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Energy Levels and Observed Spectral Lines of Ionized Argon, Ar II through Ar XVIII

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The energy levels and observed spectral lines of ionized argon atoms, in all stages of ionization, have been compiled. Sufficient experimental data were found to generate level and line tables for Ar II through Ar XV. For Ar XVI a mix of experimental and theoretical data were used. Because of the superiority of the theoretical data for Ar XVII and Ar XVIII, theoretical values are compiled for the energy levels and the lines are calculated from them. Experimental g-factors are included for Ar II. A value, either experimental, semi-empirical, or theoretical, is included for the ionization energy of each ion. *© 2010 by the U.S. Secretary of Commerce on behalf of the United States. All rights reserved.* [doi:10.1063/1.3337661]

Key words: compilation; critically evaluated data; energy levels; Ar; argon; argon ions; observed spectral lines; spectra.

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1. Introduction

In 1949 Moore [49MOO] published a compilation of the energy levels of argon containing detailed analyses of Ar I through Ar VIII and a very partial analysis of Ar IX. In 1982 Striganov and Odintsova [82STR/ODI] presented a compilation of argon lines containing observed lines for Ar I through Ar IX. Since these compilations were completed, additional work on Ar has been published. This work includes results obtained with new techniques such as beam foil spectroscopy, electron beam ion trap (EBIT), laser excited plasmas, high energy beams of Ar ions colliding with gas targets, and fusion devices such as tokamaks, as well as astronomical observations. Also detailed *ab initio* calculations with quantum electrodynamical and other corrections have been made. As a result we now have energy levels and lines for all 17 stages of ionized Ar.

The compilation for each stage of ionization states the date of the collection of lines and preliminary levels was completed. This date ranges from February 2006 for Ar II to June 2009 for Ar XVIII.

Generally, only experimentally derived energy levels are used; these include semiempirical results obtained by interpolation and extrapolation along isoelectronic sequences. An exception is made for Ar XVII and Ar XVIII where good theoretical values exist. The use of calculated values is indicated by enclosing the energy value in square brackets.

We tabulate only those lines that have wavelengths consistent with differences in the tabulated levels. For many of the stages, decisions are made about which of several possible classifications to include by calculating the respective transition probabilities with the Cowan code [81COW]. As a result of this process, in a few cases the line classifications may differ from those given in the stated references. The coupling scheme used to describe the levels are most often LS coupling, also known as Russell-Saunders coupling [81COW].

For Ar II through Ar XV the final energy levels are determined by means of a least squares adjustment of preliminary levels using the observed spectral lines. In the case of Ar XVI a mixture of observed and calculated lines is used. Theoretical values are used for Ar XVII and Ar XVIII.

For the first ionization energy we try to provide the best available values obtained experimentally. We do not average experimental values by different authors. Where experimental values are not available, we prefer to use semiempirical results which adjust calculations along an isoelectronic sequence to fit available information about some of the members. For one- and two-electron ions there are very good theoretical values.

All energy levels are given in customary units of cm^{-1} and all wavelengths in units of Å (0.1 nm). As reported in Mohr *et al.* [07MOH/TAY], the unit cm^{-1} is related to the SI unit for energy, the joule, by $1\ cm^{-1} = (1.986\,445\,501 \pm 0.000\,000\,099) \times 10^{-23}$ J. Ionization energies are provided in both cm^{-1} and eV. We use the conversion factor $(8\,065.544\,65 \pm 0.000\,20)\ cm^{-1}/eV$ as determined by Mohr *et al.* [07MOH/TAY].

Although often difficult to ascertain, uncertainties in the referenced publication of energy levels and lines are likely 1σ values. In many cases only the number of decimal places indicates the uncertainty in the quoted values. We generally use a "rule of 20," whereby an uncertainty of greater than 20 in the least significant digit serves as the criterion for dropping that digit.

The text for each ion does not attempt to provide a complete review of all work on that stage of ionization. Rather, it intends to credit the major contributions, especially those from which values are included in the line and level tables.

1.1. References for introduction

49MOO C. E. Moore, *Atomic Energy Levels*, Natl. Bur. Std. (U.S.) Circ. No. 467 (U.S. Government Printing Office, Washington, D.C., 1949), Vol. I.

81COW R. D. Cowan, *The Theory of Atomic Structure and Spectra*, University of California Press, Berkeley, 1981.

82STR/ODI A. R. Striganov and G. A. Odintsova, *Tables of Spectral Lines of Atoms and Ions* (Energy, Moscow, 1982).

07MOH/TAY P. J. Mohr, B. N. Taylor, and D. B. Newell (2007), "The 2006 CODATA Recommended Values of the Fundamental Physical Constants" (Web Version 5.2). This database was developed by J. Baker, M. Douma, and S. Kotochigova. Available: http://physics.nist.gov/constants [2009, July 13]. National Institute of Standards and Technology, Gaithersburg, MD 20899.

2. Explanation of Tables of Compiled Levels and Lines

In the Energy Level Tables the first column provides the energy level in units of cm^{-1}. The values have been rounded

using the rule of 20. The absence of a decimal point is used to indicate that the last digit is not significant. The second column gives the uncertainty of the energy level. The third column provides the parity of the energy level; "0" signifies even parity and "1" signifies odd parity. The next three columns specify the configuration, term, and J value of the level. In the case of Ar II there is an additional column which provides the magnetic Landé g-factor of the level (when known). In cases where the information is available (as a result of calculations), we provide under the heading "Leading percentages" the eigenvector percentage composition of the level. We first give the percentage of the basis state used to name the level. Then we give that of the next highest basis state (or in some cases the highest) along with the classification of this basis state. Note that in some cases if the next highest is only a few percent, it is not specified in the source and so it is not included here.

In the Line Tables wave numbers between 5000 and 50 000 cm^{-1} (wavelengths between approximately 2000 Å and 20 000 Å) are in air. All others are vacuum wavelengths. The first column is the observed wavelength in angstroms (Å). The second column is the vacuum wave number corresponding to the observed wavelength. The wave numbers are provided in units of cm^{-1}. The presence of a decimal point indicates that the last digit is a significant digit while the absence of a decimal point indicates that the last digit is not a significant digit. The conversion between air wavelengths and vacuum wavelengths and wave numbers is made using the three-term formula given in Eq. (3) of Peck and Reeder [72PEC/REE]. The wave number values are rounded to the appropriate number of significant digits using the rule of 20. The third column is the relative intensity assigned to the line. Some authors use an intensity of 0 to indicate an intensity somewhat less than 1 (but not zero intensity). This system is maintained in this compilation. Also included here are codes which are defined for each ion. The next six columns specify the classification of the transition responsible for the line by providing the configuration, term, and J value first for the lower level and then for the upper level. The next-to-last column is an estimate of the uncertainty in the wavelength of the observed line. The last column identifies the source of the observed line. (The next-to-last column does not appear in the case of Ar XVIII.)

2.1. References for section 2

72PEC/REE E. R. Peck and K. Reeder, J. Opt. Soc. Am. **62**, 958 (1972).

3. Tables of Energy Levels and Observed Lines

3.1. Ar II

Cl isoelectronic sequence

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^5\ ^2P^\circ_{3/2}$

Ionization energy: 222 850.6 ± 1.7 cm^{-1} (27.629 95 ± 0.000 21 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar II are given in Tables 1–3.

The energy levels of singly ionized argon, Ar II, were compiled by Moore [49MOO] based largely on the work of deBruin [28DEB, 28DEB2, 30DEB, 30DEB2] with some modifications by Minnhagen [47MIN, 48MIN] and Edlén [37EDL]. However, she asserts that a complete and detailed analysis of this spectrum is needed. She tabulates 118 levels. Using more recent data, we are able to tabulate 418 levels by means of a fit to the available Ar II lines. The preliminary levels for this fit were obtained primarily from the work of Whaling *et al.* [95WHA/AND] with additional levels from Minnhagen [63MIN, 71MIN] and Palmeri and Biémont [95PAL/BIÉ] and a few levels from other works [73NOR, 94QUI/PAL, 85YAM/KAN, 82HAN/PER]. We follow Whaling *et al.* [95WHA/AND] in fixing the value of the $(^3P)4s\ ^4P_{3/2}$ level at 135 085.9960 cm^{-1} and referring all other levels to this value. This results in an increase in the values for the Minnhagen levels [63MIN] of 0.075 cm^{-1}, consistent with the value later recommended by Minnhagen [71MIN] of 0.08 cm^{-1}. It also results in the ground state level value being slightly offset from zero.

In the energy level table many levels are designated using LS coupling. Pair coupling is used for the n*f*, n*g*, n*h*, n*i*, and n*k* levels.

The observed spectral lines of Ar II are compiled from 13 sources [35BOY, 58HER, 59MIN, 63MIN, 71MIN, 73NOR, 82HAN/PER, 85YAM/KAN, 94QUI/PAL, 95PAL/BIÉ, 95WHA/AND, 01HIN/JOY, 03ENG/HIN]. The sources used in this compilation are summarized in Table 2 (Sources of Ar II lines). We only include observed lines. Table 2 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

Lines calculated from energy levels (Ritz lines) were not used. In some cases the wavelength of the observed line was reconstructed from the quoted Ritz line and the stated value of the difference between the observed and the calculated line.

The source of the largest number of lines used in this compilation was Whaling *et al.* [95WHA/AND]. Their wavelengths are likely to be the best values since they used CO internal standards to calibrate their wave-number scale. We note that a privately communicated file of their results was used for the values of these lines. This file includes more lines than the published reference [95WHA/AND]. In a few cases the values differ slightly. Their values are Ritz values but the observed results could be obtained since they also provided (observed–calculated) values. Two values were modified (7643.0155 and 5631.7793 cm^{-1}) since their Ritz values did not correspond to their determined energy levels. We quote their observed values in the line table. When the

TABLE 1. Energy levels of Ar II

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	g_J
0.0002	0.0008	1	$3s^23p^5$	$^2P^\circ$	3/2	
1 431.5833	0.0008	1	$3s^23p^5$	$^2P^\circ$	1/2	
108 721.537	0.012	0	$3s3p^6$	^2S	1/2	
132 327.3618	0.0004	0	$3s^23p^4(^3P)3d$	^4D	7/2	
132 481.2070	0.0004	0	$3s^23p^4(^3P)3d$	^4D	5/2	
132 630.7279	0.0004	0	$3s^23p^4(^3P)3d$	^4D	3/2	
132 737.7041	0.0006	0	$3s^23p^4(^3P)3d$	^4D	1/2	
142 186.3155	0.0003	0	$3s^23p^4(^3P)3d$	^4F	9/2	
142 717.0967	0.0003	0	$3s^23p^4(^3P)3d$	^4F	7/2	
143 107.6803	0.0003	0	$3s^23p^4(^3P)3d$	^4F	5/2	
143 371.4366	0.0005	0	$3s^23p^4(^3P)3d$	^4F	3/2	
144 709.9820	0.0003	0	$3s^23p^4(^3P)3d$	^2P	1/2	
145 668.8847	0.0003	0	$3s^23p^4(^3P)3d$	^2P	3/2	
147 228.0523	0.0008	0	$3s^23p^4(^3P)3d$	^4P	1/2	
147 503.1136	0.0005	0	$3s^23p^4(^3P)3d$	^4P	3/2	
147 875.9479	0.0004	0	$3s^23p^4(^3P)3d$	^4P	5/2	
149 179.2446	0.0002	0	$3s^23p^4(^3P)3d$	^2F	7/2	
150 147.7023	0.0002	0	$3s^23p^4(^3P)3d$	^2F	5/2	
150 474.9905	0.0002	0	$3s^23p^4(^3P)3d$	^2D	3/2	
151 087.3130	0.0002	0	$3s^23p^4(^3P)3d$	^2D	5/2	
154 181.4944	0.0003	0	$3s^23p^4(^1D)3d$	^2G	9/2	
154 204.0242	0.0003	0	$3s^23p^4(^1D)3d$	^2G	7/2	
163 299.5618	0.0004	0	$3s^23p^4(^1D)3d$	^2F	5/2	
163 506.5370	0.0002	0	$3s^23p^4(^1D)3d$	^2F	7/2	
172 335.5987	0.0009	0	$3s^23p^4(^1D)3d$	^2D	5/2	
172 829.6541	0.0015	0	$3s^23p^4(^1D)3d$	^2D	3/2	
174 409.8918	0.0015	0	$3s^23p^4(^1D)3d$	^2P	3/2	
174 821.0100	0.0018	0	$3s^23p^4(^1D)3d$	^2P	1/2	
179 592.2250	0.0008	0	$3s^23p^4(^1S)3d$	^2D	5/2	
179 931.8395	0.0012	0	$3s^23p^4(^1S)3d$	^2D	3/2	
184 093.1339	0.0005	0	$3s^23p^4(^1D)3d$	^2S	1/2	
134 241.7391	0.0003	0	$3s^23p^4(^3P)4s$	^4P	5/2	1.598
135 085.9960	fixed	0	$3s^23p^4(^3P)4s$	^4P	3/2	1.722
135 601.7338	0.0003	0	$3s^23p^4(^3P)4s$	^4P	1/2	2.650
138 243.6446	0.0002	0	$3s^23p^4(^3P)4s$	^2P	3/2	1.334
139 258.3391	0.0002	0	$3s^23p^4(^3P)4s$	^2P	1/2	0.676
148 620.1416	0.0002	0	$3s^23p^4(^1D)4s$	^2D	3/2	0.803
148 842.4676	0.0002	0	$3s^23p^4(^1D)4s$	^2D	5/2	1.202
167 307.9824	0.0004	0	$3s^23p^4(^1S)4s$	^2S	1/2	1.993
155 043.1621	0.0002	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	1.599
155 351.1208	0.0002	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	1.720
155 708.1077	0.0003	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	2.638
157 234.0198	0.0003	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	1.427
157 673.4136	0.0002	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	1.334
158 167.8001	0.0003	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	1.199
158 428.1089	0.0004	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.000
158 730.2997	0.0002	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	1.241
159 393.3852	0.0002	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.918
159 706.5339	0.0002	1	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.983
160 239.4282	0.0002	1	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	1.244
161 048.7413	0.0003	1	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	1.987
161 089.3848	0.0002	1	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	1.695
170 401.0172	0.0002	1	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.857
170 530.4042	0.0002	1	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	1.140

TABLE 1. Energy levels of Ar II—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	g_J
172 213.8800	0.0002	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	1.332
172 816.2928	0.0004	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.677
173 347.9160	0.0002	1	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.804
173 393.4660	0.0002	1	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	1.202
191 974.5802	0.0005	1	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	1.332
192 333.4988	0.0004	1	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.760
181 594.1406	0.0002	0	$3s^23p^4(^3P)5s$	^4P	5/2	1.603
182 222.1211	0.0002	0	$3s^23p^4(^3P)5s$	^4P	3/2	1.609
182 951.2611	0.0002	0	$3s^23p^4(^3P)5s$	^4P	1/2	2.550
183 090.8929	0.0001	0	$3s^23p^4(^3P)5s$	^2P	3/2	1.445
183 914.6442	0.0002	0	$3s^23p^4(^3P)5s$	^2P	1/2	0.816
195 864.7298	0.0002	0	$3s^23p^4(^1D)5s$	^2D	5/2	
195 866.8505	0.0004	0	$3s^23p^4(^1D)5s$	^2D	3/2	
215 065.7718	0.0019	0	$3s^23p^4(^1S)5s$	^2S	1/2	
183 675.6616	0.0003	0	$3s^23p^4(^3P)4d$	^4D	7/2	1.427
183 797.4475	0.0003	0	$3s^23p^4(^3P)4d$	^4D	5/2	1.370
183 986.0139	0.0003	0	$3s^23p^4(^3P)4d$	^4D	3/2	1.198
184 191.7919	0.0006	0	$3s^23p^4(^3P)4d$	^4D	1/2	0.380
185 093.3300	0.0005	0	$3s^23p^4(^3P)4d$	^4F	9/2	1.330
185 624.8284	0.0003	0	$3s^23p^4(^3P)4d$	^4F	7/2	1.217
186 074.4377	0.0002	0	$3s^23p^4(^3P)4d$	^4F	5/2	1.045
186 171.3332	0.0004	0	$3s^23p^4(^3P)4d$	^4P	1/2	2.600
186 340.5618	0.0002	0	$3s^23p^4(^3P)4d$	^4F	3/2	0.612
186 470.3605	0.0003	0	$3s^23p^4(^3P)4d$	^4P	3/2	1.494
186 816.0498	0.0002	0	$3s^23p^4(^3P)4d$	^2F	7/2	1.167
186 891.0395	0.0003	0	$3s^23p^4(^3P)4d$	^4P	5/2	1.588
187 589.3385	0.0002	0	$3s^23p^4(^3P)4d$	^2F	5/2	0.861
189 934.6324	0.0007	0	$3s^23p^4(^3P)4d$	^2P	1/2	0.667
190 592.2308	0.0007	0	$3s^23p^4(^3P)4d$	^2P	3/2	1.322
192 556.9181	0.0006	0	$3s^23p^4(^3P)4d$	^2D	5/2	1.198
192 712.058	0.002	0	$3s^23p^4(^3P)4d$	^2D	3/2	0.833
198 594.9986	0.0004	0	$3s^23p^4(^1D)4d$	^2G	7/2	
198 604.1478	0.0004	0	$3s^23p^4(^1D)4d$	^2G	9/2	
199 446.6271	0.0006	0	$3s^23p^4(^1D)4d$	^2P	1/2	0.670
199 525.2467	0.0003	0	$3s^23p^4(^1D)4d$	^2P	3/2	
199 679.8442	0.0003	0	$3s^23p^4(^1D)4d$	^2D	5/2	1.196
199 982.0246	0.0003	0	$3s^23p^4(^1D)4d$	^2D	3/2	
200 138.9309	0.0002	0	$3s^23p^4(^1D)4d$	^2F	7/2	
200 234.9581	0.0003	0	$3s^23p^4(^1D)4d$	^2F	5/2	0.862
205 243.0499	0.0014	0	$3s^23p^4(^1D)4d$	^2S	1/2	2.004
188 766.2131	0.0002	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	
189 040.9353	0.0002	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	
189 415.0282	0.0002	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	
189 437.7398	0.0003	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	
189 654.8489	0.0002	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	
190 106.3002	0.0002	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	
190 196.2068	0.0005	1	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	
190 507.4130	0.0002	1	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	
190 511.2676	0.0002	1	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	
190 733.0158	0.0004	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	
190 942.7222	0.0003	1	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	
191 012.4248	0.0002	1	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	
191 169.5948	0.0002	1	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	
203 007.8063	0.0002	1	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	
203 151.2629	0.0004	1	$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	

TABLE 1. Energy levels of Ar II—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	g_J
203 197.5713	0.0002	1	$3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	
203 594.3548	0.0003	1	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	
204 113.7600	0.0003	1	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	
204 134.0655	0.0005	1	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	
194 800.2664	0.0003	1	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	
194 822.1835	0.0006	1	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	
194 861.3531	0.0005	1	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	
194 883.0923	0.0003	1	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	
194 996.5615	0.0007	1	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	
195 031.2030	0.0010	1	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	
195 123.6466	0.0003	1	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	
195 128.3737	0.0005	1	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	
195 281.4507	0.0011	1	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	
195 297.6800	0.0006	1	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	
196 076.4717	0.0009	1	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	
196 089.9387	0.0005	1	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	
196 103.4031	0.0002	1	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	
196 119.1023	0.0003	1	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	
196 305.1291	0.0006	1	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	
196 315.5918	0.0004	1	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	
196 621.9660	0.0004	1	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	
196 633.1007	0.0008	1	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	
208 591.8041	0.0010	1	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	
208 592.2018	0.0006	1	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	
208 803.3313	0.0006	1	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	11/2	
208 803.3350	0.0008	1	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	9/2	
208 921.2647	0.0015	1	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	
208 923.4848	0.0015	1	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	
209 248.6318	0.0009	1	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	
209 251.5033	0.0013	1	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	
209 337.9566	0.0006	1	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	
209 338.2905	0.0006	1	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	9/2	
198 812.6102	0.0002	0	$3s^23p^4(^3P)6s$	^4P	5/2	
199 138.5108	0.0002	0	$3s^23p^4(^3P)6s$	^4P	3/2	
200 032.2869	0.0002	0	$3s^23p^4(^3P)6s$	^2P	3/2	
200 110.4238	0.0002	0	$3s^23p^4(^3P)6s$	^4P	1/2	
200 623.7674	0.0003	0	$3s^23p^4(^3P)6s$	^2P	1/2	
212 932.3604	0.0005	0	$3s^23p^4(^1D)6s$	^2D	3/2	
212 933.6441	0.0004	0	$3s^23p^4(^1D)6s$	^2D	5/2	
199 879.3830	0.0002	0	$3s^23p^4(^3P)5d$	^4D	7/2	
199 959.6800	0.0002	0	$3s^23p^4(^3P)5d$	^4D	5/2	
200 151.7016	0.0003	0	$3s^23p^4(^3P)5d$	^4D	3/2	
200 393.1069	0.0002	0	$3s^23p^4(^3P)5d$	^4F	9/2	
200 406.4360	0.0004	0	$3s^23p^4(^3P)5d$	^4D	1/2	
200 880.5859	0.0003	0	$3s^23p^4(^3P)5d$	^4F	7/2	
201 030.3700	0.0007	0	$3s^23p^4(^3P)5d$	^4P	1/2	
201 345.2927	0.0003	0	$3s^23p^4(^3P)5d$	^4P	3/2	
201 351.6171	0.0003	0	$3s^23p^4(^3P)5d$	^4F	5/2	
201 608.9019	0.0002	0	$3s^23p^4(^3P)5d$	^2F	7/2	
201 720.7333	0.0003	0	$3s^23p^4(^3P)5d$	^4F	3/2	
201 781.8585	0.0002	0	$3s^23p^4(^3P)5d$	^4P	5/2	
202 155.9427	0.0002	0	$3s^23p^4(^3P)5d$	^2F	5/2	
204 417.2987	0.0020	0	$3s^23p^4(^3P)5d$	^2D	3/2	
204 515.050	0.002	0	$3s^23p^4(^3P)5d$	^2P	1/2	
204 585.664	0.012	0	$3s^23p^4(^3P)5d$	^2D	5/2	

TABLE 1. Energy levels of Ar II—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	g_J
205 221.512	0.002	0	$3s^23p^4(^3P)5d$	^2P	3/2	
214 184.8521	0.0006	0	$3s^23p^4(^1D)5d$	^2G	7/2	
214 189.4825	0.0003	0	$3s^23p^4(^1D)5d$	^2G	9/2	
214 667.52	0.02	0	$3s^23p^4(^1D)5d$	^2D	5/2	
214 832.2627	0.0015	0	$3s^23p^4(^1D)5d$	^2F	7/2	
214 911.3658	0.0011	0	$3s^23p^4(^1D)5d$	^2F	5/2	
216 882.15	0.08	0	$3s^23p^4(^1D)5d$	^2S	1/2	
202 149.1573	0.0002	1	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	
202 253.6554	0.0002	1	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	
202 420.5756	0.0003	1	$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	
202 429.8995	0.0002	1	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	
202 467.1720	0.0002	1	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	
202 544.4052	0.0003	1	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	
203 345.0334	0.0002	1	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	
203 501.8812	0.0002	1	$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	
203 730.9183	0.0002	1	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	
203 786.7026	0.0006	1	$3s^23p^4(^3P)6p$	$^2P^\circ$	1/2	
203 918.1754	0.0002	1	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	
204 929.4479	0.0004	1	$3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	
204 937.8475	0.0003	1	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	
204 951.1275	0.0003	1	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	
204 977.6466	0.0003	1	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	
204 996.1741	0.0003	1	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	
205 056.3111	0.0005	1	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	
205 079.1333	0.0006	1	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	
205 100.5849	0.0005	1	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	11/2	
205 104.4299	0.0003	1	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	
205 180.4126	0.0010	1	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	1/2	
205 194.0980	0.0008	1	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	
206 103.4751	0.0007	1	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	
206 120.3771	0.0003	1	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	
206 132.7926	0.0003	1	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2	
206 149.0244	0.0003	1	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	
206 245.6392	0.0003	1	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	
206 255.2686	0.0004	1	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	
206 623.9140	0.0005	1	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	
206 631.7187	0.0004	1	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	
218 940.8935	0.0007	1	$3s^23p^4(^1D_2)5f$	$^2[5]^\circ$	9/2	
218 940.91	0.13	1	$3s^23p^4(^1D_2)5f$	$^2[5]^\circ$	11/2	
219 001.90	0.11	1	$3s^23p^4(^1D_2)5f$	$^2[2]^\circ$	5/2	
219 003.76	0.03	1	$3s^23p^4(^1D_2)5f$	$^2[2]^\circ$	3/2	
219 160.67	0.03	1	$3s^23p^4(^1D_2)5f$	$^2[3]^\circ$	7/2	
205 211.9888	0.0005	0	$3s^23p^4(^3P_2)5g$	$^2[5]$	11/2	
205 212.1108	0.0008	0	$3s^23p^4(^3P_2)5g$	$^2[5]$	9/2	
205 214.7993	0.0009	0	$3s^23p^4(^3P_2)5g$	$^2[4]$	7/2	
205 214.8016	0.0006	0	$3s^23p^4(^3P_2)5g$	$^2[4]$	9/2	
205 250.0181	0.0007	0	$3s^23p^4(^3P_2)5g$	$^2[3]$	5/2	
205 250.1295	0.0015	0	$3s^23p^4(^3P_2)5g$	$^2[3]$	7/2	
205 273.6923	0.0004	0	$3s^23p^4(^3P_2)5g$	$^2[6]$	11/2	
205 273.7062	0.0003	0	$3s^23p^4(^3P_2)5g$	$^2[6]$	13/2	
205 300.9266	0.0013	0	$3s^23p^4(^3P_2)5g$	$^2[2]$	3/2	
205 301.0775	0.0012	0	$3s^23p^4(^3P_2)5g$	$^2[2]$	5/2	
206 336.9568	0.0011	0	$3s^23p^4(^3P_1)5g$	$^2[3]$	5/2	
206 337.0824	0.0005	0	$3s^23p^4(^3P_1)5g$	$^2[3]$	7/2	
206 347.9269	0.0003	0	$3s^23p^4(^3P_1)5g$	$^2[5]$	11/2	

TABLE 1. Energy levels of Ar II—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	g_J
206 347.9758	0.0004	0	$3s^23p^4(^3P_1)5g$	$^2[5]$	9/2	
206 397.3701	0.0006	0	$3s^23p^4(^3P_1)5g$	$^2[4]$	9/2	
206 397.3815	0.0006	0	$3s^23p^4(^3P_1)5g$	$^2[4]$	7/2	
206 819.407	0.004	0	$3s^23p^4(^3P_0)5g$	$^2[4]$	7/2	
206 819.4108	0.0004	0	$3s^23p^4(^3P_0)5g$	$^2[4]$	9/2	
219 152.53	0.02	0	$3s^23p^4(^1D_2)5g$	$^2[2]$	5/2	
219 203.591	0.011	0	$3s^23p^4(^1D_2)5g$	$^2[6]$	13/2	
219 203.595	0.011	0	$3s^23p^4(^1D_2)5g$	$^2[6]$	11/2	
219 246.644	0.004	0	$3s^23p^4(^1D_2)5g$	$^2[3]$	7/2	
219 246.79	0.02	0	$3s^23p^4(^1D_2)5g$	$^2[3]$	5/2	
219 317.5347	0.0017	0	$3s^23p^4(^1D_2)5g$	$^2[4]$	7/2	
219 317.5484	0.0018	0	$3s^23p^4(^1D_2)5g$	$^2[4]$	9/2	
219 322.1404	0.0014	0	$3s^23p^4(^1D_2)5g$	$^2[5]$	9/2	
219 322.170	0.003	0	$3s^23p^4(^1D_2)5g$	$^2[5]$	11/2	
207 095.2848	0.0003	0	$3s^23p^4(^3P)7s$	^4P	5/2	
207 277.3871	0.0003	0	$3s^23p^4(^3P)7s$	^4P	3/2	
208 249.7980	0.0003	0	$3s^23p^4(^3P)7s$	^2P	3/2	
208 329.1103	0.0007	0	$3s^23p^4(^3P)7s$	^4P	1/2	
208 765.8369	0.0006	0	$3s^23p^4(^3P)7s$	^2P	1/2	
207 694.4967	0.0004	0	$3s^23p^4(^3P)6d$	^4D	7/2	
207 746.4759	0.0012	0	$3s^23p^4(^3P)6d$	^4D	5/2	
207 936.9139	0.0007	0	$3s^23p^4(^3P)6d$	^4F	9/2	
208 011.8630	0.0014	0	$3s^23p^4(^3P)6d$	^4D	3/2	
208 143.0733	0.0005	0	$3s^23p^4(^3P)6d$	^4F	7/2	
208 481.7067	0.0014	0	$3s^23p^4(^3P)6d$	^4P	1/2	
208 673.3906	0.0009	0	$3s^23p^4(^3P)6d$	^4F	5/2	
208 695.1311	0.0008	0	$3s^23p^4(^3P)6d$	^4P	3/2	
209 015.7092	0.0003	0	$3s^23p^4(^3P)6d$	^2F	7/2	
209 198.6871	0.0008	0	$3s^23p^4(^3P)6d$	^4P	5/2	
209 268.3543	0.0007	0	$3s^23p^4(^3P)6d$	^4F	3/2	
209 377.2101	0.0008	0	$3s^23p^4(^3P)6d$	^2F	5/2	
209 413.5186	0.0011	0	$3s^23p^4(^3P)6d$	^2D	3/2	
209 597.4984	0.0017	0	$3s^23p^4(^3P)6d$	^2P	3/2	
210 125.7257	0.0018	0	$3s^23p^4(^3P)6d$	^2D	5/2	
208 914.333	0.008	1	$3s^23p^4(^3P_2)7p$	$^2[2]^\circ$	5/2	
209 397.76	0.03	1	$3s^23p^4(^3P)7p$	$^\circ$	5/2	
209 397.84	0.07	1	$3s^23p^4(^3P)7p$	$^\circ$	3/2	
210 438.859	0.014	1	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	9/2	
210 447.1142	0.0020	1	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	
210 464.709	0.004	1	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	
210 477.822	0.004	1	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	
210 513.03	0.02	1	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	3/2	
210 527.119	0.014	1	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	
210 531.77	0.14	1	$3s^23p^4(^3P_2)6f$	$^2[5]^\circ$	11/2	
210 534.939	0.007	1	$3s^23p^4(^3P_2)6f$	$^2[5]^\circ$	9/2	
210 584.91	0.03	1	$3s^23p^4(^3P_2)6f$	$^2[1]^\circ$	3/2	
211 572.2919	0.0012	1	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	3/2	
211 586.1482	0.0019	1	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	5/2	
211 593.5617	0.0004	1	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	9/2	
211 606.5422	0.0017	1	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	
211 662.06	0.05	1	$3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	7/2	
211 669.17	0.02	1	$3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	
212 071.3659	0.0011	1	$3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	7/2	
212 077.0829	0.0020	1	$3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	5/2	

TABLE 1. Energy levels of Ar II—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	g_J
210 607.6280	0.0013	0	$3s^23p^4(^3P_2)6g$	$^2[5]$	11/2	
210 607.7573	0.0014	0	$3s^23p^4(^3P_2)6g$	$^2[5]$	9/2	
210 609.378	0.003	0	$3s^23p^4(^3P_2)6g$	$^2[4]$	9/2	
210 609.4260	0.0007	0	$3s^23p^4(^3P_2)6g$	$^2[4]$	7/2	
210 630.117	0.002	0	$3s^23p^4(^3P_2)6g$	$^2[3]$	5/2	
210 630.181	0.004	0	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	
210 642.4471	0.0004	0	$3s^23p^4(^3P_2)6g$	$^2[6]$	13/2	
210 642.7275	0.0008	0	$3s^23p^4(^3P_2)6g$	$^2[6]$	11/2	
210 658.602	0.004	0	$3s^23p^4(^3P_2)6g$	$^2[2]$	3/2	
210 658.7340	0.0016	0	$3s^23p^4(^3P_2)6g$	$^2[2]$	5/2	
211 725.660	0.002	0	$3s^23p^4(^3P_1)6g$	$^2[3]$	5/2	
211 725.7663	0.0013	0	$3s^23p^4(^3P_1)6g$	$^2[3]$	7/2	
211 732.3607	0.0011	0	$3s^23p^4(^3P_1)6g$	$^2[5]$	11/2	
211 732.4322	0.0010	0	$3s^23p^4(^3P_1)6g$	$^2[5]$	9/2	
211 761.469	0.002	0	$3s^23p^4(^3P_1)6g$	$^2[4]$	9/2	
211 761.470	0.002	0	$3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	
212 197.9342	0.0015	0	$3s^23p^4(^3P_0)6g$	$^2[4]$	9/2	
212 198.0937	0.0020	0	$3s^23p^4(^3P_0)6g$	$^2[4]$	7/2	
224 606.447	0.020	0	$3s^23p^4(^1D_2)6g$	$^2[6]$	13/2	
224 606.450	0.020	0	$3s^23p^4(^1D_2)6g$	$^2[6]$	11/2	
210 636.7389	0.0010	1	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	9/2	
210 636.7416	0.0007	1	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	11/2	
210 637.211	0.009	1	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	11/2	
210 637.2200	0.0010	1	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	13/2	
210 646.9669	0.0011	1	$3s^23p^4(^3P_2)6h$	$^2[4]^\circ$	7/2	
210 646.9754	0.0015	1	$3s^23p^4(^3P_2)6h$	$^2[4]^\circ$	9/2	
210 655.8216	0.0004	1	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	13/2	
210 655.8355	0.0004	1	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	15/2	
210 662.605	0.002	1	$3s^23p^4(^3P_2)6h$	$^2[3]^\circ$	5/2	
210 662.6179	0.0015	1	$3s^23p^4(^3P_2)6h$	$^2[3]^\circ$	7/2	
211 751.9644	0.0012	1	$3s^23p^4(^3P_1)6h$	$^2[4]^\circ$	7/2	
211 751.9754	0.0008	1	$3s^23p^4(^3P_1)6h$	$^2[4]^\circ$	9/2	
211 754.9834	0.0007	1	$3s^23p^4(^3P_1)6h$	$^2[6]^\circ$	11/2	
211 754.9993	0.0005	1	$3s^23p^4(^3P_1)6h$	$^2[6]^\circ$	13/2	
211 770.9566	0.0007	1	$3s^23p^4(^3P_1)6h$	$^2[5]^\circ$	11/2	
211 770.9681	0.0007	1	$3s^23p^4(^3P_1)6h$	$^2[5]^\circ$	9/2	
212 217.4946	0.0007	1	$3s^23p^4(^3P_0)6h$	$^2[5]^\circ$	11/2	
212 217.5055	0.0005	1	$3s^23p^4(^3P_0)6h$	$^2[5]^\circ$	9/2	
212 089.487	0.002	0	$3s^23p^4(^3P)7d$	^4D	7/2	
212 224.389	0.010	0	$3s^23p^4(^3P)7d$	^4F	9/2	
212 342.380	0.003	0	$3s^23p^4(^3P)7d$	^4F	7/2	
213 299.665	0.002	0	$3s^23p^4(^3P)7d$	^2F	7/2	
213 749.18	0.05	1	$3s^23p^4(^3P_2)7f$	$^2[4]^\circ$	9/2	
213 754.75	0.10	1	$3s^23p^4(^3P_2)7f$	$^2[4]^\circ$	7/2	
213 807.62	0.05	1	$3s^23p^4(^3P_2)7f$	$^2[5]^\circ$	11/2	
213 809.49	0.04	1	$3s^23p^4(^3P_2)7f$	$^2[5]^\circ$	9/2	
214 885.64	0.05	1	$3s^23p^4(^3P_1)7f$	$^2[4]^\circ$	9/2	
214 895.52	0.09	1	$3s^23p^4(^3P_1)7f$	$^2[4]^\circ$	7/2	
213 859.364	0.006	0	$3s^23p^4(^3P_2)7g$	$^2[5]$	11/2	
213 859.416	0.004	0	$3s^23p^4(^3P_2)7g$	$^2[5]$	9/2	
213 860.492	0.003	0	$3s^23p^4(^3P_2)7g$	$^2[4]$	9/2	
213 860.614	0.003	0	$3s^23p^4(^3P_2)7g$	$^2[4]$	7/2	
213 873.677	0.012	0	$3s^23p^4(^3P_2)7g$	$^2[3]$	7/2	
213 873.80	0.02	0	$3s^23p^4(^3P_2)7g$	$^2[3]$	5/2	
213 881.214	0.004	0	$3s^23p^4(^3P_2)7g$	$^2[6]$	13/2	

TABLE 1. Energy levels of Ar II—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	g_J
213 881.217	0.006	0	$3s^23p^4(^3P_2)7g$	$^2[6]$	11/2	
213 891.30	0.03	0	$3s^23p^4(^3P_2)7g$	$^2[2]$	3/2	
213 891.504	0.003	0	$3s^23p^4(^3P_2)7g$	$^2[2]$	5/2	
214 974.607	0.005	0	$3s^23p^4(^3P_1)7g$	$^2[3]$	5/2	
214 974.651	0.006	0	$3s^23p^4(^3P_1)7g$	$^2[3]$	7/2	
214 978.941	0.005	0	$3s^23p^4(^3P_1)7g$	$^2[5]$	11/2	
214 979.020	0.003	0	$3s^23p^4(^3P_1)7g$	$^2[5]$	9/2	
214 996.98	0.04	0	$3s^23p^4(^3P_1)7g$	$^2[4]$	7/2	
214 997.588	0.004	0	$3s^23p^4(^3P_1)7g$	$^2[4]$	9/2	
215 441.755	0.008	0	$3s^23p^4(^3P_0)7g$	$^2[4]$	7/2	
215 442.096	0.007	0	$3s^23p^4(^3P_0)7g$	$^2[4]$	9/2	
213 878.149	0.004	1	$3s^23p^4(^3P_2)7h$	$^2[5]^\circ$	11/2	
213 878.197	0.002	1	$3s^23p^4(^3P_2)7h$	$^2[5]^\circ$	9/2	
213 878.438	0.006	1	$3s^23p^4(^3P_2)7h$	$^2[6]^\circ$	11/2	
213 878.449	0.004	1	$3s^23p^4(^3P_2)7h$	$^2[6]^\circ$	13/2	
213 884.608	0.009	1	$3s^23p^4(^3P_2)7h$	$^2[4]^\circ$	7/2	
213 884.621	0.009	1	$3s^23p^4(^3P_2)7h$	$^2[4]^\circ$	9/2	
213 890.067	0.010	1	$3s^23p^4(^3P_2)7h$	$^2[7]^\circ$	15/2	
213 890.067	0.003	1	$3s^23p^4(^3P_2)7h$	$^2[7]^\circ$	13/2	
213 894.433	0.012	1	$3s^23p^4(^3P_2)7h$	$^2[3]^\circ$	7/2	
213 894.433	0.015	1	$3s^23p^4(^3P_2)7h$	$^2[3]^\circ$	5/2	
214 992.067	0.005	1	$3s^23p^4(^3P_1)7h$	$^2[4]^\circ$	9/2	
214 992.067	0.007	1	$3s^23p^4(^3P_1)7h$	$^2[4]^\circ$	7/2	
214 994.001	0.004	1	$3s^23p^4(^3P_1)7h$	$^2[6]^\circ$	11/2	
214 994.011	0.003	1	$3s^23p^4(^3P_1)7h$	$^2[6]^\circ$	13/2	
215 004.098	0.008	1	$3s^23p^4(^3P_1)7h$	$^2[5]^\circ$	11/2	
215 004.099	0.008	1	$3s^23p^4(^3P_1)7h$	$^2[5]^\circ$	9/2	
215 454.811	0.006	1	$3s^23p^4(^3P_0)7h$	$^2[5]^\circ$	9/2	
215 454.821	0.005	1	$3s^23p^4(^3P_0)7h$	$^2[5]^\circ$	11/2	
213 884.353	0.007	0	$3s^23p^4(^3P_2)7i$	$^2[6]$	11/2	
213 884.356	0.006	0	$3s^23p^4(^3P_2)7i$	$^2[6]$	13/2	
213 884.837	0.008	0	$3s^23p^4(^3P_2)7i$	$^2[7]$	13/2	
213 884.8432	0.0010	0	$3s^23p^4(^3P_2)7i$	$^2[7]$	15/2	
213 887.9658	0.0014	0	$3s^23p^4(^3P_2)7i$	$^2[5]$	9/2	
213 887.9738	0.0015	0	$3s^23p^4(^3P_2)7i$	$^2[5]$	11/2	
213 891.8095	0.0008	0	$3s^23p^4(^3P_2)7i$	$^2[8]$	15/2	
213 891.8235	0.0007	0	$3s^23p^4(^3P_2)7i$	$^2[8]$	17/2	
213 893.900	0.004	0	$3s^23p^4(^3P_2)7i$	$^2[4]$	7/2	
213 893.914	0.004	0	$3s^23p^4(^3P_2)7i$	$^2[4]$	9/2	
214 997.8140	0.0013	0	$3s^23p^4(^3P_1)7i$	$^2[5]$	9/2	
214 997.8249	0.0010	0	$3s^23p^4(^3P_1)7i$	$^2[5]$	11/2	
214 998.7989	0.0008	0	$3s^23p^4(^3P_1)7i$	$^2[7]$	13/2	
214 998.8148	0.0007	0	$3s^23p^4(^3P_1)7i$	$^2[7]$	15/2	
215 004.9576	0.0010	0	$3s^23p^4(^3P_1)7i$	$^2[6]$	13/2	
215 004.9690	0.0010	0	$3s^23p^4(^3P_1)7i$	$^2[6]$	11/2	
215 458.621	0.010	0	$3s^23p^4(^3P_0)7i$	$^2[6]$	13/2	
215 458.6211	0.0009	0	$3s^23p^4(^3P_0)7i$	$^2[6]$	11/2	
214 812.44	0.03	0	$3s^23p^4(^3P)8d$	^4D	7/2	
214 894.90	0.04	0	$3s^23p^4(^3P)8d$	^4F	9/2	
215 893.68	0.06	1	$3s^23p^4(^3P_2)8f$	$^2[4]^\circ$	9/2	
215 932.37	0.06	1	$3s^23p^4(^3P_2)8f$	$^2[5]^\circ$	11/2	
215 933.64	0.04	1	$3s^23p^4(^3P_2)8f$	$^2[5]^\circ$	9/2	
215 983.21	0.09	0	$3s^23p^4(^3P_2)8g$	$^2[6]$	11/2	
215 983.36	0.09	0	$3s^23p^4(^3P_2)8g$	$^2[6]$	13/2	

TABLE 1. Energy levels of Ar II—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	g_J
215 985.13	0.02	0	$3s^23p^4(^3P_2)8i$	$^2[6]$	13/2	
215 985.18	0.02	0	$3s^23p^4(^3P_2)8i$	$^2[6]$	11/2	
215 985.434	0.006	0	$3s^23p^4(^3P_2)8i$	$^2[7]$	13/2	
215 985.445	0.004	0	$3s^23p^4(^3P_2)8i$	$^2[7]$	15/2	
215 987.293	0.010	0	$3s^23p^4(^3P_2)8i$	$^2[5]$	9/2	
215 987.306	0.011	0	$3s^23p^4(^3P_2)8i$	$^2[5]$	11/2	
215 988.883	0.006	0	$3s^23p^4(^3P_2)8i$	$^2[8]$	15/2	
215 988.886	0.005	0	$3s^23p^4(^3P_2)8i$	$^2[8]$	17/2	
215 990.530	0.012	0	$3s^23p^4(^3P_2)8i$	$^2[4]$	9/2	
215 990.530	0.015	0	$3s^23p^4(^3P_2)8i$	$^2[4]$	7/2	
217 097.366	0.010	0	$3s^23p^4(^3P_1)8i$	$^2[7]$	13/2	
217 097.376	0.010	0	$3s^23p^4(^3P_1)8i$	$^2[7]$	15/2	
217 097.563	0.010	0	$3s^23p^4(^3P_1)8i$	$^2[5]$	11/2	
217 097.563	0.011	0	$3s^23p^4(^3P_1)8i$	$^2[5]$	9/2	
217 101.921	0.009	0	$3s^23p^4(^3P_1)8i$	$^2[6]$	13/2	
217 101.921	0.009	0	$3s^23p^4(^3P_1)8i$	$^2[6]$	11/2	
217 557.496	0.008	0	$3s^23p^4(^3P_0)8i$	$^2[6]$	11/2	
217 557.505	0.007	0	$3s^23p^4(^3P_0)8i$	$^2[6]$	13/2	
215 987.718	0.011	1	$3s^23p^4(^3P_2)8k$	$^2[7]^\circ$	13/2	
215 987.721	0.011	1	$3s^23p^4(^3P_2)8k$	$^2[7]^\circ$	15/2	
215 988.002	0.009	1	$3s^23p^4(^3P_2)8k$	$^2[8]^\circ$	15/2	
215 988.008	0.003	1	$3s^23p^4(^3P_2)8k$	$^2[8]^\circ$	17/2	
215 989.165	0.009	1	$3s^23p^4(^3P_2)8k$	$^2[6]^\circ$	11/2	
215 989.173	0.009	1	$3s^23p^4(^3P_2)8k$	$^2[6]^\circ$	13/2	
215 991.036	0.009	1	$3s^23p^4(^3P_2)8k$	$^2[9]^\circ$	17/2	
215 991.050	0.009	1	$3s^23p^4(^3P_2)8k$	$^2[9]^\circ$	19/2	
215 991.723	0.007	1	$3s^23p^4(^3P_2)8k$	$^2[5]^\circ$	9/2	
215 991.736	0.006	1	$3s^23p^4(^3P_2)8k$	$^2[5]^\circ$	11/2	
217 100.498	0.003	1	$3s^23p^4(^3P_1)8k$	$^2[6]^\circ$	11/2	
217 100.509	0.003	1	$3s^23p^4(^3P_1)8k$	$^2[6]^\circ$	13/2	
217 100.877	0.003	1	$3s^23p^4(^3P_1)8k$	$^2[8]^\circ$	15/2	
217 100.893	0.003	1	$3s^23p^4(^3P_1)8k$	$^2[8]^\circ$	17/2	
217 103.774	0.005	1	$3s^23p^4(^3P_1)8k$	$^2[7]^\circ$	15/2	
217 103.785	0.005	1	$3s^23p^4(^3P_1)8k$	$^2[7]^\circ$	13/2	
217 559.809	0.009	1	$3s^23p^4(^3P_0)8k$	$^2[7]^\circ$	15/2	
217 559.820	0.009	1	$3s^23p^4(^3P_0)8k$	$^2[7]^\circ$	13/2	

uncertainty quoted in this reference is less than 0.0001 Å, we use an uncertainty of 0.0001 Å. They quoted their intensity as the peak value divided by the rms noise and tabulate $\log_{10}$ of this value. We list the intensity itself in the line table.

The next largest source for lines was Minnhagen's 1963 paper [63MIN] in which he used lower resolution spectrographs than Whaling *et al.* He quotes a generalized range of uncertainties over the spectrum. We increased his estimates somewhat to correspond to how the wavelengths compared to those calculated from the preliminary levels. We also doubled the uncertainties for lines which were more difficult to measure, such as those indicated as masked, blended, hazy, or affected. For similar reasons the stated uncertainties were increased for lines from three other sources [94QUI/PAL, 95PAL/BIÉ, 01HIN/JOY]. The doubling of the uncertainty for difficult-to-measure lines was applied to three other sources [59MIN, 82HAN/PER, 03ENG/HIN].

TABLE 2. Sources of Ar II lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
35BOY	4	electrodeless discharge. 2-m NI VS	487–505	0.01–0.02
58HER	4	electrodeless discharge in mixture of He and Ar. 3-m VS	1910–1973	0.0005

TABLE 2. Sources of Ar II lines—Continued

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
59MIN	215	electrodeless discharge. 1.5-m GI VS	487–1994	0.003–0.006
63MIN	975	electrodeless discharge. various spectrographs	1466–10 974	0.006–0.10
71MIN	6	electrodeless discharge. 10.7-m NI VS	731–932	0.01–0.02
73NOR	49	Al/Ar or Be/Ar hollow cathode. Fabry-Perot interferometer	3707–6501	0.0003–0.0008
82HAN/PER	4	dc hollow cathode discharge. 3-m NI VS	461–1765	0.003–0.005
85YAM/KAN	1	absorption of diode laser radiation in an Ar discharge	69 853	0.04
94QUI/PAL	13	hollow cathode with various metals and Ar carrier gas. FTS	17 813–30 049	0.03–0.10
95PAL/BIÉ	28	hollow cathode with various metals and Ar carrier gas. FTS	47 461–47 708	0.06–3.
95WHA/AND	1502	hollow cathode with various metals and Ar carrier gas. FTS	1831–53 328	0.0001–0.2
01HIN/JOY	8	Th/Ar hollow cathode. cryogenic spectrograph	10 840–16 560	0.01–0.10
03ENG/HIN	41	Th/Ar hollow cathode. FTS	11 311–39 748	0.001–0.06

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph; and FTS means Fourier transform spectrometer.

TABLE 3. Spectral lines of Ar II

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
461.080	216 882.1	8	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)5d$	^2S	1/2	0.003	82HAN/PER
464.144	215 450.4	7	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)5d$	^2S	1/2	0.003	82HAN/PER
487.227	205 243.	2	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2S	1/2	0.01	35BOY
487.264	205 227.6	0	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2P	3/2	0.003	59MIN
488.782	204 590.2	0.5	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2D	5/2	0.003	59MIN
488.987	204 504.4	0	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2P	1/2	0.003	59MIN
489.196	204 417.0	0.5	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2D	3/2	0.003	59MIN
490.698	203 791.3	0.5	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^2P	3/2	0.003	59MIN
492.418	203 079.5	0	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^2P	1/2	0.003	59MIN
494.686	202 148.4	0.5	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2F	5/2	0.003	59MIN
496.650	201 349.0	0.5 *	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.003	59MIN
496.650	201 349.0	0.5 *	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	3/2	0.003	59MIN
499.92	200 032.	1	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.02	35BOY
500.798	199 681.3	0.5	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.003	59MIN
501.184	199 527.5	0.5	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.003	59MIN
501.40	199 442.	1	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2P	1/2	0.02	35BOY
501.993	199 206.0	0	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^2P	1/2	0.003	59MIN
502.157	199 140.9	1	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.003	59MIN
503.649	198 551.0	0.5	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.003	59MIN
504.80	198 098.	1	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.02	35BOY
505.013	198 014.7	0.5	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2P	1/2	0.003	59MIN
510.554	195 865.7	1	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)5s$	^2D	5/2	0.003	59MIN
514.310	194 435.3	1	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)5s$	^2D	3/2	0.003	59MIN
518.910	192 711.6	1	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2D	3/2	0.003	59MIN
519.329	192 556.2	1	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2D	5/2	0.003	59MIN
522.791	191 281.0	1	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^2D	3/2	0.003	59MIN
524.683	190 591.3	1	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2P	3/2	0.003	59MIN
526.497	189 934.6	1	$3s^23p^5$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2P	1/2	0.003	59MIN
528.640	189 164.6	0.5	$3s^23p^5$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^2P	3/2	0.003	59MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
530.494	188 503.5	1 a	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)4d$	^2P	1/2	0.003	59MIN
533.082	187 588.4	1	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^2F	5/2	0.003	59MIN
535.072	186 890.7	0.5	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^4P	5/2	0.003	59MIN
537.140	186 171.2	1	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^4P	1/2	0.003	59MIN
537.421	186 073.9	0.5 a	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^4F	5/2	0.003	59MIN
540.804	184 909.9	0.5	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)4d$	^4F	3/2	0.003	59MIN
541.299	184 740.8	0.5	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)4d$	^4P	1/2	0.003	59MIN
542.911	184 192.3	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^4D	1/2	0.003	59MIN
543.205	184 092.6	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1D)3d$	^2S	1/2	0.003	59MIN
543.508	183 990.	0 m	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^4D	3/2	0.006	59MIN
543.730	183 914.8	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)5s$	^2P	1/2	0.003	59MIN
546.175	183 091.5	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)5s$	^2P	3/2	0.003	59MIN
547.166	182 759.9	2	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)4d$	^4D	1/2	0.003	59MIN
547.456	182 663.1	2	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^1D)3d$	^2S	1/2	0.003	59MIN
547.992	182 484.4	0.5	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)5s$	^2P	1/2	0.003	59MIN
548.781	182 222.1	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)5s$	^4P	3/2	0.003	59MIN
550.481	181 659.3	1	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)5s$	^2P	3/2	0.003	59MIN
550.896	181 522.5	1	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)5s$	^4P	1/2	0.003	59MIN
553.123	180 791.6	1	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)5s$	^4P	3/2	0.003	59MIN
555.764	179 932.5	1	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1S)3d$	^2D	3/2	0.003	59MIN
556.817	179 592.2	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1S)3d$	^2D	5/2	0.003	59MIN
560.224	178 500.0	2	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^1S)3d$	^2D	3/2	0.003	59MIN
572.014	174 820.9	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1D)3d$	^2P	1/2	0.003	59MIN
573.364	174 409.3	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1D)3d$	^2P	3/2	0.003	59MIN
576.738	173 389.0	2	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^1D)3d$	^2P	1/2	0.003	59MIN
578.107	172 978.4	2	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^1D)3d$	^2P	3/2	0.003	59MIN
578.604	172 829.8	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1D)3d$	^2D	3/2	0.003	59MIN
580.264	172 335.4	3	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1D)3d$	^2D	5/2	0.003	59MIN
583.437	171 398.1	2	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^1D)3d$	^2D	3/2	0.003	59MIN
597.701	167 307.7	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1S)4s$	^2S	1/2	0.003	59MIN
602.858	165 876.5	2	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^1S)4s$	^2S	1/2	0.003	59MIN
612.371	163 299.7	5	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1D)3d$	^2F	5/2	0.003	59MIN
661.869	151 087.3	5	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^2D	5/2	0.003	59MIN
664.563	150 474.8	4	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^2D	3/2	0.003	59MIN
666.010	150 147.9	6	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^2F	5/2	0.003	59MIN
670.948	149 042.8	5	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)3d$	^2D	3/2	0.003	59MIN
671.852	148 842.3	6	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1D)4s$	^2D	5/2	0.003	59MIN
672.856	148 620.2	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^1D)4s$	^2D	3/2	0.003	59MIN
676.241	147 876.3	6	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^4P	5/2	0.003	59MIN
677.951	147 503.3	5	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^4P	3/2	0.003	59MIN
679.221	147 227.5	3	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^4P	1/2	0.003	59MIN
679.400	147 188.7	6	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^1D)4s$	^2D	3/2	0.003	59MIN
686.489	145 668.8	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^2P	3/2	0.003	59MIN
691.038	144 709.8	1	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^2P	1/2	0.003	59MIN
693.301	144 237.5	2	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)3d$	^2P	3/2	0.003	59MIN
697.489	143 371.4	2	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^4F	3/2	0.003	59MIN
697.940	143 278.8	2	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)3d$	^2P	1/2	0.003	59MIN
698.771	143 108.4	4	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^4F	5/2	0.003	59MIN
704.523	141 940.0	4	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)3d$	^4F	3/2	0.003	59MIN
718.091	139 258.1	4	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4s$	^2P	1/2	0.003	59MIN
723.361	138 243.6	5	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4s$	^2P	3/2	0.003	59MIN
725.550	137 826.5	4	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)4s$	^2P	1/2	0.003	59MIN
730.9300	136 812.01	5	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)4s$	^2P	3/2	0.0003	71MIN
737.457	135 601.1	1	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4s$	^4P	1/2	0.003	59MIN
740.2691	135 086.01	10	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4s$	^4P	3/2	0.0003	71MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
744.9251	134 241.68	8	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4s$	^4P	5/2	0.0003	71MIN
745.3226	134 170.09	7	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)4s$	^4P	1/2	0.0003	71MIN
748.198	133 654.5	4	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)4s$	^4P	3/2	0.003	59MIN
754.824	132 481.2	3	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)3d$	^4D	5/2	0.003	59MIN
762.200	131 199.2	3	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)3d$	^4D	3/2	0.003	59MIN
919.7810	108 721.53	10	$3s^23p^5$	$^2P^\circ$	3/2 –	$3s3p^6$	^2S	1/2	0.0002	71MIN
932.0538	107 289.94	10	$3s^23p^5$	$^2P^\circ$	1/2 –	$3s3p^6$	^2S	1/2	0.0004	71MIN
1 268.483	78 834.32	1	$3s^23p^4(^3P)3d$	^4D	1/2 –	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 280.225	78 111.27	1	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 282.620	77 965.41	1	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 284.793	77 833.55	1	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 348.745	74 143.00	1	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 351.330	74 001.17	1	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 354.912	73 805.53	2	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 357.435	73 668.35	0	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 360.735	73 489.69	1	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 363.031	73 365.90	2	$3s^23p^4(^3P)3d$	^4D	1/2 –	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 376.107	72 668.77	0.5	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 376.956	72 623.96	1	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 377.211	72 610.52	4	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 377.442	72 598.34	0	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 379.377	72 496.50	1	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 379.884	72 469.86	3	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 380.723	72 425.82	1	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 382.228	72 346.96	2	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 382.765	72 318.87	1	$3s^23p^4(^3P)3d$	^4D	1/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 396.231	71 621.39	1	$3s^23p^4(^3P)3d$	^4F	9/2 –	$3s^23p^4(^3P_2)7f$	$^2[5]^\circ$	11/2	0.003	59MIN
1 451.879	68 876.26	1	$3s^23p^4(^3P)3d$	^4F	7/2 –	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 455.484	68 705.67	1	$3s^23p^4(^3P)3d$	^4F	3/2 –	$3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 459.875	68 499.02	1	$3s^23p^4(^3P)3d$	^4F	5/2 –	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 463.155	68 345.46	2	$3s^23p^4(^3P)3d$	^4F	9/2 –	$3s^23p^4(^3P_2)6f$	$^2[5]^\circ$	11/2	0.003	59MIN
1 464.176	68 297.80	1	$3s^23p^4(^3P)3d$	^4F	3/2 –	$3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 465.153	68 252.26	1	$3s^23p^4(^3P)3d$	^4F	9/2 –	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 466.524	68 188.5	1	$3s^23p^4(^3P)4s$	^4P	5/2 –	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	0.006	63MIN
1 472.594	67 907.4	1	$3s^23p^4(^3P)4s$	^4P	5/2 –	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	0.006	63MIN
1 474.537	67 817.90	1	$3s^23p^4(^3P)3d$	^4F	7/2 –	$3s^23p^4(^3P_2)6f$	$^2[5]^\circ$	9/2	0.003	59MIN
1 544.177	64 759.42	2	$3s^23p^4(^1D)3d$	^2G	9/2 –	$3s^23p^4(^1D_2)5f$	$^2[5]^\circ$	11/2	0.003	59MIN
1 544.711	64 737.03	2	$3s^23p^4(^1D)3d$	^2G	7/2 –	$3s^23p^4(^1D_2)5f$	$^2[5]^\circ$	9/2	0.003	59MIN
1 547.354	64 626.45	1	$3s3p^6$	^2S	1/2 –	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.003	59MIN
1 557.302	64 213.62	1	$3s^23p^4(^3P)3d$	^2P	1/2 –	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 559.072	64 140.72	3	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 560.184	64 095.00	4	$3s3p^6$	^2S	1/2 –	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.003	59MIN
1 562.441	64 002.42	2	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 563.036	63 978.05	1	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 565.377	63 882.37	1 *	$3s^23p^4(^3P)3d$	^2P	1/2 –	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.003	59MIN
1 565.377	63 882.37	1 *	$3s^23p^4(^3P)3d$	^2P	1/2 –	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.003	59MIN
1 566.812	63 823.87	1	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 567.987	63 776.04	4	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 571.390	63 637.93	1	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 574.402	63 516.18	1	$3s^23p^4(^3P)3d$	^4F	5/2 –	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 574.992	63 492.39	6	$3s3p^6$	^2S	1/2 –	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.003	59MIN
1 575.815	63 459.23	3	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 576.897	63 415.68	3	$3s^23p^4(^3P)3d$	^4F	7/2 –	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 578.812	63 338.76	3	$3s^23p^4(^3P)3d$	^4D	1/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 580.768	63 260.39	2	$3s^23p^4(^3P)3d$	^4F	3/2 –	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.003	59MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
1 580.960	63 252.71	1	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 583.83	63 138.09	1	$3s^23p^4(^3P)3d$	^4F	5/2 –	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 586.256	63 041.53	2	$3s^23p^4(^3P)3d$	^4F	5/2 –	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 589.463	62 914.33	5	$3s^23p^4(^3P)3d$	^4F	9/2 –	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	11/2	0.003	59MIN
1 590.229	62 884.02	2	$3s^23p^4(^3P)3d$	^4F	3/2 –	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 591.933	62 816.71	1	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.003	59MIN
1 593.581	62 751.75	2	$3s^23p^4(^3P)3d$	^4F	9/2 –	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 594.787	62 704.30	1	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 595.734	62 667.09	1 *	$3s^23p^4(^3P)3d$	^2D	5/2 –	$3s^23p^4(^3P_2)7f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 595.734	62 667.09	1 *	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.003	59MIN
1 596.141	62 651.11	1 *	$3s^23p^4(^3P)3d$	^4P	5/2 –	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 596.141	62 651.11	1 *	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	0.003	59MIN
1 598.561	62 556.26	1	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 598.724	62 549.88	2	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 598.872	62 544.09	1	$3s^23p^4(^3P)3d$	^4D	1/2 –	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	0.003	59MIN
1 599.125	62 534.20	1	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 599.597	62 515.75	1	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 600.133	62 494.81	4	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 600.694	62 472.90	6	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 602.554	62 400.39	2 *	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 602.554	62 400.39	2 *	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 602.893	62 387.20	2	$3s^23p^4(^3P)3d$	^4F	7/2 –	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	0.003	59MIN
1 603.074	62 380.15	4	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 603.443	62 365.80	4	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 604.083	62 340.91	5	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 606.197	62 258.86	3	$3s^23p^4(^3P)3d$	^4D	1/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 606.927	62 230.58	4	$3s^23p^4(^3P)3d$	^4D	3/2 –	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 607.168	62 221.25	1	$3s^23p^4(^3P)3d$	^4F	7/2 –	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 615.807	61 888.58	0.5	$3s^23p^4(^3P)3d$	^4F	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 616.972	61 843.99	1	$3s^23p^4(^3P)3d$	^4F	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 627.085	61 459.60	0	$3s^23p^4(^3P)3d$	^2F	5/2 –	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 628.825	61 393.9	1 b	$3s^23p^4(^3P)3d$	^2P	1/2 –	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.006	59MIN
1 629.834	61 355.9	1 b	$3s^23p^4(^3P)3d$	^2F	7/2 –	$3s^23p^4(^3P_2)6f$	$^2[5]^\circ$	9/2	0.006	59MIN
1 640.335	60 963.16	1	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 649.299	60 631.8	1	$3s^23p^4(^1D)4s$	^2D	3/2 –	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
1 650.531	60 586.56	1	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 653.322	60 484.29	1	$3s^23p^4(^3P)3d$	^2P	1/2 –	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.003	59MIN
1 655.459	60 406.2	0.5	$3s^23p^4(^1D)4s$	^2D	5/2 –	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.006	63MIN
1 662.253	60 159.31	1	$3s^23p^4(^3P)3d$	^2F	7/2 –	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 686.076	59 309.31	0.5	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 689.470	59 190.16	0.5	$3s^23p^4(^3P)3d$	^2F	5/2 –	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 701.358	58 776.58	1	$3s^23p^4(^3P)3d$	^2D	3/2 –	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.003	59MIN
1 702.186	58 747.99	1	$3s^23p^4(^3P)3d$	^4P	5/2 –	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 705.977	58 617.44	1	$3s^23p^4(^3P)3d$	^4P	3/2 –	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 710.909	58 448.46	0.5 *	$3s^23p^4(^3P)3d$	^2D	3/2 –	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 710.909	58 448.46	0.5 *	$3s^23p^4(^3P)3d$	^2D	3/2 –	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 713.215	58 369.79	2	$3s^23p^4(^3P)3d$	^4P	5/2 –	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 718.680	58 184.19	1	$3s^23p^4(^3P)3d$	^4D	7/2 –	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.003	59MIN
1 719.346	58 161.65	2	$3s^23p^4(^3P)3d$	^2D	5/2 –	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 725.138	57 966.38	1	$3s^23p^4(^3P)3d$	^4P	1/2 –	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.003	59MIN
1 725.549	57 952.57	0.5	$3s^23p^4(^3P)3d$	^4P	1/2 –	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	1/2	0.003	59MIN
1 729.075	57 834.39	1	$3s^23p^4(^3P)3d$	^2D	5/2 –	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 729.262	57 828.14	1	$3s^23p^4(^3P)3d$	^4P	1/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 733.362	57 691.35	1	$3s^23p^4(^3P)3d$	^4P	3/2 –	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.003	59MIN
1 735.378	57 624.33	0.5	$3s^23p^4(^3P)3d$	^4D	5/2 –	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.003	59MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
1 736.830	57 576.16	1	$3s^23p^4(^3P)3d$	^4P	3/2	–	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 749.003	57 175.43	0.5 a	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^1D)5d$	^2S	1/2	0.005	82HAN/PER
1 750.694	57 120.20	0.5	$3s^23p^4(^3P)3d$	^4P	5/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 751.679	57 088.09	2	$3s^23p^4(^3P)3d$	^4D	7/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	0.003	59MIN
1 755.810	56 953.77	1 b	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2	0.006	59MIN
1 763.669	56 699.98	0.5	$3s^23p^4(^3P)3d$	^4D	1/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.003	59MIN
1 765.454	56 642.65	0.5	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)5d$	^2S	1/2	0.005	82HAN/PER
1 768.042	56 559.74	1	$3s^23p^4(^3P)3d$	^4D	5/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.003	59MIN
1 770.652	56 476.37	1	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P_o)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 771.829	56 438.85	2	$3s^23p^4(^3P)3d$	^4D	7/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.003	59MIN
1 776.670	56 285.07	1	$3s^23p^4(^3P)3d$	^4D	5/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.003	59MIN
1 782.587	56 098.24	1	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 785.669	56 001.42	1	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 788.101	55 925.25	3	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	0.003	59MIN
1 791.561	55 817.25	1	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 793.435	55 758.92	0.5	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 812.475	55 173.17	0.5 b	$3s^23p^4(^3P)4s$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	0.006	59MIN
1 813.009	55 156.92	1	$3s^23p^4(^1D)3d$	^2G	9/2	–	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	9/2	0.003	59MIN
1 813.772	55 133.72	1	$3s^23p^4(^1D)3d$	^2G	7/2	–	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 816.14	55 061.83	0.5	$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 823.207	54 848.41	1	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 824.842	54 799.26	0.5	$3s^23p^4(^3P)4s$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.003	59MIN
1 830.7697	54 621.834	8	$3s^23p^4(^1D)3d$	^2G	9/2	–	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	11/2	0.0005	95WHA/AND
1 831.525	54 599.31	5	$3s^23p^4(^1D)3d$	^2G	7/2	–	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	9/2	0.003	59MIN
1 834.039	54 524.47	2	$3s^23p^4(^3P)4s$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.003	59MIN
1 854.986	53 908.76	0.5	$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 862.856	53 681.01	1	$3s^23p^4(^3P)4s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.006	63MIN
1 866.093	53 587.90	1	$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 868.6601	53 514.28	6	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.0007	95WHA/AND
1 872.582	53 402.20	1	$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 873.1396	53 386.303	21	$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	0.0002	95WHA/AND
1 877.5230	53 261.665	20	$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0002	95WHA/AND
1 879.4193	53 207.92	3	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0018	95WHA/AND
1 879.788	53 197.49	2	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.003	59MIN
1 886.3858	53 011.425	29	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.0001	95WHA/AND
1 888.7826	52 944.155	22	$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0002	95WHA/AND
1 889.0261	52 937.331	44	$3s^23p^4(^3P)3d$	^4F	9/2	–	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	0.0001	95WHA/AND
1 897.365	52 704.67	0.5 *	$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 897.365	52 704.67	0.5 *	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)6d$	^4D	5/2	0.003	59MIN
1 898.3875	52 676.285	9	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.0005	95WHA/AND
1 899.271	52 651.78	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)6d$	^4D	7/2	0.003	59MIN
1 899.834	52 636.18	1	$3s^23p^4(^3P)3d$	^4F	9/2	–	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.003	59MIN
1 900.6361	52 613.964	7	$3s^23p^4(^3P)3d$	^4F	9/2	–	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	0.0006	95WHA/AND
1 907.9864	52 411.275	20	$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	0.0002	95WHA/AND
1 909.5689	52 367.841	0.5	$3s3p^6$	^2S	1/2	–	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.0005	58HER
1 911.046	52 327.36	0.5	$3s3p^6$	^2S	1/2	–	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.003	59MIN
1 919.0082	52 110.251	12	$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	0.0003	95WHA/AND
1 919.1981	52 105.095	10	$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.0003	95WHA/AND
1 920.0064	52 083.159	5	$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	0.0007	95WHA/AND
1 931.4181	51 775.428	7	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0005	95WHA/AND
1 932.2149	51 754.078	9	$3s^23p^4(^3P)4s$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.0005	95WHA/AND
1 932.2300	51 753.67	4	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0009	95WHA/AND
1 933.6931	51 714.52	4	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.0012	95WHA/AND
1 934.0939	51 703.798	8	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	–	$3s^23p^4(^3P)6d$	^2F	5/2	0.0005	95WHA/AND
1 937.042	51 625.11	1	$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.003	59MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
1 941.0724	51 517.913	3	$3s3p^6$	^2S	1/2 –	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0005	58HER
1 945.111	51 410.95	1	$3s^23p^4(^3P)4s$	^2P	3/2 –	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
1 946.7948	51 366.481	11	$3s^23p^4(^3P)3d$	^2P	1/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.0004	95WHA/AND
1 961.3610	50 985.005	4	$3s3p^6$	^2S	1/2 –	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.0005	58HER
1 962.1612	50 964.212	9	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0005	95WHA/AND
1 966.952	50 840.08	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2 –	$3s^23p^4(^3P)6d$	^4F	3/2	0.006	63MIN
1 972.2733	50 702.912	13	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^4F	9/2	0.0003	95WHA/AND
1 973.4837	50 671.815	2	$3s3p^6$	^2S	1/2 –	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0005	58HER
1 974.4622	50 646.703	17	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0002	95WHA/AND
1 976.7655	50 587.690	15	$3s^23p^4(^3P)3d$	^2P	1/2 –	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.0003	95WHA/AND
1 977.200	50 576.57	0	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2 –	$3s^23p^4(^3P)7s$	^2P	3/2	0.003	59MIN
1 979.988	50 505.36	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^4F	5/2	0.006	63MIN
1 981.3884	50 469.661	11	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2 –	$3s^23p^4(^3P)6d$	^4F	7/2	0.0003	95WHA/AND
1 981.74	50 460.71	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^4D	7/2	0.003	59MIN
1 983.296	50 421.12	1	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.003	59MIN
1 983.831	50 407.52	1	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.003	59MIN
1 988.6021	50 286.581	6	$3s^23p^4(^3P)3d$	^2P	1/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.0006	95WHA/AND
1 988.6482	50 285.415	9	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2 –	$3s^23p^4(^3P)6d$	^2F	7/2	0.0004	95WHA/AND
1 993.555	50 161.65	0	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2 –	$3s^23p^4(^3P)7s$	^4P	1/2	0.003	59MIN

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
1 999.9988	49 983.834	10	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^2F	5/2	0.0004	95WHA/AND
2 003.325	49 900.86	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2 –	$3s^23p^4(^3P)7s$	^4P	1/2	0.006	63MIN
2 003.9101	49 886.289	10	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^2D	5/2	0.0004	95WHA/AND
2 004.9162	49 861.258	17	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2 –	$3s^23p^4(^3P)7s$	^4P	5/2	0.0002	95WHA/AND
2 007.178	49 805.08	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^4P	5/2	0.006	63MIN
2 011.141	49 706.95	1	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)6d$	^2D	3/2	0.006	63MIN
2 014.311	49 628.74	1	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.006	63MIN
2 015.3171	49 603.966	6	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2 –	$3s^23p^4(^3P)7s$	^4P	3/2	0.0008	95WHA/AND
2 018.7552	49 519.499	6	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2 –	$3s^23p^4(^3P)7s$	^2P	3/2	0.0006	95WHA/AND
2 021.76	49 445.9	0.5	$3s3p^6$	^2S	1/2 –	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.02	63MIN
2 022.73	49 422.2	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2 –	$3s^23p^4(^3P)7s$	^4P	5/2	0.02	63MIN
2 023.1164	49 412.765	9	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2 –	$3s^23p^4(^3P)6d$	^4F	7/2	0.0005	95WHA/AND
2 024.733	49 373.32	2	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)7s$	^2P	1/2	0.006	63MIN
2 025.1844	49 362.316	10	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0004	95WHA/AND
2 026.602	49 327.79	2	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 028.558	49 280.24	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^4F	5/2	0.006	63MIN
2 032.1774	49 192.478	9	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0005	95WHA/AND
2 034.7624	49 129.990	6	$3s^23p^4(^3P)3d$	^4P	3/2 –	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0006	95WHA/AND
2 035.629	49 109.08	0.5	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2 –	$3s^23p^4(^3P)7s$	^4P	3/2	0.006	63MIN
2 039.4919	49 016.077	26	$3s^23p^4(^1D)3d$	^2G	9/2 –	$3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	0.0001	95WHA/AND
2 042.3607	48 947.236	21	$3s^23p^4(^1D)3d$	^2G	7/2 –	$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.0002	95WHA/AND
2 046.155	48 856.48	0.5	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)7s$	^2P	3/2	0.006	63MIN
2 046.4925	48 848.425	14	$3s^23p^4(^3P)3d$	^4P	1/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.0003	95WHA/AND
2 047.9994	48 812.49	5	$3s^23p^4(^3P)3d$	^4P	3/2 –	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0010	95WHA/AND
2 050.3242	48 757.149	5	$3s^23p^4(^3P)3d$	^4P	5/2 –	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0008	95WHA/AND
2 050.7924	48 746.019	83	$3s^23p^4(^3P)3d$	^4P	5/2 –	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 057.5127	48 586.824	91	$3s^23p^4(^3P)3d$	^4P	3/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0001	95WHA/AND
2 058.0835	48 573.352	22	$3s^23p^4(^3P)3d$	^4P	3/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.0002	95WHA/AND
2 059.1973	48 547.08	6	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2 –	$3s^23p^4(^3P)7s$	^4P	3/2	0.0011	95WHA/AND
2 060.079	48 526.31	1	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)7s$	^2P	1/2	0.006	63MIN
2 060.855	48 508.04	0.5	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2 –	$3s^23p^4(^3P)6d$	^2P	3/2	0.006	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 063.7647	48 439.653	8	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0004	95WHA/AND
2 064.2110	48 429.183	123	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 073.4254	48 213.989	43	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0001	95WHA/AND
2 074.003	48 200.56	1	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 076.1840	48 149.935	7	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4P	5/2	0.0008	95WHA/AND
2 079.6530	48 069.628	68	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.0001	95WHA/AND
2 080.3555	48 053.397	89	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	0.0001	95WHA/AND
2 082.1077	48 012.964	12	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0004	95WHA/AND
2 086.816	47 904.65	2	$3s^23p^4(^3P)3d$	^4F	5/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.006	63MIN
2 087.718	47 883.96	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.006	63MIN
2 091.6231	47 794.567	89	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.0001	95WHA/AND
2 091.6405	47 794.170	21	$3s^23p^4(^3P)3d$	^4F	7/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.0002	95WHA/AND
2 092.3334	47 778.343	21	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	0.0002	95WHA/AND
2 092.7643	47 768.507	16	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.0002	95WHA/AND
2 095.976	47 695.32	1	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 096.808	47 676.40	1	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)7s$	^2P	1/2	0.006	63MIN
2 098.1285	47 646.394	6	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4P	3/2	0.0007	95WHA/AND
2 098.364	47 641.05	0.5	$3s^23p^4(^3P)3d$	^4F	3/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.006	63MIN
2 099.1369	47 623.509	5	$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.0008	95WHA/AND
2 099.91	47 606.0	0 ?	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)6d$	^4P	3/2	0.02	63MIN
2 101.4605	47 570.858	7	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.0008	95WHA/AND
2 103.3517	47 528.089	112	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0001	95WHA/AND
2 104.8862	47 493.446	22	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.0002	95WHA/AND
2 105.9351	47 469.793	25	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0002	95WHA/AND
2 106.247	47 462.76	1	$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.006	63MIN
2 106.537	47 456.23	1	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 108.0699	47 421.727	8	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.0003	95WHA/AND
2 108.8763	47 403.60	3	$3s^23p^4(^3P)3d$	^4F	5/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.0017	95WHA/AND
2 109.0479	47 399.738	15	$3s^23p^4(^3P)3d$	^4F	5/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0003	95WHA/AND
2 110.7472	47 361.584	14	$3s^23p^4(^3P)3d$	^4F	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.0003	95WHA/AND
2 110.8964	47 358.236	15	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0003	95WHA/AND
2 114.532	47 276.82	1	$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.006	63MIN
2 115.0789	47 264.598	11	$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0003	95WHA/AND
2 116.210	47 239.34	0.5	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.006	63MIN
2 116.6863	47 228.711	66	$3s^23p^4(^3P)3d$	^4F	9/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	0.0001	95WHA/AND
2 117.934	47 200.89	1	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.006	63MIN
2 118.948	47 178.31	1	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	0.006	63MIN
2 119.9839	47 155.255	44	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0001	95WHA/AND
2 120.8511	47 135.98	4	$3s^23p^4(^3P)3d$	^4F	3/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0015	95WHA/AND
2 121.3048	47 125.90	5	$3s^23p^4(^3P)3d$	^2F	7/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.0014	95WHA/AND
2 121.542	47 120.63	1	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 125.2713	47 037.952	5	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.0007	95WHA/AND
2 125.706	47 028.33	1	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)6f$	$^2[5]^\circ$	9/2	0.006	63MIN
2 126.6643	47 007.145	79	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 127.0503	46 998.616	10	$3s^23p^4(^3P)3d$	^4F	5/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0004	95WHA/AND
2 127.646	46 985.46	3	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 128.665	46 962.97	1	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4D	3/2	0.006	63MIN
2 129.4236	46 946.241	32	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.0001	95WHA/AND
2 129.8085	46 937.758	21	$3s^23p^4(^3P)3d$	^4F	7/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.0002	95WHA/AND
2 130.4258	46 924.159	155	$3s^23p^4(^3P)3d$	^2F	7/2	– $3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	0.0001	95WHA/AND
2 130.974	46 912.09	0.5	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^2D	5/2	0.006	63MIN
2 134.941	46 824.93	1	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^1D_2)5f$	$^2[3]^\circ$	7/2	0.006	63MIN
2 138.8805	46 738.697	59	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.0001	95WHA/AND
2 140.747	46 697.95	2 *	$3s^23p^4(^3P)3d$	^4F	7/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	0.006	63MIN
2 140.747	46 697.95	2 *	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4D	5/2	0.006	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
2 141.6820	46 677.563	7	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4F	3/2	0.0008	95WHA/AND
2 141.6835	46 677.53	4	$3s^23p^4(^1D)4s$	^2D	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.0012	95WHA/AND
2 142.2762	46 664.619	17	$3s^23p^4(^3P)3d$	^2P	3/2	–	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.0002	95WHA/AND
2 143.884	46 629.63	3	$3s3p^6$	^2S	1/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.006	63MIN
2 146.8255	46 565.745	14	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^2F	7/2	0.0003	95WHA/AND
2 147.681	46 547.20	2	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
2 150.5367	46 485.394	6	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0007	95WHA/AND
2 151.0518	46 474.264	129	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 151.94	46 455.1	0	$3s^23p^4(^1D)4s$	^2D	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.02	63MIN
2 153.0684	46 430.740	120	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4P	5/2	0.0001	95WHA/AND
2 153.9813	46 411.063	51	$3s^23p^4(^1D)4s$	^2D	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0001	95WHA/AND
2 155.588	46 376.47	1	$3s^23p^4(^1D)4s$	^2D	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 158.755	46 308.45	2	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4F	5/2	0.006	63MIN
2 158.8834	46 305.692	25	$3s^23p^4(^3P)3d$	^2P	3/2	–	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0002	95WHA/AND
2 159.0494	46 302.132	37	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4P	3/2	0.0001	95WHA/AND
2 161.8943	46 241.208	20	$3s^23p^4(^1D)4s$	^2D	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0002	95WHA/AND
2 162.2906	46 232.733	11	$3s^23p^4(^3P)3d$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.0003	95WHA/AND
2 164.3506	46 188.736	13	$3s^23p^4(^1D)4s$	^2D	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0004	95WHA/AND
2 165.039	46 174.05	1	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^1D_2)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 165.7875	46 158.093	17	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0002	95WHA/AND
2 165.8188	46 157.427	178	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 170.914	46 049.11	1	$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.006	63MIN
2 171.038	46 046.48	1	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)7s$	^4P	5/2	0.006	63MIN
2 171.3140	46 040.624	105	$3s^23p^4(^1D)4s$	^2D	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 171.4192	46 038.393	107	$3s^23p^4(^1D)3d$	^2F	5/2	–	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	0.0001	95WHA/AND
2 172.341	46 018.86	2	$3s^23p^4(^1D)4s$	^2D	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 172.6353	46 012.627	11	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	–	$3s^23p^4(^3P)5d$	^4F	3/2	0.0003	95WHA/AND
2 173.209	46 000.48	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4F	5/2	0.006	63MIN
2 173.74	45 989.2	0	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	–	$3s^23p^4(^3P)5d$	^2D	3/2	0.02	63MIN
2 174.190	45 979.7	2 b?	$3s^23p^4(^1D)4s$	^2D	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.012	63MIN
2 174.5839	45 971.400	166	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.0001	95WHA/AND
2 175.5048	45 951.942	58	$3s^23p^4(^1D)3d$	^2F	5/2	–	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.0001	95WHA/AND
2 175.6381	45 949.128	813	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	0.0001	95WHA/AND
2 175.9645	45 942.236	20	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0002	95WHA/AND
2 176.387	45 933.32	1	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.006	63MIN
2 180.089	45 855.33	2	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^2D	5/2	0.006	63MIN
2 180.2489	45 851.964	7	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0004	95WHA/AND
2 180.789	45 840.61	1	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 180.956	45 837.10	0.5	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4F	7/2	0.006	63MIN
2 181.2106	45 831.751	138	$3s^23p^4(^1D)3d$	^2F	7/2	–	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	9/2	0.0001	95WHA/AND
2 181.3830	45 828.127	8	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^2P	3/2	0.0007	95WHA/AND
2 182.849	45 797.35	0.5	$3s^23p^4(^3P)3d$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.006	63MIN
2 185.4865	45 742.091	74	$3s^23p^4(^1D)3d$	^2F	7/2	–	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 187.3153	45 703.849	155	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 188.350	45 682.24	0	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 188.4935	45 679.248	37	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4P	1/2	0.0001	95WHA/AND
2 188.95	45 669.7	0	$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.02	63MIN
2 190.235	45 642.93	2	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.006	63MIN
2 190.5107	45 637.186	135	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	–	$3s^23p^4(^3P)5d$	^4P	3/2	0.0001	95WHA/AND
2 191.1472	45 623.930	5	$3s^23p^4(^1D)3d$	^2F	5/2	–	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.0007	95WHA/AND
2 191.2870	45 621.020	50	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	0.0001	95WHA/AND
2 191.5789	45 614.945	48	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0001	95WHA/AND
2 192.224	45 601.52	2	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 194.9071	45 545.784	8	$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0005	95WHA/AND
2 195.3546	45 536.501	7	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^1D)4d$	^2S	1/2	0.0008	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 195.4437	45 534.653	59	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 196.3920	45 514.99	5	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^2P	3/2	0.0010	95WHA/AND
2 197.072	45 500.91	0	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.006	63MIN
2 197.786	45 486.13	1	$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.006	63MIN
2 201.2416	45 414.731	9	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.0004	95WHA/AND
2 201.573	45 407.90	1	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)7p$	$^2[2]^\circ$	5/2	0.006	63MIN
2 202.135	45 396.31	1	$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.006	63MIN
2 204.6981	45 343.536	6	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.0007	95WHA/AND
2 205.7332	45 322.262	95	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4P	1/2	0.0001	95WHA/AND
2 208.1507	45 272.65	5	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	1/2	0.0010	95WHA/AND
2 210.3173	45 228.274	12	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0003	95WHA/AND
2 210.883	45 216.7	(3) b	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.012	63MIN
2 212.094	45 192.0	0.5m? *	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2D	5/2	0.012	63MIN
2 212.094	45 192.0	0.5m? *	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2F	5/2	0.012	63MIN
2 214.147	45 150.05	1	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.006	63MIN
2 216.1849	45 108.540	87	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.0001	95WHA/AND
2 218.375	45 064.01	1	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.006	63MIN
2 218.8032	45 055.314	132	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	1/2	0.0001	95WHA/AND
2 219.9624	45 031.790	117	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.0001	95WHA/AND
2 220.3507	45 023.916	13	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2D	3/2	0.0003	95WHA/AND
2 221.3518	45 003.626	14	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2S	1/2	0.0003	95WHA/AND
2 222.0674	44 989.134	19	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0002	95WHA/AND
2 222.408	44 982.24	0.5	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2P	3/2	0.006	63MIN
2 224.550	44 938.93	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.006	63MIN
2 225.6602	44 916.518	309	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	5/2	0.0001	95WHA/AND
2 227.2977	44 883.499	62	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0001	95WHA/AND
2 229.024	44 848.7	0.5 b	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.012	63MIN
2 229.5322	44 838.519	11	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0004	95WHA/AND
2 229.6465	44 836.221	603	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	7/2	0.0001	95WHA/AND
2 230.3202	44 822.679	13	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.0003	95WHA/AND
2 231.0253	44 808.514	13	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^2P	1/2	0.0003	95WHA/AND
2 231.4204	44 800.581	240	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.0001	95WHA/AND
2 233.4783	44 759.306	50	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	1/2	0.0001	95WHA/AND
2 234.6724	44 735.391	214	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 235.7593	44 713.646	20	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0002	95WHA/AND
2 235.9032	44 710.768	21	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^2D	3/2	0.0002	95WHA/AND
2 236.5255	44 698.3284	62	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4D	1/2	0.0001	95WHA/AND
2 237.3844	44 681.171	11	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0002	95WHA/AND
2 237.7194	44 674.483	9	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.0004	95WHA/AND
2 238.028	44 668.32	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)5d$	^2S	1/2	0.006	63MIN
2 239.615	44 636.67	0.5	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.006	63MIN
2 239.9043	44 630.910	6	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.0005	95WHA/AND
2 241.0267	44 608.5603	204	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	5/2	0.0001	95WHA/AND
2 241.858	44 592.02	2	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^1D_2)5f$	$^2[2]^\circ$	5/2	0.006	63MIN
2 243.6598	44 556.2124	102	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0001	95WHA/AND
2 244.080	44 547.87	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.006	63MIN
2 245.1160	44 527.316	10	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.0003	95WHA/AND
2 245.410	44 521.49	2	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 245.9719	44 510.3487	34	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)5d$	^2F	5/2	0.0001	95WHA/AND
2 249.3457	44 443.5942	31	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.0001	95WHA/AND
2 249.6584	44 437.418	8	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0005	95WHA/AND
2 251.403	44 402.99	2	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^4P	1/2	0.006	63MIN
2 252.2464	44 386.3614	37	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0001	95WHA/AND
2 252.52	44 381.0	0.5	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)5d$	^2F	5/2	0.02	63MIN
2 252.8294	44 374.875	7 ?	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)5d$	^2F	7/2	0.0005	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 254.283	44 346.26	5	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2D	5/2	0.006	63MIN
2 255.178	44 328.67	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.006	63MIN
2 255.4063	44 324.1788	38	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0001	95WHA/AND
2 256.5429	44 301.8568	28	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)5d$	^2F	7/2	0.0001	95WHA/AND
2 257.9672	44 273.914	5	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.0005	95WHA/AND
2 258.342	44 266.57	1	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)5d$	^2D	5/2	0.006	63MIN
2 261.211	44 210.41	0.5	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.006	63MIN
2 262.632	44 182.64	2	$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^1D_2)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 262.877	44 177.86	0.5	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2D	3/2	0.006	63MIN
2 263.0683	44 174.126	10	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.0005	95WHA/AND
2 264.128	44 153.45	0.5	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2S	1/2	0.006	63MIN
2 265.2222	44 132.1266	41	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)5d$	^2P	3/2	0.0001	95WHA/AND
2 266.4387	44 108.443	8	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.0007	95WHA/AND
2 266.9426	44 098.64	4	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0013	95WHA/AND
2 267.1115	44 095.354	18	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.0003	95WHA/AND
2 268.625	44 065.94	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)5d$	^2S	1/2	0.006	63MIN
2 269.598	44 047.05	0.5	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4F	3/2	0.006	63MIN
2 272.640	43 988.10	2	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2F	5/2	0.006	63MIN
2 272.765	43 985.68	0.5	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
2 274.9262	43 943.893	13	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0003	95WHA/AND
2 275.054	43 941.43	1	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.006	63MIN
2 275.3612	43 935.4929	30	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^2F	7/2	0.0001	95WHA/AND
2 276.73	43 909.1	0	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.02	63MIN
2 281.512	43 817.06	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.006	63MIN
2 282.6205	43 795.7798	219	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 283.0582	43 787.384	12	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.0004	95WHA/AND
2 283.2433	43 783.8344	214	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)5d$	^2G	7/2	0.0001	95WHA/AND
2 283.7547	43 774.031	8	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0008	95WHA/AND
2 283.9938	43 769.4483	427	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)6s$	^4P	5/2	0.0001	95WHA/AND
2 285.612	43 738.46	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2P	1/2	0.006	63MIN
2 285.7997	43 734.872	16	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.0003	95WHA/AND
2 286.9248	43 713.3571	105	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
2 288.7656	43 678.2043	117	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.0001	95WHA/AND
2 289.09	43 672.0	0.5	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4P	3/2	0.02	63MIN
2 289.3802	43 666.479	19	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.0002	95WHA/AND
2 289.7683	43 659.0780	282	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)5d$	^2G	9/2	0.0001	95WHA/AND
2 290.0104	43 654.462	8	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)5d$	^2G	7/2	0.0006	95WHA/AND
2 290.4247	43 646.5677	51	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)5d$	^4F	7/2	0.0001	95WHA/AND
2 292.1320	43 614.0593	91	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.0001	95WHA/AND
2 295.3493	43 552.9326	58	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	3/2	0.0001	95WHA/AND
2 296.202	43 536.8	0.5m?	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2D	5/2	0.012	63MIN
2 297.645	43 509.42	0.5	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.006	63MIN
2 297.8805	43 504.963	5 ?	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.0010	95WHA/AND
2 300.1793	43 461.4884	195	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	5/2	0.0001	95WHA/AND
2 301.8256	43 430.4050	34	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.0001	95WHA/AND
2 302.0780	43 425.6440	91 *	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)5d$	^2P	1/2	0.0001	95WHA/AND
2 302.0780	43 425.6440	91 *	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^2F	5/2	0.0001	95WHA/AND
2 305.8594	43 354.437	18	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0002	95WHA/AND
2 307.2715	43 327.905	8	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)5d$	^2D	3/2	0.0005	95WHA/AND
2 307.4610	43 324.347	8	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.0005	95WHA/AND
2 309.0973	43 293.648	28	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.0002	95WHA/AND
2 309.1519	43 292.6246	288	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4F	3/2	0.0001	95WHA/AND
2 309.860	43 279.35	2	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.006	63MIN
2 313.7191	43 207.1738	1047	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4F	7/2	0.0001	95WHA/AND
2 314.9707	43 183.8175	398	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.0001	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 315.3098	43 177.4923	58	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)5d$	^4P	3/2	0.0001	95WHA/AND
2 316.2973	43 159.0870	1820	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	$3s^23p^4(^3P)5d$	^4F	9/2	0.0001	95WHA/AND
2 317.7460	43 132.1120	191	$3s^23p^4(^1D)4s$	^2D	5/2	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
2 318.54	43 117.3	0 bg?	$3s^23p^4(^1D)3d$	^2F	7/2	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.04	63MIN
2 322.081	43 051.60	2	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4P	5/2	0.006	63MIN
2 324.4270	43 008.150	11	$3s^23p^4(^3P)3d$	^4P	3/2	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.0004	95WHA/AND
2 327.7869	42 946.077	9	$3s^23p^4(^1D)3d$	^2F	5/2	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.0003	95WHA/AND
2 329.357	42 917.13	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	$3s^23p^4(^3P)5d$	^4P	3/2	0.006	63MIN
2 331.4503	42 878.6032	912	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)5d$	^2F	7/2	0.0001	95WHA/AND
2 332.310	42 862.8	(1) m?	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)5d$	^4P	1/2	0.012	63MIN
2 332.9032	42 851.900	9	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^1S)5s$	^2S	1/2	0.0005	95WHA/AND
2 333.0360	42 849.461	8	$3s^23p^4(^1D)3d$	^2F	5/2	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.0008	95WHA/AND
2 337.7777	42 762.5586	525	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)5d$	^2F	5/2	0.0001	95WHA/AND
2 339.06	42 739.1	0	$3s^23p^4(^1D)3d$	^2F	7/2	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.02	63MIN
2 339.7968	42 725.6600	49	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	$3s^23p^4(^3P)5d$	^4D	5/2	0.0001	95WHA/AND
2 344.2027	42 645.3633	269	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	$3s^23p^4(^3P)5d$	^4D	7/2	0.0001	95WHA/AND
2 344.745	42 635.50	0.5	$3s^23p^4(^3P)3d$	^4P	5/2	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.006	63MIN
2 345.2540	42 626.249	6	$3s^23p^4(^1D)3d$	^2F	7/2	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2	0.0011	95WHA/AND
2 345.50	42 621.8	1 b	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4F	5/2	0.04	63MIN
2 345.86	42 615.2	0	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4P	3/2	0.02	63MIN
2 346.5751	42 602.253	14	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	$3s^23p^4(^3P)5d$	^4P	1/2	0.0004	95WHA/AND
2 348.910	42 559.91	1	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^3P_1)7f$	$^2[4]^\circ$	7/2	0.006	63MIN
2 349.51	42 549.0	0.5 b?	$3s^23p^4(^1D)4s$	^2D	3/2	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.04	63MIN
2 350.4877	42 531.3432	107	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	$3s^23p^4(^1D)6s$	^2D	3/2	0.0001	95WHA/AND
2 353.4241	42 478.281	32	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4D	3/2	0.0002	95WHA/AND
2 354.1315	42 465.5175	89	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	$3s^23p^4(^1D)4d$	^2F	7/2	0.0001	95WHA/AND
2 354.793	42 453.59	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^1D)5d$	^2D	5/2	0.006	63MIN
2 357.5892	42 403.2421	158	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	$3s^23p^4(^1D)6s$	^2D	5/2	0.0001	95WHA/AND
2 358.19	42 392.4	0.5 ?	$3s^23p^4(^1D)4s$	^2D	3/2	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.02	63MIN
2 358.408	42 388.52	2	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)5d$	^4P	5/2	0.006	63MIN
2 360.0586	42 358.8764	35	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	$3s^23p^4(^3P)6s$	^2P	3/2	0.0001	95WHA/AND
2 361.820	42 327.29	1 *	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)5d$	^4F	3/2	0.006	63MIN
2 361.820	42 327.29	1 *	$3s^23p^4(^1D)4s$	^2D	5/2	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.006	63MIN
2 362.083	42 322.58	1	$3s^23p^4(^1D)4s$	^2D	3/2	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.006	63MIN
2 362.8625	42 308.62	5	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	$3s^23p^4(^1D)4d$	^2D	3/2	0.0015	95WHA/AND
2 364.1115	42 286.2654	66	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4D	5/2	0.0001	95WHA/AND
2 366.7776	42 238.635	16	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)5d$	^4D	1/2	0.0003	95WHA/AND
2 367.248	42 230.24	1	$3s^23p^4(^3P)3d$	^4P	5/2	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.006	63MIN
2 368.612	42 205.93	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4D	7/2	0.006	63MIN
2 369.1884	42 195.659	10	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	$3s^23p^4(^3P)6s$	^2P	1/2	0.0004	95WHA/AND
2 370.631	42 169.98	0.5	$3s^23p^4(^1D)4s$	^2D	5/2	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.006	63MIN
2 371.6573	42 151.736	7	$3s^23p^4(^3P)3d$	^4P	3/2	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.0007	95WHA/AND
2 371.7390	42 150.284	28	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4F	7/2	0.0002	95WHA/AND
2 376.430	42 067.09	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	$3s^23p^4(^1D)4d$	^2F	5/2	0.006	63MIN
2 379.4214	42 014.205	9 ?	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	$3s^23p^4(^3P)5d$	^4F	3/2	0.0006	95WHA/AND
2 379.863	42 006.41	3	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	$3s^23p^4(^1D)4d$	^2D	5/2	0.006	63MIN
2 381.1390	41 983.901	17	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)5d$	^4D	3/2	0.0003	95WHA/AND
2 381.456	41 978.3	1 b	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	$3s^23p^4(^3P)5d$	^4D	1/2	0.012	63MIN
2 382.565	41 958.78	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)5d$	^4F	5/2	0.006	63MIN
2 382.955	41 951.91	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)5d$	^4P	3/2	0.006	63MIN
2 383.4826	41 942.6233	91	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)6s$	^4P	1/2	0.0001	95WHA/AND
2 383.934	41 934.68	2	$3s^23p^4(^3P)3d$	^4P	3/2	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.006	63MIN
2 384.9673	41 916.5140	83	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)5d$	^2F	5/2	0.0001	95WHA/AND
2 385.936	41 899.50	1	$3s^23p^4(^1D)3d$	^2G	7/2	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	0.006	63MIN
2 387.9317	41 864.483	27	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)6s$	^2P	3/2	0.0002	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 388.268	41 858.59	1	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.006	63MIN
2 390.878	41 812.90	2	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.006	63MIN
2 392.808	41 779.17	1 *	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.006	63MIN
2 392.808	41 779.17	1 *	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
2 396.00	41 723.5	0.5	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.02	63MIN
2 397.5467	41 696.606	12	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.0004	95WHA/AND
2 398.3687	41 682.3152	71	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)6s$	^4P	1/2	0.0001	95WHA/AND
2 399.3685	41 664.948	10	$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0005	95WHA/AND
2 400.85	41 639.2	0.5 ?	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4P	3/2	0.02	63MIN
2 401.02	41 636.3	0.5	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	1/2	0.02	63MIN
2 402.900	41 603.72	1 *	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.006	63MIN
2 402.900	41 603.72	1 *	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P_1)7g$	$^2[4]$	7/2	0.006	63MIN
2 403.2364	41 597.8960	38	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	0.0001	95WHA/AND
2 404.3523	41 578.5905	646	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)6s$	^4P	5/2	0.0001	95WHA/AND
2 404.4984	41 576.064	6	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.0008	95WHA/AND
2 405.2283	41 563.4480	58	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)5d$	^2F	5/2	0.0001	95WHA/AND
2 405.776	41 553.99	2	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.006	63MIN
2 406.44	41 542.5	0.5	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.02	63MIN
2 406.6389	41 539.089	21	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	0.0002	95WHA/AND
2 407.8673	41 517.898	8	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)5d$	^2F	5/2	0.0006	95WHA/AND
2 408.2068	41 512.046	11	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.0004	95WHA/AND
2 408.943	41 499.36	1	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.006	63MIN
2 409.503	41 489.72	2	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.006	63MIN
2 409.702	41 486.29	1	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.006	63MIN
2 410.9337	41 465.0972	170	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.0001	95WHA/AND
2 412.124	41 444.64	0.5	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.006	63MIN
2 412.4640	41 438.7972	54	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)5d$	^2F	7/2	0.0001	95WHA/AND
2 412.910	41 431.14	1	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.006	63MIN
2 413.486	41 421.25	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.006	63MIN
2 414.2216	41 408.6314	81	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2F	7/2	0.0001	95WHA/AND
2 417.2096	41 357.448	10	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.0005	95WHA/AND
2 418.704	41 331.90	1	$3s^23p^4(^3P)3d$	^2F	7/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.006	63MIN
2 419.1761	41 323.832	7	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4P	1/2	0.0007	95WHA/AND
2 419.413	41 319.79	1	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)5d$	^2D	5/2	0.006	63MIN
2 420.4558	41 301.9864	151	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0001	95WHA/AND
2 421.4977	41 284.2163	34	$3s^23p^4(^1S)4s$	^2S	1/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.0001	95WHA/AND
2 421.5210	41 283.819	21	$3s^23p^4(^1S)4s$	^2S	1/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.0002	95WHA/AND
2 421.822	41 278.7	0.5m?	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2P	1/2	0.012	63MIN
2 422.089	41 274.14	2	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)5d$	^2D	5/2	0.006	63MIN
2 422.695	41 263.82	4	$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.006	63MIN
2 424.6597	41 230.3820	44	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	1/2	0.0001	95WHA/AND
2 424.7184	41 229.384	9	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	5/2	0.0006	95WHA/AND
2 428.523	41 164.80	1	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.006	63MIN
2 429.4508	41 149.078	8	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	7/2	0.0006	95WHA/AND
2 430.0345	41 139.1939	69	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)6s$	^4P	5/2	0.0001	95WHA/AND
2 431.6309	41 112.188	8	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.0008	95WHA/AND
2 431.923	41 107.25	1	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2F	5/2	0.006	63MIN
2 434.364	41 066.03	2	$3s^23p^4(^3P)3d$	^4D	7/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.006	63MIN
2 437.200	41 018.25	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2P	1/2	0.006	63MIN
2 437.5086	41 013.060	6	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	1/2	0.0010	95WHA/AND
2 440.0282	40 970.7121	41	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.0001	95WHA/AND
2 441.2892	40 949.550	9	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.0004	95WHA/AND
2 442.794	40 924.33	2	$3s^23p^4(^1D)3d$	^2G	7/2	– $3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	0.006	63MIN
2 443.2179	40 917.226	11	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^2P	1/2	0.0005	95WHA/AND
2 443.49	40 912.7	1 a	$3s^23p^4(^3P)3d$	^4D	5/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.02	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 444.828	40 890.28	3	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.006	63MIN
2 444.996	40 887.47	0.5	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.006	63MIN
2 446.355	40 864.76	1	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.006	63MIN
2 447.743	40 841.6	2 b	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2F	5/2	0.012	63MIN
2 448.16	40 834.6	0	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.02	63MIN
2 449.179	40 817.65	2	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.006	63MIN
2 449.407	40 813.85	2	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.006	63MIN
2 450.541	40 794.96	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.006	63MIN
2 452.7441	40 758.320	6 ?	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.0010	95WHA/AND
2 454.2618	40 733.1181	316	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.0001	95WHA/AND
2 455.0667	40 719.7639	50	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)6s$	^2D	5/2	0.0001	95WHA/AND
2 455.1437	40 718.487	14	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)6s$	^2D	3/2	0.0003	95WHA/AND
2 455.235	40 716.97	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	1/2	0.006	63MIN
2 455.628	40 710.46	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.006	63MIN
2 456.2654	40 699.894	9	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4D	1/2	0.0005	95WHA/AND
2 456.61	40 694.2	1 b?	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.04	63MIN
2 457.525	40 679.03	1	$3s^23p^4(^1D)3d$	^2G	7/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.006	63MIN
2 457.9510	40 671.99	10 b	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	3/2	0.0014	95WHA/AND
2 459.601	40 644.70	1 ?	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	5/2	0.006	63MIN
2 459.9521	40 638.9020	40	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0001	95WHA/AND
2 460.6409	40 627.527	9	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.0004	95WHA/AND
2 461.203	40 618.25	1 *	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.006	63MIN
2 461.203	40 618.25	1 *	$3s^23p^4(^1D)3d$	^2G	7/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.006	63MIN
2 462.553	40 595.98	1	$3s^23p^4(^1D)3d$	^2G	7/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	0.006	63MIN
2 462.998	40 588.65	2 b	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.012	63MIN
2 466.12	40 537.3	1 b?	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.04	63MIN
2 467.55	40 513.8	0	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^1D)5s$	^2D	5/2	0.02	63MIN
2 469.876	40 475.63	2	$3s^23p^4(^3P)3d$	^2F	7/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
2 470.3580	40 467.730	10	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.0004	95WHA/AND
2 471.74	40 445.1	0.5	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.02	63MIN
2 473.9968	40 408.2133	59	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.0001	95WHA/AND
2 474.2615	40 403.891	6	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^4P	1/2	0.0006	95WHA/AND
2 475.4595	40 384.3384	51	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	1/2	0.0001	95WHA/AND
2 476.71	40 364.0	0.5	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.02	63MIN
2 476.970	40 359.71	2	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.006	63MIN
2 479.0562	40 325.7528	78	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0001	95WHA/AND
2 480.4633	40 302.879	28	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.0002	95WHA/AND
2 480.8527	40 296.5520	155	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	3/2	0.0001	95WHA/AND
2 481.4745	40 286.4555	65	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.0001	95WHA/AND
2 482.1505	40 275.4853	36	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.0001	95WHA/AND
2 483.225	40 258.06	2	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.006	63MIN
2 486.906	40 198.47	3	$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.006	63MIN
2 491.0343	40 131.8609	37	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.0001	95WHA/AND
2 492.0149	40 116.069	27	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)6s$	^2D	3/2	0.0002	95WHA/AND
2 494.1164	40 082.270	9 b *	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6s$	^4P	5/2	0.0012	95WHA/AND
2 494.1164	40 082.270	9 b *	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.0012	95WHA/AND
2 495.920	40 053.31	2	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2P	1/2	0.006	63MIN
2 497.2217	40 032.431	8	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0006	95WHA/AND
2 499.5264	39 995.522	10	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2F	5/2	0.0005	95WHA/AND
2 500.3950	39 981.6290	76	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	1/2	0.0001	95WHA/AND
2 501.8360	39 958.603	22	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0002	95WHA/AND
2 503.9345	39 925.116	19	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.0003	95WHA/AND
2 504.7397	39 912.283	14	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.0004	95WHA/AND
2 507.3338	39 870.992	19	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	1/2	0.0003	95WHA/AND
2 508.548	39 851.69	1	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.006	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
2 510.6265	39 818.704	8	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^1D)4d$	^2P	3/2	0.0006	95WHA/AND
2 512.2572	39 792.860	21	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^2P	3/2	0.0002	95WHA/AND
2 515.2741	39 745.133	28	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^4P	3/2	0.0002	95WHA/AND
2 515.5932	39 740.0926	59	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^1D)4d$	^2P	1/2	0.0001	95WHA/AND
2 516.7888	39 721.2155	132	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
2 522.4986	39 631.3102	32	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0001	95WHA/AND
2 525.4032	39 585.732	12	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)6s$	^2D	5/2	0.0004	95WHA/AND
2 525.4852	39 584.4460	56	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)6s$	^2D	3/2	0.0001	95WHA/AND
2 526.076	39 575.19	2	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^2P	1/2	0.006	63MIN
2 528.3128	39 540.1798	87	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^1D)6s$	^2D	5/2	0.0001	95WHA/AND
2 528.6835	39 534.383	30	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)6s$	^2P	1/2	0.0002	95WHA/AND
2 530.423	39 507.21	1	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
2 534.7087	39 440.4138	166	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2D	5/2	0.0001	95WHA/AND
2 535.2509	39 431.979	29	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)6s$	^4P	3/2	0.0002	95WHA/AND
2 535.758	39 424.09	1	$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.006	63MIN
2 536.0150	39 420.0994	93	$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
2 540.0362	39 357.696	9	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4D	1/2	0.0006	95WHA/AND
2 541.59	39 333.6	0.5	$3s^23p^4(^1D)3d$	^2D	5/2	–	$3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	0.02	63MIN
2 544.6839	39 285.8160	79	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2P	3/2	0.0001	95WHA/AND
2 545.6468	39 270.957	8	$3s^23p^4(^1D)3d$	^2D	5/2	–	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	0.0008	95WHA/AND
2 547.184	39 247.26	2	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 549.788	39 207.18	3	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2P	1/2	0.006	63MIN
2 551.571	39 179.78	1	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
2 553.400	39 151.72	2	$3s^23p^4(^3P)4s$	^4P	5/2	–	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.006	63MIN
2 556.5856	39 102.941	9	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4D	3/2	0.0005	95WHA/AND
2 559.2866	39 061.674	11	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^4P	1/2	0.0003	95WHA/AND
2 560.853	39 037.78	1	$3s^23p^4(^1D)3d$	^2F	7/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.006	63MIN
2 561.9525	39 021.031	4	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)6s$	^4P	1/2	0.0011	95WHA/AND
2 562.0873	39 018.978	18	$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0002	95WHA/AND
2 564.4166	38 983.538	17	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^2P	3/2	0.0002	95WHA/AND
2 565.782	38 962.79	3	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.006	63MIN
2 567.095	38 942.87	1	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)6s$	^2P	3/2	0.006	63MIN
2 567.727	38 933.28	1	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2D	3/2	0.006	63MIN
2 569.2007	38 910.953	6	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4D	5/2	0.0007	95WHA/AND
2 569.9847	38 899.083	9	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^4P	3/2	0.0006	95WHA/AND
2 570.4107	38 892.6369	28	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^1D)4d$	^2D	3/2	0.0001	95WHA/AND
2 573.940	38 839.31	0.5	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 579.428	38 756.68	2	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	5/2	0.006	63MIN
2 580.360	38 742.68	1	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 591.696	38 573.24	1	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^4P	5/2	0.006	63MIN
2 592.074	38 567.61	1	$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
2 592.178	38 566.06	1	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.006	63MIN
2 600.956	38 435.91	3	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^1D)4d$	^2P	3/2	0.006	63MIN
2 609.68	38 307.4	0	$3s^23p^4(^3P)4s$	^4P	3/2	–	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.02	63MIN
2 616.811	38 203.05	3	$3s^23p^4(^3P)3d$	^4D	7/2	–	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.006	63MIN
2 617.596	38 191.59	2	$3s^23p^4(^1D)3d$	^2D	5/2	–	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	0.006	63MIN
2 620.9844	38 142.222	16	$3s^23p^4(^1D)3d$	^2D	5/2	–	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	0.0003	95WHA/AND
2 621.879	38 129.21	1	$3s^23p^4(^1D)3d$	^2D	5/2	–	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 623.090	38 111.61	1	$3s^23p^4(^1D)3d$	^2D	5/2	–	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	0.006	63MIN
2 624.5945	38 089.761	7	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^4P	3/2	0.0004	95WHA/AND
2 625.711	38 073.57	1	$3s^23p^4(^3P)3d$	^4D	7/2	–	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.006	63MIN
2 627.3984	38 049.115	7	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)6s$	^4P	3/2	0.0005	95WHA/AND
2 634.001	37 953.74	2 us	$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.006	63MIN
2 636.354	37 919.87	2	$3s^23p^4(^3P)3d$	^4D	5/2	–	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.006	63MIN
2 636.9135	37 911.826	6	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)6d$	^2D	5/2	0.0008	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 647.2456	37 763.866	29	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	$3s^23p^4(^3P)6s$	^4P	5/2	0.0002	95WHA/AND
2 647.844	37 755.33	1	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P_2)6f$	$^2[1]^\circ$	3/2	0.006	63MIN
2 649.6012	37 730.294	7	$3s^23p^4(^3P)4s$	^4P	3/2	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.0008	95WHA/AND
2 651.9095	37 697.456	9	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	0.0008	95WHA/AND
2 652.899	37 683.40	1	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 653.21	37 679.0	0	$3s^23p^4(^3P)3d$	^2D	5/2	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.02	63MIN
2 654.056	37 666.97	2	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 656.303	37 635.11	2	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 657.89	37 612.6	0	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	$3s^23p^4(^3P)6d$	^4F	7/2	0.02	63MIN
2 670.22	37 439.0	0.5	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	$3s^23p^4(^1D)5s$	^2D	3/2	0.02	63MIN
2 674.1744	37 383.608	5	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)6d$	^2P	3/2	0.0008	95WHA/AND
2 683.1001	37 259.253	6	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	0.0012	95WHA/AND
2 686.322	37 214.57	2	$3s^23p^4(^3P)4s$	^4P	1/2	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.006	63MIN
2 686.94	37 206.0	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	$3s^23p^4(^3P)4d$	^2D	5/2	0.02	63MIN
2 687.395	37 199.71	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)6d$	^2D	3/2	0.006	63MIN
2 689.093	37 176.22	2	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	5/2	0.006	63MIN
2 690.033	37 163.23	2	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)6d$	^2F	5/2	0.006	63MIN
2 692.15	37 134.0	0.5	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	$3s^23p^4(^1D)5s$	^2D	5/2	0.02	63MIN
2 697.374	37 062.10	1	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^3P)7p$	$^\circ$	5/2	0.006	63MIN
2 701.719	37 002.50	2	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	0.006	63MIN
2 708.0571	36 915.897	6	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.0010	95WHA/AND
2 708.2675	36 913.0297	93	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
2 720.184	36 751.33	2	$3s^23p^4(^1D)3d$	^2P	1/2	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 721.580	36 732.48	0.5	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)6d$	^2D	5/2	0.006	63MIN
2 730.50	36 612.5	0.5	$3s^23p^4(^3P)4s$	^4P	1/2	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.02	63MIN
2 730.67	36 610.2	0.5	$3s^23p^4(^1S)4s$	^2S	1/2	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.02	63MIN
2 731.639	36 597.22	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	$3s^23p^4(^3P)6d$	^2D	3/2	0.006	63MIN
2 732.3372	36 587.8729	45	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.0001	95WHA/AND
2 732.5024	36 585.6612	41	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.0001	95WHA/AND
2 733.0198	36 578.735	12	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^3P_2)7p$	$^2[2]^\circ$	5/2	0.0006	95WHA/AND
2 733.809	36 568.18	1 *	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P)7p$	$^\circ$	3/2	0.006	63MIN
2 733.809	36 568.18	1 *	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P)7p$	$^\circ$	5/2	0.006	63MIN
2 740.333	36 481.12	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)6d$	^4P	3/2	0.006	63MIN
2 740.912	36 473.42	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	$3s^23p^4(^1D)5s$	^2D	3/2	0.006	63MIN
2 741.0679	36 471.342	11	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	$3s^23p^4(^1D)5s$	^2D	5/2	0.0004	95WHA/AND
2 741.962	36 459.45	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)6d$	^4F	5/2	0.006	63MIN
2 744.7931	36 421.8453	81	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.0001	95WHA/AND
2 754.864	36 288.71	2	$3s^23p^4(^3P)4s$	^4P	5/2	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.006	63MIN
2 757.304	36 256.60	3	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.006	63MIN
2 761.33	36 203.7	0.5	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)6d$	^2P	3/2	0.02	63MIN
2 763.520	36 175.05	1	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P_2)6f$	$^2[1]^\circ$	3/2	0.006	63MIN
2 764.6461	36 160.313	30	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	$3s^23p^4(^1D)5s$	^2D	3/2	0.0002	95WHA/AND
2 767.945	36 117.22	2	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	0.006	63MIN
2 769.04	36 102.9	0	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	3/2	0.02	63MIN
2 769.7388	36 093.8287	41	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.0001	95WHA/AND
2 769.91	36 091.6	0.5 m?	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.04	63MIN
2 770.438	36 084.72	0.5	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P_2)7p$	$^2[2]^\circ$	5/2	0.006	63MIN
2 771.91	36 065.6	0.5 a?	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)6d$	^2D	3/2	0.02	63MIN
2 772.740	36 054.76	2	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 774.099	36 037.10	2	$3s^23p^4(^1S)4s$	^2S	1/2	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.006	63MIN
2 778.24	35 983.4	0 ?	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)6d$	^2F	5/2	0.02	63MIN
2 795.289	35 763.93	2 b?	$3s^23p^4(^1D)3d$	^2P	1/2	$3s^23p^4(^3P_2)6f$	$^2[1]^\circ$	3/2	0.012	63MIN
2 795.4285	35 762.147	19	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.0002	95WHA/AND
2 800.919	35 692.05	1	$3s^23p^4(^1D)3d$	^2P	1/2	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 805.990	35 627.55	1	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	$3s^23p^4(^1D)5s$	^2D	3/2	0.006	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 806.1670	35 625.3011	58	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	$3s^23p^4(^1D)5s$	^2D	5/2	0.0001	95WHA/AND
2 828.27	35 346.9	0 ?	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)6d$	^4P	3/2	0.02	63MIN
2 830.834	35 314.89	0.5	$3s^23p^4(^3P)4s$	^4P	3/2	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.006	63MIN
2 843.3726	35 159.167	9	$3s^23p^4(^1S)4s$	^2S	1/2	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.0005	95WHA/AND
2 844.129	35 149.82	4	$3s^23p^4(^3P)4s$	^2P	3/2	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.006	63MIN
2 847.146	35 112.57	2	$3s^23p^4(^1S)4s$	^2S	1/2	$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.006	63MIN
2 847.816	35 104.31	3	$3s^23p^4(^3P)4s$	^2P	3/2	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.006	63MIN
2 853.16	35 038.6	0	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	$3s^23p^4(^3P)4d$	^2D	3/2	0.02	63MIN
2 857.278	34 988.07	0.5 *	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P)7p$	$^\circ$	5/2	0.006	63MIN
2 857.278	34 988.07	0.5 *	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P)7p$	$^\circ$	3/2	0.006	63MIN
2 860.742	34 945.70	3	$3s^23p^4(^1S)4s$	^2S	1/2	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.006	63MIN
2 865.8432	34 883.502	20	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	$3s^23p^4(^3P)4d$	^2D	5/2	0.0003	95WHA/AND
2 869.283	34 841.68	1	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 871.022	34 820.58	1	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	$3s^23p^4(^3P)5d$	^2P	3/2	0.006	63MIN
2 871.399	34 816.01	1	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	$3s^23p^4(^1D)5s$	^2D	5/2	0.006	63MIN
2 874.5820	34 777.460	7	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	$3s^23p^4(^1D)5s$	^2D	3/2	0.0008	95WHA/AND
2 876.889	34 749.57	0.5	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)6d$	^4F	7/2	0.006	63MIN
2 891.6123	34 572.6466	234	$3s^23p^4(^3P)4s$	^2P	3/2	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
2 893.985	34 544.30	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)4d$	^2D	3/2	0.006	63MIN
2 896.564	34 513.55	2	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 896.7465	34 511.373	33	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.0002	95WHA/AND
2 897.332	34 504.40	6	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^3P_2)7p$	$^2[2]^\circ$	5/2	0.006	63MIN
2 907.04	34 389.2	0	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)4d$	^2D	5/2	0.02	63MIN
2 914.932	34 296.08	1	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 915.593	34 288.30	4	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.006	63MIN
2 915.967	34 283.90	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	$3s^23p^4(^3P)4d$	^2D	3/2	0.006	63MIN
2 924.6339	34 182.310	13 b	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.0012	95WHA/AND
2 924.6677	34 181.915	12	$3s^23p^4(^1D)3d$	^2P	3/2	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.0005	95WHA/AND
2 931.4809	34 102.474	11	$3s^23p^4(^1D)3d$	^2P	1/2	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.0005	95WHA/AND
2 932.5905	34 089.572	6	$3s^23p^4(^3P)4s$	^2P	1/2	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.0010	95WHA/AND
2 935.538	34 055.35	3	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	$3s^23p^4(^3P)5d$	^2D	5/2	0.006	63MIN
2 938.90	34 016.4	1 ag	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	$3s^23p^4(^3P)5d$	^2D	3/2	0.02	63MIN
2 941.893	33 981.78	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)4d$	^2D	3/2	0.006	63MIN
2 942.8932	33 970.2340	1047	$3s^23p^4(^3P)4s$	^2P	3/2	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
2 947.275	33 919.73	2	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 948.119	33 910.02	0.5	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.006	63MIN
2 955.3882	33 826.6181	68	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)4d$	^2D	5/2	0.0001	95WHA/AND
2 956.5420	33 813.419	6	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.0014	95WHA/AND
2 957.532	33 802.10	3	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 960.2396	33 771.185	10 b	$3s^23p^4(^1D)3d$	^2P	1/2	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.0014	95WHA/AND
2 960.2741	33 770.791	23	$3s^23p^4(^1D)3d$	^2P	1/2	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.0003	95WHA/AND
2 960.514	33 768.05	0.5	$3s^23p^4(^1D)3d$	^2D	5/2	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
2 979.0502	33 557.9518	263	$3s^23p^4(^3P)4s$	^2P	1/2	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
2 990.843	33 425.64	2	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.006	63MIN
2 999.110	33 333.51	2	$3s^23p^4(^1D)3d$	^2F	5/2	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
3 000.109	33 322.41	3	$3s^23p^4(^1D)3d$	^2F	5/2	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.003	95WHA/AND
3 000.4451	33 318.675	17	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)4d$	^2D	3/2	0.0005	95WHA/AND
3 002.964	33 290.73	4	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.003	95WHA/AND
3 004.486	33 273.86	2	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 014.4819	33 163.534	7	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)4d$	^2D	5/2	0.0010	95WHA/AND
3 026.7455	33 029.170	35	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^1D)4d$	^2S	1/2	0.0002	95WHA/AND
3 028.721	33 007.63	3	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)5d$	^2P	3/2	0.006	63MIN
3 028.9140	33 005.525	47 *	$3s^23p^4(^1D)3d$	^2F	5/2	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.0002	95WHA/AND
3 028.9140	33 005.525	47 *	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	$3s^23p^4(^3P)4d$	^2D	3/2	0.0002	95WHA/AND
3 033.5082	32 955.5402	78	$3s^23p^4(^3P)4s$	^2P	1/2	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
3 036.887	32 918.88	2 b?	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2 –	$3s^23p^4(^3P)4d$	^2P	3/2	0.012	63MIN
3 042.463	32 858.55	1	$3s^23p^4(^1D)3d$	^2D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.006	63MIN
3 046.0787	32 819.545	6	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.0008	95WHA/AND
3 047.053	32 809.05	0.5	$3s^23p^4(^1D)3d$	^2F	7/2 –	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
3 048.021	32 798.63	2	$3s^23p^4(^1D)3d$	^2F	7/2 –	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.006	63MIN
3 048.784	32 790.42	2	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.006	63MIN
3 050.043	32 776.89	1	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 053.151	32 743.53	5	$3s^23p^4(^1D)3d$	^2D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.006	63MIN
3 055.281	32 720.70	0.5	$3s^23p^4(^1D)3d$	^2D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 060.9059	32 660.572	7	$3s^23p^4(^1D)3d$	^2D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.0010	95WHA/AND
3 062.643	32 642.05	3	$3s^23p^4(^1D)3d$	^2D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.006	63MIN
3 065.120	32 615.67	3 wb	$3s^23p^4(^1D)3d$	^2D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.012	63MIN
3 065.400	32 612.69	0.5	$3s^23p^4(^1D)3d$	^2F	7/2 –	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.006	63MIN
3 066.889	32 596.86	6	$3s^23p^4(^1D)3d$	^2F	7/2 –	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	0.006	63MIN
3 071.66	32 546.2	0.5	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2 –	$3s^23p^4(^3P)4d$	^2F	5/2	0.02	63MIN
3 082.9777	32 426.756	10	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2 –	$3s^23p^4(^1D)4d$	^2S	1/2	0.0007	95WHA/AND
3 083.193	32 424.49	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^2P	3/2	0.006	63MIN
3 085.0273	32 405.214	19	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)5d$	^2P	3/2	0.0003	95WHA/AND
3 088.2151	32 371.765	8	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^2D	5/2	0.0016	95WHA/AND
3 088.910	32 364.48	3	$3s^23p^4(^1D)3d$	^2D	3/2 –	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.006	63MIN
3 093.4018	32 317.4896	68	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^2D	5/2	0.0001	95WHA/AND
3 094.9654	32 301.163	8	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^2P	1/2	0.0007	95WHA/AND
3 099.925	32 249.48	4	$3s^23p^4(^1D)3d$	^2D	3/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.003	95WHA/AND
3 101.004	32 238.27	2	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^2F	5/2	0.006	63MIN
3 102.5862	32 221.826	5	$3s^23p^4(^1D)3d$	^2P	3/2 –	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.0013	95WHA/AND
3 102.953	32 218.02	1	$3s^23p^4(^3P)4d$	^4D	7/2 –	$3s^23p^4(^3P_2)8f$	$^2[4]^\circ$	9/2	0.006	63MIN
3 104.3601	32 203.414	17	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^2D	3/2	0.0005	95WHA/AND
3 108.801	32 157.41	2	$3s^23p^4(^3P)4s$	^2P	3/2 –	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.006	63MIN
3 109.711	32 148.00	4	$3s^23p^4(^1D)3d$	^2D	3/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.006	63MIN
3 109.98	32 145.2	0.5	$3s^23p^4(^1S)3d$	^2D	3/2 –	$3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	5/2	0.02	63MIN
3 114.378	32 099.83	3	$3s^23p^4(^1D)3d$	^2D	3/2 –	$3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.006	63MIN
3 124.268	31 998.22	1	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.006	63MIN
3 136.4839	31 873.600	7	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^2P	3/2	0.0011	95WHA/AND
3 137.629	31 861.97	3	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2 –	$3s^23p^4(^3P)4d$	^2P	3/2	0.006	63MIN
3 139.0174	31 847.8759	79	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2 –	$3s^23p^4(^3P)4d$	^4P	5/2	0.0001	95WHA/AND
3 139.2636	31 845.378	8	$3s^23p^4(^1D)3d$	^2P	3/2 –	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.0009	95WHA/AND
3 140.963	31 828.15	2	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2 –	$3s^23p^4(^3P)5d$	^2P	3/2	0.006	63MIN
3 143.891	31 798.51	3	$3s^23p^4(^1D)3d$	^2D	5/2 –	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.006	63MIN
3 145.900	31 778.20	2	$3s^23p^4(^1D)3d$	^2D	5/2 –	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.006	63MIN
3 146.422	31 772.93	4	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2 –	$3s^23p^4(^3P)4d$	^2F	7/2	0.006	63MIN
3 148.206	31 754.93	2	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2 –	$3s^23p^4(^3P)5d$	^2F	5/2	0.002	95WHA/AND
3 150.510	31 731.70	4	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.006	63MIN
3 152.613	31 710.54	3	$3s^23p^4(^1D)3d$	^2P	3/2 –	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.006	63MIN
3 153.7844	31 698.760	13	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)5d$	^2P	1/2	0.0004	95WHA/AND
3 153.947	31 697.13	0.5	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 154.289	31 693.69	2	$3s^23p^4(^1D)3d$	^2P	3/2 –	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 158.208	31 654.36	0.5	$3s^23p^4(^1S)3d$	^2D	3/2 –	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	5/2	0.006	63MIN
3 161.3729	31 622.673	45	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2 –	$3s^23p^4(^3P)4d$	^2D	3/2	0.0002	95WHA/AND
3 161.4570	31 621.832	15	$3s^23p^4(^1D)3d$	^2F	7/2 –	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	0.0004	95WHA/AND
3 163.535	31 601.06	2	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)5d$	^2D	3/2	0.006	63MIN
3 165.2910	31 583.531	11	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0005	95WHA/AND
3 167.464	31 561.86	3	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
3 169.6682	31 539.9171	78	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^4P	5/2	0.0001	95WHA/AND
3 171.403	31 522.66	3	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.006	63MIN
3 172.862	31 508.17	3	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2 –	$3s^23p^4(^3P)4d$	^2D	5/2	0.004	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
3 181.0374	31 427.1958	45	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4P	3/2	0.0002	95WHA/AND
3 184.268	31 395.31	1 hl	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.006	63MIN
3 185.734	31 380.87	3	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.006	63MIN
3 186.1716	31 376.555	4	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0014	95WHA/AND
3 188.369	31 354.93	1	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
3 191.95	31 319.76	0.5 h	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4F	3/2	0.02	63MIN
3 192.363	31 315.71	3	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.006	63MIN
3 193.512	31 304.44	1	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.006	63MIN
3 194.2303	31 297.399	14	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4F	3/2	0.0004	95WHA/AND
3 194.598	31 293.80	4	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	0.006	63MIN
3 195.574	31 284.24	2 a?	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.006	63MIN
3 195.752	31 282.50	5	$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 198.920	31 251.52	2	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.006	63MIN
3 203.392	31 207.89	3	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)5d$	^2F	7/2	0.006	63MIN
3 204.3206	31 198.8485	35	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2P	3/2	0.0002	95WHA/AND
3 205.006	31 192.178	6	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^2D	5/2	0.002	95WHA/AND
3 207.581	31 167.139	5	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2P	1/2	0.002	95WHA/AND
3 207.655	31 166.42	2	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.006	63MIN
3 212.5178	31 119.243	7	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	3/2	0.0010	95WHA/AND
3 215.688	31 088.56	3	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.006	63MIN
3 216.7297	31 078.497	6	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^3P)5d$	^2F	7/2	0.0011	95WHA/AND
3 217.6730	31 069.387	5	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2D	3/2	0.0014	95WHA/AND
3 221.625	31 031.27	7	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4F	5/2	0.006	63MIN
3 222.3977	31 023.834	8	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^2D	3/2	0.0010	95WHA/AND
3 225.973	30 989.45	6	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4F	3/2	0.006	63MIN
3 230.021	30 950.62	4	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.006	63MIN
3 230.680	30 944.30	2	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4P	3/2	0.006	63MIN
3 235.175	30 901.31	3	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.006	63MIN
3 236.8097	30 885.705	10	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^2P	3/2	0.0008	95WHA/AND
3 241.708	30 839.04	2	$3s^23p^4(^3P)4d$	^4F	9/2	– $3s^23p^4(^3P_2)8f$	$^2[5]^\circ$	11/2	0.006	63MIN
3 243.6881	30 820.2120	95	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	1/2	0.0001	95WHA/AND
3 247.481	30 784.22	3	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.006	63MIN
3 249.7996	30 762.2539	95	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4P	3/2	0.0001	95WHA/AND
3 253.918	30 723.32	3	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4F	5/2	0.006	63MIN
3 258.894	30 676.41	2	$3s^23p^4(^3P)3d$	^4F	7/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.006	63MIN
3 259.336	30 672.25	0.5 *	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.006	63MIN
3 259.336	30 672.25	0.5 *	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.006	63MIN
3 259.6556	30 669.244	5	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.0015	95WHA/AND
3 262.083	30 646.42	2	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 263.5702	30 632.458	21	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4F	3/2	0.0004	95WHA/AND
3 268.987	30 581.70	5	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4F	7/2	0.006	63MIN
3 270.474	30 567.80	5	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.006	63MIN
3 273.3165	30 541.252	9	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2P	1/2	0.0008	95WHA/AND
3 275.6434	30 519.558	6	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.0012	95WHA/AND
3 276.085	30 515.44	3	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.006	63MIN
3 279.9418	30 479.56	2	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4F	7/2	0.0030	95WHA/AND
3 281.7012	30 463.2230	43	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4P	1/2	0.0002	95WHA/AND
3 291.4405	30 373.086	10	$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.0006	95WHA/AND
3 293.6402	30 352.8015	162	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2P	3/2	0.0001	95WHA/AND
3 293.9244	30 350.183	21	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^3P)5d$	^4F	7/2	0.0004	95WHA/AND
3 297.020	30 321.69	2	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.006	63MIN
3 298.418	30 308.84	2	$3s^23p^4(^3P)4d$	^4F	7/2	– $3s^23p^4(^3P_2)8f$	$^2[5]^\circ$	9/2	0.006	63MIN
3 306.445	30 235.26	5	$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 307.2283	30 228.0985	126	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^2P	1/2	0.0001	95WHA/AND
3 309.3397	30 208.813	4	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.0019	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
3 312.70	30 178.17	0.5	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.02	63MIN
3 317.825	30 131.56	3	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.006	63MIN
3 320.375	30 108.42	2	$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.006	63MIN
3 324.228	30 073.52	2	$3s^23p^4(^3P)4d$	^4D	7/2	– $3s^23p^4(^3P_2)7f$	$^2[4]^\circ$	9/2	0.006	63MIN
3 337.116	29 957.38	2 hl	$3s^23p^4(^3P)4d$	^4D	5/2	– $3s^23p^4(^3P_2)7f$	$^2[4]^\circ$	7/2	0.006	63MIN
3 338.8225	29 942.069	7	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2F	5/2	0.0007	95WHA/AND
3 341.507	29 918.01	3	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.006	63MIN
3 341.746	29 915.87	6	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^2F	5/2	0.006	63MIN
3 347.694	29 862.72	1	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^3P)5d$	^4F	9/2	0.006	63MIN
3 350.9238	29 833.9412	129	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2F	5/2	0.0001	95WHA/AND
3 361.7447	29 737.914	10	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2F	7/2	0.0006	95WHA/AND
3 363.300	29 724.16	2	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.006	63MIN
3 364.362	29 714.78	2	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.006	63MIN
3 365.5204	29 704.552	13	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)4d$	^2F	5/2	0.0006	95WHA/AND
3 365.58	29 704.03	1 ?	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.02	63MIN
3 366.5800	29 695.204	22	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2P	1/2	0.0003	95WHA/AND
3 370.9147	29 657.020	12	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)4d$	^4P	5/2	0.0007	95WHA/AND
3 370.9850	29 656.401	4	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.0018	95WHA/AND
3 373.140	29 637.46	1 wb	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.012	63MIN
3 373.842	29 631.29	3	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.006	63MIN
3 376.4357	29 608.5272	155	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)4d$	^2F	7/2	0.0001	95WHA/AND
3 378.442	29 590.94	1	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.006	63MIN
3 379.458	29 582.05	4	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)4d$	^2F	7/2	0.006	63MIN
3 379.5779	29 581.000	11	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.0007	95WHA/AND
3 381.063	29 568.01	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.006	63MIN
3 382.133	29 558.65	3	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	5/2	0.006	63MIN
3 383.865	29 543.52	1	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2P	3/2	0.006	63MIN
3 388.5306	29 502.8471	195	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)4d$	^2P	3/2	0.0001	95WHA/AND
3 391.343	29 478.38	0.5	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	7/2	0.006	63MIN
3 397.002	29 429.28	1	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^3P)5d$	^4D	5/2	0.006	63MIN
3 397.608	29 424.03	1	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.006	63MIN
3 397.8954	29 421.538	8	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2F	5/2	0.0006	95WHA/AND
3 406.298	29 348.96	3	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^3P)5d$	^4D	7/2	0.006	63MIN
3 408.350	29 331.29	0.5	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 408.612	29 329.04	3 b	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.005	95WHA/AND
3 409.413	29 322.15	1	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_2)7p$	$^2[2]^\circ$	5/2	0.006	63MIN
3 409.54	29 321.06	0 ?	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.02	63MIN
3 409.699	29 319.69	2	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.006	63MIN
3 414.4579	29 278.828	9	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.0008	95WHA/AND
3 416.560	29 260.81	1	$3s^23p^4(^3P)4d$	^4F	7/2	– $3s^23p^4(^3P_1)7f$	$^2[4]^\circ$	9/2	0.006	63MIN
3 421.6108	29 217.622	22	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4P	5/2	0.0004	95WHA/AND
3 425.500	29 184.45	2	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.006	63MIN
3 429.6138	29 149.445	20	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.0004	95WHA/AND
3 430.4148	29 142.639	26	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^2F	7/2	0.0003	95WHA/AND
3 430.991	29 137.746	5	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.002	95WHA/AND
3 431.737	29 131.41	2	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	3/2	0.006	63MIN
3 432.5838	29 124.224	5	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.0019	95WHA/AND
3 433.369	29 117.56	1	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P_2)8f$	$^2[5]^\circ$	9/2	0.006	63MIN
3 435.773	29 097.19	1	$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.006	63MIN
3 439.094	29 069.09	1	$3s^23p^4(^3P)4d$	^2P	1/2	– $3s^23p^4(^1D_2)5f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 447.290	28 999.98	1	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.006	63MIN
3 448.281	28 991.65	1	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 454.0949	28 942.8521	76	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4D	3/2	0.0001	95WHA/AND
3 458.688	28 904.42	1 ?	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4F	3/2	0.006	63MIN
3 464.1264	28 859.0413	81 b	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^2F	5/2	0.0002	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
3 465.7830	28 845.248	14	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)4d$	^2P	1/2	0.0005	95WHA/AND
3 466.3330	28 840.6714	91	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4D	1/2	0.0001	95WHA/AND
3 470.2606	28 808.031	12	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2F	5/2	0.0006	95WHA/AND
3 471.600	28 796.92	3	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4P	3/2	0.006	63MIN
3 476.7471	28 754.2853	427	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4D	5/2	0.0001	95WHA/AND
3 478.2316	28 742.0132	100	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^1D)3d$	^2S	1/2	0.0001	95WHA/AND
3 480.511	28 723.19	9	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	5/2	0.006	63MIN
3 481.591	28 714.28	1	$3s^23p^4(^3P)4d$	^4F	9/2	– $3s^23p^4(^3P_2)7f$	$^2[5]^\circ$	11/2	0.006	63MIN
3 487.3155	28 667.148	6	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4F	3/2	0.0007	95WHA/AND
3 488.188	28 659.98	1	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.006	63MIN
3 490.8729	28 637.9352	45	$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.0002	95WHA/AND
3 491.2437	28 634.8934	389	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4D	3/2	0.0001	95WHA/AND
3 491.5356	28 632.4995	1000	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4D	7/2	0.0001	95WHA/AND
3 495.775	28 597.78	1	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.006	63MIN
3 499.4759	28 567.534	8	$3s^23p^4(^3P)3d$	^4D	5/2	– $3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0007	95WHA/AND
3 499.957	28 563.61	0.5	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5s$	^2P	1/2	0.006	63MIN
3 509.7779	28 483.6844	447	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4D	1/2	0.0001	95WHA/AND
3 514.3874	28 446.3263	490	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4D	5/2	0.0001	95WHA/AND
3 517.8897	28 418.007	4	$3s^23p^4(^3P)3d$	^4D	3/2	– $3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0010	95WHA/AND
3 518.93	28 409.6	1 wb	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^1D_2)5f$	$^2[2]^\circ$	5/2	0.04	63MIN
3 519.9933	28 401.0239	191	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4F	5/2	0.0001	95WHA/AND
3 521.2600	28 390.8076	100	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)4d$	^4F	7/2	0.0001	95WHA/AND
3 521.555	28 388.43	1	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.006	63MIN
3 521.9773	28 385.0261	71	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^1D)3d$	^2S	1/2	0.0001	95WHA/AND
3 523.49	28 372.8	0.5 hb	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	3/2	0.04	63MIN
3 531.178	28 311.07	2	$3s^23p^4(^3P)3d$	^4D	1/2	– $3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.006	63MIN
3 532.233	28 302.61	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	3/2	0.006	63MIN
3 535.3194	28 277.9053	170	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4D	3/2	0.0001	95WHA/AND
3 543.1467	28 215.438	26	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^2F	7/2	0.0003	95WHA/AND
3 543.31	28 214.14	1 ?	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4P	1/2	0.02	63MIN
3 545.5952	28 195.9526	891	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2F	5/2	0.0001	95WHA/AND
3 545.8431	28 193.9815	794	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2G	7/2	0.0001	95WHA/AND
3 548.5141	28 172.7604	195	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4F	3/2	0.0001	95WHA/AND
3 550.0297	28 160.733	10	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4P	5/2	0.0006	95WHA/AND
3 556.9038	28 106.3113	49	$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.0002	95WHA/AND
3 559.5079	28 085.7496	1445	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^2F	7/2	0.0001	95WHA/AND
3 561.0303	28 073.7423	1023 b	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)4d$	^2G	9/2	0.0002	95WHA/AND
3 562.1914	28 064.5924	35	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)4d$	^2G	7/2	0.0002	95WHA/AND
3 564.3333	28 047.728	19	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.0005	95WHA/AND
3 565.0296	28 042.2500	162	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4P	3/2	0.0001	95WHA/AND
3 569.01	28 011.0	1 wb	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.04	63MIN
3 569.940	28 003.68	3 *	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.006	63MIN
3 569.940	28 003.68	3 *	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	1/2	0.006	63MIN
3 570.746	27 997.36	1	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	3/2	0.006	63MIN
3 575.7533	27 958.153	5 b	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.0018	95WHA/AND
3 576.6153	27 951.4152	12303	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4F	7/2	0.0001	95WHA/AND
3 578.3556	27 937.822	8	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.0009	95WHA/AND
3 581.6077	27 912.4549	68	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4F	3/2	0.0001	95WHA/AND
3 582.3544	27 906.6370	155	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4F	5/2	0.0001	95WHA/AND
3 588.4403	27 859.3099	12303	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)4d$	^4F	9/2	0.0001	95WHA/AND
3 593.717	27 818.41	2	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.008	95WHA/AND
3 594.37	27 813.35	0.5	$3s^23p^4(^3P)3d$	^4F	7/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.02	63MIN
3 600.2217	27 768.145	10	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.0007	95WHA/AND
3 601.5089	27 758.221	15	$3s^23p^4(^3P)3d$	^4D	5/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0004	95WHA/AND
3 603.456	27 743.22	3	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4P	1/2	0.003	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
3 603.905	27 739.77	3	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.004	95WHA/AND
3 605.8788	27 724.582	24	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.0003	95WHA/AND
3 607.401	27 712.88	2	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.006	63MIN
3 611.365	27 682.47	1	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	1/2	0.006	63MIN
3 611.8130	27 679.032	14	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.0004	95WHA/AND
3 620.807	27 610.28	3	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4F	3/2	0.006	63MIN
3 621.012	27 608.72	3	$3s^23p^4(^3P)3d$	^4D	3/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.006	63MIN
3 622.1376	27 600.137	30	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	1/2	0.0004	95WHA/AND
3 623.444	27 590.19	2	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4D	1/2	0.006	63MIN
3 634.8119	27 503.900	9	$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0008	95WHA/AND
3 635.10	27 501.72	0 h	$3s^23p^4(^3P)3d$	^4D	1/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.02	63MIN
3 635.636	27 497.67	3	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	5/2	0.006	63MIN
3 637.0303	27 487.125	19	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4F	7/2	0.0004	95WHA/AND
3 639.8324	27 465.9644	42	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.0002	95WHA/AND
3 650.8891	27 382.786	8	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.0012	95WHA/AND
3 651.184	27 380.57	0.5	$3s^23p^4(^3P)4d$	^4D	1/2	– $3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	3/2	0.006	63MIN
3 655.2775	27 349.9121	37	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2F	5/2	0.0002	95WHA/AND
3 656.0495	27 344.1376	27	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4F	5/2	0.0002	95WHA/AND
3 657.216	27 335.41	3	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.003	95WHA/AND
3 660.4362	27 311.369	28	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.0003	95WHA/AND
3 661.13	27 306.19	0.5 h	$3s^23p^4(^3P)4d$	^2F	5/2	– $3s^23p^4(^3P_1)7f$	$^2[4]^\circ$	7/2	0.02	63MIN
3 669.6020	27 243.153	26	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)5s$	^4P	1/2	0.0003	95WHA/AND
3 671.0045	27 232.745	19	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2P	1/2	0.0003	95WHA/AND
3 673.2640	27 215.994	22	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0003	95WHA/AND
3 673.842	27 211.71	0	$3s^23p^4(^1D)3d$	^2F	5/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.006	63MIN
3 678.2690	27 178.963	17	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)5s$	^4P	3/2	0.0007	95WHA/AND
3 680.0607	27 165.730	20	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.0004	95WHA/AND
3 682.5439	27 147.413	9	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.0008	95WHA/AND
3 692.126	27 076.96	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	3/2	0.006	63MIN
3 692.299	27 075.69	1 hlb?	$3s^23p^4(^3P)3d$	^4D	3/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.012	63MIN
3 694.643	27 058.51	2	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	1/2	0.006	63MIN
3 702.005	27 004.70	2	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.006	63MIN
3 703.550	26 993.44	1	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P_2)7f$	$^2[5]^\circ$	9/2	0.006	63MIN
3 706.9302	26 968.826	7	$3s^23p^4(^3P)3d$	^4D	1/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.0003	73NOR
3 709.9085	26 947.176	11	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4F	3/2	0.0006	95WHA/AND
3 713.019	26 924.60	2	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.006	63MIN
3 714.7332	26 912.178	14	$3s^23p^4(^3P)3d$	^4D	5/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0004	95WHA/AND
3 717.1721	26 894.521	6	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4F	7/2	0.0015	95WHA/AND
3 718.2061	26 887.0419	93	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2F	5/2	0.0001	95WHA/AND
3 720.4258	26 871.001	12	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	3/2	0.0011	95WHA/AND
3 724.5156	26 841.495	14	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2F	5/2	0.0005	95WHA/AND
3 729.3082	26 807.0018	234	$3s^23p^4(^3P)4s$	^4P	5/2	– $3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0001	95WHA/AND
3 733.37	26 777.8	1 hb	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	1/2	0.04	63MIN
3 735.4880	26 762.655	4	$3s^23p^4(^3P)3d$	^4D	3/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0017	95WHA/AND
3 737.8889	26 745.4646	126	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2F	7/2	0.0001	95WHA/AND
3 744.274	26 699.86	1	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.006	63MIN
3 746.4469	26 684.3716	275	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0001	95WHA/AND
3 746.9130	26 681.052	7	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4F	5/2	0.0010	95WHA/AND
3 750.4801	26 655.677	13	$3s^23p^4(^3P)3d$	^4D	1/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0005	95WHA/AND
3 751.047	26 651.65	2	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	5/2	0.006	63MIN
3 751.330	26 649.64	1	$3s^23p^4(^3P)4d$	^4D	5/2	– $3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	0.006	63MIN
3 752.856	26 638.80	0.5	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.006	63MIN
3 753.5172	26 634.109	26	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.0003	95WHA/AND
3 754.0493	26 630.334	11	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2P	1/2	0.0008	95WHA/AND
3 756.6701	26 611.756	4	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	5/2	0.0020	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
3 763.111	26 566.21	2	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4D	5/2	0.006	63MIN
3 763.5041	26 563.434	17	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	–	$3s^23p^4(^3P)4d$	^4D	5/2	0.0005	95WHA/AND
3 765.2697	26 550.9787	186	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)5s$	^4P	5/2	0.0001	95WHA/AND
3 766.1182	26 544.9966	91	$3s^23p^4(^3P)3d$	^2P	3/2	–	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
3 770.5194	26 514.012	33	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	–	$3s^23p^4(^3P)5s$	^4P	3/2	0.0004	95WHA/AND
3 774.522	26 485.90	4	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4D	7/2	0.006	63MIN
3 777.5310	26 464.800	5	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)4d$	^4P	1/2	0.0008	95WHA/AND
3 780.8394	26 441.6430	81	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	–	$3s^23p^4(^3P)4d$	^4D	7/2	0.0001	95WHA/AND
3 786.3819	26 402.939	20	$3s^23p^4(^3P)3d$	^4D	7/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0004	95WHA/AND
3 793.226	26 355.30	1	$3s^23p^4(^1D)3d$	^2F	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
3 796.5931	26 331.927	13	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2D	5/2	0.0006	95WHA/AND
3 799.3811	26 312.605	12	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	–	$3s^23p^4(^3P)4d$	^4D	3/2	0.0006	95WHA/AND
3 803.1720	26 286.3783	69	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^1D)4d$	^2D	5/2	0.0001	95WHA/AND
3 808.5745	26 249.092	14	$3s^23p^4(^3P)3d$	^4D	5/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0006	95WHA/AND
3 809.4558	26 243.0197	91	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	–	$3s^23p^4(^3P)5s$	^4P	5/2	0.0002	95WHA/AND
3 811.212	26 230.93	2	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4P	3/2	0.006	63MIN
3 817.380	26 188.54	1 h	$3s^23p^4(^1S)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.006	63MIN
3 819.0150	26 177.334	8	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2P	3/2	0.0009	95WHA/AND
3 823.254	26 148.31	3	$3s^23p^4(^1D)3d$	^2F	7/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.006	63MIN
3 825.6723	26 131.782	19	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^1D)4d$	^2P	3/2	0.0004	95WHA/AND
3 826.8067	26 124.035	30	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	–	$3s^23p^4(^3P)4d$	^4D	5/2	0.0003	95WHA/AND
3 830.165	26 101.13	1	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4F	3/2	0.006	63MIN
3 830.3951	26 099.563	6	$3s^23p^4(^3P)3d$	^4D	3/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0012	95WHA/AND
3 830.5209	26 098.705	7	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2P	1/2	0.0011	95WHA/AND
3 838.239	26 046.23	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)8d$	^4D	7/2	0.006	63MIN
3 841.5186	26 023.991	18	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4D	1/2	0.0005	95WHA/AND
3 844.5622	26 003.388	6	$3s^23p^4(^3P)4s$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.0010	95WHA/AND
3 844.7306	26 002.250	5	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	–	$3s^23p^4(^3P)4d$	^4D	7/2	0.0017	95WHA/AND
3 845.4049	25 997.6904	32	$3s^23p^4(^3P)4s$	^4P	5/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0002	95WHA/AND
3 850.5808	25 962.7452	263	$3s^23p^4(^3P)4s$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0001	95WHA/AND
3 855.1603	25 931.905	6	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4P	1/2	0.0010	95WHA/AND
3 856.1374	25 925.334	6	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	–	$3s^23p^4(^1D)3d$	^2S	1/2	0.0017	95WHA/AND
3 861.348	25 890.35	3	$3s^23p^4(^3P)3d$	^4P	3/2	–	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.006	63MIN
3 868.5281	25 842.2991	166	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4P	5/2	0.0001	95WHA/AND
3 869.614	25 835.05	2 h	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4F	5/2	0.006	63MIN
3 872.1361	25 818.220	11	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4D	3/2	0.0007	95WHA/AND
3 875.2641	25 797.3806	78	$3s^23p^4(^3P)3d$	^4D	3/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.0001	95WHA/AND
3 880.3323	25 763.687	15	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	–	$3s^23p^4(^3P)4d$	^4D	1/2	0.0005	95WHA/AND
3 883.14	25 745.06	0 h	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)6s$	^4P	3/2	0.02	63MIN
3 891.4011	25 690.406	14	$3s^23p^4(^3P)3d$	^4D	1/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.0006	95WHA/AND
3 891.9787	25 686.5930	50	$3s^23p^4(^3P)3d$	^4D	5/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0002	95WHA/AND
3 895.2506	25 665.018	5	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	–	$3s^23p^4(^1D)3d$	^2S	1/2	0.0014	95WHA/AND
3 900.6251	25 629.656	8	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4D	5/2	0.0010	95WHA/AND
3 906.95	25 588.2	0 bg?	$3s^23p^4(^3P)3d$	^4P	1/2	–	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.04	63MIN
3 911.5759	25 557.905	6	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	–	$3s^23p^4(^3P)4d$	^4D	3/2	0.0011	95WHA/AND
3 914.7674	25 537.069	25	$3s^23p^4(^3P)3d$	^4D	3/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0004	95WHA/AND
3 915.516	25 532.19	1bg	$3s^23p^4(^3P)4d$	^4F	5/2	–	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	0.012	63MIN
3 917.7669	25 517.518	5	$3s^23p^4(^3P)3d$	^4P	5/2	–	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.0013	95WHA/AND
3 922.359	25 487.64	2	$3s^23p^4(^3P)4s$	^4P	1/2	–	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.006	63MIN
3 922.528	25 486.55	1 h	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	–	$3s^23p^4(^3P)5s$	^2P	1/2	0.006	63MIN
3 923.556	25 479.87	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	–	$3s^23p^4(^3P)8d$	^4F	9/2	0.006	63MIN
3 925.7186	25 465.8328	129	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	–	$3s^23p^4(^1D)5s$	^2D	3/2	0.0001	95WHA/AND
3 926.0451	25 463.715	13	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	–	$3s^23p^4(^1D)5s$	^2D	5/2	0.0006	95WHA/AND
3 928.6227	25 447.0083	191	$3s^23p^4(^3P)4s$	^4P	1/2	–	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0001	95WHA/AND
3 931.2353	25 430.097	17	$3s^23p^4(^3P)3d$	^4D	1/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0006	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
3 932.5463	25 421.6199	91	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	3/2	0.0001	95WHA/AND
3 933.17	25 417.6	2bg	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.04	63MIN
3 935.275	25 403.99	1	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.006	63MIN
3 938.843	25 380.98	1	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4P	3/2	0.006	63MIN
3 944.2712	25 346.0523	49	$3s^23p^4(^3P)3d$	^4D	7/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.0002	95WHA/AND
3 946.0969	25 334.3260	204	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)5s$	^2D	5/2	0.0001	95WHA/AND
3 952.7280	25 291.826	16	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4F	3/2	0.0005	95WHA/AND
3 958.3790	25 255.720	7	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4D	3/2	0.0012	95WHA/AND
3 968.3589	25 192.2064	59	$3s^23p^4(^3P)3d$	^4D	5/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.0002	95WHA/AND
3 974.4764	25 153.4315	50	$3s^23p^4(^3P)4s$	^4P	3/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0002	95WHA/AND
3 974.7582	25 151.648	15	$3s^23p^4(^3P)4s$	^4P	5/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0006	95WHA/AND
3 979.3554	25 122.5919	87	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4P	1/2	0.0001	95WHA/AND
3 980.42	25 115.87	0	$3s^23p^4(^3P)4d$	^4P	3/2	– $3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	5/2	0.02	63MIN
3 988.1573	25 067.148	12	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4D	5/2	0.0006	95WHA/AND
3 992.0531	25 042.685	21	$3s^23p^4(^3P)3d$	^4D	3/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.0004	95WHA/AND
3 994.7916	25 025.5184	58	$3s^23p^4(^1S)4s$	^2S	1/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.0002	95WHA/AND
3 999.2518	24 997.6091	4	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.0003	73NOR
4 001.1378	24 985.8264	3	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0003	73NOR
4 005.3620	24 959.476	10	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^1S)5s$	^2S	1/2	0.0009	95WHA/AND
4 007.632	24 945.34	2	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^4D	7/2	0.008	63MIN
4 011.2084	24 923.098	12	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.0006	95WHA/AND
4 013.8561	24 906.6580	145	$3s^23p^4(^3P)3d$	^4D	7/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	0.0001	95WHA/AND
4 019.8434	24 869.562	7	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^1S)5s$	^2S	1/2	0.0010	95WHA/AND
4 031.3769	24 798.413	6	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4D	1/2	0.0014	95WHA/AND
4 033.8090	24 783.4616	95	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	1/2	0.0001	95WHA/AND
4 034.783	24 777.48	1 mg?	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	9/2	0.016	63MIN
4 035.4595	24 773.3258	50	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.0002	95WHA/AND
4 038.8039	24 752.812	18	$3s^23p^4(^3P)3d$	^4D	5/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	0.0005	95WHA/AND
4 042.190	24 732.08	3	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.008	63MIN
4 042.8934	24 727.7748	288	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.0001	95WHA/AND
4 045.6769	24 710.762	8	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0008	95WHA/AND
4 047.4803	24 699.752	10	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)3d$	^2S	1/2	0.0011	95WHA/AND
4 051.122	24 677.551	5	$3s^23p^4(^3P)5s$	^2P	1/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.002	95WHA/AND
4 052.9206	24 666.5975	178	$3s^23p^4(^1S)4s$	^2S	1/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
4 053.540	24 662.83	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.008	63MIN
4 057.672	24 637.71	1	$3s^23p^4(^3P)4s$	^4P	1/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.008	63MIN
4 065.1114	24 592.6269	3	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4D	3/2	0.0003	73NOR
4 070.7837	24 558.360	10	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^1S)5s$	^2S	1/2	0.0008	95WHA/AND
4 072.0043	24 550.9987	708	$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.0001	95WHA/AND
4 072.3843	24 548.7079	178	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5s$	^4P	3/2	0.0001	95WHA/AND
4 076.6282	24 523.1519	85	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)5s$	^4P	1/2	0.0002	95WHA/AND
4 076.9432	24 521.2573	47	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5s$	^2P	1/2	0.0002	95WHA/AND
4 079.5734	24 505.4481	100	$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.0001	95WHA/AND
4 080.6359	24 499.0676	85	$3s^23p^4(^1D)3d$	^2S	1/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.0001	95WHA/AND
4 080.7022	24 498.6697	40	$3s^23p^4(^1D)3d$	^2S	1/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.0003	95WHA/AND
4 082.3868	24 488.5606	76	$3s^23p^4(^3P)4s$	^4P	5/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0001	95WHA/AND
4 083.466	24 482.09	1	$3s^23p^4(^3P)4d$	^2F	5/2	– $3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	7/2	0.008	63MIN
4 097.1351	24 400.4116	28	$3s^23p^4(^3P)4d$	^4D	1/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.0003	95WHA/AND
4 097.2033	24 400.006	12	$3s^23p^4(^3P)4d$	^4D	1/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.0008	95WHA/AND
4 099.4554	24 386.601	11	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)3d$	^2S	1/2	0.0008	95WHA/AND
4 103.8323	24 360.5929	158	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.0001	95WHA/AND
4 103.9118	24 360.1209	447	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)5s$	^4P	5/2	0.0001	95WHA/AND
4 112.8151	24 307.3877	513 b	$3s^23p^4(^3P)4s$	^4P	3/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0003	95WHA/AND
4 114.487	24 297.51	2	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.008	63MIN
4 116.3756	24 286.363	8	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.0012	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
4 124.058	24 241.12	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	–	$3s^23p^4(^1S)3d$	^2D	5/2	0.008	63MIN
4 128.6399	24 214.221	18	$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.0005	95WHA/AND
4 129.6820	24 208.111	12	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)5s$	^2P	1/2	0.0007	95WHA/AND
4 131.7232	24 196.1515	891	$3s^23p^4(^1D)4s$	^2D	3/2	–	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
4 144.245	24 123.045	5	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	–	$3s^23p^4(^1S)5s$	^2S	1/2	0.003	95WHA/AND
4 147.377	24 104.83	2	$3s^23p^4(^3P)4s$	^4P	1/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.008	63MIN
4 152.909	24 072.72	0.5	$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	7/2	0.008	63MIN
4 156.0854	24 054.3211	60	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)5s$	^4P	3/2	0.0002	95WHA/AND
4 162.51	24 017.20	0	$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	0.02	63MIN
4 168.9696	23 979.983	6	$3s^23p^4(^1D)3d$	^2D	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0018	95WHA/AND
4 178.3650	23 926.063	13	$3s^23p^4(^3P)4s$	^4P	5/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0007	95WHA/AND
4 179.2972	23 920.7263	50	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	–	$3s^23p^4(^3P)5s$	^4P	5/2	0.0003	95WHA/AND
4 183.5909	23 896.176	4	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	–	$3s^23p^4(^1S)5s$	^2S	1/2	0.0004	73NOR
4 189.6507	23 861.614	16	$3s^23p^4(^1S)4s$	^2S	1/2	–	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.0006	95WHA/AND
4 199.8887	23 803.448	9	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0015	95WHA/AND
4 201.5556	23 794.005	10	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	–	$3s^23p^4(^3P)5s$	^4P	3/2	0.0008	95WHA/AND
4 201.9713	23 791.6510	59	$3s^23p^4(^3P)4s$	^4P	1/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0001	95WHA/AND
4 203.4105	23 783.505	18	$3s^23p^4(^1D)3d$	^2D	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.0006	95WHA/AND
4 209.944	23 746.60	1	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4D	3/2	0.008	63MIN
4 210.950	23 740.92	1	$3s^23p^4(^1D)3d$	^2D	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.008	63MIN
4 214.854	23 718.93	2	$3s^23p^4(^3P)4d$	^2F	7/2	–	$3s^23p^4(^3P_2)6f$	$^2[5]^\circ$	9/2	0.008	63MIN
4 217.4306	23 704.442	27	$3s^23p^4(^1S)4s$	^2S	1/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.0004	95WHA/AND
4 218.6648	23 697.5079	59	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^3P)5s$	^2P	3/2	0.0002	95WHA/AND
4 222.6369	23 675.2164	76	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)5s$	^2P	1/2	0.0001	95WHA/AND
4 226.6091	23 652.967	16	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)5s$	^2D	3/2	0.0005	95WHA/AND
4 226.9874	23 650.8501	89	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)5s$	^2D	5/2	0.0001	95WHA/AND
4 228.1577	23 644.3042	331	$3s^23p^4(^3P)4s$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0001	95WHA/AND
4 229.8688	23 634.739	26	$3s^23p^4(^1S)4s$	^2S	1/2	–	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.0004	95WHA/AND
4 237.2195	23 593.7388	269	$3s^23p^4(^1D)4s$	^2D	3/2	–	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
4 243.640	23 558.04	2	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4D	5/2	0.008	63MIN
4 255.6027	23 491.821	8	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)5s$	^4P	3/2	0.0009	95WHA/AND
4 256.663	23 485.97	1	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.008	63MIN
4 266.5265	23 431.6749	288	$3s^23p^4(^3P)4s$	^4P	5/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.0001	95WHA/AND
4 267.490	23 426.38	3	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)5s$	^4P	5/2	0.008	63MIN
4 267.730	23 425.07	3 h	$3s^23p^4(^1S)4s$	^2S	1/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.008	63MIN
4 275.1592	23 384.3609	35	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)5s$	^2P	3/2	0.0003	95WHA/AND
4 277.5279	23 371.4124	1995	$3s^23p^4(^1D)4s$	^2D	5/2	–	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
4 282.8971	23 342.1133	68	$3s^23p^4(^3P)4s$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.0001	95WHA/AND
4 286.3567	23 323.274	6	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)7d$	^4D	7/2	0.0004	73NOR
4 297.9632	23 260.291	15	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0007	95WHA/AND
4 300.449	23 246.85	2	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.008	63MIN
4 300.6493	23 245.7639	85	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.0001	95WHA/AND
4 309.0931	23 200.2136	93	$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.0001	95WHA/AND
4 309.2385	23 199.4311	120	$3s^23p^4(^1S)4s$	^2S	1/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
4 327.3364	23 102.407	3	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)4d$	^4D	1/2	0.0004	73NOR
4 329.4385	23 091.191	8	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1S)5s$	^2S	1/2	0.0011	95WHA/AND
4 331.1992	23 081.8038	603	$3s^23p^4(^3P)4s$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0001	95WHA/AND
4 332.0295	23 077.3802	162	$3s^23p^4(^3P)3d$	^4D	3/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	0.0001	95WHA/AND
4 337.0705	23 050.5574	54	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^1D)5s$	^2D	3/2	0.0002	95WHA/AND
4 338.2312	23 044.390	6	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^1D)3d$	^2S	1/2	0.0020	95WHA/AND
4 345.8968	23 003.744	9	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^1D)3d$	^2S	1/2	0.0014	95WHA/AND
4 348.0635	22 992.2808	1995	$3s^23p^4(^3P)4s$	^4P	5/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	0.0001	95WHA/AND
4 352.2047	22 970.4038	200	$3s^23p^4(^3P)3d$	^4D	1/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	0.0001	95WHA/AND
4 358.4915	22 937.271	3	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4D	3/2	0.0004	73NOR
4 362.0660	22 918.4754	78	$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.0001	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
4 367.8314	22 888.2242	129	$3s^23p^4(^1S)4s$	^2S	1/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
4 370.7529	22 872.9258	617	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.0001	95WHA/AND
4 371.3285	22 869.9138	355	$3s^23p^4(^3P)3d$	^4D	5/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.0001	95WHA/AND
4 372.4888	22 863.845	10	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5s$	^4P	5/2	0.0012	95WHA/AND
4 374.8574	22 851.467	30	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.0004	95WHA/AND
4 375.9540	22 845.7401	209	$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.0001	95WHA/AND
4 379.2128	22 828.740	11	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	3/2	0.0017	95WHA/AND
4 379.6665	22 826.3749	550	$3s^23p^4(^3P)4s$	^4P	1/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.0001	95WHA/AND
4 379.8805	22 825.2597	794	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)5s$	^2P	1/2	0.0001	95WHA/AND
4 382.930	22 809.377	5	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)7d$	^4F	9/2	0.002	95WHA/AND
4 383.7545	22 805.089	14	$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0009	95WHA/AND
4 385.0565	22 798.3182	117	$3s^23p^4(^1S)4s$	^2S	1/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0001	95WHA/AND
4 386.9656	22 788.397	5	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)7d$	^2F	7/2	0.0004	73NOR
4 394.622	22 748.70	3	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)4d$	^4D	5/2	0.008	63MIN
4 397.798	22 732.267	5	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1S)5s$	^2S	1/2	0.003	95WHA/AND
4 400.0964	22 720.3927	257	$3s^23p^4(^3P)3d$	^4D	3/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.0001	95WHA/AND
4 400.9860	22 715.8000	8710	$3s^23p^4(^3P)3d$	^4D	7/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.0001	95WHA/AND
4 401.744	22 711.89	2 b?	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	1/2	0.016	63MIN
4 404.9019	22 695.607	18	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0006	95WHA/AND
4 406.4696	22 687.532	10	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)7d$	^4F	7/2	0.0006	95WHA/AND
4 409.00	22 674.51	0.5 ?	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)7d$	^4D	7/2	0.02	63MIN
4 412.9035	22 654.455	3	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.0004	73NOR
4 420.9118	22 613.4180	47	$3s^23p^4(^3P)3d$	^4D	1/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.0003	95WHA/AND
4 426.0008	22 587.4177	1514	$3s^23p^4(^3P)4s$	^4P	3/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.0001	95WHA/AND
4 430.1885	22 566.0667	661	$3s^23p^4(^3P)4s$	^4P	1/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0001	95WHA/AND
4 430.9959	22 561.9550	251	$3s^23p^4(^3P)3d$	^4D	5/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.0001	95WHA/AND
4 433.8377	22 547.4946	120	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0001	95WHA/AND
4 438.1173	22 525.753	7	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0004	73NOR
4 438.808	22 522.25	1	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	9/2	0.008	63MIN
4 439.4611	22 518.9347	95	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)5s$	^2D	3/2	0.0001	95WHA/AND
4 439.8786	22 516.817	22	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)5s$	^2D	5/2	0.0004	95WHA/AND
4 440.1213	22 515.586	13	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5s$	^4P	3/2	0.0009	95WHA/AND
4 445.846	22 486.592	5	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.002	95WHA/AND
4 448.4587	22 473.388	14	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)5s$	^2D	3/2	0.0006	95WHA/AND
4 448.8791	22 471.2640	166	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)5s$	^2D	5/2	0.0001	95WHA/AND
4 449.521	22 468.020	7	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.003	95WHA/AND
4 456.55	22 432.59	1	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.02	63MIN
4 458.885	22 420.84	1 h	$3s^23p^4(^3P)4d$	^4P	1/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.008	63MIN
4 460.5558	22 412.441	35	$3s^23p^4(^3P)3d$	^4D	3/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.0004	95WHA/AND
4 474.7591	22 341.3025	347	$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
4 481.8104	22 306.1533	646	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.0001	95WHA/AND
4 490.9813	22 260.6033	48	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.0002	95WHA/AND
4 498.5374	22 223.213	25	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0005	95WHA/AND
4 502.9265	22 201.5523	42	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0003	95WHA/AND
4 503.08	22 200.80	1 h	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	5/2	0.02	63MIN
4 509.957	22 166.94	2	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.008	63MIN
4 516.095	22 136.82	1 hl	$3s^23p^4(^3P)5s$	^4P	5/2	– $3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.008	63MIN
4 517.5363	22 129.7531	4	$3s^23p^4(^1S)4s$	^2S	1/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.0004	73NOR
4 530.5522	22 066.1770	63	$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
4 535.4905	22 042.1514	21	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.0004	95WHA/AND
4 537.6409	22 031.706	13	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0010	95WHA/AND
4 538.7102	22 026.5155	4	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^3P)4d$	^2D	5/2	0.0004	73NOR
4 543.8702	22 001.503	10	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)5s$	^2P	3/2	0.0012	95WHA/AND
4 545.0516	21 995.7839	1738	$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
4 547.7582	21 982.693	20	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	3/2	0.0008	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment		Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
				Configuration	Term	J	Configuration	Term	J		
4 561.0124	21 918.813	7		$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^1S)3d$	^2D	5/2	0.0012	95WHA/AND
4 563.7423	21 905.702	37	b	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0006	95WHA/AND
4 564.4055	21 902.5192	42		$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	1/2	0.0004	95WHA/AND
4 572.894	21 861.86	2		$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)5s$	^4P	1/2	0.008	63MIN
4 579.3493	21 831.0460	871		$3s^23p^4(^3P)4s$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.0001	95WHA/AND
4 587.895	21 790.38	3		$3s^23p^4(^3P)4s$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.008	63MIN
4 589.8976	21 780.8756	25704		$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.0001	95WHA/AND
4 593.4476	21 764.0427	4		$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^1S)3d$	^2D	3/2	0.0004	73NOR
4 598.7625	21 738.8900	182		$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
4 600.02	21 732.95	1	h	$3s^23p^4(^1S)4s$	^2S	1/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.02	63MIN
4 609.5669	21 687.9368	2291		$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.0001	95WHA/AND
4 611.2432	21 680.053	9		$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0016	95WHA/AND
4 614.10	21 666.63	1	h	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.02	63MIN
4 637.2324	21 558.5494	148		$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.0001	95WHA/AND
4 657.9009	21 462.8893	1445		$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
4 666.260	21 424.44	1		$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^1S)3d$	^2D	5/2	0.008	63MIN
4 681.4971	21 354.7113	5		$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	5/2	0.0004	73NOR
4 682.2759	21 351.1595	21		$3s^23p^4(^3P)3d$	^2F	7/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.0004	95WHA/AND
4 703.3576	21 255.459	15		$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.0008	95WHA/AND
4 710.8230	21 221.7758	14		$3s^23p^4(^3P)3d$	^2F	7/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.0004	95WHA/AND
4 721.5913	21 173.377	32		$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	3/2	0.0005	95WHA/AND
4 726.8681	21 149.7407	23442		$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0001	95WHA/AND
4 730.672	21 132.733	7		$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)5s$	^4P	3/2	0.002	95WHA/AND
4 732.0530	21 126.5673	200		$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
4 735.9055	21 109.3816	1000		$3s^23p^4(^3P)4s$	^4P	5/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.0001	95WHA/AND
4 743.19	21 076.96	0	?	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	0.02	63MIN
4 757.2197	21 014.805	5		$3s^23p^4(^3P)5s$	^2P	1/2	– $3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.0005	73NOR
4 764.8644	20 981.0895	2344		$3s^23p^4(^3P)4s$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
4 786.150	20 887.780	6		$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.002	95WHA/AND
4 792.0818	20 861.926	17		$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1S)3d$	^2D	5/2	0.0006	95WHA/AND
4 792.59	20 859.71	0	h	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	– $3s^23p^4(^3P_2)8g$	$^2[6]$	13/2	0.02	63MIN
4 793.71	20 854.84	0	h	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	– $3s^23p^4(^3P_2)8g$	$^2[6]$	11/2	0.02	63MIN
4 806.0202	20 801.4229	1820		$3s^23p^4(^3P)4s$	^4P	5/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.0001	95WHA/AND
4 841.20	20 650.27	0.5	?	$3s^23p^4(^3P)4d$	^2P	1/2	– $3s^23p^4(^3P_2)6f$	$^2[1]^\circ$	3/2	0.02	63MIN
4 847.8095	20 622.1120	832		$3s^23p^4(^3P)4s$	^4P	3/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	0.0001	95WHA/AND
4 847.9991	20 621.305	9		$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0011	95WHA/AND
4 856.156	20 586.67	1		$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.008	63MIN
4 865.9109	20 545.3980	83		$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	5/2	0.0002	95WHA/AND
4 867.5554	20 538.457	17		$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1S)3d$	^2D	3/2	0.0006	95WHA/AND
4 877.120	20 498.18	4		$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2D	3/2	0.005	95WHA/AND
4 879.8634	20 486.6555	2239		$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0001	95WHA/AND
4 882.2424	20 476.673	21		$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.0007	95WHA/AND
4 888.2605	20 451.464	8		$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0015	95WHA/AND
4 889.0419	20 448.1950	288		$3s^23p^4(^3P)4s$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
4 904.7514	20 382.7020	107		$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.0001	95WHA/AND
4 914.3151	20 343.036	7		$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2D	5/2	0.0019	95WHA/AND
4 933.2089	20 265.1249	251		$3s^23p^4(^3P)4s$	^4P	3/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.0001	95WHA/AND
4 936.083	20 253.33	3		$3s^23p^4(^3P)3d$	^2F	5/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.008	63MIN
4 942.9210	20 225.308	19		$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1S)3d$	^2D	3/2	0.0006	95WHA/AND
4 949.3999	20 198.832	6		$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1S)3d$	^2D	5/2	0.0015	95WHA/AND
4 952.924	20 184.46	2		$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.008	63MIN
4 955.1096	20 175.558	8		$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.0017	95WHA/AND
4 959.478	20 157.79	1		$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4P	5/2	0.008	63MIN
4 965.0794	20 135.0463	891		$3s^23p^4(^3P)4s$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0001	95WHA/AND
4 972.1599	20 106.3738	100		$3s^23p^4(^3P)4s$	^4P	1/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	0.0001	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment		Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
				Configuration	Term	J	Configuration	Term	J		
4 980.025	20 074.62	0.5		$3s^23p^4(^3P)4d$	^4F	5/2	– $3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.008	63MIN
4 990.72	20 031.60	0.5	?	$3s^23p^4(^3P)5s$	^4P	3/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.02	63MIN
4 993.45	20 020.65	0.5		$3s^23p^4(^1D)3d$	^2S	1/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.02	63MIN
4 993.746	20 019.46	2		$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2D	5/2	0.008	63MIN
4 996.782	20 007.30	2		$3s^23p^4(^3P)4d$	^4F	9/2	– $3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	11/2	0.008	63MIN
5 009.3342	19 957.1661	355		$3s^23p^4(^3P)4s$	^4P	3/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.0001	95WHA/AND
5 014.92	19 934.94	1	h	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	0.02	63MIN
5 017.1626	19 926.0268	7413		$3s^23p^4(^3P)3d$	^2D	3/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.0001	95WHA/AND
5 017.6337	19 924.156	14		$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0007	95WHA/AND
5 024.778	19 895.83	1		$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^2D	3/2	0.008	63MIN
5 030.700	19 872.41	1	h	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	0.008	63MIN
5 034.40	19 857.80	0.5		$3s^23p^4(^3P)4d$	^4F	9/2	– $3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.02	63MIN
5 037.77	19 844.52	0.5	b	$3s^23p^4(^3P)4d$	^4F	9/2	– $3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.04	63MIN
5 042.416	19 826.23	1		$3s^23p^4(^3P)4d$	^4D	7/2	– $3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.008	63MIN
5 045.11	19 815.65	0.5	wb	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.04	63MIN
5 062.0370	19 749.3872	398		$3s^23p^4(^3P)4s$	^4P	1/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.0001	95WHA/AND
5 087.64	19 650.00	0.5		$3s^23p^4(^3P)4d$	^4P	3/2	– $3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.02	63MIN
5 090.4948	19 638.9819	45		$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0003	95WHA/AND
5 092.174	19 632.51	1		$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4F	5/2	0.008	63MIN
5 095.845	19 618.36	2		$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2D	5/2	0.008	63MIN
5 096.851	19 614.49	1		$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6d$	^2D	5/2	0.008	63MIN
5 100.45	19 600.65	0.5		$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)6d$	^2F	7/2	0.02	63MIN
5 121.4804	19 520.1651	5		$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	5/2	0.0005	73NOR
5 122.59	19 515.94	0.5	*	$3s^23p^4(^3P)5s$	^4P	1/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.02	63MIN
5 122.59	19 515.94	0.5	*	$3s^23p^4(^3P)4d$	^4D	3/2	– $3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.02	63MIN
5 122.972	19 514.48	2		$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	7/2	0.008	63MIN
5 125.7663	19 503.844	17		$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.0007	95WHA/AND
5 129.083	19 491.23	2		$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2P	3/2	0.008	63MIN
5 131.106	19 483.55	1		$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.008	63MIN
5 132.145	19 479.60	2		$3s^23p^4(^3P)4d$	^4F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	0.008	63MIN
5 141.7826	19 443.0912	224		$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.0001	95WHA/AND
5 145.3080	19 429.7694	162		$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.0001	95WHA/AND
5 152.8606	19 401.2915	5		$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6d$	^2P	3/2	0.0005	73NOR
5 159.505	19 376.31	1		$3s^23p^4(^3P)5s$	^2P	3/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.008	63MIN
5 160.81	19 371.41	0	bg	$3s^23p^4(^3P)4d$	^4F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.04	63MIN
5 162.7467	19 364.141	14		$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2D	3/2	0.0009	95WHA/AND
5 165.7727	19 352.7976	48		$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^1S)3d$	^2D	5/2	0.0002	95WHA/AND
5 175.426	19 316.70	2		$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2	0.008	63MIN
5 176.2290	19 313.7043	26		$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.0004	95WHA/AND
5 179.24	19 302.48	0	h	$3s^23p^4(^3P)5s$	^4P	1/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.02	63MIN
5 183.09	19 288.14	(1)	b	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.04	63MIN
5 191.3656	19 257.392	10		$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)6d$	^4P	3/2	0.0009	95WHA/AND
5 202.193	19 217.311	5		$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6d$	^2D	3/2	0.002	95WHA/AND
5 204.4432	19 209.0026	7		$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2D	5/2	0.0005	73NOR
5 215.11	19 169.71	0.5		$3s^23p^4(^3P)4s$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.02	63MIN
5 216.8140	19 163.4522	28		$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^2D	5/2	0.0005	95WHA/AND
5 219.589	19 153.26	1		$3s^23p^4(^3P)4d$	^4D	1/2	– $3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.008	63MIN
5 221.864	19 144.920	6		$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.002	95WHA/AND
5 230.5008	19 113.307	6		$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2D	5/2	0.0019	95WHA/AND
5 230.75	19 112.40	0.5		$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	0.02	63MIN
5 236.03	19 093.12	1		$3s^23p^4(^3P)5s$	^2P	1/2	– $3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.02	63MIN
5 236.231	19 092.39	2	b	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4P	5/2	0.016	63MIN
5 236.853	19 090.12	1		$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2P	3/2	0.008	63MIN
5 237.92	19 086.23	0		$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6d$	^2P	3/2	0.02	63MIN
5 241.786	19 072.16	2		$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6d$	^4F	3/2	0.008	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
5 245.09	19 060.14	1	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	– $3s^23p^4(^3P_2)7g$	$^2[4]$	9/2	0.02	63MIN
5 245.3778	19 059.099	7	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	– $3s^23p^4(^3P_2)7g$	$^2[5]$	11/2	0.0016	95WHA/AND
5 247.469	19 051.50	1	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	– $3s^23p^4(^3P_2)7g$	$^2[3]$	7/2	0.008	63MIN
5 247.986	19 049.63	3	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	0.008	63MIN
5 249.5457	19 043.967	11	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)6d$	^4P	1/2	0.0009	95WHA/AND
5 250.57	19 040.25	0	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)6d$	^4P	3/2	0.02	63MIN
5 251.1051	19 038.3114	12	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	– $3s^23p^4(^3P_2)7g$	$^2[4]$	9/2	0.0005	95WHA/AND
5 251.4029	19 037.232	11	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	– $3s^23p^4(^3P_2)7g$	$^2[5]$	9/2	0.0011	95WHA/AND
5 252.138	19 034.57	1	$3s^23p^4(^3P)4d$	^2F	5/2	– $3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.008	63MIN
5 255.39	19 022.79	0.5	$3s^23p^4(^3P)4d$	^4P	1/2	– $3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.02	63MIN
5 255.677	19 021.75	1 *	$3s^23p^4(^3P)4d$	^4D	3/2	– $3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.008	63MIN
5 255.677	19 021.75	1 *	$3s^23p^4(^1D)4d$	^2D	3/2	– $3s^23p^4(^1D_2)5f$	$^2[2]^\circ$	3/2	0.008	63MIN
5 255.677	19 021.75	1 *	$3s^23p^4(^1D)4d$	^2F	7/2	– $3s^23p^4(^1D_2)5f$	$^2[3]^\circ$	7/2	0.008	63MIN
5 256.5648	19 018.537	8	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)6d$	^4F	5/2	0.0010	95WHA/AND
5 258.223	19 012.54	1	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_2)7g$	$^2[3]$	5/2	0.008	63MIN
5 259.174	19 009.10	1	$3s^23p^4(^3P)4d$	^4P	1/2	– $3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	1/2	0.008	63MIN
5 261.8987	18 999.259	7	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_2)7g$	$^2[4]$	7/2	0.0006	73NOR
5 264.305	18 990.57	1	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^3P_2)7g$	$^2[3]$	7/2	0.008	63MIN
5 264.7819	18 988.854	17	$3s^23p^4(^3P)4d$	^2P	1/2	– $3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.0007	95WHA/AND
5 267.1634	18 980.269	14	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)6d$	^4D	5/2	0.0008	95WHA/AND
5 267.958	18 977.41	3	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^3P_2)7g$	$^2[4]$	9/2	0.008	63MIN
5 268.246	18 976.37	3	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^3P_2)7g$	$^2[5]$	9/2	0.008	63MIN
5 269.761	18 970.914	4	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4D	3/2	0.003	95WHA/AND
5 273.580	18 957.17	1	$3s^23p^4(^3P)4d$	^2D	3/2	– $3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	0.008	63MIN
5 273.85	18 956.20	0.5	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2D	5/2	0.02	63MIN
5 281.6295	18 928.2835	21	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)6d$	^4D	7/2	0.0005	95WHA/AND
5 283.437	18 921.81	1 b	$3s^23p^4(^3P)4d$	^4F	5/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.016	63MIN
5 285.438	18 914.64	2	$3s^23p^4(^1D)3d$	^2S	1/2	– $3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.008	63MIN
5 286.8866	18 909.462	18	$3s^23p^4(^3P)4s$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0008	95WHA/AND
5 288.634	18 903.21	1	$3s^23p^4(^3P)4d$	^4F	5/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.008	63MIN
5 290.0551	18 898.136	9	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	– $3s^23p^4(^3P_1)7g$	$^2[3]$	5/2	0.0013	95WHA/AND
5 290.99	18 894.80	0.5 a	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	– $3s^23p^4(^3P_2)7g$	$^2[2]$	3/2	0.02	63MIN
5 291.97	18 891.30	0.5	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.02	63MIN
5 293.8157	18 884.712	6	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	– $3s^23p^4(^3P_1)7g$	$^2[3]$	7/2	0.0018	95WHA/AND
5 295.892	18 877.31	3	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	– $3s^23p^4(^3P_2)7g$	$^2[3]$	5/2	0.008	63MIN
5 296.3883	18 875.539	7	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	– $3s^23p^4(^3P_1)7g$	$^2[5]$	11/2	0.0018	95WHA/AND
5 296.791	18 874.10	3	$3s^23p^4(^3P)4d$	^2D	3/2	– $3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	5/2	0.02	63MIN
5 298.001	18 869.79	2	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2F	5/2	0.014	95WHA/AND
5 299.0805	18 865.949	5	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6d$	^2F	5/2	0.0006	73NOR
5 299.48	18 864.53	0	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)6d$	^2P	3/2	0.02	63MIN
5 300.7745	18 859.920	8	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	– $3s^23p^4(^3P_1)7g$	$^2[5]$	9/2	0.0011	95WHA/AND
5 302.56	18 853.57	0	$3s^23p^4(^3P)4d$	^4F	3/2	– $3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.02	63MIN
5 305.6856	18 842.463	15 *	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	– $3s^23p^4(^3P_2)7g$	$^2[3]$	7/2	0.0009	95WHA/AND
5 305.6856	18 842.463	15 *	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	– $3s^23p^4(^1S)3d$	^2D	3/2	0.0009	95WHA/AND
5 308.074	18 833.99	5	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.008	63MIN
5 311.9816	18 820.131	5	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^3P_0)7g$	$^2[4]$	9/2	0.0020	95WHA/AND
5 312.078	18 819.788	5	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^3P_0)7g$	$^2[4]$	7/2	0.003	95WHA/AND
5 314.258	18 812.07	2	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.008	63MIN
5 315.215	18 808.68	4 b	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_0)7g$	$^2[4]$	7/2	0.008	95WHA/AND
5 316.11	18 805.52	0 *	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^3P)7p$	°	3/2	0.02	63MIN
5 316.11	18 805.52	0 *	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^3P)7p$	°	5/2	0.02	63MIN
5 328.758	18 760.88	1 b	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4F	3/2	0.016	63MIN
5 329.6992	18 757.567	10	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	– $3s^23p^4(^3P_2)7g$	$^2[6]$	13/2	0.0010	95WHA/AND
5 330.664	18 754.17	(3) m	$3s^23p^4(^3P)4d$	^4D	7/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	0.008	63MIN
5 331.042	18 752.844	6	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	– $3s^23p^4(^3P_2)7g$	$^2[6]$	11/2	0.002	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
5 332.70	18 747.01	0	$3s^23p^4(^3P)4d$	^4D	5/2	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.02	63MIN
5 335.12	18 738.51	0.5	$3s^23p^4(^3P)4d$	^4F	3/2	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.02	63MIN
5 335.916	18 735.71	1	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	$3s^23p^4(^3P_2)7g$	$^2[5]$	11/2	0.008	63MIN
5 337.250	18 731.03	1	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	$3s^23p^4(^3P_2)7g$	$^2[5]$	9/2	0.008	63MIN
5 338.106	18 728.03	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	$3s^23p^4(^3P)6d$	^4F	7/2	0.008	63MIN
5 339.33	18 723.73	1	$3s^23p^4(^3P)4d$	^4P	3/2	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.02	63MIN
5 343.26	18 709.96	0 ?	$3s^23p^4(^3P)4d$	^4P	3/2	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	1/2	0.02	63MIN
5 344.5228	18 705.542	7	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	$3s^23p^4(^3P)6d$	^4D	5/2	0.0018	95WHA/AND
5 345.609	18 701.74	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	$3s^23p^4(^1D)3d$	^2P	3/2	0.008	63MIN
5 348.2636	18 692.458	13	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P_1)7g$	$^2[4]$	9/2	0.0010	95WHA/AND
5 348.604	18 691.27	2	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)6d$	^4P	5/2	0.008	63MIN
5 349.717	18 687.38	2	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)6d$	^4P	5/2	0.008	63MIN
5 351.449	18 681.33	4 1	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_1)7g$	$^2[4]$	7/2	0.008	63MIN
5 354.82	18 669.57	1	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P_1)7g$	$^2[3]$	7/2	0.02	63MIN
5 357.81	18 659.15	1 *	$3s^23p^4(^3P)4d$	^2P	3/2	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.02	63MIN
5 357.81	18 659.15	1 *	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_1)7g$	$^2[3]$	7/2	0.02	63MIN
5 357.81	18 659.15	1 *	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_1)7g$	$^2[3]$	5/2	0.02	63MIN
5 358.3797	18 657.169	14	$3s^23p^4(^3P)4d$	^2P	1/2	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.0009	95WHA/AND
5 358.616	18 656.35	2	$3s^23p^4(^3P)4d$	^2F	5/2	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.008	63MIN
5 359.0657	18 654.781	6	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	$3s^23p^4(^3P)6d$	^2P	3/2	0.0006	73NOR
5 364.142	18 637.13	1	$3s^23p^4(^3P)4d$	^4F	3/2	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.008	63MIN
5 365.485	18 632.46	1	$3s^23p^4(^3P)4d$	^4D	5/2	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	0.008	63MIN
5 372.007	18 609.84	2	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	$3s^23p^4(^3P_2)7g$	$^2[2]$	3/2	0.008	63MIN
5 372.33	18 608.72	0	$3s^23p^4(^3P)4d$	^4P	3/2	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.02	63MIN
5 376.6347	18 593.824	12	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	$3s^23p^4(^3P_2)7g$	$^2[2]$	5/2	0.0009	95WHA/AND
5 378.077	18 588.838	7	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)6d$	^4P	3/2	0.002	95WHA/AND
5 378.94	18 585.86	0	$3s^23p^4(^3P)4d$	^4P	3/2	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.02	63MIN
5 379.1666	18 585.073	2	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)6d$	^2P	3/2	0.0006	73NOR
5 382.330	18 574.15	2	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	$3s^23p^4(^3P)6d$	^4D	3/2	0.008	63MIN
5 384.3742	18 567.098	8	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)6d$	^4F	5/2	0.0013	95WHA/AND
5 386.519	18 559.70	2	$3s^23p^4(^3P)4d$	^2F	5/2	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.008	63MIN
5 391.22	18 543.52	0	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	$3s^23p^4(^1S)3d$	^2D	5/2	0.02	63MIN
5 393.6015	18 535.334	8	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	$3s^23p^4(^3P)6d$	^4F	3/2	0.0013	95WHA/AND
5 394.81	18 531.18	1	$3s^23p^4(^3P)4d$	^2F	5/2	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.02	63MIN
5 397.5164	18 521.8900	35	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	$3s^23p^4(^3P)6d$	^4F	9/2	0.0003	95WHA/AND
5 400.62	18 511.25	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	$3s^23p^4(^3P)7s$	^4P	3/2	0.02	63MIN
5 402.170	18 505.93	1	$3s^23p^4(^3P)5s$	^2P	1/2	$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.008	63MIN
5 402.6051	18 504.444	15	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)6d$	^2F	7/2	0.0007	95WHA/AND
5 407.3448	18 488.2250	24	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	$3s^23p^4(^3P)6d$	^4F	7/2	0.0004	95WHA/AND
5 409.401	18 481.20	1	$3s^23p^4(^3P)4d$	^4D	3/2	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.008	63MIN
5 411.646	18 473.53	3	$3s^23p^4(^3P)4d$	^4D	7/2	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	0.008	63MIN
5 412.4465	18 470.798	6	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	$3s^23p^4(^3P)6d$	^2D	3/2	0.0006	73NOR
5 416.710	18 456.26	1	$3s^23p^4(^3P)4d$	^4D	5/2	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.008	63MIN
5 425.03	18 427.96	0	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	$3s^23p^4(^3P)6d$	^2P	3/2	0.02	63MIN
5 432.94	18 401.13	1	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)6d$	^2D	3/2	0.02	63MIN
5 439.676	18 378.34	3	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)4d$	^2P	3/2	0.008	63MIN
5 440.524	18 375.48	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)6d$	^4P	1/2	0.008	63MIN
5 440.932	18 374.10	2	$3s^23p^4(^1D)3d$	^2S	1/2	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.008	63MIN
5 443.6893	18 364.791	7	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)6d$	^2F	5/2	0.0016	95WHA/AND
5 447.556	18 351.76	2	$3s^23p^4(^3P)4d$	^4D	5/2	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	0.008	63MIN
5 451.11	18 339.79	0.5	$3s^23p^4(^1D)3d$	^2D	3/2	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.02	63MIN
5 453.634	18 331.30	5 *	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	$3s^23p^4(^3P)6d$	^4D	5/2	0.008	63MIN
5 453.634	18 331.30	5 *	$3s^23p^4(^3P)4d$	^2P	3/2	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.008	63MIN
5 454.3052	18 329.047	11 *	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	$3s^23p^4(^3P)7s$	^4P	5/2	0.0013	95WHA/AND
5 454.3052	18 329.047	11 *	$3s^23p^4(^3P)4d$	^2P	3/2	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.0013	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
5 454.757	18 327.53	1	$3s^23p^4(^1D)3d$	^2S	1/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.008	63MIN
5 456.382	18 322.07	5	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^3P_2)7p$	$^2[2]^\circ$	5/2	0.008	63MIN
5 466.4338	18 288.380	6	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	0.0006	73NOR
5 469.098	18 279.473	4	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)6d$	^4D	7/2	0.003	95WHA/AND
5 470.307	18 275.43	2	$3s^23p^4(^3P)4d$	^4D	1/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.008	63MIN
5 472.642	18 267.63	1	$3s^23p^4(^3P)4d$	^4D	3/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.008	63MIN
5 476.12	18 256.03	0	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4F	3/2	0.02	63MIN
5 481.997	18 236.46	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.008	63MIN
5 484.311	18 228.77	1	$3s^23p^4(^3P)4d$	^4D	1/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.008	63MIN
5 486.102	18 222.82	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.008	63MIN
5 490.667	18 207.66	1	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2F	5/2	0.008	63MIN
5 497.123	18 186.28	3	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4P	5/2	0.008	63MIN
5 498.1838	18 182.772	8	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.0019	95WHA/AND
5 498.972	18 180.17	2 b	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.016	63MIN
5 500.3323	18 175.670	10	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.0014	95WHA/AND
5 501.480	18 171.88	2 1	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.008	63MIN
5 503.256	18 166.01	3	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4F	5/2	0.008	63MIN
5 504.13	18 163.13	0	$3s^23p^4(^3P)4d$	^4D	3/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	0.008	63MIN
5 504.45	18 162.07	0	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6d$	^4F	5/2	0.008	63MIN
5 504.917	18 160.53	3	$3s^23p^4(^1D)3d$	^2S	1/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.008	63MIN
5 507.762	18 151.152	6	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2D	5/2	0.002	95WHA/AND
5 513.303	18 132.91	1	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.008	63MIN
5 516.668	18 121.85	2	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.008	63MIN
5 519.337	18 113.09	4	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.008	63MIN
5 521.74	18 105.20	1	$3s^23p^4(^3P)4d$	^4P	5/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.008	63MIN
5 523.690	18 098.81	2	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4F	3/2	0.008	63MIN
5 525.856	18 091.72	2	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)6d$	^4D	5/2	0.008	63MIN
5 534.96	18 061.96	0 h	$3s^23p^4(^3P)4d$	^4D	1/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.008	63MIN
5 535.51	18 060.17	1 h	$3s^23p^4(^3P)4d$	^4P	5/2	– $3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.008	63MIN
5 537.290	18 054.36	5	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	5/2	0.008	63MIN
5 543.880	18 032.90	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)7s$	^2P	1/2	0.008	63MIN
5 545.0492	18 029.098	7	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4P	5/2	0.0019	95WHA/AND
5 554.0227	17 999.9689	29	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.0005	95WHA/AND
5 554.146	17 999.570	9	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.002	95WHA/AND
5 563.196	17 970.29	2	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	0.008	63MIN
5 577.6857	17 923.606	9	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.0013	95WHA/AND
5 578.521	17 920.923	4	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	0.004	95WHA/AND
5 582.61	17 907.80	1	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	0.02	63MIN
5 588.10	17 890.20	0.5	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	0.008	63MIN
5 592.200	17 877.09	1	$3s^23p^4(^3P)4d$	^4F	7/2	– $3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.008	63MIN
5 593.52	17 872.87	1	$3s^23p^4(^3P)4d$	^2D	3/2	– $3s^23p^4(^3P_2)6f$	$^2[1]^\circ$	3/2	0.02	63MIN
5 602.62	17 843.84	0.5	$3s^23p^4(^3P)4d$	^4F	5/2	– $3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.02	63MIN
5 603.9355	17 839.6496	3	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.0006	73NOR
5 609.5799	17 821.6994	5	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.0006	73NOR
5 611.667	17 815.07	2	$3s^23p^4(^3P)4d$	^2D	3/2	– $3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	0.008	63MIN
5 617.26	17 797.33	0	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	– $3s^23p^4(^3P_2)7g$	$^2[3]$	5/2	0.008	63MIN
5 621.51	17 783.88	0 *	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	– $3s^23p^4(^3P_2)7g$	$^2[3]$	5/2	0.008	63MIN
5 621.51	17 783.88	0 *	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	– $3s^23p^4(^3P_2)7g$	$^2[3]$	7/2	0.008	63MIN
5 624.005	17 775.99	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^2P	3/2	0.008	63MIN
5 625.6764	17 770.707	10	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0013	95WHA/AND
5 631.1568	17 753.413	8	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)7s$	^2P	1/2	0.0011	95WHA/AND
5 631.381	17 752.71	1	$3s^23p^4(^3P)4d$	^2D	3/2	– $3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	0.008	63MIN
5 634.661	17 742.37	2	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.008	63MIN
5 635.8812	17 738.5305	13	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.0006	95WHA/AND
5 642.413	17 718.00	2	$3s^23p^4(^3P)3d$	^4F	3/2	– $3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.008	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
5 653.68	17 682.69	0	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4P	3/2	0.008	63MIN
5 654.020	17 681.62	2	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.008	63MIN
5 654.4555	17 680.262	8	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)7s$	^4P	5/2	0.0014	95WHA/AND
5 655.236	17 677.82	2	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.008	63MIN
5 667.29	17 640.22	0	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4D	5/2	0.008	63MIN
5 669.96	17 631.92	0	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6d$	^4F	7/2	0.008	63MIN
5 672.9766	17 622.540	6	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.0019	95WHA/AND
5 681.480	17 596.16	2 *	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)7s$	^2P	1/2	0.008	63MIN
5 681.480	17 596.16	2 *	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.008	63MIN
5 691.6630	17 564.684	11	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0016	95WHA/AND
5 693.30	17 559.63	0	$3s^23p^4(^3P)4d$	^4P	1/2	– $3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.008	63MIN
5 704.3766	17 525.537	5	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4P	3/2	0.0007	73NOR
5 707.215	17 516.82	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.008	63MIN
5 708.616	17 512.52	1	$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.008	63MIN
5 711.453	17 503.82	1	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4F	5/2	0.008	63MIN
5 716.029	17 489.81	1	$3s^23p^4(^3P)4d$	^2F	5/2	– $3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.008	63MIN
5 724.325	17 464.46	5	$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	0.008	63MIN
5 732.210	17 440.44	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)7s$	^4P	5/2	0.008	63MIN
5 732.694	17 438.97	1	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6d$	^2D	3/2	0.008	63MIN
5 743.2756	17 406.838	4	$3s^23p^4(^3P)4d$	^2F	5/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.0007	73NOR
5 749.39	17 388.33	0	$3s^23p^4(^3P)4d$	^2F	5/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.008	63MIN
5 753.54	17 375.78	1	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	– $3s^23p^4(^3P_0)6g$	$^2[4]$	9/2	0.008	63MIN
5 756.600	17 366.55	3	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.008	63MIN
5 766.542	17 336.61	2 *	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_0)6g$	$^2[4]$	7/2	0.008	63MIN
5 766.542	17 336.61	2 *	$3s^23p^4(^3P)4d$	^4F	9/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	0.008	63MIN
5 772.3230	17 319.245	9	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.0019	95WHA/AND
5 773.18	17 316.67	0 h	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.008	63MIN
5 774.697	17 312.12	1	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4P	1/2	0.008	63MIN
5 776.374	17 307.10	2	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.008	63MIN
5 781.268	17 292.45	2	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	– $3s^23p^4(^1D)3d$	^2D	5/2	0.008	63MIN
5 782.35	17 289.21	0.5	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	– $3s^23p^4(^3P)7d$	^4D	7/2	0.02	63MIN
5 786.561	17 276.63	4 b	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.008	95WHA/AND
5 788.58	17 270.60	0	$3s^23p^4(^3P)4d$	^4F	5/2	– $3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.02	63MIN
5 799.7401	17 237.372	3	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.0007	73NOR
5 800.46	17 235.23	1	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6d$	^4D	5/2	0.02	63MIN
5 807.596	17 214.06	1	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	– $3s^23p^4(^3P)7d$	^4F	7/2	0.008	63MIN
5 812.7604	17 198.762	9	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)4d$	^2P	3/2	0.0013	95WHA/AND
5 813.56	17 196.40	0.5	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	– $3s^23p^4(^3P)7d$	^2F	7/2	0.02	63MIN
5 816.272	17 188.38	2	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)4d$	^2F	5/2	0.008	63MIN
5 822.1291	17 171.087	5	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.0007	73NOR
5 826.0549	17 159.516	3	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.0007	73NOR
5 828.059	17 153.62	3	$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.008	63MIN
5 835.47	17 131.83	0	$3s^23p^4(^3P)3d$	^4F	5/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.02	63MIN
5 838.96	17 121.59	1	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	– $3s^23p^4(^1D)3d$	^2D	3/2	0.02	63MIN
5 840.048	17 118.40	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^2P	1/2	0.008	63MIN
5 843.781	17 107.47	7	$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.008	63MIN
5 846.11	17 100.65	0.5 a	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	– $3s^23p^4(^3P)7d$	^4F	9/2	0.02	63MIN
5 852.74	17 081.28	0	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.02	63MIN
5 853.10	17 080.23	2	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.02	63MIN
5 854.2728	17 076.807	4	$3s^23p^4(^3P)4d$	^4F	5/2	– $3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.0007	73NOR
5 866.598	17 040.93	2	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.008	63MIN
5 870.443	17 029.77	4	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.008	63MIN
5 884.54	16 988.97	0.5	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	5/2	0.02	63MIN
5 886.088	16 984.51	3	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	– $3s^23p^4(^1D)3d$	^2D	5/2	0.008	63MIN
5 894.16	16 961.25	0 h *	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	– $3s^23p^4(^3P)7d$	^4D	7/2	0.02	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
5 894.16	16 961.25	0 h *	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	– $3s^23p^4(^3P_1)6g$	$^2[4]$	9/2	0.02	63MIN
5 901.78	16 939.35	0	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	– $3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	0.02	63MIN
5 901.78	16 939.35	0	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	– $3s^23p^4(^3P_1)6g$	$^2[4]$	9/2	0.02	63MIN
5 904.291	16 932.14	2 ag?	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	– $3s^23p^4(^3P_1)6g$	$^2[5]$	11/2	0.02	63MIN
5 908.674	16 919.58	0.5	$3s^23p^4(^3P)4d$	^4F	7/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.008	63MIN
5 915.49	16 900.09	0	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	0.02	63MIN
5 923.08	16 878.43	0 *	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	0.02	63MIN
5 923.08	16 878.43	0 *	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^3P_1)6g$	$^2[4]$	9/2	0.02	63MIN
5 926.77	16 867.92	0.5	$3s^23p^4(^3P)3d$	^4F	3/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.02	63MIN
5 935.792	16 842.29	2	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4D	3/2	0.008	63MIN
5 936.309	16 840.82	1	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P)7p$	$^\circ$	5/2	0.008	63MIN
5 936.64	16 839.88	1	$3s^23p^4(^3P)4d$	^4P	5/2	– $3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.02	63MIN
5 941.825	16 825.18	4	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.008	63MIN
5 950.905	16 799.51	6	$3s^23p^4(^3P)4s$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.008	63MIN
5 953.8303	16 791.2586	5	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^2P	1/2	0.0007	73NOR
5 961.37	16 770.02	0	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.02	63MIN
5 962.744	16 766.16	0.5	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.008	63MIN
5 965.031	16 759.73	3	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.008	63MIN
5 973.314	16 736.49	2	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^1D)3d$	^2P	3/2	0.008	63MIN
5 975.9622	16 729.0729	5	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	– $3s^23p^4(^3P_1)6g$	$^2[3]$	5/2	0.0007	73NOR
5 977.995	16 723.38	4	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.008	63MIN
5 984.454	16 705.33	3	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.008	63MIN
5 985.912	16 701.26	1	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.014	95WHA/AND
5 988.288	16 694.64	3 ?a *	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.008	63MIN
5 988.288	16 694.64	3 ?a *	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	– $3s^23p^4(^3P_1)6g$	$^2[3]$	7/2	0.008	63MIN
5 989.339	16 691.71	8	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.008	63MIN
5 991.46	16 685.80	0.5	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.02	63MIN
6 003.170	16 653.25	1	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	– $3s^23p^4(^1D)3d$	^2P	1/2	0.008	63MIN
6 019.493	16 608.10	4	$3s^23p^4(^1D)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.008	63MIN
6 027.2513	16 586.7176	7	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)4d$	^2P	1/2	0.0007	73NOR
6 028.220	16 584.05	1	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)7s$	^4P	5/2	0.008	63MIN
6 030.844	16 576.84	1 l	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)6d$	^4D	5/2	0.008	63MIN
6 044.468	16 539.47	7	$3s^23p^4(^3P)4d$	^2D	3/2	– $3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.008	63MIN
6 046.8977	16 532.8277	10	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.0007	73NOR
6 049.0750	16 526.8770	7	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.0007	73NOR
6 050.01	16 524.32	0.5 h?	$3s^23p^4(^3P)4d$	^2F	5/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.02	63MIN
6 050.01	16 524.32	0.5 h *	$3s^23p^4(^3P)4d$	^4F	7/2	– $3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	0.02	63MIN
6 069.96	16 470.01	0	$3s^23p^4(^3P)4d$	^4F	5/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.02	63MIN
6 077.431	16 449.77	6	$3s^23p^4(^3P)4s$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	0.008	63MIN
6 083.875	16 432.34	2	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^2P	1/2	0.008	63MIN
6 084.507	16 430.64	2	$3s^23p^4(^1D)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.008	63MIN
6 101.9192	16 383.7512	4	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0007	73NOR
6 102.765	16 381.48	1	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	0.008	63MIN
6 103.5397	16 379.4013	26	$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.0005	95WHA/AND
6 108.32	16 366.58	0 ?	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.02	63MIN
6 109.15	16 364.36	2 ag	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.02	63MIN
6 111.742	16 357.42	2	$3s^23p^4(^3P)4d$	^2D	5/2	– $3s^23p^4(^3P_2)7p$	$^2[2]^\circ$	5/2	0.008	63MIN
6 114.9232	16 348.9099	537	$3s^23p^4(^1D)3d$	^2G	9/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.0001	95WHA/AND
6 118.724	16 338.75	4	$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.008	63MIN
6 120.0936	16 335.0979	6	$3s^23p^4(^3P)3d$	^4F	3/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.0007	73NOR
6 123.3609	16 326.3819	20	$3s^23p^4(^1D)3d$	^2G	7/2	– $3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.0006	95WHA/AND
6 124.571	16 323.16	3	$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.008	63MIN
6 134.83	16 295.86	0 h?	$3s^23p^4(^3P)4d$	^4P	1/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.02	63MIN
6 138.6551	16 285.7057	28	$3s^23p^4(^3P)3d$	^4F	5/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0005	95WHA/AND
6 142.615	16 275.21	2	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.008	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
6 146.46	16 265.03	0	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	–	$3s^23p^4(^3P)7s$	^4P	3/2	0.02	63MIN
6 166.7835	16 211.423	4	$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.0008	73NOR
6 167.6273	16 209.205	4	$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.0008	73NOR
6 172.2775	16 196.9930	407	$3s^23p^4(^1D)3d$	^2G	7/2	–	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.0001	95WHA/AND
6 174.378	16 191.48	3	$3s^23p^4(^1D)3d$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.008	63MIN
6 183.024	16 168.84	2	$3s^23p^4(^3P)4d$	^2P	1/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.008	63MIN
6 187.1350	16 158.099	9	$3s^23p^4(^1S)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0008	73NOR
6 192.301	16 144.62	2	$3s^23p^4(^1S)3d$	^2D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.008	63MIN
6 201.1002	16 121.710	9	$3s^23p^4(^1D)3d$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.0008	73NOR
6 206.463	16 107.78	1	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)7s$	^4P	3/2	0.008	63MIN
6 208.935	16 101.37	2	$3s^23p^4(^1D)3d$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.008	63MIN
6 210.420	16 097.52	1	$3s^23p^4(^1D)3d$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.008	63MIN
6 232.892	16 039.48	2	$3s^23p^4(^3P)4d$	^2P	3/2	–	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.008	63MIN
6 234.57	16 035.16	1 a	$3s^23p^4(^3P)4d$	^2D	5/2	–	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.02	63MIN
6 239.7120	16 021.949	8	$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0008	73NOR
6 243.1199	16 013.2029	89	$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0001	95WHA/AND
6 249.975	15 995.64	1	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)7s$	^4P	1/2	0.008	63MIN
6 273.15	15 936.55	0 h	$3s^23p^4(^1D)3d$	^2D	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.02	63MIN
6 277.425	15 925.69	2	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)7s$	^4P	5/2	0.008	63MIN
6 281.12	15 916.33	0	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)7s$	^2P	3/2	0.02	63MIN
6 282.823	15 912.01	1	$3s^23p^4(^1D)3d$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.008	63MIN
6 294.50	15 882.49	0.5	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P_0)6g$	$^2[4]$	7/2	0.02	63MIN
6 295.446	15 880.11	2	$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.008	63MIN
6 315.40	15 829.93	1	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	0.02	63MIN
6 323.735	15 809.07	3	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_2)6g$	$^2[4]$	9/2	0.008	63MIN
6 324.16	15 808.01	1 a *	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	0.02	63MIN
6 324.16	15 808.01	1 a *	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	5/2	0.02	63MIN
6 324.4151	15 807.368	12	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_2)6g$	$^2[5]$	11/2	0.0012	95WHA/AND
6 326.117	15 803.115	2 *	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	11/2	–	$3s^23p^4(^1D_2)6g$	$^2[6]$	13/2	0.008	63MIN
6 326.117	15 803.115	2 *	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	9/2	–	$3s^23p^4(^1D_2)6g$	$^2[6]$	11/2	0.008	63MIN
6 328.474	15 797.229	1	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P_2)6g$	$^2[2]$	3/2	0.008	63MIN
6 332.499	15 787.189	5	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_2)6g$	$^2[4]$	9/2	0.008	63MIN
6 332.832	15 786.359	1	$3s^23p^4(^1D)3d$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.008	63MIN
6 333.147	15 785.573	6	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_2)6g$	$^2[5]$	9/2	0.002	95WHA/AND
6 337.13	15 775.65	0	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_2)6g$	$^2[2]$	5/2	0.02	63MIN
6 339.897	15 768.767	3	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	5/2	0.008	63MIN
6 348.2272	15 748.075	7	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P_2)6g$	$^2[4]$	7/2	0.0019	95WHA/AND
6 348.601	15 747.148	2	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	0.008	63MIN
6 357.025	15 726.281	7	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_2)6g$	$^2[4]$	9/2	0.003	95WHA/AND
6 357.6776	15 724.6665	8	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_2)6g$	$^2[5]$	9/2	0.0008	73NOR
6 365.440	15 705.491	1	$3s^23p^4(^1S)3d$	^2D	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.008	63MIN
6 369.128	15 696.397	2	$3s^23p^4(^1D)3d$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.008	63MIN
6 373.19	15 686.39	0	$3s^23p^4(^1D)3d$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.02	63MIN
6 375.945	15 679.615	3	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^1D)3d$	^2P	3/2	0.008	63MIN
6 382.696	15 663.031	3	$3s^23p^4(^3P)4d$	^2P	3/2	–	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.008	63MIN
6 383.0967	15 662.0474	5	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	–	$3s^23p^4(^3P_2)6g$	$^2[2]$	3/2	0.0008	73NOR
6 388.341	15 649.191	5	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	–	$3s^23p^4(^3P_1)6g$	$^2[3]$	5/2	0.003	95WHA/AND
6 391.117	15 642.393	2	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	3/2	–	$3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	0.008	63MIN
6 393.802	15 635.824	7 b	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	–	$3s^23p^4(^3P_1)6g$	$^2[3]$	7/2	0.006	95WHA/AND
6 394.729	15 633.557	7	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	5/2	0.003	95WHA/AND
6 396.6084	15 628.964	11	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_1)6g$	$^2[5]$	11/2	0.0016	95WHA/AND
6 397.184	15 627.558	2	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	–	$3s^23p^4(^3P_2)6g$	$^2[2]$	5/2	0.008	63MIN
6 399.2085	15 622.6140	18	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0008	95WHA/AND
6 403.0123	15 613.333	11	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_1)6g$	$^2[5]$	9/2	0.0015	95WHA/AND
6 408.909	15 598.969	7	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	0.004	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment		Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
				Configuration	Term	J	Configuration	Term	J		
6 417.417	15 578.288	1		$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	– $3s^23p^4(^3P_2)6g$	$^2[4]$	7/2	0.008	63MIN
6 418.3696	15 575.975	10		$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^3P_0)6g$	$^2[4]$	9/2	0.0019	95WHA/AND
6 422.894	15 565.003	7		$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_0)6g$	$^2[4]$	7/2	0.003	95WHA/AND
6 424.144	15 561.975	1		$3s^23p^4(^3P)4d$	^2F	5/2	– $3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.008	63MIN
6 431.556	15 544.041	6		$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^3P)4d$	^4F	5/2	0.002	95WHA/AND
6 433.683	15 538.902	1		$3s^23p^4(^3P)4d$	^4P	5/2	– $3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	0.008	63MIN
6 437.6013	15 529.444	11		$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0011	95WHA/AND
6 441.8981	15 519.086	12		$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	– $3s^23p^4(^3P_2)6g$	$^2[6]$	11/2	0.0013	95WHA/AND
6 443.8591	15 514.363	12		$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	– $3s^23p^4(^3P_2)6g$	$^2[6]$	11/2	0.0016	95WHA/AND
6 456.489	15 484.015	3		$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	– $3s^23p^4(^3P_2)6g$	$^2[5]$	11/2	0.008	63MIN
6 457.71	15 481.09	0	*	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	– $3s^23p^4(^3P_2)6g$	$^2[4]$	7/2	0.02	63MIN
6 457.71	15 481.09	0	*	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	– $3s^23p^4(^3P_2)6g$	$^2[4]$	9/2	0.02	63MIN
6 458.403	15 479.426	2		$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	– $3s^23p^4(^3P_2)6g$	$^2[5]$	9/2	0.008	63MIN
6 468.047	15 456.346	8		$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^3P_1)6g$	$^2[4]$	9/2	0.002	95WHA/AND
6 472.428	15 445.885	6		$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	0.004	95WHA/AND
6 475.312	15 439.005	4		$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.008	63MIN
6 480.085	15 427.633	2		$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)3d$	^2P	1/2	0.008	63MIN
6 483.0825	15 420.5002	120		$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.0001	95WHA/AND
6 487.444	15 410.133	1	*	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_1)6g$	$^2[3]$	7/2	0.008	63MIN
6 487.444	15 410.133	1	*	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_1)6g$	$^2[3]$	5/2	0.008	63MIN
6 489.85	15 404.42	0		$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.02	63MIN
6 500.2151	15 379.8567	5		$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0008	73NOR
6 501.3608	15 377.1464	6		$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	– $3s^23p^4(^3P_2)6g$	$^2[2]$	3/2	0.0008	73NOR
6 502.157	15 375.263	3		$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.008	63MIN
6 506.138	15 365.856	3		$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.008	63MIN
6 508.174	15 361.048	6		$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	– $3s^23p^4(^3P_2)6g$	$^2[2]$	5/2	0.004	95WHA/AND
6 509.089	15 358.889	6		$3s^23p^4(^3P)3d$	^4F	3/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.008	63MIN
6 532.927	15 302.847	2		$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.008	63MIN
6 538.0451	15 290.8674	20		$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0008	95WHA/AND
6 540.409	15 285.341	2		$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.008	63MIN
6 547.350	15 269.137	3		$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.008	63MIN
6 551.498	15 259.469	3		$3s^23p^4(^3P)4d$	^2P	1/2	– $3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.008	63MIN
6 557.724	15 244.982	2		$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.008	63MIN
6 564.170	15 230.011	3	a	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.008	63MIN
6 608.26	15 128.40	1	bg?	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	0.04	63MIN
6 611.196	15 121.680	2		$3s^23p^4(^3P)4d$	^2P	1/2	– $3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.008	63MIN
6 614.349	15 114.471	6		$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)3d$	^2P	1/2	0.004	95WHA/AND
6 620.965	15 099.370	8		$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.002	95WHA/AND
6 623.15	15 094.39	0		$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	– $3s^23p^4(^3P)4d$	^4F	7/2	0.02	63MIN
6 636.20	15 064.70	0	h	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.02	63MIN
6 638.2202	15 060.1199	151		$3s^23p^4(^3P)3d$	^4F	5/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0001	95WHA/AND
6 639.7403	15 056.6721	93		$3s^23p^4(^3P)3d$	^4F	3/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.0002	95WHA/AND
6 643.6973	15 047.7043	269		$3s^23p^4(^3P)3d$	^4F	9/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	0.0001	95WHA/AND
6 653.583	15 025.347	1		$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^2P	3/2	0.008	63MIN
6 657.499	15 016.51	2	bg	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	– $3s^23p^4(^1D)3d$	^2P	3/2	0.016	63MIN
6 666.3587	14 996.5521	117		$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.0001	95WHA/AND
6 684.2924	14 956.3171	204		$3s^23p^4(^3P)3d$	^4F	7/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.0001	95WHA/AND
6 695.71	14 930.81	0.5		$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^2D	5/2	0.02	63MIN
6 696.296	14 929.507	4		$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.008	63MIN
6 756.5522	14 796.3639	32		$3s^23p^4(^3P)3d$	^4F	3/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.0005	95WHA/AND
6 799.288	14 703.364	3		$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^1D)3d$	^2P	3/2	0.008	63MIN
6 808.5312	14 683.4034	15		$3s^23p^4(^3P)3d$	^2P	1/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0009	95WHA/AND
6 818.371	14 662.213	8		$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	– $3s^23p^4(^1D)3d$	^2D	5/2	0.008	63MIN
6 832.91	14 631.02	0		$3s^23p^4(^1D)3d$	^2P	3/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.02	63MIN
6 839.584	14 616.739	4		$3s^23p^4(^1D)3d$	^2P	1/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.008	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
6 846.540	14 601.889	1	$3s^23p^4(^3P)4d$	^2P	3/2	–	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.008	63MIN
6 856.06	14 581.61	0.5 h	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)3d$	^2P	1/2	0.02	63MIN
6 861.2689	14 570.5433	112	$3s^23p^4(^3P)3d$	^2P	3/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0001	95WHA/AND
6 863.5347	14 565.7332	35	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.0004	95WHA/AND
6 869.25	14 553.61	0.5 h?	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	5/2	0.02	63MIN
6 875.55	14 540.28	0.5 h	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	0.02	63MIN
6 886.6118	14 516.9236	26	$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	0.0007	95WHA/AND
6 892.62	14 504.27	0 h	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_2)6g$	$^2[5]$	11/2	0.02	63MIN
6 900.880	14 486.909	2	$3s^23p^4(^3P)4d$	^2P	3/2	–	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.008	63MIN
6 904.46	14 479.40	0.5	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^2D	5/2	0.02	63MIN
6 911.76	14 464.10	0	$3s^23p^4(^3P)4d$	^2P	3/2	–	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.02	63MIN
6 985.708	14 310.994	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^2D	3/2	0.008	63MIN
6 990.122	14 301.958	5	$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.008	63MIN
7 001.44	14 278.84	0.5	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)5d$	^2P	3/2	0.02	63MIN
7 050.69	14 179.10	0.5	$3s^23p^4(^3P)4d$	^2P	1/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.02	63MIN
7 054.993	14 170.451	3	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)3d$	^2P	3/2	0.008	63MIN
7 077.024	14 126.338	5	$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	0.008	63MIN
7 090.560	14 099.371	1	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^1D)3d$	^2D	3/2	0.008	63MIN
7 101.190	14 078.265	1	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^2D	5/2	0.008	63MIN
7 103.11	14 074.46	0.5	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^2D	5/2	0.02	63MIN
7 121.737	14 037.649	6	$3s^23p^4(^3P)3d$	^2P	3/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.003	95WHA/AND
7 182.098	13 919.672	2	$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.008	63MIN
7 187.15	13 909.89	0	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^2D	3/2	0.02	63MIN
7 233.5341	13 820.6924	23	$3s^23p^4(^3P)3d$	^4P	1/2	–	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0009	95WHA/AND
7 249.45	13 790.35	0.5	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P)6d$	^4F	5/2	0.02	63MIN
7 280.454	13 731.623	2	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^1D)3d$	^2P	1/2	0.008	63MIN
7 284.232	13 724.501	7	$3s^23p^4(^3P)3d$	^2P	3/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.003	95WHA/AND
7 298.15	13 698.33	0.5	$3s^23p^4(^3P)4d$	^2D	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.02	63MIN
7 348.0495	13 605.306	16	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	–	$3s^23p^4(^1D)3d$	^2D	5/2	0.0016	95WHA/AND
7 355.180	13 592.116	2	$3s^23p^4(^3P)4d$	^2D	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.008	63MIN
7 358.338	13 586.283	2	$3s^23p^4(^3P)3d$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.008	63MIN
7 380.4229	13 545.6278	44	$3s^23p^4(^3P)3d$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0005	95WHA/AND
7 419.341	13 474.575	1	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)5d$	^2D	3/2	0.008	63MIN
7 428.574	13 457.827	2	$3s^23p^4(^3P)3d$	^2P	1/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.008	63MIN
7 440.491	13 436.273	4	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)3d$	^2D	3/2	0.008	63MIN
7 455.996	13 408.332	2	$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.008	63MIN
7 505.153	13 320.511	1	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	–	$3s^23p^4(^1D)3d$	^2P	3/2	0.008	63MIN
7 589.3152	13 172.7929	72	$3s^23p^4(^3P)3d$	^4P	5/2	–	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.0003	95WHA/AND
7 618.03	13 123.14	1	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^1D)3d$	^2D	3/2	0.02	63MIN
7 654.031	13 061.416	2	$3s^23p^4(^3P)3d$	^2P	3/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.008	63MIN
7 680.948	13 015.644	2	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4P	5/2	0.008	63MIN
7 681.49	13 014.73	1	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	–	$3s^23p^4(^3P)6d$	^4F	7/2	0.02	63MIN
7 683.458	13 011.392	1	$3s^23p^4(^3P)3d$	^4P	1/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.008	63MIN
7 742.42	12 912.30	1	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P)6d$	^2F	7/2	0.02	63MIN
7 753.28	12 894.22	1	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P)6d$	^4D	7/2	0.02	63MIN
7 753.66	12 893.59	0	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P)6d$	^4P	5/2	0.02	63MIN
7 757.003	12 888.030	1	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)5d$	^2P	3/2	0.008	63MIN
7 795.410	12 824.533	2	$3s^23p^4(^3P)4d$	^4D	5/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.008	63MIN
7 802.252	12 813.287	1	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	–	$3s^23p^4(^3P)6d$	^4F	9/2	0.008	63MIN
7 837.77	12 755.22	0	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P)6d$	^2F	5/2	0.02	63MIN
7 839.25	12 752.81	0	$3s^23p^4(^3P)4d$	^2P	3/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.02	63MIN
7 846.555	12 740.941	2	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4P	5/2	0.008	63MIN
7 849.409	12 736.309	9	$3s^23p^4(^3P)3d$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.004	95WHA/AND
7 894.67	12 663.29	0.5	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)8d$	^4D	7/2	0.02	63MIN
7 904.770	12 647.110	2	$3s^23p^4(^3P)4d$	^4D	3/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.008	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment		Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
				Configuration	Term	J		Configuration	Term	J		
7 915.813	12 629.467	1		$3s^23p^4(^3P)4d$	^4D	7/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.008	63MIN
7 927.35	12 611.09	2	ha	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^2D	5/2	0.02	63MIN
7 940.47	12 590.25	(1)	b	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)3d$	^2D	3/2	0.04	63MIN
7 943.51	12 585.43	0.5		$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4F	5/2	0.02	63MIN
7 983.61	12 522.22	1	h	$3s^23p^4(^3P)4d$	^2D	5/2	–	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.02	63MIN
7 992.90	12 507.66	1		$3s^23p^4(^3P)4d$	^4D	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.02	63MIN
8 017.5280	12 469.2431	19		$3s^23p^4(^1D)4s$	^2D	3/2	–	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.0010	95WHA/AND
8 034.625	12 442.710	1		$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^2D	3/2	0.008	63MIN
8 036.857	12 439.254	8		$3s^23p^4(^3P)4d$	^2D	5/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.003	95WHA/AND
8 043.76	12 428.58	0.5	h	$3s^23p^4(^1D)4s$	^2D	3/2	–	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.02	63MIN
8 044.308	12 427.732	2		$3s^23p^4(^3P)4d$	^4D	7/2	–	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	0.008	63MIN
8 066.06	12 394.22	0	h?	$3s^23p^4(^3P)4d$	^2D	5/2	–	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.02	63MIN
8 083.75	12 367.10	1	h	$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.02	63MIN
8 086.13	12 363.46	0	?	$3s^23p^4(^3P)3d$	^4P	5/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.02	63MIN
8 103.6931	12 336.6605	12023	A	$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	0.0002	95WHA/AND
8 110.65	12 326.08	1		$3s^23p^4(^3P)3d$	^4F	7/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.02	63MIN
8 150.647	12 265.592	1		$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.008	63MIN
8 165.405	12 243.424	3		$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.008	63MIN
8 182.79	12 217.412	0		$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.008	63MIN
8 190.258	12 206.272	1		$3s^23p^4(^1D)4s$	^2D	5/2	–	$3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.008	63MIN
8 192.14	12 203.47	0		$3s^23p^4(^3P)3d$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.02	63MIN
8 217.817	12 165.337	1		$3s^23p^4(^3P)3d$	^4P	1/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.008	63MIN
8 259.521	12 103.913	2		$3s^23p^4(^3P)4d$	^4D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.008	63MIN
8 296.723	12 049.640	1		$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^2F	5/2	0.008	63MIN
8 327.907	12 004.520	2		$3s^23p^4(^3P)3d$	^2P	3/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.008	63MIN
8 332.95	11 997.25	0		$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_0)5g$	$^2[4]$	9/2	0.02	63MIN
8 338.384	11 989.436	1		$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4P	1/2	0.008	63MIN
8 342.630	11 983.334	1		$3s^23p^4(^1D)3d$	^2S	1/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.008	63MIN
8 345.183	11 979.668	2		$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.008	63MIN
8 346.420	11 977.893	1		$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^4D	1/2	0.008	63MIN
8 360.29	11 958.02	0		$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P_0)5g$	$^2[4]$	7/2	0.02	63MIN
8 363.074	11 954.040	2		$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^2F	7/2	0.008	63MIN
8 375.49	11 936.32	0	? *	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_0)5g$	$^2[4]$	9/2	0.02	63MIN
8 375.49	11 936.32	0	? *	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_0)5g$	$^2[4]$	7/2	0.02	63MIN
8 376.079	11 935.480	2		$3s^23p^4(^3P)3d$	^4F	5/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.008	63MIN
8 395.724	11 907.553	8		$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	–	$3s^23p^4(^3P)5d$	^4P	3/2	0.003	95WHA/AND
8 411.88	11 884.68	1		$3s^23p^4(^3P)4d$	^4D	1/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.02	63MIN
8 415.730	11 879.246	7		$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)3d$	^2S	1/2	0.005	95WHA/AND
8 500.997	11 760.095	2		$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	–	$3s^23p^4(^1D)5d$	^2F	5/2	0.008	63MIN
8 547.023	11 696.767	4		$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4F	5/2	0.008	63MIN
8 562.550	11 675.556	2		$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4P	5/2	0.008	63MIN
8 565.34	11 671.75	1	hsb?	$3s^23p^4(^3P)3d$	^4F	3/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.04	63MIN
8 585.262	11 644.669	3		$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^2F	5/2	0.008	63MIN
8 592.624	11 634.692	3		$3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	–	$3s^23p^4(^1D)5d$	^2F	7/2	0.008	63MIN
8 604.017	11 619.286	7		$3s^23p^4(^1D)4s$	^2D	3/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.003	95WHA/AND
8 607.611	11 614.435	2		$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4F	3/2	0.008	63MIN
8 623.805	11 592.625	7		$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	–	$3s^23p^4(^3P)5d$	^4P	1/2	0.003	95WHA/AND
8 631.102	11 582.824	1		$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^2P	1/2	0.008	63MIN
8 636.78	11 575.21	0	h? *	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_1)5g$	$^2[4]$	7/2	0.02	63MIN
8 636.78	11 575.21	0	h? *	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_1)5g$	$^2[4]$	9/2	0.02	63MIN
8 650.45	11 556.92	0	wh	$3s^23p^4(^3P)4d$	^2D	5/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.02	63MIN
8 657.390	11 547.654	1		$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_1)5g$	$^2[5]$	11/2	0.008	63MIN
8 674.767	11 524.522	1		$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)5d$	^4F	3/2	0.008	63MIN
8 680.99	11 516.26	0		$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	–	$3s^23p^4(^1D)5d$	^2D	5/2	0.02	63MIN
8 693.086	11 500.236	2		$3s^23p^4(^3P)4d$	^4D	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.008	63MIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
8 716.947	11 468.757	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2F	5/2	0.008	63MIN
8 719.374	11 465.564	3	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)5d$	^4F	7/2	0.008	63MIN
8 754.009	11 420.201	2	$3s^23p^4(^1S)3d$	^2D	5/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.008	63MIN
8 768.215	11 401.699	1	$3s^23p^4(^3P)4d$	^2D	3/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.008	63MIN
8 771.8602	11 396.9606	158	$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0002	95WHA/AND
8 780.698	11 385.489	8	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.003	95WHA/AND
8 788.39	11 375.52	0	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)4d$	^4D	1/2	0.02	63MIN
8 790.555	11 372.723	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2F	7/2	0.008	63MIN
8 796.1407	11 365.5011	13	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	1/2	0.0015	95WHA/AND
8 803.860	11 355.536	1	$3s^23p^4(^3P)4d$	^4D	7/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.008	63MIN
8 838.009	11 311.660	1	$3s^23p^4(^3P)4d$	^4D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.008	63MIN
8 842.527	11 305.880	1	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	– $3s^23p^4(^3P_1)5g$	$^2[3]$	7/2	0.008	63MIN
8 850.695	11 295.446	1	$3s^23p^4(^3P)4d$	^4D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	0.008	63MIN
8 867.170	11 274.460	2	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.008	63MIN
8 870.216	11 270.588	1	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.008	63MIN
8 873.73	11 266.12	0	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.02	63MIN
8 890.1495	11 245.3172	22	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	5/2	0.0010	95WHA/AND
8 895.144	11 239.003	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	3/2	0.008	63MIN
8 899.2982	11 233.757	11	$3s^23p^4(^3P)4d$	^4D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0017	95WHA/AND
8 904.512	11 227.179	1	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.008	63MIN
8 905.6560	11 225.7370	68	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4F	7/2	0.0003	95WHA/AND
8 915.522	11 213.314	1	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4F	3/2	0.008	63MIN
8 920.190	11 207.446	10 b	$3s^23p^4(^3P)4d$	^4D	7/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.006	95WHA/AND
8 926.074	11 200.059	3	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.008	63MIN
8 926.819	11 199.124	1	$3s^23p^4(^3P)4d$	^4D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.008	63MIN
8 931.3307	11 193.4667	32	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	5/2	0.0006	95WHA/AND
8 935.448	11 188.309	1	$3s^23p^4(^1D)3d$	^2S	1/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	0.008	63MIN
8 937.530	11 185.703	1	$3s^23p^4(^3P)4d$	^4D	7/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.008	63MIN
8 966.88	11 149.09	0	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4P	3/2	0.02	63MIN
8 968.9495	11 146.5177	14	$3s^23p^4(^3P)4d$	^4D	7/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.0015	95WHA/AND
8 971.3640	11 143.5178	59	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^2F	5/2	0.0003	95WHA/AND
8 986.6158	11 124.6055	60	$3s^23p^4(^3P)4d$	^4D	7/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	0.0004	95WHA/AND
8 995.8638	11 113.1691	62	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	7/2	0.0003	95WHA/AND
8 997.8080	11 110.7678	31	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.0006	95WHA/AND
9 001.77	11 105.88	0	$3s^23p^4(^3P)4d$	^4D	1/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.02	63MIN
9 007.90	11 098.32	0.5	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)5s$	^2P	1/2	0.02	63MIN
9 008.4569	11 097.6338	87	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^2F	7/2	0.0002	95WHA/AND
9 014.938	11 089.655	1	$3s^23p^4(^3P)4d$	^4D	1/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	0.010	63MIN
9 017.5916	11 086.3921	102	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.0002	95WHA/AND
9 018.22	11 085.62	0.5	$3s^23p^4(^3P)4d$	^4D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.02	63MIN
9 022.30	11 080.61	0	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.02	63MIN
9 031.35	11 069.50	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	1/2	0.02	63MIN
9 035.9204	11 063.9042	19	$3s^23p^4(^3P)4d$	^4D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0011	95WHA/AND
9 051.229	11 045.191	7	$3s^23p^4(^3P)4d$	^4D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.004	95WHA/AND
9 060.7463	11 033.5899	50	$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)5d$	^2G	7/2	0.0004	95WHA/AND
9 068.0230	11 024.7359	44	$3s^23p^4(^3P)4d$	^4D	5/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.0005	95WHA/AND
9 079.7072	11 010.5488	15	$3s^23p^4(^3P)4d$	^4D	3/2	– $3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.0015	95WHA/AND
9 095.1026	10 991.9112	68	$3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)5d$	^2G	9/2	0.0003	95WHA/AND
9 098.5743	10 987.7170	40	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4F	3/2	0.0005	95WHA/AND
9 106.5624	10 978.0789	102	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)5d$	^4F	9/2	0.0002	95WHA/AND
9 114.348	10 968.701	6	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)5d$	^4D	1/2	0.003	95WHA/AND
9 138.49	10 939.72	0 h	$3s^23p^4(^3P)3d$	^4P	1/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.02	63MIN
9 150.82	10 924.98	1	$3s^23p^4(^3P)3d$	^4P	3/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.02	63MIN
9 151.54	10 924.12	0	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	1/2	0.02	63MIN
9 156.0492	10 918.7445	27	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	5/2	0.0007	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
9 159.0316	10 915.1892	17	$3s^23p^4(^1S)3d$	^2D	5/2	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0012	95WHA/AND
9 168.917	10 903.421	1	$3s^23p^4(^1D)3d$	^2S	1/2	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.010	63MIN
9 191.185	10 877.005	7	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)5s$	^2P	3/2	0.004	95WHA/AND
9 192.5919	10 875.3402	31	$3s^23p^4(^3P)4d$	^4D	3/2	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.0007	95WHA/AND
9 210.39	10 854.32	1	$3s^23p^4(^3P)3d$	^4P	5/2	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.02	63MIN
9 218.9849	10 844.2053	38	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)5d$	^4F	5/2	0.0006	95WHA/AND
9 222.2677	10 840.345	10	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4F	5/2	0.0019	95WHA/AND
9 252.633	10 804.770	10	$3s^23p^4(^3P)4d$	^4D	1/2	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	0.003	95WHA/AND
9 258.772	10 797.606	10	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	$3s^23p^4(^1D)5d$	^2F	5/2	0.002	95WHA/AND
9 279.7099	10 773.2427	26	$3s^23p^4(^1D)4s$	^2D	3/2	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0008	95WHA/AND
9 305.87	10 742.96	1	$3s^23p^4(^1D)4d$	^2G	7/2	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	0.02	63MIN
9 313.51	10 734.15	1	$3s^23p^4(^1D)4d$	^2G	9/2	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	9/2	0.02	63MIN
9 331.05	10 713.97	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	$3s^23p^4(^3P)5d$	^4D	3/2	0.02	63MIN
9 335.98	10 708.31	0	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)5d$	^4F	3/2	0.02	63MIN
9 344.803	10 698.200	7	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	$3s^23p^4(^1D)5d$	^2F	7/2	0.002	95WHA/AND
9 360.466	10 680.298	1 1	$3s^23p^4(^3P)4d$	^4F	7/2	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.010	63MIN
9 374.163	10 664.693	3	$3s^23p^4(^3P)3d$	^4P	3/2	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.010	63MIN
9 392.01	10 644.43	0 ?	$3s^23p^4(^1D)4d$	^2G	9/2	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.02	63MIN
9 394.91	10 641.14	0.5	$3s^23p^4(^3P)3d$	^2P	1/2	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.02	63MIN
9 396.90	10 638.89	0	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	$3s^23p^4(^1D)4d$	^2D	5/2	0.02	63MIN
9 418.582	10 614.397	1	$3s^23p^4(^3P)3d$	^2D	3/2	$3s^23p^4(^3P)4p$	$^2S^\circ$	1/2	0.010	63MIN
9 420.4762	10 612.2632	59	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	$3s^23p^4(^3P)5d$	^4P	5/2	0.0004	95WHA/AND
9 436.230	10 594.546	13	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	$3s^23p^4(^3P)6s$	^2P	3/2	0.002	95WHA/AND
9 453.20	10 575.53	0.5	$3s^23p^4(^1S)3d$	^2D	3/2	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.02	63MIN
9 466.81	10 560.32	0	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	$3s^23p^4(^1D_2)5g$	$^2[2]$	5/2	0.02	63MIN
9 468.28	10 558.68	0.5	$3s^23p^4(^3P)4d$	^4F	5/2	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.02	63MIN
9 475.2495	10 550.9174	35	$3s^23p^4(^1D)4s$	^2D	5/2	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0006	95WHA/AND
9 480.877	10 544.655	7	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	$3s^23p^4(^3P)5d$	^4D	5/2	0.003	95WHA/AND
9 490.98	10 533.43	0.5	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	$3s^23p^4(^1D)5d$	^2D	5/2	0.02	63MIN
9 500.46	10 522.92	0	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)5d$	^4P	1/2	0.02	63MIN
9 504.16	10 518.82	0.5 *	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	11/2	$3s^23p^4(^1D_2)5g$	$^2[5]$	11/2	0.02	63MIN
9 504.16	10 518.82	0.5 *	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	9/2	$3s^23p^4(^1D_2)5g$	$^2[5]$	9/2	0.02	63MIN
9 508.440	10 514.088	3	$3s^23p^4(^1S)3d$	^2D	5/2	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.010	63MIN
9 517.76	10 503.79	0	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_0)5g$	$^2[4]$	7/2	0.02	63MIN
9 524.04	10 496.87	0.5	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4D	3/2	0.02	63MIN
9 526.39	10 494.28	1	$3s^23p^4(^3P)4d$	^4F	7/2	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.02	63MIN
9 535.6550	10 484.0807	34	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	$3s^23p^4(^1D)4d$	^2F	7/2	0.0006	95WHA/AND
9 540.6651	10 478.5752	38	$3s^23p^4(^3P)4d$	^4F	7/2	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	0.0006	95WHA/AND
9 553.6308	10 464.3543	36	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	$3s^23p^4(^3P)5d$	^4D	7/2	0.0006	95WHA/AND
9 566.84	10 449.91	0	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	$3s^23p^4(^3P_2)5g$	$^2[3]$	7/2	0.02	63MIN
9 576.31	10 439.57	0	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_2)5g$	$^2[2]$	3/2	0.02	63MIN
9 586.989	10 427.944	10	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_2)5g$	$^2[3]$	7/2	0.002	95WHA/AND
9 599.325	10 414.543	2	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	$3s^23p^4(^3P_2)5g$	$^2[4]$	9/2	0.010	63MIN
9 601.9250	10 411.7226	110	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	$3s^23p^4(^3P_2)5g$	$^2[5]$	11/2	0.0003	95WHA/AND
9 610.38	10 402.56	0.5	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	$3s^23p^4(^3P)5d$	^4P	3/2	0.02	63MIN
9 612.508	10 400.260	2 *	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	11/2	$3s^23p^4(^1D_2)5g$	$^2[6]$	13/2	0.010	63MIN
9 612.508	10 400.260	2 *	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	9/2	$3s^23p^4(^1D_2)5g$	$^2[6]$	11/2	0.010	63MIN
9 619.5765	10 392.6176	56 *	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_2)5g$	$^2[4]$	7/2	0.0004	95WHA/AND
9 619.5765	10 392.6176	56 *	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_2)5g$	$^2[4]$	9/2	0.0004	95WHA/AND
9 622.0663	10 389.9284	68	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_2)5g$	$^2[5]$	9/2	0.0003	95WHA/AND
9 623.2363	10 388.6652	19	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_2)5g$	$^2[3]$	5/2	0.0012	95WHA/AND
9 630.89	10 380.41	0	$3s^23p^4(^3P)5s$	^4P	5/2	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.02	63MIN
9 638.41	10 372.31	0 ?	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	$3s^23p^4(^3P)6s$	^4P	3/2	0.02	63MIN
9 641.1882	10 369.3215	15	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)5d$	^4F	7/2	0.0012	95WHA/AND
9 643.3151	10 367.0345	14	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P_2)5g$	$^2[3]$	7/2	0.0016	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
9 655.9725	10 353.4451	85	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P_2)5g$	$^2[4]$	7/2	0.0003	95WHA/AND
9 669.27	10 339.21	0	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^4F	5/2	0.02	63MIN
9 675.21	10 332.86	0.5	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^4P	3/2	0.02	63MIN
9 676.2850	10 331.7112	45 b	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P_2)5g$	$^2[4]$	9/2	0.0018	95WHA/AND
9 678.8084	10 329.0176	50	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P_2)5g$	$^2[5]$	9/2	0.0005	95WHA/AND
9 682.219	10 325.379	6	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2 –	$3s^23p^4(^1D_2)5g$	$^2[3]$	7/2	0.003	95WHA/AND
9 684.16	10 323.31	0	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2 –	$3s^23p^4(^1D_2)5g$	$^2[3]$	5/2	0.02	63MIN
9 701.515	10 304.842	1	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2 –	$3s^23p^4(^3P)5d$	^4D	5/2	0.010	63MIN
9 701.963	10 304.366	10	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2 –	$3s^23p^4(^3P_2)5g$	$^2[2]$	3/2	0.003	95WHA/AND
9 708.59	10 297.33	0.5	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2 –	$3s^23p^4(^3P)5d$	^4P	1/2	0.02	63MIN
9 711.768	10 293.964	12	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2 –	$3s^23p^4(^3P_1)5g$	$^2[4]$	9/2	0.002	95WHA/AND
9 713.1108	10 292.5402	20	$3s^23p^4(^3P)4d$	^4F	3/2 –	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0011	95WHA/AND
9 713.77	10 291.84	0	$3s^23p^4(^3P)3d$	^4P	5/2 –	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.02	63MIN
9 726.582	10 278.285	5	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2 –	$3s^23p^4(^3P_1)5g$	$^2[4]$	7/2	0.005	95WHA/AND
9 730.06	10 274.61	0	$3s^23p^4(^1D)4p$	$^2P^\circ$	1/2 –	$3s^23p^4(^3P)5s$	^2P	3/2	0.02	63MIN
9 734.5550	10 269.8669	14	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2 –	$3s^23p^4(^3P_2)5g$	$^2[2]$	5/2	0.0016	95WHA/AND
9 739.7684	10 264.3697	28	$3s^23p^4(^1S)3d$	^2D	3/2 –	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.0009	95WHA/AND
9 743.4566	10 260.4844	93 b	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2 –	$3s^23p^4(^3P_1)5g$	$^2[3]$	5/2	0.0006	95WHA/AND
9 750.1350	10 253.4564	51	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2 –	$3s^23p^4(^3P_2)5g$	$^2[3]$	5/2	0.0005	95WHA/AND
9 756.1415	10 247.1438	85	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2 –	$3s^23p^4(^3P_1)5g$	$^2[3]$	7/2	0.0003	95WHA/AND
9 758.6365	10 244.5239	107	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2 –	$3s^23p^4(^3P_1)5g$	$^2[5]$	11/2	0.0003	95WHA/AND
9 761.851	10 241.151	10	$3s^23p^4(^3P)4d$	^4F	5/2 –	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.002	95WHA/AND
9 771.830	10 230.693	10	$3s^23p^4(^3P)4d$	^4F	5/2 –	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.003	95WHA/AND
9 773.5674	10 228.8735	112	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2 –	$3s^23p^4(^3P_1)5g$	$^2[5]$	9/2	0.0003	95WHA/AND
9 783.0786	10 218.9290	102 b	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2 –	$3s^23p^4(^3P_2)5g$	$^2[3]$	7/2	0.0006	95WHA/AND
9 793.2307	10 208.3356	28	$3s^23p^4(^1D)4d$	^2G	7/2 –	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	9/2	0.0008	95WHA/AND
9 802.0204	10 199.1816	36 b	$3s^23p^4(^1D)4d$	^2G	9/2 –	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	11/2	0.0012	95WHA/AND
9 803.6898	10 197.4448	102	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P_0)5g$	$^2[4]$	9/2	0.0003	95WHA/AND
9 814.4210	10 186.2949	28	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P_0)5g$	$^2[4]$	7/2	0.0007	95WHA/AND
9 817.10	10 183.52	0	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2 –	$3s^23p^4(^3P_2)5g$	$^2[4]$	7/2	0.02	63MIN
9 819.174	10 181.365	9	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^2F	5/2	0.003	95WHA/AND
9 824.6399	10 175.6999	20	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^4P	3/2	0.0013	95WHA/AND
9 825.832	10 174.465	8	$3s^23p^4(^1S)3d$	^2D	3/2 –	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.003	95WHA/AND
9 829.856	10 170.300	3	$3s^23p^4(^3P)3d$	^4P	3/2 –	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.010	63MIN
9 837.1699	10 162.7387	21	$3s^23p^4(^3P)4d$	^4P	3/2 –	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.0010	95WHA/AND
9 849.4582	10 150.0596	132	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2 –	$3s^23p^4(^3P_2)5g$	$^2[6]$	13/2	0.0003	95WHA/AND
9 854.0610	10 145.3185	129	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2 –	$3s^23p^4(^3P_2)5g$	$^2[6]$	11/2	0.0003	95WHA/AND
9 887.14	10 111.38	0 ?	$3s^23p^4(^3P)5s$	^4P	3/2 –	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.02	63MIN
9 900.64	10 097.59	0	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2 –	$3s^23p^4(^3P)6s$	^4P	3/2	0.02	63MIN
9 904.29	10 093.87	1	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.02	63MIN
9 905.8859	10 092.2412	87	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P_1)5g$	$^2[4]$	9/2	0.0003	95WHA/AND
9 906.3917	10 091.7259	69	$3s^23p^4(^3P)3d$	^2F	5/2 –	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0003	95WHA/AND
9 909.7166	10 088.340	11	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2 –	$3s^23p^4(^3P_2)5g$	$^2[5]$	11/2	0.0020	95WHA/AND
9 914.238	10 083.739	13	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2 –	$3s^23p^4(^3P_2)5g$	$^2[5]$	9/2	0.002	95WHA/AND
9 916.1552	10 081.7895	79 b	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P_1)5g$	$^2[4]$	7/2	0.0006	95WHA/AND
9 928.8329	10 068.9166	20	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^1D_2)5g$	$^2[4]$	9/2	0.0016	95WHA/AND
9 931.6788	10 066.0314	21	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^1D_2)5g$	$^2[4]$	7/2	0.0012	95WHA/AND
9 935.046	10 062.620	1	$3s^23p^4(^1S)3d$	^2D	5/2 –	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.010	63MIN
9 949.1504	10 048.3546	68	$3s^23p^4(^1D)3d$	^2F	5/2 –	$3s^23p^4(^1D)4p$	$^2D^\circ$	3/2	0.0003	95WHA/AND
9 951.0886	10 046.3974	33	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2 –	$3s^23p^4(^3P)6s$	^4P	5/2	0.0007	95WHA/AND
9 952.8051	10 044.6648	54	$3s^23p^4(^3P)4d$	^4F	5/2 –	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.0004	95WHA/AND
9 958.22	10 039.20	0	$3s^23p^4(^3P)3d$	^2P	3/2 –	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	0.02	63MIN
9 962.314	10 035.077	1	$3s^23p^4(^3P)4d$	^4F	9/2 –	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	0.010	63MIN
9 965.416	10 031.954	8	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P_1)5g$	$^2[3]$	7/2	0.003	95WHA/AND
9 967.0431	10 030.3159	89	$3s^23p^4(^3P)4d$	^4F	9/2 –	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2	0.0003	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
9 972.336	10 024.992	9	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.003	95WHA/AND
9 975.9428	10 021.3678	11	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^3P_1)5g$	$^2[3]$	5/2	0.0019	95WHA/AND
9 977.8274	10 019.4749	68	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	– $3s^23p^4(^3P_2)5g$	$^2[2]$	3/2	0.0004	95WHA/AND
9 988.39	10 008.88	1	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	– $3s^23p^4(^1D)4d$	^2P	1/2	0.02	63MIN
9 989.02	10 008.25	1	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5s$	^4P	3/2	0.02	63MIN
9 993.8629	10 003.3984	145	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	– $3s^23p^4(^3P_2)5g$	$^2[2]$	5/2	0.0003	95WHA/AND
9 994.0122	10 003.2490	15	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	– $3s^23p^4(^3P_2)5g$	$^2[2]$	3/2	0.0017	95WHA/AND
10 013.0962	9 984.1838	16	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	– $3s^23p^4(^1D_2)5g$	$^2[5]$	9/2	0.0013	95WHA/AND
10 013.401	9 983.880	7	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	9/2	– $3s^23p^4(^1D_2)5g$	$^2[5]$	11/2	0.003	95WHA/AND
10 022.2850	9 975.0300	117	$3s^23p^4(^3P)4d$	^4F	3/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.0003	95WHA/AND
10 035.96	9 961.438	0.5	$3s^23p^4(^3P)3d$	^2D	5/2	– $3s^23p^4(^3P)4p$	$^4S^\circ$	3/2	0.02	63MIN
10 083.81	9 914.169	0	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^4P	1/2	0.02	63MIN
10 093.0072	9 905.1346	21	$3s^23p^4(^3P)4d$	^4P	1/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.0014	95WHA/AND
10 099.25	9 899.01	0 ?	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	1/2	0.03	63MIN
10 110.6686	9 887.8323	19	$3s^23p^4(^1D)4s$	^2D	5/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0014	95WHA/AND
10 111.5923	9 886.9291	229	$3s^23p^4(^1D)3d$	^2F	7/2	– $3s^23p^4(^1D)4p$	$^2D^\circ$	5/2	0.0003	95WHA/AND
10 138.4117	9 860.7750	18	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	1/2	0.0014	95WHA/AND
10 145.96	9 853.44	0.5	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	5/2	0.03	63MIN
10 163.8648	9 836.0810	13	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0019	95WHA/AND
10 193.02	9 807.95	0	$3s^23p^4(^1D)4s$	^2D	3/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	1/2	0.03	63MIN
10 193.72	9 807.27	0.5	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4P	5/2	0.03	63MIN
10 203.396	9 797.973	11	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)7d$	^4F	7/2	0.004	95WHA/AND
10 203.928	9 797.462	9	$3s^23p^4(^3P)3d$	^4P	5/2	– $3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.003	95WHA/AND
10 221.0011	9 781.0966	51	$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	– $3s^23p^4(^1D)6s$	^2D	3/2	0.0005	95WHA/AND
10 230.8561	9 771.6749	52	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	5/2	0.0005	95WHA/AND
10 251.0093	9 752.4641	27	$3s^23p^4(^3P)5s$	^4P	3/2	– $3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0008	95WHA/AND
10 262.02	9 742.00	0 b?	$3s^23p^4(^3P)4d$	^4P	5/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.06	63MIN
10 268.2673	9 736.0730	66	$3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	– $3s^23p^4(^1D)6s$	^2D	5/2	0.0004	95WHA/AND
10 268.4401	9 735.9092	15	$3s^23p^4(^3P)4d$	^4F	3/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.0017	95WHA/AND
10 273.6987	9 730.9259	107	$3s^23p^4(^3P)4d$	^4P	5/2	– $3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.0003	95WHA/AND
10 275.84	9 728.90	0	$3s^23p^4(^3P)4d$	^4F	9/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.03	63MIN
10 277.30	9 727.52	0 ?	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2F	5/2	0.03	63MIN
10 299.0887	9 706.9366	43	$3s^23p^4(^3P)4d$	^4F	9/2	– $3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	0.0006	95WHA/AND
10 305.6350	9 700.7706	25	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.0009	95WHA/AND
10 325.34	9 682.26	1	$3s^23p^4(^3P)3d$	^2P	3/2	– $3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.03	63MIN
10 326.62	9 681.06	0.5	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	– $3s^23p^4(^3P)6s$	^2P	1/2	0.03	63MIN
10 365.96	9 644.32	0 h	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.03	63MIN
10 370.08	9 640.49	0.5	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)5d$	^4D	3/2	0.03	63MIN
10 383.900	9 627.655	1	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2F	7/2	0.02	63MIN
10 392.6187	9 619.5778	87	$3s^23p^4(^3P)4d$	^4P	3/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0003	95WHA/AND
10 401.5228	9 611.3431	38	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	1/2	0.0007	95WHA/AND
10 407.186	9 606.1131	13	$3s^23p^4(^3P)4d$	^4P	3/2	– $3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.002	95WHA/AND
10 410.5476	9 603.0111	24	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^4P	1/2	0.0011	95WHA/AND
10 440.5079	9 575.4542	69	$3s^23p^4(^3P)5s$	^4P	5/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.0004	95WHA/AND
10 442.5908	9 573.5443	20	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.0013	95WHA/AND
10 447.7810	9 568.7884	49	$3s^23p^4(^1D)4d$	^2D	5/2	– $3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.0005	95WHA/AND
10 467.1793	9 551.0551	617	$3s^23p^4(^3P)3d$	^2F	7/2	– $3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0003	95WHA/AND
10 495.941	9 524.883	2	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.02	63MIN
10 500.1998	9 521.0195	91	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)6s$	^2P	3/2	0.0003	95WHA/AND
10 516.91	9 505.89	0 ?	$3s^23p^4(^1S)3d$	^2D	3/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.03	63MIN
10 519.5058	9 503.5460	162	$3s^23p^4(^3P)4d$	^4F	7/2	– $3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	0.0003	95WHA/AND
10 535.52	9 489.10	2	$3s^23p^4(^3P)4d$	^2F	7/2	– $3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.03	63MIN
10 541.5663	9 483.6578	95	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)6s$	^4P	3/2	0.0003	95WHA/AND
10 549.126	9 476.862	9	$3s^23p^4(^1D)4d$	^2P	1/2	– $3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.003	95WHA/AND
10 555.931	9 470.753	11	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2D	3/2	0.003	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment		Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
				Configuration	Term	J		Configuration	Term	J		
10 580.83	9 448.47	2		$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)5d$	^4D	5/2	0.03	63MIN
10 607.69	9 424.54	0		$3s^23p^4(^3P)4d$	^4P	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.03	63MIN
10 613.9950	9 418.9426	13		$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2P	3/2	0.0019	95WHA/AND
10 619.4663	9 414.0899	89		$3s^23p^4(^3P)4d$	^4P	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.0003	95WHA/AND
10 637.378	9 398.238	11		$3s^23p^4(^1D)4d$	^2P	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	3/2	0.003	95WHA/AND
10 638.1207	9 397.5819	135		$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	–	$3s^23p^4(^3P)6s$	^4P	5/2	0.0003	95WHA/AND
10 639.885	9 396.023	9		$3s^23p^4(^1D)4d$	^2P	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.003	95WHA/AND
10 661.0079	9 377.4071	20	?	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	–	$3s^23p^4(^3P)6s$	^4P	1/2	0.0009	95WHA/AND
10 664.54	9 374.30	0.5		$3s^23p^4(^3P)3d$	^2P	3/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.03	63MIN
10 683.0372	9 358.0702	20		$3s^23p^4(^3P)3d$	^4P	5/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	7/2	0.0014	95WHA/AND
10 720.530	9 325.342	1		$3s^23p^4(^1D)4s$	^2D	5/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2	0.02	63MIN
10 764.3816	9 287.3532	129		$3s^23p^4(^3P)4d$	^2F	7/2	–	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	0.0003	95WHA/AND
10 785.1355	9 269.4815	19		$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.0015	95WHA/AND
10 812.8968	9 245.6829	437		$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0004	95WHA/AND
10 816.490	9 242.611	11		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.003	95WHA/AND
10 817.8828	9 241.4215	15		$3s^23p^4(^1D)4d$	^2D	5/2	–	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.0016	95WHA/AND
10 829.4584	9 231.5434	28		$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	1/2	0.0010	95WHA/AND
10 840.04	9 222.532	0.0026		$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2F	5/2	0.01	01HIN/JOY
10 867.3448	9 199.3599	48		$3s^23p^4(^1D)4d$	^2F	7/2	–	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	9/2	0.0006	95WHA/AND
10 867.8848	9 198.9028	24		$3s^23p^4(^3P)4d$	^4P	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.0011	95WHA/AND
10 869.7110	9 197.3573	23		$3s^23p^4(^3P)4d$	^4F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	0.0011	95WHA/AND
10 897.94	9 173.533	0.0015		$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	–	$3s^23p^4(^3P_2)5g$	$^2[3]$	5/2	0.01	01HIN/JOY
10 913.79	9 160.21	0		$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	–	$3s^23p^4(^3P_2)5g$	$^2[3]$	7/2	0.08	63MIN
10 916.67	9 157.79	1		$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	–	$3s^23p^4(^3P)6s$	^4P	5/2	0.10	63MIN
10 923.4440	9 152.1152	251		$3s^23p^4(^3P)3d$	^2D	5/2	–	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2	0.0004	95WHA/AND
10 931.7296	9 145.1784	20		$3s^23p^4(^1D)4d$	^2P	1/2	–	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.0013	95WHA/AND
10 954.2865	9 126.3469	28		$3s^23p^4(^3P)4d$	^4P	1/2	–	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.0009	95WHA/AND
10 973.8009	9 110.1178	37	b	$3s^23p^4(^3P)4d$	^4P	1/2	–	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2	0.0014	95WHA/AND
10 974.33	9 109.68	1		$3s^23p^4(^1D)4d$	^2F	7/2	–	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	7/2	0.10	63MIN
10 982.3830	9 102.9988	43		$3s^23p^4(^1D)4d$	^2F	5/2	–	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	0.0006	95WHA/AND
11 026.0413	9 066.9550	31		$3s^23p^4(^1D)4d$	^2P	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.0009	95WHA/AND
11 026.5233	9 066.5586	15		$3s^23p^4(^1D)4d$	^2P	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.0019	95WHA/AND
11 031.3442	9 062.5964	24		$3s^23p^4(^1D)5s$	^2D	3/2	–	$3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.0014	95WHA/AND
11 067.9439	9 032.6281	74		$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	0.0004	95WHA/AND
11 068.4554	9 032.2107	33		$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^4P	3/2	0.0009	95WHA/AND
11 083.617	9 019.855	10		$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^2P	3/2	0.003	95WHA/AND
11 087.6873	9 016.5441	21		$3s^23p^4(^1D)4d$	^2F	5/2	–	$3s^23p^4(^1D_2)4f$	$^2[3]^\circ$	5/2	0.0012	95WHA/AND
11 145.7164	8 969.6004	18		$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2D	3/2	0.0015	95WHA/AND
11 173.2792	8 947.4738	66		$3s^23p^4(^3P)5s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.0004	95WHA/AND
11 181.5835	8 940.8288	28		$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^4P	1/2	0.0010	95WHA/AND
11 209.7103	8 918.3950	23		$3s^23p^4(^3P)3d$	^2D	3/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	0.0014	95WHA/AND
11 211.305	8 917.1267	11		$3s^23p^4(^3P)5s$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.002	95WHA/AND
11 214.836	8 914.3188	10		$3s^23p^4(^1D)3d$	^2F	5/2	–	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.002	95WHA/AND
11 217.299	8 912.362	10		$3s^23p^4(^1D)4d$	^2D	5/2	–	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.003	95WHA/AND
11 253.5065	8 883.6866	234		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0004	95WHA/AND
11 311.417	8 838.2051	36	b	$3s^23p^4(^3P)5d$	^2F	7/2	–	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	0.002	03ENG/HIN
11 325.3660	8 827.3197	23	?	$3s^23p^4(^3P)4d$	^4P	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.0013	95WHA/AND
11 336.5635	8 818.6007	33		$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)6s$	^2D	3/2	0.0006	95WHA/AND
11 349.3641	8 808.6545	28		$3s^23p^4(^3P)4d$	^4F	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0010	95WHA/AND
11 361.0710	8 799.5777	41		$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	–	$3s^23p^4(^1D)6s$	^2D	5/2	0.0007	95WHA/AND
11 463.959	8 720.6026	13		$3s^23p^4(^3P)5s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.002	95WHA/AND
11 470.2870	8 715.7915	69		$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	0.0004	95WHA/AND
11 503.4797	8 690.6426	19		$3s^23p^4(^3P)4d$	^4F	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0016	95WHA/AND
11 558.6266	8 649.179	23	b	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^2P	1/2	0.0028	95WHA/AND
11 610.982	8 610.1790	14		$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.002	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment		Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
				Configuration	Term	J		Configuration	Term	J		
11 648.2955	8 582.5976	35		$3s^23p^4(^3P)3d$	^2F	5/2	–	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	0.0007	95WHA/AND
11 648.3960	8 582.5236	22		$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	–	$3s^23p^4(^1D)4d$	^2P	3/2	0.0014	95WHA/AND
11 677.8958	8 560.8431	21		$3s^23p^4(^3P)4d$	^4P	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.0015	95WHA/AND
11 720.4462	8 529.7635	47		$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.0006	95WHA/AND
11 744.6856	8 512.1593	13		$3s^23p^4(^3P)5s$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0019	95WHA/AND
11 756.0851	8 503.9054	21		$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	–	$3s^23p^4(^1D)4d$	^2P	1/2	0.0014	95WHA/AND
11 760.647	8 500.607	9		$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.004	95WHA/AND
11 769.5605	8 494.1690	78		$3s^23p^4(^3P)3d$	^2F	7/2	–	$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	0.0004	95WHA/AND
11 874.8500	8 418.8548	166		$3s^23p^4(^3P)5s$	^2P	1/2	–	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	0.0004	95WHA/AND
12 027.042	8 312.3217	54		$3s^23p^4(^3P)4d$	^2F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	0.001	03ENG/HIN
12 042.942	8 301.3468	20	b	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)6s$	^4P	5/2	0.002	03ENG/HIN
12 059.0346	8 290.2690	24		$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)6s$	^2P	1/2	0.0014	95WHA/AND
12 060.6679	8 289.1463	31		$3s^23p^4(^3P)5s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.0010	95WHA/AND
12 066.2791	8 285.2916	49		$3s^23p^4(^3P)5s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0006	95WHA/AND
12 089.5606	8 269.3362	200		$3s^23p^4(^1D)5s$	^2D	5/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.0004	95WHA/AND
12 092.6668	8 267.2121	46	?	$3s^23p^4(^1D)5s$	^2D	3/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.0007	95WHA/AND
12 122.4364	8 246.9100	141		$3s^23p^4(^1D)5s$	^2D	3/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.0004	95WHA/AND
12 164.5876	8 218.3339	120		$3s^23p^4(^3P)5s$	^4P	1/2	–	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.0004	95WHA/AND
12 184.3644	8 204.9945	32		$3s^23p^4(^3P)3d$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	1/2	0.0011	95WHA/AND
12 198.047	8 195.791	14		$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)6s$	^4P	3/2	0.003	95WHA/AND
12 307.2520	8 123.0680	42		$3s^23p^4(^3P)3d$	^4P	1/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.0010	95WHA/AND
12 374.840	8 078.7024	15		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.002	95WHA/AND
12 392.7259	8 067.0425	40		$3s^23p^4(^3P)4d$	^2F	7/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0008	95WHA/AND
12 403.652	8 059.9367	100		$3s^23p^4(^3P)5s$	^2P	1/2	–	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.002	03ENG/HIN
12 407.0913	8 057.7022	32		$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^2P	3/2	0.0013	95WHA/AND
12 509.0087	7 992.0520	27		$3s^23p^4(^3P)4d$	^4P	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.0011	95WHA/AND
12 545.326	7 968.9157	13		$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^4P	3/2	0.002	95WHA/AND
12 620.3685	7 921.5318	120		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.0005	95WHA/AND
12 680.1601	7 884.1789	229		$3s^23p^4(^3P)5s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0005	95WHA/AND
12 712.62	7 864.048	0.0386		$3s^23p^4(^1D)5s$	^2D	3/2	–	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.02	01HIN/JOY
12 732.4024	7 851.8294	85		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.0005	95WHA/AND
12 738.60	7 848.009	0.0012		$3s^23p^4(^3P)3d$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	3/2	0.02	01HIN/JOY
12 782.7756	7 820.8877	447		$3s^23p^4(^3P)5s$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	0.0005	95WHA/AND
12 847.057	7 781.7555	48		$3s^23p^4(^3P)5s$	^4P	1/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.002	03ENG/HIN
12 974.5898	7 705.2652	25		$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2D	5/2	0.0012	95WHA/AND
13 070.8391	7 648.5263	23		$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^1D)4d$	^2D	3/2	0.0013	95WHA/AND
13 080.263	7 643.016	10		$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)6s$	^4P	5/2	0.005	95WHA/AND
13 230.627	7 556.1544	38		$3s^23p^4(^3P)5s$	^4P	1/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.002	03ENG/HIN
13 240.2403	7 550.6680	20		$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2P	3/2	0.0019	95WHA/AND
13 250.399	7 544.879	2	b	$3s^23p^4(^1D)4d$	^2G	9/2	–	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.012	03ENG/HIN
13 258.8877	7 540.0487	43		$3s^23p^4(^3P)3d$	^4P	3/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.0012	95WHA/AND
13 364.785	7 480.304	8		$3s^23p^4(^1D)5s$	^2D	5/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.012	03ENG/HIN
13 424.9251	7 446.7947	219		$3s^23p^4(^3P)5s$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.0005	95WHA/AND
13 433.831	7 441.8581	19		$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.002	95WHA/AND
13 450.3332	7 432.7275	468		$3s^23p^4(^3P)5s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.0005	95WHA/AND
13 472.7240	7 420.3748	437		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.0005	95WHA/AND
13 479.7264	7 416.5201	66		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0005	95WHA/AND
13 633.5502	7 332.8416	417		$3s^23p^4(^1D)5s$	^2D	5/2	–	$3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	0.0006	95WHA/AND
13 706.609	7 293.756	11		$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.014	03ENG/HIN
13 720.194	7 286.534	12	*	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P)7d$	^4F	9/2	0.014	03ENG/HIN
13 720.194	7 286.534	12	*	$3s^23p^4(^1D)5s$	^2D	5/2	–	$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.014	03ENG/HIN
13 724.1890	7 284.4133	263		$3s^23p^4(^1D)5s$	^2D	3/2	–	$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.0006	95WHA/AND
13 798.9546	7 244.9449	22		$3s^23p^4(^3P)5s$	^4P	1/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.0018	95WHA/AND
13 855.0370	7 215.6189	112		$3s^23p^4(^3P)5s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.0006	95WHA/AND
13 939.1608	7 172.0722	316		$3s^23p^4(^3P)5s$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.0006	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment		Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
				Configuration	Term	J		Configuration	Term	J		
13 948.6083	7 167.2145	55		$3s^23p^4(^3P)3d$	^4P	5/2	–	$3s^23p^4(^3P)4p$	$^4P^\circ$	5/2	0.0008	95WHA/AND
13 972.3444	7 155.0389	69		$3s^23p^4(^3P)5s$	^4P	1/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0006	95WHA/AND
13 999.89	7 140.960	12		$3s^23p^4(^1D)5s$	^2D	3/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.03	03ENG/HIN
14 054.652	7 113.137	22	b	$3s^23p^4(^1S)4p$	$^2P^\circ$	1/2	–	$3s^23p^4(^1D)4d$	^2P	1/2	0.004	03ENG/HIN
14 070.1280	7 105.3134	65		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.0006	95WHA/AND
14 077.7713	7 101.4557	91		$3s^23p^4(^1D)3d$	^2F	5/2	–	$3s^23p^4(^1D)4p$	$^2F^\circ$	5/2	0.0006	95WHA/AND
14 085.0605	7 097.7806	204		$3s^23p^4(^3P)5s$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.0006	95WHA/AND
14 224.749	7 028.0799	25		$3s^23p^4(^3P)5s$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.003	95WHA/AND
14 233.2805	7 023.8671	123		$3s^23p^4(^1D)3d$	^2F	7/2	–	$3s^23p^4(^1D)4p$	$^2F^\circ$	7/2	0.0006	95WHA/AND
14 250.4441	7 015.4074	54		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0007	95WHA/AND
14 625.284	6 835.6057	17		$3s^23p^4(^3P)4d$	^4D	7/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.002	95WHA/AND
14 661.2990	6 818.8143	49		$3s^23p^4(^3P)5s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.0008	95WHA/AND
14 777.223	6 765.3225	16	b	$3s^23p^4(^3P)5d$	^2F	5/2	–	$3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.004	03ENG/HIN
14 854.734	6 730.021	10		$3s^23p^4(^1D)4d$	^2P	3/2	–	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.010	95WHA/AND
15 001.362	6 664.240	5	b	$3s^23p^4(^3P)5d$	^4D	5/2	–	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.014	03ENG/HIN
15 141.7739	6 602.4417	29		$3s^23p^4(^1D)5s$	^2D	5/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.0013	95WHA/AND
15 163.9895	6 592.7690	30		$3s^23p^4(^3P)5s$	^2P	1/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0019	95WHA/AND
15 230.5531	6 563.9560	62		$3s^23p^4(^3P)5s$	^2P	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.0007	95WHA/AND
15 254.331	6 553.7242	26		$3s^23p^4(^1D)5s$	^2D	3/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.002	95WHA/AND
15 274.725	6 544.9744	19	b	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	–	$3s^23p^4(^3P_2)6g$	$^2[2]$	5/2	0.004	03ENG/HIN
15 276.7846	6 544.0918	33		$3s^23p^4(^3P)5s$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.0012	95WHA/AND
15 426.626	6 480.528	5		$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	–	$3s^23p^4(^3P)5d$	^2F	7/2	0.017	03ENG/HIN
15 505.24	6 447.67	0.0005		$3s^23p^4(^3P)5d$	^2P	3/2	–	$3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	0.10	01HIN/JOY
15 647.8075	6 388.9260	27	*	$3s^23p^4(^1D)4d$	^2F	5/2	–	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.0015	95WHA/AND
15 647.8075	6 388.9260	27	*	$3s^23p^4(^1D)5s$	^2D	5/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.0015	95WHA/AND
15 936.356	6 273.2461	13		$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.005	95WHA/AND
16 105.019	6 207.549	5		$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)6d$	^2D	5/2	0.011	95WHA/AND
16 152.408	6 189.336	11	b	$3s^23p^4(^3P)5d$	^4D	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.036	03ENG/HIN
16 277.318	6 141.8405	20		$3s^23p^4(^3P)4d$	^2P	1/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	0.003	95WHA/AND
16 286.567	6 138.3525	22		$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.003	95WHA/AND
16 311.462	6 128.984	3		$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	–	$3s^23p^4(^3P)6d$	^4F	5/2	0.016	03ENG/HIN
16 362.62	6 109.82	0.0009		$3s^23p^4(^3P)5d$	^2D	3/2	–	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	0.10	01HIN/JOY
16 416.7545	6 089.6744	37		$3s^23p^4(^3P)5s$	^4P	1/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.0012	95WHA/AND
16 470.40	6 069.84	0.0004		$3s^23p^4(^3P)5d$	^2P	1/2	–	$3s^23p^4(^3P_2)6f$	$^2[1]^\circ$	3/2	0.10	01HIN/JOY
16 494.071	6 061.1288	13		$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	–	$3s^23p^4(^3P)6d$	^4P	1/2	0.004	95WHA/AND
16 560.46	6 036.83	0.0002		$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P)5d$	^2F	5/2	0.10	01HIN/JOY
16 653.411	6 003.136	3		$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)6d$	^2P	3/2	0.015	03ENG/HIN
16 749.567	5 968.673	8		$3s^23p^4(^3P)5d$	^4D	3/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.006	95WHA/AND
16 904.235	5 914.062	11		$3s^23p^4(^1D)4d$	^2F	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.007	95WHA/AND
17 015.679	5 875.328	8		$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	–	$3s^23p^4(^3P)6d$	^2F	5/2	0.006	95WHA/AND
17 067.759	5 857.400	3		$3s^23p^4(^3P)4d$	^4D	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.015	03ENG/HIN
17 078.677	5 853.656	5		$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	–	$3s^23p^4(^3P)6d$	^4P	5/2	0.016	95WHA/AND
17 086.973	5 850.814	5		$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P)5d$	^2F	5/2	0.016	03ENG/HIN
17 138.7930	5 833.1234	36		$3s^23p^4(^3P)4p$	$^4D^\circ$	5/2	–	$3s^23p^4(^1D)3d$	^2F	7/2	0.0011	95WHA/AND
17 179.911	5 819.163	9		$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)6d$	^2D	3/2	0.010	95WHA/AND
17 361.778	5 758.2061	15		$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	–	$3s^23p^4(^3P)6d$	^4D	3/2	0.003	95WHA/AND
17 379.8717	5 752.2114	66	b	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	–	$3s^23p^4(^3P)5d$	^4F	7/2	0.0018	95WHA/AND
17 394.210	5 747.4698	30		$3s^23p^4(^1D)4d$	^2P	1/2	–	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.002	95WHA/AND
17 418.7675	5 739.3668	69		$3s^23p^4(^3P)4d$	^4D	7/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	0.0009	95WHA/AND
17 467.477	5 723.3620	24	?	$3s^23p^4(^3P)4d$	^2P	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	0.003	95WHA/AND
17 548.185	5 697.0393	22		$3s^23p^4(^3P)5d$	^4D	1/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.002	95WHA/AND
17 578.172	5 687.320	5	b	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)6d$	^4P	3/2	0.028	03ENG/HIN
17 603.754	5 679.056	5		$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	0.016	95WHA/AND
17 627.117	5 671.528	8		$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_2)6g$	$^2[4]$	9/2	0.014	95WHA/AND
17 629.859	5 670.646	5		$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	–	$3s^23p^4(^1D)5s$	^2D	3/2	0.007	03ENG/HIN

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
17 632.554	5 669.7798	49	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	$3s^23p^4(^3P_2)6g$	$^2[5]$	11/2	0.003	95WHA/AND
17 668.458	5 658.258	19	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_2)6g$	$^2[4]$	9/2	0.008	95WHA/AND
17 673.545	5 656.6295	21	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_2)6g$	$^2[5]$	9/2	0.006	95WHA/AND
17 686.569	5 652.464	7	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_2)6g$	$^2[3]$	5/2	0.011	95WHA/AND
17 744.49	5 634.014	4	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	0.03	95WHA/AND
17 751.5298	5 631.7793	50	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_2)6g$	$^2[4]$	7/2	0.0019	95WHA/AND
17 781.827	5 622.1838	9	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	$3s^23p^4(^3P_1)6g$	$^2[3]$	5/2	0.006	95WHA/AND
17 810.282	5 613.2013	23	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P_2)6g$	$^2[4]$	9/2	0.006	95WHA/AND
17 812.65	5 612.455	25	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	0.03	94QUI/PAL
17 815.426	5 611.581	18	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P_2)6g$	$^2[5]$	9/2	0.008	95WHA/AND
17 821.453	5 609.6828	15	$3s^23p^4(^1D)4d$	^2P	1/2	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.005	95WHA/AND
17 835.104	5 605.3893	28	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	$3s^23p^4(^3P_1)6g$	$^2[3]$	7/2	0.004	95WHA/AND
17 845.01	5 602.277	25	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	$3s^23p^4(^3P_2)6g$	$^2[2]$	3/2	0.03	94QUI/PAL
17 853.646	5 599.5675	42	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2	$3s^23p^4(^3P_1)6g$	$^2[5]$	11/2	0.003	95WHA/AND
17 856.5165	5 598.6675	126	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	$3s^23p^4(^3P)6d$	^4F	7/2	0.0010	95WHA/AND
17 860.8258	5 597.3167	52	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	$3s^23p^4(^3P)6d$	^4D	5/2	0.0011	95WHA/AND
17 905.320	5 583.4075	36	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_1)6g$	$^2[5]$	9/2	0.003	95WHA/AND
17 917.542	5 579.599	3	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	$3s^23p^4(^3P_2)6g$	$^2[2]$	5/2	0.016	95WHA/AND
17 935.477	5 574.0194	34	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P_0)6g$	$^2[4]$	9/2	0.004	95WHA/AND
17 936.159	5 573.808	17	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	$3s^23p^4(^3P_2)6g$	$^2[3]$	5/2	0.008	95WHA/AND
17 937.437	5 573.410	7	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	$3s^23p^4(^1D)5d$	^2F	5/2	0.007	95WHA/AND
17 960.108	5 566.3752	26	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_0)6g$	$^2[4]$	7/2	0.006	95WHA/AND
18 000.500	5 553.8845	24	$3s^23p^4(^1D)4d$	^2P	3/2	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.003	95WHA/AND
18 009.709	5 551.045	26 b	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	0.012	95WHA/AND
18 028.2528	5 545.3349	85	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	$3s^23p^4(^3P)6d$	^4D	7/2	0.0010	95WHA/AND
18 030.353	5 544.6891	12	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	$3s^23p^4(^3P)6d$	^4D	3/2	0.005	95WHA/AND
18 038.6395	5 542.1419	89	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	11/2	$3s^23p^4(^3P_2)6g$	$^2[6]$	11/2	0.0012	95WHA/AND
18 051.158	5 538.2983	45	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	$3s^23p^4(^3P_2)6g$	$^2[6]$	11/2	0.003	95WHA/AND
18 065.262	5 533.975	9	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P)5d$	^2F	5/2	0.013	03ENG/HIN
18 124.693	5 515.8287	26	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P_1)6g$	$^2[4]$	9/2	0.006	95WHA/AND
18 131.2696	5 513.8279	110	$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	$3s^23p^4(^3P)6d$	^2F	7/2	0.0010	95WHA/AND
18 153.7036	5 507.0140	145 *	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	11/2	$3s^23p^4(^3P_2)6g$	$^2[5]$	11/2	0.0010	95WHA/AND
18 153.7036	5 507.0140	145 *	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	$3s^23p^4(^3P)6d$	^4F	9/2	0.0010	95WHA/AND
18 156.388	5 506.200	21	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	0.007	95WHA/AND
18 158.6995	5 505.4989	72	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	$3s^23p^4(^3P)5d$	^2F	7/2	0.0010	95WHA/AND
18 165.8	5 503.35	40	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	$3s^23p^4(^3P_2)6g$	$^2[5]$	9/2	0.1	94QUI/PAL
18 200.622	5 492.8178	11	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	$3s^23p^4(^3P)6d$	^4D	5/2	0.006	95WHA/AND
18 237.685	5 481.655	4	$3s^23p^4(^3P)6p$	$^2P^\circ$	1/2	$3s^23p^4(^3P)6d$	^4F	3/2	0.013	95WHA/AND
18 249.266	5 478.177	14 b	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	1/2	$3s^23p^4(^3P_2)6g$	$^2[2]$	3/2	0.020	95WHA/AND
18 254.0904	5 476.7287	28	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P)5d$	^4P	5/2	0.0019	95WHA/AND
18 263.522	5 473.900	10	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)6d$	^4P	1/2	0.007	95WHA/AND
18 284.0059	5 467.7679	60	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)6d$	^4P	5/2	0.0010	95WHA/AND
18 294.51	5 464.627	4	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	$3s^23p^4(^3P_2)6g$	$^2[2]$	5/2	0.06	95WHA/AND
18 313.2592	5 459.0338	54	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	$3s^23p^4(^3P)6d$	^2F	5/2	0.0012	95WHA/AND
18 335.547	5 452.3982	20	$3s^23p^4(^1D)4d$	^2P	3/2	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.003	95WHA/AND
18 390.788	5 436.020	13	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	$3s^23p^4(^3P_2)6g$	$^2[3]$	5/2	0.011	95WHA/AND
18 403.838	5 432.166	6 *	$3s^23p^4(^3P_2)5g$	$^2[4]$	9/2	$3s^23p^4(^3P_2)6h$	$^2[4]^\circ$	9/2	0.012	95WHA/AND
18 403.838	5 432.166	6 *	$3s^23p^4(^3P_2)5g$	$^2[4]$	7/2	$3s^23p^4(^3P_2)6h$	$^2[4]^\circ$	7/2	0.012	95WHA/AND
18 427.360	5 425.2320	20	$3s^23p^4(^3P_2)5g$	$^2[5]$	11/2	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	13/2	0.004	95WHA/AND
18 427.49	5 425.192	400	$3s^23p^4(^3P_2)5g$	$^2[5]$	9/2	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	11/2	0.03	94QUI/PAL
18 438.5485	5 421.9399	54 *	$3s^23p^4(^3P_2)5g$	$^2[4]$	9/2	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	11/2	0.0012	95WHA/AND
18 438.5485	5 421.9399	54 *	$3s^23p^4(^3P_2)5g$	$^2[4]$	7/2	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	9/2	0.0012	95WHA/AND
18 462.152	5 415.0080	19 b	$3s^23p^4(^3P_1)5g$	$^2[3]$	5/2	$3s^23p^4(^3P_1)6h$	$^2[4]^\circ$	7/2	0.006	95WHA/AND
18 462.543	5 414.8935	25	$3s^23p^4(^3P_1)5g$	$^2[3]$	7/2	$3s^23p^4(^3P_1)6h$	$^2[4]^\circ$	9/2	0.003	95WHA/AND
18 470.417	5 412.585	12	$3s^23p^4(^3P_2)5g$	$^2[3]$	5/2	$3s^23p^4(^3P_2)6h$	$^2[3]^\circ$	5/2	0.009	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
18 470.753	5 412.486	11	$3s^23p^4(^3P_2)5g$	$^2[3]$	7/2 –	$3s^23p^4(^3P_2)6h$	$^2[3]^\circ$	7/2	0.010	95WHA/AND
18 489.248	5 407.0725	33	$3s^23p^4(^3P_1)5g$	$^2[5]$	11/2 –	$3s^23p^4(^3P_1)6h$	$^2[6]^\circ$	13/2	0.002	95WHA/AND
18 489.4694	5 407.0076	33 b	$3s^23p^4(^3P_1)5g$	$^2[5]$	9/2 –	$3s^23p^4(^3P_1)6h$	$^2[6]^\circ$	11/2	0.0034	95WHA/AND
18 495.853	5 405.142	3	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P)5d$	^4F	3/2	0.011	03ENG/HIN
18 519.9975	5 398.0948	56 *	$3s^23p^4(^3P_0)5g$	$^2[4]$	7/2 –	$3s^23p^4(^3P_0)6h$	$^2[5]^\circ$	9/2	0.0012	95WHA/AND
18 519.9975	5 398.0948	56 *	$3s^23p^4(^3P_0)5g$	$^2[4]$	9/2 –	$3s^23p^4(^3P_0)6h$	$^2[5]^\circ$	9/2	0.0012	95WHA/AND
18 523.931	5 396.9486	21 b	$3s^23p^4(^3P_2)5g$	$^2[3]$	5/2 –	$3s^23p^4(^3P_2)6h$	$^2[4]^\circ$	7/2	0.006	95WHA/AND
18 524.277	5 396.8477	28	$3s^23p^4(^3P_2)5g$	$^2[3]$	7/2 –	$3s^23p^4(^3P_2)6h$	$^2[4]^\circ$	9/2	0.003	95WHA/AND
18 561.0656	5 386.1510	36	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	11/2 –	$3s^23p^4(^1D)5d$	^2G	9/2	0.0013	95WHA/AND
18 574.9351	5 382.1293	85 *	$3s^23p^4(^3P_2)5g$	$^2[6]$	11/2 –	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	13/2	0.0010	95WHA/AND
18 574.9351	5 382.1293	85 *	$3s^23p^4(^3P_2)5g$	$^2[6]$	13/2 –	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	15/2	0.0010	95WHA/AND
18 577.0502	5 381.5165	30	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	9/2 –	$3s^23p^4(^1D)5d$	^2G	7/2	0.0017	95WHA/AND
18 604.465	5 373.5865	46 *	$3s^23p^4(^3P_1)5g$	$^2[4]$	9/2 –	$3s^23p^4(^3P_1)6h$	$^2[5]^\circ$	11/2	0.002	95WHA/AND
18 604.465	5 373.5865	46 *	$3s^23p^4(^3P_1)5g$	$^2[4]$	7/2 –	$3s^23p^4(^3P_1)6h$	$^2[5]^\circ$	9/2	0.002	95WHA/AND
18 639.418	5 363.510	6 *	$3s^23p^4(^3P_2)5g$	$^2[6]$	11/2 –	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	11/2	0.008	95WHA/AND
18 639.418	5 363.510	6 *	$3s^23p^4(^3P_2)5g$	$^2[6]$	13/2 –	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	13/2	0.008	95WHA/AND
18 641.037	5 363.044	17 b	$3s^23p^4(^3P)4d$	^2P	1/2 –	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.010	95WHA/AND
18 641.052	5 363.040	6 b	$3s^23p^4(^3P_2)5g$	$^2[6]$	13/2 –	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	11/2	0.022	95WHA/AND
18 645.774	5 361.682	14 b	$3s^23p^4(^3P_2)5g$	$^2[2]$	3/2 –	$3s^23p^4(^3P_2)6h$	$^2[3]^\circ$	5/2	0.012	95WHA/AND
18 646.263	5 361.5409	22	$3s^23p^4(^3P_2)5g$	$^2[2]$	5/2 –	$3s^23p^4(^3P_2)6h$	$^2[3]^\circ$	7/2	0.004	95WHA/AND
18 670.52	5 354.576	3 *	$3s^23p^4(^3P_1)5g$	$^2[4]$	9/2 –	$3s^23p^4(^3P_1)6h$	$^2[4]^\circ$	9/2	0.03	95WHA/AND
18 670.52	5 354.576	3 *	$3s^23p^4(^3P_1)5g$	$^2[4]$	7/2 –	$3s^23p^4(^3P_1)6h$	$^2[4]^\circ$	7/2	0.03	95WHA/AND
18 686.157	5 350.094	10	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^4P	3/2	0.012	95WHA/AND
18 759.282	5 329.239	2 b *	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	15/2 –	$3s^23p^4(^3P_2)8i$	$^2[6]$	13/2	0.020	03ENG/HIN
18 759.282	5 329.239	2 b *	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	13/2 –	$3s^23p^4(^3P_2)8i$	$^2[6]$	11/2	0.020	03ENG/HIN
18 762.3915	5 328.3561	42	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^4F	5/2	0.0016	95WHA/AND
18 803.959	5 316.5773	9	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^4D	5/2	0.006	95WHA/AND
18 804.8354	5 316.3296	55	$3s^23p^4(^1D)4d$	^2D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.0012	95WHA/AND
18 897.186	5 290.3486	17	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P)5d$	^4D	3/2	0.003	95WHA/AND
18 932.377	5 280.515	2	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^4P	5/2	0.008	03ENG/HIN
18 936.723	5 279.3034	15	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^4D	5/2	0.004	95WHA/AND
18 972.0962	5 269.4601	50	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	11/2 –	$3s^23p^4(^3P)5d$	^4F	9/2	0.0011	95WHA/AND
18 974.422	5 268.814	4	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^4P	3/2	0.013	95WHA/AND
18 989.617	5 264.5981	15 ?	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^4D	7/2	0.003	95WHA/AND
19 023.016	5 255.3552	8	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2 –	$3s^23p^4(^3P)5d$	^4P	3/2	0.005	95WHA/AND
19 034.416	5 252.2077	13	$3s^23p^4(^3P)5d$	^4F	7/2 –	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2	0.004	95WHA/AND
19 057.129	5 245.9477	10	$3s^23p^4(^3P)4d$	^4D	1/2 –	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.006	95WHA/AND
19 066.0687	5 243.4881	29	$3s^23p^4(^3P)4d$	^4D	5/2 –	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.0015	95WHA/AND
19 106.052	5 232.5151	18	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2 –	$3s^23p^4(^3P)5d$	^4F	5/2	0.003	95WHA/AND
19 171.758	5 214.582	1	$3s^23p^4(^3P_2)5g$	$^2[3]$	7/2 –	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	0.008	03ENG/HIN
19 374.958	5 159.8927	13	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P)5d$	^4P	5/2	0.004	95WHA/AND
19 392.822	5 155.140	6	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2 –	$3s^23p^4(^3P)5d$	^4D	3/2	0.008	95WHA/AND
19 459.429	5 137.4944	23 b	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2 –	$3s^23p^4(^3P)5d$	^4D	5/2	0.004	95WHA/AND
19 462.517	5 136.679	4	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^4P	1/2	0.010	95WHA/AND
19 481.170	5 131.761	4	$3s^23p^4(^3P)4p$	$^4D^\circ$	3/2 –	$3s^23p^4(^1D)3d$	^2F	5/2	0.010	95WHA/AND
19 506.903	5 124.991	5	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	1/2 –	$3s^23p^4(^3P)5d$	^4D	1/2	0.008	95WHA/AND
19 524.021	5 120.4977	5	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2 –	$3s^23p^4(^3P)5d$	^4D	3/2	0.006	95WHA/AND
19 528.002	5 119.4539	15	$3s^23p^4(^3P)5d$	^4D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.004	95WHA/AND
19 538.165	5 116.791	4	$3s^23p^4(^3P)5d$	^4D	7/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.017	95WHA/AND
19 581.122	5 105.566	3	$3s^23p^4(^3P)6s$	^4P	5/2 –	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.016	95WHA/AND
19 608.923	5 098.3272	9	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P)5d$	^4D	5/2	0.005	95WHA/AND
19 613.595	5 097.113	5	$3s^23p^4(^1D)4d$	^2D	3/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.010	95WHA/AND
19 615.448	5 096.631	5	$3s^23p^4(^3P)5d$	^4D	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.009	95WHA/AND
19 638.8762	5 090.5513	85	$3s^23p^4(^3P)4d$	^4D	7/2 –	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.0012	95WHA/AND
19 650.142	5 087.6329	17 ?	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P)5d$	^4F	3/2	0.003	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
19 665.965	5 083.5393	17	$3s^23p^4(^3P)4d$	^4P	5/2	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.003	95WHA/AND
19 683.0888	5 079.1168	41	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	9/2	$3s^23p^4(^3P)5d$	^4D	7/2	0.0012	95WHA/AND
19 706.412	5 073.1056	22	$3s^23p^4(^3P)5d$	^4P	1/2	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.002	95WHA/AND
19 711.6998	5 071.7446	35	$3s^23p^4(^3P)5d$	^4D	7/2	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.0015	95WHA/AND
19 763.4506	5 058.4642	105	$3s^23p^4(^3P)5d$	^4D	7/2	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.0012	95WHA/AND
19 768.382	5 057.2023	11	$3s^23p^4(^3P_2)4f$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P)5d$	^4D	7/2	0.004	95WHA/AND
19 768.569	5 057.154	5 b	$3s^23p^4(^1D_2)4f$	$^2[5]^\circ$	11/2	$3s^23p^4(^3P_2)7g$	$^2[4]$	9/2	0.016	03ENG/HIN
19 777.3025	5 054.9213	43	$3s^23p^4(^3P)4d$	^4D	3/2	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.0012	95WHA/AND
19 810.356	5 046.487	6	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P)5d$	^4F	5/2	0.009	95WHA/AND
19 826.425	5 042.397	7 ?	$3s^23p^4(^3P)5d$	^4D	3/2	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.013	95WHA/AND
19 849.660	5 036.4947	6	$3s^23p^4(^3P)5d$	^4D	5/2	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.006	95WHA/AND
19 851.500	5 036.028	5	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P)5d$	^4F	5/2	0.008	95WHA/AND
19 876.477	5 029.6995	10	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P)5d$	^4P	3/2	0.003	95WHA/AND
19 880.387	5 028.710	5	$3s^23p^4(^3P)5d$	^4D	3/2	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	1/2	0.012	95WHA/AND
19 900.089	5 023.7317	12	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	$3s^23p^4(^3P)7s$	^4P	3/2	0.004	95WHA/AND
19 922.9521	5 017.9666	32	$3s^23p^4(^3P)5d$	^4D	5/2	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.0017	95WHA/AND
19 952.411	5 010.5577	17 ?	$3s^23p^4(^3P_2)4f$	$^2[5]^\circ$	9/2	$3s^23p^4(^1D)4d$	^2F	7/2	0.003	95WHA/AND

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
20 006.955	4 998.2617	17	$3s^23p^4(^3P)4d$	^4P	1/2	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.003	95WHA/AND
20 034.2678	4 991.4477	83	$3s^23p^4(^3P)5d$	^4D	5/2	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.0012	95WHA/AND
20 063.902	4 984.0755	8	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)7s$	^4P	1/2	0.008	95WHA/AND
20 083.810	4 979.135	6	$3s^23p^4(^3P)6p$	$^2P^\circ$	1/2	$3s^23p^4(^3P)7s$	^2P	1/2	0.010	95WHA/AND
20 125.7230	4 968.7656	48	$3s^23p^4(^3P)4d$	^4D	5/2	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.0012	95WHA/AND
20 138.961	4 965.4993	31 b	$3s^23p^4(^1D)4d$	^2F	7/2	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	0.004	95WHA/AND
20 144.183	4 964.2124	12 *	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	$3s^23p^4(^3P_0)7g$	$^2[4]$	9/2	0.005	95WHA/AND
20 144.183	4 964.2124	12 *	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	$3s^23p^4(^3P)6d$	^4P	3/2	0.005	95WHA/AND
20 186.121	4 953.8988	10	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	$3s^23p^4(^3P)5d$	^4P	1/2	0.006	95WHA/AND
20 217.8375	4 946.1274	34	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	$3s^23p^4(^3P)7s$	^4P	5/2	0.0016	95WHA/AND
20 251.167	4 937.9870	18	$3s^23p^4(^3P)4d$	^4F	5/2	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.002	95WHA/AND
20 290.246	4 928.4763	7	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	$3s^23p^4(^3P)5d$	^4D	5/2	0.007	95WHA/AND
20 294.552	4 927.4310	13	$3s^23p^4(^3P)5d$	^4D	3/2	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.004	95WHA/AND
20 332.197	4 918.3077	8	$3s^23p^4(^3P)6s$	^4P	5/2	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.007	95WHA/AND
20 362.5134	4 910.9851	60	$3s^23p^4(^3P)5d$	^4F	3/2	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.0012	95WHA/AND
20 366.6987	4 909.9759	32 ?	$3s^23p^4(^3P)5d$	^4P	3/2	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.0018	95WHA/AND
20 383.627	4 905.898	7	$3s^23p^4(^1S)4s$	^2S	1/2	$3s^23p^4(^1D)4p$	$^2P^\circ$	3/2	0.014	95WHA/AND
20 388.330	4 904.767	6	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	$3s^23p^4(^3P)7s$	^2P	3/2	0.010	95WHA/AND
20 388.982	4 904.6096	27	$3s^23p^4(^3P)5d$	^4D	3/2	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.002	95WHA/AND
20 392.961	4 903.6527	15 ?	$3s^23p^4(^3P)5d$	^4F	5/2	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.004	95WHA/AND
20 419.991	4 897.1618	9	$3s^23p^4(^3P)6s$	^2P	3/2	$3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.005	95WHA/AND
20 433.089	4 894.0226	16	$3s^23p^4(^3P)5d$	^4F	5/2	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.003	95WHA/AND
20 464.8010	4 886.4389	60	$3s^23p^4(^3P)4d$	^4F	7/2	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.0013	95WHA/AND
20 587.808	4 857.2437	7	$3s^23p^4(^1D)4d$	^2F	7/2	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.008	95WHA/AND
20 589.642	4 856.8110	11	$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	$3s^23p^4(^3P)7s$	^4P	3/2	0.005	95WHA/AND
20 601.474	4 854.022	5	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	$3s^23p^4(^3P)5d$	^4D	3/2	0.009	95WHA/AND
20 613.483	4 851.194	5	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	9/2	$3s^23p^4(^1D)5d$	^2G	9/2	0.009	95WHA/AND
20 619.137	4 849.864	4	$3s^23p^4(^3P)5d$	^4P	5/2	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.009	95WHA/AND
20 628.503	4 847.6614	18	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	$3s^23p^4(^3P)7s$	^2P	1/2	0.003	95WHA/AND
20 631.756	4 846.8970	4	$3s^23p^4(^1D_2)4f$	$^2[4]^\circ$	7/2	$3s^23p^4(^1D)5d$	^2G	7/2	0.008	95WHA/AND
20 652.382	4 842.056	10	$3s^23p^4(^3P)5d$	^4P	5/2	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.010	03ENG/HIN
20 654.206	4 841.6288	10	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	$3s^23p^4(^3P)7s$	^4P	5/2	0.004	95WHA/AND
20 708.077	4 829.034	4	$3s^23p^4(^3P)4d$	^4F	3/2	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.014	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
20 721.3294	4 825.9452	43	$3s^23p^4(^3P)5d$	^4D	3/2	– $3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.0014	95WHA/AND
20 751.092	4 819.0236	8	$3s^23p^4(^3P)6s$	^4P	1/2	– $3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.007	95WHA/AND
20 789.091	4 810.215	5	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.012	95WHA/AND
20 838.028	4 798.918	5	$3s^23p^4(^1D)4d$	^2F	7/2	– $3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.010	95WHA/AND
20 844.5924	4 797.4073	83	$3s^23p^4(^3P)5d$	^4F	5/2	– $3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.0013	95WHA/AND
20 847.438	4 796.7525	18	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	– $3s^23p^4(^1D)4d$	^2D	5/2	0.003	95WHA/AND
20 919.632	4 780.1988	11	$3s^23p^4(^3P)4d$	^4D	3/2	– $3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.005	95WHA/AND
20 921.965	4 779.666	5	$3s^23p^4(^3P)6s$	^4P	3/2	– $3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.011	95WHA/AND
20 932.840	4 777.1826	16	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	9/2	– $3s^23p^4(^3P)5d$	^4F	7/2	0.003	95WHA/AND
20 936.9837	4 776.2372	81	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)3d$	^2F	7/2	0.0013	95WHA/AND
20 942.0382	4 775.0844	44	$3s^23p^4(^3P)5d$	^4P	3/2	– $3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.0014	95WHA/AND
20 946.893	4 773.9776	18	$3s^23p^4(^3P)5d$	^4D	1/2	– $3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	1/2	0.004	95WHA/AND
20 969.811	4 768.760	4	$3s^23p^4(^3P)5d$	^4F	5/2	– $3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.011	95WHA/AND
21 016.436	4 758.1807	15 b	$3s^23p^4(^3P)5d$	^4P	3/2	– $3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.008	95WHA/AND
21 025.884	4 756.0427	22	$3s^23p^4(^1D)5d$	^2G	7/2	– $3s^23p^4(^1D_2)5f$	$^2[5]^\circ$	9/2	0.003	95WHA/AND
21 044.361	4 751.867	2 b	$3s^23p^4(^3P)5d$	^4F	5/2	– $3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.016	03ENG/HIN
21 046.382	4 751.4104	28	$3s^23p^4(^1D)5d$	^2G	9/2	– $3s^23p^4(^1D_2)5f$	$^2[5]^\circ$	9/2	0.002	95WHA/AND
21 061.8682	4 747.9169	47	$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.0013	95WHA/AND
21 120.419	4 734.755	3	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.017	95WHA/AND
21 128.3292	4 732.9819	56	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	– $3s^23p^4(^3P)7s$	^4P	3/2	0.0013	95WHA/AND
21 225.461	4 711.323	4	$3s^23p^4(^3P)5d$	^4F	9/2	– $3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	0.020	95WHA/AND
21 242.7985	4 707.4777	195	$3s^23p^4(^3P)5d$	^4F	9/2	– $3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	11/2	0.0014	95WHA/AND
21 251.98	4 705.443	3	$3s^23p^4(^3P)4d$	^2P	3/2	– $3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	0.03	95WHA/AND
21 280.0635	4 699.2341	56	$3s^23p^4(^3P)4d$	^4P	3/2	– $3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.0014	95WHA/AND
21 404.738	4 671.8630	16	$3s^23p^4(^3P)4d$	^4F	3/2	– $3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.003	95WHA/AND
21 426.429	4 667.133	4	$3s^23p^4(^1D)4d$	^2P	1/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.013	95WHA/AND
21 434.4555	4 665.3856	68	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	– $3s^23p^4(^3P)7s$	^4P	5/2	0.0014	95WHA/AND
21 441.311	4 663.8941	8	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.008	95WHA/AND
21 480.233	4 655.4430	10	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.006	95WHA/AND
21 505.952	4 649.8755	23	$3s^23p^4(^3P)5d$	^4D	1/2	– $3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.003	95WHA/AND
21 566.893	4 636.7365	10	$3s^23p^4(^3P)5d$	^2F	7/2	– $3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.007	95WHA/AND
21 607.080	4 628.1126	17	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	5/2	0.004	95WHA/AND
21 697.526	4 608.8202	13	$3s^23p^4(^1D)4d$	^2P	3/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.004	95WHA/AND
21 726.972	4 602.5740	8	$3s^23p^4(^1D)4d$	^2G	7/2	– $3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	0.007	95WHA/AND
21 747.682	4 598.1911	19	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.003	95WHA/AND
21 770.2548	4 593.4235	269	$3s^23p^4(^1D)4d$	^2G	9/2	– $3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	0.0014	95WHA/AND
21 775.068	4 592.4081	7	$3s^23p^4(^3P)6s$	^4P	3/2	– $3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.008	95WHA/AND
21 885.376	4 569.2614	6	$3s^23p^4(^3P)4p$	$^2D^\circ$	5/2	– $3s^23p^4(^1D)3d$	^2F	5/2	0.007	95WHA/AND
21 939.368	4 558.016	6	$3s^23p^4(^3P)5d$	^4F	9/2	– $3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.011	95WHA/AND
21 947.8049	4 556.2643	219	$3s^23p^4(^1D)4d$	^2G	7/2	– $3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.0014	95WHA/AND
22 003.4545	4 544.7409	35	$3s^23p^4(^3P)5d$	^4F	9/2	– $3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2	0.0017	95WHA/AND
22 010.763	4 543.232	0	$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	– $3s^23p^4(^3P)6d$	^4D	7/2	0.010	03ENG/HIN
22 014.751	4 542.4089	11	$3s^23p^4(^3P)6p$	$^2P^\circ$	1/2	– $3s^23p^4(^3P)7s$	^4P	1/2	0.004	95WHA/AND
22 025.84	4 540.123	3	$3s^23p^4(^3P)5d$	^2F	7/2	– $3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.03	95WHA/AND
22 052.9793	4 534.5347	37	$3s^23p^4(^3P)5d$	^4F	3/2	– $3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	0.0017	95WHA/AND
22 104.8666	4 523.8907	141	$3s^23p^4(^3P)5d$	^2F	7/2	– $3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2	0.0015	95WHA/AND
22 129.379	4 518.8796	17	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	– $3s^23p^4(^3P)7s$	^2P	3/2	0.003	95WHA/AND
22 202.669	4 503.963	3 b	$3s^23p^4(^3P)5d$	^2D	3/2	– $3s^23p^4(^1D_2)4f$	$^2[2]^\circ$	5/2	0.020	03ENG/HIN
22 251.677	4 494.0433	8	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	– $3s^23p^4(^1D)4d$	^2P	3/2	0.007	95WHA/AND
22 342.492	4 475.776	5	$3s^23p^4(^3P)5d$	^2F	5/2	– $3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	0.019	95WHA/AND
22 359.562	4 472.3597	5	$3s^23p^4(^3P)4d$	^4P	3/2	– $3s^23p^4(^3P)5p$	$^2S^\circ$	1/2	0.010	95WHA/AND
22 381.5210	4 467.9716	83	$3s^23p^4(^3P)5d$	^2F	5/2	– $3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	0.0015	95WHA/AND
22 402.5323	4 463.7811	72	$3s^23p^4(^3P)5d$	^4P	5/2	– $3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.0015	95WHA/AND
22 442.437	4 455.8441	10	$3s^23p^4(^3P)6s$	^4P	3/2	– $3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.005	95WHA/AND
22 450.6048	4 454.2230	54	$3s^23p^4(^1D)4d$	^2D	5/2	– $3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.0015	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
22 471.578	4 450.0658	7	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2P	1/2	0.008	95WHA/AND
22 527.730	4 438.9735	11	$3s^23p^4(^3P)4d$	^2P	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[2]^\circ$	5/2	0.009	95WHA/AND
22 538.613	4 436.8301	25	$3s^23p^4(^3P)4d$	^4F	5/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.002	95WHA/AND
22 553.425	4 433.9162	11	$3s^23p^4(^1D)4d$	^2D	5/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.005	95WHA/AND
22 558.2123	4 432.9754	170	$3s^23p^4(^3P)4d$	^4F	5/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0015	95WHA/AND
22 670.927	4 410.9355	6	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)7s$	^4P	1/2	0.008	95WHA/AND
22 729.108	4 399.6447	14 ?	$3s^23p^4(^3P)5d$	^4F	3/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.005	95WHA/AND
22 766.3206	4 392.4533	115 b	$3s^23p^4(^3P)4d$	^4F	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.0032	95WHA/AND
22 803.7638	4 385.2410	31	$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^1S)4p$	$^2P^\circ$	3/2	0.0018	95WHA/AND
22 898.145	4 367.1660	24	$3s^23p^4(^3P)5d$	^4P	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.003	95WHA/AND
23 049.345	4 338.5181	14	$3s^23p^4(^3P)5d$	^4P	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.005	95WHA/AND
23 086.036	4 331.623	4	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	–	$3s^23p^4(^3P)7s$	^2P	3/2	0.018	95WHA/AND
23 094.886	4 329.9630	8	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	3/2	–	$3s^23p^4(^3P)5d$	^4D	1/2	0.007	95WHA/AND
23 139.044	4 321.6997	29	$3s^23p^4(^3P)4d$	^4F	9/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	0.005	03ENG/HIN
23 139.516	4 321.6116	813 b	$3s^23p^4(^3P)5d$	^4P	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	0.010	03ENG/HIN
23 225.1335	4 305.6803	93	$3s^23p^4(^3P)6s$	^2P	1/2	–	$3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	0.0016	95WHA/AND
23 372.3763	4 278.5551	200	$3s^23p^4(^3P)4d$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^4S^\circ$	3/2	0.0016	95WHA/AND
23 421.505	4 269.581	5	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	–	$3s^23p^4(^3P)7s$	^4P	3/2	0.011	95WHA/AND
23 424.02	4 269.123	4	$3s^23p^4(^3P)4d$	^2P	3/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	5/2	0.03	95WHA/AND
23 459.5569	4 262.6551	51 ?	$3s^23p^4(^3P)4d$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	1/2	0.0017	95WHA/AND
23 675.1151	4 223.8443	155	$3s^23p^4(^3P)5d$	^4F	7/2	–	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	0.0017	95WHA/AND
23 772.6038	4 206.5228	79	$3s^23p^4(^3P)6s$	^4P	3/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.0017	95WHA/AND
23 952.645	4 174.904	4	$3s^23p^4(^3P)5d$	^2D	3/2	–	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.016	95WHA/AND
23 998.9360	4 166.8514	44	$3s^23p^4(^3P)4d$	^4F	3/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.0017	95WHA/AND
24 016.934	4 163.7289	19	$3s^23p^4(^3P)5d$	^4P	1/2	–	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.004	95WHA/AND
24 096.140	4 150.0423	15	$3s^23p^4(^3P)5d$	^4P	1/2	–	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	1/2	0.006	95WHA/AND
24 102.512	4 148.9451	11	$3s^23p^4(^3P_2)4f$	$^2[1]^\circ$	3/2	–	$3s^23p^4(^1D)4d$	^2P	1/2	0.006	95WHA/AND
24 109.595	4 147.726	5	$3s^23p^4(^1D)4d$	^2P	1/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.017	95WHA/AND
24 202.9057	4 131.7353	58	$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.0018	95WHA/AND
24 296.281	4 115.856	5	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^1D)4d$	^2F	5/2	0.014	95WHA/AND
24 297.861	4 115.5886	15	$3s^23p^4(^3P)5d$	^4F	7/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.004	95WHA/AND
24 379.658	4 101.780	5	$3s^23p^4(^3P)6s$	^2P	3/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.012	95WHA/AND
24 451.6934	4 089.6963	46	$3s^23p^4(^3P)5d$	^2F	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2	0.0018	95WHA/AND
24 529.323	4 076.753	6	$3s^23p^4(^3P)5d$	^2P	1/2	–	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	1/2	0.018	95WHA/AND
24 566.762	4 070.5406	14	$3s^23p^4(^3P)5d$	^4F	7/2	–	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.005	95WHA/AND
24 575.410	4 069.1081	15	$3s^23p^4(^1D)4d$	^2P	3/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.004	95WHA/AND
24 802.4319	4 031.8627	112	$3s^23p^4(^3P)4d$	^4F	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.0018	95WHA/AND
24 813.7721	4 030.0201	269	$3s^23p^4(^3P)4d$	^4F	7/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.0018	95WHA/AND
25 030.4508	3 995.1338	98	$3s^23p^4(^1D)4d$	^2F	7/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.0019	95WHA/AND
25 043.307	3 993.0828	9	$3s^23p^4(^3P)5d$	^2F	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	0.008	95WHA/AND
25 146.47	3 976.701	7	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P)6d$	^2D	5/2	0.02	95WHA/AND
25 224.278	3 964.4346	7	$3s^23p^4(^3P)5d$	^2F	5/2	–	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	0.010	95WHA/AND
25 262.13	3 958.494	4	$3s^23p^4(^3P)5d$	^4D	5/2	–	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.02	95WHA/AND
25 413.175	3 934.967	6	$3s^23p^4(^3P)4d$	^4P	1/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.014	95WHA/AND
25 430.064	3 932.3535	16	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	–	$3s^23p^4(^3P)7s$	^4P	3/2	0.005	95WHA/AND
25 503.42	3 921.043	7	$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^3P_0)4f$	$^2[3]^\circ$	5/2	0.03	95WHA/AND
25 600.484	3 906.1761	66	$3s^23p^4(^3P)4p$	$^2D^\circ$	3/2	–	$3s^23p^4(^1D)3d$	^2F	5/2	0.002	95WHA/AND
25 646.888	3 899.1086	15	$3s^23p^4(^1D)4d$	^2F	5/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.004	95WHA/AND
25 693.158	3 892.0868	7	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	–	$3s^23p^4(^1D)4d$	^2D	3/2	0.011	95WHA/AND
25 734.139	3 885.8886	21	$3s^23p^4(^3P)6s$	^2P	3/2	–	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.003	95WHA/AND
25 781.158	3 878.8017	69	$3s^23p^4(^1D)4d$	^2F	5/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.002	95WHA/AND
25 844.496	3 869.2958	32	$3s^23p^4(^3P)6s$	^4P	3/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.002	95WHA/AND
25 982.085	3 848.8059	13	$3s^23p^4(^3P)5d$	^4P	3/2	–	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	0.008	95WHA/AND
26 066.181	3 836.3886	8	$3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)7s$	^2P	1/2	0.007	95WHA/AND
26 262.216	3 807.7517	66	$3s^23p^4(^3P)6s$	^4P	1/2	–	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.002	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
26 383.832	3 790.2000	17	$3s^23p^4(^3P)4d$	^4F	7/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	7/2	0.004	95WHA/AND
26 555.215	3 765.7387	28	$3s^23p^4(^3P)4d$	^4F	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.003	95WHA/AND
26 674.536	3 748.8937	16	$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.005	95WHA/AND
26 782.073	3 733.8410	23	$3s^23p^4(^3P)5d$	^4P	3/2	–	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.004	95WHA/AND
26 796.756	3 731.7951	8	$3s^23p^4(^3P)6s$	^4P	5/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.011	95WHA/AND
26 827.505	3 727.5177	5	$3s^23p^4(^3P)5d$	^4F	5/2	–	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.014	95WHA/AND
26 839.516	3 725.8496	13	$3s^23p^4(^3P)4d$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	0.005	95WHA/AND
27 037.028	3 698.6314	56	$3s^23p^4(^3P)6s$	^2P	3/2	–	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.002	95WHA/AND
27 062.002	3 695.2181	224	$3s^23p^4(^3P)4d$	^2F	7/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.002	95WHA/AND
27 150.185	3 683.2161	9	$3s^23p^4(^1D)4d$	^2F	5/2	–	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.009	95WHA/AND
27 194.463	3 677.2191	17	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P)6d$	^4F	5/2	0.006	95WHA/AND
27 201.470	3 676.2719	5	$3s^23p^4(^3P)6s$	^4P	1/2	–	$3s^23p^4(^3P)6p$	$^2P^\circ$	1/2	0.014	03ENG/HIN
27 274.49	3 666.429	3	$3s^23p^4(^3P_1)4f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^1D)4d$	^2D	3/2	0.05	95WHA/AND
27 438.173	3 644.5575	46	$3s^23p^4(^3P)5d$	^4F	5/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.002	95WHA/AND
27 503.210	3 635.9392	6	$3s^23p^4(^3P)4d$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.014	95WHA/AND
27 578.33	3 626.035	5	$3s^23p^4(^3P)5d$	^4F	5/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	0.02	95WHA/AND
27 620.536	3 620.4945	68	$3s^23p^4(^3P)6s$	^4P	1/2	–	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.002	95WHA/AND
27 622.573	3 620.2276	10	$3s^23p^4(^3P)4d$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.008	95WHA/AND
27 645.010	3 617.2894	257	$3s^23p^4(^3P)6s$	^4P	5/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	0.002	95WHA/AND
27 651.969	3 616.3790	5	$3s^23p^4(^3P)4d$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.014	95WHA/AND
27 654.879	3 615.9984	10	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	–	$3s^23p^4(^3P)6d$	^4P	3/2	0.011	95WHA/AND
27 682.964	3 612.3299	30	$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.003	95WHA/AND
27 929.752	3 580.4113	25	$3s^23p^4(^3P)4d$	^4F	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.003	95WHA/AND
28 072.69	3 562.182	7	$3s^23p^4(^3P)4d$	^2D	5/2	–	$3s^23p^4(^3P_1)4f$	$^2[4]^\circ$	7/2	0.03	95WHA/AND
28 073.580	3 562.0679	34	$3s^23p^4(^3P)6s$	^2P	3/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.002	95WHA/AND
28 410.252	3 519.8561	26	$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.003	95WHA/AND
28 427.457	3 517.7259	7	$3s^23p^4(^1D)4d$	^2D	5/2	–	$3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	0.010	95WHA/AND
28 556.653	3 501.811	8	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P)6d$	^2D	5/2	0.019	95WHA/AND
28 604.438	3 495.9610	9	$3s^23p^4(^1D)4d$	^2F	5/2	–	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.009	95WHA/AND
28 607.981	3 495.5280	24	$3s^23p^4(^3P)5d$	^2F	7/2	–	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2	0.004	95WHA/AND
28 653.35	3 489.993	5	$3s^23p^4(^3P)6s$	^2P	1/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.02	95WHA/AND
28 703.205	3 483.9315	14	$3s^23p^4(^3P)6s$	^4P	1/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.006	95WHA/AND
28 821.817	3 469.5938	158	$3s^23p^4(^3P)6s$	^2P	3/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.002	95WHA/AND
29 047.339	3 442.6562	7	$3s^23p^4(^3P)5d$	^4D	3/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.010	95WHA/AND
29 060.939	3 441.0450	79	$3s^23p^4(^3P)6s$	^4P	5/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.003	95WHA/AND
29 213.404	3 423.0862	182	$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P)5p$	$^2D^\circ$	3/2	0.003	95WHA/AND
29 235.5	3 420.50	130	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_2)7g$	$^2[5]$	11/2	0.1	94QUI/PAL
29 296.75	3 413.348	5	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_2)7g$	$^2[4]$	9/2	0.11	95WHA/AND
29 305.77	3 412.297	5	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_2)7g$	$^2[5]$	9/2	0.17	95WHA/AND
29 360.867	3 405.8940	195	$3s^23p^4(^3P)6s$	^4P	3/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.003	95WHA/AND
29 391.8	3 402.30	50	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	3/2	–	$3s^23p^4(^3P_1)7g$	$^2[3]$	5/2	0.1	94QUI/PAL
29 414.69	3 399.662	6	$3s^23p^4(^3P)6p$	$^2S^\circ$	1/2	–	$3s^23p^4(^3P)7s$	^4P	1/2	0.02	95WHA/AND
29 446.8	3 395.95	60 *	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_2)7g$	$^2[3]$	5/2	0.1	94QUI/PAL
29 446.8	3 395.95	60 *	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_2)7g$	$^2[3]$	7/2	0.1	94QUI/PAL
29 446.8	3 395.95	60 *	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P_2)7g$	$^2[4]$	7/2	0.1	94QUI/PAL
29 511.57	3 388.502	5	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	5/2	–	$3s^23p^4(^3P_1)7g$	$^2[3]$	7/2	0.11	95WHA/AND
29 522.290	3 387.2711	7	$3s^23p^4(^3P)5d$	^2F	7/2	–	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.013	95WHA/AND
29 538.81	3 385.377	8	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_1)7g$	$^2[5]$	11/2	0.06	95WHA/AND
29 563.01	3 382.605	6 *	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_2)7g$	$^2[4]$	7/2	0.15	95WHA/AND
29 563.01	3 382.605	6 *	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_2)7g$	$^2[4]$	9/2	0.15	95WHA/AND
29 604.323	3 377.8850	11	$3s^23p^4(^3P)4d$	^2D	3/2	–	$3s^23p^4(^3P_1)4f$	$^2[2]^\circ$	5/2	0.009	95WHA/AND
29 651.82	3 372.474	12	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_1)7g$	$^2[5]$	9/2	0.03	95WHA/AND
29 670.19	3 370.386	5	$3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_0)7g$	$^2[4]$	7/2	0.09	95WHA/AND
29 718.6	3 364.90	90	$3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P_0)7g$	$^2[4]$	7/2	0.1	94QUI/PAL
29 755.04	3 360.774	4	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	3/2	–	$3s^23p^4(^3P_2)7g$	$^2[3]$	5/2	0.13	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
29 849.146	3 350.1796	6	$3s^23p^4(^3P)5d$	^4D	3/2	$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.013	95WHA/AND
29 858.305	3 349.1520	12	$3s^23p^4(^1D)4d$	^2S	1/2	$3s^23p^4(^1D_2)4f$	$^2[1]^\circ$	3/2	0.017	95WHA/AND
29 881.2	3 346.58	75	$3s^23p^4(^3P_2)6f$	$^2[2]^\circ$	5/2	$3s^23p^4(^3P_2)7g$	$^2[3]$	7/2	0.1	94QUI/PAL
29 883.94	3 346.279	12	$3s^23p^4(^3P_2)6f$	$^2[5]^\circ$	9/2	$3s^23p^4(^3P_2)7g$	$^2[6]$	11/2	0.04	95WHA/AND
29 920.17	3 342.227	7 *	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P)6d$	^2P	3/2	0.02	95WHA/AND
29 920.17	3 342.227	7 *	$3s^23p^4(^3P)5d$	^2F	7/2	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	0.02	95WHA/AND
29 971.101	3 336.5474	132	$3s^23p^4(^3P)6s$	^4P	5/2	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	0.003	95WHA/AND
29 980.1	3 335.55	75	$3s^23p^4(^3P)5d$	^4F	3/2	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2	0.1	94QUI/PAL
30 042.101	3 328.6620	20	$3s^23p^4(^3P)6s$	^4P	3/2	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.005	95WHA/AND
30 049.4	3 327.85	60	$3s^23p^4(^3P_1)6f$	$^2[3]^\circ$	5/2	$3s^23p^4(^3P_1)7g$	$^2[4]$	7/2	0.1	94QUI/PAL
30 186.433	3 312.7465	32	$3s^23p^4(^3P)6s$	^2P	3/2	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.003	95WHA/AND
30 211.10	3 310.042	7	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	3/2	$3s^23p^4(^3P)6d$	^2D	3/2	0.02	95WHA/AND
30 354.468	3 294.4080	66	$3s^23p^4(^3P)6s$	^2P	1/2	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.003	95WHA/AND
30 417.25	3 287.607	7	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	3/2	$3s^23p^4(^3P)6d$	^4P	1/2	0.02	95WHA/AND
30 468.625	3 282.0648	68	$3s^23p^4(^3P)6s$	^4P	3/2	$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.003	95WHA/AND
30 573.37	3 270.821	17	$3s^23p^4(^3P_2)6g$	$^2[5]$	11/2	$3s^23p^4(^3P_2)7h$	$^2[6]^\circ$	13/2	0.03	95WHA/AND
30 574.68	3 270.681	17	$3s^23p^4(^3P_2)6g$	$^2[5]$	9/2	$3s^23p^4(^3P_2)7h$	$^2[6]^\circ$	11/2	0.05	95WHA/AND
30 592.53	3 268.771	26 *	$3s^23p^4(^3P_2)6g$	$^2[4]$	9/2	$3s^23p^4(^3P_2)7h$	$^2[5]^\circ$	11/2	0.02	95WHA/AND
30 592.53	3 268.771	26 *	$3s^23p^4(^3P_2)6g$	$^2[4]$	7/2	$3s^23p^4(^3P_2)7h$	$^2[5]^\circ$	9/2	0.02	95WHA/AND
30 614.68	3 266.407	10	$3s^23p^4(^3P_1)6g$	$^2[3]$	5/2	$3s^23p^4(^3P_1)7h$	$^2[4]^\circ$	7/2	0.06	95WHA/AND
30 615.68	3 266.301	14	$3s^23p^4(^3P_1)6g$	$^2[3]$	7/2	$3s^23p^4(^3P_1)7h$	$^2[4]^\circ$	9/2	0.04	95WHA/AND
30 659.33	3 261.650	15	$3s^23p^4(^3P_1)6g$	$^2[5]$	11/2	$3s^23p^4(^3P_1)7h$	$^2[6]^\circ$	13/2	0.03	95WHA/AND
30 660.09	3 261.569	17	$3s^23p^4(^3P_1)6g$	$^2[5]$	9/2	$3s^23p^4(^3P_1)7h$	$^2[6]^\circ$	11/2	0.04	95WHA/AND
30 704.17	3 256.887	13	$3s^23p^4(^3P_0)6g$	$^2[4]$	9/2	$3s^23p^4(^3P_0)7h$	$^2[5]^\circ$	11/2	0.04	95WHA/AND
30 705.76	3 256.718	12	$3s^23p^4(^3P_0)6g$	$^2[4]$	7/2	$3s^23p^4(^3P_0)7h$	$^2[5]^\circ$	9/2	0.05	95WHA/AND
30 726.77	3 254.491	8	$3s^23p^4(^3P_2)6g$	$^2[3]$	5/2	$3s^23p^4(^3P_2)7h$	$^2[4]^\circ$	7/2	0.08	95WHA/AND
30 727.25	3 254.441	11	$3s^23p^4(^3P_2)6g$	$^2[3]$	7/2	$3s^23p^4(^3P_2)7h$	$^2[4]^\circ$	9/2	0.08	95WHA/AND
30 736.348	3 253.4770	15	$3s^23p^4(^3P)5d$	^4F	7/2	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.006	95WHA/AND
30 757.57	3 251.233	8 *	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	11/2	$3s^23p^4(^3P_2)7i$	$^2[5]$	11/2	0.04	95WHA/AND
30 757.57	3 251.233	8 *	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	9/2	$3s^23p^4(^3P_2)7i$	$^2[5]$	9/2	0.04	95WHA/AND
30 791.751	3 247.6231	132 *	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	13/2	$3s^23p^4(^3P_2)7i$	$^2[7]$	15/2	0.004	95WHA/AND
30 791.751	3 247.6231	132 *	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	11/2	$3s^23p^4(^3P_2)7i$	$^2[7]$	13/2	0.004	95WHA/AND
30 791.751	3 247.6231	132 *	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	9/2	$3s^23p^4(^3P_2)7i$	$^2[6]$	11/2	0.004	95WHA/AND
30 791.751	3 247.6231	132 *	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	11/2	$3s^23p^4(^3P_2)7i$	$^2[6]$	13/2	0.004	95WHA/AND
30 791.751	3 247.6231	132 *	$3s^23p^4(^3P_2)6g$	$^2[6]$	13/2	$3s^23p^4(^3P_2)7h$	$^2[7]^\circ$	15/2	0.004	95WHA/AND
30 791.924	3 247.6048	91 *	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	11/2	$3s^23p^4(^3P_2)7i$	$^2[6]$	13/2	0.005	95WHA/AND
30 791.924	3 247.6048	91 *	$3s^23p^4(^3P_2)6h$	$^2[5]^\circ$	9/2	$3s^23p^4(^3P_2)7i$	$^2[6]$	11/2	0.005	95WHA/AND
30 794.44	3 247.339	14	$3s^23p^4(^3P_2)6g$	$^2[6]$	11/2	$3s^23p^4(^3P_2)7h$	$^2[7]^\circ$	13/2	0.03	95WHA/AND
30 796.52	3 247.120	10 *	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	13/2	$3s^23p^4(^3P_2)7i$	$^2[6]$	13/2	0.05	95WHA/AND
30 796.52	3 247.120	10 *	$3s^23p^4(^3P_2)6h$	$^2[6]^\circ$	11/2	$3s^23p^4(^3P_2)7i$	$^2[6]$	11/2	0.05	95WHA/AND
30 808.575	3 245.8495	66 *	$3s^23p^4(^3P_1)6h$	$^2[4]^\circ$	9/2	$3s^23p^4(^3P_1)7i$	$^2[5]$	11/2	0.005	95WHA/AND
30 808.575	3 245.8495	66 *	$3s^23p^4(^3P_1)6h$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_1)7i$	$^2[5]$	9/2	0.005	95WHA/AND
30 827.894	3 243.8155	81 *	$3s^23p^4(^3P_1)6h$	$^2[6]^\circ$	13/2	$3s^23p^4(^3P_1)7i$	$^2[7]$	15/2	0.004	95WHA/AND
30 827.894	3 243.8155	81 *	$3s^23p^4(^3P_1)6h$	$^2[6]^\circ$	11/2	$3s^23p^4(^3P_1)7i$	$^2[7]$	13/2	0.004	95WHA/AND
30 839.17	3 242.630	16 *	$3s^23p^4(^3P_1)6g$	$^2[4]$	9/2	$3s^23p^4(^3P_1)7h$	$^2[5]^\circ$	11/2	0.07	95WHA/AND
30 839.17	3 242.630	16 *	$3s^23p^4(^3P_1)6g$	$^2[4]$	7/2	$3s^23p^4(^3P_1)7h$	$^2[5]^\circ$	9/2	0.07	95WHA/AND
30 853.575	3 241.1155	66 *	$3s^23p^4(^3P_0)6h$	$^2[5]^\circ$	11/2	$3s^23p^4(^3P_0)7i$	$^2[6]$	13/2	0.007	95WHA/AND
30 853.575	3 241.1155	66 *	$3s^23p^4(^3P_0)6h$	$^2[5]^\circ$	9/2	$3s^23p^4(^3P_0)7i$	$^2[6]$	11/2	0.007	95WHA/AND
30 854.690	3 240.9984	60 *	$3s^23p^4(^3P_2)6h$	$^2[4]^\circ$	9/2	$3s^23p^4(^3P_2)7i$	$^2[5]$	11/2	0.005	95WHA/AND
30 854.690	3 240.9984	60 *	$3s^23p^4(^3P_2)6h$	$^2[4]^\circ$	7/2	$3s^23p^4(^3P_2)7i$	$^2[5]$	9/2	0.005	95WHA/AND
30 902.464	3 235.9879	81 *	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	15/2	$3s^23p^4(^3P_2)7i$	$^2[8]$	17/2	0.006	95WHA/AND
30 902.464	3 235.9879	81 *	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	13/2	$3s^23p^4(^3P_2)7i$	$^2[8]$	15/2	0.006	95WHA/AND
30 905.23	3 235.698	8	$3s^23p^4(^3P_2)6g$	$^2[2]$	5/2	$3s^23p^4(^3P_2)7h$	$^2[3]^\circ$	7/2	0.11	95WHA/AND
30 915.632	3 234.6096	50	$3s^23p^4(^3P)6s$	^4P	1/2	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.003	95WHA/AND
30 921.450	3 234.0010	28 *	$3s^23p^4(^3P_1)6h$	$^2[5]^\circ$	9/2	$3s^23p^4(^3P_1)7i$	$^2[6]$	11/2	0.007	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
30 921.450	3 234.0010	28 *	$3s^23p^4(^3P_1)6h$	$^2[5]^\circ$	11/2 –	$3s^23p^4(^3P_1)7i$	$^2[6]$	13/2	0.007	95WHA/AND
30 947.34	3 231.296	26 *	$3s^23p^4(^3P_2)6h$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P_2)7i$	$^2[4]$	9/2	0.03	95WHA/AND
30 947.34	3 231.296	26 *	$3s^23p^4(^3P_2)6h$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P_2)7i$	$^2[4]$	7/2	0.03	95WHA/AND
30 969.13	3 229.022	6 *	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	15/2 –	$3s^23p^4(^3P_2)7i$	$^2[7]$	15/2	0.13	95WHA/AND
30 969.13	3 229.022	6 *	$3s^23p^4(^3P_2)6h$	$^2[7]^\circ$	13/2 –	$3s^23p^4(^3P_2)7i$	$^2[7]$	13/2	0.13	95WHA/AND
31 368.43	3 187.919	4	$3s^23p^4(^3P)5d$	^4D	1/2 –	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.03	95WHA/AND
31 616.199	3 162.9355	14	$3s^23p^4(^3P)6s$	^2P	1/2 –	$3s^23p^4(^3P)6p$	$^2P^\circ$	1/2	0.008	95WHA/AND
31 766.431	3 147.9772	9	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2 –	$3s^23p^4(^3P)6d$	^4F	3/2	0.017	95WHA/AND
31 932.853	3 131.5712	7	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^2F	5/2	0.019	95WHA/AND
32 101.237	3 115.1447	62	$3s^23p^4(^3P)6s$	^4P	3/2 –	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.003	95WHA/AND
32 153.555	3 110.0760	9	$3s^23p^4(^1D)4d$	^2F	5/2 –	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.012	95WHA/AND
32 183.842	3 107.1492	10	$3s^23p^4(^3P)6s$	^2P	1/2 –	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.012	95WHA/AND
32 287.448	3 097.1788	7	$3s^23p^4(^3P)4d$	^4F	3/2 –	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.013	95WHA/AND
32 356.35	3 090.583	7	$3s^23p^4(^3P)6d$	^4P	1/2 –	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	3/2	0.03	95WHA/AND
32 678.316	3 060.1332	6	$3s^23p^4(^3P)4p$	$^2P^\circ$	3/2 –	$3s^23p^4(^1D)3d$	^2F	5/2	0.013	95WHA/AND
32 694.266	3 058.6403	42	$3s^23p^4(^1D)4d$	^2F	7/2 –	$3s^23p^4(^1D)5p$	$^2F^\circ$	7/2	0.003	95WHA/AND
32 790.48	3 049.666	7	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^4P	5/2	0.03	95WHA/AND
32 909.416	3 038.6441	58	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	9/2 –	$3s^23p^4(^3P)6d$	^4F	7/2	0.003	95WHA/AND
33 049.29	3 025.783	4	$3s^23p^4(^1D)4d$	^2D	3/2 –	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.04	95WHA/AND
33 106.64	3 020.542	4	$3s^23p^4(^1D)4d$	^2P	1/2 –	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.03	95WHA/AND
33 188.563	3 013.0862	9	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P)6d$	^4F	3/2	0.015	95WHA/AND
33 215.45	3 010.648	5	$3s^23p^4(^3P)6s$	^4P	3/2 –	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	0.03	95WHA/AND
33 343.69	2 999.0676	8	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2 –	$3s^23p^4(^3P)6d$	^4F	9/2	0.02	95WHA/AND
33 607.580	2 975.5192	62	$3s^23p^4(^3P)6s$	^2P	3/2 –	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.003	95WHA/AND
33 625.320	2 973.9494	36 b	$3s^23p^4(^1D)4d$	^2P	1/2 –	$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.006	95WHA/AND
33 663.37	2 970.5877	7	$3s^23p^4(^3P)6s$	^2P	1/2 –	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.02	95WHA/AND
33 699.771	2 967.3792	13	$3s^23p^4(^3P)4d$	^4P	3/2 –	$3s^23p^4(^3P)5p$	$^4P^\circ$	1/2	0.008	95WHA/AND
33 834.59	2 955.5559	7	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	3/2 –	$3s^23p^4(^3P)6d$	^4D	3/2	0.02	95WHA/AND
33 863.298	2 953.0496	27	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^4P	5/2	0.005	95WHA/AND
33 991.349	2 941.9250	16	$3s^23p^4(^1D)4d$	^2P	3/2 –	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.007	95WHA/AND
34 093.036	2 933.150	19 b	$3s^23p^4(^3P)6d$	^4F	5/2 –	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	0.024	95WHA/AND
34 209.19	2 923.191	4	$3s^23p^4(^3P)5d$	^2F	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[2]^\circ$	5/2	0.04	95WHA/AND
34 223.968	2 921.9289	8	$3s^23p^4(^3P)4d$	^2F	5/2 –	$3s^23p^4(^3P)5p$	$^2D^\circ$	5/2	0.013	95WHA/AND
34 269.187	2 918.0733	7	$3s^23p^4(^3P)4d$	^2F	5/2 –	$3s^23p^4(^3P)5p$	$^2P^\circ$	3/2	0.015	95WHA/AND
34 289.969	2 916.3048	34	$3s^23p^4(^1D)4d$	^2F	5/2 –	$3s^23p^4(^1D)5p$	$^2F^\circ$	5/2	0.004	95WHA/AND
34 458.20	2 902.067	7	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2 –	$3s^23p^4(^3P)4d$	^2D	5/2	0.04	95WHA/AND
34 513.914	2 897.3822	13	$3s^23p^4(^3P)6s$	^4P	1/2 –	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.009	95WHA/AND
34 538.393	2 895.3287	7	$3s^23p^4(^1D)4d$	^2P	3/2 –	$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.020	95WHA/AND
34 589.89	2 891.0181	11	$3s^23p^4(^3P)6d$	^4P	3/2 –	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	5/2	0.02	95WHA/AND
34 687.093	2 882.9167	49	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	9/2 –	$3s^23p^4(^3P)6d$	^2F	7/2	0.004	95WHA/AND
34 848.035	2 869.6023	19	$3s^23p^4(^3P)4d$	^4P	1/2 –	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.006	95WHA/AND
34 909.364	2 864.5609	9	$3s^23p^4(^1D)4d$	^2D	5/2 –	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.014	95WHA/AND
35 012.73	2 856.104	5	$3s^23p^4(^3P)5d$	^4D	3/2 –	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.03	95WHA/AND
35 208.403	2 840.2311	17	$3s^23p^4(^3P)5d$	^2F	5/2 –	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	7/2	0.008	95WHA/AND
35 226.161	2 838.7993	74	$3s^23p^4(^3P)4d$	^2F	7/2 –	$3s^23p^4(^3P)5p$	$^4D^\circ$	5/2	0.004	95WHA/AND
35 256.89	2 836.3252	4	$3s^23p^4(^3P_2)5f$	$^2[5]^\circ$	11/2 –	$3s^23p^4(^3P)6d$	^4F	9/2	0.02	03ENG/HIN
35 317.53	2 831.4551	7	$3s^23p^4(^3P_2)5f$	$^2[1]^\circ$	1/2 –	$3s^23p^4(^3P)6d$	^4D	3/2	0.02	95WHA/AND
35 624.88	2 807.0269	6	$3s^23p^4(^1D)4d$	^2P	1/2 –	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.02	95WHA/AND
35 773.686	2 795.3508	28	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^4D	5/2	0.005	95WHA/AND
35 876.660	2 787.3275	25	$3s^23p^4(^1D)4d$	^2D	5/2 –	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.005	95WHA/AND
36 100.19	2 770.069	4	$3s^23p^4(^3P_1)5f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^2F	7/2	0.04	95WHA/AND
36 116.317	2 768.8316	10	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2 –	$3s^23p^4(^3P)6d$	^4D	5/2	0.015	95WHA/AND
36 275.924	2 756.6493	45 ?	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	9/2 –	$3s^23p^4(^3P)6d$	^4D	7/2	0.004	95WHA/AND
36 320.074	2 753.2984	23	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	7/2 –	$3s^23p^4(^3P)6d$	^2F	5/2	0.008	95WHA/AND
36 329.022	2 752.6202	19	$3s^23p^4(^3P)6d$	^4D	7/2 –	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	0.011	95WHA/AND

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
36 451.544	2 743.3680	13	$3s^23p^4(^3P_2)5f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P)6d$	^4D	7/2	0.012	95WHA/AND
36 651.402	2 728.4086	38	$3s^23p^4(^1D)4d$	^2P	3/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.004	95WHA/AND
36 747.597	2 721.2664	11	$3s^23p^4(^3P)6s$	^2P	1/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.013	95WHA/AND
36 807.2	2 716.855	3	$3s^23p^4(^3P_2)5f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P)6d$	^4D	7/2	0.2	95WHA/AND
37 028.296	2 700.6374	40	$3s^23p^4(^3P)6d$	^4D	5/2	–	$3s^23p^4(^3P_2)6f$	$^2[4]^\circ$	7/2	0.005	95WHA/AND
37 032.012	2 700.3664	28 b	$3s^23p^4(^3P)4d$	^4F	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.014	95WHA/AND
37 117.380	2 694.1557	25	$3s^23p^4(^3P)6d$	^2F	5/2	–	$3s^23p^4(^3P_0)6f$	$^2[3]^\circ$	7/2	0.010	95WHA/AND
37 927.123	2 636.6355	16	$3s^23p^4(^3P_0)5f$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P)6d$	^4F	3/2	0.010	95WHA/AND
38 149.071	2 621.2958	26	$3s^23p^4(^3P)5d$	^4F	7/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.005	95WHA/AND
38 376.44	2 605.765	4 b	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^2D	3/2	0.06	03ENG/HIN
38 441.282	2 601.3701	13	$3s^23p^4(^3P)5d$	^4D	1/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.011	95WHA/AND
38 791.979	2 577.8525	55	$3s^23p^4(^3P)6d$	^2F	7/2	–	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	9/2	0.005	95WHA/AND
38 838.61	2 574.757	10 b	$3s^23p^4(^3P_1)5f$	$^2[2]^\circ$	5/2	–	$3s^23p^4(^3P)6d$	^4P	3/2	0.06	95WHA/AND
38 852.891	2 573.8111	30	$3s^23p^4(^1D)4d$	^2D	5/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.005	95WHA/AND
38 901.81	2 570.5746	5	$3s^23p^4(^3P)4d$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	3/2	0.03	95WHA/AND
39 001.825	2 563.9826	12	$3s^23p^4(^3P)5d$	^4P	1/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.010	95WHA/AND
39 207.748	2 550.5163	39	$3s^23p^4(^3P)5d$	^4D	7/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	0.005	95WHA/AND
39 601.415	2 525.1623	17	$3s^23p^4(^3P)5d$	^2F	7/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	5/2	0.008	95WHA/AND
39 613.899	2 524.3665	16	$3s^23p^4(^3P_1)5f$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P)6d$	^4F	5/2	0.014	95WHA/AND
39 730.439	2 516.9619	26	$3s^23p^4(^3P)4d$	^2F	5/2	–	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	0.005	95WHA/AND
39 747.828	2 515.861	65 b	$3s^23p^4(^3P)5p$	$^2P^\circ$	1/2	–	$3s^23p^4(^3P)4d$	^2D	3/2	0.032	03ENG/HIN
39 880.487	2 507.4920	30	$3s^23p^4(^3P)5d$	^4D	5/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.005	95WHA/AND
40 238.96	2 485.154	3	$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.04	95WHA/AND
40 482.22	2 470.2202	7	$3s^23p^4(^3P)5d$	^4D	5/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	0.02	95WHA/AND
40 806.00	2 450.620	5	$3s^23p^4(^3P)5p$	$^4D^\circ$	3/2	–	$3s^23p^4(^3P)4d$	^2D	5/2	0.06	95WHA/AND
41 007.975	2 438.5501	11	$3s^23p^4(^1D)4d$	^2D	3/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	1/2	0.015	95WHA/AND
41 069.697	2 434.8853	10	$3s^23p^4(^3P)6s$	^2P	3/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.014	95WHA/AND
41 530.74	2 407.855	9	$3s^23p^4(^3P)6d$	^4P	5/2	–	$3s^23p^4(^3P_1)6f$	$^2[4]^\circ$	7/2	0.04	95WHA/AND
41 571.841	2 405.4744	37	$3s^23p^4(^1D)4d$	^2F	7/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	5/2	0.005	95WHA/AND
41 885.55	2 387.458	5	$3s^23p^4(^3P)6d$	^4P	5/2	–	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	5/2	0.05	95WHA/AND
41 917.730	2 385.6254	19	$3s^23p^4(^3P)5d$	^4P	3/2	–	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.008	95WHA/AND
42 831.15	2 334.749	5	$3s^23p^4(^3P)6d$	^4F	7/2	–	$3s^23p^4(^3P_2)6f$	$^2[3]^\circ$	7/2	0.06	95WHA/AND
42 989.08	2 326.172	10	$3s^23p^4(^3P)4d$	^2D	5/2	–	$3s^23p^4(^3P_2)4f$	$^2[3]^\circ$	7/2	0.04	95WHA/AND
43 187.767	2 315.4705	33	$3s^23p^4(^3P)5d$	^4D	3/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.006	95WHA/AND
43 556.81	2 295.8521	7	$3s^23p^4(^3P)4d$	^4P	3/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.03	95WHA/AND
43 592.449	2 293.9753	26	$3s^23p^4(^3P)5d$	^4D	5/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.006	95WHA/AND
44 057.246	2 269.7742	60	$3s^23p^4(^3P)5d$	^4D	7/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	0.006	95WHA/AND
44 462.98	2 249.0622	5	$3s^23p^4(^3P)5d$	^4P	3/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	1/2	0.03	95WHA/AND
45 673.008	2 189.4770	31	$3s^23p^4(^3P)5d$	^4D	5/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	5/2	0.006	95WHA/AND
46 322.600	2 158.7735	30 b	$3s^23p^4(^3P)6d$	^2D	3/2	–	$3s^23p^4(^3P_1)6f$	$^2[2]^\circ$	3/2	0.012	95WHA/AND
46 505.89	2 150.2656	8	$3s^23p^4(^3P)5d$	^4F	5/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.03	95WHA/AND
46 809.543	2 136.3165	27	$3s^23p^4(^3P)5d$	^4P	5/2	–	$3s^23p^4(^3P)6p$	$^4S^\circ$	3/2	0.007	95WHA/AND
47 461.	2 107.0	m *	$3s^23p^4(^3P_2)7h$	$^2[6]^\circ$	11/2	–	$3s^23p^4(^3P_2)8i$	$^2[7]$	13/2	3	95PAL/BIÉ
47 461.	2 107.0	m *	$3s^23p^4(^3P_2)7h$	$^2[6]^\circ$	13/2	–	$3s^23p^4(^3P_2)8i$	$^2[7]$	15/2	3	95PAL/BIÉ
47 461.	2 107.0	m *	$3s^23p^4(^3P_2)7h$	$^2[5]^\circ$	9/2	–	$3s^23p^4(^3P_2)8i$	$^2[6]$	11/2	3	95PAL/BIÉ
47 461.	2 107.0	m *	$3s^23p^4(^3P_2)7h$	$^2[5]^\circ$	11/2	–	$3s^23p^4(^3P_2)8i$	$^2[6]$	13/2	3	95PAL/BIÉ
47 494.7	2 105.50	30 *	$3s^23p^4(^3P_1)7h$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_1)8i$	$^2[5]$	11/2	0.2	95PAL/BIÉ
47 494.7	2 105.50	30 *	$3s^23p^4(^3P_1)7h$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_1)8i$	$^2[5]$	9/2	0.2	95PAL/BIÉ
47 542.9	2 103.37	760 *	$3s^23p^4(^3P_2)7i$	$^2[6]$	13/2	–	$3s^23p^4(^3P_2)8k$	$^2[7]^\circ$	15/2	0.2	95PAL/BIÉ
47 542.9	2 103.37	760 *	$3s^23p^4(^3P_2)7i$	$^2[6]$	11/2	–	$3s^23p^4(^3P_2)8k$	$^2[7]^\circ$	13/2	0.2	95PAL/BIÉ
47 542.9	2 103.37	760 b *	$3s^23p^4(^3P_1)7h$	$^2[6]^\circ$	13/2	–	$3s^23p^4(^3P_1)8i$	$^2[7]$	15/2	0.2	95PAL/BIÉ
47 542.9	2 103.37	760 b *	$3s^23p^4(^3P_1)7h$	$^2[6]^\circ$	11/2	–	$3s^23p^4(^3P_1)8i$	$^2[7]$	13/2	0.2	95PAL/BIÉ
47 547.39	2 103.165	910 *	$3s^23p^4(^3P_2)7i$	$^2[7]$	15/2	–	$3s^23p^4(^3P_2)8k$	$^2[8]^\circ$	17/2	0.06	95PAL/BIÉ
47 547.39	2 103.165	910 *	$3s^23p^4(^3P_2)7i$	$^2[7]$	13/2	–	$3s^23p^4(^3P_2)8k$	$^2[8]^\circ$	15/2	0.06	95PAL/BIÉ
47 558.25	2 102.684	440 b *	$3s^23p^4(^3P_2)7h$	$^2[4]^\circ$	9/2	–	$3s^23p^4(^3P_2)8i$	$^2[5]$	11/2	0.12	95PAL/BIÉ

TABLE 3. Spectral lines of Ar II—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
47 558.25	2 102.684	440 b *	$3s^23p^4(^3P_2)7h$	$^2[4]^\circ$	7/2	–	$3s^23p^4(^3P_2)8i$	$^2[5]$	9/2	0.12	95PAL/BIÉ
47 558.25	2 102.684	440 b *	$3s^23p^4(^3P_0)7h$	$^2[5]^\circ$	11/2	–	$3s^23p^4(^3P_0)8i$	$^2[6]$	13/2	0.12	95PAL/BIÉ
47 558.25	2 102.684	440 b *	$3s^23p^4(^3P_0)7h$	$^2[5]^\circ$	9/2	–	$3s^23p^4(^3P_0)8i$	$^2[6]$	11/2	0.12	95PAL/BIÉ
47 558.25	2 102.684	440 b *	$3s^23p^4(^3P_1)7i$	$^2[5]$	11/2	–	$3s^23p^4(^3P_1)8k$	$^2[6]^\circ$	13/2	0.06	95PAL/BIÉ
47 558.25	2 102.684	440 b *	$3s^23p^4(^3P_1)7i$	$^2[5]$	9/2	–	$3s^23p^4(^3P_1)8k$	$^2[6]^\circ$	11/2	0.06	95PAL/BIÉ
47 571.97	2 102.078	480 *	$3s^23p^4(^3P_1)7i$	$^2[7]$	15/2	–	$3s^23p^4(^3P_1)8k$	$^2[8]^\circ$	17/2	0.06	95PAL/BIÉ
47 571.97	2 102.078	480 *	$3s^23p^4(^3P_1)7i$	$^2[7]$	13/2	–	$3s^23p^4(^3P_1)8k$	$^2[8]^\circ$	15/2	0.06	95PAL/BIÉ
47 574.796	2 101.9533	14	$3s^23p^4(^3P)5d$	^4D	3/2	–	$3s^23p^4(^3P)6p$	$^4P^\circ$	3/2	0.014	95WHA/AND
47 591.9	2 101.20	630 *	$3s^23p^4(^3P_0)7i$	$^2[6]$	11/2	–	$3s^23p^4(^3P_0)8k$	$^2[7]^\circ$	13/2	0.2	95PAL/BIÉ
47 591.9	2 101.20	630 *	$3s^23p^4(^3P_0)7i$	$^2[6]$	13/2	–	$3s^23p^4(^3P_0)8k$	$^2[7]^\circ$	15/2	0.2	95PAL/BIÉ
47 591.9	2 101.20	630 *	$3s^23p^4(^3P_2)7i$	$^2[5]$	11/2	–	$3s^23p^4(^3P_2)8k$	$^2[6]^\circ$	13/2	0.2	95PAL/BIÉ
47 591.9	2 101.20	630 *	$3s^23p^4(^3P_2)7i$	$^2[5]$	9/2	–	$3s^23p^4(^3P_2)8k$	$^2[6]^\circ$	11/2	0.2	95PAL/BIÉ
47 636.6	2 099.23	440 *	$3s^23p^4(^3P_2)7i$	$^2[8]$	15/2	–	$3s^23p^4(^3P_2)8k$	$^2[9]^\circ$	17/2	0.2	95PAL/BIÉ
47 636.6	2 099.23	440 *	$3s^23p^4(^3P_2)7i$	$^2[8]$	17/2	–	$3s^23p^4(^3P_2)8k$	$^2[9]^\circ$	19/2	0.2	95PAL/BIÉ
47 645.91	2 098.816	1000 b *	$3s^23p^4(^3P_2)7h$	$^2[7]^\circ$	13/2	–	$3s^23p^4(^3P_2)8i$	$^2[8]$	15/2	0.12	95PAL/BIÉ
47 645.91	2 098.816	1000 b *	$3s^23p^4(^3P_2)7h$	$^2[7]^\circ$	15/2	–	$3s^23p^4(^3P_2)8i$	$^2[8]$	17/2	0.12	95PAL/BIÉ
47 645.91	2 098.816	1000 b *	$3s^23p^4(^3P_1)7i$	$^2[6]$	13/2	–	$3s^23p^4(^3P_1)8k$	$^2[7]^\circ$	15/2	0.12	95PAL/BIÉ
47 645.91	2 098.816	1000 b *	$3s^23p^4(^3P_1)7i$	$^2[6]$	11/2	–	$3s^23p^4(^3P_1)8k$	$^2[7]^\circ$	13/2	0.12	95PAL/BIÉ
47 668.48	2 097.822	575 b *	$3s^23p^4(^3P_2)7i$	$^2[4]$	7/2	–	$3s^23p^4(^3P_2)8k$	$^2[5]^\circ$	9/2	0.12	95PAL/BIÉ
47 668.48	2 097.822	575 b *	$3s^23p^4(^3P_2)7i$	$^2[4]$	9/2	–	$3s^23p^4(^3P_2)8k$	$^2[5]^\circ$	11/2	0.12	95PAL/BIÉ
47 668.48	2 097.822	575 *	$3s^23p^4(^3P_1)7h$	$^2[5]^\circ$	11/2	–	$3s^23p^4(^3P_1)8i$	$^2[6]$	13/2	0.12	95PAL/BIÉ
47 668.48	2 097.822	575 *	$3s^23p^4(^3P_1)7h$	$^2[5]^\circ$	9/2	–	$3s^23p^4(^3P_1)8i$	$^2[6]$	11/2	0.12	95PAL/BIÉ
47 707.70	2 096.098	30 *	$3s^23p^4(^3P_2)7h$	$^2[3]^\circ$	5/2	–	$3s^23p^4(^3P_2)8i$	$^2[4]$	7/2	0.06	95PAL/BIÉ
47 707.70	2 096.098	30 *	$3s^23p^4(^3P_2)7h$	$^2[3]^\circ$	7/2	–	$3s^23p^4(^3P_2)8i$	$^2[4]$	9/2	0.06	95PAL/BIÉ
48 403.418	2 065.9698	35	$3s^23p^4(^3P)5d$	^4F	3/2	–	$3s^23p^4(^3P)6p$	$^2P^\circ$	1/2	0.007	95WHA/AND
48 526.35	2 060.7362	11	$3s^23p^4(^3P)5d$	^4D	1/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	3/2	0.02	95WHA/AND
49 096.796	2 036.7928	78	$3s^23p^4(^3P)5d$	^4F	9/2	–	$3s^23p^4(^3P)6p$	$^4D^\circ$	7/2	0.007	95WHA/AND
50 165.159	1 993.4154	20	$3s^23p^4(^3P)5d$	^4F	5/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	3/2	0.011	95WHA/AND
50 570.50	1 977.4376	9	$3s^23p^4(^3P)5d$	^4P	1/2	–	$3s^23p^4(^1D)5p$	$^2P^\circ$	3/2	0.02	95WHA/AND
51 077.27	1 957.8178	10	$3s^23p^4(^3P)5d$	^2F	5/2	–	$3s^23p^4(^1D)5p$	$^2D^\circ$	3/2	0.02	95WHA/AND
51 306.795	1 949.0596	29	$3s^23p^4(^3P)5d$	^4P	5/2	–	$3s^23p^4(^3P)6p$	$^2P^\circ$	3/2	0.008	95WHA/AND
52 826.774	1 892.9795	43	$3s^23p^4(^3P)5d$	^2F	7/2	–	$3s^23p^4(^3P)6p$	$^2D^\circ$	5/2	0.008	95WHA/AND
53 328.41	1 875.1731	5	$3s^23p^4(^3P)4d$	^4P	5/2	–	$3s^23p^4(^3P)5p$	$^4P^\circ$	5/2	0.04	95WHA/AND
69 852.74	1 431.5831	f	$3s^23p^5$	$^2P^\circ$	3/2	–	$3s^23p^5$	$^2P^\circ$	1/2	0.04	85YAM/KAN

The priority in our choice of wavelengths for lines which appear in more than one reference is, in general, specified as follows for two spectral regions.

Wavelengths shorter than 2300 Å: [95WHA/AND, 58HER, 71MIN, 63MIN, 59MIN, 82HAN/PER], and finally [35BOY].

Wavelengths longer than 2300 Å: [95WHA/AND, 73NOR] and [03ENG/HIN, 85YAM/KAN, 94QUI/PAL, 63MIN, 01HIN/JOY], and finally [95PAL/BIÉ].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar II levels. Only classifiable lines are included in our compilation. Many other lines are listed in the references but are not included since we cannot be sure that they are from Ar II when they do not fit the known levels.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines. These calculations also suggest that the designations of a few levels may differ from those used in the various references. For example, in some cases ^4F and ^2F may be reversed. We have kept the previous designations to maintain consistency with the references. The calculations also indicate that the two $7p$ levels whose terms are only specified by the odd parity symbol, "°", could be designated $^2D^\circ_{5/2}$ and $^4P^\circ_{3/2}$ for the J=5/2 and J=3/2 levels, respectively.

Intensities have been taken from the stated sources and therefore are not on a common scale. The tabulated intensities for lines taken from two papers [58HER, 71MIN], which did not provide intensities, are taken from [59MIN].

The intensity codes given in the Ar II line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
A	Self reversed
a	Affected
b	Blended
g	Ghost near line
h	Hazy
hl	Hazy and shaded to longer wavelengths
hs	Hazy and shaded to shorter wavelengths
l	Slightly shaded to longer wavelengths
m	Masked
s	Slightly shaded to shorter wavelengths
u	Unsymmetrical
w	Wide
?	Question exists about whether it is actually an Ar II line
*	Multiply classified line (two or more classifications of this line share the same intensity)
(1)	Parentheses around number indicates that this intensity is only partly due to an Ar II line

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration. 18 classifications of observed lines were removed from the final fit, half because they were the weaker of multiclassified lines or were self-reversed lines and half because they deviated from the value calculated from the levels by more than a factor of four times their uncertainty.

One level from the preliminary list of levels, the $3s^23p^4(^3\mathrm{P})7p\ ^4\mathrm{D}^\circ_{7/2}$, which was listed with a "?" by Minnhagen [63MIN], was deleted from our final list since there were no transitions to support it in our line list. Four other levels also did not have supporting lines but are expected to be very close in energy to their partner level in the pair-coupling scheme. These were the $3s^23p^4(^3\mathrm{P}_2)7h\ ^2[7]^\circ_{15/2}$ (close to the J=13/2), the $3s^23p^4(^3\mathrm{P}_2)7h\ ^2[3]^\circ_{5/2}$ (close to the J=7/2), the $3s^23p^4(^3\mathrm{P}_0)7i\ ^2[6]^\circ_{13/2}$ (close to the J=11/2), and the $3s^23p^4(^3\mathrm{P}_2)8i\ ^2[4]_{7/2}$ (close to the J=9/2). These levels were given the same energy as their supported partner but with a somewhat larger uncertainty.

The values of g_J included in the level table were compiled by Moore [49MOO] from Bezler [40BEZ]. The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the Cl isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in February 2006.

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3.2. Ar III

S isoelectronic sequence

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^4\ ^3P_2$

Ionization energy: 328 550 ± 100 cm^{-1} (40.735 ± 0.012 eV) [96KAU/WHA]

Energy levels, sources, and spectral lines for Ar III are given in Tables 4–6.

The energy levels of doubly ionized argon, Ar III, were compiled by Moore [49MOO] based largely on the work of deBruin [33DEB, 35DEB, 37DEB] and Boyce [35BOY, 36BOY]. She tabulated 96 levels. More recently Kaufman and Whaling [96KAU/WHA] using additional data compiled a list of 115 levels. Using more recent data, we are able to tabulate 124 levels by means of a fit to the available Ar III lines. The preliminary levels for this fit were obtained primarily from the work of Kaufman and Whaling [96KAU/WHA] with additional levels from Moore [49MOO], Hansen and Persson [87HAN/PER], and Luna *et al.* [01LUN/BRE].

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar III are compiled from 15 sources [33DEB, 35DEB, 35BOY, 36BOY, 37DEB, 55BOW, 60BOW, 65BRI/CHE, 84AGE/AND, 92RAA/SNO, 95KEL/LAC, 95WHA/AND, 96KAU/WHA, 00LUN/BRE, 01FEU/LUT]. The sources used in this compilation are summarized in Table 5 (Sources of Ar III lines). We only include observed lines. Table 5 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines from this reference in the table of lines, and the range of uncertainties for these lines.

Tables of lines calculated from energy levels (Ritz lines) were not used unless the value of the difference between the observed and the calculated line was also provided for each line. In that case the value of the observed line was determined from these two values.

The source of the second largest number of lines used in this compilation was Whaling *et al.* [95WHA/AND]. Their wavelengths are likely to be the best values since they used CO internal standards to calibrate their wave-number scale. We note that a privately communicated file of their results was used for the values of these lines. This file includes more lines than the published reference [95WHA/AND]. In a few cases the values differ slightly. Their values are Ritz values but the observed results could be obtained since they also provided (observed–calculated) values. We quote their observed values in the line table. When the uncertainty quoted in this reference is less than 0.0001 Å, we use an uncertainty of 0.0001 Å. They quoted their intensity as the peak value divided by the rms noise and tabulate $\log_{10}$ of this value. We list the intensity itself in the line table.

The largest source for lines was Luna *et al.* [00LUN/BRE]. They quote an uncertainty of 0.01 Å. We doubled their estimates to correspond to how the wavelengths compared to those calculated from the preliminary levels. The uncertainty was estimated for some older sources of lines [33DEB, 35DEB, 37DEB] by comparing their values to those of more recent measurement for lines included in both sources. The intensities listed for the lines from Kaufman and Whaling [96KAU/WHA] are taken from Raassen *et al.* [92RAA/SNO].

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows.

[95WHA/AND] over [96KAU/WHA]. [37DEB] over [35DEB] over [33DEB]. [92RAA/SNO] over [35BOY].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar III levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar III when they do not fit the known levels.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. No intensities were provided for the lines from Kaufman and Whaling [96KAU/WHA]. Where possible, the intensities provided by Raassen *et al.* [92RAA/SNO] have been used for these lines. The intensity codes given in the Ar III line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
M1	Magnetic dipole line
f	Electric dipole forbidden line
*	Multiply classified line (two or more classifications of this line share the same intensity)

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on the uncertainty of the wave number.

The values of the leading percentages included in the energy level table were obtained from three sources. The values for odd parity levels were obtained by Kaufman and Whaling [96KAU/WHA] in a calculation that considered the $3s3p^5$, $3s^2 3p^3 3d$, and $3s^2 3p^3 4d$ configurations. Hansen and Persson [87HAN/PER] determined the purity of all but three even

parity levels. We calculated an estimate of the even parity levels at 33 266, 249 817, and 255 108 cm^{-1} from a calculation using the Cowan codes [81COW] with adjusted energy levels.

The value of g_J was determined to be 1.182 ± 0.025 for the $3s^2 3p^3(^2D^\circ)4p\ ^3F_4$ level by Church and Liu [72CHU/LIU]. The ionization energy was obtained by Kaufman and Whaling [96KAU/WHA] by determining the difference between the effective quantum numbers of the $3p^N 4s$ and $3p^N 5s$ to be 1.0312.

Collection of lines and levels was completed in October 2006.

TABLE 4. Energy levels of Ar III

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
0.000	0.015	0	$3s^2 3p^4$	^3P	2	100	
1 112.17	0.02	0	$3s^2 3p^4$	^3P	1	100	
1 570.23	0.02	0	$3s^2 3p^4$	^3P	0	100	
14 010.00	0.08	0	$3s^2 3p^4$	^1D	2	100	
33 265.7	0.4	0	$3s^2 3p^4$	^1S	0	96	4 $3p^6\ ^1S$
113 800.52	0.11	1	$3s3p^5$	$^3P^\circ$	2	76	17 $3s^2 3p^3(^2D^\circ)3d\ ^3P^\circ$
114 797.38	0.09	1	$3s3p^5$	$^3P^\circ$	1	76	17 $3s^2 3p^3(^2D^\circ)3d\ ^3P^\circ$
115 328.00	0.13	1	$3s3p^5$	$^3P^\circ$	0	76	18 $3s^2 3p^3(^2D^\circ)3d\ ^3P^\circ$
144 022.38	0.08	1	$3s3p^5$	$^1P^\circ$	1	43	50 $3s^2 3p^3(^2D^\circ)3d\ ^1P^\circ$
144 885.46	0.03	1	$3s^2 3p^3(^4S^\circ)3d$	$^5D^\circ$	1	100	
144 890.68	0.02	1	$3s^2 3p^3(^4S^\circ)3d$	$^5D^\circ$	2	100	
144 897.52	0.07	1	$3s^2 3p^3(^4S^\circ)3d$	$^5D^\circ$	3	100	
144 911.27	0.04	1	$3s^2 3p^3(^4S^\circ)3d$	$^5D^\circ$	4	100	
156 915.518	0.003	1	$3s^2 3p^3(^4S^\circ)3d$	$^3D^\circ$	3	48	48 $3s^2 3p^3(^2D^\circ)3d\ ^3D^\circ$
156 922.557	0.006	1	$3s^2 3p^3(^4S^\circ)3d$	$^3D^\circ$	2	48	47 $3s^2 3p^3(^2D^\circ)3d\ ^3D^\circ$
157 029.812	0.012	1	$3s^2 3p^3(^4S^\circ)3d$	$^3D^\circ$	1	48	47 $3s^2 3p^3(^2D^\circ)3d\ ^3D^\circ$
161 849.93	0.04	1	$3s^2 3p^3(^2D^\circ)3d$	$^1S^\circ$	0	100	
162 757.28	0.04	1	$3s^2 3p^3(^2D^\circ)3d$	$^3F^\circ$	2	84	15 $3s^2 3p^3(^2P^\circ)3d\ ^3F^\circ$
163 076.17	0.03	1	$3s^2 3p^3(^2D^\circ)3d$	$^3F^\circ$	3	85	14 $3s^2 3p^3(^2P^\circ)3d\ ^3F^\circ$
163 477.01	0.05	1	$3s^2 3p^3(^2D^\circ)3d$	$^3F^\circ$	4	87	13 $3s^2 3p^3(^2P^\circ)3d\ ^3F^\circ$
172 100.11	0.04	1	$3s^2 3p^3(^2D^\circ)3d$	$^3G^\circ$	3	100	
172 136.57	0.02	1	$3s^2 3p^3(^2D^\circ)3d$	$^3G^\circ$	4	100	
172 191.487	0.015	1	$3s^2 3p^3(^2D^\circ)3d$	$^3G^\circ$	5	100	
175 665.586	0.008	1	$3s^2 3p^3(^2D^\circ)3d$	$^1G^\circ$	4	100	
179 529.519	0.007	1	$3s^2 3p^3(^2P^\circ)3d$	$^1D^\circ$	2	75	25 $3s^2 3p^3(^2D^\circ)3d\ ^1D^\circ$
186 402.885	0.009	1	$3s^2 3p^3(^2P^\circ)3d$	$^3F^\circ$	4	86	13 $3s^2 3p^3(^2D^\circ)3d\ ^3F^\circ$
186 658.19	0.02	1	$3s^2 3p^3(^2P^\circ)3d$	$^3F^\circ$	3	85	14 $3s^2 3p^3(^2D^\circ)3d\ ^3F^\circ$
186 904.026	0.019	1	$3s^2 3p^3(^2P^\circ)3d$	$^3F^\circ$	2	84	15 $3s^2 3p^3(^2D^\circ)3d\ ^3F^\circ$
187 172.022	0.008	1	$3s^2 3p^3(^2D^\circ)3d$	$^3D^\circ$	1	36	50 $3s^2 3p^3(^2P^\circ)3d\ ^3D^\circ$
187 823.939	0.006	1	$3s^2 3p^3(^2D^\circ)3d$	$^3D^\circ$	2	35	49 $3s^2 3p^3(^2P^\circ)3d\ ^3D^\circ$
188 145.1	0.3	1	$3s^2 3p^3(^2P^\circ)3d$	$^3P^\circ$	0	77	23 $3s^2 3p^3(^2D^\circ)3d\ ^3P^\circ$
188 517.853	0.015	1	$3s^2 3p^3(^2P^\circ)3d$	$^3P^\circ$	1	78	22 $3s^2 3p^3(^2D^\circ)3d\ ^3P^\circ$
188 714.875	0.004	1	$3s^2 3p^3(^2D^\circ)3d$	$^3D^\circ$	3	35	49 $3s^2 3p^3(^2P^\circ)3d\ ^3D^\circ$
189 380.83	0.02	1	$3s^2 3p^3(^2P^\circ)3d$	$^3P^\circ$	2	79	21 $3s^2 3p^3(^2D^\circ)3d\ ^3P^\circ$
200 317.933	0.003	1	$3s^2 3p^3(^2P^\circ)3d$	$^1F^\circ$	3	63	37 $3s^2 3p^3(^2D^\circ)3d\ ^1F^\circ$
204 728.39	0.10	1	$3s^2 3p^3(^2D^\circ)3d$	$^3S^\circ$	1	99	
210 212.72	0.12	1	$3s^2 3p^3(^2P^\circ)3d$	$^3D^\circ$	3	44	33 $3s^2 3p^3(^4S^\circ)3d\ ^3D^\circ$
211 005.56	0.13	1	$3s^2 3p^3(^2P^\circ)3d$	$^3D^\circ$	2	44	33 $3s^2 3p^3(^4S^\circ)3d\ ^3D^\circ$
211 565.03	0.15	1	$3s^2 3p^3(^2P^\circ)3d$	$^3D^\circ$	1	44	33 $3s^2 3p^3(^4S^\circ)3d\ ^3D^\circ$
213 951.7743	0.0011	1	$3s^2 3p^3(^2D^\circ)3d$	$^3P^\circ$	2	60	22 $3s3p^5\ ^3P^\circ$
214 347.599	0.005	1	$3s^2 3p^3(^2D^\circ)3d$	$^3P^\circ$	1	59	22 $3s3p^5\ ^3P^\circ$
214 569.5	0.2	1	$3s^2 3p^3(^2D^\circ)3d$	$^3P^\circ$	0	59	23 $3s3p^5\ ^3P^\circ$
219 337.54	0.07	1	$3s^2 3p^3(^2D^\circ)3d$	$^1D^\circ$	2	72	24 $3s^2 3p^3(^2P^\circ)3d\ ^1D^\circ$
219 908.474	0.010	1	$3s^2 3p^3(^2D^\circ)3d$	$^1P^\circ$	1	48	37 $3s3p^5\ ^1P^\circ$
224 334.09	0.08	1	$3s^2 3p^3(^2D^\circ)3d$	$^1F^\circ$	3	57	35 $3s^2 3p^3(^2P^\circ)3d\ ^1F^\circ$
237 252.	8.	1	$3s^2 3p^3(^2P^\circ)3d$	$^1P^\circ$	1	75	15 $3s3p^5\ ^1P^\circ$
174 378.4968	0.0016	1	$3s^2 3p^3(^4S^\circ)4s$	$^5S^\circ$	2		
180 678.3147	0.0008	1	$3s^2 3p^3(^4S^\circ)4s$	$^3S^\circ$	1		

TABLE 4. Energy levels of Ar III—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
196 590.6352	0.0011	1	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1		
196 615.2125	0.0008	1	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2		
196 680.8461	0.0008	1	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3		
199 763.4147	0.0013	1	$3s^23p^3(^2D^\circ)4s$	$^1D^\circ$	2		
207 233.003	0.004	1	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2		
207 532.33	0.04	1	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1		
207 674.192	0.015	1	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	0		
211 063.760	0.004	1	$3s^23p^3(^2P^\circ)4s$	$^1P^\circ$	1		
204 569.953	0.003	0	$3s^23p^3(^4S^\circ)4p$	^5P	1	100	
204 655.7888	0.0018	0	$3s^23p^3(^4S^\circ)4p$	^5P	2	100	
204 803.338	0.002	0	$3s^23p^3(^4S^\circ)4p$	^5P	3	100	
209 126.1544	0.0011	0	$3s^23p^3(^4S^\circ)4p$	^3P	1	93	
209 150.8807	0.0011	0	$3s^23p^3(^4S^\circ)4p$	^3P	2	94	
209 165.6077	0.0011	0	$3s^23p^3(^4S^\circ)4p$	^3P	0	94	
223 663.160	0.007	0	$3s^23p^3(^2D^\circ)4p$	^1P	1	76	
225 149.2072	0.0008	0	$3s^23p^3(^2D^\circ)4p$	^3D	2	93	
225 156.5915	0.0010	0	$3s^23p^3(^2D^\circ)4p$	^3D	1	84	
225 404.1120	0.0013	0	$3s^23p^3(^2D^\circ)4p$	^3D	3	92	
226 357.0086	0.0014	0	$3s^23p^3(^2D^\circ)4p$	^3F	2	97	
226 504.1601	0.0011	0	$3s^23p^3(^2D^\circ)4p$	^3F	3	95	
226 646.6786	0.0013	0	$3s^23p^3(^2D^\circ)4p$	^3F	4	100	
227 244.1715	0.0015	0	$3s^23p^3(^2D^\circ)4p$	^1F	3	99	
231 342.1658	0.0014	0	$3s^23p^3(^2D^\circ)4p$	^3P	2	90	
231 627.364	0.002	0	$3s^23p^3(^2D^\circ)4p$	^3P	1	91	
231 754.836	0.003	0	$3s^23p^3(^2D^\circ)4p$	^3P	0	93	
236 064.6283	0.0018	0	$3s^23p^3(^2D^\circ)4p$	^1D	2	94	
239 194.033	0.006	0	$3s^23p^3(^2P^\circ)4p$	^3S	1	98	
240 151.990	0.012	0	$3s^23p^3(^2P^\circ)4p$	^3D	1	94	
240 258.453	0.004	0	$3s^23p^3(^2P^\circ)4p$	^3D	2	95	
240 292.3714	0.0012	0	$3s^23p^3(^2P^\circ)4p$	^3D	3	97	
241 807.155	0.019	0	$3s^23p^3(^2P^\circ)4p$	^1P	1	78	
242 924.58	0.04	0	$3s^23p^3(^2P^\circ)4p$	^3P	0	98	
243 147.063	0.006	0	$3s^23p^3(^2P^\circ)4p$	^3P	1	86	
243 425.7974	0.0013	0	$3s^23p^3(^2P^\circ)4p$	^3P	2	92	
244 358.081	0.002	0	$3s^23p^3(^2P^\circ)4p$	^1D	2	93	
255 107.826	0.005	0	$3s^23p^3(^2P^\circ)4p$	^1S	0	68	29 $3p^6$ ^1S
246 033.884	0.006	1	$3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	1	100	
246 036.277	0.007	1	$3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	2	100	
246 039.913	0.005	1	$3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	3	100	
246 045.618	0.004	1	$3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	4	100	
252 254.794	0.005	1	$3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	2	88	5 $3s^23p^3(^2D^\circ)4d$ $^3D^\circ$
252 274.172	0.007	1	$3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	1	88	5 $3s^23p^3(^2D^\circ)4d$ $^3D^\circ$
252 289.886	0.011	1	$3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	3	89	5 $3s^23p^3(^2D^\circ)4d$ $^3D^\circ$
266 723.920	0.005	1	$3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	2	97	
266 878.753	0.005	1	$3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	3	97	
267 072.080	0.006	1	$3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	4	96	3 $3s^23p^3(^2D^\circ)4d$ $^3G^\circ$
267 782.803	0.004	1	$3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	3	98	
267 833.6997	0.0020	1	$3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	4	96	3 $3s^23p^3(^2D^\circ)4d$ $^3F^\circ$
267 896.382	0.002	1	$3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	5	100	
268 979.654	0.012	1	$3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	1	94	3 $3s^23p^3(^4S^\circ)4d$ $^3D^\circ$
269 002.136	0.003	1	$3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	3	95	4 $3s^23p^3(^4S^\circ)4d$ $^3D^\circ$
269 013.923	0.005	1	$3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	2	94	4 $3s^23p^3(^4S^\circ)4d$ $^3D^\circ$
270 756.7	0.7	1	$3s^23p^3(^2D^\circ)4d$	$^1P^\circ$	1	92	4 $3s3p^5$ $^1P^\circ$
271 509.116	0.006	1	$3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	2	96	
271 672.715	0.009	1	$3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	1	98	
271 697.825	0.015	1	$3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	0	97	

TABLE 4. Energy levels of Ar III—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
272 069.2	0.4	1	$3s^23p^3(^2D^\circ)4d$	$^3S^\circ$	1	95	
272 093.5	0.6	1	$3s^23p^3(^2D^\circ)4d$	$^1D^\circ$	2	86	10 $3s^23p^3(^2P^\circ)4d$ $^1D^\circ$
275 372.1	0.4	1	$3s^23p^3(^2P^\circ)4d$	$^1F^\circ$	3	87	7 $3s^23p^3(^2P^\circ)4d$ $^1F^\circ$
281 463.049	0.012	1	$3s^23p^3(^2P^\circ)4d$	$^3F^\circ$	2	97	
281 474.692	0.005	1	$3s^23p^3(^2P^\circ)4d$	$^3F^\circ$	3	97	
281 949.57	0.05	1	$3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	0	99	
282 001.977	0.007	1	$3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	1	99	
282 100.793	0.005	1	$3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	2	98	
283 921.143	0.006	1	$3s^23p^3(^2P^\circ)4d$	$^3D^\circ$	3	97	
284 097.595	0.008	1	$3s^23p^3(^2P^\circ)4d$	$^3D^\circ$	2	46	44 $3s^23p^3(^2P^\circ)4d$ $^1D^\circ$
284 119.6	0.3	1	$3s^23p^3(^2P^\circ)4d$	$^3D^\circ$	1	97	
249 817.261	0.004	0	$3p^6$	^1S	0	67	31 $3s^23p^3(^2P^\circ)4p$ ^1S
250 719.575	0.012	1	$3s^23p^3(^4S^\circ)5s$	$^5S^\circ$	2		
252 576.253	0.012	1	$3s^23p^3(^4S^\circ)5s$	$^3S^\circ$	1		
272 129.669	0.009	1	$3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	1		
272 190.126	0.007	1	$3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	2		
272 252.578	0.005	1	$3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	3		
285 833.0	0.4	1	$3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	0		
285 882.932	0.015	1	$3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	1		
286 009.858	0.005	1	$3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	2		

TABLE 5. Sources of Ar III lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
33DEB	36	end-on self-induction discharge tube. quartz spectrograph	2148–3501	0.05
35DEB	28	end-on self-induction discharge tube. quartz spectrograph	2122–2744	0.04
35BOY	2	electrodeless discharge. 2-m NI VS	1468, 1919	0.010
36BOY	3	electrodeless discharge. 2-m NI VS	700	0.02
37DEB	47	end-on self-induction discharge tube. quartz spectrograph and 3-m grating	2139–4199	0.03
55BOW	3	astronomical nebular lines. coudé spectrograph	5192–7751	0.04–0.10
60BOW	1	astronomical nebular lines. coudé spectrograph	3109	0.3
65BRI/CHE	2	laser oscillation with pulsed dc discharge. 0.5-m and 2-m spectrometers	4147, 5502	0.04, 0.5
84AGE/AND	1	hollow cathode. 3-m NI VS	945	0.005
92RAA/SNO	47	high-voltage open spark. 6.65-m NI VS	383–1002	0.002 (one at 0.01)
95KEL/LAC	1	astronomical nebular lines. echelle grating spectrometer	89 914	1.2
95WHA/AND	132	hollow cathode with various metals and Ar carrier gas. FTS	1836–4183	0.0001–0.045
96KAU/WHA	48	pulsed-rf source. 10.7-m NI VS	508–1676	.0010
00LUN/BRE	149	capillary pulsed discharge. 3-m NI VS for VUV and 3.4-m Ebert plane-grating spectrograph for visible	368–5743	.020
01FEU/LUT	1	astronomical nebular lines. short wavelength spectrometer on the Infrared Space Observatory	218 302	3.

[a]Abbreviations used: NI means normal incidence; VS means vacuum spectrograph; VUV means vacuum ultraviolet, and FTS means Fourier transform spectrometer.

TABLE 6. Spectral lines of Ar III

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
368.300	271 518.	3	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	2	0.020	00LUN/BRE

TABLE 6. Spectral lines of Ar III—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
371.750	268 998.	3 *	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	2	0.020	00LUN/BRE
371.750	268 998.	3 *	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	3	0.020	00LUN/BRE
382.629	261 349.8	125	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2P^\circ)4d$	$^1F^\circ$	3	0.002	92RAA/SNO
387.475	258 081.2	100	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2D^\circ)4d$	$^1D^\circ$	2	0.002	92RAA/SNO
389.511	256 732.2	25	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2D^\circ)4d$	$^1P^\circ$	1	0.002	92RAA/SNO
395.919	252 576.9	50	$3s^23p^4$	^3P	2	–	$3s^23p^3(^4S^\circ)5s$	$^3S^\circ$	1	0.002	92RAA/SNO
396.369	252 290.2	200	$3s^23p^4$	^3P	2	–	$3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	3	0.002	92RAA/SNO
396.422	252 256.4	50	$3s^23p^4$	^3P	2	–	$3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	2	0.002	92RAA/SNO
397.668	251 466.0	50	$3s^23p^4$	^3P	1	–	$3s^23p^3(^4S^\circ)5s$	$^3S^\circ$	1	0.002	92RAA/SNO
398.151	251 161.0	50	$3s^23p^4$	^3P	1	–	$3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	1	0.002	92RAA/SNO
398.178	251 144.0	125	$3s^23p^4$	^3P	1	–	$3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	2	0.002	92RAA/SNO
398.394	251 007.8	20	$3s^23p^4$	^3P	0	–	$3s^23p^3(^4S^\circ)5s$	$^3S^\circ$	1	0.002	92RAA/SNO
398.88	250 702.0	50	$3s^23p^4$	^3P	0	–	$3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	1	0.002	92RAA/SNO
400.630	249 607.	1	$3s^23p^4$	^3P	1	–	$3s^23p^3(^4S^\circ)5s$	$^5S^\circ$	2	0.020	00LUN/BRE
409.080	244 451.	1	$3s^23p^4$	^3P	0	–	$3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	1	0.020	00LUN/BRE
422.490	236 692.	1	$3s^23p^4$	^1D	2	–	$3s^23p^3(^4S^\circ)5s$	$^5S^\circ$	2	0.020	00LUN/BRE
466.53	214 348.	250	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	0.01	92RAA/SNO
467.399	213 950.0	300	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	2	0.002	92RAA/SNO
468.479	213 456.7	200	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	0	0.002	92RAA/SNO
468.965	213 235.5	150	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	0.002	92RAA/SNO
469.839	212 838.9	200	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	2	0.002	92RAA/SNO
469.976	212 776.8	200	$3s^23p^4$	^3P	0	–	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	0.002	92RAA/SNO
472.660	211 569.	5	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	1	0.020	00LUN/BRE
473.922	211 005.2	300	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	2	0.002	92RAA/SNO
475.160	210 455.	3	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	1	0.020	00LUN/BRE
475.460	210 323.	6	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2D^\circ)3d$	$^1F^\circ$	3	0.020	00LUN/BRE
476.200	209 996.	3	$3s^23p^4$	^3P	0	–	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	1	0.020	00LUN/BRE
476.436	209 891.8	350	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	2	0.002	92RAA/SNO
477.340	209 494.	3	$3s^23p^4$	^3P	0	–	$3s^23p^3(^2P^\circ)4s$	$^1P^\circ$	1	0.020	00LUN/BRE
481.854	207 531.7	300	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	0.002	92RAA/SNO
482.552	207 231.6	400	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	0.002	92RAA/SNO
484.117	206 561.6	250	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	0	0.002	92RAA/SNO
484.450	206 419.7	250	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	0.002	92RAA/SNO
485.153	206 120.5	300	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	0.002	92RAA/SNO
485.528	205 961.3	200	$3s^23p^4$	^3P	0	–	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	0.002	92RAA/SNO
485.680	205 897.	6	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2D^\circ)3d$	$^1P^\circ$	1	0.020	00LUN/BRE
487.029	205 326.6	350	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2D^\circ)3d$	$^1D^\circ$	2	0.002	92RAA/SNO
488.451	204 728.8	350	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)3d$	$^3S^\circ$	1	0.002	92RAA/SNO
490.230	203 986.	3	$3s^23p^4$	^1S	0	–	$3s^23p^3(^2P^\circ)3d$	$^1P^\circ$	1	0.020	00LUN/BRE
491.121	203 615.8	200	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2D^\circ)3d$	$^3S^\circ$	1	0.002	92RAA/SNO
492.227	203 158.3	150	$3s^23p^4$	^3P	0	–	$3s^23p^3(^2D^\circ)3d$	$^3S^\circ$	1	0.002	92RAA/SNO
503.390	198 653.	3	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2D^\circ)4s$	$^1D^\circ$	2	0.020	00LUN/BRE
506.200	197 550.	3	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	1	0.020	00LUN/BRE
507.480	197 052.	6	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2P^\circ)4s$	$^1P^\circ$	1	0.020	00LUN/BRE
507.623	196 996.6	25	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	2	0.002	92RAA/SNO
508.4390	196 680.4	450	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	0.0010	96KAU/WHA
508.607	196 615.5	300	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	0.002	92RAA/SNO
508.668	196 591.9	180	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	0.002	92RAA/SNO
511.5018	195 502.7	300	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	0.0010	96KAU/WHA
511.5675	195 477.6	180	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	0.0010	96KAU/WHA
512.765	195 021.1	180	$3s^23p^4$	^3P	0	–	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	0.002	92RAA/SNO
517.560	193 214.	6	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	0.020	00LUN/BRE
524.329	190 719.9	25	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2D^\circ)3d$	$^3S^\circ$	1	0.002	92RAA/SNO
528.040	189 380.	6	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	2	0.020	00LUN/BRE
529.9005	188 714.7	450	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	3	0.0010	96KAU/WHA

TABLE 6. Spectral lines of Ar III—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
530.460	188 516.	6	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	1	0.020	00LUN/BRE
531.160	188 267.	6	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	2	0.020	00LUN/BRE
532.410	187 825.2	350	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	0.002	92RAA/SNO
533.630	187 396.	3	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	1	0.020	00LUN/BRE
534.268	187 172.0	50	$3s^23p^4$	^3P	2	–	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	0.002	92RAA/SNO
534.920	186 944.	3	$3s^23p^4$	^3P	0	–	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	1	0.020	00LUN/BRE
535.5881	186 710.6	350	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	0.0010	96KAU/WHA
535.790	186 640.	6	$3s^23p^4$	^1S	0	–	$3s^23p^3(^2D^\circ)3d$	$^1P^\circ$	1	0.020	00LUN/BRE
536.7451	186 308.2		$3s^23p^4$	^1D	2	–	$3s^23p^3(^2P^\circ)3d$	$^1F^\circ$	3	0.0010	96KAU/WHA
537.4622	186 059.6	300	$3s^23p^4$	^3P	1	–	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	0.0010	96KAU/WHA
538.350	185 753.	6	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2D^\circ)4s$	$^1D^\circ$	2	0.020	00LUN/BRE
538.7890	185 601.4	300	$3s^23p^4$	^3P	0	–	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	0.0010	96KAU/WHA
547.4304	182 671.6	50	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	0.002	92RAA/SNO
547.700	182 581.7	40	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	0.002	92RAA/SNO
552.240	181 081.	1	$3s^23p^4$	^1S	0	–	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	0.020	00LUN/BRE
553.4696	180 678.4	450	$3s^23p^4$	^3P	2	–	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	0.0010	96KAU/WHA
556.8979	179 566.1	300	$3s^23p^4$	^3P	1	–	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	0.0010	96KAU/WHA
558.3231	179 107.8	250	$3s^23p^4$	^3P	0	–	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	0.0010	96KAU/WHA
562.440	177 797.	6	$3s^23p^4$	^1S	0	–	$3s^23p^3(^2P^\circ)4s$	$^1P^\circ$	1	0.020	00LUN/BRE
573.4666	174 378.1	200	$3s^23p^4$	^3P	2	–	$3s^23p^3(^4S^\circ)4s$	$^5S^\circ$	2	0.0010	96KAU/WHA
573.840	174 265.	3	$3s^23p^4$	^1S	0	–	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	0.020	00LUN/BRE
577.1457	173 266.5	150	$3s^23p^4$	^3P	1	–	$3s^23p^3(^4S^\circ)4s$	$^5S^\circ$	2	0.0010	96KAU/WHA
578.3865	172 894.8	200	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	2	0.0010	96KAU/WHA
579.2060	172 650.1	150	$3s^23p^4$	^1D	2	–	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	3	0.002	92RAA/SNO
599.988	166 670.0	10	$3s^23p^4$	^1D	2	–	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	0.002	92RAA/SNO
604.1590	165 519.3		$3s^23p^4$	^1D	2	–	$3s^23p^3(^2P^\circ)3d$	$^1D^\circ$	2	0.0010	96KAU/WHA
636.8194	157 030.4	150	$3s^23p^4$	^3P	2	–	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	0.0010	96KAU/WHA
637.256	156 922.8	300	$3s^23p^4$	^3P	2	–	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	0.002	92RAA/SNO
637.2881	156 914.9	1000	$3s^23p^4$	^3P	2	–	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	3	0.0010	96KAU/WHA
641.3658	155 917.3	250	$3s^23p^4$	^3P	1	–	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	0.0010	96KAU/WHA
641.8072	155 810.0	600	$3s^23p^4$	^3P	1	–	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	0.0010	96KAU/WHA
643.2572	155 458.8	450	$3s^23p^4$	^3P	0	–	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	0.0010	96KAU/WHA
690.179	144 889.9	400	$3s^23p^4$	^3P	2	–	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	2	0.002	92RAA/SNO
694.336	144 022.5	250	$3s^23p^4$	^3P	2	–	$3s3p^5$	$^1P^\circ$	1	0.002	92RAA/SNO
695.5390	143 773.4	300	$3s^23p^4$	^3P	1	–	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	0.0010	96KAU/WHA
697.764	143 314.9	100	$3s^23p^4$	^3P	0	–	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	0.002	92RAA/SNO
699.72	142 914.	1 *	$3s^23p^4$	^1D	2	–	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	0.02	36BOY
699.72	142 914.	1 *	$3s^23p^4$	^3P	1	–	$3s3p^5$	$^1P^\circ$	1	0.02	36BOY
699.72	142 914.	1 *	$3s^23p^4$	^1D	2	–	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	3	0.02	36BOY
701.989	142 452.4	25	$3s^23p^4$	^3P	0	–	$3s3p^5$	$^1P^\circ$	1	0.002	92RAA/SNO
769.151	130 013.5	600	$3s^23p^4$	^1D	2	–	$3s3p^5$	$^1P^\circ$	1	0.002	92RAA/SNO
871.0995	114 797.45	500	$3s^23p^4$	^3P	2	–	$3s3p^5$	$^3P^\circ$	1	0.0010	96KAU/WHA
875.5354	114 215.83	450	$3s^23p^4$	^3P	1	–	$3s3p^5$	$^3P^\circ$	0	0.0010	96KAU/WHA
878.7308	113 800.49	600	$3s^23p^4$	^3P	2	–	$3s3p^5$	$^3P^\circ$	2	0.0010	96KAU/WHA
879.6229	113 685.08	400	$3s^23p^4$	^3P	1	–	$3s3p^5$	$^3P^\circ$	1	0.0010	96KAU/WHA
883.1800	113 227.20	450	$3s^23p^4$	^3P	0	–	$3s3p^5$	$^3P^\circ$	1	0.0010	96KAU/WHA
887.4040	112 688.25	500	$3s^23p^4$	^3P	1	–	$3s3p^5$	$^3P^\circ$	2	0.0010	96KAU/WHA
945.221	105 795.4		$3s3p^5$	$^1P^\circ$	1	–	$3p^6$	^1S	0	0.005	84AGE/AND
1 002.096	99 790.84	150	$3s^23p^4$	^1D	2	–	$3s3p^5$	$^3P^\circ$	2	0.002	92RAA/SNO
1 005.270	99 475.8	9	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	–	$3s^23p^3(^2P^\circ)4p$	^1D	2	0.020	00LUN/BRE
1 014.780	98 543.5	9	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	–	$3s^23p^3(^2P^\circ)4p$	^3P	2	0.020	00LUN/BRE
1 017.660	98 264.6	12	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	–	$3s^23p^3(^2P^\circ)4p$	^3P	1	0.020	00LUN/BRE
1 048.200	95 401.6	12	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	2	–	$3s^23p^3(^2P^\circ)4p$	^3D	3	0.020	00LUN/BRE
1 048.380	95 385.3	15	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	4	–	$3s^23p^3(^2P^\circ)4p$	^3D	3	0.020	00LUN/BRE
1 049.690	95 266.2	6	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	–	$3s^23p^3(^2P^\circ)4p$	^3D	1	0.020	00LUN/BRE

TABLE 6. Spectral lines of Ar III—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
1 157.470	86 395.3	1	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2P^\circ)4p$	^3P	2	0.020	00LUN/BRE
1 159.770	86 224.0	6	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2P^\circ)4p$	^3P	1	0.020	00LUN/BRE
1 199.370	83 377.1	12	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	3	–	$3s^23p^3(^2P^\circ)4p$	^3D	3	0.020	00LUN/BRE
1 199.950	83 336.8	12	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2P^\circ)4p$	^3D	2	0.020	00LUN/BRE
1 201.490	83 230.0	6 *	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2P^\circ)4p$	^3D	1	0.020	00LUN/BRE
1 201.490	83 230.0	6 *	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2P^\circ)4p$	^3D	2	0.020	00LUN/BRE
1 203.030	83 123.4	9	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2P^\circ)4p$	^3D	1	0.020	00LUN/BRE
1 245.760	80 272.3	9	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^3D	1	0.020	00LUN/BRE
1 250.630	79 959.7	15	$3s^23p^3(^2D^\circ)3d$	$^1S^\circ$	0	–	$3s^23p^3(^2P^\circ)4p$	^1P	1	0.020	00LUN/BRE
1 255.6374	79 640.83		$3s3p^5$	$^1P^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^1P	1	0.0010	96KAU/WHA
1 265.250	79 035.8	3	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^1D	2	0.020	00LUN/BRE
1 290.310	77 500.8	3	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	2	–	$3s^23p^3(^2P^\circ)4p$	^3D	2	0.020	00LUN/BRE
1 292.070	77 395.2	9	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	2	–	$3s^23p^3(^2P^\circ)4p$	^3D	1	0.020	00LUN/BRE
1 295.060	77 216.5	3	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	3	–	$3s^23p^3(^2P^\circ)4p$	^3D	3	0.020	00LUN/BRE
1 295.630	77 182.5	12	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	3	–	$3s^23p^3(^2P^\circ)4p$	^3D	2	0.020	00LUN/BRE
1 301.820	76 815.5	15	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	4	–	$3s^23p^3(^2P^\circ)4p$	^3D	3	0.020	00LUN/BRE
1 333.860	74 970.4	6	$3s^23p^3(^4S^\circ)4p$	^3P	1	–	$3s^23p^3(^2P^\circ)4d$	$^3D^\circ$	2	0.020	00LUN/BRE
1 337.420	74 770.8	6	$3s^23p^3(^4S^\circ)4p$	^3P	2	–	$3s^23p^3(^2P^\circ)4d$	$^3D^\circ$	3	0.020	00LUN/BRE
1 338.240	74 725.0	9	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^3P	0	0.020	00LUN/BRE
1 338.620	74 703.8	12	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3P	1	0.020	00LUN/BRE
1 340.520	74 597.9	9	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^3P	1	0.020	00LUN/BRE
1 343.710	74 420.8	12	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3P	2	0.020	00LUN/BRE
1 345.680	74 311.9	3	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^3P	2	0.020	00LUN/BRE
1 422.000	70 323.5	9	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^1F	3	0.020	00LUN/BRE
1 434.070	69 731.6	12	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	3	–	$3s^23p^3(^2D^\circ)4p$	^3F	4	0.020	00LUN/BRE
1 437.020	69 588.5	15	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	3	–	$3s^23p^3(^2D^\circ)4p$	^3F	3	0.020	00LUN/BRE
1 437.170	69 581.2	12	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3F	3	0.020	00LUN/BRE
1 440.070	69 441.1	3	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	3	–	$3s^23p^3(^2D^\circ)4p$	^3F	2	0.020	00LUN/BRE
1 440.210	69 434.3	12	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3F	2	0.020	00LUN/BRE
1 442.440	69 327.0	9	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^3F	2	0.020	00LUN/BRE
1 460.0973	68 488.59		$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	3	–	$3s^23p^3(^2D^\circ)4p$	^3D	3	0.0010	96KAU/WHA
1 460.2487	68 481.49		$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3D	3	0.0010	96KAU/WHA
1 465.5506	68 233.74		$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	3	–	$3s^23p^3(^2D^\circ)4p$	^3D	2	0.0010	96KAU/WHA
1 465.7036	68 226.62		$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3D	2	0.0010	96KAU/WHA
1 467.8533	68 126.70		$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^3D	1	0.0010	96KAU/WHA
1 468.006	68 119.6	2	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^3D	2	0.010	35BOY
1 500.740	66 633.8	9	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	–	$3s^23p^3(^2D^\circ)4p$	^1P	1	0.020	00LUN/BRE
1 542.540	64 828.1	9	$3s^23p^3(^2P^\circ)3d$	$^1D^\circ$	2	–	$3s^23p^3(^2P^\circ)4p$	^1D	2	0.020	00LUN/BRE
1 556.220	64 258.3	1	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	2	–	$3s^23p^3(^4S^\circ)4p$	^3P	2	0.020	00LUN/BRE
1 556.630	64 241.3	1	$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	–	$3s^23p^3(^4S^\circ)4p$	^3P	1	0.020	00LUN/BRE
1 568.690	63 747.5	9	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3F	3	0.020	00LUN/BRE
1 571.920	63 616.5	3	$3s^23p^3(^2P^\circ)3d$	$^1D^\circ$	2	–	$3s^23p^3(^2P^\circ)4p$	^3P	1	0.020	00LUN/BRE
1 572.3340	63 599.72		$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3F	2	0.0010	96KAU/WHA
1 573.050	63 570.8	1	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	3	–	$3s^23p^3(^2D^\circ)4p$	^3F	4	0.020	00LUN/BRE
1 576.5915	63 427.97		$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	3	–	$3s^23p^3(^2D^\circ)4p$	^3F	3	0.0010	96KAU/WHA
1 580.260	63 280.7	9	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	3	–	$3s^23p^3(^2D^\circ)4p$	^3F	2	0.020	00LUN/BRE
1 583.0377	63 169.69		$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	4	–	$3s^23p^3(^2D^\circ)4p$	^3F	4	0.0010	96KAU/WHA
1 586.330	63 038.6	1	$3s^23p^3(^4S^\circ)4p$	^3P	2	–	$3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	2	0.020	00LUN/BRE
1 586.6206	63 027.04		$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	4	–	$3s^23p^3(^2D^\circ)4p$	^3F	3	0.0010	96KAU/WHA
1 588.740	62 943.0	1	$3s^23p^3(^4S^\circ)4p$	^3P	1	–	$3s^23p^3(^2D^\circ)4d$	$^3S^\circ$	1	0.020	00LUN/BRE
1 596.210	62 648.4	6	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3D	3	0.020	00LUN/BRE
1 602.570	62 399.8	9	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3D	1	0.020	00LUN/BRE
1 602.790	62 391.2	9	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	2	–	$3s^23p^3(^2D^\circ)4p$	^3D	2	0.020	00LUN/BRE
1 604.410	62 328.2	9	$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	3	–	$3s^23p^3(^2D^\circ)4p$	^3D	3	0.020	00LUN/BRE
1 605.710	62 277.7	12	$3s^23p^3(^2P^\circ)3d$	$^1D^\circ$	2	–	$3s^23p^3(^2P^\circ)4p$	^1P	1	0.020	00LUN/BRE

TABLE 6. Spectral lines of Ar III—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
1 611.0049	62 073.06		$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.0010	96KAU/WHA
1 614.7997	61 927.19		$3s^23p^3(^2D^\circ)3d$	$^3F^\circ$	4	– $3s^23p^3(^2D^\circ)4p$	^3D	3	0.0010	96KAU/WHA
1 617.7766	61 813.23		$3s^23p^3(^2D^\circ)3d$	$^1S^\circ$	0	– $3s^23p^3(^2D^\circ)4p$	^1P	1	0.0010	96KAU/WHA
1 649.570	60 621.9	1	$3s^23p^3(^2P^\circ)3d$	$^1D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.020	00LUN/BRE
1 650.020	60 605.3	0	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	2	0.020	00LUN/BRE
1 669.0970	59 912.64		$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	2	– $3s^23p^3(^4S^\circ)4p$	^5P	3	0.0010	96KAU/WHA
1 669.2893	59 905.73		$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	3	– $3s^23p^3(^4S^\circ)4p$	^5P	3	0.0010	96KAU/WHA
1 669.6701	59 892.07		$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	4	– $3s^23p^3(^4S^\circ)4p$	^5P	3	0.0010	96KAU/WHA
1 673.0711	59 770.32		$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	– $3s^23p^3(^4S^\circ)4p$	^5P	2	0.0010	96KAU/WHA
1 673.2169	59 765.11		$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	2	– $3s^23p^3(^4S^\circ)4p$	^5P	2	0.0010	96KAU/WHA
1 673.4061	59 758.36		$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	3	– $3s^23p^3(^4S^\circ)4p$	^5P	2	0.0010	96KAU/WHA
1 675.4773	59 684.49		$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	1	– $3s^23p^3(^4S^\circ)4p$	^5P	1	0.0010	96KAU/WHA
1 675.6232	59 679.29		$3s^23p^3(^4S^\circ)3d$	$^5D^\circ$	2	– $3s^23p^3(^4S^\circ)4p$	^5P	1	0.0010	96KAU/WHA
1 768.830	56 534.5	6	$3s^23p^3(^2P^\circ)3d$	$^1D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^1D	2	0.020	00LUN/BRE
1 786.520	55 974.7	1	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.020	00LUN/BRE
1 793.640	55 752.5	3	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	0	0.020	00LUN/BRE
1 798.500	55 601.9	6	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.020	00LUN/BRE
1 814.630	55 107.7	1 *	$3s^23p^3(^2D^\circ)3d$	$^3G^\circ$	4	– $3s^23p^3(^2D^\circ)4p$	^1F	3	0.020	00LUN/BRE
1 814.630	55 107.7	1 *	$3s^23p^3(^2D^\circ)4p$	^3F	2	– $3s^23p^3(^2P^\circ)4d$	$^3F^\circ$	2	0.020	00LUN/BRE
1 827.800	54 710.6	6	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.020	00LUN/BRE
1 834.530	54 509.9	3	$3s^23p^3(^2D^\circ)3d$	$^3G^\circ$	4	– $3s^23p^3(^2D^\circ)4p$	^3F	4	0.020	00LUN/BRE
1 836.3722	54 455.191	7	$3s^23p^3(^2D^\circ)3d$	$^3G^\circ$	5	– $3s^23p^3(^2D^\circ)4p$	^3F	4	0.0005	95WHA/AND
1 838.090	54 404.3	3	$3s^23p^3(^2D^\circ)3d$	$^3G^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3F	3	0.020	00LUN/BRE
1 839.3310	54 367.59	6	$3s^23p^3(^2D^\circ)3d$	$^3G^\circ$	4	– $3s^23p^3(^2D^\circ)4p$	^3F	3	0.0008	95WHA/AND
1 843.0837	54 256.90	4	$3s^23p^3(^2D^\circ)3d$	$^3G^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3F	2	0.0012	95WHA/AND
1 850.320	54 044.7	6	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.020	00LUN/BRE
1 855.6497	53 889.481	7	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	4	– $3s^23p^3(^2P^\circ)4p$	^3D	3	0.0003	95WHA/AND
1 859.890	53 766.6	3	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.020	00LUN/BRE
1 864.500	53 633.7	1	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^3D	3	0.020	00LUN/BRE
1 865.6622	53 600.27	5	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.0008	95WHA/AND
1 874.270	53 354.1	1	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.020	00LUN/BRE
1 878.0060	53 247.966	4	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.0005	95WHA/AND
1 907.140	52 434.5	0	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.020	00LUN/BRE
1 914.4119	52 235.362	30	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^4S^\circ)4p$	^3P	2	0.0001	95WHA/AND
1 914.6704	52 228.311	6	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^4S^\circ)4p$	^3P	2	0.0007	95WHA/AND
1 915.5767	52 203.600	19	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^4S^\circ)4p$	^3P	1	0.0002	95WHA/AND
1 918.0682	52 135.790	8	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^4S^\circ)4p$	^3P	0	0.0004	95WHA/AND
1 918.667	52 119.5	4	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^4S^\circ)4p$	^3P	2	0.010	35BOY
1 919.5199	52 096.360	8	$3s^23p^3(^4S^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^4S^\circ)4p$	^3P	1	0.0005	95WHA/AND
1 938.7891	51 578.586	14	$3s^23p^3(^2D^\circ)3d$	$^1G^\circ$	4	– $3s^23p^3(^2D^\circ)4p$	^1F	3	0.0003	95WHA/AND
1 957.8465	51 076.53	3	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	0	0.0010	95WHA/AND
1 958.890	51 049.3	5	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	0	– $3s^23p^3(^2P^\circ)4p$	^3S	1	0.020	00LUN/BRE
1 962.7446	50 949.06	5	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.0011	95WHA/AND
1 965.490	50 877.9	6	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.020	00LUN/BRE
1 973.300	50 676.5	3	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3S	1	0.020	00LUN/BRE
1 973.7937	50 663.857	5	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.0007	95WHA/AND

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 006.8505	49 813.21	5	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3S	1	0.0009	95WHA/AND
2 064.150	48 430.6	1	$3s^23p^3(^2D^\circ)4p$	^1P	1	– $3s^23p^3(^2D^\circ)4d$	$^1D^\circ$	2	0.020	00LUN/BRE
2 122.34	47 102.9	8	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	3	0.04	35DEB
2 125.1373	47 040.919	7	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	2	0.0005	95WHA/AND

TABLE 6. Spectral lines of Ar III—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 125.50	47 032.9	3	$3s^23p^3(^2D^\circ)4p$	^3D	1	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	2	0.04	35DEB
2 127.89	46 980.1	3	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	1	0.04	35DEB
2 128.22	46 972.8	6	$3s^23p^3(^2D^\circ)4p$	^3D	1	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	1	0.04	35DEB
2 133.8684	46 848.464	11	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	3	0.0004	95WHA/AND
2 135.3565	46 815.820	5	$3s^23p^3(^2P^\circ)4p$	^3S	1	– $3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	2	0.0004	95WHA/AND
2 136.73	46 785.7	3	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	2	0.04	35DEB
2 138.59	46 745.0	10	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.03	37DEB
2 141.125	46 689.7	4	$3s^23p^3(^2P^\circ)4p$	^3S	1	– $3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	1	0.020	00LUN/BRE
2 143.455	46 639.0	1	$3s^23p^3(^2P^\circ)4p$	^3S	1	– $3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	0	0.020	00LUN/BRE
2 147.95	46 541.4	6	$3s^23p^3(^2D^\circ)4p$	^3D	1	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	0	0.05	33DEB
2 148.3890	46 531.860	4	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.0006	95WHA/AND
2 148.73	46 524.5	8	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	1	0.05	33DEB
2 149.07	46 517.1	3	$3s^23p^3(^2D^\circ)4p$	^3D	1	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	1	0.05	33DEB
2 156.38	46 359.4	3	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	2	0.05	33DEB
2 157.53	46 334.7	3	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	0	0.03	37DEB
2 166.19	46 149.5	15	$3s^23p^3(^4S^\circ)4p$	^5P	1	– $3s^23p^3(^4S^\circ)5s$	$^5S^\circ$	2	0.05	33DEB
2 168.2822	46 104.992	8	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	2	0.0006	95WHA/AND
2 170.2217	46 063.794	5	$3s^23p^3(^4S^\circ)4p$	^5P	2	– $3s^23p^3(^4S^\circ)5s$	$^5S^\circ$	2	0.0007	95WHA/AND
2 177.1971	45 916.228	7	$3s^23p^3(^4S^\circ)4p$	^5P	3	– $3s^23p^3(^4S^\circ)5s$	$^5S^\circ$	2	0.0007	95WHA/AND
2 184.0267	45 772.660	10	$3s^23p^3(^2D^\circ)4p$	^3F	2	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	1	0.0004	95WHA/AND
2 186.6627	45 717.488	12	$3s^23p^3(^2P^\circ)4p$	^3D	3	– $3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	2	0.0003	95WHA/AND
2 188.1716	45 685.965	10	$3s^23p^3(^2D^\circ)4p$	^3F	3	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	2	0.0004	95WHA/AND
2 191.1209	45 624.477	5	$3s^23p^3(^2P^\circ)4p$	^3D	2	– $3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	1	0.0007	95WHA/AND
2 192.0137	45 605.897	17	$3s^23p^3(^2D^\circ)4p$	^3F	4	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	3	0.0003	95WHA/AND
2 241.7249	44 594.6680	31	$3s^23p^3(^2D^\circ)4s$	$^1D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^1D	2	0.0001	95WHA/AND
2 242.3208	44 582.817	5	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	0	0.0005	95WHA/AND
2 248.73	44 455.8	7	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.04	35DEB
2 265.1445	44 133.6410	34	$3s^23p^3(^2P^\circ)3d$	$^1D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^1P	1	0.0001	95WHA/AND
2 269.7517	44 044.066	36	$3s^23p^3(^2P^\circ)4s$	$^1P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^1S	0	0.0002	95WHA/AND
2 269.9537	44 040.1460	100	$3s^23p^3(^2P^\circ)3d$	$^1F^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^1D	2	0.0001	95WHA/AND
2 279.0327	43 864.719	9	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	2	0.0004	95WHA/AND
2 279.47	43 856.3	3	$3s^23p^3(^2D^\circ)4p$	^3D	1	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	2	0.05	33DEB
2 279.68	43 852.3	4	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	3	0.05	33DEB
2 280.85	43 829.8	5	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	1	0.05	33DEB
2 281.1989	43 823.071	5	$3s^23p^3(^2D^\circ)4p$	^3D	1	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	1	0.0009	95WHA/AND
2 282.2225	43 803.417	10	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.0004	95WHA/AND
2 288.82	43 677.2	2	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	3	0.03	37DEB
2 289.31	43 667.8	4	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.03	37DEB
2 290.61	43 643.0	6	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.03	37DEB
2 291.3593	43 628.766	6	$3s^23p^3(^2P^\circ)4p$	^3D	3	– $3s^23p^3(^2P^\circ)4d$	$^3D^\circ$	3	0.0008	95WHA/AND
2 292.2648	43 611.534	5	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^3D	3	0.0008	95WHA/AND
2 292.39	43 609.2	5	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	2	0.05	33DEB
2 292.9752	43 598.023	17	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	3	0.0002	95WHA/AND
2 294.05	43 577.6	3	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.03	37DEB
2 294.91	43 561.3	5	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
2 296.24	43 536.0	4	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
2 297.15	43 518.8	5	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.04	35DEB
2 299.062	43 482.6	1	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	0	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.020	00LUN/BRE
2 300.7825	43 450.094	4	$3s^23p^3(^4S^\circ)4p$	^3P	1	– $3s^23p^3(^4S^\circ)5s$	$^3S^\circ$	1	0.0006	95WHA/AND
2 302.17	43 423.9	15	$3s^23p^3(^4S^\circ)4p$	^3P	2	– $3s^23p^3(^4S^\circ)5s$	$^3S^\circ$	1	0.05	33DEB
2 302.92	43 409.8	6	$3s^23p^3(^4S^\circ)4p$	^3P	0	– $3s^23p^3(^4S^\circ)5s$	$^3S^\circ$	1	0.05	33DEB
2 312.1238	43 236.984	6	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	0	0.0008	95WHA/AND
2 316.8911	43 148.026	7	$3s^23p^3(^4S^\circ)4p$	^3P	1	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	1	0.0005	95WHA/AND
2 317.3757	43 139.004	8	$3s^23p^3(^4S^\circ)4p$	^3P	2	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	3	0.0006	95WHA/AND
2 317.9325	43 128.643	20	$3s^23p^3(^4S^\circ)4p$	^3P	1	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	2	0.0002	95WHA/AND

TABLE 6. Spectral lines of Ar III—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 318.35	43 120.9	2	$3s^23p^3(^4S^\circ)4p$	^3P	2	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	1	0.05	33DEB
2 319.0123	43 108.561	10	$3s^23p^3(^4S^\circ)4p$	^3P	0	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	1	0.0004	95WHA/AND
2 319.2632	43 103.898	8	$3s^23p^3(^4S^\circ)4p$	^3P	2	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	2	0.0005	95WHA/AND
2 329.9195	42 906.772	5	$3s^23p^3(^2P^\circ)4p$	^3S	1	– $3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	2	0.0007	95WHA/AND
2 335.2989	42 807.945	14	$3s^23p^3(^2P^\circ)4p$	^3S	1	– $3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	1	0.0003	95WHA/AND
2 338.1615	42 755.54	4	$3s^23p^3(^2P^\circ)4p$	^3S	1	– $3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	0	0.0029	95WHA/AND
2 343.56	42 657.1	3	$3s^23p^3(^2D^\circ)4p$	^3F	2	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	2	0.05	33DEB
2 345.1968	42 627.289	14	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.0003	95WHA/AND
2 345.42	42 623.2	5	$3s^23p^3(^2D^\circ)4p$	^3F	2	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	1	0.05	33DEB
2 347.5774	42 584.065	7	$3s^23p^3(^2P^\circ)4p$	^3P	2	– $3s^23p^3(^2P^\circ)5s$	$^3P^\circ$	2	0.0006	95WHA/AND
2 351.67	42 510.0	7	$3s^23p^3(^2D^\circ)4p$	^3F	3	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	2	0.05	33DEB
2 352.33	42 498.0	5	$3s^23p^3(^2D^\circ)4p$	^3F	3	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	3	0.05	33DEB
2 356.119	42 429.7	1	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	4	0.020	00LUN/BRE
2 358.9539	42 378.713	8	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	3	0.0006	95WHA/AND
2 360.26	42 355.3	9	$3s^23p^3(^2D^\circ)4p$	^3F	4	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	3	0.05	33DEB
2 366.317	42 246.9	1	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.020	00LUN/BRE
2 377.7512	42 043.715	11	$3s^23p^3(^2D^\circ)4s$	$^1D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^1P	1	0.0006	95WHA/AND
2 382.403	41 961.6	4	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.020	00LUN/BRE
2 395.6538	41 729.548	18	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	3	0.0002	95WHA/AND
2 399.1951	41 667.959	26	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	4	0.0002	95WHA/AND
2 404.5771	41 574.70	4	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	2	0.0012	95WHA/AND
2 405.0036	41 567.332	31	$3s^23p^3(^2D^\circ)4p$	^3D	1	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	2	0.0002	95WHA/AND
2 410.3797	41 474.627	7	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	3	0.0004	95WHA/AND
2 410.8623	41 466.326	6	$3s^23p^3(^4S^\circ)4p$	^5P	1	– $3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	2	0.0007	95WHA/AND
2 411.0016	41 463.930	13	$3s^23p^3(^4S^\circ)4p$	^5P	1	– $3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	1	0.0003	95WHA/AND
2 413.2214	41 425.793	27	$3s^23p^3(^2D^\circ)4p$	^3F	2	– $3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	3	0.0002	95WHA/AND
2 415.6513	41 384.126	13	$3s^23p^3(^4S^\circ)4p$	^5P	2	– $3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	3	0.0003	95WHA/AND
2 415.8637	41 380.487	9	$3s^23p^3(^4S^\circ)4p$	^5P	2	– $3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	2	0.0005	95WHA/AND
2 416.0030	41 378.102	5	$3s^23p^3(^4S^\circ)4p$	^5P	2	– $3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	1	0.0009	95WHA/AND
2 418.8420	41 329.5390	34	$3s^23p^3(^2D^\circ)4p$	^3F	3	– $3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	4	0.0001	95WHA/AND
2 419.415	41 319.8	2	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	2	0.020	00LUN/BRE
2 419.9242	41 311.059	14	$3s^23p^3(^2P^\circ)4p$	^3D	1	– $3s^23p^3(^2P^\circ)4d$	$^3F^\circ$	2	0.0003	95WHA/AND
2 421.81	41 278.9	4	$3s^23p^3(^2D^\circ)4p$	^3F	3	– $3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	3	0.05	33DEB
2 423.5239	41 249.7030	41	$3s^23p^3(^2D^\circ)4p$	^3F	4	– $3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	5	0.0001	95WHA/AND
2 423.9601	41 242.281	26	$3s^23p^3(^4S^\circ)4p$	^5P	3	– $3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	4	0.0002	95WHA/AND
2 424.2959	41 236.568	6	$3s^23p^3(^4S^\circ)4p$	^5P	3	– $3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	3	0.0007	95WHA/AND
2 424.49	41 233.3	2	$3s^23p^3(^4S^\circ)4p$	^5P	3	– $3s^23p^3(^4S^\circ)4d$	$^5D^\circ$	2	0.05	33DEB
2 425.4917	41 216.240	18	$3s^23p^3(^2P^\circ)4p$	^3D	2	– $3s^23p^3(^2P^\circ)4d$	$^3F^\circ$	3	0.0002	95WHA/AND
2 426.1764	41 204.609	6	$3s^23p^3(^2P^\circ)4p$	^3D	2	– $3s^23p^3(^2P^\circ)4d$	$^3F^\circ$	2	0.0009	95WHA/AND
2 426.743	41 195.0	3	$3s^23p^3(^2P^\circ)4p$	^3P	0	– $3s^23p^3(^2P^\circ)4d$	$^3D^\circ$	1	0.020	00LUN/BRE
2 427.20	41 187.2	4	$3s^23p^3(^2D^\circ)4p$	^3F	4	– $3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	4	0.05	33DEB
2 427.4901	41 182.311	6	$3s^23p^3(^2P^\circ)4p$	^3D	3	– $3s^23p^3(^2P^\circ)4d$	$^3F^\circ$	3	0.0010	95WHA/AND
2 441.2307	40 950.531	7	$3s^23p^3(^2P^\circ)4p$	^3P	1	– $3s^23p^3(^2P^\circ)4d$	$^3D^\circ$	2	0.0003	95WHA/AND
2 443.6243	40 910.423	5	$3s^23p^3(^2D^\circ)4p$	^3P	2	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	3	0.0007	95WHA/AND
2 447.43	40 846.8	1	$3s^23p^3(^2D^\circ)4p$	^3P	2	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	2	0.04	35DEB
2 454.63	40 727.0	6	$3s^23p^3(^2D^\circ)4p$	^3P	2	– $3s^23p^3(^2D^\circ)4d$	$^3S^\circ$	1	0.05	33DEB
2 464.2553	40 567.941	5	$3s^23p^3(^2D^\circ)4p$	^3F	3	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	4	0.0006	95WHA/AND
2 464.62	40 561.9	5	$3s^23p^3(^2D^\circ)4p$	^3P	1	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	2	0.04	35DEB
2 466.084	40 537.9	1	$3s^23p^3(^2D^\circ)4p$	^1F	3	– $3s^23p^3(^2D^\circ)4d$	$^3G^\circ$	3	0.020	00LUN/BRE
2 467.10	40 521.2	3	$3s^23p^3(^2D^\circ)4p$	^3F	2	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	3	0.05	33DEB
2 468.30	40 501.5	2	$3s^23p^3(^2D^\circ)4p$	^3P	1	– $3s^23p^3(^2D^\circ)5s$	$^3D^\circ$	1	0.04	35DEB
2 468.6732	40 495.346	10	$3s^23p^3(^2P^\circ)4p$	^3P	2	– $3s^23p^3(^2P^\circ)4d$	$^3D^\circ$	3	0.0004	95WHA/AND
2 471.92	40 442.2	6	$3s^23p^3(^2D^\circ)4p$	^3P	1	– $3s^23p^3(^2D^\circ)4d$	$^3S^\circ$	1	0.05	33DEB
2 472.9445	40 425.408	22	$3s^23p^3(^2D^\circ)4p$	^3F	4	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	4	0.0002	95WHA/AND
2 475.212	40 388.4	2	$3s^23p^3(^2D^\circ)4s$	$^1D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.020	00LUN/BRE

TABLE 6. Spectral lines of Ar III—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 476.10	40 373.9	7	$3s^23p^3(^2D^\circ)4p$	^3F	3	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	3	0.05	33DEB
2 476.5290	40 366.901	10	$3s^23p^3(^2D^\circ)4p$	^3F	2	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	2	0.0004	95WHA/AND
2 478.7619	40 330.539	6	$3s^23p^3(^2D^\circ)4p$	^3P	2	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	1	0.0004	95WHA/AND
2 479.76	40 314.3	3	$3s^23p^3(^2D^\circ)4p$	^3P	0	– $3s^23p^3(^2D^\circ)4d$	$^3S^\circ$	1	0.05	33DEB
2 484.1045	40 243.806	5	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	4	– $3s^23p^3(^2D^\circ)4p$	^3F	4	0.0009	95WHA/AND
2 484.87	40 231.4	2	$3s^23p^3(^2D^\circ)4p$	^3F	4	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	3	0.05	33DEB
2 485.63	40 219.1	2	$3s^23p^3(^2D^\circ)4p$	^3F	3	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	2	0.05	33DEB
2 488.8577	40 166.955	16	$3s^23p^3(^2D^\circ)4p$	^3P	2	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	2	0.0003	95WHA/AND
2 492.95	40 101.0	3	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	4	– $3s^23p^3(^2D^\circ)4p$	^3F	3	0.04	35DEB
2 494.8515	40 070.461	5	$3s^23p^3(^2D^\circ)4p$	^3P	1	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	0	0.0009	95WHA/AND
2 496.40	40 045.6	5	$3s^23p^3(^2D^\circ)4p$	^3P	1	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	1	0.05	33DEB
2 499.96	39 988.6	1	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3F	4	0.04	35DEB
2 503.016	39 939.8	1	$3s^23p^3(^2P^\circ)3d$	$^1F^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.020	00LUN/BRE
2 504.3877	39 917.891	7	$3s^23p^3(^2D^\circ)4p$	^3P	0	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	1	0.0005	95WHA/AND
2 506.6580	39 881.740	6	$3s^23p^3(^2D^\circ)4p$	^3P	1	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	2	0.0006	95WHA/AND
2 508.91	39 845.9	3	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3F	3	0.04	35DEB
2 510.104	39 827.0	1	$3s^23p^3(^2D^\circ)4p$	^1F	3	– $3s^23p^3(^2D^\circ)4d$	$^3F^\circ$	4	0.020	00LUN/BRE
2 518.26	39 698.0	2	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3F	2	0.04	35DEB
2 524.48	39 600.2	1	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3F	3	0.04	35DEB
2 533.92	39 452.7	3	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3F	2	0.04	35DEB
2 538.297	39 384.7	1	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^1D	2	0.020	00LUN/BRE
2 563.29	39 000.7	5 *	$3s^23p^3(^2D^\circ)4p$	^3P	0	– $3s^23p^3(^2D^\circ)4d$	$^1P^\circ$	1	0.04	35DEB
2 563.29	39 000.7	5 *	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	4	– $3s^23p^3(^2D^\circ)4p$	^3D	3	0.04	35DEB
2 566.3789	38 953.733	8	$3s^23p^3(^2P^\circ)4p$	^3P	1	– $3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	2	0.0006	95WHA/AND
2 576.388	38 802.4	5	$3s^23p^3(^2P^\circ)4p$	^3P	1	– $3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	0	0.020	00LUN/BRE
2 579.6398	38 753.5010	59	$3s^23p^3(^2P^\circ)4s$	$^1P^\circ$	1	– $3p^6$	^1S	0	0.0001	95WHA/AND
2 580.17	38 745.5	2	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3D	3	0.04	35DEB
2 583.39	38 697.2	3	$3s^23p^3(^2D^\circ)3d$	$^3S^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.03	37DEB
2 584.8766	38 674.993	14	$3s^23p^3(^2P^\circ)4p$	^3P	2	– $3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	2	0.0003	95WHA/AND
2 591.4983	38 576.178	6	$3s^23p^3(^2P^\circ)4p$	^3P	2	– $3s^23p^3(^2P^\circ)4d$	$^3P^\circ$	1	0.0007	95WHA/AND
2 594.41	38 532.9	1	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3F	2	0.04	35DEB
2 596.634	38 499.9	1	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	3	0.020	00LUN/BRE
2 597.25	38 490.8	3	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.04	35DEB
2 602.12	38 418.7	1	$3s^23p^3(^2D^\circ)3d$	$^3S^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.03	37DEB
2 613.44	38 252.3	3	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	1	0.04	35DEB
2 613.95	38 244.9	3	$3s^23p^3(^2P^\circ)3d$	$^3F^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.04	35DEB
2 617.26	38 196.5	1	$3s^23p^3(^2D^\circ)3d$	$^3S^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	0	0.03	37DEB
2 631.8635	37 984.567	6	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3D	1	0.0008	95WHA/AND
2 632.40	37 976.8	4	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.04	35DEB
2 645.47	37 789.2	2	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3F	3	0.04	35DEB
2 653.77	37 671.0	4	$3s^23p^3(^2D^\circ)4p$	^3P	2	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	2	0.05	33DEB
2 654.5492	37 659.971	17	$3s^23p^3(^2D^\circ)4p$	^3P	2	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	3	0.0003	95WHA/AND
2 656.17	37 637.0	1	$3s^23p^3(^2D^\circ)4p$	^3P	2	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	1	0.05	33DEB
2 660.22	37 579.7	3	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	3	0.04	35DEB
2 673.9635	37 386.556	10	$3s^23p^3(^2D^\circ)4p$	^3P	1	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	2	0.0004	95WHA/AND
2 676.46	37 351.7	4	$3s^23p^3(^2D^\circ)4p$	^3P	1	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	1	0.05	33DEB
2 677.87	37 332.0	3	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	1	0.04	35DEB
2 678.3541	37 325.272	12	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.0004	95WHA/AND
2 685.5827	37 224.812	5	$3s^23p^3(^2D^\circ)4p$	^3P	0	– $3s^23p^3(^2D^\circ)4d$	$^3D^\circ$	1	0.0010	95WHA/AND
2 692.751	37 125.7	4	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^1D	2	0.020	00LUN/BRE
2 694.320	37 104.1	1	$3s^23p^3(^2P^\circ)4p$	^1D	2	– $3s^23p^3(^2P^\circ)4d$	$^3F^\circ$	2	0.020	00LUN/BRE
2 701.079	37 011.3	5	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	0	– $3s^23p^3(^2D^\circ)4p$	^3D	1	0.020	00LUN/BRE
2 724.7879	36 689.238	16	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3D	3	0.0003	95WHA/AND
2 728.562	36 638.5	5	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3D	1	0.020	00LUN/BRE
2 743.89	36 433.8	3	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.04	35DEB

TABLE 6. Spectral lines of Ar III—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 753.9148	36 301.2140	39	$3s^23p^3(^2D^\circ)4s$	$^1D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^1D	2	0.0001	95WHA/AND
2 762.1649	36 192.794	30	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.0003	95WHA/AND
2 783.6033	35 914.063	10	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.0009	95WHA/AND
2 785.23	35 893.1	5	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.03	37DEB
2 794.976	35 767.9	8	$3s^23p^3(^2P^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.020	00LUN/BRE
2 796.6367	35 746.699	11	$3s^23p^3(^2P^\circ)3d$	$^1F^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^1D	2	0.0004	95WHA/AND
2 807.02	35 614.5	4	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.03	37DEB
2 818.2260	35 472.871	8	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	0	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.0011	95WHA/AND
2 824.6461	35 392.249	10	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	0	0.0008	95WHA/AND
2 840.155	35 199.0	6	$3s^23p^3(^2D^\circ)3d$	$^1P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^1S	0	0.020	00LUN/BRE
2 842.9654	35 164.202	33	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	0	0.0002	95WHA/AND
2 853.3088	35 036.736	25	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.0002	95WHA/AND
2 855.3126	35 012.1490	69	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.0001	95WHA/AND
2 876.65	34 752.5	1	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.05	33DEB
2 878.7636	34 726.947	9	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.0005	95WHA/AND
2 881.605	34 692.7	3	$3s^23p^3(^2D^\circ)4p$	^1D	2	– $3s^23p^3(^2D^\circ)4d$	$^1P^\circ$	1	0.020	00LUN/BRE
2 884.2144	34 661.3200	115	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.0001	95WHA/AND
2 928.823	34 133.4	8	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	0	– $3s^23p^3(^2P^\circ)4p$	^1P	1	0.020	00LUN/BRE
3 002.6407	33 294.312	16	$3s^23p^3(^2P^\circ)4s$	$^1P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^1D	2	0.0006	95WHA/AND
3 010.02	33 212.7	10	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.03	37DEB
3 023.9801	33 059.373	5	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	3	0.0017	95WHA/AND
3 027.16	33 024.6	5	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.03	37DEB
3 036.96	32 918.1	3	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
3 054.7736	32 726.13	3	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.0045	95WHA/AND
3 064.77	32 619.4	10	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
3 078.15	32 477.6	10	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	0	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
3 083.64	32 419.8	3	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.03	37DEB
3 109.08	32 155.	M1	$3s^23p^4$	^3P	1	– $3s^23p^4$	^1S	0	0.30	60BOW
3 110.41	32 140.8	7	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.03	37DEB
3 127.90	31 961.1	7	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3S	1	0.03	37DEB
3 157.42	31 662.3	5	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3S	1	0.03	37DEB
3 171.64	31 520.3	2	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	0	– $3s^23p^3(^2P^\circ)4p$	^3S	1	0.03	37DEB
3 187.90	31 359.5	6	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	0	0.03	37DEB
3 223.389	31 014.29	1	$3s^23p^3(^2P^\circ)4p$	^1D	2	– $3s^23p^3(^2P^\circ)4d$	$^1F^\circ$	3	0.020	00LUN/BRE
3 251.7907	30 743.419	7	$3s^23p^3(^2P^\circ)4s$	$^1P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^1P	1	0.0012	95WHA/AND
3 263.879	30 629.56	9	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^1F	3	0.020	00LUN/BRE
3 285.8413	30 424.8410	33	$3s^23p^3(^4S^\circ)4s$	$^5S^\circ$	2	– $3s^23p^3(^4S^\circ)4p$	^5P	3	0.0002	95WHA/AND
3 301.8546	30 277.2920	224	$3s^23p^3(^4S^\circ)4s$	$^5S^\circ$	2	– $3s^23p^3(^4S^\circ)4p$	^5P	2	0.0001	95WHA/AND
3 311.2423	30 191.456	18	$3s^23p^3(^4S^\circ)4s$	$^5S^\circ$	2	– $3s^23p^3(^4S^\circ)4p$	^5P	1	0.0003	95WHA/AND
3 323.59	30 079.3	9	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	$^3D^\circ$	3	0.03	37DEB
3 327.34	30 045.4	4	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.03	37DEB
3 331.142	30 011.10	2	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^1D	2	0.020	00LUN/BRE
3 336.1746	29 965.8330	708	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3F	4	0.0001	95WHA/AND
3 342.5373	29 908.793	5 f	$3s^23p^3(^2D^\circ)3d$	$^1P^\circ$	1	– $3p^6$	^1S	0	0.0021	95WHA/AND
3 344.7567	29 888.9480	575	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3F	3	0.0001	95WHA/AND
3 352.11	29 823.4	4	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3F	3	0.05	33DEB
3 358.5305	29 766.3730	417	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3F	2	0.0001	95WHA/AND
3 361.28	29 742.0	7	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3F	2	0.05	33DEB
3 391.8445	29 474.0230	129	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.0001	95WHA/AND
3 413.53	29 286.8	6	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	3	0.03	37DEB
3 417.49	29 252.9	7	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.03	37DEB
3 424.25	29 195.1	9	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.03	37DEB
3 430.03	29 145.9	2	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
3 436.925	29 087.44	6	$3s^23p^3(^2P^\circ)4s$	$^1P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.020	00LUN/BRE
3 438.04	29 078.0	8	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	2	0.03	37DEB

TABLE 6. Spectral lines of Ar III—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
3 471.32	28 799.2	9	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.03	37DEB
3 472.61	28 788.5	6	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	3	0.05	33DEB
3 480.5020	28 723.2650	1000	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3D	3	0.0001	95WHA/AND
3 484.12	28 693.4	3	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.03	37DEB
3 494.270	28 610.09	2	$3s^23p^3(^2D^\circ)4p$	^1P	1	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	1	0.020	00LUN/BRE
3 497.10	28 586.9	4	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
3 498.31	28 577.1	6 *	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	0	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.03	37DEB
3 498.31	28 577.1	6 *	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3P	0	0.03	37DEB
3 499.6693	28 565.9560	269	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3D	1	0.0001	95WHA/AND
3 500.58	28 558.5	5	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.05	33DEB
3 502.6828	28 541.3800	93	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	1	0.0001	95WHA/AND
3 503.5894	28 533.9950	468	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.0001	95WHA/AND
3 509.3333	28 487.2930	245	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	– $3s^23p^3(^4S^\circ)4p$	^3P	0	0.0001	95WHA/AND
3 511.1485	28 472.5660	1175	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	– $3s^23p^3(^4S^\circ)4p$	^3P	2	0.0001	95WHA/AND
3 511.6671	28 468.3610	89	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3D	2	0.0001	95WHA/AND
3 514.2004	28 447.8400	724	$3s^23p^3(^4S^\circ)4s$	$^3S^\circ$	1	– $3s^23p^3(^4S^\circ)4p$	^3P	1	0.0001	95WHA/AND
3 539.219	28 246.75	3	$3s^23p^3(^2P^\circ)4p$	^3P	2	– $3s^23p^3(^2D^\circ)4d$	$^3P^\circ$	1	0.020	00LUN/BRE
3 637.8731	27 480.7570	78	$3s^23p^3(^2D^\circ)4s$	$^1D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^1F	3	0.0001	95WHA/AND
3 670.275	27 238.16	7	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	0	– $3s^23p^3(^2P^\circ)4p$	^1P	1	0.020	00LUN/BRE
3 683.431	27 140.88	6	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	3	0.020	00LUN/BRE
3 685.601	27 124.90	5	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	1	0.020	00LUN/BRE
3 686.601	27 117.54	6	$3s^23p^3(^2D^\circ)4p$	^3D	1	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	1	0.020	00LUN/BRE
3 688.230	27 105.56	7	$3s^23p^3(^2D^\circ)4p$	^3D	2	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	2	0.020	00LUN/BRE
3 689.250	27 098.07	4	$3s^23p^3(^2D^\circ)4p$	^3D	1	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	2	0.020	00LUN/BRE
3 695.988	27 048.67	9	$3s^23p^3(^2D^\circ)4s$	$^3D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^1P	1	0.020	00LUN/BRE
3 712.764	26 926.45	10	$3s^23p^3(^2P^\circ)3d$	$^1F^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^1F	3	0.020	00LUN/BRE
3 716.553	26 899.00	8	$3s^23p^3(^2D^\circ)3d$	$^3S^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.020	00LUN/BRE
3 723.251	26 850.61	5	$3s^23p^3(^2D^\circ)4p$	^3D	3	– $3s^23p^3(^4S^\circ)4d$	$^3D^\circ$	2	0.020	00LUN/BRE
3 756.382	26 613.80	9	$3s^23p^3(^2D^\circ)3d$	$^3S^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.020	00LUN/BRE
3 795.3435	26 340.5970	148	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	3	0.0001	95WHA/AND
3 800.25	26 306.6	6	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.03	37DEB
3 815.70	26 200.1	1	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
3 858.2923	25 910.855	8	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3D	2	0.0005	95WHA/AND
3 874.22	25 804.33	4	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
3 907.84	25 582.34	7	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	0	– $3s^23p^3(^2P^\circ)4p$	^3D	1	0.03	37DEB
3 960.4872	25 242.276	5	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3S	1	0.0019	95WHA/AND
3 995.590	25 020.52	8	$3s^23p^3(^2D^\circ)3d$	$^1D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^1D	2	0.020	00LUN/BRE
4 023.5864	24 846.427	4	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^3S	1	0.0015	95WHA/AND
4 059.89	24 624.26	3	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	0	– $3s^23p^3(^2P^\circ)4p$	^3S	1	0.03	37DEB
4 088.8914	24 449.605	7	$3s^23p^3(^2D^\circ)3d$	$^1P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^1D	2	0.0018	95WHA/AND
4 098.19	24 394.13	4	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.03	37DEB
4 127.19	24 222.73	4	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	0	0.03	37DEB
4 146.60	24 109.3		$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.04	65BRI/CHE
4 149.03	24 095.22	3	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.03	37DEB
4 173.69	23 952.86	2	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	0	– $3s^23p^3(^2D^\circ)4p$	^3P	1	0.03	37DEB
4 182.9667	23 899.742	18	$3s^23p^3(^2D^\circ)4s$	$^1D^\circ$	2	– $3s^23p^3(^2D^\circ)4p$	^1P	1	0.0012	95WHA/AND
4 198.83	23 809.45	3 *	$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	1	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.03	37DEB
4 198.83	23 809.45	3 *	$3s^23p^3(^2D^\circ)3d$	$^1D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^3P	1	0.03	37DEB
4 449.201	22 469.64	7	$3s^23p^3(^2D^\circ)3d$	$^1D^\circ$	2	– $3s^23p^3(^2P^\circ)4p$	^1P	1	0.020	00LUN/BRE
4 548.565	21 978.79	2	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	1	– $3s^23p^3(^4S^\circ)4p$	^3P	2	0.020	00LUN/BRE
4 565.210	21 898.66	8	$3s^23p^3(^2D^\circ)3d$	$^1P^\circ$	1	– $3s^23p^3(^2P^\circ)4p$	^1P	1	0.020	00LUN/BRE
4 687.618	21 326.83	5	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	2	– $3s^23p^3(^4S^\circ)4p$	^3P	2	0.020	00LUN/BRE
4 731.386	21 129.55	7	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	3	– $3s^23p^3(^2D^\circ)4p$	^3P	2	0.020	00LUN/BRE
4 772.166	20 948.99	4	$3s^23p^3(^2D^\circ)4p$	^3P	1	– $3s^23p^3(^4S^\circ)5s$	$^3S^\circ$	1	0.020	00LUN/BRE
4 801.368	20 821.58	2	$3s^23p^3(^2D^\circ)4p$	^3P	0	– $3s^23p^3(^4S^\circ)5s$	$^3S^\circ$	1	0.020	00LUN/BRE

TABLE 6. Spectral lines of Ar III—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
4 847.846	20 621.96	11	$3s^23p^3(^2P^\circ)3d$	$^3D^\circ$	2 –	$3s^23p^3(^2D^\circ)4p$	^3P	1	0.020	00LUN/BRE
4 891.984	20 435.90	6	$3s^23p^3(^2D^\circ)3d$	$^3D^\circ$	3 –	$3s^23p^3(^4S^\circ)4p$	^3P	2	0.020	00LUN/BRE
4 992.617	20 023.99	10	$3s^23p^3(^2D^\circ)3d$	$^1F^\circ$	3 –	$3s^23p^3(^2P^\circ)4p$	^1D	2	0.020	00LUN/BRE
5 191.82	19 255.7	f	$3s^23p^4$	^1D	2 –	$3s^23p^4$	^1S	0	0.10	55BOW
5 502.2	18 169.5		$3s^23p^3(^2P^\circ)4s$	$^3P^\circ$	2 –	$3s^23p^3(^2D^\circ)4p$	^3D	3	0.5	65BRI/CHE
5 743.147	17 407.23	1	$3s^23p^3(^2D^\circ)3d$	$^3P^\circ$	1 –	$3s^23p^3(^2D^\circ)4p$	^3P	0	0.020	00LUN/BRE
7 135.80	14 009.98	f	$3s^23p^4$	^3P	2 –	$3s^23p^4$	^1D	2	0.04	55BOW
7 751.06	12 897.91	f	$3s^23p^4$	^3P	1 –	$3s^23p^4$	^1D	2	0.10	55BOW

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
89 913.8	1 112.176	M1	$3s^23p^4$	^3P	2 –	$3s^23p^4$	^3P	1	1.2	95KEL/LAC
218 302.	458.081	f	$3s^23p^4$	^3P	1 –	$3s^23p^4$	^3P	0	3.	01FEU/LUT

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3.3. Ar IV

P isoelectronic sequence

Ground state: $1s^22s^22p^63s^23p^3\ ^4S^\circ_{3/2}$

Ionization energy: 480 560 ± 1440 cm^{-1} (59.58 ± 0.18 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar IV are given in Tables 7–9.

The energy levels of triply ionized argon, Ar IV, were compiled by Moore [49MOO] based largely on the work of Boyce [35BOY] and deBruin [36DEB]. She tabulated 37 levels. More recently Bredice *et al.* [95BRE/GAL], using only their own measurements of Ar IV lines and atomic struc-

TABLE 7. Energy levels of Ar IV

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
0.0	0.3	1	$3s^23p^3$	$^4S^\circ$	3/2	100	
21 090.6	0.3	1	$3s^23p^3$	$^2D^\circ$	3/2	99	
21 219.8	0.3	1	$3s^23p^3$	$^2D^\circ$	5/2	100	
34 854.6	0.2	1	$3s^23p^3$	$^2P^\circ$	1/2	100	
35 032.4	0.2	1	$3s^23p^3$	$^2P^\circ$	3/2	98	
117 563.4	0.5	0	$3s3p^4$	^4P	5/2	86	13 $3s^23p^2(^3P)3d\ ^4P$
118 515.7	0.5	0	$3s3p^4$	^4P	3/2	86	13 $3s^23p^2(^3P)3d\ ^4P$
119 043.1	0.3	0	$3s3p^4$	^4P	1/2	86	13 $3s^23p^2(^3P)3d\ ^4P$
145 921.2	0.3	0	$3s3p^4$	^2D	3/2	72	24 $3s^23p^2(^1D)3d\ ^2D$
145 999.4	0.3	0	$3s3p^4$	^2D	5/2	72	24 $3s^23p^2(^1D)3d\ ^2D$
177 832.5	0.4	0	$3s3p^4$	^2S	1/2	72	22 $3s^23p^2(^1D)3d\ ^2S$
222 956.1	0.3	0	$3s3p^4$	^2P	3/2	44	40 $3s^23p^2(^1D)3d\ ^2P$
224 019.3	0.4	0	$3s3p^4$	^2P	1/2	43	45 $3s^23p^2(^1D)3d\ ^2P$
166 356.4	0.3	0	$3s^23p^2(^3P)3d$	^2P	3/2	62	31 $3s3p^4\ ^2P$
167 444.6	0.3	0	$3s^23p^2(^3P)3d$	^2P	1/2	62	31 $3s3p^4\ ^2P$
180 682.5	0.7	0	$3s^23p^2(^3P)3d$	^4F	3/2	98	
181 031.8	0.4	0	$3s^23p^2(^3P)3d$	^4F	5/2	98	
181 533.3	0.8	0	$3s^23p^2(^3P)3d$	^4F	7/2	98	
182 195.6	1.1	0	$3s^23p^2(^3P)3d$	^4F	9/2	97	
187 290.4	0.8	0	$3s^23p^2(^3P)3d$	^4D	1/2	98	
187 397.5	0.6	0	$3s^23p^2(^3P)3d$	^4D	3/2	98	
187 821.3	0.5	0	$3s^23p^2(^3P)3d$	^4D	5/2	92	
188 824.5	0.5	0	$3s^23p^2(^3P)3d$	^4D	7/2	73	14 $3s^23p^2(^1D)3d\ ^2F$
207 760.7	0.6	0	$3s^23p^2(^1D)3d$	^2G	7/2	98	
207 859.3	1.1	0	$3s^23p^2(^1D)3d$	^2G	9/2	98	
220 786.8	0.2	0	$3s^23p^2(^3P)3d$	^4P	5/2	86	11 $3s3p^4\ ^4P$
221 300.9	0.3	0	$3s^23p^2(^3P)3d$	^4P	3/2	85	12 $3s3p^4\ ^4P$
221 627.4	0.3	0	$3s^23p^2(^3P)3d$	^4P	1/2	85	10 $3s3p^4\ ^4P$
224 754.4	0.3	0	$3s^23p^2(^3P)3d$	^2D	3/2	55	40 $3s^23p^2(^1S)3d\ ^2D$
226 142.8	0.4	0	$3s^23p^2(^3P)3d$	^2D	5/2	56	39 $3s^23p^2(^1S)3d\ ^2D$
238 674.	4.	0	$3s^23p^2(^1D)3d$	^2D	5/2	72	17 $3s3p^4\ ^2D$
239 050.	3.	0	$3s^23p^2(^1D)3d$	^2D	3/2	72	18 $3s3p^4\ ^2D$
246 628.0	0.3	0	$3s^23p^2(^3P)3d$	^2F	5/2	56	40 $3s^23p^2(^1D)3d\ ^2F$
246 737.6	0.4	0	$3s^23p^2(^3P)3d$	^2F	7/2	56	39 $3s^23p^2(^1D)3d\ ^2F$
250 215.2	0.2	0	$3s^23p^2(^3P)4s$	^4P	1/2	98	
250 902.16	0.19	0	$3s^23p^2(^3P)4s$	^4P	3/2	61	19 $3s^23p^2(^1D)3d\ ^2P$
251 967.35	0.19	0	$3s^23p^2(^3P)4s$	^4P	5/2	98	
256 087.8	0.3	0	$3s^23p^2(^3P)4s$	^2P	1/2	98	
257 343.58	0.16	0	$3s^23p^2(^3P)4s$	^2P	3/2	98	
267 741.3	0.4	0	$3s^23p^2(^1D)4s$	^2D	5/2	98	
267 762.0	0.3	0	$3s^23p^2(^1D)4s$	^2D	3/2	98	
285 956.2	0.2	1	$3s^23p^2(^3P)4p$	$^4D^\circ$	1/2	99	
286 224.5	0.2	1	$3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	99	
286 747.8	0.2	1	$3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	99	
287 550.8	0.3	1	$3s^23p^2(^3P)4p$	$^4D^\circ$	7/2	99	
289 122.3	0.4	1	$3s^23p^2(^3P)4p$	$^4P^\circ$	1/2	99	
289 233.9	0.2	1	$3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	97	
289 830.5	0.2	1	$3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	94	5 $3s^23p^2(^3P)4p\ ^2D$
290 251.5	0.3	1	$3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	82	16 $3s^23p^2(^1D)4p\ ^2D$
291 663.1	0.3	1	$3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	79	15 $3s^23p^2(^1D)4p\ ^2D$
291 744.0	0.2	1	$3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	99	
295 670.2	0.4	1	$3s^23p^2(^3P)4p$	$^2P^\circ$	1/2	85	13 $3s^23p^2(^1D)4p\ ^2P$
295 802.2	0.3	1	$3s^23p^2(^3P)4p$	$^2P^\circ$	3/2	83	15 $3s^23p^2(^1D)4p\ ^2P$
303 665.4	0.3	1	$3s^23p^2(^1D)4p$	$^2F^\circ$	5/2	99	
303 989.1	0.6	1	$3s^23p^2(^1D)4p$	$^2F^\circ$	7/2	99	

TABLE 7. Energy levels of Ar IV—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
305 827.4	0.2	1	$3s^23p^2(^1D)4p$	$^2D^\circ$	5/2	84	16 $3s^23p^2(^3P)4p\ ^2D$
305 899.6	0.2	1	$3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	83	16 $3s^23p^2(^3P)4p\ ^2D$

ture calculations, experimentally determined 57 levels. Using a more complete set of line data, we are able to tabulate the 57 levels by means of a fit to the available Ar IV lines. The preliminary levels for this fit were the levels determined by Bredice *et al.* [95BRE/GAL]. The values of the leading percentages included in the energy level table were obtained from the calculation of Bredice *et al.* [95BRE/GAL].

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar IV are compiled from 11 sources [29BOY/COM, 36DEB, 55BOW, 66SCH, 71PIN/CUR, 83PEN/BEN, 84JIA/SHE, 84LEV/GIR, 88LES/FOL, 92RAA/SNO, 95BRE/GAL]. The sources used in this compilation are summarized in Table 8 (Sources of Ar IV lines). We only include observed lines, although four lines observed by Bredice *et al.* [95BRE/GAL] were only provided with wavelengths they obtained using their energy levels (Ritz values). Table 8 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

The largest source for lines was from Bredice *et al.* [95BRE/GAL]. They quote an uncertainty of 0.01 Å. For wavelengths above 2400 Å we tripled their estimates to correspond to how the wavelengths compared to those calculated from their levels. The uncertainty was estimated for deBruin [36DEB] by comparing his values to those of more recent measurement for lines included in both sources.

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows.

[92RAA/SNO] over [95BRE/GAL] over [84JIA/SHE] over [84LEV/GIR] over [88LES/FOL]. [95BRE/GAL] over [29BOY/COM].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar IV levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar IV when they do not fit the known levels.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar IV line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
a	Asymmetric line
b	Blend
f	Electric dipole forbidden line
R	Ritz value was used by the source of this line
w	Wide line
*	Multiply classified line (two or more classifications of this line share the same intensity)

Once the classified line list was completed, a least squares adjustment of the energy levels was made using a modified

TABLE 8. Sources of Ar IV lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
29BOY	1	electrodeless ring discharge. VS	843	0.05
36DEB	5	end-on self-induction discharge tube. 2-m and 3-m NI and quartz spectrograph	2453–3016	0.05
55BOW	5	astronomical nebular lines. coudé spectrograph	4711–7263	0.02–0.3
66SCH	2	capillary discharge. 0.5-m NI VS	817, 842	0.04
71PIN/CUR	2	beam foil excitation. 0.5-m NI VS	712	2.
83PEN/BEN	2	astronomical nebular lines observed with International Ultraviolet Explorer satellite.	2854, 2868	0.04
84JIA/SHE	1	quartz capillary discharge. 3-m GI VS	473	0.02
84LEV/GIR	1	quartz capillary discharge. 3-m GI monochromator	807	0.2
88LES/FOL	3	radiation from Ar recoil ions. 2.2-m GI VS	389–597	0.3
92RAA/SNO	47	high-voltage open spark. 6.65-m NI VS	397–1190	0.002
95BRE/GAL	176	discharge tube. 3-m NI VS	405–3135	0.01 or 0.03

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

TABLE 9. Spectral lines of Ar IV

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
388.7	257 270	120	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^3P)4s$	^2P	3/2	0.3	88LES/FOL
396.8748	251 968.6	160	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^3P)4s$	^4P	5/2	0.0020	92RAA/SNO
398.5590	250 903.9	160	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^3P)4s$	^4P	3/2	0.0020	92RAA/SNO
399.6544	250 216.2	120	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^3P)4s$	^4P	1/2	0.0020	92RAA/SNO
405.41	246 664.	9 *	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^1D)4s$	^2D	3/2	0.01	95BRE/GAL
405.41	246 664.	9 *	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^1D)4s$	^2D	5/2	0.01	95BRE/GAL
405.64	246 524.	10	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^1D)4s$	^2D	5/2	0.01	95BRE/GAL
418.4	239 010	180	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^1D)3d$	^2D	3/2	0.3	88LES/FOL
423.275	236 253.0	20	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)4s$	^2P	3/2	0.002	92RAA/SNO
423.508	236 123.0	100	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)4s$	^2P	3/2	0.002	92RAA/SNO
425.537	234 997.2	100	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)4s$	^2P	1/2	0.002	92RAA/SNO
429.36	232 905.	6	$3s^23p^3$	$^2P^\circ$	1/2	– $3s^23p^2(^1D)4s$	^2D	3/2	0.01	95BRE/GAL
429.69	232 726.	8 a *	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^1D)4s$	^2D	3/2	0.01	95BRE/GAL
429.69	232 726.	8 a *	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^1D)4s$	^2D	5/2	0.01	95BRE/GAL
435.39	229 679.	1	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)4s$	^4P	3/2	0.01	95BRE/GAL
442.20	226 142.	6	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2D	5/2	0.01	95BRE/GAL
443.40	225 530.	12 b * R	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2F	5/2	0.01	95BRE/GAL
443.40	225 530.	12 b * R	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)3d$	^2F	7/2	0.01	95BRE/GAL
443.64	225 408.	5	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)3d$	^2F	5/2	0.01	95BRE/GAL
446.387	224 020.9	40	$3s^23p^3$	$^4S^\circ$	3/2	– $3s3p^4$	^2P	1/2	0.002	92RAA/SNO
448.518	222 956.5	120	$3s^23p^3$	$^4S^\circ$	3/2	– $3s3p^4$	^2P	3/2	0.002	92RAA/SNO
449.463	222 487.7	40	$3s^23p^3$	$^2P^\circ$	1/2	– $3s^23p^2(^3P)4s$	^2P	3/2	0.002	92RAA/SNO
449.820	222 311.1	80	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^3P)4s$	^2P	3/2	0.002	92RAA/SNO
451.211	221 625.8	15	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^3P)3d$	^4P	1/2	0.002	92RAA/SNO
451.877	221 299.2	45	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^3P)3d$	^4P	3/2	0.002	92RAA/SNO
452.015	221 231.6	160	$3s^23p^3$	$^2P^\circ$	1/2	– $3s^23p^2(^3P)4s$	^2P	1/2	0.002	92RAA/SNO
452.374	221 056.0	20	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^3P)4s$	^2P	1/2	0.002	92RAA/SNO
452.930	220 784.7	80	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^3P)3d$	^4P	5/2	0.002	92RAA/SNO
458.80	217 960.	6	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^1D)3d$	^2D	3/2	0.01	95BRE/GAL
459.07	217 832.	6	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^1D)3d$	^2D	3/2	0.01	95BRE/GAL
459.60	217 581.	8	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^1D)3d$	^2D	5/2	0.01	95BRE/GAL
459.86	217 457.	9	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^1D)3d$	^2D	5/2	0.01	95BRE/GAL
472.64	211 578.	53	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2F	5/2	0.02	84JIA/SHE
487.68	205 052.	7	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2D	5/2	0.01	95BRE/GAL
487.99	204 922.	6 a	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)3d$	^2D	5/2	0.01	95BRE/GAL
489.73	204 194.	5	$3s^23p^3$	$^2P^\circ$	1/2	– $3s^23p^2(^1D)3d$	^2D	3/2	0.01	95BRE/GAL
491.02	203 658.	9 a *	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2D	3/2	0.01	95BRE/GAL
491.02	203 658.	9 a *	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^1D)3d$	^2D	5/2	0.01	95BRE/GAL
491.32	203 533.	8	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)3d$	^2D	3/2	0.01	95BRE/GAL
492.782	202 929.5	240	$3s^23p^3$	$^2D^\circ$	3/2	– $3s3p^4$	^2P	1/2	0.002	92RAA/SNO
495.377	201 866.5	200	$3s^23p^3$	$^2D^\circ$	3/2	– $3s3p^4$	^2P	3/2	0.002	92RAA/SNO
495.698	201 735.7	270	$3s^23p^3$	$^2D^\circ$	5/2	– $3s3p^4$	^2P	3/2	0.002	92RAA/SNO
498.67	200 533.	3	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)3d$	^4P	1/2	0.01	95BRE/GAL
499.80	200 080.	6	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)3d$	^4P	3/2	0.01	95BRE/GAL
523.26	191 110.	6	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2D	5/2	0.01	95BRE/GAL
526.60	189 897.	5	$3s^23p^3$	$^2P^\circ$	1/2	– $3s^23p^2(^3P)3d$	^2D	3/2	0.01	95BRE/GAL
527.09	189 721.	6	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2D	3/2	0.01	95BRE/GAL
528.637	189 165.7	120	$3s^23p^3$	$^2P^\circ$	1/2	– $3s3p^4$	^2P	1/2	0.002	92RAA/SNO
529.132	188 988.8	160	$3s^23p^3$	$^2P^\circ$	3/2	– $3s3p^4$	^2P	1/2	0.002	92RAA/SNO
531.627	188 101.8	120	$3s^23p^3$	$^2P^\circ$	1/2	– $3s3p^4$	^2P	3/2	0.002	92RAA/SNO
532.128	187 924.7	400	$3s^23p^3$	$^2P^\circ$	3/2	– $3s3p^4$	^2P	3/2	0.002	92RAA/SNO
562.324	177 833.4	2	$3s^23p^3$	$^4S^\circ$	3/2	– $3s3p^4$	^2S	1/2	0.002	92RAA/SNO
574.12	174 180.	5	$3s3p^4$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	0.01	95BRE/GAL
577.28	173 226.	8	$3s3p^4$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	0.01	95BRE/GAL
577.54	173 148.	4	$3s3p^4$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL

TABLE 9. Spectral lines of Ar IV—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
579.04	172 700.	6	$3s3p^4$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	0.01	95BRE/GAL
580.50	172 265.	6 b	$3s3p^4$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL
582.30	171 733.	1	$3s3p^4$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
582.52	171 668.	6 b	$3s3p^4$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.01	95BRE/GAL
583.73	171 312.	6	$3s3p^4$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL
586.15	170 605.	5	$3s3p^4$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	1/2	0.01	95BRE/GAL
587.58	170 190.	7	$3s3p^4$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.01	95BRE/GAL
587.97	170 077.	4	$3s3p^4$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	1/2	0.01	95BRE/GAL
591.08	169 182.	6	$3s3p^4$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
596.6	167 620	275	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)3d$	^4D	7/2	0.3	88LES/FOL
599.77	166 731.	4	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)3d$	^4D	5/2	0.01	95BRE/GAL
600.24	166 600.	7	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)3d$	^4D	5/2	0.01	95BRE/GAL
601.119	166 356.4	5	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2P	3/2	0.002	92RAA/SNO
601.30	166 306.	3 b	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)3d$	^4D	3/2	0.01	95BRE/GAL
601.69	166 199.	6 b	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)3d$	^4D	1/2	0.01	95BRE/GAL
601.78	166 174.	5 b	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)3d$	^4D	3/2	0.01	95BRE/GAL
625.40	159 898.	4 *	$3s3p^4$	^2D	3/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
625.40	159 898.	4 *	$3s3p^4$	^2D	5/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
637.992	156 741.8	40	$3s^23p^3$	$^2D^\circ$	3/2	– $3s3p^4$	^2S	1/2	0.002	92RAA/SNO
656.34	152 360.	3	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^3P)3d$	^4D	3/2	0.01	95BRE/GAL
667.19	149 882.	1	$3s3p^4$	^2D	3/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	3/2	0.01	95BRE/GAL
667.56	149 799.	8	$3s3p^4$	^2D	5/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	3/2	0.01	95BRE/GAL
667.79	149 748.	6	$3s3p^4$	^2D	3/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	1/2	0.01	95BRE/GAL
683.277	146 353.5	400	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2P	1/2	0.002	92RAA/SNO
684.935	145 999.3	30 *	$3s^23p^3$	$^4S^\circ$	3/2	– $3s3p^4$	^2D	5/2	0.002	92RAA/SNO
684.935	145 999.3	30 *	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^3P)3d$	^4F	5/2	0.002	92RAA/SNO
688.393	145 265.9	300	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2P	3/2	0.002	92RAA/SNO
689.008	145 136.2	500	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^2(^3P)3d$	^2P	3/2	0.002	92RAA/SNO
692.85	144 331.	3	$3s3p^4$	^2D	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
699.412	142 977.2	240	$3s^23p^3$	$^2P^\circ$	1/2	– $3s3p^4$	^2S	1/2	0.002	92RAA/SNO
700.278	142 800.4	320	$3s^23p^3$	$^2P^\circ$	3/2	– $3s3p^4$	^2S	1/2	0.002	92RAA/SNO
712.	140 400	10 *	$3s3p^4$	^2D	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	2.	71PIN/CUR
712.	140 400	10 *	$3s3p^4$	^2D	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	2.	71PIN/CUR
754.205	132 589.9	160	$3s^23p^3$	$^2P^\circ$	1/2	– $3s^23p^2(^3P)3d$	^2P	1/2	0.002	92RAA/SNO
755.215	132 412.6	120	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2P	1/2	0.002	92RAA/SNO
760.446	131 501.8	120	$3s^23p^3$	^2P	1/2	– $3s^23p^2(^3P)3d$	^2P	3/2	0.002	92RAA/SNO
761.471	131 324.8	200	$3s^23p^3$	$^2P^\circ$	3/2	– $3s^23p^2(^3P)3d$	^2P	3/2	0.002	92RAA/SNO
772.50	129 449.8	13	$3s^23p^2(^3P)3d$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	3/2	0.01	95BRE/GAL
773.29	129 317.6	9	$3s^23p^2(^3P)3d$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	1/2	0.01	95BRE/GAL
800.578	124 909.8	200	$3s^23p^3$	$^2D^\circ$	3/2	– $3s3p^4$	^2D	5/2	0.002	92RAA/SNO
801.09	124 829.9	400	$3s^23p^3$	$^2D^\circ$	3/2	– $3s3p^4$	^2D	3/2	0.002	92RAA/SNO
801.415	124 779.3	400	$3s^23p^3$	$^2D^\circ$	5/2	– $3s3p^4$	^2D	5/2	0.002	92RAA/SNO
801.912	124 702.0	200	$3s^23p^3$	$^2D^\circ$	5/2	– $3s3p^4$	^2D	3/2	0.002	92RAA/SNO
807.4	123 850	2	$3s^23p^2(^3P)3d$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.2	84LEV/GIR
814.27	122 809.4	1	$3s^23p^2(^3P)3d$	^2P	1/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
816.82	122 426.		$3s^23p^2(^3P)3d$	^4F	7/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	7/2	0.04	66SCH
840.027	119 043.8	600	$3s^23p^3$	$^4S^\circ$	3/2	– $3s3p^4$	^4P	1/2	0.002	92RAA/SNO
842.04	118 759.		$3s^23p^2(^3P)3d$	^2P	1/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.04	66SCH
843.12	118 607.	4	$3s^23p^2(^3P)3d$	^4D	1/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.05	29BOY
843.773	118 515.3	800	$3s^23p^3$	$^4S^\circ$	3/2	– $3s3p^4$	^4P	3/2	0.002	92RAA/SNO
846.90	118 077.7	8 b	$3s^23p^2(^3P)3d$	^4D	5/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
847.43	118 003.8	3	$3s^23p^2(^3P)3d$	^4D	5/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
850.607	117 563.1	1000	$3s^23p^3$	$^4S^\circ$	3/2	– $3s3p^4$	^4P	5/2	0.002	92RAA/SNO
854.69	117 001.5	12 a	$3s^23p^2(^3P)3d$	^4D	7/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
868.32	115 164.9	12	$3s^23p^2(^3P)3d$	^4D	7/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	7/2	0.01	95BRE/GAL

TABLE 9. Spectral lines of Ar IV—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
870.77	114 840.9	6	$3s^23p^2(^3P)3d$	^4D	7/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	5/2	0.01	95BRE/GAL
900.360	111 066.7	200	$3s^23p^3$	$^2P^\circ$	1/2	– $3s3p^4$	^2D	3/2	0.002	92RAA/SNO
901.171	110 966.7	400	$3s^23p^3$	$^2P^\circ$	3/2	– $3s3p^4$	^2D	5/2	0.002	92RAA/SNO
901.805	110 888.7	80	$3s^23p^3$	$^2P^\circ$	3/2	– $3s3p^4$	^2D	3/2	0.002	92RAA/SNO
938.80	106 519.0	4	$3s^23p^2(^3P)3d$	^4F	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	7/2	0.01	95BRE/GAL
942.82	106 064.8	4	$3s^23p^2(^3P)3d$	^4F	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
943.24	106 017.6	14 a	$3s^23p^2(^3P)3d$	^4F	7/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	7/2	0.01	95BRE/GAL
945.94	105 715.0	12	$3s^23p^2(^3P)3d$	^4F	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
947.49	105 542.0	11	$3s^23p^2(^3P)3d$	^4F	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.01	95BRE/GAL
949.17	105 355.2	13 a	$3s^23p^2(^3P)3d$	^4F	9/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	7/2	0.01	95BRE/GAL
949.90	105 274.2	12	$3s^23p^2(^3P)3d$	^4F	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	1/2	0.01	95BRE/GAL
950.44	105 214.4	11	$3s^23p^2(^3P)3d$	^4F	7/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
950.64	105 192.3	11	$3s^23p^2(^3P)3d$	^4F	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.01	95BRE/GAL
963.01	103 841.1	12	$3s^23p^2(^3P)3d$	^4D	5/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
972.39	102 839.4	14	$3s^23p^2(^3P)3d$	^4D	7/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
976.27	102 430.7	12 *	$3s^23p^2(^3P)3d$	^4D	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL
976.27	102 430.7	12 *	$3s^23p^2(^3P)3d$	^4D	5/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
980.30	102 009.6	10	$3s^23p^2(^3P)3d$	^4D	5/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL
980.92	101 945.1	12	$3s^23p^2(^3P)3d$	^4D	1/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.01	95BRE/GAL
983.04	101 725.3	12	$3s^23p^2(^3P)3d$	^4D	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	1/2	0.01	95BRE/GAL
990.04	101 006.0	9	$3s^23p^2(^3P)3d$	^4D	7/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL
1 002.71	99 729.7	9 b R	$3s^23p^2(^3P)3d$	^4D	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	7/2	0.01	95BRE/GAL
1 006.54	99 350.2	10	$3s^23p^2(^3P)3d$	^4D	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
1 010.78	98 933.5	8	$3s^23p^2(^3P)3d$	^4D	1/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.01	95BRE/GAL
1 010.86	98 925.7	13	$3s^23p^2(^3P)3d$	^4D	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
1 011.87	98 826.9	9	$3s^23p^2(^3P)3d$	^4D	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.01	95BRE/GAL
1 012.91	98 725.5	12	$3s^23p^2(^3P)3d$	^4D	7/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	7/2	0.01	95BRE/GAL
1 013.53	98 665.1	9	$3s^23p^2(^3P)3d$	^4D	1/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	1/2	0.01	95BRE/GAL
1 014.62	98 559.1	8	$3s^23p^2(^3P)3d$	^4D	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	1/2	0.01	95BRE/GAL
1 016.21	98 404.9	12 b	$3s^23p^2(^3P)3d$	^4D	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.01	95BRE/GAL
1 020.90	97 952.8	8	$3s^23p^3$	$^2D^\circ$	3/2	– $3s3p^4$	^4P	1/2	0.01	95BRE/GAL
1 021.20	97 924.0	6	$3s^23p^2(^3P)3d$	^4D	7/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
1 026.43	97 425.1	9	$3s^23p^3$	$^2D^\circ$	3/2	– $3s3p^4$	^4P	3/2	0.01	95BRE/GAL
1 027.79	97 296.1	14 a	$3s^23p^3$	$^2D^\circ$	5/2	– $3s3p^4$	^4P	3/2	0.01	95BRE/GAL
1 037.94	96 344.7	6	$3s^23p^3$	$^2D^\circ$	5/2	– $3s3p^4$	^4P	5/2	0.01	95BRE/GAL
1 039.19	96 228.8	7	$3s^23p^2(^1D)3d$	^2G	7/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	7/2	0.01	95BRE/GAL
1 040.26	96 129.8	15	$3s^23p^2(^1D)3d$	^2G	9/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	7/2	0.01	95BRE/GAL
1 042.71	95 903.9	15	$3s^23p^2(^1D)3d$	^2G	7/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	5/2	0.01	95BRE/GAL
1 187.79	84 190.0	6	$3s^23p^3$	$^2P^\circ$	1/2	– $3s3p^4$	^4P	1/2	0.01	95BRE/GAL
1 190.328	84 010.46	80	$3s^23p^3$	$^2P^\circ$	3/2	– $3s3p^4$	^4P	1/2	0.002	92RAA/SNO
1 191.86	83 902.5	6	$3s^23p^2(^1D)3d$	^2G	7/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
1 197.82	83 485.0	10	$3s^23p^3$	$^2P^\circ$	3/2	– $3s3p^4$	^4P	3/2	0.01	95BRE/GAL
1 205.64	82 943.5	6	$3s3p^4$	^2P	3/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
1 211.65	82 532.1	9	$3s^23p^3$	$^2P^\circ$	3/2	– $3s3p^4$	^4P	5/2	0.01	95BRE/GAL
1 221.30	81 880.0	12	$3s3p^4$	^2P	1/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
1 395.64	71 651.7	6	$3s3p^4$	^2P	1/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	1/2	0.01	95BRE/GAL
1 407.50	71 048.0	9	$3s^23p^2(^3P)3d$	^2D	3/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	3/2	0.01	95BRE/GAL
1 409.30	70 957.2	14 a	$3s^23p^2(^3P)3d$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	0.01	95BRE/GAL
1 410.13	70 915.4	15	$3s^23p^2(^3P)3d$	^2D	3/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	1/2	0.01	95BRE/GAL
1 419.59	70 442.9	15	$3s^23p^2(^3P)3d$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	0.01	95BRE/GAL
1 426.19	70 116.9	15	$3s^23p^2(^3P)3d$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	0.01	95BRE/GAL
1 435.57	69 658.7	14	$3s^23p^2(^3P)3d$	^2D	5/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	3/2	0.01	95BRE/GAL
1 448.35	69 044.1	15	$3s^23p^2(^3P)3d$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL
1 455.44	68 707.7	6	$3s3p^4$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
1 459.23	68 529.3	12	$3s^23p^2(^3P)3d$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL

TABLE 9. Spectral lines of Ar IV—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
1 460.99	68 446.7	13	$3s^23p^2(^3P)3d$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.01	95BRE/GAL
1 472.04	67 932.9	3	$3s^23p^2(^3P)3d$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.01	95BRE/GAL
1 474.48	67 820.5	11	$3s^23p^2(^3P)3d$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	1/2	0.01	95BRE/GAL
1 479.15	67 606.4	12	$3s^23p^2(^3P)3d$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.01	95BRE/GAL
1 481.60	67 494.6	10	$3s^23p^2(^3P)3d$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	1/2	0.01	95BRE/GAL
1 486.01	67 294.3	2 a	$3s3p^4$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
1 495.32	66 875.3	3	$3s3p^4$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL
1 497.81	66 764.1	15	$3s^23p^2(^3P)3d$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	7/2	0.01	95BRE/GAL
1 508.80	66 277.8	9	$3s3p^4$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.01	95BRE/GAL
1 509.84	66 232.2	7	$3s3p^4$	^2P	1/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
1 516.05	65 960.9	12	$3s^23p^2(^3P)3d$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
1 526.26	65 519.6	12	$3s^23p^2(^3P)3d$	^2D	5/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
1 527.95	65 447.2	13	$3s^23p^2(^3P)3d$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
1 528.18	65 437.3	9	$3s^23p^2(^3P)3d$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.01	95BRE/GAL
1 536.00	65 104.2	8	$3s3p^4$	^2P	1/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	1/2	0.01	95BRE/GAL
1 536.68	65 075.4	4	$3s^23p^2(^3P)3d$	^2D	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL
1 540.26	64 924.1	6	$3s^23p^2(^3P)3d$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.01	95BRE/GAL
1 546.66	64 655.5	1	$3s^23p^2(^3P)3d$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	1/2	0.01	95BRE/GAL
1 554.52	64 328.5	1	$3s^23p^2(^3P)3d$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	1/2	0.01	95BRE/GAL
1 559.82	64 110.0	9 w	$3s^23p^2(^3P)3d$	^2D	5/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
1 570.17	63 687.4	6	$3s^23p^2(^3P)3d$	^2D	5/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.01	95BRE/GAL
1 626.80	61 470.4	0.5	$3s^23p^2(^3P)3d$	^2D	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.01	95BRE/GAL
1 633.93	61 202.1	0.5	$3s^23p^2(^3P)3d$	^2D	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	1/2	0.01	95BRE/GAL
1 650.02	60 605.3	0.5	$3s^23p^2(^3P)3d$	^2D	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.01	95BRE/GAL
1 687.16	59 271.2	9	$3s^23p^2(^3P)3d$	^2F	5/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
1 689.19	59 200.0	3	$3s^23p^2(^3P)3d$	^2F	5/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
1 692.33	59 090.1	12	$3s^23p^2(^3P)3d$	^2F	7/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
1 746.70	57 250.8	3 a	$3s^23p^2(^3P)3d$	^2F	7/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	7/2	0.01	95BRE/GAL
1 753.24	57 037.3	4 b	$3s^23p^2(^3P)3d$	^2F	5/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	5/2	0.01	95BRE/GAL
1 756.60	56 928.2	1	$3s^23p^2(^3P)3d$	^2F	7/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	5/2	0.01	95BRE/GAL

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 006.89	49 812.2	6	$3s^23p^2(^3P)4s$	^2P	1/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
2 058.82	48 556.0	0.5	$3s^23p^2(^3P)4s$	^2P	3/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.01	95BRE/GAL
2 061.89	48 483.7	4	$3s^23p^2(^3P)4s$	^2P	3/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	5/2	0.01	95BRE/GAL
2 407.23	41 528.9	7	$3s^23p^2(^3P)4s$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	0.03	95BRE/GAL
2 447.73	40 841.8	9	$3s^23p^2(^3P)4s$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	0.03	95BRE/GAL
2 452.58	40 761.0	4	$3s^23p^2(^3P)4s$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	0.05	36DEB
2 496.98	40 036.3	1	$3s^23p^2(^3P)4s$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.03	95BRE/GAL
2 513.29	39 776.5	12	$3s^23p^2(^3P)4s$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4S^\circ$	3/2	0.03	95BRE/GAL
2 517.21	39 714.6	10	$3s^23p^2(^3P)4s$	^2P	1/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	3/2	0.03	95BRE/GAL
2 518.38	39 696.1	6	$3s^23p^2(^3P)4s$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	0.03	95BRE/GAL
2 525.63	39 582.2	10	$3s^23p^2(^3P)4s$	^2P	1/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	1/2	0.03	95BRE/GAL
2 540.55	39 349.7	7	$3s^23p^2(^3P)4s$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.03	95BRE/GAL
2 562.09	39 018.9	10	$3s^23p^2(^3P)4s$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.03	95BRE/GAL
2 568.02	38 928.8	10	$3s^23p^2(^3P)4s$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.03	95BRE/GAL
2 569.45	38 907.2	9	$3s^23p^2(^3P)4s$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	1/2	0.03	95BRE/GAL
2 599.41	38 458.8	2	$3s^23p^2(^3P)4s$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	3/2	0.03	95BRE/GAL
2 608.03	38 331.7	9	$3s^23p^2(^3P)4s$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.03	95BRE/GAL
2 608.44	38 325.6	7	$3s^23p^2(^3P)4s$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^2P^\circ$	1/2	0.05	36DEB
2 611.24	38 284.5	3	$3s^23p^2(^3P)4s$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.05	36DEB
2 615.65	38 220.0	10	$3s^23p^2(^3P)4s$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	1/2	0.03	95BRE/GAL

TABLE 9. Spectral lines of Ar IV—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 619.90	38 158.0	9	$3s^23p^2(^1D)4s$	^2D	5/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.03	95BRE/GAL
2 621.30	38 137.6	10	$3s^23p^2(^1D)4s$	^2D	3/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	3/2	0.03	95BRE/GAL
2 624.86	38 085.9	10	$3s^23p^2(^1D)4s$	^2D	5/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	5/2	0.03	95BRE/GAL
2 626.32	38 064.7	2	$3s^23p^2(^1D)4s$	^2D	3/2	– $3s^23p^2(^1D)4p$	$^2D^\circ$	5/2	0.05	36DEB
2 640.28	37 863.5	12	$3s^23p^2(^3P)4s$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.03	95BRE/GAL
2 682.58	37 266.5	10	$3s^23p^2(^3P)4s$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.03	95BRE/GAL
2 757.91	36 248.6	10 a	$3s^23p^2(^1D)4s$	^2D	5/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	7/2	0.03	95BRE/GAL
2 776.25	36 009.2	11	$3s^23p^2(^3P)4s$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.03	95BRE/GAL
2 782.84	35 923.9	7	$3s^23p^2(^1D)4s$	^2D	5/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	5/2	0.03	95BRE/GAL
2 784.43	35 903.4	10	$3s^23p^2(^1D)4s$	^2D	3/2	– $3s^23p^2(^1D)4p$	$^2F^\circ$	5/2	0.03	95BRE/GAL
2 788.91	35 845.7	10	$3s^23p^2(^3P)4s$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.03	95BRE/GAL
2 797.08	35 741.0	9	$3s^23p^2(^3P)4s$	^4P	1/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	1/2	0.03	95BRE/GAL
2 809.47	35 583.4	10	$3s^23p^2(^3P)4s$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	7/2	0.03	95BRE/GAL
2 830.25	35 322.2	12	$3s^23p^2(^3P)4s$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.03	95BRE/GAL
2 851.91	35 053.9	8	$3s^23p^2(^3P)4s$	^4P	3/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	1/2	0.03	95BRE/GAL
2 853.67	35 032.3	7.50 f	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^3$	$^2P^\circ$	3/2	0.04	83PEN/BEN
2 868.21	34 854.7	1.95 f	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^3$	$^2P^\circ$	1/2	0.04	83PEN/BEN
2 874.34	34 780.4	10	$3s^23p^2(^3P)4s$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	5/2	0.03	95BRE/GAL
2 912.97	34 319.2	12 w	$3s^23p^2(^3P)4s$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	5/2	0.03	95BRE/GAL
2 918.26	34 257.0	9	$3s^23p^2(^3P)4s$	^4P	5/2	– $3s^23p^2(^3P)4p$	$^4D^\circ$	3/2	0.03	95BRE/GAL
2 926.27	34 163.2	11	$3s^23p^2(^3P)4s$	^2P	1/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.03	95BRE/GAL
3 016.15	33 145.2	5	$3s^23p^2(^3P)4s$	^2P	1/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.05	36DEB
3 037.91	32 907.8	9	$3s^23p^2(^3P)4s$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^2D^\circ$	3/2	0.03	95BRE/GAL
3 077.26	32 487.0	8 b R	$3s^23p^2(^3P)4s$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	5/2	0.03	95BRE/GAL
3 134.79	31 890.8	9	$3s^23p^2(^3P)4s$	^2P	3/2	– $3s^23p^2(^3P)4p$	$^4P^\circ$	3/2	0.03	95BRE/GAL
4 711.35	21 219.40	f	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^3$	$^2D^\circ$	5/2	0.02	55BOW
4 740.20	21 090.26	f	$3s^23p^3$	$^4S^\circ$	3/2	– $3s^23p^3$	$^2D^\circ$	3/2	0.02	55BOW
7 170.62	13 941.95	f	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^3$	$^2P^\circ$	3/2	0.10	55BOW
7 237.26	13 813.6	f	$3s^23p^3$	$^2D^\circ$	5/2	– $3s^23p^3$	$^2P^\circ$	3/2	0.30	55BOW
7 262.76	13 765.1	f	$3s^23p^3$	$^2D^\circ$	3/2	– $3s^23p^3$	$^2P^\circ$	1/2	0.30	55BOW

version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on the uncertainty of the wave number. None of the electric dipole forbidden lines are included in the fit. They were accurately observed in astronomical nebular sources but their wavelengths are Doppler shifted with respect to the laboratory frame of reference. The 418.4 and 816.82 Å lines and the weaker classification of the 491.02 Å line were also excluded from the fit.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the P isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in January 2007.

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3.4. Ar V

Si isoelectronic sequence

Ground state: $1s^22s^22p^63s^23p^2\ ^3P_0$

Ionization energy: 603 660 ± 1390 cm^{-1} (74.84 ± 0.17 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar V are given in Tables 10–12.

The energy levels of four times ionized argon, Ar V, were compiled by Moore [49MOO] based on the work of Phillips and Parker [41PHI/PAR]. She tabulated 21 levels. More recently Cavalcanti *et al.* [95CAV/LUN] and Cavalcanti *et al.* [96CAV/GAL], using their own measurements of Ar V lines and atomic structure calculations, experimentally determined 32 levels. Using a more complete set of line data, we are able to tabulate the 48 levels by means of a fit to the available Ar V lines. The preliminary levels for this fit were the levels tabulated in the NIST Atomic Spectra Database [07RAL/JOU]. The 41 173 cm^{-1} level listed there as $3s3p^24d\ ^1F_3$ was changed to $3s3p^2(^3P)3d\ ^1F_3$ on the basis of calculation with the Cowan codes [81COW]. A typographical error in one level was corrected.

Four levels are given energy values with "+ x" added to them. This is because there are three good lines connecting these levels but only one poorly determined line reported by Lévêque *et al.* [84LEV/GIR] (415.6 ± 0.1 Å) connecting these levels to the rest. Calculation with the Cowan codes [81COW] indicates this line is expected to be quite weak. The relative position of these levels was determined separately from the rest from the three good lines (although the 415.6 Å line was included in the line table). The value of the lowest of these levels (to which "+ x" was added) was taken from the isoelectronic extrapolation of Ellis and Martinson [84ELL/MAR].

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar V are compiled from 12 sources [41PHI/PAR, 60BOW, 78FAW/RID, 83PEN/BEN, 84JIA/SHE, 84LEV/GIR, 92RAA/SNO, 95CAV/LUN, 95KEL/LAC, 96CAV/GAL, 97FEU/LUT, 97MCK/KEE]. All lines from three other sources [66SCH, 67FAW/GAB, 02BER/POT] were superseded by the above 12. The sources used in this compilation are summarized in Table 11 (Sources of Ar V lines). Table 11 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows:

For wavelengths below 2500 Å

[92RAA/SNO] over [78FAW/RID] over [95CAV/LUN] over [96CAV/GAL] over ([41PHI/PAR] or [84JIA/SHE]) over [67FAW/GAB] over [66SCH] over [84LEV/GIR].

For wavelengths above 2500 Å

[97MCK/KEE] over [83PEN/BEN] over [60BOW] over [97FEU/LUT] over [95KEL/LAC] over [02BER/POT].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar V levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar V when they do not fit the known levels.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple classifications.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar V line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
d	Diffuse

Code	Definition
f	Electric dipole forbidden line
t	Tentative classification by source of line
u	Unsymmetrical
*	Multiply classified line (two or more classifications of this line share the same intensity)

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on the uncertainty of the wave number. The weakest classifications of the 252.072 and 262.2 Å lines were excluded from the fit as were the four lines involving "+ x" levels discussed above.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the Si isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac-Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in April 2007.

TABLE 10. Energy levels of Ar V

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0.000	0.013	0	$3s^23p^2$	^3P	0
763.236	0.011	0	$3s^23p^2$	^3P	1
2 028.76	0.08	0	$3s^23p^2$	^3P	2
16 298.66	0.07	0	$3s^23p^2$	^1D	2
37 912.4	0.3	0	$3s^23p^2$	^1S	0
84 107.0+x	1.0	1	$3s3p^3$	$^5S^\circ$	2
121 628.7	0.8	1	$3s3p^3$	$^3D^\circ$	1
121 675.0	0.3	1	$3s3p^3$	$^3D^\circ$	2
121 803.1	0.3	1	$3s3p^3$	$^3D^\circ$	3
141 762.6	1.0	1	$3s3p^3$	$^3P^\circ$	2
141 770.5	0.6	1	$3s3p^3$	$^3P^\circ$	1
141 892.6	2.0	1	$3s3p^3$	$^3P^\circ$	0
154 211.4	0.4	1	$3s3p^3$	$^1D^\circ$	2
191 536.8	0.7	1	$3s3p^3$	$^3S^\circ$	1
195 355.7	0.7	1	$3s3p^3$	$^1P^\circ$	1
217 572.	3.	1	$3s^23p3d$	$^3P^\circ$	2
218 287.	4.	1	$3s^23p3d$	$^3P^\circ$	1
218 647.	5.	1	$3s^23p3d$	$^3P^\circ$	0
221 815.	3.	1	$3s^23p3d$	$^1D^\circ$	2
224 219.	4.	1	$3s^23p3d$	$^3D^\circ$	1
224 498.	4.	1	$3s^23p3d$	$^3D^\circ$	2
224 706.	5.	1	$3s^23p3d$	$^3D^\circ$	3
245 328.	4.	1	$3s^23p3d$	$^1F^\circ$	3
252 141.	5.	1	$3s^23p3d$	$^1P^\circ$	1
264 430.1	1.7	0	$3p^4$	^3P	2
265 587.6	1.1	0	$3p^4$	^3P	1
266 075.	3.	0	$3p^4$	^3P	0
278 522.6	1.7	0	$3p^4$	^1D	2
324 862.	3.	0	$3p^4$	^1S	0

TABLE 10. Energy levels of Ar V—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
295 731.	9.	1	$3s^23p4s$	$^3P^\circ$	0
296 231.	5.	1	$3s^23p4s$	$^3P^\circ$	1
297 878.	6.	1	$3s^23p4s$	$^3P^\circ$	2
301 290.	7.	1	$3s^23p4s$	$^1P^\circ$	1
392 807.+x	3.	0	$3s3p^24s$	^5P	1
393 559.+x	3.	0	$3s3p^24s$	^5P	2
394 648.+x	3.	0	$3s3p^24s$	^5P	3
397 476.	10.	1	$3s^23p4d$	$^3D^\circ$	2
397 545.	9.	1	$3s^23p4d$	$^3D^\circ$	1
397 800.	9.	1	$3s^23p4d$	$^3D^\circ$	3
398 987.	10.	1	$3s^23p4d$	$^3F^\circ$	2
399 487.	9.	1	$3s^23p4d$	$^3F^\circ$	3
402 652.	10.	1	$3s^23p4d$	$^3P^\circ$	2
403 185.	14.	1	$3s^23p4d$	$^3P^\circ$	1
404 656.	9.	1	$3s^23p4d$	$^1F^\circ$	3
411 173.	3.	0	$3s3p^2(^3P)3d$	^1F	3
430 331.	11.	1	$3s^23p5s$	$^3P^\circ$	1
432 044.	8.	1	$3s^23p5s$	$^3P^\circ$	2
432 378.	10.	1	$3s^23p5s$	$^1P^\circ$	1

TABLE 11. Sources of Ar V lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
41PHI/PAR	1	argon excited in spark gap. 6.4-m GI VS	450	0.02
60BOW	2	astronomical nebular lines.	2786, 6435	0.04,0.10
78FAW/RID	17	theta pinch. 2-m GI VS	232–389	0.006
83PEN/BEN	1	astronomical slow nova lines observed with International Ultraviolet Explorer satellite.	2691	0.05
84JIA/SHE	2	quartz capillary discharge. 3-m GI VS	497, 603	0.02
84LEV/GIR	6	quartz capillary discharge. 3-m GI monochromator	262–721	0.1
92RAA/SNO	21	high-voltage open spark. 6.65-m NI VS	514–1195	0.002
95CAV/LUN	34	discharge tube. 3-m NI VS	337–949	0.01
95KEL/LAC	1	astronomical nebular lines. echelle grating spectrometer	79 016	3.
96CAV/GAL	18	discharge tube. 3-m NI VS	546–1448	0.02
97FEU/LUT	1	astronomical nebular lines. Infrared Space Observatory short wavelength spectrometers	131022	2.
97MCK/KEE	2	astronomical slow nova. 1.5-m echelle spectrograph	4625, 7006	0.04,0.07

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

TABLE 12. Spectral lines of Ar V

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
231.868	431 280.		$3s^23p^2$	^3P	1 –	$3s^23p5s$	$^3P^\circ$	2	0.006	78FAW/RID
232.379	430 331.	1	$3s^23p^2$	^3P	0 –	$3s^23p5s$	$^3P^\circ$	1	0.006	78FAW/RID
232.549	430 017.	4	$3s^23p^2$	^3P	2 –	$3s^23p5s$	$^3P^\circ$	2	0.006	78FAW/RID
240.339	416 079.	1 t	$3s^23p^2$	^1D	2 –	$3s^23p5s$	$^1P^\circ$	1	0.006	78FAW/RID
248.489	402 432.	b	$3s^23p^2$	^3P	1 –	$3s^23p4d$	$^3P^\circ$	1	0.006	78FAW/RID
249.611	400 623.	4	$3s^23p^2$	^3P	2 –	$3s^23p4d$	$^3P^\circ$	2	0.006	78FAW/RID
251.115	398 224.	3	$3s^23p^2$	^3P	1 –	$3s^23p4d$	$^3F^\circ$	2	0.006	78FAW/RID

TABLE 12. Spectral lines of Ar V—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
251.544	397 545.	5 t	$3s^23p^2$	^3P	0	–	$3s^23p4d$	$^3D^\circ$	1	0.006	78FAW/RID
251.599	397 458.	5	$3s^23p^2$	^3P	2	–	$3s^23p4d$	$^3F^\circ$	3	0.006	78FAW/RID
252.072	396 712.	6 *	$3s^23p^2$	^3P	1	–	$3s^23p4d$	$^3D^\circ$	1	0.006	78FAW/RID
252.072	396 712.	6 *	$3s^23p^2$	^3P	1	–	$3s^23p4d$	$^3D^\circ$	2	0.006	78FAW/RID
252.671	395 772.	6	$3s^23p^2$	^3P	2	–	$3s^23p4d$	$^3D^\circ$	3	0.006	78FAW/RID
257.495	388 357.	7	$3s^23p^2$	^1D	2	–	$3s^23p4d$	$^1F^\circ$	3	0.006	78FAW/RID
262.2	381 390	8 *	$3s^23p^2$	^1D	2	–	$3s^23p4d$	$^3D^\circ$	3	0.1	84LEV/GIR
262.2	381 390	8 *	$3s^23p^2$	^1D	2	–	$3s^23p4d$	$^3D^\circ$	1	0.1	84LEV/GIR
262.2	381 390	8 *	$3s^23p^2$	^1D	2	–	$3s^23p4d$	$^3D^\circ$	2	0.1	84LEV/GIR
322.019	310 541.	7	$3s3p^3$	$^5S^\circ$	2	–	$3s3p^24s$	^5P	3	0.006	78FAW/RID
323.152	309 452.	6	$3s3p^3$	$^5S^\circ$	2	–	$3s3p^24s$	^5P	2	0.006	78FAW/RID
323.939	308 700.	5	$3s3p^3$	$^5S^\circ$	2	–	$3s3p^24s$	^5P	1	0.006	78FAW/RID
336.57	297 115.	1	$3s^23p^2$	^3P	1	–	$3s^23p4s$	$^3P^\circ$	2	0.01	95CAV/LUN
337.58	296 226.	1	$3s^23p^2$	^3P	0	–	$3s^23p4s$	$^3P^\circ$	1	0.01	95CAV/LUN
338.01	295 849.	1	$3s^23p^2$	^3P	2	–	$3s^23p4s$	$^3P^\circ$	2	0.01	95CAV/LUN
338.45	295 465.	1	$3s^23p^2$	^3P	1	–	$3s^23p4s$	$^3P^\circ$	1	0.01	95CAV/LUN
339.02	294 968.	1	$3s^23p^2$	^3P	1	–	$3s^23p4s$	$^3P^\circ$	0	0.01	95CAV/LUN
339.89	294 213.	1	$3s^23p^2$	^3P	2	–	$3s^23p4s$	$^3P^\circ$	1	0.01	95CAV/LUN
350.88	284 998.	2	$3s^23p^2$	^1D	2	–	$3s^23p4s$	$^1P^\circ$	1	0.01	95CAV/LUN
357.23	279 932.	1	$3s^23p^2$	^1D	2	–	$3s^23p4s$	$^3P^\circ$	1	0.01	95CAV/LUN
379.69	263 373.	3	$3s^23p^2$	^1S	0	–	$3s^23p4s$	$^1P^\circ$	1	0.01	95CAV/LUN
389.163	256 962.	2	$3s3p^3$	$^1D^\circ$	2	–	$3s3p^2(^3P)3d$	^1F	3	0.006	78FAW/RID
400.0	250 000	7	$3s^23p^2$	^3P	2	–	$3s^23p3d$	$^1P^\circ$	1	0.1	84LEV/GIR
411.01	243 303.	1	$3s^23p^2$	^3P	2	–	$3s^23p3d$	$^1F^\circ$	3	0.01	95CAV/LUN
415.6	240 616	18	$3s3p^3$	$^1D^\circ$	2	–	$3s3p^24s$	^5P	3	0.1	84LEV/GIR
436.63	229 027.	3	$3s^23p^2$	^1D	2	–	$3s^23p3d$	$^1F^\circ$	3	0.01	95CAV/LUN
445.97	224 230.	3	$3s^23p^2$	^3P	0	–	$3s^23p3d$	$^3D^\circ$	1	0.01	95CAV/LUN
446.96	223 734.	2	$3s^23p^2$	^3P	1	–	$3s^23p3d$	$^3D^\circ$	2	0.01	95CAV/LUN
447.53	223 449.	3	$3s^23p^2$	^3P	1	–	$3s^23p3d$	$^3D^\circ$	1	0.01	95CAV/LUN
449.08	222 677.	2	$3s^23p^2$	^3P	2	–	$3s^23p3d$	$^3D^\circ$	3	0.01	95CAV/LUN
449.50	222 469.	3	$3s^23p^2$	^3P	2	–	$3s^23p3d$	$^3D^\circ$	2	0.01	95CAV/LUN
450.079	222 183.		$3s^23p^2$	^3P	2	–	$3s^23p3d$	$^3D^\circ$	1	0.020	41PHI/PAR
452.39	221 048.	3	$3s^23p^2$	^3P	1	–	$3s^23p3d$	$^1D^\circ$	2	0.01	95CAV/LUN
454.99	219 785.	2	$3s^23p^2$	^3P	2	–	$3s^23p3d$	$^1D^\circ$	2	0.01	95CAV/LUN
458.09	218 298.	3	$3s^23p^2$	^3P	0	–	$3s^23p3d$	$^3P^\circ$	1	0.01	95CAV/LUN
458.96	217 884.	3	$3s^23p^2$	^3P	1	–	$3s^23p3d$	$^3P^\circ$	0	0.01	95CAV/LUN
459.73	217 519.	3	$3s^23p^2$	^3P	1	–	$3s^23p3d$	$^3P^\circ$	1	0.01	95CAV/LUN
461.24	216 807.	2	$3s^23p^2$	^3P	1	–	$3s^23p3d$	$^3P^\circ$	2	0.01	95CAV/LUN
462.41	216 258.	2	$3s^23p^2$	^3P	2	–	$3s^23p3d$	$^3P^\circ$	1	0.01	95CAV/LUN
463.94	215 545.	3	$3s^23p^2$	^3P	2	–	$3s^23p3d$	$^3P^\circ$	2	0.01	95CAV/LUN
466.79	214 229.	1	$3s^23p^2$	^1S	0	–	$3s^23p3d$	$^1P^\circ$	1	0.01	95CAV/LUN
486.57	205 520.	3	$3s^23p^2$	^1D	2	–	$3s^23p3d$	$^1D^\circ$	2	0.01	95CAV/LUN
495.09	201 983.	1	$3s^23p^2$	^1D	2	–	$3s^23p3d$	$^3P^\circ$	1	0.01	95CAV/LUN
496.84	201 272.	37	$3s^23p^2$	^1D	2	–	$3s^23p3d$	$^3P^\circ$	2	0.02	84JIA/SHE
511.89	195 354.	2	$3s^23p^2$	^3P	0	–	$3s3p^3$	$^1P^\circ$	1	0.01	95CAV/LUN
513.889	194 594.6	50	$3s^23p^2$	^3P	1	–	$3s3p^3$	$^1P^\circ$	1	0.002	92RAA/SNO
517.254	193 328.6	25	$3s^23p^2$	^3P	2	–	$3s3p^3$	$^1P^\circ$	1	0.002	92RAA/SNO
522.0940	191 536.4	150	$3s^23p^2$	^3P	0	–	$3s3p^3$	$^3S^\circ$	1	0.002	92RAA/SNO
524.1817	190 773.5	250	$3s^23p^2$	^3P	1	–	$3s3p^3$	$^3S^\circ$	1	0.002	92RAA/SNO
527.685	189 507.0	300	$3s^23p^2$	^3P	2	–	$3s3p^3$	$^3S^\circ$	1	0.002	92RAA/SNO
536.75	186 306.	2	$3s^23p^2$	^1S	0	–	$3s^23p3d$	$^3D^\circ$	1	0.01	95CAV/LUN
546.18	183 090.	1 b	$3s3p^3$	$^3P^\circ$	1	–	$3p^4$	^1S	0	0.02	96CAV/GAL
558.477	179 058.4	250	$3s^23p^2$	^1D	2	–	$3s3p^3$	$^1P^\circ$	1	0.002	92RAA/SNO
570.656	175 236.9	80	$3s^23p^2$	^1D	2	–	$3s3p^3$	$^3S^\circ$	1	0.002	92RAA/SNO
602.97	165 846.	13	$3s^23p3d$	$^1F^\circ$	3	–	$3s3p^2(^3P)3d$	^1F	3	0.02	84JIA/SHE

TABLE 12. Spectral lines of Ar V—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
635.152	157 442.6	150	$3s^23p^2$	^1S	0 –	$3s3p^3$	$^1P^\circ$	1	0.002	92RAA/SNO
650.95	153 622.	2	$3s^23p^2$	^1S	0 –	$3s3p^3$	$^3S^\circ$	1	0.01	95CAV/LUN
651.68	153 450.	3	$3s^23p^2$	^3P	1 –	$3s3p^3$	$^1D^\circ$	2	0.01	95CAV/LUN
692.29	144 448.	4	$3s3p^3$	$^3D^\circ$	1 –	$3p^4$	^3P	0	0.02	96CAV/GAL
694.65	143 957.	3	$3s3p^3$	$^3D^\circ$	1 –	$3p^4$	^3P	1	0.02	96CAV/GAL
694.85	143 916.	4 u	$3s3p^3$	$^3D^\circ$	2 –	$3p^4$	^3P	1	0.02	96CAV/GAL
700.51	142 753.	3	$3s3p^3$	$^3D^\circ$	2 –	$3p^4$	^3P	2	0.02	96CAV/GAL
701.12	142 629.	3 u	$3s3p^3$	$^3D^\circ$	3 –	$3p^4$	^3P	2	0.02	96CAV/GAL
705.364	141 770.8	150	$3s^23p^2$	^3P	0 –	$3s3p^3$	$^3P^\circ$	1	0.002	92RAA/SNO
708.57	141 129.3	2	$3s^23p^2$	^3P	1 –	$3s3p^3$	$^3P^\circ$	0	0.01	95CAV/LUN
709.19	141 005.9	250	$3s^23p^2$	^3P	1 –	$3s3p^3$	$^3P^\circ$	1	0.002	92RAA/SNO
709.23	140 998.0	250	$3s^23p^2$	^3P	1 –	$3s3p^3$	$^3P^\circ$	2	0.002	92RAA/SNO
715.60	139 742.9	200	$3s^23p^2$	^3P	2 –	$3s3p^3$	$^3P^\circ$	1	0.002	92RAA/SNO
715.64	139 735.1	150	$3s^23p^2$	^3P	2 –	$3s3p^3$	$^3P^\circ$	2	0.002	92RAA/SNO
720.9	138 715.	3	$3p^4$	^3P	2 –	$3s^23p4d$	$^3P^\circ$	1	0.1	84LEV/GIR
725.097	137 912.6	100	$3s^23p^2$	^1D	2 –	$3s3p^3$	$^1D^\circ$	2	0.002	92RAA/SNO
772.16	129 507.	3	$3s3p^3$	$^1P^\circ$	1 –	$3p^4$	^1S	0	0.02	96CAV/GAL
804.46	124 307.	4	$3s3p^3$	$^1D^\circ$	2 –	$3p^4$	^1D	2	0.02	96CAV/GAL
815.23	122 665.	4 *	$3s3p^3$	$^3P^\circ$	2 –	$3p^4$	^3P	2	0.02	96CAV/GAL
815.23	122 665.	4 *	$3s3p^3$	$^3P^\circ$	1 –	$3p^4$	^3P	2	0.02	96CAV/GAL
822.160	121 630.8	200	$3s^23p^2$	^3P	0 –	$3s3p^3$	$^3D^\circ$	1	0.002	92RAA/SNO
827.048	120 912.0	250	$3s^23p^2$	^3P	1 –	$3s3p^3$	$^3D^\circ$	2	0.002	92RAA/SNO
827.353	120 867.4	150	$3s^23p^2$	^3P	1 –	$3s3p^3$	$^3D^\circ$	1	0.002	92RAA/SNO
834.903	119 774.4	200	$3s^23p^2$	^3P	2 –	$3s3p^3$	$^3D^\circ$	3	0.002	92RAA/SNO
835.799	119 646.0	50	$3s^23p^2$	^3P	2 –	$3s3p^3$	$^3D^\circ$	2	0.002	92RAA/SNO
836.112	119 601.2	100	$3s^23p^2$	^3P	2 –	$3s3p^3$	$^3D^\circ$	1	0.002	92RAA/SNO
897.85	111 377.	3	$3s3p^3$	$^1D^\circ$	2 –	$3p^4$	^3P	1	0.02	96CAV/GAL
907.32	110 215.	3	$3s3p^3$	$^1D^\circ$	2 –	$3p^4$	^3P	2	0.02	96CAV/GAL
948.98	105 376.3	2	$3s^23p^2$	^1D	2 –	$3s3p^3$	$^3D^\circ$	2	0.01	95CAV/LUN
949.38	105 331.9	2	$3s^23p^2$	^1D	2 –	$3s3p^3$	$^3D^\circ$	1	0.01	95CAV/LUN
1 194.528	83 715.07	5	$3s^23p^2$	^1S	0 –	$3s3p^3$	$^3D^\circ$	1	0.002	92RAA/SNO
1 202.39	83 167.7	1 d	$3s3p^3$	$^1P^\circ$	1 –	$3p^4$	^1D	2	0.02	96CAV/GAL
1 341.68	74 533.4	1	$3s3p^3$	$^3S^\circ$	1 –	$3p^4$	^3P	0	0.02	96CAV/GAL
1 350.43	74 050.5	5	$3s3p^3$	$^3S^\circ$	1 –	$3p^4$	^3P	1	0.02	96CAV/GAL
1 371.92	72 890.5	5	$3s3p^3$	$^3S^\circ$	1 –	$3p^4$	^3P	2	0.02	96CAV/GAL
1 413.97	70 722.9	2	$3s3p^3$	$^1P^\circ$	1 –	$3p^4$	^3P	0	0.02	96CAV/GAL
1 447.66	69 077.0	1	$3s3p^3$	$^1P^\circ$	1 –	$3p^4$	^3P	2	0.02	96CAV/GAL

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 690.94	37 150.7	f	$3s^23p^2$	^3P	1 –	$3s^23p^2$	^1S	0	0.05	83PEN/BEN
2 785.99	35 883.3	f	$3s^23p^2$	^3P	2 –	$3s^23p^2$	^1S	0	0.04	60BOW
4 625.47	21 613.37	f	$3s^23p^2$	^1D	2 –	$3s^23p^2$	^1S	0	0.04	97MCK/KEE
6 435.10	15 535.5	f	$3s^23p^2$	^3P	1 –	$3s^23p^2$	^1D	2	0.10	60BOW
7 005.87	14 269.81	f	$3s^23p^2$	^3P	2 –	$3s^23p^2$	^1D	2	0.07	97MCK/KEE

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
79 016.	1 265.57	f	$3s^23p^2$	^3P	1 –	$3s^23p^2$	^3P	2	3.0	95KEL/LAC
131 022.	763.23	f	$3s^23p^2$	^3P	0 –	$3s^23p^2$	^3P	1	2.0	97FEU/LUT

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3.5. Ar VI

Al isoelectronic sequence

Ground state: $1s^2 2s^2 2p^6 3s^2 3p\ ^2P^\circ_{1/2}$

Ionization energy: 736 304 ± 81 cm^{-1} (91.29 ± 0.01 eV) [07WAN/LU]

Energy levels, sources, and spectral lines for Ar VI are given in Tables 13–15.

The energy levels of five times ionized argon, Ar VI, were compiled by Moore [49MOO] based on the work of Phillips and Parker [41PHI/PAR]. She tabulated 26 levels. More recently Raineri *et al.* [92RAI/BRE] using their own measurements of Ar VI lines and atomic structure calculations experimentally determined 41 levels. Pinnington *et al.* [89PIN/GE] identified many of these levels, however, they had fewer transitions and larger uncertainties. Using a more complete set of line data, we are able to tabulate the 43 levels by means of a fit to the available Ar VI lines. We added two $3s^2 5d$ levels from the lines of Fawcett *et al.* [78FAW/RID]. They also classified lines using two $3s^2 4f\ ^2F^\circ$ levels and two $3s3p4f\ ^4G$ levels. Although these levels appear to have the energy obtained in an *ab initio* calculation, Sugar [99SUG] showed that they do not agree with isoelectronic calculations. So these four levels are not used here. The preliminary levels for our fit were the levels from Raineri *et al.* [92RAI/BRE] plus the two from Fawcett *et al.* [78FAW/RID]. The values of the leading percentages included in the energy level table were obtained from the calculation of Raineri *et al.* [92RAI/BRE].

TABLE 13. Energy levels of Ar VI

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
0.00	0.07	1	$3s^23p$	$^2P^\circ$	1/2	97	
2 207.88	0.10	1	$3s^23p$	$^2P^\circ$	3/2	97	
100 157.5	1.0	0	$3s3p^2$	^4P	1/2	99	
100 957.6	0.9	0	$3s3p^2$	^4P	3/2	99	
102 191.6	1.0	0	$3s3p^2$	^4P	5/2	99	
132 462.7	1.1	0	$3s3p^2$	^2D	3/2	87	12 $3s^23d$ ^2D
132 574.7	1.4	0	$3s3p^2$	^2D	5/2	87	12 $3s^23d$ ^2D
169 803.9	1.6	0	$3s3p^2$	^2S	1/2	99	
182 182.1	1.4	0	$3s3p^2$	^2P	1/2	99	
183 577.3	1.0	0	$3s3p^2$	^2P	3/2	99	
218 595.9	1.9	0	$3s^23d$	^2D	3/2	87	12 $3s3p^2$ ^2D
218 655.8	1.4	0	$3s^23d$	^2D	5/2	87	12 $3s3p^2$ ^2D
260 068.7	1.8	1	$3p^3$	$^2D^\circ$	3/2	64	35 $3s3p(^3P^\circ)3d$ ^2D
260 272.9	1.3	1	$3p^3$	$^2D^\circ$	5/2	64	35 $3s3p(^3P^\circ)3d$ ^2D
270 511.8	2.0	1	$3p^3$	$^4S^\circ$	3/2	99	
294 086.0	1.2	1	$3p^3$	$^2P^\circ$	3/2	73	19 $3s3p(^3P^\circ)3d$ ^2P
294 101.3	1.8	1	$3p^3$	$^2P^\circ$	1/2	74	19 $3s3p(^3P^\circ)3d$ ^2P
316 351.	3.	1	$3s3p(^3P^\circ)3d$	$^4P^\circ$	5/2	98	
316 974.	3.	1	$3s3p(^3P^\circ)3d$	$^4P^\circ$	3/2	97	
317 459.	3.	1	$3s3p(^3P^\circ)3d$	$^4P^\circ$	1/2	98	
319 273.	4.	1	$3s3p(^3P^\circ)3d$	$^4D^\circ$	1/2	98	
319 539.	4.	1	$3s3p(^3P^\circ)3d$	$^4D^\circ$	3/2	97	
319 771.	4.	1	$3s3p(^3P^\circ)3d$	$^4D^\circ$	5/2	98	
319 905.	10.	1	$3s3p(^3P^\circ)3d$	$^4D^\circ$	7/2	99	
328 960.4	1.8	1	$3s3p(^3P^\circ)3d$	$^2D^\circ$	5/2	47	32 $3s3p(^1P^\circ)3d$ ^2D
328 992.	4.	1	$3s3p(^3P^\circ)3d$	$^2D^\circ$	3/2	47	32 $3s3p(^1P^\circ)3d$ ^2D
344 309.8	1.8	1	$3s3p(^3P^\circ)3d$	$^2F^\circ$	5/2	71	28 $3s3p(^1P^\circ)3d$ ^2F
346 076.	2.	1	$3s3p(^3P^\circ)3d$	$^2F^\circ$	7/2	71	28 $3s3p(^1P^\circ)3d$ ^2F
375 657.8	1.9	1	$3s3p(^3P^\circ)3d$	$^2P^\circ$	3/2	78	16 $3p^3$ ^2P
376 421.	5.	1	$3s3p(^1P^\circ)3d$	$^2F^\circ$	7/2	71	28 $3s3p(^3P^\circ)3d$ ^2F
376 905.	2.	1	$3s3p(^1P^\circ)3d$	$^2F^\circ$	5/2	71	28 $3s3p(^3P^\circ)3d$ ^2F
395 494.	3.	1	$3s3p(^1P^\circ)3d$	$^2D^\circ$	3/2	66	17 $3s3p(^3P^\circ)3d$ ^2D
395 807.	2.	1	$3s3p(^1P^\circ)3d$	$^2D^\circ$	5/2	67	17 $3s3p(^3P^\circ)3d$ ^2D
342 302.	7.	0	$3s^24s$	^2S	1/2	99	
454 096.	16.	1	$3s3p(^3P^\circ)4s$	$^4P^\circ$	1/2	99	
454 874.	8.	1	$3s3p(^3P^\circ)4s$	$^4P^\circ$	3/2	99	
456 280.	10.	1	$3s3p(^3P^\circ)4s$	$^4P^\circ$	5/2	99	
525 050.	3.	1	$3s3p(^1P^\circ)4s$	$^2P^\circ$	1/2	99	
525 200.	2.	1	$3s3p(^1P^\circ)4s$	$^2P^\circ$	3/2	99	
454 751.	3.	0	$3s^24d$	^2D	3/2	99	
454 807.	2.	0	$3s^24d$	^2D	5/2	98	
555 276.	19.	0	$3s^25d$	^2D	3/2		
555 523.	21.	0	$3s^25d$	^2D	5/2		

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar VI are compiled from nine sources [41PHI/PAR, 78FAW/RID, 80ELS/SAL, 84JIA/SHE, 88LES/FOL, 88TRA/HUT, 89PIN/GE, 92RAI/BRE, 00CAS/ROC]. All lines from another [84LEV/GIR] were superseded by the above nine. Fifteen additional lines, between 3236 and 5300 Å, from transitions between high lying Ar VI levels were reported by Jacquet *et al.* [94JAC/BOD]. We have not included them since we lack information on how these levels are connected to the levels we have tabulated. The sources used in this compilation are summarized in

TABLE 14. Sources of Ar VI lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
41PHI/PAR	1	argon excited in spark gap. 6.4-m GI VS	460	0.02
78FAW/RID	3	theta pinch. 2-m GI VS	180–292	0.006
80ELS/SAL	1	collisions between Ar^{6+} ions and H_2. GI and NI monochromators	561	0.2
84JIA/SHE	5	quartz capillary discharge. 3-m GI VS	542–547	0.02, 0.04
88LES/FOL	1	radiation from Ar recoil ions. 2.2-m GI VS	679	0.2
88TRA/HUT	1	beam-foil. 1-m NI monochromator	1021	0.3
89PIN/GE	3	beam-foil. 1-m NI monochromator	478–1308	0.15–0.30
92RAI/BRE	88	discharge tube. 3-m NI VS	220–1423	0.01, 0.02
00CAS/ROC	1	astronomical nebular line. Echelle spectroscopy	45292	1.5

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

Table 14 (Sources of Ar VI lines). Table 14 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

The priority in our choice of wavelength values for lines which appear in more than one reference is, in general, specified as follows:

[92RAI/BRE] over [78FAW/RID] over [84JIA/SHE] over [41PHI/PAR] over [84LEV/GIR] over [89PIN/GE] over [88LES/FOL] over [80ELS/SAL] over [88TRA/HUT] over [00CAS/ROC].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar VI levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar VI when they do not fit the known levels.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar VI line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
f	Electric dipole forbidden line
w	Wide
A	Asymmetric
*	Multiply classified line (two or more classifications of this line share the same intensity)

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration.

The ionization energy was obtained by Wang *et al.* [07WAN/LU] by photoionizing Ar VI ions with monochromatized synchrotron radiation using an undulator and a spherical grating monochromator.

Collection of lines and levels was completed in June 2007.

TABLE 15. Spectral Lines of Ar VI

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
180.089	555 281.	1	$3s^23p$	$^2P^\circ$	1/2	– $3s^25d$	^2D	3/2	0.006	78FAW/RID
180.726	553 324.	3	$3s^23p$	$^2P^\circ$	3/2	– $3s^25d$	^2D	5/2	0.006	78FAW/RID
219.91	454 730	4	$3s^23p$	$^2P^\circ$	1/2	– $3s^24d$	^2D	3/2	0.01	92RAI/BRE
220.93	452 630	6 b	$3s^23p$	$^2P^\circ$	3/2	– $3s^24d$	^2D	5/2	0.02	92RAI/BRE
281.43	355 328.	1	$3s3p^2$	^4P	3/2	– $3s3p(^3P^\circ)4s$	$^4P^\circ$	5/2	0.01	92RAI/BRE
281.91	354 723.	1	$3s3p^2$	^4P	1/2	– $3s3p(^3P^\circ)4s$	$^4P^\circ$	3/2	0.01	92RAI/BRE
282.42	354 083.	2	$3s3p^2$	^4P	5/2	– $3s3p(^3P^\circ)4s$	$^4P^\circ$	5/2	0.01	92RAI/BRE
282.55	353 920.	1 *	$3s3p^2$	^4P	1/2	– $3s3p(^3P^\circ)4s$	$^4P^\circ$	1/2	0.01	92RAI/BRE

TABLE 15. Spectral Lines of Ar VI—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
282.55	353 920.	1*	$3s3p^2$	^4P	3/2	–	$3s3p(^3P^\circ)4s$	$^4P^\circ$	3/2	0.01	92RAI/BRE
283.16	353 157.	1	$3s3p^2$	^4P	3/2	–	$3s3p(^3P^\circ)4s$	$^4P^\circ$	1/2	0.01	92RAI/BRE
283.55	352 671.	1	$3s3p^2$	^4P	5/2	–	$3s3p(^3P^\circ)4s$	$^4P^\circ$	3/2	0.01	92RAI/BRE
292.134	342 309.	7	$3s^23p$	$^2P^\circ$	1/2	–	$3s^24s$	^2S	1/2	0.006	78FAW/RID
294.03	340 101.	2	$3s^23p$	$^2P^\circ$	3/2	–	$3s^24s$	^2S	1/2	0.01	92RAI/BRE
326.15	306 607.	2 b	$3s^23d$	^2D	3/2	–	$3s3p(^1P^\circ)4s$	$^2P^\circ$	3/2	0.02	92RAI/BRE
326.22	306 542.	4	$3s^23d$	^2D	5/2	–	$3s3p(^1P^\circ)4s$	$^2P^\circ$	3/2	0.01	92RAI/BRE
326.32	306 448.	4	$3s^23d$	^2D	3/2	–	$3s3p(^1P^\circ)4s$	$^2P^\circ$	1/2	0.01	92RAI/BRE
409.10	244 439.	6	$3s3p^2$	^2D	3/2	–	$3s3p(^1P^\circ)3d$	$^2F^\circ$	5/2	0.01	92RAI/BRE
409.28	244 332.	2	$3s3p^2$	^2D	5/2	–	$3s3p(^1P^\circ)3d$	$^2F^\circ$	5/2	0.01	92RAI/BRE
410.10	243 843.	6 b	$3s3p^2$	^2D	5/2	–	$3s3p(^1P^\circ)3d$	$^2F^\circ$	7/2	0.02	92RAI/BRE
455.83	219 380.	6 A	$3s3p^2$	^4P	1/2	–	$3s3p(^3P^\circ)3d$	$^4D^\circ$	3/2	0.02	92RAI/BRE
456.38	219 116.	6	$3s3p^2$	^4P	1/2	–	$3s3p(^3P^\circ)3d$	$^4D^\circ$	1/2	0.01	92RAI/BRE
457.01	218 814.	8	$3s3p^2$	^4P	3/2	–	$3s3p(^3P^\circ)3d$	$^4D^\circ$	5/2	0.01	92RAI/BRE
457.46	218 598.	8 b	$3s^23p$	$^2P^\circ$	1/2	–	$3s^23d$	^2D	3/2	0.02	92RAI/BRE
457.51	218 574.	4 b	$3s3p^2$	^4P	3/2	–	$3s3p(^3P^\circ)3d$	$^4D^\circ$	3/2	0.02	92RAI/BRE
458.05	218 317.	8 b	$3s3p^2$	^4P	3/2	–	$3s3p(^3P^\circ)3d$	$^4D^\circ$	1/2	0.02	92RAI/BRE
459.32	217 713.	8 w	$3s3p^2$	^4P	5/2	–	$3s3p(^3P^\circ)3d$	$^4D^\circ$	7/2	0.02	92RAI/BRE
459.603	217 579.	3	$3s3p^2$	^4P	5/2	–	$3s3p(^3P^\circ)3d$	$^4D^\circ$	5/2	0.020	41PHI/PAR
460.09	217 349.	6	$3s3p^2$	^4P	5/2	–	$3s3p(^3P^\circ)3d$	$^4D^\circ$	3/2	0.01	92RAI/BRE
460.19	217 302.	6	$3s3p^2$	^4P	1/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	1/2	0.01	92RAI/BRE
461.23	216 812.	8 w	$3s3p^2$	^4P	1/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	3/2	0.02	92RAI/BRE
461.89	216 502.	4	$3s3p^2$	^4P	3/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	1/2	0.01	92RAI/BRE
462.01	216 446.	6	$3s^23p$	$^2P^\circ$	3/2	–	$3s^23d$	^2D	5/2	0.01	92RAI/BRE
462.13	216 389.	6	$3s^23p$	$^2P^\circ$	3/2	–	$3s^23d$	^2D	3/2	0.01	92RAI/BRE
462.93	216 015.	2	$3s3p^2$	^4P	3/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	3/2	0.01	92RAI/BRE
464.26	215 397.	8	$3s3p^2$	^4P	3/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	5/2	0.01	92RAI/BRE
465.58	214 786.	6	$3s3p^2$	^4P	5/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	3/2	0.01	92RAI/BRE
466.94	214 160.	8	$3s3p^2$	^4P	5/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	5/2	0.01	92RAI/BRE
468.39	213 497.	4	$3s3p^2$	^2D	5/2	–	$3s3p(^3P^\circ)3d$	$^2F^\circ$	7/2	0.01	92RAI/BRE
468.80	213 311.	6	$3s3p^2$	^2P	1/2	–	$3s3p(^1P^\circ)3d$	$^2D^\circ$	3/2	0.01	92RAI/BRE
471.19	212 229.	8	$3s3p^2$	^2P	3/2	–	$3s3p(^1P^\circ)3d$	$^2D^\circ$	5/2	0.01	92RAI/BRE
471.87	211 923.	4 A	$3s3p^2$	^2P	3/2	–	$3s3p(^1P^\circ)3d$	$^2D^\circ$	3/2	0.02	92RAI/BRE
472.04	211 846.	6	$3s3p^2$	^2D	3/2	–	$3s3p(^3P^\circ)3d$	$^2F^\circ$	5/2	0.01	92RAI/BRE
472.29	211 734.	4	$3s3p^2$	^2D	5/2	–	$3s3p(^3P^\circ)3d$	$^2F^\circ$	5/2	0.01	92RAI/BRE
477.70	209 340		$3s3p(^3P^\circ)3d$	$^2F^\circ$	7/2	–	$3s^25d$	^2D	5/2	0.15	89PIN/GE
485.78	205 855.	6	$3s3p^2$	^2S	1/2	–	$3s3p(^3P^\circ)3d$	$^2P^\circ$	3/2	0.01	92RAI/BRE
508.83	196 529.	8	$3s3p^2$	^2D	3/2	–	$3s3p(^3P^\circ)3d$	$^2D^\circ$	3/2	0.01	92RAI/BRE
508.91	196 498.	8	$3s3p^2$	^2D	3/2	–	$3s3p(^3P^\circ)3d$	$^2D^\circ$	5/2	0.01	92RAI/BRE
509.12	196 417.	4 b	$3s3p^2$	^2D	5/2	–	$3s3p(^3P^\circ)3d$	$^2D^\circ$	3/2	0.02	92RAI/BRE
509.20	196 386.	8	$3s3p^2$	^2D	5/2	–	$3s3p(^3P^\circ)3d$	$^2D^\circ$	5/2	0.01	92RAI/BRE
516.86	193 476.	4	$3s3p^2$	^2P	1/2	–	$3s3p(^3P^\circ)3d$	$^2P^\circ$	3/2	0.01	92RAI/BRE
520.61	192 082.	4	$3s3p^2$	^2P	3/2	–	$3s3p(^3P^\circ)3d$	$^2P^\circ$	3/2	0.01	92RAI/BRE
541.99	184 505.	60 b	$3s3p^2$	^2D	3/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	3/2	0.04	84JIA/SHE
542.30	184 400.	24	$3s3p^2$	^2D	5/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	3/2	0.02	84JIA/SHE
543.83	183 881.	14	$3s3p^2$	^2D	3/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	5/2	0.02	84JIA/SHE
544.15	183 773.	b	$3s3p^2$	^2D	5/2	–	$3s3p(^3P^\circ)3d$	$^4P^\circ$	5/2	0.04	84JIA/SHE
544.73	183 577.	10	$3s^23p$	$^2P^\circ$	1/2	–	$3s3p^2$	^2P	3/2	0.01	92RAI/BRE
547.17	182 759.	7	$3s^24s$	^2S	1/2	–	$3s3p(^1P^\circ)4s$	$^2P^\circ$	1/2	0.02	84JIA/SHE
548.91	182 179.	10	$3s^23p$	$^2P^\circ$	1/2	–	$3s3p^2$	^2P	1/2	0.01	92RAI/BRE
551.35	181 373.	6 b	$3s^23p$	$^2P^\circ$	3/2	–	$3s3p^2$	^2P	3/2	0.02	92RAI/BRE
555.63	179 976.	8	$3s^23p$	$^2P^\circ$	3/2	–	$3s3p^2$	^2P	1/2	0.01	92RAI/BRE
560.8	178 320		$3s3p(^1P^\circ)3d$	$^2F^\circ$	5/2	–	$3s^25d$	^2D	3/2	0.2	80ELS/SAL
564.30	177 211.	4	$3s^23d$	^2D	3/2	–	$3s3p(^1P^\circ)3d$	$^2D^\circ$	5/2	0.01	92RAI/BRE
564.49	177 151.	6	$3s^23d$	^2D	5/2	–	$3s3p(^1P^\circ)3d$	$^2D^\circ$	5/2	0.01	92RAI/BRE

TABLE 15. Spectral Lines of Ar VI—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
565.29	176 900.	6 b	$3s^23d$	^2D	3/2	– $3s3p(^1P^\circ)3d$	$^2D^\circ$	3/2	0.02	92RAI/BRE
565.49	176 838.	4	$3s^23d$	^2D	5/2	– $3s3p(^1P^\circ)3d$	$^2D^\circ$	3/2	0.01	92RAI/BRE
587.02	170 352.	8	$3s3p^2$	^4P	1/2	– $3p^3$	$^4S^\circ$	3/2	0.01	92RAI/BRE
588.91	169 805.	8 w	$3s^23p$	$^2P^\circ$	1/2	– $3s3p^2$	^2S	1/2	0.02	92RAI/BRE
589.78	169 555.	8	$3s3p^2$	^4P	3/2	– $3p^3$	$^4S^\circ$	3/2	0.01	92RAI/BRE
594.10	168 322.	8	$3s3p^2$	^4P	5/2	– $3p^3$	$^4S^\circ$	3/2	0.01	92RAI/BRE
596.67	167 597.	6 w	$3s^23p$	$^2P^\circ$	3/2	– $3s3p^2$	^2S	1/2	0.02	92RAI/BRE
618.67	161 637.	8 b	$3s3p^2$	^2D	3/2	– $3p^3$	$^2P^\circ$	1/2	0.02	92RAI/BRE
618.72	161 624.	6 b	$3s3p^2$	^2D	3/2	– $3p^3$	$^2P^\circ$	3/2	0.02	92RAI/BRE
619.16	161 509.	8	$3s3p^2$	^2D	5/2	– $3p^3$	$^2P^\circ$	3/2	0.01	92RAI/BRE
622.15	160 733.	6	$3s3p^2$	^2P	3/2	– $3s3p(^3P^\circ)3d$	$^2F^\circ$	5/2	0.01	92RAI/BRE
631.68	158 308.	6	$3s^23d$	^2D	3/2	– $3s3p(^1P^\circ)3d$	$^2F^\circ$	5/2	0.01	92RAI/BRE
631.91	158 250.	4	$3s^23d$	^2D	5/2	– $3s3p(^1P^\circ)3d$	$^2F^\circ$	5/2	0.01	92RAI/BRE
633.85	157 766.	6 A	$3s^23d$	^2D	5/2	– $3s3p(^1P^\circ)3d$	$^2F^\circ$	7/2	0.02	92RAI/BRE
636.94	157 001.	4	$3s^23d$	^2D	5/2	– $3s3p(^3P^\circ)3d$	$^2P^\circ$	3/2	0.01	92RAI/BRE
679.4	147 190	770	$3s3p^2$	^2S	1/2	– $3s3p(^3P^\circ)3d$	$^4P^\circ$	3/2	0.2	88LES/FOL
687.84	145 383.	6	$3s3p^2$	^2P	3/2	– $3s3p(^3P^\circ)3d$	$^2D^\circ$	5/2	0.01	92RAI/BRE
754.93	132 463.	10 w	$3s^23p$	$^2P^\circ$	1/2	– $3s3p^2$	^2D	3/2	0.02	92RAI/BRE
767.07	130 366.	6 A	$3s^23p$	$^2P^\circ$	3/2	– $3s3p^2$	^2D	5/2	0.02	92RAI/BRE
767.73	130 254.1	10	$3s^23p$	$^2P^\circ$	3/2	– $3s3p^2$	^2D	3/2	0.01	92RAI/BRE
782.41	127 810.2	6	$3s3p^2$	^2D	3/2	– $3p^3$	$^2D^\circ$	5/2	0.01	92RAI/BRE
783.07	127 703.	8 A	$3s3p^2$	^2D	5/2	– $3p^3$	$^2D^\circ$	5/2	0.02	92RAI/BRE
783.66	127 606.	8 A	$3s3p^2$	^2D	3/2	– $3p^3$	$^2D^\circ$	3/2	0.02	92RAI/BRE
784.35	127 494.1	6	$3s3p^2$	^2D	5/2	– $3p^3$	$^2D^\circ$	3/2	0.01	92RAI/BRE
784.80	127 421.0	6	$3s^23d$	^2D	5/2	– $3s3p(^3P^\circ)3d$	$^2F^\circ$	7/2	0.01	92RAI/BRE
795.44	125 717.	6 A	$3s^23d$	^2D	3/2	– $3s3p(^3P^\circ)3d$	$^2F^\circ$	5/2	0.02	92RAI/BRE
795.85	125 652.	6 b	$3s^23d$	^2D	5/2	– $3s3p(^3P^\circ)3d$	$^2F^\circ$	5/2	0.02	92RAI/BRE
804.62	124 282.3	8	$3s3p^2$	^2S	1/2	– $3p^3$	$^2P^\circ$	3/2	0.01	92RAI/BRE
893.50	111 919.4	8	$3s3p^2$	^2P	1/2	– $3p^3$	$^2P^\circ$	1/2	0.01	92RAI/BRE
893.63	111 903.	6 b	$3s3p^2$	^2P	1/2	– $3p^3$	$^2P^\circ$	3/2	0.02	92RAI/BRE
904.90	110 509.4	6	$3s3p^2$	^2P	3/2	– $3p^3$	$^2P^\circ$	3/2	0.01	92RAI/BRE
998.43	100 157.2	8	$3s^23p$	$^2P^\circ$	1/2	– $3s3p^2$	^4P	1/2	0.01	92RAI/BRE
1 000.16	99 984.0	1	$3s^23p$	$^2P^\circ$	3/2	– $3s3p^2$	^4P	5/2	0.01	92RAI/BRE
1 012.66	98 749.8	6	$3s^23p$	$^2P^\circ$	3/2	– $3s3p^2$	^4P	3/2	0.01	92RAI/BRE
1 021.2	97920		$3s^23p$	$^2P^\circ$	3/2	– $3s3p^2$	^4P	1/2	0.3	88TRA/HUT
1 283.95	77 885.		$3s3p^2$	^2P	1/2	– $3p^3$	$^2D^\circ$	3/2	0.20	89PIN/GE
1 303.87	76 694.8	10 w	$3s3p^2$	^2P	3/2	– $3p^3$	$^2D^\circ$	5/2	0.02	92RAI/BRE
1 307.50	76 482.		$3s3p^2$	^2P	3/2	– $3p^3$	$^2D^\circ$	3/2	0.30	89PIN/GE
1 420.60	70 392.8	4	$3s^24d$	^2D	5/2	– $3s3p(^1P^\circ)4s$	$^2P^\circ$	3/2	0.01	92RAI/BRE
1 422.51	70 298.3	4	$3s^24d$	^2D	3/2	– $3s3p(^1P^\circ)4s$	$^2P^\circ$	1/2	0.01	92RAI/BRE
45 292.2	2 207.89	f	$3s^23p$	$^2P^\circ$	1/2	– $3s^23p$	$^2P^\circ$	3/2	1.5	00CAS/ROC

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3.6. Ar VII

Mg isoelectronic sequence
Ground state: $1s^22s^22p^63s^2\ ^1S_0$
Ionization energy: 1 003 450 ± 450 cm^{-1} (124.41 ± 0.06 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar VII are given in Tables 16–18.

The energy levels of six times ionized argon, Ar VII, were compiled by Moore [49MOO] based on the work of Phillips and Parker [41PHI/PAR]. She tabulated 22 levels. More recently the Trigueiros group [97TRI/MAN, 01TRI/CAL, 05BOR/BRE] using their own measurements of Ar VII lines and atomic structure calculations determined 56 levels. Using a more complete set of line data, we are able to tabulate 94 levels by means of a fit to the available Ar VII lines. The preliminary levels for our fit were 55 levels from the Trigueiros group [97TRI/MAN, 01TRI/CAL, 05BOR/BRE], 31 levels from lines of Fawcett *et al.* [78FAW/RID] based on lower levels provided by the Trigueiros group, six from lines of Jacquet *et al.* [94JAC/BOD] using the previous levels as a basis, and one from a Buchet-Poulizac *et al.* [82BUC/BUC] line using Trigueiros *et al.* [97TRI/MAN] as the basis. The preliminary value for the $3s4p\ ^1P^\circ_1$ level was determined using a resonance line from Fawcett *et al.* [78FAW/RID] rather than the value quoted by Trigueiros *et al.* [97TRI/MAN]. The values of the leading percentages included in the energy level table were obtained from the calculation of the Trigueiros group [97TRI/MAN, 01TRI/CAL, 05BOR/BRE] supplemented by calculations using the Cowan codes [81COW].

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar VII are compiled from 16 sources [41PHI/PAR, 76BER/DES, 78FAW/RID, 82BUC/BUC, 84JIA/SHE, 84PEA/STA, 88BLI/DES, 88LES/FOL, 91BOD/CHA, 92KNY/BLI, 93BOU/ELM, 94JAC/BOD, 97TRI/MAN, 01TRI/CAL, 05BOR/BRE, 07FEL/DOS]. All lines from eight other sources [88TRA/HUT2, 92BOD/CHA, 93BOD/CHA, 93DAN/GRI, 93JAC/BOD, 97FEL/BEH, 99BRO/FIS, 05PAR/VIA] were superseded by the above 16. 39 additional lines, between 2250 and 5661 Å, from transitions between high lying Ar VII levels were reported by the Boduch/Jacquet group [91BOD/CHA, 92BOD/CHA, 93BOD/CHA, 93JAC/BOD, 94JAC/BOD]. We have not included them since we lack information on how these levels are connected to the levels we have tabulated. The sources used in this compilation are summarized in Table 17 (Sources of Ar VII lines). Table 17 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows:

[78FAW/RID] over [84PEA/STA] over [97TRI/MAN] over [01TRI/CAL] over [05BOR/BRE] over [41PHI/PAR] over [99BRO/FIS] over [97FEL/BEH] over [07FEL/DOS], over [93DAN/GRI] over [84JIA/SHE] over [88TRA/HUT2] over [05PAR/VIA] over [76BER/DES] over [82BUC/BUC] over [93BOU/ELM] over [88LES/FOL] over [94JAC/BOD] over [91BOD/CHA] over [92BOD/CHA] over [93JAC/BOD] over [93BOD/CHA] over [92KNY/BLI] over [88BLI/DES].

This order may change for affected lines.

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar VII levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar VII when they do not fit the known levels.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar VII line table are taken from the specified sources. Their meaning is stated below:

TABLE 16. Energy levels of Ar VII

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
0.	2.	0	$2p^6 3s^2$	^1S	0	97	3 $3p^2$ ^1S
113 101.	3.	1	$3s3p$	$^3P^\circ$	0	100	
113 905.5	1.9	1	$3s3p$	$^3P^\circ$	1	100	
115 590.	2.	1	$3s3p$	$^3P^\circ$	2	100	
170 722.	2.	1	$3s3p$	$^1P^\circ$	1	97	3 $3p3d$ $^1P^\circ$
264 749.	3.	0	$3p^2$	^1D	2	77	20 $3s3d$ ^1D
269 836.	4.	0	$3p^2$	^3P	0	99	
270 777.0	1.9	0	$3p^2$	^3P	1	100	
272 562.	3.	0	$3p^2$	^3P	2	97	
316 717.	8.	0	$3p^2$	^1S	0	95	2 $3p4p$ ^1S
324 104.	3.	0	$3s3d$	^3D	1	100	
324 141.2	1.9	0	$3s3d$	^3D	2	100	
324 205.	3.	0	$3s3d$	^3D	3	100	
370 294.0	1.8	0	$3s3d$	^1D	2	78	20 $3p^2$ ^1D
443 362.	3.	1	$3p3d$	$^3F^\circ$	2	98	
444 780.	3.	1	$3p3d$	$^3F^\circ$	3	100	
446 011.	4.	1	$3p3d$	$^3F^\circ$	4	100	
450 477.	5.	1	$3p3d$	$^1D^\circ$	2	98	
472 282.	4.	1	$3p3d$	$^3P^\circ$	2	92	7 $3p3d$ $^3D^\circ$
472 875.	2.	1	$3p3d$	$^3P^\circ$	1	90	9 $3p3d$ $^3D^\circ$
473 810.	4.	1	$3p3d$	$^3P^\circ$	0	99	
475 217.	2.	1	$3p3d$	$^3D^\circ$	1	91	9 $3p3d$ $^3P^\circ$
475 585.	3.	1	$3p3d$	$^3D^\circ$	2	93	7 $3p3d$ $^3P^\circ$
475 762.	3.	1	$3p3d$	$^3D^\circ$	3	100	
510 268.	3.	1	$3p3d$	$^1F^\circ$	3	97	
517 105.4	1.5	1	$3p3d$	$^1P^\circ$	1	94	3 $3s3p$ $^1P^\circ$
514 076.	4.	0	$3s4s$	^3S	1		
528 910.	14.	0	$3s4s$	^1S	0		
563 880.	6.	1	$3s4p$	$^3P^\circ$	0	99	
564 418.	5.	1	$3s4p$	$^3P^\circ$	1	99	
564 728.	4.	1	$3s4p$	$^3P^\circ$	2	99	
569 797.	12.	1	$3s4p$	$^1P^\circ$	1	99	
634 605.	2.	0	$3s4d$	^3D	1		
634 639.	2.	0	$3s4d$	^3D	2		
634 701.	4.	0	$3s4d$	^3D	3		
635 295.	8.	0	$3s4d$	^1D	2		
653 904.	3.	0	$3d^2$	^3F	2	99	
654 038.	3.	0	$3d^2$	^3F	3	99	
654 126.	5.	0	$3d^2$	^3F	4	99	
666 550.	2.	0	$3d^2$	^1D	2	96	2 $3p4p$ ^1D
668 061.	5.	0	$3d^2$	^1G	4	95	5 $3p4f$ ^1G
669 285.	3.	0	$3d^2$	^3P	0	99	
669 366.	2.	0	$3d^2$	^3P	1	99	
669 410.	3.	0	$3d^2$	^3P	2	99	
707 626.	2.	0	$3d^2$	^1S	0		
660 075.	5.	1	$3s4f$	$^3F^\circ$	2		
660 112.	5.	1	$3s4f$	$^3F^\circ$	3		
660 122.	5.	1	$3s4f$	$^3F^\circ$	4		
667 496.	6.	1	$3s4f$	$^1F^\circ$	3		
698 350.	5.	0	$3p4p$	^1P	1	91	8 $3p4p$ ^3D
701 808.	5.	0	$3p4p$	^3D	1	88	8 $3p4p$ ^1P

TABLE 16. Energy levels of Ar VII—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
702 553.	6.	0	$3p4p$	^3D	2	96	2 $3s4d$ ^3D
708 189.	6.	0	$3p4p$	^3S	1	60	35 $3s5s$ ^3S
711 890.	5.	0	$3p4p$	^3P	2	98	
720 475.	5.	0	$3p4p$	^1D	2	90	4 $3s4d$ ^1D
714 794.	5.	0	$3s5s$	^1S	0	82	17 $3p4p$ ^3S
715 747.	6.	0	$3s5s$	^3S	1	82	13 $3d^2$ ^1S
739 463.	4.	1	$3s5p$	$^3P^\circ$	0	98	
739 690.	2.	1	$3s5p$	$^3P^\circ$	1	97	
739 763.	2.	1	$3s5p$	$^3P^\circ$	2	98	
741 843.	3.	1	$3s5p$	$^1P^\circ$	1	94	4 $3p4d$ $^1P^\circ$
772 345.	13.	0	$3s5d$	^3D	1		
772 349.	16.	0	$3s5d$	^3D	3		
772 352.	12.	0	$3s5d$	^3D	2		
772 930.	10.	0	$3s5d$	^1D	2		
784 394.	9.	1	$3s5f$	$^3F^\circ$	4		
800 109.	6.	0	$3p4f$	^3G	4		
800 673.	6.	0	$3p4f$	^3G	5		
813 967.	13.	0	$3s6s$	^3S	1		
827 501.	7.	1	$3s6p$	$^1P^\circ$	1		
842 310.	3.	0	$3s6d$	^1D	2	84	16 $3d4s$ ^1D
844 273.	17.	0	$3s6d$	^3D	1		
844 296.	4.	0	$3s6d$	^3D	2		
844 296.	4.	0	$3s6d$	^3D	3		
851 433.	8.	1	$3s6f$	$^3F^\circ$	4		
866 869.	12.	1	$3p5s$	$^3P^\circ$	0	97	
867 223.	5.	1	$3p5s$	$^3P^\circ$	1	88	9 $3p5s$ $^1P^\circ$
869 049.	5.	1	$3p5s$	$^3P^\circ$	2	97	
870 841.	6.	1	$3p5s$	$^1P^\circ$	1	85	9 $3p4s$ $^3P^\circ$
869 540.	4.	0	$3s7s$	^3S	1		
877 100	380	1	$3s7p$	$^3P^\circ$	0		
877 100	380	1	$3s7p$	$^3P^\circ$	1		
877 110	180	1	$3s7p$	$^3P^\circ$	2		
877 733.	8.	1	$3s7p$	$^1P^\circ$	1		
881 996	22.	0	$3s7d$	^3D	2		
882 709	22.	0	$3s7d$	^3D	3		
891 864.	12.	1	$3s7f$	$^3F^\circ$	4		
892 803.	11.	0	$3s7g$	^3G	5		
915 085	24.	0	$3s8d$	^3D	2		
915 143	24.	0	$3s8d$	^3D	3		
917 972.	13.	1	$3s8f$	$^3F^\circ$	4		
918 880.	11.	1	$3s8h$	$^3H^\circ$	6		
935 859.	14.	1	$3s9f$	$^3F^\circ$	4		
948 615.	15.	1	$3s10f$	$^3F^\circ$	4		

TABLE 17. Sources of Ar VII lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
41PHI/PAR	9	argon excited in spark gap. 6.4-m GI VS	476–644	0.01
76BER/DES	3	beam-foil. 2.2-m GI monochromator	165–169	0.05
78FAW/RID	43	theta pinch. 2-m GI VS	114–298	0.003
82BUC/BUC	1	beam-foil. 2-m GI VS and 1-m NI vacuum monochromator	539	0.1
84JIA/SHE	1	quartz capillary discharge. 3-m GI VS	974	0.02
84PEA/STA	1	tokamak. 2-m GI spectrometer	586	0.004
88BLI/DES	2	collisions between Ar^{7+} ions and H_2. 1-m GI spectrometer	244, 462	0.5
88LES/FOL	3	radiation from Ar recoil ions. 2.2-m GI spectrometer	279–678	0.2
91BOD/CHA	1	collisions between Ar^{7+} ions and He or H_2. NI spectrometer	3118	0.2
92KNY/BLI	3	beam-foil and collisions between Ar^{7+} or Ar^{8+} ions and He or H_2. 2.2-m GI or 0.5-m Seya Namioka monochromator	275	0.2
93BOU/ELM	10	collisions between Ar^{7+} ions and He or H_2. 3-m GI monochromator	182–685	0.1
94JAC/BOD	3	collisions between Ar^{7+} ions and Li. 0.7-m NI spectrometer	2416–3834	0.3, 0.4
97TRI/MAN	47	theta pinch and discharge tube. 2-m NI VS and 3-m NI VS	396–1064	0.01, 0.02
01TRI/CAL	25	discharge tube. 3-m NI VS	426–669	0.01, 0.03
05BOR/BRE	59	discharge tube. 3-m NI VS	417–995	0.03
07FEL/DOS	1	solar coronal plasma. satellite (SUMER) based spectrometer	878	0.025

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

Code	Definition
b	Blend
t	Tentative identification
u	Line profile is asymmetric
*	Multiply classified line (two or more classifications of this line share the same intensity)

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the Mg isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in August 2007.

References for Ar VII

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TABLE 18. Spectral lines of Ar VII

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
113.931	877 724		$2p^63s^2$	^1S	0	– $3s7p$	$^1P^\circ$	1	0.003	78FAW/RID
120.847	827 493		$2p^63s^2$	^1S	0	– $3s6p$	$^1P^\circ$	1	0.003	78FAW/RID
124.816	801 179.		$3s3p$	$^3P^\circ$	1	– $3s8d$	^3D	2	0.003	78FAW/RID
125.070	799 552.		$3s3p$	$^3P^\circ$	2	– $3s8d$	^3D	3	0.003	78FAW/RID
130.193	768 090.		$3s3p$	$^3P^\circ$	1	– $3s7d$	^3D	2	0.003	78FAW/RID
130.358	767 118.		$3s3p$	$^3P^\circ$	2	– $3s7d$	^3D	3	0.003	78FAW/RID
132.635	753 949.		$3s3p$	$^3P^\circ$	2	– $3s7s$	^3S	1	0.003	78FAW/RID
134.797	741 856.		$2p^63s^2$	^1S	0	– $3s5p$	$^1P^\circ$	1	0.003	78FAW/RID
136.769	731 160.		$3s3p$	$^3P^\circ$	0	– $3s6d$	^3D	1	0.003	78FAW/RID
136.915	730 380.	*	$3s3p$	$^3P^\circ$	1	– $3s6d$	^3D	2	0.003	78FAW/RID
136.915	730 380.	*	$3s3p$	$^3P^\circ$	1	– $3s6d$	^3D	1	0.003	78FAW/RID
137.228	728 714.	*	$3s3p$	$^3P^\circ$	2	– $3s6d$	^3D	3	0.003	78FAW/RID
137.228	728 714.	*	$3s3p$	$^3P^\circ$	2	– $3s6d$	^3D	2	0.003	78FAW/RID
142.845	700 060.		$3s3p$	$^3P^\circ$	1	– $3s6s$	^3S	1	0.003	78FAW/RID
143.189	698 378.		$3s3p$	$^3P^\circ$	2	– $3s6s$	^3S	1	0.003	78FAW/RID
151.691	659 235.		$3s3p$	$^3P^\circ$	0	– $3s5d$	^3D	1	0.003	78FAW/RID
151.872	658 449.	*	$3s3p$	$^3P^\circ$	1	– $3s5d$	^3D	2	0.003	78FAW/RID
151.872	658 449.	*	$3s3p$	$^3P^\circ$	1	– $3s5d$	^3D	1	0.003	78FAW/RID
152.263	656 758.	*	$3s3p$	$^3P^\circ$	2	– $3s5d$	^3D	2	0.003	78FAW/RID
152.263	656 758.	*	$3s3p$	$^3P^\circ$	2	– $3s5d$	^3D	3	0.003	78FAW/RID
160.151	624 411.	b	$3s3d$	^3D	3	– $3s10f$	$^3F^\circ$	4	0.003	78FAW/RID
163.491	611 654.	t	$3s3d$	^3D	3	– $3s9f$	$^3F^\circ$	4	0.003	78FAW/RID
165.41	604 560	*	$3p^2$	^3P	2	– $3s7p$	$^3P^\circ$	2	0.05	76BER/DES
165.41	604 560	*	$3p^2$	^1D	2	– $3p5s$	$^3P^\circ$	2	0.05	76BER/DES
166.044	602 250.	b	$3s3p$	$^1P^\circ$	1	– $3s5d$	^1D	2	0.003	78FAW/RID
166.139	601 906.	b	$3s3p$	$^3P^\circ$	1	– $3s5s$	^3S	1	0.003	78FAW/RID
166.625	600 150.		$3s3p$	$^3P^\circ$	2	– $3s5s$	^3S	1	0.003	78FAW/RID
168.416	593 768.		$3s3d$	^3D	3	– $3s8f$	$^3F^\circ$	4	0.003	78FAW/RID
168.60	593 120		$3s3p$	$^3P^\circ$	2	– $3p4p$	^3S	1	0.05	76BER/DES
175.501	569 797.		$2p^63s^2$	^1S	0	– $3s4p$	$^1P^\circ$	1	0.003	78FAW/RID
176.162	567 659.		$3s3d$	^3D	3	– $3s7f$	$^3F^\circ$	4	0.003	78FAW/RID
182.0	549 500		$3s3p$	$^1P^\circ$	1	– $3p4p$	^1D	2	0.1	93BOU/ELM
183.4	545 300	*	$3s3d$	^3D	2	– $3p5s$	$^3P^\circ$	2	0.1	93BOU/ELM
183.4	545 300	*	$3s3d$	^3D	3	– $3p5s$	$^3P^\circ$	2	0.1	93BOU/ELM
189.671	527 229.		$3s3d$	^3D	3	– $3s6f$	$^3F^\circ$	4	0.003	78FAW/RID
191.753	521 504.		$3s3p$	$^3P^\circ$	0	– $3s4d$	^3D	1	0.003	78FAW/RID
192.037	520 733.		$3s3p$	$^3P^\circ$	1	– $3s4d$	^3D	2	0.003	78FAW/RID
192.636	519 114.		$3s3p$	$^3P^\circ$	2	– $3s4d$	^3D	3	0.003	78FAW/RID
215.251	464 574.	b	$3s3p$	$^1P^\circ$	1	– $3s4d$	^1D	2	0.003	78FAW/RID
217.302	460 189.		$3s3d$	^3D	3	– $3s5f$	$^3F^\circ$	4	0.003	78FAW/RID
239.5	417 540	*	$3s3d$	^3D	1	– $3s5p$	$^1P^\circ$	1	0.1	93BOU/ELM
239.5	417 540	*	$3s3d$	^3D	2	– $3s5p$	$^1P^\circ$	1	0.1	93BOU/ELM
244.2	409 500		$3p3d$	$^3P^\circ$	2	– $3s7d$	^3D	2	0.5	88BLI/DES
248.296	402 745.	t	$3p^2$	^1D	2	– $3s4f$	$^1F^\circ$	3	0.003	78FAW/RID
249.393	400 974.		$3s3p$	$^3P^\circ$	0	– $3s4s$	^3S	1	0.003	78FAW/RID
249.893	400 171.		$3s3p$	$^3P^\circ$	1	– $3s4s$	^3S	1	0.003	78FAW/RID
250.950	398 486.		$3s3p$	$^3P^\circ$	2	– $3s4s$	^3S	1	0.003	78FAW/RID
268.7	372 160	*	$3p3d$	$^3P^\circ$	2	– $3s6d$	^3D	3	0.1	93BOU/ELM
268.7	372 160	*	$3p3d$	$^3P^\circ$	2	– $3s6d$	^3D	2	0.1	93BOU/ELM
275.5	363 000	*	$3s4s$	^3S	1	– $3s7p$	$^3P^\circ$	2	0.2	92KNY/BLI
275.5	363 000	*	$3s4s$	^3S	1	– $3s7p$	$^3P^\circ$	1	0.2	92KNY/BLI
275.5	363 000	*	$3s4s$	^3S	1	– $3s7p$	$^3P^\circ$	0	0.2	92KNY/BLI
279.2	358 200	80	$3s3p$	$^1P^\circ$	1	– $3s4s$	^1S	0	0.2	88LES/FOL
281.429	355 329.	b	$3p3d$	$^3F^\circ$	3	– $3p4f$	^3G	4	0.003	78FAW/RID
281.958	354 663.		$3p3d$	$^3F^\circ$	4	– $3p4f$	^3G	5	0.003	78FAW/RID

TABLE 18. Spectral lines of Ar VII—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
297.645	335 971.	b *	$3s3d$	^3D	1	– $3s4f$	$^3F^\circ$	2	0.003	78FAW/RID
297.645	335 971.	b *	$3s3d$	^3D	2	– $3s4f$	$^3F^\circ$	3	0.003	78FAW/RID
297.692	335 918.		$3s3d$	^3D	3	– $3s4f$	$^3F^\circ$	4	0.003	78FAW/RID
328.1	304 790		$3s4p$	$^3P^\circ$	2	– $3s7s$	^3S	1	0.1	93BOU/ELM
396.27	252 353.	20	$3p^2$	^1D	2	– $3p3d$	$^1P^\circ$	1	0.01	97TRI/MAN
407.31	245 513.	20	$3p^2$	^1D	2	– $3p3d$	$^1F^\circ$	3	0.01	97TRI/MAN
415.59	240 622.	60 b	$3s3d$	^3D	1	– $3s4p$	$^3P^\circ$	2	0.02	97TRI/MAN
415.66	240 581.	60 b	$3s3d$	^3D	2	– $3s4p$	$^3P^\circ$	2	0.02	97TRI/MAN
415.77	240 518.	60 b	$3s3d$	^3D	3	– $3s4p$	$^3P^\circ$	2	0.02	97TRI/MAN
416.19	240 275.	40	$3s3d$	^3D	2	– $3s4p$	$^3P^\circ$	1	0.01	97TRI/MAN
417.06	239 774.	60 u	$3s3d$	^3D	1	– $3s4p$	$^3P^\circ$	0	0.02	97TRI/MAN
417.36	239 601.	80	$3p3d$	$^3P^\circ$	2	– $3p4p$	^3P	2	0.03	05BOR/BRE
422.53	236 670.	60	$3p3d$	$^3D^\circ$	1	– $3p4p$	^3P	2	0.03	05BOR/BRE
423.50	236 128.	100	$3p3d$	$^3D^\circ$	3	– $3p4p$	^3P	2	0.03	05BOR/BRE
425.99	234 747.	3	$3p3d$	$^3P^\circ$	1	– $3d^2$	^1S	0	0.01	01TRI/CAL
426.70	234 357.	40 *	$3p3d$	$^3P^\circ$	0	– $3p4p$	^3S	1	0.03	05BOR/BRE
426.70	234 357.	40 *	$3s4d$	^3D	3	– $3p5s$	$^3P^\circ$	2	0.03	05BOR/BRE
435.65	229 542.	60	$3p3d$	$^3P^\circ$	2	– $3p4p$	^3D	1	0.03	05BOR/BRE
436.85	228 912.	60	$3p3d$	$^3P^\circ$	1	– $3p4p$	^3D	1	0.03	05BOR/BRE
438.63	227 983.	40	$3p3d$	$^3P^\circ$	0	– $3p4p$	^3D	1	0.03	05BOR/BRE
440.61	226 958.	60	$3p3d$	$^3D^\circ$	2	– $3p4p$	^3D	2	0.03	05BOR/BRE
443.08	225 693.	40	$3s4s$	^3S	1	– $3s5p$	$^3P^\circ$	2	0.03	05BOR/BRE
450.37	222 040.	3	$3p3d$	$^3F^\circ$	4	– $3d^2$	^1G	4	0.01	01TRI/CAL
450.93	221 764.	3	$3p3d$	$^3F^\circ$	3	– $3d^2$	^1D	2	0.01	01TRI/CAL
461.5	216 700		$3s4d$	^3D	3	– $3s6f$	$^3F^\circ$	4	0.5	88BLI/DES
462.81	216 071.	6	$3p3d$	$^1D^\circ$	2	– $3d^2$	^1D	2	0.01	01TRI/CAL
469.63	212 934.	80	$3s4s$	^1S	0	– $3s5p$	$^1P^\circ$	1	0.03	05BOR/BRE
473.93	211 002.	60	$3s3p$	$^3P^\circ$	0	– $3s3d$	^3D	1	0.01	97TRI/MAN
474.65	210 682.	3	$3p3d$	$^3F^\circ$	2	– $3d^2$	^3F	3	0.01	01TRI/CAL
474.96	210 544.	6	$3p3d$	$^3F^\circ$	2	– $3d^2$	^3F	2	0.01	01TRI/CAL
475.656	210 236.	8	$3s3p$	$^3P^\circ$	1	– $3s3d$	^3D	2	0.010	41PHI/PAR
475.73	210 203.	40 *	$3p3d$	$^1F^\circ$	3	– $3p4p$	^1D	2	0.01	97TRI/MAN
475.73	210 203.	40 *	$3s3p$	$^3P^\circ$	1	– $3s3d$	^3D	1	0.01	97TRI/MAN
477.70	209 336.	6	$3p3d$	$^3F^\circ$	3	– $3d^2$	^3F	4	0.01	01TRI/CAL
477.88	209 258.	6	$3p3d$	$^3F^\circ$	3	– $3d^2$	^3F	3	0.01	01TRI/CAL
479.379	208 603.	12	$3s3p$	$^3P^\circ$	2	– $3s3d$	^3D	3	0.010	41PHI/PAR
479.485	208 557.	2	$3s3p$	$^3P^\circ$	2	– $3s3d$	^3D	2	0.010	41PHI/PAR
480.49	208 121.	3	$3p3d$	$^3F^\circ$	4	– $3d^2$	^3F	4	0.01	01TRI/CAL
481.87	207 525.	40	$3p^2$	^1D	2	– $3p3d$	$^3P^\circ$	2	0.01	97TRI/MAN
486.89	205 385.	40	$3p^2$	^3P	0	– $3p3d$	$^3D^\circ$	1	0.01	97TRI/MAN
488.24	204 817.	40	$3p^2$	^3P	1	– $3p3d$	$^3D^\circ$	2	0.01	97TRI/MAN
489.14	204 440.	40	$3p^2$	^3P	1	– $3p3d$	$^3D^\circ$	1	0.01	97TRI/MAN
492.13	203 198.	60 u	$3p^2$	^3P	2	– $3p3d$	$^3D^\circ$	3	0.02	97TRI/MAN
492.55	203 025.	40 *	$3p^2$	^3P	0	– $3p3d$	$^3P^\circ$	1	0.01	97TRI/MAN
492.55	203 025.	40 *	$3p^2$	^3P	1	– $3p3d$	$^3P^\circ$	0	0.01	97TRI/MAN
492.55	203 025.	40 *	$3p^2$	^3P	2	– $3p3d$	$^3D^\circ$	2	0.01	97TRI/MAN
493.46	202 651.	20	$3p^2$	^3P	2	– $3p3d$	$^3D^\circ$	1	0.01	97TRI/MAN
494.81	202 098.	20	$3p^2$	^3P	1	– $3p3d$	$^3P^\circ$	1	0.01	97TRI/MAN
496.00	201 613.	40	$3p3d$	$^1F^\circ$	3	– $3p4p$	^3P	2	0.03	05BOR/BRE
496.27	201 503.	40	$3p^2$	^3P	1	– $3p3d$	$^3P^\circ$	2	0.01	97TRI/MAN
499.03	200 389.	60	$3p^2$	^1S	0	– $3p3d$	$^1P^\circ$	1	0.01	97TRI/MAN
499.23	200 308.	40 u	$3p^2$	^3P	2	– $3p3d$	$^3P^\circ$	1	0.02	97TRI/MAN
500.69	199 724.	40	$3p^2$	^3P	2	– $3p3d$	$^3P^\circ$	2	0.01	97TRI/MAN
500.93	199 629.	60	$3d^2$	^3P	2	– $3p5s$	$^3P^\circ$	2	0.03	05BOR/BRE
501.09	199 565.	60 u	$3s3p$	$^1P^\circ$	1	– $3s3d$	^1D	2	0.02	97TRI/MAN

TABLE 18. Spectral lines of Ar VII—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
505.83	197 695.	80	$3p3d$	$^1P^\circ$	1	– $3s5s$	^1S	0	0.03	05BOR/BRE
506.32	197 504.	40	$3d^2$	^3P	1	– $3p5s$	$^3P^\circ$	0	0.03	05BOR/BRE
508.83	196 529.	12 u	$3p3d$	$^3P^\circ$	1	– $3d^2$	^3P	2	0.03	01TRI/CAL
508.90	196 502.	12 b	$3p3d$	$^3P^\circ$	1	– $3d^2$	^3P	1	0.03	01TRI/CAL
509.12	196 417.	9 b	$3p3d$	$^3P^\circ$	1	– $3d^2$	^3P	0	0.03	01TRI/CAL
511.37	195 553.	3	$3p3d$	$^3P^\circ$	0	– $3d^2$	^3P	1	0.01	01TRI/CAL
513.36	194 795.	20	$3p3d$	$^1P^\circ$	1	– $3p4p$	^3P	2	0.03	05BOR/BRE
520.11	192 267.	20	$3s4d$	^1D	2	– $3s6p$	$^1P^\circ$	1	0.03	05BOR/BRE
523.64	190 971.	3	$3p3d$	$^3D^\circ$	2	– $3d^2$	^1D	2	0.01	01TRI/CAL
524.88	190 520.	6	$3p3d$	$^1P^\circ$	1	– $3d^2$	^1S	0	0.01	01TRI/CAL
539.0	185 530		$3p^2$	^1D	2	– $3p3d$	$^1D^\circ$	2	0.1	82BUC/BUC
541.6	184 640		$3p3d$	$^1P^\circ$	1	– $3p4p$	^3D	1	0.1	93BOU/ELM
551.75	181 242.	80	$3p3d$	$^1P^\circ$	1	– $3p4p$	^1P	1	0.03	05BOR/BRE
557.46	179 385.	60	$3p4p$	^1P	1	– $3s7p$	$^1P^\circ$	1	0.03	05BOR/BRE
559.63	178 689.	6	$3p3d$	$^3D^\circ$	1	– $3d^2$	^3F	2	0.01	01TRI/CAL
559.86	178 616.	20	$3p^2$	^1D	2	– $3p3d$	$^3F^\circ$	2	0.01	97TRI/MAN
560.38	178 450.	6	$3p3d$	$^3D^\circ$	2	– $3d^2$	^3F	3	0.01	01TRI/CAL
560.64	178 368.	9	$3p3d$	$^3D^\circ$	3	– $3d^2$	^3F	4	0.01	01TRI/CAL
561.36	178 139.	3	$3p3d$	$^3D^\circ$	3	– $3d^2$	^3F	2	0.01	01TRI/CAL
572.05	174 810.	80	$3s4f$	$^1F^\circ$	3	– $3s6d$	^1D	2	0.03	05BOR/BRE
579.75	172 488.	80	$3p4p$	^1P	1	– $3p5s$	$^1P^\circ$	1	0.03	05BOR/BRE
580.69	172 209.	20	$3p^2$	^3P	2	– $3p3d$	$^3F^\circ$	3	0.01	97TRI/MAN
585.748	170 721.9		$2p^63s^2$	^1S	0	– $3s3p$	$^1P^\circ$	1	0.004	84PEA/STA
604.57	165 407.	80	$3p4p$	^3D	1	– $3p5s$	$^3P^\circ$	1	0.03	05BOR/BRE
607.24	164 680.	80	$3p4p$	^3D	2	– $3p5s$	$^3P^\circ$	1	0.03	05BOR/BRE
613.69	162 949.	60	$3s5s$	^1S	0	– $3s7p$	$^1P^\circ$	1	0.03	05BOR/BRE
614.80	162 655.	80 b	$3p4p$	^3S	1	– $3p5s$	$^1P^\circ$	1	0.06	05BOR/BRE
621.65	160 862.	100	$3p4p$	^3S	1	– $3p5s$	$^3P^\circ$	2	0.03	05BOR/BRE
626.61	159 589.	80	$3d^2$	^1S	0	– $3p5s$	$^3P^\circ$	1	0.03	05BOR/BRE
630.306	158 653.	2	$3s3p$	$^3P^\circ$	1	– $3p^2$	^3P	2	0.010	41PHI/PAR
633.73	157 796.	6	$3p3d$	$^1F^\circ$	3	– $3d^2$	^1G	4	0.01	01TRI/CAL
634.208	157 677.	2	$3s3p$	$^3P^\circ$	0	– $3p^2$	^3P	1	0.010	41PHI/PAR
635.94	157 248.	60	$3p4p$	^1D	2	– $3s7p$	$^1P^\circ$	1	0.03	05BOR/BRE
636.31	157 156.	100	$3p4p$	^3P	2	– $3p5s$	$^3P^\circ$	2	0.03	05BOR/BRE
637.052	156 973.	4	$3s3p$	$^3P^\circ$	2	– $3p^2$	^3P	2	0.010	41PHI/PAR
637.466	156 871.	1	$3s3p$	$^3P^\circ$	1	– $3p^2$	^3P	1	0.010	41PHI/PAR
639.88	156 279.	3	$3p3d$	$^1F^\circ$	3	– $3d^2$	^1D	2	0.01	01TRI/CAL
640.83	156 048.	80 b	$3s5s$	^1S	0	– $3p5s$	$^1P^\circ$	1	0.06	05BOR/BRE
641.318	155 929.	2	$3s3p$	$^3P^\circ$	1	– $3p^2$	^3P	0	0.010	41PHI/PAR
642.08	155 744.	60	$3s4p$	$^3P^\circ$	2	– $3p4p$	^1D	2	0.03	05BOR/BRE
644.388	155 186.	2	$3s3p$	$^3P^\circ$	2	– $3p^2$	^3P	1	0.010	41PHI/PAR
652.29	153 306.	80	$3s5s$	^3S	1	– $3p5s$	$^3P^\circ$	2	0.03	05BOR/BRE
656.04	152 430.	60	$3s5s$	^1S	0	– $3p5s$	$^3P^\circ$	1	0.03	05BOR/BRE
656.58	152 304.	3	$3p3d$	$^1P^\circ$	1	– $3d^2$	^3P	2	0.01	01TRI/CAL
656.77	152 260.	6	$3p3d$	$^1P^\circ$	1	– $3d^2$	^3P	1	0.01	01TRI/CAL
657.12	152 179.	6	$3p3d$	$^1P^\circ$	1	– $3d^2$	^3P	0	0.01	01TRI/CAL
659.54	151 621.	40	$3s3d$	^3D	2	– $3p3d$	$^3D^\circ$	3	0.01	97TRI/MAN
659.83	151 554.	60	$3s3d$	^3D	3	– $3p3d$	$^3D^\circ$	3	0.01	97TRI/MAN
660.13	151 485.	40 *	$3s3d$	^3D	1	– $3p3d$	$^3D^\circ$	2	0.01	97TRI/MAN
660.13	151 485.	40 *	$3s5s$	^3S	1	– $3p5s$	$^3P^\circ$	1	0.01	97TRI/MAN
660.31	151 444.	60	$3s3d$	^3D	2	– $3p3d$	$^3D^\circ$	2	0.01	97TRI/MAN
660.61	151 375.	40	$3s3d$	^3D	3	– $3p3d$	$^3D^\circ$	2	0.01	97TRI/MAN
660.82	151 327.	40	$3s4p$	$^3P^\circ$	1	– $3s5s$	^3S	1	0.03	05BOR/BRE
661.76	151 112.	60	$3s3d$	^3D	1	– $3p3d$	$^3D^\circ$	1	0.03	05BOR/BRE
661.90	151 080.	40	$3s3d$	^3D	2	– $3p3d$	$^3D^\circ$	1	0.01	97TRI/MAN

TABLE 18. Spectral lines of Ar VII—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
662.19	151 014.	80	$3s4p$	$^3P^\circ$	2	– $3s5s$	^3S	1	0.03	05BOR/BRE
662.8	150 880	35	$3s3p$	$^3P^\circ$	1	– $3p^2$	^1D	2	0.2	88LES/FOL
665.04	150 367.	80	$3p4p$	^1D	2	– $3p5s$	$^1P^\circ$	1	0.03	05BOR/BRE
667.99	149 703.	40	$3s3d$	^3D	1	– $3p3d$	$^3P^\circ$	0	0.01	97TRI/MAN
669.14	149 446.	6	$3p3d$	$^1P^\circ$	1	– $3d^2$	^1D	2	0.01	01TRI/CAL
672.33	148 736.	40	$3s3d$	^3D	2	– $3p3d$	$^3P^\circ$	1	0.01	97TRI/MAN
675.01	148 146.	40 u	$3s3d$	^3D	2	– $3p3d$	$^3P^\circ$	2	0.02	97TRI/MAN
677.9	147 510	185	$3s4p$	$^3P^\circ$	1	– $3p4p$	^3P	2	0.2	88LES/FOL
679.53	147 161.	100	$3s4p$	$^3P^\circ$	2	– $3p4p$	^3P	2	0.03	05BOR/BRE
681.14	146 813.	40	$3s3d$	^1D	2	– $3p3d$	$^1P^\circ$	1	0.01	97TRI/MAN
684.9	146 010		$3s3p$	$^1P^\circ$	1	– $3p^2$	^1S	0	0.1	93BOU/ELM
692.94	144 313.	80 b	$3s4p$	$^3P^\circ$	0	– $3p4p$	^3S	1	0.06	05BOR/BRE
697.04	143 464.	100	$3s4p$	$^3P^\circ$	2	– $3p4p$	^3S	1	0.03	05BOR/BRE
714.43	139 971.7	20	$3s3d$	^1D	2	– $3p3d$	$^1F^\circ$	3	0.01	97TRI/MAN
723.94	138 133.	100	$3s4p$	$^3P^\circ$	1	– $3p4p$	^3D	2	0.03	05BOR/BRE
725.03	137 925.	80	$3s4p$	$^3P^\circ$	0	– $3p4p$	^3D	1	0.03	05BOR/BRE
727.85	137 391.	80	$3s4p$	$^3P^\circ$	1	– $3p4p$	^3D	1	0.03	05BOR/BRE
768.79	130 075.	60	$3s5p$	$^3P^\circ$	0	– $3s7s$	^3S	1	0.03	05BOR/BRE
770.54	129 779.	80	$3s5p$	$^3P^\circ$	2	– $3s7s$	^3S	1	0.03	05BOR/BRE
774.30	129 149.	40	$3p4p$	^1P	1	– $3s6p$	$^1P^\circ$	1	0.03	05BOR/BRE
800.40	124 938.	20	$3p4p$	^3D	2	– $3s6p$	$^1P^\circ$	1	0.03	05BOR/BRE
820.99	121 804.2	80	$3s3d$	^3D	3	– $3p3d$	$^3F^\circ$	4	0.01	97TRI/MAN
828.91	120 640.4	60	$3s3d$	^3D	2	– $3p3d$	$^3F^\circ$	3	0.01	97TRI/MAN
829.41	120 567.6	60	$3s3d$	^3D	3	– $3p3d$	$^3F^\circ$	3	0.01	97TRI/MAN
838.80	119 217.9	40	$3s3d$	^3D	2	– $3p3d$	$^3F^\circ$	2	0.01	97TRI/MAN
839.18	119 163.9	20	$3s3d$	^3D	3	– $3p3d$	$^3F^\circ$	2	0.01	97TRI/MAN
877.92	113 906.		$2p^63s^2$	^1S	0	– $3s3p$	$^3P^\circ$	1	0.025	07FEL/DOS
887.28	112 704.	40	$3s5s$	^1S	0	– $3s6p$	$^1P^\circ$	1	0.03	05BOR/BRE
932.78	107 206.	40	$3s4d$	^3D	2	– $3s5p$	$^1P^\circ$	1	0.03	05BOR/BRE
938.60	106 542.	80	$3s4d$	^1D	2	– $3s5p$	$^1P^\circ$	1	0.03	05BOR/BRE
950.94	105 159.	60	$3s4d$	^3D	1	– $3s5p$	$^3P^\circ$	2	0.03	05BOR/BRE
951.27	105 123.	80	$3s4d$	^3D	2	– $3s5p$	$^3P^\circ$	2	0.03	05BOR/BRE
951.62	105 084.	80	$3s4d$	^3D	1	– $3s5p$	$^3P^\circ$	1	0.03	05BOR/BRE
951.82	105 062.	100	$3s4d$	^3D	3	– $3s5p$	$^3P^\circ$	2	0.03	05BOR/BRE
951.91	105 052.	80	$3s4d$	^3D	2	– $3s5p$	$^3P^\circ$	1	0.03	05BOR/BRE
953.08	104 923.0	20	$3s3d$	^1D	2	– $3p3d$	$^3D^\circ$	1	0.01	97TRI/MAN
953.68	104 857.	80	$3s4d$	^3D	1	– $3s5p$	$^3P^\circ$	0	0.03	05BOR/BRE
956.64	104 533.	80 *	$3s5p$	$^3P^\circ$	2	– $3s6d$	^3D	3	0.03	05BOR/BRE
956.64	104 533.	80 *	$3s5p$	$^3P^\circ$	2	– $3s6d$	^3D	2	0.03	05BOR/BRE
974.48	102 619.	17	$3s5p$	$^3P^\circ$	1	– $3s6d$	^1D	2	0.02	84JIA/SHE
974.83	102 582.0	20	$3s3d$	^1D	2	– $3p3d$	$^3P^\circ$	1	0.01	97TRI/MAN
995.34	100 468.	80	$3s5p$	$^1P^\circ$	1	– $3s6d$	^1D	2	0.03	05BOR/BRE
1 063.54	94 025.6	40 u	$3s3p$	$^1P^\circ$	1	– $3p^2$	^1D	2	0.02	97TRI/MAN

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 416.5	41 370.		$3s6f$	$^3F^\circ$	4	– $3s7g$	^3G	5	0.3	94JAC/BOD
3 117.8	32 065.		$3d^2$	^1S	0	– $3s5p$	$^3P^\circ$	1	0.2	91BOD/CHA
3 216.6	31 080.		$3s5p$	$^1P^\circ$	1	– $3s5d$	^1D	2	0.4	94JAC/BOD
3 833.7	26 077.		$3s7g$	^3G	5	– $3s8h$	$^3H^\circ$	6	0.4	94JAC/BOD

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3.7. Ar VIII

Na isoelectronic sequence
Ground State $1s^22s^22p^63s\ ^2S_{1/2}$
Ionization energy 1 157 063 ± 29 cm^{-1} (143.458 ± 0.004 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar VIII are given in Tables 19–21.

The energy levels of seven times ionized argon, Ar VIII, were compiled by Moore [49MOO] based on the work of Phillips and Parker [41PHI/PAR]. She tabulated 21 levels. Using a more complete set of line data compiled from more recent measurements, we are able to tabulate 71 levels by means of a fit to the available Ar VIII lines. The preliminary levels for our fit were 63 levels tabulated in the NIST Atomic Spectra Database [07RAL/JOU2] with additional levels calculated from these using the classified lines of Laulhé *et al.* [97LAU/JAC] and Bazin *et al.* [00BAZ/BOD]. Additional levels involving the excitation of inner electrons ($2p^5$) have been reported in Auger spectroscopy measurements by Kádár *et al.* [91KAD/ALT] and Bliman *et al.* [01BLI/COR]. These levels are not included in this compilation.

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar VIII are compiled from 17 sources [72DRU/DAT, 72LIV/IRW, 76BER/DES, 78FAW/RID, 79KNY/DRO, 82BUC/BUC, 87REA/KAU, 92GAU/DAN, 93JAC/BOD, 94DEN/MAR, 97HEG/BÜS, 97LAU/JAC, 98ANT/DOR, 99BLI/COR, 00BAZ/BOD, 04CUR/LAN, 04NAZ/ANT]. Reader *et al.* [87REA/KAU] obtained their six listed lines by fitting the differences between the observed and calculated (via Dirac–Fock codes) values for the $3s-3p$, $3p-3d$, and $3d-4f$ transitions along the Na isoelectronic sequence from Ar to Xe. All lines from 11 other sources [41PHI/PAR, 61FAW/JON, 89BOD/CHA, 92BOD/CHA, 92MAR/DEN, 94THO/NEU, 95JAC/PAS, 95LAU/JAC, 97LAU/JAC2, 01CUR/BRE, 02BAZ/BOD] were superseded by the above 17. The sources used in this compilation are summarized in Table 20 (Sources of Ar VIII lines). Table 20 specifies the reference from which the lines

were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows:

[87REA/KAU] over [78FAW/RID] over [61FAW/JON] over [41PHI/PAR] over [04CUR/LAN] over [01CUR/BRE] over [94THO/NEU] over most [72DRU/DAT] over [76BER/DES] over [92GAU/DAN] over [97HEG/BÜS], over [82BUC/BUC] over [93JAC/BOD, 97LAU/JAC, 97LAU/JAC2, 95LAU/JAC, 92BOD/CHA, 89BOD/CHA, 95JAC/PAS] over [92MAR/DEN] over [00BAZ/BOD] over [94DEN/MAR] over [02BAZ/BOD] over [04NAZ/ANT] over [99BLI/COR] over [79KNY/DRO] over [72LIV/IRW] over [98ANT/DOR].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar VIII levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar VIII when they do not fit the known levels.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar VIII line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
*	Multiply classified line (two or more classifications of this line share the same intensity)

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration. The energies of the two levels $7h\ ^2H_{9/2,11/2}$ were set equal to each other as were the two levels $9g\ ^2G_{7/2,9/2}$, $10g\ ^2G_{7/2,9/2}$, and $12h\ ^2H_{9/2,11/2.}$

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the Na isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in October 2007.

TABLE 19. Energy levels of Ar VIII

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0.0	1.9	0	$2p^63s$	^2S	1/2
140 095.	2.	1	$2p^63p$	$^2P^\circ$	1/2
142 808.2	1.8	1	$2p^63p$	$^2P^\circ$	3/2
332 609.	2.	0	$2p^63d$	^2D	3/2
332 754.	2.	0	$2p^63d$	^2D	5/2
575 958.	5.	0	$2p^64s$	^2S	1/2
628 241.	4.	1	$2p^64p$	$^2P^\circ$	1/2
629 243.	4.	1	$2p^64p$	$^2P^\circ$	3/2
697 532.	8.	0	$2p^64d$	^2D	3/2
697 621.	11.	0	$2p^64d$	^2D	5/2
716 852.	15.	1	$2p^64f$	$^2F^\circ$	5/2
716 875.	16.	1	$2p^64f$	$^2F^\circ$	7/2
807 306.	10.	0	$2p^65s$	^2S	1/2
832 261.	6.	1	$2p^65p$	$^2P^\circ$	1/2
832 749.	6.	1	$2p^65p$	$^2P^\circ$	3/2
865 274.	7.	0	$2p^65d$	^2D	3/2
865 278.	7.	0	$2p^65d$	^2D	5/2

TABLE 19. Energy levels of Ar VIII—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
875 329.	8.	1	$2p^65f$	$^2F^\circ$	5/2
875 349.	9.	1	$2p^65f$	$^2F^\circ$	7/2
876 005.	14.	0	$2p^65g$	^2G	7/2
876 019.	15.	0	$2p^65g$	^2G	9/2
923 471.	19.	0	$2p^66s$	^2S	1/2
937 520.	11.	1	$2p^66p$	$^2P^\circ$	3/2
955 618	55.	0	$2p^66d$	^2D	5/2
955 682	20.	0	$2p^66d$	^2D	3/2
961 492.	12.	1	$2p^66f$	$^2F^\circ$	7/2
961 923.	16.	1	$2p^66h$	$^2H^\circ$	9/2
961 937.	17.	1	$2p^66h$	$^2H^\circ$	11/2
961 941.	11.	0	$2p^66g$	^2G	7/2
961 963.	12.	0	$2p^66g$	^2G	9/2
990 073.	16.	0	$2p^67s$	^2S	1/2
998 465.	6.	1	$2p^67p$	$^2P^\circ$	1/2
998 582	30.	1	$2p^67p$	$^2P^\circ$	3/2
1 009 751	23.	0	$2p^67d$	^2D	3/2
1 009 752.	5.	0	$2p^67d$	^2D	5/2
1 013 424.	14.	1	$2p^67f$	$^2F^\circ$	7/2
1 013 780.	13.	1	$2p^67h$	$^2H^\circ$	9/2
1 013 780.	13.	1	$2p^67h$	$^2H^\circ$	11/2
1 031 716.	5.	0	$2p^68s$	^2S	1/2
1 036 968	32.	1	$2p^68p$	$^2P^\circ$	3/2
1 044 625.	5.	0	$2p^68d$	^2D	3/2
1 044 645.1	1.1	0	$2p^68d$	^2D	5/2
1 047 116.	3.	1	$2p^68f$	$^2F^\circ$	7/2
1 047 291	27.	0	$2p^68i$	^2I	11/2
1 047 304	28.	0	$2p^68i$	^2I	13/2
1 059 616.	5.	0	$2p^69s$	^2S	1/2
1 063 335.	5.	1	$2p^69p$	$^2P^\circ$	1/2
1 063 412.6	1.1	1	$2p^69p$	$^2P^\circ$	3/2
1 068 471	26.	0	$2p^69d$	^2D	3/2
1 068 511	26.	0	$2p^69d$	^2D	5/2
1 070 277.	3.	1	$2p^69f$	$^2F^\circ$	7/2
1 070 380.	10.	0	$2p^69g$	^2G	7/2
1 070 380.	10.	0	$2p^69g$	^2G	9/2
1 079 225	26.	0	$2p^610s$	^2S	1/2
1 081 761.	4.	1	$2p^610p$	$^2P^\circ$	1/2
1 081 811.	3.	1	$2p^610p$	$^2P^\circ$	3/2
1 085 453	27.	0	$2p^610d$	^2D	3/2
1 085 493	27.	0	$2p^610d$	^2D	5/2

TABLE 19. Energy levels of Ar VIII—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
1 086 703.	17.	1	$2p^6 10f$	$^2F^\circ$	7/2
1 086 860.	10.	0	$2p^6 10g$	^2G	7/2
1 086 860.	10.	0	$2p^6 10g$	^2G	9/2
1 093 214.	4.	0	$2p^6 11s$	^2S	1/2
1 095 350	36.	1	$2p^6 11p$	$^2P^\circ$	3/2
1 098 073	27.	0	$2p^6 11d$	^2D	5/2
1 099 042.	4.	1	$2p^6 11f$	$^2F^\circ$	7/2
1 107 445.	4.	0	$2p^6 12d$	^2D	5/2
1 108 212.	18.	1	$2p^6 12f$	$^2F^\circ$	7/2
1 108 291.	17.	0	$2p^6 12g$	^2G	9/2
1 108 370.	10.	1	$2p^6 12h$	$^2H^\circ$	9/2
1 108 370.	10.	1	$2p^6 12h$	$^2H^\circ$	11/2
1 112 079.	4.	0	$2p^6 13s$	^2S	1/2

TABLE 20. Sources of Ar VIII lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
72DRU/DAT	5	theta pinch. 2.2-m GI monochromator and 0.75-m NI monochromator	389–743	0.04–0.5
72LIV/IRW	1	beam-foil. 1-m NI vacuum monochromator	1463	1.
76BER/DES	2	beam-foil. 2.2-m GI monochromator	408	0.05
78FAW/RID	53	theta pinch. 2-m GI VS	91–338	0.003
79KNY/DRO	1	beam-foil. 0.5-m NI vacuum monochromator	1444	1.
82BUC/BUC	9	beam-foil. 2-m GI VS and 1-m NI vacuum monochromator	628–1171	0.1–0.5
87REA/KAU	6	fit to isoelectronic sequence data using observed vs. calculated values	260–714	0.007
92GAU/DAN	1	collisions between Ar^{8+} ions and Na. 0.64-m spectrometer	5327	0.08
93JAC/BOD	7	collisions between Ar^{8+} ions and Li. 0.7-m NI spectrometer	2516–5342	0.3,0.4
94DEN/MAR	15	collisions between Ar^{8+} ions and Cs. 2-m GI spectrometer	198–584	0.5
97HEG/BÜS	4	gas-liner pinch. 1-m NI spectrometer	1155, 1164	0.1
97LAU/JAC	5	collisions between Ar^{8+} ions and Li. 0.7-m NI spectrometer	1929–3154	0.2,0.4
98ANT/DOR	3	capillary discharge. 1-m GI VS	362	2.
99BLI/COR	3	collisions between Ar^{8+} ions and H_2. 3-m GI VS	422, 673	1.
00BAZ/BOD	14	collisions between Ar^{8+} ions and Cs. 0.7-m NI spectrometer	2270–6030	0.3–0.8
04CUR/LAN	2	solar coronal plasma. satellite (SUMER) based spectrograph	700, 740	0.01
04NAZ/ANT	2	capillary discharge. 1-m GI VS	276, 318	1.

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

TABLE 21. Spectral lines of Ar VIII

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
91.295	1 095 350		$2p^6 3s$	^2S	1/2	–	$2p^6 11p$	$^2P^\circ$	3/2	0.003	78FAW/RID
92.436	1 081 830		$2p^6 3s$	^2S	1/2	–	$2p^6 10p$	$^2P^\circ$	3/2	0.003	78FAW/RID
94.035	1 063 430		$2p^6 3s$	^2S	1/2	–	$2p^6 9p$	$^2P^\circ$	3/2	0.003	78FAW/RID
96.435	1 036 970	b	$2p^6 3s$	^2S	1/2	–	$2p^6 8p$	$^2P^\circ$	3/2	0.003	78FAW/RID

TABLE 21. Spectral lines of Ar VIII—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
100.142	998 580		$2p^63s$	^2S	1/2	–	$2p^67p$	$^2P^\circ$	3/2	0.003	78FAW/RID
103.666	964 640		$2p^63p$	$^2P^\circ$	3/2	–	$2p^612d$	^2D	5/2	0.003	78FAW/RID
104.683	955 260		$2p^63p$	$^2P^\circ$	3/2	–	$2p^611d$	^2D	5/2	0.003	78FAW/RID
105.780	945 360		$2p^63p$	$^2P^\circ$	1/2	–	$2p^610d$	^2D	3/2	0.003	78FAW/RID
106.080	942 680		$2p^63p$	$^2P^\circ$	3/2	–	$2p^610d$	^2D	5/2	0.003	78FAW/RID
106.663	937 530		$2p^63s$	^2S	1/2	–	$2p^66p$	$^2P^\circ$	3/2	0.003	78FAW/RID
106.790	936 420		$2p^63p$	$^2P^\circ$	3/2	–	$2p^610s$	^2S	1/2	0.003	78FAW/RID
107.715	928 380		$2p^63p$	$^2P^\circ$	1/2	–	$2p^69d$	^2D	3/2	0.003	78FAW/RID
108.026	925 700		$2p^63p$	$^2P^\circ$	3/2	–	$2p^69d$	^2D	5/2	0.003	78FAW/RID
108.769	919 380		$2p^63p$	$^2P^\circ$	1/2	–	$2p^69s$	^2S	1/2	0.003	78FAW/RID
109.070	916 840		$2p^63p$	$^2P^\circ$	3/2	–	$2p^69s$	^2S	1/2	0.003	78FAW/RID
110.547	904 590		$2p^63p$	$^2P^\circ$	1/2	–	$2p^68d$	^2D	3/2	0.003	78FAW/RID
110.879	901 880		$2p^63p$	$^2P^\circ$	3/2	–	$2p^68d$	^2D	5/2	0.003	78FAW/RID
112.164	891 550		$2p^63p$	$^2P^\circ$	1/2	–	$2p^68s$	^2S	1/2	0.003	78FAW/RID
112.494	888 940		$2p^63p$	$^2P^\circ$	3/2	–	$2p^68s$	^2S	1/2	0.003	78FAW/RID
114.988	869 660		$2p^63p$	$^2P^\circ$	1/2	–	$2p^67d$	^2D	3/2	0.003	78FAW/RID
115.346	866 960		$2p^63p$	$^2P^\circ$	3/2	–	$2p^67d$	^2D	5/2	0.003	78FAW/RID
117.651	849 970		$2p^63p$	$^2P^\circ$	1/2	–	$2p^67s$	^2S	1/2	0.003	78FAW/RID
118.026	847 270		$2p^63p$	$^2P^\circ$	3/2	–	$2p^67s$	^2S	1/2	0.003	78FAW/RID
120.076	832 810		$2p^63s$	^2S	1/2	–	$2p^65p$	$^2P^\circ$	3/2	0.003	78FAW/RID
120.151	832 290		$2p^63s$	^2S	1/2	–	$2p^65p$	$^2P^\circ$	1/2	0.003	78FAW/RID
122.611	815 588.		$2p^63p$	$^2P^\circ$	1/2	–	$2p^66d$	^2D	3/2	0.003	78FAW/RID
123.022	812 863.		$2p^63p$	$^2P^\circ$	3/2	–	$2p^66d$	^2D	5/2	0.003	78FAW/RID
127.656	783 355.		$2p^63p$	$^2P^\circ$	1/2	–	$2p^66s$	^2S	1/2	0.003	78FAW/RID
128.093	780 683.		$2p^63p$	$^2P^\circ$	3/2	–	$2p^66s$	^2S	1/2	0.003	78FAW/RID
128.956	775 458.	b	$2p^63d$	^2D	5/2	–	$2p^612f$	$^2F^\circ$	7/2	0.003	78FAW/RID
130.500	766 284.	b	$2p^63d$	^2D	5/2	–	$2p^611f$	$^2F^\circ$	7/2	0.003	78FAW/RID
132.635	753 949.	b	$2p^63d$	^2D	5/2	–	$2p^610f$	$^2F^\circ$	7/2	0.003	78FAW/RID
135.591	737 512.	b	$2p^63d$	^2D	5/2	–	$2p^69f$	$^2F^\circ$	7/2	0.003	78FAW/RID
137.898	725 174.		$2p^63p$	$^2P^\circ$	1/2	–	$2p^65d$	^2D	3/2	0.003	78FAW/RID
138.415	722 465.		$2p^63p$	$^2P^\circ$	3/2	–	$2p^65d$	^2D	5/2	0.003	78FAW/RID
139.984	714 367.	b	$2p^63d$	^2D	5/2	–	$2p^68f$	$^2F^\circ$	7/2	0.003	78FAW/RID
146.914	680 670.	b	$2p^63d$	^2D	5/2	–	$2p^67f$	$^2F^\circ$	7/2	0.003	78FAW/RID
149.877	667 214.		$2p^63p$	$^2P^\circ$	1/2	–	$2p^65s$	^2S	1/2	0.003	78FAW/RID
150.490	664 496.		$2p^63p$	$^2P^\circ$	3/2	–	$2p^65s$	^2S	1/2	0.003	78FAW/RID
158.925	629 228.		$2p^63s$	^2S	1/2	–	$2p^64p$	$^2P^\circ$	3/2	0.003	78FAW/RID
159.049	628 737.	b	$2p^63d$	^2D	5/2	–	$2p^66f$	$^2F^\circ$	7/2	0.003	78FAW/RID
159.180	628 220.		$2p^63s$	^2S	1/2	–	$2p^64p$	$^2P^\circ$	1/2	0.003	78FAW/RID
165.354	604 763.		$2p^63d$	^2D	5/2	–	$2p^66p$	$^2P^\circ$	3/2	0.003	78FAW/RID
179.393	557 435.		$2p^63p$	$^2P^\circ$	1/2	–	$2p^64d$	^2D	3/2	0.003	78FAW/RID
180.248	554 791.		$2p^63p$	$^2P^\circ$	3/2	–	$2p^64d$	^2D	5/2	0.003	78FAW/RID
184.258	542 717.		$2p^63d$	^2D	3/2	–	$2p^65f$	$^2F^\circ$	5/2	0.003	78FAW/RID
184.302	542 588.		$2p^63d$	^2D	5/2	–	$2p^65f$	$^2F^\circ$	7/2	0.003	78FAW/RID
198.	505 100	20 *	$2p^64s$	^2S	1/2	–	$2p^610p$	$^2P^\circ$	3/2	0.5	94DEN/MAR
198.	505 100	20 *	$2p^64s$	^2S	1/2	–	$2p^610p$	$^2P^\circ$	1/2	0.5	94DEN/MAR
200.003	499 993.		$2p^63d$	^2D	5/2	–	$2p^65p$	$^2P^\circ$	3/2	0.003	78FAW/RID
200.141	499 648.		$2p^63d$	^2D	3/2	–	$2p^65p$	$^2P^\circ$	1/2	0.003	78FAW/RID
205.	487 800	16 *	$2p^64s$	^2S	1/2	–	$2p^69p$	$^2P^\circ$	3/2	0.5	94DEN/MAR
205.	487 800	16 *	$2p^64s$	^2S	1/2	–	$2p^69p$	$^2P^\circ$	1/2	0.5	94DEN/MAR
219.	456 600	16 *	$2p^64p$	$^2P^\circ$	1/2	–	$2p^610d$	^2D	3/2	0.5	94DEN/MAR
219.	456 600	16 *	$2p^64p$	$^2P^\circ$	3/2	–	$2p^610d$	^2D	5/2	0.5	94DEN/MAR
222.	450 500	69 *	$2p^64p$	$^2P^\circ$	1/2	–	$2p^610s$	^2S	1/2	0.5	94DEN/MAR
222.	450 500	69 *	$2p^64p$	$^2P^\circ$	3/2	–	$2p^610s$	^2S	1/2	0.5	94DEN/MAR
229.427	435 868.		$2p^63p$	$^2P^\circ$	1/2	–	$2p^64s$	^2S	1/2	0.003	78FAW/RID
230.869	433 146.		$2p^63p$	$^2P^\circ$	3/2	–	$2p^64s$	^2S	1/2	0.003	78FAW/RID

TABLE 21. Spectral lines of Ar VIII—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
260.245	384 253.		$2p^63d$	^{2}D	3/2	– $2p^64f$	^{2}F°	5/2	0.007	87REA/KAU
260.327	384 132.		$2p^63d$	^{2}D	5/2	– $2p^64f$	^{2}F°	7/2	0.007	87REA/KAU
276.	362 300		$2p^64p$	^{2}P°	1/2	– $2p^67s$	^{2}S	1/2	1.	04NAZ/ANT
283.	353 400	7 *	$2p^64f$	^{2}F°	5/2	– $2p^69g$	^{2}G	7/2	0.5	94DEN/MAR
283.	353 400	7 *	$2p^64f$	^{2}F°	7/2	– $2p^69g$	^{2}G	9/2	0.5	94DEN/MAR
318.	314 500		$2p^64d$	^{2}D	5/2	– $2p^67f$	^{2}F°	7/2	1.	04NAZ/ANT
337.280	296 490.		$2p^63d$	^{2}D	5/2	– $2p^64p$	^{2}P°	3/2	0.003	78FAW/RID
338.260	295 631.		$2p^63d$	^{2}D	3/2	– $2p^64p$	^{2}P°	1/2	0.003	78FAW/RID
362.	276 200	*	$2p^65p$	^{2}P°	3/2	– $2p^612d$	^{2}D	5/2	2.	98ANT/DOR
362.	276 200	*	$2p^65s$	^{2}S	1/2	– $2p^610p$	^{2}P°	3/2	2.	98ANT/DOR
362.	276 200	*	$2p^65s$	^{2}S	1/2	– $2p^610p$	^{2}P°	1/2	2.	98ANT/DOR
379.	263 900	5	$2p^64d$	^{2}D	5/2	– $2p^66f$	^{2}F°	7/2	0.5	94DEN/MAR
389.43	256 790		$2p^64s$	^{2}S	1/2	– $2p^65p$	^{2}P°	3/2	0.04	72DRU/DAT
390.12	256 330		$2p^64s$	^{2}S	1/2	– $2p^65p$	^{2}P°	1/2	0.04	72DRU/DAT
407.87	245 180	*	$2p^64f$	^{2}F°	5/2	– $2p^66g$	^{2}G	7/2	0.05	76BER/DES
407.87	245 180	*	$2p^64f$	^{2}F°	7/2	– $2p^66g$	^{2}G	9/2	0.05	76BER/DES
422.	237 000		$2p^64p$	^{2}P°	1/2	– $2p^65d$	^{2}D	3/2	1.	99BLI/COR
512.	195 310	6 *	$2p^65f$	^{2}F°	5/2	– $2p^69g$	^{2}G	7/2	0.5	94DEN/MAR
512.	195 310	6 *	$2p^65f$	^{2}F°	7/2	– $2p^69g$	^{2}G	9/2	0.5	94DEN/MAR
514.	194 550	14	$2p^65g$	^{2}G	9/2	– $2p^69f$	^{2}F°	7/2	0.5	94DEN/MAR
519.436	192 516.		$2p^63p$	^{2}P°	1/2	– $2p^63d$	^{2}D	3/2	0.007	87REA/KAU
526.466	189 946.		$2p^63p$	^{2}P°	3/2	– $2p^63d$	^{2}D	5/2	0.007	87REA/KAU
526.870	189 800.		$2p^63p$	^{2}P°	3/2	– $2p^63d$	^{2}D	3/2	0.007	87REA/KAU
562.46	177 790.		$2p^64d$	^{2}D	3/2	– $2p^65f$	^{2}F°	5/2	0.05	72DRU/DAT
562.61	177 743.		$2p^64d$	^{2}D	5/2	– $2p^65f$	^{2}F°	7/2	0.05	72DRU/DAT
584.	171 230	20	$2p^65g$	^{2}G	9/2	– $2p^68f$	^{2}F°	7/2	0.5	94DEN/MAR
628.3	159 160	*	$2p^64f$	^{2}F°	5/2	– $2p^65g$	^{2}G	7/2	0.1	82BUC/BUC
628.3	159 160	*	$2p^64f$	^{2}F°	7/2	– $2p^65g$	^{2}G	9/2	0.1	82BUC/BUC
673.	148 600	*	$2p^64f$	^{2}F°	5/2	– $2p^65d$	^{2}D	3/2	1.	99BLI/COR
673.	148 600	*	$2p^64f$	^{2}F°	7/2	– $2p^65d$	^{2}D	5/2	1.	99BLI/COR
700.24	142 808.		$2p^63s$	^{2}S	1/2	– $2p^63p$	^{2}P°	3/2	0.01	04CUR/LAN
713.802	140 094.9		$2p^63s$	^{2}S	1/2	– $2p^63p$	^{2}P°	1/2	0.007	87REA/KAU
725.8	137 780	*	$2p^65g$	^{2}G	7/2	– $2p^67h$	^{2}H°	9/2	0.2	82BUC/BUC
725.8	137 780	*	$2p^65g$	^{2}G	9/2	– $2p^67h$	^{2}H°	11/2	0.2	82BUC/BUC
739.6	135 210		$2p^64d$	^{2}D	3/2	– $2p^65p$	^{2}P°	3/2	0.2	82BUC/BUC
740.11	135 115.1		$2p^64d$	^{2}D	5/2	– $2p^65p$	^{2}P°	3/2	0.01	04CUR/LAN
742.5	134 680		$2p^64d$	^{2}D	3/2	– $2p^65p$	^{2}P°	1/2	0.5	72DRU/DAT
814.7	122 740		$2p^65p$	^{2}P°	3/2	– $2p^66d$	^{2}D	5/2	0.2	82BUC/BUC
1 039.2	96230		$2p^65d$	^{2}D	5/2	– $2p^66f$	^{2}F°	7/2	0.5	82BUC/BUC
1 154.7	86 603.	*	$2p^65f$	^{2}F°	5/2	– $2p^66g$	^{2}G	7/2	0.1	97HEG/BÜS
1 154.7	86 603.	*	$2p^65f$	^{2}F°	7/2	– $2p^66g$	^{2}G	9/2	0.1	97HEG/BÜS
1 163.9	85 918.	*	$2p^65g$	^{2}G	9/2	– $2p^66h$	^{2}H°	11/2	0.1	97HEG/BÜS
1 163.9	85 918.	*	$2p^65g$	^{2}G	7/2	– $2p^66h$	^{2}H°	9/2	0.1	97HEG/BÜS
1 171.4	85370	*	$2p^66h$	^{2}H°	9/2	– $2p^68i$	^{2}I	11/2	0.3	82BUC/BUC
1 171.4	85370	*	$2p^66h$	^{2}H°	11/2	– $2p^68i$	^{2}I	13/2	0.3	82BUC/BUC
1 444.	69250		$2p^64p$	^{2}P°	1/2	– $2p^64d$	^{2}D	3/2	1.	79KNY/DRO
1 463.	68350		$2p^64p$	^{2}P°	3/2	– $2p^64d$	^{2}D	5/2	1.	72LIV/IRW
1 929.4	51 830.	*	$2p^66g$	^{2}G	7/2	– $2p^67h$	^{2}H°	9/2	0.2	97LAU/JAC
1 929.4	51 830.	*	$2p^66g$	^{2}G	9/2	– $2p^67h$	^{2}H°	11/2	0.2	97LAU/JAC

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 270.3	44 033.		$2p^69p$	^{2}P°	3/2	– $2p^612d$	^{2}D	5/2	0.3	00BAZ/BOD

TABLE 21. Spectral lines of Ar VIII—Continued

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
2 515.5	39 742.		$2p^68f$	$^2F^\circ$	7/2	– $2p^610g$	^2G	9/2	0.3	93JAC/BOD
2 631.5	37 990.	*	$2p^69g$	^2G	9/2	– $2p^612h$	$^2H^\circ$	11/2	0.3	00BAZ/BOD
2 631.5	37 990.	*	$2p^69g$	^2G	7/2	– $2p^612h$	$^2H^\circ$	9/2	0.3	00BAZ/BOD
2 675.6	37 364.		$2p^67d$	^2D	5/2	– $2p^68f$	$^2F^\circ$	7/2	0.3	93JAC/BOD
2 689.7	37 168.	*	$2p^69f$	$^2F^\circ$	7/2	– $2p^612d$	^2D	5/2	0.3	00BAZ/BOD
2 689.7	37 168.	*	$2p^68d$	^2D	5/2	– $2p^610p$	$^2P^\circ$	3/2	0.3	00BAZ/BOD
2 692.2	37 133.		$2p^68d$	^2D	3/2	– $2p^610p$	$^2P^\circ$	1/2	0.3	00BAZ/BOD
3 006.6	33 250.		$2p^67p$	$^2P^\circ$	1/2	– $2p^68s$	^2S	1/2	0.3	93JAC/BOD
3 028.1	33 014.		$2p^65p$	$^2P^\circ$	1/2	– $2p^65d$	^2D	3/2	0.4	97LAU/JAC
3 073.2	32 530.		$2p^65p$	$^2P^\circ$	3/2	– $2p^65d$	^2D	5/2	0.4	97LAU/JAC
3 154.1	31 696.		$2p^68s$	^2S	1/2	– $2p^69p$	$^2P^\circ$	3/2	0.4	97LAU/JAC
3 297.7	30 315.		$2p^610p$	$^2P^\circ$	1/2	– $2p^613s$	^2S	1/2	0.4	00BAZ/BOD
3 302.7	30 270.		$2p^610p$	$^2P^\circ$	3/2	– $2p^613s$	^2S	1/2	0.4	00BAZ/BOD
3 345.5	29 882.		$2p^69p$	$^2P^\circ$	1/2	– $2p^611s$	^2S	1/2	0.4	00BAZ/BOD
3 354.8	29 799.		$2p^69p$	$^2P^\circ$	3/2	– $2p^611s$	^2S	1/2	0.4	00BAZ/BOD
3 487.6	28 665.		$2p^69g$	^2G	9/2	– $2p^611f$	$^2F^\circ$	7/2	0.4	93JAC/BOD
4 297.6	23 262.		$2p^68f$	$^2F^\circ$	7/2	– $2p^69g$	^2G	9/2	0.4	93JAC/BOD
4 504.7	22 192.8		$2p^69s$	^2S	1/2	– $2p^610p$	$^2P^\circ$	3/2	0.4	93JAC/BOD
4 630.8	21 588.5		$2p^610f$	$^2F^\circ$	7/2	– $2p^612g$	^2G	9/2	0.4	00BAZ/BOD
4 648.0	21 508.6	*	$2p^610g$	^2G	7/2	– $2p^612h$	$^2H^\circ$	9/2	0.4	00BAZ/BOD
4 648.0	21 508.6	*	$2p^610g$	^2G	9/2	– $2p^612h$	$^2H^\circ$	11/2	0.4	00BAZ/BOD
5 326.90	18 767.4		$2p^68d$	^2D	5/2	– $2p^69p$	$^2P^\circ$	3/2	0.08	92GAU/DAN
5 342.0	18 714.4		$2p^68d$	^2D	3/2	– $2p^69p$	$^2P^\circ$	1/2	0.4	93JAC/BOD
6 029.8	16 580.		$2p^69f$	$^2F^\circ$	7/2	– $2p^610g$	^2G	9/2	0.8	00BAZ/BOD

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3.8. Ar IX

Ne isoelectronic sequence
Ground state: $1s^2 2s^2 2p^6\ ^1S_0$
Ionization energy: 3 408 480 ± 470 cm^{-1} (422.60 ± 0.06 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar IX are given in Tables 22–24.

Three energy levels of eight times ionized argon, Ar IX, were compiled by Moore [49MOO] based on the work of Phillips and Parker [41PHI/PAR]. Using a more complete set of line data compiled from more recent measurements, we are able to tabulate 97 levels by means of a fit to the available Ar IX lines. The preliminary levels for our fit were taken from Antsiferov *et al.* [00ANT/CHU] and Fawcett [84FAW] with additional levels calculated from these using the classified lines of Bliman *et al.* [02BLI/BRU]. The values of the leading percentages included in the energy level table were obtained from Fawcett [84FAW] and Antsiferov *et al.* [00ANT/CHU].

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar IX are compiled from 11 sources [78BER/DES, 78FAW/RID, 79KNY/DRO, 83BUC/BUC, 86ENG/BER, 88MAR/DOC, 92KNY/BLI, 93PRE/CAM, 00ANT/CHU, 02BLI/BRU, 03LEP/BEI]. All lines from 19 other sources [41PHI/PAR, 64FAW/GAB2, 88DRU/BOU, 88LES/FOL, 92MAR/DEN, 94NIL/SCO, 94ROC/SHL, 95SCH/KUN, 96HIL/RUH, 97FEL/BEH, 98ANT/DOR, 00HIL/JUS, 01KOS/ANT, 02RAA/MEW, 03BEI/SCO, 03SOB/SHE, 04BEI/MAG, 04CUR/LAN, 05TRA] were superseded by the above 11. The classification of a number of lines reported in earlier papers were revised by Fawcett [84FAW] and Kramida [85KRA]. The sources used in this compilation are summarized in Table 23 (Sources of Ar IX lines). Table 23 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce

TABLE 22. Energy levels of Ar IX

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
0	59.	0	$2s^22p^6$	^{1}S	0	100	
2 026 575.7	0.8	1	$2s^22p^53s$	^{3}P°	2	100	
2 033 149.7	0.8	1	$2s^22p^53s$	^{3}P°	1	71	29 $2s^22p^53s$ ^{1}P°
2 044 543.1	1.6	1	$2s^22p^53s$	^{3}P°	0	100	
2 051 784.6	1.1	1	$2s^22p^53s$	^{1}P°	1	71	29 $2s^22p^53s$ ^{3}P°
2 149 341.1	1.0	0	$2s^22p^53p$	^{3}S	1	95	3 $2s^22p^53p$ ^{3}P
2 169 967.2	1.2	0	$2s^22p^53p$	^{3}D	3	100	
2 170 921.7	1.2	0	$2s^22p^53p$	^{3}D	2	74	20 $2s^22p^53p$ ^{1}D
2 176 736.6	1.4	0	$2s^22p^53p$	^{3}D	1	60	24 $2s^22p^53p$ ^{1}P
2 182 215.2	0.9	0	$2s^22p^53p$	^{3}P	2	62	37 $2s^22p^53p$ ^{1}D
2 189 204.6	1.3	0	$2s^22p^53p$	^{1}P	1	46	39 $2s^22p^53p$ ^{3}D
2 192 277.8	1.3	0	$2s^22p^53p$	^{3}P	0	99	1 $2s^22p^53p$ ^{1}S
2 195 049.5	1.2	0	$2s^22p^53p$	^{1}D	2	43	32 $2s^22p^53p$ ^{3}P
2 196 102.7	1.1	0	$2s^22p^53p$	^{3}P	1	66	29 $2s^22p^53p$ ^{1}P
2 265 099.4	1.9	0	$2s^22p^53p$	^{1}S	0	98	1 $2s^22p^54p$ ^{1}S
2 349 422.	4.	1	$2s^22p^53d$	^{3}P°	0	100	
2 351 405.1	1.8	1	$2s^22p^53d$	^{3}P°	1	97	3 $2s^22p^53d$ ^{3}D°
2 355 542.7	1.4	1	$2s^22p^53d$	^{3}P°	2	90	6 $2s^22p^53d$ ^{3}D°
2 358 778.	2.	1	$2s^22p^53d$	^{3}F°	4	100	
2 361 731.2	1.9	1	$2s^22p^53d$	^{3}F°	3	75	22 $2s^22p^53d$ ^{1}F°
2 366 940.	2.	1	$2s^22p^53d$	^{3}F°	2	64	21 $2s^22p^53d$ ^{1}D°
2 370 659.	2.	1	$2s^22p^53d$	^{1}F°	3	47	48 $2s^22p^53d$ ^{3}D°
2 380 958.	2.	1	$2s^22p^53d$	^{3}D°	1	91	7 $2s^22p^53d$ ^{1}P°
2 382 377.6	2.0	1	$2s^22p^53d$	^{1}D°	2	39	36 $2s^22p^53d$ ^{3}F°
2 384 764.	2.	1	$2s^22p^53d$	^{3}D°	3	49	31 $2s^22p^53d$ ^{1}F°
2 385 174.0	1.8	1	$2s^22p^53d$	^{3}D°	2	54	36 $2s^22p^53d$ ^{1}D°
2 411 101.4	1.8	1	$2s^22p^53d$	^{1}P°	1	92	6 $2s^22p^53d$ ^{3}D°
2 623 126.	12.	0	$2s2p^63s$	^{3}S	1		
2 639 743	48.	0	$2s2p^63s$	^{3}S	0		
2 701 052.	16.	1	$2s^22p^54s$	^{3}P°	2	99	
2 704 217	22.	1	$2s^22p^54s$	^{1}P°	1	52	47 $2s^22p^54s$ ^{3}P°
2 721 001	23.	1	$2s^22p^54s$	^{3}P°	1	51	48 $2s^22p^54s$ ^{1}P°
2 755 279	42.	0	$2s^22p^54p$	^{3}S	1	83	
2 759 605	43.	0	$2s^22p^54p$	^{3}D	2	58	36 $2s^22p^54p$ ^{1}D
2 760 983	42.	0	$2s^22p^54p$	^{1}P	1	49	29 $2s^22p^54p$ ^{3}D
2 760 996	46.	0	$2s^22p^54p$	^{3}D	3	100	
2 763 492	44.	0	$2s^22p^54p$	^{3}P	2	70	27 $2s^22p^54p$ ^{1}D
2 778 866	39.	0	$2s^22p^54p$	^{1}D	2	36	39 $2s^22p^54p$ ^{3}D
2 786 947.	16.	1	$2s2p^63p$	^{3}P°	1		
2 788 582.	16.	1	$2s2p^63p$	^{3}P°	2		
2 790 788	49.	1	$2s2p^63p$	^{1}P°	1	96	
2 822 058	36.	1	$2s^22p^54d$	^{3}P°	0	100	
2 823 187	28.	1	$2s^22p^54d$	^{3}P°	1	91	
2 824 880	34.	1	$2s^22p^54d$	^{3}F°	4	100	
2 825 236.	18.	1	$2s^22p^54d$	^{3}P°	2	70	18 $2s^22p^54d$ ^{3}D°
2 826 331	24.	1	$2s^22p^54d$	^{3}F°	3	65	28 $2s^22p^54d$ ^{1}F°
2 828 509	24.	1	$2s^22p^54d$	^{1}D°	2	39	36 $2s^22p^54d$ ^{3}F°
2 829 659	42.	1	$2s^22p^54d$	^{3}D°	3	64	35 $2s^22p^54d$ ^{1}F°
2 836 234	79.	1	$2s^22p^54d$	^{3}D°	1	71	24 $2s^22p^54d$ ^{1}P°
2 844 127	22.	1	$2s^22p^54d$	^{3}F°	2	64	32 $2s^22p^54d$ ^{1}D°
2 845 006	52.	1	$2s^22p^54d$	^{3}D°	2	44	29 $2s^22p^54d$ ^{3}P°
2 845 553	34.	1	$2s^22p^54d$	^{1}F°	3	37	33 $2s^22p^54d$ ^{3}F°

TABLE 22. Energy levels of Ar IX—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
2 855 980	44.	1	$2s^22p^54d$	$^1P^\circ$	1	74	21 $2s^22p^54d$ $^3D^\circ$
2 847 068	20.	0	$2s^22p^54f$	^3D	1	99	
2 847 612.	20.	0	$2s^22p^54f$	^3D	2	74	23 $2s^22p^54f$ ^1D
2 849 642	20.	0	$2s^22p^54f$	^3D	3	59	24 $2s^22p^54f$ ^3F
2 849 831.	19.	0	$2s^22p^54f$	^3G	5	100	
2 849 869.	19.	0	$2s^22p^54f$	^1G	4	53	47 $2s^22p^54f$ ^3G
2 850 315.	18.	0	$2s^22p^54f$	^1D	2	49	42 $2s^22p^54f$ ^3F
2 851 627.	12.	0	$2s^22p^54f$	^1F	3	40	31 $2s^22p^54f$ ^3G
2 868 605.	19.	0	$2s^22p^54f$	^3G	3	69	18 $2s^22p^54f$ ^1F
2 868 674.	19.	0	$2s^22p^54f$	^3G	4	38	31 $2s^22p^54f$ ^3F
2 977 698	64.	1	$2s^22p^55s$	$^3P^\circ$	0		
2 979 288	36.	1	$2s^22p^55s$	$^3P^\circ$	2		
2 979 740	890	1	$2s^22p^55s$	$^1P^\circ$	1		
2 989 015	63.	1	$2s^22p^55s$	$^3P^\circ$	1		
2 992 998	85.	0	$2s2p^63d$	^3D	3		
3 011 211	24.	0	$2s^22p^55p$	^3D	1		
3 018 248	93.	0	$2s^22p^55p$	^3D	2		
3 040 220	98.	0	$2s^22p^55p$	^1S	0		
3 036 558	63.	1	$2s^22p^55d$	$^3P^\circ$	0	100	
3 037 291	63.	1	$2s^22p^55d$	$^3P^\circ$	1	87	12 $2s^22p^55d$ $^3D^\circ$
3 038 045	60.	1	$2s^22p^55d$	$^3F^\circ$	4	100	
3 038 349	43.	1	$2s^22p^55d$	$^3P^\circ$	2	61	25 $2s^22p^55d$ $^3D^\circ$
3 038 915	21.	1	$2s^22p^55d$	$^3F^\circ$	3	61	29 $2s^22p^55d$ $^1F^\circ$
3 039 905	60.	1	$2s^22p^55d$	$^1D^\circ$	2	44	28 $2s^22p^55d$ $^3D^\circ$
3 040 385	59.	1	$2s^22p^55d$	$^3D^\circ$	3	64	35 $2s^22p^55d$ $^1F^\circ$
3 044 540	59.	1	$2s^22p^55d$	$^3D^\circ$	1	54	41 $2s^22p^55d$ $^1P^\circ$
3 056 814	59.	1	$2s^22p^55d$	$^3D^\circ$	2	39	39 $2s^22p^55d$ $^3P^\circ$
3 061 255	58.	1	$2s^22p^55d$	$^1P^\circ$	1	58	34 $2s^22p^55d$ $^3D^\circ$
3 050 762	38.	0	$2s^22p^55f$	^3G	5	100	
3 050 783	38.	0	$2s^22p^55f$	^1G	4	53	47 $2s^22p^55f$ ^3G
3 051 763	72.	0	$2s^22p^55f$	^3D	2	70	28 $2s^22p^55f$ ^3F
3 051 839	76.	0	$2s^22p^55f$	^3F	4	72	15 $2s^22p^55f$ ^1G
3 051 918	41.	0	$2s^22p^55f$	^1F	3	40	32 $2s^22p^55f$ ^3F
3 052 511	47.	0	$2s^22p^55f$	^1D	2	64	28 $2s^22p^55f$ ^3F
3 069 133	47.	0	$2s^22p^55f$	^3G	4	40	32 $2s^22p^55f$ ^1G
3 069 158	38.	0	$2s^22p^55f$	^3G	3	72	16 $2s^22p^55f$ ^1F
3 069 360	110	0	$2s^22p^55f$	^3D	3	54	26 $2s^22p^55f$ ^3F
3 156 570	210	1	$2s^22p^56d$	$^3D^\circ$	1		
3 173 390	210	1	$2s^22p^56d$	$^1P^\circ$	1		
3 159 996	51.	0	$2s^22p^56f$	^3G	5	100	
3 160 032	51.	0	$2s^22p^56f$	^1G	4	53	48 $2s^22p^56f$ ^3G
3 160 360	170	0	$2s^22p^56f$	^1F	3		
3 160 523	50.	0	$2s^22p^56f$	^3F	4	73	15 $2s^22p^56f$ ^1G
3 178 421	50.	0	$2s^22p^56f$	^3D	3	73	15 $2s^22p^56f$ ^1G
3 179 419	51.	0	$2s^22p^56f$	^3G	3	74	16 $2s^22p^56f$ ^1F

the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows: [03LEP/BEI, 78FAW/RID] over [00ANT/CHU] over [03BEI/SCO, 02BLI/BRU, 41PHI/PAR] over [02RAA/MEW, 04BEI/MAG] over [97FEL/BEH, 64FAW/GAB2] over [04CUR/LAN, 86ENG/BER] over [01KOS/ANT, 00HIL/JUS, 98ANT/DOR, 94NIL/SCO, 92KNY/BLI], over

TABLE 23. Sources of Ar IX lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
78BER/DES	10	beam-foil. 2.2-m GI vacuum monochromator	175–680	0.2, 0.5
78FAW/RID	81	theta pinch. 2-m GI VS	31–213	0.002–0.010
79KNY/DRO	2	beam-foil. 0.5-m NI vacuum monochromator	501, 571	0.3
83BUC/BUC	3	beam-foil. 1-m NI vacuum spectrometer	489–542	0.2, 0.3
86ENG/BER	16	beam-foil. 1-m NI vacuum monochromator	465–861	0.04
88MAR/DOC	1	collisions between Ar^{9+} ions and Cs vapor. 0.6-m Czerny-Turner spectrometer	3682	1.5
92KNY/BLI	3	beam-foil. 2.2-m GI vacuum monochromator	158–209	0.1
93PRE/CAM	1	theta pinch. 1-m NI vacuum monochromator	589	0.2
00ANT/CHU	43	fast capillary discharge. 6.65-m NI VS	431–815	0.005, 0.010
02BLI/BRU	14	collisions between Ar^{9+} ions and He. GI VS	33–158	.01
03LEP/BEI	4	EBIT. 0.237-m GI spectrometer	41–49	0.002, 0.003

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

[93PRE/CAM, 88LES/FOL, 83BUC/BUC, 78BER/DES] over [96HIL/RUH, 79KNY/DRO], over [05TRA, 03SOB/SHE, 88DRU/BOU] over [95SCH/KUN, 94ROC/SHL], over [88MAR/DOC] over [92MAR/DEN].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar IX levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar IX when they do not fit the known levels. Additional lines between Rydberg levels are reported by Martin *et al.* [88MAR/DOC, 92MAR/DEN].

One line, at 48.908 Å, is only observable in the presence of a magnetic field. This transition, which is strictly forbidden in the absence of the field, proceeds because the field allows mixing of the sublevels of a level with the sublevels of a neighboring level as long as the sublevels have the same magnetic quantum number and parity even if the total angular momentum of the two levels differ. Beiersdorfer *et al.* [03BEI/SCO] pointed out the value of this line as a diagnostic of magnetic field strength for high-temperature plasmas.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar IX line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
*	Multiply classified line (two or more classifications of this line share the same intensity)
?	Listed as tentative by source
M2	Magnetic quadrupole line
MF	Line appears only in presence of magnetic field

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration. Eleven line classifications, of which six were one of multiple classifications of the same line, were not used in the final fit.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the Ne isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac-Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in December 2007.

TABLE 24. Spectral lines of Ar IX

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
31.512	3 173 390		$2s^22p^6$	^1S	0	–	$2s^22p^56d$	$^1P^\circ$	1	0.002	78FAW/RID

TABLE 24. Spectral lines of Ar IX—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
31.680	3 156 570		$2s^22p^6$	^1S	0	–	$2s^22p^56d$	$^3D^\circ$	1	0.002	78FAW/RID
32.667	3 061 190		$2s^22p^6$	^1S	0	–	$2s^22p^55d$	$^1P^\circ$	1	0.002	78FAW/RID
32.847	3 044 420		$2s^22p^6$	^1S	0	–	$2s^22p^55d$	$^3D^\circ$	1	0.002	78FAW/RID
33.56	2 979 700		$2s^22p^6$	^1S	0	–	$2s^22p^55s$	$^1P^\circ$	1	0.01	02BLI/BRU
35.024	2 855 190		$2s^22p^6$	^1S	0	–	$2s^22p^54d$	$^1P^\circ$	1	0.002	78FAW/RID
35.260	2 836 070		$2s^22p^6$	^1S	0	–	$2s^22p^54d$	$^3D^\circ$	1	0.002	78FAW/RID
35.422	2 823 100		$2s^22p^6$	^1S	0	–	$2s^22p^54d$	$^3P^\circ$	1	0.002	78FAW/RID
35.834	2 790 650		$2s^22p^6$	^1S	0	–	$2s2p^63p$	$^1P^\circ$	1	0.002	78FAW/RID
36.754	2 720 790		$2s^22p^6$	^1S	0	–	$2s^22p^54s$	$^3P^\circ$	1	0.002	78FAW/RID
36.983	2 703 950		$2s^22p^6$	^1S	0	–	$2s^22p^54s$	$^1P^\circ$	1	0.002	78FAW/RID
41.485	2 410 510	15	$2s^22p^6$	^1S	0	–	$2s^22p^53d$	$^1P^\circ$	1	0.002	03LEP/BEI
42.001	2 380 900		$2s^22p^6$	^1S	0	–	$2s^22p^53d$	$^3D^\circ$	1	0.002	78FAW/RID
42.529	2 351 340		$2s^22p^6$	^1S	0	–	$2s^22p^53d$	$^3P^\circ$	1	0.002	78FAW/RID
48.737	2 051 830	20	$2s^22p^6$	^1S	0	–	$2s^22p^53s$	$^1P^\circ$	1	0.002	03LEP/BEI
48.908	2 044 660	MF	$2s^22p^6$	^1S	0	–	$2s^22p^53s$	$^3P^\circ$	0	0.003	03LEP/BEI
49.185	2 033 140		$2s^22p^6$	^1S	0	–	$2s^22p^53s$	$^3P^\circ$	1	0.002	78FAW/RID
49.338	2 026 840	M2	$2s^22p^6$	^1S	0	–	$2s^22p^53s$	$^3P^\circ$	2	0.002	03LEP/BEI
101.17	988 440		$2s^22p^53s$	$^1P^\circ$	1	–	$2s^22p^55p$	^1S	0	0.01	02BLI/BRU
103.47	966 460		$2s^22p^53s$	$^1P^\circ$	1	–	$2s^22p^55p$	^3D	2	0.01	02BLI/BRU
104.23	959 420		$2s^22p^53s$	$^1P^\circ$	1	–	$2s^22p^55p$	^3D	1	0.01	02BLI/BRU
112.485	889 010	3	$2s^22p^53p$	^3S	1	–	$2s^22p^55d$	$^3P^\circ$	2	0.008	78FAW/RID
112.619	887 950	3	$2s^22p^53p$	^3S	1	–	$2s^22p^55d$	$^3P^\circ$	1	0.008	78FAW/RID
112.712	887 220	1 b	$2s^22p^53p$	^3S	1	–	$2s^22p^55d$	$^3P^\circ$	0	0.008	78FAW/RID
115.077	868 980	4 b *	$2s^22p^53p$	^3D	3	–	$2s^22p^55d$	$^3F^\circ$	3	0.008	78FAW/RID
115.077	868 980	4 b *	$2s^22p^53p$	^3D	2	–	$2s^22p^55d$	$^1D^\circ$	2	0.008	78FAW/RID
115.077	868 980	4 b *	$2s^22p^53p$	^3P	0	–	$2s^22p^55d$	$^1P^\circ$	1	0.008	78FAW/RID
115.197	868 080	6 b *	$2s^22p^53p$	^3D	3	–	$2s^22p^55d$	$^3F^\circ$	4	0.008	78FAW/RID
115.197	868 080	6 b *	$2s^22p^53p$	^3D	2	–	$2s^22p^55d$	$^3F^\circ$	3	0.008	78FAW/RID
115.964	862 340	3	$2s^22p^53p$	^3P	2	–	$2s^22p^55d$	$^3D^\circ$	1	0.008	78FAW/RID
116.183	860 710	2	$2s^22p^53p$	^3P	1	–	$2s^22p^55d$	$^3D^\circ$	2	0.008	78FAW/RID
116.527	858 170	3	$2s^22p^53p$	^3P	2	–	$2s^22p^55d$	$^3D^\circ$	3	0.008	78FAW/RID
116.804	856 140	2	$2s^22p^53p$	^3P	2	–	$2s^22p^55d$	$^3P^\circ$	2	0.008	78FAW/RID
123.556	809 350	3	$2s^22p^53p$	^3D	3	–	$2s^22p^55s$	$^3P^\circ$	2	0.008	78FAW/RID
124.810	801 220	3	$2s^22p^53d$	$^3F^\circ$	4	–	$2s^22p^56f$	^3G	5	0.008	78FAW/RID
124.85	800 960		$2s^22p^53p$	^3D	1	–	$2s^22p^55s$	$^3P^\circ$	0	0.01	02BLI/BRU
125.266	798 300	3	$2s^22p^53d$	$^3F^\circ$	3	–	$2s^22p^56f$	^1G	4	0.008	78FAW/RID
125.464	797 040	2 *	$2s^22p^53p$	^3P	2	–	$2s^22p^55s$	$^3P^\circ$	2	0.008	78FAW/RID
125.464	797 040	2 *	$2s^22p^53d$	$^1D^\circ$	2	–	$2s^22p^56f$	^3G	3	0.008	78FAW/RID
125.95	793 970		$2s^22p^53p$	^1D	2	–	$2s^22p^55s$	$^3P^\circ$	1	0.01	02BLI/BRU
125.999	793 660	5 b *	$2s^22p^53d$	$^3D^\circ$	3	–	$2s^22p^56f$	^3D	3	0.008	78FAW/RID
125.999	793 660	5 b *	$2s^22p^53d$	$^3F^\circ$	2	–	$2s^22p^56f$	^1F	3	0.008	78FAW/RID
126.604	789 860	2	$2s^22p^53d$	$^1F^\circ$	3	–	$2s^22p^56f$	^3F	4	0.008	78FAW/RID
128.574	777 760	2	$2s^22p^53d$	$^1D^\circ$	2	–	$2s^22p^56f$	^1F	3	0.008	78FAW/RID
135.707	736 880	4	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^54p$	^3P	2	0.008	78FAW/RID
136.164	734 410	7	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^54p$	^3D	3	0.008	78FAW/RID
136.91	730 410		$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^54p$	^3P	2	0.01	02BLI/BRU
137.230	728 700	2	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^54p$	^3S	1	0.008	78FAW/RID
137.394	727 830	5 b	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^54p$	^1P	1	0.008	78FAW/RID
137.537	727 080	6	$2s^22p^53s$	$^1P^\circ$	1	–	$2s^22p^54p$	^1D	2	0.008	78FAW/RID
137.656	726 450	6	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^54p$	^3D	2	0.008	78FAW/RID
142.767	700 440	3	$2s^22p^53d$	$^3P^\circ$	1	–	$2s^22p^55f$	^3D	2	0.008	78FAW/RID
143.600	696 380	4	$2s^22p^53d$	$^3P^\circ$	2	–	$2s^22p^55f$	^1F	3	0.008	78FAW/RID
144.26	693 190	*	$2s^22p^53d$	$^3F^\circ$	4	–	$2s^22p^55f$	^3F	4	0.01	02BLI/BRU
144.26	693 190	*	$2s^22p^53d$	$^3F^\circ$	4	–	$2s^22p^55f$	^1F	3	0.01	02BLI/BRU
144.512	691 980	5	$2s^22p^53d$	$^3F^\circ$	4	–	$2s^22p^55f$	^3G	5	0.008	78FAW/RID

TABLE 24. Spectral lines of Ar IX—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
145.127	689 050	4	$2s^22p^53d$	$^3F^\circ$	3	–	$2s^22p^55f$	^1G	4	0.008	78FAW/RID
145.607	686 780	3	$2s^22p^53d$	$^1D^\circ$	2	–	$2s^22p^55f$	^3G	3	0.008	78FAW/RID
146.046	684 720	3	$2s^22p^53d$	$^3F^\circ$	2	–	$2s^22p^55f$	^3D	2	0.008	78FAW/RID
146.098	684 470	3	$2s^22p^53d$	$^3D^\circ$	3	–	$2s^22p^55f$	^3D	3	0.008	78FAW/RID
146.12	684 370	b *	$2s^22p^53d$	$^3D^\circ$	3	–	$2s^22p^55f$	^3G	4	0.01	78FAW/RID
146.12	684 370	b *	$2s^22p^53d$	$^3D^\circ$	2	–	$2s^22p^55f$	^3D	3	0.01	78FAW/RID
146.821	681 100	3 *	$2s^22p^53d$	$^1F^\circ$	3	–	$2s^22p^55f$	^3F	4	0.008	78FAW/RID
146.821	681 100	3 *	$2s^22p^53d$	$^1F^\circ$	3	–	$2s^22p^55f$	^1F	3	0.008	78FAW/RID
147.949	675 910	5	$2s^22p^53p$	^3S	1	–	$2s^22p^54d$	$^3P^\circ$	2	0.008	78FAW/RID
148.390	673 900	5	$2s^22p^53p$	^3S	1	–	$2s^22p^54d$	$^3P^\circ$	1	0.008	78FAW/RID
148.651	672 720	2	$2s^22p^53p$	^3S	1	–	$2s^22p^54d$	$^3P^\circ$	0	0.008	78FAW/RID
148.903	671 580	1	$2s^22p^53d$	$^3D^\circ$	1	–	$2s^22p^55f$	^1D	2	0.008	78FAW/RID
150.67	663 700	*	$2s^22p^53p$	^3P	0	–	$2s^22p^54d$	$^1P^\circ$	1	0.01	02BLI/BRU
150.67	663 700	*	$2s^22p^53p$	^3P	2	–	$2s^22p^54d$	$^3D^\circ$	2	0.01	02BLI/BRU
151.60	659 630	3 b	$2s^22p^53p$	^3D	3	–	$2s^22p^54d$	$^3D^\circ$	3	0.01	78FAW/RID
152.072	657 580	3	$2s^22p^53p$	^3D	2	–	$2s^22p^54d$	$^1D^\circ$	2	0.008	78FAW/RID
152.354	656 370	3	$2s^22p^53p$	^3D	3	–	$2s^22p^54d$	$^3F^\circ$	3	0.008	78FAW/RID
152.577	655 410	8 b	$2s^22p^53p$	^3D	2	–	$2s^22p^54d$	$^3F^\circ$	3	0.008	78FAW/RID
152.692	654 910	9 *	$2s^22p^53p$	^1P	1	–	$2s^22p^54d$	$^3F^\circ$	2	0.008	78FAW/RID
152.692	654 910	9 *	$2s^22p^53p$	^3D	3	–	$2s^22p^54d$	$^3F^\circ$	4	0.008	78FAW/RID
153.427	651 780	6	$2s^22p^53p$	^3D	1	–	$2s^22p^54d$	$^1D^\circ$	2	0.008	78FAW/RID
153.727	650 500	7	$2s^22p^53p$	^1D	2	–	$2s^22p^54d$	$^1F^\circ$	3	0.008	78FAW/RID
154.114	648 870	6	$2s^22p^53p$	^3P	1	–	$2s^22p^54d$	$^3D^\circ$	2	0.008	78FAW/RID
154.445	647 480	8 b	$2s^22p^53p$	^3P	2	–	$2s^22p^54d$	$^3D^\circ$	3	0.008	78FAW/RID
155.27	644 040	*	$2s^22p^53p$	^3P	0	–	$2s^22p^54d$	$^3D^\circ$	1	0.01	02BLI/BRU
155.27	644 040	*	$2s^22p^53p$	^3P	2	–	$2s^22p^54d$	$^3P^\circ$	2	0.01	02BLI/BRU
158.0	632 900		$2s^22p^53d$	$^3F^\circ$	4	–	$2s2p^63d$	^3D	3	0.1	92KNY/BLI
158.43	631 190		$2s^22p^53d$	$^3F^\circ$	3	–	$2s2p^63d$	^1D	2	0.01	02BLI/BRU
175.5	569 800	*	$2s^22p^53s$	$^1P^\circ$	1	–	$2s2p^63s$	^3S	1	0.2	78BER/DES
175.5	569 800	*	$2s^22p^53p$	^1S	0	–	$2s^22p^54d$	$^3D^\circ$	1	0.2	78BER/DES
187.520	533 280	4	$2s^22p^53p$	^3D	2	–	$2s^22p^54s$	$^1P^\circ$	1	0.008	78FAW/RID
188.296	531 080	8	$2s^22p^53p$	^3D	3	–	$2s^22p^54s$	$^3P^\circ$	2	0.008	78FAW/RID
188.631	530 140	4	$2s^22p^53p$	^3D	2	–	$2s^22p^54s$	$^3P^\circ$	2	0.008	78FAW/RID
190.130	525 960	4	$2s^22p^53p$	^1D	2	–	$2s^22p^54s$	$^3P^\circ$	1	0.008	78FAW/RID
191.562	522 020	2	$2s^22p^53p$	^3P	2	–	$2s^22p^54s$	$^1P^\circ$	1	0.008	78FAW/RID
200.946	497 646.	4	$2s^22p^53d$	$^3P^\circ$	0	–	$2s^22p^54f$	^3D	1	0.008	78FAW/RID
201.529	496 207.	5	$2s^22p^53d$	$^3P^\circ$	1	–	$2s^22p^54f$	^3D	2	0.008	78FAW/RID
202.387	494 103.	8	$2s^22p^53d$	$^3P^\circ$	2	–	$2s^22p^54f$	^3D	3	0.008	78FAW/RID
203.644	491 053.	9	$2s^22p^53d$	$^3F^\circ$	4	–	$2s^22p^54f$	^3G	5	0.008	78FAW/RID
204.127	489 891.	1	$2s^22p^53d$	$^3F^\circ$	3	–	$2s^22p^54f$	^1F	3	0.008	78FAW/RID
204.860	488 138.	8	$2s^22p^53d$	$^3F^\circ$	3	–	$2s^22p^54f$	^1G	4	0.008	78FAW/RID
205.665	486 228.	5	$2s^22p^53d$	$^1D^\circ$	2	–	$2s^22p^54f$	^3G	3	0.008	78FAW/RID
206.319	484 686.	6	$2s^22p^53d$	$^3F^\circ$	2	–	$2s^22p^54f$	^1F	3	0.008	78FAW/RID
206.650	483 910.	6 b	$2s^22p^53d$	$^3D^\circ$	3	–	$2s^22p^54f$	^3G	4	0.008	78FAW/RID
209.0	478 470	*	$2s^22p^53d$	$^1F^\circ$	3	–	$2s^22p^54f$	^1G	4	0.1	92KNY/BLI
209.0	478 470	*	$2s^22p^53d$	$^1F^\circ$	3	–	$2s^22p^54f$	^3D	3	0.1	92KNY/BLI
213.061	469 349.	3 *	$2s^22p^53d$	$^1D^\circ$	2	–	$2s^22p^54f$	^1F	3	0.008	78FAW/RID
213.061	469 349.	3 *	$2s^22p^53d$	$^3D^\circ$	1	–	$2s^22p^54f$	^1D	2	0.008	78FAW/RID
248.21	402 900		$2s^22p^53d$	$^3F^\circ$	4	–	$2s^22p^54p$	^3D	3	0.20	78BER/DES
256.87	389 300		$2s^22p^53d$	$^1F^\circ$	3	–	$2s^22p^54p$	^3D	2	0.20	78BER/DES
431.123	231 952.	130 b	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^53p$	^1S	0	0.010	00ANT/CHU
436.5	229 100		$2s^22p^54d$	$^3P^\circ$	1	–	$2s^22p^55f$	^1D	2	0.2	78BER/DES
450.660	221 897.	40	$2s^22p^53p$	^1P	1	–	$2s^22p^53d$	$^1P^\circ$	1	0.010	00ANT/CHU
463.3	215 840	*	$2s^22p^54p$	^3P	2	–	$2s^22p^55s$	$^3P^\circ$	2	0.2	78BER/DES
463.3	215 840	*	$2s^22p^54d$	$^3D^\circ$	1	–	$2s^22p^55f$	^3D	2	0.2	78BER/DES

TABLE 24. Spectral lines of Ar IX—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
465.118	214 999.	100	$2s^22p^53p$	^3P	1	–	$2s^22p^53d$	$^1P^\circ$	1	0.005	00ANT/CHU
465.51	214 818.	150 b	$2s^22p^53p$	^3D	3	–	$2s^22p^53d$	$^3D^\circ$	3	0.04	86ENG/BER
468.793	213 314.	120	$2s^22p^53s$	$^1P^\circ$	1	–	$2s^22p^53p$	^1S	0	0.005	00ANT/CHU
470.7	212 450		$2s^22p^53p$	^3D	3	–	$2s^22p^53d$	$^1D^\circ$	2	0.2	78BER/DES
484.963	206 201.	130	$2s^22p^53p$	^3S	1	–	$2s^22p^53d$	$^3P^\circ$	2	0.005	00ANT/CHU
489.2	204 420	*	$2s2p^63p$	$^3P^\circ$	2	–	$2s2p^63d$	^3D	3	0.2	83BUC/BUC
489.2	204 420	*	$2s^22p^53p$	^3D	1	–	$2s^22p^53d$	$^3D^\circ$	1	0.2	83BUC/BUC
493.74	202 536.	430	$2s^22p^53p$	^3P	2	–	$2s^22p^53d$	$^3D^\circ$	3	0.04	86ENG/BER
494.79	202 106.	70	$2s2p^63s$	^3S	1	–	$2s^22p^54d$	$^3P^\circ$	2	0.04	86ENG/BER
494.900	202 061.	60	$2s^22p^53p$	^3S	1	–	$2s^22p^53d$	$^3P^\circ$	1	0.005	00ANT/CHU
498.283	200 689.	35	$2s^22p^53p$	^3D	3	–	$2s^22p^53d$	$^1F^\circ$	3	0.010	00ANT/CHU
499.0	200 400		$2s^22p^54p$	^1D	2	–	$2s^22p^55s$	$^3P^\circ$	2	0.2	78BER/DES
499.799	200 080.	25	$2s^22p^53p$	^3S	1	–	$2s^22p^53d$	$^3P^\circ$	0	0.010	00ANT/CHU
500.9	199 640		$2s^22p^53p$	^3D	2	–	$2s^22p^53d$	$^1F^\circ$	3	0.3	79KNY/DRO
507.696	196 968.	20	$2s^22p^53p$	^3D	3	–	$2s^22p^53d$	$^3F^\circ$	2	0.010	00ANT/CHU
510.148	196 021.5	50	$2s^22p^53p$	^3D	2	–	$2s^22p^53d$	$^3F^\circ$	2	0.005	00ANT/CHU
517.672	193 172.5	85	$2s^22p^53p$	^1P	1	–	$2s^22p^53d$	$^1D^\circ$	2	0.005	00ANT/CHU
521.478	191 763.	30	$2s^22p^53p$	^3D	3	–	$2s^22p^53d$	$^3F^\circ$	3	0.010	00ANT/CHU
524.079	190 810.9	150	$2s^22p^53p$	^3D	2	–	$2s^22p^53d$	$^3F^\circ$	3	0.005	00ANT/CHU
525.760	190 200.9	90	$2s^22p^53p$	^3D	1	–	$2s^22p^53d$	$^3F^\circ$	2	0.005	00ANT/CHU
525.970	190 125.	20	$2s^22p^53p$	^1D	2	–	$2s^22p^53d$	$^3D^\circ$	2	0.010	00ANT/CHU
527.108	189 714.4	180	$2s^22p^53p$	^1D	2	–	$2s^22p^53d$	$^3D^\circ$	3	0.005	00ANT/CHU
528.901	189 071.3	100	$2s^22p^53p$	^3P	1	–	$2s^22p^53d$	$^3D^\circ$	2	0.005	00ANT/CHU
529.629	188 811.4	250	$2s^22p^53p$	^3D	3	–	$2s^22p^53d$	$^3F^\circ$	4	0.005	00ANT/CHU
529.998	188 680.0	50	$2s^22p^53p$	^3P	0	–	$2s^22p^53d$	$^3D^\circ$	1	0.005	00ANT/CHU
530.656	188 446.0	150	$2s^22p^53p$	^3P	2	–	$2s^22p^53d$	$^1F^\circ$	3	0.005	00ANT/CHU
533.820	187 329.	25	$2s^22p^53p$	^1D	2	–	$2s^22p^53d$	$^1D^\circ$	2	0.010	00ANT/CHU
533.97	187 276.	190	$2s^22p^54f$	^1F	3	–	$2s^22p^55d$	$^3F^\circ$	3	0.04	86ENG/BER
536.45	186 411.	110	$2s^22p^53p$	^3P	1	–	$2s^22p^53d$	$^1D^\circ$	2	0.04	86ENG/BER
541.6	184 640	vw	$2s^22p^53p$	^3D	2	–	$2s^22p^53d$	$^3P^\circ$	2	0.3	83BUC/BUC
557.060	179 514.	10 ?	$2s^22p^53p$	^3P	2	–	$2s^22p^53d$	$^3F^\circ$	3	0.010	00ANT/CHU
559.272	178 804.	30	$2s^22p^53p$	^3D	1	–	$2s^22p^53d$	$^3P^\circ$	2	0.010	00ANT/CHU
569.462	175 604.	40	$2s^22p^53p$	^1D	2	–	$2s^22p^53d$	$^1F^\circ$	3	0.010	00ANT/CHU
571.0	175 130		$2s^22p^54d$	$^3D^\circ$	1	–	$2s^22p^55p$	^3D	1	0.3	79KNY/DRO
576.940	173 328.2	75	$2s^22p^53p$	^3P	2	–	$2s^22p^53d$	$^3P^\circ$	2	0.005	00ANT/CHU
589.41	169 660	0.11	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^53p$	^3P	1	0.20	93PRE/CAM
591.050	169 190.	30	$2s^22p^53p$	^3P	2	–	$2s^22p^53d$	$^3P^\circ$	1	0.010	00ANT/CHU
593.575	168 471.	20	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^53p$	^1D	2	0.010	00ANT/CHU
598.52	167 079.	130	$2s^22p^54d$	$^3F^\circ$	2	–	$2s^22p^55p$	^3D	1	0.04	86ENG/BER
604.39	165 456.	250	$2s2p^63s$	^3S	1	–	$2s2p^63p$	$^3P^\circ$	2	0.04	86ENG/BER
610.42	163 822.	100	$2s2p^63s$	^3S	1	–	$2s2p^63p$	$^3P^\circ$	1	0.04	86ENG/BER
613.669	162 954.3	110 ?	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^53p$	^3P	1	0.005	00ANT/CHU
615.05	162 588.	50	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^53p$	^1P	1	0.04	86ENG/BER
617.62	161 912.	80	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^53p$	^1D	2	0.04	86ENG/BER
623.08	160 493.	130	$2s^22p^53p$	^1D	2	–	$2s^22p^53d$	$^3P^\circ$	2	0.04	86ENG/BER
628.421	159 129.0	50 *	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^53p$	^3P	0	0.005	00ANT/CHU
628.421	159 129.0	50 *	$2s^22p^53p$	^3P	0	–	$2s^22p^53d$	$^3P^\circ$	1	0.005	00ANT/CHU
642.510	155 639.6	150	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^53p$	^3P	2	0.005	00ANT/CHU
659.808	151 559.	320 b	$2s^22p^53s$	$^3P^\circ$	0	–	$2s^22p^53p$	^3P	1	0.010	00ANT/CHU
662.00	151 057.	220	$2s2p^63s$	^3S	0	–	$2s2p^63p$	$^1P^\circ$	1	0.04	86ENG/BER
666.01	150 148.	70	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^53p$	^3D	1	0.04	86ENG/BER
670.847	149 065.3	65	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^53p$	^3P	2	0.005	00ANT/CHU
679.60	147 150		$2s2p^63s$	^3S	0	–	$2s2p^63p$	$^3P^\circ$	1	0.50	78BER/DES
684.925	146 001.	400 b	$2s^22p^53p$	^1S	0	–	$2s^22p^53d$	$^1P^\circ$	1	0.010	00ANT/CHU
691.273	144 660.6	60	$2s^22p^53s$	$^3P^\circ$	0	–	$2s^22p^53p$	^1P	1	0.005	00ANT/CHU

TABLE 24. Spectral lines of Ar IX—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
692.770	144 348.1	75	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^53p$	^3D	2	0.005	00ANT/CHU
692.919	144 317.0	60	$2s^22p^53s$	$^1P^\circ$	1	–	$2s^22p^53p$	^3P	1	0.005	00ANT/CHU
696.447	143 585.9	100	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^53p$	^3D	1	0.005	00ANT/CHU
697.394	143 391.0	325	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^53p$	^3D	3	0.005	00ANT/CHU
698.007	143 265.0	225	$2s^22p^53s$	$^1P^\circ$	1	–	$2s^22p^53p$	^1D	2	0.005	00ANT/CHU
725.841	137 771.2	125	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^53p$	^3D	2	0.005	00ANT/CHU
727.692	137 420.8	200 b	$2s^22p^53s$	$^1P^\circ$	1	–	$2s^22p^53p$	^1P	1	0.010	00ANT/CHU
756.37	132 210.	40	$2s^22p^53s$	$^3P^\circ$	0	–	$2s^22p^53p$	^3D	1	0.04	86ENG/BER
766.58	130 450.	90	$2s^22p^53s$	$^1P^\circ$	1	–	$2s^22p^53p$	^3P	2	0.04	86ENG/BER
814.563	122 765.2	90	$2s^22p^53s$	$^3P^\circ$	2	–	$2s^22p^53p$	^3S	1	0.005	00ANT/CHU
860.69	116 186.	100	$2s^22p^53s$	$^3P^\circ$	1	–	$2s^22p^53p$	^3S	1	0.04	86ENG/BER

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
3 682.0	27 151.		$2s^22p^54d$	$^3P^\circ$	1	–	$2s^22p^54f$	^1D	2	1.5	88MAR/DOC

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3.9. Ar X

F isoelectronic sequence
Ground state: $1s^2 2s^2 2p^5\ ^2P^\circ_{3/2}$
Ionization energy: 3 870 200 ± 5000 cm^{-1} (479.84 ± 0.62 eV) [99BIE/FREÉ]

Energy levels, sources, and spectral lines for Ar X are given in Tables 25–27.

We are able to tabulate 70 levels of Ar X by means of a fit to the available Ar X lines. The preliminary levels for our fit were taken from Bengtsson *et al.* [94BEN/ENG] with additional levels calculated from these using the classified lines of Fawcett *et al.* [78FAW/RID] and Lepson *et al.* [03LEP/BEI]. The ground state splitting was from the measurement of the magnetic dipole line by Draganić *et al.* [03DRA/CRE] and the value for the $2s2p^6\ ^2S_{1/2}$ was from Edlén [80EDL]. The level defined by the 28.101 Å line of Lepson *et al.* [03LEP/BEI] was listed as a 5*d* level. Our calculations indicate it is more likely a 6*d* level and it is so designated here. The values of the leading percentages included in the energy level table were obtained from Bengtsson *et al.* [94BEN/ENG].

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar X are compiled from seven sources [71FAW/GAB, 78FAW/RID, 80EDL, 92KNY/BLI, 94BEN/ENG, 03DRA/CRE, 03LEP/BEI]. All lines from 11 other sources [64FAW/GAB2, 65FAW, 66DEU/HOU, 71CON/PEA, 72BEH/COH, 76BEH/COH, 02BRI/KAA, 03SOB/SHE, 04BEI/MAG, 06BEI/BIT, 06KOB/TAK] were superseded by the above seven. The sources used in this compilation are summarized in Table 26 (Sources of Ar X lines). Table 26 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

The priority in our choice of lines which appear in more than one reference, is, in general, specified as follows:

[03DRA/CRE] over [03LEP/BEI] over [80EDL], over [71FAW/GAB] over [78FAW/RID] over [04BEI/MAG] over [76BEH/COH] over [66DEU/HOU] over [65FAW] over [64FAW/GAB2] over [94BEN/ENG] over [06BEI/BIT] over [06KOB/TAK] over [02BRI/KAA] over [71CON/PEA] over [92KNY/BLI] over [03SOB/SHE] over [72BEH/COH].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar X levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar X when they do not fit the known levels.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar X line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
*	Multiply classified line (two or more classifications of this line share the same intensity)
t	Listed as tentative by source

Code	Definition
M1	Magnetic dipole line
fit	Value obtained using available data and isoelectronic fit

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration. Eight line classifications, of which seven were blends, were not used in the final fit.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the F isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in February 2008.

TABLE 25. Energy levels of Ar X

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
0.000	0.000	1	$2s^22p^5$	$^2P^\circ$	3/2	100	
18 067.494	0.006	1	$2s^22p^5$	$^2P^\circ$	1/2	100	
604 090.	13.	0	$2s2p^6$	^2S	1/2	100	
2 249 385.	7.	0	$2s^22p^4(^3P)3s$	^4P	5/2	99	
2 259 295.	7.	0	$2s^22p^4(^3P)3s$	^4P	3/2	89	10 $2s^22p^4(^3P)3s\ ^2P$
2 266 154.	8.	0	$2s^22p^4(^3P)3s$	^4P	1/2	98	
2 276 603	26	0	$2s^22p^4(^3P)3s$	^2P	3/2	87	11 $2s^22p^4(^3P)3s\ ^4P$
2 287 860	160	0	$2s^22p^4(^3P)3s$	^2P	1/2	98	
2 328 821.	9.	0	$2s^22p^4(^1D)3s$	^2D	5/2	98	
2 329 118.	9.	0	$2s^22p^4(^1D)3s$	^2D	3/2	97	2 $2s^22p^4(^3P)3s\ ^2P$
2 405 420	420	0	$2s^22p^4(^1S)3s$	^2S	1/2	97	
2 380 288.	8.	1	$2s^22p^4(^3P)3p$	$^4P^\circ$	5/2	92	7 $2s^22p^4(^3P)3p\ ^4D^\circ$
2 382 375.	11.	1	$2s^22p^4(^3P)3p$	$^4P^\circ$	3/2	87	4 $2s^22p^4(^3P)3p\ ^4D^\circ$
2 387 973.	10.	1	$2s^22p^4(^3P)3p$	$^4P^\circ$	1/2	92	3 $2s^22p^4(^3P)3p\ ^2P^\circ$
2 396 931.	8.	1	$2s^22p^4(^3P)3p$	$^4D^\circ$	7/2	98	2 $2s^22p^4(^1D)3p\ ^2F^\circ$
2 401 015.	10.	1	$2s^22p^4(^3P)3p$	$^4D^\circ$	5/2	61	33 $2s^22p^4(^3P)3p\ ^2D^\circ$
2 407 703.	9.	1	$2s^22p^4(^3P)3p$	$^4D^\circ$	3/2	88	7 $2s^22p^4(^3P)3p\ ^2D^\circ$
2 410 292.	11.	1	$2s^22p^4(^3P)3p$	$^4D^\circ$	1/2	91	4 $2s^22p^4(^3P)3p\ ^2P^\circ$
2 414 787	23	1	$2s^22p^4(^3P)3p$	$^2D^\circ$	5/2	64	31 $2s^22p^4(^3P)3p\ ^4D^\circ$
2 426 634.	8.	1	$2s^22p^4(^3P)3p$	$^4S^\circ$	3/2	53	34 $2s^22p^4(^3P)3p\ ^2D^\circ$
2 464 516.	10.	1	$2s^22p^4(^1D)3p$	$^2F^\circ$	5/2	96	2 $2s^22p^4(^3P)3p\ ^2D^\circ$
2 467 608.	10.	1	$2s^22p^4(^1D)3p$	$^2F^\circ$	7/2	98	2 $2s^22p^4(^3P)3p\ ^4D^\circ$
2 482 577.	11.	1	$2s^22p^4(^1D)3p$	$^2D^\circ$	3/2	97	2 $2s^22p^4(^1D)3p\ ^2P^\circ$
2 484 591.	9.	1	$2s^22p^4(^1D)3p$	$^2D^\circ$	5/2	97	
2 513 698.	16.	1	$2s^22p^4(^1D)3p$	$^2P^\circ$	3/2	60	38 $2s^22p^4(^3P)3p\ ^2P^\circ$
2 564 981.	11.	0	$2s^22p^4(^3P)3d$	^4D	7/2	93	6 $2s^22p^4(^3P)3d\ ^4F$
2 566 036	23	0	$2s^22p^4(^3P)3d$	^4D	5/2	91	4 $2s^22p^4(^3P)3d\ ^4F$
2 568 167.	15.	0	$2s^22p^4(^3P)3d$	^4D	3/2	90	5 $2s^22p^4(^3P)3d\ ^4P$
2 570 558.	17.	0	$2s^22p^4(^3P)3d$	^4D	1/2	93	3 $2s^22p^4(^3P)3d\ ^4P$
2 580 825.	16.	0	$2s^22p^4(^3P)3d$	^4F	9/2	98	2 $2s^22p^4(^1D)3d\ ^2G$
2 585 892.	17.	0	$2s^22p^4(^3P)3d$	^4F	7/2	66	29 $2s^22p^4(^3P)3d\ ^2F$
2 592 278.	17.	0	$2s^22p^4(^3P)3d$	^4F	5/2	83	9 $2s^22p^4(^3P)3d\ ^2F$
2 596 415.	18.	0	$2s^22p^4(^3P)3d$	^4F	3/2	54	39 $2s^22p^4(^3P)3d\ ^4P$
2 596 853	26	0	$2s^22p^4(^3P)3d$	^2F	7/2	66	27 $2s^22p^4(^3P)3d\ ^4F$
2 603 400	1200	0	$2s^22p^4(^3P)3d$	^2D	3/2	58	16 $2s^22p^4(^3P)3d\ ^2P$
2 615 600	150	0	$2s^22p^4(^3P)3d$	^2D	5/2	67	18 $2s^22p^4(^3P)3d\ ^2F$
2 646 855.	17.	0	$2s^22p^4(^1D)3d$	^2G	7/2	97	2 $2s^22p^4(^3P)3d\ ^2F$
2 647 119.	16.	0	$2s^22p^4(^1D)3d$	^2G	9/2	98	2 $2s^22p^4(^3P)3d\ ^4F$

TABLE 25. Energy levels of Ar X—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J	Leading Percentages	
2 663 010	910	0	$2s^22p^4(^1D)3d$	^2S	1/2	95	3 $2s^22p^4(^1D)3d\ ^2P$
2 664 916.	12.	0	$2s^22p^4(^1D)3d$	^2F	5/2	80	19 $2s^22p^4(^1D)3d\ ^2D$
2 666 657.	16.	0	$2s^22p^4(^1D)3d$	^2F	7/2	98	
2 671 580	140	0	$2s^22p^4(^1D)3d$	^2D	5/2	67	18 $2s^22p^4(^1D)3d\ ^2F$
2 677 780	140	0	$2s^22p^4(^1D)3d$	^2D	3/2	80	19 $2s^22p^4(^3P)3d\ ^2D$
2 735 750	230	0	$2s^22p^4(^1S)3d$	^2D	5/2	95	3 $2s^22p^4(^1D)3d\ ^2D$
2 738 560	670	0	$2s^22p^4(^1S)3d$	^2D	3/2	94	2 $2s^22p^4(^3P)3d\ ^2D$
2 825 029	99	1	$2s2p^5(^3P)3s$	$^2P^\circ$	3/2	98	2 $2s2p^5(^3P)3s\ ^4P^\circ$
2 834 240	500	1	$2s2p^5(^3P)3s$	$^2P^\circ$	1/2	98	
3 031 448	33	0	$2s^22p^4(^3P)4s$	^4P	5/2		
3 048 079	39	0	$2s^22p^4(^3P)4s$	^4P	3/2		
3 104 088	34	0	$2s^22p^4(^1D)4s$	^2D	5/2		
3 147 418	48	0	$2s^22p^4(^3P)4d$	^4D	5/2		
3 152 509	46	0	$2s^22p^4(^3P)4d$	^4F	9/2		
3 168 126	38	0	$2s^22p^4(^3P)4d$	^4F	7/2		
3 171 153	48	0	$2s^22p^4(^3P)4d$	^4F	3/2		
3 223 186	47	0	$2s^22p^4(^1D)4d$	^2G	9/2		
3 223 409	47	0	$2s^22p^4(^1D)4d$	^2G	7/2		
3 233 538	46	0	$2s^22p^4(^1D)4d$	^2F	5/2		
3 234 638	75	0	$2s^22p^4(^1D)4d$	^2F	7/2		
3 175 564	32	1	$2s^22p^4(^3P)4f$	$^4F^\circ$	9/2		
3 176 127	78	1	$2s^22p^4(^3P)4f$	$^4F^\circ$	7/2		
3 181 310	33	1	$2s^22p^4(^3P)4f$	$^4G^\circ$	11/2		
3 181 748	33	1	$2s^22p^4(^3P)4f$	$^4G^\circ$	9/2		
3 249 888	33	1	$2s^22p^4(^1D)4f$	$^2H^\circ$	11/2		
3 249 919	34	1	$2s^22p^4(^1D)4f$	$^2H^\circ$	9/2		
3 253 204	30	1	$2s^22p^4(^1D)4f$	$^2G^\circ$	7/2		
3 253 247	32	1	$2s^22p^4(^1D)4f$	$^2G^\circ$	9/2		
3 327 120	670	1	$2s^22p^4(^1S)4f$	$^2F^\circ$	5/2		
3 435 200	1100	0	$2s^22p^4(^3P)5d$	^2D	5/2		
3 558 600	1000	0	$2s^22p^4(^3P)6d$	^4F	5/2		
3 579 400	1200	0	$2s^22p^4(^3P)6d$	^2D	5/2		

TABLE 26. Sources of Ar X lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
71FAW/GAB	6	theta pinch. 2-m GI VS	33–45	0.01
78FAW/RID	22	theta pinch. 2-m GI VS	130–170	0.008, 0.02
80EDL	2	isoelectronic fits to available data	166, 171	0.005
92KNY/BLI	4	beam-foil. 2.2-m GI vacuum monochromator	139–498	0.2
94BEN/ENG	33	beam-foil. 1-m NI vacuum monochromator	537–777	0.04
03DRA/CRE	1	EBIT. Czerny-Turner NI grating spectrograph	5533	0.002
03LEP/BEI	24	EBIT. 0.237-m GI vacuum spectrometer	28–45	0.001–0.018

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

TABLE 27. Spectral lines of Ar X

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
27.938	3 579 400	2	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)6d$	^2D	5/2	0.009	03LEP/BEI
28.101	3 558 600	1	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)6d$	^4F	5/2	0.008	03LEP/BEI
29.110	3 435 200	3	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)5d$	^2D	5/2	0.009	03LEP/BEI
30.959	3 230 100	7 b	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^1D)4d$	^2F	5/2	0.001	03LEP/BEI
31.491	3 175 500	5 b	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)4d$	^4F	3/2	0.006	03LEP/BEI
31.641	3 160 500	4 b	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^3P)4d$	^4F	3/2	0.006	03LEP/BEI
32.74	3 054 400	1	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)4s$	^4P	3/2	0.01	71FAW/GAB
36.553	2 735 800	5	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^1S)3d$	^2D	5/2	0.003	03LEP/BEI
36.758	2 720 500	2	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^1S)3d$	^2D	3/2	0.009	03LEP/BEI
37.431	2 671 580	16 b	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^1D)3d$	^2D	5/2	0.002	03LEP/BEI
37.598	2 659 720	8 b	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^1D)3d$	^2D	3/2	0.002	03LEP/BEI
37.808	2 644 900	1	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^1D)3d$	^2S	1/2	0.013	03LEP/BEI
38.227	2 615 950	5	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)3d$	^2D	5/2	0.002	03LEP/BEI
38.411	2 603 400	9	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)3d$	^2D	3/2	0.018	03LEP/BEI
38.498	2 597 500	8 b *	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)3d$	^4F	5/2	0.012	03LEP/BEI
38.498	2 597 500	8 b *	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^3P)3d$	^2D	3/2	0.012	03LEP/BEI
41.57	2 405 600	4	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^1S)3s$	^2S	1/2	0.01	71FAW/GAB
41.89	2 387 200	2	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^1S)3s$	^2S	1/2	0.01	71FAW/GAB
42.94	2 328 800	5	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^1D)3s$	^2D	5/2	0.01	71FAW/GAB
43.272	2 310 960	11	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^1D)3s$	^2D	3/2	0.003	03LEP/BEI
43.705	2 288 068	5	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)3s$	^2P	1/2	0.004	03LEP/BEI
43.928	2 276 450	14	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)3s$	^2P	3/2	0.002	03LEP/BEI
44.059	2 269 680	5	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^3P)3s$	^2P	1/2	0.003	03LEP/BEI
44.257	2 259 530	11 b *	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)3s$	^4P	3/2	0.002	03LEP/BEI
44.257	2 259 530	11 b *	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^3P)3s$	^2P	3/2	0.002	03LEP/BEI
44.449	2 249 770	20 b *	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^4(^3P)3s$	^4P	5/2	0.002	03LEP/BEI
44.449	2 249 770	20 b *	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^3P)3s$	^4P	1/2	0.002	03LEP/BEI
44.63	2 240 600	8	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s^22p^4(^3P)3s$	^4P	3/2	0.01	71FAW/GAB
44.84	2 230 200	6	$2s2p^6$	^2S	1/2 –	$2s2p^5(^3P^*)3s$	$^2P^\circ$	1/2	0.01	71FAW/GAB
45.026	2 220 940	5	$2s2p^6$	^2S	1/2 –	$2s2p^5(^3P^*)3s$	$^2P^\circ$	3/2	0.002	03LEP/BEI
130.356	767 130	b *	$2s^22p^4(^3P)3p$	$^4D^\circ$	5/2 –	$2s^22p^4(^3P)4d$	^4F	7/2	0.008	78FAW/RID
130.356	767 130	b *	$2s^22p^4(^3P)3p$	$^4P^\circ$	5/2 –	$2s^22p^4(^3P)4d$	^4D	5/2	0.008	78FAW/RID
130.356	767 130	b *	$2s^22p^4(^1D)3p$	$^2F^\circ$	7/2 –	$2s^22p^4(^1D)4d$	^2F	7/2	0.008	78FAW/RID
131.430	760 860	1	$2s^22p^4(^3P)3p$	$^4D^\circ$	1/2 –	$2s^22p^4(^3P)4d$	^4F	3/2	0.008	78FAW/RID
131.771	758 890	4 b	$2s^22p^4(^1D)3p$	$^2F^\circ$	5/2 –	$2s^22p^4(^1D)4d$	^2G	7/2	0.008	78FAW/RID
132.349	755 580	5 b *	$2s^22p^4(^1D)3p$	$^2F^\circ$	7/2 –	$2s^22p^4(^1D)4d$	^2G	9/2	0.008	78FAW/RID
132.349	755 580	5 b *	$2s^22p^4(^3P)3p$	$^4D^\circ$	7/2 –	$2s^22p^4(^3P)4d$	^4F	9/2	0.008	78FAW/RID
132.746	753 320	4 b	$2s^22p^4(^3P)3p$	$^2D^\circ$	5/2 –	$2s^22p^4(^3P)4d$	^4F	7/2	0.008	78FAW/RID
133.163	750 960	2 b	$2s^22p^4(^1D)3p$	$^2D^\circ$	3/2 –	$2s^22p^4(^1D)4d$	^2F	5/2	0.008	78FAW/RID
133.341	749 960	3 b	$2s^22p^4(^1D)3p$	$^2D^\circ$	5/2 –	$2s^22p^4(^1D)4d$	^2F	7/2	0.008	78FAW/RID
138.8	720 500	t *	$2s^22p^4(^3P)3p$	$^4S^\circ$	3/2 –	$2s^22p^4(^3P)4d$	^4D	5/2	0.2	92KNY/BLI
138.8	720 500	t *	$2s^22p^4(^1D)3p$	$^2P^\circ$	3/2 –	$2s^22p^4(^1D)4d$	^2F	5/2	0.2	92KNY/BLI
157.114	636 480	2	$2s^22p^4(^1D)3p$	$^2F^\circ$	7/2 –	$2s^22p^4(^1D)4s$	^2D	5/2	0.008	78FAW/RID
157.600	634 520	2	$2s^22p^4(^3P)3p$	$^4D^\circ$	7/2 –	$2s^22p^4(^3P)4s$	^4P	5/2	0.008	78FAW/RID
157.905	633 290	2	$2s^22p^4(^3P)3p$	$^2D^\circ$	5/2 –	$2s^22p^4(^3P)4s$	^4P	3/2	0.008	78FAW/RID
162.3	616 100	t	$2s^22p^4(^3P)3p$	$^2D^\circ$	5/2 –	$2s^22p^4(^3P)4s$	^4P	5/2	0.2	92KNY/BLI
163.778	610 580	1	$2s^22p^4(^3P)3d$	^4D	7/2 –	$2s^22p^4(^3P)4f$	$^4F^\circ$	9/2	0.008	78FAW/RID
163.91	610 090	b	$2s^22p^4(^3P)3d$	^4D	5/2 –	$2s^22p^4(^3P)4f$	$^4F^\circ$	7/2	0.02	78FAW/RID
165.539	604 087.	fit	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s2p^6$	^2S	1/2	0.005	80EDL
165.820	603 060	6	$2s^22p^4(^1D)3d$	^2G	7/2 –	$2s^22p^4(^1D)4f$	$^2H^\circ$	9/2	0.008	78FAW/RID
165.901	602 770	1	$2s^22p^4(^1D)3d$	^2G	9/2 –	$2s^22p^4(^1D)4f$	$^2H^\circ$	11/2	0.008	78FAW/RID
166.532	600 490	5	$2s^22p^4(^3P)3d$	^4F	9/2 –	$2s^22p^4(^3P)4f$	$^4G^\circ$	11/2	0.008	78FAW/RID
167.826	595 860	4	$2s^22p^4(^3P)3d$	^4F	7/2 –	$2s^22p^4(^3P)4f$	$^4G^\circ$	9/2	0.008	78FAW/RID
169.906	588 560	1	$2s^22p^4(^1S)3d$	^2D	3/2 –	$2s^22p^4(^1S)4f$	$^2F^\circ$	5/2	0.008	78FAW/RID
169.985	588 290	1	$2s^22p^4(^1D)3d$	^2F	5/2 –	$2s^22p^4(^1D)4f$	$^2G^\circ$	7/2	0.008	78FAW/RID

TABLE 27. Spectral lines of Ar X—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
170.477	586 590	1	$2s^22p^4(^1D)3d$	^2F	7/2 –	$2s^22p^4(^1D)4f$	$^2G^\circ$	9/2	0.008	78FAW/RID
170.641	586 026.	fit	$2s^22p^5$	$^2P^\circ$	1/2 –	$2s2p^6$	^2S	1/2	0.005	80EDL
498.3	200 680	t	$2s^22p^4(^3P)3p$	$^2D^\circ$	5/2 –	$2s^22p^4(^3P)3d$	^2D	5/2	0.2	92KNY/BLI
537.28	186 123.	50	$2s^22p^4(^3P)3p$	$^4D^\circ$	1/2 –	$2s^22p^4(^3P)3d$	^4F	3/2	0.04	94BEN/ENG
538.29	185 773.	100 *	$2s^22p^4(^3P)3p$	$^4P^\circ$	5/2 –	$2s^22p^4(^3P)3d$	^4D	5/2	0.04	94BEN/ENG
538.29	185 773.	100 *	$2s^22p^4(^3P)3p$	$^4P^\circ$	3/2 –	$2s^22p^4(^3P)3d$	^4D	3/2	0.04	94BEN/ENG
540.90	184 877.	250 *	$2s^22p^4(^1D)3s$	^2D	5/2 –	$2s^22p^4(^1D)3p$	$^2P^\circ$	3/2	0.04	94BEN/ENG
540.90	184 877.	250 *	$2s^22p^4(^3P)3p$	$^4D^\circ$	5/2 –	$2s^22p^4(^3P)3d$	^4F	7/2	0.04	94BEN/ENG
541.45	184 689.	210	$2s^22p^4(^3P)3p$	$^4P^\circ$	5/2 –	$2s^22p^4(^3P)3d$	^4D	7/2	0.04	94BEN/ENG
541.79	184 573.	90	$2s^22p^4(^3P)3p$	$^4D^\circ$	3/2 –	$2s^22p^4(^3P)3d$	^4F	5/2	0.04	94BEN/ENG
543.79	183 895.	320	$2s^22p^4(^3P)3p$	$^4D^\circ$	7/2 –	$2s^22p^4(^3P)3d$	^4F	9/2	0.04	94BEN/ENG
544.57	183 631.	40	$2s^22p^4(^3P)3p$	$^4P^\circ$	3/2 –	$2s^22p^4(^3P)3d$	^4D	5/2	0.04	94BEN/ENG
547.69	182 585.	50	$2s^22p^4(^3P)3p$	$^4P^\circ$	1/2 –	$2s^22p^4(^3P)3d$	^4D	1/2	0.04	94BEN/ENG
548.43	182 339.	150 *	$2s^22p^4(^1D)3p$	$^2F^\circ$	5/2 –	$2s^22p^4(^1D)3d$	^2G	7/2	0.04	94BEN/ENG
548.43	182 339.	150 *	$2s^22p^4(^1D)3p$	$^2D^\circ$	3/2 –	$2s^22p^4(^1D)3d$	^2F	5/2	0.04	94BEN/ENG
549.25	182 066.	290 b *	$2s^22p^4(^1D)3p$	$^2D^\circ$	5/2 –	$2s^22p^4(^1D)3d$	^2F	7/2	0.04	94BEN/ENG
549.25	182 066.	290 b *	$2s^22p^4(^3P)3p$	$^2D^\circ$	5/2 –	$2s^22p^4(^3P)3d$	^2F	7/2	0.04	94BEN/ENG
554.55	180 326.	60	$2s^22p^4(^1D)3p$	$^2D^\circ$	5/2 –	$2s^22p^4(^1D)3d$	^2F	5/2	0.04	94BEN/ENG
557.07	179 511.	220 b	$2s^22p^4(^1D)3p$	$^2F^\circ$	7/2 –	$2s^22p^4(^1D)3d$	^2G	9/2	0.04	94BEN/ENG
564.17	177 252.	60	$2s^22p^4(^3P)3s$	^4P	5/2 –	$2s^22p^4(^3P)3p$	$^4S^\circ$	3/2	0.04	94BEN/ENG
595.05	168 053.	80	$2s^22p^4(^3P)3p$	$^4D^\circ$	7/2 –	$2s^22p^4(^3P)3d$	^4D	7/2	0.04	94BEN/ENG
597.58	167 342.	70	$2s^22p^4(^3P)3s$	^4P	3/2 –	$2s^22p^4(^3P)3p$	$^4S^\circ$	3/2	0.04	94BEN/ENG
623.15	160 475.	60 *	$2s^22p^4(^3P)3s$	^4P	1/2 –	$2s^22p^4(^3P)3p$	$^4S^\circ$	3/2	0.04	94BEN/ENG
623.15	160 475.	60 *	$2s^22p^4(^3P)3p$	$^4D^\circ$	3/2 –	$2s^22p^4(^3P)3d$	^4D	3/2	0.04	94BEN/ENG
641.98	155 768.	170	$2s^22p^4(^1D)3s$	^2D	5/2 –	$2s^22p^4(^1D)3p$	$^2D^\circ$	5/2	0.04	94BEN/ENG
651.64	153 459.	110	$2s^22p^4(^1D)3s$	^2D	3/2 –	$2s^22p^4(^1D)3p$	$^2D^\circ$	3/2	0.04	94BEN/ENG
677.75	147 547.	610	$2s^22p^4(^3P)3s$	^4P	5/2 –	$2s^22p^4(^3P)3p$	$^4D^\circ$	7/2	0.04	94BEN/ENG
693.78	144 138.	50	$2s^22p^4(^3P)3s$	^4P	1/2 –	$2s^22p^4(^3P)3p$	$^4D^\circ$	1/2	0.04	94BEN/ENG
705.61	141 721.	410	$2s^22p^4(^3P)3s$	^4P	3/2 –	$2s^22p^4(^3P)3p$	$^4D^\circ$	5/2	0.04	94BEN/ENG
706.45	141 553.	80	$2s^22p^4(^3P)3s$	^4P	1/2 –	$2s^22p^4(^3P)3p$	$^4D^\circ$	3/2	0.04	94BEN/ENG
720.52	138 789.	340	$2s^22p^4(^1D)3s$	^2D	5/2 –	$2s^22p^4(^1D)3p$	$^2F^\circ$	7/2	0.04	94BEN/ENG
723.72	138 175.	240	$2s^22p^4(^3P)3s$	^2P	3/2 –	$2s^22p^4(^3P)3p$	$^2D^\circ$	5/2	0.04	94BEN/ENG
738.56	135 399.	210	$2s^22p^4(^1D)3s$	^2D	3/2 –	$2s^22p^4(^1D)3p$	$^2F^\circ$	5/2	0.04	94BEN/ENG
751.98	132 982.	50	$2s^22p^4(^3P)3s$	^4P	5/2 –	$2s^22p^4(^3P)3p$	$^4P^\circ$	3/2	0.04	94BEN/ENG
763.91	130 905.	100	$2s^22p^4(^3P)3s$	^4P	5/2 –	$2s^22p^4(^3P)3p$	$^4P^\circ$	5/2	0.04	94BEN/ENG
777.13	128 679.	40	$2s^22p^4(^3P)3s$	$^4P^\circ$	3/2 –	$2s^22p^4(^3P)3p$	$^4P^\circ$	1/2	0.04	94BEN/ENG

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
5533.265	18 067.494	M1	$2s^22p^5$	$^2P^\circ$	3/2 –	$2s^22p^5$	$^2P^\circ$	1/2	0.002	03DRA/CRE

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3.10. Ar XI

O isoelectronic sequence
Ground state: $1s^2 2s^2 2p^4\ ^3P_2$
Ionization energy: $4\,358\,900 \pm 5200$ cm^{-1} (540.4 ± 0.6 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar XI are given in Tables 28–30.

We are able to tabulate 46 levels of Ar XI by means of a fit to the available Ar XI lines. The preliminary levels for our fit were taken from the NIST Atomic Spectra Database [08RAL/KRA] with additional levels calculated from these using some of the classified lines of Connerade *et al.* [71CON/PEA], Fawcett *et al.* [71FAW/GAB], Kink [99KIN], Biémont *et al.* [00BIE/QUI], Magunov *et al.* [02MAG/FAE], Lepson *et al.* [03LEP/BEI], and Curdt *et al.* [04CUR/LAN] with the guidance of the SUPERSTRUCTURE code calculations of Landi and Bhatia [06LAN/BHA].

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar XI are compiled from 14 sources [66DEU/HOU, 71CON/PEA, 71FAW/GAB, 74BUC/BUC, 77SAN/BRU, 82HAS/FUK, 87STE/DIE, 98BRO/DAV, 99KIN, 00BIE/QUI, 00FEL/CUR, 03DRA/CRE, 03LEP/BEI, 04BEI/MAG]. All lines from 15 other sources [64FAW/GAB2, 72JAL/COO, 77FEL/DOS, 83BLE/BUR, 85MEN/GRE, 90DOS/BHA, 93ROC/COR, 97BIE/MAR, 97FEL/BEH, 02MAG/FAE, 04CUR/LAN, 06KAT/MOR, 07FEL/DOS, 07KAT/MOR, 08SHE/BOZ] were superseded by the above 14. The sources used in this compilation are summarized in Table 29 (Sources of Ar XI lines). Table 29 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

The priority in our choice of lines which appear in more than one reference, is in general specified, as follows:

For X-ray lines: [00BIE/QUI] over [02MAG/FAE].

For the rest of the lines:

[03LEP/BEI] over [98BRO/DAV], over [77SAN/BRU] over [71FAW/GAB] over [03DRA/CRE] over [00FEL/CUR] over [07FEL/DOS] over [07KAT/MOR, 77FEL/DOS, 90DOS/BHA, 08SHE/BOZ, 04BEI/MAG, 97FEL/BEH, 87STE/DIE, 66DEU/HOU] over [72JAL/COO, 64FAW/GAB2] over [04CUR/LAN] over [99KIN, 71CON/PEA] over [85MEN/GRE] over [97BIE/MAR] over [82HAS/FUK] over [83BLE/BUR] over [93ROC/COR] over [06KAT/MOR] over [74BUC/BUC].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar XI levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar XI when they do not fit the known levels. Additional Rydberg lines are reported by Denis *et al.* [71DEN/DÉS] and Buchet *et al.* [74BUC/BUC].

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar XI line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
*	Multiply classified line (two or more classifications of this line share the same intensity)
M1	Magnetic dipole line

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the O isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in April 2008.

TABLE 28. Energy levels of Ar XI

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0.00	0.00	0	$2s^22p^4$	^3P	2
14 453.40	0.03	0	$2s^22p^4$	^3P	1
18 322	70	0	$2s^22p^4$	^3P	0
71 833.4	0.5	0	$2s^22p^4$	^1D	2
148 537.1	1.8	0	$2s^22p^4$	^1S	0
529 604.	9.	1	$2s2p^5$	$^3P^\circ$	2
541 973	37	1	$2s2p^5$	$^3P^\circ$	1
548 984	57	1	$2s2p^5$	$^3P^\circ$	0
730 398	33	1	$2s2p^5$	$^1P^\circ$	1
1 235 576	61	0	$2p^6$	^1S	0
2 483 300	120	1	$2s^22p^3(^4S^\circ)3s$	$^5S^\circ$	2
2 587 340	370	1	$2s^22p^3(^2D^\circ)3s$	$^3D^\circ$	1
2 589 610	130	1	$2s^22p^3(^2D^\circ)3s$	$^3D^\circ$	3
2 604 370	710	1	$2s^22p^3(^2D^\circ)3s$	$^1D^\circ$	2
2 644 510	660	1	$2s^22p^3(^2P^\circ)3s$	$^3P^\circ$	2
2 649 800	460	1	$2s^22p^3(^2P^\circ)3s$	$^1P^\circ$	1
2 619 080	120	0	$2s^22p^3(^4S^\circ)3p$	^5P	1
2 620 200	120	0	$2s^22p^3(^4S^\circ)3p$	^5P	2
2 622 600	120	0	$2s^22p^3(^4S^\circ)3p$	^5P	3
2 728 790	560	0	$2s^22p^3(^2D^\circ)3p$	^3F	2
2 769 650	120	0	$2s^22p^3(^2D^\circ)3p$	^3P	2
2 826 300	150	1	$2s^22p^3(^4S^\circ)3d$	$^3D^\circ$	3
2 826 250	160	1	$2s^22p^3(^4S^\circ)3d$	$^3D^\circ$	2
2 900 300	560	1	$2s^22p^3(^2D^\circ)3d$	$^3G^\circ$	3
2 911 870	560	1	$2s^22p^3(^2D^\circ)3d$	$^3D^\circ$	2
2 913 070	320	1	$2s^22p^3(^2D^\circ)3d$	$^3D^\circ$	3
2 922 000	1100	1	$2s^22p^3(^2D^\circ)3d$	$^3P^\circ$	2
2 932 610	690	1	$2s^22p^3(^2D^\circ)3d$	$^3P^\circ$	1
2 933 510	370	1	$2s^22p^3(^2D^\circ)3d$	$^3S^\circ$	1
2 945 040	650	1	$2s^22p^3(^2P^\circ)3d$	$^3F^\circ$	3
2 958 500	1000	1	$2s^22p^3(^2P^\circ)3d$	$^3P^\circ$	2
2 968 000	1400	1	$2s^22p^3(^2P^\circ)3d$	$^3P^\circ$	1
2 969 540	870	1	$2s^22p^3(^2P^\circ)3d$	$^3D^\circ$	2
2 987 530	520	1	$2s^22p^3(^2P^\circ)3d$	$^3D^\circ$	1
3 106 170	790	1	$2s2p^4(^3P)3p$	$^3D^\circ$	3
3 505 210	290	1	$2s^22p^3(^4S^\circ)4d$	$^3D^\circ$	3
3 598 550	700	1	$2s^22p^3(^2D^\circ)4d$	$^3S^\circ$	1

TABLE 28. Energy levels of Ar XI—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
3 598 550	700	1	$2s^22p^3(^2D^\circ)4d$	$^3P^\circ$	2
3 598 550	700	1	$2s^22p^3(^2D^\circ)4d$	$^3D^\circ$	3
3 812 140	770	1	$2s^22p^3(^4S^\circ)5d$	$^3D^\circ$	3
24 109 700	3600	1	$1s2s^22p^5$	$^3P^\circ$	2
24 131 900	3100	1	$1s2s^22p^5$	$^3P^\circ$	1
24 138 200	2300	1	$1s2s^22p^5$	$^3P^\circ$	0
24 207 700	2200	1	$1s2s^22p^5$	$^1P^\circ$	1
24 623 300	4500	0	$1s2s2p^6$	^3S	1
24 761 300	3500	0	$1s2s2p^6$	^1S	0

TABLE 29. Sources of Ar XI lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
66DEU/HOU	6	theta pinch. 2-m GI VS	152–194	0.02
71CON/PEA	2	plasma focus discharge. 2-m GI VS	38–39	0.04
71FAW/GAB	19	theta pinch. 2-m GI VS	34–172	0.01
74BUC/BUC	1	beam-foil. 1-m NI vacuum spectrometer	707	2.
77SAN/BRU	1	sun. Skylab ATM spectrograph	1392	0.01
82HAS/FUK	1	plasma focus discharge. GI VS	137	0.1
87STE/DIE	1	gas-puff Z-pinch. 2-m GI VS	198	0.02
98BRO/DAV	1	sun. solar EUV rocket telescope and spectrograph	189	0.003
99KIN	1	beam-foil. 1-m NI vacuum monochromator	583	0.04
00BIE/QUI	12	plasma focus discharge. spherically bent crystal spectrograph	4.14–4.16	0.0004–0.0015
00FEL/CUR	4	solar flares. SUMER spectrometer on SOHO satellite	718–746	0.01–0.02
03DRA/CRE	1	EBIT. Czerny-Turner 0.55-m NI grating spectrograph	6917	0.012
03LEP/BEI	19	EBIT. 0.237-m GI vacuum spectrometer	26–45	0.0016–0.0058
04BEI/MAG	1	EBIT. 44.3-m GI vacuum spectrometer	35	0.02

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

TABLE 30. Spectral lines of Ar XI

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
4.1434	24 135 000	*	$2s^22p^4$	^1D	2 –	$1s2s^22p^5$	$^1P^\circ$	1	0.0004	00BIE/QUI
4.1434	24 135 000	*	$2s^22p^4$	^3P	2 –	$1s2s^22p^5$	$^3P^\circ$	1	0.0004	00BIE/QUI
4.1453	24 124 000		$2s^22p^4$	^3P	1 –	$1s2s^22p^5$	$^3P^\circ$	0	0.0004	00BIE/QUI
4.1477	24 110 000	*	$2s^22p^4$	^3P	1 –	$1s2s^22p^5$	$^3P^\circ$	1	0.0008	00BIE/QUI
4.1477	24 110 000	*	$2s^22p^4$	^3P	0 –	$1s2s^22p^5$	$^3P^\circ$	1	0.0008	00BIE/QUI
4.1477	24 110 000	*	$2s^22p^4$	^3P	2 –	$1s2s^22p^5$	$^3P^\circ$	2	0.0008	00BIE/QUI
4.1502	24 095 000	*	$2s^22p^4$	^3P	1 –	$1s2s^22p^5$	$^3P^\circ$	2	0.0010	00BIE/QUI
4.1502	24 095 000	*	$2s2p^5$	$^3P^\circ$	2 –	$1s2s2p^6$	^3S	1	0.0010	00BIE/QUI
4.1535	24 076 000	*	$2s2p^5$	$^3P^\circ$	1 –	$1s2s2p^6$	^3S	1	0.0015	00BIE/QUI
4.1535	24 076 000	*	$2s2p^5$	$^3P^\circ$	0 –	$1s2s2p^6$	^3S	1	0.0015	00BIE/QUI
4.1560	24 062 000		$2s^22p^4$	^1S	0 –	$1s2s^22p^5$	$^1P^\circ$	1	0.0006	00BIE/QUI
4.1613	24 031 000		$2s2p^5$	$^1P^\circ$	1 –	$1s2s2p^6$	^1S	0	0.0006	00BIE/QUI
26.232	3 812 100		$2s^22p^4$	^3P	2 –	$2s^22p^3(^4S^\circ)5d$	$^3D^\circ$	3	0.0053	03LEP/BEI
27.789	3 598 500	b *	$2s^22p^4$	^3P	2 –	$2s^22p^3(^2D^\circ)4d$	$^3S^\circ$	1	0.0054	03LEP/BEI

TABLE 30. Spectral lines of Ar XI—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
27.789	3 598 500	b *	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2D^\circ)4d$	$^3P^\circ$	2	0.0054	03LEP/BEI
27.789	3 598 500	b *	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2D^\circ)4d$	$^3D^\circ$	3	0.0054	03LEP/BEI
28.529	3 505 200		$2s^22p^4$	^3P	2	–	$2s^22p^3(^4S^\circ)4d$	$^3D^\circ$	3	0.0024	03LEP/BEI
32.194	3 106 200	b	$2s^22p^4$	^3P	2	–	$2s2p^4(^3P)3p$	$^3D^\circ$	3	0.0082	03LEP/BEI
33.679	2 969 200	*	$2s^22p^4$	^3P	0	–	$2s^22p^3(^2P^\circ)3d$	$^3D^\circ$	1	0.0058	03LEP/BEI
33.679	2 969 200	*	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2P^\circ)3d$	$^3P^\circ$	1	0.0058	03LEP/BEI
33.84	2 955 100	*	$2s^22p^4$	^3P	1	–	$2s^22p^3(^2P^\circ)3d$	$^3D^\circ$	2	0.01	71FAW/GAB
33.84	2 955 100	*	$2s^22p^4$	^3P	1	–	$2s^22p^3(^2P^\circ)3d$	$^3P^\circ$	1	0.01	71FAW/GAB
33.96	2 944 600	*	$2s^22p^4$	^3P	0	–	$2s^22p^3(^2P^\circ)3d$	$^3P^\circ$	1	0.01	71FAW/GAB
33.96	2 944 600	*	$2s^22p^4$	^3P	1	–	$2s^22p^3(^2P^\circ)3d$	$^3P^\circ$	2	0.01	71FAW/GAB
33.96	2 944 600	*	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2P^\circ)3d$	$^3F^\circ$	3	0.01	71FAW/GAB
34.091	2 933 300	b *	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2D^\circ)3d$	$^3S^\circ$	1	0.0035	03LEP/BEI
34.091	2 933 300	b *	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2D^\circ)3d$	$^3P^\circ$	1	0.0035	03LEP/BEI
34.24	2 920 600	*	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2D^\circ)3d$	$^3P^\circ$	2	0.01	71FAW/GAB
34.24	2 920 600	*	$2s^22p^4$	^3P	1	–	$2s^22p^3(^2D^\circ)3d$	$^3S^\circ$	1	0.01	71FAW/GAB
34.24	2 920 600	*	$2s^22p^4$	^3P	1	–	$2s^22p^3(^2D^\circ)3d$	$^3P^\circ$	1	0.01	71FAW/GAB
34.328	2 913 100	b *	$2s^22p^4$	^3P	0	–	$2s^22p^3(^2D^\circ)3d$	$^3P^\circ$	1	0.0038	03LEP/BEI
34.328	2 913 100	b *	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2D^\circ)3d$	$^3D^\circ$	3	0.0038	03LEP/BEI
34.328	2 913 100	b *	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2D^\circ)3d$	$^3D^\circ$	2	0.0038	03LEP/BEI
34.520	2 896 900		$2s^22p^4$	^3P	1	–	$2s^22p^3(^2D^\circ)3d$	$^3D^\circ$	2	0.0026	03LEP/BEI
34.67	2 884 300		$2s^22p^4$	^1D	2	–	$2s^22p^3(^2P^\circ)3d$	$^3P^\circ$	2	0.02	04BEI/MAG
34.80	2 873 600	b	$2s^22p^4$	^1D	2	–	$2s^22p^3(^2P^\circ)3d$	$^3F^\circ$	3	0.01	71FAW/GAB
35.07	2 851 400	b	$2s^22p^4$	^1D	2	–	$2s^22p^3(^2D^\circ)3d$	$^3P^\circ$	2	0.01	71FAW/GAB
35.382	2 826 300	b *	$2s^22p^4$	^3P	2	–	$2s^22p^3(^4S^\circ)3d$	$^3D^\circ$	2	0.0019	03LEP/BEI
35.382	2 826 300	b *	$2s^22p^4$	^3P	2	–	$2s^22p^3(^4S^\circ)3d$	$^3D^\circ$	3	0.0019	03LEP/BEI
35.58	2 810 570		$2s^22p^4$	^3P	1	–	$2s^22p^3(^4S^\circ)3d$	$^3D^\circ$	2	0.01	71FAW/GAB
38.33	2 609 000	380	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2D^\circ)3s$	$^1D^\circ$	2	0.04	71CON/PEA
38.615	2 589 670	b	$2s^22p^4$	^3P	2	–	$2s^22p^3(^2D^\circ)3s$	$^3D^\circ$	3	0.0016	03LEP/BEI
38.79	2 578 000		$2s^22p^4$	^1D	2	–	$2s^22p^3(^2P^\circ)3s$	$^1P^\circ$	1	0.01	71FAW/GAB
38.87	2 572 700	*	$2s^22p^4$	^1D	2	–	$2s^22p^3(^2P^\circ)3s$	$^3P^\circ$	2	0.01	71FAW/GAB
38.87	2 572 700	*	$2s^22p^4$	^3P	1	–	$2s^22p^3(^2D^\circ)3s$	$^3D^\circ$	1	0.01	71FAW/GAB
38.93	2 569 000	390	$2s^22p^4$	^3P	0	–	$2s^22p^3(^2D^\circ)3s$	$^3D^\circ$	1	0.04	71CON/PEA
39.49	2 532 300		$2s^22p^4$	^1D	2	–	$2s^22p^3(^2D^\circ)3s$	$^1D^\circ$	2	0.01	71FAW/GAB
39.75	2 515 700	*	$2s^22p^4$	^1D	2	–	$2s^22p^3(^2D^\circ)3s$	$^3D^\circ$	3	0.01	71FAW/GAB
39.75	2 515 700	*	$2s^22p^4$	^1D	2	–	$2s^22p^3(^2D^\circ)3s$	$^3D^\circ$	1	0.01	71FAW/GAB
39.98	2 501 300		$2s^22p^4$	^1S	0	–	$2s^22p^3(^2P^\circ)3s$	$^1P^\circ$	1	0.01	71FAW/GAB
40.269	2 483 300		$2s^22p^4$	^3P	2	–	$2s^22p^3(^4S^\circ)3s$	$^5S^\circ$	2	0.0020	03LEP/BEI
44.642	2 240 040		$2s2p^5$	$^3P^\circ$	2	–	$2s^22p^3(^2D^\circ)3p$	^3P	2	0.0023	03LEP/BEI
136.9	730 500		$2s^22p^4$	^3P	2	–	$2s2p^5$	$^1P^\circ$	1	0.1	82HAS/FUK
151.86	658 500		$2s^22p^4$	^1D	2	–	$2s2p^5$	$^1P^\circ$	1	0.02	66DEU/HOU
171.86	581 870		$2s^22p^4$	^1S	0	–	$2s2p^5$	$^1P^\circ$	1	0.01	71FAW/GAB
184.51	541 980		$2s^22p^4$	^3P	2	–	$2s2p^5$	$^3P^\circ$	1	0.02	66DEU/HOU
187.08	534 530		$2s^22p^4$	^3P	1	–	$2s2p^5$	$^3P^\circ$	0	0.02	66DEU/HOU
188.821	529 602.		$2s^22p^4$	^3P	2	–	$2s2p^5$	$^3P^\circ$	2	0.003	98BRO/DAV
189.57	527 510		$2s^22p^4$	^3P	1	–	$2s2p^5$	$^3P^\circ$	1	0.02	66DEU/HOU
190.96	523 670		$2s^22p^4$	^3P	0	–	$2s2p^5$	$^3P^\circ$	1	0.02	66DEU/HOU
194.09	515 220		$2s^22p^4$	^3P	1	–	$2s2p^5$	$^3P^\circ$	2	0.02	66DEU/HOU
197.95	505 180		$2s2p^5$	$^1P^\circ$	1	–	$2p^6$	^1S	0	0.02	87STE/DIE
583.03	171 518.		$2s^22p^3(^2D^\circ)3p$	^3F	2	–	$2s^22p^3(^2D^\circ)3d$	$^3G^\circ$	3	0.04	99KIN
707.	141 400		$2s^22p^3(^2D^\circ)3s$	$^3D^\circ$	1	–	$2s^22p^3(^2D^\circ)3p$	^3F	2	2.	74BUC/BUC
717.853	139 304.		$2s^22p^3(^4S^\circ)3s$	$^5S^\circ$	2	–	$2s^22p^3(^4S^\circ)3p$	^5P	3	0.020	00FEL/CUR
730.439	136 904.		$2s^22p^3(^4S^\circ)3s$	$^5S^\circ$	2	–	$2s^22p^3(^4S^\circ)3p$	^5P	2	0.015	00FEL/CUR
736.490	135 779.		$2s^22p^3(^4S^\circ)3s$	$^5S^\circ$	2	–	$2s^22p^3(^4S^\circ)3p$	^5P	1	0.020	00FEL/CUR
745.803	134 083.7	M1	$2s^22p^4$	^3P	1	–	$2s^22p^4$	^1S	0	0.010	00FEL/CUR

TABLE 30. Spectral lines of Ar XI—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
1 392.12	71 832.9	M1	$2s^22p^4$	^3P	2 –	$2s^22p^4$	^1D	2	0.01	77SAN/BRU
Observed Air Wavelength (Å)	**Observed Wave Number (cm^{-1})**	**Intensity and Comment**	**Classification**						**Uncertainty of Observed Wavelength (Å)**	**Source of Line**
			Configuration	Term	J	Configuration	Term	J		
6 916.878	14 453.40	M1	$2s^22p^4$	^3P	2 –	$2s^22p^4$	^3P	1	0.012	03DRA/CRE

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3.11. Ar XII

N isoelectronic sequence
Ground state: $1s^2 2s^2 2p^3\ ^4S^\circ_{3/2}$
Ionization energy: 4 992 200 ± 3600 cm^{-1} (619.0 ± 0.5 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar XII are given in Tables 31–33.

We are able to tabulate 49 levels of Ar XII by means of a fit to the available Ar XII lines. The preliminary levels for our fit were taken from the NIST Atomic Spectra Database [08RAL/KRA2] with additional levels calculated from these using some of the classified lines of Stewart *et al.* [87STE/DIE], Schmieder and Kunze [95SCH/KUN], Biémont *et al.* [00BIE/QUI], Magunov *et al.* [02MAG/FAE], and Lepson *et al.* [03LEP/BEI] with the guidance of the Superstructure code calculations of Eissner *et al.* [05EIS/LAN] and calculations using the Cowan codes [81COW].

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar XII are compiled from 11 sources [67DEU/HOU, 71CON/PEA, 71FAW/GAB, 73FAW/HAY, 82HAS/FUK, 87STE/DIE, 95SCH/KUN, 00BIE/QUI, 00FEL/CUR, 02MAG/FAE, 03LEP/BEI]. All lines from 17 other sources [64FAW/GAB, 64FAW/GAB2, 69PEA/SPE, 72JAL/COO, 74BUC/BUC, 78DER, 93ROC/COR, 97FEL/BEH, 98FEL/CUR, 99KIN, 02BRI/KAA, 03ROC/VIN, 04CUR/LAN, 06GU/GUP, 06KAT/MOR, 07KAT/MOR, 08LEP/BEI] were superseded by the above 11. The sources used in this compilation are summarized in Table 32 (Sources of Ar XII lines). Table 32 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

Katai *et al.* [07KAT/MOR] reported observing a line at 1685.11(2) Å using the large helical device. They attribute this line to a M1 transition in the ground configuration of Ar XII. The wavelength reported is inconsistent with other M1 lines within the ground configuration reported by Feldman *et al.* [00FEL/CUR]. The 1685 Å line has not been included in this compilation.

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows:

For X-ray lines: [02MAG/FAE] over [00BIE/QUI] over [69PEA/SPE].

For the rest of the lines:

[03LEP/BEI] over [00FEL/CUR] over [73FAW/HAY] over [67DEU/HOU, 71FAW/GAB, 87STE/DIE] over [64FAW/GAB2, 98FEL/CUR, 02BRI/KAA, 06KAT/MOR, 07KAT/MOR] over [71CON/PEA] over [64FAW/GAB, 72JAL/COO, 78DER, 97FEL/BEH, 04CUR/LAN] over [99KIN] over [06GU/GUP] over [08LEP/BEI] over [93ROC/COR] over [82HAS/FUK] over [03ROC/VIN] over [95SCH/KUN] over [74BUC/BUC].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar XII levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar XII when they do not fit the known levels. Additional Rydberg lines are reported by Denis *et al.* [71DEN/DÉS] and Buchet *et al.* [74BUC/BUC].

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar XII line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
*	Multiply classified line (two or more classifications of this line share the same intensity)
M1	Magnetic dipole line

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted

from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the N isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in June 2008.

TABLE 31. Energy levels of Ar XII

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0.0	0.0	1	$2s^22p^3$	$^4S^\circ$	3/2
94 824.0	1.3	1	$2s^22p^3$	$^2D^\circ$	3/2
98 155.7	1.9	1	$2s^22p^3$	$^2D^\circ$	5/2
149 186.	2.	1	$2s^22p^3$	$^2P^\circ$	1/2
154 061.	5.	1	$2s^22p^3$	$^2P^\circ$	3/2
445 931	40	0	$2s(^2S)2p^4(^3P)$	^4P	5/2
458 106	42	0	$2s(^2S)2p^4(^3P)$	^4P	3/2
464 058	43	0	$2s(^2S)2p^4(^3P)$	^4P	1/2
613 833	59	0	$2s(^2S)2p^4(^1D)$	^2D	3/2
614 466	34	0	$2s(^2S)2p^4(^1D)$	^2D	5/2
715 379	45	0	$2s(^2S)2p^4(^1S)$	^2S	1/2
745 762	32	0	$2s(^2S)2p^4(^3P)$	^2P	3/2
761 838	43	0	$2s(^2S)2p^4(^3P)$	^2P	1/2
1 166 700	48	1	$2p^5$	$^2P^\circ$	3/2
1 186 244	45	1	$2p^5$	$^2P^\circ$	1/2
2 867 000	1600	0	$2s^22p^2(^3P)3s$	^4P	1/2
2 875 200	1700	0	$2s^22p^2(^3P)3s$	^4P	3/2
2 883 920	130	0	$2s^22p^2(^3P)3s$	^4P	5/2
2 912 070	610	0	$2s^22p^2(^3P)3s$	^2P	3/2
2 956 650	520	0	$2s^22p^2(^1D)3s$	^2D	5/2
2 958 030	640	0	$2s^22p^2(^1D)3s$	^2D	3/2
2 996 300	1700	1	$2s^22p^2(^3P)3p$	$^4D^\circ$	3/2
3 010 700	1700	1	$2s^22p^2(^3P)3p$	$^4P^\circ$	1/2
3 011 470	210	1	$2s^22p^2(^3P)3p$	$^4D^\circ$	7/2
3 011 700	1700	1	$2s^22p^2(^3P)3p$	$^4P^\circ$	3/2
3 059 000	1700	1	$2s^22p^2(^3P)3p$	$^4S^\circ$	3/2
3 124 840	760	1	$2s^22p^2(^1D)3p$	$^2D^\circ$	5/2
3 133 800	790	1	$2s^22p^2(^1D)3p$	$^2P^\circ$	1/2
3 142 510	410	1	$2s^22p^2(^1D)3p$	$^2P^\circ$	3/2
3 165 910	150	1	$2s2p^3(^4S^\circ)3s$	$^4S^\circ$	3/2
3 175 950	600	0	$2s^22p^2(^3P)3d$	^2F	5/2
3 187 350	150	0	$2s^22p^2(^3P)3d$	^4P	5/2
3 189 920	760	0	$2s^22p^2(^3P)3d$	^2F	7/2
3 190 100	810	0	$2s^22p^2(^3P)3d$	^4P	3/2
3 221 580	560	0	$2s^22p^2(^3P)3d$	^2D	3/2
3 226 750	550	0	$2s^22p^2(^3P)3d$	^2D	5/2
3 258 510	220	0	$2s^22p^2(^1D)3d$	^2G	7/2
3 264 720	720	0	$2s^22p^2(^1D)3d$	^2F	5/2
3 271 350	580	0	$2s^22p^2(^1D)3d$	^2P	1/2
3 276 700	600	0	$2s^22p^2(^1D)3d$	^2P	3/2
3 267 760	340	0	$2s2p^3(^4S^\circ)3p$	^4P	5/2
3 993 450	510	0	$2s^22p^2(^3P)4d$	^4P	5/2
24 393 800	3000	0	$1s2s^22p^4(^1D)$	^2D	3/2

TABLE 31. Energy levels of Ar XII—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
24 426 200	2200	0	$1s2s^22p^4(^3P)$	^2P	1/2
24 427 300	2700	0	$1s2s^22p^4(^3P)$	^2P	3/2
24 709 100	4800	1	$1s2s2p^5$	$^4P^\circ$	5/2
24 718 700	2200	1	$1s2s2p^5$	$^4P^\circ$	3/2
24 887 000	1800	1	$1s2s2p^5$	$^2P^\circ$	3/2
24 975 300	8000	1	$1s2s2p^5$	$^2P^\circ$	1/2

TABLE 32. Sources of Ar XII lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
67DEU/HOU	14	theta pinch. 2-m GI VS	150–224	0.02
71CON/PEA	3	plasma focus discharge. 2-m GI VS	36	0.03
71FAW/GAB	2	theta pinch. 2-m GI VS	32, 165	0.02
73FAW/HAY	17	theta pinch. 2-m GI VS	31–36	0.008, 0.02
82HAS/FUK	1	plasma focus discharge. GI VS	161	0.2
87STE/DIE	5	gas-puff Z-pinch. 2-m GI VS	175–238	0.02
95SCH/KUN	10	theta pinch. 1-m NI monochromator	434–784	1.
00BIE/QUI	2	plasma focus discharge. spherically bent crystal spectrograph	4.10–4.14	0.0005, 0.0008
00FEL/CUR	4	solar flares. SUMER spectrometer on SOHO satellite	649–1055	0.01–0.02
02MAG/FAE	18	laser pulse hits gas jet cluster. spherically bent crystal spectrometer	4.11–4.14	0.0005
03LEP/BEI	6	EBIT. 0.237-m GI vacuum spectrometer	25–37	0.0015–0.0032

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

TABLE 33. Spectral lines of Ar XII

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
4.1006	24 387 000		$2s(^2S)2p^4(^1D)$	^2D	3/2	–	$1s2s2p^5$	$^2P^\circ$	1/2	0.0005	00BIE/QUI
4.1096	24 333 000	*	$2s^22p^3$	$^2D^\circ$	3/2	–	$1s2s^22p^4(^3P)$	^2P	1/2	0.0005	02MAG/FAE
4.1096	24 333 000	*	$2s^22p^3$	$^2D^\circ$	5/2	–	$1s2s^22p^4(^3P)$	^2P	3/2	0.0005	02MAG/FAE
4.1154	24 299 000		$2s^22p^3$	$^2D^\circ$	3/2	–	$1s2s^22p^4(^1D)$	^2D	3/2	0.0005	02MAG/FAE
4.1197	24 274 000	*	$2s^22p^3$	$^2P^\circ$	1/2	–	$1s2s^22p^4(^3P)$	^2P	3/2	0.0005	02MAG/FAE
4.1197	24 274 000	*	$2s^22p^3$	$^2P^\circ$	1/2	–	$1s2s^22p^4(^3P)$	^2P	1/2	0.0005	02MAG/FAE
4.1197	24 274 000	*	$2s^22p^3$	$^2P^\circ$	3/2	–	$1s2s^22p^4(^3P)$	^2P	3/2	0.0005	02MAG/FAE
4.1197	24 274 000	*	$2s^22p^3$	$^2P^\circ$	3/2	–	$1s2s^22p^4(^3P)$	^2P	1/2	0.0005	02MAG/FAE
4.1197	24 274 000	*	$2s(^2S)2p^4(^1D)$	^2D	3/2	–	$1s2s2p^5$	$^2P^\circ$	3/2	0.0005	02MAG/FAE
4.1197	24 274 000	*	$2s(^2S)2p^4(^1D)$	^2D	5/2	–	$1s2s2p^5$	$^2P^\circ$	3/2	0.0005	02MAG/FAE
4.1197	24 274 000	*	$2s(^2S)2p^4(^3P)$	^4P	5/2	–	$1s2s2p^5$	$^4P^\circ$	3/2	0.0005	02MAG/FAE
4.1225	24 257 000	b *	$2s(^2S)2p^4(^3P)$	^4P	5/2	–	$1s2s2p^5$	$^4P^\circ$	5/2	0.0005	02MAG/FAE
4.1225	24 257 000	b *	$2s(^2S)2p^4(^1S)$	^2S	1/2	–	$1s2s2p^5$	$^2P^\circ$	1/2	0.0005	02MAG/FAE
4.1225	24 257 000	b *	$2s(^2S)2p^4(^3P)$	^4P	3/2	–	$1s2s2p^5$	$^4P^\circ$	3/2	0.0005	02MAG/FAE
4.1225	24 257 000	b *	$2s(^2S)2p^4(^3P)$	^4P	1/2	–	$1s2s2p^5$	$^4P^\circ$	3/2	0.0005	02MAG/FAE
4.1225	24 257 000	b *	$2s(^2S)2p^4(^3P)$	^4P	3/2	–	$1s2s2p^5$	$^4P^\circ$	5/2	0.0005	02MAG/FAE
4.1304	24 211 000	*	$2s(^2S)2p^4(^3P)$	^2P	3/2	–	$1s2s2p^5$	$^2P^\circ$	1/2	0.0005	02MAG/FAE
4.1304	24 211 000	*	$2s(^2S)2p^4(^3P)$	^2P	1/2	–	$1s2s2p^5$	$^2P^\circ$	1/2	0.0005	02MAG/FAE
4.1369	24 173 000		$2s(^2S)2p^4(^1S)$	^2S	1/2	–	$1s2s2p^5$	$^2P^\circ$	3/2	0.0005	02MAG/FAE
4.1434	24 135 000		$2s(^2S)2p^4(^3P)$	^2P	3/2	–	$1s2s2p^5$	$^2P^\circ$	3/2	0.0008	00BIE/QUI
25.041	3 993 500	7 b	$2s^22p^3$	$^4S^\circ$	3/2	–	$2s^22p^2(^3P)4d$	^4P	5/2	0.0032	03LEP/BEI
30.602	3 267 800	2 b	$2s^22p^3$	$^4S^\circ$	3/2	–	$2s2p^3(^4S^\circ)3p$	^4P	5/2	0.0032	03LEP/BEI
31.347	3 190 100	6	$2s^22p^3$	$^4S^\circ$	3/2	–	$2s^22p^2(^3P)3d$	^4P	3/2	0.008	73FAW/HAY

TABLE 33. Spectral lines of Ar XII—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
31.374	3 187 350	20 b	$2s^22p^3$	$^4S^\circ$	3/2	$2s^22p^2(^3P)3d$	^4P	5/2	0.0015	03LEP/BEI
31.458	3 178 800	3	$2s^22p^3$	$^2D^\circ$	5/2	$2s^22p^2(^1D)3d$	^2P	3/2	0.008	73FAW/HAY
31.483	3 176 300	2 *	$2s^22p^3$	$^2D^\circ$	3/2	$2s^22p^2(^1D)3d$	^2P	1/2	0.008	73FAW/HAY
31.483	3 176 300	2 *	$2s^22p^3$	$^4S^\circ$	3/2	$2s^22p^2(^3P)3d$	^2F	5/2	0.008	73FAW/HAY
31.55	3 169 600	2	$2s^22p^3$	$^2D^\circ$	3/2	$2s^22p^2(^1D)3d$	^2F	5/2	0.02	71FAW/GAB
31.642	3 160 400	8	$2s^22p^3$	$^2D^\circ$	5/2	$2s^22p^2(^1D)3d$	^2G	7/2	0.0022	03LEP/BEI
31.962	3 128 700	3	$2s^22p^3$	$^2D^\circ$	5/2	$2s^22p^2(^3P)3d$	^2D	5/2	0.008	73FAW/HAY
31.984	3 126 600	2	$2s^22p^3$	$^2D^\circ$	3/2	$2s^22p^2(^3P)3d$	^2D	3/2	0.008	73FAW/HAY
32.027	3 122 400	1 *	$2s^22p^3$	$^2P^\circ$	3/2	$2s^22p^2(^1D)3d$	^2P	3/2	0.008	73FAW/HAY
32.027	3 122 400	1 *	$2s^22p^3$	$^2P^\circ$	1/2	$2s^22p^2(^1D)3d$	^2P	1/2	0.008	73FAW/HAY
32.147	3 110 700	3	$2s^22p^3$	$^2P^\circ$	3/2	$2s^22p^2(^1D)3d$	^2F	5/2	0.008	73FAW/HAY
32.344	3 091 800	3	$2s^22p^3$	$^2D^\circ$	5/2	$2s^22p^2(^3P)3d$	^2F	7/2	0.008	73FAW/HAY
32.459	3 080 800	2	$2s^22p^3$	$^2D^\circ$	3/2	$2s^22p^2(^3P)3d$	^2F	5/2	0.008	73FAW/HAY
32.546	3 072 600	3 *	$2s^22p^3$	$^2P^\circ$	3/2	$2s^22p^2(^3P)3d$	^2D	5/2	0.008	73FAW/HAY
32.546	3 072 600	3 *	$2s^22p^3$	$^2P^\circ$	1/2	$2s^22p^2(^3P)3d$	^2D	3/2	0.008	73FAW/HAY
34.675	2 883 920	2 b	$2s^22p^3$	$^4S^\circ$	3/2	$2s^22p^2(^3P)3s$	^4P	5/2	0.0016	03LEP/BEI
34.78	2 875 200	4	$2s^22p^3$	$^4S^\circ$	3/2	$2s^22p^2(^3P)3s$	^4P	3/2	0.02	73FAW/HAY
34.88	2 867 000	2 *	$2s^22p^3$	$^4S^\circ$	3/2	$2s^22p^2(^3P)3s$	^4P	1/2	0.02	73FAW/HAY
34.88	2 867 000	2 *	$2s^22p^3$	$^2D^\circ$	3/2	$2s^22p^2(^1D)3s$	^2D	3/2	0.02	73FAW/HAY
35.68	2 803 000	220 *	$2s^22p^3$	$^2P^\circ$	1/2	$2s^22p^2(^1D)3s$	^2D	3/2	0.03	71CON/PEA
35.68	2 803 000	220 *	$2s^22p^3$	$^2P^\circ$	3/2	$2s^22p^2(^1D)3s$	^2D	3/2	0.03	71CON/PEA
35.68	2 803 000	220 *	$2s^22p^3$	$^2P^\circ$	3/2	$2s^22p^2(^1D)3s$	^2D	5/2	0.03	71CON/PEA
36.26	2 757 900	1	$2s^22p^3$	$^2P^\circ$	3/2	$2s^22p^2(^3P)3s$	^2P	3/2	0.02	73FAW/HAY
36.765	2 719 980	2	$2s(^2S)2p^4(^3P)$	^4P	5/2	$2s2p^3(^4S^\circ)3s$	$^4S^\circ$	3/2	0.0019	03LEP/BEI
149.93	666 980		$2s^22p^3$	$^2D^\circ$	3/2	$2s(^2S)2p^4(^3P)$	^2P	1/2	0.02	67DEU/HOU
153.63	650 910		$2s^22p^3$	$^2D^\circ$	3/2	$2s(^2S)2p^4(^3P)$	^2P	3/2	0.02	67DEU/HOU
154.43	647 540		$2s^22p^3$	$^2D^\circ$	5/2	$2s(^2S)2p^4(^3P)$	^2P	3/2	0.02	67DEU/HOU
161.2	620 300	40	$2s^22p^3$	$^2D^\circ$	3/2	$2s(^2S)2p^4(^1S)$	^2S	1/2	0.2	82HAS/FUK
163.23	612 630		$2s^22p^3$	$^2P^\circ$	1/2	$2s(^2S)2p^4(^3P)$	^2P	1/2	0.02	67DEU/HOU
164.51	607 870		$2s^22p^3$	$^2P^\circ$	3/2	$2s(^2S)2p^4(^3P)$	^2P	1/2	0.02	71FAW/GAB
167.62	596 590		$2s^22p^3$	$^2P^\circ$	1/2	$2s(^2S)2p^4(^3P)$	^2P	3/2	0.02	67DEU/HOU
169.00	591 720		$2s^22p^3$	$^2P^\circ$	3/2	$2s(^2S)2p^4(^3P)$	^2P	3/2	0.02	67DEU/HOU
174.674	572 500		$2s(^2S)2p^4(^1D)$	^2D	3/2	$2p^5$	$^2P^\circ$	1/2	0.02	87STE/DIE
176.62	566 190		$2s^22p^3$	$^2P^\circ$	1/2	$2s(^2S)2p^4(^1S)$	^2S	1/2	0.02	67DEU/HOU
178.15	561 320		$2s^22p^3$	$^2P^\circ$	3/2	$2s(^2S)2p^4(^1S)$	^2S	1/2	0.02	67DEU/HOU
181.102	552 180	b	$2s(^2S)2p^4(^1D)$	^2D	5/2	$2p^5$	$^2P^\circ$	3/2	0.02	87STE/DIE
192.66	519 050		$2s^22p^3$	$^2D^\circ$	3/2	$2s(^2S)2p^4(^1D)$	^2D	3/2	0.02	67DEU/HOU
193.68	516 320		$2s^22p^3$	$^2D^\circ$	5/2	$2s(^2S)2p^4(^1D)$	^2D	5/2	0.02	67DEU/HOU
215.49	464 060		$2s^22p^3$	$^4S^\circ$	3/2	$2s(^2S)2p^4(^3P)$	^4P	1/2	0.02	67DEU/HOU
217.21	460 380		$2s^22p^3$	$^2P^\circ$	3/2	$2s(^2S)2p^4(^1D)$	^2D	5/2	0.02	67DEU/HOU
218.29	458 110		$2s^22p^3$	$^4S^\circ$	3/2	$2s(^2S)2p^4(^3P)$	^4P	3/2	0.02	67DEU/HOU
224.25	445 930		$2s^22p^3$	$^4S^\circ$	3/2	$2s(^2S)2p^4(^3P)$	^4P	5/2	0.02	67DEU/HOU
227.050	440 430		$2s(^2S)2p^4(^3P)$	^2P	3/2	$2p^5$	$^2P^\circ$	1/2	0.02	87STE/DIE
235.608	424 430		$2s(^2S)2p^4(^3P)$	^2P	1/2	$2p^5$	$^2P^\circ$	1/2	0.02	87STE/DIE
237.549	420 970		$2s(^2S)2p^4(^3P)$	^2P	3/2	$2p^5$	$^2P^\circ$	3/2	0.02	87STE/DIE
434.	230 400	0.37	$2s^22p^2(^3P)3s$	^2P	3/2	$2s^22p^2(^1D)3p$	$^2P^\circ$	3/2	1.	95SCH/KUN
451.	221 700	0.19	$2s^22p^2(^3P)3s$	^2P	3/2	$2s^22p^2(^1D)3p$	$^2P^\circ$	1/2	1.	95SCH/KUN
470.	212 800	0.66	$2s^22p^2(^3P)3s$	^2P	3/2	$2s^22p^2(^1D)3p$	$^2D^\circ$	5/2	1.	95SCH/KUN
538.	185 900	2.07	$2s^22p^2(^1D)3s$	^2D	5/2	$2s^22p^2(^1D)3p$	$^2P^\circ$	3/2	1.	95SCH/KUN
542.	184 500	0.39	$2s^22p^2(^1D)3s$	^2D	3/2	$2s^22p^2(^1D)3p$	$^2P^\circ$	3/2	1.	95SCH/KUN
544.	183 800	0.49	$2s^22p^2(^3P)3s$	^4P	3/2	$2s^22p^2(^3P)3p$	$^4S^\circ$	3/2	1.	95SCH/KUN
649.093	154 061.	M1	$2s^22p^3$	$^4S^\circ$	3/2	$2s^22p^3$	$^2P^\circ$	3/2	0.020	00FEL/CUR
670.302	149 186.	M1	$2s^22p^3$	$^4S^\circ$	3/2	$2s^22p^3$	$^2P^\circ$	1/2	0.010	00FEL/CUR
691.	144 700	0.07	$2s^22p^2(^3P)3s$	^4P	1/2	$2s^22p^2(^3P)3p$	$^4P^\circ$	3/2	1.	95SCH/KUN
696.	143 700	0.06	$2s^22p^2(^3P)3s$	^4P	1/2	$2s^22p^2(^3P)3p$	$^4P^\circ$	1/2	1.	95SCH/KUN

TABLE 33. Spectral lines of Ar XII—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
773.	129 370	0.70	$2s^22p^2(^3P)3s$	^4P	1/2	–	$2s^22p^2(^3P)3p$	$^4D^\circ$	3/2	1.	95SCH/KUN
784.	127 550	1.00	$2s^22p^2(^3P)3s$	^4P	5/2	–	$2s^22p^2(^3P)3p$	$^4D^\circ$	7/2	1.	95SCH/KUN
1 018.790	98 155.7	M1	$2s^22p^3$	$^4S^\circ$	3/2	–	$2s^22p^3$	$^2D^\circ$	5/2	0.020	00FEL/CUR
1 054.585	94 824.0	M1 b	$2s^22p^3$	$^4S^\circ$	3/2	–	$2s^22p^3$	$^2D^\circ$	3/2	0.015	00FEL/CUR

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3.12. Ar XIII

C isoelectronic sequence
Ground state: $1s^2 2s^2 2p^2\ ^3P_0$
Ionization energy: 5 528 700 ± 2200 cm^{-1} (685.47 ± 0.27 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar XIII are given in Tables 34–36.

We are able to tabulate 43 levels of Ar XIII by means of a fit to the available Ar XIII lines. The preliminary levels for our fit were taken from the NIST Atomic Spectra Database [08RAL/KRA3] with additional levels calculated from these using some of the classified lines of Fawcett and Hayes [73FAW/HAY], Bromage and Fawcett [77BRO/FAW], Biémont *et al.* [00BIE/QUI], Magunov *et al.* [02MAG/FAE], and Lepson *et al.* [03LEP/BEI] with the guidance of the Flexible Atomic Code calculations of Liang *et al.* [04LIA/DON] and calculations using the Cowan codes [81COW].

In the energy level table all levels are designated using LS coupling. We use a fixed value of 9853.39 cm^{-1} for the energy level of the $2s^2 2p^2\ ^3P_1$ state rather than use 0.00 cm^{-1} for the ground state because the well-measured magnetic dipole transitions, which determine the energies of the ground state configuration, involve the $^3P_1$ level.

The observed spectral lines of Ar XIII are compiled from 12 sources [67DEU/HOU, 71FAW/GAB, 73FAW/HAY, 77BRO/FAW, 87STE/DIE, 00BIE/QUI, 00FEL/CUR, 02KAA/STE, 02KO/RAY, 02MAG/FAE, 03LEP/BEI, 07KAT/MOR]. All lines from 16 other sources [71CON/PEA, 72PUR/WID, 74BUC/BUC, 76BRU, 76JAL, 77SAN/BRU, 78DER, 82HAS/FUK, 93ROC/COR, 97RAY, 98FEL/CUR, 00BEN/FIS, 01WIE/WIL, 02BRI/KAA, 03ROC/VIN, 04CUR/LAN] were superseded by the above 12. The sources used in this compilation are summarized in Table 35 (Sources of Ar XIII lines). Table 35 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

Sandlin *et al.* [77SAN/BRU] reported observing a line at 1582.56(4) Å in the solar corona. They tentatively attributed this line to a M1 transition in the ground configuration of Ar XIII. The wavelength reported is inconsistent with other M1 lines within the ground configuration reported by Feldman *et al.* [00FEL/CUR] and Katai *et al.* [07KAT/MOR]. The 1583 Å line has not been included in this compilation.

Liang *et al.* [04LIA/ZHA] listed some additional Ar XIII lines in the raw data reported by Lepson *et al.* [03LEP/BEI] which are not reported in the tables of Lepson *et al.* These lines have not been used. Also the 28.658 Å line reported by [03LEP/BEI] was not included since it did not fit with the levels used.

The connection between the energies of the triplet and quintet levels depends on the tentatively classified 490.01(5) Å line of Ko *et al.* [02KO/RAY] observed in the solar corona. As a result there is a systematic uncertainty, not indicated in the level table, in the absolute (but not the relative) values of the quintet energies.

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows:

For X-ray lines: [02MAG/FAE] over [00BIE/QUI].

For the rest of the lines:

[03LEP/BEI] over [77BRO/FAW] over [02KAA/STE] over [73FAW/HAY] over [00FEL/CUR] over [71FAW/GAB] over [67DEU/HOU] over [87STE/DIE, 72PUR/WID, 02BRI/KAA] over [71CON/PEA, 76JAL, 78DER, 98FEL/CUR, 04CUR/LAN] over [77SAN/BRU] over [02KO/RAY] over [76BRU] over [93ROC/COR, 97RAY, 00BEN/FIS, 03ROC/VIN] over [74BUC/BUC, 82HAS/FUK, 01WIE/WIL] over [07KAT/MOR].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar XIII levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar XIII when they do not fit the known levels. Additional Rydberg lines are reported by Denis *et al.* [71DEN/DÉS] and Buchet *et al.* [74BUC/BUC].

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar XIII line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
t	Tentative classification
*	Multiply classified line (two or more classifications of this line share the same intensity)
M1	Magnetic dipole line

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the C isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in August 2008.

TABLE 34. Energy levels of Ar XIII

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0	33	0	$2s^22p^2$	^3P	0
9 853.4	0.0	0	$2s^22p^2$	^3P	1
21 841.	4.	0	$2s^22p^2$	^3P	2
85 011.3	1.7	0	$2s^22p^2$	^1D	2
162 136.	2.	0	$2s^22p^2$	^1S	0
225 918	21	1	$2s2p^3(^4S^\circ)$	$^5S^\circ$	2
422 699	22	1	$2s2p^3(^2D^\circ)$	$^3D^\circ$	2
423 248	26	1	$2s2p^3(^2D^\circ)$	$^3D^\circ$	1
423 969	30	1	$2s2p^3(^2D^\circ)$	$^3D^\circ$	3
495 432	47	1	$2s2p^3(^2P^\circ)$	$^3P^\circ$	0
495 799	33	1	$2s2p^3(^2P^\circ)$	$^3P^\circ$	1
497 055	44	1	$2s2p^3(^2P^\circ)$	$^3P^\circ$	2
625 844	43	1	$2s2p^3(^2D^\circ)$	$^1D^\circ$	2
628 627	45	1	$2s2p^3(^4S^\circ)$	$^3S^\circ$	1
698 669	46	1	$2s2p^3(^2P^\circ)$	$^1P^\circ$	1
955 349	39	0	$2p^4$	^3P	2
971 061	49	0	$2p^4$	^3P	1
975 690	170	0	$2p^4$	^3P	0
1 025 770	53	0	$2p^4$	^1D	2
1 159 700	6700	0	$2p^4$	^1S	0
3 160 180	790	1	$2s^22p3s$	$^3P^\circ$	2
3 177 200	1900	1	$2s^22p3s$	$^1P^\circ$	1
3 379 900	1100	1	$2s^22p3d$	$^3F^\circ$	2
3 390 500	1100	1	$2s^22p3d$	$^3F^\circ$	3
3 394 740	880	1	$2s^22p3d$	$^1D^\circ$	2
3 410 800	970	1	$2s^22p3d$	$^3D^\circ$	1
3 429 230	210	1	$2s^22p3d$	$^3D^\circ$	3
3 432 510	940	1	$2s^22p3d$	$^3P^\circ$	2
3 433 730	700	1	$2s^22p3d$	$^3P^\circ$	1
3 466 830	870	1	$2s^22p3d$	$^1P^\circ$	1
3 469 220	440	1	$2s^22p3d$	$^1F^\circ$	3
3 644 840	940	0	$2s2p^2(^4P)3d$	^5P	3
3 649 520	770	0	$2s2p^2(^4P)3d$	^5P	2
4 358 440	980	1	$2s^22p4d$	$^3D^\circ$	1
24 481 200	2700	1	$1s2s^22p^3(^2D^\circ)$	$^3D^\circ$	3
24 591 200	3000	1	$1s2s^22p^3(^2D^\circ)$	$^1D^\circ$	2
24 630 600	2600	1	$1s2s^22p^3(^2P^\circ)$	$^1P^\circ$	1
24 674 000	3000	0	$1s2s2p^4(^3P)$	^5P	2
24 908 000	3000	0	$1s2s2p^4(^1D)$	^3D	2
24 914 500	2000	0	$1s2s2p^4(^3P)$	^3P	1

TABLE 34. Energy levels of Ar XIII—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
24 989 300	3400	0	$1s2s2p^4(^3P)$	^3P	2
25 043 500	2900	0	$1s2s2p^4(^1D)$	^1D	2
25 494 800	4800	1	$1s2p^5$	$^1P^\circ$	1

TABLE 35. Sources of Ar XIII lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
67DEU/HOU	10	theta pinch. 2-m GI VS	159–211	0.02
71FAW/GAB	10	theta pinch. 2-m GI VS	30–249	0.02
73FAW/HAY	5	theta pinch. 2-m GI VS	29–32	0.008, 0.02
77BRO/FAW	5	theta pinch and laser produced plasma. 2-m GI VS	29–30	0.01
87STE/DIE	7	gas-puff Z-pinch. 2-m GI VS	181–250	0.02
00BIE/QUI	7	plasma focus discharge. spherically bent crystal spectrograph	4.08–4.11	0.0008
00FEL/CUR	2	solar flares. SUMER spectrometer on SOHO satellite	657, 1331	0.01, 0.03
02KAA/STE	2	seyfert galaxy. low energy transmission grating spectrometer on Chandra satellite	29	0.015
02KO/RAY	1	solar corona. ultraviolet coronograph spectrometer on SOHO satellite	490	0.05
02MAG/FAE	12	laser pulse hits gas jet cluster. spherically bent crystal spectrometer	4.07–4.10	0.0005
03LEP/BEI	5	EBIT. 0.237-m GI vacuum spectrometer	23–30	0.0018–0.0066
07KAT/MOR	1	large helical device. 3-m NI spectrometer	8340	3.

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

TABLE 36. Spectral lines of Ar XIII

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
4.0741	24 545 000		$2s^22p^2$	^1D	2	–	$1s2s^22p^3(^2P^\circ)$	$^1P^\circ$	1	0.0005	02MAG/FAE
4.0806	24 506 000		$2s^22p^2$	^1D	2	–	$1s2s^22p^3(^2D^\circ)$	$^1D^\circ$	2	0.0005	02MAG/FAE
4.0830	24 492 000	b *	$2s2p^3(^2D^\circ)$	$^3D^\circ$	2	–	$1s2s2p^4(^3P)$	^3P	1	0.0008	00BIE/QUI
4.0830	24 492 000	b *	$2s2p^3(^2P^\circ)$	$^3P^\circ$	2	–	$1s2s2p^4(^3P)$	^3P	2	0.0008	00BIE/QUI
4.0847	24 482 000	*	$2s2p^3(^2D^\circ)$	$^3D^\circ$	2	–	$1s2s2p^4(^1D)$	^3D	2	0.0005	02MAG/FAE
4.0847	24 482 000	*	$2s2p^3(^2D^\circ)$	$^3D^\circ$	3	–	$1s2s2p^4(^1D)$	^3D	2	0.0005	02MAG/FAE
4.0868	24 469 000	b *	$2p^4$	^1D	2	–	$1s2p^5$	$^1P^\circ$	1	0.0008	00BIE/QUI
4.0868	24 469 000	b *	$2s^22p^2$	^1S	0	–	$1s2s^22p^3(^2P^\circ)$	$^1P^\circ$	1	0.0008	00BIE/QUI
4.0880	24 462 000		$2s^22p^2$	^3P	2	–	$1s2s^22p^3(^2D^\circ)$	$^3D^\circ$	3	0.0005	02MAG/FAE
4.0903	24 448 000		$2s2p^3(^4S^\circ)$	$^5S^\circ$	2	–	$1s2s2p^4(^3P)$	^5P	2	0.0005	02MAG/FAE
4.0953	24 418 000	*	$2s2p^3(^2P^\circ)$	$^3P^\circ$	0	–	$1s2s2p^4(^3P)$	^3P	1	0.0005	02MAG/FAE
4.0953	24 418 000	*	$2s2p^3(^2D^\circ)$	$^1D^\circ$	2	–	$1s2s2p^4(^1D)$	^1D	2	0.0005	02MAG/FAE
4.0953	24 418 000	*	$2s2p^3(^2P^\circ)$	$^3P^\circ$	2	–	$1s2s2p^4(^3P)$	^3P	1	0.0005	02MAG/FAE
4.0953	24 418 000	*	$2s2p^3(^4S^\circ)$	$^3S^\circ$	1	–	$1s2s2p^4(^1D)$	^1D	2	0.0005	02MAG/FAE
4.0953	24 418 000	*	$2s2p^3(^2P^\circ)$	$^3P^\circ$	1	–	$1s2s2p^4(^1D)$	^3D	2	0.0005	02MAG/FAE
4.0994	24 394 000		$2s^22p^2$	^1D	2	–	$1s2s^22p^3(^2D^\circ)$	$^3D^\circ$	3	0.0005	02MAG/FAE
4.1049	24 361 000		$2s2p^3(^4S^\circ)$	$^3S^\circ$	1	–	$1s2s2p^4(^3P)$	^3P	2	0.0008	00BIE/QUI
4.1093	24 335 000	*	$2s2p^3(^2P^\circ)$	$^1P^\circ$	1	–	$1s2s2p^4(^1D)$	^1D	2	0.0008	00BIE/QUI
4.1093	24 335 000	*	$2p^4$	^1S	0	–	$1s2p^5$	$^1P^\circ$	1	0.0008	00BIE/QUI
22.996	4 348 600	6	$2s^22p^2$	^3P	1	–	$2s^22p4d$	$^3D^\circ$	1	0.0052	03LEP/BEI
29.209	3 423 600	8 b *	$2s^22p^2$	^3P	1	–	$2s^22p3d$	$^3P^\circ$	1	0.0066	03LEP/BEI
29.209	3 423 600	8 b *	$2s2p^3(^4S^\circ)$	$^5S^\circ$	2	–	$2s2p^2(^4P)3d$	^5P	2	0.0066	03LEP/BEI
29.249	3 418 900	2	$2s2p^3(^4S^\circ)$	$^5S^\circ$	2	–	$2s2p^2(^4P)3d$	^5P	3	0.008	73FAW/HAY
29.304	3 412 500	b	$2s^22p^2$	^3P	2	–	$2s^22p3d$	$^3P^\circ$	1	0.010	77BRO/FAW

TABLE 36. Spectral lines of Ar XIII—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
29.320	3 410 600	*	$2s^22p^2$	^3P	0	–	$2s^22p3d$	$^3D^\circ$	1	0.015	02KAA/STE
29.320	3 410 600	*	$2s^22p^2$	^3P	2	–	$2s^22p3d$	$^3P^\circ$	2	0.015	02KAA/STE
29.348	3 407 400	20 b	$2s^22p^2$	^3P	2	–	$2s^22p3d$	$^3D^\circ$	3	0.0018	03LEP/BEI
29.403	3 401 000	b	$2s^22p^2$	^3P	1	–	$2s^22p3d$	$^3D^\circ$	1	0.010	77BRO/FAW
29.549	3 384 200	4	$2s^22p^2$	^1D	2	–	$2s^22p3d$	$^1F^\circ$	3	0.0038	03LEP/BEI
29.689	3 368 300		$2s^22p^2$	^3P	2	–	$2s^22p3d$	$^3F^\circ$	3	0.010	77BRO/FAW
29.873	3 347 500		$2s^22p^2$	^1D	2	–	$2s^22p3d$	$^3P^\circ$	2	0.010	77BRO/FAW
30.214	3 309 700	2	$2s^22p^2$	^1D	2	–	$2s^22p3d$	$^1D^\circ$	2	0.008	73FAW/HAY
30.24	3 307 000	1	$2s^22p^2$	^1D	2	–	$2s^22p3d$	$^3F^\circ$	3	0.02	71FAW/GAB
30.260	3 304 700	1	$2s^22p^2$	^1S	0	–	$2s^22p3d$	$^1P^\circ$	1	0.008	73FAW/HAY
30.350	3 294 900		$2s^22p^2$	^1D	2	–	$2s^22p3d$	$^3F^\circ$	2	0.010	77BRO/FAW
31.864	3 138 300	1	$2s^22p^2$	^3P	2	–	$2s^22p3s$	$^3P^\circ$	2	0.008	73FAW/HAY
32.34	3 092 100	1	$2s^22p^2$	^1D	2	–	$2s^22p3s$	$^1P^\circ$	1	0.02	73FAW/HAY
159.08	628 610		$2s^22p^2$	^3P	0	–	$2s2p^3(^4S^\circ)$	$^3S^\circ$	1	0.02	67DEU/HOU
161.61	618 770		$2s^22p^2$	^3P	1	–	$2s2p^3(^4S^\circ)$	$^3S^\circ$	1	0.02	67DEU/HOU
162.96	613 650		$2s^22p^2$	^1D	2	–	$2s2p^3(^2P^\circ)$	$^1P^\circ$	1	0.02	67DEU/HOU
164.80	606 800		$2s^22p^2$	^3P	2	–	$2s2p^3(^4S^\circ)$	$^3S^\circ$	1	0.02	67DEU/HOU
181.102	552 180	b	$2s2p^3(^2D^\circ)$	$^3D^\circ$	1	–	$2p^4$	^3P	0	0.020	87STE/DIE
182.355	548 380	b	$2s2p^3(^2D^\circ)$	$^3D^\circ$	2	–	$2p^4$	^3P	1	0.020	87STE/DIE
182.525	547 870	b	$2s2p^3(^2D^\circ)$	$^3D^\circ$	1	–	$2p^4$	^3P	1	0.020	87STE/DIE
184.90	540 830		$2s^22p^2$	^1D	2	–	$2s2p^3(^2D^\circ)$	$^1D^\circ$	2	0.02	67DEU/HOU
186.38	536 540		$2s^22p^2$	^1S	0	–	$2s2p^3(^2P^\circ)$	$^1P^\circ$	1	0.02	71FAW/GAB
187.729	532 680	b	$2s2p^3(^2D^\circ)$	$^3D^\circ$	2	–	$2p^4$	^3P	2	0.020	87STE/DIE
187.94	532 080		$2s2p^3(^2D^\circ)$	$^3D^\circ$	1	–	$2p^4$	^3P	2	0.02	67DEU/HOU
188.196	531 360		$2s2p^3(^2D^\circ)$	$^3D^\circ$	3	–	$2p^4$	^3P	2	0.020	87STE/DIE
201.69	495 810		$2s^22p^2$	^3P	0	–	$2s2p^3(^2P^\circ)$	$^3P^\circ$	1	0.02	67DEU/HOU
205.24	487 230		$2s^22p^2$	^3P	1	–	$2s2p^3(^2P^\circ)$	$^3P^\circ$	2	0.02	71FAW/GAB
205.77	485 980		$2s^22p^2$	^3P	1	–	$2s2p^3(^2P^\circ)$	$^3P^\circ$	1	0.02	71FAW/GAB
205.94	485 580		$2s^22p^2$	^3P	1	–	$2s2p^3(^2P^\circ)$	$^3P^\circ$	0	0.02	71FAW/GAB
208.294	480 090	b	$2s2p^3(^2P^\circ)$	$^3P^\circ$	1	–	$2p^4$	^3P	0	0.020	87STE/DIE
210.46	475 150		$2s^22p^2$	^3P	2	–	$2s2p^3(^2P^\circ)$	$^3P^\circ$	2	0.02	67DEU/HOU
211.00	473 930	*	$2s^22p^2$	^3P	2	–	$2s2p^3(^2P^\circ)$	$^3P^\circ$	1	0.02	67DEU/HOU
211.00	473 930	*	$2s2p^3(^2P^\circ)$	$^3P^\circ$	2	–	$2p^4$	^3P	1	0.02	67DEU/HOU
236.27	423 240		$2s^22p^2$	^3P	0	–	$2s2p^3(^2D^\circ)$	$^3D^\circ$	1	0.02	71FAW/GAB
241.90	413 390		$2s^22p^2$	^3P	1	–	$2s2p^3(^2D^\circ)$	$^3D^\circ$	1	0.02	71FAW/GAB
242.22	412 850		$2s^22p^2$	^3P	1	–	$2s2p^3(^2D^\circ)$	$^3D^\circ$	2	0.02	71FAW/GAB
248.68	402 120		$2s^22p^2$	^3P	2	–	$2s2p^3(^2D^\circ)$	$^3D^\circ$	3	0.02	71FAW/GAB
249.46	400 870		$2s^22p^2$	^3P	2	–	$2s2p^3(^2D^\circ)$	$^3D^\circ$	2	0.02	71FAW/GAB
250.046	399 930		$2s2p^3(^2D^\circ)$	$^1D^\circ$	2	–	$2p^4$	^1D	2	0.020	87STE/DIE
490.01	204 080	t	$2s^22p^2$	^3P	2	–	$2s2p^3(^4S^\circ)$	$^5S^\circ$	2	0.05	02KO/RAY
656.672	152 283.	M1	$2s^22p^2$	^3P	1	–	$2s^22p^2$	^1S	0	0.010	00FEL/CUR
1 330.532	75 157.9	M1	$2s^22p^2$	^3P	1	–	$2s^22p^2$	^1D	2	0.030	00FEL/CUR

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification							Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
8 340.	11 987.	M1	$2s^22p^2$	^3P	1	–	$2s^22p^2$	^3P	2	3	07KAT/MOR

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3.13. Ar XIV

B isoelectronic sequence

Ground state: $1s^22s^22p\ ^2P^\circ_{1/2}$

Ionization energy: 6 090 500 ± 1800 cm^{-1} (755.13 ± 0.22 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar XIV are given in Tables 37–39.

We are able to tabulate 35 levels of Ar XIV by means of a fit to the available Ar XIV lines. The preliminary levels for our fit were taken from the NIST Atomic Spectra Database [08RAL/KRA4] with additional levels calculated from these

using some of the classified lines of Fawcett *et al.* [71FAW/GAB], Magunov *et al.* [02MAG/FAE], and Lepson *et al.* [03LEP/BEI] with the guidance of the calculations of Zhang and Sampson [94ZHA/SAM] and Liang *et al.* [04LIA/ZHA] and calculations using the Cowan codes [81COW]. Some level designations were modified as a result our calculations.

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar XIV are compiled from eight sources [71CON/PEA, 71FAW/GAB, 75FAW, 87STE/DIE, 98BRO/DAV, 02MAG/FAE, 03LEP/BEI, 06SOR/HAR]. All lines from 16 other sources [53LYO/DOL, 74BUC/BUC, 76JAL, 78DER, 82HAS/FUK, 87PRI, 93ROC/COR, 95MOR/SER, 97BIE/MAR, 00TRA/BEI, 02BRI/KAA, 02KAA/STE, 03DRA/CRE, 07KAT/MOR, 08DEL, 08SHE/BOZ] were superseded by the above eight. X-ray data from Biémont *et al.* [00BIE/QUI] was not used because the spectral "features" observed could not be resolved into specific transitions. The sources used in this compilation are summarized in Table 38 (Sources of Ar XIV lines). Table 38 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

Liang *et al.* [04LIA/ZHA] list some additional Ar XIV lines in the raw data reported by Lepson *et al.* [03LEP/BEI] which are not reported in the tables of Lepson *et al.* These lines have not been used.

Fawcett *et al.* [71FAW/GAB] reported and only partially classified a line at 27.42(2) Å. From the energy levels, this line appears to be the only available transition connecting the doublet and quartet states. A calculation using the Cowan codes [81COW] indicates a gf value of about 0.08 for this transition. We include this line in the compilation but add a "+x" to the determined energy levels of the lower quartet states to both indicate this uncertainty as well as note the better knowledge about the relative values of the quartets.

Preliminary reports from the SOHO observatory [97RAY, 97KOH] list a doublet to quartet transition at about 496.3 Å, however, a later report [02KO/RAY] does not include this line. We did not include this line in the compilation.

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows:

For the visible line: [06SOR/HAR] over [03DRA/CRE] over [07KAT/MOR] over [97BIE/MAR] over [53LYO/DOL] over [00TRA/BEI] over [87PRI] over [95MOR/SER].

For the rest of the lines:

[02MAG/FAE] over [03LEP/BEI] over [98BRO/DAV] over [75FAW] over [02KAA/STE] over [71FAW/GAB, 87STE/DIE, 02BRI/KAA, 08DEL] over [71CON/PEA, 76JAL, 78DER] over [08SHE/BOZ] over [82HAS/FUK, 93ROC/COR] over [74BUC/BUC].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar XIV levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar XIV when they do not fit the known levels. Additional Rydberg lines are reported by Denis *et al.* [71DEN/DÉS] and Buchet *et al.* [74BUC/BUC].

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

Intensities have been taken from the stated sources and therefore are not on a common scale. The intensity codes given in the Ar XIV line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
sh	Shoulder
*	Multiply classified line (two or more classifications of this line share the same intensity)
M1	Magnetic dipole line

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the B isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in October 2008.

TABLE 37. Energy levels of Ar XIV

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0.000	0.000	1	$2s^22p$	$^2P^\circ$	1/2
22 656.239	0.005	1	$2s^22p$	$^2P^\circ$	3/2

TABLE 37. Energy levels of Ar XIV—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
230 296+x	51	0	$2s2p^2$	^4P	1/2
238 954+x	24	0	$2s2p^2$	^4P	3/2
250 423+x	23	0	$2s2p^2$	^4P	5/2
410 254	25	0	$2s2p^2$	^2D	3/2
411 205.	9.	0	$2s2p^2$	^2D	5/2
514 401.	8.	0	$2s2p^2$	^2S	1/2
545 244	42	0	$2s2p^2$	^2P	1/2
554 678.	8.	0	$2s2p^2$	^2P	3/2
718 925.+x	19.	1	$2p^3$	$^4S^\circ$	3/2
810 387	41	1	$2p^3$	$^2D^\circ$	3/2
812 956	27	1	$2p^3$	$^2D^\circ$	5/2
908 793	56	1	$2p^3$	$^2P^\circ$	1/2
913 056	51	1	$2p^3$	$^2P^\circ$	3/2
3 533 890	200	1	$2s^23p$	$^2P^\circ$	1/2
3 534 840	200	1	$2s^23p$	$^2P^\circ$	3/2
3 640 470	260	0	$2s^23d$	^2D	3/2
3 641 780	260	0	$2s^23d$	^2D	5/2
3 705 800	330	1	$2s2p(^3P^\circ)3s$	$^2P^\circ$	1/2
3 720 820	330	1	$2s2p(^3P^\circ)3s$	$^2P^\circ$	3/2
3 828 850	430	0	$2s2p(^3P^\circ)3p$	^2D	5/2
3 885 390	600	1	$2s2p(^3P^\circ)3d$	$^2D^\circ$	3/2
3 954 400	1100	1	$2s2p(^3P^\circ)3d$	$^2F^\circ$	7/2
4 085 000	2700	1	$2s2p(^1P^\circ)3d$	$^2F^\circ$	7/2
4 722 050	870	0	$2s^24d$	^2D	5/2
4 724 300	1100	0	$2s^24d$	^2D	3/2
24 701 700	3100	0	$1s2s^22p^2(^1D)$	^2D	3/2
24 703 000	3000	0	$1s2s^22p^2(^1D)$	^2D	5/2
24 740 900	3100	0	$1s2s^22p^2(^3P)$	^2P	3/2
24 880 400	3000	1	$1s2s2p^3(^2D^\circ)$	$^4D^\circ$	7/2
24 884 700	3000	1	$1s2s2p^3(^2D^\circ)$	$^4D^\circ$	5/2
25 141 000	2200	1	$1s2s2p^3(^2P^\circ)$	$^2P^\circ$	3/2
25 170 500	2200	1	$1s2s2p^3(^2D^\circ)$	$^2D^\circ$	5/2
25 501 600	3900	0	$1s2p^4(^3P)$	^2P	3/2

TABLE 38. Sources of Ar XIV lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
71CON/PEA	2	plasma focus discharge. 2-m GI VS	26	0.03
71FAW/GAB	7	theta pinch. 2-m GI VS	27–258	0.02
75FAW	4	not specified	208–257	0.006, 0.03
87STE/DIE	6	gas-puff Z-pinch. 2-m GI VS	199–250	0.02
98BRO/DAV	2	solar active region. rocket telescope and spectrograph	188, 194	0.003
02MAG/FAE	13	laser pulse hits gas jet cluster. spherically bent crystal spectrometer	4.04–4.07	0.0005
03LEP/BEI	12	EBIT. 0.237-m GI vacuum spectrometer	21–32	0.002–0.009
06SOR	1	EBIT. 0.6-m Czerny-Turner spectrometer	4413	0.001

[a]Abbreviations used: GI means grazing incidence; VS means vacuum spectrograph.

TABLE 39. Spectral lines of Ar XIV

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
4.0389	24 759 000		$2s2p^2$	^2D	5/2	– $1s2s2p^3(^2D^\circ)$	$^2D^\circ$	5/2	0.0005	02MAG/FAE
4.0439	24 729 000	*	$2s2p^2$	^2D	3/2	– $1s2s2p^3(^2P^\circ)$	$^2P^\circ$	3/2	0.0005	02MAG/FAE
4.0439	24 729 000	*	$2s2p^2$	^2D	5/2	– $1s2s2p^3(^2P^\circ)$	$^2P^\circ$	3/2	0.0005	02MAG/FAE
4.0456	24 718 000		$2s^22p$	$^2P^\circ$	3/2	– $1s2s^22p^2(^3P)$	^2P	3/2	0.0005	02MAG/FAE
4.0483	24 702 000		$2s^22p$	$^2P^\circ$	1/2	– $1s2s^22p^2(^1D)$	^2D	3/2	0.0005	02MAG/FAE
4.0518	24 680 000	*	$2p^3$	$^2D^\circ$	5/2	– $1s2p^4(^3P)$	^2P	3/2	0.0005	02MAG/FAE
4.0518	24 680 000	*	$2s^22p$	$^2P^\circ$	3/2	– $1s2s^22p^2(^1D)$	^2D	5/2	0.0005	02MAG/FAE
4.0575	24 646 000		$2s2p^2$	^4P	3/2	– $1s2s2p^3(^2D^\circ)$	$^4D^\circ$	5/2	0.0005	02MAG/FAE
4.0601	24 630 000	*	$2s2p^2$	^4P	5/2	– $1s2s2p^3(^2D^\circ)$	$^4D^\circ$	7/2	0.0005	02MAG/FAE
4.0601	24 630 000	*	$2s2p^2$	^2S	1/2	– $1s2s2p^3(^2P^\circ)$	$^2P^\circ$	3/2	0.0005	02MAG/FAE
4.0624	24 616 000		$2s2p^2$	^2P	3/2	– $1s2s2p^3(^2D^\circ)$	$^2D^\circ$	5/2	0.0005	02MAG/FAE
4.0659	24 595 000	*	$2p^3$	$^2P^\circ$	1/2	– $1s2p^4(^3P)$	^2P	3/2	0.0005	02MAG/FAE
4.0659	24 595 000	*	$2p^3$	$^2P^\circ$	3/2	– $1s2p^4(^3P)$	^2P	3/2	0.0005	02MAG/FAE
21.167	4 724 300	3	$2s^22p$	$^2P^\circ$	1/2	– $2s^24d$	^2D	3/2	0.005	03LEP/BEI
21.280	4 699 200	2	$2s^22p$	$^2P^\circ$	3/2	– $2s^24d$	^2D	5/2	0.004	03LEP/BEI
25.56	3 912 000	60 *	$2p^3$	$^2D^\circ$	3/2	– $2s^24d$	^2D	5/2	0.03	71CON/PEA
25.56	3 912 000	60 *	$2p^3$	$^2D^\circ$	5/2	– $2s^24d$	^2D	5/2	0.03	71CON/PEA
26.273	3 806 200	7 b	$2s^22p$	$^2P^\circ$	3/2	– $2s2p(^3P^\circ)3p$	^2D	5/2	0.003	03LEP/BEI
27.22	3 674 000	1	$2s2p^2$	^2D	5/2	– $2s2p(^1P^\circ)3d$	$^2F^\circ$	7/2	0.02	71FAW/GAB
27.42	3 647 000	4	$2s2p^2$	^4P	3/2	– $2s2p(^3P^\circ)3d$	$^2D^\circ$	3/2	0.02	71FAW/GAB
27.469	3 640 500	20	$2s^22p$	$^2P^\circ$	1/2	– $2s^23d$	^2D	3/2	0.002	03LEP/BEI
27.631	3 619 100	19 b	$2s^22p$	$^2P^\circ$	3/2	– $2s^23d$	^2D	5/2	0.002	03LEP/BEI
28.223	3 543 200	4	$2s2p^2$	^2D	5/2	– $2s2p(^3P^\circ)3d$	$^2F^\circ$	7/2	0.009	03LEP/BEI
28.780	3 474 600	4 *	$2s2p^2$	^2D	3/2	– $2s2p(^3P^\circ)3d$	$^2D^\circ$	3/2	0.006	03LEP/BEI
28.780	3 474 600	4 *	$2s2p^2$	^2D	5/2	– $2s2p(^3P^\circ)3d$	$^2D^\circ$	3/2	0.006	03LEP/BEI
30.215	3 309 600	4	$2s2p^2$	^2D	5/2	– $2s2p(^3P^\circ)3s$	$^2P^\circ$	3/2	0.003	03LEP/BEI
30.344	3 295 500	3	$2s2p^2$	^2D	3/2	– $2s2p(^3P^\circ)3s$	$^2P^\circ$	1/2	0.003	03LEP/BEI
32.014	3 123 630	6 b *	$2s2p^2$	^2D	3/2	– $2s^23p$	$^2P^\circ$	1/2	0.002	03LEP/BEI
32.014	3 123 630	6 b *	$2s2p^2$	^2D	5/2	– $2s^23p$	$^2P^\circ$	3/2	0.002	03LEP/BEI
180.29	554 660		$2s^22p$	$^2P^\circ$	1/2	– $2s2p^2$	^2P	3/2	0.02	71FAW/GAB
183.41	545 230		$2s^22p$	$^2P^\circ$	1/2	– $2s2p^2$	^2P	1/2	0.02	71FAW/GAB
187.962	532 022.	26	$2s^22p$	$^2P^\circ$	3/2	– $2s2p^2$	^2P	3/2	0.003	98BRO/DAV
191.35	522 600		$2s^22p$	$^2P^\circ$	3/2	– $2s2p^2$	^2P	1/2	0.02	71FAW/GAB
194.401	514 401.	19	$2s^22p$	$^2P^\circ$	1/2	– $2s2p^2$	^2S	1/2	0.003	98BRO/DAV
199.262	501 850		$2s2p^2$	^2D	5/2	– $2p^3$	$^2P^\circ$	3/2	0.02	87STE/DIE
200.586	498 540		$2s2p^2$	^2D	3/2	– $2p^3$	$^2P^\circ$	1/2	0.02	87STE/DIE
203.35	491 760		$2s^22p$	$^2P^\circ$	3/2	– $2s2p^2$	^2S	1/2	0.02	71FAW/GAB
204.654	488 630		$2s2p^2$	^4P	1/2	– $2p^3$	$^4S^\circ$	3/2	0.02	87STE/DIE
208.346	479 971.		$2s2p^2$	^4P	3/2	– $2p^3$	$^4S^\circ$	3/2	0.006	75FAW
213.446	468 503.		$2s2p^2$	^4P	5/2	– $2p^3$	$^4S^\circ$	3/2	0.006	75FAW
243.79	410 190		$2s^22p$	$^2P^\circ$	1/2	– $2s2p^2$	^2D	3/2	0.03	75FAW
248.315	402 710		$2s2p^2$	^2D	3/2	– $2p^3$	$^2D^\circ$	5/2	0.02	87STE/DIE
248.916	401 740	sh	$2s2p^2$	^2D	5/2	– $2p^3$	$^2D^\circ$	5/2	0.02	87STE/DIE
249.917	400 130	b	$2s2p^2$	^2D	3/2	– $2p^3$	$^2D^\circ$	3/2	0.02	87STE/DIE
257.368	388 549.		$2s^22p$	$^2P^\circ$	3/2	– $2s2p^2$	^2D	5/2	0.006	75FAW
257.98	387 630		$2s^22p$	$^2P^\circ$	3/2	– $2s2p^2$	^2D	3/2	0.02	71FAW/GAB

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
4 412.556	22 656.239	M1	$2s^22p$	$^2P^\circ$	1/2	– $2s^22p$	$^2P^\circ$	3/2	0.001	06SOR

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TABLE 40. Energy levels of Ar XV

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0.	16.	0	$1s^22s^2$	^1S	0
228 684	35	1	$1s^22s2p$	$^3P^\circ$	0
235 860.182	0.000	1	$1s^22s2p$	$^3P^\circ$	1
252 679.553	0.006	1	$1s^22s2p$	$^3P^\circ$	2
452 182	63	1	$1s^22s2p$	$^1P^\circ$	1
604 917	27	0	$1s^22p^2$	^3P	0
615 140.	19.	0	$1s^22p^2$	^3P	1
628 308	24	0	$1s^22p^2$	^3P	2
840 620	70	0	$1s^22p^2$	^1S	0
3 980 760	380	0	$1s^22s3s$	^1S	0
4 042 040	490	1	$1s^22s3p$	$^1P^\circ$	1
4 106 160	600	0	$1s^22s3d$	^3D	1
4 109 660	300	0	$1s^22s3d$	^3D	3
4 113 330	600	0	$1s^22s3d$	^3D	2
4 149 860	280	0	$1s^22s3d$	^1D	2
5 353 420	960	0	$1s^22s4d$	^1D	2
25 127 700	3100	0	$1s2s2p^2(^1D)$	^3D	3
25 150 500	3100	0	$1s2s2p^2(^1D)$	^3D	2
25 229 900	3100	0	$1s2s2p^2(^1S)$	^3S	1
25 283 300	3100	0	$1s2s2p^2(^1D)$	^1D	2
25 431 700	3100	1	$1s2p^3(^2D)$	$^3D^\circ$	3
25 436 100	3100	1	$1s2p^3(^2D)$	$^3D^\circ$	1
25 543 000	3100	1	$1s2p^3(^2P)$	$^3P^\circ$	1

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3.14. Ar XV

Be isoelectronic sequence
Ground state: $1s^22s^2\ ^1S_0$

Ionization energy: 6 899 800 ± 2200 cm^{-1} (855.47 ± 0.27 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar XV are given in Tables 40–42.

We are able to tabulate 23 levels of Ar XV by means of a fit to the available Ar XV lines. The preliminary levels for our fit were taken from the work of Edlén [83EDL, 85EDL] with additional levels calculated from these using some of the classified lines of Magunov *et al.* [02MAG/FAE], Lepson *et al.* [03LEP/BEI], and Liang *et al.* [04LIA/ZHA] with the

TABLE 41. Sources of Ar XV lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
78DER	1	solar flares. spectroheliograph on Skylab satellite	424	0.03
87STE/DIE	7	gas-puff Z-pinch. 2-m GI VS	255–276	0.02
02MAG/FAE	9	laser pulse hits gas-jet cluster. spherically bent crystal spectrometer	4.00–4.03	0.0005
03LEP/BEI	5	EBIT. 0.237-m GI vacuum spectrometer	20–28	0.002–0.004
04LIA/ZHA	2	reevaluation of the data of 03LEP/BEI confirmed in 08LEP/BEI	26	0.004
06SOR	1	EBIT. 0.6-m Czerny-Turner spectrometer	5944	0.002
07KAT/MOR	1	large helical device. 3-m NI spectrometer	221	0.03

[a]Abbreviations used: NI means normal incidence; GI means grazing incidence; VS means vacuum spectrograph.

TABLE 42. Spectral lines of Ar XV

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
4.0000	25 000 000	*	$1s^22s2p$	$^3P^\circ$	0 –	$1s2s2p^2(^1S)$	^3S	1	0.0005	02MAG/FAE
4.0000	25 000 000	*	$1s^22s2p$	$^3P^\circ$	1 –	$1s2s2p^2(^1S)$	^3S	1	0.0005	02MAG/FAE
4.0044	24 973 000		$1s^22s2p$	$^3P^\circ$	2 –	$1s2s2p^2(^1S)$	^3S	1	0.0005	02MAG/FAE
4.0137	24 915 000	*	$1s^22s2p$	$^3P^\circ$	1 –	$1s2s2p^2(^1D)$	^3D	2	0.0005	02MAG/FAE
4.0137	24 915 000	*	$1s^22p^2$	^3P	2 –	$1s2p^3(^2P)$	$^3P^\circ$	1	0.0005	02MAG/FAE
4.0201	24 875 000		$1s^22s2p$	$^3P^\circ$	2 –	$1s2s2p^2(^1D)$	^3D	3	0.0005	02MAG/FAE
4.0272	24 831 000	*	$1s^22p^2$	^3P	0 –	$1s2p^3(^2D)$	$^3D^\circ$	1	0.0005	02MAG/FAE
4.0272	24 831 000	*	$1s^22s2p$	$^1P^\circ$	1 –	$1s2s2p^2(^1D)$	^1D	2	0.0005	02MAG/FAE
4.0317	24 803 000		$1s^22p^2$	^3P	2 –	$1s2p^3(^2D)$	$^3D^\circ$	3	0.0005	02MAG/FAE
20.403	4 901 200		$1s^22s2p$	$^1P^\circ$	1 –	$1s^22s4d$	^1D	2	0.004	03LEP/BEI
24.740	4 042 000		$1s^22s^2$	^1S	0 –	$1s^22s3p$	$^1P^\circ$	1	0.003	03LEP/BEI
25.790	3 877 500	*	$1s^22s2p$	$^3P^\circ$	0 –	$1s^22s3d$	^3D	1	0.004	04LIA/ZHA
25.790	3 877 500	*	$1s^22s2p$	$^3P^\circ$	1 –	$1s^22s3d$	^3D	2	0.004	04LIA/ZHA
25.927	3 857 000		$1s^22s2p$	$^3P^\circ$	2 –	$1s^22s3d$	^3D	3	0.002	03LEP/BEI
27.044	3 697 700		$1s^22s2p$	$^1P^\circ$	1 –	$1s^22s3d$	^1D	2	0.002	03LEP/BEI
28.340	3 528 600		$1s^22s2p$	$^1P^\circ$	1 –	$1s^22s3s$	^1S	0	0.003	03LEP/BEI
221.15	452 180		$1s^22s^2$	^1S	0 –	$1s^22s2p$	$^1P^\circ$	1	0.03	07KAT/MOR
254.824	392 430		$1s^22s2p$	$^3P^\circ$	1 –	$1s^22p^2$	^3P	2	0.020	87STE/DIE
257.441	388 440	b	$1s^22s2p$	$^1P^\circ$	1 –	$1s^22p^2$	^1S	0	0.020	87STE/DIE
258.762	386 460		$1s^22s2p$	$^3P^\circ$	0 –	$1s^22p^2$	^3P	1	0.020	87STE/DIE
263.666	379 270		$1s^22s2p$	$^3P^\circ$	1 –	$1s^22p^2$	^3P	1	0.020	87STE/DIE
266.209	375 640		$1s^22s2p$	$^3P^\circ$	2 –	$1s^22p^2$	^3P	2	0.020	87STE/DIE
270.961	369 060		$1s^22s2p$	$^3P^\circ$	1 –	$1s^22p^2$	^3P	0	0.020	87STE/DIE
275.885	362 470		$1s^22s2p$	$^3P^\circ$	2 –	$1s^22p^2$	^3P	1	0.020	87STE/DIE
423.98	235 860.		$1s^22s^2$	^1S	0 –	$1s^22s2p$	$^3P^\circ$	1	0.03	78DER

Observed Air Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
5943.879	16 819.370	M1	$1s^22s2p$	$^3P^\circ$	1 –	$1s^22s2p$	$^3P^\circ$	2	0.002	06SOR

guidance of the calculations of Bhatia and Landi [08BHA/LAN] and calculations using the Cowan codes [81COW]. Additional levels are assigned by Khardi *et al.* [94KHA/BUC]. They determined $n=3$ levels by means of calculations and isoelectronic extrapolations. They assigned lines observed between 72 and 87 Å in beam-foil experiments to $n=3$ to $n=4$ transitions and confirmed the levels by isoelectronic extrapolations where possible. Given the uncertainties involved, their lines and levels are not included in our tables.

In the energy level table all levels are designated using LS coupling.

The observed spectral lines of Ar XV are compiled from seven sources [78DER, 87STE/DIE, 02MAG/FAE, 03LEP/BEI, 04LIA/ZHA, 06SOR/HAR, 07KAT/MOR]. All lines from 16 other sources [71CON/PEA, 71FAW/GAB, 72PUR/WID, 75WID, 76SAN/BRU, 78WID, 80FAW/RID, 82HAS/FUK, 87HUA/LIP, 98BAC/MAR, 01MAT/FOU, 01WIE/WIL, 02KAA/STE, 03DRA/CRE, 04TAK/AKI, 08LEP/BEI] were superseded by the above seven. X-ray data from Biémont *et al.* [00BIE/QUI] was not used because the spectral features observed could not be resolved into specific transitions. The sources used in this compilation are summarized in Table 41 (Sources of Ar XV lines). Table 41 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

Liang *et al.* [04LIA/ZHA] listed one additional Ar XV line (25.790 Å) in the data reported by Lepson *et al.* [03LEP/BEI] which are not reported by Lepson *et al.* [03LEP/BEI]. However, since the authors of [03LEP/BEI] included this line in a subsequent work [08LEP/BEI] we included this line and the levels it defines.

Except for some possible classifications of x-ray lines, there are no lines which involve the $1s^22p^2\ ^1D_2$ level included by Edlén [83EDL]. This level and one x-ray line are not included here.

The priority in our choice of lines which appear in more than one reference is, in general, specified as follows:

[02MAG/FAE] over [06SOR/HAR] over [03LEP/BEI] over [04LIA/ZHA] over [04TAK/AKI] over [03DRA/CRE] over [02KAA/STE] over [87STE/DIE] over [07KAT/MOR] over [71FAW/GAB] over [78DER] over [72PUR/WID] over [78WID, 76SAN/BRU, 75WID, 71CON/PEA] over [98BAC/MAR] over [80FAW/RID] over [87HUA/LIP, 82HAS/FUK, 01MAT/FOU, 01WIE/WIL, 08LEP/BEI].

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar XV levels. Only classifiable lines are included in our compilation. Other lines are listed in the references but are not included since we cannot be sure that they are from Ar XV when they do not fit the known levels. Additional Rydberg lines are reported by Buchet *et al.* [74BUC/BUC].

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

The intensity codes given in the Ar XV line table are taken from the specified sources. Their meaning is stated below:

Code	Definition
b	Blend
*	Multiply classified line (two or more classifications of this line share the same intensity)
M1	Magnetic dipole line

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration.

In order to show the accuracy of the measured splitting between the $1s^22s2p\ ^3P^\circ_1$ and $^3P^\circ_2$ levels, the energy levels are listed relative to the $1s^22s2p\ ^3P^\circ_1$ level fixed at a value of 235 860.182 cm^{-1}.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the Be isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in December 2008.

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3.15. Ar XVI

Li isoelectronic sequence
Ground state: $1s^2 2s\ ^2S_{1/2}$
Ionization energy: 7 406 850 ± 850 cm^{-1} (918.33 ± 0.11 eV) [99BIE/FRÉ]

Energy levels, sources, and spectral lines for Ar XVI are given in Tables 43–45.

We are able to tabulate 52 levels of Ar XVI by means of a fit to the available Ar XVI lines. The preliminary levels for our fit were obtained from the isoelectronically predicted lines of Edlén [79EDL], the calculated lines of Vainshtein and Safronova [85VAI/SAF], the smoothed along the Li isoelectronic sequence lines of Kim *et al.* [91KIM/BAI], and the calculated lines of Safronova *et al.* [04SAF/SAF].

In the energy level table all levels are designated using LS coupling.

For Ar XVI a number of experimentally observed lines have been reported. See, for example, Peacock *et al.* [84PEA/STA], Rice *et al.* [87RIC/MAR], Skobelev *et al.* [97SKO/FAE], Tarbutt *et al.* [01TAR/BAR], Magunov *et al.* [02MAG/FAE], Biedermann *et al.* [03BIE/RAD], and Lepson *et al.* [03LEP/BEI]. These are generally consistent with more complete sets of lines obtained by means of theoretical calculations [85VAI/SAF, 95SAF/SAF, 04SAF/SAF] and by lines obtained by smoothing [91KIM/BAI] or predicting [79EDL] experimental and theoretical values along the Li isoelectronic sequence. In order to provide as much information as possible, the theoretical, predicted, and smoothed values are used here in the line table and so denoted in the comment codes. Two observed lines from Stevens *et al.* [87STE/DIE] are also included.

The experimental data reported by Lepson *et al.* [03LEP/BEI] contain five features identified as belonging to seven lines. These include two blends and one shoulder of another line. So, only two clean lines are reported. We note that these are about 0.02 Å above the value in our table obtained by Edlén [79EDL].

Table 44 specifies the reference from which the lines were obtained, the number of classifications that apply to lines from this reference, whether the lines were calculated or smoothed or, if observed, the light source used to produce the lines and the spectrometer used to observe them, the wavelength range of lines included in the table of lines, and the range of uncertainties for these lines.

Some Ar XVI lines involving transitions between principal quantum number n and $n+1$ levels for $n=4-7$, 12, 13 have been reported by Whyte *et al.* [98WHY/ISL] using charge-exchange spectroscopy. They are not included here.

All candidate lines were passed through a program to determine if they correspond to a transition between the known Ar XVI levels. Only classifiable lines are included in our compilation.

Transition probability calculations using the Cowan codes [81COW] were used to help resolve choices between multiple possible classifications of lines.

The meaning of the intensity codes given in the Ar XVI line table is stated below:

Code	Definition
c	Calculated wavelength
p	Wavelength predicted along the Li isoelectronic sequence

Code	Definition
s	Wavelength smoothed along the Li isoelectronic sequence
*	Multiply classified line

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC [69RAD]. This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. In the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration.

The ionization energy was obtained by Biémont *et al.* [99BIE/FRÉ] by systematic consideration along the Li isoelectronic sequence of differences between *ab initio* relativistic multiconfiguration Dirac–Fock calculations and the empirical values of these ionization energies compiled by Moore [70MOO].

Collection of lines and levels was completed in February 2009.

TABLE 43. Energy Levels of Ar XVI

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0.	3.	0	$1s^22s$	^2S	1/2
257 026.	4.	1	$1s^22p$	$^2P^\circ$	1/2
282 603.	4.	1	$1s^22p$	$^2P^\circ$	3/2
4 176 030	540	0	$1s^23s$	^2S	1/2
4 246 950	580	1	$1s^23p$	$^2P^\circ$	1/2
4 254 180	670	1	$1s^23p$	$^2P^\circ$	3/2
4 281 030	160	0	$1s^23d$	^2D	3/2
4 283 560	800	0	$1s^23d$	^2D	5/2
5 605 700	1000	0	$1s^24s$	^2S	1/2
5 634 800	1600	1	$1s^24p$	$^2P^\circ$	1/2
5 637 900	1600	1	$1s^24p$	$^2P^\circ$	3/2
5 648 940	270	0	$1s^24d$	^2D	3/2
5 649 610	770	0	$1s^24d$	^2D	5/2
6 259 530	260	0	$1s^25s$	^2S	1/2
6 274 820	390	1	$1s^25p$	$^2P^\circ$	1/2
6 276 440	390	1	$1s^25p$	$^2P^\circ$	3/2
6 282 200	260	0	$1s^25d$	^2D	3/2
6 282 630	360	0	$1s^25d$	^2D	5/2
24 836 200	1300	0	$1s2s^2$	^2S	1/2
24 901 000	1900	1	$1s(^2S)2s2p(^3P^\circ)$	$^4P^\circ$	1/2
24 907 800	1900	1	$1s(^2S)2s2p(^3P^\circ)$	$^4P^\circ$	3/2
25 104 200	1900	1	$1s(^2S)2s2p(^3P^\circ)$	$^2P^\circ$	1/2
25 117 400	1900	1	$1s(^2S)2s2p(^3P^\circ)$	$^2P^\circ$	3/2
25 198 400	1900	1	$1s(^2S)2s2p(^1P^\circ)$	$^2P^\circ$	1/2
25 204 200	1900	1	$1s(^2S)2s2p(^1P^\circ)$	$^2P^\circ$	3/2
25 181 100	1300	0	$1s(^2S)2p^2(^3P)$	^4P	1/2
25 192 300	1300	0	$1s(^2S)2p^2(^3P)$	^4P	3/2
25 204 700	1900	0	$1s(^2S)2p^2(^3P)$	^4P	5/2
25 320 900	1300	0	$1s(^2S)2p^2(^1D)$	^2D	3/2
25 321 400	1900	0	$1s(^2S)2p^2(^1D)$	^2D	5/2
25 346 600	1300	0	$1s(^2S)2p^2(^3P)$	^2P	1/2
25 372 100	1300	0	$1s(^2S)2p^2(^3P)$	^2P	3/2
25 499 400	1400	0	$1s(^2S)2p^2(^1S)$	^2S	1/2

TABLE 43. Energy Levels of Ar XVI—Continued

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
29 176 100	3000	0	$1s2s(^3S)3s$	^2S	1/2
29 295 700	3000	0	$1s2s(^1S)3s$	^2S	1/2
29 201 300	4300	1	$1s2s(^3S)3p$	$^4P^\circ$	3/2
29 212 400	4300	1	$1s2s(^3S)3p$	$^2P^\circ$	3/2
29 213 300	4300	1	$1s2s(^3S)3p$	$^2P^\circ$	1/2
29 360 800	4300	1	$1s2s(^1S)3p$	$^2P^\circ$	3/2
29 360 800	4300	1	$1s2s(^1S)3p$	$^2P^\circ$	1/2
29 294 700	4200	0	$1s2s(^3S)3d$	^2D	3/2
29 295 000	4200	0	$1s2s(^3S)3d$	^2D	5/2
29 382 000	4200	0	$1s2p(^3P^\circ)3p$	^2P	3/2
29 387 100	4200	0	$1s2p(^3P^\circ)3p$	^4D	3/2
29 436 200	3000	0	$1s2p(^3P^\circ)3p$	^2D	3/2
29 436 200	3000	0	$1s2p(^3P^\circ)3p$	^4S	3/2
29 455 800	4300	0	$1s2p(^3P^\circ)3p$	^2D	5/2
29 458 400	4300	0	$1s2p(^3P^\circ)3p$	^4P	3/2
29 478 400	3000	0	$1s2p(^3P^\circ)3p$	^2S	1/2
29 526 300	3000	0	$1s2p(^1P^\circ)3p$	^2D	3/2
29 527 500	4300	0	$1s2p(^1P^\circ)3p$	^2D	5/2
29 535 300	3000	0	$1s2p(^1P^\circ)3p$	^2P	3/2

TABLE 44. Sources of Ar XVI lines

Source	Number of classifications	Light source/Spectrometers[a]	Wavelength range (Å)	Uncertainty (Å)
79EDL	12	predicted from experimental data and theoretical calculations along the Li isoelectronic sequence	17.74–25.68	0.005
85VAI/SAF	9	calculation	15.93–25.01	0.001
87STE/DIE	2	gas-puff Z-pinch. 2-m GI VS	71.34, 71.67	0.03
91KIM/BAI	2	smoothed experimental data and theoretical calculations along the Li isoelectronic sequence	353.9, 389.1	0.003
95SAF/SAF	26	calculation	3.406–3.461	0.0005
04SAF/SAF	22	calculation	3.962–4.073	0.0003

[a]Abbreviations used: GI means grazing incidence; VS means vacuum spectrograph.

TABLE 45. Spectral Lines of Ar XVI

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertaintyof Observed Wavelength (Å)	Source of Line
			Configuration	Term	J		Configuration	Term	J		
[3.4059]	[29 361 000]	c *	$1s^22s$	^2S	1/2	–	$1s2s(^1S)3p$	$^2P^\circ$	1/2	0.0005	95SAF/SAF
[3.4059]	[29 361 000]	c *	$1s^22s$	^2S	1/2	–	$1s2s(^1S)3p$	$^2P^\circ$	3/2	0.0005	95SAF/SAF
[3.4155]	[29 278 000]	c	$1s^22p$	$^2P^\circ$	1/2	–	$1s2p(^1P^\circ)3p$	^2P	3/2	0.0005	95SAF/SAF
[3.4166]	[29 269 000]	c	$1s^22p$	$^2P^\circ$	1/2	–	$1s2p(^1P^\circ)3p$	^2D	3/2	0.0005	95SAF/SAF
[3.4185]	[29 253 000]	c	$1s^22p$	$^2P^\circ$	3/2	–	$1s2p(^1P^\circ)3p$	^2P	3/2	0.0005	95SAF/SAF
[3.4194]	[29 245 000]	c	$1s^22p$	$^2P^\circ$	3/2	–	$1s2p(^1P^\circ)3p$	^2D	5/2	0.0005	95SAF/SAF
[3.4195]	[29 244 000]	c	$1s^22p$	$^2P^\circ$	3/2	–	$1s2p(^1P^\circ)3p$	^2D	3/2	0.0005	95SAF/SAF
[3.4222]	[29 221 000]	c	$1s^22p$	$^2P^\circ$	1/2	–	$1s2p(^3P^\circ)3p$	^2S	1/2	0.0005	95SAF/SAF
[3.4231]	[29 213 000]	c	$1s^22s$	^2S	1/2	–	$1s2s(^3S)3p$	$^2P^\circ$	1/2	0.0005	95SAF/SAF
[3.4232]	[29 212 000]	c	$1s^22s$	^2S	1/2	–	$1s2s(^3S)3p$	$^2P^\circ$	3/2	0.0005	95SAF/SAF
[3.4245]	[29 201 000]	c *	$1s^22s$	^2S	1/2	–	$1s2s(^3S)3p$	$^4P^\circ$	3/2	0.0005	95SAF/SAF
[3.4245]	[29 201 000]	c *	$1s^22p$	$^2P^\circ$	1/2	–	$1s2p(^3P^\circ)3p$	^4P	3/2	0.0005	95SAF/SAF
[3.4251]	[29 196 000]	c	$1s^22p$	$^2P^\circ$	3/2	–	$1s2p(^3P^\circ)3p$	^2S	1/2	0.0005	95SAF/SAF
[3.4271]	[29 179 000]	c *	$1s^22p$	$^2P^\circ$	1/2	–	$1s2p(^3P^\circ)3p$	^4S	3/2	0.0005	95SAF/SAF

TABLE 45. Spectral Lines of Ar XVI—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
[3.4271]	[29 179 000]	c *	$1s^22p$	$^2P^\circ$	1/2	– $1s2p(^3P^\circ)3p$	^2D	3/2	0.0005	95SAF/SAF
[3.4278]	[29 173 000]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s2p(^3P^\circ)3p$	^2D	5/2	0.0005	95SAF/SAF
[3.4301]	[29 154 000]	c *	$1s^22p$	$^2P^\circ$	3/2	– $1s2p(^3P^\circ)3p$	^4S	3/2	0.0005	95SAF/SAF
[3.4301]	[29 154 000]	c *	$1s^22p$	$^2P^\circ$	3/2	– $1s2p(^3P^\circ)3p$	^2D	3/2	0.0005	95SAF/SAF
[3.4359]	[29 104 000]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s2p(^3P^\circ)3p$	^4D	3/2	0.0005	95SAF/SAF
[3.4365]	[29 099 000]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s2p(^3P^\circ)3p$	^2P	3/2	0.0005	95SAF/SAF
[3.4437]	[29 039 000]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s2s(^1S)3s$	^2S	1/2	0.0005	95SAF/SAF
[3.4438]	[29 038 000]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s2s(^3S)3d$	^2D	3/2	0.0005	95SAF/SAF
[3.4467]	[29 013 000]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s2s(^1S)3s$	^2S	1/2	0.0005	95SAF/SAF
[3.4468]	[29 012 000]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s2s(^3S)3d$	^2D	5/2	0.0005	95SAF/SAF
[3.4579]	[28 919 000]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s2s(^3S)3s$	^2S	1/2	0.0005	95SAF/SAF
[3.4610]	[28 893 000]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s2s(^3S)3s$	^2S	1/2	0.0005	95SAF/SAF
[3.9616]	[25 242 300]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s(^2S)2p^2(^1S)$	^2S	1/2	0.0003	04SAF/SAF
[3.9656]	[25 216 900]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s(^2S)2p^2(^1S)$	^2S	1/2	0.0003	04SAF/SAF
[3.9676]	[25 204 200]	c	$1s^22s$	^2S	1/2	– $1s(^2S)2s2p(^1P^\circ)$	$^2P^\circ$	3/2	0.0003	04SAF/SAF
[3.9685]	[25 198 400]	c	$1s^22s$	^2S	1/2	– $1s(^2S)2s2p(^1P^\circ)$	$^2P^\circ$	1/2	0.0003	04SAF/SAF
[3.9813]	[25 117 400]	c	$1s^22s$	^2S	1/2	– $1s(^2S)2s2p(^3P^\circ)$	$^2P^\circ$	3/2	0.0003	04SAF/SAF
[3.9817]	[25 114 900]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s(^2S)2p^2(^3P)$	^2P	3/2	0.0003	04SAF/SAF
[3.9834]	[25 104 200]	c	$1s^22s$	^2S	1/2	– $1s(^2S)2s2p(^3P^\circ)$	$^2P^\circ$	1/2	0.0003	04SAF/SAF
[3.9857]	[25 089 700]	c *	$1s^22p$	$^2P^\circ$	1/2	– $1s(^2S)2p^2(^3P)$	^2P	1/2	0.0003	04SAF/SAF
[3.9857]	[25 089 700]	c *	$1s^22p$	$^2P^\circ$	3/2	– $1s(^2S)2p^2(^3P)$	^2P	3/2	0.0003	04SAF/SAF
[3.9898]	[25 063 900]	c *	$1s^22p$	$^2P^\circ$	3/2	– $1s(^2S)2p^2(^3P)$	^2P	1/2	0.0003	04SAF/SAF
[3.9898]	[25 063 900]	c *	$1s^22p$	$^2P^\circ$	1/2	– $1s(^2S)2p^2(^1D)$	^2D	3/2	0.0003	04SAF/SAF
[3.9938]	[25 038 800]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s(^2S)2p^2(^1D)$	^2D	5/2	0.0003	04SAF/SAF
[3.9939]	[25 038 200]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s(^2S)2p^2(^1D)$	^2D	3/2	0.0003	04SAF/SAF
[4.0104]	[24 935 200]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s(^2S)2p^2(^3P)$	^4P	3/2	0.0003	04SAF/SAF
[4.0122]	[24 924 000]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s(^2S)2p^2(^3P)$	^4P	1/2	0.0003	04SAF/SAF
[4.0125]	[24 922 100]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s(^2S)2p^2(^3P)$	^4P	5/2	0.0003	04SAF/SAF
[4.0145]	[24 909 700]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s(^2S)2p^2(^3P)$	^4P	3/2	0.0003	04SAF/SAF
[4.0148]	[24 907 800]	c	$1s^22s$	^2S	1/2	– $1s(^2S)2s2p(^3P^\circ)$	$^4P^\circ$	3/2	0.0003	04SAF/SAF
[4.0159]	[24 901 000]	c	$1s^22s$	^2S	1/2	– $1s(^2S)2s2p(^3P^\circ)$	$^4P^\circ$	1/2	0.0003	04SAF/SAF
[4.0163]	[24 898 500]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s(^2S)2p^2(^3P)$	^4P	1/2	0.0003	04SAF/SAF
[4.0685]	[24 579 100]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s2s^2$	^2S	1/2	0.0003	04SAF/SAF
[4.0727]	[24 553 700]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s2s^2$	^2S	1/2	0.0003	04SAF/SAF
[15.9326]	[6 276 400]	c	$1s^22s$	^2S	1/2	– $1s^25p$	$^2P^\circ$	3/2	0.0010	85VAI/SAF
[15.9367]	[6 274 800]	c	$1s^22s$	^2S	1/2	– $1s^25p$	$^2P^\circ$	1/2	0.0010	85VAI/SAF
[16.5968]	[6 025 300]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s^25d$	^2D	3/2	0.0010	85VAI/SAF
[16.6595]	[6 002 600]	c	$1s^22p$	$^2P^\circ$	1/2	– $1s^25s$	^2S	1/2	0.0010	85VAI/SAF
[16.6666]	[6 000 000]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s^25d$	^2D	5/2	0.0010	85VAI/SAF
[16.6680]	[5 999 500]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s^25d$	^2D	3/2	0.0010	85VAI/SAF
[16.7312]	[5 976 900]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s^25s$	^2S	1/2	0.0010	85VAI/SAF
17.737	5 637 900	p	$1s^22s$	^2S	1/2	– $1s^24p$	$^2P^\circ$	3/2	0.005	79EDL
17.747	5 634 800	p	$1s^22s$	^2S	1/2	– $1s^24p$	$^2P^\circ$	1/2	0.005	79EDL
18.546	5 392 000	p	$1s^22p$	$^2P^\circ$	1/2	– $1s^24d$	^2D	3/2	0.005	79EDL
18.631	5 367 400	p	$1s^22p$	$^2P^\circ$	3/2	– $1s^24d$	^2D	5/2	0.005	79EDL
[18.6346]	[5 366 400]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s^24d$	^2D	3/2	0.0010	85VAI/SAF
18.696	5 348 700	p	$1s^22p$	$^2P^\circ$	1/2	– $1s^24s$	^2S	1/2	0.005	79EDL
18.786	5 323 100	p	$1s^22p$	$^2P^\circ$	3/2	– $1s^24s$	^2S	1/2	0.005	79EDL
23.507	4 254 100	p	$1s^22s$	^2S	1/2	– $1s^23p$	$^2P^\circ$	3/2	0.005	79EDL
23.549	4 246 500	p	$1s^22s$	^2S	1/2	– $1s^23p$	$^2P^\circ$	1/2	0.005	79EDL
24.850	4 024 100	p	$1s^22p$	$^2P^\circ$	1/2	– $1s^23d$	^2D	3/2	0.005	79EDL
24.994	4 001 000	p	$1s^22p$	$^2P^\circ$	3/2	– $1s^23d$	^2D	5/2	0.005	79EDL
[25.0099]	[3 998 420]	c	$1s^22p$	$^2P^\circ$	3/2	– $1s^23d$	^2D	3/2	0.0010	85VAI/SAF
25.517	3 919 000	p	$1s^22p$	$^2P^\circ$	1/2	– $1s^23s$	^2S	1/2	0.005	79EDL

TABLE 45. Spectral Lines of Ar XVI—Continued

Observed Vacuum Wavelength (Å)	Observed Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Observed Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
25.684	3 893 500	p	$1s^22p$	$^2P^\circ$	3/2	– $1s^23s$	^2S	1/2	0.005	79EDL
71.34	1 401 700		$1s^23p$	$^2P^\circ$	1/2	– $1s^24d$	^2D	3/2	0.03	87STE/DIE
71.67	1 395 300		$1s^23p$	$^2P^\circ$	3/2	– $1s^24d$	^2D	5/2	0.03	87STE/DIE
353.853	282 603.2	s	$1s^22s$	^2S	1/2	– $1s^22p$	$^2P^\circ$	3/2	0.003	91KIM/BAI
389.066	257 025.8	s	$1s^22s$	^2S	1/2	– $1s^22p$	$^2P^\circ$	1/2	0.003	91KIM/BAI

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3.16. Ar XVII

He isoelectronic sequence
Ground state: $1s^2\ ^1S_0$
Ionization energy: 33 235 410 ± 3 cm^{-1} (4120.6653 ± 0.0004 eV) [05ART/SHA]

Energy levels and spectral lines for Ar XVII are given in Tables 46 and 47.

Due to the quality of theoretically calculated values of the energy levels of two-electron ions, we list in our level table the levels obtained from three theoretical calculations. The ground state and the $1s2l$ levels are from Artemyev *et al.* [05ART/SHA] and are estimated to be accurate to ±4 cm^{-1}. The $1s3l$ levels are from Drake [85DRA, 88DRA] and are all raised by 36 cm^{-1} so that their $1s2l$ levels agree with the levels from Artemyev *et al.* [05ART/SHA]. Drake's levels are estimated to be accurate to ±40 cm^{-1}. The $1s4l$, $1s5l$, and the doubly excited levels are from Vainshtein and Safronova [85VAI/SAF2, 85VAI/SAF3] and are all raised by 861 cm^{-1} so that their $1s2l$ and $1s3l$ levels agree with the levels from Artemyev *et al.* [05ART/SHA] and the adjusted levels of Drake [85DRA]. Vainshtein and Safronova's $1s4l$, $1s5l$ levels are estimated to be accurate to ±200 cm^{-1}, while their doubly excited levels are estimated to be accurate to ±1500 cm^{-1}.

TABLE 46. Energy levels of Ar XVII

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0.		0	$1s^2$	^{1}S	0
[25 036 647.]	4.	0	$1s2s$	^{3}S	1
[25 200 961.]	4.	0	$1s2s$	^{1}S	0
[25 187 805.]	4.	1	$1s2p$	^{3}P°	0
[25 193 006.]	4.	1	$1s2p$	^{3}P°	1
[25 215 228.]	4.	1	$1s2p$	^{3}P°	2
[25 322 440.]	4.	1	$1s2p$	^{1}P°	1
[29 633 366]	40	0	$1s3s$	^{3}S	1
[29 676 853]	40	0	$1s3s$	^{1}S	0
[29 675 029]	40	1	$1s3p$	^{3}P°	0
[29 676 590]	40	1	$1s3p$	^{3}P°	1
[29 683 203]	40	1	$1s3p$	^{3}P°	2
[29 712 236]	40	1	$1s3p$	^{1}P°	1
[29 706 292]	40	0	$1s3d$	^{3}D	2
[29 706 303]	40	0	$1s3d$	^{3}D	1
[29 708 923]	40	0	$1s3d$	^{3}D	3
[29 710 147]	40	0	$1s3d$	^{1}D	2
[31 219 860]	200	0	$1s4s$	^{3}S	1
[31 238 060]	200	0	$1s4s$	^{1}S	0
[31 237 290]	200	1	$1s4p$	^{3}P°	0
[31 237 960]	200	1	$1s4p$	^{3}P°	1
[31 240 750]	200	1	$1s4p$	^{3}P°	2
[31 253 060]	200	1	$1s4p$	^{1}P°	1
[31 250 460]	200	0	$1s4d$	^{3}D	1
[31 250 560]	200	0	$1s4d$	^{3}D	2
[31 251 560]	200	0	$1s4d$	^{3}D	3
[31 252 060]	200	0	$1s4d$	^{1}D	2
[31 949 560]	200	0	$1s5s$	^{3}S	1
[31 958 960]	200	0	$1s5s$	^{1}S	0
[31 958 520]	200	1	$1s5p$	^{3}P°	0
[31 958 860]	200	1	$1s5p$	^{3}P°	1
[31 960 290]	200	1	$1s5p$	^{3}P°	2
[31 966 560]	200	1	$1s5p$	^{1}P°	1
[31 965 260]	200	0	$1s5d$	^{3}D	2
[31 965 340]	200	0	$1s5d$	^{3}D	1
[31 965 910]	200	0	$1s5d$	^{3}D	3
[31 966 160]	200	0	$1s5d$	^{1}D	2
[51 555 000]	1500	0	$2s^2$	^{1}S	0
[51 586 000]	1500	1	$2s2p$	^{3}P°	0
[51 596 600]	1500	1	$2s2p$	^{3}P°	1
[51 622 500]	1500	1	$2s2p$	^{3}P°	2
[51 829 200]	1500	1	$2s2p$	^{1}P°	1
[51 730 100]	1500	0	$2p^2$	^{3}P	0
[51 744 000]	1500	0	$2p^2$	^{3}P	1
[51 762 800]	1500	0	$2p^2$	^{3}P	2
[51 833 400]	1500	0	$2p^2$	^{1}D	2
[52 049 600]	1500	0	$2p^2$	^{1}S	0

TABLE 47. Spectral lines of Ar XVII

Vacuum Wavelength (Å)	Wave Number (cm^{-1})	Intensity and Comment	Classification						Uncertainty of Wavelength (Å)	Source of Line
			Configuration	Term	J	Configuration	Term	J		
[3.128 3]	[31 967 000]	C	$1s^2$	^1S	0 –	$1s5p$	$^1P^\circ$	1		85VAI/SAF2
[3.199 7]	[31 253 000]	13 C	$1s^2$	^1S	0 –	$1s4p$	$^1P^\circ$	1		85VAI/SAF2
[3.365 617]	[29 712 240]	19 C	$1s^2$	^1S	0 –	$1s3p$	$^1P^\circ$	1		85DRA
[3.368 909]	[29 683 200]	M2 C	$1s^2$	^1S	0 –	$1s3p$	$^3P^\circ$	2		85DRA
[3.369 659]	[29 676 590]	C	$1s^2$	^1S	0 –	$1s3p$	$^3P^\circ$	1		85DRA
[3.374 574]	[29 633 370]	M1 C	$1s^2$	^1S	0 –	$1s3s$	^3S	1		85DRA
[3.723 5]	[26 857 000]	C	$1s2p$	$^3P^\circ$	1 –	$2p^2$	^1S	0		85VAI/SAF2
[3.732 4]	[26 793 000]	C	$1s2s$	^3S	1 –	$2s2p$	$^1P^\circ$	1		85VAI/SAF2
[3.741 5]	[26 727 000]	C	$1s2p$	$^1P^\circ$	1 –	$2p^2$	^1S	0		85VAI/SAF2
[3.753 7]	[26 640 000]	C	$1s2p$	$^3P^\circ$	1 –	$2p^2$	^1D	2		85VAI/SAF2
[3.755 4]	[26 628 000]	C	$1s2s$	^1S	0 –	$2s2p$	$^1P^\circ$	1		85VAI/SAF2
[3.756 8]	[26 618 000]	C	$1s2p$	$^3P^\circ$	2 –	$2p^2$	^1D	2		85VAI/SAF2
[3.761 4]	[26 586 000]	C	$1s2s$	^3S	1 –	$2s2p$	$^3P^\circ$	2		85VAI/SAF2
[3.763 7]	[26 570 000]	C	$1s2p$	$^3P^\circ$	1 –	$2p^2$	^3P	2		85VAI/SAF2
[3.765 1]	[26 560 000]	C	$1s2s$	^3S	1 –	$2s2p$	$^3P^\circ$	1		85VAI/SAF2
[3.765 6]	[26 556 000]	C	$1s2p$	$^3P^\circ$	0 –	$2p^2$	^3P	1		85VAI/SAF2
[3.766 3]	[26 551 000]	C	$1s2p$	$^3P^\circ$	1 –	$2p^2$	^3P	1		85VAI/SAF2
[3.766 6]	[26 549 000]	C	$1s2s$	^3S	1 –	$2s2p$	$^3P^\circ$	0		85VAI/SAF2
[3.766 8]	[26 548 000]	C	$1s2p$	$^3P^\circ$	2 –	$2p^2$	^3P	2		85VAI/SAF2
[3.768 3]	[26 537 000]	C	$1s2p$	$^3P^\circ$	1 –	$2p^2$	^3P	0		85VAI/SAF2
[3.769 5]	[26 529 000]	C	$1s2p$	$^3P^\circ$	2 –	$2p^2$	^3P	1		85VAI/SAF2
[3.772 0]	[26 511 000]	C	$1s2p$	$^1P^\circ$	1 –	$2p^2$	^1D	2		85VAI/SAF2
[3.782 1]	[26 440 000]	C	$1s2p$	$^1P^\circ$	1 –	$2p^2$	^3P	2		85VAI/SAF2
[3.784 8]	[26 422 000]	C	$1s2p$	$^1P^\circ$	1 –	$2p^2$	^3P	1		85VAI/SAF2
[3.786 8]	[26 408 000]	C	$1s2p$	$^1P^\circ$	1 –	$2p^2$	^3P	0		85VAI/SAF2
[3.788 5]	[26 396 000]	C	$1s2s$	^1S	0 –	$2s2p$	$^3P^\circ$	1		85VAI/SAF2
[3.793 3]	[26 362 000]	C	$1s2p$	$^3P^\circ$	1 –	$2s^2$	^1S	0		85VAI/SAF2
[3.812 1]	[26 233 000]	C	$1s2p$	$^1P^\circ$	1 –	$2s^2$	^1S	0		85VAI/SAF2
3.949 065	25 322 450.	100	$1s^2$	^1S	0 –	$1s2p$	$^1P^\circ$	1	0.000 008	07BRU/BRA
[3.965 857]	[25 215 228.]	M2 C	$1s^2$	^1S	0 –	$1s2p$	$^3P^\circ$	2		05ART/SHA
[3.969 356]	[25 193 006.]	55 C	$1s^2$	^1S	0 –	$1s2p$	$^3P^\circ$	1		05ART/SHA
[3.994 145]	[25 036 647.]	M1 C	$1s^2$	^1S	0 –	$1s2s$	^3S	1		05ART/SHA
[16.086]	[6 216 000]	C	$1s2s$	^3S	1 –	$1s4p$	$^1P^\circ$	1		85VAI/SAF2
[16.126]	[6 201 000]	C	$1s2s$	^3S	1 –	$1s4p$	$^3P^\circ$	1		85VAI/SAF2
[16.523]	[6 052 000]	C	$1s2s$	^1S	0 –	$1s4p$	$^1P^\circ$	1		85VAI/SAF2
[16.565]	[6 037 000]	C	$1s2s$	^1S	0 –	$1s4p$	$^3P^\circ$	1		85VAI/SAF2
[21.387 7]	[4 675 590]	C	$1s2s$	^3S	1 –	$1s3p$	$^1P^\circ$	1		85DRA
[21.552 0]	[4 639 940]	C	$1s2s$	^3S	1 –	$1s3p$	$^3P^\circ$	1		85DRA
[22.166 7]	[4 511 280]	C	$1s2s$	^1S	0 –	$1s3p$	$^1P^\circ$	1		85DRA
[22.343 2]	[4 475 630]	C	$1s2s$	^1S	0 –	$1s3p$	$^3P^\circ$	1		85DRA
[559.970]	[178 581.]	C	$1s2s$	^3S	1 –	$1s2p$	$^3P^\circ$	2	0.006	05ART/SHA
[661.559]	[151 158.]	C	$1s2s$	^3S	1 –	$1s2p$	$^3P^\circ$	0	0.013	05ART/SHA

In the energy level table all levels are designated using LS coupling.

For Ar XVII a number of experimentally observed lines have been reported. See, for example, Peacock *et al.* [69PEA/SPE], Deslattes *et al.* [84DES/BEY], Seely and Feldman [85SEE/FEL], Kukla *et al.* [95KUK/LIV], Bruhns *et al.* [07BRU/BRA], and Ince-Cushman *et al.* [08INC/RIC]. These are generally consistent with the sets of lines obtained from the theoretical energy levels discussed above but not as accurately determined. Only one experimental line is included in the line table. It is from Bruhns *et al.* [07BRU/BRA] who used an EBIT and an Ar XVIII reference line to obtain a wavelength of 3.949 065(8) Å. From the energy levels of Artemyev *et al.* [05ART/SHA] we calculate a value of 3.949 067 Å for this line. The source of the calculated lines in the line table is listed as the source of the upper energy level of the transition. The source of the lower energy level is in all cases Artemyev *et al.* [05ART/SHA]. The four values of relative intensity in line table are taken from Peacock *et al.* [69PEA/SPE] who used a plasma focus device as their radiation source.

The meaning of the intensity codes given in the Ar XVII line table is stated below:

Code	Definition
C	Calculated wavelength
M1	Magnetic dipole line
M2	Magnetic quadrupole line

The ionization energy was obtained by Artemyev *et al.* [05ART/SHA] by means of *ab initio* calculations in which the complete set of two-electron corrections is evaluated to all orders in the parameter αZ.

Collection of lines and levels was completed in May 2009.

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3.17. Ar XVIII

H isoelectronic sequence

Ground state: $1s\ ^2S_{1/2}$

Ionization energy: 35 699 895 ± 6 cm^{-1} (4426.2225 ± 0.0008 eV) [85JOH/SOF]

Energy levels and spectral lines for Ar XVIII are given in Tables 48 and 49.

Due to the quality of theoretically calculated values of the energy levels of hydrogenlike ions, we list in our level table the levels obtained from two theoretical calculations. The 1*s*, 2*s*, and 2*p* levels are from Johnson and Soff [85JOH/SOF] corrected for current values of the fundamental constants [07MOH/TAY] and the atomic weight of ^{40}Ar [05COU/SCH]. They are estimated to be accurate to ±6 cm^{-1}. The rest of the levels are from Erickson [77ERI]. These are also corrected for current values of the fundamental constants [07MOH/TAY] and the atomic weight of ^{40}Ar [05COU/SCH]. Following the work of Kramida *et al.* [08KRA/RYA], who acted on a suggestion by Mohr for hydrogenlike B V, we correct for an error in the magnitude of the electron-self-energy correction in [77ERI]. This is most important for *s* states. We also adjust the [77ERI] values so that they correspond to the ionization energy of Johnson and Soff [85JOH/SOF]. The uncertainty in the relative positions of the tabulated [77ERI] levels range from 0.005 to 1.0 cm^{-1}. We note that the levels of Johnson and Soff [85JOH/SOF] are in excellent agreement with those of Mohr [83MOH].

For Ar XVIII a number of experimentally observed lines have been reported. See, for example, Peacock *et al.* [69PEA/SPE], Briand *et al.* [83BRI/MOS], Beyer *et al.* [85BEY/DES], Beiersdorfer *et al.* [86BEI/BIT], Crespo López-Urrutia *et al.* [05CRE/ART], and Sylwester *et al.* [05SYL/SYL]. These are generally consistent with the sets of lines obtained from the theoretical energy levels discussed above, but not as accurately determined. In the table of calculated spectral lines, we list as the source of the line, the source of the value of the upper energy level of the transition. The source of the value of the lower energy level is Johnson and Soff [85JOH/SOF] for n=1 or n=2 levels and the corrected values of Erickson [77ERI] for the rest.

The meaning of the intensity codes given in the Ar XVIII line table is stated below:

Code	Definition
C	Calculated wavelength
*	Multiply classified line

The ionization energy was obtained by Johnson and Soff [85JOH/SOF] by means of *ab initio* calculations in which quantum electrodynamical corrections of first and second orders in the fine structure constant are included together with finite nuclear size, reduced mass, and recoil corrections.

Collection of lines and levels was completed in June 2009.

TABLE 48. Energy levels of Ar XVIII

Energy Level (cm^{-1})	Uncertainty (cm^{-1})	Parity	Configuration	Term	J
0.	6.	0	1*s*	^2S	1/2
[26 762 896.]	6.	1	2*p*	$^2P^\circ$	1/2
[26 801 739.]	6.	1	2*p*	$^2P^\circ$	3/2
[26 764 172.]	6.	0	2*s*	^2S	1/2
[31 732 216.2]	1.0	1	3*p*	$^2P^\circ$	1/2
[31 743 728.5]	0.6	1	3*p*	$^2P^\circ$	3/2
[31 732 595.1]	1.0	0	3*s*	^2S	1/2
[31 743 708.36]	0.03	0	3*d*	^2D	3/2
[31 747 515.13]	0.03	0	3*d*	^2D	5/2
[33 469 895.0]	0.5	1	4*p*	$^2P^\circ$	1/2
[33 474 749.8]	0.2	1	4*p*	$^2P^\circ$	3/2
[33 470 055.4]	0.6	0	4*s*	^2S	1/2
[33 474 741.16]	0.06	0	4*d*	^2D	3/2
[33 476 347.71]	0.06	0	4*d*	^2D	5/2
[33 476 344.82]	0.02	1	4*f*	$^2F^\circ$	5/2
[33 477 146.51]	0.02	1	4*f*	$^2F^\circ$	7/2
[34 273 516.6]	0.2	1	5*p*	$^2P^\circ$	1/2
[34 276 001.28]	0.10	1	5*p*	$^2P^\circ$	3/2
[34 273 599.0]	0.3	0	5*s*	^2S	1/2
[34 275 996.87]	0.04	0	5*d*	^2D	3/2
[34 276 819.46]	0.04	0	5*d*	^2D	5/2
[34 276 817.97]	0.02	1	5*f*	$^2F^\circ$	5/2
[34 277 228.52]	0.02	1	5*f*	$^2F^\circ$	7/2
[34 277 227.740]	0.005	0	5*g*	^2G	7/2
[34 277 473.875]	0.005	0	5*g*	^2G	9/2

TABLE 49. Spectral lines of Ar XVIII

Vacuum Wavelength (Å)	Wave Number (cm^{-1})	Intensity and Comment	Classification						Source of Line
			Configuration	Term	J	Configuration	Term	J	
[2.917 493 2]	[34 276 001.]	C	1*s*	^2S	1/2	– 5*p*	$^2P^\circ$	3/2	77ERI
[2.917 704 7]	[34 273 516.]	C	1*s*	^2S	1/2	– 5*p*	$^2P^\circ$	1/2	77ERI
[2.987 326 3]	[33 474 750.]	C	1*s*	^2S	1/2	– 4*p*	$^2P^\circ$	3/2	77ERI
[2.987 759 6]	[33 469 895.]	C	1*s*	^2S	1/2	– 4*p*	$^2P^\circ$	1/2	77ERI
[3.150 228 6]	[31 743 728.]	C	1*s*	^2S	1/2	– 3*p*	$^2P^\circ$	3/2	77ERI
[3.151 371 5]	[31 732 216.]	C	1*s*	^2S	1/2	– 3*p*	$^2P^\circ$	1/2	77ERI
[3.731 101 2]	[26 801 739.]	C	1*s*	^2S	1/2	– 2*p*	$^2P^\circ$	3/2	85JOH/SOF
[3.736 516 4]	[26 762 896.]	C	1*s*	^2S	1/2	– 2*p*	$^2P^\circ$	1/2	85JOH/SOF
[13.312 34]	[7 511 829.]	C	2*s*	^2S	1/2	– 5*p*	$^2P^\circ$	3/2	77ERI
[13.316 74]	[7 509 345.]	C	2*s*	^2S	1/2	– 5*p*	$^2P^\circ$	1/2	77ERI
[13.377 78]	[7 475 081.]	C	2*p*	$^2P^\circ$	3/2	– 5*d*	^2D	5/2	77ERI
[14.899 03]	[6 711 845.]	C	2*p*	$^2P^\circ$	1/2	– 4*d*	^2D	3/2	77ERI
[14.901 85]	[6 710 578.]	C	2*s*	^2S	1/2	– 4*p*	$^2P^\circ$	3/2	77ERI
[14.912 63]	[6 705 723.]	C	2*s*	^2S	1/2	– 4*p*	$^2P^\circ$	1/2	77ERI
[14.982 15]	[6 674 609.]	C	2*p*	$^2P^\circ$	3/2	– 4*d*	^2D	5/2	77ERI
[20.077 05]	[4 980 812.]	C	2*p*	$^2P^\circ$	1/2	– 3*d*	^2D	3/2	77ERI

TABLE 49. Spectral lines of Ar XVIII—Continued

Vacuum Wavelength (Å)	Wave Number (cm^{-1})	Intensity and Comment	Classification						Source of Line
			Configuration	Term	J	Configuration	Term	J	
[20.082 11]	[4 979 557.]	C	2*s*	^{2}S	1/2	– 3*p*	^{2}P°	3/2	77ERI
[20.121 94]	[4 969 699.]	C	2*p*	^{2}P°	1/2	– 3*s*	^{2}S	1/2	77ERI
[20.128 64]	[4 968 044.]	C	2*s*	^{2}S	1/2	– 3*p*	^{2}P°	1/2	77ERI
[20.219 27]	[4 945 776.]	C	2*p*	^{2}P°	3/2	– 3*d*	^{2}D	5/2	77ERI
[20.234 85]	[4 941 969.]	C	2*p*	^{2}P°	3/2	– 3*d*	^{2}D	3/2	77ERI
[20.280 45]	[4 930 856.]	C	2*p*	^{2}P°	3/2	– 3*s*	^{2}S	1/2	77ERI
[39.311 56]	[2 543 780.7]	C	3*p*	^{2}P°	1/2	– 5*d*	^{2}D	3/2	77ERI
[39.317 35]	[2 543 406.2]	C	3*s*	^{2}S	1/2	– 5*p*	^{2}P°	3/2	77ERI
[39.355 80]	[2 540 921.5]	C	3*s*	^{2}S	1/2	– 5*p*	^{2}P°	1/2	77ERI
[39.477 171]	[2 533 109.61]	C	3*d*	^{2}D	3/2	– 5*f*	^{2}F°	5/2	77ERI
[39.477 46]	[2 533 090.9]	C	3*p*	^{2}P°	3/2	– 5*d*	^{2}D	5/2	77ERI
[39.530 170]	[2 529 713.39]	C	3*d*	^{2}D	5/2	– 5*f*	^{2}F°	7/2	77ERI
[57.387 99]	[1 742 524.9]	C	3*p*	^{2}P°	1/2	– 4*d*	^{2}D	3/2	77ERI
[57.400 18]	[1 742 154.7]	C	3*s*	^{2}S	1/2	– 4*p*	^{2}P°	3/2	77ERI
[57.560 59]	[1 737 299.9]	C	3*s*	^{2}S	1/2	– 4*p*	^{2}P°	1/2	77ERI
[57.715 512]	[1 732 636.46]	C	3*d*	^{2}D	3/2	– 4*f*	^{2}F°	5/2	77ERI
[57.716 09]	[1 732 619.2]	C	3*p*	^{2}P°	3/2	– 4*d*	^{2}D	5/2	77ERI
[57.769 65]	[1 731 012.6]	C	3*p*	^{2}P°	3/2	– 4*d*	^{2}D	3/2	77ERI
[57.815 787]	[1 729 631.38]	C	3*d*	^{2}D	5/2	– 4*f*	^{2}F°	7/2	77ERI
[57.842 598]	[1 728 829.69]	C	3*d*	^{2}D	5/2	– 4*f*	^{2}F°	5/2	77ERI
[57.896 013]	[1 727 234.66]	C	3*d*	^{2}D	5/2	– 4*p*	^{2}P°	3/2	77ERI
[57.926 46]	[1 726 326.9]	C	3*p*	^{2}P°	3/2	– 4*s*	^{2}S	1/2	77ERI
[57.931 16]	[1 726 186.6]	C	3*d*	^{2}D	3/2	– 4*p*	^{2}P°	1/2	77ERI
[124.053 8]	[806 101.9]	C	4*p*	^{2}P°	1/2	– 5*d*	^{2}D	3/2	77ERI
[124.077 8]	[805 945.8]	C	4*s*	^{2}S	1/2	– 5*p*	^{2}P°	3/2	77ERI
[124.461 5]	[803 461.1]	C	4*s*	^{2}S	1/2	– 5*p*	^{2}P°	1/2	77ERI
[124.676 34]	[802 076.81]	C	4*d*	^{2}D	3/2	– 5*f*	^{2}F°	5/2	77ERI
[124.677 4]	[802 069.7]	C	4*p*	^{2}P°	3/2	– 5*d*	^{2}D	5/2	77ERI
[124.805 4]	[801 247.1]	C	4*p*	^{2}P°	3/2	– 5*d*	^{2}D	3/2	77ERI
[124.862 20]	[800 882.92]	C	4*f*	^{2}F°	5/2	– 5*g*	^{2}G	7/2	77ERI
[124.862 52]	[800 880.81]	C	4*d*	^{2}D	5/2	– 5*f*	^{2}F°	7/2	77ERI
[124.948 87]	[800 327.36]	C	4*f*	^{2}F°	7/2	– 5*g*	^{2}G	9/2	77ERI
[124.987 31]	[800 081.23]	C	4*f*	^{2}F°	7/2	– 5*g*	^{2}G	7/2	77ERI
[125.054 15]	[799 653.57]	C *	4*d*	^{2}D	5/2	– 5*p*	^{2}P°	3/2	77ERI
[125.054 39]	[799 652.05]	C *	4*f*	^{2}F°	5/2	– 5*d*	^{2}D	3/2	77ERI
[125.180 1]	[798 849.2]	C	4*p*	^{2}P°	3/2	– 5*s*	^{2}S	1/2	77ERI

Air Wavelength (Å)	Wave Number (cm^{-1})	Intensity and Comment	Classification						Source of Line
			Configuration	Term	J	Configuration	Term	J	
[2 661.1]	[37 567.]	C	2*s*	^{2}S	1/2	– 2*p*	^{2}P°	3/2	85JOH/SOF
[8 699.2]	[11 492.1]	C	3*p*	^{2}P°	1/2	– 3*d*	^{2}D	3/2	77ERI
[8 979.5]	[11 133.4]	C	3*s*	^{2}S	1/2	– 3*p*	^{2}P°	3/2	77ERI

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4. Ionization Stages for Each Reference

The ionization stages reported in each reference are given in Table 50.

TABLE 50. Ionization Stages for Each Reference

Reference	Ion Stage	Reference	Ion Stage	Reference	Ion Stage
28DEB	2	71DEN/DÉS	11–14	82HAN/PER	2
28DEB2	2	71FAW/GAB	10–15	82HAS/FUK	11–15
29BOY	4	71MIN	2	82STR/ODI	I
30DEB	2	71PIN/CUR	4	83BLE/BUR	11
30DEB2	2	72BEH/COH	10	83BRI/MOS	18
33DEB	3	72CHU/LIU	3	83BUC/BUC	9
35BOY	2–4	72DRU/DAT	8	83EDL	15
35DEB	3	72JAL/COO	11,12	83MOH	18
36BOY	3	72LIV/IRW	8	83PEN/BEN	4,5
36DEB	4	72PEC/REE	E	84AGE/AND	3
37DEB	3	72PUR/WID	13,15	84DES/BEY	17
37EDL	2	73FAW/HAY	12,13	84ELL/MAR	5
40BEZ	2	73NOR	2	84FAW	9
41PHI/PAR	5–9	74BUC/BUC	11–15	84JIA/SHE	4–7
47MIN	2	75FAW	14	84LEV/GIR	4–6
48MIN	2	75WID	15	84PEA/STA	7,16
49MOO	I, 2–9	76BEH/COH	10	85BEY/DES	18
53LYO/DOL	14	76BER/DES	7,8	85DRA	17
55BOW	3,4	76BRU	13	85EDL	15
58HER	2	76JAL	13,14	85JOH/SOF	18
59MIN	2	76SAN/BRU	15	85KRA	9
60BOW	3,5	77BRO/FAW	13	85MEN/GRE	11
61FAW/JON	8	77ERI	18	85SEE/FEL	17
63MIN	2	77FEL/DOS	11	85VAI/SAF	16
64FAW/GAB	12	77SAN/BRU	11,13	85VAI/SAF2	17
64FAW/GAB2	9–12	78BER/DES	9	85VAI/SAF3	17
65BRI/CHE	3	78DER	12–15	85YAM/KAN	2
65FAW	10	78FAW/RID	5–10	86BEI/BIT	18
66DEU/HOU	10,11	78WID	15	86ENG/BER	9
66SCH	4,5	79EDL	16	87HAN/PER	3
67DEU/HOU	12,13	79KNY/DRO	8,9	87HUA/LIP	15
67FAW/GAB	5	80EDL	10	87PRI	14
69PEA/SPE	12,17,18	80ELS/SAL	6	87REA/KAU	8
69RAD	2–16	80FAW/RID	15	87RIC/MAR	16
70MOO	2,4,5,7–16	81COW	I, 2–16	87STE/DIE	11–16
71CON/PEA	10–15	82BUC/BUC	7,8	88BLI/DES	7

TABLE 50. Ionization Stages for Each Reference—Continued

Reference	Ion Stage	Reference	Ion Stage	Reference	Ion Stage
88DRA	17	97BIE/MAR	11,14	02RAA/MEW	9
88DRU/BOU	9	97FEL/BEH	7,9,11,12	03BEI/SCO	9
88LES/FOL	4,6,7,9	97FEU/LUT	5	03BIE/RAD	16
88MAR/DOC	9	97HEG/BÜS	8	03DRA/CRE	10,11,14,15
88TRA/HUT	6	97KOH	14	03ENG/HIN	2
88TRA/HUT2	7	97LAU/JAC	8	03LEP/BEI	9–16
89BOD/CHA	8	97LAU/JAC2	8	03ROC/VIN	12,13
89PIN/GE	6	97MCK/KEE	5	03SOB/SHE	9,10
90DOS/BHA	11	97RAY	13,14	04BEI/MAG	9–11
91BOD/CHA	7	97SKO/FAE	16	04CUR/LAN	8,9,11–13
91KAD/ALT	8	97TRI/MAN	7	04LIA/ZHA	13–15
91KIM/BAI	16	98ANT/DOR	8,9	04LIA/DON	13
92BOD/CHA	7,8	98BAC/MAR	15	04NAZ/ANT	8
92GAU/DAN	8	98BRO/DAV	11,14	04SAF/SAF	16
92KNY/BLI	7,9,10	98FEL/CUR	12,13	04TAK/AKI	15
92MAR/DEN	8,9	98WHY/ISL	16	05ART/SHA	17
92RAA/SNO	3–5	99BIE/FRÉ	2,4,5,7–16	05BOR/BRE	7
92RAI/BRE	6	99BLI/COR	8	05COU/SCH	18
93BOD/CHA	7	99BRO/FIS	7	05CRE/ART	18
93BOU/ELM	7	99KIN	11,12	05EIS/LAN	12
93DAN/GRI	7	99SUG	6	05PAR/VIA	7
93JAC/BOD	7,8	00ANT/CHU	9	05SYL/SYL	18
93PRE/CAM	9	00BAZ/BOD	8	05TRA	9
93ROC/COR	11–14	00BEN/FIS	13	06BEI/BIT	10
94BEN/ENG	10	00BIE/QUI	11–15	06GU/GUP	12
94DEN/MAR	8	00CAS/ROC	6	06KAT/MOR	11,12
94JAC/BOD	6,7	00FEL/CUR	11–13	06KOB/TAK	10
94KHA/BUC	15	00HIL/JUS	9	06LAN/BHA	11
94NIL/SCO	9	00LUN/BRE	3	06SOR/HAR	14,15
94QUI/PAL	2	00TRA/BEI	14	07BRU/BRA	17
94ROC/SHL	9	01BLI/COR	8	07FEL/DOS	7,11
94THO/NEU	8	01CUR/BRE	8	07KAT/MOR	11–15
94ZHA/SAM	14	01FEU/LUT	3	07MOH/TAY	I, 18
95BRE/GAL	4	01HIN/JOY	2	07RAL/JOU	5
95CAV/LUN	5	01KOS/ANT	9	07RAL/JOU2	8
95JAC/PAS	8	01LUN/BRE	3	07WAN/LU	6
95KEL/LAC	3,5	01MAT/FOU	15	08BHA/LAN	15
95KUK/LIV	17	01TAR/BAR	16	08DEL	14
95LAU/JAC	8	01TRI/CAL	7	08INC/RIC	17
95MOR/SER	14	01WIE/WIL	13,15	08KRA/RYA	18
95PAL/BIÉ	2	02BAZ/BOD	8	08LEP/BEI	12,15
95SAF/SAF	16	02BER/POT	5	08RAL/KRA	11
95SCH/KUN	9,12	02BLI/BRU	9	08RAL/KRA2	12
95WHA/AND	2,3	02BRI/KAA	10,12–14	08RAL/KRA3	13
96CAV/GAL	5	02KAA/STE	13–15	08RAL/KRA4	14
96HIL/RUH	9	02KO/RAY	13,14	08SHE/BOZ	11,14
96KAU/WHA	3	02MAG/FAE	11–16		

Note: An entry for ion stage of "2" indicates a reference used in the compilation for Ar II, while an entry of "14" indicates a reference used for Ar XIV. An entry of "11–15" indicates a reference used for all of the following ions: Ar XI, Ar XII, Ar XIII, Ar XIV, and Ar XV. An entry of "I" indicates a reference used in the Introduction while an entry of "E" indicates a reference used in the Explanation of Tables of Compiled Levels and Lines section.

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