Wavelengths, Transition Probabilities, and Energy Levels for the Spectra of Rubidium (Rb I through Rb XXXVII)

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Energy levels, with designations and uncertainties, have been compiled for the spectra of the neutral atom and all positive ions of rubidium ($Z=37$). Wavelengths with classifications, intensities, and transition probabilities are also tabulated. In addition, ground states and ionization energies are listed. For most ionization stages experimental data are available; however for ionization stages where 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. [DOI: 10.1063/1.2035727]

Contents

1. Introduction

Rubidium was discovered in 1861 by Kirchhoff and Bunsen [KB61], who named it after the characteristic deep red color observed when its salts are heated in a flame. It and cesium were the first two elements to be discovered spectroscopically. Rubidium is the second most reactive of the alkali metals so it oxidizes rapidly, may ignite when exposed to air, and reacts violently with water. It appears silvery white and is soft, with a melting point just above room temperature (39.31 °C). Its atomic number is 37; the atomic weight is 85.4678; its boiling point is 688 °C; and its specific gravity at 20 °C is 1.532 [CRC05].

For this compilation of spectral data of rubidium, the literature for each ionization stage 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 are 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.

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Naturally occurring rubidium is composed of 72.17% ^{85}Rb and 27.83% ^{87}Rb. For most spectra the data included here are for the natural isotopic abundance. For neutral rubidium there has been extensive work on each isotope separately so at the end of the data for that spectrum tables of energy levels and hyperfine structure constants for ^{85}Rb and ^{87}Rb are included. In addition, there are some spectra for which only data for a single isotope are available. This is noted in the discussion for that ionization stage.

2. Wavelength Tables

In the tables of wavelengths the following information is included:

Wavelengths are reported in units of Ångstroms, with all lines below 2000 Å given as vacuum wavelengths and those above as air wavelengths.

Uncertainty of the wavelength measurement or calculation, also in Ångstroms.

Wave number of the transition in units of cm^{-1}.

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.

Line Codes indicate additional descriptive information about the appearance of the spectral line. In general, the character of a line depends on the spectroscopic 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:

a=asymmetric
b=blend
c=complex
d=line consists of two unresolved lines
h=hazy
i=identification uncertain
l=shaded to longer wavelengths
p=perturbed by close line
r=easily self-reversed
s=shaded to shorter wavelengths
u=unresolved shoulder on strong line
w=wide
*=intensity may be affected by nearby line

Transition probabilities (A_{ki}) are given for lines which are included in this compilation if sufficiently accurate data are available. For several spectra transition probabilities of additional spectral lines have been calculated, but they are not tabulated here. Transition probabilities are given in units of s^{-1}.

Lower level and **Upper level** indicate the classification given for the transition.

λ **Ref.** and $\mathbf{A}_{ki}$ **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.

3. Energy Level Tables

The energy level tables contain the following information:

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 vertical space.

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 $J_1 j$ or $J_1 J_2$ 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 $J_1 l$, notation, have J value of the core state listed first with the value of $K = J_1 + l$ in square brackets, where l is the orbital angular momentum of the valence electron.

***J* value** is also listed for each energy level.

Level value is given in units of cm^{-1}. As reported in [MT02] the unit cm^{-1} is related to the SI unit for energy, the joule, by $1\ cm^{-1} = 1.986\,445\,61(34) \times 10^{-23}$ J. As discussed above, values enclosed in parentheses are calculated and those in square brackets are obtained by isoelectronic fitting.

Uncertainty of the level value, also given in cm^{-1}.

Landé *g* values are included for the few spectra in which they have been measured.

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.

4. Uncertainties and Significant Figures

The energy levels, wavelengths, and ionization energies reported here are given with uncertainties, as reported by the original authors. The estimated uncertainty of the wave number of a transition can be calculated from that of the wavelength. The transition probabilities contained herein are, with the exception of Rb I, calculated values whose uncertainties are unknown. If an estimate of their uncertainty is important, it is recommended to check the original source as well as the NIST Bibliographical Database of Atomic Transition Probabilities ⟨http://physics.nist.gov/fvalbib⟩ for possible additional data. The scatter between transition probabilities from different calculations is often substantial, virtually always greater than 10% and frequently much more. For the case of Rb I, the majority of the transition probabilities are from an experimental source with estimated uncertainties in the 10%–15% range.

In general the number of significant figures included here is such that the uncertainty in the last digit is between 1 and 15. 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 15.

5. Acknowledgments

The author would like to thank Joseph Reader of NIST for suggesting the need for a rubidium compilation, doing an extensive review of this manuscript, and making many comments and suggestions for its improvement.

6. References for the Introduction

CRC05 *CRC Handbook of Chemistry and Physics*, 86th ed., edited by D. R. Lide (Taylor & Francis, New York, 2005), pp. 4–31.

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MT02 P. J. Mohr and B. N. Taylor, ″2002 CODATA Recommended Values of the Fundamental Physical Constants,″ http://physics.nist.gov/constants.

7. Data Tables

7.1. Rb I

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 5s\ ^2S_{1/2}$

Ionization energy $33\,690.81 \pm 0.01\ cm^{-1}$; $4.177\,128 \pm 0.000\,001$ eV

Ionization energy of ^{85}Rb $33\,690.798\,47 \pm 0.000\,03\ cm^{-1}$

The Rb I spectrum has been observed by many researchers, beginning with Kirchhoff and Bunsen [KB61], who discovered rubidium spectroscopically. The known series were reported in Paschen and Götze [PG22] and Fowler [F22]. In 1931 Ramb [R31] measured 33 transitions in the red and infrared, locating levels in the $7-11s$, $5p$, $4-9d$, and $5-8f$ configurations. Kratz [K49] followed with an investigation of the principal series, measured in absorption, resulting in np levels up to $n = 77$. The next major set of infrared measurements were made by Johansson [J61], who also reported the hyperfine structure and isotope shift of the ground state and determined the ionization energy for natural Rb given above. Beacham [B70] improved the accuracy of the infrared wavelength determinations and Ferguson and Dunn [FD77] used Stark mixing to detect the ns series for $n = 37-54$ and the nd series for $n = 39-53$.

A particularly interesting feature of the Rb I spectrum is the inverted doublets in the nf series of energy levels for $4 \leqslant n \leqslant 8$ and in the $4d$ levels. This phenomenon was investigated by Luc-Koenig [LK76 and LK80] for cesium and the sodium isoelectronic series using a relativistic-central-field approximation. Lindgren and Mårtensson [LM82] reported on using a nonrelativistic many-body approach to predict the inversion.

More recently interest has turned to levels of the type $4p^5 5snl$. We include transitions and energy levels observed by Spong *et al.* [SKWY87] and Reader [R87]. Veje [V87] measured 11 transitions, but was unable to give classifications for most of them. Baig *et al.* [BMAH95] report an extensive list of transitions measured in absorption; however they are not included in this compilation due to ambiguities in the interpretation.

Many of the transition probabilities for prominent lines of Rb I have been summarized in Morton's compilation [M00]. In addition values are included from the more recent work of Safronova *et al.* [SWC04] and from Spong *et al.* [SKWY87], who gave values for lines of the type $4p^5 5s5p$-$4p^5 4d5s$.

There have also been several investigations of the neutral spectra of the two principal isotopes of Rb. For ^{85}Rb hyperfine structure constants have been reported in [AIV77], [BA71], [FP73], [NBFM93], [SBRF96], [WBH86], [WS91], [RKN03], and [GAOS04]. The values are listed in the ^{85}Rb table below, with **A** being the magnetic dipole splitting constant and **B** the electric quadrupole splitting constant. For identification purposes the configurations and energy level values are also given, although the level values are those given in [J61] for natural rubidium. Sansonetti and Weber [SW85] used laser spectroscopy to make high precision measurements of ns levels of ^{85}Rb, which are also included below.

For ^{87}Rb less is known. However, Bize *et al.* [BSSM99] have made an extremely accurate determination of the hyperfine splitting of the ground state. In addition, [FP73], [NBFM93], [SBRF96], and [YSJH96] have measured hyperfine splittings for other levels. The hyperfine splitting constants are listed in the ^{87}Rb table. In addition, Marian *et al.* [MSLF04] have reported frequencies for hyperfine components of several transitions from $5s\ ^2S_{1/2}$, F=2 to $5p$ and $5d$ levels. As in the ^{85}Rb table, the energy level values are those reported in [J61] for natural rubidium.

References for Rb I

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Observed spectral lines of Rb I

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
821.887	0.003	121671.2				$4p^65p\ ^2P^\circ_{1/2}$	$4p^55s5p\ ^4S_{3/2}$	R87	
823.496	0.003	121433.5				$4p^65p\ ^2P^\circ_{3/2}$	$4p^55s5p\ ^4S_{3/2}$	R87	
851.419	0.003	117451.0				$4p^64d\ ^2D_{5/2}$	$4p^55s4d\ ^4P^\circ_{5/2}$	R87	
851.419	0.003	117451.0				$4p^64d\ ^2D_{3/2}$	$4p^55s4d\ ^4P^\circ_{5/2}$	R87	
905.3	0.3	110460.				$4p^66p\ ^2P^\circ_{1/2}$	$4p^55s5p\ ^4S_{3/2}$	MBSY87	
2969.045	0.005	33671.07				$4p^65s\ ^2S_{1/2}$	$4p^677p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.085	0.005	33670.61				$4p^65s\ ^2S_{1/2}$	$4p^676p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.138	0.005	33670.01				$4p^65s\ ^2S_{1/2}$	$4p^675p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.195	0.005	33669.36				$4p^65s\ ^2S_{1/2}$	$4p^674p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.245	0.005	33668.79				$4p^65s\ ^2S_{1/2}$	$4p^673p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.305	0.005	33668.11				$4p^65s\ ^2S_{1/2}$	$4p^672p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.359	0.005	33667.49				$4p^65s\ ^2S_{1/2}$	$4p^671p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.422	0.005	33666.78				$4p^65s\ ^2S_{1/2}$	$4p^670p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.487	0.005	33666.04				$4p^65s\ ^2S_{1/2}$	$4p^669p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.554	0.005	33665.28				$4p^65s\ ^2S_{1/2}$	$4p^668p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.625	0.005	33664.48				$4p^65s\ ^2S_{1/2}$	$4p^667p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.700	0.005	33663.63				$4p^65s\ ^2S_{1/2}$	$4p^666p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.719	0.005	33662.73				$4p^65s\ ^2S_{1/2}$	$4p^665p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.861	0.005	33661.81				$4p^65s\ ^2S_{1/2}$	$4p^664p\ ^2P^\circ_{1/2,3/2}$	K49	
2969.948	0.005	33660.82				$4p^65s\ ^2S_{1/2}$	$4p^663p\ ^2P^\circ_{1/2,3/2}$	K49	
2970.038	0.005	33659.80				$4p^65s\ ^2S_{1/2}$	$4p^662p\ ^2P^\circ_{1/2,3/2}$	K49	
2970.136	0.005	33658.69				$4p^65s\ ^2S_{1/2}$	$4p^661p\ ^2P^\circ_{1/2,3/2}$	K49	
2970.237	0.005	33657.55				$4p^65s\ ^2S_{1/2}$	$4p^660p\ ^2P^\circ_{1/2,3/2}$	K49	
2970.339	0.005	33656.39				$4p^65s\ ^2S_{1/2}$	$4p^659p\ ^2P^\circ_{1/2,3/2}$	K49	
2970.452	0.005	33655.11				$4p^65s\ ^2S_{1/2}$	$4p^658p\ ^2P^\circ_{1/2,3/2}$	K49	
2970.568	0.005	33653.80				$4p^65s\ ^2S_{1/2}$	$4p^657p\ ^2P^\circ_{1/2,3/2}$	K49	
2970.690	0.005	33652.41				$4p^65s\ ^2S_{1/2}$	$4p^656p\ ^2P^\circ_{1/2,3/2}$	K49	
2970.819	0.005	33650.95				$4p^65s\ ^2S_{1/2}$	$4p^655p\ ^2P^\circ_{1/2,3/2}$	K49	
2970.962	0.005	33649.33				$4p^65s\ ^2S_{1/2}$	$4p^654p\ ^2P^\circ_{1/2,3/2}$	K49	
2971.105	0.005	33647.72				$4p^65s\ ^2S_{1/2}$	$4p^653p\ ^2P^\circ_{1/2,3/2}$	K49	
2971.264	0.005	33645.96				$4p^65s\ ^2S_{1/2}$	$4p^652p\ ^2P^\circ_{1/2,3/2}$	K49	
2971.431	0.005	33644.02				$4p^65s\ ^2S_{1/2}$	$4p^651p\ ^2P^\circ_{1/2,3/2}$	K49	
2971.609	0.005	33642.01				$4p^65s\ ^2S_{1/2}$	$4p^650p\ ^2P^\circ_{1/2,3/2}$	K49	

Observed spectral lines of Rb I—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
2971.796	0.005	33639.89				$4p^65s\ ^2S_{1/2}$	$4p^649p\ ^2P^o_{1/2,3/2}$	K49	
2971.996	0.005	33637.63				$4p^65s\ ^2S_{1/2}$	$4p^648p\ ^2P^o_{1/2,3/2}$	K49	
2972.210	0.005	33635.21				$4p^65s\ ^2S_{1/2}$	$4p^647p\ ^2P^o_{1/2,3/2}$	K49	
2972.441	0.005	33632.00				$4p^65s\ ^2S_{1/2}$	$4p^646p\ ^2P^o_{1/2,3/2}$	K49	
2972.688	0.005	33629.80				$4p^65s\ ^2S_{1/2}$	$4p^645p\ ^2P^o_{1/2,3/2}$	K49	
2972.951	0.005	33626.83				$4p^65s\ ^2S_{1/2}$	$4p^644p\ ^2P^o_{1/2,3/2}$	K49	
2973.236	0.005	33623.61				$4p^65s\ ^2S_{1/2}$	$4p^643p\ ^2P^o_{1/2,3/2}$	K49	
2973.541	0.005	33620.15				$4p^65s\ ^2S_{1/2}$	$4p^642p\ ^2P^o_{1/2,3/2}$	K49	
2973.874	0.005	33616.38				$4p^65s\ ^2S_{1/2}$	$4p^641p\ ^2P^o_{1/2,3/2}$	K49	
2974.232	0.005	33612.34				$4p^65s\ ^2S_{1/2}$	$4p^640p\ ^2P^o_{1/2,3/2}$	K49	
2974.620	0.005	33607.96				$4p^65s\ ^2S_{1/2}$	$4p^639p\ ^2P^o_{1/2,3/2}$	K49	
2975.046	0.005	33603.14				$4p^65s\ ^2S_{1/2}$	$4p^638p\ ^2P^o_{1/2,3/2}$	K49	
2975.505	0.005	33597.96				$4p^65s\ ^2S_{1/2}$	$4p^637p\ ^2P^o_{1/2,3/2}$	K49	
2976.006	0.005	33592.31				$4p^65s\ ^2S_{1/2}$	$4p^636p\ ^2P^o_{1/2,3/2}$	K49	
2976.555	0.005	33586.11				$4p^65s\ ^2S_{1/2}$	$4p^635p\ ^2P^o_{1/2,3/2}$	K49	
2977.156	0.005	33579.34				$4p^65s\ ^2S_{1/2}$	$4p^634p\ ^2P^o_{1/2,3/2}$	K49	
2977.819	0.005	33571.85				$4p^65s\ ^2S_{1/2}$	$4p^633p\ ^2P^o_{1/2,3/2}$	K49	
2978.554	0.005	33563.57				$4p^65s\ ^2S_{1/2}$	$4p^632p\ ^2P^o_{1/2,3/2}$	K49	
2979.362	0.005	33554.47				$4p^65s\ ^2S_{1/2}$	$4p^631p\ ^2P^o_{1/2,3/2}$	K49	
2980.269	0.005	33544.26				$4p^65s\ ^2S_{1/2}$	$4p^630p\ ^2P^o_{1/2,3/2}$	K49	
2981.278	0.005	33532.91				$4p^65s\ ^2S_{1/2}$	$4p^629p\ ^2P^o_{1/2,3/2}$	K49	
2982.406	0.005	33520.22				$4p^65s\ ^2S_{1/2}$	$4p^628p\ ^2P^o_{1/2,3/2}$	K49	
2983.679	0.005	33505.92				$4p^65s\ ^2S_{1/2}$	$4p^627p\ ^2P^o_{1/2,3/2}$	K49	
2985.117	0.005	33489.79				$4p^65s\ ^2S_{1/2}$	$4p^626p\ ^2P^o_{3/2}$	K49	
2985.140	0.005	33489.53				$4p^65s\ ^2S_{1/2}$	$4p^626p\ ^2P^o_{1/2}$	K49	
2986.754	0.005	33471.43				$4p^65s\ ^2S_{1/2}$	$4p^625p\ ^2P^o_{3/2}$	K49	
2986.782	0.005	33471.11				$4p^65s\ ^2S_{1/2}$	$4p^625p\ ^2P^o_{1/2}$	K49	
2988.634	0.005	33450.38				$4p^65s\ ^2S_{1/2}$	$4p^624p\ ^2P^o_{3/2}$	K49	
2988.665	0.005	33450.03				$4p^65s\ ^2S_{1/2}$	$4p^624p\ ^2P^o_{1/2}$	K49	
2990.800	0.005	33426.15				$4p^65s\ ^2S_{1/2}$	$4p^623p\ ^2P^o_{3/2}$	K49	
2990.835	0.005	33425.76				$4p^65s\ ^2S_{1/2}$	$4p^623p\ ^2P^o_{1/2}$	K49	
2993.313	0.005	33398.09				$4p^65s\ ^2S_{1/2}$	$4p^621p\ ^2P^o_{3/2}$	K49	
2993.352	0.005	33397.66				$4p^65s\ ^2S_{1/2}$	$4p^621p\ ^2P^o_{1/2}$	K49	
2996.256	0.005	33365.29				$4p^65s\ ^2S_{1/2}$	$4p^621p\ ^2P^o_{3/2}$	K49	
2996.299	0.005	33364.81				$4p^65s\ ^2S_{1/2}$	$4p^621p\ ^2P^o_{1/2}$	K49	
2999.776	0.005	33326.13			5.71E+2	$4p^65s\ ^2S_{1/2}$	$4p^620p\ ^2P^o_{1/2}$	K49	M00
3003.862	0.005	33280.81			2.05E+3	$4p^65s\ ^2S_{1/2}$	$4p^619p\ ^2P^o_{3/2}$	K49	M00
3003.923	0.005	33280.13			8.72E+2	$4p^65s\ ^2S_{1/2}$	$4p^619p\ ^2P^o_{1/2}$	K49	M00
3008.847	0.005	33225.67			2.64E+3	$4p^65s\ ^2S_{1/2}$	$4p^618p\ ^2P^o_{3/2}$	K49	M00
3008.923	0.005	33224.83			1.05E+3	$4p^65s\ ^2S_{1/2}$	$4p^618p\ ^2P^o_{1/2}$	K49	M00
3014.938	0.005	33158.54			3.26E+3	$4p^65s\ ^2S_{1/2}$	$4p^617p\ ^2P^o_{3/2}$	K49	M00
3015.029	0.005	33157.54			1.39E+3	$4p^65s\ ^2S_{1/2}$	$4p^617p\ ^2P^o_{1/2}$	K49	M00
3022.478	0.005	33075.83			4.12E+3	$4p^65s\ ^2S_{1/2}$	$4p^616p\ ^2P^o_{3/2}$	K49	M00
3022.591	0.005	33074.59			1.77E+3	$4p^65s\ ^2S_{1/2}$	$4p^616p\ ^2P^o_{1/2}$	K49	M00
3031.979	0.005	32972.19			4.93E+3	$4p^65s\ ^2S_{1/2}$	$4p^615p\ ^2P^o_{3/2}$	K49	M00
3032.120	0.005	31970.66			2.49E+3	$4p^65s\ ^2S_{1/2}$	$4p^615p\ ^2P^o_{1/2}$	K49	M00
3044.182	0.005	32840.02			8.20E+3	$4p^65s\ ^2S_{1/2}$	$4p^614p\ ^2P^o_{3/2}$	K49	M00
3044.368	0.005	32838.02			3.72E+3	$4p^65s\ ^2S_{1/2}$	$4p^614p\ ^2P^o_{1/2}$	K49	M00
3060.247	0.005	32667.63			1.05E+4	$4p^65s\ ^2S_{1/2}$	$4p^613p\ ^2P^o_{3/2}$	K49	M00
3060.491	0.005	32665.03			4.51E+3	$4p^65s\ ^2S_{1/2}$	$4p^613p\ ^2P^o_{1/2}$	K49	M00
3082.003	0.005	32437.04	2		1.49E+4	$4p^65s\ ^2S_{1/2}$	$4p^612p\ ^2P^o_{3/2}$	K49	M00
3082.340	0.005	32433.50			6.98E+3	$4p^65s\ ^2S_{1/2}$	$4p^612p\ ^2P^o_{1/2}$	K49	M00

Observed spectral lines of Rb I—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
3112.566	0.005	32118.55	10		2.51E+4	$4p^6 5s\ ^2S_{1/2}$	$4p^6 11p\ ^2P^\circ_{3/2}$	K49	M00
3113.047	0.005	32113.58	3		1.27E+4	$4p^6 5s\ ^2S_{1/2}$	$4p^6 11p\ ^2P^\circ_{1/2}$	K49	M00
3157.530	0.005	31661.19	25		3.38E+4	$4p^6 5s\ ^2S_{1/2}$	$4p^6 10p\ ^2P^\circ_{3/2}$	K49	M00
3158.259	0.005	31653.88	5		2.01E+4	$4p^6 5s\ ^2S_{1/2}$	$4p^6 10p\ ^2P^\circ_{1/2}$	K49	M00
3227.979	0.005	30970.22	50		6.40E+4	$4p^6 5s\ ^2S_{1/2}$	$4p^6 9p\ ^2P^\circ_{3/2}$	K49	M00
3229.156	0.005	30958.94	6		3.84E+4	$4p^6 5s\ ^2S_{1/2}$	$4p^6 9p\ ^2P^\circ_{1/2}$	K49	M00
3348.696	0.006	29853.82	60		1.37E+5	$4p^6 5s\ ^2S_{1/2}$	$4p^6 8p\ ^2P^\circ_{3/2}$	K49	M00
3350.812	0.006	29834.96	75		8.91E+4	$4p^6 5s\ ^2S_{1/2}$	$4p^6 8p\ ^2P^\circ_{1/2}$	K49	M00
3587.050	0.005	27870.14	100		3.96E+5	$4p^6 5s\ ^2S_{1/2}$	$4p^6 7p\ ^2P^\circ_{3/2}$	K49	M00
3591.572	0.005	27835.05	40		2.89E+5	$4p^6 5s\ ^2S_{1/2}$	$4p^6 7p\ ^2P^\circ_{1/2}$	K49	M00
4201.792	0.005	23792.69	1000		1.77E+6	$4p^6 5s\ ^2S_{1/2}$	$4p^6 6p\ ^2P^\circ_{3/2}$	K49	M00
4215.524	0.005	23715.19	500		1.50E+6	$4p^6 5s\ ^2S_{1/2}$	$4p^6 6p\ ^2P^\circ_{1/2}$	K49	M00
5050.2	0.3	19794.			6.54E+6	$4p^5 5s5p\ ^4S_{3/2}$	$4p^5 4d(^1P)5s\ ^2P^\circ_{3/2}$	SKWY87	SKWY87
5087.9874	0.0010	19648.660	2			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 10d\ ^2D_{3/2}$	B70	
5132.4708	0.0010	19478.366	2			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 12s\ ^2S_{1/2}$	B70	
5150.1339	0.0010	19411.563	10			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 10d\ ^2D_{5/2}$	B70	
5165.0231	0.0010	19355.606	1			$4p^6 5s\ ^2S_{1/2}$	$4p^6 4d\ ^2D_{3/2}$	B70	
5165.1416	0.0010	19355.162	2			$4p^6 5s\ ^2S_{1/2}$	$4p^6 4d\ ^2D_{5/2}$	B70	
5169.651	0.002	19338.290	1			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 11s\ ^2S_{1/2}$	R31	
5195.2778	0.0010	19242.890	15			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 9d\ ^2D_{3/2}$	B70	
5217.6	0.3	19161.			2.86E+6	$4p^5 5s5p\ ^4S_{3/2}$	$4p^5 5p^2\ ^4D^\circ_{5/2}$	SKWY87	SKWY87
5233.9679	0.0010	19100.646	2			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 11s\ ^2S_{1/2}$	B70	
5260.0338	0.0010	19005.995	20			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 9d\ ^2D_{5/2}$	B70	
5260.2285	0.0010	19005.291	1			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 9d\ ^2D_{3/2}$	B70	
5322.3800	0.0010	18783.362	3			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 10s\ ^2S_{1/2}$	B70	
5362.6013	0.0010	18642.482	40			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 8d\ ^2D_{3/2}$	B70	
5390.5679	0.0010	18545.765	4			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 10s\ ^2S_{1/2}$	B70	
5431.5321	0.0010	18405.695	75			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 8d\ ^2D_{5/2}$	B70	
5431.8305	0.0010	18404.884	3			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 8d\ ^2D_{3/2}$	B70	
5534.4	0.3	18064.			3.27E+6	$4p^5 5s5p\ ^4S_{3/2}$	$4p^5 5s(^1P)6s\ ^2P^\circ_{1/2}$	SKWY87	SKWY87
5578.7880	0.0010	17920.064	6			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 9s\ ^2S_{1/2}$	B70	
5647.7735	0.0010	17701.180	40			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 7d\ ^2D_{3/2}$	B70	
5653.7500	0.0010	17682.468	20			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 9s\ ^2S_{1/2}$	B70	
5724.1208	0.0010	17465.087	60			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 7d\ ^2D_{5/2}$	B70	
5724.6143	0.0010	17463.581	3			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 7d\ ^2D_{3/2}$	B70	
5859.9	0.3	17060.			9.71E+6	$4p^5 5s5p\ ^4S_{3/2}$	$4p^5 5s6s\ ^4P^\circ_{3/2}$	SKWY87	SKWY87
6070.7547	0.0010	16467.857	75			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 8s\ ^2S_{1/2}$	B70	
6119.1	0.4	16339.			2.97E+7	$4p^5 5s5p\ ^4S_{3/2}$	$4p^5 5s6s\ ^4P^\circ_{5/2}$	SKWY87	SKWY87
6159.6264	0.0010	16230.259	30	c		$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 8s\ ^2S_{1/2}$	B70	
6206.3092	0.0010	16108.179	75	c	2.948E+6	$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 6d\ ^2D_{3/2}$	B70	SWC04
6298.3252	0.0010	15872.847	120	c	3.712E+6	$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 6d\ ^2D_{5/2}$	B70	SWC04
6299.2245	0.0010	15870.581	5		6.30E+5	$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 6d\ ^2D_{3/2}$	B70	SWC04
6822.4	0.5	14654.			1.07E+5	$4p^5 5s5p\ ^4S_{3/2}$	$4p^5 4d(^3D)5s\ ^2D^\circ_{3/2}$	SKWY87	SKWY87
7279.9968	0.0010	13732.486	100	1		$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 7s\ ^2S_{1/2}$	B70	
7408.1731	0.0010	13494.888	150			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 7s\ ^2S_{1/2}$	B70	
7618.9330	0.0010	13121.585	200	1		$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 5d\ ^2D_{3/2}$	B70	
7757.6507	0.0010	12886.954	300			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 5d\ ^2D_{5/2}$	B70	
7759.4363	0.0010	12883.989	60			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 5d\ ^2D_{3/2}$	B70	
7800.268	0.010	12816.545	90000	c	3.81E+7	$4p^6 5s\ ^2S_{1/2}$	$4p^6 5p\ ^2P^\circ_{3/2}$	J61	M00

Observed spectral lines of Rb I—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
7925.260	0.002	12614.418	5	l		$4p^6 4d\ ^2D_{5/2}$	$4p^6 8f\ ^2F^\circ_{7/2}$	R31	
7925.537	0.002	12613.977	4			$4p^6 4d\ ^2D_{3/2}$	$4p^6 8f\ ^2F^\circ_{5/2}$	R31	
7947.603	0.010	12578.951	45000	c	3.61E+7	$4p^6 5s\ ^2S_{1/2}$	$4p^6 5p\ ^2P^\circ_{1/2}$	J61	M00
8271.410	0.002	12086.520	40	l		$4p^6 4d\ ^2D_{5/2}$	$4p^6 7f\ ^2F^\circ_{7/2}$	R31	
8271.707	0.002	12086.086	30			$4p^6 4d\ ^2D_{3/2}$	$4p^6 7f\ ^2F^\circ_{5/2}$	R31	
8868.512	0.003	11272.754	40	l		$4p^6 4d\ ^2D_{5/2}$	$4p^6 6f\ ^2F^\circ_{7/2}$	B70	
8868.852	0.003	11272.322	30			$4p^6 4d\ ^2D_{3/2}$	$4p^6 6f\ ^2F^\circ_{5/2}$	B70	
9224.64	0.01	9227.1715	3			$4p^6 6s\ ^2S_{1/2}$	$4p^6 9p\ ^2P^\circ_{3/2}$	RCWM80	
9234.25	0.01	9236.7841	2			$4p^6 6s\ ^2S_{1/2}$	$4p^6 9p\ ^2P^\circ_{1/2}$	RCWM80	
9522.65	0.01	9525.2622	30	l		$4p^6 4d\ ^2D_{5/2}$	$4p^6 8p\ ^2P^\circ_{3/2}$	RCWM80	
9523.05	0.01	9525.6623	5			$4p^6 4d\ ^2D_{3/2}$	$4p^6 8p\ ^2P^\circ_{3/2}$	RCWM80	
9540.18	0.01	9542.7969	20	l		$4p^6 4d\ ^2D_{3/2}$	$4p^6 8p\ ^2P^\circ_{1/2}$	RCWM80	
10075.282	0.003	9922.560	35	l		$4p^6 4d\ ^2D_{5/2}$	$4p^6 5f\ ^2F^\circ_{7/2}$	B70	
10075.708	0.003	9922.141	30	l		$4p^6 4d\ ^2D_{3/2}$	$4p^6 5f\ ^2F^\circ_{5/2}$	B70	
13235.17	0.01	7553.563	100			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 6s\ ^2S_{1/2}$	J61	
13442.81	0.01	7436.889	20			$4p^6 4d\ ^2D_{5/2}$	$4p^6 4f\ ^2F^\circ_{7/2}$	J61	
13443.57	0.01	7436.469	30			$4p^6 4d\ ^2D_{3/2}$	$4p^6 4f\ ^2F^\circ_{5/2}$	J61	
13665.01	0.01	7315.960	75			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 6s\ ^2S_{1/2}$	J61	
14752.41	0.01	6776.699	1000			$4p^6 5p\ ^2P^\circ_{1/2}$	$4p^6 4d\ ^2D_{3/2}$	J61	
15288.43	0.01	6539.107	800			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 4d\ ^2D_{3/2}$	J61	
15289.48	0.01	6538.656	150			$4p^6 5p\ ^2P^\circ_{3/2}$	$4p^6 4d\ ^2D_{5/2}$	J61	
22529.65	0.01	4437.385	20			$4p^6 4d\ ^2D_{5/2}$	$4p^6 6p\ ^2P^\circ_{3/2}$	J61	
22932.47	0.01	4359.440	10			$4p^6 4d\ ^2D_{3/2}$	$4p^6 6p\ ^2P^\circ_{1/2}$	J61	
27314.31	0.01	3660.086	4			$4p^6 6s\ ^2S_{1/2}$	$4p^6 6p\ ^2P^\circ_{3/2}$	J61	
27905.37	0.01	3582.562	2			$4p^6 6s\ ^2S_{1/2}$	$4p^6 6p\ ^2P^\circ_{1/2}$	J61	
39923.73	0.08	2504.093				$4p^6 4f\ ^2F^\circ_{5/2,7/2}$	$4p^6 5g\ ^2G_{7/2,9/2}$	L70	

Energy levels of Rb I

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$4p^6 5s$	^2S	1/2	0.000	0.010	J61
$4p^6 5p$	$^2P^\circ$	1/2	12578.950	0.002	J61
	$^2P^\circ$	3/2	12816.545	0.002	J61
$4p^6 4d$	^2D	5/2	19355.203	0.010	J61
	^2D	3/2	19355.649	0.010	J61
$4p^6 6s$	^2S	1/2	20132.510	0.010	J61
$4p^6 6p$	$^2P^\circ$	1/2	23715.081	0.010	J61
	$^2P^\circ$	3/2	23792.591	0.010	J61
$4p^6 5d$	^2D	3/2	25700.536	0.010	J61
	^2D	5/2	25703.498	0.010	J61
$4p^6 7s$	^2S	1/2	26311.437	0.010	J61
$4p^6 4f$	$^2F^\circ$	7/2	26792.092	0.010	J61
	$^2F^\circ$	5/2	26792.118	0.010	J61

Energy levels of Rb I—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$4p^6 7p$	$^2P^\circ$	1/2	27835.02	0.010	J61
	$^2P^\circ$	3/2	27870.11	0.010	J61
$4p^6 6d$	^2D	3/2	28687.127	0.010	J61
	^2D	5/2	28689.390	0.010	J61
$4p^6 8s$	^2S	1/2	29046.816	0.010	J61
$4p^6 5f$	$^2F^\circ$	7/2	29277.768	0.010	J61
	$^2F^\circ$	5/2	29277.787	0.010	J61
$4p^6 5g$	^2G	7/2,9/2	29296.196	0.010	L70
$4p^6 8p$	$^2P^\circ$	1/2	29834.94	0.010	J61
	$^2P^\circ$	3/2	29853.79	0.010	J61
$4p^6 7d$	^2D	3/2	30280.113	0.010	J61
	^2D	5/2	30281.620	0.010	J61
$4p^6 9s$	^2S	1/2	30499.031	0.010	J61
$4p^6 6f$	$^2F^\circ$	7/2	30627.962	0.010	J61
	$^2F^\circ$	5/2	30627.978	0.010	J61
$4p^6 9p$	$^2P^\circ$	1/2	30958.91	0.010	J61
	$^2P^\circ$	3/2	30970.19	0.010	J61
$4p^6 8d$	^2D	3/2	31221.440	0.010	J61
	^2D	5/2	31222.453	0.010	J61
$4p^6 10s$	^2S	1/2	31362.331	0.010	J61
$4p^6 7f$	$^2F^\circ$	7/2	31441.718	0.010	J61
	$^2F^\circ$	5/2	31441.730	0.010	J61
$4p^6 10p$	$^2P^\circ$	1/2	31653.85	0.010	J61
	$^2P^\circ$	3/2	31661.16	0.010	J61
$4p^6 9d$	^2D	3/2	31821.855	0.010	J61
	^2D	5/2	31822.550	0.010	J61
$4p^6 11s$	^2S	1/2	31917.221	0.010	J61
$4p^6 8f$	$^2F^\circ$	7/2	31969.616	0.010	J61
	$^2F^\circ$	5/2	31969.621	0.010	J61
$4p^6 11p$	$^2P^\circ$	1/2	32113.55	0.010	J61
	$^2P^\circ$	3/2	32118.52	0.010	J61
$4p^6 10d$	^2D	3/2	32227.610	0.004	J61,B70
	^2D	5/2	32228.108	0.004	J61,B70
$4p^6 12s$	^2S	1/2	32294.911	0.004	J61,B70
$4p^6 12p$	$^2P^\circ$	1/2	32433.50	0.05	K49
	$^2P^\circ$	3/2	32437.04	0.05	K49
$4p^6 13p$	$^2P^\circ$	1/2	32665.03	0.05	K49
	$^2P^\circ$	3/2	32667.63	0.05	K49
$4p^6 14p$	$^2P^\circ$	1/2	32838.02	0.05	K49
	$^2P^\circ$	3/2	32840.02	0.05	K49

Energy levels of Rb I—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$4p^6 15p$	$^2P^\circ$	1/2	32970.66	0.05	K49
	$^2P^\circ$	3/2	32972.19	0.05	K49
$4p^6 16p$	$^2P^\circ$	1/2	33074.59	0.05	K49
	$^2P^\circ$	3/2	33075.83	0.05	K49
$4p^6 17p$	$^2P^\circ$	1/2	33157.54	0.05	K49
	$^2P^\circ$	3/2	33158.54	0.05	K49
$4p^6 18p$	$^2P^\circ$	1/2	33224.83	0.06	K49
	$^2P^\circ$	3/2	33225.67	0.06	K49
$4p^6 19p$	$^2P^\circ$	1/2	33280.13	0.06	K49
	$^2P^\circ$	3/2	33280.81	0.06	K49
$4p^6 20p$	$^2P^\circ$	1/2	33326.13	0.06	K49
	$^2P^\circ$	3/2	33326.70	0.06	K49
$4p^6 21p$	$^2P^\circ$	1/2	33364.81	0.06	K49
	$^2P^\circ$	3/2	33365.29	0.06	K49
$4p^6 21p$	$^2P^\circ$	1/2	33397.66	0.06	K49
	$^2P^\circ$	3/2	33398.09	0.06	K49
$4p^6 23p$	$^2P^\circ$	1/2	33425.76	0.06	K49
	$^2P^\circ$	3/2	33426.15	0.06	K49
$4p^6 24p$	$^2P^\circ$	1/2	33450.03	0.06	K49
	$^2P^\circ$	3/2	33450.38	0.06	K49
$4p^6 25p$	$^2P^\circ$	1/2	33471.11	0.06	K49
	$^2P^\circ$	3/2	33471.43	0.06	K49
$4p^6 26p$	$^2P^\circ$	1/2	33489.53	0.06	K49
	$^2P^\circ$	3/2	33489.79	0.06	K49
$4p^6 27p$	$^2P^\circ$	1/2,3/2	33505.92	0.06	K49
$4p^6 28p$	$^2P^\circ$	1/2,3/2	33520.22	0.06	K49
$4p^6 29p$	$^2P^\circ$	1/2,3/2	33532.91	0.06	K49
$4p^6 30p$	$^2P^\circ$	1/2,3/2	33544.26	0.06	K49
$4p^6 31p$	$^2P^\circ$	1/2,3/2	33554.47	0.06	K49
$4p^6 32p$	$^2P^\circ$	1/2,3/2	33563.57	0.06	K49
$4p^6 33p$	$^2P^\circ$	1/2,3/2	33571.85	0.06	K49
$4p^6 34p$	$^2P^\circ$	1/2,3/2	33579.34	0.06	K49
$4p^6 35p$	$^2P^\circ$	1/2,3/2	33586.11	0.06	K49
$4p^6 36p$	$^2P^\circ$	1/2,3/2	33592.31	0.06	K49
$4p^6 37p$	$^2P^\circ$	1/2,3/2	33597.96	0.06	K49
$4p^6 38p$	$^2P^\circ$	1/2,3/2	33603.14	0.06	K49
$4p^6 37s$	^2S	1/2	33604.6	0.3	FD77
$4p^6 39d$	^2D	3/2,5/2	33605.7	0.3	FD77

Energy levels of Rb I—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$4p^6 39p$	$^2P^\circ$	1/2,3/2	33607.96	0.06	K49
$4p^6 38s$	^2S	1/2	33609.5	0.3	FD77
$4p^6 40d$	^2D	3/2,5/2	33610.4	0.3	FD77
$4p^6 40p$	$^2P^\circ$	1/2,3/2	33612.34	0.06	K49
$4p^6 39s$	^2S	1/2	33613.7	0.3	FD77
$4p^6 41d$	^2D	3/2,5/2	33614.5	0.3	FD77
$4p^6 41p$	$^2P^\circ$	1/2,3/2	33616.38	0.06	K49
$4p^6 40s$	^2S	1/2	33617.5	0.3	FD77
$4p^6 42d$	^2D	3/2,5/2	33618.4	0.3	FD77
$4p^6 42p$	$^2P^\circ$	1/2,3/2	33620.15	0.06	K49
$4p^6 41s$	^2S	1/2	33621.3	0.3	FD77
$4p^6 43d$	^2D	3/2,5/2	33621.9	0.3	FD77
$4p^6 43p$	$^2P^\circ$	1/2,3/2	33623.61	0.06	K49
$4p^6 42s$	^2S	1/2	33624.5	0.3	FD77
$4p^6 44d$	^2D	3/2,5/2	33625.5	0.3	FD77
$4p^6 44p$	$^2P^\circ$	1/2,3/2	33626.83	0.06	K49
$4p^6 43s$	^2S	1/2	33627.7	0.3	FD77
$4p^6 45d$	^2D	3/2,5/2	33628.4	0.3	FD77
$4p^6 45p$	$^2P^\circ$	1/2,3/2	33629.80	0.06	K49
$4p^6 44s$	^2S	1/2	33630.5	0.3	FD77
$4p^6 46d$	^2D	3/2,5/2	33631.3	0.3	FD77
$4p^6 46p$	$^2P^\circ$	1/2,3/2	33632.00	0.06	K49
$4p^6 45s$	^2S	1/2	33633.5	0.3	FD77
$4p^6 47d$	^2D	3/2,5/2	33633.9	0.3	FD77
$4p^6 47p$	$^2P^\circ$	1/2,3/2	33635.21	0.06	K49
$4p^6 46s$	^2S	1/2	33635.9	0.3	FD77
$4p^6 48d$	^2D	3/2,5/2	33636.4	0.3	FD77
$4p^6 48p$	$^2P^\circ$	1/2,3/2	33637.63	0.06	K49
$4p^6 47s$	^2S	1/2	33638.3	0.3	FD77
$4p^6 49d$	^2D	3/2,5/2	33638.8	0.3	FD77
$4p^6 49p$	$^2P^\circ$	1/2,3/2	33639.89	0.06	K49
$4p^6 48s$	^2S	1/2	33640.7	0.3	FD77
$4p^6 50p$	$^2P^\circ$	1/2,3/2	33642.01	0.06	K49

Energy levels of Rb I—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$4p^6 49s$	^2S	1/2	33642.5	0.3	FD77
$4p^6 51d$	^2D	3/2,5/2	33643.1	0.3	FD77
$4p^6 51p$	$^2P^\circ$	1/2,3/2	33644.02	0.06	K49
$4p^6 50s$	^2S	1/2	33644.7	0.3	FD77
$4p^6 52d$	^2D	3/2,5/2	33645.0	0.3	FD77
$4p^6 52p$	$^2P^\circ$	1/2,3/2	33645.96	0.06	K49
$4p^6 51s$	^2S	1/2	33646.5	0.3	FD77
$4p^6 53d$	^2D	3/2,5/2	33646.8	0.3	FD77
$4p^6 53p$	$^2P^\circ$	1/2,3/2	33647.72	0.06	K49
$4p^6 52s$	^2S	1/2	33648.3	0.3	FD77
$4p^6 54p$	$^2P^\circ$	1/2,3/2	33649.33	0.06	K49
$4p^6 53s$	^2S	1/2	33649.7	0.3	FD77
$4p^6 55p$	$^2P^\circ$	1/2,3/2	33650.95	0.06	K49
$4p^6 54s$	^2S	1/2	33651.5	0.3	FD77
$4p^6 56p$	$^2P^\circ$	1/2,3/2	33652.41	0.06	K49
$4p^6 57p$	$^2P^\circ$	1/2,3/2	33653.80	0.06	K49
$4p^6 58p$	$^2P^\circ$	1/2,3/2	33655.11	0.06	K49
$4p^6 59p$	$^2P^\circ$	1/2,3/2	33656.39	0.06	K49
$4p^6 60p$	$^2P^\circ$	1/2,3/2	33657.55	0.06	K49
$4p^6 61p$	$^2P^\circ$	1/2,3/2	33658.69	0.06	K49
$4p^6 62p$	$^2P^\circ$	1/2,3/2	33659.80	0.06	K49
$4p^6 63p$	$^2P^\circ$	1/2,3/2	33660.82	0.06	K49
$4p^6 64p$	$^2P^\circ$	1/2,3/2	33661.81	0.06	K49
$4p^6 65p$	$^2P^\circ$	1/2,3/2	33662.73	0.06	K49
$4p^6 66p$	$^2P^\circ$	1/2,3/2	33663.63	0.06	K49
$4p^6 67p$	$^2P^\circ$	1/2,3/2	33664.48	0.06	K49
$4p^6 68p$	$^2P^\circ$	1/2,3/2	33665.28	0.06	K49
$4p^6 69p$	$^2P^\circ$	1/2,3/2	33666.04	0.06	K49
$4p^6 70p$	$^2P^\circ$	1/2,3/2	33666.78	0.06	K49
$4p^6 71p$	$^2P^\circ$	1/2,3/2	33667.49	0.06	K49
$4p^6 72p$	$^2P^\circ$	1/2,3/2	33668.11	0.06	K49
$4p^6 73p$	$^2P^\circ$	1/2,3/2	33668.79	0.06	K49
$4p^6 74p$	$^2P^\circ$	1/2,3/2	33669.36	0.06	K49

Energy levels of Rb I—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$4p^6 75p$	$^2P°$	1/2,3/2	33670.01	0.06	K49
$4p^6 76p$	$^2P°$	1/2,3/2	33670.61	0.06	K49
$4p^6 77p$	$^2P°$	1/2,3/2	33671.07	0.06	K49
Rb II ($^1S_0$)	*Limit*	—	**33690.81**	0.01	J61
$4p^5 5s5p$	^4S	3/2	134250.1	0.4	R87
$4p^5 5s4d$	$^4P°$	5/2	136806.4	0.4	R87
$4p^5 4d(^3D)5s$	$^2D°$	3/2	148904.	1.1	SKWY87
$4p^5 5s6s$	$^4P°$	5/2	150589.	1.1	SKWY87
	$^4P°$	3/2	151310.	1.1	SKWY87
$4p^5 5s(^1P)6s$	$^2P°$	1/2	152314.	1.1	SKWY87
$4p^5 5p^2$	$^4D°$	5/2	153411.	1.1	SKWY87
$4p^5 4d(^1P)5s$	$^2P°$	3/2	154044.	1.2	SKWY87

Energy levels of ^{85}Rb I

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Hyperfine Constants A (cm^{-1})	Hyperfine Constants B (cm^{-1})	Hyperfine Reference
$4p^6 5s$	^2S	1/2	0.00000		SW85	0.033753721		NBFM93
$4p^6 5p$	$^2P^\circ$	1/2	12578.950	0.002	J61	0.004026(17)		BA71
		3/2	12816.545	0.002	J61	0.0008352(2)	0.0008676(7)	RKN03
$4p^6 4d$	^2D	5/2	19355.203		J61	0.000168(11)		AIV77
		3/2	19355.649		J61	0.000244(16)		AIV77
$4p^6 6p$	$^2P^\circ$	1/2	23715.081		J61	0.001305(1)		FP73
		3/2	23792.591		J61	0.0002723(2)	0.0002732(9)	AIV77
$4p^6 5d$	^2D	3/2	25700.536		J61	0.000140834(7)	0.00006373(3)	NBFM93
		5/2	25703.498		J61	−0.00007309(4)	0.0000894(7)	NBFM93
$4p^6 7s$	^2S	1/2	26311.437		J61	0.003159(3)		SBRF96
$4p^6 7p$	$^2P^\circ$	1/2	27835.02		J61	0.000590(3)		FP73
		3/2	27870.11		J61	0.0001238(3)	0.000123(3)	AIV77
$4p^6 6d$	^2D	3/2	28687.127		J61	0.000077(2)	0.000054(2)	WBH86
$4p^6 7d$	^2D	3/2	30280.113		J61	0.0000472(10)	0.000010(2)	WS91
$4p^6 14s$	^2S	1/2	32761.60069	0.00023	SW85			
$4p^6 15s$	^2S	1/2	32911.63322	0.00023	SW85			
$4p^6 16s$	^2S	1/2	33028.05246	0.00023	SW85			
$4p^6 17s$	^2S	1/2	33120.19975	0.00023	SW85			
$4p^6 18s$	^2S	1/2	33194.38247	0.00023	SW85			
$4p^6 19s$	^2S	1/2	33254.98464	0.00023	SW85			
$4p^6 20s$	^2S	1/2	33305.12986	0.00023	SW85			
$4p^6 21s$	^2S	1/2	33347.09244	0.00023	SW85			
$4p^6 22s$	^2S	1/2	33382.56103	0.00023	SW85			
$4p^6 23s$	^2S	1/2	33412.80991	0.00023	SW85			
$4p^6 24s$	^2S	1/2	33438.81426	0.00023	SW85			
$4p^6 25s$	^2S	1/2	33461.33387	0.00023	SW85			
$4p^6 26s$	^2S	1/2	33480.96379	0.00023	SW85			
$4p^6 27s$	^2S	1/2	33498.17857	0.00023	SW85			
$4p^6 28s$	^2S	1/2	33513.35849	0.00023	SW85			
$4p^6 29s$	^2S	1/2	33526.81233	0.00023	SW85			
$4p^6 30s$	^2S	1/2	33538.79178	0.00023	SW85			
$4p^6 31s$	^2S	1/2	33549.50518	0.00023	SW85			
$4p^6 32s$	^2S	1/2	33559.12441	0.00023	SW85			
$4p^6 33s$	^2S	1/2	33567.79401	0.00023	SW85			
$4p^6 34s$	^2S	1/2	33575.63464	0.00023	SW85			

Energy levels of ^{85}Rb I—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Hyperfine Constants A (cm^{-1})	Hyperfine Constants B (cm^{-1})	Hyperfine Reference
$4p^6 35s$	^2S	1/2	33582.74865	0.00023	SW85			
$4p^6 36s$	^2S	1/2	33589.22335	0.00023	SW85			
$4p^6 37s$	^2S	1/2	33595.13297	0.00023	SW85			
$4p^6 38s$	^2S	1/2	33600.54153	0.00023	SW85			
$4p^6 39s$	^2S	1/2	33605.50403	0.00023	SW85			
$4p^6 40s$	^2S	1/2	33610.06832	0.00023	SW85			
$4p^6 41s$	^2S	1/2	33614.27566	0.00023	SW85			
$4p^6 42s$	^2S	1/2	33618.16244	0.00023	SW85			
$4p^6 43s$	^2S	1/2	33621.76072	0.00023	SW85			
$4p^6 44s$	^2S	1/2	33625.09801	0.00023	SW85			
$4p^6 45s$	^2S	1/2	33628.19886	0.00023	SW85			
$4p^6 46s$	^2S	1/2	33631.08524	0.00023	SW85			
$4p^6 47s$	^2S	1/2	33633.77664	0.00023	SW85			
$4p^6 48s$	^2S	1/2	33636.29016	0.00023	SW85			
$4p^6 49s$	^2S	1/2	33638.64086	0.00023	SW85			
$4p^6 50s$	^2S	1/2	33640.84283	0.00023	SW85			

Energy levels of ^{87}Rb I

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Hyperfine Constants A (cm^{-1})	Hyperfine Constants B (cm^{-1})	Hyperfine Reference
$4p^6 5s$	^2S	1/2	0.000		J61	0.113990236053642(15)		BSSM99
$4p^6 5p$	$^2P^\circ$	1/2	12578.950	0.002	J61	0.01365(13)		FP73
	$^2P^\circ$	3/2	12816.545	0.002	J61	0.00282590(7)	0.00041684(12)	YSJH96
$4p^6 6p$	$^2P^\circ$	1/2	23715.081		J61	0.0044217(10)		FP73
	$^2P^\circ$	3/2	23792.591		J61	0.0009240(7)	0.000132	FP73
$4p^6 5d$	^2D	3/2	25700.536		J61	0.00048134(1)	0.00003109(6)	NBFM93
	^2D	5/2	25703.498		J61	−0.00024886(1)	0.00004241(7)	NBFM93
$4p^6 7s$	^2S	1/2	26311.437		J61	0.010664(3)		SBRF96
$4p^6 7p$	$^2P^\circ$	1/2	27835.02		J61	0.001999(3)		FP73
	$^2P^\circ$	3/2	27870.11		J61	0.0004193(4)	0.0000570	FP73

7.2. Rb II

Kr isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6\ {}^1S_0$

Ionization energy 220 105.0 ± 0.5 cm^{-1}; 27.2898 ± 0.0001 eV

The existing analysis of the Rb II spectrum is largely due to the extensive measurements of Reader [R75] and Reader and Epstein [RE73], who improved the range and accuracy of measurements by Reinheimmer [R23], Laporte *et al.* [LMS31], and Kopfermann *et al.* [KST56]. Wavelengths, energy level values, and designations are taken from the complete reanalysis of the spectrum reported in [R75], as is the ionization energy. The lines listed in [R75] at 1649.9 Å and 1942.3 Å were subsequently identified by Reader as being Hg II transitions. In addition he pointed out typographical errors in the wave numbers for the lines at 2298.5 Å and 4540.7 Å, which have been corrected here.

The levels with a $4p^5$ core are best described in pair coupling, with the J value of the core followed by $K = J_1 + l$ shown in square brackets, where l is the angular momentum of the final electron. The percent compositions and g values are also taken from [R75], where available, but the $4p^5 5d$ and $4p^5 6s$ percentages are quoted from [RE73]. The transition probabilities for the resonance lines were calculated by Sureau *et al.* [SGC84] using the multiconfiguration Hartree–Fock method. Probabilities for transitions from the $4p^5 5p$ and $4p^5 6s$ levels were determined by Smirnov and Sapochkin [SS79] based on experimental measurements of the lifetimes of the upper levels.

References for Rb II

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R75 J. Reader, J. Opt. Soc. Am. **65**, 286 (1975).
RE73 J. Reader and G. Epstein, J. Opt. Soc. Am. **63**, 1553 (1973).
SGC84 A. Sureau, H. Guennou, and M. Cornille, J. Phys. B **17**, 541 (1984).
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Observed spectral lines of Rb II

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
466.152	0.01	214522.4	1			$4p^6\ {}^1S_0$	$4p^5 7d\ 1/2[3/2]^\circ_1$	R75	
474.875	0.005	210581.8	10			$4p^6\ {}^1S_0$	$4p^5 8d\ 3/2[3/2]^\circ_1$	R75	
481.115	0.005	207850.5	40			$4p^6\ {}^1S_0$	$4p^5 6d\ 1/2[3/2]^\circ_1$	R75	
488.532	0.005	204694.7	5			$4p^6\ {}^1S_0$	$4p^5 8s\ 3/2[3/2]^\circ_1$	R75	
490.344	0.005	203938.5	3			$4p^6\ {}^1S_0$	$4p^5 7s\ 1/2[1/2]^\circ_1$	R75	
497.428	0.005	201034.1	90			$4p^6\ {}^1S_0$	$4p^5 6d\ 3/2[3/2]^\circ_1$	R75	
503.291	0.005	198692.0	3			$4p^6\ {}^1S_0$	$4p^5 6d\ 3/2[1/2]^\circ_1$	R75	
508.436	0.005	196681.6	20			$4p^6\ {}^1S_0$	$4p^5 7s\ 3/2[3/2]^\circ_1$	R75	
513.268	0.005	194829.8	150			$4p^6\ {}^1S_0$	$4p^5 5d\ 1/2[3/2]^\circ_1$	R75	
530.174	0.002	188617.3	300			$4p^6\ {}^1S_0$	$4p^5 5d\ 3/2[3/2]^\circ_1$	R75	
533.800	0.005	187336.0	75			$4p^6\ {}^1S_0$	$4p^5 6s\ 1/2[1/2]^\circ_1$	R75	
542.888	0.005	184200.2	40			$4p^6\ {}^1S_0$	$4p^5 5d\ 3/2[1/2]^\circ_1$	R75	
555.036	0.002	180168.5	200			$4p^6\ {}^1S_0$	$4p^5 6s\ 3/2[3/2]^\circ_1$	R75	
589.420	0.001	169658.31	2500		4.8E+10	$4p^6\ {}^1S_0$	$4p^5 4d\ {}^1P^\circ_1$	R75	SGC84
643.879	0.001	155308.76	1500		2.3E+8	$4p^6\ {}^1S_0$	$4p^5 4d\ {}^3D^\circ_1$	R75	SGC84
697.048	0.001	143462.08	3000		1.3E+8	$4p^6\ {}^1S_0$	$4p^5 4d\ {}^3P^\circ_1$	R75	SGC84
711.187	0.001	140610.05	6000		1.7E+9	$4p^6\ {}^1S_0$	$4p^5 5s\ 1/2[1/2]^\circ_1$	R75	SGC84
741.455	0.001	134869.95	10000		8.6E+8	$4p^6\ {}^1S_0$	$4p^5 5s\ 3/2[3/2]^\circ_1$	R75	SGC84
1489.056	0.005	67156.66	2			$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5f\ 3/2[3/2]_2$	R75	SGC84
1490.787	0.005	67078.68	3			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 6f\ 3/2[5/2]_2$	R75	
1491.637	0.005	67040.44	10			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 7f\ 3/2[5/2]_3$	R75	
1494.258	0.005	66922.84	5			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 6f\ 3/2[3/2]_2$	R75	
1507.262	0.01	66345.48	1			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 6f\ 1/2[7/2]_3$	R75	
1508.693	0.005	66282.53	10			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 8f\ 3/2[9/2]_4$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
1513.707	0.005	66062.98	5			$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 4f\ 1/2[5/2]_3$	R75	
1516.631	0.01	65935.63	1			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 9f\ 3/2[7/2]_3$	R75	
1520.739	0.005	65757.51	3			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 7f\ 3/2[7/2]_4$	R75	
1522.660	0.005	65674.55	50			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 7f\ 3/2[9/2]_5$	R75	
1525.260	0.005	65562.61	25			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5f\ 1/2[5/2]_3$	R75	
1531.510	0.005	65295.03	2					R75	
1548.592	0.005	64574.79	5					R75	
1550.960	0.005	64476.19	7			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 8f\ 3/2[7/2]_3$	R75	
1552.538	0.005	64410.67	5			$4p^5 4d\ {}^3P^\circ_0$	$4p^5 6f\ 3/2[3/2]_1$	R75	
1556.984	0.005	64226.73	4			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 6f\ 3/2[5/2]_2$	R75	
1557.661	0.005	64198.83	2			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 7f\ 3/2[7/2]_3$	R75	
1559.475	0.005	64124.16	30			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 7f\ 3/2[9/2]_4$	R75	
1560.771	0.005	64070.89	20			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 6f\ 3/2[3/2]_2$	R75	
1563.207	0.005	63971.05	10			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 6f\ 3/2[3/2]_1$	R75	
1569.050	0.005	63732.83	2			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 6f\ 3/2[5/2]_2$	R75	
1569.502	0.005	63714.46	75			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 6f\ 3/2[5/2]_3$	R75	
1572.897	0.005	63576.95	25			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 6f\ 3/2[3/2]_2$	R75	
1582.672	0.005	63184.29	75			$4p^5 5s\ 1/2[1/2]^\circ_0$	$4p^5 5f\ 3/2[3/2]_1$	R75	
1593.711	0.01	62746.62	1			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 9f\ 3/2[7/2]_4$	R75	
1594.973	0.005	62697.00	25			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 5f\ 1/2[7/2]_4$	R75	
1600.936	0.005	62463.46	25			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 6f\ 3/2[7/2]_4$	R75	
1603.895	0.01	62348.22	1			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 6f\ 3/2[9/2]_4$	R75	
1603.988	0.005	62344.61	20			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 7f\ 3/2[7/2]_3$	R75	
1604.121	0.005	62339.44	1000			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 6f\ 3/2[9/2]_5$	R75	
1604.325	0.01	62331.53	1			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 7f\ 3/2[5/2]_2$	R75	
1617.724	0.01	61815.23	1			$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 6p\ 1/2[1/2]_1$	R75	
1622.424	0.005	61636.17	5			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5f\ 3/2[5/2]_2$	R75	
1628.230	0.005	61416.37	100			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5f\ 3/2[3/2]_2$	R75	
1629.498	0.005	61368.61	50			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5f\ 3/2[3/2]_1$	R75	
1631.653	0.005	61287.56	10			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 8f\ 3/2[7/2]_4$	R75	
1641.846	0.005	60907.04	15			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 6f\ 3/2[7/2]_4$	R75	
1641.941	0.005	60903.52	20			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 6f\ 3/2[7/2]_3$	R75	
1643.722	0.01	60837.54	2*	p		$4p^5 4d\ {}^3F^\circ_3$	$4p^5 6f\ 3/2[5/2]_3$	R75	
1643.768	0.005	60835.83	40			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 5f\ 1/2[7/2]_3$	R75	
1644.959	0.005	60791.80	200			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 6f\ 3/2[9/2]_4$	R75	
1667.542	0.005	59968.49	10			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 6f\ 1/2[7/2]_3$	R75	
1667.595	0.005	59966.59	2			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 6f\ 1/2[5/2]_3$	R75	
1673.565	0.005	59752.69	2			$4p^5 4d\ {}^3D^\circ_1$	$4p^5 6f\ 1/2[5/2]_2$	R75	
1690.429	0.005	59156.59	50			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 7f\ 3/2[7/2]_4$	R75	
1691.496	0.005	59119.27	3			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 7f\ 3/2[5/2]_3$	R75	
1692.626	0.005	59079.81	5			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 7f\ 3/2[9/2]_4$	R75	
1693.495	0.005	59049.47	150			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 6f\ 3/2[7/2]_3$	R75	
1694.856	0.005	59002.05	7			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 6f\ 3/2[5/2]_2$	R75	
1696.171	0.005	58956.33	50			$4p^5 4d\ {}^3P^\circ_0$	$4p^5 5f\ 3/2[3/2]_1$	R75	
1699.061	0.005	58856.04	20			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 4f\ 1/2[5/2]_2$	R75	
1701.135	0.005	58784.29	4			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5f\ 3/2[5/2]_2$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
1701.561	0.005	58769.56	100			$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 4f\ 3/2[5/2]_3$	R75	
1707.518	0.005	58564.52	200			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5f\ 3/2[3/2]_2$	R75	
1708.913	0.005	58516.73	60			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5f\ 3/2[3/2]_1$	R75	
1710.264	0.005	58470.51	3			$4p^5 4d\ {}^3D^\circ_2$	$4p^5 6f\ 1/2[7/2]_3$	R75	
1710.320	0.005	58468.59	10			$4p^5 4d\ {}^3D^\circ_2$	$4p^5 6f\ 1/2[5/2]_3$	R75	
1711.174	0.005	58439.39	15			$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 4f\ 3/2[3/2]_2$	R75	
1715.551	0.005	58290.31	2			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5f\ 3/2[5/2]_2$	R75	
1716.851	0.005	58246.17	600			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5f\ 3/2[5/2]_3$	R75	
1722.045	0.005	58070.51	100			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5f\ 3/2[3/2]_2$	R75	
1723.462	0.005	58022.74	5			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5f\ 3/2[3/2]_1$	R75	
1727.112	0.005	57900.14	35			$4p^5 4d\ {}^1F^\circ_3$	$4p^5 6f\ 1/2[7/2]_4$	R75	
1728.724	0.01	57846.13	1			$4p^5 4d\ {}^3D^\circ_1$	$4p^5 8f\ 3/2[5/2]_2$	R75	
1745.061	0.01	57304.59	1			$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 4f\ 3/2[5/2]_2$	R75	
1753.626	0.005	57024.72	65			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 5f\ 3/2[7/2]_4$	R75	
1756.677	0.01	56925.66	1			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 5f\ 3/2[5/2]_3$	R75	
1757.126	0.005	56911.11	40			$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 4f\ 3/2[3/2]_2$	R75	
1758.989	0.005	56850.84	15			$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 4f\ 3/2[3/2]_1$	R75	
1760.103	0.005	56814.86	15			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 5f\ 3/2[9/2]_4$	R75	
1760.497	0.005	56802.14	5000			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 5f\ 3/2[9/2]_5$	R75	
1785.586	0.005	56004.02	15			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 4f\ 1/2[5/2]_2$	R75	
1786.740	0.005	55967.84	3			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 7f\ 3/2[7/2]_3$	R75	
1790.104	0.005	55862.67	100			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 6f\ 3/2[7/2]_4$	R75	
1792.328	0.005	55793.35	30			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 6f\ 3/2[5/2]_3$	R75	
1793.805	0.005	55747.42	40			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 6f\ 3/2[9/2]_4$	R75	
1794.995	0.005	55710.47	2			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 9d\ 3/2[7/2]^\circ_3$	R75	
1795.027	0.005	55709.48	7			$4p^5 4d\ {}^3D^\circ_1$	$4p^5 7f\ 3/2[5/2]_2$	R75	
1797.023	0.005	55647.59	2					R75	
1799.628	0.005	55567.04	2					R75	
1801.140	0.005	55520.39	4			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 9d\ 3/2[7/2]^\circ_4$	R75	
1801.472	0.005	55510.15	10			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 4f\ 1/2[5/2]_2$	R75	
1802.833	0.005	55468.24	65			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 5f\ 3/2[7/2]_4$	R75	
1802.976	0.005	55463.86	75			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 5f\ 3/2[7/2]_3$	R75	
1803.240	0.01	55455.75	1			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 4f\ 1/2[7/2]_3$	R75	
1803.468	0.005	55448.71	200			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 4f\ 1/2[5/2]_3$	R75	
1806.052	0.005	55369.38	25			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 5f\ 3/2[5/2]_3$	R75	
1809.676	0.005	55258.51	500			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 5f\ 3/2[9/2]_4$	R75	
1820.129	0.005	54941.16	4			$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 6p\ 3/2[3/2]_2$	R75	
1820.937	0.005	54916.79	3					R75	
1823.225	0.01	54847.85	1			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 9s\ 3/2[3/2]^\circ_2$	R75	
1834.799	0.01	54501.87	1			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 5f\ 1/2[5/2]_2$	R75	
1834.993	0.005	54496.12	20			$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 6p\ 3/2[1/2]_0$	R75	
1836.243	0.005	54459.01	100			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 5f\ 1/2[7/2]_3$	R75	
1836.383	0.005	54454.88	15			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 5f\ 1/2[5/2]_3$	R75	
1837.067	0.005	54434.58	2			$4p^5 4d\ {}^3D^\circ_2$	$4p^5 7f\ 3/2[5/2]_3$	R75	
1840.619	0.01	54329.54	1			$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 6p\ 3/2[5/2]_3$	R75	
1843.091	0.005	54256.67	50			$4p^5 4d\ {}^3D^\circ_1$	$4p^5 5f\ 1/2[5/2]_2$	R75	
1864.372	0.005	53637.36	20			$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 6p\ 3/2[1/2]_1$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
1865.334	0.005	53609.70	500			$4p^5 4d\ ^3F^\circ_2$	$4p^5 5f\ 3/2[7/2]_3$	R75	
1867.080	0.005	53559.57	50			$4p^5 4d\ ^3F^\circ_2$	$4p^5 5f\ 3/2[5/2]_2$	R75	
1868.624	0.005	53515.31	2			$4p^5 4d\ ^3F^\circ_2$	$4p^5 5f\ 3/2[5/2]_3$	R75	
1879.384	0.005	53208.93	25			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 8d\ 3/2[7/2]^\circ_3$	R75	
1886.650	0.01	53004.00	1			$4p^5 4d\ ^3D^\circ_2$	$4p^5 5f\ 1/2[5/2]_2$	R75	
1887.203	0.005	52988.47	30			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 8d\ 3/2[7/2]^\circ_4$	R75	
1888.180	0.005	52961.06	15			$4p^5 4d\ ^3D^\circ_2$	$4p^5 5f\ 1/2[7/2]_3$	R75	
1888.327	0.005	52956.92	100			$4p^5 4d\ ^3D^\circ_2$	$4p^5 5f\ 1/2[5/2]_3$	R75	
1889.416	0.005	52926.41	500			$4p^5 5s\ 1/2[1/2]^\circ_0$	$4p^5 4f\ 3/2[3/2]_1$	R75	
1896.056	0.01	52741.05	1			$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 6p\ 3/2[5/2]_2$	R75	
1898.519	0.005	52672.65	10			$4p^5 4d\ ^1D^\circ_2$	$4p^5 6f\ 3/2[7/2]_3$	R75	
1901.582	0.005	52587.78	75			$4p^5 4d\ ^3F^\circ_3$	$4p^5 4f\ 1/2[7/2]_4$	R75	
1902.155	0.01	52571.96	1			$4p^5 4d\ ^3F^\circ_3$	$4p^5 4f\ 1/2[5/2]_3$	R75	
1906.909	0.01	52440.89	1			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 9s\ 3/2[3/2]^\circ_1$	R75	
1907.355	0.01	52428.62	1*	u		$4p^5 4d\ ^1F^\circ_3$	$4p^5 5f\ 1/2[5/2]_2$	R75	
1907.397	0.005	52427.48	20					R75	
1908.658	0.005	52392.82	150			$4p^5 4d\ ^1F^\circ_3$	$4p^5 5f\ 1/2[7/2]_4$	R75	
1909.068	0.005	52381.57	4			$4p^5 4d\ ^1F^\circ_3$	$4p^5 5f\ 1/2[5/2]_3$	R75	
1909.129	0.005	52379.91	5			$4p^5 4d\ ^3D^\circ_1$	$4p^5 6f\ 3/2[5/2]_2$	R75	
1914.742	0.005	52226.36	5			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 9s\ 3/2[3/2]^\circ_2$	R75	
1928.399	0.005	51856.48	3					R75	
1939.331	0.005	51564.17	75			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 4f\ 3/2[5/2]_2$	R75	
1943.205	0.005	51461.37	30			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6d\ 1/2[3/2]^\circ_2$	R75	
1945.286	0.005	51406.33	20			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6d\ 1/2[5/2]^\circ_2$	R75	
1946.123	0.005	51384.22	7					R75	
1947.717	0.005	51342.17	15			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 8d\ 3/2[5/2]^\circ_3$	R75	
1949.423	0.01	51297.22	1			$4p^5 4d\ ^3P^\circ_2$	$4p^5 6p\ 1/2[3/2]_2$	R75	
1953.088	0.005	51200.96	10			$4p^5 4d\ ^3P^\circ_2$	$4p^5 6p\ 1/2[1/2]_1$	R75	
1954.235	0.005	51170.92	500			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 4f\ 3/2[3/2]_2$	R75	
1956.540	0.005	51110.63	300			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 4f\ 3/2[3/2]_1$	R75	
1956.614	0.005	51108.70	4			$4p^5 4d\ ^3D^\circ_2$	$4p^5 6f\ 3/2[5/2]_3$	R75	
1969.308	0.01	50779.25	1			$4p^5 4d\ ^3F^\circ_2$	$4p^5 4f\ 1/2[5/2]_2$	R75	
1971.419	0.005	50724.88	200			$4p^5 4d\ ^3F^\circ_2$	$4p^5 4f\ 1/2[7/2]_3$	R75	
1980.686	0.005	50487.56	3			$4p^5 4d\ ^1F^\circ_3$	$4p^5 6f\ 3/2[9/2]_4$	R75	
1983.191	0.005	50423.79	500			$4p^5 4d\ ^3D^\circ_3$	$4p^5 5f\ 3/2[7/2]_4$	R75	
1983.731	0.01	50410.06	1			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 9s\ 3/2[3/2]^\circ_2$	R75	
1987.086	0.005	50324.94	75			$4p^5 4d\ ^3D^\circ_3$	$4p^5 5f\ 3/2[5/2]_3$	R75	
1987.747	0.005	50308.20	25			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 8s\ 3/2[3/2]^\circ_2$	R75	
1991.472	0.005	50214.12	100			$4p^5 4d\ ^3D^\circ_3$	$4p^5 5f\ 3/2[9/2]_4$	R75	
1994.042	0.01	50149.38	1			$4p^5 4d\ ^3D^\circ_3$	$4p^5 5f\ 3/2[3/2]_2$	R75	
2008.211	0.005	49779.48	4					R75	
2023.773	0.005	49396.74	5			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 7d\ 3/2[5/2]^\circ_3$	R75	
2026.233	0.005	49336.77	4					R75	
2030.287	0.005	49238.27	10			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 7d\ 3/2[5/2]^\circ_3$	R75	
2030.716	0.005	49227.88	15			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 7d\ 3/2[7/2]^\circ_3$	R75	
2033.906	0.005	49150.67	50			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 6d\ 1/2[5/2]^\circ_3$	R75	
2040.485	0.005	48992.23	40			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 6d\ 1/2[5/2]^\circ_3$	R75	
2042.226	0.005	48950.45	300			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 7d\ 3/2[7/2]^\circ_4$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
2050.379	0.005	48755.85	50			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 6p\ 3/2[1/2]_0$	R75	
2052.213	0.005	48712.29	300			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 4f\ 3/2[5/2]_2$	R75	
2052.798	0.005	48698.41	500			$4p^5 4d\ {}^3P^\circ_0$	$4p^5 4f\ 3/2[3/2]_1$	R75	
2059.600	0.005	48537.58	3					R75	
2064.580	0.005	48420.53	10			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 6p\ 1/2[3/2]_2$	R75	
2065.425	0.005	48400.72	50					R75	
2068.920	0.005	48318.96	2000			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 4f\ 3/2[3/2]_2$	R75	
2071.503	0.005	48258.73	1000			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 4f\ 3/2[3/2]_1$	R75	
2073.236	0.005	48218.38	100			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 4f\ 3/2[5/2]_2$	R75	
2074.225	0.005	48195.40	40					R75	
2075.131	0.005	48174.35	50					R75	
2075.954	0.005	48155.27	10000			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 4f\ 3/2[5/2]_3$	R75	
2084.552	0.005	47956.66	45			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 8s\ 3/2[3/2]^\circ_1$	R75	
2089.414	0.005	47845.10	30			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 8s\ 3/2[3/2]^\circ_2$	R75	
2090.287	0.005	47825.11	1000			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 4f\ 3/2[3/2]_2$	R75	
2090.803	0.005	47813.31	100					R75	
2092.925	0.005	47764.84	100			$4p^5 4d\ {}^3P^\circ_2$	$4p^5 4f\ 3/2[3/2]_1$	R75	
2093.685	0.005	47747.51	10					R75	
2096.355	0.005	47686.69	150			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 8s\ 3/2[3/2]^\circ_2$	R75	
2100.894	0.01	47583.69	1			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 6d\ 1/2[3/2]^\circ_2$	R75	
2102.678	0.005	47543.31	4			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 4f\ 1/2[7/2]_4$	R75	
2108.060	0.005	47421.95	200			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 7d\ 3/2[5/2]^\circ_3$	R75	
2116.499	0.005	47232.89	300			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 5f\ 3/2[7/2]_3$	R75	
2118.754	0.005	47182.62	20			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 5f\ 3/2[5/2]_2$	R75	
2119.056	0.01	47175.90	1			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6d\ 1/2[5/2]^\circ_3$	R75	
2120.743	0.005	47138.37	15			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 5f\ 3/2[5/2]_3$	R75	
2124.398	0.005	47057.28	2					R75	
2125.247	0.005	47038.49	1000			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 4f\ 3/2[7/2]_4$	R75	
2125.507	0.005	47032.74	30			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 4f\ 3/2[7/2]_3$	R75	
2125.923	0.005	47023.53	60			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6d\ 1/2[3/2]^\circ_2$	R75	
2126.958	0.005	47000.65	150			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 6p\ 3/2[5/2]_2$	R75	
2128.416	0.005	46968.47	3			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6d\ 1/2[5/2]^\circ_2$	R75	
2129.825	0.005	46937.39	400			$4p^5 4d\ {}^3D^\circ_1$	$4p^5 5f\ 3/2[5/2]_2$	R75	
2134.480	0.005	46835.05	40			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 4f\ 3/2[5/2]_3$	R75	
2137.927	0.01	46759.54	1			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6d\ 3/2[3/2]^\circ_1$	R75	
2139.849	0.005	46717.55	15			$4p^5 4d\ {}^3D^\circ_1$	$4p^5 5f\ 3/2[3/2]_2$	R75	
2142.040	0.005	46669.77	50			$4p^5 4d\ {}^3D^\circ_1$	$4p^5 5f\ 3/2[3/2]_1$	R75	
2143.095	0.005	46646.80	200			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 4f\ 3/2[9/2]_4$	R75	
2143.830	0.005	46630.81	30000			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 4f\ 3/2[9/2]_5$	R75	
2147.918	0.005	46542.07	25			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 8s\ 3/2[3/2]^\circ_1$	R75	
2153.074	0.01	46430.61	1			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 8s\ 3/2[3/2]^\circ_2$	R75	
2164.969	0.005	46175.53	3					R75	
2174.090	0.005	45981.85	15			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 8s\ 3/2[3/2]^\circ_1$	R75	
2177.775	0.01	45904.04	1			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 6p\ 3/2[1/2]_0$	R75	
2179.377	0.005	45870.31	80			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 8s\ 3/2[3/2]^\circ_2$	R75	
2185.836	0.005	45734.77	4			$4p^5 4d\ {}^3D^\circ_2$	$4p^5 5f\ 3/2[7/2]_3$	R75	
2188.240	0.005	45684.53	5			$4p^5 4d\ {}^3D^\circ_2$	$4p^5 5f\ 3/2[5/2]_2$	R75	
2190.360	0.005	45640.33	200			$4p^5 4d\ {}^3D^\circ_2$	$4p^5 5f\ 3/2[5/2]_3$	R75	
2197.988	0.005	45481.96	600			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 4f\ 3/2[7/2]_4$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
2198.262	0.005	45476.27	600			$4p^5 4d\ ^3F^\circ_3$	$4p^5 4f\ 3/2[7/2]_3$	R75	
2198.820	0.005	45464.75	75			$4p^5 4d\ ^3D^\circ_2$	$4p^5 5f\ 3/2[3/2]_2$	R75	
2201.133	0.01	45416.97	1			$4p^5 4d\ ^3D^\circ_2$	$4p^5 5f\ 3/2[3/2]_1$	R75	
2201.809	0.005	45403.02	3			$4p^5 4d\ ^1P^\circ_1$	$4p^5 6f\ 1/2[5/2]_2$	R75	
2204.790	0.005	45341.64	100			$4p^5 4d\ ^3F^\circ_3$	$4p^5 4f\ 3/2[5/2]_2$	R75	
2207.861	0.005	45278.58	300			$4p^5 4d\ ^3F^\circ_3$	$4p^5 4f\ 3/2[5/2]_3$	R75	
2213.468	0.005	45163.91	100			$4p^5 4d\ ^1F^\circ_3$	$4p^5 5f\ 3/2[7/2]_4$	R75	
2213.683	0.005	45159.51	20			$4p^5 4d\ ^1F^\circ_3$	$4p^5 5f\ 3/2[7/2]_3$	R75	
2215.335	0.005	45125.84	50					R75	
2216.156	0.005	45109.13	2			$4p^5 4d\ ^1F^\circ_3$	$4p^5 5f\ 3/2[5/2]_2$	R75	
2217.080	0.005	45090.32	10000			$4p^5 4d\ ^3F^\circ_3$	$4p^5 4f\ 3/2[9/2]_4$	R75	
2217.936	0.005	45072.93	15			$4p^5 4d\ ^3P^\circ_0$	$4p^5 6p\ 3/2[3/2]_1$	R75	
2218.326	0.01	45065.01	1			$4p^5 4d\ ^1F^\circ_3$	$4p^5 5f\ 3/2[5/2]_3$	R75	
2223.793	0.005	44954.23	200			$4p^5 4d\ ^1F^\circ_3$	$4p^5 5f\ 3/2[9/2]_4$	R75	
2224.084	0.005	44948.35	35			$4p^5 4d\ ^3F^\circ_3$	$4p^5 4f\ 3/2[3/2]_2$	R75	
2224.149	0.01	44947.03	1			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6d\ 3/2[5/2]^\circ_2$	R75	
2230.410	0.005	44820.89	100			$4p^5 4d\ ^3P^\circ_1$	$4p^5 6p\ 3/2[3/2]_2$	R75	
2237.725	0.005	44674.37	400			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6d\ 3/2[3/2]^\circ_2$	R75	
2247.498	0.005	44480.13	2					R75	
2250.650	0.005	44417.85	500			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_1$	R75	
2251.430	0.005	44402.45	200			$4p^5 4d\ ^1D^\circ_2$	$4p^5 4f\ 1/2[5/2]_2$	R75	
2254.191	0.005	44348.08	800			$4p^5 4d\ ^1D^\circ_2$	$4p^5 4f\ 1/2[7/2]_3$	R75	
2254.551	0.005	44341.00	200			$4p^5 4d\ ^1D^\circ_2$	$4p^5 4f\ 1/2[5/2]_3$	R75	
2255.263	0.005	44326.98	50			$4p^5 4d\ ^3P^\circ_2$	$4p^5 6p\ 3/2[3/2]_2$	R75	
2256.819	0.01	44296.44	1			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 6d\ 3/2[3/2]^\circ_1$	R75	
2262.067	0.005	44193.69	2					R75	
2263.545	0.005	44164.83	200			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_0$	R75	
2263.935	0.005	44157.21	500			$4p^5 4d\ ^3D^\circ_1$	$4p^5 4f\ 1/2[5/2]_2$	R75	
2264.369	0.005	44148.75	60			$4p^5 4d\ ^3P^\circ_1$	$4p^5 6p\ 3/2[5/2]_2$	R75	
2264.858	0.01	44139.23	1			$4p^5 4d\ ^3P^\circ_2$	$4p^5 6p\ 3/2[3/2]_1$	R75	
2274.269	0.005	43956.59	125			$4p^5 4d\ ^3P^\circ_0$	$4p^5 6p\ 3/2[1/2]_1$	R75	
2275.914	0.005	43924.83	15			$4p^5 5p\ 1/2[3/2]_1$	$4p^5 6d\ 1/2[3/2]^\circ_1$	R75	
2286.821	0.005	43715.35	500			$4p^5 4d\ ^3P^\circ_2$	$4p^5 6p\ 3/2[5/2]_3$	R75	
2289.995	0.005	43654.75	30			$4p^5 4d\ ^3P^\circ_2$	$4p^5 6p\ 3/2[5/2]_2$	R75	
2291.226	0.005	43631.31	10					R75	
2291.707	0.005	43622.14	5000			$4p^5 4d\ ^3F^\circ_2$	$4p^5 4f\ 3/2[7/2]_3$	R75	
2297.248	0.005	43516.93	150			$4p^5 4d\ ^3P^\circ_1$	$4p^5 6p\ 3/2[1/2]_1$	R75	
2298.487	0.01	43493.49	1			$4p^5 5p\ 3/2[1/2]_0$	$4p^5 8s\ 3/2[3/2]^\circ_1$	R75	
2298.803	0.005	43487.51	300			$4p^5 4d\ ^3F^\circ_2$	$4p^5 4f\ 3/2[5/2]_2$	R75	
2302.144	0.005	43424.40	100			$4p^5 4d\ ^3F^\circ_2$	$4p^5 4f\ 3/2[5/2]_3$	R75	
2319.781	0.01	43094.27	1			$4p^5 4d\ ^3F^\circ_2$	$4p^5 4f\ 3/2[3/2]_2$	R75	
2323.032	0.005	43033.98	50			$4p^5 4d\ ^3F^\circ_2$	$4p^5 4f\ 3/2[3/2]_1$	R75	
2323.622	0.005	43023.04	100			$4p^5 4d\ ^3P^\circ_2$	$4p^5 6p\ 3/2[1/2]_1$	R75	
2330.051	0.005	42904.35	75			$4p^5 4d\ ^3D^\circ_2$	$4p^5 4f\ 1/2[5/2]_2$	R75	
2331.275	0.005	42881.83	100			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[3/2]^\circ_1$	R75	
2333.007	0.005	42849.99	250			$4p^5 4d\ ^3D^\circ_2$	$4p^5 4f\ 1/2[7/2]_3$	R75	
2333.393	0.005	42842.90	2000			$4p^5 4d\ ^3D^\circ_2$	$4p^5 4f\ 1/2[5/2]_3$	R75	
2337.931	0.005	42759.76	8			$4p^5 5p\ 1/2[1/2]_1$	$4p^5 6d\ 1/2[3/2]^\circ_1$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
2345.206	0.005	42627.12	125			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 6d\ 3/2[5/2]^\circ_3$	R75	
2353.108	0.005	42483.99	350			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 6d\ 3/2[5/2]^\circ_2$	R75	
2353.957	0.005	42468.67	300			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 6d\ 3/2[5/2]^\circ_3$	R75	
2356.971	0.005	42414.36	400					R75	
2357.310	0.005	42408.26	30			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 7s\ 3/2[3/2]^\circ_1$	R75	
2357.689	0.005	42401.44	2	h				R75	
2358.040	0.005	42395.14	300			$4p^5 4d\ {}^3F^\circ_4$	$4p^5 6p\ 3/2[5/2]_3$	R75	
2361.920	0.005	42325.49	25			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 6d\ 3/2[5/2]^\circ_2$	R75	
2364.268	0.005	42283.46	300			$4p^5 4d\ {}^1F^\circ_3$	$4p^5 4f\ 1/2[7/2]_4$	R75	
2364.316	0.005	42282.61	200			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 6d\ 3/2[7/2]^\circ_3$	R75	
2364.756	0.005	42274.74	65			$4p^5 4d\ {}^1F^\circ_3$	$4p^5 4f\ 1/2[7/2]_3$	R75	
2365.154	0.005	42267.63	200			$4p^5 4d\ {}^1F^\circ_3$	$4p^5 4f\ 1/2[5/2]_3$	R75	
2367.512	0.005	42225.54	300			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 7s\ 3/2[3/2]^\circ_2$	R75	
2368.314	0.005	42211.24	30			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 6d\ 3/2[3/2]^\circ_2$	R75	
2373.211	0.005	42124.14	200			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 6d\ 3/2[7/2]^\circ_3$	R75	
2377.239	0.005	42052.78	65			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 6d\ 3/2[3/2]^\circ_2$	R75	
2377.938	0.005	42040.41	80					R75	
2382.795	0.005	41954.73	50			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 6d\ 3/2[1/2]^\circ_1$	R75	
2385.339	0.005	41909.99	2000			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 6d\ 3/2[7/2]^\circ_4$	R75	
2405.938	0.005	41551.18	250					R75	
2409.412	0.005	41491.29	50					R75	
2411.796	0.01	41450.28	1			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 6p\ 3/2[3/2]_2$	R75	
2416.442	0.01	41370.59	65	w				R75	
2416.489	0.01	41369.79	125	p				R75	
2423.967	0.005	41242.17	2					R75	
2424.307	0.005	41236.38	15					R75	
2434.167	0.005	41069.35	400			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[5/2]^\circ_2$	R75	
2438.470	0.01	40996.89	1			$4p^5 5p\ 1/2[3/2]_2$	$4p^5 7d\ 3/2[7/2]^\circ_3$	R75	
2443.068	0.005	40919.73	75			$4p^5 5p\ 1/2[3/2]_2$	$4p^5 6d\ 1/2[5/2]^\circ_3$	R75	
2447.922	0.005	40838.60	3			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 6p\ 3/2[5/2]_3$	R75	
2450.439	0.005	40796.66	125			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[3/2]^\circ_2$	R75	
2451.554	0.005	40778.10	65			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 6p\ 3/2[5/2]_2$	R75	
2452.199	0.005	40767.38	15			$4p^5 5p\ 1/2[3/2]_2$	$4p^5 6d\ 1/2[3/2]^\circ_2$	R75	
2459.142	0.005	40652.29	800			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[5/2]^\circ_3$	R75	
2459.533	0.005	40645.82	75			$4p^5 5p\ 1/2[1/2]_1$	$4p^5 6d\ 1/2[3/2]^\circ_2$	R75	
2464.941	0.005	40556.66	30			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 5d\ 1/2[3/2]^\circ_1$	R75	
2465.946	0.005	40540.12	65			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_1$	R75	
2467.836	0.005	40509.09	10			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[5/2]^\circ_2$	R75	
2471.173	0.005	40454.38	2					R75	
2472.200	0.005	40437.58	50000			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 4f\ 3/2[7/2]_4$	R75	
2473.235	0.005	40420.67	3					R75	
2480.164	0.01	40307.74	2	l		$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[7/2]^\circ_3$	R75	
2480.815	0.005	40297.17	10			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 4f\ 3/2[5/2]_2$	R75	
2481.437	0.005	40287.06	40			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_0$	R75	
2484.558	0.005	40236.46	300			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[3/2]^\circ_2$	R75	
2484.701	0.005	40234.15	700			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 4f\ 3/2[5/2]_3$	R75	
2485.766	0.005	40216.91	65			$4p^5 5p\ 1/2[1/2]_0$	$4p^5 6d\ 1/2[3/2]^\circ_1$	R75	
2496.383	0.005	40045.88	2000			$4p^5 4d\ {}^3D^\circ_3$	$4p^5 4f\ 3/2[9/2]_4$	R75	
2497.723	0.01	40024.40	2	w				R75	
2498.402	0.005	40013.52	70			$4p^5 5p\ 1/2[3/2]_1$	$4p^5 7s\ 1/2[1/2]^\circ_1$	R75	
2500.499	0.005	39979.96	125			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[1/2]^\circ_1$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
2502.672	0.005	39945.25	200			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 7s\ 3/2[3/2]^\circ_1$	R75	
2503.317	0.005	39934.97	150			$4p^5 5p\ 1/2[3/2]_1$	$4p^5 7s\ 1/2[1/2]^\circ_0$	R75	
2505.072	0.005	39906.98	100			$4p^5 4d\ ^1P^\circ_1$	$4p^5 5f\ 1/2[5/2]_2$	R75	
2505.261	0.005	39903.98	90			$4p^5 4d\ ^3D^\circ_3$	$4p^5 4f\ 3/2[3/2]_2$	R75	
2509.704	0.005	39833.34	150			$4p^5 5p\ 3/2[1/2]_0$	$4p^5 6d\ 3/2[3/2]^\circ_1$	R75	
2514.177	0.005	39762.48	250			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 7s\ 3/2[3/2]^\circ_2$	R75	
2516.113	0.005	39731.90	3					R75	
2524.236	0.005	39604.04	1000			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 7s\ 3/2[3/2]^\circ_2$	R75	
2536.758	0.005	39408.55	10			$4p^5 4d\ ^3F^\circ_2$	$4p^5 6p\ 3/2[3/2]_1$	R75	
2565.302	0.005	38970.08	150			$4p^5 5p\ 1/2[3/2]_2$	$4p^5 7s\ 1/2[1/2]^\circ_1$	R75	
2573.328	0.005	38848.54	50			$4p^5 5p\ 1/2[1/2]_1$	$4p^5 7s\ 1/2[1/2]^\circ_1$	R75	
2578.544	0.005	38769.97	150			$4p^5 5p\ 1/2[1/2]_1$	$4p^5 7s\ 1/2[1/2]^\circ_0$	R75	
2583.637	0.005	38693.56	25					R75	
2590.217	0.005	38595.25	2			$4p^5 4d\ ^3D^\circ_2$	$4p^5 6p\ 1/2[1/2]_1$	R75	
2594.563	0.005	38530.61	200			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 7s\ 3/2[3/2]^\circ_1$	R75	
2606.932	0.005	38347.81	75			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 7s\ 3/2[3/2]^\circ_2$	R75	
2623.763	0.005	38101.83	400			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 5d\ 1/2[3/2]^\circ_2$	R75	
2625.423	0.005	38077.74	45					R75	
2627.482	0.005	38047.91	2					R75	
2632.844	0.005	37970.42	75			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 7s\ 3/2[3/2]^\circ_1$	R75	
2633.664	0.005	37958.60	15			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 5d\ 1/2[5/2]^\circ_2$	R75	
2639.530	0.005	37874.24	3			$4p^5 4d\ ^1P^\circ_1$	$4p^5 6f\ 3/2[3/2]_2$	R75	
2645.580	0.005	37787.64	400			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 7s\ 3/2[3/2]^\circ_2$	R75	
2684.102	0.005	37245.35	1000			$4p^5 4d\ ^1D^\circ_2$	$4p^5 4f\ 3/2[7/2]_3$	R75	
2693.836	0.005	37110.77	150			$4p^5 4d\ ^1D^\circ_2$	$4p^5 4f\ 3/2[5/2]_2$	R75	
2698.425	0.005	37047.67	50			$4p^5 4d\ ^1D^\circ_2$	$4p^5 4f\ 3/2[5/2]_3$	R75	
2711.763	0.005	36865.46	1000			$4p^5 4d\ ^3D^\circ_1$	$4p^5 4f\ 3/2[5/2]_2$	R75	
2741.006	0.005	36472.16	250			$4p^5 4d\ ^3D^\circ_1$	$4p^5 4f\ 3/2[3/2]_2$	R75	
2745.541	0.005	36411.92	100			$4p^5 4d\ ^3D^\circ_1$	$4p^5 4f\ 3/2[3/2]_1$	R75	
2753.578	0.01	36305.66	50	c		$4p^5 5p\ 1/2[1/2]_0$	$4p^5 7s\ 1/2[1/2]^\circ_1$	R75	
2777.253	0.01	35996.17	10	c		$4p^5 5p\ 3/2[5/2]_2$	$4p^5 5d\ 1/2[5/2]^\circ_3$	R75	
2792.920	0.005	35794.27	15			$4p^5 4d\ ^3D^\circ_3$	$4p^5 6p\ 3/2[5/2]_3$	R75	
2796.590	0.005	35747.29	15			$4p^5 4d\ ^3D^\circ_2$	$4p^5 4f\ 3/2[7/2]_3$	R75	
2805.097	0.005	35638.89				$4p^5 5p\ 3/2[5/2]_2$	$4p^5 5d\ 1/2[3/2]^\circ_2$	R75	
2807.161	0.005	35612.69	150			$4p^5 4d\ ^3D^\circ_2$	$4p^5 4f\ 3/2[5/2]_2$	R75	
2812.146	0.005	35549.56	500			$4p^5 4d\ ^3D^\circ_2$	$4p^5 4f\ 3/2[5/2]_3$	R75	
2817.490	0.005	35482.14	50			$4p^5 5p\ 3/2[1/2]_0$	$4p^5 7s\ 3/2[3/2]^\circ_1$	R75	
2832.308	0.005	35296.51				$4p^5 5p\ 1/2[3/2]_1$	$4p^5 6d\ 3/2[5/2]^\circ_2$	R75	
2838.510	0.005	35219.40	350			$4p^5 4d\ ^3D^\circ_2$	$4p^5 4f\ 3/2[3/2]_2$	R75	
2841.873	0.005	35177.72	75			$4p^5 4d\ ^1F^\circ_3$	$4p^5 4f\ 3/2[7/2]_4$	R75	
2842.333	0.005	35172.03	75			$4p^5 4d\ ^1F^\circ_3$	$4p^5 4f\ 3/2[7/2]_3$	R75	
2843.372	0.005	35159.17	10			$4p^5 4d\ ^3D^\circ_2$	$4p^5 4f\ 3/2[3/2]_1$	R75	
2858.398	0.005	34974.36	25			$4p^5 4d\ ^1F^\circ_3$	$4p^5 4f\ 3/2[5/2]_3$	R75	
2872.920	0.01	34797.58	5	c				R75	
2873.876	0.005	34786.00	750			$4p^5 4d\ ^1F^\circ_3$	$4p^5 4f\ 3/2[9/2]_4$	R75	
2885.650	0.005	34644.08				$4p^5 4d\ ^1F^\circ_3$	$4p^5 4f\ 3/2[3/2]_2$	R75	
2910.885	0.01	34343.75	10	s		$4p^5 5p\ 3/2[1/2]_1$	$4p^5 5d\ 3/2[3/2]^\circ_1$	R75	
2921.051	0.005	34224.23				$4p^5 5p\ 3/2[3/2]_1$	$4p^5 5d\ 1/2[3/2]^\circ_2$	R75	
2933.330	0.005	34080.98	75			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 5d\ 1/2[5/2]^\circ_2$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
2935.370	0.005	34057.29				$4p^5 4d\ {}^3D^\circ_1$	$4p^5 6p\ 3/2[1/2]_0$	R75	
2935.851	0.005	34051.72	15			$4p^5 5p\ 1/2[3/2]_2$	$4p^5 6d\ 3/2[7/2]^\circ_3$	R75	
2938.467	0.005	34021.40	75			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 5d\ 1/2[5/2]^\circ_3$	R75	
2952.578	0.005	33858.82	75			$4p^5 5p\ 1/2[1/2]_1$	$4p^5 6d\ 3/2[3/2]^\circ_2$	R75	
2969.667	0.005	33663.98	50			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 5d\ 1/2[3/2]^\circ_2$	R75	
2972.620	0.005	33630.54	15			$4p^5 5p\ 3/2[1/2]_0$	$4p^5 5d\ 1/2[3/2]^\circ_1$	R75	
2975.116	0.005	33602.32	15			$4p^5 5p\ 1/2[1/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_1$	R75	
2982.355	0.005	33520.77	5			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 5d\ 1/2[5/2]^\circ_2$	R75	
2993.039	0.005	33401.12	50			$4p^5 5p\ 1/2[1/2]_0$	$4p^5 6d\ 3/2[3/2]^\circ_1$	R75	
2997.692	0.005	33349.28				$4p^5 5p\ 1/2[1/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_0$	R75	
3041.763	0.005	32866.11	15			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6s\ 1/2[1/2]^\circ_0$	R75	
3049.146	0.005	32786.53	15			$4p^5 4d\ {}^3D^\circ_1$	$4p^5 6p\ 3/2[3/2]_1$	R75	
3051.362	0.005	32762.72	1000		3.0E+7	$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5p\ 1/2[1/2]_0$	R75	SS79
3067.752	0.005	32587.68	125			$4p^5 4d\ {}^1P^\circ_1$	$4p^5 5f\ 3/2[5/2]_2$	R75	
3071.568	0.005	32547.20	25			$4p^5 4d\ {}^1D^\circ_2$	$4p^5 6p\ 3/2[5/2]_2$	R75	
3088.583	0.005	32367.91	250			$4p^5 4d\ {}^1P^\circ_1$	$4p^5 5f\ 3/2[3/2]_2$	R75	
3094.888	0.01	32301.97	10	p		$4p^5 4d\ {}^3D^\circ_1$	$4p^5 6p\ 3/2[5/2]_2$	R75	
3135.790	0.005	31880.65				$4p^5 5p\ 3/2[5/2]_2$	$4p^5 5d\ 3/2[3/2]^\circ_1$	R75	
3148.903	0.01	31747.90	5000	c	1.4E+7	$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 5p\ 1/2[1/2]_1$	R75	SS79
3161.003	0.005	31626.37	1200		1.4E+7	$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 5p\ 1/2[3/2]_2$	R75	SS79
3189.493	0.005	31343.88				$4p^5 5p\ 3/2[1/2]_1$	$4p^5 5d\ 3/2[5/2]^\circ_2$	R75	
3234.666	0.01	30906.17	15	w		$4p^5 5p\ 1/2[3/2]_1$	$4p^5 5d\ 1/2[3/2]^\circ_1$	R75	
3270.989	0.005	30562.99	2000			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 5d\ 3/2[3/2]^\circ_2$	R75	
3281.387	0.005	30466.14	100			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 5d\ 3/2[3/2]^\circ_1$	R75	
3308.128	0.005	30219.88	75			$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5p\ 1/2[1/2]_1$	R75	
3321.486	0.005	30098.34	1500		1.8E+7	$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5p\ 1/2[3/2]_2$	R75	SS79
3340.548	0.005	29926.61	1200			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 5d\ 3/2[1/2]^\circ_1$	R75	
3353.892	0.005	29807.54	750			$4p^5 4d\ {}^1P^\circ_1$	$4p^5 4f\ 1/2[5/2]_2$	R75	
3361.375	0.005	29741.19	125			$4p^5 5p\ 1/2[1/2]_1$	$4p^5 5d\ 1/2[3/2]^\circ_1$	R75	
3393.034	0.005	29463.69	1200			$4p^5 5p\ 3/2[1/2]_1$	$4p^5 5d\ 3/2[1/2]^\circ_0$	R75	
3415.585	0.005	29269.17	750			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 5d\ 3/2[5/2]^\circ_3$	R75	
3434.177	0.005	29110.71	1000			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 5d\ 3/2[5/2]^\circ_3$	R75	
3440.743	0.005	29055.16			7.E+6	$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5p\ 1/2[3/2]_1$	R75	SS79
3461.502	0.005	28880.92	1500			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 5d\ 3/2[5/2]^\circ_2$	R75	
3480.600	0.005	28722.45	75			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 5d\ 3/2[5/2]^\circ_2$	R75	
3513.773	0.01	28451.30	25	d		$4p^5 5p\ 1/2[3/2]_1$	$4p^5 5d\ 1/2[3/2]^\circ_2$	R75	
3521.391	0.005	28389.75	3000			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 5d\ 3/2[7/2]^\circ_3$	R75	
3531.550	0.01	28308.09	3000	l		$4p^5 5p\ 1/2[3/2]_1$	$4p^5 5d\ 1/2[5/2]^\circ_2$	R75	
3541.153	0.005	28231.32	1000			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 5d\ 3/2[7/2]^\circ_3$	R75	
3557.715	0.005	28099.90	50			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 5d\ 3/2[3/2]^\circ_2$	R75	
3577.891	0.005	27941.45	125			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 5d\ 3/2[3/2]^\circ_2$	R75	
3600.605	0.005	27765.19	5000			$4p^5 5p\ 1/2[3/2]_2$	$4p^5 5d\ 1/2[5/2]^\circ_3$	R75	
3600.642	0.005	27764.90	10000			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 5d\ 3/2[7/2]^\circ_4$	R75	
3639.799	0.01	27466.21	600	c		$4p^5 5p\ 3/2[3/2]_1$	$4p^5 5d\ 3/2[5/2]^\circ_2$	R75	
3640.162	0.005	27463.48	100			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 5d\ 3/2[1/2]^\circ_1$	R75	
3646.261	0.01	27417.54	400	c		$4p^5 5p\ 3/2[1/2]_0$	$4p^5 5d\ 3/2[3/2]^\circ_1$	R75	
3647.556	0.01	27407.80	350	c		$4p^5 5p\ 1/2[3/2]_2$	$4p^5 5d\ 1/2[3/2]^\circ_2$	R75	
3662.735	0.01	27294.23	1000	c		$4p^5 5p\ 3/2[3/2]_2$	$4p^5 5d\ 3/2[5/2]^\circ_3$	R75	
3663.807	0.01	27286.24	900	c		$4p^5 5p\ 1/2[1/2]_1$	$4p^5 5d\ 1/2[3/2]^\circ_2$	R75	
3666.715	0.005	27264.60	350			$4p^5 5p\ 1/2[3/2]_2$	$4p^5 5d\ 1/2[5/2]^\circ_2$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
3675.657	0.005	27198.27	300			$4p^5 5p\ 1/2[1/2]_0$	$4p^5 5d\ 1/2[3/2]^\circ_1$	R75	
3699.576	0.01	27022.43	2500	c	3.8E+7	$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5p\ 1/2[1/2]_0$	R75	SS79
3715.581	0.005	26906.04	20			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 5d\ 3/2[5/2]^\circ_2$	R75	
3746.328	0.005	26685.22	350			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 5d\ 3/2[3/2]^\circ_2$	R75	
3784.668	0.005	26414.89	35			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 5d\ 3/2[7/2]^\circ_3$	R75	
3796.811	0.005	26330.42	3500		6.3E+7	$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5p\ 3/2[1/2]_0$	R75	
3798.121	0.01	26321.34	3	c				R75	
3801.897	0.005	26295.20	2500		3.7E+7	$4p^5 5s\ 1/2[1/2]^\circ_0$	$4p^5 5p\ 1/2[1/2]_1$	R75	SS79
3802.615	0.005	26290.23	10			$4p^5 5d\ 3/2[7/2]^\circ_4$	$4p^5 7f\ 3/2[9/2]_5$	R75	
3826.657	0.005	26125.06	1000			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 5d\ 3/2[3/2]^\circ_2$	R75	
3837.849	0.005	26048.88	175			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 5d\ 3/2[1/2]^\circ_1$	R75	
3860.735	0.005	25894.46	450		7.4E+7	$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6s\ 3/2[3/2]^\circ_1$	R75	SS79
3870.341	0.005	25830.19	5			$4p^5 5d\ 3/2[7/2]^\circ_3$	$4p^5 7f\ 3/2[9/2]_4$	R75	
3907.289	0.005	25585.95	250			$4p^5 5p\ 3/2[3/2]_1$	$4p^5 5d\ 3/2[1/2]^\circ_0$	R75	
3922.196	0.005	25488.71	500			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 5d\ 3/2[1/2]^\circ_1$	R75	
3926.436	0.01	25461.18	2500	l		$4p^5 5p\ 3/2[1/2]_1$	$4p^5 6s\ 3/2[3/2]^\circ_2$	R75	
3940.508	0.005	25370.26	25000			$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 5p\ 3/2[3/2]_2$	R75	
3978.149	0.01	25130.21	1000	c	1.8E+7	$4p^5 5s\ 1/2[1/2]^\circ_0$	$4p^5 5p\ 1/2[3/2]_1$	R75	SS79
4029.487	0.005	24810.04	1700		7.E+6	$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 5p\ 3/2[3/2]_1$	R75	SS79
4048.640	0.005	24692.68				$4p^5 5p\ 1/2[3/2]_1$	$4p^5 5d\ 3/2[3/2]^\circ_1$	R75	
4083.881	0.01	24479.60	2500	c	9.E+6	$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5p\ 1/2[1/2]_1$	R75	SS79
4104.284	0.01	24357.91	2000	c	1.6E+7	$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5p\ 1/2[3/2]_2$	R75	SS79
4136.112	0.01	24170.48	1700	c	1.2E+8	$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5p\ 1/2[1/2]_0$	R75	SS79
4193.076	0.005	23842.12	3500			$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5p\ 3/2[3/2]_2$	R75	
4227.222	0.005	23649.57				$4p^5 5p\ 1/2[3/2]_2$	$4p^5 5d\ 3/2[3/2]^\circ_1$	R75	
4244.397	0.005	23553.84	90000		1.1E+8	$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 5p\ 3/2[5/2]_3$	R75	SS79
4249.085	0.005	23527.88				$4p^5 5p\ 1/2[1/2]_1$	$4p^5 5d\ 3/2[3/2]^\circ_1$	R75	
4266.581	0.005	23431.37	500		5.4E+8	$4p^5 5p\ 3/2[5/2]_2$	$4p^5 6s\ 3/2[3/2]^\circ_1$	R75	SS79
4270.253	0.01	23411.23	250	c		$4p^5 5p\ 1/2[3/2]_1$	$4p^5 6s\ 1/2[1/2]^\circ_1$	R75	
4273.140	0.005	23395.41	15000		4.4E+7	$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 5p\ 3/2[5/2]_2$	R75	SS79
4287.967	0.01	23314.51	2500	c	3.4E+7	$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5p\ 1/2[3/2]_1$	R75	SS79
4293.971	0.005	23281.92	1500		5.4E+7	$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5p\ 3/2[3/2]_1$	R75	SS79
4306.257	0.01	23215.49	500	c		$4p^5 5p\ 1/2[3/2]_1$	$4p^5 6s\ 1/2[1/2]^\circ_0$	R75	
4346.534	0.005	23000.37				$4p^5 5p\ 3/2[1/2]_0$	$4p^5 5d\ 3/2[1/2]^\circ_1$	R75	
4346.959	0.005	22998.12	1000			$4p^5 5p\ 3/2[5/2]_2$	$4p^5 6s\ 3/2[3/2]^\circ_2$	R75	
4355.092	0.005	22955.18				$4p^5 5d\ 3/2[7/2]^\circ_4$	$4p^5 6f\ 3/2[9/2]_5$	R75	
4377.119	0.005	22839.66	2500			$4p^5 5p\ 3/2[5/2]_3$	$4p^5 6s\ 3/2[3/2]^\circ_2$	R75	
4384.816	0.01	22799.57	1			$4p^5 5d\ 1/2[5/2]^\circ_2$	$4p^5 6f\ 1/2[7/2]_3$	R75	
4404.827	0.005	22695.99	5			$4p^5 5d\ 3/2[3/2]^\circ_2$	$4p^5 6f\ 3/2[3/2]_2$	R75	
4415.683	0.005	22640.19	10					R75	
4421.006	0.005	22612.94	3			$4p^5 5d\ 3/2[7/2]^\circ_3$	$4p^5 6f\ 3/2[7/2]_4$	R75	
4421.698	0.005	22609.40	7			$4p^5 5d\ 3/2[7/2]^\circ_3$	$4p^5 6f\ 3/2[7/2]_3$	R75	
4440.097	0.005	22515.71	300			$4p^5 4d\ {}^1P^\circ_1$	$4p^5 4f\ 3/2[5/2]_2$	R75	
4443.662	0.005	22497.65	50			$4p^5 5d\ 3/2[7/2]^\circ_3$	$4p^5 6f\ 3/2[9/2]_4$	R75	
4462.912	0.005	22400.61	10			$4p^5 5d\ 3/2[3/2]^\circ_1$	$4p^5 7f\ 3/2[5/2]_2$	R75	
4463.533	0.005	22397.49	5					R75	
4466.454	0.005	22382.84	3			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 8d\ 3/2[5/2]^\circ_3$	R75	
4469.474	0.005	22367.72	1000			$4p^5 5p\ 1/2[3/2]_2$	$4p^5 6s\ 1/2[1/2]^\circ_1$	R75	
4475.993	0.005	22335.14	25			$4p^5 6p\ 3/2[5/2]_2$	$4p^5 8d\ 3/2[7/2]^\circ_3$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
4482.299	0.005	22303.72	15			$4p^5 5d\ 1/2[5/2]^\circ_3$	$4p^5 6f\ 1/2[7/2]_4$	R75	
4488.163	0.005	22274.58	3			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 8d\ 3/2[7/2]^\circ_3$	R75	
4493.922	0.01	22246.04	400	c		$4p^5 5p\ 1/2[1/2]_1$	$4p^5 6s\ 1/2[1/2]^\circ_1$	R75	
4500.686	0.005	22212.60	50			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 8d\ 3/2[7/2]^\circ_4$	R75	
4514.844	0.005	22142.95	4			$4p^5 6p\ 3/2[1/2]_1$	$4p^5 9s\ 3/2[3/2]^\circ_2$	R75	
4519.037	0.005	22122.40	700			$4p^5 4d\ {}^1P^\circ_1$	$4p^5 4f\ 3/2[3/2]_2$	R75	
4519.884	0.005	22118.26	75			$4p^5 5d\ 3/2[5/2]^\circ_2$	$4p^5 6f\ 3/2[7/2]_3$	R75	
4529.600	0.005	22070.81	10			$4p^5 5d\ 3/2[5/2]^\circ_2$	$4p^5 6f\ 3/2[5/2]_2$	R75	
4530.337	0.005	22067.22	3000		2.0E+7	$4p^5 4d\ {}^3P^\circ_0$	$4p^5 5p\ 1/2[1/2]_1$	R75	SS79
4533.786	0.01	22050.44	500	l		$4p^5 5p\ 1/2[1/2]_1$	$4p^5 6s\ 1/2[1/2]^\circ_0$	R75	
4540.736	0.005	22016.69	400		7.6E+7	$4p^5 5p\ 3/2[3/2]_1$	$4p^5 6s\ 3/2[3/2]^\circ_1$	R75	SS79
4562.245	0.005	21912.89	20					R75	
4571.774	0.005	21867.22	20000		1.8E+7	$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5p\ 3/2[5/2]_2$	R75	SS79
4591.933	0.005	21771.22	15			$4p^5 6p\ 3/2[3/2]_2$	$4p^5 8d\ 3/2[5/2]^\circ_3$	R75	
4599.893	0.005	21733.55	75			$4p^5 5d\ 3/2[5/2]^\circ_3$	$4p^5 6f\ 3/2[7/2]_4$	R75	
4614.614	0.005	21664.22	10			$4p^5 5d\ 3/2[5/2]^\circ_3$	$4p^5 6f\ 3/2[5/2]_3$	R75	
4620.066	0.005	21638.65	15					R75	
4622.423	0.01	21627.62	3000	c	3.3E+7	$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5p\ 1/2[1/2]_1$	R75	SS79
4624.413	0.01	21618.31	25	p		$4p^5 5d\ 3/2[5/2]^\circ_3$	$4p^5 6f\ 3/2[9/2]_4$	R75	
4631.888	0.01	21583.42	350	c		$4p^5 5p\ 3/2[3/2]_1$	$4p^5 6s\ 3/2[3/2]^\circ_2$	R75	
4635.369	0.005	21567.21	3			$4p^5 6p\ 3/2[5/2]_2$	$4p^5 9s\ 3/2[3/2]^\circ_1$	R75	
4647.449	0.005	21511.16	2			$4p^5 6p\ 3/2[5/2]_2$	$4p^5 9s\ 3/2[3/2]^\circ_2$	R75	
4648.566	0.005	21505.99	10000		3.5E+7	$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5p\ 1/2[3/2]_2$	R75	SS79
4659.285	0.005	21456.51	500		2.7E+8	$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6s\ 3/2[3/2]^\circ_1$	R75	SS79
4660.566	0.005	21450.61	15			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 9s\ 3/2[3/2]^\circ_2$	R75	
4665.251	0.005	21429.07	2					R75	
4665.726	0.01	21426.89	25	c				R75	
4690.778	0.005	21312.46	5			$4p^5 4f\ 3/2[9/2]_5$	$4p^5 8g\ 3/2[11/2]^\circ_6$	R75	
4694.298	0.005	21296.48	3			$4p^5 4f\ 3/2[9/2]_4$	$4p^5 8g\ 3/2[11/2]^\circ_5$	R75	
4730.454	0.005	21133.71	1000		1.3E+7	$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5p\ 1/2[1/2]_1$	R75	SS79
4733.039	0.005	21122.17	2			$4p^5 4f\ 3/2[5/2]_3$	$4p^5 8g\ 3/2[7/2]^\circ_4$	R75	
4747.210	0.005	21059.12	2			$4p^5 4f\ 3/2[5/2]_2$	$4p^5 8g\ 3/2[7/2]^\circ_3$	R75	
4751.943	0.01	21038.14	3	c		$4p^5 5p\ 1/2[3/2]_2$	$4p^5 5d\ 3/2[5/2]^\circ_3$	R75	
4755.296	0.005	21023.30	1000			$4p^5 5p\ 3/2[3/2]_2$	$4p^5 6s\ 3/2[3/2]^\circ_2$	R75	
4757.822	0.01	21012.14	400	c	1.1E+7	$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5p\ 1/2[3/2]_2$	R75	SS79
4763.915	0.005	20985.27	10			$4p^5 5p\ 1/2[1/2]_0$	$4p^5 5d\ 3/2[3/2]^\circ_1$	R75	
4775.949	0.005	20932.40	30000		3.7E+7	$4p^5 5s\ 3/2[3/2]^\circ_2$	$4p^5 5p\ 3/2[1/2]_1$	R75	SS79
4780.526	0.01	20912.35	50	c		$4p^5 5p\ 1/2[3/2]_1$	$4p^5 5d\ 3/2[3/2]^\circ_2$	R75	
4782.830	0.005	20902.28	5000	c	3.3E+7	$4p^5 4d\ {}^3P^\circ_0$	$4p^5 5p\ 1/2[3/2]_1$	R75	SS79
4797.357	0.01	20838.99	1			$4p^5 6p\ 3/2[3/2]_2$	$4p^5 9s\ 3/2[3/2]^\circ_2$	R75	
4820.916	0.005	20737.15	3					R75	
4827.132	0.005	20710.45	25					R75	
4855.336	0.01	20590.14	300	c	6.3E+7	$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5p\ 3/2[1/2]_0$	R75	SS79
4885.588	0.01	20462.65	1500	c	6.E+6	$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5p\ 1/2[3/2]_1$	R75	SS79
4886.738	0.005	20457.83	3					R75	
4930.572	0.01	20275.96	20	c		$4p^5 5p\ 1/2[3/2]_1$	$4p^5 5d\ 3/2[1/2]^\circ_1$	R75	
5006.455	0.01	19968.64	10	c	5.E+6	$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5p\ 1/2[3/2]_1$	R75	SS79
5027.739	0.005	19884.11	2					R75	
5031.597	0.01	19868.87	35	l		$4p^5 5p\ 1/2[3/2]_2$	$4p^5 5d\ 3/2[3/2]^\circ_2$	R75	
5072.827	0.005	19707.38	10			$4p^5 4d\ {}^1P^\circ_1$	$4p^5 6p\ 3/2[1/2]_0$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
5073.884	0.01	19703.28	50	c		$4p^5 5p\ 1/2[1/2]_0$	$4p^5 6s\ 1/2[1/2]^\circ_1$	R75	
5136.526	0.005	19462.99	3					R75	
5152.081	0.005	19404.23	10000		3.4E+7	$4p^5 5s\ 3/2[3/2]^\circ_1$	$4p^5 5p\ 3/2[1/2]_1$	R75	SS79
5159.311	0.01	19377.04	1			$4p^5 4f\ 3/2[3/2]_1$	$4p^5 7g\ 3/2[5/2]^\circ_2$	R75	
5164.576	0.005	19357.28	300		2.1E+7	$4p^5 5s\ 1/2[1/2]^\circ_0$	$4p^5 5p\ 3/2[3/2]_1$	R75	SS79
5175.316	0.01	19317.11	1			$4p^5 4f\ 3/2[3/2]_2$	$4p^5 7g\ 3/2[5/2]^\circ_3$	R75	
5199.390	0.005	19227.67	35					R75	
5206.644	0.005	19200.88	10			$4p^5 4f\ 3/2[9/2]_5$	$4p^5 7g\ 3/2[11/2]^\circ_5$	R75	
5210.982	0.005	19184.90	5			$4p^5 4f\ 3/2[9/2]_4$	$4p^5 7g\ 3/2[11/2]^\circ_5$	R75	
5229.048	0.01	19118.62	5	s				R75	
5231.150	0.005	19110.93	10			$4p^5 5p\ 1/2[1/2]_1$	$4p^5 5d\ 3/2[1/2]^\circ_1$	R75	
5234.606	0.005	19098.32	3					R75	
5256.652	0.005	19018.22	4			$4p^5 4f\ 3/2[5/2]_3$	$4p^5 7g\ 3/2[7/2]^\circ_4$	R75	
5260.093	0.01	19005.78	5	u				R75	
5270.513	0.005	18968.21	200		1.4E+8	$4p^5 5p\ 3/2[1/2]_0$	$4p^5 6s\ 3/2[3/2]^\circ_1$	R75	SS79
5274.117	0.005	18955.24	2			$4p^5 4f\ 3/2[5/2]_2$	$4p^5 7g\ 3/2[7/2]^\circ_3$	R75	
5308.897	0.005	18831.07	3			$4p^5 4f\ 3/2[7/2]_3$	$4p^5 7g\ 3/2[9/2]^\circ_4$	R75	
5310.491	0.005	18825.41	4			$4p^5 4f\ 3/2[7/2]_4$	$4p^5 7g\ 3/2[9/2]^\circ_5$	R75	
5330.019	0.005	18756.44	8			$4p^5 6p\ 3/2[1/2]_1$	$4p^5 6d\ 1/2[3/2]^\circ_2$	R75	
5345.701	0.005	18701.42	15			$4p^5 6p\ 3/2[1/2]_1$	$4p^5 6d\ 1/2[5/2]^\circ_2$	R75	
5352.037	0.01	18679.28	4	c				R75	
5361.017	0.005	18647.99	15			$4p^5 5p\ 1/2[1/2]_1$	$4p^5 5d\ 3/2[1/2]^\circ_0$	R75	
5397.164	0.01	18523.10	2	h		$4p^5 6p\ 3/2[5/2]_2$	$4p^5 7d\ 3/2[5/2]^\circ_3$	R75	
5414.866	0.005	18462.55	2			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 7d\ 3/2[5/2]^\circ_3$	R75	
5422.440	0.005	18436.76	250			$4p^5 4d\ {}^1P^\circ_1$	$4p^5 6p\ 3/2[3/2]_1$	R75	
5445.818	0.005	18357.61	5					R75	
5446.812	0.005	18354.26	5			$4p^5 6p\ 3/2[5/2]_2$	$4p^5 7d\ 3/2[7/2]^\circ_3$	R75	
5469.827	0.005	18277.03	50			$4p^5 6p\ 3/2[5/2]_2$	$4p^5 6d\ 1/2[5/2]^\circ_3$	R75	
5479.323	0.005	18245.36	7					R75	
5480.610	0.005	18241.07	3			$4p^5 5d\ 3/2[1/2]^\circ_0$	$4p^5 5f\ 3/2[3/2]_1$	R75	
5488.011	0.01	18216.48	1			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 6d\ 1/2[5/2]^\circ_3$	R75	
5500.634	0.005	18174.67	100			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 7d\ 3/2[7/2]^\circ_4$	R75	
5512.549	0.005	18135.39	500		2.6E+7	$4p^5 4d\ {}^3F^\circ_3$	$4p^5 5p\ 1/2[3/2]_2$	R75	SS79
5518.572	0.005	18115.60	3					R75	
5522.778	0.005	18101.80	5000			$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5p\ 3/2[3/2]_2$	R75	
5570.058	0.005	17948.15	25					R75	
5584.191	0.005	17902.73	10					R75	
5594.522	0.005	17869.67	15					R75	
5595.426	0.005	17866.78	2					R75	
5596.063	0.005	17864.75	2					R75	
5600.394	0.005	17850.93	50			$4p^5 6p\ 3/2[3/2]_2$	$4p^5 7d\ 3/2[5/2]^\circ_3$	R75	
5608.262	0.005	17825.89	5			$4p^5 5d\ 3/2[1/2]^\circ_1$	$4p^5 5f\ 3/2[3/2]_2$	R75	
5623.332	0.005	17778.11	2			$4p^5 5d\ 3/2[1/2]^\circ_1$	$4p^5 5f\ 3/2[3/2]_1$	R75	
5635.987	0.01	17738.20	5000	c	3.8E+7	$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5p\ 3/2[1/2]_0$	R75	SS79
5679.200	0.005	17603.23	3			$4p^5 6p\ 3/2[1/2]_1$	$4p^5 8s\ 3/2[3/2]^\circ_2$	R75	
5699.149	0.01	17541.61	3000	d	4.4E+7	$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5p\ 3/2[3/2]_1$	R75	SS79
5728.246	0.005	17452.51	5			$4p^5 6p\ 3/2[3/2]_2$	$4p^5 6d\ 1/2[3/2]^\circ_2$	R75	
5739.645	0.005	17417.85	200			$4p^5 5d\ 3/2[7/2]^\circ_4$	$4p^5 5f\ 3/2[9/2]_5$	R75	
5747.561	0.005	17393.86	3					R75	
5757.085	0.005	17365.09	35			$4p^5 5d\ 3/2[3/2]^\circ_2$	$4p^5 5f\ 3/2[5/2]_3$	R75	
5782.078	0.005	17290.03	3			$4p^5 5d\ 1/2[5/2]^\circ_2$	$4p^5 5f\ 1/2[7/2]_3$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
5815.888	0.005	17189.51	5			$4p^5 5d\ 3/2[3/2]^\circ_2$	$4p^5 5f\ 3/2[3/2]_2$	R75	
5821.13	0.02	17174.04	1			$4p^5 5d\ 3/2[7/2]^\circ_3$	$4p^5 5f\ 3/2[7/2]_4$	R75	
5822.63	0.02	17169.61	1			$4p^5 5d\ 3/2[7/2]^\circ_3$	$4p^5 5f\ 3/2[7/2]_3$	R75	
5831.796	0.005	17142.62	5			$4p^5 5d\ 1/2[3/2]^\circ_2$	$4p^5 5f\ 1/2[5/2]_3$	R75	
5852.156	0.005	17082.99	3			$4p^5 6p\ 3/2[5/2]_2$	$4p^5 8s\ 3/2[3/2]^\circ_1$	R75	
5893.080	0.005	16964.35	75			$4p^5 5d\ 3/2[7/2]^\circ_3$	$4p^5 5f\ 3/2[9/2]_4$	R75	
5911.711	0.005	16910.89	20			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 8s\ 3/2[3/2]^\circ_2$	R75	
5915.173	0.005	16900.99	3					R75	
5951.984	0.005	16796.47	20			$4p^5 5d\ 1/2[5/2]^\circ_3$	$4p^5 5f\ 1/2[7/2]_4$	R75	
5978.931	0.005	16720.77	10					R75	
5994.074	0.005	16678.52	30			$4p^5 5d\ 3/2[5/2]^\circ_2$	$4p^5 5f\ 3/2[7/2]_3$	R75	
6012.181	0.01	16628.29	2	h		$4p^5 5d\ 3/2[5/2]^\circ_2$	$4p^5 5f\ 3/2[5/2]_2$	R75	
6094.814	0.01	16402.85	25	c		$4p^5 4d\ {}^3F^\circ_2$	$4p^5 5p\ 1/2[1/2]_1$	R75	
6133.544	0.005	16299.28	3			$4p^5 6p\ 3/2[3/2]_2$	$4p^5 8s\ 3/2[3/2]^\circ_2$	R75	
6135.268	0.005	16294.70	200			$4p^5 5d\ 3/2[5/2]^\circ_3$	$4p^5 5f\ 3/2[7/2]_4$	R75	
6140.316	0.005	16281.30	75			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 5p\ 1/2[3/2]_2$	R75	
6172.720	0.005	16195.83	4			$4p^5 5d\ 3/2[5/2]^\circ_3$	$4p^5 5f\ 3/2[5/2]_3$	R75	
6199.080	0.01	16126.96	1000	c	2.2E+7	$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5p\ 3/2[5/2]_2$	R75	SS79
6202.887	0.005	16117.07	15			$4p^5 4f\ 3/2[3/2]_1$	$4p^5 6g\ 3/2[5/2]^\circ_2$	R75	
6215.253	0.005	16085.00	7			$4p^5 5d\ 3/2[5/2]^\circ_3$	$4p^5 5f\ 3/2[9/2]_4$	R75	
6221.688	0.01	16068.36	2	h		$4p^5 4f\ 3/2[3/2]_2$	$4p^5 6d\ 1/2[3/2]^\circ_1$	R75	
6225.828	0.005	16057.68	25			$4p^5 4f\ 3/2[3/2]_2$	$4p^5 6g\ 3/2[5/2]^\circ_3$	R75	
6269.405	0.005	15946.07	300			$4p^5 4f\ 3/2[9/2]_5$	$4p^5 6g\ 3/2[11/2]^\circ_6$	R75	
6275.697	0.005	15930.08	100			$4p^5 4f\ 3/2[9/2]_4$	$4p^5 6g\ 3/2[11/2]^\circ_5$	R75	
6310.554	0.005	15842.09	3			$4p^5 4f\ 1/2[5/2]_3$	$4p^5 6g\ 1/2[7/2]^\circ_4$	R75	
6313.856	0.005	15833.80	4			$4p^5 4f\ 1/2[7/2]_3$	$4p^5 6g\ 1/2[9/2]^\circ_4$	R75	
6317.300	0.005	15825.17	5			$4p^5 4f\ 1/2[7/2]_4$	$4p^5 6g\ 1/2[9/2]^\circ_5$	R75	
6335.153	0.01	15780.57	1			$4p^5 4f\ 1/2[5/2]_2$	$4p^5 6g\ 1/2[7/2]^\circ_3$	R75	
6337.636	0.005	15774.39	50			$4p^5 4f\ 3/2[5/2]_3$	$4p^5 6g\ 3/2[7/2]^\circ_4$	R75	
6363.009	0.005	15711.49	15			$4p^5 4f\ 3/2[5/2]_2$	$4p^5 6g\ 3/2[7/2]^\circ_3$	R75	
6410.848	0.005	15594.25	50			$4p^5 4f\ 3/2[7/2]_3$	$4p^5 6g\ 3/2[9/2]^\circ_4$	R75	
6413.167	0.005	15588.61	60			$4p^5 4f\ 3/2[7/2]_4$	$4p^5 6g\ 3/2[9/2]^\circ_5$	R75	
6458.332	0.005	15479.60	10000		3.4E+7	$4p^5 5s\ 1/2[1/2]^\circ_0$	$4p^5 5p\ 3/2[1/2]_1$	R75	SS79
6498.235	0.01	15384.54	50	h		$4p^5 5p\ 3/2[1/2]_1$	$4p^5 4d\ {}^1P^\circ_1$	R75	
6515.838	0.005	15342.98	50					R75	
6555.625	0.005	15249.86	1000			$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5p\ 3/2[3/2]_2$	R75	
6560.814	0.005	15237.80	5000			$4p^5 4d\ {}^3F^\circ_2$	$4p^5 5p\ 1/2[3/2]_1$	R75	
6607.853	0.005	15129.33	4		7.E+6	$4p^5 4d\ {}^3P^\circ_0$	$4p^5 5p\ 3/2[3/2]_1$	R75	SS79
6671.843	0.005	14984.23	3					R75	
6769.941	0.005	14767.10	2			$4p^5 5p\ 1/2[3/2]_2$	$4p^5 6s\ 3/2[3/2]^\circ_2$	R75	
6775.067	0.01	14755.93	3000	l		$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5p\ 3/2[3/2]_2$	R75	
6775.515	0.005	14754.95	100					R75	
6784.751	0.01	14734.87	1	h		$4p^5 5d\ 1/2[3/2]^\circ_1$	$4p^5 5f\ 1/2[5/2]_2$	R75	
6805.617	0.01	14689.69	35	c		$4p^5 4d\ {}^3P^\circ_1$	$4p^5 5p\ 3/2[3/2]_1$	R75	
6826.108	0.01	14645.59	2	c		$4p^5 5p\ 1/2[1/2]_1$	$4p^5 6s\ 3/2[3/2]^\circ_2$	R75	
7042.393	0.01	14195.81	75	c		$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5p\ 3/2[3/2]_1$	R75	
7316.516	0.01	13663.94	300	c	1.5E+7	$4p^5 5s\ 1/2[1/2]^\circ_1$	$4p^5 5p\ 3/2[1/2]_1$	R75	SS79
7335.545	0.01	13628.50	3	h		$4p^5 5d\ 3/2[3/2]^\circ_1$	$4p^5 5f\ 3/2[5/2]_2$	R75	
7455.793	0.01	13408.70	1			$4p^5 5d\ 3/2[3/2]^\circ_1$	$4p^5 5f\ 3/2[3/2]_2$	R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
7726.078	0.01	12939.62	50	c	3.5E+7	$4p^5 4d\ ^3P^\circ_2$	$4p^5 5p\ 3/2[5/2]_3$	R75	SS79
7726.921	0.01	12938.20	1			$4p^5 6p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[3/2]^\circ_1$	R75	
7736.900	0.01	12921.52	1	h		$4p^5 5p\ 3/2[5/2]_2$	$4p^5 4d\ ^1P^\circ_1$	R75	
7821.863	0.01	12781.16	75	c	2.8E+7	$4p^5 4d\ ^3P^\circ_2$	$4p^5 5p\ 3/2[5/2]_2$	R75	SS79
7974.876	0.01	12535.93	1	h		$4p^5 5p\ 1/2[1/2]_0$	$4p^5 6s\ 3/2[3/2]^\circ_1$	R75	
7980.515	0.005	12527.074	10					R75	
8112.273	0.005	12323.613	15			$4p^5 4d\ ^3D^\circ_1$	$4p^5 5p\ 1/2[1/2]_0$	R75	
8290.075	0.01	12059.30	2	h				R75	
8352.344	0.005	11969.40	25			$4p^5 6p\ 3/2[1/2]_1$	$4p^5 6d\ 3/2[3/2]^\circ_2$	R75	
8415.719	0.005	11879.26	50			$4p^5 4d\ ^3F^\circ_3$	$4p^5 5p\ 3/2[3/2]_2$	R75	
8505.808	0.005	11753.44	2			$4p^5 6p\ 3/2[5/2]_2$	$4p^5 6d\ 3/2[5/2]^\circ_3$	R75	
8535.254	0.005	11712.90	20			$4p^5 6p\ 3/2[1/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_1$	R75	
8549.862	0.005	11692.88	10			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 6d\ 3/2[5/2]^\circ_3$	R75	
8568.410	0.005	11667.57	2			$4p^5 6p\ 3/2[1/2]_0$	$4p^5 6d\ 3/2[3/2]^\circ_1$	R75	
8603.956	0.005	11619.37	2000			$4p^5 4d\ ^3F^\circ_4$	$4p^5 5p\ 3/2[5/2]_3$	R75	
8610.680	0.005	11610.30	10			$4p^5 6p\ 3/2[5/2]_2$	$4p^5 6d\ 3/2[5/2]^\circ_2$	R75	
8688.070	0.01	11506.87	15	c		$4p^5 5p\ 3/2[3/2]_1$	$4p^5 4d\ ^1P^\circ_1$	R75	
8711.026	0.005	11476.55	3					R75	
8723.722	0.005	11459.85	5			$4p^5 6p\ 3/2[1/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_0$	R75	
8762.652	0.005	11408.94	50			$4p^5 6p\ 3/2[5/2]_2$	$4p^5 6d\ 3/2[7/2]^\circ_3$	R75	
8809.421	0.005	11348.37	3			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 6d\ 3/2[7/2]^\circ_3$	R75	
8845.203	0.01	11302.46	2	h				R75	
8873.789	0.01	11266.05	5	d				R75	
8885.144	0.01	11251.65	25	w		$4p^5 4d\ ^3P^\circ_0$	$4p^5 5p\ 3/2[1/2]_1$	R75	
8978.878	0.005	11134.19	300			$4p^5 6p\ 3/2[5/2]_3$	$4p^5 6d\ 3/2[7/2]^\circ_4$	R75	
8985.729	0.005	11125.70	50			$4p^5 6p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[5/2]^\circ_2$	R75	
9004.338	0.01	11102.71	5	d				R75	
9018.178	0.01	11085.67	3	h				R75	
9021.768	0.005	11081.26	300			$4p^5 6p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[5/2]^\circ_3$	R75	
9131.288	0.01	10948.35	2	h				R75	
9132.691	0.01	10946.67	15	c		$4p^5 5p\ 3/2[3/2]_2$	$4p^5 4d\ ^1P^\circ_1$	R75	
9139.844	0.005	10938.10	2			$4p^5 6p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[5/2]^\circ_2$	R75	
9143.538	0.005	10933.68	2					R75	
9164.064	0.005	10909.20	15					R75	
9211.481	0.01	10853.04	15	c		$4p^5 6p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[3/2]^\circ_2$	R75	
9215.475	0.01	10848.34	20	h		$4p^5 5d\ 3/2[3/2]^\circ_1$	$4p^5 4f\ 1/2[5/2]_2$	R75	
9246.154	0.005	10812.34	5					R75	
9246.232	0.01	10812.25	3	u				R75	
9246.413	0.01	10812.04	500	c		$4p^5 4d\ ^3P^\circ_1$	$4p^5 5p\ 3/2[1/2]_1$	R75	
9246.658	0.005	10811.75	10					R75	
9295.657	0.005	10754.76	25					R75	
9311.230	0.01	10736.77	3	s		$4p^5 6p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[7/2]^\circ_3$	R75	
9317.051	0.01	10730.06	2	h		$4p^5 4f\ 3/2[3/2]_2$	$4p^5 5g\ 3/2[7/2]^\circ_3$	R75	
9338.868	0.005	10705.00	300			$4p^5 4f\ 3/2[3/2]_1$	$4p^5 5g\ 3/2[5/2]^\circ_2$	R75	
9348.637	0.005	10693.81	10					R75	
9373.497	0.01	10665.45	200	w		$4p^5 6p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[3/2]^\circ_2$	R75	
9376.453	0.005	10662.088	2					R75	
9376.601	0.005	10661.920	3					R75	
9376.800	0.005	10661.694	2					R75	
9376.939	0.005	10661.535	2					R75	
9384.756	0.01	10652.66	2	h				R75	

Observed spectral lines of Rb II—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
9391.359	0.005	10645.165	300			$4p^5 4f\ 3/2[3/2]_2$	$4p^5 5g\ 3/2[5/2]^\circ_3$	R75	
9391.723	0.005	10644.752	50			$4p^5 4f\ 3/2[3/2]_2$	$4p^5 5g\ 3/2[5/2]^\circ_2$	R75	
9400.699	0.01	10634.59	20	c		$4p^5 6p\ 1/2[3/2]_2$	$4p^5 6d\ 1/2[5/2]^\circ_3$	R75	
9415.513	0.01	10617.86	75	s		$4p^5 4f\ 3/2[9/2]_4$	$4p^5 5g\ 3/2[9/2]^\circ_4$	R75	
9434.474	0.01	10596.52	20	c		$4p^5 6p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_1$	R75	
9441.977	0.005	10588.097	2			$4p^5 4f\ 1/2[5/2]_2$	$4p^5 8d\ 3/2[5/2]^\circ_3$	R75	
9443.035	0.005	10586.911	4					R75	
9450.525	0.01	10578.52	20	c		$4p^5 6p\ 1/2[1/2]_1$	$4p^5 6d\ 1/2[3/2]^\circ_2$	R75	
9479.319	0.005	10546.387	1000			$4p^5 4f\ 3/2[9/2]_5$	$4p^5 5g\ 3/2[11/2]^\circ_6$	R75	
9493.723	0.01	10530.39	700	l		$4p^5 4f\ 3/2[9/2]_4$	$4p^5 5g\ 3/2[11/2]^\circ_5$	R75	
9524.135	0.01	10496.76	10	s				R75	
9561.391	0.01	10455.86	2	c		$4p^5 4f\ 1/2[5/2]_3$	$4p^5 5g\ 1/2[7/2]^\circ_3$	R75	
9561.821	0.005	10455.391	50			$4p^5 4f\ 1/2[5/2]_3$	$4p^5 5g\ 1/2[7/2]^\circ_4$	R75	
9569.342	0.01	10447.17	50	l		$4p^5 4f\ 1/2[7/2]_3$	$4p^5 5g\ 1/2[9/2]^\circ_4$	R75	
9577.250	0.005	10438.547	50			$4p^5 4f\ 1/2[7/2]_4$	$4p^5 5g\ 1/2[9/2]^\circ_5$	R75	
9577.363	0.01	10438.42	10	u		$4p^5 4f\ 1/2[7/2]_4$	$4p^5 5g\ 1/2[9/2]^\circ_4$	R75	
9604.488	0.01	10408.94	15	h		$4p^5 6p\ 3/2[3/2]_2$	$4p^5 6d\ 3/2[1/2]^\circ_1$	R75	
9612.855	0.005	10399.885	5			$4p^5 4f\ 3/2[5/2]_3$	$4p^5 5g\ 3/2[7/2]^\circ_3$	R75	
9612.991	0.005	10399.737	300			$4p^5 4f\ 3/2[5/2]_3$	$4p^5 5g\ 3/2[7/2]^\circ_4$	R75	
9617.981	0.01	10394.34	30	c		$4p^5 4f\ 1/2[5/2]_2$	$4p^5 5g\ 1/2[7/2]^\circ_3$	R75	
9662.782	0.01	10346.15	3	h				R75	
9665.253	0.01	10343.50	1	w		$4p^5 6p\ 3/2[3/2]_1$	$4p^5 6d\ 3/2[1/2]^\circ_0$	R75	
9671.535	0.005	10336.785	300			$4p^5 4f\ 3/2[5/2]_2$	$4p^5 5g\ 3/2[7/2]^\circ_3$	R75	
9689.049	0.01	10318.10	2000	c		$4p^5 4d\ {}^3P^\circ_2$	$4p^5 5p\ 3/2[1/2]_1$	R75	
9691.963	0.01	10315.00	10	c		$4p^5 4f\ 3/2[5/2]_3$	$4p^5 5g\ 3/2[5/2]^\circ_3$	R75	
9697.114	0.01	10309.52	2	h				R75	
9751.623	0.01	10251.89	3	h		$4p^5 4f\ 3/2[5/2]_2$	$4p^5 5g\ 3/2[5/2]^\circ_3$	R75	
9752.012	0.01	10251.48	3	h		$4p^5 4f\ 3/2[5/2]_2$	$4p^5 5g\ 3/2[5/2]^\circ_2$	R75	
9770.679	0.005	10231.897	75			$4p^5 4f\ 3/2[7/2]_3$	$4p^5 5g\ 3/2[9/2]^\circ_4$	R75	
9776.058	0.005	10226.267	200			$4p^5 4f\ 3/2[7/2]_4$	$4p^5 5g\ 3/2[9/2]^\circ_5$	R75	
9783.846	0.005	10218.127	2					R75	
9799.138	0.01	10202.18	5	h		$4p^5 4f\ 3/2[7/2]_3$	$4p^5 5g\ 3/2[7/2]^\circ_3$	R75	
9804.754	0.01	10196.34	8	h		$4p^5 4f\ 3/2[7/2]_4$	$4p^5 5g\ 3/2[7/2]^\circ_4$	R75	
9903.583	0.01	10094.59	5	h				R75	
9934.764	0.005	10062.906	200			$4p^5 4d\ {}^3F^\circ_3$	$4p^5 5p\ 3/2[5/2]_3$	R75	
9970.653	0.01	10026.68	2	w				R75	
9972.161	0.01	10025.170	2	w		$4p^5 4d\ {}^3F^\circ_2$	$4p^5 5p\ 3/2[3/2]_2$	R75	

Energy levels of Rb II

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	g Value	Leading percentages
$4p^6$	^1S	0	0.00	0.11	R75		
$4p^5 5s$	3/2[3/2]°	2	133341.607	0.016	R75	1.500	96%
	3/2[3/2]°	1	134869.751	0.016	R75	1.284	91%
	1/2[1/2]°	0	138794.380	0.015	R75		52%
	1/2[1/2]°	1	140610.047	0.01	R75	1.292	49%
$4p^5 4d$	$^3P°$	0	143022.335	0.01	R75		52% + 48% $4p^5 5s\ ^3P$
	$^3P°$	1	143461.977	0.016	R75	1.406	52% + 31% $4p^5 5s\ ^3P$
	$^3P°$	2	143955.871	0.01	R75	1.466	89% + 5% $4p^5 4d\ ^3D$
	$^3F°$	4	145276.118	0.01	R75		100%
	$^3F°$	3	146832.593	0.009	R75	1.08	86% + 9% $4p^5 4d\ ^1F$
	$^3F°$	2	148686.714	0.014	R75	0.77	75% + 15% $4p^5 4d\ ^1D$
	$^3D°$	3	151877.03	0.03	R75	1.18	56% + 44% $4p^5 4d\ ^1F$
	$^1D°$	2	155063.53	0.03	R75	0.92	46% + 29% $4p^5 4d\ ^3D$
	$^3D°$	1	155308.820	0.012	R75	0.55	94% + 4% $4p^5 4d\ ^1P$
	$^3D°$	2	156561.61	0.02	R75	1.15	56% + 36% $4p^5 4d\ ^1D$
	$^1F°$	3	157136.88	0.03	R75	1.14	47% + 39% $4p^5 4d\ ^3D$
	$^1P°$	1	169658.536	0.009	R75	1.00	96% + 4% $4p^5 4d\ ^3D$
$4p^5 5p$	3/2[1/2]	1	154273.980	0.009	R75	1.924	93%
	3/2[5/2]	2	156737.011	0.01	R75	1.123	90%
	3/2[5/2]	3	156895.486	0.008	R75	1.336	100%
	3/2[3/2]	1	158151.666	0.007	R75	0.981	97%
	3/2[3/2]	2	158711.854	0.007	R75	1.360	90%
	3/2[1/2]	0	161200.171	0.014	R75		90%
	1/2[3/2]	1	163924.55	0.02	R75	0.687	95%
	1/2[3/2]	2	164968.007	0.012	R75	1.191	99%
	1/2[1/2]	1	165089.580	0.011	R75	1.431	91%
	1/2[1/2]	0	167632.436	0.01	R75		90%
$4p^5 6s$	3/2[3/2]°	2	179735.123	0.016	R75	1.497	99%
	3/2[3/2]°	1	180168.372	0.011	R75	1.195	99%
	1/2[1/2]°	0	187140.03	0.02	R75		98%
	1/2[1/2]°	1	187335.72	0.03	R75	1.321	96%
$4p^5 5d$	3/2[1/2]°	0	183737.59	0.02	R75		98%
	3/2[1/2]°	1	184200.524	0.013	R75	1.381	63%
	3/2[7/2]°	4	184660.39	0.02	R75	1.2	100%
	3/2[3/2]°	2	184836.897	0.011	R75	1.355	97%
	3/2[7/2]°	3	185126.778	0.012	R75	1.081	79%
	3/2[5/2]°	2	185617.909	0.011	R75	0.959	99%
	3/2[5/2]°	3	186006.150	0.011	R75	1.211	79%
	3/2[3/2]°	1	188617.702	0.009	R75	0.723	55%
	1/2[5/2]°	2	192232.61	0.02	R75	0.804	99%
	1/2[3/2]°	2	192375.84	0.03	R75	1.225	98%
	1/2[5/2]°	3	192733.21	0.02	R75	1.11	99%
	1/2[3/2]°	1	194830.71	0.03	R75	0.912	81%
$4p^5 6p$	3/2[1/2]	1	186978.932	0.006	R75		97%
	3/2[5/2]	2	187610.704	0.005	R75		88%
	3/2[5/2]	3	187671.267	0.005	R75	1.34	100%
	3/2[3/2]	1	188095.292	0.007	R75	1.03	98%
	3/2[3/2]	2	188282.884	0.005	R75		89%
	3/2[1/2]	0	189365.923	0.011	R75		99%

Energy levels of Rb II—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	g Value	Leading percentages
	1/2[1/2]	1	195156.85	0.02	R75		92%
	1/2[3/2]	2	195253.15	0.02	R75		100%
$4p^5 4f$	3/2[3/2]	1	191720.748	0.01	R75	0.50	100%
	3/2[3/2]	2	191780.993	0.007	R75	1.12	98%
	3/2[9/2]	5	191906.93	0.11	R75		100%
	3/2[9/2]	4	191922.912	0.018	R75	1.04	100%
	3/2[5/2]	3	192111.172	0.007	R75	1.20	100%
	3/2[5/2]	2	192174.269	0.007	R75	0.86	97%
	3/2[7/2]	3	192308.877	0.008	R75	0.97	100%
	3/2[7/2]	4	192314.573	0.014	R75	1.18	100%
	1/2[5/2]	3	199404.52	0.02	R75	1.17	100%
	1/2[7/2]	3	199411.62	0.02	R75	0.87	100%
	1/2[7/2]	4	199420.37	0.02	R75	1.11	100%
	1/2[5/2]	2	199466.033	0.01	R75	0.88	100%
$4p^5 7s$	3/2[3/2]°	2	196499.50	0.04	R75	1.50	100%
	3/2[3/2]°	1	196682.28	0.04	R75	1.18	100%
	1/2[1/2]°	0	203859.54	0.06	R75		100%
	1/2[1/2]°	1	203938.09	0.04	R75	1.332	100%
$4p^5 6d$	3/2[1/2]°	0	198438.786	0.009	R75		100%
	3/2[1/2]°	1	198691.823	0.007	R75	1.31	61%
	3/2[7/2]°	4	198805.460	0.01	R75	1.28	100%
	3/2[3/2]°	2	198948.332	0.007	R75	1.33	99%
	3/2[7/2]°	3	199019.641	0.007	R75	1.10	82%
	3/2[5/2]°	2	199220.994	0.006	R75	0.98	100%
	3/2[5/2]°	3	199364.147	0.006	R75	1.24	82%
	3/2[3/2]°	1	201033.495	0.011	R75	0.848	59%
	1/2[5/2]°	2	205680.350	0.018	R75		99%
	1/2[3/2]°	2	205735.373	0.017	R75		98%
	1/2[5/2]°	3	205887.739	0.012	R75		100%
	1/2[3/2]°	1	207849.35	0.02	R75		93%
$4p^5 5f$	3/2[3/2]	1	201978.638	0.018	R75		
	3/2[3/2]	2	202026.405	0.010	R75	1.10	
	3/2[9/2]	5	202078.24	0.03	R75		
	3/2[9/2]	4	202091.132	0.016	R75		
	3/2[5/2]	3	202201.982	0.012	R75		
	3/2[5/2]	2	202246.199	0.013	R75	0.88	
	3/2[7/2]	3	202296.426	0.017	R75		
	3/2[7/2]	4	202300.847	0.016	R75		
	1/2[5/2]	3	209518.46	0.03	R75		
	1/2[7/2]	3	209522.64	0.02	R75		
	1/2[7/2]	4	209529.68	0.03	R75		
	1/2[5/2]	2	209565.57	0.03	R75	0.91	
$4p^5 5g$	3/2[5/2]°	2	202425.746	0.007	R75		
	3/2[5/2]°	3	202426.161	0.008	R75		
	3/2[11/2]°	5	202453.30	0.02	R75		
	3/2[11/2]°	6	202453.32	0.11	R75		
	3/2[7/2]°	4	202510.911	0.010	R75		
	3/2[7/2]°	3	202511.06	0.006	R75		
	3/2[9/2]°	4	202540.774	0.010	R75		
	3/2[9/2]°	5	202540.840	0.014	R75		

Energy levels of Rb II—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	g Value	Leading percentages
	1/2[9/2]°	4	209858.79	0.02	R75		
	1/2[9/2]°	5	209858.92	0.03	R75		
	1/2[7/2]°	4	209859.91	0.02	R75		
	1/2[7/2]°	3	209860.375	0.016	R75		
$4p^5 8s$	3/2[3/2]°	2	204582.161	0.009	R75		
	3/2[3/2]°	1	204693.695	0.015	R75		
$4p^5 7d$	3/2[7/2]°	4	205845.937	0.019	R75		
	3/2[7/2]°	3	205964.962	0.018	R75		
	3/2[5/2]°	3	206133.811	0.01	R75		
	1/2[3/2]°	1	214522.4	1.4	R75		
$4p^5 6f$	3/2[3/2]	1	207433.02	0.15	R75		100%
	3/2[3/2]	2	207532.87	0.03	R75		94%
	3/2[9/2]	5	207615.57	0.06	R75	1.22	100%
	3/2[9/2]	4	207624.43	0.02	R75		100%
	3/2[5/2]	3	207670.37	0.02	R75		100%
	3/2[5/2]	2	207688.72	0.03	R75		94%
	3/2[7/2]	3	207736.17	0.02	R75		100%
	3/2[7/2]	4	207739.71	0.02	R75		100%
	1/2[5/2]	3	215030.17	0.13	R75		100%
	1/2[7/2]	3	215032.18	0.03	R75		100%
	1/2[7/2]	4	215036.94	0.03	R75		100%
	1/2[5/2]	2	215061.54	0.09	R75		100%
$4p^5 6g$	3/2[5/2]°	2	207837.82	0.03	R75		
	3/2[5/2]°	3	207838.673	0.015	R75		
	3/2[11/2]°	5	207852.99	0.02	R75		
	3/2[11/2]°	6	207853.00	0.11	R75		
	3/2[7/2]°	4	207885.562	0.014	R75		
	3/2[7/2]°	3	207885.759	0.014	R75		
	3/2[9/2]°	4	207903.128	0.014	R75		
	3/2[9/2]°	5	207903.183	0.018	R75		
	1/2[9/2]°	4	215245.42	0.030	R75		
	1/2[9/2]°	5	215245.54	0.030	R75		
	1/2[7/2]°	3	215246.60	0.030	R75		
	1/2[7/2]°	4	215246.61	0.020	R75		
$4p^5 9s$	3/2[3/2]°	2	209121.874	0.014	R75		
	3/2[3/2]°	1	209177.91	0.020	R75		
$4p^5 8d$	3/2[7/2]°	4	209883.87	0.030	R75		
	3/2[7/2]°	3	209945.847	0.018	R75		
	3/2[5/2]°	3	210054.124	0.011	R75		
	3/2[3/2]°	1	210581.8	1.3	R75		
$4p^5 7f$	3/2[9/2]	5	210950.62	0.030	R75	1.20	
	3/2[9/2]	4	210956.96	0.040	R75	1.04	
	3/2[5/2]	3	210996.25	0.110	R75		
	3/2[5/2]	2	211018.29	0.140	R75		
	3/2[7/2]	3	211031.37	0.110	R75		
	3/2[7/2]	4	211033.62	0.140	R75		
$4p^5 7g$	3/2[5/2]°	2	211097.79	0.02	R75		
	3/2[5/2]°	3	211098.10	0.02	R75		

Energy levels of Rb II—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	g Value	Leading percentages
	3/2[11/2]°	6	211107.81	0.11	R75		
	3/2[11/2]°	5	211107.81	0.03	R75		
	3/2[7/2]°	4	211129.392	0.019	R75		
	3/2[7/2]°	3	211129.509	0.019	R75		
	3/2[9/2]°	4	211139.95	0.02	R75		
	3/2[9/2]°	5	211139.98	0.02	R75		
$4p^5 9d$	3/2[7/2]°	4	212415.88	0.15	R75		
	3/2[7/2]°	3	212447.48	0.16	R75		
$4p^5 8f$	3/2[9/2]	4	213115.12	0.22	R75		
	3/2[5/2]	2	213154.95	0.5	R75		
	3/2[7/2]	3	213162.90	0.21	R75		
	3/2[7/2]	4	213164.59	0.19	R75		
$4p^5 8g$	3/2[11/2]°	6	213219.39	0.11	R75		
	3/2[11/2]°	5	213219.39	0.03	R75		
	3/2[7/2]°	4	213233.34	0.02	R75		
	3/2[7/2]°	3	213233.39	0.02	R75		
$4p^5 9f$	3/2[7/2]	3	214622.34	0.44	R75		
	3/2[7/2]	4	214623.65	0.4	R75		

7.3. Rb III

Br isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^5\ {}^2P^\circ_{3/2}$

Ionization energy $314\,700 \pm 2500\ \mathrm{cm}^{-1}$; 39.0 ± 0.3 eV

The Rb III spectrum was observed by Tomboulian [T38], who measured the spectrum between 250 and 2500 Å, found the $4p^5\ {}^2P^\circ$ interval, and also gave values for 15 excited levels. Subsequently Reader and Epstein [RE72] investigated the region 400–820 Å and obtained Zeeman effect data from 2300 to 3600 Å. They observed transitions to the $4s^2 4p^5\ {}^2P^\circ$ ground term from the $4s4p^6$ and $4s^2 4p^4(4d+5s)$ configurations and transitions to the $4s^2 4p^4(4d+5s)$ configurations from the $4s^2 4p^4 5p$ levels. Hansen, Persson, and Valind [HPV72] used a sliding spark to record spectra of Rb III in the 370–3500 Å range. They did not report the wavelengths, but located and published most of the levels of the $4s^2 4p^4(5d+6s)$ configurations as well as those in [RE72]. Later Reader [R75] extended the range of observations to include 1489–2661 Å and a few lines between 4400 and 4700 Å. He located the missing levels of the $4s^2 4p^4 4d$ and $4s^2 4p^4 5p$ configurations and the $4s^2 4p^4(^1\mathrm{D})5\mathrm{d}\ {}^2G_{9/2}$ level and gave improved values for 13 previously identified levels.

There are several kinds of coupling indicated for the energy levels of Rb III. Levels of the $4s^2 4p^5$ and $4s4p^6$ configurations are given in *LS* coupling. Members of the $4s^2 4p^4 4d$, $5d$, and $6s$ configurations are also given in *LS* coupling, with the state of the $4p^4$ core in parentheses. Levels of the $4s^2 4p^4 5s$ configuration are given in $J_1 j$ coupling, with the state of the $4p^4$ core and the angular momentum of the $5s$ electron in parentheses. Levels of $4s^2 4p^4 5p$ configuration are given in pair coupling, or $J_1 l$, notation, with the $4p^4$ core state in parentheses and the value of $K = J_1 + l$ in square brackets. l is the orbital angular momentum of the $5p$ electron ($l=1$).

The wavelengths quoted in this compilation are from [RE72] and [R75]. The energy levels of the $4s^2 4p^4(5d+6s)$ configurations are taken from [HPV72]. All other levels are quoted from [RE72], except where superseded by [R75]. The ionization energy is also from [RE72].

References for Rb III

HPV72 J. E. Hansen, W. Persson, and S. Valind, Phys. Lett. **42A**, 275 (1972).

R75 J. Reader, J. Opt. Soc. Am. **65**, 988 (1975).

RE72 J. Reader and G. L. Epstein, J. Opt. Soc. Am. **62**, 1467 (1972).

T38 D. H. Tomboulian, Phys. Rev. **54**, 350 (1938).

Observed spectral lines of Rb III

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
465.853	0.003	30		214660.2	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^1\mathrm{D})4\mathrm{d}\ {}^2S_{1/2}$	RE72
468.101	0.003	2		213629.0	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^3\mathrm{P})4\mathrm{d}\ {}^2D_{3/2}$	RE72
482.431	0.003	35	p	207283.5	$4s^2 4p^5\ {}^2P^\circ_{1/2}$	$4s^2 4p^4(^1\mathrm{D})4\mathrm{d}\ {}^2S_{1/2}$	RE72
482.472	0.003	30	p	207266.1	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^3\mathrm{P})4\mathrm{d}\ {}^2P_{1/2}$	RE72
482.826	0.003	500		207113.9	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^3\mathrm{P})4\mathrm{d}\ {}^2D_{5/2}$	RE72
484.841	0.003	300		206253.4	$4s^2 4p^5\ {}^2P^\circ_{1/2}$	$4s^2 4p^4(^3\mathrm{P})4\mathrm{d}\ {}^2D_{3/2}$	RE72
489.660	0.003	500		204223.5	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^3\mathrm{P})4\mathrm{d}\ {}^2P_{3/2}$	RE72
489.964	0.003	100		204096.5	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^1\mathrm{S}_0)5\mathrm{s}\ (0,1/2)_{1/2}$	RE72
493.476	0.003	600		202644.0	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^1\mathrm{S})4\mathrm{d}\ {}^2D_{5/2}$	RE72
497.818	0.003	50		200876.8	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^1\mathrm{S})4\mathrm{d}\ {}^2D_{3/2}$	RE72
500.278	0.003	100		199888.8	$4s^2 4p^5\ {}^2P^\circ_{1/2}$	$4s^2 4p^4(^3\mathrm{P})4\mathrm{d}\ {}^2P_{1/2}$	RE72
508.008	0.003	1		196847.3	$4s^2 4p^5\ {}^2P^\circ_{1/2}$	$4s^2 4p^4(^3\mathrm{P})4\mathrm{d}\ {}^2P_{3/2}$	RE72
508.333	0.003	30		196721.5	$4s^2 4p^5\ {}^2P^\circ_{1/2}$	$4s^2 4p^4(^1\mathrm{S}_0)5\mathrm{s}\ (0,1/2)_{1/2}$	RE72
516.793	0.003	400		193501.1	$4s^2 4p^5\ {}^2P^\circ_{1/2}$	$4s^2 4p^4(^1\mathrm{S})4\mathrm{d}\ {}^2D_{3/2}$	RE72
533.636	0.003	800		187393.6	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^1\mathrm{D})4\mathrm{d}\ {}^2F_{5/2}$	RE72
534.278	0.003	7		187168.5	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^1\mathrm{D}_2)5\mathrm{s}\ (2,1/2)_{3/2}$	RE72
535.859	0.003	1200		186616.3	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^1\mathrm{D}_2)5\mathrm{s}\ (2,1/2)_{5/2}$	RE72
556.193	0.003	1200		179793.8	$4s^2 4p^5\ {}^2P^\circ_{1/2}$	$4s^2 4p^4(^1\mathrm{D}_2)5\mathrm{s}\ (2,1/2)_{3/2}$	RE72
558.359	0.003	500		179096.3	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^3\mathrm{P}_1)5\mathrm{s}\ (1,1/2)_{1/2}$	RE72
564.771	0.003	700		177062.8	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^3\mathrm{P})4\mathrm{d}\ {}^2F_{5/2}$	RE72
566.707	0.003	1500		176458.0	$4s^2 4p^5\ {}^2P^\circ_{3/2}$	$4s^2 4p^4(^3\mathrm{P}_1)5\mathrm{s}\ (1,1/2)_{3/2}$	RE72

Observed spectral lines of Rb III—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
572.821	0.003	1000		174574.5	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	RE72
576.653	0.003	1500		173414.6	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4P_{5/2}$	RE72
579.628	0.003	2500		172524.6	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	RE72
581.256	0.003	1500		172041.2	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	RE72
582.340	0.003	500		171721.0	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)5s\ (1,1/2)_{1/2}$	RE72
586.774	0.003	800		170423.4	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	RE72
591.424	0.003	100		169083.4	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	RE72
592.589	0.003	4		168751.0	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	RE72
593.647	0.003	900		168450.2	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	RE72
594.938	0.003	1000		168084.8	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	RE72
595.877	0.003	1300		167819.9	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	RE72
598.493	0.003	1200		167086.2	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P_2)5s\ (2,1/2)_{5/2}$	RE72
602.090	0.003	450		166088.1	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^1D)4d\ ^2P_{1/2}$	RE72
605.506	0.003	50		165151.1	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	RE72
607.285	0.003	500		164667.4	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	RE72
613.310	0.003	400		163049.6	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	RE72
619.670	0.003	500		161376.3	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	RE72
620.828	0.003	20		161075.2	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	RE72
622.235	0.003	100		160711.0	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	RE72
630.064	0.003	250		158714.0	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^1D)4d\ ^2P_{1/2}$	RE72
639.414	0.003	2		156393.1	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4D_{1/2}$	RE72
642.824	0.003	4		155563.6	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	RE72
645.673	0.003	500		154877.3	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	RE72
671.056	0.003	6		149019.0	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^4D_{1/2}$	RE72
674.809	0.003	20		148190.1	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	RE72
769.042	0.003	5000		130032.0	$4s^24p^5\ ^2P^\circ_{3/2}$	$4s4p^6\ ^2S_{1/2}$	RE72
815.276	0.003	2500		122657.8	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s4p^6\ ^2S_{1/2}$	RE72
1917.310	0.005	20		52156.40	$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	R75
1923.062	0.005	1		52000.39	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	R75
1967.869	0.005	1		50816.40	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{1/2}$	R75
2008.210	0.005	4		49779.48	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	R75
2059.600	0.005	3		48537.58	$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P_1)5p\ 1[0]^\circ_{1/2}$	R75
2070.276	0.005	1		48287.32	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[1]^\circ_{3/2}$	R75
2151.262	0.005	1		46469.73	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{5/2}$	R75
2153.214	0.005	100		46427.61	$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	R75
2160.474	0.005	7		46271.60	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	R75
2164.520	0.005	3	u	46185.12	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[1]^\circ_{3/2}$	R75
2164.590	0.005	250		46183.63	$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{7/2}$	R75
2171.928	0.005	50		46027.61	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{7/2}$	R75
2180.638	0.005	2*	w	45843.78	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	$4s^24p^4(^3P)5d\ ^4P_{3/2}$	R75
2180.638	0.005	2*	w	45843.78	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[1]^\circ_{1/2}$	R75
2182.168	0.005	25		45811.65	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{5/2}$	R75
2205.760	0.005	1		45321.72	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	$4s^24p^4(^3P)5d\ ^4P_{5/2}$	R75
2217.776	0.005	2		45076.17	$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{5/2}$	R75
2226.122	0.005	75		44907.21	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	R75
2242.585	0.005	1		44577.57	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	$4s^24p^4(^3P)5d\ ^4P_{1/2}$	R75
2246.410	0.005	10		44501.67	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{7/2}$	$4s^24p^4(^1D)5d\ ^2F_{7/2}$	R75
2248.957	0.005	15		44451.28	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^4D_{1/2}$	R75

Observed spectral lines of Rb III—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
2262.067	0.005	2		44193.69	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{5/2}$	R75
2267.997	0.005	100		44078.15	$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	R75
2272.968	0.005	1		43981.76	$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{5/2}$	R75
2275.572	0.005	5		43931.43	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	$4s^24p^4(^3P)6s\ ^2P_{3/2}$	R75
2282.706	0.005	1		43794.14	$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{3/2}$	R75
2286.936	0.005	3		43713.16	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^2D_{5/2}$	R75
2287.122	0.005	1		43709.61	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{5/2}$	R75
2287.644	0.005	50		43699.60	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	$4s^24p^4(^3P)6s\ ^2P_{3/2}$	R75
2289.918	0.005	1		43656.22	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^2D_{3/2}$	R75
2294.971	0.005	50		43560.12	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	$4s^24p^4(^3P)5d\ ^4D_{5/2}$	R75
2300.125	0.005	150		43462.52	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	R75
2304.144	0.005	500		43386.72	$4s^24p^4(^3P)4d\ ^4D_{7/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	R75
2304.446	0.005	150		43381.03	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	$4s^24p^4(^3P)5d\ ^4D_{7/2}$	R75
2307.248	0.005	60		43328.34	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^4D_{5/2}$	R75
2308.421	0.005	1		43306.33	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{1/2}$	$4s^24p^4(^3P)5d\ ^2P_{3/2}$	R75
2309.455	0.005	3		43286.96	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	$4s^24p^4(^3P)5d\ ^2F_{5/2}$	R75
2312.456	0.005	250		43230.78	$4s^24p^4(^3P)4d\ ^4D_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	R75
2313.804	0.005	15	h	43205.60	$4s^24p^4(^3P_1)5s\ (1,1/2)_{1/2}$	$4s^24p^4(^1D_2)5p\ 2[\mathit{1}]^\circ_{1/2}$	R75
2314.566	0.005	75		43191.35	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{5/2}$	$4s^24p^4(^1D)5d\ ^2G_{7/2}$	R75
2323.378	0.005	1		43027.58	$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	R75
2323.742	0.005	75		43020.81	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	$4s^24p^4(^3P)6s\ ^4P_{5/2}$	R75
2333.799	0.005	20		42835.45	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{1/2}$	$4s^24p^4(^3P)5d\ ^4F_{3/2}$	R75
2335.421	0.005	15		42805.70	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^4F_{5/2}$	R75
2336.333	0.005	10		42789.01	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	$4s^24p^4(^3P)6s\ ^4P_{5/2}$	R75
2336.954	0.005	1		42777.64	$4s^24p^4(^3P_1)5p\ 1[0]^\circ_{1/2}$	$4s^24p^4(^3P)6s\ ^4P_{3/2}$	R75
2337.070	0.005	200		42775.50	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	R75
2341.899	0.005	100		42687.30	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{7/2}$	R75
2345.371	0.005	200		42624.13	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	$4s^24p^4(^3P)5d\ ^2F_{7/2}$	R75
2349.807	0.005	100		42543.67	$4s^24p^4(^3P)4d\ ^4D_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	R75
2351.483	0.005	1		42513.34	$4s^24p^4(^1D_2)5p\ 2[1]^\circ_{3/2}$	$4s^24p^4(^1D)5d\ ^2F_{5/2}$	R75
2362.254	0.005	3		42319.51	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	$4s^24p^4(^3P)5d\ ^4D_{1/2}$	R75
2365.072	0.005	65		42269.09			R75
2365.974	0.005	50		42252.99	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[1]^\circ_{3/2}$	R75
2380.440	0.005	150		41996.24			R75
2381.288	0.005	100		41981.28			R75
2383.272	0.005	65		41946.33	$4s^24p^4(^3P)4d\ ^4D_{1/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	R75
2390.272	0.005	2		41823.50	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	$4s^24p^4(^3P)5d\ ^4D_{3/2}$	R75
2390.824	0.005	15		41813.84	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^4P_{5/2}$	R75
2399.632	0.005	2		41660.37	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{5/2}$	R75
2400.331	0.005	1		41648.24	$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[1]^\circ_{3/2}$	R75
2406.841	0.005	1		41535.60	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{7/2}$	$4s^24p^4(^1D)6s\ ^2D_{5/2}$	R75
2418.463	0.005	150		41336.02	$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	R75
2420.803	0.005	1		41296.07	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	R75
2423.908	0.005	1		41243.16	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	$4s^24p^4(^3P)6s\ ^4P_{3/2}$	R75
2429.626	0.005	10		41146.12	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	$4s^24p^4(^3P)5d\ ^4D_{3/2}$	R75
2436.485	0.005	1		41030.28	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	R75
2447.999	0.005	30		40837.31	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^2F_{5/2}$	R75
2448.370	0.005	15		40831.13	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	$4s^24p^4(^3P)6s\ ^4P_{3/2}$	R75
2452.446	0.005	20		40763.27	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{7/2}$	$4s^24p^4(^3P)5d\ ^4D_{5/2}$	R75

Observed spectral lines of Rb III—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
2455.084	0.005	65		40719.48	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{5/2}$	$4s^24p^4(^1D)5d\ ^2F_{7/2}$	R75
2458.321	0.005	2		40665.86	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	R75
2463.270	0.005	90		40584.17	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{7/2}$	$4s^24p^4(^3P)5d\ ^4D_{7/2}$	R75
2475.902	0.005	5		40377.12	$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	R75
2476.494	0.005	3		40367.47	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{3/2}$	$4s^24p^4(^1D)5d\ ^2F_{5/2}$	R75
2478.174	0.005	4		40340.10	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	$4s^24p^4(^3P)5d\ ^4D_{7/2}$	R75
2485.335	0.005	65		40223.89	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{7/2}$	$4s^24p^4(^3P)6s\ ^4P_{5/2}$	R75
2486.840	0.005	70		40199.54	$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{7/2}$	R75
2488.068	0.005	1	w	40179.70	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{5/2}$	$4s^24p^4(^1D)5d\ ^2F_{5/2}$	R75
2489.578	0.005	4		40155.34	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^4F_{5/2}$	R75
2502.752	0.005	1		39943.99	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^4F_{5/2}$	R75
2512.348	0.005	2		39791.41	$4s^24p^4(^3P_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	R75
2523.528	0.005	5		39615.14	$4s^24p^4(^3P_1)5s\ (1,1/2)_{1/2}$	$4s^24p^4(^1D_2)5p\ 2[1]^\circ_{3/2}$	R75
2559.540	0.005	65		39057.81	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	R75
2561.863	0.005	300		39022.40	$4s^24p^4(^1D)4d\ ^2G_{9/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{7/2}$	R75
2567.292	0.005	35		38939.89	$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{7/2}$	R75
2573.711	0.005	100		38842.76	$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_1)5p\ 1[0]^\circ_{1/2}$	R75
2577.071	0.005	100		38792.11	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	R75
2583.746	0.005	2		38691.92	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	R75
2586.833	0.005	200		38645.74	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	R75
2604.646	0.005	1		38381.47	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	$4s^24p^4(^3P)6s\ ^4P_{3/2}$	R75
2622.051	0.005	10		38126.72	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	R75
2629.524	0.005	2	s	38018.36	$4s^24p^4(^1S)4d\ ^2D_{3/2}$	$4s^24p^4(^1S_0)5p\ 0[1]^\circ_{1/2}$	R75
2631.752	0.005	1000		37986.17	$4s^24p^4(^3P)4d\ ^4F_{9/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{7/2}$	R75
2635.601	0.005	5		37930.70	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{1/2}$	R75
2636.830	0.005	350		37913.02	$4s^24p^4(^1D)4d\ ^2G_{7/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{5/2}$	R75
2650.704	0.005	20		37714.60	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	R75
2653.478	0.005	7		37675.17	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{1/2}$	R75
2656.076	0.005	1		37638.34	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^4D_{3/2}$	R75
2656.677	0.005	100		37629.80	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{1/2}$	R75
2660.871	0.005	5		37570.50	$4s^24p^4(^3P_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	R75
2688.004	0.005	20		37191.28	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{1/2}$	RE72
2713.861	0.005	100		36836.96	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	RE72
2716.478	0.005	40		36801.47	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	RE72
2732.176	0.010			36590.03	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	RE72
2733.579	0.005	20	s	36571.25	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	RE72
2761.097	0.005	30		36206.79	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	RE72
2773.748	0.005	50		36041.66	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	RE72
2783.786	0.005	80		35911.70	$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	RE72
2798.863	0.005	500		35718.26	$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	RE72
2800.270	0.005	150		35700.33	$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	RE72
2807.581	0.005	500		35607.37	$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	RE72
2816.790	0.005	30	s	35490.96	$4s^24p^4(^1S_0)5s\ (0,1/2)_{1/2}$	$4s^24p^4(^1S_0)5p\ 0[1]^\circ_{3/2}$	RE72
2826.954	0.010	0		35363.36	$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{7/2}$	RE72
2845.444	0.005	100		35133.57	$4s^24p^4(^1D_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[l]^\circ_{1/2}$	R75
2869.768	0.005	150		34835.79	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	RE72
2872.920	0.005	25	s	34797.58	$4s^24p^4(^1S_0)5s\ (0,1/2)_{1/2}$	$4s^24p^4(^1S_0)5p\ 0[1]^\circ_{1/2}$	R75
2876.678	0.005	50		34752.12	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	RE72
2897.089	0.010			34507.29	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[0]^\circ_{1/2}$	RE72
2903.692	0.005	500		34428.82	$4s^24p^4(^1D_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{5/2}$	RE72
2904.120	0.005	20		34423.75	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	RE72

Observed spectral lines of Rb III—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
2907.530	0.010			34383.39	$4s^24p^4(^1D)4d\ ^2P_{1/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	RE72
2910.200	0.010			34351.84	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	RE72
2916.072	0.010			34282.67	$4s^24p^4(^3P_0)5s\ (0,1/2)_{1/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{1/2}$	RE72
2920.311	0.005	10		34232.91	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	RE72
2949.617	0.005	150		33892.80	$4s^24p^4(^3P_0)5s\ (0,1/2)_{1/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	RE72
2951.010	0.005	100		33876.80	$4s^24p^4(^1D_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{5/2}$	RE72
2952.908	0.010			33855.02	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{1/2}$	RE72
2956.071	0.005	2000		33818.81	$4s^24p^4(^3P_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{7/2}$	RE72
2967.453	0.005	500	l	33689.09	$4s^24p^4(^1D_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{3/2}$	RE72
2968.130	0.005	150		33681.41	$4s^24p^4(^3P_0)5s\ (0,1/2)_{1/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	RE72
2970.739	0.005	500		33651.83	$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{5/2}$	RE72
2987.404	0.005	250*		33464.11	$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{3/2}$	RE72
2987.404	0.005	250*		33464.11	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	$4s^24p^4(^3P)5d\ ^4D_{1/2}$	RE72
2999.504	0.010			33329.13	$4s^24p^4(^3P)4d\ ^4F_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	RE72
3005.834	0.005	30		33258.94	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{1/2}$	RE72
3023.607	0.005	350		33063.46	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	RE72
3024.839	0.005	20		33049.99	$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	RE72
3039.616	0.005	200		32889.32	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[0]^\circ_{1/2}$	RE72
3041.478	0.005	200		32869.19	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	RE72
3061.162	0.010			32657.85	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	RE72
3065.185	0.005	10		32614.98	$4s^24p^4(^1D)4d\ ^2P_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	RE72
3069.746	0.005	20		32566.52	$4s^24p^4(^3P)4d\ ^4F_{7/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	RE72
3070.704	0.005	250		32556.36	$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)5p\ 2[2]^\circ_{5/2}$	RE72
3078.444	0.005	80		32474.51	$4s^24p^4(^3P)4d\ ^2D_{5/2}$	$4s^24p^4(^1S_0)5p\ 0[1]^\circ_{3/2}$	RE72
3085.698	0.010			32398.17	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	RE72
3086.841	0.005	500		32386.17	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	RE72
3094.841	0.005	10	p	32302.46	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	R75
3098.488	0.005	100		32264.44	$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	RE72
3111.364	0.005	500		32130.93	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	RE72
3114.822	0.005	250	s	32095.26	$4s^24p^4(^1D_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[1]^\circ_{3/2}$	RE72
3118.925	0.005	120		32053.04	$4s^24p^4(^3P)4d\ ^2F_{5/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	RE72
3121.978	0.005	10		32021.69	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	RE72
3134.835	0.005	30		31890.37	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	RE72
3151.588	0.010			31720.85	$4s^24p^4(^3P)4d\ ^4F_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	RE72
3169.338	0.005	100		31543.21	$4s^24p^4(^1D_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[1]^\circ_{3/2}$	RE72
3198.697	0.005	25		31253.69	$4s^24p^4(^3P_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	R75
3199.996	0.010			31241.01	$4s^24p^4(^3P)4d\ ^4P_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	RE72
3221.656	0.010			31030.98	$4s^24p^4(^3P_0)5s\ (0,1/2)_{1/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	RE72
3222.595	0.005	200		31021.93	$4s^24p^4(^3P_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	RE72
3230.489	0.010			30946.13	$4s^24p^4(^3P_0)5s\ (0,1/2)_{1/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{1/2}$	RE72
3253.744	0.010			30724.96	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	RE72
3262.057	0.005	70		30646.66	$4s^24p^4(^1D_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{7/2}$	RE72
3286.409	0.005	500		30419.58	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{5/2}$	RE72
3304.323	0.010			30254.68	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	RE72
3306.881	0.010			30231.27	$4s^24p^4(^3P_1)5s\ (1,1/2)_{1/2}$	$4s^24p^4(^3P_1)5p\ 1[1]^\circ_{3/2}$	RE72
3323.344	0.010			30081.52	$4s^24p^4(^1D)4d\ ^2D_{5/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	RE72
3327.087	0.010			30047.68	$4s^24p^4(^1D)4d\ ^2D_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	RE72
3329.868	0.010			30022.59	$4s^24p^4(^3P)4d\ ^4P_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	RE72
3330.155	0.005	100		30020.00	$4s^24p^4(^3P_1)5s\ (1,1/2)_{1/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	RE72
3331.542	0.005	50		30007.50	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[2]^\circ_{3/2}$	RE72
3333.539	0.010			29989.53	$4s^24p^4(^3P)4d\ ^2F_{7/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	RE72
3344.661	0.010			29889.80	$4s^24p^4(^3P)4d\ ^4P_{1/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{3/2}$	RE72

Observed spectral lines of Rb III—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
3346.918	0.005	200		29869.65	$4s^24p^4(^1D)4d\ ^2F_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{7/2}$	RE72
3375.167	0.010			29619.65	$4s^24p^4(^1D_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{5/2}$	RE72
3421.092	0.010			29222.05	$4s^24p^4(^3P_0)5s\ (0,1/2)_{1/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{3/2}$	RE72
3439.262	0.005	250		29067.67	$4s^24p^4(^1D_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{5/2}$	RE72
3474.346	0.010			28774.16	$4s^24p^4(^1D)4d\ ^2F_{7/2}$	$4s^24p^4(^1D_2)5p\ 2[3]^\circ_{7/2}$	RE72
3492.677	0.005	100		28623.14	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[3]^\circ_{5/2}$	RE72
3511.088	0.010			28473.07	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	$4s^24p^4(^3P_1)5p\ 1[0]^\circ_{1/2}$	RE72
3577.339	0.010			27945.76	$4s^24p^4(^3P_2)5s\ (2,1/2)_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	RE72
4443.203	0.005	1	w	22499.97	$4s^24p^4(^1D_2)5s\ (2,1/2)_{5/2}$	$4s^24p^4(^3P_0)5p\ 0[1]^\circ_{3/2}$	R75
4617.663	0.005	1	h	21649.91	$4s^24p^4(^3P_1)5s\ (1,1/2)_{3/2}$	$4s^24p^4(^3P_2)5p\ 2[2]^\circ_{5/2}$	R75
4676.922	0.005	1		21375.60	$4s^24p^4(^3P_1)5s\ (1,1/2)_{1/2}$	$4s^24p^4(^3P_2)5p\ 2[1]^\circ_{1/2}$	R75

Energy levels of Rb III

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$4s^24p^5$	$^2P^\circ$	3/2	0.0	0.0	RE72	
	$^2P^\circ$	1/2	7374.5	0.70	RE72	
$4s4p^6$	^2S	1/2	130032.2	0.70	RE72	65% + 35% $4s^24p^4(^1D)4d\ ^2S$
$4s^24p^44d$	$(^3P)^4D$	7/2	154721.27	0.10	R75	95%
	$(^3P)^4D$	5/2	154877.27	0.10	RE72	93%
	$(^3P)^4D$	3/2	155564.24	0.10	RE72	92%
	$(^3P)^4D$	1/2	156393.46	0.10	R75	93%
	$(^3P)^4F$	9/2	162918.68	0.10	R75	94% + 6% $4s^24p^4(^1D)4d\ ^2G$
	$(^3P)^4F$	7/2	165541.48	0.10	RE72	84% + 8% $4s^24p^4(^3P)4d\ ^2F$
	$(^1D)^2P$	1/2	166088.20	0.10	RE72	43% + 37% $4s^24p^4(^3P)4d\ ^2P$
	$(^3P)^4F$	5/2	167819.74	0.10	RE72	95%
	$(^3P)^4P$	3/2	168085.32	0.10	RE72	37% + 18% $4s^24p^4(^3P)5s\ ^4P$
	$(^3P)^4P$	1/2	168449.92	0.10	RE72	75% + 12% $4s^24p^4(^3P)5s\ ^4P$
	$(^3P)^4F$	3/2	168750.71	0.10	RE72	84% + 7% $4s^24p^4(^3P)4d\ ^4P$
	$(^1D)^2D$	3/2	170423.82	0.10	RE72	36% + 26% $4s^24p^4(^3P)4d\ ^2D$
	$(^3P)^2F$	7/2	171159.30	0.10	RE72	64% + 16% $4s^24p^4(^1D)4d\ ^2G$
	$(^1D)^2P$	3/2	172041.74	0.10	RE72	18% + 28% $4s^24p^4(^3P)4d\ ^4P$
	$(^3P)^4P$	5/2	173415.56	0.10	RE72	57% + 16% $4s^24p^4(^3P)5s\ ^4P$
	$(^1D)^2D$	5/2	174575.13	0.10	RE72	33% + 23% $4s^24p^4(^3P)4d\ ^4P$
	$(^3P)^2F$	5/2	177062.82	0.10	RE72	72% + 11% $4s^24p^4(^1D)4d\ ^2D$
	$(^1D)^2G$	9/2	178239.98	0.10	R75	94% + 6% $4s^24p^4(^3P)4d\ ^4F$
	$(^1D)^2G$	7/2	178322.45	0.10	R75	78% + 16% $4s^24p^4(^3P)4d\ ^2F$
	$(^1D)^2F$	5/2	187392.77	0.10	R75	49% + 37% $4s^24p^4(^1D)5s\ ^2D$
	$(^1D)^2F$	7/2	188488.28	0.10	R75	87% + 11% $4s^24p^4(^3P)4d\ ^2F$
	$(^1S)^2D$	3/2	200876.2	1.0	RE72	53% + 25% $4s^24p^4(^1D)4d\ ^2D$
	$(^1S)^2D$	5/2	202644.0	1.0	RE72	52% + 29% $4s^24p^4(^1D)4d\ ^2D$
	$(^3P)^2P$	3/2	204223.5	1.0	RE72	44% + 32% $4s^24p^4(^1D)4d\ ^2P$
	$(^3P)^2D$	5/2	207113.9	1.0	RE72	49% + 37% $4s^24p^4(^1S)4d\ ^2D$
	$(^3P)^2P$	1/2	207263.3	1.0	RE72	49% + 45% $4s^24p^4(^1D)4d\ ^2P$
	$(^3P)^2D$	3/2	213628.4	1.0	RE72	48% + 32% $4s^24p^4(^1S)4d\ ^2D$
	$(^1D)^2S$	1/2	214660.2	1.0	RE72	55% + 28% $4s4p^6\ ^2S$

Energy levels of Rb III—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$4s^24p^45s$	$(^3P_2,1/2)$	5/2	167086.06	0.10	RE72	79%
	$(^3P_2,1/2)$	3/2	172525.74	0.10	RE72	52%
	$(^3P_0,1/2)$	1/2	175434.49	0.10	RE72	47%
	$(^3P_1,1/2)$	3/2	176458.02	0.10	RE72	66%
	$(^3P_1,1/2)$	1/2	179095.92	0.10	RE72	58%
	$(^1D_2,1/2)$	5/2	186615.76	0.10	R75	53%
	$(^1D_2,1/2)$	3/2	187167.80	0.10	R75	91%
	$(^1S_0,1/2)$	1/2	204096.3	1.0	RE72	74%
$4s^24p^45p$	$(^3P_2)[2]°$	5/2	198108.00	0.10	RE72	91%
	$(^3P_2)[1]°$	3/2	198339.83	0.10	RE72	46%
	$(^3P_2)[1]°$	1/2	200471.55	0.10	RE72	61%
	$(^3P_2)[3]°$	7/2	200904.85	0.10	RE72	96%
	$(^3P_2)[3]°$	5/2	201148.86	0.10	RE72	88%
	$(^3P_2)[2]°$	3/2	204656.66	0.10	RE72	42%
	$(^3P_1)[0]°$	1/2	204931.05	0.10	RE72	66%
	$(^3P_0)[1]°$	1/2	206380.68	0.10	RE72	68%
	$(^3P_1)[2]°$	3/2	206465.50	0.10	RE72	42%
	$(^3P_1)[2]°$	5/2	206877.52	0.10	RE72	95%
	$(^3P_0)[1]°$	3/2	209115.86	0.10	RE72	74%
	$(^3P_1)[1]°$	3/2	209327.25	0.10	RE72	68%
	$(^3P_1)[1]°$	1/2	209717.04	0.10	RE72	58%
	$(^1D_2)[3]°$	5/2	216235.44	0.10	R75	93%
	$(^1D_2)[3]°$	7/2	217262.38	0.10	R75	96%
	$(^1D_2)[1]°$	3/2	218711.04	0.10	R75	77%
	$(^1D_2)[2]°$	3/2	220856.92	0.10	R75	90%
	$(^1D_2)[2]°$	5/2	221044.60	0.10	R75	95%
	$(^1D_2)[1]°$	1/2	222301.41	0.10	R75	73%
	$(^1S_0)[1]°$	1/2	238894.2	1.0	R75	93%
	$(^1S_0)[1]°$	3/2	239587.7	1.0	RE72	94%
$4s^24p^46s$	$(^3P)^4P$	5/2	241129		HPV72	
	$(^3P)^2P$	3/2	242040		HPV72	
	$(^3P)^4P$	3/2	247709		HPV72	
	$(^3P)^4P$	1/2	247807		HPV72	
	$(^3P)^2P$	1/2	249087		HPV72	
	$(^1D)^2D$	5/2	258798		HPV72	
	$(^1D)^2D$	3/2	258906		HPV72	
$4s^24p^45d$	$(^3P)^4D$	7/2	241489		HPV72	
	$(^3P)^4D$	5/2	241669		HPV72	
	$(^3P)^4D$	3/2	242295		HPV72	
	$(^3P)^4D$	1/2	242791		HPV72	
	$(^3P)^2F$	7/2	243773		HPV72	
	$(^3P)^4P$	1/2	245050		HPV72	
	$(^3P)^4P$	3/2	246316		HPV72	
	$(^3P)^4P$	5/2	246471		HPV72	
	$(^3P)^2P$	1/2	248747		HPV72	
	$(^3P)^4F$	3/2	249217		HPV72	
	$(^3P)^4F$	5/2	249272		HPV72	
	$(^3P)^2D$	3/2	250122		HPV72	
	$(^3P)^2F$	5/2	250165		HPV72	
	$(^3P)^2D$	5/2	252829		HPV72	
	$(^3P)^2P$	3/2	253024		HPV72	

Energy levels of Rb III—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
	$(^1D)^2G$	7/2	259427		HPV72	
	$(^1D)^2G$	9/2	259431.37	0.10	R75	
	$(^1D)^2F$	5/2	261225		HPV72	
	$(^1D)^2F$	7/2	261764		HPV72	
	$(^1D)^2P$	3/2	261769		HPV72	
	$(^1D)^2D$	5/2	262146		HPV72	
	$(^1D)^2S$	1/2	262577		HPV72	
	$(^1D)^2D$	3/2	263351		HPV72	
	$(^1D)^2P$	1/2	263829		HPV72	

7.4. Rb IV

Se isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^4\ {}^3P_2$

Ionization energy $421\,000 \pm 2000\ \mathrm{cm}^{-1}$; 52.2 ± 0.2 eV

The initial measurements of the Rb IV spectrum were made by Hansen and Persson [HP74] in the 500–1000 Å range. Later Persson and Wahlström [PW85] investigated the spectrum of a sliding-spark discharge from 290 to 4500 Å and did a complete reanalysis of the energy levels, finding all levels of the $4s^2 4p^4$, $4s 4p^5$, $4s^2 4p^3 4d$, and $4s^2 4p^3 5s$ configurations, all but one level of the $4s^2 4p^3 5p$ and $4s^2 4p^3 6s$ configurations and all but two levels of the $4s^2 4p^3 5d$ configuration.

The wavelengths and energy levels cited here are from [PW85], as is the ionization energy. The $4s^2 4p^3(^2P)6s\ {}^3P_0$ level value was not listed in the [PW85] energy level table. The value given here was calculated from the transition to the $4s^2 4p^4\ {}^3P_1$. The authors did not report estimates of the uncertainty in the energy levels; however the wavelengths used to determine them were measured to about 1 part in 10^5. Transition probabilities for a few Rb IV transitions have been calculated by Gruzdev [G69], however, the accuracy of the values obtained is not certain so they have not been included here.

References for Rb IV

G69 P. F. Gruzdev, Opt. Spectrosc. **27**, 479 (1969).
HP74 J. Hansen and W. Persson, J. Opt. Soc. Am. **64**, 696 (1974).
PW85 W. Persson and C.-G. Wahlstrom, Phys. Scr. **31**, 487 (1985).

Observed spectral lines of Rb IV

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
291.390	0.005	18		343182.6	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2P)6s\ {}^3P^\circ_2$	PW85
293.834	0.005	1		340328.0	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2P)5d\ {}^1F^\circ_3$	PW85
294.009	0.005	2		340125.8	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2P)5d\ {}^1D^\circ_2$	PW85
294.150	0.005	4		339963.2	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2P)6s\ {}^3P^\circ_1$	PW85
294.435	0.005	25		339633.7	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2P)5d\ {}^3D^\circ_3$	PW85
295.668	0.005	18		338217.4	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2P)5d\ {}^3P^\circ_2$	PW85
295.776	0.005	6		338093.8	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2P)5d\ {}^3P^\circ_1$	PW85
296.805	0.005	20	a	336922.0	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)6s\ {}^3P^\circ_2$	PW85
298.413	0.005	16		335106.0	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2P)5d\ {}^3F^\circ_3$	PW85
299.522	0.005	25		333865.6	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)5d\ {}^1D^\circ_2$	PW85
299.666	0.005	4		333704.5	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)6s\ {}^3P^\circ_1$	PW85
299.935	0.005	10		333406.0	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)6s\ {}^3P^\circ_0$	PW85
300.285	0.005	16		333016.9	$4s^2 4p^4\ {}^3P_0$	$4s^2 4p^3(^2P)6s\ {}^3P^\circ_1$	PW85
301.246	0.005	12		331955.2	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)5d\ {}^3P^\circ_2$	PW85
301.354	0.005	25		331835.6	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)5d\ {}^3P^\circ_1$	PW85
301.960	0.005	20		331169.3	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)5d\ {}^3P^\circ_0$	PW85
302.949	0.005	2		330088.9	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)5d\ {}^3D^\circ_1$	PW85
303.581	0.005	25		329400.9	$4s^2 4p^4\ {}^3P_0$	$4s^2 4p^3(^2P)5d\ {}^3D^\circ_1$	PW85
303.903	0.005	25		329052.0	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)5d\ {}^3D^\circ_2$	PW85
304.761	0.005	1		328126.3	$4s^2 4p^4\ {}^3P_1$	$4s^2 4p^3(^2P)5d\ {}^3F^\circ_2$	PW85
305.945	0.005	18		326856.3	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2D)5d\ {}^1F^\circ_3$	PW85
306.283	0.005	18		326495.0	$4s^2 4p^4\ {}^1D_2$	$4s^2 4p^3(^2P)6s\ {}^1P^\circ_1$	PW85
306.790	0.005	30		325955.7	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2D)6s\ {}^3D^\circ_3$	PW85
306.914	0.005	18		325824.7	$4s^2 4p^4\ {}^1D_2$	$4s^2 4p^3(^2P)6s\ {}^3P^\circ_2$	PW85
308.348	0.005	30		324308.9	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2D)5d\ {}^3S^\circ_1$	PW85
308.700	0.005	16		323939.0	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2D)6s\ {}^3D^\circ_2$	PW85
308.919	0.005	1		323709.5	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2D)6s\ {}^3D^\circ_1$	PW85
309.503	0.005	18		323098.8	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2D)5d\ {}^3P^\circ_1$	PW85
309.626	0.005	35		322969.9	$4s^2 4p^4\ {}^1D_2$	$4s^2 4p^3(^2P)5d\ {}^1F^\circ_3$	PW85
309.738	0.005	40		322853.4	$4s^2 4p^4\ {}^3P_2$	$4s^2 4p^3(^2D)5d\ {}^3P^\circ_2$	PW85
309.820	0.005	25		322768.0	$4s^2 4p^4\ {}^1D_2$	$4s^2 4p^3(^2P)5d\ {}^1D^\circ_2$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
309.975	0.005	16		322607.2	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)6s\ ^3P^o_1$	PW85
310.236	0.005	20		322334.9	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5d\ ^1P^o_1$	PW85
310.293	0.005	25		322276.6	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5d\ ^3D^o_3$	PW85
311.067	0.005	40		321474.7	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3D^o_3$	PW85
311.664	0.005	1		320858.7	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5d\ ^3P^o_2$	PW85
311.738	0.005	16		320781.7	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3D^o_2$	PW85
311.781	0.005	14		320738.5	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5d\ ^3P^o_1$	PW85
312.024	0.005	18		320488.1	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)6s\ ^1D^o_2$	PW85
313.150	0.005	16		319336.0	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3D^o_1$	PW85
313.744	0.005	18		318731.2	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5d\ ^1D^o_2$	PW85
314.061	0.005	16		318410.0	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3F^o_3$	PW85
314.419	0.005	1		318046.6	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3S^o_1$	PW85
314.513	0.005	18		317952.0	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5d\ ^3D^o_2$	PW85
314.543	0.005	30		317921.6	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3G^o_3$	PW85
314.717	0.005	18		317746.1	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5d\ ^3F^o_3$	PW85
314.784	0.005	25		317678.2	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)6s\ ^3D^o_2$	PW85
315.012	0.005	20		317448.3	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)6s\ ^3D^o_1$	PW85
315.098	0.005	8		317361.8	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)5d\ ^3S^o_1$	PW85
315.390	0.005	25		317068.3	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3P^o_0$	PW85
315.428	0.005	18		317029.7	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5d\ ^3F^o_2$	PW85
315.488	0.005	20		316969.3	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3F^o_2$	PW85
315.618	0.005	30		316838.9	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3P^o_1$	PW85
315.695	0.005	25		316761.4	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)6s\ ^3D^o_1$	PW85
316.305	0.005	12		316151.0	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)5d\ ^3P^o_1$	PW85
316.381	0.005	10		316074.3	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5d\ ^1P^o_1$	PW85
317.071	0.005	25		315387.0	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)5d\ ^1P^o_1$	PW85
317.945	0.005	35		314520.2	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3D^o_2$	PW85
319.411	0.005	4		313076.0	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3D^o_1$	PW85
320.115	0.005	25		312387.8	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)5d\ ^3D^o_1$	PW85
321.844	0.005	20		310709.7	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3F^o_2$	PW85
323.104	0.005	40		309498.0	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^1F^o_3$	PW85
323.215	0.005	35		309391.3	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)6s\ ^1D^o_2$	PW85
325.062	0.005	35		307634.1	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^1D^o_2$	PW85
325.785	0.005	20		306950.5	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3S^o_1$	PW85
326.023	0.005	30	p	306727.0	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)6s\ ^3S^o_1$	PW85
326.052	0.005	30	p	306700.0	$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)5d\ ^1P^o_1$	PW85
326.178	0.005	20		306581.4	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)6s\ ^3D^o_2$	PW85
327.074	0.005	18		305741.3	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3P^o_1$	PW85
327.336	0.005	10		305496.3	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3P^o_2$	PW85
327.387	0.005	20		305449.3	$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)6s\ ^1P^o_1$	PW85
327.894	0.005	25		304976.8	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^1P^o_1$	PW85
328.380	0.005	60		304525.3	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)5d\ ^3D^o_3$	PW85
328.499	0.005	12		304415.1	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)5d\ ^3D^o_1$	PW85
328.821	0.005	1		304117.3	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3D^o_3$	PW85
329.161	0.005	35		303802.6	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)5d\ ^3D^o_2$	PW85
329.574	0.005	10		303422.3	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3D^o_2$	PW85
331.150	0.005	20		301978.2	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3D^o_1$	PW85
331.609	0.005	6		301560.4	$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)6s\ ^3P^o_1$	PW85
332.167	0.005	12		301053.7	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3F^o_3$	PW85
332.707	0.005	14		300564.7	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3G^o_3$	PW85
332.815	0.005	25		300467.1	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)6s\ ^3S^o_1$	PW85
333.578	0.005	20		299779.9	$4s^24p^4\ ^3P_0$	$4s^24p^3(^4S)6s\ ^3S^o_1$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
333.675	0.005	1		299692.5	$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)5d\ ^3P^\circ_1$	PW85
333.764	0.005	1		299612.9	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3F^\circ_2$	PW85
334.759	0.005	4		298722.3	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	PW85
334.781	0.005	2		298703.0	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_1$	PW85
335.293	0.005	1		298247.1	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)6s\ ^5S^\circ_2$	PW85
335.397	0.005	30		298153.9	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)5d\ ^3D^\circ_1$	PW85
335.634	0.005	1		297944.0	$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)5d\ ^3D^\circ_1$	PW85
336.087	0.005	40		297541.9	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)5d\ ^3D^\circ_2$	PW85
336.174	0.005	35		297465.3	$4s^24p^4\ ^3P_0$	$4s^24p^3(^4S)5d\ ^3D^\circ_1$	PW85
341.925	0.005	4		292462.0	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	PW85
345.535	0.005	2		289370.0	$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)6s\ ^3S^\circ_1$	PW85
348.227	0.005	18		287168.7	$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)5d\ ^3D^\circ_3$	PW85
349.107	0.005	6		286445.0	$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)5d\ ^3D^\circ_2$	PW85
350.500	0.005	4		285306.4	$4s^24p^4\ ^1S_0$	$4s^24p^3(^2D)6s\ ^3D^\circ_1$	PW85
351.254	0.005	1		284694.6	$4s^24p^4\ ^1S_0$	$4s^24p^3(^2D)5d\ ^3P^\circ_1$	PW85
410.348	0.005	25		243695.9	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)5s\ ^3P^\circ_2$	PW85
414.410	0.005	16		241307.2	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)5s\ ^3P^\circ_1$	PW85
415.177	0.005	2		240861.0	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^1D^\circ_2$	PW85
416.542	0.005	14		240071.9	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)5s\ ^1P^\circ_1$	PW85
421.156	0.005	8		237441.5	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)5s\ ^3P^\circ_2$	PW85
423.629	0.005	8		236055.7	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	PW85
425.445	0.005	18		235048.2	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)5s\ ^3P^\circ_1$	PW85
426.258	0.005	25		234599.6	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^1D^\circ_2$	PW85
426.333	0.005	20		234558.2	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)5s\ ^3P^\circ_0$	PW85
428.952	0.005	25		233126.6	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3D^\circ_2$	PW85
433.929	0.005	35		230452.6	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3P^\circ_1$	PW85
435.170	0.005	30		229795.3	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	PW85
436.377	0.005	60		229159.5	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3D^\circ_3$	PW85
436.478	0.005	25		229106.6	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	PW85
436.595	0.005	30		229045.2	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5s\ ^1D^\circ_2$	PW85
438.531	0.005	50*		228033.8	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^1P^\circ_1$	PW85
438.531	0.005	50*		228033.8	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^1F^\circ_3$	PW85
439.847	0.005	30		227351.8	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)4d\ ^1P^\circ_1$	PW85
440.093	0.005	50		227225.0	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3P^\circ_2$	PW85
440.744	0.005	30		226889.0	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3P^\circ_0$	PW85
440.788	0.005	35		226866.4	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3D^\circ_2$	PW85
441.519	0.005	40		226491.0	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^1F^\circ_3$	PW85
441.809	0.005	25		226342.2	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5s\ ^3P^\circ_2$	PW85
444.100	0.005	40		225174.4	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5s\ ^3D^\circ_3$	PW85
444.534	0.005	35		224954.5	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3S^\circ_1$	PW85
446.048	0.005	30		224191.2	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3P^\circ_1$	PW85
446.342	0.005	40	a	224043.7	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5s\ ^3D^\circ_2$	PW85
446.529	0.005	20		223949.6	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)5s\ ^3P^\circ_1$	PW85
446.852	0.005	30		223788.0	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)5s\ ^3D^\circ_1$	PW85
447.420	0.005	40*		223503.7	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)4d\ ^3P^\circ_1$	PW85
447.420	0.005	40*		223503.7	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^1D^\circ_2$	PW85
448.862	0.005	18		222785.4	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5s\ ^1D^\circ_2$	PW85
452.562	0.005	35		220964.1	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3P^\circ_2$	PW85
453.045	0.005	35		220728.4	$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)4d\ ^1P^\circ_1$	PW85
457.254	0.005	35*		218696.6	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	PW85
457.254	0.005	35*		218696.6	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3S^\circ_1$	PW85
458.698	0.005	1		218008.6	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)4d\ ^3S^\circ_1$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
459.172	0.005	20		217783.4	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5s\ ^3D^o_2$	PW85
459.715	0.005	20		217526.1	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)5s\ ^3D^o_1$	PW85
460.587	0.005	25		217114.2	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3P^o_2$	PW85
460.953	0.005	30		216942.1	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^1P^o_1$	PW85
461.170	0.005	25		216839.6	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2D)5s\ ^3D^o_1$	PW85
463.457	0.005	25		215769.9	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3D^o_2$	PW85
466.197	0.005	40		214501.5	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3D^o_3$	PW85
469.275	0.005	25		213094.9	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3P^o_1$	PW85
470.158	0.005	30		212694.3	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3F^o_3$	PW85
472.020	0.005	30		211855.6	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3P^o_1$	PW85
472.138	0.005	14		211802.5	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3D^o_3$	PW85
472.393	0.005	35		211688.3	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5s\ ^1D^o_2$	PW85
474.262	0.005	25		210853.7	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3P^o_2$	PW85
476.321	0.005	40		209942.3	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)5s\ ^3S^o_1$	PW85
476.493	0.005	16		209866.7	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3P^o_2$	PW85
480.936	0.005	25		207927.9	$4s^24p^4\ ^1S_0$	$4s^24p^3(^2P)5s\ ^1P^o_1$	PW85
481.195	0.005	25		207816.0	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5s\ ^3D^o_3$	PW85
481.703	0.005	20		207596.8	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3S^o_1$	PW85
482.626	0.005	30		207200.0	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3F^o_2$	PW85
482.773	0.005	16		207136.9	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^3D^o_1$	PW85
483.822	0.005	2		206687.4	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5s\ ^3D^o_2$	PW85
484.421	0.005	6		206432.2	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)5s\ ^3D^o_1$	PW85
486.391	0.005	25		205595.7	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3P^o_1$	PW85
487.155	0.005	12		205273.4	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2P)4d\ ^1D^o_2$	PW85
488.024	0.005	20		204908.0	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2P)4d\ ^3P^o_1$	PW85
489.092	0.005	35		204460.4	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3D^o_2$	PW85
489.596	0.005	20		204250.0	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3P^o_0$	PW85
490.961	0.005	25		203682.2	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)5s\ ^3S^o_1$	PW85
491.929	0.005	30		203281.3	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)5s\ ^5S^o_2$	PW85
492.623	0.005	25		202995.0	$4s^24p^4\ ^3P_0$	$4s^24p^3(^4S)5s\ ^3S^o_1$	PW85
497.821	0.005	30	b	200875.3	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^3D^o_1$	PW85
499.523	0.005	30		200191.0	$4s^24p^4\ ^3P_0$	$4s^24p^3(^2P)4d\ ^3D^o_1$	PW85
502.483	0.01	2		199011.8	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2P)4d\ ^1D^o_2$	PW85
507.244	0.01	16		197143.9	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3D^o_3$	PW85
507.553	0.01	4		197023.6	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)5s\ ^5S^o_2$	PW85
509.936	0.01	18		196103.2	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3F^o_2$	PW85
511.241	0.01	18		195602.7	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3G^o_3$	PW85
511.936	0.01	18		195337.0	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3F^o_3$	PW85
514.146	0.01	4		194497.2	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3P^o_1$	PW85
517.164	0.01	1		193362.1	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3D^o_2$	PW85
526.926	0.01	8		189780.0	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^3D^o_1$	PW85
529.149	0.01	20		188982.6	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3F^o_3$	PW85
532.154	0.01	20		187915.4	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2P)4d\ ^1D^o_2$	PW85
533.323	0.01	20		187503.7	$4s^24p^4\ ^3P_2$	$4s^24p^3(^2D)4d\ ^3F^o_2$	PW85
544.718	0.01	18		183581.1	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^3D^o_1$	PW85
546.521	0.01	20		182975.6	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^3D^o_3$	PW85
548.575	0.01	6		182290.5	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^1S^o_0$	PW85
551.022	0.01	20		181481.0	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^3D^o_2$	PW85
551.741	0.01	20		181244.6	$4s^24p^4\ ^3P_1$	$4s^24p^3(^2D)4d\ ^3F^o_2$	PW85
561.030	0.01	20		178243.6	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3G^o_3$	PW85
563.948	0.01	18		177321.3	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)4d\ ^3D^o_1$	PW85
566.143	0.01	18		176633.8	$4s^24p^4\ ^3P_0$	$4s^24p^3(^4S)4d\ ^3D^o_1$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
570.708	0.01	20		175220.9	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	PW85
582.669	0.01	18		171624.1	$4s^24p^4\ ^1D_2$	$4s^24p^3(^2D)4d\ ^3F^\circ_3$	PW85
585.006	0.01	20		170938.4	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^5D^\circ_3$	PW85
585.176	0.01	20		170888.7	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^5D^\circ_2$	PW85
585.289	0.01	18		170855.8	$4s^24p^4\ ^3P_2$	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	PW85
595.184	0.01	20		168015.4	$4s^24p^4\ ^3P_2$	$4s4p^5\ ^1P^\circ_1$	PW85
603.793	0.01	1		165619.8	$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)4d\ ^3D^\circ_3$	PW85
607.546	0.01	16		164596.6	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	PW85
607.841	0.01	18		164516.8	$4s^24p^4\ ^3P_1$	$4s^24p^3(^4S)4d\ ^5D^\circ_0$	PW85
609.286	0.01	4		164126.6	$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	PW85
610.099	0.01	16		163907.9	$4s^24p^4\ ^3P_0$	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	PW85
651.331	0.01	6		153531.7	$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)4d\ ^5D^\circ_2$	PW85
651.475	0.01	16		153497.9	$4s^24p^4\ ^1D_2$	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	PW85
663.759	0.01	50		150657.1	$4s^24p^4\ ^1D_2$	$4s4p^5\ ^1P^\circ_1$	PW85
716.239	0.01	50		139618.3	$4s^24p^4\ ^3P_2$	$4s4p^5\ ^3P^\circ_1$	PW85
733.408	0.01	40		136349.8	$4s^24p^4\ ^3P_1$	$4s4p^5\ ^3P^\circ_0$	PW85
740.853	0.01	100		134978.6	$4s^24p^4\ ^3P_2$	$4s4p^5\ ^3P^\circ_2$	PW85
744.075	0.01	6		134395.0	$4s4p^5\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	PW85
749.861	0.01	40		133358.0	$4s^24p^4\ ^3P_1$	$4s4p^5\ ^3P^\circ_1$	PW85
750.707	0.01	12		133207.8	$4s4p^5\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	PW85
753.746	0.01	40		132670.7	$4s^24p^4\ ^3P_0$	$4s4p^5\ ^3P^\circ_1$	PW85
771.535	0.01	20		129611.8	$4s^24p^4\ ^1S_0$	$4s4p^5\ ^1P^\circ_1$	PW85
776.888	0.01	50		128718.7	$4s^24p^4\ ^3P_1$	$4s4p^5\ ^3P^\circ_2$	PW85
777.797	0.01	4		128568.3	$4s4p^5\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_2$	PW85
783.858	0.01	14		127574.2	$4s4p^5\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	PW85
788.863	0.01	1		126764.7	$4s4p^5\ ^3P^\circ_0$	$4s^24p^3(^2D)5p\ ^3P_1$	PW85
817.924	0.01	18		122260.8	$4s^24p^4\ ^1D_2$	$4s4p^5\ ^3P^\circ_1$	PW85
850.185	0.01	30		117621.5	$4s^24p^4\ ^1D_2$	$4s4p^5\ ^3P^\circ_2$	PW85
939.619	0.01	4		106426.1	$4s4p^5\ ^1P^\circ_1$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
988.004	0.01	20		101214.2	$4s^24p^4\ ^1S_0$	$4s4p^5\ ^3P^\circ_1$	PW85
1038.514	0.01	1		96291.5	$4s^24p^3(^4S)5p\ ^5P_1$	$4s^24p^3(^2P)5d\ ^3P^\circ_2$	PW85
1052.802	0.01	10		94984.7	$4s4p^5\ ^1P^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85
1108.464	0.01	4		90214.9	$4s4p^5\ ^1P^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
1210.327	0.01	10		82622.3	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
1220.860	0.01	16		81909.5	$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
1226.719	0.01	12		81518.3	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85
1233.446	0.01	12		81073.7	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	PW85
1234.509	0.01	12		81003.9	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
1239.443	0.01	2		80681.4	$4s^24p^3(^2D)4d\ ^3F^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	PW85
1255.469	0.01	10		79651.5	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
1256.610	0.01	12		79579.2	$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_2$	PW85
1259.169	0.01	10		79417.5	$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85
1262.409	0.01	14		79213.7	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
1265.085	0.01	2		79046.1	$4s4p^5\ ^1P^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
1284.267	0.01	14		77865.4	$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
1285.580	0.01	2		77785.9	$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
1294.347	0.01	14		77259.1	$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
1297.913	0.01	4		77046.7	$4s^24p^3(^4S)4d\ ^5D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85
1299.299	0.01	10		76964.6	$4s^24p^3(^4S)4d\ ^5D^\circ_3$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
1302.948	0.01	14		76749.0	$4s^24p^3(^4S)4d\ ^3D^o_2$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
1305.500	0.01	4	b	76599.0	$4s^24p^3(^2D)4d\ ^3F^o_2$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
1308.793	0.01	8		76406.3	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3S^o_1$	PW85
1310.865	0.01	2		76285.5	$4s^24p^3(^4S)4d\ ^5D^o_0$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
1311.392	0.01	14	b	76254.9	$4s^24p^3(^2D)4d\ ^3F^o_3$	$4s^24p^3(^2D)5p\ ^3F_4$	PW85
1312.233	0.01	6		76206.0	$4s^24p^3(^4S)4d\ ^5D^o_1$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
1324.597	0.01	25	b	75494.6	$4s^24p^3(^2D)4d\ ^3F^o_2$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85
1331.171	0.01	1		75121.8	$4s^24p^3(^2D)4d\ ^3F^o_3$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
1333.682	0.01	16		74980.4	$4s^24p^3(^2D)4d\ ^3F^o_2$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
1334.195	0.01	4		74951.6	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3P^o_2$	PW85
1339.613	0.01	16		74648.4	$4s^24p^3(^4S)4d\ ^3D^o_1$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
1342.768	0.01	12		74473.0	$4s^24p^3(^2P)4d\ ^1D^o_2$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
1343.182	0.01	14		74450.1	$4s^24p^3(^2D)4d\ ^1S^o_0$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85
1343.815	0.01	4		74415.0	$4s^24p^3(^2P)4d\ ^3P^o_0$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
1344.905	0.01	20		74354.7	$4s^24p^3(^2D)4d\ ^3F^o_4$	$4s^24p^3(^2D)5p\ ^3F_4$	PW85
1347.630	0.01	8		74204.3	$4s^24p^3(^2P)4d\ ^3D^o_2$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
1350.099	0.01	12		74068.6	$4s^24p^3(^2P)4d\ ^3D^o_1$	$4s^24p^3(^2P)5p\ ^3P_0$	PW85
1351.307	0.01	18		74002.5	$4s^24p^3(^2D)4d\ ^3F^o_4$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
1359.200	0.01	16*		73572.7	$4s^24p^3(^2D)4d\ ^3F^o_3$	$4s^24p^3(^2D)5p\ ^3D_2$	PW85
1359.200	0.01	16*		73572.7	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3D^o_3$	PW85
1359.836	0.01	8		73538.3	$4s^24p^3(^2P)4d\ ^3D^o_1$	$4s^24p^3(^2P)5p\ ^3P_1$	PW85
1360.489	0.01	18		73503.0	$4s^24p^3(^2D)4d\ ^3F^o_3$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
1363.572	0.01	20		73336.8	$4s^24p^3(^2D)4d\ ^3F^o_2$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
1365.727	0.01	14		73221.1	$4s^24p^3(^2D)4d\ ^3F^o_4$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
1372.156	0.01	2		72878.0	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3D^o_2$	PW85
1376.671	0.01	16		72639.0	$4s^24p^3(^4S)4d\ ^5D^o_2$	$4s^24p^3(^4S)5p\ ^5P_3$	PW85
1377.596	0.01	24		72590.2	$4s^24p^3(^4S)4d\ ^5D^o_3$	$4s^24p^3(^4S)5p\ ^5P_3$	PW85
1383.468	0.01	30		72282.1	$4s^24p^3(^4S)4d\ ^5D^o_4$	$4s^24p^3(^4S)5p\ ^5P_3$	PW85
1391.615	0.01	20		71859.0	$4s^24p^3(^2D)4d\ ^3F^o_3$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
1392.912	0.01	6		71792.1	$4s^24p^3(^2P)4d\ ^3F^o_3$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
1396.592	0.01	20		71602.9	$4s^24p^3(^2D)4d\ ^3F^o_4$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
1396.999	0.01	16		71582.0	$4s^24p^3(^2D)4d\ ^3D^o_3$	$4s^24p^3(^2P)5p\ ^3P_2$	PW85
1399.295	0.01	12		71464.6	$4s^24p^3(^2P)4d\ ^3F^o_2$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
1400.578	0.01	20		71399.1	$4s^24p^3(^4S)4d\ ^5D^o_1$	$4s^24p^3(^4S)5p\ ^5P_2$	PW85
1401.221	0.01	24		71366.3	$4s^24p^3(^4S)4d\ ^5D^o_2$	$4s^24p^3(^4S)5p\ ^5P_2$	PW85
1402.191	0.01	24		71317.0	$4s^24p^3(^4S)4d\ ^5D^o_3$	$4s^24p^3(^4S)5p\ ^5P_2$	PW85
1405.510	0.01	20		71148.5	$4s^24p^3(^4S)4d\ ^5D^o_0$	$4s^24p^3(^4S)5p\ ^5P_1$	PW85
1407.089	0.01	24		71068.7	$4s^24p^3(^4S)4d\ ^5D^o_1$	$4s^24p^3(^4S)5p\ ^5P_1$	PW85
1407.738	0.01	24		71035.9	$4s^24p^3(^4S)4d\ ^5D^o_2$	$4s^24p^3(^4S)5p\ ^5P_1$	PW85
1407.932	0.01	6		71026.2	$4s^24p^3(^2P)4d\ ^3F^o_2$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
1413.922	0.01	16		70725.3	$4s^24p^3(^2D)4d\ ^3F^o_2$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
1427.968	0.01	1		70029.6	$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2P)5d\ ^3P^o_2$	PW85
1428.871	0.01	12		69985.3	$4s^24p^3(^2D)4d\ ^3D^o_3$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
1429.474	0.01	16		69955.8	$4s^24p^3(^2P)4d\ ^3D^o_2$	$4s^24p^3(^2P)5p\ ^3P_1$	PW85
1435.120	0.01	14		69680.6	$4s^24p^3(^2D)4d\ ^1S^o_0$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
1438.590	0.01	10		69512.5	$4s^24p^3(^2P)4d\ ^3P^o_0$	$4s^24p^3(^2P)5p\ ^3S_1$	PW85
1441.923	0.01	4		69351.8	$4s^24p^3(^2P)4d\ ^3P^o_1$	$4s^24p^3(^2P)5p\ ^3P_0$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
1443.353	0.01	2		69283.1	$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
1445.747	0.01	14		69168.4	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
1446.318	0.01	14		69141.1	$4s^24p^3(^2P)4d\ ^3F^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
1449.917	0.01	14		68969.5	$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_2$	PW85
1457.642	0.01	20		68604.0	$4s^24p^3(^2D)4d\ ^3G^\circ_4$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
1459.810	0.01	4		68502.1	$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
1462.505	0.01	1		68375.8	$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
1464.984	0.01	20		68260.2	$4s^24p^3(^2D)4d\ ^3G^\circ_5$	$4s^24p^3(^2D)5p\ ^3F_4$	PW85
1466.980	0.01	14		68167.3	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3S_1$	PW85
1473.518	0.01	24		67864.8	$4s^24p^3(^2P)4d\ ^3F^\circ_4$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
1474.428	0.01	20		67822.9	$4s^24p^3(^2D)4d\ ^3G^\circ_4$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
1474.697	0.01	14		67810.5	$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
1485.124	0.01	8		67334.4	$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
1487.733	0.01	12		67216.4	$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	PW85
1490.208	0.01	2		67104.7	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_1$	PW85
1491.392	0.01	20		67051.4	$4s^24p^3(^2P)4d\ ^3F^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
1493.591	0.01	20		66952.7	$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_2$	PW85
1495.151	0.01	6		66882.9	$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
1497.853	0.01	4		66762.2	$4s^24p^3(^2D)5p\ ^3D_1$	$4s^24p^3(^2D)5d\ ^1D^\circ_2$	PW85
1505.535	0.01	18		66421.6	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85
1508.618	0.01	12		66285.8	$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
1510.483	0.01	20		66204.0	$4s^24p^3(^2D)4d\ ^3G^\circ_4$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
1519.949	0.01	10		65791.7	$4s^24p^3(^2D)4d\ ^1G^\circ_4$	$4s^24p^3(^2D)5p\ ^3F_4$	PW85
1521.868	0.01	8		65708.7	$4s^24p^3(^2D)5p\ ^3D_1$	$4s^24p^3(^2D)6s\ ^3D^\circ_2$	PW85
1524.842	0.01	20		65580.6	$4s^24p^3(^4S)4d\ ^3D^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
1527.200	0.01	1		65479.3	$4s^24p^3(^2D)5p\ ^3D_1$	$4s^24p^3(^2D)6s\ ^3D^\circ_1$	PW85
1528.135	0.01	20		65439.2	$4s^24p^3(^2D)4d\ ^1G^\circ_4$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
1532.699	0.01	12		65244.4	$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
1532.824	0.01	18		65239.1	$4s^24p^3(^2D)4d\ ^3G^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
1535.762	0.01	1		65114.3	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)6s\ ^3D^\circ_3$	PW85
1540.185	0.01	24		64927.3	$4s^24p^3(^4S)4d\ ^3D^\circ_3$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85
1545.089	0.01	12		64721.2	$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
1546.599	0.01	30		64658.0	$4s^24p^3(^2D)4d\ ^1G^\circ_4$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
1548.207	0.01	30	b	64590.9	$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_0$	PW85
1551.032	0.01	1		64473.2	$4s^24p^3(^4S)5p\ ^5P_2$	$4s^24p^3(^4S)6s\ ^3S^\circ_1$	PW85
1553.636	0.01	18		64365.2	$4s^24p^3(^2P)4d\ ^3F^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_1$	PW85
1554.706	0.01	1		64320.8	$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85
1568.636	0.01	4		63749.6	$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)6s\ ^1D^\circ_2$	PW85
1573.248	0.01	8	b	63562.8	$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	PW85
1575.308	0.01	16		63479.7	$4s^24p^3(^4S)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
1575.524	0.01	8		63470.9	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)6s\ ^3D^\circ_3$	PW85
1583.271	0.01	2		63160.4	$4s^24p^3(^2P)5p\ ^3S_1$	$4s^24p^3(^2P)6s\ ^3P^\circ_2$	PW85
1584.843	0.01	10		63097.8	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)6s\ ^3D^\circ_2$	PW85
1586.327	0.01	1		63038.7	$4s^24p^3(^2D)4d\ ^1G^\circ_4$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
1589.617	0.01	18		62908.2	$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3S_1$	PW85
1593.582	0.01	16	b	62751.7	$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^1F^\circ_3$	PW85
1596.289	0.01	4		62645.3	$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)6s\ ^1D^\circ_2$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
1596.636	0.01	10		62631.7	$4s^24p^3(^2P)4d\ ^3P^o_2$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
1597.826	0.01	16*		62585.0	$4s^24p^3(^2P)4d\ ^3P^o_1$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
1597.826	0.01	16*		62585.0	$4s^24p^3(^4S)5p\ ^5P_1$	$4s^24p^3(^4S)6s\ ^5S^o_2$	PW85
1605.864	0.01	6		62271.8	$4s^24p^3(^4S)5p\ ^5P_2$	$4s^24p^3(^4S)5d\ ^3D^o_3$	PW85
1606.227	0.01	8		62257.7	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3P^o_1$	PW85
1606.310	0.01	16		62254.5	$4s^24p^3(^4S)5p\ ^5P_2$	$4s^24p^3(^4S)6s\ ^5S^o_2$	PW85
1609.288	0.01	1		62139.3	$4s^24p^3(^2P)5p\ ^3D_1$	$4s^24p^3(^2P)6s\ ^3P^o_1$	PW85
1609.975	0.01	8		62112.8	$4s^24p^3(^2P)4d\ ^3D^o_1$	$4s^24p^3(^2D)5p\ ^3P_0$	PW85
1613.101	0.01	12		61992.4	$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^1D^o_2$	PW85
1613.657	0.01	12		61971.1	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^1F^o_3$	PW85
1616.448	0.01	14		61864.1	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)6s\ ^1D^o_2$	PW85
1616.766	0.01	2		61851.9	$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)6s\ ^3D^o_3$	PW85
1627.236	0.01	6		61453.9	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)6s\ ^3D^o_2$	PW85
1630.071	0.01	10		61347.0	$4s^24p^3(^2P)5p\ ^3D_3$	$4s^24p^3(^2P)6s\ ^3P^o_2$	PW85
1635.211	0.01	12		61154.2	$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^2D)6s\ ^3D^o_1$	PW85
1635.902	0.01	1		61128.4	$4s^24p^3(^2D)4d\ ^3S^o_1$	$4s^24p^3(^2P)5p\ ^3P_2$	PW85
1636.500	0.01	14		61106.0	$4s^24p^3(^2D)5p\ ^3D_1$	$4s^24p^3(^2D)5d\ ^3D^o_1$	PW85
1637.443	0.01	6		61070.8	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)6s\ ^3D^o_3$	PW85
1639.847	0.01	18		60981.3	$4s^24p^3(^4S)5p\ ^5P_3$	$4s^24p^3(^4S)6s\ ^5S^o_2$	PW85
1641.770	0.01	10		60909.9	$4s^24p^3(^2D)5s\ ^3D^o_3$	$4s^24p^3(^2P)5p\ ^3P_2$	PW85
1646.935	0.01	14		60718.8	$4s^24p^3(^2D)5p\ ^3F_4$	$4s^24p^3(^2D)6s\ ^3D^o_3$	PW85
1647.198	0.01	4		60709.2	$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)6s\ ^3D^o_1$	PW85
1651.466	0.01	2		60552.3	$4s^24p^3(^4S)4d\ ^3D^o_3$	$4s^24p^3(^4S)5p\ ^5P_3$	PW85
1654.456	0.01	6		60442.8	$4s^24p^3(^4S)4d\ ^3D^o_2$	$4s^24p^3(^4S)5p\ ^5P_1$	PW85
1656.486	0.01	8		60368.8	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3P^o_2$	PW85
1657.551	0.01	2		60330.0	$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^3P^o_0$	PW85
1660.602	0.01	6		60219.1	$4s^24p^3(^2P)5p\ ^3D_2$	$4s^24p^3(^2P)6s\ ^3P^o_1$	PW85
1663.708	0.01	1		60106.7	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^1D^o_2$	PW85
1667.510	0.01	16	p	59969.6	$4s^24p^3(^2D)4d\ ^3S^o_1$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
1668.345	0.01	16*		59939.7	$4s^24p^3(^2D)4d\ ^3D^o_3$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
1668.345	0.01	16*		59939.7	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3D^o_2$	PW85
1671.268	0.01	12		59834.8	$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)6s\ ^3D^o_2$	PW85
1675.985	0.01	12		59666.4	$4s^24p^3(^4S)5p\ ^3P_1$	$4s^24p^3(^4S)6s\ ^3S^o_1$	PW85
1677.507	0.01	2		59612.3	$4s^24p^3(^2P)4d\ ^1D^o_2$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
1679.076	0.01	10		59556.6	$4s^24p^3(^2D)4d\ ^3F^o_2$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
1682.610	0.01	1		59431.5	$4s^24p^3(^4S)5s\ ^3S^o_1$	$4s^24p^3(^2D)5p\ ^3P_1$	PW85
1684.459	0.01	2		59366.3	$4s^24p^3(^2P)5p\ ^1D_2$	$4s^24p^3(^2P)6s\ ^1P^o_1$	PW85
1685.349	0.01	12		59334.9	$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^1P^o_1$	PW85
1685.960	0.01	14		59313.4	$4s^24p^3(^2D)5s\ ^3D^o_3$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
1686.094	0.01	2		59308.7	$4s^24p^3(^4S)5s\ ^3S^o_1$	$4s^24p^3(^2D)5p\ ^3P_0$	PW85
1686.936	0.01	16		59279.1	$4s^24p^3(^4S)4d\ ^3D^o_3$	$4s^24p^3(^4S)5p\ ^5P_2$	PW85
1695.204	0.01	12		58990.0	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3D^o_3$	PW85
1697.208	0.01	12*		58920.3	$4s^24p^3(^2D)4d\ ^3F^o_3$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85
1697.208	0.01	12*		58920.3	$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^2D)5d\ ^3D^o_3$	PW85
1698.827	0.01	12		58864.2	$4s^24p^3(^2P)4d\ ^3P^o_0$	$4s^24p^3(^2D)5p\ ^3P_1$	PW85
1699.060	0.01	10	b	58856.1	$4s^24p^3(^2D)4d\ ^3P^o_2$	$4s^24p^3(^2P)5p\ ^3P_2$	PW85
1699.774	0.01	6		58831.4	$4s^24p^3(^2P)4d\ ^1D^o_2$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
1699.949	0.01	14		58825.3	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)6s\ ^3S^o_1$	PW85
1702.411	0.01	14		58740.2	$4s^24p^3(^2D)5p\ ^3D_1$	$4s^24p^3(^2D)5d\ ^3F^o_2$	PW85
1704.928	0.01	10		58653.5	$4s^24p^3(^2P)4d\ ^3D^o_2$	$4s^24p^3(^2D)5p\ ^3P_1$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
1707.760	0.01	4		58556.3	$4s^24p^3(^4S)5p\ ^3P_0$	$4s^24p^3(^4S)6s\ ^3S^\circ_1$	PW85
1708.702	0.01	1		58524.0	$4s^24p^3(^2P)5p\ ^3D_1$	$4s^24p^3(^2P)5d\ ^3D^\circ_1$	PW85
1709.545	0.01	2		58495.1	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3D^\circ_1$	PW85
1717.436	0.01	10		58226.3	$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^2D)5d\ ^3D^\circ_2$	PW85
1721.946	0.01	10		58073.8	$4s^24p^3(^2P)5p\ ^3S_1$	$4s^24p^3(^2P)5d\ ^3P^\circ_1$	PW85
1724.301	0.01	12		57994.5	$4s^24p^3(^2P)4d\ ^1F^\circ_3$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
1730.145	0.01	14		57798.6	$4s^24p^3(^2P)5p\ ^3D_3$	$4s^24p^3(^2P)5d\ ^3D^\circ_3$	PW85
1730.661	0.01	1		57781.4	$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^3D^\circ_2$	PW85
1731.019	0.01	12*		57769.4	$4s^24p^3(^2P)5p\ ^3P_2$	$4s^24p^3(^2P)6s\ ^1P^\circ_1$	PW85
1731.019	0.01	12*		57769.4	$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2D)6s\ ^3D^\circ_3$	PW85
1732.300	0.01	18		57726.7	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85
1737.012	0.01	14		57570.1	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3F^\circ_3$	PW85
1738.568	0.01	16		57518.6	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	PW85
1739.099	0.01	10		57501.1	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^1G^\circ_4$	PW85
1741.602	0.01	1		57418.4	$4s^24p^3(^2D)5s\ ^3D^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_0$	PW85
1741.917	0.01	2		57408.0	$4s^24p^3(^2P)5p\ ^3S_1$	$4s^24p^3(^2P)5d\ ^3P^\circ_0$	PW85
1742.282	0.01	14		57396.0	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_0$	PW85
1743.035	0.01	14		57371.2	$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^3D^\circ_3$	PW85
1743.590	0.01	14		57352.9	$4s^24p^3(^4S)5p\ ^3P_1$	$4s^24p^3(^4S)5d\ ^3D^\circ_1$	PW85
1747.874	0.01	2		57212.4	$4s^24p^3(^2P)4d\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
1751.334	0.01	4		57099.3	$4s^24p^3(^2P)5p\ ^3P_2$	$4s^24p^3(^2P)6s\ ^3P^\circ_2$	PW85
1751.871	0.01	18		57081.8	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3G^\circ_3$	PW85
1756.751	0.01	16		56923.3	$4s^24p^3(^2P)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3P_2$	PW85
1760.607	0.01	16		56798.6	$4s^24p^3(^4S)5p\ ^5P_1$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	PW85
1761.218	0.01	16		56778.9	$4s^24p^3(^4S)5p\ ^5P_1$	$4s^24p^3(^4S)5d\ ^5D^\circ_1$	PW85
1761.806	0.01	16		56759.9	$4s^24p^3(^4S)5p\ ^5P_1$	$4s^24p^3(^4S)5d\ ^5D^\circ_0$	PW85
1762.378	0.01	18		56741.5	$4s^24p^3(^4S)5p\ ^3P_1$	$4s^24p^3(^4S)5d\ ^3D^\circ_2$	PW85
1765.786	0.01	12		56632.0	$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	PW85
1765.979	0.01	12	p	56625.8	$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^3F^\circ_4$	PW85
1766.038	0.01	20		56623.9	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)5d\ ^3D^\circ_3$	PW85
1766.581	0.01	2		56606.5	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)6s\ ^5S^\circ_2$	PW85
1767.104	0.01	8		56589.8	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^3D^\circ_3$	PW85
1767.956	0.01	16		56562.5	$4s^24p^3(^2P)5p\ ^3D_1$	$4s^24p^3(^2P)5d\ ^3F^\circ_2$	PW85
1769.936	0.01	20		56499.2	$4s^24p^3(^4S)5p\ ^5P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_3$	PW85
1770.943	0.01	18		56467.1	$4s^24p^3(^4S)5p\ ^5P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	PW85
1771.531	0.01	16		56448.4	$4s^24p^3(^4S)5p\ ^5P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_1$	PW85
1775.215	0.01	1		56331.2	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_2$	PW85
1778.008	0.01	14		56242.7	$4s^24p^3(^4S)5p\ ^3P_0$	$4s^24p^3(^4S)5d\ ^3D^\circ_1$	PW85
1778.156	0.01	8		56238.0	$4s^24p^3(^2D)5p\ ^3F_4$	$4s^24p^3(^2D)5d\ ^3D^\circ_3$	PW85
1781.606	0.01	14		56129.1	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^2D)5d\ ^3F^\circ_2$	PW85
1781.815	0.01	10		56122.5	$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3S^\circ_1$	PW85
1782.692	0.01	18		56094.9	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3G^\circ_4$	PW85
1788.887	0.01	12		55900.7	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)5d\ ^3D^\circ_2$	PW85
1789.486	0.01	16		55882.0	$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^1G^\circ_4$	PW85
1789.601	0.01	8		55878.4	$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
1790.301	0.01	18		55856.5	$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^2D)5d\ ^3F^\circ_3$	PW85
1790.670	0.01	16		55845.0	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^3F^\circ_4$	PW85
1790.784	0.01	12		55841.5	$4s^24p^3(^2P)5p\ ^1D_2$	$4s^24p^3(^2P)5d\ ^1F^\circ_3$	PW85
1797.301	0.01	4		55639.0	$4s^24p^3(^2P)5p\ ^1D_2$	$4s^24p^3(^2P)5d\ ^1D^\circ_2$	PW85
1797.567	0.01	6		55630.8	$4s^24p^3(^2D)4d\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_2$	PW85
1803.737	0.01	6		55440.5	$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
1803.826	0.01	14		55437.7	$4s^24p^3(^2D)5p\ ^3F_3$	$4s^24p^3(^2D)5d\ ^3G^\circ_3$	PW85
1804.254	0.01	20		55424.6	$4s^24p^3(^2D)5p\ ^3F_4$	$4s^24p^3(^2D)5d\ ^3G^\circ_5$	PW85
1806.096	0.01	18		55368.0	$4s^24p^3(^2D)5p\ ^3D_2$	$4s^24p^3(^2D)5d\ ^3G^\circ_3$	PW85
1806.348	0.01	16		55360.3	$4s^24p^3(^2P)5p\ ^3D_2$	$4s^24p^3(^2P)5d\ ^3F^\circ_3$	PW85
1806.714	0.01	25		55349.1	$4s^24p^3(^4S)5p\ ^5P_3$	$4s^24p^3(^4S)5d\ ^5D^\circ_4$	PW85
1806.897	0.01	8		55343.5	$4s^24p^3(^2P)4d\ ^1F^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
1808.621	0.01	2		55290.8	$4s^24p^3(^2P)5p\ ^3S_1$	$4s^24p^3(^2P)5d\ ^3D^\circ_2$	PW85
1810.736	0.01	18		55226.2	$4s^24p^3(^4S)5p\ ^5P_3$	$4s^24p^3(^4S)5d\ ^5D^\circ_3$	PW85
1811.558	0.01	10		55201.1	$4s^24p^3(^2P)5p\ ^1P_1$	$4s^24p^3(^2P)5d\ ^1D^\circ_2$	PW85
1811.781	0.01	10		55194.3	$4s^24p^3(^4S)5p\ ^5P_3$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	PW85
1813.488	0.01	6		55142.4	$4s^24p^3(^2P)5p\ ^3P_0$	$4s^24p^3(^2P)5d\ ^3D^\circ_1$	PW85
1814.856	0.01	16		55100.8	$4s^24p^3(^2D)5p\ ^3D_3$	$4s^24p^3(^2D)5d\ ^1G^\circ_4$	PW85
1815.968	0.01	1		55067.0	$4s^24p^3(^2D)4d\ ^3S^\circ_1$	$4s^24p^3(^2P)5p\ ^3S_1$	PW85
1829.223	0.01	14		54668.0	$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3P^\circ_2$	PW85
1830.285	0.01	14		54636.3	$4s^24p^3(^2P)5p\ ^3P_1$	$4s^24p^3(^2P)5d\ ^3D^\circ_2$	PW85
1831.172	0.01	4		54609.8	$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
1832.430	0.01	12		54572.4	$4s^24p^3(^2D)5s\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
1832.670	0.01	4		54565.2	$4s^24p^3(^2D)5p\ ^3P_1$	$4s^24p^3(^2D)6s\ ^3D^\circ_2$	PW85
1835.667	0.01	16		54476.1	$4s^24p^3(^2D)5p\ ^1F_3$	$4s^24p^3(^2D)5d\ ^3G^\circ_4$	PW85
1843.503	0.01	1		54244.6	$4s^24p^3(^2P)5p\ ^3P_2$	$4s^24p^3(^2P)5d\ ^1F^\circ_3$	PW85
1852.872	0.01	12		53970.3	$4s^24p^3(^2D)5p\ ^1P_1$	$4s^24p^3(^2D)5d\ ^3F^\circ_2$	PW85
1853.378	0.01	1		53955.6	$4s^24p^3(^2D)5p\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3P^\circ_0$	PW85
1861.319	0.01	8		53725.4	$4s^24p^3(^2D)5p\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3P^\circ_1$	PW85
1867.379	0.01	14		53551.0	$4s^24p^3(^2P)5p\ ^3P_2$	$4s^24p^3(^2P)5d\ ^3D^\circ_3$	PW85
1873.238	0.01	8		53383.5	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
1874.665	0.01	2		53342.9	$4s^24p^3(^2D)5p\ ^3F_4$	$4s^24p^3(^2D)5d\ ^3G^\circ_4$	PW85
1876.581	0.01	12		53288.4	$4s^24p^3(^2D)5p\ ^3P_2$	$4s^24p^3(^2D)5d\ ^3D^\circ_3$	PW85
1883.834	0.01	1		53083.2	$4s^24p^3(^2D)5p\ ^3P_0$	$4s^24p^3(^2D)5d\ ^1P^\circ_1$	PW85
1898.424	0.01	14		52675.3	$4s^24p^3(^2P)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
1907.858	0.01	16		52414.8	$4s^24p^3(^2D)5p\ ^1D_2$	$4s^24p^3(^2D)5d\ ^1F^\circ_3$	PW85
1911.759	0.01	8		52307.9	$4s^24p^3(^2D)5p\ ^1D_2$	$4s^24p^3(^2D)6s\ ^1D^\circ_2$	PW85
1918.214	0.01	8		52131.8	$4s^24p^3(^2P)5p\ ^3P_2$	$4s^24p^3(^2P)5d\ ^3P^\circ_2$	PW85
1929.236	0.01	12		51834.0	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_2$	PW85
1935.677	0.01	8		51661.5	$4s^24p^3(^4S)5p\ ^3P_1$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	PW85
1936.858	0.01	2		51630.0	$4s^24p^5(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	PW85
1945.273	0.01	12	b	51406.7	$4s^24p^3(^2D)5p\ ^3P_1$	$4s^24p^3(^2D)5d\ ^3D^\circ_2$	PW85
1955.248	0.01	4		51144.4	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85
1957.286	0.01	14		51091.2	$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
1966.519	0.01	1		50851.3	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_3$	PW85
1967.763	0.01	1		50819.1	$4s^24p^3(^4S)5p\ ^3P_2$	$4s^24p^3(^4S)5d\ ^5D^\circ_2$	PW85
1970.999	0.01	10		50735.7	$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_4$	PW85
1972.412	0.01	2*		50699.3	$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
1972.412	0.01	2*		50699.3	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3D_2$	PW85
1976.852	0.01	4		50585.5	$4s^24p^3(^2P)4d\ ^3D^\circ_3$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
1978.207	0.01	12		40550.8	$4s^24p^3(^2D)5p\ ^1D_2$	$4s^24p^3(^2D)5d\ ^1D^\circ_2$	PW85
1984.772	0.01	18		40383.6	$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
1992.597	0.01	8		40185.8	$4s^24p^3(^2D)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
1995.195	0.01	18		40120.4	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
1996.615	0.01	1		40084.8	$4s^24p^3(^2D)5p\ ^3P_0$	$4s^24p^3(^2D)5d\ ^3D^\circ_1$	PW85
2015.377	0.02	8		49602.5	$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
2029.076	0.02	16		49267.7	$4s^24p^3(^2D)5s\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
2040.758	0.02	1		48985.7	$4s^24p^3(^2P)4d\ ^3P^\circ_1$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
2049.400	0.02	1		48779.1	$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_1$	PW85
2052.398	0.02	2		48707.9	$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
2064.097	0.02	8		48431.9	$4s^24p^3(^2D)4d\ ^3D^\circ_1$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
2083.382	0.02	14		47983.6	$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
2102.447	0.02	10		47548.6	$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_1$	PW85
2103.485	0.02	4		47525.1	$4s^24p^3(^2D)4d\ ^3P^\circ_0$	$4s^24p^3(^2P)5p\ ^3P_1$	PW85
2104.183	0.02	8		47509.3	$4s^24p^3(^2P)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
2117.292	0.02	10		47215.2	$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
2131.246	0.02	8		46906.1	$4s^24p^3(^2D)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_0$	PW85
2132.752	0.02	10		46873.0	$4s^24p^3(^2D)4d\ ^3P^\circ_0$	$4s^24p^3(^2P)5p\ ^3S_1$	PW85
2157.306	0.02	4*		46339.5	$4s^24p^3(^2D)4d\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
2157.306	0.02	4*		46339.5	$4s^24p^3(^2D)5p\ ^1D_2$	$4s^24p^3(^2D)5d\ ^3D^\circ_2$	PW85
2193.027	0.02	16	b	45584.8	$4s^24p^3(^2D)5s\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_1$	PW85
2198.925	0.02	16		45462.6	$4s^24p^3(^2D)5s\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^3P_0$	PW85
2199.775	0.02	8	p	45445.0	$4s^24p^3(^2D)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
2202.200	0.02	14		45395.0	$4s^24p^3(^2D)5s\ ^1D^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
2203.380	0.02	2		45370.6	$4s^24p^3(^2P)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
2205.382	0.02	1		45329.5	$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	PW85
2240.408	0.02	1		44620.9	$4s^24p^3(^4S)5s\ ^5S^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85
2264.709	0.02	18		44142.1	$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	PW85
2268.712	0.02	8		44064.3	$4s^24p^3(^2D)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
2283.458	0.02	1		43779.7	$4s^24p^3(^4S)5s\ ^5S^\circ_2$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
2291.495	0.02	1		43626.2	$4s^24p^3(^2D)4d\ ^1D^\circ_2$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
2291.940	0.02	4		43617.7	$4s^24p^3(^2P)5s\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
2296.893	0.02	30		43523.7	$4s^24p^3(^2D)4d\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^3D_1$	PW85
2315.187	0.02	1		43179.8	$4s^24p^3(^2P)5s\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
2324.175	0.02	18		43012.8	$4s^24p^3(^2D)5s\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3P_2$	PW85
2358.729	0.02	20		42382.8	$4s^24p^3(^2P)5s\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^3P_2$	PW85
2371.882	0.02	18		42147.8	$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_1$	PW85
2397.682	0.02	20		41694.3	$4s^24p^3(^2P)4d\ ^1F^\circ_3$	$4s^24p^3(^2D)5p\ ^3P_2$	PW85
2419.781	0.02	10		41313.5	$4s^24p^3(^2D)4d\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
2425.031	0.02	4		41224.1	$4s^24p^3(^2P)5s\ ^3P^\circ_2$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
2436.328	0.02	4		41032.9	$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_0$	PW85
2440.622	0.02	14		40960.8	$4s^24p^3(^2D)4d\ ^3P^\circ_2$	$4s^24p^3(^2D)5p\ ^3P_2$	PW85
2447.796	0.02	16		40840.7	$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
2483.946	0.02	50		40246.4	$4s^24p^3(^4S)5s\ ^5S^\circ_2$	$4s^24p^3(^4S)5p\ ^5P_3$	PW85
2495.269	0.02	50		40063.7	$4s^24p^3(^2D)5s\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3F_4$	PW85
2495.517	0.02	36		40059.8	$4s^24p^3(^2D)5s\ ^3D^\circ_2$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
2504.080	0.02	12		39922.79	$4s^24p^3(^2P)4d\ ^3D^\circ_1$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
2505.505	0.02	8		39900.10	$4s^24p^3(^2P)5s\ ^3P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_0$	PW85
2508.154	0.02	16		39857.96	$4s^24p^3(^2P)5s\ ^3P^\circ_0$	$4s^24p^3(^2P)5p\ ^3P_1$	PW85
2514.855	0.02	12		39751.76	$4s^24p^3(^2P)5s\ ^1P^\circ_1$	$4s^24p^3(^2P)5p\ ^3P_2$	PW85
2517.396	0.02	2		39711.63	$4s^24p^3(^2D)5s\ ^3D^\circ_3$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
2549.538	0.02	20		39211.03	$4s^24p^3(^2D)5s\ ^3D^\circ_1$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85

Observed spectral lines of Rb IV—Continued

λ (Å)	Unc. (Å)	Int.	Line Code	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
2549.991	0.02	2		39204.06	$4s^24p^3(^2P)5s\ ^3P^o_0$	$4s^24p^3(^2P)5p\ ^3S_1$	PW85
2557.171	0.02	20		39094.00	$4s^24p^3(^2D)4d\ ^1F^o_3$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
2565.098	0.02	50		38973.19	$4s^24p^3(^4S)5s\ ^5S^o_2$	$4s^24p^3(^4S)5p\ ^5P_2$	PW85
2567.904	0.02	20		38930.60	$4s^24p^3(^2D)5s\ ^3D^o_3$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
2578.803	0.02	30		38766.08	$4s^24p^3(^2D)5s\ ^3D^o_1$	$4s^24p^3(^2D)5p\ ^3D_2$	PW85
2580.206	0.02	30		38745.00	$4s^24p^3(^2P)4d\ ^1F^o_3$	$4s^24p^3(^2D)5p\ ^3F_4$	PW85
2582.166	0.02	6		38715.59	$4s^24p^3(^2P)5s\ ^3P^o_1$	$4s^24p^3(^2P)5p\ ^3S_1$	PW85
2587.039	0.02	40		38642.66	$4s^24p^3(^4S)5s\ ^5S^o_2$	$4s^24p^3(^4S)5p\ ^5P_1$	PW85
2590.374	0.02	16		38592.92	$4s^24p^3(^2P)5s\ ^1P^o_1$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
2595.931	0.02	12		38510.31	$4s^24p^3(^2D)5s\ ^3D^o_2$	$4s^24p^3(^2D)5p\ ^3D_2$	PW85
2600.625	0.02	30		38440.81	$4s^24p^3(^2D)5s\ ^3D^o_2$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
2600.750	0.02	30		38438.97	$4s^24p^3(^2P)5s\ ^3P^o_1$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
2603.867	0.02	14		38392.95	$4s^24p^3(^2P)4d\ ^1F^o_3$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
2615.012	0.02	20		38229.33	$4s^24p^3(^4S)5s\ ^3S^o_1$	$4s^24p^3(^4S)5p\ ^3P_0$	PW85
2620.121	0.02	20		38154.80	$4s^24p^3(^2P)5s\ ^1P^o_1$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85
2621.461	0.02	25		38135.28	$4s^24p^3(^2P)5s\ ^3P^o_2$	$4s^24p^3(^2P)5p\ ^3D_3$	PW85
2633.546	0.02	20		37960.31	$4s^24p^3(^4S)5s\ ^3S^o_1$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85
2638.954	0.02	4		37882.51	$4s^24p^3(^2D)5p\ ^3F_2$	$4s^24p^3(^4S)5d\ ^5D^o_2$	PW85
2654.601	0.02	16		37659.23	$4s^24p^3(^2D)4d\ ^3P^o_2$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
2679.341	0.02	20		37311.52	$4s^24p^3(^2D)5s\ ^3D^o_3$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
2693.224	0.02	25		37119.21	$4s^24p^3(^4S)5s\ ^3S^o_1$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
2698.079	0.02	16		37052.42	$4s^24p^3(^2D)5s\ ^3D^o_1$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
2701.378	0.02	14		37007.16	$4s^24p^3(^2P)5s\ ^3P^o_0$	$4s^24p^3(^2P)5p\ ^3D_1$	PW85
2716.825	0.02	25		36796.76	$4s^24p^3(^2D)5s\ ^3D^o_2$	$4s^24p^3(^2D)5p\ ^3F_2$	PW85
2737.537	0.02	16		36518.39	$4s^24p^3(^2P)5s\ ^3P^o_1$	$4s^24p^3(^2P)5p\ ^3D_1$	PW85
2750.916	0.02	10		36340.78	$4s^24p^3(^2P)4d\ ^3D^o_2$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
2752.336	0.02	20		36322.04	$4s^24p^3(^2P)5s\ ^3P^o_2$	$4s^24p^3(^2P)5p\ ^3S_1$	PW85
2771.045	0.02	12		36076.81	$4s^24p^3(^2P)4d\ ^3D^o_3$	$4s^24p^3(^2D)5p\ ^3F_4$	PW85
2773.335	0.02	16		36047.03	$4s^24p^3(^2P)4d\ ^3P^o_1$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85
2773.456	0.02	2		36045.46	$4s^24p^3(^2P)5s\ ^3P^o_2$	$4s^24p^3(^2P)5p\ ^3D_2$	PW85
2777.512	0.02	20		35992.83	$4s^24p^3(^2P)4d\ ^1F^o_3$	$4s^24p^3(^2D)5p\ ^3F_3$	PW85
2789.451	0.02	25		35838.78	$4s^24p^3(^2D)5s\ ^1D^o_2$	$4s^24p^3(^2D)5p\ ^3D_3$	PW85
2839.583	0.02	12		35206.09	$4s^24p^3(^2P)4d\ ^3P^o_1$	$4s^24p^3(^4S)5p\ ^3P_1$	PW85
2851.594	0.02	30		35057.80	$4s^24p^3(^2D)5s\ ^1D^o_2$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
2860.924	0.02	14		34943.48	$4s^24p^3(^2P)4d\ ^3D^o_3$	$4s^24p^3(^2D)5p\ ^1F_3$	PW85
2902.637	0.02	14		34441.34	$4s^24p^3(^2D)5s\ ^3D^o_1$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
2924.346	0.02	16		34185.67	$4s^24p^3(^2D)5s\ ^3D^o_2$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
2944.358	0.02	20		33953.33	$4s^24p^3(^2D)5s\ ^1D^o_2$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85
2977.034	0.02	8		33580.68	$4s^24p^3(^2D)4d\ ^1D^o_2$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
2993.057	0.02	20		33400.91	$4s^24p^3(^2D)4d\ ^3D^o_3$	$4s^24p^3(^4S)5p\ ^3P_2$	PW85
3349.201	0.02	10		29849.29	$4s^24p^3(^2D)4d\ ^3P^o_0$	$4s^24p^3(^2D)5p\ ^1P_1$	PW85
3441.555	0.02	18		29048.31	$4s^24p^3(^2D)4d\ ^1F^o_3$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
3556.512	0.02	10		28109.40	$4s^24p^3(^2P)5s\ ^1P^o_1$	$4s^24p^3(^2D)5p\ ^1D_2$	PW85
3599.042	0.02	6		27777.24	$4s^24p^3(^2D)4d\ ^3P^o_1$	$4s^24p^3(^2D)5p\ ^3D_1$	PW85
3876.191	0.02	2		25791.21	$4s^24p^3(^2P)4d\ ^1P^o_1$	$4s^24p^3(^2P)5p\ ^1P_1$	PW85
3943.369	0.02	10		25351.85	$4s^24p^3(^2P)4d\ ^1P^o_1$	$4s^24p^3(^2P)5p\ ^1D_2$	PW85

Energy levels of Rb IV

Configuration	Term	J	Energy (cm^{-1})	Reference	Leading percentages
$4s^24p^4$	^3P	2	0.00	PW85	95%
	^3P	1	6260.38	PW85	100%
	^3P	0	6947.78	PW85	94%
$4s^24p^4$	^1D	2	17357.66	PW85	95%
$4s^24p^4$	^1S	0	38403.57	PW85	94%
$4s4p^5$	$^3P°$	2	134978.51	PW85	82% + 12% $4s^24p^3(^2D)4d\ ^3P°$
	$^3P°$	1	139617.93	PW85	81% + 13% $4s^24p^3(^2D)4d\ ^3P°$
	$^3P°$	0	142608.90	PW85	82% + 13% $4s^24p^3(^2D)4d\ ^3P°$
$4s4p^5$	$^1P°$	1	168014.86	PW85	52% + 39% $4s^24p^3(^2D)4d\ ^1P°$
$4s^24p^3(^4S)4d$	$^5D°$	0	170775.49	PW85	97%
	$^5D°$	1	170855.30	PW85	97%
	$^5D°$	2	170888.35	PW85	97%
	$^5D°$	3	170937.51	PW85	95%
	$^5D°$	4	171245.51	PW85	96%
$4s^24p^3(^4S)4d$	$^3D°$	2	181480.86	PW85	36% + 32% $4s^24p^3(^2D)4d\ ^3D°$
	$^3D°$	3	182975.25	PW85	41% + 41% $4s^24p^3(^2D)4d\ ^3D°$
	$^3D°$	1	183581.55	PW85	50% + 44% $4s^24p^3(^2D)4d\ ^3D°$
$4s^24p^3(^2D)4d$	$^3F°$	2	187504.47	PW85	63% + 14% $4s^24p^3(^2P)4d\ ^3F°$
	$^3F°$	3	188981.86	PW85	71% + 14% $4s^24p^3(^2P)4d\ ^3F°$
	$^3F°$	4	190882.18	PW85	75% + 13% $4s^24p^3(^2P)4d\ ^3F°$
$4s^24p^3(^2D)4d$	$^1S°$	0	188549.18	PW85	96%
$4s^24p^3(^2D)4d$	$^3G°$	3	195601.77	PW85	88% + 7% $4s^24p^3(^2D)4d\ ^3F°$
	$^3G°$	4	196280.83	PW85	80% + 15% $4s^24p^3(^2D)4d\ ^3F°$
	$^3G°$	5	196976.80	PW85	100%
$4s^24p^3(^2D)4d$	$^1G°$	4	199445.66	PW85	88% + 6% $4s^24p^3(^2D)4d\ ^3G°$
$4s^24p^3(^4S)5s$	$^5S°$	2	203281.30	PW85	96%
$4s^24p^3(^2P)4d$	$^1D°$	2	205272.61	PW85	59% + 24% $4s^24p^3(^2D)4d\ ^1D°$
$4s^24p^3(^2P)4d$	$^3D°$	1	207138.29	PW85	45% + 38% $4s^24p^3(^2D)4d\ ^3D°$
	$^3D°$	2	210720.32	PW85	45% + 29% $4s^24p^3(^2D)4d\ ^3D°$
	$^3D°$	3	229160.15	PW85	46% + 20% $4s^24p^3(^2D)5s\ ^3D°$
$4s^24p^3(^4S)5s$	$^3S°$	1	209941.94	PW85	78% + 10% $4s^24p^3(^2P)4d\ ^3P°$
$4s^24p^3(^2P)4d$	$^3P°$	0	210509.56	PW85	65% + 29% $4s^24p^3(^2D)4d\ ^3P°$
	$^3P°$	1	211855.08	PW85	59% + 18% $4s^24p^3(^2D)4d\ ^3P°$
	$^3P°$	2	217113.99	PW85	78% + 11% $4s^24p^3(^2D)4d\ ^3P°$
$4s^24p^3(^2P)4d$	$^3F°$	3	212694.33	PW85	76% + 12% $4s^24p^3(^2D)4d\ ^3F°$
	$^3F°$	2	213459.92	PW85	70% + 21% $4s^24p^3(^2D)4d\ ^3F°$
	$^3F°$	4	213970.69	PW85	76% + 9% $4s^24p^3(^2D)4d\ ^1G°$
$4s^24p^3(^2D)4d$	$^3D°$	3	214501.21	PW85	37% + 31% $4s^24p^3(^2P)4d\ ^3D°$
	$^3D°$	2	233127.53	PW85	11% + 38% $4s^24p^3(^2P)4d\ ^3D°$
	$^3D°$	1	236054.67	PW85	7% + 27% $4s^24p^3(^2P)4d\ ^3D°$
$4s^24p^3(^2D)5s$	$^3D°$	1	223788.39	PW85	54% + 27% $4s^24p^3(^2D)4d\ ^3S°$
	$^3D°$	2	224044.06	PW85	64% + 13% $4s^24p^3(^2P)5s\ ^3P°$
	$^3D°$	3	225173.28	PW85	64% + 16% $4s^24p^3(^2P)4d\ ^1F°$

Energy levels of Rb IV—Continued

Configuration	Term	J	Energy (cm^{-1})	Reference	Leading percentages
$4s^24p^3(^2D)4d$	$^3S°$	1	224955.04	PW85	60% + 29% $4s^24p^3(^2D)5s\ ^3D°$
$4s^24p^3(^2P)4d$	$^1F°$	3	226491.94	PW85	34% + 33% $4s^24p^3(^2D)4d\ ^1F°$
$4s^24p^3(^2D)4d$	$^3P°$	2	227225.67	PW85	46% + 24% $4s^24p^3(^2D)5s\ ^3D°$
	$^3P°$	1	230452.48	PW85	40% + 16% $4s^24p^3(^2P)4d\ ^3P°$
	$^3P°$	0	233150.14	PW85	38% + 27% $4s^24p^3(^2P)5s\ ^3P°$
$4s^24p^3(^2D)5s$	$^1D°$	2	229045.99	PW85	76% + 11% $4s^24p^3(^2D)4d\ ^3P°$
$4s^24p^3(^2D)4d$	$^1P°$	1	234300.99	PW85	24% + 18% $4s^24p^3(^2P)4d\ ^3D°$
$4s^24p^3(^2P)5s$	$^3P°$	0	240818.04	PW85	72% + 19% $4s^24p^3(^2D)4d\ ^3P°$
	$^3P°$	1	241306.71	PW85	72% + 11% $4s^24p^3(^2D)4d\ ^3P°$
	$^3P°$	2	243700.30	PW85	78% + 6% $4s^24p^3(^2D)4d\ ^3P°$
$4s^24p^3(^2D)4d$	$^1D°$	2	240860.26	PW85	60% + 23% $4s^24p^3(^2P)4d\ ^1D°$
$4s^24p^3(^4S)5p$	^5P	1	241923.90	PW85	94%
	^5P	2	242254.43	PW85	89%
	^5P	3	243527.61	PW85	96%
$4s^24p^3(^2D)4d$	$^1F°$	3	245392.60	PW85	49% + 36% $4s^24p^3(^2P)4d\ ^1F°$
$4s^24p^3(^2P)5s$	$^1P°$	1	246331.50	PW85	72% + 8% $4s^24p^3(^2D)4d\ ^1P°$
$4s^24p^3(^4S)5p$	^3P	1	247061.13	PW85	80%
	^3P	2	247902.26	PW85	83%
	^3P	0	248171.26	PW85	91%
$4s^24p^3(^2D)5p$	^3D	1	258229.73	PW85	42%
	^3D	2	262554.40	PW85	47%
	^3D	3	264884.85	PW85	36%
$4s^24p^3(^2P)4d$	$^1P°$	1	259133.95	PW85	81% + 6% $4s^24p^3(^2P)5d\ ^1P°$
$4s^24p^3(^2D)5p$	^3F	2	260840.86	PW85	45%
	^3F	3	262484.75	PW85	66%
	^3F	4	265236.95	PW85	100%
$4s^24p^3(^2D)5p$	^1P	1	262999.34	PW85	47%
$4s^24p^3(^2D)5p$	^1F	3	264103.72	PW85	52%
$4s^24p^3(^2D)5p$	^3P	2	268186.21	PW85	74%
	^3P	0	269251.03	PW85	89%
	^3P	1	269373.62	PW85	75%
$4s^24p^3(^2D)5p$	^1D	2	274440.96	PW85	79%
$4s^24p^3(^2P)5p$	^3D	1	277825.07	PW85	76%
	^3D	2	279745.67	PW85	79%
	^3D	3	281835.47	PW85	84%
$4s^24p^3(^2P)5p$	^3S	1	280022.22	PW85	77%
$4s^24p^3(^2P)5p$	^3P	1	280676.13	PW85	62%
	^3P	0	281206.91	PW85	94%
	^3P	2	286083.25	PW85	67%

Energy levels of Rb IV—Continued

Configuration	Term	J	Energy (cm^{-1})	Reference	Leading percentages
$4s^24p^3(^2P)5p$	^1D	2	284486.52	PW85	78%
$4s^24p^3(^2P)5p$	^1P	1	284924.43	PW85	40%
$4s^24p^3(^4S)5d$	$^5D^\circ$	0	298683.83	PW85	96%
	$^5D^\circ$	1	298702.79	PW85	96%
	$^5D^\circ$	2	298722.31	PW85	95%
	$^5D^\circ$	3	298753.65	PW85	94%
	$^5D^\circ$	4	298876.70	PW85	96%
$4s^24p^3(^4S)5d$	$^3D^\circ$	2	303802.80	PW85	81%
	$^3D^\circ$	1	304414.02	PW85	87%
	$^3D^\circ$	3	304526.21	PW85	85%
$4s^24p^3(^4S)6s$	$^5S^\circ$	2	304508.87	PW85	96%
$4s^24p^3(^4S)6s$	$^3S^\circ$	1	306727.57	PW85	96%
$4s^24p^3(^2D)5d$	$^3F^\circ$	2	316969.98	PW85	79% + 6% $4s^24p^3(^2P)5d\ ^3F^\circ$
	$^3F^\circ$	3	318410.96	PW85	78% + 6% $4s^24p^3(^2D)5d\ ^3G^\circ$
	$^3F^\circ$	4	320729.86	PW85	84% + 9% $4s^24p^3(^2D)5d\ ^1G^\circ$
$4s^24p^3(^2D)5d$	$^3G^\circ$	3	317922.54	PW85	80% + 7% $4s^24p^3(^2P)5d\ ^3F^\circ$
	$^3G^\circ$	4	318579.78	PW85	53% + 35% $4s^24p^3(^2D)5d\ ^1G^\circ$
	$^3G^\circ$	5	320661.52	PW85	100%
$4s^24p^3(^2D)5d$	$^3D^\circ$	1	319335.84	PW85	54% + 27% $4s^24p^3(^2D)5d\ ^1P^\circ$
	$^3D^\circ$	2	320780.54	PW85	61% + 19% $4s^24p^3(^2D)5d\ ^3P^\circ$
	$^3D^\circ$	3	321474.77	PW85	82% + 8% $4s^24p^3(^2D)5d\ ^3F^\circ$
$4s^24p^3(^2D)5d$	$^1G^\circ$	4	319985.71	PW85	50% + 34% $4s^24p^3(^2D)5d\ ^3G^\circ$
$4s^24p^3(^2D)5d$	$^1P^\circ$	1	322334.26	PW85	35% + 29% $4s^24p^3(^2D)5d\ ^3S^\circ$
$4s^24p^3(^2D)5d$	$^3P^\circ$	2	322853.87	PW85	46% + 23% $4s^24p^3(^2D)5d\ ^3D^\circ$
	$^3P^\circ$	1	323098.77	PW85	35% + 17% $4s^24p^3(^2D)5d\ ^3S^\circ$
	$^3P^\circ$	0	323329.24	PW85	84% + 10% $4s^24p^3(^2D)5d\ ^1S^\circ$
$4s^24p^3(^2D)6s$	$^3D^\circ$	1	323708.72	PW85	70% + 9% $4s^24p^3(^2D)5d\ ^3S^\circ$
	$^3D^\circ$	2	323938.61	PW85	60% + 16% $4s^24p^3(^2D)6s\ ^1D^\circ$
	$^3D^\circ$	3	325955.56	PW85	98%
$4s^24p^3(^2D)5d$	$^3S^\circ$	1	324308.75	PW85	36% + 49% $4s^24p^3(^2D)5d\ ^3P^\circ$
$4s^24p^3(^2D)5d$	$^1D^\circ$	2	324991.75	PW85	65% + 16% $4s^24p^3(^2D)5d\ ^3P^\circ$
$4s^24p^3(^2D)6s$	$^1D^\circ$	2	326748.92	PW85	74% + 24% $4s^24p^3(^2D)6s\ ^3D^\circ$
$4s^24p^3(^2D)5d$	$^1F^\circ$	3	326855.84	PW85	76% + 5% $4s^24p^3(^2P)5d\ ^3D^\circ$
$4s^24p^3(^2P)5d$	$^3F^\circ$	2	334387.56	PW85	78% + 12% $4s^24p^3(^2P)5d\ ^1D^\circ$
	$^3F^\circ$	3	335106.00	PW85	71% + 19% $4s^24p^3(^2P)5d\ ^3D^\circ$
$4s^24p^3(^2P)5d$	$^3D^\circ$	2	335312.70	PW85	43% + 30% $4s^24p^3(^2P)5d\ ^3P^\circ$
	$^3D^\circ$	1	336349.15	PW85	63% + 19% $4s^24p^3(^2P)5d\ ^3P^\circ$
	$^3D^\circ$	3	339634.17	PW85	56% + 16% $4s^24p^3(^2P)5d\ ^1F^\circ$

Energy levels of Rb IV—Continued

Configuration	Term	J	Energy (cm^{-1})	Reference	Leading percentages
$4s^24p^3(^2P)5d$	$^3P°$	0	337430.25	PW85	$81\% + 6\%$ $4s^24p^3(^2D)5d\ ^3P°$
	$^3P°$	1	338096.04	PW85	$64\% + 15\%$ $4s^24p^3(^2P)5d\ ^3D°$
	$^3P°$	2	338215.16	PW85	$56\% + 14\%$ $4s^24p^3(^2P)5d\ ^1D°$
$4s^24p^3(^2P)6s$	$^3P°$	0	339666.4	PW85	
	$^3P°$	1	339964.57	PW85	$74\% + 22\%$ $4s^24p^3(^2P)6s\ ^1P°$
	$^3P°$	2	343182.55	PW85	$83\% + 8\%$ $4s^24p^3(^2D)6s\ ^3D°$
$4s^24p^3(^2P)5d$	$^1D°$	2	340125.52	PW85	$35\% + 24\%$ $4s^24p^3(^2P)5d\ ^3D°$
$4s^24p^3(^2P)5d$	$^1F°$	3	340327.91	PW85	$64\% + 10\%$ $4s^24p^3(^2P)5d\ ^3F°$
$4s^24p^3(^2P)6s$	$^1P°$	1	343852.78	PW85	$64\% + 18\%$ $4s^24p^3(^2P)6s\ ^3P°$
$4s^24p^3(^2P)5d$	$^1P°$	1	345103.6	PW85	$70\% + 8\%$ $4s^24p^3(^4S)6d\ ^3D°$

7.5. Rb v

As isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^3\ {}^4S^\circ_{3/2}$

Ionization energy (552 000 cm^{-1}); (68.5 eV)

Persson and Petterson [PP84] analyzed the spectrum of Rb v in the 550–1050 Å range, locating all levels of the ground configuration, $4s^2 4p^3$, and lowest excited configuration, $4s 4p^4$. Their wavelengths and energy level values are quoted here. O'Sullivan [O89] subsequently extended the spectral range by measuring the transitions of a laser-produced plasma in the 320–450 Å region. Although the resolution was lower than [PP84], he was able to identify transitions to the $4s^2 4p^2 5s$ configuration and determine energy levels for the upper states, which are included. We also include O'Sullivan's calculated oscillator strengths for those transitions. The calculated ionization energy is quoted from [FKS76].

References for Rb v

FKS76 S. Fraga, J. Karwowski, and K. M. S. Saxena, *Handbook of Atomic Data* (Elsevier Scientific Publishing Company, Amsterdam, 1976).

O89 G. O'Sullivan, J. Phys. B **22**, 987 (1989).

PP84 W. Persson and S.-G. Petterson, Phys. Scr. **29**, 308 (1984).

Observed spectral lines of Rb v

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
367.32	0.1	272242.	2	2.27E+9	$4s^2 4p^3\ {}^2P^\circ_{1/2}$	$4s^2 4p^2 5s\ {}^2S_{1/2}$	O89	O89
369.62	0.1	270621.	5	1.37E+9	$4s^2 4p^3\ {}^4S^\circ_{3/2}$	$4s^2 4p^2 5s\ {}^4P_{5/2}$	O89	O89
372.14	0.1	268716.	2	2.41E+9	$4s^2 4p^3\ {}^4S^\circ_{3/2}$	$4s^2 4p^2 5s\ {}^2P_{1/2}$	O89	O89
373.01	0.1	268089.	5	1.61E+9	$4s^2 4p^3\ {}^2D^\circ_{3/2}$	$4s^2 4p^2 5s\ {}^2D_{3/2}$	O89	O89
374.24	0.1	267208.	4	1.02E+9	$4s^2 4p^3\ {}^2D^\circ_{3/2}$	$4s^2 4p^2 5s\ {}^2D_{5/2}$	O89	O89
375.42	0.1	266368.	4	1.72E+9	$4s^2 4p^3\ {}^4S^\circ_{3/2}$	$4s^2 4p^2 5s\ {}^4P_{3/2}$	O89	O89
377.60	0.1	264831.	5	2.66E+9	$4s^2 4p^3\ {}^2D^\circ_{5/2}$	$4s^2 4p^2 5s\ {}^2D_{5/2}$	O89	O89
396.79	0.1	252022.	5	1.89E+9	$4s^2 4p^3\ {}^2D^\circ_{3/2}$	$4s^2 4p^2 5s\ {}^4P_{5/2}$	O89	O89
398.92	0.1	250677.	6	1.08E+10	$4s^2 4p^3\ {}^2D^\circ_{5/2}$	$4s^2 4p^2 5s\ {}^2P_{3/2}$	O89	O89
400.01	0.1	249994.	5	1.21E+10	$4s^2 4p^3\ {}^2D^\circ_{3/2}$	$4s^2 4p^2 5s\ {}^2P_{1/2}$	O89	O89
400.70	0.1	249563.	7	2.98E+9	$4s^2 4p^3\ {}^2D^\circ_{5/2}$	$4s^2 4p^2 5s\ {}^4P_{5/2}$	O89	O89
402.57	0.1	248404.	6	7.08E+9	$4s^2 4p^3\ {}^2P^\circ_{3/2}$	$4s^2 4p^2 5s\ {}^2D_{3/2}$	O89	O89
428.42	0.1	233416.	2	2.13E+9	$4s^2 4p^3\ {}^2P^\circ_{3/2}$	$4s^2 4p^2 5s\ {}^2P_{3/2}$	O89	O89
576.442	0.01	173478.0	20		$4s^2 4p^3\ {}^2D^\circ_{3/2}$	$4s 4p^4\ {}^2P_{1/2}$	PP84	
583.571	0.01	171358.7	14		$4s^2 4p^3\ {}^2D^\circ_{3/2}$	$4s 4p^4\ {}^2P_{3/2}$	PP84	
592.001	0.01	168918.7	24		$4s^2 4p^3\ {}^2D^\circ_{5/2}$	$4s 4p^4\ {}^2P_{3/2}$	PP84	
604.111	0.01	165532.6	10		$4s^2 4p^3\ {}^2P^\circ_{1/2}$	$4s 4p^4\ {}^2S_{1/2}$	PP84	
617.254	0.01	162007.8	20		$4s^2 4p^3\ {}^2P^\circ_{3/2}$	$4s 4p^4\ {}^2S_{1/2}$	PP84	
635.635	0.01	157323.1	18		$4s^2 4p^3\ {}^2P^\circ_{1/2}$	$4s 4p^4\ {}^2P_{1/2}$	PP84	
644.313	0.01	155204.0	10		$4s^2 4p^3\ {}^2P^\circ_{1/2}$	$4s 4p^4\ {}^2P_{3/2}$	PP84	
659.287	0.01	151679.0	18		$4s^2 4p^3\ {}^2P^\circ_{3/2}$	$4s 4p^4\ {}^2P_{3/2}$	PP84	
668.297	0.005	149634.1	1		$4s^2 4p^3\ {}^2D^\circ_{3/2}$	$4s 4p^4\ {}^2D_{5/2}$	PP84	
673.746	0.01	148423.9	40		$4s^2 4p^3\ {}^2D^\circ_{3/2}$	$4s 4p^4\ {}^2D_{3/2}$	PP84	
679.382	0.01	147192.6	40		$4s^2 4p^3\ {}^2D^\circ_{5/2}$	$4s 4p^4\ {}^2D_{5/2}$	PP84	
685.005	0.005	145984.3	1		$4s^2 4p^3\ {}^2D^\circ_{5/2}$	$4s 4p^4\ {}^2D_{3/2}$	PP84	
699.251	0.01	143010.2	24		$4s^2 4p^3\ {}^4S^\circ_{3/2}$	$4s 4p^4\ {}^4P_{1/2}$	PP84	
709.917	0.01	140861.5	40		$4s^2 4p^3\ {}^4S^\circ_{3/2}$	$4s 4p^4\ {}^4P_{3/2}$	PP84	
735.697	0.01	135925.5	60		$4s^2 4p^3\ {}^4S^\circ_{3/2}$	$4s 4p^4\ {}^4P_{5/2}$	PP84	
756.041	0.01	132268.0	20		$4s^2 4p^3\ {}^2P^\circ_{1/2}$	$4s 4p^4\ {}^2D_{3/2}$	PP84	

Observed spectral lines of Rb V—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
769.498	0.01	129954.9	30		$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^2D_{5/2}$	PP84	
852.615	0.01	117286.2	18		$4s^24p^3\ ^2D^\circ_{3/2}$	$4s4p^4\ ^4P_{5/2}$	PP84	
870.742	0.01	114844.6	20		$4s^24p^3\ ^2D^\circ_{5/2}$	$4s4p^4\ ^4P_{5/2}$	PP84	
975.194	0.01	102543.7	16		$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^4P_{3/2}$	PP84	
1024.494	0.005	97609.2	1		$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^4P_{5/2}$	PP84	

Energy levels of Rb V

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$4s^24p^3$	$^4S^\circ$	3/2	0.0	2.	PP84	96% + 3% $4s^24p^3\ ^2P^\circ$
$4s^24p^3$	$^2D^\circ$	3/2	18639.1	2.	PP84	87% + 12% $4s^24p^3\ ^2P^\circ$
	$^2D^\circ$	5/2	21080.4	2.	PP84	100%
$4s^24p^3$	$^2P^\circ$	1/2	34794.3	2.	PP84	100%
	$^2P^\circ$	3/2	38317.8	2.	PP84	85% + 13% $4s^24p^3\ ^2D^\circ$
$4s4p^4$	^4P	5/2	135925.6	2.	PP84	
	^4P	3/2	140861.6	2.	PP84	
	^4P	1/2	143010.2	2.	PP84	
$4s4p^4$	^2D	3/2	167062.8	2.	PP84	
	^2D	5/2	168272.8	2.	PP84	
$4s4p^4$	^2P	3/2	189997.8	2.	PP84	
	^2P	1/2	192117.3	2.	PP84	
$4s4p^4$	^2S	1/2	200326.1	2.	PP84	
$4s^24p^25s$	^4P	3/2	266420		O89	94%
	^4P	5/2	270710		O89	73% + 14% $4s^24p^2(^1D)4d\ ^2D$
$4s^24p^25s$	^2P	1/2	268680		O89	72% + 7% $4s^24p^2(^1D)4d\ ^2P$
	^2P	3/2	271790		O89	56% + 14% $4s^24p^2(^1D)4d\ ^2P$
$4s^24p^25s$	^2D	5/2	285920		O89	88% + 6% $4s^24p^25s\ ^4P$
	^2D	3/2	286790		O89	81% + 14% $4s^24p^25s\ ^2P$
$4s^24p^25s$	^2S	1/2	307390		O89	94%

7.6. Rb VI

Ge isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^2\ {}^3P_0$

Ionization energy (665 000 cm^{-1}); (82.4 eV)

Litzén and Reader [LR89] observed Rb VI transitions in the 450–790 Å region, enabling them to determine the energy levels of the $4s^2 4p^2$ and $4s4p^3$ configurations, with the exception of the $4s4p^3\ {}^5S_2$ level, for which they reported a value predicted from their fitted parameters. O'Sullivan [O89] observed transitions to the $4s^2 4p5s$ configuration in the 320–390 Å range and used wavelengths and calculated oscillator strengths to identify them.

Because the measurements in [LR89] had a greater resolution than [O89] the Litzén and Reader values are cited where available. [LR89] also reported the calculated purity of the *LS* coupling, as indicated by the percentage of the term given for the level designation plus the percentage of the next largest contribution. Wavelengths, energy levels, and oscillator strengths involving the $4s^2 4p5s$ configuration are taken from [O89], who used *jj* coupling to describe the terms. The oscillator strengths for the other transitions are values from [BHG90]. The ionization energy is quoted from the calculations of [FKS76].

References for Rb VI

BHG90 E. Biémont, A. El Himdy, and H. P. Garnir, J. Quant. Spectrosc. Radiat. Transfer **43**, 437 (1990).

FKS76 S. Fraga, J. Karwowski, and K. M. S. Saxena, *Handbook of Atomic Data* (Elsevier Scientific Publishing Company, Amsterdam, 1976).

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O89 G. O'Sullivan, J. Phys. B **22**, 987 (1989).

Observed spectral lines of Rb VI

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
324.20	0.10	308450	8	3.38E+9	$4s^2 4p^2\ {}^3P_1$	$4s^2 4p5s\ (3/2,1/2)^\circ_2$	O89	O89
328.31	0.10	304590	6	4.25E+9	$4s^2 4p^2\ {}^3P_0$	$4s^2 4p5s\ (1/2,1/2)^\circ_1$	O89	O89
329.31	0.10	303660	10	9.41E+9	$4s^2 4p^2\ {}^3P_2$	$4s^2 4p5s\ (3/2,1/2)^\circ_2$	O89	O89
333.93	0.10	299460	6	2.91E+9	$4s^2 4p^2\ {}^3P_1$	$4s^2 4p5s\ (1/2,1/2)^\circ_1$	O89	O89
335.23	0.10	298300	7	1.383E+10	$4s^2 4p^2\ {}^3P_1$	$4s^2 4p5s\ (1/2,1/2)^\circ_0$	O89	O89
339.35	0.10	294680	9	7.05E+9	$4s^2 4p^2\ {}^3P_2$	$4s^2 4p5s\ (1/2,1/2)^\circ_1$	O89	O89
340.99	0.10	293260	10	1.96E+10	$4s^2 4p^2\ {}^1D_2$	$4s^2 4p5s\ (3/2,1/2)^\circ_1$	O89	O89
344.95	0.10	289900	4	9.02E+8	$4s^2 4p^2\ {}^1D_2$	$4s^2 4p5s\ (3/2,1/2)^\circ_2$	O89	O89
356.10	0.10	280820	5	1.36E+9	$4s^2 4p^2\ {}^1D_2$	$4s^2 4p5s\ (1/2,1/2)^\circ_1$	O89	O89
367.84	0.10	271860	8	4.06E+9	$4s^2 4p^2\ {}^1S_0$	$4s^2 4p5s\ (3/2,1/2)^\circ_1$	O89	O89
385.42	0.10	259460	1	1.96E+8	$4s^2 4p^2\ {}^1S_0$	$4s^2 4p5s\ (1/2,1/2)^\circ_1$	O89	O89
453.293	0.005	220608	50	6.8E+8	$4s^2 4p^2\ {}^3P_0$	$4s4p^3\ {}^1P^\circ_1$	LR89	BHG90
464.105	0.005	215468	700	3.5E+9	$4s^2 4p^2\ {}^3P_1$	$4s4p^3\ {}^1P^\circ_1$	LR89	BHG90
474.583	0.005	210711	80		$4s^2 4p^2\ {}^3P_2$	$4s4p^3\ {}^1P^\circ_1$	LR89	
478.845	0.005	208836	1300	3.1E+9	$4s^2 4p^2\ {}^3P_0$	$4s4p^3\ {}^3S^\circ_1$	LR89	BHG90
490.934	0.005	203693	900	7.3E+9	$4s^2 4p^2\ {}^3P_1$	$4s4p^3\ {}^3S^\circ_1$	LR89	BHG90
502.677	0.005	198935	3000	1.60E+10	$4s^2 4p^2\ {}^3P_2$	$4s4p^3\ {}^3S^\circ_1$	LR89	BHG90
507.971	0.005	196861.6	1000	1.40E+10	$4s^2 4p^2\ {}^1D_2$	$4s4p^3\ {}^1P^\circ_1$	LR89	BHG90
561.278	0.005	178164.8	80	1.8E+8	$4s^2 4p^2\ {}^3P_2$	$4s4p^3\ {}^1D^\circ_2$	LR89	BHG90
570.100	0.005	175407.8	500	2.1E+9	$4s^2 4p^2\ {}^1S_0$	$4s4p^3\ {}^1P^\circ_1$	LR89	BHG90
590.053	0.005	169476.3	500	6.2E+8	$4s^2 4p^2\ {}^3P_0$	$4s4p^3\ {}^3P^\circ_1$	LR89	BHG90
608.508	0.005	164336.4	400	1.09E+9	$4s^2 4p^2\ {}^3P_1$	$4s4p^3\ {}^3P^\circ_1$	LR89	BHG90
608.574	0.005	164318.6	1000	3.8E+9	$4s^2 4p^2\ {}^1D_2$	$4s4p^3\ {}^1D^\circ_2$	LR89	BHG90
610.537	0.005	163790.2	600	2.1E+9	$4s^2 4p^2\ {}^3P_1$	$4s4p^3\ {}^3P^\circ_0$	LR89	BHG90
611.119	0.005	163634.3	20	3.5E+8	$4s^2 4p^2\ {}^1S_0$	$4s4p^3\ {}^3S^\circ_1$	LR89	BHG90
624.119	0.005	160225.9	1000	1.8E+9	$4s^2 4p^2\ {}^3P_2$	$4s4p^3\ {}^3P^\circ_2$	LR89	BHG90
626.652	0.005	159578.2	100	3.9E+8	$4s^2 4p^2\ {}^3P_2$	$4s4p^3\ {}^3P^\circ_1$	LR89	BHG90
673.265	0.005	148529.9	1000	7.3E+8	$4s^2 4p^2\ {}^3P_0$	$4s4p^3\ {}^3D^\circ_1$	LR89	BHG90
686.192	0.005	145731.8	100		$4s^2 4p^2\ {}^1D_2$	$4s4p^3\ {}^3P^\circ_1$	LR89	

Observed spectral lines of Rb VI—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
696.734	0.005	143526.8	2000	8.1E+8	$4s^24p^2\ ^3P_1$	$4s4p^3\ ^3D^\circ_2$	LR89	BHG90
697.391	0.005	143391.6	800	1.5E+8	$4s^24p^2\ ^3P_1$	$4s4p^3\ ^3D^\circ_1$	LR89	BHG90
711.569	0.005	140534.5	2000	6.4E+8	$4s^24p^2\ ^3P_2$	$4s4p^3\ ^3D^\circ_3$	LR89	BHG90
720.626	0.005	138768.2	300	1.26E+7	$4s^24p^2\ ^3P_2$	$4s4p^3\ ^3D^\circ_2$	LR89	BHG90
789.341	0.005	126688.0	800	7.3E+7	$4s^24p^2\ ^1D_2$	$4s4p^3\ ^3D^\circ_3$	LR89	BHG90

Energy levels of Rb VI

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$4s^24p^2$	^3P	0	0.	5	LR89	94% + 4% $4s^24p^2\ ^1S$
	^3P	1	5140.	5	LR89	98%
	^3P	2	9899.	5	LR89	87% + 11% $4s^24p^2\ ^1D$
$4s^24p^2$	^1D	2	23746.	5	LR89	87% + 11% $4s^24p^2\ ^3P$
$4s^24p^2$	^1S	0	45201.	5	LR89	94% + 4% $4s^24p^2\ ^3P$
$4s4p^3$	$^5S^\circ$	2	(119160)		LR89	98% + 2% $4s4p^3\ ^3P$
$4s4p^3$	$^3D^\circ$	1	148531.	5	LR89	87% + 7% $4s^24p4d\ ^3D$
	$^3D^\circ$	2	148667.	5	LR89	85% + 7% $4s^24p4d\ ^3D$
	$^3D^\circ$	3	150434.	5	LR89	92% + 7% $4s^24p4d\ ^3D$
$4s4p^3$	$^3P^\circ$	0	168930.	5	LR89	92% + 7% $4s^24p4d\ ^3P$
	$^3P^\circ$	1	169477.	5	LR89	88% + 7% $4s^24p4d\ ^3P$
	$^3P^\circ$	2	170125.	5	LR89	78% + 7% $4s4p^3\ ^3D$
$4s4p^3$	$^1D^\circ$	2	188065.	5	LR89	67% + 25% $4s^24p4d\ ^1D$
$4s4p^3$	$^3S^\circ$	1	208835.	5	LR89	70% + 25% $4s4p^3\ ^3P$
$4s4p^3$	$^1P^\circ$	1	220609.	5	LR89	66% + 26% $4s4p^3\ ^3S$
$4s^24p5s$	(1/2,1/2)°	0	303480.		O89	100%
	(1/2,1/2)°	1	304640.		O89	96%
	(3/2,1/2)°	2	313630.		O89	100%
	(3/2,1/2)°	1	317070.		O89	96%

7.7. Rb VII

Ga isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p\ ^2P^\circ_{1/2}$

Ionization energy $785\,800 \pm 300$ cm^{-1}; $97.43 \pm .04$ eV

Reader *et al.* [RAG86] observed several transitions in the 290–510 Å range, and determined the energy levels of the $4s^2 4p\ ^2P^\circ$, $4s4p^2\ ^2P$, and $4s^2 5s\ ^2S$ terms of Rb VII. Later Litzén and Reader [LR89] utilized a sliding spark source to measure additional transitions in the 390–670 Å region, which were analyzed to give additional energy levels in the $4s4p^2$ configuration and to locate many from the $4s^2 4d$, $4s^2 4f$, and $4p^3$ configurations. Where available the values of [LR89] are used, but values involving the $4s^2 5s\ ^2S$ term and the ionization energy are taken from [RAG86]. Transition probabilities have been calculated by Biémont and Quinet [BQ90] and Marcinek and Migdalek [MM93]. The two sets of data have been shown to be in good agreement [BMMQ94] and the values used here are from [BQ90], which gives oscillator strengths for individual transitions.

References for Rb VII

BMMQ94 E. Biémont, R. Marcinek, J. Migdalek, and P. Quinet, J. Phys. B **27**, 825 (1994).
BQ90 E. Biémont and P. Quinet, J. Quant. Spectrosc. Radiat. Transfer **44**, 233 (1990).
LR89 U. Litzén and J. Reader, Phys. Scr. **39**, 73 (1989).
MM93 R. Marcinek and J. Migdalek, J. Phys. B **26**, 1403 (1993).
RAG86 J. Reader, N. Acquista, and S. Goldsmith, J. Opt. Soc. Am. B **3**, 874 (1986).

Observed spectral lines of Rb VII

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
291.731	0.005	342782.	150		$4s^2 4p\ ^2P^\circ_{1/2}$	$4s^2 5s\ ^2S_{1/2}$	RAG86	
300.916	0.005	332319.	300		$4s^2 4p\ ^2P^\circ_{3/2}$	$4s^2 5s\ ^2S_{1/2}$	RAG86	
390.826	0.005	255868.	300		$4s^2 4p\ ^2P^\circ_{1/2}$	$4s^2 4d\ ^2D_{3/2}$	LR89	
405.401	0.005	246669.	400		$4s^2 4p\ ^2P^\circ_{3/2}$	$4s^2 4d\ ^2D_{5/2}$	LR89	
407.512	0.005	245392.	80		$4s^2 4p\ ^2P^\circ_{3/2}$	$4s^2 4d\ ^2D_{3/2}$	LR89	
477.356	0.005	209487.	70		$4s^2 4d\ ^2D_{3/2}$	$4s^2 4f\ ^2F^\circ_{5/2}$	LR89	
482.153	0.005	207403.	100		$4s^2 4d\ ^2D_{5/2}$	$4s^2 4f\ ^2F^\circ_{7/2}$	LR89	
483.227	0.005	206921.	800		$4s^2 4p\ ^2P^\circ_{1/2}$	$4s4p^2\ ^2P_{3/2}$	LR89	
492.952	0.005	202860.	400		$4s^2 4p\ ^2P^\circ_{1/2}$	$4s4p^2\ ^2P_{1/2}$	LR89	
508.971	0.005	196474.8	1000		$4s^2 4p\ ^2P^\circ_{3/2}$	$4s4p^2\ ^2P_{3/2}$	LR89	
519.439	0.005	192515.4	50		$4s4p^2\ ^4P_{1/2}$	$4p^3\ ^4S^\circ_{3/2}$	LR89	
519.771	0.005	192392.4	400	2.2E+9	$4s^2 4p\ ^2P^\circ_{3/2}$	$4s4p^2\ ^2P_{1/2}$	LR89	BQ90
524.383	0.005	190700.3	800		$4s^2 4p\ ^2P^\circ_{1/2}$	$4s4p^2\ ^2S_{1/2}$	LR89	
531.670	0.005	188086.6	100	4.7E+9	$4s4p^2\ ^4P_{3/2}$	$4p^3\ ^4S^\circ_{3/2}$	LR89	BQ90
541.067	0.005	184820.0	50	2.0E+9	$4s4p^2\ ^4P_{3/2}$	$4p^3\ ^2D^\circ_{3/2}$	LR89	BQ90
546.370	0.005	183026.2	70	5.0E+9	$4s4p^2\ ^2D_{5/2}$	$4p^3\ ^2P^\circ_{3/2}$	LR89	BQ90
547.384	0.005	182687.1	100	5.7E+9	$4s4p^2\ ^4P_{5/2}$	$4p^3\ ^4S^\circ_{3/2}$	LR89	BQ90
550.074	0.005	181793.7	45	6.6E+9	$4s4p^2\ ^2D_{3/2}$	$4p^3\ ^2P^\circ_{1/2}$	LR89	BQ90
554.839	0.005	180232.5	10		$4s^2 4p\ ^2P^\circ_{3/2}$	$4s4p^2\ ^2S_{1/2}$	LR89	
557.349	0.005	179420.8	80	3.6E+9	$4s4p^2\ ^4P_{5/2}$	$4p^3\ ^2D^\circ_{3/2}$	LR89	BQ90
622.280	0.005	160699.4	2000		$4s^2 4p\ ^2P^\circ_{1/2}$	$4s4p^2\ ^2D_{3/2}$	LR89	
649.064	0.005	154068.0	200	5.7E+8	$4s4p^2\ ^2D_{3/2}$	$4p^3\ ^4S^\circ_{3/2}$	LR89	BQ90
654.385	0.005	152815.2	100	2.1E+9	$4s4p^2\ ^2D_{5/2}$	$4p^3\ ^2D^\circ_{5/2}$	LR89	BQ90
659.071	0.005	151728.7	3000		$4s^2 4p\ ^2P^\circ_{3/2}$	$4s4p^2\ ^2D_{5/2}$	LR89	
663.141	0.005	150797.5	80	8.7E+8	$4s4p^2\ ^2D_{3/2}$	$4p^3\ ^2D^\circ_{3/2}$	LR89	BQ90
665.638	0.005	150231.8	30		$4s^2 4p\ ^2P^\circ_{3/2}$	$4s4p^2\ ^2D_{3/2}$	LR89	

Energy levels of Rb VII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$4s^24p$	$^2P°$	1/2	0.	5.	LR89	98%
	$^2P°$	3/2	10467.	5.	LR89	98%
$4s4p^2$	^4P	1/2	122251.	5.	LR89	98%
	^4P	3/2	126679.	5.	LR89	99%
	^4P	5/2	132078.	5.	LR89	97%
$4s4p^2$	^2D	3/2	160699.	5.	LR89	91% + 7% $4s^24d\ ^2D$
	^2D	5/2	162196.	5.	LR89	89% + 7% $4s^24d\ ^2D$
$4s4p^2$	^2S	1/2	190700.	5.	LR89	69% + 29% $4s4p^2\ ^2P$
$4s4p^2$	^2P	1/2	202859.	5.	LR89	69% + 29% $4s4p^2\ ^2S$
	^2P	3/2	206942.	5.	LR89	96%
$4s^24d$	^2D	3/2	255864.	5.	LR89	90% + 8% $4s4p^2\ ^2D$
	^2D	5/2	257136.	5.	LR89	91% + 7% $4s4p^2\ ^2D$
$4p^3$	$^2D°$	3/2	311496.	5.	LR89	44% + 35% $4p^3\ ^4S$
	$^2D°$	5/2	315011.	5.	LR89	78% + 22% 4s4p4d
$4p^3$	$^4S°$	3/2	314767.	5.	LR89	61% + 30% $4p^3\ ^2D$
$4p^3$	$^2P°$	1/2	342493.	5.	LR89	86% + 14% 4s4p4d
	$^2P°$	3/2	345222.	5.	LR89	75% + 16% 4s4p4d
$4s^25s$	^2S	1/2	342784.	5.	RAG86	
$4s^24f$	$^2F°$	7/2	464539.	5.	LR89	38% + 50% $4s4p(^1P)4d\ ^2F$
	$^2F°$	5/2	465351.	5.	LR89	36% + 49% $4s4p(^1P)4d\ ^2F$

7.8. Rb VIII

Zn isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2\ ^1S_0$

Ionization energy 1 071 000 ± 2000 cm^{-1}; 132.79 ± 0.25 eV

The initial measurement of the Rb VIII spectrum was made by Reader and Acquista [RA77], who located the $4s^2\ ^1S_0$-4s4p $^1P_1$ line at 525 Å in a low-inductance open spark. Curtis [C85] predicted the energy levels of the $4s4p\ ^3P$ term by fitting in the Zn isoelectronic sequence. Wyart *et al.* [WKRJ84] classified two lines as transitions to the $3d^9 4s^2 4p$ configuration. New measurements using a sliding spark in the 170–550 Å region enabled Litzén and Reader [LR87] to observe transitions to the $4s4p$, $4p^2$, $4s4d$, $4s5s$, and $4s5p$ configurations. Churilov *et al.* [CRW88] added measurements of transitions to the $4s4f$ configuration.

For this compilation most energy levels and the ionization energy are taken from [LR87], who incorporated the prior information with theirs in optimizing the energy levels. The two transitions in [WKRJ84] are included, as are the wavelengths from [LR87] and those involving the $4s4f$ configuration from [CRW88]. The energy levels for the $4s4f$ and $3d^9 4s^2 4p$ configurations are obtained from combining the [LR87] values for the lower levels with the energies of transitions measured by [CRW88] and [WKRJ84], respectively. Most transition probabilities are taken from Biémont *et al.* [BQF89], who used the relativistic Hartree–Fock method. However, the $4s^2\ ^1S_0$-$4s4p\ ^1P_1$ and $^3P_1$ transition probabilities are from Chou *et al.* [CCH94], who used a multiconfiguration relativistic random-phase-approximation technique.

References for Rb VIII

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Observed spectral lines of Rb VIII

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
107.756	0.005	928020.	70		$4s^2\ ^1S_0$	$3d^9 4s^2 4p\ ^3D_1$	WKRJ84	
108.480	0.005	921830.	190		$4s^2\ ^1S_0$	$3d^9 4s^2 4p\ ^1P_1$	WKRJ84	
169.361	0.005	590455.	10		$4s^2\ ^1S_0$	$4s5p\ (1/2,3/2)^\circ_1$	LR87	
170.625	0.005	586081.	5		$4s^2\ ^1S_0$	$4s5p\ (1/2,1/2)^\circ_1$	LR87	
255.573	0.005	391278.	10		$4s4p\ ^3P^\circ_0$	$4s5s\ ^3S_1$	LR87	
257.791	0.005	387911.	20		$4s4p\ ^3P^\circ_1$	$4s5s\ ^3S_1$	LR87	
263.412	0.005	379633.	40		$4s4p\ ^3P^\circ_2$	$4s5s\ ^3S_1$	LR87	
290.915	0.005	343743.	7		$4s4p\ ^1P^\circ_1$	$4s5s\ ^1S_0$	LR87	
377.818	0.005	264678.	100	1.6E+10	$4s4p\ ^3P^\circ_0$	$4s4d\ ^3D_1$	LR87	BQF89
381.787	0.005	261926.	300	2.2E+10	$4s4p\ ^3P^\circ_1$	$4s4d\ ^3D_2$	LR87	BQF89
382.678	0.005	261316.	50	1.2E+10	$4s4p\ ^3P^\circ_1$	$4s4d\ ^3D_1$	LR87	BQF89
392.786	0.005	254592.	500	2.7E+10	$4s4p\ ^3P^\circ_2$	$4s4d\ ^3D_3$	LR87	BQF89
394.257	0.005	253642.	50	6.6E+9	$4s4p\ ^3P^\circ_2$	$4s4d\ ^3D_2$	LR87	BQF89
395.181	0.007	253048.	40	7.3E+8	$4s4p\ ^3P^\circ_2$	$4s4d\ ^3D_1$	CRW88	BQF89
419.667	0.005	238284.	100	6.3E+10	$4s4p\ ^1P^\circ_1$	$4s4d\ ^1D_2$	LR87	BQF89
465.546	0.007	214802.	100	2.5E+10	$4s4d\ ^3D_1$	$4s4f\ ^3F_2$	CRW88	BQF89
466.556	0.007	214337.	150	2.6E+10	$4s4d\ ^3D_2$	$4s4f\ ^3F_3$	CRW88	BQF89
466.862	0.007	214196.	30	4.5E+9	$4s4d\ ^3D_2$	$4s4f\ ^3F_2$	CRW88	BQF89
468.176	0.007	213595.	200	3.0E+10	$4s4d\ ^3D_3$	$4s4f\ ^3F_4$	CRW88	BQF89
468.626	0.007	213390.	30	3.1E+9	$4s4d\ ^3D_3$	$4s4f\ ^3F_3$	CRW88	BQF89
471.120	0.007	212260.	200	4.2E+10	$4s4d\ ^1D_2$	$4s4f\ ^1F_3$	CRW88	BQF89
524.929	0.005	190502.0	1000	7.4E+9	$4s^2\ ^1S_0$	$4s4p\ ^1P^\circ_1$	LR87	CCH94
528.390	0.005	189254.1	50	2.0E+9	$4s4p\ ^3P^\circ_1$	$4p^2\ ^3P_2$	LR87	BQF89

Observed spectral lines of Rb VIII—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
551.807	0.005	181222.8	40	4.4E+9	4s4p $^3P^\circ_0$	4p^2 $^3P_1$	LR87	BQF89
552.562	0.005	180975.2	60	6.4E+9	4s4p $^3P^\circ_2$	4p^2 $^3P_2$	LR87	BQF89
559.947	0.005	178588.3	10	1.5E+9	4s4p $^3P^\circ_1$	4p^2 $^1D_2$	LR87	BQF89
562.253	0.005	177855.9	20	3.1E+9	4s4p $^3P^\circ_1$	4p^2 $^3P_1$	LR87	BQF89
581.809	0.005	171877.7	20	1.1E+10	4s4p $^3P^\circ_1$	4p^2 $^3P_0$	LR87	BQF89
587.165	0.005	170309.9	25	2.8E+9	4s4p $^3P^\circ_2$	4p^2 $^1D_2$	LR87	BQF89
587.669	0.005	170163.8	15	1.2E+10	4s4p $^1P^\circ_1$	4p^2 $^1S_0$	LR87	BQF89
589.699	0.005	169578.0	25	4.5E+9	4s4p $^3P^\circ_2$	4p^2 $^3P_1$	LR87	BQF89
743.369	0.005	134522.7	50	1.4E+7	4s^2 $^1S_0$	4s4p $^3P^\circ_1$	LR87	CCH94
750.333	0.005	133274.2	5	8.3E+8	4s4p $^1P^\circ_1$	4p^2 $^3P_2$	LR87	BQF89
815.584	0.005	122611.5	20	1.0E+9	4s4p $^1P^\circ_1$	4p^2 $^1D_2$	LR87	BQF89

Energy levels of Rb VIII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
4s^2	^{1}S	0	0.	1.	LR87	97%
4s4p	^{3}P°	0	131157.	2.	LR87	
	^{3}P°	1	134523.	1.	LR87	
	^{3}P°	2	142802.	1.	LR87	
4s4p	^{1}P°	1	190501.	1.	LR87	
4p^2	^{3}P	0	306401.	2.	LR87	96%
	^{3}P	1	312379.	1.	LR87	100%
	^{3}P	2	323776.	1.	LR87	64% + 31% 4p^2 ^{1}D
4p^2	^{1}D	2	313112.	1.	LR87	58% + 35% 4p^2 ^{3}P
4p^2	^{1}S	0	360665.	2.	LR87	93% + 4% 4p^2 ^{3}P
4s4d	^{3}D	1	395837.	3.	LR87	100%
	^{3}D	2	396446.	3.	LR87	100%
	^{3}D	3	397394.	3.	LR87	100%
4s4d	^{1}D	2	428785.	3.	LR87	89% + 11% 4p^2 ^{1}D
4s5s	^{3}S	1	522435.	4.	LR87	
4s5s	^{1}S	0	534244.	6.	LR87	
4s5p	(1/2,1/2)°	1	586081.	17.	LR87	
	(1/2,3/2)°	1	590455.	17.	LR87	
4s4f	^{3}F	2	610640.	4.	CRW88	
	^{3}F	3	610784.	4.	CRW88	
	^{3}F	4	610989.	4.	CRW88	
4s4f	^{1}F	3	641045.	4.	CRW88	
3d^{9}4s^{2}4p	^{1}P	1	921830	40.	WKRJ84	
3d^{9}4s^{2}4p	^{3}D	1	928020	40.	WKRJ84	

7.9. Rb IX

Cu isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s\ ^2S_{1/2}$

Ionization energy $1\,214\,900 \pm 200\ cm^{-1}$; 150.63 ± 0.02 eV

The principal doublet of Rb IX was first measured by Mack [M31]. Using a low-inductance open spark, Reader and Acquista [RA77] discovered four transitions between the $4p$ and the $4s$ and $5s$ configurations. This work was extended in Goldsmith *et al.* [GRA84] to include 18 transitions in the region 100–630 Å and 16 levels of the $4-7s$, $4-7p$, $4d$, $4f$, and $6g$ configurations. Wyart *et al.* [WKRJ84] reported an additional 21 transitions between 99 and 107 Å involving the $3d^9 4s 4p$ and $3d^9 4p^2$ configurations.

The ionization energy cited here is from [GRA84]. The wavelengths and energy levels involving the $3d^9 4s 4p$ and $3d^9 4p^2$ configurations are quoted from [WKRJ84] and all others are taken from [GRA84]. Transition probabilities have been calculated using the Coulomb approximation by Lindgård *et al.* [LCMN80] and using the relativistic Hartree–Fock method by Cheng and Kim [CK78]. The values reported here are from [CK78].

References for Rb IX

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Observed spectral lines of Rb IX

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
99.01	0.005	1010000.	20		$3d^{10}4p\ ^2P^o_{3/2}$	$3d^9(^2D)4p^2(^1S)\ ^2D_{5/2}$	WKRJ84	
99.432	0.005	1005710.	200		$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^1P)\ ^2P^o_{1/2}$	WKRJ84	
100.507	0.005	994960.	500		$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^1P)\ ^2P^o_{3/2}$	WKRJ84	
100.708	0.005	992970.	15		$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9(^2D)4p^2(^3P)\ ^2P_{1/2}$	WKRJ84	
101.514	0.005	985090.	50		$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9(^2D)4p^2(^1D)\ ^2D_{3/2}$	WKRJ84	
101.533	0.005	984900.	10		$3d^{10}4p\ ^2P^o_{3/2}$	$3d^9(^2D)4p^2(^1D)\ ^2F_{5/2}$	WKRJ84	
101.704	0.005	983240.	100		$3d^{10}4p\ ^2P^o_{3/2}$	$3d^9(^2D)4p^2(^3P)\ ^2P_{3/2}$	WKRJ84	
101.975	0.005	980630.	10		$3d^{10}4p\ ^2P^o_{3/2}$	$3d^9(^2D)4p^2(^3P)\ ^2P_{1/2}$	WKRJ84	
102.008	0.005	980320.	50		$3d^{10}4p\ ^2P^o_{3/2}$	$3d^9(^2D)4p^2(^3P)\ ^4P_{3/2}$	WKRJ84	
102.016	0.005	980240.	30		$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9(^2D)4p^2(^3P)\ ^2D_{3/2}$	WKRJ84	
102.175	0.005	978710.	200		$3d^{10}4p\ ^2P^o_{3/2}$	$3d^9(^2D)4p^2(^3P)\ ^2D_{5/2}$	WKRJ84	
102.358	0.005	976960.	50		$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9(^2D)4p^2(^3P)\ ^4F_{3/2}$	WKRJ84	
103.573	0.005	965500.	20		$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9(^2D)4p^2(^1D)\ ^2P_{3/2}$	WKRJ84	
103.589	0.005	965350.	30		$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}7p\ ^2P^o_{3/2}$	WKRJ84	
103.745	0.005	963900.	90		$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^2D^o_{3/2}$	WKRJ84	
103.770	0.005	963670.	40		$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9(^2D)4p^2(^1D)\ ^2S_{1/2}$	WKRJ84	
104.471	0.005	957200.	400		$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^2P^o_{1/2}$	WKRJ84	
104.552	0.005	956460.	600		$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^2P^o_{3/2}$	WKRJ84	
105.081	0.005	951650.	300		$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4D^o_{3/2}$	WKRJ84	
105.890	0.005	944380.	40		$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4P^o_{1/2}$	WKRJ84	
106.806	0.005	936280.	100		$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4P^o_{3/2}$	WKRJ84	
117.106	0.005	853927.	250	3.2E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}6p\ ^2P^o_{3/2}$	GRA84	CK78
117.436	0.005	851528.	100	4.0E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}6p\ ^2P^o_{1/2}$	GRA84	CK78
127.13	0.005	786600.	10		$3d^{10}4p\ ^2P^o_{1/2}$	$3d^{10}7s\ ^2S_{1/2}$	GRA84	
129.170	0.005	774174.	20		$3d^{10}4p\ ^2P^o_{3/2}$	$3d^{10}7s\ ^2S_{1/2}$	GRA84	
154.324	0.005	647987.	200	1.2E+10	$3d^{10}4p\ ^2P^o_{3/2}$	$3d^{10}6s\ ^2S_{1/2}$	GRA84	CK78
154.935	0.005	645432.	1000	4.4E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}5p\ ^2P^o_{3/2}$	GRA84	CK78
156.107	0.005	640586.	600	5.8E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}5p\ ^2P^o_{1/2}$	GRA84	CK78

Observed spectral lines of Rb IX—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
239.567	0.005	417420.	800	1.3E+10	$3d^{10}4p\ ^2P^\circ_{1/2}$	$3d^{10}5s\ ^2S_{1/2}$	GRA84	CK78
246.862	0.005	405085.	2000	2.8E+10	$3d^{10}4p\ ^2P^\circ_{3/2}$	$3d^{10}5s\ ^2S_{1/2}$	GRA84	CK78
306.286	0.005	326492.	200*	1.1E+10	$3d^{10}4f\ ^2F^\circ_{7/2}$	$3d^{10}6g\ ^2G_{7/2,9/2}$	GRA84	CK78
306.286	0.005	326492.	200*	1.1E+10	$3d^{10}4f\ ^2F^\circ_{5/2}$	$3d^{10}6g\ ^2G_{7/2}$	GRA84	CK78
383.906	0.005	260480.	1500	2.3E+10	$3d^{10}4p\ ^2P^\circ_{1/2}$	$3d^{10}4d\ ^2D_{3/2}$	GRA84	CK78
400.148	0.005	249908.	2500	2.5E+10	$3d^{10}4p\ ^2P^\circ_{3/2}$	$3d^{10}4d\ ^2D_{5/2}$	GRA84	CK78
402.992	0.005	248144.	600	4.1E+9	$3d^{10}4p\ ^2P^\circ_{3/2}$	$3d^{10}4d\ ^2D_{3/2}$	GRA84	CK78
452.043	0.005	221218.	600	2.3E+10	$3d^{10}4d\ ^2D_{3/2}$	$3d^{10}4f\ ^2F^\circ_{5/2}$	GRA84	CK78
455.752	0.005	219418.	800	2.4E+10	$3d^{10}4d\ ^2D_{5/2}$	$3d^{10}4f\ ^2F^\circ_{7/2}$	GRA84	CK78
583.399	0.005	171409.3	10000	5.6E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}4p\ ^2P^\circ_{3/2}$	GRA84	CK78
628.632	0.005	159075.6	4000	4.5E+9	$3d^{10}4s\ ^2S_{1/2}$	$3d^{10}4p\ ^2P^\circ_{1/2}$	GRA84	CK78

Energy levels of Rb IX

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3d^{10}4s$	^2S	1/2	0.	2.	GRA84	
$3d^{10}4p$	$^2P^\circ$	1/2	159075.	2.	GRA84	
	$^2P^\circ$	3/2	171410.	2.	GRA84	
$3d^{10}4d$	^2D	3/2	419554.	3.	GRA84	
	^2D	5/2	421317.	3.	GRA84	
$3d^{10}5s$	^2S	1/2	576495.	8.	GRA84	
$3d^{10}5p$	$^2P^\circ$	1/2	640586.	21.	GRA84	
	$^2P^\circ$	3/2	645432.	21.	GRA84	
$3d^{10}4f$	$^2F^\circ$	7/2	640734.	4.	GRA84	
	$^2F^\circ$	5/2	640772.	4.	GRA84	
$3d^{10}6s$	^2S	1/2	819396.	21.	GRA84	
$3d^{10}6p$	$^2P^\circ$	1/2	851528.	36.	GRA84	
	$^2P^\circ$	3/2	853927.	36.	GRA84	
$3d^9(^2D)4s4p(^3P)$	$^4P^\circ$	3/2	936280.	10.	WKRJ84	77%
	$^4P^\circ$	1/2	944380.	10.	WKRJ84	89%
$3d^{10}7s$	^2S	1/2	945584.	30.	GRA84	
$3d^9(^2D)4s4p(^3P)$	$^4D^\circ$	3/2	951656.	10.	WKRJ84	53%
$3d^9(^2D)4s4p(^3P)$	$^2P^\circ$	3/2	956466.	10.	WKRJ84	61%
	$^2P^\circ$	1/2	957215.	10.	WKRJ84	95%
$3d^9(^2D)4s4p(^3P)$	$^2D^\circ$	3/2	963893.	10.	WKRJ84	51%
$3d^{10}7p$	$^2P^\circ$	3/2	965353.	47.	GRA84	
$3d^{10}6g$	^2G	7/2,9/2	967244.	6.	GRA84	
$3d^9(^2D)4s4p(^1P)$	$^2P^\circ$	3/2	994965.	10.	WKRJ84	94%
	$^2P^\circ$	1/2	1005716.	10.	WKRJ84	98%
$3d^9(^2D)4p^2(^1D)$	^2S	1/2	1122740.	10.	WKRJ84	62%

Energy levels of Rb IX—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3d^9(^2D)4p^2(^1D)$	^2P	3/2	1124580.	10.	WKRJ84	66%
$3d^9(^2D)4p^2(^3P)$	^4F	3/2	1136040.	10.	WKRJ84	62%
$3d^9(^2D)4p^2(^3P)$	^2D	3/2	1139310.	10.	WKRJ84	48%
	^2D	5/2	1150120.	10.	WKRJ84	55%
$3d^9(^2D)4p^2(^1D)$	^2D	3/2	1143970.	10.	WKRJ84	52%
$3d^9(^2D)4p^2(^3P)$	^4P	3/2	1151720.	10.	WKRJ84	53%
$3d^9(^2D)4p^2(^3P)$	^2P	1/2	1152040.	10.	WKRJ84	81%
	^2P	3/2	1154650.	10.	WKRJ84	75%
$3d^9(^2D)4p^2(^1D)$	^2F	5/2	1156310.	10.	WKRJ84	54%
$3d^9(^2D)4p^2(^1S)$	^2D	5/2	1181410.	10.	WKRJ84	90%

7.10. Rb x

Ni isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10}\ ^1S_0$

Ionization energy (2 230 000 cm^{-1}); (277 eV)

Wyart *et al.* [WKRJ84] classified three transitions from the ground state to the $3d^9 4p$ configuration. Wyart and Ryabtsev [WR86] then used the isoelectronic sequence to predict values for the levels of the $3d^9 4s$ and $3d^9 4p$ configurations. Ryabsev *et al.* [RCW87] measured the transitions of Rb X in the 340–625 Å region in a laser plasma and reported 33 levels of the $3d^9 4s$, $3d^9 4p$, and $3d^9 4d$ configurations. An additional analysis of Ni-like ions by Ryabtsev *et al.* [RCNL99] produced values for several levels of the $3d^9 4f$ configuration and an experimental value for the $3d^9 4d\ ^1S_0$ level.

The wavelengths shorter than 100 Å cited here are from [WKRJ84]; those involving the $3d^9 4f$ configuration and the $3d^9 4d\ ^1S_0$ level are from [RCNL99]; the others were taken from [RCW87]. The energy levels are quoted from [RCW87], except those of the $3d^9 4f$ configuration and the $3d^9 4d\ ^1S_0$ level, which come from [RCNL99]. The calculated ionization energy is quoted from [FKS76].

With the exception of a few levels for which [RCNL99] reported *LS* configurations the terms for the energy levels are unknown. To facilitate the identification of those levels, we have assigned consecutive numbers to the members of the $3d^9 4s$, $4p$, and $4d$ configurations with a particular J value. Thus the lowest level of a configuration with $J=3$ is assigned 1, the next lowest level with $J=3$ would be given 2, etc. The term designations indicated in [RCW87] for the isoelectronic spectrum of Y XII agree with those indicated for Rb X in [M52] for these levels.

Transition probabilities have been calculated by Loginov [L90] for transitions involving the $3d^9 4p$ level. Ryabtsev *et al.* [RCNL99] calculated the probability for the $3d^9 4p\ ^1P^\circ_1$-$3d^9 4d\ ^1S_0$ transition.

References for Rb x

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M52 C. E. Moore, Atomic Energy Levels, Natl. Bur. Stand. (U.S.) Circ. 467, Vol. II (1952); reprinted as Natl. Stand. Ref. Data Ser., Natl. Bur. Stand. (U.S.) 35 (1971).

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WR86 J.-F. Wyart and A. N. Ryabtsev, Phys. Scr. **33**, 215 (1986).

Observed spectral lines of Rb x

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
96.977	0.005	1031170.	4000		3.0E+10	$3d^{10}\ ^1S_0$	$3d^9 4p\ ^3D^\circ_1$	WKRJ84	L90
97.704	0.005	1023500.	6000		1.0E+11	$3d^{10}\ ^1S_0$	$3d^9 4p\ ^1P^\circ_1$	WKRJ84	L90
99.183	0.005	1008240.	250		4.2E+8	$3d^{10}\ ^1S_0$	$3d^9 4p\ ^3P^\circ_1$	WKRJ84	L90
292.490	0.010	341892.	10		5.7E+10	$3d^9 4p\ ^1P^\circ_1$	$3d^9 4d\ ^1S_0$	RCNL99	RCNL99
346.619	0.007	288501.	25			$3d^9 4p\ 2^\circ_2$	$3d^9 4d\ 4_2$	RCW87	
348.884	0.007	286628.	35			$3d^9 4p\ 1^\circ_2$	$3d^9 4d\ 1_3$	RCW87	
352.860	0.007	283399.	60			$3d^9 4p\ 1^\circ_2$	$3d^9 4d\ 1_2$	RCW87	
353.449	0.007	282926.	30			$3d^9 4p\ 1^\circ_3$	$3d^9 4d\ 2_3$	RCW87	
356.324	0.007	280643.	25			$3d^9 4p\ 1^\circ_3$	$3d^9 4d\ 1_3$	RCW87	
356.599	0.007	280427.	50			$3d^9 4p\ 2^\circ_2$	$3d^9 4d\ 3_3$	RCW87	
358.328	0.007	279074.	25	i		$3d^9 4p\ ^3P^\circ_1$	$3d^9 4d\ 3_1$	RCW87	
360.706	0.007	277234.	50			$3d^9 4p\ ^3P^\circ_1$	$3d^9 4d\ 2_2$	RCW87	
361.575	0.007	276568.	100			$3d^9 4p\ 1^\circ_3$	$3d^9 4d\ 1_4$	RCW87	
361.684	0.007	276484.	30			$3d^9 4p\ ^3P^\circ_1$	$3d^9 4d\ 1_0$	RCW87	
363.314	0.007	275244.	50*			$3d^9 4p\ 1^\circ_0$	$3d^9 4d\ 4_1$	RCW87	
363.314	0.007	275244.	50*			$3d^9 4p\ ^1P^\circ_1$	$3d^9 4d\ 4_2$	RCW87	

Observed spectral lines of Rb X—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
363.907	0.007	274795.	40			$3d^9 4p\ 1^\circ_4$	$3d^9 4d\ 2_4$	RCW87	
365.552	0.007	273559.	50			$3d^9 4p\ 2^\circ_2$	$3d^9 4d\ 2_3$	RCW87	
368.309	0.007	271511.	30			$3d^9 4p\ 3^\circ_3$	$3d^9 4d\ 4_3$	RCW87	
369.042	0.007	270972.	50			$3d^9 4p\ 3^\circ_2$	$3d^9 4d\ 3_3$	RCW87	
369.908	0.007	270337.	20	i		$3d^9 4p\ {}^3P^\circ_1$	$3d^9 4d\ 2_1$	RCW87	
371.735	0.007	269009.	25			$3d^9 4p\ 1^\circ_2$	$3d^9 4d\ 1_1$	RCW87	
372.878	0.007	268184.	15			$3d^9 4p\ {}^1P^\circ_1$	$3d^9 4d\ 4_1$	RCW87	
375.356	0.007	266414.	100			$3d^9 4p\ 1^\circ_4$	$3d^9 4d\ 1_5$	RCW87	
375.844	0.007	266068.	100			$3d^9 4p\ 3^\circ_3$	$3d^9 4d\ 3_4$	RCW87	
376.261	0.007	265773.	35			$3d^9 4p\ 3^\circ_2$	$3d^9 4d\ 2_2$	RCW87	
376.712	0.007	265455.	50			$3d^9 4p\ 4^\circ_2$	$3d^9 4d\ 4_3$	RCW87	
376.755	0.007	265424.	50			$3d^9 4p\ {}^3D^\circ_1$	$3d^9 4d\ 3_2$	RCW87	
376.989	0.007	265260.	25			$3d^9 4p\ 4^\circ_2$	$3d^9 4d\ 4_2$	RCW87	
378.147	0.007	264447.	90			$3d^9 4p\ 2^\circ_3$	$3d^9 4d\ 2_4$	RCW87	
378.654	0.007	264093.	40			$3d^9 4p\ 3^\circ_2$	$3d^9 4d\ 2_3$	RCW87	
380.111	0.007	263081.	40			$3d^9 4p\ 4^\circ_2$	$3d^9 4d\ 3_2$	RCW87	
384.597	0.007	260012.	55			$3d^9 4p\ 2^\circ_3$	$3d^9 4d\ 1_3$	RCW87	
389.411	0.007	256798.	35			$3d^9 4p\ 2^\circ_3$	$3d^9 4d\ 1_2$	RCW87	
409.403	0.010	244258.	45			$3d^9 4d\ 1_4$	$3d^9 4f\ {}^3H^\circ_5$	RCNL99	
409.616	0.010	244131.	20			$3d^9 4d\ 3_3$	$3d^9 4f\ {}^3H^\circ_4$	RCNL99	
410.955	0.010	243336.	40			$3d^9 4d\ 1_5$	$3d^9 4f\ {}^3H^\circ_6$	RCNL99	
413.748	0.010	241693.	40			$3d^9 4d\ 3_4$	$3d^9 4f\ {}^1H^\circ_5$	RCNL99	
415.888	0.010	240449.	15	b		$3d^9 4d\ 2_4$	$3d^9 4f\ {}^3G^\circ_5$	RCNL99	
510.353	0.007	195943.	20		1.3E+9	$3d^9 4s\ 1_2$	$3d^9 4p\ {}^3D^\circ_1$	RCW87	L90
511.370	0.007	195553.	20		5.4E+8	$3d^9 4s\ 1_3$	$3d^9 4p\ 3^\circ_3$	RCW87	L90
520.232	0.007	192222.	20		6.7E+8	$3d^9 4s\ 1_2$	$3d^9 4p\ 3^\circ_3$	RCW87	L90
526.925	0.007	189780.	80		4.6E+9	$3d^9 4s\ 1_3$	$3d^9 4p\ 2^\circ_3$	RCW87	L90
528.324	0.007	189278.	40	b	2.2E+9	$3d^9 4s\ 1_1$	$3d^9 4p\ 4^\circ_2$	RCW87	L90
531.136	0.007	188276.	30		9.6E+8	$3d^9 4s\ 1_2$	$3d^9 4p\ {}^1P^\circ_1$	RCW87	L90
534.856	0.007	186966.	75		5.3E+9	$3d^9 4s\ 1_1$	$3d^9 4p\ {}^3D^\circ_1$	RCW87	L90
536.359	0.007	186442.	60		1.6E+9	$3d^9 4s\ 1_2$	$3d^9 4p\ 2^\circ_3$	RCW87	L90
539.627	0.007	185313.	80		4.4E+9	$3d^9 4s\ 2_2$	$3d^9 4p\ 4^\circ_2$	RCW87	L90
542.013	0.007	184497.	100		4.8E+9	$3d^9 4s\ 1_2$	$3d^9 4p\ 3^\circ_2$	RCW87	L90
557.337	0.007	179425.	100		6.2E+9	$3d^9 4s\ 1_3$	$3d^9 4p\ 1^\circ_4$	RCW87	L90
557.855	0.007	179258.	110		5.2E+9	$3d^9 4s\ 2_2$	$3d^9 4p\ 3^\circ_3$	RCW87	L90
569.776	0.007	175508.	45		6.9E+8	$3d^9 4s\ 1_1$	$3d^9 4p\ 3^\circ_2$	RCW87	L90
570.392	0.007	175318.	30		3.8E+9	$3d^9 4s\ 2_2$	$3d^9 4p\ {}^1P^\circ_1$	RCW87	L90
571.323	0.007	175032.	70		1.5E+9	$3d^9 4s\ 1_2$	$3d^9 4p\ 2^\circ_2$	RCW87	L90
577.945	0.007	173027.	80		8.0E+8	$3d^9 4s\ 2_2$	$3d^9 4p\ 2^\circ_3$	RCW87	L90
580.610	0.007	172233.	40		3.9E+9	$3d^9 4s\ 1_2$	$3d^9 4p\ {}^3P^\circ_1$	RCW87	L90
576.460	0.007	173473.	35		5.5E+9	$3d^9 4s\ 1_1$	$3d^9 4p\ 1^\circ_0$	RCW87	L90
582.977	0.007	171533.	25		9.1E+8	$3d^9 4s\ 2_2$	$3d^9 4p\ 3^\circ_2$	RCW87	L90
591.735	0.007	168995.	60		1.6E+9	$3d^9 4s\ 1_3$	$3d^9 4p\ 1^\circ_3$	RCW87	L90
602.222	0.007	166051.7	80		2.8E+9	$3d^9 4s\ 1_1$	$3d^9 4p\ 2^\circ_2$	RCW87	L90
603.653	0.007	165658.1	120		3.4E+9	$3d^9 4s\ 1_2$	$3d^9 4p\ 1^\circ_3$	RCW87	L90
612.868	0.007	163167.3	115		4.5E+9	$3d^9 4s\ 1_3$	$3d^9 4p\ 1^\circ_2$	RCW87	L90
617.030	0.007	162066.7	25		7.4E+8	$3d^9 4s\ 2_2$	$3d^9 4p\ 2^\circ_2$	RCW87	L90
624.676	0.007	160083.0	30	b	1.1E+9	$3d^9 4s\ 2_2$	$3d^9 4p\ {}^3P^\circ_1$	RCW87	L90

Energy levels of Rb X

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3d^{10}$	^1S	0	0.	30.	RCW87
$3d^9 4s$	1	3	831899.	10.	RCW87
	1	2	835237.	10.	RCW87
	1	1	844220.	10.	RCW87
	2	2	848201.	10.	RCW87
$3d^9 4p$	1°	2	995066.	10.	RCW87
	1°	3	1000895.	10.	RCW87
	$^3P°$	1	1008264.	10.	RCW87
	2°	2	1010272.	10.	RCW87
	1°	4	1011323.	10.	RCW87
	1°	0	1016453.	10.	RCW87
	3°	2	1019734.	10.	RCW87
	2°	3	1021679.	10.	RCW87
	$^1P°$	1	1023519.	10.	RCW87
	3°	3	1027459.	10.	RCW87
	$^3D°$	1	1031186.	10.	RCW87
	4°	2	1033514.	10.	RCW87
$3d^9 4d$	1	1	1264075.	10.	RCW87
	1	4	1277462.	10.	RCW87
	1	5	1277736.	10.	RCW87
	1	2	1278472.	10.	RCW87
	2	1	1278601.	10.	RCW87
	1	3	1281692.	10.	RCW87
	2	3	1283828.	10.	RCW87
	1	0	1284748.	10.	RCW87
	2	2	1285504.	10.	RCW87
	2	4	1286122.	10.	RCW87
	3	1	1287408.	10.	RCW87
	3	3	1290703.	10.	RCW87
	4	1	1291703.	10.	RCW87
	3	4	1293527.	10.	RCW87
	3	2	1296602.	10.	RCW87
	4	2	1298758.	10.	RCW87
	4	3	1298970.	10.	RCW87
	^1S	0	1365410.	50.	RCNL99
$3d^9 4f$	$^3H°$	6	1521072.	50.	RCNL99
	$^3H°$	5	1521720.	50.	RCNL99
	$^3H°$	4	1534834.	50.	RCNL99
$3d^9 4f$	$^3G°$	5	1526571.	50.	RCNL99
$3d^9 4f$	$^1H°$	5	1535220.	50.	RCNL99

7.11. Rb XI

Co isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^9\ ^2D_{5/2}$

Ionization energy (2 540 000 cm^{-1}); (315 eV)

The spectrum of Rb XI was first observed by Edlén [E47]. An extensive analysis was later completed by Zaikin *et al.* [ZLRR83]. The wavelengths, calculated transition probabilities, and energy levels included in this compilation are taken from [ZLRR83]. The calculated ionization energy is quoted from [FKS76].

References for Rb XI

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E47 B. Edlén, Physica **13**, 547 (1947).

ZLRR83 Yu. F. Zaikin, A. V. Loginov, A. A. Ramonas, and A. N. Ryabtsev, Sov. Phys. Collect. **23**(3), 65 (1983).

Observed spectral lines of Rb XI

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
79.083	0.005	1264490.	30		5.E+7	$3d^9\ ^2D_{5/2}$	$3d^8(^1S)4p\ ^2P^o_{3/2}$	ZLRR83	ZLRR83
79.866	0.005	1252100.	6		1.2E+7	$3d^9\ ^2D_{3/2}$	$3d^8(^1S)4p\ ^2P^o_{3/2}$	ZLRR83	ZLRR83
80.789	0.005	1237790.	30		8.E+7	$3d^9\ ^2D_{3/2}$	$3d^8(^1S)4p\ ^2P^o_{1/2}$	ZLRR83	ZLRR83
83.211	0.005	1201760.	50		4.4E+7	$3d^9\ ^2D_{5/2}$	$3d^8(^1G)4p\ ^2G^o_{7/2}$	ZLRR83	ZLRR83
84.128	0.005	1188660.	65		8.E+7	$3d^9\ ^2D_{5/2}$	$3d^8(^3P)4p\ ^2D^o_{3/2}$	ZLRR83	ZLRR83
84.262	0.005	1186780.	120		8.9E+7	$3d^9\ ^2D_{5/2}$	$3d^8(^3P)4p\ ^4D^o_{7/2}$	ZLRR83	ZLRR83
84.376	0.005	1185170.	110		4.0E+8	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^2P^o_{1/2}$	ZLRR83	ZLRR83
84.531	0.005	1183000.	220		4.4E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^3P)4p\ ^2P^o_{3/2}$	ZLRR83	ZLRR83
84.860	0.005	1178410.	400		6.0E+8	$3d^9\ ^2D_{3/2}$	$3d^8(^1G)4p\ ^2F^o_{5/2}$	ZLRR83	ZLRR83
84.887	0.005	1178040.	50		1.4E+8	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^2S^o_{1/2}$	ZLRR83	ZLRR83
84.939	0.005	1177320.	60		1.1E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^3P)4p\ ^4D^o_{5/2}$	ZLRR83	ZLRR83
84.992	0.005	1176580.	110		1.4E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^1D)4p\ ^2P^o_{3/2}$	ZLRR83	ZLRR83
85.026	0.005	1176110.	410*	d	4.2E+7	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^2D^o_{3/2}$	ZLRR83	ZLRR83
85.026	0.005	1176110.	410*	d	3.7E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^1G)4p\ ^2F^o_{7/2}$	ZLRR83	ZLRR83
85.242	0.005	1173130.	75		1.0E+8	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^2D^o_{5/2}$	ZLRR83	ZLRR83
85.304	0.005	1172280.	20		2.2E+7	$3d^9\ ^2D_{5/2}$	$3d^8(^3P)4p\ ^4D^o_{3/2}$	ZLRR83	ZLRR83
85.424	0.005	1170630.	130		3.4E+8	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^2P^o_{3/2}$	ZLRR83	ZLRR83
85.447	0.005	1170320.	300		3.5E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^1D)4p\ ^2D^o_{5/2}$	ZLRR83	ZLRR83
85.625	0.005	1167880.	320		2.94E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^1D)4p\ ^2F^o_{7/2}$	ZLRR83	ZLRR83
85.658	0.005	1167430.	40		7.8E+7	$3d^9\ ^2D_{5/2}$	$3d^8(^1D)4p\ ^2D^o_{3/2}$	ZLRR83	ZLRR83
86.215	0.005	1159890.	50		8.8E+7	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^4D^o_{3/2}$	ZLRR83	ZLRR83
86.360	0.005	1157940.	60		7.7E+7	$3d^9\ ^2D_{3/2}$	$3d^8(^1D)4p\ ^2D^o_{5/2}$	ZLRR83	ZLRR83
86.434	0.005	1156950.	30		8.E+7	$3d^9\ ^2D_{3/2}$	$3d^8(^1D)4p\ ^2P^o_{1/2}$	ZLRR83	ZLRR83
86.472	0.005	1156440.	280		2.1E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^2F^o_{5/2}$	ZLRR83	ZLRR83
86.494	0.005	1156150.	120		8.2E+7	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^2D^o_{3/2}$	ZLRR83	ZLRR83
86.576	0.005	1155060.	300		6.6E+8	$3d^9\ ^2D_{3/2}$	$3d^8(^1D)4p\ ^2D^o_{3/2}$	ZLRR83	ZLRR83
86.687	0.005	1153580.	360		3.9E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^3P)4p\ ^4P^o_{5/2}$	ZLRR83	ZLRR83
86.831	0.005	1151660.	40		2.2E+7	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^2G^o_{7/2}$	ZLRR83	ZLRR83
87.003	0.005	1149390.	45		6.5E+7	$3d^9\ ^2D_{3/2}$	$3d^8(^1D)4p\ ^2F^o_{5/2}$	ZLRR83	ZLRR83
87.051	0.005	1148750.	170		1.2E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^4F^o_{7/2}$	ZLRR83	ZLRR83
87.199	0.005	1146800.	140		1.9E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^4F^o_{5/2}$	ZLRR83	ZLRR83
87.407	0.005	1144070.	110		1.3E+8	$3d^9\ ^2D_{3/2}$	$3d^8(^3F)4p\ ^2F^o_{5/2}$	ZLRR83	ZLRR83
87.430	0.005	1143770.	180		3.8E+8	$3d^9\ ^2D_{3/2}$	$3d^8(^3F)4p\ ^2D^o_{3/2}$	ZLRR83	ZLRR83
87.685	0.005	1140450.	370		4.1E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^2D^o_{5/2}$	ZLRR83	ZLRR83
87.795	0.005	1139020.	300		1.4E+8	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^2F^o_{7/2}$	ZLRR83	ZLRR83

Observed spectral lines of Rb XI—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
88.149	0.005	1134440.	60		6.7E+7	$3d^9\ ^2D_{3/2}$	$3d^8(^3F)4p\ ^4F^\circ_{5/2}$	ZLRR83	ZLRR83
88.359	0.005	1131750.	25		1.2E+7	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^4G^\circ_{5/2}$	ZLRR83	ZLRR83
88.647	0.005	1128070.	10		3.3E+6	$3d^9\ ^2D_{3/2}$	$3d^8(^3F)4p\ ^2D^\circ_{5/2}$	ZLRR83	ZLRR83
88.890	0.005	1124990.	80		2.5E+7	$3d^9\ ^2D_{3/2}$	$3d^8(^3F)4p\ ^4D^\circ_{3/2}$	ZLRR83	ZLRR83
89.263	0.005	1120280.	30		1.0E+8	$3d^9\ ^2D_{3/2}$	$3d^8(^3F)4p\ ^4F^\circ_{3/2}$	ZLRR83	ZLRR83
89.336	0.005	1119370.	10		3.3E+6	$3d^9\ ^2D_{3/2}$	$3d^8(^3F)4p\ ^4G^\circ_{5/2}$	ZLRR83	ZLRR83
91.825	0.005	1089030.	350		4.26E+9	$3d^9\ ^2D_{3/2}$	$3p^53d^{10}\ ^2P^\circ_{1/2}$	ZLRR83	ZLRR83
97.205	0.005	1028750.	900		3.24E+9	$3d^9\ ^2D_{5/2}$	$3p^53d^{10}\ ^2P^\circ_{3/2}$	ZLRR83	ZLRR83
98.388	0.005	1016380.	260		3.5E+8	$3d^9\ ^2D_{3/2}$	$3p^53d^{10}\ ^2P^\circ_{3/2}$	ZLRR83	ZLRR83

Energy levels of Rb XI

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3d^9$	^2D	5/2	0	50	ZLRR83	100%
	^2D	3/2	12360	50	ZLRR83	100%
$3p^53d^{10}$	$^2P^\circ$	3/2	1028750	50	ZLRR83	98%
	$^2P^\circ$	1/2	1101390	60	ZLRR83	95% + 3% $3d^8(^1D)4p\ ^2P^\circ$
$3d^8(^3F)4p$	$^4D^\circ$	7/2	(1113236)		ZLRR83	78% + 11% $3d^8(^3F)4p\ ^4F^\circ$
	$^4D^\circ$	5/2	(1124687)		ZLRR83	74% + 15% $3d^8(^3F)4p\ ^4F^\circ$
	$^4D^\circ$	3/2	1137360	60	ZLRR83	23% + 22% $3d^8(^1D)4p\ ^2D^\circ$
	$^4D^\circ$	1/2	(1138508)		ZLRR83	77% + 17% $3d^8(^3P)4p\ ^4D^\circ$
$3d^8(^3F)4p$	$^4G^\circ$	9/2	(1119626)		ZLRR83	43% + 33% $3d^8(^3F)4p\ ^2G^\circ$
	$^4G^\circ$	7/2	(1128100)		ZLRR83	69% + 13% $3d^8(^3F)4p\ ^4F^\circ$
	$^4G^\circ$	11/2	(1130725)		ZLRR83	99%
	$^4G^\circ$	5/2	1131740	60	ZLRR83	70% + 8% $3d^8(^1D)4p\ ^2F^\circ$
$3d^8(^3F)4p$	$^4F^\circ$	3/2	1132650	60	ZLRR83	22% + 57% $3d^8(^3F)4p\ ^4D^\circ$
	$^4F^\circ$	9/2	(1136770)		ZLRR83	72% + 23% $3d^8(^3F)4p\ ^2G^\circ$
	$^4F^\circ$	5/2	1146810	60	ZLRR83	36% + 22% $3d^8(^3F)4p\ ^2F^\circ$
	$^4F^\circ$	7/2	1148760	70	ZLRR83	44% + 39% $3d^8(^3F)4p\ ^2F^\circ$
$3d^8(^3F)4p$	$^2F^\circ$	7/2	1139020	70	ZLRR83	50% + 29% $3d^8(^3F)4p\ ^4F^\circ$
	$^2F^\circ$	5/2	1156450	70	ZLRR83	55% + 13% $3d^8(^1D)4p\ ^2F^\circ$
$3d^8(^3F)4p$	$^2D^\circ$	5/2	1140450	70	ZLRR83	48% + 20% $3d^8(^3F)4p\ ^4F^\circ$
	$^2D^\circ$	3/2	1156150	70	ZLRR83	41% + 24% $3d^8(^3F)4p\ ^4F^\circ$
$3d^8(^3F)4p$	$^2G^\circ$	9/2	(1144463)		ZLRR83	43% + 43% $3d^8(^3F)4p\ ^4G^\circ$
	$^2G^\circ$	7/2	1151660	70	ZLRR83	67% + 14% $3d^8(^1D)4p\ ^2F^\circ$
$3d^8(^3P)4p$	$^4P^\circ$	3/2	(1150301)		ZLRR83	36% + 37% $3d^8(^3F)4p\ ^4F^\circ$
	$^4P^\circ$	5/2	1153580	70	ZLRR83	32% + 22% $3d^8(^3F)4p\ ^2D^\circ$
	$^4P^\circ$	1/2	(1154981)		ZLRR83	86% + 4% $3d^8(^1D)4p\ ^2P^\circ$
$3d^8(^1D)4p$	$^2F^\circ$	5/2	1161750	70	ZLRR83	44% + 42% $3d^8(^3P)4p\ ^4P^\circ$
	$^2F^\circ$	7/2	1167890	70	ZLRR83	41% + 28% $3d^8(^1G)4p\ ^2F^\circ$
$3d^8(^1D)4p$	$^2D^\circ$	3/2	1167430	70	ZLRR83	32% + 25% $3d^8(^3F)4p\ ^2D^\circ$
	$^2D^\circ$	5/2	1170320	70	ZLRR83	43% + 28% $3d^8(^3P)4p\ ^2D^\circ$
$3d^8(^1D)4p$	$^2P^\circ$	1/2	1169316	70	ZLRR83	35% + 39% $3d^8(^3P)4p\ ^2P^\circ$
	$^2P^\circ$	3/2	1176580	70	ZLRR83	59% + 23% $3d^8(^1D)4p\ ^2D^\circ$

Energy levels of Rb XI—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3d^8(^3P)4p$	$^4D°$	3/2	1172270	70	ZLRR83	$52\% + 12\%$ $3d^8(^3F)4p\ ^4D°$
	$^4D°$	1/2	(1172419)		ZLRR83	$70\% + 13\%$ $3d^8(^1D)4p\ ^2P°$
	$^4D°$	5/2	1177320	70	ZLRR83	$26\% + 23\%$ $3d^8(^1D)4p\ ^2D°$
	$^4D°$	7/2	1186780	70	ZLRR83	$32\% + 42\%$ $3d^8(^1D)4p\ ^2F°$
$3d^8(^1G)4p$	$^2H°$	9/2	(1173680)		ZLRR83	$93\% + 6\%$ $3d^8(^1G)4p\ ^2G°$
	$^2H°$	11/2	(1186910)		ZLRR83	99%
$3d^8(^1G)4p$	$^2F°$	7/2	1176120	70	ZLRR83	$43\% + 47\%$ $3d^8(^3P)4p\ ^4D°$
	$^2F°$	5/2	1190780	70	ZLRR83	$69\% + 10\%$ $3d^8(^1D)4p\ ^2F°$
$3d^8(^3P)4p$	$^2P°$	3/2	1183000	70	ZLRR83	$68\% + 6\%$ $3d^8(^1D)4p\ ^2D°$
	$^2P°$	1/2	1197540	70	ZLRR83	$33\% + 35\%$ $3d^8(^1D)4p\ ^2P°$
$3d^8(^3P)4p$	$^2D°$	5/2	1185490	70	ZLRR83	$48\% + 36\%$ $3d^8(^3P)4p\ ^4D°$
	$^2D°$	3/2	1188670	70	ZLRR83	$76\% + 13\%$ $3d^8(^3P)4p\ ^4D°$
$3d^8(^3P)4p$	$^2S°$	1/2	1190400	70	ZLRR83	$67\% + 20\%$ $3d^8(^3P)4p\ ^2P°$
$3d^8(^3P)4p$	$^4S°$	3/2	(1193400)		ZLRR83	$90\% + 3\%$ $3d^8(^3P)4p\ ^4P°$
$3d^8(^1G)4p$	$^2G°$	7/2	1201760	70	ZLRR83	$90\% + 9\%$ $3d^8(^1G)4p\ ^2F°$
	$^2G°$	9/2	(1203649)		ZLRR83	$93\% + 6\%$ $3d^8(^1G)4p\ ^2H°$
$3d^8(^1S)4p$	$^2P°$	1/2	1250160	80	ZLRR83	$94\% + 2\%$ $3d^8(^1D)4p\ ^2P°$
	$^2P°$	3/2	1264500	80	ZLRR83	$96\% + 2\%$ $3d^8(^1D)4p\ ^2P°$

7.12. Rb XII

Fe isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^8\ {}^3F_4$

Ionization energy ($2\,950\,000 \pm 150\,000\ cm^{-1}$); ($366 \pm 18$ eV)

There are two major investigations of the Rb XII spectrum. The first, by Ryabtsev [R83], focused on transitions between the $3p^6 3d^8$ and $3p^5 3d^9$ configurations, which lie in the 85–105 Å range. Subsequently Podobedova [P84] analyzed the spectrum in the 65–80 Å region, which contains transitions between the $3p^6 3d^8$ and $3p^6 3d^7 4p$ configurations. In keeping with the notation in [P84] the Racah seniority number $\nu = 3$, which is the same for most of the terms with the $3d^7$ core, has been omitted. For terms with the seniority number $\nu = 1$ it is included as a subscript, so the notation for the core appears as $({}^2_1D)$.

Values for wavelengths, energy levels, and calculated transition probabilities are taken from their papers. The calculated ionization energy is quoted from [CNWM70] and given a $\pm 5\%$ estimated uncertainty, as indicated by the comparison of their theoretical values with experimental results for spectra in which experimental values are available.

References for Rb XII

CNWM70 T. A. Carlson, C. W. Nestor, Jr., N. Wasserman, and J. D. McDowell, At. Data **2**, 63 (1970).

P84 L. I. Podobedova, Phys. Scr. **30**, 398 (1984).

R83 A. N. Ryabtsev, Phys. Scr. **28**, 176 (1983).

Observed spectral lines of Rb XII

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
72.754	0.005	1374500.	80		4.07E+10	$3p^6 3d^8\ {}^1G_4$	$3d^7({}^2_1D)4p\ {}^1F^o_3$	P84	P84
73.324	0.005	1363810.	50		2.12E+10	$3p^6 3d^8\ {}^3P_1$	$3d^7({}^2_1D)4p\ {}^3P^o_2$	P84	P84
73.398	0.005	1362440.	50		2.42E+10	$3p^6 3d^8\ {}^3P_2$	$3d^7({}^2_1D)4p\ {}^3P^o_2$	P84	P84
73.521	0.005	1360160.	16		1.06E+10	$3p^6 3d^8\ {}^1G_4$	$3d^7({}^2_1D)4p\ {}^3F^o_3$	P84	P84
74.297	0.005	1345950.	14		1.60E+10	$3p^6 3d^8\ {}^3P_2$	$3d^7({}^2F)4p\ {}^1F^o_3$	P84	P84
74.510	0.005	1342100.	16		1.14E+10	$3p^6 3d^8\ {}^1D_2$	$3d^7({}^2F)4p\ {}^3F^o_2$	P84	P84
74.744	0.005	1337900.	5		8.14E+9	$3p^6 3d^8\ {}^1D_2$	$3d^7({}^2F)4p\ {}^3D^o_3$	P84	P84
74.828	0.005	1336400.	140		8.51E+10	$3p^6 3d^8\ {}^1G_4$	$3d^7({}^2F)4p\ {}^1F^o_3$	P84	P84
74.855	0.005	1335920.	40		1.46E+10	$3p^6 3d^8\ {}^3F_4$	$3d^7({}^2D)4p\ {}^3F^o_3$	P84	P84
74.906	0.005	1335010.	9		1.26E+10	$3p^6 3d^8\ {}^3F_3$	$3d^7({}^2D)4p\ {}^1D^o_2$	P84	P84
74.982	0.005	1333650.	9		2.30E+10	$3p^6 3d^8\ {}^3F_2$	$3d^7({}^4P)4p\ {}^3D^o_1$	P84	P84
74.999	0.005	1333350.	50		2.82E+10	$3p^6 3d^8\ {}^3P_1$	$3d^7({}^2F)4p\ {}^3D^o_2$	P84	P84
75.037	0.005	1332680.	14		2.67E+10	$3p^6 3d^8\ {}^3P_1$	$3d^7({}^2F)4p\ {}^3D^o_1$	P84	P84
75.078	0.005	1331950.	60		2.24E+10	$3p^6 3d^8\ {}^3P_2$	$3d^7({}^2F)4p\ {}^3D^o_2$	P84	P84
75.078	0.005	1331950.	60		3.60E+10	$3p^6 3d^8\ {}^3P_0$	$3d^7({}^2F)4p\ {}^3D^o_1$	P84	P84
75.121	0.005	1331190.	50		1.83E+10	$3p^6 3d^8\ {}^1D_2$	$3d^7({}^2F)4p\ {}^3G^o_3$	P84	P84
75.170	0.005	1330320.	130		3.69E+10	$3p^6 3d^8\ {}^3F_4$	$3d^7({}^4P)4p\ {}^3D^o_3$	P84	P84
75.217	0.005	1329490.	14		1.60E+10	$3p^6 3d^8\ {}^3P_1$	$3d^7({}^2F)4p\ {}^3F^o_2$	P84	P84
75.249	0.005	1328920.	20		1.30E+10	$3p^6 3d^8\ {}^3P_2$	$3d^7({}^2F)4p\ {}^3F^o_3$	P84	P84
75.305	0.005	1327930.	60		2.83E+10	$3p^6 3d^8\ {}^3F_4$	$3d^7({}^2D)4p\ {}^3D^o_3$	P84	P84
75.399	0.005	1326280.	14		1.56E+10	$3p^6 3d^8\ {}^3F_2$	$3d^7({}^2P)4p\ {}^3D^o_2$	P84	P84
75.435	0.005	1325640.	60		8.0E+9	$3p^6 3d^8\ {}^3F_4$	$3d^7({}^2G)4p\ {}^3G^o_5$	P84	P84
75.487	0.005	1324730.	50		3.54E+10	$3p^6 3d^8\ {}^3F_3$	$3d^7({}^4P)4p\ {}^3P^o_2$	P84	P84
75.533	0.005	1323920.	320		2.59E+10	$3p^6 3d^8\ {}^3F_2$	$3d^7({}^2H)4p\ {}^3G^o_3$	P84	P84
75.533	0.005	1323920.	320		2.44E+10	$3p^6 3d^8\ {}^3F_4$	$3d^7({}^2G)4p\ {}^1G^o_4$	P84	P84
75.533	0.005	1323920.	320		6.27E+10	$3p^6 3d^8\ {}^1D_2$	$3d^7({}^2D)4p\ {}^1P^o_1$	P84	P84
75.533	0.005	1323920.	320		1.34E+10	$3p^6 3d^8\ {}^3P_2$	$3d^7({}^2F)4p\ {}^3D^o_3$	P84	P84
75.563	0.005	1323400.	40		2.11E+10	$3p^6 3d^8\ {}^1D_2$	$3d^7({}^2D)4p\ {}^1F^o_3$	P84	P84
75.645	0.005	1321960.	80		1.56E+10	$3p^6 3d^8\ {}^3F_4$	$3d^7({}^2P)4p\ {}^3D^o_3$	P84	P84
75.645	0.005	1321960.	80		1.90E+10	$3p^6 3d^8\ {}^3F_3$	$3d^7({}^2G)4p\ {}^3F^o_2$	P84	P84
75.673	0.005	1321480.	130		2.80E+10	$3p^6 3d^8\ {}^3F_3$	$3d^7({}^2G)4p\ {}^3F^o_3$	P84	P84
75.755	0.005	1320040.	40		2.28E+10	$3p^6 3d^8\ {}^3F_3$	$3d^7({}^4P)4p\ {}^3D^o_2$	P84	P84

Observed spectral lines of Rb XII—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
75.786	0.005	1319500.	1000		6.95E+10	$3p^63d^8\ ^3F_4$	$3d^7(^2H)4p\ ^3G^\circ_5$	P84	P84
75.786	0.005	1319500.	1000		9.77E+10	$3p^63d^8\ ^3F_3$	$3d^7(^2H)4p\ ^3G^\circ_4$	P84	P84
75.889	0.005	1317710.	80		5.80E+10	$3p^63d^8\ ^3F_2$	$3d^7(^2P)4p\ ^1P^\circ_1$	P84	P84
75.913	0.005	1317300.	110		5.72E+10	$3p^63d^8\ ^3F_2$	$3d^7(^2G)4p\ ^3F^\circ_2$	P84	P84
75.940	0.005	1316830.	20		7.14E+9	$3p^63d^8\ ^3F_2$	$3d^7(^2G)4p\ ^3F^\circ_3$	P84	P84
76.023	0.005	1315390.	14		2.14E+10	$3p^63d^8\ ^3F_2$	$3d^7(^4P)4p\ ^3D^\circ_2$	P84	P84
76.089	0.005	1314250.	94		1.70E+10	$3p^63d^8\ ^1G_4$	$3d^7(^2F)4p\ ^3D^\circ_3$	P84	P84
76.102	0.005	1314030.	27		1.90E+10	$3p^63d^8\ ^3F_2$	$3d^7(^4P)4p\ ^3S^\circ_1$	P84	P84
76.132	0.005	1313510.	240		4.80E+10	$3p^63d^8\ ^3F_3$	$3d^7(^4P)4p\ ^5P^\circ_3$	P84	P84
76.132	0.005	1313510.	240		6.22E+9	$3p^63d^8\ ^3F_4$	$3d^7(^2G)4p\ ^3H^\circ_4$	P84	P84
76.132	0.005	1313510.	240		4.43E+10	$3p^63d^8\ ^1D_2$	$3d^7(^2P)4p\ ^3S^\circ_1$	P84	P84
76.165	0.005	1312940.	20		7.86E+9	$3p^63d^8\ ^1D_2$	$3d^7(^2G)4p\ ^1F^\circ_3$	P84	P84
76.202	0.005	1312300.	50		2.26E+10	$3p^63d^8\ ^3F_2$	$3d^7(^2D)4p\ ^3D^\circ_3$	P84	P84
76.223	0.005	1311940.	120		1.21E+11	$3p^63d^8\ ^1S_0$	$3d^7(^2_1D)4p\ ^3D^\circ_1$	P84	P84
76.223	0.005	1311940.	120		3.20E+10	$3p^63d^8\ ^1D_2$	$3d^7(^2D)4p\ ^1D^\circ_2$	P84	P84
76.281	0.005	1310940.	25		1.06E+10	$3p^63d^8\ ^3F_3$	$3d^7(^2P)4p\ ^3D^\circ_3$	P84	P84
76.341	0.005	1309910.	100		1.03E+11	$3p^63d^8\ ^3P_2$	$3d^7(^2D)4p\ ^1P^\circ_1$	P84	P84
76.402	0.005	1308870.	15		1.07E+10	$3p^63d^8\ ^3F_2$	$3d^7(^4P)4p\ ^5P^\circ_3$	P84	P84
76.437	0.005	1308270.	10		1.50E+10	$3p^63d^8\ ^3F_3$	$3d^7(^2P)4p\ ^1D^\circ_2$	P84	P84
76.491	0.005	1307340.	400		7.52E+10	$3p^63d^8\ ^3F_4$	$3d^7(^2G)4p\ ^3F^\circ_4$	P84	P84
76.523	0.005	1306800.	40		1.64E+10	$3p^63d^8\ ^3F_3$	$3d^7(^2G)4p\ ^3G^\circ_3$	P84	P84
76.539	0.005	1306520.	130		7.04E+10	$3p^63d^8\ ^3P_2$	$3d^7(^2D)4p\ ^3P^\circ_2$	P84	P84
76.598	0.005	1305520.	50		1.77E+10	$3p^63d^8\ ^1D_2$	$3d^7(^2H)4p\ ^3G^\circ_3$	P84	P84
76.623	0.005	1305090.	350		1.13E+10	$3p^63d^8\ ^1G_4$	$3d^7(^2H)4p\ ^1H^\circ_5$	P84	P84
76.623	0.005	1305090.	350		1.65E+11	$3p^63d^8\ ^1D_2$	$3d^7(^4P)4p\ ^3P^\circ_1$	P84	P84
76.797	0.005	1302130.	90		2.13E+10	$3p^63d^8\ ^3F_2$	$3d^7(^2G)4p\ ^3G^\circ_3$	P84	P84
76.797	0.005	1302130.	90		6.17E+10	$3p^63d^8\ ^1S_0$	$3d^7(^2_1D)4p\ ^1P^\circ_1$	P84	P84
76.942	0.005	1299680.	14		1.21E+10	$3p^63d^8\ ^1G_4$	$3d^7(^2D)4p\ ^1F^\circ_3$	P84	P84
76.990	0.005	1298870.	150		4.41E+10	$3p^63d^8\ ^3P_2$	$3d^7(^2G)4p\ ^1F^\circ_3$	P84	P84
77.043	0.005	1297980.	40		1.48E+10	$3p^63d^8\ ^3F_3$	$3d^7(^4P)4p\ ^5D^\circ_2$	P84	P84
77.072	0.005	1297490.	120		3.77E+10	$3p^63d^8\ ^3F_4$	$3d^7(^4F)4p\ ^3F^\circ_3$	P84	P84
77.184	0.005	1295600.	25		3.10E+10	$3p^63d^8\ ^1D_2$	$3d^7(^4P)4p\ ^3S^\circ_1$	P84	P84
77.285	0.005	1293910.	40		9.0E+9	$3p^63d^8\ ^1D_2$	$3d^7(^2D)4p\ ^3D^\circ_3$	P84	P84
77.313	0.005	1293440.	680		1.90E+11	$3p^63d^8\ ^1G_4$	$3d^7(^2G)4p\ ^1G^\circ_4$	P84	P84
77.428	0.005	1291520.	90		2.86E+10	$3p^63d^8\ ^3F_4$	$3d^7(^4F)4p\ ^3D^\circ_3$	P84	P84
77.454	0.005	1291090.	25		3.13E+10	$3p^63d^8\ ^3P_2$	$3d^7(^4P)4p\ ^3P^\circ_1$	P84	P84
77.486	0.005	1290560.	60		1.22E+10	$3p^63d^8\ ^1G_4$	$3d^7(^2H)4p\ ^3H^\circ_5$	P84	P84
77.538	0.005	1289690.	80		2.47E+10	$3p^63d^8\ ^3P_0$	$3d^7(^2D)4p\ ^3D^\circ_1$	P84	P84
77.538	0.005	1289690.	80		1.24E+10	$3p^63d^8\ ^3F_3$	$3d^7(^4F)4p\ ^3F^\circ_2$	P84	P84
77.568	0.005	1289190.	30		1.24E+10	$3p^63d^8\ ^1G_4$	$3d^7(^2G)4p\ ^1F^\circ_3$	P84	P84
77.607	0.005	1288540.	20		3.03E+10	$3p^63d^8\ ^3F_2$	$3d^7(^4F)4p\ ^3D^\circ_1$	P84	P84
77.638	0.005	1288030.	170		3.08E+10	$3p^63d^8\ ^3F_4$	$3d^7(^4F)4p\ ^3F^\circ_4$	P84	P84
77.719	0.005	1286690.	80		2.20E+10	$3p^63d^8\ ^3F_3$	$3d^7(^4F)4p\ ^3D^\circ_2$	P84	P84
77.727	0.005	1286550.	100		1.91E+10	$3p^63d^8\ ^3F_3$	$3d^7(^4F)4p\ ^3F^\circ_3$	P84	P84
77.819	0.005	1285030.	80		2.66E+10	$3p^63d^8\ ^3F_2$	$3d^7(^4F)4p\ ^3F^\circ_2$	P84	P84
77.946	0.005	1282940.	12		2.17E+10	$3p^63d^8\ ^3P_1$	$3d^7(^4P)4p\ ^3S^\circ_1$	P84	P84
78.000	0.005	1282050.	30		1.36E+10	$3p^63d^8\ ^3F_2$	$3d^7(^4F)4p\ ^3D^\circ_2$	P84	P84
78.015	0.005	1281800.	180		1.80E+10	$3p^63d^8\ ^3F_4$	$3d^7(^4F)4p\ ^5F^\circ_4$	P84	P84
78.057	0.005	1281120.	30		2.07E+10	$3p^63d^8\ ^3P_1$	$3d^7(^2P)4p\ ^3D^\circ_1$	P84	P84
78.092	0.005	1280540.	70		1.90E+10	$3p^63d^8\ ^3F_3$	$3d^7(^4F)4p\ ^3D^\circ_3$	P84	P84
78.196	0.005	1278840.	25		1.24E+10	$3p^63d^8\ ^3P_1$	$3d^7(^4P)4p\ ^5P^\circ_2$	P84	P84
78.303	0.005	1277090.	50		3.89E+9	$3p^63d^8\ ^3F_3$	$3d^7(^4F)4p\ ^3F^\circ_4$	P84	P84

Observed spectral lines of Rb XII—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
78.341	0.005	1276470.	25		8.43E+9	$3p^63d^8\ ^3P_2$	$3d^7(^4P)4p\ ^5P^\circ_3$	P84	P84
78.378	0.005	1275870.	60		9.18E+9	$3p^63d^8\ ^1G_4$	$3d^7(^2G)4p\ ^1H^\circ_5$	P84	P84
78.568	0.005	1272780.	40		6.18E+9	$3p^63d^8\ ^1G_4$	$3d^7(^2H)4p\ ^3I^\circ_5$	P84	P84
78.597	0.005	1272310.	30		1.43E+10	$3p^63d^8\ ^3P_1$	$3d^7(^4P)4p\ ^5P^\circ_1$	P84	P84
79.145	0.005	1263500.	30		9.0E+9	$3p^63d^8\ ^1D_2$	$3d^7(^4F)4p\ ^3F^\circ_3$	P84	P84
79.523	0.005	1257500.	70		1.33E+10	$3p^63d^8\ ^1D_2$	$3d^7(^4F)4p\ ^3D^\circ_3$	P84	P84
79.936	0.005	1251000.	30		1.30E+10	$3p^63d^8\ ^3P_1$	$3d^7(^4F)4p\ ^3D^\circ_2$	P84	P84
84.921	0.005	1177560.	30		1.09E+9	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^1F^\circ_3$	R83	R83
87.592	0.005	1141660.	50		1.54E+10	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^1P^\circ_1$	R83	R83
88.431	0.005	1130820.	750		5.45E+10	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^1F^\circ_3$	R83	R83
90.386	0.005	1106370.	200		1.41E+10	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3P^\circ_2$	R83	R83
90.767	0.005	1101720.	40		3.02E+9	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3P^\circ_2$	R83	R83
92.310	0.005	1083310.	30		2.78E+9	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3P^\circ_2$	R83	R83
92.748	0.005	1078190.	30		1.62E+9	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3F^\circ_2$	R83	R83
93.150	0.005	1073540.	150		6.14E+9	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3F^\circ_2$	R83	R83
93.392	0.005	1070760.	80		1.12E+10	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^3P^\circ_2$	R83	R83
93.402	0.005	1070640.	450		3.10E+10	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3D^\circ_1$	R83	R83
93.520	0.005	1070640.	60		5.2E+9	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3P^\circ_2$	R83	R83
93.723	0.005	1066970.	700		2.39E+10	$3p^63d^8\ ^3F_4$	$3p^53d^9\ ^3D^\circ_3$	R83	R83
94.121	0.005	1062460.	40		1.19E+10	$3p^63d^8\ ^1S_0$	$3p^53d^9\ ^1P^\circ_1$	R83	R83
94.697	0.005	1056000.	250		7.73E+9	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3D^\circ_3$	R83	R83
94.776	0.005	1055120.	30		1.52E+9	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3F^\circ_2$	R83	R83
96.042	0.005	1041210.	300	b	2.83E+9	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3P^\circ_1$	R83	R83
96.049	0.005	1041140.	300		1.16E+10	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3F^\circ_2$	R83	R83
96.240	0.005	1039070.	100		7.47E+9	$3p^63d^8\ ^3P_0$	$3p^53d^9\ ^3D^\circ_1$	R83	R83
96.437	0.005	1036950.	600		1.78E+10	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3D^\circ_2$	R83	R83
96.807	0.005	1032980.	90		3.3E+9	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3D^\circ_3$	R83	R83
97.766	0.005	1022850.	200		1.00E+10	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3P^\circ_1$	R83	R83
97.831	0.005	1022170.	700		1.01E+10	$3p^63d^8\ ^3F_4$	$3p^53d^9\ ^3F^\circ_3$	R83	R83
98.140	0.005	1018950.	40		1.47E+9	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3D^\circ_3$	R83	R83
98.630	0.005	1013890.	200		6.76E+9	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3D^\circ_2$	R83	R83
98.816	0.005	1011980.	100		2.66E+10	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^3P^\circ_0$	R83	R83
98.895	0.005	1011170.	200		4.69E+9	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3F^\circ_3$	R83	R83
98.990	0.005	1010200.	200	b	8.67E+9	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^3P^\circ_1$	R83	R83
99.042	0.005	1009670.	70		4.13E+9	$3p^63d^8\ ^3P_0$	$3p^53d^9\ ^3P^\circ_1$	R83	R83
99.074	0.005	1009350.	70		1.8E+9	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^3D^\circ_3$	R83	R83
99.128	0.005	1008800.	40		3.17E+9	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3P^\circ_1$	R83	R83
99.354	0.005	1006500.	30		5.86E+8	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^3F^\circ_3$	R83	R83
100.017	0.005	999830.	90		3.82E+9	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3D^\circ_2$	R83	R83
100.627	0.005	993770.	40		6.2E+8	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^1D^\circ_2$	R83	R83
100.665	0.005	993390.	1000		1.06E+10	$3p^63d^8\ ^3F_4$	$3p^53d^9\ ^3F^\circ_4$	R83	R83
101.099	0.005	989130.	400		7.38E+9	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^1D^\circ_2$	R83	R83
102.669	0.005	974000.	40		7.86E+8	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3F^\circ_3$	R83	R83
103.019	0.005	970700.	300		7.8E+9	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^1D^\circ_2$	R83	R83
103.688	0.005	964430.	40		4.86E+8	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^3F^\circ_3$	R83	R83
104.526	0.005	956700.	100		1.9E+9	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^1D^\circ_2$	R83	R83

Energy levels of Rb XII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3p^6 3d^8$	^3F	4	0	50	R83	99%
	^3F	3	10980	50	R83	100%
	^3F	2	15610	50	R83	86% + 13% $3p^6 3d^8$ ^1D
$3p^6 3d^8$	^1D	2	34020	50	R83	42% + 47% $3p^6 3d^8$ ^3P
$3p^6 3d^8$	^3P	1	46580	50	R83	100%
	^3P	0	47220	50	R83	97%
	^3P	2	48070	50	R83	52% + 45% $3p^6 3d^8$ ^1D
$3p^6 3d^8$	^1G	4	57680	50	R83	99%
$3p^6 3d^8$	^1S	0	127270	50	R83	97%
$3p^5 3d^9$	$^3F°$	4	993390	50	R83	100%
	$^3F°$	3	1022150	50	R83	81% + 18% $3p^5 3d^9$ $^3D°$
	$^3F°$	2	1089180	50	R83	60% + 18% $3p^5 3d^9$ $^1D°$
$3p^5 3d^9$	$^1D°$	2	1004740	50	R83	76% + 17% $3p^5 3d^9$ $^3F°$
$3p^5 3d^9$	$^3D°$	2	1047920	50	R83	42% + 30% $3p^5 3d^9$ $^3P°$
	$^3D°$	3	1066980	50	R83	77% + 15% $3p^5 3d^9$ $^3F°$
	$^3D°$	1	1086250	50	R83	69% + 19% $3p^5 3d^9$ $^1P°$
$3p^5 3d^9$	$^3P°$	1	1056890	50	R83	82% + 16% $3p^5 3d^9$ $^3D°$
	$^3P°$	0	1058570	50	R83	100%
	$^3P°$	2	1117340	60	R83	52% + 44% $3p^5 3d^9$ $^3D°$
$3p^5 3d^9$	$^1F°$	3	1188510	60	R83	92%
$3p^5 3d^9$	$^1P°$	1	1189720	60	R83	81% + 14% $3p^5 3d^9$ $^3D°$
$3d^7(^4F)4p$	$^5D°$	4	(1257415)		P84	49% + 32% $3d^7(^4F)4p$ $^5F°$
	$^5D°$	3	(1284213)		P84	25% + 29% $3d^7(^4F)4p$ $^5F°$
	$^5D°$	2	(1284454)		P84	40% + 22% $3d^7(^4P)4p$ $^5D°$
	$^5D°$	1	(1285826)		P84	52% + 29% $3d^7(^4P)4p$ $^5D°$
	$^5D°$	0	(1286593)		P84	61% + 32% $3d^7(^4P)4p$ $^5D°$
$3d^7(^4F)4p$	$^5F°$	5	(1260171)		P84	58% + 22% $3d^7(^4F)4p$ $^5G°$
	$^5F°$	3	(1266116)		P84	51% + 33% $3d^7(^4F)4p$ $^5D°$
	$^5F°$	2	(1271812)		P84	63% + 18% $3d^7(^4F)4p$ $^5D°$
	$^5F°$	1	(1275699)		P84	74%
	$^5F°$	4	1281790	80	P84	27% + 22% $3d^7(^4F)4p$ $^3F°$
$3d^7(^4F)4p$	$^5G°$	4	(1270325)		P84	42% + 20% $3d^7(^4F)4p$ $^5F°$
	$^5G°$	3	(1275668)		P84	54% + 19% $3d^7(^4F)4p$ $^5D°$
	$^5G°$	6	(1277024)		P84	96%
	$^5G°$	2	(1279207)		P84	71% + 11% $3d^7(^4F)4p$ $^3F°$
	$^5G°$	5	(1289373)		P84	53% + 46% $3d^7(^4F)4p$ $^3G°$
$3d^7(^4F)4p$	$^3G°$	5	(1277078)		P84	31% + 40% $3d^7(^4F)4p$ $^5F°$
	$^3G°$	4	(1297644)		P84	72% + 23% $3d^7(^4F)4p$ $^5G°$
	$^3G°$	3	(1303216)		P84	82%
$3d^7(^4F)4p$	$^3F°$	4	1288040	80	P84	49% + 20% $3d^7(^4F)4p$ $^5F°$
	$^3F°$	3	1297490	80	P84	50% + 19% $3d^7(^4F)4p$ $^3D°$
	$^3F°$	2	1300650	80	P84	55% + 13% $3d^7(^4F)4p$ $^5G°$
$3d^7(^4P)4p$	$^5S°$	2	(1288580)		P84	86%

Energy levels of Rb XII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3d^7(^4F)4p$	$^3D°$	3	1291520	80	P84	$57\% + 19\%$ $3d^7(^4F)4p$ $^3F°$
	$^3D°$	2	1297670	80	P84	$50\% + 12\%$ $3d^7(^4F)4p$ $^3F°$
	$^3D°$	1	1304150	80	P84	$31\% + 13\%$ $3d^7(^2P)4p$ $^3P°$
$3d^7(^2P)4p$	$^3P°$	1	(1301458)		P84	$18\% + 30\%$ $3d^7(^4F)4p$ $^3D°$
	$^3P°$	0	(1313634)		P84	$37\% + 29\%$ $3d^7(^4F)4p$ $^5D°$
	$^3P°$	2	(1317519)		P84	$10\% + 24\%$ $3d^7(^4P)4p$ $^5D°$
$3d^7(^2G)4p$	$^3H°$	5	(1306356)		P84	$42\% + 20\%$ $3d^7(^2G)4p$ $^1H°$
	$^3H°$	4	1313510	90	P84	74%
	$^3H°$	6	(1323009)		P84	$48\% + 37\%$ $3d^7(^2G)4p$ $^1I°$
$3d^7(^2G)4p$	$^3F°$	4	1307350	90	P84	$42\% + 15\%$ $3d^7(^4F)4p$ $^3F°$
	$^3F°$	3	1332450	90	P84	$31\% + 36\%$ $3d^7(^2G)4p$ $^3G°$
	$^3F°$	2	1332870	90	P84	74%
$3d^7(^4P)4p$	$^5D°$	2	1308950	80	P84	$18\% + 15\%$ $3d^7(^4F)4p$ $^3D°$
	$^5D°$	3	(1309866)		P84	$37\% + 22\%$ $3d^7(^4P)4p$ $^3D°$
	$^5D°$	1	(1314519)		P84	$34\% + 16\%$ $3d^7(^4F)4p$ $^5D°$
	$^5D°$	0	(1317605)		P84	$24\% + 41\%$ $3d^7(^2P)4p$ $^3P°$
	$^5D°$	4	(1319678)		P84	86%
$3d^7(^2G)4p$	$^3G°$	3	1317760	90	P84	$34\% + 29\%$ $3d^7(^2G)4p$ $^3F°$
	$^3G°$	5	1325640	90	P84	$59\% + 27\%$ $3d^7(^2H)4p$ $^3I°$
	$^3G°$	4	(1332364)		P84	$52\% + 19\%$ $3d^7(^2G)4p$ $^3H°$
$3d^7(^4P)4p$	$^5P°$	1	1318990	80	P84	$29\% + 15\%$ $3d^7(^2P)4p$ $^3P°$
	$^5P°$	3	1324490	80	P84	$12\% + 20\%$ $3d^7(^2G)4p$ $^1F°$
	$^5P°$	2	1325420	80	P84	$28\% + 14\%$ $3d^7(^4P)4p$ $^3P°$
$3d^7(^2P)4p$	$^1D°$	2	1319250	90	P84	$13\% + 20\%$ $3d^7(^4P)4p$ $^5P°$
$3d^7(^2H)4p$	$^3G°$	5	1319510	90	P84	83%
	$^3G°$	4	1330490	90	P84	$67\% + 10\%$ $3d^7(^2G)4p$ $^3G°$
	$^3G°$	3	1339540	90	P84	$34\% + 12\%$ $3d^7(^2D)4p$ $^1F°$
$3d^7(^2H)4p$	$^3I°$	6	(1319593)		P84	$49\% + 35\%$ $3d^7(^2G)4p$ $^3H°$
	$^3I°$	5	1330460	80	P84	$52\% + 15\%$ $3d^7(^2G)4p$ $^3H°$
	$^3I°$	7	(1334725)		P84	100%
$3d^7(^2P)4p$	$^3D°$	3	1321950	90	P84	$27\% + 16\%$ $3d^7(^4P)4p$ $^5D°$
	$^3D°$	1	1327700	80	P84	$36\% + 14\%$ $3d^7(^2P)4p$ $^3P°$
	$^3D°$	2	1341890	90	P84	45%
$3d^7(^2G)4p$	$^1G°$	4	1323930	90	P84	$30\% + 30\%$ $3d^7(^2G)4p$ $^3F°$
$3d^7(^2P)4p$	$^1S°$	0	(1326599)		P84	$61\% + 15\%$ $3d^7(^4P)4p$ $^5D°$
$3d^7(^2D)4p$	$^3D°$	3	1327930	90	P84	$30\% + 10\%$ $3d^7(^2D)4p$ $^3F°$
	$^3D°$	1	1336910	80	P84	$35\% + 21\%$ $3d^7(^4P)4p$ $^3D°$
	$^3D°$	2	(1352026)		P84	$11\% + 27\%$ $3d^7(^2P)4p$ $^1D°$
$3d^7(^4P)4p$	$^3S°$	1	1329630	80	P84	$31\% + 38\%$ $3d^7(^4P)4p$ $^5P°$
$3d^7(^4P)4p$	$^3D°$	3	1330330	90	P84	$56\% + 26\%$ $3d^7(^4P)4p$ $^5P°$
	$^3D°$	2	1331030	90	P84	$33\% + 20\%$ $3d^7(^2D)4p$ $^3P°$
	$^3D°$	1	1349260	90	P84	$18\% + 19\%$ $3d^7(^2P)4p$ $^3S°$
$3d^7(^2P)4p$	$^1P°$	1	1333320	90	P84	$31\% + 23\%$ $3d^7(^4P)4p$ $^3P°$

Energy levels of Rb XII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3d^7(^2G)4p$	$^1H°$	5	1333540	80	P84	52% + 39% $3d^7(^2G)4p\ ^3H°$
$3d^7(^2D)4p$	$^3F°$	2	(1335406)		P84	33% + 17% $3d^7(^2P)4p\ ^3P°$
	$^3F°$	3	1335910	90	P84	22% + 21% $3d^7(^2P)4p\ ^3D°$
	$^3F°$	4	(1343043)		P84	72% + 18% $3d^7(^2_1D)4p\ ^3F°$
$3d^7(^4P)4p$	$^3P°$	2	1335710	90	P84	27% + 19% $3d^7(^4P)4p\ ^5P°$
	$^3P°$	1	1339130	80	P84	38% + 20% $3d^7(^2P)4p\ ^3S°$
	$^3P°$	0	(1348671)		P84	73% + 21% $3d^7(^2P)4p\ ^1S°$
$3d^7(^2D)4p$	$^1D°$	2	1345950	90	P84	19% + 18% $3d^7(^2D)4p\ ^3P°$
$3d^7(^2H)4p$	$^3H°$	6	(1346286)		P84	41% + 37% $3d^7(^2H)4p\ ^3I°$
	$^3H°$	5	1348230	80	P84	71% + 15% $3d^7(^2H)4p\ ^1H°$
	$^3H°$	4	(1352418)		P84	79%
$3d^7(^2H)4p$	$^3I°$	6	(1346888)		P84	40% + 48% $3d^7(^2H)4p\ ^3H°$
$3d^7(^2G)4p$	$^1F°$	3	1346950	80	P84	27% + 12% $3d^7(^2P)4p\ ^3D°$
$3d^7(^2P)4p$	$^3S°$	1	1347530	90	P84	21% + 23% $3d^7(^2D)4p\ ^3P°$
$3d^7(^2G)4p$	$^1G°$	4	1351120	80	P84	50% + 40% $3d^7(^2G)4p\ ^1G°$
$3d^7(^2D)4p$	$^3P°$	2	1354580	90	P84	22% + 19% $3d^7(^2D)4p\ ^1D°$
	$^3P°$	1	(1364733)		P84	38% + 17% $3d^7(^2P)4p\ ^1P°$
	$^3P°$	0	(1365360)		P84	69% + 13% $3d^7(^2P)4p\ ^3P°$
$3d^7(^2D)4p$	$^1F°$	3	1357420	80	P84	32% + 13% $3d^7(^2D)4p\ ^3F°$
$3d^7(^2D)4p$	$^1P°$	1	1357980	90	P84	61% + 10% $3d^7(^2_1D)4p\ ^1P°$
$3d^7(^2F)4p$	$^1D°$	2	(1361881)		P84	32% + 34% $3d^7(^2F)4p\ ^3F°$
$3d^7(^2H)4p$	$^1H°$	5	1362770	90	P84	75% + 11% $3d^7(^2H)4p\ ^3H°$
$3d^7(^2F)4p$	$^3G°$	3	1365200	90	P84	46% + 20% $3d^7(^2H)4p\ ^3G°$
	$^3G°$	4	(1367028)		P84	35% + 24% $3d^7(^2F)4p\ ^1G°$
	$^3G°$	5	(1381681)		P84	91%
$3d^7(^2F)4p$	$^3D°$	3	1371950	90	P84	34% + 18% $3d^7(^2F)4p\ ^3F°$
	$^3D°$	1	1379210	90	P84	81%
	$^3D°$	2	1379980	90	P84	46% + 34% $3d^7(^2F)4p\ ^1D°$
$3d^7(^2F)4p$	$^3F°$	2	1376100	90	P84	38% + 29% $3d^7(^2F)4p\ ^3D°$
	$^3F°$	3	1376990	90	P84	52% + 18% $3d^7(^2F)4p\ ^3D°$
	$^3F°$	4	(1382234)		P84	64% + 19% $3d^7(^2F)4p\ ^1G°$
$3d^7(^2F)4p$	$^1G°$	4	(1379308)		P84	50% + 38% $3d^7(^2F)4p\ ^3G°$
$3d^7(^2F)4p$	$^1F°$	3	1394010	90	P84	83%
$3d^7(^2_1D)4p$	$^3P°$	2	1410450	90	P84	67% + 19% $3d^7(^2D)4p\ ^3P°$
	$^3P°$	1	(1412941)		P84	64% + 14% $3d^7(^2_1D)4p\ ^1P°$
	$^3P°$	0	(1418993)		P84	87% + 10% $3d^7(^2D)4p\ ^3P°$
$3d^7(^2_1D)4p$	$^3F°$	2	(1412152)		P84	69% + 12% $3d^7(^2D)4p\ ^3F°$
	$^3F°$	3	1417830	90	P84	57% + 15% $3d^7(^2D)4p\ ^3F°$
	$^3F°$	4	(1430117)		P84	71% + 22% $3d^7(^2D)4p\ ^3F°$
$3d^7(^2_1D)4p$	$^1P°$	1	1429400	80	P84	38% + 21% $3d^7(^2_1D)4p\ ^3D°$

Energy levels of Rb XII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3d^7(^2_1D)4p$	$^1F^\circ$	3	1432160	90	P84	$55\% + 18\%$ $3d^7(^2_1D)4p$ $^3F^\circ$
$3d^7(^2_1D)4p$	$^3D^\circ$	2	(1439151)		P84	$63\% + 18\%$ $3d^7(^2D)4p$ $^3D^\circ$
	$^3D^\circ$	1	1439200	90	P84	$47\% + 33\%$ $3d^7(^2_1D)4p$ $^1P^\circ$
	$^3D^\circ$	3	(1446352)		P84	$60\% + 23\%$ $3d^7(^2D)4p$ $^3D^\circ$
$3d^7(^2_1D)4p$	$^1D^\circ$	2	(1443247)		P84	$55\% + 22\%$ $3d^7(^2D)4p$ $^1D^\circ$

7.13. Rb XIII

Mn isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^7\ {}^4F_{9/2}$

Ionization energy ($3\,370\,000 \pm 170\,000\ cm^{-1}$); ($418 \pm 21$ eV)

Wyart and Ryabtsev [WR99] have analyzed the spectrum of Rb XIII in the 80–110 Å region using a triggered spark source, locating almost all of the levels of the $3p^6 3d^7$ configuration and most of those in the $3p^5 3d^8$ configuration. The data included here are taken from their work. The calculated ionization energy is quoted from [CNWM70] and given a $\pm 5\%$ estimated uncertainty, as indicated by the comparison of their theoretical values with experimental results for spectra in which experimental values are available.

References for Rb XIII

CNWM70 T. A. Carlson, C. W. Nestor, Jr., N. Wasserman, and J. D. McDowell, At. Data **2**, 63 (1970).

WR99 J.-F. Wyart and A. N. Ryabtsev, Phys. Scr. **60**, 527 (1999).

Observed spectral lines of Rb XIII

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
84.917	0.005	1177620	80		3.45E+8	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2G^\circ_{9/2}$	WR99	WR99
85.794	0.005	1165580	1200		6.30E+9	$3p^6 3d^7\ {}^2H_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2G^\circ_{7/2}$	WR99	WR99
86.088	0.005	1161600	1600		7.26E+9	$3p^6 3d^7\ {}^2H_{11/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2G^\circ_{9/2}$	WR99	WR99
86.982	0.005	1149660	560		4.58E+9	$3p^6 3d^7\ {}^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ {}^2D^\circ_{5/2}$	WR99	WR99
87.106	0.005	1148030	970		5.43E+9	$3p^6 3d^7\ {}^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2F^\circ_{5/2}$	WR99	WR99
87.542	0.005	1142310	20		5.4E+7	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2F^\circ_{7/2}$	WR99	WR99
87.557	0.005	1142110	560		3.41E+9	$3p^6 3d^7\ {}^2F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ {}^2D^\circ_{3/2}$	WR99	WR99
87.710	0.005	1140120	100		1.26E+8	$3p^6 3d^7\ {}^2F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2G^\circ_{7/2}$	WR99	WR99
87.795	0.005	1139020	2900	b	3.32E+9	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2F^\circ_{7/2}$	WR99	WR99
87.879	0.005	1137930	40		2.72E+8	$3p^6 3d^7\ {}^2_2D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2F^\circ_{5/2}$	WR99	WR99
88.190	0.005	1133920	20		2.5E+8	$3p^6 3d^7\ {}^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2F^\circ_{5/2}$	WR99	WR99
88.495	0.005	1130010	80		3.72E+8	$3p^6 3d^7\ {}^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2F^\circ_{7/2}$	WR99	WR99
89.052	0.005	1122940	240		9.02E+9	$3p^6 3d^7\ {}^2_1D_{3/2}$	$3p^5(^2P^\circ)3d^8(^1S)\ {}^2P^\circ_{1/2}$	WR99	WR99
89.162	0.005	1121550	80		1.72E+8	$3p^6 3d^7\ {}^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2G^\circ_{9/2}$	WR99	WR99
89.466	0.005	1117740	240		2.66E+9	$3p^6 3d^7\ {}^2_1D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ {}^2P^\circ_{3/2}$	WR99	WR99
89.823	0.005	1113300	380	b	9.69E+8	$3p^6 3d^7\ {}^2H_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2F^\circ_{7/2}$	WR99	WR99
90.172	0.005	1108990	50		7.6E+7	$3p^6 3d^7\ {}^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2F^\circ_{7/2}$	WR99	WR99
90.329	0.005	1107060	720		1.87E+9	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2F^\circ_{7/2}$	WR99	WR99
91.161	0.005	1096960	70		6.73E+8	$3p^6 3d^7\ {}^2_1D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ {}^2D^\circ_{5/2}$	WR99	WR99
91.304	0.005	1095240	70		3.00E+8	$3p^6 3d^7\ {}^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2F^\circ_{5/2}$	WR99	WR99
91.526	0.005	1092590	130		2.5E+7	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2H^\circ_{9/2}$	WR99	WR99
91.700	0.005	1090510	550		1.41E+9	$3p^6 3d^7\ {}^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^4D^\circ_{7/2}$	WR99	WR99
91.914	0.005	1087970	60*		1.74E+8	$3p^6 3d^7\ {}^2_2D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2F^\circ_{7/2}$	WR99	WR99
91.914	0.005	1087970	60*		4.5E+7	$3p^6 3d^7\ {}^2F_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2F^\circ_{7/2}$	WR99	WR99
92.150	0.005	1085190	320		1.30E+9	$3p^6 3d^7\ {}^2_2D_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2F^\circ_{5/2}$	WR99	WR99
92.291	0.005	1083530	60		9.5E+7	$3p^6 3d^7\ {}^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2H^\circ_{9/2}$	WR99	WR99
92.345	0.005	1082900	110		2.38E+8	$3p^6 3d^7\ {}^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2F^\circ_{7/2}$	WR99	WR99
92.381	0.005	1082470	110		4.55E+8	$3p^6 3d^7\ {}^2_1D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^2G^\circ_{7/2}$	WR99	WR99
92.517	0.005	1080880	550		1.12E+9	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^4D^\circ_{7/2}$	WR99	WR99
92.894	0.005	1076500	50		8.2E+7	$3p^6 3d^7\ {}^2H_{11/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ {}^2H^\circ_{9/2}$	WR99	WR99
93.004	0.005	1075220	100		1.56E+8	$3p^6 3d^7\ {}^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^4D^\circ_{7/2}$	WR99	WR99
93.066	0.005	1074510	110		6.52E+8	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^4D^\circ_{5/2}$	WR99	WR99
93.477	0.005	1069780	80		1.40E+9	$3p^6 3d^7\ {}^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ {}^4D^\circ_{3/2}$	WR99	WR99
93.559	0.005	1068840	830		1.21E+9	$3p^6 3d^7\ {}^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ {}^4D^\circ_{5/2}$	WR99	WR99
93.703	0.005	1067200	710		1.21E+9	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ {}^4D^\circ_{5/2}$	WR99	WR99

Observed spectral lines of Rb XIII—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
93.723	0.005	1066970	3400	b	1.17E+9	$3p^63d^7\ ^2H_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2H^\circ_{9/2}$	WR99	WR99
93.778	0.005	1066350	180		9.52E+8	$3p^63d^7\ ^4F_{3/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{3/2}$	WR99	WR99
93.864	0.005	1065370	210		1.60E+8	$3p^63d^7\ ^4F_{3/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{5/2}$	WR99	WR99
94.199	0.005	1061580	130*		1.82E+8	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	WR99	WR99
94.199	0.005	1061580	130*		9.58E+8	$3p^63d^7\ ^4P_{3/2}$	$3p^5(^2P^\circ)3d^8(^1D)\ ^2P^\circ_{3/2}$	WR99	WR99
94.292	0.005	1060540	40		4.02E+8	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{7/2}$	WR99	WR99
94.472	0.005	1058520	140		7.68E+8	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^1D)\ ^2P^\circ_{3/2}$	WR99	WR99
94.499	0.005	1058210	80		1.7E+7	$3p^63d^7\ ^4F_{3/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	WR99	WR99
94.701	0.005	1055960	1500	b	7.6E+7	$3p^63d^7\ ^2F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^2F^\circ_{7/2}$	WR99	WR99
94.780	0.005	1055080	130		4.36E+8	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{9/2}$	WR99	WR99
94.932	0.005	1053390	100		2.13E+8	$3p^63d^7\ ^2_1D_{3/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^2F^\circ_{5/2}$	WR99	WR99
94.953	0.005	1053150	160		5.43E+8	$3p^63d^7\ ^2F_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2F^\circ_{5/2}$	WR99	WR99
95.150	0.005	1050970	930		1.27E+9	$3p^63d^7\ ^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^2F^\circ_{7/2}$	WR99	WR99
95.397	0.005	1048250	130*		1.8E+7	$3p^63d^7\ ^2_1D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^2F^\circ_{5/2}$	WR99	WR99
95.397	0.005	1048250	130*		1.58E+8	$3p^63d^7\ ^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2F^\circ_{5/2}$	WR99	WR99
95.422	0.005	1047980	160		4.58E+8	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{5/2}$	WR99	WR99
95.457	0.005	1047590	460		8.09E+8	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{7/2}$	WR99	WR99
95.624	0.005	1045760	190		2.38E+8	$3p^63d^7\ ^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{7/2}$	WR99	WR99
95.666	0.005	1045300	170		8.9E+7	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{7/2}$	WR99	WR99
95.770	0.005	1044170	130		1.28E+8	$3p^63d^7\ ^4P_{3/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{5/2}$	WR99	WR99
95.929	0.005	1042440	50	b	2.08E+8	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{5/2}$	WR99	WR99
95.962	0.005	1042080	90		4.62E+8	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{3/2}$	WR99	WR99
96.050	0.005	1041120	640	b	1.33E+8	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{5/2}$	WR99	WR99
96.256	0.005	1038900	60		2.53E+8	$3p^63d^7\ ^4F_{3/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{5/2}$	WR99	WR99
96.381	0.005	1037550	60		9.78E+8	$3p^63d^7\ ^2_2D_{5/2}$	$3p^5(^2P^\circ)3d^8(^1D)\ ^2P^\circ_{3/2}$	WR99	WR99
96.465	0.005	1036640	30		1.6E+7	$3p^63d^7\ ^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{7/2}$	WR99	WR99
96.719	0.005	1033920	540*		1.20E+9	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{7/2}$	WR99	WR99
96.719	0.005	1033920	540*		2.13E+8	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	WR99	WR99
97.062	0.005	1030270	60		4.94E+8	$3p^63d^7\ ^2_1D_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2F^\circ_{7/2}$	WR99	WR99
97.324	0.005	1027500	210		8.80E+8	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4P^\circ_{5/2}$	WR99	WR99
97.398	0.005	1026720	20		2.15E+8	$3p^63d^7\ ^2_2D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{7/2}$	WR99	WR99
97.628	0.005	1024300	130		5.42E+8	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{7/2}$	WR99	WR99
97.758	0.005	1022930	110		3.78E+8	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{3/2}$	WR99	WR99
97.829	0.005	1022190	1200	b	4.50E+8	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{7/2}$	WR99	WR99
97.857	0.005	1021900	30		1.77E+8	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4P^\circ_{5/2}$	WR99	WR99
98.018	0.005	1020220	30		4.0E+7	$3p^63d^7\ ^2_2D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{5/2}$	WR99	WR99
98.086	0.005	1019510	100		5.30E+8	$3p^63d^7\ ^4F_{3/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{3/2}$	WR99	WR99
98.165	0.005	1018690	70		2.11E+8	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{7/2}$	WR99	WR99
98.428	0.005	1015970	750		1.55E+9	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{9/2}$	WR99	WR99
98.760	0.005	1012560	30		9.6E+7	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{7/2}$	WR99	WR99
98.990	0.005	1010200	800	b	1.06E+9	$3p^63d^7\ ^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{9/2}$	WR99	WR99
99.024	0.005	1009860	110		3.52E+8	$3p^63d^7\ ^4F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	WR99	WR99
99.331	0.005	1006740	550		1.09E+9	$3p^63d^7\ ^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{7/2}$	WR99	WR99
99.379	0.005	1006250	550		9.67E+8	$3p^63d^7\ ^2H_{11/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2H^\circ_{11/2}$	WR99	WR99
99.518	0.005	1004840	70		2.12E+8	$3p^63d^7\ ^2_2D_{3/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{5/2}$	WR99	WR99
99.788	0.005	1002120	10		1.4E+7	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{7/2}$	WR99	WR99
99.947	0.005	1000530	40		4.28E+8	$3p^63d^7\ ^2_1D_{3/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2F^\circ_{5/2}$	WR99	WR99
100.170	0.005	998300	20*		2.48E+8	$3p^63d^7\ ^2_1D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^2F^\circ_{7/2}$	WR99	WR99
100.170	0.005	998300	20*		7.4E+7	$3p^63d^7\ ^4P_{3/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{3/2}$	WR99	WR99
100.248	0.005	997530	30		1.60E+8	$3p^63d^7\ ^2_2D_{3/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	WR99	WR99
100.282	0.005	997190	20		1.83E+8	$3p^63d^7\ ^4P_{3/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4P^\circ_{5/2}$	WR99	WR99
100.474	0.005	995280	30		3.25E+8	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{3/2}$	WR99	WR99

Observed spectral lines of Rb XIII—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Line Code	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
100.586	0.005	994170	170*		1.98E+8	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4P^\circ_{5/2}$	WR99	WR99
100.586	0.005	994170	170*		2.67E+8	$3p^63d^7\ ^2H_{11/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{9/2}$	WR99	WR99
100.761	0.005	992450	240		4.54E+8	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{7/2}$	WR99	WR99
100.903	0.005	991050	10		2.2E+7	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{7/2}$	WR99	WR99
101.059	0.005	989520	20		1.4E+7	$3p^63d^7\ ^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{7/2}$	WR99	WR99
101.202	0.005	988120	80		8.0E+7	$3p^63d^7\ ^2F_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4D^\circ_{5/2}$	WR99	WR99
101.818	0.005	982140	140		5.60E+8	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	WR99	WR99
102.036	0.005	980050	110		3.20E+8	$3p^63d^7\ ^2G_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{7/2}$	WR99	WR99
102.219	0.005	978290	20		1.12E+8	$3p^63d^7\ ^2_2D_{3/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{5/2}$	WR99	WR99
102.322	0.005	977310	30		6.9E+7	$3p^63d^7\ ^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{7/2}$	WR99	WR99
102.467	0.005	975920	20		4.7E+7	$3p^63d^7\ ^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{5/2}$	WR99	WR99
102.724	0.005	973480	260		2.39E+8	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{9/2}$	WR99	WR99
102.978	0.005	971080	150		2.95E+8	$3p^63d^7\ ^2G_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{9/2}$	WR99	WR99
103.679	0.005	964520	20		1.12E+8	$3p^63d^7\ ^2F_{5/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{7/2}$	WR99	WR99
103.746	0.005	963890	250	b	9.4E+7	$3p^63d^7\ ^4F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{9/2}$	WR99	WR99
104.202	0.005	959670	10		7.8E+7	$3p^63d^7\ ^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{7/2}$	WR99	WR99
104.259	0.005	959150	90		1.64E+8	$3p^63d^7\ ^4P_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{7/2}$	WR99	WR99
104.360	0.005	958220	50		1.16E+8	$3p^63d^7\ ^2_2D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3P)\ ^4D^\circ_{7/2}$	WR99	WR99
104.808	0.005	954130	130		1.51E+8	$3p^63d^7\ ^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^1G)\ ^2G^\circ_{9/2}$	WR99	WR99
105.246	0.005	950160	290		1.98E+8	$3p^63d^7\ ^4F_{9/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{11/2}$	WR99	WR99
106.592	0.005	938160	20		1.05E+8	$3p^63d^7\ ^2_2D_{5/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4G^\circ_{7/2}$	WR99	WR99
107.188	0.005	932940	50		5.E+6	$3p^63d^7\ ^2F_{7/2}$	$3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ_{7/2}$	WR99	WR99

Energy levels of Rb XIII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3p^63d^7$	^4F	9/2	0	50	WR99	96.2% + 3.6% $3p^63d^7\ ^2G$
	^4F	7/2	9634	50	WR99	99.0% + 0.9% $3p^63d^7\ ^2G$
	^4F	5/2	15260	50	WR99	96.8% + 1.9% $3p^63d^7\ ^2_2D$
	^4F	3/2	18710	50	WR99	94.1% + 3.9% $3p^63d^7\ ^2_2D$
$3p^63d^7$	^4P	3/2	39940	50	WR99	55.9% + 40.0% $3p^63d^7\ ^2P$
	^4P	5/2	42934	50	WR99	95.0% + 2.5% $3p^63d^7\ ^2_1D$
$3p^63d^7$	^2G	9/2	44846	50	WR99	82.9% + 13.5% $3p^63d^7\ ^2H$
	^2G	7/2	53878	50	WR99	97.6% + 1.5% $3p^63d^7\ ^2F$
$3p^63d^7$	^2H	11/2	60910	50	WR99	100.0%
	^2H	9/2	70520	60	WR99	86.4% + 13.3% $3p^63d^7\ ^2G$
$3p^63d^7$	^2_2D	5/2	63947	50	WR99	70.4% + 22.1% $3p^63d^7\ ^2_1D$
	^2_2D	3/2	79310	50	WR99	58.8% + 24.6% $3p^63d^7\ ^2P$
$3p^63d^7$	^2F	5/2	96011	50	WR99	97.2% + 1.7% $3p^63d^7\ ^2_2D$
	^2F	7/2	100951	50	WR99	98.2% + 1.4% $3p^63d^7\ ^2G$
$3p^63d^7$	^2_1D	3/2	148580	50	WR99	84.2% + 15.1% $3p^63d^7\ ^2_2D$
	^2_1D	5/2	153630	50	WR99	73.2% + 23.9% $3p^63d^7\ ^2_2D$
$3p^5(^2P^\circ)3d^8(^3F)$	$^4G^\circ$	11/2	950150	50	WR99	99.7% + 0.2% $3p^5(^2P^\circ)3d^8(^1G)\ ^2H^\circ$
	$^4G^\circ$	9/2	973490	50	WR99	90.9% + 7.9% $3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ$
	$^4G^\circ$	7/2	1002098	50	WR99	46.6% + 16.9% $3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ$
	$^4G^\circ$	5/2	1057610	50	WR99	41.1% + 26.0% $3p^5(^2P^\circ)3d^8(^3F)\ ^4F^\circ$

Energy levels of Rb XIII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3p^5(^2P°)3d^8(^3F)$	$^4F°$	9/2	1015950	50	WR99	57.6% + 22.5% $3p^5(^2P°)3d^8(^1G)$ $^2G°$
	$^4F°$	7/2	1033932	50	WR99	48.6% + 16.3% $3p^5(^2P°)3d^8(^1G)$ $^2G°$
	$^4F°$	3/2	1038216	50	WR99	33.8% + 33.4% $3p^5(^2P°)3d^8(^3F)$ $^4D°$
$3p^5(^2P°)3d^8(^3P)$	$^4D°$	7/2	1022171	50	WR99	67.4% + 9.3% $3p^5(^2P°)3d^8(^3F)$ $^4G°$
	$^4D°$	5/2	1025090	50	WR99	28.5% + 22.0% $3p^5(^2P°)3d^8(^3F)$ $^4D°$
	$^4D°$	5/2	1076862	50	WR99	50.6% + 24.7% $3p^5(^2P°)3d^8(^3P)$ $^4P°$
	$^4D°$	3/2	1085050	50	WR99	33.8% + 20.8% $3p^5(^2P°)3d^8(^3F)$ $^4D°$
$3p^5(^2P°)3d^8(^3P)$	$^4P°$	5/2	1037137	50	WR99	48.8% + 24.3% $3p^5(^2P°)3d^8(^3F)$ $^4F°$
$3p^5(^2P°)3d^8(^1G)$	$^2G°$	9/2	1055075	50	WR99	44.3% + 31.8% $3p^5(^2P°)3d^8(^3F)$ $^4F°$
	$^2G°$	7/2	1060575	50	WR99	45.0% + 12.3% $3p^5(^2P°)3d^8(^3F)$ $^2G°$
$3p^5(^2P°)3d^8(^1G)$	$^2H°$	11/2	1067160	50	WR99	99.3% + 0.2% $3p^5(^2P°)3d^8(^3F)$ $^4G°$
	$^2H°$	9/2	1137420	60	WR99	82.2% + 8.1% $3p^5(^2P°)3d^8(^3F)$ $^2G°$
$3p^5(^2P°)3d^8(^3F)$	$^4D°$	5/2	1084127	50	WR99	51.9% + 15.0% $3p^5(^2P°)3d^8(^1D)$ $^2D°$
	$^4D°$	7/2	1090519	50	WR99	63.3% + 19.4% $3p^5(^2P°)3d^8(^3F)$ $^4F°$
$3p^5(^2P°)3d^8(^1D)$	$^2P°$	3/2	1101490	50	WR99	43.7% + 18.6% $3p^5(^2P°)3d^8(^3P)$ $^4S°$
$3p^5(^2P°)3d^8(^1G)$	$^2F°$	5/2	1149149	50	WR99	34.2% + 29.3% $3p^5(^2P°)3d^8(^1D)$ $^2D°$
	$^2F°$	7/2	1183880	50	WR99	37.6% + 34.9% $3p^5(^2P°)3d^8(^3F)$ $^2G°$
$3p^5(^2P°)3d^8(^3F)$	$^2F°$	7/2	1151927	50	WR99	32.3% + 27.6% $3p^5(^2P°)3d^8(^1D)$ $^2F°$
	$^2F°$	5/2	1201920	50	WR99	42.0% + 37.8% $3p^5(^2P°)3d^8(^1D)$ $^2F°$
$3p^5(^2P°)3d^8(^3F)$	$^2G°$	9/2	1222490	60	WR99	70.3% + 24.9% $3p^5(^2P°)3d^8(^1G)$ $^2G°$
	$^2G°$	7/2	1236110	60	WR99	37.6% + 23.7% $3p^5(^2P°)3d^8(^1G)$ $^2G°$
$3p^5(^2P°)3d^8(^3P)$	$^2D°$	3/2	1238120	70	WR99	42.5% + 35.4% $3p^5(^2P°)3d^8(^3F)$ $^2D°$
	$^2D°$	5/2	1250600	60	WR99	64.9% + 23.3% $3p^5(^2P°)3d^8(^3F)$ $^2D°$
$3p^5(^2P°)3d^8(^3P)$	$^2P°$	3/2	1271370	60	WR99	64.2% + 13.3% $3p^5(^2P°)3d^8(^1S)$ $^2P°$
$3p^5(^2P°)3d^8(^1S)$	$^2P°$	1/2	1271520	60	WR99	56.0% + 42.2% $3p^5(^2P°)3d^8(^3P)$ $^2P°$

7.14. Rb XIV

Cr isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6\ {}^5D_4$

Ionization energy (3 790 000 ± 190 000 cm^{-1}); (470 ± 24 eV)

The spectrum of Rb XIV has not been analyzed. Edlén [E47] has observed a group of lines due to transitions between the $3d^6$ and $3d^5 4p$ configurations in the 50–100 Å region. Moore [M52] determined the ground state listed above. The calculated ionization energy is quoted from [CNWM70] and given a ±5% estimated uncertainty, as indicated by the comparison of their theoretical values with experimental results for spectra in which experimental values are available.

References for Rb XIV

CNWM70 T. A. Carlson, C. W. Nestor, Jr., N. Wasserman, and J. D. McDowell, At. Data **2**, 63 (1970).

E47 B. Edlén, Physica **13**, 547 (1947).

M52 C. E. Moore, Atomic Energy Levels, Natl. Bur. Stand. (U.S.) Circ. 467, Vol. II (1952); reprinted as Natl. Stand. Ref. Data Ser., Natl. Bur. Stand. (U.S.) 35 (1971).

7.15. Rb XV

V isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5\ {}^6S_{5/2}$

Ionization energy (4 200 000 ± 210 000 cm^{-1}); (521 ± 26 eV)

The writer has assumed the ground state listed above, by analogy with Mn III. The calculated ionization energy is quoted from [CNWM70] and given a ±5% estimated uncertainty, as indicated by the comparison of their theoretical values with experimental results for spectra in which experimental values are available.

References for Rb XV

CNWM70 T. A. Carlson, C. W. Nestor, Jr., N. Wasserman, and J. D. McDowell, At. Data **2**, 63 (1970).

7.16. Rb XVI

Ti isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^4\ {}^5D_0$

Ionization energy (4 640 000 ± 230 000 cm^{-1}); (575 ± 29 eV)

The writer has assumed the ground state listed above, by analogy with Cr III. The calculated ionization energy is quoted from [CNWM70] and given a ±5% estimated uncertainty, as indicated by the comparison of their theoretical values with experimental results for spectra in which experimental values are available.

References for Rb XVI

CNWM70 T. A. Carlson, C. W. Nestor, Jr., N. Wasserman, and J. D. McDowell, At. Data **2**, 63 (1970).

7.17. Rb XVII

Sc isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3\ {}^4F_{3/2}$

Ionization energy (4 843 226 cm^{-1}); (600.5 eV)

The ground state for Rb XVII is reported by Zilitis [Z02], who also calculated the ionization energy using the relativistic Dirac–Fock method.

References for Rb XVII

Z02 V. A. Zilitis, Opt. Spectrosc. **92**, 396 (2002).

7.18. Rb XVIII

Ca isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d^2\ {}^3F_2$

Ionization energy ($5\,480\,000 \pm 270\,000$ cm^{-1}); (679 ± 34 eV)

The writer has assumed the ground state listed above, by analogy with Ti III. The calculated ionization energy is quoted from [CNWM70] and given a $\pm 5\%$ estimated uncertainty, as indicated by the comparison of their theoretical values with experimental results for spectra in which experimental values are available. Biémont *et al.* [BHZQ92] calculated transition probabilities for forbidden transitions within the $3d^2$ configuration and of the type $3d^2$-$3d4s$; however, no energy levels or wavelengths were reported.

References for Rb XVIII

BHQZ92 E. Biémont, J. E. Hansen, P. Quinet, and C. J. Zeippen, J. Phys. B **25**, 5029 (1992).
CNWM70 T. A. Carlson, C. W. Nestor, Jr., N. Wasserman, and J. D. McDowell, At. Data **2**, 63 (1970).

7.19. Rb XIX

K isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6 3d\ ^2D_{3/2}$

Ionization energy (5 900 000 ± 300 000 cm^{-1}); (732 ± 37 eV)

There are no measurements of the Rb XIX spectrum. In a study of the K I isoelectronic sequence Kaufman *et al.* [KSR89] calculated wavelengths and energy levels for transitions from the ground configuration to the $3p^5 3d^2$ configuration by fitting along the sequence. Their predicted values are included here. No transition probabilities have been reported for the allowed lines of Rb XIX, but a comparison of the calculations for forbidden transitions can be found in Charro *et al.* [CCM02]. The calculated ionization energy is quoted from [CNWM70] and given a ±5% estimated uncertainty, as indicated by the comparison of their theoretical values with experimental results for spectra in which experimental values are available.

References for Rb XIX

CCM02 E. Charro, Z. Curiel, and I. Martín, Astron. Astrophys. **387**, 1146 (2002).

CNWM70 T. A. Carlson, C. W. Nestor, Jr., N. Wasserman, and J. D. McDowell, At. Data **2**, 63 (1970).

KSR89 V. Kaufman, J. Sugar, and W. L. Rowan, J. Opt. Soc. Am. B **6**, 142 (1989).

Spectral lines of Rb XIX

λ (Å)	Unc. (Å)	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
[87.997]	0.010	[1136400]	$3p^6 3d\ ^2D_{3/2}$	$3p^5(^2P)3d^2(^3F)\ ^2D^\circ_{3/2}$	KSR89
[89.176]	0.010	[1121380]	$3p^6 3d\ ^2D_{5/2}$	$3p^5(^2P)3d^2(^3F)\ ^2D^\circ_{5/2}$	KSR89
[87.077]	0.010	[1148410]	$3p^6 3d\ ^2D_{3/2}$	$3p^5(^2P)3d^2(^3P)\ ^2P^\circ_{3/2}$	KSR89
[88.491]	0.010	[1130060]	$3p^6 3d\ ^2D_{5/2}$	$3p^5(^2P)3d^2(^3P)\ ^2P^\circ_{3/2}$	KSR89
[88.665]	0.010	[1127840]	$3p^6 3d\ ^2D_{3/2}$	$3p^5(^2P)3d^2(^3P)\ ^2P^\circ_{1/2}$	KSR89
[94.586]	0.010	[1057240]	$3p^6 3d\ ^2D_{5/2}$	$3p^5(^2P)3d^2(^1G)\ ^2F^\circ_{7/2}$	KSR89
[97.394]	0.010	[1026760]	$3p^6 3d\ ^2D_{3/2}$	$3p^5(^2P)3d^2(^3F)\ ^2F^\circ_{5/2}$	KSR89

Energy levels of Rb XIX

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3p^6 3d$	^2D	3/2	[0]	10	KSR89
	^2D	5/2	[18384]	10	KSR89
$3p^5(^2P)3d^2(^3F)$	$^2F^\circ$	5/2	[1026760]	110	KSR89
$3p^5(^2P)3d^2(^1G)$	$^2F^\circ$	7/2	[1075620]	120	KSR89
$3p^5(^2P)3d^2(^3P)$	$^2P^\circ$	1/2	[1127840]	130	KSR89
	$^2P^\circ$	3/2	[1148440]	130	KSR89
$3p^5(^2P)3d^2(^3F)$	$^2D^\circ$	3/2	[1136400]	130	KSR89
	$^2D^\circ$	5/2	[1139760]	130	KSR89

7.20. Rb XX

Ar isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^6\ {}^1S_0$

Ionization energy [6 914 000 ± 22 000 cm^{-1}]; [857 ± 3 eV]

There are no measurements of the Rb XX spectrum. In a study of the Ar I isoelectronic sequence Kaufman *et al.* [KSR87] calculated wavelengths and energy levels for transitions from the ground configuration to the $3p^5 3d$ configuration by fitting along the sequence. Their predicted values are given here. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XX

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).

KSR87 V. Kaufman, J. Sugar, and W. L. Rowan, J. Opt. Soc. Am. B **4**, 1927 (1987).

Spectral lines of Rb XX

λ (Å)	Unc. (Å)	σ (cm^{-1})	Lower Level	Upper Level	λ Ref.
[91.934]	0.010	[1087740]	$3s^2 3p^6\ {}^1S_0$	$3s^2 3p^5 3d\ {}^1P^\circ_1$	KSR87
[113.219]	0.010	[883240]	$3s^2 3p^6\ {}^1S_0$	$3s^2 3p^5 3d\ {}^3D^\circ_1$	KSR87

Energy levels of Rb XX

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3s^2 3p^6$	^1S	0	[0]		KSR87
$3s^2 3p^5 3d$	$^3D^\circ$	1	[883240]	120	KSR87
$3s^2 3p^5 3d$	$^1P^\circ$	1	[1087740]	80	KSR87

7.21. Rb XXI

Cl isoelectronic sequence

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

Ionization energy [7 302 000 ± 7 800 cm^{-1}]; [905.3 ± 1.0 eV]

The Rb XXI spectrum has never been measured; however study of the Cl I isoelectronic sequence has enabled predictions for some energy levels and wavelengths. By investigating magnetic dipole transitions within the $3s^2 3p^5$ ground state, Sugar and Kaufman [KS86] predicted the ground state splitting and the wavelength for the $3s^2 3p^5\ ^2P^\circ_{3/2}$-$^2P^\circ_{1/2}$ transition and calculated its transition probability. Additional isoelectronic studies allowed Kaufman *et al.* [KSR89] to predict four levels in the $3s^2 3p^4 3d$ 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.* [HKCD83]; however the disagreement between their calculated energy levels and the [KSR89] data suggests that caution be used regarding the [HKCD83] transition probabilities. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXI

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).

HKCD83 K.-N. Huang, Y.-K. Kim, K. T. Cheng, and J. P. Desclaux, Atom. Data Nucl. Data Tables **28**, 355 (1983).

KS86 V. Kaufman and J. Sugar, J. Phys. Chem. Ref. Data **15**, 321 (1986).

KSR89 V. Kaufman, J. Sugar, and W. L. Rowan, J. Opt. Soc. Am. B **6**, 1444 (1989).

Spectral lines of Rb XXI

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
[87.458]	0.010	[1143410]		$3s^2 3p^5\ ^2P^\circ_{3/2}$	$3s^2 3p^4(^3P)3d\ ^2D_{3/2}$	KSR89	
[94.539]	0.010	[1057760]		$3s^2 3p^5\ ^2P^\circ_{3/2}$	$3s^2 3p^4(^3P)3d\ ^2D_{5/2}$	KSR89	
[95.066]	0.010	[1051900]		$3s^2 3p^5\ ^2P^\circ_{3/2}$	$3s^2 3p^4(^3P)3d\ ^2P_{3/2}$	KSR89	
[95.851]	0.010	[1043290]		$3s^2 3p^5\ ^2P^\circ_{1/2}$	$3s^2 3p^4(^3P)3d\ ^2D_{3/2}$	KSR89	
[98.174]	0.010	[1018600]		$3s^2 3p^5\ ^2P^\circ_{3/2}$	$3s^2 3p^4(^1D)3d\ ^2S_{1/2}$	KSR89	
[998.9]	0.5	[100110]	1.8E+4	$3s^2 3p^5\ ^2P^\circ_{3/2}$	$3s^2 3p^5\ ^2P^\circ_{1/2}$	KSR89	KS86

Energy levels of Rb XXI

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3s^2 3p^5$	$^2P^\circ$	3/2	[0]	50	KSR89
	$^2P^\circ$	1/2	[100110]	50	KSR89
$3s^2 3p^4(^1D)3d$	^2S	1/2	[1018600]	120	KSR89
$3s^2 3p^4(^3P)3d$	^2P	3/2	[1051900]	120	KSR89
$3s^2 3p^4(^3P)3d$	^2D	5/2	[1057760]	120	KSR89
	^2D	3/2	[1143400]	120	KSR89

7.22. Rb XXII

S isoelectronic sequence

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

Ionization energy [7 733 900 ± 11 000 cm^{-1}]; [958.9 ± 1.4 eV]

There are no measurements of the Rb XXII spectrum, however study of the sulfur isoelectronic sequence has enabled predictions for some energy levels and wavelengths. By investigating magnetic dipole transitions within the $3s^2 3p^4$ ground state in the sulfur isoelectronic sequence, Sugar and Kaufman [SK84] predicted the ground state splittings and wavelengths and calculated probabilities for transitions within the ground state. Additional isoelectronic studies allowed Kaufman *et al.* [KSR90] to predict four levels in the $3s^2 3p^3 3d$ 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 Saloman and Kim [SK89] using the multiconfiguration Dirac–Fock technique, and a more extensive set was calculated later by Chou *et al.* [CCCH96].

All wavelengths and energy level values quoted here are from [KSR90]. The transition probabilities come from [CCCH96]. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXII

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).
CCCH96 H.-S. Chou, J.-Y. Chang, Y.-H. Chang, and K.-N. Huang, At. Data Nucl. Data Tables **62**, 77 (1996).
KSR90 V. Kaufman, J. Sugar, and W. L. Rowan, J. Opt. Soc. Am. B **7**, 1169 (1990).
SK84 J. Sugar and V. Kaufman, J. Opt. Soc. Am. B **1**, 218 (1984).
SK89 E. B. Saloman and Y.-K. Kim, At. Data Nucl. Data Tables **41**, 339 (1989).

Spectral lines of Rb XXII

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
[98.075]	0.007	[1019630]	6.8E+11	$3s^2 3p^4\ {}^3P_2$	$3s^2 3p^3(^2D^\circ)3d\ {}^3P^\circ_2$	KSR90	CCCH96
[98.513]	0.007	[1015090]	2.5E+9	$3s^2 3p^4\ {}^3P_2$	$3s^2 3p^3(^2P^\circ)3d\ {}^1F^\circ_3$	KSR90	CCCH96
[99.513]	0.007	[1004890]	2.6E+11	$3s^2 3p^4\ {}^1D_2$	$3s^2 3p^3(^2D^\circ)3d\ {}^1F^\circ_3$	KSR90	CCCH96
[104.543]	0.007	[956540]	2.0E+11	$3s^2 3p^4\ {}^1S_0$	$3s^2 3p^3(^2P^\circ)3d\ {}^1P^\circ_1$	KSR90	CCCH96
[625.2]	0.5	[159900]	8.1E+4	$3s^2 3p^4\ {}^3P_1$	$3s^2 3p^4\ {}^1S_0$	KSR90	CCCH96
[780.2]	0.3	[128180]	1.1E+4	$3s^2 3p^4\ {}^3P_2$	$3s^2 3p^4\ {}^1D_2$	KSR90	CCCH96
[1099.3]	0.3	[90970]	1.4E+4	$3s^2 3p^4\ {}^3P_2$	$3s^2 3p^4\ {}^3P_1$	KSR90	CCCH96
[2451]	2.	[40800]	7.6E+2	$3s^2 3p^4\ {}^3P_0$	$3s^2 3p^4\ {}^3P_1$	KSR90	CCCH96
[2687]	2.	[37220]	1.2E+2	$3s^2 3p^4\ {}^3P_1$	$3s^2 3p^4\ {}^1D_2$	KSR90	CCCH96

Energy levels of Rb XXII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading percentages
$3s^2 3p^4$	^3P	2	[0]	40	KSR90	83%
	^3P	0	[50180]	40	KSR90	83%
	^3P	1	[90970]	40	KSR90	100%
$3s^2 3p^4$	^1D	2	[128180]	40	KSR90	63%
$3s^2 3p^4$	^1S	0	[250920]	40	KSR90	63%
$3s^2 3p^3(^2D^\circ)3d$	$^3P^\circ$	2	[1019630]	150	KSR90	39% + 24% $3s3p^5\ {}^3P^\circ$
$3s^2 3p^3(^2P^\circ)3d$	$^1F^\circ$	3	[1015120]	150	KSR90	34% + 30% $3s^2 3p^3(^2D^\circ)3d\ {}^1F^\circ$
$3s^2 3p^3(^2D^\circ)3d$	$^1F^\circ$	3	[1133130]	150	KSR90	48% + 32% $3s^2 3p^3(^2P^\circ)3d\ {}^1F^\circ$
$3s^2 3p^3(^2P^\circ)3d$	$^1P^\circ$	1	[1207460]	150	KSR90	

7.23. Rb XXIII

P isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2 3p^3\ {}^4S^\circ_{3/2}$

Ionization energy [8 257 000 ± 30 000 cm^{-1}]; [1 024 ± 4 eV]

Although no measurements of the Rb XXIII 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 $3s^2 3p^3$ ground state, Sugar and Kaufman [SK84] predicted the ground state splittings and wavelengths and calculated the transition probabilities. Additional isoelectronic studies allowed Sugar *et al.* [SKR91] to predict four levels in the $3s^2 3p^2 3d$ configuration and wavelengths for transitions to those levels from the ground term. Transition rates for those spectral lines were calculated by Huang [H84] using the multiconfiguration Dirac–Fock technique.

All wavelengths and energy level values quoted here are from [SKR91]. The transition probabilities come from [SK84], where available, and [H84] otherwise. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXIII

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).
H84 K.-N. Huang, Atom. Data Nucl. Data Tables **30**, 313 (1984).
SK84 J. Sugar and V. Kaufman, J. Opt. Soc. Am. B **1**, 218 (1984).
SKR91 J. Sugar, V. Kaufman, and W. L. Rowan, J. Opt. Soc. Am. B **8**, 22 (1991).

Spectral lines of Rb XXIII

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
[103.556]	0.02	[965660]	2.1E+11	$3s^2 3p^3\ {}^2D^\circ_{5/2}$	$3s^2 3p^2(^3P) 3d\ {}^2F_{7/2}$	SKR91	H84
[103.980]	0.02	[961720]	3.0E+9	$3s^2 3p^3\ {}^2D^\circ_{3/2}$	$3s^2 3p^2(^1D) 3d\ {}^2D_{5/2}$	SKR91	H84
[104.469]	0.02	[957220]	1.3E+11	$3s^2 3p^3\ {}^2D^\circ_{3/2}$	$3s^2 3p^2(^1D) 3d\ {}^2D_{3/2}$	SKR91	H84
[104.780]	0.02	[954380]	5.1E+10	$3s^2 3p^3\ {}^4S^\circ_{3/2}$	$3s^2 3p^2(^3P) 3d\ {}^4P_{3/2}$	SKR91	H84
[106.357]	0.02	[940230]	1.5E+11	$3s^2 3p^3\ {}^4S^\circ_{3/2}$	$3s^2 3p^2(^3P) 3d\ {}^4P_{5/2}$	SKR91	H84
[107.552]	0.02	[929780]	2.0E+10	$3s^2 3p^3\ {}^2D^\circ_{5/2}$	$3s^2 3p^2(^1D) 3d\ {}^2D_{5/2}$	SKR91	H84
[109.510]	0.02	[913160]	1.8E+11	$3s^2 3p^3\ {}^2P^\circ_{3/2}$	$3s^2 3p^2(^3P) 3d\ {}^2D_{5/2}$	SKR91	H84
[414.5]	0.2	[241260]	5.7E+3	$3s^2 3p^3\ {}^4S^\circ_{3/2}$	$3s^2 3p^3\ {}^2P^\circ_{3/2}$	SKR91	SK84
[601.2]	0.2	[166330]	2.0E+4	$3s^2 3p^3\ {}^4S^\circ_{3/2}$	$3s^2 3p^3\ {}^2P^\circ_{1/2}$	SKR91	SK84
[646.7]	0.2	[154630]	3.7E+4	$3s^2 3p^3\ {}^2D^\circ_{3/2}$	$3s^2 3p^3\ {}^2P^\circ_{3/2}$	SKR91	SK84
[814.0]	0.2	[122850]	7.9E+3	$3s^2 3p^3\ {}^2D^\circ_{5/2}$	$3s^2 3p^3\ {}^2P^\circ_{3/2}$	SKR91	SK84
[844.5]	0.2	[118410]	1.9E+3	$3s^2 3p^3\ {}^4S^\circ_{3/2}$	$3s^2 3p^3\ {}^2D^\circ_{5/2}$	SKR91	SK84
[1156.4]	0.3	[86475]	1.1E+4	$3s^2 3p^3\ {}^4S^\circ_{3/2}$	$3s^2 3p^3\ {}^2D^\circ_{3/2}$	SKR91	SK84
[1254.3]	0.3	[79726]	9.4E+2	$3s^2 3p^3\ {}^2D^\circ_{3/2}$	$3s^2 3p^3\ {}^2P^\circ_{1/2}$	SKR91	SK84
[1334.8]	0.4	[74918]	2.4E+3	$3s^2 3p^3\ {}^2P^\circ_{1/2}$	$3s^2 3p^3\ {}^2P^\circ_{3/2}$	SKR91	SK84
[3130]	2.	[31940]	2.2E+2	$3s^2 3p^3\ {}^2D^\circ_{3/2}$	$3s^2 3p^3\ {}^2D^\circ_{5/2}$	SKR91	SK84

Energy levels of Rb XXIII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3s^2 3p^3$	$^4S^\circ$	3/2	[0]	50	SKR91
$3s^2 3p^3$	$^2D^\circ$	3/2	[86478]	50	SKR91
	$^2D^\circ$	5/2	[118418]	50	SKR91
$3s^2 3p^3$	$^2P^\circ$	1/2	[166341]	50	SKR91
	$^2P^\circ$	3/2	[241259]	50	SKR91

Energy levels of Rb XXIII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3s^2 3p^2(^3P)3d$	^4P	5/2	[940230]	50	SKR91
	^4P	3/2	[954380]	50	SKR91
$3s^2 3p^2(^1D)3d$	^2D	3/2	[1043700]	50	SKR91
	^2D	5/2	[1048200]	50	SKR91
$3s^2 3p^2(^3P)3d$	^2F	7/2	[1084080]	50	SKR91
$3s^2 3p^2(^3P)3d$	^2D	5/2	[1154420]	50	SKR91

7.24. Rb XXIV

Si isoelectronic sequence

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

Ionization energy [8 714 300 ± 20 600 cm^{-1}]; [1 080 ± 3 eV]

The Rb XXIV spectrum has not yet been measured, however, study of the silicon isoelectronic sequence has enabled predictions for some energy levels and wavelengths. By investigating magnetic dipole transitions within the $3s^2 3p^2$ ground state, Sugar and Kaufman [SK84] predicted the ground state splittings and wavelengths and calculated the transition probabilities. Additional isoelectronic studies allowed Sugar *et al.* [SKR90] to predict five levels in the $3s^2 3p 3d$ configuration, one level in $3s 3p^3$, and wavelengths for transitions to those levels from the ground term. *Ab initio* calculations of low-lying energy levels and transition probabilities were reported by Huang [H85] using the multiconfiguration Dirac–Fock technique.

All wavelengths and energy level values quoted here are from [SKR90]. The transition probabilities come from [SK84], where available, and [H85] otherwise. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXIV

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).
H85 K.-N. Huang, At. Data Nucl. Data Tables **32**, 503 (1985).
SK84 J. Sugar and V. Kaufman, J. Opt. Soc. Am. B **1**, 218 (1984).
SKR90 J. Sugar, V. Kaufman, and W. L. Rowan, J. Opt. Soc. Am. B **7**, 152 (1990).

Spectral lines of Rb XXIV

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
[102.223]	0.02	[978250]	2.3E+10	$3s^2 3p^2\ {}^3P_2$	$3s^2 3p 3d\ {}^1F^\circ_3$	SKR90	H85
[114.289]	0.02	[874970]	1.1E+11	$3s^2 3p^2\ {}^1D_2$	$3s^2 3p 3d\ {}^1F^\circ_3$	SKR90	H85
[109.406]	0.02	[914030]	2.5E+8	$3s^2 3p^2\ {}^3P_1$	$3s^2 3p 3d\ {}^1D^\circ_2$	SKR90	H85
[111.302]	0.02	[898460]	1.2E+11	$3s^2 3p^2\ {}^3P_2$	$3s^2 3p 3d\ {}^3D^\circ_3$	SKR90	H85
[119.174]	0.02	[839110]	6.2E+10	$3s^2 3p^2\ {}^3P_1$	$3s^2 3p 3d\ {}^3P^\circ_2$	SKR90	H85
[123.228]	0.02	[811500]	3.9E+10	$3s^2 3p^2\ {}^3P_2$	$3s^2 3p 3d\ {}^3P^\circ_2$	SKR90	H85
[122.280]	0.02	[817800]	1.7E+10	$3s^2 3p^2\ {}^1D_2$	$3s^2 3p 3d\ {}^3D^\circ_2$	SKR90	H85
[137.785]	0.02	[725770]	4.8E+9	$3s^2 3p^2\ {}^3P_2$	$3s 3p^3\ {}^3S^\circ_1$	SKR90	H85
[494.4]	0.3	[202270]	6.9E+4	$3s^2 3p^2\ {}^3P_1$	$3s^2 3p^2\ {}^1S_0$	SKR90	SK84
[764.0]	0.4	[130890]	1.3E+4	$3s^2 3p^2\ {}^3P_1$	$3s^2 3p^2\ {}^1D_2$	SKR90	SK84
[968.6]	0.5	[103240]	1.1E+4	$3s^2 3p^2\ {}^3P_2$	$3s^2 3p^2\ {}^1D_2$	SKR90	SK84
[1249.8]	0.3	[80010]	7.8E+3	$3s^2 3p^2\ {}^3P_0$	$3s^2 3p^2\ {}^3P_1$	SKR90	SK84
[3619.5]	1.0	[27620]	1.6E+2	$3s^2 3p^2\ {}^3P_1$	$3s^2 3p^2\ {}^3P_2$	SKR90	SK84

Energy levels of Rb XXIV

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading Percentage
$3s^2 3p^2$	^3P	0	[0]	50	SKR90	85%
	^3P	1	[80010]	50	SKR90	
$3s^2 3p^2$	^3P	2	[107630]	50	SKR90	57%
$3s^2 3p^2$	^1D	2	[210880]	50	SKR90	57%
$3s^2 3p^2$	^1S	0	[282290]	100	SKR90	85%
$3s 3p^3$	$^3S^\circ$	1	[833400]	50	SKR90	
$3s^2 3p 3d$	$^3P^\circ$	2	[919130]	50	SKR90	

Energy levels of Rb XXIV—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference	Leading Percentage
$3s^2 3p3d$	$^1D^\circ$	2	[994040]	50	SKR90	
$3s^2 3p3d$	$^3D^\circ$	3	[1006090]	50	SKR90	
$3s^2 3p3d$	$^3D^\circ$	2	[1028680]	50	SKR90	
$3s^2 3p3d$	$^1F^\circ$	3	[1085870]	50	SKR90	

7.25. Rb XXV

Al isoelectronic sequence

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

Ionization energy [9 073 000 ± 44 000 cm^{-1}]; [1 125 ± 5 eV]

The Rb XXV spectrum has not yet been measured, but study of the aluminum isoelectronic sequence has made it possible to predict some energy levels and wavelengths. By investigating the $^2P^\circ_{1/2}$-$^2P^\circ_{3/2}$ magnetic dipole transition within the $3s^2 3p$ ground state, Sugar and Kaufman [SK84] predicted the ground state splitting and calculated the transition probability and wavelength. Additional isoelectronic studies allowed Sugar *et al.* [SKR88] to predict five levels in the $3s3p^2$ configuration, two levels in $3s^2 3p$, and wavelengths for transitions to those levels from the ground term. The transition probabilities for allowed transitions are quoted from Huang [H86], who used the multiconfiguration Dirac–Fock technique to calculate them. The wavelength and transition probability for the $3s^2 3p\ {}^2P^\circ_{1/2}$-$^2P^\circ_{3/2}$ transition come from [SK84]. The semiempirical ionization energy is quoted from [BFQ99]. All other values are taken from [SKR88].

References for Rb XXV

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).
H86 K.-N. Huang, Atom. Data Nucl. Data Tables **34**, 1 (1986).
SK84 J. Sugar and V. Kaufman, J. Opt. Soc. Am. B **1**, 218 (1984).
SKR88 J. Sugar, V. Kaufman, and W. L. Rowan, J. Opt. Soc. Am. B **5**, 2183 (1988).

Spectral lines of Rb XXV

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
[112.708]	0.02	[887250]	7.0E+10	$3s^2 3p\ {}^2P^\circ_{1/2}$	$3s^2 3d\ {}^2D_{3/2}$	SKR88	H86
[123.069]	0.02	[812550]	3.7E+10	$3s^2 3p\ {}^2P^\circ_{1/2}$	$3s3p^2\ {}^2P_{3/2}$	SKR88	H86
(124.461)	0.02	(803460)	7.0E+9	$3s^2 3p\ {}^2P^\circ_{1/2}$	$3s3p^2\ {}^2P_{1/2}$	SKR88	H86
[126.479]	0.02	[790640]	8.0E+10	$3s^2 3p\ {}^2P^\circ_{3/2}$	$3s^2 3d\ {}^2D_{5/2}$	SKR88	H86
[128.835]	0.02	[776190]	3.7E+10	$3s^2 3p\ {}^2P^\circ_{3/2}$	$3s^2 3d\ {}^2D_{3/2}$	SKR88	H86
[142.587]	0.02	[701330]	7.3E+10	$3s^2 3p\ {}^2P^\circ_{3/2}$	$3s3p^2\ {}^2P_{3/2}$	SKR88	H86
[144.371]	0.02	[692660]	7.5E+10	$3s^2 3p\ {}^2P^\circ_{1/2}$	$3s3p^2\ {}^2S_{1/2}$	SKR88	H86
[144.442]	0.02	[692320]	5.7E+10	$3s^2 3p\ {}^2P^\circ_{3/2}$	$3s3p^2\ {}^2P_{1/2}$	SKR88	H86
[162.627]	0.02	[614900]	1.1E+10	$3s^2 3p\ {}^2P^\circ_{1/2}$	$3s3p^2\ {}^2D_{3/2}$	SKR88	H86
[184.154]	0.02	[543020]	4.0E+9	$3s^2 3p\ {}^2P^\circ_{3/2}$	$3s3p^2\ {}^2D_{5/2}$	SKR88	H86
[899.8]	0.4	[111140]	1.2E+4	$3s^2 3p\ {}^2P^\circ_{1/2}$	$3s^2 3p\ {}^2P^\circ_{3/2}$	SK84	SK84

Energy levels of Rb XXV

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3s^2 3p$	$^2P^\circ$	1/2	[0]	50	SKR88
	$^2P^\circ$	3/2	[111140]	50	SKR88
$3s3p^2$	^2D	3/2	[614900]	200	SKR88
	^2D	5/2	[654160]	200	SKR88
$3s3p^2$	^2S	1/2	[692660]	200	SKR88
$3s3p^2$	^2P	1/2	[803460]	200	SKR88
	^2P	3/2	[812510]	200	SKR88
$3s^2 3d$	^2D	3/2	[887290]	200	SKR88
	^2D	5/2	[901780]	200	SKR88

7.26. Rb XXVI

Mg isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s^2\ {}^1S_0$

Ionization energy [10 021 800 ± 14 000 cm^{-1}]; [1 242.5 ± 1.7 eV]

The Rb XXVI spectrum has not been measured, however theoretical calculations and isoelectronic fitting have predicted several energy levels and transitions. Kaufman and Sugar [KS86] used semiempirical calculations to predict wavelengths for M1 lines in the $3s3p$ configuration. They also calculated transition probabilities for those transitions. Sugar *et al.* [SKR87] used the magnesium isoelectronic sequence to infer wavelengths for the transitions to the ground state from the $3s3p\ {}^1P^\circ_1$ and $3s3p\ {}^3P^\circ_1$ states. Later Sugar *et al.* [SKIR89] performed a further analysis of the Mg isoelectronic series, adding predictions for the $3s3p\ {}^3P^\circ_2$, $3p^2\ {}^3P_2$, $3s3d\ {}^3D_3$, and $3s3d\ {}^1D_2$ energy levels and giving improved values for the material found in [SKR87]. Ekberg *et al.* [EFSB89] substantially extended the isoelectronic analysis, giving predicted values for the $3p^2$, $3p3d$, and $3d^2$ configurations.

The energy-level values are taken from [EFSB89] and predicted wavelengths are calculated from those levels. The transition probabilities for the forbidden lines within the $3s3p$ configuration are taken from [KS86]. Those for the $3s^2\ {}^1S_0$-$3s3p\ {}^1P_1$ and ${}^3P_1$ transitions are from Safronova *et al.* [SJB00]. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXVI

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).
EFSB89 J. O. Ekberg, U. Feldman, J. F. Seely, and C. M. Brown, Phys. Scr. **40**, 643 (1989).
KS86 V. Kaufman and J. Sugar, J. Phys. Chem. Ref. Data **15**, 321 (1986).
SJB00 U. I. Savronova, W. R. Johnson, and H. G. Berry, Phys. Rev. A **61**, 052503 (2000).
SKR87 J. Sugar, V. Kaufman, and W. L. Rowan, J. Opt. Soc. Am. B **4**, 1927 (1987).
SKIR89 J. Sugar, V. Kaufman, P. Indelicato, and W. L. Rowan, J. Opt. Soc. Am. B **6**, 1437 (1989).

Spectral lines of Rb XXVI

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
[104.946]	0.006	[952875]		3s3p $^3P^\circ_1$	3s3d $^1D_2$	EFSB89	
[106.442]	0.006	[939480]		3p^2 $^1D_2$	3p3d $^1P^\circ_1$	EFSB89	
[109.178]	0.006	[915938]		3p^2 $^1D_2$	3p3d $^1F^\circ_3$	EFSB89	
[112.141]	0.006	[891738]		3p^2 $^3P_0$	3p3d $^3P^\circ_1$	EFSB89	
[112.146]	0.006	[891695]		3p3d $^3F^\circ_2$	3d^2 $^1D_2$	EFSB89	
[115.947]	0.007	[862466]		3s3p $^3P^\circ_2$	3s3d $^1D_2$	EFSB89	
[118.502]	0.007	[843871]		3s3p $^3P^\circ_1$	3p^2 $^1S_0$	EFSB89	
[118.701]	0.007	[842456]		3p3d $^3F^\circ_2$	3d^2 $^3F_3$	EFSB89	
[119.503]	0.007	[836801]		3p3d $^3F^\circ_3$	3d^2 $^1D_2$	EFSB89	
[120.691]	0.007	[828564]		3s3p $^3P^\circ_0$	3s3d $^3D_1$	EFSB89	
[120.961]	0.007	[826713]		3p3d $^3F^\circ_2$	3d^2 $^3F_2$	EFSB89	
[121.776]	0.007	[821180]		3p^2 $^1D_2$	3p3d $^3P^\circ_2$	EFSB89	
[122.243]	0.007	[818043]		3p3d $^1D^\circ_2$	3d^2 $^1D_2$	EFSB89	
[122.567]	0.008	[815879]		3p^2 $^3P_1$	3p3d $^3P^\circ_2$	EFSB89	
[122.818]	0.008	[814215]		3p^2 $^1D_2$	3p3d $^3P^\circ_1$	EFSB89	
[123.158]	0.008	[811966]		3s3p $^3P^\circ_1$	3s3d $^3D_2$	EFSB89	
[123.623]	0.008	[808914]		3p^2 $^3P_1$	3p3d $^3P^\circ_1$	EFSB89	
[123.704]	0.008	[808383]		3p^2 $^1D_2$	3p3d $^3D^\circ_3$	EFSB89	
[123.755]	0.008	[808051]		3p^2 $^3P_1$	3p3d $^3P^\circ_0$	EFSB89	
[123.890]	0.008	[807170]		3p^2 $^3P_2$	3p3d $^1F^\circ_3$	EFSB89	
[124.436]	0.008	[803624]		3s3p $^3P^\circ_1$	3s3d $^3D_1$	EFSB89	
[124.484]	0.008	[803314]		3p3d $^3F^\circ_3$	3d^2 $^3F_4$	EFSB89	
[125.183]	0.008	[798830]		3p^2 $^3P_0$	3p3d $^3D^\circ_1$	EFSB89	
[126.001]	0.008	[793643]		3p3d $^3D^\circ_1$	3d^2 $^1D_2$	EFSB89	
[126.974]	0.008	[787562]		3p3d $^3F^\circ_3$	3d^2 $^3F_3$	EFSB89	

Spectral lines of Rb XXVI—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
[129.387]	0.008	[772876]		$3p^2\ ^1D_2$	$3p3d\ ^3D^\circ_2$	EFSB89	
[129.564]	0.008	[771819]		$3p3d\ ^3F^\circ_3$	$3d^2\ ^3F_2$	EFSB89	
[130.072]	0.008	[768804]		$3p3d\ ^1D^\circ_2$	$3d^2\ ^3F_3$	EFSB89	
[130.280]	0.008	[767575]		$3p^2\ ^3P_1$	$3p3d\ ^3D^\circ_2$	EFSB89	
[132.791]	0.009	[753061]		$3p3d\ ^1D^\circ_2$	$3d^2\ ^3F_2$	EFSB89	
[134.757]	0.009	[742074]		$3p3d\ ^3D^\circ_2$	$3d^2\ ^1D_2$	EFSB89	
[136.023]	0.009	[735168]		$3s3p\ ^3P^\circ_2$	$3s3d\ ^3D_3$	EFSB89	
[137.238]	0.009	[728661]		$3p3d\ ^3D^\circ_1$	$3d^2\ ^3F_2$	EFSB89	
[137.791]	0.009	[725736]		$3s3p\ ^3P^\circ_1$	$3p^2\ ^3P_2$	EFSB89	
[138.342]	0.010	[722844]		$3p3d\ ^3F^\circ_4$	$3d^2\ ^3F_4$	EFSB89	
[138.589]	0.010	[721557]		$3s3p\ ^3P^\circ_2$	$3s3d\ ^3D_2$	EFSB89	
[138.637]	0.010	[721307]		$3p^2\ ^1D_2$	$3p3d\ ^3D^\circ_1$	EFSB89	
[138.708]	0.010	[720940]		$3s3d\ ^3D_2$	$3p3d\ ^1F^\circ_3$	EFSB89	
[139.430]	0.010	[717207]		$3s3p\ ^1P^\circ_1$	$3s3d\ ^1D_2$	EFSB89	
[139.664]	0.010	[716006]		$3p^2\ ^3P_1$	$3p3d\ ^3D^\circ_1$	EFSB89	
[140.210]	0.010	[713215]		$3s3p\ ^3P^\circ_2$	$3s3d\ ^3D_1$	EFSB89	
[140.336]	0.010	[712577]		$3p^2\ ^1S_0$	$3p3d\ ^1P^\circ_1$	EFSB89	
[140.368]	0.010	[712412]		$3p^2\ ^3P_2$	$3p3d\ ^3P^\circ_2$	EFSB89	
[141.377]	0.010	[707329]		$3s3d\ ^3D_3$	$3p3d\ ^1F^\circ_3$	EFSB89	
[141.424]	0.010	[707092]		$3p3d\ ^3F^\circ_4$	$3d^2\ ^3F_3$	EFSB89	
[141.529]	0.010	[706567]		$3p3d\ ^3D^\circ_3$	$3d^2\ ^1D_2$	EFSB89	
[141.754]	0.010	[705447]		$3p^2\ ^3P_2$	$3p3d\ ^3P^\circ_1$	EFSB89	
[142.707]	0.010	[700735]		$3p3d\ ^3P^\circ_1$	$3d^2\ ^1D_2$	EFSB89	
[142.936]	0.010	[699615]		$3p^2\ ^3P_2$	$3p3d\ ^3D^\circ_3$	EFSB89	
[143.491]	0.010	[696907]		$3p^2\ ^1D_2$	$3p3d\ ^1D^\circ_2$	EFSB89	
[144.140]	0.010	[693770]		$3p3d\ ^3P^\circ_2$	$3d^2\ ^1D_2$	EFSB89	
[144.335]	0.010	[692835]		$3p3d\ ^3D^\circ_2$	$3d^2\ ^3F_3$	EFSB89	
[144.591]	0.010	[691606]		$3p^2\ ^3P_1$	$3p3d\ ^1D^\circ_2$	EFSB89	
[147.460]	0.011	[678149]		$3p^2\ ^1D_2$	$3p3d\ ^3F^\circ_3$	EFSB89	
[147.690]	0.011	[677092]		$3p3d\ ^3D^\circ_2$	$3d^2\ ^3F_2$	EFSB89	
[148.571]	0.011	[673080]		$3p3d\ ^3D^\circ_3$	$3d^2\ ^3F_4$	EFSB89	
[150.081]	0.011	[666307]	5.62E+10	$3s^2\ ^1S_0$	$3s3p\ ^1P^\circ_1$	EFSB89	SJB00
[150.578]	0.011	[664108]		$3p^2\ ^3P_2$	$3p3d\ ^3D^\circ_2$	EFSB89	
[152.131]	0.012	[657328]		$3p3d\ ^3D^\circ_3$	$3d^2\ ^3F_3$	EFSB89	
[154.510]	0.012	[647209]		$3s3p\ ^3P^\circ_0$	$3p^2\ ^3P_1$	EFSB89	
[155.152]	0.012	[644531]		$3p3d\ ^3P^\circ_2$	$3d^2\ ^3F_3$	EFSB89	
[157.294]	0.012	[635753]		$3p3d\ ^3P^\circ_1$	$3d^2\ ^3F_2$	EFSB89	
[157.399]	0.012	[635327]		$3s3p\ ^3P^\circ_2$	$3p^2\ ^3P_2$	EFSB89	
[157.598]	0.012	[634524]		$3s3d\ ^3D_1$	$3p3d\ ^3P^\circ_2$	EFSB89	
[159.036]	0.013	[628788]		$3p3d\ ^3P^\circ_2$	$3d^2\ ^3F_2$	EFSB89	
[159.348]	0.013	[627559]		$3s3d\ ^3D_1$	$3p3d\ ^3P^\circ_1$	EFSB89	
[159.567]	0.013	[626696]		$3s3d\ ^3D_1$	$3p3d\ ^3P^\circ_0$	EFSB89	
[159.698]	0.013	[626182]		$3s3d\ ^3D_2$	$3p3d\ ^3P^\circ_2$	EFSB89	
[160.448]	0.013	[623255]		$3p^2\ ^1D_2$	$3p3d\ ^3F^\circ_2$	EFSB89	
[160.702]	0.013	[622269]		$3s3p\ ^3P^\circ_1$	$3p^2\ ^3P_1$	EFSB89	
[161.374]	0.013	[619679]		$3p3d\ ^1F^\circ_3$	$3d^2\ ^1G_4$	EFSB89	
[161.494]	0.013	[619217]		$3s3d\ ^3D_2$	$3p3d\ ^3P^\circ_1$	EFSB89	
[162.083]	0.013	[616968]		$3s3p\ ^3P^\circ_1$	$3p^2\ ^1D_2$	EFSB89	
[163.030]	0.013	[613385]		$3s3d\ ^3D_2$	$3p3d\ ^3D^\circ_3$	EFSB89	

Spectral lines of Rb XXVI—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
[163.246]	0.013	[612571]		3s3d $^3D_3$	3p3d $^3P^o_2$	EFSB89	
[164.419]	0.014	[608203]		3s3p $^1P^o_1$	$3p^2$ $^1S_0$	EFSB89	
[165.680]	0.014	[603573]		3s3d $^1D_2$	3p3d $^1P^o_1$	EFSB89	
[166.729]	0.014	[599774]		3s3d $^3D_3$	3p3d $^3D^o_3$	EFSB89	
[170.584]	0.015	[586220]		3s3d $^3D_1$	3p3d $^3D^o_2$	EFSB89	
[172.405]	0.015	[580031]		3s3d $^1D_2$	3p3d $^1F^o_3$	EFSB89	
[173.047]	0.015	[577878]		3s3d $^3D_2$	3p3d $^3D^o_2$	EFSB89	
[173.771]	0.015	[575470]		3p3d $^1P^o_1$	$3d^2$ $^1D_2$	EFSB89	
[177.221]	0.016	[564267]		3s3d $^3D_3$	3p3d $^3D^o_2$	EFSB89	
[181.815]	0.017	[550010]		3s3d $^3D_3$	3p3d $^3F^o_4$	EFSB89	
[185.376]	0.017	[539445]		3s3p $^3P^o_1$	$3p^2$ $^3P_0$	EFSB89	
[187.038]	0.017	[534651]		3s3d $^3D_1$	3p3d $^3D^o_1$	EFSB89	
[188.019]	0.018	[531860]		3s3p $^3P^o_2$	$3p^2$ $^3P_1$	EFSB89	
[189.912]	0.018	[526559]		3s3p $^3P^o_2$	$3p^2$ $^1D_2$	EFSB89	
[190.002]	0.018	[526309]		3s3d $^3D_2$	3p3d $^3D^o_1$	EFSB89	
[195.982]	0.019	[510251]		3s3d $^3D_1$	3p3d $^1D^o_2$	EFSB89	
[199.239]	0.02	[501909]		3s3d $^3D_2$	3p3d $^1D^o_2$	EFSB89	
[204.053]	0.02	[490068]		3s3p $^1P^o_1$	$3p^2$ $^3P_2$	EFSB89	
[204.793]	0.02	[488298]		3s3d $^3D_3$	3p3d $^1D^o_2$	EFSB89	
[206.975]	0.02	[483151]		3s3d $^3D_2$	3p3d $^3F^o_3$	EFSB89	
[212.974]	0.02	[469540]		3s3d $^3D_3$	3p3d $^3F^o_3$	EFSB89	
[229.043]	0.03	[436599]		3s3d $^3D_1$	3p3d $^3F^o_2$	EFSB89	
[232.213]	0.03	[430639]	7.46E+8	$3s^2$ $^1S_0$	3s3p $^3P^o_1$	EFSB89	SJB00
[233.505]	0.03	[428257]		3s3d $^3D_2$	3p3d $^3F^o_2$	EFSB89	
[241.170]	0.03	[414646]		3s3d $^3D_3$	3p3d $^3F^o_2$	EFSB89	
[258.665]	0.03	[386601]		3s3p $^1P^o_1$	$3p^2$ $^3P_1$	EFSB89	
[262.261]	0.03	[381300]		3s3p $^1P^o_1$	$3p^2$ $^1D_2$	EFSB89	
[383.718]	0.07	[260608]	1.8E+4	3s3p $^3P^o_0$	3s3p $^1P^o_1$	EFSB89	KS86
[424.326]	0.09	[235668]	9.39E+3	3s3p $^3P^o_1$	3s3p $^1P^o_1$	EFSB89	KS86
[688.426]	0.2	[145259]	3.91E+3	3s3p $^3P^o_2$	3s3p $^1P^o_1$	EFSB89	KS86
[1106.08]	0.6	[90409]	9.32E+3	3s3p $^3P^o_1$	3s3p $^3P^o_2$	EFSB89	KS86
[4008.5]	8.	[24940]	2.7E+2	3s3p $^3P^o_0$	3s3p $^3P^o_1$	EFSB89	KS86

Energy levels of Rb XXVI

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$3s^2$	^1S	0	[0]	50	EFSB89
3s3p	$^3P^\circ$	0	[405699]	50	EFSB89
	$^3P^\circ$	1	[430639]	50	EFSB89
	$^3P^\circ$	2	[521048]	50	EFSB89
3s3p	$^1P^\circ$	1	[666307]	50	EFSB89
$3p^2$	^3P	0	[970084]	50	EFSB89
	^3P	1	[1052908]	50	EFSB89
	^3P	2	[1156375]	50	EFSB89
$3p^2$	^1D	2	[1047607]	50	EFSB89

Energy levels of Rb XXVI—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
3s3d	^{3}D	1	[1234263]	50	EFSB89
	^{3}D	2	[1242605]	50	EFSB89
	^{3}D	3	[1256216]	50	EFSB89
$3p^2$	^{1}S	0	[1274510]	50	EFSB89
3s3d	^{1}D	2	[1383514]	50	EFSB89
3p3d	^{3}F°	2	[1670862]	50	EFSB89
	^{3}F°	3	[1725756]	50	EFSB89
	^{3}F°	4	[1806226]	50	EFSB89
3p3d	^{1}D°	2	[1744514]	50	EFSB89
3p3d	^{3}D°	1	[1768914]	50	EFSB89
	^{3}D°	2	[1820483]	50	EFSB89
	^{3}D°	3	[1855990]	50	EFSB89
3p3d	^{3}P°	0	[1860959]	50	EFSB89
	^{3}P°	1	[1861822]	50	EFSB89
	^{3}P°	2	[1868787]	50	EFSB89
3p3d	^{1}F°	3	[1963545]	50	EFSB89
3p3d	^{1}P°	1	[1987087]	50	EFSB89
$3d^2$	^{3}F	2	[2497575]	50	EFSB89
	^{3}F	3	[2513318]	50	EFSB89
	^{3}F	4	[2529070]	50	EFSB89
$3d^2$	^{1}D	2	[2562557]	50	EFSB89
$3d^2$	^{1}G	4	[2583224]	50	EFSB89

7.27. Rb XXVII

Na isoelectronic sequence

Ground state $1s^2 2s^2 2p^6 3s\ ^2S_{1/2}$

Ionization energy [10 441 390 ± 340 cm^{-1}]; [1294.57 ± 0.04 eV]

The Rb XXVII spectrum has been studied primarily by interpolation from neighboring isoelectronic species and by theoretical calculations. Edlén [E78] expressed values for transitions $3s$-$3p$ and $3p$-$3d$ and for the ionization energy. Ivanov and Ivanova [II79] used a model potential method to calculate energies of the ns, np, and nd states with $n = 3$, 4, and 5, as well as nf states for $n = 4$, 5, and 6. Reader *et al.* [RKSE87] made further experimental studies of transitions in sodiumlike Cu–Kr, Y–Mo, Ru–Ag, and Sn. By comparing the results with Dirac–Fock calculations and fitting the differences between observed and calculated wave numbers, wavelengths for all sodiumlike ions from Ar^{7+} to Xe^{43+} were determined.

The fitted wavelengths and energy level values for the $3s$, $3p$, $3d$, and $4f$ configurations are taken from [RKSE87]. Johnson *et al.* [JLS96] calculated the transition probabilities using third-order many-body perturbation theory. The other energy levels are from [II79] and wavelengths for the $3p$-$4s$ transitions are calculated from their energy levels. As discussed in the introduction, values obtained by isoelectronic fitting are enclosed in square brackets and calculated values are enclosed in parentheses. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXVII

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RKSE87 J. Reader, V. Kaufman, J. Sugar, J. O. Ekberg, U. Feldman, C. M. Brown, J. F. Seely, and W. L. Rowan, J. Opt. Soc. Am. B **4**, 1821 (1987).

Spectral lines of Rb XXVII

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(22.999)	0.002	(4348000)	6.67E+11	3p $^2P^\circ_{1/2}$	4s $^2S_{1/2}$	II79	JLS96
(23.645)	0.002	(4229200)	1.45E+12	3p $^2P^\circ_{3/2}$	4s $^2S_{1/2}$	II79	JLS96
[23.794]	0.007	[4202700]		3d $^2D_{3/2}$	4f $^2F^\circ_{5/2}$	RKSE87	
[23.901]	0.007	[4183900]		3d $^2D_{5/2}$	4f $^2F^\circ_{7/2}$	RKSE87	
[133.846]	0.007	[747130]		3p $^2P^\circ_{1/2}$	3d $^2D_{3/2}$	RKSE87	
[153.541]	0.007	[651290]		3p $^2P^\circ_{3/2}$	3d $^2D_{5/2}$	RKSE87	
[159.160]	0.007	[628300]		3p $^2P^\circ_{3/2}$	3d $^2D_{3/2}$	RKSE87	
[169.063]	0.007	[591500]	2.40E+10	3s $^2S_{1/2}$	3p $^2P^\circ_{3/2}$	RKSE87	JLS96
[211.550]	0.007	[472700]	1.20E+10	3s $^2S_{1/2}$	3p $^2P^\circ_{1/2}$	RKSE87	JLS96

Energy levels of Rb XXVII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
3s	^2S	1/2	[0]	15	RKSE87
3p	$^2P^\circ$	1/2	[472700]	15	RKSE87
	$^2P^\circ$	3/2	[591500]	20	RKSE87
3d	^2D	3/2	[1219800]	130	RKSE87
	^2D	5/2	[1242787]	130	RKSE87
4s	^2S	1/2	(4820700)	400	II79
4p	$^2P^\circ$	1/2	(5013560)	400	II79
	$^2P^\circ$	3/2	(5060760)	400	II79

Energy levels of Rb XXVII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
4d	^{2}D	3/2	(5296340)	400	II79
	^{2}D	5/2	(5306360)	400	II79
4f	^{2}F°	5/2	[5422568]	130	RKSE87
	^{2}F°	7/2	[5426712]	130	RKSE87
5s	^{2}S	1/2	(6931070)	400	II79
5p	^{2}P°	1/2	(7037590)	400	II79
	^{2}P°	3/2	(7062140)	400	II79
5d	^{2}D	3/2	(7175120)	400	II79
	^{2}D	5/2	(7180580)	400	II79
5f	^{2}F°	5/2	(7227560)	600	II79
	^{2}F°	7/2	(7229790)	600	II79
6f	^{2}F°	5/2	(8213500)	600	II79
	^{2}F°	7/2	(8214800)	600	II79

7.28. Rb XXVIII

Ne isoelectronic sequence

Ground state $1s^2 2s^2 2p^6\ ^1S_0$

Ionization energy [25 272 000 ± 14 500 cm^{-1}]; [3133.3 ± 1.8 eV]

The first reported measurements of the Rb XXVIII spectrum were made by Gordon *et al.* [GHPC79] and nearly simultaneously by Hutcheon *et al.* [HCKL80]. The two sets of data overlap, providing a useful verification of the values. Later Elliott *et al.* [EBL93] measured three transitions to improved accuracy. Aglitskii *et al.* [AIPS89] published the results of experimental measurements of spectra of ions in the Ne I isoelectronic sequence with Z>39, along with theoretical values for Z>35.

The wavelengths retained in this compilation are from [EBN93] and [HCKL80], where available, and otherwise from [GHPC79]. The energy level values are derived from the measured wavelengths. The semiempirical ionization energy is quoted from [BFQ99]. Transition probabilities for these spectral lines have been calculated by Zhang and Sampson [ZS89] and Ivanova and Gulov [IG91]. The values reported here are those of [IG91].

References for Rb XXVIII

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Spectral lines of Rb XXVIII

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
4.9351	0.0010	20263000	2.8E+13	$2s^2 2p^6\ ^1S_0$	$2s^2 2p^5 4d\ (1/2,3/2)^\circ_1$	EBN93	IG91
5.0523	0.0010	19793000	2.8E+13	$2s^2 2p^6\ ^1S_0$	$2s^2 2p^5 4d\ (3/2,5/2)^\circ_1$	EBN93	IG91
5.0573	0.0010	19773000	1.3E+13	$2s^2 2p^6\ ^1S_0$	$2s^2 2p^5 4s\ (1/2,1/2)^\circ_1$	EBN93	IG91
5.179	0.002	19309000	1.6E+12	$2s^2 2p^6\ ^1S_0$	$2s^2 2p^5 4s\ (3/2,1/2)^\circ_1$	HCKL80	IG91
5.945	0.002	16821000	2.0E+13	$2s^2 2p^6\ ^1S_0$	$2s 2p^6 3p(^2P^\circ_{3/2})\ (1/2,3/2)^\circ_1$	HCKL80	IG91
5.994	0.002	16683000	6.0E+12	$2s^2 2p^6\ ^1S_0$	$2s 2p^6 3p(^2P^\circ_{1/2})\ (1/2,1/2)^\circ_1$	HCKL80	IG91
6.277	0.002	15931000	1.1E+14	$2s^2 2p^6\ ^1S_0$	$2s^2 2p^5(^2P^\circ_{1/2})3d(^2D_{3/2})\ (1/2,3/2)^\circ_1$	HCKL80	IG91
6.454	0.002	15494000	8.9E+13	$2s^2 2p^6\ ^1S_0$	$2s^2 2p^5(^2P^\circ_{3/2})3d(^2D_{5/2})\ (3/2,5/2)^\circ_1$	HCKL80	IG91
6.519	0.002	15340000	2.8E+11	$2s^2 2p^6\ ^1S_0$	$2s^2 2p^5(^2P^\circ_{3/2})3d(^2D_{3/2})\ (3/2,3/2)^\circ_1$	HCKL80	IG91
6.789	0.005	14730000	3.7E+12	$2s^2 2p^6\ ^1S_0$	$2s^2 2p^5(^2P^\circ_{1/2})3s\ (1/2,1/2)^\circ_1$	GHPC79	IG91
7.024	0.005	14237000	5.8E+12	$2s^2 2p^6\ ^1S_0$	$2s^2 2p^5(^2P^\circ_{3/2})3s\ (3/2,1/2)^\circ_1$	GHPC79	IG91

Energy levels of Rb XXVIII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^2 2p^6$	^1S	0	0	5000	HCKL80
$2s^2 2p^5(^2P^\circ_{3/2})3s$	$(3/2,1/2)^\circ$	1	14237000	10000	GHPC79
$2s^2 2p^5(^2P^\circ_{1/2})3s$	$(1/2,1/2)^\circ$	1	14730000	11000	GHPC79
$2s^2 2p^5(^2P^\circ_{3/2})3d(^2D_{3/2})$	$(3/2,3/2)^\circ$	1	15340000	5000	HCKL80
$2s^2 2p^5(^2P^\circ_{3/2})3d(^2D_{5/2})$	$(3/2,5/2)^\circ$	1	15494000	5000	HCKL80
$2s^2 2p^5(^2P^\circ_{1/2})3d(^2D_{3/2})$	$(1/2,3/2)^\circ$	1	15931000	5000	HCKL80

Energy levels of Rb XXVIII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s2p^6 3p(^2P^\circ_{1/2})$	$(1/2,1/2)^\circ$	1	16683000	6000	HCKL80
$2s2p^6 3p(^2P^\circ_{3/2})$	$(1/2,3/2)^\circ$	1	16821000	6000	HCKL80
$2s^2 2p^5 4s$	$(3/2,1/2)^\circ$	1	19309000	7000	HCKL80
$2s^2 2p^5 4s$	$(1/2,1/2)^\circ$	1	19773000	4000	EBN93
$2s^2 2p^5 4d$	$(3/2,5/2)^\circ$	1	19793000	4000	EBN93
$2s^2 2p^5 4d$	$(1/2,3/2)^\circ$	1	20263000	4000	EBN93

7.29. Rb XXIX

F isoelectronic sequence

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

Ionization energy [26 463 000 ± 45 000 cm^{-1}]; [3281 ± 6 eV]

The spectrum of Rb XXIX was first measured in the 6.0 Å region by Hutcheon *et al.* [HCKL80] using a laser-produced plasma. Feldman *et al.* [FSBR85] measured the $2s^2 2p^5$-$2s 2p^6$ transitions and determined the ground state splitting. Zigler *et al.* [ZFD86] extended the measurements in the 6–7 Å range.

The wavelengths included are taken from [HCKL80] and [FSBR85], where available, and otherwise from [ZFD86]. Due to apparent discrepancies with the ground-state splitting, some of the classifications given in [ZFD86] are in doubt. Energy levels listed here are calculated from the wavelengths reported. Kaufman and Sugar [KS86] gave a transition probability for the 198 Å transition and Sampson *et al.* [SZF91] calculated those for the $2s^2 2p^5$-$2s 2p^6$ transitions. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXIX

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Observed spectral lines of Rb XXIX

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
6.031	0.003	16581000			$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^1S)3d\ {}^2D_{3/2}$	HCKL80	
6.044	0.003	16545000	4		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^1D)3d\ {}^2D_{3/2}$	HCKL80	
6.055	0.003	16515000	4		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^1D)3d\ {}^2D_{5/2}$	HCKL80	
6.059	0.003	16504000	4		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^1D)3d\ {}^2P_{3/2}$	HCKL80	
6.062	0.003	16496000	2		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^1D)3d\ {}^2S_{1/2}$	ZFD86	
6.107	0.003	16375000	2		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^3P)3d\ {}^2D_{5/2}$	ZFD86	
6.122	0.003	16335000	1		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^3P)3d\ {}^2D_{3/2}$	ZFD86	
6.218	0.003	16082000	3		$2s^2 2p^5\ {}^2P^\circ_{1/2}$	$2s^2 2p^4(^1D)3d\ {}^2D_{3/2}$	ZFD86	
6.231	0.003	16049000	1*		$2s^2 2p^5\ {}^2P^\circ_{1/2}$	$2s^2 2p^4(^1D)3d\ {}^2S_{1/2}$	ZFD86	
6.231	0.003	16049000	1*		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^3P)3d\ {}^4F_{5/2}$	ZFD86	
6.251	0.003	15997000	4		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^3P)3d\ {}^4P_{3/2}$	ZFD86	
6.502	0.003	15380000	7		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^3P)3s\ {}^2D_{5/2}$	ZFD86	
6.741	0.003	14835000	3		$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^4(^3P)3s\ {}^2P_{3/2}$	ZFD86	
49.728	0.005	2010940		1.95E+11	$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s 2p^6\ {}^2S_{1/2}$	FSBR85	SZF91
66.376	0.005	1506570		7.55E+10	$2s^2 2p^5\ {}^2P^\circ_{1/2}$	$2s 2p^6\ {}^2S_{1/2}$	FSBR85	SZF91
198.27	0.005	504370		2.29E+6	$2s^2 2p^5\ {}^2P^\circ_{3/2}$	$2s^2 2p^5\ {}^2P^\circ_{1/2}$	FSBR85	KS86

Energy levels of Rb XXIX

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^2 2p^5$	$^2P^\circ$	3/2	0	200	FSBR85
	$^2P^\circ$	1/2	504370	200	FSBR85
$2s2p^6$	^2S	1/2	2010940	200	FSBR85
$2s^2 2p^4(^3P)3s$	^2P	3/2	14835000	7000	ZFD86
$2s^2 2p^4(^3P)3s$	^2D	5/2	15380000	7000	ZFD86
$2s^2 2p^4(^3P)3d$	^4P	3/2	15997000	8000	ZFD86
$2s^2 2p^4(^3P)3d$	^4F	5/2	16049000	8000	ZFD86
$2s^2 2p^4(^3P)3d$	^2D	3/2	16335000	8000	ZFD86
	^2D	5/2	16375000	8000	ZFD86
$2s^2 2p^4(^1D)3d$	^2S	1/2	16496000	8000	ZFD86
$2s^2 2p^4(^1D)3d$	^2P	3/2	16504000	8000	HCKL80
$2s^2 2p^4(^1D)3d$	^2D	5/2	16515000	8000	HCKL80
	^2D	3/2	16545000	8000	HCKL80
$2s^2 2p^4(^1S)3d$	^2D	3/2	17085000	8000	HCKL80

7.30. Rb XXX

O isoelectronic sequence

Ground state $1s^2 2s^2 2p^4\ {}^3P_2$

Ionization energy [27 766 000 ± 61 000 cm^{-1}]; [3443 ± 8 eV]

A few lines of the Rb XXX spectrum have been measured by Feldman *et al.* [FSBR85], who also incorporated predictions by Edlén [E83] to produce the energy levels cited here. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXX

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).

E83 B. Edlén. Phys. Scr. **28**, 51 (1983).

FSBR85 U. Feldman, J. F. Seely, W. E. Behring, M. C. Richardson, and S. Goldsmith, J. Opt. Soc. Am. B **2**, 1658 (1985).

Spectral lines of Rb XXX

λ (Å)	Unc. (Å)	σ (cm^{-1})	Int.	Lower Level	Upper Level	λ Ref.
50.52	0.01	1982600	13	$2s^2 2p^4\ {}^3P_2$	$2s2p^5\ {}^3P^\circ_1$	FSBR85
51.20	0.01	2028000	12	$2s^2 2p^4\ {}^1D_2$	$2s2p^5\ {}^1P^\circ_1$	FSBR85
55.143	0.005	1980200	35	$2s^2 2p^4\ {}^3P_1$	$2s2p^5\ {}^3P^\circ_0$	FSBR85
56.31	0.01	1930900	13	$2s^2 2p^4\ {}^3P_2$	$2s2p^5\ {}^3P^\circ_2$	FSBR85
(171.2)	0.01	1682100		$2s^2 2p^4\ {}^3P_2$	$2s^2 2p^4\ {}^1D_2$	FSBR85
(207.7)	0.01	1668300		$2s^2 2p^4\ {}^3P_2$	$2s^2 2p^4\ {}^3P_1$	FSBR85
(974.7)	0.01	1593100		$2s^2 2p^4\ {}^3P_1$	$2s^2 2p^4\ {}^1D_2$	FSBR85

Energy levels of Rb XXX

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$2s^2 2p^4$	^3P	2	0	5000	FSBR85
	^3P	1	481500	5000	FSBR85
$2s^2 2p^4$	^1D	2	584100	5000	FSBR85
$2s2p^5$	$^3P^\circ$	2	1775900	10000	FSBR85
	$^3P^\circ$	1	1979400	10000	FSBR85
	$^3P^\circ$	0	2295000	10000	FSBR85
$2s2p^5$	$^1P^\circ$	1	2537200	10000	FSBR85

7.31. Rb XXXI

N isoelectronic sequence

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

Ionization energy [29 034 000 ± 218 000 cm^{-1}]; [3600 ± 30 eV]

There have been no measurements of the Rb XXXI spectrum; however, Zhang and Sampson [ZS99] have used the multiconfiguration Dirac–Fock method to calculate several of the low-lying energy levels and transition probabilities for transitions between them. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXXI

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).

ZS99 H. L. Zhang and D. H. Sampson, Atom. Data Nucl. Data Tables **72**, 153 (1999).

Spectral lines of Rb XXXI

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(33.700)	(2967400)	3.51E+7	$2s^2 2p^3\ {}^4S^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^2P_{1/2}$	ZS99	ZS99
(39.534)	(2529500)	3.25E+10	$2s^2 2p^3\ {}^2D^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^2P_{1/2}$	ZS99	ZS99
(40.117)	(2492700)	1.82E+10	$2s^2 2p^3\ {}^4S^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^2P_{3/2}$	ZS99	ZS99
(41.196)	(2427400)	2.03E+10	$2s2p^4({}^3P)\ {}^4P_{3/2}$	$2p^5\ {}^2P^\circ_{1/2}$	ZS99	ZS99
(41.302)	(2421200)	3.82E+9	$2s2p^4({}^3P)\ {}^4P_{1/2}$	$2p^5\ {}^2P^\circ_{1/2}$	ZS99	ZS99
(41.693)	(2398500)	1.77E+10	$2s^2 2p^3\ {}^4S^\circ_{3/2}$	$2s2p^4({}^1S)\ {}^2S_{1/2}$	ZS99	ZS99
(43.762)	(2285100)	2.48E+9	$2s^2 2p^3\ {}^2P^\circ_{1/2}$	$2s2p^4({}^3P)\ {}^2P_{1/2}$	ZS99	ZS99
(44.745)	(2234900)	4.18E+7	$2s^2 2p^3\ {}^4S^\circ_{3/2}$	$2s2p^4({}^1D)\ {}^2D_{5/2}$	ZS99	ZS99
(45.673)	(2189500)	5.08E+10	$2s2p^4({}^3P)\ {}^4P_{5/2}$	$2p^5\ {}^2P^\circ_{3/2}$	ZS99	ZS99
(47.529)	(2104000)	2.52E+10	$2s^2 2p^3\ {}^4S^\circ_{3/2}$	$2s2p^4({}^1D)\ {}^2D_{3/2}$	ZS99	ZS99
(47.879)	(2088600)	9.83E+10	$2s2p^4({}^1D)\ {}^2D_{3/2}$	$2p^5\ {}^2P^\circ_{1/2}$	ZS99	ZS99
(48.667)	(2054800)	7.07E+8	$2s^2 2p^3\ {}^2D^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^2P_{3/2}$	ZS99	ZS99
(51.005)	(1960600)	1.56E+11	$2s^2 2p^3\ {}^2D^\circ_{3/2}$	$2s2p^4({}^1S)\ {}^2S_{1/2}$	ZS99	ZS99
(51.390)	(1945900)	2.48E+11	$2s^2 2p^3\ {}^2D^\circ_{5/2}$	$2s2p^4({}^3P)\ {}^2P_{3/2}$	ZS99	ZS99
(52.425)	(1907500)	6.84E+10	$2s2p^4({}^3P)\ {}^4P_{3/2}$	$2p^5\ {}^2P^\circ_{3/2}$	ZS99	ZS99
(52.596)	(1901300)	7.56E+9	$2s2p^4({}^3P)\ {}^4P_{1/2}$	$2p^5\ {}^2P^\circ_{3/2}$	ZS99	ZS99
(53.914)	(1854800)	2.65E+11	$2s^2 2p^3\ {}^2P^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^2P_{1/2}$	ZS99	ZS99
(55.236)	(1810400)	3.99E+10	$2s^2 2p^3\ {}^2P^\circ_{1/2}$	$2s2p^4({}^3P)\ {}^2P_{3/2}$	ZS99	ZS99
(55.648)	(1797000)	1.85E+9	$2s^2 2p^3\ {}^2D^\circ_{3/2}$	$2s2p^4({}^1D)\ {}^2D_{5/2}$	ZS99	ZS99
(55.738)	(1794100)	4.98E+10	$2s2p^4({}^1S)\ {}^2S_{1/2}$	$2p^5\ {}^2P^\circ_{1/2}$	ZS99	ZS99
(56.453)	(1771400)	8.79E+10	$2s^2 2p^3\ {}^4S^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^4P_{1/2}$	ZS99	ZS99
(56.651)	(1765200)	1.09E+11	$2s^2 2p^3\ {}^4S^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^4P_{3/2}$	ZS99	ZS99
(58.268)	(1716200)	8.74E+10	$2s^2 2p^3\ {}^2P^\circ_{1/2}$	$2s2p^4({}^1S)\ {}^2S_{1/2}$	ZS99	ZS99
(58.827)	(1699900)	4.01E+11	$2s2p^4({}^3P)\ {}^2P_{3/2}$	$2p^5\ {}^2P^\circ_{1/2}$	ZS99	ZS99
(59.238)	(1688100)	9.18E+10	$2s^2 2p^3\ {}^2D^\circ_{5/2}$	$2s2p^4({}^1D)\ {}^2D_{5/2}$	ZS99	ZS99
(60.020)	(1666100)	1.11E+11	$2s^2 2p^3\ {}^2D^\circ_{3/2}$	$2s2p^4({}^1D)\ {}^2D_{3/2}$	ZS99	ZS99
(63.747)	(1568700)	5.71E+10	$2s2p^4({}^1D)\ {}^2D_{3/2}$	$2p^5\ {}^2P^\circ_{3/2}$	ZS99	ZS99
(64.218)	(1557200)	5.14E+9	$2s^2 2p^3\ {}^2D^\circ_{5/2}$	$2s2p^4({}^1D)\ {}^2D_{3/2}$	ZS99	ZS99
(67.422)	(1483200)	2.55E+10	$2s^2 2p^3\ {}^4S^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^4P_{5/2}$	ZS99	ZS99
(69.551)	(1437800)	1.04E+11	$2s2p^4({}^1D)\ {}^2D_{5/2}$	$2p^5\ {}^2P^\circ_{3/2}$	ZS99	ZS99
(70.338)	(1421700)	2.55E+9	$2s^2 2p^3\ {}^2P^\circ_{1/2}$	$2s2p^4({}^1D)\ {}^2D_{3/2}$	ZS99	ZS99
(72.459)	(1380100)	1.56E+10	$2s^2 2p^3\ {}^2P^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^2P_{3/2}$	ZS99	ZS99
(74.991)	(1333500)	2.59E+9	$2s^2 2p^3\ {}^2D^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^4P_{1/2}$	ZS99	ZS99
(75.341)	(1327300)	7.58E+7	$2s^2 2p^3\ {}^2D^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^4P_{3/2}$	ZS99	ZS99
(77.767)	(1285900)	9.31E+8	$2s^2 2p^3\ {}^2P^\circ_{3/2}$	$2s2p^4({}^1S)\ {}^2S_{1/2}$	ZS99	ZS99
(78.481)	(1274200)	9.69E+9	$2s2p^4({}^1S)\ {}^2S_{1/2}$	$2p^5\ {}^2P^\circ_{3/2}$	ZS99	ZS99
(81.619)	(1225200)	5.48E+10	$2s2p^4({}^3P)\ {}^2P_{1/2}$	$2p^5\ {}^2P^\circ_{1/2}$	ZS99	ZS99

Spectral lines of Rb XXXI—Continued

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(82.075)	(1218400)	3.71E+9	$2s^2 2p^3\ {}^2D^\circ_{5/2}$	$2s2p^4({}^3P)\ {}^4P_{3/2}$	ZS99	ZS99
(84.746)	(1180000)	3.68E+10	$2s2p^4({}^3P)\ {}^2P_{3/2}$	$2p^5\ {}^2P^\circ_{3/2}$	ZS99	ZS99
(89.103)	(1122300)	1.02E+10	$2s^2 2p^3\ {}^2P^\circ_{3/2}$	$2s2p^4({}^1D)\ {}^2D_{5/2}$	ZS99	ZS99
(91.819)	(1089100)	6.91E+9	$2s^2 2p^3\ {}^2P^\circ_{1/2}$	$2s2p^4({}^3P)\ {}^4P_{1/2}$	ZS99	ZS99
(92.345)	(1082900)	1.48E+8	$2s^2 2p^3\ {}^2P^\circ_{1/2}$	$2s2p^4({}^3P)\ {}^4P_{3/2}$	ZS99	ZS99
(95.666)	(1045300)	7.29E+9	$2s^2 2p^3\ {}^2D^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^4P_{5/2}$	ZS99	ZS99
(100.867)	(991400)	8.19E+6	$2s^2 2p^3\ {}^2P^\circ_{3/2}$	$2s2p^4({}^1D)\ {}^2D_{3/2}$	ZS99	ZS99
(106.792)	(936400)	2.11E+9	$2s^2 2p^3\ {}^2D^\circ_{5/2}$	$2s2p^4({}^3P)\ {}^4P_{5/2}$	ZS99	ZS99
(141.784)	(705300)	2.12E+8	$2s2p^4({}^3P)\ {}^2P_{1/2}$	$2p^5\ {}^2P^\circ_{3/2}$	ZS99	ZS99
(151.791)	(658800)	8.51E+7	$2s^2 2p^3\ {}^2P^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^4P_{1/2}$	ZS99	ZS99
(153.233)	(652600)	4.40E+8	$2s^2 2p^3\ {}^2P^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^4P_{3/2}$	ZS99	ZS99
(269.833)	(370600)	8.31E+6	$2s^2 2p^3\ {}^2P^\circ_{3/2}$	$2s2p^4({}^3P)\ {}^4P_{5/2}$	ZS99	ZS99

Energy levels of Rb XXXI

Configuration	Term	*J*	Energy (cm^{-1})	Reference
$2s^2 2p^3$	${}^4S^\circ$	3/2	(0)	ZS99
$2s^2 2p^3$	${}^2D^\circ$	3/2	(437900)	ZS99
	${}^2D^\circ$	5/2	(546800)	ZS99
$2s^2 2p^3$	${}^2P^\circ$	1/2	(682300)	ZS99
	${}^2P^\circ$	3/2	(1112600)	ZS99
$2s2p^4({}^3P)$	${}^4P$	5/2	(1483200)	ZS99
	${}^4P$	3/2	(1765200)	ZS99
	${}^4P$	1/2	(1771400)	ZS99
$2s2p^4({}^1D)$	${}^2D$	3/2	(2104000)	ZS99
	${}^2D$	5/2	(2234900)	ZS99
$2s2p^4({}^1S)$	${}^2S$	1/2	(2398500)	ZS99
$2s2p^4({}^3P)$	${}^2P$	3/2	(2492700)	ZS99
	${}^2P$	1/2	(2967400)	ZS99
$2p^5$	${}^2P^\circ$	3/2	(3672700)	ZS99
	${}^2P^\circ$	1/2	(4192600)	ZS99

7.32. Rb XXXII

C isoelectronic sequence

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

Ionization energy [30 771 000 ± 32 000 cm^{-1}]; [3815 ± 4 eV]

The writer has assumed the ground state listed above, by analogy with B I. The semiempirical ionization energy is quoted from [BFQ99].

References for RbXXXII

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).

7.33. Rb XXXIII

B isoelectronic sequence

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

Ionization energy [32 169 000 ± 22 000 cm^{-1}]; [3988 ± 3 eV]

Although there have been no measurements of the Rb XXXIII spectrum, Zhang and Sampson [ZS94] have used the multiconfiguration Dirac–Fock method to calculate several of the low-lying energy levels and transition probabilities for transitions between them. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXXIII

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).

ZS94 H. L. Zhang and D. H. Sampson, Atom. Data Nucl. Data Tables **56**, 41 (1994).

Spectral lines of Rb XXXIII

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(35.222)	(2839100)	1.60E+7	$2s2p^2\ {}^4P_{1/2}$	$2p^3\ {}^2P^\circ_{3/2}$	ZS94	ZS94
(40.386)	(2476100)	1.17E+9	$2s2p^2\ {}^4P_{3/2}$	$2p^3\ {}^2P^\circ_{3/2}$	ZS94	ZS94
(41.514)	(2408800)	8.40E+8	$2s2p^2\ {}^4P_{1/2}$	$2p^3\ {}^2P^\circ_{1/2}$	ZS94	ZS94
(43.031)	(2323900)	1.96E+7	$2s2p^2\ {}^4P_{5/2}$	$2p^3\ {}^2P^\circ_{3/2}$	ZS94	ZS94
(45.292)	(2207900)	9.10E+9	$2s^22p\ {}^2P^\circ_{1/2}$	$2s2p^2\ {}^2P_{3/2}$	ZS94	ZS94
(45.637)	(2191200)	7.85E+8	$2s^22p\ {}^2P^\circ_{1/2}$	$2s2p^2\ {}^2S_{1/2}$	ZS94	ZS94
(47.803)	(2091900)	3.11E+9	$2s2p^2\ {}^4P_{1/2}$	$2p^3\ {}^2D^\circ_{3/2}$	ZS94	ZS94
(48.881)	(2045800)	6.53E+8	$2s2p^2\ {}^4P_{3/2}$	$2p^3\ {}^2P^\circ_{1/2}$	ZS94	ZS94
(49.186)	(2033100)	8.66E+9	$2s2p^2\ {}^2D_{3/2}$	$2p^3\ {}^2P^\circ_{3/2}$	ZS94	ZS94
(50.979)	(1961600)	4.56E+9	$2s2p^2\ {}^2P_{1/2}$	$2p^3\ {}^2P^\circ_{3/2}$	ZS94	ZS94
(54.445)	(1836700)	6.00E+8	$2s2p^2\ {}^4P_{3/2}$	$2p^3\ {}^2D^\circ_{5/2}$	ZS94	ZS94
(57.100)	(1751300)	4.11E+10	$2s2p^2\ {}^2D_{5/2}$	$2p^3\ {}^2P^\circ_{3/2}$	ZS94	ZS94
(57.840)	(1728900)	4.41E+10	$2s2p^2\ {}^4P_{3/2}$	$2p^3\ {}^2D^\circ_{3/2}$	ZS94	ZS94
(59.365)	(1684500)	3.20E+10	$2s2p^2\ {}^4P_{5/2}$	$2p^3\ {}^2D^\circ_{5/2}$	ZS94	ZS94
(60.143)	(1662700)	4.08E+10	$2s2p^2\ {}^4P_{1/2}$	$2p^3\ {}^4S^\circ_{3/2}$	ZS94	ZS94
(60.489)	(1653200)	1.40E+11	$2s^22p\ {}^2P^\circ_{3/2}$	$2s2p^2\ {}^2P_{3/2}$	ZS94	ZS94
(61.106)	(1636500)	9.65E+10	$2s^22p\ {}^2P^\circ_{3/2}$	$2s2p^2\ {}^2S_{1/2}$	ZS94	ZS94
(62.329)	(1604400)	1.13E+11	$2s^22p\ {}^2P^\circ_{1/2}$	$2s2p^2\ {}^2P_{1/2}$	ZS94	ZS94
(62.391)	(1602800)	1.02E+11	$2s2p^2\ {}^2D_{3/2}$	$2p^3\ {}^2P^\circ_{1/2}$	ZS94	ZS94
(63.424)	(1576700)	7.54E+9	$2s2p^2\ {}^4P_{5/2}$	$2p^3\ {}^2D^\circ_{3/2}$	ZS94	ZS94
(65.236)	(1532900)	5.72E+10	$2s^22p\ {}^2P^\circ_{1/2}$	$2s2p^2\ {}^2D_{3/2}$	ZS94	ZS94
(65.304)	(1531300)	2.60E+10	$2s2p^2\ {}^2P_{1/2}$	$2p^3\ {}^2P^\circ_{1/2}$	ZS94	ZS94
(71.751)	(1393700)	2.66E+10	$2s2p^2\ {}^2D_{3/2}$	$2p^3\ {}^2D^\circ_{5/2}$	ZS94	ZS94
(72.738)	(1374800)	1.46E+10	$2s2p^2\ {}^2S_{1/2}$	$2p^3\ {}^2P^\circ_{3/2}$	ZS94	ZS94
(73.632)	(1358100)	8.99E+10	$2s2p^2\ {}^2P_{3/2}$	$2p^3\ {}^2P^\circ_{3/2}$	ZS94	ZS94
(76.941)	(1299700)	1.57E+10	$2s2p^2\ {}^4P_{3/2}$	$2p^3\ {}^4S^\circ_{3/2}$	ZS94	ZS94
(77.767)	(1285900)	1.18E+10	$2s2p^2\ {}^2D_{3/2}$	$2p^3\ {}^2D^\circ_{3/2}$	ZS94	ZS94
(79.365)	(1260000)	1.64E+10	$2s^22p\ {}^2P^\circ_{3/2}$	$2s2p^2\ {}^2D_{5/2}$	ZS94	ZS94
(82.345)	(1214400)	2.85E+10	$2s2p^2\ {}^2P_{1/2}$	$2p^3\ {}^2D^\circ_{3/2}$	ZS94	ZS94
(87.146)	(1147500)	2.86E+10	$2s2p^2\ {}^4P_{5/2}$	$2p^3\ {}^4S^\circ_{3/2}$	ZS94	ZS94
(89.936)	(1111900)	1.92E+10	$2s2p^2\ {}^2D_{5/2}$	$2p^3\ {}^2D^\circ_{5/2}$	ZS94	ZS94
(91.752)	(1089900)	6.34E+7	$2s^22p\ {}^2P^\circ_{1/2}$	$2s2p^2\ {}^4P_{3/2}$	ZS94	ZS94
(95.265)	(1049700)	2.26E+9	$2s^22p\ {}^2P^\circ_{3/2}$	$2s2p^2\ {}^2P_{1/2}$	ZS94	ZS94
(99.592)	(1004100)	1.08E+10	$2s2p^2\ {}^2D_{5/2}$	$2p^3\ {}^2D^\circ_{3/2}$	ZS94	ZS94
(102.229)	(978200)	8.49E+8	$2s^22p\ {}^2P^\circ_{3/2}$	$2s2p^2\ {}^2D_{3/2}$	ZS94	ZS94
(105.876)	(944500)	1.70E+10	$2s2p^2\ {}^2S_{1/2}$	$2p^3\ {}^2P^\circ_{1/2}$	ZS94	ZS94
(107.782)	(927800)	1.05E+9	$2s2p^2\ {}^2P_{3/2}$	$2p^3\ {}^2P^\circ_{1/2}$	ZS94	ZS94

Spectral lines of Rb XXXIII—Continued

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(116.727)	(856700)	3.02E+9	$2s2p^2\ ^2D_{3/2}$	$2p^3\ ^4S^\circ_{3/2}$	ZS94	ZS94
(127.356)	(785200)	3.39E+9	$2s2p^2\ ^2P_{1/2}$	$2p^3\ ^4S^\circ_{3/2}$	ZS94	ZS94
(137.571)	(726900)	1.47E+9	$2s^22p\ ^2P^\circ_{1/2}$	$2s2p^2\ ^4P_{1/2}$	ZS94	ZS94
(139.140)	(718700)	5.10E+9	$2s2p^2\ ^2P_{3/2}$	$2p^3\ ^2D^\circ_{5/2}$	ZS94	ZS94
(145.476)	(687400)	1.07E+9	$2s^22p\ ^2P^\circ_{3/2}$	$2s2p^2\ ^4P_{5/2}$	ZS94	ZS94
(159.337)	(627600)	1.67E+8	$2s2p^2\ ^2S_{1/2}$	$2p^3\ ^2D^\circ_{3/2}$	ZS94	ZS94
(163.693)	(610900)	2.91E+8	$2s2p^2\ ^2P_{3/2}$	$2p^3\ ^2D^\circ_{3/2}$	ZS94	ZS94
(173.943)	(574900)	8.04E+7	$2s2p^2\ ^2D_{5/2}$	$2p^3\ ^4S^\circ_{3/2}$	ZS94	ZS94
(186.846)	(535200)	6.94E+7	$2s^22p\ ^2P^\circ_{3/2}$	$2s2p^2\ ^4P_{3/2}$	ZS94	ZS94
(504.032)	(198400)	4.08E+6	$2s2p^2\ ^2S_{1/2}$	$2p^3\ ^4S^\circ_{3/2}$	ZS94	ZS94
(550.358)	(181700)	7.47E+6	$2s2p^2\ ^2P_{3/2}$	$2p^3\ ^4S^\circ_{3/2}$	ZS94	ZS94
(580.720)	(172200)	3.61E+6	$2s^22p\ ^2P^\circ_{3/2}$	$2s2p^2\ ^4P_{1/2}$	ZS94	ZS94

Energy levels of Rb XXXIII

Configuration	Term	J	Energy (cm^{-1})	Reference
$2s^22p$	$^2P^\circ$	1/2	(0)	ZS94
	$^2P^\circ$	3/2	(554700)	ZS94
$2s2p^2$	^4P	1/2	(726900)	ZS94
	^4P	3/2	(1089900)	ZS94
	^4P	5/2	(1242100)	ZS94
$2s2p^2$	^2D	3/2	(1532900)	ZS94
	^2D	5/2	(1814700)	ZS94
$2s2p^2$	^2P	1/2	(1604400)	ZS94
	^2P	3/2	(2207900)	ZS94
$2s2p^2$	^2S	1/2	(2191200)	ZS94
$2p^3$	$^4S^\circ$	3/2	(2389600)	ZS94
$2p^3$	$^2D^\circ$	3/2	(2818800)	ZS94
	$^2D^\circ$	5/2	(2926600)	ZS94
$2p^3$	$^2P^\circ$	1/2	(3135700)	ZS94
	$^2P^\circ$	3/2	(3566000)	ZS94

7.34. Rb XXXIV

Be isoelectronic sequence

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

Ionization energy [33 990 000 ± 34 000 cm^{-1}]; [4214 ± 4 eV]

Although there have been no measurements of the Rb XXXIV spectrum, Zhang and Sampson [ZS92] have used the multiconfiguration Dirac–Fock method to calculate several of the low-lying energy levels and transition probabilities for transitions between them. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXXIV

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).

ZS92 H. L. Zhang and D. H. Sampson, Atom. Data Nucl. Data Tables **56**, 41 (1994).

Spectral lines of Rb XXXIV

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(51.052)	(1958800)	2.61E+9	2s2p $^3P^\circ_1$	2p^2 $^3P_2$	ZS92	ZS92
(67.664)	(1477900)	3.77E+10	2s2p $^3P^\circ_2$	2p^2 $^3P_2$	ZS92	ZS92
(67.741)	(1476200)	6.65E+10	2s^2 $^1S_0$	2s2p $^1P^\circ_1$	ZS92	ZS92
(70.587)	(1416700)	2.77E+10	2s2p $^3P^\circ_0$	2p^2 $^3P_1$	ZS92	ZS92
(70.706)	(1414300)	2.71E+10	2s2p $^3P^\circ_1$	2p^2 $^1D_2$	ZS92	ZS92
(72.056)	(1387800)	1.12E+11	2s2p $^1P^\circ_1$	2p^2 $^1S_0$	ZS92	ZS92
(75.426)	(1325800)	1.50E+10	2s2p $^3P^\circ_1$	2p^2 $^3P_1$	ZS92	ZS92
(91.199)	(1096500)	2.27E+10	2s2p $^1P^\circ_1$	2p^2 $^3P_2$	ZS92	ZS92
(107.135)	(933400)	8.14E+9	2s2p $^3P^\circ_2$	2p^2 $^1D_2$	ZS92	ZS92
(113.263)	(882900)	2.18E+10	2s2p $^3P^\circ_1$	2p^2 $^3P_0$	ZS92	ZS92
(118.357)	(844900)	7.06E+9	2s2p $^3P^\circ_2$	2p^2 $^3P_1$	ZS92	ZS92
(162.893)	(613900)	4.78E+8	2s^2 $^1S_0$	2s2p $^3P^\circ_1$	ZS92	ZS92
(181.159)	(552000)	1.55E+9	2s2p $^1P^\circ_1$	2p^2 $^1D_2$	ZS92	ZS92
(215.750)	(463500)	8.60E+7	2s2p $^1P^\circ_1$	2p^2 $^3P_1$	ZS92	ZS92

Energy levels of Rb XXXIV

Configuration	Term	J	Energy (cm^{-1})	Reference
2s^2	^{1}S	0	(0)	ZS92
2s2p	^{3}P°	0	(523000)	ZS92
	^{3}P°	1	(613900)	ZS92
	^{3}P°	2	(1094800)	ZS92
2s2p	^{1}P°	1	(1476200)	ZS92
2p^2	^{3}P	0	(1496800)	ZS92
	^{3}P	1	(1939700)	ZS92
	^{3}P	2	(2572700)	ZS92
2p^2	^{1}D	2	(2028200)	ZS92
2p^2	^{1}S	0	(2864000)	ZS92

7.35. Rb XXXV

Li isoelectronic sequence

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

Ionization energy [35 136 000 ± 62 000 cm^{-1}]; [4356 ± 8 eV]

Theoretical calculations of the $2s$, $2p$, and $3s$ energy levels of Rb XXXV, made using third-order many-body perturbation theory, have been reported by Johnson *et al.* [JLS96], who also calculated the transition probabilities. Uncertainties for the calculated values were not reported. The semiempirical ionization energy is quoted from [BFQ99].

References for Rb XXXV

BFQ99 E. Biémont, Y. Frémat, and P. Quinet, Atom. Data Nucl. Data Tables **71**, 117 (1999).
JLS96 W. R. Johnson, Z. W. Liu, and J. Sapirstein, At. Data Nucl. Data Tables **64**, 279 (1996).

Spectral lines of Rb XXXV

λ (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(5.2286)	(19125690)	8.79E+12	2p $^2P^\circ_{1/2}$	3s $^2S_{1/2}$	JLS96	JLS96
(5.3947)	(18536600)	3.91E+12	2p $^2P^\circ_{3/2}$	3s $^2S_{1/2}$	JLS96	JLS96
(84.513)	(1183250)	2.36E+10	2s $^2S_{1/2}$	2p $^2P^\circ_{3/2}$	JLS96	JLS96
(168.305)	(594160)	2.89E+9	2s $^2S_{1/2}$	2p $^2P^\circ_{1/2}$	JLS96	JLS96

Energy levels of Rb XXXV

Configuration	Term	J	Energy (cm^{-1})	Reference
2s	^2S	1/2	(0)	JLS96
2p	$^2P^\circ$	1/2	(594160)	JLS96
	$^2P^\circ$	3/2	(1183250)	JLS96
3s	^2S	1/2	(19719850)	JLS96

7.36. Rb XXXVI

He isoelectronic sequence

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

Ionization energy of ^{85}Rb XXXVI (147 645 571.3 cm^{-1}); (18 305.716 eV)

The wavelength and energy level values reported are from the theoretical calculations of Drake [D88], who determined the energy level values for the $n=1$ and $n=2$ levels of helium-like ^{85}Rb and the ionization energy using the unified method. Johnson *et al.* [JPS95] used a relativistic, iterative technique to calculate the transition probabilities cited here. Their paper also presents a detailed comparison of several methods of calculating transition probabilities for He-like ions.

References for Rb XXXVI

D88 G. W. F. Drake, Can. J. Phys. **66**, 586 (1988).
JPS95 W. R. Johnson, D. R. Plante, and J. Sapirstein, Adv. At. Mol. Opt. Phys. **35**, 255 (1995).

Spectral lines of ^{85}Rb XXXVI

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(0.8932442)	0.0000016	(111951500)	1.66E+15	$1s^2\ {}^1S_0$	$1s2p\ {}^1P^\circ_1$	D88	JPS95
(0.8995547)	0.0000016	(111166100)	4.58E+14	$1s^2\ {}^1S_0$	$1s2p\ {}^3P^\circ_1$	D88	JPS95
(85.003)	0.014	(1176500)	1.28E+10	$1s2s\ {}^3S_1$	$1s2p\ {}^1P^\circ_1$	D88	JPS95
(101.914)	0.02	(981300)	1.28E+10	$1s2s\ {}^3S_1$	$1s2p\ {}^3P^\circ_2$	D88	JPS95
(128.08)	0.03	(780800)	1.28E+10	$1s2s\ {}^1S_0$	$1s2p\ {}^1P^\circ_1$	D88	JPS95
(255.71)	0.13	(391100)	6.19E+8	$1s2s\ {}^3S_1$	$1s2p\ {}^3P^\circ_1$	D88	JPS95
(269.30)	0.15	(371400)	6.68E+8	$1s2s\ {}^3S_1$	$1s2p\ {}^3P^\circ_0$	D88	JPS95

Energy levels of ^{85}Rb XXXVI

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
$1s^2$	^{1}S	0	(0)	200	D88
1s2s	^{3}S	1	(110775000)	200	D88
1s2p	^{3}P°	0	(111146400)	200	D88
	^{3}P°	1	(111166200)	200	D88
	^{3}P°	2	(111756300)	200	D88
1s2s	^{1}S	0	(111170700)	200	D88
1s2p	^{1}P°	1	(111951500)	200	D88

7.37. Rb XXXVII

H isoelectronic sequence

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

Ionization energy of ^{85}Rb XXXVII (152 963 000 ± 3000 cm^{-1}); (18 965.0 ± 0.4 eV)

No experimental measurements of the Rb XXXVII spectrum have been made; however Erickson [E77] calculated energy levels of ^{85}Rb 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 $n = 6-13$. The level values given here are corrected for the latest CODATA internationally recommended value of the Rydberg constant, $R = 109\,737.31568525(73)$ cm^{-1}. The wavelengths listed are computed using the differences of the levels. Only transitions involving levels with $n \leqslant 7$ are tabulated here. Uncertainties in the wavelengths are calculated from those given in [E77] for the energy levels; however, this is not a rigorous method since errors in the level value calculations are not statistically independent. This is particularly problematic for the $2s$-$2p$ transitions since the difference between levels is small, so we list no uncertainty for those wavelengths. The ionization energy given above is taken from [E77].

The transition probabilities listed are calculated using Dirac wave functions and energies produced by the algorithm described in Mohr and Kim [MK92] and the transition probability method found in Scofield [S75], as implemented by J. Baker of the National Institute of Standards and Technology.

References for Rb XXXVII

E77 G. W. Erickson, J. Phys. Chem. Ref. Data **6**, 831 (1977).

MK92 P. J. Mohr and Y.-K. Kim, Phys. Rev. A **45**, 2727 (1992).

S75 J. H. Scofield, *Atomic Inner-shell Processes*, edited by B. Crasemann (Academic, New York, 1975).

Spectral lines of ^{85}Rb XXXVII

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(0.667255)	0.000013	(149868000)	2.24E+13	1s $^2S_{1/2}$	7p $^2P^o_{1/2}$	E77	MK92,S75
(0.672295)	0.000014	(148744000)	3.58E+13	1s $^2S_{1/2}$	6p $^2P^o_{1/2}$	E77	MK92,S75
(0.680629)	0.000014	(146923000)	6.40E+13	1s $^2S_{1/2}$	5p $^2P^o_{3/2}$	E77	MK92,S75
(0.680842)	0.000014	(146877000)	6.27E+13	1s $^2S_{1/2}$	5p $^2P^o_{1/2}$	E77	MK92,S75
(0.696768)	0.000015	(143520000)	1.27E+14	1s $^2S_{1/2}$	4p $^2P^o_{3/2}$	E77	MK92,S75
(0.697204)	0.000015	(143430000)	1.25E+14	1s $^2S_{1/2}$	4p $^2P^o_{1/2}$	E77	MK92,S75
(0.734383)	0.000016	(136169000)	3.11E+14	1s $^2S_{1/2}$	3p $^2P^o_{3/2}$	E77	MK92,S75
(0.735535)	0.000016	(135956000)	3.10E+14	1s $^2S_{1/2}$	3p $^2P^o_{1/2}$	E77	MK92,S75
(0.86780)	0.00002	(115234000)	1.15E+15	1s $^2S_{1/2}$	2p $^2P^o_{3/2}$	E77	MK92,S75
(0.87325)	0.00002	(114515000)	1.18E+15	1s $^2S_{1/2}$	2p $^2P^o_{1/2}$	E77	MK92,S75
(2.828624)	0.000016	(35352900)	2.98E+11	2p $^2P^o_{1/2}$	7s $^2S_{1/2}$	E77	MK92,S75
(2.82997)	0.00002	(35336100)	3.47E+12	2s $^2S_{1/2}$	7p $^2P^o_{1/2}$	E77	MK92,S75
(2.887313)	0.000008	(34634280)	6.80E+11	2p $^2P^o_{3/2}$	7s $^2S_{1/2}$	E77	MK92,S75
(2.921447)	0.000017	(34229600)	4.79E+11	2p $^2P^o_{1/2}$	6s $^2S_{1/2}$	E77	MK92,S75
(2.92290)	0.00003	(34212600)	5.53E+12	2s $^2S_{1/2}$	6p $^2P^o_{1/2}$	E77	MK92,S75
(2.984094)	0.000009	(33511010)	1.09E+12	2p $^2P^o_{3/2}$	6s $^2S_{1/2}$	E77	MK92,S75
(3.085700)	0.000019	(32407600)	1.56E+13	2p $^2P^o_{1/2}$	5d $^2D_{3/2}$	E77	MK92,S75
(3.08725)	0.00003	(32391200)	9.28E+12	2s $^2S_{1/2}$	5p $^2P^o_{3/2}$	E77	MK92,S75
(3.089967)	0.000019	(32362800)	8.41E+11	2p $^2P^o_{1/2}$	5s $^2S_{1/2}$	E77	MK92,S75
(3.09163)	0.00003	(32345400)	9.61E+12	2s $^2S_{1/2}$	5p $^2P^o_{1/2}$	E77	MK92,S75
(3.154195)	0.000010	(31703810)	1.77E+13	2p $^2P^o_{3/2}$	5d $^2D_{5/2}$	E77	MK92,S75
(3.155673)	0.000010	(31688960)	2.89E+12	2p $^2P^o_{3/2}$	5d $^2D_{3/2}$	E77	MK92,S75
(3.160136)	0.000010	(31644210)	1.92E+12	2p $^2P^o_{3/2}$	5s $^2S_{1/2}$	E77	MK92,S75
(3.44776)	0.00002	(29004300)	3.39E+13	2p $^2P^o_{1/2}$	4d $^2D_{3/2}$	E77	MK92,S75
(3.44969)	0.00004	(28988100)	1.81E+13	2s $^2S_{1/2}$	4p $^2P^o_{3/2}$	E77	MK92,S75
(3.45820)	0.00002	(28916800)	1.69E+12	2p $^2P^o_{1/2}$	4s $^2S_{1/2}$	E77	MK92,S75
(3.46041)	0.00004	(28898300)	1.89E+13	2s $^2S_{1/2}$	4p $^2P^o_{1/2}$	E77	MK92,S75
(3.531730)	0.000012	(28314730)	3.87E+13	2p $^2P^o_{3/2}$	4d $^2D_{5/2}$	E77	MK92,S75

Spectral lines of ^{85}Rb XXXVII—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(3.535351)	0.000012	(28285740)	6.35E+12	2p $^2P^o_{3/2}$	4d $^2D_{3/2}$	E77	MK92,S75
(3.546328)	0.000014	(28198180)	3.86E+12	2p $^2P^o_{3/2}$	4s $^2S_{1/2}$	E77	MK92,S75
(4.61829)	0.00004	(21653100)	1.04E+14	2p $^2P^o_{1/2}$	3d $^2D_{3/2}$	E77	MK92,S75
(4.62170)	0.00006	(21637000)	4.12E+13	2s $^2S_{1/2}$	3p $^2P^o_{3/2}$	E77	MK92,S75
(4.66307)	0.00005	(21445100)	4.14E+12	2p $^2P^o_{1/2}$	3s $^2S_{1/2}$	E77	MK92,S75
(4.66770)	0.00007	(21423800)	4.43E+13	2s $^2S_{1/2}$	3p $^2P^o_{1/2}$	E77	MK92,S75
(4.76121)	0.00002	(21003080)	1.21E+14	2p $^2P^o_{3/2}$	3d $^2D_{5/2}$	E77	MK92,S75
(4.77681)	0.00002	(20934450)	2.01E+13	2p $^2P^o_{3/2}$	3d $^2D_{3/2}$	E77	MK92,S75
(4.82474)	0.00003	(20726500)	9.56E+12	2p $^2P^o_{3/2}$	3s $^2S_{1/2}$	E77	MK92,S75
(7.18771)	0.00004	(13912640)	2.02E+11	3p $^2P^o_{1/2}$	7s $^2S_{1/2}$	E77	MK92,S75
(7.19042)	0.00005	(13907390)	1.17E+12	3s $^2S_{1/2}$	7p $^2P^o_{1/2}$	E77	MK92,S75
(7.29957)	0.00002	(13699440)	4.55E+11	3p $^2P^o_{3/2}$	7s $^2S_{1/2}$	E77	MK92,S75
(7.299572)	0.000004	(13699434)	1.07E+11	3d $^2D_{3/2}$	7p $^2P^o_{1/2}$	E77	MK92,S75
(7.81899)	0.00005	(12789370)	3.28E+11	3p $^2P^o_{1/2}$	6s $^2S_{1/2}$	E77	MK92,S75
(7.82234)	0.00006	(12783900)	1.85E+12	3s $^2S_{1/2}$	6p $^2P^o_{1/2}$	E77	MK92,S75
(7.95155)	0.00003	(12576170)	7.39E+11	3p $^2P^o_{3/2}$	6s $^2S_{1/2}$	E77	MK92,S75
(7.951688)	0.000006	(12575946)	1.81E+11	3d $^2D_{3/2}$	6p $^2P^o_{1/2}$	E77	MK92,S75
(9.11800)	0.00007	(10967320)	5.41E+12	3p $^2P^o_{1/2}$	5d $^2D_{3/2}$	E77	MK92,S75
(9.12197)	0.00008	(10962550)	3.00E+12	3s $^2S_{1/2}$	5p $^2P^o_{3/2}$	E77	MK92,S75
(9.15535)	0.00007	(10922570)	5.86E+11	3p $^2P^o_{1/2}$	5s $^2S_{1/2}$	E77	MK92,S75
(9.16032)	0.00009	(10916650)	3.19E+12	3s $^2S_{1/2}$	5p $^2P^o_{1/2}$	E77	MK92,S75
(9.285630)	0.000002	(10769328)	8.07E+12	3d $^2D_{3/2}$	5f $^2F^o_{5/2}$	E77	MK92,S75
(9.28594)	0.00003	(10768970)	6.38E+12	3p $^2P^o_{3/2}$	5d $^2D_{5/2}$	E77	MK92,S75
(9.298353)	0.000008	(10754593)	2.85E+10	3d $^2D_{3/2}$	5p $^2P^o_{3/2}$	E77	MK92,S75
(9.29876)	0.00003	(10754120)	1.07E+12	3p $^2P^o_{3/2}$	5d $^2D_{3/2}$	E77	MK92,S75
(9.33762)	0.00004	(10709370)	1.32E+12	3p $^2P^o_{3/2}$	5s $^2S_{1/2}$	E77	MK92,S75
(9.338205)	0.000018	(10708700)	3.47E+11	3d $^2D_{3/2}$	5p $^2P^o_{1/2}$	E77	MK92,S75
(9.338750)	0.000002	(10708071)	8.52E+12	3d $^2D_{5/2}$	5f $^2F^o_{7/2}$	E77	MK92,S75
(9.345179)	0.000002	(10700704)	5.62E+11	3d $^2D_{5/2}$	5f $^2F^o_{5/2}$	E77	MK92,S75
(9.358066)	0.000008	(10685969)	2.72E+11	3d $^2D_{5/2}$	5p $^2P^o_{3/2}$	E77	MK92,S75
(13.22035)	0.00014	(7564100)	1.10E+13	3p $^2P^o_{1/2}$	4d $^2D_{3/2}$	E77	MK92,S75
(13.22856)	0.00018	(7559400)	5.51E+12	3s $^2S_{1/2}$	4p $^2P^o_{3/2}$	E77	MK92,S75
(13.37517)	0.00016	(7476540)	1.19E+12	3p $^2P^o_{1/2}$	4s $^2S_{1/2}$	E77	MK92,S75
(13.38760)	0.00019	(7469600)	6.00E+12	3s $^2S_{1/2}$	4p $^2P^o_{1/2}$	E77	MK92,S75
(13.549719)	0.000004	(7380227)	2.43E+13	3d $^2D_{3/2}$	4f $^2F^o_{5/2}$	E77	MK92,S75
(13.55033)	0.00007	(7379890)	1.32E+13	3p $^2P^o_{3/2}$	4d $^2D_{5/2}$	E77	MK92,S75
(13.60277)	0.00004	(7351450)	6.61E+10	3d $^2D_{3/2}$	4p $^2P^o_{3/2}$	E77	MK92,S75
(13.60378)	0.00007	(7350900)	2.22E+12	3p $^2P^o_{3/2}$	4d $^2D_{3/2}$	E77	MK92,S75
(13.650052)	0.000004	(7325979)	2.58E+13	3d $^2D_{5/2}$	4f $^2F^o_{7/2}$	E77	MK92,S75
(13.676891)	0.000004	(7311603)	1.72E+12	3d $^2D_{5/2}$	4f $^2F^o_{5/2}$	E77	MK92,S75
(13.73094)	0.00004	(7282820)	6.32E+11	3d $^2D_{5/2}$	4p $^2P^o_{3/2}$	E77	MK92,S75
(13.76777)	0.00010	(7263340)	2.72E+12	3p $^2P^o_{3/2}$	4s $^2S_{1/2}$	E77	MK92,S75
(13.77098)	0.00006	(7261650)	8.09E+11	3d $^2D_{3/2}$	4p $^2P^o_{1/2}$	E77	MK92,S75
(15.53235)	0.00007	(6438180)	1.40E+11	4p $^2P^o_{1/2}$	7s $^2S_{1/2}$	E77	MK92,S75
(15.53831)	0.00010	(6435710)	5.47E+11	4s $^2S_{1/2}$	7p $^2P^o_{1/2}$	E77	MK92,S75
(15.75206)	0.00005	(6348380)	3.13E+11	4p $^2P^o_{3/2}$	7s $^2S_{1/2}$	E77	MK92,S75
(15.752618)	0.000018	(6348151)	1.22E+11	4d $^2D_{3/2}$	7p $^2P^o_{1/2}$	E77	MK92,S75
(18.81499)	0.00011	(5314910)	2.31E+11	4p $^2P^o_{1/2}$	6s $^2S_{1/2}$	E77	MK92,S75
(18.82452)	0.00015	(5312220)	8.64E+11	4s $^2S_{1/2}$	6p $^2P^o_{1/2}$	E77	MK92,S75
(19.13835)	0.00008	(5225110)	5.18E+11	4p $^2P^o_{3/2}$	6s $^2S_{1/2}$	E77	MK92,S75
(19.13999)	0.00004	(5224663)	2.12E+11	4d $^2D_{3/2}$	6p $^2P^o_{1/2}$	E77	MK92,S75
(28.6298)	0.0002	(3492860)	2.27E+12	4p $^2P^o_{1/2}$	5d $^2D_{3/2}$	E77	MK92,S75

Spectral lines of ^{85}Rb XXXVII—Continued

λ (Å)	Unc. (Å)	σ (cm^{-1})	A_{ki} (s^{-1})	Lower Level	Upper Level	λ Ref.	A_{ki} Ref.
(28.6462)	0.0003	(3490870)	1.31E+12	4s $^2S_{1/2}$	5p $^2P^\circ_{3/2}$	E77	MK92,S75
(29.0014)	0.0003	(3448110)	4.16E+11	4p $^2P^\circ_{1/2}$	5s $^2S_{1/2}$	E77	MK92,S75
(29.0278)	0.0004	(3444970)	1.43E+12	4s $^2S_{1/2}$	5p $^2P^\circ_{1/2}$	E77	MK92,S75
(29.256488)	0.000009	(3418045.2)	4.54E+12	4d $^2D_{3/2}$	5f $^2F^\circ_{5/2}$	E77	MK92,S75
(29.25766)	0.00017	(3417910)	2.77E+12	4p $^2P^\circ_{3/2}$	5d $^2D_{5/2}$	E77	MK92,S75
(29.38316)	0.00008	(3403310.)	3.58E+10	4d $^2D_{3/2}$	5p $^2P^\circ_{3/2}$	E77	MK92,S75
(29.38532)	0.00017	(3403060)	4.70E+11	4p $^2P^\circ_{3/2}$	5d $^2D_{3/2}$	E77	MK92,S75
(29.442467)	0.000004	(3396454.5)	7.72E+12	4f $^2F^\circ_{5/2}$	5g $^2G_{7/2}$	E77	MK92,S75
(29.442790)	0.000009	(3396417.2)	4.85E+12	4d $^2D_{5/2}$	5f $^2F^\circ_{7/2}$	E77	MK92,S75
(29.506121)	0.000009	(3389127.3)	4.54E+9	4f $^2F^\circ_{5/2}$	5d $^2D_{5/2}$	E77	MK92,S75
(29.506792)	0.000009	(3389050.2)	3.24E+11	4d $^2D_{5/2}$	5f $^2F^\circ_{5/2}$	E77	MK92,S75
(29.529155)	0.000004	(3386483.6)	7.97E+12	4f $^2F^\circ_{7/2}$	5g $^2G_{9/2}$	E77	MK92,S75
(29.567618)	0.000004	(3382078.3)	2.84E+11	4f $^2F^\circ_{7/2}$	5g $^2G_{7/2}$	E77	MK92,S75
(29.631815)	0.000009	(3374751.1)	9.39E+10	4f $^2F^\circ_{7/2}$	5d $^2D_{5/2}$	E77	MK92,S75
(29.63564)	0.00008	(3374315)	3.40E+11	4d $^2D_{5/2}$	5p $^2P^\circ_{3/2}$	E77	MK92,S75
(29.635959)	0.000009	(3374279.2)	1.03E+11	4f $^2F^\circ_{5/2}$	5d $^2D_{3/2}$	E77	MK92,S75
(29.7769)	0.0003	(3358310)	9.44E+11	4p $^2P^\circ_{3/2}$	5s $^2S_{1/2}$	E77	MK92,S75
(29.78484)	0.00018	(3357410)	4.28E+11	4d $^2D_{3/2}$	5p $^2P^\circ_{1/2}$	E77	MK92,S75
(33.4322)	0.0002	(2991120)	1.04E+11	5p $^2P^\circ_{1/2}$	7s $^2S_{1/2}$	E77	MK92,S75
(33.4484)	0.0002	(2989680)	3.07E+11	5s $^2S_{1/2}$	7p $^2P^\circ_{1/2}$	E77	MK92,S75
(33.95323)	0.00014	(2945228)	2.32E+11	5p $^2P^\circ_{3/2}$	7s $^2S_{1/2}$	E77	MK92,S75
(33.95669)	0.00008	(2944928)	1.18E+11	5d $^2D_{3/2}$	7p $^2P^\circ_{1/2}$	E77	MK92,S75
(53.5372)	0.0006	(1867860)	1.72E+11	5p $^2P^\circ_{1/2}$	6s $^2S_{1/2}$	E77	MK92,S75
(53.5851)	0.0006	(1866190)	4.70E+11	5s $^2S_{1/2}$	6p $^2P^\circ_{1/2}$	E77	MK92,S75
(54.8859)	0.0004	(1821963)	3.89E+11	5p $^2P^\circ_{3/2}$	6s $^2S_{1/2}$	E77	MK92,S75
(54.9016)	0.0003	(1821440)	2.15E+11	5d $^2D_{3/2}$	6p $^2P^\circ_{1/2}$	E77	MK92,S75
(88.9779)	0.0010	(1123875)	8.10E+10	6p $^2P^\circ_{1/2}$	7s $^2S_{1/2}$	E77	MK92,S75
(89.0569)	0.0010	(1122878)	1.89E+11	6s $^2S_{1/2}$	7p $^2P^\circ_{1/2}$	E77	MK92,S75
(142.41)		(702200)		2s $^2S_{1/2}$	2p $^2P^\circ_{3/2}$	E77	
(6100)		(16400)		2p $^2P^\circ_{1/2}$	2s $^2S_{1/2}$	E77	

Energy levels of ^{85}Rb XXXVII

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
1s	^2S	1/2	(0.)	3000	E77
2p	$^2P^\circ$	1/2	(114515300.)	200	E77
2p	$^2P^\circ$	3/2	(115233900.)	100	E77
2s	^2S	1/2	(114531700.)	300	E77
3p	$^2P^\circ$	1/2	(135955540.)	80	E77
3p	$^2P^\circ$	3/2	(136168740.)	40	E77
3s	^2S	1/2	(135960400.)	100	E77
3d	^2D	3/2	(136168354.)	2.	E77
3d	^2D	5/2	(136236978.)	2.	E77
4p	$^2P^\circ$	1/2	(143430000.)	30	E77
4p	$^2P^\circ$	3/2	(143519800.)	20	E77

Energy levels of ^{85}Rb XXXVII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
4s	^{2}S	1/2	(143432080.)	40	E77
4d	^{2}D	3/2	(143519637.)	1.	E77
4d	^{2}D	5/2	(143548632.)	1.	E77
4f	^{2}F°	5/2	(143548581.1)	0.4	E77
4f	^{2}F°	7/2	(143562957.3)	0.4	E77
5p	^{2}P°	1/2	(146877050.)	20	E77
5p	^{2}P°	3/2	(146922947.)	9.	E77
5s	^{2}S	1/2	(146878110.)	20	E77
5d	^{2}D	3/2	(146922860.3)	0.9	E77
5d	^{2}D	5/2	(146937708.4)	0.9	E77
5f	^{2}F°	5/2	(146937682.2)	0.4	E77
5f	^{2}F°	7/2	(146945049.2)	0.4	E77
5g	^{2}G	7/2	(146945035.58)	0.09	E77
5g	^{2}G	9/2	(146949440.90)	0.09	E77
6p	^{2}P°	1/2	(148744300.)	10.	E77
6s	^{2}S	1/2	(148744910.)	10.	E77
6h	^{2}H°	11/2	(148787847.69)	0.03	E77
7p	^{2}P°	1/2	(149867788.)	7.	E77
7s	^{2}S	1/2	(149868175.)	8.	E77
7i	^{2}I	13/2	(149895953.156)	0.009	E77
8p	^{2}P°	1/2	(150595758.)	4.	E77
8s	^{2}S	1/2	(150596017.)	5.	E77
8k	^{2}K°	15/2	(150614996.940)	0.004	E77
9p	^{2}P°	1/2	(151094185.)	3.	E77
9s	^{2}S	1/2	(151094366.)	4.	E77
9l	^{2}L	17/2	(151107898.566)	0.002	E77
10p	^{2}P°	1/2	(151450317.)	2.	E77
10s	^{2}S	1/2	(151450450.)	3.	E77
10m	^{2}M°	19/2	(151460432.0639)	0.0009	E77
11p	^{2}P°	1/2	(151713576.)	2.	E77
11s	^{2}S	1/2	(151713675.)	2.	E77
11n	^{2}N	21/2	(151721247.5870)	0.0005	E77
12p	^{2}P°	1/2	(151913653.)	1.	E77
12s	^{2}S	1/2	(151913730.)	2.	E77
12o	^{2}O°	23/2	(151919608.1381)	0.0003	E77
13p	^{2}P°	1/2	(152069258.)	1.	E77

Energy levels of ^{85}Rb XXXVII—Continued

Configuration	Term	J	Energy (cm^{-1})	Uncertainty (cm^{-1})	Reference
13s	^{2}S	1/2	(152069318.)	1.	E77
13q	^{2}Q	25/2	(152073972.6878)	0.0002	E77