Selected Tables of Atomic Spectra

A Atomic Energy Levels-Second Edition
B Multiplet Tables

Si I

Data Derived From the Analyses of Optical Spectra

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Abstract

The present publication is the second Section of a series being prepared in response to the increasing demand for a current revision of two sets of tables containing data on atomic spectra as derived from analyses of optical spectra.

Both the atomic energy levels and the multiplet table are included in the same publication, as parts A and B, respectively. The Sections are being prepared at irregular intervals for these spectra whose analyses are essentially complete. A flexible paging system permits the arrangement of the various Sections by atomic number regardless of the order in which the spectra are published in this series. Section 1 included three spectra of silicon, Z=14: Si II, Si III, Si IV. The present Section contains similar data for Si I. The form of presentation is described in detail in the text to Section 1, and need not be repeated here.

Key words: Atomic energy levels; atomic spectra Si I; multiplet table; silicon, first spectrum; spectrum, Si I; wavelengths, Si I.

Foreword

The National Standard Reference Data System is a government-wide effort to give to the technical community of the United States optimum access to the quantitative data of physical science, critically evaluated and compiled for convenience. This program was established in 1963 by the President's Office of Science and Technology, acting upon the recommendation of the Federal Council for Science and Technology. The National Bureau of Standards has been assigned responsibility for administering the effort. The general objective of the System is to coordinate and integrate existing data evaluation and compilation activities into a systematic, comprehensive program, supplementing and expanding technical coverage when necessary, establishing and maintaining standards for the output of the participating groups, and providing mechanisms for the dissemination of the output as required.

The NSRDS is conducted as a decentralized operation of nation-wide scope with central coordination by NBS. It comprises a complex of data centers and other activities, carried on in government agencies, academic institutions, and nongovernmental laboratories. The independent operational status of existing critical data projects is maintained and encouraged. Data centers that are components of the NSRDS produce compilations of critically evaluated data, critical reviews of the state of quantitative knowledge in specialized areas, and computations of useful functions derived from standard reference data.

For operational purposes, NSRDS compilation activities are organized into seven categories as listed below. The data publications of the NSRDS, which may consist of monographs, loose-leaf sheets, computer tapes, or any other useful product, will be classified as belonging to one or another of these categories. An additional "General" category of NSRDS publications will include reports on detailed classification schemes, lists of compilations considered to be Standard Reference Data, status reports, and similar material. Thus, NSRDS publications will appear in the following eight categories:

Category	Title
1	General
2	Nuclear Properties
3	Atomic and Molecular Properties
4	Solid State Properties
5	Thermodynamic and Transport Properties
6	Chemical Kinetics
7	Colloid and Surface Properties
8	Mechanical Properties of Materials

The present compilation is in category 3 of the above list. It constitutes the fourteenth publication in a new NBS series known as the National Standard Reference Data Series.

Preface

The present publication is the second Section of a series that is being prepared in response to the increasing demand for a current revision of two sets of tables containing data on atomic spectra as derived from analyses of optical spectra.

The first set, ATOMIC ENERGY LEVELS, NBS Circular 467, consists of three Volumes published, respectively, in 1949, 1952, and 1958, and a fourth on rare-earth spectra, still in course of preparation.

The second set consists of two Multiplet Tables; one published in 1945 by the Princeton University Observatory, containing spectral lines in the region of wavelengths longer than 3000 Å; the other AN ULTRAVIOLET MULTIPLET TABLE, NBS Circular 488, appearing in five Sections, the first in 1950, the second in 1952, and the others in 1962.

Both the atomic energy levels and the multiplet table are being included in the same publication, as parts A and B, respectively. The Sections are being prepared at irregular intervals for those spectra whose analyses are essentially complete. A flexible paging system permits the arrangement of the various Sections by atomic number regardless of the order in which the spectra are published in this series. Section I included three spectra of silicon, $Z = 14$: Si II, Si III, Si IV. The present Section contains similar data for Si I. The form of presentation is described in detail in the text to Section 1, and need not be repeated here.

The manuscript has been prepared by Charlotte E. Moore of the Atomic Physics Division, who also prepared the earlier tables. She acknowledges with gratitude the cordial cooperation of of the National Research Council Committee on Line Spectra of the Elements, as well as that of the many atomic spectroscopists who make such a publication possible. It is hoped that as succeeding Sections appear they will provide a stimulus to carry on the analyses of many more atomic spectra.

Washington, D.C., April 14, 1967.   A. V. ASTIN, *Director.*

Contents

SILICON, $Z=14$

Part A   SILICON

Si I

14 electrons $Z = 14$

Ground state $1s^2\, 2s^2\, 2p^6\, 3s^2\, 3p^2\, {}^3P_0$

$3p^2\, {}^3P_0$ **65747.5 ± 0.6** cm^{-1}, 1520.97 Å (Vac)   I P 8.151 eV

The analysis is chiefly from the 1965 paper by Radziemski and Andrew, supplemented by observations in the lead sulphide region by Litzén and in the vacuum ultraviolet by these authors and by Kaufman and Wilson. The range of observations is from 1255 Å to 25854 Å. There are approximately 650 classified lines.

The writer has rearranged the $6f$ pairs and made other adjustments consistent with the observed combinations. Improved level values from the 1967 paper are quoted.

The limit has been derived by a modified Ritz formula from nf series, with $n = 4$ to 7, $nd\, {}^3F_4^\circ$ series with $n = 3$ to 8, and $nd\, {}^3D_3^\circ$ series with $n = 3$ to 10.

Lambert and Warner have extended the present analysis by predicting additional series members and deriving level values from lines in the solar spectrum: nf to $n = 10$; nd to $n = 11$. Their values have been added in proof for the levels:

$$6f'\, [1\tfrac{1}{2}]_{1,2}$$

$$7f'\, [2\tfrac{1}{2}]_2 \quad \text{corrected}$$

$$7f'\, [4\tfrac{1}{2}]_4.$$

Further confirmation of their data from laboratory observations is desirable.

The present multiplet table might well be extended to include additional predicted lines as the analysis and solar data are carried further.

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Si I

Config.	Desig.	J	Level	Interval
$3s^2\,3p^2$	$3p^2\ ^3P$	0	0.000	77.115
		1	77.115	146.042
		2	223.157	
$3s^2\,3p^2$	$3p^2\ ^1D$	2	6298.850	
$3s^2\,3p^2$	$3p^2\ ^1S$	0	15394.370	
$3s\,3p^3$	$3p^3\ ^5S^\circ$	2	33326.053	
$3s^2\,3p(^2P^\circ)4s$	$4s\ ^3P^\circ$	0	39683.163	77.122
		1	39760.285	194.768
		2	39955.053	
$3s^2\,3p(^2P^\circ)4s$	$4s\ ^1P^\circ$	1	40991.884	
$3s\,3p^3$	$3p^3\ ^3D^\circ$	1	45276.188	17.441
		2	45293.629	28.219
		3	45321.848	
$3s^2\,3p(^2P^\circ)4p$	$4p\ ^1P$	1	47284.061	
$3s^2\,3p(^2P^\circ)3d$	$3d\ ^1D^\circ$	2	47351.554	
$3s^2\,3p(^2P^\circ)4p$	$4p\ ^3D$	1	48020.074	82.249
		2	48102.323	161.969
		3	48264.292	
$3s^2\,3p(^2P^\circ)4p$	$4p\ ^3P$	0	49028.294	32.307
		1	49060.601	128.016
		2	49188.617	
$3s^2\,3p(^2P^\circ)4p$	$4p\ ^3S$	1	49399.670	
$3s^2\,3p(^2P^\circ)3d$	$3d\ ^3F^\circ$	2	49850.830	82.945
		3	49933.775	121.02
		4	50054.80	
$3s^2\,3p(^2P^\circ)4p$	$4p\ ^1D$	2	50189.389	
$3s^2\,3p(^2P^\circ)3d$	$3d\ ^3P^\circ$	2	50499.838	−66.559
		1	50566.397	−36.04
		0	50602.44	
$3s^2\,3p(^2P^\circ)4p$	$4p\ ^1S$	0	51612.012	
$3s^2\,3p(^2P^\circ)3d$	$3d\ ^1F^\circ$	3	53362.24	
$3s^2\,3p(^2P^\circ)3d$	$3d\ ^1P^\circ$	1	53387.334	
$3s^2\,3p(^2P^\circ)3d$	$3d\ ^3D^\circ$	1	54185.264	19.826
		2	54205.090	52.492
		3	54257.582	
$3s^2\,3p(^2P^\circ)5s$	$5s\ ^3P^\circ$	0	54245.020	68.798
		1	54313.818	214.402
		2	54528.220	
$3s^2\,3p(^2P^\circ)5s$	$5s\ ^1P^\circ$	1	54871.031	
$3s^2\,3p(^2P^\circ)4d$	$4d\ ^1D^\circ$	2	56503.346	
$3s\,3p^3$	$3p^3\ ^3P^\circ$	2	56690.903	−9.35
		1	56700.25	−33.13
		0	56733.38	
$3s^2\,3p(^2P^\circ)5p$	$5p\ ^1P$	1	56780.427	
$3s^2\,3p(^2P^\circ)5p$	$5p\ ^3D$	1	56978.256	39.240
		2	57017.496	180.531
		3	57198.027	

Si I

Config.	Desig.	J	Level	Interval
$3s^2\,3p(^2P^\circ)5p$	$5p\ ^3P$	0	57295.881	32.908
		1	57328.789	139.450
		2	57468.239	
$3s^2\,3p(^2P^\circ)4d$	$4d\ ^3F^\circ$	2	57372.297	78.283
		3	57450.580	133.077
		4	57583.657	
$3s^2\,3p(^2P^\circ)5p$	$5p\ ^3S$	1	57541.918	
$3s^2\,3p(^2P^\circ)5p$	$5p\ ^1D$	2	57798.072	
$3s^2\,3p(^2P^\circ)5p$	$5p\ ^1S$	0	58311.659	
$3s^2\,3p(^2P^\circ_{0\frac{1}{2}})4f$	$4f[2\frac{1}{2}]$	3	58774.368	
		2	58775.451	
$3s^2\,3p(^2P^\circ_{0\frac{1}{2}})4f$	$4f[3\frac{1}{2}]$	3	58786.860	
		4	58788.880	
$3s^2\,3p(^2P^\circ)4d$	$4d\ ^1P^\circ$	1	58801.529	
$3s^2\,3p(^2P^\circ)4d$	$4d\ ^1F^\circ$	3	58893.40	
$3s^2\,3p(^2P^\circ)4d$	$4d\ ^3D^\circ$	1	59056.508	−24.32
		2	59032.19	85.84
		3	59118.03	
$3s^2\,3p(^2P^\circ_{1\frac{1}{2}})4f$	$4f'[3\frac{1}{2}]$	3	59034.988	
		4	59037.043	
"	$4f'[2\frac{1}{2}]$	3	59109.959	
		2	59110.892	
"	$4f'[4\frac{1}{2}]$	5	59128.40	
		4	59131.912	
"	$4f'[1\frac{1}{2}]$	1	59190.46	
		2	59191.072	
$3s^2\,3p(^2P^\circ)6s$	$6s\ ^3P^\circ$	0	59221.11	52.46
		1	59273.575	232.784
		2	59506.359	
$3s^2\,3p(^2P^\circ)6s$	$6s\ ^1P^\circ$	1	59636.667	
$3s^2\,3p(^2P^\circ)4d$	$4d\ ^3P^\circ$	2	59917.336	−93.122
		1	60010.458	−32.04
		0	60042.50	
$3s^2\,3p(^2P^\circ)5d$	$5d\ ^1D^\circ$	2	60300.860	
$3s^2\,3p(^2P^\circ)6p$	$6p\ ^1P$	1	60381.278?	
$3s^2\,3p(^2P^\circ)6p$	$6p\ ^3D$	1	60487.103	9.255
		2	60496.358	208.17
		3	60704.53	
$3s^2\,3p(^2P^\circ)6p$	$6p\ ^3P$	0	60621.64	84.92
		1	60706.558	109.367
		2	60815.925	
$3s^2\,3p(^2P^\circ)5d$	$5d\ ^3F^\circ$	2	60645.441	60.024
		3	60705.464	143.482
		4	60848.946	
$3s^2\,3p(^2P^\circ)6p$	$6p\ ^3S$	1	60856.630	
$3s^2\,3p(^2P^\circ)6p$	$6p\ ^1D$	2	60962.105	

Si I — Continued

Config.	Desig.	J	Level	Interval
$3s^2 3p(^2P°)6p$	$6p\,^1S$	0	61198.036	
$3s^2 3p(^2P°_{0\frac{1}{2}})5f$	$5f[2\frac{1}{2}]$	3	61303.381	
		2	61304.283	
$3s^2 3p(^2P°_{0\frac{1}{2}})5f$	$5f[3\frac{1}{2}]$	3	61305.050	
		4	61306.713	
$3s^2 3p(^2P°)5d$	$5d\,^1P°$	1	61305.67	
$3s^2 3p(^2P°)5d$	$5d\,^1F°$	3	61423.23	
$3s^2 3p(^2P°)5d$	$5d\,^3D°$	1	61511.77	−63.91
		2	61447.86	126.95
		3	61574.814	
$3s^2 3p(^2P°)7s$	$7s\,^3P°$	0	61538.05	57.38
		1	61595.43	228.12
		2	61823.550	
$3s^2 3p(^2P°_{1\frac{1}{2}})5f$	$5f'[3\frac{1}{2}]$	3	61562.477	
		4	61563.952	
"	$5f'[2\frac{1}{2}]$	3	61597.404	
		2	61598.145	
"	$5f'[4\frac{1}{2}]$	5	61614.37	
		4	61617.17	
"	$5f'[1\frac{1}{2}]$	1	61647.36	
		2	61647.875	
$3s^2 3p(^2P°)5d$	$5d\,^3P°$	2	61841.94	−94.19
		1	61936.13	−24.13
		0	61960.26	
$3s^2 3p(^2P°)7s$	$7s\,^1P°$	1	61881.60	
$3s^2 3p(^2P°)7p$	$7p\,^1P$	1	62141.8?	
$3s^2 3p(^2P°)6d$	$6d\,^1D°$	2	62156.816	
$3s^2 3p(^2P°)7p$	$7p\,^3D$	1	62226.39	5.60
		2	62231.99?	189.04
		3	62421.03	
$3s^2 3p(^2P°)7p$	$7p\,^3P$	0	62318.7?	131.7
		1	62450.40	69.26
		2	62519.66	
$3s^2 3p(^2P°)6d$	$6d\,^3F°$	2	62349.93	26.89
		3	62376.820	157.26
		4	62534.08	
$3s^2 3p(^2P°)7p$	$7p\,^3S$	1	62545.10	
$3s^2 3p(^2P°)7p$	$7p\,^1D$	2	62596.32	
$3s^2 3p(^2P°)6d$	$6d\,^1P°$	1	62666.25	
$3s^2 3p(^2P°_{0\frac{1}{2}})6f$	$6f[2\frac{1}{2}]$	3	62667.823	
		2	62669.727	
	$6f[3\frac{1}{2}]$	3	62669.164	
		4	62669.179	
$3s^2 3p(^2P°)7p$	$7p\,^1S$	0	62718.99	
$3s^2 3p(^2P°)6d$	$6d\,^1F°$	3	62802.86	
$3s^2 3p(^2P°)8s$	$8s\,^3P°$	0	62806.65?	6.61
		1	62813.26	280.14
		2	63093.41	

Si I — Continued

Config.	Desig.	J	Level	Interval
$3s^2 3p(^2P°)6d$	$6d\,^3D°$	1	62925.80	−51.32
		2	62874.48	61.66
		3	62936.14	
$3s^2 3p(^2P°)6d$	$6d\,^3P°$	2	62921.08?	−176.28
		1	63097.36	−26.00
		0	63123.36?	
$3s^2 3p(^2P°_{1\frac{1}{2}})6f$	$6f'[3\frac{1}{2}]$	3	62935.76	
		4	62936.81	
"	$6f'[2\frac{1}{2}]$	3	62954.46	
		2	62955.00	
"	$6f'[4\frac{1}{2}]$	5	62966.61	
		4	62968.49?	
"	$6f'[1\frac{1}{2}]$	1	62985.96?	
		2	62986.32?	
$3s^2 3p(^2P°)8s$	$8s\,^1P°$	1	63130.49	
$3s^2 3p(^2P°)7d$	$7d\,^1D°$	2	63204.89	
$3s^2 3p(^2P°)8p$	$8p\,^3D?$	3		
		2	63225.5?	
		1		
$3s^2 3p(^2P°)7d$	$7d\,^3F°$	2	63356.24	−15.54
		3	63340.70	173.83
		4	63514.533	
$3s^2 3p(^2P°)7d$	$7d\,^1P°$	1	63486.93	
$3s^2 3p(^2P°)9s$	$9s\,^3P°$	0	63579.44?	4.78
		1	63584.22	279.56
		2	63863.78	
$3s^2 3p(^2P°)8p$	$8p\,^1S$	0	63618.6?	
$3s^2 3p(^2P°)7d$	$7d\,^1F°$	3	63641.77	
$3s^2 3p(^2P°)7d$	$7d\,^3D°$	1	63750.39	−35.99
		2	63714.40	45.84
		3	63760.24	
$3s^2 3p(^2P°)7d$	$7d\,^3P°$	2	63721.53?	−48.75
		1	63770.28	−74.36
		0	63844.64	
$3s^2 3p(^2P°_{1\frac{1}{2}})7f$	$7f'[3\frac{1}{2}]$	3	63762.20?	
		4	63762.93?	
"	$7f'[2\frac{1}{2}]$	2	63773.58?	
		3	63773.29?	
"	$7f'[4\frac{1}{2}]$	5	63781.97?	
		4	63783.31?	
$3s^2 3p(^2P°)9s$	$9s\,^1P°$	1	63884.61	
$3s^2 3p(^2P°)8d$	$8d\,^3F°$	2	63990.67	−45.58
		3	63945.09	188.84
		4	64133.93?	
$3s^2 3p(^2P°)8d$	$8d\,^1P°$	1	64018.31?	
$3s^2 3p(^2P°)10s$	$10s\,^3P°$	0		
		1	64086.37?	278.11
		2	64364.48?	

Si I—Continued

Config.	Desig.	J	Level	Interval
$3s^2\,3p(^2P°)8d$	$8d\ ^1F°$	3	64187.80	
$3s^2\,3p(^2P°)8d$	$8d\ ^3P°$	2	64243.38?	
		1		
		0	64322.69?	
$3s^2\,3p(^2P°)8d$	$8d\ ^3D°$	1		
		2	64252.08?	43.18
		3	64295.26	
$3s^2\,3p(^2P°)10s$	$10s\ ^1P°$	1	64351.86	
$3s^2\,3p(^2P°)9d$	$9d\ ^3P°$	2	64616.74?	
		1		
		0		
$3s^2\,3p(^2P°)9d$	$9d\ ^3D°$	1		
		2	64646.78	15.20
		3	64661.98	

Si I—Continued

Config.	Desig.	J	Level	Interval
$3s^2\,3p(^2P°)10d$	$10d\ ^3P°$	2	64882.8?	
		1		
		0		
$3s^2\,3p(^2P°)10d$	$10d\ ^3D°$	1		
		2		
		3	64924.4?	
Si II $(^2P°_{0\frac{1}{2}})$	*Limit*	......	65747.5 ±0.6	
$3s\,3p^3$	$3p^3\ ^3S°$	1	79664.0	
$3s\,3p^2(^4P)4s$	$4s'\ ^5P$	1	81724.64	
		2	81826.16	101.52
		3	81976.16	150.00
$3s\,3p^2(^4P)3d$	$3d'\ ^5P$	3	94291.73	−73.86
		2	94365.59	−47.42
		1	94413.01	

Si I Observed Terms

Config. 1s² 2s² 2p⁶ +	Observed Terms	
$3s^2\,3p^2$	$3p^2\ ^3P$ $3p^2\ ^1S$	$3p^2\ ^1D$
$3s\,3p^3$	$3p^3\ ^5S°$ $3p^3\ ^3S°$ $3p^3\ ^3P°$	$3p^3\ ^3D°$

	$ns(n \geqslant 4)$	$np(n \geqslant 3)$
$3s^2\,3p(^2P°)nl$	$4-10s\ ^3P°$ $4-10s\ ^1P°$	$4-7p\ ^3S$ $4-7p\ ^3P$ $4-8p\ ^3D$ $4-8p\ ^1S$ $5-7p\ ^1P$ $4-7p\ ^1D$
$3s\,3p^2(^4P)nl'$	$4s'\ ^5P$	

	$nd(n \geqslant 3)$	
$3s^2\,3p(^2P°)nl$	$3-10d\ ^3P°$ $3-10d\ ^3D°$ $3-8d\ ^3F°$ $3-8d\ ^1P°$ $3-7d\ ^1D°$ $3-8d\ ^1F°$	
$3s\,3p^2(^4P)nl'$	$3d'\ ^5P$	

jl—Coupling Notation

	Observed Pairs
	$nf(n \geqslant 4)$
$3s^2\,3p(^2P°_{0\frac{1}{2}})nl$	$4-6f\ [2\frac{1}{2}]$ $4-6f\ [3\frac{1}{2}]$
$3s^2\,3p(^2P°_{1\frac{1}{2}})nl'$	$4-7f'\ [3\frac{1}{2}]$ $4-7f'\ [2\frac{1}{2}]$ $4-7f'\ [4\frac{1}{2}]$ $4-6f'\ [1\frac{1}{2}]$

Multiplet Table
SILICON
Si I (Z = 14)

I P 8.151 eV Limit 65747.5 ± 0.6 cm⁻¹ 1520.97 Å (Vac)

Anal A   List A   March 1967

REFERENCES

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P   Predicted wavelength.

New Multiplet Numbers, not inserted between older ones, start with 93 and UV 97.

‡ *raie ultime*

* Blend

Si I

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
16454.53	P		0.03	0.78	2-2	$3p^2\,{}^3P - 3p^2\,{}^1D$
16068.30	P		0.01	0.78	1-2	0.01 F
15871.58	P		0.00	0.78	0-2	
6589.611	P		0.03	1.91	2-0	$3p^2\,{}^3P - 3p^2\,{}^1S$
6526.782	P		0.01	1.91	1-0	1 F
3020.004	A	75	0.03	4.13	2-2	$3p^2\,{}^3P - 3p^3\,{}^5S°$
3006.739	A	50	0.01	4.13	1-2	0.01
2516.112‡	A	500	0.03	4.95	2-2	$3p^2\,{}^3P - 4s\,{}^3P°$
2519.202	A	350	0.01	4.93	1-1	UV 1
2528.509	A	450	0.03	4.93	2-1	
2524.108	A	425	0.01	4.92	1-0	
2506.897	A	425	0.01	4.95	1-2	
2514.316	A	375	0.00	4.93	0-1	
2452.118	A	70	0.03	5.08	2-1	$3p^2\,{}^3P - 4s\,{}^1P°$
2443.364	A	65	0.01	5.08	1-1	UV 2
2438.767	A	65	0.00	5.08	0-1	
2216.669	A	120	0.03	5.62	2-3	$3p^2\,{}^3P - 3p^3\,{}^3D°$
2210.894	A	115	0.01	5.62	1-2	UV 3
2207.978	A	110	0.00	5.61	0-1	
2218.057	A	120	0.03	5.62	2-2	
2211.744	A	110	0.01	5.61	1-1	
2218.915	A	50	0.03	5.61	2-1	
2121.194	A	10	0.03	5.87	2-2	$3p^2\,{}^3P - 3d\,{}^1D°$
2114.631	C	(30)	0.01	5.87	1-2	UV 4
2010.993	B	45	0.03	6.19	2-3	$3p^2\,{}^3P - 3d\,{}^3F°$
2008.443	B	45	0.01	6.18	1-2	UV 6
2014.356	B	3	0.03	6.18	2-2	

Si I

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Vac						
1988.994	B	1000	0.03	6.26	2-2	$3p^2\,{}^3P - 3d\,{}^3P°$
1980.618	B	300	0.01	6.27	1-1	UV 7
1986.364	A	500	0.03	6.27	2-1	
1979.206	B	400	0.01	6.27	1-0	
1983.232	B	300	0.01	6.26	1-2	
1977.597	B	400	0.00	6.27	0-1	
1881.854	B	30	0.03	6.62	2-3	$3p^2\,{}^3P - 3d\,{}^1F°$ UV 8
1880.966	B	5	0.03	6.62	2-1	$3p^2\,{}^3P - 3d\,{}^1P°$
1875.813	B	30	0.01	6.62	1-1	UV 9
1873.104	B	25	0.00	6.62	0-1	
1850.672	B	400	0.03	6.73	2-3	$3p^2\,{}^3P - 3d\,{}^3D°$
1847.473	B	300	0.01	6.72	1-2	UV 10
1845.520	B	200	0.00	6.72	0-1	
1852.472	B	250	0.03	6.72	2-2	
1848.150	B	200	0.01	6.72	1-1	
1853.152	B	35	0.03	6.72	2-1	
1841.449	B	400	0.03	6.76	2-2	$3p^2\,{}^3P - 5s\,{}^3P°$
1843.770	B	200	0.01	6.73	1-1	UV 11
1848.748	B	250	0.03	6.73	2-1	
1846.112	B	200	0.01	6.73	1-0	
1836.509	B	200	0.01	6.76	1-2	
1841.152	B	125	0.00	6.73	0-1	
1829.897	B	10	0.03	6.80	2-1	$3p^2\,{}^3P - 5s\,{}^1P°$
1825.021	B	1	0.01	6.80	1-1	UV 12
1822.455	B	30	0.00	6.80	0-1	

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Vac						
1776.824	B	150	0.03	7.01	2-2	$3p^2\,^3P - 4d\,^1D°$
1772.226	B	12	0.01	7.01	1-2	UV 13
1770.922	B	300	0.03	7.03	2-2	$3p^2\,^3P - 3p^3\,^3P°$
1766.063	B	100	0.01	7.03	1-1	UV 14
1770.630	B	125	0.03	7.03	2-1	
1765.030	B	90	0.01	7.03	1-0	
1766.354	B	50	0.01	7.03	1-2	
1763.661	B	80	0.00	7.03	0-1	
1747.414	B	40	0.03	7.12	2-3	$3p^2\,^3P - 4d\,^3F°$
1745.348	B	25	0.01	7.11	1-2	UV 15
1749.808	B	3	0.03	7.11	2-2	
1707.115	B	8	0.03	7.29	2-1	$3p^2\,^3P - 4d\,^1P°$
1702.868	B	70	0.01	7.29	1-1	UV 16
1700.635	B	80	0.00	7.29	0-1	
1704.442	B	100	0.03	7.30	2-3	$3p^2\,^3P - 4d\,^1F°$ UV 17
1697.941	B	250	0.03	7.33	2-3	$3p^2\,^3P - 4d\,^3D°$
1696.206	B	200	0.01	7.32	1-2	UV 18
1693.293	B	125	0.00	7.32	0-1	
1700.419	B	90	0.03	7.32	2-2	
1695.507	B	90	0.01	7.32	1-1	
1699.717	B	10	0.03	7.32	2-1	
1686.818	B	100	0.03	7.38	2-2	$3p^2\,^3P - 6s\,^3P°$
1689.290	B	60	0.01	7.35	1-1	UV 21
1693.468	B	60	0.03	7.35	2-1	
1690.788	B	60	0.01	7.34	1-0	
1682.672	B	70	0.01	7.38	1-2	
1687.092	B	20	0.00	7.35	0-1	
1683.119	B	3	0.03	7.39	2-1	$3p^2\,^3P - 6s\,^1P°$
1678.992	P		0.01	7.39	1-1	UV 22
1676.821	B	15	0.00	7.39	0-1	
1675.205	B	200	0.03	7.43	2-2	$3p^2\,^3P - 4d\,^3P°$
1668.520	B	70	0.01	7.44	1-1	UV 23
1672.596	B	80	0.03	7.44	2-1	
1667.629	B	70	0.01	7.44	1-0	
1671.117	B	40	0.01	7.43	1-2	
1666.376	B	60	0.00	7.44	0-1	
1664.511	B	35	0.03	7.48	2-2	$3p^2\,^3P - 5d\,^1D°$
1660.476	B	15	0.01	7.48	1-2	UV 24
1653.376	B	40	0.03	7.53	2-3	$3p^2\,^3P - 5d\,^3F°$
1651.028	B	25	0.01	7.52	1-2	UV 25
1655.012	C	(1h)	0.03	7.52	2-2	
1633.223	B	45	0.01	7.60	1-1	$3p^2\,^3P - 5d\,^1P°$
1631.168	B	70	0.00	7.60	0-1	UV 26
1629.946	B	100	0.03	7.63	2-3	$3p^2\,^3P - 5d\,^3D°$
1629.438	B	100	0.01	7.62	1-2	UV 27
1625.704	B	70	0.00	7.63	0-1	
1633.326	B	40	0.03	7.62	2-2	
1627.745	B	30	0.01	7.63	1-1	
1631.62	P		0.03	7.63	2-1	
1633.983	B	90	0.03	7.62	2-3	$3p^2\,^3P - 5d\,^1F°$ UV 28
1623.368	B	8	0.03	7.66	2-2	$3p^2\,^3P - 7s\,^3P°$
1625.531	B	35	0.01	7.64	1-1	UV 29
1629.403	B	20	0.03	7.64	2-1	
1627.050	B	20	0.01	7.63	1-0	
1619.526	B	15	0.01	7.66	1-2	
1623.498	B	10	0.00	7.64	0-1	

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Vac						
1622.881	B	90	0.03	7.67	2-2	$3p^2\,^3P - 5d\,^3P°$
1616.579	B	70	0.01	7.68	1-1	UV 30
1620.404	B	60	0.03	7.68	2-1	
1615.949	B	50	0.01	7.68	1-0	
1619.046	B	8	0.01	7.67	1-2	
1614.567	B	30	0.00	7.68	0-1	
1621.838	B	2	0.03	7.67	2-1	$3p^2\,^3P - 7s\,^1P°$
1618.006	B	8	0.01	7.67	1-1	UV 31
1615.99	D	(−)	0.00	7.67	0-1	
1614.630	B	25	0.03	7.71	2-2	$3p^2\,^3P - 6d\,^1D°$
1610.82	D	(−)	0.01	7.71	1-2	UV 32
1608.916	B	25	0.03	7.73	2-3	$3p^2\,^3P - 6d\,^3F°$
1605.837	B	20	0.01	7.73	1-2	UV 33
1601.46	P		0.03	7.77	2-1	$3p^2\,^3P - 6d\,^1P°$
*1597.721	R	25	0.01	7.77	1-1	UV 33.01
1595.755	B	30	0.00	7.77	0-1	
1597.963	B	60	0.03	7.79	2-3	$3p^2\,^3P - 6d\,^1F°$ UV 35
1590.576	B	15	0.03	7.82	2-2	$3p^2\,^3P - 8s\,^3P°$
*1597.721	B	25	0.03	7.79	2-1	UV 35.01
1594.146	B	3	0.01	7.79	1-0?	
1586.892	B	3	0.01	7.82	1-2	
1592.020	B	20	0.00	7.79	0-1	
1594.566	B	70	0.03	7.80	2-3	$3p^2\,^3P - 6d\,^3D°$
1592.423	B	60	0.01	7.80	1-2	UV 35.02
1589.173	B	15	0.00	7.80	0-1	
1591.123	B	20	0.01	7.80	1-1	
1594.79	D	—	0.03	7.80	2-1	
1594.949	B	70	0.03	7.80	2-2?	$3p^2\,^3P - 6d\,^3P°$
1586.791	B	20	0.01	7.82	1-1	UV 35.03
1590.477	B	20	0.03	7.82	2-1	
1586.137	B	15	0.01	7.83	1-0?	
1591.24	P		0.01	7.80	1-2?	
1584.854	B	2	0.00	7.82	0-1	
1589.639	B	7	0.03	7.83	2-1	$3p^2\,^3P - 8s\,^1P°$
1585.958	B	3	0.01	7.83	1-1	UV 37
1584.022	B	8	0.00	7.83	0-1	
1587.761	B	15	0.03	7.84	2-2	$3p^2\,^3P - 7d\,^1D°$ UV 37.01
1584.346	B	12	0.03	7.85	2-3	$3p^2\,^3P - 7d\,^3F°$
1580.300	B	12	0.01	7.85	1-2	UV 37.02
1583.95	D	(−)	0.03	7.85	2-2	
1580.68	D	(−)	0.03	7.87	2-1	$3p^2\,^3P - 7d\,^1P°$
1577.044	B	2	0.01	7.87	1-1	UV 37.03
1575.127	B	10	0.00	7.87	0-1	
1571.323	B	1	0.03	7.92	2-2	$3p^2\,^3P - 9s\,^3P°$
1574.63	P		0.01	7.88	1-1	UV 37.04
1578.25	D	(−)	0.03	7.88	2-1	
1574.746	B	1	0.01	7.88	1-0?	
1567.726	B	8	0.01	7.92	1-2	
1572.717	B	2	0.00	7.88	0-1	
1576.829	B	12	0.03	7.89	2-3	$3p^2\,^3P - 7d\,^1F°$ UV 39
1573.884	B	25	0.03	7.91	2-3	$3p^2\,^3P - 7d\,^3D°$
1571.406	B	10	0.01	7.90	1-2	UV 40
1568.618	B	3	0.00	7.90	0-1	
1570.518	B	3	0.01	7.90	1-1	
1574.128	B	1	0.03	7.90	2-1	

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Vac						
1574.844	B	30	0.03	7.90	2-2	$3p^2\,{}^3P - 7d\,{}^3P^\circ$
1570.028	B	2	0.01	7.91	1-1	UV 40.01
1573.635	B	10	0.03	7.91	2-1	
1568.196	B	10	0.01	7.92	1-0	
1570.810	B	1	0.03	7.92	2-1	$3p^2\,{}^3P - 9s\,{}^1P^\circ$
1567.21	D	(−)	0.01	7.92	1-1	UV 41
1565.32	D	(−)	0.00	7.92	0-1	
1569.318	B	8	0.03	7.93	2-3	$3p^2\,{}^3P - 8d\,{}^3F^\circ$
1564.614	B	8	0.01	7.93	1-2	UV 41.01
1562.053	B	1	0.00	7.94	0-1	$3p^2\,{}^3P - 8d\,{}^1P^\circ?$ UV 41.02
1559.00	D	(−)	0.03	7.98	2-2	$3p^2\,{}^3P - 10s\,{}^3P^\circ?$
1562.28	D	(−)	0.01	7.95	1-1	UV 41.03
1565.84	D	(−)Al?	0.03	7.95	2-1	
1555.516	B	1	0.01	7.98	1-2	
1560.39	D	(−)	0.00	7.95	0-1	
1563.364	B	1	0.03	7.96	2-3	$3p^2\,{}^3P - 8d\,{}^1F^\circ$ UV 41.04
1562.006	B	4	0.03	7.96	2-2	$3p^2\,{}^3P - 8d\,{}^3P^\circ?$
1556.527	B	1	0.01	7.97	1-0	UV 41.05
1560.742	B	8	0.03	7.97	2-3	$3p^2\,{}^3P - 8d\,{}^3D^\circ$
1558.240	B	2	0.01	7.97	1-2?	UV 41.06
1561.81	D	(10r)	0.03	7.97	2-2?	
1559.364	B	2	0.03	7.98	2-1	$3p^3\,{}^3P - 10s\,{}^1P^\circ$ UV 41.07
1552.950	B	2	0.03	8.01	2-2	$3p^2\,{}^3P - 9d\,{}^3P^\circ?$ UV 41.08
1551.860	B	2	0.03	8.02	2-3	$3p^2\,{}^3P - 9d\,{}^3D^\circ?$
1548.715	B	2	0.01	8.01	1-2	UV 41.09
1552.209	B	1	0.03	8.01	2-2	
1546.56	C	(1r)	0.03	8.04	2-2	$3p^2\,{}^3P - 10d\,{}^3P^\circ?$ UV 41.10
1545.56	C	(1r)	0.03	8.05	2-3	$3p^2\,{}^3P - 10d\,{}^3D^\circ?$ UV 41.11
1258.80	C	(50)	0.03	9.88	2-1	$3p^2\,{}^3P - 3p^3\,{}^3S^\circ$
1256.49	C	(40)	0.01	9.88	1-1	UV 41.12
1255.28	C	(10)	0.00	9.88	0-1	
Air						
10991.414	P		0.78	1.91	2-0	$3p^2\,{}^1D - 3p^2\,{}^1S$ 2F
2970.355	A	55	0.78	4.95	2-2	$3p^2\,{}^1D - 4s\,{}^3P^\circ$
2987.645	A	150	0.78	4.93	2-1	1
2881.579	A	1000	0.78	5.08	2-1	$3p^2\,{}^1D - 4s\,{}^1P^\circ$ UV 43
2561.823	P		0.78	5.62	2-3	$3p^2\,{}^1D - 3p^3\,{}^3D^\circ$
2563.679	A	30	0.78	5.62	2-2	UV 44
2564.824	A	20	0.78	5.61	2-1	
2435.154	A	300	0.78	5.87	2-2	$3p^2\,{}^1D - 3d\,{}^1D^\circ$ UV 45

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
2291.034	A	35	0.78	6.19	2-3	$3p^2\,{}^1D - 3d\,{}^3F^\circ$
2295.401	A	10	0.78	6.18	2-2	UV 46
2261.693	A	5	0.78	6.26	2-2	$3p^2\,{}^1D - 3d\,{}^3P^\circ$
2258.292	P		0.78	6.27	2-1	UV 47
2124.122	A	100	0.78	6.62	2-3	$3p^2\,{}^1D - 3d\,{}^1F^\circ$ UV 48
2122.994	A	15	0.78	6.62	2-1	$3p^2\,{}^1D - 3d\,{}^1P^\circ$ UV 49
2084.463	B	50	0.78	6.73	2-3	$3p^2\,{}^1D - 3d\,{}^3D^\circ$
2086.745	C	(1)	0.78	6.72	2-2	UV 50
2087.612	B	1	0.78	6.72	2-1	
2072.764	P		0.78	6.76	2-2	$3p^2\,{}^1D - 5s\,{}^3P^\circ$
2082.021	B	60	0.78	6.73	2-1	UV 51
2058.132	B	600	0.78	6.80	2-1	$3p^2\,{}^1D - 5s\,{}^1P^\circ$ UV 52
Vac						
1991.852	B	50	0.78	7.01	2-2	$3p^2\,{}^1D - 4d\,{}^1D^\circ$ UV 53
1984.439	B	20	0.78	7.03	2-2	$3p^2\,{}^1D - 3p^3\,{}^3P^\circ$
1984.069	B	3	0.78	7.03	2-1	UV 53.01
1954.968	B	50	0.78	7.12	2-3	$3p^2\,{}^1D - 4d\,{}^3F^\circ$
1957.965	B	1	0.78	7.11	2-2	UV 55
1904.666	B	40	0.78	7.29	2-1	$3p^2\,{}^1D - 4d\,{}^1P^\circ$ UV 56
1901.337	B	400	0.78	7.30	2-3	$3p^2\,{}^1D - 4d\,{}^1F^\circ$ UV 57
1893.252	B	175	0.78	7.33	2-3	$3p^2\,{}^1D - 4d\,{}^3D^\circ$
1896.339	B	1	0.78	7.32	2-2	UV 58
1895.461	B	1	0.78	7.32	2-1	
1879.434	P		0.78	7.38	2-2	$3p^3\,{}^1D - 6s\,{}^3P^\circ$
1887.693	B	45	0.78	7.35	2-1	UV 61
1874.842	B	175	0.78	7.39	2-1	$3p^2\,{}^1D - 6s\,{}^1P^\circ$ UV 62
1865.028	B	2	0.78	7.43	2-2	$3p^2\,{}^1D - 4d\,{}^3P^\circ$
1861.795	B	2	0.78	7.44	2-1	UV 63
1851.782	B	70	0.78	7.48	2-2	$3p^2\,{}^1D - 5d\,{}^1D^\circ$ UV 64
1838.011	B	40	0.78	7.53	2-3	$3p^2\,{}^1D - 5d\,{}^3F^\circ$
1840.042	B	8	0.78	7.52	2-2	UV 65
1817.956	B	10	0.78	7.60	2-1	$3p^2\,{}^1D - 5d\,{}^1P^\circ$ UV 66
1814.079	B	250	0.78	7.62	2-3	$3p^2\,{}^1D - 5d\,{}^1F^\circ$ UV 68
1809.104	B	100	0.78	7.63	2-3	$3p^2\,{}^1D - 5d\,{}^3D^\circ$
1813.27	P	(1h)	0.78	7.62	2-2	UV 68.01
1801.000	P		0.78	7.66	2-2	$3p^2\,{}^1D - 7s\,{}^3P^\circ$
1808.429	B	20	0.78	7.64	2-1	UV 69
1800.404	B	1	0.78	7.67	2-2	$3p^2\,{}^1D - 5d\,{}^3P^\circ$
1797.356	B	6	0.78	7.68	2-1	UV 70

Si I—Continued

I A	Ref	Int	EP Low	EP High	J	Multiplet No.
Vac						
1799.118	B	30	0.78	7.67	2–1	$3p^2\,{}^1D - 7s\,{}^1P°$ UV 71
1790.254	B	25	0.78	7.71	2–2	$3p^2\,{}^1D - 6d\,{}^1D°$ UV 72
1783.232	B	25	0.78	7.73	2–3	$3p^2\,{}^1D - 6d\,{}^3F°$ UV 73
1784.088	B.	8	0.78	7.73	2–2	
1774.08	P		0.78	7.77	2–1	$3p^2\,{}^1D - 6d\,{}^1P°$ UV 73.01
1769.785	B	70	0.78	7.79	2–3	$3p^2\,{}^1D - 6d\,{}^1F°$ UV 75
1769.461	B	2	0.78	7.79	2–1	$3p^2\,{}^1D - 8s\,{}^3P°$ UV 75.01
1765.622	B	50	0.78	7.80	2–3	$3p^2\,{}^1D - 6d\,{}^3D°$ UV 76
1767.54	P		0.78	7.80	2–2	
1765.945	B	8	0.78	7.80	2–1	
1759.583	B	10	0.78	7.83	2–1	$3p^2\,{}^1D - 8s\,{}^1P°$ UV 77
1757.283	B	3	0.78	7.84	2–2	$3p^2\,{}^1D - 7d\,{}^1D°$ UV 77.01
1753.101	B	15	0.78	7.85	2–3	$3p^2\,{}^1D - 7d\,{}^3F°$ UV 77.02
1752.634	B	3	0.78	7.85	2–2	
1745.647	B	1	0.78	7.88	2–1	$3p^2\,{}^1D - 9s\,{}^3P°$ UV 77.03
1743.894	B	20	0.78	7.89	2–3	$3p^2\,{}^1D - 7d\,{}^1F°$ UV 79
1740.299	B	20	0.78	7.91	2–3	$3p^2\,{}^1D - 7d\,{}^3D°$ UV 80
1736.538	B	3	0.78	7.92	2–1	$3p^2\,{}^1D - 9s\,{}^1P°$ UV 81
1734.718	B	8	0.78	7.93	2–3	$3p^2\,{}^1D - 8d\,{}^3F°$ UV 81.01
1733.346	B	1	0.78	7.93	2–2	
1727.444	B	2	0.78	7.96	2–3	$3p^2\,{}^1D - 8d\,{}^1F°$ UV 81.02
1724.242	B	6	0.78	7.97	2–3	$3p^2\,{}^1D - 8d\,{}^3D°$ UV 81.03
1722.562	B	4	0.78	7.98	2–1	$3p^2\,{}^1D - 10s\,{}^1P°$ UV 81.04
1713.412	D	(−)	0.78	8.02	2–3	$3p^2\,{}^1D - 9d\,{}^3D°$ UV 81.05
1713.85	D	(−)	0.78	8.01	2–2	
Air						
4102.936	A	70	1.91	4.93	0–1	$3p^2\,{}^1S - 4s\,{}^3P°$ 2
3905.523	A	300	1.91	5.08	0–1	$3p^2\,{}^1S - 4s\,{}^1P°$ 3
3345.555	P		1.91	5.61	0–1	$3p^2\,{}^1S - 3p^3\,{}^3D°$ 3.01

Si I—Continued

I A	Ref	Int	EP Low	EP High	J	Multiplet No.
Air						
2842.334	A	15	1.91	6.27	0–1	$3p^2\,{}^1S - 3d\,{}^3P°$ UV 82
2631.282	A	190	1.91	6.62	0–1	$3p^2\,{}^1S - 3d\,{}^1P°$ UV 83
2577.151	A	45	1.91	6.72	0–1	$3p^2\,{}^1S - 3d\,{}^3D°$ UV 84
2568.641	A	85	1.91	6.73	0–1	$3p^2\,{}^1S - 5s\,{}^3P°$ UV 85
2532.381	A	110	1.91	6.80	0–1	$3p^2\,{}^1S - 5s\,{}^1P°$ UV 86
2420.24	A	5	1.91	7.03	0–1	$3p^2\,{}^1S - 3p^3\,{}^3P°$ UV 86.01
2303.058	A	55	1.91	7.29	0–1	$3p^2\,{}^1S - 4d\,{}^1P°$ UV 87
2289.607	A	20	1.91	7.32	0–1	$3p^2\,{}^1S - 4d\,{}^3D°$ UV 88
2278.281	A	10	1.91	7.35	0–1	$3p^2\,{}^1S - 6s\,{}^3P°$ UV 89
2259.587	A	10	1.91	7.39	0–1	$3p^2\,{}^1S - 6s\,{}^1P°$ UV 90
2240.649	P		1.91	7.44	0–1	$3p^2\,{}^1S - 4d\,{}^3P°$ UV 90.01
2177.432	A	10	1.91	7.60	0–1	$3p^2\,{}^1S - 5d\,{}^1P°$ UV 91
2167.700	A	5	1.91	7.63	0–1	$3p^2\,{}^1S - 5d\,{}^2D°$ UV 92
2163.773	A	7	1.91	7.64	0–1	$3p^2\,{}^1S - 7s\,{}^3P°$ UV 93
2147.911	C	(50h)	1.91	7.68	0–1	$3p^2\,{}^1S - 5d\,{}^3P°$ UV 94
2150.46	A	2	1.91	7.67	0–1	$3p^2\,{}^1S - 7s\,{}^1P°$ UV 95
2114.75	P		1.91	7.77	0–1	$3p^2\,{}^1S - 6d\,{}^1P°$ UV 95.01
2108.20	P		1.91	7.79	0–1	$3p^2\,{}^1S - 8s\,{}^3P°$ UV 95.02
2103.205	A	1	1.91	7.80	0–1	$3p^2\,{}^1S - 6d\,{}^3D°$ UV 95.03
2095.64	P		1.91	7.82	0–1	$3p^2\,{}^1S - 6d\,{}^3P°$ UV 95.04
2094.21	C	(10h)	1.91	7.83	0–1	$3p^2\,{}^1S - 8s\,{}^1P°$ UV 96
2078.66	P		1.91	7.87	0–1	$3p^2\,{}^1S - 7d\,{}^1P°$ UV 97
2074.46	P		1.91	7.88	0–1	$3p^2\,{}^1S - 9s\,{}^3P°$ UV 98
2067.39	C	(3H)	1.91	7.90	0–1	$3p^2\,{}^1S - 7d\,{}^3D°?$ UV 99

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
2066.41	C	(0h)	1.91	7.91	0-1	$3p^2$ ¹S − $7d$ ³P° UV 100
2061.64	C	(1H)	1.91	7.92	0-1	$3p^2$ ¹S − $9s$ ¹P° UV 101
2041.93	P		1.91	7.98	0-1	$3p^2$ ¹S − $10s$ ¹P° UV 102
2054.836	B	(50)	4.13	10.16	2-3	$3p^3$ ⁵S° − $4s'$ ⁵P UV 103
2061.19	C	(40)	4.13	10.14	2-2	
2065.52	C	(30)	4.13	10.13	2-1	
Vac						
1640.267	B	(20)	4.13	11.69	2-3	$3p^3$ ⁵S° − $3d'$ ⁵P UV 104
1638.282	B	(10)	4.13	11.70	2-2	
1637.011	B	(5)	4.13	11.71	2-1	
Air						
13640.68	P		4.95	5.86	2-1	$4s$ ³P° − $4p$ ¹P 3.02
13287.58	E	9	4.93	5.86	1-1	
13152.74	P		4.92	5.86	0-1	
12031.507	F	(440)	4.95	5.98	2-3	$4s$ ³P° − $4p$ ³D 4
11984.187	F	(370)	4.93	5.96	1-2	
11991.565	F	(220)	4.92	5.95	0-1	
12270.699	F	(120)	4.95	5.96	2-2	
12103.544	F	(150)	4.93	5.95	1-1	
12395.82	E	(6)	4.95	5.95	2-1	
10827.091	A	140	4.95	6.10	2-2	$4s$ ³P° − $4p$ ³P 5
10749.384	A	60	4.93	6.08	1-1	
10979.308	A	80	4.95	6.08	2-1	
10786.856	A	80	4.93	6.08	1-0	
10603.431	A	120	4.93	6.10	1-2	
10660.975	A	120	4.92	6.08	0-1	
10585.141	A	120	4.95	6.12	2-1	$4s$ ³P° − $4p$ ³S 6
10371.269	A	30	4.93	6.12	1-1	
10288.942	A	10	4.92	6.12	0-1	
9768.35	A	6	4.95	6.22	2-2	$4s$ ³P° − $4p$ ¹D 7
9585.92	A	10	4.93	6.22	1-2	
8435.24	A	8	4.93	6.40	1-0	$4s$ ³P° − $4p$ ¹S 8
5941.758	P		4.95	7.04	2-1	$4s$ ³P° − $5p$ ¹P 8.01
5873.764	A	40	4.93	7.04	1-1	
5847.268	P		4.92	7.04	0-1	
5797.859	A	100	4.95	7.09	2-3	$4s$ ³P° − $5p$ ³D 9
5793.071	A	90	4.93	7.07	1-2	
5780.384	A	70	4.92	7.06	0-1	
5859.201	P		4.95	7.07	2-2	
5806.276	P		4.93	7.06	1-1	
5872.708	P		4.95	7.06	2-1	
5708.397	A	160	4.95	7.12	2-2	$4s$ ³P° − $5p$ ³P 10
5690.425	A	100	4.93	7.11	1-1	
5754.220	A	45	4.95	7.11	2-1	
5701.105	A	90	4.93	7.10	1-0	
5645.611	A	90	4.93	7.12	1-2	
5665.554	A	80	4.92	7.11	0-1	
5684.484	A	120	4.95	7.13	2-1	$4s$ ³P° − $5p$ ³S 11
5622.221	A	30	4.93	7.13	1-1	
5597.941	P		4.92	7.13	0-1	

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
5602.875	A	20	4.95	7.17	2-2	$4s$ ³P° − $5p$ ¹D 11.01
5542.378	P		4.93	7.17	1-2	
5388.938	P		4.93	7.23	1-0	$4s$ ³P° − $5p$ ¹S 11.02
5145.02	A	2	4.93	7.34	1-2	$4s$ ³P° − $4f'$ [1½] 11.03
5124.86	P		4.92	7.34	0-1	
4818.06	A	7	4.95	7.53	2-3	$4s$ ³P° − $6p$ ³D 11.04
4821.167	A	15	4.93	7.50	1-2	
4805.440	A	20	4.92	7.50	0-1	
4866.881	A	7	4.95	7.50	2-2	
4823.31	A	10	4.93	7.50	1-1	
4869.074	P		4.95	7.50	2-1	
4792.324	A	80	4.95	7.54	2-2	$4s$ ³P° − $6p$ ³P 11.05
4772.785	A	25	4.93	7.53	1-1	
4817.59	A	5	4.95	7.53	2-1	
4792.212	A	35	4.93	7.52	1-0	
4747.994	A	25	4.93	7.54	1-2	
4755.276	A	25	4.92	7.53	0-1	
4782.990	A	50	4.95	7.55	2-1	$4s$ ³P° − $6p$ ³S 11.06
4738.832	P		4.93	7.55	1-1	
4721.571	P		4.92	7.55	0-1	
4758.972	A	13	4.95	7.56	2-2	$4s$ ³P° − $6p$ ¹D 11.07
4715.257	P		4.93	7.56	1-2	
4449.93	A	5	4.95	7.74	2-3	$4s$ ³P° − $7p$ ³D 11.08
4448.79	P		4.93	7.72	1-2?	
4434.69	A	10	4.92	7.71	0-1	
4430.470	A	10	4.95	7.75	2-2	$4s$ ³P° − $7p$ ³P 11.09
4405.96	A	5H	4.93	7.74	1-1	
4444.12	P		4.95	7.74	2-1	
4431.68	A	5	4.93	7.73	1-0	
4392.59	A	10	4.93	7.75	1-2	
4391.05	A	5H	4.92	7.74	0-1	
4425.49	A	10	4.95	7.75	2-1	$4s$ ³P° − $7p$ ³S 11.10
4387.65	P		4.93	7.75	1-1	
4372.85	P		4.92	7.75	0-1	
4415.50	A	5H	4.95	7.76	2-2	$4s$ ³P° − $7p$ ¹D 11.11
15888.39	E	(190)	5.08	5.86	1-1	$4s$ ¹P° − $4p$ ¹P 11.12
14059.99	P		5.08	5.96	1-2	$4s$ ¹P° − $4p$ ³D 11.13
14224.54	E	(6)	5.08	5.95	1-1	
12196.64	P		5.08	6.10	1-2	$4s$ ¹P° − $4p$ ³P 11.14
12390.16	E	(4)	5.08	6.08	1-1	
12439.96	P		5.08	6.08	1-0	
11890.48	P		5.08	6.12	1-1	$4s$ ¹P° − $4p$ ³S 12
10869.541	A	130	5.08	6.22	1-2	$4s$ ¹P° − $4p$ ¹D 13
9413.506	A	100	5.08	6.40	1-0	$4s$ ¹P° − $4p$ ¹S 14
6331.954	A	45	5.08	7.04	1-1	$4s$ ¹P° − $5p$ ¹P 14.01

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
6238.287	A	40	5.08	7.07	1-2	$4s\,^1P° - 5p\,^3D$
6253.60	A	15	5.08	7.06	1-1	14.02
6067.624	A	20	5.08	7.12	1-2	$4s\,^1P° - 5p\,^3P$
6119.417	P		5.08	7.11	1-1	15
6131.769	P		5.08	7.10	1-0	
6040.611	P		5.08	7.13	1-1	$4s\,^1P° - 5p\,^3S$
						15.01
5948.545	A	200	5.08	7.17	1-2	$4s\,^1P° - 5p\,^1D$
						16
5772.145	A	70	5.08	7.23	1-0	$4s\,^1P° - 5p\,^1S$
						17
5621.607	A	15	5.08	7.29	1-2	$4s\,^1P° - 4f\,[2\frac{1}{2}]$
						17.01
5517.535	A	35	5.08	7.33	1-2	$4s\,^1P° - 4f'\,[2\frac{1}{2}]$
						17.02
5493.23	A	40	5.08	7.34	1-2	$4s\,^1P° - 4f'\,[1\frac{1}{2}]$
5493.41	P		5.08	7.34	1-1	17.03
5156.023	A	8	5.08	7.49	1-1	$4s\,^1P° - 6p\,^1P?$
						17.04
5125.598	A	10	5.08	7.50	1-2	$4s\,^1P° - 6p\,^3D$
5128.031	A	10	5.08	7.50	1-1	17.05
5042.97	A	3	5.08	7.54	1-2	$4s\,^1P° - 6p\,^3P$
5070.951	P		5.08	7.53	1-1	17.06
5092.89	P		5.08	7.52	1-0	
5032.640	P		5.08	7.55	1-1	$4s\,^1P° - 6p\,^3S$
						17.07
5006.061	A	40	5.08	7.56	1-2	$4s\,^1P° - 6p\,^1D$
						17.08
4947.607	A	30	5.08	7.59	1 0	$4s\,^1P°\ \ 6p\,^1S$
						17.09
4921.72	A	1	5.08	7.60	1-2	$4s\,^1P° - 5f\,[2\frac{1}{2}]$
						17.10
4851.540	A	13	5.08	7.64	1-2	$4s\,^1P° - 5f'\,[2\frac{1}{2}]$
						17.11
4839.861	A	11	5.08	7.64	1-2	$4s\,^1P° - 5f'\,[1\frac{1}{2}]$
4839.98	P		5.08	7.64	1-1	17.12
4726.84	A	5	5.08	7.70	1-1	$4s\,^1P° - 7p\,^1P?$
						17.13
4706.76	A	8	5.08	7.72	1-2?	$4s\,^1P° - 7p\,^3D$
4707.98	A	4	5.08	7.71	1-1	17.14
4658.82	A	5	5.08	7.74	1-1	$4s\,^1P° - 7p\,^3P$
4643.86	P		5.08	7.75	1-2	17.15
4638.38	P		5.08	7.75	1-1	$4s\,^1P° - 7p\,^3S$
						17.16
4627.383	A	18	5.08	7.76	1-2	$4s\,^1P° - 7p\,^1D$
						17.17
4601.26	A	5	5.08	7.78	1-0	$4s\,^1P° - 7p\,^1S$
						17.18

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
4551.80	A	7	5.08	7.81	1-2	$4s\,^1P° - 6f'\,[2\frac{1}{2}]$
						17.19
4496.43	A	5H	5.08	7.84	1-2	$4s\,^1P° - 8p\,^3D?$
						17.20
4418.31	A	5H	5.08	7.89	1-0	$4s\,^1P° - 8p\,^1S?$
						17.21
25854.38	E	(6)	5.62	6.10	3-2	$3p^3\,^3D° - 4p\,^3P$
26539.28	P		5.62	6.08	2-1	17.22
26644.44	P		5.61	6.08	1-0	
8703.256	P		5.62	7.04	2-1	$3p^3\,^3D° - 5p\,^1P$
8690.062	P		5.61	7.04	1-1	17.23
8417.88	A	7	5.62	7.09	3-3	$3p^3\,^3D° - 5p\,^3D$
8527.26	A	1	5.62	7.07	2-2	18
8543.151	P		5.61	7.06	1-1	
8547.84	A	3	5.62	7.07	3-2	
8555.90	A	1	5.62	7.06	2-1	
8397.949	P		5.62	7.09	2-3	
8514.599	P		5.61	7.07	1-2	
8230.642	A	35	5.62	7.12	3-2	$3p^3\,^3D° - 5p\,^3P$
8306.710	A	25	5.62	7.11	2-1	19
8317.39	A	15	5.61	7.10	1-0	
8211.63	A	7	5.62	7.12	2-2	
8294.675	A	13	5.61	7.11	1-1	
8199.811	P		5.61	7.12	1-2	
8162.170	A	15	5.62	7.13	2-1	$3p^3\,^3D° - 5p\,^3S$
8150.54	A	7	5.61	7.13	1-1	20
8013.042	P		5.62	7.17	3-2	$3p^3\,^3D° - 5p\,^1D$
7994.959	P		5.62	7.17	2-2	21
7983.823	P		5.61	7.17	1-2	
7669.265	P		5.61	7.23	1-0	$3p^3\,^3D° - 5p\,^1S$
						21.01
7431.505	P		5.62	7.29	3-3	$3p^3\,^3D° - 4f\,[2\frac{1}{2}]$
7430.906	P		5.62	7.29	3-2	21.02
7415.946	A	275	5.62	7.29	2-3	
7415.35	A	40	5.62	7.29	2-2	
7405.774	A	375	5.61	7.29	1-2	
7423.497	A	425	5.62	7.29	3-4	$3p^3\,^3D° - 4f\,[3\frac{1}{2}]$
7424.60	A	85	5.62	7.29	3-3	21.03
7409.082	A	200	5.62	7.29	2-3	
7289.173	A	400	5.62	7.32	3-4	$3p^3\,^3D° - 4f'\,[3\frac{1}{2}]$
7290.26	A	55	5.62	7.32	3-3	21.04
7275.294	A	160	5.62	7.32	2-3	
7250.625	A	180	5.62	7.33	3-3	$3p^3\,^3D° - 4f'\,[2\frac{1}{2}]$
7250.14	A	25	5.62	7.33	3-2	21.05
7235.82	A	60	5.62	7.33	2-3	
7235.326	A	100	5.62	7.33	2-2	
7226.206	A	100	5.61	7.33	1-2	
7208.21	A	25	5.62	7.34	3-2	$3p^3\,^3D° - 4f'\,[1\frac{1}{2}]$
7193.58	A	65	5.62	7.34	2-2	21.06
7193.90	A	30	5.62	7.34	2-1	
7184.57	A	20	5.61	7.34	1-2	
7184.89	A	70	5.61	7.34	1-1	
6499.02	P		5.62	7.53	3-3	$3p^3\,^3D° - 6p\,^3D$
6575.950	P		5.62	7.50	2-2	21.07
6572.411	P		5.61	7.50	1-1	

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
6452.29	A	20	5.62	7.54	3–2	$3p^3\ ^3D^\circ - 6p\ ^3P$
6486.34	A	2	5.62	7.53	2–1	21.08
6514.85	A	2	5.61	7.52	1–0	
6478.87	A	1H	5.61	7.53	1–1	
6423.80	A	2	5.62	7.55	2–1	$3p^3\ ^3D^\circ - 6p\ ^2S$
						21.09
6255.47	A	13	5.62	7.60	3–3	$3p^3\ ^4D^\circ - 5f\ [2\tfrac{1}{2}]$
6255.139	P		5.62	7.60	3–2	21.10
6244.468	A	125	5.62	7.60	2–3	
6244.114	P		5.62	7.60	2–2	
6237.320	A	160	5.61	7.60	1–2	
6254.188	A	180	5.62	7.60	3–4	$3p^\circ\ ^\circ D^\circ - 5f\ [3\tfrac{1}{2}]$
6254.85	A	20	5.62	7.60	3–3	21.11
6243.813	A	125	5.62	7.60	2–3	
6155.134	A	160	5.62	7.63	3–4	$3p^3\ ^3D^\circ - 5f'\ [3\tfrac{1}{2}]$
6155.70	A	20	5.62	7.63	3–3	21.12
6145.015	A	100	5.63	7.63	2–3	
6142.487	A	100	5.62	7.64	3–3	$3p^3\ ^3D^\circ - 5f'\ [2\tfrac{1}{2}]$
6142.204	P		5.62	7.64	3–2	21.13
6131.850	A	90	5.62	7.64	2–3	
6131.574	A	85	5.62	7.64	2–2	
6125.021	A	90	5.61	7.64	1–2	
6123.494	P		5.62	7.64	3–2	$3p^3\ ^3D^\circ - 5f'\ [1\tfrac{1}{2}]$
6112.926	A	10	5.62	7.64	2–2	21.14
6113.15	A	4	5.62	7.64	2–1	
6106.605	A	15	5.61	7.64	1–1	
5813.20	A	3	5.62	7.75	3–2	$3p^3\ ^3D^\circ - 7p\ ^3P$
						21.15
5747.667	A	45	5.61	7.77	1–2	$3p^3\ ^3D^\circ - 6f\ [2\tfrac{1}{2}]$
						21.16
5762.977	A	45	5.62	7.77	3–4	$3p^\circ\ ^\circ D^\circ - 6f\ [3\tfrac{1}{2}]$
5753.625	A	45	5.62	7.77	2–3	21.17
5675.418	A	20	5.62	7.80	3–4	$3p^3\ ^3D^\circ - 6f'\ [3\tfrac{1}{2}]$
5675.73	A	5	5.62	7.80	3–3	21.18
5666.677	A	10	5.62	7.80	2–3	
5669.743	A	10	5.62	7.81	3–3	$3p^3\ ^3D^\circ - 6f'\ [2\tfrac{1}{2}]$
5660.683	A	13	5.62	7.81	2–3	21.19
5660.502	A	10	5.62	7.81	2–2	
5654.924	A	15	5.61	7.81	1–2	
5421.168	A	10	5.62	7.91	3–4	$3p^3\ ^3D^\circ - 7f'\ [3\tfrac{1}{2}]$?
						21.20
5409.766	P		5.62	7.91	2–2	$3p^3\ ^3D^\circ - 7f'\ [2\tfrac{1}{2}]$?
5404.665	P		5.61	7.91	1–2	21.21
16380.12	E	(8)	5.86	6.62	1–1	$4p\ ^1P - 3d\ ^1P^\circ$
						21.22
14444.77	P		5.86	6.72	1–2	$4p\ ^1P - 3d\ ^3D^\circ$
14486.27	P		5.86	6.72	1–1	21.23
14221.36	E	(2)	5.86	6.73	1–1	$4p\ ^1P - 5s\ ^3P^\circ$
14361.91	P		5.86	6.73	1–0	21.24
13176.90	E	(11)	5.86	6.80	1–1	$4p\ ^1P - 5s\ ^1P^\circ$
						21.25

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
10843.854	A	60	5.86	7.01	1–2	$4p\ ^1P - 4d\ ^1D^\circ$
						31
10627.647	A	20	5.86	7.03	1–2	$4p\ ^1P - 3p^3\ ^3P^\circ$
10617.10	P		5.86	7.03	1–1	32
10579.87	P		5.86	7.03	1–0	
9909.819	P		5.86	7.11	1–2	$4p\ ^1P - 4d\ ^3F^\circ$
						32.01
8680.079	A	11	5.86	7.29	1–1	$4p\ ^1P - 4d\ ^1P^\circ$
						32.02
8509.65	P		5.86	7.32	1–2	$4p\ ^1P - 4d\ ^3D^\circ$
8492.078	A	15	5.86	7.32	1–1	32.03
8179.518	P		5.86	7.38	1–2	$4p\ ^1P - 6s\ ^3P^\circ$
8338.328	A	20	5.86	7.35	1–1	33
8374.98	P		5.86	7.34	1–0	
8093.241	A	70	5.86	7.39	1–1	$4p\ ^1P - 6s\ ^1P^\circ$
						34
7913.432	A	25	5.86	7.43	1–2	$4p\ ^1P - 4d\ ^3P^\circ$
7855.523	P		5.86	7.44	1–1	35
7835.79	P		5.86	7.44	1–0	
7680.267	A	100	5.86	7.48	1–2	$4p\ ^1P - 5d\ ^1D^\circ$
						36
7482.19	A	25	5.86	7.52	1–2	$4p\ ^1P - 5d\ ^3F^\circ$
						36.01
7129.88	P		5.86	7.60	1–1	$4p\ ^1P - 5d\ ^1P^\circ$
						36.02
7058.31	P		5.86	7.62	1–2	$4p\ ^1P - 5d\ ^3D^\circ$
7026.62	A	25	5.86	7.63	1–1	36.03
6875.924	P		5.86	7.66	1–2	$4p\ ^1P - 7s\ ^3P^\circ$
6985.52	P		5.86	7.64	1–1	36.04
7013.65	P		5.86	7.63	1–0	
6867.22	A	20	5.86	7.67	1–2	$4p\ ^1P - 5d\ ^3P^\circ$
						36.05
6848.568	A	30	5.86	7.67	1–1	$4p\ ^1P - 7s\ ^1P^\circ$
						37
6721.853	A	100	5.86	7.71	1–2	$4p\ ^1P - 6d\ ^1D^\circ$
						38
6635.65	A	25	5.86	7.73	1–2	$4p\ ^1P - 6d\ ^3F^\circ$
						38.01
6437.79	A	8	5.86	7.79	1–1	$4p\ ^1P - 8s\ ^3P^\circ$
						38.02
6279.35	A	15	5.86	7.84	1–2	$4p\ ^1P - 7d\ ^1D^\circ$
						38.03
6220.21	P		5.86	7.85	1–2	$4p\ ^1P - 7d\ ^3F^\circ$
						38.04
10602.817	P		5.87	7.04	2–1	$3d\ ^1D^\circ - 5p\ ^1P$
						38.05
9569.93	A	6	5.87	7.17	2–2	$3d\ ^1D^\circ - 5p\ ^1D$
						42

Multiplet Table

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
8752.009	A	100	5.87	7.29	2-3	$3d\,^1D^\circ - 4f\,[2\tfrac{1}{2}]$
8751.174	A	10	5.87	7.29	2-2	42.01
8742.451	A	75	5.87	7.29	2-3	$3d\,^1D^\circ - 4f\,[3\tfrac{1}{2}]$ 42.02
8556.780	A	120	5.87	7.32	2-3	$3d\,^1D^\circ - 4f'\,[3\tfrac{1}{2}]$ 42.03
8502.221	A	60	5.87	7.33	2-3	$3d\,^1D^\circ - 4f'\,[2\tfrac{1}{2}]$
8501.547	A	40	5.87	7.33	2-2	42.04
8443.982	A	40	5.87	7.34	2-2	$3d\,^1D^\circ - 4f'\,[1\tfrac{1}{2}]$
8444.40	P		5.87	7.34	2-1	42.05
7672.648	P		5.87	7.49	2-1	$3d\,^1D^\circ - 6p\,^1P?$ 42.06
7345.218	P		5.87	7.56	2-2	$3d\,^1D^\circ - 6p\,^1D$ 42.07
7165.545	A	200	5.87	7.60	2-3	$3d\,^1D^\circ - 5f\,[2\tfrac{1}{2}]$
7165.082	P		5.87	7.60	2-2	42.08
7164.69	A	70	5.87	7.60	2-3	$3d\,^1D^\circ - 5f\,[3\tfrac{1}{2}]$ 42.09
7034.903	A	250	5.87	7.63	2-3	$3d\,^1D^\circ - 5f'\,[3\tfrac{1}{2}]$ 42.10
7017.646	A	90	5.87	7.64	2-3	$3d\,^1D^\circ - 5f'\,[2\tfrac{1}{2}]$
7017.28	A	30	5.87	7.64	2-2	42.11
6992.88	A	15	5.87	7.64	2-2	$3d\,^1D^\circ - 5f'\,[1\tfrac{1}{2}]$ 42.12
6527.199	A	45	5.87	7.77	2-3	$3d\,^1D^\circ - 6f\,[2\tfrac{1}{2}]$
6526.391	P		5.87	7.77	2-2	42.13
6526.609	A	45	5.87	7.77	2-3	$3d\,^1D^\circ - 6f\,[3\tfrac{1}{2}]$ 42.14
6414.97	A	25	5.87	7.80	2-3	$3d\,^1D^\circ - 6f'\,[3\tfrac{1}{2}]$ 42.15
6407.27	A	15	5.87	7.81	2-3	$3d\,^1D^\circ - 6f'\,[2\tfrac{1}{2}]$
6407.07	P		5.87	7.81	2-2	42.16
6394.233	P	15	5.87	7.81	2-2?	$3d\,^1D^\circ - 6f'\,[1\tfrac{1}{2}]$
6394.380	P		5.87	7.81	2-1?	42.17
6091.92	A	15	5.87	7.91	2-3	$3d\,^1D^\circ - 7f'\,[3\tfrac{1}{2}]?$ 42.18
6087.80	A	10	5.87	7.91	2-3	$3d\,^1D^\circ - 7f'\,[2\tfrac{1}{2}]?$ 42.19
16680.77	E	(29)	5.98	6.73	3-3	$4p\,^3D - 3d\,^3D^\circ$
16381.55	E	(16)	5.96	6.72	2-2	42.20
16215.68	E	(11)	5.95	6.72	1-1	
16828.18	E	(3)	5.98	6.72	3-2	
16434.98	E	(1)	5.96	6.72	2-1	
16241.84	E	(7)	5.96	6.73	2-3	
16163.71	E	(6)	5.95	6.72	1-2	
15960.04	E	(40)	5.98	6.76	3-2	$4p\,^3D - 5s\,^3P^\circ$
16094.80	E	(20)	5.96	6.73	2-1	42.21
16060.03	E	(10)	5.95	6.73	1-0	
15557.81	E	(7)	5.96	6.76	2-2	
15884.41	E	(5)	5.95	6.73	1-1	
15361.16	P		5.96	6.73	1-2	

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
10727.408	A	30	5.98	7.14	3-4	$4p\,^3D - 4d\,^3F^\circ$
10694.251	A	30	5.96	7.12	2-3	53
10689.719	A	25	5.95	7.11	1-2	
10882.802	A	30	5.98	7.12	3-3	
10784.560	A	30	5.96	7.11	2-2	
10976.346	P		5.98	7.11	3-2	
8892.728	A	20	5.98	7.38	3-2	$4p\,^3D - 6s\,^3P^\circ$
8949.10	A	10	5.96	7.35	2-1	54
8925.30	A	10	5.95	7.34	1-0	
8766.422	A	14	5.96	7.38	2-2	
8883.68	A	4	5.95	7.35	1-1	
8703.644	P		5.95	7.38	1-2	
8667.373	A	7	5.96	7.39	2-1	$4p\,^3D - 6s\,^1P^\circ$
8606.014	A	8	5.95	7.39	1-1	55
8579.09	A	6	5.98	7.43	3-2	$4p\,^3D - 4d\,^3P^\circ$
8395.24	A	5	5.96	7.44	2-1	56
8461.48	A	6	5.96	7.43	2-2	
8195.44	A	2	5.96	7.48	2-2	$4p\,^3D - 5d\,^1D^\circ$
8140.55	A	15	5.95	7.48	1-2	56.01
7944.001	A	140	5.98	7.54	3-4	$4p\,^3D - 5d\,^3F^\circ$
7932.349	A	120	5.96	7.53	2-3	57
7918.386	A	90	5.95	7.52	1-2	
8035.619	A	35	5.98	7.53	3-3	
7970.306	A	35	5.96	7.52	2-2	
8074.574	P		5.98	7.52	3-2	
7597.30	A	5	5.98	7.62	3-3	$4p\,^3D - 5d\,^1F^\circ$
7504.93	P		5.96	7.62	2-3	57.01
7510.785	P		5.98	7.63	3-3	$4p\,^3D - 5d\,^3D^\circ$
7491.08	P		5.96	7.62	2-2	57.02
7409.92	P		5.95	7.63	1-1	
7583.11	P		5.98	7.62	3-2	
7455.36	A	25	5.96	7.63	2-1	
7420.489	P		5.96	7.63	2-3	
7445.19	P		5.95	7.62	1-2	
7373.00	A	35	5.98	7.66	3-2	$4p\,^3D - 7s\,^3P^\circ$
7409.15	P		5.96	7.64	2-1	58
7395.52	A	15	5.95	7.63	1-0	
7362.88	A	1	5.98	7.67	3-2	$4p\,^3D - 5d\,^3P^\circ$ 58.01
7255.27	P		5.96	7.67	2-1	$4p\,^3D - 7s\,^1P^\circ$ 59
7005.883	A	180	5.98	7.75	3-4	$4p\,^3D - 6d\,^3F^\circ$
7003.566	A	180	5.96	7.73	2-3	60
6976.523	A	80	5.95	7.73	1-2	
7083.95	A	5	5.98	7.73	3-3	
7016.74	A	10	5.96	7.73	2-2	
7097.47	P		5.98	7.73	3-2	
6876.40	A	5H	5.98	7.79	3-3	$4p\,^3D - 6d\,^1F^\circ$
6800.63	A	1	5.96	7.79	2-3	60.01
6741.64	A	30	5.98	7.82	3-2	$4p\,^3D - 8s\,^3P^\circ$
6668.79	P		5.96	7.82	2-2	60.02
6813.89	P		5.98	7.80	3-3	$4p\,^3D - 6d\,^3D^\circ$
6767.62	P		5.96	7.80	2-2	60.03
6706.98	P		5.95	7.80	1-1	
6842.65	P		5.98	7.80	3-2	
6739.49	P		5.96	7.80	2-3	
6652.33	P		5.96	7.83	2-1	$4p\,^3D - 8s\,^1P^\circ$
6616.12	P		5.95	7.83	1-1	60.04

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
6691.32	P		5.98	7.84	3-2	4p ³D —7d ¹D° 60.05
6619.56	P		5.96	7.84	2-2	
6583.71	A	15	5.95	7.84	1-2	
6555.462	A	45	5.98	7.87	3-4	4p ³D —7d ³F° 60.06
6560.556	A	25	5.96	7.85	2-3	
6518.73	A	20	5.95	7.85	1-2	
6631.05	P		5.98	7.85	3-3	
6299.60	A	5	5.98	7.95	3-4	4p ³D —8d ³F°? 60.07
19722.50	E	(110)	6.10	6.73	2-3	4p ³P —3d ³D° 60.08
19432.97	E	(48)	6.08	6.72	1-2	
19385.94	E	(15)	6.08	6.72	0-1	
19928.88	E	(31)	6.10	6.72	2-2	
19508.13	E	(14)	6.08	6.72	1-1	
20007.97	E	(3)	6.10	6.72	2-1	
18722.90	E	(26)	6.10	6.76	2-2	4p ³P —5s ³P° 60.09
19030.79	E	(5)	6.08	6.73	1-1	
19506.12	E	(5)	6.10	6.73	2-1	
19283.29	E	(8)	6.08	6.73	1-0	
18284.51	E	(3)	6.08	6.76	1-2	
18914.48	E	(8)	6.08	6.73	0-1	
13667.35	E	(3)	6.10	7.01	2-2	4p ³P —4d ¹D° 60.10
13432.23	P		6.08	7.01	1-2	
13325.67	E	(3)	6.10	7.03	2-2	4p ³P —3p³ ³P° 60.11
13086.03	P		6.08	7.03	1-1	
13309.04	E	(5)	6.10	7.03	2-1	
13029.52	P		6.08	7.03	1-0	
13102.05	E	(3)	6.08	7.03	1-2	
13030.92	P		6.08	7.03	0-1	
10068.22	A	2	6.10	7.33	2-3	4p ³P —4d ³D° 60.12
10025.81	A	2	6.08	7.32	1-2	
9969.05	A	2	6.08	7.32	0-1	
10155.83	A	5	6.10	7.32	2-2	
9689.39	A	10	6.10	7.38	2-2	4p ³P —6s ³P° 65
9788.80	A	6	6.08	7.35	1-1	
9912.96	A	2	6.10	7.35	2-1	
9839.36	A	6	6.08	7.34	1-0	
9570.65	A	8	6.08	7.38	1-2	
9757.95	A	2	6.08	7.35	0-1	
9318.22	A	10	6.10	7.43	2-2	4p ³P —4d ³P° 66
9130.03	P		6.08	7.44	1-1	
9238.04	A	6	6.10	7.44	2-1	
9208.35	A	15	6.08	7.43	1-2	
9103.18	A	7	6.08	7.44	0-1	
8171.288	A	25	6.10	7.62	2-3	4p ³P —5d ¹F° 66.01
8071.285	A	25	6.10	7.63	2-3	4p ³P —5d ³D° 66.02
8070.598	A	25	6.08	7.62	1-2	
8008.37	A	2	6.08	7.63	0-1	
8154.872	A	15	6.10	7.62	2-2	
8029.17	P		6.08	7.63	1-1	
8112.58	P		6.10	7.63	2-1	
7912.383	A	20	6.10	7.66	2-2	4p ³P —7s ³P° 68
7975.579	A	13	6.08	7.64	1-1	
8057.87	P		6.10	7.64	2-1	
8012.25	P		6.08	7.63	1-0	
7833.025	P		6.08	7.66	1-2	
7955.07	P		6.08	7.64	0-1	

Si I—Continued

I A	Ref	Int	E P Low	E P High	J	Multiplet No.
Air						
7821.82	A	4	6.08	7.67	1-2	4p ³P —5d ³P° 68.01
7777.96	P		6.08	7.67	0-1	4p ³P —7s ¹P° 68.02
7343.27	A	1	6.10	7.79	2-3	4p ³P —6d ¹F°? 68.03
6917.13	A	1	6.10	7.89	2-3	4p ³P —7d ¹F° 68.04
20804.13	E	(4)	6.12	6.72	1-2	4p ³S —3d ³D° 68.05
19493.38	E	(13)	6.12	6.76	1-2	4p ³S —5s ³P° 68.06
20343.87	E	(4)	6.12	6.73	1-1	
14073.39	E	(3)	6.12	7.01	1-2	4p ³S —4d ¹D° 68.07
13711.36	E	(5)	6.12	7.03	1-2	4p ³S —3p³ ³P° 68.08
13693.05		(8)	6.12	7.03	1-1	
13631.94	E	(4)	6.12	7.03	1-0	
9891.72	A	10	6.12	7.38	1-2	4p ³S —6s ³P° 71
10124.930	P		6.12	7.35	1-1	
9505.19	A	20	6.12	7.43	1-2	4p ³S —4d ³P° 72
9421.78	A	15	6.12	7.44	1-1	
8297.71	A	2	6.12	7.62	1-2	4p ³S —5d ³D° 72.01
8046.803	P		6.12	7.66	1-2	4p ³S —7s ³P° 73
8009.38	P		6.12	7.67	1-1	4p ³S —7s ¹P° 74
11308.5	A	2	6.19	7.29	3-3	3d ³F° —4f [2½] 74.01
11306.98	P		6.19	7.29	3-2	
11201.88	A	4	6.18	7.29	2-2	
11446.27	P		6.21	7.29	4-4	3d ³F° —4f [3½] 74.02
11448.92	P		6.21	7.29	4-3	
11289.83	A	15	6.19	7.29	3-4	
11292.40	P		6.19	7.29	3-3	
11187.588	A	16	6.18	7.29	2-3	
11130.03	A	12	6.21	7.32	4-4	3d ³F° —4f' [3½] 74.03
11132.57	P		6.21	7.32	4-3	
10982.061	A	30	6.19	7.32	3-4	
10984.527	A	20	6.19	7.32	3-3	
10885.336	A	30	6.18	7.32	2-3	
10976.06	A	7	6.18	7.33	2-2	3d ³F° —4f' [2½] 74.04
11017.965	A	80	6.21	7.33	4-5	3d ³F° —4f' [4½] 74.05
11013.69	A	5	6.21	7.33	4-4	
10868.79	A	30	6.19	7.33	3-4	
9387.33	A	10	6.21	7.53	4-3	3d ³F° —6p ³D 74.06
9464.78	A	4	6.19	7.50	3-2	
9399.211	P		6.18	7.50	2-1	

Si I—Continued

I A	Ref	Int	EP Low	EP High	J	Multiplet No.
Air						
8887.57	P		6.21	7.60	4–3	$3d\,{}^3F^\circ-5f[2\frac{1}{2}]$ 74.07
8792.957	P A	5	6.19	7.60	3–3	
8729.282	P		6.18	7.60	2–3	
8728.595	P		6.18	7.60	2–2	
8884.94	P		6.21	7.60	4–4	$3d\,{}^3F^\circ-5f[3\frac{1}{2}]$ 74.08
8790.389	P A	35	6.19	7.60	3–4	
8791.675	P		6.19	7.60	3–3	
8728.011	A	40	6.18	7.60	2–3	
8686.35	P		6.21	7.63	4–4	$3d\,{}^3F^\circ-5f'[3\frac{1}{2}]$ 74.09
8687.46	P		6.21	7.63	4–3	
8595.962	A	25	6.19	7.63	3–4	
8597.047	A	20	6.19	7.63	3–3	
8536.164	A	40	6.18	7.63	2–3	
8571.307	P		6.19	7.64	3–3	$3d\,{}^3F^\circ-5f'[2\frac{1}{2}]$ 74.10
8510.24	A	8	6.18	7.64	2–2	
8648.462	A	50	6.21	7.64	4–5	$3d\,{}^3F^\circ-5f'[4\frac{1}{2}]$ 74.11
8646.36	A	6	6.21	7.64	4–4?	
7850.802	P		6.19	7.77	3–3	$3d\,{}^3F^\circ-6f[2\frac{1}{2}]$ 74.12
7800.008	A	30	6.18	7.77	2–3	
7925.28	P		6.21	7.77	4–4	$3d\,{}^3F^\circ-6f[3\frac{1}{2}]$ 74.13
7849.967	A	30	6.19	7.77	3–4	
7760.63	P		6.21	7.80	4–4	$3d\,{}^3F^\circ-6f'[3\frac{1}{2}]$ 74.14
7688.40	P		6.19	7.80	3–4	
7689.02	P		6.19	7.80	3–3	
7640.31	A	20	6.18	7.80	2–3	
7742.71	A	40	6.21	7.81	4–5	$3d\,{}^3F^\circ-6f'[4\frac{1}{2}]$ 74.15
7669.71	A	5	6.19	7.81	3–4?	
7282.81	A	40	6.21	7.91	4–5	$3d\,{}^3F^\circ-7f'[4\frac{1}{2}]$ 74.16
21354.24	E	(21)	6.22	6.80	2–1	$4p\,{}^1D-5s\,{}^1P^\circ$ 74.17
15833.58	E	(7)	6.22	7.01	2–2	$4p\,{}^1D-4d\,{}^1D^\circ$ 74.18
15376.88	E	(4)	6.22	7.03	2–2	$4p\,{}^1D-3p^3\,{}^3P^\circ$ 74.19
11485.83	E	(5)	6.22	7.30	2–3	$4p\,{}^1D-4d\,{}^1F^\circ$ 83
11196.80	A	2	6.22	7.33	2–3	$4p\,{}^1D-4d\,{}^3D^\circ$ 83.01
10582.14	A	2	6.22	7.39	2–1	$4p\,{}^1D-6s\,{}^1P^\circ$ 84
9887.06	A	10	6.22	7.48	2–2	$4p\,{}^1D-5d\,{}^1D^\circ$ 85
8899.23	A	2	6.22	7.62	2–3	$4p\,{}^1D-5d\,{}^1F^\circ$ 86
8780.747	A	11	6.22	7.63	2–3	$4p\,{}^1D-5d\,{}^3D^\circ$ 86.01
8593.02	P		6.22	7.66	2–2	$4p\,{}^1D-7s\,{}^3P^\circ$ 86.02
8764.88	P		6.22	7.64	2–1	
8550.35	P		6.22	7.67	2–1	$4p\,{}^1D-7s\,{}^1P^\circ$ 88

Si I—Continued

I A	Ref	Int	EP Low	EP High	J	Multiplet No.
Air						
7925.850	A	15	6.22	7.79	2–3	$4p\,{}^1D-6d\,{}^1F^\circ$ 93
12082.01	E	(4)	6.26	7.29	2–3	$3d\,{}^3P^\circ-4f[2\frac{1}{2}]$ 94
11611.09	E	(12)	6.26	7.33	2–3	$3d\,{}^3P^\circ-4f'[2\frac{1}{2}]$ 95
11609.72	E	(1)	6.26	7.33	2–2	
11700.24	E	(3)	6.27	7.33	1–2	
11502.84	A	4	6.26	7.34	2–2	$3d\,{}^3P^\circ-4f'[1\frac{1}{2}]$ 96
11591.52	E	(5)	6.27	7.34	1–2	
11592.38	E	(3)	6.27	7.34	1–1	
11640.96	E	(4)	6.27	7.34	0–1	
9253.67	A	15	6.26	7.60	2–3	$3d\,{}^3P^\circ-5f[2\frac{1}{2}]$ 97
9310.26	A	4	6.27	7.60	1–2	
9008.51	A	15	6.26	7.64	2–3	$3d\,{}^3P^\circ-5f'[2\frac{1}{2}]$ 98
9021.58	A	10	6.27	7.64	1–2	$3d\,{}^3P^\circ-5f'[1\frac{1}{2}]$ 99
9021.99	A	8	6.27	7.64	1–1	
8215.15	A	10	6.26	7.77	2–3	$3d\,{}^3P^\circ-6f[3\frac{1}{2}]$ 100
8026.950	A	25	6.26	7.81	2–3	$3d\,{}^3P^\circ-6f'[2\frac{1}{2}]$ 101
10098.55	A	1	6.40	7.63	0–1	$4p\,{}^1S-5d\,{}^3D^\circ$ 102
18422.72	E	(7)	6.62	7.29	3–4	$3d\,{}^1F^\circ-4f[3\frac{1}{2}]$ 103
17617.00	E	(3)	6.62	7.32	3–4	$3d\,{}^1F^\circ-4f'[3\frac{1}{2}]$ 104
17327.29	E	(28)	6.62	7.33	3–4	$3d\,{}^1F^\circ-4f'[4\frac{1}{2}]$ 105
20301.83	E	(1)	6.62	7.23	1–0	$3d\,{}^1P^\circ-5p\,{}^1S$ 106
18554.45	E	(2)	6.62	7.29	1–2	$3d\,{}^1P^\circ-4f[2\frac{1}{2}]$ 107
17466.92	E	(4)	6.62	7.33	1–2	$3d\,{}^1P^\circ-4f'[2\frac{1}{2}]$ 108
17225.64	E	(4)	6.62	7.34	1–2	$3d\,{}^1P^\circ-4f'[1\frac{1}{2}]$ 109
21879.35	E	(8)	6.72	7.29	2–3	$3d\,{}^3D^\circ-4f[2\frac{1}{2}]$ 110
21779.77	E	(9)	6.72	7.29	1–2	
22062.71	E	(12)	6.73	7.29	3–4	$3d\,{}^3D^\circ-4f[3\frac{1}{2}]$ 111
21819.69	E	(5)	6.72	7.29	2–3	
20917.13	E	(12)	6.73	7.32	3–4	$3d\,{}^3D^\circ-4f'[3\frac{1}{2}]$ 112
20698.56	E	(4)	6.72	7.32	2–3	
20602.86	E	(4)	6.73	7.33	3–3	$3d\,{}^3D^\circ-4f'[2\frac{1}{2}]$ 113
20382.43	E	(1)	6.72	7.33	2–3	
20378.38	E	(2)	6.72	7.33	2–2	
20296.36	E	(2)	6.72	7.33	1–2	

Multiplet Table
Strongest Unclassified Lines of Si I

Si I—Continued			Si I—Continued		
I A	Ref	Int	I A	Ref	Int
Air			4587.23	A	12
10414.70	A	10	4585.73	A	5
9576.45	A	4	4574.01	A	7
7490.87	A	5	4573.66	A	7
6394.67	A	15	4556.44	A	7
5421.61	A	10*H*	4528.07	A	5
4922.77	A	7	4516.08	A	4
4806.03	A	5	2166.599	A	3
4764.92	A	5	2158.526	A	5*h*
4671.22	A	4	Vac		
4669.83	A	4	1752.634	B	3
4658.82	A	5	1597.736	B	20
4639.335	A	6	1571.796	B	6
4638.17	A	15	1545.095	C	(1*r*)
4621.50	A	4			
4603.31	A	3			