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Wavelengths, Transition Probabilities, and Energy Levels for the Spectra of Strontium Ions (Sr II through Sr XXXVIII)

J. E. Sansonetti[a)]

National Institute of Standards and Technology, Gaithersburg, Maryland 20899, USA

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Energy levels, with designations and uncertainties, have been compiled for the spectra of strontium (Z=38) ions from singly ionized to hydrogen-like. Wavelengths with classifications, intensities, and transition probabilities are also tabulated. In addition, ground states and ionization energies are listed. For many ionization stages experimental data are available; however for those for which only theoretical calculations or fitted values exist, these are reported. There are a few ionization stages for which only a calculated ionization potential is available. © *2012 by the U.S. Secretary of Commerce on behalf of the United States. All rights reserved.* [doi: 10.1063/1.3659413]

Key words: atomic spectra; energy levels; isotopes; strontium; transition probabilities; wave numbers; wavelengths; wavelength tables.

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[a)]Author to whom correspondence should be addressed. Electronic mail: jean.sansonetti@nist.gov.

List of Tables

1. Introduction

In this compilation, the literature for each ionization stage of strontium from singly ionized (Sr II) to hydrogen-like (Sr XXXVIII) has been reviewed and lists of the most accurate wavelengths and energy levels have been assembled. A brief summary of the history of research for each spectrum and details regarding the data included in this compilation is given. Where available, experimental data are presented; however when only fitted data or theoretically calculated data are available, these are included. To clarify which data are not obtained by experimental observation, wavelengths, energy levels, and ionization energies that have been obtained by isoelectronic fitting are indicated by being enclosed in square brackets, while theoretical values are presented enclosed in parentheses.

Strontium has four stable isotopes. In general, the available data are for naturally occurring strontium, which is predominantly ^{88}Sr with a small admixture of ^{86}Sr and ^{87}Sr and trace amounts of ^{84}Sr. There are a few cases in which data are available for specific isotopes and this is noted in the discussion for the ionization stage involved. More information about the isotopes of strontium, as well as the spectrum and energy levels of the neutral atom, has been published by Sansonetti and Nave [10SAN/NAV]. The spectroscopic data are also available on the NIST Atomic Spectroscopic Database

(URL: http://physics.nist.gov/asd). In this compilation only information for ionized strontium is gathered.

2. Energy Level Tables

The energy level tables contain the following information:

(a) **Configuration** of the energy level. For visual clarity only the first member of the term has the configuration written out. All members of the same term are grouped together and set off from other terms by a blank line.
(b) **Term** is listed for each energy level. There are several kinds of coupling indicated for the energy levels. Most configurations are described in *LS* coupling, with the state of the core indicated in parentheses when needed. Some levels are given in either J_1j or J_1J_2 coupling, with the angular momentum of the core and of the final electron or group of electrons in parentheses. Levels best described by pair-coupling, or J_1l, notation, have *J*-value of the core state listed in the configuration. The term contains the value of $K = J_1 + l$ in square brackets, where l is the orbital angular momentum of the final electron.
(c) ***J* value** is also listed for each energy level.
(d) **Level value** is given in the customary units of cm^{-1}. As reported by Mohr and Taylor [05MOH/TAY], the unit cm^{-1} is related to the SI unit for energy, the joule, by $1\ \text{cm}^{-1} = 1.986\,445\,61(34) \times 10^{-23}$ J. As discussed above, values enclosed in parentheses are calculated and those in square brackets are obtained by isoelectronic fitting.
(e) **Uncertainty** of the level value, also given in cm^{-1}.
(f) **Leading percentages** of components of the level configurations are included if there is significant configuration mixing and if they are available.
(g) **Reference** refers to the source of the energy level value. The list of references can be found at the end of the discussion for that ionization stage.

3. Wavelength Tables

In the tables of wavelengths the following information is included:

(a) **Wavelengths** are reported in units of Ångströms, with all lines with wave numbers below 5000 cm^{-1} or above 50 000 cm^{-1} given as vacuum wavelengths and those between 5000 cm^{-1} and 50 000 cm^{-1} as air wavelengths. The index of refraction used for conversions is obtained using the 3-term formula of Peck and Reeder [72PEC/REE]. Occasionally wavelengths calculated from optimized energy levels (known as Ritz wavelengths) are given because they are much more accurate than experimentally observed ones, in which case the line code is given as "*R*."
(b) **Uncertainty** of the wavelength measurement or calculation is also in Ångströms.
(c) **Wave number** of the transition is given in units of cm^{-1}.
(d) **Intensity** as observed by the original investigator, except as noted in the discussion for a particular spectrum. Since in general there is no way to normalize data taken from different sources this means that intensities taken from different sources are not on the same scale and should not be used for comparison. Intensities marked by an asterisk indicate that the measured spectral line either is blended with another line or has two identifications. In either case the intensity cannot be assumed to be entirely due to the transition indicated in the classification.
(e) **Line Codes** indicate additional descriptive information about the appearance of the spectral line. In general, the character of a line depends on the light source used and the resolution of the spectrometer. For ease of use we utilize a uniform set of line codes to describe the line characteristics provided by various authors. They have the following meanings:
bl = blend
c = complex
d = line consists of two unresolved lines
h = hazy
l = shaded to longer wavelengths
m = masked by another line
p = perturbed by close line
q = asymmetric
r = easily self-reversed
R = Ritz wavelength
s = shaded to shorter wavelengths
u = unresolved shoulder on strong line
w = wide
= = multiply classified line
* = intensity may be affected by nearby line
? = classification is uncertain
(f) **Transition probabilities** (A_{ki}) for transitions from the upper state (k) to the lower (i) are given in units of s^{-1}. Exponential notation is used for these values; thus, for example, 3.2E + 5 stands for 3.2×10^5. Virtually all transition probabilities are theoretically calculated. The method used for each spectrum is discussed in the text.
(g) **Lower level** and **Upper level** indicate the classification given for the transition.
(h) λ **Ref**. and A_{ki} **Ref**. indicate the references for the wavelength measurement and transition probability, respectively. The list of references for each ionization stage is located at the bottom of the discussion for that particular spectrum.

4. Uncertainties and Significant Figures

The energy levels, wavelengths, and ionization energies reported here are given with uncertainties, as reported by the original authors. In the case of energy levels it was sometimes necessary to calculate uncertainties from the reported uncertainties of the transitions involved. Many theoretical papers do not contain estimates of the uncertainty of the reported values and hence we are unable to include that information. The estimated uncertainty of the wave number of a transition can be calculated from that of the wavelength. Most transition probabilities contained herein are calculated values whose uncertainties are unknown. Since the scatter between transition probabilities from different sources is substantial (virtually always greater than 10%), it would be prudent to check the details of the calculations in the original source if the uncertainty of the transition probability is important.

In general, the number of significant figures included here is such that the uncertainty in the last digit is between 1 and 20. If a decimal point follows a value which is a whole number this implies that the last digit given is significant, even if it is a zero. If there is no decimal point the uncertainty is greater than 20.

5. References for the Introduction

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6. Spectroscopic Data for Ions

6.1. Sr II

Rb isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}4s^24p^65s^2\ S_{1/2}$
Ionization energy $88\,964.5 \pm 1.0\,\mathrm{cm}^{-1}$; $11.030\,19 \pm 0.000\,12$ eV

A few transitions of the Sr II spectrum have been observed by many research groups, though the vast majority of lines have only been reported in one or two papers. In 1929, Selwyn [29SEL] reported seven lines between 1612 Å and 2052 Å. Infrared measurements by Meggers [33MEG] located the three infrared transitions between 4*d* and 5*p* levels. Saunders *et al.* [34SAU/SCH] combined all the prior research with their own extensive set of measurements to produce a list of 93 transitions upon which most of the current understanding of the spectrum is based. The accuracy of 14 of those lines was improved by Sullivan [38SUL], by using a Fabry-Perot interferometer. All of this was analyzed by Moore [71MOO] to produce a consistent set of energy levels, including most of the values included in Table 1. Since then there has been relatively little improvement in the analysis of the spectrum. Persson and Pira [78PER/PIR] measured fine structure intervals of ^{2}F levels and Pinnington *et al.* [95PIN/BER] reported the values of each of the 4*f* energy levels. The wavelength of the line at 2152 Å was measured by Schierle and Thorne [95SCH/THO] on a Fourier transform spectrometer. The strongest transitions of the Sr II spectrum are seen in stellar spectra, but usually the laboratory measurements are more accurate. An exception is the 1995 Å line, which was observed by Samain [95SAM] in the solar spectrum. In Table 2 the wavelengths for the resonance lines from the 4*d* levels are calculated from the energy levels. The ionization energy has been calculated by Lange *et al.* [91LAN/KHA], who measured resonance transitions of the *ns*, *nd*, *nf*, and *ng* for $25 \leq n \leq 86$ using resonant multistep laser excitation. In the course of their experiment, Lange *et al.* [91LAN/KHA] also obtained improved values for the 7*p* levels.

Transition probabilities are available for some of the lines in the Sr II spectrum. By combining lifetime measurements of the 5*p* and 4*d* states with branching ratios obtained by the intensities of fluorescing lines, Gallagher [67GAL] obtained values with estimated uncertainties of 4% for 5*s* - 5*p* transitions and 20% for 4*d* - 5*p*. The 5*p* lifetimes were measured to greater accuracy by the fast beam laser method by Pinnington *et al.* [95PIN/BER], with reported uncertainties of 1%. Chichkov and Shevelko [81CHI/SHE] calculated transition probabilities for resonance lines from higher members of the *np* series, with results for 5*p* agreeing with our retained values to within 10%. The transition probabilities for the 4*d*–4*f* transitions were obtained by Brage *et al.* [98BRA/WAH] using multiconfiguration Hartree-Fock *ab initio* calculations. Although Brage *et al.* [98BRA/WAH] did not estimate the uncertainty of their values, the lifetime they calculated for the 5*p* ^{2}P levels was within 4% of experimentally determined values. The $4p^65p^2\mathrm{P}^\circ_{3/2} - 4p^66s^2\mathrm{S}_{1/2}$ transition probability was taken from Pirronello and Strazzulla [81PIR/STR], whose values for the 5*p* resonance transitions agree with our retained values to within 20%. Lifetime measurements for the 4*d* levels by Biémont *et al.* [00BIE/LID] yield oscillator strengths for the forbidden transitions between 4*d* and 5*s*. The wavelengths given in Table 2 for those transitions have been calculated from the energy levels.

Because of its possible use in a next-generation optical clock, the resonance transition from the metastable $4d\,^2\mathrm{D}_{5/2}$ state of Sr II has been the subject of intense interest. The possibility was discussed by Madej and Sankey [90MAD/SAN], who also measured the lifetime of the upper state. Barwood *et al.* [95BAR/EDW] provided the first high-accuracy measurement of the frequency in ^{88}Sr. The uncertainty was reduced to ±0.2 kHz by Bernard *et al.* [99BER/MAD], then to ±0.10 kHz by Margolis *et al.* [03MAR/HUA] and to ±0.05 kHz by Madej *et al.* [04MAD/BER]. The error estimate for the value reported by Margolis *et al.* [04MAR/BAR] and retained in Table 3 is ±0.0015 kHz. The lifetime of the metastable $4d\,^2\mathrm{D}_{3/2}$ and $4d\,^2\mathrm{D}_{5/2}$ levels in ^{88}Sr has also been measured and is listed in Table 3. Mannervik *et al.* [99MAN/LID] obtained the retained value of the $4d\,^2\mathrm{D}_{3/2}$ lifetime using an ion beam, while Letchumanan *et al.* [05LET/WIL] measured that of the $4d\,^2\mathrm{D}_{5/2}$ level using single laser-cooled ions.

Because ^{87}Sr has a non-zero nuclear magnetic moment ($I = 9/2$ Bohr magnetons), its spectrum features considerable hyperfine structure. The splitting of the ground state has been measured by Wada *et al.* [92WAD/SUN] and, to greater precision, Sunaoshi *et al.* [93SUN/FUK]. The hyperfine constants of the $4d\,^2\mathrm{D}_{5/2}$ level are from Barwood *et al.* [03BAR/GAO], who measured transitions from hyperfine sublevels of $4d\,^2\mathrm{D}_{5/2}$ to the $5s\,^2\mathrm{S}_{1/2}$, $F = 5$ sublevel of the ground state. Buchinger *et al.* [90BUC/RAM] reported the hyperfine constants for the $5p\,^2\mathrm{P}_{3/2}$ level.

Klein *et al.* [00KLE/BAR] first proposed an optical clock based on the transition between $m_F = 0$ sublevels of the $4d\,^2\mathrm{D}_{5/2}$ and $5s\,^2\mathrm{S}_{1/2}$ states of ^{87}Sr because of independence from magnetic field effects to first order. The implementation was reported in Boshier *et al.* [00BOS/BAR]. The resonance frequency retained in Table 4 is calculated using the Barwood *et al.* [03BAR/GAO] measurements discussed above. We have combined them with the hyperfine splitting of the ground state to yield a center-of-gravity frequency for the resonance transition.

6.1.1. References for Sr II

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TABLE 1. Energy levels of Sr II

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$4p^65s$	^2S	1/2	0.00		
$4p^64d$	^2D	3/2	14 555.90	0.01	71MOO
	^2D	5/2	14 836.24	0.01	71MOO
$4p^65p$	$^2P°$	1/2	23 715.19	0.01	71MOO
	$^2P°$	3/2	24 516.65	0.01	71MOO
$4p^66s$	^2S	1/2	47 736.53	0.01	71MOO
$4p^65d$	^2D	3/2	53 286.31	0.01	71MOO
	^2D	5/2	53 372.97	0.01	71MOO
$4p^66p$	$^2P°$	1/2	55 769.7	0.3	71MOO
	$^2P°$	3/2	56 057.9	0.3	71MOO
$4p^64f$	$^2F°$	7/2	60 990.04	0.10	95PIN/BER
	$^2F°$	5/2	60 991.34	0.10	95PIN/BER
$4p^67s$	^2S	1/2	64 964.10	0.02	71MOO
$4p^66d$	^2D	3/2	67 522.87	0.02	71MOO
	^2D	5/2	67 563.15	0.02	71MOO
$4p^67p$	$^2P°$	1/2	68 679.34	0.02	91LAN/KHA
	$^2P°$	3/2	68 817.12	0.02	91LAN/KHA
$4p^65f$	$^2F°$	7/2	71 065.8	0.1	71MOO
	$^2F°$	5/2	71 065.8	0.1	71MOO
$4p^65g$	^2G	7/2	71 357.8	0.1	71MOO
	^2G	9/2	71 357.8	0.1	71MOO
$4p^68s$	^2S	1/2	73 237.1	0.1	71MOO
$4p^67d$	^2D	3/2	74 621.3	0.1	71MOO
	^2D	5/2	74 643.1	0.1	71MOO
$4p^68p$	$^2P°$	1/2			71MOO
	$^2P°$	3/2	75 311.8	0.1	71MOO
$4p^66f$	$^2F°$	7/2	76 553.4	0.1	71MOO
	$^2F°$	5/2	76 553.4	0.1	71MOO

TABLE 1. Energy levels of Sr II—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$4p^6 6g$	^2G	7/2	76 737.7	0.1	71MOO
	^2G	9/2	76 737.7	0.1	71MOO
$4p^6 9s$	^2S	1/2	77 857.6	0.1	71MOO
$4p^6 8d$	^2D	3/2	78 688.8	0.1	71MOO
	^2D	5/2	78 702.4	0.1	71MOO
$4p^6 7f$	$^2F^\circ$	7/2	79 861.3	0.2	71MOO
	$^2F^\circ$	5/2	79 861.3	0.2	71MOO
$4p^6 7g$	^2G	7/2	79 984.3	0.1	71MOO
	^2G	9/2	79 984.3	0.1	71MOO
$4p^6 10s$	^2S	1/2	80 701.8	0.1	71MOO
$4p^6 9d$	^2D	3/2	81 240.2	0.1	71MOO
	^2D	5/2	81 249.0	0.1	71MOO
$4p^6 8f$	$^2F^\circ$	7/2	82 005.9	0.2	71MOO
	$^2F^\circ$	5/2	82 005.9	0.2	71MOO
$4p^6 8g$	^2G	7/2	82 090.4	0.1	71MOO
	^2G	9/2	82 090.4	0.1	71MOO
$4p^6 11s$	^2S	1/2	82 576.1	0.2	71MOO
$4p^6 10d$	^2D	5/2	82 951.5	0.3	71MOO
	^2D	3/2	82 953.9	0.3	71MOO
$4p^6 9f$	$^2F^\circ$	7/2	83 472.7	0.2	71MOO
	$^2F^\circ$	5/2	83 472.7	0.2	71MOO
$4p^6 12s$	^2S	1/2	83 879.9	0.2	71MOO
$4p^6 11d$	^2D	3/2	84 142.0	0.3	71MOO
	^2D	5/2	84 146.9	0.3	71MOO
$4p^6 10f$	$^2F^\circ$	7/2	84 521.0	0.2	71MOO
	$^2F^\circ$	5/2	84 521.0	0.2	71MOO
$4p^6 10g$	^2G	7/2	84 567.0	0.2	71MOO
	^2G	9/2	84 567.0	0.2	71MOO
$4p^6 13s$	^2S	1/2	84 819.1	0.2	71MOO
$4p^6 12d$	^2D	3/2	85 015.5	0.3	71MOO
	^2D	5/2	85 015.5	0.3	71MOO
$4p^6 11f$	$^2F^\circ$	7/2	85 294.8	0.2	71MOO
	$^2F^\circ$	5/2	85 294.8	0.2	71MOO
$4p^6 11g$	^2G	7/2	85 330.3	0.2	71MOO
	^2G	9/2	85 330.3	0.2	71MOO
$4p^6 13d$	^2D	3/2	85 668.8	0.3	71MOO
	^2D	5/2	85 668.8	0.3	71MOO
$4p^6 12f$	$^2F^\circ$	7/2	85 883.9	0.2	71MOO
	$^2F^\circ$	5/2	85 883.9	0.2	71MOO
$4p^6 14d$	^2D	3/2	86 174.6	0.3	71MOO
	^2D	5/2	86 174.6	0.3	71MOO
Sr III ($4p^6\ ^1S_0$)	*Limit*	—	88 965.18	0.02	91LAN/KHA

TABLE 2. Observed spectral lines of Sr II

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Line Int. Code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum								
1482.69	0.02	67 444.1			$4p^64d\ ^2D_{3/2}$	$4p^68f\ ^2F^\circ_{5/2}$	34SAU/SCH	
1488.99	0.02	67 159.0			$4p^64d\ ^2D_{5/2}$	$4p^68f\ ^2F^\circ_{5/2,7/2}$	34SAU/SCH	
1531.28	0.02	65 305.0			$4p^64d\ ^2D_{3/2}$	$4p^67f\ ^2F^\circ_{5/2}$	34SAU/SCH	
1537.91	0.02	65 023.3			$4p^64d\ ^2D_{5/2}$	$4p^67f\ ^2F^\circ_{5/2,7/2}$	34SAU/SCH	
1612.98	0.02	61 997.0			$4p^64d\ ^2D_{3/2}$	$4p^66f\ ^2F^\circ_{5/2}$	34SAU/SCH	
1620.35	0.02	61 715.1			$4p^64d\ ^2D_{5/2}$	$4p^66f\ ^2F^\circ_{5/2,7/2}$	34SAU/SCH	
1762.81	0.02	56 727.6			$4p^65p\ ^2P^\circ_{3/2}$	$4p^69d\ ^2D_{5/2}$	34SAU/SCH	
1769.63	0.02	56 509.0			$4p^64d\ ^2D_{3/2}$	$4p^65f\ ^2F^\circ_{5/2}$	34SAU/SCH	
1778.39	0.02	56 230.6			$4p^64d\ ^2D_{5/2}$	$4p^65f\ ^2F^\circ_{5/2,7/2}$	34SAU/SCH	
1783.97	0.02	56 054.3		2.9E+4	$4p^65s\ ^2S_{1/2}$	$4p^66p\ ^2P^\circ_{3/2}$	34SAU/SCH	81CHI/SHE
1793.10	0.02	55 769.3		6.4E+5	$4p^65s\ ^2S_{1/2}$	$4p^66p\ ^2P^\circ_{1/2}$	34SAU/SCH	81CHI/SHE
1819.01	0.02	54 974.9			$4p^65p\ ^2P^\circ_{3/2}$	$4p^68d\ ^2D_{5/2}$	34SAU/SCH	
1845.45	0.02	54 187.3			$4p^65p\ ^2P^\circ_{3/2}$	$4p^68d\ ^2D_{3/2}$	34SAU/SCH	
1846.76	0.02	54 148.8			$4p^65p\ ^2P^\circ_{1/2}$	$4p^69s\ ^2S_{1/2}$	34SAU/SCH	
1874.90	0.02	53 336.2			$4p^65p\ ^2P^\circ_{3/2}$	$4p^69s\ ^2S_{1/2}$	34SAU/SCH	
1964.43	0.02	50 905.3			$4p^65p\ ^2P^\circ_{1/2}$	$4p^67d\ ^2D_{3/2}$	34SAU/SCH	
1995.00	0.02	50 125.3			$4p^65p\ ^2P^\circ_{3/2}$	$4p^67d\ ^2D_{5/2}$	34SAU/SCH	
1995.799	0.003	50 105.25			$4p^65p\ ^2P^\circ_{3/2}$	$4p^67d\ ^2D_{3/2}$	95SAM	
Air								
2019.31	0.02	49 522.0			$4p^65p\ ^2P^\circ_{1/2}$	$4p^68s\ ^2S_{1/2}$	34SAU/SCH	
2052.54	0.02	48 720.1			$4p^65p\ ^2P^\circ_{3/2}$	$4p^68s\ ^2S_{1/2}$	34SAU/SCH	
2152.840	0.004	46 435.67		2.36E+8	$4p^64d\ ^2D_{3/2}$	$4p^64f\ ^2F^\circ_{5/2}$	95SCH/THO	98BRA/WAH
2165.928	0.002	46 155.10		1.68E+7	$4p^64d\ ^2D_{5/2}$	$4p^64f\ ^2F^\circ_{5/2}$	95PIN/BER	98BRA/WAH
2165.989	0.002	46 153.80		2.53E+8	$4p^64d\ ^2D_{5/2}$	$4p^64f\ ^2F^\circ_{7/2}$	95PIN/BER	98BRA/WAH
2281.999	0.001	43 807.707			$4p^65p\ ^2P^\circ_{1/2}$	$4p^66d\ ^2D_{3/2}$	38SUL	
2322.355	0.001	43 046.519			$4p^65p\ ^2P^\circ_{3/2}$	$4p^66d\ ^2D_{5/2}$	38SUL	
2324.52	0.02	43 006.43			$4p^65p\ ^2P^\circ_{3/2}$	$4p^66d\ ^2D_{3/2}$	34SAU/SCH	

TABLE 2. Observed spectral lines of Sr II—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Line Int. Code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
2423.569	0.001	41 248.935			$4p^65p\ ^2P^{\circ}_{1/2}$	$4p^67s\ ^2S_{1/2}$	38SUL	
2425.17	0.02	41 221.6			$4p^64d\ ^2D_{5/2}$	$4p^66p\ ^2P^{\circ}_{3/2}$	34SAU/SCH	
2425.62	0.02	41 214.0			$4p^64d\ ^2D_{3/2}$	$4p^66p\ ^2P^{\circ}_{1/2}$	34SAU/SCH	
2471.597	0.001	40 447.446	20		$4p^65p\ ^2P^{\circ}_{3/2}$	$4p^67s\ ^2S_{1/2}$	38SUL	
3075.01	0.02	32 510.8			$4p^65d\ ^2D_{5/2}$	$4p^612f\ ^2F^{\circ}_{5/2,7/2}$	34SAU/SCH	
3123.30	0.02	32 008.2			$4p^65d\ ^2D_{3/2}$	$4p^611f\ ^2F^{\circ}_{5/2}$	34SAU/SCH	
3131.75	0.02	31 921.8			$4p^65d\ ^2D_{5/2}$	$4p^611f\ ^2F^{\circ}_{5/2,7/2}$	34SAU/SCH	
3200.68	0.02	31 234.4			$4p^65d\ ^2D_{3/2}$	$4p^610f\ ^2F^{\circ}_{5/2}$	34SAU/SCH	
3209.56	0.02	31 147.9			$4p^65d\ ^2D_{5/2}$	$4p^610f\ ^2F^{\circ}_{5/2,7/2}$	34SAU/SCH	
3288.00	0.02	30 404.9			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^614d\ ^2D_{3/2}$	34SAU/SCH	
3311.85	0.02	30 185.9			$4p^65d\ ^2D_{3/2}$	$4p^69f\ ^2F^{\circ}_{5/2}$	34SAU/SCH	
3321.34	0.02	30 099.7			$4p^65d\ ^2D_{5/2}$	$4p^69f\ ^2F^{\circ}_{5/2,7/2}$	34SAU/SCH	
3343.46	0.02	29 900.6			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^613d\ ^2D_{3/2}$	34SAU/SCH	
3376.35	0.02	29 609.3			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^613d\ ^2D_{3/2,5/2}$	34SAU/SCH	
3380.711	0.001	29 571.085	50		$4p^65p\ ^2P^{\circ}_{1/2}$	$4p^65d\ ^2D_{3/2}$	38SUL	
3418.36	0.02	29 245.4			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^612d\ ^2D_{3/2}$	34SAU/SCH	
3441.43	0.02	29 049.4			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^613s\ ^2S_{1/2}$	34SAU/SCH	
3452.30	0.02	28 957.9			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^612d\ ^2D_{3/2,5/2}$	34SAU/SCH	
3464.457	0.001	28 856.288	50		$4p^65p\ ^2P^{\circ}_{3/2}$	$4p^65d\ ^2D_{5/2}$	38SUL	
3474.887	0.001	28 769.677	10		$4p^65p\ ^2P^{\circ}_{3/2}$	$4p^65d\ ^2D_{3/2}$	38SUL	
3480.97	0.02	28 719.4			$4p^65d\ ^2D_{3/2}$	$4p^68f\ ^2F^{\circ}_{5/2}$	34SAU/SCH	
3491.62	0.02	28 631.8			$4p^65d\ ^2D_{5/2}$	$4p^68f\ ^2F^{\circ}_{5/2,7/2}$	34SAU/SCH	
3523.51	0.02	28 372.3			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^611d\ ^2D_{3/2}$	34SAU/SCH	
3556.44	0.02	28 110.0			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^612s\ ^2S_{1/2}$	34SAU/SCH	
3559.10	0.02	28 088.7			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^611d\ ^2D_{3/2,5/2}$	34SAU/SCH	
3593.23	0.02	27 822.2			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^612s\ ^2S_{1/2}$	34SAU/SCH	
3677.56	0.02	27 184.2			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^610d\ ^2D_{3/2}$	34SAU/SCH	
3717.30	0.02	26 993.6			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^610d\ ^2D_{5/2}$	34SAU/SCH	
3729.34	0.02	26 806.8			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^611s\ ^2S_{1/2}$	34SAU/SCH	
3762.00	0.02	26 574.1			$4p^65d\ ^2D_{3/2}$	$4p^67f\ ^2F^{\circ}_{5/2}$	34SAU/SCH	
3769.99	0.02	26 517.8			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^611s\ ^2S_{1/2}$	34SAU/SCH	
3774.22	0.02	26 488.0			$4p^65d\ ^2D_{5/2}$	$4p^67f\ ^2F^{\circ}_{5/2,7/2}$	34SAU/SCH	
3925.00	0.02	25 470.5			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^69d\ ^2D_{3/2}$	34SAU/SCH	
4009.75	0.02	24 932.2			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^610s\ ^2S_{1/2}$	34SAU/SCH	
4056.67	0.02	24 643.8			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p\ ^610s\ ^2S_{1/2}$	34SAU/SCH	
4077.714	0.001	24 516.622	400 r	1.41(2)E+8	$4p^65s\ ^2S_{1/2}$	$4p^65p\ ^2P^{\circ}_{3/2}$	38SUL	95PIN/BER,67GAL
4107.55	0.02	24 338.6			$4p^64f\ ^2F^{\circ}_{5/2,7/2}$	$4p^611g\ ^2G_{7/2,9/2}$	34SAU/SCH	
4161.796	0.001	24 021.316	30		$4p^65p\ ^2P^{\circ}_{1/2}$	$4p^66s\ ^2S_{1/2}$	38SUL	
4215.524	0.001	23 715.163	300 r	1.26(3)E+8	$4p^65s\ ^2S_{1/2}$	$4p^65p\ ^2P^{\circ}_{1/2}$	38SUL	95PIN/BER,67GAL
4240.54	0.02	23 575.3			$4p^64f\ ^2F^{\circ}_{5/2,7/2}$	$4p^610g\ ^2G_{7/2,9/2}$	34SAU/SCH	
4296.82	0.02	23 266.5			$4p^65d\ ^2D_{3/2}$	$4p^66f\ ^2F^{\circ}_{5/2}$	34SAU/SCH	
4305.447	0.001	23 219.861	40	1.40E+8	$4p^65p\ ^2P^{\circ}_{3/2}$	$4p^66s\ ^2S_{1/2}$	38SUL	81PIR/STR
4312.74	0.02	23 180.6			$4p^65d\ ^2D_{5/2}$	$4p^66f\ ^2F^{\circ}_{5/2,7/2}$	34SAU/SCH	
4414.84	0.02	22 644.5			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^68d\ ^2D_{5/2}$	34SAU/SCH	
4417.50	0.02	22 630.9			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^68d\ ^2D_{3/2}$	34SAU/SCH	
4526.10	0.02	22 087.8			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^69s\ ^2S_{1/2}$	34SAU/SCH	
4556.89	0.02	21 938.7			$4p^65d\ ^2D_{5/2}$	$4p^68p\ ^2P^{\circ}_{3/2}$	34SAU/SCH	
4585.91	0.02	21 799.8			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^69s\ ^2S_{1/2}$	34SAU/SCH	
4738.30	0.02	21 098.7			$4p^64f\ ^2F^{\circ}_{5/2,7/2}$	$4p^68g\ ^2G_{7/2,9/2}$	34SAU/SCH	
5263.73	0.02	18 992.6			$4p^64f\ ^2F^{\circ}_{5/2,7/2}$	$4p^67g\ ^2G_{7/2,9/2}$	34SAU/SCH	
5303.13	0.02	18 851.5			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^67d\ ^2D_{3/2}$	34SAU/SCH	
5379.13	0.02	18 585.2			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^67d\ ^2D_{5/2}$	34SAU/SCH	
5385.45	0.02	18 563.4			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^67d\ ^2D_{3/2}$	34SAU/SCH	
5622.94	0.02	17 779.3			$4p^65d\ ^2D_{3/2}$	$4p^65f\ ^2F^{\circ}_{5/2}$	34SAU/SCH	
5650.54	0.02	17 692.5			$4p^65d\ ^2D_{5/2}$	$4p^65f\ ^2F^{\circ}_{5/2,7/2}$	34SAU/SCH	
5723.70	0.02	17 466.3			$4p^66p\ ^2P^{\circ}_{1/2}$	$4p^68s\ ^2S_{1/2}$	34SAU/SCH	
5819.00	0.02	17 180.3			$4p^66p\ ^2P^{\circ}_{3/2}$	$4p^68s\ ^2S_{1/2}$	34SAU/SCH	
6349.00	0.02	15 746.1			$4p^64f\ ^2F^{\circ}_{5/2,7/2}$	$4p^66g\ ^2G_{7/2,9/2}$	34SAU/SCH	
6483.17	0.02	15 420.3			$4p^65d\ ^2D_{5/2}$	$4p^67p\ ^2P^{\circ}_{3/2}$	34SAU/SCH	
6509.20	0.02	15 358.6			$4p^65d\ ^2D_{3/2}$	$4p^67p\ ^2P^{\circ}_{1/2}$	34SAU/SCH	
6738.392	0.005	14 836.24	*R*	2.559(10)	$4p^65s\ ^2S_{1/2}$	$4p^64d\ ^2D_{5/2}$	71MOO	05LET/WIL
6868.171	0.005	14 555.90	*R*	2.299(21)	$4p^65s\ ^2S_{1/2}$	$4p^64d\ ^2D_{3/2}$	71MOO	00BIE/LID
9644.2	0.3	10 366.1			$4p^64f\ ^2F^{\circ}_{5/2,7/2}$	$4p^65g\ ^2G_{7/2,9/2}$	34SAU/SCH	

TABLE 2. Observed spectral lines of Sr II—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Line Int. Code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
10 036.654	0.003	9960.749	300	1.0(2)E+6	$4p^64d\ ^2D_{3/2}$	$4p^65p\ ^2P^\circ_{3/2}$	38SUL	67GAL
10 327.309	0.003	9680.412	1000	8.7(15)E+6	$4p^64d\ ^2D_{5/2}$	$4p^65p\ ^2P^\circ_{3/2}$	38SUL	67GAL
10 914.874	0.003	9159.301	200	9.5(20)E+6	$4p^64d\ ^2D_{3/2}$	$4p^65p\ ^2P^\circ_{1/2}$	38SUL	67GAL
12 015.9	0.4	8320.0			$4p^66s\ ^2S_{1/2}$	$4p^66p\ ^2P^\circ_{3/2}$	34SAU/SCH	
12 445.1	0.4	8033.1			$4p^66s\ ^2S_{1/2}$	$4p^66p\ ^2P^\circ_{1/2}$	34SAU/SCH	
12 974.99	0.17	7705.03			$4p^65d\ ^2D_{3/2}$	$4p^64f\ ^2F^\circ_{5/2}$	95PIN/BER	
13 122.58	0.17	7618.37			$4p^65d\ ^2D_{5/2}$	$4p^64f\ ^2F^\circ_{5/2}$	95PIN/BER	
13 124.82	0.17	7617.07			$4p^65d\ ^2D_{5/2}$	$4p^64f\ ^2F^\circ_{7/2}$	95PIN/BER	

TABLE 3. Spectroscopic data for ^{88}Sr II

Configuration	Term	J	Resonance frequency (Hz)	Uncertainty (Hz)	Reference	Lifetime (s)	Lifetime reference
$4p^64d$	^2D	5/2	444 779 044 095 484.6	1.5	04MAR/BAR	390.8(16)	05LET/WIL
		3/2				435.(4)	99MAN/LID

TABLE 4. Spectroscopic data for ^{87}Sr II

Configuration	Term	J	Resonance frequency (MHz)	Uncertainty (MHz)	Reference	Hyperfine A (MHz)	Constants B (MHz)	Hyperfine reference
$4p^65s$	^2S	1/2				−1000.473 673(11)		93SUN/FUK
$4p^64d$	^2D	5/2	444 778 796.106	0.004	03BAR/GAO	2.1743(14)	49.11(6)	03BAR/GAO
$4p^65p$	$^2P^\circ$	3/2				−36.0(4)	88.5(54)	90BUC/RAM

6.2. Sr III

Kr isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}4s^24p^6\ ^1S_0$
Ionization energy $345\,879.0 \pm 1.5$ cm^{-1}; $42.883\,53 \pm 0.000\,18$ eV

The first reported transitions of Sr III were five resonance lines observed by Reader and Epstein [70REA/EPS], who located $J = 1$ levels in the $4p^54d$ and $4p^55s$ configurations. Persson and Valind [71PER/VAL] determined the rest of the $4p^54d$ levels and all of the $4p^54f$ levels, based on sixty $4p^54d$ to $4p^54f$ transitions. They also found four $4p^55f$ and $4p^56f$ levels. Persson and Valind extended the analysis of their data [72PER/VAL] and classified 590 lines in the 350 Å to 9800 Å range. In that same year Reader *et al.* [72REA/EPS] reported an additional eight resonance lines and improved measurements of their earlier transitions. The leading percentages in Table 5 were calculated by Hansen and Persson [73HAN/PER] using the Hartree-Fock method. Also in Table 5 the energy levels are given to two decimal places because, although the absolute uncertainties are 1.0 cm^{-1}, the intervals between levels are more accurate. Persson and Valind [72PER/VAL] found that the average difference between the experimental wavelengths and those calculated from the levels is 0.017 Å for wavelengths above 7000 Å, 0.007 Å in the 2000 Å to 7000 Å range, and 0.003 Å below 2000 Å. The ionization energy given above was determined by Persson and Valind [72PER/VAL] by using a two-parameter polarization formula and configuration average energy values for the $5g$, $6g$, and $6h$ configurations.

In Table 2 of Persson and Valind [72PER/VAL], the wave numbers of four lines between 1037 Å and 1045 Å do not agree with their wavelengths. We have entered the Ritz calculated values of these lines in Table 6. This is indicated by an *R* in the line code. Transition probabilities have been calculated by Loginov and Tuchkin [01LOG/TUC] using wavefunctions calculated semi-empirically using two parametric methods. Since the disagreement between their two methods is frequently greater than 50%, we have not included transition probability information in Table 6.

Although outside the scope of this compilation, we note that McGuinness *et al.* [95MCG/OSU] published 44 classified transitions involving promotion of 3*d* electrons, measured in absorption.

6.2.1 References for Sr III

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TABLE 5. Energy levels of Sr III

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4p^6$	^{1}S	0	0.00			
$4p^5(^2P_{3/2})4d$	$^2[1/2]°$	0	176 434.77	1.0	99% $4p^5(^2P)4d$ ^{3}P	72PER/VAL
	$^2[1/2]°$	1	177 698.19	1.0	96% $4p^5(^2P)4d$ ^{3}P	72PER/VAL
	$^2[3/2]°$	2	180 213.47	1.0	89% $4p^5(^2P)4d$ ^{3}P + 5% $4p^5(^2P_{3/2})5s$ $^2[3/2]$	72PER/VAL
	$^2[7/2]°$	4	183 123.42	1.0	100% $4p^5(^2P)4d$ ^{3}F	72PER/VAL
	$^2[7/2]°$	3	185 105.87	1.0	88% $4p^5(^2P)4d$ ^{3}F + 7% $4p^5(^2P)4d$ ^{1}F	72PER/VAL
	$^2[5/2]°$	2	187 564.70	1.0	78% $4p^5(^2P)4d$ ^{3}F + 13% $4p^5(^2P)4d$ ^{1}D + 9% $4p^5(^2P)4d$ ^{3}D	72PER/VAL
	$^2[5/2]°$	3	193 106.27	1.0	62% $4p^5(^2P)4d$ ^{3}D + 38% $4p^5(^2P)4d$ ^{1}F	72PER/VAL
	$^2[3/2]°$	1	197 225.97	1.0	96% $4p^5(^2P)4d$ ^{3}D	72PER/VAL
$(^2P_{1/2})4d$	$^2[5/2]°$	2	196 290.12	1.0	48% $4p^5(^2P)4d$ ^{1}D + 30% $4p^5(^2P)4d$ ^{3}D + 22% $4p^5(^2P)4d$ ^{3}F	72PER/VAL
	$^2[3/2]°$	2	198 738.14	1.0	55% $4p^5(^2P)4d$ ^{3}D + 36% $4p^5(^2P)4d$ ^{1}D + 8% $4p^5(^2P)4d$ ^{3}P	72PER/VAL
	$^2[5/2]°$	3	199 916.00	1.0	55% $4p^5(^2P)4d$ ^{1}F + 33% $4p^5(^2P)4d$ ^{3}D + 12% $4p^5(^2P)4d$ ^{3}F	72PER/VAL
	$^2[3/2]°$	1	228 708.73	1.0	98% $4p^5(^2P)4d$ ^{1}P	72PER/VAL
$4p^5(^2P_{3/2})5s$	$^2[3/2]°$	2	192 655.86	1.0	94%	72PER/VAL
	$^2[3/2]°$	1	194 411.46	1.0	95%	72PER/VAL
$(^2P_{1/2})5s$	$^2[1/2]°$	0	202 081.34	1.0	99%	72PER/VAL
	$^2[1/2]°$	1	203 342.00	1.0	96%	72PER/VAL
$4p^5(^2P_{3/2})4f$	$^2[3/2]$	1	279 824.21	1.0	98%	72PER/VAL
	$^2[3/2]$	2	280 180.56	1.0	82% + 14% $4p^5(^2P_{3/2})4f$ $^2[5/2]$	72PER/VAL
	$^2[9/2]$	5	280 662.31	1.0	100%	72PER/VAL
	$^2[9/2]$	4	280 806.83	1.0	99%	72PER/VAL
	$^2[5/2]$	3	280 920.71	1.0	67% + 31% $4p^5(^2P_{3/2})6p$ $^2[5/2]$	72PER/VAL
	$^2[5/2]$	2	281 821.37	1.0	78% + 10% $4p^5(^2P_{3/2})4f$ $^2[3/2]$ + 9% $4p^5(^2P_{3/2})6p$ $^2[3/2]$	72PER/VAL
	$^2[7/2]$	3	281 886.39	1.0	99%	72PER/VAL
	$^2[7/2]$	4	281 955.93	1.0	99%	72PER/VAL
$4p^5(^2P_{1/2})4f$	$^2[5/2]$	3	290 733.53	1.0	97%	72PER/VAL
	$^2[7/2]$	3	290 831.39	1.0	99%	72PER/VAL
	$^2[7/2]$	4	290 926.59	1.0	99%	72PER/VAL
	$^2[5/2]$	2	291 211.88	1.0	98%	72PER/VAL
$(^2P_{3/2})5p$	$^2[1/2]$	1	221 795.40	1.0	92% + 7% $4p^5(^2P_{1/2})5p$ $^2[1/2]$	72PER/VAL
	$^2[5/2]$	2	225 310.67	1.0	89% + 10% $4p^5(^2P_{3/2})5p$ $^2[3/2]$	72PER/VAL
	$^2[5/2]$	3	225 843.11	1.0	100%	72PER/VAL
	$^2[3/2]$	1	227 495.38	1.0	96%	72PER/VAL
	$^2[3/2]$	2	228 539.04	1.0	89% + 11% $4p^5(^2P_{3/2})5p$ $^2[5/2]$	72PER/VAL
	$^2[1/2]$	0	232 236.60	1.0	83% + 17% $4p^5(^2P_{1/2})5p$ $^2[1/2]$	72PER/VAL
$(^2P_{1/2})5p$	$^2[3/2]$	1	234 753.44	1.0	93%	72PER/VAL
	$^2[3/2]$	2	236 636.50	1.0	98%	72PER/VAL
	$^2[1/2]$	1	236 855.60	1.0	90% + 7% $4p^5(^2P_{3/2})5p$ $^2[1/2]$	72PER/VAL
	$^2[1/2]$	0	241 000.51	1.0	83% + 17% $4p^5(^2P_{3/2})5p$ $^2[1/2]$	72PER/VAL
$4p^5(^2P_{3/2})5d$	$^2[1/2]°$	0	268 448.63	1.0	100%	72PER/VAL
	$^2[1/2]°$	1	268 960.97	1.0	54% + 30% $4p^5(^2P_{3/2})5d$ $^2[3/2]$ + 15% $4p^5(^2P_{3/2})6s$ $^2[3/2]$	72PER/VAL
	$^2[7/2]°$	4	269 810.66	1.0	100%	72PER/VAL
	$^2[3/2]°$	2	270 011.52	1.0	94%	72PER/VAL
	$^2[7/2]°$	3	270 340.60	1.0	85% + 14% $4p^5(^2P_{3/2})5d$ $^2[5/2]$	72PER/VAL
	$^2[5/2]°$	2	271 164.97	1.0	99%	72PER/VAL
	$^2[5/2]°$	3	271 723.37	1.0	85% + 15% $4p^5(^2P_{3/2})5d$ $^2[7/2]$	72PER/VAL
	$^2[3/2]°$	1	275 109.48	1.0	59% + 24% $4p^5(^2P_{3/2})5d$ $^2[1/2]$ + 17% $4p^5(^2P_{1/2})5d$ $^2[3/2]$	72PER/VAL
$(^2P_{1/2})5d$	$^2[5/2]°$	2	279 794.58	1.0	98%	72PER/VAL
	$^2[3/2]°$	2	280 126.39	1.0	97%	72PER/VAL
	$^2[5/2]°$	3	280 523.88	1.0	99%	72PER/VAL
	$^2[3/2]°$	1	284 397.70	1.0	81% + 11% $4p^5(^2P_{3/2})5d$ $^2[1/2]$ + 8% $4p^5(^2P_{3/2})5d$ $^2[3/2]$	72PER/VAL
$4p^5(^2P_{3/2})5f$	$^2[3/2]$	1	303 474.46	1.0	99%	72PER/VAL
	$^2[3/2]$	2	303 763.69	1.0	82% + 16% $4p^5(^2P_{3/2})5f$ $^2[5/2]$	72PER/VAL
	$^2[9/2]$	5	304 101.96	1.0	100%	72PER/VAL
	$^2[9/2]$	4	304 205.62	1.0	99%	72PER/VAL
	$^2[5/2]$	3	304 276.99	1.0	99%	72PER/VAL
	$^2[7/2]$	3	304 767.70	1.0	100%	72PER/VAL
	$^2[5/2]$	2	304 767.81	1.0	83% + 17% $4p^5(^2P_{3/2})5f$ $^2[3/2]$	72PER/VAL
	$^2[7/2]$	4	304 819.93	1.0	99%	72PER/VAL

TABLE 5. Energy levels of Sr III—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$(^2P_{1/2})5f$	$^2[5/2]$	3	313 679.69	1.0	97%	72PER/VAL
	$^2[7/2]$	3	314 012.50	1.0	100%	72PER/VAL
	$^2[7/2]$	4	314 095.05	1.0	100%	72PER/VAL
	$^2[5/2]$	2	314 149.62	1.0	99%	72PER/VAL
$4p^5(^2P_{3/2})5g$	$^2[5/2]°$	2	305 981.33	1.0		72PER/VAL
	$^2[5/2]°$	3	305 984.65	1.0		72PER/VAL
	$^2[11/2]°$	6	306 059.06	1.0		72PER/VAL
	$^2[11/2]°$	5	306 060.19	1.0		72PER/VAL
	$^2[7/2]°$	4	306 220.26	1.0		72PER/VAL
	$^2[7/2]°$	3	306 222.46	1.0		72PER/VAL
	$^2[9/2]°$	4	306 305.35	1.0		72PER/VAL
	$^2[9/2]°$	5	306 305.90	1.0		72PER/VAL
$(^2P_{1/2})5g$	$^2[9/2]°$	4	315 872.86	1.0		72PER/VAL
	$^2[9/2]°$	5	315 873.75	1.0		72PER/VAL
	$^2[7/2]°$	4	315 877.00	1.0		72PER/VAL
	$^2[7/2]°$	3	315 881.55	1.0		72PER/VAL
$4p^5(^2P_{3/2})6s$	$^2[3/2]°$	2	268 660.40	1.0	97%	72PER/VAL
	$^2[3/2]°$	1	269 388.34	1.0	85% + 11% $4p^5(^2P_{3/2})5d\ ^2[1/2]$	72PER/VAL
$(^2P_{1/2})6s$	$^2[1/2]°$	0	278 375.24	1.0	100%	72PER/VAL
	$^2[1/2]°$	1	278 706.16	1.0	99%	72PER/VAL
$4p^5(^2P_{3/2})6p$	$^2[1/2]$	1	280 069.03	1.0	96%	72PER/VAL
	$^2[5/2]$	2	281 032.70	1.0	84% + 8% $4p^5(^2P_{3/2})6p\ ^2[3/2]$ + 6% $4p^5(^2P_{3/2})4f\ ^2[3/2]$	72PER/VAL
	$^2[5/2]$	3	281 459.61	1.0	68% + 31% $4p^5(^2P_{3/2})4f\ ^2[5/2]$	72PER/VAL
	$^2[3/2]$	1	281 919.00	1.0	97%	72PER/VAL
	$^2[3/2]$	2	282 324.73	1.0	82% + 12% $4p^5(^2P_{3/2})6p\ ^2[5/2]$	72PER/VAL
	$^2[1/2]$	0	283 933.04	1.0	98%	72PER/VAL
$(^2P_{1/2})6p$	$^2[3/2]$	1	290 618.19	1.0	92% + 8% $4p^5(^2P_{1/2})6p\ ^2[1/2]$	72PER/VAL
	$^2[1/2]$	1	291 259.30	1.0	91% + 8% $4p^5(^2P_{1/2})6p\ ^2[3/2]$	72PER/VAL
	$^2[3/2]$	2	291 377.76	1.0	98%	72PER/VAL
	$^2[1/2]$	0	292 481.99	1.0	98%	72PER/VAL
$4p^5(^2P_{3/2})6d$	$^2[1/2]°$	0	299 245.80	1.0		72PER/VAL
	$^2[1/2]°$	1	299 555.53	1.0		72PER/VAL
	$^2[7/2]°$	4	299 825.06	1.0		72PER/VAL
	$^2[3/2]°$	2	299 973.22	1.0		72PER/VAL
	$^2[7/2]°$	3	300 047.16	1.0		72PER/VAL
	$^2[5/2]°$	2	300 413.72	1.0		72PER/VAL
	$^2[5/2]°$	3	300 621.60	1.0		72PER/VAL
	$^2[3/2]°$	1	302 422.24	1.0		72PER/VAL
$(^2P_{1/2})6d$	$^2[5/2]°$	2	309 616.33	1.0		72PER/VAL
	$^2[3/2]°$	2	309 701.00	1.0		72PER/VAL
	$^2[5/2]°$	3	309 921.97	1.0		72PER/VAL
	$^2[3/2]°$	1	310 935.11	1.0		72PER/VAL
$4p^5(^2P_{3/2})6f$	$^2[3/2]$	1	316 465.17	1.0		72PER/VAL
	$^2[3/2]$	2	316 756.85	1.0		72PER/VAL
	$^2[9/2]$	5	316 977.60	1.0		72PER/VAL
	$^2[9/2]$	4	317 046.32	1.0		72PER/VAL
	$^2[5/2]$	3	317 118.40	1.0		72PER/VAL
	$^2[7/2]$	3	317 382.62	1.0		72PER/VAL
	$^2[5/2]$	2	317 399.80	1.0		72PER/VAL
	$^2[7/2]$	4	317 414.00	1.0		72PER/VAL
$(^2P_{1/2})6f$	$^2[7/2]$	3	326 823.55	1.0		72PER/VAL
	$^2[7/2]$	4	326 879.63	1.0		72PER/VAL

TABLE 5. Energy levels of Sr III—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4p^5(^2P_{3/2})6g$	$^2[5/2]^\circ$	2	318 198.53	1.0		72PER/VAL
	$^2[5/2]^\circ$	3	318 202.36	1.0		72PER/VAL
	$^2[11/2]^\circ$	6	318 242.47	1.0		72PER/VAL
	$^2[11/2]^\circ$	5	318 243.67	1.0		72PER/VAL
	$^2[7/2]^\circ$	4	318 341.99	1.0		72PER/VAL
	$^2[7/2]^\circ$	3	318 344.19	1.0		72PER/VAL
	$^2[9/2]^\circ$	4	318 388.20	1.0		72PER/VAL
	$^2[9/2]^\circ$	5	318 388.67	1.0		72PER/VAL
$(^2P_{1/2})6g$	$^2[9/2]^\circ$	4	328 021.35	1.0		72PER/VAL
	$^2[9/2]^\circ$	5	328 022.20	1.0		72PER/VAL
	$^2[7/2]^\circ$	4	328 024.86	1.0		72PER/VAL
	$^2[7/2]^\circ$	3	328 027.09	1.0		72PER/VAL
$4p^5(^2P_{3/2})6h$	$^2[7/2]$	3	318 355.44	1.0		72PER/VAL
	$^2[7/2]$	4	318 355.50	1.0		72PER/VAL
	$^2[13/2]$	6	318 374.98	1.0		72PER/VAL
	$^2[13/2]$	7	318 374.99	1.0		72PER/VAL
	$^2[9/2]$	4	318 430.76	1.0		72PER/VAL
	$^2[9/2]$	5	318 430.79	1.0		72PER/VAL
	$^2[11/2]$	5	318 451.96	1.0		72PER/VAL
	$^2[11/2]$	6	318 451.99	1.0		72PER/VAL
$(^2P_{1/2})6h$	$^2[11/2]$	5	328 131.48	1.0		72PER/VAL
	$^2[11/2]$	6	328 131.56	1.0		72PER/VAL
	$^2[9/2]$	4	328 132.83	1.0		72PER/VAL
	$^2[9/2]$	5	328 132.91	1.0		72PER/VAL
$4p^5(^2P_{3/2})7s$	$^2[3/2]^\circ$	2	299 030.32	1.0		72PER/VAL
	$^2[3/2]^\circ$	1	299 303.66	1.0		72PER/VAL
$(^2P_{1/2})7s$	$^2[1/2]^\circ$	0	308 730.79	1.0		72PER/VAL
	$^2[1/2]^\circ$	1	308 869.14	1.0		72PER/VAL
$4p^5(^2P)7d$	$^3D^\circ$	1	316 349.0	2.0		72REA/EPS
	$^1P^\circ$	1	325 542.0	2.0		72REA/EPS
$4p^5(^2P_{3/2})7f$	$^2[9/2]$	5	324 741.95	1.0		72PER/VAL
	$^2[9/2]$	4	324 784.13	1.0		72PER/VAL
$4p^5(^2P_{3/2})7g$	$^2[11/2]^\circ$	6	325 588.12	1.0		72PER/VAL
	$^2[11/2]^\circ$	5	325 589.55	1.0		72PER/VAL
	$^2[9/2]^\circ$	4	325 676.89	1.0		72PER/VAL
	$^2[9/2]^\circ$	5	325 677.45	1.0		72PER/VAL
$4p^5(^2P_{3/2})7h$	$^2[13/2]$	7	325 676.86	1.0		72PER/VAL
$4p^5(^2P_{3/2})8f$	$^2[9/2]$	5	329 763.69	1.0		72PER/VAL
Sr IV $(4p^5\ ^2P_{3/2})$		*Limit*	(345 879.0)	1.5		72PER/VAL

TABLE 6. Observed spectral lines of Sr III

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
Vacuum							
307.180	0.002	325 542.0	1		$4p^6\ ^1S_0$	$4p^5(^2P_{1/2})7d\ ^2[3/2]^\circ_1$	72REA/EPS
316.107	0.002	316 349.0	2		$4p^6\ ^1S_0$	$4p^5(^2P_{1/2})7d\ ^2[3/2]^\circ_1$	72REA/EPS
321.608	0.002	310 938.0	2		$4p^6\ ^1S_0$	$4p^5(^2P_{1/2})6d\ ^2[3/2]^\circ_1$	72REA/EPS
330.666	0.002	302 420.0	5		$4p^6\ ^1S_0$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_1$	72REA/EPS
351.621	0.002	284 397.0	20		$4p^6\ ^1S_0$	$4p^5(^2P_{1/2})5d\ ^2[3/2]^\circ_1$	72REA/EPS
358.801	0.002	278 706.0	3		$4p^6\ ^1S_0$	$4p^5(^2P_{1/2})6s\ ^2[1/2]^\circ_1$	72REA/EPS
363.491	0.002	275 110.0	10		$4p^6\ ^1S_0$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_1$	72REA/EPS
371.214	0.002	269 386.0	6		$4p^6\ ^1S_0$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_1$	72REA/EPS
437.240	0.002	228 707.0	40		$4p^6\ ^1S_0$	$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_1$	72REA/EPS
491.786	0.002	203 340.7	75		$4p^6\ ^1S_0$	$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_1$	72REA/EPS
507.035	0.002	197 225.0	50		$4p^6\ ^1S_0$	$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	72REA/EPS

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
514.376	0.002	194 410.5	150		$4p^6\ ^1S_0$	$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_1$	72REA/EPS
562.752	0.002	177 698.3	100		$4p^6\ ^1S_0$	$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_1$	72REA/EPS
681.941	0.010	146 640.0	1		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})8f\ ^2[9/2]_5$	72PER/VAL
706.123	0.010	141 618.0	5		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})7f\ ^2[9/2]_5$	72PER/VAL
714.129	0.010	140 031.0	1	l	$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_0$	$4p^5(^2P_{3/2})6f\ ^2[3/2]_1$	72PER/VAL
715.934	0.010	139 678.0	1		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})7f\ ^2[9/2]_4$	72PER/VAL
719.123	0.010	139 058.3	3		$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})6f\ ^2[3/2]_2$	72PER/VAL
720.634	0.010	138 766.7	1		$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})6f\ ^2[3/2]_1$	72PER/VAL
730.438	0.010	136 904.1	4		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6f\ ^2[5/2]_3$	72PER/VAL
732.359	0.010	136 545.0	0.5		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6f\ ^2[3/2]_2$	72PER/VAL
732.863	0.010	136 451.2	2		$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_2$	72PER/VAL
744.653	0.010	134 290.7	2		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})6f\ ^2[7/2]_4$	72PER/VAL
747.080	0.010	133 854.6	9		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})6f\ ^2[9/2]_5$	72PER/VAL
749.252	0.010	133 466.5	8		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_3$	72PER/VAL
755.988	0.010	132 277.2	2		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})6f\ ^2[7/2]_3$	72PER/VAL
757.920	0.010	131 940.1	8		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})6f\ ^2[9/2]_4$	72PER/VAL
766.094	0.010	130 532.3	5		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{1/2})6f\ ^2[7/2]_3$	72PER/VAL
770.211	0.010	129 834.5	0.5		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})6f\ ^2[5/2]_2$	72PER/VAL
770.312	0.010	129 817.5	6		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})6f\ ^2[7/2]_3$	72PER/VAL
775.255	0.010	128 989.8	9	p	$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{1/2})5f\ ^2[7/2]_4$	72PER/VAL
787.155	0.010	127 039.9	9		$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_0$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_1$	72PER/VAL
787.636	0.010	126 962.2	7		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})6f\ ^2[7/2]_4$	72PER/VAL
790.833	0.010	126 448.9	9		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{1/2})5f\ ^2[7/2]_3$	72PER/VAL
793.238	0.010	126 065.5	10		$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
795.062	0.010	125 776.4	8		$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_1$	72PER/VAL
804.455	0.010	124 307.7	9		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})6f\ ^2[7/2]_4$	72PER/VAL
806.040	0.010	124 063.3	10		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_3$	72PER/VAL
806.843	0.010	123 939.9	7	bl	$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})6f\ ^2[9/2]_4$	72PER/VAL
809.389	0.010	123 550.1	8		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
811.291	0.010	123 260.3	0.5		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_1$	72PER/VAL
821.716	0.010	121 696.5	9		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_4$	72PER/VAL
826.592	0.010	120 978.7	12		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})5f\ ^2[9/2]_5$	72PER/VAL
832.130	0.010	120 173.5	4		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})6f\ ^2[5/2]_2$	72PER/VAL
835.687	0.010	119 662.0	9	=	$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
835.687	0.010	119 662.0	9	=	$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_3$	72PER/VAL
839.133	0.010	119 170.6	3		$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_3$	72PER/VAL
839.628	0.010	119 100.4	18	p	$4p^5(^2P_{3/2})4d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[9/2]_4$	72PER/VAL
844.738	0.010	118 380.0	6		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6f\ ^2[5/2]_3$	72PER/VAL
848.471	0.010	117 859.1	1		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_2$	72PER/VAL
849.458	0.010	117 722.1	9		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{1/2})5f\ ^2[7/2]_3$	72PER/VAL
853.220	0.010	117 203.1	10	=	$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
853.220	0.010	117 203.1	10	=	$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_3$	72PER/VAL
853.753	0.010	117 129.9	1		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})6f\ ^2[9/2]_4$	72PER/VAL
855.261	0.010	116 923.4	8		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_2$	72PER/VAL
866.469	0.010	115 410.9	1		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_2$	72PER/VAL
867.508	0.010	115 272.7	2	bl	$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})5f\ ^2[7/2]_3$	72PER/VAL
870.009	0.010	114 941.3	9		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_3$	72PER/VAL
875.817	0.010	114 179.1	12		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})5f\ ^2[7/2]_4$	72PER/VAL
876.456	0.010	114 095.9	1		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})5f\ ^2[7/2]_3$	72PER/VAL
879.022	0.010	113 762.8	5	p	$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_3$	72PER/VAL
879.663	0.010	113 679.9	1		$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	72PER/VAL
880.954	0.010	113 513.3	9		$4p^5(^2P_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	72PER/VAL
895.147	0.010	111 713.6	12		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_4$	72PER/VAL
895.891	0.010	111 620.7	3		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_3$	72PER/VAL
899.522	0.010	111 170.2	10		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_3$	72PER/VAL
900.095	0.010	111 099.4	9		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[9/2]_4$	72PER/VAL
900.533	0.010	111 045.4	4		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})6p\ ^2[1/2]_1$	72PER/VAL
900.917	0.010	110 998.0	6		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	72PER/VAL
904.812	0.010	110 520.2	12		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	72PER/VAL
906.158	0.010	110 356.1	1		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
921.850	0.010	108 477.5	9	=	$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
921.850	0.010	108 477.5	9	=	$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_3$	72PER/VAL
926.041	0.010	107 986.6	1		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_3$	72PER/VAL

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
929.282	0.010	107 609.9	0.5		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{4}$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	72PER/VAL
929.871	0.010	107 541.8	9		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{1}$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
930.469	0.010	107 472.7	12	bl	$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
940.987	0.010	106 271.4	3		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	72PER/VAL
941.201	0.010	106 247.2	1		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{1}$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_1$	72PER/VAL
942.459	0.010	106 105.5	3		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	72PER/VAL
943.140	0.010	106 028.8	0.5	=	$4p^5(^2P_{1/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
943.140	0.010	106 028.8	0.5	=	$4p^5(^2P_{1/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_3$	72PER/VAL
944.993	0.010	105 820.9	12		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{1/2})4f\ ^2[7/2]_4$	72PER/VAL
946.721	0.010	105 627.8	7		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	72PER/VAL
947.515	0.010	105 539.3	8		$4p^5(^2P_{1/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_3$	72PER/VAL
952.150	0.010	105 025.5	6		$4p^5(^2P_{1/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
953.264	0.010	104 902.8	1		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_4$	72PER/VAL
953.735	0.010	104 851.0	2	=	$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
953.735	0.010	104 851.0	2	=	$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_3$	72PER/VAL
955.777	0.010	104 627.0	6		$4p^5(^2P_{3/2})4d\ ^2[1/2]^{\circ}_{1}$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
958.867	0.010	104 289.7	8		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})5f\ ^2[9/2]_4$	72PER/VAL
959.499	0.010	104 221.0	1		$4p^5(^2P_{3/2})4d\ ^2[1/2]^{\circ}_{1}$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	72PER/VAL
960.400	0.010	104 123.3	9		$4p^5(^2P_{3/2})4d\ ^2[1/2]^{\circ}_{1}$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	72PER/VAL
964.808	0.010	103 647.6	7	bl	$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	72PER/VAL
967.215	0.010	103 389.7	10		$4p^5(^2P_{3/2})4d\ ^2[1/2]^{\circ}_{0}$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	72PER/VAL
968.367	0.010	103 266.6	20		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	72PER/VAL
969.290	0.010	103 168.3	0.5		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	72PER/VAL
970.369	0.010	103 053.6	5		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_1$	72PER/VAL
975.775	0.010	102 482.6	20		$4p^5(^2P_{3/2})4d\ ^2[1/2]^{\circ}_{1}$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
976.840	0.010	102 370.9	10	bl	$4p^5(^2P_{3/2})4d\ ^2[1/2]^{\circ}_{1}$	$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	72PER/VAL
979.181	0.010	102 126.1	15		$4p^5(^2P_{3/2})4d\ ^2[1/2]^{\circ}_{1}$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	72PER/VAL
979.317	0.010	102 112.0	8		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
983.229	0.010	101 705.7	4		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	72PER/VAL
984.173	0.010	101 608.2	9		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	72PER/VAL
987.691	0.010	101 246.3	18		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
991.877	0.010	100 819.0	2		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
992.975	0.010	100 707.5	25		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
1000.327	0.010	99 967.3	18		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
1001.446	0.010	99 855.6	1		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	72PER/VAL
1003.905	0.010	99 611.0	9		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	72PER/VAL
1011.813	0.010	98 832.5	18		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{4}$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	72PER/VAL
1012.520	0.010	98 763.5	2		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{4}$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	72PER/VAL
1016.919	0.010	98 336.3	9		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{4}$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
1022.522	0.010	97 797.4	12		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{4}$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
1023.715	0.010	97 683.4	15		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{4}$	$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	72PER/VAL
1025.233	0.010	97 538.8	50		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{4}$	$4p^5(^2P_{3/2})4f\ ^2[9/2]_5$	72PER/VAL
1032.524	0.010	96 850.0	18		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	72PER/VAL
1033.265	0.010	96 780.6	18		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	72PER/VAL
1037.842	0.010	96 353.7	9	*R*	$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
1042.461	0.010	95 926.8	9	*R*	$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
1043.680	0.010	95 814.8	8	*R*	$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
1044.921	0.010	95 701.0	35	*R*	$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	72PER/VAL
1051.656	0.010	95 088.1	6		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	72PER/VAL
1051.804	0.010	95 074.8	6		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_{3}$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
1053.498	0.010	94 921.9	8		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	72PER/VAL
1055.295	0.010	94 760.3	4		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
1057.737	0.010	94 541.5	20		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	72PER/VAL
1058.832	0.010	94 443.7	10		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	72PER/VAL
1059.831	0.010	94 354.6	5		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	72PER/VAL
1060.196	0.010	94 322.2	25		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	72PER/VAL
1060.931	0.010	94 256.9	15		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	72PER/VAL
1062.112	0.010	94 152.0	8		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{1}$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	72PER/VAL
1063.987	0.010	93 986.1	18		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_{1}$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	72PER/VAL
1065.018	0.010	93 895.2	5		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
1079.449	0.010	92 639.9	2		$4p^5(^2P_{1/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	72PER/VAL
1079.720	0.010	92 616.6	5		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_{2}$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
1080.829	0.010	92 521.6	5		$4p^5(^2P_{1/2})4d\ ^2[3/2]^{\circ}_{2}$	$4p^5(^2P_{1/2})6p\ ^2[1/2]_1$	72PER/VAL

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1081.386	0.010	92 473.9	8		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	72PER/VAL
1085.855	0.010	92 093.3	8		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	72PER/VAL
1087.009	0.010	91 995.5	15		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	72PER/VAL
1093.355	0.010	91 461.6	1		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	72PER/VAL
1098.771	0.010	91 010.8	20		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})4f\ ^2[7/2]_4$	72PER/VAL
1099.925	0.010	90 915.3	5		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	72PER/VAL
1101.109	0.010	90 817.5	8		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	72PER/VAL
1120.847	0.010	89 218.3	4		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
1125.494	0.010	88 849.9	35		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	72PER/VAL
1131.818	0.010	88 353.4	12		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
1132.951	0.010	88 265.1	10		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
1138.761	0.010	87 814.7	18		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
1140.239	0.010	87 700.9	20		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	72PER/VAL
1143.995	0.010	87 413.0	6		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	72PER/VAL
1148.444	0.010	87 074.3	5	=	$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
1148.444	0.010	87 074.3	5	=	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})7s\ ^2[1/2]^\circ_1$	72PER/VAL
1154.448	0.010	86 621.5	6		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
1162.323	0.010	86 034.6	1		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
1168.270	0.010	85 596.7	20		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	72PER/VAL
1169.162	0.010	85 531.4	12		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	72PER/VAL
1170.397	0.010	85 441.1	3		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_2$	72PER/VAL
1174.127	0.010	85 169.6	7		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
1180.047	0.010	84 742.4	0.5		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
1180.727	0.010	84 693.6	1		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	72PER/VAL
1181.601	0.010	84 630.9	7		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
1182.090	0.010	84 595.9	20		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	72PER/VAL
1193.219	0.010	83 806.9	12		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
1203.611	0.010	83 083.3	7		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	72PER/VAL
1205.475	0.010	82 954.9	7		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
1208.873	0.010	82 721.7	15		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
1210.676	0.010	82 598.5	15		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	72PER/VAL
1215.149	0.010	82 294.4	8		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
1216.797	0.010	82 183.0	18		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
1218.922	0.010	82 039.7	4		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	72PER/VAL
1219.948	0.010	81 970.7	12		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	72PER/VAL
1226.336	0.010	81 543.7	6		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
1227.858	0.010	81 442.7	18		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
1233.254	0.010	81 086.3	9		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	72PER/VAL
1234.491	0.010	81 005.0	8		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
1236.233	0.010	80 890.9	50		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	72PER/VAL
1245.876	0.010	80 264.8	8		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
1279.134	0.010	78 177.9	10		$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
1286.003	0.010	77 760.3	10		$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_1$	72PER/VAL
1290.178	0.010	77 508.7	6		$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_1$	72PER/VAL
1291.147	0.010	77 450.5	8		$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_0$	72PER/VAL
1294.748	0.010	77 235.1	12		$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
1312.657	0.010	76 181.4	7	p	$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
1314.768	0.010	76 059.0	9		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
1327.831	0.010	75 310.8	3		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
1331.504	0.010	75 103.0	12		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
1332.358	0.010	75 054.9	8		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
1337.287	0.010	74 778.3	12		$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
1338.079	0.010	74 734.0	18	bl	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	72PER/VAL
1339.362	0.010	74 662.4	3		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
1347.646	0.010	74 203.5	10		$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	72PER/VAL
1349.242	0.010	74 115.7	9		$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})7s\ ^2[1/2]^\circ_1$	72PER/VAL
1349.902	0.010	74 079.5	7		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
1351.483	0.010	73 992.8	12		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_1$	72PER/VAL
1351.684	0.010	73 981.8	18		$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_4$	72PER/VAL
1351.766	0.010	73 977.3	8	p	$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})7s\ ^2[1/2]^\circ_0$	72PER/VAL
1356.490	0.010	73 719.7	12		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
1364.530	0.010	73 285.3	15		$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{1/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
1366.362	0.010	73 187.0	18		$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1370.243	0.010	72 979.8	8		$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{1/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
1371.405	0.010	72 917.9	15		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2\mathrm{P}_{3/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
1372.774	0.010	72 845.2	12		$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2\mathrm{P}_{1/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
1384.410	0.010	72 233.0	12		$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{1/2})7s\ ^2[1/2]^\circ_1$	72PER/VAL
1387.294	0.010	72 082.8	18		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{3/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
1387.733	0.010	72 060.0	5	p	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2\mathrm{P}_{3/2})6d\ ^2[1/2]^\circ_1$	72PER/VAL
1388.630	0.010	72 013.4	8		$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2\mathrm{P}_{1/2})7s\ ^2[1/2]^\circ_1$	72PER/VAL
1391.307	0.010	71 874.9	10	*,bl	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2\mathrm{P}_{1/2})7s\ ^2[1/2]^\circ_0$	72PER/VAL
1391.307	0.010	71 874.9	10	*,bl	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{3/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
1392.597	0.010	71 808.3	10		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2\mathrm{P}_{3/2})7s\ ^2[3/2]^\circ_1$	72PER/VAL
1397.932	0.010	71 534.2	2		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2\mathrm{P}_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
1399.895	0.010	71 433.9	12		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
1408.123	0.010	71 016.5	9		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{3/2})6d\ ^2[1/2]^\circ_1$	72PER/VAL
1413.133	0.010	70 764.8	10		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{3/2})7s\ ^2[3/2]^\circ_1$	72PER/VAL
1418.615	0.010	70 491.3	12		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
1424.790	0.010	70 185.8	10		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[1/2]_0$	$4p^5(^2\mathrm{P}_{3/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
1429.910	0.010	69 934.5	9		$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_0$	$4p^5(^2\mathrm{P}_{1/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
1491.047	0.010	67 067.0	9		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[1/2]_0$	$4p^5(^2\mathrm{P}_{3/2})7s\ ^2[3/2]^\circ_1$	72PER/VAL
1579.719	0.010	63 302.4	12		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_0$	72PER/VAL
1595.678	0.010	62 669.3	12		$4p^5(^2\mathrm{P}_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2\mathrm{P}_{1/2})6p\ ^2[3/2]_2$	72PER/VAL
1599.918	0.010	62 503.2	15	p	$4p^5(^2\mathrm{P}_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2\mathrm{P}_{1/2})4f\ ^2[5/2]_2$	72PER/VAL
1628.098	0.010	61 421.4	4		$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_0$	$4p^5(^2\mathrm{P}_{3/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
1655.058	0.010	60 420.8	10	bl	$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_0$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
1690.408	0.010	59 157.3	10		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
1696.693	0.010	58 938.2	12		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
1714.358	0.010	58 330.9	12	p	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[3/2]^\circ_2$	72PER/VAL
1714.719	0.010	58 318.6	12		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_0$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_1$	72PER/VAL
1752.691	0.010	57 055.1	12		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_1$	72PER/VAL
1757.139	0.010	56 910.7	9		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2\mathrm{P}_{1/2})6s\ ^2[1/2]^\circ_1$	72PER/VAL
1757.399	0.010	56 902.3	9		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[3/2]^\circ_1$	72PER/VAL
1765.472	0.010	56 642.1	15	p	$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
1767.424	0.010	56 579.5	8		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2\mathrm{P}_{1/2})6s\ ^2[1/2]^\circ_0$	72PER/VAL
1772.328	0.010	56 423.0	18	q	$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
1790.246	0.010	55 858.2	4	p	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[3/2]^\circ_1$	72PER/VAL
1820.463	0.010	54 931.1	1		$4p^5(^2\mathrm{P}_{3/2})5d\ ^2[7/2]^\circ_4$	$4p^5(^2\mathrm{P}_{3/2})7f\ ^2[9/2]_5$	72PER/VAL
1824.296	0.010	54 815.7	6		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[3/2]^\circ_2$	72PER/VAL
1828.800	0.010	54 680.7	4		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[5/2]^\circ_3$	72PER/VAL
1833.566	0.010	54 538.5	15		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[1/2]_0$	72PER/VAL
1865.115	0.010	53 616.0	15		$4p^5(^2\mathrm{P}_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2\mathrm{P}_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
1882.793	0.010	53 112.6	18		$4p^5(^2\mathrm{P}_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2\mathrm{P}_{3/2})4f\ ^2[5/2]_2$	72PER/VAL
1911.177	0.010	52 323.8	15		$4p^5(^2\mathrm{P}_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2\mathrm{P}_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
1912.060	0.010	52 299.6	8		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[5/2]^\circ_2$	72PER/VAL
1923.622	0.010	51 985.3	6		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[5/2]^\circ_3$	72PER/VAL
1938.447	0.010	51 587.7	10		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[3/2]^\circ_2$	72PER/VAL
1940.580	0.010	51 531.0	20		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[7/2]^\circ_3$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
1942.802	0.010	51 472.0	15		$4p^5(^2\mathrm{P}_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2\mathrm{P}_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
1951.003	0.010	51 255.7	1		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[5/2]^\circ_2$	72PER/VAL
1958.443	0.010	51 061.0	30	p	$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_0$	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
1966.915	0.010	50 841.0	30		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
1993.302	0.010	50 168.0	12	p	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{1/2})6s\ ^2[1/2]^\circ_1$	72PER/VAL
Air							
2007.431	0.02	49 798.8	12	=	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2\mathrm{P}_{3/2})5d\ ^2[3/2]^\circ_1$	72PER/VAL
2007.431	0.02	49 798.8	12	=	$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
2013.673	0.02	49 644.5	15		$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[3/2]^\circ_1$	72PER/VAL
2024.886	0.02	49 369.6	9		$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2\mathrm{P}_{3/2})5d\ ^2[5/2]^\circ_2$	72PER/VAL
2028.115	0.02	49 291.0	12		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
2037.169	0.02	49 072.0	12		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
2068.634	0.02	48 325.7	25		$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
2073.341	0.02	48 216.0	25	bl	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2\mathrm{P}_{3/2})5d\ ^2[3/2]^\circ_2$	72PER/VAL
2093.081	0.02	47 761.3	9		$4p^5(^2\mathrm{P}_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2\mathrm{P}_{1/2})5d\ ^2[3/2]^\circ_1$	72PER/VAL
2099.598	0.02	47 613.1	50	=	$4p^5(^2\mathrm{P}_{3/2})4d\ ^2[1/2]^\circ_1$	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
2099.598	0.02	47 613.1	50	=	$4p^5(^2\mathrm{P}_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2\mathrm{P}_{3/2})5d\ ^2[3/2]^\circ_1$	72PER/VAL

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
2100.482	0.02	47 593.0	12		$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_1$	72PER/VAL
2102.730	0.02	47 542.1	15		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})5d\ ^2[3/2]^{\circ}_1$	72PER/VAL
2114.306	0.02	47 281.9	25		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
2118.476	0.02	47 188.8	30		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	72PER/VAL
2119.522	0.02	47 165.5	50	=	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[1/2]^{\circ}_1$	72PER/VAL
2119.522	0.02	47 165.5	50	=	$4p^5(^2P_{3/2})5d\ ^2[7/2]^{\circ}_4$	$4p^5(^2P_{3/2})6f\ ^2[9/2]_5$	72PER/VAL
2122.170	0.02	47 106.7	7		$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{3/2})6f\ ^2[5/2]_3$	72PER/VAL
2125.671	0.02	47 029.1	2		$4p^5(^2P_{1/2})5d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{1/2})6f\ ^2[7/2]_3$	72PER/VAL
2133.119	0.02	46 864.9	50		$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_2$	72PER/VAL
2140.397	0.02	46 705.6	10		$4p^5(^2P_{3/2})5d\ ^2[7/2]^{\circ}_3$	$4p^5(^2P_{3/2})6f\ ^2[9/2]_4$	72PER/VAL
2142.801	0.02	46 653.2	30		$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[1/2]^{\circ}_0$	72PER/VAL
2145.749	0.02	46 589.1	20		$4p^5(^2P_{3/2})5s\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_0$	72PER/VAL
2151.262	0.02	46 469.7	12		$4p^5(^2P_{3/2})5p\ ^2[1/2]_0$	$4p^5(^2P_{1/2})6s\ ^2[1/2]^{\circ}_1$	72PER/VAL
2156.545	0.02	46 355.9	5		$4p^5(^2P_{1/2})5d\ ^2[5/2]^{\circ}_3$	$4p^5(^2P_{1/2})6f\ ^2[7/2]_4$	72PER/VAL
2163.003	0.02	46 217.5	12	s,p	$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{3/2})6f\ ^2[7/2]_3$	72PER/VAL
2178.904	0.02	45 880.3	30		$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_3$	72PER/VAL
2180.134	0.02	45 854.4	30		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_2$	72PER/VAL
2187.955	0.02	45 690.5	9		$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_3$	$4p^5(^2P_{3/2})6f\ ^2[7/2]_4$	72PER/VAL
2190.872	0.02	45 629.7	50		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	72PER/VAL
2203.268	0.02	45 373.0	9		$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})5d\ ^2[3/2]^{\circ}_2$	72PER/VAL
2203.866	0.02	45 360.6	50		$4p^5(^2P_{3/2})4d\ ^2[1/2]^{\circ}_0$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
2205.751	0.02	45 321.9	15	=	$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_2$	72PER/VAL
2205.751	0.02	45 321.9	15	=	$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_3$	$4p^5(^2P_{3/2})6f\ ^2[9/2]_4$	72PER/VAL
2216.744	0.02	45 097.2	10		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
2219.503	0.02	45 041.1	50		$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})5d\ ^2[5/2]^{\circ}_2$	72PER/VAL
2220.050	0.02	45 030.0	50		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})5d\ ^2[7/2]^{\circ}_3$	72PER/VAL
2225.199	0.02	44 925.8	2	h	$4p^5(^2P_{3/2})4f\ ^2[9/2]_5$	$4p^5(^2P_{3/2})7g\ ^2[11/2]^{\circ}_6$	72PER/VAL
2232.331	0.02	44 782.3	1	h,bl?	$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	$4p^5(^2P_{3/2})7g\ ^2[11/2]^{\circ}_5$	72PER/VAL
2236.397	0.02	44 700.9	15		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_2$	72PER/VAL
2246.619	0.02	44 497.5	20		$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})5d\ ^2[7/2]^{\circ}_3$	72PER/VAL
2261.752	0.02	44 199.8	20		$4p^5(^2P_{3/2})5s\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
2263.362	0.02	44 168.4	12		$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_2$	72PER/VAL
2267.026	0.02	44 097.0	50		$4p^5(^2P_{3/2})4d\ ^2[1/2]^{\circ}_1$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
2268.018	0.02	44 077.8	20		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_1$	72PER/VAL
2273.028	0.02	43 980.6	18		$4p^5(^2P_{3/2})5s\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
2273.708	0.02	43 967.4	100		$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})5d\ ^2[7/2]^{\circ}_4$	72PER/VAL
2274.469	0.02	43 952.7	15		$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})6s\ ^2[1/2]^{\circ}_1$	72PER/VAL
2277.862	0.02	43 887.3	50		$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{1/2})5d\ ^2[5/2]^{\circ}_3$	72PER/VAL
2283.734	0.02	43 774.4	18		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_0$	72PER/VAL
2289.224	0.02	43 669.5	30		$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_2$	72PER/VAL
2290.232	0.02	43 650.2	20		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})5d\ ^2[1/2]^{\circ}_1$	72PER/VAL
2291.722	0.02	43 621.9	15		$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})6s\ ^2[1/2]^{\circ}_0$	72PER/VAL
2296.553	0.02	43 530.1	10		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_3$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
2298.680	0.02	43 489.8	18		$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{1/2})5d\ ^2[3/2]^{\circ}_2$	72PER/VAL
2301.684	0.02	43 433.1	18		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_3$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
2303.586	0.02	43 397.2	20		$4p^5(^2P_{1/2})5p\ ^2[1/2]_0$	$4p^5(^2P_{1/2})5d\ ^2[3/2]^{\circ}_1$	72PER/VAL
2306.110	0.02	43 349.7	18		$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_2$	72PER/VAL
2310.327	0.02	43 270.6	30		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})5d\ ^2[3/2]^{\circ}_2$	72PER/VAL
2314.952	0.02	43 184.2	50		$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_3$	72PER/VAL
2316.352	0.02	43 158.1	18		$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{1/2})5d\ ^2[5/2]^{\circ}_2$	72PER/VAL
2331.763	0.02	42 872.9	25		$4p^5(^2P_{3/2})5p\ ^2[1/2]_0$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_1$	72PER/VAL
2334.798	0.02	42 817.1	50		$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_2$	72PER/VAL
2340.128	0.02	42 719.6	100		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_4$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	72PER/VAL
2345.279	0.02	42 625.8	9		$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_2$	72PER/VAL
2351.290	0.02	42 516.8	20	p	$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_2$	72PER/VAL
2355.320	0.02	42 444.1	9		$4p^5(^2P_{3/2})5s\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
2363.876	0.02	42 290.5	2	h	$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{3/2})6f\ ^2[5/2]_2$	72PER/VAL
2367.545	0.02	42 225.0	18		$4p^5(^2P_{3/2})5s\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
2376.285	0.02	42 069.7	25		$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{1/2})6s\ ^2[1/2]^{\circ}_1$	72PER/VAL
2386.308	0.02	41 893.0	20		$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_1$	72PER/VAL
2388.729	0.02	41 850.5	15		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})6s\ ^2[1/2]^{\circ}_1$	72PER/VAL
2404.164	0.02	41 581.8	50		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
2407.766	0.02	41 519.7	18		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})6s\ ^2[1/2]^{\circ}_0$	72PER/VAL

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
2410.516	0.02	41 472.3	30		$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_2$	72PER/VAL
2410.906	0.02	41 465.6	10		$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[1/2]^{\circ}_1$	72PER/VAL
2428.518	0.02	41 164.9	10		$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_2$	72PER/VAL
2439.817	0.02	40 974.3	12		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
2441.080	0.02	40 953.1	12		$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[1/2]^{\circ}_0$	72PER/VAL
2447.288	0.02	40 849.2	20		$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_1$	72PER/VAL
2454.022	0.02	40 737.1	50		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_3$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	72PER/VAL
2464.416	0.02	40 565.3	3		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
2473.169	0.02	40 421.7	15		$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})5d\ ^2[1/2]^{\circ}_1$	72PER/VAL
2477.196	0.02	40 356.0	10		$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_1$	72PER/VAL
2477.783	0.02	40 346.5	25		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
2478.060	0.02	40 342.0	15		$4p^5(^2P_{3/2})5s\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	72PER/VAL
2486.520	0.02	40 204.7	100		$4p^5(^2P_{3/2})4d\ ^2[7/2]^{\circ}_3$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
2491.690	0.02	40 121.3	20		$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_2$	72PER/VAL
2503.594	0.02	39 930.54	50		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
2522.609	0.02	39 629.57	18		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
2536.628	0.02	39 410.58	6	p	$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
2560.706	0.02	39 040.03	1		$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_2$	72PER/VAL
2599.103	0.02	38 463.32	30		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	72PER/VAL
2605.131	0.02	38 374.32	5		$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	$4p^5(^2P_{3/2})6g\ ^2[5/2]^{\circ}_2$	72PER/VAL
2611.667	0.02	38 278.30	15		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	72PER/VAL
2613.336	0.02	38 253.84	10		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_1$	72PER/VAL
2622.686	0.02	38 117.48	35		$4p^5(^2P_{1/2})4d\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
2629.286	0.02	38 021.80	6	h	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6g\ ^2[5/2]^{\circ}_3$	72PER/VAL
2637.865	0.02	37 898.16	20		$4p^5(^2P_{1/2})4d\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
2642.959	0.02	37 825.12	30		$4p^5(^2P_{3/2})5s\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_0$	72PER/VAL
2648.507	0.02	37 745.89	30		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
2651.333	0.02	37 705.65	18		$4p^5(^2P_{1/2})5p\ ^2[1/2]_0$	$4p^5(^2P_{1/2})6s\ ^2[1/2]^{\circ}_1$	72PER/VAL
2654.657	0.02	37 658.45	35		$4p^5(^2P_{1/2})5s\ ^2[1/2]^{\circ}_1$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_0$	72PER/VAL
2660.187	0.02	37 580.16	12	h	$4p^5(^2P_{3/2})4f\ ^2[9/2]_5$	$4p^5(^2P_{3/2})6g\ ^2[11/2]^{\circ}_6$	72PER/VAL
2663.935	0.02	37 527.30	20		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	72PER/VAL
2670.372	0.02	37 436.84	10	h,l	$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	$4p^5(^2P_{3/2})6g\ ^2[11/2]^{\circ}_5$	72PER/VAL
2671.484	0.02	37 421.25	6	h	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6g\ ^2[7/2]^{\circ}_4$	72PER/VAL
2680.792	0.02	37 291.33	4	h	$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{1/2})6g\ ^2[7/2]^{\circ}_4$	72PER/VAL
2688.100	0.02	37 189.96	4	h	$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{1/2})6g\ ^2[9/2]^{\circ}_4$	72PER/VAL
2690.871	0.02	37 151.66	18		$4p^5(^2P_{3/2})5p\ ^2[1/2]_0$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_1$	72PER/VAL
2694.937	0.02	37 095.61	6	h,l	$4p^5(^2P_{1/2})4f\ ^2[7/2]_4$	$4p^5(^2P_{1/2})6g\ ^2[9/2]^{\circ}_5$	72PER/VAL
2710.516	0.02	36 882.42	3	h	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6g\ ^2[7/2]^{\circ}_4$	72PER/VAL
2715.464	0.02	36 815.21	3	h,l	$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{1/2})6g\ ^2[7/2]^{\circ}_3$	72PER/VAL
2722.474	0.02	36 720.42	40		$4p^5(^2P_{1/2})4d\ ^2[5/2]^{\circ}_3$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
2737.204	0.02	36 522.82	4	h,l	$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6g\ ^2[7/2]^{\circ}_3$	72PER/VAL
2738.780	0.02	36 501.81	6	h,l	$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{3/2})6g\ ^2[9/2]^{\circ}_4$	72PER/VAL
2743.972	0.02	36 432.74	7	h,l	$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	$4p^5(^2P_{3/2})6g\ ^2[9/2]^{\circ}_5$	72PER/VAL
2745.583	0.02	36 411.37	0.5		$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[5/2]^{\circ}_2$	72PER/VAL
2775.787	0.02	36 015.19	5		$4p^5(^2P_{1/2})4d\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	72PER/VAL
2786.003	0.02	35 883.13	50		$4p^5(^2P_{3/2})5s\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
2821.420	0.02	35 432.72	50		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_3$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
2835.403	0.02	35 257.99	7		$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_2$	72PER/VAL
2854.203	0.02	35 025.76	8		$4p^5(^2P_{3/2})5d\ ^2[1/2]^{\circ}_0$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_1$	72PER/VAL
2855.465	0.02	35 010.29	25		$4p^5(^2P_{3/2})4d\ ^2[3/2]^{\circ}_1$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_0$	72PER/VAL
2869.482	0.02	34 839.27	25		$4p^5(^2P_{3/2})5s\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
2872.490	0.02	34 802.78	10		$4p^5(^2P_{3/2})5d\ ^2[1/2]^{\circ}_1$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
2874.863	0.02	34 774.07	30		$4p^5(^2P_{1/2})5s\ ^2[1/2]^{\circ}_0$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
2886.425	0.02	34 634.77	6		$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^{\circ}_1$	72PER/VAL
2896.570	0.02	34 513.47	7		$4p^5(^2P_{3/2})5d\ ^2[1/2]^{\circ}_1$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_1$	72PER/VAL
2903.842	0.02	34 427.05	7	=	$4p^5(^2P_{3/2})5d\ ^2[7/2]^{\circ}_3$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
2903.842	0.02	34 427.05	7	=	$4p^5(^2P_{3/2})5d\ ^2[7/2]^{\circ}_3$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_3$	72PER/VAL
2906.554	0.02	34 394.93	3		$4p^5(^2P_{3/2})5d\ ^2[7/2]^{\circ}_4$	$4p^5(^2P_{3/2})5f\ ^2[9/2]_4$	72PER/VAL
2909.931	0.02	34 355.02	0.5		$4p^5(^2P_{1/2})5d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_2$	72PER/VAL
2915.339	0.02	34 291.29	20		$4p^5(^2P_{3/2})5d\ ^2[7/2]^{\circ}_4$	$4p^5(^2P_{3/2})5f\ ^2[9/2]_5$	72PER/VAL
2917.539	0.02	34 265.43	15		$4p^5(^2P_{3/2})5d\ ^2[3/2]^{\circ}_2$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_3$	72PER/VAL
2920.502	0.02	34 230.67	12		$4p^5(^2P_{3/2})4d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
2921.580	0.02	34 218.04	12		$4p^5(^2P_{1/2})5d\ ^2[5/2]^{\circ}_2$	$4p^5(^2P_{1/2})5f\ ^2[7/2]_3$	72PER/VAL

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
2929.339	0.02	34 127.41	30		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
2945.818	0.02	33 936.50	4		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_3$	72PER/VAL
2952.045	0.02	33 864.92	18		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[9/2]_4$	72PER/VAL
2961.905	0.02	33 752.19	8		$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
2975.074	0.02	33 602.80	15	=	$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
2975.074	0.02	33 602.80	15	=	$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_3$	72PER/VAL
2977.879	0.02	33 571.15	12		$4p^5(^2P_{1/2})5d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})5f\ ^2[7/2]_4$	72PER/VAL
2979.462	0.02	33 553.31	10		$4p^5(^2P_{1/2})5d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_3$	72PER/VAL
2982.995	0.02	33 513.57	30		$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	72PER/VAL
2987.509	0.02	33 462.94	2		$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_1$	72PER/VAL
2995.378	0.02	33 375.04	10		$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_2$	72PER/VAL
3002.613	0.02	33 294.62	100		$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	72PER/VAL
3012.318	0.02	33 187.36	200		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	72PER/VAL
3015.192	0.02	33 155.73	3	=	$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_2$	72PER/VAL
3015.192	0.02	33 155.73	3	=	$4p^5(^2P_{1/2})5d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_3$	72PER/VAL
3020.581	0.02	33 096.58	18		$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[7/2]_4$	72PER/VAL
3021.725	0.02	33 084.04	100		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
3052.386	0.02	32 751.73	2		$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_1$	72PER/VAL
3053.771	0.02	32 736.87	25		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	72PER/VAL
3059.827	0.02	32 672.09	30		$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_0$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	72PER/VAL
3061.427	0.02	32 655.01	50		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
3066.738	0.02	32 598.47	1		$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
3070.951	0.02	32 553.75	6		$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_3$	72PER/VAL
3072.956	0.02	32 532.50	0.5		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_1$	72PER/VAL
3077.701	0.02	32 482.35	7		$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5f\ ^2[9/2]_4$	72PER/VAL
3104.252	0.02	32 204.53	30		$4p^5(^2P_{3/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
3113.835	0.02	32 105.43	15		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_1$	72PER/VAL
3121.740	0.02	32 024.13	4		$4p^5(^2P_{1/2})5p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_2$	72PER/VAL
3143.255	0.02	31 804.94	12		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_2$	72PER/VAL
3164.332	0.02	31 593.10	12		$4p^5(^2P_{1/2})5p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_0$	72PER/VAL
3182.613	0.02	31 411.64	50		$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})5p\ ^2[3/2]_1$	72PER/VAL
3203.670	0.02	31 205.19	30		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
3235.388	0.02	30 899.28	100		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
3302.716	0.02	30 269.39	30		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
3354.627	0.02	29 801.01	25		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
3360.141	0.02	29 752.11	5		$4p^5(^2P_{1/2})5d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{1/2})5f\ ^2[5/2]_2$	72PER/VAL
3370.767	0.02	29 658.32	12		$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
3430.756	0.02	29 139.74	50		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
3444.853	0.02	29 020.50	18		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
3459.865	0.02	28 894.59	15		$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_0$	72PER/VAL
3476.389	0.02	28 757.24	5		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
3488.893	0.02	28 654.19	7		$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
3492.678	0.02	28 623.13	7		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
3521.611	0.02	28 387.98	8		$4p^5(^2P_{1/2})5p\ ^2[1/2]_0$	$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_1$	72PER/VAL
3524.459	0.02	28 365.04	1		$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_1$	72PER/VAL
3559.645	0.02	28 084.67	18		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
3575.457	0.02	27 960.47	7		$4p^5(^2P_{1/2})5p\ ^2[1/2]_0$	$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_1$	72PER/VAL
3650.727	0.02	27 384.00	20		$4p^5(^2P_{3/2})5s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
3688.326	0.02	27 104.85	20		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	72PER/VAL
3762.233	0.02	26 572.41	12		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
3821.969	0.02	26 157.10	25		$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	$4p^5(^2P_{3/2})5g\ ^2[5/2]^\circ_2$	72PER/VAL
3838.874	0.02	26 041.92	12		$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	$4p^5(^2P_{3/2})5g\ ^2[7/2]^\circ_3$	72PER/VAL
3855.882	0.02	25 927.05	20		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_3$	72PER/VAL
3874.261	0.02	25 804.06	30		$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	$4p^5(^2P_{3/2})5g\ ^2[5/2]^\circ_3$	72PER/VAL
3874.750	0.02	25 800.80	12		$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	$4p^5(^2P_{3/2})5g\ ^2[5/2]^\circ_2$	72PER/VAL
3898.500	0.02	25 643.62	10		$4p^5(^2P_{3/2})4f\ ^2[9/2]_5$	$4p^5(^2P_{3/2})5g\ ^2[9/2]^\circ_5$	72PER/VAL
3920.681	0.02	25 498.56	15		$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	$4p^5(^2P_{3/2})5g\ ^2[9/2]^\circ_4$	72PER/VAL
3936.398	0.02	25 396.75	30		$4p^5(^2P_{3/2})4f\ ^2[9/2]_5$	$4p^5(^2P_{3/2})5g\ ^2[11/2]^\circ_6$	72PER/VAL
3936.722	0.02	25 394.66	30		$4p^5(^2P_{1/2})4d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
3951.521	0.02	25 299.55	25		$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{3/2})5g\ ^2[7/2]^\circ_4$	72PER/VAL
3958.748	0.02	25 253.36	30		$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	$4p^5(^2P_{3/2})5g\ ^2[11/2]^\circ_5$	72PER/VAL
3967.603	0.02	25 197.00	25		$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_2$	72PER/VAL
3975.331	0.02	25 148.02	5		$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{1/2})5g\ ^2[7/2]^\circ_3$	72PER/VAL

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
3976.043	0.02	25 143.52	25		$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{1/2})5g\ ^2[7/2]^\circ_4$	72PER/VAL
3976.692	0.02	25 139.42	4		$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{1/2})5g\ ^2[9/2]^\circ_4$	72PER/VAL
3988.667	0.02	25 063.94	10		$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{3/2})5g\ ^2[5/2]^\circ_3$	72PER/VAL
3991.592	0.02	25 045.58	5		$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{1/2})5g\ ^2[7/2]^\circ_4$	72PER/VAL
3992.250	0.02	25 041.45	25		$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{1/2})5g\ ^2[9/2]^\circ_4$	72PER/VAL
4006.827	0.02	24 950.35	4		$4p^5(^2P_{1/2})4f\ ^2[7/2]_4$	$4p^5(^2P_{1/2})5g\ ^2[7/2]^\circ_4$	72PER/VAL
4007.339	0.02	24 947.16	25		$4p^5(^2P_{1/2})4f\ ^2[7/2]_4$	$4p^5(^2P_{1/2})5g\ ^2[9/2]^\circ_5$	72PER/VAL
4012.192	0.02	24 916.99	2		$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})7f\ ^2[9/2]_5$	72PER/VAL
4037.516	0.02	24 760.71	15		$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})5g\ ^2[7/2]^\circ_4$	72PER/VAL
4041.386	0.02	24 737.00	2		$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})7f\ ^2[9/2]_4$	72PER/VAL
4052.416	0.02	24 669.67	18		$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{1/2})5g\ ^2[7/2]^\circ_3$	72PER/VAL
4068.951	0.02	24 569.42	12		$4p^5(^2P_{3/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
4094.032	0.02	24 418.90	30		$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{3/2})5g\ ^2[9/2]^\circ_4$	72PER/VAL
4097.019	0.02	24 401.10	30		$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})5g\ ^2[7/2]^\circ_3$	72PER/VAL
4105.629	0.02	24 349.93	30		$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	$4p^5(^2P_{3/2})5g\ ^2[9/2]^\circ_5$	72PER/VAL
4107.975	0.02	24 336.03	12		$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{3/2})5g\ ^2[7/2]^\circ_3$	72PER/VAL
4120.119	0.02	24 264.30	10		$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	$4p^5(^2P_{3/2})5g\ ^2[7/2]^\circ_4$	72PER/VAL
4137.339	0.02	24 163.31	10		$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})5g\ ^2[5/2]^\circ_3$	72PER/VAL
4137.916	0.02	24 159.94	5		$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})5g\ ^2[5/2]^\circ_2$	72PER/VAL
4139.046	0.02	24 153.34	5		$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[3/2]_1$	72PER/VAL
4335.799	0.02	23 057.32	35		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
4550.660	0.02	21 968.68	18		$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[5/2]_2$	72PER/VAL
4652.858	0.02	21 486.15	9	h	$4p^5(^2P_{3/2})5f\ ^2[9/2]_5$	$4p^5(^2P_{3/2})7g\ ^2[11/2]^\circ_6$	72PER/VAL
4675.100	0.02	21 383.93	6	h	$4p^5(^2P_{3/2})5f\ ^2[9/2]_4$	$4p^5(^2P_{3/2})7g\ ^2[11/2]^\circ_5$	72PER/VAL
4781.248	0.02	20 909.19	2	h	$4p^5(^2P_{3/2})5f\ ^2[7/2]_3$	$4p^5(^2P_{3/2})7g\ ^2[9/2]^\circ_4$	72PER/VAL
4793.095	0.02	20 857.52	3	h	$4p^5(^2P_{3/2})5f\ ^2[7/2]_4$	$4p^5(^2P_{3/2})7g\ ^2[9/2]^\circ_5$	72PER/VAL
4852.776	0.02	20 601.01	5		$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
4907.772	0.02	20 370.16	9		$4p^5(^2P_{1/2})5d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[5/2]_2$	72PER/VAL
4920.630	0.02	20 316.93	6		$4p^5(^2P_{1/2})6p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
4941.014	0.02	20 233.11	5		$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
5022.667	0.02	19 904.19	25		$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5050.953	0.02	19 792.73	5		$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5066.697	0.02	19 731.22	5	s	$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_1$	72PER/VAL
5071.087	0.02	19 714.14	30		$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_0$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
5074.497	0.02	19 700.89	8		$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
5080.965	0.02	19 675.82	3		$4p^5(^2P_{1/2})6p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
5095.99	0.02	19 617.80	1	w,h	$4p^5(^2P_{3/2})5g\ ^2[11/2]^\circ_6$	$4p^5(^2P_{3/2})7h\ ^2[13/2]_7$	72PER/VAL
5103.510	0.02	19 588.90	6		$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
5130.335	0.02	19 486.47	30		$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_1$	72PER/VAL
5158.261	0.02	19 380.98	35		$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
5159.863	0.02	19 374.96	3		$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_1$	72PER/VAL
5162.295	0.02	19 365.84	2	p	$4p^5(^2P_{1/2})5d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})5f\ ^2[3/2]_2$	72PER/VAL
5195.973	0.02	19 240.32	18		$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	72PER/VAL
5197.515	0.02	19 234.61	5		$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_1$	72PER/VAL
5213.193	0.02	19 176.76	15		$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_0$	72PER/VAL
5217.078	0.02	19 162.48	25	=	$4p^5(^2P_{3/2})4f\ ^2[9/2]_5$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_4$	72PER/VAL
5217.078	0.02	19 162.48	25	=	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
5226.917	0.02	19 126.42	12		$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	72PER/VAL
5247.175	0.02	19 052.57	3		$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5257.707	0.02	19 014.41	40		$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	72PER/VAL
5262.212	0.02	18 998.13	30		$4p^5(^2P_{1/2})6p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
5262.958	0.02	18 995.43	9		$4p^5(^2P_{1/2})4f\ ^2[7/2]_4$	$4p^5(^2P_{1/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
5272.430	0.02	18 961.31	25		$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
5278.223	0.02	18 940.50	3		$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5288.319	0.02	18 904.34	30		$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_4$	72PER/VAL
5298.062	0.02	18 869.58	2		$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{1/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5317.591	0.02	18 800.28	5		$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
5321.909	0.02	18 785.02	6		$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{1/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
5343.301	0.02	18 709.82	9	bl	$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{1/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
5355.942	0.02	18 665.66	18		$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
5378.458	0.02	18 587.52	15		$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	72PER/VAL
5391.028	0.02	18 544.18	30		$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	$4p^5(^2P_{1/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
5395.886	0.02	18 527.49	15		$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
5399.924	0.02	18 513.63	12		$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5405.451	0.02	18 494.70	25		$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
5407.066	0.02	18 489.18	20		$4p^5(^2P_{3/2})6p\ ^2[1/2]_0$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
5417.560	0.02	18 453.36	25	=	$4p^5(^2P_{1/2})5s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})5p\ ^2[1/2]_1$	72PER/VAL
5417.560	0.02	18 453.36	25	=	$4p^5(^2P_{1/2})6p\ ^2[1/2]_0$	$4p^5(^2P_{1/2})6d\ ^2[3/2]^\circ_1$	72PER/VAL
5420.991	0.02	18 441.69	25		$4p^5(^2P_{1/2})6p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5431.974	0.02	18 404.40	3		$4p^5(^2P_{1/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{1/2})6d\ ^2[5/2]^\circ_2$	72PER/VAL
5443.483	0.02	18 365.49	40		$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_4$	72PER/VAL
5455.984	0.02	18 323.41	3	h	$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	$4p^5(^2P_{1/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5463.897	0.02	18 296.87	30		$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_3$	72PER/VAL
5471.650	0.02	18 270.95	25		$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_1$	72PER/VAL
5477.634	0.02	18 250.99	8		$4p^5(^2P_{1/2})6p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})7s\ ^2[1/2]^\circ_1$	72PER/VAL
5485.219	0.02	18 225.75	20		$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	72PER/VAL
5504.829	0.02	18 160.83	2		$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	72PER/VAL
5507.556	0.02	18 151.83	5		$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5519.484	0.02	18 112.61	4		$4p^5(^2P_{1/2})6p\ ^2[3/2]_1$	$4p^5(^2P_{1/2})7s\ ^2[1/2]^\circ_0$	72PER/VAL
5520.418	0.02	18 109.54	25		$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
5537.333	0.02	18 054.22	12		$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5554.755	0.02	17 997.60	18		$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
5594.495	0.02	17 869.75	3	w,bl	$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_4$	72PER/VAL
5637.242	0.02	17 734.25	5		$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_1$	72PER/VAL
5664.655	0.02	17 648.43	30		$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	72PER/VAL
5668.480	0.02	17 636.52	2		$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_1$	72PER/VAL
5677.093	0.02	17 609.76	5		$4p^5(^2P_{1/2})6p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})7s\ ^2[1/2]^\circ_1$	72PER/VAL
5689.717	0.02	17 570.69	30		$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
5715.509	0.02	17 491.40	25		$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	$4p^5(^2P_{1/2})7s\ ^2[1/2]^\circ_1$	72PER/VAL
5722.026	0.02	17 471.48	7		$4p^5(^2P_{1/2})6p\ ^2[1/2]_1$	$4p^5(^2P_{1/2})7s\ ^2[1/2]^\circ_0$	72PER/VAL
5750.598	0.02	17 384.67	25		$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_1$	72PER/VAL
5801.953	0.02	17 230.80	15		$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_1$	72PER/VAL
5809.316	0.02	17 208.96	5		$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
5811.889	0.02	17 201.34	2		$4p^5(^2P_{3/2})6d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})6f\ ^2[3/2]_2$	72PER/VAL
5828.429	0.02	17 152.53	8		$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})6f\ ^2[9/2]_5$	72PER/VAL
5830.903	0.02	17 145.25	3		$4p^5(^2P_{3/2})6d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6f\ ^2[5/2]_3$	72PER/VAL
5880.990	0.02	16 999.23	4		$4p^5(^2P_{3/2})6d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})6f\ ^2[9/2]_4$	72PER/VAL
5888.019	0.02	16 978.94	12		$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_1$	72PER/VAL
5891.503	0.02	16 968.90	3		$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})6f\ ^2[7/2]_3$	72PER/VAL
5953.413	0.02	16 792.44	3		$4p^5(^2P_{3/2})6d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})6f\ ^2[7/2]_4$	72PER/VAL
5984.339	0.02	16 705.66	20		$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	$4p^5(^2P_{3/2})7s\ ^2[3/2]^\circ_2$	72PER/VAL
6100.654	0.02	16 387.15	3		$4p^5(^2P_{1/2})6p\ ^2[1/2]_0$	$4p^5(^2P_{1/2})7s\ ^2[1/2]^\circ_1$	72PER/VAL
6677.275	0.02	14 972.04	4		$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[1/2]_0$	72PER/VAL
6873.445	0.02	14 544.73	6		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[1/2]_0$	72PER/VAL
7257.093	0.03	13 775.83	5		$4p^5(^2P_{1/2})6s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})6p\ ^2[1/2]_0$	72PER/VAL
7316.292	0.03	13 664.36	15		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
7421.626	0.03	13 470.43	0.5		$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_0$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	72PER/VAL
7596.148	0.03	13 160.94	4		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	72PER/VAL
7715.070	0.03	12 958.08	2		$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	72PER/VAL
7728.022	0.03	12 936.36	15		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
7759.418	0.03	12 884.02	10		$4p^5(^2P_{1/2})6s\ ^2[1/2]^\circ_0$	$4p^5(^2P_{1/2})6p\ ^2[1/2]_1$	72PER/VAL
7810.860	0.03	12 799.17	25		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
7889.492	0.03	12 671.60	18		$4p^5(^2P_{1/2})6s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	72PER/VAL
7963.951	0.03	12 553.13	6		$4p^5(^2P_{1/2})6s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})6p\ ^2[1/2]_1$	72PER/VAL
7978.275	0.03	12 530.59	18		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	72PER/VAL
8079.165	0.03	12 374.11	4		$4p^5(^2P_{3/2})5g\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})6h\ ^2[7/2]_3$	72PER/VAL
8080.349	0.03	12 372.30	8		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
8081.299	0.03	12 370.85	5	h	$4p^5(^2P_{3/2})5g\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})6h\ ^2[7/2]_4$	72PER/VAL
8117.338	0.03	12 315.92	7	h	$4p^5(^2P_{3/2})5g\ ^2[11/2]^\circ_6$	$4p^5(^2P_{3/2})6h\ ^2[13/2]_7$	72PER/VAL
8118.082	0.03	12 314.80	5	h	$4p^5(^2P_{3/2})5g\ ^2[11/2]^\circ_5$	$4p^5(^2P_{3/2})6h\ ^2[13/2]_6$	72PER/VAL
8119.127	0.03	12 313.21	10		$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
8133.294	0.03	12 291.76	18		$4p^5(^2P_{1/2})4d\ ^2[3/2]^\circ_1$	$4p^5(^2P_{1/2})5p\ ^2[1/2]_0$	72PER/VAL
8154.148	0.03	12 260.33	10		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
8155.280	0.03	12 258.62	2	h	$4p^5(^2P_{1/2})5g\ ^2[9/2]^\circ_4$	$4p^5(^2P_{1/2})6h\ ^2[11/2]_5$	72PER/VAL
8155.822	0.03	12 257.81	3	h	$4p^5(^2P_{1/2})5g\ ^2[9/2]^\circ_5$	$4p^5(^2P_{1/2})6h\ ^2[11/2]_6$	72PER/VAL
8157.088	0.03	12 255.91	2	h	$4p^5(^2P_{1/2})5g\ ^2[7/2]^\circ_4$	$4p^5(^2P_{1/2})6h\ ^2[9/2]_5$	72PER/VAL

TABLE 6. Observed spectral lines of Sr III—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
8160.170	0.03	12 251.28	1	h	$4p^5(^2P_{1/2})5g\ ^2[7/2]^\circ_3$	$4p^5(^2P_{1/2})6h\ ^2[9/2]_4$	72PER/VAL
8165.724	0.03	12 242.95	6		$4p^5(^2P_{1/2})6s\ ^2[1/2]^\circ_0$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_1$	72PER/VAL
8187.402	0.03	12 210.53	5	h	$4p^5(^2P_{3/2})5g\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})6h\ ^2[9/2]_5$	72PER/VAL
8188.898	0.03	12 208.30	5	h	$4p^5(^2P_{3/2})5g\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})6h\ ^2[9/2]_4$	72PER/VAL
8230.490	0.03	12 146.61	4	h	$4p^5(^2P_{3/2})5g\ ^2[9/2]^\circ_4$	$4p^5(^2P_{3/2})6h\ ^2[11/2]_5$	72PER/VAL
8230.842	0.03	12 146.09	6	h	$4p^5(^2P_{3/2})5g\ ^2[9/2]^\circ_5$	$4p^5(^2P_{3/2})6h\ ^2[11/2]_6$	72PER/VAL
8231.377	0.03	12 145.30	6		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	72PER/VAL
8392.566	0.03	11 912.03	15		$4p^5(^2P_{1/2})6s\ ^2[1/2]^\circ_1$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_1$	72PER/VAL
8395.800	0.03	11 907.45	3		$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	72PER/VAL
8582.112	0.03	11 648.94	18		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
8585.520	0.03	11 644.32	15		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
8603.182	0.03	11 620.42	4		$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_0$	$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	72PER/VAL
8606.937	0.03	11 615.35	2		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	72PER/VAL
8658.761	0.03	11 545.83	3		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	72PER/VAL
8707.801	0.03	11 480.80	2		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_2$	72PER/VAL
8732.679	0.03	11 448.10	4		$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_3$	72PER/VAL
8762.901	0.03	11 408.61	15		$4p^5(^2P_{3/2})6s\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	72PER/VAL
8788.396	0.03	11 375.52	2		$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_0$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	72PER/VAL
8910.579	0.03	11 219.54	2		$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_2$	72PER/VAL
8979.908	0.03	11 132.92	5		$4p^5(^2P_{1/2})5d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})6p\ ^2[1/2]_1$	72PER/VAL
8998.281	0.03	11 110.18	4		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
9000.000	0.03	11 108.06	3		$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})6p\ ^2[1/2]_1$	72PER/VAL
9058.091	0.03	11 036.83	8		$4p^5(^2P_{1/2})5d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{1/2})4f\ ^2[7/2]_3$	72PER/VAL
9164.077	0.03	10 909.18	10		$4p^5(^2P_{3/2})5d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
9202.824	0.03	10 863.25	3		$4p^5(^2P_{3/2})5d\ ^2[1/2]^\circ_1$	$4p^5(^2P_{3/2})4f\ ^2[3/2]_1$	72PER/VAL
9210.784	0.03	10 853.86	12		$4p^5(^2P_{1/2})5d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_2$	72PER/VAL
9212.662	0.03	10 851.65	15		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_4$	$4p^5(^2P_{3/2})4f\ ^2[9/2]_5$	72PER/VAL
9236.528	0.03	10 823.61	6		$4p^5(^2P_{1/2})5d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{1/2})6p\ ^2[3/2]_1$	72PER/VAL
9296.328	0.03	10 753.99	7		$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_1$	72PER/VAL
9324.572	0.03	10 721.41	12		$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_2$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_3$	72PER/VAL
9350.155	0.03	10 692.08	10		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})6p\ ^2[5/2]_2$	72PER/VAL
9425.028	0.03	10 607.14	8		$4p^5(^2P_{1/2})5d\ ^2[3/2]^\circ_2$	$4p^5(^2P_{1/2})4f\ ^2[5/2]_3$	72PER/VAL
9430.218	0.03	10 601.30	8		$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})6p\ ^2[3/2]_2$	72PER/VAL
9449.123	0.03	10 580.09	0.5		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[5/2]_3$	72PER/VAL
9551.938	0.03	10 466.21	15		$4p^5(^2P_{3/2})5d\ ^2[7/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[9/2]_4$	72PER/VAL
9610.239	0.03	10 402.72	7		$4p^5(^2P_{1/2})5d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{1/2})4f\ ^2[7/2]_4$	72PER/VAL
9770.075	0.03	10 232.53	12		$4p^5(^2P_{3/2})5d\ ^2[5/2]^\circ_3$	$4p^5(^2P_{3/2})4f\ ^2[7/2]_4$	72PER/VAL

6.3. Sr IV

Br isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}4s^24p^5\ ^2P^\circ_{3/2}$
Ionization energy $453\,930 \pm 25\ cm^{-1}$; 56.279 ± 0.003 eV

The investigation of the Sr IV spectrum began with the observation of 29 lines in the vacuum ultraviolet by Tomboulian [38TOM]. The understanding of the spectrum was greatly enhanced by Hansen and Persson [76HAN/PER] and Persson [78PER]. In [76HAN/PER] about 570 Sr IV lines were classified. Persson [78PER] brought the number of classified lines to about 1200 transitions between 255 levels. The levels and lines in Tables 7 and 8 are taken from the two later papers. Persson [78PER] also determined the leading percentages presented in Table 7 and the ionization energy. The $4s^24p^4nl$ energy level values are given to two decimal places in Table 7 because, although the absolute uncertainty of the levels is $\pm 0.6\ cm^{-1}$, Hansen and Persson [76HAN/PER] indicate that the internal consistency of these levels is $\pm 0.2\ cm^{-1}$. (Because of space limitations we have omitted the multiplicity from the pair coupling terms in the leading percentages in Table 7, since it is always 2.)

6.3.1 References for Sr IV

38TOM D. H. Tomboulian, Phys. Rev. **54**, 350 (1938).

76HAN/PER J. E. Hansen and W. Persson, Phys. Scr. **13**, 166 (1976).

78PER W. Persson, Phys. Scr. **17**, 387 (1978).

TABLE 7. Energy levels of Sr IV

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Ref.
$4s^24p^5$	$^2P^\circ$	3/2	0.0			78PER
	$^2P^\circ$	1/2	9727.9	0.3		78PER
$4s4p^6$	^2S	1/2	150 504.1	0.2	70% + 30% $4s^24p^4(^1D)4d$ ^2S	78PER
$4s^24p^4(^3P)4d$	^4D	7/2	187 160.33	0.6	94%	78PER
	^4D	5/2	187 200.74	0.6	91%	78PER
	^4D	3/2	188 024.11	0.6	90%	78PER
	^4D	1/2	189 119.64	0.6	90%	78PER
	^4F	9/2	197 060.03	0.6	92% + 8% $4s^24p^4(^1D)4d$ ^2G	78PER
	^4F	7/2	200 340.03	0.6	78% + 12% $4s^24p^4(^3P)4d$ ^2F + 8% $4s^24p^4(^1D)4d$ ^2G	78PER
	^4F	5/2	203 344.42	0.6	95%	78PER
	^4F	3/2	204 179.71	0.6	77% + 8% $4s^24p^4(^1S)4d$ ^2D + 5% $4s^24p^4(^3P)4d$ ^4P	78PER
	^4P	1/2	204 743.50	0.6	91%	78PER
	^4P	3/2	204 808.95	0.6	53% + 19% $4s^24p^4(^1D)4d$ ^2P + 13% $4s^24p^4(^3P)4d$ ^4F + 9% $4s^24p^4(^3P)4d$ ^2P	78PER
	^4P	5/2	208 937.80	0.6	80% + 6% $4s^24p^4(^1S)4d$ ^2D + 6% $4s^24p^4(^3P)4d$ ^2D	78PER
	^2F	7/2	207 478.23	0.6	55% + 18% $4s^24p^4(^1D)4d$ ^2G + 16% $4s^24p^4(^3P)4d$ ^4F + 8% $4s^24p^4(^1D)4d$ ^2F	78PER
	^2F	5/2	214 946.01	0.6	68% + 13% $4s^24p^4(^1D)4d$ ^2F + 13% $4s^24p^4(^1D)4d$ ^2D + 5% $4s^24p^4(^3P)4d$ ^2D	78PER
	^2P	3/2	252 385.97	0.6	46% + 34% $4s^24p^4(^1D)4d$ ^2P + 8% $4s^24p^4(^1D)4d$ ^2D + 5% $4s^24p^4(^1D2)5s$ [2]	78PER
	^2P	1/2	253 231.79	0.6	31% + 30% $4s^24p^4(^1D)4d$ ^2P + 25% $4s^24p^4(^1D)4d$ ^2S + 11% $4s4p^6$ ^2S	78PER
	^2D	5/2	254 820.96	0.6	56% + 20% $4s^24p^4(^1D)4d$ ^2D + 17% $4s^24p^4(^1S)4d$ ^2D + 6% $4s^24p^4(^1D2)5s$ [2]	78PER
	^2D	3/2	264 181.57	0.6	53% + 24% $4s^24p^4(^1S)4d$ ^2D + 14% $4s^24p^4(^1D)4d$ ^2D	78PER
$(^1S)4d$	^2D	3/2	242 171.57	0.6	60% + 26% $4s^24p^4(^1D)4d$ ^2D + 6% $4s^24p^4(^1D)4d$ ^2P	78PER
	^2D	5/2	245 734.92	0.6	70% + 18% $4s^24p^4(^1D)4d$ ^2D	78PER
$(^1D)4d$	^2P	1/2	200 529.25	0.6	46% + 39% $4s^24p^4(^3P)4d$ ^2P + 9% $4s^24p^4(^3P)4d$ ^4D + 6% $4s^24p^4(^3P)4d$ ^4P	78PER
	^2P	3/2	209 211.07	0.6	26% + 37% $4s^24p^4(^3P)4d$ ^4P + 23% $4s^24p^4(^3P)4d$ ^2P + 6% $4s^24p^4(^1D)4d$ ^2D	78PER
	^2D	3/2	206 524.12	0.6	39% + 27% $4s^24p^4(^3P)4d$ ^2D + 10% $4s^24p^4(^3P)4d$ ^2P + 8% $4s^24p^4(^1D)4d$ ^2P	78PER
	^2D	5/2	211 973.07	0.6	37% + 23% $4s^24p^4(^3P)4d$ ^2D + 15% $4s^24p^4(^3P)4d$ ^2F + 14% $4s^24p^4(^3P)4d$ ^4P	78PER
	^2G	9/2	215 187.68	0.6	92% + 8% $4s^24p^4(^3P)4d$ ^4F	78PER
	^2G	7/2	215 188.35	0.6	73% + 20% $4s^24p^4(^3P)4d$ ^2F + 6% $4s^24p^4(^1D)4d$ ^2F	78PER
	^2F	5/2	225 871.18	0.6	85% + 8% $4s^24p^4(^3P)4d$ ^2F + 5% $4s^24p^4(^1D)4d$ ^2D	78PER
	^2F	7/2	228 097.73	0.6	85% + 13% $4s^24p^4(^3P)4d$ ^2F	78PER
	^2S	1/2	257 344.99	0.6	41% + 21% $4s^24p^4(^3P)4d$ ^2P + 17% $4s^24p^4(^1D)4d$ ^2P + 17% $4s4p^6$ ^2S	78PER
$4s^24p^4(^3P_2)5s$	$^2[2]$	5/2	228 654.17	0.6	93%	78PER
	$^2[2]$	3/2	232 210.43	0.6	80% + 13% $4s^24p^4(^3P_1)5s$ [1] + 6% $4s^24p^4(^1D_2)5s$ [2]	78PER
$(^3P_1)5s$	$^2[1]$	3/2	238 217.98	0.6	87% + 11% $4s^24p^4(^3P_2)5s$ [2]	78PER
	$^2[1]$	1/2	242 092.84	0.6	63% + 32% $4s^24p^4(^3P_0)5s$ [0]	78PER
$(^3P_0)5s$	$^2[0]$	1/2	236 924.66	0.6	58% + 36% $4s^24p^4(^3P_1)5s$ [1]	78PER
	$^2[0]$	1/2	274 687.97	0.6	87% + 8% $4s^24p^4(^3P_0)5s$ [0]	78PER
$(^1D_2)5s$	$^2[2]$	5/2	250 046.76	0.6	87% + 6% $4s^24p^4(^3P)4d$ ^2D	78PER
	$^2[2]$	3/2	250 503.65	0.6	85% + 8% $4s^24p^4(^3P_2)5s$ [2]	78PER
$4s^24p^4(^3P_2)5p$	$^2[3]^\circ$	7/2	271 249.46	0.6	95% + 5% $4s^24p^4(^1D_2)5p$ [3]	78PER
	$^2[3]^\circ$	5/2	271 328.56	0.6	85% + 6% $4s^24p^4(^1D_2)5p$ [3] + 6% $4s^24p^4(^3P_2)5p$ [2]	78PER
	$^2[2]^\circ$	5/2	267 537.32	0.6	88% + 7% $4s^24p^4(^3P_2)5p$ [3]	78PER
	$^2[2]^\circ$	3/2	276 159.16	0.6	39% + 26% $4s^24p^4(^3P_1)5p$ [2] + 26% $4s^24p^4(^3P_2)5p$ [1] + 5% $4s^24p^4(^3P_0)5p$ [1]	78PER
	$^2[1]^\circ$	3/2	267 529.26	0.6	43% + 40% $4s^24p^4(^3P_2)5p$ [2] + 5% $4s^24p^4(^1D_2)5p$ [1] + 5% $4s^24p^4(^3P_1)5p$ [1]	78PER
	$^2[1]^\circ$	1/2	270 350.30	0.6	58% + 12% $4s^24p^4(^3P_1)5p$ [0] + 12% $4s^24p^4(^1D_2)5p$ [1] + 9% $4s^24p^4(^3P_1)5p$ [1]	78PER
$(^3P_1)5p$	$^2[2]^\circ$	5/2	279 165.72	0.6	95%	78PER
	$^2[2]^\circ$	3/2	278 078.00	0.6	38% + 22% $4s^24p^4(^3P_1)5p$ [1] + 13% $4s^24p^4(^3P_2)5p$ [1] + 9% $4s^24p^4(^3P_0)5p$ [1]	78PER
	$^2[1]^\circ$	3/2	282 345.52	0.6	64% + 20% $4s^24p^4(^3P_1)5p$ [2] + 13% $4s^24p^4(^3P_2)5p$ [1]	78PER
	$^2[1]^\circ$	1/2	282 440.51	0.6	59% + 17% $4s^24p^4(^3P_2)5p$ [1] + 10% $4s^24p^4(^3P_0)5p$ [1] + 7% $4s^24p^4(^3P_1)5p$ [0]	78PER
	$^2[0]^\circ$	1/2	276 054.66	0.6	64% + 14% $4s^24p^4(^1D_2)5p$ [1] + 11% $4s^24p^4(^3P_1)5p$ [1] + 7% $4s^24p^4(^3P_2)5p$ [1]	78PER
$(^3P_0)5p$	$^2[1]^\circ$	3/2	281 543.86	0.6	72% + 10% $4s^24p^4(^1D_2)5p$ [1] + 7% $4s^24p^4(^3P_1)5p$ [2]	78PER
	$^2[1]^\circ$	1/2	277 913.84	0.6	66% + 16% $4s^24p^4(^3P_1)5p$ [1] + 6% $4s^24p^4(^3P_2)5p$ [1] + 6% $4s^24p^4(^3P_1)5p$ [0]	78PER
$(^1S_0)5p$	$^2[1]^\circ$	3/2	315 791.69	0.6	91% + 6% $4s^24p^4(^3P_0)5p$ [1]	78PER
	$^2[1]^\circ$	1/2	314 666.82	0.6	90% + 9% $4s^24p^4(^3P_0)5p$ [1]	78PER

TABLE 7. Energy levels of Sr IV—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Ref.
$(^1D_2)5p$	$^2[3]°$	7/2	290 311.89	0.6	95% + 5% $4s^24p^4(^3P_2)5p$ [3]	78PER
	$^2[3]°$	5/2	288 655.13	0.6	91% + 6% $4s^24p^4(^3P_2)5p$ [3]	78PER
	$^2[2]°$	5/2	295 118.74	0.6	94%	78PER
	$^2[2]°$	3/2	294 867.62	0.6	81% + 9% $4s^24p^4(^3P_2)5p$ [2] + 6% $4s^24p^4(^1D_2)5p$ [1]	78PER
	$^2[1]°$	3/2	292 454.67	0.6	67% + 14% $4s^24p^4(^1D_2)5p$ [2] + 6% $4s^24p^4(^3P_1)5p$ [2] + 6% $4s^24p^4(^3P_2)5p$ [2]	78PER
	$^2[1]°$	1/2	297 705.09	0.6	68% + 12% $4s^24p^4(^3P_2)5p$ [1] + 10% $4s^24p^4(^3P_1)5p$ [0] + 5% $4s^24p^4(^3P_0)5p$ [1]	78PER
$4s^24p^4(^3P_2)6s$	$^2[2]$	5/2	334 143.89	0.6	94% + 6% $4s^24p^4(^1D_2)6s$ [2]	78PER
	$^2[2]$	3/2	335 436.88	0.6	90% + 7% $4s^24p^4(^1D_2)6s$ [2]	78PER
$(^3P_1)6s$	$^2[1]$	3/2	342 700.06	0.6	97%	78PER
	$^2[1]$	1/2	344 195.86	0.6	52% + 42% $4s^24p^4(^3P_0)6s$ [0]	78PER
$(^3P_0)6s$	$^2[0]$	1/2	342 636.27	0.6	49% + 47% $4s^24p^4(^3P_1)6s$ [1]	78PER
$(^1S_0)6s$	$^2[0]$	1/2	378 474.25	0.6	91% + 9% $4s^24p^4(^3P_0)6s$ [0]	78PER
$(^1D_2)6s$	$^2[2]$	5/2	354 841.85	0.6	92% + 6% $4s^24p^4(^3P_2)6s$ [2]	78PER
	$^2[2]$	3/2	354 937.05	0.6	84% + 8% $4s^24p^4(^1D_2)5d$ [2] + 6% $4s^24p^4(^3P_2)6s$ [2]	78PER
$4s4p^5(^3P)4d$	$^4P°$	1/2	334 267.61	0.6	79% + 16% $4s^24p^4(^3P)4f\ ^4D$	78PER
	$^4P°$	3/2	335 389.12	0.6	61% + 18% $4s^24p^4(^3P)4f\ ^4D$ + 7% $4s^24p^4(^3P)4f\ ^2D$ + 6% $4s4p^5(^3P)4d\ ^4D$	78PER
	$^4P°$	5/2	338 194.34	0.6	79% + 10% $4s^24p^4(^3P)4f\ ^2F$	78PER
	$^4F°$	9/2	350 449.73	0.6	66% + 25% $4s^24p^4(^3P)4f\ ^4F$	78PER
	$^4F°$	7/2	350 715.04	0.6	64% + 15% $4s^24p^4(^3P)4f\ ^4F$ + 8% $4s^24p^4(^1D)4f\ ^2F$ + 8% $4s4p^5(^3P)4d\ ^4D$	78PER
	$^4F°$	5/2	352 433.02	0.6	65% + 16% $4s^24p^4(^3P)4f\ ^4F$ + 11% $4s4p^5(^3P)4d\ ^4D$	78PER
	$^4F°$	3/2	354 435.30	0.6	64% + 16% $4s^24p^4(^3P)4f\ ^4F$ + 9% $4s4p^5(^3P)4d\ ^4D$	78PER
	$^4D°$	1/2	360 344.74	0.6	87% + 11% $4s^24p^4(^3P)4f\ ^4D$	78PER
	$^4D°$	7/2	360 539.33	0.6	67% + 14% $4s^24p^4(^3P)4f\ ^4D$ + 9% $4s^24p^4(^1D)4f\ ^2F$	78PER
	$^4D°$	3/2	361 406.28	0.6	75% + 10% $4s4p^5(^3P)4d\ ^4F$ + 10% $4s^24p^4(^3P)4f\ ^4D$	78PER
	$^4D°$	5/2	361 478.30	0.6	67% + 11% $4s4p^5(^3P)4d\ ^4F$ + 9% $4s^24p^4(^3P)4f\ ^4D$ + 5% $4s4p^5(^1P)4d\ ^2D$	78PER
$(^1P)4d$	$^2D°$	5/2	363 743.37	0.6	31% + 22% $4s4p^5(^1P)4d\ ^2F$ + 15% $4s^24p^4(^1D)4f\ ^2D$ + 10% $4s^24p^4(^1D)4f\ ^2F$	78PER
	$^2D°$	3/2	367 291.31	0.6	52% + 21% $4s^24p^4(^1D)4f\ ^2D$ + 17% $4s4p^5(^3P)4d\ ^2D$ + 5% $4s4p^5(^1P)4d\ ^2P$	78PER
	$^2F°$	5/2	368 412.00	0.6	35% + 21% $4s4p^5(^1P)4d\ ^2D$ + 13% $4s4p^5(^3P)4d\ ^2F$ + 9% $4s^24p^4(^1D)4f\ ^2F$	78PER
$4s^24p^4(^3P)4f$	$^4F°$	9/2	328 551.41	0.6	70% + 21% $4s4p^5(^1P)4d\ ^4F$ + 5% $4s^24p^4(^3P)4f\ ^4G$	78PER
	$^4F°$	7/2	328 908.67	0.6	68% + 18% $4s4p^5(^3P)4d\ ^4F$ + 6% $4s^24p^4(^3P)4f\ ^4D$	78PER
	$^4F°$	5/2	329 681.06	0.6	64% + 15% $4s4p^5(^3P)4d\ ^4F$ + 11% $4s^24p^4(^3P)4f\ ^4D$	78PER
	$^4F°$	3/2	330 811.44	0.6	59% + 16% $4s^24p^4(^3P)4f\ ^4D$ + 13% $4s4p^5(^3P)4d\ ^4F$ + 5% $4s^24p^4(^3P)4f\ ^2D$	78PER
	$^4G°$	11/2	335 379.10	0.6	92% + 8% $4s^24p^4(^1D)4f\ ^2H$	78PER
	$^4G°$	9/2	341 157.71	0.6	60% + 25% $4s^24p^4(^3P)4f\ ^2G$ + 11% $4s4p^5(^3P)4d\ ^4F$	78PER
	$^4G°$	7/2	343 266.68	0.6	66% + 18% $4s^24p^4(^3P)4f\ ^2F$ + 10% $4s^24p^4(^3P)4f\ ^4D$	78PER
	$^4G°$	5/2	343 520.46	0.6	85% + 6% $4s^24p^4(^3P)4f\ ^2F$ + 6% $4s^24p^4(^1S)4f\ ^2F$	78PER
	$^4D°$	1/2	335 431.13	0.6	68% + 20% $4s4p^5(^3P)4d\ ^4P$ + 7% $4s^24p^4(^1D)4f\ ^2P$ + 5% $4s4p^5(^3P)4d\ ^4D$	78PER
	$^4D°$	3/2	336 723.73	0.6	38% + 36% $4s4p^5(^3P)4d\ ^4P$ + 15% $4s^24p^4(^3P)4f\ ^2D$ + 7% $4s^24p^4(^1D)4f\ ^2P$	78PER
	$^4D°$	5/2	340 973.05	0.6	43% + 17% $4s^24p^4(^3P)4f\ ^2F$ + 13% $4s4p^5(^3P)4d\ ^4P$ + 10% $4s^24p^4(^3P)4f\ ^4F$	78PER
	$^4D°$	7/2	341 420.62	0.6	56% + 16% $4s^24p^4(^3P)4f\ ^4G$ + 10% $4s4p^5(^3P)4d\ ^4D$ + 6% $4s^24p^4(^3P)4f\ ^4F$	78PER
	$^2F°$	5/2	335 706.85	0.6	44% + 27% $4s^24p^4(^3P)4f\ ^4D$ + 10% $4s^24p^4(^3P)4f\ ^2D$	78PER
	$^2F°$	7/2	335 780.35	0.6	59% + 17% $4s^24p^4(^3P)4f\ ^2G$ + 10% $4s^24p^4(^3P)4f\ ^4D$ + 8% $4s^24p^4(^3P)4f\ ^4G$	78PER
	$^2G°$	9/2	335 779.95	0.6	64% + 27% $4s^24p^4(^3P)4f\ ^4G$ + 8% $4s^24p^4(^1D)4f\ ^2H$	78PER
	$^2G°$	7/2	344 417.51	0.6	76% + 19% $4s^24p^4(^3P)4f\ ^2F$	78PER
	$^2D°$	3/2	340 337.91	0.6	53% + 14% $4s^24p^4(^3P)4f\ ^4F$ + 12% $4s^24p^4(^3P)4f\ ^4D$ + 10% $4s^24p^4(^1D)4f\ ^2D$	78PER
	$^2D°$	5/2	345 236.33	0.6	81% + 8% $4s^24p^4(^3P)4f\ ^2F$	78PER
$(^1S)4f$	$^2F°$	7/2	379 962.16	0.6	87%	78PER
	$^2F°$	5/2	380 835.09	0.6	85% + 5% $4s4p^5(^1P)4d\ ^2F$	78PER
$(^1D)4f$	$^2D°$	5/2	351 166.74	0.6	64% + 14% $4s4p^5(^1P)4d\ ^2D$ + 9% $4s4p^5(^3P)4d\ ^2D$	78PER
	$^2D°$	3/2	352 624.10	0.6	40% + 18% $4s^24p^4(^1D)4f\ ^2P$ + 15% $4s^24p^4(^3P)4f\ ^2D$ + 11% $4s4p^5(^1P)4d\ ^2D$	78PER
	$^2P°$	3/2	352 075.62	0.6	67% + 19% $4s^24p^4(^1D)4f\ ^2D$ + 5% $4s^24p^4(^3P)4f\ ^4D$	78PER
	$^2H°$	9/2	353 156.17	0.6	92% + 6% $4s^24p^4(^3P)4f\ ^2G$	78PER
	$^2H°$	11/2	353 192.24	0.6	92% + 8% $4s^24p^4(^3P)4f\ ^4G$	78PER
	$^2F°$	7/2	353 937.37	0.6	51% + 25% $4s4p^5(^1P)4d\ ^2F$ + 11% $4s4p^5(^3P)4d\ ^2F$ + 7% $4s^24p^4(^3P)4f\ ^4F$	78PER
	$^2F°$	5/2	355 372.02	0.6	66% + 12% $4s4p^5(^1P)4d\ ^2F$ + 9% $4s^24p^4(^3P)4f\ ^2F$ + 7% $4s4p^5(^3P)4d\ ^2F$	78PER
	$^2G°$	7/2	357 530.83	0.6	94%	78PER
	$^2G°$	9/2	357 874.78	0.6	92%	78PER

TABLE 7. Energy levels of Sr IV—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Ref.
$4s^24p^4(^3P_2)5d$	$^2[4]$	9/2	329 068.54	0.6	94% + 6% $4s^24p^4(^1D_2)5d$ [4]	78PER
	$^2[4]$	7/2	329 973.93	0.6	90% + 7% $4s^24p^4(^1D_2)5d$ [4]	78PER
	$^2[3]$	7/2	327 166.57	0.6	93%	78PER
	$^2[3]$	5/2	333 195.98	0.6	55% + 30% $4s^24p^4(^3P_2)5d$ [2] + 9% $4s^24p^4(^3P_1)5d$ [3]	78PER
	$^2[2]$	5/2	327 296.31	0.6	60% + 31% $4s^24p^4(^3P_2)5d$ [3]	78PER
	$^2[2]$	3/2	327 865.89	0.6	60% + 28% $4s^24p^4(^3P_2)5d$ [1]	78PER
	$^2[1]$	3/2	333 030.58	0.6	65% + 19% $4s^24p^4(^3P_2)5d$ [2] + 5% $4s^24p^4(^1D_2)5d$ [2] + 5% $4s^24p^4(^3P_1)5d$ [2]	78PER
	$^2[1]$	1/2	328 733.88	0.6	79% + 9% $4s^24p^4(^3P_1)5d$ [1] + 8% $4s^24p^4(^1D_2)5d$ [1]	78PER
	$^2[0]$	1/2	331 574.88	0.6	87% + 6% $4s^24p^4(^1D_2)5d$ [0]	78PER
$(^3P_1)5d$	$^2[3]$	7/2	336 898.26	0.6	96%	78PER
	$^2[3]$	5/2	341 045.43	0.6	49% + 39% $4s^24p^4(^3P_0)5d$ [2]	78PER
	$^2[2]$	5/2	338 581.20	0.6	97%	78PER
	$^2[2]$	3/2	341 216.97	0.6	35% + 25% $4s^24p^4(^3P_1)5d$ [1] + 19% $4s^24p^4(^3P_0)5d$ [2] + 8% $4s^24p^4(^1D_2)5d$ [1]	78PER
	$^2[1]$	3/2	337 963.83	0.6	46% + 39% $4s^24p^4(^3P_1)5d$ [2] + 6% $4s^24p^4(^1D_2)5d$ [2]	78PER
	$^2[1]$	1/2	336 333.74	0.6	84% + 9% $4s^24p^4(^1D_2)5d$ [1] + 6% $4s^24p^4(^3P_2)5d$ [1]	78PER
$(^3P_0)5d$	$^2[2]$	5/2	337 151.32	0.6	51% + 38% $4s^24p^4(^3P_1)5d$ [3] + 6% $4s^24p^4(^3P_2)5d$ [2]	78PER
	$^2[2]$	3/2	337 047.44	0.6	63% + 17% $4s^24p^4(^3P_1)5d$ [1] + 12% $4s^24p^4(^3P_1)5d$ [2]	78PER
$(^1S_0)5d$	$^2[2]$	5/2	373 326.84	0.6	92% + 7% $4s^24p^4(^3P_0)5d$ [2]	78PER
	$^2[2]$	3/2	373 710.50	0.6	89% + 10% $4s^24p^4(^3P_0)5d$ [2]	78PER
$(^1D_2)5d$	$^2[4]$	9/2	348 308.67	0.6	94% + 6% $4s^24p^4(^3P_1)5d$ [4]	78PER
	$^2[4]$	7/2	348 103.87	0.6	92% + 7% $4s^24p^4(^3P_2)5d$ [4]	78PER
	$^2[3]$	7/2	351 385.40	0.6	94%	78PER
	$^2[3]$	5/2	351 726.93	0.6	48% + 40% $4s^24p^4(^1D_2)5d$ [2] + 7% $4s^24p^4(^3P_2)5d$ [3]	78PER
	$^2[2]$	5/2	350 510.38	0.6	51% + 45% $4s^24p^4(^1D_2)5d$ [3]	78PER
	$^2[2]$	3/2	353 264.68	0.6	74% + 9% $4s^24p^4(^1D_2)6s$ [2] + 9% $4s^24p^4(^3P_1)5d$ [2]	78PER
	$^2[1]$	3/2	350 832.42	0.6	85% + 6% $4s^24p^4(^3P_1)5d$ [2]	78PER
	$^2[1]$	1/2	353 148.62	0.6	69% + 12% $4s^24p^4(^3P_2)5d$ [1] + 11% $4s^24p^4(^1D_2)5d$ [0]	78PER
	$^2[0]$	1/2	350 670.46	0.6	82% + 11% $4s^24p^4(^1D_2)5d$ [1]	78PER
$4s^24p^4(^3P_2)6p$	$^2[3]^\circ$	7/2	351 462.05	0.6	95% + 5% $4s^24p^4(^1D_2)6p$ [3]	78PER
	$^2[3]^\circ$	5/2	351 443.45	0.6	85% + 9% $4s^24p^4(^3P_2)6p$ [2] + 5% $4s^24p^4(^1D_2)6p$ [3]	78PER
	$^2[2]^\circ$	5/2	349 952.33	0.6	87% + 9% $4s^24p^4(^3P_2)6p$ [3]	78PER
	$^2[2]^\circ$	3/2	353 899.14	0.6	50% + 45% $4s^24p^4(^3P_2)6p$ [1]	78PER
	$^2[1]^\circ$	3/2	350 211.08	0.6	48% + 43% $4s^24p^4(^3P_2)6p$ [2]	78PER
	$^2[1]^\circ$	1/2	351 735.29	0.6	87% + 9% $4s^24p^4(^1D_2)6p$ [1]	78PER
$(^3P_1)6p$	$^2[2]^\circ$	5/2	359 420.70	0.6	99%	78PER
	$^2[2]^\circ$	3/2	359 228.65	0.6	67% + 21% $4s^24p^4(^3P_0)6p$ [1] + 8% $4s^24p^4(^3P_1)6p$ [1]	78PER
	$^2[1]^\circ$	3/2	360 403.00	0.6	89% + 5% $4s^24p^4(^3P_1)6p$ [2]	78PER
	$^2[1]^\circ$	1/2	361 194.32	0.6	56% + 21% $4s^24p^4(^3P_1)6p$ [0] + 17% $4s^24p^4(^3P_0)6p$ [1]	78PER
	$^2[0]^\circ$	1/2	358 151.51	0.6	75% + 18% $4s^24p^4(^3P_1)6p$ [1]	78PER
$(^3P_0)6p$	$^2[1]^\circ$	3/2	360 770.07	0.6	69% + 25% $4s^24p^4(^3P_1)6p$ [2] + 5% $4s^24p^4(^1S_0)6p$ [1]	78PER
	$^2[1]^\circ$	1/2	359 197.56	0.6	70% + 24% $4s^24p^4(^3P_1)6p$ [1] + 6% $4s^24p^4(^1S_0)6p$ [1]	78PER
$(^1D_2)6p$	$^2[3]^\circ$	7/2	371 246.97	0.6	95% + 5% $4s^24p^4(^3P_2)6p$ [3]	78PER
	$^2[3]^\circ$	5/2	370 570.27	0.6	92% + 5% $4s^24p^4(^3P_2)6p$ [3]	78PER
	$^2[2]^\circ$	5/2	373 036.14	0.6	93%	78PER
	$^2[2]^\circ$	3/2	372 804.73	0.6	94% + 5% $4s^24p^4(^3P_2)6p$ [2]	78PER
$4s^24p^4(^3P_2)6d$	$^2[4]$	9/2	377 002.29	0.6	94% + 6% $4s^24p^4(^1D_2)6d$ [4]	78PER
	$^2[4]$	7/2	377 348.64	0.6	92% + 7% $4s^24p^4(^1D_2)6d$ [4]	78PER
	$^2[3]$	7/2	376 210.74	0.6	93% + 5% $4s^24p^4(^1D_2)6d$ [3]	78PER
	$^2[3]$	5/2	378 892.59	0.6	60% + 32% $4s^24p^4(^3P_2)6d$ [2]	78PER
	$^2[2]$	5/2	376 297.31	0.6	62% + 32% $4s^24p^4(^3P_2)6d$ [3]	78PER
	$^2[2]$	3/2	376 503.06	0.6	61% + 31% $4s^24p^4(^3P_2)6d$ [1]	78PER
	$^2[1]$	3/2	378 914.97	0.6	61% + 28% $4s^24p^4(^3P_2)6d$ [2]	78PER
	$^2[1]$	1/2	377 030.29	0.6	83% + 9% $4s^24p^4(^3P_2)6d$ [0] + 7% $4s^24p^4(^1D_2)6d$ [1]	78PER
	$^2[0]$	1/2	378 221.92	0.6	85% + 7% $4s^24p^4(^3P_2)6d$ [1] + 6% $4s^24p^4(^1D_2)6d$ [0]	78PER

TABLE 7. Energy levels of Sr IV—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Ref.
$(^3P_1)6d$	$^2[3]$	7/2	384 999.12	0.6	99%	78PER
	$^2[3]$	5/2	385 191.43	0.6	54% + 41% $4s^24p^4(^3P_0)6d$ [2]	78PER
	$^2[2]$	5/2	385 744.98	0.6	98%	78PER
	$^2[2]$	3/2	385 489.76	0.6	62% + 21% $4s^24p^4(^3P_0)6d$ [2] + 14% $4s^24p^4(^3P_1)6d$ [1]	78PER
	$^2[1]$	3/2	385 158.09	0.6	55% + 40% $4s^24p^4(^3P_0)6d$ [2]	78PER
	$^2[1]$	1/2	384 695.31	0.6	97%	78PER
$(^3P_0)6d$	$^2[2]$	5/2	386 725.54	0.6	50% + 44% $4s^24p^4(^3P_1)6d$ [3]	78PER
	$^2[2]$	3/2	387 321.32	0.6	33% + 28% $4s^24p^4(^3P_1)6d$ [1] + 27% $4s^24p^4(^3P_0)6d$ [2]	78PER
$(^1D_2)6d$	$^2[4]$	9/2	396 805.69	0.6	94% + 6% $4s^24p^4(^3P_2)6d$ [4]	78PER
	$^2[4]$	7/2	396 691.71	0.6	92% + 6% $4s^24p^4(^3P_2)6d$ [4]	78PER
	$^2[3]$	7/2	398 091.68	0.6	94% + 5% $4s^24p^4(^3P_2)6d$ [3]	78PER
	$^2[3]$	5/2	398 073.63	0.6	79% + 15% $4s^24p^4(^1D_2)6d$ [2] + 5% $4s^24p^4(^3P_2)6d$ [3]	78PER
	$^2[2]$	5/2	397 631.75	0.6	80% + 15% $4s^24p^4(^1D_2)6d$ [3]	78PER
	$^2[2]$	3/2	398 299.95	0.6	90% + 7% $4s^24p^4(^3P_2)6d$ [2]	78PER
	$^2[1]$	3/2	397 204.0	0.6	93% + 5% $4s^24p^4(^3P_2)6d$ [1]	78PER
	$^2[1]$	1/2	397 965.0	0.6	73% + 16% $4s^24p^4(^1D_2)6d$ [0] + 7% $4s^24p^4(^3P_2)6d$ [1]	78PER
	$^2[0]$	1/2	397 314.0	0.6	77% + 17% $4s^24p^4(^1D_2)6d$ [1]	78PER
$4s^24p^4(^3P_2)5f$	$^2[5]^\circ$	11/2	377 552.45	0.6		78PER
	$^2[5]^\circ$	9/2	377 766.96	0.6		78PER
	$^2[4]^\circ$	9/2	377 521.69	0.6		78PER
	$^2[4]^\circ$	7/2	376 898.93	0.6		78PER
	$^2[3]^\circ$	7/2	378 028.81	0.6		78PER
	$^2[3]^\circ$	5/2	376 797.49	0.6		78PER
	$^2[2]^\circ$	5/2	378 524.75	0.6		78PER
$4s^24p^4(^3P_2)7s$	$^2[2]$	5/2	379 066.96	0.6	92% + 6% $4s^24p^4(^1D_2)7s$ [2]	78PER
	$^2[2]$	3/2	379 680.74	0.6	90% + 6% $4s^24p^4(^1D_2)7s$ [2]	78PER
$(^3P_1)7s$	$^2[1]$	3/2	387 472.75	0.6	93%	78PER
	$^2[1]$	1/2	387 557.60	0.6	63% + 33% $4s^24p^4(^3P_0)7s$ [0]	78PER
$(^3P_0)7s$	$^2[0]$	1/2	388 284.04	0.6	58% + 36% $4s^24p^4(^3P_1)7s$ [1] + 6% $4s^24p^4(^1S_0)7s$ [0]	78PER
$(^1D_2)7s$	$^2[2]$	5/2	399 522.24	0.6	93% + 6% $4s^24p^4(^3P_2)7s$ [2]	78PER
	$^2[2]$	3/2	399 560.55	0.6	92% + 6% $4s^24p^4(^3P_2)7s$ [2]	78PER
$4s^24p^4(^3P_2)5g$	$^2[6]$	13/2	383 277.00	0.6	93% + 7% $4s^24p^4(^1D_2)5g$ [6]	78PER
	$^2[6]$	11/2	383 286.02	0.6	93% + 7% $4s^24p^4(^1D_2)5g$ [6]	78PER
	$^2[5]$	11/2	382 891.60	0.6	94% + 6% $4s^24p^4(^1D_2)5g$ [5]	78PER
	$^2[5]$	9/2	382 932.42	0.6	59% + 35% $4s^24p^4(^3P_2)5g$ [4]	78PER
	$^2[4]$	9/2	382 897.81	0.6	59% + 35% $4s^24p^4(^3P_2)5g$ [5]	78PER
	$^2[4]$	7/2	382 914.84	0.6	92% + 6% $4s^24p^4(^1D_2)5g$ [4]	78PER
	$^2[3]$	7/2	383 151.49	0.6	92% + 6% $4s^24p^4(^1D_2)5g$ [3]	78PER
	$^2[3]$	5/2	383 134.13	0.6	93% + 6% $4s^24p^4(^1D_2)5g$ [3]	78PER
	$^2[2]$	5/2	383 457.36	0.6	93% + 7% $4s^24p^4(^1D_2)5g$ [2]	78PER
	$^2[2]$	3/2	383 451.04	0.6	93% + 7% $4s^24p^4(^1D_2)5g$ [2]	78PER
$(^3P_1)5g$	$^2[5]$	11/2	391 323.38	0.6	100%	78PER
	$^2[5]$	9/2	391 336.49	0.6	100%	78PER
	$^2[4]$	9/2	391 709.40	0.6	100%	78PER
	$^2[4]$	7/2	391 711.14	0.6	98%	78PER
	$^2[3]$	7/2	391 257.50	0.6	100%	78PER
	$^2[3]$	5/2	391 242.82	0.6	100%	78PER
$(^3P_0)5g$	$^2[4]$	9/2	391 854.19	0.6	91% + 9% $4s^24p^4(^1S_0)5g$ [4]	78PER
	$^2[4]$	7/2	391 856.50	0.6	90% + 9% $4s^24p^4(^1S_0)5g$ [4]	78PER
$(^1D_2)5g$	$^2[6]$	13/2	403 039.04	0.6	93% + 7% $4s^24p^4(^3P_2)5g$ [6]	78PER
	$^2[6]$	11/2	403 040.00	0.6	93% + 7% $4s^24p^4(^3P_2)5g$ [6]	78PER
	$^2[5]$	11/2	403 864.66	0.6	94% + 6% $4s^24p^4(^3P_2)5g$ [5]	78PER
	$^2[5]$	9/2	403 863.95	0.6	94% + 6% $4s^24p^4(^3P_2)5g$ [5]	78PER
	$^2[4]$	9/2	403 806.14	0.6	94% + 6% $4s^24p^4(^3P_2)5g$ [4]	78PER
	$^2[4]$	7/2	403 815.98	0.6	94% + 6% $4s^24p^4(^3P_2)5g$ [4]	78PER
	$^2[3]$	7/2	403 387.96	0.6	94% + 6% $4s^24p^4(^3P_2)5g$ [3]	78PER
	$^2[3]$	5/2	403 396.12	0.6	94% + 6% $4s^24p^4(^3P_2)5g$ [3]	78PER

TABLE 7. Energy levels of Sr IV—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Ref.
$4s^24p^4(^3P_2)6g$	$^2[6]$	13/2	404 860.73	0.6	93%	78PER
	$^2[6]$	11/2	404 867.75	0.6	93%	78PER
	$^2[5]$	11/2	404 652.67	0.6	94%	78PER
	$^2[5]$	9/2	404 690.21	0.6	50%	78PER
	$^2[4]$	9/2	404 657.76	0.6	50%	78PER
	$^2[4]$	7/2	404 681.82	0.6	92%	78PER
	$^2[3]$	7/2	404 803.93	0.6	92%	78PER
	$^2[2]$	5/2	404 981.69	0.6	93%	78PER
	$^2[2]$	3/2	404 970.53	0.6	93%	78PER
$4s^24p^4(^3P_2)6h$	$^2[7]^\circ$	15/2	405 139.33	0.6	94% + 6% $4s^24p^4(^1D_2)6h$ [7]	78PER
	$^2[7]^\circ$	13/2	405 140.77	0.6	94% + 6% $4s^24p^4(^1D_2)6h$ [7]	78PER
	$^2[6]^\circ$	13/2	405 026.55	0.6	94% + 6% $4s^24p^4(^1D_2)6h$ [6]	78PER
	$^2[6]^\circ$	11/2	405 025.99	0.6	86% + 7% $4s^24p^4(^3P_2)6h$ [5] + 6% $4s^24p^4(^1D_2)6h$ [6]	78PER
	$^2[5]^\circ$	11/2	405 024.04	0.6	86% + 7% $4s^24p^4(^3P_2)6h$ [6] + 6% $4s^24p^4(^1D_2)6h$ [5]	78PER
	$^2[5]^\circ$	9/2	405 022.76	0.6	94% + 6% $4s^24p^4(^1D_2)6h$ [5]	78PER
	$^2[4]^\circ$	9/2	405 087.28	0.6	94% + 6% $4s^24p^4(^1D_2)6h$ [4]	78PER
	$^2[4]^\circ$	7/2	405 086.10	0.6	94% + 6% $4s^24p^4(^1D_2)6h$ [4]	78PER
	$^2[3]^\circ$	7/2	405 180.62	0.6	93% + 7% $4s^24p^4(^1D_2)6h$ [3]	78PER
	$^2[3]^\circ$	5/2	405 182.67	0.6	93% + 7% $4s^24p^4(^1D_2)6h$ [3]	78PER
$(^3P_1)6h$	$^2[6]^\circ$	13/2	413 359.39	0.6	100%	78PER
	$^2[6]^\circ$	11/2	413 358.39	0.6	100%	78PER
	$^2[5]^\circ$	11/2	413 480.27	0.6	100%	78PER
	$^2[5]^\circ$	9/2	413 480.05	0.6	100%	78PER
$(^3P_0)6h$	$^2[5]^\circ$	9/2	413 807.07	0.6	91% + 9% $4s^24p^4(^1S_0)6h$ [5]	78PER
$(^1D_2)6h$	$^2[7]^\circ$	15/2	425 272.55	0.6	94% + 6% $4s^24p^4(^3P_2)6h$ [7]	78PER
	$^2[7]^\circ$	13/2	425 273.51	0.6	94% + 6% $4s^24p^4(^3P_2)6h$ [7]	78PER
	$^2[6]^\circ$	13/2	425 520.26	0.6	94% + 6% $4s^24p^4(^3P_2)6h$ [6]	78PER
	$^2[6]^\circ$	11/2	425 519.55	0.6	94% + 6% $4s^24p^4(^3P_2)6h$ [6]	78PER
	$^2[5]^\circ$	11/2	425 530.88	0.6	94% + 6% $4s^24p^4(^3P_2)6h$ [5]	78PER
	$^2[5]^\circ$	9/2	425 532.42	0.6	94% + 6% $4s^24p^4(^3P_2)6h$ [5]	78PER
	$^2[4]^\circ$	9/2	425 399.98	0.6	94% + 6% $4s^24p^4(^3P_2)6h$ [4]	78PER
	$^2[4]^\circ$	7/2	425 399.44	0.6	94% + 6% $4s^24p^4(^3P_2)6h$ [4]	78PER
Sr V ($4s^24p^4$ $^3P_2$)		*Limit*	453 930	25		78PER

TABLE 8. Observed spectral lines of Sr IV

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
Vacuum							
250.300	0.010	399 521.2	8		$4s^24p^5$ $^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)7s$ $^2[2]_{5/2}$	78PER
251.066	0.010	398 302.4	3		$4s^24p^5$ $^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)6d$ $^2[2]_{3/2}$	78PER
251.210	0.010	398 074.0	6		$4s^24p^5$ $^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)6d$ $^2[3]_{5/2}$	78PER
251.489	0.010	397 631.7	5		$4s^24p^5$ $^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)6d$ $^2[2]_{5/2}$	78PER
251.690	0.010	397 313.8	8	p	$4s^24p^5$ $^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)6d$ $^2[0]_{1/2}$	78PER
251.760	0.010	397 204.0	7		$4s^24p^5$ $^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)6d$ $^2[1]_{3/2}$	78PER
256.520	0.010	389 832.8	7		$4s^24p^5$ $^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)7s$ $^2[2]_{3/2}$	78PER
257.354	0.010	388 569.5	8		$4s^24p^5$ $^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)6d$ $^2[2]_{3/2}$	78PER
257.546	0.010	388 279.6	9		$4s^24p^5$ $^2P^\circ_{3/2}$	$4s^24p^4(^3P_0)7s$ $^2[0]_{1/2}$	78PER
257.575	0.010	388 237.0	8		$4s^24p^5$ $^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)6d$ $^2[1]_{1/2}$	78PER
258.007	0.010	387 586.2	1		$4s^24p^5$ $^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)6d$ $^2[0]_{1/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
258.081	0.010	387 474.6	9	=	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{3/2}$	78PER
258.081	0.010	387 474.6	9	=	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)6d\ ^2[1]_{3/2}$	78PER
258.184	0.010	387 321.1	5		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_0)6d\ ^2[2]_{3/2}$	78PER
258.581	0.010	386 726.0	9		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_0)6d\ ^2[2]_{5/2}$	78PER
259.238	0.010	385 745.5	3		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[2]_{5/2}$	78PER
259.411	0.010	385 489.0	6		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[2]_{3/2}$	78PER
259.611	0.010	385 191.4	4		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[3]_{5/2}$	78PER
259.633	0.010	385 159.1	4		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[1]_{3/2}$	78PER
259.947	0.010	384 694.1	2		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[1]_{1/2}$	78PER
263.379	0.010	379 680.7	9		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{3/2}$	78PER
263.812	0.010	379 058.4	7	bl	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{5/2}$	78PER
263.912	0.010	378 914.2	9	p	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[1]_{3/2}$	78PER
263.927	0.010	378 893.1	10	p	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[3]_{5/2}$	78PER
264.162	0.010	378 556.3	7		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_0)7s\ ^2[0]_{1/2}$	78PER
264.221	0.010	378 471.1	6		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1S_0)6s\ ^2[0]_{1/2}$	76HAN/PER
264.396	0.010	378 220.7	7		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[0]_{1/2}$	78PER
264.669	0.010	377 830.9	2		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{1/2}$	78PER
264.835	0.010	377 593.3	9		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_0)6d\ ^2[2]_{3/2}$	78PER
266.126	0.010	375 761.4	1		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)6d\ ^2[2]_{3/2}$	78PER
266.360	0.010	375 432.2	4		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)6d\ ^2[1]_{3/2}$	78PER
266.688	0.010	374 970.1	3		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)6d\ ^2[1]_{1/2}$	78PER
267.863	0.010	373 325.7	8		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1S_0)5d\ ^2[2]_{5/2}$	76HAN/PER
270.305	0.010	369 953.0	6		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{3/2}$	78PER
270.867	0.010	369 185.4	7		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)6d\ ^2[1]_{3/2}$	78PER
271.191	0.010	368 744.5	6		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1S_0)6s\ ^2[0]_{1/2}$	76HAN/PER
271.375	0.010	368 493.4	6		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)6d\ ^2[0]_{1/2}$	78PER
274.741	0.010	363 979.8	10		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1S_0)5d\ ^2[2]_{3/2}$	76HAN/PER
281.818	0.010	354 838.9	10		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	76HAN/PER
283.073	0.010	353 265.3	9		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{3/2}$	76HAN/PER
283.167	0.010	353 149.0	7		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
284.312	0.010	351 726.5	12		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	76HAN/PER
285.036	0.010	350 832.9	10		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
285.166	0.010	350 672.5	10		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[0]_{1/2}$	76HAN/PER
285.298	0.010	350 510.6	10		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
289.680	0.010	345 208.5	10		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{3/2}$	76HAN/PER
290.533	0.010	344 195.6	10		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
291.090	0.010	343 536.7	12		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{3/2}$	76HAN/PER
291.188	0.010	343 421.2	12		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
291.801	0.010	342 699.4	10	p	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
293.069	0.010	341 217.2	9		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	76HAN/PER
293.164	0.010	341 105.7	10		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
293.216	0.010	341 045.0	12		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	76HAN/PER
293.304	0.010	340 942.8	8		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[0]_{1/2}$	76HAN/PER
295.350	0.010	338 580.9	8		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	76HAN/PER
295.890	0.010	337 963.8	10		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	76HAN/PER
296.603	0.010	337 151.1	9		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
296.694	0.010	337 047.9	5		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
297.323	0.010	336 334.4	8		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{1/2}$	76HAN/PER
298.118	0.010	335 437.3	15		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	76HAN/PER
298.982	0.010	334 468.5	10		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
299.272	0.010	334 144.0	9		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	76HAN/PER
300.124	0.010	333 196.2	15		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	76HAN/PER
300.273	0.010	333 030.7	12		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER
300.324	0.010	332 973.9	5		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
300.382	0.010	332 909.1	5		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
301.591	0.010	331 575.0	10		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[0]_{1/2}$	76HAN/PER
301.669	0.010	331 488.9	12		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	76HAN/PER
304.660	0.010	328 234.5	10		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	76HAN/PER
305.006	0.010	327 862.2	0.5		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	76HAN/PER
305.513	0.010	327 317.9	5		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
306.181	0.010	326 604.6	6		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{1/2}$	76HAN/PER
307.023	0.010	325 708.7	6		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	76HAN/PER
309.306	0.010	323 304.0	9		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
310.707	0.010	321 847.1	4		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[0]_{1/2}$	76HAN/PER
313.474	0.010	319 006.2	5		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{1/2}$	76HAN/PER
314.329	0.010	318 138.2	2		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	76HAN/PER
364.049	0.010	274 688.5	10		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1S_0)5s\ ^2[0]_{1/2}$	76HAN/PER
377.415	0.010	264 960.7	5		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1S_0)5s\ ^2[0]_{1/2}$	76HAN/PER
378.525	0.010	264 183.2	20		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^2D_{3/2}$	76HAN/PER
388.581	0.010	257 346.6	4		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D)4d\ ^2S_{1/2}$	76HAN/PER
392.435	0.010	254 819.6	75		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^2D_{5/2}$	76HAN/PER
392.999	0.010	254 453.8	50		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^2D_{3/2}$	76HAN/PER
394.896	0.010	253 231.0	45		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^2P_{1/2}$	76HAN/PER
396.220	0.010	252 384.8	50		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^2P_{3/2}$	76HAN/PER
399.192	0.010	250 506.1	10		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	76HAN/PER
399.924	0.010	250 047.4	40		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	76HAN/PER
403.8509	0.0009	247 616.1	35		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D)4d\ ^2S_{1/2}$	76HAN/PER
406.942	0.010	245 735.2	35		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1S)4d\ ^2D_{5/2}$	76HAN/PER
410.671	0.010	243 504.2	20		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^2P_{1/2}$	76HAN/PER
412.101	0.010	242 658.9	12		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^2P_{3/2}$	76HAN/PER
412.9319	0.0009	242 170.7	30		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1S)4d\ ^2D_{3/2}$	76HAN/PER
413.0661	0.0009	242 092.0	40		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	76HAN/PER
415.3240	0.0009	240 775.9	40		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	76HAN/PER
419.7839	0.0009	238 217.8	30		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	76HAN/PER
422.073	0.010	236 926.1	15		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_0)5s\ ^2[0]_{1/2}$	76HAN/PER
430.2101	0.0009	232 444.6	25		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1S)4d\ ^2D_{3/2}$	76HAN/PER
430.3582	0.0009	232 364.6	20		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	76HAN/PER
430.6452	0.0009	232 209.7	30		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	76HAN/PER
437.3416	0.0009	228 654.2	20		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	76HAN/PER
437.653	0.010	228 491.7	20		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	76HAN/PER
440.150	0.010	227 195.4	15		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_0)5s\ ^2[0]_{1/2}$	76HAN/PER
442.7311	0.0009	225 870.7	25		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D)4d\ ^2F_{5/2}$	76HAN/PER
449.478	0.010	222 480.2	15		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	76HAN/PER
465.2316	0.0009	214 946.7	20		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^2F_{5/2}$	76HAN/PER
471.7577	0.0009	211 973.2	25		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	76HAN/PER
478.6111	0.0009	208 937.9	20		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4P_{5/2}$	76HAN/PER
484.2037	0.0009	206 524.7	25		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	76HAN/PER
488.2605	0.0009	204 808.7	20		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	76HAN/PER
488.4155	0.0009	204 743.7	20		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	76HAN/PER
494.760	0.010	202 118.4	3		$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{3/2}$	78PER
496.102	0.010	201 571.3	3		$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^1D)4f\ ^2P^\circ_{3/2}$	78PER
498.684	0.010	200 527.9	18		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D)4d\ ^2P_{1/2}$	76HAN/PER
501.293	0.010	199 484.2	20	q	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	76HAN/PER
508.140	0.010	196 796.1	25	p	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	76HAN/PER
512.778	0.010	195 016.2	15		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	76HAN/PER
514.267	0.010	194 451.6	15	p	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	76HAN/PER
524.034	0.010	190 827.3	4		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{7/2}$	78PER
525.317	0.010	190 361.4	9		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{9/2}$	78PER
531.848	0.010	188 023.6	18		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	76HAN/PER
534.1853	0.010	187 201.0	25		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	76HAN/PER
537.000	0.010	186 219.8	5		$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	78PER
554.044	0.010	180 491.2	10		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s^24p^4(^3P_2)5f\ ^2[5]^\circ_{11/2}$	78PER
560.865	0.010	178 296.0	6		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	76HAN/PER
563.615	0.010	177 426.1	6	bl	$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_2)5f\ ^2[5]^\circ_{9/2}$	78PER
576.776	0.010	173 377.7	8		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{7/2}$	78PER
587.237	0.010	170 289.1	5		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_2)5f\ ^2[5]^\circ_{9/2}$	78PER
600.926	0.010	166 409.9	9		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{3/2}$	78PER
604.908	0.010	165 314.3	9		$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{3/2}$	78PER
605.212	0.010	165 231.4	9		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{5/2}$	78PER
608.242	0.010	164 408.2	8		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{5/2}$	78PER
611.424	0.010	163 552.6	8		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
611.569	0.010	163 513.8	9		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
612.414	0.010	163 288.2	10		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{9/2}$	78PER
614.291	0.010	162 789.2	1		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	78PER
614.440	0.010	162 749.9	0.5		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	78PER
618.776	0.010	161 609.3	0.5		$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{5/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
620.588	0.010	161 137.4	6		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{5/2}$	78PER
621.375	0.010	160 933.3	2		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s4p^5(^1P)4d\ ^2F^\circ_{5/2}$	78PER
622.019	0.010	160 766.9	2		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s4p^5(^1P)4d\ ^2D^\circ_{3/2}$	78PER
628.134	0.010	159 201.7	7		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s4p^5(^1P)4d\ ^2F^\circ_{5/2}$	78PER
628.619	0.010	159 079.0	0.5		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	78PER
632.668	0.010	158 060.7	3		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{3/2}$	78PER
635.737	0.010	157 297.8	4		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{5/2}$	78PER
636.055	0.010	157 219.2	6		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s4p^5(^1P)4d\ ^2D^\circ_{5/2}$	78PER
638.298	0.010	156 666.6	8	=	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{5/2}$	78PER
638.298	0.010	156 666.6	8	=	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{3/2}$	78PER
638.586	0.010	156 596.1	1		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{3/2}$	78PER
640.775	0.010	156 061.1	6	bl	$4s^24p^4(^1D)4d\ ^2G_{9/2}$	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{7/2}$	78PER
642.668	0.010	155 601.2	5		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{1/2}$	78PER
642.943	0.010	155 534.9	0.5		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{1/2}$	78PER
643.581	0.010	155 380.7	1		$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{5/2}$	78PER
645.977	0.010	154 804.3	1		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s4p^5(^1P)4d\ ^2D^\circ_{5/2}$	78PER
647.666	0.010	154 400.6	7		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{7/2}$	78PER
648.259	0.010	154 259.4	8		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{7/2}$	78PER
649.360	0.010	153 997.8	8	p	$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	78PER
650.311	0.010	153 772.7	7		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	78PER
650.812	0.010	153 654.2	0.5		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
651.059	0.010	153 595.8	2		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{7/2}$	78PER
651.940	0.010	153 388.4	9		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s4p^5(^3P)4d\ ^4F_{9/2}{}^\circ$	78PER
653.820	0.010	152 947.4	3		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	78PER
655.568	0.010	152 539.5	5		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{5/2}$	78PER
656.404	0.010	152 345.1	2		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s4p^5(^1P)4d\ ^2D^\circ_{3/2}$	78PER
656.747	0.010	152 265.7	2		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{5/2}$	78PER
657.053	0.010	152 194.8	2		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{3/2}$	78PER
657.498	0.010	152 091.8	2		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{5/2}$	78PER
658.148	0.010	151 941.6	2		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	78PER
658.892	0.010	151 769.9	5		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s4p^5(^1P)4d\ ^2D^\circ_{5/2}$	78PER
659.622	0.010	151 602.0	9		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{7/2}$	78PER
661.804	0.010	151 102.1	2		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	78PER
662.105	0.010	151 033.4	8		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{5/2}$	78PER
662.280	0.010	150 993.5	5		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{5/2}$	78PER
664.4337	0.010	150 504.1	200		$4s^24p^5\ ^2P^\circ_{3/2}$	$4s4p^6\ ^2S_{1/2}$	76HAN/PER
664.914	0.010	150 395.5	7		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^1D)4f\ ^2G^\circ_{9/2}$	78PER
665.003	0.010	150 375.4	7		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
665.538	0.010	150 254.3	6		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{3/2}$	78PER
666.181	0.010	150 109.5	9		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{9/2}$	78PER
668.340	0.010	149 624.4	2		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{3/2}$	78PER
668.876	0.010	149 504.4	1		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{5/2}$	78PER
670.746	0.010	149 087.7	7		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{5/2}$	78PER
671.826	0.010	148 848.1	6		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{5/2}$	78PER
672.497	0.010	148 699.5	3		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	78PER
673.190	0.010	148 546.6	3		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
673.373	0.010	148 506.2	1		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
674.526	0.010	148 252.3	5		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{5/2}$	78PER
674.814	0.010	148 189.0	8		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{3/2}$	78PER
677.129	0.010	147 682.3	4		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
677.481	0.010	147 605.5	6		$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	78PER
678.401	0.010	147 405.6	2		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{1/2}$	78PER
678.564	0.010	147 370.0	9		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
679.047	0.010	147 265.3	1		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^1D)4f\ ^2P^\circ_{3/2}$	78PER
679.345	0.010	147 200.7	9		$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
682.791	0.010	146 457.8	5	=	$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{3/2}$	78PER
682.791	0.010	146 457.8	5	=	$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{7/2}$	78PER
683.475	0.010	146 311.1	7		$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{1/2}$	78PER
683.673	0.010	146 268.7	2		$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{3/2}$	78PER
683.791	0.010	146 243.5	7		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{1/2}$	78PER
684.178	0.010	146 160.9	4		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{5/2}$	78PER
686.445	0.010	145 678.2	6		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^1D)4f\ ^2H^\circ_{9/2}$	78PER
686.847	0.010	145 592.8	5		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{7/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
689.953	0.010	144 937.3	0.5		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{5/2}$	78PER
691.366	0.010	144 641.2	2		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{5/2}$	78PER
692.715	0.010	144 359.5	8		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{7/2}$	78PER
693.980	0.010	144 096.3	9		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	78PER
696.327	0.010	143 610.6	7		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{3/2}$	78PER
698.147	0.010	143 236.3	1		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
699.442	0.010	142 971.1	8		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{9/2}$	78PER
699.664	0.010	142 925.7	7		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{7/2}$	78PER
700.345	0.010	142 786.8	10		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{3/2}$	78PER
700.838	0.010	142 686.3	8		$4s^24p^4(^1D)4d\ ^2G_{9/2}$	$4s^24p^4(^1D)4f\ ^2G^\circ_{9/2}$	78PER
701.344	0.010	142 583.3	7		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D)4f\ ^2G^\circ_{7/2}$	78PER
701.554	0.010	142 540.7	3		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s4p^5(^1P)4d\ ^2F^\circ_{5/2}$	78PER
701.655	0.010	142 520.1	5		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	78PER
701.847	0.010	142 481.2	9		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	78PER
702.534	0.010	142 342.0	8		$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^1D)4f\ ^2G^\circ_{7/2}$	78PER
703.080	0.010	142 231.3	4		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	78PER
704.403	0.010	141 964.2	10	p	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{7/2}$	78PER
704.468	0.010	141 951.2	10	p	$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
705.483	0.010	141 747.0	10		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	78PER
705.677	0.010	141 707.8	10		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	78PER
705.755	0.010	141 692.3	10		$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{3/2}$	78PER
705.928	0.010	141 657.5	10		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	78PER
707.264	0.010	141 390.0	15		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{9/2}$	78PER
708.818	0.010	141 079.9	4		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{7/2}$	78PER
710.141	0.010	140 817.1	9		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	78PER
710.3475	0.010	140 776.2	100		$4s^24p^5\ ^2P^\circ_{1/2}$	$4s4p^6\ ^2S_{1/2}$	76HAN/PER
711.067	0.010	140 633.8	2		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	78PER
712.112	0.010	140 427.3	9		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{5/2}$	78PER
713.387	0.010	140 176.4	8		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{5/2}$	78PER
713.764	0.010	140 102.4	1		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2P^\circ_{3/2}$	78PER
714.683	0.010	139 922.2	10		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{7/2}$	78PER
715.261	0.010	139 809.2	9		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{3/2}$	78PER
717.665	0.010	139 340.9	10		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{5/2}$	78PER
719.469	0.010	138 991.5	7		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{7/2}$	78PER
720.756	0.010	138 743.2	5		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
720.917	0.010	138 712.2	10	=	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{5/2}$	78PER
720.917	0.010	138 712.2	10	=	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{5/2}$	78PER
721.171	0.010	138 663.3	8		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^1S)4f\ ^2F^\circ_{5/2}$	78PER
722.971	0.010	138 318.1	18		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{11/2}$	78PER
724.240	0.010	138 075.8	10		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{7/2}$	78PER
724.614	0.010	138 004.6	12		$4s^24p^4(^1D)4d\ ^2G_{9/2}$	$4s^24p^4(^1D)4f\ ^2H^\circ_{11/2}$	78PER
724.807	0.010	137 967.7	12		$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^1D)4f\ ^2H^\circ_{9/2}$	78PER
732.624	0.010	136 495.7	0.5		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	78PER
734.109	0.010	136 219.6	4		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{5/2}$	78PER
734.245	0.010	136 194.4	5		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	78PER
734.408	0.010	136 164.2	8		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	78PER
735.159	0.010	136 025.0	8		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{5/2}$	78PER
736.443	0.010	135 787.9	7		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{7/2}$	78PER
737.495	0.010	135 594.1	2		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{3/2}$	78PER
737.848	0.010	135 529.3	8	=	$4s^24p^4(^1D)4d\ ^2G_{9/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
737.848	0.010	135 529.3	8	=	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{3/2}$	78PER
738.124	0.010	135 478.6	3		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P)4f\ ^2G^\circ_{7/2}$	78PER
738.333	0.010	135 440.2	15		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P)4f\ ^2G^\circ_{9/2}$	78PER
740.198	0.010	135 099.0	0.5		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1S)4f\ ^2F^\circ_{5/2}$	78PER
741.512	0.010	134 859.6	4		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{3/2}$	78PER
742.571	0.010	134 667.2	0.5		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{7/2}$	78PER
742.807	0.010	134 624.5	2		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{5/2}$	78PER
743.780	0.010	134 448.4	2		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	78PER
744.445	0.010	134 328.2	7		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{7/2}$	78PER
745.006	0.010	134 227.1	7		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1S)4f\ ^2F^\circ_{7/2}$	78PER
747.309	0.010	133 813.5	4		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{3/2}$	78PER
748.057	0.010	133 679.7	12		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	78PER
750.391	0.010	133 263.9	0.5		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{5/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
754.815	0.010	132 482.8	10		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{7/2}$	78PER
755.056	0.010	132 440.5	12		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{7/2}$	78PER
755.506	0.010	132 361.6	4		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
755.895	0.010	132 293.5	5		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{7/2}$	78PER
757.376	0.010	132 034.9	6		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	78PER
757.682	0.010	131 981.5	9		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	78PER
758.064	0.010	131 915.0	4		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	78PER
758.457	0.010	131 846.7	3		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	78PER
758.940	0.010	131 762.8	9		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	78PER
759.530	0.010	131 660.3	12		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P)4f\ ^2G^\circ_{9/2}$	78PER
760.514	0.010	131 490.0	10		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{9/2}$	78PER
761.651	0.010	131 293.7	9		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{7/2}$	78PER
761.897	0.010	131 251.3	1		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{1/2}$	78PER
762.406	0.010	131 163.7	8		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{7/2}$	78PER
762.620	0.010	131 126.9	3		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{3/2}$	78PER
763.126	0.010	131 040.0	6		$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
763.957	0.010	130 897.4	5		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
765.181	0.010	130 688.0	9		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{1/2}$	78PER
765.425	0.010	130 646.4	5		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{3/2}$	78PER
765.812	0.010	130 580.3	6		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{3/2}$	78PER
767.525	0.010	130 288.9	5		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{5/2}$	78PER
768.049	0.010	130 200.4	7		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	78PER
770.550	0.010	129 777.4	12		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^1D)4f\ ^2G^\circ_{9/2}$	78PER
772.066	0.010	129 522.6	4	bl	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{1/2}$	78PER
772.201	0.010	129 500.0	7		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{5/2}$	78PER
772.371	0.010	129 471.5	12		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P)4f\ ^2G^\circ_{7/2}$	78PER
772.512	0.010	129 447.8	8		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{7/2}$	78PER
773.151	0.010	129 340.8	1		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	78PER
773.661	0.010	129 255.6	4		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{5/2}$	78PER
774.094	0.010	129 183.3	12		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
775.199	0.010	128 999.1	9		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	78PER
777.794	0.010	128 568.8	6		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	78PER
779.412	0.010	128 301.9	10		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P)4f\ ^2G^\circ_{9/2}$	78PER
780.847	0.010	128 066.1	8		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{7/2}$	78PER
782.819	0.010	127 743.4	0.5		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{1/2}$	78PER
783.852	0.010	127 575.1	7		$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
784.525	0.010	127 465.7	0.5		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{3/2}$	78PER
784.869	0.010	127 409.9	15	bl	$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
788.376	0.010	126 843.1	10		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{7/2}$	78PER
788.835	0.010	126 769.2	9		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
789.701	0.010	126 630.2	2		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{3/2}$	78PER
791.540	0.010	126 336.0	2		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	78PER
792.141	0.010	126 240.2	6		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s4p^5(^1P)4d\ ^2F^\circ_{5/2}$	78PER
792.266	0.010	126 220.2		=	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^\circ_{1/2}$	78PER
792.266	0.010	126 220.2	6	=	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{5/2}$	78PER
793.848	0.010	125 968.7	7		$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	78PER
794.664	0.010	125 839.4	8		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{7/2}$	78PER
796.492	0.010	125 550.5	7		$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
798.121	0.010	125 294.3	0.5		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{5/2}$	78PER
799.106	0.010	125 139.8	3		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1S)4f\ ^2F^\circ_{7/2}$	78PER
799.638	0.010	125 056.6	3		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s4p^5(^3P)4d\ ^4P^\circ_{1/2}$	78PER
807.703	0.010	123 807.9	12	bl	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{7/2}$	78PER
808.192	0.010	123 733.0	4		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
812.560	0.010	123 067.9	1		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{5/2}$	78PER
814.288	0.010	122 806.7	3		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{7/2}$	78PER
815.555	0.010	122 615.9	2		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
817.317	0.010	122 351.5	6		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{9/2}$	78PER
819.161	0.010	122 076.1	1		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{7/2}$	78PER
822.361	0.010	121 601.1	0.5		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{3/2}$	78PER
822.673	0.010	121 554.9	2	bl	$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s4p^5(^1P)4d\ ^2D^\circ_{3/2}$	78PER
824.420	0.010	121 297.5	7		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	78PER
825.075	0.010	121 201.0	5	=	$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{7/2}$	78PER
825.075	0.010	121 201.0		=	$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
825.947	0.010	121 073.1	5		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{9/2}$	78PER
828.088	0.010	120 760.1	0.5		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
829.250	0.010	120 590.9	8		$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^3P)4f\ ^2G^\circ_{9/2}$	78PER
830.083	0.010	120 469.9	1		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	78PER
833.538	0.010	119 970.5	6		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	78PER
836.647	0.010	119 524.7	0.5		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	78PER
838.701	0.010	119 232.0	3		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	78PER
842.625	0.010	118 676.7	0.5		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{3/2}$	78PER
843.557	0.010	118 545.7	8		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P)4f\ ^2G^\circ_{7/2}$	78PER
847.400	0.010	118 008.1	2	bl	$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s4p^5(^1P)4d\ ^2D^\circ_{5/2}$	78PER
851.826	0.010	117 394.8	3	bl	$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{7/2}$	78PER
854.518	0.010	117 025.1	8		$4s4p^6\ ^2S_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
857.243	0.010	116 653.1	6		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^1S)4f\ ^2F^\circ_{5/2}$	78PER
871.045	0.010	114 804.7	5		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{7/2}$	78PER
876.148	0.010	114 136.0	1		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
884.500	0.010	113 058.2	4		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	78PER
887.985	0.010	112 614.5	1		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{5/2}$	78PER
896.629	0.010	111 528.9	4		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{5/2}$	78PER
898.007	0.010	111 357.7	6		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s4p^5(^1P)4d\ ^2D^\circ_{5/2}$	78PER
901.048	0.010	110 981.9	1		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
901.673	0.010	110 905.0	0.5		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)7s\ ^2[2]_{3/2}$	78PER
909.531	0.010	109 946.8	2		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s4p^5(^1P)4d\ ^2D^\circ_{3/2}$	78PER
909.846	0.010	109 908.8	8		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{7/2}$	78PER
910.455	0.010	109 835.2	4		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
913.234	0.010	109 500.9	0.5		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[1]_{1/2}$	78PER
917.480	0.010	108 994.2	7		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{5/2}$	78PER
918.080	0.010	108 923.0	1		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s4p^5(^1P)4d\ ^2D_{5/2}{}^\circ$	78PER
919.464	0.010	108 759.0	1		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[2]_{5/2}$	78PER
920.198	0.010	108 672.3	4		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[3]_{7/2}$	78PER
922.929	0.010	108 350.7	3		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{3/2}$	78PER
923.307	0.010	108 306.4	2		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{3/2}$	78PER
924.198	0.010	108 202.0	1		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{7/2}$	78PER
924.713	0.010	108 141.7	7		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
925.621	0.010	108 035.6	1		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)6d\ ^2[4]_{7/2}$	78PER
927.498	0.010	107 816.9	5		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{5/2}$	78PER
927.821	0.010	107 779.4	0.5		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	78PER
928.662	0.010	107 681.9	9		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^3P)4f\ ^2G^\circ_{9/2}$	78PER
929.686	0.010	107 563.2	0.5		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[3]_{5/2}$	78PER
933.597	0.010	107 112.6	0.5		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[3]_{5/2}$	78PER
938.264	0.010	106 579.8	7		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
939.029	0.010	106 493.0	2		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)6d\ ^2[4]_{9/2}$	78PER
940.380	0.010	106 340.0	1		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2P^\circ_{3/2}$	78PER
943.225	0.010	106 019.2	5		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[4]_{7/2}$	78PER
944.899	0.010	105 831.4	5		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)6d\ ^2[3]_{7/2}$	78PER
945.595	0.010	105 753.5	7		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)6d\ ^2[4]_{9/2}$	78PER
945.904	0.010	105 719.0	6		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{7/2}$	78PER
948.484	0.010	105 431.5	2		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{5/2}$	78PER
950.757	0.010	105 179.4	1		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)6d\ ^2[2]_{5/2}$	78PER
957.821	0.010	104 403.7	0.5		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)7s\ ^2[2]_{5/2}$	78PER
963.227	0.010	103 817.7	8	q	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
969.457	0.010	103 150.5	7		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
970.265	0.010	103 064.6	7		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^\circ_{5/2}$	78PER
971.011	0.010	102 985.5	2		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{5/2}$	78PER
971.145	0.010	102 971.3	0.5		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)6d\ ^2[3]_{7/2}$	78PER
973.618	0.010	102 709.6	2		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2G^\circ_{7/2}$	78PER
979.915	0.010	102 049.7	7	bl	$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{3/2}$	78PER
985.664	0.010	101 454.4	2		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
986.693	0.010	101 348.6	2		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^4G^\circ_{5/2}$	78PER
993.358	0.010	100 668.7	2		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	78PER
994.515	0.010	100 551.5	3		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2F^\circ_{5/2}$	78PER
997.625	0.010	100 238.1	4		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{3/2}$	78PER
1003.106	0.010	99 690.4	9		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^1D)4f\ ^2P^\circ_{3/2}$	78PER
1006.113	0.010	99 392.4	8		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{3/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1008.909	0.010	99 117.0	8		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2F^{\circ}_{7/2}$	78PER
1011.693	0.010	98 844.2	7		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^1D)4f\ ^2P^{\circ}_{3/2}$	78PER
1012.339	0.010	98 781.2	9		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^1D)4f\ ^2D^{\circ}_{5/2}$	78PER
1013.353	0.010	98 682.3	4		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^2G^{\circ}_{7/2}$	78PER
1028.228	0.010	97 254.7	0.5		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2P^{\circ}_{3/2}$	78PER
1029.070	0.010	97 175.1	1		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1029.970	0.010	97 090.2	3		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s4p^5(^3P)4d\ ^4F^{\circ}_{3/2}$	78PER
1037.925	0.010	96 346.1	6		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D)4f\ ^2D^{\circ}_{5/2}$	78PER
1042.818	0.010	95 894.1	4		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s4p^5(^3P)4d\ ^4F^{\circ}_{7/2}$	78PER
1051.034	0.010	95 144.4	2		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1055.616	0.010	94 731.4	1		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s^24p^4(^1D)4f\ ^2P^{\circ}_{3/2}$	78PER
1059.971	0.010	94 342.2	9		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1060.011	0.010	94 338.6	9		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1076.997	0.010	92 850.8	9		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^{\circ}_{5/2}$	78PER
1086.907	0.010	92 004.2	9	p	$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1087.371	0.010	91 964.9	4		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1096.599	0.010	91 191.0	8		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^1D)4f\ ^2F^{\circ}_{5/2}$	78PER
1097.198	0.010	91 141.3	2		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1100.391	0.010	90 876.8	2		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1107.303	0.010	90 309.5	3		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1110.449	0.010	90 053.6	4		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1112.475	0.010	89 889.6	6		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1116.115	0.010	89 596.5	5		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^2G^{\circ}_{7/2}$	78PER
1124.120	0.010	88 958.5	10	=	$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1124.120	0.010	88 958.5	10	=	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1126.202	0.010	88 794.0	1		$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1128.736	0.010	88 594.7	2		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1130.635	0.010	88 445.9	6		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^4G^{\circ}_{7/2}$	78PER
1131.942	0.010	88 343.8	4		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1135.969	0.010	88 030.6	3		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^{\circ}_{1/2}$	76HAN/PER
1136.975	0.010	87 952.7	1		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^{\circ}_{3/2}$	78PER
1141.026	0.010	87 640.4	5		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1148.024	0.010	87 106.2	1		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^3P)4f\ ^2D^{\circ}_{3/2}$	78PER
1149.618	0.010	86 985.5	3		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^1D)4f\ ^2D^{\circ}_{5/2}$	78PER
1150.288	0.010	86 934.8	8		$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^{\circ}_{1/2}$	76HAN/PER
1160.348	0.010	86 181.0	3		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1163.730	0.010	85 930.6	1	=	$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1163.730	0.010	85 930.6	1	=	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1164.038	0.010	85 907.9	4		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1167.446	0.010	85 657.1	8		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1185.687	0.010	84 339.3	2		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^4D^{\circ}_{3/2}$	78PER
1188.100	0.010	84 168.0	15		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^{\circ}_{5/2}$	76HAN/PER
1188.666	0.010	84 127.9	10		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^{\circ}_{5/2}$	76HAN/PER
1189.212	0.010	84 089.3	20		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^{\circ}_{7/2}$	76HAN/PER
1189.780	0.010	84 049.2	12		$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^{\circ}_{7/2}$	76HAN/PER
1197.360	0.010	83 517.0	10		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1197.698	0.010	83 493.5	2		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^3P)4f\ ^4D^{\circ}_{3/2}$	78PER
1200.169	0.010	83 321.6	10		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^3P)4f\ ^2F^{\circ}_{5/2}$	78PER
1200.412	0.010	83 304.7	5		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^{\circ}_{5/2}$	76HAN/PER
1201.290	0.010	83 243.8	10		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1202.699	0.010	83 146.3	15		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1204.910	0.010	82 993.8	3		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s^24p^4(^3P)4f\ ^2D^{\circ}_{3/2}$	78PER
1206.356	0.010	82 894.3	6		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1207.242	0.010	82 833.4	4	p	$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{7/2}$	76HAN/PER
1214.678	0.010	82 326.4	15		$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1217.158	0.010	82 158.6	1		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s4p^5(^3P)4d\ ^4P^{\circ}_{3/2}$	78PER
1217.570	0.010	82 130.8	12		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{5/2}$	76HAN/PER
1220.831	0.010	81 911.4	8		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1220.932	0.010	81 904.6	1		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^4D^{\circ}_{3/2}$	78PER
1231.878	0.010	81 176.9	12		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{5/2}$	76HAN/PER
1233.722	0.010	81 055.5	8		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^{\circ}_{5/2}$	78PER
1234.344	0.010	81 014.7	9		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1235.174	0.010	80 960.3	15		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^{\circ}_{7/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1236.298	0.010	80 886.6	7		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P)4f\ ^2F^{\circ}_{5/2}$	78PER
1242.520	0.010	80 481.6	12	=	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1242.520	0.010	80 481.6	12	=	$4s^24p^4(^3P_2)5p\ ^2[1]^{\circ}_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1244.137	0.010	80 377.0	30		$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1244.746	0.010	80 337.7	20	p	$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1244.866	0.010	80 329.9	20	p	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1251.223	0.010	79 921.8	10		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1257.650	0.010	79 513.4	15	p	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1257.775	0.010	79 505.5	20	p	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1258.741	0.010	79 444.5	9		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{5/2}$	76HAN/PER
1259.765	0.010	79 379.9	3		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s^24p^4(^3P)4f\ ^4D^{\circ}_{3/2}$	78PER
1260.413	0.010	79 339.1	6		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^4G^{\circ}_{5/2}$	78PER
1268.618	0.010	78 825.9	20		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1275.350	0.010	78 409.8	18		$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1276.501	0.010	78 339.1	12		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{7/2}$	76HAN/PER
1277.773	0.010	78 261.2	3	p	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1278.778	0.010	78 199.7	12		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1279.332	0.010	78 165.8	1		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1288.134	0.010	77 631.7	15		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1288.623	0.010	77 602.2	12		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1289.510	0.010	77 548.8	12		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1289.713	0.010	77 536.7	12		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1292.244	0.010	77 384.8	9		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1292.586	0.010	77 364.3	12	s	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1303.187	0.010	76 735.0	12		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1304.090	0.010	76 681.8	8		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{5/2}$	76HAN/PER
1304.372	0.010	76 665.2	5	bl	$4s^24p^4(^3P_2)5p\ ^2[1]^{\circ}_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
1313.065	0.010	76 157.7	3		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^2D^{\circ}_{3/2}$	78PER
1314.032	0.010	76 101.6	8		$4s^24p^4(^3P)4f\ ^4F^{\circ}_{9/2}$	$4s^24p^4(^3P_2)6g\ ^2[5]_{11/2}$	78PER
1317.242	0.010	75 916.2	3		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1318.896	0.010	75 821.0	12	=	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1318.896	0.010	75 821.0	12	=	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1320.154	0.010	75 748.7	7		$4s^24p^4(^3P)4f\ ^4F^{\circ}_{7/2}$	$4s^24p^4(^3P_2)6g\ ^2[4]_{9/2}$	78PER
1322.234	0.010	75 629.6	8		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1324.043	0.010	75 526.2	12	p	$4s^24p^4(^1D)4d\ ^2P^{\circ}_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^{\circ}_{1/2}$	76HAN/PER
1326.863	0.010	75 365.7	10		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{7/2}$	76HAN/PER
1330.317	0.010	75 170.1	1		$4s^24p^4(^3P_2)5p\ ^2[1]^{\circ}_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1330.462	0.010	75 161.9	1		$4s^24p^4(^3P_2)5p\ ^2[2]^{\circ}_{5/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1331.129	0.010	75 124.2	20		$4s^24p^4(^1D)4d\ ^2G_{9/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{7/2}$	78PER
1333.320	0.010	75 000.8	5		$4s^24p^4(^3P)4f\ ^4F^{\circ}_{5/2}$	$4s^24p^4(^3P_2)6g\ ^2[4]_{7/2}$	78PER
1338.079	0.010	74 734.0	18	bl	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1339.170	0.010	74 673.1	4		$4s^24p^4(^3P_2)5p\ ^2[2]^{\circ}_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1340.200	0.010	74 615.8	3		$4s^24p^4(^3P_1)5p\ ^2[0]^{\circ}_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[0]_{1/2}$	76HAN/PER
1344.870	0.010	74 356.7	10		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{5/2}$	76HAN/PER
1344.980	0.010	74 350.5	4		$4s^24p^4(^3P_2)5p\ ^2[2]^{\circ}_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1347.901	0.010	74 189.4	30		$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^{\circ}_{7/2}$	76HAN/PER
1351.109	0.010	74 013.3	8		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s4p^5(^3P)4d\ ^4P^{\circ}_{5/2}$	78PER
1353.214	0.010	73 898.1	12		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1354.183	0.010	73 845.3	1		$4s^24p^4(^3P_2)5p\ ^2[1]^{\circ}_{1/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
1356.228	0.010	73 733.9	18		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1356.684	0.010	73 709.1	12		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{5/2}$	76HAN/PER
1356.871	0.010	73 699.0	3		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1357.795	0.010	73 648.8	6		$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1358.330	0.010	73 619.8	10		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1360.247	0.010	73 516.1	1		$4s^24p^4(^3P_2)5p\ ^2[1]^{\circ}_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	76HAN/PER
1361.154	0.010	73 467.1	20		$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^{\circ}_{5/2}$	76HAN/PER
1362.255	0.010	73 407.7	15		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER
1363.621	0.010	73 334.2	8		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1364.296	0.010	73 297.9	7		$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{3/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1364.834	0.010	73 269.0	15		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^{\circ}_{3/2}$	76HAN/PER
1365.571	0.010	73 229.4	15		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1366.677	0.010	73 170.2	2		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^{\circ}_{1/2}$	76HAN/PER
1367.345	0.010	73 134.4	12		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^{\circ}_{3/2}$	76HAN/PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1367.893	0.010	73 105.1	10		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1371.405	0.010	72 917.9	15	bl	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1373.343	0.010	72 815.0	15		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1374.493	0.010	72 754.1	9		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1377.296	0.010	72 606.1	15		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1377.551	0.010	72 592.6	10		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[0]_{1/2}$	76HAN/PER
1377.905	0.010	72 573.9	4		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1378.147	0.010	72 561.2	2		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1379.412	0.010	72 494.7	12		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1380.597	0.010	72 432.5	5		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1382.178	0.010	72 349.6	8		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1383.398	0.010	72 285.8	1		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1389.285	0.010	71 979.5	12		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1391.307	0.010	71 874.9	10	bl	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
1394.298	0.010	71 720.7	6		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{3/2}$	76HAN/PER
1394.935	0.010	71 687.9	18		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1397.544	0.010	71 554.1	12		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1398.093	0.010	71 526.0	12		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	78PER
1400.251	0.010	71 415.8	12		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1400.761	0.010	71 389.8	10		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1401.539	0.010	71 350.1	9		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1401.669	0.010	71 343.5	7	p	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1402.304	0.010	71 311.2	9		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
1403.596	0.010	71 245.6	12		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
1407.422	0.010	71 051.9	9		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	76HAN/PER
1407.596	0.010	71 043.1	10		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	76HAN/PER
1408.674	0.010	70 988.8	25		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
1410.047	0.010	70 919.6	5		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{3/2}$	76HAN/PER
1410.250	0.010	70 909.4	15		$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
1411.097	0.010	70 866.9	8		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	76HAN/PER
1414.259	0.010	70 708.4	9		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1419.752	0.010	70 434.8	10		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	76HAN/PER
1421.006	0.010	70 372.7	18		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1423.934	0.010	70 228.0	10		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1427.411	0.010	70 056.9	18		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1429.497	0.010	69 954.7	12		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1432.234	0.010	69 821.0	12		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1434.373	0.010	69 716.9	9		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	76HAN/PER
1436.063	0.010	69 634.8	15		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1436.323	0.010	69 622.2	10		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1436.491	0.010	69 614.1	9		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1437.388	0.010	69 570.7	12	bl	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1438.034	0.010	69 539.4	3		$4s^24p^4(^3P)4f\ ^4D^\circ_{1/2}$	$4s^24p^4(^3P_2)6g\ ^2[2]_{3/2}$	78PER
1438.215	0.010	69 530.6	12		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
1438.644	0.010	69 509.9	1		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1439.232	0.010	69 481.5	10		$4s^24p^4(^3P)4f\ ^4G^\circ_{11/2}$	$4s^24p^4(^3P_2)6g\ ^2[6]_{13/2}$	78PER
1441.743	0.010	69 360.5	3		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{7/2}$	76HAN/PER
1443.242	0.010	69 288.5	4		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1446.338	0.010	69 140.1	12		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1446.619	0.010	69 126.7	7		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[0]_{1/2}$	76HAN/PER
1447.252	0.010	69 096.4	6		$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	$4s^24p^4(^3P_2)6g\ ^2[3]_{7/2}$	78PER
1447.438	0.010	69 087.6	9		$4s^24p^4(^3P)4f\ ^2G^\circ_{9/2}$	$4s^24p^4(^3P_2)6g\ ^2[6]_{11/2}$	78PER
1449.350	0.010	68 996.5	15		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1449.976	0.010	68 966.7	4		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1451.175	0.010	68 909.7	8		$4s^24p^4(^3P)4f\ ^2F^\circ_{7/2}$	$4s^24p^4(^3P_2)6g\ ^2[5]_{9/2}$	78PER
1452.078	0.010	68 866.8	12		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1455.547	0.010	68 702.7	10		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1465.031	0.010	68 258.0	3		$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	$4s^24p^4(^3P_2)6g\ ^2[2]_{5/2}$	78PER
1467.541	0.010	68 141.2	1		$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
1469.799	0.010	68 036.5	4		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
1470.935	0.010	67 984.0	12		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
1472.599	0.010	67 907.1	12	p	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1472.638	0.010	67 905.4	9	p	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1472.786	0.010	67 898.5	10	p	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1483.691	0.010	67 399.5	18		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1487.623	0.010	67 221.4	12		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1488.162	0.010	67 197.0	15	p	$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1488.252	0.010	67 192.9	12	p	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1489.230	0.010	67 148.8	8		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
1492.066	0.010	67 021.2	18		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1492.541	0.010	66 999.8	12		$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1493.694	0.010	66 948.1	10		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1496.038	0.010	66 843.2	15		$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
1499.309	0.010	66 697.4	7	p	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1500.471	0.010	66 645.7	9		$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1501.173	0.010	66 614.6	10		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1501.354	0.010	66 606.6	12		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1501.545	0.010	66 598.1	18		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1501.868	0.010	66 583.8	15	=	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1501.868	0.010	66 583.8	15	=	$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1503.318	0.010	66 519.5	10		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
1504.280	0.010	66 477.0	12		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1504.556	0.010	66 464.8	9		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1508.700	0.010	66 282.2	12	=	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1508.700	0.010	66 282.2	12	=	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
1510.263	0.010	66 213.6	8		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1510.877	0.010	66 186.7	12		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1511.247	0.010	66 170.5	12		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1512.742	0.010	66 105.1	12		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1517.412	0.010	65 901.7	5		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1519.234	0.010	65 822.6	2		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1521.032	0.010	65 744.9	10		$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1522.841	0.010	65 666.8	12		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1523.025	0.010	65 658.8	10		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1523.252	0.010	65 649.0	8		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{7/2}$	76HAN/PER
1524.229	0.010	65 606.9	12		$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1525.753	0.010	65 541.4	15		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1526.709	0.010	65 500.4	7	bl	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER
1526.868	0.010	65 493.6	12	=	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER
1526.868	0.010	65 493.6	12	=	$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1534.622	0.010	65 162.6	10		$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	76HAN/PER
1536.406	0.010	65 086.9	12		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1545.054	0.010	64 722.7	12		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1547.458	0.010	64 622.1	10		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1547.760	0.010	64 609.5	10		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{3/2}$	76HAN/PER
1548.979	0.010	64 558.7	12		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1549.666	0.010	64 530.0	12		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1551.834	0.010	64 439.9	4	p	$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
1557.155	0.010	64 219.7	7		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1557.807	0.010	64 192.8	10		$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1557.971	0.010	64 186.0	15	=	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1557.971	0.010	64 186.0	15	=	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1558.524	0.010	64 163.3	3		$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1559.856	0.010	64 108.5	12		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1563.051	0.010	63 977.5	10		$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1566.165	0.010	63 850.2	18		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
1566.750	0.010	63 826.4	15		$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1567.216	0.010	63 807.4	9		$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^1S_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1567.380	0.010	63 800.7	8		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1568.106	0.010	63 771.2	10		$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
1573.953	0.010	63 534.3	12		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1574.916	0.010	63 495.5	1		$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	$4s^24p^4(^3P_2)6g\ ^2[5]_{11/2}$	78PER
1577.147	0.010	63 405.6	5		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1578.343	0.010	63 357.6	10		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1578.544	0.010	63 349.5	12		$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1583.812	0.010	63 138.8	9		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	76HAN/PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1583.984	0.010	63 131.9	10		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1585.492	0.010	63 071.9	12		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1588.122	0.010	62 967.5	12		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	76HAN/PER
1588.679	0.010	62 945.4	3		$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	$4s^24p^4(^3P_0)5g\ ^2[4]_{9/2}$	78PER
1589.968	0.010	62 894.4	15		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1591.967	0.010	62 815.4	1		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1592.736	0.010	62 785.0	20	=	$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_1)5g\ ^2[5]_{9/2}$	76HAN/PER
1592.736	0.010	62 785.0	20	=	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1593.067	0.010	62 772.0	9		$4s^24p^4(^3P)4f\ ^4F^\circ_{9/2}$	$4s^24p^4(^3P_1)5g\ ^2[5]_{11/2}$	78PER
1594.176	0.010	62 728.3	12	=	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1594.176	0.010	62 728.3	12	=	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{7/2}$	76HAN/PER
1594.379	0.010	62 720.3	12		$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1595.392	0.010	62 680.5	12	=	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER
1595.392	0.010	62 680.5	12	=	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1S_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1595.997	0.010	62 656.8	5	p	$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1596.106	0.010	62 652.5	10		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
1600.450	0.010	62 482.4	10		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1601.625	0.010	62 436.6	10		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[4]_{7/2}$	76HAN/PER
1601.851	0.010	62 427.8	2		$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	$4s^24p^4(^3P_1)5g\ ^2[5]_{9/2}$	78PER
1601.996	0.010	62 422.1	10		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	76HAN/PER
1602.806	0.010	62 390.6	15		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
1602.891	0.010	62 387.3	9	p	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1604.835	0.010	62 311.7	12		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
1607.349	0.010	62 214.3	15		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
1615.271	0.010	61 909.1	15		$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	76HAN/PER
1616.042	0.010	61 879.6	10		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	76HAN/PER
1616.365	0.010	61 867.2	15		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1616.678	0.010	61 855.2	12	p	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1616.800	0.010	61 850.6	12	p	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
1619.294	0.010	61 755.3	12		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	76HAN/PER
1620.690	0.010	61 702.1	12		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER
1621.860	0.010	61 657.6	10		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
1623.999	0.010	61 576.4	4		$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	$4s^24p^4(^3P_1)5g\ ^2[3]_{7/2}$	78PER
1627.739	0.010	61 434.9	12		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1628.273	0.010	61 414.8	12		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1633.330	0.010	61 224.6	12		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[0]_{1/2}$	76HAN/PER
1633.641	0.010	61 213.0	12		$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1633.861	0.010	61 204.7	15		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1635.160	0.010	61 156.1	2		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1636.867	0.010	61 092.3	12		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1637.370	0.010	61 073.5	15		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{7/2}$	76HAN/PER
1638.982	0.010	61 013.5	12	p	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1639.554	0.010	60 992.2	12	=	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1639.554	0.010	60 992.2	12	=	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1640.133	0.010	60 970.7	12		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1642.350	0.010	60 888.4	10		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1651.326	0.010	60 557.4	10		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
1652.803	0.010	60 503.3	12		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	76HAN/PER
1654.771	0.010	60 431.3	6		$4s^24p^4(^3P)4f\ ^4F^\circ_{3/2}$	$4s^24p^4(^3P_1)5g\ ^2[3]_{5/2}$	78PER
1656.903	0.010	60 353.6	12	p	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1657.375	0.010	60 336.4	12	bl	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	76HAN/PER
1657.594	0.010	60 328.4	12	p	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	76HAN/PER
1658.630	0.010	60 290.7	10		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1658.950	0.010	60 279.1	12		$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{1/2}$	76HAN/PER
1659.490	0.010	60 259.5	7		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1659.911	0.010	60 244.2	12		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1661.182	0.010	60 198.1	7	p	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1661.254	0.010	60 195.5	5	p	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
1664.741	0.010	60 069.4	12		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1667.395	0.010	59 973.8	7	p	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1669.846	0.010	59 885.8	12		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	76HAN/PER
1671.727	0.010	59 818.4	9		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1673.168	0.010	59 766.9	15		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	76HAN/PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1673.387	0.010	59 759.0	18		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1674.393	0.010	59 723.1	12		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1675.797	0.010	59 673.1	10		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	76HAN/PER
1677.029	0.010	59 629.3	25		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	76HAN/PER
1680.625	0.010	59 501.7	15		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	76HAN/PER
1681.035	0.010	59 487.2	9		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1682.122	0.010	59 448.7	18		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[4]_{7/2}$	76HAN/PER
1683.061	0.010	59 415.6	12		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	76HAN/PER
1684.766	0.010	59 355.4	12		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
1686.975	0.010	59 277.7	10	=	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
1686.975	0.010	59 277.7	10	=	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1687.125	0.010	59 272.4	9		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1691.085	0.010	59 133.6	15		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1692.810	0.010	59 073.4	15		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1693.659	0.010	59 043.8	12		$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^1S_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1695.791	0.010	58 969.5	8		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1698.619	0.010	58 871.3	9		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	76HAN/PER
1700.734	0.010	58 798.1	9		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	76HAN/PER
1701.362	0.010	58 776.4	12		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	76HAN/PER
1702.868	0.010	58 724.5	9		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)5d\ ^2[4]_{7/2}$	76HAN/PER
1703.580	0.010	58 699.9	10		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	76HAN/PER
1705.164	0.010	58 645.4	20		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[4]_{7/2}$	76HAN/PER
1706.500	0.010	58 599.5	18		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1706.733	0.010	58 591.5	15		$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1710.961	0.010	58 446.7	10		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1712.420	0.010	58 396.9	10		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{3/2}$	76HAN/PER
1712.812	0.010	58 383.5	12		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1712.976	0.010	58 377.9	12		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1714.495	0.010	58 326.2	12	p	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1715.827	0.010	58 280.9	9		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1716.569	0.010	58 255.7	9		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{1/2}$	76HAN/PER
1717.747	0.010	58 215.8	10		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[0]_{1/2}$	76HAN/PER
1722.486	0.010	58 055.6	15		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1724.234	0.010	57 996.8	20		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)5d\ ^2[4]_{9/2}$	76HAN/PER
1724.590	0.010	57 984.8	12	=	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1724.590	0.010	57 984.8	12	=	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1726.557	0.010	57 918.7	9		$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1S_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1729.533	0.010	57 819.1	25		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)5d\ ^2[4]_{9/2}$	76HAN/PER
1730.343	0.010	57 792.0	10		$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)5d\ ^2[4]_{7/2}$	76HAN/PER
1732.121	0.010	57 732.7	20		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{7/2}$	76HAN/PER
1738.068	0.010	57 535.2	12		$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^1S_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1738.663	0.010	57 515.5	10		$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	76HAN/PER
1743.408	0.010	57 358.9	4		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1744.535	0.010	57 321.9	2		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1747.276	0.010	57 231.9	8		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^1D_2)6s\ ^2[2]_{3/2}$	76HAN/PER
1753.262	0.010	57 036.5	15	=	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1753.262	0.010	57 036.5	15	=	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	76HAN/PER
1758.361	0.010	56 871.2	12		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER
1758.726	0.010	56 859.3	12		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1765.244	0.010	56 649.4	9		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1766.529	0.010	56 608.2	10		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1770.722	0.010	56 474.1	10		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1777.252	0.010	56 266.6	20		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[3]_{7/2}$	76HAN/PER
1778.236	0.010	56 235.5	18		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	76HAN/PER
1781.262	0.010	56 140.0	12		$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
1783.618	0.010	56 065.8	1		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1783.787	0.010	56 060.5	7	q,bl?	$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
1784.223	0.010	56 046.8	12		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1786.745	0.010	55 967.7	5		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1786.838	0.010	55 964.8	5		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1788.363	0.010	55 917.1	15		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	76HAN/PER
1790.894	0.010	55 838.0	12		$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	76HAN/PER
1792.025	0.010	55 802.8	8		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[0]_{1/2}$	76HAN/PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1794.892	0.010	55 713.7	10		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{3/2}$	76HAN/PER
1796.221	0.010	55 672.4	10		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1797.182	0.010	55 642.7	10		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1797.976	0.010	55 618.1	10		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	76HAN/PER
1798.167	0.010	55 612.2	12		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1798.318	0.010	55 607.5	12		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1799.723	0.010	55 564.1	10		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1799.877	0.010	55 559.4	12		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{3/2}$	76HAN/PER
1799.978	0.010	55 556.2	10		$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1800.723	0.010	55 533.3	12		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1801.045	0.010	55 523.3	4		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	76HAN/PER
1801.686	0.010	55 503.6	9		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1803.641	0.010	55 443.4	10		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1804.545	0.010	55 415.6	9		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[0]_{1/2}$	76HAN/PER
1805.326	0.010	55 391.7	12		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1818.918	0.010	54 977.7	0.5		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1819.764	0.010	54 952.2	4		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER
1824.628	0.010	54 805.7	9		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	76HAN/PER
1828.090	0.010	54 701.9	5		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1831.250	0.010	54 607.5	2		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	76HAN/PER
1840.052	0.010	54 346.3	8		$4s^24p^4(^3P)4f\ ^4F^\circ_{9/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	78PER
1840.256	0.010	54 340.3	15		$4s^24p^4(^3P)4f\ ^4F^\circ_{9/2}$	$4s^24p^4(^3P_2)5g\ ^2[5]_{11/2}$	78PER
1843.553	0.010	54 243.1	6		$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	$4s^24p^4(^3P_2)5g\ ^2[3]_{7/2}$	78PER
1843.771	0.010	54 236.7	15		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1851.645	0.010	54 006.0	6		$4s^24p^4(^3P)4f\ ^4F^\circ_{7/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{7/2}$	78PER
1852.225	0.010	53 989.1	12	=	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{1/2}$	76HAN/PER
1852.225	0.010	53 989.1	12	=	$4s^24p^4(^3P_2)4f\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	78PER
1862.519	0.010	53 690.7	15	p	$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1863.549	0.010	53 661.1	10		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[0]_{1/2}$	76HAN/PER
1870.203	0.010	53 470.1	5		$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	$4s^24p^4(^3P_2)5g\ ^2[3]_{7/2}$	78PER
1870.794	0.010	53 453.2	7		$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	$4s^24p^4(^3P_2)5g\ ^2[3]_{5/2}$	78PER
1876.360	0.010	53 294.7	0.5		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1878.500	0.010	53 234.0	12		$4s^24p^4(^3P)4f\ ^4F^\circ_{5/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{7/2}$	78PER
1882.265	0.010	53 127.5	3		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^1D_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1890.721	0.010	52 889.9	12		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1894.837	0.010	52 775.0	9		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1897.679	0.010	52 695.9	10		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1899.704	0.010	52 639.8	0.5		$4s^24p^4(^3P)4f\ ^4F^\circ_{3/2}$	$4s^24p^4(^3P_2)5g\ ^2[2]_{3/2}$	78PER
1911.215	0.010	52 322.7	10	p	$4s^24p^4(^3P)4f\ ^4F^\circ_{3/2}$	$4s^24p^4(^3P_2)5g\ ^2[3]_{5/2}$	78PER
1914.923	0.010	52 221.4	8		$4s^24p^4(^1D)4f\ ^2D^\circ_{5/2}$	$4s^24p^4(^1D_2)5g\ ^2[3]_{7/2}$	78PER
1915.451	0.010	52 207.0	6		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
1930.557	0.010	51 798.5	3		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	76HAN/PER
1937.595	0.010	51 610.4	8		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1942.239	0.010	51 487.0	5		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER
1948.532	0.010	51 320.7	4		$4s^24p^4(^1D)4f\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D_2)5g\ ^2[3]_{5/2}$	78PER
1952.045	0.010	51 228.3	7		$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[2]^\circ_{5/2}$	78PER
1955.511	0.010	51 137.5	5		$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	76HAN/PER
1958.171	0.010	51 068.1	10		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1964.445	0.010	50 905.0	12	bl	$4s^24p^4(^3P)4f\ ^2D^\circ_{3/2}$	$4s^24p^4(^3P_1)5g\ ^2[3]_{5/2}$	78PER
1965.273	0.010	50 883.5	4		$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	$4s^24p^4(^3P_0)5g\ ^2[4]_{7/2}$	78PER
1966.093	0.010	50 862.3	9		$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{7/2}$	78PER
1966.550	0.010	50 850.5	1		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	76HAN/PER
1967.728	0.010	50 820.0	1		$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{1/2}$	76HAN/PER
1971.125	0.010	50 732.4	10		$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{7/2}$	78PER
1972.066	0.010	50 708.2	0.5		$4s^24p^4(^1D)4f\ ^2H^\circ_{9/2}$	$4s^24p^4(^1D_2)5g\ ^2[5]_{9/2}$	78PER
1972.961	0.010	50 685.3	10		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	76HAN/PER
1973.454	0.010	50 672.6	0.5		$4s^24p^4(^1D)4f\ ^2H^\circ_{11/2}$	$4s^24p^4(^1D_2)5g\ ^2[5]_{11/2}$	78PER
1973.983	0.010	50 659.0	5		$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)5f\ ^2[2]^\circ_{5/2}$	78PER
1979.739	0.010	50 511.7	12		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
1980.775	0.010	50 485.3	12		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1982.775	0.010	50 434.4	10	bl	$4s^24p^4(^3P_1)4f\ ^2[4]^\circ_{7/2}$	$4s^24p^4(^3P_0)5g\ ^2[4]_{9/2}$	78PER
1985.623	0.010	50 362.0	12		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1985.903	0.010	50 354.9	15		$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{9/2}$	78PER
1988.541	0.010	50 288.1	12		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1988.541	0.010	50 288.1	12	bl	$4s^24p^4(^3P)4f\ ^4D^\circ_{7/2}$	$4s^24p^4(^3P_1)5g\ ^2[4]_{9/2}$	78PER
1988.688	0.010	50 284.4	10	p	$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	$4s^24p^4(^3P_1)5g\ ^2[3]_{7/2}$	78PER
1988.721	0.010	50 283.6	12		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
1990.233	0.010	50 245.4	8		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	76HAN/PER
1990.828	0.010	50 230.4	10		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
1993.398	0.010	50 165.6	10		$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	$4s^24p^4(^3P_1)5g\ ^2[5]_{11/2}$	78PER
1994.606	0.010	50 135.2	20		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
Air							
2002.716	0.02	49 916.0	8		$4s^24p^4(^3P)4f\ ^4D^\circ_{7/2}$	$4s^24p^4(^3P_1)5g\ ^2[5]_{9/2}$	78PER
2004.009	0.02	49 883.8	12		$4s^24p^4(^1D)4f\ ^2H^\circ_{9/2}$	$4s^24p^4(^1D_2)5g\ ^2[6]_{11/2}$	78PER
2004.617	0.02	49 868.7	9		$4s^24p^4(^1D)4f\ ^2F^\circ_{7/2}$	$4s^24p^4(^1D_2)5g\ ^2[4]_{9/2}$	78PER
2005.498	0.02	49 846.8	12		$4s^24p^4(^1D)4f\ ^2H^\circ_{11/2}$	$4s^24p^4(^1D_2)5g\ ^2[6]_{13/2}$	78PER
2007.875	0.02	49 787.8	4		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	76HAN/PER
2010.103	0.02	49 732.6	1		$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{7/2}$	78PER
2015.374	0.02	49 602.6	9		$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{7/2}$	78PER
2019.510	0.02	49 501.0	5		$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{5/2}$	78PER
2021.593	0.02	49 450.0	0.5		$4s^24p^4(^1D)4f\ ^2F^\circ_{7/2}$	$4s^24p^4(^1D_2)5g\ ^2[3]_{7/2}$	78PER
2022.662	0.02	49 423.9	12		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2024.299	0.02	49 383.9	15		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2026.367	0.02	49 333.5	10		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2030.654	0.02	49 229.4	9		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)5d\ ^2[0]_{1/2}$	76HAN/PER
2043.006	0.02	48 931.8	8		$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{5/2}$	78PER
2052.726	0.02	48 700.1	2		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	76HAN/PER
2057.346	0.02	48 590.8	9		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	76HAN/PER
2061.881	0.02	48 483.9	12		$4s^24p^4(^3P_2)5d\ ^2[4]_{9/2}$	$4s^24p^4(^3P_2)5f\ ^2[5]^\circ_{11/2}$	78PER
2063.182	0.02	48 453.3	9		$4s^24p^4(^3P_2)5d\ ^2[4]_{9/2}$	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{9/2}$	78PER
2063.631	0.02	48 442.8	15		$4s^24p^4(^3P)4f\ ^4G^\circ_{7/2}$	$4s^24p^4(^3P_1)5g\ ^2[4]_{9/2}$	78PER
2068.194	0.02	48 335.9	10		$4s^24p^4(^3P)4f\ ^4G^\circ_{5/2}$	$4s^24p^4(^3P_0)5g\ ^2[4]_{7/2}$	78PER
2074.423	0.02	48 190.8	10		$4s^24p^4(^3P)4f\ ^4G^\circ_{5/2}$	$4s^24p^4(^3P_1)5g\ ^2[4]_{7/2}$	78PER
2077.012	0.02	48 130.7	7		$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	76HAN/PER
2079.648	0.02	48 069.7	12		$4s^24p^4(^3P)4f\ ^4G^\circ_{7/2}$	$4s^24p^4(^3P_1)5g\ ^2[5]_{9/2}$	78PER
2079.710	0.02	48 068.3	9		$4s4p^5(^3P)4d\ ^4P^\circ_{3/2}$	$4s^24p^4(^3P_2)5g\ ^2[2]_{5/2}$	78PER
2079.973	0.02	48 062.2	0.5		$4s4p^5(^3P)4d\ ^4P^\circ_{3/2}$	$4s^24p^4(^3P_2)5g\ ^2[2]_{3/2}$	78PER
2081.649	0.02	48 023.5	0.5		$4s^24p^4(^1D)4f\ ^2F^\circ_{5/2}$	$4s^24p^4(^1D_2)5g\ ^2[3]_{5/2}$	78PER
2081.807	0.02	48 019.9	10		$4s^24p^4(^3P)4f\ ^4D^\circ_{1/2}$	$4s^24p^4(^3P_2)5g\ ^2[2]_{3/2}$	78PER
2087.110	0.02	47 897.9	18		$4s^24p^4(^3P)4f\ ^4G^\circ_{11/2}$	$4s^24p^4(^3P_2)5g\ ^2[6]_{13/2}$	78PER
2091.181	0.02	47 804.7	4		$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	$4s^24p^4(^1S)4f\ ^2F^\circ_{5/2}$	78PER
2091.690	0.02	47 793.0	12		$4s^24p^4(^3P_2)5d\ ^2[4]_{7/2}$	$4s^24p^4(^3P_2)5f\ ^2[5]^\circ_{9/2}$	78PER
2094.145	0.02	47 737.0	2		$4s^24p^4(^3P)4f\ ^4G^\circ_{5/2}$	$4s^24p^4(^3P_1)5g\ ^2[3]_{7/2}$	78PER
2102.486	0.02	47 547.7	0.5		$4s^24p^4(^3P_2)5d\ ^2[4]_{7/2}$	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{9/2}$	78PER
2104.042	0.02	47 512.5	8		$4s^24p^4(^3P)4f\ ^4G^\circ_{11/2}$	$4s^24p^4(^3P_2)5g\ ^2[5]_{11/2}$	78PER
2104.327	0.02	47 506.1	18		$4s^24p^4(^3P)4f\ ^2G^\circ_{9/2}$	$4s^24p^4(^3P_2)5g\ ^2[6]_{11/2}$	78PER
2104.381	0.02	47 504.9	20		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2107.050	0.02	47 444.7	12		$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	$4s^24p^4(^3P_2)5g\ ^2[3]_{7/2}$	78PER
2107.400	0.02	47 436.8	10		$4s^24p^4(^3P)4f\ ^2G^\circ_{7/2}$	$4s^24p^4(^3P_0)5g\ ^2[4]_{9/2}$	78PER
2110.314	0.02	47 371.3	2		$4s^24p^4(^3P)4f\ ^2F^\circ_{7/2}$	$4s^24p^4(^3P_2)5g\ ^2[3]_{7/2}$	78PER
2113.860	0.02	47 291.8	10		$4s^24p^4(^3P)4f\ ^2G^\circ_{7/2}$	$4s^24p^4(^3P_1)5g\ ^2[4]_{9/2}$	78PER
2117.617	0.02	47 208.0	9		$4s^24p^4(^3P)4f\ ^2F^\circ_{5/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{7/2}$	78PER
2117.902	0.02	47 201.6	20		$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
2120.150	0.02	47 151.6	17		$4s^24p^4(^3P)4f\ ^2F^\circ_{7/2}$	$4s^24p^4(^3P_2)5g\ ^2[5]_{9/2}$	78PER
2120.908	0.02	47 134.7	2		$4s^24p^4(^3P)4f\ ^2F^\circ_{7/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{7/2}$	78PER
2121.676	0.02	47 117.6	4	=	$4s^24p^4(^3P)4f\ ^2F^\circ_{7/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	78PER
2121.676	0.02	47 117.6	4	=	$4s^24p^4(^3P)4f\ ^2G^\circ_{9/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	78PER
2129.012	0.02	46 955.3	15		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2130.664	0.02	46 918.9	12		$4s^24p^4(^3P)4f\ ^2G^\circ_{7/2}$	$4s^24p^4(^3P_1)5g\ ^2[5]_{9/2}$	78PER
2137.619	0.02	46 766.3	8		$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	$4s^24p^4(^1S)4f\ ^2F^\circ_{7/2}$	78PER
2139.110	0.02	46 733.7	10		$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	$4s^24p^4(^3P_2)5g\ ^2[2]_{5/2}$	78PER
2139.405	0.02	46 727.2	0.5		$4s^24p^4(^3P)4f\ ^4D^\circ_{3/2}$	$4s^24p^4(^3P_2)5g\ ^2[2]_{3/2}$	78PER
2139.744	0.02	46 719.8	3		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2144.318	0.02	46 620.2	8		$4s^24p^4(^3P)4f\ ^2D^\circ_{5/2}$	$4s^24p^4(^3P_0)5g\ ^2[4]_{7/2}$	78PER
2151.033	0.02	46 474.7	12		$4s^24p^4(^3P)4f\ ^2D^\circ_{5/2}$	$4s^24p^4(^3P_1)5g\ ^2[4]_{7/2}$	78PER
2156.852	0.02	46 349.3			$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	76HAN/PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
2157.612	0.02	46 333.0	12		$4s^24p^4(^1D)4f\ ^2G^\circ_{7/2}$	$4s^24p^4(^1D_2)5g\ ^2[5]_{9/2}$	78PER
2159.841	0.02	46 285.2	6	p	$4s^24p^4(^1D)4f\ ^2G^\circ_{7/2}$	$4s^24p^4(^1D_2)5g\ ^2[4]_{7/2}$	78PER
2172.227	0.02	46 021.3	8		$4s^24p^4(^3P)4f\ ^2D^\circ_{5/2}$	$4s^24p^4(^3P_1)5g\ ^2[3]_{7/2}$	78PER
2173.713	0.02	45 989.8	15		$4s^24p^4(^1D)4f\ ^2G^\circ_{9/2}$	$4s^24p^4(^1D_2)5g\ ^2[5]_{11/2}$	78PER
2176.469	0.02	45 931.6	3		$4s^24p^4(^1D)4f\ ^2G^\circ_{9/2}$	$4s^24p^4(^1D_2)5g\ ^2[4]_{9/2}$	78PER
2176.701	0.02	45 926.7	5		$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	76HAN/PER
2187.332	0.02	45 703.5	15		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
2196.349	0.02	45 515.9	12		$4s^24p^4(^3P_0)5s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
2196.668	0.02	45 509.3	2		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	76HAN/PER
2197.400	0.02	45 494.1	6		$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	$4s^24p^4(^3P_2)5f\ ^2[2]^\circ_{5/2}$	78PER
2199.179	0.02	45 457.3	12		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
2200.713	0.02	45 425.6	12		$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	76HAN/PER
2200.942	0.02	45 420.9	18		$4s^24p^4(^3P_0)5s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2203.014	0.02	45 378.2	8		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
2217.987	0.02	45 071.9	20		$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2229.815	0.02	44 832.8	6		$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{7/2}$	78PER
2230.410	0.02	44 820.9	20		$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2240.497	0.02	44 619.1	20		$4s^24p^4(^3P_0)5s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2240.700	0.02	44 615.1	18		$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2242.621	0.02	44 576.8	3		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
2253.386	0.02	44 363.9	20		$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2260.590	0.02	44 222.5	15		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
2265.458	0.02	44 127.5	18		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2274.677	0.02	43 948.7	18		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2284.132	0.02	43 766.8	9		$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{5/2}$	78PER
2287.469	0.02	43 703.0	10		$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{7/2}$	78PER
2292.784	0.02	43 601.7	2		$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{5/2}$	78PER
2307.381	0.02	43 325.8	12		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2312.463	0.02	43 230.7	12		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
2316.693	0.02	43 151.7	3		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
2318.422	0.02	43 119.5	0.5		$4s^24p^4(^3P)4f\ ^2D^\circ_{3/2}$	$4s^24p^4(^3P_2)5g\ ^2[2]_{5/2}$	78PER
2325.832	0.02	42 982.2	8		$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	76HAN/PER
2329.190	0.02	42 920.2	9		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
2335.948	0.02	42 796.1	6		$4s^24p^4(^3P)4f\ ^2D^\circ_{3/2}$	$4s^24p^4(^3P_2)5g\ ^2[3]_{5/2}$	78PER
2339.416	0.02	42 732.6	15		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2346.968	0.02	42 595.1	50		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
2353.254	0.02	42 481.4	15		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2357.339	0.02	42 407.7	20		$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2383.011	0.02	41 950.9	18		$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2383.532	0.02	41 941.7	4		$4s^24p^4(^3P)4f\ ^4D^\circ_{5/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{7/2}$	78PER
2395.038	0.02	41 740.3	1		$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	78PER
2395.411	0.02	41 733.8	10		$4s^24p^4(^3P)4f\ ^4G^\circ_{9/2}$	$4s^24p^4(^3P_2)5g\ ^2[5]_{11/2}$	78PER
2399.304	0.02	41 666.1	9		$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2401.052	0.02	41 635.7	10		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2410.238	0.02	41 477.1	9		$4s^24p^4(^3P)4f\ ^4D^\circ_{7/2}$	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	78PER
2429.205	0.02	41 153.3	18		$4s^24p^4(^3P_0)5s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2432.133	0.02	41 103.7	18		$4s^24p^4(^1S_0)5s\ ^2[0]_{1/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2438.934	0.02	40 989.1	20		$4s^24p^4(^3P_0)5s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
2441.406	0.02	40 947.6	25		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2476.950	0.02	40 360.0	18		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
2480.786	0.02	40 297.6	18		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2482.574	0.02	40 268.6	10	p	$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
2482.793	0.02	40 265.1	30		$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
2483.565	0.02	40 252.5	25		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2488.446	0.02	40 173.6	2		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2494.964	0.02	40 068.7	15		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2496.338	0.02	40 046.6	8		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2500.568	0.02	39 978.86	18		$4s^24p^4(^1S_0)5s\ ^2[0]_{1/2}$	$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
2508.024	0.02	39 860.01	20		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2534.033	0.02	39 450.93	20		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2534.763	0.02	39 439.57	5		$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2539.099	0.02	39 372.22	1		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
2548.016	0.02	39 234.45	18		$4s^24p^4(^3P_0)5s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2548.760	0.02	39 223.00	12		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2555.601	0.02	39 118.01	40		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
2571.042	0.02	38 883.09	40		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
2571.580	0.02	38 874.95	25		$4s^24p^4(^3P_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2589.340	0.02	38 608.33	15		$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
2620.351	0.02	38 151.44	25		$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
2621.157	0.02	38 139.71	20		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
2634.877	0.02	37 941.13	5		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2642.155	0.02	37 836.62	20		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
2656.408	0.02	37 633.62	7		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2664.266	0.02	37 522.64	1		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s^24p^4(^1D_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2778.099	0.02	35 985.22	1		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2816.784	0.02	35 491.03	1		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{7/2}$	76HAN/PER
2830.527	0.02	35 318.72	15		$4s^24p^4(^3P_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
2934.603	0.02	34 066.19	9		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
2943.619	0.02	33 961.86	2		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
2954.730	0.02	33 834.16	1		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
2982.100	0.02	33 523.63	5		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
3019.294	0.02	33 110.68	10		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
3173.957	0.02	31 497.30	3		$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
3266.517	0.02	30 604.82	9		$4s^24p^4(^3P_0)5s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
3326.301	0.02	30 054.78	5		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
3409.511	0.02	29 321.31	2		$4s^24p^4(^3P_1)6p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{3/2}$	78PER
3409.715	0.02	29 319.55	8		$4s^24p^4(^3P_1)5s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
3422.663	0.02	29 208.64	1		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
3428.694	0.02	29 157.26	2		$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
3433.662	0.02	29 115.08	5	p	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{5/2}$	78PER
3433.809	0.02	29 113.84	6	bl?	$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
3448.439	0.02	28 990.32	3		$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)7s\ ^2[2]_{3/2}$	78PER
3485.566	0.02	28 681.54	2		$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[3]_{5/2}$	78PER
3514.205	0.02	28 447.80	5		$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{5/2}$	78PER
3525.081	0.02	28 360.03	1		$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{1/2}$	78PER
3528.947	0.02	28 328.97	5		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{1/2}$	78PER
3531.046	0.02	28 312.12	6		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
3535.649	0.02	28 275.27	5		$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)7s\ ^2[2]_{5/2}$	78PER
3535.926	0.02	28 273.06	1		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
3537.876	0.02	28 257.47	7		$4s^24p^4(^3P_1)5s\ ^2[1]_{1/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
3539.552	0.02	28 244.09	1		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{3/2}$	78PER
3540.401	0.02	28 237.32	8		$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{3/2}$	78PER
3563.789	0.02	28 052.01	7		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{3/2}$	78PER
3566.429	0.02	28 031.25	9		$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
3577.391	0.02	27 945.36			$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{3/2}$	78PER
3597.223	0.02	27 791.30	3	w	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{7/2}$	$4s^24p^4(^3P_2)6g\ ^2[5]_{9/2}$	78PER
3621.511	0.02	27 604.91	10		$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{5/2}$	78PER
3625.530	0.02	27 574.32	5		$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
3632.081	0.02	27 524.58	6		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
3633.511	0.02	27 513.74	3		$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)7s\ ^2[0]_{1/2}$	78PER
3634.889	0.02	27 503.32	2		$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)6d\ ^2[3]_{5/2}$	78PER
3635.720	0.02	27 497.03	1		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_0)6d\ ^2[2]_{5/2}$	78PER
3642.078	0.02	27 449.03	6		$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[3]_{5/2}$	78PER
3656.837	0.02	27 338.25	1		$4s^24p^4(^3P_1)6p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_1)6d\ ^2[2]_{3/2}$	78PER
3660.849	0.02	27 308.29	7	w	$4s^24p^4(^3P_2)5f\ ^2[5]^\circ_{11/2}$	$4s^24p^4(^3P_2)6g\ ^2[6]_{13/2}$	78PER
3678.192	0.02	27 179.53	4		$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)6d\ ^2[1]_{1/2}$	78PER
3681.572	0.02	27 154.58	1		$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{1/2}$	78PER
3684.780	0.02	27 130.94	4	w	$4s^24p^4(^3P_2)5f\ ^2[4]^\circ_{9/2}$	$4s^24p^4(^3P_2)6g\ ^2[5]_{11/2}$	78PER
3688.877	0.02	27 100.81	5	w	$4s^24p^4(^3P_2)5f\ ^2[5]^\circ_{9/2}$	$4s^24p^4(^3P_2)6g\ ^2[6]_{11/2}$	78PER
3690.359	0.02	27 089.93	2		$4s^24p^4(^3P_1)6p\ ^2[1]_{1/2}{}^\circ$	$4s^24p^4(^3P_0)7s\ ^2[0]_{1/2}$	78PER
3693.114	0.02	27 069.72	3		$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{3/2}$	78PER
3701.777	0.02	27 006.37	4		$4s^24p^4(^3P_1)6p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_1)6d\ ^2[1]_{3/2}$	78PER
3724.081	0.02	26 844.63	1		$4s^24p^4(^1S_0)5p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	76HAN/PER
3724.081	0.02	26 844.63	3	bl	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)6d\ ^2[3]_{7/2}$	78PER
3727.618	0.02	26 819.16	6		$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[1]_{1/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
3736.447	0.02	26 755.78	2		$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)7s\ ^2[2]_{3/2}$	78PER
3741.053	0.02	26 722.85	9		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
3754.240	0.02	26 628.98			$4s^24p^4(^3P_2)5f\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)6g\ ^2[4]_{9/2}$	78PER
3762.630	0.02	26 569.61	2		$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{3/2}$	78PER
3765.295	0.02	26 550.80	1		$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[2]_{3/2}$	78PER
3766.296	0.02	26 543.74	5		$4s^24p^4(^3P_1)6p\ ^2[0]^\circ_{1/2}$	$4s^24p^4(^3P_1)6d\ ^2[1]_{1/2}$	78PER
3774.440	0.02	26 486.48	6	=	$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)7s\ ^2[2]_{5/2}$	78PER
3774.440	0.02	26 486.48	6	=	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)6d\ ^2[0]_{1/2}$	78PER
3792.053	0.02	26 363.45	0.5		$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)7s\ ^2[1]_{1/2}$	78PER
3794.726	0.02	26 344.89	9		$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[2]_{5/2}$	78PER
3797.706	0.02	26 324.21	4		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)6d\ ^2[2]_{5/2}$	78PER
3802.313	0.02	26 292.32	4		$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_1)6d\ ^2[2]_{3/2}$	78PER
3804.205	0.02	26 279.24	2	w	$4s^24p^4(^3P_2)5f\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)6g\ ^2[3]_{7/2}$	78PER
3806.849	0.02	26 260.99	3		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[2]_{3/2}$	78PER
3807.208	0.02	26 258.51	12		$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[3]_{7/2}$	78PER
3818.379	0.02	26 181.70	4		$4s^24p^4(^1D)4f\ ^2D^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[4]_{7/2}$	78PER
3823.539	0.02	26 146.36	2		$4s^24p^4(^1D)4f\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[0]_{1/2}$	78PER
3826.373	0.02	26 127.00	5		$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_0)6d\ ^2[2]_{3/2}$	78PER
3827.187	0.02	26 121.44	7		$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^1D_2)6d\ ^2[4]_{7/2}$	78PER
3828.506	0.02	26 112.44	5		$4s^24p^4(^1D_2)5s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
3832.341	0.02	26 086.31	8		$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[2]_{1/2}$	78PER
3850.580	0.02	25 962.75	10		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[3]_{5/2}$	78PER
3851.681	0.02	25 955.33	10		$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_0)6d\ ^2[2]_{5/2}$	78PER
3859.136	0.02	25 905.19	15		$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[4]_{7/2}$	78PER
3877.627	0.02	25 781.66	4		$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)7s\ ^2[2]_{3/2}$	78PER
3879.275	0.02	25 770.71	0.5		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)6d\ ^2[3]_{5/2}$	78PER
3889.738	0.02	25 701.39	2		$4s^24p^4(^3P_2)5d\ ^2[1]_{1/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{3/2}$	78PER
3891.159	0.02	25 692.00	1		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
3896.699	0.02	25 655.48	1		$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
3906.112	0.02	25 593.65	1		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
3908.438	0.02	25 578.42	12		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^3P_1)6d\ ^2[3]_{7/2}$	78PER
3911.452	0.02	25 558.72	12		$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^1D_2)6d\ ^2[4]_{9/2}$	78PER
3912.620	0.02	25 551.09	5		$4s^24p^4(^1D_2)5s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
3914.282	0.02	25 540.24	18		$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)6d\ ^2[4]_{9/2}$	78PER
3916.160	0.02	25 527.99	1		$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_0)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
3921.194	0.02	25 495.22	1		$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)6d\ ^2[2]_{3/2}$	78PER
3925.613	0.02	25 466.52	0.5		$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[1]_{1/2}$	78PER
3944.896	0.02	25 342.04	10		$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[2]_{5/2}$	78PER
3952.218	0.02	25 295.09	2		$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)6d\ ^2[1]_{1/2}$	78PER
3956.310	0.02	25 268.93	4		$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^1D_2)6d\ ^2[3]_{5/2}$	78PER
3977.111	0.02	25 136.77	3		$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{5/2}$	78PER
3983.644	0.02	25 095.55	3		$4s^24p^4(^1D)4d\ ^2S_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
3987.285	0.02	25 072.63	1		$4s^24p^4(^3P_1)5d\ ^2[1]_{1/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{3/2}$	78PER
3989.994	0.02	25 055.61	6		$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)6d\ ^2[3]_{7/2}$	78PER
3996.315	0.02	25 015.98	6		$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[1]_{1/2}$	78PER
3999.906	0.02	24 993.52	10		$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[3]_{5/2}$	78PER
4023.643	0.02	24 846.08	1		$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
4032.979	0.02	24 788.56	1		$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[3]_{5/2}$	78PER
4036.467	0.02	24 767.15	3		$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	$4s^24p^4(^3P_2)6d\ ^2[2]_{1/2}$	78PER
4036.378	0.02	24 767.69	3		$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	$4s^24p^4(^3P_2)6d\ ^2[3]_{7/2}$	78PER
4038.385	0.02	24 755.38	2		$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[1]_{3/2}$	78PER
4039.482	0.02	24 748.66	8		$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{7/2}$	$4s^24p^4(^3P_2)6d\ ^2[3]_{7/2}$	78PER
4064.618	0.02	24 595.61	3		$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{5/2}$	$4s^24p^4(^1D_2)6d\ ^2[2]_{5/2}$	78PER
4069.279	0.02	24 567.44	3		$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{5/2}$	78PER
4092.019	0.02	24 430.92	1		$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	$4s4p^5(^3P)4d\ ^4D^\circ_{5/2}$	78PER
4093.680	0.02	24 421.00	0.5		$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[3]_{5/2}$	78PER
4106.506	0.02	24 344.74	5		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{5/2}$	76HAN/PER
4110.200	0.02	24 322.85	2		$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	$4s^24p^4(^3P_2)6d\ ^2[0]_{1/2}$	78PER
4114.863	0.02	24 295.29	10		$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{7/2}$	78PER
4115.325	0.02	24 292.56	0.5		$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	$4s^24p^4(^3P_1)6d\ ^2[1]_{1/2}$	78PER
4118.017	0.02	24 276.69	3		$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	78PER
4136.988	0.02	24 165.36	3		$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{7/2}$	78PER
4188.323	0.02	23 869.18	3		$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
4205.249	0.02	23 773.11	2	p	$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
4223.775	0.02	23 668.84	2	p	$4s^24p^4(^3P)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
4232.767	0.02	23 618.56	3		$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{3/2}$	78PER
4245.343	0.02	23 548.59	4		$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
4268.879	0.02	23 418.76	7	q	$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{7/2}$	78PER
4293.717	0.02	23 283.29	6		$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{9/2}$	78PER
4298.571	0.02	23 257.01	9		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_1)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
4299.542	0.02	23 251.75	3		$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	78PER
4346.314	0.02	23 001.54	8		$4s^24p^4(^3P_2)5d\ ^2[1]_{1/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	78PER
4362.787	0.02	22 914.69	18		$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{3/2}$	78PER
4366.564	0.02	22 894.87	6		$4s^24p^4(^3P_1)5d\ ^2[1]_{1/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	78PER
4380.282	0.02	22 823.17	3	q	$4s^24p^4(^3P)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_1)5p\ ^2[0]^\circ_{1/2}$	76HAN/PER
4387.482	0.02	22 785.72	20		$4s^24p^4(^3P_2)5d\ ^2[3]_{7/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	78PER
4412.618	0.02	22 655.92	10		$4s^24p^4(^3P_2)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	78PER
4438.781	0.02	22 522.38	25		$4s^24p^4(^3P_1)5d\ ^2[3]_{7/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	78PER
4449.841	0.02	22 466.41	25		$4s^24p^4(^1D_2)5d\ ^2[4]_{7/2}$	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{5/2}$	78PER
4451.342	0.02	22 458.83	7		$4s^24p^4(^3P_2)5d\ ^2[4]_{7/2}$	$4s4p^5(^3P)4d\ ^4F^\circ_{5/2}$	78PER
4455.250	0.02	22 439.13	10		$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	78PER
4464.303	0.02	22 393.63	30		$4s^24p^4(^3P_2)5d\ ^2[4]_{9/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{7/2}$	78PER
4473.951	0.02	22 345.34	20		$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{3/2}$	78PER
4478.186	0.02	22 324.20	6		$4s^24p^4(^3P_2)5d\ ^2[0]_{1/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	78PER
4484.174	0.02	22 294.40	12		$4s^24p^4(^1D_2)5d\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{3/2}$	78PER
4496.455	0.02	22 233.51	15	w,=	$4s^24p^4(^1D_2)5g\ ^2[6]_{13/2}$	$4s^24p^4(^1D_2)6h\ ^2[7]^\circ_{15/2}$	78PER
4496.455	0.02	22 233.51	15	w,=	$4s^24p^4(^1D_2)5g\ ^2[6]_{11/2}$	$4s^24p^4(^1D_2)6h\ ^2[7]^\circ_{13/2}$	78PER
4502.478	0.02	22 203.77	8		$4s^24p^4(^1D_2)5d\ ^2[1]_{3/2}$	$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{5/2}$	78PER
4505.396	0.02	22 189.38	2	w	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	$4s^24p^4(^3P_2)6h\ ^2[4]^\circ_{9/2}$	78PER
4507.060	0.02	22 181.19	5		$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	78PER
4509.079	0.02	22 171.26	4	w	$4s^24p^4(^3P_2)5g\ ^2[4]_{7/2}$	$4s^24p^4(^3P_2)6h\ ^2[4]^\circ_{7/2}$	78PER
4513.402	0.02	22 150.03	12		$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{1/2}$	78PER
4514.751	0.02	22 143.40	0.5	w	$4s^24p^4(^3P_1)5g\ ^2[5]_{9/2}$	$4s^24p^4(^3P_1)6h\ ^2[5]^\circ_{9/2}$	78PER
4516.475	0.02	22 134.95	18	w	$4s^24p^4(^3P_2)5g\ ^2[5]_{11/2}$	$4s^24p^4(^3P_2)6h\ ^2[6]^\circ_{13/2}$	78PER
4516.919	0.02	22 132.78	3	w	$4s^24p^4(^3P_2)5g\ ^2[5]_{13/2}$	$4s^24p^4(^3P_2)6h\ ^2[5]^\circ_{11/2}$	78PER
4517.866	0.02	22 128.14	9	w	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	$4s^24p^4(^3P_2)6h\ ^2[6]^\circ_{11/2}$	78PER
4518.278	0.02	22 126.12	10	w	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	$4s^24p^4(^3P_2)6h\ ^2[5]^\circ_{11/2}$	78PER
4518.484	0.02	22 125.11	4	w,p	$4s^24p^4(^3P_2)5g\ ^2[4]_{9/2}$	$4s^24p^4(^3P_2)6h\ ^2[5]^\circ_{9/2}$	78PER
4522.002	0.02	22 107.90	12	w	$4s^24p^4(^3P_2)5g\ ^2[4]_{7/2}$	$4s^24p^4(^3P_2)6h\ ^2[5]^\circ_{9/2}$	78PER
4524.926	0.02	22 093.62	12	w	$4s^24p^4(^3P_2)5g\ ^2[5]_{9/2}$	$4s^24p^4(^3P_2)6h\ ^2[6]^\circ_{11/2}$	78PER
4525.324	0.02	22 091.67	12	w	$4s^24p^4(^3P_2)5g\ ^2[5]_{9/2}$	$4s^24p^4(^3P_2)6h\ ^2[5]^\circ_{11/2}$	78PER
4526.381	0.02	22 086.51	9		$4s^24p^4(^3P_2)5d\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	78PER
4528.294	0.02	22 077.18	15		$4s^24p^4(^3P_0)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	78PER
4534.101	0.02	22 048.91	1	w	$4s^24p^4(^3P_2)5g\ ^2[3]_{5/2}$	$4s^24p^4(^3P_2)6h\ ^2[3]^\circ_{5/2}$	78PER
4536.754	0.02	22 036.01	18	w	$4s^24p^4(^3P_1)5g\ ^2[5]_{11/2}$	$4s^24p^4(^3P_1)6h\ ^2[6]^\circ_{13/2}$	78PER
4538.099	0.02	22 029.48	2	w	$4s^24p^4(^3P_2)5g\ ^2[3]_{7/2}$	$4s^24p^4(^3P_2)6h\ ^2[3]^\circ_{7/2}$	78PER
4539.662	0.02	22 021.90	15	w	$4s^24p^4(^3P_1)5g\ ^2[5]_{9/2}$	$4s^24p^4(^3P_1)6h\ ^2[6]^\circ_{11/2}$	78PER
4541.698	0.02	22 012.02	6	w	$4s^24p^4(^1D_2)5g\ ^2[3]_{7/2}$	$4s^24p^4(^1D_2)6h\ ^2[4]^\circ_{9/2}$	78PER
4543.495	0.02	22 003.32	5	w	$4s^24p^4(^1D_2)5g\ ^2[3]_{5/2}$	$4s^24p^4(^1D_2)6h\ ^2[4]^\circ_{7/2}$	78PER
4554.414	0.02	21 950.57	10	w	$4s^24p^4(^3P_0)5g\ ^2[4]_{7/2}$	$4s^24p^4(^3P_0)6h\ ^2[5]^\circ_{9/2}$	78PER
4557.476	0.02	21 935.82	12	w	$4s^24p^4(^3P_2)5g\ ^2[3]_{7/2}$	$4s^24p^4(^3P_2)6h\ ^2[4]^\circ_{9/2}$	78PER
4572.795	0.02	21 862.33	25	w	$4s^24p^4(^3P_2)5g\ ^2[6]_{13/2}$	$4s^24p^4(^3P_2)6h\ ^2[7]^\circ_{15/2}$	78PER
4574.382	0.02	21 854.75	20	w	$4s^24p^4(^3P_2)5g\ ^2[6]_{11/2}$	$4s^24p^4(^3P_2)6h\ ^2[7]^\circ_{13/2}$	78PER
4581.322	0.02	21 821.65	15		$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	78PER
4582.146	0.02	21 817.72	10		$4s^24p^4(^3P_1)5d\ ^2[1]_{1/2}$	$4s^24p^4(^3P_1)6p\ ^2[0]^\circ_{1/2}$	78PER
4587.079	0.02	21 794.26	1		$4s^24p^4(^1S)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[1]^\circ_{3/2}$	76HAN/PER
4592.007	0.02	21 770.87	10	w	$4s^24p^4(^3P_1)5g\ ^2[4]_{9/2}$	$4s^24p^4(^3P_1)6h\ ^2[5]^\circ_{11/2}$	78PER
4592.411	0.02	21 768.96	9	w	$4s^24p^4(^3P_1)5g\ ^2[4]_{7/2}$	$4s^24p^4(^3P_1)6h\ ^2[5]^\circ_{9/2}$	78PER
4600.325	0.02	21 731.51	9	w	$4s^24p^4(^3P_2)5g\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)6h\ ^2[3]^\circ_{5/2}$	78PER
4601.758	0.02	21 724.74	8	w	$4s^24p^4(^1D_2)5g\ ^2[4]_{9/2}$	$4s^24p^4(^1D_2)6h\ ^2[5]^\circ_{11/2}$	78PER
4602.097	0.02	21 723.14	10	w	$4s^24p^4(^3P_2)5g\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6h\ ^2[3]^\circ_{7/2}$	78PER
4603.516	0.02	21 716.44	7	w	$4s^24p^4(^1D_2)5g\ ^2[4]_{7/2}$	$4s^24p^4(^1D_2)6h\ ^2[5]^\circ_{9/2}$	78PER
4616.449	0.02	21 655.60	8	w,=	$4s^24p^4(^1D_2)5g\ ^2[5]_{11/2}$	$4s^24p^4(^1D_2)6h\ ^2[6]^\circ_{13/2}$	78PER
4616.449	0.02	21 655.60	8	w,=	$4s^24p^4(^1D_2)5g\ ^2[5]_{9/2}$	$4s^24p^4(^1D_2)6h\ ^2[6]^\circ_{11/2}$	78PER
4617.477	0.02	21 650.79	20		$4s^24p^4(^1D_2)5d\ ^2[3]_{7/2}$	$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{5/2}$	78PER
4654.771	0.02	21 477.32	15		$4s^24p^4(^3P_2)5d\ ^2[1]_{1/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{3/2}$	78PER

TABLE 8. Observed spectral lines of Sr IV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
4656.463	0.02	21 469.52	25		$4s^24p^4(^3P_2)5d\ ^2[4]_{7/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	78PER
4685.078	0.02	21 338.39	9		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[2]^\circ_{3/2}$	76HAN/PER
4691.571	0.02	21 308.86	10		$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{5/2}$	78PER
4717.208	0.02	21 193.05	3		$4s^24p^4(^3P_2)5d\ ^2[4]_{7/2}$	$4s^24p^4(^1D)4f\ ^2D^\circ_{5/2}$	78PER
4737.098	0.02	21 104.07	7		$4s^24p^4(^3P_0)5d\ ^2[2]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[0]^\circ_{1/2}$	78PER
4742.994	0.02	21 077.83	12		$4s^24p^4(^1D_2)5d\ ^2[3]_{5/2}$	$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{3/2}$	78PER
4790.566	0.02	20 868.53	15		$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	78PER
4797.244	0.02	20 839.48	12		$4s^24p^4(^3P_1)5d\ ^2[2]_{5/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	78PER
4828.819	0.02	20 703.21	18		$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	78PER
4952.120	0.02	20 187.74	10		$4s^24p^4(^3P_1)5d\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[0]^\circ_{1/2}$	78PER
4958.836	0.02	20 160.40	12		$4s^24p^4(^3P_2)5d\ ^2[0]_{1/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	78PER
5004.209	0.02	19 977.61	12		$4s^24p^4(^3P_1)5d\ ^2[2]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{1/2}$	78PER
5033.435	0.02	19 861.61	10		$4s^24p^4(^1D_2)5d\ ^2[3]_{7/2}$	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{7/2}$	78PER
5060.487	0.02	19 755.44	8		$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	78PER
5068.337	0.02	19 724.84	15	q	$4s^24p^4(^3P_1)5d\ ^2[3]_{5/2}$	$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{3/2}$	78PER
5344.696	0.02	18 704.94	8		$4s^24p^4(^3P_2)5d\ ^2[1]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	78PER
5414.988	0.02	18 462.13	15		$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{3/2}$	78PER
5475.276	0.02	18 258.85	2		$4s^24p^4(^3P)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_1)5p\ ^2[1]^\circ_{1/2}$	76HAN/PER
5478.622	0.02	18 247.70	10		$4s^24p^4(^3P_2)5d\ ^2[3]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	78PER
5494.631	0.02	18 194.53	12		$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{5/2}$	78PER
5595.174	0.02	17 867.58	10		$4s^24p^4(^1D_2)6s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)6p\ ^2[2]^\circ_{3/2}$	78PER
5626.927	0.02	17 766.76	9		$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	78PER
5647.190	0.02	17 703.01	10		$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{3/2}$	78PER
5772.657	0.02	17 318.24	30		$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{7/2}$	78PER
5776.759	0.02	17 305.95	8		$4s^24p^4(^1D_2)5d\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{5/2}$	78PER
5881.363	0.02	16 998.15	10		$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	$4s^24p^4(^3P_1)6p\ ^2[1]^\circ_{1/2}$	78PER
5978.943	0.02	16 720.73	15		$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{5/2}$	78PER
6025.124	0.02	16 592.57	10		$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	78PER
6031.803	0.02	16 574.20	12		$4s^24p^4(^3P_1)6s\ ^2[1]_{1/2}$	$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{3/2}$	78PER
6036.478	0.02	16 561.36	10		$4s^24p^4(^3P_0)6s\ ^2[0]_{1/2}$	$4s^24p^4(^3P_0)6p\ ^2[1]^\circ_{1/2}$	78PER
6048.432	0.02	16 528.63	10		$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[2]^\circ_{3/2}$	78PER
6056.071	0.02	16 507.79	4		$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ ^2[3]^\circ_{5/2}$	76HAN/PER
6093.986	0.02	16 405.08	12		$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{7/2}$	78PER
6133.909	0.02	16 298.31	10		$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{1/2}$	78PER
6222.211	0.02	16 067.01	15		$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[1]^\circ_{3/2}$	78PER
6245.726	0.02	16 006.52	20		$4s^24p^4(^3P_2)6s\ ^2[2]_{3/2}$	$4s^24p^4(^3P_2)6p\ ^2[3]^\circ_{5/2}$	78PER
6324.005	0.02	15 808.39	25		$4s^24p^4(^3P_2)6s\ ^2[2]_{5/2}$	$4s^24p^4(^3P_2)6p\ ^2[2]^\circ_{5/2}$	78PER
6356.232	0.02	15 728.24	8		$4s^24p^4(^1D_2)6s\ ^2[2]_{5/2}$	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{5/2}$	78PER
6394.942	0.02	15 633.04	10		$4s^24p^4(^1D_2)6s\ ^2[2]_{3/2}$	$4s^24p^4(^1D_2)6p\ ^2[3]^\circ_{5/2}$	78PER
6470.111	0.02	15 451.42	10		$4s^24p^4(^3P_1)6s\ ^2[1]_{3/2}$	$4s^24p^4(^3P_1)6p\ ^2[0]^\circ_{1/2}$	78PER

6.4. Sr V

Se isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}4s^24p^4\ ^3P_2$
Ionization energy $570\,000 \pm 5000\ cm^{-1}$; 70.7 ± 0.6 eV

The first measurements of the Sr V spectrum were reported by Hansen and Persson [74HAN/PER]. They observed 13 transitions between the ground configuration and levels of the $4s4p^5$ configuration produced by a sliding spark source. By extending the range of measurements from 200 Å to 2500 Å, Persson and Wahlström [84PER/WAH] were able to classify about 650 transitions between 138 energy levels of the $4s^24p^4$, $4s4p^5$, and $4s^24p^34d$, $4f$, $5s$, $5p$, $5d$, and $6s$ configurations. The levels and wavelengths listed in Tables 9 and 10 are all taken from Persson and Wahlström [84PER/WAH], as is the ionization energy. Although the authors estimate the absolute uncertainty of the level values to be ± 1.0 cm^{-1}, they indicate that the internal consistency of the $4p^3nl$ is ± 0.20 cm^{-1}. Therefore we have retained two decimal places for the levels, as given by Persson and Wahlström [84PER/WAH].

6.4.1 References for Sr V

74HAN/PER J. E. Hansen and W. Persson, J. Opt. Soc. Am. **64**, 696 (1974).

84PER/WAH W. Persson and C.-G. Wahlström, Phys. Scr. **30**, 169 (1984).

TABLE 9. Energy levels of Sr V

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4s^24p^4$	^{3}P	2	0.00		94%	
	^{3}P	1	8307.88	1.0	100%	84PER/WAH
	^{3}P	0	8718.47	1.0	91%	84PER/WAH
	^{1}D	2	20 310.51	1.0	94%	84PER/WAH
	^{1}S	0	44 050.41	1.0	91%	84PER/WAH
$4s(^2S)4p^5$	^{3}P°	2	154 032.29	1.0	84% + 11% $4p^3(^2D)4d\ ^3P$	84PER/WAH
	^{3}P°	1	160 017.52	1.0	82% + 11% $4p^3(^2D)4d\ ^3P$	84PER/WAH
	^{3}P°	0	164 015.68	1.0	84% + 12% $4p^3(^2D)4d\ ^3P$	84PER/WAH
	^{1}P°	1	193 318.87	1.0	58% + 34% $4p^3(^2D)4d\ ^1P$ + 5% $4p^3(^2P)4d\ ^1P$	84PER/WAH
$4s^24p^3(^4S)4d$	^{5}D°	4	202 912.96	1.0	96%	84PER/WAH
	^{5}D°	3	202 398.48	1.0	94%	84PER/WAH
	^{5}D°	2	202 321.43	1.0	96%	84PER/WAH
	^{5}D°	1	202 265.18	1.0	97%	84PER/WAH
	^{5}D°	0	202 128.66	1.0	97%	84PER/WAH
	^{3}D°	3	271 500.19	1.0	38% + 32% $4p^3(^2P)4d\ ^3D$ + 14% $4p^3(^2D)4d\ ^3D$ + 10% $4p^3(^2D)4d\ ^1F$	84PER/WAH
	^{3}D°	2	276 821.46	1.0	30% + 33% $4p^3(^2P)4d\ ^3D$ + 14% $4p^3(^2D)4d\ ^3D$ + 10% $4p^3(^2D)4d\ ^1D$	84PER/WAH
	^{3}D°	1	280 067.09	1.0	31% + 40% $4p^3(^2P)4d\ ^3D$ + 14% $4p^3(^2D)4d\ ^3D$	84PER/WAH
$4s^24p^3(^2D)4d$	^{3}G°	5	232 585.9	1.0	100%	84PER/WAH
	^{3}G°	4	230 974.17	1.0	76% + 18% $4p^3(^2D)4d\ ^3F$	84PER/WAH
	^{3}G°	3	229 949.55	1.0	86% + 9% $4p^3(^2D)4d\ ^3F$	84PER/WAH
	^{3}F°	4	224 844.36	1.0	72% + 14% $4p^3(^2P)4d\ ^3F$ + 10% $4p^3(^2D)4d\ ^3G$	84PER/WAH
	^{3}F°	3	222 368.34	1.0	67% + 13% $4p^3(^2P)4d\ ^3F$ + 9% $4p^3(^2D)4d\ ^3D$ + 6% $4p^3(^4S)4d\ ^3D$	84PER/WAH
	^{3}F°	2	220 549.72	1.0	57% + 17% $4p^3(^2D)4d\ ^3D$ + 13% $4p^3(^2P)4d\ ^3F$ + 11% $4p^3(^4S)4d\ ^3D$	84PER/WAH
	^{3}D°	3	216 104.17	1.0	40% + 38% $4p^3(^4S)4d\ ^3D$ + 8% $4p^3(^2D)4d\ ^3F$	84PER/WAH
	^{3}D°	2	213 783.82	1.0	29% + 31% $4p^3(^4S)4d\ ^3D$ + 18% $4p^3(^2D)4d\ ^3F$ + 7% $4p^3(^2P)4d\ ^1D$	84PER/WAH
	^{3}D°	1	216 969.19	1.0	47% + 47% $4p^3(^4S)4d\ ^3D$	84PER/WAH
	^{3}P°	2	267 351.03	1.0	56% + 26% $4p^3(^4S)5s\ ^5S$ + 9% $4s4p^5(^2S)\ ^3P$	84PER/WAH
	^{3}P°	1	269 614.82	1.0	33% + 24% $4p^3(^2D)4d\ ^1P$ + 15% $4s4p^5(^2S)\ ^1P$ + 7% $4p^3(^2P)4d\ ^3P$	84PER/WAH
	^{3}P°	0	275 425.41	1.0	58% + 24% $4p^3(^2P)4d\ ^3P$ + 15% $4p^3(^2S)p5\ ^3P$	84PER/WAH
	^{3}S°	1	265 178.82	1.0	88% + 9% $4p^3(^2D)4d\ ^3P$	84PER/WAH
	^{1}G°	4	234 782.57	1.0	86% + 6% $4p^3(^2D)4d\ ^3G$	84PER/WAH
	^{1}F°	3	291 678.41	1.0	32% + 42% $4p^3(^2D)5s\ ^3D$ + 21% $4p^3(^2P)4d\ ^1F$	84PER/WAH
	^{1}D°	2	285 450.04	1.0	59% + 21% $4p^3(^2P)4d\ ^1D$ + 7% $4p^3(^2P)4d\ ^3D$ + 5% $4p^3(^4S)4d\ ^3D$	84PER/WAH
	^{1}P°	1	275 488.13	1.0	35% + 18% $4p^3(^2D)4d\ ^3P$ + 16% $4s4p^5(^2S)\ ^1P$ + 13% $4p^3(^2P)4d\ ^3P$	84PER/WAH
	^{1}S°	0	221 778.44	1.0	95%	84PER/WAH
$4s^24p^3(^2P)4d$	^{3}F°	4	251 233.8	1.0	74% + 11% $4p^3(^2D)4d\ ^1G$ + 7% $4p^3(^2D)4d\ ^3G$	84PER/WAH
	^{3}F°	3	249 673.18	1.0	76% + 12% $4p^3(^2D)4d\ ^3F$ + 6% $4p^3(^2D)4d\ ^3G$	84PER/WAH
	^{3}F°	2	250 656.55	1.0	63% + 22% $4p^3(^2D)4d\ ^3F$	84PER/WAH
	^{3}D°	3	253 340.43	1.0	38% + 33% $4p^3(^2D)4d\ ^3D$ + 12% $4p^3(^4S)4d\ ^3D$ + 8% $4p^3(^2P)4d\ ^1F$	84PER/WAH
	^{3}D°	2	248 383.31	1.0	49% + 24% $4p^3(^2D)4d\ ^3D$ + 14% $4p^3(^4S)4d\ ^3D$ + 6% $4p^3(^2P)4d\ ^3F$	84PER/WAH
	^{3}D°	1	243 576.50	1.0	50% + 35% $4p^3(^2D)4d\ ^3D$ + 13% $4p^3(^4S)4d\ ^3D$	84PER/WAH
	^{3}P°	2	255 118.53	1.0	80% + 7% $4p^3(^2D)4d\ ^3P$	84PER/WAH
	^{3}P°	1	248 011.88	1.0	70% + 20% $4p^3(^2D)4d\ ^3P$	84PER/WAH
	^{3}P°	0	246 801.43	1.0	66% + 27% $4p^3(^2D)4d\ ^3P$	84PER/WAH
	^{1}F°	3	266 239.42	1.0	54% + 26% $4p^3(^2D)4d\ ^1F$ + 14% $4p^3(^2P)4d\ ^3D$	84PER/WAH
	^{1}D°	2	241 479.47	1.0	58% + 22% $4p^3(^2D)4d\ ^1D$ + 8% $4p^3(^2P)4d\ ^3F$	84PER/WAH
	^{1}P°	1	306 075.40	1.0	66% + 18% $4p^3(^2P)5s\ ^3P$	84PER/WAH
$4s^24p^3(^4S)5s$	^{5}S°	2	266 325.33	1.0	70% + 18% $4p^3(^2D)4d\ ^3P$ + 5% $4p^3(^2P)5s\ ^3P$	84PER/WAH
	^{3}S°	1	274 951.74	1.0	84% + 5% $4p^3(^2D)4d\ ^3P$	84PER/WAH
$4s^24p^3(^2D)5s$	^{3}D°	3	291 835.57	1.0	57% + 23% $4p^3(^2D)4d\ ^1F$ + 14% $4p^3(^2P)4d\ ^1F$	84PER/WAH
	^{3}D°	2	289 116.66	1.0	73% + 13% $4p^3(^2P)5s\ ^3P$ + 9% $4p^3(^2D)5s\ ^1D$	84PER/WAH
	^{3}D°	1	288 831.62	1.0	84% + 6% $4p^3(^2P)5s\ ^1P$	84PER/WAH
	^{1}D°	2	294 818.15	1.0	81% + 14% $4p^3(^2D)5s\ ^3D$	84PER/WAH
	^{3}P°	2	311 699.75	1.0	78% + 9% $4p^3(^2D)Ss\ ^1D$ + 9% $4p^3(^2D)5s\ ^3D$	84PER/WAH
	^{3}P°	1	307 806.45	1.0	66% + 18% $4p^3(^2P)4d\ ^1P$ + 9% $4p^3(^2P)5s\ ^1P$	84PER/WAH
	^{3}P°	0	306 607.40	1.0	98%	84PER/WAH
	^{1}P°	1	314 735.94	1.0	76% + 11% $4p^3(^2D)5s\ ^3D$ + 8% $4p^3(^2P)5s\ ^3P$	84PER/WAH

TABLE 9. Energy levels of Sr V—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4s^24p^3(^4S)5p$	^5P	3	316 119.90	1.0	95%	84PER/WAH
	^5P	2	314 143.18	1.0	84% + 8% $4p^3(^4S)$ ^3P	84PER/WAH
	^5P	1	313 726.94	1.0	91%	84PER/WAH
	^3P	2	321 239.05	1.0	78% + 12% $4p^3(^4S)$ ^5P + 6% $4p^3(^2D)$ ^3P	84PER/WAH
	^3P	1	319 834.74	1.0	73% + 8% $4p^3(^2D)$ ^3P + 6% $4p^3(^2P)$ ^1P	84PER/WAH
	^3P	0	321 640.81	1.0	90%	84PER/WAH
$4s^24p^3(^2D)5p$	^3F	4	340 419.40	1.0	100%	84PER/WAH
	^3F	3	336 623.27	1.0	67% + 20% $4p^3(^2D)$ ^3D + 10% $4p^3(^2P)$ ^3D	84PER/WAH
	^3F	2	334 364.87	1.0	48% + 35% $4p^3(^2D)$ ^3D + 10% $4p^3(^2P)$ ^3D	84PER/WAH
	^3D	3	339 930.18	1.0	46% + 30% $4p^3(^2D)$ ^1F + 24% $4p^3(^2D)$ ^3F	84PER/WAH
	^3D	2	336 694.99	1.0	51% + 37% $4p^3(^2D)$ ^3F + 6% $4p^3(^2P)$ ^1D	84PER/WAH
	^3D	1	331 198.24	1.0	40% + 34% $4p^3(^2D)$ ^1P + 9% $4p^3(^2P)$ ^1P + 7% $4p^3(^4S)$ ^3P	84PER/WAH
	^3P	2	343 583.26	1.0	69% + 12% $4p^3(^2P)$ ^3P + 8% $4p^3(^4S)$ ^3P + 6% $4p^3(^2D)$ ^1D	84PER/WAH
	^3P	1	345 344.22	1.0	68% + 14% $4p^3(^2P)$ ^3S + 13% $4p^3(^4S)$ ^3P	84PER/WAH
	^3P	0	345 057.34	1.0	88% + 8% $4p^3(^2P)$ ^1S	84PER/WAH
	^1F	3	338 691.84	1.0	60% + 34% $4p^3(^2D)$ ^3D	84PER/WAH
	^1D	2	351 337.47	1.0	73% + 10% $4p^3(^2D)$ ^3P + 5% $4p^3(^2P)$ ^3D	84PER/WAH
	^1P	1	337 454.30	1.0	46% + 41% $4p^3(^2D)$ ^3D + 8% $4p^3(^2P)$ ^3D	84PER/WAH
$4s^24p^3(^2P)5p$	^3D	3	359 646.95	1.0	81% + 8% $4p^3(^2D)$ ^3F + 8% $4p^3(^2D)$ ^1F	84PER/WAH
	^3D	2	356 566.83	1.0	75% + 10% $4p^3(^2P)$ ^3P + 5% $4p^3(^2P)$ ^1D	84PER/WAH
	^3D	1	353 844.75	1.0	73% + 15% $4p^3(^2P)$ ^1P + 6% $4p^3(^2D)$ ^3D	84PER/WAH
	^3P	2	364 886.55	1.0	63% + 9% $4p^3(^2D)$ ^3P + 9% $4p^3(^2D)$ ^1D + 8% $4p^3(^2P)$ ^1D	84PER/WAH
	^3P	1	357 554.36	1.0	65% + 26% $4p^3(^2P)$ ^1P + 5% $4p^3(^2P)$ ^3D	84PER/WAH
	^3P	0	358 075.63	1.0	91%	84PER/WAH
	^3S	1	357 247.90	1.0	74% + 18% $4p^3(^2D)$ ^3P	84PER/WAH
	^1D	2	362 486.77	1.0	74% + 8% $4p^3(^2D)$ ^1D + 7% $4p^3(^2D)$ ^3F	84PER/WAH
	^1P	1	363 332.24	1.0	40% + 27% $4p^3(^2P)$ ^3P + 10% $4p^3(^2D)$ ^3D + 9% $4p^3(^2P)$ ^3D	84PER/WAH
	^1S	0	375 152.16	1.0	87% + 7% $4p^3(^2D)$ ^3P	84PER/WAH
$4s^24p^3(^4S)4f$	^5F	5	386 641.6	1.0		84PER/WAH
	^5F	4	385 955.41	1.0		84PER/WAH
	^5F	3	386 199.80	1.0		84PER/WAH
	^5F	2	386 439.71	1.0		84PER/WAH
	^5F	1	386 660.56	1.0		84PER/WAH
$4s^24p^3(^4S)5d$	$^5D°$	4	386 847.17	1.0	95%	84PER/WAH
	$^5D°$	3	386 627.19	1.0	92%	84PER/WAH
	$^5D°$	2	386 581.90	1.0	93%	84PER/WAH
	$^5D°$	1	386 568.48	1.0	95%	84PER/WAH
	$^5D°$	0	386 524.69	1.0	95%	84PER/WAH
	$^3D°$	3	392 856.49	1.0	87%	84PER/WAH
	$^3D°$	2	391 772.82	1.0	81% + 5% $4p^3(^2D)5d$ ^3D	84PER/WAH
	$^3D°$	1	392 707.81	1.0	89%	84PER/WAH
$4s^24p^3(^2D)5d$	$^3G°$	5	411 192.9	1.0	100%	84PER/WAH
	$^3G°$	4	408 237.78	1.0	54% + 31% $4p^3(^2D)5d$ ^1G + 13% $4p^3(^2P)5d$ ^3F	84PER/WAH
	$^3G°$	3	407 282.42	1.0	60% + 22% $4p^3(^2D)5d$ ^3F + 9% $4p^3(^2P)5d$ ^3F	84PER/WAH
	$^3F°$	4	410 365.34	1.0	66% + 21% $4p^3(^2D)5d$ ^1G + 12% $4p^3(^2D)5d$ ^3G	84PER/WAH
	$^3F°$	3	407 979.67	1.0	54% + 24% $4p^3(^2D)5d$ ^3G + 9% $4p^3(^2D)5d$ ^3D + 6% $4p^3(^2P)5d$ ^1F	84PER/WAH
	$^3F°$	2	406 129.11	1.0	75% + 7% $4p^3(^2P)5d$ ^3F	84PER/WAH
	$^3D°$	3	411 800.14	1.0	78% + 13% $4p^3(^2D)5d$ ^3F	84PER/WAH
	$^3D°$	2	410 516.87	1.0	42% + 33% $4p^3(^2D)5d$ ^3P + 10% $4p^3(^2P)5d$ ^3P	84PER/WAH
	$^3D°$	1	408 586.08	1.0	49% + 30% $4p^3(^2D)5d$ ^1P + 5% $4p^3(^2P)5d$ ^3D + 5% $4p^3(^2P)5d$ ^3P	84PER/WAH
	$^3P°$	2	413 007.75	1.0	37% + 44% $4p^3(^2D)5d$ ^3D + 9% $4p^3(^2D)5d$ ^1D	84PER/WAH
	$^3P°$	1	413 446.26	1.0	37% + 24% $4p^3(^2D)5d$ ^3D + 21% $4p^3(^2D)5d$ ^1P + 12% $4p^3(^2D)5d$ ^3S	84PER/WAH
	$^3P°$	0	413 822.42	1.0	85% + 11% $4p^3(^2D)5d$ ^1S	84PER/WAH
	$^3S°$	1	414 775.09	1.0	46% + 42% $4p^3(^2D)5d$ ^3P + 10% $4p^3(^2D)5d$ ^1P	84PER/WAH
	$^1G°$	4	411 152.84	1.0	40% + 34% $4p^3(^2D)5d$ ^3F + 26% $4p^3(^2D)5d$ ^3G	84PER/WAH
	$^1F°$	3	417 657.82	1.0	80%	84PER/WAH
	$^1D°$	2	415 542.33	1.0	66% + 17% $4p^3(^2D)5d$ ^3P + 6% $4p^3(^2D)5d$ ^3F	84PER/WAH
	$^1P°$	1	412 486.36	1.0	29% + 31% $4p^3(^2D)5d$ ^3S + 17% $4p^3(^2D)5d$ ^3D + 12% $4p^3(^2D)5d$ ^3P	84PER/WAH
$4s^24p^3(^2P)5d$	$^3D°$	3	433 202.82	1.0	41% + 39% $4p^3(^2P)5d$ ^1F + 7% $4p^3(^2D)5d$ ^3F	84PER/WAH
	$^3D°$	2	427 207.25	1.0	41% + 32% $4p^3(^2P)5d$ ^3P + 20% $4p^3(^2P)5d$ ^1D	84PER/WAH

TABLE 9. Energy levels of Sr v—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
	$^3D°$	1	428 455.92	1.0	60% + 25% $4p^3(^2P)5d$ ^3P + 7% $4p^3(^2P)5d$ ^1P	84PER/WAH
	$^3P°$	2	431 700.49	1.0	50% + 18% $4p^3(^2P)5d$ ^1D + 10% $4p^3(^2D)5d$ ^3P + 10% $4p^3(^2P)5d$ ^3D	84PER/WAH
	$^3P°$	1	431 024.41	1.0	58% + 21% $4p^3(^2P)5d$ ^3D + 6% $4p^3(^2D)5d$ ^3S + 5% $4p^3(^2D)5d$ ^1P	84PER/WAH
	$^3P°$	0	430 001.7	1.0	84% + 6% $4p^3(^2D)5d$ ^3P + 6% $4p^3(^2D)5d$ ^1S	84PER/WAH
	$^1F°$	3	433 660.35	1.0	39% + 19% $4p^3(^2P)5d$ ^3D + 18% $4p^3(^2P)5d$ ^3F + 9% $4p^3(^2D)5d$ ^1F	84PER/WAH
	$^1D°$	2	433 958.19	1.0	28% + 30% $4p^3(^2P)5d$ ^3D + 13% $4p^3(^2P)5d$ ^3F + 10% $4p^3(^2D)5d$ ^1D	84PER/WAH
	$^1P°$	1	438 712.58	1.0	74% + 5% $4p^3(^2P)5d$ ^3D	84PER/WAH
$4s^24p^3(^4S)6s$	$^5S°$	2	402 356.59	1.0	95%	84PER/WAH
	$^3S°$	1	404 878.30	1.0	93%	84PER/WAH
$4s^24p^3(^2D)6s$	$^3D°$	3	426 317.28	1.0	95%	84PER/WAH
	$^3D°$	2	423 315.79	1.0	63% + 20% $4p^3(^2D)6s$ ^1D + 14% $4p^3(^2P)6s$ ^3P	84PER/WAH
	$^3D°$	1	423 107.53	1.0	84% + 8% $4p^3(^2P)6s$ ^1P	84PER/WAH
	$^1D°$	2	427 217.06	1.0	69% + 24% $4p^3(^2D)6s$ ^3D	84PER/WAH
	$^3P°$	2	446 262.9	1.0	81% + 9% $4p^3(^2D)6s$ ^3D + 7% $4p^3(^2D)6s$ ^1D	84PER/WAH
	$^3P°$	1	441 606.3	1.0	74% + 24% $4p^3(^2P)6s$ ^1P	84PER/WAH
	$^1P°$	1	447 043.2	1.0	63% + 19% $4p^3(^2P)6s$ ^3P + 14% $4p^3(^2D)6s$ ^3D	84PER/WAH
$4s^24p^3(^4S)5f$	^5F	5	458 947.39	1.0		84PER/WAH
	^5F	4	457 998.90	1.0		84PER/WAH
	^5F	3	458 314.27	1.0		84PER/WAH
	^5F	2	458 596.91	1.0		84PER/WAH
	^5F	1	458 858.4	1.0		84PER/WAH
Sr VI ($4s^24p^3$ $^4S_{3/2}$)		*Limit*	570 000	5000		84PER/WAH

TABLE 10. Observed spectral lines of Sr v

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
Vacuum							
224.084	0.005	446 262.0	6		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2P)6s$ $^3P^\circ_2$	84PER/WAH
226.446	0.005	441 606.4	2		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2P)6s$ $^3P^\circ_1$	84PER/WAH
228.333	0.005	437 955.9	8		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2P)6s$ $^3P^\circ_2$	84PER/WAH
230.438	0.005	433 955.6	0.5		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2P)5d$ $^1D^\circ_2$	84PER/WAH
230.596	0.005	433 659.8	5		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2P)5d$ $^1F^\circ_3$	84PER/WAH
230.789	0.005	433 296.0	3		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2P)6s$ $^3P^\circ_1$	84PER/WAH
230.839	0.005	433 201.4	4		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2P)5d$ $^3D^\circ_3$	84PER/WAH
231.005	0.005	432 890.3	9		$4s^24p^4$ $^3P_0$	$4s^24p^3(^2P)6s$ $^3P^\circ_1$	84PER/WAH
231.644	0.005	431 697.1	2		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2P)5d$ $^3P^\circ_2$	84PER/WAH
232.341	0.005	430 401.5	0.5		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2P)5d$ $^1P^\circ_1$	84PER/WAH
234.074	0.005	427 214.8	2		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2D)6s$ $^1D^\circ_2$	84PER/WAH
234.340	0.005	426 729.9	8		$4s^24p^4$ $^1D_2$	$4s^24p^3(^2P)6s$ $^1P^\circ_1$	84PER/WAH
234.568	0.005	426 314.9	10		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2D)6s$ $^3D^\circ_3$	84PER/WAH
234.768	0.005	425 952.4	7		$4s^24p^4$ $^1D_2$	$4s^24p^3(^2P)6s$ $^3P^\circ_2$	84PER/WAH
234.935	0.005	425 650.4	8		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2P)5d$ $^1D^\circ_2$	84PER/WAH
236.189	0.005	423 391.4	3		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2P)5d$ $^3P^\circ_2$	84PER/WAH
236.231	0.005	423 314.6	9		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2D)6s$ $^3D^\circ_2$	84PER/WAH
236.566	0.005	422 715.4	8		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2P)5d$ $^3P^\circ_1$	84PER/WAH
237.139	0.005	421 693.8	6		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2P)5d$ $^3P^\circ_0$	84PER/WAH
237.364	0.005	421 294.4	6		$4s^24p^4$ $^1D_2$	$4s^24p^3(^2P)6s$ $^3P^\circ_1$	84PER/WAH
238.011	0.005	420 148.3	3		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2P)5d$ $^3D^\circ_1$	84PER/WAH
238.244	0.005	419 737.0	8		$4s^24p^4$ $^3P_0$	$4s^24p^3(^2P)5d$ $^3D^\circ_1$	84PER/WAH
238.720	0.005	418 900.5	9		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2P)5d$ $^3D^\circ_2$	84PER/WAH
239.007	0.005	418 398.7	1		$4s^24p^4$ $^1D_2$	$4s^24p^3(^2P)5d$ $^1P^\circ_1$	84PER/WAH
239.430	0.005	417 659.1	8		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2D)5d$ $^1F^\circ_3$	84PER/WAH
240.959	0.005	415 007.7	7		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2D)6s$ $^3D^\circ_2$	84PER/WAH
241.082	0.005	414 797.1	7		$4s^24p^4$ $^3P_1$	$4s^24p^3(^2D)6s$ $^3D^\circ_1$	84PER/WAH
241.095	0.005	414 773.9	8		$4s^24p^4$ $^3P_2$	$4s^24p^3(^2D)5d$ $^3S^\circ_1$	84PER/WAH
241.321	0.005	414 386.2	7		$4s^24p^4$ $^3P_0$	$4s^24p^3(^2D)6s$ $^3D^\circ_1$	84PER/WAH

TABLE 10. Observed spectral lines of Sr V—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
241.753	0.005	413 645.7	8		$4s^24p^4\,^1D_2$	$4s^24p^3(^2P)5d\,^1D^\circ_2$	84PER/WAH
241.872	0.005	413 442.5	6		$4s^24p^4\,^3P_2$	$4s^24p^3(^2D)5d\,^3P^\circ_1$	84PER/WAH
241.926	0.005	413 349.7	7		$4s^24p^4\,^1D_2$	$4s^24p^3(^2P)5d\,^1F^\circ_3$	84PER/WAH
242.127	0.005	413 006.6	10		$4s^24p^4\,^3P_2$	$4s^24p^3(^2D)5d\,^3P^\circ_2$	84PER/WAH
242.195	0.005	412 891.1	9		$4s^24p^4\,^1D_2$	$4s^24p^3(^2P)5d\,^3D^\circ_3$	84PER/WAH
242.437	0.005	412 478.6	7		$4s^24p^4\,^3P_2$	$4s^24p^3(^2D)5d\,^1P^\circ_1$	84PER/WAH
242.840	0.005	411 793.1	12		$4s^24p^4\,^3P_2$	$4s^24p^3(^2D)5d\,^3D^\circ_3$	84PER/WAH
243.482	0.005	410 707.3	2		$4s^24p^4\,^1D_2$	$4s^24p^3(^2P)5d\,^3P^\circ_1$	84PER/WAH
243.599	0.005	410 510.1	8		$4s^24p^4\,^3P_2$	$4s^24p^3(^2D)5d\,^3D^\circ_2$	84PER/WAH
244.750	0.005	408 580.4	6		$4s^24p^4\,^3P_2$	$4s^24p^3(^2D)5d\,^3D^\circ_1$	84PER/WAH
245.113	0.005	407 974.6	2		$4s^24p^4\,^3P_2$	$4s^24p^3(^2D)5d\,^3F^\circ_3$	84PER/WAH
245.533	0.005	407 277.2	9		$4s^24p^4\,^3P_2$	$4s^24p^3(^2D)5d\,^3G^\circ_3$	84PER/WAH
245.560	0.005	407 232.0	6		$4s^24p^4\,^3P_1$	$4s^24p^3(^2D)5d\,^1D^\circ_2$	84PER/WAH
245.760	0.005	406 901.5	15	=	$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)6s\,^1D^\circ_2$	84PER/WAH
245.760	0.005	406 901.5	15	=	$4s^24p^4\,^1D_2$	$4s^24p^3(^2P)5d\,^3D^\circ_2$	84PER/WAH
246.228	0.005	406 127.2	7		$4s^24p^4\,^3P_2$	$4s^24p^3(^2D)5d\,^3F^\circ_2$	84PER/WAH
246.273	0.005	406 053.8	1		$4s^24p^4\,^3P_0$	$4s^24p^3(^2D)5d\,^3S^\circ_1$	84PER/WAH
246.303	0.005	406 003.8	7		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)6s\,^3D^\circ_3$	84PER/WAH
246.601	0.005	405 512.9	8		$4s^24p^4\,^3P_1$	$4s^24p^3(^2D)5d\,^3P^\circ_0$	84PER/WAH
246.830	0.005	405 137.1	9		$4s^24p^4\,^3P_1$	$4s^24p^3(^2D)5d\,^3P^\circ_1$	84PER/WAH
246.989	0.005	404 875.7	12		$4s^24p^4\,^3P_2$	$4s^24p^3(^4S)6s\,^3S^\circ_1$	84PER/WAH
247.082	0.005	404 724.8	3		$4s^24p^4\,^3P_0$	$4s^24p^3(^2D)5d\,^3P^\circ_1$	84PER/WAH
247.097	0.005	404 699.5	2		$4s^24p^4\,^3P_1$	$4s^24p^3(^2D)5d\,^3P^\circ_2$	84PER/WAH
247.417	0.005	404 175.8	2		$4s^24p^4\,^3P_1$	$4s^24p^3(^2D)5d\,^1P^\circ_1$	84PER/WAH
247.669	0.005	403 765.1	8		$4s^24p^4\,^3P_0$	$4s^24p^3(^2D)5d\,^1P^\circ_1$	84PER/WAH
248.134	0.005	403 007.9	8		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)6s\,^3D^\circ_2$	84PER/WAH
248.142	0.005	402 995.6	9		$4s^24p^4\,^1S_0$	$4s^24p^3(^2P)6s\,^1P^\circ_1$	84PER/WAH
248.265	0.005	402 795.2	5		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)6s\,^3D^\circ_1$	84PER/WAH
248.536	0.005	402 355.6	7		$4s^24p^4\,^3P_2$	$4s^24p^3(^4S)6s\,^5S^\circ_2$	84PER/WAH
248.628	0.005	402 207.1	12		$4s^24p^4\,^3P_1$	$4s^24p^3(^2D)5d\,^3D^\circ_2$	84PER/WAH
250.084	0.005	399 866.0	8		$4s^24p^4\,^3P_0$	$4s^24p^3(^2D)5d\,^3D^\circ_1$	84PER/WAH
251.367	0.005	397 824.1	7		$4s^24p^4\,^3P_1$	$4s^24p^3(^2D)5d\,^3F^\circ_2$	84PER/WAH
251.536	0.005	397 557.1	1		$4s^24p^4\,^1S_0$	$4s^24p^3(^2P)6s\,^3P^\circ_1$	84PER/WAH
251.668	0.005	397 348.9	12		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)5d\,^1F^\circ_3$	84PER/WAH
252.160	0.005	396 573.8	10		$4s^24p^4\,^3P_1$	$4s^24p^3(^4S)6s\,^3S^\circ_1$	84PER/WAH
252.422	0.005	396 161.8	8		$4s^24p^4\,^3P_0$	$4s^24p^3(^4S)6s\,^3S^\circ_1$	84PER/WAH
253.015	0.005	395 233.6	10		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)5d\,^1D^\circ_2$	84PER/WAH
253.379	0.005	394 665.7	9		$4s^24p^4\,^1S_0$	$4s^24p^3(^2P)5d\,^1P^\circ_1$	84PER/WAH
253.506	0.005	394 467.7	8		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)5d\,^3S^\circ_1$	84PER/WAH
254.363	0.005	393 138.5	6		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)5d\,^3P^\circ_1$	84PER/WAH
254.545	0.005	392 858.6	15		$4s^24p^4\,^3P_2$	$4s^24p^3(^4S)5d\,^3D^\circ_3$	84PER/WAH
254.642	0.005	392 707.6	5		$4s^24p^4\,^3P_2$	$4s^24p^3(^4S)5d\,^3D^\circ_1$	84PER/WAH
254.987	0.005	392 177.2	8		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)5d\,^1P^\circ_1$	84PER/WAH
255.249	0.005	391 774.0	9		$4s^24p^4\,^3P_2$	$4s^24p^3(^4S)5d\,^3D^\circ_2$	84PER/WAH
255.429	0.005	391 498.7	0.5		$4s^24p^4\,^1D_2$	$4s^24p^3(^4D)5d\,^3D^\circ_3$	84PER/WAH
256.273	0.005	390 208.7	3		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)5d\,^3D^\circ_2$	84PER/WAH
257.546	0.005	388 279.6	12	bl	$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)5d\,^3D^\circ_1$	84PER/WAH
257.951	0.005	387 670.8	5		$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)5d\,^3F^\circ_3$	84PER/WAH
258.416	0.005	386 972.6	7	=	$4s^24p^4\,^1S_0$	$4s^24p^3(^2P)5d\,^3P^\circ_1$	84PER/WAH
258.416	0.005	386 972.6	7	=	$4s^24p^4\,^1D_2$	$4s^24p^3(^2D)5d\,^3G^\circ_3$	84PER/WAH
258.676	0.005	386 583.7	0.5		$4s^24p^4\,^3P_2$	$4s^24p^3(^4S)5d\,^5D^\circ_2$	84PER/WAH
260.032	0.005	384 568.2	1		$4s^24p^4\,^1D_2$	$4s^24p^3(^4S)6s\,^3S^\circ_1$	84PER/WAH
260.145	0.005	384 400.6	8		$4s^24p^4\,^3P_1$	$4s^24p^3(^4S)5d\,^3D^\circ_1$	84PER/WAH
260.426	0.005	383 986.2	9		$4s^24p^4\,^3P_0$	$4s^24p^3(^4S)5d\,^3D^\circ_1$	84PER/WAH
260.781	0.005	383 463.5	10		$4s^24p^4\,^3P_1$	$4s^24p^3(^4S)5d\,^3D^\circ_2$	84PER/WAH
268.423	0.005	372 546.9	6		$4s^24p^4\,^1D_2$	$4s^24p^3(^4S)5d\,^3D^\circ_3$	84PER/WAH
269.203	0.005	371 467.0	1		$4s^24p^4\,^1D_2$	$4s^24p^3(^4S)5d\,^3D^\circ_2$	84PER/WAH
274.320	0.005	364 537.4	2		$4s^24p^4\,^1S_0$	$4s^24p^3(^2D)5d\,^3D^\circ_1$	84PER/WAH
320.823	0.005	311 698.7	10		$4s^24p^4\,^3P_2$	$4s^24p^3(^2P)5s\,^3P^\circ_2$	84PER/WAH
324.878	0.005	307 808.0	7		$4s^24p^4\,^3P_2$	$4s^24p^3(^2P)5s\,^3P^\circ_1$	84PER/WAH
326.340	0.005	306 428.8	0.5		$4s^24p^4\,^3P_1$	$4s^24p^3(^2P)5s\,^3P^\circ_1$	84PER/WAH
326.717	0.005	306 075.5	0.5		$4s^24p^4\,^3P_2$	$4s^24p^3(^2P)4d\,^1P^\circ_1$	84PER/WAH
326.778	0.005	306 017.8	0.5		$4s^24p^4\,^3P_0$	$4s^24p^3(^2P)5s\,^1P^\circ_1$	84PER/WAH

TABLE 10. Observed spectral lines of Sr v—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
329.605	0.005	303 393.4	25		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)5s\ ^3P^{\circ}_2$	84PER/WAH
333.890	0.005	299 499.5	9		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)5s\ ^3P^{\circ}_1$	84PER/WAH
334.351	0.005	299 086.7	10		$4s^24p^4\ ^3P_0$	$4s^24p^3(^2P)5s\ ^3P^{\circ}_1$	84PER/WAH
335.234	0.005	298 299.3	10		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)5s\ ^3P^{\circ}_0$	84PER/WAH
336.295	0.005	297 357.9	3		$4s^24p^4\ ^3P_0$	$4s^24p^3(^2P)4d\ ^1P^{\circ}_1$	84PER/WAH
339.195	0.005	294 815.8	10		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5s\ ^1D^{\circ}_2$	84PER/WAH
339.644	0.005	294 425.6	0.5		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5s\ ^1P^{\circ}_1$	84PER/WAH
342.654	0.005	291 839.4	12		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5s\ ^3D^{\circ}_3$	84PER/WAH
342.848	0.005	291 674.8	40		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^1F^{\circ}_3$	84PER/WAH
343.184	0.005	291 389.0	18		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5s\ ^3P^{\circ}_2$	84PER/WAH
345.882	0.005	289 116.1	25		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5s\ ^3D^{\circ}_2$	84PER/WAH
347.831	0.005	287 496.0	9		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5s\ ^3P^{\circ}_1$	84PER/WAH
349.027	0.005	286 510.7	10		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5s\ ^1D^{\circ}_2$	84PER/WAH
349.935	0.005	285 767.4	7		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^1P^{\circ}_1$	84PER/WAH
350.323	0.005	285 450.8	9		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^1D^{\circ}_2$	84PER/WAH
356.113	0.005	280 810.0	20		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5s\ ^3D^{\circ}_2$	84PER/WAH
356.475	0.005	280 524.7	20		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5s\ ^3D^{\circ}_1$	84PER/WAH
356.999	0.005	280 113.1	12		$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)5s\ ^3D^{\circ}_1$	84PER/WAH
357.055	0.005	280 068.8	9		$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^3D^{\circ}_1$	84PER/WAH
360.824	0.005	277 143.6	20		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^1D^{\circ}_2$	84PER/WAH
361.245	0.005	276 820.7	25		$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^3D^{\circ}_2$	84PER/WAH
363.700	0.005	274 952.2	20		$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)5s\ ^3S^{\circ}_1$	84PER/WAH
364.289	0.005	274 507.4	25		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5s\ ^1D^{\circ}_2$	84PER/WAH
367.976	0.005	271 757.2	25		$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)4d\ ^3D^{\circ}_1$	84PER/WAH
368.295	0.005	271 521.7	35		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5s\ ^3D^{\circ}_3$	84PER/WAH
368.326	0.005	271 498.8	50		$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^3D^{\circ}_3$	84PER/WAH
368.507	0.005	271 365.4	15		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^1F^{\circ}_3$	84PER/WAH
368.532	0.005	271 346.6	20		$4s^24p^4\ ^3P_0$	$4s^24p^3(^4S)4d\ ^3D^{\circ}_1$	84PER/WAH
369.430	0.005	270 687.2	18		$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)5s\ ^1P^{\circ}_1$	84PER/WAH
370.906	0.005	269 610.2	20		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3P^{\circ}_1$	84PER/WAH
372.018	0.005	268 804.1	18		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5s\ ^3D^{\circ}_2$	84PER/WAH
372.423	0.005	268 512.1	35		$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)4d\ ^3D^{\circ}_2$	84PER/WAH
374.043	0.005	267 348.7	50		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3P^{\circ}_2$	84PER/WAH
374.280	0.005	267 179.4	20		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^1P^{\circ}_1$	84PER/WAH
374.366	0.005	267 118.2	20		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3P^{\circ}_0$	84PER/WAH
374.861	0.005	266 765.8	20		$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)4d\ ^1P^{\circ}_1$	84PER/WAH
375.033	0.005	266 643.1	18		$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)5s\ ^3S^{\circ}_1$	84PER/WAH
375.480	0.005	266 325.7	35		$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)5s\ ^5S^{\circ}_2$	84PER/WAH
375.602	0.005	266 239.1	18	=	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^1F^{\circ}_3$	84PER/WAH
375.602	0.005	266 239.1	18	=	$4s^24p^4\ ^3P_0$	$4s^24p^3(^4S)5s\ ^3S^{\circ}_1$	84PER/WAH
377.106	0.005	265 177.2	30		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3S^{\circ}_1$	84PER/WAH
377.162	0.005	265 138.3	30		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^1D^{\circ}_2$	84PER/WAH
379.137	0.005	263 757.1	18		$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)5s\ ^3P^{\circ}_1$	84PER/WAH
381.642	0.005	262 025.5	20		$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)4d\ ^1P^{\circ}_1$	84PER/WAH
382.690	0.005	261 308.2	20		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3P^{\circ}_1$	84PER/WAH
383.294	0.005	260 896.2	18		$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)4d\ ^3P^{\circ}_1$	84PER/WAH
384.975	0.005	259 757.4	15		$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)4d\ ^3D^{\circ}_1$	84PER/WAH
386.034	0.005	259 044.9	20		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3P^{\circ}_2$	84PER/WAH
387.569	0.005	258 018.4	18		$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)5s\ ^5S^{\circ}_2$	84PER/WAH
389.298	0.005	256 872.7	18		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3S^{\circ}_1$	84PER/WAH
389.515	0.005	256 729.8	6		$4s^24p^3(^4S)4d\ ^5D^{\circ}_0$	$4s^24p^3(^4S)5f\ ^5F^{\circ}_1$	84PER/WAH
389.848	0.005	256 510.1	18		$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)4d\ ^3D^{\circ}_2$	84PER/WAH
389.920	0.005	256 462.9	10		$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)4d\ ^3S^{\circ}_1$	84PER/WAH
390.119	0.005	256 332.2	5		$4s^24p^3(^4S)4d\ ^5D^{\circ}_1$	$4s^24p^3(^4S)5f\ ^5F_2$	84PER/WAH
390.209	0.005	256 273.1	0.5		$4s^24p^3(^4S)4d\ ^5D^{\circ}_2$	$4s^24p^3(^4S)5f\ ^5F_2$	84PER/WAH
390.571	0.005	256 034.6	9		$4s^24p^3(^4S)4d\ ^5D^{\circ}_4$	$4s^24p^3(^4S)5f\ ^5F_5$	84PER/WAH
390.636	0.005	255 992.5	8		$4s^24p^3(^4S)4d\ ^5D^{\circ}_2$	$4s^24p^3(^4S)5f\ ^5F_3$	84PER/WAH
390.753	0.005	255 916.2	1		$4s^24p^3(^4S)4d\ ^5D^{\circ}_3$	$4s^24p^3(^4S)5f\ ^5F_3$	84PER/WAH
391.236	0.005	255 600.2	8		$4s^24p^3(^4S)4d\ ^5D^{\circ}_3$	$4s^24p^3(^4S)5f\ ^5F_4$	84PER/WAH
391.884	0.005	255 177.5	20		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^1P^{\circ}_1$	84PER/WAH
391.975	0.005	255 118.6	25		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3P^{\circ}_2$	84PER/WAH
392.024	0.005	255 086.2	1	p,bl	$4s^24p^3(^4S)4d\ ^5D^{\circ}_4$	$4s^24p^3(^4S)5f\ ^5F_4$	84PER/WAH
392.709	0.005	254 641.2	20		$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)5s\ ^3S^{\circ}_1$	84PER/WAH

TABLE 10. Observed spectral lines of Sr V—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
394.724	0.005	253 341.6	40		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3D^\circ_3$	84PER/WAH
398.102	0.005	251 192.0	1		$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)4d\ ^3D^\circ_3$	84PER/WAH
400.523	0.005	249 673.8	20		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3F^\circ_3$	84PER/WAH
401.117	0.005	249 303.7	20		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3P^\circ_1$	84PER/WAH
402.597	0.005	248 387.2	5		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	84PER/WAH
403.204	0.005	248 013.4	20		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	84PER/WAH
404.796	0.005	247 038.2	15		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3P^\circ_2$	84PER/WAH
405.168	0.005	246 811.1	18		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3P^\circ_2$	84PER/WAH
406.480	0.005	246 014.7	8		$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)5s\ ^5S^\circ_2$	84PER/WAH
406.622	0.005	245 929.0	15		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^1F^\circ_3$	84PER/WAH
408.384	0.005	244 861.6	12		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3S^\circ_1$	84PER/WAH
410.551	0.005	243 575.0	6		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3D^\circ_1$	84PER/WAH
412.627	0.005	242 349.7	25		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3F^\circ_2$	84PER/WAH
414.112	0.005	241 480.9	15		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	84PER/WAH
416.532	0.005	240 077.4	30		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	84PER/WAH
417.180	0.005	239 704.5	18		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	84PER/WAH
417.896	0.005	239 294.3	8		$4s^24p^4\ ^3P_0$	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	84PER/WAH
419.296	0.005	238 494.9	9		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3P^\circ_0$	84PER/WAH
425.042	0.005	235 270.8	15		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3D^\circ_1$	84PER/WAH
425.790	0.005	234 857.4	25		$4s^24p^4\ ^3P_0$	$4s^24p^3(^2P)4d\ ^3D^\circ_1$	84PER/WAH
425.878	0.005	234 809.3	7		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3P^\circ_2$	84PER/WAH
428.867	0.005	233 172.6	9		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	84PER/WAH
429.128	0.005	233 030.5	18		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3D^\circ_3$	84PER/WAH
432.081	0.005	231 438.3	10		$4s^24p^4\ ^1S_0$	$4s^24p^3(^2D)4d\ ^1P^\circ_1$	84PER/WAH
433.084	0.005	230 902.0	8		$4s^24p^4\ ^1S_0$	$4s^24p^3(^4S)5s\ ^3S^\circ_1$	84PER/WAH
434.129	0.005	230 346.4	18		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3F^\circ_2$	84PER/WAH
434.878	0.005	229 949.4	18		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3G^\circ_3$	84PER/WAH
435.990	0.005	229 363.1	18		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3F^\circ_3$	84PER/WAH
438.456	0.005	228 073.3	0.5		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	84PER/WAH
439.170	0.005	227 702.5	15		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	84PER/WAH
443.332	0.005	225 564.5	7		$4s^24p^4\ ^1S_0$	$4s^24p^3(^2D)4d\ ^3P^\circ_1$	84PER/WAH
447.897	0.005	223 265.9	10		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3D^\circ_1$	84PER/WAH
449.706	0.005	222 367.5	18		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3F^\circ_3$	84PER/WAH
452.142	0.005	221 169.6	20		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	84PER/WAH
453.414	0.005	220 549.2	15		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3F^\circ_2$	84PER/WAH
460.908	0.005	216 963.0	9		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	84PER/WAH
462.739	0.005	216 104.6	18		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3D^\circ_3$	84PER/WAH
467.761	0.005	213 784.6	20		$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3D^\circ_2$	84PER/WAH
468.447	0.005	213 471.5	4		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^1S^\circ_0$	84PER/WAH
471.164	0.005	212 240.1	7		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3F^\circ_2$	84PER/WAH
477.014	0.005	209 637.6	15		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3G^\circ_3$	84PER/WAH
479.244	0.005	208 661.9	12		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	84PER/WAH
480.193	0.005	208 249.7	10		$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	84PER/WAH
486.678	0.005	205 474.7	8		$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3D^\circ_2$	84PER/WAH
494.075	0.005	202 398.5	15		$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^5D^\circ_3$	84PER/WAH
494.263	0.005	202 321.5	18		$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^5D^\circ_2$	84PER/WAH
494.391	0.005	202 268.9	12		$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	84PER/WAH
494.916	0.005	202 054.6	8		$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3F^\circ_3$	84PER/WAH
515.578	0.010	193 957.2	9		$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	84PER/WAH
515.938	0.010	193 821.9	9		$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)4d\ ^5D^\circ_0$	84PER/WAH
516.672	0.010	193 546.5	7		$4s^24p^4\ ^3P_0$	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	84PER/WAH
517.281	0.010	193 318.4	10		$4s^24p^4\ ^3P_2$	$4s(^2S)4p^5\ ^1P^\circ_1$	84PER/WAH
522.702	0.010	191 313.7	7		$4s(^2S)4p^5\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
527.559	0.010	189 552.4	8		$4s(^2S)4p^5\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
540.509	0.010	185 010.7	6		$4s^24p^4\ ^3P_1$	$4s(^2S)4p^5\ ^1P^\circ_1$	84PER/WAH
541.913	0.010	184 531.6	9		$4s^24p^3(^4S)4d\ ^5D^\circ_0$	$4s^24p^3(^4S)4f\ ^5F_1$	84PER/WAH
542.319	0.010	184 393.3	9	p	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	$4s^24p^3(^4S)4f\ ^5F_1$	84PER/WAH
542.478	0.010	184 339.5	2	Sr V?	$4s^24p^3(^4S)4d\ ^5D^\circ_2$	$4s^24p^3(^4S)4f\ ^5F_1$	84PER/WAH
542.963	0.010	184 174.6	9		$4s^24p^3(^4S)4d\ ^5D^\circ_1$	$4s^24p^3(^4S)4f\ ^5F_2$	84PER/WAH
543.128	0.010	184 118.8	9		$4s^24p^3(^4S)4d\ ^5D^\circ_2$	$4s^24p^3(^4S)4f\ ^5F_2$	84PER/WAH
543.358	0.010	184 040.7	4		$4s^24p^3(^4S)4d\ ^5D^\circ_3$	$4s^24p^3(^4S)4f\ ^5F_2$	84PER/WAH
543.837	0.010	183 878.5	10		$4s^24p^3(^4S)4d\ ^5D^\circ_2$	$4s^24p^3(^4S)4f\ ^5F_3$	84PER/WAH
544.066	0.010	183 801.2	10		$4s^24p^3(^4S)4d\ ^5D^\circ_3$	$4s^24p^3(^4S)4f\ ^5F_3$	84PER/WAH

TABLE 10. Observed spectral lines of Sr V—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
544.281	0.010	183 728.6	12		$4s^24p^3(^4S)4d\ ^5D^\circ_4$	$4s^24p^3(^4S)4f\ ^5F_5$	84PER/WAH
544.790	0.010	183 556.8	12		$4s^24p^3(^4S)4d\ ^5D^\circ_3$	$4s^24p^3(^4S)4f\ ^5F_4$	84PER/WAH
545.590	0.010	183 287.9	2	h,Sr V?	$4s^24p^3(^4S)4d\ ^5D^\circ_4$	$4s^24p^3(^4S)4f\ ^5F_3$	84PER/WAH
546.321	0.010	183 042.7	9		$4s^24p^3(^4S)4d\ ^5D^\circ_4$	$4s^24p^3(^4S)4f\ ^5F_4$	84PER/WAH
547.460	0.010	182 661.9	3		$4s(^2S)4p^5\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
549.960	0.010	181 831.3	3		$4s(^2S)4p^5\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^1S_0$	84PER/WAH
551.491	0.010	181 326.5	3	h	$4s(^2S)4p^5\ ^3P^\circ_0$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
578.006	0.010	173 008.6	25		$4s^24p^4\ ^1D_2$	$4s(^2S)4p^5\ ^1P^\circ_1$	84PER/WAH
584.174	0.010	171 181.8	4		$4s(^2S)4p^5\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
591.127	0.010	169 168.5	3	h	$4s(^2S)4p^5\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
624.932	0.010	160 017.5	30		$4s^24p^4\ ^3P_2$	$4s(^2S)4p^5\ ^3P^\circ_1$	84PER/WAH
642.229	0.010	155 707.8	25		$4s^24p^4\ ^3P_1$	$4s(^2S)4p^5\ ^3P^\circ_0$	84PER/WAH
649.213	0.010	154 032.8	50		$4s^24p^4\ ^3P_2$	$4s(^2S)4p^5\ ^3P^\circ_2$	84PER/WAH
659.153	0.010	151 710.0	20		$4s^24p^4\ ^3P_1$	$4s(^2S)4p^5\ ^3P^\circ_1$	84PER/WAH
660.943	0.010	151 299.1	25		$4s^24p^4\ ^3P_0$	$4s(^2S)4p^5\ ^3P^\circ_1$	84PER/WAH
669.933	0.010	149 268.6	9		$4s^24p^4\ ^1S_0$	$4s(^2S)4p^5\ ^1P^\circ_1$	84PER/WAH
686.228	0.010	145 724.2	35		$4s^24p^4\ ^3P_1$	$4s(^2S)4p^5\ ^3P^\circ_2$	84PER/WAH
693.802	0.010	144 133.4	2		$4s(^2S)4p^5\ ^1P^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
715.787	0.010	139 706.3	6		$4s^24p^4\ ^1D_2$	$4s(^2S)4p^5\ ^3P^\circ_1$	84PER/WAH
747.823	0.010	133 721.5	12		$4s^24p^4\ ^1D_2$	$4s(^2S)4p^5\ ^3P^\circ_2$	84PER/WAH
757.193	0.010	132 066.7	4		$4s^24p^3(^2D)4d\ ^1S^\circ_0$	$4s^24p^3(^2P)5p\ ^3D_1$	84PER/WAH
760.117	0.010	131 558.7	2	p	$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
770.425	0.010	129 798.5	6		$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
777.164	0.010	128 673.0	2		$4s^24p^3(^2D)4d\ ^3G^\circ_4$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
778.982	0.010	128 372.7	2	p	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
780.719	0.010	128 087.1	4		$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_0$	84PER/WAH
784.436	0.010	127 480.1	7		$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
800.591	0.010	124 907.7	5		$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
801.313	0.010	124 795.2	4		$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
804.403	0.010	124 315.8	6		$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_4$	84PER/WAH
807.593	0.010	123 824.7	8		$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_3$	84PER/WAH
808.602	0.010	123 670.2	8		$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
812.790	0.010	123 033.0	4		$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
813.597	0.010	122 910.9	9		$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
814.070	0.010	122 839.6	5		$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_3$	84PER/WAH
815.745	0.010	122 587.3	9		$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
820.662	0.010	121 852.9	7		$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH
823.805	0.010	121 387.9	0.5		$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
824.979	0.010	121 215.3	6		$4s^24p^3(^2D)4d\ ^3F^\circ_3$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
826.395	0.010	121 007.5	8		$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
829.248	0.010	120 591.2	10	q,p	$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
829.977	0.010	120 485.3	6		$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
840.517	0.010	118 974.4	7		$4s^24p^3(^4S)4d\ ^5D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
840.919	0.010	118 917.6	8		$4s^24p^3(^4S)4d\ ^5D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
841.463	0.010	118 840.6	8		$4s^24p^3(^4S)4d\ ^5D^\circ_3$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
845.590	0.010	118 260.6	7		$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
846.275	0.010	118 164.9	0.5		$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
847.090	0.010	118 051.1	8		$4s^24p^3(^2D)4d\ ^3F^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_4$	84PER/WAH
849.572	0.010	117 706.3	5		$4s^24p^3(^4S)4d\ ^5D^\circ_0$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
850.573	0.010	117 567.8	6		$4s^24p^3(^4S)4d\ ^5D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
850.974	0.010	117 512.4	0.5		$4s^24p^3(^4S)4d\ ^5D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
851.681	0.010	117 414.9	5	p	$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
851.796	0.010	117 399.0	9	q,bl	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
855.398	0.010	116 904.6	10		$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
855.618	0.010	116 874.7	5		$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
858.130	0.010	116 532.4	3	p	$4s^24p^3(^2P)4d\ ^3P^\circ_0$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH
858.345	0.010	116 503.3	5		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
859.670	0.010	116 323.7	6		$4s^24p^3(^2D)4d\ ^3F^\circ_3$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
860.992	0.010	116 145.1	0.5		$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
861.522	0.010	116 073.6	9	=	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	84PER/WAH
861.522	0.010	116 073.6	9	=	$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_3$	84PER/WAH
862.316	0.010	115 966.7	9		$4s^24p^4\ ^1S_0$	$4s(^2S)4p^5\ ^3P^\circ_1$	84PER/WAH
864.484	0.010	115 675.9	8		$4s^24p^3(^2D)4d\ ^1S^\circ_0$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH

TABLE 10. Observed spectral lines of Sr V—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
865.236	0.010	115 575.4	10		$4s^24p^3(^2D)4d\ ^3F^\circ_4$	$4s^24p^3(^2D)5p\ ^3F_4$	84PER/WAH
867.161	0.010	115 318.9	4		$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH
868.914	0.010	115 086.1	10	=	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
868.914	0.010	115 086.1	10	=	$4s^24p^3(^2D)4d\ ^3F^\circ_4$	$4s^24p^3(^2D)5p\ ^3D_3$	84PER/WAH
873.373	0.010	114 498.6	7		$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_0$	84PER/WAH
875.239	0.010	114 254.4	9		$4s^24p^3(^2D)4d\ ^3F^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_3$	84PER/WAH
875.432	0.010	114 229.4	9	=	$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
875.432	0.010	114 229.4	9	=	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
878.360	0.010	113 848.5	9	bl	$4s^24p^3(^2D)4d\ ^3F^\circ_4$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
878.621	0.010	113 814.7	10		$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
878.746	0.010	113 798.5	8		$4s^24p^3(^4S)4d\ ^5D^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_3$	84PER/WAH
879.343	0.010	113 721.3	12		$4s^24p^3(^4S)4d\ ^5D^\circ_3$	$4s^24p^3(^4S)5p\ ^5P_3$	84PER/WAH
880.021	0.010	113 633.6	3		$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
883.338	0.010	113 206.9	15		$4s^24p^3(^4S)4d\ ^5D^\circ_4$	$4s^24p^3(^4S)5p\ ^5P_3$	84PER/WAH
886.418	0.010	112 813.6	9	q	$4s^24p^3(^2P)4d\ ^3F^\circ_3$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
887.507	0.010	112 675.1	8		$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH
889.956	0.010	112 365.1	9		$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_1$	84PER/WAH
893.829	0.010	111 878.2	10		$4s^24p^3(^4S)4d\ ^5D^\circ_1$	$4s^24p^3(^4S)5p\ ^5P_2$	84PER/WAH
894.277	0.010	111 822.2	15		$4s^24p^3(^4S)4d\ ^5D^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_2$	84PER/WAH
894.626	0.010	111 778.6	12		$4s^24p^3(^2D)4d\ ^3F^\circ_4$	$4s^24p^3(^2D)5p\ ^3F_3$	84PER/WAH
894.896	0.010	111 744.8	15		$4s^24p^3(^4S)4d\ ^5D^\circ_3$	$4s^24p^3(^4S)5p\ ^5P_2$	84PER/WAH
896.073	0.010	111 598.1	12		$4s^24p^3(^4S)4d\ ^5D^\circ_0$	$4s^24p^3(^4S)5p\ ^5P_1$	84PER/WAH
896.495	0.010	111 545.5	9		$4s^24p^3(^2P)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
897.163	0.010	111 462.5	9	p	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	$4s^24p^3(^4S)5p\ ^5P_1$	84PER/WAH
897.619	0.010	111 405.8	12		$4s^24p^3(^4S)4d\ ^5D^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_1$	84PER/WAH
898.766	0.010	111 263.7	0.5		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
903.765	0.010	110 648.3	9		$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
905.416	0.010	110 446.5	7		$4s^24p^3(^2P)4d\ ^3P^\circ_0$	$4s^24p^3(^2P)5p\ ^3S_1$	84PER/WAH
908.568	0.010	110 063.3	6		$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_0$	84PER/WAH
909.308	0.010	109 973.7	7	=,q	$4s^24p^3(^2P)4d\ ^3F^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
909.308	0.010	109 973.7	7	=,q	$4s^24p^3(^2D)4d\ ^3S^\circ_1$	$4s^24p^3(^2P)5p\ ^1S_0$	84PER/WAH
910.270	0.010	109 857.5	8		$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
911.014	0.010	109 767.8	9		$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
913.913	0.010	109 419.6	9		$4s^24p^3(^2D)4d\ ^1S^\circ_0$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
915.456	0.010	109 235.1	8		$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3S_1$	84PER/WAH
916.201	0.010	109 146.4	8		$4s^24p^3(^2P)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
921.189	0.010	108 555.4	0.5		$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
922.397	0.010	108 413.2	12		$4s^24p^3(^2P)4d\ ^3F^\circ_4$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
924.103	0.010	108 213.0	8		$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH
927.356	0.010	107 833.5	12		$4s^24p^3(^2D)4d\ ^3G^\circ_5$	$4s^24p^3(^2D)5p\ ^3F_4$	84PER/WAH
928.354	0.010	107 717.5	10		$4s^24p^3(^2D)4d\ ^3G^\circ_4$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
930.619	0.010	107 455.3	10		$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
935.506	0.010	106 894.0	12	bl	$4s^24p^3(^2P)4d\ ^3F^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
936.808	0.010	106 745.5	12		$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
937.441	0.010	106 673.3	3		$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_3$	84PER/WAH
940.676	0.010	106 306.6	7		$4s^24p^3(^2P)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
942.943	0.010	106 050.9	12		$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
946.529	0.010	105 649.1	10		$4s^24p^3(^2D)4d\ ^3G^\circ_4$	$4s^24p^3(^2D)5p\ ^3F_3$	84PER/WAH
946.632	0.010	105 637.7	5		$4s^24p^3(^2D)4d\ ^1G^\circ_4$	$4s^24p^3(^2D)5p\ ^3F_4$	84PER/WAH
948.215	0.010	105 461.3	7		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_1$	84PER/WAH
951.051	0.010	105 146.9	10		$4s^24p^3(^2D)4d\ ^1G^\circ_4$	$4s^24p^3(^2D)5p\ ^3D_3$	84PER/WAH
951.155	0.010	105 135.3	12		$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
951.670	0.010	105 078.4	1		$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^2D)6s\ ^3D^\circ_3$	84PER/WAH
955.369	0.010	104 671.5	12		$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_0$	84PER/WAH
956.677	0.010	104 528.5	5		$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
957.710	0.010	104 415.7	12		$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
959.047	0.010	104 270.2	4		$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
962.375	0.010	103 909.6	15		$4s^24p^3(^2D)4d\ ^1G^\circ_4$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
967.816	0.010	103 325.4	4		$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
968.744	0.010	103 226.5	9		$4s^24p^3(^2P)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
969.104	0.010	103 188.1	10		$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_1$	84PER/WAH
972.142	0.010	102 865.6	9		$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
976.221	0.010	102 435.8	9		$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	84PER/WAH

TABLE 10. Observed spectral lines of Sr V—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
979.166	0.010	102 127.7	12	p	$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3S_1$	84PER/WAH
979.661	0.010	102 076.2	2		$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^2D)6s\ ^3D^\circ_2$	84PER/WAH
981.929	0.010	101 840.3	5		$4s^24p^3(^2D)4d\ ^1G^\circ_4$	$4s^24p^3(^2D)5p\ ^3F_3$	84PER/WAH
982.630	0.010	101 767.7	6		$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
985.408	0.010	101 480.8	8		$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_0$	84PER/WAH
985.718	0.010	101 448.9	5		$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
993.152	0.010	100 689.5	4		$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
993.232	0.010	100 681.4	7		$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
996.419	0.010	100 359.4	0.5		$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_2$	84PER/WAH
999.846	0.010	100 015.4	4		$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^4S)5p\ ^5P_3$	84PER/WAH
1000.567	0.010	99 943.4	5		$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_1$	84PER/WAH
1002.933	0.010	99 707.6	6		$4s^24p^3(^2D)4d\ ^3S^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
1007.198	0.010	99 285.3	7		$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
1011.419	0.010	98 871.0	8		$4s^24p^3(^2D)4d\ ^3F^\circ_3$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
1013.711	0.010	98 647.4	10		$4s^24p^3(^2P)4d\ ^1F^\circ_3$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
1015.736	0.010	98 450.8	7		$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_3$	84PER/WAH
1020.001	0.010	98 039.1	8		$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^4S)5p\ ^5P_2$	84PER/WAH
1020.437	0.010	97 997.2	10		$4s^24p^3(^2P)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
1027.408	0.010	97 332.4	9	bl?	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1030.441	0.010	97 045.8	8		$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_0$	84PER/WAH
1031.343	0.010	96 961.0	10		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1033.509	0.010	96 757.8	0.5		$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^5P_1$	84PER/WAH
1038.991	0.010	96 247.2	9		$4s^24p^3(^2P)4d\ ^1F^\circ_3$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
1041.466	0.010	96 018.5	1		$4s^24p^3(^2D)5p\ ^3D_1$	$4s^24p^3(^2D)6s\ ^1D^\circ_2$	84PER/WAH
1041.936	0.010	95 975.2	10		$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
1050.430	0.010	95 199.2	0.5		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
1056.108	0.010	94 687.3	6		$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1060.409	0.010	94 303.2	1		$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^1D^\circ_2$	84PER/WAH
1065.209	0.010	93 878.3	8		$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
1066.652	0.010	93 751.3	4		$4s^24p^3(^2D)4d\ ^3F^\circ_3$	$4s^24p^3(^4S)5p\ ^5P_3$	84PER/WAH
1068.251	0.010	93 611.0	2		$4s^24p^3(^4S)5p\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3P^\circ_1$	84PER/WAH
1069.103	0.010	93 536.3	3		$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3S^\circ_1$	84PER/WAH
1070.577	0.010	93 407.6	7		$4s^24p^3(^2P)4d\ ^1F^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
1070.817	0.010	93 386.7	5		$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
1073.897	0.010	93 118.8	4		$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
1076.756	0.010	92 871.5	3		$4s^24p^3(^2D)4d\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
1086.146	0.010	92 068.7	0.5		$4s^24p^3(^2D)4d\ ^3S^\circ_1$	$4s^24p^3(^2P)5p\ ^3S_1$	84PER/WAH
1087.524	0.010	91 952.0	0.5		$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)6s\ ^3D^\circ_3$	84PER/WAH
1088.030	0.010	91 909.3	3		$4s^24p^3(^2D)5p\ ^3D_1$	$4s^24p^3(^2D)6s\ ^3D^\circ_1$	84PER/WAH
1089.684	0.010	91 769.8	0.5	p	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2P)5d\ ^3P^\circ_2$	84PER/WAH
1132.347	0.010	88 312.1	1	q	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
1141.260	0.010	87 622.4	0.5		$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
1159.599	0.010	86 236.7	4		$4s^24p^3(^4S)5p\ ^5P_3$	$4s^24p^3(^4S)6s\ ^5S^\circ_2$	84PER/WAH
1163.039	0.010	85 981.6	2		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
1164.174	0.010	85 897.8	4		$4s^24p^3(^2D)5p\ ^3F_4$	$4s^24p^3(^2D)6s\ ^3D^\circ_3$	84PER/WAH
1195.612	0.010	83 639.2	7	bl	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)6s\ ^3S^\circ_1$	84PER/WAH
1207.514	0.010	82 814.8	4		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
1208.691	0.010	82 734.1	3		$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2D)6s\ ^3D^\circ_3$	84PER/WAH
1210.831	0.010	82 587.9	2		$4s^24p^3(^2D)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_0$	84PER/WAH
1222.166	0.010	81 822.0	4		$4s^24p^3(^2D)4d\ ^3P^\circ_0$	$4s^24p^3(^2P)5p\ ^3S_1$	84PER/WAH
1238.651	0.010	80 733.0	8		$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	84PER/WAH
1243.371	0.010	80 426.5	5		$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3S_1$	84PER/WAH
1243.628	0.010	80 409.9	2		$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3S^\circ_1$	84PER/WAH
1252.542	0.010	79 837.7	5		$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
1264.520	0.010	79 081.4	4		$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3P^\circ_1$	84PER/WAH
1266.369	0.010	78 965.9	7		$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^1F^\circ_3$	84PER/WAH
1275.431	0.010	78 404.9	10	p	$4s^24p^3(^2D)4d\ ^3S^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
1280.601	0.010	78 088.3	6		$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^1D^\circ_2$	84PER/WAH
1280.994	0.010	78 064.4	7		$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_0$	84PER/WAH
1281.227	0.010	78 050.2	0.5		$4s^24p^3(^2D)5p\ ^3P_0$	$4s^24p^3(^2D)6s\ ^3D^\circ_1$	84PER/WAH
1281.911	0.010	78 008.6	7		$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_0$	84PER/WAH
1282.514	0.010	77 971.9	2		$4s^24p^3(^2D)5p\ ^3P_1$	$4s^24p^3(^2D)6s\ ^3D^\circ_2$	84PER/WAH
1283.984	0.010	77 882.6	8		$4s^24p^3(^2D)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH

TABLE 10. Observed spectral lines of Sr V—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1290.546	0.010	77 486.6	2	p	$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_1$	84PER/WAH
1292.191	0.010	77 387.9	9	p	$4s^24p^3(^2D)5p\ ^3D_1$	$4s^24p^3(^2D)5d\ ^3D^\circ_1$	84PER/WAH
1294.366	0.010	77 257.9	6		$4s^24p^3(^4S)5s\ ^5S^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
1295.654	0.010	77 181.1	4		$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^2P)5p\ ^3S_1$	84PER/WAH
1302.906	0.010	76 751.5	0.5		$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^2D)5d\ ^3P^\circ_1$	84PER/WAH
1307.190	0.010	76 499.9	0.5		$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
1309.154	0.010	76 385.2	8	=	$4s^24p^3(^4S)5s\ ^3S^\circ_1$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
1309.154	0.010	76 385.2	8	=	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3P^\circ_2$	84PER/WAH
1309.442	0.010	76 368.4	1		$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^3P^\circ_0$	84PER/WAH
1311.331	0.010	76 258.4	8		$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
1313.163	0.010	76 152.0	5		$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3D^\circ_2$	84PER/WAH
1315.924	0.010	75 992.3	2		$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^3P^\circ_1$	84PER/WAH
1317.874	0.010	75 879.8	4		$4s^24p^3(^2D)5p\ ^1D_2$	$4s^24p^3(^2D)6s\ ^1D^\circ_2$	84PER/WAH
1318.047	0.010	75 869.8	1		$4s^24p^3(^2D)5p\ ^1D_2$	$4s^24p^3(^2P)5d\ ^3D^\circ_2$	84PER/WAH
1320.489	0.010	75 729.5	4		$4s^24p^3(^2D)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1322.536	0.010	75 612.3	2		$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^1D^\circ_2$	84PER/WAH
1326.606	0.010	75 380.3	2		$4s^24p^3(^2P)5p\ ^1P_1$	$4s^24p^3(^2P)5d\ ^1P^\circ_1$	84PER/WAH
1330.199	0.010	75 176.7	8		$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3D^\circ_3$	84PER/WAH
1331.440	0.010	75 106.7	8	p	$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^2D)5d\ ^3D^\circ_3$	84PER/WAH
1332.772	0.010	75 031.6	8		$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^1P^\circ_1$	84PER/WAH
1340.284	0.010	74 611.1	3		$4s^24p^3(^2P)5p\ ^3D_1$	$4s^24p^3(^2P)5d\ ^3D^\circ_1$	84PER/WAH
1341.752	0.010	74 529.4	8		$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^1G^\circ_4$	84PER/WAH
1341.992	0.010	74 516.1	7		$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
1343.139	0.010	74 452.5	8		$4s^24p^3(^2P)5p\ ^3S_1$	$4s^24p^3(^2P)5d\ ^3P^\circ_2$	84PER/WAH
1345.619	0.010	74 315.2	4		$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^3P^\circ_2$	84PER/WAH
1351.106	0.010	74 013.4	8	bl	$4s^24p^3(^2P)5p\ ^3D_3$	$4s^24p^3(^2P)5d\ ^1F^\circ_3$	84PER/WAH
1351.928	0.010	73 968.4	9		$4s^24p^3(^2D)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
1354.620	0.010	73 821.5	9		$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^2D)5d\ ^3D^\circ_2$	84PER/WAH
1355.461	0.010	73 775.6	10		$4s^24p^3(^2P)5p\ ^3S_1$	$4s^24p^3(^2P)5d\ ^3P^\circ_1$	84PER/WAH
1356.095	0.010	73 741.2	9	p	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3F^\circ_4$	84PER/WAH
1358.426	0.010	73 614.6	7	p	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3F^\circ_3$	84PER/WAH
1359.511	0.010	73 555.9	8		$4s^24p^3(^2P)5p\ ^3D_3$	$4s^24p^3(^2P)5d\ ^3D^\circ_3$	84PER/WAH
1362.948	0.010	73 370.4	0.5		$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
1365.985	0.010	73 207.2	12		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
1368.399	0.010	73 078.1	1		$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^3P^\circ_2$	84PER/WAH
1368.678	0.010	73 063.2	5		$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^3D^\circ_2$	84PER/WAH
1372.252	0.010	72 872.9	9		$4s^24p^3(^4S)5p\ ^3P_1$	$4s^24p^3(^4S)5d\ ^3D^\circ_1$	84PER/WAH
1372.592	0.010	72 854.9	9	=	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
1372.592	0.010	72 854.9	9	=	$4s^24p^3(^4S)5p\ ^5P_1$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	84PER/WAH
1372.838	0.010	72 841.8	15	p	$4s^24p^3(^4S)5p\ ^5P_1$	$4s^24p^3(^4S)5d\ ^5D^\circ_1$	84PER/WAH
1373.669	0.010	72 797.7	8		$4s^24p^3(^4S)5p\ ^5P_1$	$4s^24p^3(^4S)5d\ ^5D^\circ_0$	84PER/WAH
1377.804	0.010	72 579.3	7		$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_3$	84PER/WAH
1380.051	0.010	72 461.1	10		$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^1G^\circ_4$	84PER/WAH
1380.217	0.010	72 452.4	8		$4s^24p^3(^2P)4d\ ^1F^\circ_3$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
1380.478	0.010	72 438.7	10		$4s^24p^3(^4S)5p\ ^5P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	84PER/WAH
1380.732	0.010	72 425.4	9		$4s^24p^3(^4S)5p\ ^5P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_1$	84PER/WAH
1386.879	0.010	72 104.4	2		$4s^24p^3(^2D)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	84PER/WAH
1386.962	0.010	72 100.1	6		$4s^24p^3(^4S)5d\ ^5D^\circ_4$	$4s^24p^3(^4S)5f\ ^5F_5$	84PER/WAH
1390.086	0.010	71 938.0	12		$4s^24p^3(^4S)5p\ ^3P_1$	$4s^24p^3(^4S)5d\ ^3D^\circ_2$	84PER/WAH
1391.397	0.010	71 870.2	7	p	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^3D^\circ_3$	84PER/WAH
1392.309	0.010	71 823.2	0.5		$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
1393.457	0.010	71 764.0	9		$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3F^\circ_2$	84PER/WAH
1394.073	0.010	71 732.3	2		$4s^24p^3(^4S)5d\ ^5D^\circ_2$	$4s^24p^3(^4S)5f\ ^5F_3$	84PER/WAH
1395.215	0.010	71 673.6	10		$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^3F^\circ_4$	84PER/WAH
1396.294	0.010	71 618.1	9	p	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)5d\ ^3D^\circ_3$	84PER/WAH
1396.356	0.010	71 615.0	9	p	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3G^\circ_4$	84PER/WAH
1399.161	0.010	71 471.4	5		$4s^24p^3(^2P)5p\ ^1D_2$	$4s^24p^3(^2P)5d\ ^1D^\circ_2$	84PER/WAH
1399.558	0.010	71 451.1	8		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
1400.939	0.010	71 380.7	6		$4s^24p^3(^2D)5p\ ^3F_4$	$4s^24p^3(^2D)5d\ ^3D^\circ_3$	84PER/WAH
1401.116	0.010	71 371.7	4		$4s^24p^3(^4S)5d\ ^5D^\circ_3$	$4s^24p^3(^4S)5f\ ^5F_4$	84PER/WAH
1401.414	0.010	71 356.5	2		$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3F^\circ_3$	84PER/WAH
1401.712	0.010	71 341.3	4		$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
1404.047	0.010	71 222.7	10		$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^1G^\circ_4$	84PER/WAH

TABLE 10. Observed spectral lines of Sr V—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1404.658	0.010	71 191.7	10	bl	$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3S^\circ_1$	84PER/WAH
1405.019	0.010	71 173.4	9		$4s^24p^3(^2P)5p\ ^1D_2$	$4s^24p^3(^2P)5d\ ^1F^\circ_3$	84PER/WAH
1407.120	0.010	71 067.2	9		$4s^24p^3(^4S)5p\ ^3P_0$	$4s^24p^3(^4S)5d\ ^3D^\circ_1$	84PER/WAH
1410.405	0.010	70 901.6	2		$4s^24p^3(^2P)5p\ ^3P_1$	$4s^24p^3(^2P)5d\ ^3D^\circ_1$	84PER/WAH
1412.259	0.010	70 808.5	0.5		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
1412.958	0.010	70 773.5	12		$4s^24p^3(^2D)5p\ ^3F_4$	$4s^24p^3(^2D)5d\ ^3G^\circ_5$	84PER/WAH
1413.882	0.010	70 727.3	15		$4s^24p^3(^4S)5p\ ^5P_3$	$4s^24p^3(^4S)5d\ ^5D^\circ_4$	84PER/WAH
1414.101	0.010	70 716.3	9		$4s^24p^3(^2P)5p\ ^1D_2$	$4s^24p^3(^2P)5d\ ^3D^\circ_3$	84PER/WAH
1415.274	0.010	70 657.7	9	bl	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3G^\circ_3$	84PER/WAH
1415.402	0.010	70 651.3	10		$4s^24p^3(^2D)5s\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
1415.616	0.010	70 640.6	2		$4s^24p^3(^2P)5p\ ^3D_2$	$4s^24p^3(^2P)5d\ ^3D^\circ_2$	84PER/WAH
1415.902	0.010	70 626.3	8		$4s^24p^3(^2P)5p\ ^1P_1$	$4s^24p^3(^2P)5d\ ^1D^\circ_2$	84PER/WAH
1416.687	0.010	70 587.2	9		$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^2D)5d\ ^3G^\circ_3$	84PER/WAH
1416.687	0.010	70 587.2	9		$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^3D^\circ_2$	84PER/WAH
1417.759	0.010	70 533.8	9		$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)5d\ ^3D^\circ_2$	84PER/WAH
1418.292	0.010	70 507.3	10		$4s^24p^3(^4S)5p\ ^5P_3$	$4s^24p^3(^4S)5d\ ^5D^\circ_3$	84PER/WAH
1419.204	0.010	70 462.0	8		$4s^24p^3(^4S)5p\ ^5P_3$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	84PER/WAH
1419.752	0.010	70 434.8	10	bl	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^3F^\circ_4$	84PER/WAH
1420.609	0.010	70 392.4	7	p	$4s^24p^3(^4S)5s\ ^3S^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1420.852	0.010	70 380.3	7		$4s^24p^3(^2P)5p\ ^3P_0$	$4s^24p^3(^2P)5d\ ^3D^\circ_1$	84PER/WAH
1425.515	0.010	70 150.1	0.5		$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^5P_1$	84PER/WAH
1426.519	0.010	70 100.7	5	p	$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
1429.677	0.010	69 945.9	10		$4s^24p^3(^2D)5p\ ^3F_4$	$4s^24p^3(^2D)5d\ ^3F^\circ_4$	84PER/WAH
1430.225	0.010	69 919.1	4		$4s^24p^3(^2D)4d\ ^3P^\circ_0$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1431.520	0.010	69 855.8	4a		$4s^24p^3(^2D)4d\ ^1P^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1435.487	0.010	69 662.8	7		$4s^24p^3(^2P)5p\ ^3P_1$	$4s^24p^3(^2D)6s\ ^1D^\circ_2$	84PER/WAH
1435.693	0.010	69 652.8	7		$4s^24p^3(^2P)5p\ ^3P_1$	$4s^24p^3(^2P)5d\ ^3D^\circ_2$	84PER/WAH
1437.898	0.010	69 546.0	9		$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^3G^\circ_4$	84PER/WAH
1438.721	0.010	69 506.2	0.5		$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3F^\circ_2$	84PER/WAH
1440.412	0.010	69 424.6	9		$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3P^\circ_2$	84PER/WAH
1442.090	0.010	69 343.8	5		$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
1443.581	0.010	69 272.2	8		$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_3$	84PER/WAH
1445.374	0.010	69 186.2	2		$4s^24p^3(^2D)4d\ ^3S^\circ_1$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
1445.540	0.010	69 178.3	1		$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
1447.667	0.010	69 076.7	6		$4s^24p^3(^2P)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^1S_0$	84PER/WAH
1447.776	0.010	69 071.5	2		$4s^24p^3(^2P)5p\ ^3P_2$	$4s^24p^3(^2P)5d\ ^1D^\circ_2$	84PER/WAH
1450.980	0.010	68 919.0	7		$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_4$	84PER/WAH
1451.307	0.010	68 903.4	2		$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^1P^\circ_1$	84PER/WAH
1454.041	0.010	68 773.9	9		$4s^24p^3(^2P)5p\ ^3P_2$	$4s^24p^3(^2P)5d\ ^1F^\circ_3$	84PER/WAH
1456.140	0.010	68 674.7	8		$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^3F^\circ_2$	84PER/WAH
1457.054	0.010	68 631.6	10		$4s^24p^3(^4S)5s\ ^3S^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
1457.926	0.010	68 590.6	2		$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^3G^\circ_3$	84PER/WAH
1459.367	0.010	68 522.9	9		$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1459.546	0.010	68 514.5	4		$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH
1460.322	0.010	68 478.1	5		$4s^24p^3(^2D)5p\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3P^\circ_0$	84PER/WAH
1461.181	0.010	68 437.8	6		$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	84PER/WAH
1462.068	0.010	68 396.3	7	p	$4s^24p^3(^2D)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_1$	84PER/WAH
1462.669	0.010	68 368.2	6		$4s^24p^3(^2P)5p\ ^1P_1$	$4s^24p^3(^2P)5d\ ^3P^\circ_2$	84PER/WAH
1463.786	0.010	68 316.0	4		$4s^24p^3(^2P)5p\ ^3P_2$	$4s^24p^3(^2P)5d\ ^3D^\circ_3$	84PER/WAH
1465.909	0.010	68 217.0	9		$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3D^\circ_3$	84PER/WAH
1468.390	0.010	68 101.8	9	bl	$4s^24p^3(^2D)5p\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3P^\circ_1$	84PER/WAH
1471.259	0.010	67 969.0	9		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
1474.069	0.010	67 839.4	4		$4s^24p^3(^2D)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
1474.527	0.010	67 818.4	6		$4s^24p^3(^2D)5p\ ^3F_4$	$4s^24p^3(^2D)5d\ ^3G^\circ_4$	84PER/WAH
1474.677	0.010	67 811.5	0.5		$4s^24p^3(^2D)5s\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH
1477.792	0.010	67 668.5	6		$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
1483.043	0.010	67 428.9	8		$4s^24p^3(^2D)5p\ ^3P_0$	$4s^24p^3(^2D)5d\ ^1P^\circ_1$	84PER/WAH
1489.363	0.010	67 142.8	0.5		$4s^24p^3(^2D)5p\ ^3P_1$	$4s^24p^3(^2D)5d\ ^1P^\circ_1$	84PER/WAH
1492.213	0.010	67 014.6	7	p	$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
1496.690	0.010	66 814.1	7		$4s^24p^3(^2P)5p\ ^3P_2$	$4s^24p^3(^2P)5d\ ^3P^\circ_2$	84PER/WAH
1497.862	0.010	66 761.8	5		$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
1498.494	0.010	66 733.7	0.5		$4s^24p^3(^4S)5p\ ^3P_1$	$4s^24p^3(^4S)5d\ ^5D^\circ_1$	84PER/WAH
1507.832	0.010	66 320.4	10		$4s^24p^3(^2D)5p\ ^1D_2$	$4s^24p^3(^2D)5d\ ^1F^\circ_3$	84PER/WAH

TABLE 10. Observed spectral lines of Sr V—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
1514.713	0.010	66 019.1	4		$4s^24p^3(^2D)4d\ ^3S^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
1517.734	0.010	65 887.7	9		$4s^24p^3(^2D)4d\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
1520.685	0.010	65 759.9	3		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_2$	84PER/WAH
1529.330	0.010	65 388.1	5		$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_3$	84PER/WAH
1530.364	0.010	65 344.0	9a		$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_1$	84PER/WAH
1531.926	0.010	65 277.3	4		$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1533.866	0.010	65 194.7	4		$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
1534.389	0.010	65 172.5	9		$4s^24p^3(^2D)5p\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3D^\circ_2$	84PER/WAH
1541.099	0.010	64 888.8	10	bl	$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
1557.519	0.010	64 204.7	9		$4s^24p^3(^2D)5p\ ^1D_2$	$4s^24p^3(^2D)5d\ ^1D^\circ_2$	84PER/WAH
1573.306	0.010	63 560.4	4		$4s^24p^3(^2P)5p\ ^1S_0$	$4s^24p^3(^2P)5d\ ^1P^\circ_1$	84PER/WAH
1574.093	0.010	63 528.6	7	p	$4s^24p^3(^2D)5p\ ^3P_0$	$4s^24p^3(^2D)5d\ ^3D^\circ_1$	84PER/WAH
1590.713	0.010	62 864.9	4		$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
1593.973	0.010	62 736.3	0.5		$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	84PER/WAH
1607.189	0.010	62 220.4	3	Sr V?	$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
1613.779	0.010	61 966.4	7		$4s^24p^3(^2D)4d\ ^1P^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
1616.275	0.010	61 870.7	5	p	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
1623.813	0.010	61 583.4	6		$4s^24p^3(^2D)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
1631.451	0.010	61 295.1	2	h	$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^4S)6s\ ^3S^\circ_1$	84PER/WAH
1655.182	0.010	60 416.3	9		$4s^24p^3(^2P)5s\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^1S_0$	84PER/WAH
1669.621	0.010	59 893.9	4		$4s^24p^3(^2D)4d\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1670.173	0.010	59 874.0	10	p	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
1676.188	0.010	59 659.2	4		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
1694.147	0.010	59 026.8	5		$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_1$	84PER/WAH
1737.818	0.010	57 543.4	1		$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
1746.515	0.010	57 256.9	0.5		$4s^24p^3(^2P)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH
1769.311	0.010	56 519.2	12		$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	84PER/WAH
1769.524	0.010	56 512.4	7	p	$4s^24p^3(^2D)5s\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1771.093	0.010	56 462.3	0.5		$4s^24p^3(^2D)4d\ ^3S^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_0$	84PER/WAH
1772.694	0.010	56 411.3	2		$4s^24p^3(^2P)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
1777.885	0.010	56 246.6	6		$4s^24p^3(^4S)5s\ ^3S^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
1778.492	0.010	56 227.4	7	p	$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	84PER/WAH
1780.579	0.010	56 161.5	5		$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^4S)5d\ ^3D^\circ_3$	84PER/WAH
1789.786	0.010	55 872.6	7		$4s^24p^3(^2P)5p\ ^1S_0$	$4s^24p^3(^2P)5d\ ^3P^\circ_1$	84PER/WAH
1800.964	0.010	55 525.8	6		$4s^24p^3(^2P)5s\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH
1821.041	0.010	54 913.6	9		$4s^24p^3(^4S)5s\ ^5S^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
1829.633	0.010	54 655.8	2		$4s^24p^3(^2D)4d\ ^3S^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
1835.993	0.010	54 466.4	8		$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
1839.024	0.010	54 376.7	1		$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
1880.162	0.010	53 186.9	12		$4s^24p^3(^2P)5s\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
1926.598	0.010	51 905.0	15		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
1937.074	0.010	51 624.3	6		$4s^24p^3(^2D)4d\ ^3P^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
1962.826	0.010	50 947.0	10		$4s^24p^3(^2P)5s\ ^3P^\circ_0$	$4s^24p^3(^2P)5p\ ^3P_1$	84PER/WAH
1967.972	0.010	50 813.7	12		$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_3$	84PER/WAH
1969.008	0.010	50 787.0	6		$4s^24p^3(^2P)5s\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
1980.541	0.010	50 491.3	5		$4s^24p^3(^2P)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
1989.291	0.010	50 269.2	6		$4s^24p^3(^2P)5s\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_0$	84PER/WAH
1991.242	0.010	50 219.9	7		$4s^24p^3(^2D)4d\ ^3P^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
1993.990	0.010	50 150.7	6		$4s^24p^3(^2P)5s\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_2$	84PER/WAH
Air							
2007.599	0.020	49 794.6	15		$4s^24p^3(^4S)5s\ ^5S^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_3$	84PER/WAH
2009.483	0.020	49 747.9	3		$4s^24p^3(^2P)5s\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_1$	84PER/WAH
2009.854	0.020	49 738.8	10		$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
2016.485	0.020	49 575.2	12		$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
2049.985	0.020	48 765.2	3		$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	84PER/WAH
2050.190	0.020	48 760.3	12		$4s^24p^3(^2P)5s\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
2051.005	0.020	48 741.0	15		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_4$	84PER/WAH
2055.997	0.020	48 622.6	10		$4s^24p^3(^2D)5s\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
2057.115	0.020	48 596.2	9		$4s^24p^3(^2P)5s\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^1P_1$	84PER/WAH
2057.640	0.020	48 583.8	3		$4s^24p^3(^2D)5s\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_4$	84PER/WAH
2071.807	0.020	48 251.6	10		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_3$	84PER/WAH
2084.970	0.020	47 947.1	12		$4s^24p^3(^2P)5s\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_3$	84PER/WAH

TABLE 10. Observed spectral lines of Sr V—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	Lower level	Upper level	λ Ref.
2087.452	0.020	47 890.1	9		$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	84PER/WAH
2088.618	0.020	47 863.3	12		$4s^24p^3(^2D)5s\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
2090.604	0.020	47 817.9	15		$4s^24p^3(^4S)5s\ ^5S^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_2$	84PER/WAH
2092.727	0.020	47 769.4	7		$4s^24p^3(^2P)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^3D_1$	84PER/WAH
2093.555	0.020	47 750.5	12	bl	$4s^24p^3(^2P)5s\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^1D_2$	84PER/WAH
2101.129	0.020	47 578.4	9		$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	84PER/WAH
2108.966	0.020	47 401.6	15		$4s^24p^3(^4S)5s\ ^5S^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_1$	84PER/WAH
2116.305	0.020	47 237.2	9	w	$4s^24p^3(^2P)5s\ ^3P^\circ_0$	$4s^24p^3(^2P)5p\ ^3D_1$	84PER/WAH
2126.379	0.020	47 013.5	10		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
2133.514	0.020	46 856.2	8		$4s^24p^3(^2D)5s\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
2136.439	0.020	46 792.1	9		$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_2$	84PER/WAH
2141.161	0.020	46 688.9	10		$4s^24p^3(^4S)5s\ ^3S^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_0$	84PER/WAH
2155.615	0.020	46 375.9	10		$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_1$	84PER/WAH
2159.744	0.020	46 287.3	15		$4s^24p^3(^4S)5s\ ^3S^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
2171.421	0.020	46 038.4	9		$4s^24p^3(^2P)5s\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3D_1$	84PER/WAH
2185.066	0.020	45 750.9	10		$4s^24p^3(^2D)4d\ ^1P^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
2194.789	0.020	45 548.2	10		$4s^24p^3(^2P)5s\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3S_1$	84PER/WAH
2195.508	0.020	45 533.3	10		$4s^24p^3(^2D)5s\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
2209.350	0.020	45 248.1	12		$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
2216.014	0.020	45 112.0	12		$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_3$	84PER/WAH
2224.252	0.020	44 944.9	12		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_3$	84PER/WAH
2227.317	0.020	44 883.1	12		$4s^24p^3(^4S)5s\ ^3S^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
2228.113	0.020	44 867.1	0.5		$4s^24p^3(^2P)5s\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_2$	84PER/WAH
2250.659	0.020	44 417.7	0.5		$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_2$	84PER/WAH
2254.264	0.020	44 346.6	6		$4s^24p^3(^2D)4d\ ^1P^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
2278.569	0.020	43 873.6	15		$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^1F_3$	84PER/WAH
2324.152	0.020	43 013.2	6		$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_1$	84PER/WAH
2341.948	0.020	42 686.4	8		$4s^24p^3(^2D)4d\ ^1F^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_2$	84PER/WAH
2344.712	0.020	42 636.1	10		$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^1P_1$	84PER/WAH
2359.628	0.020	42 366.6	10		$4s^24p^3(^2D)5s\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH
2375.608	0.020	42 081.7	9		$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_1$	84PER/WAH

6.5. Sr VI

As isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}4s^24p^3\ ^4S^\circ_{3/2}$
Ionization energy (710 000 cm^{-1});
(88 eV)

The initial analysis of experimental data for Sr VI was published by Persson and Pettersson [84PER/PET], who discovered all the levels of the ground configuration ($4s^24p^3$) and lowest excited configuration ($4s4p^4$). Additional measurements of the emission spectrum by O'Sullivan and Maher [89OSU/MAH] established the locations of the members of the $4s^24p^45s$ configuration. The wavelengths and energy levels are listed in Tables 11 and 12.

Charro and Martín [98CHA/MAR, 05CHA/MAR] have calculated the oscillator strengths for six transitions from the $4s^24p^45s$ configuration to the ground configuration using both a relativistic quantum defect orbital method and multiconfiguration Dirac-Fock technique. In addition, O'Sullivan and Maher [89OSU/MAH, 89OSU] obtained oscillator strengths for the lines they measured, using multiconfiguration Dirac-Fock. The resulting values disagreed substantially, with discrepancies frequently exceeding 40%, even for strong lines. In Table 12, we have retained the [89OSU] values only for the strongest lines. The calculated ionization energy is taken from the Dirac-Fock calculations of binding energies for ions done by Rodrigues *et al.* [04ROD/IND].

TABLE 11. Energy levels of Sr VI

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4s^24p^3$	$^4S^\circ$	3/2	0.0		95%	84PER/PET
	$^2D^\circ$	3/2	20 134.7	2.0	100%	84PER/PET
	$^2D^\circ$	5/2	23 527.0	2.0	84% + 13% $4s^24p^3\ ^2P$	84PER/PET
	$^2P^\circ$	1/2	38 531.1	2.0	100%	84PER/PET
	$^2P^\circ$	3/2	43 566.9	2.0	82% + 15% $4s^24p^3\ ^2D$	84PER/PET

TABLE 11. Energy levels of Sr VI—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4s4p^4$	^4P	1/2	162 238.2	2.0		84PER/PET
	^4P	3/2	159 597.3	2.0		84PER/PET
	^4P	5/2	153 170.8	2.0		84PER/PET
	^2D	3/2	188 319.4	2.0		84PER/PET
	^2D	5/2	189 978.4	2.0		84PER/PET
	^2P	1/2	216 644.3	2.0		84PER/PET
	^2P	3/2	215 697.0	2.0		84PER/PET
	^2S	1/2	227 291.5	2.0		84PER/PET
$4s^24p^25s$	$^4P^\circ$	1/2	327 320	50	90% + 6% $4s^24p^25s$ ^2P	89OSU/MAH
	$^4P^\circ$	3/2	333 260	50	96%	89OSU/MAH
	$^2P^\circ$	1/2	338 240	50	92% + 7% $4s^24p^25s$ ^4P	89OSU/MAH
	$^4P^\circ$	5/2	338 650	50	91% + 9% $4s^24p^25s$ ^2D	89OSU/MAH
	$^2P^\circ$	3/2	343 870	50	79% + 19% $4s^24p^25s$ ^2D	89OSU/MAH
	$^2D^\circ$	5/2	355 820	50	91% + 9% $4s^24p^25s$ ^4P	89OSU/MAH
	$^2D^\circ$	3/2	356 820	50	81% + 17% $4s^24p^25s$ ^2P	89OSU/MAH
	$^2S^\circ$	1/2	378 990	50	96%	89OSU/MAH
Sr VII ($4s^24p^2$ $^3P_0$)		*Limit*	(710 000)			04ROD/IND

6.5.1 References for Sr VI

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TABLE 12. Observed spectral lines of Sr VI

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum									
263.91	0.05	378 920	2			$4s^24p^3$ $^4S^\circ_{3/2}$	$4s^24p^25s$ $^2S_{1/2}$	89OSU/MAH	
278.72	0.05	358 780	1			$4s^24p^3$ $^2D^\circ_{3/2}$	$4s^24p^25s$ $^2S_{1/2}$	89OSU/MAH	
280.31	0.05	356 750	1			$4s^24p^3$ $^4S^\circ_{3/2}$	$4s^24p^25s$ $^2D_{3/2}$	89OSU/MAH	
281.05	0.05	355 810	3			$4s^24p^3$ $^4S^\circ_{3/2}$	$4s^24p^25s$ $^2D_{5/2}$	89OSU/MAH	
293.83	0.05	340 330	10		5.0E+9	$4s^24p^3$ $^2P^\circ_{1/2}$	$4s^24p^25s$ $^2S_{1/2}$	89OSU/MAH	89OSU
295.36	0.05	338 570	10		5.5E+9	$4s^24p^3$ $^4S^\circ_{3/2}$	$4s^24p^25s$ $^4P_{5/2}$	89OSU/MAH	89OSU
297.04	0.05	336 660	5			$4s^24p^3$ $^2D^\circ_{3/2}$	$4s^24p^25s$ $^2D_{3/2}$	89OSU/MAH	
298.01	0.05	335 560	7		1.8E+9	$4s^24p^3$ $^2D^\circ_{3/2}$	$4s^24p^25s$ $^2D_{5/2}$	89OSU/MAH	89OSU
298.18	0.05	335 370	7		6.3E+9	$4s^24p^3$ $^2P^\circ_{3/2}$	$4s^24p^25s$ $^2S_{1/2}$	89OSU/MAH	89OSU
300.11	0.05	333 210	9	w,=	8.5E+9	$4s^24p^3$ $^4S^\circ_{3/2}$	$4s^24p^25s$ $^4P_{3/2}$	89OSU/MAH	89OSU
300.11	0.05	333 210	9	w,=	3.8E+8	$4s^24p^3$ $^2D^\circ_{5/2}$	$4s^24p^25s$ $^2D_{3/2}$	89OSU/MAH	89OSU
301.01	0.05	332 220	10		7.7E+9	$4s^24p^3$ $^2D^\circ_{5/2}$	$4s^24p^25s$ $^2D_{5/2}$	89OSU/MAH	89OSU
305.57	0.05	327 260	6		6.0E+9	$4s^24p^3$ $^4S^\circ_{3/2}$	$4s^24p^25s$ $^4P_{1/2}$	89OSU/MAH	89OSU
308.97	0.05	323 660	4			$4s^24p^3$ $^2D^\circ_{3/2}$	$4s^24p^25s$ $^4P_{5/2}$	89OSU/MAH	
312.24	0.05	320 270	10	w	2.2E+10	$4s^24p^3$ $^2D^\circ_{5/2}$	$4s^24p^25s$ $^2P_{3/2}$	89OSU/MAH	89OSU
314.24	0.05	318 230	2			$4s^24p^3$ $^2P^\circ_{1/2}$	$4s^24p^25s$ $^2D_{3/2}$	89OSU/MAH	
314.43	0.05	318 040	10	w	4.7E+9	$4s^24p^3$ $^2D^\circ_{3/2}$	$4s^24p^25s$ $^2P_{1/2}$	89OSU/MAH	89OSU
317.38	0.05	315 080	5			$4s^24p^3$ $^2D^\circ_{5/2}$	$4s^24p^25s$ $^4P_{5/2}$	89OSU/MAH	
319.28	0.05	313 200	10		1.1E+10	$4s^24p^3$ $^2P^\circ_{3/2}$	$4s^24p^25s$ $^2D_{3/2}$	89OSU/MAH	89OSU
319.33	0.05	313 160	2			$4s^24p^3$ $^2D^\circ_{3/2}$	$4s^24p^25s$ $^4P_{3/2}$	89OSU/MAH	
320.25	0.05	312 260	5			$4s^24p^3$ $^2P^\circ_{3/2}$	$4s^24p^25s$ $^2D_{5/2}$	89OSU/MAH	
322.14	0.05	310 420	3			$4s^24p^3$ $^2D^\circ_{5/2}$	$4s^24p^25s$ $^4P_{3/2}$	89OSU/MAH	

TABLE 12. Observed spectral lines of Sr VI—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
325.57	0.05	307 150	3			$4s^24p^3\ ^2D^\circ_{3/2}$	$4s^24p^25s\ ^4P_{1/2}$	89OSU/MAH	
327.57	0.05	305 280	10		5.7E+9	$4s^24p^3\ ^2P^\circ_{1/2}$	$4s^24p^25s\ ^2P_{3/2}$	89OSU/MAH	89OSU
333.04	0.05	300 260	6		7.4E+9	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^25s\ ^2P_{3/2}$	89OSU/MAH	89OSU
333.70	0.05	299 670	7		9.7E+9	$4s^24p^3\ ^2P^\circ_{1/2}$	$4s^24p^25s\ ^2P_{1/2}$	89OSU/MAH	89OSU
339.36	0.05	294 670	1			$4s^24p^3\ ^2P^\circ_{1/2}$	$4s^24p^25s\ ^4P_{3/2}$	89OSU/MAH	
461.580	0.010	216 647.0	0.5			$4s^24p^3\ ^4S^\circ_{3/2}$	$4s4p^4\ ^2P_{1/2}$	84PER/PET	
463.621	0.010	215 694.0	1			$4s^24p^3\ ^4S^\circ_{3/2}$	$4s4p^4\ ^2P_{3/2}$	84PER/PET	
482.727	0.010	207 157.0	8			$4s^24p^3\ ^2D^\circ_{3/2}$	$4s4p^4\ ^2S_{1/2}$	84PER/PET	
508.883	0.005	196 509.0	12			$4s^24p^3\ ^2D^\circ_{3/2}$	$4s4p^4\ ^2P_{1/2}$	84PER/PET	
511.347	0.005	195 562.0	10			$4s^24p^3\ ^2D^\circ_{3/2}$	$4s4p^4\ ^2P_{3/2}$	84PER/PET	
520.372	0.005	192 170.0	18			$4s^24p^3\ ^2D^\circ_{5/2}$	$4s4p^4\ ^2P_{3/2}$	84PER/PET	
526.379	0.010	189 977.0	3			$4s^24p^3\ ^4S^\circ_{3/2}$	$4s4p^4\ ^2D_{5/2}$	84PER/PET	
529.771	0.010	188 761.0	7			$4s^24p^3\ ^2P^\circ_{1/2}$	$4s4p^4\ ^2S_{1/2}$	84PER/PET	
531.013	0.010	188 320.0	3			$4s^24p^3\ ^4S^\circ_{3/2}$	$4s4p^4\ ^2D_{3/2}$	84PER/PET	
561.439	0.005	178 113.8	12			$4s^24p^3\ ^2P^\circ_{1/2}$	$4s4p^4\ ^2P_{1/2}$	84PER/PET	
564.443	0.005	177 165.9	10			$4s^24p^3\ ^2P^\circ_{1/2}$	$4s4p^4\ ^2P_{3/2}$	84PER/PET	
577.791	0.010	173 073.0	5	p		$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^2P_{1/2}$	84PER/PET	
580.962	0.010	172 128.0	7	bl		$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^2P_{3/2}$	84PER/PET	
588.768	0.010	169 846.0	9			$4s^24p^3\ ^2D^\circ_{3/2}$	$4s4p^4\ ^2D_{5/2}$	84PER/PET	
594.583	0.005	168 185.1	25			$4s^24p^3\ ^2D^\circ_{3/2}$	$4s4p^4\ ^2D_{3/2}$	84PER/PET	
600.775	0.005	166 451.8	30			$4s^24p^3\ ^2D^\circ_{5/2}$	$4s4p^4\ ^2D_{5/2}$	84PER/PET	
606.833	0.010	164 790.0	6			$4s^24p^3\ ^2D^\circ_{5/2}$	$4s4p^4\ ^2D_{3/2}$	84PER/PET	
616.376	0.005	162 238.6	18			$4s^24p^3\ ^4S^\circ_{3/2}$	$4s4p^4\ ^4P_{1/2}$	84PER/PET	
626.576	0.005	159 597.4	30			$4s^24p^3\ ^4S^\circ_{3/2}$	$4s4p^4\ ^4P_{3/2}$	84PER/PET	
652.865	0.005	153 170.9	50			$4s^24p^3\ ^4S^\circ_{3/2}$	$4s4p^4\ ^4P_{5/2}$	84PER/PET	
667.609	0.005	149 788.4	12			$4s^24p^3\ ^2P^\circ_{1/2}$	$4s4p^4\ ^2D_{3/2}$	84PER/PET	
683.015	0.005	146 409.8	20			$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^2D_{5/2}$	84PER/PET	
690.833	0.010	144 753.0	8			$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^2D_{3/2}$	84PER/PET	
734.920	0.010	136 069.0	9			$4s^24p^3\ ^2D^\circ_{5/2}$	$4s4p^4\ ^4P_{3/2}$	84PER/PET	
751.677	0.005	133 035.9	12			$4s^24p^3\ ^2D^\circ_{3/2}$	$4s4p^4\ ^4P_{5/2}$	84PER/PET	
771.345	0.005	129 643.7	15			$4s^24p^3\ ^2D^\circ_{5/2}$	$4s4p^4\ ^4P_{5/2}$	84PER/PET	
808.366	0.010	123 706.4	8			$4s^24p^3\ ^2P^\circ_{1/2}$	$4s4p^4\ ^4P_{1/1}$	84PER/PET	
842.660	0.010	118 671.8	3			$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^4P_{1/2}$	84PER/PET	
861.342	0.010	116 030.5	8			$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^4P_{3/2}$	84PER/PET	
912.374	0.010	109 604.1	7			$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^4P_{5/2}$	84PER/PET	

6.6. Sr VII

Ge isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}4s^24p^2\ ^3P_0$
Ionization energy (839 000 cm^{-1});
(104 eV)

In 1989, both Litzén and Reader [89LIT/REA] and O'Sullivan and Maher [89OSU/MAH] reported measurements of the Sr VII spectrum. In the region between 415 Å and 634 Å, Litzén and Reader [89LIT/REA] observed 16 transitions between the $4s4p^3$ and $4s^24p^2$ configurations. As indicated in Table 13, they determined the energies involved in those transitions to $\pm 5\ cm^{-1}$. The leading percentages for those levels are also taken from [89LIT/REA]. O'Sullivan and Maher [89OSU/MAH], who focused on the 256 Å to 310 Å region, were able to classify the 14 transitions between $4s^24p5s$ and $4s^24p^2$, which are listed in Table 14. The energies and leading percentages for the $4s^24p5s$ levels are from [89OSU/MAH]. The calculated ionization energy is taken from the Dirac-Fock calculations of binding energies for ions done by Rodrigues *et al.* [04ROD/IND].

Transition probabilities for Sr VII spectral lines have been calculated by several groups. O'Sullivan and Maher [89OSU/MAH] used the multiconfiguration Dirac-Fock (MCDF) technique to calculate oscillator strengths for the lines they observed. Transition rates for the $4s4p^3$ to $4s^24p^2$ transitions were determined by Biémont *et al.* [90BIE/HIM] using the semi-relativistic Hartree-Fock method. Oscillator strengths of transitions to $4s^24p^2\ ^3P$ levels from some of the $4s4p^3$ levels of Ge-like ions between Rb VI and Mo XI have been investigated by Charro and Martín [02CHA/MAR, 05CHA/MAR], comparing the relativistic quantum defect orbital and MCDF methods. In order to have a consistent set of values for all the observed $4s4p^3$ to $4s^24p^2$ transitions we retain the O'Sullivan and Maher values in Table 14, while noting that, in general, the Charro and Martín MCDF values are about 10% lower.

TABLE 13. Energy levels of Sr VII

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4s^24p^2$	^3P	0	0	5	93% + 5% $4s^24p^2$ ^1S	89LIT/REA
	^3P	1	6845	5	98%	89LIT/REA
	^3P	2	12 545	5	83% + 15% $4s^24p^2$ ^1D	89LIT/REA
	^1D	2	28 490	5	83% + 15% $4s^24p^2$ ^3P	89LIT/REA
	^1S	0	51 814	5	93% + 5% $4s^24p^2$ ^3P	89LIT/REA
$4s4p^3$	^5S	2	(134 828)	5	97%	89LIT/REA
	^3D	1	167 806	5	86% + 6% $4s^24p4d$ ^3D + 5% $4s4p^3$ ^3P	89LIT/REA
	^3D	2	167 977	5	84% + 8% $4s4p^3$ ^3P + 6% $4s^24p4d$ ^3D	89LIT/REA
	^3D	3	170 427	5	93% + 6% $4s^24p4d$ ^3D	89LIT/REA
	^3P	0	190 425	5	94% + 6% $4s^24p4d$ ^3P	89LIT/REA
	^3P	1	191 215	5	87% + 6% $4s^24p4d$ ^3P + 5% $4s4p^3$ ^3D	89LIT/REA
	^3P	2	192 193	5	76% + 8% $4s4p^3$ ^3D + 6% $4s4p^3$ ^1D	89LIT/REA
	^1D	2	213 095	5	69% + 22% $4s^24p4d$ ^1D + 7% $4s4p^3$ ^3P	89LIT/REA
	^3S	1	232 870	5	70% + 26% $4s4p^3$ ^3P	89LIT/REA
	^1P	1	247 754	5	66% + 27% $4s4p^3$ ^3S + 5% $4s^24p4d$ ^1P	89LIT/REA
$4s^24p5s$	(1/2,1/2)	0	373 400	100	100% (1/2,1/2)	89OSU/MAH
	(1/2,1/2)	1	374 670	100	96% (1/2,1/2) + 4% (3/2,1/2)	89OSU/MAH
	(3/2,1/2)	1	389 730	100	96% (3/2,1/2) + 4% (1/2,1/2)	89OSU/MAH
	(3/2,1/2)	2	386 270	100	100% (3/2,1/2)	89OSU/MAH
Sr VIII ($4s^24p$ $^2P_{1/2}$)		*Limit*	(840 000)			04ROD/IND

6.6.1 References for Sr VII

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TABLE 14. Observed spectral lines of Sr VII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum								
256.64	0.05	389 650	3	3.92E+8	$4s^24p^2$ $^3P_0$	$4s^24p5s$ $(3/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
261.21	0.05	382 830	4	8.62E+8	$4s^24p^2$ $^3P_1$	$4s^24p5s$ $(3/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
263.62	0.05	379 330	10	5.06E+9	$4s^24p^2$ $^3P_1$	$4s^24p5s$ $(3/2,1/2)^\circ_2$	89OSU/MAH	89OSU/MAH
265.18	0.05	377 100	3	3.37E+8	$4s^24p^2$ $^3P_2$	$4s^24p5s$ $(3/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
266.95	0.05	374 600	10	6.36E+9	$4s^24p^2$ $^3P_0$	$4s^24p5s$ $(1/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
267.67	0.05	373 590	10	1.37E+10	$4s^24p^2$ $^3P_2$	$4s^24p5s$ $(3/2,1/2)^\circ_2$	89OSU/MAH	89OSU/MAH
271.90	0.05	367 780	8	4.29E+9	$4s^24p^2$ $^3P_1$	$4s^24p5s$ $(1/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
272.84	0.05	366 520	10	2.08E+10	$4s^24p^2$ $^3P_1$	$4s^24p5s$ $(1/2,1/2)^\circ_0$	89OSU/MAH	89OSU/MAH
276.23	0.05	362 020	8	1.12E+10	$4s^24p^2$ $^3P_2$	$4s^24p5s$ $(1/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
276.79	0.05	361 280	10	2.89E+10	$4s^24p^2$ $^1D_2$	$4s^24p5s$ $(3/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
279.37	0.05	357 950	7	1.85E+9	$4s^24p^2$ $^1D_2$	$4s^24p5s$ $(3/2,1/2)^\circ_2$	89OSU/MAH	89OSU/MAH
288.81	0.05	346 250	5	1.92E+9	$4s^24p^2$ $^1D_2$	$4s^24p5s$ $(1/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
295.58	0.05	338 320	8	6.18E+9	$4s^24p^2$ $^1S_0$	$4s^24p5s$ $(3/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
309.49	0.05	323 110	2	2.88E+8	$4s^24p^2$ $^1S_0$	$4s^24p5s$ $(1/2,1/2)^\circ_1$	89OSU/MAH	89OSU/MAH
415.095	0.005	240 908.7	50	4.37E+9	$4s^24p^2$ $^3P_1$	$4s4p^3$ $^1P^\circ_1$	89LIT/REA	90BIE/HIM
429.422	0.005	232 871.2	500	3.81E+9	$4s^24p^2$ $^3P_0$	$4s4p^3$ $^3S^\circ_1$	89LIT/REA	90BIE/HIM
442.427	0.005	226 026.0	1000	8.62E+9	$4s^24p^2$ $^3P_1$	$4s4p^3$ $^3S^\circ_1$	89LIT/REA	90BIE/HIM
453.879	0.005	220 323.0	1300	1.92E+10	$4s^24p^2$ $^3P_2$	$4s4p^3$ $^3S^\circ_1$	89LIT/REA	90BIE/HIM
456.071	0.005	219 264.1	1000	1.73E+10	$4s^24p^2$ $^1D_2$	$4s4p^3$ $^1P^\circ_1$	89LIT/REA	90BIE/HIM
510.385	0.005	195 930.5	100	2.89E+9	$4s^24p^2$ $^1S_0$	$4s4p^3$ $^1P^\circ_1$	89LIT/REA	90BIE/HIM
522.975	0.005	191 213.7	200	7.94E+8	$4s^24p^2$ $^3P_0$	$4s4p^3$ $^3P^\circ_1$	89LIT/REA	90BIE/HIM
542.392	0.005	184 368.5	200	1.58E+9	$4s^24p^2$ $^3P_1$	$4s4p^3$ $^3P^\circ_1$	89LIT/REA	90BIE/HIM

TABLE 14. Observed spectral lines of Sr VII—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
541.698	0.005	184 604.7	1000	5.22E+9	$4s^24p^2\ {}^1D_2$	$4s4p^3\ {}^1D^\circ_2$	89LIT/REA	90BIE/HIM
544.723	0.005	183 579.5	150	2.83E+9	$4s^24p^2\ {}^3P_1$	$4s4p^3\ {}^3P^\circ_0$	89LIT/REA	90BIE/HIM
556.644	0.005	179 648.0	400	2.48E+9	$4s^24p^2\ {}^3P_2$	$4s4p^3\ {}^3P^\circ_2$	89LIT/REA	90BIE/HIM
559.686	0.005	178 671.6	80	4.69E+8	$4s^24p^2\ {}^3P_2$	$4s4p^3\ {}^3P^\circ_1$	89LIT/REA	90BIE/HIM
595.925	0.005	167 806.4	200	1.11E+9	$4s^24p^2\ {}^3P_0$	$4s4p^3\ {}^3D^\circ_1$	89LIT/REA	90BIE/HIM
620.608	0.005	161 132.3	300	1.15E+9	$4s^24p^2\ {}^3P_1$	$4s4p^3\ {}^3D^\circ_2$	89LIT/REA	90BIE/HIM
621.270	0.005	160 960.6	50	1.74E+8	$4s^24p^2\ {}^3P_1$	$4s4p^3\ {}^3D^\circ_1$	89LIT/REA	90BIE/HIM
633.386	0.005	157 881.6	250	8.82E+8	$4s^24p^2\ {}^3P_2$	$4s4p^3\ {}^3D^\circ_3$	89LIT/REA	90BIE/HIM

6.7. Sr VIII

Ga isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}4s^24p\ {}^2P^\circ_{1/2}$
Ionization energy 977 600 ± 500 cm^{-1}; 121.21 ± 0.06 eV

The fine-structure splitting of the ground configuration of Sr VIII was first reported by Curtis *et al*. [84CUR/REA]. Further observations by Reader *et al*. [86REA/ACQ] refined that value and enabled the determination of the $4s4p^2\ {}^2P$ and $4s^25s$ levels. Additional values were published by Litzén *et al*. [89LIT/REA2], who measured transitions between 345 Å and 600 Å involving the $4s^24p$, $4s4p^2$, $4p^3$, $4s^24d$, and $4s^24f$ configurations. The energy levels and wavelengths in Tables 15 and 16 are primarily taken from [89LIT/REA2], with some from [86REA/ACQ], as listed. Except for the $4s^25s$ levels (which are taken from [86REA/ACQ]) the leading percentages all come from Litzén *et al*. [89LIT/REA2]. The ionization energy was determined by Reader *et al*. [86REA/ACQ], who calculated the quantum defects for the $4s^25s$ levels of isoelectronic ions, then corrected them by the difference between calculated and observed quantum defects for copper-like ions. The uncertainty of this procedure is included in the uncertainty given for the ionization energy.

Oscillator strengths for allowed transitions of Sr VIII have been calculated by Biémont and Quinet [89BIE/QUI, 90BIE/QUI] using the semi-relativistic Hartree-Fock method as implemented by Cowan [81COW]. Multiplet oscillator strengths have also been published by Marcinek and Migdalek [93MAR/MIG] and by Biémont *et al*. [94BIE/MAR]. The comparisons of results included in the latter indicate a consistency of results to about ±10%.

6.7.1 References for Sr VIII

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TABLE 15. Energy levels of Sr VIII

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4s^24p$	${}^2P^\circ$	1/2	0.0		98%	89LIT/REA2
	${}^2P^\circ$	3/2	13 198.0	2	98%	86REA/ACQ
$4s4p^2$	${}^4P$	1/2	137 002.0	5	98%	89LIT/REA2
	${}^4P$	3/2	142 730.0	5	99%	89LIT/REA2
	${}^4P$	5/2	149 356.0	5	96%	89LIT/REA2
	${}^2D$	3/2	180 074.0	5	91% + 7% $4s^24d\ {}^2D$	89LIT/REA2
	${}^2D$	5/2	182 164.0	5	89% + 6% $4s^24d\ {}^2D$	89LIT/REA2
	${}^2S$	1/2	211 438.0	5	64% + 34% $4s4p^2\ {}^2P$	89LIT/REA2
	${}^2P$	1/2	225 894.0	2	64% + 35% $4s4p^2\ {}^2S$	86REA/ACQ
	${}^2P$	3/2	230 550.0	2	96%	86REA/ACQ

TABLE 15. Energy levels of Sr VIII—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4s^24d$	^{2}D	3/2	289 409.0	5	91% + 7% $4s4p^2$ ^{2}D	89LIT/REA2
	^{2}D	5/2	291 114.0	5	92% + 6% $4s4p^2$ ^{2}D	89LIT/REA2
$4p^3$	^{2}D°	3/2	347 175.0	5	37% + 42% $4p^3$ ^{4}S + 11% $4p^3$ ^{2}P + 8% $4s4p4d$	89LIT/REA2
	^{2}D°	5/2	352 473.0	5	81% + 19% $4s4p4d$	89LIT/REA2
	^{4}S°	3/2	351 697.0	5	52% + 38% $4p^3$ ^{2}D + 9% $4s4p4d$	89LIT/REA2
	^{2}P°	1/2	381 722.0	5	87% + 12% $4s4p4d$	89LIT/REA2
	^{2}P°	3/2	385 791.0	5	75% + 5% $4p^3$ ^{4}S + 4% $4p^3$ ^{2}D + 14% $4s4p4d$	89LIT/REA2
$4s^24f$	^{2}F°	5/2	533 050.0	5	54% + 35% $4s4p(^1P)4d$ ^{2}F + 11% $4s4p(^3P)4d$ ^{2}F	89LIT/REA2
	^{2}F°	7/2	532 318.0	5	56% + 35% $4s4p(^1P)4d$ ^{2}F + 9% $4s4p(^3P)4d$ ^{2}F	89LIT/REA2
$4s^25s$	^{2}S	1/2	415 643.0	8	100%	86REA/ACQ
Sr IX ($4s^2$ $^1S_0$)	*Limit*		977 600	500		86REA/ACQ

TABLE 16. Observed spectral lines of Sr VIII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum									
240.593	0.005	415 640.0	150			$4s^24p$ $^2P^\circ_{1/2}$	$4s^25s$ $^2S_{1/2}$	86REA/ACQ	
248.479	0.005	402 448.0	300			$4s^24p$ $^2P^\circ_{3/2}$	$4s^25s$ $^2S_{1/2}$	86REA/ACQ	
345.532	0.005	289 409.0	1000		3.67E+10	$4s^24p$ $^2P^\circ_{1/2}$	$4s^24d$ $^2D_{3/2}$	89LIT/REA2	89BIE/QUI
359.821	0.005	277 916.0	900		3.92E+10	$4s^24p$ $^2P^\circ_{3/2}$	$4s^24d$ $^2D_{5/2}$	89LIT/REA2	89BIE/QUI
362.034	0.005	276 217.0	200	p	7.49E+9	$4s^24p$ $^2P^\circ_{3/2}$	$4s^24d$ $^2D_{3/2}$	89LIT/REA2	89BIE/QUI
410.440	0.005	243 641.0	100		5.24E+10	$4s^24d$ $^2D^\circ_{3/2}$	$4s^24f$ $^2F_{5/2}$	89LIT/REA2	90BIE/QUI
414.586	0.005	241 204.0	125		5.57E+10	$4s^24d$ $^2D^\circ_{5/2}$	$4s^24f$ $^2F_{7/2}$	89LIT/REA2	90BIE/QUI
433.746	0.005	230 550.0	700		4.76E+9	$4s^24p$ $^2P^\circ_{1/2}$	$4s4p^2$ $^2P_{3/2}$	86REA/ACQ	89BIE/QUI
442.684	0.005	225 895.0	200		6.04E+9	$4s^24p$ $^2P^\circ_{1/2}$	$4s4p^2$ $^2P_{1/2}$	86REA/ACQ	89BIE/QUI
460.082	0.005	217 352.6	1000		2.22E+10	$4s^24p$ $^2P^\circ_{3/2}$	$4s4p^2$ $^2P_{3/2}$	86REA/ACQ	89BIE/QUI
465.778	0.005	214 694.6	50		2.32E+9	$4s4p^2$ $^4P_{1/2}$	$4p^3$ $^4S^\circ_{3/2}$	89LIT/REA2	90BIE/QUI
470.155	0.005	212 695.8	700		1.44E+10	$4s^24p$ $^2P^\circ_{3/2}$	$4s4p^2$ $^2P_{1/2}$	86REA/ACQ	89BIE/QUI
472.955	0.005	211 436.6	700		1.46E+10	$4s^24p$ $^2P^\circ_{1/2}$	$4s4p^2$ $^2S_{1/2}$	89LIT/REA2	89BIE/QUI
475.796	0.005	210 174.1	70		2.12E+9	$4s4p^2$ $^4P_{1/2}$	$4p^3$ $^2D^\circ_{3/2}$	89LIT/REA2	90BIE/QUI
478.544	0.005	208 967.2	75		5.04E+9	$4s4p^2$ $^4P_{3/2}$	$4p^3$ $^4S^\circ_{3/2}$	89LIT/REA2	90BIE/QUI
489.125	0.005	204 446.7	50		3.04E+9	$4s4p^2$ $^4P_{3/2}$	$4p^3$ $^2D^\circ_{3/2}$	89LIT/REA2	90BIE/QUI
491.094	0.005	203 627.0	50		5.88E+9	$4s4p^2$ $^2D_{5/2}$	$4p^3$ $^2P^\circ_{3/2}$	89LIT/REA2	90BIE/QUI
494.214	0.005	202 341.5	70		5.55E+9	$4s4p^2$ $^4P_{5/2}$	$4p^3$ $^4S^\circ_{3/2}$	89LIT/REA2	90BIE/QUI
495.912	0.005	201 648.7	35		8.17E+9	$4s4p^2$ $^2D_{3/2}$	$4p^3$ $^2P^\circ_{1/2}$	89LIT/REA2	90BIE/QUI
504.435	0.005	198 241.6	15		9.07E+7	$4s^24p$ $^2P^\circ_{3/2}$	$4s4p^2$ $^2S_{1/2}$	89LIT/REA2	89BIE/QUI
505.516	0.005	197 817.7	75		5.43E+9	$4s4p^2$ $^4P_{5/2}$	$4p^3$ $^2D^\circ_{3/2}$	89LIT/REA2	90BIE/QUI
555.327	0.005	180 074.1	200		2.20E+9	$4s^24p$ $^2P^\circ_{1/2}$	$4s4p^2$ $^2D_{3/2}$	89LIT/REA2	89BIE/QUI
582.672	0.005	171 623.1	20		9.58E+8	$4s4p^2$ $^2D_{3/2}$	$4p^3$ $^4S^\circ_{3/2}$	89LIT/REA2	90BIE/QUI
587.168	0.005	170 309.0	40		2.81E+9	$4s4p^2$ $^2D_{5/2}$	$4p^3$ $^2D^\circ_{5/2}$	89LIT/REA2	90BIE/QUI
589.856	0.005	169 532.9	10		5.50E+8	$4s4p^2$ $^2D_{5/2}$	$4p^3$ $^4S^\circ_{3/2}$	89LIT/REA2	90BIE/QUI
591.833	0.005	168 966.6	200		1.63E+9	$4s^24p$ $^2P^\circ_{3/2}$	$4s4p^2$ $^2D_{5/2}$	89LIT/REA2	89BIE/QUI

6.8. Sr IX

Zn isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}4s^2$ $^1S_0$
Ionization energy 1 277 000 ± 2000 cm^{-1};
158.33 ± 0.25 eV

The first reported line of the Sr IX spectrum was the $4s^2$ $^1S_0 - 4s4p$ $^1P^\circ_1$ transition at 475.358 Å, measured by Reader and Acquista [77REA/ACQ]. Subsequently, Acquista and Reader [81ACQ/REA] observed two transitions from $3d^94s^24p$ levels to the ground state. A more systematic investigation of the Sr IX spectrum by Wyart and Artru [87WYA/ART] yielded 21 classified lines and values for the $4s^2$, $4s4p$, $4p^2$, and $4s4d$ levels. By extending the wavelength region down to 145 Å, Litzén and Reader [87LIT/REA] added lines involving some of the $4s4f$, $4s5s$, $4s5p$, and $4s5d$ levels. They also remeasured most of the [87WYA/ART] lines. In a third set of measurements, by Churilov *et al.* [88CHU/RYA], transitions between $4s4d$ and $4s4f$ levels were determined. In order to provide a consistent set of levels in Table 17, we have retained the Litzén and Reader [87LIT/REA] values where available. The $4s4f$ values were obtained by adding transition energies to the [87LIT/REA] values of $4s4d$ levels. The ionization energy is taken from Litzén and Reader [87LIT/

REA], who obtained it by combining the three measured 4*s*4*l*, 4*s*5*l* series with theoretically calculated changes in the effective quantum number.

Transition probabilities for the $4s^2\ ^1S_0 - 4s4p\ ^{1,3}P^\circ_1$ lines of the Sr IX have been the subject of interest for many groups [83VIC/TAY, 89BIE/QUI2, 92CUR, 93LAV/MAR, 95FLE/HIB, 06LIU/HUT, 08RES/CUR, 10CHE/CHE, 10SAF/SAF]. For the $4s4p\ ^1P_1$ decay, most of the values lie within ±2% of the average retained in Table 18. The transition rates calculated for the $4s4p\ ^3P_1$ decay have a scatter of ±20%. The value listed in Table 20 is the average [11SAN]. More comprehensive sets of calculations were performed by Victor and Taylor [83VIC/TAY] using a model-potential method and by Biémont *et al.* [89BIE/QUI2], who used the semi-relativistic code of Cowan [81COW]. We have retained the [89BIE/QUI2] values since the energy levels used more accurately fit the experimental levels. Biémont *et al.* [89BIE/QUI2] compared their transition probabilities in the zinc isoelectronic sequence with others done by several sources and calculational techniques. The comparison indicates agreement to about ±10% except for the intercombination line discussed above.

6.8.1 References for Sr IX

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TABLE 17. Energy levels of Sr IX

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4s^2$	^{1}S	0	0.0	3	98%	87LIT/REA
$4s4p$	^{3}P	0	144 933.0	2		87LIT/REA
	^{3}P	1	149 029.0	1		87LIT/REA
	^{3}P	2	159 433.0	1		87LIT/REA
	^{1}P	1	210 378.0	2		87LIT/REA
$4p^2$	^{3}P	0	337 890.0	2	95% + 5% $4p^2\ ^1$S	87LIT/REA
	^{3}P	1	345 682.0	1	100%	87LIT/REA
	^{3}P	2	360 052.0	2	63% + 33% $4p^2\ ^1$D + 4% $4s4d\ ^1$D	87LIT/REA
	^{1}D	2	346 804.0	2	57% + 37% $4p^2\ ^3$P + 6% $4s4d\ ^1$D	87LIT/REA
	^{1}S	0	398 856.0	3	93% + 5% $4p^2\ ^3$P	87LIT/REA
$4s4d$	^{3}D	1	441 693.0	3	100%	87LIT/REA
	^{3}D	2	442 476.0	3	100%	87LIT/REA
	^{3}D	3	443 723.0	4	100%	87LIT/REA
	^{1}D	2	478 011.0	4	90% + 10% $4p^2\ ^1$D	87LIT/REA
$4s5s$	^{3}S	1	611 668.0	7		87LIT/REA
	^{1}S	0	624 344.0	10		87LIT/REA
$4s4f$	^{3}F	2	691 208.0	10		87LIT/REA,88CHU/RYA
	^{3}F	3	691 307.0	10		87LIT/REA,88CHU/RYA
	^{3}F	4	691 508.0	10		87LIT/REA,88CHU/RYA
	^{1}F	3	722 877.0	10		87LIT/REA,88CHU/RYA
$4s5p$	(1/2,1/2)	1	683 228.0	24		87LIT/REA
	(1/2,3/2)	1	689 589.0	24		87LIT/REA

TABLE 17. Energy levels of Sr IX—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$4p5s$	(1/2,1/2)	0	790 306.0	10		87LIT/REA
	(1/2,1/2)	1	791 774.0	9		87LIT/REA
	(3/2,1/2)	2	804 797.0	10		87LIT/REA
	(3/2,1/2)	1	809 515.0	13		87LIT/REA
$4s5d$	^3D	2	796 056.0	21		87LIT/REA
	^3D	3	796 652.0	20		87LIT/REA
$3d^94s^24p$	^3D	1	1 093 650	60		81ACQ/REA
	^1P	1	1 085 840	60		81ACQ/REA
Sr X ($4s\ ^2S_{1/2}$)		*Limit*	1 277 000	2000		87LIT/REA

TABLE 18. Observed spectral lines of Sr IX

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum									
91.437	0.005	1 093 650	3			$4s^2\ ^1S_0$	$3d^94s^24p\ ^3D^\circ_1$	81ACQ/REA	
92.095	0.005	1 085 840	10			$4s^2\ ^1S_0$	$3d^94s^24p\ ^1P^\circ_1$	81ACQ/REA	
145.014	0.005	689 589	100			$4s^2\ ^1S_0$	$4s5p\ (1/2,3/2)^\circ_1$	87LIT/REA	
146.364	0.005	683 228	50			$4s^2\ ^1S_0$	$4s5p\ (1/2,1/2)^\circ_1$	87LIT/REA	
154.553	0.005	647 027	5			$4s4p\ ^3P^\circ_1$	$4s5d\ ^3D_2$	87LIT/REA	
156.932	0.005	637 219	25			$4s4p\ ^3P^\circ_2$	$4s5d\ ^3D_3$	87LIT/REA	
214.253	0.005	466 738.0	100			$4s4p\ ^3P^\circ_0$	$4s5s\ ^3S_1$	87LIT/REA	
216.125	0.005	462 695.0	20			$4p^2\ ^1D_2$	$4p5s\ (3/2,1/2)^\circ_1$	87LIT/REA	
216.151	0.005	462 640.0	300	p		$4s4p\ ^3P^\circ_1$	$4s5s\ ^3S_1$	87LIT/REA	
217.809	0.005	459 118.0	5			$4p^2\ ^3P_1$	$4p5s\ (3/2,1/2)^\circ_2$	87LIT/REA	
218.349	0.005	457 982.0	25			$4p^2\ ^1D_2$	$4p5s\ (3/2,1/2)^\circ_2$	87LIT/REA	
221.123	0.005	452 237.0	500			$4s4p\ ^3P^\circ_2$	$4s5s\ ^3S_1$	87LIT/REA	
222.481	0.005	449 477.0	30			$4p^2\ ^3P_2$	$4p5s\ (3/2,1/2)^\circ_1$	87LIT/REA	
224.173	0.005	446 084.0	50			$4p^2\ ^3P_1$	$4p5s\ (1/2,1/2)^\circ_1$	87LIT/REA	
224.745	0.005	444 949.0	45			$4p^2\ ^1D_2$	$4p5s\ (1/2,1/2)^\circ_1$	87LIT/REA	
224.843	0.005	444 755.0	45			$4p^2\ ^3P_2$	$4p5s\ (3/2,1/2)^\circ_2$	87LIT/REA	
224.909	0.005	444 624.0	30			$4p^2\ ^3P_1$	$4p5s\ (1/2,1/2)^\circ_0$	87LIT/REA	
241.566	0.005	413 966.0	125			$4s4p\ ^3P^\circ_1$	$4s5s\ ^1S_0$	87LIT/REA	
303.966	0.005	328 984.0	150		6.30E+8	$4s4p\ ^3P^\circ_1$	$4s4d\ ^1D_2$	87LIT/REA	89BIE/QUI2
336.974	0.005	296 759.0	750		2.03E+10	$4s4p\ ^3P^\circ_0$	$4s4d\ ^3D_1$	87LIT/REA	89BIE/QUI2
340.776	0.005	293 448.0	700		2.64E+10	$4s4p\ ^3P^\circ_1$	$4s4d\ ^3D_2$	87LIT/REA	89BIE/QUI2
341.687	0.005	292 666.0	500		1.45E+10	$4s4p\ ^3P^\circ_1$	$4s4d\ ^3D_1$	87LIT/REA	89BIE/QUI2
351.754	0.005	284 290.0	900		3.21E+10	$4s4p\ ^3P^\circ_2$	$4s4d\ ^3D_3$	87LIT/REA	89BIE/QUI2
353.305	0.005	283 042.0	300		7.96E+9	$4s4p\ ^3P^\circ_2$	$4s4d\ ^3D_2$	87LIT/REA	89BIE/QUI2
354.295	0.015	282 251.0	5		8.75E+8	$4s4p\ ^3P^\circ_2$	$4s4d\ ^3D_1$	88CHU/RYA	89BIE/QUI2
373.648	0.005	267 632.0	500		4.56E+10	$4s4p\ ^1P^\circ_1$	$4s4d\ ^1D_2$	87LIT/REA	89BIE/QUI2
400.277	0.005	249 827.0	1		3.36E+8	$4s4p\ ^3P^\circ_1$	$4p^2\ ^1S_0$	87WYA/ART	89BIE/QUI2
400.782	0.015	249 512.0	15		3.18E+10	$4s4d\ ^3D_1$	$4s4f\ ^3F^\circ_2$	88CHU/RYA	89BIE/QUI2
401.866	0.015	248 839.0	20		3.36E+10	$4s4d\ ^3D_2$	$4s4f\ ^3F^\circ_3$	88CHU/RYA	89BIE/QUI2
402.032	0.015	248 736.0	7		5.71E+9	$4s4d\ ^3D_2$	$4s4f\ ^3F^\circ_2$	88CHU/RYA	89BIE/QUI2
403.575	0.015	247 785.0	20		3.76E+10	$4s4d\ ^3D_3$	$4s4f\ ^3F^\circ_4$	88CHU/RYA	89BIE/QUI2
403.917	0.015	247 576.0	10		4.01E+9	$4s4d\ ^3D_3$	$4s4f\ ^3F^\circ_3$	88CHU/RYA	89BIE/QUI2
408.387	0.015	244 866.0	25		5.22E+10	$4s4d\ ^1D_2$	$4s4f\ ^1F^\circ_3$	88CHU/RYA	89BIE/QUI2
473.883	0.005	211 022.6	300		2.33E+9	$4s4p\ ^3P^\circ_1$	$4p^2\ ^3P_2$	87LIT/REA	89BIE/QUI2
475.336	0.005	210 377.5	2500		1.43E+10	$4s^2\ ^1S_0$	$4s4p\ ^1P^\circ_1$	87LIT/REA	11SAN
498.135	0.005	200 748.8	250		5.25E+9	$4s4p\ ^3P^\circ_0$	$4p^2\ ^3P_1$	87LIT/REA	89BIE/QUI2
498.458	0.005	200 618.7	400		7.50E+9	$4s4p\ ^3P^\circ_2$	$4p^2\ ^3P_2$	87LIT/REA	89BIE/QUI2
505.625	0.005	197 775.0	100		1.92E+9	$4s4p\ ^3P^\circ_1$	$4p^2\ ^1D_2$	87LIT/REA	89BIE/QUI2
508.513	0.005	196 651.8	100		3.66E+9	$4s4p\ ^3P^\circ_1$	$4p^2\ ^3P_1$	87LIT/REA	89BIE/QUI2
529.491	0.005	188 860.6	300		1.30E+10	$4s4p\ ^3P^\circ_1$	$4p^2\ ^3P_0$	87LIT/REA	89BIE/QUI2
530.566	0.005	188 478.0	150		1.46E+10	$4s4p\ ^1P^\circ_1$	$4p^2\ ^1S_0$	87LIT/REA	89BIE/QUI2
533.701	0.005	187 370.8	400		3.46E+9	$4s4p\ ^3P^\circ_2$	$4p^2\ ^1D_2$	87LIT/REA	89BIE/QUI2
536.915	0.005	186 249.2	300		5.22E+9	$4s4p\ ^3P^\circ_2$	$4p^2\ ^3P_1$	87LIT/REA	89BIE/QUI2
668.131	0.015	149 671.2	15		1.17E+9	$4s4p\ ^1P^\circ_1$	$4p^2\ ^3P_2$	88CHU/RYA	89BIE/QUI2

TABLE 18. Observed spectral lines of Sr IX—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
671.017	0.015	149 027.5	5		5.81E+7	$4s^2\ ^1S_0$	$4s4p\ ^3P^\circ_1$	88CHU/RYA	11SAN
733.026	0.015	136 420.8	10		1.27E+9	$4s4p\ ^1P^\circ_1$	$4p^2\ ^1D_2$	88CHU/RYA	89BIE/QUI2

6.9. Sr X

Cu isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}4s\ ^2S_{1/2}$
Ionization energy $1\,430\,000 \pm 500$ cm^{-1}; 177.30 ± 0.06 eV

Following the initial publication of three classified lines of the Sr X spectrum by Reader and Acquista [77REA/ACQ], there are two more substantial sets of experimental measurements. Acquista and Reader [81ACQ/REA] used a low-inductance sliding spark to observe 30 transitions between 100 Å and 575 Å involving $3d^{10}nl$ levels. In addition, 12 transitions between 85 Å and 91 Å were classified as having upper levels with a $3d^9$ core. Wyart *et al.* [84WYA/KLE] published a detailed analysis of transitions involving promotion of one of the 3*d* levels to 4*p*, based upon measurements of 23 such transitions in Sr X plus a similar number in isoelectronic ions from Rb to Mo and about 9 transitions each in isoelectronic ions from Ge to Br. For the 12 transitions in both [81ACQ/REA] and [84WYA/KLE] the wavelength agreement was within ±0.002 Å, suggesting that the accuracy of the measurements may be somewhat better than indicated by the uncertainties given by the authors. The ionization energy cited above and in Table 19 is taken from Acquista and Reader [81ACQ/REA], who calculated it using the 4 to 7*s*, 4 to 6*p*, 4 to 6*d*, and 4 to 6*f* series.

For Sr X transitions involving only levels of the $3d^{10}nl$ configurations, Cheng and Kim [78CHE/KIM] produced the most comprehensive set of transition probabilities, which they calculated using the Desclaux code [75DES]. Lindgård *et al.* [80LIN/CUR] used the Coulomb approximation to also obtain transition probabilities for these transitions. Curtis and Theodosiou [89CUR/THE] report additional calculations of oscillator strengths for the $4s-4p$ and $4p-4d$ transitions using a Hartree-Slater potential to represent the ionic core. Biémont [88BIE] used the relativistic Hartree plus statistical exchange computer program developed by Cowan [81COW] to calculate oscillator strengths for the transitions involving energy levels with a $3d^9$ core listed in Table 20. As reported by Biémont, in general the agreement between [78CHE/KIM], [88BIE], and [89CUR/THE] transition probabilities is within 7%. The [80LIN/CUR] values agree to within 10%.

6.9.1 References for Sr X

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TABLE 19. Energy levels of Sr X

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentage	Reference
$3d^{10}4s$	^2S	1/2	0	2		81ACQ/REA
$3d^{10}4p$	$^2P^\circ$	1/2	174 445	2		81ACQ/REA
	$^2P^\circ$	3/2	189 714	2		81ACQ/REA
$3d^{10}4d$	^2D	3/2	465 155	3		81ACQ/REA
	^2D	5/2	467 425	3		81ACQ/REA
$3d^{10}5s$	^2S	1/2	668 319	9		81ACQ/REA
$3d^{10}4f$	$^2F^\circ$	7/2	718 988	4		81ACQ/REA
	$^2F^\circ$	5/2	719 024	4		81ACQ/REA
$3d^{10}5p$	$^2P^\circ$	1/2	739 968	27		81ACQ/REA
	$^2P^\circ$	3/2	746 066	5		81ACQ/REA

TABLE 19. Energy levels of Sr X—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentage	Reference
$3d^{10}5d$	^2D	3/2	862 235	21		81ACQ/REA
	^2D	5/2	863 265	23		81ACQ/REA
$3d^{10}6s$	^2S	1/2	954 720	21		81ACQ/REA
$3d^{10}5f$	$^2F^\circ$	7/2	974 362	13		81ACQ/REA
$3d^{10}5g$	^2G	7/2	989 942	5		81ACQ/REA
	^2G	9/2	989 959	6		81ACQ/REA
$3d^{10}6p$	$^2P^\circ$	1/2	991 045	14		81ACQ/REA
	$^2P^\circ$	3/2	994 146	14		81ACQ/REA
$3d^{10}6d$	^2D	3/2	1 054 502	39		81ACQ/REA
	^2D	5/2	1 055 006	37		81ACQ/REA
$3d^9(^2D)4s4p(^3P)$	^4P	3/2	1 100 380	60	71%	84WYA/KLE
	^4F	3/2	1 107 600	60	88%	84WYA/KLE
	^4P	1/2	1 110 490	60	86%	84WYA/KLE
	^2D	3/2	1 116 930	60	53%	84WYA/KLE
	^2P	3/2	1 122 760	60	59%	84WYA/KLE
	^2P	1/2	1 123 840	60	93%	84WYA/KLE
	^4D	3/2	1 131 930	60	52%	84WYA/KLE
$3d^{10}7s$	^2S	1/2	1 104 921	42		81ACQ/REA
$3d^{10}6f$	$^2F^\circ$	5/2	1 114 236	42		81ACQ/REA
	$^2F^\circ$	7/2	1 114 272	21		81ACQ/REA
$3d^{10}7p$	$^2P^\circ$	3/2	1 127 590	60		84WYA/KLE
	$^2P^\circ$	1/2	1 125 800	60		84WYA/KLE
$3d^9(^2D)4s4p(^1P)$	$^2P^\circ$	3/2	1 163 600	70	93%	84WYA/KLE
	$^2P^\circ$	1/2	1 176 260	70	98%	84WYA/KLE
$3d^9(^2D)4p^2(^1D)$	^2S	1/2	1 304 990	70	60%	84WYA/KLE
	^2P	3/2	1 306 780	70	65%	84WYA/KLE
	^2P	1/2	1 320 260	70	62%	84WYA/KLE
	^2D	3/2	1 328 940	70	55%	84WYA/KLE
	^2F	5/2	1 343 710	70	54%	84WYA/KLE
$3d^9(^2D)4p^2(^3P)$	^4F	3/2	1 319 040	70	56%	84WYA/KLE
	^2D	3/2	1 323 620	70	46%	84WYA/KLE
	^2D	5/2	1 335 720	70	54%	84WYA/KLE
	^2P	1/2	1 337 440	70	86%	84WYA/KLE
	^4P	3/2	1 338 470	70	44%	84WYA/KLE
	^2P	3/2	1 340 520	70	70%	84WYA/KLE
$3d^9(^2D)4p^2(^1S)$	^2D	5/2	1 368 830	70	88%	84WYA/KLE
Sr XI ($3d^{10}$ $^1S_0$)		*Limit*	1 430 000	500		81ACQ/REA

TABLE 20. Observed spectral lines of Sr X

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum									
84.808	0.005	1 179 130	40		1.41E+12	$3d^{10}4p$ $^2P^\circ_{3/2}$	$3d^9(^2D)4p^2(^1S)$ $^2D_{5/2}$	84WYA/KLE	88BIE
85.015	0.005	1 176 260	300		3.67E+12	$3d^{10}4s$ $^2S_{1/2}$	$3d^9(^2D)4s4p(^1P)$ $^2P^\circ_{1/2}$	84WYA/KLE	88BIE
85.940	0.005	1 163 600	700		6.36E+11	$3d^{10}4s$ $^2S_{1/2}$	$3d^9(^2D)4s4p(^1P)$ $^2P^\circ_{3/2}$	84WYA/KLE	88BIE
85.984	0.005	1 163 010	50		5.06E+12	$3d^{10}4p$ $^2P^\circ_{1/2}$	$3d^9(^2D)4p^2(^3P)$ $^2P_{1/2}$	84WYA/KLE	88BIE
86.618	0.005	1 154 490	40		1.40E+12	$3d^{10}4p$ $^2P^\circ_{1/2}$	$3d^9(^2D)4p^2(^1D)$ $^2D_{3/2}$	84WYA/KLE	88BIE
86.654	0.005	1 154 010	40		2.82E+12	$3d^{10}4p$ $^2P^\circ_{3/2}$	$3d^9(^2D)4p^2(^1D)$ $^2F_{5/2}$	84WYA/KLE	88BIE
86.894	0.005	1 150 830	140		8.02E+11	$3d^{10}4p$ $^2P^\circ_{3/2}$	$3d^9(^2D)4p^2(^3P)$ $^2P_{3/2}$	84WYA/KLE	88BIE
87.019	0.005	1 149 170	100		1.05E+12	$3d^{10}4p$ $^2P^\circ_{1/2}$	$3d^9(^2D)4p^2(^3P)$ $^2D_{3/2}$	84WYA/KLE	88BIE
87.050	0.005	1 148 770	80		1.10E+12	$3d^{10}4p$ $^2P^\circ_{3/2}$	$3d^9(^2D)4p^2(^3P)$ $^4P_{3/2}$	84WYA/KLE	88BIE
87.129	0.005	1 147 720	40		4.10E+12	$3d^{10}4p$ $^2P^\circ_{3/2}$	$3d^9(^2D)4p^2(^3P)$ $^2P_{1/2}$	84WYA/KLE	88BIE

TABLE 20. Observed spectral lines of Sr X—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A$_{ki}$ (s^{-1})	Lower level	Upper level	λ Ref.	A$_{ki}$ Ref.
87.258	0.005	1 146 030	300		1.80E+11	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^9(^2D)4p^2(^3P)\ ^2D_{5/2}$	84WYA/KLE	88BIE
87.367	0.005	1 144 600	120		1.12E+12	$3d^{10}4p\ ^2P^{\circ}_{1/2}$	$3d^9(^2D)4p^2(^3P)\ ^4F_{3/2}$	84WYA/KLE	88BIE
88.313	0.005	1 132 340	40		4.57E+12	$3d^{10}4p\ ^2P^{\circ}_{1/2}$	$3d^9(^2D)4p^2(^1D)\ ^2P_{3/2}$	84WYA/KLE	88BIE
88.345	0.005	1 131 930	100		5.88E+12	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4D^{\circ}_{3/2}$	84WYA/KLE	88BIE
88.453	0.005	1 130 540	40	=	9.54E+12	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^9(^2D)4p^2(^1D)\ ^2P_{1/2}$	84WYA/KLE	88BIE
88.453	0.005	1 130 540	40	=	3.46E+12	$3d^{10}4p\ ^2P^{\circ}_{1/2}$	$3d^9(^2D)4p^2(^1D)\ ^2S_{1/2}$	84WYA/KLE	88BIE
88.685	0.005	1 127 590	40			$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}7p\ ^2P^{\circ}_{3/2}$	84WYA/KLE	
88.826	0.005	1 125 800	10			$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}7p\ ^2P^{\circ}_{1/2}$	84WYA/KLE	
88.980	0.005	1 123 850	400		1.43E+12	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^2P^{\circ}_{1/2}$	84WYA/KLE	88BIE
89.065	0.005	1 122 780	600		6.06E+11	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^2P^{\circ}_{3/2}$	84WYA/KLE	88BIE
89.530	0.005	1 116 940	350		2.13E+12	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^2D^{\circ}_{3/2}$	84WYA/KLE	88BIE
90.050	0.005	1 110 490	40		3.34E+13	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4P^{\circ}_{1/2}$	84WYA/KLE	88BIE
90.285	0.005	1 107 600	15		9.35E+13	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4F^{\circ}_{3/2}$	84WYA/KLE	88BIE
90.876	0.005	1 100 400	100		9.23E+12	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4P^{\circ}_{3/2}$	84WYA/KLE	88BIE
100.591	0.005	994 125	25		4.96E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}6p\ ^2P^{\circ}_{3/2}$	81ACQ/REA	78CHE/KIM
100.904	0.005	991 041	10		6.14E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}6p\ ^2P^{\circ}_{1/2}$	81ACQ/REA	78CHE/KIM
109.265	0.005	915 206	3			$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^{10}7s\ ^2S_{1/2}$	81ACQ/REA	
113.629	0.005	880 057	5		1.23E+9	$3d^{10}4p\ ^2P^{\circ}_{1/2}$	$3d^{10}6d\ ^2D_{3/2}$	81ACQ/REA	78CHE/KIM
115.568	0.005	865 291	10		1.96E+9	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^{10}6d\ ^2D_{5/2}$	81ACQ/REA	78CHE/KIM
128.160	0.005	780 275	30		8.18E+9	$3d^{10}4p\ ^2P^{\circ}_{1/2}$	$3d^{10}6s\ ^2S_{1/2}$	81ACQ/REA	78CHE/KIM
130.718	0.005	765 006	80		1.69E+10	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^{10}6s\ ^2S_{1/2}$	81ACQ/REA	78CHE/KIM
134.037	0.005	746 063	1000		6.97E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}5p\ ^2P^{\circ}_{3/2}$	81ACQ/REA	78CHE/KIM
135.141	0.005	739 968	700		9.06E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}5p\ ^2P^{\circ}_{1/2}$	81ACQ/REA	78CHE/KIM
145.390	0.005	687 805	25		4.33E+8	$3d^{10}4p\ ^2P^{\circ}_{1/2}$	$3d^{10}5d\ ^2D_{3/2}$	81ACQ/REA	78CHE/KIM
148.467	0.005	673 550	100		9.69E+8	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^{10}5d\ ^2D_{5/2}$	81ACQ/REA	78CHE/KIM
148.695	0.010	672 518	3	p	1.91E+8	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^{10}5d\ ^2D_{3/2}$	81ACQ/REA	78CHE/KIM
154.064	0.010	649 081	10	p	2.76E+9	$3d^{10}4d\ ^2D_{3/2}$	$3d^{10}6f\ ^2F^{\circ}_{5/2}$	81ACQ/REA	78CHE/KIM
154.596	0.005	646 847.0	15		3.12E+9	$3d^{10}4d\ ^2D_{5/2}$	$3d^{10}6f\ ^2F^{\circ}_{7/2}$	81ACQ/REA	78CHE/KIM
189.853	0.005	526 723.0	30		5.67E+9	$3d^{10}4d\ ^2D_{5/2}$	$3d^{10}6p\ ^2P^{\circ}_{3/2}$	81ACQ/REA	78CHE/KIM
190.154	0.005	525 890.0	10		6.31E+9	$3d^{10}4d\ ^2D_{3/2}$	$3d^{10}6p\ ^2P^{\circ}_{1/2}$	81ACQ/REA	78CHE/KIM
197.263	0.005	506 937.0	25		1.04E+9	$3d^{10}4d\ ^2D_{5/2}$	$3d^{10}5f\ ^2F^{\circ}_{7/2}$	81ACQ/REA	78CHE/KIM
202.480	0.005	493 876.0	3000		1.84E+10	$3d^{10}4p\ ^2P^{\circ}_{1/2}$	$3d^{10}5s\ ^2S_{1/2}$	81ACQ/REA	78CHE/KIM
208.941	0.005	478 604.0	6000		3.84E+10	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^{10}5s\ ^2S_{1/2}$	81ACQ/REA	78CHE/KIM
343.984	0.005	290 711.2	12 000		2.78E+10	$3d^{10}4p\ ^2P^{\circ}_{1/2}$	$3d^{10}4d\ ^2D_{3/2}$	81ACQ/REA	78CHE/KIM
358.885	0.005	278 640.8	40		1.44E+10	$3d^{10}4d\ ^2D_{5/2}$	$3d^{10}5p\ ^2P^{\circ}_{3/2}$	81ACQ/REA	78CHE/KIM
360.088	0.005	277 709.9	15 000		2.98E+10	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^{10}4d\ ^2D_{5/2}$	81ACQ/REA	78CHE/KIM
363.054	0.005	275 441.1	1000		4.85E+9	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^{10}4d\ ^2D_{3/2}$	81ACQ/REA	78CHE/KIM
369.043	0.005	270 971.1	40		4.57E+10	$3d^{10}4f\ ^2F^{\circ}_{7/2}$	$3d^{10}5g\ ^2G_{9/2}$	81ACQ/REA	78CHE/KIM
369.116	0.005	270 917.5	30		4.41E+10	$3d^{10}4f\ ^2F^{\circ}_{5/2}$	$3d^{10}5g\ ^2G_{7/2}$	81ACQ/REA	78CHE/KIM
393.903	0.005	253 869.6	1000		2.91E+10	$3d^{10}4d\ ^2D_{3/2}$	$3d^{10}4f\ ^2F^{\circ}_{5/2}$	81ACQ/REA	78CHE/KIM
397.463	0.010	251 595.7	2	bl	2.03E+9	$3d^{10}4d\ ^2D_{5/2}$	$3d^{10}4f\ ^2F^{\circ}_{5/2}$	81ACQ/REA	78CHE/KIM
397.514	0.005	251 563.5	1500		3.05E+10	$3d^{10}4d\ ^2D_{5/2}$	$3d^{10}4f\ ^2F^{\circ}_{7/2}$	81ACQ/REA	78CHE/KIM
527.108	0.005	189 714.4	20 000		6.78E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	81ACQ/REA	78CHE/KIM
573.248	0.005	174 444.6	10 000		5.26E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}4p\ ^2P^{\circ}_{1/2}$	81ACQ/REA	78CHE/KIM

6.10. Sr XI

Ni isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^{10}\ ^1S_0$
Ionization energy (2 597 000 cm^{-1}); (322 eV)

Although Edlén [47EDL] first reported seeing transitions of the Sr XI spectrum and provided preliminary unpublished measurements which formed the basis of Moore's energy level table [52MOO], the first published wavelengths for the spectrum were three transitions from the ground state to the $3d^94p$ configuration reported by Acquista and Reader [81ACQ/REA]. Wyart *et al.* [84WYA/KLE] remeasured those transitions, along with similar transitions in nearby isoelectronic ions. Wyart and Ryabtsev [86WYA/RYA] then used the isoelectronic sequence to predict values for the levels of the $3d^94s$ and $3d^94p$ configurations. Using a laser-induced plasma Ryabtsev *et al.* [87RYA/CHU] measured the transitions of Sr XI in the 310 Å to 570 Å region and reported 33 levels of the $3d^94s$, $3d^94p$, and $3d^94d$ configurations. An additional analysis of Ni-like ions by Ryabtsev *et al.* [99RYA/CHU] produced wavelengths for several $3d^94d-3d^94f$ transitions, values for some levels of the $3d^94f$ configuration, an isoelectronically fitted value for the $3d^94d\ ^1S_0$ level, and a wavelength for its transition to $3d^94p\ ^1P_1$. Li *et al.* [98LI/NIL] used isoelectronic fitting to report an interpolated wavelength for the $3d^94p\ ^1P_1-3d^94d\ ^1S_0$ transition.

To present the most consistent set of energy levels, in Table 21 we retain the [87RYA/CHU] values where available, and include levels from [99RYA/CHU] for the $3d^94f$ configuration and the $3d^94d$ $^1S_0$ level. The calculated ionization energy is quoted from the Dirac-Fock calculations of Rodrigues *et al.* [04ROD/IND]. By comparison, Ivanova and Tsirekidze [86IVA/TSI] obtained 2 615 000 cm^{-1} using relativistic perturbation theory. In Table 22 the wavelengths are primarily from [87RYA/CHU] and [99RYA/CHU], with the three lowest wavelengths taken from [81ACQ/REA].

Transition probabilities have been calculated by Loginov [90LOG] for transitions involving the $3d^94p$ level. Ryabtsev *et al.* [99RYA/CHU] calculated the probability for the $3d^94p\,^1P^\circ_1 - 3d^94d\,^1S_0$ transition using the Cowan [81COW] code. More recently, Safronova *et al.* [06SAF/SAF] used relativistic many-body calculations to determine transition probabilities for the resonance transitions from the $3d^94p$ $^3P_1$, $^1P_1$, and $^3D_1$ levels.

The *LS* terms were not given for the energy levels in Ryabtsev *et al.* [87RYA/CHU]. However, in the course of calculating transition probabilities for transitions to the ground state, Safronova *et al.* [06SAF/SAF] reported terms for the upper levels. We have utilized those in Tables 21 and 22 with the exception of the $^3D_1$ and $^1P_1$ levels of the $3d^94p$ configuration, which several other researchers [52MOO, 81ACQ/REA, 84WYA/KLE, 90QUI/BIE] indicate should be attached to the 1 203 431 cm^{-1}and 1 193 746 cm^{-1} levels, respectively.

6.10.1 References for Sr XI

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TABLE 21. Energy levels of Sr XI

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3d^{10}$	^1S	0	0	70	87RYA/CHU
$3d^94s$	^3D	3	983 838	10	87RYA/CHU
	^3D	2	987 498	10	87RYA/CHU
	^3D	1	998 429	10	87RYA/CHU
	^1D	2	1 002 542	10	87RYA/CHU
$3d^94p$	^3F	2	1 161 837	10	87RYA/CHU
	^3F	3	1 167 876	10	87RYA/CHU
	^3P	1	1 177 769	10	87RYA/CHU
	^3P	2	1 179 259	10	87RYA/CHU
	^3F	4	1 181 075	10	87RYA/CHU
	^3P	0	1 187 841	10	87RYA/CHU
	^1D	2	1 189 800	10	87RYA/CHU
	^1F	3	1 192 288	10	87RYA/CHU
	^1P	1	1 193 746	10	87RYA/CHU
	^3D	3	1 199 636	10	87RYA/CHU
	^3D	1	1 203 431	10	87RYA/CHU
	^3D	2	1 206 180	10	87RYA/CHU
$3d^94d$	^3S	1	1 458 436	10	87RYA/CHU
	^3G	4	1 473 192	10	87RYA/CHU
	^3G	5	1 473 575	10	87RYA/CHU
	^3P	2	1 474 386	10	87RYA/CHU

TABLE 21. Energy levels of Sr XI—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
	^1P	1	1 474 563?	10	87RYA/CHU
	^3G	3	1 478 000	10	87RYA/CHU
	^3D	3	1 480 569	10	87RYA/CHU
	^3P	0	1 481 977	10	87RYA/CHU
	^3D	2	1 482 500	10	87RYA/CHU
	^3F	4	1 483 207	10	87RYA/CHU
	^3D	1	1 485 234?	10	87RYA/CHU
	^3F	3	1 488 617	10	87RYA/CHU
	^3P	1	1 489 970	10	87RYA/CHU
	^1G	4	1 492 370	10	87RYA/CHU
	^3F	2	1 495 554	10	87RYA/CHU
	^1D	2	1 497 765	10	87RYA/CHU
	^1F	3	1 498 264	10	87RYA/CHU
	^1S	0	[1 573 000]	10	99RYA/CHU
$3d^94f$	^3H	6	1 747 236	30	99RYA/CHU
	^3H	5	1 748 270	30	99RYA/CHU
	^3G	5	1 753 972	30	99RYA/CHU
	^1G	4	1 754 081	30	99RYA/CHU
	^3H	4	1 763 753	30	99RYA/CHU
	^1H	5	1 765 481	30	99RYA/CHU
	^3G	4	1 769 377	30	99RYA/CHU
Sr XII ($3d^9$ ^{2}**D**$_{5/2}$)		*Limit*	2 597 000		04ROD/IND

TABLE 22. Observed spectral lines of Sr XI

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum									
83.095	0.005	1 203 440	700		3.57E+10	$3d^{10}$ $^1S_0$	$3d^94p$ $^3D_1$	81ACQ/REA	06SAF/SAF
83.771	0.005	1 193 730	1000		1.56E+11	$3d^{10}$ $^1S_0$	$3d^94p$ $^1P_1$	81ACQ/REA	06SAF/SAF
84.906	0.005	1 177 770	10		6.66E+8	$3d^{10}$ $^1S_0$	$3d^94p$ $^3P_1$	81ACQ/REA	06SAF/SAF
[263.68]	0.05	379 250			6.9E+10	$3d^94p$ $^1P_1$	$3d^94d$ $^1S_0$	99RYA/CHU	99RYA/CHU
313.975	0.015	318 497	20			$3d^94p$ $^3P_2$	$3d^94d$ $^1D_2$	87RYA/CHU	
316.291	0.015	316 165	35			$3d^94p$ $^3F_2$	$3d^94d$ $^3G_3$	87RYA/CHU	
317.855	0.015	314 609	7			$3d^94p$ $^3F_3$	$3d^94d$ $^3D_2$	87RYA/CHU	
319.800	0.015	312 695	30			$3d^94p$ $^3F_3$	$3d^94d$ $^3D_3$	87RYA/CHU	
319.950	0.015	312 549	60			$3d^94p$ $^3F_2$	$3d^94d$ $^3P_2$	87RYA/CHU	
320.343	0.015	312 165	10			$3d^94p$ $^3P_1$	$3d^94d$ $^3P_1$	87RYA/CHU	
322.448	0.015	310 128	25			$3d^94p$ $^3F_3$	$3d^94d$ $^3G_3$	87RYA/CHU	
323.249	0.015	309 359	40			$3d^94p$ $^3P_2$	$3d^94d$ $^3F_3$	87RYA/CHU	
325.272	0.015	307 435	15	?		$3d^94p$ $^3P_1$	$3d^94d$ $^3D_1$	87RYA/CHU	
327.530	0.015	305 316	80			$3d^94p$ $^3F_3$	$3d^94d$ $^3G_4$	87RYA/CHU	
328.190	0.015	304 702	30			$3d^94p$ $^3P_1$	$3d^94d$ $^3D_2$	87RYA/CHU	
328.755	0.015	304 178	30			$3d^94p$ $^3P_1$	$3d^94d$ $^3P_0$	87RYA/CHU	
328.927	0.015	304 019	40			$3d^94p$ $^1P_1$	$3d^94d$ $^1D_2$	87RYA/CHU	
330.943	0.015	302 167	50			$3d^94p$ $^3F_4$	$3d^94d$ $^3F_4$	87RYA/CHU	
330.984	0.015	302 129	30			$3d^94p$ $^3P_0$	$3d^94d$ $^3P_1$	87RYA/CHU	
331.885	0.015	301 309	45			$3d^94p$ $^3P_2$	$3d^94d$ $^3D_3$	87RYA/CHU	
334.655	0.015	298 815	50			$3d^94p$ $^1D_2$	$3d^94d$ $^3F_3$	87RYA/CHU	
334.865	0.015	298 628	50			$3d^94p$ $^3D_3$	$3d^94d$ $^1F_3$	87RYA/CHU	
336.968	0.015	296 764	65	?		$3d^94p$ $^3P_1$	$3d^94d$ $^1P_1$	87RYA/CHU	
337.155	0.015	296 599	55			$3d^94p$ $^3F_2$	$3d^94d$ $^3S_1$	87RYA/CHU	
337.565	0.015	296 239	20			$3d^94p$ $^1P_1$	$3d^94d$ $^3P_1$	87RYA/CHU	
341.607	0.015	292 734	70			$3d^94p$ $^3D_3$	$3d^94d$ $^1G_4$	87RYA/CHU	
341.707	0.015	292 648	40			$3d^94p$ $^1D_2$	$3d^94d$ $^3D_2$	87RYA/CHU	
341.880	0.015	292 500	100			$3d^94p$ $^3F_4$	$3d^94d$ $^3G_5$	87RYA/CHU	
342.321	0.015	292 123	110	=		$3d^94p$ $^3D_1$	$3d^94d$ $^3F_2$	87RYA/CHU	
342.321	0.015	292 123	110	=		$3d^94p$ $^3F_4$	$3d^94d$ $^3G_4$	87RYA/CHU	
342.369	0.015	292 083	100			$3d^94p$ $^3D_2$	$3d^94d$ $^1F_3$	87RYA/CHU	
342.951	0.015	291 587	20			$3d^94p$ $^3D_2$	$3d^94d$ $^1D_2$	87RYA/CHU	
343.738	0.015	290 919	80			$3d^94p$ $^1F_3$	$3d^94d$ $^3F_4$	87RYA/CHU	

TABLE 22. Observed spectral lines of Sr XI—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
343.990	0.015	290 706	120	bl		$3d^94p\ ^1D_2$	$3d^94d\ ^3D_3$	87RYA/CHU	
345.568	0.015	289 379	50			$3d^94p\ ^3D_2$	$3d^94d\ ^3F_2$	87RYA/CHU	
350.007	0.015	285 709	50			$3d^94p\ ^1F_3$	$3d^94d\ ^3G_3$	87RYA/CHU	
354.495	0.015	282 091	20			$3d^94p\ ^1F_3$	$3d^94d\ ^3P_2$	87RYA/CHU	
363.460	0.015	275 133	25	bl	3.12E+10	$3d^94d\ ^3G_3$	$3d^94f\ ^3H_4$	99RYA/CHU	99RYA/CHU
363.520	0.015	275 088	37	bl	3.26E+10	$3d^94d\ ^3G_4$	$3d^94f\ ^3H_5$	99RYA/CHU	99RYA/CHU
365.415	0.015	273 661	60		3.35E+10	$3d^94d\ ^3G_5$	$3d^94f\ ^3H_6$	99RYA/CHU	99RYA/CHU
366.152	0.015	273 111	30		2.41E+10	$3d^94d\ ^1F_3$	$3d^94f\ ^1G_4$	99RYA/CHU	99RYA/CHU
367.454	0.015	272 143	38		3.25E+10	$3d^94d\ ^1G_4$	$3d^94f\ ^1H_5$	99RYA/CHU	99RYA/CHU
368.850	0.015	271 113	20		2.83E+10	$3d^94d\ ^3F_3$	$3d^94f\ ^3G_4$	99RYA/CHU	99RYA/CHU
369.324	0.015	270 765	50		2.75E+10	$3d^94d\ ^3F_4$	$3d^94f\ ^3G_5$	99RYA/CHU	99RYA/CHU
463.095	0.015	215 938	15		1.43E+9	$3d^94s\ ^3D_2$	$3d^94p\ ^3D_1$	87RYA/CHU	90LOG
463.373	0.015	215 809	10		4.62E+8	$3d^94s\ ^3D_3$	$3d^94p\ ^3D_3$	87RYA/CHU	90LOG
471.366	0.015	212 149	15		6.33E+8	$3d^94s\ ^3D_2$	$3d^94p\ ^3D_3$	87RYA/CHU	90LOG
479.729	0.015	208 451	65		5.54E+9	$3d^94s\ ^3D_3$	$3d^94p\ ^1F_3$	87RYA/CHU	90LOG
481.338	0.015	207 754	35		2.70E+9	$3d^94s\ ^3D_1$	$3d^94p\ ^3D_2$	87RYA/CHU	90LOG
484.869	0.015	206 241	15		1.42E+9	$3d^94s\ ^3D_2$	$3d^94p\ ^1P_1$	87RYA/CHU	90LOG
487.800	0.015	205 002	50		6.28E+9	$3d^94s\ ^3D_1$	$3d^94p\ ^3D_1$	87RYA/CHU	90LOG
488.310	0.015	204 788	40		2.05E+9	$3d^94s\ ^3D_2$	$3d^94p\ ^1F_3$	87RYA/CHU	90LOG
491.078	0.015	203 634	60		5.15E+9	$3d^94s\ ^1D_2$	$3d^94p\ ^3D_2$	87RYA/CHU	90LOG
494.284	0.015	202 313	80	bl	5.76E+9	$3d^94s\ ^3D_2$	$3d^94p\ ^1D_2$	87RYA/CHU	90LOG
507.082	0.015	197 207	100		7.31E+9	$3d^94s\ ^3D_3$	$3d^94p\ ^3F_4$	87RYA/CHU	90LOG
507.378	0.015	197 092	80		6.44E+9	$3d^94s\ ^1D_2$	$3d^94p\ ^3D_3$	87RYA/CHU	90LOG
512.017	0.015	195 306	20		1.43E+9	$3d^94s\ ^3D_1$	$3d^94p\ ^1P_1$	87RYA/CHU	90LOG
521.474	0.015	191 764	30		1.63E+9	$3d^94s\ ^3D_2$	$3d^94p\ ^3P_2$	87RYA/CHU	90LOG
522.566	0.015	191 363	30		7.54E+8	$3d^94s\ ^3D_1$	$3d^94p\ ^1D_2$	87RYA/CHU	90LOG
523.008	0.015	191 202	50		4.19E+9	$3d^94s\ ^1D_2$	$3d^94p\ ^1P_1$	87RYA/CHU	90LOG
525.565	0.015	190 271	50		4.47E+9	$3d^94s\ ^3D_2$	$3d^94p\ ^3P_1$	87RYA/CHU	90LOG
527.949	0.015	189 412	30		6.48E+9	$3d^94s\ ^3D_1$	$3d^94p\ ^3P_0$	87RYA/CHU	90LOG
534.017	0.015	187 260	20		9.35E+8	$3d^94s\ ^1D_2$	$3d^94p\ ^1D_2$	87RYA/CHU	90LOG
543.371	0.015	184 036	25		1.84E+9	$3d^94s\ ^3D_3$	$3d^94p\ ^3F_3$	87RYA/CHU	90LOG
553.009	0.015	180 829	50		3.21E+9	$3d^94s\ ^3D_1$	$3d^94p\ ^3P_2$	87RYA/CHU	90LOG
554.387	0.015	180 379	30		3.80E+9	$3d^94s\ ^3D_2$	$3d^94p\ ^3F_3$	87RYA/CHU	90LOG
561.800	0.015	177 999	75		5.22E+9	$3d^94s\ ^3D_3$	$3d^94p\ ^3F_2$	87RYA/CHU	90LOG
565.879	0.015	176 716	25		9.88E+8	$3d^94s\ ^1D_2$	$3d^94p\ ^3P_2$	87RYA/CHU	90LOG
570.689	0.015	175 227	25		1.46E+9	$3d^94s\ ^1D_2$	$3d^94p\ ^3P_1$	87RYA/CHU	90LOG

6.11. Sr XII

Co isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^9\ ^2D_{5/2}$
Ionization energy (2 920 000 cm^{-1}); (362 eV)

Observation of Sr XII spectral lines was first reported by Edlén [47EDL], and his unpublished wavelengths formed the basis for Moore's compilation of Sr XII energy levels [52MOO]. Three transitions between the ground ($3p^63d^9$) configuration and the $3p^53d^{10}$ were reported by Acquista and Reader [81ACQ/REA]. Those measurements were used by Ekberg *et al*. [87EKB/FEL] to obtain fitted values for energy levels along the cobalt isoelectronic sequence. Twenty resonance transitions from the $3p^63d^84p$ configuration were measured by Ryabtsev and Reader [82RYA/REA]. These transitions were remeasured by Zaikin *et al*. [83ZAI/LOG], who also observed 29 additional $3p^63d^9-3p^63d^84p$ lines. To retain a consistent set of data, the wavelengths, calculated transition probabilities, and energy levels included in Tables 23 and 24 are taken from [83ZAI/LOG], who used the [81ACQ/REA] wavelengths for the $3p^63d^9-3p^53d^{10}$ transitions. Zaikin *et al*. [83ZAI/LOG] did not estimate the uncertainties of the energy levels, so the uncertainties given are calculated from the uncertainties of the wavelengths. The ionization energy cited above is taken from Dirac-Fock values calculated by Rodrigues *et al*. [04ROD/IND].

6.11.1 References for Sr XII

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TABLE 23. Energy levels of Sr XII

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$3p^63d^9$	^{2}D	5/2	0		100%	83ZAI/LOG
	^{2}D	3/2	14 660	70	100%	83ZAI/LOG
$3p^53d^{10}$	^{2}P	3/2	1 086 610	70	99%	83ZAI/LOG
	^{2}P	1/2	1 171 890	70	99%	83ZAI/LOG
$3p^63d^8(^3F)4p$	^{4}D	7/2	1 286 830	120	76% + 13% $3p^63d^8(^3F)4p$ ^{4}F	83ZAI/LOG
	^{4}D	5/2	1 300 740	120	71% + 17% $3p^63d^8(^3F)4p$ ^{4}F	83ZAI/LOG
	^{4}G	5/2	1 307 860	120	66% + 10% $3p^63d^8(^1D)4p$ ^{2}F	83ZAI/LOG
	^{4}F	3/2	1 309 260	120	27% + 41% $3p^63d^8(^3F)4p$ ^{4}D	83ZAI/LOG
	^{4}F	9/2	1 314 180	120	72% + 23% $3p^63d^8(^3F)4p$ ^{2}G	83ZAI/LOG
	^{4}D	3/2	1 314 270	120	36% + 19% $3p^63d^8(^1D)4p$ ^{2}D	83ZAI/LOG
	^{4}D	1/2	1 316 740?	120	73% + 20% $3p^63d^8(^3P)4p$ ^{4}D	83ZAI/LOG
	^{2}F	7/2	1 316 550	120	53% + 26% $3p^63d^8(^3F)4p$ ^{4}F	83ZAI/LOG
	^{2}D	5/2	1 317 950	120	48% + 17% $3p^63d^8(^3F)4p$ ^{4}F	83ZAI/LOG
	^{4}F	5/2	1 325 800	120	36% + 21% $3p^63d^8(^3F)4p$ ^{2}F	83ZAI/LOG
	^{4}F	7/2	1 328 140	120	47% + 36% $3p^63d^8(^3F)4p$ ^{2}F	83ZAI/LOG
	^{2}G	7/2	1 331 270	120	64% + 18% $3p^63d^8(^1D)4p$ ^{2}F	83ZAI/LOG
	^{2}D	3/2	1 335 880	120	38% + 32% $3p^63d^8(^3F)4p$ ^{4}F	83ZAI/LOG
	^{2}F	5/2	1 335 900	120	55% + 13% $3p^63d^8(^1D)4p$ ^{2}F	83ZAI/LOG
$3p^63d^8(^3P)4p$	^{4}P	3/2	1 328 140	120	41% + 31% $3p^63d^8(^3F)4p$ ^{4}F	83ZAI/LOG
	^{4}P	5/2	1 331 060	120	33% + 22% $3p^63d^8(^3F)4p$ ^{2}D	83ZAI/LOG
	^{4}D	3/2	1 351 650	120	66% + 12% $3p^63d^8(^3F)4p$ ^{4}D	83ZAI/LOG
	^{4}D	1/2	1 351 000	120	65% + 18% $3p^63d^8(^1D)4p$ ^{2}P	83ZAI/LOG
	^{4}D	5/2	1 358 570	120	23% + 26% $3p^63d^8(^1D)4p$ ^{2}D	83ZAI/LOG
	^{2}P	3/2	1 363 630	120	66% + 9% $3p^63d^8(^1D)4p$ ^{2}D	83ZAI/LOG
	^{2}D	5/2	1 367 100	120	45% + 36% $3p^63d^8(^3P)4p$ ^{4}D	83ZAI/LOG
	^{4}D	7/2	1 368 820	120	33% + 45% $3p^63d^8(^1D)4p$ ^{2}F	83ZAI/LOG
	^{2}D	3/2	1 370 460	120	77% + 13% $3p^63d^8(^3P)4p$ ^{4}D	83ZAI/LOG
	^{2}S	1/2	1 371 680	120	62% + 23% $3p^63d^8(^3P)4p$ ^{2}P	83ZAI/LOG
	^{2}P	1/2	1 379 400	120	32% + 34% $3p^63d^8(^1D)4p$ ^{2}P	83ZAI/LOG
$3p^63d^8(^1D)4p$	^{2}F	5/2	1 340 960	120	38% + 43% $3p^63d^8(^3P)4p$ ^{4}P	83ZAI/LOG
	^{2}D	3/2	1 346 960	120	29% + 26% $3p^63d^8(^3F)4p$ ^{2}D	83ZAI/LOG
	^{2}F	7/2	1 347 550	120	32% + 34% $3p^63d^8(^1G)4p$ ^{2}F	83ZAI/LOG
	^{2}P	1/2	1 349 180	120	32% + 38% $3p^63d^8(^3P)4p$ ^{2}P	83ZAI/LOG
	^{2}D	5/2	1 349 960	120	35% + 30% $3p^63d^8(^3P)4p$ ^{2}D	83ZAI/LOG
	^{2}P	3/2	1 357 230	120	61% + 21% $3p^63d^8(^1D)4p$ ^{2}D	83ZAI/LOG
$3p^63d^8(^1G)4p$	^{2}F	7/2	1 355 500	120	40% + 46% $3p^63d^8(^3P)4p$ ^{4}D	83ZAI/LOG
	^{2}F	5/2	1 372 760	120	63% + 11% $3p^63d^8(^1D)4p$ ^{2}F	83ZAI/LOG
	^{2}G	7/2	1 383 880	120	88% + 11% $3p^63d^8(^1G)4p$ ^{2}F	83ZAI/LOG
$3p^63d^8(^1S)4p$	^{2}P	1/2	1 433 210	120	93% + 3% $3p^63d^8(^1D)4p$ ^{2}P	83ZAI/LOG
	^{2}P	3/2	1 450 900	120	95% + 2% $3p^63d^8(^1D)4p$ ^{2}P	83ZAI/LOG
Sr XIII ($3d^8$ ^{3}F$_4$)		*Limit*	(2 920 000)			04ROD/IND

TABLE 24. Observed spectral lines of Sr XII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A$_{ki}$ (s^{-1})	Lower level	Upper level	λ Ref.	A$_{ki}$ Ref.
Vacuum									
68.923	0.005	1 450 894	25		6.2E + 9	$3p^63d^9$ ^{2}D$_{5/2}$	$3p^63d^8(^1S)4p$ ^{2}P$_{3/2}$	83ZAI/LOG	83ZAI/LOG
69.630	0.005	1 436 163	5		1.8E + 9	$3p^63d^9$ ^{2}D$_{3/2}$	$3p^63d^8(^1S)4p$ ^{2}P$_{3/2}$	83ZAI/LOG	83ZAI/LOG
70.493	0.005	1 418 581	30		1.3E + 10	$3p^63d^9$ ^{2}D$_{3/2}$	$3p^63d^8(^1S)4p$ ^{2}P$_{1/2}$	83ZAI/LOG	83ZAI/LOG
72.260	0.005	1 383 892	50		6.1E + 9	$3p^63d^9$ ^{2}D$_{5/2}$	$3p^63d^8(^1G)4p$ ^{2}G$_{7/2}$	83ZAI/LOG	83ZAI/LOG
72.968	0.005	1 370 464	35		9.5E + 9	$3p^63d^9$ ^{2}D$_{5/2}$	$3p^63d^8(^3P)4p$ ^{2}D$_{3/2}$	83ZAI/LOG	83ZAI/LOG
73.056	0.005	1 368 813	65		6.5E + 9	$3p^63d^9$ ^{2}D$_{5/2}$	$3p^63d^8(^3P)4p$ ^{4}D$_{7/2}$	83ZAI/LOG	83ZAI/LOG
73.274	0.005	1 364 741	110		7.8E + 10	$3p^63d^9$ ^{2}D$_{3/2}$	$3p^63d^8(^3P)4p$ ^{2}P$_{1/2}$	83ZAI/LOG	83ZAI/LOG

TABLE 24. Observed spectral lines of Sr XII—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
73.334	0.005	1 363 624	160		5.85E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3P)4p\ ^2P_{3/2}$	83ZAI/LOG	83ZAI/LOG
73.607	0.005	1 358 566	90		1.35E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3P)4p\ ^4D_{5/2}$	83ZAI/LOG	83ZAI/LOG
73.632	0.005	1 358 105	400		7.40E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^1G)4p\ ^2F_{5/2}$	83ZAI/LOG	83ZAI/LOG
73.679	0.005	1 357 239	140		2.90E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^1D)4p\ ^2P_{3/2}$	83ZAI/LOG	83ZAI/LOG
73.691	0.005	1 357 018	60		3.2E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3P)4p\ ^2S_{1/2}$	83ZAI/LOG	83ZAI/LOG
73.759	0.005	1 355 767	20		6.5E+9	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3P)4p\ ^2D_{3/2}$	83ZAI/LOG	83ZAI/LOG
73.774	0.005	1 355 491	420		4.59E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^1G)4p\ ^2F_{7/2}$	83ZAI/LOG	83ZAI/LOG
73.940	0.005	1 352 448	70		1.63E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3P)4p\ ^2D_{5/2}$	83ZAI/LOG	83ZAI/LOG
73.983	0.005	1 351 662	20		4.2E+9	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3P)4p\ ^4D_{3/2}$	83ZAI/LOG	83ZAI/LOG
74.076	0.005	1 349 965	240		3.27E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^1D)4p\ ^2D_{5/2}$	83ZAI/LOG	83ZAI/LOG
74.130	0.005	1 348 982	140		4.85E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3P)4p\ ^2P_{3/2}$	83ZAI/LOG	83ZAI/LOG
74.209	0.005	1 347 545	350		4.20E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^1D)4p\ ^2F_{7/2}$	83ZAI/LOG	83ZAI/LOG
74.242	0.005	1 346 946	120		3.73E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^1D)4p\ ^2D_{3/2}$	83ZAI/LOG	83ZAI/LOG
74.409	0.005	1 343 923	40		7.8E+9	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3P)4p\ ^4D_{5/2}$	83ZAI/LOG	83ZAI/LOG
74.573	0.005	1 340 968	15		1.8E+9	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^1D)4p\ ^2F_{5/2}$	83ZAI/LOG	83ZAI/LOG
74.794	0.005	1 337 006	100		2.05E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3P)4p\ ^4D_{3/2}$	83ZAI/LOG	83ZAI/LOG
74.831	0.005	1 336 345	8		3.0E+9	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3P)4p\ ^4D_{1/2}$	83ZAI/LOG	83ZAI/LOG
74.856	0.005	1 335 898	380	=	4.35E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^2F_{5/2}$	83ZAI/LOG	83ZAI/LOG
74.856	0.005	1 335 898	380	=	1.05E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^2D_{3/2}$	83ZAI/LOG	83ZAI/LOG
74.889	0.005	1 335 310	70		1.25E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^1D)4p\ ^2D_{5/2}$	83ZAI/LOG	83ZAI/LOG
74.934	0.005	1 334 508	20		1.25E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^1D)4p\ ^2P_{1/2}$	83ZAI/LOG	83ZAI/LOG
75.058	0.005	1 332 303	280		8.30E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^1D)4p\ ^2D_{3/2}$	83ZAI/LOG	83ZAI/LOG
75.116	0.005	1 331 274	70		4.0E+9	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^2G_{7/2}$	83ZAI/LOG	83ZAI/LOG
75.128	0.005	1 331 062	380		4.23E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3P)4p\ ^4P_{5/2}$	83ZAI/LOG	83ZAI/LOG
75.293	0.005	1 328 145	180		1.33E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^4F_{7/2}$	83ZAI/LOG	83ZAI/LOG
75.398	0.005	1 326 295	45		6.0E+9	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^1D)4p\ ^2F_{5/2}$	83ZAI/LOG	83ZAI/LOG
75.426	0.005	1 325 803	110		1.85E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^4F_{5/2}$	83ZAI/LOG	83ZAI/LOG
75.688	0.005	1 321 213	320	=	1.52E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3F)4p\ ^2F_{5/2}$	83ZAI/LOG	83ZAI/LOG
75.688	0.005	1 321 213	320	=	4.10E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3F)4p\ ^2D_{3/2}$	83ZAI/LOG	83ZAI/LOG
75.875	0.005	1 317 957	540		6.15E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^2D_{5/2}$	83ZAI/LOG	83ZAI/LOG
75.956	0.005	1 316 552	400		2.05E+10	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^2F_{7/2}$	83ZAI/LOG	83ZAI/LOG
76.134	0.005	1 313 474	10		1.2E+9	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3P)4p\ ^4P_{3/2}$	83ZAI/LOG	83ZAI/LOG
76.269	0.005	1 311 149	75		7.3E+9	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3F)4p\ ^4F_{5/2}$	83ZAI/LOG	83ZAI/LOG
76.379	0.005	1 309 260	8		1.0E+9	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^4F_{3/2}$	83ZAI/LOG	83ZAI/LOG
76.461	0.005	1 307 856	30		2.7E+9	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^4G_{5/2}$	83ZAI/LOG	83ZAI/LOG
76.727	0.005	1 303 322	5		6.7E+8	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3F)4p\ ^2D_{5/2}$	83ZAI/LOG	83ZAI/LOG
76.816	0.005	1 301 812	5			$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3F)4p\ ^4D_{1/2}$	83ZAI/LOG	83ZAI/LOG
76.879	0.005	1 300 745	6		3.3E+8	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^4D_{5/2}$	83ZAI/LOG	83ZAI/LOG
76.944	0.005	1 299 646	50		8.0E+9	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3F)4p\ ^4D_{3/2}$	83ZAI/LOG	83ZAI/LOG
77.244	0.005	1 294 599	40		5.2E+9	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3F)4p\ ^4F_{3/2}$	83ZAI/LOG	83ZAI/LOG
77.332	0.005	1 293 126	10		3.3E+8	$3p^63d^9\ ^2D_{3/2}$	$3p^63d^8(^3F)4p\ ^4G_{5/2}$	83ZAI/LOG	83ZAI/LOG
77.711	0.005	1 286 819	10		3.8E+8	$3p^63d^9\ ^2D_{5/2}$	$3p^63d^8(^3F)4p\ ^4D_{7/2}$	83ZAI/LOG	83ZAI/LOG
86.413	0.005	1 157 230	580		4.29E+11	$3p^63d^9\ ^2D_{3/2}$	$3p^53d^{10}\ ^2P_{1/2}$	81ACQ/REA	83ZAI/LOG
92.029	0.005	1 086 610	1200		3.32E+11	$3p^63d^9\ ^2D_{5/2}$	$3p^53d^{10}\ ^2P_{3/2}$	81ACQ/REA	83ZAI/LOG
93.288	0.005	1 071 950	250		3.55E+10	$3p^63d^9\ ^2D_{3/2}$	$3p^53d^{10}\ ^2P_{3/2}$	81ACQ/REA	83ZAI/LOG

6.12. Sr XIII

Fe isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^8\ ^3F_4$
Ionization energy (3 291 000 cm^{-1}); (408 eV)

The observation of a cluster of Sr XIII spectral lines was first reported by Edlén [47EDL], though no wavelengths were determined. There are three major investigations of the Sr XIII spectrum. The first, by Reader and Ryabtsev [81REA/RYA], reported 26 transitions between the ground configuration and the $3p^53d^9$ configuration. In a follow-up paper [83RYA] the energy of the $3p^63d^8\ ^1S_0$ level was revised. Ryabtsev [83RYA] also focused on transitions between the $3p^63d^8$ and $3p^53d^9$ configurations, which lie in the 80 Å to 100 Å range. He remeasured many of the same lines and brought the total number of lines measured to 44. Subsequently Podobedova [84POD] analyzed the spectrum in the 65–70 Å region, which contains transitions between the $3p^63d^8$ and $3p^63d^74p$ configurations. The $3d^7$ core of the upper configuration has two possible ^{2}D states, one of which would have a Racah seniority number $\nu = 3$ while the other would have $\nu = 1$. To distinguish between these core states in Tables 25 and 26, the one with $\nu = 1$ will be designated (^{2}D1), while that with $\nu = 3$ will be designated (^{2}D2).

Values for wavelengths, energy levels, and calculated transition probabilities are taken from the papers of Ryabtsev [83RYA] and Podobedova [84POD]. The calculated ionization energy is quoted from the Dirac-Fock values calculated by Rodrigues *et al*. [04ROD/IND].

6.12.1 References for Sr XIII

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TABLE 25. Energy levels of Sr XIII

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$3p^63d^8$	^{3}F	4	0		99%	83RYA
	^{3}F	3	13 060	50	100%	83RYA
	^{3}F	2	17 920	50	79% + 18% $3p^63d^8$ ^{1}D	83RYA
	^{1}D	2	36 780	50	36% + 50% $3p^63d^8$ ^{3}P + 14% $3p^63d^8$ ^{3}F	83RYA
	^{3}P	1	50 840	50	100%	83RYA
	^{3}P	0	51 200	50	97%	83RYA
	^{3}P	2	52 980	50	48% + 47% $3p^63d^8$ ^{1}D	83RYA
	^{1}G	4	62 100	50	99%	83RYA
	^{1}S	0	136 650	50	97%	83RYA
$3p^53d^9$	^{3}F	4	1 046 840	50	100%	83RYA
	^{1}D	2	1 059 680	50	76% + 16% $3p^63d^8$ ^{3}F	83RYA
	^{3}F	3	1 079 130	50	79% + 20% $3p^63d^8$ ^{3}D	83RYA
	^{3}D	2	1 106 140	50	45% + 30% $3p^63d^8$ ^{3}P + 23% $3p^63d^8$ ^{3}F	83RYA
	^{3}P	1	1 115 090	50	84% + 16% $3p^63d^8$ ^{3}D	83RYA
	^{3}P	0	1 117 280	50	100%	83RYA
	^{3}D	3	1 126 700	50	74% + 18% $3p^63d^8$ ^{3}F	83RYA
	^{3}D	1	1 146 980	50	69% + 22% $3p^63d^8$ ^{1}P + 9% $3p^63d^8$ ^{3}P	83RYA
	^{3}F	2	1 156 490	50	59% + 19% $3p^63d^8$ ^{1}D + 12% $3p^63d^8$ ^{3}D	83RYA
	^{3}P	2	1 185 240	50	52% + 42% $3p^63d^8$ ^{3}D	83RYA
	^{1}F	3	1 257 450	50	92%	83RYA
	^{1}P	1	1 261 320	50	77% + 16% $3p^63d^8$ ^{3}D	83RYA
$3p^63d^7(^4F)4p$	^{5}F	4	1 468 000	120	24% + 27% $3p^63d^7(^4F)4p$ ^{3}F + 24% $3p^63d^7(^4F)4p$ ^{5}D	84POD
	^{3}F	4	1 474 870	120	41% + 25% $3p^63d^7(^4F)4p$ ^{5}F + 14% $3p^63d^7(^4F)4p$ ^{5}G	84POD
	^{3}D	3	1 478 160	120	56% + 17% $3p^63d^7(^4F)4p$ ^{3}F	84POD
	^{3}D	2	1 485 250	120	44% + 15% $3p^63d^7(^4F)4p$ ^{5}F	84POD
	^{3}F	3	1 485 630	120	51% + 15% $3p^63d^7(^4F)4p$ ^{3}D + 14% $3p^63d^7(^4F)4p$ ^{5}F	84POD
	^{3}F	2	1 488 830	120	48% + 14% $3p^63d^7(^4F)4p$ ^{5}G	84POD
	^{3}D	1	1 491 890	120	45% + 13% $3p^63d^7(^2P)4p$ ^{3}D + 12% $3p^63d^7(^4F)4p$ ^{5}D	84POD
$3p^63d^7(^2G)4p$	^{3}F	4	1 492 990	120	40% + 17% $3p^63d^7(^4F)4p$ ^{3}F + 12% $3p^63d^7(^2G)4p$ ^{3}D	84POD
	^{3}H	4	1 500 420	120	73%	84POD
	^{3}G	3	1 504 940	120	34% + 27% $3p^63d^7(^2G)4p$ ^{3}F + 19% $3p^63d^7(^2G)4p$ ^{1}F	84POD
	^{1}G	4	1 512 160	120	29% + 30% $3p^63d^7(^2G)4p$ ^{3}F + 12% $3p^63d^7(^2H)4p$ ^{1}G	84POD
	^{3}G	5	1 514 240	120	58% + 28% $3p^63d^7(^2H)4p$ ^{3}I	84POD
	^{3}F	3	1 522 330	120	33% + 36% $3p^63d^7(^2G)4p$ ^{3}G	84POD
	^{1}H	5	1 523 960	120	51% + 39% $3p^63d^7(^2G)4p$ ^{3}H	84POD
	^{1}F	3	1 538 410	120	29% + 11% $3p^63d^7(^2P)4p$ ^{3}D	84POD
$3p^63d^7(^2P)4p$	^{3}P	2	1 496 000	120	10% + 19% $3p^63d^7(^4F)4p$ ^{3}D + 15% $3p^63d^7(^4F)4p$ ^{3}F	84POD
	^{1}D	2	1 506 950	120	12% + 21% $3p^63d^7(^2P)4p$ ^{3}P + 18% $3p^63d^7(^4P)4p$ ^{5}P	84POD
	^{3}D	3	1 509 270	120	29% + 17% $3p^63d^7(^4P)4p$ ^{5}D + 13% $3p^63d^7(^4P)4p$ ^{5}P	84POD
	^{3}D	1	1 517 160	120	34% + 15% $3p^63d^7(^4P)4p$ ^{3}S + 15% $3p^63d^7(^2P)4p$ ^{3}P	84POD
	^{1}P	1	1 522 100	120	23% + 29% $3p^63d^7(^4P)4p$ ^{3}P + 12% $3p^63d^7(^4P)4p$ ^{3}S	84POD
	^{3}D	2	1 533 040	120	40%	84POD
	^{3}S	1	1 538 630	120	13% + 27% $3p^63d^7(^2D2)4p$ ^{3}P + 21% $3p^63d^7(^2P)4p$ ^{3}P	84POD
$3p^63d^7(^2H)4p$	^{3}G	5	1 506 210	120	83%	84POD
	^{3}G	4	1 519 270	120	65% + 10% $3p^63d^7(^2G)4p$ ^{3}G	84POD
	^{3}I	5	1 519 330	120	49% + 17% $3p^63d^7(^2G)4p$ ^{3}H + 13% $3p^63d^7(^2G)4p$ ^{1}H	84POD
	^{3}G	3	1 530 630	120	29% + 12% $3p^63d^7(^2D2)4p$ ^{1}F + 11% $3p^63d^7(^4P)4p$ ^{5}P	84POD
	^{3}H	5	1 538 490	120	67% + 18% $3p^63d^7(^2H)4p$ ^{1}H	84POD
	^{1}G	4	1 541 700	120	53% + 38% $3p^63d^7(^2G)4p$ ^{1}G	84POD

TABLE 25. Energy levels of Sr XIII—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
	^{1}H	5	1 555 090	120	72% + 13% $3p^63d^7(^2H)4p\ ^3H$	84POD
$3p^63d^7(^4P)4p$	^{5}P	3	1 512 930	120	13% + 17% $3p^63d^7(^2G)4p\ ^1F$ + 15% $3p^63d^7(^2H)4p\ ^3G$	84POD
	^{5}P	2	1 514 040	120	25% + 15% $3p^63d^7(^4P)4p\ ^3P$ + 12% $3p^63d^7(^4P)4p\ ^5D$	84POD
	^{3}S	1	1 518 920	120	28% + 31% $3p^63d^7(^4P)4p\ ^5P$ + 17% $3p^63d^7(^2P)4p\ ^1P$	84POD
	^{3}D	3	1 519 280	120	52% + 30% $3p^63d^7(^4P)4p\ ^5P$	84POD
	^{3}D	2	1 519 740	120	34% + 22% $3p^63d^7(^2D2)4p\ ^3P$ + 16% $3p^63d^7(^4P)4p\ ^3P$	84POD
	^{3}P	1	1 529 770	120	29% + 24% $3p^63d^7(^2P)4p\ ^3S$ + 22% $3p^63d^7(^4P)4p\ ^3D$	84POD
$3p^63d^7(^2D2)4p$	^{3}D	3	1 515 940	120	30% + 11% $3p^63d^7(^2G)4p\ ^1F$ + 10% $3p^63d^7(^2D2)4p\ ^3F$	84POD
	^{3}F	2	1 525 220	120	34% + 17% $3p^63d^7(^2P)4p\ ^3P$ + 10% $3p^63d^7(^4P)4p\ ^3D$	84POD
	^{3}D	2	1 536 640	120	10% + 17% $3p^63d^7(^2D2)4p\ ^3P$ + 16% $3p^63d^7(^2D2)4p\ ^1D$	84POD
	^{3}P	2	1 545 250	120	20% + 20% $3p^63d^7(^2P)4p\ ^1D$ + 17% $3p^63d^7(^4P)4p\ ^3P$	84POD
	^{1}F	3	1 548 420	120	25% + 15% $3p^63d^7(^2F)4p\ ^3D$ + 12% $3p^63d^7(^2D2)4p\ ^3F$	84POD
	^{1}P	1	1 549 600	120	55% + 12% $3p^63d^7(^2P)4p\ ^3S$	84POD
	^{3}P	1	1 558 300	120	74% + 18% $3p^63d^7(^2P)4p\ ^1P$	84POD
$3p^63d^7(^2F)4p$	^{3}G	3	1 555 400	120	39% + 21% $3p^63d^7(^2H)4p\ ^3G$ + 11% $3p^63d^7(^2F)4p\ ^3D$	84POD
	^{3}D	3	1 563 960	120	26% + 16% $3p^63d^7(^2F)4p\ ^3F$ + 14% $3p^63d^7(^2P)4p\ ^3D$	84POD
	^{3}F	3	1 568 880	120	52% + 17% $3p^63d^7(^2F)4p\ ^3D$ + 17% $3p^63d^7(^2F)4p\ ^3G$	84POD
	^{3}D	1	1 570 480	120	79%	84POD
	^{1}G	4	1 571 370	120	?% + 38% $3p^63d^7(^2F)4p\ ^3G$	84POD
	^{3}D	2	1 573 320	120	42% + 37% $3p^63d^7(^2F)4p\ ^1D$	84POD
	^{1}F	3	1 587 200	120	82% + 10% $3p^63d^7(^2F)4p\ ^3D$	84POD
$3p^63d^7(^2D1)4p$	^{1}P	1	1 624 060	120	30% + 25% $3p^63d^7(^2D2)4p\ ^3D$ + 22% $3p^63d^7(^2D1)4p\ ^3P$	84POD
	^{3}D	1	1 634 700	120	42% + 39% $3p^63d^7(^2D1)4p\ ^1P$ + 10% $3p^63d^7(^2D2)4p\ ^3D$	84POD
Sr XIV ($3d^7\ ^4F_{9/2}$)		*Limit*	(3 291 000)			04ROD/IND

TABLE 26. Observed spectral lines of Sr XIII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum									
65.570	0.005	1 525 090	160		1.05E+11	$3p^63d^8\ ^1G_4$	$3p^63d^7(^2F)4p\ ^1F_3$	84POD	84POD
65.683	0.005	1 522 460	60		3.20E+10	$3p^63d^8\ ^3P_1$	$3p^63d^7(^2F)4p\ ^3D_2$	84POD	84POD
65.774	0.005	1 520 360	50		2.84E+10	$3p^63d^8\ ^3P_2$	$3p^63d^7(^2F)4p\ ^3D_2$	84POD	84POD
65.821	0.005	1 519 270	170	=	4.53E+10	$3p^63d^8\ ^3P_0$	$3p^63d^7(^2F)4p\ ^3D_1$	84POD	84POD
65.821	0.005	1 519 270	170	=	4.64E+10	$3p^63d^8\ ^3F_4$	$3p^63d^7(^4P)4p\ ^3D_3$	84POD	84POD
65.849	0.005	1 518 630	90		3.56E+10	$3p^63d^8\ ^1D_2$	$3p^63d^7(^2F)4p\ ^3G_3$	84POD	84POD
65.967	0.005	1 515 910	130	=	3.63E+10	$3p^63d^8\ ^3F_4$	$3p^63d^7(^2D2)4p\ ^3D_3$	84POD	84POD
65.967	0.005	1 515 910	130	=	1.64E+10	$3p^63d^8\ ^3P_2$	$3p^63d^7(^2F)4p\ ^3F_3$	84POD	84POD
66.001	0.005	1 515 130	40		1.86E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^2P)4p\ ^3D_2$	84POD	84POD
66.040	0.005	1 514 230	90		9.36E+9	$3p^63d^8\ ^3F_4$	$3p^63d^7(^2G)4p\ ^3G_5$	84POD	84POD
66.106	0.005	1 512 720	110		3.43E+10	$3p^63d^8\ ^1D_2$	$3p^63d^7(^2D2)4p\ ^1P_1$	84POD	84POD
66.130	0.005	1 512 170	140	=	3.13E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^2H)4p\ ^3G_3$	84POD	84POD
66.130	0.005	1 512 170	140	=	2.34E+10	$3p^63d^8\ ^3F_4$	$3p^63d^7(^2G)4p\ ^1G_4$	84POD	84POD
66.130	0.005	1 512 170	140	=	4.02E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^2D2)4p\ ^3F_2$	84POD	84POD
66.153	0.005	1 511 650	50		1.97E+10	$3p^63d^8\ ^1D_2$	$3p^63d^7(^2D2)4p\ ^1F_3$	84POD	84POD
66.182	0.005	1 510 980	60		3.01E+10	$3p^63d^8\ ^3P_2$	$3p^63d^7(^2F)4p\ ^3D_3$	84POD	84POD
66.257	0.005	1 509 270	190	=	3.53E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^2G)4p\ ^3F_3$	84POD	84POD
66.257	0.005	1 509 270	190	=	2.17E+10	$3p^63d^8\ ^3F_4$	$3p^63d^7(^2P)4p\ ^3D_3$	84POD	84POD
66.257	0.005	1 509 270	190	=	1.02E+10	$3p^63d^8\ ^1G_4$	$3p^63d^7(^2F)4p\ ^1G_4$	84POD	84POD
66.337	0.005	1 507 450	80		3.53E+10	$3p^63d^8\ ^3P_1$	$3p^63d^7(^2D2)4p\ ^3P_1$	84POD	84POD
66.373	0.005	1 506 640	100		3.78E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^4P)4p\ ^3D_2$	84POD	84POD
66.392	0.005	1 506 210	1000	=	1.01E+11	$3p^63d^8\ ^3F_4$	$3p^63d^7(^2H)4p\ ^3G_5$	84POD	84POD
66.392	0.005	1 506 210	1000	=	1.04E+11	$3p^63d^8\ ^3F_3$	$3p^63d^7(^2H)4p\ ^3G_4$	84POD	84POD
66.392	0.005	1 506 210	1000	=	1.29E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^4P)4p\ ^3D_3$	84POD	84POD
66.438	0.005	1 505 160	150		8.20E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^2G)4p\ ^3F_2$	84POD	84POD
66.481	0.005	1 504 190	90		4.93E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^2P)4p\ ^1P_1$	84POD	84POD
66.584	0.005	1 501 860	110	=	2.53E+10	$3p^63d^8\ ^1G_4$	$3p^63d^7(^2F)4p\ ^3D_3$	84POD	84POD
66.584	0.005	1 501 860	110	=	1.84E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^4P)4p\ ^3D_2$	84POD	84POD
66.584	0.005	1 501 860	110	=	3.97E+10	$3p^63d^8\ ^1D_2$	$3p^63d^7(^2P)4p\ ^3S_1$	84POD	84POD

TABLE 26. Observed spectral lines of Sr XIII—Continued

λ (Å)	Uncertainty (Å)	σ (cm⁻¹)	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
66.624	0.005	1 500 960	60		4.93E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^4P)4p\ ^3S_1$	84POD	84POD
66.648	0.005	1 500 420	40		8.89E+9	$3p^63d^8\ ^3F_4$	$3p^63d^7(^2G)4p\ ^3H_4$	84POD	84POD
66.673	0.005	1 499 860	210	=	6.63E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^4P)4p\ ^5P_3$	84POD	84POD
66.673	0.005	1 499 860	210	=	8.74E+10	$3p^63d^8\ ^1D_2$	$3p^63d^7(^2D2)4p\ ^3D_2$	84POD	84POD
66.753	0.005	1 498 060	100	=	3.34E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^2D2)4p\ ^3D_3$	84POD	84POD
66.753	0.005	1 498 060	100	=	8.17E+10	$3p^63d^8\ ^1S_0$	$3p^63d^7(^2D1)4p\ ^3D_1$	84POD	84POD
66.817	0.005	1 496 630	130		1.39E+11	$3p^63d^8\ ^3P_2$	$3p^63d^7(^2D2)4p\ ^1P_1$	84POD	84POD
66.888	0.005	1 495 040	50		1.27E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^4P)4p\ ^5P_3$	84POD	84POD
66.940	0.005	1 493 880	50	=	2.27E+10	$3p^63d^8\ ^1D_2$	$3p^63d^7(^2H)4p\ ^3G_3$	84POD	84POD
66.940	0.005	1 493 880	50	=	1.98E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^2P)4p\ ^1D_2$	84POD	84POD
66.979	0.005	1 493 010	880	=	5.33E+10	$3p^63d^8\ ^1G_4$	$3p^63d^7(^2H)4p\ ^1H_5$	84POD	84POD
66.979	0.005	1 493 010	880	=	1.02E+11	$3p^63d^8\ ^3F_4$	$3p^63d^7(^2G)4p\ ^3F_4$	84POD	84POD
66.979	0.005	1 493 010	880	=	6.37E+10	$3p^63d^8\ ^1D_2$	$3p^63d^7(^4P)4p\ ^3P_1$	84POD	84POD
67.012	0.005	1 492 270	80		2.72E+10	$3p^63d^8\ ^3P_2$	$3p^63d^7(^2D)4p\ ^3P_2$	84POD	84POD
67.032	0.005	1 491 820	60		5.94E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^2G)4p\ ^3G_3$	84POD	84POD
67.231	0.005	1 487 410	50		6.67E+10	$3p^63d^8\ ^1S_0$	$3p^63d^7(^2D1)4p\ ^1P_1$	84POD	84POD
67.246	0.005	1 487 080	110		2.61E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^2G)4p\ ^3G_3$	84POD	84POD
67.312	0.005	1 485 620	190		4.50E+10	$3p^63d^8\ ^3F_4$	$3p^63d^7(^4F)4p\ ^3F_3$	84POD	84POD
67.321	0.005	1 485 420	190		6.03E+10	$3p^63d^8\ ^3P_2$	$3p^63d^7(^2G)4p\ ^1F_3$	84POD	84POD
67.434	0.005	1 482 930	80		1.94E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^2P)4p\ ^3D_3$	84POD	84POD
67.469	0.005	1 482 160	30		4.70E+10	$3p^63d^8\ ^1D_2$	$3p^63d^7(^4P)4p\ ^3S_1$	84POD	84POD
67.589	0.005	1 479 530	680		2.42E+11	$3p^63d^8\ ^1G_4$	$3p^63d^7(^2H)4p\ ^1G_4$	84POD	84POD
67.652	0.005	1 478 150	160		3.67E+10	$3p^63d^8\ ^3F_4$	$3p^63d^7(^4F)4p\ ^3D_3$	84POD	84POD
67.714	0.005	1 476 800	150		3.63E+10	$3p^63d^8\ ^3P_2$	$3p^63d^7(^4P)4p\ ^3P_1$	84POD	84POD
67.773	0.005	1 475 510	50	=	1.64E+10	$3p^63d^8\ ^1G_4$	$3p^63d^7(^2H)4p\ ^3H_5$	84POD	84POD
67.773	0.005	1 475 510	50	=	1.80E+10	$3p^63d^8\ ^1G_4$	$3p^63d^7(^2G)4p\ ^1F_3$	84POD	84POD
67.802	0.005	1 474 880	180		3.09E+10	$3p^63d^8\ ^3F_4$	$3p^63d^7(^4F)4p\ ^3F_4$	84POD	84POD
67.884	0.005	1 473 100	60		4.73E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^4F)4p\ ^3D_1$	84POD	84POD
67.912	0.005	1 472 490	40		2.50E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^4F)4p\ ^3F_3$	84POD	84POD
67.923	0.005	1 472 260	30		2.46E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^4F)4p\ ^3D_2$	84POD	84POD
67.985	0.005	1 470 910	90		3.12E+10	$3p^63d^8\ ^3F_2$	$3p^63d^7(^4F)4p\ ^3F_2$	84POD	84POD
68.014	0.005	1 470 290	25		1.64E+10	$3p^63d^8\ ^1D_2$	$3p^63d^7(^2P)4p\ ^1D_2$	84POD	84POD
68.120	0.005	1 468 000	220		2.78E+10	$3p^63d^8\ ^3F_4$	$3p^63d^7(^4F)4p\ ^3F_4$	84POD	84POD
68.198	0.005	1 466 320	30		2.67E+10	$3p^63d^8\ ^3P_1$	$3p^63d^7(^2P)4p\ ^3D_1$	84POD	84POD
68.255	0.005	1 465 090	60		2.06E+10	$3p^63d^8\ ^3F_3$	$3p^63d^7(^4F)4p\ ^3D_3$	84POD	84POD
68.343	0.005	1 463 210	50		1.68E+10	$3p^63d^8\ ^3P_1$	$3p^63d^7(^4P)4p\ ^5P_2$	84POD	84POD
68.406	0.005	1 461 860	90		1.21E+10	$3p^63d^8\ ^1G_4$	$3p^63d^7(^2G)4p\ ^1H_5$	84POD	84POD
68.490	0.005	1 460 070	60		1.03E+10	$3p^63d^8\ ^3P_2$	$3p^63d^7(^4P)4p\ ^5P_3$	84POD	84POD
68.623	0.005	1 457 240	50		8.00E+9	$3p^63d^8\ ^1G_4$	$3p^63d^7(^2H)4p\ ^3I_5$	84POD	84POD
69.375	0.005	1 441 440	50		8.57E+9	$3p^63d^8\ ^1D_2$	$3p^63d^7(^4F)4p\ ^3D_3$	84POD	84POD
69.715	0.005	1 434 410	30		1.42E+10	$3p^63d^8\ ^3P_1$	$3p^63d^7(^4F)4p\ ^3D_2$	84POD	84POD
78.528	0.005	1 273 430	5		2.43E+9	$3p^63d^8\ ^3F_4$	$3p^53d^9\ ^1F_3$	83RYA	83RYA
80.361	0.005	1 244 380	15		1.39E+10	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^1F_3$	83RYA	83RYA
80.675	0.005	1 239 540	5		6.86E+9	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^1F_3$	83RYA	83RYA
81.663	0.005	1 224 540	40		1.21E+11	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^1P_1$	83RYA	83RYA
82.758	0.005	1 208 340	75		1.83E+11	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^1P_1$	83RYA	83RYA
83.022	0.005	1 204 500	15		1.81E+10	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^1F_3$	83RYA	83RYA
83.656	0.005	1 195 370	900		5.77E+11	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^1F_3$	83RYA	83RYA
85.311	0.005	1 172 180	150		1.50E+11	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3P_2$	83RYA	83RYA
85.666	0.005	1 167 320	20		3.06E+10	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3P_2$	83RYA	83RYA
87.073	0.005	1 148 460	30		3.72E+10	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3P_2$	83RYA	83RYA
87.456	0.005	1 143 430	30		1.28E+10	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3F_2$	83RYA	83RYA
87.827	0.005	1 138 600	80		5.96E+10	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3F_2$	83RYA	83RYA
88.154	0.005	1 134 380	100		1.20E+11	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^3P_2$	83RYA	83RYA
88.569	0.005	1 129 060	300		3.31E+11	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3D_1$	83RYA	83RYA
88.320	0.005	1 132 250	40		5.20E+10	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3P_2$	83RYA	83RYA
88.755	0.005	1 126 700	700		2.44E+11	$3p^63d^8\ ^3F_4$	$3p^53d^9\ ^3D_3$	83RYA	83RYA
88.916	0.005	1 124 660	30		1.26E+11	$3p^63d^8\ ^1S_0$	$3p^53d^9\ ^1P_1$	83RYA	83RYA
89.798	0.005	1 113 610	200		8.57E+10	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3D_3$	83RYA	83RYA
89.309	0.005	1 119 710	15		1.86E+10	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3F_2$	83RYA	83RYA
90.621	0.005	1 103 500	200		1.22E+11	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3F_2$	83RYA	83RYA
91.145	0.005	1 097 150	10		2.30E+10	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3P_1$	83RYA	83RYA
91.258	0.005	1 095 790	40		7.80E+10	$3p^63d^8\ ^3P_0$	$3p^53d^9\ ^3D_1$	83RYA	83RYA

TABLE 26. Observed spectral lines of Sr XIII—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
91.484	0.005	1 093 090	450		1.97E+11	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3D_2$	83RYA	83RYA
91.754	0.005	1 089 870	100		3.80E+10	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3D_3$	83RYA	83RYA
92.738	0.005	1 078 310	150		1.20E+11	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3P_1$	83RYA	83RYA
92.667	0.005	1 079 130	450		1.19E+11	$3p^63d^8\ ^3F_4$	$3p^53d^9\ ^3F_3$	83RYA	83RYA
93.137	0.005	1 073 690	10		1.17E+10	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3D_3$	83RYA	83RYA
93.514	0.005	1 069 360	150		7.16E+10	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3D_2$	83RYA	83RYA
93.770	0.005	1 066 440	80		2.83E+11	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^3P_0$	83RYA	83RYA
93.801	0.005	1 066 090	200		4.53E+10	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3F_3$	83RYA	83RYA
93.964	0.005	1 064 240	80		9.23E+10	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^3P_1$	83RYA	83RYA
93.990	0.005	1 063 940	30		4.47E+10	$3p^63d^8\ ^3P_0$	$3p^53d^9\ ^3P_1$	83RYA	83RYA
93.934	0.005	1 064 580	50		2.34E+10	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^3D_3$	83RYA	83RYA
94.154	0.005	1 062 090	20		2.63E+10	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3P_1$	83RYA	83RYA
94.230	0.005	1 061 230	20		6.14E+9	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3F_3$	83RYA	83RYA
94.950	0.005	1 053 190	50		4.18E+10	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3D_2$	83RYA	83RYA
95.525	0.005	1 046 850	1000		1.12E+11	$3p^63d^8\ ^3F_4$	$3p^53d^9\ ^3F_4$	83RYA	83RYA
95.992	0.005	1 041 750	300		8.82E+10	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^1D_2$	83RYA	83RYA
96.730	0.005	1 033 810	50		7.33E+9	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3F_4$	83RYA	83RYA
97.443	0.005	1 026 240	70		9.14E+9	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3F_3$	83RYA	83RYA
97.762	0.005	1 022 890	250		7.04E+10	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^1D_2$	83RYA	83RYA
98.320	0.005	1 017 090	20		6.57E+9	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^3F_3$	83RYA	83RYA
99.131	0.005	1 008 770	20		6.80E+9	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^1D_2$	83RYA	83RYA
99.340	0.005	1 006 640	60		2.20E+10	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^1D_2$	83RYA	83RYA

6.13. Sr XIV

Mn isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^7\ ^4F_{9/2}$
Ionization energy (3 662 000 cm^{-1}); (454 eV)

Wavelengths of the spectrum of Sr XIV were first predicted by Wyart *et al*. [83WYA/KLA] based on an analysis of isoelectronic ions from Y XV to Ag XXIII. Wyart and Ryabtsev [99WYA/RYA] used a low-inductance vacuum spark source to observe the transitions in the 80 Å to 105 Å region, locating many of the levels of the $3p^63d^7$ and $3p^53d^8$ configurations, which are listed in Table 27. There are two doublet D levels in the ground configuration, which we have distinguished by adding a 1 or 2 after the "D" in the term. As can be seen in the energy level table, several of the levels are highly mixed. In the case of the level at 1 080 540 cm^{-1}, there was no unique meaningful label which could be applied. Hence we have given it a designation based on its energy and *J* value. The uncertainties listed for the level values were determined from the wavelength uncertainties. The transition probabilities and leading percentages given in Table 28 were calculated by Wyart and Ryabtsev [99WYA/RYA] using the semi-relativistic Hartree-Fock code developed by Cowan [81COW]. The ionization energy was taken from the Dirac-Fock calculations of Rodrigues *et al*. [04ROD/IND].

6.13.1 References for Sr XIV

81COW R. D. Cowan, *The Theory of Atomic Structure and Spectra* (U. California, Berkeley, CA, 1981).

83WYA/KLA J.-F. Wyart, M. Klapisch, J.-L. Schwob, and P. Mandelbaum, Phys. Scr. **28**, 381 (1983).

99WYA/RYA J.-F. Wyart and A. N. Ryabtsev, Phys. Scr. **60**, 527 (1999).

04ROD/IND G. C. Rodrigues, P. Indelicato, J. P. Santos, P. Patté, and F. Parente, At. Data Nucl. Data Tables **86**, 117 (2004).

TABLE 27. Energy levels of Sr XIV

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$3p^63d^7$	^4F	9/2	0	50	95.4% + 4.4% $3p^63d^7\ ^2G$	99WYA/RYA
	^4F	7/2	11 512	50	98.7% + 1.1% $3p^63d^7\ ^2G$	99WYA/RYA
	^4F	5/2	17 993	50	95.7% + 2.5% $3p^63d^7\ ^2D2$	99WYA/RYA
	^4F	3/2	21 840	50	92.0% + 5.1% $3p^63d^7\ ^2D2$	99WYA/RYA
$3p^63d^7$	^4P	5/2	46 081	50	93.9% + 3.0% $3p^63d^7\ ^2D1$	99WYA/RYA
$3p^63d^7$	^2G	9/2	47 967	50	80.5% + 15.2% $3p^63d^7\ ^2H$	99WYA/RYA
	^2G	7/2	58 485	50	97.0% + 1.9% $3p^63d^7\ ^2F$	99WYA/RYA

TABLE 27. Energy levels of Sr XIV—Continued

Designation	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$3p^63d^7$	^{2}H	11/2	65 170	50	100.0%	99WYA/RYA
	^{2}H	9/2	76 720	50	84.7% + 15.0% $3p^63d^7$ ^{2}G	99WYA/RYA
$3p^63d^7$	^{2}D2	5/2	68 980	50	69.0% + 21.8% $3p^63d^7$ ^{2}D1	99WYA/RYA
$3p^63d^7$	^{2}F	7/2	108 150	50	97.8% + 1.8% $3p^63d^7$ ^{2}G	99WYA/RYA
$3p^63d^7$	^{2}D1	5/2	163 890	50	72.5% + 24.0%$3p^63d^7$ ^{2}D2	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^3F)$	$^4G^\circ$	11/2	999 660	60	99.7% + 0.3% $3p^5(^2P^\circ)3d^8(^1G)$ $^2H^\circ$	99WYA/RYA
	$^4G^\circ$	9/2	1 026 220	60	89.5% + 9.3% $3p^5(^2P^\circ)3d^8(^3F)$ $^4F^\circ$	99WYA/RYA
	$^4G^\circ$	7/2	1 056 940	60	42.8% + 20.2% $3p^5(^2P^\circ)3d^8(^3F)$ $^4F^\circ$	99WYA/RYA
	$^4G^\circ$	5/2	1 121 140	60	43.2% + 21.2% $3p^5(^2P^\circ)3d^8(^3F)$ $^4F^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^3F)$	$^4F^\circ$	9/2	1 069 080	60	55.0% + 23.6% $3p^5(^2P^\circ)3d^8(^1G)$ $^2G^\circ$	99WYA/RYA
	$^4F^\circ$	7/2	1 089 790	60	44.1% + 18.8% $3p^5(^2P^\circ)3d^8(^1G)$ $^2G^\circ$	99WYA/RYA
	$^4F^\circ$	3/2	1 094 900	60	33.6% + 32.2% $3p^5(^2P^\circ)3d^8(^3F)$ $^4D^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^3P)$	$^4D^\circ$	7/2	1 077 880	60	66.1% + 11.0% $3p^5(^2P^\circ)3d^8(^3F)$ $^4G^\circ$	99WYA/RYA
	$^4D^\circ$	5/2	1 137 510	60	48.8% + 16.9% $3p^5(^2P^\circ)3d^8(^3F)$ $^4D^\circ$	99WYA/RYA
	$^4D^\circ$	3/2	1 144 020	60	31.7% + 18.8% $3p^5(^2P^\circ)3d^8(^3F)$ $^4D^\circ$	99WYA/RYA
1 080 540(5/2)		5/2	1 080 540	60	28.2% $3p^5(^2P^\circ)$ $3d^8(^3P)$ $^4D^\circ$ + 24.6% $3p^5(^2P^\circ)3d^8(^3P)$ $^4P^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^3P)$	$^4P^\circ$	5/2	1 093 100	60	44.3% + 29.0% $3p^5(^2P^\circ)3d^8(^3F)$ $^4F^\circ$	99WYA/RYA
	$^4P^\circ$	3/2	1 105 800	60	44.5% + 23.5% $3p^5(^2P^\circ)3d^8(^3F)$ $^4F^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^1G)$	$^2G^\circ$	9/2	1 113 417	60	43.3% + 32.6% $3p^5(^2P^\circ)3d^8(^3F)$ $^4F^\circ$	99WYA/RYA
	$^2G^\circ$	7/2	1 118 920	60	41.6% + 11.7% $3p^5(^2P^\circ)3d^8(^3F)$ $^4G^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^1G)$	$^2H^\circ$	11/2	1 124 090	60	99.4% + 0.3% $3p^5(^2P^\circ)3d^8(^3F)$ $^4G^\circ$	99WYA/RYA
	$^2H^\circ$	9/2	1 205 000	70	80.9% + 8.8% $3p^5(^2P^\circ)3d^8(^3F)$ $^2G^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^3F)$	$^4D^\circ$	7/2	1 151 990	60	59.0% + 21.7% $3p^5(^2P^\circ)3d^8(^3F)$ $^4F^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^1D)$	$^2D^\circ$	5/2	1 212 480	70	28.5% + 32.8% $3p^5(^2P^\circ)3d^8(^1G)$ $^2F^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^1G)$	$^2F^\circ$	5/2	1 189 630	70	37.6% + 22.8% $3p^5(^2P^\circ)3d^8(^1D)$ $^2F^\circ$	99WYA/RYA
	$^2F^\circ$	7/2	1 247 990	70	38.0% + 38.1% $3p^5(^2P^\circ)3d^8(^3F)$ $^2G^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^3F)$	$^2F^\circ$	7/2	1 217 240	70	34.5% + 26.6% $3p^5(^2P^\circ)3d^8(^1D)$ $^2F^\circ$	99WYA/RYA
	$^2F^\circ$	5/2	1 270 210	70	40.3% + 39.1% $3p^5(^2P^\circ)3d^8(^1D)$ $^2F^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^3F)$	$^2G^\circ$	9/2	1 290 270	70	70.2% + 24.6% $3p^5(^2P^\circ)3d^8(^1G)$ $^2G^\circ$	99WYA/RYA
	$^2G^\circ$	7/2	1 307 290	70	35.4% + 25.4% $3p^5(^2P^\circ)3d^8(^1G)$ $^2F^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^3P)$	$^2D^\circ$	5/2	1 320 370	70	64.3% + 23.1% $3p^5(^2P^\circ)3d^8(^3F)$ $^2D^\circ$	99WYA/RYA
$3p^5(^2P^\circ)3d^8(^3P)$	$^2P^\circ$	3/2	1 343 000	70	63.3% + 12.3% $3p^5(^2P^\circ)3d^8(^1S)$ $^2P^\circ$	99WYA/RYA
Sr XV ($3d^6$ ^{5}D$_4$)		*Limit*	(3 662 000)			04ROD/IND

TABLE 28. Observed spectral lines of Sr XIV

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A$_{ki}$ (s^{-1})	Lower level	Upper level	λ Ref.	A$_{ki}$ Ref.
Vacuum									
80.497	0.005	1 242 280	320		4.03E+10	$3p^63d^7$ $^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)$ $^2G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
81.263	0.005	1 230 570	830		6.57E+11	$3p^63d^7$ $^2H_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)$ $^2G^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
81.625	0.005	1 225 110	1350		7.65E+11	$3p^63d^7$ $^2H_{11/2}$	$3p^5(^2P^\circ)3d^8(^3F)$ $^2G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
82.147	0.005	1 217 330	20		2.00E+9	$3p^63d^7$ $^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)$ $^2F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
82.493	0.005	1 212 220	430		4.86E+11	$3p^63d^7$ $^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3P)$ $^2D^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
82.527	0.005	1 211 720	550		5.69E+11	$3p^63d^7$ $^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)$ $^2F^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
83.332	0.005	1 200 020	520		3.29E+11	$3p^63d^7$ $^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)$ $^2F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
84.065	0.005	1 189 560	90		4.14E+10	$3p^63d^7$ $^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)$ $^2F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
84.810	0.005	1 179 110	270		4.81E+11	$3p^63d^7$ $^2D1_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)$ $^2P^\circ_{3/2}$	99WYA/RYA	99WYA/RYA
85.348	0.005	1 171 670	230		1.45E+10	$3p^63d^7$ $^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)$ $^2F^\circ_{5/2}$	99WYA/RYA	99WYA/RYA

TABLE 28. Observed spectral lines of Sr XIV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
85.380	0.005	1 171 230	230		1.10E+11	$3p^63d^7\ ^2H_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
85.523	0.005	1 169 280	320		2.17E+11	$3p^63d^7\ ^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^2F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
86.654	0.005	1 154 010	120		4.07E+10	$3p^63d^7\ ^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^1D)\ ^2D^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
86.807	0.005	1 151 980	230		1.37E+11	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
87.221	0.005	1 146 510	30		1.05E+10	$3p^63d^7\ ^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2H^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
87.456	0.005	1 143 430	320	bl	1.35E+11	$3p^63d^7\ ^2D2_{5/2}$	$3p^5(^2P^\circ)3d^8(^1D)\ ^2D^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
87.680	0.005	1 140 510	220		1.22E+11	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
88.631	0.005	1 128 270	550		1.28E+11	$3p^63d^7\ ^2H_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2H^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
88.810	0.005	1 126 000	460		1.72E+11	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
89.112	0.005	1 122 180	80		9.95E+10	$3p^63d^7\ ^4F_{3/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{3/2}$	99WYA/RYA	99WYA/RYA
89.238	0.005	1 120 600	70		7.98E+10	$3p^63d^7\ ^2D2_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2F^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
89.325	0.005	1 119 510	130		7.80E+10	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
89.369	0.005	1 118 960	80		4.76E+10	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
89.815	0.005	1 113 400	180		4.57E+10	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
90.120	0.005	1 109 630	30		5.05E+10	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
90.169	0.005	1 109 030	230		1.28E+11	$3p^63d^7\ ^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^2F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
90.423	0.005	1 105 910	90		8.41E+10	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
90.580	0.005	1 104 000	60		3.29E+10	$3p^63d^7\ ^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
90.754	0.005	1 101 880	30		1.44E+10	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
91.085	0.005	1 097 880	70		5.68E+10	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{3/2}$	99WYA/RYA	99WYA/RYA
91.623	0.005	1 091 430	20		3.17E+10	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
91.759	0.005	1 089 810	730	bl	1.22E+11	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
91.928	0.005	1 087 810	300		1.18E+11	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4P^\circ_{3/2}$	99WYA/RYA	99WYA/RYA
92.242	0.005	1 084 100	70		5.14E+10	$3p^63d^7\ ^2D1_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
92.255	0.005	1 083 950	100		1.95E+10	$3p^63d^7\ ^4F_{3/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4P^\circ_{3/2}$	99WYA/RYA	99WYA/RYA
92.458	0.005	1 081 570	240		1.06E+11	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4P^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
92.738	0.005	1 078 310	1350	bl	5.23E+10	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
92.776	0.005	1 077 860	340		6.28E+10	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
92.858	0.005	1 076 910	60		3.98E+10	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{3/2}$	99WYA/RYA	99WYA/RYA
93.011	0.005	1 075 140	60		2.32E+10	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4P^\circ_{5/2}$	99WYA/RYA	99WYA/RYA
93.192	0.005	1 073 050	90		5.73E+10	$3p^63d^7\ ^4F_{3/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{3/2}$	99WYA/RYA	99WYA/RYA
93.543	0.005	1 069 030	1270		1.62E+11	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
93.770	0.005	1 066 440	760	bl	5.13E+9	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
93.858	0.005	1 065 440	590		1.11E+11	$3p^63d^7\ ^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
94.116	0.005	1 062 520	40		3.52E+10	$3p^63d^7\ ^4F_{5/2}$	1 080 540(5/2)	99WYA/RYA	99WYA/RYA
94.305	0.005	1 060 390	350		1.09E+11	$3p^63d^7\ ^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
94.365	0.005	1 059 710	70		7.08E+10	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4P^\circ_{3/2}$	99WYA/RYA	99WYA/RYA
94.438	0.005	1 058 900	760		1.03E+11	$3p^63d^7\ ^2H_{11/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2H^\circ_{11/2}$	99WYA/RYA	99WYA/RYA
94.556	0.005	1 057 570	30		1.94E+10	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
95.396	0.005	1 048 260	70		3.29E+10	$3p^63d^7\ ^2H_{11/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
95.476	0.005	1 047 380	90		4.50E+9	$3p^63d^7\ ^2H_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2H^\circ_{11/2}$	99WYA/RYA	99WYA/RYA
95.656	0.005	1 045 410	360		5.66E+10	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
95.951	0.005	1 042 200	70		9.88E+9	$3p^63d^7\ ^2H_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
96.666	0.005	1 034 490	250		6.58E+10	$3p^63d^7\ ^4P_{5/2}$	1 080 540(5/2)	99WYA/RYA	99WYA/RYA
96.965	0.005	1 031 300	100		3.94E+10	$3p^63d^7\ ^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
97.443	0.005	1 026 240	680	bl	2.85E+10	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
97.928	0.005	1 021 160	210		3.15E+10	$3p^63d^7\ ^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
98.550	0.005	1 014 710	160		9.20E+9	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
98.924	0.005	1 010 880	190		1.96E+10	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{7/2}$	99WYA/RYA	99WYA/RYA
99.473	0.005	1 005 300	60		1.60E+10	$3p^63d^7\ ^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA
100.034	0.005	999 660	650		2.10E+10	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{11/2}$	99WYA/RYA	99WYA/RYA
102.223	0.005	978 250	130		5.00E+9	$3p^63d^7\ ^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{9/2}$	99WYA/RYA	99WYA/RYA

6.14. Sr XV

Cr isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^6\ ^5D_4$
Ionization energy (4 025 000 cm^{-1}); (499 eV)

Transitions of the Sr XV spectrum have not yet been observed; however, Rodrigues *et al.* [04ROD/IND] have used the Dirac-Fock method to determine the ground state and calculate the ionization energy listed above.

6.14.1 References for Sr XV

04ROD/IND G. C. Rodrigues, P. Indelicato, J. P. Santos, P. Patté, and F. Parente, At. Data Nucl. Data Tables **86**, 117 (2004).

6.15. Sr XVI

V isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^5\ {}^6S_{5/2}$
Ionization energy (4 533 000 cm^{-1});
(562 eV)

Transitions of the Sr XVI spectrum have not yet been observed; however, Rodrigues *et al*. [04ROD/IND] have used the Dirac-Fock method to determine the ground state and calculate the ionization energy listed above.

6.15.1 References for Sr XVI

04ROD/IND G. C. Rodrigues, P. Indelicato, J. P. Santos, P. Patté, and F. Parente, At. Data Nucl. Data Tables **86**, 117 (2004).

6.16. Sr XVII

Ti isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^4\ {}^5D_0$
Ionization energy (4 936 000 cm^{-1});
(612 eV)

Transitions of the Sr XVII spectrum have not yet been observed; however, Rodrigues *et al*. [04ROD/IND] have used the Dirac-Fock method to determine the ground state and calculate the ionization energy listed above.

6.16.1 References for Sr XVII

04ROD/IND G. C. Rodrigues, P. Indelicato, J. P. Santos, P. Patté, and F. Parente, At. Data Nucl. Data Tables **86**, 117 (2004).

6.17. Sr XVIII

Sc isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^3\ {}^4F_{3/2}$
Ionization energy (5 364 000 cm^{-1});
(665 eV)

Transitions of the Sr XVIII spectrum have not yet been observed; however, Rodrigues *et al*. [04ROD/IND] have used the Dirac-Fock method to determine the ground state and calculate the ionization energy listed above. A Dirac-Fock calculation of the ionization energy was also performed by Zilitis [02ZIL], who obtained a value of 5 372 000 cm^{-1}, in fairly good agreement with the Rodrigues *et al*. [04ROD/IND] value.

6.17.1 References for Sr XVIII

02ZIL V. A. Zilitis, Opt. Spectrosc. **92**, 353 (2002).
04ROD/IND G. C. Rodrigues, P. Indelicato, J. P. Santos, P. Patté, and F. Parente, At. Data Nucl. Data Tables **86**, 117 (2004).

6.18. Sr XIX

Ca isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d^2\ {}^3F_2$
Ionization energy (5 823 000 cm^{-1});
(722 eV)

Although the spectrum of the Sr XIX has not been observed, energies of the levels in the ground configuration have been calculated by Safronova *et al*. [01SAF/JOH] and are listed in Table 29. The calculated ionization energy was taken from Rodrigues *et al*. [04ROD/IND].

6.18.1 References for Sr XIX

01SAF/JOH U. I. Safronova, W. R. Johnson, D. Kato, and S. Ohtani, Phys. Rev. A **63**, 032518 (2001).
04ROD/IND G. C. Rodrigues, P. Indelicato, J. P. Santos, P. Patté, and F. Parente, At. Data Nucl. Data Tables **86**, 117 (2004).

TABLE 29. Calculated energy levels of Sr XIX

Configuration	Term	J	Energy (cm^{-1})	Reference
$3d^2$	^3F	2	(0)	01SAF/JOH
	^3F	3	(15 115)	01SAF/JOH
	^3F	4	(29 794)	01SAF/JOH
$3d^2$	^1D	2	(50 240)	01SAF/JOH
$3d^2$	^3P	0	(51 105)	01SAF/JOH
	^3P	1	(58 595)	01SAF/JOH
	^3P	2	(74 591)	01SAF/JOH
$3d^2$	^1G	4	(80 559)	01SAF/JOH
$3d^2$	^1S	0	(169 216)	01SAF/JOH
Sr XX ($3d\ {}^2\mathbf{D}_{3/2}$)		*Limit*	(5 823 000)	04ROD/IND

6.19. Sr XX

K isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^63d\ {}^2D_{3/2}$
Ionization energy (6 243 000 cm^{-1});
(774 eV)

Only four lines of the Sr XX spectrum have been observed. The TFR group and Wyart [88TFR/WYA] were able to excite them by injecting Sr into the TFR tokamak. In addition to those measurements, Kaufman *et al*. [89KAU/SUG] obtained the $3p^63d\ {}^2D_{3/2}-3p^63d\ {}^2D_{5/2}$ splitting, as well as wavelengths and energy levels for transitions from the ground configuration to several levels of the $3p^53d^2$ configuration by fitting along the K isoelectronic sequence. Ali and Kim [88ALI/KIM] used the multi-configuration Dirac-Fock method to calculate the location of the $4s\ {}^2S_{1/2}$ level. In addition, Charro *et al*. [02CHA/CUR] used a polynomial fit to experimental data for isoelectronic ions with values of $18 \leq Z \leq 24$ to predict the energy of the $3p^64s\ ^2S_{1/2}$ level. The result of this extrapolation was within 2000 cm^{-1} of [88ALI/KIM]. The calculated ionization energy cited in Table 30 is taken from Rodrigues *et al*. [04ROD/IND]. The wavelengths in Table 31 are from [89KAU/SUG] and [88TFR/WYA].

6.19.1 References for Sr XX

88TFR/WYA TFR Group and J.-F. Wyart, Phys. Scr. **37**, 66 (1988).

88ALI/KIM M. A. Ali and Y.-K. Kim, Phys. Rev. A **38**, 3992 (1988).

89KAU/SUG V. Kaufman, J. Sugar, and W. L. Rowan, J. Opt. Soc. Am. B **6**, 142 (1989).

02CHA/CUR E. Charro, Z. Curiel, and I. Martín, Astron. Astrophys. **387**, 1146 (2002).

04ROD/IND G. C. Rodrigues, P. Indelicato, J. P. Santos, P. Patté, and F. Parente, At. Data Nucl. Data Tables **86**, 117 (2004).

TABLE 30. Energy levels of Sr XX

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3p^63d$	^{2}D	3/2	0		89KAU/SUG
	^{2}D	5/2	[21 399]	10	89KAU/SUG
$3p^5(^2P)3d^2(^3F)$	$^2F^\circ$	5/2	[1 074 300]	200	89KAU/SUG
	$^2D^\circ$	3/2	1 188 350	150	88TFR/WYA
	$^2D^\circ$	5/2	1 193 730	150	88TFR/WYA
$3p^5(^2P)3d^2(^1G)$	$^2F^\circ$	7/2	1 130 050	150	88TFR/WYA
$3p^5(^2P)3d^2(^3P)$	$^2P^\circ$	1/2	[1 181 200]	200	89KAU/SUG
	$^2P^\circ$	3/2	1 202 730	150	88TFR/WYA
$3p^64s$	^{2}S	1/2	(2 493 400)		88ALI/KIM
Sr XXI ($3p^6\ ^1S_0$)		*Limit*	(6 243 000)		04ROD/IND

6.20. Sr XXI

Ar isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^6\ ^1S_0$
Ionization energy (7 517 000 cm^{-1}); (932 eV)

There is one measured line in the Sr XXI spectrum, obtained by the TFR Group and Wyart [88TFR/WYA] by injecting strontium into the TFR Tokamak. In a study of the Ar I isoelectronic sequence Kaufman *et al*. [87KAU/SUG] calculated wavelengths and energy levels for transitions from the ground configuration to the $3p^53d\ ^3D^\circ_1$ level by fitting along the sequence. In a similar fashion, Jupén *et al*. [03JUP/DEN] obtained values for $3p^53d\ ^3P^\circ_1$. There is no estimate of the uncertainty of the [03JUP/DEN] fitted values. The [87KAU/SUG], [88TFR/WYA], and [03JUP/DEN] values are given in Tables 32 and 33, along with the ionization energy calculated by Rodrigues *et al*. [04ROD/IND] using the Dirac-Fock method.

6.20.1 References for Sr XXI

87KAU/SUG V. Kaufman, J. Sugar, and W. L. Rowan, J. Opt. Soc. Am. B **4**, 1927 (1987).

88TFR/WYA TFR Group and J.-F. Wyart, Phys. Scr. **37**, 66 (1988).

03JUP/DEN C. Jupén, B. Denne-Hinnov, I. Martinson, and L. J. Curtis, Phys. Scr. **68**, 230 (2003).

04ROD/IND G. C. Rodrigues, P. Indelicato, J. P. Santos, P. Patté, and F. Parente, At. Data Nucl. Data Tables **86**, 117 (2004).

TABLE 32. Energy levels of Sr XXI

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3p^6$	^{1}S	0	[0]		87KAU/SUG
$3p^53d$	$^3P^\circ$	1	[794 300]		03JUP/DEN
$3p^53d$	$^3D^\circ$	1	[924 370]	90	87KAU/SUG
$3p^53d$	$^1P^\circ$	1	1 137 010	130	88TFR/WYA
Sr XXII ($3p^5\ ^2P_{3/2}$)		*Limit*	(7 517 000)		04ROD/IND

TABLE 31. Spectral lines of Sr XX

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Lower level	Upper level	λ Ref.
Vacuum					
[83.052]	0.05	1 204 060	$3p^63d\ ^2D_{3/2}$	$3p^5(^2P)3d^2(^3P)\ ^2P^\circ_{3/2}$	89KAU/SUG
84.15	0.01	1 188 350	$3p^63d\ ^2D_{3/2}$	$3p^5(^2P)3d^2(^3F)\ ^2D^\circ_{3/2}$	88TFR/WYA
[84.555]	0.05	1 182 660	$3p^63d\ ^2D_{5/2}$	$3p^5(^2P)3d^2(^3P)\ ^2P^\circ_{3/2}$	89KAU/SUG
84.65	0.01	1 181 330	$3p^63d\ ^2D_{5/2}$	$3p^5(^2P)3d^2(^3P)\ ^2P^\circ_{3/2}$	88TFR/WYA
[84.660]	0.05	1 181 200	$3p^63d\ ^2D_{3/2}$	$3p^5(^2P)3d^2(^3P)\ ^2P^\circ_{1/2}$	89KAU/SUG
85.30	0.01	1 172 330	$3p^63d\ ^2D_{5/2}$	$3p^5(^2P)3d^2(^3F)\ ^2D^\circ_{5/2}$	88TFR/WYA
90.20	0.01	1 108 650	$3p^63d\ ^2D_{5/2}$	$3p^5(^2P)3d^2(^1G)\ ^2F^\circ_{7/2}$	88TFR/WYA
[93.084]	0.05	1 074 300	$3p^63d\ ^2D_{3/2}$	$3p^5(^2P)3d^2(^3F)\ ^2F^\circ_{5/2}$	89KAU/SUG

TABLE 33. Spectral lines of Sr XXI

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Lower level	Upper level	λ Ref.
Vacuum					
87.95	0.010	1 137 010	$3p^6\ ^1S_0$	$3p^53d\ ^1P^\circ_1$	88TFR/WYA
[108.182]	0.010	[924 370]	$3p^6\ ^1S_0$	$3p^53d\ ^3D^\circ_1$	87KAU/SUG
[125.897]		[794 300]	$3p^6\ ^1S_0$	$3p^53d\ ^3D^\circ_1$	03JUP/DEN

6.21. Sr XXII

Cl isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^5\ ^2P^\circ_{3/2}$
Ionization energy [7 921 000 ± 8600 cm^{-1}]; [982.1 ± 1.1 eV]

Four transitions identified as Sr XXII lines have been observed by the TFR group and Wyart [88TFR/WYA]. Further study of the Cl I isoelectronic sequence has enabled predictions for some energy levels and wavelengths. By investigating magnetic dipole transitions within the $3s^23p^5$ ground state, Sugar and Kaufman [84SUG/KAU, 86KAU/SUG] predicted the ground state splitting and the wavelength for the $3p^5\ ^2P^\circ_{3/2} - {}^2P^\circ_{1/2}$ transition and calculated its transition probability. The splitting was also calculated by Curtis and Ramanujam [83CUR/RAM] and predicted by isoelectronic fitting by Denne *et al*. [83DEN/HIN]. Additional isoelectronic studies allowed Kaufman *et al*. [89KAU/SUG2] to predict five levels in the $3p^43d$ configuration and wavelengths for transitions to those levels from the ground term. Transition rates for those spectral lines have been calculated by Huang *et al*. [83HUA/KIM]; however the disagreement between their calculated energy levels and the [89KAU/SUG2] data suggests that caution be used regarding the [83HUA/KIM] transition probabilities. The level and transition data are summarized in Tables 34 and 35. The semi-empirical ionization energy cited is taken from the isoelectronic fit of Biémont *et al*. [99BIE/FRE].

6.21.1 References for Sr XXII

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TABLE 34. Energy levels of Sr XXII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3p^5$	$^2P^\circ$	3/2	[0]	50	89KAU/SUG2
	$^2P^\circ$	1/2	[114 320]	50	89KAU/SUG2
$3p^4(^1D)3d$	^2S	1/2	[1 067 800]	120	89KAU/SUG2
$3p^4(^3P)3d$	^2D	5/2	[1 095 940]	120	89KAU/SUG2
	^2D	3/2	[1 204 600]	120	89KAU/SUG2
$3p^4(^3P)3d$	^2P	3/2	[1 101 800]	120	89KAU/SUG2
	^2P	1/2	[1 164 000]	120	89KAU/SUG2
Sr XXIII ($3p^4\ ^3P_2$)		*Limit*	[7 921 000]	8600	99BIE/FRE

TABLE 35. Spectral lines of Sr XXII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum							
[83.015]	0.010	[1 204 600]		$3p^5\ ^2P^\circ_{3/2}$	$3p^4(^3P)3d\ ^2D_{3/2}$	89KAU/SUG2	
[90.761]	0.010	[1 101 800]		$3p^5\ ^2P^\circ_{3/2}$	$3p^4(^3P)3d\ ^2P_{3/2}$	89KAU/SUG2	
[91.245]	0.010	[1 095 940]		$3p^5\ ^2P^\circ_{3/2}$	$3p^4(^3P)3d\ ^2D_{5/2}$	89KAU/SUG2	
[91.720]	0.010	[1 090 280]		$3p^5\ ^2P^\circ_{1/2}$	$3p^4(^3P)3d\ ^2D_{3/2}$	89KAU/SUG2	
[93.650]	0.010	[1 067 800]		$3p^5\ ^2P^\circ_{3/2}$	$3p^4(^1D)3d\ ^2S_{1/2}$	89KAU/SUG2	
[95.267]	0.010	[1 049 680]		$3p^5\ ^2P^\circ_{1/2}$	$3p^4(^3P)3d\ ^2P_{1/2}$	89KAU/SUG2	
[874.7]	0.5	[114 320]	2.7E+4	$3p^5\ ^2P^\circ_{3/2}$	$3p^5\ ^2P^\circ_{1/2}$	89KAU/SUG2	86KAU/SUG

6.22. Sr XXIII

S isoelectronic sequence
Ground state $1s^2 2s^2 2p^6 3s^2 3p^4\ ^3P_2$
Ionization energy [8 372 100 ± 11 800 cm^{-1}];
[1038.0 ± 1.5 eV]

There are no measurements of the Sr XXIII spectrum, however study of the sulfur isoelectronic sequence has enabled predictions for some energy levels and wavelengths. By investigating magnetic dipole transitions within the $3p^4$ ground state in the sulfur isoelectronic sequence, Sugar and Kaufman [84SUG/KAU] and Denne *et al*. [83DEN/HIN] predicted the ground state splittings and wavelengths and calculated probabilities for transitions within the ground state. Additional isoelectronic studies allowed Kaufman *et al*. [90KAU/SUG] to predict four levels in the $3p^3 3d$ configuration and wavelengths for transitions to those levels from the ground term.

Ab initio calculations of energy levels and transition probabilities in the ground state configuration were reported by Sugar and Kaufman [84SUG/KAU, 86KAU/SUG] using the Hartree-Fock method; Biémont and Hansen [86BIE/HAN] using the semi-relativistic Hartree-Fock code of Cowan [81COW]; and Saloman and Kim [89SAL/KIM] using the multiconfiguration Dirac-Fock (MCDF) technique. A more extensive set, which included allowed transitions was calculated by Chou *et al*. [96CHO/CHA], also using MCDF. For the forbidden lines the transition probabilities from these sources agreed to within 5%.

All wavelengths and energy level values quoted in Tables 36 and 37 are from Kaufman and Sugar [90KAU/SUG]. The transition probabilities for allowed transitions come from Chou *et al*. [96CHO/CHA], while those for forbidden transitions are taken from Biémont and Hansen [86BIE/HAN]. The semi-empirical ionization energy is quoted from Biémont and Hansen [99BIE/FRE].

6.22.1 References for Sr XXIII

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99BIE/FRE E. Biémont, Y. Frémat, and P. Quinet, At. Data Nucl. Data Tables **71**, 117 (1999).

TABLE 36. Energy levels of Sr XXIII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$3p^4$	^{3}P	2	[0]	40	82%	90KAU/SUG
	^{3}P	0	[53 400]	40	60%	90KAU/SUG
	^{3}P	1	[104 670]	40	100%	90KAU/SUG
$3p^4$	^{1}D	2	[279 580]	40	82%	90KAU/SUG
$3p^4$	^{1}S	0	[250 920]	40	60%	90KAU/SUG
$3p^3(^2D°)3d$	^{3}P°	2	[1 078 630]	150	36% + 19% $3p^3(^2D°)3d\ ^3D°$	90KAU/SUG
$3p^3(^2P°)3d$	^{1}F°	3	[1 063 320]	150	31% + 28% $3p^3(^2D°)3d\ ^1F°$	90KAU/SUG
$3p^3(^2D°)3d$	^{1}F°	3	[1 192 710]	150	46% + 32% $3p^3(^2P°)3d\ ^1F°$	90KAU/SUG
$3p^3(^2P°)3d$	^{1}P°	1	[1 274 210]	150		90KAU/SUG
Sr XXIV $(3p^3\ ^4S°_{3/2})$	*Limit*		[8 372 100]	11 800		99BIE/FRE

TABLE 37. Spectral lines of Sr XXIII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum							
[92.710]	0.007	[1 078 630]	3.02E+10	$3p^4\ ^3P_2$	$3p^3(^2D°)3d\ ^3P°_2$	90KAU/SUG	96CHO/CHA
[94.045]	0.007	[1 063 320]	2.50E+11	$3p^4\ ^3P_2$	$3p^3(^2P°)3d\ ^1F°_3$	90KAU/SUG	96CHO/CHA
[95.267]	0.007	[1 049 680]	2.76E+11	$3p^4\ ^1D_2$	$3p^3(^2D°)3d\ ^1F°_3$	90KAU/SUG	96CHO/CHA

TABLE 37. Spectral lines of Sr XXIII—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A$_{ki}$ (s^{-1})	Lower level	Upper level	λ Ref.	A$_{ki}$ Ref.
[100.540]	0.007	[994 630]	2.14E+11	$3p^4\ ^1S_0$	$3p^3(^2P^\circ)3d\ ^1P^\circ_1$	90KAU/SUG	96CHO/CHA
[571.7]	0.5	[174 920]	1.17E+5	$3p^4\ ^3P_1$	$3p^4\ ^1S_0$	90KAU/SUG	86BIE/HAN
[699.6]	0.3	[142 940]	1.84E+4	$3p^4\ ^3P_2$	$3p^4\ ^1D_2$	90KAU/SUG	86BIE/HAN
[955.4]	0.3	[104 670]	2.19E+4	$3p^4\ ^3P_2$	$3p^4\ ^3P_1$	90KAU/SUG	86BIE/HAN
[1950.0]	2.0	[51 280]	1.50E+3	$3p^4\ ^3P_0$	$3p^4\ ^3P_1$	90KAU/SUG	86BIE/HAN
Air							
[2613.0]	2.0	[38 260]	1.39E+2	$3p^4\ ^3P_1$	$3p^4\ ^1D_2$	90KAU/SUG	86BIE/HAN

6.23. Sr XXIV

P isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^3\ ^4S^\circ_{3/2}$
Ionization energy [8 914 000 ± 33 000 cm^{-1}]; [1105 ± 4 eV]

Although no measurements of the Sr XXIV spectrum have been made, study of the phosphorus isoelectronic sequence has enabled predictions for some energy levels and wavelengths. By investigating magnetic dipole transitions within the $3p^3$ ground state, Sugar and Kaufman [84SUG/KAU, 86KAU/SUG] predicted the ground state splittings and wavelengths and calculated the transition probabilities. Additional isoelectronic studies allowed Sugar *et al.* [91SUG/KAU] to predict four levels in the $3p^23d$ configuration and wavelengths for transitions from those levels to the ground term.

Transition rates for the allowed spectral lines were calculated by Huang [84HUA] using the multi-configuration Dirac-Fock technique. Charro *et al.* [00CHA/MAR] used the relativistic quantum defect orbital method to obtain oscillator strengths for three of the resonance lines; however, the agreement with Huang was poor. For the allowed transitions, probabilities were calculated by Huang [84HUA] and, in addition, by Sugar and Kaufman [84SUG/KAU, 86KAU/SUG] using scaled Hartree-Fock radial integrals; Biémont and Hansen [85BIE/HAN] using the semi-relativistic Hartree-Fock code of Cowan [81COW]; and Frose Fischer and Godefroid [86FRO/GOD] using the multiconfiguration Hartree-Fock plus Breit-Pauli technique. The agreement between these sources is within 10%, with the exception of the $3p^3\ ^2D^\circ_{3/2}$ to $3p^3\ ^2D^\circ_{5/2}$ line, for which the Frose Fischer and Godefroid [86FRO/GOD] result is nearly a factor of 2 higher than the others.

All wavelengths and energy level values quoted in Tables 38 and 39 are from [91SUG/KAU]. The transition probabilities come from [86FRO/GOD], where available, and [84HUA] otherwise. The semi-empirical ionization energy is quoted from [99BIE/FRE].

6.23.1 References for Sr XXIV

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TABLE 38. Energy levels of Sr XXIV

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3p^3$	$^4S^\circ$	3/2	[0]	60	91SUG/KAU
$3p^3$	$^2D^\circ$	3/2	[96 817]	60	91SUG/KAU
	$^2D^\circ$	5/2	[131 405]	60	91SUG/KAU
$3p^3$	$^2P^\circ$	1/2	[181 025]	60	91SUG/KAU
	$^2P^\circ$	3/2	[268 821]	60	91SUG/KAU
$3p^2(^3P)3d$	^4P	5/2	[986 710]	60	91SUG/KAU
	^4P	3/2	[1 002 160]	60	91SUG/KAU
$3p^2(^1D)3d$	^2D	3/2	[1 100 690]	60	91SUG/KAU
	^2D	5/2	[1 104 190]	60	91SUG/KAU
$3p^2(^3P)3d$	^2F	7/2	[1 140 930]	60	91SUG/KAU
$3p^2(^3P)3d$	^2D	5/2	[1 218 050]	60	91SUG/KAU
Sr XXV ($3p^2\ ^3P_0$)		*Limit*	[8 914 000]	33 000	99BIE/FRE

TABLE 39. Spectral lines of Sr XXIV

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum							
[99.056]	0.02	[1 009 530]	2.18E+11	$3p^3\ ^2D^\circ_{5/2}$	$3p^2(^3P)3d\ ^2F_{7/2}$	91SUG/KAU	84HUA
[99.268]	0.02	[1 007 370]	1.22E+9	$3p^3\ ^2D^\circ_{3/2}$	$3p^2(^1D)3d\ ^2D_{5/2}$	91SUG/KAU	84HUA
[99.614]	0.02	[1 003 880]	1.42E+11	$3p^3\ ^2D^\circ_{3/2}$	$3p^2(^1D)3d\ ^2D_{3/2}$	91SUG/KAU	84HUA
[99.784]	0.02	[1 002 160]	6.99E+10	$3p^3\ ^4S^\circ_{3/2}$	$3p^2(^3P)3d\ ^4P_{3/2}$	91SUG/KAU	84HUA
[101.347]	0.02	[986 710]	1.53E+11	$3p^3\ ^4S^\circ_{3/2}$	$3p^2(^3P)3d\ ^4P_{5/2}$	91SUG/KAU	84HUA
[102.798]	0.02	[972 780]	1.41E+10	$3p^3\ ^2D^\circ_{5/2}$	$3p^2(^1D)3d\ ^2D_{5/2}$	91SUG/KAU	84HUA
[105.349]	0.02	[949 230]	1.85E+11	$3p^3\ ^2P^\circ_{3/2}$	$3p^2(^3P)3d\ ^2D_{5/2}$	91SUG/KAU	84HUA
[372.0]	0.2	[268 820]	6.39E+3	$3p^3\ ^4S^\circ_{3/2}$	$3p^3\ ^2P^\circ_{3/2}$	91SUG/KAU	86FRO/GOD
[552.4]	0.2	[181 030]	2.74E+4	$3p^3\ ^4S^\circ_{3/2}$	$3p^3\ ^2P^\circ_{1/2}$	91SUG/KAU	86FRO/GOD
[582.0]	0.2	[171 820]	4.96E+4	$3p^3\ ^2D^\circ_{3/2}$	$3p^3\ ^2P^\circ_{3/2}$	91SUG/KAU	86FRO/GOD
[727.7]	0.2	[137 420]	9.12E+3	$3p^3\ ^2D^\circ_{5/2}$	$3p^3\ ^2P^\circ_{3/2}$	91SUG/KAU	86FRO/GOD
[761.0]	0.2	[131 410]	3.66E+3	$3p^3\ ^4S^\circ_{3/2}$	$3p^3\ ^2D^\circ_{5/2}$	91SUG/KAU	86FRO/GOD
[1032.9]	0.2	[96 815]	2.08E+4	$3p^3\ ^4S^\circ_{3/2}$	$3p^3\ ^2D^\circ_{3/2}$	91SUG/KAU	86FRO/GOD
[1139.0]	0.3	[87 796]	4.33E+3	$3p^3\ ^2P^\circ_{1/2}$	$3p^3\ ^2P^\circ_{3/2}$	91SUG/KAU	86FRO/GOD
[1190.2]	0.3	[84 019]	9.56E+2	$3p^3\ ^2D^\circ_{3/2}$	$3p^3\ ^2P^\circ_{1/2}$	91SUG/KAU	86FRO/GOD
Air							
[2906.0]	2.0	[34 400]	5.83E+2	$3p^3\ ^2D^\circ_{3/2}$	$3p^3\ ^2D^\circ_{5/2}$	91SUG/KAU	86FRO/GOD

6.24. Sr XXV

Si isoelectronic sequence
Ground state $1s^22s^22p^63s^23p^2\ ^3P_0$
Ionization energy [9 397 500 ± 22 000 cm^{-1}]; [1092.0 ± 2.6 eV]

By investigating magnetic dipole transitions within the $3s^23p^2$ ground configurations of isoelectronic ions, Sugar and Kaufman [84SUG/KAU] predicted the ground configuration splittings and wavelengths and calculated the transition probabilities for the Sr XXV spectrum. These values were refined by Kaufman and Sugar [86KAU/SUG]. Further studies of neighboring isoelectronic ions were presented by Sugar and Kaufman [90SUG/KAU]. Similar fitting by Jupén *et al*. [91JUP/MAR] enabled the prediction of two transitions from the $3s3p^3\ ^5S_2$ level to $3s^23p^2\ ^3P_{1,2}$.

Observations of the spectrum began with three transitions seen by the TFR Group and Wyart [88TFR/WYA], though all three lines were blended with impurities. More recently, Ekberg *et al*. [92EKB/JUP] measured and classified 31 transitions and determined the energy levels involved. Although they do not give *LS* designations for the energy levels, an examination of the leading percentages enables such an assignment except for the $J = 2$ level at 1 092 056 cm^{-1}. Because none of the levels is largely composed of $3s^23p3d\ ^1D_2$, the name cannot be given to any of them, and we designate this level by using the energy and J values in Tables 40 and 41. The values we have retained for the ground configuration are from the isoelectronic fits of Sugar and Kaufman [90SUG/KAU] because the longer wavelengths of the experimental lines observed permitted a more accurate determination of the energies. The sole determination of the $3s3p^3\ ^5S_2$ level was by Jupén *et al*. [91JUP/MAR].

In addition to the Hartree-Fock transition probabilities derived by Sugar and Kaufman [84SUG/KAU, 86KAU/SUG], *ab initio* calculations of transition rates within the ground configuration were reported by Biémont and Bromage [83BIE/BRO], who used the relativistic Hartree plus exchange method developed by Cowan [81COW], and Huang [85HUA] using the multiconfiguration Dirac-Fock technique (MCDF). The transition probabilities for the $3s^23p^2\ ^3P_2-^3P_1$ and $3s^23p^2\ ^3P_1-^3P_0$ lines were also calculated by Ishikawa and Vilkas [01ISH/VIL] using a relativistic multireference Møller-Plesset perturbation theory (MR-MP). All these results agree to within 5%, except for the $3s^23p^2\ ^3P_2-^3P_1$ line, for which Huang's [85HUA] value is 10% higher than the others. Transition rates for the allowed transitions are given by Huang [85HUA] and Ekberg *et al*. [92EKB/JUP], who also used MCDF. Ekberg *et al*. [92EKB/JUP] also determined the leading percentages given in Table 40. In Table 41 the transition probabilities for lines involving the $3s3p^3\ ^5S_2$ level are from MR-MP calculations by Ishikawa and Vilkas [02ISH/VIL]. The semi-empirical ionization energy is quoted from [99BIE/FRE].

6.24.1 References for Sr XXV

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TABLE 40. Energy levels of Sr XXV

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$3s^23p^2$	^{3}P	0	[0]		82% + 17% $3s^23p^2$ ^{1}S	90SUG/KAU
	^{3}P	1	[93 075]	50	99%	90SUG/KAU
	^{3}P	2	[122 260]	50	56% + 43% $3s^23p^2$ ^{1}D	90SUG/KAU
$3s^23p^2$	^{1}D	2	[239 200]	50	56% + 43% $3s^23p^2$ ^{3}P	90SUG/KAU
$3s^23p^2$	^{1}S	0	[312 730]	50	81% + 17% $3s^23p^2$ ^{3}P	90SUG/KAU
$3s3p^3$	^{5}S°	2	[537 968]	200		91JUP/MAR
$3s3p^3$	^{3}D°	1	649 835	200	65% + 15% $3s3p^3$ ^{3}P + 10% $3s^23p3d$ ^{3}D	92EKB/JUP
	^{3}D°	2	664 646	200	63% + 13% $3s3p^3$ ^{3}P + 10% $3s3p^3$ ^{5}S	92EKB/JUP
$3s3p^3$	^{3}P°	1	779 876	200	66% + 15% $3s3p^3$ ^{3}D + 8% $3s^23p3d$ ^{3}P	92EKB/JUP
$3s3p^3$	^{3}S°	1	883 844	200	59% + 29% $3s3p^3$ ^{1}P + 5% $3s3p^3$ ^{3}P	92EKB/JUP
$3s^23p3d$	^{3}P°	2	967 530	200	47% + 22% $3s^23p3d$ ^{3}D + 14% $3s3p^3$ ^{1}D	92EKB/JUP
	^{3}P°	0	1 060 965	200	88% + 11% $3s3p^3$ ^{3}P	92EKB/JUP
	^{3}P°	1	1 075 510	200	59% + 17% $3s^23p3d$ ^{3}D + 11% $3s3p^3$ ^{3}P	92EKB/JUP
$3s^23p3d$	^{3}D°	1	971 732	200	39% + 25% $3s^23p3d$ ^{3}P + 19% $3s^23p3d$ ^{1}P	92EKB/JUP
	^{3}D°	2	1 052 471	200	42% + 28% $3s^23p3d$ ^{1}D + 19% $3s3p^3$ ^{1}D	92EKB/JUP
	^{3}D°	3	1 064 510	200	73% + 10% $3s^23p3d$ ^{1}F + 8% $3s3p^3$ ^{3}D	92EKB/JUP
$3s3p^3$	^{1}P°	1	1 008 273	200	45% + 27% $3s3p^3$ ^{3}S + 21% $3s^23p3d$ ^{3}D	92EKB/JUP
1 092 056(2)	°	2	1 092 056	200	38% $3s^23p3d$ ^{3}P + 21% $3s^23p3d$ ^{3}D + 15% $3s^23p3d$ ^{1}D	92EKB/JUP
$3s^23p3d$	^{1}F°	3	1 147 978	200	85% + 12% $3s^23p3d$ ^{3}D	92EKB/JUP
$3s^23p3d$	^{1}P°	1	1 184 276	200	72% + 12% $3s3p^3$ ^{1}P + 8% $3s^23p3$ ^{3}D	92EKB/JUP
Sr XXVI (3p ^{2}P°$_{1/2}$)		*Limit*	[9 397 500]	22 000		99BIE/FRE

TABLE 41. Spectral lines of Sr XXV

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A$_{ki}$ (s^{-1})	Lower level	Upper level	λ Ref.	A$_{ki}$ Ref.
Vacuum									
97.494	0.010	1 025 700	2	h	2.1E+10	$3s^23p^2$ ^{3}P$_2$	$3s^23p3d$ ^{1}F°$_3$	92EKB/JUP	92EKB/JUP
100.123	0.010	998 770	1	h	5.E+9	$3s^23p^2$ ^{3}P$_1$	1092056(2)°	92EKB/JUP	92EKB/JUP
101.765	0.010	982 660	2		5.0E+10	$3s^23p^2$ ^{3}P$_1$	$3s^23p3d$ ^{3}P°$_1$	92EKB/JUP	92EKB/JUP
102.909	0.010	971 730	4		1.09E+11	$3s^23p^2$ ^{3}P$_0$	$3s^23p3d$ ^{3}D°$_1$	92EKB/JUP	92EKB/JUP
103.316	0.010	967 900	1		9.9E+10	$3s^23p^2$ ^{3}P$_1$	$3s^23p3d$ ^{3}P°$_0$	92EKB/JUP	92EKB/JUP
104.239	0.010	959 330	3		5.7E+10	$3s^23p^2$ ^{3}P$_1$	$3s^23p3d$ ^{3}D°$_2$	92EKB/JUP	92EKB/JUP
104.900	0.010	953 290	2	w	2.5E+10	$3s^23p^2$ ^{3}P$_2$	$3s^23p3d$ ^{3}P°$_1$	92EKB/JUP	92EKB/JUP
105.815	0.010	945 050	1		2.E+9	$3s^23p^2$ ^{1}D$_2$	$3s^23p3d$ ^{1}P°$_1$	92EKB/JUP	92EKB/JUP
106.132	0.010	942 220	4		1.16E+11	$3s^23p^2$ ^{3}P$_2$	$3s^23p3d$ ^{3}D°$_3$	92EKB/JUP	92EKB/JUP
107.514	0.010	930 110	3	h	8.4E+10	$3s^23p^2$ ^{3}P$_2$	$3s^23p3d$ ^{3}D°$_2$	92EKB/JUP	92EKB/JUP

TABLE 41. Spectral lines of Sr XXV—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
109.253	0.010	915 310	2	w	5.7E+10	$3s^23p^2\ ^3P_1$	$3s3p^3\ ^1P^\circ_1$	92EKB/JUP	92EKB/JUP
110.036	0.010	908 790	5		1.05E+11	$3s^23p^2\ ^1D_2$	$3s^23p3d\ ^1F^\circ_3$	92EKB/JUP	92EKB/JUP
112.858	0.010	886 070	1	?	5.83E+9	$3s^23p^2\ ^3P_2$	$3s3p^3\ ^1P^\circ_1$	92EKB/JUP	85HUA
113.150	0.010	883 780	1		2.5E+10	$3s^23p^2\ ^3P_0$	$3s3p^3\ ^3S^\circ_1$	92EKB/JUP	92EKB/JUP
113.793	0.010	878 790	3	bl	5.E+9	$3s^23p^2\ ^3P_1$	$3s^23p3d\ ^3D^\circ_1$	92EKB/JUP	92EKB/JUP
114.353	0.010	874 480	3		5.7E+10	$3s^23p^2\ ^3P_1$	$3s^23p3d\ ^3P^\circ_2$	92EKB/JUP	92EKB/JUP
114.773	0.010	871 280	3		1.11E+11	$3s^23p^2\ ^1S_0$	$3s^23p3d\ ^1P^\circ_1$	92EKB/JUP	92EKB/JUP
117.260	0.010	852 810	10		9.4E+10	$3s^23p^2\ ^1D_2$	1 092 056(2)°	92EKB/JUP	92EKB/JUP
117.690	0.010	849 690	7	bl	4.E+9	$3s^23p^2\ ^3P_2$	$3s^23p3d\ ^3D^\circ_1$	92EKB/JUP	92EKB/JUP
118.318	0.010	845 180	3	h	3.2E+10	$3s^23p^2\ ^3P_2$	$3s^23p3d\ ^3P^\circ_2$	92EKB/JUP	92EKB/JUP
119.540	0.010	836 540	2	h	3.3E+10	$3s^23p^2\ ^1D_2$	$3s^23p3d\ ^3P^\circ_1$	92EKB/JUP	92EKB/JUP
122.952	0.010	813 330	2		1.1E+10	$3s^23p^2\ ^1D_2$	$3s^23p3d\ ^3D^\circ_2$	92EKB/JUP	92EKB/JUP
126.454	0.010	790 800	1		2.9E+10	$3s^23p^2\ ^3P_1$	$3s3p^3\ ^3S^\circ_1$	92EKB/JUP	92EKB/JUP
128.235	0.010	779 820	3		2.E+9	$3s^23p^2\ ^3P_0$	$3s3p^3\ ^3P^\circ_1$	92EKB/JUP	92EKB/JUP
131.286	0.010	761 700	3	w	6.3E+10	$3s^23p^2\ ^3P_2$	$3s3p^3\ ^3S^\circ_1$	92EKB/JUP	92EKB/JUP
136.536	0.010	732 410	1		2.E+9	$3s^23p^2\ ^1D_2$	$3s^23p3d\ ^3D^\circ_1$	92EKB/JUP	92EKB/JUP
137.327	0.010	728 190	1		6.E+9	$3s^23p^2\ ^1D_2$	$3s^23p3d\ ^3P^\circ_2$	92EKB/JUP	92EKB/JUP
153.880	0.010	649 860	3		9.E+9	$3s^23p^2\ ^3P_0$	$3s3p^3\ ^3D^\circ_1$	92EKB/JUP	92EKB/JUP
175.149	0.010	570 940	1	h	2.E+9	$3s^23p^2\ ^1S_0$	$3s3p^3\ ^3S^\circ_1$	92EKB/JUP	92EKB/JUP
179.614	0.010	556 750	1		6.48E+5	$3s^23p^2\ ^3P_1$	$3s3p^3\ ^3D^\circ_1$	92EKB/JUP	85HUA
[224.78]	>0.03	[444 879]			4.54E+8	$3s^23p^2\ ^3P_1$	$3s3p^3\ ^5S^\circ_2$	91JUP/MAR	02ISH/VIL
[240.58]	>0.03	[415 662]			3.23E+8	$3s^23p^2\ ^3P_2$	$3s3p^3\ ^5S^\circ_2$	91JUP/MAR	02ISH/VIL
[455.3]	0.3	[219 640]			9.50E+4	$3s^23p^2\ ^3P_1$	$3s^23p^2\ ^1S_0$	90SUG/KAU	84SUG/KAU
[684.3]	0.3	[146 130]			1.90E+4	$3s^23p^2\ ^3P_1$	$3s^23p^2\ ^1D_2$	90SUG/KAU	84SUG/KAU
[855.2]	0.5	[116 930]			1.60E+4	$3s^23p^2\ ^3P_2$	$3s^23p^2\ ^1D_2$	90SUG/KAU	84SUG/KAU
[1074.3]	0.3	[93 084]			1.21E+4	$3s^23p^2\ ^3P_0$	$3s^23p^2\ ^3P_1$	90SUG/KAU	01ISH/VIL
Air									
[3426.1]	1.0	[29 179]			1.88E+2	$3s^23p^2\ ^3P_1$	$3s^23p^2\ ^3P_2$	90SUG/KAU	01ISH/VIL

6.25. Sr XXVI

Al isoelectronic sequence
Ground state $1s^22s^22p^63s^23p\ ^2P^\circ_{1/2}$
Ionization energy [9 766 000 ± 47 000 cm^{-1}]; [1 211 ± 6 eV]

Although the ground configuration splitting was calculated as early as 1984 [84SUG/KAU], the Sr XXVI spectrum was not experimentally observed until 1987 [87WYA/GAU]. The TFR Group and Wyart [88TFR/WYA] extended the spectral range and reported 7 transitions, one of which was doubly classified. Isoelectronic studies allowed Sugar *et al.* [88SUG/KAU] to obtain fitted values for the ground configuration splitting, five levels in the $3s3p^2$ configuration, and two levels in $3s^23d$. Ekberg *et al.* [91EKB/RED] observed laser-produced plasmas in five ions from Ge XX to Zr XXVIII. They observed 57 spectral lines of Sr XXVI and were able to determine isoelectronically fitted wavelengths for an additional 25 transitions. They also adopted the energy level values retained in Table 42.

Transition probabilities for most of the lines were calculated by Ekberg *et al.* [91EKB/RED] using the Grant code [80GRA/MCK, 80MCK/GRA]. For some lines multiconfiguration Dirac-Fock calculations were employed by Huang [86HUA] and Gebarowski *et al.* [94GEB/MIG] to determine transition rates. Lavin *et al.* [94LAV/ALV] published a comparison between the quantum defect orbital method and its relativistic counterpart and the [86HUA] and [94GEB/MIG] results for the $3s^23p\ ^2P$ to $3s^23d\ ^2D$ transitions. More recently, Safronova *et al.* [03SAF/SAT] utilized relativistic many-body calculations to obtain a more extensive set of transition probabilities. Comparison of the various probabilities was complicated by the fact that, along the isoelectronic sequence, the configuration with the highest leading percentage changes, so the level designations presented in the different papers varied for a few of the levels. In Tables 42 and 43 we have opted to use as the level designation the configuration determined by Ekberg *et al.* [91EKB/RED] to have the highest percentage, except for the level at 1 675 096 cm^{-1}, which would have been identical to that of the level at 1 686 922 cm^{-1}. We have retained the transition probabilities calculated by Safronova *et al.* [03SAF/SAT], which agree with [86HUA] and [94GEB/MIG] to within ±10%, whereas the results of Ekberg *et al.* [91EKB/RED] do not. Where [03SAF/SAT] data are unavailable the [86HUA] values are used.

The ionization energy is taken from the interpolated isoelectronic fits of Biémont *et al.* [99BIE/FRE].

6.25.1 References for Sr XXVI

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TABLE 42. Energy levels of Sr XXVI

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Leading percentages	Reference
$3s^23p$	$^2P°$	1/2	0		98%	91EKB/RED
	$^2P°$	3/2	126 410	50	98%	91EKB/RED
$3s3p^2$	^4P	1/2	453 140	200	89% + 9% $3s3p^2$ ^2S	91EKB/RED
	^4P	3/2	525 050	200	97%	91EKB/RED
	^4P	5/2	568 030	200	76% + 22% $3s3p^2$ ^2D	91EKB/RED
$3s3p^2$	^2D	3/2	651 640	200	83% + 12% $3s^23d$ ^2D	91EKB/RED
	^2D	5/2	699 540	200	64% + 23% $3s3p^2$ ^4P + 12% $3s^23d$ ^2D	91EKB/RED
$3s3p^2$	^2P	1/2	728 900	200	63% + 27% $3s3p^2$ ^2S + 8% $3s3p^2$ ^4P	91EKB/RED
	^2P	3/2	862 070	200	83% + 12% $3s^23d$ ^2D	91EKB/RED
$3s3p^2$	^2S	1/2	855 010	200	62% + 33% $3s3p^2$ ^2P	91EKB/RED
$3s^23d$	^2D	3/2	933 830	200	73% + 17% $3s3p^2$ ^2D + 7% $3s3p^2$ ^2P	91EKB/RED
	^2D	5/2	949 440	200	85% + 13% $3s3p^2$ ^2D	91EKB/RED
$3p^3$	$^4S°$	3/2	1 234 520	200	50% + 19% $3s3p(^3P)3d$ ^4F + 15% $3s3p(^3P)3d$ ^2D	91EKB/RED
$3p^3$	$^2P°$	3/2	1 403 780	200	43% + 16% $3s3p(^3P)3d$ ^2D + 14% $3p^3$ ^4S	91EKB/RED
$3s3p(^3P)3d$	$^4P°$	5/2	1 350 960	200	56% + 27% $3s3p(^3P)3d$ ^4D + 8% $3s3p(^1P)3d$ ^2D	91EKB/RED
	$^4P°$	1/2	1 442 930	200	90% + 9% $3s3p(^3P)3d$ ^4D	91EKB/RED
$3s3p(^3P)3d$	$^4D°$	1/2	1 358 220	200	83% + 8% $3s3p(^3P)3d$ ^4P + 5% $3s3p(^1P)3d$ ^2P	91EKB/RED
	$^4D°$	7/2	1 440 460	200	87% + 11% $3s3p(^3P)3d$ ^4F	91EKB/RED
$3s3p(^3P)3d$	$^2D°$	3/2	1 455 090	200	35% + 21% $3p^3$ ^2D + 14% $3p^3$ ^2P	91EKB/RED
$3s3p(^3P)3d$	$^2F°$	7/2	1 549 780	200	73% + 26% $3s3p(^1P)3d$ ^2F	91EKB/RED
$3s3p(^3P)3d$	$^2P°$	3/2	1 567 950	200	41% + 37% $3s3p(^1P)3d$ ^2D + 14% $3p^3$ ^2P	91EKB/RED
	$^2P°$	1/2	1 631 370	200	73% + 17% $3s3p(^1P)3d$ ^2P + 5% $3p^3$ ^2P	91EKB/RED
$3s3p(^1P)3d$	$^2F°$	7/2	1 624 850	200	69% + 25% $3s3p(^3P)3d$ ^2F	91EKB/RED
	$^2F°$	5/2	1 631 260	200	65% + 23% $3s3p(^3P)3d$ ^2F	91EKB/RED
$3s3p(^1P)3d$	$^2P°$	1/2	1 657 490	200	72% + 13% $3s3p(^3P)3d$ ^2P + 11% $3p^3$ ^2P	91EKB/RED
	$^2P°$	3/2	1 686 920	200	49% + 15% $3s3p(^1P)3d$ ^2D + 10% $3s3p(^3P)3d$ ^2D	91EKB/RED
$3s3p(^1P)3d$	$^2D°$	3/2	1 675 100	200	24% + 37% $3s3p(^1P)3d$ ^2P + 25% $3s3p(^3P)3d$ ^2P	91EKB/RED
	$^2D°$	5/2	1 682 130	200	60% + 15% $3s3p(^3P)3d$ ^2D + 11% $3p^3$ ^2P	91EKB/RED
Sr XXVII ($3s^2$ $^1S_0$)	*Limit*		[9 766 000]	47 000		99BIE/FRE

TABLE 43. Spectral lines of Sr XXVI

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum									
84.878	0.010	1 178 160	1			$3s3p^2\ ^4P_{1/2}$	$3s3p(^3P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	
[86.425]	0.010	1 157 070				$3s3p^2\ ^4P_{3/2}$	$3s3p(^1P)3d\ ^2D^\circ_{5/2}$	91EKB/RED	
89.725	0.010	1 114 520	2			$3s3p^2\ ^4P_{1/2}$	$3s3p(^3P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	
89.792	0.010	1 113 680	1			$3s3p^2\ ^4P_{5/2}$	$3s3p(^1P)3d\ ^2D^\circ_{5/2}$	91EKB/RED	
[94.624]	0.010	1 056 810				$3s3p^2\ ^4P_{5/2}$	$3s3p(^1P)3d\ ^2F^\circ_{7/2}$	91EKB/RED	
96.587	0.010	1 035 340	2			$3s3p^2\ ^2D_{3/2}$	$3s3p(^1P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	
[99.418]	0.010	1 005 850				$3s3p^2\ ^2D_{3/2}$	$3s3p(^1P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	
99.779	0.010	1 002 220	2			$3s3p^2\ ^4P_{1/2}$	$3s3p(^3P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	
101.860	0.010	981 740	3	w		$3s3p^2\ ^4P_{5/2}$	$3s3p(^3P)3d\ ^2F^\circ_{7/2}$	91EKB/RED	
102.077	0.010	979 650	3	=		$3s3p^2\ ^2D_{3/2}$	$3s3p(^3P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	
102.077	0.010	979 650	3	=		$3s3p^2\ ^2D_{3/2}$	$3s3p(^1P)3d\ ^2F^\circ_{5/2}$	91EKB/RED	
[102.506]	0.010	975 550				$3s3p^2\ ^2D_{5/2}$	$3s3p(^1P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	
104.389	0.010	957 960	2			$3s3p^2\ ^2P_{1/2}$	$3s3p(^1P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	
105.178	0.010	950 770	2	w		$3s3p^2\ ^4P_{1/2}$	$3p^3\ ^2P^\circ_{3/2}$	91EKB/RED	
[105.686]	0.010	946 200				$3s3p^2\ ^2P_{1/2}$	$3s3p(^1P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	
107.098	0.010	933 720	3		6.96E+10	$3s^23p\ ^2P^\circ_{1/2}$	$3s^23d\ ^2D_{3/2}$	91EKB/RED	86HUA
[107.329]	0.010	931 720				$3s3p^2\ ^2D_{5/2}$	$3s3p(^1P)3d\ ^2F^\circ_{5/2}$	91EKB/RED	
107.694	0.010	928 560	1		4.95E+10	$3s3p^2\ ^2P_{1/2}$	$3s3p(^1P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	03SAF/SAT
108.069	0.010	925 340	3			$3s3p^2\ ^2D_{5/2}$	$3s3p(^1P)3d\ ^2F^\circ_{7/2}$	91EKB/RED	
108.926	0.010	918 050	4			$3s3p^2\ ^4P_{3/2}$	$3s3p(^3P)3d\ ^4P^\circ_{1/2}$	91EKB/RED	
109.143	0.010	916 240	1			$3s3p^2\ ^2D_{3/2}$	$3s3p(^3P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	
110.487	0.010	905 080	4			$3s3p^2\ ^4P_{1/2}$	$3s3p(^3P)3d\ ^4D^\circ_{1/2}$	91EKB/RED	
110.797	0.010	902 550	3	h	1.32E+10	$3s3p^2\ ^2P_{1/2}$	$3s3p(^3P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	03SAF/SAT
113.793	0.010	878 790	3			$3s3p^2\ ^4P_{3/2}$	$3p^3\ ^2P^\circ_{3/2}$	91EKB/RED	
114.603	0.010	872 580	6		6.93E+10	$3s3p^2\ ^4P_{5/2}$	$3s3p(^3P)3d\ ^4D^\circ_{7/2}$	91EKB/RED	03SAF/SAT
115.980	0.010	862 220	3	p	4.42E+10	$3s^23p\ ^2P^\circ_{1/2}$	$3s3p^2\ ^2P_{3/2}$	91EKB/RED	03SAF/SAT
116.922	0.010	855 270	2	h	6.63E+9	$3s^23p\ ^2P^\circ_{1/2}$	$3s3p^2\ ^2S_{1/2}$	91EKB/RED	86HUA
117.601	0.010	850 330	7	bl	3.58E+10	$3s3p^2\ ^2D_{5/2}$	$3s3p(^3P)3d\ ^2F^\circ_{7/2}$	91EKB/RED	03SAF/SAT
119.194	0.010	838 970	4	h	1.02E+11	$3s3p^2\ ^2P_{1/2}$	$3s3p(^3P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	03SAF/SAT
[120.023]	0.010	833 170				$3s3p^2\ ^4P_{3/2}$	$3s3p(^3P)3d\ ^4D^\circ_{1/2}$	91EKB/RED	
120.213	0.010	831 860	3			$3s3p^2\ ^2S_{1/2}$	$3s3p(^1P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	
121.069	0.010	825 980	7	bl	4.34E+10	$3s3p^2\ ^4P_{3/2}$	$3s3p(^3P)3d\ ^4P^\circ_{5/2}$	91EKB/RED	03SAF/SAT
121.268	0.010	824 620	3	h	5.14E+10	$3s3p^2\ ^2P_{3/2}$	$3s3p(^1P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	03SAF/SAT
121.507	0.010	823 000	5		7.86E+10	$3s^23p\ ^2P^\circ_{3/2}$	$3s^23d\ ^2D_{5/2}$	91EKB/RED	03SAF/SAT
121.956	0.010	819 970	6	=	7.74E+10	$3s3p^2\ ^2S_{1/2}$	$3s3p(^1P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	03SAF/SAT
121.956	0.010	819 970	6	=	9.87E+10	$3s3p^2\ ^2P_{3/2}$	$3s3p(^1P)3d\ ^2D^\circ_{5/2}$	91EKB/RED	03SAF/SAT
[122.977]	0.010	813 160				$3s3p^2\ ^2P_{3/2}$	$3s3p(^1P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	
123.835	0.010	807 530	3	bl	4.34E+10	$3s^23p\ ^2P^\circ_{3/2}$	$3s^23d\ ^2D_{3/2}$	91EKB/RED	03SAF/SAT
124.469	0.010	803 410	3		6.64E+10	$3s3p^2\ ^2D_{3/2}$	$3s3p(^3P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	03SAF/SAT
[124.613]	0.010	802 480			1.97E+10	$3s3p^2\ ^2S_{1/2}$	$3s3p(^1P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	03SAF/SAT
125.713	0.010	795 460	2		5.62E+10	$3s3p^2\ ^2P_{3/2}$	$3s3p(^1P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	03SAF/SAT
127.681	0.010	783 200	3	w		$3s3p^2\ ^4P_{5/2}$	$3s3p(^3P)3d\ ^4P^\circ_{5/2}$	91EKB/RED	
127.987	0.010	781 330	3		1.38E+10	$3s3p^2\ ^4P_{1/2}$	$3p^3\ ^4S^\circ_{3/2}$	91EKB/RED	03SAF/SAT
128.808	0.010	776 350	3	w	5.94E+10	$3s3p^2\ ^2S_{1/2}$	$3s3p(^3P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	03SAF/SAT
[129.988]	0.010	769 300				$3s3p^2\ ^2P_{3/2}$	$3s3p(^3P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	
130.028	0.010	769 060	3	w	2.24E+10	$3s3p^2\ ^2P_{3/2}$	$3s3p(^1P)3d\ ^2F^\circ_{5/2}$	91EKB/RED	03SAF/SAT
132.352	0.010	755 560	3			$3s3p^2\ ^2D_{5/2}$	$3s3p(^3P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	
132.777	0.010	753 140	4		7.07E+10	$3s^23d\ ^2D_{3/2}$	$3s3p(^1P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	03SAF/SAT
[132.954]	0.010	752 140				$3s3p^2\ ^2D_{3/2}$	$3p^3\ ^2P^\circ_{3/2}$	91EKB/RED	
133.629	0.010	748 340	3	p		$3s^23d\ ^2D_{3/2}$	$3s3p(^1P)3d\ ^2D^\circ_{5/2}$	91EKB/RED	
[134.904]	0.010	741 270			9.17E+9	$3s^23d\ ^2D_{3/2}$	$3s3p(^1P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	03SAF/SAT
134.960	0.010	740 960	5	bl		$3s3p^2\ ^2D_{5/2}$	$3s3p(^3P)3d\ ^4D^\circ_{7/2}$	91EKB/RED	
135.612	0.010	737 400	1		2.95E+10	$3s^23d\ ^2D_{5/2}$	$3s3p(^1P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	03SAF/SAT
135.917	0.010	735 740	4		6.69E+10	$3s^23p\ ^2P^\circ_{3/2}$	$3s3p^2\ ^2P_{3/2}$	91EKB/RED	03SAF/SAT
136.475	0.010	732 740	4		5.54E+10	$3s^23d\ ^2D_{5/2}$	$3s3p(^1P)3d\ ^2D^\circ_{5/2}$	91EKB/RED	03SAF/SAT
137.193	0.010	728 900	5	bl	7.66E+10	$3s^23p\ ^2P^\circ_{1/2}$	$3s3p^2\ ^2P_{1/2}$	91EKB/RED	03SAF/SAT
137.246	0.010	728 620	2	p	5.84E+10	$3s^23p\ ^2P^\circ_{3/2}$	$3s3p^2\ ^2S_{1/2}$	91EKB/RED	03SAF/SAT
137.700	0.010	726 220	4	bl		$3s3p^2\ ^2P_{1/2}$	$3s3p(^3P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	
137.772	0.010	725 840	4	w	4.33E+10	$3s^23d\ ^2D_{5/2}$	$3s3p(^1P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	03SAF/SAT
138.212	0.010	723 530	1	h	4.13E+10	$3s^23d\ ^2D_{3/2}$	$3s3p(^1P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	03SAF/SAT
140.273	0.010	712 900	1			$3s3p^2\ ^2S_{1/2}$	$3s3p(^3P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	
[140.952]	0.010	709 460			1.80E+10	$3s3p^2\ ^4P_{3/2}$	$3p^3\ ^4S^\circ_{3/2}$	91EKB/RED	03SAF/SAT

TABLE 43. Spectral lines of Sr XXVI—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
[141.526]	0.010	706 580				$3s3p^2\ ^2D_{3/2}$	$3s3p(^3P)3d\ ^4D^\circ_{1/2}$	91EKB/RED	
141.689	0.010	705 770	1		1.77E+10	$3s3p^2\ ^2P_{3/2}$	$3s3p(^3P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	03SAF/SAT
141.960	0.010	704 420	3			$3s3p^2\ ^2D_{5/2}$	$3p^3\ ^2P^\circ_{3/2}$	91EKB/RED	
143.358	0.010	697 550	4	h,=	1.25E+10	$3s^23d\ ^2D_{3/2}$	$3s3p(^3P)3d\ ^2P^\circ_{1/2}$	91EKB/RED	03SAF/SAT
143.358	0.010	697 550	4	h,=	5.89E+10	$3s^23d\ ^2D_{3/2}$	$3s3p(^1P)3d\ ^2F^\circ_{5/2}$	91EKB/RED	03SAF/SAT
148.054	0.010	675 430	4		6.63E+10	$3s^23d\ ^2D_{5/2}$	$3s3p(^1P)3d\ ^2F^\circ_{7/2}$	91EKB/RED	03SAF/SAT
[148.175]	0.010	674 880				$3s3p^2\ ^2P_{1/2}$	$3p^3\ ^2P^\circ_{3/2}$	91EKB/RED	
[150.042]	0.010	666 480			2.07E+10	$3s3p^2\ ^4P_{5/2}$	$3p^3\ ^4S^\circ_{3/2}$	91EKB/RED	03SAF/SAT
153.470	0.010	651 590	3	h	1.18E+10	$3s^23p\ ^2P^\circ_{1/2}$	$3s3p^2\ ^2D_{3/2}$	91EKB/RED	03SAF/SAT
[153.510]	0.010	651 420				$3s3p^2\ ^2D_{5/2}$	$3s3p(^3P)3d\ ^4P^\circ_{5/2}$	91EKB/RED	
157.700	0.010	634 120	2	p		$3s^23d\ ^2D_{3/2}$	$3s3p(^3P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	
[158.901]	0.010	629 320				$3s3p^2\ ^2P_{1/2}$	$3s3p(^3P)3d\ ^4D^\circ_{1/2}$	91EKB/RED	
[161.679]	0.010	618 510				$3s^23d\ ^2D_{5/2}$	$3s3p(^3P)3d\ ^2P^\circ_{3/2}$	91EKB/RED	
[165.979]	0.010	602 490				$3s^23p\ ^2P^\circ_{3/2}$	$3s3p^2\ ^2P_{1/2}$	91EKB/RED	
[166.573]	0.010	600 340				$3s^23d\ ^2D_{5/2}$	$3s3p(^3P)3d\ ^2F^\circ_{7/2}$	91EKB/RED	
[166.645]	0.010	600 080				$3s3p^2\ ^2S_{1/2}$	$3s3p(^3P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	
[168.629]	0.010	593 020				$3s3p^2\ ^2P_{3/2}$	$3s3p(^3P)3d\ ^2D^\circ_{3/2}$	91EKB/RED	
174.491	0.010	573 100	2	h	4.04E+9	$3s^23p\ ^2P^\circ_{3/2}$	$3s3p^2\ ^2D_{5/2}$	91EKB/RED	86HUA
[184.601]	0.010	541 710				$3s3p^2\ ^2P_{3/2}$	$3p^3\ ^2P^\circ_{3/2}$	91EKB/RED	
[198.722]	0.010	503 220				$3s3p^2\ ^2S_{1/2}$	$3s3p(^3P)3d\ ^4D^\circ_{1/2}$	91EKB/RED	

6.26. Sr XXVII

Mg isoelectronic sequence
Ground state $1s^22s^22p^63s^2\ ^1S_0$
Ionization energy [10 755 000 ± 15 000 cm^{-1}]; [1333.4 ± 1.9 eV]

Observations of the Sr XXVII spectrum began in 1979, with the report by Gordon *et al*. [79GOR/HOB] of one inner-shell transition. Isoelectronic fitting was used by Curtis and Ramanujam [81CUR/RAM, 83CUR/RAM2], Finkenthal *et al*. [82FIN/HIN], Denne *et al*. [83DEN/HIN], Kaufman and Sugar [86KAU/SUG, 89SUG/KAU], and Das and Grant [86DAS/GRA] to predict values for the $3s3p$ levels. Using a laser-produced plasma, Reader [83REA] measured the $3s^2\ ^1S_0-3s3p\ ^1P_1$ transition, as well as two lines from $3s3p$ to $3s3d$ levels. By combining observations of laser-produced plasmas with measurements of radiation from a tokamak, Wyart *et al*. [87WYA/GAU, 88TFR/WYA] reported 40 transitions, which they classified as being between 23 energy levels. The number of measured lines was extended to 77 by Ekberg *et al*. [89EKB/FEL], also with a laser-produced plasma source. These lines were used to determine level values for 33 levels in the $3s^2$, $3s3p$, $3p^2$, $3s3d$, $3p3d$, and $3d^2$ configurations, which are given in Table 44. In the course of evaluating the spectra of more highly ionized members of the Mg isoelectronic sequence, Ekberg *et al*. [91EKB/FEL] later discovered the classifications of two more Sr XXVII lines, thus establishing the location of the $3d^2\ ^3P_0$ level.

Transition probabilities for most of the spectral lines in Table 45 were calculated by Wyart *et al*. [87WYA/GAU] using the relativistic parametric potential method. No estimate of the accuracy of the values was given. Transition rates for the $3s^2\ ^1S_0-3s3p\ ^1P_1$ and $^3P_1$ transitions are from the relativistic many-body perturbation theory calculations of Safronova *et al*. [00SAF/JOH], which are within 12% of the values calculated by Stanek *et al*. [96STA/GLO], who used the multiconfiguration Dirac-Fock method with core polarization.

The semi-empirical ionization energy is quoted from [99BIE/FRE]. Stanek *et al*. [96STA/GLO] also calculated the ionization energy, obtaining a value within the uncertainty given above.

6.26.1 References for Sr XXVII

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81CUR/RAM L. J. Curtis and P. S. Ramanujam, Phys. Scr. **23**, 1043 (1981).

82FIN/HIN M. Finkenthal, E. Hinnov, S. Cohen, and S. Suckewer, Phys. Lett. **91**, 284 (1982).

83CUR/RAM2 L. J. Curtis and P. S. Ramanujam, J. Opt. Soc. Am. **73**, 979 (1983).

83DEN/HIN B. Denne, E. Hinnov, S. Suckewer, and S. Cohen, Phys. Rev. A **28**, 206 (1983).

83REA J. Reader, J. Opt. Soc. Am. **73**, 796 (1983).

86DAS/GRA B. P. Das and I. P. Grant, J. Phys. B **19**, L7 (1986).

86KAU/SUG V. Kaufman and J. Sugar, J. Phys. Chem. Ref. Data **15**, 321 (1986).

87WYA/GAU J.-F. Wyart, J. C. Gauthier, J. P. Geindre, N. Tragin, P. Monier, A. Klisnick, and A. Carillon, Phys. Scr. **36**, 227 (1987).

88TFR/WYA TFR Group and J.-F. Wyart, Phys. Scr. **37**, 66 (1988).

89EKB/FEL J. O. Ekberg, U. Feldman, J. F. Seely, and C. M. Brown, Phys. Scr. **40**, 643 (1989).

89SUG/KAU J. Sugar, V. Kaufman, P. Indelicato, and W. L. Rowan, J. Opt. Soc. B **6**, 1437 (1989).

91EKB/FEL J. O. Ekberg, U. Feldman, J. F. Seely, C. M. Brown, B. J. MacGowan, D. R. Kania, and C. J. Keane, Phys. Scr. **43**, 193 (1991).

96STA/GLO M. Stanek, L. Glowacki, and J. Migdalek, J. Phys. B **29**, 2985 (1996).

99BIE/FRE E. Biémont, Y. Frémat, and P. Quinet, At. Data Nucl. Data Tables **71**, 117 (1999).

00SAF/JOH U. I. Safronova, W. R. Johnson, and H. G. Berry, Phys. Rev. A **61**, 052503 (2000).

TABLE 44. Energy levels of Sr XXVII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3s^2$	^{1}S	0	0		89EKB/FEL
$3s3p$	^{3}P°	0	421 880	50	89EKB/FEL
	^{3}P°	1	449 180	50	89EKB/FEL
	^{3}P°	2	552 940	50	89EKB/FEL
$3s3p$	^{1}P°	1	701 950	50	89EKB/FEL
$3p^2$	^{3}P	0	1 009 330	50	89EKB/FEL
$3p^2$	^{3}P	1	1 105 560	50	89EKB/FEL
$3p^2$	^{3}P	2	1 222 790	50	89EKB/FEL
$3p^2$	^{1}D	2	1 100 230	50	89EKB/FEL
$3p^2$	^{1}S	0	1 345 500	50	89EKB/FEL
$3s3d$	^{3}D	1	1 292 370	50	89EKB/FEL
	^{3}D	2	1 302 020	50	89EKB/FEL
	^{3}D	3	1 317 740	50	89EKB/FEL
$3s3d$	^{1}P°	2	1 449 800	50	89EKB/FEL
$3p3d$	^{3}F°	2	1 746 610	80	89EKB/FEL
$3p3d$	^{3}F°	3	1 808 120	80	89EKB/FEL
$3p3d$	^{3}F°	4	1 901 140	80	89EKB/FEL
$3p3d$	^{1}D°	2	1 826 420	80	89EKB/FEL
$3p3d$	^{3}D°	1	1 849 050	80	89EKB/FEL
$3p3d$	^{3}D°	2	1 912 710	80	89EKB/FEL
$3p3d$	^{3}D°	3	1 949 900	80	89EKB/FEL
$3p3d$	^{3}P°	0	1 954 880	80	89EKB/FEL
$3p3d$	^{3}P°	1	1 955 840	80	89EKB/FEL
$3p3d$	^{3}P°	2	1 964 520	80	89EKB/FEL
$3p3d$	^{1}F°	3	2 061 190	80	89EKB/FEL
$3p3d$	^{1}P°	1	2 086 460	80	89EKB/FEL
$3d^2$	^{3}F	2	2 615 640	80	89EKB/FEL
$3d^2$	^{3}F	3	2 634 070	80	89EKB/FEL
$3d^2$	^{3}F	4	2 652 080	80	89EKB/FEL
$3d^2$	^{1}D	2	2 684 720	80	89EKB/FEL
$3d^2$	^{3}P	0	2 684 570	80	91EKB/FEL
$3d^2$	^{3}P	1	2 693 660	80	91EKB/FEL
$3d^2$	^{3}P	2	2 714 780	80	91EKB/FEL
$3d^2$	^{1}G	4	2 707 610	80	89EKB/FEL
Sr XXVIII ($3s$ $^2S_{1/2}$)	*Limit*		[1 075 5000]	15 000	99BIE/FRE

TABLE 45. Observed spectral lines of Sr XXVII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum									
99.938	0.010	1 000 620	3			$3s3p$ $^3P^\circ_1$	$3s3d$ $^1D_2$	89EKB/FEL	
104.060	0.010	960 984	6			$3p^2$ $^1D_2$	$3p3d$ $^1F^\circ_3$	89EKB/FEL	
111.567	0.010	896 322	1			$3s3p$ $^3P^\circ_1$	$3p^2$ $^1S_0$	89EKB/FEL	
114.077	0.010	876 601	2			$3p3d$ $^3F^\circ_3$	$3d^2$ $^1D_2$	89EKB/FEL	
114.876	0.010	870 504	7			$3s3p$ $^3P^\circ_0$	$3s3d$ $^3D_1$	89EKB/FEL	
115.066	0.010	869 066	6			$3p3d$ $^3F^\circ_2$	$3d^2$ $^3F_2$	89EKB/FEL	
115.303	0.010	867 280	4			$3p3d$ $^1D^\circ_2$	$3d^2$ $^3P_1$	89EKB/FEL	
115.697	0.010	864 327	1			$3p^2$ $^1D_2$	$3p3d$ $^3P^\circ_2$	89EKB/FEL	
116.419	0.010	858 966	2		3.7E+10	$3p^2$ $^3P_1$	$3p3d$ $^3P^\circ_2$	89EKB/FEL	87WYA/GAU
116.506	0.010	858 325	6			$3p3d$ $^1D^\circ_2$	$3d^2$ $^1D_2$	89EKB/FEL	
117.260	0.010	852 806	10		2.4E+11	$3s3p$ $^3P^\circ_1$	$3s3d$ $^3D_2$	89EKB/FEL	87WYA/GAU
117.601	0.010	850 333	7		1.2E+11	$3p^2$ $^3P_1$	$3p3d$ $^3P^\circ_1$	89EKB/FEL	87WYA/GAU
117.690	0.010	849 690	7		2.3E+11	$3p^2$ $^1D_2$	$3p3d$ $^3D^\circ_3$	89EKB/FEL	87WYA/GAU
118.490	0.010	843 953	2			$3p3d$ $^3F^\circ_3$	$3d^2$ $^3F_4$	89EKB/FEL	
118.599	0.010	843 177	4		7.7E+10	$3s3p$ $^3P^\circ_1$	$3s3d$ $^3D_1$	89EKB/FEL	87WYA/GAU
119.085	0.010	839 736	6		2.0E+11	$3p^2$ $^3P_0$	$3p3d$ $^3D^\circ_1$	89EKB/FEL	87WYA/GAU
119.274	0.010	838 406	4		1.0E+11	$3p^2$ $^3P_2$	$3p3d$ $^1F^\circ_3$	89EKB/FEL	87WYA/GAU
119.694	0.010	835 464	3			$3p3d$ $^3D^\circ_1$	$3d^2$ $^3P_0$	91EKB/FEL	
121.069	0.010	825 975	7			$3p3d$ $^3F^\circ_3$	$3d^2$ $^3F_3$	89EKB/FEL	
123.081	0.010	812 473	4		1.2E+11	$3p^2$ $^1D_2$	$3p3d$ $^3D^\circ_2$	89EKB/FEL	87WYA/GAU

TABLE 45. Observed spectral lines of Sr XXVII—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
123.835	0.010	807 526	3	h		$3p3d\ ^1D^\circ_2$	$3d^2\ ^3F_3$	89EKB/FEL	
123.890	0.010	807 168	7	bl	1.9E+11	$3p^2\ ^3P_1$	$3p3d\ ^3D^\circ_2$	89EKB/FEL	87WYA/GAU
124.668	0.010	802 130	2			$3p3d\ ^3D^\circ_2$	$3d^2\ ^3P_2$	89EKB/FEL	
128.038	0.010	781 018	2			$3p3d\ ^3D^\circ_2$	$3d^2\ ^3P_1$	89EKB/FEL	
129.269	0.010	773 581	4		9.2E+10	$3s3p\ ^3P_1^\circ$	$3p^2\ ^3P_2$	89EKB/FEL	87WYA/GAU
129.535	0.010	771 992	2	h		$3p3d\ ^3D^\circ_2$	$3d^2\ ^1D_2$	89EKB/FEL	
130.452	0.010	766 565	5			$3p3d\ ^3D^\circ_1$	$3d^2\ ^3F_2$	89EKB/FEL	
130.752	0.015	764 807	10	=	3.5E+11	$3s3p\ ^3P^\circ_2$	$3s3d\ ^3D_3$	89EKB/FEL	87WYA/GAU
130.752	0.010	764 807	10	m,=		$3p3d\ ^3D^\circ_3$	$3d^2\ ^3P_2$	89EKB/FEL	
131.762	0.010	758 944	1			$3p3d\ ^3P^\circ_1$	$3d^2\ ^3P_2$	89EKB/FEL	
133.165	0.010	750 948	5			$3p3d\ ^3F^\circ_4$	$3d^2\ ^3F_4$	89EKB/FEL	
133.282	0.010	750 289	4			$3p3d\ ^3P^\circ_2$	$3d^2\ ^3P_2$	89EKB/FEL	
133.494	0.010	749 097	3			$3s3p\ ^3P^\circ_2$	$3s3d\ ^3D_2$	89EKB/FEL	
133.721	0.015	747 826	10		6.1E+11	$3s3p\ ^1P^\circ_1$	$3s3d\ ^1D_2$	89EKB/FEL	87WYA/GAU
134.505	0.010	743 467	2			$3p^2\ ^3P_1$	$3p3d\ ^3D^\circ_1$	89EKB/FEL	
134.505	0.010	743 467	2	bl	2.9E+10	$3s3d\ ^3D_3$	$3p3d\ ^1F^\circ_3$	89EKB/FEL	87WYA/GAU
134.821	0.010	741 724	5	bl	1.8E+11	$3p^2\ ^3P_2$	$3p3d\ ^3P^\circ_2$	89EKB/FEL	87WYA/GAU
134.960	0.010	740 960	5			$3p^2\ ^1S_0$	$3p3d\ ^1P^\circ_1$	89EKB/FEL	
135.238	0.010	739 437	1			$3s3p\ ^3P^\circ_2$	$3s3d\ ^3D_1$	89EKB/FEL	
135.357	0.010	738 787	1			$3p3d\ ^3P^\circ_0$	$3d^2\ ^3P_1$	89EKB/FEL	
135.526	0.010	737 866	1			$3p3d\ ^3P^\circ_1$	$3d^2\ ^3P_1$	89EKB/FEL	
136.415	0.010	733 057	2		3.9E+10	$3p^2\ ^3P_2$	$3p3d\ ^3P^\circ_1$	89EKB/FEL	87WYA/GAU
137.195	0.010	728 890	5	bl		$3p3d\ ^3P^\circ_1$	$3d^2\ ^3D_2$	89EKB/FEL	
137.246	0.010	728 619	1			$3p3d\ ^3P^\circ_1$	$3d^2\ ^3P_0$	91EKB/FEL	
137.532	0.010	727 104	6		2.6E+11	$3p^2\ ^3P_2$	$3p3d\ ^3D^\circ_3$	89EKB/FEL	87WYA/GAU
137.700	0.010	726 216	4		9.1E+10	$3p^2\ ^1D_2$	$3p3d\ ^1D^\circ_2$	89EKB/FEL	87WYA/GAU
138.629	0.010	721 350	3	h		$3p3d\ ^3D^\circ_2$	$3d^2\ ^3F_3$	89EKB/FEL	
138.725	0.010	720 851	4		1.0E+11	$3p^2\ ^3P_1$	$3p3d\ ^1D^\circ_2$	89EKB/FEL	87WYA/GAU
141.269	0.010	707 869	2		3.1E+10	$3p^2\ ^1D_2$	$3p3d\ ^3F^\circ_3$	89EKB/FEL	87WYA/GAU
142.455	0.010	701 976	10	h,=	6.10E+10	$3s^2\ ^1S_0$	$3s3p\ ^1P^\circ_1$	89EKB/FEL	00SAF/JOH
142.455	0.010	701 976	10	m,=		$3p3d\ ^3D^\circ_3$	$3d^2\ ^3F_4$	89EKB/FEL	
144.948	0.010	689 903	1			$3p^2\ ^3P_2$	$3p3d\ ^3D^\circ_2$	89EKB/FEL	
146.271	0.010	683 663	4			$3s3p\ ^3P^\circ_0$	$3p^2\ ^3P_1$	89EKB/FEL	
148.73	0.05	672 359	5		2.1E+10	$3s3d\ ^3D_1$	$3p3d\ ^3P^\circ_2$	87WYA/GAU	87WYA/GAU
149.296	0.010	669 810	6		1.9E+11	$3s3p\ ^3P^\circ_2$	$3p^2\ ^3P_2$	89EKB/FEL	87WYA/GAU
149.374	0.010	669 461	4	w		$3p3d\ ^3P^\circ_2$	$3d^2\ ^3F_3$	89EKB/FEL	
150.726	0.010	663 456	2		6.9E+10	$3s3d\ ^3D_1$	$3p3d\ ^3P^\circ_1$	89EKB/FEL	87WYA/GAU
150.945	0.010	662 493	4	bl		$3s3d\ ^3D_1$	$3p3d\ ^3P^\circ_0$	89EKB/FEL	
150.945	0.010	662 493	4	bl	1.1E+11	$3s3d\ ^3D_2$	$3p3d\ ^3P^\circ_2$	89EKB/FEL	87WYA/GAU
152.349	0.010	656 388	3		4.8E+10	$3s3p\ ^3P^\circ_1$	$3p^2\ ^3P_1$	89EKB/FEL	87WYA/GAU
152.940	0.010	653 851	1			$3s3d\ ^3D_2$	$3p3d\ ^3P^\circ_1$	89EKB/FEL	
153.575	0.010	651 148	11	m	4.2E+10	$3s3p\ ^3P^\circ_1$	$3p^2\ ^1D_2$	89EKB/FEL	87WYA/GAU
154.346	0.010	647 895	2		8.1E+10	$3s3d\ ^3D_2$	$3p3d\ ^3D^\circ_3$	89EKB/FEL	87WYA/GAU
154.611	0.010	646 785	1		2.4E+10	$3s3d\ ^3D_3$	$3p3d\ ^3P^\circ_2$	89EKB/FEL	87WYA/GAU
154.698	0.010	646 421	4	bl		$3p^2\ ^1D_2$	$3p3d\ ^3F^\circ_2$	89EKB/FEL	
154.698	0.010	646 421	4	bl	4.6E+11	$3p3d\ ^1F^\circ_3$	$3d^2\ ^1G_4$	89EKB/FEL	87WYA/GAU
155.390	0.010	643 542	3			$3s3p\ ^1P^\circ_1$	$3p^2\ ^1S_0$	89EKB/FEL	
157.064	0.010	636 683	2			$3s3d\ ^1D_2$	$3p3d\ ^1P^\circ_1$	89EKB/FEL	
158.21	0.05	632 071	24		1.2E+11	$3s3d\ ^3D_3$	$3p3d\ ^3D^\circ_3$	87WYA/GAU	87WYA/GAU
161.196	0.010	620 363	1		3.7E+10	$3s3d\ ^3D_1$	$3p3d\ ^3D^\circ_2$	89EKB/FEL	87WYA/GAU
163.564	0.010	611 381	5		4.2E+11	$3s3d\ ^1D_2$	$3p3d\ ^1F^\circ_3$	89EKB/FEL	87WYA/GAU
168.077	0.010	594 965	2	w	3.3E+10	$3s3d\ ^3D_3$	$3p3d\ ^3D^\circ_2$	89EKB/FEL	87WYA/GAU
171.408	0.010	583 403	3		2.0E+11	$3s3d\ ^3D_3$	$3p3d\ ^3F^\circ_4$	89EKB/FEL	87WYA/GAU
178.524	0.010	560 149	2	h	4.0E+10	$3s3p\ ^3P^\circ_1$	$3p^2\ ^3P_0$	89EKB/FEL	87WYA/GAU
180.96	0.05	552 608	18		5.1E+10	$3s3p\ ^3P^\circ_2$	$3p^2\ ^3P_1$	87WYA/GAU	87WYA/GAU
182.714	0.010	547 303	2		4.0E+10	$3s3p\ ^3P^\circ_2$	$3p^2\ ^1D_2$	89EKB/FEL	87WYA/GAU
182.821	0.010	546 983	1	h		$3s3d\ ^3D_2$	$3p3d\ ^3D^\circ_1$	89EKB/FEL	
191.991	0.010	520 858	1		1.0E+10	$3s3p\ ^1P^\circ_1$	$3p^2\ ^3P_2$	89EKB/FEL	87WYA/GAU
196.557	0.010	508 758	2	w	3.4E+10	$3s3d\ ^3D_3$	$3p3d\ ^1D^\circ_2$	89EKB/FEL	87WYA/GAU
197.588	0.010	506 104	2	h	6.0E+10	$3s3d\ ^3D_2$	$3p3d\ ^3F^\circ_3$	89EKB/FEL	87WYA/GAU
203.922	0.010	490 384	1			$3s3d\ ^3D_3$	$3p3d\ ^3F^\circ_3$	89EKB/FEL	
220.145	0.010	454 246	1			$3s3d\ ^3D_1$	$3p3d\ ^3F^\circ_2$	89EKB/FEL	
[222.642]	0.010	[449 151]			9.01E+8	$3s^2\ ^1S_0$	$3s3p\ ^1P^\circ_1$	89SUG/KAU	00SAF/JOH

6.27. Sr XXVIII

Na isoelectronic sequence
Ground state $1s^2 2s^2 2p^6 3s\ ^2S_{1/2}$
Ionization energy 11 188 200 ± 1000 cm^{-1}; 1387.16 ± 0.12 eV

Though isoelectronic studies by Edlén [78EDL] produced predictions of the $2p^6 3p$ and $2p^6 3d$ levels, experimental observations of the Sr XXVIII spectrum were first reported by Gordon *et al*. [79GOR/HOB]. Using a laser-produced plasma, Reader [86REA] observed 37 lines, which were classified as transitions between twenty seven $2p^6 nl$ energy levels. Wavelengths for three of these transitions were remeasured and modified slightly by Reader *et al*. [87REA/KAU]. Wavelengths for those transitions were confirmed in a separate experiment by the TFR Group and Wyart [88TFR/WYA]. In addition to measuring transitions in sodium-like Cd, In, Sb, and Te, Matsushima *et al*. [91MAT/GEI] used isoelectronic fitting to obtain the $2p^6 6s$ and $2p^6 6p\ ^2P_{1/2}$ level values retained. In Tables 46 and 47, the wavelengths and energy level values for the other $2p^6 nl$ configurations are taken from [86REA], except those revised by [87REA/KAU]. The wavelength of the line at 203 Å is a Ritz value, calculated by [86REA] from the energy levels. The ionization energy was obtained by Reader [86REA] using the 4–6*f* and 5*g* levels.

Though the spectral features observed by Gordon *et al*. [79GOR/HOB] were due to inner-shell transitions, each feature was a composite of several transitions. Wyart *et al*. [99WYA/FAJ] were able to detect several isolated spectral lines along with a few multiply-classified features in the 6.3 Å to 6.8 Å range. We have included those transitions in Table 47 and determined values for the upper levels by combining the experimental wave number with the lower energy level obtained by Reader [86REA]. Levels determined only by unresolved transitions have been assigned a higher uncertainty. The terms of the levels were not given by [99WYA/FAJ], so we have used a combination of the configuration, *J*, and energy level value (in 1000 cm^{-1}) in the wavelength table to indicate which upper level is involved.

There are several sources for transition probabilities for the Sr XXVIII spectrum. For the inner shell transitions in Table 47, the rates were calculated by Wyart *et al*. [99WYA/FAJ] using the relativistic parametric potential method. Probabilities for transitions between $2p^6 nl$ levels have been calculated by Johnson *et al*. [96JOH/LIU] using third-order many-body perturbation theory; Zhang *et al*. [92ZHA/ZHU] with the multi-configuration Dirac-Fock technique; Sampson *et al*. [90SAM/ZHA] following the procedure described in Sampson *et al*. [89SAM/ZHA]; and Engo *et al*. [97ENG/NJO] who compared several quantum-defect methods. For all except the latter the calculated transition rates agreed within 10%. We have retained the values of Johnson *et al*. [96JOH/LIU], where available, and Zhang *et al*. [92ZHA/ZHU] otherwise, except for the 3*p*–3*d* transitions, which were taken from Sampson *et al*. [90SAM/ZHA].

6.27.1 References for Sr XXVIII

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TABLE 46. Energy levels of Sr XXVIII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2p^6 3s$	^{2}S	1/2	0		86REA
$2p^6 3p$	^{2}P	1/2	491 004	40	86REA
	^{2}P	3/2	625 864	20	86REA
$2p^6 3d$	^{2}D	3/2	1 276 982	30	86REA
	^{2}D	5/2	1 303 522	30	86REA
$2p^6 4s$	^{2}S	1/2	5 157 500	1100	86REA
$2p^6 4p$	^{2}P	1/2	5 358 600	800	86REA
	^{2}P	3/2	5 412 500	800	86REA
$2p^6 4d$	^{2}D	3/2	5 656 100	1300	86REA
	^{2}D	5/2	5 667 700	1300	86REA
$2p^6 4f$	^{2}F	5/2	5 790 700	1000	86REA
	^{2}F	7/2	5 795 100	1000	86REA
$2p^6 5s$	^{2}S	1/2	7 420 400	2400	86REA

TABLE 46. Energy levels of Sr XXVIII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2p^65p$	^{2}P	1/2	7 516 500	5600	86REA
	^{2}P	3/2	7 547 200	2800	86REA
$2p^65d$	^{2}D	3/2	7 666 500	800	86REA
	^{2}D	5/2	7 672 300	800	86REA
$2p^65f$	^{2}F	5/2	7 732 300	1300	86REA
	^{2}F	7/2	7 734 600	1300	86REA
$2p^65g$	^{2}G	7/2	7 743 790	1000	86REA
	^{2}G	9/2	7 744 990	1000	86REA
$2p^66s$	^{2}S	1/2	[8 612 070]	2200	91MAT/GEI
$2p^66p$	^{2}P	1/2	[8 669 460]	2200	91MAT/GEI
	^{2}P	3/2	8 681 300	3800	86REA
$2p^66d$	^{2}D	3/2	8 751 400	3400	86REA
	^{2}D	5/2	8 753 300	3300	86REA
$2p^66f$	^{2}F	5/2	8 787 000	1400	86REA
	^{2}F	7/2	8 789 900	1400	86REA
$2p^67d$	^{2}D	5/2	9 407 800	3900	86REA
Sr XXIX ($2p^6\ ^1S_0$)		*Limit*	1 118 8200	1000	86REA
$2p^53s^2$	^{2}P	3/2	1 499 0000	7000	99WYA/FAJ, 86REA
	^{2}P	1/2	1 556 4000	7000	99WYA/FAJ, 86REA
$2p^53s3p$		5/2	1 539 9000	7000	99WYA/FAJ, 86REA
		3/2	1 540 5000	10 000	99WYA/FAJ, 86REA
		1/2	1 543 0000	10 000	99WYA/FAJ, 86REA
		3/2	1 552 5000	10 000	99WYA/FAJ, 86REA
		5/2	1 554 0000	10 000	99WYA/FAJ, 86REA
		1/2	1 556 5000	10 000	99WYA/FAJ, 86REA
		3/2	1 566 6000	10 000	99WYA/FAJ, 86REA
		3/2	1 569 2000	7000	99WYA/FAJ, 86REA
		3/2	1 596 4000	10 000	99WYA/FAJ, 86REA
		5/2	1 608 7000	10 000	99WYA/FAJ, 86REA
		1/2	1 611 5000	10 000	99WYA/FAJ, 86REA
		3/2	1 623 6000	7000	99WYA/FAJ, 86REA
$2p^53p^2$		7/2	1 601 6000	7000	99WYA/FAJ, 86REA
		1/2	1 612 3000	7000	99WYA/FAJ, 86REA
		5/2	1 614 9000	7000	99WYA/FAJ, 86REA
		3/2	1 631 2000	7000	99WYA/FAJ, 86REA
		3/2	1 676 4000	10 000	99WYA/FAJ, 86REA
$2p^53s3d$		7/2	1 620 2000	10 000	99WYA/FAJ, 86REA
		5/2	1 621 7000	10 000	99WYA/FAJ, 86REA
		3/2	1 623 1000	10 000	99WYA/FAJ, 86REA
		5/2	1 626 0000	7000	99WYA/FAJ, 86REA
		7/2	1 625 8000	10 000	99WYA/FAJ, 86REA
		5/2	1 634 3000	10 000	99WYA/FAJ, 86REA
		7/2	1 637 1000	7000	99WYA/FAJ, 86REA
		5/2	1 640 0000	7000	99WYA/FAJ, 86REA
		3/2	1 675 0000	10 000	99WYA/FAJ, 86REA
		5/2	1 678 8000	10 000	99WYA/FAJ, 86REA
		5/2	1 679 1000	10 000	99WYA/FAJ, 86REA
		7/2	1 681 5000	10 000	99WYA/FAJ, 86REA
		3/2	1 684 1000	7000	99WYA/FAJ, 86REA
		5/2	1 694 0000	7000	99WYA/FAJ, 86REA

TABLE 47. Observed spectral lines of Sr XXVIII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum									
6.386	0.003	15 659 000			5.96E+11	$2p^63d\ ^2D_{3/2}$	$2p^53s3d\ (16940)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.394	0.003	15 640 000			1.91E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16940)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.406	0.003	15 610 000			2.92E+12	$2p^63p\ ^2P_{3/2}$	$2p^53s3p\ (16236)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.425	0.003	15 564 000			5.76E+12	$2p^63s\ ^2S_{1/2}$	$2p^53s^2\ ^2P_{1/2}$	99WYA/FAJ	99WYA/FAJ
6.436	0.003	15 538 000			1.91E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16841)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.447	0.003	15 511 000		=	1.93E+12	$2p^63d\ ^2D_{3/2}$	$2p^53s3d\ (16791)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.447	0.003	15 511 000		=	5.89E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16815)_{7/2}$	99WYA/FAJ	99WYA/FAJ
6.447	0.003	15 511 000		=	3.60E+12	$2p^63d\ ^2D_{3/2}$	$2p^53s3d\ (16788)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.456	0.003	15 489 000		=	4.58E+12	$2p^63p\ ^2P_{3/2}$	$2p^53s3p\ (16115)_{1/2}$	99WYA/FAJ	99WYA/FAJ
6.456	0.003	15 489 000		=	3.35E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16791)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.463	0.003	15 473 000		=	3.68E+12	$2p^63d\ ^2D_{3/2}$	$2p^53s3d\ (16750)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.463	0.003	15 473 000		=	1.81E+12	$2p^63p\ ^2P_{1/2}$	$2p^53s3p\ (15964)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.468	0.003	15 461 000		=	3.93E+12	$2p^63d\ ^2D_{5/2}$	$2p^53p^2\ (16764)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.468	0.003	15 461 000		=	1.14E+12	$2p^63p\ ^2P_{3/2}$	$2p^53s3p\ (16087)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.576	0.003	15 207 000			7.88E+11	$2p^63p\ ^2P_{1/2}$	$2p^53s3p\ (15692)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.624	0.003	15 097 000			2.40E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16400)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.637	0.003	15 067 000			1.64E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16371)_{7/2}$	99WYA/FAJ	99WYA/FAJ
6.640	0.003	15 060 000			2.66E+12	$2p^63p\ ^2P_{3/2}$	$2p^53s3p\ (15692)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.649	0.003	15 040 000		=	5.00E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16343)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.649	0.003	15 040 000		=	1.31E+12	$2p^63p\ ^2P_{3/2}$	$2p^53s3p\ (15666)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.663	0.003	15 008 000			2.56E+12	$2p^63d\ ^2D_{5/2}$	$2p^53p^2\ (16312)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.671	0.003	14 990 000			4.99E+12	$2p^63s\ ^2S_{1/2}$	$2p^53s^2\ ^2P_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.674	0.003	14 984 000			1.23E+12	$2p^63d\ ^2D_{3/2}$	$2p^53s3d\ (16260)_{5/2}$	99WYA/FAJ	99WYA/FAJ

TABLE 47. Observed spectral lines of Sr XXVIII—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
6.687	0.003	14 954 000		=	4.94E+12	$2p^63d\ ^2D_{3/2}$	$2p^53s3d\ (16231)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.687	0.003	14 954 000		=	4.04E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16258)_{7/2}$	99WYA/FAJ	99WYA/FAJ
6.687	0.003	14 954 000		=	2.35E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16260)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.694	0.003	14 939 000		=	5.50E+12	$2p^63p\ ^2P_{3/2}$	$2p^53s3p\ (15565)_{1/2}$	99WYA/FAJ	99WYA/FAJ
6.694	0.003	14 939 000		=	5.04E+12	$2p^63d\ ^2D_{3/2}$	$2p^53s3d\ (16217)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.694	0.003	14 939 000		=	3.61E+12	$2p^63p\ ^2P_{1/2}$	$2p^53s3p\ (15430)_{1/2}$	99WYA/FAJ	99WYA/FAJ
6.705	0.003	14 914 000		=	5.38E+12	$2p^63p\ ^2P_{1/2}$	$2p^53s3p\ (15405)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.705	0.003	14 914 000		=	2.58E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16217)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.705	0.003	14 914 000		=	3.97E+11	$2p^63p\ ^2P_{3/2}$	$2p^53s3p\ (15540)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.712	0.003	14 899 000		=	3.79E+12	$2p^63p\ ^2P_{3/2}$	$2p^53s3p\ (15525)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.712	0.003	14 899 000		=	1.19E+12	$2p^63d\ ^2D_{5/2}$	$2p^53s3d\ (16217)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.724	0.003	14 872 000			1.93E+11	$2p^63d\ ^2D_{3/2}$	$2p^53p^2\ (16149)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.736	0.003	14 846 000			1.54E+12	$2p^63d\ ^2D_{3/2}$	$2p^53p^2\ (16123)_{1/2}$	99WYA/FAJ	99WYA/FAJ
6.769	0.003	14 773 000			3.45E+11	$2p^63p\ ^2P_{3/2}$	$2p^53s3p\ (15399)_{5/2}$	99WYA/FAJ	99WYA/FAJ
6.797	0.003	14 712 000			3.18E+11	$2p^63d\ ^2D_{5/2}$	$2p^53p^2\ (16016)_{7/2}$	99WYA/FAJ	99WYA/FAJ
11.387	0.005	8 781 900	1		8.28E+11	$2p^63p\ ^2P_{3/2}$	$2p^67d\ ^2D_{5/2}$	86REA	92ZHA/ZHU
11.519	0.005	8 681 300	2		5.93E+11	$2p^63s\ ^2S_{1/2}$	$2p^66p\ ^2P_{3/2}$	86REA	92ZHA/ZHU
[11.535]	0.005	8 669 300			6.42E+11	$2p^63s\ ^2S_{1/2}$	$2p^66p\ ^2P_{1/2}$	91MAT/GEI	92ZHA/ZHU
12.106	0.005	8 260 400	3		1.11E+12	$2p^63p\ ^2P_{1/2}$	$2p^66d\ ^2D_{3/2}$	86REA	92ZHA/ZHU
12.304	0.005	8 127 400	15		1.32E+12	$2p^63p\ ^2P_{3/2}$	$2p^66d\ ^2D_{5/2}$	86REA	92ZHA/ZHU
13.250	0.005	7 547 200	5		9.97E+11	$2p^63s\ ^2S_{1/2}$	$2p^65p\ ^2P_{3/2}$	86REA	92ZHA/ZHU
13.304	0.005	7 516 500	8	=	1.51E+12	$2p^63d\ ^2D_{3/2}$	$2p^66f\ ^2F_{5/2}$	86REA	92ZHA/ZHU
13.304	0.005	7 516 500	8	=	1.09E+12	$2p^63s\ ^2S_{1/2}$	$2p^65p\ ^2P_{1/2}$	86REA	92ZHA/ZHU
13.359	0.005	7 485 600	8		1.60E+12	$2p^63d\ ^2D_{5/2}$	$2p^66f\ ^2F_{7/2}$	86REA	92ZHA/ZHU
13.937	0.005	7 175 100	20		1.91E+12	$2p^63p\ ^2P_{1/2}$	$2p^65d\ ^2D_{3/2}$	86REA	92ZHA/ZHU
14.192	0.005	7 046 200	25		2.29E+12	$2p^63p\ ^2P_{3/2}$	$2p^65d\ ^2D_{5/2}$	86REA	92ZHA/ZHU
14.431	0.005	6 929 500	1		3.37E+11	$2p^63p\ ^2P_{1/2}$	$2p^65s\ ^2S_{1/2}$	86REA	92ZHA/ZHU
14.718	0.005	6 794 400	2		7.32E+11	$2p^63p\ ^2P_{3/2}$	$2p^65s\ ^2S_{1/2}$	86REA	92ZHA/ZHU
15.493	0.005	6 454 500	22		3.08E+12	$2p^63d\ ^2D_{3/2}$	$2p^65f\ ^2F_{5/2}$	86REA	92ZHA/ZHU
15.549	0.005	6 431 300	25		3.27E+12	$2p^63d\ ^2D_{5/2}$	$2p^65f\ ^2F_{7/2}$	86REA	92ZHA/ZHU
18.475	0.005	5 412 700	70		1.74E+12	$2p^63s\ ^2S_{1/2}$	$2p^64p\ ^2P_{3/2}$	86REA	92ZHA/ZHU
18.663	0.005	5 358 200	30		1.96E+12	$2p^63s\ ^2S_{1/2}$	$2p^64p\ ^2P_{1/2}$	86REA	92ZHA/ZHU
19.361	0.005	5 165 000	60		3.46E+12	$2p^63p\ ^2P_{1/2}$	$2p^64d\ ^2D_{3/2}$	86REA	92ZHA/ZHU
19.834	0.005	5 041 800	75		4.23E+12	$2p^63p\ ^2P_{3/2}$	$2p^64d\ ^2D_{5/2}$	86REA	92ZHA/ZHU
19.879	0.005	5 030 400	8		7.16E+11	$2p^63p\ ^2P_{3/2}$	$2p^64d\ ^2D_{3/2}$	86REA	92ZHA/ZHU
21.430	0.005	4 666 400	20		7.59E+11	$2p^63p\ ^2P_{1/2}$	$2p^64s\ ^2S_{1/2}$	86REA	96JOH/LIU
22.067	0.005	4 531 700	20		1.66E+12	$2p^63p\ ^2P_{3/2}$	$2p^64s\ ^2S_{1/2}$	86REA	96JOH/LIU
22.155	0.005	4 513 700	80		8.54E+12	$2p^63d\ ^2D_{3/2}$	$2p^64f\ ^2F_{5/2}$	86REA	92ZHA/ZHU
22.264	0.005	4 491 600	100		9.10E+12	$2p^63d\ ^2D_{5/2}$	$2p^64f\ ^2F_{7/2}$	86REA	92ZHA/ZHU
24.337	0.005	4 109 000	5		4.47E+11	$2p^63d\ ^2D_{5/2}$	$2p^64p\ ^2P_{3/2}$	86REA	92ZHA/ZHU
24.500	0.005	4 081 600	3		5.47E+11	$2p^63d\ ^2D_{3/2}$	$2p^64p\ ^2P_{1/2}$	86REA	92ZHA/ZHU
31.940	0.005	3 130 870	2		7.89E+11	$2p^64d\ ^2D_{3/2}$	$2p^66f\ ^2F_{5/2}$	86REA	92ZHA/ZHU
32.029	0.005	3 122 170	3		8.41E+11	$2p^64d\ ^2D_{5/2}$	$2p^66f\ ^2F_{7/2}$	86REA	92ZHA/ZHU
43.329	0.005	2 307 920	3		6.21E+11	$2p^64p\ ^2P_{1/2}$	$2p^65d\ ^2D_{3/2}$	86REA	92ZHA/ZHU
44.252	0.005	2 259 780	5		7.79E+11	$2p^64p\ ^2P_{3/2}$	$2p^65d\ ^2D_{5/2}$	86REA	92ZHA/ZHU
48.164	0.005	2 076 240	12		1.46E+12	$2p^64d\ ^2D_{3/2}$	$2p^65f\ ^2F_{5/2}$	86REA	92ZHA/ZHU
48.381	0.005	2 066 930	15		1.57E+12	$2p^64d\ ^2D_{5/2}$	$2p^65f\ ^2F_{7/2}$	86REA	92ZHA/ZHU
49.809	0.005	2 007 670	3	w	5.24E+11	$2p^64p\ ^2P_{3/2}$	$2p^65s\ ^2S_{1/2}$	86REA	92ZHA/ZHU
51.201	0.005	1 953 090	25		2.54E+12	$2p^64f\ ^2F_{5/2}$	$2p^65g\ ^2G_{7/2}$	86REA	92ZHA/ZHU
51.285	0.005	1 949 890	30		2.63E+12	$2p^64f\ ^2F_{7/2}$	$2p^65g\ ^2G_{9/2}$	86REA	92ZHA/ZHU
127.227	0.005	785 978	40		3.97E+10	$2p^63p\ ^2P_{1/2}$	$2p^63d\ ^2D_{3/2}$	87REA/KAU	90SAM/ZHA
147.569	0.005	677 658	30		3.08E+10	$2p^63p\ ^2P_{3/2}$	$2p^63d\ ^2D_{5/2}$	87REA/KAU	90SAM/ZHA
153.579	0.005	651 118	5		4.52E+09	$2p^63p\ ^2P_{3/2}$	$2p^63d\ ^2D_{3/2}$	87REA/KAU	90SAM/ZHA
159.770	0.005	625 864	30		2.66E+10	$2p^63s\ ^2S_{1/2}$	$2p^63p\ ^2P_{3/2}$	87REA/KAU	96JOH/LIU
203.664	0.005	491 004		*R*	1.26E+10	$2p^63s\ ^2S_{1/2}$	$2p^63p\ ^2P_{1/2}$	86REA	96JOH/LIU

6.28. Sr XXIX

Ne isoelectronic sequence
Ground state $1s^22s^22p^6\ ^1S_0$
Ionization energy [$26\,977\,000 \pm 15\,000\ cm^{-1}$]; [$3344.7 \pm 1.9$ eV]

The first reported measurements of the Sr XXIX spectrum were seven transitions from $J = 1$ excited states to the ground state, made by Gordon *et al.* [79GOR/HOB] and nearly simultaneously by Hutcheon *et al.* [80HUT/COO]. The two sets of data overlap, providing a useful verification of the values, with all values within 0.006 Å, but with the [80HUT/COO] data on average 0.004 Å higher. In 1986 Gauthier *et al*. [86GAU/GEI] remeasured two of the lines, obtaining values intermediate to the two previous experiments, and also measured the line at 5.385 Å. Subsequent observations by Wyart *et al*. [99WYA/FAJ] produced results for the wavelengths of the 6.362 Å and 6.592 Å lines which were identical to those of [80HUT/COO]. Transitions between excited levels were first reported by Wyart *et al*. [87WYA/GAU], who reported 13 spectral lines, some of which were multiply classified. Keane *et al*. [90KEA/MAT] extended the wavelength region measured and observed four additional transitions.

The $2s^22p^53l$ and $2s2p^63l$ levels in Table 48 were obtained by integrating the experimental wavelengths and reoptimizing the levels [11SAN]. Transitions have not been measured which would locate the $2s^22p^53s(1/2,1/2)^\circ_0$ and $2s^22p^53p(1/2,1/2)^\circ_1$ levels. For those we have used the values calculated by Ivanova and Gulov [91IVA/GUL], whose levels most closely matched the experimental results for other levels. The "$+x$" and "$+y$" in the table indicate which levels have been affected by this process.

In addition to the $n=3$ levels listed in Table 48, there have been theoretical calculations of levels of the $2s^22p^54l$ and $2s2p^64l$ configurations by Boiko *et al*. [78BOI/FAE], Zhang *et al*. [87ZHA/SAM, 89ZHA/SAM], Cornille *et al*. [94COR/DUB], Ivanova and Gulov [91IVA/GUL], Elliott *et al*. [93ELL/BEI, 96NIL/BEI], and Safronova *et al*. [94SAF/SAF]. We have retained the [91IVA/GUL] values. The uncertainty assigned to these theoretical levels reflects the variation among energies calculated by the various theoretical methods. The spread in values for levels with a $2s^22p^5$ core is considerably less than that for those with a $2s2p^6$ core.

The wavelengths retained in Table 49 are from [87WYA/GAU] and [86GAU/GEI], where available, and otherwise from Keane *et al*. [90KEA/MAT] and Hutcheon *et al*. [80HUT/COO]. The ionization energy is from the isoelectronic fit of Biémont *et al*. [99BIE/FRE]. Theoretical calculations of the ionization energy by Huang *et al*. [06HUA/JIA], Gu [05GU], and Rodrigues *et al*. [04ROD/IND] all lie within 37 000 cm^{-1} of the [99BIE/FRE] value.

Many of the theoretical papers also report transition probabilities for the observed spectral lines ([87ZHA/SAM], [89ZHA/SAM], [94COR/DUB], [91IVA/GUL], [94SAF/SAF]). In addition, transition rates have been given in the experimental papers of Gauthier *et al*. [86GAU/GEI] and Wyart *et al*. [87WYA/GAU, 99WYA/FAJ]. Theoretical investigations of Ne-like ions by Quinet *et al*. [91QUI/GOR], Ivanova and Grant [98IVA/GRA], and Safronova *et al*. [05SAF/COW] have also yielded oscillator strengths. Comparison of the results obtained indicates that most are within ±15% of each other. For transitions to the ground state we have retained the relativistic perturbation theory results of Ivanova and Gulov [91IVA/GUL]. For transitions between excited states we give the relativistic many-body perturbation theory values of Safronova *et al*. [05SAF/COW], where available, and the multi-configuration Dirac-Fock probabilities calculated by Quinet *et al*. [91QUI/GOR] otherwise.

6.28.1 References for Sr XXIX

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TABLE 48. Energy levels of Sr XXIX

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^22p^6$	^1S	0	0		
$2s^22p^53s$	(3/2,1/2)°	2	15 143 000	5000	11SAN
		1	15 170 000	5000	11SAN
$2s^22p^53p$	(3/2,1/2)	1	15 597 000	5000	11SAN
		2	15 615 000	5000	11SAN
$2s^22p^53s$	(1/2,1/2)°	0	15 709 000 + x	10 000	11SAN
		1	15 718 000	5000	11SAN
$2s^22p^53p$	(3/2,3/2)	3	15 739 000	5000	11SAN
		1	15 741 000	5000	11SAN
		2	15 779 000	5000	11SAN
$2s^22p^53p$	(1/2,1/2)	1	16 169 000 + y	10 000	11SAN
		0	16 344 000	5000	11SAN
$2s^22p^53p$	(1/2,3/2)	1	16 312 000 + x	10 000	11SAN
		2	16 319 000	5000	11SAN
$2s^22p^53d$	(3/2,3/2)°	1	16 318 000	5000	11SAN
		3	16 342 000	5000	11SAN
		0	16 349 000	5000	11SAN
		2	16 359 000	5000	11SAN
$2s^22p^53d$	(3/2,5/2)°	4	16 353 000	5000	11SAN
		3	16 405 000	5000	11SAN
		1	16 493 000	5000	11SAN
$2s^22p^53d$	(1/2,3/2)°	2	16 904 000 + y	10 000	11SAN
		1	16 998 000	6000	11SAN
$2s^22p^53d$	(1/2,5/2)°	2	16 936 000 + x	10 000	11SAN
		3	16 945 000	5000	11SAN
$2s2p^63p$	(1/2,1/2)°	1	17 768 000	6000	11SAN
$2s2p^63p$	(1/2,3/2)°	1	17 921 000	6000	11SAN
$2s2p^63d$	(1/2,5/2)	2	18 570 000	6000	11SAN
$2s^22p^54s$	(3/2,1/2)°	2	(20 561 000)	25 000	91IVA/GUL
		1	(20 570 000)	25 000	91IVA/GUL
$2s^22p^54s$	(1/2,1/2)°	0	(21 128 000)	25 000	91IVA/GUL
		1	(21 135 000)	25 000	91IVA/GUL
$2s^22p^54p$	(3/2,1/2)	1	(20 748 000)	25 000	91IVA/GUL
		2	(20 753 000)	25 000	91IVA/GUL
$2s^22p^54p$	(3/2,3/2)	3	(20 804 000)	25 000	91IVA/GUL
		1	(20 806 000)	25 000	91IVA/GUL
		2	(20 818 000)	25 000	91IVA/GUL
		0	(20 870 000)	25 000	91IVA/GUL
$2s^22p^54p$	(1/2,1/2)	1	(21 317 000)	25 000	91IVA/GUL
		0	(21 359 000)	25 000	91IVA/GUL
$2s^22p^54p$	(1/2,3/2)	1	(21 374 000)	25 000	91IVA/GUL
		2	(21 378 000)	25 000	91IVA/GUL
$2s^22p^54d$	(3/2,3/2)°	0	(21 016 000)	25 000	91IVA/GUL
		1	(21 024 000)	25 000	91IVA/GUL
		2	(21 037 000)	25 000	91IVA/GUL
		3	(21 033 000)	25 000	91IVA/GUL
$2s^22p^54d$	(3/2,5/2)°	4	(21 039 000)	25 000	91IVA/GUL
		2	(21 047 000)	25 000	91IVA/GUL
		3	(21 056 000)	25 000	91IVA/GUL
		1	(21 090 000)	25 000	91IVA/GUL
$2s^22p^54d$	(1/2,3/2)°	2	(21 598 000)	25 000	91IVA/GUL
		1	(21 628 000)	25 000	91IVA/GUL
$2s^22p^54d$	(1/2,5/2)°	2	(21 611 000)	25 000	91IVA/GUL
		3	(21 616 000)	25 000	91IVA/GUL
$2s2p^64s$	(1/2,1/2)	1	(22 694 000)	40 000	91IVA/GUL
		0	(22 724 000)	40 000	91IVA/GUL
$2s2p^64p$	(1/2,1/2)°	0	(22 885 000)	40 000	91IVA/GUL
		1	(22 887 000)	40 000	91IVA/GUL
$2s2p^64p$	(1/2,3/2)°	2	(22 941 000)	40 000	91IVA/GUL
		1	(22 948 000)	40 000	91IVA/GUL
$2s2p^64d$	(1/2,3/2)	1	(23 161 000)	40 000	91IVA/GUL
		2	(23 164 000)	40 000	91IVA/GUL
$2s2p^64d$	(1/2,5/2)	3	(23 174 000)	40 000	91IVA/GUL
		2	(23 194 000)	40 000	91IVA/GUL
Sr XXX ($2p^5$ $^2P_{3/2}$)	*Limit*		[26 977 000]	15 000	99BIE/FRE

TABLE 49. Observed spectral lines of Sr XXIX

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
Vacuum									
5.385	0.002	18 570 000			1.4E+11	$2p^6$ $^1S_0$	$2s2p^63d$ $(1/2,5/2)_2$	86GAU/GEI	91IVA/GUL
5.580	0.002	17 921 000			2.2E+13	$2p^6$ $^1S_0$	$2s2p^63p$ $(1/2,3/2)°_1$	86GAU/GEI	91IVA/GUL
5.628	0.002	17 768 000			7.1E+12	$2p^6$ $^1S_0$	$2s2p^63p$ $(1/2,1/2)°_1$	86GAU/GEI	91IVA/GUL
5.883	0.002	16 998 000			1.2E+14	$2p^6$ $^1S_0$	$2s^22p^53d$ $(1/2,3/2)°_1$	80HUT/COO	91IVA/GUL
6.063	0.002	16 493 000			1.0E+14	$2p^6$ $^1S_0$	$2s^22p^53d$ $(3/2,5/2)°_1$	80HUT/COO	91IVA/GUL
6.128	0.002	16 319 000			2.6E+11	$2p^6$ $^1S_0$	$2s^22p^53d$ $(3/2,3/2)°_1$	80HUT/COO	91IVA/GUL
6.362	0.002	15 718 000			4.3E+12	$2p^6$ $^1S_0$	$2s^22p^53s$ $(1/2,1/2)°_1$	80HUT/COO	91IVA/GUL
6.592	0.002	15 170 000			6.6E+12	$2p^6$ $^1S_0$	$2s^22p^53s$ $(3/2,1/2)°_1$	80HUT/COO	91IVA/GUL
84.88	0.10	1 178 100			1.32E+10	$2s^22p^53s$ $(3/2,1/2)°_1$	$2s^22p^53p$ $(1/2,1/2)_0$	90KEA/MAT	91QUI/GOR

TABLE 49. Observed spectral lines of Sr XXIX—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Int.	Line Code	A$_{ki}$ (s^{-1})	Lower Level	Upper Level	λ Ref.	A$_{ki}$ Ref.
131.23	0.05	762 000	5		1.17E+10	$2s^22p^53p$ (3/2,1/2)$_1$	$2s^22p^53d$ (3/2,3/2)°$_2$	87WYA/GAU	91QUI/GOR
132.98	0.10	752 000			4.33E+10	$2s^22p^53s$ (3/2,1/2)°$_1$	$2s^22p^53p$ (3/2,3/2)$_0$	90KEA/MAT	05SAF/COW
136.01	0.05	735 200	18	bl,w	2.90E+10	$2s^22p^53p$ (1/2,1/2)$_1$	$2s^22p^53d$ (1/2,3/2)°$_2$	87WYA/GAU	05SAF/COW
137.51	0.05	727 200	18	bl	2.81E+10	$2s^22p^53p$ (3/2,1/2)$_2$	$2s^22p^53d$ (3/2,3/2)°$_3$	87WYA/GAU	05SAF/COW
138.67	0.05	721 100	23	bl	2.30E+10	$2s^22p^53p$ (3/2,1/2)$_1$	$2s^22p^53d$ (3/2,3/2)°$_1$	87WYA/GAU	05SAF/COW
157.11	0.05	636 500	23	=	1.62E+10	$2s^22p^53p$ (3/2,3/2)$_1$	$2s^22p^53d$ (3/2,5/2)°$_2$	87WYA/GAU	05SAF/COW
157.11	0.05	636 500	23	=	1.40E+10	$2s^22p^53s$ (3/2,1/2)°$_2$	$2s^22p^53p$ (3/2,3/2)$_2$	87WYA/GAU	05SAF/COW
159.78	0.05	625 900	95	bl,=	2.16E+10	$2s^22p^53p$ (1/2,3/2)$_2$	$2s^22p^53d$ (1/2,5/2)°$_3$	87WYA/GAU	05SAF/COW
159.78	0.05	625 900	95	bl,=	1.79E+10	$2s^22p^53p$ (3/2,3/2)$_2$	$2s^22p^53d$ (3/2,5/2)°$_3$	87WYA/GAU	05SAF/COW
159.78	0.05	625 900	95	bl,=	2.52E+10	$2s^22p^53s$ (1/2,1/2)°$_1$	$2s^22p^53p$ (1/2,1/2)$_0$	87WYA/GAU	05SAF/COW
160.47	0.05	623 170	9		1.90E+10	$2s^22p^53p$ (1/2,3/2)$_1$	$2s^22p^53d$ (1/2,5/2)°$_2$	87WYA/GAU	05SAF/COW
162.89	0.05	613 910	14		2.01E+10	$2s^22p^53p$ (3/2,3/2)$_3$	$2s^22p^53d$ (3/2,5/2)°$_4$	87WYA/GAU	05SAF/COW
164.08	0.05	609 460	8	w	1.15E+10	$2s^22p^53s$ (3/2,1/2)°$_1$	$2s^22p^53p$ (3/2,3/2)$_2$	87WYA/GAU	05SAF/COW
165.77	0.05	603 250	8		1.46E+10	$2s^22p^53s$ (1/2,1/2)°$_0$	$2s^22p^53p$ (1/2,3/2)$_1$	87WYA/GAU	05SAF/COW
166.49	0.05	600 640	11		2.40E+10	$2s^22p^53s$ (1/2,1/2)°$_1$	$2s^22p^53p$ (1/2,3/2)$_2$	87WYA/GAU	05SAF/COW
167.91	0.05	595 560	12		2.14E+10	$2s^22p^53s$ (3/2,1/2)°$_2$	$2s^22p^53p$ (3/2,3/2)$_3$	87WYA/GAU	05SAF/COW
175.1	0.1	571 100			1.80E+10	$2s^22p^53s$ (3/2,1/2)°$_1$	$2s^22p^53p$ (3/2,3/2)$_1$	90KEA/MAT	05SAF/COW
224.9	0.1	444 600			4.46E+10	$2s^22p^53s$ (3/2,1/2)°$_1$	$2s^22p^53p$ (3/2,1/2)$_2$	90KEA/MAT	05SAF/COW

6.29. Sr XXX

F isoelectronic sequence
Ground state $1s^22s^22p^5\ ^2P^\circ_{3/2}$
Ionization energy [28 205 000 ± 48 000 cm^{-1}]; [3497 ± 6 eV]

The spectrum of Sr XXX was first measured in the 5.7 Å region by Hutcheon *et al.* [80HUT/COO] using a laser-produced plasma. Using a similar source, Reader [82REA] measured the $2s^22p^5-2s2p^6$ transitions and determined the ground state splitting. Zigler *et al.* [86ZIG/FEL] also observed the blended transition at 5.69 Å, obtaining a value within the uncertainty of the measurement. By extending the experimental wavelength region to 6.8 Å, Wyart *et al.* [99WYA/FAJ] observed the first transitions involving the $2s^22p^43s$ and $2s2p^53s$ configurations. They also calculated the energy levels involved in the transitions. As indicated in Table 50, Wyart *et al.* [99WYA/FAJ] did not give terms for the levels in the upper configurations and also did not estimate the uncertainty of the level values. We have used the first five digits of the level value and the *J* value to identify these levels in Table 51.

The most comprehensive source of transition probabilities for the Sr XXX spectrum is Sampson *et al.* [91SAM/ZHA]. Unfortunately, the use of different coupling schemes in the [91SAM/ZHA] and [80HUT/COO] papers precludes the unambiguous matching of the upper levels. Thus we are unable to give transition probabilities of the observed transitions for some of the spectral lines in Table 51. The transition rate for the forbidden transition between the levels of the ground configuration is taken from Kaufman and Sugar [86KAU/SUG]. Probabilities for the lines measured only by Wyart *et al.* [99WYA/FAJ] are taken from that paper. The semi-empirical ionization energy is quoted from Biémont *et al.* [99BIE/FRE]. It is within the stated uncertainty of the values calculated by Rodrigues *et al.* [04ROD/IND], Gu [05GU], and Huang *et al.* [06HUA/JIA].

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TABLE 50. Energy levels of Sr XXX

Configuration	Term or designation	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^22p^5$	$^2P^\circ$	3/2	0		
	$^2P^\circ$	1/2	568 360	400	82REA
$2s2p^6$	^2S	1/2	2 126 300	700	82REA
$2s^22p^43s$	$(15789)_{1/2}$	1/2	(15 789 200)		99WYA/FAJ
$2s^22p^43s$	$(16421)_{3/2}$	3/2	(16 421 500)		99WYA/FAJ
$2s^22p^4(^1D)3d$	^2S	1/2	17 538 000	10 000	80HUT/COO
$2s^22p^4(^1D)3d$	^2F	5/2	17 538 000	10 000	80HUT/COO
$2s^22p^4(^1D)3d$	^2P	3/2	17 575 000	10 000	80HUT/COO
$2s^22p^4(^1D)3d$	^2D	5/2	17 575 000	10 000	80HUT/COO
$2s2p^53s$	$(17747)^\circ_{3/2}$	3/2	(17 747 000)		99WYA/FAJ
$2s2p^53s$	$(17931)^\circ_{1/2}$	1/2	(17 931 400)		99WYA/FAJ
Sr XXXI ($2p^4\ ^3P_2$)		*Limit*	[28 205 000]	48 000	99BIE/FRE

TABLE 51. Observed spectral lines of Sr XXX

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	Line code	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum								
5.690	0.002	17 575 000	bl		$2s^22p^5\ ^2P^\circ_{3/2}$	$2s^22p^4(^1D)3d\ ^2P_{3/2}$	80HUT/COO	
5.690	0.002	17 575 000	bl		$2s^22p^5\ ^2P^\circ_{3/2}$	$2s^22p^4(^1D)3d\ ^2D_{5/2}$	80HUT/COO	
5.702	0.002	17 538 000	bl		$2s^22p^5\ ^2P^\circ_{3/2}$	$2s^22p^4(^1D)3d\ ^2F_{5/2}$	80HUT/COO	
5.702	0.002	17 538 000	bl		$2s^22p^5\ ^2P^\circ_{3/2}$	$2s^22p^4(^1D)3d\ ^2S_{1/2}$	80HUT/COO	
6.309	0.003	15 850 000		7.44E+12	$2s^22p^5\ ^2P^\circ_{1/2}$	$2s^22p^43s\ (16421)_{3/2}$	99WYA/FAJ	99WYA/FAJ
6.334	0.003	15 788 000	bl	2.19E+13	$2s^22p^5\ ^2P^\circ_{3/2}$	$2s^22p^43s\ (15789)_{1/2}$	99WYA/FAJ	99WYA/FAJ
6.334	0.003	15 788 000	bl	7.27E+12	$2s2p^6\ ^2S_{1/2}$	$2s2p^53s\ (17931)^\circ_{1/2}$	99WYA/FAJ	99WYA/FAJ
6.403	0.003	15 618 000		5.87E+12	$2s2p^6\ ^2S_{1/2}$	$2s2p^53s\ (17747)^\circ_{3/2}$	99WYA/FAJ	99WYA/FAJ
47.031	0.015	2 126 300		3.01E+11	$2s^22p^5\ ^2P^\circ_{3/2}$	$2s2p^6\ ^2S_{1/2}$	82REA	91SAM/ZHA
64.189	0.015	1 557 900		5.86E+10	$2s^22p^5\ ^2P^\circ_{1/2}$	$2s2p^6\ ^2S_{1/2}$	82REA	91SAM/ZHA
[176.02]	0.12	568 120		3.27E+6	$2s^22p^5\ ^2P^\circ_{3/2}$	$2s^22p^5\ ^2P^\circ_{1/2}$	82REA	86KAU/SUG

6.30. Sr XXXI

O isoelectronic sequence
Ground state $1s^22s^22p^4\ ^3P_2$
Ionization energy [29 551 000 ± 65 000 cm^{-1}]; [3664 ± 8 eV]

Although no measurements of spectral lines of Sr XXXI have been reported, lines of many nearby members of the oxygen isoelectronic sequence have been observed. Based upon members up to germanium ($Z=32$), Edlén [83EDL] predicted values for ions up to molybdenum ($Z=42$). After measuring transitions in Mo, Cd, In, and Sn, Feldman *et al.* [91FEL/EKB] were able to fit the isoelectronic series and interpolate to obtain the wavelengths and energy levels in Tables 52 and 53.

The transition probabilities listed in Table 53 were calculated by Zhang and Sampson [02ZHA/SAM] using the multi-configuration Dirac-Fock code of Grant *et al.* [80GRA/MCK, 80MCK/GRA]. The semi-empirical ionization energy is quoted from the isoelectronic fit of Biémont *et al.* [99BIE/FRE]. It is within 25 000 cm^{-1} of the theoretical values obtained by Rodrigues *et al.* [04ROD/IND], Gu [05GU], and Huang *et al.* [06HUA/JIA].

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TABLE 52. Energy levels of Sr XXXI

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^22p^4$	^3P	2	0	400	91FEL/EKB
	^3P	0	[175 960]	400	91FEL/EKB
	^3P	1	[545 040]	400	91FEL/EKB
$2s^22p^4$	^1D	2	[649 980]	400	91FEL/EKB
$2s^22p^4$	^1S	0	[1 268 550]	400	91FEL/EKB
$2s2p^5$	$^3P°$	2	[1 883 100]	400	91FEL/EKB
	$^3P°$	1	[2 101 960]	400	91FEL/EKB
	$^3P°$	0	[2 467 670]	400	91FEL/EKB
$2s2p^5$	$^1P°$	1	[2 708 830]	400	91FEL/EKB
$2p^6$	^1S	0	[4 223 570]	700	91FEL/EKB
Sr XXXII ($2p^3$ $^4S_{3/2}$)		*Limit*	[29 551 000]	65 000	99BIE/FRE

TABLE 53. Spectral lines of Sr XXXI

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum							
[46.211]	0.010	2 163 990	2.09E+10	$2s^22p^4$ $^3P_1$	$2s2p^5$ $^1P^\circ_1$	91FEL/EKB	02ZHA/SAM
[47.138]	0.010	2 121 430	2.60E+11	$2s2p^5$ $^3P^\circ_1$	$2p^6$ $^1S_0$	91FEL/EKB	02ZHA/SAM
[47.572]	0.010	2 102 080	1.83E+11	$2s^22p^4$ $^3P_2$	$2s2p^5$ $^3P^\circ_1$	91FEL/EKB	02ZHA/SAM
[48.571]	0.010	2 058 840	3.36E+11	$2s^22p^4$ $^1D_2$	$2s2p^5$ $^1P^\circ_1$	91FEL/EKB	02ZHA/SAM
[51.921]	0.010	1 926 000	3.60E+09	$2s^22p^4$ $^3P_0$	$2s2p^5$ $^3P^\circ_1$	91FEL/EKB	02ZHA/SAM
[52.012]	0.010	1 922 630	2.15E+11	$2s^22p^4$ $^3P_1$	$2s2p^5$ $^3P^\circ_0$	91FEL/EKB	02ZHA/SAM
[53.106]	0.010	1 883 030	1.17E+11	$2s^22p^4$ $^3P_2$	$2s2p^5$ $^3P^\circ_2$	91FEL/EKB	02ZHA/SAM
[138.22]	0.08	723 480		$2s^22p^4$ $^3P_1$	$2s^22p^4$ $^1S_0$	91FEL/EKB	
[153.85]	0.09	649 980		$2s^22p^4$ $^3P_2$	$2s^22p^4$ $^1D_2$	91FEL/EKB	
[183.47]	0.13	545 050		$2s^22p^4$ $^3P_2$	$2s^22p^4$ $^3P_1$	91FEL/EKB	
[270.9]	0.3	369 140		$2s^22p^4$ $^3P_0$	$2s^22p^4$ $^3P_1$	91FEL/EKB	
[952.0]	4.0	105 040		$2s^22p^4$ $^3P_1$	$2s^22p^4$ $^1D_2$	91FEL/EKB	

6.31. Sr XXXII

N isoelectronic sequence
Ground state $1s^22s^22p^3$ $^4S^\circ_{3/2}$
Ionization energy [30 854 000 ± 231 000 cm^{-1}]; [3830 ± 30 eV]

There have been no measurements of the Sr XXXII spectrum; however, Zhang and Sampson [99ZHA/SAM] have used the multi-configuration Dirac-Fock method to calculate several of the low-lying energy levels and transition probabilities for transitions between them. The levels are shown in Table 54 and the wavelengths listed in Table 55 are derived from them. The semi-empirical ionization energy is quoted from the isoelectronic fit of [99BIE/FRE]. It is within 11 000 cm^{-1} of the theoretical values obtained by Rodrigues *et al*. [04ROD/IND], Gu [05GU], and Huang *et al*. [06HUA/JIA].

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TABLE 54. Calculated energy levels of Sr XXXII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^22p^3$	$^4S^\circ$	3/2	(0)		99ZHA/SAM
$2s^22p^3$	$^2D^\circ$	3/2	(496 000)		99ZHA/SAM
	$^2D^\circ$	5/2	(609 300)		99ZHA/SAM
$2s^22p^3$	$^2P^\circ$	1/2	(750 600)		99ZHA/SAM
	$^2P^\circ$	3/2	(1 241 900)		99ZHA/SAM
$2s2p^4(^3P)$	^4P	5/2	(1 581 300)		99ZHA/SAM
	^4P	3/2	(1 885 800)		99ZHA/SAM
	^4P	1/2	(1 888 000)		99ZHA/SAM
$2s2p^4(^1D)$	^2D	3/2	(2 255 200)		99ZHA/SAM
	^2D	5/2	(2 399 400)		99ZHA/SAM
$2s2p^4(^3P)$	^2P	3/2	(2 663 900)		99ZHA/SAM
	^2P	1/2	(2 967 400)		99ZHA/SAM
$2s2p^4(^1S)$	^2S	1/2	(3 199 000)		99ZHA/SAM
$2p^5$	$^2P^\circ$	3/2	(3 887 400)		99ZHA/SAM
	$^2P^\circ$	1/2	(4 472 300)		99ZHA/SAM
Sr XXXII ($2s^22p^2\ ^3P_0$)	*Limit*		[30 854 000]	231 000	99BIE/FRE

TABLE 55. Spectral lines of Sr XXXII

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum						
(31.260)	(3 199 000)	3.97E+7	$2s^22p^3\ ^4S^\circ_{3/2}$	$2s2p^4(^1S)\ ^2S_{1/2}$	99ZHA/SAM	99ZHA/SAM
(33.700)	(2 967 400)	2.50E+10	$2s^22p^3\ ^4S^\circ_{3/2}$	$2s2p^4(^3P)\ ^2P_{1/2}$	99ZHA/SAM	99ZHA/SAM
(36.996)	(2 703 000)	3.31E+10	$2s^22p^3\ ^2D^\circ_{3/2}$	$2s2p^4(^1S)\ ^2S_{1/2}$	99ZHA/SAM	99ZHA/SAM
(37.539)	(2 663 900)	1.86E+10	$2s^22p^3\ ^4S^\circ_{3/2}$	$2s2p^4(^3P)\ ^2P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(38.662)	(2 586 500)	1.24E+10	$2s2p^4(^3P)\ ^4P_{3/2}$	$2p^5\ ^2P^\circ_{1/2}$	99ZHA/SAM	99ZHA/SAM
(38.695)	(2 584 300)	3.83E+9	$2s2p^4(^3P)\ ^4P_{1/2}$	$2p^5\ ^2P^\circ_{1/2}$	99ZHA/SAM	99ZHA/SAM
(40.463)	(2 471 400)	2.52E+11	$2s^22p^3\ ^2D^\circ_{3/2}$	$2s2p^4(^3P)\ ^2P_{1/2}$	99ZHA/SAM	99ZHA/SAM
(40.843)	(2 448 400)	2.32E+9	$2s^22p^3\ ^2P^\circ_{1/2}$	$2s2p^4(^1S)\ ^2S_{1/2}$	99ZHA/SAM	99ZHA/SAM
(41.677)	(2 399 400)	4.74E+7	$2s^22p^3\ ^4S^\circ_{3/2}$	$2s2p^4(^1D)\ ^2D_{5/2}$	99ZHA/SAM	99ZHA/SAM
(43.363)	(2 306 100)	4.04E+10	$2s2p^4(^3P)\ ^4P_{5/2}$	$2p^5\ ^2P^\circ_{3/2}$	99ZHA/SAM	99ZHA/SAM
(44.342)	(2 255 200)	2.50E+10	$2s^22p^3\ ^4S^\circ_{3/2}$	$2s2p^4(^1D)\ ^2D_{3/2}$	99ZHA/SAM	99ZHA/SAM
(45.104)	(2 217 100)	4.75E+10	$2s2p^4(^1D)\ ^2D_{3/2}$	$2p^5\ ^2P^\circ_{1/2}$	99ZHA/SAM	99ZHA/SAM
(45.110)	(2 216 800)	1.41E+11	$2s^22p^3\ ^2P^\circ_{1/2}$	$2s2p^4(^3P)\ ^2P_{1/2}$	99ZHA/SAM	99ZHA/SAM
(46.128)	(2 167 900)	2.47E+8	$2s^22p^3\ ^2D^\circ_{3/2}$	$2s2p^4(^3P)\ ^2P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(48.671)	(2 054 600)	2.71E+11	$2s^22p^3\ ^2D^\circ_{5/2}$	$2s2p^4(^3P)\ ^2P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(49.960)	(2 001 600)	8.87E+10	$2s2p^4(^3P)\ ^4P_{3/2}$	$2p^5\ ^2P^\circ_{3/2}$	99ZHA/SAM	99ZHA/SAM
(50.015)	(1 999 400)	1.88E+10	$2s2p^4(^3P)\ ^4P_{1/2}$	$2p^5\ ^2P^\circ_{3/2}$	99ZHA/SAM	99ZHA/SAM
(51.096)	(1 957 100)	2.90E+11	$2s^22p^3\ ^2P^\circ_{3/2}$	$2s2p^4(^1S)\ ^2S_{1/2}$	99ZHA/SAM	99ZHA/SAM
(52.266)	(1 913 300)	4.55E+10	$2s^22p^3\ ^2P^\circ_{1/2}$	$2s2p^4(^3P)\ ^2P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(52.538)	(1 903 400)	2.30E+9	$2s^22p^3\ ^2D^\circ_{3/2}$	$2s2p^4(^1D)\ ^2D_{5/2}$	99ZHA/SAM	99ZHA/SAM
(52.966)	(1 888 000)	1.01E+11	$2s^22p^3\ ^4S^\circ_{3/2}$	$2s2p^4(^3P)\ ^4P_{1/2}$	99ZHA/SAM	99ZHA/SAM
(53.028)	(1 885 800)	1.32E+11	$2s^22p^3\ ^4S^\circ_{3/2}$	$2s2p^4(^3P)\ ^4P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(55.298)	(1 808 400)	2.31E+11	$2s2p^4(^3P)\ ^2P_{3/2}$	$2p^5\ ^2P^\circ_{1/2}$	99ZHA/SAM	99ZHA/SAM
(55.863)	(1 790 100)	1.02E+11	$2s^22p^3\ ^2D^\circ_{5/2}$	$2s2p^4(^1D)\ ^2D_{5/2}$	99ZHA/SAM	99ZHA/SAM
(56.844)	(1 759 200)	1.20E+11	$2s^22p^3\ ^2D^\circ_{3/2}$	$2s2p^4(^1D)\ ^2D_{3/2}$	99ZHA/SAM	99ZHA/SAM
(57.954)	(1 725 500)	2.43E+9	$2s^2p^3\ ^3P^\circ_{3/2}$	$2s2p^4(^3P)\ ^2P_{1/2}$	99ZHA/SAM	99ZHA/SAM
(60.757)	(1 645 900)	5.85E+9	$2s^2p^3\ ^2D^\circ_{5/2}$	$2s2p^4(^1D)\ ^2D_{3/2}$	99ZHA/SAM	99ZHA/SAM
(61.267)	(1 632 200)	5.70E+10	$2s2p^4(^1D)\ ^2D_{3/2}$	$2p^5\ ^2P^\circ_{3/2}$	99ZHA/SAM	99ZHA/SAM
(63.239)	(1 581 300)	2.79E+10	$2s^22p^3\ ^4S^\circ_{3/2}$	$2s2p^4(^3P)\ ^4P_{5/2}$	99ZHA/SAM	99ZHA/SAM
(66.450)	(1 504 900)	3.81E+10	$2s2p^4(^3P)\ ^2P_{1/2}$	$2p^5\ ^2P^\circ_{1/2}$	99ZHA/SAM	99ZHA/SAM
(66.463)	(1 504 600)	2.48E+9	$2s^22p^3\ ^2P^\circ_{1/2}$	$2s2p^4(^1D)\ ^2D_{3/2}$	99ZHA/SAM	99ZHA/SAM
(67.204)	(1 488 000)	7.16E+10	$2s2p^4(^1D)\ ^2D_{5/2}$	$2p^5\ ^2P^\circ_{3/2}$	99ZHA/SAM	99ZHA/SAM
(70.323)	(1 422 000)	1.62E+10	$2s^22p^3\ ^2P^\circ_{3/2}$	$2s2p^4(^3P)\ ^2P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(71.839)	(1 392 000)	2.52E+9	$2s^22p^3\ ^2D^\circ_{3/2}$	$2s2p^4(^3P)\ ^4P_{1/2}$	99ZHA/SAM	99ZHA/SAM
(71.953)	(1 389 800)	3.45E+8	$2s^22p^3\ ^2D^\circ_{3/2}$	$2s2p^4(^3P)\ ^4P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(78.339)	(1 276 500)	4.94E+9	$2s^22p^3\ ^2D^\circ_{5/2}$	$2s2p^4(^3P)\ ^4P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(78.536)	(1 273 300)	5.63E+10	$2s2p^4(^1S)\ ^2S_{1/2}$	$2p^5\ ^2P^\circ_{1/2}$	99ZHA/SAM	99ZHA/SAM
(81.733)	(1 223 500)	3.66E+10	$2s2p^4(^3P)\ ^2P_{3/2}$	$2p^5\ ^2P^\circ_{3/2}$	99ZHA/SAM	99ZHA/SAM
(86.393)	(1 157 500)	1.06E+10	$2s^22p^3\ ^2P^\circ_{3/2}$	$2s2p^4(^1D)\ ^2D_{5/2}$	99ZHA/SAM	99ZHA/SAM
(87.920)	(1 137 400)	8.30E+10	$2s^22p^3\ ^2P^\circ_{1/2}$	$2s2p^4(^3P)\ ^4P_{1/2}$	99ZHA/SAM	99ZHA/SAM
(88.090)	(1 135 200)	1.74E+8	$2s^22p^3\ ^2P^\circ_{1/2}$	$2s2p^4(^3P)\ ^4P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(92.140)	(1 085 300)	7.96E+9	$2s^22p^3\ ^2D^\circ_{3/2}$	$2s2p^4(^3P)\ ^4P_{5/2}$	99ZHA/SAM	99ZHA/SAM

TABLE 55. Spectral lines of Sr XXXII—Continued

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
(98.687)	(1 013 300)	4.71E+7	$2s^22p^3\ ^2P^\circ_{3/2}$	$2s2p^4(^1D)\ ^2D_{3/2}$	99ZHA/SAM	99ZHA/SAM
(102.881)	(972 000)	2.39E+9	$2s^22p^3\ ^2D^\circ_{5/2}$	$2s2p^4(^3P)\ ^4P_{5/2}$	99ZHA/SAM	99ZHA/SAM
(108.696)	(920 000)	9.65E+9	$2s2p^4(^3P)\ ^2P_{1/2}$	$2p^5\ ^2P^\circ_{3/2}$	99ZHA/SAM	99ZHA/SAM
(145.264)	(688 400)	3.38E+8	$2s2p^4(^1S)\ ^2S_{1/2}$	$2p^5\ ^2P^\circ_{3/2}$	99ZHA/SAM	99ZHA/SAM
(154.775)	(646 100)	7.85E+7	$2s^22p^3\ ^2P^\circ_{3/2}$	$2s2p^4(^3P)\ ^4P_{1/2}$	99ZHA/SAM	99ZHA/SAM
(155.304)	(643 900)	3.87E+8	$2s^22p^3\ ^2P^\circ_{3/2}$	$2s2p^4(^3P)\ ^4P_{3/2}$	99ZHA/SAM	99ZHA/SAM
(294.638)	(339 400)	5.79E+6	$2s^22p^3\ ^2P^\circ_{3/2}$	$2s2p^4(^3P)\ ^4P_{5/2}$	99ZHA/SAM	99ZHA/SAM

6.32. Sr XXXIII

C isoelectronic sequence
Ground state $1s^22s^22p^2\ ^3P_0$
Ionization energy [32 725 000 ± 35 000 cm^{-1}]; [4057 ± 4 eV]

Though there have been no measurements of the Sr XXXIII spectrum, Zhang and Sampson [96ZHA/SAM] have used the multi-configuration Dirac-Fock method to calculate several of the low-lying energy levels and transition probabilities for transitions between them. These values are included in Tables 56 and 57. The wavelengths and wave numbers in Table 57 are calculated from the energy levels. For a few of the transitions the oscillator strength was so small that only one significant figure was given. Because of the lack of precision those transition probabilities are not retained.

There are two available isoelectronic fits of values of ionization energy, Biémont *et al.* [99BIE/FRE] and Huang *et al.* [10HUA/ZHA], both based on fitting the deviations of experimentally available ionization energies from theoretical multiconfiguration Dirac-Fock values. The average of these two fits for Sr XXXIII is given. The theoretical values obtained by Rodrigues *et al.* [04ROD/IND], Gu [05GU], and Huang *et al.* [06HUA/JIA], as well as the multi-configuration Dirac-Fock theoretical results of Biémont *et al.* [99BIE/FRE] and Huang *et al.* [10HUA/ZHA], lie between the two fitted values. Although there is no statistically valid method of determining the uncertainty of the ionization potential, all the values lie within ±35 000 cm^{-1} of the retained value. That is also the uncertainty quoted by Biémont *et al.* [99BIE/FRE] for their isoelectronic fit.

6.32.1 References for Sr XXXIII

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TABLE 56. Calculated energy levels of Sr XXXIII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^22p^2$	^3P	0	(0)		96ZHA/SAM
	^3P	1	(517 290)		96ZHA/SAM
	^3P	2	(606 730)		96ZHA/SAM
$2s^22p^2$	^1D	2	(1 185 600)		96ZHA/SAM
$2s^22p^2$	^1S	0	(1 387 500)		96ZHA/SAM
$2s2p^3(^2P)$	$^3P^\circ$	2	(1 368 900)		96ZHA/SAM
	$^3P^\circ$	1	(1 747 600)		96ZHA/SAM
	$^3P^\circ$	0	(2 278 000)		96ZHA/SAM
$2s2p^3(^2D)$	$^3D^\circ$	2	(1 938 900)		96ZHA/SAM
	$^3D^\circ$	3	(2 096 000)		96ZHA/SAM
	$^3D^\circ$	1	(2 336 100)		96ZHA/SAM
$2s2p^3(^4S)$	$^5S^\circ$	2	(2 409 800)		96ZHA/SAM
$2s2p^3(^2P)$	$^1P^\circ$	1	(2 486 500)		96ZHA/SAM
$2s2p^3(^2D)$	$^1D^\circ$	2	(2 867 500)		96ZHA/SAM
$2s2p^3(^4S)$	$^3S^\circ$	1	(3 157 800)		96ZHA/SAM
$2p^4$	^3P	2	(3 456 100)		96ZHA/SAM
	^3P	0	(3 679 400)		96ZHA/SAM
	^3P	1	(4 015 400)		96ZHA/SAM
$2p^4$	^1D	2	(4 124 600)		96ZHA/SAM
$2p^4$	^1S	0	(4 821 500)		96ZHA/SAM
Sr XXXIV ($2s^22p\ ^2P_{1/2}$)	*Limit*		[32 725 000]	35 000	11SAN

TABLE 57. Spectral lines of Sr XXXIII

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum						
(31.667)	(3 157 800)		$2s^22p^2\ ^3P_0$	$2s2p^3(^2P)\ ^1P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(32.532)	(3 073 900)		$2s2p^3(^2D)\ ^3D^\circ_1$	$2p^4\ ^1S_0$	96ZHA/SAM	96ZHA/SAM
(36.288)	(2 755 800)		$2s2p^3(^4S)\ ^5S^\circ_2$	$2p^4\ ^1D_2$	96ZHA/SAM	96ZHA/SAM
(37.785)	(2 646 500)		$2s2p^3(^4S)\ ^5S^\circ_2$	$2p^4\ ^3P_1$	96ZHA/SAM	96ZHA/SAM
(37.871)	(2 640 500)	1.67E+10	$2s^22p^2\ ^3P_1$	$2s2p^3(^2P)\ ^1P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(39.199)	(2 551 100)		$2s^22p^2\ ^1D_2$	$2s2p^3(^2P)\ ^1P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(40.217)	(2 486 500)	1.22E+10	$2s^22p^2\ ^3P_0$	$2s2p^3(^4S)\ ^3S^\circ_1$	96ZHA/SAM	96ZHA/SAM
(40.235)	(2 485 400)	2.76E+10	$2s2p^3(^2P)\ ^3P^\circ_1$	$2p^4\ ^1S_0$	96ZHA/SAM	96ZHA/SAM
(42.068)	(2 377 100)		$2s2p^3(^2D)\ ^3D^\circ_1$	$2p^4\ ^1D_2$	96ZHA/SAM	96ZHA/SAM
(42.549)	(2 350 300)		$2s^22p^2\ ^3P_1$	$2s2p^3(^2P)\ ^3P^\circ_2$	96ZHA/SAM	96ZHA/SAM
(42.806)	(2 336 100)	7.40E+9	$2s^22p^2\ ^3P_0$	$2s2p^3(^2P)\ ^3P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(42.827)	(2 335 000)	8.00E+9	$2s2p^3(^4S)\ ^3S^\circ_1$	$2p^4\ ^1S_0$	96ZHA/SAM	96ZHA/SAM
(44.094)	(2 267 900)	2.50E+10	$2s2p^3(^2D)\ ^3D^\circ_1$	$2p^4\ ^3P_1$	96ZHA/SAM	96ZHA/SAM
(44.232)	(2 260 800)	1.33E+10	$2s^22p^2\ ^1D_2$	$2s2p^3(^2P)\ ^3P^\circ_2$	96ZHA/SAM	96ZHA/SAM
(45.751)	(2 185 800)		$2s2p^3(^2D)\ ^3D^\circ_2$	$2p^4\ ^1D_2$	96ZHA/SAM	96ZHA/SAM
(47.911)	(2 087 200)	4.33E+10	$2s2p^3(^4S)\ ^5S^\circ_2$	$2p^4\ ^3P_2$	96ZHA/SAM	96ZHA/SAM
(48.157)	(2 076 600)	6.39E+10	$2s2p^3(^2D)\ ^3D^\circ_2$	$2p^4\ ^3P_1$	96ZHA/SAM	96ZHA/SAM
(49.294)	(2 028 600)	4.36E+10	$2s2p^3(^2D)\ ^3D^\circ_3$	$2p^4\ ^1D_2$	96ZHA/SAM	96ZHA/SAM
(50.703)	(1 972 300)	1.86E+11	$2s^22p^2\ ^3P_2$	$2s2p^3(^2P)\ ^1P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(50.781)	(1 969 200)	3.54E+10	$2s^22p^2\ ^3P_1$	$2s2p^3(^4S)\ ^3S^\circ_1$	96ZHA/SAM	96ZHA/SAM
(51.764)	(1 931 900)	1.53E+11	$2s2p^3(^2D)\ ^3D^\circ_1$	$2p^4\ ^3P_0$	96ZHA/SAM	96ZHA/SAM
(52.839)	(1 892 500)	2.87E+9	$2s^22p^2\ ^3P_1$	$2s2p^3(^2D)\ ^1D^\circ_2$	96ZHA/SAM	96ZHA/SAM
(53.197)	(1 880 000)	1.78E+11	$2s^22p^2\ ^1D_2$	$2s2p^3(^4S)\ ^3S^\circ_1$	96ZHA/SAM	96ZHA/SAM
(54.981)	(1 818 800)	1.20E+11	$2s^22p^2\ ^3P_1$	$2s2p^3(^2P)\ ^3P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(55.460)	(1 803 100)	1.37E+11	$2s^22p^2\ ^1D_2$	$2s2p^3(^2D)\ ^1D^\circ_2$	96ZHA/SAM	96ZHA/SAM
(55.912)	(1 788 500)	2.05E+10	$2s2p^3(^2P)\ ^3P^\circ_1$	$2p^4\ ^1D_2$	96ZHA/SAM	96ZHA/SAM
(56.487)	(1 770 300)	5.46E+10	$2s^22p^2\ ^1S_0$	$2s2p^3(^2P)\ ^1P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(56.797)	(1 760 700)	8.93E+10	$2s^22p^2\ ^3P_1$	$2s2p^3(^2P)\ ^3P^\circ_0$	96ZHA/SAM	96ZHA/SAM
(57.223)	(1 747 600)	8.37E+10	$2s^22p^2\ ^3P_0$	$2s2p^3(^2D)\ ^3D^\circ_1$	96ZHA/SAM	96ZHA/SAM
(57.555)	(1 737 500)	2.17E+10	$2s2p^3(^2P)\ ^3P^\circ_0$	$2p^4\ ^3P_1$	96ZHA/SAM	96ZHA/SAM
(57.824)	(1 729 400)		$2s^22p^2\ ^1D_2$	$2s2p^3(^2P)\ ^3P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(58.315)	(1 714 800)	9.24E+10	$2s2p^3(^2D)\ ^1D^\circ_2$	$2p^4\ ^1D_2$	96ZHA/SAM	96ZHA/SAM
(58.530)	(1 708 500)	4.15E+10	$2s2p^3(^2D)\ ^3D^\circ_1$	$2p^4\ ^3P_2$	96ZHA/SAM	96ZHA/SAM
(59.453)	(1 682 000)	1.07E+11	$2s^22p^2\ ^3P_2$	$2s2p^3(^2P)\ ^3P^\circ_2$	96ZHA/SAM	96ZHA/SAM
(59.548)	(1 679 300)	2.63E+10	$2s2p^3(^2P)\ ^3P^\circ_1$	$2p^4\ ^3P_1$	96ZHA/SAM	96ZHA/SAM
(60.108)	(1 663 700)	3.02E+11	$2s2p^3(^2P)\ ^1P^\circ_1$	$2p^4\ ^1S_0$	96ZHA/SAM	96ZHA/SAM
(61.046)	(1 638 100)	1.97E+9	$2s2p^3(^4S)\ ^3S^\circ_1$	$2p^4\ ^1D_2$	96ZHA/SAM	96ZHA/SAM
(62.282)	(1 605 600)	4.30E+10	$2s2p^3(^2D)\ ^1D^\circ_2$	$2p^4\ ^3P_1$	96ZHA/SAM	96ZHA/SAM
(65.406)	(1 528 900)	7.09E+10	$2s2p^3(^4S)\ ^3S^\circ_1$	$2p^4\ ^3P_1$	96ZHA/SAM	96ZHA/SAM
(65.910)	(1 517 200)	2.98E+10	$2s2p^3(^2D)\ ^3D^\circ_2$	$2p^4\ ^3P_2$	96ZHA/SAM	96ZHA/SAM
(67.147)	(1 489 300)	1.88E+10	$2s^22p^2\ ^1D_2$	$2s2p^3(^2D)\ ^3D^\circ_3$	96ZHA/SAM	96ZHA/SAM
(70.344)	(1 421 600)	2.77E+10	$2s^22p^2\ ^3P_1$	$2s2p^3(^2D)\ ^3D^\circ_2$	96ZHA/SAM	96ZHA/SAM
(73.524)	(1 360 100)	4.55E+10	$2s2p^3(^2D)\ ^3D^\circ_3$	$2p^4\ ^3P_2$	96ZHA/SAM	96ZHA/SAM
(74.443)	(1 343 300)	2.50E+10	$2s2p^3(^2P)\ ^3P^\circ_1$	$2p^4\ ^3P_0$	96ZHA/SAM	96ZHA/SAM
(75.067)	(1 332 100)		$2s^22p^2\ ^1D_2$	$2s2p^3(^2D)\ ^3D^\circ_2$	96ZHA/SAM	96ZHA/SAM
(76.866)	(1 301 000)	3.57E+9	$2s^22p^2\ ^3P_2$	$2s2p^3(^4S)\ ^3S^\circ_1$	96ZHA/SAM	96ZHA/SAM
(79.548)	(1 257 100)	4.45E+10	$2s2p^3(^2P)\ ^3P^\circ_2$	$2p^4\ ^1D_2$	96ZHA/SAM	96ZHA/SAM
(81.283)	(1 230 300)		$2s^22p^2\ ^3P_1$	$2s2p^3(^2D)\ ^3D^\circ_1$	96ZHA/SAM	96ZHA/SAM
(81.681)	(1 224 300)	2.20E+9	$2s^22p^2\ ^3P_2$	$2s2p^3(^2D)\ ^1D^\circ_2$	96ZHA/SAM	96ZHA/SAM
(83.830)	(1 192 900)	5.94E+10	$2s2p^3(^4S)\ ^3S^\circ_1$	$2p^4\ ^3P_0$	96ZHA/SAM	96ZHA/SAM
(86.915)	(1 150 600)		$2s^22p^2\ ^3P_2$	$2s2p^3(^2P)\ ^3P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(87.116)	(1 147 900)	1.17E+10	$2s2p^3(^2P)\ ^3P^\circ_2$	$2p^4\ ^3P_1$	96ZHA/SAM	96ZHA/SAM
(87.655)	(1 140 800)	4.63E+9	$2s^22p^2\ ^1D_2$	$2s2p^3(^2D)\ ^3D^\circ_1$	96ZHA/SAM	96ZHA/SAM
(89.287)	(1 120 000)	7.86E+9	$2s2p^3(^2P)\ ^3P^\circ_1$	$2p^4\ ^3P_2$	96ZHA/SAM	96ZHA/SAM
(90.991)	(1 099 000)	3.73E+9	$2s^22p^2\ ^1S_0$	$2s2p^3(^4S)\ ^3S^\circ_1$	96ZHA/SAM	96ZHA/SAM
(95.578)	(1 046 300)	8.10E+9	$2s2p^3(^2D)\ ^1D^\circ_2$	$2p^4\ ^3P_2$	96ZHA/SAM	96ZHA/SAM
(103.140)	(969 600)	7.21E+9	$2s2p^3(^4S)\ ^3S^\circ_1$	$2p^4\ ^3P_2$	96ZHA/SAM	96ZHA/SAM
(103.432)	(966 800)	9.91E+9	$2s2p^3(^2P)\ ^1P^\circ_1$	$2p^4\ ^1D_2$	96ZHA/SAM	96ZHA/SAM
(105.420)	(948 600)	7.60E+8	$2s^22p^2\ ^1S_0$	$2s2p^3(^2P)\ ^3P^\circ_1$	96ZHA/SAM	96ZHA/SAM
(109.837)	(910 400)	4.34E+9	$2s^22p^2\ ^3P_2$	$2s2p^3(^2D)\ ^3D^\circ_3$	96ZHA/SAM	96ZHA/SAM
(116.603)	(857 600)	2.60E+9	$2s2p^3(^2P)\ ^1P^\circ_1$	$2p^4\ ^3P_1$	96ZHA/SAM	96ZHA/SAM
(117.427)	(851 600)	1.83E+9	$2s^22p^2\ ^3P_1$	$2s2p^3(^4S)\ ^5S^\circ_2$	96ZHA/SAM	96ZHA/SAM

TABLE 57. Spectral lines of Sr XXXIII—Continued

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
(131.207)	(762 200)	8.91E+8	$2s^22p^2\ ^1D_2$	$2s2p^3(^4S)\ ^5S^\circ_2$	96ZHA/SAM	96ZHA/SAM
(132.745)	(753 300)		$2s^22p^2\ ^3P_2$	$2s2p^3(^2D)\ ^3D^\circ_2$	96ZHA/SAM	96ZHA/SAM
(169.911)	(588 500)	2.77E+8	$2s2p^3(^2P)\ ^3P^\circ_2$	$2p^4\ ^3P_2$	96ZHA/SAM	96ZHA/SAM
(177.934)	(562 000)		$2s^22p^2\ ^3P_2$	$2s2p^3(^2D)\ ^3D^\circ_1$	96ZHA/SAM	96ZHA/SAM
(191.718)	(521 600)		$2s2p^3(^2P)\ ^1P^\circ_1$	$2p^4\ ^3P_0$	96ZHA/SAM	96ZHA/SAM
(277.742)	(360 000)		$2s^22p^2\ ^1S_0$	$2s2p^3(^2D)\ ^3D^\circ_1$	96ZHA/SAM	96ZHA/SAM
(335.274)	(298 300)		$2s2p^3(^2P)\ ^1P^\circ_1$	$2p^4\ ^3P_2$	96ZHA/SAM	96ZHA/SAM
(545.465)	(183 300)		$2s^22p^2\ ^3P_2$	$2s2p^3(^4S)\ ^5S^\circ_2$	96ZHA/SAM	96ZHA/SAM

6.33. Sr XXXIV

B isoelectronic sequence
Ground state $1s^22s^22p\ ^2P^\circ_{1/2}$
Ionization energy [34 167 000 ± 30 000 cm^{-1}]; [4236 ± 4 eV]

Although there have been no measurements of the Sr XXXIV spectrum, Zhang and Sampson [94ZHA/SAM] have used the multi-configuration Dirac-Fock method to calculate several of the low-lying energy levels and transition probabilities for transitions between them. There are a few other values for some of these levels. The ground configuration splitting was also calculated by Koc [05KOC] using a multi-reference relativistic configuration interaction method. Curtis and Ramanujam [82CUR/RAM] obtained an extrapolated value from an isoelectronic fit of the splitting. Koc [05KOC] also calculated a value for the $2s2p^2\ ^4P_{1/2}$ level. Myrnäs *et al.* [94MYR/JUP] measured spectral lines in four ions in the boron isoelectronic sequence ranging from nickel ($Z=28$) to molybdenum ($Z=42$). By fitting along the sequence they were able to give values for four levels in the $2s2p^2$ configuration. Because they provide a more consistent set, the level values included in Table 58 are taken from Zhang and Sampson [94ZHA/SAM] where available. The only data available involving the $2s^23s$ and $2s^23p$ levels were calculated by Bogdanovich *et al.* [07BOG/KAR] using a configuration interaction method. The wavelengths and wave numbers in Table 59 are calculated from the energy levels.

There are two available isoelectronic fits of values of ionization energy, Biémont *et al.* [99BIE/FRE] and Huang *et al.* [10HUA/ZHA]. Both are based on fitting the deviations of experimentally available ionization energies from theoretical multiconfiguration Dirac-Fock values. The average of these two fits for Sr XXXIV is given. The theoretical values obtained by Rodrigues *et al.* [04ROD/IND], Gu [05GU], and Huang *et al.* [06HUA/JIA], as well as the multi-configuration Dirac-Fock theoretical results of Biémont *et al.* [99BIE/FRE] and Huang *et al.* [10HUA/ZHA], lie between the two fitted values. Although there is no statistically valid method of determining the uncertainty of the ionization potential, all the values lie within ±30 000 cm^{-1} of the retained value.

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TABLE 58. Calculated energy levels of Sr XXXIV

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^22p$	$^2P^\circ$	1/2	(0)		94ZHA/SAM
	$^2P^\circ$	3/2	(623 100)		94ZHA/SAM
$2s2p^2$	^4P	1/2	(759 800)		94ZHA/SAM
	^4P	3/2	(1 178 000)		94ZHA/SAM
	^4P	5/2	(1 338 600)		94ZHA/SAM
$2s2p^2$	^2D	3/2	(1 634 900)		94ZHA/SAM
	^2D	5/2	(1 968 800)		94ZHA/SAM
$2s2p^2$	^2P	1/2	(1 700 800)		94ZHA/SAM
	^2P	3/2	(2 375 500)		94ZHA/SAM
$2s2p^2$	^2S	1/2	(2 359 100)		94ZHA/SAM
$2p^3$	$^4S^\circ$	3/2	(2 522 400)		94ZHA/SAM
$2p^3$	$^2D^\circ$	3/2	(3 009 300)		94ZHA/SAM
	$^2D^\circ$	5/2	(3 122 200)		94ZHA/SAM
$2p^3$	$^2P^\circ$	1/2	(3 337 000)		94ZHA/SAM
	$^2P^\circ$	3/2	(3 830 400)		94ZHA/SAM
$2s^23s$	$^2S^\circ$	1/2	(19 138 500)		07BOG/KAR
$2s^23p$	$^2P^\circ$	1/2	(19 434 400)		07BOG/KAR
	$^2P^\circ$	3/2	(19 596 600)		07BOG/KAR
Sr XXXIV ($2s^2$ $^1S_0$)	*Limit*		[34 167 000]	30 000	11SAN

TABLE 59. Spectral lines of Sr XXXIV

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum						
(5.62)	(17 799 500)	3.00E+11	$2s2p^2$ $^2D_{3/2}$	$2s^23p$ $^2P^\circ_{1/2}$	07BOG/KAR	07BOG/KAR
(5.67)	(17 627 800)	3.01E+11	$2s2p^2$ $^2D_{5/2}$	$2s^23p$ $^2P^\circ_{3/2}$	07BOG/KAR	07BOG/KAR
(32.567)	(3 070 600)	1.56E+7	$2s2p^2$ $^4P_{1/2}$	$2p^3$ $^2P^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(37.702)	(2 652 400)	1.28E+9	$2s2p^2$ $^4P_{3/2}$	$2p^3$ $^2P^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(38.802)	(2 577 200)	8.64E+8	$2s2p^2$ $^4P_{1/2}$	$2p^3$ $^2P^\circ_{1/2}$	94ZHA/SAM	94ZHA/SAM
(40.132)	(2 491 800)	6.96E+6	$2s2p^2$ $^4P_{5/2}$	$2p^3$ $^2P^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(42.096)	(2 375 500)	9.37E+9	$2s^22p$ $^2P^\circ_{1/2}$	$2s2p^2$ $^2P_{3/2}$	94ZHA/SAM	94ZHA/SAM
(42.389)	(2 359 100)	7.13E+8	$2s^22p$ $^2P^\circ_{1/2}$	$2s2p^2$ $^2S_{1/2}$	94ZHA/SAM	94ZHA/SAM
(44.454)	(2 249 500)	3.63E+9	$2s2p^2$ $^4P_{1/2}$	$2p^3$ $^2D^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(45.548)	(2 195 500)	8.91E+9	$2s2p^2$ $^2D_{3/2}$	$2p^3$ $^2P^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(46.318)	(2 159 000)	7.84E+8	$2s2p^2$ $^4P_{3/2}$	$2p^3$ $^2P^\circ_{1/2}$	94ZHA/SAM	94ZHA/SAM
(46.957)	(2 129 600)	4.75E+9	$2s2p^2$ $^2P_{1/2}$	$2p^3$ $^2P^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(51.435)	(1 944 200)	7.28E+8	$2s2p^2$ $^4P_{3/2}$	$2p^3$ $^2D^\circ_{5/2}$	94ZHA/SAM	94ZHA/SAM
(53.717)	(1 861 600)	4.61E+10	$2s2p^2$ $^2D_{5/2}$	$2p^3$ $^2P^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(54.606)	(1 831 300)	5.23E+10	$2s2p^2$ $^4P_{3/2}$	$2p^3$ $^2D^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(56.066)	(1 783 600)	3.88E+10	$2s2p^2$ $^4P_{5/2}$	$2p^3$ $^2D^\circ_{5/2}$	94ZHA/SAM	94ZHA/SAM
(56.734)	(1 762 600)	4.70E+10	$2s2p^2$ $^4P_{1/2}$	$2p^3$ $^4S^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(57.065)	(1 752 400)	1.57E+11	$2s^22p$ $^2P^\circ_{3/2}$	$2s2p^2$ $^2P_{3/2}$	94ZHA/SAM	94ZHA/SAM
(57.604)	(1 736 000)	1.07E+11	$2s^22p$ $^2P^\circ_{3/2}$	$2s2p^2$ $^2S_{1/2}$	94ZHA/SAM	94ZHA/SAM
(58.751)	(1 702 100)	1.15E+11	$2s2p^2$ $^2D_{3/2}$	$2p^3$ $^2P^\circ_{1/2}$	94ZHA/SAM	94ZHA/SAM
(58.796)	(1 700 800)	1.25E+11	$2s^22p$ $^2P^\circ_{1/2}$	$2s2p^2$ $^2P_{1/2}$	94ZHA/SAM	94ZHA/SAM
(59.855)	(1 670 700)	8.74E+9	$2s2p^2$ $^4P_{5/2}$	$2p^3$ $^2D^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(61.117)	(1 636 200)	3.09E+10	$2s2p^2$ $^2P_{1/2}$	$2p^3$ $^2P^\circ_{1/2}$	94ZHA/SAM	94ZHA/SAM
(61.166)	(1 634 900)	6.63E+10	$2s^22p$ $^2P^\circ_{1/2}$	$2s2p^2$ $^2D_{3/2}$	94ZHA/SAM	94ZHA/SAM
(67.236)	(1 487 300)	3.17E+10	$2s2p^2$ $^2D_{3/2}$	$2p^3$ $^2D^\circ_{5/2}$	94ZHA/SAM	94ZHA/SAM
(67.967)	(1 471 300)	1.73E+10	$2s2p^2$ $^2S_{1/2}$	$2p^3$ $^2P^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(68.733)	(1 454 900)	1.04E+11	$2s2p^2$ $^2P_{3/2}$	$2p^3$ $^2P^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(72.759)	(1 374 400)	1.25E+10	$2s2p^2$ $^2D_{3/2}$	$2p^3$ $^2D^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(74.311)	(1 345 700)	1.83E+10	$2s^22p$ $^2P^\circ_{3/2}$	$2s2p^2$ $^2D_{5/2}$	94ZHA/SAM	94ZHA/SAM
(74.383)	(1 344 400)	1.53E+10	$2s2p^2$ $^4P_{3/2}$	$2p^3$ $^4S^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(76.423)	(1 308 500)	3.28E+10	$2s2p^2$ $^2P_{1/2}$	$2p^3$ $^2D^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(84.474)	(1 183 800)	2.93E+10	$2s2p^2$ $^4P_{5/2}$	$2p^3$ $^4S^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(84.890)	(1 178 000)	8.33E+7	$2s^22p$ $^2P^\circ_{1/2}$	$2s2p^2$ $^4P_{3/2}$	94ZHA/SAM	94ZHA/SAM
(86.700)	(1 153 400)	1.94E+10	$2s2p^2$ $^2D_{5/2}$	$2p^3$ $^2D^\circ_{5/2}$	94ZHA/SAM	94ZHA/SAM
(92.790)	(1 077 700)	2.59E+9	$2s^22p$ $^2P^\circ_{3/2}$	$2s2p^2$ $^2P_{1/2}$	94ZHA/SAM	94ZHA/SAM
(96.108)	(1 040 500)	1.14E+10	$2s2p^2$ $^2D_{5/2}$	$2p^3$ $^2D^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(98.834)	(1 011 800)	1.05E+9	$2s^22p$ $^2P^\circ_{3/2}$	$2s2p^2$ $^2D_{3/2}$	94ZHA/SAM	94ZHA/SAM
(102.260)	(977 900)	1.75E+10	$2s2p^2$ $^2S_{1/2}$	$2p^3$ $^2P^\circ_{1/2}$	94ZHA/SAM	94ZHA/SAM
(104.004)	(961 500)	9.56E+8	$2s2p^2$ $^2P_{3/2}$	$2p^3$ $^2P^\circ_{1/2}$	94ZHA/SAM	94ZHA/SAM
(112.676)	(887 500)	3.38E+9	$2s2p^2$ $^2D_{3/2}$	$2p^3$ $^4S^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM

TABLE 59. Spectral lines of Sr XXXIV—Continued

λ (Å)	σ (cm^{-1})	A$_{ki}$ (s^{-1})	Lower level	Upper level	λ Ref.	A$_{ki}$ Ref.
(121.714)	(821 600)	3.83E+9	$2s2p^2\ ^2P_{1/2}$	$2p^3\ ^4S^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(131.614)	(759 800)	1.75E+9	$2s^22p\ ^2P^\circ_{1/2}$	$2s2p^2\ ^4P_{1/2}$	94ZHA/SAM	94ZHA/SAM
(133.923)	(746 700)	5.23E+9	$2s2p^2\ ^2P_{3/2}$	$2p^3\ ^2D^\circ_{5/2}$	94ZHA/SAM	94ZHA/SAM
(139.762)	(715 500)	1.23E+9	$2s^22p\ ^2P^\circ_{3/2}$	$2s2p^2\ ^4P_{5/2}$	94ZHA/SAM	94ZHA/SAM
(153.799)	(650 200)	1.47E+8	$2s2p^2\ ^2S_{1/2}$	$2p^3\ ^2D^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(157.778)	(633 800)	3.38E+8	$2s2p^2\ ^2P_{3/2}$	$2p^3\ ^2D^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(180.213)	(554 900)	7.99E+7	$2s^22p\ ^2P^\circ_{3/2}$	$2s2p^2\ ^4P_{3/2}$	94ZHA/SAM	94ZHA/SAM
(180.636)	(553 600)	6.65E+7	$2s2p^2\ ^2D_{5/2}$	$2p^3\ ^4S^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(218.29)	(458 100)	7.13E+9	$2s^23s\ ^2S_{1/2}$	$2s^23p\ ^2P^\circ_{3/2}$	07BOG/KAR	07BOG/KAR
(337.94)	(295 900)	1.97E+9	$2s^23s\ ^2S_{1/2}$	$2s^23p\ ^2P^\circ_{1/2}$	07BOG/KAR	07BOG/KAR
(612.37)	(163 300)	2.06E+6	$2s2p^2\ ^2S_{1/2}$	$2p^3\ ^4S^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(680.74)	(146 900)	3.60E+6	$2s2p^2\ ^2P_{3/2}$	$2p^3\ ^4S^\circ_{3/2}$	94ZHA/SAM	94ZHA/SAM
(731.53)	(136 700)	1.73E+6	$2s^22p\ ^2P^\circ_{3/2}$	$2s2p^2\ ^4P_{1/2}$	94ZHA/SAM	94ZHA/SAM

6.34. Sr XXXV

Be isoelectronic sequence
Ground state $1s^22s^2\ ^1S_0$
Ionization energy [36 015 000 ± 36 000 cm^{-1}]; [4465 ± 5 eV]

Although there have been no measurements of the Sr XXXV spectrum, Zhang and Sampson [92ZHA/SAM] have used the multi-configuration Dirac-Fock method to calculate several of the low-lying energy levels and transition probabilities for transitions between them. Level values for a few of the $2s2l$ levels have also been calculated by Chen and Cheng [08CHE/CHE], Curtis and Ellis [96CUR/ELL], and Yi *et al.* [00YI/WAN]. In addition, isoelectronically fitted values for the $2s2p\ ^{1,3}P^\circ_1$ levels were determined by Edlén [83EDL]. After measuring the isoelectronic molybdenum ion, Denne *et al.* [89DEN/MAG] also fit the series of $2s2p\ ^1P^\circ_1$ and $^3P_1$ levels. Although some of these values may be more accurate for individual levels, we retain the Zhang and Sampson [92ZHA/SAM] levels in Table 60 in order to make the entire set of levels more consistent. It should be noted that the Zhang and Sampson levels are consistently higher than those of the other groups, generally by more than 3000 cm^{-1}. Transition probabilities for the $2s^2\ ^1S_0 - 2s2p\ ^{1,3}P^\circ_1$ transitions have also been calculated by Chen and Cheng [08CHE/CHE], Curtis and Ellis [96CUR/ELL], Marques *et al.* [93MAR/PAR], and Yi *et al.* [00YI/WAN], with results all within 10% of those of Zhang and Sampson [92ZHA/SAM].

The $2s3p$ levels in Table 60 have been calculated by Safronova *et al.* [99SAF/DER]. Prior calculations by Kim *et al.* [88KIM/MAR] agree within ±7000 cm^{-1} and the [88KIM/MAR] transition probabilities agree with Safronova *et al.* [99SAF/DER] within 5%. The wavelengths and wave numbers in Table 61 have been calculated from the level values.

The semi-empirical ionization energy is quoted from Biémont *et al.* [99BIE/FRE]. It agrees within its estimated error with an earlier isoelectronic fit by Curtis [93CUR] and with theoretical calculations by Rodrigues *et al.* [04ROD/IND], Gu [05GU], and Huang *et al.* [06HUA/JIA].

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TABLE 60. Calculated energy levels of Sr XXXV

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^2$	^1S	0	(0)		92ZHA/SAM
$2s2p$	$^3P°$	0	(539 700)		92ZHA/SAM
	$^3P°$	1	(636 700)		92ZHA/SAM
	$^3P°$	2	(1 183 500)		92ZHA/SAM
$2s2p$	$^1P°$	1	(1 570 400)		92ZHA/SAM
$2p^2$	^3P	0	(1 548 000)		92ZHA/SAM
	^3P	1	(2 054 000)		92ZHA/SAM
	^3P	2	(2 757 400)		92ZHA/SAM
$2p^2$	^1D	2	(2 145 600)		92ZHA/SAM
$2p^2$	^1S	0	(3 054 300)		92ZHA/SAM
$2s3p$	$^1P°$	1	(20 580 000)		99SAF/DER
$2s3p$	$^3P°$	1	(20 756 000)		99SAF/DER
Sr XXXVI ($2s\ ^2S_{1/2}$)	*Limit*		[36 015 000]	36 000	99BIE/FRE

TABLE 61. Spectral lines of Sr XXXV

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum						
(4.818)	(20 756 000)	4.07E+13	$2s^2\ ^1S_0$	$2s3p\ ^3P^°_1$	99SAF/DER	99SAF/DER
(4.859)	(20 580 000)	2.30E+13	$2s^2\ ^1S_0$	$2s3p\ ^1P^°_1$	99SAF/DER	99SAF/DER
(47.154)	(2 120 700)	2.88E+9	$2s2p\ ^3P^°_1$	$2p^2\ ^3P_2$	92ZHA/SAM	92ZHA/SAM
(63.536)	(1 573 900)	4.39E+10	$2s2p\ ^3P^°_2$	$2p^2\ ^3P_2$	92ZHA/SAM	92ZHA/SAM
(63.678)	(1 570 400)	7.53E+10	$2s^2\ ^1S_0$	$2s2p\ ^1P^°_1$	92ZHA/SAM	92ZHA/SAM
(66.037)	(1 514 300)	3.19E+10	$2s2p\ ^3P^°_0$	$2p^2\ ^3P_1$	92ZHA/SAM	92ZHA/SAM
(66.273)	(1 508 900)	7.88E+10	$2s2p\ ^3P^°_1$	$2p^2\ ^1D_2$	92ZHA/SAM	92ZHA/SAM
(67.390)	(1 483 900)	1.27E+11	$2s2p\ ^1P^°_1$	$2p^2\ ^1S_0$	92ZHA/SAM	92ZHA/SAM
(70.557)	(1 417 300)	2.26E+10	$2s2p\ ^3P^°_1$	$2p^2\ ^3P_1$	92ZHA/SAM	92ZHA/SAM
(84.246)	(1 187 000)	2.68E+10	$2s2p\ ^1P^°_1$	$2p^2\ ^3P_2$	92ZHA/SAM	92ZHA/SAM
(103.939)	(962 100)	8.21E+9	$2s2p\ ^3P^°_2$	$2p^2\ ^1D_2$	92ZHA/SAM	92ZHA/SAM
(109.733)	(911 300)	2.28E+10	$2s2p\ ^3P^°_1$	$2p^2\ ^3P_0$	92ZHA/SAM	92ZHA/SAM
(114.877)	(870 500)	7.33E+9	$2s2p\ ^3P^°_2$	$2p^2\ ^3P_1$	92ZHA/SAM	92ZHA/SAM
(157.060)	(636 700)	5.41E+8	$2s^2\ ^1S_0$	$2s2p\ ^3P^°_1$	92ZHA/SAM	92ZHA/SAM
(173.853)	(575 200)	1.66E+9	$2s2p\ ^1P^°_1$	$2p^2\ ^1D_2$	92ZHA/SAM	92ZHA/SAM
(206.782)	(483 600)	9.36E+7	$2s2p\ ^1P^°_1$	$2p^2\ ^3P_1$	92ZHA/SAM	92ZHA/SAM

6.35. Sr XXXVI

Li isoelectronic sequence
Ground state $1s^22s\ ^2S_{1/2}$
Ionization energy [37 196 700 ± 6500 cm^{-1}]; [4611.8 ± 0.8 eV]

Although there have been no measurements of the Sr XXXVI spectrum, Zhang *et al.* [90ZHA/SAM] have used a Dirac-Fock-Slater method to calculate all *nl* levels up to $n=5$ and transition probabilities for transitions involving the 2*s* and 2*p* levels. Third-order many-body perturbation theory was used by Johnson *et al.* [96JOH/LIU], to determine the 2*p* and 3*s* energy levels and also the rates for transitions between them. Level values for the 2*p* levels based on isoelectronic fitting were reported by Hinnov *et al.* [89HIN/TFT], who measured spectra of 8 isoelectronic ions between Ti ($Z=22$) and Mo ($Z=42$). Calculated level values have been published by Vainshtein and Safronova [85VAI/SAF], Seely [89SEE], Curtis [89CUR], Theodosiou *et al.* [91THE/CUR], and Kim *et al.* [91KIM/BAI]. In the course of trying to identify potential transitions for resonantly photo-pumped x-ray lasers, Nilsen [92NIL] calculated values for the $4p\ ^2P^°_{1/2}$ and $5p\ ^2P^°_{3/2}$ levels. Although some of these values may be more accurate for individual levels, we retain the Zhang *et al.* [90ZHA/SAM] values in Table 62 in order to make the entire set of levels more consistent.

The only source for transition probabilities for many of the Sr XXXVI lines in Table 63 is Zhang *et al.* [90ZHA/SAM]. The values are calculated using a Dirac-Fock-Slater formulation. Probabilities for 2*s*-2*p* and 2*p*-3*s* transitions are also available from Johnson *et al.* [96JOH/LIU], who used third-order many-body perturbation theory. Rates for the 2*s*-2*p* transitions are also given by Theodosiou *et al.* [91THE/CUR]. All three sources agree within ±2%. The relativistic quantum defect orbital calculations of Martin *et al.* [93MAR/KAR] produce 2*s*-2*p* transition rates in the same range; however, the 2*p*-3*s* rates differ by up to ±25%. We have retained the [96JOH/LIU] values, where available, and otherwise those of Zhang *et al.* [90ZHA/SAM].

The semi-empirical ionization energy is taken from Biémont *et al.* [99BIE/FRE]. It agrees within its estimated uncertainty with the multiconfiguration Dirac-Fock calculations of Huang *et al.* [06HUA/JIA], as well as the many-body perturbation value determined by Gu [05GU] and the isoelectronic fit of Theodosiou *et al.* [91THE/CUR]. The many-body perturbation theory result of Yerokhin *et al.* [07YER/ART] is about 20 000 cm^{-1} higher.

6.35.1 References for Sr XXXVI

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TABLE 62. Calculated energy levels of Sr XXXVI

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s$	^2S	1/2	(0)		90ZHA/SAM
$2p$	^2P	1/2	(613 400)		90ZHA/SAM
	^2P	3/2	(1 273 900)		90ZHA/SAM
$3s$	^2S	1/2	(20 897 800)		90ZHA/SAM
$3p$	^2P	1/2	(21 068 800)		90ZHA/SAM
	^2P	3/2	(21 268 800)		90ZHA/SAM
$3d$	^2D	3/2	(21 334 200)		90ZHA/SAM
	^2D	5/2	(21 396 300)		90ZHA/SAM
$4s$	^2S	1/2	(28 110 000)		90ZHA/SAM
$4p$	^2P	1/2	(28 181 000)		90ZHA/SAM
	^2P	3/2	(28 264 900)		90ZHA/SAM
$4d$	^2D	3/2	(28 292 300)		90ZHA/SAM
	^2D	5/2	(28 318 100)		90ZHA/SAM
$4f$	^2F	5/2	(28 320 500)		90ZHA/SAM
	^2F	7/2	(28 333 500)		90ZHA/SAM
$5s$	^2S	1/2	(31 420 900)		90ZHA/SAM
$5p$	^2P	1/2	(31 456 400)		90ZHA/SAM
	^2P	3/2	(31 499 200)		90ZHA/SAM
$5d$	^2D	3/2	(31 512 900)		90ZHA/SAM
	^2D	5/2	(31 526 600)		90ZHA/SAM
$5f$	^2F	5/2	(31 527 400)		90ZHA/SAM
	^2F	7/2	(31 534 700)		90ZHA/SAM
$5g$	^2G	7/2	(31 534 700)		90ZHA/SAM
	^2G	9/2	(31 538 700)		90ZHA/SAM
Sr XXXVII ($1s^2\ ^1S_0$)	*Limit*		[37 196 700]	6500	99BIE/FRE

TABLE 63. Spectral lines of Sr XXXVI

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum						
(3.175)	(31 499 200)	8.50E+12	$2s\ ^2S_{1/2}$	$5p\ ^2P^{\circ}_{3/2}$	90ZHA/SAM	90ZHA/SAM
(3.179)	(31 456 400)	8.78E+12	$2s\ ^2S_{1/2}$	$5p\ ^2P^{\circ}_{1/2}$	90ZHA/SAM	90ZHA/SAM
(3.236)	(30 899 500)	1.43E+13	$2p\ ^2P^{\circ}_{1/2}$	$5d\ ^2D_{3/2}$	90ZHA/SAM	90ZHA/SAM
(3.246)	(30 807 500)	8.86E+11	$2p\ ^2P^{\circ}_{1/2}$	$5s\ ^2S_{1/2}$	90ZHA/SAM	90ZHA/SAM
(3.305)	(30 252 700)	1.64E+13	$2p\ ^2P^{\circ}_{3/2}$	$5d\ ^2D_{5/2}$	90ZHA/SAM	90ZHA/SAM
(3.307)	(30 239 000)	2.62E+12	$2p\ ^2P^{\circ}_{3/2}$	$5d\ ^2D_{3/2}$	90ZHA/SAM	90ZHA/SAM
(3.317)	(30 147 000)	1.94E+12	$2p\ ^2P^{\circ}_{3/2}$	$5s\ ^2S_{1/2}$	90ZHA/SAM	90ZHA/SAM
(3.538)	(28 264 900)	1.64E+13	$2s\ ^2S_{1/2}$	$4p\ ^2P^{\circ}_{3/2}$	90ZHA/SAM	90ZHA/SAM
(3.548)	(28 181 000)	1.71E+13	$2s\ ^2S_{1/2}$	$4p\ ^2P^{\circ}_{1/2}$	90ZHA/SAM	90ZHA/SAM
(3.613)	(27 678 900)	3.10E+13	$2p\ ^2P^{\circ}_{1/2}$	$4d\ ^2D_{3/2}$	90ZHA/SAM	90ZHA/SAM

TABLE 63. Spectral lines of Sr XXXVI—Continued

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
(3.637)	(27 496 600)	1.71E+12	$2p\ ^2P^\circ_{1/2}$	$4s\ ^2S_{1/2}$	90ZHA/SAM	90ZHA/SAM
(3.698)	(27 044 200)	3.58E+13	$2p\ ^2P^\circ_{3/2}$	$4d\ ^2D_{5/2}$	90ZHA/SAM	90ZHA/SAM
(3.701)	(27 018 400)	5.79E+12	$2p\ ^2P^\circ_{3/2}$	$4d\ ^2D_{3/2}$	90ZHA/SAM	90ZHA/SAM
(3.726)	(26 836 100)	3.94E+12	$2p\ ^2P^\circ_{3/2}$	$4s\ ^2S_{1/2}$	90ZHA/SAM	90ZHA/SAM
(4.702)	(21 268 800)	3.68E+13	$2s\ ^2S_{1/2}$	$3p\ ^2P^\circ_{3/2}$	90ZHA/SAM	90ZHA/SAM
(4.746)	(21 068 800)	3.96E+13	$2s\ ^2S_{1/2}$	$3p\ ^2P^\circ_{1/2}$	90ZHA/SAM	90ZHA/SAM
(4.826)	(20 720 800)	9.34E+13	$2p\ ^2P^\circ_{1/2}$	$3d\ ^2D_{3/2}$	90ZHA/SAM	90ZHA/SAM
(4.930)	(20 284 400)	4.38E+12	$2p\ ^2P^\circ_{1/2}$	$3s\ ^2S_{1/2}$	90ZHA/SAM	96JOH/LIU
(4.970)	(20 122 400)	1.09E+14	$2p\ ^2P^\circ_{3/2}$	$3d\ ^2D_{5/2}$	90ZHA/SAM	90ZHA/SAM
(4.985)	(20 060 300)	1.80E+13	$2p\ ^2P^\circ_{3/2}$	$3d\ ^2D_{3/2}$	90ZHA/SAM	90ZHA/SAM
(5.096)	(19 623 900)	9.89E+12	$2p\ ^2P^\circ_{3/2}$	$3s\ ^2S_{1/2}$	90ZHA/SAM	96JOH/LIU
(78.499)	(1 273 900)	2.78E+10	$2s\ ^2S_{1/2}$	$2p\ ^2P^\circ_{3/2}$	90ZHA/SAM	96JOH/LIU
(163.026)	(613 400)	3.00E+9	$2s\ ^2S_{1/2}$	$2p\ ^2P^\circ_{1/2}$	90ZHA/SAM	96JOH/LIU

6.36. Sr XXXVII

He isoelectronic sequence
Ground state $1s^2\ ^1S_0$
Ionization energy of ^{88}Sr XXXVII (156 031 220 ± 250 cm^{-1}); (19 345.40 ± 0.03 eV)

Only the $1s^2\ ^1S_0 - 1s2p\ ^1P^\circ_1$ transition of the Sr XXXVII spectrum has been measured. Aglitsky *et al.* [88AGL/ANT] used a low-inductance vacuum spark source to produce the spectral line and obtained a wavelength of 845.34 ± 0.35 mÅ. Because they are believed to be more accurate than the experimental determination, the energy levels retained in Table 64 are from theoretical calculations. Drake [88DRA] determined the energies of the n = 1 and n = 2 levels of helium-like ^{88}Sr and the ionization energy using a unified-theory method. Relativistic all-order many-body calculations by Plante *et al.* [94PLA/JOH] produced energies for the same levels, which agree within ±1500 cm^{-1}. The fine structure splittings between levels in the $1s2p$ configuration were also calculated by Johnson *et al.* [97JOH/CHE], with agreement within ±700 cm^{-1}. Additional calculations have been made by Safronova *et al.* [81SAF, 85VAI/SAF], Aglitsky *et al.* [88AGL/ANT], Kagawa and Safronova [92KAG/SAF], and Boyko *et al.* [94BOY/PAL], though the agreement is not as good. Values for higher $1snl$ levels have been determined by Vainshtein and Safronova [85VAI/SAF] and Boyko *et al.* [94BOY/PAL]. Nilsen *et al.* [92NIL/SCO] calculated the $1snp\ ^{1,3}P^\circ_1$ levels for $n = 2$ to 4 using the multi-configuration Dirac-Fock code of Grant [80GRA/MCK]. We retain the Vainstein and Safronova [85VAI/SAF] results, which agree more closely with the $1s2l$ levels of Drake [88DRA] and the $1snp\ ^{1,3}P^\circ_1$ levels of Nilsen *et al.* [92NIL/SCO]. Of these calculations only those of Drake [88DRA] are specific to the ^{88}Sr isotope. The Vainshtein and Safronova level splittings for the $1snp$ and $1snd$ configurations are determined more accurately than the positions of the configuration as a whole; thus we retain more significant figures for those levels than the absolute uncertainty would indicate. Though the doubly excited levels are not included in this compilation, it should be noted that a formula for calculating $2s^2$, $2s2p$, and $2p^2$ levels has been published by Safronova *et al.* [94SAF/SAF2].

We have used the level values to calculate the wavelengths and transition energies in Table 65. The Sr XXXVII ionization energy was taken from Drake [88DRA]. A value was also determined by Plante *et al.* [94PLA/JOH] with results 5200 cm^{-1} higher than Drake [88DRA].

Johnson *et al.* [95JOH/PLA] used a relativistic, iterative technique to calculate the transition probabilities cited in Table 65. The paper also presents a detailed comparison of several methods of calculating transition probabilities for He-like ions. While the $1s^2\ ^1S_0 - 1s2p\ ^3P^\circ_0$ transition probability for Sr isotopes not affected by hyperfine splitting is listed in the table, hyperfine interaction induces some mixing of the $1s2p\ ^3P^\circ_0$ wave function with those with $J = 1$, which greatly affects the transition rate. Johnson *et al.* [97JOH/CHE] have determined that the rate for ^{87}Sr (with nuclear spin $I = 9/2$) is 1.32×10^{11} s^{-1}, which is orders of magnitude higher than that of ^{88}Sr.

6.36.1 References for Sr XXXVII

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TABLE 64. Calculated energy levels of Sr XXXVII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$1s^2$	^1S	0	(0)		88DRA
$1s2s$	^3S	1	(117 047 430)	250	88DRA
$1s2p$	$^3P^\circ$	0	(117 433 110)	250	88DRA
	$^3P^\circ$	1	(117 451 640)	250	88DRA
	$^3P^\circ$	2	(118 116 410)	250	88DRA
$1s2s$	^1S	0	(117 457 530)	250	88DRA
$1s2p$	$^1P^\circ$	1	(118 316 440)	250	88DRA
$1s3s$	^3S	1	(138 874 000)	14 000	85VAI/SAF
$1s3p$	$^3P^\circ$	0	(138 979 000)	14 000	85VAI/SAF
	$^3P^\circ$	1	(138 989 080)	14 000	85VAI/SAF
	$^3P^\circ$	2	(139 182 780)	14 000	85VAI/SAF
$1s3s$	^1S	0	(138 982 000)	14 000	85VAI/SAF
$1s3p$	$^1P^\circ$	1	(139 233 000)	14 000	85VAI/SAF
$1s3d$	^3D	1	(139 235 920)	14 000	85VAI/SAF
	^3D	2	(139 233 000)	14 000	85VAI/SAF
	^3D	3	(139 300 370)	14 000	85VAI/SAF
$1s3d$	^1D	2	(139 305 000)	14 000	85VAI/SAF
$1s4s$	^3S	1	(146 434 000)	15 000	85VAI/SAF
$1s4p$	$^3P^\circ$	0	(146 478 000)	15 000	85VAI/SAF
	$^3P^\circ$	1	(146 482 180)	15 000	85VAI/SAF
	$^3P^\circ$	2	(146 563 820)	15 000	85VAI/SAF
$1s4s$	^1S	0	(146 480 000)	15 000	85VAI/SAF
$1s4p$	$^1P^\circ$	1	(146 586 000)	15 000	85VAI/SAF
$1s4d$	^3D	1	(146 587 210)	15 000	85VAI/SAF
	^3D	2	(146 586 000)	15 000	85VAI/SAF
	^3D	3	(146 614 440)	15 000	85VAI/SAF
$1s4d$	^1D	2	(146 616 000)	15 000	85VAI/SAF
$1s5s$	^3S	1	(149 912 000)	15 000	85VAI/SAF
$1s5p$	$^3P^\circ$	0	(149 935 000)	15 000	85VAI/SAF
	$^3P^\circ$	1	(149 937 100)	15 000	85VAI/SAF
	$^3P^\circ$	2	(149 978 860)	15 000	85VAI/SAF
$1s5s$	^1S	0	(149 935 000)	15 000	85VAI/SAF
$1s5p$	$^1P^\circ$	1	(149 989 000)	15 000	85VAI/SAF
$1s5d$	^3D	1	(149 989 620)	15 000	85VAI/SAF
	^3D	2	(149 989 000)	15 000	85VAI/SAF
	^3D	3	(150 003 560)	15 000	85VAI/SAF
$1s5d$	^1D	2	(150 005 000)	15 000	85VAI/SAF
Sr XXXVIII ($1s$ $^2S_{1/2}$)		*Limit*	(156 031 220)	250	88DRA

TABLE 65. Spectral lines of Sr XXXVII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum							
(0.666716)	0.00007	(149 989 000)		$1s^2\ ^1S_0$	$1s5p\ ^1P^{\circ}_1$	88DRA,85VAI/SAF	
(0.666946)	0.00007	(149 937 100)		$1s^2\ ^1S_0$	$1s5p\ ^3P^{\circ}_1$	88DRA,85VAI/SAF	
(0.682193)	0.00007	(146 586 000)		$1s^2\ ^1S_0$	$1s4p\ ^1P^{\circ}_1$	88DRA,85VAI/SAF	
(0.682677)	0.00007	(146 482 180)		$1s^2\ ^1S_0$	$1s4p\ ^3P^{\circ}_1$	88DRA,85VAI/SAF	
(0.718221)	0.00007	(139 233 000)		$1s^2\ ^1S_0$	$1s3p\ ^1P^{\circ}_1$	88DRA,85VAI/SAF	
(0.719481)	0.00007	(138 989 080)		$1s^2\ ^1S_0$	$1s3p\ ^3P^{\circ}_1$	88DRA,85VAI/SAF	
(0.845191)	0.000002	(118 316 440)	1.834E+15	$1s^2\ ^1S_0$	$1s2p\ ^1P^{\circ}_1$	88DRA	95JOH/PLA
(0.846622)	0.000002	(118 116 410)	1.453E+11	$1s^2\ ^1S_0$	$1s2p\ ^3P^{\circ}_2$	88DRA	95JOH/PLA
(0.851414)	0.000002	(117 451 640)	5.313E+14	$1s^2\ ^1S_0$	$1s2p\ ^3P^{\circ}_1$	88DRA	95JOH/PLA
(0.851549)	0.000002	(117 433 110)	7.06E+8	$1s^2\ ^1S_0$	$1s2p\ ^3P_0{}^{\circ}$	88DRA	97JOH/CHE
(0.854355)	0.000002	(117 047 430)	1.015E+10	$1s^2\ ^1S_0$	$1s2s\ ^3S_1$	88DRA	95JOH/PLA
(3.03661)	0.0013	(32 931 430)		$1s2s\ ^3S_1$	$1s5p\ ^3P^{\circ}_2$	88DRA,85VAI/SAF	
(3.04047)	0.0013	(32 889 670)		$1s2s\ ^3S_1$	$1s5p\ ^3P^{\circ}_1$	88DRA,85VAI/SAF	
(3.04066)	0.0013	(32 887 570)		$1s2s\ ^3S_1$	$1s5p\ ^3P^{\circ}_0$	88DRA,85VAI/SAF	
(3.07158)	0.0013	(32 556 510)		$1s2p\ ^3P^{\circ}_0$	$1s5d\ ^3D_1$	88DRA,85VAI/SAF	
(3.07188)	0.0013	(32 553 360)		$1s2p\ ^3P^{\circ}_1$	$1s5d\ ^1D_2$	88DRA,85VAI/SAF	
(3.07333)	0.0013	(32 537 980)		$1s2p\ ^3P^{\circ}_1$	$1s5d\ ^3D_1$	88DRA,85VAI/SAF	
(3.07339)	0.0013	(32 537 360)		$1s2p\ ^3P^{\circ}_1$	$1s5d\ ^3D_2$	88DRA,85VAI/SAF	
(3.07395)	0.0013	(32 531 470)		$1s2s\ ^1S_0$	$1s5p\ ^1P^{\circ}_1$	88DRA,85VAI/SAF	
(3.07850)	0.0013	(32 483 360)		$1s2p\ ^3P^{\circ}_1$	$1s5s\ ^1S_0$	88DRA,85VAI/SAF	
(3.07886)	0.0013	(32 479 570)		$1s2s\ ^1S_0$	$1s5p\ ^3P^{\circ}_1$	88DRA,85VAI/SAF	
(3.07892)	0.0013	(32 478 890)		$1s2p\ ^3P^{\circ}_0$	$1s5s\ ^3S_1$	88DRA,85VAI/SAF	
(3.08068)	0.0013	(32 460 360)		$1s2p\ ^3P^{\circ}_1$	$1s5s\ ^3S_1$	88DRA,85VAI/SAF	
(3.13592)	0.0014	(31 888 590)		$1s2p\ ^3P^{\circ}_2$	$1s5d\ ^1D_2$	88DRA,85VAI/SAF	
(3.13606)	0.0014	(31 887 150)		$1s2p\ ^3P^{\circ}_2$	$1s5d\ ^3D_3$	88DRA,85VAI/SAF	
(3.13743)	0.0014	(31 873 210)		$1s2p\ ^3P^{\circ}_2$	$1s5d\ ^3D_1$	88DRA,85VAI/SAF	
(3.13749)	0.0014	(31 872 590)		$1s2p\ ^3P^{\circ}_2$	$1s5d\ ^3D_2$	88DRA,85VAI/SAF	
(3.14509)	0.0014	(31 795 590)		$1s2p\ ^3P^{\circ}_2$	$1s5s\ ^3S_1$	88DRA,85VAI/SAF	
(3.15571)	0.0014	(31 688 560)		$1s2p\ ^1P^{\circ}_1$	$1s5d\ ^1D_2$	88DRA,85VAI/SAF	
(3.15724)	0.0014	(31 673 180)		$1s2p\ ^1P^{\circ}_1$	$1s5d\ ^3D_1$	88DRA,85VAI/SAF	
(3.15731)	0.0014	(31 672 560)		$1s2p\ ^1P^{\circ}_1$	$1s5d\ ^3D_2$	88DRA,85VAI/SAF	
(3.16270)	0.0014	(31 618 560)		$1s2p\ ^1P^{\circ}_1$	$1s5s\ ^1S_0$	88DRA,85VAI/SAF	
(3.16500)	0.0014	(31 595 560)		$1s2p\ ^1P^{\circ}_1$	$1s5s\ ^3S_1$	88DRA,85VAI/SAF	
(3.38795)	0.0016	(29 516 390)		$1s2s\ ^3S_1$	$1s4p\ ^3P^{\circ}_2$	88DRA,85VAI/SAF	
(3.39734)	0.0016	(29 434 750)		$1s2s\ ^3S_1$	$1s4p\ ^3P^{\circ}_1$	88DRA,85VAI/SAF	
(3.39783)	0.0016	(29 430 570)		$1s2s\ ^3S_1$	$1s4p\ ^3P^{\circ}_0$	88DRA,85VAI/SAF	
(3.42884)	0.0016	(29 164 360)		$1s2p\ ^3P^{\circ}_1$	$1s4d\ ^1D_2$	88DRA,85VAI/SAF	
(3.43005)	0.0016	(29 154 100)		$1s2p\ ^3P^{\circ}_0$	$1s4d\ ^3D_1$	88DRA,85VAI/SAF	
(3.43019)	0.0016	(29 152 890)		$1s2p\ ^3P^{\circ}_0$	$1s4d\ ^3D_2$	88DRA,85VAI/SAF	
(3.43223)	0.0016	(29 135 570)		$1s2p\ ^3P^{\circ}_1$	$1s4d\ ^3D_1$	88DRA,85VAI/SAF	
(3.43237)	0.0016	(29 134 360)		$1s2p\ ^3P^{\circ}_1$	$1s4d\ ^3D_2$	88DRA,85VAI/SAF	
(3.43307)	0.0017	(29 128 470)		$1s2s\ ^1S_0$	$1s4p\ ^1P^{\circ}_1$	88DRA,85VAI/SAF	
(3.44491)	0.0017	(29 028 360)		$1s2p\ ^3P^{\circ}_1$	$1s4s\ ^1S_0$	88DRA,85VAI/SAF	
(3.44535)	0.0017	(29 024 650)		$1s2s\ ^1S_0$	$1s4p\ ^3P^{\circ}_1$	88DRA,85VAI/SAF	
(3.44817)	0.0017	(29 000 890)		$1s2p\ ^3P^{\circ}_0$	$1s4s\ ^3S_1$	88DRA,85VAI/SAF	
(3.45038)	0.0017	(28 982 360)		$1s2p\ ^3P^{\circ}_1$	$1s4s\ ^3S_1$	88DRA,85VAI/SAF	
(3.50882)	0.0017	(28 499 590)		$1s2p\ ^3P^{\circ}_2$	$1s4d\ ^1D_2$	88DRA,85VAI/SAF	
(3.50901)	0.0017	(28 498 030)		$1s2p\ ^3P^{\circ}_2$	$1s4d\ ^3D_3$	88DRA,85VAI/SAF	
(3.51237)	0.0017	(28 470 800)		$1s2p\ ^3P^{\circ}_2$	$1s4d\ ^3D_1$	88DRA,85VAI/SAF	
(3.51252)	0.0017	(28 469 590)		$1s2p\ ^3P^{\circ}_2$	$1s4d\ ^3D_2$	88DRA,85VAI/SAF	
(3.53137)	0.0017	(28 317 590)		$1s2p\ ^3P^{\circ}_2$	$1s4s\ ^3S_1$	88DRA,85VAI/SAF	
(3.53362)	0.0017	(28 299 560)		$1s2p\ ^1P^{\circ}_1$	$1s4d\ ^1D_2$	88DRA,85VAI/SAF	
(3.53722)	0.0018	(28 270 770)		$1s2p\ ^1P^{\circ}_1$	$1s4d\ ^3D_1$	88DRA,85VAI/SAF	
(3.53737)	0.0018	(28 269 560)		$1s2p\ ^1P^{\circ}_1$	$1s4d\ ^3D_2$	88DRA,85VAI/SAF	
(3.55069)	0.0018	(28 163 560)		$1s2p\ ^1P^{\circ}_1$	$1s4s\ ^1S_0$	88DRA,85VAI/SAF	
(3.55650)	0.0018	(28 117 560)		$1s2p\ ^1P^{\circ}_1$	$1s4s\ ^3S_1$	88DRA,85VAI/SAF	
(4.51766)	0.003	(22 135 350)		$1s2s\ ^3S_1$	$1s3p\ ^3P^{\circ}_2$	88DRA,85VAI/SAF	
(4.55754)	0.003	(21 941 650)		$1s2s\ ^3S_1$	$1s3p\ ^3P^{\circ}_1$	88DRA,85VAI/SAF	
(4.55964)	0.003	(21 931 570)		$1s2s\ ^3S_1$	$1s3p\ ^3P^{\circ}_0$	88DRA,85VAI/SAF	
(4.57596)	0.003	(21 853 360)		$1s2p\ ^3P^{\circ}_1$	$1s3d\ ^1D_2$	88DRA,85VAI/SAF	
(4.58656)	0.003	(21 802 810)		$1s2p\ ^3P^{\circ}_0$	$1s3d\ ^3D_1$	88DRA,85VAI/SAF	
(4.59047)	0.003	(21 784 280)		$1s2p\ ^3P^{\circ}_1$	$1s3d\ ^3D_1$	88DRA,85VAI/SAF	

TABLE 65. Spectral lines of Sr XXXVII—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
(4.59108)	0.003	(21 781 360)		$1s2p\ ^3P^\circ_1$	$1s3d\ ^3D_2$	88DRA,85VAI/SAF	
(4.59232)	0.003	(21 775 470)		$1s2s\ ^1S_0$	$1s3p\ ^1P^\circ_1$	88DRA,85VAI/SAF	
(4.64435)	0.003	(21 531 550)		$1s2s\ ^1S_0$	$1s3p\ ^3P^\circ_1$	88DRA,85VAI/SAF	
(4.64460)	0.003	(21 530 360)		$1s2p\ ^3P^\circ_1$	$1s3s\ ^1S_0$	88DRA,85VAI/SAF	
(4.66398)	0.003	(21 440 890)		$1s2p\ ^3P^\circ_0$	$1s3s\ ^3S_1$	88DRA,85VAI/SAF	
(4.66802)	0.003	(21 422 360)		$1s2p\ ^3P^\circ_1$	$1s3s\ ^3S_1$	88DRA,85VAI/SAF	
(4.71952)	0.003	(21 188 590)		$1s2p\ ^3P^\circ_2$	$1s3d\ ^1D_2$	88DRA,85VAI/SAF	
(4.72055)	0.003	(21 183 960)		$1s2p\ ^3P^\circ_2$	$1s3d\ ^3D_3$	88DRA,85VAI/SAF	
(4.73496)	0.003	(21 119 510)		$1s2p\ ^3P^\circ_2$	$1s3d\ ^3D_1$	88DRA,85VAI/SAF	
(4.73561)	0.003	(21 116 590)		$1s2p\ ^3P^\circ_2$	$1s3d\ ^3D_2$	88DRA,85VAI/SAF	
(4.76450)	0.003	(20 988 560)		$1s2p\ ^1P^\circ_1$	$1s3d\ ^1D_2$	88DRA,85VAI/SAF	
(4.78023)	0.003	(20 919 480)		$1s2p\ ^1P^\circ_1$	$1s3d\ ^3D_1$	88DRA,85VAI/SAF	
(4.78090)	0.003	(20 916 560)		$1s2p\ ^1P^\circ_1$	$1s3d\ ^3D_2$	88DRA,85VAI/SAF	
(4.81752)	0.003	(20 757 590)		$1s2p\ ^3P^\circ_2$	$1s3s\ ^3S_1$	88DRA,85VAI/SAF	
(4.83897)	0.003	(20 665 560)		$1s2p\ ^1P^\circ_1$	$1s3s\ ^1S_0$	88DRA,85VAI/SAF	
(4.86439)	0.003	(20 557 560)		$1s2p\ ^1P^\circ_1$	$1s3s\ ^3S_1$	88DRA,85VAI/SAF	
(78.802)	0.016	(1 269 010)	5.791E+9	$1s2s\ ^3S_1$	$1s2p\ ^1P^\circ_1$	88DRA	95JOH/PLA
(93.547)	0.022	(1 068 980)	1.565E+10	$1s2s\ ^3S_1$	$1s2p\ ^3P^\circ_2$	88DRA	95JOH/PLA
(116.43)	0.03	(858 910)	6.422E+9	$1s2s\ ^1S_0$	$1s2p\ ^1P^\circ_1$	88DRA	95JOH/PLA
(247.40)	0.15	(404 210)	6.380E+8	$1s2s\ ^3S_1$	$1s2p\ ^3P^\circ_1$	88DRA	95JOH/PLA
(259.28)	0.17	(385 680)	7.059E+8	$1s2s\ ^3S_1$	$1s2p\ ^3P^\circ_0$	88DRA	95JOH/PLA

6.37. Sr XXXVIII

H isoelectronic sequence
Ground state $1s\ ^2S_{1/2}$
Ionization energy of ^{88}Sr XXXVIII (161 514 400 ± 100 cm^{-1}); (20 025.231 ± 0.012 eV)

No experimental measurements of the Sr XXXVIII spectrum have been made; however, Erickson [77ERI] calculated energy levels of ^{88}Sr for ns levels with $n=1-13$, np levels with $n=2-13$, nd levels with $n=3-5$, nf levels with $n=4-5$, plus the levels with $J=n-1/2$ for $n=6-13$. Later Mohr [83MOH] and Johnson and Soff [85JOH/SOF] calculated the $n=1$ and 2 levels with reduced uncertainties. Their results agree within the estimated uncertainties. The $n=1$ and 2 level values and ionization energy retained in Table 66 are taken from Johnson and Soff [85JOH/SOF], corrected for the latest CODATA internationally recommended value of the Rydberg constant, $R=$ 109 737.31568525(73) cm^{-1}. The $n \geq 3$ levels are obtained by combining the Johnson and Soff [85JOH/SOF] ionization energy with Erickson's binding energies [77ERI], which have also been corrected to reflect the latest value of R. The uncertainties given are with respect to the ionization limit, since the actual calculations were of binding energies. The wavelengths listed in Table 67 are computed using the differences of the levels. Wavelengths of the $1s-2p$ and $1s-3p$ transitions were also calculated by Nilsen *et al.* [92NIL/SCO], with results identical to those in Table 67 within the number of significant figures given. Only transitions involving levels with $n \leq 7$ are tabulated here. Uncertainties in the wavelengths of most transitions are calculated from those given in [77ERI] for the energy levels; however, this is not a rigorous method since errors in the level value calculations are not statistically independent. The uncertainty of the $1s-2p$ and $2s-2p$ splittings was explicitly determined by Johnson and Soff [85JOH/SOF] and has been used to determine the wavelength uncertainties for those transitions.

Most transition probabilities in Table 67 were calculated by Jitrik and Bunge [04JIT/BUN] using point-nucleus Dirac eigenfunctions. Pal'chikov [98PAL] also obtained transition probabilities for the resonance transitions and $n=2-n=3$ transitions. The results agree with Jitrik and Bunge [04JIT/BUN] to within 0.1%. There has been considerable interest in the $1s-2s$ transition, for which two-photon transitions contribute significantly to the transition probability. Pal'chikov [98PAL] and Jitrik and Bunge [04JIT/BUN] give only the M1 rate. Labzowsky *et al.* [04LAB/SHO, 05LAB/SHO] focus on the E1M1 and E1E2 two photon probabilities. The total transition probability is determined in Johnson [72JOH], Parpia and Johnson [82PAR/JOH], and Santos *et al.* [98SAN/PAR]. Agreement between them is better than 1% and the value retained in Table 67 is from the latter source.

6.37.1 References for Sr XXXVIII

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77ERI G. W. Erickson, J. Phys. Chem. Ref. Data **6**, 831 (1977).

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04LAB/SHO L. N. Labzowsky and A. V. Shonin, Phys. Lett. A **333**, 289 (2004).

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05LAB/SHO L. N. Labzowsky, A. V. Shonin, and D. A. Solovyev, J. Phys. B **38**, 265 (2005).

TABLE 66. Calculated energy levels of ^{88}Sr XXXVIII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
1*s*	^{2}S	1/2	(0.0000)	100	85JOH/SOF
2*p*	^{2}P	1/2	(120 906 800.0)	100	85JOH/SOF
	^{2}P	3/2	(121 708 454.0)	100	85JOH/SOF
2*s*	^{2}S	1/2	(120 923 570.0)	100	85JOH/SOF
3*p*	^{2}P	1/2	(143 556 270.0)	90	77ERI, 85JOH/SOF
	^{2}P	3/2	(143 794 110.0)	50	77ERI, 85JOH/SOF
3*s*	^{2}S	1/2	(143 561 700.0)	100	77ERI, 85JOH/SOF
3*d*	^{2}D	3/2	(143 793 680.0)	2	77ERI, 85JOH/SOF
	^{2}D	5/2	(143 870 083.0)	2	77ERI, 85JOH/SOF
4*p*	^{2}P	1/2	(151 450 550.0)	40	77ERI, 85JOH/SOF
	^{2}P	3/2	(151 550 720.0)	20	77ERI, 85JOH/SOF
4*s*	^{2}S	1/2	(151 452 830.0)	50	77ERI, 85JOH/SOF
4*d*	^{2}D	3/2	(151 550 532.0)	2	77ERI, 85JOH/SOF
	^{2}D	5/2	(151 582 816.0)	2	77ERI, 85JOH/SOF
4*f*	^{2}F	5/2	(151 582 759.6)	0.5	77ERI, 85JOH/SOF
	^{2}F	7/2	(151 598 759.2)	0.5	77ERI, 85JOH/SOF
5*p*	^{2}P	1/2	(155 090 450.0)	20	77ERI, 85JOH/SOF
	^{2}P	3/2	(155 141 640.0)	10	77ERI, 85JOH/SOF
5*s*	^{2}S	1/2	(155 091 620.0)	20	77ERI, 85JOH/SOF
5*d*	^{2}D	3/2	(155 141 547.0)	1	77ERI, 85JOH/SOF
	^{2}D	5/2	(155 158 080.0)	1	77ERI, 85JOH/SOF
5*f*	^{2}F	5/2	(155 158 050.5)	0.5	77ERI, 85JOH/SOF
	^{2}F	7/2	(155 166 249.7)	0.5	77ERI, 85JOH/SOF
5*g*	^{2}G	7/2	(155 166 234.6)	0.1	77ERI, 85JOH/SOF
	^{2}G	9/2	(155 171 136.8)	0.1	77ERI, 85JOH/SOF
6*p*	^{2}P	1/2	(157 061 861.0)	10	77ERI, 85JOH/SOF
6*s*	^{2}S	1/2	(157 062 531.0)	10	77ERI, 85JOH/SOF
6*h*	^{2}H	11/2	(157 110 391.58)	0.03	77ERI, 85JOH/SOF
7*p*	^{2}P	1/2	(158 247 875.0)	8	77ERI, 85JOH/SOF
7*s*	^{2}S	1/2	(158 248 300.0)	9	77ERI, 85JOH/SOF
7*i*	^{2}I	13/2	(158 279 260.58)	0.01	77ERI, 85JOH/SOF
8*p*	^{2}P	1/2	(159 016 287.0)	5	77ERI, 85JOH/SOF
8*s*	^{2}S	1/2	(159 016 571.0)	6	77ERI, 85JOH/SOF
8*k*	^{2}K	15/2	(159 037 724.285)	0.004	77ERI, 85JOH/SOF
9*p*	^{2}P	1/2	(159 542 364.0)	4	77ERI, 85JOH/SOF
9*s*	^{2}S	1/2	(159 542 563.0)	4	77ERI, 85JOH/SOF
9*l*	^{2}L	17/2	(159 557 643.916)	0.002	77ERI, 85JOH/SOF

TABLE 66. Calculated energy levels of ^{88}Sr XXXVIII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
10*p*	^{2}P	1/2	(159 918 230.0)	3	77ERI, 85JOH/SOF
10*s*	^{2}S	1/2	(159 918 375.0)	3	77ERI, 85JOH/SOF
10*m*	^{2}M	19/2	(159 929 499.164)	0.001	77ERI, 85JOH/SOF
11*p*	^{2}P	1/2	(160 196 062.0)	2	77ERI, 85JOH/SOF
11*s*	^{2}S	1/2	(160 196 171.0)	2	77ERI, 85JOH/SOF
11*n*	^{2}N	21/2	(160 204 608.4111)	0.0005	77ERI, 85JOH/SOF
12*p*	^{2}P	1/2	(160 407 205.0)	2	77ERI, 85JOH/SOF
12*s*	^{2}S	1/2	(160 407 289.0)	2	77ERI, 85JOH/SOF
12*o*	^{2}O	23/2	(160 413 839.2682)	0.0003	77ERI, 85JOH/SOF
13*p*	^{2}P	1/2	(160 571 411.0)	1	77ERI, 85JOH/SOF
13*s*	^{2}S	1/2	(160 571 477.0)	1	77ERI, 85JOH/SOF
13*q*	^{2}Q	25/2	(160 576 662.7286)	0.0002	77ERI, 85JOH/SOF
		Limit	(161 514 400)	–	85JOH/SOF

TABLE 67. Spectral lines of ^{88}Sr XXXVIII

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
Vacuum							
(0.6319200)	0.0000004	(158 247 870.0)	2.4863E+13	1*s* $^2S_{1/2}$	7*p* $^2P^\circ_{1/2}$	77ERI,85JOH/SOF	04JIT/BUN
(0.6366918)	0.0000004	(157 061 860.0)	3.9792E+13	1*s* $^2S_{1/2}$	6*p* $^2P^\circ_{1/2}$	77ERI,85JOH/SOF	04JIT/BUN
(0.6445723)	0.0000004	(155 141 640.0)	7.1217E+13	1*s* $^2S_{1/2}$	5*p* $^2P^\circ_{3/2}$	77ERI,85JOH/SOF	04JIT/BUN
(0.6447850)	0.0000004	(155 090 450.0)	6.9615E+13	1*s* $^2S_{1/2}$	5*p* $^2P^\circ_{1/2}$	77ERI,85JOH/SOF	04JIT/BUN
(0.6598451)	0.0000004	(151 550 720.0)	1.4128E+14	1*s* $^2S_{1/2}$	4*p* $^2P^\circ_{3/2}$	77ERI,85JOH/SOF	04JIT/BUN
(0.6602815)	0.0000005	(151 450 550.0)	1.3894E+14	1*s* $^2S_{1/2}$	4*p* $^2P^\circ_{1/2}$	77ERI,85JOH/SOF	04JIT/BUN
(0.6954388)	0.0000005	(143 794 110.0)	3.4608E+14	1*s* $^2S_{1/2}$	3*p* $^2P^\circ_{3/2}$	77ERI,85JOH/SOF	04JIT/BUN
(0.6965910)	0.0000006	(143 556 270.0)	3.4439E+14	1*s* $^2S_{1/2}$	3*p* $^2P^\circ_{1/2}$	77ERI,85JOH/SOF	04JIT/BUN
(0.8216356)	0.0000007	(121 708 450.0)	1.2834E+15	1*s* $^2S_{1/2}$	2*p* $^2P^\circ_{3/2}$	85JOH/SOF	04JIT/BUN
(0.8269686)	0.0000007	(120 923 570.0)	4.068E+10	1*s* $^2S_{1/2}$	2*p* $^2S_{1/2}$	85JOH/SOF	98SAN/PAR
(0.8270833)	0.0000007	(120 906 800.0)	1.3190E+15	1*s* $^2S_{1/2}$	2*p* $^2P^\circ_{1/2}$	85JOH/SOF	04JIT/BUN
(2.677986)	0.000007	(37 341 500.0)	3.3281E+11	2*p* $^2P^\circ_{1/2}$	7*s* $^2S_{1/2}$	77ERI	04JIT/BUN
(2.679219)	0.000007	(37 324 300.0)	3.8640E+12	2*s* $^2S_{1/2}$	7*p* $^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(2.736738)	0.000008	(36 539 850.0)	7.6319E+11	2*p* $^2P^\circ_{3/2}$	7*s* $^2S_{1/2}$	77ERI	04JIT/BUN
(2.765813)	0.000008	(36 155 730.0)	5.3412E+11	2*p* $^2P^\circ_{1/2}$	6*s* $^2S_{1/2}$	77ERI	04JIT/BUN
(2.767148)	0.000008	(36 138 290.0)	6.1628E+12	2*s* $^2S_{1/2}$	6*p* $^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(2.828528)	0.000008	(35 354 080.0)	1.2256E+12	2*p* $^2P^\circ_{3/2}$	6*s* $^2S_{1/2}$	77ERI	04JIT/BUN
(2.921009)	0.000009	(34 234 750.0)	1.7373E+13	2*p* $^2P^\circ_{1/2}$	5*d* $^2D_{3/2}$	77ERI	04JIT/BUN
(2.922432)	0.000009	(34 218 070.0)	1.0327E+13	2*s* $^2S_{1/2}$	5*p* $^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(2.925275)	0.000009	(34 184 820.0)	9.3810E+11	2*p* $^2P^\circ_{1/2}$	5*s* $^2S_{1/2}$	77ERI	04JIT/BUN
(2.926811)	0.000009	(34 166 880.0)	1.0711E+13	2*s* $^2S_{1/2}$	5*p* $^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(2.989570)	0.000009	(33 449 630.0)	1.9667E+13	2*p* $^2P^\circ_{3/2}$	5*d* $^2D_{5/2}$	77ERI	04JIT/BUN
(2.991048)	0.000009	(33 433 090.0)	3.2101E+12	2*p* $^2P^\circ_{3/2}$	5*d* $^2D_{3/2}$	77ERI	04JIT/BUN
(2.995522)	0.000009	(33 383 170.0)	2.1551E+12	2*p* $^2P^\circ_{3/2}$	5*s* $^2S_{1/2}$	77ERI	04JIT/BUN
(3.263310)	0.000011	(30 643 730.0)	3.7779E+13	2*p* $^2P^\circ_{1/2}$	4*d* $^2D_{3/2}$	77ERI	04JIT/BUN
(3.265077)	0.000011	(30 627 150.0)	2.0076E+13	2*s* $^2S_{1/2}$	4*p* $^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(3.273748)	0.000012	(30 546 030.0)	1.8807E+12	2*p* $^2P^\circ_{1/2}$	4*s* $^2S_{1/2}$	77ERI	04JIT/BUN
(3.275791)	0.000012	(30 526 980.0)	2.1054E+13	2*s* $^2S_{1/2}$	4*p* $^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(3.347352)	0.000011	(29 874 360.0)	4.3023E+13	2*p* $^2P^\circ_{3/2}$	4*d* $^2D_{5/2}$	77ERI	04JIT/BUN
(3.350973)	0.000011	(29 842 080.0)	7.0618E+12	2*p* $^2P^\circ_{3/2}$	4*d* $^2D_{3/2}$	77ERI	04JIT/BUN
(3.361980)	0.000013	(29 744 380.0)	4.3325E+12	2*p* $^2P^\circ_{3/2}$	4*s* $^2S_{1/2}$	77ERI	04JIT/BUN
(4.369316)	0.000019	(22 886 880.0)	1.1607E+14	2*p* $^2P^\circ_{1/2}$	3*d* $^2D_{3/2}$	77ERI	04JIT/BUN

TABLE 67. Spectral lines of ^{88}Sr XXXVIII—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
(4.37244)	0.00002	(22 870 540.0)	4.5807E+13	$2s\ ^2S_{1/2}$	$3p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(4.41406)	0.00003	(22 654 900.0)	4.6141E+12	$2p\ ^2P^\circ_{1/2}$	$3s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(4.41839)	0.00003	(22 632 700.0)	4.9389E+13	$2s\ ^2S_{1/2}$	$3p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(4.51230)	0.00003	(22 161 630.0)	1.3443E+14	$2p\ ^2P^\circ_{3/2}$	$3d\ ^2D_{5/2}$	77ERI	04JIT/BUN
(4.52791)	0.00003	(22 085 230.0)	2.2365E+13	$2p\ ^2P^\circ_{3/2}$	$3d\ ^2D_{3/2}$	77ERI	04JIT/BUN
(4.57598)	0.00003	(21 853 250.0)	1.0739E+13	$2p\ ^2P^\circ_{3/2}$	$3s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(6.80641)	0.00004	(14 692 030.0)	2.2518E+11	$3p\ ^2P^\circ_{1/2}$	$7s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(6.80913)	0.00005	(14 686 170.0)	1.3003E+12	$3s\ ^2S_{1/2}$	$7p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(6.918407)	0.000004	(14 454 195.0)	1.2094E+11	$3d\ ^2D_{3/2}$	$7p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(6.91841)	0.00002	(14 454 190.0)	5.0992E+11	$3p\ ^2P^\circ_{3/2}$	$7s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(7.40397)	0.00005	(13 506 260.0)	3.6562E+11	$3p\ ^2P^\circ_{1/2}$	$6s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(7.40732)	0.00006	(13 500 160.0)	2.0668E+12	$3s\ ^2S_{1/2}$	$6p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(7.53669)	0.00003	(13 268 420.0)	8.2902E+11	$3p\ ^2P^\circ_{3/2}$	$6s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(7.536828)	0.000006	(13 268 181.0)	2.0405E+11	$3d\ ^2D_{3/2}$	$6p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(8.63165)	0.00007	(11 585 280.0)	6.0265E+12	$3p\ ^2P^\circ_{1/2}$	$5d\ ^2D_{3/2}$	77ERI	04JIT/BUN
(8.63562)	0.00007	(11 579 940.0)	3.3358E+12	$3s\ ^2S_{1/2}$	$5p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(8.66900)	0.00007	(11 535 350.0)	6.5335E+11	$3p\ ^2P^\circ_{1/2}$	$5s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(8.67397)	0.00008	(11 528 750.0)	3.5576E+12	$3s\ ^2S_{1/2}$	$5p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(8.7994315)	0.0000016	(11 364 370.0)	8.9831E+12	$3d\ ^2D_{3/2}$	$5f\ ^2F^\circ_{5/2}$	77ERI	04JIT/BUN
(8.79974)	0.00004	(11 363 970.0)	7.1046E+12	$3p\ ^2P^\circ_{3/2}$	$5d\ ^2D_{5/2}$	77ERI	04JIT/BUN
(8.812156)	0.000008	(11 347 961.0)	3.1750E+10	$3d\ ^2D_{3/2}$	$5p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(8.81256)	0.00004	(11 347 440.0)	1.1860E+12	$3p\ ^2P^\circ_{3/2}$	$5d\ ^2D_{3/2}$	77ERI	04JIT/BUN
(8.85151)	0.00004	(11 297 510.0)	1.4860E+12	$3p\ ^2P^\circ_{3/2}$	$5s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(8.852087)	0.000016	(11 296 770.0)	3.8998E+11	$3d\ ^2D_{3/2}$	$5p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(8.8525606)	0.0000016	(11 296 167.0)	9.4786E+12	$3d\ ^2D_{5/2}$	$5f\ ^2F^\circ_{7/2}$	77ERI	04JIT/BUN
(8.8589908)	0.0000016	(11 287 967.0)	6.2489E+11	$3d\ ^2D_{5/2}$	$5f\ ^2F^\circ_{5/2}$	77ERI	04JIT/BUN
(8.871888)	0.000008	(11 271 558.0)	3.0402E+11	$3d\ ^2D_{5/2}$	$5p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(12.50897)	0.00014	(7 994 260.0)	1.2217E+13	$3p\ ^2P^\circ_{1/2}$	$4d\ ^2D_{3/2}$	77ERI	04JIT/BUN
(12.51718)	0.00016	(7 989 020.0)	6.1198E+12	$3s\ ^2S_{1/2}$	$4p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(12.66374)	0.00017	(7 896 560.0)	1.3284E+12	$3p\ ^2P^\circ_{1/2}$	$4s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(12.67612)	0.00017	(7 888 850.0)	6.6970E+12	$3s\ ^2S_{1/2}$	$4p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(12.838487)	0.000003	(7 789 080.0)	2.7095E+13	$3d\ ^2D_{3/2}$	$4f\ ^2F^\circ_{5/2}$	77ERI	04JIT/BUN
(12.83911)	0.00008	(7 788 700.0)	1.4656E+13	$3p\ ^2P^\circ_{3/2}$	$4d\ ^2D_{5/2}$	77ERI	04JIT/BUN
(12.89151)	0.00003	(7 757 040.0)	7.3651E+10	$3d\ ^2D_{3/2}$	$4p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(12.89254)	0.00008	(7 756 420.0)	2.4739E+12	$3p\ ^2P^\circ_{3/2}$	$4d\ ^2D_{3/2}$	77ERI	04JIT/BUN
(12.938827)	0.000004	(7 728 676.0)	2.8735E+13	$3d\ ^2D_{5/2}$	$4f\ ^2F^\circ_{7/2}$	77ERI	04JIT/BUN
(12.965668)	0.000004	(7 712 677.0)	1.9095E+12	$3d\ ^2D_{5/2}$	$4f\ ^2F^\circ_{5/2}$	77ERI	04JIT/BUN
(13.01975)	0.00003	(7 680 640.0)	7.0632E+11	$3d\ ^2D_{5/2}$	$4p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(13.05701)	0.00012	(7 658 720.0)	3.0555E+12	$3p\ ^2P^\circ_{3/2}$	$4s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(13.06017)	0.00007	(7 656 870.0)	9.1032E+11	$3d\ ^2D_{3/2}$	$4p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(14.71075)	0.00009	(6 797 750.0)	1.5577E+11	$4p\ ^2P^\circ_{1/2}$	$7s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(14.71661)	0.00011	(6 795 040.0)	6.0933E+11	$4s\ ^2S_{1/2}$	$7p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(14.93077)	0.00005	(6 697 580.0)	3.5039E+11	$4p\ ^2P^\circ_{3/2}$	$7s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(14.931295)	0.000018	(6 697 343.0)	1.3651E+11	$4d\ ^2D_{3/2}$	$7p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(17.81902)	0.00013	(5 611 980.0)	2.5708E+11	$4p\ ^2P^\circ_{1/2}$	$6s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(17.82839)	0.00016	(5 609 030.0)	9.6270E+11	$4s\ ^2S_{1/2}$	$6p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(18.14286)	0.00007	(5 511 810.0)	5.8028E+11	$4p\ ^2P^\circ_{3/2}$	$6s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(18.14444)	0.00003	(5 511 329.0)	2.3869E+11	$4d\ ^2D_{3/2}$	$6p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(27.0930)	0.0003	(3 691 000.0)	2.5198E+12	$4p\ ^2P^\circ_{1/2}$	$5d\ ^2D_{3/2}$	77ERI	04JIT/BUN
(27.1090)	0.0004	(3 688 810.0)	1.4497E+12	$4s\ ^2S_{1/2}$	$5p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(27.4645)	0.0003	(3 641 070.0)	4.6380E+11	$4p\ ^2P^\circ_{1/2}$	$5s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(27.4905)	0.0004	(3 637 620.0)	1.5985E+12	$4s\ ^2S_{1/2}$	$5p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(27.719885)	0.000016	(3 607 519.0)	5.0503E+12	$4d\ ^2D_{3/2}$	$5f\ ^2F^\circ_{5/2}$	77ERI	04JIT/BUN
(27.72111)	0.00015	(3 607 360.0)	3.0812E+12	$4p\ ^2P^\circ_{3/2}$	$5d\ ^2D_{5/2}$	77ERI	04JIT/BUN
(27.84655)	0.00008	(3 591 109.0)	3.9839E+10	$4d\ ^2D_{3/2}$	$5p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(27.84875)	0.00016	(3 590 830.0)	5.2346E+11	$4p\ ^2P^\circ_{3/2}$	$5d\ ^2D_{3/2}$	77ERI	04JIT/BUN
(27.905873)	0.000004	(3 583 475.0)	8.5927E+12	$4f\ ^2F^\circ_{5/2}$	$5g\ ^2G_{7/2}$	77ERI	04JIT/BUN
(27.906194)	0.000016	(3 583 434.0)	5.3922E+12	$4d\ ^2D_{5/2}$	$5f\ ^2F^\circ_{7/2}$	77ERI	04JIT/BUN
(27.969523)	0.000009	(3 575 320.2)	5.0547E+9	$4f\ ^2F^\circ_{5/2}$	$5d\ ^2D_{5/2}$	77ERI	04JIT/BUN
(27.970192)	0.000016	(3 575 235.0)	3.6057E+11	$4d\ ^2D_{5/2}$	$5f\ ^2F^\circ_{5/2}$	77ERI	04JIT/BUN
(27.992561)	0.000004	(3 572 377.6)	8.8716E+12	$4f\ ^2F^\circ_{7/2}$	$5g\ ^2G_{9/2}$	77ERI	04JIT/BUN
(28.031027)	0.000004	(3 567 475.4)	3.1597E+11	$4f\ ^2F^\circ_{7/2}$	$5g\ ^2G_{7/2}$	77ERI	04JIT/BUN
(28.095249)	0.000009	(3 559 320.6)	1.0473E+11	$4f\ ^2F^\circ_{7/2}$	$5d\ ^2D_{5/2}$	77ERI	04JIT/BUN

TABLE 67. Spectral lines of ^{88}Sr XXXVIII—Continued

λ (Å)	Uncertainty (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower level	Upper level	λ Ref.	A_{ki} Ref.
(28.09916)	0.00008	(3 558 825.0)	3.7975E+11	$4d\ ^2D_{5/2}$	$5p\ ^2P^\circ_{3/2}$	77ERI	04JIT/BUN
(28.099460)	0.000009	(3 558 787.2)	1.1461E+11	$4f\ ^2F^\circ_{5/2}$	$5d\ ^2D_{3/2}$	77ERI	04JIT/BUN
(28.2414)	0.0002	(3 540 900.0)	1.0596E+12	$4p\ ^2P^\circ_{3/2}$	$5s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(28.24923)	0.00016	(3 539 920.0)	4.8108E+11	$4d\ ^2D_{3/2}$	$5p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(31.6671)	0.0002	(3 157 850.0)	1.1554E+11	$5p\ ^2P^\circ_{1/2}$	$7s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(31.6831)	0.0002	(3 156 250.0)	3.4206E+11	$5s\ ^2S_{1/2}$	$7p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(32.18892)	0.00014	(3 106 659.0)	2.5950E+11	$5p\ ^2P^\circ_{3/2}$	$7s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(32.19235)	0.00008	(3 106 328.0)	1.3214E+11	$5d\ ^2D_{3/2}$	$7p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(50.7079)	0.0006	(1 972 080.0)	1.9190E+11	$5p\ ^2P^\circ_{1/2}$	$6s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(50.7552)	0.0006	(1 970 240.0)	5.2372E+11	$5s\ ^2S_{1/2}$	$6p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(51.566200)	0.000004	(1 939 254.8)	3.4309E+12	$5g\ ^2G_{9/2}$	$6h\ ^2H^\circ_{11/2}$	77ERI	04JIT/BUN
(52.0592)	0.0004	(1 920 890.0)	4.3651E+11	$5p\ ^2P^\circ_{3/2}$	$6s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(52.0748)	0.0003	(1 920 314.0)	2.4095E+11	$5d\ ^2D_{3/2}$	$6p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(84.2858)	0.0010	(1 186 439.0)	9.0204E+10	$6p\ ^2P^\circ_{1/2}$	$7s\ ^2S_{1/2}$	77ERI	04JIT/BUN
(84.3637)	0.0009	(1 185 344.0)	2.1009E+11	$6s\ ^2S_{1/2}$	$7p\ ^2P^\circ_{1/2}$	77ERI	04JIT/BUN
(127.407)	0.003	(784 880.0)	6.2974E+9	$2s\ ^2S_{1/2}$	$2p\ ^2P^\circ_{3/2}$	85JOH/SOF	04JIT/BUN

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