NE 5	118.452	2P2	2P 4D	G 3P	3D*	22		
NE 5	118.663	2P2	2P 4D	G 3P	3P*	10		
NE 5	118.677	2P2	2P 4D	G 3P	3P*	11		
NE 5	118.764	2P2	2P 4D	G 3P	3P*	21		
NE 5	118.887	2P2	2P 4D	G 3P	3D*	01		
NE 5	119.000	2P2	2P 4D	G 3P	3D*	12		
NE 5	119.072	2S 2P3	2S 2P2 4D	3D*	3F	34		2D
NE 5	123.952	2P2	2P 4D	1D	3F*	22		
NE 5	124.186	2P2	2P 4S	G 3P	3P*	12		
NE 5	124.314	2P2	2P 4S	G 3P	3P*	10		
NE 5	124.388	2P2	2P 4S	G 3P	3P*	21		
NE 5	124.582	2P2	2P 4S	G 3P	3P*	01		
NE 5	125.072	2S22P2	2S 2P2 3P	1D	1D*	22		2D
NE 5	125.776	2S22P2	2S 2P2 3P	1D	1F*	23		2D
NE 5	127.698	2P2	2P 4D	1S	1P*	01		
NE 5	129.457	2S 2P3	2S 2P2 4D	3D*	3D	33		4P
NE 5	129.919	2S 2P3	2S 2P2 4D	3D*	3F	34		4P
NE 5	129.996	2S 2P3	2S 2P2 4D	3D*	3F	23		4P
NE 5	130.148	2S 2P3	2S 2P2 4D	3D*	3F	12		4P
NE 5	130.719	2S22P2	2S 2P2 3P	G 3P	3P*	12		4P

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NE 5	130.837	2S22P2	2S 2P2 3P	G 3P	3P*	22		4P
NE 5	131.956	2S22P2	2S 2P2 3P	G 3P	3D*	12		4P
NE 5	132.008	2S22P2	2S 2P2 3P	G 3P	3D*	23		4P
NE 5	132.086	2S22P2	2S 2P2 3P	G 3P	3D*	22		4P
NE 5	134.812	2P2	2P 4S	1S	1P*	01		
NE 5	135.724	2S22P2	2S 2P2 3P	G 3P	3S*	11		4P
NE 5	135.860	2S22P2	2S 2P2 3P	G 3P	3S*	21		4P
NE 5	142.347	2P2	2P 3D	G 3P	3P*	01		
NE 5	142.582	2P2	2P 3D	G 3P	3P*	12		
NE 5	142.678	2S 2P3	2S 2P2 3D	3D*	3D	33		2D
NE 5	143.271	2P2	2P 3D	G 3P	3D*	11		
NE 5	143.401	2P2	2P 3D	G 3P	3D*	22		
NE 5	143.413	2S 2P3	2S 2P2 3D	3D*	3P	32		2D
NE 5	144.407	2S 2P3	2S 2P2 3D	3D*	3F	34		2D
NE 5	144.687	2P2	2P 3D	G 3P	1D*	12		
NE 5	144.928	2P2	2P 3D	G 3P	3F*	23		
NE 5	149.529	2S 2P3	2S 2P2 3D	3P*	3D	23		2D
NE 5	150.375	2S 2P3	2S 2P2 3D	3P*	3P	22		2D
NE 5	151.430	2P2	2P 3D	1D	3F*	22		
NE 5	156.134	2S 2P3	2S 2P2 3D	3D*	3D	33		4P
NE 5	156.196	2S 2P3	2S 2P2 3D	3D*	3D	22		4P
NE 5	158.608	2S 2P3	2S 2P2 3D	3D*	3F	34		4P
NE 5	158.743	2S 2P3	2S 2P2 3D	3D*	3F	23		4P
NE 5	158.842	2S 2P3	2S 2P2 3D	3D*	3F	12		4P
NE 5	159.931	2S 2P3	2S 2P2 3D	3D*	3P	21		4P
NE 5	159.986	2S 2P3	2S 2P2 3D	3D*	3P	32		4P
NE 5	162.048	2S 2P3	2S 2P2 3D	1D*	1F	23		2D
NE 5	164.459	2S 2P3	2S 2P2 3D	3P*	3D	23		4P
NE 5	164.538	2S 2P3	2S 2P2 3D	3P*	3D	01		4P
NE 5	164.635	2S 2P3	2S 2P2 3D	3P*	3D	12		4P
NE 5	166.767	2S 2P3	2S 2P2 3S	3D*	3D	33		2D
NE 5	167.892	2P2	2P 3S	G 3P	3P*	11		
NE 5	168.721	2S 2P3	2S 2P2 3D	3P*	3P	22		4P
NE 5	171.270	2S 2P3	2S 2P2 3D	1P*	1D	12		2D
NE 5	175.775	2S 2P3	2S 2P2 3S	3P*	3D	23		2D
NE 5	183.740	2S 2P3	2S 2P2 3S	3D*	3P	32		4P
NE 5	183.743	2S 2P3	2S 2P2 3S	3D*	3P	21		4P
NE 5	184.112	2S 2P3	2S 2P2 3S	3D*	3P	10		4P
NE 5	191.029	2S 2P3	2S 2P2 3S	1D*	1D	22		2D
NE 5	191.786	2S 2P3	2S 2P2 3D	3S*	3P	12		4P
NE 5	204.592	2S 2P3	2S 2P2 3S	1P*	1D	12		2D
NE 5	210.198	2S 2P3	2S22P 3P	3D*	3P	32		
NE 5	210.433	2S 2P3	2S22P 3P	3D*	3P	21		
NE 5	214.641	2S 2P3	2S22P 3P	3D*	3D	33		
NE 5	230.521	2S 2P3	2S22P 3P	3P*	3D	23		
NE 5	230.921	2S 2P3	2S22P 3P	3P*	3D	12		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NE 6	86.074	2P	6D	G 2P*	2D	12		
NE 6	86.171	2P	6D	G 2P*	2D	23		
NE 6	89.065	2S 2P2	2S 2P 5D	4P	4D*	34		3P*
NE 6	89.944	2P	5D	G 2P*	2D	12		
NE 6	90.049	2P	5D	G 2P*	2D	23		
NE 6	96.973	2S 2P2	2S 2P 4D	4P	4P*	33		3P*
NE 6	97.028	2S 2P2	2S 2P 4D	4P	4D*	12		3P*
NE 6	97.085	2S 2P2	2S 2P 4D	4P	4P*	32		3P*
NE 6	97.087	2S 2P2	2S 2P 4D	4P	4D*	23		3P*
NE 6	97.106	2S 2P2	2S 2P 4D	4P	4D*	34		3P*
NE 6	98.105	2P	4D	G 2P*	2D	12		
NE 6	98.234	2P	4D	G 2P*	2D	23		
NE 6	100.444	2S 2P2	2S 2P 4S	4P	4P*	23		3P*
NE 6	100.607	2S 2P2	2S 2P 4S	4P	4P*	33		3P*
NE 6	101.077	2S 2P2	2S 2P 4S	4P	4P*	32		3P*
NE 6	101.240	2S2 2P	2S 2P 3P	G 2P*	2P	22		1P*
NE 6	101.456	2S2 2P	2S 2P 3P	G 2P*	2D	12		1P*
NE 6	101.578	2S2 2P	2S 2P 3P	G 2P*	2D	23		1P*
NE 6	101.786	2P	4S	G 2P*	2S	11		
NE 6	101.787	2S 2P2	2P2 3P	4P	4S*	22		3P
NE 6	101.855	2S 2P2	2P2 3P	4P	4S*	32		3P
NE 6	101.903	2P	4S	G 2P*	2S	21		
NE 6	103.306	2S 2P2	2P2 3P	4P	4P*	33		3P
NE 6	104.111	2S 2P2	2P2 3P	4P	4D*	34		3P
NE 6	104.130	2S 2P2	2S 2P 4D	2D	2F*	34		3P*
NE 6	104.201	2S 2P2	2S 2P 4D	2D	2F*	23		3P*
NE 6	105.229	2S 2P2	2S 2P 4D	2D	2D*	33		3P*
NE 6	107.611	2S 2P2	2P2 3P	2D	2D*	33		1D
NE 6	109.084	2S 2P2	2P2 3P	2D	2F*	23		1D
NE 6	109.127	2S 2P2	2P2 3P	2D	2F*	34		1D
NE 6	109.368	2S2 2P	2S 2P 3P	G 2P*	2S	11		3P*
NE 6	111.017	2S2 2P	2S 2P 3P	G 2P*	2D	12		3P*
NE 6	113.429	2S 2P2	2S 2P 4D	2P	2D*	23		3P*
NE 6	114.095	2S2 2P	2S 2P 3P	G 2P*	2P	12		3P*
NE 6	114.143	2S2 2P	2S 2P 3P	G 2P*	2P	11		3P*
NE 6	114.305	2S2 2P	2S 2P 3P	G 2P*	2P	21		3P*
NE 6	117.484	2S 2P2	2S 2P 3D	2D	2D*	33		1P*
NE 6	118.634	2S 2P2	2S 2P 3D	2D	2F*	34		1P*
NE 6	120.151	2S 2P2	2S 2P 3D	4P	4P*	11		3P*
NE 6	120.187	2S 2P2	2S 2P 3D	4P	4P*	12		3P*
NE 6	120.205	2S 2P2	2S 2P 3D	4P	4P*	21		3P*
NE 6	120.242	2S 2P2	2S 2P 3D	4P	4P*	22		3P*
NE 6	120.288	2S 2P2	2S 2P 3D	4P	4P*	23		3P*
NE 6	120.335	2S 2P2	2S 2P 3D	4P	4P*	32		3P*
NE 6	120.386	2S 2P2	2S 2P 3D	4P	4P*	33		3P*
NE 6	121.078	2S 2P2	2S 2P 3D	4P	4D*	12		3P*
NE 6	121.121	2S 2P2	2S 2P 3D	4P	4D*	23		3P*
NE 6	121.219	2S 2P2	2S 2P 3D	4P	4D*	33		3P*
NE 6	125.132	2S 2P2	2S 2P 3D	2S	2P*	12		1P*
NE 6	126.128	2P3	2P2 3D	4S*	4P	21		3P
NE 6	126.144	2S 2P2	2S 2P 3D	2P	2P*	11		1P*
NE 6	126.149	2P3	2P2 3D	4S*	4P	22		3P
NE 6	126.206	2P3	2P2 3D	4S*	4P	23		3P
NE 6	127.428	2S 2P2	2S 2P 3D	2P	2P*	22		1P*
NE 6	127.680	2P3	2P2 3D	2D*	2P	32		1D
NE 6	128.070	2S 2P2	2S 2P 3D	2P	2D*	12		1P*
NE 6	128.170	2S 2P2	2S 2P 3D	2P	2D*	23		1P*
NE 6	128.214	2P3	2P2 3D	2D*	2F	34		1D
NE 6	128.235	2P3	2P2 3D	2D*	2F	23		1D
NE 6	129.786	2P3	2P2 3D	2D*	2D	33		1D

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NE 6	130.259	2S 2P2	2S 2P 3D	2D	2F*	34		3P*
NE 6	130.398	2S 2P2	2S 2P 3D	2D	2F*	23		3P*
NE 6	131.382	2S 2P2	2S 2P 3S	2D	2P*	32		1P*
NE 6	133.493	2S 2P2	2S 2P 3D	2D	2D*	33		3P*
NE 6	133.526	2S 2P2	2S 2P 3D	2D	2D*	22		3P*
NE 6	136.199	2S 2P2	2S 2P 3S	4P	4P*	23		3P*
NE 6	136.268	2S 2P2	2S 2P 3S	4P	4P*	12		3P*
NE 6	136.440	2S 2P2	2S 2P 3S	4P	4P*	21		3P*
NE 6	136.479	2S 2P2	2S 2P 3S	4P	4P*	32		3P*
NE 6	138.313	2P3	2P2 3D	2P*	2D	23		1D
NE 6	138.568	2S 2P2	2S 2P 3D	2S	2P*	11		3P*
NE 6	138.614	2S 2P2	2S 2P 3D	2S	2P*	12		3P*
NE 6	140.910	2S 2P2	2S 2P 3S	2S	2P*	12		1P*
NE 6	142.608	2P3	2P2 3S	4S*	4P	23		3P
NE 6	142.735	2P3	2P2 3S	4S*	4P	22		3P
NE 6	143.551	2P3	2P2 3S	2D*	2D	33		1D
NE 6	144.628	2S 2P2	2S 2P 3S	2P	2P*	11		1P*
NE 6	144.754	2S 2P2	2S 2P 3S	2P	2P*	22		1P*
NE 6	147.355	2S 2P2	2S 2P 3D	2P	2D*	12		3P*
NE 6	147.481	2S 2P2	2S 2P 3D	2P	2D*	23		3P*
NE 6	147.589	2S 2P2	2S 2P 3S	2D	2P*	32		3P*
NE 6	147.792	2S 2P2	2S 2P 3S	2D	2P*	21		3P*
NE 6	154.104	2P3	2P2 3S	2P*	2D	23		1D
NE 6	159.062	2P3	2S 2P 3P	2D*	2P	32		1P*
NE 6	159.828	2S 2P2	2S 2P 3S	2S	2P*	12		3P*
NE 6	160.052	2S 2P2	2S 2P 3S	2S	2P*	11		3P*
NE 6	164.856	2S 2P2	2S 2P 3S	2P	2P*	22		3P*
NE 6	168.705	2S 2P2	2S2 3P	2D	2P*	32		
NE 6	168.799	2S 2P2	2S2 3P	2D	2P*	21		
NE 6	553.578	2S 2P2	2P3	2D	2D*	22		
NE 6	553.688	2S 2P2	2P3	2D	2D*	33		
NE 6	571.263	2S 2P2	2P3	2S	2P*	12		
NE 6	641.922	2S 2P2	2P3	2P	2P*	22		
NE 6	913.894	2S 2P2	2P3	2P	2D*	23		
NE 7	69.117	2S2	2S 5P	G 1S	1P*	01		
NE 7	70.994	2S 2P	2S 6D	3P*	3D	12		
NE 7	71.049	2S 2P	2S 6D	3P*	3D	23		
NE 7	74.481	2S 2P	2S 5D	3P*	3D	12		
NE 7	74.611	2S 2P	2S 5D	3P*	3D	23		
NE 7	77.309	2P2	2P 5D	3P	3D*	23		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NE 7	80.573	2S 2P	2P	4P	1P*	1D	12		
NE 7	82.182	2S 2P	2S	4D	3P*	3D	01		
NE 7	82.207	2S 2P	2S	4D	3P*	3D	12		
NE 7	85.438	2P2	2P	4D	3P	3D*	23		
NE 7	94.262	2S 2P	2P	3P	3P*	3P	11		
NE 7	94.269	2S 2P	2P	3P	3P*	3P	12		
NE 7	94.385	2S 2P	2P	3P	3P*	3P	21		
NE 7	94.825	2S 2P	2P	3P	3P*	3S	01		
NE 7	94.867	2S 2P	2P	3P	3P*	3S	11		
NE 7	95.896	2S 2P	2P	3P	3P*	3D	11		
NE 7	95.933	2S 2P	2P	3P	3P*	3D	22		
NE 7	103.145	2S 2P	2P	3P	1P*	1D	12		
NE 7	106.039	2S 2P	2S	3D	3P*	3D	01		
NE 7	109.778	2P2	2P	3D	3P	3P*	11		2P*
NE 7	110.553	2P2	2P	3D	3P	3D*	01		
NE 7	110.590	2P2	2P	3D	3P	3D*	12		
NE 7	110.704	2P2	2P	3D	3P	3D*	22		
NE 7	115.333	2S 2P	2S	3S	3P*	3S	01		
NE 7	120.222	2P2	2P	3S	3P	3P*	12		
NE 7	120.304	2P2	2P	3S	3P	3P*	01		
NE 7	120.368	2P2	2P	3S	3P	3P*	11		
NE 7	120.456	2P2	2P	3S	3P	3P*	10		
NE 7	141.260	2P2	2S	3P	1D	1P*	21		
NE 7	974.022	2S 2P	2P2		1P*	1D	12		
NE 8	62.300	2P		6D	2P*	2D	12		
NE 8	65.821	2P		5D	2P*	2D	12		
NE 8	66.321	2P		5S	2P*	2S	21		
NE 8	73.483	2P		4D	2P*	2D	12		
NE 8	74.544	2P		4S	2P*	2S	11		
NE 8	88.120	2S		3P	G 2S	2P*	11		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NA 2	270.052	2P6	2P5 6D	G 1S	12*K	01		2P*
NA 2	271.059	2P6	2P5 6D	G 1S	22*K	01		2P*
NA 2	273.445	2P6	2P5 5D	G 1S	12*K	01		2P*
NA 2	275.448	2P6	2P5 5D	G 1S	22*K	01		2P*
NA 2	281.285	2P6	2P5 4D	G 1S	12*K	01		2P*
NA 2	282.058	2P6	2P5 4D	G 1S	22*K	01		2P*
NA 2	300.098	2P6	2P5 4S	G 1S	11*K	01		2P*
NA 2	300.986	2P6	2P5 3D	G 1S	12*K	01		2P*
NA 2	301.216	2P6	2P5 4S	G 1S	22*K	01		2P*
NA 2	301.912	2P6	2P5 3D	G 1S	21*K	01		2P*
NA 2	372.540	2P6	2P5 3S	G 1S	11*K	01		2P*
NA 2	376.745	2P6	2P5 3S	G 1S	22*K	01		2P*
NA 3	182.459	2P5	2P4 4D	G 2P*	2S	21		1D
NA 3	186.271	2P5	2P4 5D	G 2P*	2D	23		3P
NA 3	193.613	2P5	2P4 4D	G 2P*	4P	23		3P
NA 3	193.919	2P5	2P4 4D	G 2P*	2D	22		3P
NA 3	194.145	2P5	2P4 4D	G 2P*	2D	12		3P
NA 3	194.573	2P5	2P4 4D	G 2P*	2P	11		3P
NA 3	194.991	2P5	2P4 4D	G 2P*	4P	12		3P
NA 3	201.600	2P5	2P4 3D	G 2P*	2S	21		1D
NA 3	206.882	2P5	2P4 4S	G 2P*	2P	21		3P
NA 3	207.303	2P5	2P4 4S	G 2P*	2P	22		3P
NA 3	207.468	2P5	2P4 4S	G 2P*	2P	11		3P
NA 3	207.860	2P5	2P4 4S	G 2P*	2P	12		3P
NA 3	214.730	2P5	2P4 3D	G 2P*	2F	23		3P
NA 3	215.589	2P5	2P4 3D	G 2P*	4D	23		3P
NA 3	215.625	2P5	2P4 3D	G 2P*	4P	21		3P
NA 3	216.065	2P5	2P4 3D	G 2P*	4D	12		3P
NA 3	273.069	2P5	2P4 3S	G 2P*	4P	23		3P
NA 3	273.426	2P5	2P4 3S	G 2P*	4P	12		3P
NA 3	284.523	2S 2P6	2S 2P5 3S	2S	2P*	11		3P*
NA 3	284.814	2S 2P6	2S 2P5 3S	2S	2P*	12		
NA 4	132.392	2P4	2P3 4D	G 3P	3P*	22		2P*
NA 4	138.189	2P4	2P3 5D	G 3P	3D*	23		4S*
NA 4	150.274	2P4	2P3 3D	G 3P	3D*	22		2P*
NA 4	150.685	2P4	2P3 3D	G 3P	3P*	21		2P*
NA 4	150.903	2P4	2P3 3D	G 3P	3P*	11		2P*
NA 4	150.944	2P4	2P3 3D	G 3P	3P*	10		2P*
NA 4	155.412	2P4	2P3 3D	G 3P	3S*	11		2D*
NA 4	155.721	2P4	2P3 3D	G 3P	3P*	11		2D*
NA 4	189.157	2S 2P5	2S 2P4 3S	3P*	3D	23		2D
NA 4	190.478	2P4	2P3 3S	G 3P	3D*	22		2D*
NA 4	215.809	2S 2P5	2S 2P4 3S	3P*	3P	22		4P
NA 5	99.194	2P3	2P2 5D	G 4S*	4P	22		3P
NA 5	99.233	2P3	2P2 5D	G 4S*	4P	23		3P
NA 5	101.754	2P3	2P2 5S	G 4S*	4P	23		3P
NA 5	106.063	2P3	2P2 4D	G 4S*	4P	21		3P
NA 5	106.651	2P3	2P2 5D	2P*	2D	23		3P
NA 5	107.687	2P3	2P2 4D	2D*	2P	32		1D
NA 5	110.677	2P3	2P2 4D	2P*	2P	22		1D
NA 5	111.753	2P3	2P2 4S	G 4S*	4P	23		3P
NA 5	115.648	2P3	2P2 4D	2P*	2P	11		3P
NA 5	115.724	2P3	2P2 4D	2P*	2P	22		3P
NA 5	121.508	2P3	2P2 4S	2P*	2P	11		3P

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NA 5	131.651	2P3	2P2 3D	2P*	2D	12		1D
NA 5	151.615	2P3	2P2 3S	2D*	2D	22		1D
NA 5	154.426	2P3	2P2 3S	2D*	2P	22		3P
NA 5	332.362	2S22P3	2S 2P4	2P*	2P	21		
NA 5	333.622	2S22P3	2S 2P4	2P*	2P	12		
NA 5	401.231	2S22P3	2S 2P4	2D*	2D	22		
NA 6	91.436	2P2	2P 4S	G 3P	3P*	10		
NA 6	91.510	2P2	2P 4S	G 3P	3P*	21		
NA 6	93.676	2P2	2P 4D	1S	1P*	01		
NA 6	94.726	2P2	2P 4S	1D	1P*	21		
NA 6	107.663	2P2	2P 3D	G 3P	3D*	11		
NA 6	113.133	2P2	2P 3D	1D	3F*	22		
NA 6	124.036	2P2	2P 3S	G 3P	3P*	10		
NA 6	141.128	2S 2P3	2S 2P2 3S	3P*	3P	10		4P
NA 6	152.014	2S 2P3	2S22P 3P	3D*	3D	33		
NA 6	160.933	2S 2P3	2S22P 3P	3P*	3D	23		
NA 6	161.233	2S 2P3	2S22P 3P	3P*	3D	12		
NA 6	416.231	2S22P2	2S 2P3	G 3P	3P*	10		
NA 7	74.312	2S 2P2	2S 2P 4D	4P	4P*	32		3P*
NA 7	77.196	2S 2P2	2S 2P 4S	4P	4P*	32		3P*
NA 7	77.258	2P	4S	G 2P*	2S	11		
NA 7	79.745	2S2 2P	2S 2P 3P	G 2P*	2P	22		1P*
NA 7	79.921	2S 2P2	2S 2P 4D	2D	2D*	33		3P*
NA 7	85.320	2S2 2P	2S 2P 3P	G 2P*	2S	11		3P*
NA 7	92.764	2S 2P2	2S 2P 3D	4P	4P*	11		3P*
NA 7	96.337	2S 2P2	2S 2P 3D	2S	2P*	12		1P*
NA 7	107.025	2S 2P2	2S 2P 3S	2S	2P*	12		1P*
NA 7	124.526	2S 2P2	2S2 3P	2D	2P*	21		
NA 7	378.737	2S2 2P	2S 2P2	G 2P*	2S	11		
NA 7	492.200	2S2 2P	2S 2P2	G 2P*	2D	22		
NA 7	499.528	2S 2P2	2P3	2S	2P*	12		
NA 7	557.456	2S 2P2	2P3	2P	2P*	22		
NA 7	786.993	2S 2P2	2P3	2P	2D*	23		
NA 7	869.629	2S2 2P	2S 2P2	G 2P*	4P	12		
NA 7	874.827	2S2 2P	2S 2P2	G 2P*	4P	11		
NA 7	885.299	2S2 2P	2S 2P2	G 2P*	4P	22		
NA 7	890.686	2S2 2P	2S 2P2	G 2P*	4P	21		
NA 8	58.213	2S 2P	2S 5D	3P*	3D	23		
NA 8	74.993	2S 2P	2P 3P	3P*	3P	12		
NA 8	93.249	2P2	2P 3S	3P	3P*	11		
NA 8	494.431	2S 2P	2P2	3P*	3P	01		
NA 8	496.165	2S 2P	2P2	3P*	3P	11		
NA 8	498.123	2S 2P	2P2	3P*	3P	10		
NA 8	499.966	2S 2P	2P2	3P*	3P	21		
NA 8	849.800	2S 2P	2P2	1P*	1D	12		
NA10	8.979	1S2	1S 4P	G 1S	1P*	01		
NA10	9.434	1S2	1S 3P	G 1S	1P*	01		
NA10	63.606	1S 2P	1S 3D	3P*	3D	23		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
MG 3	161.091	2P6	2P5 6D	G 1S	12*K	01		2P*
MG 3	164.282	2P6	2P5 5D	G 1S	12*K	01		2P*
MG 3	171.247	2P6	2P5 4D	G 1S	22*K	01		2P*
MG 4	132.194	2P5	2P4 4S	G 2P*	2D	23		1D
MG 4	147.640	2P5	2P4 3D	G 2P*	4P	21		3P
MG 4	147.697	2P5	2P4 3D	G 2P*	4P	23		3P
MG 4	189.755	2S 2P6	2S 2P5 3S	2S	2P*	11		3P*
MG 4	189.998	2S 2P6	2S 2P5 3S	2S	2P*	12		
MG 4	320.893	2S22P5	2S 2P6	G 2P*	2S	21		
MG 4	323.252	2S22P5	2S 2P6	G 2P*	2S	11		
MG 5	98.185	2P4	2P3 4D	G 3P	3S*	21		2D*
MG 5	98.367	2P4	2P3 4D	G 3P	3S*	11		2D*
MG 5	111.558	2P4	2P3 3D	G 3P	3P*	01		2P*
MG 5	115.017	2P4	2P3 3D	1D	1F*	23		2P*
MG 5	137.483	2P4	2P3 3S	G 3P	3D*	22		2D*
MG 6	83.144	2P3	2P2 4D	2D*	2D	33		3P
MG 6	83.174	2P3	2P2 4D	2D*	2D	22		3P
MG 6	83.926	2P3	2P2 4S	G 4S*	4P	21		3P
MG 6	85.206	2P3	2P2 4D	2P*	2D	12		3P
MG 6	87.423	2P3	2P2 4S	2D*	2P	21		3P
MG 6	116.989	2P3	2P2 3S	2P*	2D	23		1D
MG 6	320.132	2S 2P4	2P5	2D	2P*	21		
MG 6	322.710	2S 2P4	2P5	2D	2P*	32		
MG 6	348.962	2S22P3	2S 2P4	2D*	2D	22		
MG 6	440.745	2S 2P4	2P5	2P	2P*	22		
MG 7	84.058	2S 2P3	2S 2P2 3D	3D*	3D	33		2D
MG 7	87.223	2S 2P3	2S 2P2 3D	3P*	3P	22		2D
MG 7	320.384	2S 2P3	2P4	3D*	3P	10		
MG 7	320.693	2S22P2	2S 2P3	1S	1P*	01		
MG 7	321.244	2S 2P3	2P4	3D*	3P	21		
MG 7	323.244	2S 2P3	2P4	3D*	3P	32		
MG 7	323.370	2S 2P3	2P4	3D*	3P	22		
MG 7	371.187	2S 2P3	2P4	3P*	3P	21		
MG 7	374.023	2S 2P3	2P4	3P*	3P	22		
MG 7	431.334	2S22P2	2S 2P3	G 3P	3D*	11		
MG 8	58.609	2S 2P2	2S 2P 4D	4P	4P*	33		3P*
MG 8	341.927	2S 2P2	2P3	2D	2P*	32		
MG 8	342.071	2S 2P2	2P3	2D	2P*	21		
MG 8	352.602	2S 2P2	2P3	4P	4S*	12		
MG 8	354.014	2S 2P2	2P3	4P	4S*	22		
MG 8	780.217	2S2 2P	2S 2P2	G 2P*	4P	23		
MG 9	74.062	2P2	2P 3D	1S	1P*	01		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
AL 1	1883.180	3S2 3P	3S 3P2	G 2P*	2S	11		
AL 1	1891.063	3S2 3P	3S 3P2	G 2P*	2S	21		
AL 2	1762.359	2P63P2	2P63P 3D	3P	3D*	12		2P*
AL 2	1764.142	2P63P2	2P63P 3D	3P	3D*	11		2P*
AL 2	1764.217	2P63P2	2P63P 3D	3P	3D*	01		2P*
AL 2	1768.663	2P63P2	2P63P 3D	3P	3D*	22		2P*
AL 2	1771.032	2P63P2	2P63P 3D	3P	3D*	23		2P*
AL 2	1779.257	2P63P2	2P63P 3D	3P	3D*	21		2P*
AL 4	130.357	2P6	2P5 3D	G 1S	22*K	01		2P*
AL 6	69.767	2P4	2P3 5D	G 3P	3D*	23		2D*
AL 6	76.399	2P4	2P3 4S	G 3P	3P*	22		2P*
AL 7	58.367	2P3	2P2 5D	2D*	2D	33		1D
AL 7	62.392	2P3	2P2 4D	G 4S*	4P	21		3P
AL 7	62.863	2P3	2P2 4D	2D*	2P	32		1D
AL 7	63.028	2P3	2P2 4D	2D*	2D	33		1D
AL 7	64.789	2P3	2P2 4D	2D*	2F	23		3P
AL 7	65.304	2P3	2P2 4S	G 4S*	4P	21		3P
AL 7	65.757	2P3	2P2 4S	2D*	2D	33		1D
AL 7	67.502	2P3	2P2 4S	2D*	2P	21		3P
AL 7	69.027	2P3	2P2 4S	2P*	2P	22		3P
AL 7	95.079	2S 2P4	2S 2P3 3S	2D	2D*	33		3D*
AL 7	240.517	2S22P3	2S 2P4	2D*	2P	22		
AL 7	283.545	2S 2P4	2P5	2D	2P*	21		
AL 7	286.472	2S 2P4	2P5	2D	2P*	32		
AL 7	386.582	2S 2P4	2P5	2P	2P*	22		
AL 8	49.414	2S 2P3	2S 2P2 5D	5S*	5P	23		4P
AL 8	49.763	2P2	2P 5D	G 3P	3P*	22		
AL 8	50.761	2P2	2P 5D	1D	1F*	23		
AL 8	54.210	2P2	2P 4D	G 3P	3P*	22		
AL 8	54.421	2S 2P3	2S 2P2 4D	3D*	3F	34		2D
AL 8	55.308	2P2	2P 4D	1D	1F*	23		
AL 8	55.720	2P2	2P 4D	1D	1D*	22		
AL 8	57.336	2S 2P3	2S 2P2 4D	3D*	3D	33		4P
AL 8	57.588	2S 2P3	2S 2P2 4D	3D*	3F	12		4P
AL 8	63.433	2S22P2	2S 2P2 3P	G 3P	3P*	12		4P
AL 8	63.546	2S22P2	2S 2P2 3P	G 3P	3P*	22		4P
AL 8	67.118	2S 2P3	2S 2P2 3D	5S*	5D	23		4P
AL 8	67.500	2S 2P3	2S 2P2 3D	3D*	3P	32		2D
AL 8	68.753	2P2	2P 3D	1D	1P*	21		
AL 8	71.241	2S 2P3	2S 2P2 3D	3D*	3D	33		4P
AL 8	71.276	2S 2P3	2S 2P2 3D	3D*	3D	22		4P
AL 8	72.794	2S 2P3	2S 2P2 3D	3D*	3P	21		4P
AL 8	72.924	2S 2P3	2S 2P2 3D	3D*	3P	32		4P
AL 8	73.404	2S 2P3	2S 2P2 3D	1D*	1F	23		2D
AL 8	76.012	2S 2P3	2S 2P2 3D	1P*	1D	12		2D
AL 8	81.326	2S 2P3	2S 2P2 3D	3S*	3P	12		4P
AL 8	83.737	2S 2P3	2S 2P2 3S	3P*	3P	10		4P
AL 8	87.165	2S 2P3	2S22P 3P	3D*	3P	32		
AL 8	87.295	2S 2P3	2S22P 3P	3D*	3P	21		
AL 8	247.366	2S22P2	2S 2P3	G 3P	3S*	01		
AL 8	248.448	2S22P2	2S 2P3	G 3P	3S*	11		
AL 8	286.072	2S 2P3	2P4	3D*	3P	10		
AL 8	287.080	2S 2P3	2P4	3D*	3P	21		
AL 8	287.627	2S22P2	2S 2P3	1S	1P*	01		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
AL 8	289.423	2S 2P3	2P4	3D*	3P	32		
AL 8	289.544	2S 2P3	2P4	3D*	3P	22		
AL 8	323.873	2S22P2	2S 2P3	G 3P	3P*	01		
AL 8	325.599	2S22P2	2S 2P3	G 3P	3P*	12		
AL 8	331.428	2S 2P3	2P4	3P*	3P	21		
AL 8	334.709	2S 2P3	2P4	3P*	3P	22		
AL 8	381.480	2S22P2	2S 2P3	G 3P	3D*	01		
AL 8	384.128	2S22P2	2S 2P3	G 3P	3D*	11		
AL 8	387.927	2S22P2	2S 2P3	G 3P	3D*	22		
AL 9	43.263	2S 2P2	2S 2P 5D	4P	4D*	34		3P*
AL 9	43.440	2P	5D	G 2P*	2D	12		
AL 9	47.445	2S 2P2	2S 2P 4D	4P	4D*	23		3P*
AL 9	48.894	2S 2P2	2S 2P 4S	4P	4P*	33		3P*
AL 9	49.083	2P	4S	G 2P*	2S	21		
AL 9	49.928	2S 2P2	2S 2P 4D	2D	2F*	23		3P*
AL 9	56.344	2S 2P2	2P2 3P	2D	2F*	34		1D
AL 9	56.368	2S 2P2	2P2 3P	2D	2F*	23		1D
AL 9	60.261	2S 2P2	2S 2P 3D	4P	4P*	23		3P*
AL 9	62.955	2P3	2P2 3D	2D*	2F	34		1D
AL 9	66.259	2S 2P2	2S 2P 3D	2S	2P*	11		3P*
AL 9	66.729	2P3	2P2 3D	2P*	2D	23		1D
AL 9	68.648	2P3	2P2 3S	2D*	2D	33		1D
AL 9	69.143	2S 2P2	2S 2P 3D	2P	2D*	12		3P*
AL 9	280.470	2S2 2P	2S 2P2	G 2P*	2P	12		
AL 9	282.673	2S2 2P	2S 2P2	G 2P*	2P	11		
AL 9	286.505	2S2 2P	2S 2P2	G 2P*	2P	21		
AL 9	300.781	2S2 2P	2S 2P2	G 2P*	2S	11		
AL 9	305.163	2S2 2P	2S 2P2	G 2P*	2S	21		
AL 9	307.361	2S 2P2	2P3	2D	2P*	32		
AL 9	307.440	2S 2P2	2P3	2D	2P*	21		
AL 9	317.259	2S 2P2	2P3	4P	4S*	12		
AL 9	318.914	2S 2P2	2P3	4P	4S*	22		
AL 9	321.177	2S 2P2	2P3	4P	4S*	32		
AL 9	702.422	2S2 2P	2S 2P2	G 2P*	4P	23		
AL10	39.627	2S 2P	2P 4P	3P*	3D	23		
AL10	39.904	2S2	2S 4P	G 1S	1P*	01		
AL10	40.433	2S 2P	2S 5D	1P*	1D	12		
AL10	42.322	2S 2P	2S 4D	3P*	3D	01		
AL10	42.413	2S 2P	2S 4D	3P*	3D	23		
AL10	43.561	2P2	2P 4D	3P	3D*	23		
AL10	50.742	2S 2P	2P 3P	3P*	3P	11		
AL10	50.920	2S 2P	2P 3P	3P*	3S	01		
AL10	56.611	2P2	2P 3D	3P	3P*	01		
AL10	56.648	2P2	2P 3D	3P	3P*	10		
AL10	56.717	2P2	2P 3D	3P	3P*	12		
AL10	56.948	2P2	2P 3D	3P	3D*	01		
AL10	59.110	2P2	2P 3D	1D	1D*	22		
AL10	59.888	2P2	2P 3D	1S	1P*	01		
AL10	60.630	2P2	2P 3S	3P	3P*	12		
AL10	60.648	2P2	2P 3S	3P	3P*	01		
AL10	60.787	2P2	2P 3S	3P	3P*	10		
AL10	60.928	2P2	2P 3S	1D	1P*	21		
AL10	65.281	2P2	2P 3S	1S	1P*	01		
AL10	395.766	2S 2P	2P2	3P*	3P	12		
AL10	637.607	2S2	2S 2P	G 1S	3P*	01		
AL11	36.694	2S	4P	G 2S	2P*	12		
AL11	39.094	2P	4D	2P*	2D	12		
AL11	549.888	2S	2P	G 2S	2P*	12		
AL11	568.771	2S	2P	G 2S	2P*	11		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
SI 1	1742.893	3S23P2	3S23P 3D	G 3P	3D*	23		2P*
SI 2	1221.641	3S 3P2	3S 3P 3D	4P	4D*	32		3P*
SI 3	1138.903	2P63P2	2P63P 3D	3P	3D*	01		2P*
SI 3	1139.394	2P63P2	2P63P 3D	3P	3D*	12		2P*
SI 3	1140.139	2P63P2	2P63P 3D	3P	3D*	11		2P*
SI 3	1142.791	2P63P2	2P63P 3D	3P	3D*	23		2P*
SI 3	1143.017	2P63P2	2P63P 3D	3P	3D*	22		2P*
SI 3	1145.164	2P63P2	2P63P 3D	3P	3D*	21		2P*
SI 3	1148.141	2P63P2	2P63P 3D	3P	3P*	10		2P*
SI 3	1158.846	2P63P2	2P63P 3D	3P	3P*	21		2P*
SI 3	1161.522	2P63P2	2P63P 3D	3P	3P*	12		2P*
SI 3	1165.611	2P63P2	2P63P 3D	3P	3P*	22		2P*
SI 4	405.341	3P	7S	2P*	2S	21		
SI 5	83.316	2P6	2P5 5S	G 1S	22*K	01		2P*
SI 6	69.078	2P5	2P4 4D	G 2P*	2P	22		1D
SI 6	69.613	2P5	2P4 4D	G 2P*	2P	11		1D
SI 6	71.003	2P5	2P4 4D	G 2P*	2P	22		3P
SI 7	58.626	2P4	2P3 4D	G 3P	3P*	12		2D*
SI 7	60.008	2P4	2P3 4D	1D	1D*	22		2D*
SI 7	60.943	2P4	2P3 4D	G 3P	3D*	01		4S*
SI 7	61.564	2P4	2P3 4S	1D	1P*	21		2P*
SI 7	63.787	2P4	2P3 4S	G 3P	3S*	21		4S*
SI 7	63.947	2P4	2P3 4S	G 3P	3S*	11		4S*
SI 7	69.677	2P4	2P3 3D	G 3P	3S*	01		2D*
SI 7	70.332	2P4	2P3 3D	G 3P	3D*	01		2D*
SI 7	246.066	2S22P4	2S 2P5	1S	1P*	01		
SI 8	46.582	2P3	2P2 5D	2D*	2F	34		1D
SI 8	50.085	2P3	2P2 4D	G 4S*	4D	21		3P
SI 8	50.136	2P3	2P2 4D	G 4S*	4D	23		3P
SI 8	50.329	2P3	2P2 4D	2D*	2F	34		1D
SI 8	51.427	2P3	2P2 4D	2P*	2D	23		1D
SI 8	61.328	2S 2P4	2S 2P3 3D	4P	4S*	32		3D*
SI 8	61.509	2S 2P4	2S 2P3 3D	4P	4D*	23		3D*
SI 8	61.583	2S 2P4	2S 2P3 3D	4P	4D*	12		3D*
SI 8	61.677	2S 2P4	2S 2P3 3D	4P	4P*	32		3D*
SI 8	61.714	2S 2P4	2S 2P3 3D	4P	4P*	33		3D*
SI 8	61.793	2S 2P4	2S 2P3 3D	4P	4P*	21		3D*
SI 8	62.846	2P3	2P2 3D	2P*	2P	11		1D
SI 8	64.226	2P3	2P2 3D	2D*	2P	21		3P
SI 8	65.773	2P3	2P2 3D	2P*	2P	11		3P
SI 8	69.496	2P3	2P2 3S	2P*	2S	21		
SI 8	76.298	2S 2P4	2S 2P3 3S	4P	4S*	12		5S*
SI 8	250.994	2S22P3	2S 2P4	2P*	2S	21		
SI 8	277.140	2S22P3	2S 2P4	2D*	2D	33		
SI 9	43.911	2S 2P3	2S 2P2 4D	5S*	5P	22		4P
SI 9	43.940	2S 2P3	2S 2P2 4D	5S*	5P	23		4P
SI 9	46.694	2S 2P3	2S 2P2 4D	3D*	3F	34		4P
SI 9	46.774	2S 2P3	2S 2P2 4D	3D*	3F	23		4P
SI 9	52.917	2S22P2	2S 2P2 3P	G 3P	3D*	22		4P
SI 9	53.879	2S22P2	2S 2P2 3P	G 3P	3S*	11		4P
SI 9	55.032	2P2	2P 3D	G 3P	3P*	01		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
SI 9	55.165	2P2	2P 3D	G 3P	3P*	12		
SI 9	55.465	2P2	2P 3D	G 3P	3D*	22		
SI 9	56.199	2S 2P3	2S 2P2 3D	3P*	3S	21		2D
SI 9	59.986	2S 2P3	2S 2P2 3D	3P*	3D	12		4P
SI 9	60.002	2S 2P3	2S 2P2 3D	3P*	3D	01		4P
SI 9	61.732	2P2	2P 3S	G 3P	3P*	11		
SI 9	64.941	2S 2P3	2S 2P2 3S	3D*	3P	32		4P
SI 9	65.085	2S 2P3	2S 2P2 3S	3D*	3P	21		4P
SI 9	66.548	2S 2P3	2S 2P2 3S	1D*	1D	22		2D
SI 9	67.199	2S 2P3	2S 2P2 3S	3P*	3P	22		4P
SI 9	67.358	2S 2P3	2S 2P2 3S	3P*	3P	21		4P
SI 9	68.950	2S 2P3	2S 2P2 3S	1P*	1D	12		2D
SI 9	227.376	2S22P2	2S 2P3	1D	1P*	21		
SI 9	341.905	2S22P2	2S 2P3	G 3P	3D*	01		
SI10	35.934	2P	5D	G 2P*	2D	23		
SI10	39.306	2S 2P2	2S 2P 4D	4P	4D*	34		3P*
SI10	39.426	2P	4D	G 2P*	2D	12		
SI10	39.512	2P	4D	G 2P*	2D	23		
SI10	41.023	2S 2P2	2S 2P 4D	2D	2F*	34		3P*
SI10	44.900	2S 2P2	2P2 3P	4P	4S*	22		3P
SI10	44.965	2S 2P2	2P2 3P	4P	4S*	32		3P
SI10	45.603	2S 2P2	2P2 3P	4P	4P*	33		3P
SI10	45.664	2S 2P2	2P2 3P	4P	4D*	34		3P
SI10	46.571	2S 2P2	2P2 3P	2D	2D*	33		1D
SI10	49.981	2S 2P2	2S 2P 3D	4P	4P*	12		3P*
SI10	50.013	2S 2P2	2S 2P 3D	4P	4P*	21		3P*
SI10	50.036	2S 2P2	2S 2P 3D	4P	4P*	22		3P*
SI10	50.122	2S 2P2	2S 2P 3D	4P	4P*	32		3P*
SI10	50.394	2S 2P2	2S 2P 3D	4P	4D*	33		3P*
SI10	51.312	2S 2P2	2S 2P 3D	2P	2P*	11		1P*
SI10	51.433	2S 2P2	2S 2P 3D	2P	2P*	22		1P*
SI10	51.608	2P3	2P2 3D	4S*	4P	21		3P
SI10	54.879	2P	3S	G 2P*	2S	11		
SI10	55.080	2P	3S	G 2P*	2S	21		
SI10	56.527	2P3	2P2 3S	4S*	4P	23		3P
SI10	56.543	2S 2P2	2S 2P 3S	2P	2P*	11		1P*
SI10	56.599	2P3	2P2 3S	4S*	4P	22		3P
SI10	57.304	2S 2P2	2S 2P 3S	2D	2P*	21		3P*
SI10	59.949	2S 2P2	2S 2P 3S	2S	2P*	12		3P*
SI10	60.090	2S 2P2	2S 2P 3S	2S	2P*	11		3P*
SI10	60.938	2S 2P2	2S 2P 3S	2P	2P*	22		3P*
SI11	36.758	2P2	2P 4D	1D	1F*	23		2P*
SI11	37.322	2S 2P	2S 4D	1P*	1D	12		
SI11	42.832	2S 2P	2P 3P	3P*	3P	22		2P*
SI11	42.864	2S 2P	2P 3P	3P*	3P	21		2P*
SI11	42.959	2S 2P	2P 3P	3P*	3S	11		2P*
SI11	43.045	2S 2P	2P 3P	3P*	3S	21		2P*
SI11	43.330	2S 2P	2P 3P	3P*	3D	11		2P*
SI11	43.378	2S 2P	2P 3P	3P*	3D	22		2P*
SI11	46.653	2S 2P	2P 3P	1P*	1P	11		2P*
SI11	47.332	2P2	2P 3D	3P	3P*	11		2P*

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
SI11	47.447	2P2	2P 3D	3P	3P*	21		2P*
SI11	47.700	2P2	2P 3D	3P	3D*	22		2P*
SI11	49.030	2S 2P	2S 3S	3P*	3S	01		
SI11	49.068	2S 2P	2S 3S	3P*	3S	11		
SI11	49.200	2S 2P	2S 3S	3P*	3S	21		
SI11	50.487	2P2	2P 3S	3P	3P*	22		2P*
SI11	365.503	2S 2P	2P2	3P*	3P	22		
SI12	32.985	2P	4D	2P*	2D	23		
SI12	45.459	2P	3S	2P*	2S	11		
SI14	4.770	1S	6P	G 2S	2P*	12		
SI14	4.772	1S	6P	G 2S	2P*	1		
SI14	4.830	1S	5P	G 2S	2P*	1		
SI14	4.832	1S	5P	G 2S	2P*	12		
SI14	4.946	1S	4P	G 2S	2P*	12		
SI14	4.951	1S	4P	G 2S	2P*	1		
SI14	5.218	1S	3P	G 2S	2P*	12		
SI14	5.218	1S	3P	G 2S	2P*	1		
SI14	6.182	1S	2P	G 2S	2P*	1		
SI14	6.183	1S	2P	G 2S	2P*	12		
P 1	1837.052	3S23P3	3S 3P4	2P*	2P	11		
P 1	1839.333	3S23P3	3S 3P4	2P*	2P	21		
P 1	1845.007	3S23P3	3S 3P4	2P*	2P	12		
P 2	939.165	3S23P2	3S23P 3D	G 3P	3P*	11		
P 2	975.351	3S23P2	3S 3P3	1D	3S*	21		
P 3	785.828	3S 3P2	3S 3P 4S	4P	4P*	22		3P*
P 3	849.176	3S2 3P	3S2 3D	G 2P*	2D	22		
P 4	444.448	3S 3P	3S 4D	3P*	3D	01		
P 4	819.935	3S 3P	3S 3D	3P*	3D	11		
P 4	824.291	3S 3P	3S 3D	3P*	3D	22		
P 5	229.526	3S	6P	G 2S	2P*	11		
P 5	280.142	3P	6D	2P*	2D	12		
P 5	280.782	3P	6D	2P*	2D	23		
P 5	294.732	3P	6S	2P*	2S	11		
P 5	310.494	3P	5D	2P*	2D	12		
P 5	311.297	3P	5D	2P*	2D	23		
P 5	476.130	3D	5F	2D	2F*	34		
P 5	478.454	3D	5F	2D	2F*	23		
P 5	674.980	3D	4F	2D	2F*	34		
P 5	677.918	3D	4F	2D	2F*	23		
P 5	871.683	3P	3D	2P*	2D	22		
P 6	55.880	2S22P6	2S 2P6 3P	G 1S	1P*	01		2S
P 7	52.358	2P5	2P4 5D	G 2P*	2D	23		3P
P 7	54.669	2P5	2P4 4D	G 2P*	2S	21		1D
P 7	54.684	2P5	2P4 4D	G 2P*	2D	23		1D
P 7	55.804	2P5	2P4 4D	G 2P*	2P	22		3P
P 7	56.056	2P5	2P4 4D	G 2P*	4P	23		3P
P 7	56.067	2P5	2P4 4D	G 2P*	2D	22		3P
P 7	56.362	2P5	2P4 4D	G 2P*	2P	11		3P
P 7	56.425	2P5	2P4 4D	G 2P*	4P	12		3P
P 7	57.414	2P5	2P4 4S	G 2P*	2D	23		1D

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 7	59.231	2P5	2P4 4S	G 2P*	2P	12		3P
P 7	64.251	2P5	2P4 3D	G 2P*	2D	22		1D
P 7	64.340	2P5	2P4 3D	G 2P*	2P	22		1D
P 7	64.887	2P5	2P4 3D	G 2P*	2P	11		1D
P 7	66.167	2P5	2P4 3D	G 2P*	2P	22		3P
P 7	66.353	2P5	2P4 3D	G 2P*	2D	22		3P
P 7	66.744	2P5	2P4 3D	G 2P*	2P	11		3P
P 7	76.343	2P5	2P4 3S	G 2P*	2D	12		1D
P 7	77.985	2P5	2P4 3S	G 2P*	2P	21		3P
P 7	78.735	2P5	2P4 3S	G 2P*	2P	12		3P
P 7	79.109	2P5	2P4 3S	G 2P*	4P	22		3P
P 7	80.829	2S 2P6	2S 2P5 3S	2S	2P*	12		3P*
P 8	43.825	2P4	2P3 5D	G 3P	3D*	23		2D*
P 8	45.287	2P4	2P3 5D	G 3P	3D*	23		4S*
P 8	46.352	2P4	2P3 4D	G 3P	3D*	23		2P*
P 8	46.462	2P4	2P3 4D	G 3P	3P*	22		2P*
P 8	47.140	2P4	2P3 4D	G 3P	3S*	21		2D*
P 8	47.180	2P4	2P3 4D	G 3P	3P*	22		2D*
P 8	47.236	2P4	2P3 4D	G 3P	3D*	23		2D*
P 8	47.261	2P4	2P3 4D	G 3P	3S*	11		2D*
P 8	47.362	2P4	2P3 4D	G 3P	3D*	12		2D*
P 8	47.368	2P4	2P3 4D	G 3P	3P*	12		2D*
P 8	47.438	2P4	2P3 4D	1D	1F*	23		2P*
P 8	48.226	2P4	2P3 4S	G 3P	3P*	22		2P*
P 8	48.284	2P4	2P3 4D	1D	1F*	23		2D*
P 8	48.301	2P4	2P3 4D	1D	1D*	22		2D*
P 8	48.480	2P4	2P3 4D	1D	1P*	21		2D*
P 8	48.897	2P4	2P3 4D	G 3P	3D*	01		4S*
P 8	48.998	2P4	2P3 4D	G 3P	3D*	12		4S*
P 8	49.286	2P4	2P3 4S	G 3P	3D*	23		2D*
P 8	49.524	2P4	2P3 4S	1D	1P*	21		2P*
P 8	50.482	2P4	2P3 4S	1D	1D*	22		2D*
P 8	51.048	2P4	2P3 4S	G 3P	3S*	21		4S*
P 8	51.188	2P4	2P3 4S	G 3P	3S*	11		4S*
P 8	55.537	2P4	2P3 3D	G 3P	3D*	22		2P*
P 8	56.569	2P4	2P3 3D	G 3P	3S*	21		2D*
P 8	56.740	2P4	2P3 3D	G 3P	3S*	11		2D*
P 8	56.743	2P4	2P3 3D	G 3P	3P*	21		2D*
P 8	56.800	2P4	2P3 3D	G 3P	3P*	22		2D*
P 8	56.849	2P4	2P3 3D	G 3P	3S*	01		2D*
P 8	56.924	2P4	2P3 3D	G 3P	3P*	10		2D*
P 8	56.987	2P4	2P3 3D	G 3P	3P*	12		2D*
P 8	56.989	2P4	2P3 3D	G 3P	3P*	01		2D*
P 8	57.060	2P4	2P3 3D	G 3P	3D*	23		2D*
P 8	57.074	2P4	2P3 3D	1D	1F*	23		2P*
P 8	57.193	2P4	2P3 3D	1D	1P*	21		2P*
P 8	57.361	2P4	2P3 3D	G 3P	3D*	01		2D*
P 8	57.387	2P4	2P3 3D	1D	1D*	22		2P*
P 8	59.522	2P4	2P3 3D	G 3P	3D*	12		4S*
P 8	59.595	2P4	2P3 3D	G 3P	3D*	01		4S*
P 8	60.893	2P4	2P3 3D	1S	1P*	01		2D*
P 8	65.754	2P4	2P3 3S	1D	1P*	21		2P*
P 8	66.041	2P4	2P3 3S	G 3P	3D*	12		2D*
P 8	66.132	2P4	2P3 3S	G 3P	3D*	01		2D*
P 8	66.240	2S 2P5	2S 2P4 3S	3P*	3D	23		2D
P 8	70.354	2S 2P5	2S 2P4 3S	3P*	3P	22		4P

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 9	38.033	2P3	2P2 5D	2D*	2F	34		1D
P 9	41.040	2P3	2P2 4D	G 4S*	4P	22		3P
P 9	41.074	2P3	2P2 4D	G 4S*	4P	23		3P
P 9	41.084	2P3	2P2 4D	G 4S*	4D	21		3P
P 9	41.143	2P3	2P2 4D	G 4S*	4D	23		3P
P 9	41.430	2P3	2P2 4D	2D*	2D	33		1D
P 9	42.077	2P3	2P2 4D	2P*	2D	23		1D
P 9	42.319	2P3	2P2 4D	2D*	2F	34		3P
P 9	42.414	2P3	2P2 4D	2D*	2F	23		3P
P 9	42.945	2P3	2P2 4D	2P*	2D	23		3P
P 9	43.830	2P3	2P2 4S	2D*	2P	32		3P
P 9	48.931	2S22P3	2S 2P3 3P	G 4S*	4P	23		5S*
P 9	50.624	2P3	2P2 3D	G 4S*	4D	21		3P
P 9	50.650	2S 2P4	2S 2P3 3D	4P	4S*	32		3D*
P 9	50.673	2P3	2P2 3D	G 4S*	4D	23		3P
P 9	50.762	2P3	2P2 3D	2D*	2P	32		1D
P 9	50.815	2S 2P4	2S 2P3 3D	4P	4D*	23		3D*
P 9	50.815	2P3	2P2 3D	2D*	2P	21		1D
P 9	50.887	2S 2P4	2S 2P3 3D	4P	4D*	12		3D*
P 9	50.953	2S 2P4	2S 2P3 3D	4P	4P*	32		3D*
P 9	50.991	2S 2P4	2S 2P3 3D	4P	4P*	33		3D*
P 9	51.063	2S 2P4	2S 2P3 3D	4P	4P*	21		3D*
P 9	51.129	2P3	2P2 3D	2D*	2F	23		1D
P 9	51.133	2P3	2P2 3D	2D*	2D	22		1D
P 9	51.682	2P3	2P2 3D	2P*	2S	21		1D
P 9	51.839	2P3	2P2 3D	2P*	2P	22		1D
P 9	51.877	2P3	2P2 3D	2P*	2P	11		1D
P 9	52.203	2P3	2P2 3D	2P*	2D	12		1D
P 9	52.939	2P3	2P2 3D	2D*	2P	21		3P
P 9	52.955	2P3	2P2 3D	2P*	2D	23		3P
P 9	52.977	2P3	2P2 3D	2P*	2D	12		3P
P 9	52.999	2P3	2P2 3D	2D*	2P	32		3P
P 9	54.124	2P3	2P2 3D	2P*	2P	11		3P
P 9	54.178	2P3	2P2 3D	2P*	2P	22		3P
P 9	55.066	2S 2P4	2S 2P3 3D	4P	4D*	34		5S*
P 9	55.300	2S 2P4	2S 2P3 3D	4P	4D*	12		5S*
P 9	56.966	2P3	2P2 3S	2P*	2S	21		
P 9	58.988	2P3	2P2 3S	2D*	2P	32		3P
P 9	59.081	2P3	2P2 3S	2P*	2D	23		1D
P 9	59.155	2P3	2P2 3S	2D*	2P	21		3P
P 9	60.439	2P3	2P2 3S	2P*	2P	22		3P
P 9	60.595	2P3	2P2 3S	2P*	2P	11		3P
P 9	61.701	2S 2P4	2S 2P3 3S	4P	4S*	32		5S*
P 9	61.895	2S 2P4	2S 2P3 3S	4P	4S*	22		5S*
P 9	61.978	2S 2P4	2S 2P3 3S	4P	4S*	12		5S*
P 9	196.890	2S22P3	2S 2P4	2D*	2P	22		
P 9	211.335	2S22P3	2S 2P4	2P*	2P	11		
P 9	211.628	2S22P3	2S 2P4	2P*	2P	21		
P 9	213.917	2S22P3	2S 2P4	2P*	2P	12		
P 9	214.476	2S22P3	2S 2P4	2P*	2P	22		
P 9	226.970	2S22P3	2S 2P4	2P*	2S	11		
P 9	227.605	2S22P3	2S 2P4	2P*	2S	21		
P 9	250.395	2S22P3	2S 2P4	2D*	2D	22		
P 9	250.786	2S22P3	2S 2P4	2D*	2D	33		
P 9	278.447	2S22P3	2S 2P4	2P*	2D	12		
P 9	279.249	2S22P3	2S 2P4	2P*	2D	23		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 10	36.523	2S 2P3	2S 2P2 4D	5S*	5P	22		4P
P 10	36.560	2S 2P3	2S 2P2 4D	5S*	5P	23		4P
P 10	36.767	2P2	2P 4D	G 3P	3D*	12		
P 10	36.793	2P2	2P 4D	G 3P	3D*	23		
P 10	38.669	2S 2P3	2S 2P2 4D	3D*	3F	34		4P
P 10	38.755	2S 2P3	2S 2P2 4D	3D*	3F	23		4P
P 10	43.051	2S22P2	2S 2P2 3P	1D	1D*	22		2D
P 10	43.245	2S22P2	2S 2P2 3P	1D	1F*	23		2D
P 10	44.348	2S22P2	2S 2P2 3P	G 3P	3D*	12		4P
P 10	44.371	2S22P2	2S 2P2 3P	G 3P	3D*	23		4P
P 10	44.446	2S22P2	2S 2P2 3P	G 3P	3D*	22		4P
P 10	45.172	2S22P2	2S 2P2 3P	G 3P	3S*	11		4P
P 10	45.287	2S22P2	2S 2P2 3P	G 3P	3S*	21		4P
P 10	45.997	2P2	2P 3D	G 3P	3P*	01		
P 10	46.067	2P2	2P 3D	G 3P	3P*	10		
P 10	46.087	2P2	2P 3D	G 3P	3P*	11		
P 10	46.140	2P2	2P 3D	G 3P	3P*	12		
P 10	46.199	2P2	2P 3D	G 3P	3P*	21		
P 10	46.233	2P2	2P 3D	G 3P	3P*	22		
P 10	46.241	2P2	2P 3D	G 3P	3D*	01		
P 10	46.294	2P2	2P 3D	G 3P	3D*	12		
P 10	46.330	2P2	2P 3D	G 3P	3D*	23		
P 10	46.392	2P2	2P 3D	G 3P	3D*	22		
P 10	46.431	2S 2P3	2S 2P2 3D	3D*	3D	33		2D
P 10	46.644	2S 2P3	2S 2P2 3D	3D*	3F	34		2D
P 10	46.726	2S 2P3	2S 2P2 3D	3P*	3S	21		2D
P 10	47.697	2S 2P3	2S 2P2 3D	3P*	3D	23		2D
P 10	48.052	2P2	2P 3D	1D	3F*	22		
P 10	48.116	2P2	2P 3D	1S	1P*	01		
P 10	48.391	2S 2P3	2S 2P2 3D	3D*	3D	33		4P
P 10	48.985	2S 2P3	2S 2P2 3D	3D*	3F	34		4P
P 10	49.078	2S 2P3	2S 2P2 3D	3D*	3F	23		4P
P 10	49.147	2S 2P3	2S 2P2 3D	3D*	3F	12		4P
P 10	49.772	2S 2P3	2S 2P2 3D	3P*	3D	23		4P
P 10	49.789	2S 2P3	2S 2P2 3D	3P*	3D	12		4P
P 10	49.794	2S 2P3	2S 2P2 3D	3P*	3D	01		4P
P 10	50.664	2S 2P3	2S 2P2 3S	5S*	5P	23		4P
P 10	50.778	2S 2P3	2S 2P2 3S	5S*	5P	22		4P
P 10	50.849	2S 2P3	2S 2P2 3S	5S*	5P	21		4P
P 10	50.874	2S 2P3	2S 2P2 3D	3P*	3P	22		4P
P 10	51.006	2P2	2P 3S	G 3P	3P*	12		
P 10	51.091	2P2	2P 3S	G 3P	3P*	01		
P 10	51.096	2S 2P3	2S 2P2 3S	3D*	3D	33		2D
P 10	51.147	2P2	2P 3S	G 3P	3P*	22		
P 10	52.641	2S 2P3	2S 2P2 3S	3P*	3D	23		2D
P 10	53.610	2S 2P3	2S 2P2 3S	3D*	3P	32		4P
P 10	53.737	2S 2P3	2S 2P2 3S	3D*	3P	21		4P
P 10	53.841	2P2	2P 3S	1S	1P*	01		
P 10	54.811	2S 2P3	2S 2P2 3S	1D*	1D	22		2D
P 10	55.286	2S 2P3	2S 2P2 3S	3P*	3P	22		4P
P 10	55.435	2S 2P3	2S 2P2 3S	3P*	3P	21		4P
P 10	56.575	2S 2P3	2S 2P2 3S	1P*	1D	12		2D
P 10	203.869	2S22P2	2S 2P3	G 3P	3S*	01		
P 10	205.418	2S22P2	2S 2P3	G 3P	3S*	11		
P 10	207.377	2S22P2	2S 2P3	1D	1P*	21		
P 10	207.733	2S22P2	2S 2P3	G 3P	3S*	21		
P 10	235.293	2S22P2	2S 2P3	1D	1D*	22		
P 10	236.655	2S22P2	2S 2P3	1S	1P*	01		
P 10	263.261	2S22P2	2S 2P3	G 3P	3P*	01		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 10	265.454	2S22P2	2S 2P3	G 3P	3P*	11		
P 10	265.661	2S22P2	2S 2P3	G 3P	3P*	12		
P 10	269.577	2S22P2	2S 2P3	G 3P	3P*	21		
P 10	269.718	2S22P2	2S 2P3	G 3P	3P*	22		
P 11	30.166	2P	5D	G 2P*	2D	23		
P 11	33.050	2S 2P2	2S 2P 4D	4P	4D*	34		3P*
P 11	33.102	2P	4D	G 2P*	2D	12		
P 11	33.174	2P	4D	G 2P*	2D	23		
P 11	34.351	2S 2P2	2S 2P 4D	2D	2F*	34		3P*
P 11	38.230	2S 2P2	2P2 3P	4P	4S*	22		3P
P 11	38.294	2S 2P2	2P2 3P	4P	4S*	32		3P
P 11	38.843	2S 2P2	2P2 3P	4P	4P*	33		3P
P 11	38.845	2S 2P2	2P2 3P	4P	4D*	34		3P
P 11	39.541	2S 2P2	2P2 3P	2D	2D*	33		1D
P 11	42.189	2S 2P2	2S 2P 3D	4P	4P*	12		3P*
P 11	42.217	2S 2P2	2S 2P 3D	4P	4P*	21		3P*
P 11	42.239	2S 2P2	2S 2P 3D	4P	4P*	22		3P*
P 11	42.321	2S 2P2	2S 2P 3D	4P	4P*	32		3P*
P 11	42.349	2S 2P2	2S 2P 3D	4P	4P*	33		3P*
P 11	42.413	2S 2P2	2S 2P 3D	4P	4D*	12		3P*
P 11	42.551	2S 2P2	2S 2P 3D	4P	4D*	33		3P*
P 11	42.798	2S 2P2	2S 2P 3D	2P	2P*	11		1P*
P 11	42.925	2S 2P2	2S 2P 3D	2P	2P*	22		1P*
P 11	43.463	2P3	2P2 3D	4S*	4P	21		3P
P 11	43.815	2S 2P2	2S 2P 3D	2P	2D*	12		1P*
P 11	43.888	2S 2P2	2S 2P 3D	2P	2D*	23		1P*
P 11	44.238	2S 2P2	2S 2P 3D	2D	2F*	23		3P*
P 11	44.961	2S 2P2	2S 2P 3S	2D	2P*	32		1P*
P 11	44.988	2S 2P2	2S 2P 3D	2D	2D*	33		3P*
P 11	45.011	2S 2P2	2S 2P 3D	2D	2D*	22		3P*
P 11	45.685	2S 2P2	2S 2P 3S	4P	4P*	23		3P*
P 11	45.747	2S 2P2	2S 2P 3S	4P	4P*	12		3P*
P 11	45.793	2S 2P2	2S 2P 3S	4P	4P*	33		3P*
P 11	45.892	2S 2P2	2S 2P 3S	4P	4P*	21		3P*
P 11	45.921	2S 2P2	2S 2P 3S	4P	4P*	32		3P*
P 11	47.280	2S 2P2	2S 2P 3S	2P	2P*	11		1P*
P 11	47.414	2S 2P2	2S 2P 3S	2P	2P*	22		1P*
P 11	47.446	2S 2P2	2S 2P 3D	2P	2D*	23		3P*
P 11	47.455	2P3	2P2 3S	4S*	4P	23		3P
P 11	47.502	2P3	2P2 3S	4S*	4P	22		3P
P 11	47.796	2S 2P2	2S 2P 3S	2D	2P*	32		3P*
P 11	47.859	2S 2P2	2S 2P 3S	2D	2P*	21		3P*
P 11	49.866	2S 2P2	2S 2P 3S	2S	2P*	12		3P*
P 11	49.976	2S 2P2	2S 2P 3S	2S	2P*	11		3P*
P 11	50.635	2S 2P2	2S 2P 3S	2P	2P*	22		3P*
P 12	31.097	2P2	2P 4D	1D	1F*	23		2P*

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 12	31.515	2S 2P	2S 4D	1P*	1D	12		
P 12	36.629	2S 2P	2P 3P	3P*	3P	22		2P*
P 12	36.654	2S 2P	2P 3P	3P*	3P	21		2P*
P 12	36.715	2S 2P	2P 3P	3P*	3S	11		2P*
P 12	36.794	2S 2P	2P 3P	3P*	3S	21		2P*
P 12	37.026	2S 2P	2P 3P	3P*	3D	11		2P*
P 12	37.065	2S 2P	2P 3P	3P*	3D	22		2P*
P 12	38.632	2S 2P	2P 3P	1P*	1D	12		2P*
P 12	39.622	2S 2P	2P 3P	1P*	1P	11		2P*
P 12	40.134	2P2	2P 3D	3P	3P*	11		2P*
P 12	40.251	2P2	2P 3D	3P	3P*	21		2P*
P 12	40.292	2P2	2P 3D	3P	3P*	22		2P*
P 12	40.377	2P2	2P 3D	3P	3D*	12		2P*
P 12	40.416	2P2	2P 3D	3P	3D*	23		2P*
P 12	40.463	2P2	2P 3D	3P	3D*	22		2P*
P 12	40.600	2P2	2P 3D	1D	1F*	23		2P*
P 12	41.506	2S 2P	2S 3S	3P*	3S	01		
P 12	41.533	2S 2P	2S 3S	3P*	3S	11		
P 12	41.666	2S 2P	2S 3S	3P*	3S	21		
P 12	41.691	2P2	2P 3D	1D	1D*	22		2P*
P 12	42.653	2P2	2P 3S	3P	3P*	22		2P*
P 12	44.036	2S 2P	2S 3S	1P*	1S	10		
P 12	335.308	2S 2P	2P2	3P*	3P	22		
P 12	536.552	2S2	2S 2P	G 1S	3P*	01		
P 13	28.154	2P	4D	2P*	2D	23		
P 13	37.562	2P	3D	2P*	2D	12		
P 13	37.704	2P	3D	2P*	2D	23		
P 15	4.154	1S	6P	G 2S	2P*	12		
P 15	4.208	1S	5P	G 2S	2P*	12		
P 15	4.307	1S	4P	G 2S	2P*	12		
P 15	4.544	1S	3P	G 2S	2P*	12		
P 15	5.385	1S	2P	G 2S	2P*	12		
S 2	774.697	3S23P3	3S23P2 3D	G 4S*	4P	22		3P
S 2	775.651	3S23P3	3S23P2 3D	G 4S*	4P	21		3P
S 2	777.426	3S23P3	3S23P2 3D	G 4S*	4P	23		3P
S 2	785.263	3S23P3	3S23P2 3D	2D*	2D	22		1D
S 2	799.410	3S23P3	3S23P2 3D	2D*	2F	23		1D
S 2	799.801	3S23P3	3S23P2 3D	2D*	2F	34		1D
S 2	848.488	3S23P3	3S23P2 3D	2D*	2P	21		3P
S 2	849.270	3S23P3	3S23P2 3D	2D*	2P	22		3P
S 2	856.939	3S23P3	3S23P2 3D	2D*	2D	33		3P
S 2	862.679	3S23P3	3S23P2 3D	2D*	2D	22		3P
S 2	862.843	3S23P3	3S23P2 3D	2D*	2D	32		3P
S 2	940.405	3S23P3	3S23P2 4S	2D*	2D	22		1D
S 2	1134.510	3S23P3	3S 3P4	2D*	2P	22		
S 2	1305.830	3S23P3	3S 3P4	2P*	2D	12		
S 2	1306.314	3S23P3	3S 3P4	2P*	2D	22		
S 2	1308.432	3S23P3	3S 3P4	2P*	2D	23		
S 3	685.288	3S23P2	3S23P 4S	G 3P	3P*	12		2P*
S 3	687.027	3S23P2	3S23P 4S	G 3P	3P*	01		2P*
S 3	688.374	3S23P2	3S23P 4S	G 3P	3P*	11		2P*
S 3	690.008	3S23P2	3S23P 3D	1D	1F*	23		2P*
S 3	691.702	3S23P2	3S23P 3D	G 3P	3P*	11		
S 3	1017.497	3S23P2	3S 3P3	G 3P	3P*	10		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
S 4	391.291	3S2 3P	3S2 4D	G 2P*	2D	12		
S 4	392.765	3S2 3P	3S2 4D	G 2P*	2D	23		
S 4	660.092	3S2 3P	3S2 3D	G 2P*	2D	22		
S 4	660.607	3S 3P2	3S 3P 3D	4P	4P*	11		3P*
S 4	662.103	3S 3P2	3S 3P 3D	4P	4P*	21		3P*
S 5	319.604	3S 3P	3S 4D	3P*	3D	01		
S 5	319.831	3S 3P	3S 4D	3P*	3D	12		
S 5	320.582	3S 3P	3S 4D	3P*	3D	23		
S 5	567.784	3S 3D	3S 4F	3D	3F*	34		
S 5	568.090	3S 3D	3S 4F	3D	3F*	23		
S 5	568.350	3S 3D	3S 4F	3D	3F*	12		
S 5	659.073	3S 3P	3S 3D	3P*	3D	11		
S 5	662.639	3S 3P	3S 3D	3P*	3D	22		
S 6	203.792	3P	6D	2P*	2D	12		
S 6	204.331	3P	6D	2P*	2D	23		
S 6	251.201	3P	5S	2P*	2S	11		
S 6	328.936	3D	5F	2D	2F*	23		
S 6	328.981	3D	5F	2D	2F*	34		
S 6	465.096	3D	4F	2D	2F*	23		
S 6	465.431	3D	4F	2D	2F*	34		
S 7	48.363	2S22P6	2S 2P6 3P	G 1S	1P*	01		2S
S 10	192.717	2S22P3	2S 2P4	2P*	2P	11		
S 11	39.001	2S 2P3	2S 2P2 3D	5S*	5P	21		4P
S 11	39.023	2S 2P3	2S 2P2 3D	5S*	5P	22		4P
S 11	39.049	2S 2P3	2S 2P2 3D	5S*	5P	23		4P
S 11	285.626	2S22P2	2S 2P3	G 3P	3D*	12		
S 11	291.424	2S22P2	2S 2P3	G 3P	3D*	23		
S 12	35.983	2S 2P2	2S 2P 3D	2D	2F*	34		1P*
S 12	36.336	2S 2P2	2S 2P 3D	4P	4D*	23		3P*
S 12	37.135	2P3	2P2 3D	4S*	4P	22		3P
S 12	37.176	2P3	2P2 3D	4S*	4P	23		3P
S 12	37.607	2S 2P2	2S 2P 3D	2D	2F*	34		3P*
S 13	31.950	2S 2P	2P 3P	3P*	3D	23		
S 13	32.238	2S2	2S 3P	G 1S	1P*	01		
S 13	33.822	2S 2P	2S 3D	3P*	3D	C1		
S 13	35.681	2S 2P	2S 3D	1P*	1D	12		
S 13	257.845	2S2	2S 2P	G 1S	1P*	C1		
S 14	30.416	2S	3P	G 2S	2P*	12		
S 14	30.526	2S	3P	G 2S	2P*	11		
S 14	33.392	2P	3S	2P*	2S	21		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CL 1	833.304	3S23P5	3S23P4 5S	G 2P*	2D	22		1D
CL 1	1087.665	3S23P5	3S23P4 3D	G 2P*	2D	23		1D
CL 1	1143.120	3S23P5	3S23P4 3D	G 2P*	2D	22		1D
CL 1	1155.222	3S23P5	3S23P4 3D	G 2P*	2D	12		1D
CL 2	602.792	3P4	3P3 3D	G 3P	3P*	22		2P*
CL 2	602.795	3P4	3P3 3D	G 3P	3P*	21		2P*
CL 2	605.395	3P4	3P3 3D	1D	1P*	21		2D*
CL 2	606.925	3P4	3P3 3D	G 3P	3P*	01		2P*
CL 2	627.712	3P4	3P3 3D	1D	1F*	23		2P*
CL 2	651.616	3P4	3P3 3D	G 3P	3S*	11		2D*
CL 2	653.111	3P4	3P3 3D	G 3P	3S*	01		2D*
CL 2	671.493	3P4	3P3 3D	1S	1P*	01		2D*
CL 2	673.900	3P4	3P3 3D	1D	3D*	22		2P*
CL 2	708.984	3P4	3P3 3D	1D	1F*	23		2D*
CL 2	760.338	3P4	3P3 4S	G 3P	1D*	22		2D*
CL 2	765.752	3P4	3P3 4S	G 3P	1D*	12		2D*
CL 3	694.514	3S23P3	3S23P2 3D	2D*	2F	34		3P
CL 3	696.853	3S23P3	3S23P2 3D	2D*	2F	23		3P
CL 3	697.184	3S23P3	3S23P2 3D	2D*	2F	33		3P
CL 3	849.496	3S23P3	3S 3P4	2D*	2P	22		
CL 3	851.917	3S23P3	3S 3P4	2P*	2S	11		
CL 3	852.874	3S23P3	3S 3P4	2P*	2S	21		
CL 3	929.617	3S23P3	3S 3P4	2P*	2P	11		
CL 3	930.363	3S23P3	3S 3P4	2P*	2P	21		
CL 3	935.919	3S23P3	3S 3P4	2P*	2P	12		
CL 3	1040.492	3S23P3	3S 3P4	2P*	2D	12		
CL 3	1041.349	3S23P3	3S 3P4	2P*	2D	22		
CL 3	1042.286	3S23P3	3S 3P4	2P*	2D	23		
CL 4	525.344	3S23P2	3S23P 3D	1D	1F*	23		
CL 4	530.651	3S23P2	3S23P 3D	1D	1F*	23		2P*
CL 4	839.837	3S23P2	3S 3P3	G 3P	3P*	2		
CL 4	985.612	3S23P2	3S 3P3	G 3P	3D*	21		
CL 5	285.280	3S2 3P	3S2 4D	G 2P*	2D	12		
CL 5	286.606	3S2 3P	3S2 4D	G 2P*	2D	23		
CL 6	1009.614	3S2	3S 3P	G 1S	3P*	01		2S
CL 7	133.053	3S	6P	2S	2P*	12		
CL 7	162.595	3P	6S	2P*	2S	21		
CL 8	38.117	2P6	2P5 6D	G 1S	12*K	01		2P*
CL 8	38.300	2P6	2P5 6D	G 1S	22*K	01		2P*
CL 8	40.504	2P6	2P5 5S	G 1S	22*K	01		2P*
CL12	33.553	2S 2P3	2S 2P2 3D	5S*	5P	21		4P
CL12	33.570	2S 2P3	2S 2P2 3D	5S*	5P	22		4P
CL12	33.592	2S 2P3	2S 2P2 3D	5S*	5P	23		4P
CL12	262.305	2S22P2	2S 2P3	G 3P	3D*	12		
CL12	268.425	2S22P2	2S 2P3	G 3P	3D*	23		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CL13	31.178	2S 2P2	2S 2P 3D	2D	2F*	34		1P*
CL13	31.447	2S 2P2	2S 2P 3D	4P	4D*	23		3P*
CL13	32.083	2P3	2P2 3D	4S*	4P	22		3P
CL13	32.124	2P3	2P2 3D	4S*	4P	23		3P
CL13	32.445	2S 2P2	2S 2P 3D	2D	2F*	34		3P*
CL14	27.880	2S 2P	2P 3P	3P*	3D	23		
CL14	28.108	2S2	2S 3P	G 1S	1P*	01		
CL14	29.403	2S 2P	2S 3D	3P*	3D	01		
CL14	239.999	2S2	2S 2P	G 1S	1P*	01		
CL15	26.615	2S	3P	G 2S	2P*	12		
CL15	26.762	2S	3P	G 2S	2P*	11		
CL15	29.006	2P	3S	2P*	2S	21		
CL16	3.779	1S2	1S 3P	G 1S	3P*	01		
CL16	4.447	1S2	1S 2P	G 1S	3P*	01		
AR 1	98C.482	3P6	3P5 3D	G 1S	1P*	01		2P*
AR 3	4C5.192	3P4	3P3 5S	G 3P	3S*	01		4S*
AR 3	468.114	3P4	3P3 3D	G 3P	3D*	21		2P*
AR 3	468.567	3P4	3P3 3D	1D	1D*	22		2P*
AR 3	469.749	3P4	3P3 3D	1D	1F*	23		2P*
AR 3	470.662	3P4	3P3 3D	G 3P	3D*	11		2P*
AR 3	471.494	3P4	3P3 3D	G 3P	3D*	23		2P*
AR 3	471.666	3P4	3P3 3D	G 3P	3D*	01		2P*
AR 3	486.236	3P4	3P3 3D	1D	1P*	21		2D*
AR 3	496.315	3P4	3P3 4S	1D	1P*	21		2P*
AR 3	496.753	3P4	3P3 4S	G 3P	1D*	22		2D*
AR 3	499.710	3P4	3P3 4S	G 3P	1D*	12		2D*
AR 3	502.751	3P4	3P3 3D	1D	3D*	22		2P*
AR 3	507.577	3P4	3P3 4S	1D	3P*	22		2P*
AR 3	533.952	3P4	3P3 4S	1D	1D*	22		2D*
AR 3	536.354	3P4	3P3 3D	1S	1P*	01		2D*
AR 3	541.326	3P4	3P3 3D	1D	1F*	23		2D*
AR 3	622.051	3P4	3P3 3D	1D	1D*	22		2D*
AR 4	294.913	3S23P3	3S23P2 4D	G 4S*	4P	22		3P
AR 4	295.022	3S23P3	3S23P2 4D	G 4S*	4P	21		3P
AR 4	295.165	3S23P3	3S23P2 4D	G 4S*	4P	23		3P
AR 4	306.429	3S23P3	3S23P2 4D	2D*	2D	33		3P
AR 4	313.399	3S23P3	3S23P2 4D	2D*	2F	34		3P
AR 4	314.523	3S23P3	3S23P2 4D	2D*	2F	23		3P
AR 4	406.031	3S23P3	3S23P2 4S	2D*	2D	22		1D
AR 4	406.271	3S23P3	3S23P2 4S	2D*	2D	33		1D
AR 4	426.153	3S23P3	3S23P2 4S	2D*	2P	21		3P
AR 4	430.048	3S23P3	3S23P2 4S	2P*	2D	12		1D
AR 4	430.393	3S23P3	3S23P2 4S	2P*	2D	23		1D
AR 4	442.561	3S23P3	3S23P2 3D	2D*	2F	23		1D
AR 4	450.198	3S23P3	3S23P2 4S	2P*	2P	12		3P
AR 4	450.525	3S23P3	3S23P2 4S	2P*	2P	22		3P
AR 4	452.646	3S23P3	3S23P2 4S	2P*	2P	11		3P
AR 4	452.971	3S23P3	3S23P2 4S	2P*	2P	21		3P
AR 4	458.924	3S23P3	3S23P2 3D	2D*	2D	22		1D

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
AR 4	459.183	3S23P3	3S23P2 3D		2D*	2D	32	1D
AR 4	473.548	3S23P3	3S23P2 3D		2P*	2P	12	1D
AR 4	473.925	3S23P3	3S23P2 3D		2P*	2P	22	1D
AR 4	484.984	3S23P3	3S23P2 3D		2D*	2D	33	3P
AR 4	486.158	3S23P3	3S23P2 3D		2D*	2D	22	3P
AR 4	486.475	3S23P3	3S23P2 3D		2D*	2D	32	3P
AR 4	493.201	3S23P3	3S23P2 3D		2D*	2P	21	3P
AR 4	495.542	3S23P3	3S23P2 3D		2D*	2P	22	3P
AR 4	495.832	3S23P3	3S23P2 3D		2D*	2P	32	3P
AR 4	526.138	3S23P3	3S23P2 3D		2D*	2F	34	3P
AR 4	527.202	3S23P3	3S23P2 3D		2D*	2F	23	3P
AR 4	527.588	3S23P3	3S23P2 3D		2D*	2F	33	3P
AR 4	529.320	3S23P3	3S23P2 3D		2P*	2P	21	3P
AR 4	531.587	3S23P3	3S23P2 3D		2P*	2P	12	3P
AR 4	532.039	3S23P3	3S23P2 3D		2P*	2P	22	3P
AR 5	238.327	3S23P2	3S23P 5S		1D	1P*	21	2P*
AR 5	378.303	3S23P2	3S23P 4S		1S	1P*	01	2P*
AR 5	570.929	3S23P2	3S 3P3		1D	3S*	21	
AR 5	646.135	3S23P2	3S 3P3		1S	1P*	01	
AR 5	711.342	3S23P2	3S 3P3	G	3P	3P*	11	
AR 5	711.488	3S23P2	3S 3P3	G	3P	3P*	12	
AR 5	715.549	3S23P2	3S 3P3	G	3P	3P*	2	
AR 6	283.594	3S 3P2	3S 3P 4S		4P	4P*	32	3P*
AR 7	192.065	3S 3P	3S 4D		3P*	3D	11	
AR 7	192.664	3S 3P	3S 4D		3P*	3D	22	
AR 7	487.620	2P63P2	2P63P 3D		3P	3D*	01	2P*
AR 7	487.814	2P63P2	2P63P 3D		3P	3P*	10	2P*
AR 7	488.753	2P63P2	2P63P 3D		3P	3D*	12	2P*
AR 7	489.715	2P63P2	2P63P 3D		3P	3D*	11	2P*
AR 7	492.593	2P63P2	2P63P 3D		3P	3D*	23	2P*
AR 7	492.967	2P63P2	2P63P 3D		3P	3D*	22	2P*
AR 7	494.249	2P63P2	2P63P 3D		3P	3D*	21	2P*
AR 7	496.417	2P63P2	2P63P 3D		3P	3P*	21	2P*
AR 7	496.521	2P63P2	2P63P 3D		3P	3P*	12	2P*
AR 7	500.920	2P63P2	2P63P 3D		3P	3P*	22	2P*
AR 7	876.817	3S2	3S 3P	G	1S	3P*	01	2S
AR 9	36.722	2S22P6	2S22P5 4S	G	1S	11*K	01	2P*
AR 9	37.021	2S22P6	2S22P5 4S	G	1S	22*K	01	2P*
AR10	36.540	2S22P5	2S22P4 3D	G	2P*	2D	23	1S
AR10	36.757	2S22P5	2S22P4 3D	G	2P*	2D	12	1S
AR11	34.811	2S22P4	2S22P3 3D		1D	1F*	23	2D*
AR11	35.088	2S22P4	2S22P3 3D		1D	1D*	22	2D*
AR11	39.800	2S22P4	2S22P3 3S		1S	1P*	01	2P*
AR11	165.585	2S22P4	2S 2P5		1S	1P*	01	
AR14	27.501	2S 2P2	2S 2P 3D		4P	4D*	34	3P*
AR15	25.804	2S 2P	2S 3D		3P*	3D	12	
AR15	25.808	2S 2P	2S 3D		3P*	3D	23	

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM	LOWER	UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
K 2	504.184	3P6	3P5 3D	G	1S	1P*	01		2P*
K 3	440.709	3S23P5	3S23P4 4S	G	2P*	2D	22		1D
K 3	478.546	3S23P5	3S23P4 4S	G	2P*	4P	21		3P
K 4	287.849	3S23P4	3S23P3 4D	G	3P	3D*	23		4S*
K 4	289.561	3S23P4	3S23P3 4D	G	3P	3D*	12		4S*
K 4	290.335	3S23P4	3S23P3 4D	G	3P	3D*	01		4S*
K 4	342.790	3P4	3P3 4S	G	3P	3P*	11		2P*
K 4	343.568	3P4	3P3 4S	G	3P	3P*	01		2P*
K 4	351.226	3S23P4	3S23P3 4S	G	3P	3P*	11		2P*
K 4	352.069	3S23P4	3S23P3 4S	G	3P	3P*	01		2P*
K 4	381.010	3P4	3P3 3D		1S	1P*	01		2P*
K 4	383.565	3P4	3P3 4S	G	3P	3S*	21		4S*
K 4	385.276	3S23P4	3S23P3 4S	G	3P	3S*	21		4S*
K 4	385.792	3P4	3P3 4S		1S	1P*	01		2P*
K 4	386.997	3P4	3P3 4S	G	3P	3S*	01		4S*
K 4	388.738	3S23P4	3S23P3 4S	G	3P	3S*	01		4S*
K 4	396.640	3S23P4	3S23P3 4S	G	3P	5S*	22		4S*
K 4	413.928	3P4	3P3 3D		1D	3P*	21		2P*
K 4	590.435	3S23P4	3S23P3 3D	G	3P	5D*	01		4S*
K 4	854.688	3S23P4	3S 3P5		1D	3P*	22		
K 5	225.221	3S23P3	3S23P2 4D	G	4S*	4P	22		3P
K 5	225.376	3S23P3	3S23P2 4D	G	4S*	4P	23		3P
K 5	225.537	3S23P3	3S23P2 4D	G	4S*	4P	21		3P
K 5	231.825	3S23P3	3S23P2 4D		2D*	2D	33		3P
K 5	238.489	3S23P3	3S23P2 4D		2D*	2F	34		3P
K 5	239.340	3S23P3	3S23P2 4D		2D*	2F	23		3P
K 6	180.272	3S23P2	3S23P 5S		1D	1P*	21		2P*
K 6	266.207	3S23P2	3S23P 4S		1D	1P*	21		2P*
K 6	266.430	3S23P2	3S23P 4S		1D	1P*	21		
K 6	282.856	3S23P2	3S23P 4S		1S	1P*	01		2P*
K 6	384.875	3S23P2	3S23P 3D	G	3P	3D*	21		
K 6	389.472	3S23P2	3S23P 3D	G	3P	3D*	12		2P*
K 6	389.516	3S23P2	3S23P 3D	G	3P	3D*	11		2P*
K 6	453.427	3S23P2	3S 3P3	G	3P	1P*	01		
K 6	583.424	3S23P2	3S 3P3		1S	1P*	01		
K 6	613.743	3S23P2	3S 3P3	G	3P	3P*	01		
K 6	621.657	3S23P2	3S 3P3	G	3P	3P*	11		
K 6	621.874	3S23P2	3S 3P3	G	3P	3P*	12		
K 6	624.756	3S23P2	3S 3P3	G	3P	3P*	21		
K 6	624.821	3S23P2	3S 3P3	G	3P	3P*	22		
K 6	726.712	3S23P2	3S 3P3	G	3P	3D*	21		
K 7	141.784	3S2 3P	3S2 5D	G	2P*	2D	12		
K 7	142.365	3S2 3P	3S2 5D	G	2P*	2D	23		
K 7	221.583	3S 3P2	3S 3P 4S		4P	4P*	22		3P*
K 7	401.565	3S 3P2	3S 3P 3D		4P	4P*	11		3P*
K 7	402.922	3S 3P2	3S 3P 3D		4P	4P*	12		3P*
K 7	403.377	3S 3P2	3S 3P 3D		4P	4P*	21		3P*
K 7	406.105	3S 3P2	3S 3P 3D		4P	4P*	23		3P*
K 7	407.564	3S 3P2	3S 3P 3D		4P	4P*	32		3P*
K 7	408.950	3S 3P2	3S 3P 3D		4P	4P*	33		3P*
K 7	672.951	3S2 3P	3S 3P2	G	2P*	2D	22		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
K 8	123.729	3S 3P	3S 5D	3P*	3D	12	2S	2S
K 8	123.893	3S 3P	3S 5D	3P*	3D	23	2S	2S
K 8	143.804	3S2	3S 4P	G 1S	1P*	01		2S
K 8	230.664	3S 3D	3S 4F	3D	3F*	12		
K 8	230.703	3S 3D	3S 4F	3D	3F*	23		
K 8	230.733	3S 3D	3S 4F	3D	3F*	12	2S	2S
K 8	230.755	3S 3D	3S 4F	3D	3F*	34		
K 8	230.757	3S 3D	3S 4F	3D	3F*	34	2S	2S
K 8	230.774	3S 3D	3S 4F	3D	3F*	23	2S	2S
K 8	425.423	2P63P2	2P63P 3D	3P	3P*	10		2P*
K 8	429.935	2P63P2	2P63P 3D	3P	3D*	01		2P*
K 8	431.041	2P63P2	2P63P 3D	3P	3D*	12		2P*
K 8	432.110	2P63P2	2P63P 3D	3P	3D*	11		2P*
K 8	435.317	2P63P2	2P63P 3D	3P	3D*	23		2P*
K 8	435.562	2P63P2	2P63P 3D	3P	3D*	22		2P*
K 8	435.991	2P63P2	2P63P 3D	3P	3P*	21		2P*
K 8	437.234	2P63P2	2P63P 3D	3P	3P*	12		2P*
K 8	437.238	2P63P2	2P63P 3D	3P	3D*	21		2P*
K 8	442.001	2P63P2	2P63P 3D	3P	3P*	22		2P*
K 8	557.609	3S 3P	2P63P2	3P*	3P	12		
K 8	561.941	3S 3P	2P63P2	3P*	3P	01		
K 8	564.849	3S 3P	2P63P2	3P*	3P	22		
K 8	569.694	3S 3P	2P63P2	3P*	3P	10		
K 8	572.969	3S 3P	2P63P2	3P*	3P	21		
K 9	98.870	3S	5P	G 2S	2P*	11		
K 9	98.808	3S	5P	G 2S	2P*	12		
K 9	99.395	3P	6D	2P*	2D	12		
K 9	99.770	3P	6D	2P*	2D	23		
K 9	119.095	3P	5S	2P*	2S	11		
K 9	119.934	3P	5S	2P*	2S	21		
K 9	467.599	3P	3D	2P*	2D	22		
K 10	26.514	2P6	2P5 6D	G 1S	12*K	01		2P*
K 10	26.627	2P6	2P5 6D	G 1S	22*K	01		2P*
K 10	27.480	2P6	2P5 5D	G 1S	12*K	01		2P*
K 11	31.327	2P5	2P4 3D	G 2P*	2D	23		1S
K 11	31.487	2S22P5	2S22P4 3D	G 2P*	2D	23		1S
K 11	31.696	2S22P5	2S22P4 3D	G 2P*	2D	12		1S
K 11	32.297	2P5	2P4 3D	G 2P*	2D	23		1D
K 11	32.317	2P5	2P4 3D	G 2P*	2P	22		1D
K 11	32.895	2P5	2P4 3D	G 2P*	2D	23		3P
K 11	32.982	2P5	2P4 3D	G 2P*	2P	11		3P
K 11	33.061	2P5	2P4 3D	G 2P*	2P	22		3P
K 11	33.134	2P5	2P4 3D	G 2P*	2P	21		3P
K 11	33.259	2P5	2P4 3D	G 2P*	4D	22		3P
K 11	35.602	2S22P5	2S22P4 3S	G 2P*	2S	21		1S
K 11	35.713	2P5	2P4 3D	G 2P*	2D	12		3P
K 11	35.896	2S22P5	2S22P4 3S	G 2P*	2S	11		1S
K 11	37.616	2S22P5	2S22P4 3S	G 2P*	2P	11		3P
K 11	38.056	2S22P5	2S22P4 3S	G 2P*	4P	12		3P
K 11	38.193	2S 2P6	2S 2P5 3S	2S	2P*	11		3P*
K 11	38.355	2S 2P6	2S 2P5 3S	2S	2P*	12		3P*

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
K 11	38.406	2S 2P6	2S 2P5 3S	2S	2P*	12		
K 12	30.157	2S22P4	2S22P3 3D	1D	1F*	23		2D*
K 12	30.387	2S22P4	2S22P3 3D	1D	1D*	22		2D*
K 12	30.598	2S22P4	2S22P3 3D	G 3P	3D*	23		4S*
K 12	33.961	2S22P4	2S22P3 3S	1D	1D*	22		2D*
K 12	34.128	2S22P4	2S22P3 3S	G 3P	3S*	21		4S*
K 12	34.199	2S22P4	2S22P3 3S	1S	1P*	01		2P*
K 12	34.351	2S22P4	2S22P3 3S	G 3P	3S*	11		4S*
K 13	30.100	2S22P3	2S22P2 3S	G 4S*	4P	23		3P
K 13	157.878	2S22P3	2S 2P4	2P*	2P	22		
K 13	164.137	2S22P3	2S 2P4	2P*	2S	11		
K 13	166.121	2S22P3	2S 2P4	2P*	2S	21		
K 13	178.181	2S22P3	2S 2P4	2D*	2D	22		
K 13	179.484	2S22P3	2S 2P4	2D*	2D	33		
K 13	202.104	2S22P3	2S 2P4	2P*	2D	23		
K 14	147.595	2S22P2	2S 2P3	G 3P	3S*	01		
K 14	150.537	2S22P2	2S 2P3	G 3P	3S*	11		
K 14	151.761	2S22P2	2S 2P3	1D	1P*	21		
K 14	153.994	2S22P2	2S 2P3	G 3P	3S*	21		
K 14	172.181	2S22P2	2S 2P3	1D	1D*	22		
K 14	175.397	2S22P2	2S 2P3	1S	1P*	01		
K 14	185.918	2S22P2	2S 2P3	G 3P	3P*	01		
K 14	190.509	2S22P2	2S 2P3	G 3P	3P*	11		
K 14	195.459	2S22P2	2S 2P3	G 3P	3P*	22		
K 14	196.222	2S22P2	2S 2P3	G 3P	3P*	21		
K 15	24.237	2S 2P2	2S 2P 3D	4P	4D*	34		3P*
K 16	22.726	2S 2P	2S 3D	3P*	3D	23		
K 16	22.779	2S 2P	2S 3D	3P*	3D	12		
K 19	2.585	1S	6P	G 2S	2P*	1		
K 19	2.615	1S	5P	G 2S	2P*	1		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CA 3	301.790	3P6	3P5	5S	G 1S	11*K	01		2P*
CA 3	304.333	3P6	3P5	5S	G 1S	22*K	01		2P*
CA 3	410.762	3P6	3P5	4S	G 1S	22*K	01		2P*
CA 4	325.704	3S23P5	3S23P4	3D	G 2P*	2D	22		1D
CA 4	329.062	3S23P5	3S23P4	3D	G 2P*	2D	12		1D
CA 4	338.580	3S23P5	3S23P4	4S	G 2P*	2P	12		3P
CA 5	223.639	3S23P4	3S23P3	4D	G 3P	3D*	23		4S*
CA 5	225.315	3S23P4	3S23P3	4D	G 3P	3D*	12		4S*
CA 5	226.123	3S23P4	3S23P3	4D	G 3P	3D*	01		4S*
CA 5	287.060	3P4	3P3	4S	G 3P	3S*	11		4S*
CA 5	288.255	3S23P4	3S23P3	4S	G 3P	3S*	11		4S*
CA 5	293.169	3S23P4	3S23P3	4S	G 3P	5S*	22		4S*
CA 5	516.642	3S23P4	3S23P3	3D	G 3P	3D*	23		4S*
CA 5	521.821	3S23P4	3S23P3	3D	G 3P	3D*	11		4S*
CA 5	522.552	3S23P4	3S23P3	3D	G 3P	3D*	12		4S*
CA 5	524.267	3S23P4	3S23P3	3D	G 3P	3D*	01		4S*
CA 5	533.498	3S23P4	3S23P3	3D	G 3P	5D*	01		4S*
CA 5	749.900	3S23P4	3S 3P5		1D	3P*	22		
CA 6	333.512	3S23P3	3S23P2	3D	G 4S*	4P	21		3P
CA 6	334.938	3S23P3	3S23P2	3D	G 4S*	4P	22		3P
CA 6	335.233	3S23P3	3S23P2	3D	G 4S*	4P	23		3P
CA 7	209.780	3S23P2	3S23P	4S	1D	1P*	21		
CA 9	120.133	3S2	3S	4P	G 1S	1P*	01		2S
CA10	82.265	3P		6D	2P*	2D	12		
CA10	82.612	3P		6D	2P*	2D	23		
CA10	82.800	3S		5P	G 2S	2P*	12		
CA10	82.866	3S		5P	G 2S	2P*	11		
CA10	99.445	3P		5S	2P*	2S	11		
CA10	123.786	3P		4D	2P*	2D	22		
CA12	28.018	2P5	2P4	3D	G 2P*	2P	22		1D
CA12	28.119	2P5	2P4	3D	G 2P*	2D	23		1D
CA12	28.508	2P5	2P4	3D	G 2P*	2D	23		3P
CA12	28.667	2P5	2P4	3D	G 2P*	2P	22		3P
CA12	28.738	2P5	2P4	3D	G 2P*	2P	21		3P
CA12	28.799	2P5	2P4	3D	G 2P*	4D	22		3P
CA12	28.883	2P5	2P4	3D	G 2P*	2P	11		3P
CA12	29.606	2P5	2P4	3D	G 2P*	2D	12		3P
CA12	33.028	2S 2P6	2S 2P5	3S	2S	2P*	12		3P*
CA12	33.041	2S 2P6	2S 2P5	3S	2S	2P*	12		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
SC 3	302.663	3P6 3D	3P53D2	G 2D	2D*	22	1S	
SC 3	303.438	3P6 3D	3P53D2	G 2D	2D*	33	1S	
SC 3	305.907	3P6 3D	3P53D2	G 2D	2F*	34	1S	
SC 3	307.027	3P6 3D	3P53D2	G 2D	2F*	23	1S	
SC 5	184.984	3P5	3P4 4D	G 2P*	2D	22		1D
SC 5	185.632	3P5	3P4 4D	G 2P*	2D	23		1D
SC 5	186.296	3P5	3P4 4D	G 2P*	2P	22		1D
SC 5	186.520	3P5	3P4 4D	G 2P*	2D	12		1D
SC 5	186.643	3P5	3P4 4D	G 2P*	2S	21		1D
SC 5	187.796	3P5	3P4 4D	G 2P*	2P	12		1D
SC 5	188.219	3P5	3P4 4D	G 2P*	2S	11		1D
SC 5	189.776	3S23P5	3S23P4 5S	G 2P*	2D	23		1D
SC 5	190.752	3P5	3P4 4D	G 2P*	2F	23		3P
SC 5	191.536	3P5	3P4 4D	G 2P*	4F	23		3P
SC 5	192.298	3P5	3P4 4D	G 2P*	2D	22		3P
SC 5	192.617	3P5	3P4 4D	G 2P*	2D	23		3P
SC 5	193.878	3P5	3P4 4D	G 2P*	2D	12		3P
SC 5	377.104	3S23P5	3S23P4 3D	G 2P*	2D	23		3P
SC 5	380.206	3S23P5	3S23P4 3D	G 2P*	2D	22		3P
SC 5	386.494	3S23P5	3S23P4 3D	G 2P*	2D	12		3P
SC 6	277.657	3P4	3P3 3D	G 3P	1D*	12		2P*
SC 6	292.122	3P4	3P3 3D	G 3P	1P*	21		2D*
SC 6	296.949	3P4	3P3 3D	G 3P	3P*	11		2P*
SC 6	298.166	3P4	3P3 3D	G 3P	3P*	12		2P*
SC 7	302.500	3S23P3	3S23P2 3D	2D*	2D	22		1D
SC 7	303.098	3S23P3	3S23P2 3D	2D*	2D	32		1D
SC 7	308.353	3S23P3	3S23P2 3D	2P*	2P	12		1D
SC 7	309.181	3S23P3	3S23P2 3D	2P*	2P	22		1D
SC 7	354.171	3S23P3	3S23P2 3D	2P*	2P	21		3P
SC 7	357.289	3S23P3	3S23P2 3D	2P*	2P	12		3P
SC 7	358.433	3S23P3	3S23P2 3D	2P*	2P	22		3P
SC 7	488.866	3S23P3	3S 3P4	2P*	2S	11		
SC 7	491.004	3S23P3	3S 3P4	2P*	2S	21		
SC 8	295.432	3S23P2	3S23P 3D	G 3P	3D*	21		
SC 8	355.842	3S23P2	3S 3P3	G 3P	1P*	01		
SC 8	556.110	3S23P2	3S 3P3	G 3P	3D*	01		
SC 8	562.827	3S23P2	3S 3P3	G 3P	3D*	12		
SC 8	563.041	3S23P2	3S 3P3	G 3P	3D*	11		
SC 8	571.688	3S23P2	3S 3P3	G 3P	3D*	23		
SC 8	573.106	3S23P2	3S 3P3	G 3P	3D*	22		
SC 9	94.517	3S2 3P	3S2 5D	G 2P*	2D	12		
SC 9	95.025	3S2 3P	3S2 5D	G 2P*	2D	23		
SC 9	317.841	3S 3P2	3S 3P 3D	4P	4D*	12		3P*
SC 9	318.612	3S 3P2	3S 3P 3D	4P	4D*	11		3P*
SC 9	319.515	3S 3P2	3S 3P 3D	4P	4D*	23		3P*
SC 9	319.988	3S 3P2	3S 3P 3D	4P	4D*	22		3P*
SC 9	320.765	3S 3P2	3S 3P 3D	4P	4D*	21		3P*
SC 9	322.639	3S 3P2	3S 3P 3D	4P	4D*	34		3P*
SC 9	322.711	3S 3P2	3S 3P 3D	4P	4D*	33		3P*
SC 9	323.194	3S 3P2	3S 3P 3D	4P	4D*	32		3P*
SC 9	384.473	3S23P	3S 3P2	G 2P*	2P	12		
SC 9	386.195	3S2 3P	3S 3P2	G 2P*	2P	12		
SC 9	390.221	3S23P	3S 3P2	G 2P*	2P	11		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM	LOWER	UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
SC 9	392.867	3S23P	3S 3P2	G	2P*	2P	22		
SC 9	399.755	3S23P	3S 3P2	G	2P*	2P	21		
SC 9	426.741	3S 3P2	3P3		4P	4S*	32		
SC 9	451.452	3S23P	3S 3P2	G	2P*	2D	22		
SC 9	522.265	3S2 3P	3S 3P2	G	2P*	2D	12		
SC 9	643.388	3S23P	3S 3P2	G	2P*	2D	23		
SC10	338.340	3S 3P	3S 3D		3P*	3D	11		
SC10	422.234	3S2	3S 3P	G	1S	1P*	01		
SC10	449.283	3S 3P	3P2		3P*	3P	12	2S	
SC10	455.237	3S 3P	3P2		3P*	3P	01	2S	
SC10	458.116	3S 3P	3P2		3P*	3P	22	2S	
SC10	459.387	3S 3P	3P2		3P*	3P	11	2S	
SC10	464.977	3S 3P	3P2		3P*	3P	10	2S	
SC10	468.673	3S 3P	3P2		3P*	3P	21	2S	
SC11	382.072	3P	3D		2P*	2D	23		
SC11	382.692	3P	3D		2P*	2D	22		
SC11	383.500	3P	3D		2P*	2D	22		
SC11	505.252	3S	3P	G	2S	2P*	12		
SC11	522.765	3S	3P	G	2S	2P*	11		
SC12	21.935	2S22P6	2S22P5 4D	G	1S	12*K	01		2P*
SC12	22.107	2S22P6	2S22P5 4D	G	1S	22*K	01		2P*
SC12	22.875	2S22P6	2S22P5 4S	G	1S	11*K	01		2P*
SC12	23.002	2S22P6	2S22P5 4S	G	1S	22*K	01		2P*
SC13	24.241	2P5	2P4 3D	G	2P*	2D	12		1S
SC13	24.623	2P5	2P4 3D	G	2P*	2P	21		1D
SC13	25.282	2P5	2P4 3D	G	2P*	2P	12		3P
SC14	122.700	2S22P4	2S 2P5		1D	1P*	21		
SC14	132.930	2S22P4	2S 2P5		1S	1P*	01		
SC14	145.168	2S22P4	2S 2P5	G	3P	3P*	21		
SC14	148.573	2S22P4	2S 2P5	G	3P	3P*	10		
SC14	150.574	2S22P4	2S 2P5	G	3P	3P*	22		
SC14	151.959	2S22P4	2S 2P5	G	3P	3P*	11		
SC14	152.971	2S22P4	2S 2P5	G	3P	3P*	01		
SC14	157.911	2S22P4	2S 2P5	G	3P	3P*	12		
SC15	119.080	2S22P3	2S 2P4		2D*	2P	21		
SC15	124.233	2S22P3	2S 2P4		2D*	2P	22		
SC15	125.871	2S22P3	2S 2P4		2D*	2P	32		
SC15	170.090	2S22P3	2S 2P4	G	4S*	4P	21		
SC15	173.413	2S22P3	2S 2P4	G	4S*	4P	22		
SC15	181.271	2S22P3	2S 2P4	G	4S*	4P	23		

TABLE II.- CALCULATED LINES – Continued

		CONFIGURATION		TERM			PARENT-TERM	
ION	WAVELENGTH	LOWER	UPPER	LOWER	UPPER	JJ	LOWER	UPPER
TI 3	1431.728	3D2	3D 4P	3P	1P*	21		2D
TI 3	1434.696	3D2	3D 4P	3P	3P*	11		2D
TI 4	254.198	3P6 3D	3P53D2	G 2D	2D*	23		
TI 4	254.404	3P6 3D	3P53D 4S	G 2D	2D*	22		3D*
TI 4	254.429	3P6 3D	3P53D2	G 2D	2D*	32		
TI 4	254.692	3P6 3D	3P53D 4S	G 2D	2D*	32		3D*
TI 4	256.374	3P6 3D	3P53D2	G 2D	2D*	22	1S	
TI 4	256.946	3P6 3D	3P53D2	G 2D	2D*	33	1S	
TI 4	257.284	3P6 3D	3P53D 4S	G 2D	2D*	23		3D*
TI 4	257.430	3P6 3D	3P53D 4S	G 2D	2D*	33		3D*
TI 4	259.332	3P6 3D	3P53D 4S	G 2D	4D*	33		3D*
TI 4	259.522	3P6 3D	3P53D 4S	G 2D	4D*	34		3D*
TI 4	264.625	3P6 3D	3P53D 4S	G 2D	4P*	32		3P*
TI 4	264.647	3P6 3D	3P53D 4S	G 2D	2P*	21		3P*
TI 4	266.577	3P6 3D	3P53D 4S	G 2D	2F*	23		3F*
TI 4	267.039	3P6 3D	3P53D 4S	G 2D	2F*	33		3F*
TI 4	268.361	3P6 3D	3P53D 4S	G 2D	2F*	34		3F*
TI 4	268.932	3P6 3D	3P53D 4S	G 2D	2P*	22		3P*
TI 4	270.113	3P6 3D	3P53D 4S	G 2D	4F*	34		3F*
TI 4	271.197	3P6 3D	3P53D 4S	G 2D	4F*	23		3F*
TI 4	284.538	3P6 3D	3P53D2	G 2D	2F*	34	1S	
TI 4	284.973	3P6 3D	3P53D2	G 2D	2F*	23	1S	
TI 5	163.076	3P6	3P5 5S	G 1S	11*K	01		2P*
TI 5	164.445	3P6	3P5 5S	G 1S	22*K	01		2P*
TI 5	170.159	3P6	3P5 4D	1S	12*J	01		2P*1
TI 5	171.950	3P6	3P5 4D	1S	23*J	01		2P*2
TI 5	229.155	3P6	3P5 4S	G 1S	22*K	01		2P*
TI 6	203.890	3S23P5	3S23P4 4S	G 2P*	4P	12		3P
TI 7	123.622	3P4	3P3 5S	G 3P	3S*	21		4S*
TI 7	124.335	3P4	3P3 5S	G 3P	3S*	11		4S*
TI 7	124.535	3P4	3P3 5S	G 3P	3S*	01		4S*
TI 7	169.853	3P4	3P3 4S	G 3P	1D*	12		2D*
TI 8	297.453	3S23P3	3S23P2 3D	2D*	2P	21		3P
TI 8	301.500	3S23P3	3S23P2 3D	2D*	2P	22		3P
TI 8	302.429	3S23P3	3S23P2 3D	2D*	2P	32		3P
TI 8	500.199	3S23P3	3S 3P4	G 4S*	4P	21		
TI 8	505.035	3S23P3	3S 3P4	G 4S*	4P	22		
TI 9	136.585	3S23P2	3S23P 4S	G 3P	3P*	12		2P*
TI 9	137.137	3S23P2	3S23P 4S	G 3P	3P*	01		2P*
TI 9	137.364	3S23P2	3S23P 4S	G 3P	3P*	22		2P*
TI 9	137.723	3S23P2	3S23P 4S	G 3P	3P*	11		2P*
TI 9	137.947	3S23P2	3S23P 4S	G 3P	3P*	10		2P*
TI 9	138.510	3S23P2	3S23P 4S	G 3P	3P*	21		2P*
TI 9	280.450	3S23P2	3S23P 3D	G 3P	3P*	01		2P*
TI 9	324.841	3S23P2	3S 3P3	G 3P	1P*	11		
TI 9	329.283	3S23P2	3S 3P3	G 3P	1P*	21		
TI 9	335.974	3S23P2	3S 3P3	G 3P	3S*	01		
TI 9	447.975	3S23P2	3S 3P3	G 3P	3P*	2		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
TI10	101.163	3S2 3P	3S2 4D	G 2P*	2D	12	1S	1S
TI10	101.902	3S2 3P	3S2 4D	G 2P*	2D	23	1S	1S
TI10	123.035	3S 3P2	3S 3P 4S	4P	4P*	23		3P*
TI10	123.329	3S 3P2	3S 3P 4S	4P	4P*	12		3P*
TI10	123.658	3S 3P2	3S 3P 4S	4P	4P*	33		3P*
TI10	124.185	3S 3P2	3S 3P 4S	4P	4P*	21		3P*
TI10	124.382	3S 3P2	3S 3P 4S	4P	4P*	32		3P*
TI10	125.601	3S2 3P	3S2 4S	G 2P*	2S	11	1S	1S
TI10	126.800	3S2 3P	3S2 4S	G 2P*	2S	21	1S	1S
TI10	289.720	3S2 3P	3S2 3D	G 2P*	2D	12	1S	1S
TI10	295.677	3S2 3P	3S2 3D	G 2P*	2D	23	1S	1S
TI10	296.148	3S2 3P	3S2 3D	G 2P*	2D	22	1S	1S
TI10	355.923	3S2 3P	3S 3P2	G 2P*	2P	11	1S	
TI10	360.185	3S2 3P	3S 3P2	G 2P*	2P	22	1S	
TI10	365.690	3S2 3P	3S 3P2	G 2P*	2P	21	1S	
TI10	378.040	3S2 3P	3S 3P2	G 2P*	2S	11	1S	
TI10	389.243	3S2 3P	3S 3P2	G 2P*	2S	21	1S	
TI10	489.278	3S2 3P	3S 3P2	G 2P*	2D	23	1S	
TI11	71.351	3S 3P	3S 5D	3P*	3D	12	2S	2S
TI11	90.843	3S 3D	3S 5F	3D	3F*	34		
TI11	93.377	3S 3P	3S 4D	3P*	3D	01	2S	2S
TI11	113.946	3S 3P	3S 4S	3P*	3S	01	2S	2S
TI11	125.608	3S 3D	3S 4F	3D	3F*	23		
TI11	125.940	3S 3D	3S 4F	3D	3F*	12	2S	2S
TI11	125.979	3S 3D	3S 4F	3D	3F*	23	2S	2S
TI11	126.017	3S 3D	3S 4F	3D	3F*	12		
TI11	126.160	3S 3D	3S 4F	3D	3F*	34		
TI11	295.992	3S 3P	3S 3D	3P*	3D	01	2S	2S
TI11	297.698	3S 3P	3S 3D	3P*	3D	12	2S	2S
TI11	302.093	3S 3P	3S 3D	3P*	3D	23	2S	2S
TI11	302.884	3S 3P	3S 3D	3P*	3D	22	2S	2S
TI11	306.907	3S 3P	3S 3D	3P*	3D	12		
TI11	307.336	3S 3P	3S 3D	3P*	3D	11		
TI11	312.206	3S 3P	3S 3D	3P*	3D	23		
TI11	386.775	3S2	3S 3P	G 1S	1P*	01		2S
TI11	415.024	3S 3P	3P2	3P*	3P	01	2S	
TI11	573.683	3S2	3S 3P	G 1S	3P*	01		2S
TI12	27.616	2P6 3S	2P53S2	G 2S	2P*	11		
TI12	27.922	2P6 3S	2P53S2	G 2S	2P*	12		
TI12	82.524	3D	5F	2D	2F*	23		
TI12	139.861	3D	4P	2D	2P*	32		
TI12	140.338	3D	4P	2D	2P*	21		
TI12	340.972	3P	3D	2P*	2D	12		
TI12	350.126	3P	3D	2P*	2D	23		
TI12	351.226	3P	3D	2P*	2D	22		
TI12	459.893	3S	3P	G 2S	2P*	12		
TI12	479.339	3S	3P	G 2S	2P*	11		
TI13	21.027	2S22P6	2S 2P6 3P	G 1S	1P*	01		2S
TI13	21.065	2S22P6	2S 2P6 3P	G 1S	1P*	01		
TI13	21.121	2S22P6	2S 2P6 3P	G 1S	3P*	01		2S
TI13	21.150	2S22P6	2S 2P6 3P	G 1S	3P*	01		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
V 3	1013.407	3D3	3D2 4P	G 4F	4D*	44		A3P
V 3	1015.950	3D3	3D2 4P	G 4F	4D*	54		A3P
V 3	1017.400	3D3	3D2 4P	G 4F	4D*	22		A3P
V 3	1018.515	3D3	3D2 4P	G 4F	4D*	43		A3P
V 3	1019.169	3D3	3D2 4P	G 4F	4D*	32		A3P
V 3	1066.172	3D3	3D2 4P	2G	2H*	56		A1G
V 3	1116.932	3D3	3D2 4P	4P	4P*	23		A3P
V 3	1118.796	3D3	3D2 4P	4P	4P*	33		A3P
V 3	1120.433	3D3	3D2 4P	4P	4P*	22		A3P
V 3	1123.320	3D3	3D2 4P	4P	4P*	32		A3P
V 3	1124.172	3D3	3D2 4P	2H	2H*	66		A1G
V 3	1130.958	3D3	3D2 4P	G 4F	2D*	33		A3F
V 3	1133.182	3D3	3D2 4P	G 4F	2D*	43		A3F
V 3	1137.129	3D3	3D2 4P	G 4F	4D*	54		A3F
V 3	1139.444	3D3	3D2 4P	G 4F	4D*	43		A3F
V 3	1141.816	3D3	3D2 4P	G 4F	4D*	32		A3F
V 3	1146.845	3D3	3D2 4P	4P	4D*	34		A3P
V 3	1151.171	3D3	3D2 4P	4P	4D*	23		A3P
V 3	1151.689	3D3	3D2 4P	G 4F	2F*	54		A3F
V 3	1153.003	3D3	3D2 4P	4P	4D*	12		A3P
V 3	1153.664	3D3	3D2 4P	G 4F	2F*	43		A3F
V 3	1158.982	3D3	3D2 4P	G 4F	4F*	45		A3F
V 3	1160.979	3D3	3D2 4P	G 4F	4F*	34		A3F
V 3	1162.398	3D3	3D2 4P	G 4F	4F*	55		A3F
V 3	1163.446	3D3	3D2 4P	G 4F	4F*	44		A3F
V 3	1164.634	3D3	3D2 4P	G 4F	4F*	33		A3F
V 3	1165.481	3D3	3D2 4P	G 4F	4F*	22		A3F
V 3	1167.558	3D3	3D2 4P	G 4F	4F*	43		A3F
V 3	1168.072	3D3	3D2 4P	G 4F	4F*	32		A3F
V 3	1171.832	3D3	3D2 4P	G 4F	4G*	56		A3F
V 3	1175.081	3D3	3D2 4P	2H	2G*	54		A1G
V 3	1175.253	3D3	3D2 4P	G 4F	4G*	45		A3F
V 3	1177.487	3D3	3D2 4P	4P	4S*	12		A3P
V 3	1178.644	3D3	3D2 4P	G 4F	4G*	34		A3F
V 3	1181.405	3D3	3D2 4P	G 4F	4G*	23		A3F
V 3	1268.491	3D3	3D2 4P	2G	2G*	55		A3F
V 3	1270.556	3D3	3D2 4P	2G	2G*	44		A3F
V 3	1274.352	3D3	3D2 4P	2G	2G*	54		A3F
V 3	1304.716	3D3	3D2 4P	4P	4D*	34		A3F
V 3	1308.824	3D3	3D2 4P	2G	2D*	43		A3F
V 3	1310.438	3D3	3D2 4P	4P	4D*	23		A3F
V 3	1312.313	3D3	3D2 4P	4P	4D*	33		A3F
V 3	1313.252	3D3	3D2 4P	2G	4D*	54		A3F
V 3	1314.773	3D3	3D2 4P	4P	4D*	12		A3F
V 3	1316.005	3D3	3D2 4P	2G	4D*	43		A3F
V 3	1316.540	3D3	3D2 4P	4P	4D*	22		A3F
V 3	1331.375	3D3	3D2 4P	2G	2F*	54		A3F
V 3	1335.443	3D3	3D2 4P	2G	2F*	43		A3F
V 3	1349.023	3D3	3D2 4P	2H	2G*	55		A3F
V 3	1351.645	3D3	3D2 4P	2H	2G*	65		A3F
V 3	1355.249	3D3	3D2 4P	2H	2G*	54		A3F
V 3	1389.502	3D3	3D2 4P	2D	2D*	33		A3F
V 3	1411.270	3D3	3D2 4P	2D	2F*	34		A3F
V 4	707.646	3D2	3D 4P	3P	1P*	21		2D

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
V 5	199.943	3P6 3D	3P53D 4S	G 2D	2D*	22		3D*
V 5	200.206	3P6 3D	3P53D 4S	G 2D	2D*	32		3D*
V 5	200.658	3P6 3D	3P53D 4S	G 2D	2D*	23		3D*
V 5	200.885	3P6 3D	3P53D 4S	G 2D	2D*	33		3D*
V 5	203.669	3P6 3D	3P53D 4S	G 2D	4D*	33		3D*
V 5	203.928	3P6 3D	3P53D 4S	G 2D	4D*	34		3D*
V 5	208.651	3P6 3D	3P53D 4S	G 2D	2F*	23		3F*
V 5	208.956	3P6 3D	3P53D 4S	G 2D	2F*	33		3F*
V 5	210.217	3P6 3D	3P53D 4S	G 2D	2F*	34		3F*
V 5	211.985	3P6 3D	3P53D 4S	G 2D	4F*	23		3F*
V 5	212.344	3P6 3D	3P53D 4S	G 2D	2P*	21		3P*
V 5	212.428	3P6 3D	3P53D 4S	G 2D	4F*	34		3F*
V 5	212.942	3P6 3D	3P53D 4S	G 2D	2P*	22		3P*
V 5	213.481	3P6 3D	3P53D 4S	G 2D	4P*	32		3P*
V 5	224.309	3P6 3D	3P53D2	G 2D	2D*	23		
V 5	224.457	3P6 3D	3P53D2	G 2D	2D*	32		
V 5	283.977	3P6 3D	3P6 4F	G 2D	2F*	23	1S	1S
V 5	284.372	3P6 3D	3P6 4F	G 2D	2F*	34	1S	1S
V 5	481.193	3P6 3D	3P6 4P	G 2D	2P*	22	1S	1S
V 5	482.655	3P6 3D	3P6 4P	G 2D	2P*	32	1S	1S
V 5	484.096	3P6 3D	3P6 4P	G 2D	2P*	21	1S	1S
V 5	506.981	3P6 4P	3P6 6S	2P*	2S	21	1S	1S
V 5	820.588	3P6 4P	3P6 5S	2P*	2S	11	1S	1S
V 5	828.608	3P6 4P	3P6 5S	2P*	2S	21	1S	1S
V 6	137.861	3P6	3P5 4D	1S	12*J	01		2P*1
V 6	139.235	3P6	3P5 4D	1S	23*J	01		2P*2
V 6	224.001	3P6	3P5 3D	1S	1P*	01		2P*
V 6	224.767	3P6	3P5 3D	G 1S	1P*	01		2P*
V 7	123.358	3P5	3P4 4D	G 2P*	2P	11		1D
V 7	164.563	3S23P5	3S23P4 4S	G 2P*	4P	12		3P
V 8	101.678	3P4	3P3 5S	G 3P	3S*	21		4S*
V 8	102.320	3P4	3P3 5S	G 3P	3S*	11		4S*
V 8	102.477	3P4	3P3 5S	G 3P	3S*	01		4S*
V 8	113.302	3P4	3P3 4D	1D	1F*	23		2D*
V 8	113.623	3P4	3P3 4D	1D	1D*	22		2D*
V 8	114.573	3P4	3P3 4D	G 3P	3D*	23		4S*
V 8	115.416	3P4	3P3 4D	G 3P	3D*	12		4S*
V 8	115.570	3P4	3P3 4D	G 3P	3D*	01		4S*
V 8	224.534	3P4	3P3 3D	G 3P	1D*	12		2P*
V 8	227.684	3P4	3P3 3D	G 3P	3D*	21		2P*
V 8	229.595	3P4	3P3 3D	1S	1P*	01		2P*
V 8	237.589	3P4	3P3 3D	G 3P	1P*	21		2D*
V 8	240.365	3P4	3P3 3D	G 3P	3P*	21		2P*
V 8	242.055	3P4	3P3 3D	G 3P	3S*	21		2D*
V 8	243.976	3P4	3P3 3D	G 3P	3P*	11		2P*
V 8	244.109	3P4	3P3 3D	1D	3D*	22		2P*
V 8	244.810	3P4	3P3 3D	G 3P	3P*	01		2P*
V 8	245.584	3P4	3P3 3D	G 3P	3S*	11		2D*
V 8	246.571	3P4	3P3 3D	G 3P	3S*	01		2D*
V 8	253.721	3P4	3P3 3D	1D	1P*	21		2D*
V 8	256.638	3P4	3P3 3D	1D	3P*	21		2P*
V 8	268.977	3P4	3P3 3D	1D	1F*	23		2D*

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
V 8	277.270	3P4	3P3 3D	1S	1P*	01		2D*
V 8	299.890	3P4	3P3 3D	1D	1D*	22		2D*
V 8	456.296	3S23P4	3S 3P5	G 3P	3P*	10		
V 8	472.919	3S23P4	3S 3P5	G 3P	3P*	12		
V 9	129.688	3S23P3	3S23P2 4S	2D*	2P	32		3P
V 9	130.324	3S23P3	3S23P2 4S	2D*	2P	21		3P
V 9	130.762	3S23P3	3S23P2 4S	2P*	2D	12		1D
V 9	131.193	3S23P3	3S23P2 4S	2P*	2D	23		1D
V 9	133.618	3S23P3	3S23P2 4S	2P*	2P	12		3P
V 9	134.002	3S23P3	3S23P2 4S	2P*	2P	22		3P
V 9	134.580	3S23P3	3S23P2 4S	2P*	2P	11		3P
V 9	134.968	3S23P3	3S23P2 4S	2P*	2P	21		3P
V 9	245.059	3S23P3	3S23P2 3D	G 4S*	4P	22		3P
V 9	247.694	3S23P3	3S23P2 3D	G 4S*	4P	23		3P
V 9	271.198	3S23P3	3S23P2 3D	2D*	2P	21		3P
V 9	275.510	3S23P3	3S23P2 3D	2D*	2P	22		3P
V 9	276.612	3S23P3	3S23P2 3D	2D*	2P	32		3P
V 9	452.527	3S23P3	3S 3P4	G 4S*	4P	21		
V 9	457.657	3S23P3	3S 3P4	G 4S*	4P	22		
V 10	115.157	3S23P2	3S23P 4S	G 3P	3P*	12		2P*
V 10	115.651	3S23P2	3S23P 4S	G 3P	3P*	01		2P*
V 10	115.852	3S23P2	3S23P 4S	G 3P	3P*	22		2P*
V 10	116.200	3S23P2	3S23P 4S	G 3P	3P*	11		2P*
V 10	116.367	3S23P2	3S23P 4S	G 3P	3P*	10		2P*
V 10	116.898	3S23P2	3S23P 4S	G 3P	3P*	21		2P*
V 10	256.226	3S23P2	3S23P 3D	G 3P	3P*	01		2P*
V 10	257.203	3S23P2	3S23P 3D	G 3P	3P*	10		2P*
V 10	258.564	3S23P2	3S23P 3D	G 3P	3P*	11		2P*
V 10	262.191	3S23P2	3S23P 3D	G 3P	3P*	21		2P*
V 10	262.642	3S23P2	3S23P 3D	G 3P	3P*	12		2P*
V 10	266.387	3S23P2	3S23P 3D	G 3P	3P*	22		2P*
V 10	297.036	3S23P2	3S 3P3	G 3P	1P*	11		
V 10	301.693	3S23P2	3S 3P3	G 3P	1P*	21		
V 10	308.476	3S23P2	3S 3P3	G 3P	3S*	11		
V 10	309.467	3S23P2	3S 3P3	G 3P	3S*	C1		
V 10	313.639	3S23P2	3S 3P3	G 3P	3S*	21		
V 10	323.902	3S23P2	3S 3P3	1D	1P*	21		
V 10	400.563	3S23P2	3S 3P3	G 3P	3P*	1		
V 10	409.363	3S23P2	3S 3P3	G 3P	3P*	2		
V 11	86.817	3S2 3P	3S2 4D	G 2P*	2D	12	1S	1S
V 11	87.506	3S2 3P	3S2 4D	G 2P*	2D	23	1S	1S
V 11	104.769	3S 3P2	3S 3P 4S	4P	4P*	23		3P*
V 11	105.033	3S 3P2	3S 3P 4S	4P	4P*	12		3P*
V 11	105.340	3S 3P2	3S 3P 4S	4P	4P*	33		3P*
V 11	105.873	3S 3P2	3S 3P 4S	4P	4P*	21		3P*
V 11	106.003	3S 3P2	3S 3P 4S	4P	4P*	32		3P*
V 11	106.720	3S2 3P	3S2 4S	G 2P*	2S	11	1S	1S
V 11	107.823	3S2 3P	3S2 4S	G 2P*	2S	21	1S	1S
V 11	265.767	3S2 3P	3S2 3D	G 2P*	2D	12	1S	1S
V 11	272.084	3S2 3P	3S2 3D	G 2P*	2D	23	1S	1S
V 11	272.655	3S2 3P	3S2 3D	G 2P*	2D	22	1S	1S
V 11	326.365	3S2 3P	3S 3P2	G 2P*	2P	11	1S	
V 11	331.105	3S2 3P	3S 3P2	G 2P*	2P	22	1S	

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
V 11	336.848	3S2 3P	3S 3P2	G 2P*	2P	21	1S	
V 11	357.190	3S 3P2	3P3	4P	4S*	32		
V 11	358.163	3S2 3P	3S 3P2	G 2P*	2S	21	1S	
V 11	449.144	3S2 3P	3S 3P2	G 2P*	2D	23	1S	
V 12	76.904	3S 3D	3S 5F	3D	3F*	34		
V 12	106.679	3S 3D	3S 4F	3D	3F*	23		
V 12	106.802	3S 3D	3S 4F	3D	3F*	12		
V 12	106.916	3S 3D	3S 4F	3D	3F*	34		
V 12	264.592	3S 3P	3S 3D	3P*	3D	01	2S	2S
V 12	266.127	3S 3P	3S 3D	3P*	3D	12	2S	2S
V 12	270.451	3S 3P	3S 3D	3P*	3D	23	2S	2S
V 12	271.475	3S 3P	3S 3D	3P*	3D	22	2S	2S
V 12	282.792	3S 3P	3S 3D	3P*	3D	12		
V 12	283.175	3S 3P	3S 3D	3P*	3D	11		
V 12	288.239	3S 3P	3S 3D	3P*	3D	23		
V 12	356.301	3S2	3S 3P	G 1S	1P*	01		2S
V 12	527.864	3S2	3S 3P	G 1S	3P*	01		2S
V 13	118.041	3D	4P	2D	2P*	32		
V 13	118.465	3D	4P	2D	2P*	21		
V 13	313.402	3P	3D	2P*	2D	12		
V 13	313.736	3P	3D	2P*	2D	12		
V 13	323.543	3P	3D	2P*	2D	23		
V 13	422.526	3S	3P	G 2S	2P*	12		
V 13	443.211	3S	3P	G 2S	2P*	11		
V 14	18.758	2S22P6	2S 2P6 3P	G 1S	1P*	01		2S
V 14	18.897	2S22P6	2S 2P6 3P	G 1S	3P*	01		2S
V 14	20.717	2S22P6	2S22P5 3D	G 1S	12*K	01		2P*
V 14	21.285	2S22P6	2S22P5 3D	G 1S	21*K	01		2P*
V 15	22.192	2P5	2P4 3S	G 2P*	4P	23		3P
CR 5	447.065	3D2	3D 4P	1D	1F*	23		2D
CR 5	467.448	3D2	3D 4P	3P	3F*	23		2D
CR 6	208.870	3P6 3D	3P6 4F	G 2D	2F*	23	1S	1S
CR 6	209.211	3P6 3D	3P6 4F	G 2D	2F*	34	1S	1S
CR 6	371.896	3P6 4P	3P6 6S	2P*	2S	21	1S	1S
CR 6	603.154	3P6 4P	3P6 5S	2P*	2S	11	1S	1S
CR 6	609.486	3P6 4P	3P6 5S	2P*	2S	21	1S	1S
CR 8	88.369	3P5	3P4 5S	G 2P*	2D	23		1D
CR 8	102.234	3P5	3P4 4D	G 2P*	2D	22		1D
CR 8	102.447	3P5	3P4 4D	G 2P*	2D	23		1D
CR 8	102.964	3P5	3P4 4D	G 2P*	2P	22		1D
CR 8	103.303	3P5	3P4 4D	G 2P*	2D	12		1D
CR 8	103.481	3P5	3P4 4D	G 2P*	2S	21		1D
CR 8	103.694	3P5	3P4 4D	G 2P*	2P	11		1D
CR 8	104.003	3P5	3P4 4D	G 2P*	2P	12		1D
CR 8	104.550	3P5	3P4 4D	G 2P*	2S	11		1D
CR 8	105.133	3P5	3P4 4D	G 2P*	2F	23		3P
CR 8	105.381	3P5	3P4 4D	G 2P*	4F	23		3P
CR 8	105.537	3P5	3P4 4D	G 2P*	2D	22		3P
CR 8	105.643	3P5	3P4 4D	G 2P*	2D	23		3P
CR 8	106.678	3P5	3P4 4D	G 2P*	2D	12		3P

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CR 9	96.171	3P4	3P3 4D	1D	1F*	23		2D*
CR 9	96.437	3P4	3P3 4D	1D	1D*	22		2D*
CR 9	97.091	3P4	3P3 4D	G 3P	3D*	23		4S*
CR 9	97.910	3P4	3P3 4D	G 3P	3D*	12		4S*
CR 9	97.941	3P4	3P3 4D	G 3P	3D*	01		4S*
CR 9	363.718	3S23P4	3S 3P5	1D	1P*	21		
CR 9	407.974	3S23P4	3S 3P5	G 3P	3P*	21		
CR 9	418.492	3S23P4	3S 3P5	G 3P	3P*	22		
CR 9	421.188	3S23P4	3S 3P5	G 3P	3P*	11		
CR 9	424.383	3S23P4	3S 3P5	G 3P	3P*	01		
CR10	106.503	3S23P3	3S23P2 4S	G 4S*	4P	23		3P
CR10	107.166	3S23P3	3S23P2 4S	G 4S*	4P	22		3P
CR10	107.514	3S23P3	3S23P2 4S	2D*	2D	22		1D
CR10	107.703	3S23P3	3S23P2 4S	G 4S*	4P	21		3P
CR10	107.808	3S23P3	3S23P2 4S	2D*	2D	33		1D
CR11	231.020	3S23P2	3S23P 3D	G 3P	3D*	01		
CR11	232.244	3S23P2	3S23P 3D	G 3P	3D*	12		
CR11	234.263	3S23P2	3S23P 3D	G 3P	3D*	11		
CR11	235.734	3S23P2	3S23P 3D	G 3P	3D*	22		
CR12	293.904	3S23P	3S 3P2	G 2P*	2P	12		
CR12	299.807	3S23P	3S 3P2	G 2P*	2P	11		
CR12	318.236	3S23P	3S 3P2	G 2P*	2S	11		
CR12	332.352	3S23P	3S 3P2	G 2P*	2S	21		
CR13	70.999	3S 3P	3S 4D	3P*	3D	11	2S	2S
CR13	91.808	3S 3D	3S 4F	3D	3F*	34	2S	2S
CR16	17.628	2P5	2P4 3D	G 2P*	2S	11		1D

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
MN 6	311.262	3D2	3D 4P	G 3F	3D*	32		2D
MN 6	315.651	3D2	3D 4P	1D	1F*	23		2D
MN 6	915.397	3D 4P	3D 4D	3F*	3G	23	2D	2D
MN 6	920.611	3D 4P	3D 4D	3F*	3G	34	2D	2D
MN 6	925.704	3D 4P	3D 4D	3F*	3G	45	2D	2D
MN 6	933.524	3D 4P	3D 4D	3F*	3G	44	2D	2D
MN 9	106.659	3P5	3P4 4S	G 2P*	2S	11		1S
MN10	334.682	3S23P4	3S 3P5	1D	1P*	21		
MN10	372.711	3S23P4	3S 3P5	G 3P	3P*	21		
MN10	383.549	3S23P4	3S 3P5	G 3P	3P*	22		
MN10	386.634	3S23P4	3S 3P5	G 3P	3P*	11		
MN10	389.595	3S23P4	3S 3P5	G 3P	3P*	01		
MN11	91.628	3S23P3	3S23P2 4S	G 4S*	4P	23		3P
MN11	92.237	3S23P3	3S23P2 4S	G 4S*	4P	22		3P
MN11	92.401	3S23P3	3S23P2 4S	2D*	2D	22		1D
MN11	92.681	3S23P3	3S23P2 4S	2D*	2D	33		1D
MN11	92.733	3S23P3	3S23P2 4S	G 4S*	4P	21		3P
MN11	207.069	3S23P3	3S23P2 3D	G 4S*	4P	21		3P
MN12	214.235	3S23P2	3S23P 3D	G 3P	3D*	01		
MN12	215.246	3S23P2	3S23P 3D	G 3P	3D*	12		
MN12	218.028	3S23P2	3S23P 3D	G 3P	3D*	11		
MN12	218.828	3S23P2	3S23P 3D	G 3P	3D*	22		
MN13	254.544	3S23P	3S 3P2	G 2P*	2S	11		
MN13	309.329	3S23P	3S 3P2	G 2P*	2S	21		
MN13	330.926	3S23P	3S 3P2	G 2P*	2D	22		
MN13	447.530	3S23P	3S 3P2	G 2P*	2D	23		
MN14	47.020	3S 3P	3S 5D	3P*	3D	12	2S	2S
MN14	47.297	3S 3P	3S 5D	3P*	3D	23	2S	2S
MN14	62.513	3S 3P	3S 4D	3P*	3D	01	2S	2S
MN14	74.045	3S 3P	3S 4S	3P*	3S	01	2S	2S
MN14	79.732	3S 3D	3S 4F	3D	3F*	34	2S	2S
MN14	328.300	3S 3P	3P2	3P*	3P	22	2S	
MN15	44.816	3P	5D	2P*	2D	12		
MN15	45.152	3P	5D	2P*	2D	23		
MN17	15.947	2P5	2P4 3D	G 2P*	2S	11		1D
MN17	16.020	2P5	2P4 3D	G 2P*	2D	12		3P
MN24	1.722	1S2	1S 3P	G 1S	3P*	01		
MN24	2.007	1S2	1S 2P	G 1S	3P*	01		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
FE 5	352.586	3D4	3D3 4P		3H	3G*	65		A2F
FE 5	352.764	3D4	3D3 4P		3H	3G*	54		A2F
FE 5	352.938	3D4	3D3 4P		3H	3G*	43		A2F
FE 5	378.015	3D4	3D3 4P		3F	3G*	23		A2F
FE 7	233.110	3D2	3D 4P	G	3F	3D*	33		2D
FE 7	233.747	3D2	3D 4P	G	3F	3D*	43		2D
FE 7	243.278	3D2	3D 4P		3P	3F*	23		2D
FE 7	244.515	3D2	3D 4P		3P	3D*	23		2D
FE 7	245.086	3D2	3D 4P		3P	3D*	01		2D
FE 7	245.278	3D2	3D 4P		3P	3D*	11		2D
FE 7	776.654	3D 4P	3D 4D		3F*	3G	23	2D	2D
FE 7	782.048	3D 4P	3D 4D		3F*	3G	34	2D	2D
FE 7	786.303	3D 4P	3D 4D		3F*	3G	45	2D	2D
FE 7	794.414	3D 4P	3D 4D		3F*	3G	44	2D	2D
FE10	77.001	3P5	3P4 4D	G	2P*	2P	12		1D
FE10	90.418	3P5	3P4 4S	G	2P*	2S	21		1S
FE10	91.701	3P5	3P4 4S	G	2P*	2S	11		1S
FE11	192.576	3P4	3P3 3D	G	3P	3P*	11		2P*
FE12	364.447	3S23P3	3S 3P4	G	4S*	4P	23		
FE14	269.034	3S23P	3S 3P2	G	2P*	2D	22		
FE15	41.880	3S 3P	3S 5D		3P*	3D	23	2S	2S
FE15	66.234	3S 3P	3S 4S		3P*	3S	21	2S	2S
FE15	292.231	3S 3P	3P2		3P*	3P	12	2S	
FE15	307.814	3S 3P	3P2		3P*	3P	11	2S	
FE18	14.446	2P5	2P4 3D	G	2P*	2D	12		3P
FE18	14.461	2P5	2P4 3D	G	2P*	2P	22		3P
FE18	14.535	2P5	2P4 3D	G	2P*	2P	21		3P
FE18	14.820	2P5	2P4 3D	G	2P*	2P	11		3P
FE18	16.009	2P5	2P4 3S	G	2P*	4P	22		3P
CO 6	247.515	3D4	3D3 4P		3F	3G*	23		A2F
CO 6	255.806	3D4	3D3 4P		3H	3G*	65		A2F
CO 6	255.936	3D4	3D3 4P		3H	3G*	54		A2F
CO 6	256.085	3D4	3D3 4P		3H	3G*	43		A2F
CO 6	265.481	3D4	3D3 4P	G	5D	5P*	23		A4P
CO 6	265.839	3D4	3D3 4P	G	5D	5P*	33		A4P
CO 6	265.976	3D4	3D3 4P	G	5D	5P*	12		A4P
CO 6	266.250	3D4	3D3 4P	G	5D	5P*	22		A4P
CO 6	266.316	3D4	3D3 4P	G	5D	5P*	43		A4P
CO 6	266.469	3D4	3D3 4P	G	5D	5P*	11		A4P
CO 6	266.629	3D4	3D3 4P	G	5D	5P*	32		A4P
CO 6	266.739	3D4	3D3 4P	G	5D	5P*	21		A4P
CO 6	270.950	3D4	3D3 4P		3H	3G*	43		A2H
CO 6	271.353	3D4	3D3 4P		3H	3G*	54		A2H
CO 6	271.522	3D4	3D3 4P		3H	3G*	55		A2H
CO 6	271.798	3D4	3D3 4P		3H	3G*	65		A2H
CO 6	275.121	3D4	3D3 4P		3G	3G*	33		A2H
CO 6	275.558	3D4	3D3 4P		3G	3G*	44		A2H

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO 6	275.696	3D4	3D3 4P	3G	3G*	45		A2H
CO 6	275.980	3D4	3D3 4P	3G	3G*	55		A2H
CO 6	276.387	3D4	3D3 4P	G 5D	3D*	23		A4F
CO 6	276.883	3D4	3D3 4P	G 5D	3D*	12		A4F
CO 6	277.467	3D4	3D3 4P	G 5D	5F*	34		A4F
CO 6	277.475	3D4	3D3 4P	G 5D	5F*	45		A4F
CO 6	278.053	3D4	3D3 4P	G 5D	5F*	33		A4F
CO 6	278.482	3D4	3D3 4P	G 5D	5F*	11		A4F
CO 6	278.565	3D4	3D3 4P	G 5D	5F*	43		A4F
CO 6	278.670	3D4	3D3 4P	G 5D	5F*	32		A4F
CO 6	278.764	3D4	3D3 4P	G 5D	5D*	34		A4F
CO 6	278.765	3D4	3D3 4P	G 5D	5D*	23		A4F
CO 6	278.798	3D4	3D3 4P	G 5D	5F*	21		A4F
CO 6	279.269	3D4	3D3 4P	G 5D	5D*	44		A4F
CO 6	279.465	3D4	3D3 4P	G 5D	5D*	33		A4F
CO 6	279.605	3D4	3D3 4P	G 5D	5D*	01		A4F
CO 6	279.990	3D4	3D3 4P	G 5D	5D*	43		A4F
CO 6	280.048	3D4	3D3 4P	G 5D	5D*	32		A4F
CO 6	282.292	3D4	3D3 4P	3H	3G*	65		A2G
CO 6	282.587	3D4	3D3 4P	3H	3G*	54		A2G
CO 6	283.068	3D4	3D3 4P	3H	3G*	43		A2G
CO 6	283.541	3D4	3D3 4P	3F	3G*	45		A2G
CO 6	284.034	3D4	3D3 4P	3F	3G*	34		A2G
CO 6	284.797	3D4	3D3 4P	3F	3G*	23		A2G
CO 6	286.809	3D4	3D3 4P	3G	3G*	55		A2G
CO 6	287.161	3D4	3D3 4P	3G	3G*	44		A2G
CO 6	287.647	3D4	3D3 4P	3G	3G*	33		A2G
CO 6	288.052	3D4	3D3 4P	3G	3G*	43		A2G
CO 6	294.378	3D4	3D3 4P	3F	3F*	34		A4F
CO 6	294.520	3D4	3D3 4P	3F	3F*	44		A4F
CO 6	295.326	3D4	3D3 4P	3F	3F*	43		A4F
CO 6	295.810	3D4	3D3 4P	3F	3F*	22		A4F
CO 6	295.880	3D4	3D3 4P	3F	3F*	32		A4F
CO 6	296.005	3D4	3D3 4P	3H	3G*	65		A4F
CO 6	296.072	3D4	3D3 4P	3H	3G*	44		A4F
CO 6	296.444	3D4	3D3 4P	3H	3G*	54		A4F
CO 6	296.719	3D4	3D3 4P	3H	3G*	43		A4F
CO 6	297.367	3D4	3D3 4P	3F	3G*	45		A4F
CO 6	297.723	3D4	3D3 4P	3G	3F*	44		A4F
CO 6	298.024	3D4	3D3 4P	3F	3G*	34		A4F
CO 6	298.052	3D4	3D3 4P	3G	3F*	54		A4F
CO 6	298.529	3D4	3D3 4P	3G	3F*	43		A4F
CO 6	298.600	3D4	3D3 4P	3F	3G*	23		A4F
CO 6	298.871	3D4	3D3 4P	3G	3F*	32		A4F
CO 6	299.559	3D4	3D3 4P	3P	3D*	01		A4F
CO 6	300.207	3D4	3D3 4P	3P	3D*	12		A4F
CO 6	300.687	3D4	3D3 4P	3P	3D*	11		A4F
CO 6	300.974	3D4	3D3 4P	3G	3G*	55		A4F
CO 6	301.116	3D4	3D3 4P	3P	3D*	23		A4F
CO 6	301.304	3D4	3D3 4P	3F	3D*	33		A4F
CO 6	301.435	3D4	3D3 4P	3F	3D*	43		A4F
CO 6	301.474	3D4	3D3 4P	3G	3G*	44		A4F
CO 6	302.042	3D4	3D3 4P	3P	3D*	22		A4F
CO 6	302.134	3D4	3D3 4P	3F	3D*	22		A4F
CO 6	302.195	3D4	3D3 4P	3F	3D*	32		A4F
CO 6	302.413	3D4	3D3 4P	3P	5D*	01		A4F

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO 6	302.652	3D4	3D3 4P	3F	3D*	21		A4F
CO 6	303.122	3D4	3D3 4P	3P	5D*	12		A4F
CO 6	303.492	3D4	3D3 4P	3F	5F*	32		A4F
CO 6	304.258	3D4	3D3 4P	3P	5D*	23		A4F
CO 6	304.539	3D4	3D3 4P	3F	5D*	43		A4F
CO 6	305.101	3D4	3D3 4P	3F	5D*	32		A4F
CO 6	305.526	3D4	3D3 4P	3F	5D*	21		A4F
CO 6	318.423	3D4	3D3 4P	3F	3F*	23		A4F
CO 6	318.486	3D4	3D3 4P	3F	3F*	33		A4F
CO 6	327.394	3D4	3D3 4P	3F	5F*	43		A4F
CO 7	211.732	3D3	3D2 4P	G 4F	4D*	44		A3P
CO 7	212.219	3D3	3D2 4P	G 4F	4D*	54		A3P
CO 7	212.519	3D3	3D2 4P	G 4F	4D*	22		A3P
CO 7	212.685	3D3	3D2 4P	G 4F	4D*	43		A3P
CO 7	212.832	3D3	3D2 4P	G 4F	4D*	32		A3P
CO 7	216.213	3D3	3D2 4P	2G	2H*	56		A1G
CO 7	219.190	3D3	3D2 4P	4P	4P*	23		A3P
CO 7	219.638	3D3	3D2 4P	4P	4P*	33		A3P
CO 7	219.734	3D3	3D2 4P	G 4F	2D*	33		A3F
CO 7	219.920	3D3	3D2 4P	4P	4P*	22		A3P
CO 7	220.176	3D3	3D2 4P	G 4F	2D*	43		A3F
CO 7	220.389	3D3	3D2 4P	4P	4P*	32		A3P
CO 7	220.399	3D3	3D2 4P	2H	2H*	66		A1G
CO 7	220.971	3D3	3D2 4P	G 4F	4D*	54		A3F
CO 7	221.218	3D3	3D2 4P	G 4F	4D*	43		A3F
CO 7	221.334	3D3	3D2 4P	4P	4D*	34		A3P
CO 7	221.497	3D3	3D2 4P	G 4F	4D*	32		A3F
CO 7	221.923	3D3	3D2 4P	4P	4D*	23		A3P
CO 7	222.150	3D3	3D2 4P	G 4F	4F*	45		A3F
CO 7	222.183	3D3	3D2 4P	G 4F	2F*	54		A3F
CO 7	222.255	3D3	3D2 4P	G 4F	2F*	43		A3F
CO 7	222.322	3D3	3D2 4P	G 4F	4G*	56		A3F
CO 7	222.404	3D3	3D2 4P	4P	4D*	12		A3P
CO 7	222.422	3D3	3D2 4P	G 4F	4F*	34		A3F
CO 7	222.688	3D3	3D2 4P	G 4F	4F*	55		A3F
CO 7	222.862	3D3	3D2 4P	G 4F	4F*	44		A3F
CO 7	223.005	3D3	3D2 4P	G 4F	4G*	45		A3F
CO 7	223.113	3D3	3D2 4P	G 4F	4F*	33		A3F
CO 7	223.314	3D3	3D2 4P	G 4F	4F*	22		A3F
CO 7	223.521	3D3	3D2 4P	G 4F	4G*	34		A3F
CO 7	223.574	3D3	3D2 4P	G 4F	4F*	43		A3F
CO 7	223.672	3D3	3D2 4P	G 4F	4F*	32		A3F
CO 7	224.005	3D3	3D2 4P	G 4F	4G*	23		A3F
CO 7	224.845	3D3	3D2 4P	4P	4S*	12		A3P
CO 7	225.176	3D3	3D2 4P	2H	2G*	54		A1G
CO 7	229.254	3D3	3D2 4P	2G	2G*	55		A3F
CO 7	229.516	3D3	3D2 4P	2G	2G*	44		A3F
CO 7	230.008	3D3	3D2 4P	2G	2G*	54		A3F
CO 7	230.898	3D3	3D2 4P	4P	4D*	34		A3F
CO 7	231.190	3D3	3D2 4P	2G	2D*	43		A3F
CO 7	231.272	3D3	3D2 4P	4P	4D*	23		A3F
CO 7	231.758	3D3	3D2 4P	4P	4D*	33		A3F
CO 7	231.929	3D3	3D2 4P	4P	4D*	12		A3F
CO 7	231.983	3D3	3D2 4P	2G	4D*	54		A3F
CO 7	232.072	3D3	3D2 4P	4P	4D*	22		A3F
CO 7	232.333	3D3	3D2 4P	2G	4D*	43		A3F
CO 7	233.298	3D3	3D2 4P	2G	2F*	54		A3F

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CC 7	233.484	3C3	3D2 4P	2G	2F*	43		A3F
CO 7	233.644	3C3	3D2 4P	2H	2G*	55		A3F
CO 7	233.968	3C3	3D2 4P	2H	2G*	65		A3F
CO 7	234.415	3C3	3D2 4P	2H	2G*	54		A3F
CO 7	236.101	3C3	3D2 4P	2D	2D*	33		A3F
CO 7	237.757	3C3	3D2 4P	2D	2F*	34		A3F
CO 8	181.137	3C2	3D 4P	G 3F	3F*	34		2D
CO 8	181.688	3D2	3D 4P	G 3F	3F*	44		2D
CO 8	182.168	3D2	3D 4P	G 3F	3F*	33		2D
CO 8	182.289	3C2	3C 4P	G 3F	3F*	22		2D
CO 8	182.734	3D2	3D 4P	G 3F	3F*	43		2D
CO 8	182.773	3C2	3D 4P	G 3F	3F*	32		2D
CO 8	183.202	3C2	3D 4P	G 3F	3D*	33		2D
CO 8	183.558	3C2	3D 4P	G 3F	3D*	22		2D
CO 8	183.670	3C2	3D 4P	G 3F	3D*	43		2D
CC 8	183.947	3C2	3D 4P	G 3F	3D*	32		2D
CO 8	184.179	3C2	3D 4P	1D	1P*	21		2D
CC 8	185.888	3C2	3D 4P	3P	1P*	21		2D
CO 8	187.113	3C2	3D 4P	3P	3P*	12		2D
CO 8	187.257	3D2	3D 4P	3P	3P*	01		2D
CC 8	187.429	3C2	3D 4P	3P	3P*	11		2D
CO 8	187.436	3C2	3C 4P	3P	3P*	10		2D
CC 8	187.530	3C2	3D 4P	3P	3P*	22		2D
CC 8	187.852	3C2	3D 4P	3P	3P*	21		2D
CO 8	190.071	3D2	3D 4P	1G	1F*	43		2D
CO 8	190.969	3C2	3D 4P	3P	3D*	23		2D
CO 8	191.105	3C2	3D 4P	1D	1D*	22		2D
CO 8	191.441	3C2	3D 4P	3P	3D*	01		2D
CO 8	191.510	3C2	3D 4P	3P	3D*	11		2D
CO 8	191.511	3C2	3D 4P	3P	3D*	12		2D
CC 8	191.950	3C2	3D 4P	3P	3D*	22		2D
CC 9	95.890	3P6 3D	3P53D 4S	G 2D	2D*	23		3D*
CO 9	96.026	3P6 3D	3P53D 4S	G 2D	2D*	22		3D*
CC 9	96.117	3P6 3D	3P53D 4S	G 2D	2D*	33		3D*
CC 9	96.246	3P6 3D	3P53D 4S	G 2D	2D*	32		3D*
CO 9	97.507	3P6 3D	3P53D 4S	G 2D	4D*	33		3D*
CO 9	97.763	3P6 3D	3P53D 4S	G 2D	4D*	34		3D*
CO 9	98.922	3P6 3D	3P53D 4S	G 2D	2F*	23		3F*
CC 9	99.173	3P6 3D	3P53D 4S	G 2D	2F*	33		3F*
CO 9	99.789	3P6 3D	3P53D 4S	G 2D	2F*	34		3F*
CO 9	100.085	3P6 3D	3P53D 4S	G 2D	4F*	23		3F*
CO 9	100.531	3P6 3D	3P53D 4S	G 2D	4F*	34		3F*
CO 9	100.595	3P6 3D	3P53D 4S	G 2D	2P*	22		3P*
CC 9	101.093	3P6 3D	3P53D 4S	G 2D	2P*	21		3P*
CO 9	101.782	3P6 3D	3P53D 4S	G 2D	4P*	32		3P*
CC 9	155.144	3P6 3D	3P53D2	G 2D	2D*	23		
CC 9	155.325	3P6 3D	3P53D2	G 2D	2D*	22	1S	
CO 9	155.669	3P6 3D	3P53D2	G 2D	2D*	32		
CO 9	156.067	3P6 3D	3P53D2	G 2D	2D*	33	1S	
CC 9	156.659	3P6 3D	3P6 4P	G 2D	2P*	22		
CC 9	157.292	3P6 3D	3P6 4P	G 2D	2P*	32		
CO 9	157.779	3P6 3D	3P6 4P	G 2D	2P*	21		
CC 9	169.336	3P6 3D	3P53D2	G 2D	2F*	34	1S	
CO 9	170.839	3P6 3D	3P53D2	G 2D	2F*	23	1S	

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
C010	71.395	3P6	3P5 4D	1S	12*J	01		2P*1
C010	72.372	3P6	3P5 4D	1S	23*J	01		2P*2
C010	158.903	3P6	3P5 3D	1S	1P*	01		2P*
C011	54.229	3P5	3P4 5S	G 2P*	2D	23		1D
C011	66.026	3P5	3P4 4D	G 2P*	2D	22		1D
C011	66.310	3P5	3P4 4D	G 2P*	2D	23		1D
C011	66.605	3P5	3P4 4D	G 2P*	2P	22		1D
C011	66.841	3P5	3P4 4D	G 2P*	2D	12		1D
C011	66.991	3P5	3P4 4D	G 2P*	2S	21		1D
C011	67.849	3P5	3P4 4D	G 2P*	2S	11		1D
C011	67.950	3P5	3P4 4D	G 2P*	2F	23		3P
C011	67.956	3P5	3P4 4D	G 2P*	4F	23		3P
C011	67.989	3P5	3P4 4D	G 2P*	2D	22		3P
C011	67.999	3P5	3P4 4D	G 2P*	2D	23		3P
C011	68.767	3P5	3P4 4D	G 2P*	2D	12		3P
C011	78.550	3P5	3P4 4S	G 2P*	2S	21		1S
C011	81.467	3P5	3P4 4S	G 2P*	2D	23		1D
C011	82.516	3P5	3P4 4S	G 2P*	2P	21		3P
C011	82.729	3P5	3P4 4S	G 2P*	2D	12		1D
C011	83.193	3P5	3P4 4S	G 2P*	2P	22		3P
C011	83.854	3P5	3P4 4S	G 2P*	2P	11		3P
C011	84.040	3P5	3P4 4S	G 2P*	4P	22		3P
C011	84.541	3P5	3P4 4S	G 2P*	2P	12		3P
C011	84.662	3P5	3P4 4S	G 2P*	4P	23		3P
C011	158.510	3P5	3P4 3D	G 2P*	2D	22		1D
C011	162.798	3P5	3P4 3D	G 2P*	2D	23		1D
C011	163.164	3P5	3P4 3D	G 2P*	2P	21		1D
C011	163.491	3P5	3P4 3D	G 2P*	2D	12		1D
C011	165.058	3P5	3P4 3D	G 2P*	2P	22		1D
C011	168.479	3P5	3P4 3D	G 2P*	2P	11		1D
C011	170.440	3P5	3P4 3D	G 2P*	2P	12		1D
C011	171.848	3P5	3P4 3D	G 2P*	2S	21		1D
C011	177.721	3P5	3P4 3D	G 2P*	2S	11		1D
C011	317.385	3S23P5	3S 3P6	G 2P*	2S	21		
C011	338.102	3S23P5	3S 3P6	G 2P*	2S	11		
C012	75.506	3P4	3P3 4S	1D	1P*	21		2P*
C012	75.605	3P4	3P3 4S	G 3P	3D*	23		2D*
C012	75.931	3P4	3P3 4S	G 3P	3D*	22		2D*
C012	76.864	3P4	3P3 4S	G 3P	3D*	12		2D*
C012	76.884	3P4	3P3 4S	G 3P	3D*	11		2D*
C012	77.003	3P4	3P3 4S	G 3P	3D*	01		2D*
C012	77.701	3P4	3P3 4S	G 3P	3S*	21		4S*
C012	77.744	3P4	3P3 4S	1D	1D*	22		2D*
C012	78.085	3P4	3P3 4S	1S	1P*	01		2P*
C012	78.669	3P4	3P3 4S	G 3P	3S*	11		4S*
C012	78.759	3P4	3P3 4S	G 3P	3S*	01		4S*
C012	167.926	3P4	3P3 3D	G 1D	1F*	23		2P*
C012	168.472	3P4	3P3 3D	G 3P	3D*	23		2P*
C012	169.130	3P4	3P3 3D	G 3P	3D*	01		2P*
C012	170.418	3P4	3P3 3D	G 3P	3D*	12		2P*
C012	172.519	3P4	3P3 3D	1D	1D*	22		2P*
C012	175.766	3P4	3P3 3D	G 3P	3P*	22		2P*
C013	174.878	3P3	3P2 3D	2D*	2F	34		1D
C013	339.537	3S23P3	3S 3P4	G 4S*	4P	23		

TABLE II.- CALCULATED LINES – Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO14	184.854	3P2	3P 3D		1D	1F*	23		
CO14	190.839	3P2	3P 3D	G	3P	3D*	23		
CO15	197.550	3P	3D	G	2P*	2D	12		
CO15	205.806	3P	3D	G	2P*	2D	23		
CO15	236.299	3S23P	3S 3P2	G	2P*	2P	12		
CO15	240.192	3S23P	3S 3P2	G	2P*	2P	11		
CO15	248.491	3S23P	3S 3P2	G	2P*	2P	22		
CO15	253.493	3S23P	3S 3P2	G	2P*	2P	21		
CO16	44.268	3S 3D	3S 5F		3D	3F*	34		
CO16	47.508	3S2	3S 4P	G	1S	1P*	01		2S
CO16	49.854	3S 3P	3S 4D		3P*	3D	C1	2S	2S
CO16	49.993	3S 3P	3S 4D		3P*	3D	12	2S	2S
CO16	50.010	3S 3P	3S 4D		3P*	3D	11	2S	2S
CO16	50.391	3S 3P	3S 4D		3P*	3D	23	2S	2S
CO16	50.426	3S 3P	3S 4D		3P*	3D	22	2S	2S
CO16	58.091	3S 3P	3S 4S		3P*	3S	01	2S	2S
CO16	58.334	3S 3P	3S 4S		3P*	3S	11	2S	2S
CO16	58.951	3S 3P	3S 4S		3P*	3S	21	2S	2S
CO16	61.887	3S 3D	3S 4F		3D	3F*	12		
CO16	61.912	3S 3D	3S 4F		3D	3F*	23		
CO16	62.000	3S 3D	3S 4F		3D	3F*	34		
CO16	212.763	3S 3P 3S	3D		3P*	3D	12		
CO16	213.325	3S 3P 3S	3D		3P*	3D	11		
CO16	219.913	3S 3P 3S	3D		3P*	3D	23		
CO16	265.807	3S2 3S	3P	G	1S	1P*	01		
CO16	271.118	3S 3P	3P2		3P*	3P	12	2S	
CO16	286.368	3S 3P	3P2		3P*	3P	22	2S	
CO16	287.851	3S 3P	3P2		3P*	3P	11	2S	
CO16	298.426	3S 3P	3P2		3P*	3P	10	2S	
CO16	302.764	3S 3P	3P2		3P*	3P	21	2S	
CO17	15.546	2P6 3S	2P53S2	G	2S	2P*	11		
CO17	15.820	2P6 3S	2P53S2	G	2S	2P*	12		
CO17	41.542	3D	5F		2D	2F*	23		
CO17	45.322	3S	4P	G	2S	2P*	12		
CO17	45.515	3S	4P	G	2S	2P*	11		
CO17	235.110	3P	3D		2P*	2D	12		
CO17	247.684	3P	3D		2P*	2D	23		
CO17	249.920	3P	3D		2P*	2D	22		
CO17	312.576	3S	3P	G	2S	2P*	12		
CO17	339.469	3S	3P	G	2S	2P*	11		
CO18	12.593	2S22P6	2S 2P6 3P	G	1S	1P*	01		2S
CO18	12.650	2S22P6	2S 2P6 3P	G	1S	3P*	01		2S
CO19	12.834	2P5	2P4 3D	G	2P*	2D	23		1S
CO19	12.884	2P5	2P4 3D	G	2P*	2D	12		1S

TABLE II.- CALCULATED LINES – Concluded

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO19	12.925	2P5	2P4 3D	G 2P*	2P	22		1D
CO19	12.970	2P5	2P4 3D	G 2P*	2P	21		1D
CO19	13.063	2P5	2P4 3D	G 2P*	2D	23		3P
CO19	13.096	2P5	2P4 3D	G 2P*	2P	22		3P
CO19	13.194	2P5	2P4 3D	G 2P*	2D	23		1D
CO19	13.209	2P5	2P4 3D	G 2P*	2P	21		3P
CO19	13.292	2P5	2P4 3D	G 2P*	4D	22		3P
CO19	13.374	2P5	2P4 3D	G 2P*	2P	12		3P
CO19	13.490	2P5	2P4 3D	G 2P*	2P	11		3P
CO19	14.173	2P5	2P4 3S	G 2P*	2D	23		1D
CO19	14.343	2P5	2P4 3S	G 2P*	2D	12		1D
CO19	14.425	2P5	2P4 3S	G 2P*	2P	22		3P
CO19	14.550	2P5	2P4 3S	G 2P*	4P	22		3P
CO19	14.627	2P5	2P4 3S	G 2P*	4P	23		3P
CO19	14.677	2S 2P6	2S 2P5 3S	2S	2P*	12		
CO19	81.740	2S22P5	2S 2P6	G 2P*	2S	21		
CO19	87.242	2S22P5	2S 2P6	G 2P*	2S	11		
CO26	1.474	1S2	1S 3P	G 1S	3P*	01		
CO26	1.728	1S2	1S 2P	G 1S	3P*	01		

TABLE III.- FINDING LIST

(a) Lines Calculated From Four Known Wavelengths

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
MN24	1.722	1S2	1S 3P	G 1S	3P*	01		
MN24	2.007	1S2	1S 2P	G 1S	3P*	01		
CL16	3.779	1S2	1S 3P	G 1S	3P*	01		
CL16	4.447	1S2	1S 2P	G 1S	3P*	01		
F 9	11.473	1S	7P	G 2S	2P*	12		
CO19	12.834	2P5	2P4 3D	G 2P*	2D	23		1S
CO19	12.884	2P5	2P4 3D	G 2P*	2D	12		1S
CO19	12.925	2P5	2P4 3D	G 2P*	2P	22		1D
CO19	12.970	2P5	2P4 3D	G 2P*	2P	21		1D
CO19	13.063	2P5	2P4 3D	G 2P*	2D	23		3P
CO19	13.194	2P5	2P4 3D	G 2P*	2D	23		1D
CO19	13.292	2P5	2P4 3D	G 2P*	4D	22		3P
CO19	13.374	2P5	2P4 3D	G 2P*	2P	12		3P
CO19	14.173	2P5	2P4 3S	G 2P*	2D	23		1D
CO19	14.343	2P5	2P4 3S	G 2P*	2D	12		1D
CO19	14.425	2P5	2P4 3S	G 2P*	2P	22		3P
FE18	14.461	2P5	2P4 3D	G 2P*	2P	22		3P
FE18	14.535	2P5	2P4 3D	G 2P*	2P	21		3P
CO19	14.677	2S 2P6	2S 2P5 3S	2S	2P*	12		
FE18	14.820	2P5	2P4 3D	G 2P*	2P	11		3P
FE18	16.009	2P5	2P4 3S	G 2P*	4P	22		3P
MN17	16.020	2P5	2P4 3D	G 2P*	2D	12		3P
V 15	22.192	2P5	2P4 3S	G 2P*	4P	23		3P
SC13	24.241	2P5	2P4 3D	G 2P*	2D	12		1S
SC13	24.623	2P5	2P4 3D	G 2P*	2P	21		1D
SC13	25.282	2P5	2P4 3D	G 2P*	2P	12		3P
S 13	35.681	2S 2P	2S 3D	1P*	1D	12		
AL11	36.694	2S	4P	G 2S	2P*	12		
P 10	36.767	2P2	2P 4D	G 3P	3D*	12		
P 10	36.793	2P2	2P 4D	G 3P	3D*	23		
P 13	37.562	2P	3D	2P*	2D	12		
P 13	37.704	2P	3D	2P*	2D	23		
CL 8	38.117	2P6	2P5 6D	G 1S	12*K	01		2P*
CL 8	38.300	2P6	2P5 6D	G 1S	22*K	01		2P*
P 12	38.632	2S 2P	2P 3P	1P*	1D	12		2P*
AL10	39.904	2S2	2S 4P	G 1S	1P*	01		
P 12	40.292	2P2	2P 3D	3P	3P*	22		2P*
P 12	40.377	2P2	2P 3D	3P	3D*	12		2P*
P 12	40.416	2P2	2P 3D	3P	3D*	23		2P*
P 12	40.600	2P2	2P 3D	1D	1F*	23		2P*
P 9	41.074	2P3	2P2 4D	G 4S*	4P	23		3P
P 9	42.319	2P3	2P2 4D	2D*	2F	34		3P
P 11	42.349	2S 2P2	2S 2P 3D	4P	4P*	33		3P*
AL10	42.413	2S 2P	2S 4D	3P*	3D	23		
P 11	42.413	2S 2P2	2S 2P 3D	4P	4D*	12		3P*
P 9	42.945	2P3	2P2 4D	2P*	2D	23		3P
P 10	43.051	2S22P2	2S 2P2 3P	1D	1D*	22		2D
P 10	43.245	2S22P2	2S 2P2 3P	1D	1F*	23		2D
P 11	43.815	2S 2P2	2S 2P 3D	2P	2D*	12		1P*
P 9	43.830	2P3	2P2 4S	2D*	2P	32		3P
P 11	43.888	2S 2P2	2S 2P 3D	2P	2D*	23		1P*
P 12	44.036	2S 2P	2S 3S	1P*	1S	10		
P 11	44.238	2S 2P2	2S 2P 3D	2D	2F*	23		3P*
P 10	44.348	2S22P2	2S 2P2 3P	G 3P	3D*	12		4P
P 10	44.371	2S22P2	2S 2P2 3P	G 3P	3D*	23		4P
MN15	44.816	3P	5D	2P*	2D	12		

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 11	44.961	2S 2P2	2S 2P 3S	2D	2P*	32		1P*
P 11	44.988	2S 2P2	2S 2P 3D	2D	2D*	33		3P*
P 11	45.011	2S 2P2	2S 2P 3D	2D	2D*	22		3P*
MN15	45.152	3P	5D	2P*	2D	23		
P 10	45.287	2S22P2	2S 2P2 3P	G 3P	3S*	21		4P
SI12	45.459	2P	3S	2P*	2S	11		
P 11	45.685	2S 2P2	2S 2P 3S	4P	4P*	23		3P*
P 11	45.747	2S 2P2	2S 2P 3S	4P	4P*	12		3P*
P 11	45.793	2S 2P2	2S 2P 3S	4P	4P*	33		3P*
P 11	45.882	2S 2P2	2S 2P 3S	4P	4P*	21		3P*
P 11	45.921	2S 2P2	2S 2P 3S	4P	4P*	32		3P*
P 10	46.067	2P2	2P 3D	G 3P	3P*	10		
P 10	46.087	2P2	2P 3D	G 3P	3P*	11		
P 10	46.199	2P2	2P 3D	G 3P	3P*	21		
P 10	46.233	2P2	2P 3D	G 3P	3P*	22		
P 10	46.241	2P2	2P 3D	G 3P	3D*	01		
P 10	46.294	2P2	2P 3D	G 3P	3D*	12		
P 10	46.330	2P2	2P 3D	G 3P	3D*	23		
P 8	46.352	2P4	2P3 4D	G 3P	3D*	23		2P*
P 10	46.644	2S 2P3	2S 2P2 3D	3D*	3F	34		2D
P 8	47.180	2P4	2P3 4D	G 3P	3P*	22		2D*
P 8	47.236	2P4	2P3 4D	G 3P	3D*	23		2D*
MN14	47.297	3S 3P	3S 5D	3P*	3D	23	2S	2S
P 8	47.362	2P4	2P3 4D	G 3P	3D*	12		2D*
P 11	47.414	2S 2P2	2S 2P 3S	2P	2P*	22		1P*
P 8	47.438	2P4	2P3 4D	1D	1F*	23		2P*
P 11	47.446	2S 2P2	2S 2P 3D	2P	2D*	23		3P*
CO16	47.508	3S2	3S 4P	G 1S	1P*	01		2S
P 10	47.697	2S 2P3	2S 2P2 3D	3P*	3D	23		2D
P 11	47.796	2S 2P2	2S 2P 3S	2D	2P*	32		3P*
P 10	48.116	2P2	2P 3D	1S	1P*	01		
P 8	48.284	2P4	2P3 4D	1D	1F*	23		2D*
P 8	48.480	2P4	2P3 4D	1D	1P*	21		2D*
P 9	48.931	2S22P3	2S 2P3 3P	G 4S*	4P	23		5S*
P 10	48.985	2S 2P3	2S 2P2 3D	3D*	3F	34		4P
P 8	48.998	2P4	2P3 4D	G 3P	3D*	12		4S*
P 10	49.078	2S 2P3	2S 2P2 3D	3D*	3F	23		4P
P 10	49.147	2S 2P3	2S 2P2 3D	3D*	3F	12		4P
P 8	49.286	2P4	2P3 4S	G 3P	3D*	23		2D*
P 10	49.772	2S 2P3	2S 2P2 3D	3P*	3D	23		4P
CO16	49.993	3S 3P	3S 4D	3P*	3D	12	2S	2S
CO16	50.391	3S 3P	3S 4D	3P*	3D	23	2S	2S
CO16	50.426	3S 3P	3S 4D	3P*	3D	22	2S	2S
P 8	50.482	2P4	2P3 4S	1D	1D*	22		2D*
P 9	50.624	2P3	2P2 3D	G 4S*	4D	21		3P
P 10	50.664	2S 2P3	2S 2P2 3S	5S*	5P	23		4P
P 9	50.673	2P3	2P2 3D	G 4S*	4D	23		3P
P 9	50.762	2P3	2P2 3D	2D*	2P	32		1D
P 10	50.778	2S 2P3	2S 2P2 3S	5S*	5P	22		4P
P 9	50.815	2P3	2P2 3D	2D*	2P	21		1D
P 10	50.849	2S 2P3	2S 2P2 3S	5S*	5P	21		4P
P 10	50.874	2S 2P3	2S 2P2 3D	3P*	3P	22		4P
P 10	51.006	2P2	2P 3S	G 3P	3P*	12		
P 10	51.091	2P2	2P 3S	G 3P	3P*	01		
P 10	51.096	2S 2P3	2S 2P2 3S	3D*	3D	33		2D

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 9	51.129	2P3	2P2 3D	2D*	2F	23		1D
P 9	51.133	2P3	2P2 3D	2D*	2D	22		1D
P 10	51.147	2P2	2P 3S	G 3P	3P*	22		
P 9	51.682	2P3	2P2 3D	2P*	2S	21		1D
P 9	51.839	2P3	2P2 3D	2P*	2P	22		1D
P 10	52.641	2S 2P3	2S 2P2 3S	3P*	3D	23		2D
P 9	52.955	2P3	2P2 3D	2P*	2D	23		3P
P 9	52.977	2P3	2P2 3D	2P*	2D	12		3P
P 9	52.999	2P3	2P2 3D	2D*	2P	32		3P
P 10	53.841	2P2	2P 3S	1S	1P*	01		
P 9	54.178	2P3	2P2 3D	2P*	2P	22		3P
AL 8	54.210	2P2	2P 4D	G 3P	3P*	22		
P 7	54.684	2P5	2P4 4D	G 2P*	2D	23		1D
P 9	55.066	2S 2P4	2S 2P3 3D	4P	4D*	34		5S*
P 9	55.300	2S 2P4	2S 2P3 3D	4P	4D*	12		5S*
AL 8	55.308	2P2	2P 4D	1D	1F*	23		
AL 8	55.720	2P2	2P 4D	1D	1D*	22		
P 8	56.569	2P4	2P3 3D	G 3P	3S*	21		2D*
P 8	56.743	2P4	2P3 3D	G 3P	3P*	21		2D*
P 8	56.800	2P4	2P3 3D	G 3P	3P*	22		2D*
P 8	56.924	2P4	2P3 3D	G 3P	3P*	10		2D*
P 8	56.987	2P4	2P3 3D	G 3P	3P*	12		2D*
P 8	56.989	2P4	2P3 3D	G 3P	3P*	01		2D*
P 8	57.060	2P4	2P3 3D	G 3P	3D*	23		2D*
P 8	57.193	2P4	2P3 3D	1D	1P*	21		2P*
P 8	57.387	2P4	2P3 3D	1D	1D*	22		2P*
CC16	58.334	3S 3P	3S 4S	3P*	3S	11	2S	2S
P 9	58.988	2P3	2P2 3S	2D*	2P	32		3P
AL10	59.110	2P2	2P 3D	1D	1D*	22		
P 9	59.155	2P3	2P2 3S	2D*	2P	21		3P
P 8	59.522	2P4	2P3 3D	G 3P	3D*	12		4S*
P 8	59.595	2P4	2P3 3D	G 3P	3D*	01		4S*
P 9	60.439	2P3	2P2 3S	2P*	2P	22		3P
P 9	60.595	2P3	2P2 3S	2P*	2P	11		3P
P 8	60.893	2P4	2P3 3D	1S	1P*	01		2D*
P 9	61.701	2S 2P4	2S 2P3 3S	4P	4S*	32		5S*
P 9	61.895	2S 2P4	2S 2P3 3S	4P	4S*	22		5S*
AL 7	63.028	2P3	2P2 4D	2D*	2D	33		1D
P 7	64.251	2P5	2P4 3D	G 2P*	2D	22		1D
P 7	64.340	2P5	2P4 3D	G 2P*	2P	22		1D
AL 7	64.789	2P3	2P2 4D	2D*	2F	23		3P
P 7	64.887	2P5	2P4 3D	G 2P*	2P	11		1D
P 8	65.754	2P4	2P3 3S	1D	1P*	21		2P*
AL 7	65.757	2P3	2P2 4S	2D*	2D	33		1D
P 8	66.041	2P4	2P3 3S	G 3P	3D*	12		2D*
P 8	66.132	2P4	2P3 3S	G 3P	3D*	01		2D*
P 7	66.167	2P5	2P4 3D	G 2P*	2P	22		3P
FE15	66.234	3S 3P	3S 4S	3P*	3S	21	2S	2S
P 7	66.353	2P5	2P4 3D	G 2P*	2D	22		3P
P 7	66.744	2P5	2P4 3D	G 2P*	2P	11		3P
CR13	70.999	3S 3P	3S 4D	3P*	3D	11	2S	2S
F 7	72.339	2S	7P	G 2S	2P*	12		
NE 8	73.483	2P	4D	2P*	2D	12		
F 7	74.513	2S	6P	G 2S	2P*	12		
P 7	76.343	2P5	2P4 3S	G 2P*	2D	12		1D
P 7	77.985	2P5	2P4 3S	G 2P*	2P	21		3P

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
F 7	78.366	2S 5P		G 2S	2P*	12		
P 7	78.735	2P5	2P4 3S	G 2P*	2P	12		3P
F 7	78.746	2P 7D		2P*	2D	23		
P 7	79.109	2P5	2P4 3S	G 2P*	4P	22		3P
P 7	80.829	2S 2P6	2S 2P5 3S	2S	2P*	12		3P*
F 7	81.234	2P 6D		2P*	2D	23		
CO11	81.467	3P5	3P4 4S	G 2P*	2D	23		1D
CO19	81.740	2S22P5	2S 2P6	G 2P*	2S	21		
NE 7	82.182	2S 2P	2S 4D	3P*	3D	01		
CO11	82.516	3P5	3P4 4S	G 2P*	2P	21		3P
CO11	82.729	3P5	3P4 4S	G 2P*	2D	12		1D
MG 6	83.144	2P3	2P2 4D	2D*	2D	33		3P
CO11	83.193	3P5	3P4 4S	G 2P*	2P	22		3P
CO11	83.854	3P5	3P4 4S	G 2P*	2P	11		3P
CO11	84.040	3P5	3P4 4S	G 2P*	4P	22		3P
CO11	84.541	3P5	3P4 4S	G 2P*	2P	12		3P
CO11	84.662	3P5	3P4 4S	G 2P*	4P	23		3P
MG 6	85.206	2P3	2P2 4D	2P*	2D	12		3P
NE 7	85.438	2P2	2P 4D	3P	3D*	23		
F 7	85.820	2P 5D		2P*	2D	23		
CO19	87.242	2S22P5	2S 2P6	G 2P*	2S	11		
NE 8	88.120	2S 3P		G 2S	2P*	11		
CR 8	88.369	3P5	3P4 5S	G 2P*	2D	23		1D
NE 6	89.065	2S 2P2	2S 2P 5D	4P	4D*	34		3P*
NE 6	89.944	2P 5D		G 2P*	2D	12		
NE 6	90.049	2P 5D		G 2P*	2D	23		
FE10	90.418	3P5	3P4 4S	G 2P*	2S	21		1S
TI11	93.377	3S 3P	3S 4D	3P*	3D	01	2S	2S
NE 7	94.385	2S 2P	2P 3P	3P*	3P	21		
NA 6	94.726	2P2	2P 4S	1D	1P*	21		
NE 7	94.825	2S 2P	2P 3P	3P*	3S	01		
NE 7	94.867	2S 2P	2P 3P	3P*	3S	11		
NE 7	95.896	2S 2P	2P 3P	3P*	3D	11		
NE 7	95.933	2S 2P	2P 3P	3P*	3D	22		
NE 6	96.973	2S 2P2	2S 2P 4D	4P	4P*	33		3P*
NE 6	97.087	2S 2P2	2S 2P 4D	4P	4D*	23		3P*
NE 6	97.106	2S 2P2	2S 2P 4D	4P	4D*	34		3P*
F 7	97.357	2P 4S		2P*	2S	21		
NE 6	98.105	2P 4D		G 2P*	2D	12		
NE 6	98.234	2P 4D		G 2P*	2D	23		
K 9	98.808	3S 5P		G 2S	2P*	12		
K 9	98.870	3S 5P		G 2S	2P*	11		
NE 6	100.607	2S 2P2	2S 2P 4S	4P	4P*	33		3P*
NE 6	101.787	2S 2P2	2P2 3P	4P	4S*	22		3P
NE 6	101.855	2S 2P2	2P2 3P	4P	4S*	32		3P
NE 6	101.903	2P 4S		G 2P*	2S	21		
CR 8	102.234	3P5	3P4 4D	G 2P*	2D	22		1D
CR 8	102.447	3P5	3P4 4D	G 2P*	2D	23		1D
CR 8	102.964	3P5	3P4 4D	G 2P*	2P	22		1D
NE 7	103.145	2S 2P	2P 3P	1P*	1D	12		
CR 8	103.303	3P5	3P4 4D	G 2P*	2D	12		1D
CR 8	103.481	3P5	3P4 4D	G 2P*	2S	21		1D
NE 6	104.130	2S 2P2	2S 2P 4D	2D	2F*	34		3P*
NE 6	104.201	2S 2P2	2S 2P 4D	2D	2F*	23		3P*
CR 8	104.550	3P5	3P4 4D	G 2P*	2S	11		1D

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CR 8	105.133	3P5	3P4 4D	G	2P*	2F	23		3P
CR 8	105.381	3P5	3P4 4D	G	2P*	4F	23		3P
CR 8	105.537	3P5	3P4 4D	G	2P*	2D	22		3P
CR 8	105.643	3P5	3P4 4D	G	2P*	2D	23		3P
NE 7	106.039	2S 2P	2S 3D		3P*	3D	01		
CR 8	106.678	3P5	3P4 4D	G	2P*	2D	12		3P
NE 6	107.611	2S 2P2	2P2 3P		2D	2D*	33		1D
F 6	108.874	2S 2P	2S 4D		3P*	3D	12		
NE 5	110.373	2P2	2P 5D	G	3P	3D*	23		
NE 7	110.553	2P2	2P 3D		3P	3D*	01		
NE 7	110.590	2P2	2P 3D		3P	3D*	12		
NE 7	110.704	2P2	2P 3D		3P	3D*	22		
NA 5	111.753	2P3	2P2 4S	G	4S*	4P	23		3P
NE 5	113.709	2P2	2P 5D		1D	1F*	23		
TI11	113.946	3S 3P	3S 4S		3P*	3S	01	2S	2S
NE 7	115.333	2S 2P	2S 3S		3P*	3S	01		
MG 6	116.989	2P3	2P2 3S		2P*	2D	23		1D
NE 5	117.164	2S 2P3	2S 2P2 4D		5S*	5P	22		4P
NE 6	117.484	2S 2P2	2S 2P 3D		2D	2D*	33		1P*
F 5	118.449	2P	6D	G	2P*	2D	12		
NE 6	118.634	2S 2P2	2S 2P 3D		2D	2F*	34		1P*
NE 5	118.887	2P2	2P 4D	G	3P	3D*	01		
NE 5	119.000	2P2	2P 4D	G	3P	3D*	12		
SC15	119.080	2S22P3	2S 2P4		2D*	2P	21		
K 9	119.934	3P	5S		2P*	2S	21		
NE 6	120.187	2S 2P2	2S 2P 3D		4P	4P*	12		3P*
NE 6	120.205	2S 2P2	2S 2P 3D		4P	4P*	21		3P*
NE 7	120.222	2P2	2P 3S		3P	3P*	12		
NE 6	120.242	2S 2P2	2S 2P 3D		4P	4P*	22		3P*
NE 6	120.288	2S 2P2	2S 2P 3D		4P	4P*	23		3P*
NE 7	120.304	2P2	2P 3S		3P	3P*	01		
NE 6	120.335	2S 2P2	2S 2P 3D		4P	4P*	32		3P*
NE 6	120.386	2S 2P2	2S 2P 3D		4P	4P*	33		3P*
NE 7	120.456	2P2	2P 3S		3P	3P*	10		
NE 6	121.078	2S 2P2	2S 2P 3D		4P	4D*	12		3P*
NE 6	121.121	2S 2P2	2S 2P 3D		4P	4D*	23		3P*
NE 6	121.219	2S 2P2	2S 2P 3D		4P	4D*	33		3P*
SC14	122.700	2S22P4	2S 2P5		1D	1P*	21		
CA10	123.786	3P	4D		2P*	2D	22		
K 8	123.893	3S 3P	3S 5D		3P*	3D	23	2S	2S
NA 6	124.036	2P2	2P 3S	G	3P	3P*	10		
NE 5	124.186	2P2	2P 4S	G	3P	3P*	12		
SC15	124.233	2S22P3	2S 2P4		2D*	2P	22		
NE 5	124.314	2P2	2P 4S	G	3P	3P*	10		
NE 5	124.388	2P2	2P 4S	G	3P	3P*	21		
NE 5	125.072	2S22P2	2S 2P2 3P		1D	1D*	22		2D
NE 5	125.776	2S22P2	2S 2P2 3P		1D	1F*	23		2D
SC15	125.871	2S22P3	2S 2P4		2D*	2P	32		
NE 6	126.128	2P3	2P2 3D		4S*	4P	21		3P
NE 6	126.149	2P3	2P2 3D		4S*	4P	22		3P
NE 6	126.206	2P3	2P2 3D		4S*	4P	23		3P
NE 5	127.698	2P2	2P 4D		1S	1P*	01		
NE 6	128.070	2S 2P2	2S 2P 3D		2P	2D*	12		1P*
NE 6	128.170	2S 2P2	2S 2P 3D		2P	2D*	23		1P*
NE 5	129.919	2S 2P3	2S 2P2 4D		3D*	3F	34		4P
NE 5	129.996	2S 2P3	2S 2P2 4D		3D*	3F	23		4P

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NE 6	130.259	2S 2P2	2S 2P 3D	2D	2F*	34		3P*
V 9	130.324	3S23P3	3S23P2 4S	2D*	2P	21		3P
NE 6	130.398	2S 2P2	2S 2P 3D	2D	2F*	23		3P*
V 9	130.762	3S23P3	3S23P2 4S	2P*	2D	12		1D
V 9	131.193	3S23P3	3S23P2 4S	2P*	2D	23		1D
NE 6	131.382	2S 2P2	2S 2P 3S	2D	2P*	32		1P*
MG 4	132.194	2P5	2P4 4S	G 2P*	2D	23		1D
CL 7	133.053	3S	6P	2S	2P*	12		
NE 6	133.493	2S 2P2	2S 2P 3D	2D	2D*	33		3P*
NE 6	133.526	2S 2P2	2S 2P 3D	2D	2D*	22		3P*
V 9	133.618	3S23P3	3S23P2 4S	2P*	2P	12		3P
V 9	134.002	3S23P3	3S23P2 4S	2P*	2P	22		3P
V 9	134.580	3S23P3	3S23P2 4S	2P*	2P	11		3P
V 9	134.968	3S23P3	3S23P2 4S	2P*	2P	21		3P
NE 6	136.199	2S 2P2	2S 2P 3S	4P	4P*	23		3P*
NE 6	136.268	2S 2P2	2S 2P 3S	4P	4P*	12		3P*
NE 6	136.440	2S 2P2	2S 2P 3S	4P	4P*	21		3P*
NE 6	136.479	2S 2P2	2S 2P 3S	4P	4P*	32		3P*
NE 6	138.568	2S 2P2	2S 2P 3D	2S	2P*	11		3P*
NE 6	138.614	2S 2P2	2S 2P 3D	2S	2P*	12		3P*
NE 7	141.260	2P2	2S 3P	1D	1P*	21		
NE 5	142.347	2P2	2P 3D	G 3P	3P*	01		
NE 5	142.582	2P2	2P 3D	G 3P	3P*	12		
NE 6	142.735	2P3	2P2 3S	4S*	4P	22		3P
NE 5	143.271	2P2	2P 3D	G 3P	3D*	11		
NE 5	143.401	2P2	2P 3D	G 3P	3D*	22		
SC14	145.168	2S22P4	2S 2P5	G 3P	3P*	21		
NE 6	147.355	2S 2P2	2S 2P 3D	2P	2D*	12		3P*
NE 6	147.481	2S 2P2	2S 2P 3D	2P	2D*	23		3P*
NE 6	147.589	2S 2P2	2S 2P 3S	2D	2P*	32		3P*
NE 6	147.792	2S 2P2	2S 2P 3S	2D	2P*	21		3P*
SC14	148.573	2S22P4	2S 2P5	G 3P	3P*	10		
SC14	150.574	2S22P4	2S 2P5	G 3P	3P*	22		
SC14	151.959	2S22P4	2S 2P5	G 3P	3P*	11		
SC14	152.971	2S22P4	2S 2P5	G 3P	3P*	01		
CO 9	155.325	3P6 3D	3P53D2	G 2D	2D*	22	1S	
CO 9	156.067	3P6 3D	3P53D2	G 2D	2D*	33	1S	
SC14	157.911	2S22P4	2S 2P5	G 3P	3P*	12		
CO11	158.510	3P5	3P4 3D	G 2P*	2D	22		1D
NE 6	159.828	2S 2P2	2S 2P 3S	2S	2P*	12		3P*
NE 6	160.052	2S 2P2	2S 2P 3S	2S	2P*	11		3P*
CL 7	162.595	3P	6S	2P*	2S	21		
CO11	162.798	3P5	3P4 3D	G 2P*	2D	23		1D
CO11	163.164	3P5	3P4 3D	G 2P*	2P	21		1D
CO11	163.491	3P5	3P4 3D	G 2P*	2D	12		1D
NE 6	164.856	2S 2P2	2S 2P 3S	2P	2P*	22		3P*
CO11	165.058	3P5	3P4 3D	G 2P*	2P	22		1D
AR11	165.585	2S22P4	2S 2P5	1S	1P*	01		
LI 2	167.273	1S2	1S 6P	G 1S	1P*	01		
NE 5	167.892	2P2	2P 3S	G 3P	3P*	11		
CC11	168.479	3P5	3P4 3D	G 2P*	2P	11		1D
NE 5	168.721	2S 2P3	2S 2P2 3D	3P*	3P	22		4P
LI 2	168.773	1S2	1S 5P	G 1S	1P*	01		
CO 9	169.336	3P6 3D	3P53D2	G 2D	2F*	34	1S	
SC15	170.090	2S22P3	2S 2P4	G 4S*	4P	21		

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO11	170.440	3P5	3P4 3D	G	2P*	2P	12		1D
CO 9	170.839	3P6 3D	3P53D2	G	2D	2F*	23	1S	
CO11	171.848	3P5	3P4 3D	G	2P*	2S	21		1D
NE 4	172.862	2P3	2P2 3D	G	4S*	4D	23		3P
SC15	173.413	2S22P3	2S 2P4	G	4S*	4P	22		
NE 5	175.775	2S 2P3	2S 2P2 3S		3P*	3D	23		2D
NE 4	176.045	2P3	2P2 3D		2D*	2D	22		1D
CO11	177.721	3P5	3P4 3D	G	2P*	2S	11		1D
CO 8	181.137	3D2	3D 4P	G	3F	3F*	34		2D
SC15	181.271	2S22P3	2S 2P4	G	4S*	4P	23		
CO 8	181.688	3D2	3D 4P	G	3F	3F*	44		2D
CO 8	182.168	3D2	3D 4P	G	3F	3F*	33		2D
CO 8	182.289	3D2	3D 4P	G	3F	3F*	22		2D
CO 8	182.734	3D2	3D 4P	G	3F	3F*	43		2D
CO 8	182.773	3D2	3D 4P	G	3F	3F*	32		2D
CO 8	183.558	3D2	3D 4P	G	3F	3D*	22		2D
NE 5	183.740	2S 2P3	2S 2P2 3S		3D*	3P	32		4P
NE 5	184.112	2S 2P3	2S 2P2 3S		3D*	3P	10		4P
CO 8	184.179	3D2	3D 4P		1D	1P*	21		2D
NE 4	185.758	2P3	2P2 3D		2D*	2F	23		3P
CO 8	187.113	3D2	3D 4P		3P	3P*	12		2D
CO 8	187.257	3D2	3D 4P		3P	3P*	01		2D
CO 8	187.429	3D2	3D 4P		3P	3P*	11		2D
CO 8	187.436	3D2	3D 4P		3P	3P*	10		2D
CO 8	187.530	3D2	3D 4P		3P	3P*	22		2D
CO 8	187.852	3D2	3D 4P		3P	3P*	21		2D
CO 8	190.071	3D2	3D 4P		1G	1F*	43		2D
NE 5	191.029	2S 2P3	2S 2P2 3S		1D*	1D	22		2D
CO 8	191.105	3D2	3D 4P		1D	1D*	22		2D
CO 8	191.511	3D2	3D 4P		3P	3D*	12		2D
CO 8	191.950	3D2	3D 4P		3P	3D*	22		2D
AR 7	192.065	3S 3P	3S 4D		3P*	3D	11		
AR 7	192.664	3S 3P	3S 4D		3P*	3D	22		
NA 3	193.919	2P5	2P4 4D	G	2P*	2D	22		3P
P 9	196.890	2S22P3	2S 2P4		2D*	2P	22		
LI 2	202.235	1S2	1S 2P	G	1S	3P*	01		
NA 3	206.882	2P5	2P4 4S	G	2P*	2P	21		3P
NA 3	207.303	2P5	2P4 4S	G	2P*	2P	22		3P
NA 3	207.468	2P5	2P4 4S	G	2P*	2P	11		3P
P 10	207.733	2S22P2	2S 2P3	G	3P	3S*	21		
NE 5	210.198	2S 2P3	2S22P 3P		3D*	3P	32		
P 9	211.335	2S22P3	2S 2P4		2P*	2P	11		
P 9	211.628	2S22P3	2S 2P4		2P*	2P	21		
F 4	214.103	2P2	2P 3D		1D	1D*	22		
P 9	214.476	2S22P3	2S 2P4		2P*	2P	22		
NA 3	214.730	2P5	2P4 3D	G	2P*	2F	23		3P
NE 3	218.275	2P4	2P3 3D	G	3P	3P*	22		2P*
NE 3	223.085	2P4	2P3 4D	G	3P	3D*	23		4S*
NE 3	223.392	2P4	2P3 4D	G	3P	3D*	12		4S*
V 6	224.767	3P6	3P5 3D	G	1S	1P*	01		2P*
NE 3	227.307	2P4	2P3 3D	G	3P	3S*	21		2D*
NE 3	227.493	2P4	2P3 3D	G	3P	3P*	22		2D*
V 8	227.684	3P4	3P3 3D	G	3P	3D*	21		2P*
NE 3	227.800	2P4	2P3 3D	G	3P	3P*	12		2D*
NE 3	227.890	2P4	2P3 3D	G	3P	3P*	01		2D*
NE 3	228.892	2P4	2P3 3D	G	3P	3D*	23		2D*

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NE 3	229.177	2P4	2P3 3D	G 3P	3D*	12		2D*
NE 3	230.113	2P4	2P3 4S	1D	1D*	22		2D*
K 8	230.664	3S 3D	3S 4F	3D	3F*	12		
K 8	230.703	3S 3D	3S 4F	3D	3F*	23		
K 8	230.755	3S 3D	3S 4F	3D	3F*	34		
K 8	230.757	3S 3D	3S 4F	3D	3F*	34	2S	2S
FE 7	233.110	3D2	3D 4P	G 3F	3D*	33		2D
FE 7	233.747	3D2	3D 4P	G 3F	3D*	43		2D
P 10	235.293	2S22P2	2S 2P3	1D	1D*	22		
NE 3	238.031	2P4	2P3 4S	G 3P	3S*	21		4S*
NE 3	238.373	2P4	2P3 4S	G 3P	3S*	11		4S*
V 8	240.365	3P4	3P3 3D	G 3P	3P*	21		2P*
NE 3	240.803	2P4	2P3 3D	1D	1F*	23		2D*
NE 3	241.517	2P4	2P3 3D	1D	1D*	22		2D*
NE 3	241.931	2P4	2P3 3D	1D	1P*	21		2D*
V 8	242.055	3P4	3P3 3D	G 3P	3S*	21		2D*
F 3	244.064	2P3	2P2 4D	2D*	2D	22		3P
V 8	244.109	3P4	3P3 3D	1D	3D*	22		2P*
FE 7	244.515	3D2	3D 4P	3P	3D*	23		2D
V 8	244.810	3P4	3P3 3D	G 3P	3P*	01		2P*
FE 7	245.086	3D2	3D 4P	3P	3D*	01		2D
FE 7	245.278	3D2	3D 4P	3P	3D*	11		2D
V 8	245.584	3P4	3P3 3D	G 3P	3S*	11		2D*
SI 7	246.066	2S22P4	2S 2P5	1S	1P*	01		
V 8	246.571	3P4	3P3 3D	G 3P	3S*	01		2D*
CO17	247.684	3P	3D	2P*	2D	23		
CO15	248.491	3S23P	3S 3P2	G 2P*	2P	22		
CO17	249.920	3P	3D	2P*	2D	22		
P 9	250.395	2S22P3	2S 2P4	2D*	2D	22		
S 6	251.201	3P	5S	2P*	2S	11		
CO15	253.493	3S23P	3S 3P2	G 2P*	2P	21		
V 8	253.721	3P4	3P3 3D	1D	1P*	21		2D*
TI 4	256.374	3P6 3D	3P53D2	G 2D	2D*	22	1S	
TI 4	256.946	3P6 3D	3P53D2	G 2D	2D*	33	1S	
V 10	257.203	3S23P2	3S23P 3D	G 3P	3P*	10		2P*
V 10	258.564	3S23P2	3S23P 3D	G 3P	3P*	11		2P*
V 10	262.191	3S23P2	3S23P 3D	G 3P	3P*	21		2P*
V 10	262.642	3S23P2	3S23P 3D	G 3P	3P*	12		2P*
CO16	265.807	3S2	3S 3P	G 1S	1P*	01		
K 6	266.207	3S23P2	3S23P 4S	1D	1P*	21		2P*
V 10	266.387	3S23P2	3S23P 3D	G 3P	3P*	22		2P*
P 10	269.718	2S22P2	2S 2P3	G 3P	3P*	22		
NA 3	273.069	2P5	2P4 3S	G 2P*	4P	23		3P
NA 3	273.426	2P5	2P4 3S	G 2P*	4P	12		3P
V 8	277.270	3P4	3P3 3D	1S	1P*	01		2D*
P 9	278.447	2S22P3	2S 2P4	2P*	2D	12		
P 9	279.249	2S22P3	2S 2P4	2P*	2D	23		
AR 6	283.594	3S 3P2	3S 3P 4S	4P	4P*	32		3P*
TI 4	284.538	3P6 3D	3P53D2	G 2D	2F*	34	1S	
TI 4	284.973	3P6 3D	3P53D2	G 2D	2F*	23	1S	
CL 5	285.280	3S2 3P	3S2 4D	G 2P*	2D	12		
CL 5	286.608	3S2 3P	3S2 4D	G 2P*	2D	23		
FE15	292.231	3S 3P	3P2	3P*	3P	12	2S	
CR12	293.904	3S23P	3S 3P2	G 2P*	2P	12		
CO16	298.426	3S 3P	3P2	3P*	3P	10	2S	

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CR12	299.807	3S23P	3S 3P2	G 2P*	2P	11		
V 8	299.890	3P4	3P3 3D	1D	1D*	22		2D*
CO16	302.764	3S 3P	3P2	3P*	3P	21	2S	
FE15	307.814	3S 3P	3P2	3P*	3P	11	2S	
V 10	308.476	3S23P2	3S 3P3	G 3P	3S*	11		
P 5	310.494	3P	5D	2P*	2D	12		
MN 6	311.262	3D2	3D 4P	G 3F	3D*	32		2D
P 5	311.297	3P	5D	2P*	2D	23		
V 10	313.639	3S23P2	3S 3P3	G 3P	3S*	21		
V 13	313.736	3P	3D	2P*	2D	12		
SC 9	317.841	3S 3P2	3S 3P 3D	4P	4D*	12		3P*
SC 9	318.612	3S 3P2	3S 3P 3D	4P	4D*	11		3P*
SC 9	319.515	3S 3P2	3S 3P 3D	4P	4D*	23		3P*
S 5	319.831	3S 3P	3S 4D	3P*	3D	12		
SC 9	319.988	3S 3P2	3S 3P 3D	4P	4D*	22		3P*
S 5	320.582	3S 3P	3S 4D	3P*	3D	23		
SC 9	320.765	3S 3P2	3S 3P 3D	4P	4D*	21		3P*
MG 4	320.893	2S22P5	2S 2P6	G 2P*	2S	21		
AL 9	321.177	2S 2P2	2P3	4P	4S*	32		
SC 9	322.639	3S 3P2	3S 3P 3D	4P	4D*	34		3P*
SC 9	322.711	3S 3P2	3S 3P 3D	4P	4D*	33		3P*
SC 9	323.194	3S 3P2	3S 3P 3D	4P	4D*	32		3P*
MG 4	323.252	2S22P5	2S 2P6	G 2P*	2S	11		
V 13	323.543	3P	3D	2P*	2D	23		
AL 8	323.873	2S22P2	2S 2P3	G 3P	3P*	01		
V 10	323.902	3S23P2	3S 3P3	1D	1P*	21		
AL 8	325.599	2S22P2	2S 2P3	G 3P	3P*	12		
MN14	328.300	3S 3P	3P2	3P*	3P	22	2S	
CA 6	333.512	3S23P3	3S23P2 3D	G 4S*	4P	21		3P
CA 6	334.938	3S23P3	3S23P2 3D	G 4S*	4P	22		3P
CA 6	335.233	3S23P3	3S23P2 3D	G 4S*	4P	23		3P
SC10	338.340	3S 3P	3S 3D	3P*	3D	11		
TI12	350.126	3P	3D	2P*	2D	23		
TI12	351.226	3P	3D	2P*	2D	22		
FE12	364.447	3S23P3	3S 3P4	G 4S*	4P	23		
NE 3	376.648	2S22P4	2S 2P5	1D	1P*	21		
NA 7	378.737	2S2 2P	2S 2P2	G 2P*	2S	11		
AL 8	381.480	2S22P2	2S 2P3	G 3P	3D*	01		
B 4	385.110	1S 2P	1S 3D	3P*	3D	23		
SC 9	386.195	3S2 3P	3S 3P2	G 2P*	2P	12		
AL 8	387.927	2S22P2	2S 2P3	G 3P	3D*	22		
K 6	389.472	3S23P2	3S23P 3D	G 3P	3D*	12		2P*
K 6	389.516	3S23P2	3S23P 3D	G 3P	3D*	11		2P*
SC 9	392.867	3S23P	3S 3P2	G 2P*	2P	22		
AL10	395.766	2S 2P	2P2	3P*	3P	12		
SC 9	399.755	3S23P	3S 3P2	G 2P*	2P	21		
V 10	400.563	3S23P2	3S 3P3	G 3P	3P*	1		
K 7	402.922	3S 3P2	3S 3P 3D	4P	4P*	12		3P*
AR 4	406.031	3S23P3	3S23P2 4S	2D*	2D	22		1D
K 7	406.105	3S 3P2	3S 3P 3D	4P	4P*	23		3P*
AR 4	406.271	3S23P3	3S23P2 4S	2D*	2D	33		1D
K 7	407.564	3S 3P2	3S 3P 3D	4P	4P*	32		3P*
K 7	408.950	3S 3P2	3S 3P 3D	4P	4P*	33		3P*
NA 6	416.231	2S22P2	2S 2P3	G 3P	3P*	10		
O 2	418.695	2P3	2P2 4S	G 4S*	4P	21		3P
F 4	419.551	2S22P2	2S 2P3	G 3P	3S*	01		

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
SC10	422.234	3S2	3S 3P	G 1S	1P*	01		
AR 4	426.153	3S23P3	3S23P2 4S		2D*	2P	21	3P
AR 4	430.048	3S23P3	3S23P2 4S		2P*	2D	12	1D
AR 4	430.393	3S23P3	3S23P2 4S		2P*	2D	23	1D
SC10	449.283	3S 3P	3P2		3P*	3P	12	2S
AR 4	450.198	3S23P3	3S23P2 4S		2P*	2P	12	3P
AR 4	450.525	3S23P3	3S23P2 4S		2P*	2P	22	3P
AR 4	452.646	3S23P3	3S23P2 4S		2P*	2P	11	3P
AR 4	452.971	3S23P3	3S23P2 4S		2P*	2P	21	3P
K 6	453.427	3S23P2	3S 3P3	G 3P	1P*	01		
V 8	456.296	3S23P4	3S 3P5	G 3P	3P*	10		
SC10	458.116	3S 3P	3P2		3P*	3P	22	2S
SC10	459.387	3S 3P	3P2		3P*	3P	11	2S
SC10	464.977	3S 3P	3P2		3P*	3P	10	2S
SC10	468.673	3S 3P	3P2		3P*	3P	21	2S
C 2	468.755	2P3	2P2 4S		2D*	2P	21	3P
V 8	472.919	3S23P4	3S 3P5	G 3P	3P*	12		
V 5	481.193	3P6 3D	3P6 4P	G 2D	2P*	22	1S	1S
V 5	482.655	3P6 3D	3P6 4P	G 2D	2P*	32	1S	1S
V 5	484.096	3P6 3D	3P6 4P	G 2D	2P*	21	1S	1S
NA 7	492.200	2S2 2P	2S 2P2	G 2P*	2D	22		
AR 4	493.201	3S23P3	3S23P2 3D		2D*	2P	21	3P
NA 8	494.431	2S 2P	2P2		3P*	3P	01	
AR 4	495.542	3S23P3	3S23P2 3D		2D*	2P	22	3P
AR 4	495.832	3S23P3	3S23P2 3D		2D*	2P	32	3P
NA 8	496.165	2S 2P	2P2		3P*	3P	11	
NA 8	498.123	2S 2P	2P2		3P*	3P	10	
NA 8	499.966	2S 2P	2P2		3P*	3P	21	
SC11	505.252	3S	3P	G 2S	2P*	12		
SC 9	522.265	3S2 3P	3S 3P2	G 2P*	2D	12		
SC11	522.765	3S	3P	G 2S	2P*	11		
CL 4	525.344	3S23P2	3S23P 3D	1D	1F*	23		
B 2	544.667	2S2	2S 5P	G 1S	1P*	01		
AL11	549.888	2S	2P	G 2S	2P*	12		
NE 6	553.578	2S 2P2	2P3		2D	2D*	22	
NE 6	553.688	2S 2P2	2P3		2D	2D*	33	
SC 8	556.110	3S23P2	3S 3P3	G 3P	3D*	01		
K 8	557.609	3S 3P	2P63P2		3P*	3P	12	
K 8	561.941	3S 3P	2P63P2		3P*	3P	01	
SC 8	562.827	3S23P2	3S 3P3	G 3P	3D*	12		
SC 8	563.041	3S23P2	3S 3P3	G 3P	3D*	11		
K 8	564.849	3S 3P	2P63P2		3P*	3P	22	
AL11	568.771	2S	2P	G 2S	2P*	11		
K 8	569.694	3S 3P	2P63P2		3P*	3P	10	
SC 8	571.688	3S23P2	3S 3P3	G 3P	3D*	23		
K 8	572.969	3S 3P	2P63P2		3P*	3P	21	
SC 8	573.106	3S23P2	3S 3P3	G 3P	3D*	22		
K 6	613.743	3S23P2	3S 3P3	G 3P	3P*	01		
K 6	624.756	3S23P2	3S 3P3	G 3P	3P*	21		
K 6	624.821	3S23P2	3S 3P3	G 3P	3P*	22		
B 2	631.735	2S 2P	2P 3P		3P*	3P	12	2P*2
B 2	631.838	2S 2P	2P 3P		3P*	3P	22	2P*2
B 2	631.973	2S 2P	2P 3P		3P*	3P	21	2P*2
AL10	637.607	2S2	2S 2P	G 1S	3P*	01		
B 2	645.451	2S 2P	2P 3P		3P*	3D	23	2P*2

TABLE III.- FINDING LIST – Continued

(a) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
B 2	652.754	2S 2P	2S 6D		3P*	3D	23		
B 2	652.770	2S 2P	2S 6D		3P*	3D	12		
F 1	670.980	2P5	2P4 3S	G	2P*	2S	21		1S
F 1	671.301	2P5	2P4 3D	G	2P*	2P	22		1D
K 7	672.951	3S2 3P	3S 3P2	G	2P*	2D	22		
F 1	673.310	2P5	2P4 3S	G	2P*	2S	11		1S
F 1	674.139	2P5	2P4 3D	G	2P*	2D	23		1D
B 2	680.245	2S 2P	2S 5D		3P*	3D	23		
S 3	685.288	3S23P2	3S23P 4S	G	3P	3P*	12		2P*
S 3	687.027	3S23P2	3S23P 4S	G	3P	3P*	01		2P*
S 3	688.374	3S23P2	3S23P 4S	G	3P	3P*	11		2P*
N 1	721.592	2S22P3	2S 2P4		2D*	2P	21		
N 1	722.036	2S22P3	2S 2P4		2D*	2P	32		
S 2	774.697	3S23P3	3S23P2 3D	G	4S*	4P	22		3P
S 2	775.651	3S23P3	3S23P2 3D	G	4S*	4P	21		3P
N 1	776.549	2S22P3	2S 2P4		2P*	2P	11		
N 1	777.233	2S22P3	2S 2P4		2P*	2P	22		
S 2	777.426	3S23P3	3S23P2 3D	G	4S*	4P	23		3P
N 2	787.001	2S 2P3	2P4		3D*	3P	10		
N 2	787.501	2S 2P3	2P4		3D*	3P	21		
N 2	788.436	2S 2P3	2P4		3D*	3P	32		
N 2	788.485	2S 2P3	2P4		3D*	3P	22		
F 1	789.669	2P5	2P4 3D	G	2P*	2P	21		3P
F 1	792.726	2P5	2P4 3D	G	2P*	2P	11		3P
S 2	799.801	3S23P3	3S23P2 3D		2D*	2F	34		1D
B 2	806.859	2P2	2P 4D		3P	3D*	23		2P*2
O 3	834.220	2S22P2	2S 2P3	G	3P	3D*	11		
NA 7	869.629	2S2 2P	2S 2P2	G	2P*	4P	12		
P 5	871.683	3P	3D		2P*	2D	22		
NA 7	874.827	2S2 2P	2S 2P2	G	2P*	4P	11		
N 1	881.754	2S22P3	2S 2P4		2P*	2S	21		
B 2	883.275	2S 2P	2S 3D		3P*	3D	01		
C 1	884.402	2S22P2	2S 2P3		1D	1P*	21		
NA 7	885.299	2S2 2P	2S 2P2	G	2P*	4P	22		
NA 7	890.686	2S2 2P	2S 2P2	G	2P*	4P	21		
N 2	911.065	2S 2P3	2P4		3P*	3P	21		
N 2	912.459	2S 2P3	2P4		3P*	3P	22		
N 1	937.959	2P3	2P2 4D		2D*	2F	34		1D
N 1	951.300	2P3	2P2 4D		2D*	2D	33		1D
N 1	979.004	2S22P3	2S 2P4		2D*	2D	33		
N 2	979.782	2S 2P3	2S 2P2 3S		3P*	3P	22		4P
N 2	982.860	2S 2P3	2S 2P2 3S		3P*	3P	21		4P
B 2	987.377	2S 2P	2S 4D		1P*	1D	12		
B 2	987.491	2P2	2P 3D		3P	3D*	12		2P*2
N 1	992.373	2P3	2P2 3D		2D*	2F	34		1D
N 1	995.513	2P3	2P2 3D		2D*	2P	32		1D
N 1	996.108	2P3	2P2 3D		2D*	2P	21		1D
S 3	1017.497	3S23P2	3S 3P3	G	3P	3P*	10		
N 1	1049.326	2P3	2P2 4D		2P*	2D	23		1D
B 2	1082.912	2S 2P	2S 3S		3P*	3S	01		
N 1	1082.966	2S22P3	2S 2P4		2P*	2D	23		
CL 1	1087.665	3S23P5	3S23P4 3D	G	2P*	2D	23		1D
N 1	1095.370	2P3	2P2 3D		2P*	2S	21		1D
N 1	1100.069	2P3	2P2 3D		2P*	2D	23		1D
N 1	1103.579	2P3	2P2 3D		2P*	2P	22		1D
C 1	1105.027	2S22P2	2S 2P3		1D	1D*	22		

TABLE III.- FINDING LIST – Continued

(a) Concluded

ION		WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
C	1	1145.087	2S 2P3	2S 2P2	3D	5S*	5P	21		4P
C	1	1145.272	2S 2P3	2S 2P2	3D	5S*	5P	23		4P
C	1	1145.771	2S 2P3	2S 2P2	3D	5S*	5P	22		4P
B	2	1211.024	2P2	2P	3S	3P	3P*	12		2P*2
B	2	1211.903	2P2	2P	3S	3P	3P*	22		2P*2
B	2	1379.404	2P2	2P	3S	1D	1P*	21		2P*2
B	1	1425.588	2S 2P2	2S 2P	5D	4P	4D*	34		3P*
TI	3	1434.696	3D2	3D	4P	3P	3P*	11		2D
B	1	1465.454	2S 2P2	2S 2P	4D	4P	4P*	33		3P*
B	1	1468.184	2S 2P2	2S 2P	4D	4P	4D*	34		3P*
B	1	1468.535	2S 2P2	2S 2P	4D	4P	4D*	23		3P*
B	1	1476.706	2S 2P2	2S 2P	4D	4P	4P*	32		3P*
B	1	1581.440	2S 2P2	2S 2P	3D	4P	4P*	12		3P*
B	1	1581.737	2S 2P2	2S 2P	3D	4P	4P*	21		3P*
B	1	1582.686	2S 2P2	2S 2P	3D	4P	4P*	23		3P*
B	1	1583.226	2S 2P2	2S 2P	3D	4P	4P*	32		3P*
B	1	1583.718	2S 2P2	2S 2P	3D	4P	4P*	33		3P*
B	2	1605.689	2S 2P	2S	3S	1P*	1S	10		
B	1	1607.406	2S 2P2	2S 2P	3D	4P	4D*	12		3P*
B	1	1608.507	2S 2P2	2S 2P	3D	4P	4D*	23		3P*
B	1	1608.814	2S 2P2	2S 2P	3D	4P	4D*	34		3P*
B	1	1609.525	2S 2P2	2S 2P	3D	4P	4D*	33		3P*
B	1	1609.982	2S 2P2	2S 2P	4S	4P	4P*	32		3P*
B	1	1609.992	2S 2P2	2S 2P	4S	4P	4P*	33		3P*
B	2	1618.169	2S 2P	2P2		3P*	3P	11		
SI	1	1742.893	3S23P2	3S23P	3D	G 3P	3D*	23		2P*
B	1	1837.385	2P		3D	G 2P*	2D	23		

TABLE III.- FINDING LIST – Continued

(b) Lines Calculated From Three Known Wavelengths

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO26	1.474	1S2	1S 3P	G 1S	3P*	01		
CO26	1.728	1S2	1S 2P	G 1S	3P*	01		
K 19	2.585	1S	6P	G 2S	2P*	1		
K 19	2.615	1S	5P	G 2S	2P*	1		
P 15	4.154	1S	6P	G 2S	2P*	12		
P 15	4.208	1S	5P	G 2S	2P*	12		
P 15	4.307	1S	4P	G 2S	2P*	12		
P 15	4.544	1S	3P	G 2S	2P*	12		
SI14	4.770	1S	6P	G 2S	2P*	12		
SI14	4.772	1S	6P	G 2S	2P*	1		
SI14	4.830	1S	5P	G 2S	2P*	1		
SI14	4.832	1S	5P	G 2S	2P*	12		
SI14	4.946	1S	4P	G 2S	2P*	12		
SI14	4.951	1S	4P	G 2S	2P*	1		
SI14	5.218	1S	3P	G 2S	2P*	12		
SI14	5.218	1S	3P	G 2S	2P*	1		
P 15	5.385	1S	2P	G 2S	2P*	12		
SI14	6.182	1S	2P	G 2S	2P*	1		
SI14	6.183	1S	2P	G 2S	2P*	12		
NA10	8.979	1S2	1S 4P	G 1S	1P*	01		
NA10	9.434	1S2	1S 3P	G 1S	1P*	01		
CO18	12.593	2S22P6	2S 2P6 3P	G 1S	1P*	01		2S
CO18	12.650	2S22P6	2S 2P6 3P	G 1S	3P*	01		2S
CO19	13.096	2P5	2P4 3D	G 2P*	2P	22		3P
CO19	13.209	2P5	2P4 3D	G 2P*	2P	21		3P
F 8	13.336	1S2	1S 6P	G 1S	1P*	01		
CO19	13.490	2P5	2P4 3D	G 2P*	2P	11		3P
FE18	14.446	2P5	2P4 3D	G 2P*	2D	12		3P
CO19	14.550	2P5	2P4 3S	G 2P*	4P	22		3P
CO19	14.627	2P5	2P4 3S	G 2P*	4P	23		3P
CO17	15.546	2P6 3S	2P53S2	G 2S	2P*	11		
CO17	15.820	2P6 3S	2P53S2	G 2S	2P*	12		
MN17	15.947	2P5	2P4 3D	G 2P*	2S	11		1D
CR16	17.628	2P5	2P4 3D	G 2P*	2S	11		1D
V 14	18.758	2S22P6	2S 2P6 3P	G 1S	1P*	01		2S
V 14	18.897	2S22P6	2S 2P6 3P	G 1S	3P*	01		2S
V 14	20.717	2S22P6	2S22P5 3D	G 1S	12*K	01		2P*
TI13	21.027	2S22P6	2S 2P6 3P	G 1S	1P*	01		2S
TI13	21.065	2S22P6	2S 2P6 3P	G 1S	1P*	01		
TI13	21.121	2S22P6	2S 2P6 3P	G 1S	3P*	01		2S
TI13	21.150	2S22P6	2S 2P6 3P	G 1S	3P*	01		
V 14	21.285	2S22P6	2S22P5 3D	G 1S	21*K	01		2P*
SC12	21.935	2S22P6	2S22P5 4D	G 1S	12*K	01		2P*
SC12	22.107	2S22P6	2S22P5 4D	G 1S	22*K	01		2P*
K 16	22.726	2S 2P	2S 3D	3P*	3D	23		
K 16	22.779	2S 2P	2S 3D	3P*	3D	12		
SC12	22.875	2S22P6	2S22P5 4S	G 1S	11*K	01		2P*
SC12	23.002	2S22P6	2S22P5 4S	G 1S	22*K	01		2P*
N 6	23.024	1S2	1S 6P	G 1S	1P*	01		
N 6	23.282	1S2	1S 5P	G 1S	1P*	01		
K 15	24.237	2S 2P2	2S 2P 3D	4P	4D*	34		3P*
AR15	25.804	2S 2P	2S 3D	3P*	3D	12		
AR15	25.808	2S 2P	2S 3D	3P*	3D	23		
K 10	26.514	2P6	2P5 6D	G 1S	12*K	01		2P*
CL15	26.615	2S	3P	G 2S	2P*	12		
K 10	26.627	2P6	2P5 6D	G 1S	22*K	01		2P*

TABEL III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CL15	26.762	2S 3P		G 2S	2P*	11		
K 10	27.480	2P6 2P5 5D		G 1S	12*K	01		2P*
AR14	27.501	2S 2P2 2S 2P 3D		4P	4D*	34		3P*
TI12	27.616	2P6 3S 2P53S2		G 2S	2P*	11		
CL14	27.830	2S 2P 2P 3P		3P*	3D	23		
TI12	27.922	2P6 3S 2P53S2		G 2S	2P*	12		
CA12	28.018	2P5 2P4 3D		G 2P*	2P	22		1D
CL14	28.108	2S2 2S 3P		G 1S	1P*	01		
CA12	28.119	2P5 2P4 3D		G 2P*	2D	23		1D
P 13	28.154	2P 4D		2P*	2D	23		
CA12	28.508	2P5 2P4 3D		G 2P*	2D	23		3P
CA12	28.667	2P5 2P4 3D		G 2P*	2P	22		3P
CA12	28.738	2P5 2P4 3D		G 2P*	2P	21		3P
CA12	28.799	2P5 2P4 3D		G 2P*	4D	22		3P
CA12	28.883	2P5 2P4 3D		G 2P*	2P	11		3P
CL15	29.006	2P 3S		2P*	2S	21		
CL14	29.403	2S 2P 2S 3D		3P*	3D	01		
CA12	29.606	2P5 2P4 3D		G 2P*	2D	12		3P
K 13	30.100	2S22P3 2S22P2 3S		G 4S*	4P	23		3P
K 12	30.157	2S22P4 2S22P3 3D		1D	1F*	23		2D*
P 11	30.166	2P 5D		G 2P*	2D	23		
K 12	30.387	2S22P4 2S22P3 3D		1D	1D*	22		2D*
S 14	30.416	2S 3P		G 2S	2P*	12		
S 14	30.526	2S 3P		G 2S	2P*	11		
K 12	30.598	2S22P4 2S22P3 3D		G 3P	3D*	23		4S*
P 12	31.097	2P2 2P 4D		1D	1F*	23		2P*
CL13	31.178	2S 2P2 2S 2P 3D		2D	2F*	34		1P*
K 11	31.327	2P5 2P4 3D		G 2P*	2D	23		1S
CL13	31.447	2S 2P2 2S 2P 3D		4P	4D*	23		3P*
K 11	31.487	2S22P5 2S22P4 3D		G 2P*	2D	23		1S
P 12	31.515	2S 2P 2S 4D		1P*	1D	12		
K 11	31.696	2S22P5 2S22P4 3D		G 2P*	2D	12		1S
S 13	31.950	2S 2P 2P 3P		3P*	3D	23		
CL13	32.083	2P3 2P2 3D		4S*	4P	22		3P
CL13	32.124	2P3 2P2 3D		4S*	4P	23		3P
S 13	32.238	2S2 2S 3P		G 1S	1P*	01		
K 11	32.297	2P5 2P4 3D		G 2P*	2D	23		1D
K 11	32.317	2P5 2P4 3D		G 2P*	2P	22		1D
CL13	32.445	2S 2P2 2S 2P 3D		2D	2F*	34		3P*
K 11	32.895	2P5 2P4 3D		G 2P*	2D	23		3P
K 11	32.982	2P5 2P4 3D		G 2P*	2P	11		3P
SI12	32.985	2P 4D		2P*	2D	23		
CA12	33.028	2S 2P6 2S 2P5 3S		2S	2P*	12		3P*
CA12	33.041	2S 2P6 2S 2P5 3S		2S	2P*	12		
P 11	33.050	2S 2P2 2S 2P 4D		4P	4D*	34		3P*
K 11	33.061	2P5 2P4 3D		G 2P*	2P	22		3P
P 11	33.102	2P 4D		G 2P*	2D	12		
K 11	33.134	2P5 2P4 3D		G 2P*	2P	21		3P
P 11	33.174	2P 4D		G 2P*	2D	23		
K 11	33.259	2P5 2P4 3D		G 2P*	4D	22		3P
S 14	33.392	2P 3S		2P*	2S	21		
CL12	33.553	2S 2P3 2S 2P2 3D		5S*	5P	21		4P
CL12	33.570	2S 2P3 2S 2P2 3D		5S*	5P	22		4P
CL12	33.592	2S 2P3 2S 2P2 3D		5S*	5P	23		4P
S 13	33.822	2S 2P 2S 3D		3P*	3D	01		

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
K 12	33.961	2S22P4	2S22P3 3S		1D	1D*	22		2D*
K 12	34.128	2S22P4	2S22P3 3S	G	3P	3S*	21		4S*
K 12	34.199	2S22P4	2S22P3 3S		1S	1P*	01		2P*
P 11	34.351	2S 2P2	2S 2P 4D		2D	2F*	34		3P*
K 12	34.351	2S22P4	2S22P3 3S	G	3P	3S*	11		4S*
AR11	34.811	2S22P4	2S22P3 3D		1D	1F*	23		2D*
AR11	35.088	2S22P4	2S22P3 3D		1D	1D*	22		2D*
K 11	35.602	2S22P5	2S22P4 3S	G	2P*	2S	21		1S
K 11	35.713	2P5	2P4 3D	G	2P*	2D	12		3P
K 11	35.896	2S22P5	2S22P4 3S	G	2P*	2S	11		1S
SI10	35.934	2P	5D	G	2P*	2D	23		
S 12	35.983	2S 2P2	2S 2P 3D		2D	2F*	34		1P*
S 12	36.336	2S 2P2	2S 2P 3D		4P	4D*	23		3P*
P 10	36.523	2S 2P3	2S 2P2 4D		5S*	5P	22		4P
AR10	36.540	2S22P5	2S22P4 3D	G	2P*	2D	23		1S
P 10	36.560	2S 2P3	2S 2P2 4D		5S*	5P	23		4P
P 12	36.629	2S 2P	2P 3P		3P*	3P	22		2P*
P 12	36.654	2S 2P	2P 3P		3P*	3P	21		2P*
P 12	36.715	2S 2P	2P 3P		3P*	3S	11		2P*
AR 9	36.722	2S22P6	2S22P5 4S	G	1S	11*K	01		2P*
AR10	36.757	2S22P5	2S22P4 3D	G	2P*	2D	12		1S
SI11	36.758	2P2	2P 4D		1D	1F*	23		2P*
P 12	36.794	2S 2P	2P 3P		3P*	3S	21		2P*
AR 9	37.021	2S22P6	2S22P5 4S	G	1S	22*K	01		2P*
B 5	37.025	1S	8P	G	2S	2P*	12		
P 12	37.026	2S 2P	2P 3P		3P*	3D	11		2P*
P 12	37.065	2S 2P	2P 3P		3P*	3D	22		2P*
S 12	37.135	2P3	2P2 3D		4S*	4P	22		3P
S 12	37.176	2P3	2P2 3D		4S*	4P	23		3P
B 5	37.206	1S	7P	G	2S	2P*	12		
SI11	37.322	2S 2P	2S 4D		1P*	1D	12		
S 12	37.607	2S 2P2	2S 2P 3D		2D	2F*	34		3P*
K 11	37.616	2S22P5	2S22P4 3S	G	2P*	2P	11		3P
P 9	38.033	2P3	2P2 5D		2D*	2F	34		1D
K 11	38.056	2S22P5	2S22P4 3S	G	2P*	4P	12		3P
K 11	38.193	2S 2P6	2S 2P5 3S		2S	2P*	11		3P*
P 11	38.230	2S 2P2	2P2 3P		4P	4S*	22		3P
P 11	38.294	2S 2P2	2P2 3P		4P	4S*	32		3P
K 11	38.355	2S 2P6	2S 2P5 3S		2S	2P*	12		3P*
K 11	38.406	2S 2P6	2S 2P5 3S		2S	2P*	12		
P 10	38.669	2S 2P3	2S 2P2 4D		3D*	3F	34		4P
P 10	38.755	2S 2P3	2S 2P2 4D		3D*	3F	23		4P
P 11	38.843	2S 2P2	2P2 3P		4P	4P*	33		3P
P 11	38.845	2S 2P2	2P2 3P		4P	4D*	34		3P
S 11	39.001	2S 2P3	2S 2P2 3D		5S*	5P	21		4P
S 11	39.023	2S 2P3	2S 2P2 3D		5S*	5P	22		4P
S 11	39.049	2S 2P3	2S 2P2 3D		5S*	5P	23		4P
AL11	39.094	2P	4D		2P*	2D	12		
SI10	39.306	2S 2P2	2S 2P 4D		4P	4D*	34		3P*
SI10	39.426	2P	4D	G	2P*	2D	12		
SI10	39.512	2P	4D	G	2P*	2D	23		
P 11	39.541	2S 2P2	2P2 3P		2D	2D*	33		1D
P 12	39.622	2S 2P	2P 3P		1P*	1P	11		2P*
AL10	39.627	2S 2P	2P 4P		3P*	3D	23		
AR11	39.800	2S22P4	2S22P3 3S		1S	1P*	01		2P*
P 12	40.134	2P2	2P 3D		3P	3P*	11		2P*

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 12	40.251	2P2	2P 3D	3P	3P*	21		2P*
AL10	40.433	2S 2P	2S 5D	1P*	1D	12		
P 12	40.463	2P2	2P 3D	3P	3D*	22		2P*
CL 8	40.504	2P6	2P5 5S	G 1S	22*K	01		2P*
SI10	41.023	2S 2P2	2S 2P 4D	2D	2F*	34		3P*
P 9	41.040	2P3	2P2 4D	G 4S*	4P	22		3P
P 9	41.084	2P3	2P2 4D	G 4S*	4D	21		3P
P 9	41.143	2P3	2P2 4D	G 4S*	4D	23		3P
P 9	41.430	2P3	2P2 4D	2D*	2D	33		1D
P 12	41.506	2S 2P	2S 3S	3P*	3S	01		
P 12	41.533	2S 2P	2S 3S	3P*	3S	11		
CO17	41.542	3D	5F	2D	2F*	23		
P 12	41.666	2S 2P	2S 3S	3P*	3S	21		
P 12	41.691	2P2	2P 3D	1D	1D*	22		2P*
FE15	41.880	3S 3P	3S 5D	3P*	3D	23	2S	2S
P 9	42.077	2P3	2P2 4D	2P*	2D	23		1D
P 11	42.189	2S 2P2	2S 2P 3D	4P	4P*	12		3P*
P 11	42.217	2S 2P2	2S 2P 3D	4P	4P*	21		3P*
P 11	42.239	2S 2P2	2S 2P 3D	4P	4P*	22		3P*
P 11	42.321	2S 2P2	2S 2P 3D	4P	4P*	32		3P*
AL10	42.322	2S 2P	2S 4D	3P*	3D	01		
P 9	42.414	2P3	2P2 4D	2D*	2F	23		3P
P 11	42.551	2S 2P2	2S 2P 3D	4P	4D*	33		3P*
P 12	42.653	2P2	2P 3S	3P	3P*	22		2P*
P 11	42.798	2S 2P2	2S 2P 3D	2P	2P*	11		1P*
SI11	42.832	2S 2P	2P 3P	3P*	3P	22		2P*
SI11	42.864	2S 2P	2P 3P	3P*	3P	21		2P*
P 11	42.925	2S 2P2	2S 2P 3D	2P	2P*	22		1P*
SI11	42.959	2S 2P	2P 3P	3P*	3S	11		2P*
SI11	43.045	2S 2P	2P 3P	3P*	3S	21		2P*
AL 9	43.263	2S 2P2	2S 2P 5D	4P	4D*	34		3P*
SI11	43.330	2S 2P	2P 3P	3P*	3D	11		2P*
SI11	43.378	2S 2P	2P 3P	3P*	3D	22		2P*
AL 9	43.440	2P	5D	G 2P*	2D	12		
P 11	43.463	2P3	2P2 3D	4S*	4P	21		3P
AL10	43.561	2P2	2P 4D	3P	3D*	23		
P 8	43.825	2P4	2P3 5D	G 3P	3D*	23		2D*
SI 9	43.911	2S 2P3	2S 2P2 4D	5S*	5P	22		4P
SI 9	43.940	2S 2P3	2S 2P2 4D	5S*	5P	23		4P
CO16	44.268	3S 3D	3S 5F	3D	3F*	34		
P 10	44.446	2S22P2	2S 2P2 3P	G 3P	3D*	22		4P
SI10	44.900	2S 2P2	2P2 3P	4P	4S*	22		3P
SI10	44.965	2S 2P2	2P2 3P	4P	4S*	32		3P
P 10	45.172	2S22P2	2S 2P2 3P	G 3P	3S*	11		4P
P 8	45.287	2P4	2P3 5D	G 3P	3D*	23		4S*
CO17	45.322	3S	4P	G 2S	2P*	12		
CO17	45.515	3S	4P	G 2S	2P*	11		
SI10	45.603	2S 2P2	2P2 3P	4P	4P*	33		3P
SI10	45.664	2S 2P2	2P2 3P	4P	4D*	34		3P
P 10	45.997	2P2	2P 3D	G 3P	3P*	01		
P 10	46.140	2P2	2P 3D	G 3P	3P*	12		
P 10	46.392	2P2	2P 3D	G 3P	3D*	22		
P 10	46.431	2S 2P3	2S 2P2 3D	3D*	3D	33		2D
P 8	46.462	2P4	2P3 4D	G 3P	3P*	22		2P*
SI10	46.571	2S 2P2	2P2 3P	2D	2D*	33		1D

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
SI 8	46.582	2P3	2P2 5D	2D*	2F	34		1D
SI11	46.653	2S 2P	2P 3P	1P*	1P	11		2P*
SI 9	46.694	2S 2P3	2S 2P2 4D	3D*	3F	34		4P
P 10	46.726	2S 2P3	2S 2P2 3D	3P*	3S	21		2D
SI 9	46.774	2S 2P3	2S 2P2 4D	3D*	3F	23		4P
MN14	47.020	3S 3P	3S 5D	3P*	3D	12	2S	2S
P 8	47.140	2P4	2P3 4D	G 3P	3S*	21		2D*
P 8	47.261	2P4	2P3 4D	G 3P	3S*	11		2D*
P 11	47.280	2S 2P2	2S 2P 3S	2P	2P*	11		1P*
SI11	47.332	2P2	2P 3D	3P	3P*	11		2P*
P 8	47.368	2P4	2P3 4D	G 3P	3P*	12		2D*
AL 9	47.445	2S 2P2	2S 2P 4D	4P	4D*	23		3P*
SI11	47.447	2P2	2P 3D	3P	3P*	21		2P*
P 11	47.455	2P3	2P2 3S	4S*	4P	23		3P
P 11	47.502	2P3	2P2 3S	4S*	4P	22		3P
SI11	47.700	2P2	2P 3D	3P	3D*	22		2P*
P 11	47.859	2S 2P2	2S 2P 3S	2D	2P*	21		3P*
P 10	48.052	2P2	2P 3D	1D	3F*	22		
P 8	48.226	2P4	2P3 4S	G 3P	3P*	22		2P*
P 8	48.301	2P4	2P3 4D	1D	1D*	22		2D*
S 7	48.363	2S22P6	2S 2P6 3P	G 1S	1P*	01		2S
P 10	48.391	2S 2P3	2S 2P2 3D	3D*	3D	33		4P
B 4	48.629	1S2	1S 7P	G 1S	1P*	01		
AL 9	48.894	2S 2P2	2S 2P 4S	4P	4P*	33		3P*
P 8	48.897	2P4	2P3 4D	G 3P	3D*	01		4S*
SI11	49.030	2S 2P	2S 3S	3P*	3S	01		
SI11	49.068	2S 2P	2S 3S	3P*	3S	11		
AL 9	49.083	2P	4S	G 2P*	2S	21		
SI11	49.200	2S 2P	2S 3S	3P*	3S	21		
AL 8	49.414	2S 2P3	2S 2P2 5D	5S*	5P	23		4P
P 8	49.524	2P4	2P3 4S	1D	1P*	21		2P*
AL 8	49.763	2P2	2P 5D	G 3P	3P*	22		
P 10	49.789	2S 2P3	2S 2P2 3D	3P*	3D	12		4P
P 10	49.794	2S 2P3	2S 2P2 3D	3P*	3D	01		4P
CO16	49.854	3S 3P	3S 4D	3P*	3D	01	2S	2S
P 11	49.866	2S 2P2	2S 2P 3S	2S	2P*	12		3P*
AL 9	49.928	2S 2P2	2S 2P 4D	2D	2F*	23		3P*
P 11	49.976	2S 2P2	2S 2P 3S	2S	2P*	11		3P*
SI10	49.981	2S 2P2	2S 2P 3D	4P	4P*	12		3P*
CO16	50.010	3S 3P	3S 4D	3P*	3D	11	2S	2S
SI10	50.013	2S 2P2	2S 2P 3D	4P	4P*	21		3P*
SI10	50.036	2S 2P2	2S 2P 3D	4P	4P*	22		3P*
SI 8	50.085	2P3	2P2 4D	G 4S*	4D	21		3P
SI10	50.122	2S 2P2	2S 2P 3D	4P	4P*	32		3P*
SI 8	50.136	2P3	2P2 4D	G 4S*	4D	23		3P
SI 8	50.329	2P3	2P2 4D	2D*	2F	34		1D
SI10	50.394	2S 2P2	2S 2P 3D	4P	4D*	33		3P*
SI11	50.487	2P2	2P 3S	3P	3P*	22		2P*
P 11	50.635	2S 2P2	2S 2P 3S	2P	2P*	22		3P*
P 9	50.650	2S 2P4	2S 2P3 3D	4P	4S*	32		3D*
AL10	50.742	2S 2P	2P 3P	3P*	3P	11		
AL 8	50.761	2P2	2P 5D	1D	1F*	23		
P 9	50.815	2S 2P4	2S 2P3 3D	4P	4D*	23		3D*
P 9	50.887	2S 2P4	2S 2P3 3D	4P	4D*	12		3D*
AL10	50.920	2S 2P	2P 3P	3P*	3S	01		
P 9	50.953	2S 2P4	2S 2P3 3D	4P	4P*	32		3D*

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 9	50.991	2S 2P4	2S 2P3	3D	4P	4P*	33		3D*
P 8	51.048	2P4	2P3	4S	G 3P	3S*	21		4S*
P 9	51.063	2S 2P4	2S 2P3	3D	4P	4P*	21		3D*
P 8	51.188	2P4	2P3	4S	G 3P	3S*	11		4S*
SI10	51.312	2S 2P2	2S 2P	3D	2P	2P*	11		1P*
SI 8	51.427	2P3	2P2	4D	2P*	2D	23		1D
SI10	51.433	2S 2P2	2S 2P	3D	2P	2P*	22		1P*
SI10	51.608	2P3	2P2	3D	4S*	4P	21		3P
P 9	51.877	2P3	2P2	3D	2P*	2P	11		1D
P 9	52.203	2P3	2P2	3D	2P*	2D	12		1D
P 7	52.358	2P5	2P4	5D	G 2P*	2D	23		3P
SI 9	52.917	2S22P2	2S 2P2	3P	G 3P	3D*	22		4P
P 9	52.939	2P3	2P2	3D	2D*	2P	21		3P
P 10	53.610	2S 2P3	2S 2P2	3S	3D*	3P	32		4P
P 10	53.737	2S 2P3	2S 2P2	3S	3D*	3P	21		4P
SI 9	53.879	2S22P2	2S 2P2	3P	G 3P	3S*	11		4P
P 9	54.124	2P3	2P2	3D	2P*	2P	11		3P
CO11	54.229	3P5	3P4	5S	G 2P*	2D	23		1D
AL 8	54.421	2S 2P3	2S 2P2	4D	3D*	3F	34		2D
P 7	54.669	2P5	2P4	4D	G 2P*	2S	21		1D
P 10	54.811	2S 2P3	2S 2P2	3S	1D*	1D	22		2D
SI10	54.879	2P		3S	G 2P*	2S	11		
SI 9	55.032	2P2	2P	3D	G 3P	3P*	01		
SI10	55.080	2P		3S	G 2P*	2S	21		
SI 9	55.165	2P2	2P	3D	G 3P	3P*	12		
P 10	55.286	2S 2P3	2S 2P2	3S	3P*	3P	22		4P
P 10	55.435	2S 2P3	2S 2P2	3S	3P*	3P	21		4P
SI 9	55.465	2P2	2P	3D	G 3P	3D*	22		
P 8	55.537	2P4	2P3	3D	G 3P	3D*	22		2P*
P 7	55.804	2P5	2P4	4D	G 2P*	2P	22		3P
P 6	55.880	2S22P6	2S 2P6	3P	G 1S	1P*	01		2S
P 7	56.056	2P5	2P4	4D	G 2P*	4P	23		3P
P 7	56.067	2P5	2P4	4D	G 2P*	2D	22		3P
SI 9	56.199	2S 2P3	2S 2P2	3D	3P*	3S	21		2D
AL 9	56.344	2S 2P2	2P2	3P	2D	2F*	34		1D
P 7	56.362	2P5	2P4	4D	G 2P*	2P	11		3P
AL 9	56.368	2S 2P2	2P2	3P	2D	2F*	23		1D
P 7	56.425	2P5	2P4	4D	G 2P*	4P	12		3P
SI10	56.527	2P3	2P2	3S	4S*	4P	23		3P
SI10	56.543	2S 2P2	2S 2P	3S	2P	2P*	11		1P*
P 10	56.575	2S 2P3	2S 2P2	3S	1P*	1D	12		2D
SI10	56.595	2P3	2P2	3S	4S*	4P	22		3P
AL10	56.611	2P2	2P	3D	3P	3P*	01		
AL10	56.648	2P2	2P	3D	3P	3P*	10		
AL10	56.717	2P2	2P	3D	3P	3P*	12		
P 8	56.740	2P4	2P3	3D	G 3P	3S*	11		2D*
P 8	56.849	2P4	2P3	3D	G 3P	3S*	01		2D*
AL10	56.948	2P2	2P	3D	3P	3D*	01		
P 9	56.966	2P3	2P2	3S	2P*	2S	21		
P 8	57.074	2P4	2P3	3D	1D	1F*	23		2P*
SI10	57.304	2S 2P2	2S 2P	3S	2D	2P*	21		3P*
AL 8	57.336	2S 2P3	2S 2P2	4D	3D*	3D	33		4P
P 8	57.361	2P4	2P3	3D	G 3P	3D*	01		2D*
P 7	57.414	2P5	2P4	4S	G 2P*	2D	23		1D
AL 8	57.588	2S 2P3	2S 2P2	4D	3D*	3F	12		4P

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
BE 4	57.853	1S	8P	G	2S	2P*	12		
CO16	58.091	3S 3P	3S 4S		3P*	3S	01	2S	2S
BE 4	58.137	1S	7P	G	2S	2P*	12		
NA 8	58.213	2S 2P	2S 5D		3P*	3D	23		
AL 7	58.367	2P3	2P2 5D		2D*	2D	33		1D
MG 8	58.609	2S 2P2	2S 2P 4D		4P	4P*	33		3P*
SI 7	58.626	2P4	2P3 4D	G	3P	3P*	12		2D*
CO16	58.951	3S 3P	3S 4S		3P*	3S	21	2S	2S
P 9	59.081	2P3	2P2 3S		2P*	2D	23		1D
P 7	59.231	2P5	2P4 4S	G	2P*	2P	12		3P
AL10	59.888	2P2	2P 3D		1S	1P*	01		
SI10	59.949	2S 2P2	2S 2P 3S		2S	2P*	12		3P*
SI 9	59.986	2S 2P3	2S 2P2 3D		3P*	3D	12		4P
SI 9	60.002	2S 2P3	2S 2P2 3D		3P*	3D	01		4P
SI 7	60.008	2P4	2P3 4D		1D	1D*	22		2D*
SI10	60.090	2S 2P2	2S 2P 3S		2S	2P*	11		3P*
AL 9	60.261	2S 2P2	2S 2P 3D		4P	4P*	23		3P*
AL10	60.630	2P2	2P 3S		3P	3P*	12		
AL10	60.648	2P2	2P 3S		3P	3P*	01		
AL10	60.787	2P2	2P 3S		3P	3P*	10		
AL10	60.928	2P2	2P 3S		1D	1P*	21		
SI10	60.938	2S 2P2	2S 2P 3S		2P	2P*	22		3P*
SI 7	60.943	2P4	2P3 4D	G	3P	3D*	01		4S*
SI 8	61.328	2S 2P4	2S 2P3 3D		4P	4S*	32		3D*
SI 8	61.509	2S 2P4	2S 2P3 3D		4P	4D*	23		3D*
SI 7	61.564	2P4	2P3 4S		1D	1P*	21		2P*
SI 8	61.583	2S 2P4	2S 2P3 3D		4P	4D*	12		3D*
SI 8	61.677	2S 2P4	2S 2P3 3D		4P	4P*	32		3D*
SI 8	61.714	2S 2P4	2S 2P3 3D		4P	4P*	33		3D*
SI 9	61.732	2P2	2P 3S	G	3P	3P*	11		
SI 8	61.793	2S 2P4	2S 2P3 3D		4P	4P*	21		3D*
CO16	61.887	3S 3D	3S 4F		3D	3F*	12		
CO16	61.912	3S 3D	3S 4F		3D	3F*	23		
P 9	61.978	2S 2P4	2S 2P3 3S		4P	4S*	12		5S*
CO16	62.000	3S 3D	3S 4F		3D	3F*	34		
NE 8	62.300	2P	6D		2P*	2D	12		
AL 7	62.392	2P3	2P2 4D	G	4S*	4P	21		3P
MN14	62.513	3S 3P	3S 4D		3P*	3D	01	2S	2S
SI 8	62.846	2P3	2P2 3D		2P*	2P	11		1D
AL 7	62.863	2P3	2P2 4D		2D*	2P	32		1D
AL 9	62.955	2P3	2P2 3D		2D*	2F	34		1D
AL 8	63.433	2S22P2	2S 2P2 3P	G	3P	3P*	12		4P
AL 8	63.546	2S22P2	2S 2P2 3P	G	3P	3P*	22		4P
NA10	63.606	1S 2P	1S 3D		3P*	3D	23		
SI 7	63.787	2P4	2P3 4S	G	3P	3S*	21		4S*
SI 7	63.947	2P4	2P3 4S	G	3P	3S*	11		4S*
SI 8	64.226	2P3	2P2 3D		2D*	2P	21		3P
SI 9	64.941	2S 2P3	2S 2P2 3S		3D*	3P	32		4P
SI 9	65.085	2S 2P3	2S 2P2 3S		3D*	3P	21		4P
AL10	65.281	2P2	2P 3S		1S	1P*	01		
AL 7	65.304	2P3	2P2 4S	G	4S*	4P	21		3P
SI 8	65.773	2P3	2P2 3D		2P*	2P	11		3P
NE 8	65.821	2P	5D		2P*	2D	12		
CO11	66.026	3P5	3P4 4D	G	2P*	2D	22		1D
P 8	66.240	2S 2P5	2S 2P4 3S		3P*	3D	23		2D
AL 9	66.259	2S 2P2	2S 2P 3D		2S	2P*	11		3P*

TABLE III.- FINDING LIST – Continued

(b) *Continued*

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM	LOWER	UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO11	66.310	3P5	3P4 4D	G	2P*	2D	23		1D
NE 8	66.321	2P	5S		2P*	2S	21		
SI 9	66.548	2S 2P3	2S 2P2 3S		1D*	1D	22		2D
CO11	66.605	3P5	3P4 4D	G	2P*	2P	22		1D
AL 9	66.729	2P3	2P2 3D		2P*	2D	23		1D
CO11	66.841	3P5	3P4 4D	G	2P*	2D	12		1D
CO11	66.991	3P5	3P4 4D	G	2P*	2S	21		1D
AL 8	67.118	2S 2P3	2S 2P2 3D		5S*	5D	23		4P
SI 9	67.199	2S 2P3	2S 2P2 3S		3P*	3P	22		4P
SI 9	67.358	2S 2P3	2S 2P2 3S		3P*	3P	21		4P
AL 8	67.500	2S 2P3	2S 2P2 3D		3D*	3P	32		2D
AL 7	67.502	2P3	2P2 4S		2D*	2P	21		3P
CO11	67.849	3P5	3P4 4D	G	2P*	2S	11		1D
CO11	67.950	3P5	3P4 4D	G	2P*	2F	23		3P
CO11	67.956	3P5	3P4 4D	G	2P*	4F	23		3P
CO11	67.989	3P5	3P4 4D	G	2P*	2D	22		3P
CO11	67.999	3P5	3P4 4D	G	2P*	2D	23		3P
AL 9	68.648	2P3	2P2 3S		2D*	2D	33		1D
AL 8	68.753	2P2	2P 3D		1D	1P*	21		
CO11	68.767	3P5	3P4 4D	G	2P*	2D	12		3P
SI 9	68.950	2S 2P3	2S 2P2 3S		1P*	1D	12		2D
AL 7	69.027	2P3	2P2 4S		2P*	2P	22		3P
SI 6	69.078	2P5	2P4 4D	G	2P*	2P	22		1D
NE 7	69.117	2S2	2S 5P	G	1S	1P*	01		
AL 9	69.143	2S 2P2	2S 2P 3D		2P	2D*	12		3P*
F 7	69.371	2S	10P	G	2S	2P*	12		
SI 8	69.496	2P3	2P2 3S		2P*	2S	21		
SI 6	69.613	2P5	2P4 4D	G	2P*	2P	11		1D
SI 7	69.677	2P4	2P3 3D	G	3P	3S*	01		2D*
AL 6	69.767	2P4	2P3 5D	G	3P	3D*	23		2D*
F 7	69.975	2S	9P	G	2S	2P*	12		
SI 7	70.332	2P4	2P3 3D	G	3P	3D*	01		2D*
P 8	70.354	2S 2P5	2S 2P4 3S		3P*	3P	22		4P
F 7	70.882	2S	8P	G	2S	2P*	12		
NE 7	70.994	2S 2P	2S 6D		3P*	3D	12		
SI 6	71.003	2P5	2P4 4D	G	2P*	2P	22		3P
NE 7	71.049	2S 2P	2S 6D		3P*	3D	23		
AL 8	71.241	2S 2P3	2S 2P2 3D		3D*	3D	33		4P
AL 8	71.276	2S 2P3	2S 2P2 3D		3D*	3D	22		4P
TI11	71.351	3S 3P	3S 5D		3P*	3D	12	2S	2S
CO10	71.395	3P6	3P5 4D		1S	12*J	01		2P*1
CO10	72.372	3P6	3P5 4D		1S	23*J	01		2P*2
AL 8	72.794	2S 2P3	2S 2P2 3D		3D*	3P	21		4P
AL 8	72.924	2S 2P3	2S 2P2 3D		3D*	3P	32		4P
AL 8	73.404	2S 2P3	2S 2P2 3D		1D*	1F	23		2D
MN14	74.045	3S 3P	3S 4S		3P*	3S	01	2S	2S
MG 9	74.062	2P2	2P 3D		1S	1P*	01		
NA 7	74.312	2S 2P2	2S 2P 4D		4P	4P*	32		3P*
NE 7	74.481	2S 2P	2S 5D		3P*	3D	12		
NE 8	74.544	2P	4S		2P*	2S	11		
NE 7	74.611	2S 2P	2S 5D		3P*	3D	23		
NA 8	74.993	2S 2P	2P 3P		3P*	3P	12		
F 7	75.382	2P	10D		2P*	2D	23		
CO12	75.506	3P4	3P3 4S		1D	1P*	21		2P*
CO12	75.605	3P4	3P3 4S	G	3P	3D*	23		2D*

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO12	75.931	3P4	3P3 4S	G	3P	3D*	22		2D*
AL 8	76.012	2S 2P3	2S 2P2 3D		1P*	1D	12		2D
F 7	76.073	2P	9D		2P*	2D	23		
SI 8	76.298	2S 2P4	2S 2P3 3S		4P	4S*	12		5S*
AL 6	76.399	2P4	2P3 4S	G	3P	3P*	22		2P*
CO12	76.864	3P4	3P3 4S	G	3P	3D*	12		2D*
CO12	76.884	3P4	3P3 4S	G	3P	3D*	11		2D*
V 12	76.904	3S 3D	3S 5F		3D	3F*	34		
FE10	77.001	3P5	3P4 4D	G	2P*	2P	12		1D
CO12	77.003	3P4	3P3 4S	G	3P	3D*	01		2D*
F 7	77.122	2P	8D		2P*	2D	23		
NA 7	77.196	2S 2P2	2S 2P 4S		4P	4P*	32		3P*
NA 7	77.258	2P	4S	G	2P*	2S	11		
NE 7	77.309	2P2	2P 5D		3P	3D*	23		
CO12	77.701	3P4	3P3 4S	G	3P	3S*	21		4S*
CO12	77.744	3P4	3P3 4S		1D	1D*	22		2D*
CO12	78.085	3P4	3P3 4S		1S	1P*	01		2P*
CO11	78.550	3P5	3P4 4S	G	2P*	2S	21		1S
CO12	78.669	3P4	3P3 4S	G	3P	3S*	11		4S*
CO12	78.759	3P4	3P3 4S	G	3P	3S*	01		4S*
MN14	79.732	3S 3D	3S 4F		3D	3F*	34	2S	2S
NA 7	79.745	2S2 2P	2S 2P 3P	G	2P*	2P	22		1P*
NA 7	79.921	2S 2P2	2S 2P 4D		2D	2D*	33		3P*
NE 7	80.573	2S 2P	2P 4P		1P*	1D	12		
F 7	81.171	2P	6D		2P*	2D	12		
AL 8	81.326	2S 2P3	2S 2P2 3D		3S*	3P	12		4P
F 7	81.513	2P	6S		2P*	2S	21		
NE 7	82.207	2S 2P	2S 4D		3P*	3D	12		
CA10	82.265	3P	6D		2P*	2D	12		
TI12	82.524	3D	5F		2D	2F*	23		
CA10	82.612	3P	6D		2P*	2D	23		
CA10	82.800	3S	5P	G	2S	2P*	12		
CA10	82.866	3S	5P	G	2S	2P*	11		
MG 6	83.174	2P3	2P2 4D		2D*	2D	22		3P
SI 5	83.316	2P6	2P5 5S	G	1S	22*K	01		2P*
AL 8	83.737	2S 2P3	2S 2P2 3S		3P*	3P	10		4P
MG 6	83.926	2P3	2P2 4S	G	4S*	4P	21		3P
MG 7	84.058	2S 2P3	2S 2P2 3D		3D*	3D	33		2D
NA 7	85.320	2S2 2P	2S 2P 3P	G	2P*	2S	11		3P*
F 7	85.753	2P	5D		2P*	2D	12		
NE 6	86.074	2P	6D	G	2P*	2D	12		
NE 6	86.171	2P	6D	G	2P*	2D	23		
F 7	86.457	2P	5S		2P*	2S	21		
V 11	86.817	3S2 3P	3S2 4D	G	2P*	2D	12	1S	1S
AL 8	87.165	2S 2P3	2S22P 3P		3D*	3P	32		
MG 7	87.223	2S 2P3	2S 2P2 3D		3P*	3P	22		2D
AL 8	87.295	2S 2P3	2S22P 3P		3D*	3P	21		
MG 6	87.423	2P3	2P2 4S		2D*	2P	21		3P
V 11	87.506	3S2 3P	3S2 4D	G	2P*	2D	23	1S	1S
F 6	90.799	2S2	2S 5P	G	1S	1P*	01		
TI11	90.843	3S 3D	3S 5F		3D	3F*	34		
NA 6	91.436	2P2	2P 4S	G	3P	3P*	10		
NA 6	91.510	2P2	2P 4S	G	3P	3P*	21		
MN11	91.628	3S23P3	3S23P2 4S	G	4S*	4P	23		3P
FE10	91.701	3P5	3P4 4S	G	2P*	2S	11		1S
CR13	91.808	3S 3D	3S 4F		3D	3F*	34	2S	2S

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
MN11	92.237	3S23P3	3S23P2 4S	G 4S*	4P	22		3P
MN11	92.401	3S23P3	3S23P2 4S	2D*	2D	22		1D
MN11	92.681	3S23P3	3S23P2 4S	2D*	2D	33		1D
MN11	92.733	3S23P3	3S23P2 4S	G 4S*	4P	21		3P
NA 7	92.764	2S 2P2	2S 2P 3D	4P	4P*	11		3P*
NA 8	93.249	2P2	2P 3S	3P	3P*	11		
NA 6	93.676	2P2	2P 4D	1S	1P*	01		
NE 7	94.262	2S 2P	2P 3P	3P*	3P	11		
NE 7	94.269	2S 2P	2P 3P	3P*	3P	12		
F 6	94.403	2S 2P	2S 6D	3P*	3D	12		
F 6	94.460	2S 2P	2S 6D	3P*	3D	23		
SC 9	94.517	3S2 3P	3S2 5D	G 2P*	2D	12		
SC 9	95.025	3S2 3P	3S2 5D	G 2P*	2D	23		
AL 7	95.079	2S 2P4	2S 2P3 3S	2D	2D*	33		3D*
CO 9	95.890	3P6 3D	3P53D 4S	G 2D	2D*	23		3D*
CO 9	96.026	3P6 3D	3P53D 4S	G 2D	2D*	22		3D*
CO 9	96.117	3P6 3D	3P53D 4S	G 2D	2D*	33		3D*
CR 9	96.171	3P4	3P3 4D	1D	1F*	23		2D*
CO 9	96.246	3P6 3D	3P53D 4S	G 2D	2D*	32		3D*
NA 7	96.337	2S 2P2	2S 2P 3D	2S	2P*	12		1P*
CR 9	96.437	3P4	3P3 4D	1D	1D*	22		2D*
NE 6	97.028	2S 2P2	2S 2P 4D	4P	4D*	12		3P*
NE 6	97.085	2S 2P2	2S 2P 4D	4P	4P*	32		3P*
CR 9	97.091	3P4	3P3 4D	G 3P	3D*	23		4S*
F 7	97.261	2P	4S	2P*	2S	11		
CO 9	97.507	3P6 3D	3P53D 4S	G 2D	4D*	33		3D*
CO 9	97.763	3P6 3D	3P53D 4S	G 2D	4D*	34		3D*
CR 9	97.910	3P4	3P3 4D	G 3P	3D*	12		4S*
CR 9	97.941	3P4	3P3 4D	G 3P	3D*	01		4S*
F 6	98.038	2S 2P	2P 4P	3P*	3D	23		
MG 5	98.185	2P4	2P3 4D	G 3P	3S*	21		2D*
MG 5	98.367	2P4	2P3 4D	G 3P	3S*	11		2D*
CO 9	98.922	3P6 3D	3P53D 4S	G 2D	2F*	23		3F*
F 6	99.047	2S 2P	2S 5D	3P*	3D	12		
CO 9	99.173	3P6 3D	3P53D 4S	G 2D	2F*	33		3F*
NA 5	99.194	2P3	2P2 5D	G 4S*	4P	22		3P
NA 5	99.233	2P3	2P2 5D	G 4S*	4P	23		3P
K 9	99.395	3P	6D	2P*	2D	12		
CA10	99.445	3P	5S	2P*	2S	11		
K 9	99.770	3P	6D	2P*	2D	23		
CO 9	99.789	3P6 3D	3P53D 4S	G 2D	2F*	34		3F*
CO 9	100.085	3P6 3D	3P53D 4S	G 2D	4F*	23		3F*
NE 6	100.444	2S 2P2	2S 2P 4S	4P	4P*	23		3P*
CO 9	100.531	3P6 3D	3P53D 4S	G 2D	4F*	34		3F*
CO 9	100.595	3P6 3D	3P53D 4S	G 2D	2P*	22		3P*
NE 6	101.077	2S 2P2	2S 2P 4S	4P	4P*	32		3P*
CO 9	101.093	3P6 3D	3P53D 4S	G 2D	2P*	21		3P*
TI10	101.163	3S2 3P	3S2 4D	G 2P*	2D	12	1S	1S
NE 6	101.240	2S2 2P	2S 2P 3P	G 2P*	2P	22		1P*
NE 6	101.456	2S2 2P	2S 2P 3P	G 2P*	2D	12		1P*
NE 6	101.578	2S2 2P	2S 2P 3P	G 2P*	2D	23		1P*
V 8	101.678	3P4	3P3 5S	G 3P	3S*	21		4S*
NA 5	101.754	2P3	2P2 5S	G 4S*	4P	23		3P
CO 9	101.782	3P6 3D	3P53D 4S	G 2D	4P*	32		3P*
NE 6	101.786	2P	4S	G 2P*	2S	11		

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
TI10	101.902	3S2 3P	3S2 4D	G 2P*	2D	23	1S	1S
V 8	102.320	3P4	3P3 5S	G 3P	3S*	11		4S*
V 8	102.477	3P4	3P3 5S	G 3P	3S*	01		4S*
F 6	103.136	2S 2P	2S 6D	1P*	1D	12		
F 6	103.207	2P2	2P 5D	3P	3D*	23		2P*2
F 6	103.223	2P2	2P 5D	3P	3D*	23		
NE 6	103.306	2S 2P2	2P2 3P	4P	4P*	33		3P
CR 8	103.694	3P5	3P4 4D	G 2P*	2P	11		1D
CR 8	104.003	3P5	3P4 4D	G 2P*	2P	12		1D
NE 6	104.111	2S 2P2	2P2 3P	4P	4D*	34		3P
V 11	104.769	3S 3P2	3S 3P 4S	4P	4P*	23		3P*
V 11	105.033	3S 3P2	3S 3P 4S	4P	4P*	12		3P*
NE 6	105.229	2S 2P2	2S 2P 4D	2D	2D*	33		3P*
V 11	105.340	3S 3P2	3S 3P 4S	4P	4P*	33		3P*
V 11	105.873	3S 3P2	3S 3P 4S	4P	4P*	21		3P*
V 11	106.003	3S 3P2	3S 3P 4S	4P	4P*	32		3P*
NA 5	106.063	2P3	2P2 4D	G 4S*	4P	21		3P
NE 5	106.291	2P2	2P 6D	G 3P	3D*	23		
F 6	106.446	2S 2P	2P 4P	1P*	1D	12		2P*2
F 6	106.460	2S 2P	2P 4P	1P*	1D	12		
CR10	106.503	3S23P3	3S23P2 4S	G 4S*	4P	23		3P
NA 5	106.651	2P3	2P2 5D	2P*	2D	23		3P
MN 9	106.659	3P5	3P4 4S	G 2P*	2S	11		1S
V 12	106.679	3S 3D	3S 4F	3D	3F*	23		
V 11	106.720	3S2 3P	3S2 4S	G 2P*	2S	11	1S	1S
V 12	106.802	3S 3D	3S 4F	3D	3F*	12		
V 12	106.916	3S 3D	3S 4F	3D	3F*	34		
NA 7	107.025	2S 2P2	2S 2P 3S	2S	2P*	12		1P*
CR10	107.166	3S23P3	3S23P2 4S	G 4S*	4P	22		3P
CR10	107.514	3S23P3	3S23P2 4S	2D*	2D	22		1D
NA 6	107.663	2P2	2P 3D	G 3P	3D*	11		
NA 5	107.687	2P3	2P2 4D	2D*	2P	32		1D
CR10	107.703	3S23P3	3S23P2 4S	G 4S*	4P	21		3P
CR10	107.808	3S23P3	3S23P2 4S	2D*	2D	33		1D
V 11	107.823	3S2 3P	3S2 4S	G 2P*	2S	21	1S	1S
F 6	108.501	2S 2P	2S 5D	1P*	1D	12		
NE 5	108.945	2S 2P3	2S 2P2 5D	5S*	5P	23		4P
NE 6	109.084	2S 2P2	2P2 3P	2D	2F*	23		1D
NE 6	109.127	2S 2P2	2P2 3P	2D	2F*	34		1D
NE 6	109.368	2S2 2P	2S 2P 3P	G 2P*	2S	11		3P*
NE 7	109.778	2P2	2P 3D	3P	3P*	11		2P*
NE 5	110.146	2P2	2P 5D	G 3P	3D*	12		
NE 5	110.422	2P2	2P 5D	G 3P	3P*	22		
NA 5	110.677	2P3	2P2 4D	2P*	2P	22		1D
NE 6	111.017	2S2 2P	2S 2P 3P	G 2P*	2D	12		3P*
MG 5	111.558	2P4	2P3 3D	G 3P	3P*	01		2P*
F 6	112.118	2S 2P	2S 4S	3P*	3S	21		
NA 6	113.133	2P2	2P 3D	1D	3F*	22		
V 8	113.302	3P4	3P3 4D	1D	1F*	23		2D*
NE 6	113.429	2S 2P2	2S 2P 4D	2P	2D*	23		3P*
V 8	113.623	3P4	3P3 4D	1D	1D*	22		2D*
F 6	113.819	2P2	2P 4D	3P	3D*	12		2P*2
NE 6	114.095	2S2 2P	2S 2P 3P	G 2P*	2P	12		3P*
NE 6	114.143	2S2 2P	2S 2P 3P	G 2P*	2P	11		3P*
NE 5	114.280	2P2	2P 5D	1D	1D*	22		
NE 6	114.305	2S2 2P	2S 2P 3P	G 2P*	2P	21		3P*

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
V 8	114.573	3P4	3P3 4D	G	3P	3D*	23		4S*
MG 5	115.017	2P4	2P3 3D		1D	1F*	23		2P*
V 10	115.157	3S23P2	3S23P 4S	G	3P	3P*	12		2P*
V 8	115.416	3P4	3P3 4D	G	3P	3D*	12		4S*
V 8	115.570	3P4	3P3 4D	G	3P	3D*	01		4S*
NA 5	115.648	2P3	2P2 4D		2P*	2P	11		3P
V 10	115.651	3S23P2	3S23P 4S	G	3P	3P*	01		2P*
NA 5	115.724	2P3	2P2 4D		2P*	2P	22		3P
V 10	115.852	3S23P2	3S23P 4S	G	3P	3P*	22		2P*
V 10	116.200	3S23P2	3S23P 4S	G	3P	3P*	11		2P*
V 10	116.367	3S23P2	3S23P 4S	G	3P	3P*	10		2P*
V 10	116.898	3S23P2	3S23P 4S	G	3P	3P*	21		2P*
NE 5	117.546	2P2	2P 4D	G	3P	3P*	12		
V 13	118.041	3D	4P		2D	2P*	32		
NE 5	118.280	2P2	2P 5D		1S	1P*	01		
NE 5	118.398	2P2	2P 4D	G	3P	3D*	11		
NE 5	118.452	2P2	2P 4D	G	3P	3D*	22		
V 13	118.465	3D	4P		2D	2P*	21		
NE 5	118.663	2P2	2P 4D	G	3P	3P*	10		
NE 5	118.677	2P2	2P 4D	G	3P	3P*	11		
NE 5	118.764	2P2	2P 4D	G	3P	3P*	21		
NE 5	119.072	2S 2P3	2S 2P2 4D		3D*	3F	34		2D
K 9	119.095	3P	5S		2P*	2S	11		
CA 9	120.133	3S2	3S 4P	G	1S	1P*	01		2S
NE 6	120.151	2S 2P2	2S 2P 3D		4P	4P*	11		3P*
NE 7	120.368	2P2	2P 3S		3P	3P*	11		
NA 5	121.508	2P3	2P2 4S		2P*	2P	11		3P
TI10	123.035	3S 3P2	3S 3P 4S		4P	4P*	23		3P*
TI10	123.329	3S 3P2	3S 3P 4S		4P	4P*	12		3P*
V 7	123.358	3P5	3P4 4D	G	2P*	2P	11		1D
TI 7	123.622	3P4	3P3 5S	G	3P	3S*	21		4S*
TI10	123.658	3S 3P2	3S 3P 4S		4P	4P*	33		3P*
K 8	123.729	3S 3P	3S 5D		3P*	3D	12	2S	2S
NE 5	123.952	2P2	2P 4D		1D	3F*	22		
TI10	124.185	3S 3P2	3S 3P 4S		4P	4P*	21		3P*
TI 7	124.335	3P4	3P3 5S	G	3P	3S*	11		4S*
TI10	124.382	3S 3P2	3S 3P 4S		4P	4P*	32		3P*
NA 7	124.526	2S 2P2	2S2 3P		2D	2P*	21		
TI 7	124.535	3P4	3P3 5S	G	3P	3S*	01		4S*
NE 5	124.582	2P2	2P 4S	G	3P	3P*	01		
NE 6	125.132	2S 2P2	2S 2P 3D		2S	2P*	12		1P*
TI10	125.601	3S2 3P	3S2 4S	G	2P*	2S	11	1S	1S
TI11	125.608	3S 3D	3S 4F		3D	3F*	23		
TI11	125.940	3S 3D	3S 4F		3D	3F*	12	2S	2S
TI11	125.979	3S 3D	3S 4F		3D	3F*	23	2S	2S
TI11	126.017	3S 3D	3S 4F		3D	3F*	12		
NE 6	126.144	2S 2P2	2S 2P 3D		2P	2P*	11		1P*
TI11	126.160	3S 3D	3S 4F		3D	3F*	34		
TI10	126.800	3S2 3P	3S2 4S	G	2P*	2S	21	1S	1S
NE 6	127.428	2S 2P2	2S 2P 3D		2P	2P*	22		1P*
NE 6	127.680	2P3	2P2 3D		2D*	2P	32		1D
NE 6	128.214	2P3	2P2 3D		2D*	2F	34		1D
NE 6	128.235	2P3	2P2 3D		2D*	2F	23		1D
NE 5	129.457	2S 2P3	2S 2P2 4D		3D*	3D	33		4P
V 9	129.688	3S23P3	3S23P2 4S		2D*	2P	32		3P

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
NE 6	129.786	2P3	2P2 3D	2D*	2D	33		1D
NE 5	130.148	2S 2P3	2S 2P2 4D	3D*	3F	12		4P
AL 4	130.357	2P6	2P5 3D	G 1S	22*K	01		2P*
NE 5	130.719	2S22P2	2S 2P2 3P	G 3P	3P*	12		4P
NE 5	130.837	2S22P2	2S 2P2 3P	G 3P	3P*	22		4P
NA 5	131.651	2P3	2P2 3D	2P*	2D	12		1D
NE 5	131.956	2S22P2	2S 2P2 3P	G 3P	3D*	12		4P
NE 5	132.008	2S22P2	2S 2P2 3P	G 3P	3D*	23		4P
NE 5	132.086	2S22P2	2S 2P2 3P	G 3P	3D*	22		4P
F 5	132.221	2S 2P2	2S 2P 4D	4P	4F*	21		3P*
NA 4	132.392	2P4	2P3 4D	G 3P	3P*	22		2P*
SC14	132.930	2S22P4	2S 2P5	1S	1P*	01		
NE 5	134.812	2P2	2P 4S	1S	1P*	01		
NE 5	135.724	2S22P2	2S 2P2 3P	G 3P	3S*	11		4P
NE 5	135.860	2S22P2	2S 2P2 3P	G 3P	3S*	21		4P
F 6	136.563	2P2	2S 4F	1D	1F*	23		
TI 9	136.585	3S23P2	3S23P 4S	G 3P	3P*	12		2P*
TI 9	137.137	3S23P2	3S23P 4S	G 3P	3P*	01		2P*
TI 9	137.364	3S23P2	3S23P 4S	G 3P	3P*	22		2P*
MG 5	137.483	2P4	2P3 3S	G 3P	3D*	22		2D*
TI 9	137.723	3S23P2	3S23P 4S	G 3P	3F*	11		2P*
F 5	137.856	2S 2P2	2S 2P 4S	4P	4P*	23		3P*
V 6	137.861	3P6	3P5 4D	1S	12*J	01		2P*1
TI 9	137.947	3S23P2	3S23P 4S	G 3P	3P*	10		2P*
NA 4	138.189	2P4	2P3 5D	G 3P	3D*	23		4S*
NE 6	138.313	2P3	2P2 3D	2P*	2D	23		1D
TI 9	138.510	3S23P2	3S23P 4S	G 3P	3P*	21		2P*
V 6	139.235	3P6	3P5 4D	1S	23*J	01		2P*2
TI12	139.861	3D	4P	2D	2P*	32		
NE 4	140.234	2P3	2P2 5D	G 4S*	4P	22		3P
NE 4	140.283	2P3	2P2 5D	G 4S*	4P	23		3P
TI12	140.338	3D	4P	2D	2P*	21		
NE 6	140.910	2S 2P2	2S 2P 3S	2S	2P*	12		1P*
NA 6	141.128	2S 2P3	2S 2P2 3S	3P*	3P	10		4P
K 7	141.784	3S2 3P	3S2 5D	G 2P*	2D	12		
K 7	142.365	3S2 3P	3S2 5D	G 2P*	2D	23		
NE 6	142.608	2P3	2P2 3S	4S*	4P	23		3P
NE 5	142.678	2S 2P3	2S 2P2 3D	3D*	3D	33		2D
NE 4	142.793	2P3	2P2 5D	2D*	2D	33		1D
NE 5	143.413	2S 2P3	2S 2P2 3D	3D*	3P	32		2D
NE 6	143.551	2P3	2P2 3S	2D*	2D	33		1D
K 8	143.804	3S2	3S 4P	G 1S	1P*	01		2S
NE 5	144.407	2S 2P3	2S 2P2 3D	3D*	3F	34		2D
NE 6	144.628	2S 2P2	2S 2P 3S	2P	2P*	11		1P*
NE 5	144.687	2P2	2P 3D	G 3P	1D*	12		
NE 6	144.754	2S 2P2	2S 2P 3S	2P	2P*	22		1P*
NE 5	144.928	2P2	2P 3D	G 3P	3F*	23		
F 6	145.157	2P2	2P 3D	3P	3P*	11		2P*
K 14	147.595	2S22P2	2S 2P3	G 3P	3S*	01		
MG 4	147.640	2P5	2P4 3D	G 2P*	4P	21		3P
MG 4	147.697	2P5	2P4 3D	G 2P*	4P	23		3P
NE 4	148.629	2P3	2P2 4D	G 4S*	4D	21		3P
NE 4	148.955	2P3	2P2 4D	G 4S*	4D	23		3P
NE 5	149.529	2S 2P3	2S 2P2 3D	3P*	3D	23		2D
NA 4	150.274	2P4	2P3 3D	G 3P	3D*	22		2P*
NE 5	150.375	2S 2P3	2S 2P2 3D	3P*	3P	22		2D

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
K 14	150.537	2S22P2	2S 2P3	G 3P	3S*	11		
NA 4	150.685	2P4	2P3 3D	G 3P	3P*	21		2P*
NA 4	150.903	2P4	2P3 3D	G 3P	3P*	11		2P*
NA 4	150.944	2P4	2P3 3D	G 3P	3P*	10		2P*
NE 5	151.430	2P2	2P 3D	1D	3F*	22		
NA 5	151.615	2P3	2P2 3S	2D*	2D	22		1D
K 14	151.761	2S22P2	2S 2P3	1D	1P*	21		
NA 6	152.014	2S 2P3	2S22P 3P	3D*	3D	33		
NE 4	153.339	2P3	2P2 5D	2P*	2D	23		3P
K 14	153.994	2S22P2	2S 2P3	G 3P	3S*	21		
NE 6	154.104	2P3	2P2 3S	2P*	2D	23		1D
NA 5	154.426	2P3	2P2 3S	2D*	2P	22		3P
CO 9	155.144	3P6 3D	3P53D2	G 2D	2D*	23		
NA 4	155.412	2P4	2P3 3D	G 3P	3S*	11		2D*
CO 9	155.669	3P6 3D	3P53D2	G 2D	2D*	32		
NA 4	155.721	2P4	2P3 3D	G 3P	3P*	11		2D*
NE 5	156.134	2S 2P3	2S 2P2 3D	3D*	3D	33		4P
NE 5	156.196	2S 2P3	2S 2P2 3D	3D*	3D	22		4P
CO 9	156.659	3P6 3D	3P6 4P	G 2D	2P*	22		
CO 9	157.292	3P6 3D	3P6 4P	G 2D	2P*	32		
CO 9	157.779	3P6 3D	3P6 4P	G 2D	2P*	21		
K 13	157.878	2S22P3	2S 2P4	2P*	2P	22		
F 4	158.383	2P2	2P 5D	G 3P	3D*	12		
NE 5	158.608	2S 2P3	2S 2P2 3D	3D*	3F	34		4P
NE 5	158.743	2S 2P3	2S 2P2 3D	3D*	3F	23		4P
NE 5	158.842	2S 2P3	2S 2P2 3D	3D*	3F	12		4P
CO10	158.903	3P6	3P5 3D	1S	1P*	01		2P*
NE 6	159.062	2P3	2S 2P 3P	2D*	2P	32		1P*
NE 4	159.783	2S22P3	2S 2P3 3P	G 4S*	4P	23		5S*
NE 5	159.931	2S 2P3	2S 2P2 3D	3D*	3P	21		4P
NE 5	159.986	2S 2P3	2S 2P2 3D	3D*	3P	32		4P
NA 6	160.933	2S 2P3	2S22P 3P	3P*	3D	23		
MG 3	161.091	2P6	2P5 6D	G 1S	12*K	01		2P*
NA 6	161.233	2S 2P3	2S22P 3P	3P*	3D	12		
NE 5	162.048	2S 2P3	2S 2P2 3D	1D*	1F	23		2D
TI 5	163.076	3P6	3P5 5S	G 1S	11*K	01		2P*
K 13	164.137	2S22P3	2S 2P4	2P*	2S	11		
MG 3	164.282	2P6	2P5 5D	G 1S	12*K	01		2P*
TI 5	164.445	3P6	3P5 5S	G 1S	22*K	01		2P*
NE 5	164.459	2S 2P3	2S 2P2 3D	3P*	3D	23		4P
NE 5	164.538	2S 2P3	2S 2P2 3D	3P*	3D	01		4P
V 7	164.563	3S23P5	3S23P4 4S	G 2P*	4P	12		3P
NE 5	164.635	2S 2P3	2S 2P2 3D	3P*	3D	12		4P
NE 4	164.893	2P3	2P2 4D	2P*	2P	11		3P
NE 4	164.996	2P3	2P2 4D	2P*	2P	22		3P
F 5	166.018	2S 2P2	2S 2P 3D	2P	2P*	11		1P*
K 13	166.121	2S22P3	2S 2P4	2P*	2S	21		
LI 2	166.376	1S2	1S 7P	G 1S	1P*	01		
NE 5	166.767	2S 2P3	2S 2P2 3S	3D*	3D	33		2D
CO12	167.926	3P4	3P3 3D	G 1D	1F*	23		2P*
O 5	168.131	2S 2P	2P 3P	3P*	3D	22		2P*2
F 4	168.356	2P2	2P 4D	G 3P	3P*	12		
CO12	168.472	3P4	3P3 3D	G 3P	3D*	23		2P*
NE 6	168.705	2S 2P2	2S2 3P	2D	2P*	32		
NE 6	168.799	2S 2P2	2S2 3P	2D	2P*	21		

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO12	169.130	3P4	3P3 3D	G 3P	3D*	01		2P*
F 4	169.321	2P2	2P 4D	G 3P	3D*	11		
F 4	169.391	2P2	2P 4D	G 3P	3D*	22		
TI 7	169.853	3P4	3P3 4S	G 3P	1D*	12		2D*
TI 5	170.159	3P6	3P5 4D	1S	12*J	01		2P*1
CO12	170.418	3P4	3P3 3D	G 3P	3D*	12		2P*
MG 3	171.247	2P6	2P5 4D	G 1S	22*K	01		2P*
NE 5	171.270	2S 2P3	2S 2P2 3D	1P*	1D	12		2D
TI 5	171.950	3P6	3P5 4D	1S	23*J	01		2P*2
K 14	172.181	2S22P2	2S 2P3	1D	1D*	22		
CO12	172.519	3P4	3P3 3D	1D	1D*	22		2P*
NE 4	172.755	2P3	2P2 3D	G 4S*	4D	21		3P
NE 4	172.854	2S 2P4	2S 2P3 3D	4P	4S*	32		3D*
NE 4	173.246	2S 2P4	2S 2P3 3D	4P	4D*	23		3D*
NE 4	173.382	2S 2P4	2S 2P3 3D	4P	4D*	12		3D*
N 6	173.886	1S 2P	1S 3D	3P*	3D	12		
NE 4	173.926	2S 2P4	2S 2P3 3D	4P	4P*	32		3D*
NE 4	173.981	2S 2P4	2S 2P3 3D	4P	4P*	33		3D*
NE 4	174.119	2S 2P4	2S 2P3 3D	4P	4P*	21		3D*
CO13	174.878	3P3	3P2 3D	2D*	2F	34		1D
K 14	175.397	2S22P2	2S 2P3	1S	1P*	01		
CO12	175.766	3P4	3P3 3D	G 3P	3P*	22		2P*
NE 4	177.008	2P3	2P2 3D	2D*	2F	23		1D
K 13	178.181	2S22P3	2S 2P4	2D*	2D	22		
F 4	178.931	2P2	2P 4S	G 3P	3P*	01		
K 13	179.484	2S22P3	2S 2P4	2D*	2D	33		
K 6	180.272	3S23P2	3S23P 5S	1D	1F*	21		2P*
NA 3	182.459	2P5	2P4 4D	G 2P*	2S	21		1D
CO 8	183.202	3D2	3D 4P	G 3F	3D*	33		2D
CO 8	183.670	3D2	3D 4P	G 3F	3D*	43		2D
NE 5	183.743	2S 2P3	2S 2P2 3S	3D*	3P	21		4P
F 6	183.743	2P2	2P 3S	1S	1P*	01		2P*2
CO 8	183.947	3D2	3D 4P	G 3F	3D*	32		2D
CO14	184.854	3P2	3P 3D	1D	1F*	23		
SC 5	184.984	3P5	3P4 4D	G 2P*	2D	22		1D
SC 5	185.632	3P5	3P4 4D	G 2P*	2D	23		1D
CO 8	185.888	3D2	3D 4P	3P	1P*	21		2D
K 14	185.918	2S22P2	2S 2P3	G 3P	3P*	01		
NA 3	186.271	2P5	2P4 5D	G 2P*	2D	23		3P
SC 5	186.296	3P5	3P4 4D	G 2P*	2P	22		1D
SC 5	186.520	3P5	3P4 4D	G 2P*	2D	12		1D
SC 5	186.643	3P5	3P4 4D	G 2P*	2S	21		1D
F 5	186.860	2S 2P2	2S 2P 3S	4P	4P*	11		3P*
SC 5	187.796	3P5	3P4 4D	G 2P*	2P	12		1D
SC 5	188.219	3P5	3P4 4D	G 2P*	2S	11		1D
NA 4	189.157	2S 2P5	2S 2P4 3S	3P*	3D	23		2D
F 6	189.179	2P2	2P 3S	1S	1P*	01		
MG 4	189.755	2S 2P6	2S 2P5 3S	2S	2P*	11		3P*
SC 5	189.776	3S23P5	3S23P4 5S	G 2P*	2D	23		1D
MG 4	189.998	2S 2P6	2S 2P5 3S	2S	2P*	12		
NA 4	190.478	2P4	2P3 3S	G 3P	3D*	22		2D*
K 14	190.509	2S22P2	2S 2P3	G 3P	3P*	11		
SC 5	190.752	3P5	3P4 4D	G 2P*	2F	23		3P
CO14	190.839	3P2	3P 3D	G 3P	3D*	23		
CO 8	190.969	3D2	3D 4P	3P	3D*	23		2D
CO 8	191.441	3D2	3D 4P	3P	3D*	01		2D

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO 8	191.510	3D2	3D 4P		3P	3D*	11	2D
SC 5	191.536	3P5	3P4 4D	G	2P*	4F	23	3P
NE 5	191.786	2S 2P3	2S 2P2 3D		3S*	3P	12	4P
N 4	192.003	2S 2P	2S 7D		3P*	3D	23	
SC 5	192.298	3P5	3P4 4D	G	2P*	2D	22	3P
FE11	192.576	3P4	3P3 3D	G	3P	3P*	11	2P*
SC 5	192.617	3P5	3P4 4D	G	2P*	2D	23	3P
S 10	192.717	2S22P3	2S 2P4		2P*	2P	11	
NA 3	193.613	2P5	2P4 4D	G	2P*	4P	23	3P
SC 5	193.878	3P5	3P4 4D	G	2P*	2D	12	3P
NA 3	194.145	2P5	2P4 4D	G	2P*	2D	12	3P
NA 3	194.573	2P5	2P4 4D	G	2P*	2P	11	3P
NA 3	194.991	2P5	2P4 4D	G	2P*	4P	12	3P
K 14	195.459	2S22P2	2S 2P3	G	3P	3P*	22	
NE 3	195.652	2P4	2P3 4D	G	3P	3D*	23	2P*
K 14	196.222	2S22P2	2S 2P3	G	3P	3P*	21	
CO15	197.550	3P	3D	G	2P*	2D	12	
V 5	199.943	3P6 3D	3P53D 4S	G	2D	2D*	22	3D*
V 5	200.206	3P6 3D	3P53D 4S	G	2D	2D*	32	3D*
F 5	200.232	2S 2P2	2S 2P 3S		2P	2P*	22	1P*
F 5	200.263	2S 2P2	2S 2P 3S		2P	2P*	11	1P*
V 5	200.658	3P6 3D	3P53D 4S	G	2D	2D*	23	3D*
V 5	200.885	3P6 3D	3P53D 4S	G	2D	2D*	33	3D*
NA 3	201.600	2P5	2P4 3D	G	2P*	2S	21	1D
K 13	202.104	2S22P3	2S 2P4		2P*	2D	23	
V 5	203.669	3P6 3D	3P53D 4S	G	2D	4D*	33	3D*
S 6	203.792	3P	6D		2P*	2D	12	
P 10	203.869	2S22P2	2S 2P3	G	3P	3S*	01	
TI 6	203.890	3S23P5	3S23P4 4S	G	2P*	4P	12	3P
V 5	203.928	3P6 3D	3P53D 4S	G	2D	4D*	34	3D*
O 5	203.946	2P2	2P 3D		3P	3D*	22	2P*2
NE 3	204.037	2P4	2P3 4D	G	3P	3D*	23	2D*
S 6	204.331	3P	6D		2P*	2D	23	
NE 3	204.427	2P4	2P3 4D	G	3P	3D*	12	2D*
NE 5	204.592	2S 2P3	2S 2P2 3S		1P*	1D	12	2D
NE 3	205.126	2P4	2P3 4D	G	3P	3P*	22	2D*
NE 3	205.328	2P4	2P3 4D	G	3P	3P*	12	2D*
P 10	205.418	2S22P2	2S 2P3	G	3P	3S*	11	
CO15	205.806	3P	3D	G	2P*	2D	23	
N 4	205.904	2S 2P	2S 5D		3P*	3D	01	
MN11	207.069	3S23P3	3S23P2 3D	G	4S*	4P	21	3P
NE 3	207.099	2P4	2P3 4D		1D	1F*	23	2P*
P 10	207.377	2S22P2	2S 2P3		1D	1P*	21	
NA 3	207.860	2P5	2P4 4S	G	2P*	2P	12	3P
NE 3	208.190	2P4	2P3 4S	G	3P	3P*	22	2P*
V 5	208.651	3P6 3D	3P53D 4S	G	2D	2F*	23	3F*
CR 6	208.870	3P6 3D	3P6 4F	G	2D	2F*	23	1S 1S
V 5	208.956	3P6 3D	3P53D 4S	G	2D	2F*	33	3F*
CR 6	209.211	3P6 3D	3P6 4F	G	2D	2F*	34	1S 1S
CA 7	209.780	3S23P2	3S23P 4S		1D	1P*	21	
V 5	210.217	3P6 3D	3P53D 4S	G	2D	2F*	34	3F*
NE 5	210.433	2S 2P3	2S22P 3P		3D*	3P	21	
CO 7	211.732	3D3	3D2 4P	G	4F	4D*	44	A3P
V 5	211.985	3P6 3D	3P53D 4S	G	2D	4F*	23	3F*
CO 7	212.219	3D3	3D2 4P	G	4F	4D*	54	A3P

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
V 5	212.344	3P6 3D	3P53D 4S	G	2D	2P*	21		3P*
V 5	212.428	3P6 3D	3P53D 4S	G	2D	4F*	34		3F*
CO 7	212.519	3D3	3D2 4P	G	4F	4D*	22		A3P
CO 7	212.685	3D3	3D2 4P	G	4F	4D*	43		A3P
CO16	212.763	3S 3P	3S 3D		3P*	3D	12		
CO 7	212.832	3D3	3D2 4P	G	4F	4D*	32		A3P
NE 4	212.899	2P3	2P2 3S		2D*	2D	22		1D
V 5	212.942	3P6 3D	3P53D 4S	G	2D	2P*	22		3P*
CO16	213.325	3S 3P	3S 3D		3P*	3D	11		
V 5	213.481	3P6 3D	3P53D 4S	G	2D	4P*	32		3P*
P 9	213.917	2S22P3	2S 2P4		2P*	2P	12		
MN12	214.235	3S23P2	3S23P 3D	G	3P	3D*	01		
NE 5	214.641	2S 2P3	2S22P 3P		3D*	3D	33		
MN12	215.246	3S23P2	3S23P 3D	G	3P	3D*	12		
NA 3	215.589	2P5	2P4 3D	G	2P*	4D	23		3P
NA 3	215.625	2P5	2P4 3D	G	2P*	4P	21		3P
NE 3	215.651	2P4	2P3 4D		1D	1F*	23		2D*
NE 3	215.682	2P4	2P3 4D		1D	1D*	22		2D*
NA 4	215.809	2S 2P5	2S 2P4 3S		3P*	3P	22		4P
NE 3	215.944	2P4	2P3 4D		1D	1P*	21		2D*
NA 3	216.065	2P5	2P4 3D	G	2P*	4D	12		3P
CO 7	216.213	3D3	3D2 4P		2G	2H*	56		A1G
NE 3	217.726	2P4	2P3 3D	G	3P	3D*	23		2P*
NE 3	217.990	2P4	2P3 3D	G	3P	3D*	12		2P*
MN12	218.028	3S23P2	3S23P 3D	G	3P	3D*	11		
NE 3	218.469	2P4	2P3 4S	G	3P	3D*	23		2D*
NE 3	218.743	2P4	2P3 3D	G	3P	3P*	12		2P*
MN12	218.828	3S23P2	3S23P 3D	G	3P	3D*	22		
CO 7	219.190	3D3	3D2 4P		4P	4P*	23		A3P
CO 7	219.638	3D3	3D2 4P		4P	4P*	33		A3P
CO 7	219.734	3D3	3D2 4P	G	4F	2D*	33		A3F
F 4	219.743	2P2	2P 3D		1D	1P*	21		
NE 3	219.908	2P4	2P3 4S		1D	1P*	21		2P*
CO16	219.913	3S 3P	3S 3D		3P*	3D	23		
CO 7	219.920	3D3	3D2 4P		4P	4P*	22		A3P
CO 7	220.176	3D3	3D2 4P	G	4F	2D*	43		A3F
CO 7	220.389	3D3	3D2 4P		4P	4P*	32		A3P
CO 7	220.399	3D3	3D2 4P		2H	2H*	66		A1G
F 3	220.538	2P3	2P2 5S	G	4S*	4P	23		3P
CO 7	220.971	3D3	3D2 4P	G	4F	4D*	54		A3F
NE 4	220.980	2P3	2P2 3S		2D*	2P	22		3P
CO 7	221.218	3D3	3D2 4P	G	4F	4D*	43		A3F
CO 7	221.334	3D3	3D2 4P		4P	4D*	34		A3P
CO 7	221.497	3D3	3D2 4P	G	4F	4D*	32		A3F
K 7	221.583	3S 3P2	3S 3P 4S		4P	4P*	22		3P*
CO 7	221.923	3D3	3D2 4P		4P	4D*	23		A3P
CO 7	222.150	3D3	3D2 4P	G	4F	4F*	45		A3F
CO 7	222.183	3D3	3D2 4P	G	4F	2F*	54		A3F
CO 7	222.255	3D3	3D2 4P	G	4F	2F*	43		A3F
CO 7	222.322	3D3	3D2 4P	G	4F	4G*	56		A3F
CO 7	222.404	3D3	3D2 4P		4P	4D*	12		A3P
CO 7	222.422	3D3	3D2 4P	G	4F	4F*	34		A3F
CO 7	222.688	3D3	3D2 4P	G	4F	4F*	55		A3F
CO 7	222.863	3D3	3D2 4P	G	4F	4F*	44		A3F
CO 7	223.005	3D3	3D2 4P	G	4F	4G*	45		A3F
F 3	223.026	2P3	2P2 4D	G	4S*	4D	21		3P

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO 7	223.113	3D3	3D2 4P	G 4F	4F*	33		A3F
NE 3	223.242	2P4	2P3 4D	G 3P	3D*	01		4S*
CO 7	223.314	3D3	3D2 4P	G 4F	4F*	22		A3F
CO 7	223.521	3D3	3D2 4P	G 4F	4G*	34		A3F
CO 7	223.574	3D3	3D2 4P	G 4F	4F*	43		A3F
CA 5	223.639	3S23P4	3S23P3 4D	G 3P	3D*	23		4S*
CO 7	223.672	3D3	3D2 4P	G 4F	4F*	32		A3F
N 4	223.711	2S 2P	2S 6D	1P*	1D	12		
V 6	224.001	3P6	3P5 3D	1S	1P*	01		2P*
CO 7	224.005	3D3	3D2 4P	G 4F	4G*	23		A3F
V 5	224.309	3P6 3D	3P53D2	G 2D	2D*	23		
F 3	224.368	2P3	2P2 4D	G 4S*	4D	23		3P
V 5	224.457	3P6 3D	3P53D2	G 2D	2D*	32		
V 8	224.534	3P4	3P3 3D	G 3P	1D*	12		2P*
CO 7	224.845	3D3	3D2 4P	4P	4S*	12		A3P
CO 7	225.176	3D3	3D2 4P	2H	2G*	54		A1G
K 5	225.221	3S23P3	3S23P2 4D	G 4S*	4P	22		3P
CA 5	225.315	3S23P4	3S23P3 4D	G 3P	3D*	12		4S*
K 5	225.376	3S23P3	3S23P2 4D	G 4S*	4P	23		3P
K 5	225.537	3S23P3	3S23P2 4D	G 4S*	4P	21		3P
CA 5	226.123	3S23P4	3S23P3 4D	G 3P	3D*	01		4S*
P 9	226.970	2S22P3	2S 2P4	2P*	2S	11		
SI 9	227.376	2S22P2	2S 2P3	1D	1P*	21		
NE 3	227.381	2P4	2P3 3D	G 3P	3P*	21		2D*
O 5	227.565	2P2	2P 3S	3P	3P*	11		2P*2
P 9	227.605	2S22P3	2S 2P4	2P*	2S	21		
O 5	227.649	2P2	2P 3S	3P	3P*	10		2P*2
NE 3	227.693	2P4	2P3 3D	G 3P	3P*	11		2D*
NE 3	227.765	2P4	2P3 3D	G 3P	3P*	10		2D*
NE 3	228.304	2P4	2P3 3D	G 3P	3S*	01		2D*
TI 5	229.155	3P6	3P5 4S	G 1S	22*K	01		2P*
CO 7	229.254	3D3	3D2 4P	2G	2G*	55		A3F
NE 3	229.381	2P4	2P3 3D	G 3P	3D*	01		2D*
CO 7	229.516	3D3	3D2 4P	2G	2G*	44		A3F
P 5	229.526	3S	6P	G 2S	2P*	11		
V 8	229.595	3P4	3P3 3D	1S	1P*	01		2P*
CO 7	230.008	3D3	3D2 4P	2G	2G*	54		A3F
NE 3	230.268	2P4	2P3 3D	1D	1F*	23		2P*
NE 5	230.521	2S 2P3	2S22P 3P	3P*	3D	23		
K 8	230.733	3S 3D	3S 4F	3D	3F*	12	2S	2S
NE 3	230.768	2P4	2P3 3D	1D	1P*	21		2P*
K 8	230.774	3S 3D	3S 4F	3D	3F*	23	2S	2S
CO 7	230.898	3D3	3D2 4P	4P	4D*	34		A3F
NE 5	230.921	2S 2P3	2S22P 3P	3P*	3D	12		
CR11	231.020	3S23P2	3S23P 3D	G 3P	3D*	01		
CO 7	231.190	3D3	3D2 4P	2G	2D*	43		A3F
CO 7	231.272	3D3	3D2 4P	4P	4D*	23		A3F
NE 3	231.302	2P4	2P3 3D	1D	1D*	22		2P*
CO 7	231.758	3D3	3D2 4P	4P	4D*	33		A3F
K 5	231.825	3S23P3	3S23P2 4D	2D*	2D	33		3P
CO 7	231.929	3D3	3D2 4P	4P	4D*	12		A3F
CO 7	231.983	3D3	3D2 4P	2G	4D*	54		A3F
CO 7	232.072	3D3	3D2 4P	4P	4D*	22		A3F
CR11	232.244	3S23P2	3S23P 3D	G 3P	3D*	12		
CO 7	232.333	3D3	3D2 4P	2G	4D*	43		A3F

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
N 4	232.444	2S 2P	2S 4S	3P*	3S	21		
CO 7	233.298	3D3	3D2 4P	2G	2F*	54		A3F
CO 7	233.484	3D3	3D2 4P	2G	2F*	43		A3F
CO 7	233.644	3D3	3D2 4P	2H	2G*	55		A3F
CO 7	233.968	3D3	3D2 4P	2H	2G*	65		A3F
CR11	234.263	3S23P2	3S23P 3D	G 3P	3D*	11		
CO 7	234.415	3D3	3D2 4P	2H	2G*	54		A3F
CO17	235.110	3P	3D	2P*	2D	12		
CR11	235.734	3S23P2	3S23P 3D	G 3P	3D*	22		
N 4	235.799	2S 2P	2S 5D	1P*	1D	12		
CO 7	236.101	3D3	3D2 4P	2D	2D*	33		A3F
CO15	236.299	3S23P	3S 3P2	G 2P*	2P	12		
P 10	236.655	2S22P2	2S 2P3	1S	1P*	01		
V 8	237.589	3P4	3P3 3D	G 3P	1P*	21		2D*
CO 7	237.757	3D3	3D2 4P	2D	2F*	34		A3F
AR 5	238.327	3S23P2	3S23P 5S	1D	1P*	21		2P*
K 5	238.489	3S23P3	3S23P2 4D	2D*	2F	34		3P
F 4	238.670	2S 2P3	2S 2P2 3D	3P*	3D	12		4P
K 5	239.340	3S23P3	3S23P2 4D	2D*	2F	23		3P
CL14	239.999	2S2	2S 2P	G 1S	1P*	01		
CO15	240.192	3S23P	3S 3P2	G 2P*	2P	11		
AL 7	240.517	2S22P3	2S 2P4	2D*	2P	22		
NE 4	240.782	2S 2P4	2S 2P3 3S	2D	2D*	33		3D*
FE 7	243.278	3D2	3D 4P	3P	3F*	23		2D
V 8	243.976	3P4	3P3 3D	G 3P	3P*	11		2P*
N 4	244.350	2P2	2P 4D	1D	1F*	23		2P*2
V 9	245.059	3S23P3	3S23P2 3D	G 4S*	4P	22		3P
AL 8	247.366	2S22P2	2S 2P3	G 3P	3S*	01		
CO 6	247.515	3D4	3D3 4P	3F	3G*	23		A2F
V 9	247.694	3S23P3	3S23P2 3D	G 4S*	4P	23		3P
AL 8	248.448	2S22P2	2S 2P3	G 3P	3S*	11		
P 9	250.786	2S22P3	2S 2P4	2D*	2D	33		
SI 8	250.994	2S22P3	2S 2P4	2P*	2S	21		
F 3	252.356	2S 2P4	2S 2P3 3D	4P	4S*	32		3D*
F 3	253.102	2S 2P4	2S 2P3 3D	4P	4D*	23		3D*
F 3	253.438	2S 2P4	2S 2P3 3D	4P	4D*	12		3D*
TI 4	254.198	3P6 3D	3P53D2	G 2D	2D*	23		
TI 4	254.404	3P6 3D	3P53D 4S	G 2D	2D*	22		3D*
TI 4	254.429	3P6 3D	3P53D2	G 2D	2D*	32		
F 3	254.458	2S 2P4	2S 2P3 3D	4P	4P*	32		3D*
F 3	254.623	2S 2P4	2S 2P3 3D	4P	4P*	33		3D*
TI 4	254.692	3P6 3D	3P53D 4S	G 2D	2D*	32		3D*
F 3	254.872	2S 2P4	2S 2P3 3D	4P	4P*	21		3D*
CO 6	255.806	3D4	3D3 4P	3H	3G*	65		A2F
CO 6	255.936	3D4	3D3 4P	3H	3G*	54		A2F
F 3	255.971	2P3	2P2 3D	G 4S*	4D	21		3P
CO 6	256.085	3D4	3D3 4P	3H	3G*	43		A2F
V 10	256.226	3S23P2	3S23P 3D	G 3P	3P*	01		2P*
V 8	256.638	3P4	3P3 3D	1D	3P*	21		2P*
TI 4	257.284	3P6 3D	3P53D 4S	G 2D	2D*	23		3D*
TI 4	257.430	3P6 3D	3P53D 4S	G 2D	2D*	33		3D*
S 13	257.845	2S2	2S 2P	G 1S	1P*	01		
TI 4	259.332	3P6 3D	3P53D 4S	G 2D	4D*	33		3D*
TI 4	259.522	3P6 3D	3P53D 4S	G 2D	4D*	34		3D*
NE 3	260.861	2P4	2P3 3D	1S	1P*	01		2D*
CL12	262.305	2S22P2	2S 2P3	G 3P	3D*	12		

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 10	263.261	2S22P2	2S 2P3	G 3P	3P*	01		
F 3	263.287	2P3	2P2 3D	2D*	2F	23		1D
O 3	263.594	2P2	2P 4D	G 3P	3P*	10		
O 3	263.627	2P2	2P 4D	G 3P	3P*	11		
O 3	263.765	2P2	2P 4D	G 3P	3P*	21		
V 12	264.592	3S 3P	3S 3D	3P*	3D	01	2S	2S
TI 4	264.625	3P6 3D	3P53D 4S	G 2D	4P*	32		3P*
TI 4	264.647	3P6 3D	3P53D 4S	G 2D	2P*	21		3P*
P 10	265.454	2S22P2	2S 2P3	G 3P	3P*	11		
CO 6	265.481	3D4	3D3 4P	G 5D	5P*	23		A4P
P 10	265.661	2S22P2	2S 2P3	G 3P	3P*	12		
V 11	265.767	3S2 3P	3S2 3D	G 2P*	2D	12	1S	1S
CO 6	265.839	3D4	3D3 4P	G 5D	5P*	33		A4P
CO 6	265.976	3D4	3D3 4P	G 5D	5P*	12		A4P
V 12	266.127	3S 3P	3S 3D	3P*	3D	12	2S	2S
CO 6	266.250	3D4	3D3 4P	G 5D	5P*	22		A4P
CO 6	266.316	3D4	3D3 4P	G 5D	5P*	43		A4P
K 6	266.430	3S23P2	3S23P 4S	1D	1P*	21		
CO 6	266.469	3D4	3D3 4P	G 5D	5P*	11		A4P
TI 4	266.577	3P6 3D	3P53D 4S	G 2D	2F*	23		3F*
CO 6	266.629	3D4	3D3 4P	G 5D	5P*	32		A4P
CO 6	266.739	3D4	3D3 4P	G 5D	5P*	21		A4P
TI 4	267.039	3P6 3D	3P53D 4S	G 2D	2F*	33		3F*
N 3	268.239	2S 2P2	2P2 3P	4P	4S*	22		3P
N 3	268.333	2S 2P2	2P2 3P	4P	4S*	32		3P
TI 4	268.361	3P6 3D	3P53D 4S	G 2D	2F*	34		3F*
CL12	268.425	2S22P2	2S 2P3	G 3P	3D*	23		
TI 4	268.932	3P6 3D	3P53D 4S	G 2D	2P*	22		3P*
V 8	268.977	3P4	3P3 3D	1D	1F*	23		2D*
FE14	269.034	3S23P	3S 3P2	G 2P*	2D	22		
P 10	269.577	2S22P2	2S 2P3	G 3P	3P*	21		
NA 2	270.052	2P6	2P5 6D	G 1S	12*K	01		2P*
TI 4	270.113	3P6 3D	3P53D 4S	G 2D	4F*	34		3F*
V 12	270.451	3S 3P	3S 3D	3P*	3D	23	2S	2S
N 4	270.926	2S 2P	2P 3P	1P*	1D	12		2P*2
CO 6	270.950	3D4	3D3 4P	3H	3G*	43		A2H
NA 2	271.059	2P6	2P5 6D	G 1S	22*K	01		2P*
CO16	271.113	3S 3P	3P2	3P*	3P	12	2S	
TI 4	271.197	3P6 3D	3P53D 4S	G 2D	4F*	23		3F*
V 9	271.198	3S23P3	3S23P2 3D	2D*	2P	21		3P
CO 6	271.353	3D4	3D3 4P	3H	3G*	54		A2H
V 12	271.475	3S 3P	3S 3D	3P*	3D	22	2S	2S
CO 6	271.522	3D4	3D3 4P	3H	3G*	55		A2H
CO 6	271.798	3D4	3D3 4P	3H	3G*	65		A2H
V 11	272.084	3S2 3P	3S2 3D	G 2P*	2D	23	1S	1S
V 11	272.655	3S2 3P	3S2 3D	G 2P*	2D	22	1S	1S
NA 2	273.445	2P6	2P5 5D	G 1S	12*K	01		2P*
N 3	275.013	2S 2P2	2P2 3P	4P	4D*	34		3P
CO 6	275.121	3D4	3D3 4P	3G	3G*	33		A2H
NA 2	275.448	2P6	2P5 5D	G 1S	22*K	01		2P*
V 9	275.510	3S23P3	3S23P2 3D	2D*	2P	22		3P
CO 6	275.558	3D4	3D3 4P	3G	3G*	44		A2H
CO 6	275.696	3D4	3D3 4P	3G	3G*	45		A2H
CO 6	275.980	3D4	3D3 4P	3G	3G*	55		A2H
N 3	276.292	2S 2P2	2P2 3P	4P	4P*	33		3P

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CO 6	276.387	3D4	3D3 4P	G 5D	3D*	23		A4F
V 9	276.612	3S23P3	3S23P2 3D	2D*	2P	32		3P
CO 6	276.883	3D4	3D3 4P	G 5D	3D*	12		A4F
SI 8	277.140	2S22P3	2S 2P4	2D*	2D	33		
CO 6	277.467	3D4	3D3 4P	G 5D	5F*	34		A4F
CO 6	277.475	3D4	3D3 4P	G 5D	5F*	45		A4F
SC 6	277.657	3P4	3P3 3D	G 3P	1D*	12		2P*
CO 6	278.053	3D4	3D3 4P	G 5D	5F*	33		A4F
CO 6	278.482	3D4	3D3 4P	G 5D	5F*	11		A4F
CO 6	278.565	3D4	3D3 4P	G 5D	5F*	43		A4F
CO 6	278.670	3D4	3D3 4P	G 5D	5F*	32		A4F
CO 6	278.764	3D4	3D3 4P	G 5D	5D*	34		A4F
CO 6	278.765	3D4	3D3 4P	G 5D	5D*	23		A4F
CO 6	278.798	3D4	3D3 4P	G 5D	5F*	21		A4F
CO 6	279.269	3D4	3D3 4P	G 5D	5D*	44		A4F
CO 6	279.465	3D4	3D3 4P	G 5D	5D*	33		A4F
CO 6	279.605	3D4	3D3 4P	G 5D	5D*	01		A4F
CO 6	279.990	3D4	3D3 4P	G 5D	5D*	43		A4F
CO 6	280.048	3D4	3D3 4P	G 5D	5D*	32		A4F
P 5	280.142	3P	6D	2P*	2D	12		
TI 9	280.450	3S23P2	3S23P 3D	G 3P	3P*	01		2P*
AL 9	280.470	2S2 2P	2S 2P2	G 2P*	2P	12		
P 5	280.782	3P	6D	2P*	2D	23		
NA 2	281.285	2P6	2P5 4D	G 1S	12*K	01		2P*
NA 2	282.058	2P6	2P5 4D	G 1S	22*K	01		2P*
CO 6	282.292	3D4	3D3 4P	3H	3G*	65		A2G
CO 6	282.587	3D4	3D3 4P	3H	3G*	54		A2G
AL 9	282.673	2S2 2P	2S 2P2	G 2P*	2P	11		
V 12	282.792	3S 3P	3S 3D	3P*	3D	12		
K 6	282.856	3S23P2	3S23P 4S	1S	1P*	01		2P*
CO 6	283.068	3D4	3D3 4P	3H	3G*	43		A2G
V 12	283.175	3S 3P	3S 3D	3P*	3D	11		
CO 6	283.541	3D4	3D3 4P	3F	3G*	45		A2G
AL 7	283.545	2S 2P4	2P5	2D	2P*	21		
V 5	283.977	3P6 3D	3P6 4F	G 2D	2F*	23	1S	1S
CO 6	284.034	3D4	3D3 4P	3F	3G*	34		A2G
V 5	284.372	3P6 3D	3P6 4F	G 2D	2F*	34	1S	1S
NA 3	284.523	2S 2P6	2S 2P5 3S	2S	2P*	11		3P*
CO 6	284.797	3D4	3D3 4P	3F	3G*	23		A2G
NA 3	284.814	2S 2P6	2S 2P5 3S	2S	2P*	12		
S 11	285.626	2S22P2	2S 2P3	G 3P	3D*	12		
AL 8	286.072	2S 2P3	2P4	3D*	3P	10		
CO16	286.368	3S 3P	3P2	3P*	3P	22	2S	
AL 7	286.472	2S 2P4	2P5	2D	2P*	32		
AL 9	286.505	2S2 2P	2S 2P2	G 2P*	2P	21		
CO 6	286.809	3D4	3D3 4P	3G	3G*	55		A2G
CA 5	287.060	3P4	3P3 4S	G 3P	3S*	11		4S*
AL 8	287.080	2S 2P3	2P4	3D*	3P	21		
CO 6	287.161	3D4	3D3 4P	3G	3G*	44		A2G
AL 8	287.627	2S22P2	2S 2P3	1S	1P*	01		
CO 6	287.647	3D4	3D3 4P	3G	3G*	33		A2G
K 4	287.849	3S23P4	3S23P3 4D	G 3P	3D*	23		4S*
CO16	287.851	3S 3P	3P2	3P*	3P	11	2S	
CO 6	288.052	3D4	3D3 4P	3G	3G*	43		A2G
V 12	288.239	3S 3P	3S 3D	3P*	3D	23		
CA 5	288.255	3S23P4	3S23P3 4S	G 3P	3S*	11		4S*

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
AL 8	289.423	2S 2P3	2P4		3D*	3P	32		
AL 8	289.544	2S 2P3	2P4		3D*	3P	22		
K 4	289.561	3S23P4	3S23P3	4D	G 3P	3D*	12		4S*
TI10	289.720	3S2 3P	3S2	3D	G 2P*	2D	12	1S	1S
K 4	290.335	3S23P4	3S23P3	4D	G 3P	3D*	01		4S*
S 11	291.424	2S22P2	2S 2P3		G 3P	3D*	23		
SC 6	292.122	3P4	3P3	3D	G 3P	1F*	21		2D*
CA 5	293.169	3S23P4	3S23P3	4S	G 3P	5S*	22		4S*
CO 6	294.378	3D4	3D3	4P	3F	3F*	34		A4F
CO 6	294.520	3D4	3D3	4P	3F	3F*	44		A4F
MN13	294.544	3S23P	3S 3P2		G 2P*	2S	11		
P 5	294.732	3P		6S	2P*	2S	11		
AR 4	294.913	3S23P3	3S23P2	4D	G 4S*	4F	22		3P
AR 4	295.022	3S23P3	3S23P2	4D	G 4S*	4P	21		3P
AR 4	295.165	3S23P3	3S23P2	4D	G 4S*	4P	23		3P
CO 6	295.326	3D4	3D3	4P	3F	3F*	43		A4F
SC 8	295.432	3S23P2	3S23P	3D	G 3P	3D*	21		
TI1D	295.677	3S2 3P	3S2	3D	G 2P*	2D	23	1S	1S
CO 6	295.810	3D4	3D3	4P	3F	3F*	22		A4F
CO 6	295.880	3D4	3D3	4P	3F	3F*	32		A4F
TI11	295.992	3S 3P	3S	3D	3P*	3D	01	2S	2S
CO 6	296.005	3D4	3D3	4P	3H	3G*	65		A4F
CO 6	296.072	3D4	3D3	4P	3H	3G*	44		A4F
TI10	296.148	3S2 3P	3S2	3D	G 2P*	2D	22	1S	1S
CO 6	296.444	3D4	3D3	4P	3H	3G*	54		A4F
CO 6	296.719	3D4	3D3	4P	3H	3G*	43		A4F
NE 2	296.944	2P5	2P4	3D	G 2P*	2D	23		1S
SC 6	296.949	3P4	3P3	3D	G 3P	3P*	11		2P*
V 10	297.036	3S23P2	3S 3P3		G 3P	1P*	11		
CO 6	297.367	3D4	3D3	4P	3F	3G*	45		A4F
TI 8	297.453	3S23P3	3S23P2	3D	2D*	2P	21		3P
NE 2	297.586	2P5	2P4	3D	G 2P*	2D	12		1S
N 3	297.591	2S 2P2	2P2	3P	2D	2F*	34		1D
TI11	297.698	3S 3P	3S	3D	3P*	3D	12	2S	2S
CO 6	297.723	3D4	3D3	4P	3G	3F*	44		A4F
CO 6	298.024	3D4	3D3	4P	3F	3G*	34		A4F
CO 6	298.052	3D4	3D3	4P	3G	3F*	54		A4F
SC 6	298.166	3P4	3P3	3D	G 3P	3P*	12		2P*
CO 6	298.529	3D4	3D3	4P	3G	3F*	43		A4F
CO 6	298.600	3D4	3D3	4P	3F	3G*	23		A4F
CO 6	298.871	3D4	3D3	4P	3G	3F*	32		A4F
CO 6	299.559	3D4	3D3	4P	3P	3D*	01		A4F
NA 2	300.098	2P6	2P5	4S	G 1S	11*K	01		2P*
CO 6	300.207	3D4	3D3	4P	3P	3D*	12		A4F
CO 6	300.687	3D4	3D3	4P	3P	3D*	11		A4F
AL 9	300.781	2S2 2P	2S 2P2		G 2P*	2S	11		
CO 6	300.974	3D4	3D3	4P	3G	3G*	55		A4F
NA 2	300.986	2P6	2P5	3D	G 1S	12*K	01		2P*
CO 6	301.116	3D4	3D3	4P	3P	3D*	23		A4F
NA 2	301.216	2P6	2P5	4S	G 1S	22*K	01		2P*
CO 6	301.304	3D4	3D3	4P	3F	3D*	33		A4F
CO 6	301.435	3D4	3D3	4P	3F	3D*	43		A4F
CO 6	301.474	3D4	3D3	4P	3G	3G*	44		A4F
TI 8	301.500	3S23P3	3S23P2	3D	2D*	2P	22		3P
V 10	301.693	3S23P2	3S 3P3		G 3P	1P*	21		

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CA 3	301.790	3P6	3P5 5S	G 1S	11*K	01		2P*
NA 2	301.912	2P6	2P5 3D	G 1S	21*K	01		2P*
CO 6	302.042	3D4	3D3 4P	3P	3C*	22		A4F
TI11	302.093	3S 3P	3S 3D	3P*	3D	23	2S	2S
CO 6	302.134	3D4	3D3 4P	3F	3D*	22		A4F
CO 6	302.199	3D4	3D3 4P	3F	3D*	32		A4F
CO 6	302.413	3D4	3D3 4P	3P	5D*	01		A4F
TI 8	302.429	3S23P3	3S23P2 3D	2D*	2P	32		3P
SC 7	302.500	3S23P3	3S23P2 3D	2D*	2D	22		1D
CO 6	302.652	3D4	3D3 4P	3F	3D*	21		A4F
SC 3	302.663	3P6 3D	3P53D2	G 2D	2D*	22	1S	
TI11	302.884	3S 3P	3S 3D	3P*	3D	22	2S	2S
SC 7	303.098	3S23P3	3S23P2 3D	2D*	2D	32		1D
CO 6	303.122	3D4	3D3 4P	3P	5D*	12		A4F
SC 3	303.438	3P6 3D	3P53D2	G 2D	2D*	33	1S	
CO 6	303.492	3D4	3D3 4P	3F	5F*	32		A4F
NE 2	303.666	2P5	2P4 4D	G 2P*	2P	22		1D
CO 6	304.258	3D4	3D3 4P	3P	5D*	23		A4F
CA 3	304.333	3P6	3P5 5S	G 1S	22*K	01		2P*
NE 2	304.415	2P5	2P4 4D	G 2P*	2D	23		1D
CO 6	304.539	3D4	3D3 4P	3F	5D*	43		A4F
CO 6	305.101	3D4	3D3 4P	3F	5D*	32		A4F
AL 9	305.163	2S2 2P	2S 2P2	G 2P*	2S	21		
CO 6	305.526	3D4	3D3 4P	3F	5D*	21		A4F
N 3	305.766	2S 2P2	2S 2P 4D	4P	4D*	12		3P*
SC 3	305.907	3P6 3D	3P53D2	G 2D	2F*	34	1S	
AR 4	306.429	3S23P3	3S23P2 4D	2D*	2D	33		3P
NE 2	306.492	2P5	2P4 4D	G 2P*	2P	11		1D
TI11	306.907	3S 3P	3S 3D	3P*	3D	12		
SC 3	307.027	3P6 3D	3P53D2	G 2D	2F*	23	1S	
TI11	307.336	3S 3P	3S 3D	3P*	3D	11		
AL 9	307.361	2S 2P2	2P3	2D	2P*	32		
AL 9	307.440	2S 2P2	2P3	2D	2P*	21		
F 4	307.485	2S 2P3	2S 2P2 3S	1P*	1D	12		2D
SC 7	308.353	3S23P3	3S23P2 3D	2P*	2P	12		1D
SC 7	309.181	3S23P3	3S23P2 3D	2P*	2P	22		1D
MN13	309.329	3S23P	3S 3P2	G 2P*	2S	21		
V 10	309.467	3S23P2	3S 3P3	G 3P	3S*	01		
TI11	312.206	3S 3P	3S 3D	3P*	3D	23		
CO17	312.576	3S	3P	G 2S	2P*	12		
AR 4	313.399	3S23P3	3S23P2 4D	2D*	2F	34		3P
V 13	313.402	3P	3D	2P*	2D	12		
AR 4	314.523	3S23P3	3S23P2 4D	2D*	2F	23		3P
MN 6	315.651	3D2	3D 4P	1D	1F*	23		2D
AL 9	317.259	2S 2P2	2P3	4P	4S*	12		
CO11	317.385	3S23P5	3S 3P6	G 2P*	2S	21		
CR12	318.236	3S23P	3S 3P2	G 2P*	2S	11		
CO 6	318.423	3D4	3D3 4P	3F	3F*	23		A4F
CO 6	318.486	3D4	3D3 4P	3F	3F*	33		A4F
AL 9	318.914	2S 2P2	2P3	4P	4S*	22		
S 5	319.604	3S 3P	3S 4D	3P*	3D	01		
MG 6	320.132	2S 2P4	2P5	2D	2P*	21		
NE 2	320.193	2P5	2P4 5D	G 2P*	2D	23		3P
MG 7	320.384	2S 2P3	2P4	3D*	3P	10		
MG 7	320.693	2S22P2	2S 2P3	1S	1P*	01		
MG 7	321.244	2S 2P3	2P4	3D*	3P	21		

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
MG 6	322.710	2S 2P4	2P5	2D	2P*	32		
MG 7	323.244	2S 2P3	2P4	3D*	3P	32		
MG 7	323.370	2S 2P3	2P4	3D*	3P	22		
NE 2	324.120	2P5	2P4 3D	G 2P*	2D	22		1D
F 2	324.629	2P4	2P3 4D	G 3P	3D*	23		2P*
TI 9	324.841	3S23P2	3S 3P3	G 3P	1P*	11		
CA 4	325.704	3S23P5	3S23P4 3D	G 2P*	2D	22		1D
V 11	326.365	3S2 3P	3S 3P2	G 2P*	2P	11	1S	
CO 6	327.394	3D4	3D3 4P	3F	5F*	43		A4F
NE 2	327.739	2P5	2P4 3D	G 2P*	2P	21		1D
NE 2	327.784	2P5	2P4 3D	G 2P*	2P	12		1D
S 6	328.936	3D	5F	2D	2F*	23		
S 6	328.981	3D	5F	2D	2F*	34		
CA 4	329.062	3S23P5	3S23P4 3D	G 2P*	2D	12		1D
TI 9	329.283	3S23P2	3S 3P3	G 3P	1P*	21		
MN13	330.926	3S23P	3S 3P2	G 2P*	2D	22		
NE 2	330.932	2P5	2P4 4D	G 2P*	4P	12		3P
V 11	331.105	3S2 3P	3S 3P2	G 2P*	2P	22	1S	
NE 2	331.108	2P5	2P4 4D	G 2P*	2P	21		3P
AL 8	331.423	2S 2P3	2P4	3P*	3P	21		
CR12	332.352	3S23P	3S 3P2	G 2P*	2S	21		
NA 5	332.362	2S22P3	2S 2P4	2P*	2P	21		
NA 5	333.622	2S22P3	2S 2P4	2P*	2P	12		
MN10	334.682	3S23P4	3S 3P5	1D	1P*	21		
AL 8	334.709	2S 2P3	2P4	3P*	3P	22		
F 7	335.114	3S	4P	2S	2P*	12		
F 7	335.233	3S	4P	2S	2P*	11		
P 12	335.308	2S 2P	2P2	3P*	3P	22		
TI 9	335.974	3S23P2	3S 3P3	G 3P	3S*	01		
V 11	336.848	3S2 3P	3S 3P2	G 2P*	2P	21	1S	
B 3	337.254	2S	10P	G 2S	2P*	12		
CO11	338.102	3S23P5	3S 3P6	G 2P*	2S	11		
CA 4	338.580	3S23P5	3S23P4 4S	G 2P*	2P	12		3P
CO17	339.469	3S	3P	G 2S	2P*	11		
CO13	339.537	3S23P3	3S 3P4	G 4S*	4P	23		
B 3	339.664	2S	9P	G 2S	2P*	12		
TI12	340.972	3P	3D	2P*	2D	12		
SI 9	341.905	2S22P2	2S 2P3	G 3P	3D*	01		
MG 8	341.927	2S 2P2	2P3	2D	2P*	32		
MG 8	342.071	2S 2P2	2P3	2D	2P*	21		
F 2	342.423	2P4	2P3 4D	G 3P	3D*	23		2D*
K 4	342.790	3P4	3P3 4S	G 3P	3P*	11		2P*
K 4	343.568	3P4	3P3 4S	G 3P	3P*	01		2P*
B 3	343.735	2S	8P	G 2S	2P*	12		
MG 6	348.962	2S22P3	2S 2P4	2D*	2D	22		
B 3	349.505	2S	7P	G 2S	2P*	12		
K 4	351.226	3S23P4	3S23P3 4S	G 3P	3P*	11		2P*
N 3	351.637	2S 2P2	2S 2P 3D	2D	2F*	34		1P*
F 2	351.993	2P4	2P3 3D	G 3P	3D*	12		2P*
K 4	352.069	3S23P4	3S23P3 4S	G 3P	3P*	01		2P*
F 2	352.264	2P4	2P3 3D	G 3P	3D*	23		2P*
FE 5	352.586	3D4	3D3 4P	3H	3G*	65		A2F
MG 8	352.602	2S 2P2	2P3	4P	4S*	12		
FE 5	352.764	3D4	3D3 4P	3H	3G*	54		A2F
FE 5	352.938	3D4	3D3 4P	3H	3G*	43		A2F

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER		TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
F 2	353.212	2P4	2P3	4D	G 3P	3P*	22		2D*
F 2	353.277	2P4	2P3	4D	G 3P	3P*	12		2D*
MG 8	354.014	2S 2P2	2P3		4P	4S*	22		
SC 7	354.171	3S23P3	3S23P2	3D	2P*	2P	21		3P
F 2	354.850	2P4	2P3	3D	G 3P	3P*	12		2P*
SC 8	355.842	3S23P2	3S 3P3		G 3P	1P*	01		
TI10	355.923	3S2 3P	3S 3P2		G 2P*	2P	11	1S	
NE 2	355.961	2P5	2P4	3D	G 2P*	4D	23		3P
V 12	356.301	3S2	3S	3P	G 1S	1P*	01		2S
F 2	356.598	2P4	2P3	4D	1D	1F*	23		2P*
NE 2	356.690	2P5	2P4	3D	G 2P*	4D	12		3P
V 11	357.190	3S 3P2	3P3		4P	4S*	32		
SC 7	357.289	3S23P3	3S23P2	3D	2P*	2P	12		3P
V 11	358.163	3S2 3P	3S 3P2		G 2P*	2S	21	1S	
SC 7	358.433	3S23P3	3S23P2	3D	2P*	2P	22		3P
B 3	359.611	2S		6P	G 2S	2P*	12		
TI10	360.185	3S2 3P	3S 3P2		G 2P*	2P	22	1S	
CR 9	363.718	3S23P4	3S 3P5		1D	1P*	21		
SI11	365.503	2S 2P	2P2		3P*	3P	22		
TI10	365.690	3S2 3P	3S 3P2		G 2P*	2P	21	1S	
F 7	367.466	3P		4D	2P*	2D	12		
F 7	367.787	3P		4D	2P*	2D	23		
C 3	371.053	2S 2P	2S	4D	3P*	3D	01		
MG 7	371.187	2S 2P3	2P4		3P*	3P	21		
CR 6	371.896	3P6 4P	3P6	6S	2P*	2S	21	1S	1S
NA 2	372.540	2P6	2P5	3S	G 1S	11*K	01		2P*
MN10	372.711	3S23P4	3S 3P5		G 3P	3P*	21		
MG 7	374.023	2S 2P3	2P4		3P*	3P	22		
F 2	374.957	2P4	2P3	3D	G 3P	3P*	21		2D*
F 2	375.383	2P4	2P3	4D	1D	1P*	21		2D*
F 2	375.745	2P4	2P3	4D	1D	1D*	22		2D*
F 2	376.005	2P4	2P3	4S	G 3P	3D*	23		2D*
F 2	376.024	2P4	2P3	3D	G 3P	3P*	10		2D*
F 2	376.688	2P4	2P3	4D	1D	1F*	23		2D*
NA 2	376.745	2P6	2P5	3S	G 1S	22*K	01		2P*
SC 5	377.104	3S23P5	3S23P4	3D	G 2P*	2D	23		3P
F 2	377.638	2P4	2P3	4S	1D	1P*	21		2P*
FE 5	378.015	3D4	3D3	4P	3F	3G*	23		A2F
F 2	378.034	2P4	2P3	3D	G 3P	3D*	01		2D*
TI10	378.040	3S2 3P	3S 3P2		G 2P*	2S	11	1S	
AR 5	378.303	3S23P2	3S23P	4S	1S	1P*	01		2P*
F 2	379.851	2P4	2P3	3D	G 3P	3S*	01		2D*
SC 5	380.206	3S23P5	3S23P4	3D	G 2P*	2D	22		3P
F 2	380.230	2P4	2P3	3D	1D	1P*	21		2P*
K 4	381.010	3P4	3P3	3D	1S	1P*	01		2P*
F 7	381.762	3D		4F	2D	2F*	23		
F 7	381.882	3D		4F	2D	2F*	34		
SC11	382.072	3P	3D		2P*	2D	23		
SC11	382.692	3P		3D	2P*	2D	22		
F 2	382.891	2P4	2P3	3D	1D	1D*	22		2P*
SC11	383.500	3P	3D		2P*	2D	22		
MN10	383.549	3S23P4	3S 3P5		G 3P	3P*	22		
K 4	383.565	3P4	3P3	4S	G 3P	3S*	21		4S*
AL 8	384.123	2S22P2	2S 2P3		G 3P	3D*	11		
SC 9	384.473	3S23P	3S 3P2		G 2P*	2P	12		
B 4	384.767	1S 2P	1S	3D	3P*	3D	12		

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
K 6	384.875	3S23P2	3S23P 3D	G 3P	3D*	21		
K 4	385.276	3S23P4	3S23P3 4S	G 3P	3S*	21		4S*
K 4	385.792	3P4	3P3 4S	1S	1P*	01		2P*
SC 5	386.494	3S23P5	3S23P4 3D	G 2P*	2D	12		3P
AL 7	386.582	2S 2P4	2P5	2P	2P*	22		
MN10	386.634	3S23P4	3S 3P5	G 3P	3P*	11		
TI11	386.775	3S2	3S 3P	G 1S	1P*	01		2S
K 4	386.997	3P4	3P3 4S	G 3P	3S*	01		4S*
N 3	387.553	2P3	2P2 3D	4S*	4P	21		3P
N 3	387.671	2P3	2P2 3D	4S*	4P	22		3P
N 3	387.708	2P3	2P2 3D	4S*	4P	23		3P
O 2	387.764	2P3	2P2 5D	2D*	2F	34		1D
K 4	388.738	3S23P4	3S23P3 4S	G 3P	3S*	01		4S*
TI10	389.243	3S2 3P	3S 3P2	G 2P*	2S	21	1S	
MN10	389.595	3S23P4	3S 3P5	G 3P	3P*	01		
SC 9	390.221	3S23P	3S 3P2	G 2P*	2P	11		
N 3	390.731	2S 2P2	2S 2P 3S	2D	2P*	32		1P*
N 2	391.166	2S22P2	2S 2P2 3P	1D	1F*	23		2D
S 4	391.291	3S2 3P	3S2 4D	G 2P*	2D	12		
N 2	391.955	2S22P2	2S 2P2 3P	1D	1D*	22		2D
S 4	392.765	3S2 3P	3S2 4D	G 2P*	2D	23		
F 2	392.957	2P4	2P3 4D	G 3P	3D*	01		4S*
N 3	393.846	2S 2P2	2S 2P 3D	2P	2P*	22		1P*
K 4	396.640	3S23P4	3S23P3 4S	G 3P	5S*	22		4S*
N 3	399.729	2P3	2P2 3D	2D*	2P	32		1D
NA 5	401.231	2S22P3	2S 2P4	2D*	2D	22		
K 7	401.565	3S 3P2	3S 3P 3D	4P	4P*	11		3P*
N 3	402.308	2P3	2P2 3D	2D*	2F	23		1D
N 3	402.464	2P3	2P2 3D	2D*	2F	34		1D
K 7	403.377	3S 3P2	3S 3P 3D	4P	4P*	21		3P*
B 3	403.724	2P	10D	2P*	2D	23		
AR 3	405.192	3P4	3P3 5S	G 3P	3S*	01		4S*
SI 4	405.341	3P	7S	2P*	2S	21		
B 3	407.142	2P	9D	2P*	2D	23		
N 3	407.176	2P3	2P2 3D	2D*	2D	33		1D
CR 9	407.974	3S23P4	3S 3P5	G 3P	3P*	21		
V 10	409.363	3S23P2	3S 3P3	G 3P	3P*	2		
CA 3	410.762	3P6	3P5 4S	G 1S	22*K	01		2P*
B 3	412.724	2P	8D	2P*	2D	23		
K 4	413.928	3P4	3P3 3D	1D	3P*	21		2P*
N 3	413.998	2S 2P2	2S 2P 4D	2P	2D*	23		3P*
TI11	415.024	3S 3P	3P2	3P*	3P	01	2S	
CR 9	418.492	3S23P4	3S 3P5	G 3P	3P*	22		
CR 9	421.188	3S23P4	3S 3P5	G 3P	3P*	11		
B 3	421.457	2P	7D	2P*	2D	23		
C 2	422.288	2S2 2P	2S 2P 3P	G 2P*	2P	22		1P*
V 13	422.526	3S	3P	G 2S	2P*	12		
CR 9	424.383	3S23P4	3S 3P5	G 3P	3P*	01		
K 8	425.423	2P63P2	2P63P 3D	3P	3P*	10		2P*
SC 9	426.741	3S 3P2	3P3	4P	4S*	32		
K 8	429.935	2P63P2	2P63P 3D	3P	3D*	01		2P*
K 8	431.041	2P63P2	2P63P 3D	3P	3D*	12		2P*
MG 7	431.334	2S22P2	2S 2P3	G 3P	3D*	11		
N 2	431.709	2S22P2	2S 2P2 3P	G 3P	3P*	12		4P
K 8	432.110	2P63P2	2P63P 3D	3P	3D*	11		2P*

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
N 2	432.115	2S22P2	2S 2P2 3P	G 3P	3P*	22		4P
O 2	432.539	2P3	2P2 4S	2D*	2D	33		1D
N 2	432.736	2S 2P3	2S 2P2 5D	5S*	5P	23		4P
B 3	434.684	2P	6D	2P*	2D	12		
K 8	435.317	2P63P2	2P63P 3D	3P	3D*	23		2P*
K 8	435.562	2P63P2	2P63P 3D	3P	3D*	22		2P*
C 2	435.721	2S2 2P	2S 2P 3P	G 2P*	2D	12		1P*
C 2	435.808	2S2 2P	2S 2P 3P	G 2P*	2D	23		1P*
K 8	435.991	2P63P2	2P63P 3D	3P	3P*	21		2P*
N 2	437.093	2S22P2	2S 2P2 3P	G 3P	3D*	12		4P
N 2	437.151	2S22P2	2S 2P2 3P	G 3P	3D*	23		4P
K 8	437.234	2P63P2	2P63P 3D	3P	3P*	12		2P*
K 8	437.238	2P63P2	2P63P 3D	3P	3D*	21		2P*
N 2	437.275	2S22P2	2S 2P2 3P	G 3P	3D*	22		4P
B 3	437.993	2P	6S	2P*	2S	21		
K 3	440.709	3S23P5	3S23P4 4S	G 2P*	2D	22		1D
MG 6	440.745	2S 2P4	2P5	2P	2P*	22		
N 2	441.590	2P2	2P 6D	G 3P	3D*	23		
K 8	442.001	2P63P2	2P63P 3D	3P	3P*	22		2P*
AR 4	442.561	3S23P3	3S23P2 3D	2D*	2F	23		1D
V 13	443.211	3S	3P	G 2S	2P*	11		
P 4	444.448	3S 3P	3S 4D	3P*	3D	01		
CR 5	447.065	3D2	3D 4P	1D	1F*	23		2D
F 6	447.229	2S 3P	2S 4D	3P*	3D	01		
F 6	447.342	2S 3P	2S 4D	3P*	3D	12		
MN13	447.530	3S23P	3S 3P2	G 2P*	2D	23		
F 6	447.559	2S 3P	2S 4D	3P*	3D	23		
TI 9	447.975	3S23P2	3S 3P3	G 3P	3P*	2		
N 2	448.693	2S22P2	2S 2P2 3P	G 3P	3S*	11		4P
N 2	449.015	2S22P2	2S 2P2 3P	G 3P	3S*	21		4P
V 11	449.144	3S2 3P	3S 3P2	G 2P*	2D	23	1S	
F 2	450.129	2P4	2P3 3D	1S	1P*	01		2D*
SC 9	451.452	3S23P	3S 3P2	G 2P*	2D	22		
V 9	452.527	3S23P3	3S 3P4	G 4S*	4P	21		
N 2	453.074	2S 2P3	2S 2P2 4D	5S*	5P	22		4P
SC10	455.237	3S 3P	3P2	3P*	3P	01	2S	
N 3	457.150	2P3	2P2 3S	2D*	2D	33		1D
V 9	457.657	3S23P3	3S 3P4	G 4S*	4P	22		
N 3	458.444	2P3	2P2 3D	2P*	2D	23		1D
B 3	458.834	2P	5D	2P*	2D	12		
AR 4	458.924	3S23P3	3S23P2 3D	2D*	2D	22		1D
AR 4	459.183	3S23P3	3S23P2 3D	2D*	2D	32		1D
TI12	459.893	3S	3P	G 2S	2P*	12		
S 6	465.096	3D	4F	2D	2F*	23		
S 6	465.431	3D	4F	2D	2F*	34		
B 3	465.962	2P	5S	2P*	2S	21		
CR 5	467.448	3D2	3D 4P	3P	3F*	23		2D
K 9	467.599	3P	3D	2P*	2D	22		
AR 3	468.114	3P4	3P3 3D	G 3P	3D*	21		2P*
AR 3	468.567	3P4	3P3 3D	1D	1D*	22		2P*
O 2	468.749	2P3	2P2 3D	2P*	2P	11		1D
N 3	469.104	2P3	2P2 3S	4S*	4P	23		3P
N 3	469.687	2P3	2P2 3S	4S*	4P	22		3P
AR 3	469.749	3P4	3P3 3D	1D	1F*	23		2P*
AR 3	470.662	3P4	3P3 3D	G 3P	3D*	11		2P*
AR 3	471.494	3P4	3P3 3D	G 3P	3D*	23		2P*

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
AR 3	471.666	3P4	3P3 3D	G 3P	3D*	01		2P*
AR 4	473.548	3S23P3	3S23P2 3D	2P*	2P	12		1D
AR 4	473.925	3S23P3	3S23P2 3D	2P*	2P	22		1D
P 5	476.130	3D	5F	2D	2F*	34		
P 5	478.454	3D	5F	2D	2F*	23		
K 3	478.546	3S23P5	3S23P4 4S	G 2P*	4P	21		3P
TI12	479.339	3S	3P	G 2S	2P*	11		
N 2	482.873	2S 2P3	2S 2P2 3D	3D*	3P	32		2D
AR 4	484.984	3S23P3	3S23P2 3D	2D*	2D	33		3P
AR 4	486.158	3S23P3	3S23P2 3D	2D*	2D	22		3P
AR 3	486.236	3P4	3P3 3D	1D	1P*	21		2D*
AR 4	486.475	3S23P3	3S23P2 3D	2D*	2D	32		3P
N 2	487.203	2P2	2P 5D	1D	1D*	22		
AR 7	487.620	2P63P2	2P63P 3D	3P	3D*	01		2P*
AR 7	487.814	2P63P2	2P63P 3D	3P	3P*	10		2P*
AR 7	488.753	2P63P2	2P63P 3D	3P	3D*	12		2P*
SC 7	488.866	3S23P3	3S 3P4	2P*	2S	11		
TI10	489.278	3S2 3P	3S 3P2	G 2P*	2D	23	1S	
AR 7	489.715	2P63P2	2P63P 3D	3P	3D*	11		2P*
SC 7	491.004	3S23P3	3S 3P4	2P*	2S	21		
AR 7	492.593	2P63P2	2P63P 3D	3P	3D*	23		2P*
AR 7	492.967	2P63P2	2P63P 3D	3P	3D*	22		2P*
AR 7	494.249	2P63P2	2P63P 3D	3P	3D*	21		2P*
N 2	495.347	2S 2P3	2S 2P2 3D	3D*	3F	34		2D
AR 3	496.315	3P4	3P3 4S	1D	1P*	21		2P*
AR 7	496.417	2P63P2	2P63P 3D	3P	3P*	21		2P*
AR 7	496.521	2P63P2	2P63P 3D	3P	3P*	12		2P*
AR 3	496.753	3P4	3P3 4S	G 3P	1D*	22		2D*
NA 7	499.528	2S 2P2	2P3	2S	2P*	12		
AR 3	499.710	3P4	3P3 4S	G 3P	1D*	12		2D*
TI 8	500.199	3S23P3	3S 3P4	G 4S*	4P	21		
AR 7	500.920	2P63P2	2P63P 3D	3P	3P*	22		2P*
N 2	502.648	2S 2P3	2S 2P2 3D	5S*	5D	23		4P
AR 3	502.751	3P4	3P3 3D	1D	3D*	22		2P*
K 2	504.184	3P6	3P5 3D	G 1S	1P*	01		2P*
TI 8	505.035	3S23P3	3S 3P4	G 4S*	4P	22		
V 5	506.981	3P6 4P	3P6 6S	2P*	2S	21	1S	1S
AR 3	507.577	3P4	3P3 4S	1D	3P*	22		2P*
N 3	509.418	2S 2P2	2S 2P 3D	2P	2P*	22		3P*
N 2	510.168	2S 2P3	2S 2P2 3D	3D*	3D	33		2D
N 2	515.792	2P2	2P 4D	1D	3F*	22		
CA 5	516.642	3S23P4	3S23P3 3D	G 3P	3D*	23		4S*
CA 5	521.821	3S23P4	3S23P3 3D	G 3P	3D*	11		4S*
CA 5	522.552	3S23P4	3S23P3 3D	G 3P	3D*	12		4S*
N 3	523.047	2P3	2P2 3S	2P*	2D	23		1D
CA 5	524.267	3S23P4	3S23P3 3D	G 3P	3D*	01		4S*
AR 4	526.138	3S23P3	3S23P2 3D	2D*	2F	34		3P
N 2	526.782	2S 2P3	2S 2P2 3D	3P*	3P	22		2D
AR 4	527.202	3S23P3	3S23P2 3D	2D*	2F	23		3P
AR 4	527.588	3S23P3	3S23P2 3D	2D*	2F	33		3P
V 12	527.864	3S2	3S 3P	G 1S	3P*	01		2S
B 3	528.407	2P	4S	2P*	2S	11		
AR 4	529.320	3S23P3	3S23P2 3D	2P*	2P	21		3P
N 2	529.405	2P2	2P 5D	1S	1P*	01		

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CL 4	530.651	3S23P2	3S23P 3D	1D	1F*	23		2P*
AR 4	531.587	3S23P3	3S23P2 3D	2P*	2P	12		3P
AR 4	532.039	3S23P3	3S23P2 3D	2P*	2P	22		3P
CA 5	533.498	3S23P4	3S23P3 3D	G 3P	5D*	01		4S*
AR 3	533.952	3P4	3P3 4S	1D	1D*	22		2D*
N 2	534.477	2P2	2P 3D	G 3P	1D*	12		
AR 3	536.354	3P4	3P3 3D	1S	1P*	01		2D*
P 12	536.552	2S2	2S 2P	G 1S	3P*	01		
N 2	536.683	2P2	2P 3D	G 3P	3F*	23		
AR 3	541.326	3P4	3P3 3D	1D	1F*	23		2D*
O 3	554.903	2S 2P3	2S22P 3P	3D*	3P	21		
NA 7	557.456	2S 2P2	2P3	2P	2P*	22		
N 2	559.132	2S 2P3	2S 2P2 3D	3P*	3D	23		2D
S 5	567.784	3S 3D	3S 4F	3D	3F*	34		
S 5	568.090	3S 3D	3S 4F	3D	3F*	23		
S 5	568.350	3S 3D	3S 4F	3D	3F*	12		
AR 5	570.929	3S23P2	3S 3P3	1D	3S*	21		
NE 6	571.263	2S 2P2	2P3	2S	2P*	12		
F 1	572.002	2P5	2P4 3D	G 2P*	2D	23		1S
C 2	572.062	2S 2P2	2S 2P 3D	2D	2D*	33		1P*
F 1	573.228	2P5	2P4 3D	G 2P*	2D	12		1S
TI11	573.683	3S2	3S 3P	G 1S	3P*	01		2S
O 2	574.747	2S 2P4	2S 2P3 3D	4P	4D*	34		5S*
O 2	575.446	2S 2P4	2S 2P3 3D	4P	4D*	23		5S*
O 2	576.110	2S 2P4	2S 2P3 3D	4P	4D*	12		5S*
N 3	576.401	2P3	2S 2P 3P	2D*	2P	32		1P*
O 1	576.977	2S22P4	2S 2P5	1D	1P*	21		
K 6	583.424	3S23P2	3S 3P3	1S	1P*	01		
C 3	585.568	2P2	2P 3S	3P	3P*	01		
K 4	590.435	3S23P4	3S23P3 3D	G 3P	5D*	01		4S*
CL 2	602.792	3P4	3P3 3D	G 3P	3P*	22		2P*
CL 2	602.795	3P4	3P3 3D	G 3P	3P*	21		2P*
CR 6	603.154	3P6 4P	3P6 5S	2P*	2S	11	1S	1S
CL 2	605.395	3P4	3P3 3D	1D	1P*	21		2D*
N 2	605.490	2P2	2P 4S	1S	1P*	01		
CL 2	606.925	3P4	3P3 3D	G 3P	3P*	01		2P*
CR 6	609.486	3P6 4P	3P6 5S	2P*	2S	21	1S	1S
N 2	620.421	2S 2P3	2S 2P2 3S	3D*	3D	33		2D
K 6	621.657	3S23P2	3S 3P3	G 3P	3P*	11		
K 6	621.874	3S23P2	3S 3P3	G 3P	3P*	12		
AR 3	622.051	3P4	3P3 3D	1D	1D*	22		2D*
CL 2	627.712	3P4	3P3 3D	1D	1F*	23		2P*
F 1	634.921	2P5	2P4 4D	G 2P*	2P	22		1D
B 2	638.759	2S 2P	2S 7D	3P*	3D	23		
F 1	640.401	2P5	2P4 3D	G 2P*	2D	22		1D
C 2	640.837	2S 2P2	2S 2P 3D	4P	4P*	11		3P*
C 2	641.099	2S 2P2	2S 2P 3D	4P	4P*	22		3P*
NE 6	641.922	2S 2P2	2P3	2P	2P*	22		
SC 9	643.388	3S23P	3S 3P2	G 2P*	2D	23		
O 1	644.409	2S22P4	2S 2P5	1S	1P*	01		
B 2	644.564	2S 2P	2P 3P	3P*	3D	22		2P*2
N 2	645.012	2S 2P3	2S 2P2 3D	3D*	3D	33		4P
N 2	645.349	2S 2P3	2S 2P2 3D	3D*	3D	22		4P
AR 5	646.135	3S23P2	3S 3P3	1S	1P*	01		
F 1	648.279	2P5	2P4 4D	G 2P*	2D	23		1D

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
N 2	649.709	2S 2P3	2S 2P2 3D		3D*	3P	32	4P
CL 2	651.616	3P4	3P3 3D	G	3P	3S*	11	2D*
N 2	652.235	2S 2P3	2S 2P2 3D		3D*	3F	34	4P
N 2	652.617	2S 2P3	2S 2P2 3D		3D*	3F	23	4P
N 2	652.947	2S 2P3	2S 2P2 3D		3D*	3F	12	4P
CL 2	653.111	3P4	3P3 3D	G	3P	3S*	01	2D*
F 6	657.226	2S 2P	2P2		1P*	1S	10	
S 5	659.073	3S 3P	3S 3D		3P*	3D	11	
S 4	660.092	3S2 3P	3S2 3D	G	2P*	2D	22	
N 3	660.574	2S 2P2	2S 2P 3S		2P	2P*	22	3P*
S 4	660.607	3S 3P2	3S 3P 3D		4P	4P*	11	3P*
O 2	661.515	2S 2P4	2P5		2D	2P*	21	
S 4	662.103	3S 3P2	3S 3P 3D		4P	4P*	21	3P*
S 5	662.639	3S 3P	3S 3D		3P*	3D	22	
O 2	662.751	2S 2P4	2P5		2D	2P*	32	
F 1	664.988	2P5	2P4 4D	G	2P*	2P	11	1D
F 1	670.752	2P5	2P4 3D	G	2P*	2P	12	1D
CL 2	671.493	3P4	3P3 3D		1S	1P*	01	2D*
CL 2	673.900	3P4	3P3 3D		1D	3D*	22	2P*
P 5	674.980	3D	4F		2D	2F*	34	
BE 3	675.578	1S 2P	1S 3D		3P*	3D	23	
B 2	676.219	2S 2P	2P 4P		1P*	1D	12	2P*2
P 5	677.918	3D	4F		2D	2F*	23	
F 1	678.387	2P5	2P4 3D	G	2P*	2P	21	1D
B 2	679.901	2S 2P	2S 5D		3P*	3D	12	
B 2	680.693	2S 2P	2S 5D		3P*	3D	01	
C 2	681.747	2S 2P2	2S 2P 4D		2D	2F*	34	3P*
C 2	681.860	2S 2P2	2S 2P 4D		2D	2F*	23	3P*
S 3	690.008	3S23P2	3S23P 3D		1D	1F*	23	2P*
S 3	691.702	3S23P2	3S23P 3D	G	3P	3P*	11	
F 1	693.035	2P5	2P4 3D	G	2P*	2S	21	1D
CL 3	694.514	3S23P3	3S23P2 3D		2D*	2F	34	3P
N 2	694.749	2S 2P3	2S 2P2 3S		3P*	3D	23	2D
CL 3	696.853	3S23P3	3S23P2 3D		2D*	2F	23	3P
CL 3	697.184	3S23P3	3S23P2 3D		2D*	2F	33	3P
AL 9	702.422	2S2 2P	2S 2P2	G	2P*	4P	23	
V 4	707.646	3D2	3D 4P		3P	1P*	21	2D
CL 2	708.984	3P4	3P3 3D		1D	1F*	23	2D*
AR 5	711.342	3S23P2	3S 3P3	G	3P	3P*	11	
AR 5	711.488	3S23P2	3S 3P3	G	3P	3P*	12	
AR 5	715.549	3S23P2	3S 3P3	G	3P	3P*	2	
C 2	719.815	2S 2P2	2S 2P 3D		2P	2D*	12	1P*
C 2	720.333	2S 2P2	2S 2P 3D		2P	2D*	23	1P*
O 1	724.627	2P4	2P3 3D	G	3P	3P*	22	2P*
N 2	725.616	2S 2P3	2S 2P2 3D		3P*	3D	23	4P
N 2	726.103	2S 2P3	2S 2P2 3D		3P*	3D	01	4P
K 6	726.712	3S23P2	3S 3P3	G	3P	3D*	21	
N 2	731.634	2S 2P3	2S 2P2 3D		3P*	3P	22	4P
B 2	734.999	2S 2P	2S 4D		3P*	3D	01	
B 2	745.016	2P2	2P 5D		3P	3D*	23	2P*2
O 1	745.913	2P4	2P3 4S	G	3P	3P*	22	2P*
CA 5	749.900	3S23P4	3S 3P5		1D	3P*	22	
CL 2	760.338	3P4	3P3 4S	G	3P	1D*	22	2D*
F 1	760.415	2P5	2P4 4D	G	2P*	2P	11	3P
F 1	764.158	2P5	2P4 3D	G	2P*	4P	23	3P

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
CL 2	765.752	3P4	3P3 4S	G 3P	1D*	12		2D*
F 1	766.905	2P5	2P4 4D	G 2P*	2P	21		3P
F 5	768.505	2S 2P2	2P3		2P	2P*	11	
FE 7	776.654	3D 4P	3D 4D		3F*	3G	23	2D	2D
F 1	779.581	2P5	2P4 4D	G 2P*	2D	12		3P
MG 8	780.217	2S2 2P	2S 2P2	G 2P*	4P	23		
FE 7	782.048	3D 4P	3D 4D		3F*	3G	34	2D	2D
B 1	783.803	2S2 2P	2S 2P 3P	G 2P*	2P	22		1P*
S 2	785.263	3S23P3	3S23P2 3D		2D*	2D	22		1D
P 3	785.828	3S 3P2	3S 3P 4S		4P	4P*	22		3P*
FE 7	786.303	3D 4P	3D 4D		3F*	3G	45	2D	2D
NA 7	786.993	2S 2P2	2P3		2P	2D*	23		
FE 7	794.414	3D 4P	3D 4D		3F*	3G	44	2D	2D
O 2	794.980	2S22P3	2S 2P4		2P*	2D	12		
N 2	796.398	2S 2P3	2S 2P2 4S		5S*	5P	23		4P
F 1	797.671	2P5	2P4 4S	G 2P*	2P	12		3P
S 2	799.410	3S23P3	3S23P2 3D		2D*	2F	23		1D
O 1	803.350	2P4	2P3 3D	G 3P	3D*	23		2D*
O 1	805.795	2P4	2P3 3D	G 3P	3D*	12		2D*
O 1	806.844	2P4	2P3 3D	G 3P	3S*	21		2D*
B 2	806.972	2P2	2P 4D		3P	3D*	12		2P*2
B 2	810.661	2S 2P	2P 3P		1P*	1D	12		2P*2
P 4	819.935	3S 3P	3S 3D		3P*	3D	11		
V 5	820.588	3P6 4P	3P6 5S		2P*	2S	11	1S	1S
P 4	824.291	3S 3P	3S 3D		3P*	3D	22		
V 5	828.608	3P6 4P	3P6 5S		2P*	2S	21	1S	1S
CL 1	833.304	3S23P5	3S23P4 5S	G 2P*	2D	22		1D
CL 4	839.837	3S23P2	3S 3P3	G 3P	3P*	2		
S 2	848.488	3S23P3	3S23P2 3D		2D*	2P	21		3P
P 3	849.176	3S2 3P	3S2 3D	G 2P*	2D	22		
S 2	849.270	3S23P3	3S23P2 3D		2D*	2P	22		3P
CL 3	849.496	3S23P3	3S 3P4		2D*	2P	22		
NA 8	849.800	2S 2P	2P2		1P*	1D	12		
CL 3	851.917	3S23P3	3S 3P4		2P*	2S	11		
CL 3	852.874	3S23P3	3S 3P4		2P*	2S	21		
K 4	854.688	3S23P4	3S 3P5		1D	3P*	22		
S 2	856.939	3S23P3	3S23P2 3D		2D*	2D	33		3P
B 2	858.472	2P2	2P 4D		1D	1F*	23		2P*2
S 2	862.679	3S23P3	3S23P2 3D		2D*	2D	22		3P
S 2	862.843	3S23P3	3S23P2 3D		2D*	2D	32		3P
B 1	863.549	2S2 2P	2S 2P 3P	G 2P*	2D	12		1P*
B 1	864.137	2S2 2P	2S 2P 3P	G 2P*	2D	23		1P*
B 2	865.729	2P2	2P 3D		1D	1F*	23		2P*2
AR 7	876.817	3S2	3S 3P	G 1S	3P*	01		2S
N 1	901.929	2S 2P4	2P5		2D	2P*	21		
N 1	904.245	2S 2P4	2P5		2D	2P*	32		
O 1	910.259	2P4	2P3 3D		1D	1P*	21		2D*
NE 6	913.894	2S 2P2	2P3		2P	2D*	23		
MN 6	915.397	3D 4P	3D 4D		3F*	3G	23	2D	2D
MN 6	920.611	3D 4P	3D 4D		3F*	3G	34	2D	2D
MN 6	925.704	3D 4P	3D 4D		3F*	3G	45	2D	2D
CL 3	929.617	3S23P3	3S 3P4		2P*	2P	11		
CL 3	930.363	3S23P3	3S 3P4		2P*	2P	21		
MN 6	933.524	3D 4P	3D 4D		3F*	3G	44	2D	2D
N 1	933.528	2P3	2P2 5D		2D*	2F	34		1D
CL 3	935.919	3S23P3	3S 3P4		2P*	2P	12		

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
P 2	939.165	3S23P2	3S23P 3D	G 3P	3P*	11		
S 2	940.405	3S23P3	3S23P2 4S	2D*	2D	22		1D
N 4	951.321	2S 2P	2P2	1P*	1S	10		
O 2	952.939	2S 2P4	2P5	2P	2P*	22		
NE 7	974.022	2S 2P	2P2	1P*	1D	12		
P 2	975.351	3S23P2	3S 3P3	1D	3S*	21		
AR 1	980.482	3P6	3P5 3D	G 1S	1P*	01		2P*
N 1	981.225	2S22P3	2S 2P4	2D*	2D	22		
N 2	982.153	2S 2P3	2S 2P2 3S	3P*	3P	10		4P
CL 4	985.612	3S23P2	3S 3P3	G 3P	3D*	21		
B 2	987.551	2P2	2P 3D	3P	3D*	22		2P*2
N 1	992.327	2P3	2P2 3D	2D*	2D	33		1D
N 1	993.433	2P3	2P2 3D	2D*	2D	22		1D
CL 6	1009.614	3S2	3S 3P	G 1S	3P*	01		2S
V 3	1013.407	3D3	3D2 4P	G 4F	4D*	44		A3P
V 3	1015.950	3D3	3D2 4P	G 4F	4D*	54		A3P
V 3	1017.400	3D3	3D2 4P	G 4F	4D*	22		A3P
V 3	1018.515	3D3	3D2 4P	G 4F	4D*	43		A3P
V 3	1019.169	3D3	3D2 4P	G 4F	4D*	32		A3P
C 2	1033.042	2S 2P2	2S 2P 3S	2D	2P*	32		3P*
C 2	1033.696	2S 2P2	2S 2P 3S	2D	2P*	21		3P*
N 1	1035.857	2P3	2P2 4S	2D*	2D	33		1D
CL 3	1040.492	3S23P3	3S 3P4	2P*	2D	12		
CL 3	1041.349	3S23P3	3S 3P4	2P*	2D	22		
CL 3	1042.286	3S23P3	3S 3P4	2P*	2D	23		
N 1	1044.922	2P3	2P2 4D	2P*	2P	22		1D
B 2	1055.558	2P2	2P 3D	3P	3P*	10		2P*2
B 2	1056.273	2P2	2P 3D	3P	3P*	01		2P*2
B 2	1056.873	2P2	2P 3D	3P	3P*	12		2P*2
B 2	1056.905	2P2	2P 3D	3P	3P*	21		2P*2
B 2	1057.674	2P2	2P 3D	3P	3P*	22		2P*2
V 3	1066.172	3D3	3D2 4P	2G	2H*	56		A1G
N 1	1075.931	2S22P3	2S 2P4	2P*	2D	12		
B 1	1082.616	2S2 2P	2S 2P 3P	G 2P*	2D	12		3P*
BE 1	1084.565	2S 2P	2P 3P	3P*	3S	11		2P*2
BE 1	1085.234	2S 2P	2P 3P	3P*	3S	01		2P*2
B 1	1085.836	2S2 2P	2S 2P 3P	G 2P*	2D	23		3P*
BE 1	1086.069	2S 2P	2P 3P	3P*	3S	21		2P*2
N 1	1103.368	2P3	2P2 3D	2P*	2P	11		1D
N 2	1105.050	2S 2P3	2S 2P2 3D	3S*	3P	12		4P
V 3	1116.932	3D3	3D2 4P	4P	4P*	23		A3P
V 3	1118.796	3D3	3D2 4P	4P	4P*	33		A3P
V 3	1120.433	3D3	3D2 4P	4P	4P*	22		A3P
C 1	1120.795	2S 2P3	2P4	3D*	3P	10		
C 1	1121.539	2S 2P3	2P4	3D*	3P	21		
C 1	1122.667	2S 2P3	2P4	3D*	3P	22		
C 1	1122.705	2S 2P3	2P4	3D*	3P	32		
V 3	1123.320	3D3	3D2 4P	4P	4P*	32		A3P
V 3	1124.172	3D3	3D2 4P	2H	2H*	66		A1G
V 3	1130.958	3D3	3D2 4P	G 4F	2D*	33		A3F
V 3	1133.182	3D3	3D2 4P	G 4F	2D*	43		A3F
S 2	1134.510	3S23P3	3S 3P4	2D*	2P	22		
V 3	1137.129	3D3	3D2 4P	G 4F	4D*	54		A3F
SI 3	1138.903	2P63P2	2P63P 3D	3P	3D*	01		2P*
SI 3	1139.394	2P63P2	2P63P 3D	3P	3D*	12		2P*

TABLE III.- FINDING LIST – Continued

(b) Continued

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
V 3	1139.444	3D3	3D2 4P	G 4F	4C*	43		A3F
SI 3	1140.139	2P63P2	2P63P 3D	3P	3C*	11		2P*
V 3	1141.816	3D3	3D2 4P	G 4F	4C*	32		A3F
SI 3	1142.791	2P63P2	2P63P 3D	3P	3C*	23		2P*
SI 3	1143.017	2P63P2	2P63P 3D	3P	3C*	22		2P*
CL 1	1143.120	3S23P5	3S23P4 3D	G 2P*	2D	22		1D
SI 3	1145.164	2P63P2	2P63P 3D	3P	3C*	21		2P*
V 3	1146.845	3D3	3D2 4P	4P	4D*	34		A3P
SI 3	1148.141	2P63P2	2P63P 3D	3P	3P*	10		2P*
V 3	1151.171	3D3	3D2 4P	4P	4C*	23		A3P
V 3	1151.689	3D3	3D2 4P	G 4F	2F*	54		A3F
V 3	1153.003	3D3	3D2 4P	4P	4C*	12		A3P
V 3	1153.664	3D3	3D2 4P	G 4F	2F*	43		A3F
B 1	1153.965	2S 2P2	2S 2P 3D	2D	2D*	33		1P*
CL 1	1155.222	3S23P5	3S23P4 3D	G 2P*	2D	12		1D
SI 3	1158.846	2P63P2	2P63P 3D	3P	3P*	21		2P*
V 3	1158.982	3D3	3D2 4P	G 4F	4F*	45		A3F
V 3	1160.979	3D3	3D2 4P	G 4F	4F*	34		A3F
SI 3	1161.522	2P63P2	2P63P 3D	3P	3P*	12		2P*
V 3	1162.398	3D3	3D2 4P	G 4F	4F*	55		A3F
V 3	1163.446	3D3	3D2 4P	G 4F	4F*	44		A3F
V 3	1164.634	3D3	3D2 4P	G 4F	4F*	33		A3F
V 3	1165.481	3D3	3D2 4P	G 4F	4F*	22		A3F
SI 3	1165.611	2P63P2	2P63P 3D	3P	3P*	22		2P*
B 1	1166.864	2S2 2P	2S 2P 3P	G 2P*	2P	12		3P*
V 3	1167.558	3D3	3D2 4P	G 4F	4F*	43		A3F
B 1	1167.621	2S2 2P	2S 2P 3P	G 2P*	2P	11		3P*
V 3	1168.072	3D3	3D2 4P	G 4F	4F*	32		A3F
B 1	1169.397	2S2 2P	2S 2P 3P	G 2P*	2P	22		3P*
B 1	1170.075	2S2 2P	2S 2P 3P	G 2P*	2P	21		3P*
V 3	1171.832	3D3	3D2 4P	G 4F	4G*	56		A3F
V 3	1175.081	3D3	3D2 4P	2H	2G*	54		A1G
V 3	1175.253	3D3	3D2 4P	G 4F	4G*	45		A3F
V 3	1177.487	3D3	3D2 4P	4P	4S*	12		A3P
V 3	1178.644	3D3	3D2 4P	G 4F	4G*	34		A3F
V 3	1181.405	3D3	3D2 4P	G 4F	4G*	23		A3F
B 2	1211.745	2P2	2P 3S	3P	3P*	11		2P*2
B 2	1212.079	2P2	2P 3S	3P	3P*	10		2P*2
B 2	1213.061	2P2	2P 3S	3P	3P*	01		
SI 2	1221.641	3S 3P2	3S 3P 3D	4P	4D*	32		3P*
V 3	1268.491	3D3	3D2 4P	2G	2G*	55		A3F
V 3	1270.556	3D3	3D2 4P	2G	2G*	44		A3F
V 3	1274.352	3D3	3D2 4P	2G	2G*	54		A3F
BE 1	1291.136	2P2	2P 3D	1D	1F*	23		2P*2
C 1	1294.182	2S 2P3	2P4	3P*	3P	21		
C 1	1296.387	2S 2P3	2P4	3P*	3P	22		
V 3	1304.716	3D3	3D2 4P	4P	4D*	34		A3F
S 2	1305.830	3S23P3	3S 3P4	2P*	2D	12		
S 2	1306.314	3S23P3	3S 3P4	2P*	2D	22		
S 2	1308.432	3S23P3	3S 3P4	2P*	2D	23		
V 3	1308.824	3D3	3D2 4P	2G	2D*	43		A3F
V 3	1310.438	3D3	3D2 4P	4P	4D*	23		A3F
V 3	1312.313	3D3	3D2 4P	4P	4D*	33		A3F
V 3	1313.252	3D3	3D2 4P	2G	4D*	54		A3F
V 3	1314.773	3D3	3D2 4P	4P	4D*	12		A3F
B 1	1314.892	2S2 2P	2S 2P2	G 2P*	2P	11		

TABLE III.- FINDING LIST – Concluded

(b) Concluded

ION	WAVELENGTH	CONFIGURATION LOWER	CONFIGURATION UPPER	TERM LOWER	TERM UPPER	JJ	PARENT-TERM LOWER	PARENT-TERM UPPER
V 3	1316.005	3D3	3D2 4P	2G	4D*	43		A3F
V 3	1316.540	3D3	3D2 4P	4P	4D*	22		A3F
N 1	1320.104	2S 2P4	2P5	2P	2P*	22		
V 3	1331.375	3D3	3D2 4P	2G	2F*	54		A3F
V 3	1335.443	3D3	3D2 4P	2G	2F*	43		A3F
C 2	1342.821	2S 2P2	2S 2P 3S	2S	2P*	12		3P*
C 2	1344.100	2S 2P2	2S 2P 3S	2S	2P*	11		3P*
V 3	1349.023	3D3	3D2 4P	2H	2G*	55		A3F
C 2	1349.381	2S 2P2	2P3	2S	2P*	12		
V 3	1351.645	3D3	3D2 4P	2H	2G*	65		A3F
V 3	1355.249	3D3	3D2 4P	2H	2G*	54		A3F
V 3	1389.502	3D3	3D2 4P	2D	2D*	33		A3F
B 2	1392.333	2P2	2P 3D	1S	1P*	01		2P*2
BE 1	1400.935	2S 2P	2P 3P	3P*	3D	23		2P*2
V 3	1411.270	3D3	3D2 4P	2D	2F*	34		A3F
BE 1	1428.806	2S 2P	2P 3P	3P*	3P	12		2P*2
TI 3	1431.728	3D2	3D 4P	3P	1P*	21		2D
BE 1	1432.667	2S 2P	2P 3P	3P*	3P	22		2P*2
BE 1	1433.166	2S 2P	2P 3P	3P*	3F	21		2P*2
B 1	1463.556	2S 2P2	2S 2P 4D	4P	4D*	12		3P*
B 1	1467.146	2S 2P2	2S 2P 4D	4P	4P*	21		3P*
B 1	1571.297	2S 2P2	2S 2P 3D	4P	4P*	11		3P*
B 1	1574.152	2S 2P2	2S 2P 3D	4P	4P*	22		3P*
B 1	1583.755	2S 2P2	2S 2P 4S	4P	4P*	23		3P*
N 1	1587.581	2S 2P4	2S 2P3 3D	4P	4D*	34		5S*
N 1	1593.658	2S 2P4	2S 2P3 3D	4P	4D*	23		5S*
B 3	1596.446	3S	4P	2S	2P*	12		
B 3	1596.546	3S	4P	2S	2P*	11		
N 1	1603.098	2S 2P4	2S 2P3 3D	4P	4D*	12		5S*
B 1	1666.234	2S 2P2	2S 2P 3D	2P	2D*	12		1P*
B 1	1672.011	2S 2P2	2S 2P 3D	2P	2D*	23		1P*
AL 2	1762.359	2P63P2	2P63P 3D	3P	3D*	12		2P*
AL 2	1764.142	2P63P2	2P63P 3D	3P	3D*	11		2P*
AL 2	1764.217	2P63P2	2P63P 3D	3P	3D*	01		2P*
AL 2	1768.663	2P63P2	2P63P 3D	3P	3D*	22		2P*
AL 2	1771.032	2P63P2	2P63P 3D	3P	3D*	23		2P*
AL 2	1779.257	2P63P2	2P63P 3D	3P	3D*	21		2P*
P 1	1837.052	3S23P3	3S 3P4	2P*	2P	11		
P 1	1839.333	3S23P3	3S 3P4	2P*	2P	21		
P 1	1845.007	3S23P3	3S 3P4	2P*	2P	12		
BE 1	1847.318	2S 2P	2P 4P	1P*	1D	12		2P*2
AL 1	1883.180	3S2 3P	3S 3P2	G 2P*	2S	11		
AL 1	1891.063	3S2 3P	3S 3P2	G 2P*	2S	21		
B 3	1954.234	3P	4D	2P*	2D	12		
B 3	1954.897	3P	4D	2P*	2D	23		

TABLE IV.- CALCULATED AND OBSERVED SPECTRA

Ion	Wavelength, angstroms		Reference
	Calculated	Observed	
Al X	39.627	39.628	8
	39.904	39.925	8
	40.433	40.421	8
	42.322	42.310	8
	42.413	42.403	8
	43.561	43.577	8
	50.742	50.717	8
	50.920	50.903	8
	56.611	56.590	8
	56.717	56.696	8
	56.948	56.945	8
	59.110	59.107	8
	60.928	60.896	8
Si XI	36.758	36.772	8
	37.322	37.340	8
	42.832	42.826	8
	42.864	42.866	8
	42.959	42.950	8
	43.045	43.046	8
	43.330	43.329	8
	43.378	43.385	8
	46.653	46.662	8
	47.332	47.350	8
	47.447	47.453	8
	47.700	47.702	8
	49.030	48.991	8
	49.068	49.052	8
	49.200	49.181	8
Ca IV	325.704	329.12	10
	329.062	332.53	10
Sc XIII	24.241	24.28	7
	24.623	24.65	7
	25.282	25.33	7
Ti XII	27.616	27.489 ± 0.005	5
	27.922	27.818 ± 0.005	5
Ti XIII	21.027	21.035 ± 0.005	6
	21.121	21.127 ± 0.005	6
V XIV	18.758	18.782 ± 0.005	6
	18.870	18.891 ± 0.005	6
V XV	22.192	22.20	7
Fe XV	66.234	66.238	9
Fe XVIII	14.461	14.55	7
	16.009	16.01	7
Co XVII	15.820	15.828 ± 0.005	5
	15.546	15.551 ± 0.005	5
	41.542	41.404	9
	235.110	234.91	9
	247.684	247.62	9
	249.920	249.85	9
	312.576	312.57	9
	339.469	339.58	9
Co XIX	12.884	12.87	7
	12.970	12.99	7
	12.925	12.94	7
	13.063	13.09	7
	13.096	13.26	7
	13.194	13.13	7
	13.374	13.42	7
	14.173	14.17	7
	14.425	14.42	7
	14.550	14.53	7
	14.627	14.59	7

TABLE V.- PUNCHED CARD FORMAT

FE18Q1633.1082S213000CS10000B43S23P214D3S23P215PGA3P* X3D* 12A2P*2A2P*2376487794

COLUMNS	INFORMATION
1 THRU 4	ELEMENT AND IONIZATION STAGE
5	CONTAINS Q IF ANY DATA IS QUESTIONABLE. (SUSPECT CLASSIFICATION OF CLASSIFIED LINES. OTHERWISE.SUSPECT ION STAGE.)
6 THRU 14	WAVELENGTH OF LINE IN ANGSTROMS
15	CONTAINS S IF LINE IS A STANDARD
16 THRU 21	MULTIPLET NUMBER
22	CONTAINS C IF LINE IS CLASSIFIED
23	CONTAINS S IF LINE IS A SOLAR LINE
24 THRU 28	LINE INTENSITY (VERY APPROXIMATE)
29	CONTAINS VARIOUS LETTERS WHICH REPRESENT A DESCRIPTION OF THE LINE. (B=BLEND OF TWO LINES. D=DIFFUSE. F=FORBIDDEN. H=HAZY. P=PREDICTED WAVELENGTH. R=REVERSED. W=WIDE)
30	LOG(BASE 10) OF LARGEST INTENSITY OF THE SCALE
31 THRU 39	LOWER QUANTUM CONFIGURATION
40 THRU 48	UPPER QUANTUM CONFIGURATION
49	CONTAINS G IF LOWER TERM IS GROUND TERM
50	CONTAINS A LETTER WHICH REPRESENTS SPECTRUM IDENTIFICATION UNDER AN OLD SYSTEM.IF THE LINE IS SO IDENTIFIED
51 THRU 54	LOWER TERM
55	PART OF OLD SPECTRUM IDENTIFICATION SYSTEM
56 THRU 59	UPPER TERM
60	TOTAL ANGULAR MOMENTUM OF LOWER TERM (J)
61	TOTAL ANGULAR MOMENTUM OF UPPER TERM (J)
62 THRU 65	LOWER PARENT TERM
66	TOTAL ANGULAR MOMENTUM OF LOWER PARENT TERM
67 THRU 70	UPPER PARENT TERM
71	TOTAL ANGULAR MOMENTUM OF UPPER PARENT TERM
72 THRU 74	NUMBER OF REFERENCE FROM WHICH WAVELENGTH WAS OBTAINED
75 THRU 77	NUMBER OF REFERENCE FROM WHICH INTENSITY WAS OBTAINED
78 THRU 80	NUMBER OF REFERENCE FROM WHICH CLASSIFICATION WAS OBTAINED

TABLE VI.- FLOW CHART

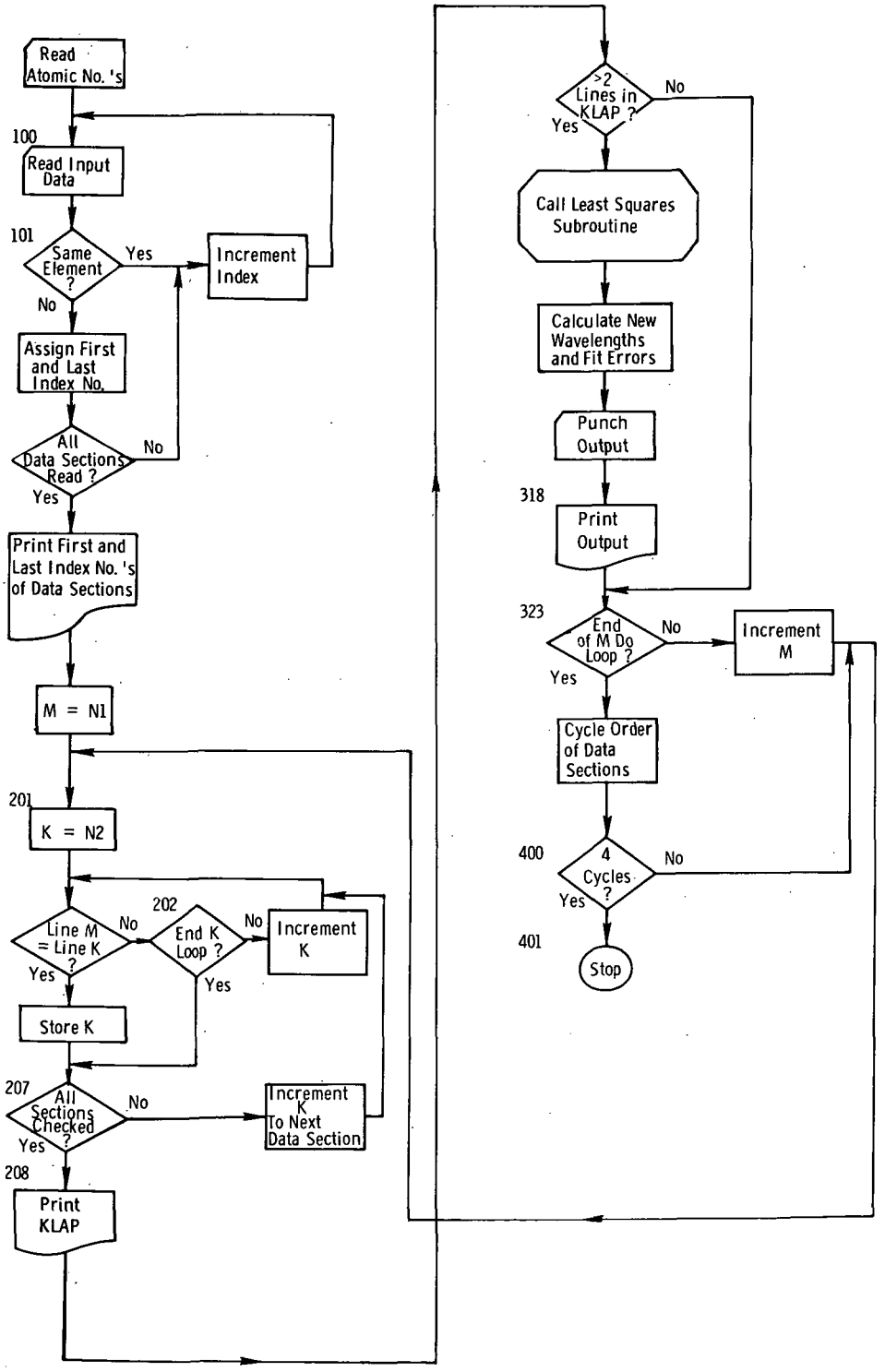

TABLE VII.- COMPUTER PROGRAM

```
      PROGRAM SORT(INPUT,OUTPUT,PUNCH)
C THIS PROGRAM SORTS SPECTRAL EMISSION DATA INTO ISOELECTRONIC SEQUENCES
C AND CALCULATES WAVELENGTHS OF MISSING LINES IN THE SEQUENCES THAT
C CONTAIN THREE OR FOUR KNOWN WAVELENGTHS. CALCULATIONS ARE PERFORMED BY USE OF
C SECOND-DEGREE POLYNOMIALS WHICH BEST FIT THE RESPECTIVE SEQUENCES
C ACCORDING TO THE METHOD OF LEAST SQUARES.
C       DATA IS COMPOSED OF ONE CARD CONTAINING ATOMIC NUMBERS OF FIVE
C SECTIONS OF KNOWN DATA FOLLOWED BY FIVE SECTIONS OF KNOWN DATA ON
C ISOELECTRONIC IONS FOLLOWED BY A BLANK CARD.
C C14= ELEMENT AND IONIZATION STAGE
C C5 = Q(DATA QUESTIONABLE, SUSPECT CLASS.,IF CLASS.,OR SUSPECT ION.ST.)
C C614= WAVELENGTH OF LINE
C C15= S (IF STANDARD LINE)
C M1621= MULTIPLET NUMBER
C C22= C (IF CLASSIFIED LINE)
C C23= S (IF SOLAR LINE)
C M2428= INTENSITY
C C29= INTENSITY MODIFIER
C M30= INTENSITY BASE
C C3139= LOWER CONFIGURATION
C C4048= UPPER CONFIGURATION
C C49= G (IF GROUND STATE)
C C5154= LOWER TERM
C C5659= UPPER TERM
C M60= LOWER J
C M61= UPPER J
C C6266= LOWER PARENT TERM
C C6771= UPPER PARENT TERM
C M7280= REFERENCES
      DIMENSION Y(5,1) ,X(5) ,W(5) ,RESID(5,1) ,SUM(1) ,A(3,3) ,B(3,1),
     1 C(5,3) ,AL(5),DEV(5),PRED(5),ZO(5)
     2,QST1(5),QST2(5),QST3(5),QST4(5),QST5(5)
      DIMENSION C14(600),C5(600),C614(600),C15(600),M1621(600),C22(600),
     1C23(600),M2428(600),C29(600),M30(600),C3139(600),C4048(600),
     2C49(600),C5154(600),C5659(600),M60(600),M61(600),C6266(600),
     3C6771(600),M7280(600),KLAP(5),AUXL(5)
C STATEMENTS 100-110 READ DATA AND INDEXES FIRST AND LAST CARDS OF EACH ELEMENT
      READ 8,(Z1,Z2,Z3,Z4,Z5)
    8 FORMAT(5F5.0)
      ZMIN=Z1
      NA=0 $ NB=0 $ NC=0 $ ND=0 $ NE=0
      I=1
  100 READ 1,C14(I),C5(I),C614(I),C15(I),M1621(I),C22(I),C23(I),
     1M2428(I),C29(I),M30(I),C3139(I),C4048(I),C49(I),C5154(I),C5659(I),
     2M60(I),M61(I),C6266(I),C6771(I),M7280(I)
    1 FORMAT(A4,A1,F9.4,A1,I6,A1,A1,I5,A1,I1,A9,A9,A1,1X,A4,1X,A4,A1,A1,
     1A5,A5,I9)
      IF(I.EQ.1) GO TO 110
  101 IF(C14(I).EQ.C14(I-1))GO TO 110
C HERE THRU 110 INDEXES 1ST AND LAST CARD OF EACH ELEMENT
      IF(NA.EQ.0)GO TO 102
      IF(NB.EQ.0)GO TO 103
      IF(NC.EQ.0)GO TO 104
      IF(ND.EQ.0)GO TO 105
      NE=I-1    $ GO TO 112
  102 NA=I-1 $ N2=I $ N1=1 $ GO TO 110
  103 NB=I-1 $ N3=I $ GO TO 110
  104 NC=I-1 $ N4=I $ GO TO 110
  105 ND=I-1 $ N5=I $ GO TO 110
  110  I=I+1 $ GO TO 100
  112 NEF=NE $ BLANK=10H
```

TABLE VII.- COMPUTER PROGRAM – Continued

```
      PRINT 5,N1,NA,N2,NB,N3,NC,N4,ND,N5,NE
    5 FORMAT(22H1DATA SECTIONS INDICES,2I5,4(1H,,2I5)///)
C STATEMENTS 200-207 CORRELATE EACH LINE OF ONE ELEMENT WITH ISOELECT.
C LINES OF OTHER FOUR ELEMENTS
  200 ITOP=N1 $ IBOT=NA
      DO 323 M=ITOP,IBOT
      KLAP(1)=M $ KLAP(2)=0  $ KLAP(3)=0  $ KLAP(4)=0  $ KLAP(5)=0
      JTOP=N2 $ JBOT=NB $ IND=2
  201 DO 202 K=JTOP,JBOT
      IF(C3139(M).NE.C3139(K)) GO TO 202
      IF(C4048(M).NE.C4048(K)) GO TO 202
      IF(C5154(M).NE.C5154(K)) GO TO 202
      IF(C5659(M).NE.C5659(K)) GO TO 202
      IF(M60(M).NE.M60(K)) GO TO 202
      IF(M61(M).NE.M61(K))GO TO 202
  212 IF(C6266(M).EQ.BLANK.OR.C6266(K).EQ.BLANK)GO TO 210
      IF(C6266(M).NE.C6266(K))GO TO 202
  210 IF(C6771(M).EQ.BLANK.OR.C6771(K).EQ.BLANK)GO TO 203
      IF(C6771(M).EQ.C6771(K))GO TO 203
  202 CONTINUE
      GO TO 207
  203 C3139(K)=FLOAT(K)
      KLAP(IND)=K
  207 IF(IND.EQ.5)GO TO 208
      IND=IND+1
C HERE THRU 206 CHANGES LIMITS OF K
      IF(JTOP.EQ.N2)GO TO 204
      IF(JTOP.EQ.N3)GO TO 205
      IF(JTOP.EQ.N4)GO TO 206
      IF(JTOP.EQ.N5)GO TO 208
  204 JTOP=N3 $ JBOT=NC $ GO TO 201
  205 JTOP=N4 $ JBOT=ND $ GO TO 201
  206 JTOP=N5 $ JBOT=NE $ GO TO 201
C IF THERE ARE THREE OR MORE ISOELEC. LINES, THEY ARE FIT TO A 2ND ORDER POLYN.,
C POLYN. DEV. FROM TAB. LINES IS CALC.,AND NEW LINES PREDICTED
  208 PRINT 6,(KLAP(MQ),MQ=1,5)
    6 FORMAT(10X,5I5)
      ISUM=0
      DO 209 MN=1,5
      IF(KLAP(MN).GT.0)ISUM=ISUM+1
  209 CONTINUE
      IF(ISUM.GT.2)GO TO 300
      GO TO 323
C  C614=KNOWN LAMDAS  X=NUCLEAR CHARGE  ISUM=NO. OF KNOWN LAMDAS
  300 NU=1 $ X(1)=0. $ X(2)=0. $ X(3)=0. $ X(4)=0. $ X(5)=0.
      ZO(1)=0. $ ZO(2)=0. $ ZO(3)=0. $ ZO(4)=0. $ ZO(5)=0.
      DO 306 JK=1,5
      IF(KLAP(JK).EQ.0)GO TO 306
      KL=KLAP(JK)
      Y(NU,1)=1./C614(KL)
      IF(KL.LE.NA.AND.KL.GE.N1)GO TO 301
      IF(KL.LE.NB.AND.KL.GE.N2)GO TO 302
      IF(KL.LE.NC.AND.KL.GE.N3)GO TO 303
      IF(KL.LE.ND.AND.KL.GE.N4)GO TO 304
      X(NU)=Z5 $ ZO(JK)=Z5 $ GO TO 305
  301 X(NU)=Z1 $  ZO(JK)=Z1 $ GO TO 305
  302 X(NU)=Z2 $  ZO(JK)=Z2 $ GO TO 305
  303 X(NU)=Z3 $  ZO(JK)=Z3 $ GO TO 305
  304 X(NU)=Z4 $ ZO(JK)=Z4
```

TABLE VII.- COMPUTER PROGRAM – Continued

```
305 W(NU)=1.
    NU=NU+1
306 CONTINUE
    CALL LSQPOL(X,Y,W,RESID,ISUM,SUM,1,A,B,3,C,5,3)
    DO 314 I=1,5
    IF(ZO(I).LT.ZMIN)GO TO 312
    AL(I)=1./(B(1,1)+B(2,1)*ZO(I)+B(3,1)*ZO(I)**2)
    KL=KLAP(I)
    DEV(I)=AL(I)-C614(KL)
    GO TO 314
312 AL(I)=01777000000000000000
    DEV(I)=C1777000000000000000
314 CONTINUE
    DO 317 J=1,5
    IF(ZO(J).GE.ZMIN)GO TO 316
    IF(J.EQ.1)ZO(J)=Z1
    IF(J.EQ.2)ZO(J)=Z2
    IF(J.EQ.3)ZO(J)=Z3
    IF(J.EQ.4)ZO(J)=Z4
    IF(J.EQ.5)ZO(J)=Z5
315 PRED(J)=1./(B(1,1)+B(2,1)*ZO(J)+B(3,1)*ZO(J)**2)
    GO TO 317
316 PRED(J)=01777000000000000000
317 CONTINUE
    QST1(1)=1H  $ QST1(2)=1H  $ QST1(3)=1H  $ QST1(4)=1H  $QST1(5)=1H
    QST2(1)=1H  $ QST2(2)=1H  $ QST2(3)=1H  $ QST2(4)=1H  $QST2(5)=1H
    QST3(1)=1H  $ QST3(2)=1H  $ QST3(3)=1H  $ QST3(4)=1H  $QST3(5)=1H
    QST4(1)=1H  $ QST4(2)=1H  $ QST4(3)=1H  $ QST4(4)=1H  $QST4(5)=1H
    QST5(1)=1H  $ QST5(2)=1H  $ QST5(3)=1H  $ QST5(4)=1H  $QST5(5)=1H
    DO 322 IN=1,5
    KL=KLAP(IN) $ K1=KLAP(1)
    IF(KL.EQ.0)GO TO 307
    IF(C5(KL).EQ.1HQ)QST1(IN)=2HQ,
    IF(M60(KL).EQ.0)QST2(IN)=3HLJ,
    IF(M61(KL).EQ.0)QST3(IN)=3HUJ,
    IF(C6266(KL).EQ.BLANK)QST4(IN)=3HLP,
    IF(C6771(KL).EQ.BLANK)QST5(IN)=3HUP,
    KC=KL $ AUXL(IN)=C614(KL) $ GO TO 308
307 IF(IN.EQ.1)KC=N1
    IF(IN.EQ.2)KC=N2
    IF(IN.EQ.3)KC=N3
    IF(IN.EQ.4)KC=N4
    IF(IN.EQ.5)KC=N5
    M2428(KC)=01777000000000000000
    AUXL(IN)=01777000000000000000
    PUNCH 9,(C14(KC),PRED(IN),C3139(K1),C4048(K1),C49(K1),C5154(K1),
   1C5659(K1),M60(K1),M61(K1),C6266(K1),C6771(K1))
  9 FORMAT(A4,1X,F9.4,16X,2A9,A1,1X,A4,1X,A4,2A1,2A5)
308 CONTINUE
    IF(IN.GT.1)GO TO 320
    PRINT 113
113 FORMAT(8HOELEMENT, 8X,14HQUANTUM STATES,21X,1HZ,3X,9HTAB. LINE ,
   15X,10HPRED. LINE,6X,9HLINE DEV.,4X,9HINTENSITY,4X,12HQUESTIONABLE)
318 PRINT 319,(C14(KC),C3139(KL),C4048(KL),C5154(KL),C5659(KL),
   1M60(KL),M61(KL),ZO(IN),AUXL(IN),PRED(IN),DEV(IN),M2428(KC),
   2C29(KC),QST1(IN),QST2(IN),QST3(IN),QST4(IN),QST5(IN))
319 FORMAT(2X,A4,3X,2A9 ,2X,2A4,2X,2A1,8X,F3.0,3X,F9.4,5X,F9.4,
   16X,F9.5,5X,I4,A1,6X,5A4)
    GO TO 322
```

TABLE VII.- COMPUTER PROGRAM – Concluded

```
  320 PRINT 321,(C14(KC),ZO(IN),AUXL(IN),PRED(IN),DEV(IN),M2428(KC),
     1C29(KC),QST1(IN),QST2(IN),QST3(IN),QST4(IN),QST5(IN))
  321 FORMAT(2X,A4,43X,F3.0,3X,F9.4,5X,F9.4,6X,F9.5,5X,I4,A1,6X,5A4)
  322 CONTINUE
      PRINT 7
    7 FORMAT(1HO)
  323 CONTINUE
C STATEMENTS BEGINNING AT 400 CYCLE PREVIOUS ELEMENT ORDER FOR ANOTHER
C PASS THRU THE PROGRAM (UNTIL THERE HAVE BEEN 5 PASSES)
  400 IF(NEF.EQ.IBOT)GO TO 401
      TEMP1=N1 $ TEMP2=NA $ TEMP3=Z1
      N1=N2    $ NA=NB    $ Z1=Z2
      N2=N3    $ NB=NC    $ Z2=Z3
      N3=N4    $ NC=ND    $ Z3=Z4
      N4=N5    $ ND=NE    $ Z4=Z5
      N5=TEMP1 $ NE=TEMP2 $ Z5=TEMP3
      GO TO 200
  401 STOP
      END
```


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