NSRDS–NBS 3, Section 5

U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards

Selected Tables of Atomic Spectra

Atomic Energy Levels and Multiplet Tables

N I, N II, N III

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards[1] was established by an act of Congress March 3, 1901. The Bureau's overall goal is to strengthen and advance the Nation's science and technology and facilitate their effective application for public benefit. To this end, the Bureau conducts research and provides: (1) a basis for the Nation's physical measurement system, (2) scientific and technological services for industry and government, (3) a technical basis for equity in trade, and (4) technical services to promote public safety. The Bureau consists of the Institute for Basic Standards, the Institute for Materials Research, the Institute for Applied Technology, the Institute for Computer Sciences and Technology, and the Office for Information Programs.

THE INSTITUTE FOR BASIC STANDARDS provides the central basis within the United States of a complete and consistent system of physical measurement; coordinates that system with measurement systems of other nations; and furnishes essential services leading to accurate and uniform physical measurements throughout the Nation's scientific community, industry, and commerce. The Institute consists of a Center for Radiation Research, an Office of Measurement Services and the following divisions:

Applied Mathematics — Electricity — Mechanics — Heat — Optical Physics — Nuclear Sciences[2] — Applied Radiation[2] — Quantum Electronics[3] — Electromagnetics[3] — Time and Frequency[3] — Laboratory Astrophysics[3] — Cryogenics[3].

THE INSTITUTE FOR MATERIALS RESEARCH conducts materials research leading to improved methods of measurement, standards, and data on the properties of well-characterized materials needed by industry, commerce, educational institutions, and Government; provides advisory and research services to other Government agencies; and develops, produces, and distributes standard reference materials. The Institute consists of the Office of Standard Reference Materials and the following divisions:

Analytical Chemistry — Polymers — Metallurgy — Inorganic Materials — Reactor Radiation — Physical Chemistry.

THE INSTITUTE FOR APPLIED TECHNOLOGY provides technical services to promote the use of available technology and to facilitate technological innovation in industry and Government; cooperates with public and private organizations leading to the development of technological standards (including mandatory safety standards), codes and methods of test; and provides technical advice and services to Government agencies upon request. The Institute consists of a Center for Building Technology and the following divisions and offices:

Engineering and Product Standards — Weights and Measures — Invention and Innovation — Product Evaluation Technology — Electronic Technology — Technical Analysis — Measurement Engineering — Structures, Materials, and Life Safety[4] — Building Environment[4] — Technical Evaluation and Application[4] — Fire Technology.

THE INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY conducts research and provides technical services designed to aid Government agencies in improving cost effectiveness in the conduct of their programs through the selection, acquisition, and effective utilization of automatic data processing equipment; and serves as the principal focus within the executive branch for the development of Federal standards for automatic data processing equipment, techniques, and computer languages. The Institute consists of the following divisions:

Computer Services — Systems and Software — Computer Systems Engineering — Information Technology.

THE OFFICE FOR INFORMATION PROGRAMS promotes optimum dissemination and accessibility of scientific information generated within NBS and other agencies of the Federal Government; promotes the development of the National Standard Reference Data System and a system of information analysis centers dealing with the broader aspects of the National Measurement System; provides appropriate services to ensure that the NBS staff has optimum accessibility to the scientific information of the world. The Office consists of the following organizational units:

Office of Standard Reference Data — Office of Information Activities — Office of Technical Publications — Library — Office of International Relations.

---

[1] Headquarters and Laboratories at Gaithersburg, Maryland, unless otherwise noted; mailing address Washington, D.C. 20234.
[2] Part of the Center for Radiation Research.
[3] Located at Boulder, Colorado 80302.
[4] Part of the Center for Building Technology.

Selected Tables of Atomic Spectra

A Atomic Energy Levels - Second Edition

B Multiplet Tables

N I, N II, N III

Data Derived from the Analyses of Optical Spectra

Charlotte E. Moore

Office of Standard Reference Data
National Bureau of Standards
Washington, D.C. 20234

E. O. Hulburt Center for Space Research
U.S. Naval Research Laboratory
Washington, D.C. 20375

U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS, Richard W. Roberts, *Director*

Issued May 1975

Library of Congress Catalog Card Number: 64-600074

NSRDS-NBS 3, Section 5

Nat. Stand. Ref. Data Ser., Nat. Bur. Stand. (U.S.), 3, Sec. 5, 67 pages (May 1975)

CODEN: NSRDAP

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1975

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
(Order by SD Catalog No. 13.48:3/Sec. 5). Price $1.80 (Add 25 percent additional for other than U.S. mailing)

Abstract

The present publication is the fifth Section of a series being prepared in response to the persistent need for a current revision of two sets of tables containing data on atomic spectra as derived from analyses of optical spectra. As in the previous sections, Part A contains the atomic energy levels and Part B the multiplet tables. The first three spectra of nitrogen, N I, N II and N III are included. The form of presentation is described in detail in the text of Section 1.

Key words: Atomic energy levels, N I, N II, N III; Multiplet tables, N I, N II, N III; Nitrogen spectra, N I, N II, N III; Spectra, N I, N II, N III; Wavelengths, nitrogen spectra N I, N II, N III.

Foreword

The National Standard Reference Data System provides access to the quantitative data of physical science, critically evaluated and compiled for convenience and readily accessible through a variety of distribution channels. The System was established in 1963 by action of the President's Office of Science and Technology and the Federal Council for Science and Technology, and responsibility to administer it was assigned to the National Bureau of Standards.

NSRDS receives advice and planning assistance from a Review Committee of the National Research Council of the National Academy of Sciences-National Academy of Engineering. A number of Advisory Panels, each concerned with a single technical area, meet regularly to examine major portions of the program, assign relative priorities, and identify specific key problems in need of further attention. For selected specific topics, the Advisory Panels sponsor subpanels which make detailed studies of users' needs, the present state of knowledge, and existing data resources as a basis for recommending one or more data compilation activities. This assembly of advisory services contributes greatly to the guidance of NSRDS activities.

The System now includes a complex of data centers and other activities in academic institutions and other laboratories. Components of the NSRDS produce compilations of critically evaluated data, reviews of the state of quantitative knowledge in specialized areas, and computations of useful functions derived from standard reference data. The centers and projects also establish criteria for evaluation and compilation of data and recommend improvements in experimental techniques. They are normally associated with research in the relevant field.

The technical scope of NSRDS is indicated by the categories of projects active or being planned: nuclear properties, atomic and molecular properties, solid state properties, thermodynamic and transport properties, chemical kinetics, and colloid and surface properties.

Reliable data on the properties of matter and materials is a major foundation of scientific and technical progress. Such important activities as basic scientific research, industrial quality control, development of new materials for building and other technologies, measuring and correcting environmental pollution depend on quality reference data. In NSRDS, the Bureau's responsibility to support American science, industry, and commerce is vitally fulfilled.

RICHARD W. ROBERTS, *Director*

Preface

The present publication is the fifth 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. This Circular has been reprinted as NSRDS–NBS 35, Volumes I, II, and III.

The second set consists of two Multiplet Tables; one published in 1945 by the Princeton University Observatory, containing multiplets having 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. The Princeton Multiplet Table was reprinted in 1972 as NSRDS–NBS 40.

The present series includes both sets of data, the energy levels and multiplet tables, as parts A and B, respectively, for selected spectra contained in Volume I of "Atomic Energy Levels." The Sections are being published at irregular intervals as revised analyses become available. A flexible paging system permits the arrangement of the various Sections by atomic number, regardless of the order in which the separate spectra are published. Section 1 includes three spectra of silicon, $Z=14$; Si II, Si III, Si IV. Section 2 contains similar data for Si I. Section 3 covers all spectra of carbon, $Z=6$: C I, C II, C III, C IV, C V, C VI. Section 4 includes the last four spectra of nitrogen, $Z=7$: N IV, N V, N VI, N VII. The present Section, 5, completes the spectra of nitrogen, N I, N II, N III. Section 6 contains the spectra of hydrogen, $Z=1$: H I, D, T. The form of presentation of the data is described in detail in the text of Section 1. All Sections are arranged identically, and the same conversion factor, cm^{-1} to eV, 0.000123981 is used throughout.

The manuscript has been prepared by Charlotte E. Moore, who has published the earlier tables. She appreciates the cordial cooperation of numerous atomic spectroscopists. She is particularly indebted to colleagues in Sweden, B. Edlén, K. B. S. Eriksson, K. Bockasten and R. Hallin, for their helpful guidance and for providing valuable data on analyses in advance of publication. Similarly, D. J. Michels has generously furnished his unpublished thesis material including short-wave observations. W. C. Martin and his associates in the Spectroscopy Section have given helpful advice regarding the text and tables. To all the writer extends grateful thanks.

Washington, D.C. July, 1974.

Contents

NSRDS–NBS 3, SECTION 5

NITROGEN Z = 7

A N I Atomic Energy Levels

B N I Multiplet Table

Part A NITROGEN

N I

7 electrons $Z=7$

Ground state $1s^2\,2s^2\,2p^3\ {}^4S^\circ_{1\frac{1}{2}}$

$2p^3\ {}^4S^\circ_{1\frac{1}{2}}$ ***117225.7 ±0.3*** cm^{-1}; 853.055 Å (Vac) I P 14.534eV

Most of the revised and extended analysis is from the work of K. B. S. Eriksson and J. E. Pettersson, who kindly furnished their final manuscripts in advance of publication. Additional levels are quoted from the 1966 and 1961 papers from Lund.

A further revision and extension of the analysis based on observations by M. S. Manalis and new measurements in the vacuum ultraviolet region, have been provided by K. B. S. Eriksson (1974). He reports 74 new energy levels together with 147 newly classified lines between 3781 Å and 9022 Å and 56 between 864 Å and 1172 Å.

Eriksson points out that the total orbital angular momentum tends to be a good quantum number for the $nf-$ and $ng-$ configurations. Consequently, the listed designations for the pairs include the respective letters D,F,G and F,G,H for these configurations.

The sextet terms from the $2s\ 2p^3(^5S^\circ)nl$ configuration are not connected with the other terms, as indicated in the table by "$+x$". The np-series of quartet terms from this limit have been observed in absorption by Carroll and his associates from $n=3$ to 14. The lines occur in the region 612 Å to 694 Å as combinations with the ground term. All of the lines are broadened as a result of autoionization. The term with $n=9$ is entered in brackets because the N I line coincides with a line of Ne I.

The levels from the $2s^2\ 2p^2\ (^3P)6f$ configuration are based on infrared observations by J. W. McConkey and his associates.

The classified lines extend from 864 Å to 18751 Å. They include two lists of calculated wavelengths: one of 78 lines published by V. Kaufman and J. F. Ward, and a more recent compilation by K. B. S. Eriksson of 147 lines, in the range 885 Å to 1745 Å. These lists are in excellent agreement.

Both B. Edlén and G. Herzberg have provided earlier, more limited lists of N I lines that are suitable for use as standards.

The limit is from the 1971 paper by K. B. S. Eriksson and J. E. Pettersson. The value of 117356.46 ± 0.12 for $2s^2\,2p^2\,{}^3P_2$ was determined from the levels $nd\,{}^4F_{4\frac{1}{2}}$ ($n=3-6$) and $nf\,G[5]^\circ_{5\frac{1}{2}}$ ($n=4-6$) by a Ritz formula, with $R=109733.01$. The quoted limit was then derived "from the known structure of the N II ground configuration."

J. W. McConkey and J. A. Kernahan used the nf-levels to obtain ionization limits for the ground term of N II. Their value 117225.35 cm^{-1} differs very little from the limit quoted above.

Brackets indicate predicted values of energy levels.

Ni – Continued

REFERENCES

K. B. S. Eriksson, Ark. Fys. (Stockholm) **13**, No. 34, 429–439 (1958). T, C L
G. Herzberg, Proc. Royal Soc. A **248**, 309–332 (1958). T, C L
K. B. S. Eriksson and I. Johansson, Ark. Fys. (Stockholm) **19**, No. 16, 235–248 (1961). T, C L
B. Edlén, Reports on Progress in Physics **26**, 181–212 (1963). W L
K. B. S. Eriksson, Ark. Phys. **33**, No. 25, 357–360 (1966). T, C L
P. K. Carroll, R. E. Huffman, J. C. Larrabee and Y. Tanaka, Astroph. J. **146**, No. 2, 553–557 (1966). T, C L
V. Kaufman and J. F. Ward, Appl. Opt. **6**, No. 1, 43–46 (1967). T, C L
J. W. McConkey, D. J. Burns and J. A. Kernahan, J. Quant. Spectr. Rad. Transfer **8**, 823–828 (1968). T, C L
J. W. McConkey and J. A. Kernahan, Physics Letters **27A**, No. 2, 82–83 (1968). I P, T
M.S. Manalis, Dissertation (1970): See M. S. Manalis and H. P. Broida, Spectrochim. Acta **26B**, 721–731 (1971). W L
K. B. S. Eriksson and J. E. Pettersson, Phys. Scr. **3** No. 5, 211–217 (1971). I P, T, C L
K. B. S. Eriksson, letter (August 1971). T, Calc. W L (Vac. UV).
K. B. S. Eriksson, Phys. Scr. **9**, No. 3, 151–155 (1974). T, C L

Ni

Config.	Desig.	J	Level	Interval
$2s^2\ 2p^3$	$2p^3\ {}^4S°$	$1\frac{1}{2}$	0.000	
$2s^2\ 2p^3$	$2p^3\ {}^2D°$	$2\frac{1}{2}$	19224.464	
		$1\frac{1}{2}$	19233.177	− 8.713
$2s^2\ 2p^3$	$2p^3\ {}^2P°$	$0\frac{1}{2}$	28838.920	
		$1\frac{1}{2}$	28839.306	0.386
$2s^2\ 2p^2(^3P)3s$	$3s\ {}^4P$	$0\frac{1}{2}$	83284.070	
		$1\frac{1}{2}$	83317.830	33.760
		$2\frac{1}{2}$	83364.620	46.790
$2s^2\ 2p^2(^3P)3s$	$3s\ {}^2P$	$0\frac{1}{2}$	86137.350	
		$1\frac{1}{2}$	86220.510	83.160
$2s\ 2p^4$	$2p^4\ {}^4P$	$2\frac{1}{2}$	88107.260	
		$1\frac{1}{2}$	88151.170	−43.910
		$0\frac{1}{2}$	88170.570	−19.400
$2s^2\ 2p^2(^3P)3p$	$3p\ {}^2S°$	$0\frac{1}{2}$	93581.550	
$2s^2\ 2p^2(^3P)3p$	$3p\ {}^4D°$	$0\frac{1}{2}$	94770.880	
		$1\frac{1}{2}$	94793.490	22.610
		$2\frac{1}{2}$	94830.890	37.400
		$3\frac{1}{2}$	94881.820	50.930
$2s^2\ 2p^2(^3P)3p$	$3p\ {}^4P°$	$0\frac{1}{2}$	95475.310	
		$1\frac{1}{2}$	95493.690	18.380
		$2\frac{1}{2}$	95532.150	38.460
$2s^2\ 2p^2(^3P)3p$	$3p\ {}^4S°$	$1\frac{1}{2}$	96750.840	
$2s^2\ 2p^2(^3P)3p$	$3p\ {}^2D°$	$1\frac{1}{2}$	96787.680	
		$2\frac{1}{2}$	96864.050	76.370
$2s^2\ 2p^2(^3P)3p$	$3p\ {}^2P°$	$0\frac{1}{2}$	97770.180	
		$1\frac{1}{2}$	97805.840	35.660
$2s^2\ 2p^2(^1D)3s$	$3s'\ {}^2D$	$2\frac{1}{2}$	99663.427	
		$1\frac{1}{2}$	99663.912	−0.485
$2s^2\ 2p^2(^3P)4s$	$4s\ {}^4P$	$0\frac{1}{2}$	103622.51	
		$1\frac{1}{2}$	103667.16	44.65
		$2\frac{1}{2}$	103735.48	68.32

Ni

Config.	Desig.	J	Level	Interval
$2s^2\ 2p^2(^3P)4s$	$4s\ {}^2P$	$0\frac{1}{2}$	104144.820	
		$1\frac{1}{2}$	104221.630	76.810
$2s^2\ 2p^2(^3P)3d$	$3d\ {}^2P$	$1\frac{1}{2}$	104615.470	
		$0\frac{1}{2}$	104654.030	−38.560
$2s^2\ 2p^2(^3P)3d$	$3d\ {}^4F$	$1\frac{1}{2}$	104664.130	
		$2\frac{1}{2}$	104683.060	18.930
		$3\frac{1}{2}$	104716.950	33.890
		$4\frac{1}{2}$	104765.77	48.82
$2s^2\ 2p^2(^3P)3d$	$3d\ {}^2F$	$2\frac{1}{2}$	104810.360	
		$3\frac{1}{2}$	104881.350	70.990
$2s^2\ 2p^2(^3P)3d$	$3d\ {}^4P$	$2\frac{1}{2}$	104825.110	
		$1\frac{1}{2}$	104859.73	−34.62
		$0\frac{1}{2}$	104886.10	−26.37
$2s^2\ 2p^2(^3P)3d$	$3d\ {}^4D$	$0\frac{1}{2}$	104984.37	
		$1\frac{1}{2}$	104996.27	11.90
		$2\frac{1}{2}$	105008.55	12.28
		$3\frac{1}{2}$	105017.600	9.05
$2s^2\ 2p^2(^3P)3d$	$3d\ {}^2D$	$1\frac{1}{2}$	105119.880	
		$2\frac{1}{2}$	105143.710	23.830
$2s^2\ 2p^2(^3P)4p$	$4p\ {}^2S°$	$0\frac{1}{2}$	106477.800	
$2s^2\ 2p^2(^3P)4p$	$4p\ {}^4D°$	$0\frac{1}{2}$	106758.731	
		$1\frac{1}{2}$	106778.337	19.606
		$2\frac{1}{2}$	106814.459	36.122
		$3\frac{1}{2}$	106868.635	54.176
$2s^2\ 2p^2(^3P)4p$	$4p\ {}^4P°$	$0\frac{1}{2}$	106980.480	
		$1\frac{1}{2}$	106996.032	15.552
		$2\frac{1}{2}$	107037.069	41.037
$2s^2\ 2p^2(^3P)4p$	$4p\ {}^2D°$	$1\frac{1}{2}$	107182.788	
		$2\frac{1}{2}$	107253.106	70.318
$2s^2\ 2p^2(^3P)4p$	$4p\ {}^4S°$	$1\frac{1}{2}$	107445.622	
$2s^2\ 2p^2(^3P)4p$	$4p\ {}^2P°$	$0\frac{1}{2}$	107588.469	
		$1\frac{1}{2}$	107628.283	39.814

N I—Continued

Config.	Desig.	J	Level	Interval
$2s^2\,2p^2(^3P)5s$	$5s\ ^4P$	$0\frac{1}{2}$	109812.233	
		$1\frac{1}{2}$	109856.520	44.287
		$2\frac{1}{2}$	109926.661	70.141
$2s^2\,2p^2(^3P)5s$	$5s\ ^2P$	$0\frac{1}{2}$	110035.720	
		$1\frac{1}{2}$	110103.834	68.114
$2s^2\,2p^2(^3P)4d$	$4d\ ^4F$	$1\frac{1}{2}$	110194.654	
		$2\frac{1}{2}$	110212.396	17.742
		$3\frac{1}{2}$	110247.288	34.892
		$4\frac{1}{2}$	110303.233	55.945
$2s^2\,2p^2(^3P)4d$	$4d\ ^2P$	$1\frac{1}{2}$	110220.107	
		$0\frac{1}{2}$	110245.183	25.076
$2s^2\,2p^2(^3P)4d$	$4d\ ^2F$	$2\frac{1}{2}$	110286.305	
		$3\frac{1}{2}$	110362.462	76.157
$2s^2\,2p^2(^3P)4d$	$4d\ ^4P$	$2\frac{1}{2}$	110299.974	
		$1\frac{1}{2}$	110322.721	−22.747
		$0\frac{1}{2}$	110350.014	−27.293
$2s^2\,2p^2(^3P_0)4f$	$4f\ D[3]^\circ$	$2\frac{1}{2}$	110349.09	
		$3\frac{1}{2}$	110349.17	0.08
$(^3P_1)$	$D[2]^\circ$	$1\frac{1}{2}$	110404.50	
		$2\frac{1}{2}$	110404.55	0.05
$(^3P_2)$	$D[1]^\circ$	$0\frac{1}{2}, 1\frac{1}{2}$	110459.79	
$2s^2\,2p^2(^3P_1)4f$	$4f\ G[3]^\circ$	$2\frac{1}{2}$	110385.29	
		$3\frac{1}{2}$	110385.36	0.07
$(^3P_1)$	$G[4]^\circ$	$4\frac{1}{2}$	110402.09	
		$3\frac{1}{2}$	110402.18	−0.09
$(^3P_2)$	$G[5]^\circ$	$5\frac{1}{2}$	110473.09	
		$4\frac{1}{2}$	110473.24	−0.15
$2s^2\,2p^2(^3P)4d$	$4d\ ^4D$	$0\frac{1}{2}$	110385.795	
		$1\frac{1}{2}$	110395.463	9.668
		$2\frac{1}{2}$	110401.356	5.893
		$3\frac{1}{2}$	110403.220	1.864
$2s^2\,2p^2(^3P)4d$	$4d\ ^2D$	$1\frac{1}{2}$	110447.032	
		$2\frac{1}{2}$	110470.244	23.212
$2s^2\,2p^2(^3P_2)4f$	$4f\ F[2]^\circ$	$1\frac{1}{2}$	110485.96	
		$2\frac{1}{2}$	110486.04	0.08
$(^3P_2)$	$4f\ F[3]^\circ$	$3\frac{1}{2}$	110498.42	
		$2\frac{1}{2}$	110498.43	−0.01
$(^3P_2)$	$4f\ F[4]^\circ$	$4\frac{1}{2}$	110501.68	
		$3\frac{1}{2}$	110501.83	−0.15

N I—Continued

Config.	Desig.	J	Level	Interval
$2s^2\,2p^2(^1D)3p$	$3p'\ ^2D^\circ$	$1\frac{1}{2}$	110521.050	
		$2\frac{1}{2}$	110544.850	23.800
$2s^2\,2p^2(^1D)3p$	$3p'\ ^2F^\circ$	$2\frac{1}{2}$	110710.739	
		$3\frac{1}{2}$	110715.152	4.413
$2s^2\,2p^2(^3P)5p$	$5p\ ^2S^\circ$	$0\frac{1}{2}$	111060.905	
$2s^2\,2p^2(^3P)5p$	$5p\ ^4D^\circ$	$0\frac{1}{2}$	111143.567	
		$1\frac{1}{2}$	111165.158	21.591
		$2\frac{1}{2}$	111204.016	38.858
		$3\frac{1}{2}$	111260.873	56.857
$2s^2\,2p^2(^3P)5p$	$5p\ ^2P^\circ$	$0\frac{1}{2}$	111198.848	
		$1\frac{1}{2}$	111213.271	14.423
$2s^2\,2p^2(^3P)5p$	$5p\ ^4P^\circ$	$0\frac{1}{2}$	111271.596	
		$1\frac{1}{2}$	111285.644	14.048
		$2\frac{1}{2}$	111326.798	41.154
$2s^2\,2p^2(^3P)5p$	$5p\ ^4S^\circ$	$1\frac{1}{2}$	111501.368	
$2s^2\,2p^2(^3P)5p$	$5p\ ^2D^\circ$	$1\frac{1}{2}$	111853.061	
		$2\frac{1}{2}$	111905.609	52.548
$2s^2\,2p^2(^1D)3p$	$3p'\ ^2P^\circ$	$0\frac{1}{2}$	112294.007	
		$1\frac{1}{2}$	112319.805	25.798
$2s^2\,2p^2(^3P)6s$	$6s\ ^4P$	$0\frac{1}{2}$	112565.470	
		$1\frac{1}{2}$	112609.612	44.142
		$2\frac{1}{2}$	112681.389	71.777
$2s^2\,2p^2(^3P)6s$	$6s\ ^2P$	$0\frac{1}{2}$	112691.96	
		$1\frac{1}{2}$	112736.961	45.00
$2s^2\,2p^2(^3P)5d$	$5d\ ^4F$	$1\frac{1}{2}$	112759.966	
		$2\frac{1}{2}$	112760.325	0.359
		$3\frac{1}{2}$	112797.725	37.400
		$4\frac{1}{2}$	112861.348	63.623
$2s^2\,2p^2(^3P)5d$	$5d\ ^2P$	$1\frac{1}{2}$	112801.031	
		$0\frac{1}{2}$	112807.567	−6.536
$2s^2\,2p^2(^3P)5d$	$5d\ ^2F$	$2\frac{1}{2}$	112812.518	
		$3\frac{1}{2}$	112891.238	78.720
$2s^2\,2p^2(^3P)5d$	$5d\ ^4P$	$2\frac{1}{2}$	112824.459	
		$1\frac{1}{2}$	112838.02	−13.56
		$0\frac{1}{2}$	112870.27	−32.25
$2s^2\,2p^2(^3P_0)5f$	$5f\ D[3]^\circ$	$2\frac{1}{2}, 3\frac{1}{2}$	[112826.94]	
$(^3P_1)$	$D[2]^\circ$	$1\frac{1}{2}$	112880.1	
		$2\frac{1}{2}$	112880.53	0.4
$(^3P_2)$	$D[1]^\circ$	$0\frac{1}{2}, 1\frac{1}{2}$	[112946.62]	

N I – Continued

Config.	Desig.	J	Level	Interval
$2s^2\,2p^2(^3P_1)5f$	$5f$ G[3]°	$2\frac{1}{2}$		
		$3\frac{1}{2}$	112868.73	
$(^3P_1)$	$5f$ G[4]°	$4\frac{1}{2}$	112877.91	
		$3\frac{1}{2}$	112877.92	−0.01
$(^3P_2)$	$5f$ G[5]°	$5\frac{1}{2}$	112953.43	
		$4\frac{1}{2}$	112953.53	−0.10
$2s^2\,2p^2(^3P)5d$	$5d$ ^4D	$0\frac{1}{2}$	112904.5	
		$1\frac{1}{2}$	112909.076	4.6
		$2\frac{1}{2}$	112910.630	1.554
		$3\frac{1}{2}$	112911.079	0.449
$2s^2\,2p^2(^3P)5d$	$5d$ ^2D	$1\frac{1}{2}$	112927.055	
		$2\frac{1}{2}$	112945.809	18.754
$2s^2\,2p^2(^3P_2)5f$	$5f$ F[2]°	$1\frac{1}{2}, 2\frac{1}{2}$	[112957.77]	
$(^3P_2)$	$5f$ F[3]°	$3\frac{1}{2}$	112965.36	
		$2\frac{1}{2}$		
$(^3P_2)$	$5f$ F[4]°	$4\frac{1}{2}$	112967.09	
		$3\frac{1}{2}$	112967.20	−0.11
$2s^2\,2p^2(^3P)6p$	$6p$ $^4D°$	$0\frac{1}{2}$		
		$1\frac{1}{2}$		
		$2\frac{1}{2}$	113307.5	
		$3\frac{1}{2}$	113370.5	63.0
$2s^2\,2p^2(^3P)6p$	$6p$ $^4P°$	$0\frac{1}{2}$		
		$1\frac{1}{2}$	113349.8	
		$2\frac{1}{2}$	113402.4	52.6
$2s^2\,2p^2(^3P)7s$	$7s$ ^4P	$0\frac{1}{2}$	114026.654	
		$1\frac{1}{2}$	114071.153	44.499
		$2\frac{1}{2}$	114146.525	75.372
$2s^2\,2p^2(^3P)7s$	$7s$ ^2P	$0\frac{1}{2}$	114112.1	
		$1\frac{1}{2}$	114206.1	94.0
$2s^2\,2p^2(^3P)6d$	$6d$ ^4F	$1\frac{1}{2}$	114124.2	
		$2\frac{1}{2}$	114132.7	8.5
		$3\frac{1}{2}$	114175.736	43.0
		$4\frac{1}{2}$	114245.309	69.573
$2s^2\,2p^2(^3P)6d$	$6d$ ^2P	$1\frac{1}{2}$	114170.4	
		$0\frac{1}{2}$	114183.5	−13.1
$2s^2\,2p^2(^3P_0)6f$	$6f$ D[3]°	$2\frac{1}{2}, 3\frac{1}{2}$	114171.98	
$(^3P_1)$	D[2]°	$1\frac{1}{2}, 2\frac{1}{2}$	114223.88	
$(^3P_2)$	D[1]°	$0\frac{1}{2}, 1\frac{1}{2}$	[114296.19]	

N I – Continued

Config.	Desig.	J	Level	Interval
$2s^2\,2p^2(^3P)6d$	$6d$ ^2F	$2\frac{1}{2}$	114182.7	
		$3\frac{1}{2}$	114262.1	79.4
$2s^2\,2p^2(^3P)6d$	$6d$ ^4P	$2\frac{1}{2}$	114191.6	
		$1\frac{1}{2}$	114200.0	−8.4
		$0\frac{1}{2}$	114249.5	−49.5
$2s^2\,2p^2(^3P_1)6f$	$6f$ G[3]°	$2\frac{1}{2}, 3\frac{1}{2}$	114216.70	
$(^3P_1)$	G[4]°	$4\frac{1}{2}, 3\frac{1}{2}$	114222.08	
$(^3P_2)$	G[5]°	$5\frac{1}{2}, 4\frac{1}{2}$	114300.110	
$2s^2\,2p^2(^3P)6d$	$6d$ ^4D	$0\frac{1}{2}$	114271.8	
		$1\frac{1}{2}$	114272.6	0.8
		$2\frac{1}{2}$	114274.0	1.4
		$3\frac{1}{2}$	114274.1	0.1
$2s^2\,2p^2(^3P)6d$	$6d$ ^2D	$1\frac{1}{2}$	114277.0	
		$2\frac{1}{2}$	114293.5	16.5
$2s^2\,2p^2(^3P_2)6f$	$6f$ F[2]°	$1\frac{1}{2}, 2\frac{1}{2}$	114302.02	
$(^3P_2)$	F[3]°	$3\frac{1}{2}, 2\frac{1}{2}$	114306.69	
$(^3P_2)$	F[4]°	$4\frac{1}{2}, 3\frac{1}{2}$	114307.79	
$2s^2\,2p^2(^3P)7p$	$7p$ $^4D°$	$0\frac{1}{2}$		
		$1\frac{1}{2}$		
		$2\frac{1}{2}$		
		$3\frac{1}{2}$	114545.6	
$2s^2\,2p^2(^3P)8s$	$8s$ ^4P	$0\frac{1}{2}$	114894.0	
		$1\frac{1}{2}$	114939.1	45.1
		$2\frac{1}{2}$	115021.3	82.2
$2s^2\,2p^2(^3P)7d$	$7d$ ^4F	$1\frac{1}{2}$	114952.5	
		$2\frac{1}{2}$	114959.0	6.5
		$3\frac{1}{2}$	115003.6	44.6
		$4\frac{1}{2}$	115077.2	73.6
$2s^2\,2p^2(^3P)8s$	$8s$ ^2P	$0\frac{1}{2}$	114963.1	
		$1\frac{1}{2}$	115033.4	70.3
$2s^2\,2p^2(^3P)7d$	$7d$ ^2P	$1\frac{1}{2}$	114992.8	
		$0\frac{1}{2}$	115009.9	−17.1
$2s^2\,2p^2(^3P)7d$	$7d$ ^2F	$2\frac{1}{2}$	115003.0	
		$3\frac{1}{2}$	115086.9	83.9
$2s^2\,2p^2(^3P)7d$	$7d$ ^4P	$2\frac{1}{2}$	115011.0	
		$1\frac{1}{2}$	115018.7	−7.7
		$0\frac{1}{2}$		

N I—Continued

Config.	Desig.	J	Level	Interval
$2s^2\ 2p^2(^3P)7d$	$7d\ ^4D$	$0\frac{1}{2}$	115093.3	
		$1\frac{1}{2}$	115094.5	1.2
		$2\frac{1}{2}$	115094.6	0.1
		$3\frac{1}{2}$	115094.4	−0.2
$2s^2\ 2p^2(^3P)7d$	$7d\ ^2D$	$1\frac{1}{2}$	115100.0	
		$2\frac{1}{2}$	115106.2	6.2
$2s^2\ 2p^2(^3P)9s$	$9s\ ^4P$	$0\frac{1}{2}$	115449.5	
		$1\frac{1}{2}$	115495.5	46.0
		$2\frac{1}{2}$	115576.6	81.1
$2s^2\ 2p^2(^3P)8d$	$8d\ ^4F$	$1\frac{1}{2}$		
		$2\frac{1}{2}$	115495.5	
		$3\frac{1}{2}$	115537.8	42.3
		$4\frac{1}{2}$	115613.3	75.5
$2s^2\ 2p^2(^3P)8d$	$8d\ ^2P$	$0\frac{1}{2}$		
		$1\frac{1}{2}$	115535.4	
$2s^2\ 2p^2(^3P)8d$	$8d\ ^2F$	$2\frac{1}{2}$	115538.4	
		$3\frac{1}{2}$	115620.6	82.2
$2s^2\ 2p^2(^3P)8d$	$8d\ ^4D$	$0\frac{1}{2}$	115624.5	
		$1\frac{1}{2}$	115626.9	2.4
		$2\frac{1}{2}$	115626.9	0.0
		$3\frac{1}{2}$	115627.7	0.8
$2s^2\ 2p^2(^3P)8d$	$8d\ ^2D$	$1\frac{1}{2}$		
		$2\frac{1}{2}$	115633.5	
$2s^2\ 2p^2(^3P)10s$	$10s\ ^4P$	$0\frac{1}{2}$	115829.3	
		$1\frac{1}{2}$	115876.5	47.2
		$2\frac{1}{2}$	115955.2	78.7
$2s^2\ 2p^2(^1S)3s$	$3s''\ ^2S$	$0\frac{1}{2}$	116278.558	
		...	.....	
N II $2p^2\ ^3P$	***Limit***	0	117225.7 ± 0.3	
		1	117274.4	48.7
		2	117356.46 ± 0.12	82.1
$2s^2\ 2p^2(^1D)4s$	$4s'\ ^2D$	$1\frac{1}{2}, 2\frac{1}{2}$	119210.0	
$2s^2\ 2p^2(^1D)3d$	$3d'\ ^2F$	$2\frac{1}{2}$		
		$3\frac{1}{2}$	119812.9	
$2s^2\ 2p^2(^1D)3d$	$3d'\ ^2G$	$4\frac{1}{2}$	120149.238	
		$3\frac{1}{2}$	120149.325	−0.087

N I—Continued

Config.	Desig.	J	Level	Interval
$2s^2\ 2p^2(^1D)3d$	$3d'\ ^2D$	$2\frac{1}{2}$	120150.1	
		$1\frac{1}{2}$	120155.8	−5.7
$2s^2\ 2p^2(^1D)3d$	$3d'\ ^2P$	$1\frac{1}{2}$	120309.6	
		$0\frac{1}{2}$	120311.2	−1.6
$2s^2\ 2p^2(^1D)3d$	$3d'\ ^2S$	$0\frac{1}{2}$	120566.0	
$2s\ 2p^4$	$2p^4\ ^2D$	$2\frac{1}{2}$	121200.5	
		$1\frac{1}{2}$		
$2s^2\ ^2p^2(^1D)4p$	$4p'\ ^2F^\circ$	$2\frac{1}{2}, 3\frac{1}{2}$	122246.4	
$2s^2\ 2p^2(^1D)4f$	$4f'$ H[5]°	$5\frac{1}{2}, 4\frac{1}{2}$	125688.07	
$2s\ 2p^3(^5S^\circ)3s$	$3s'''\ ^6S^\circ$	$2\frac{1}{2}$	[131000.00 + x]	
$2s\ 2p^3(^5S^\circ)3p$	$3p'''\ ^6P$	$1\frac{1}{2}$	142080.75 + x	
		$2\frac{1}{2}$	142081.91 + x	1.66
		$3\frac{1}{2}$	142084.13 + x	2.22
$2s\ 2p^3(^5S^\circ)3p$	$3p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	144360	
$2s\ 2p^3(^5S^\circ)4p$	$4p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	154439	
$2s\ 2p^3(^5S^\circ)5p$	$5p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	158322	
$2s\ 2p^3(^5S^\circ)6p$	$6p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	160241	
$2s\ 2p^3(^5S^\circ)7p$	$7p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	161330	
$2s\ 2p^3(^5S^\circ)8p$	$8p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	162005	
$2s\ 2p^3(^5S^\circ)9p$	$9p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	[162436]	
$2s\ 2p^3(^5S^\circ)10p$	$10p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	162770	
$2s\ 2p^3(^5S^\circ)11p$	$11p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	162999	
$2s\ 2p^3(^5S^\circ)12p$	$12p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	163163	
$2s\ 2p^3(^5S^\circ)13p$	$13p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	163298	
$2s\ 2p^3(^5S^\circ)14p$	$14p'''\ ^4P$	$0\frac{1}{2}$–$2\frac{1}{2}$	163399	

September 1974.

NI Observed Terms

Configuration $1s^2+$	Observed Terms									
$2s^2\,2p^3$	$2p^3\ {}^4S^\circ$		$2p^3\ {}^2P^\circ$	$2p^3\ {}^2D^\circ$						
$2s\ 2p^4$			$2p^4\ {}^4P$							
				$2p^4\ {}^2D$						
	$ns(n \geq 3)$					$np(n \geq 3)$				
$2s^2\,2p^2({}^3P)nl$			$3\text{–}10s\ {}^4P$			$3\text{–}5p\ {}^4S^\circ$	$3\text{–}6p\ {}^4P^\circ$	$3\text{–}7p\ {}^4D^\circ$		
			$3\text{–}8s\ {}^2P$			$3\text{–}5p\ {}^2S^\circ$	$3\text{–}5p\ {}^2P^\circ$	$3\text{–}5p\ {}^2D^\circ$		
$2s^2\,2p^2({}^1D)nl'$				$3,4s'\ {}^2D$			$3p'\ {}^2P^\circ$	$3p'\ {}^2D^\circ$	$3,4p'\ {}^2F^\circ$	
$2s^2\,2p^2({}^1S)nl''$		$3s''\ {}^2S$								
$2s\ 2p^3({}^5S^\circ)nl'''$		$3s'''\ {}^6S^\circ$					$3p'''\ {}^6P$			
							$3\text{–}14p'''\ {}^4P$			
	$nd(n \geq 3)$					$nf(n \geq 4)$				
$2s^2\,2p^2({}^3P)nl$		$3\text{–}7d\ {}^4P$	$3\text{–}8d\ {}^4D$	$3\text{–}8d\ {}^4F$		$4\text{–}6f$	D[3]°	$4\text{–}6f$	F[2]°	$4\text{–}6f$ G[3]°
		$3\text{–}8d\ {}^2P$	$3\text{–}8d\ {}^2D$	$3\text{–}8d\ {}^2F$			[2]°		[3]°	[4]°
							[1]°		[4]°	[5]°
$2s^2\,2p^2({}^1D)nl'$	$3d'\ {}^2S$	$3d'\ {}^2P$	$3d'\ {}^2D$	$3d'\ {}^2F$	$3d'\ {}^2G$					$4f'$ H[5]°

Part B NITROGEN

N I (Z = 7)

I P 14.534 Limit ***117225.7 ±0.3*** 853.055 Å (Vac)

Anal A List A September 1974

REFERENCES

A K. B. S. Eriksson and J. E. Petterson, Phys. Scr. **3,** No. 5, 211–217 (1971). I P, T, C L, I; W L 885 Å–10485 Å

B K. B. S. Eriksson, Phys. Scr. **9,** No. 3, 151–155 (1974). T, C L, I; W L 864 Å–9022 Å

C K. B. S. Eriksson and I. Johansson, Ark. Fys. (Stockholm) **19,** No. 16, 235–248 (1961). T, C L, I; W L 11998 Å–18751 Å

D K. B. S. Eriksson, Ark. Fys. (Stockholm) **13,** No. 34, 429–439 (1958). T, C L, I; W L 7898 Å–11651 Å, Calc. W L 954 Å–1745 Å

E K. B. S. Eriksson, Ark. Fys. **33,** No. 25, 357–360 (1966). T, C L (I); W L 1199 Å–1745 Å

F V. Kaufman and J. F. Ward, Appl. Opt. **6,** No. 1, 43–46 (1967). T, C L (I); Calc. W L 908 Å–1745 Å

G J. W. McConkey, D.J. Burns and J.A. Kernahan, J. Quant. Spectr. Rad. Transfer **8,** 823–828 (1968). T, C L, I; W L 10105 Å–10775 Å

H M. S. Manalis, Dissertation (1970); M. S. Manlis and H. P. Broida, Spectrochim. Acta **26B,** 721–731 (1971). W L 4913.0 Å–5790.0 Å See Ref. B

I E. Ekefors, Zeit. Phys. **63,** 437–443 (1930). T, C L, I; W L 1008 Å–1889 Å

J J. W. Ryde, Proc. Roy. Soc. (London) **A117,** 164–182 (1927). I; W L 3437 Å–7468 Å See Ref. B.

K P. K. Carroll, R. E. Huffman, J. C. Larrabee and Y. Tanaka, Astroph. J. **146,** No. 2, 553–557 (1966), T, C L, (I); W L 612 Å–694 Å

P Calculated wavelengths are quoted from Ref. A, Ref. B, Ref. E Table 1, and Ref. F; all others are from the levels in Part A.

O. S. Duffendack and R. A. Wolfe, Phys. Rev. [2] **34,** 409–420 (1929). T, C L, (I); W L 4143 Å–8729 Å

M. Kamiyama, Sci. Papers Inst. Phys. Chem. Research (Tokyo) **36,** No. 933, 375–384 (1939). C L, (I); W L 855 Å–1836 Å

M. Kamiyama and T. Sugiura, Sci. Papers Inst. Phys. Chem. Research (Tokyo) **37,** Nos. 982, 983, 479–487 (1940). C L, (I); W L 6722 Å–10560 Å

B. Edlén, Reports on Progress in Physics **26,** 181–212 (1963). W L

In column 3 parentheses indicate that the estimated intensities are from a different reference and on a different scale than the entries without parentheses.

N I — Continued

Intensities given with predicted wavelengths indicate that the line has been observed but that the calculated wavelength may be preferable to the observed value. A few intensities from the 1929 1939 and 1940 papers are quoted in parentheses for some predicted lines.

New Multiplet Numbers not inserted between older ones, start with UV 14 and 25.

* Blend

‡ Raie ultime

m Masked

N I

I A	Ref.	Int.	E P Low	E P High	*J*	Multiplet No.
Air						
5200.257	P	(64)	0.00	2.38	1½–2½	$2p^3\ ^4S°-\ 2p^3\ ^2D°$
5197.902	P	(100)	0.00	2.38	1½–1½	1F
3466.4970	E	(100)	0.00	3.58	1½–1½	$2p^3\ ^4S°-\ 2p^3\ ^2P°$
3466.5434	E	(20)	0.00	3.58	1½–0½	2F
Vac						
1199.5496‡	P	32	0.00	10.34	1½–2½	$2p^3\ ^4S°-\ 3s\ ^4P$
1200.2233	P	31	0.00	10.33	1½–1½	UV 1
1200.7098	P	30	0.00	10.33	1½–0½	
1159.814	B	4	0.00	10.69	1½–1½	$2p^3\ ^4S°-\ 3s\ ^2P$
1160.932	B	2	0.00	10.68	1½–0½	UV 1.01
1134.9803	P	32	0.00	10.92	1½–2½	$2p^2\ ^4S°-\ 2p^4\ ^4P$
1134.4149	P	31	0.00	10.93	1½–1½	UV 2
1134.1653	P	30	0.00	10.93	1½–0½	
1003.377	P		0.00	12.36	1½–2½	$2p^3\ ^4S°-\ 3s\ ^2D$
1003.372	P		0.00	12.36	1½–1½	UV 2.01
963.9903	P	18	0.00	12.86	1½–2½	$2p^3\ ^4S°-\ 4s\ ^4P$
964.6256	P	17	0.00	12.85	1½–1½	UV 3
965.0413	P	13	0.00	12.85	1½–0½	
959.4936	P	(8)	0.00	12.92	1½–1½	$2p^3\ ^4S°-\ 4s\ ^2P$
960.201	P		0.00	12.91	1½–0½	UV 3.01
955.8814	P	(10)	0.00	12.97	1½–1½	$2p^3\ ^4S°-\ 3d\ ^2P$
955.5292	P	(3)	0.00	12.98	1½–0½	UV 3.02
955.2643	P	(4)	0.00	12.98	1½–2½	$2p^3\ ^4S°-\ 3d\ ^4F$
955.437	P	(2)	0.00	12.98	1½–1½	UV 3.03
954.1042	P	12	0.00	12.99	1½–2½	$2p^3\ ^4S°-\ 3d\ ^2F$
						UV 3.04
953.9699	P	18	0.00	13.00	1½–2½	$2p^3\ ^4S°-\ 3d\ ^4P$
953.6549	P	16	0.00	13.00	1½–1½	UV 3.05
953.4152	P	15	0.00	13.00	1½–0½	
952.3034	P	12	0.00	13.02	1½–2½	$2p^3\ ^4S°-\ 3d\ ^4D$
952.4148	P	11	0.00	13.02	1½–1½	UV 3.06
952.5227	P	9	0.00	13.02	1½–0½	

N I

I A	Ref.	Int.	E P Low	E P High	*J*	Multiplet No.
Vac						
951.0791	P	(12)	0.00	13.04	1½–2½	$2p^3\ ^4S°-\ 3d\ ^2D$
951.2947	P	(3)	0.00	13.03	1½–1½	UV 3.07
909.6974	P	15	0.00	13.63	1½–2½	$2p^3\ ^4S°-\ 5s\ ^4P$
910.2782	P	14	0.00	13.62	1½–1½	UV 3.08
910.6454	P	10	0.00	13.61	1½–0½	
908.2332	P	(3)	0.00	13.65	1½–1½	$2p^3\ ^4S°-\ 5s\ ^2P$
908.7958	P	(1)	0.00	13.64	1½–0½	UV 3.09
907.3390	P	7	0.00	13.66	1½–2½	$2p^3\ ^4S°-\ 4d\ ^4F$
907.485	P		0.00	13.66	1½–1½	UV 3.10
907.275	P	*m*	0.00	13.67	1½–1½	$2p^3\ ^4S°-\ 4d\ ^2P$
907.069	P	(2)	0.00	13.67	1½–0½	UV 3.11
906.7309	P	12	0.00	13.67	1½–2½	$2p^3\ ^4S°-\ 4d\ ^2F$
						UV 3.12
906.6185	P	12	0.00	13.68	1½–2½	$2p^3\ ^4S°-\ 4d\ ^4P$
906.4316	P	13	0.00	13.68	1½–1½	UV 3.13
906.2074	P	11	0.00	13.68	1½–0½	
905.7860	P	11	0.00	13.69	1½–2½	$2p^3\ ^4S°-\ 4d\ ^4D$
905.8343	P	12	0.00	13.69	1½–1½	UV 3.14
905.9137	P	11	0.00	13.69	1½–0½	
905.2211	P	6	0.00	13.70	1½–2½	$2p^3\ ^4S°-\ 4d\ ^2D$
905.411	P	(2)	0.00	13.69	1½–1½	UV 3.15
887.4580	P	11	0.00	13.97	1½–2½	$2p^3\ ^4S°-\ 6s\ ^4P$
888.0237	P	10	0.00	13.96	1½–1½	UV 3.16
888.3719	P	8	0.00	13.96	1½–0½	
887.0205	P	4	0.00	13.98	1½–1½	$2p^3\ ^4S°-\ 6s\ ^2P$
887.375	P	(4)	0.00	13.97	1½–0½	UV 3.17
886.8367	P	6	0.00	13.98	1½–2½	$2p^3\ ^4S°-\ 5d\ ^4F$
886.840	P		0.00	13.98	1½–1½	UV 3.18
886.517	P		0.00	13.99	1½–1½	$2p^3\ ^4S°-\ 5d\ ^2P$
886.465	P		0.00	13.99	1½–0½	UV 3.19
886.4265	P	8	0.00	13.99	1½–2½	$2p^3\ ^4S°-\ 5d\ ^2F$
						UV 3.20

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
886.3326	P	8	0.00	13.99	1½–2½	$2p^3\ ^4S°-\ 5d\ ^4P$
886.226	A	9	0.00	13.99	1½–1½	UV 3.21
885.973	A	6	0.00	13.99	1½–0½	
885.6562	P	15*	0.00	14.00	1½–2½	$2p^3\ ^4S°-\ 5d\ ^4D$
885.6684	P		0.00	14.00	1½–1½	UV 3.22
885.71	P		0.00	14.00	1½–0½	
885.3804	P	5	0.00	14.00	1½–2½	$2p^3\ ^4S°-\ 5d\ ^2D$
885.527	P		0.00	14.00	1½–1½	UV 3.23
876.066	B	7	0.00	14.15	1½–2½	$2p^3\ ^4S°-\ 7s\ ^4P$
876.645	B	6	0.00	14.14	1½–1½	UV 3.24
876.987	B	5	0.00	14.14	1½–0½	
875.598	B	2	0.00	14.16	1½–1½	$2p^3\ ^4S°-\ 7s\ ^2P$
876.331	P		0.00	14.15	1½–0½	UV 3.25
876.172	B	6	0.00	14.15	1½–2½	$2p^3\ ^4S°-\ 6d\ ^4F$
876.238	P		0.00	14.15	1½–1½	UV 3.26
875.791	B	6	0.00	14.16	1½–2½	$2p^3\ ^4S°-\ 6d\ ^2F$
						UV 3.27
875.721	B	6	0.00	14.16	1½–2½	$2p^3\ ^4S°-\ 6d\ ^4P$
875.656	B	6	0.00	14.16	1½–1½	UV 3.28
875.277	P		0.00	14.16	1½–0½	
875.100	B	10	0.00	14.17	1½–	$2p^3\ ^4S°-\ 6d\ ^4D$
						UV 3.29
874.934	B	4	0.00	14.17	1½–2½	$2p^3\ ^4S°-\ 6d\ ^2D$
875.067	P		0.00	14.17	1½–1½	UV 3.30
*869.413	B	4	0.00	14.26	1½–2½	$2p^3\ ^4S°-\ 8s\ ^4P$
870.029	B	5	0.00	14.25	1½–1½	UV 3.31
870.367	P		0.00	14.24	1½–0½	
869.878	B	4	0.00	14.25	1½–2½	$2p^3\ ^4S°-\ 7d\ ^4F$
869.925	P		0.00	14.25	1½–1½	UV 3.32
869.546	B	6	0.00	14.26	1½–2½	$2p^3\ ^4S°-\ 7d\ ^2F$
						UV 3.33
869.482	P		0.00	14.26	1½–2½	$2p^3\ ^4S°-\ 7d\ ^4P$
*869.413	B	4	0.00	14.26	1½–1½	UV 3.34
868.860	B	8	0.00	14.27	1½–	$2p^3\ ^4S°-\ 7d\ ^4D$
						UV 3.35
864.868	B	5	0.00	14.34	1½–	$2p^3\ ^4S°-\ 8d\ ^4D$
						UV 3.36
860.004	P		0.00	14.42	1½–0½	$2p^3\ ^4S°-\ 3s''\ ^2S$
						UV 3.37
692.70	K	(350)	0.00	17.90		$2p^3\ ^4S°-\ 3p'''\ ^4P$
						UV 3.38
647.503	K	(140)	0.00	19.15		$2p^3\ ^4S°-\ 4p'''\ ^4P$
						UV 3.39

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
631.624	K	(78)	0.00	19.63		$2p^3\ ^4S°-\ 5p'''\ ^4P$
						UV 3.40
624.059	K	(40)	0.00	19.87		$2p^3\ ^4S°-\ 6p'''\ ^4P$
						UV 3.41
619.847	K	(36)	0.00	20.00		$2p^3\ ^4S°-\ 7p'''\ ^4P$
						UV 3.42
617.265	K	(26)	0.00	20.09		$2p^3\ ^4S°-\ 8p'''\ ^4P$
						UV 3.43
*m*615.627	K	(Ne I)	0.00	20.14		$2p^3\ ^4S°-\ 9p'''\ ^4P$
						UV 3.44
614.364	K	(21)	0.00	20.18		$2p^3\ ^4S°-\ 10p'''\ ^4P$
						UV 3.45
613.500	K	(19)	0.00	20.21		$2p^3\ ^4S°-\ 11p'''\ ^4P$
						UV 3.46
612.883	K	(16)	0.00	20.23		$2p^3\ ^4S°-\ 12p'''\ ^4P$
						UV 3.47
612.378	K		0.00	20.25		$2p^3\ ^4S°-\ 13p'''\ ^4P$
						UV 3.48
611.998	K		0.00	20.26		$2p^3\ ^4S°-\ 14p'''\ ^4P$
						UV 3.49
Air						
10397.74	P	(100)	2.38	3.58	2½–1½	$2p^3\ ^2D°-\ 2p^3\ ^2P°$
10407.59	P	(44)	2.38	3.58	1½–0½	3F
10407.17	P	(46)	2.38	3.58	1½–1½	
10398.16	P	(29)	2.38	3.58	2½–0½	
Vac						
1559.086	P		2.38	10.34	2½–2½	$2p^3\ ^2D°-\ 3s\ ^4P$
1560.436	P		2.38	10.33	1½–1½	UV 3.50
1560.224	P		2.38	10.33	2½–1½	
1561.258	P		2.38	10.33	1½–0½	
1559.298	P		2.38	10.34	1½–2½	
1492.6254	P	42	2.38	10.69	2½–1½	$2p^3\ ^2D°-\ 3s\ ^2P$
1494.6751	P	40	2.38	10.68	1½–0½	UV 4
1492.8195	P	35	2.38	10.69	1½–1½	
1451.741	P		2.38	10.92	2½–2½	$2p^3\ ^2D°-\ 2p^4\ ^4P$
1451.000	P		2.38	10.93	1½–1½	UV 4.01
1450.816	P		2.38	10.93	2½–1½	
1450.592	P		2.38	10.93	1½–0½	
1451.925	P		2.38	10.92	1½–2½	
1243.1786	P	30*	2.38	12.36	2½–2½	$2p^3\ ^2D°-\ 3s'\ ^2D$
1243.3058	P	28*	2.38	12.36	1½–1½	UV 5
1243.1711	P	30*	2.38	12.36	2½–1½	
1243.3133	P	28*	2.38	12.36	1½–2½	

N I – Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1183.278	P		2.38	12.86	2½–2½	$2p^3\ ^2D°$– 4s ^4P
1184.357	P		2.38	12.85	1½–1½	UV 5.01
1184.235	P		2.38	12.85	2½–1½	
1184.984	P		2.38	12.85	1½–0½	
1183.400	P		2.38	12.86	1½–2½	
1176.5098	P	24	2.38	12.92	2½–1½	$2p^3\ ^2D°$– 4s ^2P
1177.6948	P	22	2.38	12.91	1½–0½	UV 5.02
1176.6304	P	16	2.38	12.92	1½–1½	
1171.0835	P	12	2.38	12.97	2½–1½	$2p^3\ ^2D°$– 3d ^2P
1170.6743	P	6	2.38	12.98	1½–0½	UV 5.03
1171.203	P		2.38	12.97	1½–1½	
1169.6934	P	14	2.38	12.98	2½–3½	$2p^3\ ^2D°$– 3d ^4F
1170.2766	P	13	2.38	12.98	1½–2½	UV 5.04
1170.1573	P	5	2.38	12.98	2½–2½	
1170.536	P		2.38	12.98	1½–1½	
*1170.432	B	7	2.38	12.98	2½–1½	
1167.4485	P	26	2.38	13.00	2½–3½	$2p^3\ ^2D°$– 3d ^2F
1168.5358	P	22	2.38	12.99	1½–2½	UV 6
1168.4168	P	12	2.38	12.99	2½–2½	
1168.2155	P	11	2.38	13.00	2½–2½	$2p^3\ ^2D°$– 3d ^4P
1167.862	P		2.38	13.00	1½–1½	UV 6.01
1167.743	P		2.38	13.00	2½–1½	
1167.502	P		2.38	13.00	1½–0½	
1168.3344	P	16	2.38	13.00	1½–2½	
1165.5944	P	12	2.38	13.02	2½–3½	$2p^3\ ^2D°$– 3d ^4D
1165.8358	P	(60)	2.38	13.02	1½–2½	UV 6.02
1165.717	P		2.38	13.02	2½–2½	
1166.003	P		2.38	13.02	1½–1½	
1163.8836	P	18	2.38	13.04	2½–2½	$2p^3\ ^2D°$– 3d ^2D
1164.3246	P	16	2.38	13.03	1½–1½	UV 7
1164.2065	P	12	2.38	13.03	2½–1½	
1164.0016	P	(2)	2.38	13.04	1½–2½	
1102.509	P		2.38	13.63	2½–2½	$2p^3\ ^2D°$– 5s ^4P
1103.468	P		2.38	13.62	1½–1½	UV 7.01
1103.362	P		2.38	13.62	2½–1½	
1104.008	P		2.38	13.61	1½–0½	
1100.3597	P	16	2.38	13.65	2½–1½	$2p^3\ ^2D°$– 5s ^2P
1101.2907	P	15	2.38	13.64	1½–0½	UV 7.02
1100.4652	P	10	2.38	13.65	1½–1½	
1098.6255	P	12	2.38	13.67	2½–3½	$2p^3\ ^2D°$– 4d ^4F
1099.1521	P	13	2.38	13.66	1½–2½	UV 7.03
1099.0468	P	8	2.38	13.66	2½–2½	
1099.366	P		2.38	13.66	1½–1½	
1099.2612	P	8	2.38	13.66	2½–1½	
1098.9537	P	9	2.38	13.67	2½–1½	$2p^3\ ^2D°$– 4d ^2P
1098.7561	P	6	2.38	13.67	1½–0½	UV 7.04
1099.059	P		2.38	13.67	1½–1½	

N I – Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1097.2372	P	21	2.38	13.68	2½–3½	$2p^3\ ^2D°$– 4d ^2F
1098.2599	P	17	2.38	13.67	1½–2½	UV 7.05
1098.155	P		2.38	13.67	2½–2½	
1097.9900	P	8	2.38	13.68	2½–2½	$2p^3\ ^2D°$– 4d ^4P
1097.821	P		2.38	13.68	1½–1½	UV 7.06
1097.716	P		2.38	13.68	2½–1½	
1097.492	P		2.38	13.68	1½–0½	
1098.0951	P	17	2.38	13.68	1½–2½	
1096.7467	P	13	2.38	13.69	2½–3½	$2p^3\ ^2D°$– 4d ^4D
1096.874	P		2.38	13.69	1½–2½	UV 7.07
1096.769	P		2.38	13.69	2½–2½	
1096.945	P		2.38	13.69	1½–1½	
1095.9411	P	13	2.38	13.70	2½–2½	$2p^3\ ^2D°$– 4d ^2D
1096.3247	P	11	2.38	13.69	1½–1½	UV 7.08
1096.220	P		2.38	13.69	2½–1½	
1096.046	P		2.38	13.70	1½–2½	
1070.012	P		2.38	13.97	2½–2½	$2p^3\ ^2D°$– 6s ^4P
1070.935	I	0n	2.38	13.96	1½–1½	UV 7.09
1070.834	P		2.38	13.96	2½–1½	
1071.441	P		2.38	13.96	1½–0½	
1070.111	P		2.38	13.97	1½–2½	
1069.3758	P	7	2.38	13.98	2½–1½	$2p^3\ ^2D°$– 6s ^2P
1069.990	P	11	2.38	13.97	1½–0½	UV 7.10
1069.4754	P	6	2.38	13.98	1½–1½	
1068.6814	P	11*	2.38	13.98	2½–3½	$2p^3\ ^2D°$– 5d ^4F
1069.2083	P	9	2.38	13.98	1½–2½	UV 7.11
1069.109	P		2.38	13.98	2½–2½	
1069.212	P	2	2.38	13.98	1½–1½	
1069.1128	P	8	2.38	13.98	2½–1½	
1068.6436	P	12*	2.38	13.99	2½–1½	$2p^3\ ^2D°$– 5d ^2P
1068.6685	P	11*	2.38	13.99	1½–0½	UV 7.12
1068.743	P		2.38	13.99	1½–1½	
1067.6144	P	15	2.38	14.00	2½–3½	$2p^3\ ^2D°$– 5d ^2F
1068.6119	P	12*	2.38	13.99	1½–2½	UV 7.13
1068.512	P	3	2.38	13.99	2½–2½	
1068.376	P		2.38	13.99	2½–2½	$2p^3\ ^2D°$– 5d ^4P
1068.321	P		2.38	13.99	1½–1½	UV 7.14
1068.221	P		2.38	13.99	2½–1½	
1067.953	P		2.38	13.99	1½–0½	
1068.4756	P	13	2.38	13.99	1½–2½	
1067.3883	P	10	2.38	14.00	2½–3½	$2p^3\ ^2D°$– 5d ^4D
1067.493	P		2.38	14.00	1½–2½	UV 7.15
1067.399	I	0	2.38	14.00	2½–2½	
1066.9928	P	10	2.38	14.00	2½–2½	$2p^3\ ^2D°$– 5d ^2D
1067.3056	P	8	2.38	14.00	1½–1½	UV 7.16
1067.206	P		2.38	14.00	2½–1½	
1067.092	P		2.38	14.00	1½–2½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1053.496	P		2.38	14.15	2½–2½	$2p^3\ ^2D°-\ 7s\ \ ^4P$
1054.430	P		2.38	14.14	1½–1½	UV 7.17
1054.333	P		2.38	14.14	2½–1½	
1052.834	B	8	2.38	14.16	2½–1½	$2p^3\ ^2D°-\ 7s\ \ ^2P$
1053.988	B	12	2.38	14.15	1½–0½	UV 7.18
1052.932	P		2.38	14.16	1½–1½	
*1053.184	B	8	2.38	14.16	2½–3½	$2p^3\ ^2D°-\ 6d\ \ ^4F$
*1053.744	B	7	2.38	14.15	1½–2½	UV 7.19
1053.656	B	7	2.38	14.15	2½–2½	
*1053.744	B	7	2.38	14.15	2½–1½	
1053.231	P		2.38	14.15	2½–1½	$2p^3\ ^2D°-\ 6d\ \ ^2P$
*1053.184	B	8	2.38	14.16	1½–0½	UV 7.20
1052.215	B	9	2.38	14.17	2½–3½	$2p^3\ ^2D°-\ 6d\ \ ^2F$
*1053.184	B	8	2.38	14.16	1½–2½	UV 7.21
1052.909	B	6	2.38	14.16	2½–1½	$2p^3\ ^2D°-\ 6d\ \ ^4P$
1053.088	B	11	2.38	14.16	1½–2½	UV 7.22
1052.082	B	9	2.38	14.17	2½–3½	$2p^3\ ^2D°-\ 6d\ \ ^4D$
1052.180	P		2.38	14.17	1½–2½	UV 7.23
1051.868	B	7	2.38	14.17	2½–2½	$2p^3\ ^2D°-\ 6d'\ ^2D$
1051.956	B	5	2.38	14.17	1½–2½	UV 7.24
1044.069	P		2.38	14.26	2½–3½	$2p^3\ ^2D°-\ 7d\ \ ^4F$
*1044.633	B	8	2.38	14.25	1½–2½	UV 7.25
*1044.633	B	8	2.38	14.25	2½–1½	
1043.739	B	6	2.38	14.26	2½–1½	$2p^3\ ^2D°-\ 8s\ \ ^2P$
*1044.633	B	8	2.38	14.25	1½–0½	UV 7.26
1043.845	B	6	2.38	14.26	1½–1½	
1044.188	B	7	2.38	14.26	2½–1½	$2p^3\ ^2D°-\ 7d\ \ ^2P$
1044.095	P	*m*	2.38	14.26	1½–0½	UV 7.27
*1043.166	B	8	2.38	14.27	2½–3½	$2p^3\ ^2D°-\ 7d\ \ ^2F$
1044.171	P		2.38	14.26	1½–2½	UV 7.28
1043.991	B	6	2.38	14.26	2½–2½	$2p^3\ ^2D°-\ 7d\ \ ^4P$
1044.087	B	8	2.38	14.26	1½–2½	UV 7.29
1043.080	B	8	2.38	14.27	2½–3½	$2p^3\ ^2D°-\ 7d\ \ ^4D$
*1043.166	B	8	2.38	14.27	1½–1½	UV 7.30
1037.382	B	5	2.38	14.33	2½–3½	$2p^3\ ^2D°-\ 8d\ \ ^2F$
1038.366	P	*m*	2.38	14.32	1½–2½	UV 7.31
1030.446	P		2.38	14.42	1½–0½	$2p^3\ ^2D°-\ 3s''\ ^2S$ UV 7.32
1000.183	B	6	2.38	14.78		$2p^3\ ^2D°-\ 4s'\ \ ^2D$ UV 7.33
1834.011	P		3.58	10.34	1½–2½	$2p^3\ ^2P°-\ 3s\ \ ^4P$
1835.573	P		3.58	10.33	0½–1½	UV 8
1836.739	I	2	3.58	10.33	1½–0½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1742.7309	P	44*	3.58	10.69	1½–1½	$2p^3\ ^2P°-\ 3s\ \ ^2P$
1745.2485	P	42*	3.58	10.68	0½–0½	UV 9
1745.2603	P	42*	3.58	10.68	1½–0½	
1742.7192	P	44*	3.58	10.69	0½–1½	
1687.252	P		3.58	10.92	1½–2½	$2p^3\ ^2P°-\ 2p^4\ \ ^4P$
1685.992	P		3.58	10.93	0½–1½	UV 9.01
1685.441	P		3.58	10.93	0½–0½	
1411.9483	P	30*	3.58	12.36	1½–2½	$2p^3\ ^2P°-\ 3s'\ \ ^2D$
1411.9310	P	30*	3.58	12.36	0½–1½	UV 10
1411.9387	P	30*	3.58	12.36	1½–1½	
1335.182	P		3.58	12.86	1½–2½	$2p^3\ ^2P°-\ 4s\ \ ^4P$
1336.394	P		3.58	12.85	0½–1½	UV 10.01
1326.5709	P	17*	3.58	12.92	1½–1½	$2p^3\ ^2P°-\ 4s\ \ ^2P$
1327.9172	P	17*	3.58	12.91	0½–0½	UV 11
1327.9240	P	17*	3.58	12.91	1½–0½	
1326.5641	P	17*	3.58	12.92	0½–1½	
1319.6762	P	28*	3.58	12.97	1½–1½	$2p^3\ ^2P°-\ 3d\ \ ^2P$
1318.9983	P	24*	3.58	12.98	0½–0½	UV 12
1319.0050	P	24*	3.58	12.98	1½–0½	
1319.6695	P	28*	3.58	12.97	0½–1½	
1318.500	P		3.58	12.98	1½–2½	$2p^3\ ^2P°-\ 3d\ \ ^4F$
1318.8224	P	(10)*	3.58	12.98	0½–1½	UV 12.01
1318.8293	P	12	3.58	12.98	1½–1½	
1316.2908	P	12	3.58	12.99	1½–2½	$2p^3\ ^2P°-\ 3d\ \ ^2F$ UV 12.02
1316.035	P		3.58	13.00	1½–2½	$2p^3\ ^2P°-\ 3d\ \ ^4P$
1315.429	P		3.58	13.00	0½–1½	UV 12.03
1312.866	P	(3)	3.58	13.02	1½–2½	$2p^3\ ^2P°-\ 3d\ \ ^4D$
1313.071	P		3.58	13.02	0½–1½	UV 12.04
1310.5403	P	27	3.58	13.04	1½–2½	$2p^3\ ^2P°-\ 3d\ \ ^2D$
1310.9431	P	25*	3.58	13.03	0½–1½	UV 13
1310.9498	P	25*	3.58	13.03	1½–1½	
1233.238	P	(2)	3.58	13.63	1½–2½	$2p^3\ ^2P°-\ 5s\ \ ^4P$
1234.300	P		3.58	13.62	0½–1½	UV 14
1230.5492	P	7*	3.58	13.65	1½–1½	$2p^3\ ^2P°-\ 5s\ \ ^2P$
1231.5756	P	12*	3.58	13.64	0½–0½	UV 15
1231.5815	P	12*	3.58	13.64	1½–0½	
1230.5434	P	7*	3.58	13.65	0½–1½	
1228.907	P		3.58	13.66	1½–2½	$2p^3\ ^2P°-\ 4d\ \ ^4F$
1229.1755	P	14	3.58	13.66	1½–1½	UV 16
1228.7911	P	20*	3.58	13.67	1½–1½	$2p^3\ ^2P°-\ 4d\ \ ^2P$
1228.4067	P	18*	3.58	13.67	0½–0½	UV 17
1228.4125	P	18*	3.58	13.67	1½–0½	
1228.7852	P	20*	3.58	13.67	0½–1½	

N I – Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1227.7923	P	8	3.58	13.67	1½–2½	$2p^3\ ^2P°–\ 4d\ ^2F$ UV 18
1227.586	P		3.58	13.68	1½–2½	$2p^3\ ^2P°–\ 4d\ ^4P$
1227.2436	P	7	3.58	13.68	1½–1½	UV 19
1226.833	P		3.58	13.68	1½–0½	
1226.060	P		3.58	13.69	1½–2½	$2p^3\ ^2P°–\ 4d\ ^4D$
1226.143	P		3.58	13.69	0½–1½	UV 20
1225.0257	P	21	3.58	13.70	1½–2½	$2p^3\ ^2P°–\ 4d\ ^2D$
1225.3684	P	20*	3.58	13.69	0½–1½	UV 21
1225.3742	P	20*	3.58	13.69	1½–1½	
1192.718	P	(2)	3.58	13.97	1½–2½	$2p^3\ ^2P°–\ 6s\ ^4P$
1193.735	P		3.58	13.96	0½–1½	UV 22
1191.9284	P	8*	3.58	13.98	1½–1½	$2p^3\ ^2P°–\ 6s\ ^2P$
1192.563	P	4*	3.58	13.97	0½–0½	UV 23
1192.568	P	4*	3.58	13.97	1½–0½	
1191.9229	P	8*	3.58	13.98	0½–1½	
1191.597	P		3.58	13.98	1½–2½	$2p^3\ ^2P°–\ 5d\ ^4F$
1191.6017	P	2	3.58	13.98	1½–1½	UV 24
1191.0189	P	12*	3.58	13.99	1½–1½	$2p^3\ ^2P°–\ 5d\ ^2P$
1190.9207	P	8*	3.58	13.99	0½–0½	UV 25
1190.9262	P	8*	3.58	13.99	1½–0½	
1191.0134	P	12*	3.58	13.99	0½–1½	
1190.8560	P	6	3.58	13.99	1½–2½	$2p^3\ ^2P°–\ 5d\ ^2F$ UV 26
1190.6866	P	2	3.58	13.99	1½–2½	$2p^3\ ^2P°–\ 5d\ ^4P$
1190.494	A	6	3.58	13.99	1½–1½	UV 27
1190.032	P	5	3.58	13.99	0½–0½	
1189.466	P		3.58	14.00	1½–2½	$2p^3\ ^2P°–\ 5d\ ^4D$
1189.483	P		3.58	14.00	0½–1½	UV 28
1188.9687	P	14	3.58	14.00	1½–2½	$2p^3\ ^2P°–\ 5d\ ^2D$
1189.2284	P	14*	3.58	14.00	0½–1½	UV 29
1189.2339	P	14*	3.58	14.00	1½–1½	
1172.234	P		3.58	14.15	1½–2½	$2p^3\ ^2P°–\ 7s\ ^4P$
1173.265	P		3.58	14.14	0½–1½	UV 30
1171.418	B	6	3.58	14.16	–1½	$2p^3\ ^2P°–\ 7s\ ^2P$ UV 31
1171.904	B	5	3.58	14.15	–1½	$2p^3\ ^2P°–\ 6d\ ^2P$
1171.722	B	4	3.58	14.16	–0½	UV 32
1171.502	B	3	3.58	14.16	1½–1½	$2p^3\ ^2P°–\ 6d\ ^4P$
1170.815	B	2	3.58	14.16	0½–0½	UV 33
1170.485	P		3.58	14.17	1½–2½	$2p^3\ ^2P°–\ 6d\ ^4D$
1170.499	B	3	3.58	14.17	0½–1½	UV 34
1170.220	B	6	3.58	14.17	1½–2½	$2p^3\ ^2P°–\ 6d\ ^2D$
*1170.432	B	7	3.58	14.17	–1½	UV 35

N I – Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1160.171	B	1	3.58	14.26	–1½	$2p^3\ ^2P°–\ 8s\ ^2P$
1161.118	B	2	3.58	14.25	–0½	UV 36
1160.713	B	2	3.58	14.26	–1½	$2p^3\ ^2P°–\ 7d\ ^2P$
1160.476	B	1	3.58	14.26	–0½	UV 37
1159.349	P		3.58	14.27	1½–2½	$2p^3\ ^2P°–\ 7d\ ^4D$
1159.344	B	3	3.58	14.27	0½–1½	UV 38
1159.193	B	4	3.58	14.27	1½–2½	$2p^3\ ^2P°–\ 7d\ ^2D$
1159.273	B	1	3.58	14.27	–1½	UV 39
1153.453	B	2	3.58	14.32	–1½	$2p^3\ ^2P°–\ 8d\ ^2P$ UV 40
1143.6511	P	16*	3.58	14.42	1½–0½	$2p^3\ ^2P°–\ 3s''\ ^2S$
1143.6461	P	16*	3.58	14.42	0½–0½	UV 41
1106.547	B	6	3.58	14.78		$2p^3\ ^2P°–\ 4s'\ ^2D$ UV 42
Air						
9740.385	P		10.33	11.60	1½–0½	$3s\ ^4P - 3p\ ^2S°$
9708.452	P		10.33	11.60	0½–0½	0.01
8680.283	D	17	10.34	11.76	2½–3½	$3s\ ^4P - 3p\ ^4D°$
8683.401	D	16	10.33	11.76	1½–2½	1
8686.149	D	14	10.33	11.75	0½–1½	
8718.826	D	14	10.34	11.76	2½–2½	
8711.704	D	15	10.33	11.75	1½–1½	
8703.248	D	14	10.33	11.75	0½–0½	
8747.357	D	9	10.34	11.75	2½–1½	
8728.894	D	10	10.33	11.75	1½–0½	
8216.345	D	15	10.34	11.84	2½–2½	$3s\ ^4P - 3p\ ^4P°$
8210.715	D	11	10.33	11.84	1½–1½	2
8200.363	D	10	10.33	11.84	0½–0½	
8242.393	D	13	10.34	11.84	2½–1½	
8223.140	D	13	10.33	11.84	1½–0½	
8184.867	D	13	10.33	11.84	1½–2½	
8188.023	D	13	10.33	11.84	0½–1½	
7468.307	A	33	10.34	12.00	2½–1½	$3s\ ^4P - 3p\ ^4S°$
7442.293	A	31	10.33	12.00	1½–1½	3
7423.639	A	29	10.33	12.00	0½–1½	
7405.680	P		10.34	12.01	2½–2½	$3s\ ^4P - 3p\ ^2D°$
7421.944	P		10.33	12.00	1½–1½	3.01
7447.815	P		10.34	12.00	2½–1½	
7380.100	P		10.33	12.01	1½–2½	
7403.388	P		10.33	12.00	0½–1½	
6922.713	P		10.34	12.13	2½–1½	$3s\ ^4P - 3p\ ^2P°$
6917.382	P		10.33	12.12	1½–0½	3.02
6900.356	P		10.33	12.13	1½–1½	
6901.260	P		10.33	12.12	0½–0½	
6884.314	P		10.33	12.13	0½–1½	

N I—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
4253.398	A	9	10.34	13.25	2½–3½	3s ⁴P – 4p ⁴D°
4254.733	A	10	10.33	13.24	1½–2½	4
4255.158	A	9	10.33	13.24	0½–1½	
4263.222	P		10.34	13.24	2½–2½	
4261.283	P		10.33	13.24	1½–1½	
4258.714	P	3.5	10.33	13.24	0½–0½	
4269.799	P		10.34	13.24	2½–1½	
4264.847	P		10.33	13.24	1½–0½	
4223.128	A	12	10.34	13.27	2½–3½	3s ⁴P – 4p ⁴P°
4222.101	A	10	10.33	13.27	1½–2½	5
4218.860	P	3.0	10.33	13.26	0½–0½	
4230.465	A	8	10.34	13.27	2½–1½	
4224.880	A	10	10.33	13.26	1½–0½	
4214.804	A	9	10.33	13.27	1½–2½	
4216.096	A	9	10.33	13.27	0½–1½	
4184.938	P		10.34	13.30	2½–2½	3s ⁴P – 4p ²D°
4189.064	P		10.33	13.29	1½–1½	5.01
4197.293	P		10.34	13.29	2½–1½	
4176.757	P		10.33	13.30	1½–2½	
4183.146	P		10.33	13.29	0½–1½	
4151.480	A	13	10.34	13.32	2½–1½	3s ⁴P – 4p ⁴S°
4143.431	A	11	10.33	13.32	1½–1½	6
4137.640	A	10	10.33	13.32	0½–1½	
3583.688	P		10.34	13.79	2½–3½	3s ⁴P – 5p ⁴D°
3584.982	P		10.33	13.79	1½–2½	6.01
3585.637	P		10.33	13.78	0½–1½	
3591.007	P		10.34	13.79	2½–2½	
3589.984	P		10.33	13.78	1½–1½	
3588.416	P		10.33	13.78	0½–0½	
3575.239	P		10.34	13.80	2½–2½	3s ⁴P – 5p ⁴P°
3574.518	P		10.33	13.80	1½–1½	6.02
3572.000	P		10.33	13.80	0½–0½	
3580.509	P		10.34	13.80	2½–1½	
3576.315	P		10.33	13.80	1½–0½	
3569.266	P		10.33	13.80	1½–2½	
3570.208	P		10.33	13.80	0½–1½	
3553.056	P		10.34	13.82	2½–1½	3s ⁴P – 5p ⁴S°
3547.157	P		10.33	13.82	1½–1½	6.03
3542.913	P		10.33	13.82	0½–1½	
13581.33	C	1200	10.69	11.60	1½–0½	3s ²P – 3p ²S°
13429.61	C	670	10.68	11.60	0½–0½	6.04
11610.71	P		10.69	11.76	1½–2½	3s ²P – 3p ⁴D°
11549.33	P		10.68	11.75	0½–1½	6.05
11661.36	P		10.69	11.75	1½–1½	
11579.58	P		10.68	11.75	0½–0½	
11692.20	P		10.69	11.75	1½–0½	
10736.31	P		10.69	11.84	1½–2½	3s ²P – 3p ⁴P°
10685.01	P		10.68	11.84	0½–1½	6.06
10780.83	P		10.69	11.84	1½–1½	
10706.04	P		10.68	11.84	0½–0½	
10802.25	P		10.69	11.84	1½–0½	

N I—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
9493.774	P		10.69	12.00	1½–0½	3s ²P – 3p ⁴S°
9419.387	P		10.68	12.00	0½–0½	6.07
9392.789	D	15	10.69	12.01	1½–2½	3s ²P – 3p ²D°
9386.805	D	14	10.68	12.00	0½–1½	7
9460.676	D	10	10.69	12.00	1½–1½	
8629.238	D	16	10.69	12.13	1½–1½	3s ²P – 3p ²P°
8594.005	D	15	10.68	12.12	0½–0½	8
8655.887	A	14	10.69	12.12	1½–0½	
8567.735	D	14	10.68	12.13	0½–1½	
4935.121	A	16	10.69	13.20	1½–0½	3s ²P – 4p ²S°
4914.937	A	14	10.68	13.20	0½–0½	9
4753.196	A	8	10.69	13.30	1½–2½	3s ²P – 4p ²D°
4750.295	A	6	10.68	13.29	0½–1½	9.01
4769.140	P		10.69	13.29	1½–1½	
4669.894	A	12	10.69	13.34	1½–1½	3s ²P – 4p ²P°
4660.455	A	10	10.68	13.34	0½–0½	9.02
4678.598	A	8	10.69	13.34	1½–0½	
4651.821	A	7	10.68	13.34	0½–1½	
4109.949	A	15	10.69	13.71	1½–2½	3s ²P – 3p′ ²D°
4099.944	A	13	10.68	13.70	0½–1½	10
4113.975	A	8	10.69	13.70	1½–1½	
4024.565	A	8	10.69	13.77	1½–0½	3s ²P – 5p ²S°
4011.133	A	7	10.68	13.77	0½–0½	10.01
4000.025	A	7	10.69	13.79	1½–1½	3s ²P – 5p ²P°
3989.050	A	10*	10.68	13.79	0½–0½	10.02
4002.331	A	4	10.69	13.79	1½–0½	
3986.762	P	1.6	10.68	13.79	0½–1½	
3892.204	A	13	10.69	13.87	1½–2½	3s ²P – 5p ²D°
3887.571	A	12	10.68	13.87	0½–1½	10.03
3900.175	A	9*	10.69	13.87	1½–1½	
3830.433	A	13	10.69	13.93	1½–1½	3s ²P – 3p′ ²P°
3822.034	A	11	10.68	13.92	0½–0½	11
3834.229	A	11*	10.69	13.92	1½–0½	
3818.264	A	9	10.68	13.93	0½–1½	
14757.07	C	300	10.92	11.76	2½–3½	2p⁴ ⁴P – 3p ⁴D°
14966.60	C	180	10.93	11.76	1½–2½	11.01
15094.96	C	75	10.93	11.75	0½–1½	
14868.87	C	100	10.92	11.76	2½–2½	
15050.88	C	80	10.93	11.75	1½–1½	
15146.66	C	75	10.93	11.75	0½–0½	
14952.07	C	15	10.92	11.75	2½–1½	
15102.29	C	26	10.93	11.75	1½–0½	

N I – Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
13464.53	C	185	10.92	11.84	2½–2½	$2p^4\ ^4P - 3p\ ^4P°$ 11.02
13615.56	C	35	10.93	11.84	1½–1½	
13686.03	C	14	10.93	11.84	0½–0½	
13534.64	C	60	10.92	11.84	2½–1½	
13649.74	C	58	10.93	11.84	1½–0½	
13544.61	C	65	10.93	11.84	1½–2½	
13651.63	C	60	10.93	11.84	0½–1½	
11566.114	D	4	10.92	12.00	2½–1½	$2p^4\ ^4P - 3p\ ^4S°$ 12
11625.173	D	3	10.93	12.00	1½–1½	
11651.45	D	2	10.93	12.00	0½–1½	
5328.616	A	12	10.92	13.25	2½–3½	$2p^4\ ^4P - 4p\ ^4D°$ 13
5356.623	A	10	10.93	13.24	1½–2½	
5372.611	A	8	10.93	13.24	0½–1½	
5344.038	A	6*	10.92	13.24	2½–2½	
5367.006	A	9	10.93	13.24	1½–1½	
5378.273	A	9	10.93	13.24	0½–0½	
5374.388	P		10.92	13.24	2½–1½	
5372.666	P	*m*	10.93	13.24	1½–0½	
5281.205	A	15	10.92	13.27	2½–2½	$2p^4\ ^4P - 4p\ ^4P°$ 14
5305.011	A	8	10.93	13.27	1½–1½	
5314.865	A	7	10.93	13.26	0½–0½	
5292.678	A	13	10.92	13.27	2½–1½	
5309.395	A	12	10.93	13.26	1½–0½	
5293.481	A	10	10.93	13.27	1½–2½	
5310.476	A	10	10.93	13.27	0½–1½	
5169.629	A	11	10.92	13.32	2½–1½	$2p^4\ ^4P - 4p\ ^4S°$ 14.01
5181.396	A	10	10.93	13.32	1½–1½	
5186.607	A	9	10.93	13.32	0½–1½	
4494.81	H	4.9	10.92	13.68	2½–3½	$2p^4\ ^4P - 4f$ D [3]° 14.02
4503.66	P		10.93	13.68	1½–2½	
4492.51	H	4.4	10.93	13.69	1½–2½	[2]°
4485.29	H	2.8	10.93	13.69	0½–	[1]°
4476.36	H	0.8	10.93	13.70	1½–2½	$2p^4\ ^4P - 4f$ F [2]° 14.03
4317.766	A	6	10.92	13.79	2½–3½	$2p^4\ ^4P - 5p\ ^4D°$ 14.04
4336.640	A	6	10.93	13.79	1½–2½	
4347.627	P		10.93	13.78	0½–1½	
4328.395	P		10.92	13.79	2½–2½	
4343.962	A	2	10.93	13.78	1½–1½	
4351.713	A	1	10.93	13.78	0½–0½	
4335.690	P		10.92	13.78	2½–1½	
4348.042	P		10.93	13.78	1½–0½	
4305.508	A	5	10.92	13.80	2½–2½	$2p^4\ ^4P - 5p\ ^4P°$ 14.05
4321.334	A	0	10.93	13.80	1½–1½	
4327.595	P		10.93	13.80	0½–0½	
4313.155	A	4	10.92	13.80	2½–1½	
4323.964	A	5	10.93	13.80	1½–0½	
4313.663	A	2	10.93	13.80	1½–2½	
4324.965	P		10.93	13.80	0½–1½	
4273.377	A	1	10.92	13.82	2½–1½	$2p^4\ ^4P - 5p\ ^4S°$ 14.06
4281.415	A	3	10.93	13.82	1½–1½	
4284.973	A	2	10.93	13.82	0½–1½	

N I – Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
4044.31	H	4.5	10.92	13.99	2½–3½	$2p^4\ ^4P - 5f$ D [3]°
4035.51	H	1.2	10.92	14.00	2½–2½	14.07 [2]°
4045.89	H	12.2*	10.93	13.99	0½–1½	
4035.06	H	3.1	10.93	14.00	0½–	[1]°
4037.48	H	7.0	10.92	13.99	2½–3½	$2p^4\ ^4P - 5f$ G [3]° 14.08
4030.02	H	3.4	10.93	14.00	1½–2½	$2p^4\ ^4P - 5f$ F [2]° 14.09
3957.20	H	4.9	10.92	14.06	2½–3½	$2p^4\ ^4P - 6p\ ^4D°$
3974.03	H	4.2	10.93	14.05	1½–2½	14.10
3952.21	H	4.5	10.92	14.06	2½–2½	$2p^4\ ^4P - 6p\ ^4P°$
3960.45	H	2.6	10.92	14.05	2½–1½	14.11
3822.82	H	2.8	10.93	14.17	1½–2½	$2p^4\ ^4P - 6f$ F [2]° 14.12
3781.32	H	6	10.92	14.20	2½–3½	$2p^4\ ^4P - 7p\ ^4D°$ 14.13
9395.85	P		11.60	12.92	0½–1½	$3p\ ^2S° - 4s\ \cdot\ ^2P$
9464.23	D	1	11.60	12.91	0½–0½	14.14
9060.472	D	10	11.60	12.97	0½–1½	$3p\ ^2S° - 3d\ ^2P$
9028.918	D	9	11.60	12.98	0½–0½	15
9020.68	D	2	11.60	12.98	0½–1½	$3p\ ^2S° - 3d\ ^4F$ 15.01
6050.757	P		11.60	13.65	0½–1½	$3p\ ^2S° - 5s\ ^2P$
6075.802	A	9	11.60	13.64	0½–0½	15.02
6017.674	A	11	11.60	13.66	0½–1½	$3p\ ^2S° - 4d\ ^4F$ 15.03
6008.472	A	16	11.60	13.67	0½–1½	$3p\ ^2S° - 4d\ ^2P$
5999.430	A	14	11.60	13.67	0½–0½	16
5218.98	H	4.9	11.60	13.98	0½–1½	$3p\ ^2S° - 6s\ ^2P$
5231.29	P		11.60	13.97	0½–0½	16.01
5201.608	A	8	11.60	13.99	0½–1½	$3p\ ^2S° - 5d\ ^2P$
5199.837	A	5	11.60	13.99	0½–0½	16.02
4847.38	H	14.9	11.60	14.16	0½–1½	$3p\ ^2S° - 7s\ ^2P$
4869.10	H	3.4	11.60	14.15	0½–0½	16.03
4855.56	H	1.3	11.60	14.15	0½–1½	$3p\ ^2S° - 6d\ ^2P$
4852.55	H	4.9	11.60	14.16	0½–0½	16.04
4677.82	H	2.3	11.60	14.25	0½–1½	$3p\ ^2S° - 7d\ ^4F$ 16.05
4660.31	P		11.60	14.26	0½–1½	$3p\ ^2S° - 8s\ ^2P$
4675.44	H	2.2	11.60	14.25	0½–0½	16.06

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
11291.679	D	5	11.76	12.86	3½–2½	3*p* ⁴D°– 4*s* ⁴P 17
11313.900	D	4	11.76	12.85	2½–1½	
11323.184	D	3	11.75	12.85	1½–0½	
11227.076	D	3	11.76	12.86	2½–2½	
11266.210	D	3	11.75	12.85	1½–1½	
11294.242	D	2	11.75	12.85	0½–0½	
11180.142	D	1	11.75	12.86	1½–2½	
11237.556	D	2	11.75	12.85	0½–1½	
10114.644	D	13	11.76	12.99	3½–4½	3*p* ⁴D°– 3*d* ⁴F 18
10112.483	D	12	11.76	12.98	2½–3½	
10108.893	D	11	11.75	12.98	1½–2½	
10105.130	D	10	11.75	12.98	0½–1½	
10164.845	D	7	11.76	12.98	3½–3½	
10147.255	D	8	11.76	12.98	2½–2½	
10128.280	D	7	11.75	12.98	1½–1½	
10199.98	D	2	11.76	12.98	3½–2½	
10166.79	D	3	11.76	12.98	2½–1½	
9997.750	D	4	11.76	13.00	3½–3½	3*p* ⁴D°– 3*d* ²F 18.01
10017.822	D	5	11.76	12.99	2½–2½	
10069.356	P		11.76	12.99	3½–2½	
9947.066	D	4	11.76	13.00	2½–3½	
9980.424	D	3	11.75	12.99	1½–2½	
10054.259	D	4	11.76	13.00	3½–2½	3*p* ⁴D°– 3*d* ⁴P 18.02
9968.510	P		11.76	13.00	2½–1½	
9905.54	D	0	11.75	13.00	1½–0½	
10003.055	D	5	11.76	13.00	2½–2½	
9931.474	D	5	11.75	13.00	1½–1½	
9883.369	D	3	11.75	13.00	0½–0½	
9965.736	D	3	11.75	13.00	1½–2½	
9909.220	D	2	11.75	13.00	0½–1½	
9863.330	D	9	11.76	13.02	3½–3½	3*p* ⁴D°– 3*d* ⁴D 19
9822.748	D	7	11.76	13.02	2½–2½	
9798.564	D	5	11.75	13.02	1½–1½	
9788.286	D	4	11.75	13.02	0½–0½	
9872.145	D	6	11.76	13.02	3½–2½	
9834.621	D	6	11.76	13.02	2½–1½	
9810.003	D	5	11.75	13.02	1½–0½	
9814.000	D	4	11.76	13.02	2½–3½	
9786.770	D	4	11.75	13.02	1½–2½	
9776.885	D	4	11.75	13.02	0½–1½	
9742.12	P		11.76	13.04	3½–2½	3*p* ⁴D°– 3*d* ²D 19.01
9716.46	P		11.76	13.03	2½–1½	
9694.01	D	1	11.76	13.04	2½–2½	
9681.27	P		11.75	13.03	1½–1½	
9658.98	P		11.75	13.04	1½–2½	
6644.964	A	17	11.76	13.63	3½–2½	3*p* ⁴D°– 5*s* ⁴P 20
6653.462	A	17	11.76	13.62	2½–1½	
6656.506	A	16	11.75	13.61	1½–0½	
6622.539	A	15	11.76	13.63	2½–2½	
6636.935	A	15	11.75	13.62	1½–1½	
6646.499	A	15	11.75	13.61	0½–0½	
6606.176	P		11.75	13.63	1½–2½	
6626.984	A	11	11.75	13.62	0½–1½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
6482.699	A	21	11.76	13.68	3½–4½	3*p* ⁴D°– 4*d* ⁴F 21
6484.800	A	20	11.76	13.67	2½–3½	
6483.751	A	19	11.75	13.66	1½–2½	
6481.707	A	18	11.75	13.66	0½–1½	
6506.308	A	15	11.76	13.67	3½–3½	
6499.543	A	16*	11.76	13.66	2½–2½	
6491.221	A	14	11.75	13.66	1½–1½	
6521.110	P		11.76	13.66	3½–2½	
6507.024	P		11.76	13.66	2½–1½	
6457.897	A	15	11.76	13.68	3½–3½	3*p* ⁴D°– 4*d* ²F 21.01
6468.437	A	19	11.76	13.67	2½–2½	
6489.821	A	8	11.76	13.67	3½–2½	
6436.714	A	13	11.76	13.68	2½–3½	
6452.822	P	(1)	11.75	13.67	1½–2½	
6484.067	A	7	11.76	13.68	3½–2½	3*p* ⁴D°– 4*d* ⁴P 21.02
6453.232	P		11.76	13.68	2½–1½	
6426.395	P		11.75	13.68	1½–0½	
6462.716	A	11	11.76	13.68	2½–2½	
6437.682	A	15*	11.75	13.68	1½–1½	
6417.066	A	11	11.75	13.68	0½–0½	
6447.132	A	12	11.75	13.68	1½–2½	
6428.320	A	16*	11.75	13.68	0½–1½	
6440.937	A	17	11.76	13.69	3½–3½	3*p* ⁴D°– 4*d* ⁴D 21.03
6420.643	A	16	11.76	13.69	2½–2½	
6407.676	A	12	11.75	13.69	1½–1½	
6402.364	P		11.75	13.69	0½–0½	
6441.708	A	13	11.76	13.69	3½–2½	
6423.025	A	16*	11.76	13.69	2½–1½	
6411.646	A	15	11.75	13.69	1½–0½	
6419.866	A	9	11.76	13.69	2½–3½	
6405.273	A	8*	11.75	13.69	1½–2½	
6398.402	P		11.75	13.69	0½–1½	
6413.244	P		11.76	13.70	3½–2½	3*p* ⁴D°– 4*d* ²D 21.04
6401.861	P		11.76	13.69	2½–1½	
6392.359	P		11.76	13.70	2½–2½	
6386.565	P		11.75	13.69	1½–1½	
6377.109	P		11.75	13.70	1½–2½	
5616.557	A	10	11.76	13.97	3½–2½	3*p* ⁴D°– 6*s* ⁴P 24
5623.140	A	10	11.76	13.96	2½–1½	
5625.274	A	5	11.75	13.96	1½–0½	
5600.528	A	5	11.76	13.97	2½–2½	
5611.336	A	6	11.75	13.96	1½–1½	
5618.126	A	6	11.75	13.96	0½–0½	
5588.820	P		11.75	13.97	1½–2½	
5604.224	A	6	11.75	13.96	0½–1½	
5583.148	P		11.76	13.98	2½–1½	3*p* ⁴D°– 6*s* ²P 25
5585.519	P		11.75	13.97	1½–0½	
5571.511	P		11.75	13.98	1½–1½	
5578.472	P		11.75	13.97	0½–0½	
5564.499	A	5	11.75	13.98	0½–1½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
5560.337	A	10	11.76	13.99	3½–4½	3p ⁴D°– 5d ⁴F 26
*5564.265	A	10	11.76	13.98	2½–3½	
*5564.265	A	10	11.75	13.98	1½–2½	
5557.383	A	6	11.75	13.98	0½–1½	
5580.079	A	0	11.76	13.98	3½–3½	
5575.872	P		11.76	13.98	2½–2½	
5564.370	A	0	11.75	13.98	1½–1½	
5591.757	P		11.76	13.98	3½–2½	
5551.106	A	5	11.76	14.00	3½–3½	3p ⁴D°– 5d ²F 27
5559.687	A	5	11.76	13.99	2½–2½	
5575.480	A	2	11.76	13.99	3½–2½	
5535.455	A	4	11.76	14.00	2½–3½	
5548.148	P	4.9	11.75	13.99	1½–2½	
5571.769	P	2.3	11.76	13.99	3½–2½	3p ⁴D°– 5d ⁴P 28
5551.814	P		11.76	13.99	2½–1½	
5530.423	P		11.75	13.99	1½–0½	
5555.991	A	1	11.76	13.99	2½–2½	
5540.307	P	4.9	11.75	13.99	1½–1½	
5523.514	P	2.0	11.75	13.99	0½–0½	
5544.480	A	2	11.75	13.99	1½–2½	
5533.373	P	0.9	11.75	13.99	0½–1½	
5545.000	A	6	11.76	14.00	3½–3½	3p ⁴D°– 5d ⁴D 29
5529.520	A	4	11.76	14.00	2½–2½	
5518.576	P		11.75	14.00	1½–1½	
5545.132	A	5	11.76	14.00	3½–2½	
5529.989	A	3	11.76	14.00	2½–1½	
5519.97	P	1.5	11.75	14.00	1½–0½	
5529.380	P		11.76	14.00	2½–3½	
5548.729	P		11.75	14.00	1½–2½	
5542.252	P		11.75	14.00	0½–1½	
5189.397	A	4	11.76	14.15	3½–2½	3p ⁴D°– 7s ⁴P 30
5195.992	A	4	11.76	14.14	2½–1½	
5197.902	A	1	11.75	14.14	1½–0½	
5175.712	P		11.76	14.15	2½–2½	
5185.914	A	1	11.75	14.14	1½–1½	
5191.806	A	1	11.75	14.14	0½–0½	
5165.710	P		11.75	14.15	1½–2½	
5179.825	A	0	11.75	14.14	0½–1½	
5149.62	H	1.6	11.75	14.16	1½–1½	3p ⁴D°– 7s ²P 31
5162.920	A	4	11.76	14.16	3½–4½	3p ⁴D°– 6d ⁴F 32
5167.896	A	2	11.76	14.16	2½–3½	
5169.40	P	(1)	11.76	14.16	1½–2½	
5165.77	H	8.5	11.75	14.15	0½–1½	
*5153.05	H	2.6	11.75	14.15	0½–1½	3p ⁴D°– 6d ²P 33
5158.49	H	5.2	11.76	14.17	3½–3½	3p ⁴D°– 6d ²F 34
5165.90	H	8.0	11.76	14.16	2½–2½	
5155.87	H	3.9	11.75	14.16	1½–2½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
5163.77	H	1.6	11.76	14.16	2½–2½	3p ⁴D°– 6d ⁴P 35
*5151.33	H	4.3	11.75	14.16	1½–1½	
*5132.41	P	1.4	11.75	14.16	0½–0½	
5153.76	H	1.3	11.75	14.16	1½–2½	
*5155.26	H	5.3	11.76	14.17	3½–3½	3p ⁴D°– 6d ⁴D 36
5141.78	P		11.76	14.17	2½–2½	
5132.28	P		11.75	14.17	1½–1½	
5126.54	P		11.75	14.17	0½–0½	
*5155.26	H	5.3	11.76	14.17	3½–2½	
*5132.49	P	1.4	11.75	14.17	1½–0½	
4963.98	H	20.6	11.76	14.26	3½–2½	3p ⁴D°– 8s ⁴P 37
4971.51	H	10.5	11.76	14.25	2½–1½	
4973.37	H	4.6	11.75	14.24	1½–0½	
4951.48	H	6.7	11.76	14.26	2½–2½	
4962.29	H	4.6	11.75	14.25	1½–1½	
*4968.31	H	3.3	11.75	14.24	0½–0½	
4942.31	P		11.75	14.26	1½–2½	
4956.92	P		11.75	14.25	0½–1½	
4950.23	H	14.0	11.76	14.27	3½–4½	3p ⁴D°– 7d ⁴F 38
4955.74	H	10.3	11.76	14.26	2½–3½	
4957.42	H	3.9	11.75	14.25	1½–2½	
4953.42	H	4.8	11.75	14.25	0½–1½	
*4968.31	H	3.3	11.76	14.26	3½–3½	
4966.79	P		11.76	14.25	2½–2½	
4959.18	P		11.75	14.25	1½–1½	
4949.13	H	1.0	11.75	14.26	1½–1½	3p ⁴D°– 7d ²P 39
4943.61	H	2.0	11.75	14.26	0½–1½	
4947.74	H	2.4	11.76	14.27	3½–3½	3p ⁴D°– 7d ²F 40
4946.53	H	2.9	11.75	14.26	1½–2½	
4966.41	H	2.0	11.76	14.26	3½–2½	3p ⁴D°– 7d ⁴P 41
4942.89	H	2.1	11.75	14.26	1½–1½	
4937.43	P	0.8	11.75	14.26	0½–1½	
4945.90	H	2.0	11.76	14.27	3½–3½	3p ⁴D°– 7d ⁴D 42
4933.55	H	2.5	11.76	14.27	2½–2½	
4924.49	P		11.75	14.27	1½–1½	
4830.69	H	4.6	11.76	14.33	3½–2½	3p ⁴D°– 9s ⁴P 43
*4837.93	H	3.7	11.76	14.32	2½–1½	
*4839.85	H	2.4	11.75	14.31	1½–0½	
*4819.10	H	2.6	11.76	14.33	2½–2½	
*4829.10	H	4.0	11.75	14.32	1½–1½	
4834.60	H	2.0	11.75	14.31	0½–0½	
4822.22	H	5.3	11.76	14.33	3½–4½	3p ⁴D°– 8d ⁴F 44
4828.06	H	5.2	11.76	14.32	2½–3½	
*4829.10	H	4.0	11.75	14.32	1½–2½	
*4839.85	H	2.4	11.76	14.32	3½–3½	
*4837.93	H	3.7	11.76	14.32	2½–2½	
4820.69	H	0.8	11.76	14.33	3½–3½	3p ⁴D°– 8d ²F 45
4827.86	H	1.4	11.76	14.32	2½–2½	
*4819.10	H	2.6	11.75	14.32	1½–2½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
4732.6	H	1.1	11.76	14.38	2½–2½	$3p\ ^4D°–10s\ ^4P$
4747.4	H	0.9	11.75	14.36	0½–0½	46
12186.82	C	480	11.84	12.86	2½–2½	$3p\ ^4D°–\ 4s\ ^4P$
12231.32	C	75*	11.84	12.85	1½–1½	47
12270.80	C	20*	11.84	12.85	0½–0½	
*12288.97	C	260	11.84	12.85	2½–1½	
12298.55	C	120	11.84	12.85	1½–0½	
12129.97	C	170	11.84	12.86	1½–2½	
12203.93	C	150	11.84	12.85	0½–1½	
11505.02	P		11.84	12.92	2½–1½	$3p\ ^4P°–\ 4s\ ^2P$
11556.02	P		11.84	12.91	1½–0½	48
11454.32	P		11.84	12.92	1½–1½	
11531.52	P		11.84	12.91	0½–0½	
11430.25	P		11.84	12.92	0½–1½	
11006.18	P		11.84	12.97	2½–1½	$3p\ ^4P°–\ 3d\ ^2P$
10913.64	P		11.84	12.98	1½–0½	49
10959.77	P		11.84	12.97	1½–1½	
10891.78	P		11.84	12.98	0½–0½	
10937.73	P		11.84	12.97	0½–1½	
10884.60	D	2	11.84	12.98	2½–3½	$3p\ ^4P°–\ 3d\ ^4F$
10879.19	D	1	11.84	12.98	1½–2½	50
10879.81	P		11.84	12.98	0½–1½	
10693.167	D	3	11.84	13.00	2½–3½	$3p\ ^4P°–\ 3d\ ^2F$
10730.510	D	4	11.84	12.99	1½–2½	51
10774.993	D	3	11.84	12.99	2½–2½	
10757.888	D	7	11.84	13.00	2½–2½	$3p\ ^4P°–\ 3d\ ^4P$
10673.946	P		11.84	13.00	1½–1½	52
10623.177	D	5	11.84	13.00	0½–0½	
10717.954	D	6	11.84	13.00	2½–1½	
10643.981	D	6	11.84	13.00	1½–0½	
10713.550	D	8	11.84	13.00	1½–2½	
10653.034	D	8	11.84	13.00	0½–1½	
10539.573	D	10	11.84	13.02	2½–3½	$3p\ ^4P°–\ 3d\ ^4D$
10507.004	D	8	11.84	13.02	1½–2½	53
10500.271	D	6	11.84	13.02	0½–1½	
10549.638	D	8	11.84	13.02	2½–2½	
10520.583	D	8	11.84	13.02	1½–1½	
10513.399	D	7	11.84	13.02	0½–0½	
10563.328	D	5	11.84	13.02	2½–1½	
10533.775	D	5	11.84	13.02	1½–0½	
10401.29	P		11.84	13.04	2½–2½	$3p\ ^4P°–\ 3d\ ^2D$
10385.48	P		11.84	13.03	1½–1½	54
10427.14	P		11.84	13.03	2½–1½	
10359.83	P		11.84	13.04	1½–2½	
10365.69	P		11.84	13.03	0½–1½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
6945.181	A	10	11.84	13.63	2½–2½	$3p\ ^4P°–\ 5s\ ^4P$
6960.507	A	7	11.84	13.62	1½–1½	55
6973.075	A	6	11.84	13.61	0½–0½	
6979.187	A	9	11.84	13.62	2½–1½	
6982.029	A	8	11.84	13.61	1½–0½	
6926.669	A	10	11.84	13.63	1½–2½	
6951.599	A	8	11.84	13.62	0½–1½	
6793.841	A	8	11.84	13.67	2½–3½	$3p\ ^4P°–\ 4d\ ^4F$
6792.196	A	7	11.84	13.66	1½–2½	56
6791.908	A	3	11.84	13.66	0½–1½	
6810.002	A	3	11.84	13.66	2½–2½	
6800.375	A	4	11.84	13.66	1½–1½	
6818.236	P		11.84	13.66	2½–1½	
6741.090	A	12	11.84	13.68	2½–3½	$3p\ ^4P°–\ 4d\ ^2F$
6758.267	A	12	11.84	13.67	1½–2½	57
6775.882	P		11.84	13.67	2½–2½	
6769.594	A	10*	11.84	13.68	2½–2½	$3p\ ^4P°–\ 4d\ ^4P$
6741.663	A	11	11.84	13.68	1½–1½	58
6720.970	A	13	11.84	13.68	0½–0½	
6759.198	P		11.84	13.68	2½–1½	
6729.283	P		11.84	13.68	1½–0½	
6752.028	A	14	11.84	13.68	1½–2½	
6733.322	A	12	11.84	13.68	0½–1½	
6722.618	A	15	11.84	13.69	2½–3½	$3p\ ^4P°–\ 4d\ ^4D$
6706.108	A	13	11.84	13.69	1½–2½	59
6700.494	P		11.84	13.69	0½–1½	
6723.452	A	12	11.84	13.69	2½–2½	
6708.762	A	13	11.84	13.69	1½–1½	
6704.840	A	7	11.84	13.69	0½–0½	
6726.120	A	11	11.84	13.69	2½–1½	
6713.113	A	11	11.84	13.69	1½–0½	
5829.535	A	18*	11.84	13.97	2½–2½	$3p\ ^4P°–\ 6s\ ^4P$
5840.887	A	11*	11.84	13.96	1½–1½	60
5849.699	P		11.84	13.96	0½–0½	
5854.040	A	17*	11.84	13.96	2½–1½	
5855.997	P	(1)	11.84	13.96	1½–0½	
5816.486	A	11*	11.84	13.97	1½–2½	
5834.622	A	11*	11.84	13.96	0½–1½	
5790.27	P	4.1	11.84	13.98	2½–3½	$3p\ ^4P°–\ 5d\ ^4F$
5789.91	P		11.84	13.98	1½–2½	61
5781.315	P		11.84	13.99	2½–2½	$3p\ ^4P°–\ 5d\ ^4P$
5763.974	P		11.84	13.99	1½–1½	62
5747.198	P		11.84	13.99	0½–0½	
5768.49	P	4.4	11.84	13.99	1½–2½	
5757.87	P	8.8	11.84	13.99	0½–1½	
5752.499	P	29.3*	11.84	14.00	2½–3½	$3p\ ^4P°–\ 5d\ ^4D$
5739.947	A	7	11.84	14.00	1½–2½	63
5734.405	P		11.84	14.00	0½–1½	
5752.64	P	29.3*	11.84	14.00	2½–2½	
5740.461	A	10	11.84	14.00	1½–1½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
5370.697	A	4	11.84	14.15	2½–2½	3p ⁴P°– 7s ⁴P
5381.370	P	2.0	11.84	14.14	1½–1½	64
5488.946	P		11.84	14.14	0½–0½	
5392.534	P		11.84	14.14	2½–1½	
5394.292	P	6.3	11.84	14.14	1½–0½	
5359.590	A	1*	11.84	14.15	1½–2½	
5376.049	A	3	11.84	14.14	0½–1½	
5361.96	H	4.2	11.84	14.16	2½–3½	3p ⁴P°– 6d ⁴F
5363.67	H	10.1	11.84	14.15	1½–2½	65
5374.89	H	2.8	11.84	14.15	2½–2½	
5343.73	H	2.1	11.84	14.16	0½–0½	3p ⁴P°– 6d ²P
						66
5346.96	H	2.3	11.84	14.16	1½–2½	3p ⁴P°– 6d ⁴P
5339.50	H	3.7	11.84	14.16	0½–1½	67
*5334.38	H	8.0	11.84	14.17	2½–3½	3p ⁴P°– 6d ⁴D
5323.25	P		11.84	14.17	1½–2½	68
5318.43	P		11.84	14.17	0½–1½	
*5334.38	H	8.0	11.84	14.17	2½–2½	
5324.00	H	4.3	11.84	14.17	1½–1½	
5129.64	P		11.84	14.26	2½–2½	3p ⁴P°– 8s ⁴P
5141.16	H	2.0	11.84	14.25	1½–1½	69
*5151.33	H	4.3	11.84	14.25	2½–1½	
*5153.05	H	2.6	11.84	14.24	1½–0½	
5136.31	H	4.1	11.84	14.25	0½–1½	
5134.39	H	6.1	11.84	14.26	2½–3½	3p ⁴P°– 7d ⁴F
5135.79	H	3.1	11.84	14.25	1½–2½	70
5146.07	P	2.3	11.84	14.25	2½–2½	
5117.88	H	1.6	11.84	14.26	0½–0½	3p ⁴P°– 7d ²P
						71
5120.21	P	1.6	11.84	14.26	1½–1½	3p ⁴P°– 7d ⁴P
5115.44	H	2.3	11.84	14.26	0½–1½	72
5110.52	H	4.5	11.84	14.27	2½–3½	3p ⁴P°– 7d ⁴D
*5100.45	H	8.8	11.84	14.27	1½–2½	73
*5100.45	H	8.8	11.84	14.27	1½–1½	
5100.69	H	4.4	11.84	14.27	1½–0½	
*4987.47	H	3.9	11.84	14.33	2½–2½	3p ⁴P°– 9s ⁴P
5007.77	P	1.4	11.84	14.32	2½–1½	74
5009.68	P	1.5	11.84	14.31	1½–0½	
4997.18	P	1.6	11.84	14.32	2½–3½	3p ⁴P°– 8d ⁴F
4998.16	P		11.84	14.32	1½–2½	75
*4987.47	H	3.9	11.84	14.32	1½–2½	3p ⁴P°– 8d ²F
						76
4974.82	H	2.7	11.84	14.34	2½–3½	3p ⁴P°– 8d ⁴D
*4965.54	H	1.0	11.84	14.34	1½–2½	77
*4965.54	H	1.0	11.84	14.34	1½–1½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
4895.05	P	1.9	11.84	14.38	2½–2½	3p ⁴P°–10s ⁴P
4914.0	H	0.6	11.84	14.37	2½–1½	78
4916.08	H	1.5	11.84	14.36	1½–0½	
14313.21	C	80	12.00	12.86	1½–2½	3p ⁴S°– 4s ⁴P
14454.62	C	29	12.00	12.85	1½–1½	79
14548.55	C	20	12.00	12.85	1½–0½	
12404.27	C	98	12.00	12.99	1½–2½	3p ⁴S°– 3d ²F
						80
12381.65	C	375	12.00	13.00	1½–2½	3p ⁴S°– 3d ⁴P
12328.76	C	350	12.00	13.00	1½–1½	81
*12288.97	C	260	12.00	13.00	1½–0½	
12106.59	C	45	12.00	13.02	1½–2½	3p ⁴S°– 3d ⁴D
12124.60	C	35	12.00	13.02	1½–1½	82
12142.16	C	12	12.00	13.02	1½–0½	
7587.571	P		12.00	13.63	1½–2½	3p ⁴S°– 5s ⁴P
7628.174	A	4	12.00	13.62	1½–1½	83
7654.048	A	3	12.00	13.61	1½–0½	
7378.513	P		12.00	13.68	1½–2½	3p ⁴S°– 4d ⁴P
7366.150	A	12	12.00	13.68	1½–1½	84
7351.363	P		12.00	13.68	1½–0½	
7323.714	A	9	12.00	13.69	1½–2½	3p ⁴S°– 4d ⁴D
7326.868	A	13	12.00	13.69	1½–1½	85
7332.073	A	14	12.00	13.69	1½–0½	
6275.514	A	10*	12.00	13.97	1½–2½	3p ⁴S°– 6s ⁴P
6303.915	P	(0)	12.00	13.96	1½–1½	86
6321.511	P	(00)	12.00	13.96	1½–0½	
6219.654	P		12.00	13.99	1½–2½	3p ⁴S°– 5d ⁴P
6214.411	P		12.00	13.99	1½–1½	87
6201.977	P		12.00	13.99	1½–0½	
6186.495	P		12.00	14.00	1½–2½	3p ⁴S°– 5d ⁴D
6187.083	P		12.00	14.00	1½–1½	88
6188.84	P	1.2	12.00	14.00	1½–0½	
5746.958	P	12.9*	12.00	14.15	1½–2½	3p ⁴S°– 7s ⁴P
5771.961	A	5	12.00	14.14	1½–1½	89
5786.835	P		12.00	14.14	1½–0½	
5496.75	H	2.7	12.00	14.25	1½–1½	3p ⁴S°– 8s ⁴P
						90
5472.40	H	4.5	12.00	14.26	1½–1½	3p ⁴S°– 7d ⁴P
						91
13587.73	C	200	12.01	12.92	2½–1½	3p ²D°– 4s ²P
13588.55	C	115	12.00	12.91	1½–0½	92
13448.12	C	21	12.00	12.92	1½–1½	

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
12897.32	C	51	12.01	12.97	2½–1½	3p ²D°– 3d ²P
12708.89	C	30	12.00	12.98	1½–0½	93
12771.51	C	15	12.00	12.97	1½–1½	
12730.68	C	35	12.01	12.98	2½–3½	3p ²D°– 3d ⁴F
12662.16	C	27	12.00	12.98	1½–2½	94
12469.62	C	1350	12.01	13.00	2½–3½	3p ²D°– 3d ²F
12461.25	C	680	12.00	12.99	1½–2½	95
12581.00	C	27	12.01	12.99	2½–2½	
*12557.66	C	14	12.01	13.00	2½–2½	3p ²D°– 3d ⁴P
*12384.83	C	12	12.00	13.00	1½–1½	96
12438.40	C	195	12.00	13.00	1½–2½	
12261.28	C	27*	12.01	13.02	2½–3½	3p ²D°– 3d ⁴D
12160.84	P		12.00	13.02	1½–2½	97
12074.51	C	230	12.01	13.04	2½–2½	3p ²D°– 3d ²D
11998.36	C	110	12.00	13.03	1½–1½	98
12109.30	C	25*	12.01	13.03	2½–1½	
11964.13	P		12.00	13.04	1½–2½	
7653.330	P		12.01	13.63	2½–2½	3p ²D°– 5s ⁴P
7649.683	P		12.00	13.62	1½–1½	99
7608.796	A	15	12.00	13.63	1½–2½	
7550.915	A	14	12.01	13.65	2½–1½	3p ²D°– 5s ²P
7546.209	A	13	12.00	13.64	1½–0½	100
7406.239	A	18	12.01	13.68	2½–3½	3p ²D°– 4d ²F
7406.122	A	14	12.00	13.67	1½–2½	101
7440.684	P		12.01	13.68	2½–3½	3p ²D°– 4d ⁴P
7386.196	P		12.00	13.68	1½–1½	102
7398.641	A	16	12.00	13.68	1½–2½	
7347.571	A	14	12.01	13.70	2½–2½	3p ²D°– 4d ²D
7318.975	P		12.00	13.69	1½–1½	103
6298.30	P	6.6	12.01	13.98	2½–1½	3p ²D°– 6s ²P
6285.88	P	13.8	12.00	13.97	1½–0½	104
6258.97	P	1.6*	12.00	13.98	1½–2½	3p ²D°– 5d ⁴F
6259.11	P	1.6*	12.00	13.98	1½–1½	105
6289.18	P	7.2	12.01	13.98	2½–1½	
6272.976	A	13	12.01	13.99	2½–1½	3p ²D°– 5d ²P
6240.515	P		12.00	13.99	1½–0½	106
6243.06	P	3.5	12.00	13.99	1½–1½	
6237.675	A	10	12.01	14.00	2½–3½	3p ²D°– 5d ²F
6238.587	P		12.00	13.99	1½–2½	107
6233.94	P	4.6	12.00	13.99	1½–2½	3p ²D°– 5d ⁴P
						108

N I — Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
6216.511	A	9	12.01	14.00	2½–2½	3p ²D°– 5d ²D
6194.313	A	8	12.00	14.00	1½–1½	109
5764.75	P	17.1	12.01	14.16	2½–1½	3p ²D°– 7s ²P
5747.18	P	12.9*	12.00	14.16	1½–2½	110
5744.25	P	1.7	12.00	14.16	1½–2½	3p ²D°– 6d ²F
5502.23	P		12.01	14.26	2½–1½	111
5500.42	H	6.0	12.00	14.25	1½–0½	3p ²D°– 6d ⁴P
5486.08	P	0.8*	12.01	14.27	2½–3½	112
5488.37	P		12.00	14.26	1½–2½	3p ²D°– 8s ²P
5485.96	P	0.8*	12.00	14.26	1½–2½	113
5326.34	H	2.7	12.01	14.34	2½–2½	3p ²D°– 7d ²F
*4474.16	J	4	12.01	14.78	2½–	114
4458.59	P	2	12.00	14.78	1½–	3p ²D°– 7d ⁴P
4356.3	J	4	12.01	14.85	2½–3½	115
4277.5	B	1	12.00	14.90	1½–2½	3p ²D°– 8d ²D
4264.1	B	2	12.01	14.92	2½–1½	116
4249.5	B	1	12.00	14.92	1½–0½	3p ²D°– 4s′ ²D
4107.9	J	7	12.01	15.03	2½–2½	117
15582.27	C	200	12.13	12.92	1½–1½	3p ²D°– 3d′ ²F
15682.86	C	54	12.12	12.91	0½–0½	118
15571.10	C	22	12.13	12.91	1½–0½	3p ²D°– 3d′ ²D
15496.13	C	34	12.12	12.92	0½–1½	119
14681.04	C	55	12.13	12.97	1½–1½	3p ²D°– 3d′ ²P
14522.81	C	36	12.12	12.98	0½–0½	120
14598.42	C	17	12.13	12.98	1½–0½	3p ²D°– 2p⁴ ²D
14604.64	C	27	12.12	12.97	0½–1½	121
13624.18	C	350	12.13	13.04	1½–2½	3p ²P°– 4s ²P
13602.27	C	190	12.12	13.03	0½–1½	122
13668.60	C	65	12.13	13.03	1½–1½	3p ²P°– 3d ²P
						123
						3p ²P°– 3d ²D
						124

N I—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
8129.170	D	3	12.13	13.65	1½–1½	3p ²P°– 5s ²P
8150.66	D	1	12.12	13.64	0½–0½	125
8174.50	D	1	12.13	13.64	1½–0½	
8105.631	D	2	12.12	13.65	0½–1½	
7893.974	A	10	12.13	13.70	1½–2½	3p ²P°– 4d ²D
7886.224	A	9	12.12	13.69	0½–1½	126
6715.81	P	2.6	12.13	13.97	1½–0½	3p ²P°– 6s ²P
						127
6667.06	H	10.0	12.13	13.99	1½–1½	3p ²P°– 5d ²P
6648.25	P	9.7	12.12	13.99	0½–0½	128
6603.204	A	7	12.13	14.00	1½–2½	3p ²P°– 5d ²D
6595.844	P	5.8	12.12	14.00	0½–1½	129
6095.76	P	4.4	12.13	14.16	1½–1½	3p ²P°– 7s ²P
6117.55	P	2.4	12.12	14.15	0½–0½	130
5411.885	A	8	12.13	14.42	1½–0½	3p ²P°– 3s'' ²S
5401.456	A	5	12.12	14.42	0½–0½	131
4671.0	J	5	12.13	14.78	1½–	3p ²P°– 4s' ²D
4663.37	J	2	12.12	14.78	0½–1½	132
*4474.16	J	4	12.13	14.90	1½–2½	3p ²P°– 3d' ²D
4466.31	J	1	12.12	14.90	0½–1½	133
4442.3	B	3	12.13	14.92	1½–	3p ²P°– 3d' ²P
4435.3	B	2	12.12	14.92	0½–	134
4392.42	J	3	12.13	14.95	1½–0½	3p ²P°– 3d' ²S
4385.53	J	2	12.12	14.95	0½–0½	135
9187.449	D	9	12.36	13.71	2½–2½	3s' ²D – 3p' ²D°
9208.001	D	8	12.36	13.70	1½–1½	136
9207.59	D	3	12.36	13.70	2½–1½	
9187.84	D	3	12.36	13.71	1½–2½	
9045.878	D	13	12.36	13.73	2½–3½	3s' ²D – 3p' ²F°
9049.890	D	12	12.36	13.73	1½–2½	137
9049.47	D	5	12.36	13.73	2½–2½	
8655.758	A	14	12.36	13.79	2½–1½	3s' ²D – 5p ²P°
8666.935	A	12	12.36	13.79	1½–0½	138
8656.112	A	8	12.36	13.79	1½–1½	
8166.235	D	8	12.36	13.87	2½–2½	3s' ²D – 5p ²D°
8201.766	D	7	12.36	13.87	1½–1½	139
8201.43	D	2	12.36	13.87	2½–1½	
8166.51	D	2	12.36	13.87	1½–2½	
7898.985	D	8	12.36	13.93	2½–1½	3s' ²D – 3p' ²P°
7915.419	D	77	12.36	13.92	1½–0½	140
7899.27	D	3	12.36	13.93	1½–1½	

N I—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
4426.9	J	2	12.36	15.16		3s' ²D – 4p' ²F°
						141
17436.22	C	24	12.97	13.68	1½–2½	3d ²P – 4f D [3]°
17269.17	C	11	12.97	13.69	1½–	142 [2]°
17385.13	C	12	12.98	13.69	0½–1½	
17219.55	C	10	12.98	13.69	0½–	[1]°
17326.86	C	16	12.97	13.69	1½–2½	3d ²P – 4f G [3]°
						143
10461.2	G	4	12.97	14.16	1½–2½	3d ²P – 6f D [3]°
						144
10412.4	G	2	12.97	14.16	1½–2½	3d ²P – 6f G [3]°
						145
17643.98	C	42	12.98	13.68	2½–	3d ⁴F – 4f D [3]°
						146
17516.58	C	125s	12.99	13.70	4½–	3d ⁴F – 4f G [5]°
17367.55	C	23	12.98	13.70	3½–4½	147
17584.86	C	100l	12.98	13.69	3½–	[4]°
17480.41	C	27	12.98	13.69	2½–3½	
17636.83	C	8	12.98	13.69	3½–	[3]°
17531.99	C	18	12.98	13.69	2½–	
17474.16	C	32	12.98	13.69	1½–2½	
17429.23	C	16s	12.99	13.70	4½–	3d ⁴F – 4f F [4]°
17282.04	C	4	12.98	13.70	3½–	148
17291.81	C	6	12.98	13.70	3½–	[3]°
12210.17	C	12*	12.99	14.00	4½–5½	3d ⁴F –5f G [5]°
12250.11	C	11*	12.98	13.99	3½–4½	149 [4]°
10535.8	G	3	12.98	14.16	2½–3½	3d ⁴F – 6f D [3]°
						150
10485.530	A	8	12.99	14.17	4½–5½	3d ⁴F – 6f G [5]°
10517.7	G	4	12.98	14.16	3½–4½	151 [4]°
10480.4	G	4	12.98	14.16	2½–3½	
10465.6	G	3	12.98	14.16	1½–2½	[3]°
10477.1	G	3	12.99	14.17	4½–4½	3d ⁴F – 6f F [4]°
						152
*18049.56	C	33l	12.99	13.68	2½–	3d ²F – 4f D [3]°
						153
*17878.26	C	100	13.00	13.70	3½–4½	3d ²F – 4f G [5]°
18108.61	C	12	13.00	13.69	3½–	154 [4]°
*17878.26	C	100	12.99	13.69	2½–3½	

N I – Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
17787.27	C	8*s*	13.00	13.70	1½–	3*d* ²F – 4*f* 155 F [4]°
12471	C	6	12.99	13.99	2½–	3*d* ²F – 5*f* 156 D [3]°
*12384.83	C	12	13.00	14.00	3½–4½	3*d* ²F – 5*f* 157 G [5]°
12391.9	C	5	12.99	13.99	2½–3½	[4]°
10678.9	G	4	12.99	14.16	2½–3½	3*d* ²F – 6*f* 158 D [3]°
10614.2	G	5	13.00	14.17	3½–4½	3*d* ²F – 6*f* 159 G [5]°
10702.9	G	1	13.00	14.16	3½–4½	[4]°
18097.71	C	10	13.00	13.68	2½–	3*d* ⁴P – 4*f* 160 D [3]°
17918.06	C	7	13.00	13.69	2½–	[2]°
18029.95	C	30	13.00	13.69	1½–	
18116.27	C	6	13.00	13.69	0½–1½	
17852.09	C	10	13.00	13.69	1½–	[1]°
17936.55	C	17	13.00	13.69	0½–	
17925.70	C	8	13.00	13.69	2½–3½	3*d* ⁴P – 4*f* 161 G [4]°
17979.89	C	51	13.00	13.69	2½–	[3]°
12464.2	C	5*	13.00	14.00	1½–2½	3*d* ⁴P – 5*f* 162 D [2]°
12428.81	C	6	13.00	13.99	2½–3½	3*d* ⁴P – 5*f* 163 G [3]°
10676.1	G	3	13.00	14.16	1½–2½	3*d* ⁴P – 6*f* 164 D [2]°
18751.01	C	2	13.02	13.68	3½–	3*d* ⁴D – 4*f* 165 D [3]°
18566.75	C	4	13.02	13.69	3½–	3*d* ⁴D – 4*f* 166 G [4]°

N I – Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
18229.66	C	60	13.02	13.70	3½–	3*d* ⁴D – 4*f* 167 F [4]°
18199.13	C	8	13.02	13.70	2½–3½	
18240.54	C	13	13.02	13.70	3½–	[3]°
*18210.56	C	32*l*	13.02	13.70	2½–	
18169.74	C	13	13.02	13.70	1½–2½	
18251.58	C	11	13.02	13.70	2½–	[2]°
*18210.56	C	32*l*	13.02	13.70	1½–	
18171.60	C	13	13.02	13.70	0½–1½	
12575.99	C	8	13.02	14.01	3½–4½	3*d* ⁴D – 5*f* 168 F [4]°
12578.8	C	3	13.05	14.01	3½–3½	[3]°
12564.4	C	4*	13.02	14.01	2½–3½	
*12557.66	C	14*s*	13.02	14.00	1½–	[2]°
10761.1	G	4	13.02	14.17	3½–4½	3*d* ⁴D – 6*f* 169 F [4]°
10751.9	G	3	13.02	14.17	2½–3½	[3]°
10743.1	G	2	13.02	14.17	1½–2½	[2]°
18658.16	C	32	13.04	13.70	2½–3½	3*d* ²D – 4*f* 170 F [4]°
18670.00	C	4	13.04	13.70	2½–	[3]°
18587.24	C	13	13.03	13.70	1½–2½	
18630.19	C	13	13.03	13.70	1½–	[2]°
12778.5	C	5*	13.04	14.01	2½–3½	3*d* ²D – 5*f* 171 F [4]°
10596.958	D	6	13.73	14.90	3½–4½	3*p*′ ²F°– 3*d*′ ²G 172
10591.905	D	5	13.73	14.90	2½–3½	
*18049.56	C	33*l*	14.90	15.58		3*d*′ ²G – 4*f*′ 173 H [5]°
9019.432	D	4	[16.24	17.62]	2½–3½	3*s*‴ ⁶S°– 3*p*‴ ⁶P 174
9021.236	D	3	[16.24	17.62]	2½–2½	
9022.183	D	3	[16.24	17.62]	2½–1½	

NSRDS–NBS 3, SECTION 5

NITROGEN Z=7

A N II Atomic Energy Levels

B N II Multiplet Table

Part A NITROGEN

N II

C I sequence; 6 electrons $Z=7$

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

$2p^2\,{}^3P_0$ ***238750.50 ± 1.3*** cm^{-1}; 418.847 Å (Vac) I P 29.601 eV

The terms are from the revised and complete analysis of K.B.S. Eriksson, who has reobserved the spectrum from 2077 Å to 10547 Å and measured some 450 lines. He has added approximately 200 classified lines and 55 new levels to the earlier work. In the vacuum region improved wavelengths from older spectrograms are given for 15 lines.

Observed intersystem combinations connect the terms of different multiplicities, and the consistent system of term values provides accurate recalculated wavelengths in the region short of 2000 Å.

An evident misprint occurs in the published value of the term $5s\,{}^1P^\circ_1$. The observed combinations indicate a correction of -0.61 cm^{-1}, which has been introduced in the table. The level $5d\,{}^3D^\circ_2$ has, also, been added on the basis of one observed combination.

The table of observed g-values is taken from Volume I of "Atomic Energy Levels," since no later Zeeman data are available.

The ionization limit is well determined from selected members of the nf series ($n=4$ to 7).

REFERENCES

K.B.S. Eriksson, Ark. Fys. (Stockholm) **13**, No. 25, 303–329 (1958). I P, T, C L

C. E. Moore, Atomic Energy Levels, Circ. Natl. Bur. Std. 467, **I**, 35–37 (1949). Z E

J. B. Green and H. N. Maxwell, Phys. Rev. **51**, 243–245 (1937). Z E

N II **N II**

Config.	Desig.	J	Level	Interval	Config.	Desig.	J	Level	Interval
$2s^2\,2p^2$	$2p^2\,{}^3P$	0	0.0	48.7	$2s\,2p^3$	$2p^3\,{}^3P^\circ$	2	*109217.6*	1.0
		1	48.7	82.1			1	*109216.6*	−6.9
		2	130.8				0	*109223.5*	
$2s^2\,2p^2$	$2p^2\,{}^1D$	2	15316.2		$2s\,2p^3$	$2p^3\,{}^1D^\circ$	2	*144187.94*	
$2s^2\,2p^2$	$2p^2\,{}^1S$	0	32688.8		$2s^2\,2p\ ({}^2P^\circ)3s$	$3s\ {}^3P^\circ$	0	*148908.59*	31.58
							1	*148940.17*	136.35
$2s\ 2p^3$	$2p^3\,{}^5S^\circ$	2	*46784.6*				2	*149076.52*	
$2s\ 2p^3$	$2p^3\,{}^3D^\circ$	3	*92237.2*	−13.1	$2s^2\,2p\ ({}^2P^\circ)3s$	$3s\ {}^1P^\circ$	1	*149187.80*	
		2	*92250.3*	−1.5					
		1	*92251.8*		$2s\ 2p^3$	$2p^3\,{}^3S^\circ$	1	*155126.73*	

N II — Continued

Config.	Desig.	J	Level	Interval
$2s^2\,2p\ (^2P^\circ)3p$	$3p\ ^1P$	1	164610.76	
$2s^2\,2p\ (^2P^\circ)3p$	$3p\ ^3D$	1	166521.69	
		2	166582.45	60.76
		3	166678.64	96.19
$2s\ 2p^3$	$2p^3\ ^1P^\circ$	1	*166765.66*	
$2s^2\,2p\ (^2P^\circ)3p$	$3p\ ^3S$	1	168892.21	
$2s^2\,2p\ (^2P^\circ)3p$	$3p\ ^3P$	0	170572.61	
		1	170607.89	35.28
		2	170666.23	58.34
$2s^2\,2p\ (^2P^\circ)3p$	$3p\ ^1D$	2	174212.03	
$2s^2\,2p\ (^2P^\circ)3p$	$3p\ ^1S$	0	178273.38	
$2s^2\,2p\ (^2P^\circ)3d$	$3d\ ^3F^\circ$	2	*186511.58*	
		3	*186570.98*	59.40
		4	*186652.49*	81.51
$2s^2\,2p\ (^2P^\circ)3d$	$3d\ ^1D^\circ$	2	*187091.37*	
$2s^2\,2p\ (^2P^\circ)3d$	$3d\ ^3D^\circ$	1	*187437.56*	
		2	*187461.56*	24.00
		3	*187491.90*	30.34
$2s^2\,2p\ (^2P^\circ)3d$	$3d\ ^3P^\circ$	2	*188857.37*	
		1	*188909.17*	−51.80
		0	*188937.24*	−28.07
$2s^2\,2p\ (^2P^\circ)3d$	$3d\ ^1F^\circ$	3	*189335.16*	
$2s^2\,2p\ (^2P^\circ)3d$	$3d\ ^1P^\circ$	1	*190120.24*	
$2s^2\,2p\ (^2P^\circ)4s$	$4s\ ^3P^\circ$	0	*196540.23*	
		1	*196592.07*	51.84
		2	*196711.54*	119.47
$2s^2\,2p\ (^2P^\circ)4s$	$4s\ ^1P^\circ$	1	*197858.69*	
$2s^2\,2p\ (^2P^\circ)4p$	$4p\ ^1P$	1	202170.63	
$2s^2\,2p\ (^2P^\circ)4p$	$4p\ ^3D$	1	202714.12	
		2	202765.26	51.14
		3	202861.36	96.10
$2s^2\,2p\ (^2P^\circ)4p$	$4p\ ^3P$	0	203162.48	
		1	203189.03	26.55
		2	203258.98	69.95
$2s^2\,2p\ (^2P^\circ)4p$	$4p\ ^3S$	1	203537.66	
$2s^2\,2p\ (^2P^\circ)4p$	$4p\ ^1D$	2	205350.18	
$2s\ 2p^2(^4P)3s$	$3s'\ ^5P$	1	205597.97	
		2	205654.22	56.25
		3	205724.81	70.59
$2s^2\,2p\ (^2P^\circ)4p$	$4p\ ^1S$	0	206910.24	

N II — Continued

Config.	Desig.	J	Level	Interval
$2s^2\,2p\ (^2P^\circ)4d$	$4d\ ^3F^\circ$	2	*209673.65*	
		3	*209737.97*	64.32
		4	*209823.91*	85.94
$2s^2\,2p\ (^2P^\circ)4d$	$4d\ ^1D^\circ$	2	*209925.76*	
$2s^2\,2p\ (^2P^\circ)4d$	$4d\ ^3D^\circ$	1	*210239.83*	
		2	*210266.04*	26.21
		3	*210301.68*	35.64
$2s^2\,2p\ (^2P^\circ)4d$	$4d\ ^3P^\circ$	2	*210705.26*	
		1	*210751.43*	−46.17
		0	*210776.45*	−25.02
$2s^2\,2p\ (^2P^\circ_{01/2})4f$	$4f\ [2\frac{1}{2}]$	3	211030.07	
		2	211032.93	−2.86
,,	$4f\ [3\frac{1}{2}]$	3	211056.26	
		4	211060.24	3.98
$2s^2\,2p\ (^2P^\circ)4d$	$4d\ ^1F^\circ$	3	*211103.63*	
$2s^2\,2p\ (^2P^\circ_{11/2})4f$	$4f'\ [3\frac{1}{2}]$	3	211287.23	
		4	211294.85	7.62
,,	$4f'\ [4\frac{1}{2}]$	5	211389.95	
		4	211402.03	−12.08
,,	$4f'\ [2\frac{1}{2}]$	3	211410.47	
		2	211415.16	−4.69
,,	$4f'\ [1\frac{1}{2}]$	1	211486.58	
		2	211490.30	3.72
$2s^2\,2p\ (^2P^\circ)4d$	$4d\ ^1P^\circ$	1	*211336.16*	
$2s\ 2p^2(^4P)3s$	$3s'\ ^3P$	0	211749.35	
		1	211779.45	30.10
		2	211827.67	48.22
$2s^2\,2p\ (^2P^\circ)5s$	$5s\ ^3P^\circ$	0	*214211.96*	
		1	*214257.69*	45.73
		2	*214384.13*	126.44
$2s^2\,2p\ (^2P^\circ)5s$	$5s\ ^1P^\circ$	1	*214829.18*	
$2s^2\,2p\ (^2P^\circ)5d$	$5d\ ^1D^\circ$	2	*220495.36*	
$2s^2\,2p\ (^2P^\circ)5d$	$5d\ ^3D^\circ$	1		
		2	*220674*	42
		3	*220716*	
$2s^2\,2p\ (^2P^\circ_{01/2})5f$	$5f\ [2\frac{1}{2}]$	3	221054.50	
		2	221057.01	−2.51
,,	$5f\ [3\frac{1}{2}]$	3	221069.22	
		4	221073.35	4.13
$2s^2\,2p\ (^2P^\circ)5d$	$5d\ ^1F^\circ$	3	*221141.61*	
$2s^2\,2p\ (^2P^\circ_{01/2})5g$	$5g\ [3\frac{1}{2}]^\circ$	3	*221163.71*	
		4	*221163.71*	0.00
,,	$5g\ [4\frac{1}{2}]^\circ$	4	*221167.38*	
		5	*221167.57*	0.19

N II—Continued

Config.	Desig.	J	Level	Interval
$2s^2\,2p\ (^2P^\circ_{1\frac{1}{2}})5f$	$5f'$ [$3\frac{1}{2}$]	3	221226.65	5.27
		4	221231.92	
"	$5f'$ [$4\frac{1}{2}$]	5	221301.10	−10.01
		4	221311.11	
"	$5f'$ [$2\frac{1}{2}$]	3	221292.31	−3.93
		2	221296.24	
"	$5f'$ [$1\frac{1}{2}$]	1	221351.63	2.84
		2	221354.47	
$2s^2\,2p\ (^2P^\circ)5d$	$5d\ ^1P^\circ$	1	*221246.17*	
$2s^2\,2p\ (^2P^\circ_{1\frac{1}{2}})5g$	$5g'$ [$4\frac{1}{2}$]°	4	*221322.76*	0.10
		5	*221322.86*	
"	$5g'$ [$5\frac{1}{2}$]°	5	*221363.98*	0.02
		6	*221364.00*	
"	$5g'$ [$3\frac{1}{2}$]°	3	*221342.81*	0.19
		4	*221343.00*	
"	$5g'$ [$2\frac{1}{2}$]°	2, 3	[*221380.3*]	
$2s^2\,2p\ (^2P^\circ)6s$	$6s\ ^3P^\circ$	0		
		1	*222744.16*	134.23
		2	*222878.39*	
$2s\ 2p^2(^4P)3p$	$3p'\ ^3S^\circ$	1	*223069.02*	
$2s\ 2p\ (^2P^\circ)6s$	$6s\ ^1P^\circ$	1	*223101.82*	
$2s\ 2p^2(^4P)3p$	$3p'\ ^5D^\circ$	0	*223643.30*	
		1	*223658.55*	15.25
		2	*223688.45*	29.90
		3	*223731.59*	43.14
		4	*223785.51*	53.92
$2s\ 2p^2(^4P)3p$	$3p'\ ^5P^\circ$	1	*225603.50*	
		2	*225627.47*	23.97
		3	*225671.22*	43.75
$2s^2\,2p\ (^2P^\circ_{0\frac{1}{2}})6f$	$6f$ [$2\frac{1}{2}$]	3	226482.68	−1.96
		2	226484.64	
"	$6f$ [$3\frac{1}{2}$]	3	226488.79	3.30
		4	226492.09	
$2s^2\,2p\ (^2P^\circ_{1\frac{1}{2}})6f$	$6f'$ [$3\frac{1}{2}$]	3	226640.22	3.03
		4	226643.25	
"	$6f'$ [$4\frac{1}{2}$]	5	226688.9	−7.3
		4	226696.2	
"	$6f'$ [$2\frac{1}{2}$]	3	226675.99	−2.4
		2	226678.4	
"	$6f'$ [$1\frac{1}{2}$]	1	226718.6	2.2
		2	226720.8	
$2s\ 2p^2(^4P)3p$	$3p'\ ^3D^\circ$	1	*228694.30*	37.51
		2	*228731.81*	60.02
		3	*228791.83*	

N II—Continued

Config.	Desig.	J	Level	Interval
$2s^2\,2p\ (^2P^\circ_{0\frac{1}{2}})7f$	$7f$ [$3\frac{1}{2}$]	3	229748.9	0.8
		4	229749.7	
$2s\ 2p^2(^4P)3p$	$3p'\ ^5S^\circ$	2	*229838.96*	
$2s^2\,2p\ (^2P^\circ_{1\frac{1}{2}})7f$	$7f'$ [$3\frac{1}{2}$]	3		
		4	229907.5	
"	$7f'$ [$4\frac{1}{2}$]	5	229938.1	−5.0
		4	229943.1	
$2s\ 2p^2(^4P)3p$	$3p'\ ^3P^\circ$	0		
		1		
		2	*230831.74?*	
N III ($^2P^\circ_{0\frac{1}{2}}$)	***Limit***	.....	238750.50 ± 1.3	
N III ($^2P^\circ_{1\frac{1}{2}}$)	***Limit***	.....	238924.86	
$2s\ 2p^2(^4P)3d$	$3d'\ ^5F$	1	242969.16	17.60
		2	242986.76	26.01
		3	243012.77	33.79
		4	243046.56	40.38
		5	243086.94	
$2s\ 2p^2(^4P)3d$	$3d'\ ^5P$	3	244353.31	−38.57
		2	244391.88	−26.64
		1	244418.52	
$2s\ 2p^2(^4P)3d$	$3d'\ ^5D$	0	244935.74	4.15
		1	244939.89	7.88
		2	244947.77	11.18
		3	244958.95	14.36
		4	244973.31	
$2s\ 2p^2(^4P)4f$	$4f'\ ^5G^\circ$	2		
		3		
		4	*268378.35*	37.50
		5	*268415.85*	47.41
		6	*268463.26*	
$2s\ 2p^2(^4P)4f$	$4f'\ ^5D^\circ$	0		
		1		
		2		
		3		
		4	*268415.27?*	
$2s\ 2p^2(^4P)4f$	$4f'\ ^5F^\circ$	1		
		2		
		3	*268716.02*	8.89
		4	*268724.91*	8.81
		5	*268733.72*	
$2s\ 2p^2(^4P)5f$	$5f'\ ^5G^\circ$	2		
		3		
		4	*278333.5?*	33.8
		5	*278367.3*	53.0
		6	*278420.26*	
N III ($^4P_{0\frac{1}{2}}$)	*Limit*	.....	295942.5	
($^4P_{1\frac{1}{2}}$)	*Limit*	.....	296002.4	
($^4P_{2\frac{1}{2}}$)	*Limit*	.....	296083.6	

January 1971.

N II Observed g-Values

Desig.	J	Obs. g	Desig.	J	Obs. g	Desig.	J	Obs. g
$3s\ ^3P^\circ$	1	1.455	$3p\ ^3S$	1	2.015	$3d\ ^1D^\circ$	2	0.986
	2	1.502						
			$3p\ ^3P$	1	1.530	$3d\ ^3D^\circ$	1	0.494
$3s\ ^1P^\circ$	1	1.051		2	1.497		2	1.114
							3	3.329
$3p\ ^1P$	1	1.005	$3p\ ^1D$	2	1.002			
						$3d\ ^3P^\circ$	2	1.504
$3p\ ^3D$	1	0.494	$3d\ ^3F^\circ$	3	1.079		1	1.487
	2	1.166		4	1.250			
	3	1.330				$3d\ ^1P^\circ$	1	1.026

N II Observed Terms

Configuration $1s^2+$	Observed Terms					
$2s^2\ 2p^2$	$2p^2\ ^3P$					
	$2p^2\ ^1S$		$2p^2\ ^1D$			
$2s\ 2p^3$	$2p^3\ ^5S^\circ$					
	$2p^3\ ^3S^\circ$	$2p^3\ ^3P^\circ$	$2p^3\ ^3D^\circ$			
		$2p^3\ ^1P^\circ$	$2p^3\ ^1D^\circ$			
	$ns(n \geq 3)$			$np(n \geq 3)$		
$2s^2\ 2p\ (^2P^\circ)nl$	$3\text{–}6s\ ^3P^\circ$			$3\text{–}4p\ ^3S$	$3\text{–}4p\ ^3P$	$3\text{–}4p\ ^3D$
	$3\text{–}6s\ ^1P^\circ$			$3\text{–}4p\ ^1S$	$3\text{–}4p\ ^1P$	$3\text{–}4p\ ^1D$
$2s\ 2p^2(^4P)nl'$	$3s'\ ^5P$			$3p'\ ^5S^\circ$	$3p'\ ^5P^\circ$	$3p'\ ^5D^\circ$
	$3s'\ ^3P$			$3p'\ ^3S^\circ$	$3p'\ ^3P^\circ$	$3p'\ ^3D^\circ$
	$nd(n \geq 3)$			$nf(n \geq 4)$		
$2s^2\ 2p\ (^2P^\circ)nl'$	$3\text{–}4d\ ^3P^\circ$	$3\text{–}5d\ ^3D^\circ$	$3\text{–}4d\ ^3F^\circ$			
	$3\text{–}5d\ ^1P^\circ$	$3\text{–}5d\ ^1D^\circ$	$3\text{–}5d\ ^1F^\circ$			
$2s\ 2p^2(^4P)nl'$	$3d'\ ^5P$	$3d'\ ^5D$	$3d'\ ^5F$	$4f'\ ^5D^\circ$	$4f'\ ^5F^\circ$	$4, 5f'\ ^5G^\circ$
	Observed Pairs					
	$nf(n \geq 4)$			$ng(g \geq 5)$		
$2s^2\ 2p\ (^2P^\circ_{01/2})nl$	$4\text{–}6f\ [2\frac{1}{2}]$			$5g\ [3\frac{1}{2}]^\circ$		
	$4\text{–}7f\ [3\frac{1}{2}]$			$5g\ [4\frac{1}{2}]^\circ$		
$2s^2\ 2p\ (^2P^\circ_{1\,1/2})nl'$	$4\text{–}7f'[3\frac{1}{2}]$			$5g'[4\frac{1}{2}]^\circ$		
	$4\text{–}7f'[4\frac{1}{2}]$			$5g'[5\frac{1}{2}]^\circ$		
	$4\text{–}6f'[2\frac{1}{2}]$			$5g'[3\frac{1}{2}]^\circ$		
	$4\text{–}6f'[1\frac{1}{2}]$			$5g'[2\frac{1}{2}]^\circ$†		

†Calculated value entered in the table for $5g'[2\frac{1}{2}]^\circ$.

Part B NITROGEN

N II (Z=7)

I P 29.601 eV **Limit 238750.50 ± 1.3** cm^{-1} 418.847 Å (Vac)

Anal A List A January 1971

REFERENCES

I. S. Bowen, Astroph. J. **132**, 1–17 (1960) [N II] W L

B. Edlén, Nova Acta Reg. Soc. Sci. Uppsala [IV] **9**, No. 6, 109–120 (1934). I P, T, C L, G D (Singlets). (I)

A K. B. S. Eriksson, Ark. Fys. (Stockholm) **13**, No. 25, 303–329 (1958). I P, T, C L, I: W L 453Å to 10547Å

P Predicted Wavelength: See B. Edlén, Reports on Progress in Physics **26**, 206–207 (1963). (I): W L 529Å to 1085Å and Ref. A (I): W L 453 Å to 1991 Å

New Multiplet Numbers, not inserted between older ones, start with UV 24 and 72

*Blend

‡Raie Ultime.

N II

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
6583.45	P		0.02	1.90	2–2	$2p^2\,{}^3P - 2p^2\,{}^1D$
6548.05	P		0.01	1.90	1–2	1F
6527.23	P		0.00	1.90	0–2	
3070.55	P		0.02	4.05	2–0	$2p^2\,{}^3P - 2p^2\,{}^1S$
3062.83	P		0.01	4.05	1–0	2F
2142.775	A	6	0.02	5.80	2–2	$2p^2\,{}^3P - 2p^3\,{}^5S^\circ$
2139.007	A	4	0.01	5.80	1–2	UV 0.01
Vac						
1085.701‡	P	(150)	0.02	11.44	2–3	$2p^2\,{}^3P - 2p^3\,{}^3D^\circ$
1084.580	P	(80)	0.01	11.44	1–2	UV 1
1083.990	P	(40)	0.00	11.44	0–1	
1085.546	P	(30)	0.02	11.44	2–2	
1084.562	P	(30)	0.01	11.44	1–1	
1085.529	P	(2)	0.02	11.44	2–1	

N II

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
916.701	P	(100)	0.02	13.54	2–2	$2p^2\,{}^3P - 2p^3\,{}^3P^\circ$
916.020	P	(20)	0.01	13.54	1–1	UV 2
916.710	P	(40)	0.02	13.54	2–1	
915.962	P	(30)	0.01	13.54	1–0	
916.012	P	(40)	0.01	13.54	1–2	
915.612	P	(30)	0.00	13.54	0–1	
694.169	P		0.02	17.88	2–2	$2p^2\,{}^3P - 2p^3\,{}^1D^\circ$
693.774	P		0.01	17.88	1–2	UV 2.01
671.386	P	(15)	0.02	18.48	2–2	$2p^2\,{}^3P - 3s\ {}^3P^\circ$
671.630	P	(3)	0.01	18.47	1–1	UV 3
672.001	P	(5)	0.02	18.47	2–1	
671.773	P	(5)	0.01	18.46	1–0	
671.016	P	(5)	0.01	18.48	1–2	
671.411	P	(4)	0.00	18.47	0–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
670.884	P	(1)	0.02	18.50	2–1	$2p^2\ ^3P - 3s\ ^1P^\circ$
670.515	P	(1+)	0.01	18.50	1–1	UV 3.01
670.296	P	(2+)	0.00	18.50	0–1	
645.178	P	(30)	0.02	19.23	2–1	$2p^2\ ^3P - 2p^3\ ^3S^\circ$
644.837	P	(20)	0.01	19.23	1–1	UV 4
644.634	P	(10)	0.00	19.23	0–1	
600.115	P		0.02	20.68	2–1	$2p^2\ ^3P - 2p^3\ ^1P^\circ$
599.819	P		0.01	20.68	1–1	UV 4.01
599.644	P		0.00	20.68	0–1	
534.872	P		0.02	23.20	2–2	$2p^2\ ^3P - 3d\ ^1D^\circ$
534.637	P		0.01	23.20	1–2	UV 4.02
533.729	P	(8)	0.02	23.25	2–3	$2p^2\ ^3P - 3d\ ^3D^\circ$
533.581	P	(5)	0.01	23.24	1–2	UV 5
533.511	P	(3)	0.00	23.24	0–1	
533.815	P	(3)	0.02	23.24	2–2	
533.650	P	(3)	0.01	23.24	1–1	
533.884	P		0.02	23.24	2–1	
529.867	P	(5)	0.02	23.41	2–2	$2p^2\ ^3P - 3d\ ^3P^\circ$
529.491	P	(1)	0.01	23.42	1–1	UV 6
529.722	P	(2)	0.02	23.42	2–1	
529.413	P	(2)	0.01	23.42	1–0	
529.637	P	(2)	0.01	23.41	1–2	
529.355	P	(2)	0.00	23.42	0–1	
526.345	P		0.02	23.57	2–1	$2p^2\ ^3P - 3d\ ^1P^\circ$
526.118	P		0.01	23.57	1–1	UV 6.01
525.983	P		0.00	23.57	0–1	
508.697	P	(2)*	0.02	24.39	2–2	$2p^2\ ^3P - 4s\ ^3P^\circ$
508.794	P		0.01	24.37	1–1	UV 6.02
509.006	P	(0+)	0.02	24.37	2–1	
508.928	P	(0)	0.01	24.37	1–0	
508.484	P	(0+)	0.01	24.39	1–2	
508.668	P	(2)*	0.00	24.37	0–1	
505.746	P		0.02	24.53	2–1	$2p^2\ ^3P - 4s\ ^1P^\circ$
505.536	P		0.01	24.53	1–1	UV 6.03
505.411	P		0.00	24.53	0–1	
476.656	P		0.02	26.03	2–2	$2p^2\ ^3P - 4d\ ^1D^\circ$
476.469	P		0.01	26.03	1–2	UV 6.04
475.803	P	(3)	0.02	26.07	2–3	$2p^2\ ^3P - 4d\ ^3D^\circ$
475.698	P	(2)	0.01	26.07	1–2	UV 6.05
475.647	P	(1)	0.00	26.07	0–1	
475.884	P	(1−)	0.02	26.07	2–2	
475.757	P		0.01	26.07	1–1	
475.943	P		0.02	26.07	2–1	
474.891	P	(2)	0.02	26.12	2–2	$2p^2\ ^3P - 4d\ ^3P^\circ$
474.602	P	(0−)	0.01	26.13	1–1	UV 6.06
474.787	P	(0+)	0.02	26.13	2–1	
474.546	P	(0)	0.01	26.13	1–0	
474.706	P	(0+)	0.01	26.12	1–2	
474.493	P	(0)	0.00	26.13	0–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
473.473	P		0.02	26.20	2–1	$2p^2\ ^3P - 4d\ ^1P^\circ$
473.289	P		0.01	26.20	1–1	UV 6.07
473.180	P		0.00	26.20	0–1	
466.519	P		0.02	26.58	2–2	$2p^2\ ^3P - 5s\ ^3P^\circ$
466.834	P		0.01	26.56	1–1	UV 6.08
467.013	P		0.02	26.56	2–1	
467.021	P		0.01	26.56	1–0	
466.558	P		0.01	26.58	1–2	
466.728	P		0.00	26.56	0–1	
465.770	P		0.02	26.63	2–1	$2p^2\ ^3P - 5s\ ^1P^\circ$
465.592	P		0.01	26.63	1–1	UV 6.09
465.486	P		0.00	26.63	0–1	
453.793	P		0.02	27.34	2–2	$2p^2\ ^3P - 5d\ ^1D^\circ$
453.624	P		0.01	27.34	1–2	UV 6.10
453.340	C	(1)	0.02	27.36	2–3	$2p^2\ ^3P - 5d\ ^3D^\circ$
453.257	C	(0+)	0.01	27.36	1–2	UV 6.11
Air						
5754.59	P		1.90	4.05	2–0	$2p^2\ ^1D - 2p^2\ ^1S$ 3F
3176.87	P		1.90	5.80	2–2	$2p^2\ ^1D - 2p^3\ ^5S^\circ$ 0.01
Vac						
1300.035	P		1.90	11.44	2–3	$2p^2\ ^1D - 2p^3\ ^3D^\circ$
1299.814	P		1.90	11.44	2–2	UV 6.12
1299.788	P		1.90	11.44	2–1	
1064.947	P		1.90	13.54	2–2	$2p^2\ ^1D - 2p^3\ ^3P^\circ$
1064.958	P		1.90	13.54	2–1	UV 6.13
775.965	P	(100)	1.90	17.88	2–2	$2p^2\ ^1D - 2p^3\ ^1D^\circ$ UV 7
747.606	P		1.90	18.48	2–2	$2p^2\ ^1D - 3s\ ^3P^\circ$
748.369	P	(10)	1.90	18.47	2–1	UV 7.01
746.984	P	(15)	1.90	18.50	2–1	$2p^2\ ^1D - 3s\ ^1P^\circ$ UV 8
715.254	P		1.90	19.23	2–1	$2p^2\ ^1D - 2p^3\ ^3S^\circ$ UV 8.01
660.286	P	(25)	1.90	20.68	2–1	$2p^2\ ^1D - 2p^3\ ^1P^\circ$ UV 9
582.156	P	(3)	1.90	23.20	2–2	$2p^2\ ^1D - 3d\ ^1D^\circ$ UV 10
580.802	P		1.90	23.25	2–3	$2p^2\ ^1D - 3d\ ^3D^\circ$
580.904	P		1.90	23.24	2–2	UV 10.01
580.985	P		1.90	23.24	2–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
576.232	P		1.90	23.41	2–2	$2p^2\ ^1D - 3d\ ^3P^\circ$
576.060	P		1.90	23.42	2–1	UV 10.02
574.650	C	(5)	1.90	23.47	2–3	$2p^2\ ^1D - 3d\ ^1F^\circ$ UV 11
572.069	P		1.90	23.57	2–1	$2p^2\ ^1D - 3d\ ^1P^\circ$ UV 11.01
551.282	P		1.90	24.39	2–2	$2p^2\ ^1D - 4s\ ^3P^\circ$
551.645	P		1.90	24.37	2–1	UV 11.02
547.818	P	(0)	1.90	24.53	2–1	$2p^2\ ^1D - 4s\ ^1P^\circ$ UV 11.03
514.346	P		1.90	26.00	2–3	$2p^2\ ^1D - 4d\ ^3F^\circ$
514.516	P		1.90	26.00	2–2	UV 11.04
513.849	P	(2)	1.90	26.03	2–2	$2p^2\ ^1D - 4d\ ^1D^\circ$ UV 11.05
512.859	P		1.90	26.07	2–3	$2p^2\ ^1D - 4d\ ^3D^\circ$
512.952	P		1.90	26.07	2–2	UV 11.06
513.021	P		1.90	26.07	2–1	
511.799	P		1.90	26.12	2–2	$2p^2\ ^1D - 4d\ ^3P^\circ$
511.678	P		1.90	26.13	2–1	UV 11.07
510.758	P	(3)	1.90	26.17	2–3	$2p^2\ ^1D - 4d\ ^1F^\circ$ UV 11.08
510.152	P		1.90	26.20	2–1	$2p^2\ ^1D - 4d\ ^1P^\circ$ UV 11.09
502.341	P		1.90	26.58	2–2	$2p^2\ ^1D - 5s\ ^3P^\circ$
502.660	P		1.90	26.56	2–1	UV 11.10
501.220	P		1.90	26.63	2–1	$2p^2\ ^1D - 5s\ ^1P^\circ$ UV 11.11
487.379	P		1.90	27.34	2–2	$2p^2\ ^1D - 5d\ ^1D^\circ$ UV 11.12
485.849	P	(0)	1.90	27.42	2–3	$2p^2\ ^1D - 5d\ ^1F^\circ$ UV 11.13
485.602	P		1.90	27.43	2–1	$2p^2\ ^1D - 5d\ ^1P^\circ$ UV 11.14
1678.895	P		4.05	11.44	1–0	$2p^2\ ^1S - 2p^3\ ^3D^\circ$ UV 11.15
1306.715	P		4.05	13.54	0–1	$2p^2\ ^1S - 2p^3\ ^3P^\circ$ UV 11.16
860.205	P	(0)	4.05	18.47	0–1	$2p^2\ ^1S - 3s\ ^3P^\circ$ UV 11.17

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
858.376	P	(1)	4.05	18.50	0–1	$2p^2\ ^1S - 3s\ ^1P^\circ$ UV 11.18
816.740	P		4.05	19.23	0–1	$2p^2\ ^1S - 2p^3\ ^3S^\circ$ UV 11.19
745.841	P	(5)	4.05	20.68	0–1	$2p^2\ ^1S - 2p^3\ ^1P^\circ$ UV 12
640.121	P		4.05	23.42	0–1	$2p^2\ ^1S - 3d\ ^3P^\circ$ UV 12.01
635.197	P	(3)	4.05	23.57	0–1	$2p^2\ ^1S - 3d\ ^1P^\circ$ UV 13
610.116	P		4.05	24.37	0–1	$2p^2\ ^1S - 4s\ ^3P^\circ$ UV 13.01
605.437	P		4.05	24.53	0–1	$2p^2\ ^1S - 4s\ ^1P^\circ$ UV 13.02
561.600	P		4.05	26.13	0–1	$2p^2\ ^1S - 4d\ ^3P^\circ$ UV 13.03
559.762	P	(0)	4.05	26.20	0–1	$2p^2\ ^1S - 4d\ ^1P^\circ$ UV 13.04
549.027	P		4.05	26.63	0–1	$2p^2\ ^1S - 5s\ ^1P^\circ$ UV 13.05
530.343	P		4.05	27.43	0–1	$2p^2\ ^1S - 5d\ ^1P^\circ$ UV 13.06
818.950	P		5.80	20.94	2–1	$2p^3\ ^5S^\circ - 3p\ ^3S$ UV 13.07
807.222	P		5.80	21.16	2–2	$2p^3\ ^5S^\circ - 3p\ ^3P$
807.603	P		5.80	21.15	2–1	UV 13.08
639.082	P		5.80	25.20	2–2	$2p^3\ ^5S^\circ - 4p\ ^3P$
639.368	P		5.80	25.19	2–1	UV 13.09
637.946	P		5.80	25.23	2–1	$2p^3\ ^5S^\circ - 4p\ ^3S$ UV 13.10
629.167	P		5.80	25.51	2–3	$2p^3\ ^5S^\circ - 3s'\ ^5P$
629.447	P		5.80	25.50	2–2	UV 13.11
629.670	P		5.80	25.49	2–1	
605.902	P		5.80	26.26	2–2	$2p^3\ ^5S^\circ - 3s'\ ^3P$
606.080	P		5.80	26.26	2–1	UV 13.12
506.153	P		5.80	30.30	2–3	$2p^3\ ^5S^\circ - 3d'\ ^5P$
506,054	P		5.80	30.30	2–2	UV 13.13
505.986	P		5.80	30.30	2–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1381.970	P		11.44	20.41	2–1	$2p^3\,{}^3D°–3p\,{}^1P$
1383.911	P		11.44	20.41	1–1	UV 13.14
1343.338	B	(2)	11.44	20.66	3–3	$2p^3\,{}^3D°–3p\,{}^3D$
1345.313	P	(1)*	11.44	20.65	2–2	UV 13.15
1346.441	P	(0)*	11.44	20.65	1–1	
1345.076	P		11.44	20.65	3–2	
1346.413	P	(0)*	11.44	20.65	2–1	
1343.574	P		11.44	20.66	2–3	
1345.340	P	(1)*	11.44	20.65	1–2	
1304.769	P		11.44	20.94	2–1	$2p^3\,{}^3D°–3p\,{}^3S$
1304.795	P		11.44	20.94	1–1	UV 13.16
1275.038	B	(4)	11.44	21.16	3–2	$2p^3\,{}^3D°–3p\,{}^3P$
1276.201	P	(3)*	11.44	21.15	2–1	UV 13.17
1276.800	B	(2)	11.44	21.15	1–0	
1275.251	P	(1)*	11.44	21.16	2–2	
1276.225	P	(3)*	11.44	21.15	1–1	
1275.275	P	(1)*	11.44	21.16	1–2	
1219.887	P		11.44	21.60	3–2	$2p^3\,{}^3D°–3p\,{}^1D$
1220.082	P		11.44	21.60	2–2	UV 13.18
1220.104	P		11.44	21.60	1–2	
1162.499	P		11.44	22.10	1–0	$2p^3\,{}^3D°–3p\,{}^1S$
						UV 13.19
903.962	P		11.44	25.15	3–3	$2p^3\,{}^3D°–4p\,{}^3D$
904.855	P		11.44	25.14	2–2	UV 13.20
905.286	P		11.44	25.13	1–1	
904.748	P		11.44	25.14	3–2	
905.274	P		11.44	25.13	2–1	
904.069	P		11.44	25.15	2–3	
904.867	P		11.44	25.14	1–2	
900.724	P		11.44	25.20	3–2	$2p^3\,{}^3D°–4p\,{}^3P$
901.398	P		11.44	25.19	2–1	UV 13.21
901.626	P		11.44	25.19	1–0	
900.830	P		11.44	25.20	2–2	
901.411	P		11.44	25.19	1–1	
900.843	P		11.44	25.20	1–2	
881.153	P		11.44	25.51	3–3	$2p^3\ {}^3D°–3s'\,{}^5P$
881.804	P		11.44	25.50	2–2	UV 13.22
882.253	P		11.44	25.49	1–1	
836.187	P	(3)	11.44	26.26	3–2	$2p^3\,{}^3D°–3s'\,{}^3P$
836.616	P	(3)*	11.44	26.26	2–1	UV 13.23
836.837	P	(1)	11.44	26.25	1–0	
836.279	P	(0)*	11.44	26.26	2–2	
836.627	P	(3)*	11.44	26.26	1–1	
836.289	P	(0)*	11.44	26.26	1–2	
1805.277	P		13.54	20.41	2–1	$2p^3\,{}^3P°–3p\,{}^1P$
1805.244	P		13.54	20.41	1–1	UV 13.24
1805.469	P		13.54	20.41	0–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1740.310	P	(4)	13.54	20.66	2–3	$2p^3\,{}^3P°–3p\,{}^3D$
1743.197	P	(3)*	13.54	20.65	1–2	UV 13.25
1745.256	P		13.54	20.65	0–1	
1743.228	P	(3)*	13.54	20.65	2–2	
1745.046	P		13.54	20.65	1–1	
1745.076	P		13.54	20.65	2–1	
1675.755	P	(4)*	13.54	20.94	2–1	$2p^3\,{}^3P°–3p\,{}^3S$
1675.726	P	(4)*	13.54	20.94	1–1	UV 13.26
1675.920	P	(1)	13.54	20.94	0–1	
1627.376	P	(1)*	13.54	21.16	2–2	$2p^3\,{}^3P°–3p\,{}^3P$
1628.896	P	(1)*	13.54	21.15	1–1	UV 13.27
1628.922	P	(1)*	13.54	21.15	2–1	
1629.832	P	(0)	13.54	21.15	1–0	
1627.349	P	(1)*	13.54	21.16	1–2	
1629.079	P	(1)*	13.54	21.15	0–1	
1538.593	P		13.54	21.60	2–2	$2p^3\,{}^3P°–3p\,{}^1D$
1538.570	P		13.54	21.60	1–2	UV 13.28
1448.084	P		13.54	22.10	1–0	$2p^3\,{}^3P°–3p\,{}^1S$
						UV 13.29
1067.877	P		13.54	25.15	2–3	$2p^3\,{}^3P°–4p\,{}^3D$
1068.962	P		13.54	25.14	1–2	UV 13.30
1069.626	P		13.54	25.13	0–1	
1068.974	P		13.54	25.14	2–2	
1069.547	P		13.54	25.13	1–1	
1069.559	P		13.54	25.13	2–1	
1063.362	P		13.54	25.20	2–2	$2p^3\,{}^3P°–4p\,{}^3P$
1064.142	P		13.54	25.19	1–1	UV 13.31
1064.153	P		13.54	25.19	2–1	
1064.443	P		13.54	25.19	1–0	
1063.350	P		13.54	25.20	1–2	
1064.220	P		13.54	25.19	0–1	
1036.192	P		13.54	25.51	2–3	$2p^3\,{}^3P°–3s'\,{}^5P$
1036.940	P		13.54	25.50	1–2	UV 13.32
1037.619	P		13.54	25.49	0–1	
1036.950	P		13.54	25.50	2–2	
1037.545	P		13.54	25.49	1–1	
1037.556	P		13.54	25.49	2–1	
974.563	P		13.54	26.26	2–2	$2p^3\,{}^3P°–3s'\,{}^3P$
975.012	P		13.54	26.26	1–1	UV 13.33
Air						
4895.111	A	8	17.88	20.41	2–1	$2p^3\,{}^1D°–3p\,{}^1P$
						1
4445.035	P		17.88	20.66	2–3	$2p^3\,{}^1D°–3p\,{}^3D$
4464.127	P		17.88	20.65	2–2	1.01
4476.272	P		17.88	20.65	2–1	
4046.740	P		17.88	20.94	2–1	$2p^3\,{}^1D°–3p\,{}^3S$
						1.02

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
3775.606	P		17.88	21.16	2–2	$2p^3\ ^1D°–3p\ ^3P$
3783.944	P		17.88	21.15	2–1	1.03
3329.704	A	5	17.88	21.60	2–2	$2p^3\ ^1D°–3p\ ^1D$ 1.04
Vac						
1724.653	P		17.88	25.07	2–1	$2p^3\ ^1D°–4p\ ^1P$ UV 13.34
1634.996	P		17.88	25.46	2–2	$2p^3\ ^1D°–4p\ ^1D$ UV 13.35
Air						
6435.614	P		18.48	20.41	2–1	$3s\ ^3P°–3p\ ^1P$
6379.615	A	9	18.47	20.41	1–1	2
6366.786	P		18.46	20.41	0–1	
5679.562	A	14	18.48	20.66	2–3	$3s\ ^3P°–3p\ ^3D$
5666.627	A	12	18.47	20.65	1–2	3
5676.019	A	11	18.46	20.65	0–1	
5710.766	A	10	18.48	20.65	2–2	
5686.213	A	10	18.47	20.65	1–1	
5730.65	A	5	18.48	20.65	2–1	
5045.100	A	11	18.48	20.94	2–1	$3s\ ^3P°–3p\ ^3S$
5010.620	A	10	18.47	20.94	1–1	4
5002.703	A	9	18.46	20.94	0–1	
4630.543	A	14	18.48	21.16	2–2	$3s\ ^3P°–3p\ ^3P$
4613.866	A	9	18.47	21.15	1–1	5
4643.085	A	11	18.48	21.15	2–1	
4621.394	A	10	18.47	21.15	1–0	
4601.480	A	11	18.47	21.16	1–2	
4607.157	A	10	18.46	21.15	0–1	
3977.310	P		18.48	21.60	2–2	$3s\ ^3P°–3p\ ^1D$
3955.851	A	10	18.47	21.60	1–2	6
3408.127	A	5	18.47	22.10	1–0	$3s\ ^3P°–3p\ ^1S$ 7
Vac						
1883.448	P		18.48	25.07	2–1	$3s\ ^3P°–4p\ ^1P$
1878.624	P		18.47	25.07	1–1	UV 13.36
1877.510	P		18.46	25.07	0–1	
1859.260	P		18.48	25.15	2–3	$3s\ ^3P°–4p\ ^3D$
1857.870	P		18.47	25.14	1–2	UV 13.37
1858.545	P		18.46	25.13	0–1	
1862.588	P		18.48	25.14	2–2	
1859.636	P		18.47	25.13	1–1	
1864.364	P		18.48	25.13	2–1	
1845.616	P		18.48	25.20	2–2	$3s\ ^3P°–4p\ ^3P$
1843.357	P		18.47	25.19	1–1	UV 13.38
1848.002	P		18.48	25.19	2–1	
1844.259	P		18.47	25.19	1–0	
1840.983	P		18.47	25.20	1–2	
1842.284	P		18.46	25.19	0–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1836.172	P		18.48	25.23	2–1	$3s\ ^3P°–4p\ ^3S$
1831.586	P		18.47	25.23	1–1	UV 13.39
1830.527	P		18.46	25.23	0–1	
1777.030	P		18.48	25.46	2–2	$3s\ ^3P°–4p\ ^1D$
1772.735	P		18.47	25.46	1–2	UV 13.40
1765.278	P		18.48	25.51	2–3	$3s\ ^3P°–3s'\ ^5P$
1763.232	P		18.47	25.50	1–2	UV 13.41
1763.999	P		18.46	25.49	0–1	
1725.028	P		18.47	25.65	1–0	$3s\ ^3P°–4p\ ^1S$ UV 13.42
1593.596	P		18.48	26.26	2–2	$3s\ ^3P°–3s'\ ^3P$
1591.361	P		18.47	26.26	1–1	UV 13.43
1594.822	P		18.48	26.26	2–1	
1592.124	P		18.47	26.25	1–0	
1590.141	P		18.47	26.26	1–2	
1590.562	P		18.46	26.26	0–1	
Air						
6482.053	A	13	18.50	20.41	1–1	$3s\ ^1P°–3p\ ^1P$ 8
5747.296	A	8	18.50	20.65	1–2	$3s\ ^1P°–3p\ ^3D$
5767.440	A	7	18.50	20.65	1–1	9
5073.590	A	5	18.50	20.94	1–1	$3s\ ^1P°–3p\ ^3S$ 10
4654.532	A	5	18.50	21.16	1–2	$3s\ ^1P°–3p\ ^3P$
4667.206	A	5	18.50	21.15	1–1	11
4674.909	A	5	18.50	21.15	1–0	
3994.998	A	15	18.50	21.60	1–2	$3s\ ^1P°–3p\ ^1D$ 12
3437.147	A	9	18.50	22.10	1–0	$3s\ ^1P°–3p\ ^1S$ 13
Vac						
1887.404	P	(4)	18.50	25.07	1–1	$3s\ ^1P°–4p\ ^1P$ UV 14
1866.457	P		18.50	25.14	1–2	$3s\ ^1P°–4p\ ^3D$
1868.240	P	(0)	18.50	25.13	1–1	UV 14.01
1849.414	P	(1)	18.50	25.20	1–2	$3s\ ^1P°–4p\ ^3P$
1851.810	P		18.50	25.19	1–1	UV 14.02
1852.721	P		18.50	25.19	1–0	
1839.931	P		18.50	25.23	1–1	$3s\ ^1P°–4p\ ^3S$ UV 14.03
1780.551	P		18.50	25.46	1–2	$3s\ ^1P°–4p\ ^1D$ UV 14.04
1732.428	P		18.50	25.65	1–0	$3s\ ^1P°–4p\ ^1S$ UV 14.05

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
10541.15	P		19.23	20.41	1–1	$2p^3\,{}^3S°–3p\ {}^1P$ 13.01
8726.87	P		19.23	20.65	1–2	$2p^3\,{}^3S°–3p\ {}^3D$
8773.40	P		19.23	20.65	1–1	13.02
7262.55	P		19.23	20.94	1–1	$2p^3\,{}^3S°–3p\ {}^3S$ 13.03
6433.45	A	1	19.23	21.16	1–2	$2p^3\,{}^3S°–3p\ {}^3P$
6457.69	A	0	19.23	21.15	1–1	13.04
6472.43	P		19.23	21.15	1–0	
4319.063	P		19.23	22.10	1–0	$2p^3\,{}^3S°–3p\ {}^1S$ 13.05
2125.003	P		19.23	25.07	1–1	$2p^3\,{}^3S°–4p\ {}^1P$ UV 14.06
2076.944	A	4	19.23	25.20	1–2	$2p^3\,{}^3S°–4p\ {}^3P$
2079.968	A	3	19.23	25.19	1–1	UV 14.07
2081.120	P		19.23	25.19	1–0	
2064.990	P		19.23	25.23	1–1	$2p^3\,{}^3S°–4p\ {}^3S$ UV 14.08
Vac						
1931.117	P		19.23	25.65	1–0	$2p^3\,{}^3S°–4p\ {}^1S$ UV 14.09
1773.639	P		19.23	26.26	1–2	$2p^3\,{}^3S°–3s'\ {}^3P$
1765.140	P		19.23	26.26	1–1	UV 14.10
1766.079	P		19.23	26.25	1–0	
Air						
4564.764	A	3	20.41	23.12	1–2	$3p\ {}^1P –3d\ {}^3F°$ 14
4447.033	A	12	20.41	23.20	1–2	$3p\ {}^1P –3d\ {}^1D°$ 15
4374.98	A	2	20.41	23.24	1–2	$3p\ {}^1P –3d\ {}^3D°$
4379.59	P		20.41	23.24	1–1	16
4123.13	P		20.41	23.41	1–2	$3p\ {}^1P –3d\ {}^3P°$
4114.36	A	0	20.41	23.42	1–1	16.01
4109.59	P		20.41	23.42	1–0	
3918.999	A	9	20.41	23.57	1–1	$3p\ {}^1P –3d\ {}^1P°$ 17
3114.286	P		20.41	24.39	1–2	$3p\ {}^1P –4s\ {}^3P°$
3125.920	P		20.41	24.37	1–1	17.01
3130.996	P		20.41	24.37	1–0	
3006.830	A	7	20.41	24.53	1–1	$3p\ {}^1P –4s\ {}^1P°$ 18
2218.41	A	0	20.41	26.00	1–2	$3p\ {}^1P –4d\ {}^3F°$ UV 14.11

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
2206.088	A	6	20.41	26.03	1–2	$3p\ {}^1P –4d\ {}^1D°$ UV 15
2189.643	P		20.41	26.07	1–2	$3p\ {}^1P –4d\ {}^3D°$
2190.900	P		20.41	26.07	1–1	UV 15.01
2168.778	P		20.41	26.12	1–2	$3p\ {}^1P –4d\ {}^3P°$
2166.605	P		20.41	26.13	1–1	UV 15.02
2165.431	P		20.41	26.13	1–0	
2139.489	P		20.41	26.20	1–1	$3p\ {}^1P –4d\ {}^1P°$ UV 15.03
Vac						
1991.301	P		20.41	26.63	1–1	$3p\ {}^1P –5s\ {}^1P°$ UV 15.04
1789.402	P		20.41	27.34	1–2	$3p\ {}^1P –5d\ {}^1D°$ UV 15.05
1765.680	P		20.41	27.43	1–1	$3p\ {}^1P –5d\ {}^1P°$ UV 15.06
1460.045	P		20.41	27.66	1–1	$3p\ {}^1P –6s\ {}^1P°$ UV 15.07
Air						
*5005.149	A	14	20.66	23.14	3–4	$3p\ {}^3D –3d\ {}^3F°$
5001.477	A	12	20.65	23.13	2–3	19
5001.136	A	11	20.65	23.12	1–2	
5025.662	A	9	20.66	23.13	3–3	
5016.387	A	9	20.65	23.12	2–2	
5040.72	A	3	20.66	23.12	3–2	
4897.536	P		20.66	23.20	3–2	$3p\ {}^3D –3d\ {}^1D°$
4874.566	P		20.65	23.20	2–2	19.01
4860.170	A	4	20.65	23.20	1–2	
4803.289	A	10	20.66	23.25	3–3	$3p\ {}^3D –3d\ {}^3D°$
4788.131	A	8	20.65	23.24	2–2	20
4779.722	A	7	20.65	23.24	1–1	
4810.306	A	4	20.66	23.24	3–2	
4793.650	A	4	20.65	23.24	2–1	
4781.190	A	4	20.65	23.25	2–3	
4774.241	A	4	20.65	23.24	1–2	
4507.557	A	6	20.66	23.41	3–2	$3p\ {}^3D –3d\ {}^3P°$
4477.691	A	4	20.65	23.42	2–1	21
4459.933	A	3	20.65	23.42	1–0	
4488.12	A	2	20.65	23.41	2–2	
4465.527	A	2	20.65	23.42	1–1	
4475.886	P		20.65	23.41	1–2	
4412.501	P		20.66	23.47	3–3	$3p\ {}^3D –3d\ {}^1F°$
4393.847	P		20.65	23.47	2–3	21.01
4247.31	A	1	20.65	23.57	2–1	$3p\ {}^3D –3d\ {}^1P°$
4236.356	P		20.65	23.57	1–1	21.02

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
3328.730	A	7	20.66	24.39	3–2	$3p\ ^3D - 4s\ ^3P^\circ$
3331.310	A	6	20.65	24.37	2–1	22
3330.314	A	5	20.65	24.37	1–0	
3318.098	A	5	20.65	24.39	2–2	
3324.573	A	5	20.65	24.37	1–1	
3311.418	P		20.65	24.39	1–2	
3196.391	P		20.65	24.53	2–1	$3p\ ^3D - 4s\ ^1P^\circ$
3190.194	P		20.65	24.53	1–1	22.01
2317.046	A	8	20.66	26.01	3–4	$3p\ ^3D - 4d\ ^3F^\circ$
2316.493	A	7	20.65	26.00	2–3	UV 16
2316.690	A	6	20.65	26.00	1–2	
2321.650	A	4	20.66	26.00	3–3	
2319.941	A	4	20.65	26.00	2–2	
2325.16	A	0	20.66	26.00	3–2	
2311.582	P		20.66	26.00	3–2	$3p\ ^3D - 4d\ ^1D^\circ$
2306.451	P		20.65	26.00	2–2	UV 16.01
2303.21	A	1	20.65	26.03	1–2	
2291.652	A	4	20.66	26.07	3–3	$3p\ ^3D - 4d\ ^3D^\circ$
*2288.444	A	5	20.65	26.07	2–2	UV 16.02
*2286.689	A	6	20.65	26.07	1–1	
2293.534	P		20.66	26.07	3–2	
2289.84	A	0	20.65	26.07	2–1	
2286.618	P		20.65	26.07	2–3	
2285.305	P		20.65	26.07	1–2	
2270.651	P		20.66	25.20	3–2	$3p\ ^3D - 4d\ ^3P^\circ$
2263.332	P		20.65	25.19	2–1	UV 16.03
2258.945	P		20.65	25.19	1–0	
2265.701	P		20.65	25.20	2–2	
2260.223	P		20.65	25.19	1–1	
2262.585	P		20.65	25.20	1–2	
2250.283	P		20.66	26.17	3–3	$3p\ ^3D - 4d\ ^1F^\circ$
2245.426	P		20.65	26.17	2–3	UV 16.04
2233.758	P		20.65	26.20	2–1	$3p\ ^3D - 4d\ ^1P^\circ$
2230.729	P		20.65	26.20	1–1	UV 16.05
2095.532	A	6	20.66	26.58	3–2	$3p\ ^3D - 5s\ ^3P^\circ$
2096.856	A	5	20.65	26.56	2–1	UV 16.06
2096.192	A	4	20.65	26.56	1–0	
2091.316	A	3	20.65	26.58	2–2	
2094.183	A	3	20.65	26.56	1–1	
2088.657	P		20.65	26.58	1–2	
13425.69	P		20.68	21.60	1–2	$2p^3\ ^1P^\circ - 3p\ ^1D$ 22.02
8687.430	A	5	20.68	22.10	1–0	$2p^3\ ^1P^\circ - 3p\ ^1S$ 22.03
2823.635	A	5	20.68	25.07	1–1	$2p^3\ ^1P^\circ - 4p\ ^1P$ UV 17

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
2776.989	P		20.68	25.14	1–2	$2p^3\ ^1P^\circ - 4p\ ^3D$
2780.940	P		20.68	25.13	1–1	UV 17.01
2739.417	P		20.68	25.20	1–2	$2p^3\ ^1P^\circ - 4p\ ^3P$
2744.678	P		20.68	25.19	1–1	UV 17.02
2746.681	P		20.68	25.19	1–0	
2718.655	P		20.68	25.23	1–1	$2p^3\ ^1P^\circ - 4p\ ^3S$ UV 17.03
2590.938	A	5	20.68	25.46	1–2	$2p^3\ ^1P^\circ - 4p\ ^1D$ UV 18
*2490.281	A	4	20.68	25.65	1–0	$2p^3\ ^1P^\circ - 4p\ ^1S$ UV 18.01
2238.974	A	4	20.68	26.21	1–2	$2p^3\ ^1P^\circ - 4f'\ [2\frac{1}{2}]$
2235.208	A	4	20.68	26.22	1–2	UV 18.02 $[1\frac{1}{2}]$
2235.396	P		20.68	26.22	1–1	
2218.474	P		20.68	26.26	1–2	$2p^3\ ^1P^\circ - 3s'\ ^3P$
2220.850	P		20.68	26.26	1–1	UV 18.03
2223.36	P		20.68	26.25	1–0	
5493.22	A	1	20.94	23.20	1–2	$3p\ ^3S - 3d\ ^1D^\circ$ 22.04
5383.71	A	2	20.94	23.24	1–2	$3p\ ^3S - 3d\ ^3D^\circ$
5390.68	A	1	20.94	23.24	1–1	23
5007.325	A	11	20.94	23.41	1–2	$3p\ ^3S - 3d\ ^3P^\circ$
*4994.363	A	10	20.94	23.42	1–1	24
4987.367	A	8	20.94	23.42	1–0	
4709.435	P		20.94	23.57	1–1	$3p\ ^3S - 3d\ ^1P^\circ$ 25
3593.597	A	5	20.94	24.39	1–2	$3p\ ^3S - 4s\ ^3P^\circ$
3609.097	A	4	20.94	24.37	1–1	26
3615.858	A	2	20.94	24.37	1–0	
3451.277	P		20.94	24.53	1–1	$3p\ ^3S - 4s\ ^1P^\circ$ 26.01
2436.291	P		20.94	26.03	1–2	$3p\ ^3S - 4d\ ^1D^\circ$ UV 18.04
2416.253	P		20.94	26.07	1–2	$3p\ ^3S - 4d\ ^3D^\circ$
2417.784	P		20.94	26.07	1–1	UV 18.05
2390.866	A	4	20.94	26.12	1–2	$3p\ ^3S - 4d\ ^3P^\circ$
2388.230	A	3	20.94	26.13	1–1	UV 18.06
2386.78	A	1	20.94	26.13	1–0	
2355.328	P		20.94	26.20	1–1	$3p\ ^3S - 4d\ ^1P^\circ$ UV 18.07

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
2197.506	A	4	20.94	26.58	1–2	$3p\ ^3S - 5s\ ^3P°$
2203.633	A	3	20.94	26.56	1–1	UV 18.08
2205.855	P		20.94	26.56	1–0	
6285.70	A	2	21.16	23.13	2–3	$3p\ ^3P - 3d\ ^3F°$
6286.11	P		21.15	23.12	1–2	26.02
6309.255	P		21.16	23.12	2–2	
6086.54	P		21.16	23.20	2–2	$3p\ ^3P - 3d\ ^1D°$
6065.00	A	3	21.15	23.20	1–2	27
5941.653	A	12	21.16	23.25	2–3	$3p\ ^3P - 3d\ ^3D°$
5931.779	A	11	21.15	23.24	1–2	28
5927.811	A	9	21.15	23.24	0–1	
5952.388	A	8	21.16	23.24	2–2	
5940.240	A	8	21.15	23.24	1–1	
5960.901	A	4	21.16	23.24	2–1	
5495.666	A	10	21.16	23.41	2–2	$3p\ ^3P - 3d\ ^3P°$
5462.592	A	7	21.15	23.42	1–1	29
5480.062	A	7	21.16	23.42	2–1	
5454.221	A	7	21.15	23.42	1–0	
5478.096	A	7	21.15	23.41	1–2	
5452.083	A	7	21.15	23.42	0–1	
5138.897	P		21.16	23.57	2–1	$3p\ ^3P - 3d\ ^1P°$
5123.532	P		21.15	23.57	1–1	29.01
5114.284	P		21.15	23.57	0–1	
3838.374	A	8	21.16	24.39	2–2	$3p\ ^3P - 4s\ ^3P°$
3847.409	A	5	21.15	24.37	1–1	30
3856.057	A	6	21.16	24.37	2–1	
3855.100	A	5	21.15	24.37	1–0	
3829.793	A	6	21.15	24.39	1–2	
3842.183	A	5	21.15	24.37	0–1	
3676.442	P		21.16	24.53	2–1	$3p\ ^3P - 4s\ ^1P°$
3668.572	P		21.15	24.53	1–1	30.01
3663.829	P		21.15	24.53	0–1	
2558.62	A	0	21.16	26.00	2–3	$3p\ ^3P - 4d\ ^3F°$
2559.02	P		21.15	26.00	1–2	UV 18.09
2562.85	P		21.16	26.00	2–2	
2546.388	P		21.16	26.03	2–2	$3p\ ^3P - 4d\ ^1D°$
2542.609	P		21.15	26.03	1–2	UV 18.10
2522.227	A	7	21.16	26.07	2–3	$3p\ ^3P - 4d\ ^3D°$
2520.791	A	6	21.15	26.07	1–2	UV 19
2520.222	A	5	21.15	26.07	0–1	
2524.488	A	4	21.16	26.07	2–2	
2522.458	A	4	21.15	26.07	1–1	
2526.17	A	0	21.16	26.07	2–1	
2496.83	A	5	21.16	26.12	2–2	$3p\ ^3P - 4d\ ^3P°$
*2490.281	A	4	21.15	26.13	1–1	UV 20
2493.940	A	3	21.16	26.13	2–1	
2488.746	A	3	21.15	26.13	1–0	
2493.16	A	2	21.15	26.12	1–2	
2488.120	A	2	21.15	26.13	0–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
2458.075	P		21.16	26.20	2–1	$3p\ ^3P - 4d\ ^1P°$
2458.554	P		21.15	26.20	1–1	UV 20.01
2452.430	P		21.15	26.20	0–1	
*2286.689	A	6	21.16	26.58	2–2	$3p\ ^3P - 5s\ ^3P°$
2290.259	A	3	21.15	26.56	1–1	UV 20.02
2293.318	A	4	21.16	26.56	2–1	
2292.652	A	3	21.15	26.56	1–0	
2283.652	A	4	21.15	26.58	1–2	
*2288.444	A	5	21.15	26.56	0–1	
8089.08	P		21.60	23.13	2–3	$3p\ ^1D - 3d\ ^3F°$
8128.14	P		21.60	23.12	2–2	30.02
7762.237	A	10	21.60	23.20	2–2	$3p\ ^1D - 3d\ ^1D°$
						30.03
7528.122	P		21.60	23.25	2–3	$3p\ ^1D - 3d\ ^3D°$
7545.360	P		21.60	23.24	2–2	30.04
7559.053	P		21.60	23.24	2–1	
6826.227	P		21.60	23.41	2–2	$3p\ ^1D - 3d\ ^3P°$
6802.168	P		21.60	23.42	2–1	30.05
6610.565	A	13	21.60	23.47	2–3	$3p\ ^1D - 3d\ ^1F°$
						31
6284.322	A	6	21.60	23.57	2–1	$3p\ ^1D - 3d\ ^1P°$
						32
4443.294	P		21.60	24.39	2–2	$3p\ ^1D - 4s\ ^3P°$
4467.014	P		21.60	24.37	2–1	32.01
4227.743	A	8	21.60	24.53	2–1	$3p\ ^1D - 4s\ ^1P°$
						33
2814.016	P		21.60	26.00	2–3	$3p\ ^1D - 4d\ ^3F°$
2819.120	P		21.60	26.00	2–2	UV 20.03
2799.216	A	5	21.60	26.03	2–2	$3p\ ^1D - 4d\ ^1D°$
						UV 21
2770.060	P		21.60	26.07	2–3	$3p\ ^1D - 4d\ ^3D°$
2772.898	P		21.60	26.07	2–2	UV 21.01
2774.815	P		21.60	26.07	2–1	
2739.424	P		21.60	26.12	2–2	$3p\ ^1D - 4d\ ^3P°$
2735.962	P		21.60	26.13	2–1	UV 21.02
2709.837	A	6	21.60	26.17	2–3	$3p\ ^1D - 4d\ ^1F°$
						UV 22
2692.867	P		21.60	26.20	2–1	$3p\ ^1D - 4d\ ^1P°$
						UV 22.01
2461.270	A	6	21.60	26.63	2–1	$3p\ ^1D - 5s\ ^1P°$
						UV 23

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
2159.927	A	3	21.60	27.34	2–2	$3p\ ^1D - 5d\ ^1D^\circ$ UV 24
2130.179	A	5	21.60	27.42	2–3	$3p\ ^1D - 5d\ ^1F^\circ$ UV 25
2125.444	P		21.60	27.43	2–1	$3p\ ^1D - 5d\ ^1P^\circ$ UV 26
2044.761	P		21.60	27.66	2–1	$3p\ ^1D - 6s\ ^1P^\circ$ UV 27
10909.06	P		22.10	23.24	0–1	$3p\ ^1S - 3d\ ^3D^\circ$ 33.01
9399.64	P		22.10	23.42	0–1	$3p\ ^1S - 3d\ ^3P^\circ$ 33.02
8438.742	A	11	22.10	23.57	0–1	$3p\ ^1S - 3d\ ^1P^\circ$ 33.03
5457.389	P		22.10	24.37	0–1	$3p\ ^1S - 4s\ ^3P^\circ$ 33.04
5104.437	A	5	22.10	24.53	0–1	$3p\ ^1S - 4s\ ^1P^\circ$ 34
3127.373	P		22.10	26.07	0–1	$3p\ ^1S - 4d\ ^3D^\circ$ 34.01
3078.108	P		22.10	26.13	0–1	$3p\ ^1S - 4d\ ^3P^\circ$ 34.02
3023.668	A	4	22.10	26.20	0–1	$3p\ ^1S - 4d\ ^1P^\circ$ 35
*2734.702	A	2*h*	22.10	26.63	0–1	$3p\ ^1S - 5s\ ^1P^\circ$ UV 28
2326.340	A	3	22.10	27.43	0–1	$3p\ ^1S - 5d\ ^1P^\circ$ UV 29
2230.034	P		22.10	27.66	0–1	$3p\ ^1S - 6s\ ^1P^\circ$ UV 30
6384.31	A	2	23.12	25.07	2–1	$3d\ ^3F^\circ - 4p\ ^1P$ 35.01
6167.755	A	8	23.14	25.15	4–3	$3d\ ^3F^\circ - 4p\ ^3D$ 36
6173.313	A	7	23.13	25.14	3–2	
6170.166	A	6	23.12	25.13	2–1	
6136.894	A	4	23.13	25.15	3–3	
6150.755	A	4	23.12	25.14	2–2	
6114.598	P		23.12	25.15	2–3	
5323.560	P		23.13	25.46	3–2	$3d\ ^3F^\circ - 4p\ ^1D$ 36.01
5306.774	P		23.12	25.46	2–2	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
4100.973	P		23.14	26.16	4–3	$3d\ ^3F^\circ - 4f$ [2½]
4086.828	P		23.13	26.16	3–2	38
4087.303	A	3	23.13	26.16	3–3	
4076.908	A	3	23.12	26.16	2–2	
4077.404	P		23.12	26.16	2–3	
4095.904	A	4	23.14	26.17	4–4	[3½]
4082.89	A	1	23.13	26.17	3–3	
4096.58	A	0	23.14	26.17	4–3	
4082.270	A	5	23.13	26.17	3–4	
4073.042	A	6	23.12	26.17	2–3	
4056.90	A	4	23.14	26.20	4–4	$3d\ ^3F^\circ - 4f'$ [3½]
4044.777	A	4	23.13	26.20	3–3	39
4058.162	P		23.14	26.20	4–3	
4043.529	A	9	23.13	26.20	3–4	
4035.080	A	9	23.12	26.20	2–3	
4041.311	A	11	23.14	26.21	4–5	[4½]
4026.075	A	7	23.13	26.21	3–4	
4039.345	A	2	23.14	26.21	4–4	
4037.96	A	1	23.14	26.21	4–3	$3d\ ^3F^\circ - 4f'$ [2½]
4023.950	P		23.13	26.21	3–2	39.01
4024.710	P		23.13	26.21	3–3	
4011.817	P		23.13	26.22	3–2	[1½]
4002.872	P		23.12	26.22	2–1	
4002.276	P		23.12	26.22	2–2	
2905.956	P		23.14	27.41	4–3	$3d\ ^3F^\circ - 5f$ [2½]
2898.875	P		23.13	27.41	3–2	UV 31
2899.086	A	1	23.13	27.41	3–3	
2893.889	A	1	23.12	27.41	2–2	
2889.918	P		23.12	27.41	2–3	
2904.357	A	1	23.14	27.41	4–4	[3½]
2897.849	P		23.13	27.41	3–3	
2904.713	P		23.14	27.41	4–3	
2897.503	A	4	23.13	27.41	3–4	
2892.868	A	4	23.12	27.41	2–3	
2891.046	A	3	23.14	27.43	4–4	$3d\ ^3F^\circ - 5f'$ [3½]
2884.685	A	2	23.13	27.43	3–3	UV 32
2891.486	P		23.14	27.43	4–3	
2884.246	A	4	23.13	27.43	3–4	
2879.751	A	4	23.12	27.43	2–3	
2885.273	A	6	23.14	27.44	4–5	[4½]
2877.681	A	4	23.13	27.44	3–4	
2884.439	P		23.14	27.44	4–4	
2509.902	P		23.14	28.08	4–3	$3d\ ^3F^\circ - 6f$ [2½]
2504.653	P		23.13	28.08	3–2	UV 33
2504.776	P		23.13	28.08	3–3	
2500.931	P		23.12	28.08	2–2	
2501.554	P		23.12	28.08	2–3	
2509.310	P		23.14	28.08	4–4	[3½]
2504.993	P		23.13	28.08	3–3	
2509.518	P		23.14	28.08	4–3	
2504.188	A	4*h*	23.13	28.08	3–4	
2500.672	A	4*h*	23.12	28.08	2–3	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
2499.825	A	2*h*	23.14	28.10	4–4	3*d* ^{3}F°–6*f*′ [3½] UV 34
2494.92	A	0*h*	23.13	28.10	3–3	
2494.71	A	3*h*	23.13	28.10	3–4	
2491.21	A	3*h*	23.12	28.10	2–3	
2496.97	A	4*h*	23.14	28.11	4–5	[4½]
2491.46	A	3*h*	23.13	28.11	3–4	
2496.52	P		23.14	28.11	4–4	
2319.62	P		23.14	28.48	4–4	3*d* ^{3}F°–7*f* [3½] UV 35
2315.29	P		23.13	28.48	3–3	
2315.25	A	0*h*	23.13	28.48	3–4	
2312.13	A	0*h*	23.12	28.48	2–3	
2311.161	P		23.14	28.50	4–4	3*d* ^{3}F°–7*f*′ [3½] UV 36
2306.814	P		23.13	28.50	3–4	
2309.53	A	1*h*	23.14	28.51	4–5	[4½]
2304.92	P		23.13	28.51	3–4	
2309.26	P		23.14	28.51	4–4	
6629.795	A	7	23.20	25.07	2–1	3*d* ^{1}D°–4*p* ^{1}P 41
6339.406	P		23.20	25.15	2–3	3*d* ^{1}D°–4*p* ^{3}D 41.01
6378.274	P		23.20	25.14	2–2	
6399.16	A	2	23.20	25.13	2–1	
6183.495	P		23.20	25.20	2–2	3*d* ^{1}D°–4*p* ^{3}P 41.02
6210.365	P		23.20	25.19	2–1	
5475.29	A	4	23.20	25.46	2–2	3*d* ^{1}D°–4*p* ^{1}D 41.03
4176.161	A	8	23.20	26.16	2–3	3*d* ^{1}D°–4*f* [2½] 43
4175.660	P		23.20	26.16	2–2	
4171.607	A	6	23.20	26.17	2–3	[3½]
4131.782	A	4	23.20	26.20	2–3	3*d* ^{1}D°–4*f*′ [3½] 43.01
4110.83	A	2	23.20	26.21	2–3	3*d* ^{1}D°–4*f*′ [2½] 44
4110.04	A	3	23.20	26.21	2–2	
*m*4097.384	P	N III	23.20	26.22	2–2	[1½]
4098.009	P		23.20	26.22	2–1	
4041.500	P		23.20	26.26	2–2	3*d* ^{1}D°–3*s*′ ^{3}P 44.01
4049.394	P		23.20	26.26	2–1	
2943.495	A	4	23.20	27.41	2–3	3*d* ^{1}D°–5*f* [2½] UV 37
2943.291	P		23.20	27.41	2–2	
2942.17	A	3*	23.20	27.41	2–3	[3½]
2928.655	A	3	23.20	27.43	2–3	3*d* ^{1}D°–5*f*′ [3½] UV 38

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
2923.050	A	1	23.20	27.44	2–3	3*d* ^{1}D°–5*f*′ [2½] UV 39
2922.76	A	1*	23.20	27.44	2–2	
2917.734	A	1	23.20	27.44	2–2	[1½]
2917.979	P		23.20	27.44	2–1	
2537.873	A	3*h*	23.20	28.08	2–3	3*d* ^{1}D°–6*f* [2½] UV 40
2537.742	P		23.20	28.08	2–2	
2537.49	A	0*h*	23.20	28.08	2–3	[3½]
2527.762	A	2*h*	23.20	28.10	2–3	3*d* ^{1}D°–6*f*′ [3½] UV 41
2525.48	A	0*h*	23.20	28.10	2–3	3*d* ^{1}D°–6*f*′ [2½] UV 42
2525.32	P		23.20	28.10	2–2	
2522.62	P		23.20	28.11	2–2	[1½]
2522.76	P		23.20	28.11	2–1	
6504.608	A	6	23.25	25.15	3–3	3*d* ^{3}D°–4*p* ^{3}D 45
6532.550	A	5	23.24	25.14	2–2	
6544.162	A	4	23.24	25.13	1–1	
6545.530	A	3	23.25	25.14	3–2	
6554.47	A	3	23.24	25.13	2–1	
6491.79	A	2	23.24	25.15	2–3	
6522.39	A	2	23.24	25.14	1–2	
6340.569	A	7	23.25	25.20	3–2	3*d* ^{3}D°–4*p* ^{3}P 46
6356.545	A	6	23.24	25.19	2–1	
6357.569	A	5	23.24	25.19	1–0	
6328.39	A	5	23.24	25.20	2–2	
6346.86	A	5	23.24	25.19	1–1	
6318.80	A	1	23.24	25.20	1–2	
6218.67	A	0	23.24	25.23	2–1	3*d* ^{3}D°–4*p* ^{3}S 46.01
6209.424	P		23.24	25.23	1–1	
4247.20	A	1	23.25	26.16	3–3	3*d* ^{3}D°–4*f* [2½] 48
4241.240	A	3	23.24	26.16	2–2	
4246.707	P		23.25	26.16	3–2	
*4241.784	A	10	23.24	26.16	2–3	
4236.91	A	8	23.24	26.16	1–2	
*4241.784	A	10	23.25	26.17	3–4	[3½]
4237.05	A	7	23.24	26.17	2–3	
4242.489	A	3	23.25	26.17	3–3	
4199.980	A	5	23.25	26.20	3–4	3*d* ^{3}D°–4*f*′ [3½] 49
4195.974	A	3	23.24	26.20	2–3	
4201.35	A	1	23.25	26.20	3–3	
4181.10	A	2	23.25	26.21	3–4	[4½]

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
4179.674	A	5	23.25	26.21	3–3	$3d\ ^3D^\circ - 4f'\ [2\frac{1}{2}]$
4173.572	A	3	23.24	26.21	2–2	50
4178.86	A	0	23.25	26.21	3–2	
4174.379	P		23.24	26.21	2–3	
4169.38	A	1	23.24	26.21	1–2	
4165.77	P		23.25	26.22	3–2	$[1\frac{1}{2}]$
4161.14	A	1	23.24	26.22	2–1	
4160.50	A	2	23.24	26.22	2–2	
4157.01	A	3	23.24	26.22	1–1	
4156.39	A	1	23.24	26.22	1–2	
4108.018	P		23.25	26.26	3–2	$3d\ ^3D^\circ - 3s'\ ^3P$
4111.039	P		23.24	26.26	2–1	50.01
4112.070	P		23.24	26.25	1–0	
4102.903	P		23.24	26.26	2–2	
4106.986	P		23.24	26.26	1–1	
4098.866	P		23.24	26.26	1–2	
2978.638	P		23.25	27.41	3–3	$3d\ ^3D^\circ - 5f\ [2\frac{1}{2}]$
2975.725	P		23.24	27.41	2–2	UV 43
2978.415	P		23.25	27.41	3–2	
2975.947	P		23.24	27.41	2–3	
2973.601	A	3	23.24	27.41	1–2	
2976.971	A	4	23.25	27.41	3–4	$[3\frac{1}{2}]$
2974.65	A	2*	23.24	27.41	2–3	
2977.33	P		23.25	27.41	3–3	
2962.953	A	4	23.25	27.43	3–4	$3d\ ^3D^\circ - 5f'\ [3\frac{1}{2}]$
2960.774	P		23.24	27.43	2–3	UV 44
2963.437	P		23.25	27.43	3–3	
2956.036	P		23.25	27.44	3–4	$[4\frac{1}{2}]$
2957.680	P		23.25	27.44	3–3	$3d\ ^3D^\circ - 5f'\ [2\frac{1}{2}]$
2954.684	P		23.24	27.44	2–2	UV 45
2957.336	P		23.25	27.44	3–2	
2955.027	P		23.24	27.44	2–3	
2952.590	P		23.24	27.44	1–2	
2952.250	P		23.25	27.44	3–2	$[1\frac{1}{2}]$
2949.855	P		23.24	27.44	2–1	
2949.608	P		23.24	27.44	2–2	
2947.767	P		23.24	27.44	1–1	
2947.520	P		23.24	27.44	1–2	
2563.940	P		23.25	28.08	3–3	$3d\ ^3D^\circ - 6f\ [2\frac{1}{2}]$
2561.818	P		23.24	28.08	2–2	UV 46
2563.812	P		23.25	28.08	3–2	
2561.943	A	2*h*	23.24	28.08	2–3	
2560.243	A	3*h*	23.24	28.08	1–2	
2563.319	A	3*h*	23.25	28.08	3–4	$[3\frac{1}{2}]$
2561.545	A	1*h*	23.24	28.08	2–3	
2563.539	P		23.25	28.08	3–3	
2553.422	A	4*h*	23.25	28.10	3–4	$3d\ ^3D^\circ - 6f'\ [3\frac{1}{2}]$
2551.64	A	2*h*	23.24	28.10	2–3	UV 47
2553.622	P		23.25	28.10	3–3	
2549.98	P		23.25	28.11	3–4	$[4\frac{1}{2}]$
2365.70	P		23.25	28.48	3–4	$3d\ ^3D^\circ - 7f\ [3\frac{1}{2}]$
2364.04	A	0*h*	23.24	28.48	2–3	UV 48

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
2356.90	A	0*h*	23.25	28.50	3–4	$3d\ ^3D^\circ - 7f'\ [3\frac{1}{2}]$
						UV 49
7138.87	A	4	23.41	25.15	2–3	$3d\ ^3P^\circ - 4p\ ^3D$
7215.06	A	3	23.42	25.14	1–2	52
7256.53	A	2	23.42	25.13	0–1	
7188.20	A	2	23.41	25.14	2–2	
7241.78	P		23.42	25.13	1–1	
7214.71	P		23.41	25.13	2–1	
6941.752	A	5	23.41	25.20	2–2	$3d\ ^3P^\circ - 4p\ ^3P$
7000.94	P		23.42	25.19	1–1	53
6975.64	A	4	23.41	25.19	2–1	
7013.98	A	2	23.42	25.19	1–0	
6966.81	A	3	23.42	25.20	1–2	
7014.73	A	2	23.42	25.19	0–1	
6809.989	A	7	23.41	25.23	2–1	$3d\ ^3P^\circ - 4p\ ^3S$
6834.094	A	6	23.42	25.23	1–1	54
6847.237	A	4	23.42	25.23	0–1	
4508.77	A	2	23.41	26.16	2–3	$3d\ ^3P^\circ - 4f\ [2\frac{1}{2}]$
4518.780	P		23.42	26.16	1–2	54.01
4432.735	A	8	23.41	26.21	2–3	$3d\ ^3P^\circ - 4f'\ [2\frac{1}{2}]$
4442.018	A	6	23.42	26.21	1–2	55
4431.816	A	3	23.41	26.21	2–2	
4417.07	A	4	23.41	26.22	2–2	$[1\frac{1}{2}]$
4427.964	A	4	23.42	26.22	1–1	
4417.82	A	1	23.41	26.22	2–1	
4427.236	A	5	23.42	26.22	1–2	
4433.475	A	5	23.42	26.22	0–1	
3082.191	A	4	23.41	27.44	2–3	$3d\ ^3P^\circ - 5f'\ [2\frac{1}{2}]$
3086.78	A	2*p*	23.42	27.44	1–2	55.01
3076.304	P		23.41	27.44	2–2	$[1\frac{1}{2}]$
3081.485	A	2	23.42	27.44	1–1	
3076.573	P		23.41	27.44	2–1	
3081.222	A	2	23.42	27.44	1–2	
3084.155	A	2	23.42	27.44	0–1	
2643.413	A	2*h*	23.41	28.10	2–3	$3d\ ^3P^\circ - 6f'\ [2\frac{1}{2}]$
2646.87	A	0*h*	23.42	28.10	1–2	UV 50
2643.93	A	1*h*	23.42	28.11	1–2	$[1\frac{1}{2}]$
2646.02	A	0*h*	23.42	28.11	0–1	
6242.412	A	7	23.47	25.46	3–2	$3d\ ^1F^\circ - 4p\ ^1D$
						57
4608.085	A	3	23.47	26.16	3–3	$3d\ ^1F^\circ - 4f\ [2\frac{1}{2}]$
4602.53	A	3	23.47	26.17	3–3	57.01 $[3\frac{1}{2}]$
4552.527	A	7	23.47	26.20	3–4	$3d\ ^1F^\circ - 4f'\ [3\frac{1}{2}]$
4530.410	A	9	23.47	26.21	3–4	58 $[4\frac{1}{2}]$
3150.276	P		23.47	27.41	3–3	$3d\ ^1F^\circ - 5f\ [3\frac{1}{2}]$
						58.01

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
3126.40	A	3*	23.47	27.44	3–4	$3d\ {}^1F^\circ - 5f'\ [4\frac{1}{2}]$ 58.02
2690.49	A	1*h*	23.47	28.08	3–4	$3d\ {}^1F^\circ - 6f\ [3\frac{1}{2}]$
2690.728	P		23.47	28.08	3–3	UV 51
2679.60	A	1*h*	23.47	28.10	3–4	$3d\ {}^1F^\circ - 6f'\ [3\frac{1}{2}]$
2675.78	A	2*h*	23.47	28.11	3–4	UV 52 $[4\frac{1}{2}]$
2461.83	A	0*h*	23.47	28.51	3–4	$3d\ {}^1F^\circ - 7f'\ [4\frac{1}{2}]$ UV 53
8296.205	A	4	23.57	25.07	1–1	$3d\ {}^1P^\circ - 4p\ {}^1P$ 58.03
6564.20	A	3	23.57	25.46	1–2	$3d\ {}^1P^\circ - 4p\ {}^1D$ 58.04
5954.276	A	5	23.57	25.65	1–0	$3d\ {}^1P^\circ - 4p\ {}^1S$ 58.05
4694.637	A	6	23.57	26.21	1–2	$3d\ {}^1P^\circ - 4f'\ [2\frac{1}{2}]$
4678.14	A	6	23.57	26.22	1–2	61 $[1\frac{1}{2}]$
3206.709	A	2	23.57	27.44	1–2	$3d\ {}^1P^\circ - 5f'\ [2\frac{1}{2}]$
3200.685	A	2	23.57	27.44	1–2	61.01 $[1\frac{1}{2}]$
*2734.702	A	2*h*	23.57	28.10	1–2	$3d\ {}^1P^\circ - 6f'\ [2\frac{1}{2}]$
2731.37	A	1*h*	23.57	28.11	1–2	UV 54 $[1\frac{1}{2}]$
16256.20	P		24.39	25.15	2–3	$4s\ {}^3P^\circ - 4p\ {}^3D$
16194.66	P		24.37	25.14	1–2	61.02
16192.82	P		24.37	25.13	0–1	
16514.26	P		24.39	25.14	2–2	
16329.94	P		24.37	25.13	1–1	
16654.95	P		24.39	25.13	2–1	
15268.97	P		24.39	25.20	2–2	$4s\ {}^3P^\circ - 4p\ {}^3P$
15154.36	P		24.37	25.19	1–1	61.03
6801.31	A	1	24.39	26.21	2–3	$4s\ {}^3P^\circ - 4f'\ [2\frac{1}{2}]$ 61.04
6613.622	A	5	24.39	26.26	2–2	$4s\ {}^3P^\circ - 3s'\ {}^3P$
6582.596	P		24.37	26.26	1–1	61.05
6634.789	A	3	24.39	26.26	2–1	
6595.666	A	3	24.37	26.25	1–0	
6561.78	A	3*	24.37	26.26	1–2	
6560.203	A	3	24.37	26.26	0–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
23185.10	P		24.53	25.07	1–1	$4s\ {}^1P^\circ - 4p\ {}^1P$ 61.06
13344.83	P		24.53	25.46	1–2	$4s\ {}^1P^\circ - 4p\ {}^1D$ 61.07
12891.16	P		25.07	26.03	1–2	$4p\ {}^1P - 4d\ {}^1D^\circ$ 61.08
10907.46	P		25.07	26.20	1–1	$4p\ {}^1P - 4d\ {}^1P^\circ$ 61.09
7897.62	A	4	25.07	26.63	1–1	$4p\ {}^1P - 5s\ {}^1P^\circ$ 61.10
5455.590	P		25.07	27.34	1–2	$4p\ {}^1P - 5d\ {}^1D^\circ$ 61.11
5240.857	P		25.07	27.43	1–1	$4p\ {}^1P - 5d\ {}^1P^\circ$ 61.12
4776.224	P		25.07	26.63	1–1	$4p\ {}^1P - 6s\ {}^1P^\circ$ 61.13
14358.63	P		25.15	26.01	3–4	$4p\ {}^3D - 4d\ {}^3F^\circ$
14337.71	P		25.14	26.00	2–3	61.14
14364.86	P		25.13	26.00	1–2	
8676.076	A	7	25.15	26.58	3–2	$4p\ {}^3D - 5s\ {}^3P^\circ$
8699.002	A	5	25.14	26.56	2–1	61.15
8694.900	A	4	25.13	26.56	1–0	
8604.32	A	3	25.14	26.58	2–2	
8660.52	A	3	25.13	26.56	1–1	
8566.62	P		25.13	26.58	1–2	
*4994.363	A	10	25.15	27.63	3–2	$4p\ {}^3D - 6s\ {}^3P^\circ$
5003.88	A	0	25.14	27.62	2–1	61.16
14195.22	P		25.20	26.07	2–3	$4p\ {}^3P - 4d\ {}^3D^\circ$
14126.40	P		25.19	26.07	1–2	61.17
14125.72	P		25.19	26.07	0–1	
8986.15	A	4	25.20	26.58	2–2	$4p\ {}^3P - 5s\ {}^3P^\circ$
9032.04	A	1	25.19	26.56	1–1	61.18
9089.45	A	1	25.20	26.56	2–1	
9069.51	A	1	25.19	26.56	1–0	
8930.04	A	1	25.19	26.58	1–2	
9010.39	A	1	25.19	26.56	0–1	
5095.58	A	1	25.20	27.63	2–2	$4p\ {}^3P - 6s\ {}^3P^\circ$
5112.323	P		25.19	27.62	1–1	61.19

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
5046.51	A	2	25.20	27.66	2–1	$4p\ ^3P - 3p'\ ^3S°$ 61.20
5028.81	A	1	25.19	27.66	1–1	
5022.06	A	0	25.19	27.66	0–1	
13947.86	P		25.23	26.12	1–2	$4p\ ^3S - 4d\ ^3P°$ 61.21
13858.59	P		25.23	26.13	1–1	
13810.69	P		25.23	26.13	1–0	
9217.10	A	2	25.23	26.58	1–2	$4p\ ^3S - 5s\ ^3P°$ 61.22
9325.84	A	0	25.23	26.56	1–1	
9365.73	P		25.23	26.56	1–0	
5168.99	A	1	25.23	27.63	1–2	$4p\ ^3S - 6s\ ^3P°$ 61.23
5205.11	A	0	25.23	27.62	1–1	
5118.54	P		25.23	27.66	1–1	$4p\ ^3S - 3p'\ ^3S°$ 61.24
21849.20	P		25.46	26.03	2–2	$4p\ ^1D - 4d\ ^1D°$ 61.25
16701.14	P		25.46	26.20	2–1	$4p\ ^1D - 4d\ ^1P°$ 61.26
10546.76	A	4	25.46	26.63	2–1	$4p\ ^1D - 5s\ ^1P°$ 61.27
6600.94	P		25.46	27.34	2–2	$4p\ ^1D - 5d\ ^1D°$ 61.28
6330.80	P		25.46	27.42	2–3	$4p\ ^1D - 5d\ ^1F°$ 61.29
6289.15	P		25.46	27.43	2–1	$4p\ ^1D - 5d\ ^1P°$ 61.30
5631.72	A	1*h*	25.46	27.66	2–1	$4p\ ^1D - 6s\ ^1P°$ 61.31
*5535.363	A	8	25.51	27.75	3–4	$3s'\ ^5P - 3p'\ ^5D°$ 63
5530.244	A	7	25.50	27.74	2–3	
5526.239	A	5	25.49	27.73	1–2	
5551.922	A	5	25.51	27.74	3–3	
5543.471	A	5	25.50	27.73	2–2	
*5535.363	A	8	25.49	27.73	1–1	
5565.25	A	3	25.51	27.73	3–2	
5552.67	A	4	25.50	27.73	2–1	
5540.059	A	4	25.49	27.73	1–0	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
5012.029	A	6	25.51	27.98	3–3	$3s'\ ^5P - 3p'\ ^5P°$ 64
*5005.149	A	14	25.50	27.97	2–2	
4997.227	A	4	25.49	27.97	1–1	
5023.048	A	5	25.51	27.97	3–2	
5011.30	A	5	25.50	27.97	2–1	
*4994.363	A	10	25.50	27.98	2–3	
4991.240	A	5	25.49	27.97	1–2	
4145.776	A	6	25.51	28.50	3–2	$3s'\ ^5P - 3p'\ ^5S°$ 65
4133.672	A	5	25.50	28.50	2–2	
4124.078	A	4	25.49	28.50	1–2	
8886.89	P		26.01	27.41	4–4	$4d\ ^3F° - 5f$ [3½] 65.01
8822.73	P		26.00	27.41	3–3	
8819.56	A	2*h*	26.00	27.41	3–4	
8772.95	A	3*h*	26.00	27.41	2–3	
8763.39	A	1*h*	26.01	27.43	4–4	$4d\ ^3F° - 5f'$ [3½] 65.02
8697.79	A	3*h*	26.00	27.43	3–4	
8653.38	A	3*h*	26.00	27.43	2–3	
8710.54	A	6*h*	26.01	27.44	4–5	[4½]
8638.31	A	3*h*	26.00	27.44	3–4	
8983.28	A	3*h*	26.03	27.41	2–3	$4d\ ^1D° - 5f$ [2½] 65.03 [3½]
8971.36	A	1*h*	26.03	27.41	2–3	
8846.46	A	1*h*	26.03	27.43	2–3	$4d\ ^1D° - 5f'$ [3½] 65.04
9266.61	A	1*h*	26.07	27.41	2–3	$4d\ ^3D° - 5f$ [2½] 65.05 [3½]
9242.02	A	2*h*	26.07	27.41	1–2	
9281.06	A	3*h*	26.07	27.41	3–4	
9253.98	A	1*h*	26.07	27.41	2–3	
9146.40	A	2*h*	26.07	27.43	3–4	$4d\ ^3D° - 5f'$ [3½] 65.06
9121.00	A	1*h*	26.07	27.43	2–3	
9096.17	A	1*h*	26.07	27.44	3–3	$4d\ ^3D° - 5f'$ [2½] 65.07
9063.78	A	0*h*	26.07	27.44	2–2	
9092.93	A	0	26.07	27.44	3–2	
9442.82	A	3*h*	26.12	27.44	2–3	$4d\ ^3P° - 5f'$ [2½] 65.08
9480.73	A	1*h*	26.13	27.44	1–2	
9439.40	A	1*h*	26.12	27.44	2–2	
9431.20	A	1*h*	26.13	27.44	1–1	[1½]
9453.50	A	1*h*	26.13	27.44	0–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
9865.41	A	6*h*	26.16	27.42	3–	4*f* [2½]–5*g* [3½]°
9868.21	A	5*h*	26.16	27.42	2–3	65.09
*m*9693.91	P	N I	26.16	27.44	3–4	4*f* [2½]–5*g*′ [3½]°
9696.77	A	1*h*	26.16	27.44	2–3	65.10
*m*9694.09	P	N I	26.16	27.44	3–3	
*9891.09	A	7*h*	26.17	27.42	3–	4*f* [3½]–5*g* [3½]°
*9891.09	A	7*h*	26.17	27.42	4–5	65.11 [4½]°
9887.39	A	6*h*	26.17	27.42	3–4	
*9891.09	A	7*h*	26.17	27.42	4–4	
*9741.43	A	4*h*	26.17	27.44	4–5	4*f* [3½]–5*g*′ [4½]°
9737.75	A	4*h*	26.17	27.44	3–4	65.12
*9741.43	A	4*h*	26.17	27.44	4–4	
*9722.36	A	1*h*	26.17	27.44	4–4	4*f* [3½]–5*g* [3½]°
*9718.66	A	1*h*	26.17	27.44	3–3	65.13
*9722.36	A	1*h*	26.17	27.44	4–3	
*9718.66	A	1*h*	26.17	27.44	3–4	
9794.01	A	3*h*	26.17	27.44	3–4	4*d* ^{1}F° –5*f*′ [4½] 65.14
*10126.27	A	5*h*	26.20	27.42	4–5	4*f*′ [3½]–5*g* [4½]°
10118.49	A	4*h*	26.20	27.42	3–4	65.15
*10126.27	A	5*h*	26.20	27.42	4–4	
9969.34	A	7*h*	26.20	27.44	4–5	4*f*′ [3½]–5*g*′ [4½]°
9961.86	A	6*h*	26.20	27.44	3–4	65.16
*10023.27	A	8*h*	26.21	27.44	5–6	[4½] [5½]°
10035.45	A	7*h*	26.21	27.44	4–5	
*10023.27	A	8*h*	26.21	27.44	5–5	
*10065.15	A	7*h*	26.21	27.44	3–4	4*f*′ [2½]–5*g*′ [3½]
10070.12	A	6*h*	26.21	27.44	2–3	65.17
*10065.15	A	7*h*	26.21	27.44	3–3	
*m*10108.5	P	N I	26.22	27.45	2–3	[1½] [2½]
*m*10104.7	P	N I	26.22	27.45	1–2	
8893.32	A	1*p**	26.26	27.66	2–1	3*s*′ ^{3}P –3*p*′ ^{3}S° 65.18
8855.40	A	0	26.26	27.66	1–1	
8831.75	P		26.25	27.66	0–1	
5893.15	A	3	26.26	28.37	2–3	3*s*′ ^{3}P –3*p*′ ^{3}D° 65.19
5897.25	A	2	26.26	28.36	1–2	
5899.83	A	1	26.25	28.35	0–1	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
5260.57	A	2	26.26	28.62	2–2	3*s*′ ^{3}P –3*p*′ ^{3}P°? 65.20
5179.52	A	7	27.75	30.14	4–5	3*p*′ ^{5}D° –3*d*′ ^{5}F
5175.891	A	6	27.74	30.13	3–4	66
5173.386	A	5	27.73	30.13	2–3	
5172.346	A	4	27.73	30.13	1–2	
5172.970	A	3	27.73	30.12	0–1	
5190.380	A	4	27.75	30.13	4–4	
*5184.964	A	4	27.74	30.13	3–3	
5180.352	A	4	27.73	30.13	2–2	
5177.060	A	4	27.73	30.12	1–1	
5199.48	A	1	27.75	30.13	4–3	
5191.97	A	2	27.74	30.13	3–2	
*5184.964	A	4	27.73	30.12	2–1	
4718.38	A	4	27.75	30.37	4–4	3*p*′ ^{5}D° –3*d*′ ^{5}D
4709.59	A	2	27.74	30.37	3–3	68
4702.51	A	2	27.73	30.37	2–2	
4697.64	P		27.73	30.37	1–1	
4721.57	A	2	27.75	30.37	4–3	
4712.07	A	2	27.74	30.37	3–2	
4704.24	A	2	27.73	30.37	2–1	
4698.55	A	1	27.73	30.37	1–0	
4706.40	A	2	27.74	30.37	3–4	
4700.04	A	2	27.73	30.37	2–3	
4695.89	A	2	27.73	30.37	1–2	
5351.220	A	4	27.98	30.30	3–3	3*p*′ ^{5}P° –3*d*′ ^{5}P
5327.76	A	1	27.97	30.30	2–2	69
5313.419	A	2	27.97	30.30	1–1	
5340.213	A	3	27.98	30.30	3–2	
5320.203	A	3	27.97	30.30	2–1	
5338.732	A	4	27.97	30.30	2–3	
5320.953	A	4	27.97	30.30	1–2	
5179.35	A	7	27.98	30.37	3–4	3*p*′ ^{5}P° –3*d*′ ^{5}D
5171.45	A	4	27.97	30.37	2–3	70
5168.056	A	4	27.97	30.37	1–2	
5183.200	A	4	27.98	30.37	3–3	
5174.463	A	4	27.97	30.37	2–2	
5170.168	A	4	27.97	30.37	1–1	
5186.200	A	2	27.98	30.37	3–2	
5176.563	A	2	27.97	30.37	2–1	
5171.30	A	2	27.97	30.37	1–0	
6178.20	P		28.37	30.37	3–4	3*p*′ ^{3}D° –3*d*′ ^{5}D
6160.81	P		28.36	30.37	2–3	70.01
6138.68	A	0	28.37	30.37	3–3	
6165.06	P		28.36	30.37	2–2	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
6887.834	A	5	28.50	30.30	2–3	$3p'\ ^5S^\circ - 3d'\ ^5P$
6869.580	A	4	28.50	30.30	2–2	71
6857.030	A	3	28.50	30.30	2–1	
3939.57	A	4	30.14	33.28	5–6	$3d'\ ^5F - 4f'\ ^5G^\circ$
3940.66	A	2	30.13	33.28	4–5	72
3941.23	A	1	30.13	33.27	3–4	
2829.358	A	1	30.14	34.52	5–6	$3d'\ ^5F - 5f'\ ^5G^\circ$
*2830.36	A	0*h*	30.13	34.51	4–5	UV 55
*2830.36	A	0*h*	30.13	34.51	3–4?	

N II—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
4154.77	A	2	30.30	33.28	3–4	$3d'\ ^5P - 4f'\ ^5D^\circ$ 73
4207.50	A	3	30.37	33.32	4–5	$3d'\ ^5D - 4f'\ ^5F^\circ$
4206.51	A	2	30.37	33.32	3–4	74
4206.11	A	1	30.37	33.32	2–3	
4209.09	A	0	30.37	33.32	4–4	
Unclassified Lines of N II						
2330.855	A	2				
2189.78	A	2*h*				

NSRDS—NBS 3, SECTION 5

NITROGEN $Z = 7$

A	N III	Atomic Energy Levels
B	N III	Multiplet Table

Part A NITROGEN

N III

B I sequence: 5 electrons $Z=7$

Ground state $1s^2\,2s^2\,2p\,{}^2P^\circ_{01/2}$

$2p\,{}^2P^\circ_{01/2}$ ***382703.8*** cm^{-1}, 261.299 Å(vac) I P 47.448eV

The early analysis has been extended by D. J. Michels who has observed N III in the short-wave region from 208 Å to 482 Å.

K. B. S. Eriksson reported the present interval of the ground term. B. Edlén and his associates observed the intersystem combination in Multiplet UV 0.01 and derived a correction of -5.0 cm^{-1} to the quartet terms. This has been adopted by D. J. Michels and is included here.

The analysis has been further improved and extended by the observations of R. Hallin and his associates in the range 763 Å to 8424 Å. A revised list of term values and multiplets based on this material has been kindly furnished by K. Bockasten especially for inclusion here. He and G. Arrhén have also provided a preliminary manuscript in which "a check of the relative positions of the $4f'$ levels has been obtained from formulas for the *spl*-configuration".

The limit (^1S) has been determined from the *ng*-terms ($n=5, 6, 7$) and *nh*-terms ($n=6, 7$), by means of the polarization formula, by using the method of least squares, according to K. Bockasten.

REFERENCES

K. B. S. Eriksson, Ark. Fys. (Stockholm) **13**, No. 25, 325 (1958). T

B. Edlén, H. P. Palenius, K. Bockasten, R. Hallin and J. Bromander, Solar Phys. **9**, No. 2, 432–438 (1969). C L

R. Hallin, R. Sjödin and K. Bockasten, unpublished material (June 1974).

K. Bockasten and G. Arrhén, Manuscript (June 1974).

D. J. Michels, J. Opt. Soc. Am. **64**, No. 9, 1164–1174 (1974). I P, T, C L, GD

N III

Config.	Desig.	J	Level	Interval
$2s^2(^1S)2p$	$2p\ ^2P^\circ$	$0\frac{1}{2}$	0.0	
		$1\frac{1}{2}$	174.4	174.4
$2s\ 2p^2$	$2p^2\ ^4P$	$0\frac{1}{2}$	57187.1	
		$1\frac{1}{2}$	57246.8	59.7
		$2\frac{1}{2}$	57327.9	81.1
$2s\ 2p^2$	$2p^2\ ^2D$	$2\frac{1}{2}$	101023.9	
		$1\frac{1}{2}$	101030.6	−6.7
$2s\ 2p^2$	$2p^2\ ^2S$	$0\frac{1}{2}$	131004.3	
$2s\ 2p^2$	$2p^2\ ^2P$	$0\frac{1}{2}$	145875.7	
		$1\frac{1}{2}$	145985.8	110.1
$2p^3$	$2p^3\ ^4S^\circ$	$1\frac{1}{2}$	186797.1	
$2p^3$	$2p^3\ ^2D^\circ$	$2\frac{1}{2}$	203074.6	
		$1\frac{1}{2}$	203088.9	−14.3
$2s^2(^1S)3s$	$3s\ ^2S$	$0\frac{1}{2}$	221302.2	
$2p^3$	$2p^3\ ^2P^\circ$	$0\frac{1}{2}$	230404.3	
		$1\frac{1}{2}$	230408.6	4.3
$2s^2(^1S)3p$	$3p\ ^2P^\circ$	$0\frac{1}{2}$	245665.4	
		$1\frac{1}{2}$	245701.3	35.9
$2s^2(^1S)3d$	$3d\ ^2D$	$1\frac{1}{2}$	267238.4	
		$2\frac{1}{2}$	267244.0	5.6
$2s\ 2p(^3P^\circ)3s$	$3s'\ ^4P^\circ$	$0\frac{1}{2}$	287529.4	
		$1\frac{1}{2}$	287591.5	62.1
		$2\frac{1}{2}$	287706.9	115.4
$2s\ 2p(^3P^\circ)3s$	$3s'\ ^2P^\circ$	$0\frac{1}{2}$	297151.2	
		$1\frac{1}{2}$	297264.4	113.2
$2s^2(^1S)4s$	$4s\ ^2S$	$0\frac{1}{2}$	301082.6	
$2s\ 2p(^3P^\circ)3p$	$3p'\ ^2P$	$0\frac{1}{2}$	309131.2	
		$1\frac{1}{2}$	309185.2	54.0
$2s\ 2p(^3P^\circ)3p$	$3p'\ ^4D$	$0\frac{1}{2}$	309656.2	
		$1\frac{1}{2}$	309691.8	35.6
		$2\frac{1}{2}$	309753.5	61.7
		$3\frac{1}{2}$	309849.8	96.3
$2s^2(^1S)4p$	$4p\ ^2P^\circ$	$0\frac{1}{2}$	311690.3	
		$1\frac{1}{2}$	311715.2	24.9
$2s\ 2p(^3P^\circ)3p$	$3p'\ ^4S$	$1\frac{1}{2}$	314217.3	
$2s\ 2p(^3P^\circ)3p$	$3p'\ ^4P$	$0\frac{1}{2}$	317293.6	
		$1\frac{1}{2}$	317336.2	42.6
		$2\frac{1}{2}$	317395.2	59.0
$2s^2(^1S)4d$	$4d\ ^2D$	$1\frac{1}{2}$	317747.7	
		$2\frac{1}{2}$	317779.5	31.8
$2s^2(^1S)4f$	$4f\ ^2F^\circ$	$2\frac{1}{2}$	320287.2	
		$3\frac{1}{2}$	320288.3	1.1

N III

Config.	Desig.	J	Level	Interval
$2s\ 2p(^3P^\circ)3p$	$3p'\ ^2D$	$1\frac{1}{2}$	320978.2	
		$2\frac{1}{2}$	321066.8	88.6
$2s\ 2p(^3P^\circ)3p$	$3p'\ ^2S$	$0\frac{1}{2}$	327058.0	
$2s\ 2p(^3P^\circ)3d$	$3d'\ ^4F^\circ$	$1\frac{1}{2}$	330232.1	
		$2\frac{1}{2}$	330266.5	34.4
		$3\frac{1}{2}$	330318.5	52.0
		$4\frac{1}{2}$	330389.9	71.4
$2s\ 2p(^3P^\circ)3d$	$3d'\ ^4D^\circ$	$0\frac{1}{2}$	332791.3	
		$1\frac{1}{2}$	332804.4	13.1
		$2\frac{1}{2}$	332826.0	21.6
		$3\frac{1}{2}$	332854.0	28.0
$2s^2(^1S)5s$	$5s\ ^2S$	$0\frac{1}{2}$	333712.0	
$2s\ 2p(^3P^\circ)3d$	$3d'\ ^2D^\circ$	$1\frac{1}{2}$	334540.2	
		$2\frac{1}{2}$	334568.3	28.1
$2s\ 2p(^3P^\circ)3d$	$3d'\ ^4P^\circ$	$2\frac{1}{2}$	336206.9	
		$1\frac{1}{2}$	336261.6	−54.7
		$0\frac{1}{2}$	336296.6	−35.0
$2s^2\ (^1S)5p$	$5p\ ^2P^\circ$	$0\frac{1}{2}$	338153.9	
		$1\frac{1}{2}$	338162.1	8.2
$2s\ 2p(^3P^\circ)3d$	$3d'\ ^2F^\circ$	$2\frac{1}{2}$	339744.6	
		$3\frac{1}{2}$	339855.5	110.9
$2s^2(^1S)5d$	$5d\ ^2D$	$1\frac{1}{2}$	341947.7	
		$2\frac{1}{2}$	341948.8	1.1
$2s\ 2p(^3P^\circ)3d$	$3d'\ ^2P^\circ$	$1\frac{1}{2}$	342691.5	
		$0\frac{1}{2}$	342762.5	−71.0
$2s^2(^1S)5f$	$5f\ ^2F^\circ$	$2\frac{1}{2}$	342749.2	
		$3\frac{1}{2}$	342750.1	0.9
$2s^2(^1S)5g$	$5g\ ^2G$	$3\frac{1}{2}, 4\frac{1}{2}$	343117.1	
$2s^2(^1S)6s$	$6s\ ^2S$	$0\frac{1}{2}$	349824.8	
$2s\ 2p(^1P^\circ)3s$	$3s''\ ^2P^\circ$	$0\frac{1}{2}$	353440.6	
		$1\frac{1}{2}$	353442.5	1.9
$2s^2(^1S)6d$	$6d\ ^2D$	$1\frac{1}{2}, 2\frac{1}{2}$	354530.5	
$2s^2(^1S)6f$	$6f\ ^2F^\circ$	$2\frac{1}{2}, 3\frac{1}{2}$	354954.1	
$2s^2(^1S)6g$	$6g\ ^2G$	$3\frac{1}{2}, 4\frac{1}{2}$	355216.3	
$2s^2(^1S)6h$	$6h\ ^2H^\circ$	$4\frac{1}{2}, 5\frac{1}{2}$	355254.9	
$2s^2(^1S)7s$	$7s\ ^2S$	$0\frac{1}{2}$	359148.1	
$2s^2(^1S)7d$	$7d\ ^2D$	$1\frac{1}{2}, 2\frac{1}{2}$	362066	
$2s^2(^1S)7f$	$7f\ ^2F^\circ$	$2\frac{1}{2}, 3\frac{1}{2}$	362320.9	
$2s^2(^1S)7g$	$7g\ ^2G$	$3\frac{1}{2}, 4\frac{1}{2}$	362511.5	
$2s^2(^1S)7h$	$7h\ ^2H^\circ$	$4\frac{1}{2}, 5\frac{1}{2}$	362537.2	

N III—Continued

Config.	Desig.	J	Level	Interval
$2s^2(^1S)8s$	$8s\ ^2S$	$0\frac{1}{2}$	364994.2	
$2s^2(^1S)8d$	$8d\ ^2D$	$1\frac{1}{2}, 2\frac{1}{2}$	366940	
$2s\ 2p(^3P^\circ)4s$	$4s'\ ^4P^\circ$	$0\frac{1}{2}$	368514.4	
		$1\frac{1}{2}$	368578.3	63.9
		$2\frac{1}{2}$	368696.3	118.0
$2s^2(^1S)9s$	$9s\ ^2S$	$0\frac{1}{2}$	368893.8	
$2s^2(^1S)9d$	$9d\ ^2D$	$1\frac{1}{2}, 2\frac{1}{2}$	370269	
$2s\ 2p(^3P^\circ)4p$	$4p'\ ^2S$	$0\frac{1}{2}$	370365	
$2s^2(^1S)10s$	$10s\ ^2S$	$0\frac{1}{2}$	371646.9	
$2s^2(^1S)10d$	$10d\ ^2D$	$1\frac{1}{2}, 2\frac{1}{2}$	372651	
$2s\ 2p(^1P^\circ)3p$	$3p''\ ^2D$	$1\frac{1}{2}$	373346.1	29.6
		$2\frac{1}{2}$	373375.7	
$2s^2(^1S)11s$	$11s\ ^2S$	$0\frac{1}{2}$	373605.6	
$2s^2(^1S)11d$	$11d\ ^2D$	$1\frac{1}{2}, 2\frac{1}{2}$	374427	
$2s\ 2p(^3P^\circ)4p$	$4p'\ ^2P$	$0\frac{1}{2}$	374746.4	58.4
		$1\frac{1}{2}$	374804.8	
$2s^2(^1S)12s$	$12s\ ^2S$	$0\frac{1}{2}$	375075.6	
$2s^2(^1S)12d$	$12d\ ^2D$	$1\frac{1}{2}, 2\frac{1}{2}$	375754	
$2s^2(^1S)13s$	$13s\ ^2S$	$0\frac{1}{2}$	376145.4	
$2s\ 2p(^3P^\circ)4p$	$4p'\ ^4D$	$0\frac{1}{2}$	376750.4	45.3
		$1\frac{1}{2}$	376795.7	61.1
		$2\frac{1}{2}$	376856.8	88.4
		$3\frac{1}{2}$	376945.2	
$2s^2(^1S)14s$	$14s\ ^2S$	$0\frac{1}{2}$	377050.9	
$2s\ 2p(^1P^\circ)3p$	$3p''\ ^2P$	$0\frac{1}{2}$	377577.9	33.4
		$1\frac{1}{2}$	377611.3	
$2s\ 2p(^3P^\circ)4p$	$4p'\ ^4S$	$1\frac{1}{2}$	378432.8	
$2s\ 2p(^3P^\circ)4p$	$4p'\ ^4P$	$0\frac{1}{2}$	379300.1	44.7
		$1\frac{1}{2}$	379344.8	52.8
		$2\frac{1}{2}$	379397.6	
$2s\ 2p(^3P^\circ)4p$	$4p'\ ^2D$	$1\frac{1}{2}$	381411.5	103.3
		$2\frac{1}{2}$	381514.8	
N IV $2s^2\ ^1S$	***Limit***	0	**382703.8**	
$2s\ 2p(^3P^\circ)4d$	$4d'\ ^4F^\circ$	$1\frac{1}{2}$		
		$2\frac{1}{2}$	384011	49
		$3\frac{1}{2}$	384060	74
		$4\frac{1}{2}$	384134	
$2s\ 2p(^3P^\circ)4d$	$4d'\ ^2D^\circ$	$1\frac{1}{2}, 2\frac{1}{2}$	385126	

N III—Continued

Config.	Desig.	J	Level	Interval
$2s\ 2p(^3P^\circ)4d$	$4d'\ ^4D^\circ$	$0\frac{1}{2}$		
		$1\frac{1}{2}$	385291	27
		$2\frac{1}{2}$	385318	29
		$3\frac{1}{2}$	385347	
$2s\ 2p(^3P^\circ)4d$	$4d'\ ^4P^\circ$	$2\frac{1}{2}$	386237.7	−54.1
		$1\frac{1}{2}$	386291.8	−32.5
		$0\frac{1}{2}$	386324.3	
$2s\ 2p(^3P^\circ)4f$	$4f'\ ^2F$	$2\frac{1}{2}$	386953.4	23.6
		$3\frac{1}{2}$	386977.0	
$2s\ 2p(^3P^\circ)4f$	$4f'\ ^4F$	$1\frac{1}{2}$	386971.6	11.2
		$2\frac{1}{2}$	386982.8	18.1
		$3\frac{1}{2}$	387000.9	12.2
		$4\frac{1}{2}$	387013.1	
$2s\ 2p(^3P^\circ)4d$	$4d'\ ^2F^\circ$	$2\frac{1}{2}$	387715.6	101.6
		$3\frac{1}{2}$	387817.2	
$2s\ 2p(^3P^\circ)4f$	$4f'\ ^4G$	$2\frac{1}{2}$	388041.1	28.8
		$3\frac{1}{2}$	388069.9	53.9
		$4\frac{1}{2}$	388123.8	73.0
		$5\frac{1}{2}$	388196.8	
$2s\ 2p(^3P^\circ)4f$	$4f'\ ^2G$	$3\frac{1}{2}$	388178.2	101.2
		$4\frac{1}{2}$	388279.4	
$2s\ 2p(^3P^\circ)4f$	$4f'\ ^4D$	$3\frac{1}{2}$	388272.8	−36.5
		$2\frac{1}{2}$	388309.3	−47.5
		$1\frac{1}{2}$	388356.8	−29.0
		$0\frac{1}{2}$	388385.8	
$2s\ 2p(^3P^\circ)4f$	$4f'\ ^2D$	$2\frac{1}{2}$	388375.6	−66.8
		$1\frac{1}{2}$	388442.4	
$2s\ 2p(^3P^\circ)4d$	$4d'\ ^2P^\circ$	$1\frac{1}{2}$	389082.0	−70.0
		$0\frac{1}{2}$	389152.0	
$2s\ 2p(^1P^\circ)3d$	$3d''\ ^2F^\circ$	$2\frac{1}{2}, 3\frac{1}{2}$	394969	
$2s\ 2p(^1P^\circ)3d$	$3d''\ ^2D^\circ$	$1\frac{1}{2}$	396574.9	9.9
		$2\frac{1}{2}$	396584.8	
$2p^2(^3P)3s$	$3s'''\ ^4P$	$0\frac{1}{2}$	400566.2	66.7
		$1\frac{1}{2}$	400632.9	99.3
		$2\frac{1}{2}$	400732.2	
$2s\ 2p(^3P^\circ)5s$	$5s'\ ^4P^\circ$	$0\frac{1}{2}$	400862.5	71.7
		$1\frac{1}{2}$	400934.2	119.3
		$2\frac{1}{2}$	401053.5	
$2s\ 2p(^3P^\circ)5p$	$5p'\ ^2P$	$0\frac{1}{2}$	402624.6	81.0
		$1\frac{1}{2}$	402705.6	
$2s\ 2p(^3P^\circ)5p$	$5p'\ ^2D$	$1\frac{1}{2}$	406163.9	103.6
		$2\frac{1}{2}$	406267.5	
$2s\ 2p(^3P^\circ)5p$	$5p'\ ^2S$	$0\frac{1}{2}$	408128	

N III—Continued

Config.	Desig.	J	Level	Interval
$2s\ 2p(^3P°)5d$	$5d'\ ^4D°$	$0\frac{1}{2}$		
		$1\frac{1}{2}$	408956.7	
		$2\frac{1}{2}$	408978.2	21.5
		$3\frac{1}{2}$	409024.8	46.6
$2s\ 2p(^3P°)5d$	$5d'\ ^4P°$	$2\frac{1}{2}$	409391.3	
		$1\frac{1}{2}$	409445.8	54.5
		$0\frac{1}{2}$	409486.2	40.4
$2p^2(^3P)3d$	$3d'''\ ^4P$	$2\frac{1}{2}$	409738.4	
		$1\frac{1}{2}$	409820.4	−82.0
		$0\frac{1}{2}$	409869.7	−49.3
$2s\ 2p(^3P°)5d$	$5d'\ ^2F°$	$2\frac{1}{2}$	410377.1	
		$3\frac{1}{2}$		
$2s\ 2p(^3P°)5d$	$5d'\ ^2P°$	$1\frac{1}{2}$	410859.1	
		$0\frac{1}{2}$	410927.0	−67.9
$2p^2(^3P)3p$	$3p'''\ ^2D°$	$2\frac{1}{2}$	415678.0	
		$1\frac{1}{2}$	415679.7	−1.7
$2s\ 2p(^3P°)6s$	$6s'\ ^4P°$	$0\frac{1}{2}$		
		$1\frac{1}{2}$	417090.9	
		$2\frac{1}{2}$	417204.8	113.9
$2p^2(^3P)3p$	$3p'''\ ^4D°$	$0\frac{1}{2}$	419700.3	
		$1\frac{1}{2}$	419737.6	37.3
		$2\frac{1}{2}$	419800.7	63.1
		$3\frac{1}{2}$	419871.7	71.0
$2s\ 2p(^3P°)6p$	$6p'\ ^2P$	$0\frac{1}{2}$	420106.1	
		$1\frac{1}{2}$	420178.4	72.3
$2s\ 2p(^3P°)6p$	$6p'\ ^2D$	$1\frac{1}{2}$	420995.9	
		$2\frac{1}{2}$	421111.9	116.0
$2s\ 2p(^3P°)6d$	$6d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	421794.2	
$2s\ 2p(^3P°)6d$	$6d'\ ^4P°$	$2\frac{1}{2}$	421794.2	
		$1\frac{1}{2}$	421843.2	−49.0
		$0\frac{1}{2}$	421867.2	−24.0
$2s\ 2p(^3P°)6d$	$6d'\ ^2F°$	$2\frac{1}{2}$	422458.1	
		$3\frac{1}{2}$	422560.0	101.9
$2s\ 2p(^3P°)6d$	$6d'\ ^2P°$	$1\frac{1}{2}$	422774.0	
		$0\frac{1}{2}$	422837.6	−63.6
$2p^2(^3P)3p$	$3p'''\ ^4P°$	$0\frac{1}{2}$		
		$1\frac{1}{2}$	422876.0	
		$2\frac{1}{2}$	422926.8	50.8
$2s\ 2p(^3P°)7s$	$7s'\ ^4P°$	$0\frac{1}{2}$		
		$1\frac{1}{2}$	426761.3	
		$2\frac{1}{2}$	426859.6	98.3
$2s\ 2p(^3P°)7p$	$7p'\ ^2P$	$0\frac{1}{2}$	428045.5	
		$1\frac{1}{2}$	428080.8	35.3
$2s\ 2p(^3P°)7p$	$7p'\ ^2D$	$1\frac{1}{2}$	428573.9	
		$2\frac{1}{2}$	428682.3	108.4
$2s\ 2p(^3P°)7d$	$7d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	429412.9	

N III—Continued

Config.	Desig.	J	Level	Interval
$2s\ 2p(^3P°)7d$	$7d'\ ^4P°$	$2\frac{1}{2}$ to $0\frac{1}{2}$	429486.3	
$2s\ 2p(^3P°)7d$	$7d'\ ^2F°$	$2\frac{1}{2}$	429759.4	
		$3\frac{1}{2}$	429859.8	100.4
$2s\ 2p(^3P°)7d$	$7d'\ ^2P°$	$1\frac{1}{2}$	429978.6	
		$0\frac{1}{2}$	430040.3	−61.7
$2p^2(^3P)3p$	$3p'''\ ^4S°$	$1\frac{1}{2}$	430025.9	
$2s\ 2p(^3P°)8p$	$8p'\ ^2P$	$0\frac{1}{2}$	433296.2	
		$1\frac{1}{2}$	433335.6	39.4
$2s\ 2p(^3P°)8p$	$8p'\ ^2D$	$1\frac{1}{2}$	433668.3	
		$2\frac{1}{2}$	433777.0	108.7
$2s\ 2p(^3P°)8d$	$8d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	434301.2	
$2s\ 2p(^3P°)8d$	$8d'\ ^4P°$	$2\frac{1}{2}$ to $0\frac{1}{2}$	434356.6	
$2s\ 2p(^3P°)8d$	$8d'\ ^2F°$	$2\frac{1}{2}$	434472.6	
		$3\frac{1}{2}$		
$2s\ 2p(^3P°)8d$	$8d'\ ^2P°$	$1\frac{1}{2}$	434671.5	
		$0\frac{1}{2}$	434731.5	60.0
$2s\ 2p(^3P°)9p$	$9p'\ ^2D$	$1\frac{1}{2}$	437135.5	
		$2\frac{1}{2}$	437256.5	121.0
$2s\ 2p(^3P°)9d$	$9d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	437680.7	
$2s\ 2p(^3P°)9d$	$9d'\ ^4P°$	$2\frac{1}{2}$ to $0\frac{1}{2}$	437748.7	
$2s\ 2p(^3P°)9d$	$9d'\ ^2P°$	$1\frac{1}{2}$	437901.6	
		$0\frac{1}{2}$	437951.6	−50.0
$2s\ 2p(^3P°)10p$	$10p'\ ^2D$	$1\frac{1}{2}$	439601.0	
		$2\frac{1}{2}$	439706.0	105.0
$2s\ 2p(^3P°)10d$	$10d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	440056.4	
$2s\ 2p(^1P°)4p$	$4p''\ ^2D$	$1\frac{1}{2}$	440854.9	
		$2\frac{1}{2}$	440877.9	23.0
$2p^2(^3P)3p$	$3p'''\ ^2S°$	$0\frac{1}{2}$	441026.6	
$2s\ 2p(^3P°)11p$	$11p'\ ^2D$	$1\frac{1}{2}$		
		$2\frac{1}{2}$	441637	
$2s\ 2p(^3P°)11d$	$11d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	441810.5	
$2s\ 2p(^1P°)4p$	$4p''\ ^2P$	$0\frac{1}{2}, 1\frac{1}{2}$	442414	
$2s\ 2p(^3P°)12p$	$12p'\ ^2D$	$1\frac{1}{2}$		
		$2\frac{1}{2}$	442972	
$2s\ 2p(^3P°)12d$	$12d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	443147.0	
$2s\ 2p(^3P°)13p$	$13p'\ ^2D$	$1\frac{1}{2}$		
		$2\frac{1}{2}$	444023	
$2s\ 2p(^3P°)13d$	$13d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	444176.9	

N III—Continued

Config.	Desig.	J	Level	Interval
$2s\ 2p(^3P°)14p$	$14p'\ ^2D$	$1\frac{1}{2}$		
		$2\frac{1}{2}$	444870	
$2s\ 2p(^3P°)14d$	$14d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	444995.7	
$2s\ 2p(^3P°)15d$	$15d'\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	445674.7	
$2s\ 2p(^1P°)4d$	$4d''\ ^2F°$	$2\frac{1}{2}$, $3\frac{1}{2}$	[448126]	
$2s\ 2p(^1P°)4d$	$4d''\ ^2D°$	$1\frac{1}{2}$, $2\frac{1}{2}$	448775	
N IV $2s\ 2p\ ^3P°$	***Limit***	0	449913.0	
		1	449976.1	63.1
		2	450120.1	144.0
$2s\ 2p(^1P°)5p$	$5p''\ ^2D$	$1\frac{1}{2}$, $2\frac{1}{2}$	468683	
$2s\ 2p(^1P°)5p$	$5p''\ ^2P$	$0\frac{1}{2}$, $1\frac{1}{2}$	469297	
$2p^2(^3P)4p$	$4p'''\ ^4D°$	$0\frac{1}{2}$		
		$1\frac{1}{2}$	485597.4	71.5
		$2\frac{1}{2}$	485668.9	121.2
		$3\frac{1}{2}$	485790.1	

N III—Continued

Config.	Desig.	J	Level	Interval
$2p^2(^3P)4p$	$4p'''\ ^4P°$	$0\frac{1}{2}$ to $2\frac{1}{2}$	486781.8	
$2p^2(^3P)4p$	$4p'''\ ^4S°$	$1\frac{1}{2}$	489219.0	
$2p^2(^3P)5p$	$5p'''\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	513599	
$2p^2(^3P)5p$	$5p'''\ ^4P°$	$0\frac{1}{2}$ to $2\frac{1}{2}$	514055.6	
$2p^2(^3P)5p$	$5p'''\ ^4S°$	$1\frac{1}{2}$	515170.1	
$2p^2(^3P)6p$	$6p'''\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	527994	
$2p^2(^3P)6p$	$6p'''\ ^4P°$	$0\frac{1}{2}$ to $2\frac{1}{2}$	528228.9	
$2p^2(^3P)6p$	$6p'''\ ^4S°$	$1\frac{1}{2}$	528832.8	
$2p^2(^3P)7p$	$7p'''\ ^4D°$	$0\frac{1}{2}$ to $3\frac{1}{2}$	536416	
$2p^2(^3P)7p$	$7p'''\ ^4P°$	$0\frac{1}{2}$ to $2\frac{1}{2}$	536553.8	
$2p^2(^3P)7p$	$7p'''\ ^4S°$	$1\frac{1}{2}$	536921.5	

July 1974.

N III Observed Terms

Config. $1s^2+$		Observed Terms	
$2s\,2p^2$	$2p^2\ {}^4P$ $2p^2\ {}^2S$ $2p^2\ {}^2P$ $2p^2\ {}^2D$		
$2p^3$	$2p^3\ {}^4S^\circ$ $2p^3\ {}^2P^\circ$ $2p^3\ {}^2D^\circ$		
	$ns\,(n \geq 3)$	$np\,(n \geq 2)$	$nd\,(n \geq 3)$
$2s^2({}^1S)nl$	3–14s ^2S	2–5p $^2P^\circ$	3–12d ^2D
$2s\,2p({}^3P^\circ)nl'$	3–7s' $^4P^\circ$ 3s' $^2P^\circ$	3–4p' ^4S 3–4p' ^4P 3– 4p' ^4D 3–5p' ^2S 3–8p' ^2P 3–14p' ^2D	3–9d' $^4P^\circ$ 3–15d' $^4D^\circ$ 3–4d' $^4F^\circ$ 3–9d' $^2P^\circ$ 3– 4d' $^2D^\circ$ 3–8d' $^2F^\circ$
$2s\,2p({}^1P^\circ)nl''$	3s'' $^2P^\circ$	3–5p'' ^2P 3– 5p'' ^2D	3– 4d'' $^2D^\circ$ 3–4d'' $^2F^\circ$
$2p^2({}^3P)nl'''$	3s''' ^4P	3–7p''' $^4S^\circ$ 3–7p''' $^4P^\circ$ 3– 7p''' $^4D^\circ$ 3p''' $^2S^\circ$ 3p''' $^2D^\circ$	3d''' ^4P
	$nf\,(n \geq 4)$	$ng\,(n \geq 5)$	$nh\,(n \geq 6)$
$2s^2({}^1S)nl$	4–7f $^2F^\circ$	5–7g ^2G	6– 7h $^2H^\circ$
$2s\,2p({}^3P^\circ)nl'$	4f' ^4D 4f' ^4F 4f' ^4G 4f' ^2D 4f' ^2F 4f' ^2G		

Part B NITROGEN

N III ($Z = 7$)

I P 47.448 eV Limit **382703.8** cm^{-1} 261.299 Å (Vac)

Anal A List A July 1974

REFERENCES

A D. J. Michels, J. Opt. Soc. Am. **64,** No. 9, 1164–1174 (1974). T, C L, G D, I; W L 208 Å to 482 Å.

B R. Hallin, R. Sjödin and K. Bockasten, Unpublished material, June 1974. T, C L, I; W L 763 Å to 8424 Å.

C B. Edlén, Nova Acta Reg. Soc. Sci. Uppsala [IV] **9,** No. 6, 78 to 90 (1934). I P, T, C L, G D; (I); W L 264Å to 4641Å.

D B. Edlén, H. P. Palenius, K. Bockasten, R. Hallin, and J. Bromander, Solar Physics **9,** No. 2, 432 to 438 (1969). C L, (I); W L 1746 Å to 1753 Å.

E B. Edlén, Zeit. Phys. **98,** Nos. 9, 10, 561 to 568 (1936). T, C L, (I); W L 1906Å to 2192Å.

F L. J. Freeman, Proc. Roy. Soc. (London) A **121,** 318 to 343 (1928). I P, T, C L, (I); W L 374 Å to 6487 Å. See Ref. B, D.

P Predicted Wavelength.

I. S. Bowen (1927). See Ref. E, C L, W L.

In column 3 parentheses indicate that the estimated intensities are on a different scale than those without parentheses. For wavelengths shorter than 482 Å the intensity estimate reported by Michels for the leading line of a multiplet is entered for the entire multiplet and indicated as a blend, for unresolved groups.

New Multiplet Numbers, not inserted between older ones, start with UV 31 and 18.

*Blend

*and § Blend with N IV

m masked

N III **N III**

I A	Ref.	Int.	E P Low	E P High	*J*	Multiplet No.	I A	Ref.	Int.	E P Low	E P High	*J*	Multiplet No.
Vac							Vac						
1749.674	D	1	0.02	7.11	$1\frac{1}{2}$–$2\frac{1}{2}$	$2p\ ^2P^\circ$– $2p^2\ ^4P$	764.359	B	15	0.02	16.24	$1\frac{1}{2}$–$0\frac{1}{2}$	$2p\ ^2P^\circ$–$2p^2\ ^2S$
1746.82	P		0.00	7.10	$0\frac{1}{2}$–$1\frac{1}{2}$	UV 0.01	763.336	B	14	0.00	16.24	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 2
1752.16	P		0.02	7.10	$1\frac{1}{2}$–$1\frac{1}{2}$								
1748.61	D	(3)	0.00	7.09	$0\frac{1}{2}$–$0\frac{1}{2}$								
1753.986	D	0	0.02	7.09	$1\frac{1}{2}$–$0\frac{1}{2}$								
							685.816	C	(16)	0.02	18.10	$1\frac{1}{2}$–$1\frac{1}{2}$	$2p\ ^2P^\circ$– $2p^2\ ^2P$
991.579	C	20	0.02	12.53	$1\frac{1}{2}$–$2\frac{1}{2}$	$2p\ ^2P^\circ$– $2p^2\ ^2D$	685.513	C	(15)	0.00	18.09	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 3
989.790	C	19	0.00	12.53	$0\frac{1}{2}$–$1\frac{1}{2}$	UV 1	686.335	C	(14)	0.02	18.09	$1\frac{1}{2}$–$0\frac{1}{2}$	
991.514	C	17	0.02	12.53	$1\frac{1}{2}$–$1\frac{1}{2}$		684.996	C	(14)	0.00	18.10	$0\frac{1}{2}$–$1\frac{1}{2}$	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
452.226‡	C	900*	0.02	27.44	1½–0½	2p ²P°– 3s ²S
451.869	C		0.00	27.44	0½–0½	UV 4
374.441	C	900*	0.02	33.13	1½–	2p ²P°– 3d ²D
374.204	C		0.00	33.13	0½–1½	UV 5
332.333	A	650*	0.02	37.33	1½–0½	2p ²P°– 4s ²S
332.140	A		0.00	37.33	0½–0½	UV 5.01
323.615	C	500*	0.02	38.33	1½–1½	2p ²P°– 3p′ ²P
323.488	C		0.00	38.33	0½–0½	UV 6
323.671	C		0.02	38.33	1½–0½	
323.431	C		0.00	38.33	0½–1½	
314.850	C	800*	0.02	39.40	1½–2½	2p ²P°– 4d ²D
314.715	C		0.00	39.39	0½–1½	UV 7
314.877	C		0.02	39.39	1½–1½	•
311.636	A	500*	0.02	39.81	1½–2½	2p ²P°– 3p′ ²D
311.550	A		0.00	39.80	0½–1½	UV 7.01
311.721	A		0.02	39.80	1½–1½	
305.920	A	500*	0.02	40.55	1½–0½	2p ²P°– 3p′ ²S
305.761	A		0.00	40.55	0½–0½	UV 7.02
299.818	A	500*	0.02	41.37	1½–0½	2p ²P°– 5s ²S
299.661	A		0.00	41.37	0½–0½	UV 7.03
292.595	C	750*	0.02	42.40	1½–2½	2p ²P°– 5d ²D
292.447	C		0.00	42.40	0½–1½	UV 7.04
286.000	A	450*	0.02	43.37	1½–0½	2p ²P°– 6s ²S
285.855	A		0.00	43.37	0½–0½	UV 7.05
282.209	A	700*	0.02	43.96	1½–	2p ²P°– 6d ²D
282.070	A		0.00	43.96	0½–1½	UV 7.06
278.572	A	400*	0.02	44.53	1½–0½	2p ²P°– 7s ²S
278.436	A		0.00	44.53	0½–0½	UV 7.07
276.326	A	700*	0.02	44.89	1½–	2p ²P°– 7d ²D
276.193	A		0.00	44.89	0½–1½	UV 7.08
274.108	A	400*	0.02	45.25	1½–0½	2p ²P°– 8s ²S
273.977	A		0.00	45.25	0½–0½	UV 7.09
272.654	A	650d*	0.02	45.49	1½–	2p ²P°– 8d ²D
272.523	A		0.00	45.49	0½–1½	UV 7.10
271.209	A	350*	0.02	45.74	1½–0½	2p ²P°– 9s ²S
271.077	A		0.00	45.74	0½–0½	UV 7.11
270.201	A	650n*	0.02	45.91	1½–	2p ²P°– 9d ²D
270.073	A		0.00	45.91	0½–1½	UV 7.12
270.131	P	400*	0.02	45.92	1½–0½	2p ²P°– 4p′ ²S
270.004	A		0.00	45.92	0½–0½	UV 7.13
269.199	A	300*	0.02	46.08	1½–0½	2p ²P°–10s ²S
269.072	A		0.00	46.08	0½–0½	UV 7.14

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
268.473	A	600n*	0.02	46.20	1½–	2p ²P°–10d ²D
268.347	A		0.00	46.20	0½–1½	UV 7.15
267.952	C	500*	0.02	46.29	1½–2½	2p ²P°– 3p″ ²D
267.848	A		0.00	46.29	0½–1½	UV 7.16
267.966	A		0.02	46.29	1½–1½	
267.787	A	300*	0.02	46.32	1½–0½	2p ²P°–11s ²S
267.661	A		0.00	46.32	0½–0½	UV 7.17
267.199	A	500n	0.02	46.42	1½–	2p ²P°–11d ²D
267.075	P		0.00	46.42	0½–1½	UV 7.18
266.930	A	400*	0.02	46.47	1½–1½	2p ²P°– 4p′ ²P
266.847	A		0.00	46.46	0½–0½	UV 7.19
266.974	A	350*	0.02	46.46	1½–0½	
266.805	A		0.00	46.47	0½–1½	
266.737	A	250*	0.02	46.50	1½–0½	2p ²P°–12s ²S
266.613	A		0.00	46.50	0½–0½	UV 7.20
266.255	A	500n	0.02	46.59	1½–	2p ²P°–12d ²D
266.132	P		0.00	46.59	0½–1½	UV 7.21
265.978	A	200*	0.02	46.64	1½–0½	2p ²P°–13s ²S
265.852	A		0.00	46.64	0½–0½	UV 7.22
265.339	A	200*	0.02	46.75	1½–0½	2p ²P°–14s ²S
265.216	P		0.00	46.75	0½–0½	UV 7.23
264.945	A	400*	0.02	46.82	1½–1½	2p ²P°– 3p″ ²P
264.846	A		0.00	46.81	0½–0½	UV 7.24
264.966	A		0.02	46.81	1½–0½	
264.822	A		0.00	46.82	0½–1½	
262.233	A	800*	0.02	47.30	1½–2½	2p ²P°– 4p′ ²D
262.184	A		0.00	47.29	0½–1½	UV 7.25
262.304	P		0.02	47.29	1½–1½	
248.428	A	350*	0.02	49.93	1½–1½	2p ²P°– 5p′ ²P
248.371	A		0.00	49.92	0½–0½	UV 7.26
248.478	A		0.02	49.92	1½–0½	
248.320	A		0.00	49.93	0½–1½	
246.249	A	650*	0.02	50.37	1½–2½	2p ²P°– 5p′ ²D
246.206	A		0.00	50.36	0½–1½	UV 7.27
246.311	A		0.02	50.36	1½–1½	
245.115	A	400n*	0.02	50.60	1½–0½	2p ²P°– 5p′ ²S
245.021	A		0.00	50.60	0½–0½	UV 7.28
238.093	A	350*	0.02	52.09	1½–1½	2p ²P°– 6p′ ²P
238.034	A		0.00	52.09	0½–0½	UV 7.29
238.134	A		0.02	52.09	1½–0½	
237.994	P		0.00	52.09	0½–1½	
237.565	A	450*	0.02	52.21	1½–2½	2p ²P°– 6p′ ²D
237.532	A		0.00	52.20	0½–1½	UV 7.30
237.624	A		0.02	52.20	1½–1½?	

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
233.696	A	300*	0.02	53.07	1½–1½	2p ²P°– 7p′ ²P
233.620	A		0.00	53.07	0½–0½	UV 7.31
233.716	A		0.02	53.07	1½–0½	
233.599	A		0.00	53.07	0½–1½	
233.368	A	400*	0.02	53.15	1½–2½	2p ²P°– 7p′ ²D
233.332	A		0.00	53.14	0½–1½	UV 7.32
233.424	A		0.02	53.14	1½–1½	
230.861	A	250*	0.02	33.73	1½–1½	2p ²P°– 8p′ ²P
230.789	A		0.00	33.72	0½–0½	UV 7.33
230.879	A		0.02	33.72	1½–0½	
230.765	A		0.00	33.73	0½–1½	
230.626	A	300*	0.02	53.78	1½–2½	2p ²P°– 8p′ ²D
230.591	A		0.00	53.77	0½–1½	UV 7.34
230.681	A		0.02	53.77	1½–1½	
228.790	A	250*	0.02	54.21	1½–2½	2p ²P°– 9p′ ²D
228.762	A		0.00	54.20	0½–1½	UV 7.35
228.844	A		0.02	54.20	1½–1½	
227.515	A	250*	0.02	54.52	1½–2½	2p ²P°–10p′ ²D
227.479	A		0.00	54.50	0½–1½	UV 7.36
227.569	P		0.02	54.50	1½–1½	
226.910	A	400*	0.02	54.66	1½–2½	2p ²P°– 4p″ ²D
226.832	A		0.00	54.66	0½–1½	UV 7.37
226.520	A	50*d*	0.02	54.75	1½–2½	2p ²P°–11p′ ²D
						UV 7.38
226.122	A	300*	0.02	54.85	1½–	2p ²P°– 4p″ ²P
226.030	A		0.00	54.85	0½–	UV 7.39
225.837	A	300*n*	0.02	54.92	1½–2½	2p ²P°–12p′ ²D
						UV 7.40
225.302	A	70*n*	0.02	55.05	1½–2½	2p ²P°–13p′ ²D
						UV 7.41
224.873	A	50*n*	0.02	55.16	1½–2½	2p ²P°–14p′ ²D
						UV 7.42
213.447	A	100*n*	0.02	58.11	1½–	2p ²P°– 5p″ ²D
213.364	A	50*n*	0.00	58.11	0½–1½	UV 7.43
213.164	A	200*n**	0.02	58.18	1½–	2p ²P°– 5p″ ²P
213.086	A		0.00	58.18	0½–	UV 7.44
Air						
2287.83	P		7.11	12.53	2½–2½	2p² ⁴P – 2p² ²D
2283.25	P		7.10	12.53	1½–1½	UV 7.45 F
2287.48	P		7.11	12.53	2½–1½	
2283.59	P		7.10	12.53	1½–2½	
2280.14	P		7.09	12.53	0½–1½	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1355.794	P		7.10	16.24	1½–0½	2p² ⁴P – 2p² ²S
1354.698	P		7.09	16.24	0½–0½	UV 7.46 F
1127.931	P		7.11	18.10	2½–1½	2p² ⁴P – 2p² ²P
1128.300	P		7.10	18.09	1½–0½	UV 7.47 F
1126.900	P		7.10	18.10	1½–1½	
1127.541	P		7.09	18.09	0½–0½	
1126.143	P		7.09	18.10	0½–1½	
772.385	C	12	7.11	23.16	2½–1½	2p² ⁴P – 2p³ ⁴S°
771.901	C	11	7.10	23.16	1½–1½	UV 8
771.544	C	10	7.09	23.16	0½–1½	
434.066	C		7.11	35.67	2½–2½	2p² ⁴P – 3s′ ⁴P°
*434.129	C		7.10	35.66	1½–1½	UV 9
*434.129	C		7.09	35.65	0½–0½	
434.280	C	650*	7.11	35.66	2½–1½	
434.246	C		7.10	35.65	1½–0½	
433.911	C		7.10	35.67	1½–2½	
434.014	C		7.09	35.66	0½–1½	
362.949	A		7.11	41.27	2½–3½	2p² ⁴P – 3d′ ⁴D°
362.876	A		7.10	41.26	1½–2½	UV 10
362.831	A	700	7.09	41.26	0½–1½	
362.982	A		7.11	41.26	2½–2½	
362.902	A		7.10	41.26	1½–1½	
363.004	A		7.11	41.26	2½–1½	
358.578	C		7.11	41.68	2½–2½	2p² ⁴P – 3d′ ⁴P°
358.401	C		7.10	41.69	1½–1½	UV 11
358.278	C		7.09	41.69	0½–0½	
358.509	C	600*	7.11	41.69	2½–1½	
358.356	C		7.10	41.69	1½–0½	
358.469	C		7.10	41.68	1½–2½	
358.327	C		7.09	41.69	0½–1½	
321.162	A		7.11	45.71	2½–2½	2p² ⁴P – 4s′ ⁴P°
*321.198	A		7.10	45.70	1½–1½	UV 11.01
*321.198	A		7.09	45.69	0½–0½	
321.278	A	500*	7.11	45.70	2½–1½	
321.261	P		7.10	45.69	1½–0½	
321.079	A		7.10	45.71	1½–2½	
321.135	A		7.09	45.70	0½–1½	
*304.877	A		7.11	47.78	2½–3½	2p² ⁴P – 4d′ ⁴D°
304.812	A		7.10	47.77	1½–2½	UV 11.02
304.786	A		7.09	47.77	0½–1½	
*304.877	A	500*	7.11	47.77	2½–2½	
304.837	P		7.10	47.77	1½–1½	
304.921	A		7.11	47.77	2½–1½	
304.035	A		7.11	47.89	2½–2½	2p² ⁴P – 4d′ ⁴P°
303.910	A		7.10	47.89	1½–1½	UV 11.03
303.825	A		7.09	47.90	0½–0½	
303.985	A	450*	7.11	47.89	2½–1½	
303.880	A		7.10	47.90	1½–0½	
303.960	A		7.10	47.89	1½–2½	
303.856	A		7.09	47.89	0½–1½	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
290.930	A	400*	7.11	49.72	$2\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^4P - 5s'\ {}^4P^\circ$ UV 11.04
*290.965	A		7.10	49.71	$1\frac{1}{2}$–$1\frac{1}{2}$	
*290.965	A		7.09	49.70	$0\frac{1}{2}$–$0\frac{1}{2}$	
291.031	A		7.11	49.71	$2\frac{1}{2}$–$1\frac{1}{2}$	
291.023	A		7.10	49.70	$1\frac{1}{2}$–$0\frac{1}{2}$	
290.865	A		7.10	49.72	$1\frac{1}{2}$–$2\frac{1}{2}$	
290.916	A		7.09	49.71	$0\frac{1}{2}$–$1\frac{1}{2}$	
284.336	A	400*	7.11	50.71	$2\frac{1}{2}$–$3\frac{1}{2}$	$2p^2\ {}^4P - 5d'\ {}^4D^\circ$ UV 11.05
284.308	A		7.10	50.71	$1\frac{1}{2}$–$2\frac{1}{2}$	
284.277	A		7.09	50.70	$0\frac{1}{2}$–$1\frac{1}{2}$	
284.365	A		7.11	50.71	$2\frac{1}{2}$–$2\frac{1}{2}$	
284.040	A	400*	7.11	50.76	$2\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^4P - 5d'\ {}^4P^\circ$ UV 11.06
283.937	A		7.10	50.76	$1\frac{1}{2}$–$1\frac{1}{2}$	
283.863	A		7.09	50.77	$0\frac{1}{2}$–$0\frac{1}{2}$	
283.996	A		7.11	50.76	$2\frac{1}{2}$–$1\frac{1}{2}$	
283.898	A		7.10	50.77	$1\frac{1}{2}$–$0\frac{1}{2}$	
283.977	A		7.10	50.76	$1\frac{1}{2}$–$2\frac{1}{2}$	
277.873	A	300*	7.11	51.73	$2\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^4P - 6s'\ {}^4P^\circ$ UV 11.07
277.901	A		7.10	51.71	$1\frac{1}{2}$–$1\frac{1}{2}$	
277.961	A		7.11	51.71	$2\frac{1}{2}$–$1\frac{1}{2}$	
277.813	A		7.10	51.73	$1\frac{1}{2}$–$2\frac{1}{2}$	
275.829	A	400*	7.11	52.06	$2\frac{1}{2}$–$3\frac{1}{2}$	$2p^2\ {}^4P - 3p'''\ {}^4D^\circ$ UV 11.08
275.883	A		7.11	52.05	$2\frac{1}{2}$–$2\frac{1}{2}$	
275.871	A		7.10	52.04	$1\frac{1}{2}$–$1\frac{1}{2}$	
275.852	A		7.09	52.03	$0\frac{1}{2}$–$0\frac{1}{2}$	
275.931	A		7.11	52.04	$2\frac{1}{2}$–$1\frac{1}{2}$	
‘274.374	A	400*	7.11	52.29		$2p^2\ {}^4P - 6d'\ {}^4D^\circ$ UV 11.09
‘274.374	A	400*	7.11	52.29	$2\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^4P - 6d'\ {}^4P^\circ$ UV 11.10
274.276	A		7.10	52.30	$1\frac{1}{2}$–$1\frac{1}{2}$	
274.213	P		7.09	52.30	$0\frac{1}{2}$–$0\frac{1}{2}$	
274.337	P		7.11	52.30	$2\frac{1}{2}$–$1\frac{1}{2}$	
274.258	A		7.10	52.30	$1\frac{1}{2}$–$0\frac{1}{2}$	
274.316	A		7.10	52.29	$1\frac{1}{2}$–$2\frac{1}{2}$	
273.524	A	450*	7.11	52.43	$2\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^4P - 3p'''\ {}^4P^\circ$ UV 11.11
273.503	A		7.10	52.43	$1\frac{1}{2}$–$1\frac{1}{2}$	
273.562	A		7.11	52.43	$2\frac{1}{2}$–$1\frac{1}{2}$	
273.462	A		7.10	52.43	$1\frac{1}{2}$–$2\frac{1}{2}$	
270.613	A	150	7.11	52.92	$2\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^4P - 7s'\ {}^4P^\circ$ UV 11.12
270.685	A	50	7.11	52.91	$2\frac{1}{2}$–$1\frac{1}{2}$	
270.554	A	50	7.10	52.92	$1\frac{1}{2}$–$2\frac{1}{2}$	
268.756	A	400	7.11	53.24		$2p^2\ {}^4P - 7d'\ {}^4D^\circ$ UV 11.13
268.703	A	500	7.11	53.25		$2p^2\ {}^4P - 7d'\ {}^4P^\circ$ UV 11.14
268.314	A	400*	7.11	53.32	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^4P - 3p'''\ {}^4S^\circ$ UV 11.15
268.255	A		7.10	53.32	$1\frac{1}{2}$–$1\frac{1}{2}$	
268.212	A		7.09	53.32	$0\frac{1}{2}$–$1\frac{1}{2}$	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
265.271	A	500*n*	7.11	53.85		$2p^2\ {}^4P - 8d'\ {}^4D^\circ$ UV 11.16
265.232	A	500*n*	7.11	53.85		$2p^2\ {}^4P - 8d'\ {}^4P^\circ$ UV 11.17
262.914	A	500*n*	7.11	54.26		$2p^2\ {}^4P - 9d'\ {}^4D^\circ$ UV 11.18
262.867	A	400*n*	7.11	54.27		$2p^2\ {}^4P - 9d'\ {}^4P^\circ$ UV 11.19
261.282	A	800*n*	7.11	54.56		$2p^2\ {}^4P - 10d'\ {}^4D^\circ$ UV 11.20
260.090	A	800*n*	7.11	54.78		$2p^2\ {}^4P - 11d'\ {}^4D^\circ$ UV 11.21
259.189	A	700*n*	7.11	54.94		$2p^2\ {}^4P - 12d'\ {}^4D^\circ$ UV 11.22
258.499	A	650*n*	7.11	55.07		$2p^2\ {}^4P - 13d'\ {}^4D^\circ$ UV 11.23
257.953	A	500*n*	7.11	55.17		$2p^2\ {}^4P - 14d'\ {}^4D^\circ$ UV 11.24
257.502	A	300*n*	7.11	55.26		$2p^2\ {}^4P - 15d'\ {}^4D^\circ$ UV 11.25
233.393	A	350*	7.11	60.23	$2\frac{1}{2}$–$3\frac{1}{2}$	$2p^2\ {}^4P - 4p'''\ {}^4D^\circ$ UV 11.26
*233.459	A		7.11	60.21	$2\frac{1}{2}$–$2\frac{1}{2}$	
*233.459	A		7.10	60.20	$1\frac{1}{2}$–$1\frac{1}{2}$	
233.498	A		7.11	60.20	$2\frac{1}{2}$–$1\frac{1}{2}$	
232.854	A	300*n*	7.11	60.35		$2p^2\ {}^4P - 4p'''\ {}^4P^\circ$ UV 11.27
231.540	A	200*	7.11	60.65	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^4P - 4p'''\ {}^4S^\circ$ UV 11.28
231.497	A		7.10	60.65	$1\frac{1}{2}$–$1\frac{1}{2}$	
231.465	A		7.09	60.65	$0\frac{1}{2}$–$1\frac{1}{2}$	
219.168	A	250*	7.11	63.68		$2p^2\ {}^4P - 5p'''\ {}^4D^\circ$ UV 11.29
218.949	A	100*n*	7.11	63.73		$2p^2\ {}^4P - 5p'''\ {}^4P^\circ$ UV 11.30
218.416	A	100*	7.11	63.87	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^4P - 5p'''\ {}^4S^\circ$ UV 11.31
218.378	A		7.10	63.87	$1\frac{1}{2}$–$1\frac{1}{2}$	
218.349	A		7.09	63.87	$0\frac{1}{2}$–$1\frac{1}{2}$	
212.465	A	100*l*	7.11	65.46		$2p^2\ {}^4P - 6p'''\ {}^4D^\circ$ UV 11.32
212.359	A	50*n*	7.11	65.49		$2p^2\ {}^4P - 6p'''\ {}^4P^\circ$ UV 11.33

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
212.087	A	80*	7.11	65.57	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^4P - 6p'''\ {}^4S^\circ$
212.049	A		7.10	65.57	$1\frac{1}{2}$–$1\frac{1}{2}$	UV 11.34
212.019	A		7.09	65.57	$0\frac{1}{2}$–$1\frac{1}{2}$	
208.730	A	50*l*	7.11	66.51		$2p^2\ {}^4P - 7p'''\ {}^4D^\circ$ UV 11.35
208.670	A	50*n*	7.11	66.52		$2p^2\ {}^4P - 7p'''\ {}^4P^\circ$ UV 11.36
*208.510§	A	30*n*	7.11	66.57		$2p^2\ {}^4P - 7p'''\ {}^4S^\circ$ UV 11.37
979.919	C	17	12.53	25.18	$2\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^2D - 2p^3\ {}^2D^\circ$
979.842	C	16	12.53	25.18	$1\frac{1}{2}$–$1\frac{1}{2}$	UV 12
772.891	C	9	12.53	28.57	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2D - 2p^3\ {}^2P^\circ$
772.975	C	8	12.53	28.57	$1\frac{1}{2}$–$0\frac{1}{2}$	UV 13
691.187	C	(2)	12.53	30.46	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2D - 3p\ {}^2P^\circ$
691.388	C	(1)	12.53	30.46	$1\frac{1}{2}$–$0\frac{1}{2}$	UV 13.01
509.586	C	(5)	12.53	36.86	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2D - 3s'\ {}^2P^\circ$
509.897	C	(4)	12.53	36.84	$1\frac{1}{2}$–$0\frac{1}{2}$	UV 14
456.077	A	600	12.53	39.71	$2\frac{1}{2}$–$3\frac{1}{2}$	$2p^2\ {}^2D - 4f\ {}^2F^\circ$ UV 14.01
428.180	C	600*	12.53	41.48	$2\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^2D - 3d'\ {}^2D^\circ$
428.244	C		12.53	41.48	$1\frac{1}{2}$–$1\frac{1}{2}$	UV 15
418.712	A	650*	12.53	42.14	$2\frac{1}{2}$–$3\frac{1}{2}$	$2p^2\ {}^2D - 3d'\ {}^2F^\circ$
418.919	A		12.53	42.12	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 16
413.797	C	450*	12.53	42.49	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2D - 3d'\ {}^2P^\circ$
413.681	C		12.53	42.50	$1\frac{1}{2}$–$0\frac{1}{2}$	UV 16.01
396.186	A	450	12.53	43.82		$2p^2\ {}^2D - 3s''\ {}^2P^\circ$ UV 16.02
351.979	C	500*	12.53	47.75		$2p^2\ {}^2D - 4d'\ {}^2D^\circ$ UV 16.03
348.683	A	800*	12.53	48.08	$2\frac{1}{2}$–$3\frac{1}{2}$	$2p^2\ {}^2D - 4d'\ {}^2F^\circ$
348.816	A		12.53	48.07	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 16.04
347.148	A	200*	12.53	48.24	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2D - 4d'\ {}^2P^\circ$
347.072	A		12.53	48.25	$1\frac{1}{2}$–$0\frac{1}{2}$	UV 16.05
340.20	A	500*n*	12.53	48.97		$2p^2\ {}^2D - 3d''\ {}^2F^\circ$ UV 16.06
338.349	A	500	12.53	49.17		$2p^2\ {}^2D - 3d''\ {}^2D^\circ$ UV 16.07
323.263	A	600*n*	12.53	50.88	$1\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^2D - 5d'\ {}^2F^\circ$ UV 16.08

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
311.007	A	350*n**	12.53	52.39	$2\frac{1}{2}$–$3\frac{1}{2}$	$2p^2\ {}^2D - 6d'\ {}^2F^\circ$
311.113	A		12.53	52.38	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 16.09
310.803	A	100*	12.53	52.42	$2\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2D - 6d'\ {}^2P^\circ$
310.746	A		12.53	52.42	$1\frac{1}{2}$–$0\frac{1}{2}$	UV 16.10
304.103	A	300*	12.53	53.29	$2\frac{1}{2}$–$3\frac{1}{2}$	$2p^2\ {}^2D - 7d'\ {}^2F^\circ$
304.203	A		12.53	53.28	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 16.11
299.903	A	200*	12.53	53.87	$1\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^2D - 8d'\ {}^2F^\circ$ UV 16.12
287.56	A	300*n*	12.53	55.64		$2p^2\ {}^2D - 4d''\ {}^2D^\circ$ UV 16.13
1006.021	B	5	16.24	28.57	$0\frac{1}{2}$–	$2p^2\ {}^2S - 2p^3\ {}^2P^\circ$ UV 17
871.870	B	3	16.24	30.46	$0\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2S - 3p\ {}^2P^\circ$
872.143	B	2	16.24	30.46	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 17.01
601.468	C	(1)	16.24	36.86	$0\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2S - 3s'\ {}^2P^\circ$
601.878	C	(0)	16.24	36.84	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 17.02
472.399	A	550*	16.24	42.49	$0\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2S - 3d'\ {}^2P^\circ$
472.239	A		16.24	42.50	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 18
449.559	A	450	16.24	43.82	$0\frac{1}{2}$–	$2p^2\ {}^2S - 3s''\ {}^2P^\circ$ UV 18.01
387.483	A	500*	16.24	48.24	$0\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2S - 4d'\ {}^2P^\circ$
387.375	P		16.24	48.25	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 18.02
357.324	A	450*	16.24	50.94	$0\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2S - 5d'\ {}^2P^\circ$
357.238	A		16.24	50.95	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 18.03
342.741	A	300*	16.24	52.42	$0\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2S - 6d'\ {}^2P^\circ$
342.665	A		16.24	52.42	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 18.04
334.476	A	250*	16.24	53.31	$0\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2S - 7d'\ {}^2P^\circ$
334.407	A		16.24	53.32	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 18.05
329.307	A	100*n**	16.24	53.89	$0\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2S - 8d'\ {}^2P^\circ$
329.242	A		16.24	53.90	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 18.06
325.841	A	50*n**	16.24	54.29	$0\frac{1}{2}$–$1\frac{1}{2}$	$2p^2\ {}^2S - 9d'\ {}^2P^\circ$
325.788	A		16.24	54.30	$0\frac{1}{2}$–$0\frac{1}{2}$	UV 18.07
1751.657	B	16	18.10	25.18	$1\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^2P - 2p^3\ {}^2D^\circ$
1747.848	B	15	18.09	25.18	$0\frac{1}{2}$–$1\frac{1}{2}$	UV 19
1751.218	B	12	18.10	25.18	$1\frac{1}{2}$–$1\frac{1}{2}$	
1184.550	B	15	18.10	28.57	$1\frac{1}{2}$–	$2p^2\ {}^2P - 2p^3\ {}^2P^\circ$
1183.031	B	14	18.09	28.57	$0\frac{1}{2}$–	UV 20
530.268	C	(3)	18.10	41.48	$1\frac{1}{2}$–$2\frac{1}{2}$	$2p^2\ {}^2P - 3d'\ {}^2D^\circ$
530.037	C	(2)	18.09	41.48	$0\frac{1}{2}$–$1\frac{1}{2}$	UV 20.01

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
482.030	A	500*	18.10	43.82	1½–1½	$2p^2\ ^2P - 3s''\ ^2P^\circ$
481.778	A		18.09	43.82	0½–0½	UV 20.02
411.361	A	400*	18.10	48.24	1½–1½	$2p^2\ ^2P - 4d'\ ^2P^\circ$
411.056	A		18.09	48.25	0½–0½	UV 20.03
411.243	A		18.10	48.25	1½–0½	
411.173	A		18.09	48.24	0½–1½	
399.045	C	600*	18.10	49.17	1½–2½	$2p^2\ ^2P - 3d''\ ^2D^\circ$
398.885	C		18.09	49.17	0½–1½	UV 20.04
399.084	C		18.10	49.17	1½–1½	
377.540	A	250*	18.10	50.94	1½–1½	$2p^2\ ^2P - 5d'\ ^2P^\circ$
377.286	A		18.09	50.95	0½–0½	UV 20.05
377.444	A		18.10	50.95	1½–0½	
377.380	A		18.09	50.94	0½–1½	
370.794	A	350*	18.10	51.54	1½–2½	$2p^2\ ^2P - 3p'''\ ^2D^\circ$
370.640	A		18.09	51.54	0½–1½	UV 20.06
361.288	A	200*	18.10	52.42	1½–1½	$2p^2\ ^2P - 6d'\ ^2P^\circ$
361.061	A		18.09	52.42	0½–0½	UV 20.07
361.205	A		18.10	52.42	1½–0½	
361.143	A		18.09	52.42	0½–1½	
352.114	A	20	18.10	53.31	1½–1½	$2p^2\ ^2P - 7d'\ ^2P^\circ$
351.909	P		18.09	53.32	0½–0½	UV 20.08
338.937	A	300*n*	18.10	54.68	1½–0½	$2p^2\ ^2P - 3p'''\ ^2S^\circ$
338.808	A		18.09	54.68	0½–0½	UV 20.09
330.26	A	300*n*	18.10	55.64		$2p^2\ ^2P - 4d''\ ^2D^\circ$ UV 20.10
467.432	A	500*	23.16	49.68	1½–2½	$2p^3\ ^4S - 3s'''\ ^4P$
467.649	A		23.16	49.67	1½–1½	UV 20.11
467.795	A		23.16	49.66	1½–0½	
448.549	A	450*	23.16	50.80	1½–2½	$2p^3\ ^4S^\circ - 3d'''\ ^4P$
448.384	A		23.16	50.81	1½–1½	UV 20.12
448.285	A		23.16	50.82	1½–0½	
Air						
4097.33	B	10	27.44	30.46	0½–1½	$3s\ ^2S - 3p\ ^2P^\circ$
4103.43	B	9	27.44	30.46	0½–0½	1
2714.01	B	4*	28.57	33.13	1½–2½	$2p^3\ ^2P^\circ - 3d\ ^2D$
2714.07	B		28.57	33.13	0½–1½	UV 21
2714.35	B	0	28.57	33.13	1½–1½	
4640.64	B	7	30.46	33.13	1½–2½	$3p\ ^2P^\circ - 3d\ ^2D$
4634.14	B	6	30.46	33.13	0½–1½	2
4641.85	B	4	30.46	33.13	1½–1½	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1805.669	B	9	30.46	37.33	1½–0½	$3p\ ^2P^\circ - 4s\ ^2S$
1804.486	B	8	30.46	37.33	0½–0½	UV 22
1575.21	B	5	30.46	38.33	1½–1½	$3p\ ^2P^\circ - 3p'\ ^2P$
1575.65	B	4	30.46	38.33	0½–0½	UV 22.01
1576.54	B	3	30.46	38.33	1½–0½	
1574.32	B	3	30.46	38.33	0½–1½	
*1387.371	B	8	30.46	39.40	1½–2½	$3p\ ^2P^\circ - 4d\ ^2D$
*1387.371	B	8	30.46	39.39	0½–1½	UV 22.02
1387.995	B	4	30.46	39.39	1½–1½	
Air						
2247.95	B	(6)	33.13	38.65	2½–1½	$3d\ ^2D - 4p\ ^2P^\circ$
2248.93	B	(5)	33.13	38.64	1½–0½	UV 23
2247.65	F	(2)	33.13	38.65	1½–1½	
Vac						
1885.215	B	13	33.13	39.71	2½–3½	$3d\ ^2D - 4f\ ^2F^\circ$
1885.058	B	12	33.13	39.71	1½–2½	UV 24
Air						
4514.86	B	7	35.67	38.42	2½–3½	$3s'\ ^4P^\circ - 3p'\ ^4D$
*4510.91	B	6	35.66	38.40	1½–2½	3
*4510.91	B	6	35.65	38.40	0½–1½	
4534.58	B	4	35.67	38.40	2½–2½	
4523.58	B	5	35.66	38.40	1½–1½	
4518.15	B	4	35.65	38.39	0½–0½	
4547.30	B	1	35.67	38.40	2½–1½	
*m*4530.86	P	N II	35.66	38.39	1½–0½	
3771.05	B	7	35.67	38.96	2½–1½	$3s'\ ^4P^\circ - 3p'\ ^4S$
3754.67	B	6	35.66	38.96	1½–1½	4
3745.92	B	4	35.65	38.96	0½–1½	
3367.34	B	7	35.67	39.35	2½–2½	$3s'\ ^4P^\circ - 3p'\ ^4P$
3360.95	B	3	35.66	39.34	1½–1½	5
3358.79	B	2	35.65	39.34	0½–0½	
3374.06	B	5	35.67	39.34	2½–1½	
3365.81	B	4	35.66	39.34	1½–0½	
3354.27	B	4	35.66	39.35	1½–2½	
3353.96	B	4	35.65	39.34	0½–1½	
8386.48	B	3	36.86	38.33	1½–1½	$3s'\ ^2P^\circ - 3p'\ ^2P$
8344.86	B	2	36.84	38.33	0½–0½	5.01
8424.55	B	0	36.86	38.33	1½–0½	
8307.55	B	0	36.84	38.33	0½–1½	
4200.10	B	8	36.86	39.81	1½–2½	$3s'\ ^2P^\circ - 3p'\ ^2D$
4195.76	B	7	36.84	39.80	0½–1½	6
4215.77	B	4	36.86	39.80	1½–1½	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
3355.49	B	4	36.86	40.55	1½–0½	3s′ ²P°– 3p′ ²S
3342.71	B	3	36.84	40.55	0½–0½	7
2237.21	C	(0d)	36.86	42.40	1½–2½	3s′ ²P°– 5d ²D
2231.65	C	(0)	36.84	42.40	0½–1½	UV 24.01
2696.11	B	3	37.33	41.93	0½–1½	4s ²S – 5p ²P°
2696.71	B	2	37.33	41.92	0½–0½	UV 24.02
3938.52	B	6	38.33	41.48	1½–2½	3p′ ²P – 3d′ ²D°
3934.43	B	5	38.33	41.48	0½–1½	8
3942.95	B	1	38.33	41.48	1½–1½	
m2983.64	P	O III	38.33	42.49	1½–1½	3p′ ²P – 3d′ ²P°
2972.56	B	3	38.33	42.50	0½–0½	UV 25
2977.29	B	2	38.33	42.50	1½–0½	
2978.83	B	2	38.33	42.49	0½–1½	
*4867.15	B	8	38.42	40.96	3½–4½	3p′ ⁴D – 3d′ ⁴F°
m4861.27	P	Hβ	38.40	40.95	2½–3½	9
*4858.82	B	6	38.40	40.95	1½–2½	
*4858.82	B	6	38.39	40.94	0½–1½	
4884.13	B	4	38.42	40.95	3½–3½	
4873.57	B	4	38.40	40.95	2½–2½	
*4867.15	B	8	38.40	40.94	1½–1½	
4896.63	B	1	38.42	40.95	3½–2½	
4881.81	B	1	38.40	40.94	2½–1½	
4345.68	B	7	38.42	41.27	3½–3½	3p′ ⁴D – 3d′ ⁴D°
4332.91	B	7	38.40	41.26	2½–2½	10
4325.44	B	4	38.40	41.26	1½–1½	
*4321.32	B	4	38.39	41.26	0½–0½	
4351.22	B	5	38.42	41.26	3½–2½	
4336.94	B	4	38.40	41.26	2½–1½	
*4327.80	B	4	38.40	41.26	1½–0½	
*4327.80	B	4	38.40	41.27	2½–3½	
*4321.32	B	4	38.40	41.26	1½–2½	
4318.77	B	3	38.39	41.26	0½–1½	
3792.92	B	3	38.42	41.68	3½–2½	3p′ ⁴D – 3d′ ⁴P°
m3771.36	P	N III	38.40	41.69	2½–1½	11
3762.40	B	1	38.40	41.69	1½–1½	
3752.80	B	0	38.39	41.69	0½–0½	
Vac						
1699.317	B	6	38.42	45.71	3½–2½	3p′ ⁴D – 4s′ ⁴P°
*1699.975	B	5	38.40	45.70	2½–1½	UV 25.01
*1699.975	B	5	38.40	45.69	1½–0½	
1696.569	B	2	38.40	45.71	2½–2½	
1698.172	B	2	38.40	45.70	1½–1½	
*1699.00§	P	3	38.39	45.69	0½–0½	
1694.761	B	0	38.40	45.71	1½–2½	
*1697.16§	P		38.39	45.70	0½–1½	
1346.27	F	(4)	38.42	47.63	3½–4½	3p′ ⁴D – 4d′ ⁴F°
*1345.69	F	(4)	38.40	47.62	2½–3½	UV 25.02
*1345.69	F	(4)	38.40	47.61	1½–2½	
1347.56	F	0	38.42	47.62	3½–3½	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1324.361	B	6	38.42	47.78	3½–3½	3p′ ⁴D – 4d′ ⁴D°
						UV 25.03
Air						
4544.85	B	2	38.65	41.37	1½–0½	4p ²P°– 5s ²S
4539.71	B	1	38.64	41.37	0½–0½	12
3306.63	B	5	38.65	42.40	1½–2½	4p ²P°– 5d ²D
3304.03	B	4	38.64	42.40	1½–0½	12.01
4546.32	B	3	38.96	41.68	1½–2½	3p′ ⁴S – 3d′ ⁴P°
m4535.05	P	N III	38.96	41.69	1½–1½	13
4527.87	B	1	38.96	41.69	1½–0½	
Vac						
1835.568	B	3	38.96	45.71	1½–2½	3p′ ⁴S – 4s′ ⁴P°
1839.541	B	3	38.96	45.70	1½–1½	UV 25.04
1841.718	B	2	38.96	45.69	1½–0½	
Air						
6467.02	B	7	39.35	41.27	2½–3½	3p′ ⁴P – 3d′ ⁴D°
6454.11	B	6	39.34	41.26	1½–2½	14
6445.22	B	5	39.34	41.26	0½–1½	
6478.72	B	5	39.35	41.26	2½–2½	
6463.13	B	5	39.34	41.26	1½–1½	
6450.91	B	5	39.34	41.26	0½–0½	
6487.81	B	1	39.35	41.26	2½–1½	
6468.45	B	1	39.34	41.26	1½–0½	
5314.35	B	6	39.35	41.68	2½–2½	3p′ ⁴P – 3d′ ⁴P°
5282.44	B	4	39.34	41.69	1½–1½	15
5260.83	B	5	39.34	41.69	0½–0½	
5298.95	B	5	39.35	41.69	2½–1½	
5272.68	B	5	39.34	41.69	1½–0½	
5297.76	B	5	39.34	41.68	1½–2½	
5270.58	B	5	39.34	41.69	0½–1½	
Vac						
1949.285	B	6	39.35	45.71	2½–2½	3p′ ⁴P – 4s′ ⁴P°
1951.521	B	3	39.34	45.70	1½–1½	UV 25.05
1952.330	B	2	39.34	45.69	0½–0½	
1953.784	B	3	39.35	45.70	2½–1½	
*1953.96	P	B III	39.34	45.69	1½–0½	
1947.049	B	4	39.34	45.71	1½–2½	
1949.909	B	4	39.34	45.70	0½–1½	
1471.69	F	5	39.35	47.78	2½–3½	3p′ ⁴P – 4d′ ⁴D°
1471.02	F	4	39.34	47.77	1½–2½	UV 25.06
1470.68	F	1	39.34	47.77	0½–1½	
Air						
4904.80	B	3	39.40	41.93	2½–1½	4d ²D – 5p ²P°
4899.08	B	2	39.39	41.92	1½–0½	16

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
4003.58	B	9	39.40	42.49	$2\frac{1}{2}$–$3\frac{1}{2}$	$4d\ ^2D - 5f\ ^2F^\circ$
3998.63	B	8	39.39	42.49	$1\frac{1}{2}$–$2\frac{1}{2}$	17
2689.20	B	6	39.40	44.01	$2\frac{1}{2}$–	$4d\ ^2D - 6f\ ^2F^\circ$
2686.91	B	5	39.39	44.01	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 25.07
4379.11	B	11	39.71	42.54		$4f\ ^2F^\circ - 5g\ ^2G$
						18
2862.18	B	10*n*	39.71	44.04		$4f\ ^2F^\circ - 6g\ ^2G$
						UV 26
7404.64	B	1	39.81	41.48	$2\frac{1}{2}$–$2\frac{1}{2}$	$3p'\ ^2D - 3d'\ ^2D^\circ$
7371.54	B	0	39.80	41.48	$1\frac{1}{2}$–$1\frac{1}{2}$	19
5847.83	B	5	39.81	41.93	$2\frac{1}{2}$–$1\frac{1}{2}$	$3p'\ ^2D - 5p\ ^2P^\circ$
5820.67	B	4	39.80	41.92	$1\frac{1}{2}$–$0\frac{1}{2}$	20
5320.82	B	9	39.81	42.14	$2\frac{1}{2}$–$3\frac{1}{2}$	$3p'\ ^2D - 3d'\ ^2F^\circ$
5327.18	B	8	39.80	42.12	$1\frac{1}{2}$–$2\frac{1}{2}$	21
5352.35	B	4	39.81	42.12	$2\frac{1}{2}$–$2\frac{1}{2}$	
6394.72	B	5	40.55	42.49	$0\frac{1}{2}$–$1\frac{1}{2}$	$3p'\ ^2S - 3d'\ ^2P^\circ$
6365.75	B	4	40.55	42.50	$0\frac{1}{2}$–$0\frac{1}{2}$	22
2147.306	B	6	40.96	46.73	$4\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^4F^\circ - 4p'\ ^4D$
2148.108	B	5	40.95	46.72	$3\frac{1}{2}$–$2\frac{1}{2}$	UV 26.01
2148.493	B	5	40.95	46.72	$2\frac{1}{2}$–$1\frac{1}{2}$	
*2149.010	B	3	40.94	46.71	$1\frac{1}{2}$–$0\frac{1}{2}$	
2144.034	B	1	40.95	46.73	$3\frac{1}{2}$–$3\frac{1}{2}$	
2145.86	B	3	40.95	46.72	$2\frac{1}{2}$–$2\frac{1}{2}$	
2146.961	B	1	40.94	46.72	$1\frac{1}{2}$–$1\frac{1}{2}$	
Vac						
1766.059	B	3	40.96	47.98	$4\frac{1}{2}$–$4\frac{1}{2}$	$3d'\ ^4F^\circ - 4f'\ ^4F$
1764.218	B	1	40.95	47.98	$3\frac{1}{2}$–$3\frac{1}{2}$	UV 26.02
*1763.16	P	2*O III	40.95	47.98	$2\frac{1}{2}$–$2\frac{1}{2}$	
1762.426	B	1	40.94	47.98	$1\frac{1}{2}$–$1\frac{1}{2}$	
1764.79	B	1	40.95	47.98	$3\frac{1}{2}$–$2\frac{1}{2}$	
*m*1763.51	P	N II	40.95	47.98	$2\frac{1}{2}$–$1\frac{1}{2}$	
*1763.84	P	5*Al II	40.95	47.98	$3\frac{1}{2}$–$4\frac{1}{2}$	
1762.592	B	1	40.95	47.98	$2\frac{1}{2}$–$3\frac{1}{2}$	
*1762.09	P	3*Al II	40.94	47.98	$1\frac{1}{2}$–$2\frac{1}{2}$	
*1729.945	B	10	40.96	48.13	$4\frac{1}{2}$–$5\frac{1}{2}$	$3d'\ ^4F^\circ - 4f'\ ^4G$
*1729.945	B		40.95	48.12	$3\frac{1}{2}$–$4\frac{1}{2}$	UV 26.03
*1729.945	B		40.95	48.11	$2\frac{1}{2}$–$3\frac{1}{2}$	
*1729.945	B		40.94	48.11	$1\frac{1}{2}$–$2\frac{1}{2}$	
1732.089	B	2	40.96	48.12	$4\frac{1}{2}$–$4\frac{1}{2}$	
1731.561	B	2	40.95	48.11	$3\frac{1}{2}$–$3\frac{1}{2}$	
1730.863	B	2	40.95	48.11	$2\frac{1}{2}$–$2\frac{1}{2}$	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1727.426	B	5	40.96	48.14	$4\frac{1}{2}$–$4\frac{1}{2}$	$3d'\ ^4F^\circ - 4f'\ ^2G$
1728.318	B	1	40.95	48.13	$3\frac{1}{2}$–$3\frac{1}{2}$	UV 26.04
1725.315	B	1	40.95	48.14	$3\frac{1}{2}$–$4\frac{1}{2}$	
1726.776	B	1	40.95	48.13	$2\frac{1}{2}$–$3\frac{1}{2}$	
Air						
2267.33	B	(3)	41.27	46.73	$3\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^4D^\circ - 4p'\ ^4D$
2270.43	F	(2)	41.26	46.72	$2\frac{1}{2}$–$2\frac{1}{2}$	UV 26.05
2272.42	F	(0)	41.26	46.72	$1\frac{1}{2}$–$1\frac{1}{2}$	
2274.12	F	(0)	41.26	46.71	$0\frac{1}{2}$–$0\frac{1}{2}$	
*2271.79	F	(0)	41.27	46.72	$3\frac{1}{2}$–$2\frac{1}{2}$	
2273.51	F	(1)	41.26	46.72	$2\frac{1}{2}$–$1\frac{1}{2}$	
2265.87	F	(0)	41.26	46.73	$2\frac{1}{2}$–$3\frac{1}{2}$	
2269.30	F	(0)	41.26	46.72	$1\frac{1}{2}$–$2\frac{1}{2}$	
*2271.79	F	(0)	41.26	46.72	$0\frac{1}{2}$–$1\frac{1}{2}$	
*2147.922	B	4	41.27	47.04	$3\frac{1}{2}$–$2\frac{1}{2}$	$3d'\ ^4D^\circ - 4p'\ ^4P$
*2149.010	B	3	41.26	47.03	$2\frac{1}{2}$–$1\frac{1}{2}$	UV 26.06
2150.040	B	2	41.26	47.03	$1\frac{1}{2}$–$0\frac{1}{2}$	
2146.570	B	1	41.26	47.04	$2\frac{1}{2}$–$2\frac{1}{2}$	
*2147.922	B	4	41.26	47.03	$1\frac{1}{2}$–$1\frac{1}{2}$	
2149.465	B	1	41.26	47.03	$0\frac{1}{2}$–$0\frac{1}{2}$	
Vac						
*1846.694	B	5	41.26	47.98	$2\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^4D^\circ - 4f'\ ^2F$
*1846.694	B	5	41.26	47.97	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 26.07
*1846.415	B	8	41.27	47.98	$3\frac{1}{2}$–$4\frac{1}{2}$	$3d'\ ^4D^\circ - 4f'\ ^4F$
1845.865	B	7	41.26	47.98	$2\frac{1}{2}$–$3\frac{1}{2}$	UV 26.08
*1845.715	B	7	41.26	47.98	$1\frac{1}{2}$–$2\frac{1}{2}$	
*1845.715	B	7	41.26	47.98	$0\frac{1}{2}$–$1\frac{1}{2}$	
*1846.694	B	5	41.27	47.98	$3\frac{1}{2}$–$3\frac{1}{2}$	
*1846.415	B	8	41.26	47.98	$2\frac{1}{2}$–$2\frac{1}{2}$	
1846.142	B	3	41.26	47.98	$1\frac{1}{2}$–$1\frac{1}{2}$	
*m*1804.44	P	N III	41.27	48.14	$3\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^4D^\circ - 4f'\ ^4D$
1802.365	B	4	41.26	48.14	$2\frac{1}{2}$–$2\frac{1}{2}$	UV 26.09
*1800.131	B	3	41.26	48.15	$1\frac{1}{2}$–$1\frac{1}{2}$	
1798.733	B	1	41.26	48.15	$0\frac{1}{2}$–$0\frac{1}{2}$	
1803.255	B	1	41.27	48.14	$3\frac{1}{2}$–$2\frac{1}{2}$	
1800.789	B	2	41.26	48.15	$2\frac{1}{2}$–$1\frac{1}{2}$	
1799.180	B	1	41.26	48.15	$1\frac{1}{2}$–$0\frac{1}{2}$	
1803.525	B	1	41.26	48.14	$2\frac{1}{2}$–$3\frac{1}{2}$	
1801.639	B	1	41.26	48.14	$1\frac{1}{2}$–$2\frac{1}{2}$	
1799.660	B	1	41.26	48.15	$0\frac{1}{2}$–$1\frac{1}{2}$	
*1800.131	B	3	41.26	48.15	$2\frac{1}{2}$–$2\frac{1}{2}$	$3d'\ ^4D^\circ - 4f'\ ^2D$
1797.277	B	0	41.26	48.16	$1\frac{1}{2}$–$1\frac{1}{2}$	UV 26.10
Air						
2484.54	B	4	41.48	46.47	$2\frac{1}{2}$–$1\frac{1}{2}$	$3d'\ ^2D^\circ - 4p'\ ^2P$
2486.43	B	3	41.48	46.46	$1\frac{1}{2}$–$0\frac{1}{2}$	UV 26.11
2482.85	F	0	41.48	46.47	$1\frac{1}{2}$–$1\frac{1}{2}$	
Vac						
*1907.991	B	9	41.48	47.98	$2\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^2D^\circ - 4f'\ ^2F$
*1907.991	B	9	41.48	47.97	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 27
1908.936	B	3	41.48	47.97	$2\frac{1}{2}$–$2\frac{1}{2}$	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Vac						
1907.209	B	6	41.48	47.98	$2\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^2D°-\ 4f'\ ^4F$
1906.847	B	4	41.48	47.98	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 27.01
1860.733	B	1	41.48	48.14	$2\frac{1}{2}$–$2\frac{1}{2}$	$3d'\ ^2D°-\ 4f'\ ^4D$ UV 27.02
*1858.48	P	3*N II	41.48	48.15	$2\frac{1}{2}$–$2\frac{1}{2}$	$3d'\ ^2D°-\ 4f'\ ^2D$
1855.232	B	1	41.48	48.16	$1\frac{1}{2}$–$1\frac{1}{2}$	UV 27.03
Air						
2453.89	B	(4)	41.68	46.73	$2\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^4P°-\ 4p'\ ^4D$
2462.56	F	(1)	41.69	46.72	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 28
2468.36	F	(0)	41.69	46.72	$0\frac{1}{2}$–$1\frac{1}{2}$	
2459.26	F	(0)	41.68	46.72	$2\frac{1}{2}$–$2\frac{1}{2}$	
2466.24	F	(1)	41.69	46.72	$1\frac{1}{2}$–$1\frac{1}{2}$	
2471.24	F	(00)	41.69	46.71	$0\frac{1}{2}$–$0\frac{1}{2}$	
2463.04	F	(00)	41.68	46.72	$2\frac{1}{2}$–$1\frac{1}{2}$	
2367.53	B	3	41.68	46.92	$2\frac{1}{2}$–$1\frac{1}{2}$	$3d'\ ^4P°-\ 4p'\ ^4S$
2370.53	B	2	41.69	46.72	$1\frac{1}{2}$–$1\frac{1}{2}$	UV 28.01
2372.52	B	1	41.69	46.92	$0\frac{1}{2}$–$1\frac{1}{2}$	
2314.56	F	(1)	41.68	47.04	$2\frac{1}{2}$–$2\frac{1}{2}$	$3d'\ ^4P°-\ 4p'\ ^4P$
2320.33	F	(00)	41.69	47.03	$1\frac{1}{2}$–$1\frac{1}{2}$	UV 28.02
*2317.35	F	(0)	41.68	47.03	$2\frac{1}{2}$–$1\frac{1}{2}$	
2322.81	F	(1)	41.69	47.03	$1\frac{1}{2}$–$0\frac{1}{2}$	
*2317.35	F	(0)	41.69	47.04	$1\frac{1}{2}$–$2\frac{1}{2}$	
2322.23	F	(0)	41.69	47.03	$0\frac{1}{2}$–$1\frac{1}{2}$	
Vac						
1920.654	B	11	41.68	48.14	$2\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^4P°-\ 4f'\ ^4D$
1921.299	B	9	41.69	48.14	$1\frac{1}{2}$–$2\frac{1}{2}$	UV 29
1920.838	B	8	41.69	48.15	$0\frac{1}{2}$–$1\frac{1}{2}$	
1919.288	B	6	41.68	48.14	$2\frac{1}{2}$–$2\frac{1}{2}$	
1919.547	B	8	41.69	48.15	$1\frac{1}{2}$–$1\frac{1}{2}$	
1919.768	B	8	41.69	48.15	$0\frac{1}{2}$–$0\frac{1}{2}$	
1917.572	B	0	41.68	48.15	$2\frac{1}{2}$–$1\frac{1}{2}$	
1918.53	B	2*	41.69	48.15	$1\frac{1}{2}$–$0\frac{1}{2}$	
1916.849	B	1	41.68	48.15	$2\frac{1}{2}$–$2\frac{1}{2}$	$3d'\ ^4P°-\ 4f'\ ^2D$
1916.53	B	1	41.69	48.16	$1\frac{1}{2}$–$1\frac{1}{2}$	UV 29.01
1918.87	B	4*	41.69	48.15	$1\frac{1}{2}$–$2\frac{1}{2}$	

N III—Continued

I A	Ref.	Int.	E P Low	E P High	J	Multiplet No.
Air						
6107.52	B	1*n*	41.93	43.96	$1\frac{1}{2}$–	$5p\ ^2P°-\ 6d\ ^2D$
6104.69	B	0*n*	41.92	43.96	$0\frac{1}{2}$–$1\frac{1}{2}$	23
2121.501	B	6	42.14	47.98	$3\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^2F°-\ 4f'\ ^2F$
2117.593	B	6	42.12	47.97	$2\frac{1}{2}$–$2\frac{1}{2}$	UV 29.02
2120.464	B	4	42.14	47.98	$3\frac{1}{2}$–$3\frac{1}{2}$	$3d'\ ^2F°-\ 4f'\ ^4F$ UV 29.03
2071.088	B	6	42.14	48.12	$3\frac{1}{2}$–$4\frac{1}{2}$	$3d'\ ^2F°-\ 4f'\ ^4G$
*2068.681	B	7	42.12	48.11	$2\frac{1}{2}$–$3\frac{1}{2}$	UV 29.04
2064.423	B	10	42.14	48.14	$3\frac{1}{2}$–$4\frac{1}{2}$	$3d'\ ^2F°-\ 4f'\ ^2G$
2064.007	B	9	42.12	48.13	$2\frac{1}{2}$–$3\frac{1}{2}$	UV 30
*2068.681	B	7	42.14	48.13	$3\frac{1}{2}$–$3\frac{1}{2}$	
7686.83	B	3*n*	42.40	44.01		$5d\ ^2D - 6f\ ^2F°$ 24
4907.20	B	2*n*	42.40	44.92		$5d\ ^2D - 7f\ ^2F°$ 25
2191.436	B	5	42.49	48.14	$1\frac{1}{2}$–$2\frac{1}{2}$	$3d'\ ^2P°-\ 4f'\ ^4D$
2192.593	B	2	42.50	48.15	$0\frac{1}{2}$–$1\frac{1}{2}$	UV 31
2188.205	B	9	42.49	48.15	$1\frac{1}{2}$–$2\frac{1}{2}$	$3d'\ ^2P°-\ 4f'\ ^2D$
2188.379	B	8	42.50	48.16	$0\frac{1}{2}$–$1\frac{1}{2}$	UV 32
2185.101	B	3	42.49	48.16	$1\frac{1}{2}$–$1\frac{1}{2}$	
8019.09	B	4*n*	42.49	44.04		$5f\ ^2F° - 6g\ ^2G$ 26
5085.85	B	3*n*	42.49	44.94		$5f\ ^2F° - 7g\ ^2G$ 27
8236.46	B	5*n*	42.54	44.04		$5g\ ^2G - 6h\ ^2H°$ 28
5147.88	B	3*n*	42.54	44.95		$5g\ ^2G - 7h\ ^2H°$ 29

NBS-114A (REV. 7-73)

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET	1. PUBLICATION OR REPORT NO. NSRDS-NBS 3, Sec. 5	2. Gov't Accession No.	3. Recipient's Accession No.

4. TITLE AND SUBTITLE

Selected Tables of Atomic Spectra
Atomic Energy Levels and Multiplet Tables
NI, NII, NIII

5. Publication Date: May 1975

6. Performing Organization Code:

7. AUTHOR(S): Charlotte E. Moore

8. Performing Organ. Report No.:

9. PERFORMING ORGANIZATION NAME AND ADDRESS

NATIONAL BUREAU OF STANDARDS
DEPARTMENT OF COMMERCE
WASHINGTON, D.C. 20234

10. Project/Task/Work Unit No.:

11. Contract/Grant No.:

12. Sponsoring Organization Name and Complete Address (Street, City, State, ZIP)

Same as 9.

13. Type of Report & Period Covered: N/A

14. Sponsoring Agency Code:

15. SUPPLEMENTARY NOTES

Library of Congress Catalog Card Number: 64-600074

16. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

The present publication is the fifth Section of a series being prepared in response to the persistent need for a current revision of two sets of tables containing data on atomic spectra as derived from analyses of optical spectra. As in the previous sections, Part A contains the atomic energy levels and Part B the multiplet tables. The first three spectra of nitrogen, NI, NII and NIII are included. The form of presentation is described in detail in the text of Section 1.

17. KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)*

Atomic energy levels, NI, NII, NIII; Multiplet tables, NI, NII, NIII; Nitrogen spectra, NI, NII, NIII; Spectra, NI, NII, NIII; Wavelengths, nitrogen spectra NI, NII, NIII

18. AVAILABILITY

[X] Unlimited

[ ] For Official Distribution. Do Not Release to NTIS

[X] Order From Sup. of Doc., U.S. Government Printing Office Washington, D.C. 20402, SD Cat. No. C13.48:3/Sec. 5

[ ] Order From National Technical Information Service (NTIS) Springfield, Virginia 22151

19. SECURITY CLASS (THIS REPORT): UNCLASSIFIED

21. NO. OF PAGES: 67

20. SECURITY CLASS (THIS PAGE): UNCLASSIFIED

22. Price: $1.80

USCOMM-DC 29042-P74

(cut here)

Announcement of New Publications in

National Standard Reference Data Series

Superintendent of Documents,
Government Printing Office,
Washington, D.C. 20402

Dear Sir:

Please add my name to the announcement list of new publications to be issued in the series: National Standard Reference Data Series—National Bureau of Standards.

Name .....

Company .....

Address .....

City ..... State..... Zip Code.....

(Notification key N-337)

NBS TECHNICAL PUBLICATIONS

PERIODICALS

JOURNAL OF RESEARCH reports National Bureau of Standards research and development in physics, mathematics, and chemistry. It is published in two sections, available separately:

• Physics and Chemistry (Section A)

Papers of interest primarily to scientists working in these fields. This section covers a broad range of physical and chemical research, with major emphasis on standards of physical measurement, fundamental constants, and properties of matter. Issued six times a year. Annual subscription: Domestic, $17.00; Foreign, $21.25.

• Mathematical Sciences (Section B)

Studies and compilations designed mainly for the mathematician and theoretical physicist. Topics in mathematical statistics, theory of experiment design, numerical analysis, theoretical physics and chemistry, logical design and programming of computers and computer systems. Short numerical tables. Issued quarterly. Annual subscription: Domestic, $9.00; Foreign, $11.25.

DIMENSIONS/NBS (formerly Technical News Bulletin)—This monthly magazine is published to inform scientists, engineers, businessmen, industry, teachers, students, and consumers of the latest advances in science and technology, with primary emphasis on the work at NBS. The magazine highlights and reviews such issues as energy research, fire protection, building technology, metric conversion, pollution abatement, health and safety, and consumer product performance. In addition, it reports the results of Bureau programs in measurement standards and techniques, properties of matter and materials, engineering standards and services, instrumentation, and automatic data processing.

Annual subscription: Domestic, $9.45; Foreign, $11.85.

NONPERIODICALS

Monographs—Major contributions to the technical literature on various subjects related to the Bureau's scientific and technical activities.

Handbooks—Recommended codes of engineering and industrial practice (including safety codes) developed in cooperation with interested industries, professional organizations, and regulatory bodies.

Special Publications—Include proceedings of conferences sponsored by NBS, NBS annual reports, and other special publications appropriate to this grouping such as wall charts, pocket cards, and bibliographies.

Applied Mathematics Series—Mathematical tables, manuals, and studies of special interest to physicists, engineers, chemists, biologists, mathematicians, computer programmers, and others engaged in scientific and technical work.

National Standard Reference Data Series—Provides quantitative data on the physical and chemical properties of materials, compiled from the world's literature and critically evaluated. Developed under a world-wide program coordinated by NBS. Program under authority of National Standard Data Act (Public Law 90-396).

NOTE: At present the principal publication outlet for these data is the Journal of Physical and Chemical Reference Data (JPCRD) published quarterly for NBS by the American Chemical Society (ACS) and the American Institute of Physics (AIP). Subscriptions, reprints, and supplements available from ACS, 1155 Sixteenth St. N. W., Wash. D. C. 20056.

Building Science Series—Disseminates technical information developed at the Bureau on building materials, components, systems, and whole structures. The series presents research results, test methods, and performance criteria related to the structural and environmental functions and the durability and safety characteristics of building elements and systems.

Technical Notes—Studies or reports which are complete in themselves but restrictive in their treatment of a subject. Analogous to monographs but not so comprehensive in scope or definitive in treatment of the subject area. Often serve as a vehicle for final reports of work performed at NBS under the sponsorship of other government agencies.

Voluntary Product Standards—Developed under procedures published by the Department of Commerce in Part 10, Title 15, of the Code of Federal Regulations. The purpose of the standards is to establish nationally recognized requirements for products, and to provide all concerned interests with a basis for common understanding of the characteristics of the products. NBS administers this program as a supplement to the activities of the private sector standardizing organizations.

Federal Information Processing Standards Publications (FIPS PUBS)—Publications in this series collectively constitute the Federal Information Processing Standards Register. Register serves as the official source of information in the Federal Government regarding standards issued by NBS pursuant to the Federal Property and Administrative Services Act of 1949 as amended, Public Law 89-306 (79 Stat. 1127), and as implemented by Executive Order 11717 (38 FR 12315, dated May 11, 1973) and Part 6 of Title 15 CFR (Code of Federal Regulations).

Consumer Information Series—Practical information, based on NBS research and experience, covering areas of interest to the consumer. Easily understandable language and illustrations provide useful background knowledge for shopping in today's technological marketplace.

NBS Interagency Reports (NBSIR)—A special series of interim or final reports on work performed by NBS for outside sponsors (both government and non-government). In general, initial distribution is handled by the sponsor; public distribution is by the National Technical Information Service (Springfield, Va. 22161) in paper copy or microfiche form.

Order NBS publications (except NBSIR's and Bibliographic Subscription Services) from: Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

BIBLIOGRAPHIC SUBSCRIPTION SERVICES

The following current-awareness and literature-survey bibliographies are issued periodically by the Bureau:

Cryogenic Data Center Current Awareness Service

A literature survey issued biweekly. Annual subscription: Domestic, $20.00; foreign, $25.00.

Liquefied Natural Gas. A literature survey issued quarterly. Annual subscription: $20.00.

Superconducting Devices and Materials. A literature survey issued quarterly. Annual subscription: $20.00. Send subscription orders and remittances for the preceding bibliographic services to National Technical Information Service, Springfield, Va. 22161.

Electromagnetic Metrology Current Awareness Service Issued monthly. Annual subscription: $100.00 (Special rates for multi-subscriptions). Send subscription order and remittance to Electromagnetics Division, National Bureau of Standards, Boulder, Colo. 80302.

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Washington, D.C. 20234

OFFICIAL BUSINESS

Penalty for Private Use, $300

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-215

FOURTH CLASS MAIL