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Spectrum and Energy Levels of Neutral Thulium

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A new set of measurements of the spectrum of neutral thulium covering the range of 2513 Å to 11750 Å is given. The light source utilized for the observations was a microwave-excited thulium-iodide lamp. Second spectrum lines were recognized by comparing the output of this lamp with that of a 6A sliding spark. The results of Zeeman effect studies of these lines are included. Analysis of these new data led to the discovery of 348 new energy levels and provided revised values for the 142 already published. Measured Landé g factors are given for most of the levels.

Key words: Energy levels; spectrum; thulium; wavelengths.

1. Introduction

The fundamental energy interval in neutral thulium of 8771 cm^{-1} was discovered by Meggers in 1942 [1].[1] He identified it as the ^{2}F interval of the $4f^{13}6s^2$ normal electronic configuration. Sixteen pairs of lines were found with this wave number difference, giving as many upper levels. The line list was obtained by comparing spectra of Tm, Yb, and Lu oxides, each containing the other two as considerable impurities. Although the availability of the pure metal by the middle 1950's allowed spectroscopic studies to be made much more easily and completely, it was not until 1963 that the first new results were obtained [2, 3] by Blaise and co-workers at Laboratoire Aimé Cotton. They studied the *hfs* of 70 strong lines utilizing a cooled hollow cathode light source and a Fabry-Perot spectrometer. Their investigation confirmed the 16 levels of even parity found by Meggers, assigned J values to them, and extended the analysis to include ten high-lying levels of odd parity (including the discovery of the $4f^{13}6s7s$ configuration), as well as 12 new even levels.

At about this time the work of making a completely new description of the spectra of thulium was initiated at the National Bureau of Standards in Washington, D.C. The program was to make as complete as practical a set of wavelengths of the first and second spectra in the range of 2000 Å to 12000 Å. This was to be done with the microwave-excited metal-halide lamp and the low current sliding spark, the distinction between first and second spectra being provided by their relative enhancement in these two light sources. The work, which occupied a span of three years, resulted in the measurement of a set of 4378 lines of Tm I and 12842 lines of Tm II with an accuracy of about 0.03 cm^{-1}. In addition, there appeared in the spark 848 lines of higher ionization which were identified as such by comparison with the spectrum of a higher current spark. Of these, 454 have been classified in a level scheme of doubly ionized thulium [4].

Two new sets of observations acquired by Laboratoire Aimé Cotton led to the next breakthrough in the analysis of Tm I: spectrograms of the Zeeman effect taken at the Argonne National Laboratory and a line list extending from 0.9 μm to 2.4 μm obtained from observations made with the S.I.S.A.M. spectrometer [5]. These data enabled the assignment of J values and g values to nearly every known level and led to the discovery of 42 new even levels and 62 new odd levels [5–7].

The information on Tm I and Tm II was now sufficient to permit all the low-lying configurations to be interpreted through parametric calculations of the energy levels, eigenvectors, and g values. These calculations were carried out by Camus [8] for the mixed configurations $4f^{12}5d6s^2$ and $4f^{13}6s6p$ of even parity, and for $4f^{12}6s^26p$ and $4f^{13}5d6s$ of odd parity [9]. The

*Deceased.

[1]Figures in brackets indicate the literature references at the end of this paper.

simple configurations $4f^{13}6s7s$ and $4f^{13}6s8s$ had already been interpreted and utilized in a determination of the ionization energy in reference [7].

With the completion of the measurements of Tm I and Tm II at the National Bureau of Standards, a collaboration was established with Laboratoire Aimé Cotton to pool resources and to search for the higher-lying energy levels of Tm. Part of the fruits of this labor are presented here. The new results in Tm I consist mainly of the discovery and interpretation of the levels belonging to the $4f^{13}5d6p$, $4f^{12}5d6s6p$, $4f^{13}6s6d$, and $4f^{13}6p^2$ configurations as well as of additional levels belonging to the known configurations mentioned above. The known even levels were augmented by 138 additions, and the odd levels by 210 with the position of all the energy levels based on the new wavelength measurements.

We present here all the previously published energy levels of Tm I as well as those new ones found with the NBS line list and the Zeeman data, their measured g values, and their designations obtained from the parametric calculations [23]. The line list of Tm I measured at NBS is given in its entirety, with classifications and Zeeman data given where known. The results of the calculations of the newly identified configurations will be given in a later publication.

2. Observations and Measurements

The microwave-excited metal-halide lamp was used as the light source for the first spectrum of thulium, both for the wavelength measurements at the National Bureau of Standards and for the Zeeman effect measurements at the Argonne National Laboratories. A description of the method of preparation and the desirable features of these lamps has been given in detail [10, 11]. Because this light source produces a considerable excitation of singly ionized thulium, a clear distinction between the spectra of the neutral and singly ionized species must be made. This was accomplished unambiguously for practically all lines by comparing the lamp spectrum with that obtained by means of a low-current, low-voltage sliding spark. The versatility of this spark (described in detail in ref. [12]) in separating various ionic spectra by variations of the peak discharge current was previously demonstrated in studies of the third spectra of praseodymium [12] and cerium [13]. For the Pr III work it was operated at 50A and 1000A to produce relatively enhanced third or fourth spectrum. The lines of Pr II were distinguished by comparison with an arc spectrum of Pr. In the cerium work the spark was found to operate well at 6A peak current and to produce a second spectrum which was comparable to the arc spectrum in relative enhancement but much sharper. A line width of ~ 0.1 cm^{-1} is obtained with the sliding spark at 6A peak current. For our analysis the spectrum obtained in this operating condition was compared with that of the metal-halide lamp to pick out second spectrum lines and to provide the line list of Tm II.

A variety of spectrographs was used to obtain the wavelength coverage for our observations. From 2000 to 2600 Å a Wadsworth mounting of a 6.4 m grating with 1200 grooves/mm was used in the third order giving a plate factor of 0.6 Å/mm and in second order from 2600 to 4400 Å. The data from 4400 to 6850 Å was obtained with an Eagle mounting of a 10.7 m grating having 600 grooves/mm utilized in the second order. Averaged in with the data from the Eagle spectrograph are some measurements in first order of the 6.4 m Wadsworth. Two more Wadsworth mountings were used to carry the observations to 12000 Å: one containing a 6.4 m grating with 600 grooves/mm and blazed at 9500 Å, and the second with a grating of the same radius of curvature but with 300 grooves/mm and a blaze at 12000 Å. This same spectral range is now covered at NBS by two Eagle mountings, one in vacuum and one in air, with 10.7 m gratings.

The observations of the Zeeman effect were made using the Paschen-Runge mounting of a 9.15 m grating at the Argonne National Laboratory and using a magnetic field of $\sim$ 24000 Oe. The construction and operation of this excellent facility is described in two papers [14, 15] by Tomkins and Fred, who generously provided the thulium exposures for us.

Maximum exposure times for the Tm lamp varied from 1 h in the ultraviolet below 3000 Å to 10 min in the visible and to 3 h in the extreme photographic infrared. Shorter exposures were, of course, used to obtain the stronger lines with good images. Exposure times for the 6A spark followed a similar pattern with maxima of 3 to 5 h in the extreme wavelength regions to 5 min in the visible. A spark repetition rate of about 20/s was used with a rotating external spark gap placed in the series discharge circuit. The 50A spark operating at one-third of the exposure time of the 6A spark produced weaker second spectrum and stronger third or higher spectra, thus giving the desired separation.

Calibration standards in the region of 2000 to 3000 Å were obtained from a copper hollow-cathode discharge containing a few grams of germanium supplemented by an iron-iodide lamp which provided Fe I and Fe II in this region. The copper standard wavelengths used were the interferometric measurements of Reader, Meissner, and Andrew [16]; the germanium measurements in this region are those of Van Veld and Meissner [17]. Since these lines are fairly sparsely distributed in the region of 2000 to 2600 Å, the calibration was augmented by Fe II lines measured by Meggers and Humphreys [18]. No shift was detectable among these spectra. From 2600 to 3300 Å interferometrically measured lines of Fe I were used [19]. The longer wavelength regions were well covered in first or second order by the thorium measurements of Meggers and Stanley [20] which were available prior to publication.

A pulsed high-current arc in He at 1 atm was used as a source to aid in the recognition of resonance and other low-excitation lines of Tm I and Tm II [21]. It produced self-reversal of 120 first spectrum lines and 126 of the second spectrum. The self-reversals are two types: one for which there appears only a gap in the continuum with little trace of a line left (designated

"a" in the line list under "intensity"), and a second type for which most of the wings of the lines still remain (designated "r"). Eleven such lines remain unclassified. The classified ones arise mainly from the ground ^2F term, but some have the low level as high as 19466 cm^{-1}. All such low levels for these lines were found to be metastable because of their J values.

Each spectral line included in the list has been measured on at least two separate plates, and on as many as ten for some of the stronger lines. We found that 95 percent of the classified lines fit the energy level scheme to within ± 0.05 cm^{-1}. A measure of the wave number precision was made by finding the rms deviation in repeating wave number differences determining the low-lying level intervals. For the 27 pairs determining the lowest interval of 8771.243 cm^{-1}, the rms deviation is 0.02 cm^{-1}. Intervals between the level pairs of even parity 13119.610 − 15587.811 cm^{-1} and 15587.811 − 17454.818 cm^{-1} having 59 and 51 line pairs, respectively, are determined with rms deviations of 0.03 cm^{-1} each. Therefore, the rms error in the individual wave number measurements is estimated to be $0.03/1.4 = 0.02$ cm^{-1}.

A total of 2734 lines are classified, and, of these, 47 are classified twice. These are mostly weak lines with no observed Zeeman effect. The complete line list is given in the appendix which includes the measured wavelengths, visually estimated relative intensities from 1 to 50,000, vacuum wave numbers, classifications of the lines, and measured Zeeman effect. The intensity numbers are sometimes followed by letters indicating the following characteristics of the lines:

h = hazy
d = a double line
w = wide
r = reversed in pulsed arc
a = nearly completely absorbed in pulsed arc.

The classifications contain the values of the energy levels responsible for the transition, their J values given as subscripts, and a superscript degree symbol to indicate odd parity. The column headed "Zeeman Effect" generally contains the three following pieces of information:

1. The type of Zeeman pattern observed which is indicated by the symbols:
   - $\Delta J = 0$ where the p-components are shaded toward the center,
   - *SI* where the n-components are shaded toward the center,
   - *SO* where the n-components are shaded away from the center,
   - *SOO* where n-components are shaded away from center and are overlapping,
   - *T* where only a triplet was observed.
2. Half the interval between the two corresponding strong n-components in Lorentz units, denoted by "f".
3. Half the interval between the two outer p-components in Lorentz units, denoted by "Je" where "e" is the interval between components ($e = \Delta g$).

When the pattern is completely resolved. the two derived g factors are given in the columns "f" and "Je" with star (*) in the "Je" column to indicate such cases. The limit of resolution for "e" was 0.05, and the uncertainty in the g factors is estimated to be ± 0.01.

3. Energy Levels

Neutral thulium is one of the simpler rare earths at low energy because of its nearly closed $4f$ shell. The ground configuration, $4f^{13}6s^2$, consists of two levels with a separation of 8771 cm^{-1}. Above 13119 cm^{-1} the level structure begins to exhibit a complex character resulting from excitation of an electron from the $4f$ into the $5d$ shell, and at somewhat higher energy, the excitation of a $6s$ electron into the $6p$ shell. The resulting overlapping configurations of even parity, $4f^{12}5d6s^2$ and $4f^{13}6s6p$, are heavily mixed and form a dense complex of levels. There is a corresponding low energy complex of levels of odd parity beginning at 20406 cm^{-1} formed by one-electron excitations out of the ground configuration. They arise from the configurations $4f^{13}5d6s$ and $4f^{12}6s^26p$. Because these two low-lying complex groups of levels of opposite parity can combine by one-electron transitions, they produce a strong spectrum in the infrared.

A diagram showing the start of each of the known configurations is given in figure 1. Transitions in the infrared are indicated by heavy lines while those in the visible and shorter wavelength regions are indicated by the fine lines. The arrows show the order of discovery of the various configurations as the analysis progressed. Strong configuration interaction in the two low groups accounts for the observation of "forbidden" transitions $4f^{12}6s^26p - 4f^{13}6s6p$ and $4f^{12}5d6s^2 - 4f^{13}5d6s$.

The next stage of complexity begins at the threshold for 2-electron excitations out of the ground configuration. The observed odd configuration of this type, $4f^{12}5d6s6p$, accounts for the bulk of the known levels of this parity. Levels of this configuration begin at 29308 cm^{-1} and extend far beyond the ionization energy. Within their bounds were found four much simpler configurations: $4f^{13}6s7s$, $4f^{13}6s8s$, $4f^{13}6s6d$, and $4f^{13}6p^2$.

No even configuration of comparable complexity has been found, but Brewer [22] predicted the presence of $4f^{12}5d^26s$ at about 27600 cm^{-1}. In this parity there are many known high-lying levels without interpretation. It is likely that they belong to this configuration, but they cannot be understood as such until the low structure of this configuration is discovered. The limitation here is that $4f^{12}5d^26s$ lies so close to $4f^{12}5d6s6p$ that the strong transitions are in the far infrared. The simpler higher-lying even configuration $4f^{13}5d6p$ has been identified at 38318 cm^{-1}.

Many higher-lying energy levels of even parity based on single lines seen in photoabsorption have been

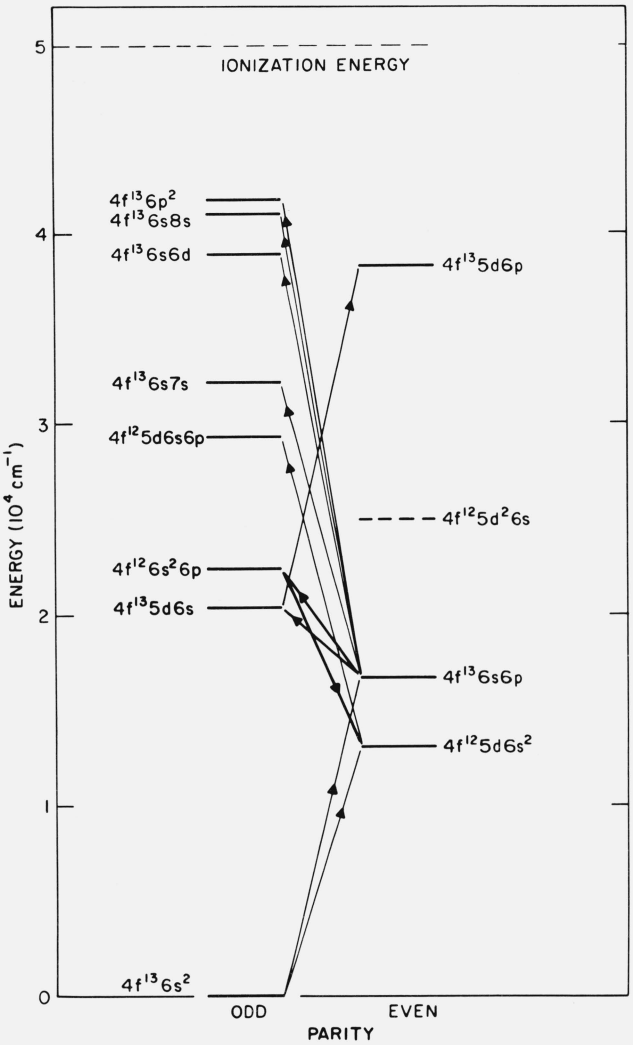

FIGURE 1. *Relative positions of known configurations of neutral thulium, with each configuration represented by lowest level.*

Dashed line gives predicted position for $4f^{12}5d^26s$. Arrows show the order of discovery of the configurations. Heavy arrows indicate where infrared lines were used.

reported by Camus [23]. He was able to follow the $4f^{13}6snp$ series from $n=17$ to $n=48$. Many of the levels reported here are supported by the absorption data, but we include no levels which are not in evidence in emission.

Table I contains all levels of Tm I of even parity which are deduced from the present line list. Nearly all of those below 35000 cm^{-1} have been reported before. Their source is indicated by a number in the last column denoting the reference appearing in section 5. The levels of the three configurations identified are grouped into J_1J_2 coupling terms. For $4f^{12}5d6s^2$ and $4f^{13}6s6p$ the designations are taken from reference [8]. The designations of $4f^{13}5d6p$ are from calculations which we will soon publish.

Table 2 contains all the known levels of odd parity. The configurations $4f^{12}6s^26p$, $4f^{12}5d6s6p$, $4f^{13}6s7s$, $4f^{13}6s8s$, and $4f^{13}6p^2$, are designated in J_1J_2 coupling as indicated by the parametric treatment [9, 23]. The coupling scheme applied to the configurations $4f^{13}5d6s$ and $4f^{13}6s6d$ is J_1L_2 coupling. The J_1 vector refers to the $4f^{13}$ angular momentum, and L_2 denotes the orbital angular momentum of the *ds* system. The resultant angular momentum K is enclosed in a square bracket with a superscript on the left of the bracket denoting the spin of the *ds* system. Those few odd levels which have not been assigned to a configuration appear in numerical order in the total list. Many levels of $4f^{12}5d6s6p$ have only a configuration assignment because of technical limitations in the theoretical treatment of this extremely large configuration. These limitations will be discussed in a later paper on the theoretical treatment of the high configurations, including the $4f^{13}6s6d$ and $4f^{13}6p^2$ and $4f^{13}5d6p$. Designations for levels of the configurations $4f^{12}6s^26p$ and $4f^{13}5d6s$ are taken from references [5] and [9]. The sources for levels previously published are denoted as in table 1.

The level values for both parities were adjusted by least squares fitting to the measured lines with a computer code written by Radziemski, Fisher, Steinhaus, and Goldman for this purpose [24]. For levels given to three decimal places the standard deviation varies from 0.004 to 0.010 cm^{-1}. For those given to two it varies from 0.010 to 0.02 cm^{-1}. The rms deviation of the measured lines from the spectrum calculated with the adjusted level values is 0.02 cm^{-1}.

TABLE 1. *Energy levels of neutral thulium, even parity, in units of cm^{-1}. Ref. is given for levels previously published*

Configuration	Designation	J	Energy	g-Factor	Ref.
$4f^{12}(^3H_6)5d_{3/2}\,6s^2$	(6,1½)	4½	13119.610	1.305	6
		7½	15271.002	1.08	5
		5½	15587.811	1.255	7
		6½	17454.818	1.15	7
$4f^{12}(^3H_6)5d_{5/2}\,6s^2$	(6,2½)	8½	16456.913	1.175	5
		3½	16957.006	1.169	2
		7½	18693.074	1.18	5
		4½	18837.385	1.13	2
		5½	18853.823	1.15	6
		6½	19466.663	1.15	7
$4f^{13}(^2F_{7/2})6s6p(^3P_0)$	(3½,0)	3½	16742.237	1.325	2
$4f^{13}(^2F_{7/2})6s6p(^3P_1)$	(3½,1)	3½	17343.374	1.022	2
		4½	17613.659	1.188	2
		2½	17752.634	1.186	2
$4f^{13}(^2F_{7/2})6s6p(^3P_2)$	(3½,2)	5½	18990.406	1.215	6
		1½	19132.245	0.88	6
		2½	19548.834	0.983	2
		4½	19748.543	1.29	6
		3½	19753.830	1.18	2
$4f^{12}(^3F_4)5d_{3/2}\,6s^2$	(4,1½)	3½	21120.836	1.175	2
		2½	21161.401	1.14	1
		4½	21737.685	1.13	2
		5½	21997.473	1.06	5
$4f^{12}(^3H_5)5d_{3/2}\,6s^2$	(5,1½)	3½	22791.176	1.14	1
		6½	23374.681	0.98	
		4½	24348.692	1.12	2
		5½	25488.545		
$4f^{12}(^3F_4)5d_{5/2}\,6s^2$	(4,2½)	2½	22929.717	1.152	1
		5½	23309.979	1.11	5
		4½	23781.698	1.14	2
		3½	23873.207	1.135	2
		1½	23882.41		
		6½	24137.196	1.128	5
$4f^{13}(^2F_{7/2})6s6p(^1P_1)$	(3½,1)	2½	24418.018	1.06	2
		3½	26701.325	1.076	3
		4½	26889.125	1.11	3
$4f^{12}(^3H_5)5d_{5/2}\,6s^2$	(5,2½)	7½	25130.453	1.10	
		3½	25717.197	1.02	1
		2½	25745.117	1.09	6
		4½	26646.214	0.961	3
		6½	27377.13	1.12	
		5½	27491.31		
$4f^{13}(^2F_{5/2})6s6p(^3P_0)$	(2½,0)	2½	25656.019	0.724	1
$4f^{13}(^2F_{5/2})6s6p(^3P_1)$	(2½,1)	2½	26126.907	1.10	1
		3½	26439.491	1.000	1
		1½	26488.70	0.85	6
$4f^{13}(^2F_{5/2})6s6p(^3P_2)$	(2½,2)	0½	27314.56	−0.015	6
		4½	28024.01	1.15	6
		1½	28143.67	0.66	6
		2½	28448.585	1.000	6
		3½	28555.799	1.157	6
$4f^{12}(^3H_4)5d_{3/2}\,6s^2$	(4,1½)	2½	28051.37	0.96	1
		4½	29316.690	0.978	6
		3½	31510.24	1.11	1
$4f^{12}(^3F_3)5d_{3/2}\,6s^2$	(3,1½)	3½	29260.59	0.928	6
		2½	31431.88	1.07	1
		4½	31440.54	1.13	7
		1½	31520.98	0.79	6
$4f^{12}(^3F_2)5d_{3/2}\,6s^2$	(2,1½)	2½	30082.18	0.81	6
		1½	30585.65	1.085	7
		3½	32446.26	0.89	1
$4f^{12}(^3H_4)5d_{5/2}\,6s^2$	(4,2½)	3½	30124.02	0.955	6
		6½	30125.61		
		2½	30302.42	0.91	1
		4½	30915.02	0.99	6
		5½	30972.46		
$4f^{12}(^3F_3)5d_{5/2}\,6s^2$	(3,2½)	2½	32174.49	1.16	1
		4½	32407.78		
		3½	32811.02	1.04	1
		1½	32928.76	0.935	6
$4f^{12}(^3F_2)5d_{5/2}\,6s^2$	(2,2½)	1½	33489.36	1.468	6
		3½	33623.78	0.92	6
		2½	35026.22	1.022	6
$4f^{13}(^2F_{5/2})6s6p(^1P_1)$	(2½,1)	2½	34085.20	0.95	1
		3½	34297.17	0.915	1
		1½	35089.67	0.85	6
		2½	35261.762	1.346	
		2½	37064.18	1.42	
		1½	37138.57	1.56	
		4½	37576.866	1.19	
		4½	37711.074	1.14	
		2½	37724.84		
		4½	37946.39		
$4f^{12}(^1G_4)5d_{5/2}\,6s^2$	(4,2½)	2½	38014.37	1.11	
		3½	38342.57	1.108	
		1½	39514.74	0.80	
		4½	39768.79		
$4f^{12}(^1G_4)5d_{3/2}\,6s^2$	(4,1½)	4½	38120.71		
		3½	39560.41	0.895	7
		2½	40787.24	0.91	6
		3½	38123.02	1.14	
		2½	38128.37	1.05	
		1½	38237.89	1.04	

TABLE 1. *Energy levels of neutral thulium, even parity, in units of cm^{-1}. Ref. is given for levels previously published*—Continued

Configuration	Designation	J	Energy	g-Factor	Ref
$4f^{13}(^2F_{7/2})5d6p(^3F_2)$	$(3^1/_2,2)$	$1^1/_2$	38318.62	1.195	
		$2^1/_2$	39547.31	1.285	
		$5^1/_2$	40128.384	1.10	
		$3^1/_2$	40802.56	1.185	
		$4^1/_2$	41074.45	1.07	
		$2^1/_2$	38433.92		
		$4^1/_2$	38502.00	1.10	6
		$2^1/_2$	38696.79		
		$5^1/_2$	38844.072	1.08	
		$4^1/_2$	39123.17		
		$2^1/_2$	39161.45		
		$4^1/_2$	39206.84		
		$2^1/_2$	39259.92	1.20	
		$1^1/_2$	39635.56	1.34	
		$4^1/_2$	39698.70		
		$3^1/_2$	39847.04	1.285	
		$5^1/_2$	39942.571	1.191	
		$3^1/_2$	39996.221		
		$2^1/_2$	40066.70	1.36	
		$1^1/_2$	40091.58	1.13	
		$4^1/_2$	40101.72		
		$3^1/_2$	40360.37		
		$5^1/_2$	40503.326	1.105	
		$4^1/_2$	40516.66		
		$4^1/_2$	40563.90		
		$2^1/_2$	40584.52		
		$6^1/_2$	40586.40	1.175	
		$3^1/_2$	40649.441		
$4f^{13}(^2F_{7/2})5d6p(^3F_3)$	$(3^1/_2,3)$	$1^1/_2$	40693.63	1.31	
		$0^1/_2$	41089.05	1.50	
		$6^1/_2$	41469.44	1.15	
		$5^1/_2$	42429.385	1.19	
		$2^1/_2$	42596.49		
		$4^1/_2$	42764.664		
		$3^1/_2$	42783.46		
		$6^1/_2$	40855.53	1.17	
		$3^1/_2$	41144.66		
		$4^1/_2$	41151.10		
		$6^1/_2$	41193.16	1.17	
		$5^1/_2$	41352.806	1.07	
		$4^1/_2$	41391.10	1.17	
		$5^1/_2$	41430.237		
$4f^{13}(^2F_{7/2})5d6p(^1D_2)$	$(3^1/_2,2)$	$2^1/_2$	41493.034	1.29	
		$5^1/_2$	42080.152	1.12	
		$1^1/_2$	42357.42	1.18	
		$4^1/_2$	42667.745	1.10	
		$3^1/_2$	43098.19		
$4f^{13}(^2F_{7/2})5d6p(^3D_1)$	$(3^1/_2,1)$	$2^1/_2$	41544.59	1.25	
		$4^1/_2$	42139.01	1.06	
		$3^1/_2$	42543.119	1.12	
$4f^{13}(^2F_{7/2})5d6p(^3P_1)$	$(3^1/_2,1)$	$3^1/_2$	41617.243	1.29	
		$5^1/_2$	41700.222	1.13	
		$4^1/_2$	41728.003	1.06	
		$2^1/_2$	41751.03	1.08	
		$2^1/_2$	41836.02		
		$2^1/_2$	42198.77	1.25	
		$3^1/_2$	42325.81		
		$6^1/_2$	42456.47	1.20	
		$6^1/_2$	42545.150		
		$4^1/_2$	42576.01		
		$5^1/_2$	42595.791	1.20	
		$4^1/_2$	42718.44	1.12	
$4f^{13}(^2F_{7/2})5d6p(^3F_4)$	$(3^1/_2,4)$	$7^1/_2$	42733.10	1.19	
		$1^1/_2$	43800.88	1.21	
		$2^1/_2$	43958.23	1.11	
		$3^1/_2$	44265.285	1.10	
		$5^1/_2$	44417.48	1.17	
		$4^1/_2$	44582.64	1.07	
		$5^1/_2$	42868.255		
		$6^1/_2$	42869.748		
		$2^1/_2$	42876.38		
		$4^1/_2$	42902.55		
		$3^1/_2$	42952.02	1.14	
		$5^1/_2$	42957.138		
		$2^1/_2$	42957.52		
		$2^1/_2$	43056.22		
		$4^1/_2$	43115.42		
		$1^1/_2$	43160.53		
$4f^{13}(^2F_{7/2})5d6p(^3D_2)$	$(3^1/_2,2)$	$5^1/_2$	43196.848		
		$1^1/_2$	43221.84	1.20	
		$2^1/_2$	43481.28		
		$4^1/_2$	43755.64	1.08	
		$3^1/_2$	43981.104		
		$2^1/_2$	43243.00		
		$4^1/_2$	43292.24		
		$3^1/_2$	43303.151		
		$2^1/_{62}$	43318.02		
		$4^1/_2$	43354.65		
		$4^1/_2$	43464.15		
		$3^1/_2$	43514.41		
		$2^1/_2$	43571.61		
		$3^1/_2$	43590.42		
		$5^1/_2$	43715.572		

TABLE 1. *Energy levels of neutral thulium, even parity, in units of cm^{-1}. Ref. is given for levels previously published*—Continued

Configuration	Designation	J	Energy	g-Factor	Ref.
$4f^{13}(^2F_{7/2})5d6p(^3D_3)$	$(3^1/_2,3)$	$5^1/_2$	43788.44	1.17	
		$6^1/_2$	43836.666	1.18	
		$4^1/_2$	44380.90	1.15	
		$2^1/_2$	44518.91	1.205	
		$1^1/_2$	44545.90	1.10	
		$3^1/_2$	44750.078	1.16	
		$2^1/_2$	43859.06	1.11	
		$3^1/_2$	44206.39	1.04	
		$4^1/_2$	44238.85		
		$2^1/_2$	44243.40		
		$5^1/_2$	44276.41	1.16	
		$3^1/_2$	44323.00	1.09	
		$6^1/_2$	44515.01	1.125	
		$3^1/_2$	44529.428	0.95	
		$4^1/_2$	44689.913		
		$3^1/_2$	44891.22		
		$4^1/_2$	44919.302	1.19	
		$3^1/_2$	45018.23		
		$4^1/_2$	45091.022	1.04	
$4f^{13}(^2F_{7/2})5d6p(^3P_0)$	$(3^1/_2,0)$	$3^1/_2$	45131.67		
		$3^1/_2$	45149.63		
		$5^1/_2$	45714.11		
$4f^{13}(^2F_{7/2})5d6p(^3P_2)$	$(3^1/_2,2)$	$5^1/_2$	46262.14	1.15	
		$4^1/_2$	48547.98		

TABLE 2. *Energy levels of neutral thulium, odd parity, in units of cm^{-1}. Ref. is given for levels previously published*

Configuration	Designation	J	Energy	g-Factor	Ref.
$4f^{13}\,6s^2$	$^2F^\circ$	$3^1/_2$	0.000	1.143	1
		$2^1/_2$	8771.243	0.855	1
$4f^{13}(^2F_{7/2})5d6s(^3D)$	$^3[1^1/_2]^\circ$	$2^1/_2$	20406.840	1.58	5
		$1^1/_2$	21799.380	1.45	5
		$0^1/_2$	24160.63	1.010	5
	$^3[5^1/_2]^\circ$	$4^1/_2$	22419.764	0.934	6
		$5^1/_2$	22559.502	1.15	7
		$6^1/_2$	22742.777	1.198	5
$4f^{12}(^3H_6)6s^2\,6p_{1/2}$	$(6,^1/_2)^\circ$	$5^1/_2$	22468.046	1.21	7
		$6^1/_2$	22902.127	1.138	5
$4f^{13}(^2F_{7/2})5d6s(^3D)$	$^3[2^1/_2]^\circ$	$3^1/_2$	23335.111	1.362	6
		$2^1/_2$	23431.844	1.22	6
		$1^1/_2$	23574.415	0.83	5
	$^3[3^1/_2]^\circ$	$4^1/_2$	23941.071	1.29	6
		$2^1/_2$	24611.303	0.92	6
		$3^1/_2$	24708.041	1.08	5
	$^3[4^1/_2]^\circ$	$3^1/_2$	24246.425	1.02	6
		$4^1/_2$	24701.058	1.145	6
		$5^1/_2$	24957.469	1.235	5
$4f^{13}(^2F_{7/2})5d6s(^1D)$	$^1[1^1/_2]^\circ$	$1^1/_2$	25207.732	1.365	5
	$^1[5^1/_2]^\circ$	$5^1/_2$	25520.987	1.10	6
$4f^{12}(^3H_6)6s^2\,6p_{3/2}$	$(6,1^1/_2)^\circ$	$7^1/_2$	25536.116	1.20	5
		$4^1/_2$	25699.714	1.12	6
		$6^1/_2$	26357.736	1.188	7
		$5^1/_2$	26368.412	1.125	6
$4f^{13}(^2F_{7/2})5d6s(^1D)$	$^1[2^1/_2]^\circ$	$2^1/_2$	26448.274	1.14	5
	$^1[3^1/_2]^\circ$	$3^1/_2$	27037.468	1.11	5
	$^1[4^1/_2]^\circ$	$4^1/_2$	27440.858		6
$4f^{12}(^3F_4)6s^2\,6p_{1/2}$	$(4,^1/_2)^\circ$	$3^1/_2$	28340.29		5
		$4^1/_2$	28514.423	1.085	5
$4f^{12}(^3H_6)5d6s6p(^4F_{3/2})$	$(6,1^1/_2)^\circ$	$4^1/_2$	29308.69	1.49	7
		$5^1/_2$	31080.846	1.37	
		$7^1/_2$	32112.98	0.98	
		$6^1/_2$	32950.10	1.31	
$4f^{13}(^2F_{5/2})5d6s(^3D)$	$^3[4^1/_2]^\circ$	$3^1/_2$	30921.58	0.69	5
		$4^1/_2$	31388.303	0.98	5
		$5^1/_2$	32107.268	1.115	5
$4f^{12}(^3H_5)6s^2\,6p_{1/2}$	$(5,^1/_2)^\circ$	$4^1/_2$	30947.175		5
		$5^1/_2$	31007.60	1.00	5
$4f^{12}(^3H_6)5d6s6p(^4F_{5/2})$	$(6,2^1/_2)^\circ$	$3^1/_2$	31367.728	1.33	
		$4^1/_2$	32441.714	1.25	
		$8^1/_2$	32761.54	1.11	
		$5^1/_2$	33793.154	1.24	
		$7^1/_2$	34046.54	1.18	
		$6^1/_2$	34449.774	1.18	
$4f^{12}(^3F_4)6s^2\,6p_{3/2}$	$(4,1^1/_2)^\circ$	$4^1/_2$	31454.298		5
		$5^1/_2$	31519.495		5
		$2^1/_2$	31593.70		5
		$3^1/_2$	31694.749	1.17	5
$4f^{13}(^2F_{5/2})5d6s(^3D)$	$^3[^1/_2]^\circ$	$1^1/_2$	31499.06	1.33	6
	$^3[1^1/_2]^\circ$	$2^1/_2$	31773.78	1.23	5
		$1^1/_2$	32780.04	1.05	5
	$^3[2^1/_2]^\circ$	$1^1/_2$	32181.49	0.725	6
		$2^1/_2$	32856.613	1.051	5
		$3^1/_2$	33240.362	1.17	5
$4f^{13}(^2F_{7/2})6s7s(^3S_1)$	$(3^1/_2,1)^\circ$	$4^1/_2$	32217.195	1.333	2
		$3^1/_2$	32359.372	1.195	2
		$2^1/_2$	32479.326	0.89	2
$4f^{13}(^2F_{5/2})5d6s(^3D)$	$^3[3^1/_2]^\circ$	$2^1/_2$	33292.78	0.624	5
		$3^1/_2$	33395.984		
		$4^1/_2$	33726.70	1.14	
$4f^{12}(^3H_6)5d6s6p(^4D_{1/2})$	$(6,^1/_2)^\circ$	$5^1/_2$	33638.74	1.42	
		$6^1/_2$	33812.149	1.15	
$4f^{12}(^3H_6)5d6s6p(^4F_{7/2})$	$(6,3^1/_2)^\circ$	$9^1/_2$	33644.74	1.18	
		$2^1/_2$	34194.09	1.24	
		$7^1/_2$	36273.94	1.13	
$4f^{12}(^3H_5)6s^2\,6p_{3/2}$	$(5,1^1/_2)^\circ$	$3^1/_2$	33778.36		
		$6^1/_2$	33943.282	1.13	5
		$4^1/_2$	34310.330	0.995	5
		$5^1/_2$	34532.898	1.126	5
$4f^{13}(^2F_{7/2})6s7s(^1S_0)$	$(3^1/_2,0)^\circ$	$3^1/_2$	33961.044	1.15	6
$4f^{13}(^2F_{5/2})5d6s(^1D)$	$^1[^1/_2]^\circ$	$0^1/_2$	34069.26	0.666	6
	$^1[4^1/_2]^\circ$	$4^1/_2$	34587.982	1.00	5
	$^1[1^1/_2]^\circ$	$1^1/_2$	34999.008	0.897	5
	$^1[2^1/_2]^\circ$	$2^1/_2$	35673.62		
	$^1[3^1/_2]^\circ$	$3^1/_2$	36435.78		
$4f^{12}(^3H_6)5d6s6p(^4D_{5/2})$	$(6,2^1/_2)^\circ$	$3^1/_2$	34365.624	1.205	
		$4^1/_2$	35054.681	1.28	
		$6^1/_2$	35958.880	1.134	
		$7^1/_2$	36179.60	1.155	
		$5^1/_2$	36329.786	1.035	
$4f^{12}(^3H_6)5d6s6p(^4D_{3/2})$	$(6,1^1/_2)^\circ$	$4^1/_2$	34457.853	1.185	
		$5^1/_2$	34691.802	1.16	
		$7^1/_2$	35557.70	1.255	
$4f^{12}(^3H_4)6s^2\,6p_{1/2}$	$(4,^1/_2)^\circ$	$4^1/_2$	35363.77	0.91	
		$3^1/_2$	35389.94	0.965	
$4f^{12}(^3H_6)5d6s6p(^2D_{5/2})$	$(6,2^1/_2)^\circ$	$8^1/_2$	35633.01	1.18	
		$7^1/_2$	37159.51	1.225	

TABLE 2. *Energy levels of neutral thulium, odd parity, in units of cm^{-1}. Ref. is given for levels previously published*—Continued

Configuration	Designation	J	Energy	g-Factor	Ref.
$4f^{12}\,5d6s6p$		3½	35682.251	1.222	
		6½	36223.628	1.12	
		4½	36377.733	1.21	
$4f^{12}(^3H_6)5d6s6p(^2D_{3/2})$	(6,1½)°	7½	36653.924	1.13	
$4f^{12}\,5d6s6p$		5½	36656.724	1.16	
		3½	36934.216	1.285	
		4½	37010.534	1.11	
$4f^{12}(^3F_3)6s^2\,6p_{1/2}$	(3,½)°	3½	37221.455		
$4f^{12}(^3H_6)5d6s6p(^4D_{7/2})$	(6,3½)°	8½	37252.03	1.20	
		7½	37858.62	1.20	
$4f^{12}\,5d6s6p$		5½	37276.778	1.25	
		6½	37365.13	1.20	
		3½	37519.484	1.09	
		6½	37646.186	1.175	
		5½	37657.928	1.01	
		4½	37768.662	1.215	
		6½	38012.795	1.09	
		5½	38161.255	1.125	
		3½	38211.625	1.175	
$4f^{12}(^3H_4)6s^2\,6p_{3/2}$	(4,1½)°	5½	38347.875	1.07	
		3½	38664.184	1.042	
		4½	38685.555	1.043	
$4f^{12}\,5d6s6p$		4½	38384.926	1.134	
		3½	38482.584	1.25	
$4f^{12}(^3H_6)5d6s6p(^4F_{9/2})$	(6,4½)°	7½	38485.85	1.145	
$4f^{12}\,5d6s6p$		4½	38499.016	1.064	
		5½	38529.686	1.17	
		6½	38588.46	1.212	
		2½	38751.812	1.215	
$4f^{13}(^2F_{7/2})6s6d(^3D)$	$^3[1½]°$	2½	38861.937	1.565	7
		1½	39602.902	1.30	7
		0½	39737.58	0.81	
$4f^{12}\,5d6s6p$		5½	38877.211	1.065	
		6½	38915.90	1.22	
$4f^{13}(^2F_{7/2})6s6d(^1D)$	$^1[1½]°$	1½	39061.819	1.34	
	$^1[5½]°$	5½	39362.651	1.13	2
	$^1[2½]°$	2½	39470.489	1.04	
	$^1[3½]°$	3½	39542.165	1.06	
	$^1[4½]°$	4½	39741.913	1.112	2
$4f^{13}(^2F_{7/2})6s6d(^3D)$	$^3[5½]°$	5½	39089.533	1.09	2
		6½	39157.57	1.24	6
		4½	39220.035	1.12	2
	$^3[2½]°$	3½	39187.473	1.336	
		2½	39277.087	1.184	2
		1½	39419.90	0.916	7
$4f^{12}\,5d6s6p$		4½	39244.584	1.05	2
$4f^{13}(^2F_{7/2})6s6d(^3D)$	$^3[3½]°$	4½	39322.014	1.153	
		3½	39462.782	1.12	
		2½	39658.852	0.96	
$4f^{12}\,5d6s6p$		2½	39386.959	0.982	
		3½	39413.672	1.165	
		6½	39434.151	1.15	
$4f^{13}(^2F_{7/2})6s6d(^3D)$	$^3[4½]°$	4½	39444.295	1.13	
		5½	39479.873	1.21	
		3½	39627.996	1.04	
$4f^{12}\,5d6s6p$		3½	39480.272	1.17	
		4½	39488.236	1.095	
		5½	39563.003	1.11	
		5½	39709.038	1.17	
$4f^{12}(^3F_3)6s^2\,6p_{3/2}$	(3,1½)°	3½	40061.324	1.13	
		4½	40208.499	1.18	
$4f^{12}\,5d6s6p$		6½	40113.75		
		4½	40322.536	1.115	
		2½	40347.267	1.14	
		6½	40376.20		
		4½	40517.661	1.153	
		3½	40533.825	1.24	
		3½	40596.302	1.305	
		5½	40663.129		
		3½	40763.892	1.178	2
		6½	40780.904	1.22	
		4½	40855.580	1.08	
		2½	40938.61	1.20	
$4f^{13}(^2F_{5/2})6s7s(^3S_1)$	(2½,1)°	1½	40989.73	0.40	6
		2½	41074.399	0.99	6
		3½	41189.162	1.19	7
$4f^{12}\,5d6s6p$		3½	41012.387	1.15	
		5½	41081.384	1.295	
$4f^{13}(^2F_{7/2})6s8s(^3S_1)$	(3½,1)°	4½	41078.537	1.32	7
		3½	41211.943	1.18	6
		2½	41325.87	0.90	7

TABLE 2. *Energy levels of neutral thulium, odd parity, in units of cm^{-1}. Ref. is given for levels previously published*—Continued

Configuration	Designation	J	Energy	g-Factor	Ref.
$4f^{12}(^3F_2)6s^2\ 6p_{3/2}$	$(2,1^1/_2)^\circ$	$3^1/_2$	41085.039	1.005	
$4f^{12}\ 5d6s6p$		$4^1/_2$	41109.364	1.19	
		$4^1/_2$	41124.334	1.244	
$4f^{12}\ 5d6s6p$		$6^1/_2$	41274.90	1.12	
		$8^1/_2$	41299.37	1.08	
$4f^{12}\ 5d6s6p$		$3^1/_2$	41425.474	1.10	
		$3^1/_2$	41525.20	1.105	
		$2^1/_2$	41533.564	1.025	
		$5^1/_2$	41569.114	1.205	
		$4^1/_2$	41576.146	1.249	
$4f^{13}(^2F_{7/2})6s8s(^1S_0)$	$(3^1/_2,0)^\circ$	$3^1/_2$	41646.129	1.16	
$4f^{12}\ 5d6s6p$		$5^1/_2$	41687.404	1.145	
		$1^1/_2$	41743.39	0.913	
		$4^1/_2$	41786.249	1.25	
$4f^{13}(^2F_{7/2})6p^2(^3P_0)$	$(3^1/_2,0)^\circ$	$3^1/_2$	41841.602	1.21	
$4f^{12}\ 5d6s6p$		$5^1/_2$	41874.369	1.16	
$4f^{12}(^3F_4)5d6s6p(^4F_{7/2})$	$(4,3^1/_2)^\circ$	$7^1/_2$	41880.13		
$4f^{12}\ 5d6s6p$		$4^1/_2$	41881.739	1.18	
		$6^1/_2$	41917.235	1.15	
		$5^1/_2$	42119.080	1.10	
		$3^1/_2$	42133.263	1.17	
		$2^1/_2$	42179.886	1.05	
		$2^1/_2$	42367.610	1.20	
		$3^1/_2$	42370.718	1.043	
		$6^1/_2$	42406.656	1.125	
		$5^1/_2$	42541.367	1.10	
		$4^1/_2$	42561.536	1.06	
		$5^1/_2$	42581.974	1.135	
		$4^1/_2$	42594.049	1.09	
		$2^1/_2$	42705.880	1.095	
$4f^{13}(^2F_{5/2})6s7s(^1S_0)$	$(2^1/_2,0)^\circ$	$2^1/_2$	42735.208		
$4f^{12}\ 5d6s6p$		$3^1/_2$	42742.008	1.19	
		$4^1/_2$	42770.792	1.215	
		$4^1/_2$	42839.493	1.086	
$4f^{12}(^3F_4)5d6s6p(^4F_{9/2})$	$(4,4^1/_2)^\circ$	$7^1/_2$	42855.44	1.124	
		$2^1/_2$	42902.504	1.04	
$4f^{12}\ 5d6s6p$		$6^1/_2$	42910.043	1.20	
		$5^1/_2$	42961.884	1.205	
		$4^1/_2$	43030.299	1.143	
		$3^1/_2$	43034.166	1.15	
$4f^{12}(^3H_6)5d6s6p(^2F_{5/2})$	$(6,2^1/_2)^\circ$	$7^1/_2$	43051.55	1.19	
$4f^{13}(^2F_{7/2})6p^2(^3P_1)$	$(3^1/_2,1)^\circ$	$3^1/_2$	43052.541	1.055	
		$4^1/_2$	43429.363	1.20	
		$2^1/_2$	43430.758	1.09	
$4f^{12}\ 5d6s6p$		$2^1/_2$	43113.646	1.114	
		$5^1/_2$	43186.335	1.196	
		$1^1/_2$	43230.70	0.99	
		$6^1/_2$	43288.722	1.175	
		$5^1/_2$	43408.960	1.20	
		$3^1/_2$	43428.780	1.155	
		$6^1/_2$	43438.251	1.23	
		$5^1/_2$	43447.878	1.105	
		$4^1/_2$	43544.574		
		$3^1/_2$	43588.180	1.248	
$4f^{12}(^3H_5)5d6s6p(^4F_{7/2})$	$(5,3^1/_2)^\circ$	$7^1/_2$	43614.261	1.12	
$4f^{12}\ 5d6s6p$		$4^1/_2$	43675.258	1.04	
		$5^1/_2$	43974.645	1.14	
		$6^1/_2$	43979.308		
$4f^{12}(^1G_4)6s^2\ 6p_{1/2}$	$(4,^1/_2)^\circ$	$4^1/_2$	44001.272	1.04	
		$3^1/_2$	44142.395	1.02	
$4f^{12}\ 5d6s6p$		$6^1/_2$	44072.61		
$4f^{13}(^2F_{7/2})6p^2(^3P_2)$	$(3^1/_2,2)^\circ$	$5^1/_2$	44180.935	1.17	
		$4^1/_{62}$	44316.715	1.15	
		$3^1/_2$	44456.230		
		$1^1/_2$	44483.351	1.005	
		$2^1/_2$	44855.240	1.045	
$4f^{12}\ 5d6s6p$		$2^1/_2$	44182.324	1.17	
$4f^{12}(^3H_5)5d6s6p(^2D_{5/2})$	$(5,2^1/_2)^\circ$	$7^1/_2$	44210.42	1.15	
$4f^{12}\ 5d6s6p$		$3^1/_2$	44263.974	0.905	
		$2^1/_2$	44300.233	1.09	
		$6^1/_2$	44307.188	1.13	
$4f^{12}(^3H_5)5d6s6p(^4F_{9/2})$	$(5,4^1/_2)^\circ$	$9^1/_2$	44334.66	1.18	
$4f^{12}\ 5d6s6p$		$5^1/_2$	44383.637		
		$3^1/_2$	44418.396		
		$6^1/_2$	44418.695	1.13	
$4f^{12}(^3H_6)5d6s6p(^2D_{3/2})$	$(6,1^1/_2)^\circ$	$7^1/_2$	44565.85	1.135	
$4f^{12}(^3H_6)5d6s6p(^2F_{7/2})$	$(6,3^1/_2)$	$8^1/_2$	44571.82	1.18	
$4f^{12}\ 5d6s6p$		$6^1/_2$	44591.133	1.04	
		$5^1/_2$	44747.009	1.17	
		$4^1/_2$	44774.242		
		$6^1/_2$	44803.868	1.105	
		$4^1/_2$	44868.173	1.10	
		$5^1/_2$	45058.379	1.055	

TABLE 2. *Energy levels of neutral thulium, odd parity, in units of cm⁻¹. Ref. is given for levels previously published*—Continued

Configuration	Designation	J	Energy	g-Factor	Ref.
		$4^1/_2$	45070.577		
		$4^1/_2$	45147.300		
		$5^1/_2$	45289.01	1.155	
		$6^1/_2$	45389.06		
		$3^1/_2$	45408.656	1.105	
		$4^1/_2$	45467.723		
		$5^1/_2$	45485.87		
$4f^{12}(^3H_6)5d6s6p(^2F_{5/2})$	$(6,2^1/_2)^\circ$	$7^1/_2$	45557.72	1.164	
$4f^{12}(^3H_5)5d6s6p(^1D_{5/2})$	$(5,2^1/_2)^\circ$	$7^1/_2$	45608.78	1.15	
$4f^{12}$ $5d6s6p$		$5^1/_2$	45635.737	1.14	
		$6^1/_2$	45660.65	1.19	
		$5^1/_2$	45810.508	1.225	
$4f^{12}(^3H_5)5d6s6p(^4D_{7/2})$	$(5,3^1/_2)^\circ$	$7^1/_2$	45934.52	1.165	
$4f^{12}$ $5d6s6p$		$5^1/_2$	46163.587		
		$5^1/_2$	46221.416		
$4f^{12}(^3H_6)5d6s6p(^2F_{7/2})$	$(6,3^1/_2)^\circ$	$7^1/_2$	46461.06	1.18	
		$8^1/_2$	46767.71	1.17	
$4f^{12}$ $5d6s6p$		$6^1/_2$	46597.694	1.18	
		$6^1/_2$	46694.096	1.16	
		$5^1/_2$	46850.44	1.145	
		$6^1/_2$	47027.45	1.17	
		$6^1/_2$	47214.313	1.135	
		$5^1/_2$	47484.84	1.115	
$4f^{12}(^3H_5)5d6s6p(^2F_{5/2})$	$(5,2^1/_2)^\circ$	$7^1/_2$	47630.53	1.162	
$4f^{12}$ $5d6s6p$		$6^1/_2$	47644.931	1.175	
		$6^1/_2$	47759.379	1.16	
$4f^{12}(^3H_4)5d6s6p(^4F_{7/2})$	$(4,3^1/_2)^\circ$	$7^1/_2$	47886.05	1.15	
$4f^{12}$ $5d6s6p$		$6^1/_2$	48115.671	1.17	
		$7^1/_2$	50563.91	1.18	
		$6^1/_2$	51298.366		
		$6^1/_2$	51466.730		
		$5^1/_2$	51756.675		

4. Ionization Energy

An accurate value for the ionization energy of neutral thulium was derived by Camus [23] from his observations of the $4f^{13}(^2F_{7/2})6snp$ series in absorption for $17 \leqslant n \leqslant 48$. He obtained the value 49879.5 ± 0.5 cm⁻¹. This supports the value obtained from the $4f^{13}(^2F_{7/2})6sns$ series $(7 \leqslant n \leqslant 8)$. From the data reported in table 2 we have:

$$\text{center of gravity } 4f^{13}(^2F_{7/2})6s7s = 32737.9 \text{ cm}^{-1}$$

$$6s8s = 41300.2 \text{ cm}^{-1}.$$

Assuming a change in quantum defect of 1.031 ± 0.005 deduced from the corresponding configurations of Ba I, [25] we obtain a series limit of 49994.4 ± 20 cm⁻¹. Since the limit occurs at 103.7 cm⁻¹ above the ground state of Tm II, the ionization energy equals 49891 ± 20 cm⁻¹. We note that this result confirms the predicted value by Reader and Sugar [26] of 49900 ± 160 cm⁻¹, based on interpolation of the $6sns$ series for all the rare earths.

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Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je
11749.50	5	8508.67				
11662.00	5 *h*	8572.51				
11650.30	4	8581.12				
11649.00	5 *h*	8582.08	$33961^{\circ}_{7/2} - 42543_{7/2}$			
11544.00	5	8660.14				
11540.00	5	8663.14	$22791_{7/2} - 31454^{\circ}_{9/2}$			
11538.90	3	8663.97	$22929_{5/2} - 31593^{\circ}_{5/2}$			
11522.70	1	8676.15				
11515.30	50	8681.72	$25130_{15/2} - 33812^{\circ}_{13/2}$			
11496.90	10	8695.62	$17752_{5/2} - 26448^{\circ}_{5/2}$			
11452.30	1	8729.48				
11434.90	200	8742.76	$16957_{7/2} - 25699^{\circ}_{9/2}$			
11423.20	1	8751.72				
11419.20	10	8754.78	$17613_{9/2} - 26368^{\circ}_{11/2}$			
11405.90	7	8764.99	$22929_{5/2} - 31694^{\circ}_{7/2}$			
11397.80	1	8771.22				
11395.80	1	8772.76	$28448_{5/2} - 37221^{\circ}_{7/2}$			
11387.40	4	8779.23				
11357.30	3	8802.50	$22791_{7/2} - 31593^{\circ}_{5/2}$			
″			$27377_{13/2} - 36179^{\circ}_{15/2}$			
11344.00	30	8812.82	$25130_{15/2} - 33943^{\circ}_{13/2}$			
″			$24137_{13/2} - 32950^{\circ}_{13/2}$			
11332.50	5	8821.76	$25488_{11/2} - 34310^{\circ}_{9/2}$			
11285.80	3	8858.27				
11284.10	4	8859.60				
11269.90	6	8870.76	$25717_{7/2} - 34587^{\circ}_{9/2}$			
11268.20	8	8872.10	$26126_{5/2} - 34999^{\circ}_{3/2}$			
11261.40	2	8877.46	$25207^{\circ}_{3/2} - 34085_{5/2}$			
11229.20	100	8902.92	$17454_{13/2} - 26357^{\circ}_{13/2}$			
11228.40	10	8903.55	$22791_{7/2} - 31694^{\circ}_{7/2}$			
11215.70	200	8913.63	$17454_{13/2} - 26368^{\circ}_{11/2}$			
11207.00	2	8920.55	$35261_{5/2} - 44182^{\circ}_{5/2}$			
11202.40	2	8924.22	$26439_{7/2} - 35363^{\circ}_{9/2}$			
11175.30	1	8945.86				
11172.50	2	8948.10				
11165.00	70	8954.11				
11164.30	20	8954.67	$31694^{\circ}_{7/2} - 40649_{7/2}$			
11160.80	5	8957.48	$16742_{7/2} - 25699^{\circ}_{9/2}$			
11154.30	1	8962.70				
11153.30	1	8963.50				
11144.40	2	8970.66				
11135.30	40	8977.99	$24418_{5/2} - 33396^{\circ}_{7/2}$			
11131.10	2	8981.38	$8771^{\circ}_{5/2} - 17752_{5/2}$			
11128.55	3 *h*	8983.44	$23873_{7/2} - 32856^{\circ}_{5/2}$			
11104.25	2	9003.10				
11100.90	2	9005.81	$39542^{\circ}_{7/2} - 48547_{9/2}$			
11095.60	20	9010.11	$21997_{11/2} - 31007^{\circ}_{11/2}$			
11071.28	2	9029.91				
11069.71	2	9031.19	$29316_{9/2} - 38347^{\circ}_{11/2}$			
11053.60	20	9044.35	$25488_{11/2} - 34583^{\circ}_{11/2}$			
11039.95	20	9055.53				
11029.96	5	9063.73				
11011.15	2000	9079.22	$16456_{17/2} - 25536^{\circ}_{15/2}$			
11006.11	2	9083.37	$21997_{11/2} - 31080^{\circ}_{11/2}$			
10986.66	10	9099.46	$25488_{11/2} - 34587^{\circ}_{9/2}$			
10980.10	100	9104.89	$17343_{7/2} - 26448^{\circ}_{5/2}$			
10972.35	15	9111.32	$30302_{5/2} - 39413^{\circ}_{7/2}$			
10963.91	3	9118.34				
10953.48	10	9127.02				
10917.44	1	9157.15				
10907.07	3	9165.85	$29316_{9/2} - 38482^{\circ}_{7/2}$			
10889.90	4	9180.31				
10869.60	30	9197.45				
10862.75	4	9203.25	$25488_{11/2} - 34691^{\circ}_{11/2}$			
10852.52	10	9211.93				
10851.34	40	9212.93	$28555_{7/2} - 37768^{\circ}_{9/2}$			
10849.05	15	9214.87				
10840.50	2 *h*	9222.14				
10838.90	1	9223.50				
10837.30	2 *h*	9224.86				
10827.20	30	9233.47				
10812.73	5 *h*	9245.83	$33489_{3/2} - 42735^{\circ}_{5/2}$			
10803.30	1	9253.90	$25745_{5/2} - 34999^{\circ}_{3/2}$			
10797.36	3	9258.99				
10786.90	2	9267.97				
10785.90	1	9268.82				
10784.67	4	9269.88	$21737_{9/2} - 31007^{\circ}_{11/2}$			
10767.31	80	9284.83	$17752_{5/2} - 27037^{\circ}_{7/2}$			
10763.70	3	9287.94				
10757.30	2	9293.47	$30915_{9/2} - 40208^{\circ}_{9/2}$			
10749.44	5	9300.26	$13119_{9/2} - 22419^{\circ}_{9/2}$			
10745.85	4	9303.37	$39244^{\circ}_{9/2} - 48547_{9/2}$			
10738.30	1	9309.91				
10727.00	5	9319.72				
10701.75	1	9341.71				
10700.30	8	9342.97	$25656_{5/2} - 34999^{\circ}_{3/2}$			
10694.03	2000	9348.45	$13119_{9/2} - 22468^{\circ}_{11/2}$			
10680.43	40	9360.35	$24418_{5/2} - 33778^{\circ}_{7/2}$			
10673.60	1	9366.34				
10672.70	6	9367.13	$23873_{7/2} - 33240^{\circ}_{7/2}$			
10670.80	1	9368.80				
10669.80	2	9369.68	$15587_{11/2} - 24957^{\circ}_{11/2}$			
10661.10	4	9377.33	$24246^{\circ}_{7/2} - 33623_{7/2}$			
10653.90	1	9383.66				
10631.55	20 *d*	9403.39				
10613.80	2	9419.12				
10606.10	8	9425.95	$22791_{7/2} - 32217^{\circ}_{9/2}$			
10603.50	1	9428.27				
10602.00	7	9429.60	$22929_{5/2} - 32359^{\circ}_{7/2}$			
10590.45	2000	9439.88	$13119_{9/2} - 22559^{\circ}_{11/2}$			
10585.30	6	9444.48	$24348_{9/2} - 33793^{\circ}_{11/2}$			
10569.68	2	9458.43	$39089^{\circ}_{11/2} - 48547_{9/2}$			
10565.00	10	9462.62				
10539.95	20	9485.11				
10533.14	6	9491.24	$16957_{7/2} - 26448^{\circ}_{5/2}$			
10531.20	3	9492.99				
10530.25	3	9493.85				
10520.27	20	9502.86	$18837_{9/2} - 28340^{\circ}_{7/2}$			
10499.11	200	9522.01	$21997_{11/2} - 31519^{\circ}_{11/2}$			
10496.90	7	9524.01	$18990_{11/2} - 28514^{\circ}_{9/2}$			
10476.05	2000	9542.97	$24418_{5/2} - 33961^{\circ}_{7/2}$			
10471.96	5	9546.70	$26126_{5/2} - 35673^{\circ}_{5/2}$			
″			$26889_{9/2} - 36435^{\circ}_{7/2}$			
10454.60	10	9562.55				
10448.46	2	9568.17	$22791_{7/2} - 32359^{\circ}_{7/2}$			
10441.30	1	9574.73				
10400.48	2000	9612.31	$24348_{9/2} - 33961^{\circ}_{7/2}$			
10381.35	10	9630.02	$21737_{9/2} - 31367^{\circ}_{7/2}$			
10365.44	10	9644.80	$25745_{5/2} - 35389^{\circ}_{7/2}$			
10359.19	4	9650.62	$21737_{9/2} - 31388^{\circ}_{9/2}$			
10353.10	1	9656.30				
10348.50	40	9660.59	$18853_{11/2} - 28514^{\circ}_{9/2}$			
10343.88	200	9664.90				
10341.75	1	9666.89				
10334.53	2	9673.65	$31519^{\circ}_{11/2} - 41193_{13/2}$			
10319.12	6	9688.09	$22791_{7/2} - 32479^{\circ}_{5/2}$			
10316.32	4	9690.72	$30972_{11/2} - 40663^{\circ}_{11/2}$			
10312.75	200	9694.08	$17343_{7/2} - 27037^{\circ}_{7/2}$			
10300.07	3	9706.01	$16742_{7/2} - 26448^{\circ}_{5/2}$			
10288.86	80	9716.59	$21737_{9/2} - 31454^{\circ}_{9/2}$			
10282.10	1	9722.98				
10269.68	2	9734.73				
10229.61	20 *h*	9772.87	$29316_{9/2} - 39089^{\circ}_{11/2}$			
10225.17	3 *h*	9777.11	$32928_{3/2} - 42705^{\circ}_{5/2}$			
10220.30	100	9781.77	$21737_{9/2} - 31519^{\circ}_{11/2}$			
10216.05	1	9785.84				
10197.54	2	9803.60				
10194.60	30	9806.43	$32928_{3/2} - 42735^{\circ}_{5/2}$			
10182.06	20	9818.50	$25207^{\circ}_{3/2} - 35026_{5/2}$			
10173.95	4	9826.33	$21120_{7/2} - 30947^{\circ}_{9/2}$			

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je
10173.04	200	9827.21	$17613_{9/2} - 27440^{\circ}_{9/2}$			
10162.57	9	9837.33				
10155.20	2	9844.47				
10149.19	2	9850.30	$22929_{5/2} - 32780^{\circ}_{3/2}$			
10134.00	2 *h*	9865.07				
10088.78	6 *h*	9909.29	$24137_{13/2} - 34046^{\circ}_{15/2}$			
10067.80	1	9929.93				
10064.53	70	9933.16	$15587_{11/2} - 25520^{\circ}_{11/2}$			
10058.00	2	9939.61				
10051.04	2	9946.49				
10049.93	8	9947.59	$24418_{5/2} - 34365^{\circ}_{7/2}$			
10047.57	9	9949.93	$31519^{\circ}_{11/2} - 41469_{13/2}$			
10041.83	2	9955.62				
10040.37	30	9957.06	$21737_{9/2} - 31694^{\circ}_{7/2}$			
10035.76	10	9961.64	$24348_{9/2} - 34310^{\circ}_{9/2}$			
10032.31	2 *h*	9965.06	$25717_{7/2} - 35682^{\circ}_{7/2}$			
10011.38	5	9985.90				
10009.37	2 *h*	9987.90				
9971.06	2 *h*	10026.28	$25656_{5/2} - 35682^{\circ}_{7/2}$			
9951.47	20	10046.01	$29316_{9/2} - 39362^{\circ}_{11/2}$			
9943.55	1	10054.01	$25207^{\circ}_{3/2} - 35261_{5/2}$			
9928.65	1	10069.10				
9920.11	50	10077.77				
9917.45	10	10080.47	$16957_{7/2} - 27037^{\circ}_{7/2}$			
9910.20	1000	10087.85	$23873_{7/2} - 33961^{\circ}_{7/2}$			
9905.33	4	10092.81				
9900.72	80	10097.51	$17343_{7/2} - 27440^{\circ}_{9/2}$			
9886.58	30	10111.95	$15587_{11/2} - 25699^{\circ}_{9/2}$			
9879.16	6	10119.54				
9871.16	2	10127.74				
9863.14	2	10135.98	$27440^{\circ}_{9/2} - 37576_{9/2}$			
9857.30	1	10141.99				
9851.10	10	10148.37				
9850.14	2	10149.36				
9849.39	2	10150.13				
9833.43	5	10166.60	$27491_{11/2} - 37657^{\circ}_{11/2}$			
9826.44	3	10173.84				
9821.14	800	10179.33	$23781_{9/2} - 33961^{\circ}_{7/2}$			
9816.46	20	10184.18	$24348_{9/2} - 34532^{\circ}_{11/2}$			
9787.65	2	10214.16				
9786.37	40	10215.49	$13119_{9/2} - 23335^{\circ}_{7/2}$			
9746.48	3	10257.30				
9739.04	500	10265.14	$15271_{15/2} - 25536^{\circ}_{15/2}$			
9736.87	3	10267.43	$21120_{7/2} - 31388^{\circ}_{9/2}$			
9728.48	100	10276.28				
9717.87	9	10287.50				
9716.50	6	10288.95	$32446_{7/2} - 42735^{\circ}_{5/2}$			
9705.80	3000	10300.29				
9705.62	7	10300.48				
9697.70	2 *h*	10308.90	$26126_{5/2} - 36435^{\circ}_{7/2}$			
9675.50	10	10332.55				
9674.68	30	10333.43	$21120_{7/2} - 31454^{\circ}_{9/2}$			
9665.64	6	10343.09	$24348_{9/2} - 34691^{\circ}_{11/2}$			
9648.92	3	10361.01	$8771^{\circ}_{5/2} - 19132_{3/2}$			
9638.22	3	10372.52				
9616.73	5 *h*	10395.69	$24137_{13/2} - 34532^{\circ}_{11/2}$			
9601.10	20	10412.62				
9589.51	4 *h*	10425.20	$29316_{9/2} - 39741^{\circ}_{9/2}$			
9582.98	150	10432.31	$21161_{5/2} - 31593^{\circ}_{5/2}$			
9578.56	10	10437.12	$23873_{7/2} - 34310^{\circ}_{9/2}$			
9578.21	10	10437.50	$23374_{13/2} - 33812^{\circ}_{13/2}$			
9551.90	20	10466.25	$22929_{5/2} - 33396^{\circ}_{7/2}$			
9545.86	40	10472.87	$21120_{7/2} - 31593^{\circ}_{5/2}$			
9538.05	2 *h*	10481.45	$27377_{13/2} - 37858^{\circ}_{15/2}$			
9532.30	8	10487.77				
9497.14	2	10526.60				
9495.00	10 *w*	10528.97				
9474.82	1	10551.40				
9471.89	6	10554.66	$24137_{13/2} - 34691^{\circ}_{11/2}$			
9466.50	5 *h*	10560.67	$32174_{5/2} - 42735^{\circ}_{5/2}$			
″			$31519^{\circ}_{11/2} - 42080_{11/2}$			
9459.36	6	10568.64	$23374_{13/2} - 33943^{\circ}_{13/2}$			
9437.80	50	10592.78				
9420.61	7 *h*	10612.11				
9409.72	5 *h*	10624.39				
9358.82	5 *h*	10682.18	$27440^{\circ}_{9/2} - 38123_{7/2}$			
9357.20	2 *h*	10684.03				
9344.41	10	10698.65	$16742_{7/2} - 27440^{\circ}_{9/2}$			
9340.00	6 *h*	10703.70				
9330.79	5	10714.27				
9298.73	3 *h*	10751.21	$23781_{9/2} - 34532^{\circ}_{11/2}$			
9295.16	2 *h*	10755.34	$32112^{\circ}_{15/2} - 42868_{11/2}$			
9289.23	2	10762.20				
9288.01	5 *h*	10763.62				
9282.57	800	10769.92	$15587_{11/2} - 26357^{\circ}_{13/2}$			
9275.67	5 *d*	10777.94				
9273.38	200	10780.60	$15587_{11/2} - 26368^{\circ}_{11/2}$			
9238.37	6	10821.45	$13119_{9/2} - 23941^{\circ}_{9/2}$			
9231.58	10	10829.41				
9139.02	6	10939.09				
9063.52	10	11030.21	$33292^{\circ}_{5/2} - 44323_{7/2}$			
9062.62	10	11031.31	$22929_{5/2} - 33961^{\circ}_{7/2}$			
9018.24	3000	11085.60	$27037^{\circ}_{7/2} - 38123_{7/2}$			
9017.33	30	11086.71	$15271_{15/2} - 26357^{\circ}_{13/2}$			
″			$29260_{7/2} - 40347^{\circ}_{5/2}$			
9016.10	10	11088.23				
9015.14	3	11089.41				
8959.48	4	11158.30				
8950.12	9	11169.97	$22791_{7/2} - 33961^{\circ}_{7/2}$			
8895.48	8	11238.58	$21120_{7/2} - 32359^{\circ}_{7/2}$			
8833.13	10	11317.91	$21161_{5/2} - 32479^{\circ}_{5/2}$			
8801.57	10	11358.49	$21120_{7/2} - 32479^{\circ}_{5/2}$			
8800.57	2	11359.78				
8790.54	2	11372.74	$19548_{5/2} - 30921^{\circ}_{7/2}$			
8782.41	20	11383.27	$16957_{7/2} - 28340^{\circ}_{7/2}$			
8680.64	2	11516.73	$23873_{7/2} - 35389^{\circ}_{7/2}$			
8678.80	9	11519.17	$22791_{7/2} - 34310^{\circ}_{9/2}$			
8675.59	4 *h*	11523.43	$25130_{15/2} - 36653^{\circ}_{15/2}$			
″			$33623_{7/2} - 45147^{\circ}_{9/2}$			
8666.23	2	11535.87				
8662.44	10	11540.92	$19466_{13/2} - 31007^{\circ}_{11/2}$			
8650.10	20	11557.39	$16957_{7/2} - 28514^{\circ}_{9/2}$			
8643.60	2	11566.08	$26448^{\circ}_{5/2} - 38014_{5/2}$			
8636.17	3	11576.03				
8635.63	2 *h*	11576.75				
8632.13	50	11581.45	$13119_{9/2} - 24701^{\circ}_{9/2}$			
8626.98	1	11588.36	$13119_{9/2} - 24708^{\circ}_{7/2}$			
8623.97	20	11592.40				
8621.48	2	11595.75				
8619.77	2 *h*	11598.05	$16742_{7/2} - 28340^{\circ}_{7/2}$			
8607.79	30	11614.19	$19466_{13/2} - 31080^{\circ}_{11/2}$			
8604.50	1	11618.63	$21161_{5/2} - 32780^{\circ}_{3/2}$			
8604.10	70	11619.17	$19748_{9/2} - 31367^{\circ}_{7/2}$			
8599.18	5	11625.82				
8592.78	80	11634.48	$19753_{7/2} - 31388^{\circ}_{9/2}$			
8588.88	20	11639.76	$19748_{9/2} - 31388^{\circ}_{9/2}$			
8588.45	1	11640.35				
8563.19	10 *h*	11674.68	$26448^{\circ}_{5/2} - 38123_{7/2}$			
8556.48	2	11683.84	$31080^{\circ}_{11/2} - 42764_{9/2}$			
8555.41	2 *h*	11685.30				
8553.90	2 *h*	11687.36	$23574^{\circ}_{3/2} - 35261_{5/2}$			
8548.18	1	11695.18	$21161_{5/2} - 32856^{\circ}_{5/2}$			
8543.45	2	11701.66	$26646_{9/2} - 38347^{\circ}_{11/2}$			
8529.67	30 *h*	11720.56	$30947^{\circ}_{9/2} - 42667_{9/2}$			
8509.66	20	11748.12				
8500.50	1 *h*	11760.78				
8496.73	5 *h*	11766.00				
8493.16	2 *h*	11770.95	$19748_{9/2} - 31519^{\circ}_{11/2}$			
8479.52	2 *h*	11789.88				
8464.67	1	11810.56				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
8461.77	3	11814.61					
8460.53	1	11816.34					
8445.15	20	11837.86	$13119_{9/2}-24957^{\circ}_{11/2}$				
8435.00	100	11852.11					
8426.92	4 *h*	11863.47	$25656_{5/2}-37519^{\circ}_{7/2}$				
8412.43	10	11883.91					
8405.17	10 *h*	11894.17					
8400.31	2 *h*	11901.05	$21737_{9/2}-33638^{\circ}_{11/2}$				
8396.90	1	11905.89	$32359^{\circ}_{7/2}-44265_{7/2}$				
8379.33	3	11930.85	$25207^{\circ}_{3/2}-37138_{3/2}$				
8371.09	4 *h*	11942.59					
8368.83	2	11945.82	$21997_{11/2}-33943^{\circ}_{13/2}$				
8368.55	3 *h*	11946.22	$19748_{9/2}-31694^{\circ}_{7/2}$				
8365.75	200	11950.22	$19548_{5/2}-31499^{\circ}_{3/2}$				
8351.86	10	11970.09					
8341.12	100 *h*	11985.50	$27377_{13/2}-39362^{\circ}_{11/2}$	T	1.13		
8339.33	3 *h*	11988.08	$26889_{9/2}-38877^{\circ}_{11/2}$				
8323.19	30 *h*	12011.32	$25699^{\circ}_{9/2}-37711_{9/2}$				
8318.79	6	12017.68	$24418_{5/2}-36435^{\circ}_{7/2}$				
8317.21	4	12019.96	$19753_{7/2}-31773^{\circ}_{5/2}$				
8313.44	8	12025.41					
8311.32	4	12028.48					
8305.10	1	12037.49					
8303.97	1	12039.12					
8301.70	10	12042.42	$24137_{13/2}-36179^{\circ}_{15/2}$				
8294.52	200	12052.84	$19466_{13/2}-31519^{\circ}_{11/2}$				
8292.46	7 *h*	12055.83	$25520^{\circ}_{11/2}-37576_{9/2}$				
″			$30124_{7/2}-42179^{\circ}_{5/2}$				
8277.48	2 *h*	12077.65					
8267.94	5	12091.59					
8266.72	2 *h*	12093.37	$18853_{11/2}-30947^{\circ}_{9/2}$				
8265.35	2	12095.38					
8264.84	6	12096.12					
8258.05	10	12106.07					
8255.50	15	12109.81	$18837_{9/2}-30947^{\circ}_{9/2}$				
8248.86	4 *h*	12119.56	$27440^{\circ}_{9/2}-39560_{7/2}$				
″			$21120_{7/2}-33240^{\circ}_{7/2}$				
8245.89	40 *h*	12123.92					
8230.94	2	12145.94	$19548_{5/2}-31694^{\circ}_{7/2}$				
8225.62	7	12153.80	$18853_{11/2}-31007^{\circ}_{11/2}$				
8223.29	20	12157.24					
8215.07	2	12169.41	$25488_{11/2}-37657^{\circ}_{11/2}$				
8214.48	6	12170.28	$36377^{\circ}_{9/2}-48547_{9/2}$				
8202.10	7	12188.65					
8201.73	1	12189.20	$31007^{\circ}_{11/2}-43196_{11/2}$				
8201.15	80 *h*	12190.06	$25520^{\circ}_{11/2}-37711_{9/2}$				
8194.19	1000	12200.42	$26889_{9/2}-39089^{\circ}_{11/2}$				
8182.48	8	12217.87					
8179.41	10	12222.46	$27037^{\circ}_{7/2}-39259_{5/2}$				
8178.84	20 *h*	12223.31	$21737_{9/2}-33961^{\circ}_{7/2}$				
8177.74	15 *h*	12224.96	$19548_{5/2}-31773^{\circ}_{5/2}$				
8176.34	2 *h*	12227.05	$18853_{11/2}-31080^{\circ}_{11/2}$				
8171.58	5	12234.17					
8171.30	1	12234.59	$21161_{5/2}-33396^{\circ}_{7/2}$				
8167.60	2 *h*	12240.13					
8165.39	2 *h*	12243.45	$18837_{9/2}-31080^{\circ}_{11/2}$				
8163.12	2 *h*	12246.85					
8162.34	6	12248.02					
8162.05	3 *h*	12248.46	$26448^{\circ}_{5/2}-38696_{5/2}$				
8156.43	1	12256.90					
8140.40	50	12281.03	$30125_{13/2}-42406^{\circ}_{13/2}$				
8119.35	9	12312.87	$21997_{11/2}-34310^{\circ}_{9/2}$				
8116.52	4	12317.16	$31519^{\circ}_{11/2}-43836_{13/2}$				
8109.39	2 *h*	12327.99	$32446_{7/2}-44774^{\circ}_{9/2}$				
8107.02	8	12331.60					
8102.81	1	12338.01					
8095.19	9	12349.62	$8771^{\circ}_{5/2}-21120_{7/2}$				
8093.82	1 *h*	12351.71	$16957_{7/2}-29308^{\circ}_{9/2}$				
8089.20	40	12358.76	$19748_{9/2}-32107^{\circ}_{11/2}$				
8083.92	100	12366.84	$19132_{3/2}-31499^{\circ}_{3/2}$	ΔJ=0	0.88	1.33	*
8075.40	150	12379.88		SI	1.60	0.50	
8074.23	6	12381.68					
8073.43	3 *h*	12382.90					
8068.70	150	12390.16	$8771^{\circ}_{5/2}-21161_{5/2}$	ΔJ=0	0.85	1.13	*
8063.67	1	12397.89	$18990_{11/2}-31388^{\circ}_{9/2}$				
8061.40	100	12401.38	$13119_{9/2}-25520^{\circ}_{11/2}$	S0	1.309	1.10	*
8056.45	1	12409.00	$32446_{7/2}-44855^{\circ}_{5/2}$				
8045.82	10	12425.40	$25520^{\circ}_{11/2}-37946_{9/2}$				
8040.09	1 *h*	12434.25					
8038.66	1	12436.46	$30972_{11/2}-43408^{\circ}_{11/2}$				
8034.23	40 *h*	12443.32	$26646_{9/2}-39089^{\circ}_{11/2}$	SI	?	0.37	
8028.44	1	12452.30	$21997_{11/2}-34449^{\circ}_{13/2}$				
8021.33	200 *h*	12463.33	$19753_{7/2}-32217^{\circ}_{9/2}$	SI	1.182	1.33	*
8017.90	20000	12468.66	$19748_{9/2}-32217^{\circ}_{9/2}$	ΔJ=0	1.32	0.20	
8014.77	2000	12473.53	$26889_{9/2}-39362^{\circ}_{11/2}$	T	1.20	0.08	
8006.55	1	12486.34	$26357^{\circ}_{13/2}-38844_{11/2}$				
8004.15	1	12490.08	$28448_{5/2}-40938^{\circ}_{5/2}$				
7994.89	2	12504.55	$23873_{7/2}-36377^{\circ}_{9/2}$				
7991.47	100 *h*	12509.90	$27037^{\circ}_{7/2}-39547_{5/2}$	S0	1.09	1.26	*
7985.93	300 *h*	12518.58	$28555_{7/2}-41074^{\circ}_{5/2}$	SI	1.16	0.985	*
7983.14	2 *h*	12522.96	$27037^{\circ}_{7/2}-39560_{7/2}$				
7981.43	2 *h*	12525.64	$29260_{7/2}-41786^{\circ}_{9/2}$				
7979.22	7	12529.11	$18990_{11/2}-31519^{\circ}_{11/2}$				
7978.44	50	12530.33	$18837_{9/2}-31367^{\circ}_{7/2}$	S0	1.145	1.325	*
7975.79	2	12534.50	$18853_{11/2}-31388^{\circ}_{9/2}$				
7975.19	4	12535.44	$21997_{11/2}-34532^{\circ}_{11/2}$				
7971.56	200 *h*	12541.15	$28448_{5/2}-40989^{\circ}_{3/2}$	SI	1.01	0.40	*
7970.23	6 *h*	12543.24	$26701_{7/2}-39244^{\circ}_{9/2}$				
7967.13	1 *h*	12548.12	$23781_{9/2}-36329^{\circ}_{11/2}$				
7962.63	60 *h*	12555.21	$26889_{9/2}-39444^{\circ}_{9/2}$	ΔJ=0	1.13	0.12	
7951.60	4	12572.63	$21737_{9/2}-34310^{\circ}_{9/2}$				
″			$22791_{7/2}-35363^{\circ}_{9/2}$				
7949.63	40 *h*	12575.74	$26701_{7/2}-39277^{\circ}_{5/2}$				
7946.88	30	12580.09	$13119_{9/2}-25699^{\circ}_{9/2}$				
7940.14	70 *h*	12590.77	$26889_{9/2}-39479^{\circ}_{11/2}$				
7934.84	100 *h*	12599.18	$26889_{9/2}-39488^{\circ}_{9/2}$	T	1.09		
7934.00	4	12600.52	$18853_{11/2}-31454^{\circ}_{9/2}$				
7930.84	30000	12605.54	$19753_{7/2}-32359^{\circ}_{7/2}$	T	1.18		
7927.51	20000	12610.83	$19748_{9/2}-32359^{\circ}_{7/2}$	SI	1.29	1.195	*
7923.65	6	12616.98					
7922.14	15 *h*	12619.38	$24957^{\circ}_{11/2}-37576_{9/2}$				
7918.10	600	12625.82	$28448_{5/2}-41074^{\circ}_{5/2}$	ΔJ=0	1.00	0.06	
7916.76	2 *h*	12627.96	$21737_{9/2}-34365^{\circ}_{7/2}$				
7913.80	100	12632.68	$19548_{5/2}-32181^{\circ}_{3/2}$	SI	0.98	0.70	*
7913.43	100 *h*	12633.27	$28555_{7/2}-41189^{\circ}_{7/2}$	ΔJ=0	1.18	0.09	
7908.86	2	12640.57	$19466_{13/2}-32107^{\circ}_{11/2}$				
7905.25	20	12646.34	$19466_{13/2}-32112^{\circ}_{15/2}$				
7901.10	60 *h*	12652.99	$26889_{9/2}-39542^{\circ}_{7/2}$	T	1.15		
7899.17	400 *h*	12656.08	$28555_{7/2}-41211^{\circ}_{7/2}$	T	1.17		
7898.26	2	12657.53	$21120_{7/2}-33778^{\circ}_{7/2}$				
7893.18	8	12665.68	$18853_{11/2}-31519^{\circ}_{11/2}$				
7888.08	9 *h*	12673.87	$26889_{9/2}-39563^{\circ}_{11/2}$				
7880.77	30 *h*	12685.63	$26701_{7/2}-39386^{\circ}_{5/2}$				
7879.58	9	12687.54	$27440^{\circ}_{9/2}-40128_{11/2}$				
7879.35	2	12687.91	$19753_{7/2}-32441^{\circ}_{9/2}$				
7876.07	100	12693.20	$19748_{9/2}-32441^{\circ}_{9/2}$	ΔJ=0	1.25	0.15	
7875.43	2 *h*	12694.23					
7869.99	2	12703.00					
7863.69	3 *h*	12713.18	$26448^{\circ}_{5/2}-39161_{5/2}$				
7861.94	40	12716.01					
7861.67	50 *h*	12716.45	$26646_{9/2}-39362^{\circ}_{11/2}$				
7856.08	5000	12725.49	$19753_{7/2}-32479^{\circ}_{5/2}$	SI	1.18	0.89	*
7845.31	100 *h*	12742.96	$26701_{7/2}-39444^{\circ}_{9/2}$	SI	1.24	0.12	
7839.42	3	12752.54	$22929_{5/2}-35682^{\circ}_{7/2}$				
7838.78	20	12753.58	$24957^{\circ}_{11/2}-37711_{9/2}$				
7838.05	5	12754.77	$26368^{\circ}_{11/2}-39123_{9/2}$				
7833.94	50 *h*	12761.46	$26701_{7/2}-39462^{\circ}_{7/2}$	ΔJ=0	1.08	0.08	
7831.53	1	12765.39	$25717_{7/2}-38482^{\circ}_{7/2}$				
7829.22	100 *h*	12769.15	$26701_{7/2}-39470^{\circ}_{5/2}$	T	1.13		
7823.22	7	12778.94	$26701_{7/2}-39480^{\circ}_{7/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
7818.35	70*h*	12786.90	$26701_{7/2}-39488^{\circ}_{9/2}$	T	1.05		
7813.27	2*h*	12795.22	$21737_{9/2}-34532^{\circ}_{11/2}$				
7811.52	7*h*	12798.08	$26646_{9/2}-39444^{\circ}_{9/2}$				
7810.60	5*h*	12799.59	$21161_{5/2}-33961^{\circ}_{7/2}$				
7808.24	2*h*	12803.46	$24418_{5/2}-37221^{\circ}_{7/2}$				
7807.34	2*h*	12804.94	$23374_{13/2}-36179^{\circ}_{15/2}$				
7803.93	1000	12810.53	$19548_{5/2}-32359^{\circ}_{7/2}$	SI	0.97	1.19	*
7791.23	2	12831.41					
7785.90	150*h*	12840.20	$21120_{7/2}-33961^{\circ}_{7/2}$	ΔJ=0	1.15	0.09	
7785.51	200*h*	12840.84	$26701_{7/2}-39542^{\circ}_{7/2}$	ΔJ=0	1.07	0.11	
7782.35	500	12846.05	$28143_{3/2}-40989^{\circ}_{3/2}$	ΔJ=0	0.66	0.40	*
7778.27	300*h*	12852.79	$26889_{9/2}-39741^{\circ}_{9/2}$	T	1.11		
7775.49	40	12857.39	$18837_{9/2}-31694^{\circ}_{7/2}$	S0	0.98	0.15	
7764.37	40*h*	12875.80	$24701^{\circ}_{9/2}-37576_{9/2}$	ΔJ=0	1.15	0.15	
7754.67	1	12891.91					
7750.26	1	12899.24	$23374_{13/2}-36273^{\circ}_{15/2}$				
7740.31	2	12915.83	$28514^{\circ}_{9/2}-41430_{11/2}$				
7733.80	30*h*	12926.70	$26701_{7/2}-39628^{\circ}_{7/2}$	ΔJ=0	1.08	0.12	
7731.53	10000	12930.49	$19548_{5/2}-32479^{\circ}_{5/2}$	ΔJ=0	0.983	0.89	*
7726.85	5*h*	12938.32	$28051_{5/2}-40989^{\circ}_{3/2}$				
7725.40	30	12940.75					
7721.73	8	12946.90					
7720.40	1	12949.13					
7717.43	5	12954.12	$21737_{9/2}-34691^{\circ}_{11/2}$				
7715.38	5*h*	12957.56	$26701_{7/2}-39658^{\circ}_{5/2}$				
7714.67	5	12958.75	$27037^{\circ}_{7/2}-39996_{7/2}$				
7702.71	50	12978.87		ΔJ=0	1.15	0.09	
7701.46	400*h*	12980.98	$25520^{\circ}_{11/2}-38502_{9/2}$	T	1.09		
7700.30	1*h*	12982.93					
7696.81	100*h*	12988.82		ΔJ=0	1.24	0.16	
7684.00	1	13010.47	$25488_{11/2}-38499^{\circ}_{9/2}$				
7683.48	5	13011.35					
7682.31	2	13013.34					
7677.01	7	13022.32	$24137_{13/2}-37159^{\circ}_{15/2}$				
7676.61	70*h*	13023.00	$28051_{5/2}-41074^{\circ}_{5/2}$	T	0.93		
7676.04	3	13023.97					
7673.66	5*h*	13028.01					
7666.24	500*h*	13040.62	$26701_{7/2}-39741^{\circ}_{9/2}$	T	1.14		
7661.16	50	13049.26	$19132_{3/2}-32181^{\circ}_{3/2}$	ΔJ=0	0.88	0.73	*
7660.32	150	13050.69	$28340^{\circ}_{7/2}-41391_{9/2}$	S0	0.96	0.20	
7655.00	30	13059.76					
7652.41	9	13064.18	$27037^{\circ}_{7/2}-40101_{9/2}$				
7645.60	1	13075.82	$27440^{\circ}_{9/2}-40516_{9/2}$				
7633.98	15*h*	13095.72	$26646_{9/2}-39741^{\circ}_{9/2}$				
″			$25656_{5/2}-38751^{\circ}_{5/2}$				
7631.41	3	13100.13	$30972_{11/2}-44072^{\circ}_{13/2}$				
7630.44	10	13101.80					
7629.85	150	13102.81	$19753_{7/2}-32856^{\circ}_{5/2}$	SI	1.19	1.06	*
7625.18	3*h*	13110.84	$25207^{\circ}_{3/2}-38318_{3/2}$				
7623.67	10*h*	13113.43		ΔJ=0	?	0.68	
7621.67	80	13116.87	$18990_{11/2}-32107^{\circ}_{11/2}$	ΔJ=0	1.215	1.115	*
7620.06	4	13119.64	$0^{\circ}_{7/2}-13119_{9/2}$				
7612.17	1	13133.24					
7605.70	8	13144.42					
7600.99	9	13152.56	$23781_{9/2}-36934^{\circ}_{7/2}$				
7594.90	100*h*	13163.11	$30125_{13/2}-43288^{\circ}_{13/2}$	T	1.11		
7593.74	400*h*	13165.12	$28024_{9/2}-41189^{\circ}_{7/2}$	S0	0.98	0.13	
7591.50	10	13169.00					
7590.51	4*h*	13170.72					
7581.80	6	13185.85					
7580.61	400*h*	13187.92	$28024_{9/2}-41211^{\circ}_{7/2}$	S0	0.99	0.15	
7568.74	1	13208.60	$27440^{\circ}_{9/2}-40649_{7/2}$				
7567.64	5*h*	13210.52					
7558.33	20000	13226.79	$18990_{11/2}-32217^{\circ}_{9/2}$	S0	1.215	1.335	*
7555.80	15	13231.22	$19548_{5/2}-32780^{\circ}_{3/2}$				
7555.54	4	13231.68					
7548.06	5	13244.79	$21120_{7/2}-34365^{\circ}_{7/2}$				
7545.78	300	13248.79	$13119_{9/2}-26368^{\circ}_{11/2}$	S0	1.305	1.125	*
7543.13	20	13253.45	$18853_{11/2}-32107^{\circ}_{11/2}$	ΔJ=0	?	0.20	
7539.36	2*h*	13260.07	$26126_{5/2}-39386^{\circ}_{5/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
7532.99	3*h*	13271.29					
7528.49	2	13279.22	$23374_{13/2}-36653^{\circ}_{15/2}$				
7526.89	20	13282.04	$23374_{13/2}-36656^{\circ}_{11/2}$				
7526.14	10	13283.37	$30125_{13/2}-43408^{\circ}_{11/2}$				
7512.33	60	13307.79	$19548_{5/2}-32856^{\circ}_{5/2}$	ΔJ=0	1.00	0.17	
7507.28	200*h*	13316.74	$25745_{5/2}-39061^{\circ}_{3/2}$	S0	1.09	1.34	*
7503.71	30	13323.07	$25520^{\circ}_{11/2}-38844_{11/2}$	ΔJ=0	1.08	0.12	
7497.83	2	13333.52	$17613_{9/2}-30947^{\circ}_{9/2}$				
7495.86	8	13337.02	$21120_{7/2}-34457^{\circ}_{9/2}$				
7490.20	8000	13347.10	$19132_{3/2}-32479^{\circ}_{5/2}$	T	0.91		
7481.08	10000	13363.37	$18853_{11/2}-32217^{\circ}_{9/2}$	S0	1.15	1.338	*
7477.33	4*h*	13370.08					
7474.67	30	13374.83		T	1.30		
7466.63	3*h*	13389.24					
7461.31	2	13398.78	$26448^{\circ}_{5/2}-39847_{7/2}$				
7452.35	20*h*	13414.89	$24708^{\circ}_{7/2}-38123_{7/2}$	ΔJ=0	1.11	0.25	
7449.80	4*h*	13419.48					
7449.55	4	13419.93	$18693_{15/2}-32112^{\circ}_{15/2}$				
″			$24348_{9/2}-37768^{\circ}_{9/2}$				
7449.35	2	13420.29	$24708^{\circ}_{7/2}-38128_{5/2}$				
7448.45	100*h*	13421.92	$24701^{\circ}_{9/2}-38123_{7/2}$	T	1.12		
7447.60	2	13423.45	$25699^{\circ}_{9/2}-39123_{9/2}$				
7438.76	2	13439.40					
7435.43	5	13445.42					
7432.18	200	13451.30	$18990_{11/2}-32441^{\circ}_{9/2}$	S0	1.09	0.12	
7426.07	2	13462.37	$21799^{\circ}_{3/2}-35261_{5/2}$				
7417.28	20*h*	13478.32					
7416.14	60	13480.39					
7411.36	5*h*	13489.09	$25207^{\circ}_{3/2}-38696_{5/2}$				
7409.86	70	13491.82	$19748_{9/2}-33240^{\circ}_{7/2}$				
7408.83	6	13493.69					
7400.45	3	13508.97	$24137_{13/2}-37646^{\circ}_{13/2}$				
7396.03	10	13517.04	$24611^{\circ}_{5/2}-38128_{5/2}$				
7393.36	30	13521.93	$18837_{9/2}-32359^{\circ}_{7/2}$	S0	0.90	0.23	
7390.26	100*h*	13527.60		T	1.09		
7387.85	100*h*	13532.01	$25745_{5/2}-39277^{\circ}_{5/2}$	ΔJ=0	1.13	0.25	
7385.95	100*h*	13535.49		ΔJ=0	0.92	0.17	
7384.06	4	13538.96	$19753_{7/2}-33292^{\circ}_{5/2}$				
7381.13	10*h*	13544.33					
7379.16	8	13547.95	$26448^{\circ}_{5/2}-39996_{7/2}$				
7372.64	8*h*	13559.93	$25717_{7/2}-39277^{\circ}_{5/2}$				
7370.35	1*h*	13564.14	$23574^{\circ}_{3/2}-37138_{3/2}$				
7369.90	1*h*	13564.97					
7369.50	2	13565.70	$28514^{\circ}_{9/2}-42080_{11/2}$				
7368.39	8	13567.75					
7364.92	3	13574.14	$26368^{\circ}_{11/2}-39942_{11/2}$				
7362.71	50	13578.22	$17343_{7/2}-30921^{\circ}_{7/2}$	ΔJ=0	1.022	0.692	*
7360.42	1*h*	13582.44					
7359.13	2	13584.82	$26357^{\circ}_{13/2}-39942_{11/2}$				
7357.48	2	13587.87	$18853_{11/2}-32441^{\circ}_{9/2}$				
7356.62	5*h*	13589.46					
7348.87	1	13603.79	$17343_{7/2}-30947^{\circ}_{9/2}$				
7344.45	2*h*	13611.97	$27037^{\circ}_{7/2}-40649_{7/2}$				
7342.76	4	13615.11	$17752_{5/2}-31367^{\circ}_{7/2}$				
7342.22	50*h*	13616.11		T	1.26		
7337.74	20*h*	13624.42		ΔJ=0	0.90	0.36	
7336.86	70	13626.06	$17454_{13/2}-31080^{\circ}_{11/2}$	S0	?	1.18	
7332.80	7	13633 60	$27440^{\circ}_{9/2}-41074_{9/2}$				
7332.40	7*h*	13634.34					
7331.65	40*h*	13635.74	$23941^{\circ}_{9/2}-37576_{9/2}$	ΔJ=0	1.24	0.43	
7328.40	10	13641.79					
7328.20	8	13642.16	$19753_{7/2}-33396^{\circ}_{7/2}$				
7327.59	5	13643.29	$26448^{\circ}_{5/2}-40091_{3/2}$	T	1.14		
7325.16	30	13647.82	$19132_{3/2}-32780^{\circ}_{3/2}$	ΔJ=0	0.97	0.26	
7313.80	2*h*	13669.02	$25488_{11/2}-39157^{\circ}_{13/2}$				
7313.40	8*h*	13669.76	$25717_{7/2}-39386^{\circ}_{5/2}$				
7310.51	300	13675.17	$27314_{1/2}-40989^{\circ}_{3/2}$	SI	0.605	0.205	
7303.27	5	13688.73					
7301.77	20	13691.54	$19548_{5/2}-33240^{\circ}_{7/2}$				
7299.49	1*h*	13695.81					

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
7293.67	6	13706.74	$23431^{\circ}_{5/2} - 37138_{3/2}$				
″			$31440_{9/2} - 45147^{\circ}_{9/2}$				
7293.43	5*h*	13707.19	$26889_{9/2} - 40596^{\circ}_{7/2}$				
7291.81	4	13710.24	$27440^{\circ}_{9/2} - 41151_{9/2}$				
7287.86	8*h*	13717.67	$25745_{5/2} - 39462^{\circ}_{7/2}$				
7286.16	200	13720.87	$15587_{11/2} - 29308^{\circ}_{9/2}$	SO	0.175	1.08	
7284.30	100	13724.37	$19132_{3/2} - 32856^{\circ}_{5/2}$	SI	0.86	1.06	*
7283.78	60*h*	13725.35	$25745_{5/2} - 39470^{\circ}_{5/2}$				
7282.85	10*h*	13727.11	$25717_{7/2} - 39444^{\circ}_{9/2}$				
7281.82	20	13729.05	$23335^{\circ}_{7/2} - 37064_{5/2}$	SO	1.30	0.07	
7280.34	3	13731.84					
7279.56	4*h*	13733.31	$26368^{\circ}_{11/2} - 40101_{9/2}$				
7279.02	3	13734.33					
7277.20	3	13737.76	$23781_{9/2} - 37519^{\circ}_{7/2}$				
7277.00	2	13738.14					
7276.15	7	13739.75					
7273.92	30	13743.96	$19548_{5/2} - 33292^{\circ}_{5/2}$	ΔJ=0	0.99	0.624	*
7272.62	500	13746.42	$17752_{5/2} - 31499^{\circ}_{3/2}$	SO	0.97	0.22	
7269.00	4*h*	13753.26	$25717_{7/2} - 39470^{\circ}_{5/2}$	T	0.98		
7265.46	2	13759.96	$26368^{\circ}_{11/2} - 40128_{11/2}$				
7263.81	1*h*	13763.09	$25717_{7/2} - 39480^{\circ}_{7/2}$				
7260.20	6	13769.93					
7259.63	20	13771.01	$25717_{7/2} - 39488^{\circ}_{9/2}$				
7257.72	50	13774.64	$17613_{9/2} - 31388^{\circ}_{9/2}$	ΔJ=0	?	0.85	
7249.43	3	13790.39					
7249.03	10	13791.15					
7245.97	40*h*	13796.97	$25745_{5/2} - 39542^{\circ}_{7/2}$	T	1.065		
7243.47	2	13801.73	$30972_{11/2} - 44774^{\circ}_{9/2}$				
7237.44	2*h*	13813.23					
7231.33	50*h*	13824.91	$25717_{7/2} - 39542^{\circ}_{7/2}$	ΔJ=0	1.03	0.15	
7230.36	5*h*	13826.76					
7214.17	100*h*	13857.79	$25745_{5/2} - 39602^{\circ}_{3/2}$	SO	0.79	0.30	
7212.63	4*h*	13860.75	$25699^{\circ}_{9/2} - 39560_{7/2}$				
7211.50	1*h*	13862.92	$24348_{9/2} - 38211^{\circ}_{7/2}$				
7211.15	2*h*	13863.59					
7209.58	6	13866.61					
7208.74	9	13868.23					
7205.35	7	13874.75	$26889_{9/2} - 40763^{\circ}_{7/2}$				
7202.19	30	13880.84					
7201.12	20*h*	13882.90	$25745_{5/2} - 39628^{\circ}_{7/2}$				
7199.20	4	13886.61	$24957^{\circ}_{11/2} - 38844_{11/2}$				
7198.47	30	13888.01		ΔJ=0	?	0.31	
7186.89	40	13910.39		ΔJ=0	?	0.22	
7186.09	2*h*	13911.94	$27440^{\circ}_{9/2} - 41352_{11/2}$				
7185.17	20*h*	13913.72	$25745_{5/2} - 39658^{\circ}_{5/2}$	ΔJ=0	?	0.34	
7174.78	3*h*	13933.87	$21120_{7/2} - 35054^{\circ}_{9/2}$				
7172.48	2	13938.34					
7169.27	20	13944.58	$21737_{9/2} - 35682^{\circ}_{7/2}$	T	1.10		
7161.52	2*h*	13959.67	$18990_{11/2} - 32950^{\circ}_{13/2}$				
7160.63	1	13961.40	$21997_{11/2} - 35958^{\circ}_{13/2}$				
7159.01	5	13964.56	$16957_{7/2} - 30921^{\circ}_{7/2}$				
7152.04	20	13978.17	$19748_{9/2} - 33726^{\circ}_{9/2}$	ΔJ=0	?	0.68	
7147.55	2	13986.95	$23781_{9/2} - 37768^{\circ}_{9/2}$				
7146.32	3*h*	13989.36	$27440^{\circ}_{9/2} - 41430_{11/2}$				
7145.92	10	13990.14	$16957_{7/2} - 30947^{\circ}_{9/2}$				
7139.95	60	14001.84		ΔJ=0	1.18	0.10	
7138.58	2*h*	14004.53	$22929_{5/2} - 36934^{\circ}_{7/2}$				
7138.21	5*h*	14005.25					
7134.25	3*h*	14013.03					
7132.62	2*h*	14016.23					
7130.73	50	14019.94	$8771^{\circ}_{5/2} - 22791_{7/2}$	SI	0.85	1.13	*
7130.13	1*h*	14021.12	$17752_{5/2} - 31773^{\circ}_{5/2}$				
7128.46	100*h*	14024.41	$17343_{7/2} - 31367^{\circ}_{7/2}$	ΔJ=0	?	1.09	
7128.32	40*h*	14024.69	$25717_{7/2} - 39741^{\circ}_{9/2}$	SI	1.44	0.33	
7123.95	2	14033.29					
7122.09	20	14036.95	$27037^{\circ}_{7/2} - 41074_{9/2}$				
7115.41	15	14050.13					
7109.63	2*h*	14061.55	$28514^{\circ}_{9/2} - 42576_{9/2}$				
7108.06	30	14064.66	$17454_{13/2} - 31519^{\circ}_{11/2}$				
7106.14	150	14068.46	$18693_{15/2} - 32761^{\circ}_{17/2}$	SO	0.56	0.52	
7099.63	10*h*	14081.36	$28514^{\circ}_{9/2} - 42595_{11/2}$				
7095.21	50	14090.13	$34457^{\circ}_{9/2} - 48547_{9/2}$	ΔJ=0	1.085	0.21	
7092.06	5	14096.39	$18853_{11/2} - 32950^{\circ}_{13/2}$				
7083.40	5*h*	14113.62	$27037^{\circ}_{7/2} - 41151_{9/2}$				
7082.23	8*h*	14115.95	$30302_{5/2} - 44418^{\circ}_{7/2}$				
7077.57	5*h*	14125.25					
7072.74	1	14134.90	$26368^{\circ}_{11/2} - 40503_{11/2}$				
7066.52	2*h*	14147.34	$25699^{\circ}_{9/2} - 39847_{7/2}$				
7065.04	4*h*	14150.30	$24348_{9/2} - 38499^{\circ}_{9/2}$				
7061.27	3*h*	14157.85					
7060.97	100	14158.46	$8771^{\circ}_{5/2} - 22929_{5/2}$	ΔJ=0	0.85	1.142	*
7059.94	15	14160.52	$19132_{3/2} - 33292^{\circ}_{5/2}$				
7055.29	7	14169.85					
7054.30	7	14171.84					
7052.05	4	14176.37	$27440^{\circ}_{9/2} - 41617_{7/2}$				
7051.38	1	14177.71	$25520^{\circ}_{11/2} - 39698_{9/2}$				
7050.54	30*h*	14179.40	$28555_{7/2} - 42735^{\circ}_{5/2}$				
7039.74	3	14201.15	$26448^{\circ}_{5/2} - 40649_{7/2}$				
7034.34	150	14212.06		ΔJ=0	1.11	0.10	
7034.12	8	14212.50	$19748_{9/2} - 33961^{\circ}_{7/2}$				
7031.41	1	14217.98	$26368^{\circ}_{11/2} - 40586_{13/2}$				
7029.40	80*h*	14222.04		ΔJ=0	1.33	0.17	
7027.38	1	14226.13	$21997_{11/2} - 36223^{\circ}_{13/2}$				
7026.14	4	14228.64	$26357^{\circ}_{13/2} - 40586_{13/2}$				
7022.44	10	14236.14					
7021.74	3	14237.56					
7019.73	10*h*	14241.63					
7017.90	150	14245.35	$26448^{\circ}_{5/2} - 40693_{3/2}$	SO	1.14	1.32	*
7012.18	50	14256.97	$18693_{15/2} - 32950^{\circ}_{13/2}$				
7011.00	4	14259.37	$27440^{\circ}_{9/2} - 41700_{11/2}$				
7010.79	70	14259.80	$31454^{\circ}_{9/2} - 45714_{11/2}$	SI	1.36	0.10	
6997.38	40	14287.12	$27440^{\circ}_{9/2} - 41728_{9/2}$	ΔJ=0	1.08	0.18	
6994.59	30*h*	14292.82					
6992.80	8	14296.48	$25699^{\circ}_{9/2} - 39996_{7/2}$				
6989.13	40	14303.99		T	1.15		
6980.04	3*h*	14322.62					
6975.33	3*h*	14332.29	$21997_{11/2} - 36329^{\circ}_{11/2}$				
6971.78	10*h*	14339.58	$25207^{\circ}_{3/2} - 39547_{5/2}$	SO	1.20	0.09	
6969.74	7	14343.78					
6954.13	4	14375.98	$23335^{\circ}_{7/2} - 37711_{9/2}$				
6949.54	30	14385.47					
6946.15	2	14392.49	$24137_{13/2} - 38529^{\circ}_{11/2}$				
6941.79	3*h*	14401.53	$23941^{\circ}_{9/2} - 38342_{7/2}$				
6941.55	2	14402.03	$25699^{\circ}_{9/2} - 40101_{9/2}$				
6937.37	80	14410.71	$16957_{7/2} - 31367^{\circ}_{7/2}$	ΔJ=0	1.25	0.57	
6933.32	9	14419.13		T	1.15		
6932.13	4	14421.60	$25520^{\circ}_{11/2} - 39942_{11/2}$				
6928.66	30	14428.83	$17752_{5/2} - 32181^{\circ}_{3/2}$	SI	1.186	0.723	*
6927.90	6	14430.41	$17343_{7/2} - 31773^{\circ}_{5/2}$				
6927.46	3	14431.32	$16957_{7/2} - 31388^{\circ}_{9/2}$				
6923.16	10	14440.29	$19753_{7/2} - 34194^{\circ}_{5/2}$				
″			$30125_{13/2} - 44565^{\circ}_{15/2}$				
6915.86	40	14455.53	$27037^{\circ}_{7/2} - 41493_{5/2}$	SO	0.67	0.43	
6914.35	2*h*	14458.69	$23309_{11/2} - 37768^{\circ}_{9/2}$				
6898.56	80	14491.78		ΔJ=0	1.07	0.33	
6897.70	20	14493.59	$17613_{9/2} - 32107^{\circ}_{11/2}$				
6895.95	4	14497.27	$16957_{7/2} - 31454^{\circ}_{9/2}$				
6894.18	5*h*	14500.99	$26488_{3/2} - 40989^{\circ}_{3/2}$				
6891.27	7	14507.11	$27037^{\circ}_{7/2} - 41544_{5/2}$				
6888.71	9	14512.50					
6884.75	10	14520.85	$21161_{5/2} - 35682^{\circ}_{7/2}$				
6881.11	5	14528.53	$24348_{9/2} - 38877^{\circ}_{11/2}$				
6871.47	2	14548.91					
6869.69	3*h*	14552.68					
6865.58	10	14561.39	$21120_{7/2} - 35682^{\circ}_{7/2}$				
6861.95	2*h*	14569.10					
6856.863	50	14579.91	$19466_{13/2} - 34046^{\circ}_{15/2}$	T	1.22		
6854.115	200	14585.75	$26488_{3/2} - 41074^{\circ}_{5/2}$	SI	1.20	0.21	
6853.56	3	14586.93					
6852.89	2	14588.36					

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
6852.23	7	14589.76	$22929_{5/2}-37519^{\circ}_{7/2}$				
6851.12	4	14592.13	$21737_{9/2}-36329^{\circ}_{11/2}$				
6845.755	1000	14603.56	$17613_{9/2}-32217^{\circ}_{9/2}$	ΔJ=0	1.19	1.33	*
6844.262	2000	14606.75	$17752_{5/2}-32359^{\circ}_{7/2}$	T	1.23		
6835.494	100	14625.49	$16742_{7/2}-31367^{\circ}_{7/2}$	T	1.335		
6831.092	300	14634.91	$26439_{7/2}-41074^{\circ}_{5/2}$	T	1.01		
6826.954	200	14643.78	$24418_{5/2}-39061^{\circ}_{3/2}$	S0	1.06	1.34	*
6820.266	200	14658.14	$17454_{13/2}-32112^{\circ}_{15/2}$				
6805.234	20	14690.52	$27037^{\circ}_{7/2}-41728_{9/2}$				
6794.576	20	14713.56	$27037^{\circ}_{7/2}-41751_{5/2}$	T	1.16	0.5	
6788.516	300	14726.70	$17752_{5/2}-32479^{\circ}_{5/2}$	ΔJ=0	1.185	0.90	*
6783.436	10	14737.72	$16957_{7/2}-31694^{\circ}_{7/2}$	T	1.15		
6781.998	300	14740.85	$24348_{9/2}-39089^{\circ}_{11/2}$	T	1.10		
6779.767	2000	14745.70	$17613_{9/2}-32359^{\circ}_{7/2}$	T	1.19		
6777.927	100	14749.70	$26439_{7/2}-41189^{\circ}_{7/2}$	ΔJ=0	?	0.7	
6767.477	100	14772.48	$26439_{7/2}-41211^{\circ}_{7/2}$	ΔJ=0	1.00	1.18	*
6761.466	10	14785.61	$23335^{\circ}_{7/2}-38120_{9/2}$				
6754.274	10	14801.35	$18837_{9/2}-33638^{\circ}_{11/2}$				
6744.991	4	14821.73	$18990_{11/2}-33812^{\circ}_{13/2}$				
6742.114	30	14828.05	$17613_{9/2}-32441^{\circ}_{9/2}$				
6740.853	3	14830.82					
6739.222	50	14834.41		SI	1.13	0.27	
6726.338	100	14862.83	$26126_{5/2}-40989^{\circ}_{3/2}$	SI	1.09	0.41	*
6723.371	3	14869.39	$23882_{3/2}-38751^{\circ}_{5/2}$				
6721.365	1000	14873.82	$17343_{7/2}-32217^{\circ}_{9/2}$	SI	1.022	1.333	*
6692.931	200	14937.01	$19132_{3/2}-34069^{\circ}_{1/2}$	SI	1.02	0.125	
6688.241	10	14947.49	$26126_{5/2}-41074^{\circ}_{5/2}$				
6685.990	4	14952.52	$16742_{7/2}-31694^{\circ}_{7/2}$				
6684.533	30	14955.78	$18837_{9/2}-33793^{\circ}_{11/2}$				
6678.652	10	14968.95	$24418_{5/2}-39386^{\circ}_{5/2}$				
6678.431	3	14969.44					
6672.681	30	14982.34	$25520^{\circ}_{11/2}-40503_{11/2}$	ΔJ=0	1.10	0.05	
6672.337	50	14983.12	$19466_{13/2}-34449^{\circ}_{13/2}$	ΔJ=0	1.16	0.14	
6671.768	3	14984.39	$26368^{\circ}_{11/2}-41352_{11/2}$				
6659.025	7	15013.07	$21997_{11/2}-37010^{\circ}_{9/2}$				
6658.639	500	15013.94	$24348_{9/2}-39362^{\circ}_{11/2}$	T	1.12		
6657.720	2000	15016.01	$17343_{7/2}-32359^{\circ}_{7/2}$	ΔJ=0	1.02	1.19	*
6657.095	40	15017.42	$22559^{\circ}_{11/2}-37576_{9/2}$				
6656.502	2	15018.76	$25745_{5/2}-40763^{\circ}_{7/2}$				
6654.745	1	15022.72	$26368^{\circ}_{11/2}-41391_{9/2}$				
6653.692	10	15025.10					
6652.675	30	15027.40	$17752_{5/2}-32780^{\circ}_{3/2}$				
6650.852	100	15031.52	$16742_{7/2}-31773^{\circ}_{5/2}$				
6645.212	40	15044.27					
6644.996	30	15044.76	$26448^{\circ}_{5/2}-41493_{5/2}$				
″			$24418_{5/2}-39467^{\circ}_{7/2}$				
6643.026	5	15049.23					
6642.556	7	15050.29	$25536^{\circ}_{15/2}-40586_{13/2}$				
6641.592	30	15052.47	$24418_{5/2}-39470^{\circ}_{5/2}$	T	1.08		
6637.463	3	15061.84	$26368^{\circ}_{11/2}-41430_{11/2}$				
6637.273	100	15062.27	$26126_{5/2}-41189^{\circ}_{7/2}$	SI	1.39	0.20	
6636.080	3	15064.98	$24348_{9/2}-39413^{\circ}_{7/2}$				
6635.528	30	15066.23	$19466_{13/2}-34532^{\circ}_{11/2}$	T	1.25		
6632.770	2	15072.50	$26357^{\circ}_{13/2}-41430_{11/2}$				
6630.445	2	15077.78					
6627.248	100	15085.05	$26126_{5/2}-41211^{\circ}_{7/2}$	SI	1.40	0.22	
6625.313	5	15089.46	$18853_{11/2}-33943^{\circ}_{13/2}$				
6624.609	1	15091.06					
6622.619	20	15095.60	$24348_{9/2}-39444^{\circ}_{9/2}$				
6621.420	30	15098.33	$17343_{7/2}-32441^{\circ}_{9/2}$	ΔJ=1	?	0.80	
6620.230	2	15101.05	$26368^{\circ}_{11/2}-41469_{13/2}$				
6619.814	10	15101.99	$8771^{\circ}_{5/2}-23873_{7/2}$				
6619.698	5	15102.26	$27440^{\circ}_{9/2}-42543_{7/2}$				
6619.433	1	15102.86	$25699^{\circ}_{9/2}-40802_{7/2}$				
6618.946	2	15103.97	$17752_{5/2}-32856^{\circ}_{5/2}$				
6616.797	40	15108.88	$22468^{\circ}_{11/2}-37576_{9/2}$				
6615.563	10	15111.70	$26357^{\circ}_{13/2}-41469_{13/2}$				
6613.516	2	15116.38					
6612.340	4	15119.06	$18693_{15/2}-33812^{\circ}_{13/2}$				
6610.318	40	15123.69	$18837_{9/2}-33961^{\circ}_{7/2}$	T	1.12		
6610.112	10*h*	15124.16	$24418_{5/2}-39542^{\circ}_{7/2}$	T	1.03		
6607.045	3	15131.18	$24348_{9/2}-39479^{\circ}_{11/2}$				
6604.955	2000	15135.97	$17343_{7/2}-32479^{\circ}_{5/2}$	SI	1.02	0.89	*
6603.397	3	15139.54	$24348_{9/2}-39488^{\circ}_{9/2}$				
6602.211	1	15142.26					
6600.516	5	15146.15					
6598.134	20	15151.62	$22559^{\circ}_{11/2}-37711_{9/2}$	T	1.13		
6591.239	4	15167.47					
6590.585	1	15168.97	$26448^{\circ}_{5/2}-41617_{7/2}$				
6589.744	5	15170.91	$24957^{\circ}_{11/2}-40128_{11/2}$				
6583.684	20	15184.87	$24418_{5/2}-39602^{\circ}_{3/2}$				
6581.884	1	15189.02	$23309_{11/2}-38499^{\circ}_{9/2}$				
6580.963	5	15191.15	$30972_{11/2}-46163^{\circ}_{11/2}$				
6580.057	1	15193.24					
6579.961	2	15193.46	$25745_{5/2}-40938^{\circ}_{5/2}$				
″			$24348_{9/2}-39542^{\circ}_{7/2}$				
6578.644	7	15196.50	$21737_{9/2}-36934^{\circ}_{7/2}$				
6577.161	1	15199.93					
6575.542	100	15203.67		S0	0.66	0.31	
6573.521	2	15208.35					
6572.828	4	15209.95	$24418_{5/2}-39628^{\circ}_{7/2}$				
6570.961	2	15214.27	$24348_{9/2}-39563^{\circ}_{11/2}$				
6568.632	1	15219.67	$23309_{11/2}-38529^{\circ}_{11/2}$				
6566.287	100	15225.10	$19466_{13/2}-34691^{\circ}_{11/2}$	T	1.17		
6565.525	10	15226.87	$27440^{\circ}_{9/2}-42667_{9/2}$				
6557.386	2	15245.77	$25130_{15/2}-40376^{\circ}_{13/2}$				
6555.488	20	15250.18	$18693_{15/2}-33943^{\circ}_{13/2}$				
6555.395	2	15250.40					
6552.617	2	15256.86	$21120_{7/2}-36377^{\circ}_{9/2}$				
6551.623	5	15259.18					
6551.185	100	15260.20	$16957_{7/2}-32217^{\circ}_{9/2}$				
6547.015	1	15269.92					
6543.725	5*h*	15277.60	$27440^{\circ}_{9/2}-42718_{9/2}$				
6541.883	3	15281.90	$22929_{5/2}-38211^{\circ}_{7/2}$				
6539.825	40	15286.71					
6539.134	1	15288.32	$24708^{\circ}_{7/2}-39996_{7/2}$				
6535.449	20	15296.94	$24137_{13/2}-39434^{\circ}_{13/2}$				
6534.406	100	15299.38		T	1.17	0.07	
6534.215	10	15299.83					
6533.784	1	15300.84	$19753_{7/2}-35054^{\circ}_{9/2}$				
6531.528	2	15306.12	$19748_{9/2}-35054^{\circ}_{9/2}$				
6530.807	50	15307.81	$23781_{9/2}-39089^{\circ}_{11/2}$	S0	0.82	0.25	
6525.863	2	15319.41	$25536^{\circ}_{15/2}-40855_{13/2}$				
6525.648	5	15319.92	$18990_{11/2}-34310^{\circ}_{9/2}$				
6523.994	20*h*	15323.80	$27440^{\circ}_{9/2}-42764_{9/2}$				
6519.778	200	15333.71	$25656_{5/2}-40989^{\circ}_{3/2}$	SI	0.72	0.40	*
6519.421	1	15334.55	$25520^{\circ}_{11/2}-40855_{13/2}$				
6517.443	5	15339.20	$21799^{\circ}_{3/2}-37138_{3/2}$				
6515.094	3	15344.73					
6514.208	2	15346.82	$23873_{9/2}-39220^{\circ}_{9/2}$				
6513.678	1	15348.07					
6513.640	1	15348.16					
6511.384	40	15353.48	$18693_{15/2}-34046^{\circ}_{15/2}$	T	1.16		
6507.663	300	15362.26		S0	0.73	0.11	
6507.302	20	15363.11					
6503.803	2	15371.37	$23873_{7/2}-39244^{\circ}_{9/2}$				
6498.085	1	15384.90	$24611^{\circ}_{5/2}-39996_{7/2}$				
6496.873	3	15387.77	$26448^{\circ}_{5/2}-41836_{5/2}$				
6494.573	40	15393.22	$24348_{9/2}-39741^{\circ}_{9/2}$	T	1.10		
6493.905	3	15394.80	$13119_{9/2}-28514^{\circ}_{9/2}$				
6490.703	200	15402.40	$16957_{7/2}-32359^{\circ}_{7/2}$	ΔJ=0	1.18	0.10	
6489.080	20*h*	15406.25					
6485.678	1	15414.33					
6483.978	40	15418.37	$25656_{5/2}-41074^{\circ}_{5/2}$				
6480.185	40	15427.40	$27440^{\circ}_{9/2}-42868_{11/2}$				
6478.173	1	15432.19					
6476.494	20	15436.19					
6473.192	3	15444.06	$25745_{5/2}-41189^{\circ}_{7/2}$				
6472.815	1	15444.96	$25699^{\circ}_{9/2}-41144_{7/2}$				
6470.630	5	15450.18	$19548_{5/2}-34999^{\circ}_{3/2}$				

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Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
6470.203	3	15451.20					
6467.980	7	15456.51	$18853_{11/2}-34310^{\circ}_{9/2}$				
6467.389	1	15457.92					
6466.788	20	15459.36	$18990_{11/2}-34449^{\circ}_{13/2}$				
6465.814	10	15461.68	$27440^{\circ}_{9/2}-42902_{9/2}$				
6463.405	30	15467.45	$18990_{11/2}-34457^{\circ}_{9/2}$	SI	1.30	0.09	
6462.940	1 *h*	15468.56					
6461.146	1	15472.85	$26646_{9/2}-42119^{\circ}_{11/2}$				
6460.261	5000	15474.97	$16742_{7/2}-32217^{\circ}_{9/2}$	T	1.35		
6458.850	2 *h*	15478.36					
6458.032	1	15480.32	$24611^{\circ}_{5/2}-40091_{3/2}$				
6456.201	30	15484.71	$16957_{7/2}-32441^{\circ}_{9/2}$	SI	1.53	0.27	
6455.985	2	15485.22					
6454.936	20	15487.74	$17752_{5/2}-33240^{\circ}_{7/2}$	T	1.14		
6452.737	30	15493.02	$15587_{11/2}-31080^{\circ}_{11/2}$				
6451.587	1	15495.78					
6444.334	30	15513.22	$17343_{7/2}-32856^{\circ}_{5/2}$	T	0.98		
6444.117	20	15513.74	$23873_{7/2}-39386^{\circ}_{5/2}$				
6443.060	2	15516.29	$27440^{\circ}_{9/2}-42957_{11/2}$				
6442.656	2	15517.26					
6440.829	1	15521.66					
6440.540	100	15522.36	$16957_{7/2}-32479^{\circ}_{5/2}$	SI	1.17	0.90	*
6438.105	200	15528.23	$18837_{9/2}-34365^{\circ}_{7/2}$	S0	0.88	0.25	
6437.887	2	15528.76					
6436.070	30 *h*	15533.14	$25656_{5/2}-41189^{\circ}_{7/2}$				
6433.173	5	15540.13	$17752_{5/2}-33292^{\circ}_{5/2}$				
6432.197	1	15542.49	$18990_{11/2}-34532^{\circ}_{11/2}$				
6427.655	4	15553.47	$25520^{\circ}_{11/2}-41074_{9/2}$				
6426.638	20	15555.94	$25656_{5/2}-41211^{\circ}_{7/2}$				
6425.366	4	15559.02					
6424.452	6 *h*	15561.23	$22559^{\circ}_{11/2}-38120_{9/2}$				
6421.975	1	15567.23	$23309_{11/2}-38877^{\circ}_{11/2}$				
6420.390	5	15571.07	$23873_{7/2}-39444^{\circ}_{9/2}$				
6416.319	60	15580.95	$23781_{9/2}-39362^{\circ}_{11/2}$	S0	1.05	0.08	
6412.770	10	15589.58	$23873_{7/2}-39462^{\circ}_{7/2}$				
6410.978	3	15593.93					
6410.150	30	15595.95	$18853_{11/2}-34449^{\circ}_{13/2}$				
6409.603	10	15597.28	$23873_{7/2}-39470^{\circ}_{5/2}$				
6409.479	10	15597.58	$18990_{11/2}-34587^{\circ}_{9/2}$				
6408.274	2 *h*	15600.51	$24246^{\circ}_{7/2}-39847_{7/2}$				
6406.823	50	15604.05	$18853_{11/2}-34457^{\circ}_{9/2}$	S0	0.99	0.16	
6405.582	3	15607.07	$23873_{7/2}-39480^{\circ}_{7/2}$				
6403.209	20	15612.85					
6402.320	40	15615.02	$23873_{7/2}-39488^{\circ}_{9/2}$	T	1.09		
6401.439	200	15617.17	$16742_{7/2}-32359^{\circ}_{7/2}$	ΔJ=0	1.32	1.19	*
6398.121	5	15625.27	$30972_{11/2}-46597^{\circ}_{13/2}$				
6397.533	10	15626.71	$17613_{9/2}-33240^{\circ}_{7/2}$	T	1.21		
6396.134	2	15630.12	$25520^{\circ}_{11/2}-41151_{9/2}$				
6396.065	20	15630.29	$27037^{\circ}_{7/2}-42667_{9/2}$	T	1.08		
6389.319	10	15646.80	$8771^{\circ}_{5/2}-24418_{5/2}$				
6388.534	5	15648.72	$21997_{11/2}-37646^{\circ}_{13/2}$				
6386.912	6 *w*	15652.69	$22468^{\circ}_{11/2}-38120_{9/2}$				
6386.744	4	15653.10	$25699^{\circ}_{9/2}-41352_{11/2}$				
6385.527	4	15656.09	$16456_{17/2}-32112^{\circ}_{15/2}$				
6385.130	6	15657.06	$25536^{\circ}_{15/2}-41193_{13/2}$				
6384.951	1	15657.50					
6383.744	2	15660.46	$21997_{11/2}-37657^{\circ}_{11/2}$				
6380.270	200	15668.99	$23873_{7/2}-39542^{\circ}_{7/2}$	ΔJ=0	1.10	0.15	
6376.166	7	15679.07	$18853_{11/2}-34532^{\circ}_{11/2}$				
6375.383	40	15681.00	$23781_{9/2}-39462^{\circ}_{7/2}$	T	1.08		
6371.152	1	15691.41	$22791_{7/2}-38482^{\circ}_{7/2}$				
6369.489	10	15695.51	$18837_{9/2}-34532^{\circ}_{11/2}$				
6368.412	6	15698.16	$23781_{9/2}-39479^{\circ}_{11/2}$				
6367.880	100	15699.47	$16742_{7/2}-32441^{\circ}_{9/2}$	S0	0.99	0.25	
6365.022	8	15706.52	$23781_{9/2}-39488^{\circ}_{9/2}$				
6364.489	1	15707.84	$22791_{7/2}-38499^{\circ}_{9/2}$				
6364.323	1	15708.25	$28555_{7/2}-44263^{\circ}_{7/2}$				
6362.908	10	15711.74	$26368^{\circ}_{11/2}-42080_{11/2}$				
6359.156	3	15721.01					
6358.588	4	15722.42	$26357^{\circ}_{13/2}-42080_{11/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
6355.308	1	15730.53	$25699^{\circ}_{9/2}-41430_{11/2}$				
6353.842	6	15734.16	$18853_{11/2}-34587^{\circ}_{9/2}$				
6353.722	1	15734.46	$22929_{5/2}-38664^{\circ}_{7/2}$				
6353.470	3	15735.08					
6352.660	300	15737.09	$16742_{7/2}-32479^{\circ}_{5/2}$	SI	1.324	0.89	*
6349.066	30	15745.99	$27037^{\circ}_{7/2}-42783_{7/2}$				
6347.203	1	15750.62	$18837_{9/2}-34587^{\circ}_{9/2}$				
6345.885	1	15753.89	$29316_{9/2}-45070^{\circ}_{9/2}$				
6345.528	20	15754.77	$23873_{7/2}-39628^{\circ}_{7/2}$				
6344.748	100	15756.71	$18693_{15/2}-34449^{\circ}_{13/2}$	T	1.17		
6344.373	1	15757.64	$23941^{\circ}_{9/2}-39698_{9/2}$				
6338.916	2	15771.21	$21997_{11/2}-37768^{\circ}_{9/2}$				
6338.520	10	15772.19		T	1.14	0.03	
6338.270	3	15772.81	$21161_{5/2}-36934^{\circ}_{7/2}$				
6334.658	1	15781.81	$21737_{9/2}-37519^{\circ}_{7/2}$				
6334.454	1	15782.32	$17613_{9/2}-33396^{\circ}_{7/2}$				
6332.154	1	15788.05	$23335^{\circ}_{7/2}-39123_{9/2}$				
6330.596	1	15791.93					
6325.911	1	15803.63					
6323.217	1	15810.36					
6322.015	1	15813.37	$21120_{7/2}-36934^{\circ}_{7/2}$				
6318.529	3	15822.09	$22929_{5/2}-38751^{\circ}_{5/2}$	ΔJ=0	1.18	0.215	
6314.649	7	15831.82	$25520^{\circ}_{11/2}-41352_{11/2}$	ΔJ=0	1.09	0.19	
6312.195	20	15837.97	$18853_{11/2}-34691^{\circ}_{11/2}$	T	1.153		
6310.012	1	15843.45					
6306.266	1	15852.86	$26889_{9/2}-42742^{\circ}_{7/2}$				
6305.650	50	15854.41	$18837_{9/2}-34691^{\circ}_{11/2}$	SI	1.205	0.045	
6302.513	10	15862.30	$27440^{\circ}_{9/2}-43303_{7/2}$				
6300.742	1	15866.76	$19132_{3/2}-34999^{\circ}_{3/2}$				
6299.975	100 *h*	15868.69	$23873_{7/2}-39741^{\circ}_{9/2}$	S0	1.03	0.095	
6298.751	1	15871.77	$23335^{\circ}_{7/2}-39206_{9/2}$				
6298.268	1	15872.99	$22791_{7/2}-38664^{\circ}_{7/2}$				
6297.030	1	15876.11					
6296.465	2	15877.54	$25656_{5/2}-41533^{\circ}_{5/2}$				
6295.570	1	15879.79					
6294.959	3	15881.34	$25207^{\circ}_{3/2}-41089_{1/2}$				
6294.475	30	15882.56		S0	1.16	0.095	
6291.647	5	15889.70	$21120_{7/2}-37010^{\circ}_{9/2}$	S0	0.84	0.27	
6288.756	3	15897.00	$17343_{7/2}-33240^{\circ}_{7/2}$				
6288.335	2	15898.06	$24957^{\circ}_{11/2}-40855_{13/2}$				
6286.746	1	15902.08					
6285.873	1	15904.29					
6285.205	2	15905.98	$23941^{\circ}_{9/2}-39847_{7/2}$				
6283.915	7	15909.25	$25520^{\circ}_{11/2}-41430_{11/2}$				
6279.574	2	15920.24	$21737_{9/2}-37657^{\circ}_{11/2}$				
6278.563	1	15922.81	$22419^{\circ}_{9/2}-38342_{7/2}$				
6277.767	5 *h*	15924.83	$23335^{\circ}_{7/2}-39259_{5/2}$				
6277.515	50	15925.47	$21799^{\circ}_{3/2}-37724_{5/2}$				
6276.349	6	15928.42	$19753_{7/2}-35682^{\circ}_{7/2}$	ΔJ=0	1.14	0.23	
6276.191	1	15928.83					
6275.622	7	15930.27		ΔJ=0	1.00	0.44	
6274.882	6 *h*	15932.15	$22929_{5/2}-38861^{\circ}_{5/2}$				
6274.417	10	15933.33	$25536^{\circ}_{15/2}-41469_{13/2}$	T	1.20		
6271.029	1	15941.94	$22902^{\circ}_{13/2}-38844_{11/2}$				
6269.050	1	15946.97	$27491_{11/2}-43438^{\circ}_{13/2}$				
6263.850	20 *h*	15960.21	$23781_{9/2}-39741^{\circ}_{9/2}$	ΔJ=0	1.12	0.13	
6257.635	2	15976.06					
6257.439	2	15976.56	$24137_{13/2}-40113^{\circ}_{13/2}$				
6248.071	1	16000.51	$25699^{\circ}_{9/2}-41700_{11/2}$				
6247.687	3	16001.50	$23941^{\circ}_{9/2}-39942_{11/2}$				
6243.947	1	16011.08					
6242.292	2	16015.33	$21997_{11/2}-38012^{\circ}_{13/2}$				
6241.869	1	16016.41					
6237.245	1	16028.29	$25699^{\circ}_{9/2}-41728_{9/2}$				
6225.129	1	16059.48	$23374_{13/2}-39434^{\circ}_{13/2}$				
6224.548	8	16060.98	$26368^{\circ}_{11/2}-42429_{11/2}$	ΔJ=0	1.14	0.33	
6223.272	5	16064.27	$18990_{11/2}-35054^{\circ}_{9/2}$	S0	0.90	0.30	
6220.419	1	16071.64	$26357^{\circ}_{13/2}-42429_{11/2}$				
6216.288	3	16082.32	$24611^{\circ}_{5/2}-40693_{3/2}$				
″			$22419^{\circ}_{9/2}-38502_{9/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
6214.069	3	16088.06	$26368^{\circ}_{11/2}-42456_{13/2}$				
6211.445	40	16094.86	$26448^{\circ}_{5/2}-42543_{7/2}$	T	1.06		
6210.814	1	16096.50	$25745_{5/2}-41841^{\circ}_{7/2}$				
6209.952	10	16098.73	$26357^{\circ}_{13/2}-42456_{13/2}$	ΔJ=0	1.20	0.08	
6209.215	7	16100.64	$21120_{7/2}-37221^{\circ}_{7/2}$				
6204.446	5	16113.02	$17613_{9/2}-33726^{\circ}_{9/2}$				
6204.082	1	16113.96					
6203.927	20	16114.36	$16742_{7/2}-32856^{\circ}_{5/2}$	SI	1.33	1.06	*
6200.154	1	16124.17	$23309_{11/2}-39434^{\circ}_{13/2}$				
6199.916	1	16124.79	$19548_{5/2}-35673^{\circ}_{5/2}$				
6197.110	10	16132.09	$22929_{5/2}-39061^{\circ}_{3/2}$				
6196.602	4	16133.41	$19548_{5/2}-35682^{\circ}_{7/2}$				
6190.922	4	16148.22	$26448^{\circ}_{5/2}-42596_{5/2}$				
6184.958	2	16163.79	$21997_{11/2}-38161^{\circ}_{11/2}$				
6180.164	10	16176.32					
6180.011	1	16176.73	$26368^{\circ}_{11/2}-42545_{13/2}$				
6179.429	1	16178.25	$23309_{11/2}-39488^{\circ}_{9/2}$				
″			$24418_{5/2}-40596^{\circ}_{7/2}$				
6179.047	10	16179.25	$25520^{\circ}_{11/2}-41700_{11/2}$	ΔJ=0	1.14	0.16	
6178.956	1	16179.49	$17613_{9/2}-33793^{\circ}_{11/2}$				
6177.259	30	16183.93	$17454_{13/2}-33638^{\circ}_{11/2}$	S00	1.15	1.42	*
6175.947	1 *h*	16187.37	$26357^{\circ}_{13/2}-42545_{13/2}$				
6175.294	400	16189.08	$13119_{9/2}-29308^{\circ}_{9/2}$	ΔJ=0	1.40	0.80	
6170.806	8	16200.86	$18853_{11/2}-35054^{\circ}_{9/2}$	S0	0.55	0.60	
6169.821	1	16203.44					
6168.458	10	16207.02	$25520^{\circ}_{11/2}-41728_{9/2}$	SI	1.32	0.20	
6167.917	40	16208.44	$17752_{5/2}-33961^{\circ}_{7/2}$				
6166.500	20	16212.17	$23335^{\circ}_{7/2}-39547_{5/2}$	SI	1.55	0.19	
6164.550	2	16217.30	$18837_{9/2}-35054^{\circ}_{9/2}$				
6160.720	40	16227.38	$26368^{\circ}_{11/2}-42595_{11/2}$				
6156.671	10	16238.05	$26357^{\circ}_{13/2}-42595_{11/2}$				
6153.396	1	16246.69					
6151.992	1	16250.40					
6151.000	5	16253.02	$23309_{11/2}-39563^{\circ}_{11/2}$				
6146.215	2	16265.67	$27037^{\circ}_{7/2}-43303_{7/2}$				
6144.742	3	16269.57					
6142.800	5	16274.72	$27440^{\circ}_{9/2}-43715_{11/2}$				
6139.548	1	16283.34	$16957_{7/2}-33240^{\circ}_{7/2}$				
6139.086	1	16284.56	$22559^{\circ}_{11/2}-38844_{11/2}$				
6138.795	10	16285.34	$25207^{\circ}_{3/2}-41493_{5/2}$				
6131.532	200	16304.63	$16456_{17/2}-32761^{\circ}_{17/2}$	ΔJ=0	1.14	0.54	
6129.673	1	16309.57					
6119.445	2	16336.83	$25207^{\circ}_{3/2}-41544_{5/2}$				
6118.883	150	16338.33	$17454_{13/2}-33793^{\circ}_{11/2}$	S0	0.65	0.50	
6117.028	2	16343.28					
6115.490	5 *h*	16347.39	$17613_{9/2}-33961^{\circ}_{7/2}$				
6114.360	1	16350.42	$21997_{11/2}-38347^{\circ}_{11/2}$				
6111.778	5	16357.32	$17454_{13/2}-33812^{\circ}_{13/2}$				
6109.439	1	16363.59	$23335^{\circ}_{7/2}-39698_{9/2}$				
6104.797	2	16376.03	$22468^{\circ}_{11/2}-38844_{11/2}$				
6103.150	5	16380.45	$25699^{\circ}_{9/2}-42080_{11/2}$				
6101.149	1	16385.82	$25488_{11/2}-41874^{\circ}_{11/2}$				
6100.538	3	16387.46	$21997_{11/2}-38384^{\circ}_{9/2}$				
6096.377	1	16398.65	$21120_{7/2}-37519^{\circ}_{7/2}$				
6093.856	1	16405.43	$29308^{\circ}_{9/2}-45714_{11/2}$				
6092.771	1	16408.35					
6091.873	1	16410.77					
6090.220	2	16415.22	$24348_{9/2}-40763^{\circ}_{7/2}$				
″			$23431^{\circ}_{5/2}-39847_{7/2}$				
6088.713	1	16419.29					
6086.848	8	16424.32	$22419^{\circ}_{9/2}-38844_{11/2}$				
6085.977	2	16426.67	$27037^{\circ}_{7/2}-43464_{9/2}$				
6085.445	1	16428.10	$26448^{\circ}_{5/2}-42876_{5/2}$				
6084.574	1	16430.46					
6082.898	1	16434.98	$17343_{7/2}-33778^{\circ}_{7/2}$				
6081.586	1	16438.53	$21799^{\circ}_{3/2}-38237_{3/2}$				
6080.782	1	16440.70	$32107^{\circ}_{11/2}-48547_{9/2}$				
6080.504	10	16441.45	$17752_{5/2}-34194^{\circ}_{5/2}$				
6078.362	2	16447.25					
6075.555	4	16454.85					
6075.211	1	16455.78					
6074.670	1	16457.24	$22929_{5/2}-39386^{\circ}_{5/2}$				
6072.656	2	16462.70	$25717_{7/2}-42179^{\circ}_{5/2}$				
6068.945	1	16472.77	$24957^{\circ}_{11/2}-41430_{11/2}$				
6068.508	1	16473.95	$21737_{9/2}-38211^{\circ}_{7/2}$				
6067.411	10	16476.93	$27037^{\circ}_{7/2}-43514_{7/2}$				
6064.827	1	16483.95	$22929_{5/2}-39413^{\circ}_{7/2}$				
6063.169	20	16488.46	$17454_{13/2}-33943^{\circ}_{13/2}$				
6062.533	1	16490.19	$22929_{5/2}-39419^{\circ}_{3/2}$				
6059.091	2	16499.56					
6058.988	5	16499.84	$26368^{\circ}_{11/2}-42868_{11/2}$				
6057.992	1	16502.55					
6057.553	2	16503.75	$26448^{\circ}_{5/2}-42952_{7/2}$				
6055.655	2	16508.92					
6055.268	1	16509.97	$18853_{11/2}-35363^{\circ}_{9/2}$				
6055.072	2	16510.51	$26357^{\circ}_{13/2}-42868_{11/2}$				
6054.541	20	16511.96	$23335^{\circ}_{7/2}-39847_{7/2}$				
″			$24957^{\circ}_{11/2}-41469_{13/2}$				
6052.810	1	16516.68					
6049.419	1	16525.94	$24137_{13/2}-40663^{\circ}_{11/2}$				
6047.127	2	16532.20	$21997_{11/2}-38529^{\circ}_{11/2}$				
6046.804	1	16533.08	$22929_{5/2}-39462^{\circ}_{7/2}$				
6044.181	10	16540.26	$27440^{\circ}_{9/2}-43981_{7/2}$				
″			$26889_{9/2}-43429^{\circ}_{9/2}$				
6043.989	2	16540.78	$22929_{5/2}-39470^{\circ}_{5/2}$				
″			$24246^{\circ}_{7/2}-40787_{5/2}$				
6043.767	2	16541.39	$19132_{3/2}-35673^{\circ}_{5/2}$				
6043.068	10	16543.31	$25207^{\circ}_{3/2}-41751_{5/2}$	S0	1.06	1.36	
6040.260	1	16551.00	$28340^{\circ}_{7/2}-44891_{7/2}$				
6039.780	40	16552.31					
6038.380	2	16556.15	$24246^{\circ}_{7/2}-40802_{7/2}$				
6037.696	1	16558.02					
6037.279	15	16559.17	$25520^{\circ}_{11/2}-42080_{11/2}$				
6036.983	10	16559.98					
6035.639	1	16563.67	$22559^{\circ}_{11/2}-39123_{9/2}$				
6035.389	3	16564.35	$23431^{\circ}_{5/2}-39996_{7/2}$				
6034.254	1	16567.47					
6031.303	3	16575.58	$23941^{\circ}_{9/2}-40516_{9/2}$				
6026.521	1 *h*	16588.73	$26368^{\circ}_{11/2}-42957_{11/2}$				
6025.437	200	16591.71	$17454_{13/2}-34046^{\circ}_{15/2}$	SI	1.45	0.30	
6024.192	1	16595.14					
6021.645	2	16602.16	$27377_{13/2}-43979^{\circ}_{13/2}$				
6020.036	2	16606.60					
6019.165	1	16609.00					
6018.978	1	16609.52					
6018.732	1	16610.20	$21737_{9/2}-38347^{\circ}_{11/2}$				
6017.905	2	16612.48	$22929_{5/2}-39542^{\circ}_{7/2}$				
6017.724	2	16612.98	$17752_{5/2}-34365^{\circ}_{7/2}$				
6017.195	1	16614.44					
6016.016	7	16617.69	$17343_{7/2}-33961^{\circ}_{7/2}$				
6015.899	5	16618.02	$25520^{\circ}_{11/2}-42139_{9/2}$				
6014.283	1	16622.48	$22791_{7/2}-39413^{\circ}_{7/2}$				
6013.767	1	16623.91	$19753_{7/2}-36377^{\circ}_{9/2}$				
6013.417	1	16624.88	$26488_{3/2}-43113^{\circ}_{5/2}$				
6011.856	3	16629.19	$19748_{9/2}-36377^{\circ}_{9/2}$				
6011.777	8	16629.41	$15587_{11/2}-32217^{\circ}_{9/2}$				
6011.373	1	16630.53	$25488_{11/2}-42119^{\circ}_{11/2}$				
6010.058	3	16634.17					
6009.920	15	16634.55	$21799^{\circ}_{3/2}-38433_{5/2}$				
6009.812	2	16634.85	$23431^{\circ}_{5/2}-40066_{5/2}$				
6009.693	1	16635.18					
6009.191	1	16636.57					
6008.262	5	16639.14					
6006.610	1	16643.72	$24137_{13/2}-40780^{\circ}_{13/2}$				
6005.338	3	16647.24	$21737_{9/2}-38384^{\circ}_{9/2}$				
6005.315	1	16647.31	$22559^{\circ}_{11/2}-39206_{9/2}$				
6004.191	1	16650.42	$25717_{7/2}-42367^{\circ}_{5/2}$				
6003.711	3	16651.75	$24701^{\circ}_{9/2}-41352_{11/2}$				
6003.222	1	16653.11	$22791_{7/2}-39444^{\circ}_{9/2}$				
6002.998	1	16653.73	$16742_{7/2}-33396^{\circ}_{7/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
6002.497	3	16655.12	$22468^{\circ}_{11/2}-39123_{9/2}$				
6001.692	30	16657.35	$20406^{\circ}_{5/2}-37064_{5/2}$	ΔJ=0	1.577	1.42	*
6000.840	3	16659.72	$23431^{\circ}_{5/2}-40091_{3/2}$				
5996.556	1	16671.62	$22791_{7/2}-39462^{\circ}_{7/2}$				
5995.988	3	16673.20	$22929_{5/2}-39602^{\circ}_{3/2}$				
5995.357	1	16674.96					
5992.659	1	16682.46					
5990.930	2	16687.28	$19748_{9/2}-36435^{\circ}_{7/2}$				
5990.275	1	16689.10	$22791_{7/2}-39480^{\circ}_{7/2}$				
5989.927	1	16690.07	$24701^{\circ}_{9/2}-41391_{9/2}$				
5989.377	1	16691.60					
5987.560	1	16696.67	$17613_{9/2}-34310^{\circ}_{9/2}$				
5984.867	40	16704.18		T	1.18		
5984.315	1	16705.72					
5981.978	2	16712.25	$26448^{\circ}_{5/2}-43160_{5/2}$				
5981.735	30	16712.93	$19466_{13/2}-36179^{\circ}_{15/2}$	T	1.16		
5978.100	1	16723.09	$23873_{7/2}-40596^{\circ}_{7/2}$				
5975.747	2	16729.68	$25699^{\circ}_{9/2}-42429_{11/2}$				
5975.070	3	16731.60	$23335^{\circ}_{7/2}-40066_{5/2}$	T	1.36		
5975.015	100	16731.73	$20406^{\circ}_{5/2}-37138_{3/2}$	T	1.56		
5974.670	3	16732.69	$24348_{9/2}-41081^{\circ}_{11/2}$				
5973.744	1	16735.29					
5972.514	1	16738.73					
5972.392	20	16739.07	$23374_{13/2}-40113^{\circ}_{13/2}$				
5971.264	2000 *r*	16742.24	$0^{\circ}_{7/2}-16742_{7/2}$	ΔJ=0	1.14	1.32	*
5970.310	3	16744.91	$21737_{9/2}-38482^{\circ}_{7/2}$				
5969.141	1	16748.19					
5968.784	1	16749.19					
5968.609	1	16749.68	$25130_{15/2}-41880^{\circ}_{15/2}$				
5968.135	3	16751.01	$22791_{7/2}-39542^{\circ}_{7/2}$				
5967.800	7	16751.95	$17613_{9/2}-34365^{\circ}_{7/2}$	T	1.15		
5967.734	2	16752.14	$23781_{9/2}-40533^{\circ}_{7/2}$				
5966.011	30	16756.98	$19466_{13/2}-36223^{\circ}_{13/2}$	ΔJ=0	1.10	0.22	
5961.186	1	16770.54	$24957^{\circ}_{11/2}-41728_{9/2}$				
5960.113	4	16773.56	$26448^{\circ}_{5/2}-43221_{3/2}$				
5958.162	1	16779.05					
5956.057	1	16784.98	$24708^{\circ}_{7/2}-41493_{5/2}$				
5954.390	1	16789.68					
5954.294	3	16789.95					
5953.565	10	16792.01	$21737_{9/2}-38529^{\circ}_{11/2}$				
5953.189	4	16793.07					
5952.534	1	16794.92					
5951.444	2	16797.99	$27440^{\circ}_{9/2}-44238_{9/2}$				
5949.396	1	16803.77	$23309_{11/2}-40113^{\circ}_{13/2}$				
5948.369	1	16806.67					
5948.156	15	16807.28	$19466_{13/2}-36273^{\circ}_{15/2}$				
5946.640	1	16811.56					
5944.945	10	16816.35					
5944.862	2	16816.59					
5943.090	1	16821.60	$27037^{\circ}_{7/2}-43859_{5/2}$				
5942.666	1	16822.80					
5940.820	6	16828.03	$24246^{\circ}_{7/2}-41074_{9/2}$				
5939.880	2	16830.69					
5939.804	10	16830.91					
5939.735	20	16831.11					
5939.674	3	16831.28					
5938.842	5	16833.64					
5937.714	1	16836.83	$22791_{7/2}-39628^{\circ}_{7/2}$				
5935.895	300	16841.99	$15271_{15/2}-32112^{\circ}_{15/2}$	ΔJ=0	1.08	0.973	*
5935.067	1	16844.34	$25717_{7/2}-42561^{\circ}_{9/2}$				
5934.889	30	16844.85	$18837_{9/2}-35682^{\circ}_{7/2}$	T	1.125		
5934.257	1	16846.64					
5932.826	1	16850.71	$17343_{7/2}-34194^{\circ}_{5/2}$				
5931.703	100	16853.90	$15587_{11/2}-32441^{\circ}_{9/2}$	T	1.25		
5931.355	10	16854.88	$26448^{\circ}_{5/2}-43303_{7/2}$				
5929.813	1	16859.27					
5928.457	20	16863.12	$19466_{13/2}-36329^{\circ}_{11/2}$				
5928.335	1	16863.47					
5927.921	5	16864.65	$18693_{15/2}-35557^{\circ}_{15/2}$				
5922.622	4	16879.74	$21997_{11/2}-38877^{\circ}_{11/2}$				
5921.988	2	16881.54					
5920.846	40	16884.80	$8771^{\circ}_{5/2}-25656_{5/2}$	ΔJ=0	0.82	0.34	
5918.914	10	16890.31					
5918.852	2	16890.49					
5916.891	30	16896.09	$25699^{\circ}_{9/2}-42595_{11/2}$				
5916.500	10	16897.20					
5916.020	10	16898.57	$23309_{11/2}-40208^{\circ}_{9/2}$				
5914.386	1	16903.24					
5913.874	4	16904.71	$29316^{\circ}_{9/2}-46221_{11/2}$				
″			$24246^{\circ}_{7/2}-41151_{9/2}$				
5912.582	50	16908.40	$25520^{\circ}_{11/2}-42429_{11/2}$	ΔJ=0	1.14	0.49	
5910.104	1	16915.49					
5909.185	5	16918.12	$25488_{11/2}-42406^{\circ}_{13/2}$				
5909.073	1	16918.44	$21997_{11/2}-38915^{\circ}_{13/2}$				
5908.792	1	16919.24	$17613_{9/2}-34532^{\circ}_{11/2}$				
5908.405	20	16920.35	$25536^{\circ}_{15/2}-42456_{13/2}$	T	1.18		
5907.008	1	16924.35					
5906.260	1	16926.50	$21737_{9/2}-38664^{\circ}_{7/2}$				
5905.976	1	16927.31					
5901.572	300	16939.94	$18693_{15/2}-35633^{\circ}_{17/2}$	T	1.10	0.05	
5900.864	1	16941.98	$26646_{9/2}-43588^{\circ}_{7/2}$				
5900.282	1	16943.65	$27037^{\circ}_{7/2}-43981_{7/2}$				
5900.091	1	16944.20	$24137_{13/2}-41081^{\circ}_{11/2}$				
5899.473	400	16945.97	$8771^{\circ}_{5/2}-25717_{7/2}$	SI	1.4		
5878.670	1	17005.94	$24611^{\circ}_{5/2}-41617_{7/2}$				
5878.139	1	17007.47	$24418_{5/2}-41425^{\circ}_{7/2}$				
5877.597	5	17009.04	$25536^{\circ}_{15/2}-42545_{13/2}$				
5876.918	20	17011.01					
5873.827	2	17019.96	$24708^{\circ}_{7/2}-41728_{9/2}$				
5873.037	1	17022.25	$17343_{7/2}-34365^{\circ}_{7/2}$				
5872.372	1	17024.18	$25520^{\circ}_{11/2}-42545_{13/2}$				
5872.147	1	17024.83	$25717_{7/2}-42742^{\circ}_{7/2}$				
5871.996	10	17025.27	$23335^{\circ}_{7/2}-40360_{7/2}$				
5871.584	1	17026.46					
5871.416	2	17026.95	$24701^{\circ}_{9/2}-41728_{9/2}$				
5866.753	1	17040.48	$22902^{\circ}_{13/2}-39942_{11/2}$				
5863.392	1	17050.25	$21161_{5/2}-38211^{\circ}_{7/2}$				
5862.921	1	17051.62					
5862.488	1	17052.88	$25488_{11/2}-42541^{\circ}_{11/2}$				
5861.748	4	17055.03	$25520^{\circ}_{11/2}-42576_{9/2}$				
5861.353	1	17056.18	$23882_{3/2}-40938^{\circ}_{5/2}$				
5858.018	2	17065.89					
5857.910	1	17066.20	$23309_{11/2}-40376^{\circ}_{13/2}$				
5855.580	1	17073.00	$25488_{11/2}-42561^{\circ}_{9/2}$				
5853.828	4	17078.11	$17454_{13/2}-34532^{\circ}_{11/2}$				
″			$17613_{9/2}-34691^{\circ}_{11/2}$				
5850.238	1	17088.59	$27440^{\circ}_{9/2}-44529_{7/2}$				
5848.579	1	17093.43	$25488_{11/2}-42581^{\circ}_{11/2}$				
5844.602	2	17105.06	$18853_{11/2}-35958^{\circ}_{13/2}$				
5844.056	10	17106.66					
5843.936	10	17107.01					
5843.802	8	17107.41	$23882_{3/2}-40989^{\circ}_{3/2}$				
5842.825	1	17110.27					
5841.385	4	17114.48	$17343_{7/2}-34457^{\circ}_{9/2}$				
5841.020	1	17115.55	$24418_{5/2}-41533^{\circ}_{5/2}$				
5839.362	1	17120.41					
5838.590	5	17122.68	$24957^{\circ}_{11/2}-42080_{11/2}$	ΔJ=0	1.18	0.62	
5835.837	1	17130.75					
5835.524	1	17131.67	$22929_{5/2}-40061^{\circ}_{7/2}$				
5834.939	20	17133.39	$23941^{\circ}_{9/2}-41074_{9/2}$	ΔJ=0	1.10	1.00	
5833.468	30	17137.71	$24137_{13/2}-41274^{\circ}_{13/2}$	T	1.14		
5832.966	10	17139.19	$23873_{7/2}-41012^{\circ}_{7/2}$				
5832.851	2	17139.52	$21737_{9/2}-38877^{\circ}_{11/2}$				
5831.910	1	17142.29					
5831.087	4	17144.71	$24246^{\circ}_{7/2}-41391_{9/2}$				
5830.387	10	17146.77	$25520^{\circ}_{11/2}-42667_{9/2}$	T	1.08		
5830.125	1	17147.54					
5829.527	3	17149.30					
5829.394	1	17149.69	$25207^{\circ}_{3/2}-42357_{3/2}$				
5829.136	40	17150.45					
5828.381	3	17152.67	$23431^{\circ}_{5/2}-40584_{5/2}$				
5822.995	5	17168.53	$25699^{\circ}_{9/2}-42868_{11/2}$				
5821.310	4	17173.50					

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
5818.337	1	17182.28					
5816.648	7	17187.27	$19466_{13/2}-36653^{\circ}_{15/2}$				
5816.458	100	17187.83	$16456_{17/2}-33644^{\circ}_{19/2}$	T	1.10	0.05	
5815.702	1	17190.06	$19466_{13/2}-36656^{\circ}_{11/2}$				
5815.264	1	17191.36					
5812.909	2	17198.32					
5811.875	3	17201.38	$27037^{\circ}_{7/2}-44238_{9/2}$				
5810.721	1	17204.80					
5810.589	3	17205.19					
5809.749	1	17207.68	$23309_{11/2}-40517^{\circ}_{9/2}$				
5806.394	1	17217.62	$23431^{\circ}_{5/2}-40649_{7/2}$				
5806.230	1	17218.11					
5805.838	7	17219.27					
5803.485	1	17226.25	$22902^{\circ}_{13/2}-40128_{11/2}$				
5802.219	3	17230.01					
5801.998	2	17230.66	$23781_{9/2}-41012^{\circ}_{7/2}$				
5801.134	6	17233.23	$18990_{11/2}-36223^{\circ}_{13/2}$				
5799.862	100	17237.01	$17454_{13/2}-34691^{\circ}_{11/2}$				
5797.617	5	17243.68	$25520^{\circ}_{11/2}-42764_{9/2}$				
5797.308	2	17244.60	$17343_{7/2}-34587^{\circ}_{9/2}$				
5796.790	1	17246.14					
5796.710	20	17246.38	$17752_{5/2}-34999^{\circ}_{3/2}$	SI	1.187	0.898	*
5796.636	2	17246.60	$24246^{\circ}_{7/2}-41493_{5/2}$				
5796.265	10	17247.71					
5793.244	7	17256.70	$19753_{7/2}-37010^{\circ}_{9/2}$				
5793.008	2	17257.40	$25699^{\circ}_{9/2}-42957_{11/2}$				
5791.532	8	17261.80	$23431^{\circ}_{5/2}-40693_{3/2}$				
5791.470	1	17261.99	$19748_{9/2}-37010^{\circ}_{9/2}$				
5790.765	10	17264.09	$21120_{7/2}-38384^{\circ}_{9/2}$				
5790.187	2	17265.81	$18693_{15/2}-35958^{\circ}_{13/2}$				
5788.139	1	17271.92					
5786.701	3	17276.21	$25130_{15/2}-42406^{\circ}_{13/2}$				
5783.574	1	17285.55	$27037^{\circ}_{7/2}-44323_{7/2}$				
5783.318	3	17286.32					
5781.484	1	17291.80	$26889_{9/2}-44180^{\circ}_{11/2}$				
5776.268	1	17307.42	$25745_{5/2}-43052^{\circ}_{7/2}$				
5775.664	2	17309.23	$27440^{\circ}_{9/2}-44750_{7/2}$				
5774.317	1	17313.26					
5773.586	1	17315.46					
5773.116	1	17316.87					
5772.882	1	17317.57					
5772.733	9	17318.02	$20406^{\circ}_{5/2}-37724_{5/2}$				
5772.211	1	17319.58					
5771.982	2	17320.27					
5771.672	2	17321.20	$21161_{5/2}-38482^{\circ}_{7/2}$				
5771.552	6	17321.56					
5769.319	1	17328.26					
5767.531	10	17333.63	$25536^{\circ}_{15/2}-42869_{13/2}$				
5765.570	8	17339.53					
5764.287	3000 *r*	17343.39	$0^{\circ}_{7/2}-17343_{7/2}$	ΔJ=0	1.08	0.42	
5763.003	30	17347.25	$25520^{\circ}_{11/2}-42868_{11/2}$				
5762.498	5	17348.77	$25520^{\circ}_{11/2}-42869_{13/2}$				
5761.436	2	17351.97					
5761.215	5	17352.64	$26448^{\circ}_{5/2}-43800_{3/2}$				
5761.041	2	17353.16	$23309_{11/2}-40663^{\circ}_{11/2}$				
5760.982	1	17353.34	$16957_{7/2}-34310^{\circ}_{9/2}$				
5760.545	3	17354.66					
5760.202	500 *r*	17355.69	$8771^{\circ}_{5/2}-26126_{5/2}$	ΔJ=0	0.855	1.10	*
5758.186	1	17361.77	$21120_{7/2}-38482^{\circ}_{7/2}$				
5758.020	300	17362.27	$15587_{11/2}-32950^{\circ}_{13/2}$	SI	1.62	0.29	
5755.516	20	17369.82	$27377_{13/2}-44747^{\circ}_{11/2}$				
5753.856	3	17374.83	$26889_{9/2}-44263^{\circ}_{7/2}$				
5752.741	1	17378.20	$21120_{7/2}-38499^{\circ}_{9/2}$				
5752.644	1	17378.49					
5752.441	4	17379.10	$24701^{\circ}_{9/2}-42080_{11/2}$				
5751.626	1	17381.57	$25520^{\circ}_{11/2}-42902_{9/2}$				
5751.127	4	17383.08	$22559^{\circ}_{11/2}-39942_{11/2}$				
5750.285	4	17385.62	$22742^{\circ}_{13/2}-40128_{11/2}$				
5749.774	1	17387.17					
5749.720	8	17387.33	$18990_{11/2}-36377^{\circ}_{9/2}$				
5744.827	20	17402.14					
5743.860	1	17405.07					
5743.520	1	17406.10					
5742.692	30	17408.61	$16957_{7/2}-34365^{\circ}_{7/2}$	ΔJ=0	1.18	0.12	
5741.659	1	17411.74	$23941^{\circ}_{9/2}-41352_{11/2}$				
5739.817	1	17417.33	$22791_{7/2}-40208^{\circ}_{9/2}$				
5738.446	1	17421.49	$25488_{11/2}-42910^{\circ}_{13/2}$				
5737.914	1	17423.10					
5735.838	7	17429.41					
5735.394	2	17430.76	$26357^{\circ}_{13/2}-43788_{11/2}$				
5733.616	20	17436.16	$25520^{\circ}_{11/2}-42957_{11/2}$				
5733.446	20	17436.68	$21997_{11/2}-39434^{\circ}_{13/2}$				
5732.969	1	17438.13					
5730.114	1	17446.82	$21997_{11/2}-39444^{\circ}_{9/2}$				
5729.053	1	17450.05	$23941^{\circ}_{9/2}-41391_{9/2}$				
5728.471	7	17451.82	$16742_{7/2}-34194^{\circ}_{5/2}$				
5725.827	1	17459.88					
5725.539	20	17460.76	$21799^{\circ}_{3/2}-39259_{5/2}$	S0	1.45	1.20	*
5724.404	1	17464.22					
5723.350	2	17467.44	$23335^{\circ}_{7/2}-40802_{7/2}$				
5723.285	1	17467.64	$19753_{7/2}-37221^{\circ}_{7/2}$				
5723.079	4	17468.27	$26368^{\circ}_{11/2}-43836_{13/2}$				
5722.761	3	17469.24					
5720.571	5	17475.92	$18853_{11/2}-36329^{\circ}_{11/2}$				
5722.206	1	17470.93	$23309_{11/2}-40780^{\circ}_{13/2}$				
5721.887	5	17471.91	$24957^{\circ}_{11/2}-42429_{11/2}$				
5721.031	1	17474.52	$22468^{\circ}_{11/2}-39942_{11/2}$				
5720.180	1	17477.12					
5719.587	20	17478.93	$26357^{\circ}_{13/2}-43836_{13/2}$	T	1.17		
5719.029	1	17480.64					
5718.718	30	17481.59	$24246^{\circ}_{7/2}-41728_{9/2}$	T	1.06		
5718.462	1	17482.37	$21737_{9/2}-39220^{\circ}_{9/2}$				
″			$21997_{11/2}-39479^{\circ}_{11/2}$				
5718.365	1	17482.67					
5717.104	70	17486.52	$18693_{15/2}-36179^{\circ}_{15/2}$	ΔJ=0	1.17	0.20	
5716.238	1	17489.17	$23941^{\circ}_{9/2}-41430_{11/2}$				
5715.788	200	17490.55	$15271_{15/2}-32761^{\circ}_{17/2}$	SI	1.30	0.20	
5715.181	40	17492.41	$18837_{9/2}-36329^{\circ}_{11/2}$	S0	0.56	0.47	
5715.010	5	17492.93	$24348_{9/2}-41841^{\circ}_{7/2}$				
5714.503	1	17494.48	$26889_{9/2}-44383^{\circ}_{11/2}$				
5713.633	2	17497.15	$25699^{\circ}_{9/2}-43196_{11/2}$				
5713.030	1	17498.99	$24957^{\circ}_{11/2}-42456_{13/2}$				
5712.422	40	17500.85	$16957_{7/2}-34457^{\circ}_{9/2}$	T	1.21		
5711.924	9	17502.38					
5711.793	1	17502.78	$21161_{5/2}-38664^{\circ}_{7/2}$				
5709.750	100	17509.04		T	1.21		
5708.877	1	17511.72					
5707.929	1	17514.63	$23574^{\circ}_{3/2}-41089_{1/2}$				
5706.715	1	17518.36					
5706.048	2	17520.40					
5705.900	4	17520.86					
5705.275	10	17522.78	$22419^{\circ}_{9/2}-39942_{11/2}$	SI	0.93	1.19	*
5704.903	8	17523.92	$18853_{11/2}-36377^{\circ}_{9/2}$				
5704.328	3	17525.69	$24348_{9/2}-41874^{\circ}_{11/2}$				
5703.499	10	17528.23	$19748_{9/2}-37276^{\circ}_{11/2}$				
5702.740	10	17530.57	$18693_{15/2}-36223^{\circ}_{13/2}$				
5702.479	1	17531.37	$22791_{7/2}-40322^{\circ}_{9/2}$				
5702.000	20	17532.84	$26448^{\circ}_{5/2}-43981_{7/2}$				
5701.012	7	17535.88					
5698.581	1	17543.36	$21120_{7/2}-38664^{\circ}_{7/2}$				
5697.987	1	17545.19	$27037^{\circ}_{7/2}-44582_{9/2}$				
5696.987	2	17548.27					
5696.522	2	17549.70					
5696.186	1	17550.74					
5695.931	2	17551.52					
5694.449	1	17556.09	$22791_{7/2}-40347^{\circ}_{5/2}$				
5694.262	1	17556.67					
5692.938	2	17560.75					
5692.323	2	17562.65	$26701_{7/2}-44263^{\circ}_{7/2}$				
5691.650	1	17564.72	$21120_{7/2}-38685^{\circ}_{9/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
5691.387	3	17565.54	$21997_{11/2}-39563^{\circ}_{11/2}$				
5690.879	1	17567.10	$26889_{9/2}-44456^{\circ}_{7/2}$				
5690.559	2	17568.09	$16742_{7/2}-34310^{\circ}_{9/2}$				
5690.305	20	17568.88	$22559^{\circ}_{11/2}-40128_{11/2}$				
5687.555	1	17577.37	$27440^{\circ}_{9/2}-45018_{7/2}$				
5685.386	2	17584.08					
5684.222	1	17587.68	$24957^{\circ}_{11/2}-42545_{13/2}$				
5683.592	200	17589.63	$16456_{17/2}-34046^{\circ}_{15/2}$	T	1.16		
5683.335	3	17590.42	$21161_{5/2}-38751^{\circ}_{5/2}$	ΔJ=0	?	0.20	
5682.036	3	17594.44	$25520^{\circ}_{11/2}-43115_{9/2}$				
5680.591	2	17598.92	$26701_{7/2}-44300^{\circ}_{5/2}$				
5680.247	1	17599.98					
5679.856	1	17601.20	$22902^{\circ}_{13/2}-40503_{11/2}$				
5679.264	1	17603.03					
5679.130	1	17603.45	$25699^{\circ}_{9/2}-43303_{7/2}$				
5677.744	1	17607.74					
5675.835	5000 *r*	17613.67	$0^{\circ}_{7/2}-17613_{9/2}$	SI	1.34	0.14	
5673.484	2	17620.96					
5670.261	2	17630.98	$16957_{7/2}-34587^{\circ}_{9/2}$				
5669.950	10	17631.95					
5669.389	1	17633.69	$22468^{\circ}_{11/2}-40101_{9/2}$				
5667.897	1	17638.33	$24957^{\circ}_{11/2}-42595_{11/2}$				
5667.711	1	17638.91					
5666.257	1	17643.44					
5664.091	2	17650.19	$27440^{\circ}_{9/2}-45091_{9/2}$				
5663.975	1	17650.55					
5663.783	2	17651.15	$23882_{3/2}-41533^{\circ}_{5/2}$				
5662.920	4	17653.84					
5660.834	20	17660.34	$22468^{\circ}_{11/2}-40128_{11/2}$	ΔJ=0	1.13	0.53	
5658.918	7	17666.32	$18990_{11/2}-36656^{\circ}_{11/2}$				
5658.298	600	17668.26	$8771^{\circ}_{5/2}-26439_{7/2}$	SI	1.37	0.37	
5657.047	3	17672.16					
5656.896	4	17672.63	$19548_{5/2}-37221^{\circ}_{7/2}$				
5655.858	5 *h*	17675.88	$25520^{\circ}_{11/2}-43196_{11/2}$				
5655.765	4	17676.17	$23941^{\circ}_{9/2}-41617_{7/2}$	T	1.30		
5655.135	1	17678.14					
5654.839	20	17679.06	$15271_{15/2}-32950^{\circ}_{13/2}$	S00	1.07	1.31	*
5653.910	1	17681.97	$22419^{\circ}_{9/2}-40101_{9/2}$				
5653.610	5	17682.91					
5652.610	8	17686.03		SI	1.32	0.23	
5650.879	1	17691.45					
5650.434	50	17692.85	$19466_{13/2}-37159^{\circ}_{15/2}$	SI	1.75	0.465	
5648.457	1	17699.04					
5647.213	1	17702.94	$23873_{7/2}-41576^{\circ}_{9/2}$				
″			$26439_{7/2}-44142^{\circ}_{7/2}$				
5645.400	200	17708.62	$22419^{\circ}_{9/2}-40128_{11/2}$	SI	0.95	1.12	*
5644.686	1	17710.86					
5644.546	1	17711.30	$17343_{7/2}-35054^{\circ}_{9/2}$				
5644.462	3	17711.56	$21997_{11/2}-39709^{\circ}_{11/2}$				
″			$25717_{7/2}-43428^{\circ}_{7/2}$				
5644.062	5	17712.82	$23431^{\circ}_{5/2}-41144_{7/2}$				
5643.525	1	17714.51	$24611^{\circ}_{5/2}-42325_{7/2}$				
5643.284	1	17715.26	$24418_{5/2}-42133^{\circ}_{7/2}$				
5642.960	1	17716.28	$20406^{\circ}_{5/2}-38123_{7/2}$				
5640.179	40	17725.01	$25130_{15/2}-42855^{\circ}_{15/2}$				
5639.714	1	17726.48	$22791_{7/2}-40517^{\circ}_{9/2}$				
5639.443	1	17727.33					
5639.127	2	17728.32	$24701^{\circ}_{9/2}-42429_{11/2}$				
5638.207	1	17731.21					
5636.309	3	17737.18	$24137_{13/2}-41874^{\circ}_{11/2}$				
5635.709	7	17739.07					
5635.623	5	17739.34	$23335^{\circ}_{7/2}-41074_{9/2}$				
5634.718	2	17742.19	$21737_{9/2}-39479^{\circ}_{11/2}$				
5634.481	2	17742.94	$24137_{13/2}-41880^{\circ}_{15/2}$				
5633.729	2	17745.31					
5632.902	60	17747.91	$21799^{\circ}_{3/2}-39547_{5/2}$	S0	1.03	0.25	
5632.061	2	17750.56	$21737_{9/2}-39488^{\circ}_{9/2}$				
5631.406	3000 *r*	17752.63	$0^{\circ}_{7/2}-17752_{5/2}$	S0	1.015	0.13	
5629.335	2	17759.16	$23941^{\circ}_{9/2}-41700_{11/2}$				
5629.063	2	17760.02					
5628.894	3	17760.55	$22742^{\circ}_{13/2}-40503_{11/2}$				
5628.474	1	17761.87	$24418_{5/2}-42179^{\circ}_{5/2}$				
5626.309	3	17768.71					
5625.457	5	17771.40	$23309_{11/2}-41081^{\circ}_{11/2}$	ΔJ=0	1.28	0.45	
5624.968	2	17772.95	$23873_{7/2}-41646^{\circ}_{7/2}$				
5623.525	1	17777.51					
5622.864	1	17779.60	$25130_{15/2}-42910^{\circ}_{13/2}$				
5622.723	50	17780.04	$24137_{13/2}-41917^{\circ}_{13/2}$	ΔJ=0	1.14	0.13	
5622.049	1	17782.17					
5621.288	2	17784.58	$24348_{9/2}-42133^{\circ}_{7/2}$				
5620.542	7	17786.94	$23941^{\circ}_{9/2}-41728_{9/2}$				
5620.391	2	17787.42	$23781_{9/2}-41569^{\circ}_{11/2}$				
5618.171	5	17794.45	$23781_{9/2}-41576^{\circ}_{9/2}$	ΔJ=0	1.20	0.485	
5617.799	2	17795.63					
5617.725	1	17795.86					
5617.578	2	17796.33					
5615.500	2	17802.91	$18853_{11/2}-36656^{\circ}_{11/2}$				
5615.318	1	17803.49					
5614.714	2	17805.40					
5614.148	2	17807.20	$24957^{\circ}_{11/2}-42764_{9/2}$				
5614.004	2	17807.66					
5613.694	40	17808.64					
5613.410	6	17809.54	$23335^{\circ}_{7/2}-41144_{7/2}$				
5613.230	70	17810.11	$19466_{13/2}-37276^{\circ}_{11/2}$	S0	0.62	0.50	
5611.893	2	17814.35	$23309_{11/2}-41124^{\circ}_{9/2}$				
5611.380	2	17815.98	$23335^{\circ}_{7/2}-41151_{9/2}$				
5609.947	2	17820.53					
5608.440	5	17825.32	$21737_{9/2}-39563^{\circ}_{11/2}$				
5606.643	50	17831.03	$20406^{\circ}_{5/2}-38237_{3/2}$	SI	1.58	1.04	*
5606.333	1	17832.02					
5605.652	1	17834.19	$22929_{5/2}-40763^{\circ}_{7/2}$				
5605.300	2	17835.31					
5604.640	20	17837.41		SI	1.30	0.16	
5603.184	5	17842.04	$24701^{\circ}_{9/2}-42543_{7/2}$				
5602.686	20	17843.63	$22742^{\circ}_{13/2}-40586_{13/2}$	ΔJ=0	1.19	0.11	
5599.508	4	17853.76	$27037^{\circ}_{7/2}-44891_{7/2}$				
5598.206	20	17857.91	$26889_{9/2}-44747^{\circ}_{11/2}$				
5597.957	1	17858.70					
5597.592	3	17859.87					
5596.928	2	17861.99					
5596.156	2	17864.45	$23781_{9/2}-41646^{\circ}_{7/2}$				
5595.869	3	17865.37					
5595.056	2	17867.96	$24708^{\circ}_{7/2}-42576_{9/2}$				
5594.945	1	17868.32					
5594.281	2	17870.44	$26368^{\circ}_{11/2}-44238_{9/2}$				
5586.252	1	17896.12					
5583.247	40	17905.75	$23781_{9/2}-41687^{\circ}_{11/2}$	T	1.145		
5581.369	200	17911.78	$20406^{\circ}_{5/2}-38318_{3/2}$	SI	1.58	1.20	*
5581.342	40	17911.86	$27377_{13/2}-45288^{\circ}_{11/2}$				
5581.215	40	17912.27	$24957^{\circ}_{11/2}-42869_{13/2}$				
5578.497	4	17921.00	$17752_{5/2}-35673^{\circ}_{5/2}$				
5577.407	2	17924.50					
5575.815	10	17929.62	$17752_{5/2}-35682^{\circ}_{7/2}$				
5575.135	20	17931.81	$24611^{\circ}_{5/2}-42543_{7/2}$				
5574.471	3	17933.94					
5571.608	10 *h*	17943.16	$25520^{\circ}_{11/2}-43464_{9/2}$				
5571.402	20	17943.82	$22559^{\circ}_{11/2}-40503_{11/2}$	ΔJ=0	1.14	0.385	
5568.720	5	17952.46					
5568.630	5	17952.75	$24418_{5/2}-42370^{\circ}_{7/2}$				
″			$25207^{\circ}_{3/2}-43160_{3/2}$				
5568.427	5	17953.41	$22902^{\circ}_{13/2}-40855_{13/2}$				
5567.267	2	17957.15	$22559^{\circ}_{11/2}-40516_{9/2}$				
5566.479	1	17959.69	$24708^{\circ}_{7/2}-42667_{9/2}$				
5566.119	50	17960.85	$18693_{15/2}-36653^{\circ}_{15/2}$				
5566.005	300	17961.22	$13119_{9/2}-31080^{\circ}_{11/2}$	SI	1.64	0.29	
5564.862	2	17964.91	$23309_{11/2}-41274^{\circ}_{13/2}$				
5563.085	20	17970.65	$19548_{5/2}-37519^{\circ}_{7/2}$	SI	1.36	0.25	
5562.870	4	17971.34	$21737_{9/2}-39709^{\circ}_{11/2}$				
5562.447	2	17972.71	$22791_{7/2}-40763^{\circ}_{7/2}$				
5559.606	3	17981.89	$24137_{13/2}-42119^{\circ}_{11/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
5556.248	3	17992.76					
5554.115	20	17999.67	$24957^{\circ}_{11/2}-42957_{11/2}$				
5551.642	5	18007.69					
5551.385	1	18008.52	$23873_{7/2}-41881^{\circ}_{9/2}$				
5550.802	3	18010.41	$24708^{\circ}_{7/2}-42718_{9/2}$				
5549.665	20	18014.10	$25207^{\circ}_{3/2}-43221_{3/2}$				
5549.442	10	18014.83	$19753_{7/2}-37768^{\circ}_{9/2}$				
5549.121	6	18015.87	$25699^{\circ}_{9/2}-43715_{11/2}$				
5548.787	3	18016.95					
5548.650	4	18017.40	$24701^{\circ}_{9/2}-42718_{9/2}$				
5547.813	10	18020.12	$18990_{11/2}-37010^{\circ}_{9/2}$				
″			$19748_{9/2}-37768^{\circ}_{9/2}$				
5547.230	1	18022.01	$24348_{9/2}-42370^{\circ}_{7/2}$				
5545.666	20	18027.09	$20406^{\circ}_{5/2}-38433_{5/2}$				
5545.312	5	18028.24					
5544.968	8	18029.36					
5544.613	1	18030.52					
5543.148	4	18035.28	$22468^{\circ}_{11/2}-40503_{11/2}$				
5541.949	15	18039.18					
5539.907	1	18045.83					
5539.260	1	18047.94					
5538.341	30	18050.94	$15587_{11/2}-33638^{\circ}_{11/2}$	ΔJ=0	1.30	0.80	
5537.535	3	18053.56	$27037^{\circ}_{7/2}-45091_{9/2}$				
5536.785	10	18056.01	$25488_{11/2}-43544^{\circ}_{9/2}$				
″			$23335^{\circ}_{7/2}-41391_{9/2}$				
5535.507	3	18060.18					
5535.195	30	18061.19	$23431^{\circ}_{5/2}-41493_{5/2}$				
5532.301	2	18070.64	$26448^{\circ}_{5/2}-44518_{5/2}$				
5531.600	3	18072.93	$26701_{7/2}-44774^{\circ}_{9/2}$				
5529.083	2	18081.16	$26448^{\circ}_{5/2}-44529_{7/2}$				
5528.702	2	18082.41	$24701^{\circ}_{9/2}-42783_{7/2}$				
5528.343	200	18083.58	$22419^{\circ}_{9/2}-40503_{11/2}$	SI	0.935	1.105	*
5526.614	2	18089.24					
5525.560	10	18092.69	$23781_{9/2}-41874^{\circ}_{11/2}$				
5524.271	4	18096.91					
5524.034	3	18097.69	$16957_{7/2}-35054^{\circ}_{9/2}$				
″			$26448_{5/2}-44545^{\circ}_{3/2}$				
5522.451	1	18102.87	$17454_{13/2}-35557^{\circ}_{15/2}$				
5520.169	1	18110.36					
5519.440	1	18112.75	$23431^{\circ}_{5/2}-41544_{5/2}$				
″			$22742^{\circ}_{13/2}-40855_{13/2}$				
5518.545	4	18115.69	$21161_{5/2}-39277^{\circ}_{5/2}$				
5517.729	10	18118.37	$22468^{\circ}_{11/2}-40586_{13/2}$				
5517.711	2	18118.42					
5517.115	2	18120.38					
5514.784	1	18128.04	$26646_{9/2}-44774^{\circ}_{9/2}$				
5513.649	1	18131.77					
5513.566	1	18132.05					
5512.105	3	18136.85					
5511.425	3	18139.09	$23941^{\circ}_{9/2}-42080_{11/2}$				
5509.890	1	18144.14	$22419^{\circ}_{9/2}-40563_{9/2}$				
5507.311	10	18152.64		ΔJ=0	1.14	0.20	
5506.495	2	18155.33	$22929_{5/2}-41085^{\circ}_{7/2}$				
5506.075	40	18156.71	$18853_{11/2}-37010^{\circ}_{9/2}$	SI	1.36	0.20	
5505.999	1	18156.96					
5505.901	10	18157.29	$26357^{\circ}_{13/2}-44515_{13/2}$				
5503.466	2	18165.32					
5501.340	20	18172.34					
5501.093	60	18173.16	$18837_{9/2}-37010^{\circ}_{9/2}$	ΔJ=0	1.12	0.10	
5497.391	3	18185.39	$23431^{\circ}_{5/2}-41617_{7/2}$				
5495.616	30	18191.27	$19466_{13/2}-37657^{\circ}_{11/2}$	SI	1.95	0.77	
5495.189	1	18192.68	$24348_{9/2}-42541^{\circ}_{11/2}$				
5494.617	50	18194.58	$25520^{\circ}_{11/2}-43715_{11/2}$				
5493.950	4	18196.78	$24160^{\circ}_{1/2}-42357_{3/2}$				
5491.365	10	18205.35	$15587_{11/2}-33793^{\circ}_{11/2}$	T	1.26		
5490.046	3	18209.72					
5489.104	3	18212.85	$24348_{9/2}-42561^{\circ}_{9/2}$				
5485.645	200	18224.33	$15587_{11/2}-33812^{\circ}_{13/2}$	S0	0.56	0.58	
5483.420	3	18231.73	$27377_{13/2}-45608^{\circ}_{15/2}$				
5483.200	2	18232.46					
5482.945	5	18233.31	$24348_{9/2}-42581^{\circ}_{11/2}$	SI	1.26	0.11	
5482.533	2	18234.68	$25520^{\circ}_{11/2}-43755_{9/2}$				
5481.113	3	18239.40	$24957^{\circ}_{11/2}-43196_{11/2}$				
5481.054	10	18239.60					
5479.724	3	18244.03	$24708^{\circ}_{7/2}-42952_{7/2}$				
5478.498	80	18248.11	$13119_{9/2}-31367^{\circ}_{7/2}$	T	1.25	0.06	
5476.100	20	18256.10	$24701^{\circ}_{9/2}-42957_{11/2}$				
5474.455	20	18261.58	$23574^{\circ}_{3/2}-41836_{5/2}$				
5473.079	20	18266.18	$23309_{11/2}-41576^{\circ}_{9/2}$				
5472.710	40	18267.41	$25520^{\circ}_{11/2}-43788_{11/2}$				
5472.363	4	18268.57					
5470.913	10	18273.41					
5468.303	10	18282.13	$23335^{\circ}_{7/2}-41617_{7/2}$				
5466.596	2	18287.84	$24418_{5/2}-42705^{\circ}_{5/2}$				
5465.641	3	18291.03	$22902^{\circ}_{13/2}-41193_{13/2}$				
5465.362	3	18291.97					
5465.299	10	18292.18	$21799^{\circ}_{3/2}-40091_{3/2}$	ΔJ=0	1.47	1.15	*
5465.103	4	18292.83	$21120_{7/2}-39413^{\circ}_{7/2}$				
5464.727	2	18294.09					
5464.621	1	18294.45					
5464.145	60	18296.04	$22559^{\circ}_{11/2}-40855_{13/2}$	T	1.11	0.05	
5463.723	1	18297.45	$23882_{3/2}-42179^{\circ}_{5/2}$				
5462.796	20	18300.56	$25536^{\circ}_{15/2}-43836_{13/2}$	T	1.23		
5462.428	5	18301.79	$26448^{\circ}_{5/2}-44750_{7/2}$				
5460.245	2	18309.11	$21161_{5/2}-39470^{\circ}_{5/2}$				
5455.813	1	18323.98	$24418_{5/2}-42742^{\circ}_{7/2}$				
5451.825	3	18337.39	$23781_{9/2}-42119^{\circ}_{11/2}$				
5451.388	3	18338.86	$17343_{7/2}-35682^{\circ}_{7/2}$				
5449.480	2	18345.28					
5642.596	300	17717.42	$8771^{\circ}_{5/2}-26488_{5/2}$	T	0.85		
5641.273	15	17721.58	$20406^{\circ}_{5/2}-38128_{5/2}$	ΔJ=0	1.58	1.05	*
5448.178	2	18349.66	$21120_{7/2}-39470^{\circ}_{5/2}$				
5446.453	60	18355.47	$15587_{11/2}-33943^{\circ}_{13/2}$	S0	0.45	0.67	
5440.751	6	18374.71	$18990_{11/2}-37365^{\circ}_{13/2}$				
5440.438	1	18375.77					
5439.559	3	18378.74	$21997_{11/2}-40376^{\circ}_{13/2}$				
5436.972	50	18387.48	$22468^{\circ}_{11/2}-40855_{13/2}$	S0	0.94	0.22	
5435.645	20	18391.97	$19466_{13/2}-37858^{\circ}_{15/2}$	SI	1.48	0.27	
5434.171	6	18396.96					
5433.334	5	18399.79					
5431.098	3	18407.37	$24708^{\circ}_{7/2}-43115_{9/2}$				
5426.505	10	18422.95	$18853_{11/2}-37276^{\circ}_{11/2}$	ΔJ=0	1.19	0.61	
5422.301	2	18437.23	$25745_{5/2}-44182^{\circ}_{5/2}$				
5421.661	3	18439.41	$18837_{9/2}-37276^{\circ}_{11/2}$				
5420.037	2	18444.93	$24611^{\circ}_{5/2}-43056_{5/2}$				
5419.733	1	18445.97	$26701_{7/2}-45147^{\circ}_{9/2}$				
5418.438	30	18450.37	$22742^{\circ}_{13/2}-41193_{13/2}$	ΔJ=0	1.19	0.16	
5416.260	3	18457.79	$19753_{7/2}-38211^{\circ}_{7/2}$				
5414.093	4	18465.18	$25717_{7/2}-44182^{\circ}_{5/2}$				
5413.727	100	18466.43	$18693_{15/2}-37159^{\circ}_{15/2}$	ΔJ=0	1.20	0.38	
5413.570	5	18466.97					
5413.476	10	18467.29		T	1.13	0.06	
5408.639	20	18483.80	$25130_{15/2}-43614^{\circ}_{15/2}$				
5407.320	1	18488.31	$23941^{\circ}_{9/2}-42429_{11/2}$				
5404.640	2	18497.48	$21161_{5/2}-39658^{\circ}_{5/2}$				
″			$23873_{7/2}-42370^{\circ}_{7/2}$				
5403.990	1	18499.70	$23374_{13/2}-41874^{\circ}_{11/2}$				
5403.628	2	18500.94					
5402.716	40	18504.06	$17454_{13/2}-35958^{\circ}_{13/2}$	ΔJ=0	1.14	0.15	
5402.231	200	18505.73		ΔJ=0	1.22	0.73	
5400.600	10	18511.31	$18853_{11/2}-37365^{\circ}_{13/2}$	SI	1.39	0.20	
5391.912	50	18541.14	$15271_{15/2}-33812^{\circ}_{13/2}$				
5391.500	3	18542.56	$23374_{13/2}-41917^{\circ}_{13/2}$				
5391.172	1	18543.69					
5390.460	15	18546.14	$19466_{13/2}-38012^{\circ}_{13/2}$				
5389.814	5	18548.36					
5386.736	10	18558.96	$18693_{15/2}-37252^{\circ}_{17/2}$	SI	1.46	0.245	
5382.044	15	18575.14	$13119_{9/2}-31694^{\circ}_{7/2}$	SI	1.77	0.45	
5377.280	4	18591.59	$22559^{\circ}_{11/2}-41151_{9/2}$				
5376.834	3	18593.14	$25207^{\circ}_{3/2}-43800_{3/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
5374.984	1	18599.53	$25717_{7/2}-44316^{\circ}_{9/2}$				
5374.242	1	18602.10	$24701^{\circ}_{9/2}-43303_{7/2}$				
5372.754	4	18607.25	$23309_{11/2}-41917^{\circ}_{13/2}$				
5371.810	2	18610.52	$24611^{\circ}_{5/2}-43221_{3/2}$				
5368.756	5	18621.11	$21120_{7/2}-39741^{\circ}_{9/2}$				
5365.141	200	18633.66	$22559^{\circ}_{11/2}-41193_{13/2}$	T	1.18		
5364.358	5	18636.38	$19748_{9/2}-38384^{\circ}_{9/2}$				
5361.015	4	18648.00					
5358.782	5	18655.77	$18990_{11/2}-37646^{\circ}_{13/2}$				
5355.945	2	18665.65	$21997_{11/2}-40663^{\circ}_{11/2}$				
5355.547	2	18667.04					
5354.045	100	18672.27	$15271_{15/2}-33943^{\circ}_{13/2}$	S0	0.77	0.29	
5350.089	2	18686.08					
5348.440	3	18691.84	$24611^{\circ}_{5/2}-43303_{7/2}$				
5347.650	5	18694.60	$19466_{13/2}-38161^{\circ}_{11/2}$				
5340.158	2	18720.83	$23873_{7/2}-42594^{\circ}_{9/2}$				
5339.388	50	18723.53		SI	1.56	0.30	
5339.031	100	18724.78	$17454_{13/2}-36179^{\circ}_{15/2}$	SI	1.25	0.08	
5338.940	20	18725.10	$22468^{\circ}_{11/2}-41193_{13/2}$				
5338.900	50	18725.24	$16957_{7/2}-35682^{\circ}_{7/2}$	ΔJ=0	1.15	0.17	
5338.495	4	18726.66	$22742^{\circ}_{13/2}-41469_{13/2}$				
″			$23941^{\circ}_{9/2}-42667_{9/2}$				
5335.193	2	18738.25	$25745_{5/2}-44483^{\circ}_{3/2}$				
5333.442	3	18744.40	$23374_{13/2}-42119^{\circ}_{11/2}$				
5333.222	2	18745.18	$19753_{7/2}-38499^{\circ}_{9/2}$				
5331.710	4	18750.49	$19748_{9/2}-38499^{\circ}_{9/2}$				
5330.105	2	18756.14	$24708^{\circ}_{7/2}-43464_{9/2}$				
5329.547	2	18758.10	$24957^{\circ}_{11/2}-43715_{11/2}$				
5327.848	4	18764.08	$17613_{9/2}-36377^{\circ}_{9/2}$				
5326.503	2	18768.82	$17454_{13/2}-36223^{\circ}_{13/2}$				
5325.363	2	18772.84	$24137_{13/2}-42910^{\circ}_{13/2}$				
5324.595	50	18775.55	$15271_{15/2}-34046^{\circ}_{15/2}$	ΔJ=0	1.13	0.75	
5323.828	40	18778.25	$18990_{11/2}-37768^{\circ}_{9/2}$	T	1.20		
5321.885	7	18785.11	$21799^{\circ}_{3/2}-40584_{5/2}$				
5318.190	2	18798.16	$24957^{\circ}_{11/2}-43755_{9/2}$				
5317.590	1	18800.28	$23781_{9/2}-42581^{\circ}_{11/2}$	T	1.13		
5315.093	3	18809.11	$23309_{11/2}-42119^{\circ}_{11/2}$	ΔJ=0	1.10	0.15	
5314.177	2	18812.36	$23781_{9/2}-42594^{\circ}_{9/2}$				
5312.267	100	18819.12	$17454_{13/2}-36273^{\circ}_{15/2}$	S0	1.05	0.10	
5311.864	4	18820.55	$18837_{9/2}-37657^{\circ}_{11/2}$				
5308.741	2	18831.62	$22559^{\circ}_{11/2}-41391_{9/2}$	T	1.20		
5307.116	3000 *r*	18837.39	$0^{\circ}_{7/2}-18837_{9/2}$	T	1.11	0.02	
5304.912	3	18845.21					
5303.054	5	18851.81					
5302.694	100	18853.09	$20406^{\circ}_{5/2}-39259_{5/2}$	ΔJ=0	1.59	1.21	*
5300.205	300	18861.95	$15587_{11/2}-34449^{\circ}_{13/2}$	S0	0.78	0.36	
5298.218	5	18869.02	$24246^{\circ}_{7/2}-43115_{9/2}$				
5297.934	5	18870.03	$15587_{11/2}-34457^{\circ}_{9/2}$	SI	1.44	0.25	
5296.550	5	18874.96	$17454_{13/2}-36329^{\circ}_{11/2}$	SI	1.79	0.65	
5295.358	20	18879.21	$24957^{\circ}_{11/2}-43836_{13/2}$	S0	0.86	0.31	
5294.324	100	18882.90	$25699^{\circ}_{9/2}-44582_{9/2}$	T	1.20		
5291.143	100	18894.25	$21799^{\circ}_{3/2}-40693_{3/2}$	ΔJ=0	1.45	1.30	*
5288.305	3	18904.39					
5286.756	20	18909.93	$22559^{\circ}_{11/2}-41469_{13/2}$	SI	1.30	0.12	
5286.620	4	18910.42	$19753_{7/2}-38664^{\circ}_{7/2}$				
5285.386	3	18914.83	$18853_{11/2}-37768^{\circ}_{9/2}$				
5282.425	3	18925.43	$21737_{9/2}-40663^{\circ}_{11/2}$				
5282.385	5	18925.58	$23431^{\circ}_{5/2}-42357_{3/2}$	T	1.24	0.05	
5280.304	4	18933.04	$22419^{\circ}_{9/2}-41352_{11/2}$				
5279.199	3	18937.00	$19748_{9/2}-38685^{\circ}_{9/2}$				
5276.948	40	18945.08	$15587_{11/2}-34532^{\circ}_{11/2}$	ΔJ=0	?	0.715	
5274.714	50	18953.10	$18693_{15/2}-37646^{\circ}_{13/2}$	T	1.16		
5272.710	3	18960.30	$23781_{9/2}-42742^{\circ}_{7/2}$				
5272.386	2	18961.47	$23941^{\circ}_{9/2}-42902_{9/2}$				
5272.190	1	18962.17	$22468^{\circ}_{11/2}-41430_{11/2}$				
5270.358	1	18968.76					
5267.543	10	18978.90	$25536^{\circ}_{15/2}-44515_{13/2}$	SI	1.65	0.45	
5258.796	5	19010.47	$22419^{\circ}_{9/2}-41430_{11/2}$				
5258.668	3	19010.93	$23941^{\circ}_{9/2}-42952_{7/2}$				
5257.680	4	19014.50	$24701^{\circ}_{9/2}-43715_{11/2}$				
5255.503	20	19022.38	$18990_{11/2}-38012^{\circ}_{13/2}$	S0	0.36	0.70	
5253.593	2	19029.30	$23873_{7/2}-42902^{\circ}_{5/2}$				
5252.284	4	19034.04					
5249.016	3	19045.89					
5248.550	7	19047.58	$24708^{\circ}_{7/2}-43755_{9/2}$				
5244.798	5	19061.21	$24160^{\circ}_{1/2}-43221_{3/2}$				
5241.942	5	19071.59	$24246^{\circ}_{7/2}-43318_{5/2}$				
5239.640	20	19079.97	$25130_{15/2}-44210^{\circ}_{15/2}$	ΔJ=0	1.12	0.38	
5234.800	7	19097.61	$13119_{9/2}-32217^{\circ}_{9/2}$	T	1.30		
5234.555	10	19098.50					
5233.928	20	19100.79	$16456_{17/2}-35557^{\circ}_{15/2}$	S0	0.58	0.60	
5233.440	5	19102.57	$25488_{11/2}-44591^{\circ}_{13/2}$				
5233.053	30	19103.99	$15587_{11/2}-34691^{\circ}_{11/2}$	ΔJ=0	?	0.56	
5232.397	3	19106.38	$27491_{11/2}-46597^{\circ}_{13/2}$				
5231.916	20	19108.14	$19753^{\circ}_{7/2}-38861^{\circ}_{5/2}$				
5231.055	2	19111.28	$23431^{\circ}_{5/2}-42543_{7/2}$				
5230.535	2	19113.18					
5226.304	20	19128.66	$19748_{9/2}-38877^{\circ}_{11/2}$				
5224.130	5	19136.62					
5223.082	30	19140.46	$20406^{\circ}_{5/2}-39547_{5/2}$	ΔJ=0	1.58	1.29	*
5223.014	2	19140.70	$22559^{\circ}_{11/2}-41700_{11/2}$				
5218.035	50	19158.97	$18853_{11/2}-38012^{\circ}_{13/2}$	S0	0.73	0.32	
5216.243	3	19165.55	$18693_{15/2}-37858^{\circ}_{15/2}$				
5215.445	20	19168.48	$22559^{\circ}_{11/2}-41728_{9/2}$	SI	1.70	0.53	
5214.805	3	19170.84	$18990_{11/2}-38161^{\circ}_{11/2}$				
5213.376	600	19176.09	$16456_{17/2}-35633^{\circ}_{17/2}$	ΔJ=0	1.18	0.07	
5212.853	3	19178.01	$22902^{\circ}_{13/2}-42080_{11/2}$				
5212.650	50	19178.76	$15271_{15/2}-34449^{\circ}_{13/2}$	S0	0.41	0.65	
5207.125	30	19199.11	$17454_{13/2}-36653^{\circ}_{15/2}$	T	1.11		
5206.366	15	19201.91	$17454_{13/2}-36656^{\circ}_{11/2}$				
5205.916	1	19203.57	$22929_{5/2}-42133^{\circ}_{7/2}$				
5204.128	30	19210.17					
5202.080	5	19217.73	$24246^{\circ}_{7/2}-43464_{9/2}$				
5200.411	2	19223.90					
5199.726	1	19226.43	$21120_{7/2}-40347^{\circ}_{5/2}$				
5199.107	70	19228.72	$20406^{\circ}_{5/2}-39635_{3/2}$	SI	1.58	1.33	*
5198.436	1	19231.20	$23882_{3/2}-43113^{\circ}_{5/2}$				
5198.176	1	19232.16	$22468^{\circ}_{11/2}-41700_{11/2}$				
5193.960	20	19247.77	$24611^{\circ}_{5/2}-43859_{5/2}$				
5193.312	2	19250.17	$22929_{5/2}-42179^{\circ}_{5/2}$				
5191.796	20	19255.80	$23941^{\circ}_{9/2}-43196_{11/2}$				
5190.673	7	19259.96	$22468^{\circ}_{11/2}-41728_{9/2}$				
5190.655	30	19260.03	$22468^{\circ}_{11/2}-41728_{9/2}$				
5190.622	10	19260.15					
5187.742	1	19270.84	$23781_{9/2}-43052^{\circ}_{7/2}$				
5187.433	3	19271.99	$23309_{11/2}-42581^{\circ}_{11/2}$				
5185.969	5	19277.43	$21997_{11/2}-41274^{\circ}_{13/2}$				
5185.249	300	19280.11	$8771^{\circ}_{5/2}-28051_{5/2}$	ΔJ=0	0.92	0.29	
5185.154	10	19280.46	$22419^{\circ}_{9/2}-41700_{11/2}$				
5184.182	3	19284.08	$23309_{11/2}-42594^{\circ}_{9/2}$				
5182.680	70	19289.66	$21799^{\circ}_{3/2}-41089_{1/2}$	T	1.42	0.03	
5179.624	2	19301.05	$24137_{13/2}-43438^{\circ}_{13/2}$				
5177.911	2	19307.43	$18853_{11/2}-38161^{\circ}_{11/2}$				
5177.688	50	19308.26	$22419^{\circ}_{9/2}-41728_{9/2}$	ΔJ=0	0.98	0.52	
5176.397	1	19313.08	$19548_{5/2}-38861^{\circ}_{5/2}$				
5175.745	4	19315.51					
5174.823	3	19318.95	$24957^{\circ}_{11/2}-44276_{11/2}$				
5174.612	6	19319.74	$18693_{15/2}-38012^{\circ}_{13/2}$				
5174.584	30	19319.84					
5174.567	10	19319.91					
5174.393	10	19320.56	$17613_{9/2}-36934^{\circ}_{7/2}$				
5171.832	5	19330.12					
5171.308	10	19332.08					
5171.162	3	19332.63	$23335^{\circ}_{7/2}-42667_{9/2}$				
5169.679	10	19338.17	$25207^{\circ}_{3/2}-44545_{3/2}$	ΔJ=0	1.20	0.40	
5168.927	40	19340.99	$19748_{9/2}-39089^{\circ}_{11/2}$				
5168.198	3	19343.72	$21737_{9/2}-41081^{\circ}_{11/2}$				
5168.124	2	19343.99	$24246^{\circ}_{7/2}-43590_{7/2}$				
5166.397	3	19350.46					
5163.886	4	19359.87					

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
5163.290	1	19362.10	$23941^{\circ}_{9/2}-43303_{7/2}$				
5160.543	200	19372.41	$8771^{\circ}_{5/2}-28143_{3/2}$	SI	0.85	0.65	*
5160.053	20	19374.25	$18837_{9/2}-38211^{\circ}_{7/2}$				
5156.207	2	19388.70	$22791_{7/2}-42179^{\circ}_{5/2}$				
5154.482	3	19395.19					
5154.034	10	19396.87	$21120_{7/2}-40517^{\circ}_{9/2}$				
5153.555	2	19398.68					
5150.405	5	19410.54	$19466_{13/2}-38877^{\circ}_{11/2}$				
5149.600	10	19413.58	$23941^{\circ}_{9/2}-43354_{9/2}$				
5147.705	50	19420.72	$16957_{7/2}-36377^{\circ}_{9/2}$	SI	1.33	0.12	
5147.172	4	19422.73					
5145.367	5	19429.55	$23335^{\circ}_{7/2}-42764_{9/2}$				
5142.886	300	19438.92	$19748_{9/2}-39187^{\circ}_{7/2}$	S0	1.09	0.18	
5142.545	100	19440.21	$20406^{\circ}_{5/2}-39847_{7/2}$	S0	0.54	0.73	
5141.405	4	19444.52	$23431^{\circ}_{5/2}-42876_{5/2}$				
5140.392	4	19448.35	$23335^{\circ}_{7/2}-42783_{7/2}$				
5137.310	3	19460.02	$24957^{\circ}_{11/2}-44417_{11/2}$				
5137.102	2	19460.81	$23309_{11/2}-42770^{\circ}_{9/2}$				
5135.682	10	19466.19	$19753_{7/2}-39220^{\circ}_{9/2}$				
5135.503	15	19466.87	$15587_{11/2}-35054^{\circ}_{9/2}$	S0	1.11	0.14	
5134.282	20	19471.50	$19748_{9/2}-39220^{\circ}_{9/2}$				
5131.564	4	19481.81	$23574^{\circ}_{3/2}-43056_{5/2}$				
5129.526	4	19489.55					
5129.210	3	19490.75	$19753_{7/2}-39244^{\circ}_{9/2}$				
5129.127	15	19491.06		S0	0.83	0.23	
5127.819	20	19496.04	$19748_{9/2}-39244^{\circ}_{9/2}$				
5127.215	2	19498.33	$24708^{\circ}_{7/2}-44206_{7/2}$				
5125.593	2	19504.50					
5124.516	7	19508.60	$18990_{11/2}-38499^{\circ}_{9/2}$				
5123.370	30	19512.97	$19548_{5/2}-39061^{\circ}_{3/2}$				
5121.353	3	19520.65	$22559^{\circ}_{11/2}-42080_{11/2}$				
5120.671	150	19523.25	$19753_{7/2}-39277^{\circ}_{5/2}$	T	1.18		
5118.610	4	19531.11	$18853_{11/2}-38384^{\circ}_{9/2}$				
5115.953	5 *h*	19541.26	$23335^{\circ}_{7/2}-42876_{5/2}$				
5113.970	500 *r*	19548.83	$0^{\circ}_{7/2}-19548_{5/2}$	SI	1.53	0.39	
5113.890	10	19549.14					
5112.482	20	19554.52					
5112.065	2	19556.12	$23873_{7/2}-43429^{\circ}_{9/2}$				
5111.776	7	19557.22	$24708^{\circ}_{7/2}-44265_{7/2}$				
5111.691	30	19557.55	$24957^{\circ}_{11/2}-44515_{13/2}$	S0	0.56	0.56	
5109.476	1	19566.03					
5109.103	2	19567.45	$23335^{\circ}_{7/2}-42902_{9/2}$				
5108.426	1	19570.05	$25520^{\circ}_{11/2}-45091_{9/2}$				
5107.533	400	19573.47	$19748_{9/2}-39322^{\circ}_{9/2}$	ΔJ=0	1.22	0.64	
5106.760	2	19576.43	$22791_{7/2}-42367^{\circ}_{5/2}$				
5106.174	2	19578.68	$21997_{11/2}-41576^{\circ}_{9/2}$				
5105.526	2	19581.16					
5104.237	2	19586.11	$23574^{\circ}_{3/2}-43160_{3/2}$				
5103.387	20	19589.37	$20406^{\circ}_{5/2}-39996_{7/2}$				
5103.006	1	19590.83	$17343_{7/2}-36934^{\circ}_{7/2}$				
5101.896	10	19595.10	$24611^{\circ}_{5/2}-44206_{7/2}$	SI	1.35	0.29	
5101.821	2	19595.38					
5101.129	40	19598.04	$18990_{11/2}-38588^{\circ}_{13/2}$	T	1.22		
5097.469	2	19612.11	$22468^{\circ}_{11/2}-42080_{11/2}$				
5096.222	2	19616.91	$23335^{\circ}_{7/2}-42952_{7/2}$				
5095.530	2	19619.58	$19132_{3/2}-38751^{\circ}_{5/2}$				
5094.641	2	19623.00					
5094.277	30	19624.40	$23431^{\circ}_{5/2}-43056_{5/2}$				
5092.277	2	19632.11	$24611^{\circ}_{5/2}-44243_{5/2}$				
5092.009	4	19633.14	$19753_{7/2}-39386^{\circ}_{5/2}$				
5091.391	2	19635.53	$16742_{7/2}-36377^{\circ}_{9/2}$				
5090.162	7	19640.27	$24160^{\circ}_{1/2}-43800_{3/2}$				
5089.437	2	19643.06	$22902^{\circ}_{13/2}-42545_{13/2}$				
″			$21120_{7/2}-40763^{\circ}_{7/2}$				
5088.881	40	19645.21	$18853_{11/2}-38499^{\circ}_{9/2}$				
″			$18837_{9/2}-38482^{\circ}_{7/2}$				
5088.302	15	19647.45	$23574^{\circ}_{3/2}-43221_{3/2}$				
5087.323	10	19651.23					
5086.607	7	19653.99	$24611^{\circ}_{5/2}-44265_{7/2}$				
5085.086	200	19659.87	$20406^{\circ}_{5/2}-40066_{5/2}$	ΔJ=0	1.58	1.36	*
5084.950	20	19660.40	$22419^{\circ}_{9/2}-42080_{11/2}$				
5084.624	6	19661.66	$18837_{9/2}-38499^{\circ}_{9/2}$				
5084.244	4	19663.13	$17613_{9/2}-37276^{\circ}_{11/2}$				
5083.914	5	19664.40					
5083.402	10	19666.38					
5083.197	5	19667.18	$17343_{7/2}-37010^{\circ}_{9/2}$				
5081.729	20	19672.86	$24708^{\circ}_{7/2}-44380_{9/2}$	SI	1.40	0.25	
5081.643	3	19673.19					
5080.948	1	19675.88	$18853_{11/2}-38529^{\circ}_{11/2}$				
5080.577	20	19677.32	$8771^{\circ}_{5/2}-28448_{5/2}$	ΔJ=0	0.94	0.33	
5079.925	1	19679.84	$24701^{\circ}_{9/2}-44380_{9/2}$				
5079.675	6	19680.81					
5078.180	40	19686.61	$22742^{\circ}_{13/2}-42429_{11/2}$	T	1.20		
5077.312	2	19689.97	$21997_{11/2}-41687^{\circ}_{11/2}$				
5077.183	300	19690.47	$19753_{7/2}-39444^{\circ}_{9/2}$	S0	0.90	0.21	
5076.875	20	19691.67					
5076.705	2	19692.33	$18837_{9/2}-38529^{\circ}_{11/2}$				
5076.469	10	19693.24					
5076.360	200	19693.67	$21799^{\circ}_{3/2}-41493_{5/2}$	S0	1.05	0.24	
5075.970	2	19695.18	$18990_{11/2}-38685^{\circ}_{9/2}$				
5075.820	60	19695.76	$19748_{9/2}-39444^{\circ}_{9/2}$	ΔJ=0	1.185	0.66	
5073.513	100	19704.72	$17454_{13/2}-37159^{\circ}_{15/2}$	SI	1.80	0.58	
5072.416	300	19708.98	$19753_{7/2}-39462^{\circ}_{7/2}$	ΔJ=0	1.15	0.20	
5071.833	1	19711.24					
5071.717	3	19711.69	$24611^{\circ}_{5/2}-44323_{7/2}$				
5071.200	20	19713.70	$22742^{\circ}_{13/2}-42456_{13/2}$	ΔJ=0	1.22	0.10	
5071.057	30	19714.26	$19748_{9/2}-39462^{\circ}_{7/2}$	SI	1.92	0.63	
5070.494	20	19716.45	$24701^{\circ}_{9/2}-44417_{11/2}$	T	1.15		
5070.432	10	19716.69	$19753_{7/2}-39470^{\circ}_{5/2}$				
5069.817	3	19719.08					
5069.300	2	19721.09	$23335^{\circ}_{7/2}-43056_{5/2}$				
5068.890	50	19722.69	$16456_{17/2}-36179^{\circ}_{15/2}$	SI	1.29	0.14	
5067.918	10	19726.47	$19753_{7/2}-39480^{\circ}_{7/2}$				
5067.825	30	19726.83					
5067.463	30	19728.24	$19548_{5/2}-39277^{\circ}_{5/2}$				
5066.670	800	19731.33	$19748_{9/2}-39479^{\circ}_{11/2}$	S0	0.86	0.36	
5065.876	100	19734.42	$19753_{7/2}-39488^{\circ}_{9/2}$	SI	1.40	0.35	
5065.812	30	19734.67	$18853_{11/2}-38588^{\circ}_{13/2}$				
″			$24246^{\circ}_{7/2}-43981_{7/2}$				
5064.523	10	19739.69	$19748_{9/2}-39488^{\circ}_{9/2}$				
5062.250	200	19748.56	$0^{\circ}_{7/2}-19748_{9/2}$	SI	1.143	1.29	*
5060.895	2000 *r*	19753.84	$0^{\circ}_{7/2}-19753_{7/2}$	ΔJ=0	1.15	0.13	
5058.208	2	19764.34	$24418_{5/2}-44182^{\circ}_{5/2}$				
5057.559	5	19766.87	$17752_{5/2}-37519^{\circ}_{7/2}$				
5056.182	60	19772.26		T	1.27	0.07	
5055.227	5	19775.99	$15587_{11/2}-35363^{\circ}_{9/2}$				
5054.909	1	19777.24	$21161_{5/2}-40938^{\circ}_{5/2}$				
5054.619	3	19778.37					
5054.119	10	19780.33	$23335^{\circ}_{7/2}-43115_{9/2}$				
5053.043	150	19784.54	$8771^{\circ}_{5/2}-28555_{7/2}$	SI	0.85	1.15	*
5051.648	20	19790.00	$23431^{\circ}_{5/2}-43221_{3/2}$	SI	1.29	0.06	
5050.935	2	19792.80	$18693_{15/2}-38485^{\circ}_{15/2}$				
5049.798	2	19797.25					
5048.493	2	19802.37	$22742^{\circ}_{13/2}-42545_{13/2}$				
5046.254	1	19811.16	$23431^{\circ}_{5/2}-43243_{5/2}$				
5046.177	2	19811.46					
5045.963	10	19812.30	$22929_{5/2}-42742^{\circ}_{7/2}$				
5045.408	250	19814.48	$19748_{9/2}-39563^{\circ}_{11/2}$	S0	0.23	0.86	
5044.758	2	19817.03	$16456_{17/2}-36273^{\circ}_{15/2}$				
5043.505	100	19821.95	$17454_{13/2}-37276^{\circ}_{11/2}$	S0	0.61	0.54	
5043.238	5	19823.00					
5041.213	20	19830.97	$22902^{\circ}_{13/2}-42733_{15/2}$				
5040.738	20	19832.83					
5039.393	20	19838.13	$19548_{5/2}-39386^{\circ}_{5/2}$	T	0.99		
5037.057	4	19847.33	$23941^{\circ}_{9/2}-43788_{11/2}$				
5036.129	1	19850.99	$21161_{5/2}-41012^{\circ}_{7/2}$				
5035.618	20	19853.00	$22742^{\circ}_{13/2}-42595_{11/2}$	T	1.21		
5032.620	6	19864.83	$19548_{5/2}-39413^{\circ}_{7/2}$				
5032.183	2	19866.55					
5031.341	3	19869.88	$22559^{\circ}_{11/2}-42429_{11/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
5031.042	9	19871.06	$19548_{5/2}-39419^{\circ}_{3/2}$				
5030.260	200	19874.15	$19753_{7/2}-39628^{\circ}_{7/2}$	ΔJ=0	1.10	0.51	
5029.262	1	19878.09	$17343_{7/2}-37221^{\circ}_{7/2}$				
5028.608	1	19880.68					
5028.228	4	19882.18	$24418_{5/2}-44300^{\circ}_{5/2}$				
5027.060	10	19886.80	$18990_{11/2}-38877^{\circ}_{11/2}$	ΔJ=0	1.15	0.84	
5025.860	2	19891.55	$21120_{7/2}-41012^{\circ}_{7/2}$				
5024.890	50	19895.38	$18693_{15/2}-38588^{\circ}_{13/2}$	S0	0.89	0.26	
5024.429	1	19897.21					
5023.681	4	19900.17					
5023.597	5	19900.51	$25488_{11/2}-45389^{\circ}_{13/2}$				
5022.457	4	19905.02	$19753_{7/2}-39658^{\circ}_{5/2}$				
5022.198	3	19906.05	$22419^{\circ}_{9/2}-42325_{7/2}$				
5021.123	100	19910.31	$17454_{13/2}-37365^{\circ}_{13/2}$	ΔJ=0	1.18	0.35	
5019.156	2	19918.11	$24611^{\circ}_{5/2}-44529_{7/2}$				
5018.737	20	19919.78	$21997_{11/2}-41917^{\circ}_{13/2}$				
″			$23574^{\circ}_{3/2}-43494_{5/2}$				
5018.442	5	19920.95					
5017.303	40	19925.47	$18990_{11/2}-38915^{\circ}_{13/2}$	T	1.25	0.04	
5016.272	10	19929.56	$19132_{3/2}-39061^{\circ}_{3/2}$				
5014.277	50	19937.49		T	0.70		
5013.281	3	19941.45					
5010.718	20	19951.65	$21799^{\circ}_{3/2}-41751_{5/2}$	S0	1.45	1.08	*
5010.245	30	19953.54	$20406^{\circ}_{5/2}-40360_{7/2}$				
″			$21120_{7/2}-41074^{\circ}_{5/2}$				
5009.690	10	19955.75					
5008.497	1	19960.50	$19748_{9/2}-39709^{\circ}_{11/2}$				
5008.163	1	19961.83	$24957^{\circ}_{11/2}-44919_{9/2}$				
5007.092	20	19966.10	$22902^{\circ}_{13/2}-42868_{11/2}$				
5006.736	10	19967.52	$19466_{13/2}-39434^{\circ}_{13/2}$				
5006.703	2	19967.65	$22902^{\circ}_{13/2}-42869_{13/2}$				
5006.607	10	19968.04	$24348_{9/2}-44316^{\circ}_{9/2}$				
″			$23335^{\circ}_{7/2}-43303_{7/2}$				
5003.814	2	19979.18	$25488_{11/2}-45467^{\circ}_{9/2}$				
5003.708	3	19979.61	$22791_{7/2}-42770^{\circ}_{9/2}$				
5003.145	15	19981.85	$24708^{\circ}_{7/2}-44689_{9/2}$				
5002.197	10	19985.64	$22559^{\circ}_{11/2}-42545_{13/2}$				
5001.587	200	19988.08	$19753_{7/2}-39741^{\circ}_{9/2}$	S0	0.79	0.30	
5001.504	30	19988.41	$22468^{\circ}_{11/2}-42456_{13/2}$				
5001.025	200	19990.32	$22742^{\circ}_{13/2}-42733_{15/2}$	T	1.12	0.07	
5000.270	100	19993.34	$19548_{5/2}-39542^{\circ}_{7/2}$	SI	1.18	0.12	
4999.643	3	19995.85					
4996.201	1	20009.63	$22419^{\circ}_{9/2}-42429_{11/2}$				
4994.480	2	20016.52	$22559^{\circ}_{11/2}-42576_{9/2}$				
4992.780	20	20023.34					
4988.669	6	20039.84	$18837_{9/2}-38877^{\circ}_{11/2}$				
4987.139	2	20045.98					
4986.256	1	20049.53					
4985.627	1	20052.06					
4985.260	5	20053.54	$16957_{7/2}-37010^{\circ}_{9/2}$				
4985.130	200	20054.06	$19548_{5/2}-39602^{\circ}_{3/2}$	S0	0.985	1.31	*
4984.893	5*h*	20055.02	$22902^{\circ}_{13/2}-42957_{11/2}$				
4983.185	1	20061.89					
4983.136	2	20062.09	$18853_{11/2}-38915^{\circ}_{13/2}$				
4982.328	5	20065.34	$24418_{5/2}-44483^{\circ}_{3/2}$				
4979.540	3	20076.58	$24246^{\circ}_{7/2}-44323_{7/2}$				
4978.900	400	20079.16	$19548_{5/2}-39628^{\circ}_{7/2}$	SI	1.15	0.10	
4975.036	5	20094.75					
4973.953	30	20099.13	$18990_{11/2}-39089^{\circ}_{11/2}$	ΔJ=0	?	0.55	
4973.282	2	20101.84					
4971.694	10	20108.26	$22559^{\circ}_{11/2}-42667_{9/2}$				
4971.258	200	20110.02	$19548_{5/2}-39658^{\circ}_{5/2}$	ΔJ=0	0.97	0.08	
4967.437	2	20125.49	$22742^{\circ}_{13/2}-42868_{11/2}$				
4967.063	1	20127.01	$22742^{\circ}_{13/2}-42869_{13/2}$				
4966.880	10	20127.75	$22468^{\circ}_{11/2}-42595_{11/2}$				
4965.216	2	20134.49	$24246^{\circ}_{7/2}-44380_{9/2}$				
4964.672	7	20136.70	$21737_{9/2}-41874^{\circ}_{11/2}$				
4964.370	2	20137.92	$23309_{11/2}-43447^{\circ}_{11/2}$				
4963.052	2	20143.27					
4962.943	2	20143.71					
4962.673	3	20144.81	$19132_{3/2}-39277^{\circ}_{5/2}$				
4962.327	5*h*	20146.21	$23335^{\circ}_{7/2}-43481_{5/2}$				
4961.564	10	20149.31					
4960.163	10	20155.00	$17613_{9/2}-37768^{\circ}_{9/2}$				
4959.855	4	20156.26	$22419^{\circ}_{9/2}-42576_{9/2}$				
4959.283	2	20158.58	$23431^{\circ}_{5/2}-43590_{7/2}$				
4957.175	1000	20167.15	$18990_{11/2}-39157^{\circ}_{13/2}$	SI	1.38	0.14	
4956.474	1	20170.00	$24137_{13/2}-44307^{\circ}_{13/2}$				
4954.978	2	20176.09	$17343_{7/2}-37519^{\circ}_{7/2}$				
4954.585	5	20177.69	$20406^{\circ}_{5/2}-40584_{5/2}$				
4954.511	3	20178.00					
4953.834	2	20180.75					
4952.266	2	20187.14					
4951.704	1	20189.43					
4951.229	1	20191.37	$17454_{13/2}-37646^{\circ}_{13/2}$				
4951.080	2	20191.98	$16742_{7/2}-36934^{\circ}_{7/2}$				
4949.845	5	20197.02	$16456_{17/2}-36653^{\circ}_{15/2}$				
4949.188	1	20199.70	$22468^{\circ}_{11/2}-42667_{9/2}$				
4948.670	7	20201.81		T	0.98		
4948.353	100	20203.11	$17454_{13/2}-37657^{\circ}_{11/2}$	SI	1.84	0.69	
4947.852	5	20205.15	$22559^{\circ}_{11/2}-42764_{9/2}$				
4947.497	30	20206.60		T	1.10		
4946.358	3	20211.25	$24708^{\circ}_{7/2}-44919_{9/2}$				
4945.600	1	20214.35	$22742^{\circ}_{13/2}-42957_{11/2}$				
4945.299	2	20215.58					
4944.833	2	20217.49					
4944.652	10	20218.23	$24701^{\circ}_{9/2}-44919_{9/2}$	ΔJ=0	?	0.19	
4943.300	2	20223.76					
4942.640	30	20226.46	$23574^{\circ}_{3/2}-43800_{3/2}$	ΔJ=0	0.83	1.20	*
4942.199	1	20228.26					
4941.865	3	20229.63	$18990_{11/2}-39220^{\circ}_{9/2}$				
4940.383	20	20235.70	$18853_{11/2}-39089^{\circ}_{11/2}$	ΔJ=0	1.13	0.25	
4940.187	3	20236.50	$23335^{\circ}_{7/2}-43571_{5/2}$				
4939.440	3	20239.56	$23374_{13/2}-43614^{\circ}_{15/2}$				
4938.753	1	20242.38	$19466_{13/2}-39709^{\circ}_{11/2}$				
4938.698	5	20242.60	$20406^{\circ}_{5/2}-40649_{7/2}$				
4937.385	20	20247.98	$22419^{\circ}_{9/2}-42667_{9/2}$				
4935.880	20	20254.16	$18990_{11/2}-39244^{\circ}_{9/2}$				
4935.747	3	20254.70	$19132_{3/2}-39386^{\circ}_{5/2}$				
4934.798	2	20258.60	$25130_{15/2}-45389^{\circ}_{13/2}$				
4933.365	5	20264.48	$16957_{7/2}-37221^{\circ}_{7/2}$				
4933.162	1	20265.32	$23941^{\circ}_{9/2}-44206_{7/2}$				
4932.552	1	20267.82	$27377_{13/2}-47644^{\circ}_{13/2}$				
4932.390	2	20268.49					
4929.729	10	20279.43					
4929.228	2	20281.49	$24137_{13/2}-44418^{\circ}_{13/2}$				
4928.457	50	20284.66	$23574^{\circ}_{3/2}-43859_{5/2}$	SI	1.55	0.42	
4927.945	3	20286.77	$20406^{\circ}_{5/2}-40693_{3/2}$				
4927.732	200	20287.65	$19132_{3/2}-39419^{\circ}_{3/2}$	ΔJ=0	0.89	0.09	
4925.555	1	20296.61	$22468^{\circ}_{11/2}-42764_{9/2}$				
4925.274	1	20297.77	$23941^{\circ}_{9/2}-44238_{9/2}$				
4925.060	2	20298.65	$22419^{\circ}_{9/2}-42718_{9/2}$				
4923.826	600	20303.74	$18853_{11/2}-39157^{\circ}_{13/2}$	SI	1.67	0.42	
4922.524	2	20309.11	$23873_{7/2}-44182^{\circ}_{5/2}$				
4922.260	2	20310.20	$22559^{\circ}_{11/2}-42869_{13/2}$				
4921.620	1	20312.84	$19748_{9/2}-40061^{\circ}_{7/2}$				
4920.876	1	20315.91					
4917.085	20	20331.58	$18990_{11/2}-39322^{\circ}_{9/2}$	SI	1.50	0.23	
4916.180	1	20335.32	$23941^{\circ}_{9/2}-44276_{11/2}$				
4915.961	3	20336.23	$24246^{\circ}_{7/2}-44582_{9/2}$				
4915.475	1	20338.24	$19132_{3/2}-39470^{\circ}_{3/2}$				
4913.296	2	20347.26					
4909.736	200	20362.01	$15271_{15/2}-35633^{\circ}_{17/2}$	SI	1.88	0.70	
4908.727	5	20366.19	$18853_{11/2}-39220^{\circ}_{9/2}$				
4907.550	30	20371.08	$15587_{11/2}-35958^{\circ}_{13/2}$	S0	0.39	0.74	
4907.269	100	20372.25	$18990_{11/2}-39362^{\circ}_{11/2}$	ΔJ=0	1.18	0.44	
4904.690	2	20382.96	$24708^{\circ}_{7/2}-45091_{9/2}$				
4902.815	20	20390.75	$18853_{11/2}-39244^{\circ}_{9/2}$				
″			$23873_{7/2}-44263^{\circ}_{7/2}$				
4901.854	2	20394.75					

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je
4901.627	100	20395.69	$20406^{\circ}_{5/2}-40802_{7/2}$	S0	0.22	0.98
4901.165	1	20397.62	$22559^{\circ}_{11/2}-42957_{11/2}$			
4900.993	5	20398.33	$24348_{9/2}-44747^{\circ}_{11/2}$			
4900.746	5	20399.36	$21799^{\circ}_{3/2}-42198_{5/2}$			
4900.545	5	20400.20	$22468^{\circ}_{11/2}-42868_{11/2}$			
4900.190	8	20401.68	$22468^{\circ}_{11/2}-42869_{13/2}$			
4900.120	10	20401.97				
4899.680	5	20403.80	$17454_{13/2}-37858^{\circ}_{15/2}$			
4897.535	1	20412.74	$21120_{7/2}-41533^{\circ}_{5/2}$			
4896.150	10	20418.51				
4895.668	10	20420.52	$23335^{\circ}_{7/2}-43755_{9/2}$			
4894.534	4	20425.25	$17343_{7/2}-37768^{\circ}_{9/2}$			
4894.233	3	20426.51				
4893.436	1	20429.83				
4891.670	2	20437.21	$24418_{5/2}-44855^{\circ}_{5/2}$			
4891.640	8	20437.33				
4890.166	2	20443.49	$24246^{\circ}_{7/2}-44689_{9/2}$			
″			$23873_{7/2}-44316^{\circ}_{9/2}$			
4889.425	20	20446.59		T	0.96	
4887.660	40*h*	20453.98				
4887.346	10	20455.29	$21120_{7/2}-41576^{\circ}_{9/2}$			
4887.140	3	20456.15				
4886.464	3	20458.98	$17752_{5/2}-38211^{\circ}_{7/2}$			
4884.263	10	20468.20	$18853_{11/2}-39322^{\circ}_{9/2}$			
4883.675	200	20470.67	$19132_{3/2}-39602^{\circ}_{3/2}$	ΔJ=0	0.88	1.30 *
4879.194	300	20489.47	$18990_{11/2}-39479^{\circ}_{11/2}$	ΔJ=0	1.20	0.12
4877.022	1	20498.59				
4874.590	40	20508.82	$18853_{11/2}-39362^{\circ}_{11/2}$	ΔJ=0	1.15	0.13
4874.420	3	20509.53				
4873.819	2	20512.06				
4870.997	7	20523.95	$23335^{\circ}_{7/2}-43859_{5/2}$			
4870.687	20	20525.25	$18837_{9/2}-39362^{\circ}_{11/2}$	T	1.13	
4870.367	200	20526.60	$19132_{3/2}-39658^{\circ}_{5/2}$	SI	1.09	0.13
4869.839	50	20528.83		S0	0.80	0.35
4868.372	1	20535.01	$23781_{9/2}-44316^{\circ}_{9/2}$			
4867.812	4	20537.37	$22419^{\circ}_{9/2}-42957_{11/2}$			
4866.270	50	20543.88	$21997_{11/2}-42541^{\circ}_{11/2}$	ΔJ=0	1.08	0.17
4865.392	10	20547.59	$17613_{9/2}-38161^{\circ}_{11/2}$	S0	0.87	0.27
4865.000	3	20549.24	$23431^{\circ}_{5/2}-43981_{7/2}$			
4863.571	2*d*	20555.28				
4862.934	30	20557.97	$17454_{13/2}-38012^{\circ}_{13/2}$	ΔJ=0	1.12	0.26
4861.867	4	20562.49	$16957_{7/2}-37519^{\circ}_{7/2}$			
4861.495	2	20564.06	$21997_{11/2}-42561^{\circ}_{9/2}$			
4860.398	1	20568.70	$19753_{7/2}-40322^{\circ}_{9/2}$			
4859.473	30	20572.62	$18990_{11/2}-39563^{\circ}_{11/2}$	ΔJ=0	1.15	0.57
4859.310	4	20573.31				
4857.658	1	20580.30	$18853_{11/2}-39434^{\circ}_{13/2}$			
4856.670	20	20584.49	$21997_{11/2}-42581^{\circ}_{11/2}$	ΔJ=0	1.09	0.42
4856.356	10	20585.82				
4855.758	2	20588.36	$23941^{\circ}_{9/2}-44529_{7/2}$			
4854.566	3	20593.41	$19753_{7/2}-40347^{\circ}_{5/2}$			
4853.825	2	20596.55	$21997_{11/2}-42594^{\circ}_{9/2}$			
4853.495	30	20597.96	$17613_{9/2}-38211^{\circ}_{7/2}$	SI	1.25	0.05
4851.755	100	20605.34	$19132_{3/2}-39737^{\circ}_{1/2}$	SI	0.92	0.04
4850.415	3	20611.03				
4847.925	70	20621.62		SI	1.47	0.36
4847.573	2	20623.12	$23335^{\circ}_{7/2}-43958_{5/2}$			
4846.887	40	20626.04	$18853_{11/2}-39479^{\circ}_{11/2}$	ΔJ=0	1.18	0.28
4845.544	3	20631.75				
4844.591	50	20635.81	$15587_{11/2}-36223^{\circ}_{13/2}$	S0	0.38	0.76
4844.237	2	20637.32	$22559^{\circ}_{11/2}-43196_{11/2}$			
4842.935	10	20642.87	$18837_{9/2}-39480^{\circ}_{7/2}$	T	1.04	0.08
4841.066	1	20650.84	$18837_{9/2}-39488^{\circ}_{9/2}$			
4837.653	1	20665.41	$21120_{7/2}-41786^{\circ}_{9/2}$			
4835.903	5	20672.89	$24246^{\circ}_{7/2}-44919_{9/2}$			
4835.754	300	20673.52	$13119_{9/2}-33793^{\circ}_{11/2}$	S0	1.01	0.24
4834.607	2	20678.43	$22419^{\circ}_{9/2}-43098_{7/2}$			
4832.400	2	20687.87	$15271_{15/2}-35958^{\circ}_{13/2}$			
4831.930	20	20689.88		T	1.10	
4830.590	15	20695.62	$22419^{\circ}_{9/2}-43115_{9/2}$			
4828.966	100	20702.58	$16456_{17/2}-37159^{\circ}_{15/2}$	S0	0.79	0.36
4828.797	15	20703.31		T	1.16	
4828.066	40	20706.44	$17454_{13/2}-38161^{\circ}_{11/2}$	T	1.14	
4827.430	10	20709.17	$18853_{11/2}-39563^{\circ}_{11/2}$			
4827.312	4	20709.68	$24348_{9/2}-45058^{\circ}_{11/2}$			
4825.230	1	20718.61	$18990_{11/2}-39709^{\circ}_{11/2}$			
4824.465	1	20721.90	$24348_{9/2}-45070^{\circ}_{9/2}$			
4822.592	2	20729.94	$17752_{5/2}-38482^{\circ}_{7/2}$			
4821.597	20	20734.22	$17613_{9/2}-38347^{\circ}_{11/2}$			
4819.793	10	20741.98	$15587_{11/2}-36329^{\circ}_{11/2}$			
4818.200	2	20748.84	$23941^{\circ}_{9/2}-44689_{9/2}$			
4817.839	10	20750.40		T	1.35	
4817.139	1	20753.41	$22791_{7/2}-43544^{\circ}_{9/2}$			
4816.387	1	20756.65	$24957^{\circ}_{11/2}-45714_{11/2}$			
4815.403	3	20760.89	$21120_{7/2}-41881^{\circ}_{9/2}$			
4813.496	150	20769.12		S0	0.64	0.37
4812.996	1	20771.27	$17613_{9/2}-38384^{\circ}_{9/2}$			
4812.238	2	20774.55	$23431^{\circ}_{5/2}-44206_{7/2}$			
4811.650	50	20777.08	$22419^{\circ}_{9/2}-43196_{11/2}$			
4809.756	7	20785.27	$19748_{9/2}-40533^{\circ}_{7/2}$			
4808.679	300	20789.92	$15587_{11/2}-36377^{\circ}_{9/2}$	SI	1.40	0.16
4807.477	100	20795.12	$16456_{17/2}-37252^{\circ}_{17/2}$	ΔJ=0	1.16	0.26
4807.022	7	20797.09	$21799^{\circ}_{3/2}-42596_{5/2}$			
4806.709	2	20798.44	$19548_{5/2}-40347^{\circ}_{5/2}$			
4805.502	10	20803.67	$21737_{9/2}-42541^{\circ}_{11/2}$	S0	0.97	0.12
4804.273	5	20808.99	$23941^{\circ}_{9/2}-44750_{7/2}$			
4801.266	10	20822.02				
4799.509	30	20829.64				
4799.297	4	20830.56				
4798.633	10	20833.45	$23431^{\circ}_{5/2}-44265_{7/2}$			
4798.105	4	20835.74	$23374_{13/2}-44210^{\circ}_{15/2}$			
4796.660	10	20842.01	$21997_{11/2}-42839^{\circ}_{9/2}$	S0	0.98	0.09
4796.138	3	20844.28	$21737_{9/2}-42581^{\circ}_{11/2}$			
4795.343	10	20847.74	$19748_{9/2}-40596^{\circ}_{7/2}$	S0	1.22	0.07
4793.628	1	20855.20	$18853_{11/2}-39709^{\circ}_{11/2}$			
4793.360	4	20856.36	$21737_{9/2}-42594^{\circ}_{9/2}$			
4792.393	60	20860.57		S0	0.54	0.50
4791.915	2	20862.65				
4790.632	30	20868.24	$17343_{7/2}-38211^{\circ}_{7/2}$	ΔJ=0	1.10	0.54
4789.659	4	20872.48	$22419^{\circ}_{9/2}-43292_{9/2}$			
4787.429	5	20882.20				
4786.704	2	20885.36	$17613_{9/2}-38499^{\circ}_{9/2}$			
4786.210	2	20887.52				
4785.335	2	20891.34				
4784.179	2	20896.39				
4783.116	4	20901.03	$23873_{7/2}-44774^{\circ}_{9/2}$			
4782.501	1	20903.72	$23335^{\circ}_{7/2}-44238_{9/2}$			
4782.312	5*d*	20904.54	$18837_{9/2}-39741^{\circ}_{9/2}$			
4781.460	1	20908.27	$23335^{\circ}_{7/2}-44243_{5/2}$			
4780.716	10	20911.52	$17752_{5/2}-38664^{\circ}_{7/2}$	S0	0.65	0.38
4780.480	1	20912.56	$21997_{11/2}-42910^{\circ}_{13/2}$			
4780.020	1	20914.57	$19748_{9/2}-40663^{\circ}_{11/2}$			
4779.689	20	20916.02	$17613_{9/2}-38529^{\circ}_{11/2}$	S0	1.03	0.10
4776.461	1	20930.15	$23335^{\circ}_{7/2}-44265_{7/2}$			
4775.924	2	20932.50	$23374_{13/2}-44307^{\circ}_{13/2}$			
4775.465	20	20934.52	$22902^{\circ}_{13/2}-43836_{13/2}$	ΔJ=0	1.16	0.26
4774.162	40*h*	20940.23				
4771.340	2	20952.61	$15271_{15/2}-36223^{\circ}_{13/2}$			
4769.035	2	20962.74				
4768.447	6	20965.33	$23781_{9/2}-44747^{\circ}_{11/2}$	T	1.19	
4767.328	10	20970.25		S0	0.40	0.58
4766.965	2	20971.84	$21161_{5/2}-42133^{\circ}_{7/2}$			
4766.752	1	20972.78	$22742^{\circ}_{13/2}-43715_{11/2}$			
4761.714	1	20994.97	$23873_{7/2}-44868^{\circ}_{9/2}$			
4760.460	3	21000.50				
4759.905	500	21002.95	$15271_{15/2}-36273^{\circ}_{15/2}$	ΔJ=0	1.10	0.33
4759.587	1	21004.35	$21737_{9/2}-42742^{\circ}_{7/2}$			
4757.756	2	21012.44	$21120_{7/2}-42133^{\circ}_{7/2}$			
4757.295	1	21014.47				
4757.095	7	21015.36	$19748_{9/2}-40763^{\circ}_{7/2}$	SI	1.65	0.36

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
4754.589	30	21026.43	$16742_{7/2}-37768^{\circ}_{9/2}$	S0	0.85	0.35	
4752.590	2	21035.28					
4751.168	30	21041.57	$17343_{7/2}-38384^{\circ}_{9/2}$	SI	1.48	0.36	
4750.610	3	21044.04	$23374_{13/2}-44418^{\circ}_{13/2}$				
4750.533	6	21044.38	$22419^{\circ}_{9/2}-43464_{9/2}$				
4750.241	30	21045.68	$22742^{\circ}_{13/2}-43788_{11/2}$	SI	1.45	0.22	
4749.838	1	21047.46	$19548_{5/2}-40596^{\circ}_{7/2}$				
4747.930	2	21055.92					
4747.222	4	21059.06	$21120_{7/2}-42179^{\circ}_{5/2}$				
4744.329	15	21071.90	$17613_{9/2}-38685^{\circ}_{9/2}$	ΔJ=0	1.10	0.62	
4743.659	2	21074.88	$17454_{13/2}-38529^{\circ}_{11/2}$				
4743.177	3	21077.02	$21799^{\circ}_{3/2}-42876_{5/2}$				
4741.113	40	21086.20	$20406^{\circ}_{5/2}-41493_{5/2}$	ΔJ=0	1.58	1.29	*
4740.918	1	21087.06	$23431^{\circ}_{5/2}-44518_{5/2}$				
4739.390	4	21093.86	$22742^{\circ}_{13/2}-43836_{13/2}$				
4739.213	10	21094.65	$22419^{\circ}_{9/2}-43514_{7/2}$				
4739.109	1	21095.11					
4738.553	1	21097.59	$23431^{\circ}_{5/2}-44529_{7/2}$				
4737.908	10	21100.46					
4737.607	10	21101.80	$21737_{9/2}-42839^{\circ}_{9/2}$	ΔJ=0	1.105	0.17	
4735.917	20	21109.33	$17752_{5/2}-38861^{\circ}_{5/2}$	ΔJ=0	1.19	1.565	*
4734.490	2	21115.69					
4733.335	2000 *r*	21120.85	$0^{\circ}_{7/2}-21120_{7/2}$	ΔJ=0	1.16	0.21	
4732.235	3	21125.75					
4729.554	7	21137.73	$20406^{\circ}_{5/2}-41544_{5/2}$	ΔJ=0	1.40	0.83	
4729.334	1	21138.71					
4729.222	5	21139.21	$17343_{7/2}-38482^{\circ}_{7/2}$				
4726.821	3	21149.95	$23941^{\circ}_{9/2}-45091_{9/2}$				
4725.548	40	21155.65	$17343_{7/2}-38499^{\circ}_{9/2}$	SI	1.175	0.13	
4724.987	7	21158.16	$21799^{\circ}_{3/2}-42957_{5/2}$				
4724.260	700 *r*	21161.42	$0^{\circ}_{7/2}-21161_{5/2}$	T	1.145		
4723.608	10	21164.34					
4719.270	30	21183.79	$23335^{\circ}_{7/2}-44518_{5/2}$	SI	1.75	0.40	
4718.140	2	21188.87	$21997_{11/2}-43186^{\circ}_{11/2}$				
4717.726	40	21190.72	$13119_{9/2}-34310^{\circ}_{9/2}$	ΔJ=0	1.305	0.995	*
4717.623	2	21191.19	$23374_{13/2}-44565^{\circ}_{15/2}$				
4717.461	2	21191.91					
4716.522	15	21196.13	$22559^{\circ}_{11/2}-43755_{9/2}$	SI	1.52	0.35	
4716.236	4	21197.42	$23873_{7/2}-45070^{\circ}_{9/2}$				
4715.591	2	21200.32					
4715.002	2	21202.97					
4714.746	3	21204.12					
4713.344	20	21210.43	$20406^{\circ}_{5/2}-41617_{7/2}$	S0	1.58	1.29	*
4712.319	30	21215.04	$19132_{3/2}-40347^{\circ}_{5/2}$	SI	0.83	1.13	*
4712.004	20	21216.46	$23374_{13/2}-44591^{\circ}_{13/2}$	ΔJ=0	1.02	0.42	
4711.643	2	21218.08	$18990_{11/2}-40208^{\circ}_{9/2}$				
4710.198	50	21224.59		SI	1.39	0.29	
4706.954	1	21239.22					
4705.440	50	21246.05	$13119_{9/2}-34365^{\circ}_{7/2}$	SI	1.66	0.35	
4705.284	1	21246.76	$21120_{7/2}-42367^{\circ}_{5/2}$				
4705.113	4	21247.53	$22468^{\circ}_{11/2}-43715_{11/2}$				
4704.000	3	21252.56	$22929_{5/2}-44182^{\circ}_{5/2}$				
4703.540	10	21254.64	$16957_{7/2}-38211^{\circ}_{7/2}$	T	1.17		
4702.671	1	21258.56	$19753_{7/2}-41012^{\circ}_{7/2}$				
4702.366	1	21259.94	$18853_{11/2}-40113^{\circ}_{13/2}$				
4701.565	300	21263.56	$17613_{9/2}-38877^{\circ}_{11/2}$	S0	0.48	0.58	
4699.582	1	21272.54					
4699.234	10	21274.11	$23873_{7/2}-45147^{\circ}_{9/2}$				
4699.052	2	21274.94					
4698.663	3	21276.70	$23781_{9/2}-45058^{\circ}_{11/2}$				
4698.558	20	21277.17	$22559^{\circ}_{11/2}-43836_{13/2}$	SI	1.33	0.15	
4698.179	10	21278.89		S0	0.45	0.50	
4697.667	5	21281.21	$23309_{11/2}-44591^{\circ}_{13/2}$				
4696.256	2	21287.60	$22468^{\circ}_{11/2}-43755_{9/2}$				
4694.585	10	21295.18					
4694.443	4	21295.82	$22419^{\circ}_{9/2}-43715_{11/2}$				
4694.292	20	21296.51	$21737_{9/2}-43034^{\circ}_{7/2}$	S0	1.04	0.07	
4693.395	1	21300.58					
4692.492	2	21304.68	$24957^{\circ}_{11/2}-46262_{11/2}$				
4692.071	3	21306.59					
4691.855	10	21307.57					
4691.493	200	21309.21	$17752_{5/2}-39061^{\circ}_{3/2}$	S0	0.94	0.235	
4691.111	500 *r*	21310.95	$8771^{\circ}_{5/2}-30082_{5/2}$	ΔJ=0	0.82	0.15	
4690.808	20	21312.32		S0	0.73	0.35	
4690.112	1	21315.49					
4689.511	6	21318.22	$23431^{\circ}_{5/2}-44750_{7/2}$				
4688.943	2	21320.80	$17343_{7/2}-38664^{\circ}_{7/2}$				
4686.909	20	21330.05	$19748_{9/2}-41078^{\circ}_{9/2}$	ΔJ=0	1.31	0.17	
4686.297	2	21332.84	$19748_{9/2}-41081^{\circ}_{11/2}$				
4686.100	1	21333.74					
4685.490	1	21336.51	$19748_{9/2}-41085^{\circ}_{7/2}$				
4685.114	500	21338.23	$13119_{9/2}-34457^{\circ}_{9/2}$	ΔJ=0	1.30	1.18	*
4682.845	2	21348.57					
4681.920	1000 *r*	21352.78	$8771^{\circ}_{5/2}-30124_{7/2}$	SI	1.22	0.27	
4681.478	3	21354.80	$23335^{\circ}_{7/2}-44689_{9/2}$				
4681.320	3	21355.52	$19753_{7/2}-41109^{\circ}_{9/2}$	T	1.18		
4681.038	3	21356.81					
4680.087	5	21361.15	$21799^{\circ}_{3/2}-43160_{3/2}$				
4678.840	5	21366.84					
4678.447	3	21368.63	$22468^{\circ}_{11/2}-43836_{13/2}$				
″			$22419^{\circ}_{9/2}-43788_{11/2}$				
4678.028	10	21370.55	$22929_{5/2}-44300^{\circ}_{5/2}$	ΔJ=0	1.11	0.17	
4677.210	30	21374.28	$22902^{\circ}_{13/2}-44276_{11/2}$	S0	1.04	0.11	
4676.878	5	21375.80	$19748_{9/2}-41124^{\circ}_{9/2}$	ΔJ=0	1.24	0.16	
4676.429	5	21377.85					
4675.312	500	21382.96	$15271_{15/2}-36653^{\circ}_{15/2}$	ΔJ=0	1.10	0.36	
4675.098	300	21383.94		T	1.18		
4673.659	1	21390.52					
4671.214	10	21401.72	$16456_{17/2}-37858^{\circ}_{15/2}$	S0	1.02	0.15	
4669.746	10	21408.45	$17343_{7/2}-38751^{\circ}_{5/2}$	S0	1.02	1.215	*
4668.690	100	21413.29	$13119_{9/2}-34532^{\circ}_{11/2}$	S0	1.305	1.126	*
4668.321	4	21414.98	$23335^{\circ}_{7/2}-44750_{7/2}$				
4666.640	100	21422.70	$15587_{11/2}-37010^{\circ}_{9/2}$	SI	1.255	1.11	*
4664.641	1	21431.88	$21997_{11/2}-43429^{\circ}_{9/2}$				
4663.885	30	21435.35	$19753_{7/2}-41189^{\circ}_{7/2}$	T	1.19		
4662.727	10	21440.68	$19748_{9/2}-41189^{\circ}_{7/2}$	ΔJ=1	?	0.36	
4662.507	10 *h*	21441.69					
4660.611	1	21450.41	$21997_{11/2}-43447^{\circ}_{11/2}$				
4658.931	30	21458.14	$19753_{7/2}-41211^{\circ}_{7/2}$	T	1.17		
4658.672	1	21459.34	$23431^{\circ}_{5/2}-44891_{7/2}$				
4658.298	4	21461.06	$17454_{13/2}-38915^{\circ}_{13/2}$				
4657.790	6	21463.40	$19748_{9/2}-41211^{\circ}_{7/2}$				
4657.642	1	21464.08					
4657.126	2	21466.46					
4657.010	1	21467.00					
4656.717	70	21468.35	$13119_{9/2}-34587^{\circ}_{9/2}$	ΔJ=0	1.308	1.00	*
4656.490	20	21469.39	$16742_{7/2}-38211^{\circ}_{7/2}$				
4655.664	1	21473.20	$21120_{7/2}-42594^{\circ}_{9/2}$				
4655.087	1000	21475.86	$17613_{9/2}-39089^{\circ}_{11/2}$	S0	0.69	0.39	
4649.961	2	21499.54					
4648.510	2	21506.25		T	0.98		
4648.297	10 *h*	21507.23					
4646.684	4	21514.70					
4646.070	9	21517.54		T	1.26		
4645.847	100	21518.58	$17343_{7/2}-38861^{\circ}_{5/2}$	S0	1.02	1.565	*
4645.122	1	21521.93					
4645.050	1	21522.27					
4644.579	300	21524.45	$17752_{5/2}-39277^{\circ}_{5/2}$	T	1.18		
4644.339	4	21525.56	$19548_{5/2}-41074^{\circ}_{5/2}$				
″			$16957_{7/2}-38482^{\circ}_{7/2}$				
4643.980	1	21527.23	$18990_{11/2}-40517^{\circ}_{9/2}$				
4643.125	300	21531.19	$8771^{\circ}_{5/2}-30302_{5/2}$	ΔJ=0	0.88	0.13	
4642.844	10	21532.49					
4642.604	20	21533.61	$22742^{\circ}_{13/2}-44276_{11/2}$	SI	1.42	0.23	
4642.441	3	21534.36					
4642.050	1	21536.18	$19548_{5/2}-41085^{\circ}_{7/2}$				
4641.740	2	21537.61					
4641.215	5	21540.05		ΔJ=0	?	1.82	
4640.796	50	21542.00	$16957_{7/2}-38499^{\circ}_{9/2}$	S0	0.72	0.33	
4640.260	4	21544.48	$21161_{5/2}-42705^{\circ}_{5/2}$	ΔJ=0	1.125	0.09	

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
4638.932	3	21550.65		ΔJ=0	1.22	0.18	
4638.287	2	21553.65	$22929_{5/2}-44483^{\circ}_{3/2}$				
4637.767	5	21556.06	$23335^{\circ}_{7/2}-44891_{7/2}$				
4636.633	10	21561.34	$22419^{\circ}_{9/2}-43981_{7/2}$				
4635.795	5 *h*	21565.23					
4633.960	300	21573.77	$17613_{9/2}-39187^{\circ}_{7/2}$	S0	0.61	0.58	
4632.490	5	21580.62	$21161_{5/2}-42742^{\circ}_{7/2}$				
4632.349	4	21581.28					
4631.538	10	21585.06	$21120_{7/2}-42705^{\circ}_{5/2}$	SI	1.32	0.16	
4631.104	1	21587.08					
4626.968	200	21606.37	$17613_{9/2}-39220^{\circ}_{9/2}$	ΔJ=0	1.15	0.31	
4625.576	40	21612.88	$22902^{\circ}_{13/2}-44515_{13/2}$	ΔJ=0	1.13	0.14	
4625.245	1	21614.42	$21120_{7/2}-42735^{\circ}_{5/2}$				
4624.402	30	21618.36		ΔJ=0	1.03	0.54	
4623.800	3	21621.18	$21120_{7/2}-42742^{\circ}_{7/2}$	ΔJ=0	1.18	0.09	
4621.716	300	21630.93	$17613_{9/2}-39244^{\circ}_{9/2}$	ΔJ=0	1.19	1.04	*
4620.989	50	21634.33	$17752_{5/2}-39386^{\circ}_{5/2}$	ΔJ=0	1.07	0.51	
4619.204	4	21642.69	$16742_{7/2}-38384^{\circ}_{9/2}$				
4615.296	20	21661.02	$17752_{5/2}-39413^{\circ}_{7/2}$	S0	1.11	0.06	
4615.101	3	21661.93					
4614.696	10	21663.83	$18853_{11/2}-40517^{\circ}_{9/2}$				
4613.967	200	21667.25	$17752_{5/2}-39419^{\circ}_{3/2}$	SI	1.186	0.916	*
4613.112	1	21671.27	$21737_{9/2}-43408^{\circ}_{11/2}$				
4613.035	5	21671.63	$19753_{7/2}-41425^{\circ}_{7/2}$				
4612.380	7	21674.71	$22742^{\circ}_{13/2}-44417_{11/2}$	SI	1.42	0.21	
4612.094	1	21676.05					
4611.197	1	21680.27	$18837_{9/2}-40517^{\circ}_{9/2}$				
4610.595	4	21683.10	$18693_{15/2}-40376^{\circ}_{13/2}$				
4610.470	2	21683.69	$23374_{13/2}-45058^{\circ}_{11/2}$				
4609.354	50	21688.94	$15587_{11/2}-37276^{\circ}_{11/2}$	T	1.25		
4608.913	2	21691.01					
4608.895	3	21691.10	$21737_{9/2}-43428^{\circ}_{7/2}$	T	1.15	0.06	
4608.795	1	21691.57					
4607.967	1	21695.47					
4607.453	2	21697.89					
4607.330	2	21698.47					
4607.036	2	21699.85	$23431^{\circ}_{5/2}-45131_{7/2}$				
4607.018	4	21699.94					
4606.608	10	21701.87					
4605.660	3	21706.33					
4605.231	40	21708.36	$17613_{9/2}-39322^{\circ}_{9/2}$	ΔJ=0	1.17	0.18	
4604.850	300	21710.15	$17752_{5/2}-39462^{\circ}_{7/2}$	S0	0.98	0.14	
4603.217	60	21717.85	$17752_{5/2}-39470^{\circ}_{5/2}$	ΔJ=0	1.14	0.36	
4603.051	20	21718.64	$21120_{7/2}-42839^{\circ}_{9/2}$	S0	0.69	0.38	
4601.580	3	21725.58		ΔJ=0	1.05	0.38	
4601.147	10	21727.62	$17752_{5/2}-39480^{\circ}_{7/2}$	T	1.15	0.03	
4599.017	2000 *r*	21737.69	$0^{\circ}_{7/2}-21737_{9/2}$	S0	1.09	0.045	
4598.225	4	21741.43		S0	0.20	0.49	
4596.626	1000	21748.99	$17613_{9/2}-39362^{\circ}_{11/2}$	S0	0.88	0.26	
4595.420	1	21754.70					
4594.979	4	21756.79	$16742_{7/2}-38499^{\circ}_{9/2}$	S0	0.13	0.925	
4594.532	3	21758.91	$18837_{9/2}-40596^{\circ}_{7/2}$				
4592.677	2	21767.69		ΔJ=0	1.15	0.51	
4591.717	4	21772.25	$22742^{\circ}_{13/2}-44515_{13/2}$				
4590.694	5	21777.10	$19548_{5/2}-41325^{\circ}_{5/2}$				
4590.649	40	21777.31	$15587_{11/2}-37365^{\circ}_{13/2}$	S0	0.91	0.29	
4589.729	10	21781.68	$21120_{7/2}-42902^{\circ}_{5/2}$	SI	1.50	0.33	
4588.684	6	21786.64	$22419^{\circ}_{9/2}-44206_{7/2}$				
4588.423	1	21787.88					
4588.067	50	21789.57	$17752_{5/2}-39542^{\circ}_{7/2}$	S0	0.73	0.32	
4587.870	1	21790.50	$18990_{11/2}-40780^{\circ}_{13/2}$				
4587.567	10	21791.94	$20406^{\circ}_{5/2}-42198_{5/2}$	ΔJ=0	1.58	1.255	*
4586.967	20	21794.79	$16957_{7/2}-38751^{\circ}_{5/2}$	S0	1.06	0.11	
4586.062	1	21799.09					
4584.535	6	21806.35	$19132_{3/2}-40938^{\circ}_{5/2}$	SI	1.54	0.33	
4584.110	5	21808.37	$22468^{\circ}_{11/2}-44276_{11/2}$				
4583.914	2	21809.31	$18853_{11/2}-40663^{\circ}_{11/2}$				
4582.842	100	21814.41	$8771^{\circ}_{5/2}-30585_{3/2}$	S0	0.855	1.085	*
4581.856	4	21819.10	$22419^{\circ}_{9/2}-44238_{9/2}$				
4581.547	1	21820.57	$19748_{9/2}-41569^{\circ}_{11/2}$				
4581.006	4	21823.15					
4580.460	2	21825.75	$18837_{9/2}-40663^{\circ}_{11/2}$				
4580.067	3	21827.63	$19748_{9/2}-41576^{\circ}_{9/2}$				
4579.438	10	21830.62	$17613_{9/2}-39444^{\circ}_{9/2}$	ΔJ=0	1.15	0.25	
4578.820	10 *h*	21833.57					
4576.609	80	21844.12	$17343_{7/2}-39187^{\circ}_{7/2}$	ΔJ=0	1.022	1.336	*
4576.307	20	21845.56	$22419^{\circ}_{9/2}-44265_{7/2}$	S0	0.43	0.49	
4575.555	20	21849.15	$17613_{9/2}-39462^{\circ}_{7/2}$				
4575.322	30	21850.26	$17752_{5/2}-39602^{\circ}_{3/2}$	S0	1.01	0.165	
4573.981	2	21856.67	$22419^{\circ}_{9/2}-44276_{11/2}$				
4573.702	20	21858.00	$22559^{\circ}_{11/2}-44417_{11/2}$	ΔJ=0	1.16	0.165	
4573.190	1	21860.45					
4572.197	5	21865.20	$18990_{11/2}-40855^{\circ}_{9/2}$				
4571.900	80	21866.62	$17613_{9/2}-39480^{\circ}_{7/2}$	SI	1.25	0.06	
4571.225	30	21869.85		SI	1.40	0.125	
4570.617	10	21872.75	$21161_{5/2}-43034^{\circ}_{7/2}$	T	1.18	0.02	
4570.240	50	21874.56	$17613_{9/2}-39488^{\circ}_{9/2}$	ΔJ=0	1.15	0.36	
4569.803	10	21876.65	$19548_{5/2}-41425^{\circ}_{7/2}$				
"			$17343_{7/2}-39220^{\circ}_{9/2}$				
4567.329	3	21888.50	$15271_{15/2}-37159^{\circ}_{15/2}$				
4566.532	5	21892.32	$19753_{7/2}-41646^{\circ}_{7/2}$				
4565.432	20	21897.59	$19748_{9/2}-41646^{\circ}_{7/2}$				
4565.053	2	21899.41					
4564.676	400	21901.22	$17343_{7/2}-39244^{\circ}_{9/2}$	T	1.02		
4564.260	3	21903.22					
4563.892	20	21904.98	$16957_{7/2}-38861^{\circ}_{5/2}$				
4563.642	20	21906.18	$17752_{5/2}-39658^{\circ}_{3/2}$				
4561.521	2	21916.37					
4560.137	3	21923.02					
4559.300	2	21927.05	$18853_{11/2}-40780^{\circ}_{13/2}$				
4558.335	1	21931.69	$21120_{7/2}-43052^{\circ}_{7/2}$				
4557.917	3	21933.70	$17343_{7/2}-39277^{\circ}_{5/2}$				
4557.633	200	21935.07	$13119_{9/2}-35054^{\circ}_{9/2}$	ΔJ=0	1.29	0.115	
4556.849	3	21938.84	$19748_{9/2}-41687^{\circ}_{11/2}$				
4555.923	3	21943.30	$16742_{7/2}-38685^{\circ}_{9/2}$				
4554.650	10	21949.43	$22468^{\circ}_{11/2}-44417_{11/2}$	ΔJ=0	1.20	0.25	
4554.065	2	21952.25	$21161_{5/2}-43113^{\circ}_{5/2}$				
4553.677	30	21954.12		SI	1.64	0.335	
4553.391	20	21955.50	$22559^{\circ}_{11/2}-44515_{13/2}$	S0	0.92	0.18	
4552.226	7	21961.12	$22419^{\circ}_{9/2}-44380_{9/2}$				
4549.069	2	21976.36	$19548_{5/2}-41525^{\circ}_{7/2}$				
4548.597	1000	21978.64	$17343_{7/2}-39322^{\circ}_{9/2}$	SI	1.61	0.45	
4548.105	50	21981.02	$15271_{15/2}-37252^{\circ}_{17/2}$	SI	2.10	0.90	
4547.341	5	21984.71	$19548_{5/2}-41533^{\circ}_{5/2}$	ΔJ=0	?	0.10	
4545.777	2	21992.27					
4544.660	10	21997.68	$22419^{\circ}_{9/2}-44417_{11/2}$				
4543.870	10	22001.50	$21799^{\circ}_{3/2}-43800_{3/2}$				
4543.825	2	22001.72	$18853_{11/2}-40855^{\circ}_{9/2}$				
4539.406	80	22023.14	$22559^{\circ}_{11/2}-44582_{9/2}$	SI	1.70	0.47	
4538.645	2	22026.83					
4538.212	4	22028.93	$16456_{17/2}-38485^{\circ}_{15/2}$				
4537.442	2	22032.67					
4536.406	2	22037.70	$19748_{9/2}-41786^{\circ}_{9/2}$				
4535.198	40	22043.57	$17343_{7/2}-39386^{\circ}_{5/2}$	SI	1.08	0.06	
4534.501	2	22046.96	$22468^{\circ}_{11/2}-44515_{13/2}$				
4532.150	300	22058.40	$15587_{11/2}-37646^{\circ}_{13/2}$	S0	0.82	0.44	
4531.130	2	22063.36					
4529.910	5	22069.31	$21161_{5/2}-43230^{\circ}_{3/2}$				
4529.745	2	22070.11	$15587_{11/2}-37657^{\circ}_{11/2}$				
4526.043	30	22088.16	$18990_{11/2}-41078^{\circ}_{9/2}$	S0	0.68	0.525	
4525.469	2	22090.96	$18990_{11/2}-41081^{\circ}_{11/2}$				
4525.034	10	22093.09	$19748_{9/2}-41841^{\circ}_{7/2}$				
4524.821	200	22094.13	$15271_{15/2}-37365^{\circ}_{13/2}$	S0	0.29	0.78	
4524.567	3	22095.37	$17613_{9/2}-39709^{\circ}_{11/2}$				
4524.168	3	22097.32	$19548_{5/2}-41646^{\circ}_{7/2}$				
4523.430	20	22100.92	$17343_{7/2}-39444^{\circ}_{9/2}$				
4521.643	10	22109.65	$22419^{\circ}_{9/2}-44529_{7/2}$	S0	0.83	0.07	
4520.632	20	22114.60	$22468^{\circ}_{11/2}-44582_{9/2}$	SI	1.85	0.56	
4519.734	20	22118.99	$18990_{11/2}-41109^{\circ}_{9/2}$	T	1.20		
4519.595	2000	22119.67	$16742_{7/2}-38861^{\circ}_{5/2}$	S0	1.32	1.57	*

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
4518.350	5	22125.77	$19748_{9/2}-41874^{\circ}_{11/2}$				
4517.846	70	22128.24	$17613_{9/2}-39741^{\circ}_{9/2}$	ΔJ=0	?	0.34	
4517.400	4	22130.42	$22559^{\circ}_{11/2}-44689_{9/2}$				
4517.209	1	22131.36					
4516.834	2	22133.19	$19748_{9/2}-41881^{\circ}_{9/2}$				
4516.684	40	22133.93	$18990_{11/2}-41124^{\circ}_{9/2}$	SO	1.12	0.09	
4516.205	70	22136.28	$20406^{\circ}_{5/2}-42543_{7/2}$	SO	1.58	1.12	*
4514.453	20	22144.87	$17343_{7/2}-39488^{\circ}_{9/2}$	SI	1.33	0.25	
4514.226	2	22145.98					
4508.318	1	22175.00	$18837_{9/2}-41012^{\circ}_{7/2}$				
4506.220	1	22185.33					
4505.342	1	22189.65	$20406^{\circ}_{5/2}-42596_{5/2}$				
4505.273	2	22189.96					
4504.859	60	22192.03		ΔJ=0	1.17	0.335	
4504.535	20	22193.62	$19132_{3/2}-41325^{\circ}_{5/2}$				
4504.350	7	22194.54	$19548_{5/2}-41743^{\circ}_{3/2}$	SI	1.06	0.08	
4503.936	2	22196.58					
4503.484	100	22198.80	$17343_{7/2}-39542^{\circ}_{7/2}$	ΔJ=0	1.04	0.15	
4500.986	2	22211.12					
4499.039	10	22220.74	$19466_{13/2}-41687^{\circ}_{11/2}$	T	1.17		
4498.813	7	22221.85	$22468^{\circ}_{11/2}-44689_{9/2}$				
4498.230	10	22224.73	$18853_{11/2}-41078^{\circ}_{9/2}$				
4497.131	2	22230.16					
4497.070	5	22230.46	$16957_{7/2}-39187^{\circ}_{7/2}$				
4496.786	2	22231.87					
4496.022	3 *h*	22235.65					
4495.226	3	22239.58					
4494.299	20	22244.17	$13119_{9/2}-35363^{\circ}_{9/2}$	ΔJ=0	1.305	0.91	*
4493.333	5	22248.95					
4492.270	20	22254.22	$17454_{13/2}-39709^{\circ}_{11/2}$	SO	0.85	0.27	
4492.001	20	22255.55	$18853_{11/2}-41109^{\circ}_{9/2}$	SO	0.98	0.18	
4491.731	2 *h*	22256.89					
4490.900	2	22261.01	$23374_{13/2}-45635^{\circ}_{11/2}$				
4489.618	3	22267.36	$21161_{5/2}-43428^{\circ}_{7/2}$				
4489.050	10	22270.18	$22419^{\circ}_{9/2}-44689_{9/2}$				
4489.016	30	22270.35	$13119_{9/2}-35389^{\circ}_{7/2}$	SI	2.50	1.20	
4488.983	20	22270.51	$18853_{11/2}-41124^{\circ}_{9/2}$	SO	0.72	0.425	
4487.642	2	22277.17					
4487.196	2	22279.38	$22791_{7/2}-45070^{\circ}_{9/2}$				
4486.140	150	22284.63	$17343_{7/2}-39628^{\circ}_{7/2}$	ΔJ=0	1.015	0.135	
4485.642	5	22287.10					
4485.543	20	22287.59	$16957_{7/2}-39244^{\circ}_{9/2}$				
4485.435	2	22288.13					
4484.797	2 *h*	22291.30					
4484.499	5	22292.78	$19548_{5/2}-41841^{\circ}_{7/2}$				
4482.959	1	22300.44					
4482.476	10 *h*	22302.84					
4482.169	1	22304.37					
4481.054	2	22309.92	$21120_{7/2}-43430^{\circ}_{5/2}$				
4479.938	30	22315.48	$17343_{7/2}-39658^{\circ}_{5/2}$	SI	1.20	0.15	
4478.815	20	22321.07	$23941^{\circ}_{9/2}-46262_{11/2}$	SO	0.52	0.63	
4476.960	3	22330.32	$22419^{\circ}_{9/2}-44750_{7/2}$				
4476.236	20	22333.93					
4473.402	1	22348.08					
4472.816	60	22351.01					
4471.990	40	22355.14					
4471.788	2	22356.15	$22791_{7/2}-45147^{\circ}_{9/2}$				
4471.057	7	22359.80	$22559^{\circ}_{11/2}-44919_{9/2}$				
4470.985	2	22360.16					
4470.425	4	22362.96					
4470.360	2	22363.29					
4470.012	40	22365.03	$16957_{7/2}-39322^{\circ}_{9/2}$	SO	1.03	0.12	
4468.910	10	22370.54	$19748_{9/2}-42119^{\circ}_{11/2}$				
4467.983	100	22375.19	$15271_{15/2}-37646^{\circ}_{13/2}$	SO	0.40	0.66	
4467.694	7	22376.63	$20406^{\circ}_{5/2}-42783_{7/2}$				
4466.643	2	22381.90	$23781_{9/2}-46163^{\circ}_{11/2}$				
4466.078	70	22384.73	$19748_{9/2}-42133^{\circ}_{7/2}$	SI	1.71	0.425	
4465.542	2	22387.42					
4465.337	1	22388.44					
4464.778	1	22391.25					
4463.465	2	22397.83					
4463.328	3	22398.52	$17343_{7/2}-39741^{\circ}_{9/2}$				
4462.770	20	22401.32	$19132_{3/2}-41533^{\circ}_{5/2}$	SI	1.24	0.22	
4461.310	3 *h*	22408.65					
4459.986	100	22415.30		T	0.895	0.05	
4459.661	5	22416.94					
4459.267	3	22418.92					
4458.059	20	22424.99	$15587_{11/2}-38012^{\circ}_{13/2}$	SO	0.31	0.825	
4457.848	20	22426.05	$19753_{7/2}-42179^{\circ}_{5/2}$	SI	1.52	0.35	
4457.071	3	22429.96	$16957_{7/2}-39386^{\circ}_{5/2}$				
4454.276	2	22444.04	$21799^{\circ}_{3/2}-44243_{5/2}$				
4454.033	1000	22445.26	$16742_{7/2}-39187^{\circ}_{7/2}$	ΔJ=0	1.33	0.05	
4453.699	3	22446.95					
4453.562	6	22447.64	$17613_{9/2}-40061^{\circ}_{7/2}$				
4452.978	10	22450.58	$19466_{13/2}-41917^{\circ}_{13/2}$	T	1.15		
4452.843	2	22451.26	$22468^{\circ}_{11/2}-44919_{9/2}$				
4451.774	2	22456.65	$16957_{7/2}-39413^{\circ}_{7/2}$				
4450.280	2	22464.19					
4449.772	10	22466.76		SO	0.76	0.24	
4449.223	5	22469.53	$20406^{\circ}_{5/2}-42876_{5/2}$				
4448.435	2	22473.51					
4448.022	2 *h*	22475.59					
4447.824	2	22476.59					
4447.585	200	22477.80	$16742_{7/2}-39220^{\circ}_{9/2}$	SO	0.40	0.72	
4447.357	2	22478.96	$22929_{5/2}-45408^{\circ}_{7/2}$				
4446.900	2	22481.26					
4446.406	20 *h*	22483.76					
4445.712	5	22487.27	$16957_{7/2}-39444^{\circ}_{9/2}$				
4444.530	50	22493.25		SI	1.39	0.28	
4443.287	4	22499.55	$22419^{\circ}_{9/2}-44919_{9/2}$				
4442.735	400	22502.34	$16742_{7/2}-39244^{\circ}_{9/2}$	SO	1.325	1.03	*
4442.059	15	22505.76	$16957_{7/2}-39462^{\circ}_{7/2}$				
4440.676	2	22512.77					
4440.535	4	22513.49	$16957_{7/2}-39470^{\circ}_{5/2}$				
4440.346	2	22514.45	$25130_{15/2}-47644^{\circ}_{13/2}$				
4438.607	10	22523.27	$16957_{7/2}-39480^{\circ}_{7/2}$	T	1.17		
4438.010	2	22526.30	$21737_{9/2}-44263^{\circ}_{7/2}$				
4436.985	20	22531.50	$22559^{\circ}_{11/2}-45091_{9/2}$	ΔJ=1	?	0.49	
4436.324	100	22534.86	$16742_{7/2}-39277^{\circ}_{5/2}$	SI	1.65	0.35	
4435.070	2	22541.23					
4434.296	40	22545.16	$20406^{\circ}_{5/2}-42952_{7/2}$	SO	1.58	1.14	*
4431.811	2	22557.81					
4431.561	60	22559.08		T	0.80		
4431.494	2	22559.42					
4430.862	50	22562.64	$13119_{9/2}-35682^{\circ}_{7/2}$	SI	1.305	1.12	*
4429.756	50 *h*	22568.27					
4428.759	3 *w*	22573.35					
4428.530	1	22574.52					
4427.710	2	22578.70	$18990_{11/2}-41569^{\circ}_{11/2}$				
4427.500	4	22579.77	$16742_{7/2}-39322^{\circ}_{9/2}$				
4426.442	10	22585.17	$16957_{7/2}-39542^{\circ}_{7/2}$				
4426.330	100	22585.74	$18990_{11/2}-41576^{\circ}_{9/2}$	SO	1.04	0.165	
4425.958	200	22587.64	$15271_{15/2}-37858^{\circ}_{15/2}$	ΔJ=0	1.16	0.90	
4425.167	2	22591.67					
4423.265	10	22601.39					
4422.305	70	22606.29	$18693_{15/2}-41299^{\circ}_{17/2}$	SO	0.28	0.775	
4421.670	2 *h*	22609.54					
4421.357	1	22611.14	$19132_{3/2}-41743^{\circ}_{3/2}$				
4420.845	40	22613.76	$19753_{7/2}-42367^{\circ}_{5/2}$	SO	1.13	0.05	
4420.236	7	22616.88	$19753_{7/2}-42370^{\circ}_{7/2}$	ΔJ=0	1.07	0.495	
4419.787	2	22619.17					
4419.204	40	22622.16	$19748_{9/2}-42370^{\circ}_{7/2}$	SI	2.14	0.86	
4419.046	20	22622.97	$22468^{\circ}_{11/2}-45091_{9/2}$				
4417.470	20	22631.04	$19548_{5/2}-42179^{\circ}_{5/2}$	ΔJ=0	1.02	0.175	
4416.603	5 *h*	22635.48					
4416.240	2	22637.34					
4414.801	10	22644.72	$16742_{7/2}-39386^{\circ}_{5/2}$				
4413.522	10	22651.28		SO	0.35	0.815	
4411.697	200	22660.65	$8771^{\circ}_{5/2}-31431_{5/2}$	ΔJ=0	0.855	1.07	*
4410.842	5	22665.04					

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
4409.598	50	22671.44	$16742_{7/2}-39413^{\circ}_{7/2}$	ΔJ=0	1.14	0.595	
4409.354	5	22672.69					
4408.601	5	22676.56	$22791_{7/2}-45467^{\circ}_{9/2}$				
4407.560	3 *h*	22681.92					
4406.981	1	22684.90					
4404.476	1	22697.80					
4403.650	40	22702.06	$16742_{7/2}-39444^{\circ}_{9/2}$	S0	0.42	0.70	
4402.325	2	22708.89	$17613_{9/2}-40322^{\circ}_{9/2}$	ΔJ=0	?	0.30	
4401.843	1	22711.38					
4401.082	2	22715.31	$18853_{11/2}-41569^{\circ}_{11/2}$	ΔJ=0	?	0.275	
4400.257	10	22718.56	$21799^{\circ}_{3/2}-44518_{5/2}$				
4400.446	1	22718.59	$21737_{9/2}-44456^{\circ}_{7/2}$				
4400.070	20	22720.53	$16742_{7/2}-39462^{\circ}_{7/2}$				
4399.723	100	22722.29	$18853_{11/2}-41576^{\circ}_{9/2}$	S0	0.575	0.46	
4398.573	40	22728.26	$16742_{7/2}-39470^{\circ}_{5/2}$				
4397.900	5	22731.74	$18837_{9/2}-41569^{\circ}_{11/2}$				
4396.685	60	22738.02	$16742_{7/2}-39480^{\circ}_{7/2}$				
4396.495	500 *r*	22739.00	$8771^{\circ}_{5/2}-31510_{7/2}$	SI	0.856	1.11	*
4395.960	500	22741.77	$15271_{15/2}-38012^{\circ}_{13/2}$	T	1.08	0.05	
4394.420	1000 *r*	22749.74	$8771^{\circ}_{5/2}-31520_{3/2}$	SI	0.94	0.09	
4393.309	4	22755.49					
4392.435	2	22760.02	$15587_{11/2}-38347^{\circ}_{11/2}$				
4392.220	4	22761.14					
4390.670	2 *h*	22769.17					
4389.952	30	22772.90		SI	1.51	0.32	
4389.551	100	22774.98		S0	0.99	0.215	
4389.207	2	22776.76	$21997_{11/2}-44774^{\circ}_{9/2}$				
4388.355	40	22781.18	$17752_{5/2}-40533^{\circ}_{7/2}$	SI	1.37	0.145	
4387.641	10 *h*	22784.89	$16957_{7/2}-39741^{\circ}_{9/2}$				
4387.360	5	22786.35					
4386.434	10000 *a*	22791.16	$0^{\circ}_{7/2}-22791_{7/2}$	T	1.14		
4386.120	10	22792.79	$19748_{9/2}-42541^{\circ}_{11/2}$				
4385.817	4 *h*	22794.36					
4385.535	30	22795.83	$18990_{11/2}-41786^{\circ}_{9/2}$	S0	1.09	0.13	
4385.291	20	22797.10	$15587_{11/2}-38384^{\circ}_{9/2}$				
4385.095	4	22798.12					
4384.743	100 *h*	22799.95	$16742_{7/2}-39542^{\circ}_{7/2}$				
4383.510	5	22806.36	$21997_{11/2}-44803^{\circ}_{13/2}$				
4383.257	6	22807.68	$19753_{7/2}-42561^{\circ}_{9/2}$				
4382.432	6 *h*	22811.97	$22902^{\circ}_{13/2}-45714_{11/2}$				
4382.243	3 *h*	22812.96	$19748_{9/2}-42561^{\circ}_{9/2}$				
4380.360	5	22822.76					
4379.989	20 *h*	22824.69					
4378.310	100	22833.45	$19748_{9/2}-42581^{\circ}_{11/2}$	S0	0.46	0.675	
4377.017	50	22840.19	$19753_{7/2}-42594^{\circ}_{9/2}$	S0	0.68	0.36	
4376.475	4	22843.02					
4376.344	8	22843.70	$17752_{5/2}-40596^{\circ}_{7/2}$				
4376.003	50	22845.48	$19748_{9/2}-42594^{\circ}_{9/2}$	ΔJ=0	1.19	0.875	
4375.766	10	22846.72	$23374_{13/2}-46221^{\circ}_{11/2}$				
4375.140	100	22849.99	$18837_{9/2}-41687^{\circ}_{11/2}$	SI	1.24	0.10	
4373.053	10	22860.90		S0	0.35	0.585	
4372.882	10 *h*	22861.79					
4372.247	3	22865.11	$17343_{7/2}-40208^{\circ}_{9/2}$				
4369.948	4	22877.14					
4369.557	3 *h*	22879.19					
4368.648	50	22883.95	$18990_{11/2}-41874^{\circ}_{11/2}$	ΔJ=0	1.19	0.32	
4367.238	200	22891.33	$18990_{11/2}-41881^{\circ}_{9/2}$	SI	1.44	0.225	
4366.295	50 *h*	22896.28	$20406^{\circ}_{5/2}-43303_{7/2}$				
4365.936	3	22898.16					
4365.294	3	22901.53					
4364.898	10 *h*	22903.61					
4364.820	3	22904.02	$17613_{9/2}-40517^{\circ}_{9/2}$	ΔJ=0	1.17	0.13	
4364.113	3	22907.73					
4363.455	40	22911.18	$15587_{11/2}-38499^{\circ}_{9/2}$	SI	1.25	1.07	*
4362.422	1 *h*	22916.61	$16742^{\circ}_{7/2}-39658^{\circ}_{5/2}$				
4361.746	10	22920.16	$17613_{9/2}-40533^{\circ}_{7/2}$				
4360.476	15	22926.83	$18990_{11/2}-41917^{\circ}_{7/2}$				
4359.928	15000 *a*	22929.71	$0^{\circ}_{7/2}$ $22929_{5/2}$	T	1.15		
4357.975	6	22939.99	$19466_{13/2}-42406^{\circ}_{13/2}$				
4357.620	4	22941.86	$15587_{11/2}-38529^{\circ}_{11/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
4355.695	60	22952.00	$19753_{7/2}-42705^{\circ}_{5/2}$	SI	1.40	0.22	
4354.917	30	22956.10		S0	0.22	0.81	
4352.710	2 *h*	22967.74					
4352.028	80	22971.34	$22742^{\circ}_{13/2}-45714_{11/2}$				
4351.375	3	22974.78					
4350.125	5	22981.39	$19753_{7/2}-42735^{\circ}_{5/2}$				
4349.887	4	22982.64	$17613_{9/2}-40596^{\circ}_{7/2}$				
4349.075	1	22986.93					
4348.841	20	22988.17	$19753_{7/2}-42742^{\circ}_{7/2}$	ΔJ=0	1.19	0.07	
4347.840	50	22993.46	$19748_{9/2}-42742^{\circ}_{7/2}$	SI	1.62	0.33	
4346.484	300	23000.64	$15587_{11/2}-38588^{\circ}_{13/2}$	S0	1.00	0.205	
4345.863	200	23003.92	$17343_{7/2}-40347^{\circ}_{5/2}$	S0	0.76	0.25	
4345.129	3	23007.81					
4344.840	10	23009.34	$21737_{9/2}-44747^{\circ}_{11/2}$				
4344.479	500	23011.25	$17752_{5/2}-40763^{\circ}_{7/2}$	T	1.18		
4343.710	3	23015.32					
4343.405	15	23016.94	$19753_{7/2}-42770^{\circ}_{9/2}$	SI	1.30	0.11	
4343.040	2	23018.88					
4342.726	4	23020.54	$18853_{11/2}-41874^{\circ}_{11/2}$				
4342.404	50	23022.25	$19748_{9/2}-42770^{\circ}_{9/2}$	ΔJ=0	1.25	0.35	
4341.336	60	23027.91	$18853_{11/2}-41881^{\circ}_{9/2}$	S0	1.05	0.105	
4339.626	30	23036.98	$18837_{9/2}-41874^{\circ}_{11/2}$	SI	1.26	0.11	
4338.242	4	23044.33	$18837_{9/2}-41881^{\circ}_{9/2}$				
4337.622	70	23047.63	$19132_{3/2}-42179^{\circ}_{5/2}$	SI	0.88	1.06	*
4336.554	3	23053.30					
4334.656	30	23063.40	$18853_{11/2}-41917^{\circ}_{13/2}$	T	1.16		
4333.737	3	23068.29					
4332.589	20 *h*	23074.40	$20406^{\circ}_{5/2}-43481_{5/2}$				
4330.851	1	23083.66					
4330.476	7	23085.66	$19753_{7/2}-42839^{\circ}_{9/2}$	S0	0.72	0.35	
4329.487	8	23090.93	$19748_{9/2}-42839^{\circ}_{9/2}$	ΔJ=0	1.29	1.09	*
4328.190	20	23097.85		SI	1.26	0.04	
4327.308	2	23102.56	$21161_{5/2}-44263^{\circ}_{7/2}$				
4326.987	6	23104.27	$16957_{7/2}-40061^{\circ}_{7/2}$	ΔJ=0	1.14	0.13	
4325.688	6 *h*	23111.21					
4324.116	10	23119.61		S0	0.76	0.32	
4322.423	20	23128.67	$18990_{11/2}-42119^{\circ}_{11/2}$	ΔJ=0	1.15	0.69	
4320.522	2	23138.84	$21161_{5/2}-44300^{\circ}_{5/2}$				
4319.726	3	23143.11	$21120_{7/2}-44263^{\circ}_{7/2}$				
4318.397	600 *r*	23150.23	$17613_{9/2}-40763^{\circ}_{7/2}$	SI	1.25	0.05	
4317.126	20	23157.05	$19548_{5/2}-42705^{\circ}_{5/2}$	ΔJ=0	1.05	0.30	
4316.215	2	23161.93					
4315.642	30 *h*	23165.01					
4314.955	2	23168.70					
4313.916	3	23174.28	$17343_{7/2}-40517^{\circ}_{9/2}$				
4312.966	8	23179.38	$21120_{7/2}-44300^{\circ}_{5/2}$	SI	1.33	0.16	
4312.084	3	23184.12					
4311.743	2	23185.96	$17752_{5/2}-40938^{\circ}_{5/2}$				
4311.672	2	23186.34	$19548_{5/2}-42735^{\circ}_{5/2}$				
4311.543	2	23187.03	$18693_{15/2}-41880^{\circ}_{15/2}$				
4310.405	30	23193.15	$19548_{5/2}-42742^{\circ}_{7/2}$	SI	0.98	1.19	*
4309.819	2	23196.31					
4309.623	3	23197.36					
4307.593	2 *h*	23208.29	$17454_{13/2}-40663^{\circ}_{11/2}$				
4306.780	10	23212.67					
4306.657	150	23213.34	$19748_{9/2}-42961^{\circ}_{11/2}$	S0	0.83	0.385	
4306.378	40	23214.84	$15271_{15/2}-38485^{\circ}_{15/2}$	ΔJ=0	?	0.472	
4305.490	4	23219.63					
4304.865	2	23223.00	$23374_{13/2}-46597^{\circ}_{13/2}$				
4304.652	5	23224.15	$18693_{15/2}-41917^{\circ}_{13/2}$				
4302.569	20	23235.39	$19132_{3/2}-42367^{\circ}_{5/2}$	SI	0.88	1.20	*
4302.023	3	23238.34					
4301.360	20	23241.92	$17613_{9/2}-40855^{\circ}_{9/2}$	ΔJ=0	1.14	0.475	
4300.595	20	23246.06	$22468^{\circ}_{11/2}-45714_{11/2}$				
4299.589	20	23251.50	$16957_{7/2}-40208^{\circ}_{9/2}$	SI	1.24	0.04	
4299.482	4	23252.08					
4299.325	7	23252.92	$17343_{7/2}-40596^{\circ}_{7/2}$				
4298.365	300 *r*	23258.12	$13119_{9/2}-36377^{\circ}_{9/2}$	ΔJ=0	1.27	0.46	
4298.060	40	23259.77	$17752_{5/2}-41012^{\circ}_{7/2}$	S0	1.03	0.11	
4297.477	2	23262.92					

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
4297.044	20	23265.27	$18853_{11/2}-42119^{\circ}_{11/2}$	ΔJ=0	1.13	0.32	
4296.052	4*h*	23270.64					
4294.982	20	23276.44	$19753_{7/2}-43030^{\circ}_{9/2}$	SI	?	0.325	
4294.481	2	23279.15					
4293.289	30	23285.62	$19748_{9/2}-43034^{\circ}_{7/2}$	SI	1.77	0.445	
4292.591	3	23289.40	$15587_{11/2}-38877^{\circ}_{11/2}$				
4291.590	4*h*	23294.83	$21161_{5/2}-44456^{\circ}_{7/2}$				
4291.084	2	23297.58	$21120_{7/2}-44418^{\circ}_{7/2}$				
4290.874	60	23298.72	$19753_{7/2}-43052^{\circ}_{7/2}$	ΔJ=0	1.12	0.46	
4290.137	20*h*	23302.72					
4289.905	20	23303.98	$19748_{9/2}-43052^{\circ}_{7/2}$	SI	1.29	1.055	*
4288.653	20	23310.79		SI	1.17	0.215	
4287.426	10	23317.46	$15271_{15/2}-38588^{\circ}_{13/2}$				
4287.130	2*h*	23319.07	$16742_{7/2}-40061^{\circ}_{7/2}$				
4286.934	40*h*	23320.13					
4286.102	2	23324.66					
4285.840	20	23326.09	$17454_{13/2}-40780^{\circ}_{13/2}$	ΔJ=0	1.18	0.465	
4285.654	3	23327.10					
4285.073	4	23330.26					
4284.680	40	23332.40	$17752_{5/2}-41085^{\circ}_{7/2}$				
4284.344	4	23334.23					
4284.095	3	23335.59					
4281.662	2	23348.85					
4280.776	10	23353.68	$19548_{5/2}-42902^{\circ}_{5/2}$				
4280.369	3	23355.90					
4279.990	2	23357.97					
4279.620	10*h*	23359.99	$22902^{\circ}_{13/2}-46262_{11/2}$				
4278.605	3	23365.53	$16957_{7/2}-40322^{\circ}_{9/2}$				
4274.355	60	23388.76	$19466_{13/2}-42855^{\circ}_{15/2}$	SO	0.93	0.185	
4274.084	7	23390.24	$16957_{7/2}-40347^{\circ}_{5/2}$				
4273.839	4	23391.58	$21997_{11/2}-45389^{\circ}_{13/2}$				
4272.537	60	23398.71	$17613_{9/2}-41012^{\circ}_{7/2}$	SI	1.32	0.235	
4271.716	500 *r*	23403.21	$8771^{\circ}_{5/2}-32174_{5/2}$	ΔJ=0	0.856	1.16	*
4270.190	2*h*	23411.57					
4269.334	3	23416.27	$18990_{11/2}-42406^{\circ}_{13/2}$				
4268.561	300	23420.51	$17343_{7/2}-40763^{\circ}_{7/2}$	ΔJ=0	1.02	1.18	*
4265.648	20*h*	23436.50	$17752_{5/2}-41189^{\circ}_{7/2}$				
4265.414	30	23437.79	$19748_{9/2}-43186^{\circ}_{11/2}$				
4264.394	2	23443.39	$19466_{13/2}-42910^{\circ}_{13/2}$				
4262.798	3*h*	23452.17	$20406^{\circ}_{5/2}-43859_{5/2}$				
4262.486	10*h*	23453.89					
4261.502	60*h*	23459.30	$17752_{5/2}-41211^{\circ}_{7/2}$				
4261.200	2	23460.96					
4260.487	300*h*	23464.89	$17613_{9/2}-41078^{\circ}_{9/2}$	ΔJ=0	1.27	0.63	
4259.975	3	23467.71	$17613_{9/2}-41081^{\circ}_{11/2}$				
4259.307	10	23471.39	$17613_{9/2}-41085^{\circ}_{7/2}$	SI	1.86	0.65	
4255.283	15	23493.59		ΔJ=0	1.14	0.44	
4254.988	20	23495.22	$19466_{13/2}-42961^{\circ}_{11/2}$	SO	0.89	0.25	
4254.905	4	23495.67	$17613_{9/2}-41109^{\circ}_{9/2}$				
4254.335	6	23498.82					
4253.455	200	23503.68	$19548_{5/2}-43052^{\circ}_{7/2}$	SI	1.24	0.18	
4252.191	30	23510.67	$17613_{9/2}-41124^{\circ}_{9/2}$	ΔJ=0	1.22	0.26	
4251.362	10	23515.25		ΔJ=0	1.02	1.02	
4250.624	30	23519.34	$22742^{\circ}_{13/2}-46262_{11/2}$				
4250.316	3	23521.04					
4247.416	150	23537.10	$13119_{9/2}-36656^{\circ}_{11/2}$	SO	1.304	1.16	*
4244.919	30	23550.95	$18990_{11/2}-42541^{\circ}_{11/2}$	ΔJ=0	1.15	0.64	
4244.838	5	23551.39	$20406^{\circ}_{5/2}-43958_{5/2}$				
4244.576	4	23552.85	$18853_{11/2}-42406^{\circ}_{13/2}$				
4243.325	10	23559.79					
4243.170	20	23560.65	$16957_{7/2}-40517^{\circ}_{9/2}$	T	1.16		
4242.420	30	23564.82	$19548_{5/2}-43113^{\circ}_{5/2}$	ΔJ=0	?	0.325	
4241.528	30*h*	23569.77	$15587_{11/2}-39157^{\circ}_{13/2}$				
4241.282	40	23571.14	$18990_{11/2}-42561^{\circ}_{9/2}$	SI	1.215	1.055	*
4240.722	20	23574.25	$20406^{\circ}_{5/2}-43981_{7/2}$				
4240.490	200*h*	23575.54	$17613_{9/2}-41189^{\circ}_{7/2}$	T	1.19		
4239.632	6	23580.31	$16742_{7/2}-40322^{\circ}_{9/2}$				
4239.012	1	23583.76					
4238.809	20	23584.89	$19466_{13/2}-43051^{\circ}_{15/2}$	SI	1.42	0.24	
4237.612	20	23591.55	$18990_{11/2}-42581^{\circ}_{11/2}$	ΔJ=0	1.17	0.43	
4237.235	10*h*	23593.65					
4236.400	80*h*	23598.30	$17613_{9/2}-41211^{\circ}_{7/2}$				
4236.237	3*h*	23599.21					
4235.444	40	23603.63	$18990_{11/2}-42594^{\circ}_{9/2}$	SI	1.70	0.48	
4235.192	40	23605.03	$16742_{7/2}-40347^{\circ}_{5/2}$	SI	1.325	1.135	*
4235.036	3	23605.90					
4234.177	4	23610.69					
4232.395	2	23620.63					
4232.116	4	23622.19	$24137_{13/2}-47759^{\circ}_{13/2}$				
4231.332	4	23626.57	$17454_{13/2}-41081^{\circ}_{11/2}$				
4229.236	2	23638.28	$21997_{11/2}-45635^{\circ}_{11/2}$				
4229.058	40	23639.27	$16957_{7/2}-40596^{\circ}_{7/2}$	ΔJ=0	1.23	0.47	
4228.050	40	23644.91	$15271_{15/2}-38915^{\circ}_{13/2}$				
4227.390	2	23648.60					
4226.537	2	23653.37	$21120_{7/2}-44774^{\circ}_{9/2}$				
4226.253	3	23654.96					
4226.055	150	23656.07		SI	1.20	0.11	
4225.639	10	23658.40					
4225.565	4	23658.81					
4223.060	20	23672.84	$17752_{5/2}-41425^{\circ}_{7/2}$				
4222.671	2000 *r*	23675.03	$8771^{\circ}_{5/2}-32446_{7/2}$	SI	1.00	0.10	
4222.584	200	23675.51	$19753_{7/2}-43429^{\circ}_{9/2}$				
4222.336	8	23676.90	$19753_{7/2}-43430^{\circ}_{5/2}$				
4221.743	10	23680.23	$19748_{9/2}-43428^{\circ}_{7/2}$				
4221.639	80	23680.81	$19748_{9/2}-43429^{\circ}_{9/2}$	ΔJ=0	1.25	0.47	
4221.450	50	23681.87	$19548_{5/2}-43230^{\circ}_{3/2}$	T	1.00	0.04	
4220.440	3	23687.54	$18853_{11/2}-42541^{\circ}_{11/2}$				
4218.060	4	23700.91					
4217.753	20*h*	23702.63	$22559^{\circ}_{11/2}-46262_{11/2}$	T	1.16		
4217.030	3*h*	23706.69					
4216.851	60	23707.70	$18853_{11/2}-42561^{\circ}_{9/2}$	SI	1.69	0.55	
4215.804	20	23713.59	$18693_{15/2}-42406^{\circ}_{13/2}$				
4215.627	10*h*	23714.58					
4213.925	10	23724.16	$18837_{9/2}-42561^{\circ}_{9/2}$	ΔJ=0	1.70	0.36	
4213.216	200	23728.15	$18853_{11/2}-42581^{\circ}_{11/2}$	T	1.14		
4212.588	10	23731.69					
4211.980	20*h*	23735.12	$17343_{7/2}-41078^{\circ}_{9/2}$	SI	1.02	1.32	*
4211.720	4	23736.58					
4211.332	2	23738.77					
4211.072	6	23740.23	$18853_{11/2}-42594^{\circ}_{9/2}$				
4210.921	7	23741.09					
4210.817	40	23741.67	$17343_{7/2}-41085^{\circ}_{7/2}$	ΔJ=0	1.015	0.08	
4210.299	6	23744.59	$18837_{9/2}-42581^{\circ}_{11/2}$				
4209.811	5	23747.35	$21120_{7/2}-44868^{\circ}_{9/2}$				
4208.144	3*h*	23756.75	$18837_{9/2}-42594^{\circ}_{9/2}$	T	1.125		
4207.832	3	23758.51					
4207.322	6	23761.39		SI	1.60	0.37	
4207.268	4*h*	23761.70					
4206.508	3	23765.99	$17343_{7/2}-41109^{\circ}_{9/2}$				
4205.752	40	23770.26	$19132_{3/2}-42902^{\circ}_{5/2}$	SI	0.88	1.04	*
4204.841	5	23775.41	$16742_{7/2}-40517^{\circ}_{9/2}$				
4203.953	30	23780.44	$18990_{11/2}-42770^{\circ}_{9/2}$	T	1.22		
4203.727	30000 *a*	23781.71	$0^{\circ}_{7/2}-23781_{9/2}$	T	1.14		
4201.980	3	23791.60	$16742_{7/2}-40533^{\circ}_{7/2}$				
4201.542	10*h*	23794.08	$22468^{\circ}_{11/2}-46262_{11/2}$				
4201.195	4	23796.05	$19748_{9/2}-43544^{\circ}_{9/2}$				
4200.577	100	23799.55	$20406^{\circ}_{5/2}-44206_{7/2}$	SOO	1.58	1.04	*
4199.284	30	23806.88	$16957_{7/2}-40763^{\circ}_{7/2}$	T	1.17		
4198.411	100	23811.83	$17613_{9/2}-41425^{\circ}_{7/2}$	SI	1.56	0.33	
4198.270	4*h*	23812.63					
4198.200	2	23813.02	$21997_{11/2}-45810^{\circ}_{11/2}$				
4197.924	20	23814.59	$13119_{9/2}-36934^{\circ}_{7/2}$	SI	1.40	0.09	
4196.958	5	23820.07	$17454_{13/2}-41274^{\circ}_{13/2}$	T	1.14		
4196.608	10	23822.06	$19466_{13/2}-43288^{\circ}_{13/2}$	ΔJ=0	1.17	0.27	
4196.419	4	23823.13					
4194.848	4	23832.05					
4194.440	10	23834.37	$19753_{7/2}-43588^{\circ}_{7/2}$				
4194.054	2	23836.56	$20406^{\circ}_{5/2}-44243_{5/2}$				
4193.725	3	23838.43					
4193.514	40	23839.63	$19748_{9/2}-43588^{\circ}_{7/2}$	SI	1.44	0.15	

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
4193.028	10 *h*	23842.40	$22419^{\circ}_{9/2}-46262_{11/2}$				
4192.336	60	23846.33	$15587_{11/2}-39434^{\circ}_{13/2}$	S0	0.57	0.58	
4191.846	4	23849.12	$18990_{11/2}-42839^{\circ}_{9/2}$				
4190.975	100	23854.07	$16742_{7/2}-40596^{\circ}_{7/2}$	ΔJ=0	1.315	0.07	
4190.204	20	23858.46	$20406^{\circ}_{5/2}-44265_{7/2}$	S00	1.58	1.10	*
4187.615	40000 *a*	23873.21	$0^{\circ}_{7/2}-23873_{7/2}$	ΔJ=0	1.14	0.04	
4186.086	20	23881.93	$19548_{5/2}-43430^{\circ}_{5/2}$				
4184.513	100	23890.91	$13119_{9/2}-37010^{\circ}_{9/2}$	ΔJ=0	1.305	1.105	*
4184.311	6	23892.06	$15587_{11/2}-39479^{\circ}_{11/2}$				
4184.064	6 *h*	23893.47	$17752_{5/2}-41646^{\circ}_{7/2}$				
4183.245	6 *h*	23898.15					
4183.168	3	23898.59	$16957_{7/2}-40855^{\circ}_{9/2}$				
4182.898	3	23900.13					
4182.848	7	23900.42	$15587_{11/2}-39488^{\circ}_{9/2}$				
4182.110	4	23904.64	$18837_{9/2}-42742^{\circ}_{7/2}$				
4180.902	40	23911.54	$17613_{9/2}-41525^{\circ}_{7/2}$	SI	1.46	0.29	
4180.093	30	23916.17	$20406^{\circ}_{5/2}-44323_{7/2}$	S00	1.58	1.09	*
4179.953	50	23916.97	$18853_{11/2}-42770^{\circ}_{9/2}$	S0	0.88	0.25	
4179.486	20	23919.65	$18990_{11/2}-42910^{\circ}_{13/2}$	T	1.20		
4178.247	4 *h*	23926.74	$19748_{9/2}-43675^{\circ}_{9/2}$				
4177.083	7	23933.41	$18837_{9/2}-42770^{\circ}_{9/2}$	ΔJ=0	1.17	0.38	
4175.528	3	23942.32	$19466_{13/2}-43408^{\circ}_{11/2}$				
4173.235	6	23955.47	$17613_{9/2}-41569^{\circ}_{11/2}$	SI	1.25	0.05	
4172.010	7	23962.51	$17613_{9/2}-41576^{\circ}_{9/2}$	ΔJ=0	1.22	0.23	
4171.460	2	23965.67					
4170.790	1	23969.52					
4170.449	500	23971.48	$18990_{11/2}-42961^{\circ}_{11/2}$	ΔJ=0	1.20	0.08	
4169.232	5	23978.47	$24137_{13/2}-48115^{\circ}_{13/2}$				
4168.720	300	23981.42	$19132_{3/2}-43113^{\circ}_{5/2}$	SI	0.88	1.11	*
4168.535	200 *h*	23982.48	$17343_{7/2}-41325^{\circ}_{5/2}$				
4167.970	3	23985.73					
4167.092	4	23990.79	$17752_{5/2}-41743^{\circ}_{3/2}$	SI	1.184	0.91	*
4165.764	2	23998.44					
4165.495	5	23999.99					
4165.125	20	24002.12	$18837_{9/2}-42839^{\circ}_{9/2}$	ΔJ=0	1.10	0.20	
4163.708	3	24010.29					
4163.030	3	24014.20					
4161.735	80	24021.67	$16742_{7/2}-40763^{\circ}_{7/2}$	ΔJ=0	1.32	1.175	*
4159.870	20 *h*	24032.44	$17613_{9/2}-41646^{\circ}_{7/2}$				
4158.665	8	24039.40					
4158.601	500 *r*	24039.77	$8771^{\circ}_{5/2}-32811_{7/2}$	SI	0.85	1.04	*
4156.295	3	24053.11					
4155.898	3	24055.41	$16957_{7/2}-41012^{\circ}_{7/2}$				
4155.757	30	24056.22	$18853_{11/2}-42910^{\circ}_{13/2}$	SI	1.47	0.27	
4154.720	2	24062.23					
4154.130	300 *h*	24065.64					
4153.430	20 *h*	24069.70					
4152.732	20	24073.75	$17613_{9/2}-41687^{\circ}_{11/2}$	S0	1.01	0.13	
4151.108	2	24083.16					
4150.104	200	24088.99	$17752_{5/2}-41841^{\circ}_{7/2}$	SI	1.25	0.05	
4149.144	300	24094.56		T	1.10	0.04	
4148.910	5 *h*	24095.92					
4148.475	20 *h*	24098.45	$19132_{3/2}-43230^{\circ}_{3/2}$	ΔJ=0	0.93	0.17	
4148.222	10 *h*	24099.92					
4147.890	20 *d*	24101.85	$13119_{9/2}-37221^{\circ}_{7/2}$				
4147.178	10	24105.98					
4146.821	60	24108.06	$18853_{11/2}-42961^{\circ}_{11/2}$				
4146.260	3	24111.32					
4146.129	40 *h*	24112.08	$20406^{\circ}_{5/2}-44518_{5/2}$	ΔJ=0	1.58	1.21	*
4145.910	40	24113.36	$16742_{7/2}-40855^{\circ}_{9/2}$	S0	1.325	1.08	*
4145.748	1	24114.30	$17454_{13/2}-41569^{\circ}_{11/2}$				
4144.553	5	24121.25	$15587_{11/2}-39709^{\circ}_{11/2}$				
4144.325	50	24122.58	$20406^{\circ}_{5/2}-44529_{7/2}$	S00	1.58	0.97	*
4143.995	100	24124.50	$18837_{9/2}-42961^{\circ}_{11/2}$				
4141.704	4	24137.84					
4141.495	60 *h*	24139.06	$20406^{\circ}_{5/2}-44545_{3/2}$	SI	1.58	1.10	*
4141.098	3	24141.38					
4140.596	70 *h*	24144.30					
4140.030	80	24147.60	$19466_{13/2}-43614^{\circ}_{15/2}$	S0	0.80	0.30	
4138.387	400 *r*	24157.19	$13119_{9/2}-37276^{\circ}_{11/2}$	S0	0.98	0.25	
4138.334	2000 *r*	24157.50	$8771^{\circ}_{5/2}-32928_{3/2}$	S0	0.74	0.12	
4138.005	100 *h*	24159.42					
4137.503	70	24162.35	$18693_{15/2}-42855^{\circ}_{15/2}$	ΔJ=0	1.15	0.43	
4137.365	4	24163.16	$15271_{15/2}-39434^{\circ}_{13/2}$				
4136.360	9 *h*	24169.03					
4136.192	30 *h*	24170.01					
4135.875	9	24171.86					
4135.744	4	24172.63	$17613_{9/2}-41786^{\circ}_{9/2}$				
4135.462	6 *h*	24174.28					
4135.083	2	24176.49	$18853_{11/2}-43030^{\circ}_{9/2}$				
4134.167	8	24181.85	$17343_{7/2}-41525^{\circ}_{7/2}$	ΔJ=0	1.05	0.27	
4134.068	1	24182.43					
4132.740	6	24190.20	$17343_{7/2}-41533^{\circ}_{5/2}$				
4132.270	5	24192.95	$18837_{9/2}-43030^{\circ}_{9/2}$				
4131.760	10	24195.94	$18990_{11/2}-43186^{\circ}_{11/2}$				
4131.658	4 *h*	24196.53					
4130.998	2	24200.40					
4129.530	20	24209.00		ΔJ=0	1.22	0.22	
4128.477	20	24215.18	$18837_{9/2}-43052^{\circ}_{7/2}$				
4128.168	20	24216.99	$18693_{15/2}-42910^{\circ}_{13/2}$	S0	1.02	0.16	
4127.408	2	24221.45					
4127.097	2	24223.27					
4126.612	20 *h*	24226.12	$19748_{9/2}-43974^{\circ}_{11/2}$				
4126.298	200	24227.96	$17613_{9/2}-41841^{\circ}_{7/2}$	S0	1.15	0.04	
4125.476	80	24232.79	$17343_{7/2}-41576^{\circ}_{9/2}$	SI	1.02	1.25	*
4124.648	10 *h*	24237.66					
4122.979	20 *h*	24247.47	$19753_{7/2}-44001^{\circ}_{9/2}$				
4122.081	4	24252.75	$19748_{9/2}-44001^{\circ}_{9/2}$				
4120.725	20	24260.73	$17613_{9/2}-41874^{\circ}_{11/2}$	S0	1.07	0.11	
4120.171	1	24263.99					
4119.475	50	24268.09	$17613_{9/2}-41881^{\circ}_{9/2}$	T	1.19	0.04	
4119.262	3	24269.35					
4119.124	30	24270.16	$16742_{7/2}-41012^{\circ}_{7/2}$	ΔJ=0	1.23	0.63	
4116.710	3	24284.39					
4115.834	20 *h*	24289.56					
4115.764	6	24289.97					
4114.592	6	24296.89					
4114.320	100	24298.50	$19132_{3/2}-43430^{\circ}_{5/2}$	SI	1.40	0.32	
4114.128	100 *h*	24299.63					
4111.853	5	24313.08					
4111.208	3	24316.89					
4109.328	5 *h*	24328.01					
4108.565	2	24332.53	$18853_{11/2}-43186^{\circ}_{11/2}$				
4107.930	300	24336.29	$16742_{7/2}-41078^{\circ}_{9/2}$	T	1.32		
4107.531	1	24338.66					
4106.756	5	24343.25	$20406^{\circ}_{5/2}-44750_{7/2}$	S0	1.08	1.08	
4105.841	50000 *a*	24348.67	$0^{\circ}_{7/2}-24348_{9/2}$	S0	1.05	0.07	
4105.010	5	24353.60					
4104.697	3 *h*	24355.46					
4104.189	20	24358.48	$18693_{15/2}-43051^{\circ}_{15/2}$	T	1.185		
4103.792	6	24360.83					
4102.727	60	24367.16	$16742_{7/2}-41109^{\circ}_{9/2}$	S0	0.68	0.51	
4101.460	10 *h*	24374.68					
4100.458	10	24380.64	$17752_{5/2}-42133^{\circ}_{7/2}$	T	1.18		
4100.340	3	24381.34					
4100.217	8	24382.07	$16742_{7/2}-41124^{\circ}_{9/2}$	SI	1.41	0.24	
4100.171	10	24382.35					
4099.780	2	24384.67	$23374_{13/2}-47759^{\circ}_{13/2}$				
4099.127	10	24388.56	$19753_{7/2}-44142^{\circ}_{7/2}$	ΔJ=0	1.10	0.57	
4097.747	10 *h*	24396.77					
4094.187	50000 *a*	24417.98	$0^{\circ}_{7/2}-24418_{5/2}$	SI	1.30	0.20	
4092.631	30	24427.27	$17752_{5/2}-42179^{\circ}_{5/2}$	ΔJ=0	1.12	0.35	
4092.425	50	24428.49	$19753_{7/2}-44182^{\circ}_{5/2}$	SI	1.25	0.06	
4092.372	5	24428.81					
4091.771	80	24432.40	$19748_{9/2}-44180^{\circ}_{11/2}$	S0	0.57	0.54	
4091.355	30	24434.88	$18853_{11/2}-43288^{\circ}_{13/2}$	SI	1.32	0.14	
4090.672	5	24438.96	$18990_{11/2}-43429^{\circ}_{9/2}$				
4089.342	6 *h*	24446.91	$16742_{7/2}-41189^{\circ}_{7/2}$				
4089.187	30	24447.84	$18990_{11/2}-43438^{\circ}_{13/2}$	T	1.20	0.04	
4088.927	4	24449.39	$23309_{11/2}-47759^{\circ}_{13/2}$				

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Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
4088.052	5 *h*	24454.63					
4087.952	3 *h*	24455.22					
4087.576	6	24457.47	$18990_{11/2}-43447^{\circ}_{11/2}$				
4086.751	5	24462.41	$17454_{13/2}-41917^{\circ}_{13/2}$				
4086.102	3	24466.30					
4085.742	20	24468.45	$16957_{7/2}-41425^{\circ}_{7/2}$	ΔJ=0	1.13	0.25	
4085.536	10 *h*	24469.69	$16742_{7/2}-41211^{\circ}_{7/2}$				
4085.364	10	24470.72					
4084.837	4	24473.87					
4084.194	100	24477.73		S0	1.10	0.16	
4083.472	1	24482.05					
4083.091	10	24484.34	$20406^{\circ}_{5/2}-44891_{7/2}$				
4082.028	30	24490.71		ΔJ=0	1.10	0.66	
4081.395	40 *h*	24494.51					
4080.780	100	24498.20	$17343_{7/2}-41841^{\circ}_{7/2}$	ΔJ=0	1.08	0.67	
4079.999	40 *h*	24502.89					
4079.827	10	24503.93					
4079.578	6	24505.42	$17613_{9/2}-42119^{\circ}_{11/2}$				
4079.152	7 *h*	24507.98	$19466_{13/2}-43974^{\circ}_{11/2}$				
4078.793	20	24510.14	$19753_{7/2}-44263^{\circ}_{7/2}$	ΔJ=0	?	0.96	
4078.612	3	24511.22					
4078.377	2	24512.64	$19466_{13/2}-43979^{\circ}_{13/2}$				
4078.094	2	24514.34					
4077.916	6	24515.41	$19748_{9/2}-44263^{\circ}_{7/2}$				
4077.221	100	24519.59	$17613_{9/2}-42133^{\circ}_{7/2}$	SI	1.25	0.07	
4076.169	5	24525.91	$15587_{11/2}-40113^{\circ}_{13/2}$				
4075.510	7 *h*	24529.88					
4074.111	50	24538.30	$13119_{9/2}-37657^{\circ}_{11/2}$	S00	1.305	1.00	*
4073.000	3 *h*	24545.00					
4072.765	40	24546.41	$19753_{7/2}-44300^{\circ}_{5/2}$				
4071.641	4	24553.19					
4071.480	6	24554.16	$18990_{11/2}-43544^{\circ}_{9/2}$				
4070.856	6 *h*	24557.92					
4070.037	2	24562.87	$19753_{7/2}-44316^{\circ}_{9/2}$				
4069.466	2	24566.31					
4069.160	3	24568.16	$19748_{9/2}-44316^{\circ}_{9/2}$				
″			$16957_{7/2}-41525^{\circ}_{7/2}$				
4068.596	40	24571.56	$18837_{9/2}-43408^{\circ}_{11/2}$				
4066.605	6 *h*	24583.59	$16742_{7/2}-41325^{\circ}_{5/2}$				
4066.471	20	24584.40	$18853_{11/2}-43438^{\circ}_{13/2}$				
4065.318	4	24591.38	$18837_{9/2}-43428^{\circ}_{7/2}$				
4064.957	4	24593.56	$19548_{5/2}-44142^{\circ}_{7/2}$				
4064.611	40	24595.65	$18693_{15/2}-43288^{\circ}_{13/2}$				
4064.331	4 *h*	24597.35					
4062.723	10	24607.08					
4062.157	10	24610.51	$18837_{9/2}-43447^{\circ}_{11/2}$				
4062.011	200	24611.40	$20406^{\circ}_{5/2}-45018_{7/2}$				
4061.417	40	24615.00	$17752_{5/2}-42367^{\circ}_{5/2}$				
4060.909	50	24618.08	$17752_{5/2}-42370^{\circ}_{7/2}$				
4060.737	30	24619.12	$16957_{7/2}-41576^{\circ}_{9/2}$				
4060.478	30	24620.69	$15587_{11/2}-40208^{\circ}_{9/2}$				
4059.256	3	24628.10					
4058.185	7	24634.60					
4057.167	4	24640.78					
4055.809	400 *r*	24649.03	$13119_{9/2}-37768^{\circ}_{9/2}$	ΔJ=0	1.27	0.40	
4054.655	3	24656.05					
4053.881	3	24660.75					
4053.532	2	24662.88					
4053.306	10	24664.25	$17454_{13/2}-42119^{\circ}_{11/2}$				
4053.258	6	24664.54	$19753_{7/2}-44418^{\circ}_{7/2}$				
4052.386	6	24669.85	$19748_{9/2}-44418^{\circ}_{7/2}$				
4050.190	40	24683.23	$16742_{7/2}-41425^{\circ}_{7/2}$				
4049.946	2	24684.71					
4048.957	20	24690.74	$18853_{11/2}-43544^{\circ}_{9/2}$				
4048.129	40 *h*	24695.79					
4047.050	2	24702.38	$19753_{7/2}-44456^{\circ}_{7/2}$				
4046.184	20	24707.66	$19748_{9/2}-44456^{\circ}_{7/2}$				
4045.976	4	24708.94					
4045.103	6	24714.27	$19466_{13/2}-44180^{\circ}_{11/2}$				
4044.963	40	24715.12	$19548_{5/2}-44263^{\circ}_{7/2}$				
4044.474	800 *r*	24718.11	$8771^{\circ}_{5/2}-33489_{3/2}$	S0	0.856	1.468	*
4043.380	40 *h*	24724.80	$20406^{\circ}_{5/2}-45131_{7/2}$				
4042.090	300 *h*	24732.69					
4041.762	30	24734.70	$15587_{11/2}-40322^{\circ}_{9/2}$				
4040.481	2	24742.54					
4040.440	3	24742.79	$20406^{\circ}_{5/2}-45149_{7/2}$				
4040.285	20	24743.74	$19466_{13/2}-44210^{\circ}_{15/2}$				
4040.050	30	24745.18	$18693_{15/2}-43438^{\circ}_{13/2}$				
4039.969	80	24745.67					
4039.136	2	24750.78	$18837_{9/2}-43588^{\circ}_{7/2}$				
4038.887	2	24752.30					
4038.115	5	24757.04	$17613_{9/2}-42370^{\circ}_{7/2}$				
4034.360	30	24780.08					
4033.894	20	24782.94	$16742_{7/2}-41525^{\circ}_{7/2}$				
4033.186	4	24787.29					
4033.006	10	24788.40	$15587_{11/2}-40376^{\circ}_{13/2}$				
4032.765	10	24789.88	$17343_{7/2}-42133^{\circ}_{7/2}$				
4030.200	6	24805.65	$23309_{11/2}-48115^{\circ}_{13/2}$				
4030.034	6	24806.68					
4029.430	20 *h*	24810.39					
4027.640	30 *h*	24821.42	$18853_{11/2}-43675^{\circ}_{9/2}$				
4027.543	2	24822.02					
4026.594	20 *h*	24827.87					
4026.370	80	24829.25	$16957_{7/2}-41786^{\circ}_{9/2}$	SI	1.48	0.24	
4025.891	3	24832.20					
4025.615	200	24833.91	$16742_{7/2}-41576^{\circ}_{9/2}$	S0	0.99	0.25	
4025.193	60	24836.51	$17343_{7/2}-42179^{\circ}_{5/2}$	T	1.00		
4024.972	6	24837.87	$18837_{9/2}-43675^{\circ}_{9/2}$				
4024.732	5	24839.36					
4024.545	10	24840.51	$19466_{13/2}-44307^{\circ}_{13/2}$				
4024.230	500 *r*	24842.45	$16456_{17/2}-41299^{\circ}_{17/2}$	ΔJ=0	1.10	0.83	
4023.154	2	24849.10					
4022.595	50	24852.55	$8771^{\circ}_{5/2}-33623_{7/2}$	SI	1.11	0.16	
4020.324	4 *h*	24866.59					
4019.880	100 *h*	24869.34					
4019.575	40 *h*	24871.22					
4019.132	5	24873.96					
4017.417	3	24884.58	$16957_{7/2}-41841^{\circ}_{7/2}$				
4014.305	50 *h*	24903.87	$16742_{7/2}-41646^{\circ}_{7/2}$				
4013.736	8	24907.40	$19548_{5/2}-44456^{\circ}_{7/2}$				
4012.193	4	24916.98	$19466_{13/2}-44383^{\circ}_{11/2}$				
4011.798	20	24919.44					
4011.518	10	24921.17	$18693_{15/2}-43614^{\circ}_{15/2}$				
4010.943	20	24924.75	$16957_{7/2}-41881^{\circ}_{9/2}$				
4010.468	20	24927.70	$17613_{9/2}-42541^{\circ}_{11/2}$				
4010.124	30	24929.84	$15587_{11/2}-40517^{\circ}_{9/2}$				
4009.906	6 *h*	24931.19					
4009.369	200	24934.53	$19548_{5/2}-44483^{\circ}_{3/2}$	T	0.97	0.03	
4008.737	3	24938.46					
4008.213	4	24941.72					
4006.588	20	24951.84	$17454_{13/2}-42406^{\circ}_{13/2}$				
4006.362	60	24953.25	$17752_{5/2}-42705^{\circ}_{5/2}$	ΔJ=0	1.14	0.23	
4005.096	2	24961.13					
4004.713	4 *h*	24963.52					
4003.943	20	24968.32	$17613_{9/2}-42581^{\circ}_{11/2}$				
4002.989	1	24974.27					
4002.551	2	24977.01					
4002.008	40	24980.39	$17613_{9/2}-42594^{\circ}_{9/2}$				
4001.656	4	24982.59	$17752_{5/2}-42735^{\circ}_{5/2}$				
4001.395	20 *h*	24984.22	$18990_{11/2}-43974^{\circ}_{11/2}$				
4000.642	7	24988.92	$18990_{11/2}-43979^{\circ}_{13/2}$				
4000.570	40	24989.37	$17752_{5/2}-42742^{\circ}_{7/2}$	T	1.22		
3999.143	5	24998.29					
3999.120	3	24998.43	$19748_{9/2}-44747^{\circ}_{11/2}$				
3998.351	4	25003.24					
3998.241	40	25003.93					
3997.816	50	25006.59					
3996.415	10	25015.35					
3995.730	6 *h*	25019.64					
3994.999	7	25024.22	$17343_{7/2}-42367^{\circ}_{5/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je
3994.503	20	25027.33	$17343_{7/2}-42370^{\circ}_{7/2}$			
3993.352	3	25034.54				
3991.840	20 *h*	25044.02	$16742_{7/2}-41786^{\circ}_{9/2}$			
3990.875	50	25050.08	$19132_{3/2}-44182^{\circ}_{5/2}$			
3989.289	2	25060.04				
3987.865	3	25068.98				
3987.605	7 *h*	25070.62				
3986.861	4	25075.30	$15587_{11/2}-40663^{\circ}_{11/2}$			
3985.764	6	25082.20	$18990_{11/2}-44072^{\circ}_{13/2}$			
3985.074	10	25086.54	$17454_{13/2}-42541^{\circ}_{11/2}$			
3984.747	3	25088.60				
3984.207	15	25092.00	$13119_{9/2}-38211^{\circ}_{7/2}$			
3983.676	2 *h*	25095.35				
3983.040	10	25099.35	$16742_{7/2}-41841^{\circ}_{7/2}$			
3982.716	15	25101.39	$19753_{7/2}-44855^{\circ}_{5/2}$			
3982.321	3	25103.88				
3980.918	3	25112.73	$21737_{9/2}-46850^{\circ}_{11/2}$			
3980.661	40	25114.35	$19753_{7/2}-44868^{\circ}_{9/2}$			
3979.825	30	25119.63	$19748_{9/2}-44868^{\circ}_{9/2}$			
3979.637	20 *h*	25120.81	$18853_{11/2}-43974^{\circ}_{11/2}$			
3979.062	3	25124.44	$19466_{13/2}-44591^{\circ}_{13/2}$			
3978.897	10	25125.49	$18853_{11/2}-43979^{\circ}_{13/2}$			
3978.635	40	25127.14	$17454_{13/2}-42581^{\circ}_{11/2}$			
3978.447	3	25128.33	$17613_{9/2}-42742^{\circ}_{7/2}$			
3977.032	100 *h*	25137.27	$18837_{9/2}-43974^{\circ}_{11/2}$			
3976.679	100	25139.50	$16742_{7/2}-41881^{\circ}_{9/2}$	SO	0.63	0.50
3975.425	6	25147.43	$18853_{11/2}-44001^{\circ}_{9/2}$			
3975.040	3 *h*	25149.87	$17752_{5/2}-42902^{\circ}_{5/2}$			
3973.894	10	25157.12	$17613_{9/2}-42770^{\circ}_{9/2}$			
3973.200	2	25161.51				
3972.828	2	25163.87	$18837_{9/2}-44001^{\circ}_{9/2}$			
3972.174	3	25168.01	$19132_{3/2}-44300^{\circ}_{5/2}$			
3971.232	20 *h*	25173.98				
3970.878	20	25176.23	$16957_{7/2}-42133^{\circ}_{7/2}$			
3970.138	7	25180.92				
3970.090	4	25181.22				
3968.621	50	25190.54	$18990_{11/2}-44180^{\circ}_{11/2}$	ΔJ=0	1.18	0.25
3968.222	20	25193.08	$15587_{11/2}-40780^{\circ}_{13/2}$			
3964.804	15	25214.79				
3964.484	10	25216.83	$21997_{11/2}-47214^{\circ}_{13/2}$			
3964.172	20	25218.81	$18853_{11/2}-44072^{\circ}_{13/2}$			
3963.532	50	25222.89	$16957_{7/2}-42179^{\circ}_{5/2}$	SI	1.42	0.30
3963.068	10	25225.84	$17613_{9/2}-42839^{\circ}_{9/2}$			
3962.686	60	25228.27	$13119_{9/2}-38347^{\circ}_{11/2}$			
3960.192	2	25244.16				
3959.427	30 *h*	25249.04				
3959.168	20	25250.69	$17343_{7/2}-42594^{\circ}_{9/2}$			
3956.878	60	25265.30	$13119_{9/2}-38384^{\circ}_{9/2}$			
3956.492	20	25267.77	$15587_{11/2}-40855^{\circ}_{9/2}$			
3954.520	7	25280.37	$19466_{13/2}-44747^{\circ}_{11/2}$			
3953.600	2	25286.25	$18693_{15/2}-43979^{\circ}_{13/2}$			
3952.760	4 *h*	25291.62				
3951.466	4	25299.90	$17752_{5/2}-43052^{\circ}_{7/2}$			
3949.920	5	25309.81	$19748_{9/2}-45058^{\circ}_{11/2}$			
3949.270	3000 *r*	25313.97	$8771^{\circ}_{5/2}-34085_{5/2}$	ΔJ=0	0.90	0.24
3948.833	20	25316.77	$19753_{7/2}-45070^{\circ}_{9/2}$			
″			$18990_{11/2}-44307^{\circ}_{13/2}$			
3948.023	4	25321.97				
3947.336	3	25326.37	$18990_{11/2}-44316^{\circ}_{9/2}$			
3947.222	60	25327.10	$18853_{11/2}-44180^{\circ}_{11/2}$	T	1.15	
3946.589	6	25331.17				
3945.650	5	25337.20	$19466_{13/2}-44803^{\circ}_{13/2}$			
3945.321	3	25339.31				
3944.660	40	25343.55	$18837_{9/2}-44180^{\circ}_{11/2}$	SI	1.32	0.18
3943.935	80	25348.21	$17613_{9/2}-42961^{\circ}_{11/2}$	T	1.24	
3943.490	80	25351.07	$19132_{3/2}-44483^{\circ}_{3/2}$			
3941.946	15	25361.00	$17752_{5/2}-43113^{\circ}_{5/2}$			
3941.710	40	25362.52	$17343_{7/2}-42705^{\circ}_{5/2}$	SO	0.83	0.18
3941.640	30	25362.97	$13119_{9/2}-38482^{\circ}_{7/2}$			
3939.993	3	25373.57				
3939.089	80	25379.40	$13119_{9/2}-38499^{\circ}_{9/2}$			
3937.282	100	25391.04	$16742_{7/2}-42133^{\circ}_{7/2}$	ΔJ=0	1.22	0.54
3937.159	2	25391.84	$17343_{7/2}-42735^{\circ}_{5/2}$			
3936.939	4	25393.26	$18990_{11/2}-44383^{\circ}_{11/2}$			
3936.100	30	25398.67	$17343_{7/2}-42742^{\circ}_{7/2}$			
3935.799	80	25400.61	$17454_{13/2}-42855^{\circ}_{15/2}$	T	1.125	
3934.332	10	25410.08	$13119_{9/2}-38529^{\circ}_{11/2}$			
3934.252	6	25410.60	$16957_{7/2}-42367^{\circ}_{5/2}$			
3934.112	2	25411.50				
3933.767	20	25413.73	$16957_{7/2}-42370^{\circ}_{7/2}$			
3932.910	3	25419.27				
3932.718	20	25420.51	$17613_{9/2}-43034^{\circ}_{7/2}$			
3932.300	4	25423.21	$16456_{17/2}-41880^{\circ}_{15/2}$			
3931.775	2	25426.61	$18837_{9/2}-44263^{\circ}_{7/2}$			
3931.649	20	25427.42	$17343_{7/2}-42770^{\circ}_{9/2}$			
3931.514	15	25428.29	$18990_{11/2}-44418^{\circ}_{13/2}$			
3930.717	10	25433.45	$25130_{15/}-50563^{\circ}_{15/2}$			
3930.066	20	25437.66	$16742_{7/2}-42179^{\circ}_{5/2}$			
3927.639	2	25453.38	$18853_{11/2}-44307^{\circ}_{13/2}$			
3927.355	20	25455.22	$17454_{13/2}-42910^{\circ}_{13/2}$			
3926.742	5	25459.20				
3925.096	3	25469.87				
3923.638	8	25479.34	$18837_{9/2}-44316^{\circ}_{9/2}$			
3922.405	1 *h*	25487.35	$21997_{11/2}-47484^{\circ}_{11/2}$			
3921.885	5 *h*	25490.72	$15587_{11/2}-41078^{\circ}_{9/2}$			
3921.446	60	25493.58	$15587_{11/2}-41081^{\circ}_{11/2}$	ΔJ=0	1.28	0.20
3921.056	2	25496.11	$17343_{7/2}-42839^{\circ}_{9/2}$			
3919.372	40	25507.07	$17454_{13/2}-42961^{\circ}_{11/2}$			
3919.023	2	25509.34				
3918.934	10	25509.92	$15271_{15/2}-40780^{\circ}_{13/2}$			
3918.376	3	25513.55				
3917.144	40	25521.58	$15587_{11/2}-41109^{\circ}_{9/2}$			
3916.477	5000 *r*	25525.92	$8771^{\circ}_{5/2}-34297_{7/2}$	T	0.94	
3914.850	6	25536.53	$15587_{11/2}-41124^{\circ}_{9/2}$			
3914.452	8 *h*	25539.13				
3913.619	40	25544.56	$13119_{9/2}-38664^{\circ}_{7/2}$			
3913.528	3	25545.16				
3913.360	30	25546.25	$18837_{9/2}-44383^{\circ}_{11/2}$			
3911.384	10	25559.16	$17343_{7/2}-42902^{\circ}_{5/2}$			
3910.504	40	25564.91	$18853_{11/2}-44418^{\circ}_{13/2}$			
3910.346	10	25565.94	$13119_{9/2}-38685^{\circ}_{9/2}$			
3910.200	3	25566.90				
3909.315	10	25572.69	$17613_{9/2}-43186^{\circ}_{11/2}$			
3906.478	2	25591.26				
3905.032	2	25600.73	$18990_{11/2}-44591^{\circ}_{13/2}$			
3904.452	3	25604.54	$16957_{7/2}-42561^{\circ}_{9/2}$			
3903.098	2	25613.42				
3902.944	4	25614.43				
3902.268	20	25618.87	$18837_{9/2}-44456^{\circ}_{7/2}$			
3901.276	4	25625.38	$16742_{7/2}-42367^{\circ}_{5/2}$			
3899.496	20	25637.08	$16957_{7/2}-42594^{\circ}_{9/2}$			
3896.617	1000 *r*	25656.02	$0^{\circ}_{7/2}-25656_{5/2}$	SI	1.14	0.72 *
3895.993	40	25660.13	$19748_{9/2}-45408^{\circ}_{7/2}$			
3895.418	4	25663.91				
3893.525	7	25676.39				
3893.257	10	25678.16	$17752_{5/2}-43430^{\circ}_{5/2}$			
3892.673	6	25682.01				
3891.900	5	25687.11	$15587_{11/2}-41274^{\circ}_{13/2}$			
3889.880	5 *h*	25700.45				
3888.558	30	25709.19	$17343_{7/2}-43052^{\circ}_{7/2}$	ΔJ=0	1.04	0.13
3887.842	3	25713.92	$19753_{7/2}-45467^{\circ}_{9/2}$			
3887.348	5000 *a*	25717.19	$0^{\circ}_{7/2}-25717_{7/2}$	ΔJ=0	1.14	1.01 *
3886.472	2	25722.99	$19132_{3/2}-44855^{\circ}_{5/2}$			
3886.068	20	25725.66	$18693_{15/2}-44418^{\circ}_{13/2}$			
3885.885	4 *h*	25726.87				
3885.726	2 *h*	25727.93				
3885.133	5 *h*	25731.85				
3884.306	3	25737.33	$18853_{11/2}-44591^{\circ}_{13/2}$			
3883.132	10000 *a*	25745.11	$0^{\circ}_{7/2}-25745_{5/2}$	SI	1.25	0.13
3882.559	4	25748.91	$16957_{7/2}-42705^{\circ}_{5/2}$			

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
3881.397	20	25756.62	$18990_{11/2}-44747^{\circ}_{11/2}$				
3881.249	50	25757.60	$13119_{9/2}-38877^{\circ}_{11/2}$	ΔJ=1	?	1.08	
3880.599	30	25761.92	$21997_{11/2}-47759^{\circ}_{13/2}$	T	1.20		
3879.340	80	25770.28	$17343_{7/2}-43113^{\circ}_{5/2}$	S0	0.80	0.22	
3879.051	7	25772.20					
3878.143	5	25778.23	$16957_{7/2}-42735^{\circ}_{5/2}$				
3877.300	2	25783.84	$18990_{11/2}-44774^{\circ}_{9/2}$				
3877.126	10	25784.99	$16957_{7/2}-42742^{\circ}_{7/2}$				
3876.864	2 *h*	25786.74					
3876.416	5	25789.72					
3874.248	2	25804.15					
3873.824	4	25806.97					
3873.446	30	25809.49					
3873.400	2	25809.80	$25488_{11/2}-51298^{\circ}_{13/2}$				
3872.846	40	25813.49	$18990_{11/2}-44803^{\circ}_{13/2}$				
3872.804	60	25813.77	$16957_{7/2}-42770^{\circ}_{9/2}$				
3872.512	200	25815.71	$17613_{9/2}-43429^{\circ}_{9/2}$	T	1.18		
3871.973	60	25819.31	$16742_{7/2}-42561^{\circ}_{9/2}$				
3871.846	30	25820.15		T	1.06		
3871.530	4	25822.26	$19466_{13/2}-45288^{\circ}_{11/2}$				
3870.912	5 *h*	25826.38					
3869.786	50	25833.90	$17454_{13/2}-43288^{\circ}_{13/2}$				
3869.744	10	25834.18	$17613_{9/2}-43447^{\circ}_{11/2}$				
3869.540	4	25835.54	$17752_{5/2}-43588^{\circ}_{7/2}$				
3867.107	8	25851.80	$16742_{7/2}-42594^{\circ}_{9/2}$				
3865.909	5	25859.81	$19548_{5/2}-45408^{\circ}_{7/2}$				
3863.972	70	25872.77	$18693_{15/2}-44565^{\circ}_{15/2}$	ΔJ=0	1.15	0.35	
3863.524	3	25875.77					
3863.230	1	25877.74	$18990_{11/2}-44868^{\circ}_{9/2}$				
3863.081	30	25878.74	$18693_{15/2}-44571^{\circ}_{17/2}$	T	1.18		
3862.522	20	25882.48	$16957_{7/2}-42839^{\circ}_{9/2}$				
3861.820	20	25887.19	$19748_{9/2}-45635^{\circ}_{11/2}$				
3860.925	5	25893.19	$18853_{11/2}-44747^{\circ}_{11/2}$				
3860.201	2	25898.04	$18693_{15/2}-44591^{\circ}_{13/2}$				
3858.480	100	25909.59	$18837_{9/2}-44747^{\circ}_{11/2}$	SI	1.40	0.20	
3856.868	15	25920.42	$18853_{11/2}-44774^{\circ}_{9/2}$				
3855.305	6	25930.93	$17613_{9/2}-43544^{\circ}_{9/2}$				
3854.522	10 *h*	25936.20					
3854.426	20	25936.85	$18837_{9/2}-44774^{\circ}_{9/2}$				
3853.145	50	25945.47	$16957_{7/2}-42902^{\circ}_{5/2}$				
3852.470	30	25950.01	$18853_{11/2}-44803^{\circ}_{13/2}$				
3850.447	6	25963.65	$16742_{7/2}-42705^{\circ}_{5/2}$				
3849.518	6	25969.91	$13119_{9/2}-39089^{\circ}_{11/2}$				
3848.835	5	25974.52	$17613_{9/2}-43588^{\circ}_{7/2}$				
3848.295	5	25978.17	$25488_{11/2}-51466^{\circ}_{13/2}$				
3847.836	20	25981.27	$15587_{11/2}-41569^{\circ}_{11/2}$				
3847.514	100 *r*	25983.44	$17454_{13/2}-43438^{\circ}_{13/2}$	ΔJ=0	1.22	0.53	
3846.091	30	25993.05	$17454_{13/2}-43447^{\circ}_{11/2}$				
3845.100	5	25999.75	$16742_{7/2}-42742^{\circ}_{7/2}$				
3842.946	150 *h*	26014.32	$18853_{11/2}-44868^{\circ}_{9/2}$				
3840.869	500 *r*	26028.39	$15271_{15/2}-41299^{\circ}_{17/2}$	T	1.09		
3840.518	2	26030.77	$18837_{9/2}-44868^{\circ}_{9/2}$				
3837.438	2 *h*	26051.66					
3835.926	10	26061.93	$19748_{9/2}-45810^{\circ}_{11/2}$				
3835.051	20	26067.88	$13119_{9/2}-39187^{\circ}_{7/2}$				
3834.484	2	26071.73					
3834.262	7	26073.24	$16957_{7/2}-43030^{\circ}_{9/2}$				
3833.695	10	26077.10	$16957_{7/2}-43034^{\circ}_{7/2}$				
3833.254	10	26080.10					
3832.386	30	26086.00	$17343_{7/2}-43429^{\circ}_{9/2}$	SI	1.80	0.62	
3832.183	80	26087.39	$17343_{7/2}-43430^{\circ}_{5/2}$	S0	0.80	0.18	
3831.643	4	26091.06	$19466_{13/2}-45557^{\circ}_{15/2}$				
3830.736	3	26097.24	$16742_{7/2}-42839^{\circ}_{9/2}$				
3830.394	30	26099.57	$15587_{11/2}-41687^{\circ}_{11/2}$				
3830.267	30	26100.44	$13119_{9/2}-39220^{\circ}_{9/2}$				
3829.065	30 *h*	26108.63		T	1.10		
3827.965	8 *h*	26116.13					
3827.666	4	26118.17	$21997_{11/2}-48115^{\circ}_{13/2}$				
3826.667	30	26124.99	$13119_{9/2}-39244^{\circ}_{9/2}$				
3826.386	400 *a*	26126.91	$0^{\circ}_{7/2}-26126_{5/2}$	SI	1.22	0.09	
3824.430	100 *h*	26140.27		T	1.17		
3824.326	2	26140.98					
3822.030	5	26156.68	$16957_{7/2}-43113^{\circ}_{5/2}$				
3822.003	4	26156.87	$18990_{11/2}-45147^{\circ}_{9/2}$				
3821.623	100 *r*	26159.47	$17454_{13/2}-43614^{\circ}_{15/2}$	S0	0.98	0.16	
3821.511	5	26160.24	$16742_{7/2}-42902^{\circ}_{5/2}$				
3821.215	2	26162.26					
3819.906	10 *h*	26171.23					
3816.591	3	26193.96	$19466_{13/2}-45660^{\circ}_{13/2}$				
3815.037	60 *h*	26204.63					
3813.276	10	26216.73	$18853_{11/2}-45070^{\circ}_{9/2}$				
3810.888	10	26233.16	$18837_{9/2}-45070^{\circ}_{9/2}$				
3810.055	30 *h*	26238.89					
3809.402	20	26243.39					
3808.948	60	26246.52		T	1.14		
3808.300	5	26250.98					
3807.719	700 *r*	26254.99	$8771^{\circ}_{5/2}-35026_{5/2}$	ΔJ=0	0.85	1.02	*
3803.144	30	26286.57	$15587_{11/2}-41874^{\circ}_{11/2}$	ΔJ=0	1.21	0.46	
3802.074	150 *r*	26293.97	$15587_{11/2}-41881^{\circ}_{9/2}$	SI	1.58	0.32	
3799.874	3	26309.19					
3799.774	5	26309.89	$18837_{9/2}-45147^{\circ}_{9/2}$				
3799.710	30	26310.33	$16742_{7/2}-43052^{\circ}_{7/2}$				
3798.541	800 *r*	26318.43	$8771^{\circ}_{5/2}-35089_{5/2}$	T	0.85		
3797.636	40	26324.70	$13119_{9/2}-39444^{\circ}_{9/2}$	ΔJ=0	1.20	0.83	
3796.596	10	26331.91	$17343_{7/2}-43675^{\circ}_{9/2}$				
3795.965	3	26336.28	$25130_{15/2}-51466^{\circ}_{13/2}$				
3794.872	3	26343.87	$19466_{13/2}-45810^{\circ}_{11/2}$				
3793.269	10	26355.00					
3792.404	10 *h*	26361.01	$17613_{9/2}-43974^{\circ}_{11/2}$				
3791.307	80	26368.64	$13119_{9/2}-39488^{\circ}_{9/}$	ΔJ=0	1.20	0.86	
3790.905	20	26371.44	$16742_{7/2}-43113^{\circ}_{5/2}$				
3788.759	5 *h*	26386.37					
3788.582	5	26387.61	$17613_{9/2}-44001^{\circ}_{9/2}$				
3788.273	2	26389.76	$17752_{5/2}-44142^{\circ}_{7/2}$				
3787.605	10 *h*	26394.41					
3787.014	120 *r*	26398.53	$16456_{17/2}-42855^{\circ}_{15/2}$	SI	1.56	0.38	
3784.645	2 *h*	26415.06	$19748_{9/2}-46163^{\circ}_{11/2}$				
3784.327	4 *h*	26417.28					
3783.855	2	26420.57					
3782.550	30	26429.69	$17752_{5/2}-44182^{\circ}_{5/2}$	T	1.20		
3781.148	200 *a*	26439.48	$0^{\circ}_{7/2}-26439_{7/2}$	ΔJ=0	1.07	0.50	
3780.977	20	26440.68					
3780.588	20	26443.40	$13119_{9/2}-39563^{\circ}_{11/2}$				
3780.214	5	26446.02					
3779.414	60 *h*	26451.62	$18837_{9/2}-45289^{\circ}_{11/2}$	T	1.13		
3777.096	5	26467.85	$19466_{13/2}-45934^{\circ}_{15/2}$				
3776.537	30	26471.77	$16957_{7/2}-43428^{\circ}_{7/2}$				
3776.452	6	26472.36	$16957_{7/2}-43429^{\circ}_{9/2}$				
3773.864	20	26490.51	$8771^{\circ}_{5/2}-35261_{5/2}$	ΔJ=0	0.855	1.346	*
3773.205	3	26495.14					
3772.102	5 *h*	26502.89					
3771.901	4 *h*	26504.30					
3769.693	100 *h*	26519.82	$17454_{13/2}-43974^{\circ}_{11/2}$				
3769.032	6	26524.48	$17454_{13/2}-43979^{\circ}_{13/2}$				
3768.065	40	26531.28	$15587_{11/2}-42119^{\circ}_{11/2}$				
3766.713	7	26540.81					
3765.746	20	26547.62	$17752_{5/2}-44300^{\circ}_{5/2}$				
3764.387	8	26557.20					
3762.954	10	26567.32	$17613_{9/2}-44180^{\circ}_{11/2}$				
3762.352	150 *h*	26571.57					
3759.820	40	26589.46	$13119_{9/2}-39709^{\circ}_{11/2}$	S0	0.57	0.58	
3759.086	40	26594.65	$16456_{17/2}-43051^{\circ}_{15/2}$	T	1.15		
3758.726	3	26597.20					
3757.570	3	26605.38					
3757.040	6	26609.14	$15271_{15/2}-4180^{\circ}_{15/2}$				
3756.370	10	26613.88	$18853_{11/2}-45467^{\circ}_{9/2}$				
3755.818	4	26617.79	$17454_{13/2}-44072^{\circ}_{13/2}$				
3754.055	10	26630.29	$18837_{9/2}-45467^{\circ}_{9/2}$				
3753.930	20	26631.18	$16957_{7/2}-43588^{\circ}_{7/2}$				
3753.810	10	26632.03	$18853_{11/2}-45485^{\circ}_{11/2}$				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je
3752.828	10 *h*	26639.00				
3752.168	20	26643.69				
3751.806	2000 *a*	26646.26	$0^{\circ}_{7/2}-26646_{9/2}$	S0	1.143	0.961 *
3751.495	5	26648.47	$18837_{9/2}-45485^{\circ}_{11/2}$			
3748.433	3	26670.23	$18990_{11/2}-45660^{\circ}_{13/2}$			
3746.208	5	26686.07				
3746.139	3	26686.57	$16742_{7/2}-43428^{\circ}_{7/2}$			
3746.057	20	26687.15	$16742_{7/2}-43429^{\circ}_{9/2}$			
3745.865	6	26688.52	$16742_{7/2}-43430^{\circ}_{5/2}$			
3744.954	8	26695.01				
3744.064	6000 *a*	26701.35	$0^{\circ}_{7/2}-26701_{7/2}$	ΔJ=0	1.10	0.23
3741.692	200	26718.28	$16957_{7/2}-43675^{\circ}_{9/2}$	S0	0.58	0.45
3740.597	5	26726.10	$17454_{13/2}-44180^{\circ}_{11/2}$			
3739.953	15	26730.70	$17752_{5/2}-44483^{\circ}_{3/2}$			
3739.772	100	26732.00		S0	0.70	0.30
3739.472	5	26734.14				
3736.591	3	26754.75	$19466_{13/2}-46221^{\circ}_{11/2}$			
3736.471	40	26755.61	$17454_{13/2}-44210^{\circ}_{15/2}$	T	1.15	
3732.804	30	26781.90	$18853_{11/2}-45635^{\circ}_{11/2}$	T	1.12	
3731.287	4	26792.79				
3731.048	3 *h*	26794.50				
3730.423	10	26798.99	$17343_{7/2}-44142^{\circ}_{7/2}$			
3729.954	5	26802.36	$16742_{7/2}-43544^{\circ}_{9/2}$			
3728.809	2 *h*	26810.59				
3727.487	20	26820.10	$18990_{11/2}-45810^{\circ}_{11/2}$			
3724.875	4	26838.91	$17343_{7/2}-44182^{\circ}_{5/2}$			
3724.370	4	26842.54	$17613_{9/2}-44456^{\circ}_{7/2}$			
3723.897	20	26845.95	$16742_{7/2}-43588^{\circ}_{7/2}$			
3723.005	5	26852.39	$17454_{13/2}-44307^{\circ}_{13/2}$			
3722.400	70 *h*	26856.75				
3719.105	2	26880.54				
3717.914	10000 *a*	26889.15	$0^{\circ}_{7/2}-26889_{9/2}$	S0	1.00	0.10
3714.249	4	26915.69	$18693_{15/2}-45608^{\circ}_{15/2}$			
3714.132	3	26916.53				
3713.573	10	26920.59	$17343_{7/2}-44263^{\circ}_{7/2}$			
3712.860	6 *h*	26925.76				
3712.439	5	26928.81	$17454_{13/2}-44383^{\circ}_{11/2}$			
3711.859	2 *h*	26933.02	$16742_{7/2}-43675^{\circ}_{9/2}$			
3710.665	20	26941.68	$13119_{9/2}-40061^{\circ}_{7/2}$			
3709.030	20	26953.56	$15587_{11/2}-42541^{\circ}_{11/2}$			
3708.602	2	26956.67	$18853_{11/2}-45810^{\circ}_{11/2}$			
3708.425	4 *h*	26957.96				
3707.099	30	26967.60	$18693_{15/2}-45660_{13/2}$	T	1.145	
3706.329	4	26973.20				
3706.255	20	26973.74	$15587_{11/2}-42561^{\circ}_{9/2}$			
3704.358	50 *h*	26987.55		T	1.41	
3703.419	9	26994.39	$19466_{13/2}-46461^{\circ}_{15/2}$			
3701.795	40 *r*	27006.24	$15587_{11/2}-42594^{\circ}_{9/2}$	SI	2.00	0.74
3701.045	10 *h*	27011.71				
3696.593	5	27044.24	$16957_{7/2}-44001^{\circ}_{9/2}$			
3696.455	4 *h*	27045.25				
3695.385	3	27053.08				
3692.390	3	27075.02	$17343_{7/2}-44418^{\circ}_{7/2}$			
3691.580	5	27080.96				
3691.030	4 *h*	27085.00				
3690.504	10	27088.86	$13119_{9/2}-40208^{\circ}_{9/2}$			
3689.350	20 *h*	27097.33				
3688.731	10 *h*	27101.88	$19748_{9/2}-46850^{\circ}_{11/2}$			
3688.645	3	27102.51				
3687.488	20	27111.02	$17454_{13/2}-44565^{\circ}_{15/2}$	T	1.14	
3687.248	10	27112.78				
3684.771	20	27131.01	$19466_{13/2}-46597^{\circ}_{13/2}$	ΔJ=0	1.16	0.18
3684.458	10	27133.31	$17613_{9/2}-44747^{\circ}_{11/2}$			
3684.145	6	27135.61	$15271_{15/2}-42406^{\circ}_{13/2}$			
3684.059	5	27136.25				
3683.475	10	27140.55				
3681.194	20	27157.37	$16456_{17/2}-43614^{\circ}_{15/2}$	SI	1.48	0.40
3679.113	3 *h*	27172.73				
3677.728	40 *r*	27182.96	$15587_{11/2}-42770^{\circ}_{9/2}$	SI	1.44	0.18
3677.004	4 *h*	27188.31				
3675.029	30	27202.92	$13119_{9/2}-40322^{\circ}_{7/2}$	ΔJ=0	1.25	0.86
3673.989	3	27210.62				
3672.616	30 *h*	27220.80				
3671.724	10	27227.41	$19466_{13/2}-46694^{\circ}_{13/2}$	T	1.14	
3670.776	8	27234.44				
3669.835	3	27241.42	$18693_{15/2}-45934^{\circ}_{15/2}$			
3669.081	20 *h*	27247.02				
3668.452	30	27251.69	$15587_{11/2}-42839^{\circ}_{9/2}$			
3665.754	5	27271.75				
3664.617	10 *h*	27280.21				
3663.005	90	27292.22	$17454_{13/2}-44747^{\circ}_{11/2}$	S0	0.95	0.15
3662.276	10	27297.65				
3661.200	2	27305.67				
3661.024	40	27306.98	$16957_{7/2}-44263^{\circ}_{7/2}$			
3660.452	20	27311.25		T	1.36	
3658.983	20	27322.22	$15587_{11/2}-22910^{\circ}_{13/2}$			
3658.008	3	27329.50	$24137_{13/2}-51466^{\circ}_{13/2}$			
3656.196	5	27343.04				
3656.178	5	27343.18	$16957_{7/2}-44300^{\circ}_{5/2}$			
3655.312	5	27349.65				
3654.560	20 *h*	27355.28				
3653.968	30	27359.71	$16957_{7/2}-44316^{\circ}_{9/2}$			
3652.050	50 *r*	27374.08	$15587_{11/2}-42961^{\circ}_{11/2}$	ΔJ=0	1.22	0.26
3651.557	4	27377.78				
3650.740	50 *h*	27383.90				
3649.784	3	27391.08				
3648.853	50 *r*	27398.07	$13119_{9/2}-40517^{\circ}_{9/2}$	ΔJ=0	1.25	0.68
3648.572	5	27400.18	$16742_{7/2}-44142^{\circ}_{7/2}$			
3648.485	10	27400.83				
3646.703	200 *r*	27414.22	$13119_{9/2}-40533^{\circ}_{7/2}$	SI	1.52	0.21
3643.472	20	27438.53				
3642.944	100 *r*	27442.51	$15587_{11/2}-43030^{\circ}_{9/2}$	SI	1.98	0.71
3641.034	10	27456.90	$17613_{9/2}-45070^{\circ}_{9/2}$			
3640.437	3	27461.40	$16957_{7/2}-44418^{\circ}_{7/2}$			
3639.570	6	27467.94				
3638.408	300 *r*	27476.72	$13119_{9/2}-40596^{\circ}_{7/2}$	T	1.31	
3633.763	20	27511.84	$17343_{7/2}-44855^{\circ}_{5/2}$			
3632.062	50	27524.72				
3631.210	4 *h*	2753 (18				
3630.895	4	27533.57				
3629.876	7	27541.30				
3627.598	10 *h*	27558.59				
3627.303	5	27560.83	$19466_{13/2}-47027^{\circ}_{13/2}$			
3625.442	20 *h*	27574.98		T	1.02	
3624.198	200 *r*	27584.45	$15271_{15/2}-42855^{\circ}_{15/2}$	ΔJ=0	1.10	0.33
3622.355	10	27598.48	$15587_{11/2}-43186^{\circ}_{11/2}$			
3620.497	100 *h*	27612.64				
3619.545	4	27619.91				
3617.040	10	27639.03	$15271_{15/2}-42910^{\circ}_{13/2}$			
3616.398	2	27643.94				
3616.355	20	27644.27	$13119_{9/2}-40763^{\circ}_{7/2}$	SI	1.72	0.41
3615.650	4	27649.66				
3614.820	20	27656.01	$17752_{5/2}-45408^{\circ}_{7/2}$			
3613.565	3	27665.61				
3613.200	3	27668.41				
3608.960	10	27700.91	$15587_{11/2}-43288^{\circ}_{13/2}$			
3608.604	2	27703.65	$18990_{11/2}-46694^{\circ}_{13/2}$			
3607.261	20	27713.96	$16742_{7/2}-44456^{\circ}_{7/2}$			
3606.609	5 *h*	27718.97				
3604.401	10	27735.95	$13119_{9/2}-40855^{\circ}_{9/2}$			
3603.872	10	27740.02		T	1.17	
3603.661	30 *h*	27741.64				
3602.123	60 *r*	27753.49	$16456_{17/2}-44210^{\circ}_{15/2}$	SI	1.22	0.15
3600.241	30	27768.00	$18693_{15/2}-46461^{\circ}_{15/2}$	T	1.20	
3599.188	5	27776.12				
3598.616	200 *r*	27780.54	$15271_{15/2}-43051^{\circ}_{15/2}$	ΔJ=0	1.15	0.84
3596.487	20	27796.98		T	0.85	
3595.600	4	27803.84				
3594.404	30	27813.09		T	1.09	
3593.867	20	27817.24	$16957_{7/2}-44774^{\circ}_{9/2}$			

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
3593.487	2	27820.19					
3593.360	20	27821.17	$15587_{11/2}-43408^{\circ}_{11/2}$				
3593.067	3	27823.44					
3590.896	8	27840.26	$18853_{11/2}-46694^{\circ}_{13/2}$				
3590.728	200 *r*	27841.56	$15587_{11/2}-43429^{\circ}_{9/2}$	SI	1.52	0.25	
3589.585	40	27850.43	$15587_{11/2}-43438^{\circ}_{13/2}$	S0	1.08	0.14	
3589.113	7	27854.09					
3588.344	30	27860.06	$15587_{11/2}-43447^{\circ}_{11/2}$				
"			$18990_{11/2}-46850^{\circ}_{11/2}$				
3586.067	300 *r*	27877.75	$16456_{17/2}-44334^{\circ}_{19/2}$	T	1.21		
3584.137	10	27892.76	$13119_{9/2}-41012^{\circ}_{7/2}$				
3583.429	100 *r*	27898.27	$16957_{7/2}-44855^{\circ}_{5/2}$	SI	1.48	0.29	
3582.614	20	27904.62	$18693_{15/2}-46597^{\circ}_{13/2}$	T	1.185		
3581.773	40	27911.17	$16957_{7/2}-44868^{\circ}_{9/2}$				
3580.967	20 *h*	27917.45					
3580.167	15	27923.69	$23374_{13/2}-51298^{\circ}_{13/2}$				
3578.692	2	27935.20					
3575.934	4	27956.74	$15587_{11/2}-43544^{\circ}_{9/2}$				
3575.662	30	27958.87	$13119_{9/2}-41078^{\circ}_{9/2}$	T	1.30		
3575.291	80 *r*	27961.77	$13119_{9/2}-41081^{\circ}_{11/2}$				
3574.824	20	27965.42	$13119_{9/2}-41085^{\circ}_{7/2}$				
3572.448	20 *h*	27984.02					
3571.723	8	27989.70	$13119_{9/2}-41109^{\circ}_{9/2}$				
3570.664	60	27998.00		T	1.13		
3569.940	9	28003.68					
3569.805	100 *r*	28004.74	$13119_{9/2}-41124^{\circ}_{9/2}$	ΔJ=0	1.28	0.27	
3568.867	1	28012.10					
3568.722	4 *h*	28013.24					
3568.148	20 *r*	28017.74	$15271_{15/2}-43288^{\circ}_{13/2}$				
3567.592	20	28022.11	$17613_{9/2}-45635^{\circ}_{11/2}$				
3567.356	500 *a*	28024.96	$0^{\circ}_{7/2}-28023_{9/2}$	T	1.17		
3566.336	5	28031.98	$16742_{7/2}-44774^{\circ}_{9/2}$				
3565.819	10	28036.04					
3563.876	400 *a*	28051.33	$0^{\circ}_{7/2}-28051_{5/2}$	SI	1.145	0.96	*
3563.435	30	28054.80					
3562.219	7	28064.37					
3562.107	20	28065.26	$17343_{7/2}-45408^{\circ}_{7/2}$				
3561.571	6	28069.48					
3560.916	300 *r*	28074.64	$18693_{15/2}-46767^{\circ}_{17/2}$	T	1.15		
3559.292	6	28087.45	$15587_{11/2}-43675^{\circ}_{9/2}$				
3557.335	80 *r*	28102.90	$17454_{13/2}-45557^{\circ}_{15/2}$	SI	1.27	0.09	
3556.573	80 *r*	28108.93	$16456_{17/2}-44565^{\circ}_{15/2}$	SI	1.47	0.30	
3555.818	200 *r*	28114.89	$16456_{17/2}-44571^{\circ}_{17/2}$	T	1.175		
3551.677	60 *r*	28147.67		T	1.08		
3550.887	40	28153.93	$17454_{13/2}-45608^{\circ}_{15/2}$	T	1.15		
3549.634	60	28163.87	$19466_{13/2}-47630^{\circ}_{15/2}$	T	1.19		
3549.207	60 *r*	28167.26	$15271_{15/2}-43438^{\circ}_{13/2}$	S0	0.16	0.95	
3548.833	2 *h*	28170.23					
3547.820	30	28178.27	$19466_{13/2}-47644^{\circ}_{13/2}$				
3547.489	60	28180.90	$17454_{13/2}-45635^{\circ}_{11/2}$	T	1.145		
3546.312	10	28190.25	$16957_{7/2}-45147^{\circ}_{9/2}$				
3545.478	7	28196.89	$17613_{9/2}-45810^{\circ}_{11/2}$				
3545.445	2	28197.15					
3544.347	40 *r*	28205.88	$17454_{13/2}-45660^{\circ}_{13/2}$	ΔJ=0	1.16	0.30	
3543.254	4 *h*	28214.58					
3542.082	60 *r*	28223.92	$18990_{11/2}-47214^{\circ}_{13/2}$	S0	0.65	0.45	
3541.777	5 *h*	28226.35					
3541.280	5 *h*	28230.31					
3541.160	30 *h*	28231.27					
3540.616	10	28235.60		T	1.215		
3537.910	300 *r*	28257.20		S0	0.95	0.20	
3537.600	20 *h*	28259.68					
3533.470	9	28292.71	$19466_{13/2}-47759^{\circ}_{13/2}$				
3533.232	5	28294.61					
3531.660	10 *h*	28307.21					
3531.016	10	28312.37					
3529.033	20	28328.28					
3528.271	30 *h*	28334.39	$18693_{15/2}-47027^{\circ}_{13/2}$	T	1.25		
3527.890	40	28337.45		S0	0.70	0.23	
3527.457	5	28340.93					
3527.169	50 *r*	28343.25	$15271_{15/2}-43614^{\circ}_{15/2}$	ΔJ=0	1.12	0.25	
3525.619	200 *r*	28355.71	$17454_{13/2}-45810^{\circ}_{11/2}$	S0	0.70	0.40	
3525.281	100 *h*	28358.43					
3525.026	100 *r*	28360.48	$18853_{11/2}-47214^{\circ}_{13/2}$	S0	0.98	0.15	
3523.454	4	28373.13					
3522.650	4 *h*	28379.61					
3521.751	80	28386.85	$15587_{11/2}-43974^{\circ}_{11/2}$	ΔJ=0	1.20	0.63	
3520.896	10	28393.74					
3520.290	30 *h*	28398.63					
3519.488	3	28405.10	$16742_{7/2}-45147^{\circ}_{9/2}$				
3519.428	60 *r*	28405.59	$13119_{9/2}-41525^{\circ}_{7/2}$	SI	2.00	0.70	
3518.451	20	28413.47	$15587_{11/2}-44001^{\circ}_{9/2}$				
3517.720	100 *r*	28419.38	$19466_{13/2}-47886^{\circ}_{15/2}$	T	1.14		
3517.598	200 *a*	28420.36		SI	1.60	0.38	
3517.106	3 *h*	28424.34					
3516.443	5 *h*	28429.70					
3514.857	50	28442.53		T	1.05		
3514.112	100 *a*	28448.56	$0^{\circ}_{7/2}-28448_{5/2}$	SI	1.50	0.36	
3513.997	40 *r*	28449.49	$13119_{9/2}-41569^{\circ}_{11/2}$	S0	0.73	0.45	
3513.729	100 *a*	28451.66	$16957_{7/2}-45408^{\circ}_{7/2}$	ΔJ=0	1.145	0.21	
3513.255	4	28455.50					
3513.128	30	28456.52	$13119_{9/2}-41576^{\circ}_{9/2}$	ΔJ=0	1.25	0.25	
3512.543	20	28461.26					
3512.100	10	28464.85					
3511.744	7 *h*	28467.74					
3510.580	20	28477.18					
3510.266	40	28479.72	$17454_{13/2}-45934^{\circ}_{15/2}$	T	1.16		
3508.456	100 *h*	28494.42	$18990_{11/2}-47484^{\circ}_{11/2}$				
3505.979	50 *r*	28514.55		T	1.31		
3505.370	40 *h*	28519.50					
3505.158	40 *r*	28521.23	$18693_{15/2}-47214^{\circ}_{13/2}$	SI	1.53	0.28	
3504.510	20 *h*	28526.50	$13119_{9/2}-41646^{\circ}_{7/2}$				
3504.039	20	28530.33					
3503.356	200 *r*	28535.90		SI	1.28	0.10	
3500.918	100 *a*	28555.77	$0^{\circ}_{7/2}-28555_{7/2}$	ΔJ=0	1.14	0.13	
3499.948	300 *a*	28563.68		SI	1.53	0.33	
3499.446	60 *a*	28567.78	$13119_{9/2}-41687^{\circ}_{11/2}$	S0	0.44	0.70	
3497.520	10 *h*	28583.51					
3497.131	10	28586.69					
3496.348	40	28593.09	$15587_{11/2}-44180^{\circ}_{11/2}$				
3494.976	20	28604.32					
3492.519	10	28624.44					
3491.717	200	28631.01	$18853_{11/2}-47484^{\circ}_{11/2}$	ΔJ=0	1.11	0.20	
3490.738	10	28639.04					
3489.525	1000 *a*	28649.00	$19466_{13/2}-48115^{\circ}_{13/2}$	ΔJ=0	1.165	0.12	
3488.382	20 *h*	28658.38					
3487.530	30 *h*	28665.38					
3487.379	300 *a*	28666.63	$13119_{9/2}-41786^{\circ}_{9/2}$	ΔJ=0	1.28	0.25	
3486.573	8	28673.25					
3482.890	60	28703.57		T	1.29		
3482.317	20	28708.30	$15271_{15/2}-43979^{\circ}_{13/2}$				
3482.264	10 *h*	28708.73	$17454_{13/2}-46163^{\circ}_{11/2}$				
3480.975	200 *r*	28719.36	$15587_{11/2}-44307^{\circ}_{13/2}$	S0	0.49	0.65	
3480.664	20	28721.93	$13119_{9/2}-41841^{\circ}_{7/2}$				
3479.824	7	28728.86	$15587_{11/2}-44316^{\circ}_{9/2}$				
3479.294	6	28733.24					
3479.179	4 *h*	28734.19					
3476.692	200 *r*	28754.74	$13119_{9/2}-41874^{\circ}_{11/2}$	S0	0.48	0.65	
3475.812	30 *h*	28762.02					
3475.705	40	28762.91					
3475.260	3	28766.59	$17454_{13/2}-46221^{\circ}_{11/}$				
3474.970	40	28768.99	$18990_{11/2}-47759^{\circ}_{13/2}$				
3474.800	20 *h*	28770.40					
3474.204	30 *h*	28775.33					
3473.428	7	28781.76					
3472.300	300	28791.11	$18853_{11/2}-47644^{\circ}_{13/2}$				
3471.731	40	28795.83	$15587_{11/2}-44383^{\circ}_{11/2}$				
3471.037	60 *r*	28801.59	$15271_{15/2}-44072^{\circ}_{13/2}$				
3470.160	40	28808.87					
3468.040	5	28826.48					

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je
3467.513	200 *r*	28830.86	$15587_{11/2}-44418^{\circ}_{13/2}$	S0	0.53	0.605
3465.720	40 *h*	28845.77				
3462.634	6	28871.48				
3458.551	40 *r*	28905.56	$18853_{11/2}-47759^{\circ}_{13/2}$	T	1.17	
3458.457	20	28906.35				
3456.358	100 *a*	28923.90		T	1.135	
3454.738	100 *a*	28937.47	$18693_{15/2}-47630^{\circ}_{15/2}$	ΔJ=0	1.16	0.15
3454.505	50 *a*	28939.42	$15271_{15/2}-44210^{\circ}_{15/2}$	ΔJ=0	1.12	0.50
3453.548	4	28947.44				
3453.027	100 *r*	28951.80	$18693_{15/2}-47644^{\circ}_{13/2}$	T	1.18	
3452.020	4 *h*	28960.25				
3450.370	4 *h*	28974.10				
3448.801	4 *h*	28987.28				
3447.353	100 *r*	28999.45	$13119_{9/2}-42119^{\circ}_{11/2}$	S0	0.20	0.92
3446.893	7	29003.32	$15587_{11/2}-44591^{\circ}_{13/2}$			
3446.546	100 *a*	29006.24	$17454_{13/2}-46461^{\circ}_{15/2}$	SI	1.40	0.20
3445.668	50 *a*	29013.63	$13119_{9/2}-42133^{\circ}_{7/2}$			
3444.162	100 *a*	29026.32		T	1.19	
3442.992	100 *a*	29036.18	$15271_{15/2}-44307^{\circ}_{13/2}$	S0	0.72	0.33
3440.443	2	29057.70				
3439.425	10	29066.30	$18693_{15/2}-47759^{\circ}_{13/2}$			
3436.599	40	29090.20		T	1.13	
3435.348	100 *a*	29100.79	$16456_{17/2}-45557^{\circ}_{15/2}$	SI	1.25	0.07
3433.409	4 *h*	29117.22				
3430.385	20 *r*	29142.89	$17454_{13/2}-46597^{\circ}_{13/2}$			
3429.828	20 *r*	29147.62	$15271_{15/2}-44418^{\circ}_{13/2}$			
3429.332	200 *a*	29151.84	$16456_{17/2}-45608^{\circ}_{15/2}$			
3428.471	200 *a*	29159.16	$15587_{11/2}-44747^{\circ}_{11/2}$	ΔJ=0	1.22	0.45
3426.678	100	29174.42				
3425.262	15	29186.48	$15587_{11/2}-44774^{\circ}_{9/2}$			
3424.899	60	29189.57				
3424.498	400 *r*	29192.99	$18693_{15/2}-47886^{\circ}_{15/2}$	ΔJ=0	1.18	0.25
3423.984	40	29197.37				
3422.559	100	29209.53				
3421.791	700 *r*	29216.08	$15587_{11/2}-44803^{\circ}_{13/2}$	S0	0.28	0.80
3421.697	100	29216.89				
3421.202	20	29221.11				
3420.203	50	29229.65				
3420.146	100	29230.14				
3419.644	8	29234.43				
3419.359	100	29236.86				
3419.071	100	29239.33	$17454_{13/2}-46694^{\circ}_{13/2}$			
3418.625	200	29243.14	$8771^{\circ}_{5/2}-38014_{5/2}$	ΔJ=0	0.85	1.105 *
3417.692	300	29251.12	$13119_{9/2}-42370^{\circ}_{7/2}$			
3417.416	10	29253.48				
3416.588	3000 *a*	29260.57	$0^{\circ}_{7/2}-29260_{7/2}$	ΔJ=0	1.143	0.928 *
3416.430	10	29261.93	$18853_{11/2}-48115^{\circ}_{13/2}$			
3416.146	4	29264.36				
3414.521	50 *h*	29278.29				
3414.273	20	29280.41	$15587_{11/2}-44868^{\circ}_{9/2}$			
3413.989	200 *h*	29282.85				
3413.330	2	29288.50				
3413.035	200	29291.03				
3412.590	3000 *a*	29294.85	$15271_{15/2}-44565^{\circ}_{15/2}$	ΔJ=0	1.11	0.41
3412.404	3	29296.45				
3411.893	200	29300.84	$15271_{15/2}-44571^{\circ}_{17/2}$			
″			$21997_{11/2}-51298^{\circ}_{13/2}$			
3410.048	1000 *a*	29316.69	$0^{\circ}_{7/2}-29316_{9/2}$	S0	0.40	0.58
3409.650	100	29320.11	$15271_{15/2}-44591^{\circ}_{13/2}$			
3408.747	40	29327.88				
3405.967	2000 *a*	29351.82	$8771^{\circ}_{5/2}-38123_{7/2}$	SI	0.83	1.15 *
3402.694	3	29380.05				
3401.751	40 *h*	29388.19				
3400.887	200 *h*	29395.66	$17454_{13/2}-46850^{\circ}_{11/2}$	T	1.14	
3399.782	200	29405.21				
3399.593	3	29406.85				
3398.544	10	29415.92				
3397.867	300 *r*	29421.78	$13119_{9/2}-42541^{\circ}_{11/2}$	S0	1.31	1.10 *
3397.773	200	29422.60	$18693_{15/2}-48115^{\circ}_{13/2}$			
3396.724	8	29431.68				
3395.196	3	29444.93				
3394.185	200 *h*	29453.70				
3393.980	70	29455.48				
3393.186	1000 *r*	29462.37	$13119_{9/2}-42581^{\circ}_{11/2}$	S0	0.37	0.75
3392.693	20	29466.65	$8771^{\circ}_{5/2}-38237_{3/2}$			
3392.391	6	29469.28	$21997_{11/2}-51466^{\circ}_{13/2}$			
3392.241	100	29470.58	$15587_{11/2}-45058^{\circ}_{11/2}$			
3392.029	5	29472.42				
3391.865	8	29473.85				
3391.800	100	29474.41	$13119_{9/2}-42594^{\circ}_{9/2}$			
3391.430	200	29477.63	$16456_{17/2}-45934^{\circ}_{15/2}$	SI	1.26	0.08
3391.262	8 *h*	29479.09				
3390.836	200	29482.79	$15587_{11/2}-45070^{\circ}_{9/2}$			
3390.365	5	29486.88				
3390.245	100	29487.93				
3389.461	9	29494.75				
3389.339	10	29495.81				
3385.084	2000 *r*	29532.89	$15271_{15/2}-44803^{\circ}_{13/2}$	S0	0.92	0.15
3383.419	10	29547.42	$8771^{\circ}_{5/2}-38318_{3/2}$			
3383.268	4 *h*	29548.74				
3382.038	100	29559.48	$15587_{11/2}-45147^{\circ}_{9/2}$			
3381.499	3 *h*	29564.19				
3381.390	50 *h*	29565.15				
3380.688	1000 *a*	29571.29	$8771^{\circ}_{5/2}-38342_{7/2}$	SI	0.85	1.108 *
3380.534	2000 *a*	29572.63	$17454_{13/2}-47027^{\circ}_{13/2}$	ΔJ=0	1.16	0.13
3379.915	1	29578.05				
3377.392	3	29600.14				
3376.963	3 *h*	29603.90				
3375.890	10	29613.31				
3374.970	20	29621.39				
3374.853	100	29622.41	$13119_{9/2}-42742^{\circ}_{7/2}$			
3374.163	2	29628.47				
3373.482	3	29634.45				
3372.750	30	29640.88				
3371.576	100	29651.20	$13119_{9/2}-42770^{\circ}_{9/2}$			
3369.321	3 *h*	29671.05				
3368.597	2000 *a*	29677.42		T	1.04	0.08
3368.186	3	29681.05				
3368.010	4	29682.60				
3367.805	1	29684.40				
3367.570	3	29686.47				
3366.676	2	29694.36				
3365.900	1000 *h*	29701.20	$15587_{11/2}-45289^{\circ}_{11/2}$	ΔJ=0	1.12	0.55
3365.327	3	29706.26				
3363.781	200	29719.91	$13119_{9/2}-42839^{\circ}_{9/2}$			
3363.535	100	29722.09				
3363.465	10	29722.70				
3359.549	2	29757.35				
3359.337	50 *h*	29759.23	$21997_{11/2}-51756^{\circ}_{11/2}$			
3358.601	2	29765.75				
3358.265	20	29768.73				
3358.057	4	29770.57				
3356.161	10	29787.39				
3354.600	100 *r*	29801.25	$15587_{11/2}-45389^{\circ}_{13/2}$			
3354.167	1	29805.10				
3353.648	10	29809.71				
3352.923	5	29816.15				
3351.530	10	29828.55				
3351.390	8	29829.79				
3351.224	10	29831.27				
3349.987	1000	29842.28	$13119_{9/2}-42961^{\circ}_{11/2}$	S0	1.30	1.195 *
3349.808	60	29843.88				
3348.766	100	29853.16				
3346.676	1	29871.81				
3346.033	2	29877.55				
3344.163	8	29894.25				
3343.737	200	29898.06	$15587_{11/2}-45485^{\circ}_{11/2}$			
3342.896	9	29905.58				
3342.390	20	29910.11				
3342.324	30	29910.70	$13119_{9/2}-43030^{\circ}_{9/2}$			

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je	
3341.889	10	29914.60	$13119_{9/2}-43034^{\circ}_{7/2}$				
3340.664	10	29925.56	$8771^{\circ}_{5/2}-38696_{5/2}$				
3340.664	10	29925.56					
3339.843	20	29932.92	$13119_{9/2}-43052^{\circ}_{7/2}$				
3337.863	2	29950.68					
3337.628	100	29952.78					
3333.459	3	29990.24					
3333.130	40	29993.20					
3331.912	500	30004.17	$16456_{17/2}-46461^{\circ}_{15/2}$				
3331.556	30	30007.37					
3330.723	2	30014.88					
3330.477	80	30017.10					
3329.722	2	30023.90					
3329.042	100	30030.03	$17454_{13/2}-47484^{\circ}_{11/2}$				
3328.226	10 *h*	30037.40					
3327.185	4	30046.79					
3327.059	500	30047.93	$15587_{11/2}-45635^{\circ}_{11/2}$	ΔJ=0	1.20	0.62	
3325.108	10	30065.56					
3324.980	400	30066.72	$13119_{9/2}-43186^{\circ}_{11/2}$				
3324.746	2	30068.84					
3323.273	200	30082.16	$0^{\circ}_{7/2}-30082_{5/2}$				
3322.184	5	30092.02					
3322.094	4	30092.84					
3321.451	2	30098.66					
3320.895	4	30103.70					
3320.772	4 *h*	30104.82					
3320.475	6	30107.51					
3319.908	4	30112.65					
3319.661	3	30114.89					
3319.308	400	30118.10	$15271_{15/2}-45389^{\circ}_{13/2}$	S0	0.58	0.52	
3318.847	3	30122.28					
3318.559	8	30124.89					
3317.557	3	30133.99					
3313.647	8	30169.55					
3312.969	5	30175.72	$17454_{13/2}-47630^{\circ}_{15/2}$				
3312.426	10	30180.67					
3311.389	150	30190.12	$17454_{13/2}-47644^{\circ}_{13/2}$				
3310.488	10	30198.33					
3309.359	10	30208.64					
3309.074	20	30211.24					
3308.958	2	30212.30					
3308.688	3	30214.76					
3307.822	800 *a*	30222.67	$15587_{11/2}-45810^{\circ}_{11/2}$	ΔJ=0	1.23	0.17	
3305.591	4	30243.07					
3305.099	2	30247.57					
3304.240	150	30255.44					
3302.647	80	30270.03					
3300.824	800	30286.75	$15271_{15/2}-45557^{\circ}_{15/2}$	ΔJ=0	1.15	0.58	
3300.540	400	30289.35	$13119_{9/2}-43408^{\circ}_{11/2}$	S0	0.76	0.43	
3299.809	5	30296.06					
3299.115	700 *a*	30302.43	$0^{\circ}_{7/2}-30302_{5/2}$	SI	1.14	0.90	*
3298.882	70	30304.57	$17454_{13/2}-47759^{\circ}_{13/2}$				
3298.381	300	30309.18	$13119_{9/2}-43428^{\circ}_{7/2}$				
3298.315	10	30309.78	$13119_{9/2}-43429^{\circ}_{9/2}$				
3298.205	80	30310.79	$16456_{17/2}-46767^{\circ}_{17/2}$				
3298.054	4	30312.18					
3297.662	20 *h*	30315.79					
3296.303	500	30328.28	$13119_{9/2}-43447^{\circ}_{11/2}$				
3295.271	100	30337.78	$15271_{15/2}-45608^{\circ}_{15/2}$				
3294.015	10	30349.35					
3292.518	2	30363.15					
3291.736	1	30370.36					
3290.660	3	30380.29					
3289.650	200	30389.62	$15271_{15/2}-45660^{\circ}_{13/2}$				
3289.589	20	30390.18	$8771^{\circ}_{5/2}-39161_{5/2}$				
3287.790	4	30406.81					
3285.828	10	30424.96	$13119_{9/2}-43544^{\circ}_{9/2}$				
3285.754	4	30425.65					
3285.155	200	30431.20	$17454_{13/2}-47886^{\circ}_{15/2}$				
3281.127	100	30468.55	$13119_{9/2}-43588^{\circ}_{7/2}$				
3280.219	2	30476.99					
3278.964	8	30488.65	$8771^{\circ}_{5/2}-39259_{5/2}$				
3277.620	40	30501.15					
3277.088	10	30506.11					
3275.075	2 *h*	30524.85					
3272.355	3	30550.23					
3272.028	10	30553.28					
3271.781	400	30555.59	$13119_{9/2}-43675^{\circ}_{9/2}$				
3271.605	10	30557.23					
3269.625	100	30575.73	$15587_{11/2}-46163^{\circ}_{11/2}$				
3267.992	2	30591.01					
3267.101	2	30599.35					
3264.781	30	30621.10					
3264.099	2000 *r*	30627.50		S0	0.52	0.58	
3263.446	70	30633.62	$15587_{11/2}-46221^{\circ}_{11/2}$				
3263.184	1	30636.08					
3262.807	4	30639.62					
3262.667	1	30640.94					
3261.053	3	30656.10					
3260.552	70	30660.81	$17454_{13/2}-48115^{\circ}_{13/2}$				
3260.263	3	30663.53	$15271_{15/2}-45934^{\circ}_{15/2}$				
3258.336	8	30681.66					
3257.371	20	30690.75					
3257.050	2	30693.78					
3256.539	3	30698.59					
3256.279	60	30701.05					
3254.071	4	30721.88					
3253.870	10	30723.77					
3253.687	6	30725.50					
3252.430	30	30737.38					
3251.782	800 *a*	30743.50	$8771^{\circ}_{5/2}-39514_{3/2}$	T	0.92		
3246.963	3000 *a*	30789.13	$8771^{\circ}_{5/2}-39560_{7/2}$	SI	1.00	0.10	
3244.821	200	30809.45					
3244.447	10	30813.00					
3243.411	100	30822.85					
3243.212	4	30824.74					
3240.647	3	30849.13					
3240.030	20	30855.01	$13119_{9/2}-43974^{\circ}_{11/2}$				
3239.052	200	30864.32	$8771^{\circ}_{5/2}-39635_{3/2}$				
3238.114	3	30873.26					
3237.233	2	30881.67	$13119_{9/2}-44001^{\circ}_{9/2}$				
3235.835	2	30895.01					
3234.999	4	30902.99					
3233.741	1000 *a*	30915.01	$0^{\circ}_{7/2}-30915_{9/2}$	S0	1.14	0.99	*
3232.307	5	30928.73					
3232.121	10	30930.51					
3230.582	20	30945.24					
3230.426	30	30946.74					
3229.009	2	30960.32					
3223.849	30	31009.87	$15587_{11/2}-46597^{\circ}_{13/2}$				
3223.306	1	31015.09					
3222.505	3	31022.80	$13119_{9/2}-44142^{\circ}_{7/2}$				
3221.076	200	31036.56					
3220.729	4	31039.91					
3218.507	40	31061.34	$13119_{9/2}-44180^{\circ}_{11/2}$				
3218.280	400 *a*	31063.53					
3215.059	40	31094.65					
3214.792	100	31097.23	$19466_{13/2}-50563^{\circ}_{15/2}$				
3214.381	10	31101.21					
3214.077	8	31104.15					
3213.980	2	31105.09					
3213.854	7	31106.31	$15587_{11/2}-46694^{\circ}_{13/2}$				
3212.859	15	31115.94					
3211.190	7	31132.11					
3209.927	10	31144.36	$13119_{9/2}-44263^{\circ}_{7/2}$				
3206.917	500	31173.59	$16456_{17/2}-47630^{\circ}_{15/2}$				
3206.537	8	31177.28					
3205.607	40	31186.33					
3205.225	40	31190.05	$15271_{15/2}-46461^{\circ}_{15/2}$				
3204.796	10	31194.22					

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je
3204.502	50	31197.08	$13119_{9/2}-44316^{\circ}_{9/2}$			
3201.645	300	31224.92	$8771^{\circ}_{5/2}-39996_{7/2}$			
3201.255	20	31228.72				
3200.677	5	31234.36				
3197.640	15	31264.03	$13119_{9/2}-44383^{\circ}_{11/2}$			
3195.685	30	31283.15				
3194.592	150	31293.86				
3194.431	20	31295.43	$8771^{\circ}_{5/2}-40066_{5/2}$			
3194.085	150	31298.82	$13119_{9/2}-44418^{\circ}_{7/2}$			
3193.778	2	31301.83				
3192.582	8	31313.56				
3192.548	10	31313.89				
3191.234	400	31326.78				
3190.228	40	31336.66	$13119_{9/2}-44456^{\circ}_{7/2}$			
3189.150	40	31347.25				
3188.306	3	31355.55				
3186.058	150	31377.68				
3183.555	2	31402.34				
3183.416	2	31403.72				
3182.148	4	31416.23				
3181.923	3	31418.45				
3181.453	40	31423.09	$15271_{15/2}-46694^{\circ}_{13/2}$			
3180.947	3	31428.09				
3180.837	20	31429.18	$16456_{17/2}-47886^{\circ}_{15/2}$			
3180.565	1000 *a*	31431.86	$0^{\circ}_{7/2}-31431_{5/2}$	SI	1.31	0.17
3180.195	20	31435.52				
3180.030	150	31437.15				
3179.780	30	31439.62	$15587_{11/2}-47027^{\circ}_{13/2}$			
3179.687	300 *a*	31440.54	$0^{\circ}_{7/2}-31440_{9/2}$	T	1.13	
3179.044	5	31446.90				
3178.241	10	31454.85				
3176.168	1	31475.38				
3175.724	3	31479.78				
3174.018	8	31496.70	$15271_{15/2}-46767^{\circ}_{17/2}$			
3173.484	20	31502.00				
3173.428	10	31502.55				
3172.654	3000 *a*	31510.24	$0^{\circ}_{7/2}-31510_{7/2}$	T	1.10	0.11
3172.036	1	31516.37				
3171.277	10	31523.92				
3168.107	10	31555.46				
3166.572	60	31570.76				
3164.731	5	31589.12	$8771^{\circ}_{5/2}-40360_{7/2}$			
3162.693	7 *h*	31609.47				
3162.612	5	31610.28				
3161.200	4	31624.40				
3160.989	2	31626.51	$15587_{11/2}-47214^{\circ}_{13/2}$			
3160.895	100	31627.45	$13119_{9/2}-44747^{\circ}_{11/2}$			
3159.731	6	31639.11				
3158.177	10	31654.67	$13119_{9/2}-44774^{\circ}_{9/2}$			
3157.990	5	31656.55				
3156.688	3	31669.60				
3154.766	2	31688.90				
3154.297	3	31693.61				
3153.223	150	31704.40				
3148.611	1	31750.84				
3148.058	400	31756.42	$15271_{15/2}-47027^{\circ}_{13/2}$			
3146.574	400	31771.40				
3145.637	20	31780.86				
3144.105	20	31796.34				
3142.838	2	31809.16				
3142.433	400	31813.26	$8771^{\circ}_{5/2}-40584_{5/2}$			
3140.611	100	31831.72	$19466_{13/2}-51298^{\circ}_{13/2}$			
3139.795	10	31839.99				
3137.010	30	31868.25				
3136.755	500	31870.85	$18693_{15/2}-50563^{\circ}_{15/2}$	T	1.18	
3136.539	20	31873.04				
3136.216	20	31876.32				
3136.031	5	31878.20	$8771^{\circ}_{5/2}-40649_{7/2}$			
3134.177	40	31897.06	$15587_{11/2}-47484^{\circ}_{11/2}$			
3133.239	10	31906.61				
3131.686	10	31922.43	$8771^{\circ}_{5/2}-40693_{3/2}$			
3130.083	50	31938.78	$13119_{9/2}-45058^{\circ}_{11/2}$			
3129.638	20	31943.32	$15271_{15/2}-47214^{\circ}_{13/2}$			
3128.891	20	31950.95	$13119_{9/2}-45070^{\circ}_{9/2}$			
3125.506	2	31985.55				
3124.087	100	32000.07	$19466_{13/2}-51466^{\circ}_{13/2}$			
3123.907	30	32001.92				
3122.959	1	32011.63				
3122.533	3000 *r*	32016.00	$8771^{\circ}_{5/2}-40787_{5/2}$	ΔJ=0	0.88	0.14
3121.390	100	32027.72	$13119_{9/2}-45147^{\circ}_{9/2}$			
3121.038	8	32031.34	$8771^{\circ}_{5/2}-40802_{7/2}$			
3120.881	7	32032.95				
3119.522	10	32046.90				
3118.523	50	32057.17	$15587_{11/2}-47644^{\circ}_{13/2}$			
3116.348	4	32079.54				
3116.261	30	32080.44				
3113.848	2 *h*	32105.29				
3113.507	2	32108.81				
3110.015	3	32144.86				
3108.358	1	32162.00				
3108.293	3	32162.67				
3107.932	5	32166.40				
3107.642	30 *h*	32169.41	$13119_{9/2}-45289^{\circ}_{11/2}$			
3107.152	500 *a*	32174.48	$0^{\circ}_{7/2}-32174_{5/2}$	T	1.10	0.05
3105.741	2	32189.10				
3104.969	2	32197.10				
3104.888	5	32197.94				
3103.826	10	32208.96				
3103.698	5	32210.28				
3103.646	40	32210.82				
3098.222	4	32267.21				
3096.032	300	32290.04	$19466_{13/2}-51756^{\circ}_{11/2}$			
3092.033	20	32331.80				
3090.471	40	32348.14	$13119_{9/2}-45467^{\circ}_{9/2}$			
3089.522	30	32358.07				
3088.737	4	32366.30	$13119_{9/2}-45485^{\circ}_{11/2}$			
3088.464	1	32369.16				
3087.936	5	32374.69				
3086.854	2	32386.04				
3084.783	400 *a*	32407.78	$0^{\circ}_{7/2}-32407_{9/2}$			
3081.388	3	32443.48				
3081.121	2000 *a*	32446.30	$0^{\circ}_{7/2}-32446_{7/2}$	ΔJ=0	1.143	0.89 *
3080.212	4	32455.87				
3080.083	20	32457.23				
3079.034	2	32468.29				
3078.822	4	32470.52				
3078.107	300	32478.07				
3077.717	8	32482.18				
3074.501	80	32516.16	$13119_{9/2}-45635^{\circ}_{11/2}$			
3073.391	10	32527.90	$15587_{11/2}-48115^{\circ}_{13/2}$			
3072.063	4	32541.96				
3071.839	5	32544.33				
3068.904	15	32575.46				
3067.728	2	32587.94				
3066.096	200	32605.29	$18693_{15/2}-51298^{\circ}_{13/2}$			
3065.382	10	32612.88	$18853_{11/2}-51466^{\circ}_{13/2}$			
3063.584	3	32632.02				
3060.440	20	32665.54				
3060.176	1	32668.36				
3058.065	400	32690.91	$13119_{9/2}-45810^{\circ}_{11/2}$			
3055.636	10	32716.90				
3055.179	70	32721.79	$8771^{\circ}_{5/2}-41493_{5/2}$			
3051.033	50 *h*	32766.26	$18990_{11/2}-51756^{\circ}_{11/2}$			
3050.367	40	32773.41	$8771^{\circ}_{5/2}-41544_{5/2}$			
3050.339	30	32773.71	$18693_{15/2}-51466^{\circ}_{13/2}$			
3049.985	2	32777.51				
3049.090	2	32787.13				
3046.870	3000 *a*	32811.02	$0^{\circ}_{7/2}-32811_{7/2}$	ΔJ=0	1.143	1.04 *
3044.469	30 *h*	32836.90				
3039.631	20	32889.16				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je
3039.067	20	32895.26				
3038.370	200 *h*	32902.81	$18853_{11/2} - 51756^{\circ}_{11/2}$			
3036.848	80 *h*	32919.30	$18837_{9/2} - 51756^{\circ}_{11/2}$			
3035.784	2	32930.84				
3034.642	3	32943.23				
3032.613	30	32965.27				
3031.280	40	32979.76	$8771^{\circ}_{5/2} - 41751_{5/2}$			
3030.567	20	32987.52				
3030.491	10	32988.35				
3029.061	2	33003.92				
3026.694	2	33029.73				
3025.449	10	33043.32				
3025.386	40	33044.01	$13119_{9/2} - 46163^{\circ}_{11/2}$			
3024.498	8	33053.71				
3023.485	20	33064.79	$8771^{\circ}_{5/2} - 41836_{5/2}$			
3020.101	10	33101.83	$13119_{9/2} - 46221^{\circ}_{11/2}$			
3019.436	70	33109.12	$17454_{13/2} - 50563^{\circ}_{15/2}$			
3016.834	2	33137.68				
3013.639	10	33172.81				
3009.480	10	33218.65				
3008.446	200	33230.07				
3007.281	3	33242.94				
3007.118	1	33244.74				
3005.816	10	33259.14				
3002.396	7	33297.03				
3001.334	2	33308.81				
2999.448	5	33329.75				
2995.079	30	33378.37				
2992.564	5	33406.42				
2991.152	3	33422.19				
2990.672	10	33427.55	$8771^{\circ}_{5/2} - 42198_{5/2}$			
2989.922	2	33435.94				
2988.258	2	33454.55				
2988.229	2	33454.88				
2986.739	3	33471.57				
2985.519	10	33485.24				
2984.834	40	33492.93				
2982.889	10	33514.77				
2979.637	30	33551.34				
2979.034	1	33558.13				
2976.749	10	33583.89				
2976.545	2	33586.20	$8771^{\circ}_{5/2} - 42357_{3/2}$			
2976.100	2	33591.22				
2975.496	20	33598.04				
2974.006	1	33614.87				
2973.218	3000 *a*	33623.78	$0^{\circ}_{7/2} - 33623_{7/2}$	ΔJ=0	1.14	0.92 *
2970.694	15	33652.34				
2968.688	2	33675.08				
2965.059	10	33716.30				
2964.592	2	33721.61				
2964.494	20 *w*	33722.72				
2962.314	10	33747.54				
2961.749	40	33753.97				
2957.287	20 *h*	33804.90				
2955.508	20	33825.25	$8771^{\circ}_{5/2} - 42596_{5/2}$			
2953.910	10	33843.55	$17454_{13/2} - 51298^{\circ}_{13/2}$			
2950.542	2 *h*	33882.18				
2949.502	100	33894.12				
2943.416	5	33964.20				
2943.101	1	33967.84				
2943.000	3	33969.00				
2942.857	4	33970.65				
2942.528	100	33974.45				
2940.755	3	33994.93				
2940.087	4	34002.66				
2939.292	20	34011.85	$17454_{13/2} - 51466^{\circ}_{13/2}$			
2935.699	50	34053.48				
2934.222	9	34070.62				
2932.966	1000 *a*	34085.21	$0^{\circ}_{7/2} - 34085_{5/2}$	SI	1.14	0.95 *
2931.093	400	34106.99	$16456_{17/2} - 50563^{\circ}_{15/2}$	T	1.18	
2926.431	40	34161.32				
2925.842	3 *h*	34168.20				
2925.049	1	34177.46				
2924.297	2	34186.25	$8771^{\circ}_{5/2} - 42957_{5/2}$			
2921.958	3	34213.61				
2921.706	10	34216.56				
2920.758	1	34227.67				
2917.411	2	34266.93				
2916.372	4	34279.14				
2915.985	1	34283.69				
2915.879	20	34284.94	$8771^{\circ}_{5/2} - 43056_{5/2}$			
2915.458	5 *h*	34289.89				
2914.839	1000 *a*	34297.17	$0^{\circ}_{7/2} - 34297_{7/2}$	ΔJ=0	1.143	0.915 *
2914.665	2	34299.22				
2914.442	30 *h*	34301.84	$17454_{13/2} - 51756^{\circ}_{11/2}$			
2912.953	20	34319.37				
2912.342	1	34326.57				
2909.301	5	34362.45				
2908.502	2	34371.89				
2908.161	10	34375.92				
2907.031	5	34389.28	$8771^{\circ}_{5/2} - 43160_{3/2}$			
2906.270	3	34398.29				
2904.065	2	34424.41				
2902.226	10	34446.22				
2901.864	2	34450.51				
2900.088	50	34471.61				
2897.580	20 *h*	34501.45				
2894.191	20	34541.84				
2891.518	2	34573.77				
2890.576	5	34585.04				
2888.814	4 *h*	34606.13				
2885.047	5	34651.32				
2884.289	2	34660.42				
2882.917	10	34676.92				
2879.152	70 *h*	34722.26				
2877.743	4	34739.26				
2876.873	10	34749.77				
2875.440	4	34767.08				
2872.702	200 *h*	34800.22				
2871.319	2	34816.98				
2869.725	4	34836.32				
2868.461	1	34851.67				
2866.840	20	34871.37				
2865.069	1	34892.93				
2864.757	300	34896.73				
2863.012	10	34918.00				
2854.166	1000 *a*	35026.21	$0^{\circ}_{7/2} - 35026_{5/2}$	SI	1.45	0.30
2853.889	2	35029.61	$8771^{\circ}_{5/2} - 43800_{3/2}$			
2852.644	2	35044.90				
2851.256	3	35061.96				
2848.169	4 *h*	35099.96				
2847.088	5	35113.29				
2845.514	1	35132.71				
2842.812	1	35166.10				
2842.225	2 *h*	35173.36				
2841.283	15	35185.02				
2841.123	200 *a*	35187.00	$8771^{\circ}_{5/2} - 43958_{5/2}$			
2840.657	2	35192.78				
2839.279	3	35209.86	$8771^{\circ}_{5/2} - 43981_{7/2}$			
2837.841	10	35227.70				
2837.294	10	35234.49				
2835.098	80 *a*	35261.78	$0^{\circ}_{7/2} - 35261_{5/2}$			
2833.055	2	35287.21				
2832.804	10	35290.33				
2832.596	10	35292.92	$15271_{15/2} - 50563^{\circ}_{15/2}$			
2832.316	5	35296.41				
2831.037	30	35312.36				
2830.739	4	35316.07				
2827.187	1	35360.44				
2826.690	50 *a*	35366.66				

Wave-length in air Å	Intensity	Wave-number cm⁻¹	Classification	Zeeman effect type	f	Je
2821.626	15	35430.13				
2821.558	1	35430.98				
2819.552	2	35456.19				
2818.285	2	35472.13	$8771^{\circ}_{5/2} - 44243_{5/2}$			
2811.972	1	35551.76	$8771^{\circ}_{5/2} - 44323_{7/2}$			
2805.574	10	35632.83				
2803.727	1	35656.30				
2799.468	5	35710.55	$15587_{11/2} - 51298^{\circ}_{13/2}$			
2798.865	4	35718.24				
2795.122	1	35766.07				
2790.721	10	35822.47				
2789.810	2	35834.17				
2786.329	2	35878.93	$15587_{11/2} - 51466^{\circ}_{13/2}$			
2783.461	5	35915.90				
2775.875	3	36014.05				
2773.898	15	36039.71				
2768.840	1	36105.55				
2767.731	4	36120.01	$8771^{\circ}_{5/2} - 44891_{7/2}$			
2764.848	8	36157.67				
2763.023	1	36181.55				
2761.938	1	36195.77	$15271_{15/2} - 51466^{\circ}_{13/2}$			
2759.450	8	36228.40				
2753.176	50	36310.95				
2752.182	50	36324.07				
2751.646	2 *h*	36331.14				
2748.870	2	36367.83				
2747.158	4	36390.49				
2739.775	2 *h*	36488.55				
2709.625	15	36894.54				
2708.020	3	36916.40				
2692.207	10	37133.22				
2691.342	7	37145.16				
2681.860	3 *h*	37276.48				
2679.918	3	37303.49				
2673.342	1	37395.25				
2669.591	1	37447.79				
2664.616	10	37517.70				
2661.810	1	37557.25				
2660.417	20	37576.91	$0^{\circ}_{7/2} - 37576_{9/2}$			
2657.203	1	37622.36				
2651.570	7	37702.28				
2651.214	3	37707.34				
2651.173	20	37707.93				
2650.950	10	37711.10	$0^{\circ}_{7/2} - 37711_{9/2}$			
2650.628	3	37715.68				
2649.986	4	37724.82	$0^{\circ}_{7/2} - 37724_{5/2}$			
2633.727	2	37957.69				
2626.054	3	38068.59				
2622.467	3	38120.66	$0^{\circ}_{7/2} - 38120_{9/2}$			
2621.936	10	38128.38	$0^{\circ}_{7/2} - 38128_{5/2}$			
2601.092	8	38433.91	$0^{\circ}_{7/2} - 38433_{5/2}$			
2596.489	10	38502.04	$0^{\circ}_{7/2} - 38502_{9/2}$			
2579.205	1	38760.03				
2564.058	5	38988.99				
2553.514	10	39149.97				
2552.764	50	39161.48	$0^{\circ}_{7/2} - 39161_{5/2}$			
2552.263	2	39169.16				
2551.115	5	39186.79				
2549.810	5	39206.84	$0^{\circ}_{7/2} - 39206_{9/2}$			
2541.776	5	39330.76				
2539.469	2	39366.49				
2535.432	5	39429.16				
2534.719	50	39440.25				
2533.181	1	39464.20				
2533.144	5	39464.77				
2527.542	5	39552.24				
2527.275	2	39556.42				
2527.022	10 *r*	39560.37	$0^{\circ}_{7/2} - 39560_{7/2}$			
2525.723	2	39580.72				
2520.768	5 *h*	39658.52				
2520.655	2	39660.30				
2520.398	1	39664.34				
2517.694	1	39706.94				
2513.778	5 *r*	39768.79	$0^{\circ}_{7/2} - 39768_{9/2}$			