

Atomic Spectral Tables for the Chandra X-Ray Observatory. Part III. Mg v–Mg x

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Tables of critically compiled wavelengths, energy levels, line classifications, and transition probabilities are given for spectra of ionized magnesium (Mg v–Mg x) in the region 35–170 Å. These tables provide data of interest for the Emission Line Project in support of analyses of astronomical data from the Chandra X-Ray Observatory. They will also be useful for the diagnostics of plasmas encountered in fusion energy research. The transition probabilities were obtained mainly from recent sophisticated calculations carried out with complex computer codes. © 2004 by the U.S. Secretary of Commerce on behalf of the United States. All rights reserved. [DOI: 10.1063/1.1637923]

Key words: far ultraviolet; Mg v, Mg vi, Mg vii, Mg viii, Mg ix, Mg x; magnesium; soft x rays; transition probabilities; wavelengths.

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List of Symbols

Symbols for indication of data accuracy

A uncertainty within 3%,

B uncertainty within 10%,
C uncertainty within 25%,
D uncertainty within 50%,
E uncertainty greater than 50%.

Symbols used for the table headings

E_i : lower energy level,
 E_k : upper energy level,
 g_i : statistical weight of the lower level,
 g_k : statistical weight of the upper level,
 A_{ki} : atomic transition probability for spontaneous emission,
 f_{ik} : (absorption) oscillator strength,
 S : line strength.

Abbreviations appearing in the column labeled Ref.

LS: decomposition from multiplet value according to LS rules.

In all tables, we have shown the power of 10 by the exponential notation. For example, 3.88E–03 stands for 3.88×10^{-3} .

1. Introduction

The Chandra X-ray Observatory was designed to observe x rays from high-energy regions of the universe, as for example remnants of exploded stars. It was launched by the Space Shuttle Columbia in July 1999. In Parts I and II of this series of papers^{1,2} containing data for the Chandra X-Ray Observatory, we presented data for S viii to S xiv and Si vi to Si xii in the 20–170 Å region. This is the region covered by the Low Energy Transmission Grating on the observatory. These tables are compiled to assist the Emission Line Project situated at the Smithsonian Astrophysical Laboratory. The present tables provide data for the cosmically abundant element Mg in the region 35–170 Å. Similar tables for neon are in progress. These tables will also be of use for the diagnostics of plasmas found in fusion energy research devices such as tokamaks.

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The wavelengths in the tables are Ritz-type values derived from experimental energy level values in the NIST Atomic Spectra Database (ASD)³ and the compilation of Kaufman and Martin.⁴ That is, the wave number of a particular transition is found as the difference of the values of the combining energy levels in cm^{-1} , and the wavelength in vacuum is the reciprocal of the wave number. Except for Li-like ions, only transitions are considered for which experimental energies are known for both lower and upper levels. For Li-like ions extremely precise *ab initio* calculations provide values for some energy levels that have uncertainties comparable to experimental values. Thus, for some levels of Li-like ions that have not been observed experimentally (see Ref. 4), use has been made of level values, and in turn wavelengths, obtained from such precise calculations. Where this has been done, the levels are specifically denoted in the tables.

The ionization energies given in the text portion for each ion were taken from ASD. The values in cm^{-1} were converted to electron volts⁵ with the factor $1 \text{ eV}/hc = 8065.54477(32) \text{ cm}^{-1}$. In compiling the transition probabilities we selected only values obtained with the most advanced theoretical and experimental methods. Our general evaluation criteria were those that have been developed at NIST.^{6,7} We normally list here only values having estimated uncertainties of $\pm 50\%$ or less. A few exceptions have been made for important lines. Because experimental results for highly charged ions are not generally available, for most transitions we had to rely on theoretical data.

The most extensive source of theoretical data was the Opacity Project (OP),⁸ in which multiplet f values for the spectra of many elements were produced. However, since the OP calculations do not normally include spin-orbit interactions they do not provide values for individual lines of a multiplet. For the present compilation the average OP values for LS multiplets were decomposed into their LSJ fine structure components using LS coupling rules.⁹ For the ions of this compilation, LS coupling should generally be a fairly good approximation. When this is not the case we have used results of calculations that do include spin-orbit and other relativistic effects. Tachiev and Froese Fischer have performed calculations for B-, C-, N-, and O-like ions with the multiconfiguration Hartree-Fock (MCHF)¹⁰ method with Breit-Pauli corrections and have made their results available on the World Wide Web. Blackford and Hibbert have carried out extensive calculations for F-like ions¹¹ with the configuration interaction code-version 3 (CIV3).¹² The same method was used by Aggarwal for several C-like ions.¹³ For Be- and B-like ions, the data of Safronova and co-workers were found to be very useful.¹⁴⁻¹⁶ Their calculations were performed using relativistic many-body perturbation theory (MBPT). Vilkas and co-workers applied many-body perturbation theory including Breit-Pauli corrections to obtain transition probabilities for ions of C, N, and O.¹⁷⁻¹⁹ For Li-like magnesium most of the transition probabilities were taken from the OP results; part of the data are from calculations of Zhang, Sampson, and Fontes,²⁰ who used the

Dirac equation with relativistic Dirac-Fock-Slater central potential.

2. Graphical and Numerical Comparisons in Support of the Assessment Procedure

In order to put the uncertainty estimates for the transition probabilities of the present compilation on a firm basis, we made graphical and numerical comparisons of the results of different advanced calculations for as many transitions as possible, regardless of wavelength. We then selected data for the Chandra spectral range 10–170 Å. To fit the data into systematic trends, or deviations from them, we found the theoretically predicted trends of data along isoelectronic sequences to be useful. If available, we always selected data from detailed configuration-interaction calculations with intermediate coupling. Usually, such calculations were performed for transitions to the ground state or between low excited configurations. For transitions involving high-lying configurations, only OP data are available. For the stronger transitions of many spectra, good agreement exists between the OP data and data from more detailed calculations that consider spin-orbit interactions. However, for weaker transitions large disagreements are often observed, especially when appreciable cancellation of positive and negative components of the transition integral is encountered. The agreement between the OP calculations and various relativistic calculations also becomes worse for transitions between levels where one or both are appreciably mixed due to breakdown of LS coupling.

A comparison of oscillator strengths for the B-like ion Mg VIII is shown in Fig. 1. Here, the ratios of oscillator strengths from several calculations^{8,16,19,21} to the MCHF values¹⁰ are plotted against the MCHF oscillator strengths on a logarithmic scale. For most transitions the agreement is better than 10%; agreement between MCHF and OP data decreases to a little more than 25%.

A comparison of oscillator strengths for the $2s^2 2p^2 - 2s 2p^3$ transitions of the C-like spectrum Mg VII is given in Fig. 2, where the ratios of the OP and CIV3 results to the MCHF values are plotted against the MCHF values on a logarithmic scale. These transitions are strong. Agreement is within 5% for the CIV3:MCHF ratios and within 25% for the OP:MCHF ratios.

A similar comparison is given in Fig. 3 for the $2s^2 2p^2 - 2s^2 2p 3d$ transitions of Mg VII. Since the coupling in the upper configuration departs significantly from LS, the agreement is not as good as in Fig. 2, even though the transitions have a similar range of oscillator strengths, $f > 0.001$. However, the differences are less than 50%. Agreement between OP and MCHF is worse; for a few transitions the results differ by factors of 2.

Figure 4 shows a comparison of oscillator strengths for $2s 2p^3 - 2s^2 2p 3p$ transitions. This comparison shows good agreement for the transitions with large oscillator strengths,

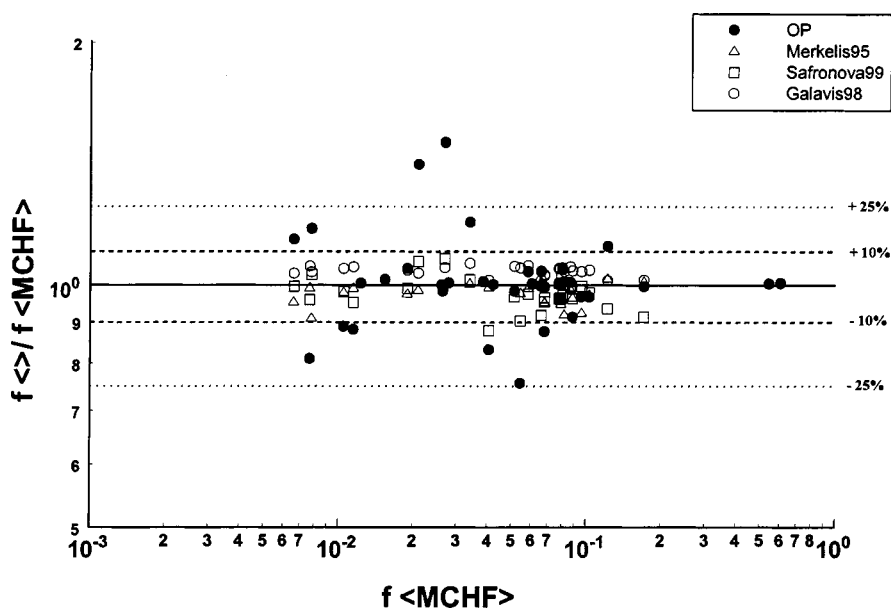


FIG. 1. Ratios of oscillator strengths from several calculations^{8,16,19,21} for transitions of B-like Mg VIII to MCHF values.¹⁰

but the scatter increases for transitions with smaller oscillator strengths. For transitions with oscillator strengths $f < 0.001$ the differences of the MCHF results with some of the CIV3 and OP calculations are larger than 50%.

The importance of the purity of LS coupling was illustrated by an example for the fluorine-like ions S VIII and Si VI in our earlier publications.^{1,2} We found that studies of uncertainties as a function of departures from LS coupling are an especially useful guide for cases where transition probabili-

ties are available from only one source and where we must estimate their accuracy on the basis of extrapolations from comparisons with other sources.

3. Arrangement of the Tables

The tables are ordered by increasing ionization stage. Individual lines are arranged in order of wavelength. For each transition we give the wavelength, the energy of the lower

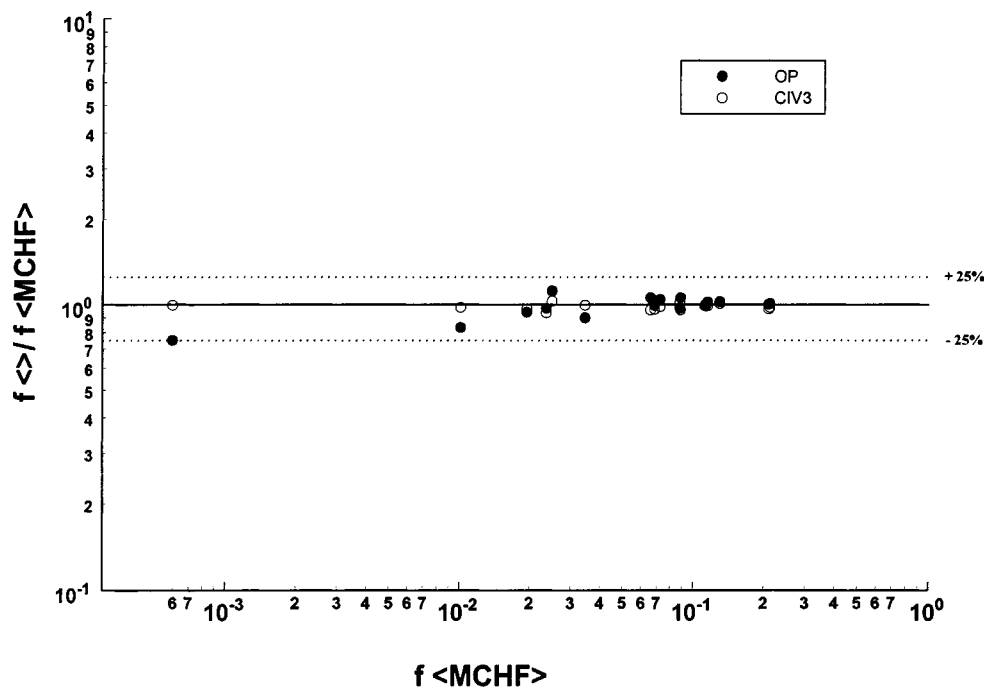


FIG. 2. Ratios of oscillator strengths from two calculations^{8,13} for $2s^22p^2-2s2p^3$ transitions of C-like Mg VII to MCHF values.¹⁰

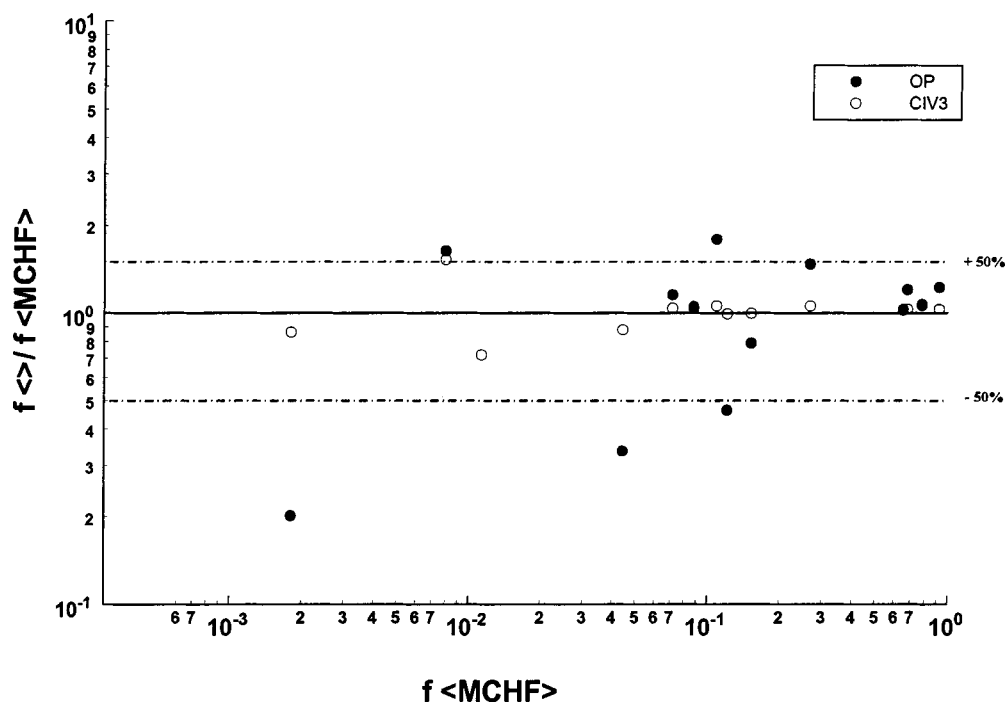


FIG. 3. Ratios of oscillator strengths from two calculations^{8,13} for $2s^2 2p^2 - 2s^2 2p 3d$ transitions of C-like Mg VII to MCHF values.¹⁰

level (i), the energy of the upper level (k), the level designations, and the statistical weights of the levels ($g = 2J + 1$). In some cases the designations in ASD are given with a question mark. In the present tables we omitted these question marks because the designations were confirmed by later calculations.^{8,10-19} If an energy level was given in ASD with a question mark to indicate that its existence is uncertain, we

have retained the question mark and have added it to the Ritz wavelength as well. Levels whose values are noted with a $+x$ are not connected to the main system of levels by observed transitions. The level values have been estimated by theoretical methods so that the unknown quantity x will be minimized. All of the present values are for electric dipole transitions, E1.

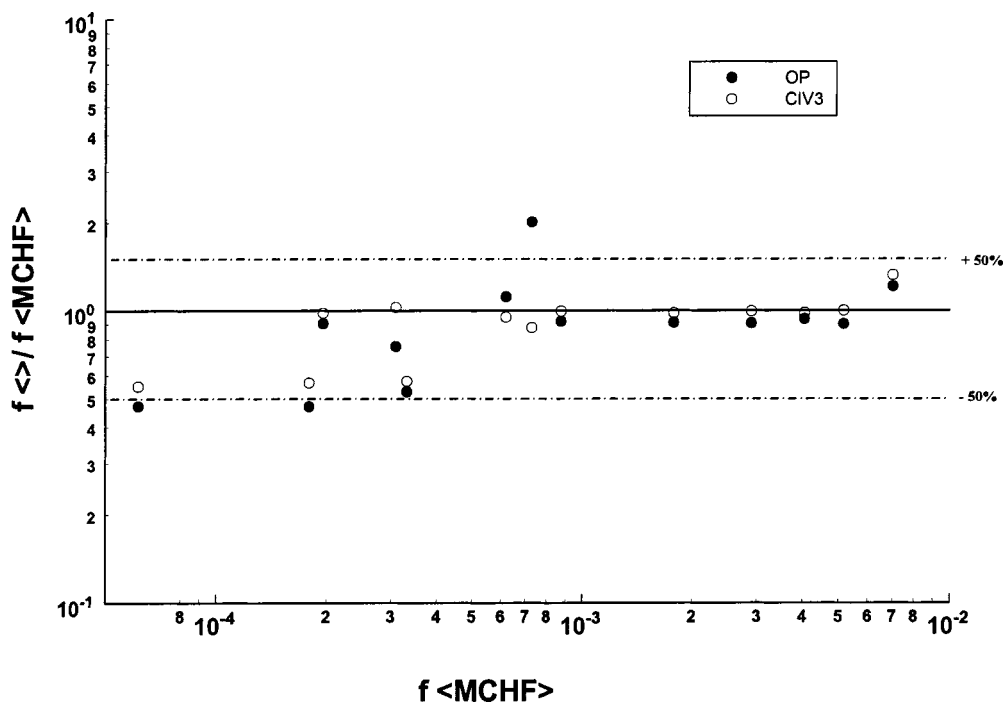


FIG. 4. Ratios of oscillator strengths from two calculations^{8,13} for $2s 2p^3 - 2s^2 2p 3p$ transitions of C-like Mg VII to MCHF values.¹⁰

Following the statistical weights, we give the transition probability for spontaneous emission A_{ki} (in units of 10^8 s^{-1}), the absorption oscillator strength f_{ik} (dimensionless), the line strength S in atomic units (a.u.), and $\log g_{if}$. For electric dipole transitions, $E1$, $1 \text{ a.u.} = a_0^2 e^2 = 7.188 \times 10^{-59} \text{ m}^2 \text{ C}^2$, where a_0 is the Bohr radius and e is the electron charge. For conversion factors and more details on the units, see Wiese *et al.*⁶ The power of 10 is indicated by exponential notation (E-02 indicates 10^{-2}). Finally, the estimated accuracy and the references are given. The estimated uncertainty is indicated by the following code letters, which are the same as used in earlier NIST publications:^{6,7} A—uncertainty less than 3%, B—uncertainty less than 10%, C—uncertainty less than 25%, D—uncertainty less than 50%, and E—uncertainty greater than 50%.

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6. Mg v

Z=12

OI isoelectronic sequence

Ground state $1s^2 2s^2 2p^4 \ ^3P_2$ Ionization energy $1\ 139\ 420\ \text{cm}^{-1}$ (141.27 eV)

Data are tabulated for 188 transitions in the range from 92 to 165 Å. Transition probabilities for the $2s^2 2p^4 - 2s^2 2p^3 3s$, $2s^2 2p^4 - 2s^2 2p^3 3d$, and $2s 2p^5 - 2s 2p^4 (4P) 3s$ arrays are taken from the multiconfiguration Hartree-Fock (MCHF) calculations of Tachiev and Froese Fischer.¹ Values for the other arrays are taken from the Opacity Project (OP).² OP provides, however, only multiplet values. These have been decomposed into fine-structure components assuming LS coupling, as indicated by the notation LS in the reference column.

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²<http://legacy.gsfc.nasa.gov/topbase/> (downloaded 28 July 1995).

Mg v

λ Ritz (Å)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} ($10^8\ \text{s}^{-1}$)	f_{ik}	S (a.u.)	$\log g_{if}$	Acc.	Ref.
92.432	0.0	1 081 880	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 5d$	$3P - 3P^o$	2-2	5-5	2.26E+02	2.90E-02	4.41E-02	-0.839	C	2,LS
92.432	0.0	1 081 880	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 5d$	$3P - 3P^o$	2-1	5-3	1.26E+02	9.66E-03	1.47E-02	-1.316	C	2,LS
92.584	1 783.1	1 081 880	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 5d$	$3P - 3P^o$	1-2	3-5	7.52E+01	1.61E-02	1.47E-02	-1.316	C	2,LS
92.584	1 783.1	1 081 880	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 5d$	$3P - 3P^o$	1-1	3-3	7.50E+01	9.64E-03	8.82E-03	-1.539	D	2,LS
92.648	2 521.8	1 081 880	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 5d$	$3P - 3P^o$	0-1	1-3	9.97E+01	3.85E-02	1.17E-02	-1.415	C	2,LS
93.104?	35 926	1 109 990?	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 5d$	$1D - 1D^o$	2-2	5-5	1.58E+01	2.05E-03	3.14E-03	-1.989	D	2,LS
95.554?	35 926	1 082 450?	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 5d$	$1D - 1F^o$	2-3	5-7	6.42E+02	1.23E-01	1.94E-01	-0.211	C	2,LS
95.798	0.0	1 043 860	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3D^o$	2-3	5-7	3.28E+02	6.32E-02	9.97E-02	-0.500	C	2,LS
95.798	0.0	1 043 860	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3D^o$	2-1	5-3	9.12E+00	7.53E-04	1.19E-03	-2.424	D	2,LS
95.798	0.0	1 043 860	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3D^o$	2-2	5-5	8.21E+01	1.13E-02	1.78E-02	-1.248	C	2,LS
95.896	0.0	1 042 800	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3P^o$	2-2	5-5	1.33E+02	1.83E-02	2.89E-02	-1.039	C	2,LS
95.917	0.0	1 042 570	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3P^o$	2-1	5-3	7.36E+01	6.09E-03	9.62E-03	-1.516	D	2,LS
95.962	1 783.1	1 043 860	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3D^o$	1-2	3-5	2.45E+02	5.64E-02	5.35E-02	-0.772	C	2,LS
95.962	1 783.1	1 043 860	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3D^o$	1-1	3-3	1.36E+02	1.88E-02	1.78E-02	-1.249	C	2,LS
96.030	2 521.8	1 043 860	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3D^o$	0-1	1-3	1.81E+02	7.51E-02	2.37E-02	-1.124	C	2,LS
96.060	1 783.1	1 042 800	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3P^o$	1-2	3-5	4.38E+01	1.01E-02	9.58E-03	-1.519	D	2,LS
96.081	1 783.1	1 042 570	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3P^o$	1-1	3-3	4.39E+01	6.08E-03	5.77E-03	-1.739	D	2,LS
96.149	2 521.8	1 042 570	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$3P - 3P^o$	0-1	1-3	5.84E+01	2.43E-02	7.69E-03	-1.614	D	2,LS
97.392	0.0	1 026 780	$2s^2 2p^4 - 2s^2 2p^3 (4S^o) 5d$	$3P - 3D^o$	2-3	5-7	2.33E+02	4.64E-02	7.44E-02	-0.635	C	2,LS
97.392	0.0	1 026 780	$2s^2 2p^4 - 2s^2 2p^3 (4S^o) 5d$	$3P - 3D^o$	2-1	5-3	6.48E+00	5.53E-04	8.87E-04	-2.558	D	2,LS
97.392	0.0	1 026 780	$2s^2 2p^4 - 2s^2 2p^3 (4S^o) 5d$	$3P - 3D^o$	2-2	5-5	5.83E+01	8.29E-03	1.33E-02	-1.382	C	2,LS
97.561	1 783.1	1 026 780	$2s^2 2p^4 - 2s^2 2p^3 (4S^o) 5d$	$3P - 3D^o$	1-2	3-5	1.74E+02	4.14E-02	3.99E-02	-0.906	C	2,LS
97.561	1 783.1	1 026 780	$2s^2 2p^4 - 2s^2 2p^3 (4S^o) 5d$	$3P - 3D^o$	1-1	3-3	9.67E+01	1.38E-02	1.33E-02	-1.383	C	2,LS
97.632	2 521.8	1 026 780	$2s^2 2p^4 - 2s^2 2p^3 (4S^o) 5d$	$3P - 3D^o$	0-1	1-3	1.29E+02	5.51E-02	1.77E-02	-1.259	C	2,LS
98.232	0.0	1 018 000	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3P^o$	2-1	5-3	1.15E+02	9.98E-03	1.61E-02	-1.302	C	2,LS
98.269	0.0	1 017 620	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3P^o$	2-2	5-5	2.07E+02	2.99E-02	4.84E-02	-0.825	C	2,LS
98.404	1 783.1	1 018 000	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3P^o$	1-1	3-3	6.86E+01	9.96E-03	9.68E-03	-1.525	D	2,LS
98.441	1 783.1	1 017 620	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3P^o$	1-2	3-5	6.86E+01	1.66E-02	1.61E-02	-1.303	C	2,LS
98.476	2 521.8	1 018 000	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3P^o$	0-1	1-3	9.13E+01	3.98E-02	1.29E-02	-1.400	C	2,LS
98.626	0.0	1 013 931	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3D^o$	2-1	5-3	4.46E+00	3.90E-04	6.33E-04	-2.710	D	2,LS
98.629	0.0	1 013 897	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3D^o$	2-2	5-5	4.02E+01	5.86E-03	9.51E-03	-1.533	D	2,LS
98.635	0.0	1 013 839	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3D^o$	2-3	5-7	1.61E+02	3.28E-02	5.33E-02	-0.785	C	2,LS
98.800	1 783.1	1 013 931	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3D^o$	1-1	3-3	6.66E+01	9.74E-03	9.50E-03	-1.534	D	2,LS
98.803	1 783.1	1 013 897	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3D^o$	1-2	3-5	1.20E+02	2.92E-02	2.85E-02	-1.057	C	2,LS
98.872	2 521.8	1 013 931	$2s^2 2p^4 - 2s^2 2p^3 (2D^o) 4d$	$3P - 3D^o$	0-1	1-3	8.85E+01	3.89E-02	1.27E-02	-1.410	C	2,LS
99.066?	35 926	1 045 350?	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4d$	$1D - 1F^o$	2-3	5-7	4.36E+02	8.99E-02	1.47E-01	-0.347	C	2,LS
100.949?	0.0	990 600?	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4s$	$3P - 3P^o$	2-1	5-3	1.47E+01	1.35E-03	2.24E-03	-2.171	D	2,LS
100.949?	0.0	990 600?	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4s$	$3P - 3P^o$	2-2	5-5	2.66E+01	4.06E-03	6.75E-03	-1.693	D	2,LS
101.131?	1 783.1	990 600?	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4s$	$3P - 3P^o$	1-1	3-3	8.81E+00	1.35E-03	1.35E-03	-2.393	D	2,LS
101.131?	1 783.1	990 600?	$2s^2 2p^4 - 2s^2 2p^3 (2P^o) 4s$	$3P - 3P^o$	1-2	3-5	8.81E+00	2.25E-03	2.25E-03	-2.171	D	2,LS

Mg v—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
101.131?	1 783.1	990 600?	2s ² 2p ⁴ -2s ² 2p ³ (² P°)4s	3P- ³ P°	1-0	3-1	3.52E+01	1.80E-03	1.80E-03	-2.268	D	2,LS
101.207?	2 521.8	990 600?	2s ² 2p ⁴ -2s ² 2p ³ (² P°)4s	3P- ³ P°	0-1	1-3	1.17E+01	5.39E-03	1.80E-03	-2.268	D	2,LS
101.670	35 926	1 019 500	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4d	1D- ¹ F°	2-3	5-7	7.24E+02	1.57E-01	2.63E-01	-0.105	C	2,LS
101.781	35 926	1 018 430	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4d	1D- ¹ D°	2-2	5-5	6.34E+02	9.85E-02	1.65E-01	-0.308	C	2,LS
102.073	35 926	1 015 615	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4d	1D- ¹ P°	2-1	5-3	3.86E+02	3.62E-02	6.08E-02	-0.742	C	2,LS
103.902	0.0	962 445	2s ² 2p ⁴ -2s ² 2p ³ (⁴ S°)4d	3P- ³ D°	2-3	5-7	5.78E+02	1.31E-01	2.24E-01	-0.184	C	2,LS
103.906	0.0	962 407	2s ² 2p ⁴ -2s ² 2p ³ (⁴ S°)4d	3P- ³ D°	2-2	5-5	1.45E+02	2.34E-02	4.00E-02	-0.932	C	2,LS
103.906	0.0	962 407	2s ² 2p ⁴ -2s ² 2p ³ (⁴ S°)4d	3P- ³ D°	2-1	5-3	1.61E+01	1.56E-03	2.67E-03	-2.108	D	2,LS
103.938	0.0	962 114	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4s	3P- ³ D°	2-1	5-3	1.61E+01	1.56E-03	2.67E-03	-2.108	D	2,LS
103.939	0.0	962 103	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4s	3P- ³ D°	2-2	5-5	1.44E+02	2.33E-02	3.99E-02	-0.934	C	2,LS
103.942	0.0	962 075	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4s	3P- ³ D°	2-3	5-7	5.78E+02	1.31E-01	2.24E-01	-0.184	C	2,LS
104.099	1 783.1	962 407	2s ² 2p ⁴ -2s ² 2p ³ (⁴ S°)4d	3P- ³ D°	1-1	3-3	2.39E+02	3.89E-02	4.00E-02	-0.933	C	2,LS
104.099	1 783.1	962 407	2s ² 2p ⁴ -2s ² 2p ³ (⁴ S°)4d	3P- ³ D°	1-2	3-5	4.32E+02	1.17E-01	1.20E-01	-0.455	C	2,LS
104.131	1 783.1	962 114	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4s	3P- ³ D°	1-1	3-3	2.39E+02	3.88E-02	3.99E-02	-0.934	C	2,LS
104.132	1 783.1	962 103	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4s	3P- ³ D°	1-2	3-5	4.32E+02	1.17E-01	1.20E-01	-0.455	C	2,LS
104.179	2 521.8	962 407	2s ² 2p ⁴ -2s ² 2p ³ (⁴ S°)4d	3P- ³ D°	0-1	1-3	3.18E+02	1.55E-01	5.32E-02	-0.810	C	2,LS
104.211	2 521.8	962 114	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4s	3P- ³ D°	0-1	1-3	3.17E+02	1.55E-01	5.32E-02	-0.810	C	2,LS
104.447	35 926	993 349	2s ² 2p ⁴ -2s ² 2p ³ (² P°)4s	1D- ¹ P°	2-1	5-3	8.01E+01	7.86E-03	1.35E-02	-1.406	C	2,LS
106.572	77 279	1 015 615	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4d	1S- ¹ P°	0-1	1-3	1.36E+01	6.97E-03	2.45E-03	-2.157	D	2,LS
107.653	35 926	964 836	2s ² 2p ⁴ -2s ² 2p ³ (² D°)4s	1D- ¹ D°	2-2	5-5	1.39E+02	2.42E-02	4.29E-02	-0.917	C	2,LS
109.162	77 279	993 349	2s ² 2p ⁴ -2s ² 2p ³ (² P°)4s	1S- ¹ P°	0-1	1-3	7.18E+01	3.85E-02	1.38E-02	-1.415	C	2,LS
109.349	0.0	914 500	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ¹ P°	2-1	5-3	1.33E-02	1.43E-06	2.57E-06	-5.147	D	1
109.563	1 783.1	914 500	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ¹ P°	1-1	3-3	3.48E-02	6.26E-06	6.77E-06	-4.726	D	1
109.652	2 521.8	914 500	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ¹ P°	0-1	1-3	3.27E-01	1.77E-04	6.39E-05	-3.752	D	1
109.800	0.0	910 750	2s ² 2p ⁴ -2s ² 2p ³ (⁴ S°)4s	3P- ³ S°	2-1	5-3	9.96E+01	1.08E-02	1.95E-02	-1.268	C	2,LS
110.015	1 783.1	910 750	2s ² 2p ⁴ -2s ² 2p ³ (⁴ S°)4s	3P- ³ S°	1-1	3-3	5.95E+01	1.08E-02	1.17E-02	-1.489	C	2,LS
110.104	2 521.8	910 750	2s ² 2p ⁴ -2s ² 2p ³ (⁴ S°)4s	3P- ³ S°	0-1	1-3	1.96E+01	1.07E-02	3.88E-03	-1.971	D	2,LS
110.452	0.0	905 370	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ¹ F°	2-3	5-7	4.40E-01	1.13E-04	2.05E-04	-3.249	C	1
110.771	0.0	902 766	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ D°	2-1	5-3	1.63E+01	1.80E-03	3.29E-03	-2.045	B	1
110.802	0.0	902 509	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ D°	2-2	5-5	8.93E+01	1.64E-02	3.00E-02	-1.085	B	1
110.846	0.0	902 152	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ D°	2-3	5-7	5.90E+02	1.52E-01	2.78E-01	-0.119	A	1
110.929	0.0	901 474	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ¹ D°	2-2	5-5	5.61E+01	1.03E-02	1.89E-02	-1.286	B	1
110.990	1 783.1	902 766	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ D°	1-1	3-3	2.89E+02	5.34E-02	5.85E-02	-0.796	B	1
111.022	1 783.1	902 509	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ D°	1-2	3-5	2.69E+02	8.28E-02	9.08E-02	-0.605	B	1
111.081	2 521.8	902 766	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ D°	0-1	1-3	4.12E+02	2.29E-01	8.36E-02	-0.641	B	1
111.149	1 783.1	901 474	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ¹ D°	1-2	3-5	2.54E+02	7.83E-02	8.60E-02	-0.629	B	1
111.189	0.0	899 369	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ P°	2-2	5-5	1.83E+02	3.39E-02	6.21E-02	-0.771	B	1
111.239	0.0	898 962	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ P°	2-1	5-3	1.01E+02	1.13E-02	2.07E-02	-1.249	B	1
111.410	1 783.1	899 369	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ P°	1-2	3-5	5.12E+01	1.59E-02	1.75E-02	-1.322	B	1
111.460	1 783.1	898 962	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ P°	1-1	3-3	1.08E+02	2.02E-02	2.22E-02	-1.218	B	1
111.486	1 783.1	898 962	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ P°	1-0	3-1	3.75E+02	2.33E-02	2.57E-02	-1.155	B	1
111.552	2 521.8	898 962	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	3P- ³ P°	0-1	1-3	1.19E+02	6.66E-02	2.45E-02	-1.176	B	1
113.194?	283 212.3	1 166 650?	2s2p ⁵ -2s2p ⁴ (² D)3d	3P°- ³ D	2-1	5-3	9.37E+00	1.08E-03	2.01E-03	-2.268	D	2,LS
113.202?	283 212.3	1 166 590?	2s2p ⁵ -2s2p ⁴ (² D)3d	3P°- ³ D	2-2	5-5	8.43E+01	1.62E-02	3.02E-02	-1.092	C	2,LS
113.210?	283 212.3	1 166 530?	2s2p ⁵ -2s2p ⁴ (² D)3d	3P°- ³ D	2-3	5-7	3.38E+02	9.08E-02	1.69E-01	-0.343	C	2,LS
113.277	0.0	882 791	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ¹ F°	2-3	5-7	6.13E+00	1.65E-03	3.08E-03	-2.083	B	1
113.402?	284 828.3	1 166 650	2s2p ⁵ -2s2p ⁴ (² D)3d	3P°- ³ D?	1-1	3-3	1.40E+02	2.70E-02	3.02E-02	-1.092	C	2,LS
113.409?	284 828.3	1 166 590	2s2p ⁵ -2s2p ⁴ (² D)3d	3P°- ³ D?	1-2	3-5	2.52E+02	8.09E-02	9.06E-02	-0.615	C	2,LS
113.515?	285 712.0	1 166 650	2s2p ⁵ -2s2p ⁴ (² D)3d	3P°- ³ D?	0-1	1-3	1.86E+02	1.08E-01	4.04E-02	-0.967	C	2,LS
113.699	0.0	879 515	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ³ S°	2-1	5-3	7.65E+02	8.89E-02	1.67E-01	-0.352	A	1
113.821	35 926	914 500	2s ² 2p ⁴ -2s ² 2p ³ (² P°)3d	1D- ¹ P°	2-1	5-3	6.01E+01	7.00E-03	1.31E-02	-1.456	B	1
113.930	1 783.1	879 515	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ³ S°	1-1	3-3	5.47E+02	1.06E-01	1.20E-01	-0.496	A	1
113.946	0.0	877 611	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ¹ D°	2-2	5-5	1.21E+01	2.35E-03	4.41E-03	-1.930	B	1
113.988	0.0	877 283	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ³ P°	2-1	5-3	7.04E+02	8.22E-02	1.54E-01	-0.386	A	1
114.026	2 521.8	879 515	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ³ S°	0-1	1-3	1.97E+02	1.15E-01	4.33E-02	-0.938	B	1
114.052	0.0	876 795	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ³ P°	2-2	5-5	1.15E+03	2.24E-01	4.21E-01	0.050	A	1
114.178	1 783.1	877 611	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ¹ D°	1-2	3-5	2.98E+00	9.69E-04	1.09E-03	-2.537	B	1
114.197	1 783.1	877 463	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ³ P°	1-0	3-1	1.38E+03	8.96E-02	1.01E-01	-0.570	A	1
114.220	1 783.1	877 283	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ³ P°	1-1	3-3	2.97E+02	5.82E-02	6.56E-02	-0.758	B	1
114.284	1 783.1	876 795	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ³ P°	1-2	3-5	3.42E+02	1.12E-01	1.26E-01	-0.476	A	1
114.317	2 521.8	877 283	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ³ P°	0-1	1-3	4.04E+02	2.38E-01	8.94E-02	-0.624	B	1
114.488	0.0	873 456	2s ² 2p ⁴ -2s ² 2p ³ (² D°)3d	3P- ¹ P°	2-1	5-3	1.37E+01	1.61E-03	3.04E-03	-2.093	B	1

Mg v—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
114.722	1 783.1	873 456	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$3P_{-1}P^{\circ}$	1-1	3-3	1.99E+01	3.92E-03	4.44E-03	-1.930	B	1
114.759	0.0	871 390	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$3P_{-3}D^{\circ}$	2-1	5-3	1.34E+01	1.58E-03	2.99E-03	-2.102	B	1
114.764	0.0	871 357	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$3P_{-3}D^{\circ}$	2-2	5-5	1.61E+02	3.17E-02	5.99E-02	-0.800	B	1
114.782	0.0	871 216	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$3P_{-3}D^{\circ}$	2-3	5-7	7.75E+02	2.14E-01	4.05E-01	-0.030	A	1
114.819	2 521.8	873 456	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$3P_{-1}P^{\circ}$	0-1	1-3	3.41E-01	2.02E-04	7.63E-05	-3.695	D	1
114.994	1 783.1	871 390	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$3P_{-3}D^{\circ}$	1-1	3-3	2.62E+02	5.20E-02	5.91E-02	-0.807	B	1
114.999	1 783.1	871 357	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$3P_{-3}D^{\circ}$	1-2	3-5	5.60E+02	1.85E-01	2.10E-01	-0.256	A	1
115.016	35 926	905 370	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1D_{-1}F^{\circ}$	2-3	5-7	9.68E+02	2.69E-01	5.09E-01	0.128	A	1
115.092	2 521.8	871 390	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$3P_{-3}D^{\circ}$	0-1	1-3	3.94E+02	2.35E-01	8.89E-02	-0.630	B	1
115.362	35 926	902 766	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1D_{-3}D^{\circ}$	2-1	5-3	3.50E-01	4.19E-05	7.95E-05	-3.679	D	1
115.396	35 926	902 509	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1D_{-3}D^{\circ}$	2-2	5-5	3.54E+02	7.07E-02	1.34E-01	-0.452	A	1
115.443	35 926	902 152	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1D_{-3}D^{\circ}$	2-3	5-7	3.52E+00	9.84E-04	1.87E-03	-2.308	B	1
115.534	35 926	901 474	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1D_{-1}D^{\circ}$	2-2	5-5	3.63E+02	7.27E-02	1.38E-01	-0.439	A	1
115.815	35 926	899 369	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1D_{-3}P^{\circ}$	2-2	5-5	1.38E-01	2.77E-05	5.29E-05	-3.858	D	1
115.870	35 926	898 962	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1D_{-3}P^{\circ}$	2-1	5-3	1.87E+00	2.26E-04	4.32E-04	-2.947	C	1
118.083	35 926	882 791	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1D_{-1}F^{\circ}$	2-3	5-7	1.35E+03	3.96E-01	7.70E-01	0.297	A	1
118.541	35 926	879 515	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1D_{-3}S^{\circ}$	2-1	5-3	7.52E-03	9.50E-07	1.85E-06	-5.323	D	1
118.809	35 926	877 611	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1D_{-1}D^{\circ}$	2-2	5-5	8.77E+02	1.85E-01	3.63E-01	-0.033	A	1
118.856	35 926	877 283	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1D_{-3}P^{\circ}$	2-1	5-3	1.33E+01	1.69E-03	3.30E-03	-2.074	B	1
118.925	35 926	876 795	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1D_{-3}P^{\circ}$	2-2	5-5	5.94E+00	1.26E-03	2.47E-03	-2.201	B	1
119.399	35 926	873 456	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1D_{-1}P^{\circ}$	2-1	5-3	7.65E+02	9.81E-02	1.93E-01	-0.309	A	1
119.443	77 279	914 500	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1S_{-3}P^{\circ}$	0-1	1-3	1.67E+03	1.07E+00	4.22E-01	0.030	A	1
119.694	35 926	871 390	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1D_{-3}D^{\circ}$	2-1	5-3	6.25E+00	8.05E-04	1.59E-03	-2.395	B	1
119.699	35 926	871 357	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1D_{-3}D^{\circ}$	2-2	5-5	4.21E-01	9.03E-05	1.78E-04	-3.345	C	1
119.719	35 926	871 216	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1D_{-3}D^{\circ}$	2-3	5-7	1.44E-01	4.34E-05	8.55E-05	-3.664	D	1
121.141	77 279	902 766	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1S_{-3}D^{\circ}$	0-1	1-3	1.07E-01	7.03E-05	2.81E-05	-4.153	D	1
121.645	0.0	822 066	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$3P_{-3}D^{\circ}$	2-3	5-7	7.18E+02	2.23E-01	4.47E-01	0.047	A	1
121.656	0.0	821 989	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$3P_{-3}D^{\circ}$	2-2	5-5	1.82E+02	4.03E-02	8.08E-02	-0.695	B	1
121.658	0.0	821 974	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$3P_{-3}D^{\circ}$	2-1	5-3	2.03E+01	2.71E-03	5.42E-03	-1.868	B	1
121.701	77 279	898 962	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3d$	$1S_{-3}P^{\circ}$	0-1	1-3	2.26E+00	1.50E-03	6.03E-04	-2.823	C	1
121.921	1 783.1	821 989	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$3P_{-3}D^{\circ}$	1-2	3-5	5.24E+02	1.94E-01	2.34E-01	-0.234	A	1
121.923	1 783.1	821 974	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$3P_{-3}D^{\circ}$	1-1	3-3	2.94E+02	6.55E-02	7.89E-02	-0.707	B	1
122.033	2 521.8	821 974	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$3P_{-3}D^{\circ}$	0-1	1-3	3.87E+02	2.59E-01	1.04E-01	-0.587	A	1
124.652	77 279	879 515	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1S_{-3}S^{\circ}$	0-1	1-3	9.08E-02	6.35E-05	2.61E-05	-4.197	D	1
124.999	77 279	877 283	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1S_{-3}P^{\circ}$	0-1	1-3	2.68E-01	1.89E-04	7.76E-05	-3.724	D	1
125.600	77 279	873 456	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1S_{-1}P^{\circ}$	0-1	1-3	1.11E+02	7.87E-02	3.26E-02	-1.104	B	1
125.927	77 279	871 390	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3d$	$1S_{-3}D^{\circ}$	0-1	1-3	2.17E+00	1.55E-03	6.41E-04	-2.811	C	1
126.282	283 212.3	1 075 090	$2s 2p^5 - 2s 2p^4(^4P) 3d$	$3P^{\circ}_{-3}D$	2-3	5-7	1.10E+03	3.68E-01	7.65E-01	0.265	C	2,LS
126.282	283 212.3	1 075 090	$2s 2p^5 - 2s 2p^4(^4P) 3d$	$3P^{\circ}_{-3}D$	2-2	5-5	2.75E+02	6.57E-02	1.37E-01	-0.483	C	2,LS
126.282	283 212.3	1 075 090	$2s 2p^5 - 2s 2p^4(^4P) 3d$	$3P^{\circ}_{-3}D$	2-1	5-3	3.05E+01	4.38E-03	9.11E-03	-1.660	D	2,LS
126.540	284 828.3	1 075 090	$2s 2p^5 - 2s 2p^4(^4P) 3d$	$3P^{\circ}_{-3}D$	1-2	3-5	8.20E+02	3.28E-01	4.10E-01	-0.007	C	2,LS
126.540	284 828.3	1 075 090	$2s 2p^5 - 2s 2p^4(^4P) 3d$	$3P^{\circ}_{-3}D$	1-1	3-3	4.54E+02	1.09E-01	1.36E-01	-0.485	C	2,LS
126.682	285 712.0	1 075 090	$2s 2p^5 - 2s 2p^4(^4P) 3d$	$3P^{\circ}_{-3}D$	0-1	1-3	6.05E+02	4.37E-01	1.82E-01	-0.360	C	2,LS
127.204	35 926	822 066	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$1D_{-3}D^{\circ}$	2-3	5-7	1.79E-01	6.06E-05	1.27E-04	-3.518	C	1
127.216	35 926	821 989	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$1D_{-3}D^{\circ}$	2-2	5-5	9.78E-02	2.37E-05	4.97E-05	-3.926	D	1
127.219	35 926	821 974	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$1D_{-3}D^{\circ}$	2-1	5-3	3.46E-02	5.04E-06	1.06E-05	-4.598	D	1
130.783	0.0	764 628	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3s$	$3P_{-1}P^{\circ}$	2-1	5-3	7.31E-03	1.12E-06	2.42E-06	-5.250	D	1
131.088	1 783.1	764 628	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3s$	$3P_{-1}P^{\circ}$	1-1	3-3	5.74E-03	1.48E-06	1.92E-06	-5.353	D	1
131.215	2 521.8	764 628	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3s$	$3P_{-1}P^{\circ}$	0-1	1-3	3.20E-02	2.48E-05	1.07E-05	-4.606	D	1
132.163	0.0	756 641	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3s$	$3P_{-3}P^{\circ}$	2-2	5-5	1.11E+02	2.92E-02	6.35E-02	-0.836	B	1
132.176	0.0	756 566	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3s$	$3P_{-3}P^{\circ}$	2-1	5-3	6.11E+01	9.60E-03	2.09E-02	-1.319	B	1
132.475	1 783.1	756 641	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3s$	$3P_{-3}P^{\circ}$	1-2	3-5	4.78E+01	2.09E-02	2.74E-02	-1.202	B	1
132.488	1 783.1	756 566	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3s$	$3P_{-3}P^{\circ}$	1-1	3-3	3.80E+01	9.99E-03	1.31E-02	-1.523	B	1
132.492	1 783.1	756 545	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3s$	$3P_{-3}P^{\circ}$	1-0	3-1	1.59E+02	1.39E-02	1.82E-02	-1.379	B	1
132.618	2 521.8	756 566	$2s^2 2p^4 - 2s^2 2p^3(^2P^{\circ}) 3s$	$3P_{-3}P^{\circ}$	0-1	1-3	6.03E+01	4.77E-02	2.08E-02	-1.321	B	1
134.283	77 279	821 974	$2s^2 2p^4 - 2s^2 2p^3(^4S^{\circ}) 3d$	$1S_{-3}D^{\circ}$	0-1	1-3	3.01E-04	2.44E-07	1.08E-07	-6.613	E	1
135.628	283 212.3	1 020 522	$2s 2p^5 - 2s 2p^4(^2D) 3s$	$3P^{\circ}_{-3}D$	2-3	5-7	1.69E+02	6.51E-02	1.45E-01	-0.487	C	2,LS
135.647	283 212.3	1 020 419	$2s 2p^5 - 2s 2p^4(^2D) 3s$	$3P^{\circ}_{-3}D$	2-2	5-5	4.21E+01	1.16E-02	2.59E-02	-1.237	C	2,LS
135.661	283 212.3	1 020 345	$2s 2p^5 - 2s 2p^4(^2D) 3s$	$3P^{\circ}_{-3}D$	2-1	5-3	4.68E+00	7.75E-04	1.73E-03	-2.412	D	2,LS
135.945	284 828.3	1 020 419	$2s 2p^5 - 2s 2p^4(^2D) 3s$	$3P^{\circ}_{-3}D$	1-2	3-5	1.26E+02	5.80E-02	7.79E-02	-0.759	C	2,LS
135.953	0.0	735 546	$2s^2 2p^4 - 2s^2 2p^3(^2D^{\circ}) 3s$	$3P_{-1}D^{\circ}$	2-2	5-5	1.58E+00	4.39E-04	9.82E-04	-2.659	C	1
135.959	284 828.3	1 020 345	$2s 2p^5 - 2s 2p^4(^2D) 3s$	$3P^{\circ}_{-3}D$	1-1	3-3	6.96E+01	1.93E-02	2.59E-02	-1.237	C	2,LS

Mg v—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
136.122	285 712.0	1 020 345	$2s^2p^5-2s^2p^4(^2D)3s$	$^3P-^3D$	0-1	1-3	9.26E+01	7.72E-02	3.46E-02	-1.112	C	2,LS
136.284	1 783.1	735 546	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^3P-^1D^{\circ}$	1-2	3-5	1.42E-01	6.58E-05	8.86E-05	-3.705	D	1
137.230	35 926	764 628	$2s^22p^4-2s^22p^3(^2P^{\circ})3s$	$^1D-^1P^{\circ}$	2-1	5-3	1.90E+02	3.22E-02	7.27E-02	-0.793	B	1
137.404	0.0	727 782	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^3P-^3D^{\circ}$	2-1	5-3	5.48E+00	9.31E-04	2.11E-03	-2.332	B	1
137.407	0.0	727 763	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^3P-^3D^{\circ}$	2-2	5-5	4.59E+01	1.30E-02	2.94E-02	-1.188	B	1
137.411	0.0	727 742	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^3P-^3D^{\circ}$	2-3	5-7	1.56E+02	6.18E-02	1.40E-01	-0.510	A	1
137.741	1 783.1	727 782	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^3P-^3D^{\circ}$	1-1	3-3	6.88E+01	1.96E-02	2.66E-02	-1.231	B	1
137.745	1 783.1	727 763	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^3P-^3D^{\circ}$	1-2	3-5	1.09E+02	5.19E-02	7.06E-02	-0.808	B	1
137.882	2 521.8	727 782	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^3P-^3D^{\circ}$	0-1	1-3	8.07E+01	6.90E-02	3.13E-02	-1.161	B	1
138.751	35 926	756 641	$2s^22p^4-2s^22p^3(^2P^{\circ})3s$	$^1D-^3P^{\circ}$	2-2	5-5	2.43E+00	7.00E-04	1.60E-03	-2.456	B	1
138.766	35 926	756 566	$2s^22p^4-2s^22p^3(^2P^{\circ})3s$	$^1D-^3P^{\circ}$	2-1	5-3	9.30E-02	1.61E-05	3.68E-05	-4.094	D	1
142.935	35 926	735 546	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^1D-^1D^{\circ}$	2-2	5-5	3.92E+02	1.20E-01	2.82E-01	-0.222	A	1
144.539	35 926	727 782	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^1D-^3D^{\circ}$	2-1	5-3	2.27E-01	4.26E-05	1.01E-04	-3.672	C	1
144.543	35 926	727 763	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^1D-^3D^{\circ}$	2-2	5-5	4.61E-02	1.45E-05	3.44E-05	-4.141	D	1
144.547	35 926	727 742	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^1D-^3D^{\circ}$	2-3	5-7	1.59E-01	6.99E-05	1.66E-04	-3.456	C	1
145.486	77 279	764 628	$2s^22p^4-2s^22p^3(^2P^{\circ})3s$	$^1S-^1P^{\circ}$	0-1	1-3	1.81E+02	1.73E-01	8.27E-02	-0.763	B	1
146.083	0.0	684 541	$2s^22p^4-2s^22p^3(^4S^{\circ})3s$	$^3P-^3S^{\circ}$	2-1	5-3	2.69E+02	5.16E-02	1.24E-01	-0.588	A	1
146.465	1 783.1	684 541	$2s^22p^4-2s^22p^3(^4S^{\circ})3s$	$^3P-^3S^{\circ}$	1-1	3-3	1.57E+02	5.05E-02	7.30E-02	-0.820	B	1
146.623	2 521.8	684 541	$2s^22p^4-2s^22p^3(^4S^{\circ})3s$	$^3P-^3S^{\circ}$	0-1	1-3	5.20E+01	5.03E-02	2.43E-02	-1.299	B	1
147.213	77 279	756 566	$2s^22p^4-2s^22p^3(^2P^{\circ})3s$	$^1S-^3P^{\circ}$	0-1	1-3	1.99E-02	1.94E-05	9.41E-06	-4.712	D	1
152.021	284 828.3	942 634	$2s^2p^5-2s^2p^4(^4P)3s$	$^3P^{\circ}-^3P$	1-0	3-1	2.94E+02	3.40E-02	5.11E-02	-0.991	C	2,LS
153.727	77 279	727 782	$2s^22p^4-2s^22p^3(^2D^{\circ})3s$	$^1S-^3D^{\circ}$	0-1	1-3	1.03E-01	1.10E-04	5.56E-05	-3.960	D	1
154.175	35 926	684 541	$2s^22p^4-2s^22p^3(^4S^{\circ})3s$	$^1D-^3S^{\circ}$	2-1	5-3	7.89E-02	1.69E-05	4.28E-05	-4.074	D	1
164.674	77 279	684 541	$2s^22p^4-2s^22p^3(^4S^{\circ})3s$	$^1S-^3S^{\circ}$	0-1	1-3	4.90E-04	5.98E-07	3.24E-07	-6.224	E	1

7. Mg VI

Z = 12

NI isoelectronic sequence

Ground state $1s^2 2s^2 2p^3 \ ^4S_{3/2}$ Ionization energy $1\ 506\ 300\ \text{cm}^{-1}$ (186.76 eV)

Data are tabulated for 273 transitions in the range 74–172 Å. Transition probabilities for the $2s^2 2p^3 - 2s^2 2p^2 3s$, $2s^2 2p^3 - 2s^2 2p^2 3d$, and $2s 2p^4 - 2s 2p^3 ({}^5S^\circ) 3s$ arrays are taken from the multiconfiguration Hartree–Fock (MCHF) calculations of Tachiev and Froese Fischer.¹ Values for the other arrays are taken from the Opacity Project (OP).² OP provides, however, only multiplet values. These have been decomposed into fine-structure components assuming LS coupling, as indicated by the notation LS in the reference column.

References

¹G. Tachiev and C. Froese Fischer, http://vuse.vanderbilt.edu/~cff/mchf_collection/ (downloaded 28 March, 2002). See also G. Tachiev and C. Froese Fischer, *Astron. Astrophys.* **385**, 716 (2002).

²<http://legacy.gsfc.nasa.gov/topbase/> (downloaded 28 July, 1995).

Mg VI

λ Ritz (Å)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} ($10^8\ \text{s}^{-1}$)	f_{ik}	S (a.u.)	$\log g_i f$	Acc.	Ref.
74.574?	0.0	1 340 950?	$2s^2 2p^3 - 2s 2p^3 ({}^5S^\circ) 4p$	$4S^\circ - {}^4P$	3/2–1/2	4–2	3.69E+01	1.54E–03	1.51E–03	–2.210	D	2,LS
74.574?	0.0	1 340 950?	$2s^2 2p^3 - 2s 2p^3 ({}^5S^\circ) 4p$	$4S^\circ - {}^4P$	3/2–3/2	4–4	3.69E+01	3.08E–03	3.02E–03	–1.909	D	2,LS
74.574?	0.0	1 340 950?	$2s^2 2p^3 - 2s 2p^3 ({}^5S^\circ) 4p$	$4S^\circ - {}^4P$	3/2–5/2	4–6	3.69E+01	4.62E–03	4.54E–03	–1.733	D	2,LS
75.248	55 356	1 384 290	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2D^\circ - {}^2D$	5/2–3/2	6–4	3.29E+01	1.86E–03	2.76E–03	–1.952	D	2,LS
75.248	55 356	1 384 290	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2D^\circ - {}^2D$	5/2–5/2	6–6	3.06E+02	2.60E–02	3.86E–02	–0.807	C	2,LS
75.249	55 372.8	1 384 290	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2D^\circ - {}^2D$	3/2–3/2	4–4	2.96E+02	2.51E–02	2.49E–02	–0.998	C	2,LS
75.249	55 372.8	1 384 290	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2D^\circ - {}^2D$	3/2–5/2	4–6	2.19E+01	2.79E–03	2.76E–03	–1.952	D	2,LS
75.334?	55 356	1 382 780?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2D^\circ - {}^2F$	5/2–5/2	6–6	1.82E+01	1.55E–03	2.31E–03	–2.032	D	2,LS
75.334?	55 356	1 382 780?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2D^\circ - {}^2F$	5/2–7/2	6–8	2.73E+02	3.10E–02	4.61E–02	–0.730	C	2,LS
75.335?	55 372.8	1 382 780?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2D^\circ - {}^2F$	3/2–5/2	4–6	2.55E+02	3.26E–02	3.23E–02	–0.885	C	2,LS
75.834?	0.0	1 318 670?	$2s^2 2p^3 - 2s^2 2p^2 ({}^3P) 5s$	$4S^\circ - {}^4P$	3/2–5/2	4–6	1.01E+02	1.31E–02	1.31E–02	–1.281	C	2,LS
75.890?	0.0	1 317 700?	$2s^2 2p^3 - 2s^2 2p^2 ({}^3P) 5s$	$4S^\circ - {}^4P$	3/2–3/2	4–4	1.01E+02	8.74E–03	8.73E–03	–1.456	D	2,LS
76.901	83 920.0	1 384 290	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2P^\circ - {}^2D$	1/2–3/2	2–4	7.67E+01	1.36E–02	6.89E–03	–1.565	C	2,LS
76.908	84 028.4	1 384 290	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2P^\circ - {}^2D$	3/2–3/2	4–4	1.53E+01	1.36E–03	1.38E–03	–2.264	D	2,LS
76.908	84 028.4	1 384 290	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 5d$	$2P^\circ - {}^2D$	3/2–5/2	4–6	9.25E+01	1.23E–02	1.25E–02	–1.308	C	2,LS
77.405?	55 356	1 347 260?	$2s^2 2p^3 - 2s^2 2p^2 ({}^3P) 5d$	$2D^\circ - {}^2F$	5/2–7/2	6–8	4.58E+02	5.48E–02	8.38E–02	–0.483	C	2,LS
77.510?	55 356	1 345 510?	$2s^2 2p^3 - 2s^2 2p^2 ({}^3P) 5d$	$2D^\circ - {}^2F$	5/2–5/2	6–6	3.03E+01	2.73E–03	4.18E–03	–1.786	D	2,LS
77.511?	55 372.8	1 345 510?	$2s^2 2p^3 - 2s^2 2p^2 ({}^3P) 5d$	$2D^\circ - {}^2F$	3/2–5/2	4–6	4.25E+02	5.74E–02	5.86E–02	–0.639	C	2,LS
78.238?	55 356	1 333 500?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1S) 4d$	$2D^\circ - {}^2D$	5/2–3/2	6–4	2.48E–01	1.52E–05	2.35E–05	–4.040	E	2,LS
78.238?	55 356	1 333 500?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1S) 4d$	$2D^\circ - {}^2D$	5/2–5/2	6–6	2.31E+00	2.12E–04	3.28E–04	–2.896	D	2,LS
78.239?	55 372.8	1 333 500?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1S) 4d$	$2D^\circ - {}^2D$	3/2–5/2	4–6	1.66E–01	2.28E–05	2.35E–05	–4.040	E	2,LS
78.239?	55 372.8	1 333 500?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1S) 4d$	$2D^\circ - {}^2D$	3/2–3/2	4–4	2.23E+00	2.05E–04	2.11E–04	–3.086	D	2,LS
79.817	0.0	1 252 870	$2s^2 2p^3 - 2s^2 2p^2 ({}^3P) 4d$	$4S^\circ - {}^4P$	3/2–1/2	4–2	7.73E+02	3.69E–02	3.88E–02	–0.831	C	2,LS
79.830	0.0	1 252 660	$2s^2 2p^3 - 2s^2 2p^2 ({}^3P) 4d$	$4S^\circ - {}^4P$	3/2–3/2	4–4	7.72E+02	7.38E–02	7.76E–02	–0.530	C	2,LS
79.857	0.0	1 252 240	$2s^2 2p^3 - 2s^2 2p^2 ({}^3P) 4d$	$4S^\circ - {}^4P$	3/2–5/2	4–6	7.74E+02	1.11E–01	1.17E–01	–0.353	C	2,LS
80.027?	83 920.0	1 333 500?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1S) 4d$	$2P^\circ - {}^2D$	1/2–3/2	2–4	2.86E+02	5.49E–02	2.89E–02	–0.959	C	2,LS
80.034?	84 028.4	1 333 500?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1S) 4d$	$2P^\circ - {}^2D$	3/2–5/2	4–6	3.43E+02	4.94E–02	5.21E–02	–0.704	C	2,LS
80.034?	84 028.4	1 333 500?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1S) 4d$	$2P^\circ - {}^2D$	3/2–3/2	4–4	5.72E+01	5.49E–03	5.79E–03	–1.658	D	2,LS
80.724?	55 356	1 294 150?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2P$	5/2–3/2	6–4	2.50E+02	1.63E–02	2.60E–02	–1.010	C	2,LS
80.725?	55 372.8	1 294 150?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2P$	3/2–1/2	4–2	2.78E+02	1.36E–02	1.45E–02	–1.264	C	2,LS
80.725?	55 372.8	1 294 150?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2P$	3/2–3/2	4–4	2.78E+01	2.72E–03	2.89E–03	–1.963	D	2,LS
80.930	55 356	1 290 990	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2D$	5/2–3/2	6–4	5.87E+01	3.84E–03	6.14E–03	–1.638	D	2,LS
80.930	55 356	1 290 990	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2D$	5/2–5/2	6–6	5.48E+02	5.38E–02	8.60E–02	–0.491	C	2,LS
80.931	55 372.8	1 290 990	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2D$	3/2–3/2	4–4	5.29E+02	5.19E–02	5.53E–02	–0.683	C	2,LS
80.931	55 372.8	1 290 990	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2D$	3/2–5/2	4–6	3.91E+01	5.76E–03	6.14E–03	–1.638	D	2,LS
81.106?	55 356	1 288 310?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2F$	5/2–5/2	6–6	5.74E+01	5.66E–03	9.07E–03	–1.469	D	2,LS
81.106?	55 356	1 288 310?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2F$	5/2–7/2	6–8	8.59E+02	1.13E–01	1.81E–01	–0.169	C	2,LS
81.107?	55 372.8	1 288 310?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2D^\circ - {}^2F$	3/2–5/2	4–6	8.04E+02	1.19E–01	1.27E–01	–0.322	C	2,LS
82.467?	83 920.0	1 296 520?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2P^\circ - {}^2S$	1/2–1/2	2–2	8.98E+01	9.16E–03	4.97E–03	–1.737	D	2,LS
82.475?	84 028.4	1 296 520?	$2s^2 2p^3 - 2s^2 2p^2 ({}^1D) 4d$	$2P^\circ - {}^2S$	3/2–1/2	4–2	1.80E+02	9.16E–03	9.95E–03	–1.436	D	2,LS

Mg VI—Continued

λ Ritz (\AA)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} (10^8 s^{-1})	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
82.629?	83 920.0	1 294 150?	$2s^2 2p^3 - 2s^2 2p^2(1D)4d$	$2P^\circ - 2P$	1/2-3/2	2-4	7.91E+01	1.62E-02	8.81E-03	-1.489	C	2,LS
82.629?	83 920.0	1 294 150?	$2s^2 2p^3 - 2s^2 2p^2(1D)4d$	$2P^\circ - 2P$	1/2-1/2	2-2	3.16E+02	3.23E-02	1.76E-02	-1.190	C	2,LS
82.636?	84 028.4	1 294 150?	$2s^2 2p^3 - 2s^2 2p^2(1D)4d$	$2P^\circ - 2P$	3/2-3/2	4-4	3.95E+02	4.04E-02	4.40E-02	-0.792	C	2,LS
82.636?	84 028.4	1 294 150?	$2s^2 2p^3 - 2s^2 2p^2(1D)4d$	$2P^\circ - 2P$	3/2-1/2	4-2	1.58E+02	8.08E-03	8.79E-03	-1.491	D	2,LS
82.845	83 920.0	1 290 990	$2s^2 2p^3 - 2s^2 2p^2(1D)4d$	$2P^\circ - 2D$	1/2-3/2	2-4	1.81E+02	3.73E-02	2.03E-02	-1.127	C	2,LS
82.853	84 028.4	1 290 990	$2s^2 2p^3 - 2s^2 2p^2(1D)4d$	$2P^\circ - 2D$	3/2-5/2	4-6	2.18E+02	3.36E-02	3.67E-02	-0.872	C	2,LS
82.853	84 028.4	1 290 990	$2s^2 2p^3 - 2s^2 2p^2(1D)4d$	$2P^\circ - 2D$	3/2-3/2	4-4	3.62E+01	3.73E-03	4.07E-03	-1.826	D	2,LS
83.124?	55 356	1 258 380?	$2s^2 2p^3 - 2s^2 2p^2(3P)4d$	$2D^\circ - 2D$	5/2-5/2	6-6	2.23E+02	2.31E-02	3.79E-02	-0.858	C	2,LS
83.125?	55 372.8	1 258 380?	$2s^2 2p^3 - 2s^2 2p^2(3P)4d$	$2D^\circ - 2D$	3/2-5/2	4-6	1.59E+01	2.47E-03	2.70E-03	-2.005	D	2,LS
83.403?	55 356	1 254 350?	$2s^2 2p^3 - 2s^2 2p^2(3P)4d$	$2D^\circ - 2F$	5/2-7/2	6-8	6.92E+02	9.62E-02	1.58E-01	-0.239	C	2,LS
83.518?	55 356	1 252 700?	$2s^2 2p^3 - 2s^2 2p^2(3P)4d$	$2D^\circ - 2F$	5/2-5/2	6-6	4.59E+01	4.80E-03	7.92E-03	-1.541	D	2,LS
83.519?	55 372.8	1 252 700?	$2s^2 2p^3 - 2s^2 2p^2(3P)4d$	$2D^\circ - 2F$	3/2-5/2	4-6	6.44E+02	1.01E-01	1.11E-01	-0.394	C	2,LS
83.560?	0.0	1 196 740?	$2s^2 2p^3 - 2s^2 2p^2(3P)4s$	$4S^\circ - 4P$	3/2-5/2	4-6	7.13E+01	1.12E-02	1.23E-02	-1.349	C	2,LS
84.722	55 356	1 235 690	$2s^2 2p^3 - 2s^2 2p^2(1D)4s$	$2D^\circ - 2D$	5/2-3/2	6-4	3.69E+01	2.65E-03	4.43E-03	-1.799	D	2,LS
84.722	55 356	1 235 690	$2s^2 2p^3 - 2s^2 2p^2(1D)4s$	$2D^\circ - 2D$	5/2-5/2	6-6	3.45E+02	3.71E-02	6.21E-02	-0.652	C	2,LS
84.723	55 372.8	1 235 690	$2s^2 2p^3 - 2s^2 2p^2(1D)4s$	$2D^\circ - 2D$	3/2-5/2	4-6	2.46E+01	3.97E-03	4.43E-03	-1.799	D	2,LS
84.723	55 372.8	1 235 690	$2s^2 2p^3 - 2s^2 2p^2(1D)4s$	$2D^\circ - 2D$	3/2-3/2	4-4	3.33E+02	3.58E-02	3.99E-02	-0.844	C	2,LS
85.153?	84 028.4	1 258 380?	$2s^2 2p^3 - 2s^2 2p^2(3P)4d$	$2P^\circ - 2D$	3/2-5/2	4-6	7.05E+01	1.15E-02	1.29E-02	-1.337	C	2,LS
85.575?	55 356	1 223 920?	$2s^2 2p^3 - 2s^2 2p^3(3D^\circ)3p$	$2D^\circ - 2F$	5/2-5/2	6-6	4.58E+01	5.03E-03	8.50E-03	-1.520	D	2,LS
85.576?	55 372.8	1 223 920?	$2s^2 2p^3 - 2s^2 2p^3(3D^\circ)3p$	$2D^\circ - 2F$	3/2-5/2	4-6	6.44E+02	1.06E-01	1.19E-01	-0.373	C	2,LS
85.622?	55 356	1 223 280?	$2s^2 2p^3 - 2s^2 2p^3(3D^\circ)3p$	$2D^\circ - 2F$	5/2-7/2	6-8	6.89E+02	1.01E-01	1.71E-01	-0.218	C	2,LS
86.823	83 920.0	1 235 690	$2s^2 2p^3 - 2s^2 2p^2(1D)4s$	$2P^\circ - 2D$	1/2-3/2	2-4	2.58E+01	5.84E-03	3.34E-03	-1.933	D	2,LS
86.831	84 028.4	1 235 690	$2s^2 2p^3 - 2s^2 2p^2(1D)4s$	$2P^\circ - 2D$	3/2-5/2	4-6	3.10E+01	5.26E-03	6.01E-03	-1.677	D	2,LS
86.831	84 028.4	1 235 690	$2s^2 2p^3 - 2s^2 2p^2(1D)4s$	$2P^\circ - 2D$	3/2-3/2	4-4	5.17E+00	5.84E-04	6.68E-04	-2.632	D	2,LS
87.404	55 356	1 199 470	$2s^2 2p^3 - 2s^2 2p^2(3P)4s$	$2D^\circ - 2P$	5/2-3/2	6-4	9.69E+00	7.40E-04	1.28E-03	-2.353	D	2,LS
87.405	55 372.8	1 199 470	$2s^2 2p^3 - 2s^2 2p^2(3P)4s$	$2D^\circ - 2P$	3/2-3/2	4-4	1.07E+00	1.23E-04	1.42E-04	-3.308	D	2,LS
88.825	247 948	1 373 760	$2s 2p^4 - 2s 2p^3(5S^\circ)4d$	$4P - 4D^\circ$	5/2-7/2	6-8	8.88E+02	1.40E-01	2.46E-01	-0.076	C	2,LS
88.825	247 948	1 373 760	$2s 2p^4 - 2s 2p^3(5S^\circ)4d$	$4P - 4D^\circ$	5/2-5/2	6-6	2.66E+02	3.15E-02	5.53E-02	-0.724	C	2,LS
88.825	247 948	1 373 760	$2s 2p^4 - 2s 2p^3(5S^\circ)4d$	$4P - 4D^\circ$	5/2-3/2	6-4	4.44E+01	3.50E-03	6.14E-03	-1.678	D	2,LS
88.898	0.0	1 124 890	$2s^2 2p^3 - 2s^2 2p^2(1S)3d$	$4S^\circ - 2D$	3/2-3/2	4-4	5.52E+00	6.54E-04	7.66E-04	-2.582	C	1
88.954	249 584	1 373 760	$2s 2p^4 - 2s 2p^3(5S^\circ)4d$	$4P - 4D^\circ$	3/2-5/2	4-6	6.18E+02	1.10E-01	1.29E-01	-0.357	C	2,LS
88.954	249 584	1 373 760	$2s 2p^4 - 2s 2p^3(5S^\circ)4d$	$4P - 4D^\circ$	3/2-3/2	4-4	4.72E+02	5.60E-02	6.56E-02	-0.650	C	2,LS
88.954	249 584	1 373 760	$2s 2p^4 - 2s 2p^3(5S^\circ)4d$	$4P - 4D^\circ$	3/2-1/2	4-2	1.47E+02	8.74E-03	1.02E-02	-1.456	D	2,LS
89.023	250 450	1 373 760	$2s 2p^4 - 2s 2p^3(5S^\circ)4d$	$4P - 4D^\circ$	1/2-3/2	2-4	3.68E+02	8.74E-02	5.12E-02	-0.757	C	2,LS
89.023	250 450	1 373 760	$2s 2p^4 - 2s 2p^3(5S^\circ)4d$	$4P - 4D^\circ$	1/2-1/2	2-2	7.36E+02	8.74E-02	5.12E-02	-0.757	C	2,LS
89.642	83 920.0	1 199 470	$2s^2 2p^3 - 2s^2 2p^2(3P)4s$	$2P^\circ - 2P$	1/2-3/2	2-4	3.11E+01	7.49E-03	4.42E-03	-1.824	D	2,LS
89.651	84 028.4	1 199 470	$2s^2 2p^3 - 2s^2 2p^2(3P)4s$	$2P^\circ - 2P$	3/2-3/2	4-4	1.55E+02	1.87E-02	2.21E-02	-1.126	C	2,LS
90.897	0.0	1 100 150	$2s^2 2p^3 - 2s^2 2s 2p^3(5S^\circ)3$	$4S^\circ - 4P$	3/2-5/2	4-6	4.45E+02	8.27E-02	9.90E-02	-0.480	B	1
90.897	0.0	1 100 150	$2s^2 2p^3 - 2s^2 2s 2p^3(5S^\circ)3$	$4S^\circ - 4P$	3/2-1/2	4-2	4.34E+02	2.69E-02	3.22E-02	-0.968	B	1
90.897	0.0	1 100 150	$2s^2 2p^3 - 2s^2 2s 2p^3(5S^\circ)3$	$4S^\circ - 4P$	3/2-3/2	4-4	4.39E+02	5.44E-02	6.51E-02	-0.662	B	1
90.977	0.0	1 099 180	$2s^2 2p^3 - 2s^2 2p^2(1D)3d$	$4S^\circ - 2S$	3/2-1/2	4-2	1.37E+00	8.51E-05	1.02E-04	-3.468	D	1
91.387	0.0	1 094 250	$2s^2 2p^3 - 2s^2 2p^2(1D)3d$	$4S^\circ - 2P$	3/2-3/2	4-4	8.27E-01	1.04E-04	1.25E-04	-3.381	D	1
91.428	0.0	1 093 760	$2s^2 2p^3 - 2s^2 2p^2(1D)3d$	$4S^\circ - 2P$	3/2-1/2	4-2	3.01E-01	1.89E-05	2.27E-05	-4.121	D	1
92.003	0.0	1 086 920	$2s^2 2p^3 - 2s^2 2p^2(1D)3d$	$4S^\circ - 2D$	3/2-5/2	4-6	6.63E-01	1.26E-04	1.53E-04	-3.298	C	1
92.033	0.0	1 086 570	$2s^2 2p^3 - 2s^2 2p^2(1D)3d$	$4S^\circ - 2D$	3/2-3/2	4-4	1.13E-01	1.43E-05	1.73E-05	-4.243	D	1
92.282	0.0	1 083 640	$2s^2 2p^3 - 2s^2 2p^2(1D)3d$	$4S^\circ - 2F$	3/2-5/2	4-6	8.19E-03	1.57E-06	1.91E-06	-5.203	D	1
92.966?	247 948	1 323 610?	$2s 2p^4 - 2s 2p^3(5S^\circ)4s$	$4P - 4S^\circ$	5/2-3/2	6-4	3.18E+01	2.75E-03	5.05E-03	-1.783	D	2,LS
93.108?	249 584	1 323 610?	$2s 2p^4 - 2s 2p^3(5S^\circ)4s$	$4P - 4S^\circ$	3/2-3/2	4-4	2.11E+01	2.74E-03	3.36E-03	-1.960	D	2,LS
93.183?	250 450	1 323 610?	$2s 2p^4 - 2s 2p^3(5S^\circ)4s$	$4P - 4S^\circ$	1/2-3/2	2-4	1.05E+01	2.74E-03	1.68E-03	-2.261	D	2,LS
93.499	55 356	1 124 890	$2s^2 2p^3 - 2s^2 2p^2(1S)3d$	$2D^\circ - 2D$	5/2-3/2	6-4	3.03E+00	2.65E-04	4.89E-04	-2.799	C	1
93.499	55 356	1 124 890	$2s^2 2p^3 - 2s^2 2p^2(1S)3d$	$2D^\circ - 2D$	5/2-5/2	6-6	2.71E+01	3.55E-03	6.56E-03	-1.672	C	1
93.500	55 372.8	1 124 890	$2s^2 2p^3 - 2s^2 2p^2(1S)3d$	$2D^\circ - 2D$	3/2-5/2	4-6	6.34E+00	1.25E-03	1.53E-03	-2.301	C	1
93.500	55 372.8	1 124 890	$2s^2 2p^3 - 2s^2 2p^2(1S)3d$	$2D^\circ - 2D$	3/2-3/2	4-4	2.07E+01	2.71E-03	3.34E-03	-1.965	C	1
94.107	0.0	1 062 620	$2s^2 2p^3 - 2s^2 2p^2(3P)3d$	$4S^\circ - 2D$	3/2-5/2	4-6	1.11E-01	2.22E-05	2.75E-05	-4.052	D	1
94.158	0.0	1 062 050	$2s^2 2p^3 - 2s^2 2p^2(3P)3d$	$4S^\circ - 2D$	3/2-3/2	4-4	1.22E-02	1.62E-06	2.01E-06	-5.188	D	1
95.385	0.0	1 048 380	$2s^2 2p^3 - 2s^2 2p^2(3P)3d$	$4S^\circ - 4P$	3/2-1/2	4-2	3.10E+03	2.11E-01	2.65E-01	-0.074	A	1
95.421	0.0	1 047 990	$2s^2 2p^3 - 2s^2 2p^2(3P)3d$	$4S^\circ - 4P$	3/2-3/2	4-4	3.06E+03	4.17E-01	5.24E-01	0.222	A	1
95.483	0.0	1 047 310	$2s^2 2p^3 - 2s^2 2p^2(3P)3d$	$4S^\circ - 4P$	3/2-5/2	4-6	3.00E+03	6.16E-01	7.74E-01	0.392	A	1
95.564	0.0	1 046 420	$2s^2 2p^3 - 2s^2 2p^2(3P)3d$	$4S^\circ - 2F$	3/2-5/2	4-6	4.69E+00	9.64E-04	1.21E-03	-2.414	C	1
96.064	83 920.0	1 124 890	$2s^2 2p^3 - 2s^2 2p^2(1S)3d$	$2P^\circ - 2D$	1/2-3/2	2-4	9.99E+02	2.77E-01	1.75E-01	-0.256	A	1
96.074	84 028.4	1 124 890	$2s^2 2p^3 - 2s^2 2p^2(1S)3d$	$2P^\circ - 2D$	3/2-3/2	4-4	1.98E+02	2.74E-02	3.47E-02	-0.960	B	1

Mg VI—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
96.074	84 028.4	1 124 890	2s ² 2p ³ -2s ² 2p ² (¹ S)3d	2P°- ² D	3/2-5/2	4-6	1.11E+03	2.30E-01	2.91E-01	-0.036	A	1
96.091	0.0	1 040 680	2s ² 2p ³ -2s ² 2p ² (³ P)3d	4S°- ² P	3/2-1/2	4-2	1.08E+00	7.50E-05	9.49E-05	-3.523	D	1
96.148	0.0	1 040 060	2s ² 2p ³ -2s ² 2p ² (³ P)3d	4S°- ² P	3/2-3/2	4-4	1.83E+01	2.54E-03	3.22E-03	-1.993	C	1
96.159	247 948	1 287 890	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ S°	5/2-3/2	6-4	1.33E+03	1.23E-01	2.34E-01	-0.132	C	2,LS
96.238	247 948	1 287 040	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ D°	5/2-5/2	6-6	3.59E+02	4.98E-02	9.47E-02	-0.525	C	2,LS
96.238	247 948	1 287 040	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ D°	5/2-3/2	6-4	5.98E+01	5.54E-03	1.05E-02	-1.478	D	2,LS
96.238	247 948	1 287 040	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ D°	5/2-7/2	6-8	1.19E+03	2.21E-01	4.20E-01	0.123	C	2,LS
96.256	55 356	1 094 250	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² P	5/2-3/2	6-4	5.01E+02	4.64E-02	8.82E-02	-0.555	B	1
96.258	55 372.8	1 094 250	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² P	3/2-3/2	4-4	3.93E+01	5.46E-03	6.93E-03	-1.661	C	1
96.303	55 372.8	1 093 760	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² P	3/2-1/2	4-2	6.65E+02	4.63E-02	5.87E-02	-0.732	B	1
96.311?	249 584	1 287 890?	2s2p ⁴ -2s2p ³ (³ D°)3d	4P-S°	3/2-3/2	4-4	8.77E+02	1.22E-01	1.55E-01	-0.312	C	2,LS
96.390	249 584	1 287 040	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ D°	3/2-3/2	4-4	6.35E+02	8.85E-02	1.12E-01	-0.451	C	2,LS
96.390	249 584	1 287 040	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ D°	3/2-5/2	4-6	8.33E+02	1.74E-01	2.21E-01	-0.157	C	2,LS
96.390	249 584	1 287 040	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ D°	3/2-1/2	4-2	1.98E+02	1.38E-02	1.75E-02	-1.258	C	2,LS
96.391?	250 450	1 287 890?	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ S°	1/2-3/2	2-4	4.38E+02	1.22E-01	7.74E-02	-0.613	C	2,LS
96.470	250 450	1 287 040	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ D°	1/2-1/2	2-2	9.89E+02	1.38E-01	8.77E-02	-0.559	C	2,LS
96.470	250 450	1 287 040	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ D°	1/2-3/2	2-4	4.95E+02	1.38E-01	8.77E-02	-0.559	C	2,LS
96.670	247 948	1 282 400	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ P°	5/2-3/2	6-4	1.15E+03	1.07E-01	2.04E-01	-0.192	C	2,LS
96.704	247 948	1 282 030	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ P°	5/2-5/2	6-6	1.78E+03	2.49E-01	4.76E-01	0.174	C	2,LS
96.797	249 584	1 282 670	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ P°	3/2-1/2	4-2	2.11E+03	1.48E-01	1.89E-01	-0.228	C	2,LS
96.823	249 584	1 282 400	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ P°	3/2-3/2	4-4	3.37E+02	4.73E-02	6.03E-02	-0.723	C	2,LS
96.857	249 584	1 282 030	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ P°	3/2-5/2	4-6	7.58E+02	1.60E-01	2.04E-01	-0.194	C	2,LS
96.879	250 450	1 282 670	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ P°	1/2-1/2	2-2	4.20E+02	5.91E-02	3.77E-02	-0.927	C	2,LS
96.904	250 450	1 282 400	2s2p ⁴ -2s2p ³ (³ D°)3d	4P- ⁴ P°	1/2-3/2	2-4	1.05E+03	2.95E-01	1.88E-01	-0.229	C	2,LS
96.940	55 356	1 086 920	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² D	5/2-5/2	6-6	1.18E+03	1.66E-01	3.18E-01	-0.002	B	1
96.942	55 372.8	1 086 920	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² D	3/2-5/2	4-6	1.76E+02	3.73E-02	4.76E-02	-0.826	B	1
96.973	55 356	1 086 570	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² D	5/2-3/2	6-4	1.68E+02	1.57E-02	3.02E-02	-1.026	B	1
96.975	55 372.8	1 086 570	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² D	3/2-3/2	4-4	1.40E+03	1.98E-01	2.53E-01	-0.101	A	1
97.249	55 356	1 083 640	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² F	5/2-5/2	6-6	3.79E+02	5.37E-02	1.03E-01	-0.492	B	1
97.251	55 372.8	1 083 640	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² F	3/2-5/2	4-6	2.59E+03	5.50E-01	7.04E-01	0.342	A	1
97.278	55 356	1 083 340	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2D°- ² F	5/2-7/2	6-8	2.76E+03	5.23E-01	1.00E+00	0.497	A	1
98.497	83 920	1 099 180	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² S	1/2-1/2	2-2	4.52E+02	6.58E-02	4.27E-02	-0.881	B	1
98.507	84 028.4	1 099 180	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² S	3/2-1/2	4-2	1.01E+03	7.37E-02	9.56E-02	-0.530	B	1
98.978	83 920.0	1 094 250	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² P	1/2-3/2	2-4	2.12E+02	6.22E-02	4.05E-02	-0.905	B	1
98.988	84 028.4	1 094 250	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² P	3/2-3/2	4-4	1.15E+03	1.69E-01	2.21E-01	-0.170	B	1
99.026	83 920.0	1 093 760	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² P	1/2-1/2	2-2	8.70E+02	1.28E-01	8.34E-02	-0.592	B	1
99.036	84 028.4	1 093 760	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² P	3/2-1/2	4-2	3.35E+02	2.47E-02	3.21E-02	-1.005	B	1
99.279	55 356	1 062 620	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² D	5/2-5/2	6-6	7.56E+02	1.12E-01	2.19E-01	-0.173	B	1
99.280	55 372.8	1 062 620	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² D	3/2-5/2	4-6	1.58E+02	3.50E-02	4.58E-02	-0.854	B	1
99.335	55 356	1 062 050	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² D	5/2-3/2	6-4	9.67E+01	9.54E-03	1.87E-02	-1.242	C	1
99.337	55 372.8	1 062 050	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² D	3/2-3/2	4-4	5.95E+02	8.80E-02	1.15E-01	-0.453	B	1
99.712	84 028.4	1 086 920	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² D	3/2-5/2	4-6	1.09E+03	2.43E-01	3.19E-01	-0.012	A	1
99.736	83 920.0	1 086 570	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² D	1/2-3/2	2-4	7.67E+02	2.29E-01	1.50E-01	-0.339	A	1
99.746	84 028.4	1 086 570	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² D	3/2-3/2	4-4	9.65E+01	1.44E-02	1.89E-02	-1.240	B	1
100.039	84 028.4	1 083 640	2s ² 2p ³ -2s ² 2p ² (¹ D)3d	2P°- ² F	3/2-5/2	4-6	2.64E+00	5.94E-04	7.83E-04	-2.624	D	1
100.703	55 356	1 048 380	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² F	5/2-7/2	6-8	8.44E+02	1.71E-01	3.40E-01	0.011	B	1
100.704	55 372.8	1 048 380	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² P	3/2-1/2	4-2	2.42E-01	1.84E-05	2.44E-05	-4.133	D	1
100.742	55 356	1 047 990	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ⁴ P	5/2-3/2	6-4	8.46E-01	8.58E-05	1.71E-04	-3.288	D	1
100.744	55 372.8	1 047 990	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² P	3/2-3/2	4-4	3.76E-02	5.72E-06	7.59E-06	-4.641	D	1
100.811	55 356	1 047 310	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² P	5/2-5/2	6-6	4.16E-01	6.33E-05	1.26E-04	-3.420	D	1
100.813	55 372.8	1 047 310	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² P	3/2-5/2	4-6	5.96E-01	1.36E-04	1.81E-04	-3.264	D	1
100.902	55 356	1 046 420	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² F	5/2-5/2	6-6	5.58E+01	8.52E-03	1.70E-02	-1.291	C	1
100.903	55 372.8	1 046 420	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² F	3/2-5/2	4-6	7.70E+02	1.76E-01	2.34E-01	-0.152	B	1
100.985?	55 372.8	1 045 620?	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ⁴ D	3/2-1/2	4-2	6.66E+01	5.09E-03	6.77E-03	-1.691	C	1
101.025?	55 356	1 045 210?	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ⁴ D	5/2-3/2	6-4	3.11E+01	3.17E-03	6.33E-03	-1.721	C	1
101.025?	55 356	1 045 210?	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ⁴ D	5/2-5/2	6-6	1.10E-01	1.68E-05	3.35E-05	-3.997	D	1
101.027?	55 372.8	1 045 210?	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ⁴ D	3/2-3/2	4-4	1.74E+01	2.65E-03	3.53E-03	-1.975	C	1
101.027?	55 372.8	1 045 210?	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ⁴ D	3/2-5/2	4-6	3.95E+00	9.07E-04	1.21E-03	-2.440	C	1
101.491	55 372.8	1 040 680	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² P	3/2-1/2	4-2	1.23E+02	9.51E-03	1.27E-02	-1.420	C	1
101.553	55 356	1 040 060	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² P	5/2-3/2	6-4	1.69E+02	1.74E-02	3.49E-02	-0.981	B	1
101.555	55 372.8	1 040 060	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2D°- ² P	3/2-3/2	4-4	5.63E+01	8.71E-03	1.17E-02	-1.458	C	1
102.188	84 028.4	1 062 620	2s ² 2p ³ -2s ² 2p ² (³ P)3d	2P°- ² D	3/2-5/2	4-6	1.07E+03	2.51E-01	3.38E-01	0.002	A	1

Mg VI—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
102.236	83 920.0	1 062 050	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^2D$	1/2-3/2	2-4	9.48E+02	2.97E-01	2.00E-01	-0.226	A	1
102.247	84 028.4	1 062 050	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^2D$	3/2-3/2	4-4	2.63E+02	4.12E-02	5.54E-02	-0.783	B	1
103.685	83 920.0	1 048 380	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4P$	1/2-1/2	2-2	9.49E-02	1.53E-05	1.04E-05	-4.514	D	1
103.697	84 028.4	1 048 380	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4P$	3/2-1/2	4-2	1.27E-01	1.02E-05	1.40E-05	-4.389	D	1
103.727	83 920.0	1 047 990	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4P$	1/2-3/2	2-4	3.12E-01	1.01E-04	6.88E-05	-3.695	D	1
103.739	84 028.4	1 047 990	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4P$	3/2-3/2	4-4	2.08E-01	3.36E-05	4.59E-05	-3.872	D	1
103.812	84 028.4	1 047 310	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4P$	3/2-5/2	4-6	5.63E-01	1.36E-04	1.86E-04	-3.264	D	1
103.908	84 028.4	1 046 420	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^2F$	3/2-5/2	4-6	6.11E-01	1.48E-04	2.03E-04	-3.226	D	1
103.983?	83 920.0	1 045 620?	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4D$	1/2-1/2	2-2	1.93E+02	3.12E-02	2.14E-02	-1.205	B	1
103.994?	84 028.4	1 045 620?	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4D$	3/2-1/2	4-2	1.01E+02	8.19E-03	1.12E-02	-1.485	C	1
104.027?	83 920.0	1 045 210?	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4D$	1/2-3/2	2-4	2.92E+01	9.47E-03	6.49E-03	-1.723	C	1
104.039?	84 028.4	1 045 210?	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4D$	3/2-5/2	4-6	4.87E-02	1.18E-05	1.62E-05	-4.326	D	1
104.039?	84 028.4	1 045 210?	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^4D$	3/2-3/2	4-4	1.15E+02	1.86E-02	2.55E-02	-1.128	B	1
104.519	83 920.0	1 040 680	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^2P$	1/2-2/2	2-2	4.06E+02	6.65E-02	4.57E-02	-0.876	B	1
104.531	84 028.4	1 040 680	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^2P$	3/2-1/2	4-2	2.12E+02	1.73E-02	2.39E-02	-1.160	C	1
104.587	83 920.0	1 040 060	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^2P$	1/2-3/2	2-4	1.25E+02	4.11E-02	2.83E-02	-1.085	B	1
104.599	84 028.4	1 040 060	$2s^2 2p^3-2s^2 2p^2(^3P)3d$	$2^{\circ}P^{\circ}-^2P$	3/2-3/2	4-4	5.30E+02	8.70E-02	1.20E-01	-0.458	B	1
105.405?	341 751	1 290 470?	$2s2p^4-2s2p^3(^3D^{\circ})3d$	$^2D-^2F^{\circ}$	5/2-5/2	6-6	1.07E+02	1.78E-02	3.71E-02	-0.971	C	2,LS
105.410?	341 793	1 290 470?	$2s2p^4-2s2p^3(^3D^{\circ})3d$	$^2D-^2F^{\circ}$	3/2-5/2	4-6	1.49E+03	3.73E-01	5.18E-01	0.174	C	2,LS
105.502?	341 751	1 289 600?	$2s2p^4-2s2p^3(^3D^{\circ})3d$	$^2D-^2F^{\circ}$	5/2-7/2	6-8	1.60E+03	3.55E-01	7.40E-01	0.328	C	2,LS
106.516	0.0	938 830	$2s^2 2p^3-2s^2 2p^2(^1D)3s$	$4^{\circ}S^{\circ}-^2D$	3/2-3/2	4-4	1.73E+02	2.93E-06	4.12E-06	-4.930	D	1
106.516	0.0	938 830	$2s^2 2p^3-2s^2 2p^2(^1D)3s$	$4^{\circ}S^{\circ}-^2D$	3/2-5/2	4-6	8.94E-02	2.28E-05	3.20E-05	-4.040	D	1
107.822	247 948	1 175 400	$2s2p^4-2s2p^3(^5S^{\circ})3d$	$^4P-^4D^{\circ}$	5/2-5/2	6-6	3.34E+02	5.83E-02	1.24E-01	-0.456	C	2,LS
107.822	247 948	1 175 400	$2s2p^4-2s2p^3(^5S^{\circ})3d$	$^4P-^4D^{\circ}$	5/2-7/2	6-8	1.11E+03	2.59E-01	5.52E-01	0.191	C	2,LS
107.822	247 948	1 175 400	$2s2p^4-2s2p^3(^5S^{\circ})3d$	$^4P-^4D^{\circ}$	5/2-3/2	6-4	5.58E+01	6.48E-03	1.38E-02	-1.410	D	2,LS
108.013	249 584	1 175 400	$2s2p^4-2s2p^3(^5S^{\circ})3d$	$^4P-^4D^{\circ}$	3/2-1/2	4-2	1.85E+02	1.62E-02	2.30E-02	-1.188	C	2,LS
108.013	249 584	1 175 400	$2s2p^4-2s2p^3(^5S^{\circ})3d$	$^4P-^4D^{\circ}$	3/2-3/2	4-4	5.89E+02	1.03E-01	1.46E-01	-0.385	C	2,LS
108.013	249 584	1 175 400	$2s2p^4-2s2p^3(^5S^{\circ})3d$	$^4P-^4D^{\circ}$	3/2-5/2	4-6	7.78E+02	2.04E-01	2.90E-01	-0.088	C	2,LS
108.114	250 450	1 175 400	$2s2p^4-2s2p^3(^5S^{\circ})3d$	$^4P-^4D^{\circ}$	1/2-1/2	2-2	9.24E+02	1.62E-01	1.15E-01	-0.489	C	2,LS
108.114	250 450	1 175 400	$2s2p^4-2s2p^3(^5S^{\circ})3d$	$^4P-^4D^{\circ}$	1/2-3/2	2-4	4.62E+02	1.62E-01	1.15E-01	-0.489	C	2,LS
108.148	247 948	1 172 610	$2s2p^4-2s2p^3(^3P^{\circ})3s$	$^4P-^4P^{\circ}$	5/2-5/2	6-6	2.18E+02	3.83E-02	8.18E-02	-0.639	C	2,LS
108.148	247 948	1 172 610	$2s2p^4-2s2p^3(^3P^{\circ})3s$	$^4P-^4P^{\circ}$	5/2-3/2	6-4	1.40E+02	1.64E-02	3.50E-02	-1.007	C	2,LS
108.339	249 584	1 172 610	$2s2p^4-2s2p^3(^3P^{\circ})3s$	$^4P-^4P^{\circ}$	3/2-5/2	4-6	9.32E+01	2.46E-02	3.51E-02	-1.007	C	2,LS
108.339	249 584	1 172 610	$2s2p^4-2s2p^3(^3P^{\circ})3s$	$^4P-^4P^{\circ}$	3/2-3/2	4-4	4.14E+01	7.28E-03	1.04E-02	-1.536	D	2,LS
108.339	249 584	1 172 610	$2s2p^4-2s2p^3(^3P^{\circ})3s$	$^4P-^4P^{\circ}$	3/2-1/2	4-2	2.58E+02	2.27E-02	3.24E-02	-1.042	C	2,LS
108.441	250 450	1 172 610	$2s2p^4-2s2p^3(^3P^{\circ})3s$	$^4P-^4P^{\circ}$	1/2-3/2	2-4	1.29E+02	4.54E-02	3.24E-02	-1.042	C	2,LS
108.441	250 450	1 172 610	$2s2p^4-2s2p^3(^3P^{\circ})3s$	$^4P-^4P^{\circ}$	1/2-1/2	2-2	5.16E+01	9.09E-03	6.49E-03	-1.740	D	2,LS
109.854	0.0	910 300	$2s^2 2p^3-2s^2 2p^2(^3P)3s$	$4^{\circ}S^{\circ}-^2P$	3/2-3/2	4-4	1.04E-01	1.88E-05	2.72E-05	-4.124	D	1
110.082	0.0	908 410	$2s^2 2p^3-2s^2 2p^2(^3P)3s$	$4^{\circ}S^{\circ}-^2P$	3/2-1/2	4-2	8.57E-02	7.78E-06	1.13E-05	-4.507	D	1
111.173?	83 920.0	983 420?	$2s^2 2p^3-2s^2 2p^2(^1S)3s$	$2^{\circ}P^{\circ}-^2S$	1/2-1/2	2-2	1.38E+02	2.55E-02	1.87E-02	-1.292	B	1
111.186?	84 028.4	983 420?	$2s^2 2p^3-2s^2 2p^2(^1S)3s$	$2^{\circ}P^{\circ}-^2S$	3/2-1/2	4-2	2.54E+02	2.36E-02	3.45E-02	-1.025	B	1
111.552	0.0	896 440	$2s^2 2p^3-2s^2 2p^2(^3P)3s$	$4^{\circ}S^{\circ}-^4P$	3/2-5/2	4-6	2.24E+02	6.27E-02	9.21E-02	-0.601	B	1
111.746	0.0	894 890	$2s^2 2p^3-2s^2 2p^2(^3P)3s$	$4^{\circ}S^{\circ}-^4P$	3/2-3/2	4-4	2.22E+02	4.16E-02	6.12E-02	-0.779	B	1
111.864	0.0	893 940	$2s^2 2p^3-2s^2 2p^2(^3P)3s$	$4^{\circ}S^{\circ}-^4P$	3/2-1/2	4-2	2.21E+02	2.07E-02	3.05E-02	-1.082	B	1
113.190	55 356	938 830	$2s^2 2p^3-2s^2 2p^2(^1D)3s$	$2^{\circ}D^{\circ}-^2D$	5/2-5/2	6-6	2.81E+02	5.39E-02	1.21E-01	-0.490	B	1
113.190	55 356	938 830	$2s^2 2p^3-2s^2 2p^2(^1D)3s$	$2^{\circ}D^{\circ}-^2D$	5/2-3/2	6-4	2.12E+01	2.71E-03	6.06E-03	-1.789	C	1
113.192	55 372.8	938 830	$2s^2 2p^3-2s^2 2p^2(^1D)3s$	$2^{\circ}D^{\circ}-^2D$	3/2-3/2	4-4	2.65E+02	5.10E-02	7.60E-02	-0.690	B	1
113.192	55 372.8	938 830	$2s^2 2p^3-2s^2 2p^2(^1D)3s$	$2^{\circ}D^{\circ}-^2D$	3/2-5/2	4-6	2.69E+01	7.76E-03	1.16E-02	-1.508	C	1
114.407	247 948	1 122 020	$2s2p^4-2s2p^3(^3D^{\circ})3s$	$^4P-^4D^{\circ}$	5/2-3/2	6-4	1.45E+01	1.90E-03	4.29E-03	-1.943	D	2,LS
114.407	247 948	1 122 020	$2s2p^4-2s2p^3(^3D^{\circ})3s$	$^4P-^4D^{\circ}$	5/2-5/2	6-6	8.71E+01	1.71E-02	3.86E-02	-0.989	C	2,LS
114.407	247 948	1 122 020	$2s2p^4-2s2p^3(^3D^{\circ})3s$	$^4P-^4D^{\circ}$	5/2-7/2	6-8	2.90E+02	7.60E-02	1.72E-01	-0.341	C	2,LS
114.622	249 584	1 122 020	$2s2p^4-2s2p^3(^3D^{\circ})3s$	$^4P-^4D^{\circ}$	3/2-1/2	4-2	4.81E+01	4.74E-03	7.15E-03	-1.722	D	2,LS
114.622	249 584	1 122 020	$2s2p^4-2s2p^3(^3D^{\circ})3s$	$^4P-^4D^{\circ}$	3/2-3/2	4-4	1.54E+02	3.03E-02	4.57E-02	-0.916	C	2,LS
114.622	249 584	1 122 020	$2s2p^4-2s2p^3(^3D^{\circ})3s$	$^4P-^4D^{\circ}$	3/2-5/2	4-6	2.02E+02	5.97E-02	9.01E-02	-0.622	C	2,LS
114.735	250 450	1 122 020	$2s2p^4-2s2p^3(^3D^{\circ})3s$	$^4P-^4D^{\circ}$	1/2-3/2	2-4	1.20E+02	4.73E-02	3.57E-02	-1.024	C	2,LS
114.735	250 450	1 122 020	$2s2p^4-2s2p^3(^3D^{\circ})3s$	$^4P-^4D^{\circ}$	1/2-1/2	2-2	2.40E+02	4.73E-02	3.57E-02	-1.024	C	2,LS
116.967	55 356	910 300	$2s^2 2p^3-2s^2 2p^2(^3P)3s$	$2^{\circ}D^{\circ}-^2P$	5/2-3/2	6-4	3.42E+02	4.68E-02	1.08E-01	-0.552	B	1
116.969	55 372.8	910 300	$2s^2 2p^3-2s^2 2p^2(^3P)3s$	$2^{\circ}D^{\circ}-^2P$	3/2-3/2	4-4	1.81E+01	3.72E-03	5.73E-03	-1.827	C	1
116.971	83 920.0	938 830	$2s^2 2p^3-2s^2 2p^2(^1D)3s$	$2^{\circ}P^{\circ}-^2D$	1/2-3/2	2-4	8.26E+01	3.39E-02	2.61E-02	-1.169	B	1
116.986	84 028.4	938 830	$2s^2 2p^3-2s^2 2p^2(^1D)3s$	$2^{\circ}P^{\circ}-^2D$	3/2-3/2	4-4	3.70E+01	7.59E-03	1.17E-02	-1.518	C	1
116.986	84 028.4	938 830	$2s^2 2p^3-2s^2 2p^2(^1D)3s$	$2^{\circ}P^{\circ}-^2D$	3/2-5/2	4-6	9.96E+01	3.07E-02	4.72E-02	-0.911	B	1
117.228	55 372.8	908 410	$2s^2 2p^3-2s^2 2p^2(^3P)3s$	$2^{\circ}D^{\circ}-^2P$	3/2-1/2	4-2	3.97E+02	4.09E-02	6.32E-02	-0.786	B	1

Mg VI—Continued

λ Ritz (Å)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10^8 s^{-1})	f_{ik}	S (a.u.)	$\log g_i f$	Acc.	Ref.
117.532	341 751	1 192 580	$2s2p^4-2s2p^3(^3P^e)3s$	$^2D-^2P^e$	5/2-3/2	6-4	2.06E+02	2.84E-02	6.59E-02	-0.769	C	2,LS
117.538	341 793	1 192 580	$2s2p^4-2s2p^3(^3P^e)3s$	$^2D-^2P^e$	3/2-3/2	4-4	2.29E+01	4.74E-03	7.34E-03	-1.722	D	2,LS
117.573	341 793	1 192 330	$2s2p^4-2s2p^3(^3P^e)3s$	$^2D-^2P^e$	3/2-1/2	4-2	2.29E+02	2.37E-02	3.67E-02	-1.023	C	2,LS
118.894	55 356	896 440	$2s^22p^3-2s^22p^2(^3P)3s$	$^2D^e-^4P$	5/2-5/2	6-6	2.52E-01	5.33E-05	1.25E-04	-3.495	D	1
118.897	55 372.8	896 440	$2s^22p^3-2s^22p^2(^3P)3s$	$^2D^e-^4P$	3/2-5/2	4-6	1.36E-02	4.32E-06	6.76E-06	-4.762	D	1
119.114	55 356	894 890	$2s^22p^3-2s^22p^2(^3P)3s$	$^2D^e-^4P$	5/2-3/2	6-4	5.19E-01	7.35E-05	1.73E-04	-3.356	D	1
119.116	55 372.8	894 890	$2s^22p^3-2s^22p^2(^3P)3s$	$^2D^e-^4P$	3/2-3/2	4-4	1.76E-01	3.73E-05	5.86E-05	-3.826	D	1
119.251	55 372.8	893 940	$2s^22p^3-2s^22p^2(^3P)3s$	$^2D^e-^4P$	3/2-1/2	4-2	4.49E-01	4.78E-05	7.51E-05	-3.719	D	1
121.01	83 920.0	910 300	$2s^22p^3-2s^22p^2(^3P)3s$	$^2P^e-^2P$	1/2-3/2	2-4	5.29E+01	2.32E-02	1.85E-02	-1.333	B	1
121.026	84 028.4	910 300	$2s^22p^3-2s^22p^2(^3P)3s$	$^2P^e-^2P$	3/2-3/2	4-4	2.40E+02	5.27E-02	8.40E-02	-0.676	B	1
121.287	83 920.0	908 410	$2s^22p^3-2s^22p^2(^3P)3s$	$^2P^e-^2P$	1/2-1/2	2-2	1.83E+02	4.03E-02	3.22E-02	-1.094	B	1
121.303	84 028.4	908 410	$2s^22p^3-2s^22p^2(^3P)3s$	$^2P^e-^2P$	3/2-1/2	4-2	7.42E+01	8.19E-03	1.31E-02	-1.485	C	1
123.090	84 028.4	896 440	$2s^22p^3-2s^22p^2(^3P)3s$	$^2P^e-^4P$	3/2-5/2	4-6	8.56E-04	2.91E-07	4.73E-07	-5.933	E	1
123.309	83 920.0	894 890	$2s^22p^3-2s^22p^2(^3P)3s$	$^2D^e-^4P$	1/2-3/2	2-4	3.57E-02	1.63E-05	1.32E-05	-4.488	D	1
123.326	84 028.4	894 890	$2s^22p^3-2s^22p^2(^3P)3s$	$^2P^e-^4P$	3/2-3/2	4-4	2.00E-01	4.55E-05	7.39E-05	-3.740	D	1
123.454	83 920.0	893 940	$2s^22p^3-2s^22p^2(^3P)3s$	$^2P^e-^4P$	1/2-1/2	2-2	5.49E-02	1.25E-05	1.02E-05	-4.601	D	1
123.470	84 028.4	893 940	$2s^22p^3-2s^22p^2(^3P)3s$	$^2P^e-^4P$	3/2-1/2	4-2	1.20E-01	1.37E-05	2.22E-05	-4.262	D	1
123.596	341 751	1 150 840	$2s2p^4-2s2p^3(^3D^e)3s$	$^2D-^2D^e$	5/2-5/2	6-6	3.56E+02	8.16E-02	1.99E-01	-0.310	C	2,LS
123.596	341 751	1 150 840	$2s2p^4-2s2p^3(^3D^e)3s$	$^2D-^2D^e$	5/2-3/2	6-4	3.82E+01	5.83E-03	1.42E-02	-1.456	D	2,LS
123.602	341 793	1 150 840	$2s2p^4-2s2p^3(^3D^e)3s$	$^2D-^2D^e$	3/2-5/2	4-6	2.54E+01	8.74E-03	1.42E-02	-1.456	D	2,LS
123.602	341 793	1 150 840	$2s2p^4-2s2p^3(^3D^e)3s$	$^2D-^2D^e$	3/2-3/2	4-4	3.43E+02	7.86E-02	1.28E-01	-0.503	C	2,LS
125.205	247 948	1 046 640	$2s2p^4-2s2p^3(^5S^e)3s$	$^4P-^4S^e$	5/2-3/2	6-4	2.44E+02	3.82E-02	9.46E-02	-0.639	C	1
125.462	249 584	1 046 640	$2s2p^4-2s2p^3(^5S^e)3s$	$^4P-^4S^e$	3/2-3/2	4-4	1.60E+02	3.78E-02	6.25E-02	-0.820	C	1
125.598	250 450	1 046 640	$2s2p^4-2s2p^3(^5S^e)3s$	$^4P-^4S^e$	1/2-3/2	2-4	7.97E+01	3.77E-02	3.12E-02	-1.123	C	1
126.461	401 822	1 192 580	$2s2p^4-2s2p^3(^3P)3s$	$^2S-^2P^e$	1/2-3/2	2-4	1.66E+02	7.98E-02	6.64E-02	-0.797	C	2,LS
126.501	401 822	1 192 330	$2s2p^4-2s2p^3(^3P)3s$	$^2S-^2P^e$	1/2-1/2	2-2	1.66E+02	3.99E-02	3.32E-02	-1.098	C	2,LS
130.312	425 190	1 192 580	$2s2p^4-2s2p^3(^3P^e)3s$	$^2P-^2P^e$	3/2-3/2	4-4	2.98E+01	7.58E-03	1.30E-02	-1.518	D	2,LS
130.354	425 190	1 192 330	$2s2p^4-2s2p^3(^3P^e)3s$	$^2P-^2P^e$	3/2-1/2	4-2	1.19E+01	1.52E-03	2.61E-03	-2.216	D	2,LS
130.643	427 135	1 192 580	$2s2p^4-2s2p^3(^3P^e)3s$	$^2P-^2P^e$	1/2-3/2	2-4	5.92E+00	3.03E-03	2.61E-03	-2.218	D	2,LS
130.686	427 135	1 192 330	$2s2p^4-2s2p^3(^3P^e)3s$	$^2P-^2P^e$	1/2-1/2	2-2	2.36E+01	6.05E-03	5.21E-03	-1.917	D	2,LS
137.807	425 190	1 150 840	$2s2p^4-2s2p^3(^3D^e)3s$	$^2P-^2D^e$	3/2-3/2	4-4	3.16E+00	8.99E-04	1.63E-03	-2.444	D	2,LS
137.807	425 190	1 150 840	$2s2p^4-2s2p^3(^3D^e)3s$	$^2P-^2D^e$	3/2-5/2	4-6	1.89E+01	8.09E-03	1.47E-02	-1.490	D	2,LS
138.178	427 135	1 150 840	$2s2p^4-2s2p^3(^3D^e)3s$	$^2P-^2D^e$	1/2-3/2	2-4	1.57E+01	8.97E-03	8.16E-03	-1.746	D	2,LS
141.866	341 751	1 046 640	$2s2p^4-2s2p^3(^5S^e)3s$	$^2D-^4S^e$	5/2-3/2	6-4	3.50E-03	7.04E-07	1.97E-06	-5.375	E	1
146.707?	651 867	1 333 500?	$2p^5-2s^22p^2(^1S)4d$	$^2P^e-^2D$	3/2-5/2	4-6	5.23E-03	2.53E-06	4.89E-06	-4.995	E	2,LS
147.270?	654 473	1 333 500?	$2p^5-2s^22p^2(^1S)4d$	$^2P^e-^2D$	1/2-3/2	2-4	4.31E-03	2.80E-06	2.72E-06	-5.252	E	2,LS
155.083	401 822	1 046 640	$2s2p^4-2s2p^3(^5S^e)3s$	$^2S-^4S^e$	1/2-3/2	2-4	1.34E-02	9.68E-06	9.89E-06	-4.713	D	1
155.122?	651 867	1 296 520?	$2p^5-2s^22p^2(^1D)4d$	$^2P^e-^2S$	3/2-1/2	4-2	1.46E+00	2.63E-04	5.37E-04	-2.978	D	2,LS
155.695?	651 867	1 294 150?	$2p^5-2s^22p^2(^1D)4d$	$^2P^e-^2P$	3/2-3/2	4-4	7.49E-03	2.72E-06	5.58E-06	-4.963	E	2,LS
155.752?	654 473	1 296 520?	$2p^5-2s^22p^2(^1D)4d$	$^2P^e-^2S$	1/2-1/2	2-2	7.20E-01	2.62E-04	2.69E-04	-3.281	D	2,LS
156.329?	654 473	1 294 150?	$2p^5-2s^22p^2(^1D)4d$	$^2P^e-^2P$	1/2-1/2	2-2	5.92E-03	2.17E-06	2.23E-06	-5.363	E	2,LS
156.329?	654 473	1 294 150?	$2p^5-2s^22p^2(^1D)4d$	$^2P^e-^2P$	1/2-3/2	2-4	1.47E-03	1.08E-06	1.11E-06	-5.666	E	2,LS
156.464	651 867	1 290 990	$2p^5-2s^22p^2(^1D)4d$	$^2P^e-^2D$	3/2-5/2	4-6	6.61E-03	3.64E-06	7.50E-06	-4.837	E	2,LS
157.105	654 473	1 290 990	$2p^5-2s^22p^2(^1D)4d$	$^2P^e-^2D$	1/2-3/2	2-4	5.43E-03	4.02E-06	4.16E-06	-5.095	E	2,LS
164.877?	651 867	1 258 380?	$2p^5-2s^22p^2(^3P)4d$	$^2P^e-^2D$	3/2-5/2	4-6	1.93E+00	1.18E-03	2.56E-03	-2.326	D	2,LS
171.285	651 867	1 235 690	$2p^5-2s^22p^2(^1D)4s$	$^2P^e-^2D$	3/2-3/2	4-4	6.25E-02	2.75E-05	6.20E-05	-3.959	E	2,LS
171.285	651 867	1 235 690	$2p^5-2s^22p^2(^1D)4s$	$^2P^e-^2D$	3/2-5/2	4-6	3.74E-01	2.47E-04	5.57E-04	-3.005	D	2,LS
172.053	654 473	1 235 690	$2p^5-2s^22p^2(^1D)4s$	$^2P^e-^2D$	1/2-3/2	2-4	3.09E-01	2.74E-04	3.10E-04	-3.261	D	2,LS

8. Mg VII

Z=12

CI isoelectronic sequence

Ground state $1s^2 2s^2 2p^2 \ ^3P_0$

Ionization energy $1\ 814\ 900\ \text{cm}^{-1}$ (225.02 eV)

Data are tabulated for 170 transitions in the range from 59 to 166 Å. For the transition arrays $2s^2 2p^2 - 2s^2 2p 3s$, $2s^2 2p^2 - 2s^2 2p 3d$, $2p^4 - 2s^2 2p 3d$, and $2s 2p^3 - 2s^2 2p 3p$ we give mean values of MCHF and CIV3 calculations.^{1,2} Transition probabilities for the $2s 2p^3 - 2s 2p^2 3s$, $2s 2p^3 - 2s 2p^2 3d$, and $2s^2 2p^2 - 2s 2p^2 3p$ arrays are taken from calculations carried out by Fawcett with Cowan's relativistic Hartree Fock code (HFR).³ The remaining results are taken from the Opacity Project (OP).⁴ OP provides, however, only multiplet values. These have been decomposed into fine-structure components assuming LS coupling, as indicated by the notation LS in the reference column.

References

¹G. Tachiev and C. Froese Fischer, http://www.vuse.vanderbilt.edu/~cff/mchf_collection/ (downloaded 28 March, 2002). See also G. Tachiev and C. Froese Fischer, *Can. J. Phys.* **79**, 955 (2001).

²K. M. Aggarwal, *Astrophys. J., Suppl. Ser.* **118**, 589 (1998).

³B. C. Fawcett, *At. Data Nucl. Data Tables* **37**, 367 (1987).

⁴<http://legacy.gsfc.nasa.gov/topbase/> (downloaded 28 July, 1995).

Mg VII

λ Ritz (Å)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} ($10^8\ \text{s}^{-1}$)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
59.640?	118 100+x	1 794 830+x?	$2s 2p^3 - 2s 2p^2(^4P)6d$	$^5S^{\circ} - ^5P$	2-3	5-7	5.13E+02	3.83E-02	3.76E-02	-0.718	D	4,LS
62.166?	118 100+x	1 726 700+x?	$2s 2p^3 - 2s 2p^2(^4P)5d$	$^5S^{\circ} - ^5P$	2-3	5-7	8.99E+02	7.29E-02	7.46E-02	-0.438	D	4,LS
66.788?	232 853	1 730 130?	$2s 2p^3 - 2s 2p^2(^4P)5d$	$^3D^{\circ} - ^3F$	3-4	7-9	8.07E+02	6.94E-02	1.07E-01	-0.314	D	4,LS
67.453	118 100+x	1 600 610+x	$2s 2p^3 - 2s 2p^2(^4P)4d$	$^5S^{\circ} - ^5P$	2-1	5-3	1.76E+03	7.21E-02	8.01E-02	-0.443	D	4,LS
67.470	118 100+x	1 600 240+x	$2s 2p^3 - 2s 2p^2(^4P)4d$	$^5S^{\circ} - ^5P$	2-2	5-5	1.76E+03	1.20E-01	1.33E-01	-0.222	D	4,LS
67.497	118 100+x	1 599 650+x	$2s 2p^3 - 2s 2p^2(^4P)4d$	$^5S^{\circ} - ^5P$	2-3	5-7	1.76E+03	1.68E-01	1.87E-01	-0.076	D	4,LS
68.352?	232 853	1 695 870?	$2s 2p^3 - 2s 2p^2(^2D)4d$	$^3D^{\circ} - ^3F$	3-4	7-9	8.57E+02	7.72E-02	1.22E-01	-0.267	D	4,LS
69.900?	118 100+x	1 548 720+x?	$2s 2p^3 - 2s 2p^2(^4P)4s$	$^5S^{\circ} - ^5P$	2-3	5-7	3.24E+00	3.32E-04	3.82E-04	-2.780	E	4,LS
72.787?	232 853	1 606 730?	$2s 2p^3 - 2s 2p^2(^4P)4d$	$^3D^{\circ} - ^3F$	3-4	7-9	3.56E+02	3.63E-02	6.09E-02	-0.595	D	4,LS
72.847?	232 853	1 605 600?	$2s 2p^3 - 2s 2p^2(^4P)4d$	$^3D^{\circ} - ^3F$	3-3	7-7	3.95E+01	3.14E-03	5.27E-03	-1.658	E	4,LS
72.852?	232 957	1 605 600?	$2s 2p^3 - 2s 2p^2(^4P)4d$	$^3D^{\circ} - ^3F$	2-3	5-7	3.15E+02	3.51E-02	4.21E-02	-0.756	D	4,LS
72.887?	232 853	1 604 840?	$2s 2p^3 - 2s 2p^2(^4P)4d$	$^3D^{\circ} - ^3F$	3-2	7-5	1.56E+00	8.85E-05	1.49E-04	-3.208	E	4,LS
72.893?	232 957	1 604 840?	$2s 2p^3 - 2s 2p^2(^4P)4d$	$^3D^{\circ} - ^3F$	2-2	5-5	5.51E+01	4.39E-03	5.27E-03	-1.659	E	4,LS
72.896?	233 024	1 604 840?	$2s 2p^3 - 2s 2p^2(^4P)4d$	$^3D^{\circ} - ^3F$	1-2	3-5	2.97E+02	3.94E-02	2.84E-02	-0.927	D	4,LS
75.975	40 948	1 357 170	$2s^2 2p^2 - 2s 2p^2(^2D)3p$	$^1D - ^1D^{\circ}$	2-2	5-5	1.21E+03	1.04E-01	1.31E-01	-0.282	C	3
76.392	40 948	1 349 990	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^1D - ^1F^{\circ}$	2-3	5-7	1.26E+03	1.54E-01	1.93E-01	-0.114	C	3
78.339	0	1 276 500	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3P^{\circ}$	0-1	1-3	2.90E+02	8.00E-02	2.06E-02	-1.097	D	3
78.407	1 107	1 276 500	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3P^{\circ}$	1-1	3-3	2.53E+02	2.33E-02	1.81E-02	-1.155	D	3
78.407	1 107	1 276 500	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3P^{\circ}$	1-2	3-5	2.13E+02	3.27E-02	2.53E-02	-1.009	D	3
78.519	2 924	1 276 500	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3P^{\circ}$	2-2	5-5	8.01E+02	7.40E-02	9.56E-02	-0.432	D	3
78.519	2 924	1 276 500	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3P^{\circ}$	2-1	5-3	4.62E+02	2.56E-02	3.31E-02	-0.893	D	3
79.133	1 107	1 264 810	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3D^{\circ}$	1-2	3-5	7.75E+02	1.21E-01	9.48E-02	-0.439	C	3
79.168?	2 924	1 266 060?	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3D^{\circ}$	2-3	5-7	9.73E+02	1.28E-01	1.67E-01	-0.194	C	3
79.246	2 924	1 264 810	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3D^{\circ}$	2-2	5-5	1.98E+02	1.86E-02	2.43E-02	-1.032	D	3
80.951	0	1 235 310	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3S^{\circ}?$	0-1	1-3	1.66E+02	4.90E-02	1.31E-02	-1.310	D	3
81.024	1 107	1 235 310	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3S^{\circ}?$	1-1	3-3	4.74E+02	4.67E-02	3.74E-02	-0.854	D	3
81.143	2 924	1 235 310	$2s^2 2p^2 - 2s 2p^2(^4P)3p$	$^3P - ^3S^{\circ}?$	2-1	5-3	7.33E+02	4.34E-02	5.80E-02	-0.664	D	3
82.454	0	1 212 800	$2s^2 2p^2 - 2s^2 2p 3d$	$^3P - ^1P^{\circ}$	0-1	1-3	5.35E+00	1.64E-03	4.44E-04	-2.786	D	1,2
82.529	1 107	1 212 800	$2s^2 2p^2 - 2s^2 2p 3d$	$^3P - ^1P^{\circ}$	1-1	3-3	2.14E+00	2.18E-04	1.78E-04	-3.184	C	1,2
82.653	2 924	1 212 800	$2s^2 2p^2 - 2s^2 2p 3d$	$^3P - ^1P^{\circ}$	2-1	5-3	1.47E-01	9.02E-06	1.23E-05	-4.346	D	1,2
82.721	2 924	1 211 810	$2s^2 2p^2 - 2s^2 2p 3d$	$^3P - ^1F^{\circ}$	2-3	5-7	8.83E-02	1.27E-05	1.73E-05	-4.198	E	1,2
82.940	118 100+x	1 323 790+x	$2s^2 2p^3 - 2s 2p^2(^4P)3d$	$^5S^{\circ} - ^5P$	2-1	5-3	4.98E+03	3.08E-01	4.21E-01	0.188	C	3
82.969	118 100+x	1 323 370+x	$2s^2 2p^3 - 2s 2p^2(^4P)3d$	$^5S^{\circ} - ^5P$	2-2	5-5	4.92E+03	5.08E-01	6.94E-01	0.405	C	3
83.015	118 100+x	1 322 700+x	$2s^2 2p^3 - 2s 2p^2(^4P)3d$	$^5S^{\circ} - ^5P$	2-3	5-7	4.90E+03	7.08E-01	9.68E-01	0.549	C	3
83.511	0	1 197 450	$2s^2 2p^2 - 2s^2 2p 3d$	$^3P - ^3P^{\circ}$	0-1	1-3	3.86E+02	1.21E-01	3.33E-02	-0.917	A	1,2
83.560	1 107	1 197 850	$2s^2 2p^2 - 2s^2 2p 3d$	$^3P - ^3P^{\circ}$	1-0	3-1	2.56E+03	8.95E-02	7.39E-02	-0.571	A	1,2

Mg VII—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
83.588	1 107	1 197 450	$2s^2 2p^2-2s^2 2p 3d$	$3P-3P^o$	1-1	3-3	1.08E+03	1.13E-01	9.30E-02	-0.471	A	1,2
83.637	1 107	1 196 750	$2s^2 2p^2-2s^2 2p 3d$	$3P-3P^o$	1-2	3-5	5.58E+01	9.76E-03	8.06E-03	-1.533	C	1,2
83.715	2 924	1 197 450	$2s^2 2p^2-2s^2 2p 3d$	$3P-3P^o$	2-1	5-3	1.16E+03	7.32E-02	1.01E-01	-0.436	A	1,2
83.764	2 924	1 196 750	$2s^2 2p^2-2s^2 2p 3d$	$3P-3P^o$	2-2	5-5	2.63E+03	2.77E-01	3.82E-01	0.141	A	1,2
83.910	0	1 191 750	$2s^2 2p^2-2s^2 2p 3d$	$3P-3D^o$	0-1	1-3	2.97E+03	9.39E-01	2.59E-01	-0.027	A	1,2
83.959	1 107	1 192 170	$2s^2 2p^2-2s^2 2p 3d$	$3P-3D^o$	1-2	3-5	3.93E+03	6.91E-01	5.73E-01	0.317	A	1,2
83.988	1 107	1 191 750	$2s^2 2p^2-2s^2 2p 3d$	$3P-3D^o$	1-1	3-3	1.45E+03	1.53E-01	1.27E-01	-0.338	A	1,2
84.025	2 924	1 193 050	$2s^2 2p^2-2s^2 2p 3d$	$3P-3D^o$	2-3	5-7	4.47E+03	6.63E-01	9.17E-01	0.520	A	1,2
84.051?	232 853	1 422 600?	$2s 2p^3-2s 2p^2(2D)3d$	$3D-3D$	3-3	7-7	1.98E+03	2.10E-01	4.07E-01	0.167	C	3
84.059?	232 957	1 422 600?	$2s 2p^3-2s 2p^2(2D)3d$	$3D-3D$	2-3	5-7	2.47E+02	3.66E-02	5.06E-02	-0.738	D	3
84.087	2 924	1 192 170	$2s^2 2p^2-2s^2 2p 3d$	$3P-3D^o$	2-2	5-5	3.93E+02	4.16E-02	5.76E-02	-0.682	B	1,2
84.092?	232 853	1 422 020?	$2s^2 2p^3-2s 2p^2(2D)3d$	$3D-3D$	3-2	7-5	3.60E+02	2.73E-02	5.29E-02	-0.719	D	3
84.100?	232 957	1 422 020?	$2s 2p^3-2s 2p^2(2D)3d$	$3D-3D$	2-2	5-5	1.61E+03	1.71E-01	2.36E-01	-0.069	C	3
84.105?	233 024	1 422 020?	$2s 2p^3-2s 2p^2(2D)3d$	$3D-3D$	1-2	3-5	3.47E+02	6.13E-02	5.09E-02	-0.735	D	3
84.117	2 924	1 191 750	$2s^2 2p^2-2s^2 2p 3d$	$3P-3D^o$	2-1	5-3	2.65E+01	1.69E-03	2.33E-03	-2.074	B	1,2
84.643	232 853	1 414 290	$2s 2p^3-2s 2p^2(2D)3d$	$3D-3F$	3-4	7-9	4.38E+03	6.04E-01	1.18E+00	0.626	C	3
84.643	232 853	1 414 290	$2s 2p^3-2s 2p^2(2D)3d$	$3D-3F$	3-3	7-7	5.43E+02	5.83E-02	1.14E-01	-0.389	D	3
84.650	232 957	1 414 290	$2s 2p^3-2s 2p^2(2D)3d$	$3D-3F$	2-3	5-7	3.82E+03	5.74E-01	8.00E-01	0.458	C	3
84.650	232 957	1 414 290	$2s 2p^3-2s 2p^2(2D)3d$	$3D-3F$	2-2	5-5	7.26E+02	7.80E-02	1.09E-01	-0.409	D	3
84.655	233 024	1 414 290	$2s 2p^3-2s 2p^2(2D)3d$	$3D-3F$	1-2	3-5	3.61E+03	6.47E-01	5.41E-01	0.288	C	3
85.335	40 948	1 212 800	$2s^2 2p^2-2s^2 2p 3d$	$1D-1P^o$	2-1	5-3	1.55E+02	1.02E-02	1.43E-02	-1.294	C	1,2
85.407	40 948	1 211 810	$2s^2 2p^2-2s^2 2p 3d$	$1D-1F^o$	2-3	5-7	5.27E+03	8.07E-01	1.13E+00	0.606	A	1,2
86.032?	274 904	1 437 260?	$2s 2p^3-2s 2p^2(2D)3d$	$3P-3S$	2-1	5-3	1.29E+03	8.60E-02	1.22E-01	-0.367	E	3
86.032?	274 897	1 437 260?	$2s 2p^3-2s 2p^2(2D)3d$	$3P-3S$	1-1	3-3	6.76E+02	7.50E-02	6.37E-02	-0.648	E	3
86.035?	274 947	1 437 260?	$2s 2p^3-2s 2p^2(2D)3d$	$3P-3S$	0-1	1-3	2.10E+02	7.00E-02	1.98E-02	-1.155	E	3
86.468	40 948	1 197 450	$2s^2 2p^2-2s^2 2p 3d$	$1D-3P^o$	2-1	5-3	6.18E-01	4.15E-05	5.91E-05	-3.683	C	1,2
86.520	40 948	1 196 750	$2s^2 2p^2-2s^2 2p 3d$	$1D-3P^o$	2-2	5-5	1.56E+01	1.75E-03	2.49E-03	-2.058	B	1,2
86.798	40 948	1 193 050	$2s^2 2p^2-2s^2 2p 3d$	$1D-3D^o$	2-3	5-7	2.49E-01	3.93E-05	5.62E-05	-3.706	E	1,2
86.864	40 948	1 192 170	$2s^2 2p^2-2s^2 2p 3d$	$1D-3D^o$	2-2	5-5	2.56E+00	2.89E-04	4.13E-04	-2.840	D	1,2
86.896	40 948	1 191 750	$2s^2 2p^2-2s^2 2p 3d$	$1D-3D^o$	2-1	5-3	9.86E-01	6.70E-05	9.58E-05	-3.475	D	1,2
87.131?	274 904	1 422 600?	$2s 2p^3-2s 2p^2(2D)3d$	$3P-3D$	2-3	5-7	1.52E+03	2.42E-01	3.47E-01	0.083	C	3
87.175?	274 897	1 422 020?	$2s 2p^3-2s 2p^2(2D)3d$	$3P-3D$	1-2	3-5	1.13E+03	2.14E-01	1.84E-01	-0.192	C	3
87.175?	274 904	1 422 020?	$2s 2p^3-2s 2p^2(2D)3d$	$3P-3D$	2-2	5-5	3.02E+02	3.44E-02	4.94E-02	-0.764	D	3
87.722	40 948	1 180 910	$2s^2 2p^2-2s^2 2p 3d$	$1D-1D^o$	2-2	5-5	1.07E+03	1.24E-01	1.79E-01	-0.208	A	1
88.680	85 153	1 212 800	$2s^2 2p^2-2s^2 2p 3d$	$1S-1P^o$	0-1	1-3	3.17E+03	1.12E+00	3.28E-01	0.050	B	1,2
89.406	232 853	1 351 340	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3D$	3-3	7-7	8.55E+02	1.02E-01	2.11E-01	-0.145	C	3
89.415	232 957	1 351 340	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3D$	2-3	5-7	1.25E+02	2.10E-02	3.09E-02	-0.979	D	3
89.439	232 853	1 350 930	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3D$	3-2	7-5	1.62E+02	1.39E-02	2.86E-02	-1.013	D	3
89.448	232 957	1 350 930	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3D$	2-2	5-5	5.85E+02	7.02E-02	1.03E-01	-0.455	D	3
89.453	233 024	1 350 930	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3D$	1-2	3-5	1.47E+02	2.93E-02	2.59E-02	-1.056	D	3
89.471	232 957	1 350 640	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3D$	2-1	5-3	2.31E+02	1.66E-02	2.45E-02	-1.081	D	3
89.476	233 024	1 350 640	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3D$	1-1	3-3	6.14E+02	7.37E-02	6.51E-02	-0.656	D	3
89.904	85 153	1 197 450	$2s^2 2p^2-2s^2 2p 3d$	$1S-3P^o$	0-1	1-3	1.64E+00	5.95E-04	1.76E-04	-3.225	D	1,2
90.367	85 153	1 191 750	$2s^2 2p^2-2s^2 2p 3d$	$1S-3D^o$	0-1	1-3	3.87E+00	1.42E-03	4.23E-04	-2.847	C	1,2
90.706	232 853	1 335 320	$2s^2 2p^3-2s 2p^2(4P)3d$	$3D-3F$	3-4	7-9	2.15E+03	3.41E-01	7.14E-01	0.378	C	3
90.806	232 853	1 334 100	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3F$	3-3	7-7	2.13E+02	2.63E-02	5.50E-02	-0.735	D	3
90.815	232 957	1 334 100	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3F$	2-3	5-7	1.93E+03	3.34E-01	4.99E-01	0.223	C	3
90.883?	232 853	1 333 170?	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3F$	3-2	7-5	6.46E+00	5.71E-04	1.20E-03	-2.398	D	3
90.891?	232 957	1 333 170?	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3F$	2-2	5-5	3.12E+02	3.86E-02	5.78E-02	-0.714	D	3
90.897?	233 024	1 333 170?	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3F$	1-2	3-5	1.81E+03	3.73E-01	3.35E-01	0.049	C	3
91.447?	233 024	1 326 550?	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3P$	1-0	3-1	1.99E+02	8.33E-03	7.53E-03	-1.602	D	3
91.486	232 957	1 326 020	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3P$	2-1	5-3	1.36E+02	1.02E-02	1.54E-02	-1.292	D	3
91.492	233 024	1 326 020	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3P$	1-1	3-3	8.23E+01	1.03E-02	9.33E-03	-1.509	D	3
91.566	232 853	1 324 960	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3P$	3-2	7-5	1.86E+02	1.67E-02	3.53E-02	-0.932	D	3
91.575	232 957	1 324 960	$2s 2p^3-2s 2p^2(4P)3d$	$3D-3P$	2-2	5-5	6.84E+01	8.60E-03	1.30E-02	-1.367	E	3
92.256?	354 401	1 438 340?	$2s 2p^3-2s 2p^2(2D)3d$	$1D-1F$	2-3	5-7	1.48E+03	2.64E-01	4.01E-01	0.121	E	3
92.899	274 904	1 351 340	$2s 2p^3-2s 2p^2(4P)3d$	$3P-3D$	2-3	5-7	1.89E+03	3.42E-01	5.23E-01	0.233	C	3
92.934	274 897	1 350 930	$2s 2p^3-2s 2p^2(4P)3d$	$3P-3D$	1-2	3-5	1.36E+03	2.94E-01	2.70E-01	-0.055	C	3
92.935	274 904	1 350 930	$2s 2p^3-2s 2p^2(4P)3d$	$3P-3D$	2-2	5-5	5.76E+02	7.46E-02	1.14E-01	-0.428	D	3
92.959	274 897	1 350 640	$2s 2p^3-2s 2p^2(4P)3d$	$3P-3D$	1-1	3-3	8.72E+02	1.13E-01	1.04E-01	-0.470	C	3
92.960	274 904	1 350 640	$2s 2p^3-2s 2p^2(4P)3d$	$3P-3D$	2-1	5-3	7.46E+01	5.80E-03	8.88E-03	-1.538	E	3
92.963	274 947	1 350 640	$2s 2p^3-2s 2p^2(4P)3d$	$3P-3D$	0-1	1-3	1.02E+03	3.98E-01	1.22E-01	-0.400	C	3

Mg VII—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
94.043	118 100+x	1 181 440+x	2s2p ³ -2s2p ² (⁴ P)3s	⁵ S°- ⁵ P	2-3	5-7	3.59E+02	6.66E-02	1.03E-01	-0.478	D	3
94.174	118 100+x	1 179 960+x	2s2p ³ -2s2p ² (⁴ P)3s	⁵ S°- ⁵ P	2-2	5-5	3.55E+02	4.72E-02	7.32E-02	-0.627	D	3
94.248	0	1 061 030	2s ² 2p ² -2s ² 2p3s	³ P- ¹ P°	0-1	1-3	1.04E+00	4.16E-04	1.29E-04	-3.381	D	1,2
94.346	1 107	1 061 030	2s ² 2p ² -2s ² 2p3s	³ P- ¹ P°	1-1	3-3	1.60E+00	2.13E-04	1.99E-04	-3.194	D	1,2
94.508	2 924	1 061 030	2s ² 2p ² -2s ² 2p3s	³ P- ¹ P°	2-1	5-3	5.62E-01	4.51E-05	7.02E-05	-3.647	D	1,2
95.027?	232 853	1 285 190?	2s2p ³ -2s2p ² (² D)3s	³ D°- ³ D	3-3	7-7	4.74E+02	6.41E-02	1.41E-01	-0.348	D	3
95.036?	232 957	1 285 190?	2s2p ³ -2s2p ² (² D)3s	³ D°- ³ D	2-3	5-7	7.07E+01	1.34E-02	2.10E-02	-1.174	D	3
95.088?	274 897	1 326 550?	2s2p ³ -2s2p ² (⁴ P)3d	³ P°- ³ P	1-0	3-1	1.36E+03	6.13E-02	5.76E-02	-0.735	D	3
95.136	274 897	1 326 020	2s2p ³ -2s2p ² (⁴ P)3d	³ P°- ³ P	1-1	3-3	2.95E+02	4.00E-02	3.76E-02	-0.921	D	3
95.137	274 904	1 326 020	2s2p ³ -2s2p ² (⁴ P)3d	³ P°- ³ P	2-1	5-3	5.65E+02	4.60E-02	7.20E-02	-0.638	D	3
95.141	274 947	1 326 020	2s2p ³ -2s2p ² (⁴ P)3d	³ P°- ³ P	0-1	1-3	4.81E+02	1.96E-01	6.14E-02	-0.708	C	3
95.232	274 897	1 324 960	2s2p ³ -2s2p ² (⁴ P)3d	³ P°- ³ P	1-2	3-5	3.80E+02	8.60E-02	8.09E-02	-0.588	D	3
95.233	274 904	1 324 960	2s2p ³ -2s2p ² (⁴ P)3d	³ P°- ³ P	2-2	5-5	9.24E+01	1.26E-01	1.97E-01	-0.202	C	3
95.258	1 107	1 050 890	2s ² 2p ² -2s ² 2p3s	³ P- ³ P°	1-2	3-5	1.30E+02	2.95E-02	2.78E-02	-1.053	A	1,2
95.383	0	1 048 400	2s ² 2p ² -2s ² 2p3s	³ P- ³ P°	0-1	1-3	1.71E+02	7.00E-02	2.20E-02	-1.155	A	1,2
95.423	2 924	1 050 890	2s ² 2p ² -2s ² 2p3s	³ P- ³ P°	2-2	5-5	3.89E+02	5.31E-02	8.34E-02	-0.576	A	1,2
95.484	1 107	1 048 400	2s ² 2p ² -2s ² 2p3s	³ P- ³ P°	1-1	3-3	1.27E+02	1.74E-02	1.64E-02	-1.282	A	1,2
95.556	1 107	1 047 610	2s ² 2p ² -2s ² 2p3s	³ P- ³ P°	1-0	3-1	5.15E+02	2.35E-02	2.22E-02	-1.152	A	1,2
95.650	2 924	1 048 400	2s ² 2p ² -2s ² 2p3s	³ P- ³ P°	2-1	5-3	2.15E+02	1.77E-02	2.79E-02	-1.053	A	1,2
98.031	40 948	1 061 030	2s ² 2p ² -2s ² 2p3s	¹ D- ¹ P°	2-1	5-3	6.15E+02	5.32E-02	8.58E-02	-0.575	A	1,2
98.982?	274 904	1 285 190?	2s2p ³ -2s2p ² (² D)3s	³ P°- ³ D	2-3	5-7	1.86E+02	3.82E-02	6.22E-02	-0.719	D	3
99.016	40 948	1 050 890	2s ² 2p ² -2s ² 2p3s	¹ D- ³ P°	2-2	5-5	5.12E-01	7.53E-05	1.23E-04	-3.424	C	1,2
99.260	40 948	1 048 400	2s ² 2p ² -2s ² 2p3s	¹ D- ³ P°	2-1	5-3	4.87E+00	4.31E-04	7.05E-04	-2.666	D	1,2
101.956	232 853	1 213 670	2s2p ³ -2s2p ² (⁴ P)3s	³ D°- ³ P	3-2	7-5	2.90E+02	3.23E-02	7.59E-02	-0.646	D	3
101.967	232 957	1 213 670	2s2p ³ -2s2p ² (⁴ P)3s	³ D°- ³ P	2-2	5-5	3.98E+01	6.20E-03	1.04E-02	-1.509	D	3
101.974	233 024	1 213 670	2s2p ³ -2s2p ² (⁴ P)3s	³ D°- ³ P	1-2	3-5	2.57E+00	6.67E-04	6.72E-04	-2.699	D	3
102.137	232 957	1 212 030	2s2p ³ -2s2p ² (⁴ P)3s	³ D°- ³ P	2-1	5-3	2.71E+02	2.54E-02	4.27E-02	-0.896	D	3
102.144	233 024	1 212 030	2s2p ³ -2s2p ² (⁴ P)3s	³ D°- ³ P	1-1	3-3	7.67E+01	1.20E-02	1.21E-02	-1.444	D	3
102.235?	233 024	1 211 160?	2s2p ³ -2s2p ² (⁴ P)3s	³ D°- ³ P	1-0	3-1	3.57E+02	1.87E-02	1.89E-02	-1.252	D	3
102.472	85 153	1 061 030	2s ² 2p ² -2s ² 2p3s	¹ S- ¹ P°	0-1	1-3	1.85E+02	8.72E-02	2.94E-02	-1.060	A	1,2
103.688?	362 117	1 326 550?	2s2p ³ -2s2p ² (⁴ P)3d	³ S°- ³ P	1-0	3-1	3.54E+02	1.90E-02	1.95E-02	-1.244	E	3
103.745	362 117	1 326 020	2s2p ³ -2s2p ² (⁴ P)3d	³ S°- ³ P	1-1	3-3	3.43E+02	5.53E-02	5.67E-02	-0.780	E	3
103.816	85 153	1 048 400	2s ² 2p ² -2s ² 2p3s	¹ S- ³ P°	0-1	1-3	1.16E+00	5.61E-04	1.92E-04	-3.251	D	1,2
103.859	362 117	1 324 960	2s2p ³ -2s2p ² (⁴ P)3d	³ S°- ³ P	1-2	3-5	3.25E+02	8.77E-02	8.99E-02	-0.580	E	3
105.164?	354 401	1 305 300?	2s2p ³ -2s2p ² (² D)3s	¹ D°- ¹ D	2-2	5-5	3.58E+02	5.94E-02	1.03E-01	-0.527	D	3
106.522	274 897	1 213 670	2s2p ³ -2s2p ² (⁴ P)3s	³ P°- ³ P	1-2	3-5	7.05E+01	2.00E-02	2.10E-02	-1.222	D	3
106.523	274 904	1 213 670	2s2p ³ -2s2p ² (⁴ P)3s	³ P°- ³ P	2-2	5-5	2.12E+02	3.60E-02	6.31E-02	-0.745	D	3
106.708	274 897	1 212 030	2s2p ³ -2s2p ² (⁴ P)3s	³ P°- ³ P	1-1	3-3	7.03E+01	1.20E-02	1.27E-02	-1.444	D	3
106.709	274 904	1 212 030	2s2p ³ -2s2p ² (⁴ P)3s	³ P°- ³ P	2-1	5-3	1.04E+02	1.06E-02	1.86E-02	-1.276	D	3
106.714	274 947	1 212 030	2s2p ³ -2s2p ² (⁴ P)3s	³ P°- ³ P	0-1	1-3	9.18E+01	4.70E-02	1.65E-02	-1.328	D	3
106.808?	274 897	1 211 160?	2s2p ³ -2s2p ² (⁴ P)3s	³ P°- ³ P	1-0	3-1	2.57E+02	1.47E-02	1.55E-02	-1.356	D	3
110.114?	397 153	1 305 300?	2s2p ³ -2s2p ² (² D)3s	¹ P°- ¹ D	1-2	3-5	1.28E+02	3.87E-02	4.21E-02	-0.936	E	3
111.984	232 853	1 125 840	2s2p ³ -2s ² 2p3p	³ D°- ³ P	3-2	7-5	6.07E+01	8.14E-03	2.10E-02	-1.244	C	1,2
111.997	232 957	1 125 840	2s2p ³ -2s ² 2p3p	³ D°- ³ P	2-2	5-5	9.38E+00	1.76E-03	3.25E-03	-2.055	A	1,2
112.005	233 024	1 125 840	2s2p ³ -2s ² 2p3p	³ D°- ³ P	1-2	3-5	6.20E-01	1.94E-04	2.15E-04	-3.234	A	1,2
112.110	232 957	1 124 940	2s2p ³ -2s ² 2p3p	³ D°- ³ P	2-1	5-3	4.57E+01	5.16E-03	9.53E-03	-1.588	A	1,2
112.118	233 024	1 124 940	2s2p ³ -2s ² 2p3p	³ D°- ³ P	1-1	3-3	1.54E+01	2.90E-03	3.21E-03	-2.061	A	1,2
112.269?	233 024	1 123 740?	2s2p ³ -2s ² 2p3p	³ D°- ³ P	1-0	3-1	6.37E+01	4.01E-03	4.45E-03	-1.920	A	1,2
117.433	362 117	1 213 670	2s2p ³ -2s2p ² (⁴ P)3s	³ S°- ³ P	1-2	3-5	8.71E+00	3.00E-03	3.48E-03	-2.046	D	3
117.517	274 897	1 125 840	2s2p ³ -2s ² 2p3p	³ P°- ³ P	1-2	3-5	1.75E+00	6.04E-04	7.01E-04	-2.742	A	1,2
117.518	274 904	1 125 840	2s2p ³ -2s ² 2p3p	³ P°- ³ P	2-2	5-5	4.22E+00	8.75E-04	1.69E-03	-2.359	A	1,2
117.641	274 897	1 124 940	2s2p ³ -2s ² 2p3p	³ P°- ³ P	1-1	3-3	3.30E+00	6.84E-04	7.95E-04	-2.688	A	1,2
117.642	274 904	1 124 940	2s2p ³ -2s ² 2p3p	³ P°- ³ P	2-1	5-3	1.92E-01	2.39E-05	4.63E-05	-3.923	D	1,2
117.648	274 947	1 124 940	2s2p ³ -2s ² 2p3p	³ P°- ³ P	0-1	1-3	3.31E+00	2.06E-03	7.97E-04	-2.687	A	1
117.659	362 117	1 212 030	2s2p ³ -2s2p ² (⁴ P)3s	³ S°- ³ P	1-1	3-3	8.03E+00	1.67E-03	1.94E-03	-2.301	D	3
117.780?	362 117	1 211 160?	2s2p ³ -2s2p ² (⁴ P)3s	³ S°- ³ P	1-0	3-1	4.81E+00	3.33E-04	3.88E-04	-3.000	D	3
117.807?	274 897	1 123 740?	2s2p ³ -2s ² 2p3p	³ P°- ³ P	1-0	3-1	4.52E+00	3.14E-04	3.65E-04	-3.027	A	1,2
130.938	362 117	1 125 840	2s2p ³ -2s ² 2p3p	³ S°- ³ P	1-2	3-5	6.10E-01	2.61E-04	3.38E-04	-3.106	C	1,2
131.092	362 117	1 124 940	2s2p ³ -2s ² 2p3p	³ S°- ³ P	1-1	3-3	5.46E-01	1.41E-04	1.82E-04	-3.375	C	1,2
131.299?	362 117	1 123 740?	2s2p ³ -2s ² 2p3p	³ S°- ³ P	1-0	3-1	5.54E-01	4.77E-05	6.19E-05	-3.844	C	1,2
152.641	542 316	1 197 450	2p ⁴ -2s ² 2p3d	³ P- ³ P°	2-1	5-3	4.33E-02	9.07E-06	2.28E-05	-4.344	D	1,2
152.804	542 316	1 196 750	2p ⁴ -2s ² 2p3d	³ P- ³ P°	2-2	5-5	8.38E-02	2.93E-05	7.38E-05	-3.834	D	1,2
153.032	544 393	1 197 850	2p ⁴ -2s ² 2p3d	³ P- ³ P°	1-0	3-1	1.04E-01	1.21E-05	1.83E-05	-4.439	D	1,2

Mg VII—Continued

λ Ritz (Å)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10^8 s^{-1})	f_{ik}	S (a.u.)	$\log g_i f$	Acc.	Ref.
153.126	544 393	1 197 450	$2p^4-2s^2 2p3d$	$^3P-^3P^\circ$	1-1	3-3	2.86E-02	1.00E-05	1.52E-05	-4.521	D	1,2
153.290	544 393	1 196 750	$2p^4-2s^2 2p3d$	$^3P-^3P^\circ$	1-2	3-5	2.24E-02	1.31E-05	1.99E-05	-4.404	D	1,2
153.330	545 264	1 197 450	$2p^4-2s^2 2p3d$	$^3P-^3P^\circ$	0-1	1-3	3.26E-02	3.45E-05	1.74E-05	-4.463	D	1,2
153.673	542 316	1 193 050	$2p^4-2s^2 2p3d$	$^3P-^3D^\circ$	2-3	5-7	1.10E-02	5.47E-06	1.38E-05	-4.563	D	1,2
153.881	542 316	1 192 170	$2p^4-2s^2 2p3d$	$^3P-^3D^\circ$	2-2	5-5	4.68E-03	1.66E-06	4.21E-06	-5.081	E	1,2
153.980	542 316	1 191 750	$2p^4-2s^2 2p3d$	$^3P-^3D^\circ$	2-1	5-3	9.49E-04	2.02E-07	5.13E-07	-5.995	D	1,2
154.474	544 393	1 191 750	$2p^4-2s^2 2p3d$	$^3P-^3D^\circ$	1-1	3-3	3.09E-03	1.10E-06	1.68E-06	-5.480	D	1,2
157.104	576 280	1 212 800	$2p^4-2s^2 2p3d$	$^1D-^1P^\circ$	2-1	5-3	1.35E-03	2.99E-07	7.73E-07	-5.826	D	1,2
165.390	576 280	1 180 910	$2p^4-2s^2 2p3d$	$^1D-^1D^\circ$	2-2	5-5	9.88E-02	4.05E-05	1.10E-04	-3.693	D	1

9. Mg VIII

Z = 12

BI isoelectronic sequence

Ground state $1s^2 2s^2 2p^2 P^{\circ}_{1/2}$

Ionization energy $2\,145\,100\text{ cm}^{-1}$ (265.96 eV)

Data are tabulated for 318 transitions in the range 51–172 Å. Transition probabilities for the $2s^2 2p-2s^2 3s$, $2s^2 2p-2s^2 3d$, $2s 2p^2-2s 2p 3s$, $2p^3-2s^2 3s$, and $2p^3-2s^2 3d$ arrays are taken from the multiconfiguration Hartree–Fock (MCHF) calculations of Tachiev and Froese Fischer.¹ Values for the other arrays are taken from the Opacity Project (OP).² OP provides, however, only multiplet values. These have been decomposed into fine-structure components assuming LS coupling, as indicated by the notation LS in the reference column.

References

¹G. Tachiev and C. Froese Fischer, http://www.vuse.vanderbilt.edu/~cff/mchf_collection (downloaded 28 March, 2002). See also G. Tachiev and C. Froese Fischer, *J. Phys. B* **33**, 2419 (2000).

²<http://legacy.gsfc.nasa.gov/topbase/> (downloaded 28 July, 1995).

Mg VIII

λ Ritz (Å)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10^8 s^{-1})	f_{ik}	S (a.u.)	$\log g_i f$	Acc	Ref.
51.386	0	1 946 060	$2s^2 2p-2s^2 6d$	$2P^{\circ}-^2D$	1/2–3/2	2–4	2.03E+02	1.61E–02	5.45E–03	–1.492	D	2,LS
51.473	3 302	1 946 060	$2s^2 2p-2s^2 6d$	$2P^{\circ}-^2D$	3/2–5/2	4–6	2.43E+02	1.45E–02	9.83E–03	–1.237	D	2,LS
51.473	3 302	1 946 060	$2s^2 2p-2s^2 6d$	$2P^{\circ}-^2D$	3/2–3/2	4–4	4.05E+01	1.61E–03	1.09E–03	–2.191	D	2,LS
52.395?	132 710+x	2 041 290+x?	$2s 2p^2-2p^2(^3P)4p$	$4P-^4D^{\circ}$	5/2–7/2	6–8	3.13E+02	1.72E–02	1.78E–02	–0.986	C	2,LS
52.628?	232 307	2 132 420?	$2s 2p^2-2s 2p(^1P^{\circ})5d$	$2D-^2D^{\circ}$	3/2–5/2	4–6	7.05E+00	4.39E–04	3.04E–04	–2.755	C	2,LS
52.628?	232 274	2 132 420?	$2s 2p^2-2s 2p(^1P^{\circ})5d$	$2D-^2D^{\circ}$	5/2–3/2	6–4	1.06E+01	2.93E–04	3.05E–04	–2.755	C	2,LS
52.628?	232 274	2 132 420?	$2s 2p^2-2s 2p(^1P^{\circ})5d$	$2D-^2D^{\circ}$	5/2–5/2	6–6	9.87E+01	4.10E–03	4.26E–03	–1.609	D	2,LS
52.628?	232 307	2 132 420?	$2s 2p^2-2s 2p(^1P^{\circ})5d$	$2D-^2D^{\circ}$	3/2–3/2	4–4	9.51E+01	3.95E–03	2.74E–03	–1.801	D	2,LS
53.437	131 030+x	2 002 380+x	$2s 2p^2-2s 2p(^3P^{\circ})5d$	$4P-^4P^{\circ}$	3/2–5/2	4–6	1.81E+02	1.16E–02	8.16E–03	–1.333	D	2,LS
53.484?	131 030+x	2 000 750+x?	$2s 2p^2-2s 2p(^3P^{\circ})5d$	$4P-^4D^{\circ}$	3/2–5/2	4–6	7.93E+02	5.10E–02	3.59E–02	–0.690	C	2,LS
53.485	132 710+x	2 002 380+x	$2s 2p^2-2s 2p(^3P^{\circ})5d$	$4P-^4P^{\circ}$	5/2–5/2	6–6	4.20E+02	1.80E–02	1.90E–02	–0.967	C	2,LS
53.512	132 710+x	2 001 450+x	$2s 2p^2-2s 2p(^3P^{\circ})5d$	$4P-^4D^{\circ}$	5/2–7/2	6–8	1.13E+03	6.47E–02	6.84E–02	–0.411	C	2,LS
53.532?	132 710+x	2 000 750+x?	$2s 2p^2-2s 2p(^3P^{\circ})5d$	$4P-^4D^{\circ}$	5/2–5/2	6–6	3.38E+02	1.45E–02	1.53E–02	–1.060	C	2,LS
53.812	0	1 858 320	$2s^2 2p-2s^2 5d$	$2P^{\circ}-^2D$	1/2–3/2	2–4	5.39E+02	4.68E–02	1.66E–02	–1.029	C	2,LS
53.905	3 302	1 858 420	$2s^2 2p-2s^2 5d$	$2P^{\circ}-^2D$	3/2–5/2	4–6	6.44E+02	4.21E–02	2.99E–02	–0.774	C	2,LS
53.908	3 302	1 858 320	$2s^2 2p-2s^2 5d$	$2P^{\circ}-^2D$	3/2–3/2	4–4	1.07E+02	4.67E–03	3.32E–03	–1.729	D	2,LS
54.853?	0	1 823 050?	$2s^2 2p-2s 2p(^3P^{\circ})4p$	$2P^{\circ}-^2D$	1/2–3/2	2–4	5.73E+02	5.17E–02	1.87E–02	–0.985	C	2,LS
54.886?	3 302	1 825 260?	$2s^2 2p-2s 2p(^3P^{\circ})4p$	$2P^{\circ}-^2D$	3/2–5/2	4–6	6.86E+02	4.65E–02	3.36E–02	–0.730	C	2,LS
54.953?	3 302	1 823 050?	$2s^2 2p-2s 2p(^3P^{\circ})4p$	$2P^{\circ}-^2D$	3/2–3/2	4–4	1.14E+02	5.16E–03	3.73E–03	–1.685	D	2,LS
55.122?	0	1 814 170?	$2s^2 2p-2s 2p(^3P^{\circ})4p$	$2P^{\circ}-^2P$	1/2–3/2	2–4	1.20E+02	1.09E–02	3.96E–03	–1.662	D	2,LS
55.136?	318 721	2 132 420?	$2s 2p^2-2s 2p(^1P^{\circ})5d$	$2P-^2D^{\circ}$	1/2–3/2	2–4	5.69E+02	5.19E–02	1.88E–02	–0.984	C	2,LS
55.197?	320 723	2 132 420?	$2s 2p^2-2s 2p(^1P^{\circ})5d$	$2P-^2D^{\circ}$	3/2–3/2	4–4	1.13E+02	5.18E–03	3.77E–03	–1.684	D	2,LS
55.197?	320 723	2 132 420?	$2s 2p^2-2s 2p(^1P^{\circ})5d$	$2P-^2D^{\circ}$	3/2–5/2	4–6	6.80E+02	4.66E–02	3.39E–02	–0.730	C	2,LS
55.222?	3 302	1 814 170?	$2s^2 2p-2s 2p(^3P^{\circ})4p$	$2P^{\circ}-^2P$	3/2–3/2	4–4	5.93E+02	2.71E–02	1.97E–02	–0.965	C	2,LS
56.358?	232 274	2 006 650?	$2s 2p^2-2s 2p(^3P^{\circ})5d$	$2D-^2F^{\circ}$	5/2–7/2	6–8	9.31E+02	5.91E–02	6.58E–02	–0.450	C	2,LS
56.402?	232 274	2 005 260?	$2s 2p^2-2s 2p(^3P^{\circ})5d$	$2D-^2F^{\circ}$	5/2–5/2	6–6	6.19E+01	2.95E–03	3.29E–03	–1.752	D	2,LS
56.403?	232 307	2 005 260?	$2s 2p^2-2s 2p(^3P^{\circ})5d$	$2D-^2F^{\circ}$	3/2–5/2	4–6	8.67E+02	6.20E–02	4.61E–02	–0.606	C	2,LS
56.987?	0	1 754 790?	$2s^2 2p-2p^2(^1D)3d$	$2P^{\circ}-^2P$	1/2–3/2	2–4	1.67E+01	1.63E–03	6.12E–04	–2.487	C	2,LS
57.024?	0	1 753 640?	$2s^2 2p-2p^2(^1D)3d$	$2P^{\circ}-^2P$	1/2–1/2	2–2	6.67E+01	3.25E–03	1.22E–03	–2.187	D	2,LS
57.094?	3 302	1 754 790?	$2s^2 2p-2p^2(^1D)3d$	$2P^{\circ}-^2P$	3/2–3/2	4–4	8.31E+01	4.06E–03	3.05E–03	–1.789	D	2,LS
57.132?	3 302	1 753 640?	$2s^2 2p-2p^2(^1D)3d$	$2P^{\circ}-^2P$	3/2–1/2	4–2	3.32E+01	8.12E–04	6.11E–04	–2.488	C	2,LS
57.590?	232 274	1 968 690?	$2s 2p^2-2s 2p(^1P^{\circ})4d$	$2D-^2D^{\circ}$	5/2–5/2	6–6	2.35E+02	1.17E–02	1.33E–02	–1.154	C	2,LS
57.590?	232 274	1 968 690?	$2s 2p^2-2s 2p(^1P^{\circ})4d$	$2D-^2D^{\circ}$	5/2–3/2	6–4	2.52E+01	8.36E–04	9.51E–04	–2.300	C	2,LS
57.591?	232 307	1 968 690?	$2s 2p^2-2s 2p(^1P^{\circ})4d$	$2D-^2D^{\circ}$	3/2–3/2	4–4	2.27E+02	1.13E–02	8.57E–03	–1.345	D	2,LS
57.591?	232 307	1 968 690?	$2s 2p^2-2s 2p(^1P^{\circ})4d$	$2D-^2D^{\circ}$	3/2–5/2	4–6	1.68E+01	1.25E–03	9.48E–04	–2.301	C	2,LS
57.736?	232 274	1 964 300?	$2s 2p^2-2s 2p(^1P^{\circ})4d$	$2D-^2F^{\circ}$	5/2–5/2	6–6	4.84E+01	2.42E–03	2.76E–03	–1.838	D	2,LS
57.736?	232 274	1 964 300?	$2s 2p^2-2s 2p(^1P^{\circ})4d$	$2D-^2F^{\circ}$	5/2–7/2	6–8	7.26E+02	4.84E–02	5.52E–02	–0.537	C	2,LS
57.737?	232 307	1 964 300?	$2s 2p^2-2s 2p(^1P^{\circ})4d$	$2D-^2F^{\circ}$	3/2–5/2	4–6	6.79E+02	5.09E–02	3.87E–02	–0.691	C	2,LS
57.783?	3 302	1 733 900?	$2s^2 2p-2p^2(^1D)3d$	$2P^{\circ}-^2D$	3/2–5/2	4–6	6.70E+01	5.03E–03	3.83E–03	–1.696	D	2,LS
58.498?	129 890+x	1 839 350+x?	$2s 2p^2-2s 2p(^3P^{\circ})4d$	$4P-^4P^{\circ}$	1/2–3/2	2–4	5.11E+02	5.24E–02	2.02E–02	–0.980	C	2,LS

Mg VIII—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
58.537?	131 030+x	1 839 350+x?	2s2p ² -2s2p(3P)4d	4P-4P°	3/2-3/2	4-4	1.63E+02	8.38E-03	6.46E-03	-1.475	D	2,LS
58.556?	131 030+x	1 838 790+x?	2s2p ² -2s2p(3P)4d	4P-4P°	3/2-5/2	4-6	3.67E+02	2.83E-02	2.18E-02	-0.946	C	2,LS
58.595?	132 710+x	1 839 350+x?	2s2p ² -2s2p(3P)4d	4P-4P°	5/2-3/2	6-4	5.48E+02	1.88E-02	2.18E-02	-0.948	C	2,LS
58.614	131 030+x	1 837 110+x	2s2p ² -2s2p(3P)4d	4P-4D°	3/2-5/2	4-6	1.58E+03	1.22E-01	9.42E-02	-0.312	C	2,LS
58.614?	132 710+x	1 838 790+x?	2s2p ² -2s2p(3P)4d	4P-4P°	5/2-5/2	6-6	8.54E+02	4.40E-02	5.09E-02	-0.578	C	2,LS
58.667	132 710+x	1 837 250+x	2s2p ² -2s2p(3P)4d	4P-4D°	5/2-7/2	6-8	2.25E+03	1.55E-01	1.80E-01	-0.032	B	2,LS
58.672	132 710+x	1 837 110+x	2s2p ² -2s2p(3P)4d	4P-4D°	5/2-5/2	6-6	6.74E+02	3.48E-02	4.03E-02	-0.680	C	2,LS
58.824?	3 302	1 703 280?	2s ² 2p-2p ² (3P)3d	2P°-2D	3/2-5/2	4-6	1.41E+02	1.10E-02	8.52E-03	-1.357	D	2,LS
59.038	0	1 693 830	2s ² 2p-2s ² 4d	2P°-2D	1/2-3/2	2-4	1.20E+03	1.25E-01	4.86E-02	-0.602	C	2,LS
59.153	3 302	1 693 830	2s ² 2p-2s ² 4d	2P°-2D	3/2-5/2	4-6	1.42E+03	1.12E-01	8.72E-02	-0.349	C	2,LS
59.153	3 302	1 693 830	2s ² 2p-2s ² 4d	2P°-2D	3/2-3/2	4-4	2.36E+02	1.24E-02	9.66E-03	-1.305	D	2,LS
60.321	131 030+x	1 788 830+x	2s2p ² -2s2p(3P)4s	4P-4P°	3/2-5/2	4-6	6.65E+01	5.44E-03	4.32E-03	-1.662	D	2,LS
60.382	132 710+x	1 788 830+x	2s2p ² -2s2p(3P)4s	4P-4P°	5/2-5/2	6-6	1.55E+02	8.46E-03	1.01E-02	-1.294	C	2,LS
60.607?	318 721	1 968 690?	2s2p ² -2s2p(3P)4d	2P-4D°	1/2-3/2	2-4	1.21E+03	1.33E-01	5.31E-02	-0.575	C	2,LS
60.681?	320 723	1 968 690?	2s2p ² -2s2p(1P)4d	2P-2D°	3/2-5/2	4-6	1.45E+03	1.20E-01	9.59E-02	-0.319	C	2,LS
60.681?	320 723	1 968 690?	2s2p ² -2s2p(1P)4d	2P-2D°	3/2-3/2	4-4	2.41E+02	1.33E-02	1.06E-02	-1.274	C	2,LS
60.684	0	1 647 880	2s ² 2p-2s ² 4s	2P°-2S	1/2-1/2	2-2	5.47E+01	3.02E-03	1.21E-03	-2.219	D	2,LS
60.806	3 302	1 647 880	2s ² 2p-2s ² 4s	2P°-2S	3/2-1/2	4-2	1.09E+02	3.02E-03	2.42E-03	-1.918	D	2,LS
61.021	0	1 638 790	2s ² 2p-2p ² (1D)3s	2P°-2D	1/2-3/2	2-4	6.99E+00	7.80E-04	3.13E-04	-2.807	C	2,LS
61.144	3 302	1 638 790	2s ² 2p-2p ² (1D)3s	2P°-2D	3/2-3/2	4-4	1.39E+00	7.78E-05	6.26E-05	-3.507	D	2,LS
61.144	3 302	1 638 790	2s ² 2p-2p ² (1D)3s	2P°-2D	3/2-5/2	4-6	8.33E+00	7.00E-04	5.64E-04	-2.553	C	2,LS
61.891	232 274	1 848 020	2s2p ² -2s2p(3P)4d	2D-2F°	5/2-7/2	6-8	1.88E+03	1.44E-01	1.76E-01	-0.063	B	2,LS
61.963?	232 274	1 846 150?	2s2p ² -2s2p(3P)4d	2D-2F°	5/2-5/2	6-6	1.25E+02	7.20E-03	8.81E-03	-1.365	D	2,LS
61.964?	232 307	1 846 150?	2s2p ² -2s2p(3P)4d	2D-2F°	3/2-5/2	4-6	1.75E+03	1.51E-01	1.23E-01	-0.219	B	2,LS
62.291	232 274	1 837 640	2s2p ² -2s2p(3P)4d	2D-2D°	5/2-5/2	6-6	4.71E+02	2.74E-02	3.37E-02	-0.784	C	2,LS
62.291	232 274	1 837 640	2s2p ² -2s2p(3P)4d	2D-2D°	5/2-3/2	6-4	5.05E+01	1.96E-03	2.41E-03	-1.930	D	2,LS
62.292	232 307	1 837 640	2s2p ² -2s2p(3P)4d	2D-2D°	3/2-5/2	4-6	3.37E+01	2.94E-03	2.41E-03	-1.930	D	2,LS
62.292	232 307	1 837 640	2s2p ² -2s2p(3P)4d	2D-2D°	3/2-3/2	4-4	4.54E+02	2.64E-02	2.17E-02	-0.976	C	2,LS
64.243	0	1 556 590	2s ² 2p-2s2p(1P)3p	2P°-2S	1/2-1/2	2-2	1.60E+02	9.89E-03	4.18E-03	-1.704	D	2,LS
64.380	3 302	1 556 590	2s ² 2p-2s2p(1P)3p	2P°-2S	3/2-1/2	4-2	3.18E+02	9.87E-03	8.37E-03	-1.404	D	2,LS
64.493	0	1 550 560	2s ² 2p-2s2p(1P)3p	2P°-2P	1/2-3/2	2-4	9.46E+01	1.18E-02	5.01E-03	-1.627	D	2,LS
64.517	0	1 549 990	2s ² 2p-2s2p(1P)3p	2P°-2P	1/2-1/2	2-2	3.77E+02	2.35E-02	9.98E-03	-1.328	D	2,LS
64.630	3 302	1 550 560	2s ² 2p-2s2p(1P)3p	2P°-2P	3/2-3/2	4-4	4.68E+02	2.93E-02	2.49E-02	-0.931	C	2,LS
64.654	3 302	1 549 990	2s ² 2p-2s2p(1P)3p	2P°-2P	3/2-1/2	4-2	1.87E+02	5.87E-03	5.00E-03	-1.629	D	2,LS
64.702	3 302	1 548 850	2s ² 2p-2s2p(1P)3p	2P°-2D	3/2-5/2	4-6	1.79E+02	1.68E-02	1.43E-02	-1.173	C	2,LS
64.761	129 890+x	1 674 020+x	2s2p ² -2p ² (3P)3p	4P-4S°	1/2-3/2	2-4	1.61E+02	2.03E-02	8.66E-03	-1.391	D	2,LS
64.809	131 030+x	1 674 020+x	2s2p ² -2p ² (3P)3p	4P-4S°	3/2-3/2	4-4	3.22E+02	2.03E-02	1.73E-02	-1.090	C	2,LS
64.880	132 710+x	1 674 020+x	2s2p ² -2p ² (3P)3p	4P-4S°	5/2-3/2	6-4	4.83E+02	2.03E-02	2.60E-02	-0.914	C	2,LS
65.734	131 030+x	1 652 310+x	2s2p ² -2p ² (3P)3p	4P-4P°	3/2-5/2	4-6	2.32E+02	2.25E-02	1.95E-02	-1.046	C	2,LS
65.807	132 710+x	1 652 310+x	2s2p ² -2p ² (3P)3p	4P-4P°	5/2-5/2	6-6	5.38E+02	3.49E-02	4.54E-02	-0.679	C	2,LS
65.836	318 721	1 837 640	2s2p ² -2s2p(3P)4d	2P-2D°	1/2-3/2	2-4	3.27E+02	4.25E-02	1.84E-02	-1.071	C	2,LS
65.923	320 723	1 837 640	2s2p ² -2s2p(3P)4d	2P-2D°	3/2-5/2	4-6	3.91E+02	3.82E-02	3.32E-02	-0.816	C	2,LS
65.923	320 723	1 837 640	2s2p ² -2s2p(3P)4d	2P-2D°	3/2-3/2	4-4	6.52E+01	4.25E-03	3.69E-03	-1.770	D	2,LS
66.069?	132 710+x	1 646 280+x?	2s2p ² -2p ² (3P)3p	4P-4D°	5/2-7/2	6-8	5.41E+02	4.72E-02	6.16E-02	-0.548	C	2,LS
67.553	465 745	1 946 060	2p ³ -2s ² 6d	2D°-2D	5/2-3/2	6-4	2.35E-02	1.07E-06	1.43E-06	-5.192	E	2,LS
67.553	465 745	1 946 060	2p ³ -2s ² 6d	2D°-2D	5/2-5/2	6-6	2.19E-01	1.50E-05	2.00E-05	-4.046	D	2,LS
67.557	465 818	1 946 060	2p ³ -2s ² 6d	2D°-2D	3/2-5/2	4-6	1.57E-02	1.61E-06	1.43E-06	-5.191	E	2,LS
67.557	465 818	1 946 060	2p ³ -2s ² 6d	2D°-2D	3/2-3/2	4-4	2.12E-01	1.45E-05	1.29E-05	-4.237	D	2,LS
68.450	0	1 460 910	2s ² 2p-2s2p(3P)3p	2P°-2S	1/2-1/2	2-2	5.69E+02	4.00E-02	1.80E-02	-1.097	C	2,LS
68.550?	232 274	1 691 060?	2s2p ² -2p ² (1D)3p	2D-2F°	5/2-7/2	6-8	4.93E+02	4.63E-02	6.27E-02	-0.556	C	2,LS
68.578?	232 274	1 690 460?	2s2p ² -2p ² (1D)3p	2D-2F°	5/2-5/2	6-6	3.29E+01	2.32E-03	3.14E-03	-1.856	D	2,LS
68.580?	232 307	1 690 460?	2s2p ² -2p ² (1D)3p	2D-2F°	3/2-5/2	4-6	4.60E+02	4.86E-02	4.39E-02	-0.711	C	2,LS
68.606	3 302	1 460 910	2s ² 2p-2s2p(3P)3p	2P°-2S	3/2-1/2	4-2	1.13E+03	3.99E-02	3.61E-02	-0.797	C	2,LS
69.415	0	1 440 610	2s ² 2p-2s2p(3P)3p	2P°-2D	1/2-3/2	2-4	1.43E+03	2.06E-01	9.42E-02	-0.385	C	2,LS
69.467	3 302	1 442 830	2s ² 2p-2s2p(3P)3p	2P°-2D	3/2-5/2	4-6	1.71E+03	1.85E-01	1.69E-01	-0.131	B	2,LS
69.575	3 302	1 440 610	2s ² 2p-2s2p(3P)3p	2P°-2D	3/2-3/2	4-4	2.83E+02	2.05E-02	1.88E-02	-1.086	C	2,LS
70.353	524 652	1 946 060	2p ³ -2s ² 6d	2P°-2D	1/2-3/2	2-4	2.76E-01	4.10E-05	1.90E-05	-4.086	D	2,LS
70.362	524 841	1 946 060	2p ³ -2s ² 6d	2P°-2D	3/2-5/2	4-6	3.31E-01	3.69E-05	3.42E-05	-3.831	D	2,LS
70.362	524 841	1 946 060	2p ³ -2s ² 6d	2P°-2D	3/2-3/2	4-4	5.52E-02	4.10E-06	3.80E-06	-4.785	E	2,LS
70.952	0	1 409 400	2s ² 2p-2s2p(3P)3p	2P°-2P	1/2-3/2	2-4	2.67E+02	4.03E-02	1.88E-02	-1.094	C	2,LS
71.004	0	1 408 370	2s ² 2p-2s2p(3P)3p	2P°-2P	1/2-1/2	2-2	1.07E+03	8.05E-02	3.76E-02	-0.793	C	2,LS
71.119	3 302	1 409 400	2s ² 2p-2s2p(3P)3p	2P°-2P	3/2-3/2	4-4	1.32E+03	1.00E-01	9.37E-02	-0.398	C	2,LS

Mg VIII—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
71.171	3 302	1 408 370	2s ² 2p-2s2p(3P)3p	2P°-2P	3/2-1/2	4-2	5.29E+02	2.01E-02	1.88E-02	-1.095	C	2,LS
71.804	465 745	1 858 420	2p ³ -2s ² 5d	2D°-2D	5/2-5/2	6-6	1.59E+00	1.23E-04	1.75E-04	-3.132	C	2,LS
71.808	465 818	1 858 420	2p ³ -2s ² 5d	2D°-2D	3/2-5/2	4-6	1.14E-01	1.32E-05	1.25E-05	-4.277	D	2,LS
71.809	465 745	1 858 320	2p ³ -2s ² 5d	2D°-2D	5/2-3/2	6-4	1.71E-01	8.80E-06	1.25E-05	-4.277	D	2,LS
71.813	465 818	1 858 320	2p ³ -2s ² 5d	2D°-2D	3/2-3/2	4-4	1.54E+00	1.19E-04	1.13E-04	-3.322	C	2,LS
72.548	232 274	1 610 670	2s2p ² -2s2p(1P)3d	2D-2P°	5/2-3/2	6-4	7.03E+01	3.70E-03	5.30E-03	-1.654	D	2,LS
72.550	232 307	1 610 670	2s2p ² -2s2p(1P)3d	2D-2P°	3/2-1/2	4-2	7.81E+01	3.08E-03	2.94E-03	-1.909	D	2,LS
72.550	232 307	1 610 670	2s2p ² -2s2p(1P)3d	2D-2P°	3/2-3/2	4-4	7.81E+00	6.16E-04	5.89E-04	-2.608	C	2,LS
72.678	232 274	1 608 210	2s2p ² -2s2p(1P)3d	2D-2D°	5/2-5/2	6-6	5.10E+02	4.04E-02	5.80E-02	-0.615	C	2,LS
72.680	232 307	1 608 210	2s2p ² -2s2p(1P)3d	2D-2D°	3/2-5/2	4-6	3.64E+01	4.32E-03	4.14E-03	-1.762	D	2,LS
72.697	232 274	1 607 850	2s2p ² -2s2p(1P)3d	2D-2D°	5/2-3/2	6-4	5.45E+01	2.88E-03	4.14E-03	-1.762	D	2,LS
72.699	232 307	1 607 850	2s2p ² -2s2p(1P)3d	2D-2D°	3/2-3/2	4-4	4.91E+02	3.89E-02	3.72E-02	-0.808	C	2,LS
73.249?	232 274	1 597 480?	2s2p ² -2s2p(1P)3d	2D-2F°	5/2-5/2	6-6	2.11E+02	1.70E-02	2.46E-02	-0.991	C	2,LS
73.249?	232 274	1 597 480?	2s2p ² -2s2p(1P)3d	2D-2F°	5/2-7/2	6-8	3.16E+03	3.39E-01	4.91E-01	0.308	B	2,LS
73.251?	232 307	1 597 480?	2s2p ² -2s2p(1P)3d	2D-2F°	3/2-5/2	4-6	2.95E+03	3.56E-01	3.43E-01	0.154	B	2,LS
73.556?	465 745	1 825 260?	2p ³ -2s2p(3P)4p	2D°-2D	5/2-5/2	6-6	3.14E+00	2.55E-04	3.71E-04	-2.815	C	2,LS
73.560?	465 818	1 825 260?	2p ³ -2s2p(3P)4p	2D°-2D	3/2-5/2	4-6	2.24E-01	2.73E-05	2.64E-05	-3.962	D	2,LS
73.675?	465 745	1 823 050?	2p ³ -2s2p(3P)4p	2D°-2D	5/2-3/2	6-4	3.36E-01	1.82E-05	2.65E-05	-3.962	D	2,LS
73.679?	465 818	1 823 050?	2p ³ -2s2p(3P)4p	2D°-2D	3/2-3/2	4-4	3.02E+00	2.46E-04	2.39E-04	-3.007	C	2,LS
73.800	129 890+x	1 484 910+x	2s2p ² -2s2p(3P)3d	4P-4P°	1/2-1/2	2-2	5.92E+02	4.83E-02	2.35E-02	-1.015	C	2,LS
73.826	129 890+x	1 484 420+x	2s2p ² -2s2p(3P)3d	4P-4P°	1/2-3/2	2-4	1.48E+03	2.42E-01	1.18E-01	-0.315	B	2,LS
73.862	131 030+x	1 484 910+x	2s2p ² -2s2p(3P)3d	4P-4P°	3/2-1/2	4-2	2.96E+03	1.21E-01	1.18E-01	-0.315	B	2,LS
73.889	131 030+x	1 484 420+x	2s2p ² -2s2p(3P)3d	4P-4P°	3/2-3/2	4-4	4.72E+02	3.86E-02	3.76E-02	-0.811	C	2,LS
73.928	131 030+x	1 483 690+x	2s2p ² -2s2p(3P)3d	4P-4P°	3/2-5/2	4-6	1.06E+03	1.30E-01	1.27E-01	-0.284	B	2,LS
73.980	132 710+x	1 484 420+x	2s2p ² -2s2p(3P)3d	4P-4P°	5/2-3/2	6-4	1.59E+03	8.68E-02	1.27E-01	-0.283	B	2,LS
74.020	132 710+x	1 483 690+x	2s2p ² -2s2p(3P)3d	4P-4P°	5/2-5/2	6-6	2.46E+03	2.02E-01	2.95E-01	0.084	B	2,LS
74.161?	465 745	1 814 170?	2p ³ -2s2p(3P)4p	2D°-2P	5/2-3/2	6-4	2.73E-01	1.50E-05	2.20E-05	-4.046	D	2,LS
74.165?	465 818	1 814 170?	2p ³ -2s2p(3P)4p	2D°-2P	3/2-3/2	4-4	3.03E-02	2.50E-06	2.44E-06	-5.000	E	2,LS
74.274?	129 890+x	1 476 260+x?	2s2p ² -2s2p(3P)3d	4P-4D°	1/2-3/2	2-4	2.75E+03	4.55E-01	2.23E-01	-0.041	B	2,LS
74.318	131 030+x	1 476 590+x	2s2p ² -2s2p(3P)3d	4P-4D°	3/2-5/2	4-6	4.61E+03	5.73E-01	5.61E-01	0.360	B	2,LS
74.337?	131 030+x	1 476 260+x?	2s2p ² -2s2p(3P)3d	4P-4D°	3/2-3/2	4-4	3.51E+03	2.91E-01	2.85E-01	0.066	B	2,LS
74.366?	132 710+x	1 477 410+x?	2s2p ² -2s2p(3P)3d	4P-4D°	5/2-7/2	6-8	6.58E+03	7.27E-01	1.07E+00	0.640	B	2,LS
74.411	132 710+x	1 476 590+x	2s2p ² -2s2p(3P)3d	4P-4D°	5/2-5/2	6-6	1.98E+03	1.64E-01	2.41E-01	-0.007	B	2,LS
74.430?	132 710+x	1 476 260+x?	2s2p ² -2s2p(3P)3d	4P-4D°	5/2-3/2	6-4	3.29E+02	1.82E-02	2.68E-02	-0.962	C	2,LS
74.858	0	1 335 860	2s ² 2p-2s ² 3d	2P°-2D	1/2-3/2	2-4	3.59E+03	6.02E-01	2.97E-01	0.081	A	1
74.981	524 652	1 858 320	2p ³ -2s ² 5d	2P°-2D	1/2-3/2	2-4	2.37E+01	3.99E-03	1.97E-03	-2.098	D	2,LS
74.986	524 841	1 858 420	2p ³ -2s ² 5d	2P°-2D	3/2-5/2	4-6	2.84E+01	3.59E-03	3.55E-03	-1.843	D	2,LS
74.992	524 841	1 858 320	2p ³ -2s ² 5d	2P°-2D	3/2-3/2	4-4	4.73E+00	3.99E-04	3.94E-04	-2.797	C	2,LS
75.034	3 302	1 336 030	2s ² 2p-2s ² 3d	2P°-2D	3/2-5/2	4-6	4.28E+03	5.42E-01	5.36E-01	0.336	A	1
75.044	3 302	1 335 860	2s ² 2p-2s ² 3d	2P°-2D	3/2-3/2	4-4	7.14E+02	6.03E-02	5.96E-02	-0.618	B	1
76.197	298 282	1 610 670	2s2p ² -2s2p(1P)3d	2S-2P°	1/2-3/2	2-4	1.28E+03	2.23E-01	1.12E-01	-0.351	B	2,LS
76.197	298 282	1 610 670	2s2p ² -2s2p(1P)3d	2S-2P°	1/2-1/2	2-2	1.29E+03	1.12E-01	5.62E-02	-0.650	C	2,LS
76.714	413 610+x	1 717 150+x	2p ³ -2p ² (3P)3d	4S°-4P	3/2-1/2	4-2	6.03E+03	2.66E-01	2.69E-01	0.027	B	2,LS
76.740	413 610+x	1 716 710+x	2p ³ -2p ² (3P)3d	4S°-4P	3/2-3/2	4-4	6.01E+03	5.31E-01	5.37E-01	0.327	B	2,LS
76.788	413 610+x	1 715 900+x	2p ³ -2p ² (3P)3d	4S°-4P	3/2-5/2	4-6	6.00E+03	7.96E-01	8.05E-01	0.503	B	2,LS
76.898?	524 841	1 825 260?	2p ³ -2s2p(3P)4p	2P°-2D	3/2-5/2	4-6	3.75E+01	4.99E-03	5.05E-03	-1.700	D	2,LS
77.018?	524 652	1 823 050?	2p ³ -2s2p(3P)4p	2P°-2D	1/2-3/2	2-4	3.12E+01	5.54E-03	2.81E-03	-1.955	D	2,LS
77.029?	524 841	1 823 050?	2p ³ -2s2p(3P)4p	2P°-2D	3/2-3/2	4-4	6.23E+00	5.54E-04	5.62E-04	-2.654	C	2,LS
77.402	318 721	1 610 670	2s2p ² -2s2p(1P)3d	2P-2P°	1/2-1/2	2-2	1.53E+03	1.37E-01	6.98E-02	-0.562	C	2,LS
77.402	318 721	1 610 670	2s2p ² -2s2p(1P)3d	2P-2P°	1/2-3/2	2-4	3.82E+02	6.87E-02	3.50E-02	-0.862	C	2,LS
77.523	320 723	1 610 670	2s2p ² -2s2p(1P)3d	2P-2P°	3/2-3/2	4-4	1.91E+03	1.72E-01	1.76E-01	-0.162	B	2,LS
77.523	320 723	1 610 670	2s2p ² -2s2p(1P)3d	2P-2P°	3/2-1/2	4-2	7.61E+02	3.43E-02	3.50E-02	-0.863	C	2,LS
77.548?	524 652	1 814 170?	2p ³ -2s2p(3P)4p	2P°-2P	1/2-3/2	2-4	9.21E+00	1.66E-03	8.48E-04	-2.479	C	2,LS
77.560?	524 841	1 814 170?	2p ³ -2s2p(3P)4p	2P°-2P	3/2-3/2	4-4	4.61E+01	4.16E-03	4.25E-03	-1.779	D	2,LS
77.572	318 721	1 607 850	2s2p ² -2s2p(1P)3d	2P-2D°	1/2-3/2	2-4	3.85E+03	6.94E-01	3.55E-01	0.142	B	2,LS
77.577?	465 745	1 754 790?	2p ³ -2s2p(1D)3d	2D°-2P	5/2-3/2	6-4	9.39E+02	5.65E-02	8.66E-02	-0.470	C	2,LS
77.581?	465 818	1 754 790?	2p ³ -2p ² (1D)3d	2D°-2P	3/2-3/2	4-4	1.04E+02	9.42E-03	9.62E-03	-1.424	D	2,LS
77.650?	465 818	1 753 640?	2p ³ -2p ² (1D)3d	2D°-2P	3/2-1/2	4-2	1.04E+03	4.70E-02	4.81E-02	-0.726	C	2,LS
77.671	320 723	1 608 210	2s2p ² -2s2p(1P)3d	2P-2D°	3/2-5/2	4-6	4.59E+03	6.23E-01	6.37E-01	0.397	B	2,LS
77.692	320 723	1 607 850	2s2p ² -2s2p(1P)3d	2P-2D°	3/2-3/2	4-4	7.66E+02	6.93E-02	7.09E-02	-0.557	C	2,LS
77.737?	465 745	1 752 130?	2p ³ -2p ² (1D)3d	2D°-2F	5/2-7/2	6-8	7.32E+03	8.84E-01	1.36E+00	0.725	B	2,LS
78.006?	232 307	1 514 260?	2s2p ² -2s2p(3P)3d	2D-2P°	3/2-1/2	4-2	5.70E+01	2.60E-03	2.67E-03	-1.983	D	2,LS

Mg VIII—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
78.075?	232 274	1 513 100?	$2s2p^2-2s2p(^3P^o)3d$	$^2D-^2P^o$	5/2-3/2	6-4	5.11E+01	3.11E-03	4.80E-03	-1.729	D	2,LS
78.077?	232 307	1 513 100?	$2s2p^2-2s2p(^3P^o)3d$	$^2D-^2P^o$	3/2-3/2	4-4	5.68E+00	5.19E-04	5.34E-04	-2.683	C	2,LS
78.446	232 274	1 507 040	$2s2p^2-2s2p(^3P^o)3d$	$^2D-^2F^o$	5/2-7/2	6-8	4.26E+03	5.24E-01	8.12E-01	0.497	B	2,LS
78.572	232 274	1 504 990	$2s2p^2-2s2p(^3P^o)3d$	$^2D-^2F^o$	5/2-5/2	6-6	2.83E+02	2.62E-02	4.07E-02	-0.804	C	2,LS
78.574	232 307	1 504 990	$2s2p^2-2s2p(^3P^o)3d$	$^2D-^2F^o$	3/2-5/2	4-6	3.96E+03	5.50E-01	5.69E-01	0.342	B	2,LS
78.855?	465 745	1 733 900?	$2p^3-2p^2(^1D)3d$	$^2D^o-^2D$	5/2-5/2	6-6	1.73E+03	1.61E-01	2.51E-01	-0.015	B	2,LS
78.859?	465 818	1 733 900?	$2p^3-2p^2(^1D)3d$	$^2D^o-^2D$	3/2-5/2	4-6	1.23E+02	1.72E-02	1.79E-02	-1.162	C	2,LS
79.701	232 274	1 486 970	$2s2p^2-2s2p(^1P^o)3s$	$^2D-^2P^o$	5/2-3/2	6-4	3.91E+02	2.48E-02	3.90E-02	-0.827	C	2,LS
79.703	232 307	1 486 970	$2s2p^2-2s2p(^1P^o)3s$	$^2D-^2P^o$	3/2-1/2	4-2	4.35E+02	2.07E-02	2.17E-02	-1.082	C	2,LS
79.703	232 307	1 486 970	$2s2p^2-2s2p(^1P^o)3s$	$^2D-^2P^o$	3/2-3/2	4-4	4.34E+01	4.13E-03	4.34E-03	-1.782	D	2,LS
80.230	232 274	1 478 690	$2s2p^2-2s2p(^3P^o)3d$	$^2D-^2D^o$	5/2-5/2	6-6	1.66E+03	1.60E-01	2.54E-01	-0.018	B	2,LS
80.232	232 307	1 478 690	$2s2p^2-2s2p(^3P^o)3d$	$^2D-^2D^o$	3/2-5/2	4-6	1.18E+02	1.71E-02	1.81E-02	-1.165	C	2,LS
80.253	232 274	1 478 340	$2s2p^2-2s2p(^3P^o)3d$	$^2D-^2D^o$	5/2-3/2	6-4	1.77E+02	1.14E-02	1.81E-02	-1.165	C	2,LS
80.255	232 307	1 478 340	$2s2p^2-2s2p(^3P^o)3d$	$^2D-^2D^o$	3/2-3/2	4-4	1.60E+03	1.54E-01	1.63E-01	-0.210	B	2,LS
80.806?	465 745	1 703 280?	$2p^3-2p^2(^3P)3d$	$^2D^o-^2D$	5/2-5/2	6-6	2.02E+03	1.98E-01	3.16E-01	0.075	B	2,LS
80.811?	465 818	1 703 280?	$2p^3-2p^2(^3P)3d$	$^2D^o-^2D$	3/2-5/2	4-6	1.44E+02	2.12E-02	2.26E-02	-1.072	C	2,LS
80.889?	465 745	1 702 010?	$2p^3-2p^2(^3P)3d$	$^2D^o-^2F$	5/2-7/2	6-8	6.35E+02	8.30E-02	1.33E-01	-0.303	B	2,LS
81.292?	524 652	1 754 790?	$2p^3-2p^2(^1D)3d$	$^2P^o-^2P$	1/2-3/2	2-4	4.59E+02	9.09E-02	4.87E-02	-0.740	C	2,LS
81.304?	524 841	1 754 790?	$2p^3-2p^2(^1D)3d$	$^2P^o-^2P$	3/2-3/2	4-4	2.29E+03	2.27E-01	2.43E-01	-0.042	B	2,LS
81.368?	524 652	1 753 640?	$2p^3-2p^2(^1D)3d$	$^2P^o-^2P$	1/2-1/2	2-2	1.83E+03	1.82E-01	9.75E-02	-0.439	C	2,LS
81.380?	524 841	1 753 640?	$2p^3-2p^2(^1D)3d$	$^2P^o-^2P$	3/2-1/2	4-2	9.15E+02	4.54E-02	4.87E-02	-0.741	C	2,LS
81.428	465 745	1 693 830	$2p^3-2s^24d$	$^2D^o-^2D$	5/2-3/2	6-4	4.44E-01	2.94E-05	4.73E-05	-3.754	D	2,LS
81.428	465 745	1 693 830	$2p^3-2s^24d$	$^2D^o-^2D$	5/2-5/2	6-6	4.14E+00	4.11E-04	6.61E-04	-2.608	C	2,LS
81.432	465 818	1 693 830	$2p^3-2s^24d$	$^2D^o-^2D$	3/2-5/2	4-6	2.95E-01	4.40E-05	4.72E-05	-3.754	D	2,LS
81.432	465 818	1 693 830	$2p^3-2s^24d$	$^2D^o-^2D$	3/2-3/2	4-4	3.98E+00	3.96E-04	4.25E-04	-2.800	C	2,LS
81.731	131 030+x	1 354 550+x	$2s2p^2-2s2p(^3P^o)3s$	$^4P-^4P^o$	3/2-5/2	4-6	2.79E+02	4.20E-02	4.52E-02	-0.775	B	1
81.790	129 890+x	1 352 530+x	$2s2p^2-2s2p(^3P^o)3s$	$^4P-^4P^o$	1/2-3/2	2-4	3.84E+02	7.70E-02	4.15E-02	-0.813	B	1
81.844	132 710+x	1 354 550+x	$2s2p^2-2s2p(^3P^o)3s$	$^4P-^4P^o$	5/2-5/2	6-6	6.50E+02	6.53E-02	1.06E-01	-0.407	A	1
81.867	129 890+x	1 351 390+x	$2s2p^2-2s2p(^3P^o)3s$	$^4P-^4P^o$	1/2-1/2	2-2	1.53E+02	1.53E-02	8.27E-03	-1.513	B	1
81.867	131 030+x	1 352 530+x	$2s2p^2-2s2p(^3P^o)3s$	$^4P-^4P^o$	3/2-3/2	4-4	1.23E+02	1.23E-02	1.33E-02	-1.307	B	1
81.943	131 030+x	1 351 390+x	$2s2p^2-2s2p(^3P^o)3s$	$^4P-^4P^o$	3/2-1/2	4-2	7.62E+02	3.84E-02	4.14E-02	-0.814	B	1
81.979	132 710+x	1 352 530+x	$2s2p^2-2s2p(^3P^o)3s$	$^4P-^4P^o$	5/2-3/2	6-4	4.14E+02	2.78E-02	4.50E-02	-0.778	B	1
82.238?	298 282	1 514 260?	$2s2p^2-2s2p(^3P^o)3d$	$^2S-^2P^o$	1/2-1/2	2-2	2.45E+03	2.48E-01	1.34E-01	-0.305	B	2,LS
82.317?	298 282	1 513 100?	$2s2p^2-2s2p(^3P^o)3d$	$^2S-^2P^o$	1/2-3/2	2-4	2.44E+03	4.95E-01	2.68E-01	-0.004	B	2,LS
82.598	0	1 210 690	$2s^22p-2s^23s$	$^2P^o-^2S$	1/2-1/2	2-2	2.55E+02	2.61E-02	1.42E-02	-1.283	B	1
82.709?	524 841	1 733 900?	$2p^3-2p^2(^1D)3d$	$^2P^o-^2D$	3/2-5/2	4-6	2.30E+03	3.54E-01	3.86E-01	0.151	B	2,LS
82.823	3 302	1 210 690	$2s^22p-2s^23s$	$^2P^o-^2S$	3/2-1/2	4-2	5.13E+02	2.64E-02	2.88E-02	-0.976	B	1
83.644?	318 721	1 514 260?	$2s2p^2-2s2p(^3P^o)3d$	$^2P-^2P^o$	1/2-1/2	2-2	2.58E+02	2.71E-02	1.49E-02	-1.266	C	2,LS
83.726?	318 721	1 513 100?	$2s2p^2-2s2p(^3P^o)3d$	$^2P-^2P^o$	1/2-3/2	2-4	6.42E+01	1.35E-02	7.44E-03	-1.569	D	2,LS
83.785?	320 723	1 514 260?	$2s2p^2-2s2p(^3P^o)3d$	$^2P-^2P^o$	3/2-1/2	4-2	1.29E+02	6.77E-03	7.47E-03	-1.567	D	2,LS
83.866?	320 723	1 513 100?	$2s2p^2-2s2p(^3P^o)3d$	$^2P-^2P^o$	3/2-3/2	4-4	3.21E+02	3.38E-02	3.73E-02	-0.869	C	2,LS
84.126	298 282	1 486 970	$2s2p^2-2s2p(^1P^o)3s$	$^2S-^2P^o$	1/2-3/2	2-4	3.41E+02	7.24E-02	4.01E-02	-0.839	C	2,LS
84.126	298 282	1 486 970	$2s2p^2-2s2p(^1P^o)3s$	$^2S-^2P^o$	1/2-1/2	2-2	3.41E+02	3.62E-02	2.01E-02	-1.140	C	2,LS
84.858?	524 841	1 703 280?	$2p^3-2p^2(^3P)3d$	$^2P^o-^2D$	3/2-5/2	4-6	1.33E+03	2.15E-01	2.40E-01	-0.066	B	2,LS
84.919	413 610+x	1 591 200+x	$2p^3-2p^2(^3P)3s$	$^4S^o-^4P$	3/2-5/2	4-6	4.90E+02	7.95E-02	8.89E-02	-0.498	C	2,LS
85.064	413 610+x	1 589 200+x	$2p^3-2p^2(^3P)3s$	$^4S^o-^4P$	3/2-3/2	4-4	4.88E+02	5.29E-02	5.93E-02	-0.674	C	2,LS
85.153	413 610+x	1 587 970+x	$2p^3-2p^2(^3P)3s$	$^4S^o-^4P$	3/2-1/2	4-2	4.86E+02	2.64E-02	2.96E-02	-0.976	C	2,LS
85.248	465 745	1 638 790	$2p^3-2p^2(^1D)3s$	$^2D^o-^2D$	5/2-5/2	6-6	6.00E+02	6.54E-02	1.10E-01	-0.406	B	2,LS
85.248	465 745	1 638 790	$2p^3-2p^2(^1D)3s$	$^2D^o-^2D$	5/2-3/2	6-4	6.43E+01	4.67E-03	7.86E-03	-1.553	D	2,LS
85.254	465 818	1 638 790	$2p^3-2p^2(^1D)3s$	$^2D^o-^2D$	3/2-3/2	4-4	5.79E+02	6.31E-02	7.08E-02	-0.598	C	2,LS
85.254	465 818	1 638 790	$2p^3-2p^2(^1D)3s$	$^2D^o-^2D$	3/2-5/2	4-6	4.29E+01	7.01E-03	7.87E-03	-1.552	D	2,LS
85.530	524 652	1 693 830	$2p^3-2s^24d$	$^2P^o-^2D$	1/2-3/2	2-4	4.47E-01	9.80E-05	5.52E-05	-3.708	D	2,LS
85.544	524 841	1 693 830	$2p^3-2s^24d$	$^2P^o-^2D$	3/2-3/2	4-4	8.93E-02	9.80E-06	1.10E-05	-4.407	D	2,LS
85.544	524 841	1 693 830	$2p^3-2s^24d$	$^2P^o-^2D$	3/2-5/2	4-6	5.36E-01	8.82E-05	9.94E-05	-3.452	D	2,LS
85.598	318 721	1 486 970	$2s2p^2-2s2p(^1P^o)3s$	$^2P-^2P^o$	1/2-3/2	2-4	1.02E+02	2.24E-02	1.26E-02	-1.349	C	2,LS
85.598	318 721	1 486 970	$2s2p^2-2s2p(^1P^o)3s$	$^2P-^2P^o$	1/2-1/2	2-2	4.09E+02	4.49E-02	2.53E-02	-1.047	C	2,LS
85.745	320 723	1 486 970	$2s2p^2-2s2p(^1P^o)3s$	$^2P-^2P^o$	3/2-3/2	4-4	5.08E+02	5.60E-02	6.32E-02	-0.650	C	2,LS
85.745	320 723	1 486 970	$2s2p^2-2s2p(^1P^o)3s$	$^2P-^2P^o$	3/2-1/2	4-2	2.03E+02	1.12E-02	1.27E-02	-1.349	C	2,LS
86.235	318 721	1 478 340	$2s2p^2-2s2p(^3P^o)3d$	$^2P-^2D^o$	1/2-3/2	2-4	4.44E+02	9.91E-02	5.63E-02	-0.703	C	2,LS
86.358	320 723	1 478 690	$2s2p^2-2s2p(^3P^o)3d$	$^2P-^2D^o$	3/2-5/2	4-6	5.31E+02	8.91E-02	1.01E-01	-0.448	B	2,LS
86.384	320 723	1 478 340	$2s2p^2-2s2p(^3P^o)3d$	$^2P-^2D^o$	3/2-3/2	4-4	8.85E+01	9.90E-03	1.13E-02	-1.402	C	2,LS
86.844	232 274	1 383 760	$2s2p^2-2s2p(^3P^o)3s$	$^2D-^2P^o$	5/2-3/2	6-4	4.50E+02	3.39E-02	5.82E-02	-0.692	C	2,LS

Mg VIII—Continued

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc.	Ref.
86.847	232 307	1 383 760	2s2p ² -2s2p(3P ^o)3s	2D- ² P ^o	3/2-3/2	4-4	4.99E+01	5.64E-03	6.45E-03	-1.647	D	2,LS
87.021	232 307	1 381 450	2s2p ² -2s2p(3P ^o)3s	2D- ² P ^o	3/2-1/2	4-2	4.97E+02	2.82E-02	3.23E-02	-0.948	C	2,LS
89.029	524 652	1 647 880	2p ³ -2s ² 4s	2P ^o - ² S	1/2-1/2	2-2	1.12E-01	1.33E-05	7.80E-06	-4.575	E	2,LS
89.044	524 841	1 647 880	2p ³ -2s ² 4s	2P ^o - ² S	3/2-1/2	4-2	2.24E-01	1.33E-05	1.56E-05	-4.274	D	2,LS
89.105?	232 274	1 354 550+x	2s2p ² -2s2p(3P ^o)3s	2D- ⁴ P ^o	5/2-5/2	6-6	1.84E-01	2.19E-05	3.86E-05	-3.881	C	1
89.107?	232 307	1 354 550+x	2s2p ² -2s2p(3P ^o)3s	2D- ⁴ P ^o	3/2-5/2	4-6	1.13E-02	2.01E-06	2.36E-06	-5.095	D	1
89.265?	232 274	1 352 530+x	2s2p ² -2s2p(3P ^o)3s	2D- ⁴ P ^o	5/2-3/2	6-4	2.45E-01	1.95E-05	3.44E-05	-3.932	C	1
89.268?	232 307	1 352 530+x	2s2p ² -2s2p(3P ^o)3s	2D- ⁴ P ^o	3/2-3/2	4-4	1.22E-01	1.46E-05	1.72E-05	-4.233	C	1
89.359?	232 307	1 351 390+x	2s2p ² -2s2p(3P ^o)3s	2D- ⁴ P ^o	3/2-1/2	4-2	1.31E-01	7.84E-06	9.23E-06	-4.503	D	1
89.755	524 652	1 638 790	2p ³ -2p ² (1D)3s	2P ^o - ² D	1/2-3/2	2-4	1.67E+02	4.04E-02	2.39E-02	-1.093	C	2,LS
89.771	524 841	1 638 790	2p ³ -2p ² (1D)3s	2P ^o - ² D	3/2-3/2	4-4	3.34E+01	4.04E-03	4.78E-03	-1.792	D	2,LS
89.771	524 841	1 638 790	2p ³ -2p ² (1D)3s	2P ^o - ² D	3/2-5/2	4-6	2.01E+02	3.64E-02	4.30E-02	-0.837	C	2,LS
92.125	298 282	1 383 760	2s2p ² -2s2p(3P ^o)3s	2S- ² P ^o	1/2-3/2	2-4	1.56E+02	3.98E-02	2.41E-02	-1.099	C	2,LS
92.182	465 745	1 550 560	2p ³ -2s2p(1P ^o)3p	2D ^o - ² P	5/2-3/2	6-4	1.45E+02	1.23E-02	2.24E-02	-1.132	C	2,LS
92.188	465 818	1 550 560	2p ³ -2s2p(1P ^o)3p	2D ^o - ² P	3/2-3/2	4-4	1.61E+01	2.05E-03	2.49E-03	-2.086	D	2,LS
92.236	465 818	1 549 990	2p ³ -2s2p(1P ^o)3p	2D ^o - ² P	3/2-1/2	4-2	1.60E+02	1.02E-02	1.24E-02	-1.389	C	2,LS
92.322	298 282	1 381 450	2s2p ² -2s2p(3P ^o)3s	2S- ² P ^o	1/2-1/2	2-2	1.56E+02	1.99E-02	1.21E-02	-1.400	C	2,LS
92.327	465 745	1 548 850	2p ³ -2s2p(1P ^o)3p	2D ^o - ² D	5/2-5/2	6-6	2.33E+00	2.98E-04	5.44E-04	-2.748	C	2,LS
92.333	465 818	1 548 850	2p ³ -2s2p(1P ^o)3p	2D ^o - ² D	3/2-5/2	4-6	1.67E-01	3.20E-05	3.89E-05	-3.893	D	2,LS
93.893	318 721	1 383 760	2s2p ² -2s2p(3P ^o)3s	2P- ² P ^o	1/2-3/2	2-4	7.23E+00	1.91E-03	1.18E-03	-2.418	D	2,LS
94.070	320 723	1 383 760	2s2p ² -2s2p(3P ^o)3s	2P- ² P ^o	3/2-3/2	4-4	3.60E+01	4.77E-03	5.91E-03	-1.719	D	2,LS
94.097	318 721	1 381 450	2s2p ² -2s2p(3P ^o)3s	2P- ² P ^o	1/2-1/2	2-2	2.88E+01	3.82E-03	2.37E-03	-2.117	D	2,LS
94.275	320 723	1 381 450	2s2p ² -2s2p(3P ^o)3s	2P- ² P ^o	3/2-1/2	4-2	1.43E+01	9.53E-04	1.18E-03	-2.419	D	2,LS
94.854?	298 282	1 352 530+x	2s2p ² -2s2p(3P ^o)3s	2S- ⁴ P ^o	1/2-3/2	2-4	4.71E-02	1.27E-05	7.93E-06	-4.595	D	1
94.957?	298 282	1 351 390+x	2s2p ² -2s2p(3P ^o)3s	2S- ⁴ P ^o	1/2-1/2	2-2	1.44E-02	1.95E-06	1.22E-06	-5.409	D	1
96.728?	320 723	1 354 550+x	2s2p ² -2s2p(3P ^o)3s	2P- ⁴ P ^o	3/2-5/2	4-6	4.25E-03	8.94E-07	1.14E-06	-5.447	D	1
96.730?	318 721	1 352 530+x	2s2p ² -2s2p(3P ^o)3s	2P- ⁴ P ^o	1/2-3/2	2-4	4.29E-03	1.20E-06	7.67E-07	-5.618	D	1
96.836?	318 721	1 351 390+x	2s2p ² -2s2p(3P ^o)3s	2P- ⁴ P ^o	1/2-1/2	2-2	2.74E-03	3.85E-07	2.46E-07	-6.113	D	1
96.905	524 652	1 556 590	2p ³ -2s2p(1P ^o)3p	2P ^o - ² S	1/2-1/2	2-2	1.85E+00	2.61E-04	1.67E-04	-3.282	C	2,LS
96.917?	320 723	1 352 530+x	2s2p ² -2s2p(3P ^o)3s	2P- ⁴ P ^o	3/2-3/2	4-4	8.60E-04	1.21E-07	1.55E-07	-6.315	D	1
96.923	524 841	1 556 590	2p ³ -2s2p(1P ^o)3p	2P ^o - ² S	3/2-1/2	4-2	3.71E+00	2.61E-04	3.33E-04	-2.981	C	2,LS
97.025?	320 723	1 351 390+x	2s2p ² -2s2p(3P ^o)3s	2P- ⁴ P ^o	3/2-1/2	4-2	8.92E-03	6.29E-07	8.04E-07	-5.599	D	1
97.475	524 652	1 550 560	2p ³ -2s2p(1P ^o)3p	2P ^o - ² P	1/2-3/2	2-4	8.14E+00	2.32E-03	1.49E-03	-2.333	D	2,LS
97.493	524 841	1 550 560	2p ³ -2s2p(1P ^o)3p	2P ^o - ² P	3/2-3/2	4-4	4.06E+01	5.79E-03	7.43E-03	-1.635	D	2,LS
97.529	524 652	1 549 990	2p ³ -2s2p(1P ^o)3p	2P ^o - ² P	1/2-1/2	2-2	3.25E+01	4.63E-03	2.97E-03	-2.033	D	2,LS
97.547	524 841	1 549 990	2p ³ -2s2p(1P ^o)3p	2P ^o - ² P	3/2-1/2	4-2	1.63E+01	1.16E-03	1.49E-03	-2.333	D	2,LS
97.655	524 841	1 548 850	2p ³ -2s2p(1P ^o)3p	2P ^o - ² D	3/2-5/2	4-6	3.01E-01	6.46E-05	8.31E-05	-3.588	D	2,LS
102.345	465 745	1 442 830	2p ³ -2s2p(3P ^o)3p	2D ^o - ² D	5/2-5/2	6-6	1.85E+01	2.90E-03	5.86E-03	-1.759	D	2,LS
102.353	465 818	1 442 830	2p ³ -2s2p(3P ^o)3p	2D ^o - ² D	3/2-5/2	4-6	1.32E+00	3.11E-04	4.19E-04	-2.905	C	2,LS
102.578	465 745	1 440 610	2p ³ -2s2p(3P ^o)3p	2D ^o - ² D	5/2-3/2	6-4	1.97E+00	2.07E-04	4.19E-04	-2.906	C	2,LS
102.586	465 818	1 440 610	2p ³ -2s2p(3P ^o)3p	2D ^o - ² D	3/2-3/2	4-4	1.77E+01	2.79E-03	3.77E-03	-1.952	D	2,LS
105.971	465 745	1 409 400	2p ³ -2s2p(3P ^o)3p	2D ^o - ² P	5/2-3/2	6-4	3.24E+01	3.64E-03	7.62E-03	-1.661	D	2,LS
105.979	465 818	1 409 400	2p ³ -2s2p(3P ^o)3p	2D ^o - ² P	3/2-3/2	4-4	3.61E+00	6.07E-04	8.47E-04	-2.615	C	2,LS
106.095	465 818	1 408 370	2p ³ -2s2p(3P ^o)3p	2D ^o - ² P	3/2-1/2	4-2	3.59E+01	3.03E-03	4.23E-03	-1.916	D	2,LS
106.808	524 652	1 460 910	2p ³ -2s2p(3P ^o)3p	2P ^o - ² S	1/2-1/2	2-2	3.26E+01	5.58E-03	3.92E-03	-1.952	D	2,LS
106.830	524 841	1 460 910	2p ³ -2s2p(3P ^o)3p	2P ^o - ² S	3/2-1/2	4-2	6.52E+01	5.58E-03	7.85E-03	-1.651	D	2,LS
108.410	413 610	1 336 030	2p ³ -2s ² 3d	4S ^o - ² D	3/2-5/2	4-6	1.00E-03	2.64E-07	3.78E-07	-5.976	D	1
108.430	413 610	1 335 860	2p ³ -2s ² 3d	4S ^o - ² D	3/2-3/2	4-4	1.52E-04	2.67E-08	3.82E-08	-6.971	E	1
108.934	524 841	1 442 830	2p ³ -2s2p(3P ^o)3p	2P ^o - ² D	3/2-5/2	4-6	1.28E+01	3.41E-03	4.89E-03	-1.865	D	2,LS
109.175	524 652	1 440 610	2p ³ -2s2p(3P ^o)3p	2P ^o - ² D	1/2-3/2	2-4	1.06E+01	3.78E-03	2.72E-03	-2.121	D	2,LS
109.198	524 841	1 440 610	2p ³ -2s2p(3P ^o)3p	2P ^o - ² D	3/2-3/2	4-4	2.11E+00	3.78E-04	5.44E-04	-2.820	C	2,LS
113.027	524 652	1 409 400	2p ³ -2s2p(3P ^o)3p	2P ^o - ² P	1/2-3/2	2-4	3.05E-02	1.17E-05	8.71E-06	-4.631	E	2,LS
113.051	524 841	1 409 400	2p ³ -2s2p(3P ^o)3p	2P ^o - ² P	3/2-3/2	4-4	1.52E-01	2.92E-05	4.35E-05	-3.933	D	2,LS
113.158	524 652	1 408 370	2p ³ -2s2p(3P ^o)3p	2P ^o - ² P	1/2-1/2	2-2	1.22E-01	2.34E-05	1.74E-05	-4.330	D	2,LS
113.182	524 841	1 408 370	2p ³ -2s2p(3P ^o)3p	2P ^o - ² P	3/2-1/2	4-2	6.08E-02	5.84E-06	8.70E-06	-4.632	E	2,LS
114.905	465 745	1 336 030	2p ³ -2s ² 3d	2D ^o - ² D	5/2-5/2	6-6	2.25E-01	4.45E-05	1.01E-04	-3.573	C	1
114.915	465 818	1 336 030	2p ³ -2s ² 3d	2D ^o - ² D	3/2-5/2	4-6	2.27E-02	6.73E-06	1.02E-05	-4.570	C	1
114.927	465 745	1 335 860	2p ³ -2s ² 3d	2D ^o - ² D	5/2-3/2	6-4	2.09E-02	2.76E-06	6.27E-06	-4.781	C	1
114.937	465 818	1 335 860	2p ³ -2s ² 3d	2D ^o - ² D	3/2-3/2	4-4	2.28E-01	4.52E-05	6.84E-05	-3.743	C	1
123.273	524 652	1 335 860	2p ³ -2s ² 3d	2P ^o - ² D	1/2-3/2	2-4	6.95E-03	3.17E-06	2.57E-06	-5.198	C	1
123.276	524 841	1 336 030	2p ³ -2s ² 3d	2P ^o - ² D	3/2-5/2	4-6	1.50E-02	5.11E-06	8.30E-06	-4.690	C	1
123.302	524 841	1 335 860	2p ³ -2s ² 3d	2P ^o - ² D	3/2-3/2	4-4	9.41E-04	2.14E-07	3.48E-07	-6.067	D	1

Mg VIII

λ Ritz (Å)	E_i (cm ⁻¹)	E_k (cm ⁻¹)	Configurations	Terms	$J_i - J_k$	$g_i - g_k$	A_{ki} (10 ⁸ s ⁻¹)	f_{ik}	S (a.u.)	log $g_i f$	Acc	Ref.
125.458	413 610	1 210 690	$2p^3 - 2s^2 3s$	$^2S^\circ - ^2S$	3/2-1/2	4-2	1.03E-04	1.21E-08	2.01E-08	-7.314	E	1
125.540?	1 335 860	2 132 420?	$2s^2 3d - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	3/2-5/2	4-6	1.87E-02	6.63E-06	1.10E-05	-4.576	D	2,LS
125.540?	1 335 860	2 132 420?	$2s^2 3d - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	3/2-3/2	4-4	2.53E-01	5.97E-05	9.87E-05	-3.622	D	2,LS
125.567?	1 336 030	2 132 420?	$2s^2 3d - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	5/2-5/2	6-6	2.62E-01	6.19E-05	1.54E-04	-3.430	C	2,LS
125.567?	1 336 030	2 132 420?	$2s^2 3d - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	5/2-3/2	6-4	2.81E-02	4.42E-06	1.10E-05	-4.576	D	2,LS
134.251	465 818	1 210 690	$2p^3 - 2s^2 3s$	$^2D^\circ - ^2S$	3/2-1/2	4-2	1.12E-04	1.51E-08	2.67E-08	-7.219	E	1
138.112?	1 408 370	2 132 420?	$2s 2p(^3P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2P - ^2D^\circ$	1/2-3/2	2-4	1.96E+00	1.12E-03	1.02E-03	-2.650	D	2,LS
138.309?	1 409 400	2 132 420?	$2s 2p(^3P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2P - ^2D^\circ$	3/2-3/2	4-4	3.91E-01	1.12E-04	2.04E-04	-3.349	C	2,LS
138.309?	1 409 400	2 132 420?	$2s 2p(^3P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2P - ^2D^\circ$	3/2-5/2	4-6	2.35E+00	1.01E-03	1.84E-03	-2.394	D	2,LS
144.548?	1 440 610	2 132 420?	$2s 2p(^3P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	3/2-3/2	4-4	4.73E-02	1.48E-05	2.82E-05	-4.228	D	2,LS
144.548?	1 440 610	2 132 420?	$2s 2p(^3P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	3/2-5/2	4-6	3.49E-03	1.64E-06	3.12E-06	-5.183	E	2,LS
145.014?	1 442 830	2 132 420?	$2s 2p(^3P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	5/2-3/2	6-4	5.19E-03	1.09E-06	3.12E-06	-5.184	E	2,LS
145.014?	1 442 830	2 132 420?	$2s 2p(^3P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	5/2-5/2	6-6	4.85E-02	1.53E-05	4.38E-05	-4.037	D	2,LS
145.765	524 652	1 210 690	$2p^3 - 2s^2 3s$	$^2P^\circ - ^2S$	1/2-1/2	2-2	9.73E-03	3.10E-06	2.97E-06	-5.208	C	1
145.805	524 841	1 210 690	$2p^3 - 2s^2 3s$	$^2P^\circ - ^2S$	3/2-1/2	4-2	2.15E-02	3.43E-06	6.59E-06	-4.862	C	1
149.116?	1 336 030	2 006 650?	$2s^2 3d - 2s 2p(^3P^\circ) 5d$	$^2D - ^2F^\circ$	5/2-7/2	6-8	1.01E+01	4.47E-03	1.32E-02	-1.572	C	2,LS
149.388?	1 335 860	2 005 260?	$2s^2 3d - 2s 2p(^3P^\circ) 5d$	$^2D - ^2F^\circ$	3/2-5/2	4-6	9.35E+00	4.69E-03	9.23E-03	-1.727	D	2,LS
149.425?	1 336 030	2 005 260?	$2s^2 3d - 2s 2p(^3P^\circ) 5d$	$^2D - ^2F^\circ$	5/2-5/2	6-6	6.66E-01	2.23E-04	6.58E-04	-2.874	C	2,LS
158.020?	1 335 860	1 968 690?	$2s^2 3d - 2s 2p(^1P^\circ) 4d$	$^2D - ^2D^\circ$	3/2-3/2	4-4	3.93E-01	1.47E-04	3.06E-04	-3.231	C	2,LS
158.020?	1 335 860	1 968 690?	$2s^2 3d - 2s 2p(^1P^\circ) 4d$	$^2D - ^2D^\circ$	3/2-5/2	4-6	2.90E-02	1.63E-05	3.39E-05	-4.186	D	2,LS
158.063?	1 336 030	1 968 690?	$2s^2 3d - 2s 2p(^1P^\circ) 4d$	$^2D - ^2D^\circ$	5/2-3/2	6-4	4.37E-02	1.09E-05	3.40E-05	-4.184	D	2,LS
158.063?	1 336 030	1 968 690?	$2s^2 3d - 2s 2p(^1P^\circ) 4d$	$^2D - ^2D^\circ$	5/2-5/2	6-6	4.06E-01	1.52E-04	4.75E-04	-3.040	C	2,LS
159.124?	1 335 860	1 964 300?	$2s^2 3d - 2s 2p(^1P^\circ) 4d$	$^2D - ^2F^\circ$	3/2-5/2	4-6	9.80E+00	5.58E-03	1.17E-02	-1.651	C	2,LS
159.167?	1 336 030	1 964 300?	$2s^2 3d - 2s 2p(^1P^\circ) 4d$	$^2D - ^2F^\circ$	5/2-7/2	6-8	1.05E+01	5.32E-03	1.67E-02	-1.496	C	2,LS
159.167?	1 336 030	1 964 300?	$2s^2 3d - 2s 2p(^1P^\circ) 4d$	$^2D - ^2F^\circ$	5/2-5/2	6-6	7.00E-01	2.66E-04	8.36E-04	-2.797	C	2,LS
171.359?	1 548 850	2 132 420?	$2s 2p(^1P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	5/2-3/2	6-4	3.68E+00	1.08E-03	3.66E-03	-2.188	D	2,LS
171.359?	1 548 850	2 132 420?	$2s 2p(^1P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2D - ^2D^\circ$	5/2-5/2	6-6	3.43E+01	1.51E-02	5.11E-02	-1.043	C	2,LS
171.694?	1 549 990	2 132 420?	$2s 2p(^1P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2P - ^2D^\circ$	1/2-3/2	2-4	8.62E+01	7.62E-02	8.61E-02	-0.817	C	2,LS
171.863?	1 550 560	2 132 420?	$2s 2p(^1P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2P - ^2D^\circ$	3/2-5/2	4-6	1.03E+02	6.86E-02	1.55E-01	-0.562	B	2,LS
171.863?	1 550 560	2 132 420?	$2s 2p(^1P^\circ) 3p - 2s 2p(^1P^\circ) 5d$	$^2P - ^2D^\circ$	3/2-3/2	4-4	1.72E+01	7.62E-03	1.73E-02	-1.516	C	2,LS

10. Mg IX

 $Z = 12$

Be I isoelectronic sequence

 Ground state $1s^2 2s^2 \ ^1S_0$

 Ionization energy $2\ 646\ 000\ \text{cm}^{-1}$ (328.06 eV)

Data are tabulated for 216 transitions in the range from 40 to 171 Å. Transition probabilities for the $2s2p-2s3s$, $2s2p-2s3d$, and $2p^2-2s3p$ arrays are taken from MCHF calculations.¹ Values for the $2s2p-2p3p$, $2p^2-2p3s$, and $2p^2-2p3d$ arrays are taken from the many-body perturbation theory (MBPT) calculations of Safronova *et al.*² The other data are from the Opacity Project (OP).³ OP provides, however, only multiplet values. These have been decomposed into fine-structure components assuming LS coupling, as indicated by the notation LS in the reference column.

For the transition probability of the $2s^2 \ ^1S_0-2s3p \ ^3P_1^o$ intercombination line (62.60 Å) the mean of the MCHF result¹ and the experimental result of Granzow, Heckmann, and Träbert⁴ is given. They used the beam foil spectroscopy technique to investigate the decay of the $2s3p \ ^3P_{0,1,2}^o$ levels. The mean wavelength of the transition $2p^2 \ ^3P-2s3p \ ^3P^o$ and the lifetimes of the $2s3p \ ^3P_{0,1,2}^o$ levels were measured. The mean energy of the $2s3p \ ^3P^o$ term was established as $1\ 597\ 500\ \text{cm}^{-1}$ from the measured wavelength (81.35 Å) of the $2p^2 \ ^3P-2s3p \ ^3P^o$ transition and the mean energy of the $2p^2 \ ^3P$ term ($368\ 220\ \text{cm}^{-1}$). The $2s3p \ ^3P^o$ term is not present in the NIST Atomic Spectra Database because the previous compilation was made before 1994. Ten transitions involving levels of the $2s3p \ ^3P^o$ term are included in the present table.

References

¹G. Tachiev and C. Froese Fischer, http://www.vuse.vanderbilt.edu/~cff/mchf_collection/ (downloaded 28 March, 2002). See also G. Tachiev and C. Froese Fischer, *J. Phys. B* **32**, 5805 (1999).

²U. I. Safronova, A. Derevianko, M. S. Safronova, and W. R. Johnson, *J. Phys. B* **32**, 3527 (1999) (complete data listing from private communication 9 March, 2000).

³<http://legacy.gsfc.nasa.gov/topbase/> (downloaded 28 July, 1995).

⁴J. Granzow, P. H. Heckmann, and E. Träbert, *Phys. Scr.* **49**, 148 (1994).

Mg IX

λ Ritz (Å)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} ($10^8\ \text{s}^{-1}$)	f_{ik}	S (a.u.)	$\log g_i f$	Acc.	Ref.
40.638	0	2 460 750	$2s^2-2s7p$	$^1S-^1P^o$	0-1	1-3	1.74E+02	1.29E-02	1.73E-03	-1.889	D	3,LS
41.803	0	2 392 170	$2s^2-2s6p$	$^1S-^1P^o$	0-1	1-3	4.22E+02	3.32E-02	4.57E-03	-1.479	D	3,LS
43.091	141 631	2 462 300	$2s2p-2s7d$	$^3P^o-^3D$	1-2	3-5	2.11E+02	9.77E-03	4.16E-03	-1.533	D	3,LS
43.137	144 091	2 462 300	$2s2p-2s7d$	$^3P^o-^3D$	2-3	5-7	2.79E+02	1.09E-02	7.74E-03	-1.264	D	3,LS
43.137	144 091	2 462 300	$2s2p-2s7d$	$^3P^o-^3D$	2-2	5-5	6.99E+01	1.95E-03	1.39E-03	-2.011	D	3,LS
43.434	141 631	2 443 950	$2s2p-2p5d$	$^3P^o-^3P$	1-2	3-5	9.48E+01	4.47E-03	1.92E-03	-1.873	D	3,LS
43.481	144 091	2 443 950	$2s2p-2p5p$	$^3P^o-^3P$	2-2	5-5	2.83E+02	8.03E-03	5.75E-03	-1.396	D	3,LS
43.843	0	2 280 870	$2s^2-2s5p$	$^1S-^1P^o$	0-1	1-3	5.63E+02	4.87E-02	7.03E-03	-1.312	D	3,LS
44.281	0	2 258 310	$2s^2-2p4d$	$^1S-^1P^o$	0-1	1-3	2.60E+02	2.29E-02	3.34E-03	-1.640	D	3,LS
44.372	141 631	2 395 290	$2s2p-2s6d$	$^3P^o-^3D$	1-2	3-5	3.92E+02	1.93E-02	8.46E-03	-1.237	D	3,LS
44.421	144 091	2 395 290	$2s2p-2s6d$	$^3P^o-^3D$	2-2	5-5	1.30E+02	3.85E-03	2.82E-03	-1.716	D	3,LS
44.421	144 091	2 395 290	$2s2p-2s6d$	$^3P^o-^3D$	2-3	5-7	5.22E+02	2.16E-02	1.58E-02	-0.967	C	3,LS
45.635	271 687	2 462 990	$2s2p-2s7d$	$^1P^o-^1D$	1-2	3-5	2.83E+02	1.47E-02	6.63E-03	-1.356	D	3,LS
45.980	271 687	2 446 550	$2s2p-2p5p$	$^1P^o-^1D$	1-2	3-5	4.17E+02	2.20E-02	9.99E-03	-1.180	D	3,LS
46.657	141 631	2 284 920	$2s2p-2s5d$	$^3P^o-^3D$	1-2	3-5	6.55E+02	3.56E-02	1.64E-02	-0.971	C	3,LS
46.711	144 091	2 284 920	$2s2p-2s5d$	$^3P^o-^3D$	2-2	5-5	2.18E+02	7.12E-03	5.47E-03	-1.449	D	3,LS
46.711	144 091	2 284 920	$2s2p-2s5d$	$^3P^o-^3D$	2-3	5-7	8.71E+02	3.99E-02	3.07E-02	-0.700	C	3,LS
47.041	271 687	2 397 490	$2s2p-2s6d$	$^1P^o-^1D$	1-2	3-5	3.87E+02	2.14E-02	9.94E-03	-1.192	D	3,LS
47.762	141 631	2 235 350	$2s2p-2p4p$	$^3P^o-^3P$	1-2	3-5	1.79E+02	1.02E-02	4.81E-03	-1.514	D	3,LS
47.818	144 091	2 235 350	$2s2p-2p4p$	$^3P^o-^3P$	2-2	5-5	5.37E+02	1.84E-02	1.45E-02	-1.036	C	3,LS
47.947	144 091	2 229 730	$2s2p-2p4p$	$^3P^o-^3D$	2-3	5-7	5.82E+02	2.81E-02	2.22E-02	-0.852	C	3,LS
48.024	369 330	2 451 620	$2p^2-2p5d$	$^3P-^3D^o$	2-3	5-7	1.27E+03	6.13E-02	4.85E-02	-0.514	C	3,LS
48.340	0	2 068 680	$2s^2-2s4p$	$^1S-^1P^o$	0-1	1-3	1.36E+03	1.43E-01	2.28E-02	-0.845	C	3,LS
48.646	405 100	2 460 750	$2p^2-2s7p$	$^1D-^1P^o$	2-1	5-3	7.94E+00	1.69E-04	1.35E-04	-3.073	E	3,LS
48.794	405 100	2 454 530	$2p^2-2p5d$	$^1D-^1F^o$	2-3	5-7	1.58E+03	7.90E-02	6.35E-02	-0.403	C	3,LS
49.586	271 687	2 288 380	$2s2p-2s5d$	$^1P^o-^1D$	1-2	3-5	7.83E+02	4.81E-02	2.36E-02	-0.841	C	3,LS
50.325	405 100	2 392 170	$2p^2-2s6p$	$^1D-^1P^o$	2-1	5-3	3.89E+00	8.87E-05	7.35E-05	-3.353	E	3,LS
50.777	271 687	2 241 080	$2s2p-2p4p$	$^1P^o-^1D$	1-2	3-5	8.30E+02	5.35E-02	2.68E-02	-0.795	C	3,LS
50.991	499 633	2 460 750	$2p^2-2s7p$	$^1S-^1P^o$	0-1	1-3	1.45E+02	1.69E-02	2.84E-03	-1.772	D	3,LS

Mg IX—Continued

λ Ritz (\AA)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10^8 s^{-1})	f_{ik}	S (a.u.)	$\log g_i f$	Acc.	Ref.
51.561	140 504	2 079 970	$2s2p-2s4d$	$3P^o-3D$	0-1	1-3	1.11E+03	1.33E-01	2.26E-02	-0.876	C	3,LS
51.591	141 631	2 079 970	$2s2p-2s4d$	$3P^o-3D$	1-1	3-3	8.30E+02	3.31E-02	1.69E-02	-1.003	C	3,LS
51.591	141 631	2 079 970	$2s2p-2s4d$	$3P^o-3D$	1-2	3-5	1.50E+03	9.94E-02	5.07E-02	-0.525	C	3,LS
51.654	144 091	2 080 050	$2s2p-2s4d$	$3P^o-3D$	2-3	5-7	1.98E+03	1.11E-01	9.44E-02	-0.256	C	3,LS
51.656	144 091	2 079 970	$2s2p-2s4d$	$3P^o-3D$	2-2	5-5	4.98E+02	1.99E-02	1.69E-02	-1.002	C	3,LS
51.656	144 091	2 079 970	$2s2p-2s4d$	$3P^o-3D$	2-1	5-3	5.50E+01	1.32E-03	1.12E-03	-2.180	D	3,LS
52.839	499 633	2 392 170	$2p^2-2s6p$	$1S-1P^o$	0-1	1-3	1.27E+01	1.60E-03	2.78E-04	-2.796	E	3,LS
53.075	365 856	2 249 970	$2p^2-2p4d$	$3P-3P^o$	0-1	1-3	4.65E+02	5.89E-02	1.03E-02	-1.230	C	3,LS
53.112	367 159	2 249 970	$2p^2-2p4d$	$3P-3P^o$	1-1	3-3	3.48E+02	1.47E-02	7.71E-03	-1.356	D	3,LS
53.127	367 159	2 249 450	$2p^2-2p4d$	$3P-3P^o$	1-2	3-5	3.47E+02	2.45E-02	1.29E-02	-1.134	C	3,LS
53.173	369 330	2 249 970	$2p^2-2p4d$	$3P-3P^o$	2-1	5-3	5.78E+02	1.47E-02	1.29E-02	-1.134	C	3,LS
53.188	369 330	2 249 450	$2p^2-2p4d$	$3P-3P^o$	2-2	5-5	1.04E+03	4.41E-02	3.86E-02	-0.657	C	3,LS
53.222	369 330	2 248 250	$2p^2-2p4d$	$3P-3D^o$	2-3	5-7	2.67E+03	1.59E-01	1.39E-01	-0.100	B	3,LS
53.311	405 100	2 280 870	$2p^2-2s5p$	$1D-1P^o$	2-1	5-3	9.23E+00	2.36E-04	2.07E-04	-2.928	E	3,LS
53.960	405 100	2 258 310	$2p^2-2p4d$	$1D-1P^o$	2-1	5-3	7.87E+01	2.06E-03	1.83E-03	-1.987	D	3,LS
54.011	405 100	2 256 570	$2p^2-2p4d$	$1D-1F^o$	2-3	5-7	3.28E+03	2.01E-01	1.79E-01	0.002	B	3,LS
54.302	0	1 841 560	$2s^2-2p3d$	$1S-1P^o$	0-1	1-3	2.24E+02	3.21E-02	5.73E-03	-1.494	C	2
54.463	405 100	2 241 210	$2p^2-2p4d$	$1D-1D^o$	2-2	5-5	8.88E+02	3.95E-02	3.54E-02	-0.704	C	3,LS
55.060	271 687	2 087 890	$2s2p-2s4d$	$1P^o-1D$	1-2	3-5	1.53E+03	1.16E-01	6.31E-02	-0.458	C	3,LS
55.060	0	1 816 210	$2s^2-2p3d$	$1S-3P^o$	0-1	1-3	1.78E-01	2.43E-05	4.40E-06	-4.615	E	2
55.331	0	1 807 320	$2s^2-2p3d$	$1S-3D^o$	0-1	1-3	6.08E-01	8.38E-05	1.53E-05	-4.077	D	2
56.141	499 633	2 280 870	$2p^2-2s5p$	$1S-1P^o$	0-1	1-3	2.30E+02	3.26E-02	6.03E-03	-1.487	D	3,LS
56.861	499 633	2 258 310	$2p^2-2p4d$	$1S-1P^o$	0-1	1-3	1.53E+03	2.22E-01	4.16E-02	-0.654	C	3,LS
57.371	0	1 743 040	$2s^2-2p3s$	$1S-1P^o$	0-1	1-3	1.33E+02	1.96E-02	3.71E-03	-1.707	C	2
58.437	0	1 711 250	$2s^2-2p3s$	$1S-3P^o$	0-1	1-3	7.07E-01	1.09E-04	2.09E-05	-3.965	D	2
60.111	405 100	2 068 680	$2p^2-2s4p$	$1D-1P^o$	2-1	5-3	3.54E+00	1.15E-04	1.14E-04	-3.240	E	3,LS
60.451	141 631	1 795 870	$2s2p-2p3p$	$3P^o-1D$	1-2	3-5	1.09E+00	9.96E-05	5.95E-05	-3.525	D	2
60.541	144 091	1 795 870	$2s2p-2p3p$	$3P^o-1D$	2-2	5-5	1.48E+00	8.11E-05	8.08E-05	-3.392	D	2
61.037	141 631	1 779 990	$2s2p-2p3p$	$3P^o-3P$	1-2	3-5	3.37E+02	3.14E-02	1.89E-02	-1.026	B	2
61.043	140 504	1 778 690	$2s2p-2p3p$	$3P^o-3P$	0-1	1-3	3.98E+02	6.66E-02	1.34E-02	-1.176	B	2
61.085	141 631	1 778 690	$2s2p-2p3p$	$3P^o-3P$	1-1	3-3	2.83E+02	1.59E-02	9.57E-03	-1.323	C	2
61.128	144 091	1 779 990	$2s2p-2p3p$	$3P^o-3P$	2-2	5-5	1.15E+03	6.44E-02	6.48E-02	-0.492	B	2
61.177	144 091	1 778 690	$2s2p-2p3p$	$3P^o-3P$	2-1	5-3	8.10E+02	2.73E-02	2.75E-02	-0.865	B	2
61.354	140 504	1 770 380	$2s2p-2p3p$	$3P^o-3S$	0-1	1-3	2.22E+02	3.76E-02	7.60E-03	-1.425	C	2
61.397	141 631	1 770 380	$2s2p-2p3p$	$3P^o-3S$	1-1	3-3	5.70E+02	3.22E-02	1.95E-02	-1.015	B	2
61.490	144 091	1 770 380	$2s2p-2p3p$	$3P^o-3S$	2-1	5-3	5.94E+02	2.02E-02	2.04E-02	-0.996	B	2
61.921?	140 504	1 755 470?	$2s2p-2p3p$	$3P^o-3D$	0-1	1-3	4.63E+02	7.99E-02	1.63E-02	-1.097	B	2
61.924	144 091	1 758 970	$2s2p-2p3p$	$3P^o-3D$	2-3	5-7	8.11E+02	6.53E-02	6.66E-02	-0.486	B	2
61.926?	141 631	1 756 470?	$2s2p-2p3p$	$3P^o-3D$	1-2	3-5	6.32E+02	6.05E-02	3.70E-02	-0.741	B	2
61.964?	141 631	1 755 470?	$2s2p-2p3p$	$3P^o-3D$	1-1	3-3	2.90E+02	1.67E-02	1.02E-02	-1.301	B	2
62.020?	144 091	1 756 470?	$2s2p-2p3p$	$3P^o-3D$	2-2	5-5	1.72E+02	9.90E-03	1.01E-02	-1.305	B	2
62.059?	144 091	1 755 470?	$2s2p-2p3p$	$3P^o-3D$	2-1	5-3	1.89E+01	6.56E-04	6.70E-04	-2.484	C	2
62.204	140 504	1 748 120	$2s2p-2p3p$	$3P^o-1P$	0-1	1-3	6.86E+00	1.19E-03	2.45E-04	-2.923	D	2
62.248	141 631	1 748 120	$2s2p-2p3p$	$3P^o-1P$	1-1	3-3	2.54E+01	1.48E-03	9.07E-04	-2.354	D	2
62.60	0	1 597 500	$2s^2-2s3p$	$1S-3P^o$	0-1	1-3	5.23E+01	9.22E-03	1.90E-03	-2.035	B	1,4
62.751	0	1 593 600	$2s^2-2s3p$	$1S-1P^o$	0-1	1-3	3.02E+03	5.35E-01	1.11E-01	-0.272	A	1
63.733	499 633	2 068 680	$2p^2-2s4p$	$1S-1P^o$	0-1	1-3	8.05E+01	1.47E-02	3.08E-03	-1.833	D	3,LS
65.609	271 687	1 795 870	$2s2p-2p3p$	$1P^o-1D$	1-2	3-5	2.40E+03	2.59E-01	1.68E-01	-0.110	B	2
66.096	141 631	1 654 580	$2s2p-2s3d$	$3P^o-1D$	1-2	3-5	2.22E-01	2.42E-05	1.58E-05	-4.139	C	1
66.204	144 091	1 654 580	$2s2p-2s3d$	$3P^o-1D$	2-2	5-5	3.24E-02	2.13E-06	2.32E-06	-4.972	D	1
66.300	271 687	1 779 990	$2s2p-2p3p$	$1P^o-3P$	1-2	3-5	5.35E+00	5.88E-04	3.85E-04	-2.754	D	2
66.357	271 687	1 778 690	$2s2p-2p3p$	$1P^o-3P$	1-1	3-3	8.16E-01	5.38E-05	3.53E-05	-3.792	D	2
66.725	271 687	1 770 380	$2s2p-2p3p$	$1P^o-3S$	1-1	3-3	6.38E+00	4.26E-04	2.81E-04	-2.893	D	2
67.090	140 504	1 631 040	$2s2p-2s3d$	$3P^o-3D$	0-1	1-3	3.46E+03	7.00E-01	1.55E-01	-0.155	A	1
67.135	141 631	1 631 170	$2s2p-2s3d$	$3P^o-3D$	1-2	3-5	4.66E+03	5.25E-01	3.48E-01	0.197	A	1
67.141	141 631	1 631 040	$2s2p-2s3d$	$3P^o-3D$	1-1	3-3	2.59E+03	1.75E-01	1.16E-01	-0.280	A	1
67.239	144 091	1 631 320	$2s2p-2s3d$	$3P^o-3D$	2-3	5-7	6.19E+03	5.87E-01	6.50E-01	0.468	A	1
67.246	144 091	1 631 170	$2s2p-2s3d$	$3P^o-3D$	2-2	5-5	1.55E+03	1.05E-01	1.16E-01	-0.280	A	1
67.252	144 091	1 631 040	$2s2p-2s3d$	$3P^o-3D$	2-1	5-3	1.72E+02	7.01E-03	7.76E-03	-1.455	B	1
67.350?	271 687	1 756 470?	$2s2p-2p3p$	$1P^o-3D$	1-2	3-5	8.91E-01	1.01E-04	6.72E-05	-3.519	D	2
67.395?	271 687	1 755 470?	$2s2p-2p3p$	$1P^o-3D$	1-1	3-3	5.59E+01	3.81E-03	2.53E-03	-1.942	D	2
67.731	271 687	1 748 120	$2s2p-2p3p$	$1P^o-1P$	1-1	3-3	1.70E+03	1.17E-01	7.80E-02	-0.456	B	2
67.764	365 856	1 841 560	$2p^2-2p3d$	$3P-1P^o$	0-1	1-3	5.11E+00	1.05E-03	2.35E-04	-2.977	D	2
67.824	367 159	1 841 560	$2p^2-2p3d$	$3P-1P^o$	1-1	3-3	1.68E+00	1.16E-04	7.76E-05	-3.459	D	2

Mg IX—Continued

λ Ritz (\AA)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10^8 s^{-1})	f_{ik}	S (a.u.)	$\log g_i f$	Acc.	Ref.
68.243	369 330	1 834 690	$2p^2-2p3d$	$^3P-^1F$	2-3	5-7	1.31E+00	1.28E-04	1.44E-04	-3.194	D	2
68.949	365 856	1 816 210	$2p^2-2p3d$	$^3P-^3P$	0-1	1-3	7.96E+02	1.70E-01	3.86E-02	-0.769	B	2
69.011	367 159	1 816 210	$2p^2-2p3d$	$^3P-^3P$	1-1	3-3	1.49E+03	1.06E-01	7.26E-02	-0.496	B	2
69.058	367 159	1 815 220	$2p^2-2p3d$	$^3P-^3P$	1-2	3-5	2.78E+02	3.31E-02	2.26E-02	-1.003	B	2
69.114	369 330	1 816 210	$2p^2-2p3d$	$^3P-^3P$	2-1	5-3	1.80E+03	7.75E-02	8.81E-02	-0.412	B	2
69.162	369 330	1 815 220	$2p^2-2p3d$	$^3P-^3P$	2-2	5-5	3.85E+03	2.76E-01	3.14E-01	0.140	B	2
69.374	365 856	1 807 320	$2p^2-2p3d$	$^3P-^3D$	0-1	1-3	4.80E+03	1.04E+00	2.37E-01	0.017	B	2
69.411	367 159	1 807 860	$2p^2-2p3d$	$^3P-^3D$	1-2	3-5	6.45E+03	7.76E-01	5.32E-01	0.367	B	2
69.437	367 159	1 807 320	$2p^2-2p3d$	$^3P-^3D$	1-1	3-3	2.72E+03	1.96E-01	1.35E-01	-0.230	B	2
69.467	369 330	1 808 860	$2p^2-2p3d$	$^3P-^3D$	2-3	5-7	7.64E+03	7.74E-01	8.85E-01	0.588	B	2
69.515	369 330	1 807 860	$2p^2-2p3d$	$^3P-^3D$	2-2	5-5	1.07E+03	7.73E-02	8.85E-02	-0.413	B	2
69.542	369 330	1 807 320	$2p^2-2p3d$	$^3P-^3D$	2-1	5-3	8.79E+01	3.82E-03	4.38E-03	-1.719	C	2
69.616	405 100	1 841 560	$2p^2-2p3d$	$^1D-^1P$	2-1	5-3	2.82E+02	1.23E-02	1.41E-02	-1.211	B	2
69.950	405 100	1 834 690	$2p^2-2p3d$	$^1D-^1F$	2-3	5-7	9.05E+03	9.29E-01	1.07E+00	0.667	B	2
70.300	367 159	1 789 640	$2p^2-2p3d$	$^3P-^1D$	1-2	3-5	1.70E+01	2.10E-03	1.46E-03	-2.200	D	2
70.407	369 330	1 789 640	$2p^2-2p3d$	$^3P-^1D$	2-2	5-5	4.27E+00	3.18E-04	3.68E-04	-2.799	D	2
70.599	141 631	1 558 080	$2s2p-2s3s$	$^3P-^1S$	1-0	3-1	2.38E-02	5.93E-07	4.13E-07	-5.750	E	1
70.866	405 100	1 816 210	$2p^2-2p3d$	$^1D-^3P$	2-1	5-3	1.15E+00	5.17E-05	6.04E-05	-3.587	D	2
70.916	405 100	1 815 220	$2p^2-2p3d$	$^1D-^3P$	2-2	5-5	1.82E+01	1.37E-03	1.60E-03	-2.164	D	2
71.237	405 100	1 808 860	$2p^2-2p3d$	$^1D-^3D$	2-3	5-7	5.03E-01	5.36E-05	6.29E-05	-3.572	D	2
71.288	405 100	1 807 860	$2p^2-2p3d$	$^1D-^3D$	2-2	5-5	1.28E-01	9.76E-06	1.15E-05	-4.312	D	2
71.315	405 100	1 807 320	$2p^2-2p3d$	$^1D-^3D$	2-1	5-3	1.18E+00	5.40E-05	6.34E-05	-3.569	D	2
71.842	140 504	1 532 450	$2s2p-2s3s$	$^3P-^3S$	0-1	1-3	1.46E+02	3.39E-02	8.03E-03	-1.469	B	1
71.900	141 631	1 532 450	$2s2p-2s3s$	$^3P-^3S$	1-1	3-3	4.39E+02	3.40E-02	2.42E-02	-0.991	A	1
72.027	144 091	1 532 450	$2s2p-2s3s$	$^3P-^3S$	2-1	5-3	7.34E+02	3.42E-02	4.06E-02	-0.766	A	1
72.226	405 100	1 789 640	$2p^2-2p3d$	$^1D-^1D$	2-2	5-5	2.11E+03	1.65E-01	1.96E-01	-0.083	B	2
72.312	271 687	1 654 580	$2s2p-2s3d$	$^1P-^1D$	1-2	3-5	4.05E+03	5.29E-01	3.78E-01	0.200	A	1
72.612	365 856	1 743 040	$2p^2-2p3s$	$^3P-^1P$	0-1	1-3	4.51E-01	1.07E-04	2.56E-05	-3.971	D	2
72.681	367 159	1 743 040	$2p^2-2p3s$	$^3P-^1P$	1-1	3-3	7.63E-01	6.04E-05	4.34E-05	-3.742	D	2
73.557	271 687	1 631 170	$2s2p-2s3d$	$^1P-^3D$	1-2	3-5	2.28E-01	3.09E-05	2.24E-05	-4.033	C	1
73.564	271 687	1 631 040	$2s2p-2s3d$	$^1P-^3D$	1-1	3-3	4.32E-01	3.50E-05	2.55E-05	-3.978	C	1
74.253	367 159	1 713 900	$2p^2-2p3s$	$^3P-^3P$	1-2	3-5	2.67E+02	3.68E-02	2.70E-02	-0.957	B	2
74.328	365 856	1 711 250	$2p^2-2p3s$	$^3P-^3P$	0-1	1-3	3.48E+02	8.65E-02	2.12E-02	-1.063	B	2
74.373	369 330	1 713 900	$2p^2-2p3s$	$^3P-^3P$	2-2	5-5	7.85E+02	6.51E-02	7.97E-02	-0.487	B	2
74.400	367 159	1 711 250	$2p^2-2p3s$	$^3P-^3P$	1-1	3-3	2.56E+02	2.13E-02	1.56E-02	-1.195	B	2
74.461	367 159	1 710 140	$2p^2-2p3s$	$^3P-^3P$	1-0	3-1	1.03E+03	2.86E-02	2.10E-02	-1.066	B	2
74.520	369 330	1 711 250	$2p^2-2p3s$	$^3P-^3P$	2-1	5-3	4.33E+02	2.16E-02	2.65E-02	-0.966	B	2
74.520	499 633	1 841 560	$2p^2-2p3d$	$^1S-^1P$	0-1	1-3	4.97E+03	1.24E+00	3.05E-01	0.094	B	2
74.742	405 100	1 743 040	$2p^2-2p3s$	$^1D-^1P$	2-1	5-3	7.89E+02	3.96E-02	4.88E-02	-0.703	B	2
75.955	499 633	1 816 210	$2p^2-2p3d$	$^1S-^3P$	0-1	1-3	1.55E+00	4.01E-04	1.00E-04	-3.396	D	2
76.406	405 100	1 713 900	$2p^2-2p3s$	$^1D-^3P$	2-2	5-5	9.32E-01	8.16E-05	1.03E-04	-3.390	D	2
76.471	499 633	1 807 320	$2p^2-2p3d$	$^1S-^3D$	0-1	1-3	2.70E+00	7.10E-04	1.79E-04	-3.148	D	2
76.561	405 100	1 711 250	$2p^2-2p3s$	$^1D-^3P$	2-1	5-3	4.02E-01	2.12E-05	2.67E-05	-3.975	D	2
77.737	271 687	1 558 080	$2s2p-2s3s$	$^1P-^1S$	1-0	3-1	4.22E+02	1.27E-02	9.78E-03	-1.418	B	1
79.317	271 687	1 532 450	$2s2p-2s3s$	$^1P-^3S$	1-1	3-3	9.28E-02	8.75E-06	6.86E-06	-4.581	D	1
80.424	499 633	1 743 040	$2p^2-2p3s$	$^1S-^1P$	0-1	1-3	3.07E+02	8.94E-02	2.37E-02	-1.049	B	2
81.19	365 856	1 597 500	$2p^2-2s3p$	$^3P-^3P$	0-1	1-3	4.07E+00	1.21E-03	3.23E-04	-2.918	B	1
81.28	367 159	1 597 500	$2p^2-2s3p$	$^3P-^3P$	1-0	3-1	1.18E+01	3.88E-04	3.12E-04	-2.934	B	1
81.28	367 159	1 597 500	$2p^2-2s3p$	$^3P-^3P$	1-1	3-3	2.97E+00	2.94E-04	2.36E-04	-3.055	B	1
81.28	367 159	1 597 500	$2p^2-2s3p$	$^3P-^3P$	1-2	3-5	3.26E+00	5.38E-04	4.32E-04	-2.792	B	1
81.42	369 330	1 597 500	$2p^2-2s3p$	$^3P-^3P$	2-2	5-5	9.56E+00	9.50E-04	1.27E-03	-2.323	B	1
81.42	369 330	1 597 500	$2p^2-2s3p$	$^3P-^3P$	2-1	5-3	4.45E+00	2.65E-04	3.56E-04	-2.877	B	1
81.450	365 856	1 593 600	$2p^2-2s3p$	$^3P-^1P$	0-1	1-3	2.86E-02	8.53E-06	2.29E-06	-5.069	D	1
81.537	367 159	1 593 600	$2p^2-2s3p$	$^3P-^1P$	1-1	3-3	7.21E-02	7.19E-06	5.79E-06	-4.666	D	1
81.681	369 330	1 593 600	$2p^2-2s3p$	$^3P-^1P$	2-1	5-3	9.46E-01	5.68E-05	7.63E-05	-3.547	C	1
82.534	499 633	1 711 250	$2p^2-2p3s$	$^1S-^3P$	0-1	1-3	2.93E-01	8.99E-05	2.44E-05	-4.046	D	2
83.86	405 100	1 597 500	$2p^2-2s3p$	$^1D-^3P$	2-2	5-5	1.54E-02	1.63E-06	2.25E-06	-5.089	D	1
83.86	405 100	1 597 500	$2p^2-2s3p$	$^1D-^3P$	2-1	5-3	3.19E+00	2.02E-04	2.79E-04	-2.996	C	1
84.140	405 100	1 593 600	$2p^2-2s3p$	$^1D-^1P$	2-1	5-3	1.50E+02	9.54E-03	1.32E-02	-1.321	A	1
91.09	499 633	1 597 500	$2p^2-2s3p$	$^1S-^3P$	0-1	1-3	7.05E-02	2.63E-05	7.89E-06	-4.580	D	1
91.410	499 633	1 593 600	$2p^2-2s3p$	$^1S-^1P$	0-1	1-3	6.27E+00	2.35E-03	7.09E-04	-2.628	B	1
110.782	1 558 080	2 460 750	$2s3s-2s7p$	$^1S-^1P$	0-1	1-3	2.65E+01	1.46E-02	5.33E-03	-1.836	D	3,LS
115.023	1 593 600	2 462 990	$2s3p-2s7d$	$^1P-^1D$	1-2	3-5	7.71E+01	2.55E-02	2.90E-02	-1.116	C	3,LS
117.240	1 593 600	2 446 550	$2s3p-2p5p$	$^1P-^1D$	1-2	3-5	9.84E+00	3.38E-03	3.91E-03	-1.994	D	3,LS

Mg IX—Continued

λ Ritz (\AA)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10^8 s^{-1})	f_{ik}	S (a.u.)	$\log g_i f$	Acc.	Ref.
119.891	1 558 080	2 392 170	2s3s-2s6p	$^1S-^1P$	0-1	1-3	5.85E+01	3.78E-02	1.49E-02	-1.423	C	3,LS
121.884	1 631 170	2 451 620	2s3d-2p5d	$^3D-^3D^o$	2-3	5-7	6.22E-02	1.94E-05	3.89E-05	-4.013	E	3,LS
121.907	1 631 320	2 451 620	2s3d-2p5d	$^3D-^3D^o$	3-3	7-7	4.94E-01	1.10E-04	3.09E-04	-3.114	E	3,LS
124.043	1 654 580	2 460 750	2s3d-2s7p	$^1D-^1P$	2-1	5-3	3.74E+00	5.18E-04	1.06E-03	-2.587	D	3,LS
124.395	1 593 600	2 397 490	2s3p-2s6d	$^1P-^1D$	1-2	3-5	1.29E+02	4.97E-02	6.11E-02	-0.827	C	3,LS
125.008	1 654 580	2 454 530	2s3d-2p5d	$^1D-^1F$	2-3	5-7	1.28E+00	4.20E-04	8.64E-04	-2.678	E	3,LS
133.147	1 711 250	2 462 300	2p3s-2s7d	$^3P^o-^3D$	1-2	3-5	2.13E-01	9.42E-05	1.24E-04	-3.549	E	3,LS
133.618	1 713 900	2 462 300	2p3s-2s7d	$^3P^o-^3D$	2-3	5-7	2.80E-01	1.05E-04	2.31E-04	-3.280	E	3,LS
133.618	1 713 900	2 462 300	2p3s-2s7d	$^3P^o-^3D$	2-2	5-5	7.02E-02	1.88E-05	4.14E-05	-4.027	E	3,LS
135.577	1 654 580	2 392 170	2s3d-2s6p	$^1D-^1P$	2-1	5-3	1.06E+01	1.75E-03	3.91E-03	-2.058	D	3,LS
136.482	1 711 250	2 443 950	2p3s-2p5p	$^3P^o-^3P$	1-2	3-5	2.47E+01	1.15E-02	1.55E-02	-1.462	C	3,LS
136.977	1 713 900	2 443 950	2p3s-2p5p	$^3P^o-^3P$	2-2	5-5	7.32E+01	2.06E-02	4.65E-02	-0.987	C	3,LS
138.353	1 558 080	2 280 870	2s3s-2s5p	$^1S-^1P$	0-1	1-3	8.07E+01	6.95E-02	3.17E-02	-1.158	C	3,LS
138.899	1 743 040	2 462 990	2p3s-2s7d	$^1P^o-^1D$	1-2	3-5	5.35E+00	2.58E-03	3.54E-03	-2.111	D	3,LS
139.369	1 532 450	2 249 970	2s3s-2p4d	$^3S-^3P$	1-1	3-3	1.60E+01	4.67E-03	6.43E-03	-1.854	D	3,LS
139.470	1 532 450	2 249 450	2s3s-2p4d	$^3S-^3P$	1-2	3-5	1.60E+01	7.78E-03	1.07E-02	-1.632	C	3,LS
140.325	1 748 120	2 460 750	2p3p-2s7p	$^1P-^1P^o$	1-1	3-3	3.79E+00	1.12E-03	1.55E-03	-2.474	D	3,LS
142.144	1 743 040	2 446 550	2p3s-2p5p	$^1P^o-^1D$	1-2	3-5	8.93E+01	4.51E-02	6.33E-02	-0.869	C	3,LS
142.810	1 558 080	2 258 310	2s3s-2p4d	$^1S-^1P$	0-1	1-3	1.45E+01	1.33E-02	6.25E-03	-1.876	D	3,LS
143.854	1 756 470	2 451 620	2p3p-2p5d	$^3D-^3D^o$	2-3	5-7	6.93E+00	3.01E-03	7.13E-03	-1.822	D	3,LS
143.930	1 593 600	2 288 380	2s3p-2s5d	$^1P^o-^1D$	1-2	3-5	2.18E+02	1.13E-01	1.61E-01	-0.470	B	3,LS
144.373	1 758 970	2 451 620	2p3p-2p5d	$^3D-^3D^o$	3-3	7-7	5.47E+01	1.71E-02	5.69E-02	-0.922	C	3,LS
148.511	1 789 640	2 462 990	2p3d-2s7d	$^1D^o-^1D$	2-2	5-5	6.32E-02	2.09E-05	5.11E-05	-3.981	E	3,LS
148.892	1 779 990	2 451 620	2p3p-2p5p	$^3P^o-^3D$	2-3	5-7	1.74E+02	8.11E-02	1.99E-01	-0.392	B	3,LS
150.403	1 793 870	2 460 750	2p3p-2s7p	$^1D-^1P$	2-1	5-3	1.49E+00	3.03E-04	7.50E-04	-2.820	E	3,LS
151.823	1 795 870	2 454 530	2p3p-2p5d	$^1D-^1F$	2-3	5-7	2.04E+02	9.87E-02	2.47E-01	-0.307	B	3,LS
152.228	1 789 640	2 446 550	2p3d-2p5p	$^1D^o-^1D$	2-2	5-5	1.15E-01	4.00E-05	1.00E-04	-3.699	E	3,LS
152.676	1 807 320	2 462 300	2p3d-2s7d	$^3D^o-^3D$	1-2	3-5	5.05E-02	2.94E-05	4.43E-05	-4.055	E	3,LS
152.800	1 743 040	2 397 490	2p3s-2s6d	$^1P^o-^1D$	1-2	3-5	4.90E+00	2.86E-03	4.32E-03	-2.067	D	3,LS
152.802	1 807 860	2 462 300	2p3d-2s7d	$^3D^o-^3D$	2-3	5-7	3.73E-02	1.83E-05	4.60E-05	-4.039	E	3,LS
152.802	1 807 860	2 462 300	2p3d-2s7d	$^3D^o-^3D$	2-2	5-5	2.34E-01	8.19E-05	2.06E-04	-3.388	E	3,LS
153.036	1 808 860	2 462 300	2p3d-2s7d	$^3D^o-^3D$	3-2	7-5	5.22E-02	1.31E-05	4.62E-05	-4.038	E	3,LS
153.036	1 808 860	2 462 300	2p3d-2s7d	$^3D^o-^3D$	3-3	7-7	2.96E-01	1.04E-04	3.67E-04	-3.138	E	3,LS
154.445	1 593 600	2 241 080	2s3p-2p4p	$^1P^o-^1D$	1-2	3-5	1.21E+01	7.20E-03	1.10E-02	-1.666	C	3,LS
154.540	1 815 220	2 462 300	2p3d-2s7d	$^3P^o-^3D$	2-3	5-7	3.47E+00	1.74E-03	4.43E-03	-2.060	D	3,LS
154.540	1 815 220	2 462 300	2p3d-2s7d	$^3P^o-^3D$	2-2	5-5	8.69E-01	3.11E-04	7.91E-04	-2.808	E	3,LS
154.777	1 816 210	2 462 300	2p3d-2s7d	$^3P^o-^3D$	1-2	3-5	2.59E+00	1.55E-03	2.37E-03	-2.333	D	3,LS
155.267	1 748 120	2 392 170	2p3p-2s6p	$^1P-^1P^o$	1-1	3-3	1.43E-01	5.16E-05	7.91E-05	-3.810	E	3,LS
157.077	1 807 320	2 443 950	2p3d-2p5p	$^3D^o-^3P$	1-2	3-5	1.24E-01	7.65E-05	1.19E-04	-3.639	E	3,LS
157.210	1 807 860	2 443 950	2p3d-2p5p	$^3D^o-^3P$	2-2	5-5	1.86E+00	6.88E-04	1.78E-03	-2.463	D	3,LS
157.458	1 808 860	2 443 950	2p3d-2p5p	$^3D^o-^3P$	3-2	7-5	1.04E+01	2.75E-03	9.98E-03	-1.716	D	3,LS
159.051	1 815 220	2 443 950	2p3d-2p5p	$^3P^o-^3P$	2-2	5-5	8.65E-01	3.28E-04	8.59E-04	-2.785	E	3,LS
159.302	1 816 210	2 443 950	2p3d-2p5p	$^3P^o-^3P$	1-2	3-5	2.87E-01	1.82E-04	2.86E-04	-3.263	E	3,LS
159.670	1 654 580	2 280 870	2s3d-2s5p	$^1D-^1P^o$	2-1	5-3	1.45E+01	3.32E-03	8.73E-03	-1.780	D	3,LS
160.919	1 841 560	2 462 990	2p3d-2s7d	$^1P^o-^1D$	1-2	3-5	2.91E-01	1.88E-04	2.99E-04	-3.249	E	3,LS
161.569	1 631 040	2 249 970	2s3d-2p4d	$^3D-^3P^o$	1-1	3-3	9.86E-01	3.86E-04	6.16E-04	-2.936	E	3,LS
161.603	1 631 170	2 249 970	2s3d-2p4d	$^3D-^3P^o$	2-1	5-3	2.96E+00	6.95E-04	1.85E-03	-2.459	D	3,LS
161.705	1 631 040	2 249 450	2s3d-2p4d	$^3D-^3P^o$	1-2	3-5	3.93E-02	2.57E-05	4.10E-05	-4.113	E	3,LS
161.739	1 631 170	2 249 450	2s3d-2p4d	$^3D-^3P^o$	2-2	5-5	5.89E-01	2.31E-04	6.15E-04	-2.937	E	3,LS
161.778	1 631 320	2 249 450	2s3d-2p4d	$^3D-^3P^o$	3-2	7-5	3.30E+00	9.25E-04	3.45E-03	-2.189	D	3,LS
162.054	1 631 170	2 248 250	2s3d-2p4d	$^3D-^3D^o$	2-3	5-7	1.05E-01	5.77E-05	1.54E-04	-3.540	E	3,LS
162.093	1 631 320	2 248 250	2s3d-2p4d	$^3D-^3D^o$	3-3	7-7	8.33E-01	3.28E-04	1.23E-03	-2.639	D	3,LS
163.436	1 834 690	2 446 550	2p3d-2p5p	$^1F^o-^1D$	3-2	7-5	1.52E+01	4.35E-03	1.64E-02	-1.516	C	3,LS
164.514	1 789 640	2 397 490	2p3d-2s6d	$^1D^o-^1D$	2-2	5-5	6.04E-02	2.45E-05	6.64E-05	-3.912	E	3,LS
165.292	1 841 560	2 446 550	2p3d-2p5p	$^1P^o-^1D$	1-2	3-5	5.71E+00	3.90E-03	6.37E-03	-1.932	D	3,LS
165.637	1 654 580	2 258 310	2s3d-2p4d	$^1D-^1P^o$	2-1	5-3	4.38E+00	1.08E-03	2.95E-03	-2.268	D	3,LS
166.116	1 654 580	2 256 570	2s3d-2p4d	$^1D-^1F$	2-3	5-7	1.01E-02	5.82E-06	1.59E-05	-4.536	E	3,LS
167.701	1 795 870	2 392 170	2p3p-2s6p	$^1D-^1P^o$	2-1	5-3	1.08E+00	2.72E-04	7.51E-04	-2.866	E	3,LS
170.465	1 654 580	2 241 210	2s3d-2p4d	$^1D-^1D^o$	2-2	5-5	3.56E+00	1.55E-03	4.35E-03	-2.111	D	3,LS

11. Mg x

Z=12

Li I isoelectronic sequence

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

Ionization energy $2\,964\,060\text{ cm}^{-1}$ (367.50 eV)

Data are tabulated for 73 transitions in the range from 35 to 171 Å. Transition probabilities for the $2s-np$ ($n=3-5$) and $2p-ns$ ($n=3-5$), and $2p-nd$ ($n=3-5$) transitions are taken from calculations by Zhang *et al.*,¹ which are based on the Dirac equation with relativistic Dirac-Fock-Slater central potential. The other results are taken from the Opacity Project (OP).² OP provides, however, only multiplet values. These have been decomposed into fine-structure components assuming LS coupling, as indicated by the notation LS in the reference column.

References

¹H. L. Zhang, D. H. Sampson, and C. J. Fontes, *At. Data Nucl. Data Tables* **44**, 31 (1990).

²<http://legacy.gsfc.nasa.gov/topbase/> (downloaded 28 July, 1995).

Mg x

λ Ritz (Å)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10^8 s^{-1})	f_{ik}	S (a.u.)	$\log g_i f$	Acc.	Ref.
35.366	0	2 827 600	$1s^2(1S)2s-1s^2(1S)9p$	$2S-2P^\circ$	1/2-3/2	2-4	8.83E+01	3.31E-03	7.71E-04	-2.179	B	2,LS
35.366	0	2 827 600	$1s^2(1S)2s-1s^2(1S)9p$	$2S-2P^\circ$	1/2-1/2	2-2	8.80E+01	1.65E-03	3.84E-04	-2.481	B	2,LS
35.827	0	2 791 200	$1s^2(1S)2s-1s^2(1S)8p$	$2S-2P^\circ$	1/2-1/2	2-2	1.26E+02	2.42E-03	5.71E-04	-2.315	B	2,LS
35.827	0	2 791 200	$1s^2(1S)2s-1s^2(1S)8p$	$2S-2P^\circ$	1/2-3/2	2-4	1.26E+02	4.84E-03	1.14E-03	-2.014	B	2,LS
36.518	0	2 738 400	$1s^2(1S)2s-1s^2(1S)7p$	$2S-2P^\circ$	1/2-3/2	2-4	1.87E+02	7.48E-03	1.80E-03	-1.825	B	2,LS
36.518	0	2 738 400	$1s^2(1S)2s-1s^2(1S)7p$	$2S-2P^\circ$	1/2-1/2	2-2	1.87E+02	3.74E-03	8.99E-04	-2.126	B	2,LS
37.644	0	2 656 500	$1s^2(1S)2s-1s^2(1S)6p$	$2S-2P^\circ$	1/2-1/2	2-2	2.97E+02	6.30E-03	1.56E-03	-1.900	B	2,LS
37.644	0	2 656 500	$1s^2(1S)2s-1s^2(1S)6p$	$2S-2P^\circ$	1/2-3/2	2-4	2.97E+02	1.26E-02	3.12E-03	-1.599	B	2,LS
38.766	160 015	2 739 600	$1s^2(1S)2p-1s^2(1S)7d$	$2P^\circ-2D$	1/2-3/2	2-4	2.82E+02	1.27E-02	3.24E-03	-1.595	B	2,LS
38.826	163 990	2 739 600	$1s^2(1S)2p-1s^2(1S)7d$	$2P^\circ-2D$	3/2-3/2	4-4	5.62E+01	1.27E-03	6.49E-04	-2.294	B	2,LS
38.826	163 990	2 739 600	$1s^2(1S)2p-1s^2(1S)7d$	$2P^\circ-2D$	3/2-5/2	4-6	3.36E+02	1.14E-02	5.83E-03	-1.341	B	2,LS
39.668	0	2 520 900	$1s^2(1S)2s-1s^2(1S)5p$	$2S-2P^\circ$	1/2-1/2	2-2	5.17E+02	1.22E-02	3.19E-03	-1.613	A	1
39.668	0	2 520 900	$1s^2(1S)2s-1s^2(1S)5p$	$2S-2P^\circ$	1/2-3/2	2-4	5.15E+02	2.43E-02	6.35E-03	-1.313	A	1
40.019	160 015	2 658 800	$1s^2(1S)2p-1s^2(1S)6d$	$2P^\circ-2D$	1/2-3/2	2-4	4.62E+02	2.22E-02	5.85E-03	-1.353	B	2,LS
40.083	163 990	2 658 800	$1s^2(1S)2p-1s^2(1S)6d$	$2P^\circ-2D$	3/2-5/2	4-6	5.54E+02	2.00E-02	1.06E-02	-1.097	B	2,LS
40.083	163 990	2 658 800	$1s^2(1S)2p-1s^2(1S)6d$	$2P^\circ-2D$	3/2-3/2	4-4	9.22E+01	2.22E-03	1.17E-03	-2.052	B	2,LS
42.294	160 015	2 524 400	$1s^2(1S)2p-1s^2(1S)5d$	$2P^\circ-2D$	1/2-3/2	2-4	8.61E+02	4.62E-02	1.29E-02	-1.034	A	1
42.362	163 990	2 524 600	$1s^2(1S)2p-1s^2(1S)5d$	$2P^\circ-2D$	3/2-5/2	4-6	1.03E+03	4.16E-02	2.32E-02	-0.779	A	1
42.366	163 990	2 524 400	$1s^2(1S)2p-1s^2(1S)5d$	$2P^\circ-2D$	3/2-3/2	4-4	1.71E+02	4.60E-03	2.57E-03	-1.735	B	1
42.525	160 015	2 511 600	$1s^2(1S)2p-1s^2(1S)5s$	$2P^\circ-2S$	1/2-1/2	2-2	6.27E+01	1.70E-03	4.76E-04	-2.469	B	1
42.597	163 990	2 511 600	$1s^2(1S)2p-1s^2(1S)5s$	$2P^\circ-2S$	3/2-1/2	4-2	1.32E+02	1.80E-03	1.01E-03	-2.143	B	1
44.050	0	2 270 150	$1s^2(1S)2s-1s^2(1S)4p$	$2S-2P^\circ$	1/2-1/2	2-2	9.94E+02	2.89E-02	8.38E-03	-1.238	A	1
44.050	0	2 270 150	$1s^2(1S)2s-1s^2(1S)4p$	$2S-2P^\circ$	1/2-3/2	2-4	9.88E+02	5.75E-02	1.67E-02	-0.939	A	1
47.229	160 015	2 277 380	$1s^2(1S)2p-1s^2(1S)4d$	$2P^\circ-2D$	1/2-3/2	2-4	1.85E+03	1.24E-01	3.84E-02	-0.607	A	1
47.310	163 990	2 277 700	$1s^2(1S)2p-1s^2(1S)4d$	$2P^\circ-2D$	3/2-5/2	4-6	2.21E+03	1.11E-01	6.94E-02	-0.351	A	1
47.317	163 990	2 277 380	$1s^2(1S)2p-1s^2(1S)4d$	$2P^\circ-2D$	3/2-3/2	4-4	3.66E+02	1.23E-02	7.66E-03	-1.308	A	1
47.788	160 015	[2 252 600]	$1s^2(1S)2p-1s^2(1S)4s$	$2P^\circ-2S$	1/2-1/2	2-2	1.31E+02	4.50E-03	1.42E-03	-2.046	B	1
47.879	163 990	[2 252 600]	$1s^2(1S)2p-1s^2(1S)4s$	$2P^\circ-2S$	3/2-1/2	4-2	2.62E+02	4.50E-03	2.84E-03	-1.745	B	1
57.876	0	1 727 830	$1s^2(1S)2s-1s^2(1S)3p$	$2S-2P^\circ$	1/2-3/2	2-4	2.15E+03	2.16E-01	8.24E-02	-0.364	A	1
57.920	0	1 726 520	$1s^2(1S)2s-1s^2(1S)3p$	$2S-2P^\circ$	1/2-1/2	2-2	2.17E+03	1.09E-01	4.16E-02	-0.661	A	1
63.152	160 015	1 743 500	$1s^2(1S)2p-1s^2(1S)3d$	$2P^\circ-2D$	1/2-3/2	2-4	5.37E+03	6.42E-01	2.67E-01	0.108	A	1
63.295	163 990	1 743 890	$1s^2(1S)2p-1s^2(1S)3d$	$2P^\circ-2D$	3/2-5/2	4-6	6.43E+03	5.80E-01	4.83E-01	0.365	A	1
63.311	163 990	1 743 500	$1s^2(1S)2p-1s^2(1S)3d$	$2P^\circ-2D$	3/2-3/2	4-4	1.07E+03	6.44E-02	5.37E-02	-0.589	A	1
65.673	160 015	1 682 700	$1s^2(1S)2p-1s^2(1S)3s$	$2P^\circ-2S$	1/2-1/2	2-2	3.29E+02	2.13E-02	9.21E-03	-1.371	A	1
65.845	163 990	1 682 700	$1s^2(1S)2p-1s^2(1S)3s$	$2P^\circ-2S$	3/2-1/2	4-2	6.65E+02	2.16E-02	1.87E-02	-1.063	A	1
87.344	1 682 700	2 827 600	$1s^2(1S)3s-1s^2(1S)9p$	$2S-2P^\circ$	1/2-1/2	2-2	2.73E+01	3.12E-03	1.79E-03	-2.205	B	2,LS
87.344	1 682 700	2 827 600	$1s^2(1S)3s-1s^2(1S)9p$	$2S-2P^\circ$	1/2-3/2	2-4	2.73E+01	6.24E-03	3.59E-03	-1.904	B	2,LS
90.212	1 682 700	2 791 200	$1s^2(1S)3s-1s^2(1S)8p$	$2S-2P^\circ$	1/2-3/2	2-4	3.87E+01	9.45E-03	5.61E-03	-1.724	B	2,LS
90.212	1 682 700	2 791 200	$1s^2(1S)3s-1s^2(1S)8p$	$2S-2P^\circ$	1/2-1/2	2-2	3.87E+01	4.72E-03	2.80E-03	-2.025	B	2,LS
92.242	1 743 500	2 827 600	$1s^2(1S)3d-1s^2(1S)9p$	$2D-2P^\circ$	3/2-3/2	4-4	2.49E-01	3.18E-05	3.86E-05	-3.896	C	2,LS
92.242	1 743 500	2 827 600	$1s^2(1S)3d-1s^2(1S)9p$	$2D-2P^\circ$	3/2-1/2	4-2	2.49E+00	1.59E-04	1.93E-04	-3.197	C	2,LS

Mg x-Continued

λ Ritz (\AA)	E_i (cm^{-1})	E_k (cm^{-1})	Configurations	Terms	J_i-J_k	g_i-g_k	A_{ki} (10^8 s^{-1})	f_{ik}	S (a.u.)	$\log g_i f$	Acc.	Ref.
92.276	1 743 890	2 827 600	$1s^2(^1S)3d-1s^2(^1S)9p$	$^2D-^2P^o$	5/2-3/2	6-4	2.24E+00	1.91E-04	3.48E-04	-2.941	C	2,LS
94.724	1 682 700	2 738 400	$1s^2(^1S)3s-1s^2(^1S)7p$	$^2S-^2P^o$	1/2-3/2	2-4	5.76E+01	1.55E-02	9.67E-03	-1.509	B	2,LS
94.724	1 682 700	2 738 400	$1s^2(^1S)3s-1s^2(^1S)7p$	$^2S-^2P^o$	1/2-1/2	2-2	5.76E+01	7.75E-03	4.83E-03	-1.810	B	2,LS
95.447	1 743 500	2 791 200	$1s^2(^1S)3d-1s^2(^1S)8p$	$^2D-^2P^o$	3/2-1/2	4-2	3.65E+00	2.49E-04	3.13E-04	-3.002	C	2,LS
95.447	1 743 500	2 791 200	$1s^2(^1S)3d-1s^2(^1S)8p$	$^2D-^2P^o$	3/2-3/2	4-4	3.65E-01	4.98E-05	6.26E-05	-3.701	C	2,LS
95.483	1 743 890	2 791 200	$1s^2(^1S)3d-1s^2(^1S)8p$	$^2D-^2P^o$	5/2-3/2	6-4	3.28E+00	2.99E-04	5.64E-04	-2.746	C	2,LS
98.709	1 726 520	2 739 600	$1s^2(^1S)3p-1s^2(^1S)7d$	$^2P^o-^2D$	1/2-3/2	2-4	9.93E+01	2.90E-02	1.89E-02	-1.237	B	2,LS
98.837	1 727 830	2 739 600	$1s^2(^1S)3p-1s^2(^1S)7d$	$^2P^o-^2D$	3/2-5/2	4-6	1.19E+02	2.61E-02	3.40E-02	-0.981	B	2,LS
98.837	1 727 830	2 739 600	$1s^2(^1S)3p-1s^2(^1S)7d$	$^2P^o-^2D$	3/2-3/2	4-4	1.98E+01	2.90E-03	3.77E-03	-1.936	B	2,LS
100.513	1 743 500	2 738 400	$1s^2(^1S)3d-1s^2(^1S)7p$	$^2D-^2P^o$	3/2-1/2	4-2	5.67E+00	4.29E-04	5.68E-04	-2.765	C	2,LS
100.513	1 743 500	2 738 400	$1s^2(^1S)3d-1s^2(^1S)7p$	$^2D-^2P^o$	3/2-3/2	4-4	5.67E-01	8.58E-05	1.14E-04	-3.464	C	2,LS
100.552	1 743 890	2 738 400	$1s^2(^1S)3d-1s^2(^1S)7p$	$^2D-^2P^o$	5/2-3/2	6-4	5.10E+00	5.15E-04	1.02E-03	-2.510	C	2,LS
102.690	1 682 700	2 656 500	$1s^2(^1S)3s-1s^2(^1S)6p$	$^2S-^2P^o$	1/2-1/2	2-2	9.05E+01	1.43E-02	9.67E-03	-1.544	B	2,LS
102.690	1 682 700	2 656 500	$1s^2(^1S)3s-1s^2(^1S)6p$	$^2S-^2P^o$	1/2-3/2	2-4	9.01E+01	2.85E-02	1.93E-02	-1.244	B	2,LS
107.264	1 726 520	2 658 800	$1s^2(^1S)3p-1s^2(^1S)6d$	$^2P^o-^2D$	1/2-3/2	2-4	1.61E+02	5.56E-02	3.93E-02	-0.954	B	2,LS
107.415	1 727 830	2 658 800	$1s^2(^1S)3p-1s^2(^1S)6d$	$^2P^o-^2D$	3/2-5/2	4-6	1.93E+02	5.00E-02	7.07E-02	-0.699	B	2,LS
107.415	1 727 830	2 658 800	$1s^2(^1S)3p-1s^2(^1S)6d$	$^2P^o-^2D$	3/2-3/2	4-4	3.21E+01	5.55E-03	7.85E-03	-1.654	B	2,LS
109.529	1 743 500	2 656 500	$1s^2(^1S)3d-1s^2(^1S)6p$	$^2D-^2P^o$	3/2-3/2	4-4	9.56E-01	1.72E-04	2.48E-04	-3.162	C	2,LS
109.529	1 743 500	2 656 500	$1s^2(^1S)3d-1s^2(^1S)6p$	$^2D-^2P^o$	3/2-1/2	4-2	9.54E+00	8.58E-04	1.24E-03	-2.464	C	2,LS
109.576	1 743 890	2 656 500	$1s^2(^1S)3d-1s^2(^1S)6p$	$^2D-^2P^o$	5/2-3/2	6-4	8.58E+00	1.03E-03	2.23E-03	-2.209	B	2,LS
119.303	1 682 700	2 520 900	$1s^2(^1S)3s-1s^2(^1S)5p$	$^2S-^2P^o$	1/2-3/2	2-4	1.52E+02	6.48E-02	5.09E-02	-0.887	B	2,LS
119.303	1 682 700	2 520 900	$1s^2(^1S)3s-1s^2(^1S)5p$	$^2S-^2P^o$	1/2-1/2	2-2	1.52E+02	3.24E-02	2.55E-02	-1.188	B	2,LS
125.332	1 726 520	2 524 400	$1s^2(^1S)3p-1s^2(^1S)5d$	$^2P^o-^2D$	1/2-3/2	2-4	2.89E+02	1.36E-01	1.12E-01	-0.565	B	2,LS
125.507	1 727 830	2 524 600	$1s^2(^1S)3p-1s^2(^1S)5d$	$^2P^o-^2D$	3/2-5/2	4-6	3.44E+02	1.22E-01	2.02E-01	-0.312	B	2,LS
125.538	1 727 830	2 524 400	$1s^2(^1S)3p-1s^2(^1S)5d$	$^2P^o-^2D$	3/2-3/2	4-4	5.76E+01	1.36E-02	2.25E-02	-1.264	B	2,LS
127.376	1 726 520	2 511 600	$1s^2(^1S)3p-1s^2(^1S)5s$	$^2P^o-^2S$	1/2-1/2	2-2	4.44E+01	1.08E-02	9.06E-03	-1.666	B	2,LS
127.588	1 727 830	2 511 600	$1s^2(^1S)3p-1s^2(^1S)5s$	$^2P^o-^2S$	3/2-1/2	4-2	8.77E+01	1.07E-02	1.80E-02	-1.369	B	2,LS
128.634	1 743 500	2 520 900	$1s^2(^1S)3d-1s^2(^1S)5p$	$^2D-^2P^o$	3/2-3/2	4-4	1.83E+00	4.53E-04	7.67E-04	-2.742	C	2,LS
128.634	1 743 500	2 520 900	$1s^2(^1S)3d-1s^2(^1S)5p$	$^2D-^2P^o$	3/2-1/2	4-2	1.83E+01	2.27E-03	3.85E-03	-2.042	B	2,LS
128.698	1 743 890	2 520 900	$1s^2(^1S)3d-1s^2(^1S)5p$	$^2D-^2P^o$	5/2-3/2	6-4	1.64E+01	2.72E-03	6.92E-03	-1.787	B	2,LS
170.227	1 682 700	2 270 150	$1s^2(^1S)3s-1s^2(^1S)4p$	$^2S-^2P^o$	1/2-3/2	2-4	2.68E+02	2.33E-01	2.61E-01	-0.332	B	2,LS
170.227	1 682 700	2 270 150	$1s^2(^1S)3s-1s^2(^1S)4p$	$^2S-^2P^o$	1/2-1/2	2-2	2.69E+02	1.17E-01	1.31E-01	-0.631	B	2,LS