

The First Spectrum of Tungsten (W I)

Donald D. Laun¹ and C. H. Corliss

Institute for Basic Standards, National Bureau of Standards, Washington, D.C. 20234

(August 6, 1968)

The first spectrum of tungsten (W I) has been observed in the region between 2000 Å and 10500 Å. Of the 6800 spectral lines reported here, about 5500 have been classified as transitions between 91 even and 365 odd levels.

Key Words: Atomic spectra; energy levels; spectroscopy; spectrum of tungsten; tungsten; wavelengths.

1. Introduction

The analysis of the first spectrum of tungsten (or wolfram), W I, was initiated by Otto Laporte [1]² in 1925 during his stay in the NBS Spectroscopy Section. By using mainly the wavelengths measured by Belke [2] in Kayser's laboratory at Bonn and existing Zeeman effect data, he identified the low $4d^46s^2\ ^5D$ and $4d^56s\ ^7S$ terms. Over the next two decades this work was greatly extended by Laporte and Julian Mack [3] who in 1943 reported 50 even and 250 odd levels. That report incorporated, in addition to their own work, contributions from Catalán and Poggio [4] and from Laun [5].

In 1955 Laun contributed over 50 new levels to C. E. Moore for inclusion in her compilation "Atomic Energy Levels" [6]. Since that time the work has been extended. The entire spectrum has been remeasured and the results are reported in this paper.

Gilbert Gluck [7] has described the hyperfine isotopic structure of tungsten. He found that the relative isotopic shifts in natural tungsten, between isotope 186 and the isotopes 184, 183, 182, and 180 are respectively (1), (1.54), (2.13), and (2.92). Gluck then measured by interferometer the separation of the strong 184 and 186 components of 578 lines. He verified the level 397 $\frac{1}{2}$, which has only two combinations and unresolved Zeeman patterns. The hyperfine separations of its combinations with 19_6 and 3H_6 are -68 and +08 millikaysers which values agree with those found for other lines. Gluck used an electronic computer to look for new levels. Eight of these had been found independently by Laun, or are adopted from Gluck with assigned J -values, but eight others are apparently spurious due to the use of spark lines.

The level 41637 $\frac{3}{2}$ which Gluck believed to be the first level of the configuration d^5p to be identified, because it might explain the line 4466.74 Å with isotope displacement -63, is, however, not confirmed with any other combinations.

From his observations Gluck assigned 150 odd levels to d^4sp or d^3s^2p and 36 even levels to d^4s^2 or d^5s configurations. Some of these lead to designations different from those in AEL. The designations in this paper are the same as those in AEL. Gluck's associate Bauche is working on the configuration assignment of more levels.

Yehuda Shadmi of Jerusalem reports that his calculations account for all the low even levels. His work is presented in this issue of the NBS Journal of Research [8]. Spin-orbit interaction is strong enough to mix states with different term assignments; hence many of the levels, especially those with small J -values do not have definite LS designations. Shadmi is also making calculations on the odd levels.

2. Experiments

The observations of the arc spectrum presented here were carried out with those of the spark spectrum, which were reported in 1964 [9]. The list of W II lines in that paper is not complete, since, with the exception of a few of the stronger lines, only classified lines were reported there. The spectrum described here, on the other hand, contains all the lines attributable to the neutral atom, including one or two observed only by Belke or Gluck. The lines at 4645.72 and 5796.49 Å are due to Gluck.

The making of the spectrograms is described in the paper on W II. The d-c arc in air between tungsten electrodes has a beautiful white color. The spark spectrum was photographed alongside the arc ex-

¹ Formerly with the Spectroscopy Section, NBS; present address: Kiel, Wisconsin 53042.

² Figures in brackets indicate references on page 614.

posure. Since most of the lines appear in both sources, visual estimates of the intensities in each source were made. Ninety lines in the W II paper were marked "A" to indicate that a calculated arc line coincided with a calculated spark line. These coincidences are marked with an "s" in the spark column in this table. About 50 more of the "s" lines will be found in this table than "a" lines in the spark table [9].

Very few impurity lines were detected, but it is possible that in such a rich spectrum band lines were measured, especially in the region beyond 6350 Å where the arc in air was troubled by band lines. To eliminate these, the spectrum was excited in an electrodeless lamp containing tungsten iodide and photographed and measured in 1967 at NBS. In this

case, thorium standards were used. The observations beyond 10 000 Å were made by C. C. Kiess. No arc lines were positively identified below 2000 Å.

3. Results

The results of this investigation are presented in three tables. Table 1 contains the levels of even parity and table 2, those of odd parity. The configurations and term designations (where assigned) are followed by the total angular momentum quantum number, J , in column 3, the numerical value of the level in cm^{-1} in column 4, intervals between levels of terms in column 5; and magnetic splitting factors, g , in column 6, measured by other observers.

TABLE 1. Even levels of W I

Configuration	Desig.	J	Level	Interval	Obs. g	Configuration	Desig.	J	Level	Interval	Obs. g
$5d^4 6s^2$	5D	0	0.00			$5d^5 6s$	5S	2	18280.48		1.43
		1	1670.29	1670.29	1.51			3	19827.68		1.28
		2	3325.53	1655.24	1.48			0	20174.20		
		3	4830.00	1504.47	1.50			1	20427.84		2.1
		4	6219.33	1389.33	1.49			2	20983.02		
$5d^5 6s$	7S	3	2951.29		1.98			4	22476.68		1.48
								0	22773.78		
$5d^4 6s^2$	3P	0	9528.06					4	22852.80		1.2
		1	13307.10	3779.04	1.32			1	23455.02		
		2	19253.56	5946.46	1.18			6	23484.78		
$5d^4 6s^2$	3H	4	12161.96		0.99			3	23930.08		1.4
		5	15069.93	2907.97	1.05			2	23982.80		
		6	17008.50	1938.57	1.4			3	24610.88		
								2	24789.66		
								2	26861.64		
$5d^4 6s^2$	3G	3	13348.56		0.92			4	27213.82		
		4	16431.31	3082.75	1.02			1	27670.48		
		5	19826.04	3394.73	1.20			5	27849.80		
								2	28204.20		
$5d^4 6s^2$	3F	2	13777.71		1.09			5	28233.44		
		3	17701.18	3923.47	1.02			3	28291.88		
		4	17107.01	-594.17	1.19			3	28347.60		
								6	28392.70		
$5d^4 6s^2$	3D	3	15460.01		1.17			1	28720.88		
		2	14976.18	483.83	1.06			2	28898.96		
		1	18082.83	-3106.65	0.7			7	29460.98		
								4	29479.32		
$5d^5 6s$	5G	2	18116.84		1.08	$5d^4 6s 7s$	7D	1	43451.98	1467.86	2.83
		3	18974.51	857.67	1.06			2	44919.84	1576.78	1.9
		4	19256.24	281.73	1.20			3	46496.62	1478.92	1.74
		5	19535.01	278.77	1.21			4	47975.54	1379.14	1.68
		6	19648.54	113.53	1.32			5	49354.68		1.7
								0	45225.22		
							e^5D	1	46458.30	1233.08	
								2	48078.32	1620.02	1.55

TABLE 1. *Even levels of W I (cont'd).*

Configuration	Desig.	<i>J</i>	Level	Interval	Obs. <i>g</i>	Configuration	Desig.	<i>J</i>	Level	Interval	Obs. <i>g</i>
		3	49656.04	1577.72	1.66			3	52284.76		
		4	51123.14	1467.10	1.4			4	52378.22		
		2	50525.35					1	52956.92		
		1	50906.20					4	53786.00		
		1	50949.07					3	53916.90		
		0	51285.46					5	53974.10		
		2	51936.84					3	54657.56		
		3	52002.25					4	55333.12		
		1	52057.80					5	55381.00		
		2	52183.20					6	55420.88		
								5	56573.54		
								5	56768.06		
								6	56832.90		

1.45

TABLE 2. *Odd levels of W I*

Configuration	Desig.	<i>J</i>	Level	Interval	Obs. <i>g</i>	Configuration	Desig.	<i>J</i>	Level	Interval	Obs. <i>g</i>
$5d^4 6s 6p$	$^7F^\circ$	0	19389.43			$5d^4 6s 6p$	$^5P^\circ$	1	28198.90		
		1	20064.30	674.87	1.54			2	29393.40	1194.50	1.83
		2	21448.76	1384.46	1.48			3	30586.64	1193.24	1.64
		3	23047.31	1598.55	1.53			1	30683.54		1.39
		4	24763.39	1716.08	1.50			1	31323.48		0.86
		5	26676.48	1913.09	1.46			2	31817.63		1.52
		6	29643.06	2966.58				3	32238.02		1.3
								0	32386.56		
								3	32957.58		1.43
								2	33141.38		1.51
								2	33944.06		
$5d^4 6s 6p$	$^7D^\circ$	1	21453.90	2510.77	2.51			4	34121.68		1.5
		2	23964.67	2224.53	1.93			3	34228.60		
		3	26189.20	2608.04	1.80			1	34342.44		1.56
		4	28797.24	976.10	1.61			3	34354.08		0.71
		5	29773.34		1.55			2	34485.86		0.82
								4	34632.60		0.89
$5d^4 6s 6p$	$^5F^\circ$	1	25983.60	1678.92	0.54			1	34719.33		0.15
		2	27662.52	1476.60	1.21			4	35116.78		1.2
		3	29139.12	2293.79	1.06			2	35311.56		1.0
		4	31432.91	1937.13	1.32			3	35499.15		1.0
		5	33370.04		1.39			5	35507.07		
								2	35731.96		1.5
								3	35943.17		1.4
								4	36082.30		1.24
								1	36190.49		1.62
								5	36275.10		1.27
								0	36588.32		
								2	36673.70		1.50
								3	36874.36		1.50
								2	36904.16		1.57
$5d^5(^6S)6p$	$^7P^\circ$	2	26229.77	1258.34	1.84			4	37146.36		1.1
		3	27488.11	401.57	1.72			5	37309.16		1.25
		4	27889.68		1.71			2	37466.30		1.28
		2	26367.28		0.87			3	37674.08		1.13
								1	37773.96		
								4	38001.12		1.1
								3	38053.05		1.11
								6	38203.12		
$5d^4 6s 6p$	5D	0	26629.46	1149.04				3	38206.38		
		1	27778.50	1417.34	1.25			4	38259.40		
		2	29195.84	717.01	1.28			1	38355.84		
		3	29912.85	2915.27	1.31			0	38576.14		
		4	32828.12		1.7			4	38748.44		
								2	39030.25		
								1	39183.20		1.01
								5	39361.01		1.13
								5	39614.05		1.20

TABLE 2. *Odd levels of W1—Continued*

Configuration	Desig.	<i>J</i>	Level	Interval	Obs. <i>g</i>	Configuration	Desig.	<i>J</i>	Level	Interval	Obs. <i>g</i>
		1	39636.62		1.44			5	45451.65		1.16
		3	39646.41		1.46			3	45551.32		1.30
		2	39707.02		1.00			3	45677.69		1.24
		7	39709.04					1	45760.80		
		4	39719.96		1.17			5	45789.14		1.19
		2	40011.50		1.0			4	45869.10		1.36
		4	40233.97		1.53			2	45902.48		0.5
		3	40269.35		1.03			3	46068.02		1.46
		1	40411.12		1.58			1	46104.62		
		5	40476.42		1.04			6	46106.20		
		4	40583.07					1	46291.63		
		3	40665.85		0.96			2	46327.75		0.8
		1	40770.78		1.28			3	46385.46		1.4
		2	40868.40		1.26			5	46506.37		1.38
		5	40911.98		1.03			0	46613.70		
		3	40923.83		1.32			4	46625.05		1.14
		2	41104.52		1.5			6	46672.22		1.18
		0	41127.38					2	46806.45		1.1
		6	41171.44					5	46854.80		1.21
		4	41198.14		1.22			4	46931.84		1.0
		6	41417.52		1.23			2	47079.40		1.3
		3	41499.43		1.11			1	47255.55		
		2	41583.20		1.06			2	47337.79		0.9
		3	41694.34		1.28			4	47360.19		
		2	41734.13		1.1			3	47361.74		1.3
		4	41871.94		1.11			2	47442.53		
		0	41965.24					3	47483.68		1.29
		2	41978.62		0.8			6	47541.56		1.23
		6	42239.06					3	47593.44		1.2
		3	42251.51		1.32			4	47689.33		1.4
		1	42262.30		1.5			1	47819.94		
		2	42449.60					5	47850.84		
		4	42450.24					4	47968.62		1.23
		3	42514.14		1.22			5	48138.38		1.2
		4	42532.62					3	48170.55		
		1	42573.49		1.3			2	48244.29		1.4
		3	42601.19		1.12			7	48250.70		
		5	42866.00		1.11			0	48264.62		
		4	42910.74		1.18			2	48318.84		1.4
		5	43034.10					3	48326.41		
		0	43053.88					1	48389.96		
		1	43217.33		1.3			0	48603.44		
		2	43227.66		1.3			4	48676.08		1.20
		4	43251.00		1.14			6	48684.68		
		7	43411.50		1.20			1	48788.06		
		3	43478.58		1.3			3	49072.14		1.26
		2	43514.68		0.9			5	49073.88		
		4	43720.87					4	49147.95		
		5	43741.37		1.09			2	49151.94		
		3	43850.84		1.17			5	49187.92		1.25
		1	43892.62		1.05			2	49270.16		
		5	43924.25		1.2			3	49417.90		
		2	43975.22		1.15			1	49443.70		
		4	43985.41		1.24			3	49514.34		1.3
		3	44021.00		1.2			2	49517.26		
		1	44353.46		1.02			4	49636.52		
		2	44367.50		1.1			2	49699.56		1.9
		6	44390.42		1.28			4	49788.58		
		3	44447.02		1.38			0	49798.48		
		5	44546.76		1.3			3	49966.03		
		2	44596.28		1.11			5	50137.55		1.11
		1	44737.21		1.1			3	50185.70		
		6	44923.90		1.23			4	50284.64		1.03
		4	44940.57		1.20			3	50303.78		
		7	44970.82		1.20			6	50429.18		
		3	45014.54		1.3			2	50494.54		
		2	45019.02					1	50533.55		
		4	45116.77		1.2			2	50718.90		
		4	45262.55		1.1			3	50800.44		1.0
		0	45306.89					5	50806.07		
		1	45374.00					3	50894.12		
		2	45422.26		0.63			4	50909.47		1.2

TABLE 2. *Odd levels of W₁*—Continued

Configuration	Desig.	<i>J</i>	Level	Interval	Obs. <i>g</i>	Configuration	Desig.	<i>J</i>	Level	Interval	Obs. <i>g</i>
		6	50951.86					2	55619.66		
		3	51072.18					7	55690.82		
		2	51182.38					5	55795.48		
		1	51260.68					2	55835.12		
		5	51290.73					6	55847.68		
		7	51296.92					1	55859.32		
		4	51473.04					4	55867.24		
		3	51600.52					4	55955.36		
		2	51606.78					5	55987.90		
		2	51693.85					2	56037.28		
		1	51763.44					3	56108.44		
		4	51856.10					4	56174.63		
		6	51978.68					4	56255.65		
		3	52015.28					5	56280.45		
		4	52059.78					3	56332.00		
		2	52064.08					3	56484.33		
		5	52081.09					4	56502.10		
		2	52152.62					6	56526.57		
		0	52233.10					7	56557.20		
		3	52255.80					3	56717.13		
		5	52395.50					7	56790.60		
		4	52436.44					4	56831.67		
		1	52477.57					2	56999.30		
		2	52503.41					3	57131.78		
		2	52653.58					5	57143.48		
		5	52774.10					6	57148.98		
		3	52806.56					4	57315.25		
		6	52855.98					3	57352.32		
		2	52885.50					4	57471.80		
		3	52943.48					5	57560.83		
		4	52992.69					3	57619.36		
		2	53003.72					6	57702.30		
		1	53042.00					3	57732.46		
		4	53118.29					4	57803.66		
		5	53194.25		1.3			6	57919.17		
		1	53227.03					3	58091.58		
		6	53228.42					5	58179.38		
		4	53238.41					3	58206.00		
		2	53284.92					1	58290.18		
		3	53345.52					4	58316.46		
		3	53390.42					4	58330.13		
		2	53669.36					3	58487.52		
		4	53848.63					5	58562.68		
		5	53862.72					2	58595.42		
		1	53875.26					3	58644.10		
		2	53912.55					2	58655.72		
		2	53959.28					6	58760.96		
		3	54117.36					4	58777.80		
		4	54118.78					4	58848.90		
		3	54269.77					5	58903.98		
		0	54295.64					6	59128.80		
		5	54310.30					5	59149.60		
		1	54374.80					4	59171.71		
		1	54419.67					2	59211.47		
		3	54556.43					5	59263.63		
		6	54733.38					7	59346.98		
		2	54859.15					3	59399.74		
		6	54895.96					6	59410.52		
		3	54900.90					2	59422.00		
		4	54911.61					5	59673.32		
		1	54941.01					2	59999.10		
		5	55009.22					4	60158.32		
		2	55032.67					5	60229.18		
		4	55043.34					4	60385.09		
		2	55084.02					6	60414.83		
		4	55346.20					5	60741.40		
		1	55384.38					7	61180.86		
		3	55389.30					5	61476.60		
		2	55390.16					4	61535.50		
		5	55455.35					5	62154.50		
		5	55492.22					6	62524.02		
		3	55546.06					6	62687.50		
		4	55596.90					6	63532.78		

There are 91 even levels of which 37 are new. There are 365 odd levels, 64 of them new. As an aid in checking the reality of the levels, a square array showing all the predicted combinations between even and odd levels was prepared on the NBS electronic computer by W. R. Bozman and Jack Sugar.

Table 3 contains about 6800 observed lines of the arc spectrum of tungsten. Approximately 5500 of these are classified, compared with the table of 2400 lines classified by Laporte and Mack [2] 25 years ago. In table 3, wavelengths in air in Ångströms are followed by intensity estimates of the lines as observed on the exposures of arc and spark. Between 6359 and 10000 Å the arc intensities are taken from the electrodeless lamp exposures and no spark exposure was made. The symbols in the intensity columns are as follows:

- a* air line coincident
- b* broadened
- bb* very broad
- d* double
- g* possible ghost
- v* shaded to short wavelength
- l* shaded to long wavelength
- r* reversed
- s* classified in spark spectrum

Vacuum wavenumbers in cm^{-1} are derived from the observed wavelengths with the aid of the Table of Wavenumbers by Coleman, Bozman, and Meggers [10].

The column "o-c" of differences between the observed wave numbers and those calculated from the term combinations is an index of the accuracy of the measurements. The "o-c" is greater at short wavelengths and, also, where lines are too close together for precise measurement. The corresponding levels between which the transition occurs are given in the next column. A few term designations are used where unambiguous, but in most cases the even levels are indicated by the first two digits of the level value and the odd levels by the first three digits as was done by Laporte and Mack. Where the levels are too close together, all five digits are given. *J*-values are given as subscripts and the odd symbol as a superscript.

The number of doubly classified lines in table 3 has been severely reduced by limiting the tolerance "o-c" and especially by casting out the higher combinations if they fall on a low combination. The higher combinations are usually masked by the lower ones. A further check is given in the last column by indicating the type of Zeeman pattern. The symbols in the last column describe the Zeeman patterns as follows:

Res resolved Zeeman pattern in apparent agreement with the classification

- 1 type 1 pattern ($g_x < g_y, J_x > J_y$)
- 2 type 2 pattern ($g_x > g_y, J_x > J_y$)
- 3 type 3 pattern ($J_x = J_y$)
- 7 type 7 pattern (indeterminate)

(b) *p*-components broadened

(0) *p*-components unchanged from the zero-field position

zd two superimposed patterns

An explanation and illustrations of the types are given in ref. [11].

We acknowledge the encouragement of the late W. F. Meggers in this work and the assistance of the late C. C. Kiess who made most of the spectrograms.

4. References

- [1] Laporte, O., *Naturwiss.* **13**, 627-628 (1925).
- [2] Belke, M., *Z. Wiss. Photographie* **17**, 132 and 145 (1918).
- [3] Laporte, O., and Mack, J. E., *Phys. Rev.* **63**, 246-297 (1943).
- [4] Catalán, M. A., and Poggio, F., *Ann. Soc. Espan. Física y Química* **32**, 255 (1934); Poggio, F., *ibid.* **33**, 171-202 (1935).
- [5] Laun, D. D., *J. Res. NBS* **21**, 207-224 (1938) RP1125.
- [6] Moore, C. E., *Atomic Energy Levels*, NBS Circ. 467, Vol. **III**, 156-161 Washington (1958).
- [7] Gluck, G., *Ann. Phys.* **10**, 673-696 (1965).
- [8] Shadmi, Y., and Caspi, E., *J. Res. NBS* **72A** (Phys. and Chem.) No. 6, 757 (1968).
- [9] Laun, D. D., *J. Res. NBS* **68A**, 207-252 (1964).
- [10] Coleman, C. D., Bozman, W. R., and Meggers, W. F., *Table of Wave numbers*, NBS Mono. 3, Washington (1960).
- [11] Corliss, C. H., Meggers, W. F., *J. Res. NBS* **61** No. 4, 269 (1958) RP2904.

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2000.40	3		49973.8			
2000.97	3		49959.6	+0.21	$^5D_{2-}$ 532 $^{\circ}_2$	
2001.15	1		49955.1	-0.20	$^5D_{4-}$ 561 $^{\circ}_4$	
2002.47	5		49922.2			
2006.93	3		49811.3			
2008.63	1		49769.1	+0.53	$^5D_{4-}$ 559 $^{\circ}_5$	
2008.91	3		49762.2			
2014.72	1		49618.7	+0.75	$^5D_{2-}$ 529 $^{\circ}_3$	
2016.40	3		49577.4	+1.25	$^5D_{4-}$ 557 $^{\circ}_5$	
2020.11	5		49486.3	+1.15	$^7S_{3-}$ 524 $^{\circ}_4$	
2021.81	3		49444.7	+1.0	$^5D_{0-}$ 494 $^{\circ}_1$	
2022.04	2	4	49439.1	-0.67	$^5D_{3-}$ 542 $^{\circ}_3$	
2023.87	5		49394.4			
2030.19	2		49240.6			
2030.36	2		49236.5	+0.48	$^5D_{4-}$ 55455 $^{\circ}_5$	
2034.77	4		49129.8	+0.52	$^5D_{3-}$ 539 $^{\circ}_2$	
2035.46	2		49113.3	+0.51	$^7S_{3-}$ 520 $^{\circ}_2$	
2036.92	3	1	49078.0			
2039.38	3		49018.9	+0.27	$^5D_{3-}$ 538 $^{\circ}_4$	
2044.16	1		48904.2	-0.61	$^7S_{3-}$ 518 $^{\circ}_4$	
2045.74	3		48866.4			
2047.48	3		48824.9	+0.65	$^5D_{1-}$ 504 $^{\circ}_2$	
				+0.89	$^5D_{4-}$ 550 $^{\circ}_4$	
2049.03	3	8	48788.0	-0.06	$^5D_{0-}$ 487 $^{\circ}_1$	
2051.04	3	8	48740.1			
2051.94	3		48718.8			
2053.514	3	20	48681.4	-0.17	$^5D_{4-}$ 549 $^{\circ}_3$	
2058.616	10	2	48560.8	+0.38	$^5D_{3-}$ 53390 $^{\circ}_3$	
2060.53	3	2 s	48515.7	+0.18	$^5D_{3-}$ 53345 $^{\circ}_3$	
2061.31	2		48497.4			
2062.754	4		48463.4	+0.54	$^3H_{5-}$ 635 $^{\circ}_6$	
2063.10	6		48455.3	+0.38	$^5D_{3-}$ 532 $^{\circ}_2$	
2064.51	2		48422.2			
2065.056	6	3 s	48409.4	+0.99	$^5D_{3-}$ 532 $^{\circ}_4$	
2065.86	4		48390.5	+0.54	$^5D_{0-}$ 483 $^{\circ}_1$	
2066.604	6		48373.1			
2070.23	3		48288.4	+0.11	$^5D_{3-}$ 531 $^{\circ}_4$	
2070.55	6	1	48280.9	+0.35	$^5D_{2-}$ 51606 $^{\circ}_2$	
2070.80	3	1	48275.1	+0.11	$^5D_{2-}$ 516 $^{\circ}_3$	
2077.10	8		48128.7	+0.51	$^5D_{1-}$ 497 $^{\circ}_0$	
2077.732	1	2	48114.1	+0.62	$^5D_{3-}$ 529 $^{\circ}_3$	
2080.45	4		48051.2	+0.76	$^5D_{4-}$ 542 $^{\circ}_3$	
2081.37	12		48030.0	+0.73	$^5D_{1-}$ 496 $^{\circ}_2$	
2082.806	8		47996.9	+0.54	$^3H_{4-}$ 601 $^{\circ}_4$	
2085.46	8	1	47935.8	+0.65	$^5D_{2-}$ 512 $^{\circ}_1$	
2087.10	80 d	2 l	47898.1	-1.35	$^5D_{4-}$ 541 $^{\circ}_4$	
2087.933	3		47879.0			
2088.90	2	2	47856.9	+0.05	$^5D_{2-}$ 511 $^{\circ}_2$	
2089.30	30		47847.7	+0.73	$^5D_{1-}$ 495 $^{\circ}_2$	
2090.48	60		47820.7	+0.76	$^5D_{0-}$ 478 $^{\circ}_1$	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2092.516	10	1	47774.2	+0.79	⁵ D ₁ - 494 ₁ [°]	
2093.66	15		47748.1	+1.45	⁵ D ₂ - 510 ₃ [°]	
2094.06	15		47739.0			
2095.03	2		47716.9			
2095.56	25	12	47704.8			
2097.52	1	1	47660.2			
2098.22	60	30 s	47644.2	+0.81	⁵ D ₄ - 538 ₅ [°]	
2098.846	25		47630.1	+0.80	⁵ D ₄ - 538 ₄ [°]	
2099.85	50	1	47607.3	+0.86	⁵ D ₃ - 524 ₄ [°]	
2101.538	50		47569.1	+0.51	⁵ D ₂ -50894 ₃ [°]	
2102.65	8	1	47544.0	+0.75	⁷ S ₃ - 504 ₂ [°]	
2102.977	3	1	47536.6			
2103.37	5		47527.7			
2104.08	15		47511.7	+0.34	³ H ₄ - 596 ₅ [°]	
2105.40	50	1	47481.9	+0.25	⁵ D ₁ - 491 ₂ [°]	
2105.75	25	12	47474.0	-0.91	⁵ D ₂ - 508 ₃ [°]	
2106.57	15	2	47455.5	+1.41	³ H ₅ - 625 ₆ [°]	
2106.94	8		47447.16			
2107.86	15		47426.4	+0.60	⁵ D ₃ - 522 ₃ [°]	
2109.31	60	2	47393.8	+0.43	⁵ D ₂ - 507 ₂ [°]	
2109.89	12		47380.8			
2111.13	15	1	47353.0	+0.51	⁷ S ₃ - 503 ₃ [°]	
2112.47	6		47323.0	+0.38	⁵ D ₃ - 521 ₂ [°]	
2114.82	8	1	47270.4			
2115.49	3		47255.4	-0.15	⁵ D ₀ - 472 ₁ [°]	
2116.30	40	8	47237.3	-0.48	³ H ₄ - 593 ₃ [°]	
2116.44	30		47234.2	+0.12	⁵ D ₃ - 520 ₂ [°]	
				-0.21	⁷ S ₃ - 501 ₃ [°]	
2116.63	20		47230.0	+0.22	⁵ D ₃ - 520 ₄ [°]	
2117.59	30	1	47208.6	+0.58	⁵ D ₂ - 505 ₁ [°]	
2118.62	25		47185.6	+0.32	⁵ D ₃ - 520 ₃ [°]	
2119.30	120	6	47170.5	-0.59	⁵ D ₄ -53390 ₃ [°]	
				+1.49	⁵ D ₂ - 504 ₂ [°]	
2120.74	12		47138.4			
2121.27	3		47126.7	+0.51	⁵ D ₄ -53345 ₃ [°]	
2121.60	100 d	25 s	47119.3	+1.53	⁵ D ₁ - 487 ₁ [°]	
2122.37	20	4	47102.2	+0.53	³ H ₄ - 592 ₅ [°]	
2123.15	30		47084.9	+0.33	³ H ₅ - 621 ₅ [°]	
2124.86	20 b		47047.1			
2124.95	6		47045.1			
2125.36	3		47036.0	-0.53	³ G ₃ - 603 ₄ [°]	
2125.79	15		47026.5	+0.40	⁵ D ₃ - 518 ₄ [°]	
2126.114	25		47019.31	+0.23	⁵ D ₄ - 532 ₄ [°]	
2126.544	6	1	47009.81	+0.06	³ H ₄ - 591 ₄ [°]	
2127.55	3		46987.6	-0.04	³ H ₄ - 591 ₅ [°]	
2127.957	15	5	46978.59	+0.34	⁵ D ₂ - 503 ₃ [°]	
2128.122	50	5	46974.95	+0.03	⁵ D ₄ - 531 ₅ [°]	
2129.00	10	2 s	46955.58			
2130.05	20	2 s	46932.4	-0.75	⁵ D ₁ - 486 ₀ [°]	
2131.526	8	2	46899.9	+0.94	⁵ D ₄ - 531 ₄ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2133.17	1	2	46863.8	-0.05	⁵ D ₃ -51693 [°] ₂	
2133.32	3		46860.5	+0.33	⁵ D ₂ - 501 [°] ₃	
2133.65	30		46853.3			
2135.625	6		46809.94	+0.18	³ G ₃ - 601 [°] ₄	
2135.875	8		46804.46			
2137.135	20	10 s	46776.87	+0.09	⁵ D ₃ -51606 [°] ₂	
2137.400	10		46771.07	+0.55	⁵ D ₃ - 516 [°] ₃	
2138.71	10		46742.4	+0.38	³ H ₄ - 589 [°] ₅	
2139.53	8		46724.51	+0.36	⁵ D ₄ - 529 [°] ₃	
2139.73	15		46720.14	+0.47	⁵ D ₁ - 483 [°] ₁	
2141.222	15		46687.59	+0.65	³ H ₄ - 588 [°] ₄	
2141.307	6	3	46685.74	+0.51	⁷ S ₃ - 496 [°] ₄	
2142.92	2		46650.60	+0.06	³ G ₃ - 599 [°] ₂	
2143.00	20		46648.86	+0.31	⁵ D ₁ - 483 [°] ₂	
2143.257	15	3 s	46643.27	+0.23	⁵ D ₃ - 514 [°] ₄	
2143.36	10		46641.03	+0.53	⁵ D ₂ - 499 [°] ₃	
2144.50	12	5	46616.24	+0.40	³ H ₄ - 587 [°] ₄	
2145.49	6	3	46594.73	+0.40	⁵ D ₁ - 482 [°] ₀	
2146.43	35 r		46574.33	+0.33	⁵ D ₁ - 482 [°] ₂	
2147.31	35	3 s	46555.24	-0.47	⁵ D ₄ - 527 [°] ₅	
2147.53	12		46550.47			
2148.716	6		46524.78	+0.50	³ H ₆ - 635 [°] ₆	
2150.68	2		46482.30	+0.16	³ H ₄ - 580 [°] ₃	
2151.075	8		46473.76			
2151.44	8		46465.88	+0.31	³ H ₅ - 615 [°] ₄	
2151.92	5		46455.52			
2154.86	5		46392.14			
2155.690	20		46374.28	+0.25	⁵ D ₂ - 496 [°] ₂	
2156.69	2	8	46352.78	+0.40	⁵ D ₃ - 511 [°] ₂	
2157.68	10		46331.52	+0.26	³ P ₀ - 558 [°] ₁	
2157.95	6		46325.72	+0.16	³ H ₄ - 584 [°] ₃	
2159.53	12		46291.83	+0.20	⁵ D ₀ - 462 [°] ₁	
2162.816	6		46221.50	+0.11	³ F ₂ - 599 [°] ₂	
2163.004	15	2	46217.49	+0.38	⁵ D ₄ - 524 [°] ₄	
2163.795	8		46200.59	-0.06	⁷ S ₃ - 491 [°] ₂	
2164.20	15		46191.95	+0.22	⁵ D ₂ - 495 [°] ₂	
2164.340	25 r		46188.96	+0.15	⁵ D ₂ - 495 [°] ₃	
2164.534	12		46184.82			
2164.928	25 r		46176.42	+0.25	⁵ D ₄ - 523 [°] ₅	
2165.686	8		46160.26			
2165.940	12		46154.85	+0.35	³ H ₄ -58316 [°] ₄	
2166.165	2		46150.05	+0.40	⁵ D ₁ - 478 [°] ₁	
2167.654	25	12	46118.36	+0.19	⁵ D ₂ - 494 [°] ₁	
2167.806	5		46115.12	+0.22	³ P ₁ - 594 [°] ₂	
2168.290	25	5	46104.83	+0.21	⁵ D ₀ - 461 [°] ₁	
2168.856	10		46092.80	+0.43	⁵ D ₂ - 494 [°] ₃	
2169.474	100 r	4	46079.67	+0.20	⁵ D ₃ - 509 [°] ₄	
2169.660	4		46075.72	+0.23	³ D ₃ - 615 [°] ₄	
2169.760	2		46073.60	+0.16	³ C ₃ - 594 [°] ₂	
2170.196	40	1	46064.34	+0.22	⁵ D ₃ -50894 [°] ₃	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2170.632	3		46055.09			
2171.086	4 <i>b</i>		46045.46			
2171.14	1		46044.31	+0.27	³ H ₄ - 582° ₃	
2171.51	3		46036.47	0.00	⁵ D ₄ - 522° ₃	
2172.984	12		46005.24			
2174.620	60	1	45970.64	+0.20	⁵ D ₃ -50800° ₃	
2175.08	3		45960.9			
2175.842	80 <i>r</i>	2	45944.82	+0.19	⁵ D ₂ - 492° ₂	
2176.558	6		45929.71	+0.09	³ H ₄ - 580° ₃	
2176.938	10		45921.69			
2177.760	30		45904.36	-0.05	³ P ₁ - 592° ₂	
2178.474	80 <i>r</i>	1	45889.32	+0.42	⁵ D ₃ - 507° ₂	
2178.886	3		45880.65			
2179.764	100 <i>r</i>	3	45862.17	+0.41	⁵ D ₄ - 520° ₅	
2180.026	4		45856.65	+0.33	³ P ₀ - 553° ₁	
2180.778	40	1	45840.84	+0.39	⁵ D ₄ - 520° ₄	
2181.49	15	3 <i>s</i>	45825.9	-0.51	⁵ D ₂ - 491° ₂	
2181.603	2		45823.51	+0.36	³ G ₃ - 591° ₄	
2181.946	10		45816.31			
2182.90	150 <i>r</i>		45796.29	+0.34	⁵ D ₄ - 520° ₃	
2183.47	12		45784.34			
2184.204	35	10	45768.95			
2184.56	6		45761.49	+0.69	⁵ D ₀ - 457° ₁	
2185.256	40		45746.92	+0.31	⁵ D ₂ - 490° ₃	
2186.300	8		45725.08	+0.29	⁷ S ₃ - 486° ₄	
2186.374	25		45723.53	+0.34	³ G ₄ - 621° ₅	
2187.70	3		45695.82			
2188.49	10		45679.33	+0.33	³ H ₆ - 626° ₆	
2188.86	5		45671.60	+0.13	³ H ₅ - 607° ₅	
2189.05	15		45667.64	+0.14	⁵ D ₁ - 473° ₂	
2189.19	30	30 <i>s</i>	45664.72	+0.18	⁵ D ₃ - 504° ₂	
2190.28	1	1	45642.0	+0.30	³ H ₄ - 578° ₄	
2190.52	40	1	45637.0	+0.23	⁵ D ₄ - 518° ₄	
2191.225	4		45622.32	+0.29	13 ₂ - 593° ₃	
2191.446	4		45617.72			
2191.80	4		45610.35			
2192.36	60	8	45598.7			
2192.615	30		45593.40			
2193.016	50	125	45585.06	-0.20	⁵ D ₁ - 472° ₁	
2193.707	30		45570.70	+0.20	³ H ₄ - 577° ₃	
2194.78	10		45548.42			
2196.354	4		45515.79	+0.27	³ H ₆ - 625° ₆	
2197.080	80	4	45500.74	+0.40	³ G ₃ - 588° ₄	
2198.367	150	6	45474.11	+0.33	⁵ D ₃ - 503° ₃	
2198.915	200 <i>r</i>	3	45462.78	+0.25	⁵ D ₂ - 487° ₁	
2199.166	40	2 <i>s</i>	45457.59	+0.19	³ H ₄ - 576° ₃	
2199.300	50	3	45454.82	+0.18	⁵ D ₃ - 502° ₄	
2199.88	12	1	45442.84			
2200.316	25		45433.84	+0.07	13 ₂ - 592° ₂	
2200.532	20		45429.38	+0.14	³ G ₃ - 587° ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2201.504	60	1	45409.32	+0.21	⁵ D ₁ - 470 ₂ [°]	
2202.856	50		45381.45	+0.26	⁵ D ₄ - 516 ₃ [°]	
2203.188	40		45374.61	-0.51	⁷ S ₃ - 483 ₃ [°]	
				+0.61	⁵ D ₀ - 453 ₁ [°]	
2203.518	6		45367.82	+0.27	⁷ S ₃ - 483 ₂ [°]	
2204.092	50		45356.01	+0.31	⁵ D ₃ - 501 ₃ [°]	
2204.610	15		45345.35	+0.45	³ H ₅ - 604 ₆ [°]	
2205.368	20		45329.77			
2206.456	4		45307.42	+0.26	³ G ₃ - 586 ₂ [°]	
2207.028	20		45295.67	+0.13	³ G ₃ - 586 ₃ [°]	
2207.160	30	1	45292.97	-0.03	⁷ S ₃ - 482 ₂ [°]	
2207.373	40	3 s	45288.60	+0.28	³ P ₁ - 585 ₂ [°]	
2207.542	20		45285.13			
2208.314	25		45269.30			
2208.382	15		45267.91			
2209.064	35	12	45253.93	+0.22	⁵ D ₄ - 514 ₄ [°]	
2209.422	20	25	45246.60	-0.26	³ G ₃ - 585 ₂ [°]	
2210.745	15	3	45219.53	+0.27	⁷ S ₃ - 481 ₃ [°]	
2211.644	30		45201.15			
2212.170	75	3	45190.40	+0.04	³ H ₄ - 573 ₃ [°]	
2212.606	20	2	45181.50			
2213.460	8		45164.07			
2213.696	40		45159.25	0.00	³ H ₅ - 602 ₅ [°]	
2214.340	50		45146.12	+0.12	³ H ₆ - 621 ₅ [°]	
2214.708	20	30	45138.62	-0.38	³ G ₃ - 584 ₃ [°]	
2214.830	40	15	45136.13	-0.03	⁵ D ₁ - 468 ₂ [°]	
2215.354	12	3	45125.46			
2216.414	30	20	45103.88	-0.31	³ G ₄ - 615 ₄ [°]	
2217.176	30		45088.38	-0.01	³ H ₅ - 601 ₄ [°]	
2218.02	3		45071.2	-0.20	⁵ D ₄ - 512 ₅ [°]	
2218.352	40	10	45064.48	+0.05	⁵ D ₂ - 483 ₁ [°]	
2219.192	25		45047.43	-0.06	17 ₄ - 621 ₅ [°]	
2219.295	6 d		45045.34	+0.05	³ G ₄ - 614 ₅ [°]	
2220.09	3		45029.2			
2220.40	35		45022.92	0.00	14 ₂ - 599 ₂ [°]	
2220.675	8 d		45017.34	+0.01	⁷ S ₃ - 479 ₄ [°]	
2221.852	40	4	44993.50	+0.19	⁵ D ₂ - 483 ₂ [°]	
2222.363	6		44983.15	+0.07	³ P ₁ - 582 ₁ [°]	
2222.444	10	1	44981.52	0.00	³ H ₄ - 571 ₅ [°]	
2222.90	10		44972.3			
2223.01	12		44970.06	+0.24	³ H ₄ - 571 ₃ [°]	
2223.574	80 r	2	44958.66	+0.08	⁵ D ₃ - 497 ₄ [°]	
2224.314	25		44943.70	+0.29	⁵ D ₁ - 466 ₀ [°]	
2225.230	15	5 s	44925.2	+0.12	³ D ₃ - 603 ₄ [°]	
2225.544	100	2 d	44918.87	+0.11	⁵ D ₂ - 482 ₂ [°]	
2226.98	10		44889.9			
2227.98	80 r	3	44869.75	+0.19	⁵ D ₃ - 496 ₂ [°]	
2228.14	20	12	44866.53	+0.14	13 ₂ - 586 ₃ [°]	
2228.58	30		44857.68	+0.24	³ G ₃ - 582 ₃ [°]	
2228.80	40		44853.25	+0.40	⁵ D ₄ - 510 ₃ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2229.11	15	2	44847.01	+0.21	$^3P_{0-}$ 543 $^{\circ}_1$	
2229.196	50	2	44845.28	+0.26	$^5D_{2-}$ 481 $^{\circ}_3$	
2230.734	50		44814.37			
2231.12	6		44806.6	+0.08	$^5D_{3-}$ 496 $^{\circ}_4$	
2234.30	5		44742.85	-0.17	$^3G_{3-}$ 580 $^{\circ}_3$	
2234.58	40		44737.24	+0.03	$^5D_{0-}$ 447 $^{\circ}_1$	
2235.28	4		44723.24			
2235.954	5		44709.75	-0.06	13_{2-} 584 $^{\circ}_3$	
2236.525	8		44698.34	+0.03	$^3D_{3-}$ 601 $^{\circ}_4$	
2236.566	8		44697.52			
2236.932	12		44690.21	+0.07	$^5D_{4-}$ 509 $^{\circ}_4$	
2237.09	15		44687.05	-0.21	$^5D_{3-}$ 495 $^{\circ}_2$	
2237.222	30	3	44684.42	+0.08	$^5D_{3-}$ 495 $^{\circ}_3$	
2237.39	4		44681.06			
2237.70	25	3	44674.87	+0.08	$^5D_{4-}$ 50894 $^{\circ}_3$	
2237.953	35	1	44669.82	+0.11	$^3H_{4-}$ 568 $^{\circ}_4$	
2238.567	10		44657.57	+0.11	$^5D_{1-}$ 463 $^{\circ}_2$	
2239.039	8		44648.16			
2239.333	7		44642.30	+0.15	$^7S_{3-}$ 475 $^{\circ}_3$	
2240.01	7		44628.8			
2240.376	35	2	44621.52	+0.18	$^5D_{1-}$ 462 $^{\circ}_1$	
2240.587	30	6	44617.32			
2241.282	50	10 s	44603.48	+0.09	$^3H_{5-}$ 596 $^{\circ}_5$	
2242.06	25		44588.0	+0.10	$^5D_{3-}$ 494 $^{\circ}_3$	
2242.115	5		44586.91	+0.17	$^5D_{4-}$ 508 $^{\circ}_5$	
2242.40	25	2	44581.25	+0.14	$^5D_{4-}$ 50800 $^{\circ}_3$	
2243.70	6		44555.42	+0.25	$^3H_{4-}$ 567 $^{\circ}_3$	
2244.52	4	2	44539.14	+0.05	$^3D_{3-}$ 599 $^{\circ}_2$	
2244.85	4		44532.6	+0.21	$^7S_{3-}$ 474 $^{\circ}_3$	
2245.86	5		44512.57	+0.10	13_{2-} 582 $^{\circ}_1$	
2246.77	45 r	5	44494.54	+0.13	$^5D_{2-}$ 478 $^{\circ}_1$	
2246.92	6		44491.57	+0.33	$^7S_{3-}$ 474 $^{\circ}_2$	
2248.096	5	1	44468.30	+0.20	$^3H_{6-}$ 614 $^{\circ}_5$	
2248.750	60 r	100 s	44455.37	+0.27	$^3G_{3-}$ 578 $^{\circ}_4$	z d
2249.22	1		44446.08	+0.26	14_{2-} 594 $^{\circ}_2$	
2249.508	30	3	44440.39	+0.23	$^5D_{3-}$ 492 $^{\circ}_2$	
2249.804	20	s	44434.54	+0.21	$^5D_{1-}$ 461 $^{\circ}_1$	
2250.11	3		44428.50	+0.01	17_{4-} 615 $^{\circ}_4$	
2250.31	10		44424.55			
2250.35	5		44423.76	+0.20	14_{2-} 593 $^{\circ}_3$	
2251.02	8		44410.54	+0.09	$^7S_{3-}$ 473 $^{\circ}_3$	
2252.236	6	8	44386.57	+0.07	$^7S_{3-}$ 473 $^{\circ}_2$	
2252.30	8		44385.31			
2252.36	25	1	44384.12	+0.22	$^3G_{3-}$ 577 $^{\circ}_3$	
2253.093	10		44369.68	+0.09	17_{4-} 614 $^{\circ}_5$	
2253.91	25 r	4	44353.60	+0.14	$^5D_{0-}$ 443 $^{\circ}_1$	
2254.224	20		44347.43	+0.23	$^3P_{0-}$ 538 $^{\circ}_1$	
2254.574	30	2	44340.54	-0.05	$^3H_{5-}$ 594 $^{\circ}_6$	
2255.505	20	1	44322.24	-0.13	$^3H_{4-}$ 564 $^{\circ}_3$	
2255.584	8		44320.69			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2255.715	10	10 s	44318.12	+0.17	⁵ D ₃ - 491° ₄	
2256.12	15		44310.16	+0.07	³ G ₄ - 607° ₅	
2256.56	3		44301.52			
2258.12	40	30 s	44270.92	+0.12	³ G ₃ - 576° ₃	
2258.276	2		44267.86	-0.05	⁵ D ₂ - 475° ₃	
2259.585	30		44242.22	+0.08	⁵ D ₃ - 490° ₃	
2259.81	3		44237.82			
2260.10	35 r	5	44232.14	-0.05	⁵ D ₁ - 459° ₂	
2260.98	5	2	44214.92			
2261.39	8		44206.91			
2262.06	12		44193.82	+0.12	³ H ₅ - 592° ₅	
2262.18	8		44191.47			
2263.158	15	1	44172.38	+0.02	³ H ₆ - 611° ₇	
2263.274	15		44170.11	+0.07	³ H ₄ - 563° ₃	
2263.88	35 r		44158.3	+0.15	⁵ D ₂ - 474° ₃	
2264.45	4		44147.2			
2265.42	7	3	44128.3	+0.19	⁷ S ₃ - 470° ₂	
2265.67	35	20 s	44123.4	+0.16	³ G ₃ - 574° ₄	
2265.915	6		44118.64	+0.15	³ H ₄ - 562° ₅	
2265.994	12		44117.10	+0.10	⁵ D ₂ - 474° ₂	
2266.78	2		44101.80	+0.02	³ H ₅ - 591° ₄	
2266.90	15		44099.5			
2267.19	15		44093.8	+0.11	³ H ₄ - 562° ₄	
2267.36	4	2	44090.5	-0.01	⁵ D ₁ - 457° ₁	
2268.60	4	1	44066.4			
2268.646	35	1	44065.53	+0.22	⁵ D ₄ - 502° ₄	
2268.98	20		44059.0	+0.13	³ H ₅ - 591° ₆	
2269.71	4		44044.9			
2270.15	15		44036.3	+0.09	⁵ D ₂ - 473° ₃	
2271.374	40	2	44012.61	-0.06	12 ₄ - 561° ₄	
2272.135	15		43997.87	+0.10	19535 ₅ - 635° ₆	
2273.02	40		43980.74	+0.19	⁷ S ₃ - 469° ₄	
2273.75	30		43966.6	-0.09	³ G ₃ - 573° ₄	
				+0.23	⁵ D ₄ - 501° ₃	
2273.984	10		43962.10	+0.11	15 ₃ - 594° ₂	
2274.405	40		43953.96	+0.18	³ G ₄ - 603° ₄	
2274.782	20		43946.68	+0.20	³ H ₄ - 561° ₃	
2275.138	8		43939.80	+0.07	15 ₃ - 593° ₃	
2275.645	25	4	43930.02	0.00	⁵ D ₂ - 472° ₁	
2276.253	15	30	43918.28	+0.06	⁵ D ₄ - 501° ₅	
2277.583	60 r	20 s	43892.64	+0.02	⁵ D ₀ - 438° ₁	
2280.00	2	1	43846.1	+0.02	⁵ D ₃ - 486° ₄	
2280.226	20		43841.77	+0.12	13 ₂ - 576° ₃	
2280.621	30	12 s	43834.18	+0.13	³ H ₅ - 589° ₅	
				-0.14	17 ₃ - 615° ₄	
2280.85	25		43829.8			
2281.050	35	12	43825.93	-0.01	³ H ₄ - 559° ₅	
2281.95	30		43808.6			
2282.508	30		43797.94	+0.07	³ G ₄ - 602° ₅	
2282.75	35	2	43793.3	-0.10	³ H ₄ - 559° ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2283.266	25	5 s	43783.40	+0.18	³ G ₃₋ 571° ₃	3
2283.496	15		43778.99	+0.02	³ H ₅₋ 588° ₄	
2283.771	20		43773.72			
2284.794	40	3	43754.12	+0.25	⁵ D ₂₋ 470° ₂	
2284.909	40		43751.92	-0.05	⁵ D ₁₋ 454° ₂	
2285.17	100 r	8	43746.92	+0.22	⁵ D ₄₋ 499° ₃	
2285.90	20		43732.95	+0.05	³ H ₆₋ 607° ₅	
2286.21	40		43727.0	-0.01	³ G ₄₋ 601° ₄	
2287.012	15		43711.69	-0.01	15 ₃₋ 591° ₄	
2287.212	20	2	43707.87	0.00	³ H ₅₋ 587° ₄	
2287.344	18		43705.35	+0.07	³ H ₄₋ 558° ₄	
2287.46	8	5 s	43703.1	-0.61	⁵ D ₁₋ 453° ₁	
2287.68	30	1	43698.9	-0.07	³ P ₀₋ 532° ₁	
2288.10	20		43690.9	-0.13	³ H ₅₋ 587° ₆	
2288.695	20		43679.55	+0.01	14 ₂₋ 586° ₂	
2289.01	12	8 s	43673.54	-0.22	⁷ S ₃₋ 466° ₄	
2289.31	15	9	43667.82	-0.10	14 ₂₋ 586° ₃	
2289.864	20		43657.26			
2290.206	2		43650.74	0.00	³ G ₃₋ 569° ₂	
2290.73	6		43640.75			
2290.95	30	4	43636.56	-0.04	⁵ D ₁₋ 453° ₀	
2291.09	35		43633.9	+0.38	³ H ₄₋ 557° ₅	
				-0.49	17 ₄₋ 607° ₅	
2291.63	6	1	43623.6			
2291.724	6		43621.83			
2291.86	5		43619.24	0.00	14 ₂₋ 585° ₂	
2292.43	5	1	43608.4			
2294.494	80 r	8	43569.17	-0.08	⁵ D ₄₋ 497° ₄	7
2297.402	12	4	43514.03	+0.09	³ P ₀₋ 530° ₁	
2297.546	4		43511.30	-0.04	14 ₂₋ 584° ₃	
2298.332	25	6	43496.42	+0.01	⁵ D ₃₋ 483° ₃	
2298.521	20		43492.85	+0.10	³ H ₅₋ 585° ₅	
2298.727	20	2	43488.95	+0.11	⁵ D ₃₋ 483° ₂	
2299.032	20	1	43483.18	+0.07	³ G ₃₋ 568° ₄	
2299.15	25	3	43480.94	+0.02	⁵ D ₂₋ 468° ₂	
2299.55	8		43473.4			
2299.97	3		43465.4			
2300.70	2	3	43451.7			7
2300.906	10	3	43447.76			
2301.072	6		43444.63			
2301.568	6		43435.27	+0.33	³ H ₄₋ 555° ₄	
2301.642	20	30 s	43433.87	-0.30	⁷ S ₃₋ 463° ₃	
2302.282	25	6	43421.8			
2302.514	4		43417.42	+0.23	⁵ D ₄₋ 496° ₄	
2302.676	20	1	43414.37	+0.08	⁵ D ₃₋ 482° ₂	
2303.102	30	6	43406.34	+0.01	³ H ₆₋ 604° ₆	
2304.036	3	2	43388.74	-0.15	15 ₃₋ 588° ₄	
2304.587	4		43378.37			7
2305.087	20		43368.96	+0.37	³ G ₃₋ 567° ₃	
2305.876	12		43354.13	+0.06	13 ₂₋ 571° ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
2306.160	10		43348.79	+0.06	⁵ D ₁ - 450 [°] ₂	7
2306.593	35 <i>r</i>	5	43340.65	+0.10	⁵ D ₃ - 481 [°] ₃	
2307.148	3		43330.23	-0.03	³ H ₄ -55492 [°] ₅	
2307.826	4	10	43317.50	-0.29	15 ₃ - 587 [°] ₄	
2308.012	1		43314.0	0.00	14 ₂ - 582 [°] ₁	
2309.018	25 <i>r</i>	6	43295.14	+0.13	⁵ D ₄ - 495 [°] ₃	
2309.11	15		43293.4	+0.01	³ H ₄ -55455 [°] ₅	
2309.93	3		43278.05	-0.03	17 ₄ - 603 [°] ₄	
2310.88	20	3	43260.25	+0.05	³ H ₅ -58330 [°] ₄	
2311.46	8		43249.4			
2311.608	8		43246.6	+0.07	³ H ₅ -58316 [°] ₄	7
2311.734	6		43244.28			
2311.854	15	1	43242.03	+0.02	³ G ₄ - 596 [°] ₅	
2312.373	12	1	43232.33			
2312.50	8		43229.9	+0.08	14 ₂ - 582 [°] ₃	
2312.638	5		43227.37	+0.03	³ H ₄ - 553 [°] ₃	
2313.012	25	2	43220.38	-0.30	³ H ₆ - 602 [°] ₅	
2313.170	30 <i>r</i>	6	43217.43	+0.10	⁵ D ₀ - 432 [°] ₁	
2314.174	20 <i>r</i>	5	43198.68	+0.11	⁵ D ₄ - 494 [°] ₃	
2314.332	8		43195.74	+0.03	15 ₃ - 586 [°] ₂	
2314.83	5		43186.4			7
2314.946	15		43184.28	+0.04	³ H ₄ - 553 [°] ₄	
2315.474	5		43174.44			
2316.587	12		43153.70	+0.16	³ G ₃ - 565 [°] ₄	
2316.644	6		43152.63	+0.14	19 ₅ - 626 [°] ₆	
2317.392	15	8	43138.71	+0.09	⁵ D ₃ - 479 [°] ₄	
2317.554	12	8	43135.68	-0.09	³ G ₃ - 564 [°] ₃	
2318.28	8		43122.2	+0.03	17 ₄ - 602 [°] ₅	
2318.565	12		43116.88	+0.15	⁷ S ₃ - 460 [°] ₃	
2318.643	12		43115.43	+0.03	14 ₂ - 580 [°] ₃	
2318.96	25	4	43109.5	+0.05	³ H ₅ - 581 [°] ₅	(0)
2321.25	15	1	43067.0	+0.08	⁵ D ₁ - 447 [°] ₁	
2321.629	40 <i>r</i>	10	43059.98	+0.05	⁵ D ₂ - 463 [°] ₃	
2322.098	4		43051.29	-0.02	17 ₄ - 601 [°] ₄	
2322.134	5		43050.62			
2323.380	20		43027.53	+0.02	15 ₃ - 584 [°] ₃	
2324.750	12		43002.18	-0.04	⁵ D ₂ - 463 [°] ₂	
2325.462	3		42989.01	0.00	19 ₅ - 625 [°] ₆	
2325.761	10		42983.48	+0.04	³ G ₃ - 563 [°] ₃	
2326.564	25 <i>r</i>	8	42968.65	+0.06	⁵ D ₄ - 491 [°] ₅	
2326.698	15 <i>r</i>	4	42966.17	+0.07	⁵ D ₂ - 462 [°] ₁	(0)
2326.786	12		42964.55			
2327.505	8		42951.28	+0.09	⁷ S ₃ - 459 [°] ₂	
2327.592	8	5 <i>s</i>	42949.67	+0.16	³ P ₀ - 524 [°] ₁	
2328.144	2		42939.49	+0.07	13 ₂ - 567 [°] ₃	
2328.732	6	2	42928.65	+0.03	⁵ D ₄ - 491 [°] ₄	
2328.872	15		42926.07	+0.08	⁵ D ₁ - 445 [°] ₂	
2329.316	12	3	42917.88	+0.07	⁷ S ₃ - 458 [°] ₄	
2329.896	8		42907.20	+0.11	³ G ₃ - 562 [°] ₄	
2331.292	30 <i>r</i>	3	42881.51	+0.13	³ H ₄ - 550 [°] ₄	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
2331.909	15	2	42870.16	+0.04	15 ₃ -58330 ₄ [°]	3
2332.378	5		42861.55	+0.09	19826 ₅ - 626 ₆ [°]	
2332.493	15	1	42859.44	+0.11	⁵ D ₃ - 476 ₄ [°]	
2332.646	5		42856.63	+0.18	15 ₃ -58316 ₄ [°]	
2332.758	8	2	42854.57	+0.02	⁵ D ₄ - 490 ₅ [°]	
2332.848	8		42852.92	+0.11	⁵ D ₄ - 490 ₃ [°]	
2333.055	1		42849.11	-0.13	³ H ₅ - 579 ₆ [°]	
2333.146	25	12 s	42847.44	+0.18	³ H ₄ - 550 ₅ [°]	
2333.967	12		42832.37	+0.05	³ G ₄ - 592 ₅ [°]	
2334.301	20		42826.24	+0.17	³ G ₃ - 561 ₄ [°]	
2335.787	4		42799.00			
2336.866	8		42779.24	+0.15	⁵ D ₂ - 461 ₁ [°]	
2337.17	25	1	42773.68			
2337.724	10	1	42763.54	+0.10	⁵ D ₃ - 475 ₃ [°]	
2337.918	8		42759.99	+0.11	³ G ₃ - 561 ₃ [°]	
2338.155	15		42755.66			
2338.478	20	2	42749.75	+0.10	³ H ₄ - 549 ₄ [°]	
2338.681	2	1	42746.04	+0.05	15 ₃ - 582 ₃ [°]	
2338.871	12		42742.57	+0.08	⁵ D ₂ - 460 ₃ [°]	
2338.983	10	3	42740.53	+0.13	³ G ₄ - 591 ₄ [°]	
2339.348	15		42733.86	+0.13	³ H ₅ - 578 ₄ [°]	
2339.543	15		42730.30	+0.12	³ P ₁ - 560 ₂ [°]	
2340.837	12	4	42706.68	+0.06	13 ₂ - 564 ₃ [°]	
2340.99	4	2	42703.89			
2341.368	25	35 s	42696.99	-0.22	⁵ D ₁ - 443 ₂ [°]	
2341.816	20		42688.82	+0.10	³ G ₃ - 560 ₂ [°]	
2342.122	12		42683.25	+0.08	⁵ D ₁ - 443 ₁ [°]	
2342.469	35	2	42676.92			
2342.995	5		42667.34			
2343.125	15	7	42664.98	+0.16	³ H ₆ - 596 ₅ [°]	
2343.74	10		42653.78	+0.10	⁵ D ₃ - 474 ₃ [°]	
2344.32	1		42643.23	+0.05	14 ₂ - 576 ₃ [°]	
2344.918	8		42632.36	-0.01	³ H ₅ - 577 ₆ [°]	
2344.958	2		42631.63	+0.06	15 ₃ - 580 ₃ [°]	
2345.622	4		42619.56	+0.07	19535 ₅ - 621 ₅ [°]	
2346.007	8	1	42612.57	+0.04	⁵ D ₃ - 474 ₂ [°]	
2346.32	5		42606.89	+0.09	³ G ₃ - 559 ₄ [°]	
2346.693	10		42600.11	+0.08	⁷ S ₃ - 455 ₃ [°]	
2347.97	10		42576.95	0.00	⁵ D ₂ - 459 ₂ [°]	
2348.16	8		42573.50	+0.01	⁵ D ₀ - 425 ₁ [°]	
2348.557	5	1	42566.30	-0.01	17 ₄ - 596 ₅ [°]	
2348.847	3	1	42561.05	+0.06	18 ₃ - 615 ₄ [°]	
2349.328	12		42552.33	+0.11	³ P ₁ - 558 ₁ [°]	
2350.461	10	1	42531.83	+0.09	⁵ D ₃ - 473 ₃ [°]	
2350.546	8	1	42530.29	+0.10	⁵ D ₃ - 473 ₄ [°]	
2351.792	10	1	42507.76	-0.03	⁵ D ₃ - 473 ₂ [°]	
2351.895	1		42505.90	-0.06	19 ₆ - 621 ₅ [°]	
2352.734	4		42490.74	-0.16	³ H ₅ - 575 ₅ [°]	
2352.962	12		42486.62	+0.06	³ G ₃ - 558 ₂ [°]	
2353.38	4		42479.08			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2353.737	7		42472.64	-0.03	³ G ₄₋ 589 [°] ₅	3
2353.827	7		42471.01	+0.04	⁷ S ₃₋ 454 [°] ₂	
2354.614	15 r	8	42456.82	+0.07	⁵ D ₄₋ 486 [°] ₄	
2356.087	4	1	42430.28			
2356.789	8	1	42417.64	+0.05	³ G ₄₋ 588 [°] ₄	
2357.078	3		42412.44			
2357.657	10	1	42402.02	0.00	³ H ₆₋ 594 [°] ₆	
2358.068	15	1	42394.63	+0.16	³ H ₄₋ 545 [°] ₃	
2359.098	2		42376.12	-0.02	14 ₂₋ 573 [°] ₃	
2360.44	15 r	5	42352.03	-0.13	⁵ D ₂₋ 456 [°] ₃	
2360.753	3		42346.42	-0.07	³ G ₄₋ 587 [°] ₄	
2360.91	5		42343.60	-0.05	15 ₃₋ 578 [°] ₄	
2361.194	12	10 s	42338.51	+0.03	³ H ₆₋ 593 [°] ₇	
2361.622	10		42330.84	+0.11	13 ₂₋ 561 [°] ₃	
2361.755	4		42328.45	-0.01	19826 ₅₋ 621 [°] ₅	
2362.641	6		42312.59	+0.03	³ P ₁₋ 556 [°] ₂	
2363.072	18 r	8	42304.87	-0.06	⁵ D ₁₋ 439 [°] ₂	
2363.464	8	14 s	42297.85	-0.07	17 ₃₋ 599 [°] ₂	
2363.752	2		42292.70	-0.03	17 ₄₋ 593 [°] ₃	
2364.884	5		42272.46	+0.01	15 ₃₋ 577 [°] ₃	
2364.958	8		42271.13	+0.03	³ G ₃₋ 556 [°] ₂	
2365.452	12	4	42262.30	0.00	⁵ D ₀₋ 422 [°] ₁	
2365.853	20		42255.14	+0.01	³ H ₆₋ 592 [°] ₅	
2366.177	15	3	42249.36	-0.04	⁵ D ₃₋ 470 [°] ₂	
2366.236	5	2	42248.30	-0.04	³ G ₃₋ 555 [°] ₄	
2366.958	25	4	42235.42	+0.04	³ P ₀₋ 517 [°] ₁	
2367.374	3		42228.00			
2367.504	4		42225.68	-0.11	⁵ D ₂₋ 455 [°] ₃	
2367.693	10	4	42222.31	-0.02	⁵ D ₁₋ 438 [°] ₁	
2368.216	2	2	42212.98	+0.19	³ G ₄₋ 586 [°] ₃	
2369.088	6		42197.45	-0.05	³ G ₃₋ 555 [°] ₃	
2369.552	4		42189.19			
2370.888	15	2	42165.40	-0.08	⁷ S ₃₋ 451 [°] ₄	
2371.387	12	1	42156.54	-0.08	17 ₄₋ 592 [°] ₅	
2371.849	8		42148.33	-0.01	³ H ₄₋ 543 [°] ₅	
2372.804	14		42131.37	0.00	³ G ₄₋ 585 [°] ₅	
2373.43	10		42120.26	-0.04	³ H ₆₋ 591 [°] ₆	
2374.127	10	1	42107.89	+0.08	³ H ₄₋ 542 [°] ₃	
2374.176	7	1	42107.02	-0.06	⁵ D ₄₋ 483 [°] ₃	
2374.468	30 r		42101.85	+0.01	⁵ D ₃₋ 469 [°] ₄	
2374.756	10	3	42096.74	+0.01	⁵ D ₂₋ 454 [°] ₂	
2375.536	4		42082.92	-0.14	³ P ₁₋ 553 [°] ₂	
2375.61	3		42081.61	0.00	13 ₂₋ 558 [°] ₁	
2375.753	10		42079.08	+0.04	³ H ₅₋ 571 [°] ₆	
2376.064	20	8	42073.57	+0.02	³ H ₅₋ 571 [°] ₅	
2376.394	6		42067.73	0.00	⁷ S ₃₋ 450 [°] ₂	
2376.566	15	2	42064.68	-0.02	17 ₄₋ 591 [°] ₄	
2376.644	3		42063.30	+0.05	⁷ S ₃₋ 450 [°] ₃	
2376.975	10	1	42057.44	+0.03	13 ₂₋ 558 [°] ₂	
2377.048	15	1	42056.15	-0.06	³ G ₄₋ 584 [°] ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2377.484	1		42048.44	-0.03	⁵ D ₂ - 453 [°] ₁	
2377.916	10	1	42040.80	+0.06	³ G ₃ - 553 [°] ₃	
2378.916	7		42023.13	+0.01	14 ₂ - 569 [°] ₂	
2379.066	12		42020.48			
2379.556	7	8	42011.83	+0.04	15 ₃ - 574 [°] ₄	
2379.65	12		42010.17			
2380.194	2		42000.57	+0.08	19535 ₅ - 615 [°] ₄	
2380.356	3		41997.71	+0.07	³ G ₃ - 553 [°] ₄	
2380.832	7	1	41989.32	+0.04	⁷ S ₃ - 449 [°] ₄	
2381.559	15	1	41976.50	+0.05	⁵ D ₃ - 468 [°] ₂	
2382.673	10		41956.88	+0.06	³ H ₄ - 541 [°] ₄	
2382.99	20 <i>r</i>	4	41951.29	+0.07	⁵ D ₄ - 481 [°] ₃	
2383.39	4		41944.25			
2383.548	4		41941.47	-0.12	19535 ₅ - 614 [°] ₅	
2384.824	25 <i>r</i>	30	41919.04	-0.01	⁵ D ₄ - 481 [°] ₅	
2384.982	2		41916.26	-0.01	18 ₁ - 599 [°] ₂	
2386.162	20	2	41895.53	+0.05	³ H ₆ - 589 [°] ₅	
2386.348	9		41892.27	-0.04	15 ₃ - 573 [°] ₃	
2386.75	3		41885.21	+0.06	³ G ₄ -58316 [°] ₄	
2386.918	1		41882.26	0.00	18 ₂ - 599 [°] ₂	
2387.212	3		41877.10			
2389.078	15 <i>r</i>	4	41844.40	+0.01	⁵ D ₁ - 435 [°] ₂	
2389.21	2		41842.1	+0.15	13 ₂ - 556 [°] ₂	
2391.794	2		41796.89	-0.08	17 ₄ - 589 [°] ₅	
2391.896	10		41795.10	+0.05	⁵ D ₃ - 466 [°] ₄	
2392.932	20	60 <i>s</i>	41777.01	+0.09	³ P ₁ -55084 [°] ₂	
2393.063	15		41774.72	+0.03	³ G ₄ - 582 [°] ₃	
2393.424	25	5	41768.42	+0.07	13 ₂ - 555 [°] ₃	
2393.808	8		41761.72	-0.02	³ H ₅ - 568 [°] ₄	
2394.444	12	7 <i>s</i>	41750.63			
2394.522	3		41749.27	-0.02	⁵ D ₄ - 479 [°] ₄	
2394.59	8		41748.09	+0.02	³ G ₄ - 581 [°] ₅	
2394.947	10	1	41741.86	-0.03	17 ₄ - 588 [°] ₄	
2395.313	15 <i>r</i>	2	41735.49	+0.03	³ G ₃ -55084 [°] ₂	
2395.476	30 <i>r</i>	3	41732.65	+0.03	³ P ₀ - 512 [°] ₁	
2395.878	10		41725.63	+0.06	³ P ₁ -55032 [°] ₂	
2396.153	1		41720.85	+0.03	17 ₃ - 594 [°] ₂	
2396.287	2		41718.51	-0.11	⁵ S ₂ - 599 [°] ₂	
2396.902	4		41707.81	-0.01	19 ₃ - 615 [°] ₄	
2397.304	9	1	41700.81	+0.05	³ H ₄ - 538 [°] ₅	
2397.434	9		41698.54	-0.02	17 ₃ - 593 [°] ₃	
2397.652	2		41694.77	-0.01	³ G ₃ - 550 [°] ₄	
2397.726	20 <i>r</i>	5	41693.48	-0.01	⁵ D ₂ - 450 [°] ₂	Res
2397.984	25 <i>r</i>		41689.00	-0.01	⁵ D ₂ - 450 [°] ₃	Res
2398.118	8		41686.67	0.00	³ H ₄ - 538 [°] ₄	
2398.260	10		41684.20	+0.09	³ G ₃ -55032 [°] ₂	
2399.037	15	2	41670.70	-0.09	17 ₄ - 587 [°] ₄	
2400.198	3		41650.54	-0.02	19826 ₅ - 614 [°] ₅	
2400.519	5	8 <i>s</i>	41644.98	-0.01	⁷ S ₃ - 445 [°] ₂	
2401.155	18	1	41633.94	+0.03	³ P ₁ - 549 [°] ₁	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2401.298	12	4	41631.46	-0.05	⁵ D ₄ - 478 [°] ₅	
2402.394	6		41612.47	+0.02	13 ₂ - 553 [°] ₂	
2402.446	15	2	41611.57	-0.02	13 ₂ - 553 [°] ₃	
2402.733	7	2	41606.60	-0.07	13 ₂ - 553 [°] ₁	
2402.924	3	1	41603.30			
2404.244	25	20	41580.47			
2405.257	35		41562.95	-0.10	³ C ₃ - 549 [°] ₄	
2405.580	30 <i>r</i>	8	41557.36	-0.01	⁵ D ₁ - 432 [°] ₂	
2405.689	20 <i>r</i>	6	41555.48	+0.02	⁵ D ₃ - 463 [°] ₃	
2405.764	15		41554.20	+0.02	³ H ₆ - 585 [°] ₅	
2406.180	15 <i>r</i>	3	41547.01	-0.03	⁵ D ₁ - 432 [°] ₁	
2406.632	2		41539.20	-0.09	15 ₃ - 569 [°] ₂	
2406.760	10		41537.00	-0.09	17 ₄ - 586 [°] ₃	
2407.039	2		41532.18	-0.14	19 ₆ - 611 [°] ₇	
2408.282	12	15 <i>s</i>	41510.73	+0.14	³ C ₃ - 548 [°] ₂	
2408.444	5		41507.95	-0.20	14 ₂ - 564 [°] ₃	
2409.034	15	3	41497.78	+0.03	⁵ D ₃ - 463 [°] ₂	
2409.155	8		41495.70	-0.03	⁷ S ₃ - 444 [°] ₃	
2409.776	1		41485.01	-0.15	19 ₄ - 607 [°] ₅	
2410.620	15	1	41470.50	-0.03	17 ₃ - 591 [°] ₄	
2411.427	7		41456.60	-0.04	³ H ₅ - 565 [°] ₆	
2411.483	7		41455.64	-0.03	17 ₄ - 585 [°] ₅	
2412.847	1		41432.22	+0.05	³ H ₅ - 565 [°] ₄	
2413.782	15	2	41416.17	-0.04	⁷ S ₃ - 443 [°] ₂	
2414.039	20 <i>r</i>	4	41411.75	+0.07	⁵ D ₂ - 447 [°] ₁	
2414.118	4	7 <i>s</i>	41410.40	-0.18	18 ₃ - 603 [°] ₄	
2414.417	4		41405.27			
2414.627	5	2	41401.67			
2415.685	35 <i>r</i>	8	41383.54	-0.05	⁵ D ₁ - 430 [°] ₀	
2415.871	6	1	41380.36	-0.15	17 ₄ - 584 [°] ₃	
2416.237	15	1	41374.08	-0.11	⁵ D ₄ - 475 [°] ₃	
2416.339	10		41372.34	-0.01	³ C ₄ - 578 [°] ₄	
2417.290	2		41356.06	+0.24	14 ₂ - 563 [°] ₃	
2418.360	5		41337.78			
2418.822	3		41329.87			
2420.202	20	2	41306.31	0.00	13 ₂ -55084 [°] ₂	
2420.504	8	15	41301.16	+0.01	³ C ₄ - 577 [°] ₃	
2422.292	30	20 <i>s</i>	41270.67	-0.08	⁵ D ₂ - 445 [°] ₂	
2422.662	12		41264.37	+0.02	⁵ D ₄ - 474 [°] ₃	
2423.214	1		41254.97	+0.01	13 ₂ -55032 [°] ₂	
2424.206	80 <i>r</i>	8	41238.10	+0.08	⁵ D ₃ - 460 [°] ₃	Res
2424.770	15		41228.51	+0.05	³ H ₄ -53390 [°] ₃	
2425.086	1		41223.13	+0.01	17 ₄ -58330 [°] ₄	
2425.850	3	3	41210.15	-0.37	³ H ₅ - 562 [°] ₅	
2425.888	5		41209.50	+0.05	17 ₄ -58316 [°] ₄	
2425.975	10	6 <i>s</i>	41208.02	+0.15	³ C ₃ - 545 [°] ₃	
2426.076	9		41206.31	-0.08	19535 ₅ - 607 [°] ₅	
2426.805	5		41193.94			
2427.156	2		41187.97	-0.08	³ C ₄ - 576 [°] ₃	
2427.282	15	2	41185.84	+0.12	³ H ₅ - 562 [°] ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2427.408	7		41183.70	+0.16	³ H ₄ -53345 ₃	
2428.158	8		41170.98	+0.10	³ H ₆ - 581 ₅	
2428.600	6		41163.49	+0.19	13 ₂ - 549 ₁	
2429.838	15	3	41142.50	+0.09	⁵ D ₄ - 473 ₃	
2429.930	5		41140.96	+0.10	⁵ D ₄ - 473 ₄	
2430.440	20	2	41132.33	+0.07	14 ₂ - 561 ₃	
2430.604	5		41129.56	+0.04	³ C ₄ - 575 ₅	
2430.647	3		41128.82	-0.03	19 ₄ - 603 ₄	
2430.976	6		41123.26	+0.07	13 ₂ - 549 ₃	
2431.081	25 <i>r</i>	5	41121.49	0.00	⁵ D ₂ - 444 ₃	
2431.604	4		41112.64	+0.07	³ P ₁ - 544 ₁	
2431.811	3		41109.14			
2432.670	2		41094.63			
2432.776	4		41092.83	-0.03	19 ₆ - 607 ₅	
2433.442	10	1	41081.59	+0.15	13 ₂ - 548 ₂	
2433.739	12	2	41076.57	+0.12	³ H ₄ - 532 ₄	
				-0.05	17 ₃ - 587 ₄	
2433.982	25	20 <i>s</i>	41072.47	-0.01	⁵ D ₃ - 459 ₂	
2434.140	6		41069.81	+0.10	⁷ S ₃ - 440 ₃	
2434.254	10	12 <i>s</i>	41067.88	+0.18	³ P ₁ - 543 ₁	
2434.658	5		41061.07	-0.03	14 ₂ - 560 ₂	
2435.782	12	3	41042.13	+0.16	⁵ D ₂ - 443 ₂	
				+0.04	15 ₃ - 565 ₄	
2435.874	6		41040.58	+0.09	³ C ₄ - 574 ₄	
2435.957	80	20	41039.18	+0.08	⁵ D ₃ - 458 ₄	
2436.255	10	2	41034.16	+0.04	⁷ S ₃ - 439 ₄	
2436.363	3		41032.34	+0.05	³ H ₄ - 531 ₅	
2436.624	25 <i>r</i>	6	41027.94	+0.01	⁵ D ₂ - 443 ₁	
2436.838	5		41024.34	+0.02	15 ₃ - 564 ₃	
2437.952	10	1	41005.60	0.11	³ P ₀ - 505 ₁	
2438.964	8		40988.58	+0.04	³ P ₁ - 542 ₀	
2439.200	12		40984.62	+0.05	17 ₄ - 580 ₃	
2440.880	5		40956.42	+0.09	³ H ₄ - 531 ₄	
2440.993	3	1	40954.51	-0.03	17 ₃ - 586 ₂	
2441.690	2		40942.83	-0.09	17 ₃ - 586 ₃	
2442.391	2		40931.07	+0.08	⁵ S ₂ - 592 ₂	
2442.976	25	1	40921.27	+0.06	³ C ₃ - 542 ₃	
2443.171	10	3	40918.01	+0.04	³ H ₅ - 559 ₅	
2443.326	12	1	40915.41	+0.05	19826 ₅ - 607 ₅	
2443.612	40	5	40910.62	-0.05	³ H ₆ - 579 ₆	
2444.056	60 <i>r</i>	12	40903.20	0.00	⁵ D ₁ - 425 ₁	Res
2444.170	3	1	40901.29			
2444.272	2		40899.58	+0.03	⁷ S ₃ - 438 ₃	
2444.590	2		40894.26	+0.02	17 ₃ - 585 ₂	
2445.119	2		40885.41	-0.02	³ H ₅ - 559 ₄	
2445.255	4		40883.14	0.00	14 ₂ - 558 ₁	
2445.455	8	1	40879.80	-0.02	19535 ₅ - 604 ₆	
2445.918	5		40872.05	+0.06	15 ₃ - 563 ₃	
2446.704	4		40858.92	-0.02	14 ₂ - 558 ₂	
2446.800	5		40857.33			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2447.375	10		40847.73	+0.04	⁵ D ₃ - 456 [°] ₃	Res
2448.390	25 <i>r</i>	3	40830.80	+0.07	³ H ₄ - 529 [°] ₄	
2450.398	4		40797.34	+0.03	³ H ₅ - 558 [°] ₄	
2450.50	6	1	40795.64	0.00	15 ₃ - 562 [°] ₄	
2451.346	30 <i>r</i>	4	40781.56	+0.04	³ H ₄ - 529 [°] ₃	
2451.484	70 <i>r</i>		40779.26	-0.05	⁵ D ₁ - 424 [°] ₂	Res
2451.576	4		40777.73	-0.02	³ H ₅ - 558 [°] ₆	
2451.996	100 <i>r</i>	15	40770.74	-0.04	⁵ D ₀ - 407 [°] ₁	
2452.063	4		40769.64	+0.06	⁷ S ₃ - 437 [°] ₄	
2452.107	3	1	40768.90			
2453.232	3		40750.22			Res
2454.717	40 <i>r</i>	5	40725.56	+0.01	³ H ₅ - 557 [°] ₅	
2454.978	80	10	40721.23	-0.09	⁵ D ₃ - 455 [°] ₃	
2455.372	10		40714.70	+0.08	15 ₃ - 561 [°] ₄	
2455.506	80 <i>r</i>	10 <i>s</i>	40712.48	-0.03	⁵ D ₄ - 469 [°] ₄	
2456.228	15	2	40700.51	+0.04	³ G ₄ - 571 [°] ₃	Res
2456.454	5 <i>b</i>		40696.77	+0.12	17 ₄ - 578 [°] ₄	
2456.534	150 <i>r</i>	8	40695.44	-0.03	⁵ D ₂ - 440 [°] ₃	
2456.616	3		40694.08	+0.28	³ H ₆ - 577 [°] ₆	
2459.146	4		40652.22	+0.04	³ P ₁ - 539 [°] ₂	
2459.300	140 <i>r</i>	20	40649.68	-0.01	⁵ D ₂ - 439 [°] ₂	Res
2459.602	20	10 <i>s</i>	40644.68	+0.08	³ H ₄ - 528 [°] ₃	
2459.674	3		40643.50	+0.02	14 ₂ - 556 [°] ₂	
2459.768	3		40641.94	-0.02	13 ₂ - 544 [°] ₁	
2460.160	50 <i>r</i>	5	40635.47	0.00	⁵ D ₄ - 468 [°] ₅	
2460.548	10		40629.06	+0.11	17 ₃ -58330 [°] ₄	Res
2460.763	6		40625.51	+0.06	17 ₄ - 577 [°] ₃	
2460.894	15	1	40623.34	+0.03	19535 ₅ - 601 [°] ₄	
2461.384	3		40615.26	-0.02	17 ₃ -58316 [°] ₄	
2461.568	30	15	40612.22	+0.08	³ H ₄ - 527 [°] ₅	
2461.653	5		40610.82	+0.10	³ G ₃ - 539 [°] ₂	Res
2462.480	12	1	40597.19	+0.10	13 ₂ - 543 [°] ₁	
2462.793	100 <i>r</i>	15	40592.02	+0.01	⁵ D ₁ - 422 [°] ₁	
2462.986	10	1	40588.84	+0.05	19826 ₅ - 604 [°] ₆	
2463.486	1	3	40580.61	-0.03	19 ₆ - 602 [°] ₅	
2463.688	8	1	40577.28	+0.01	15 ₃ - 560 [°] ₂	Res
2463.952	2		40572.93	+0.04	18 ₁ - 586 [°] ₂	
2464.135	8	4	40569.92	+0.04	14 ₂ - 555 [°] ₃	
2464.305	60 <i>r</i>	6	40567.12	+0.03	⁵ D ₂ - 438 [°] ₁	
2464.489	2		40564.09	+0.10	³ G ₃ -53912 [°] ₂	
2464.532	2		40563.38	-0.01	⁷ S ₃ - 435 [°] ₂	Res
2464.798	3		40559.01	-0.04	19826 ₅ - 603 [°] ₄	
2464.897	2		40557.38	-0.03	19 ₃ - 603 [°] ₄	
2465.203	35		40552.34	+0.01	³ H ₆ - 575 [°] ₅	
2466.028	2		40538.78	-0.10	18 ₂ - 586 [°] ₂	
2466.848	100 <i>r</i>	15	40525.31	0.00	⁵ D ₂ - 438 [°] ₃	Res
2467.620	12	1	40512.63	+0.04	18 ₁ - 585 [°] ₂	
2468.094	4		40504.85	+0.03	17 ₃ - 582 [°] ₃	
2468.461	3		40498.82			
2468.668	7		40495.43	+0.08	15 ₃ - 559 [°] ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2468.875	5		40492.03	-0.03	13 ₂ - 542 ₃ [°]	
2470.260	4		40469.33			
2470.733	4		40461.59			
2471.208	25	3	40453.81	-0.01	17 ₄ - 575 ₅ [°]	
2471.592	5		40447.53	+0.04	18 ₃ - 594 ₂ [°]	
2471.956	5	4	40441.58			
2472.127	15	1	40438.77			
2472.506	70 <i>r</i>		40432.58	+0.03	⁵ D ₃ - 452 ₄ [°]	Res
2473.137	4		40422.26	-0.03	³ H ₅ -55492 ₅ [°]	
2473.458	1		40417.02	-0.06	19 ₄ - 596 ₅ [°]	
2473.644	3		40413.98	0.00	14 ₂ - 553 ₂ [°]	
2473.698	10	1	40413.09	-0.03	14 ₂ - 553 ₃ [°]	
2473.819	15	2	40411.12	0.00	⁵ D ₀ - 404 ₁ [°]	
2474.01	2		40408.0	-0.20	14 ₂ - 553 ₁ [°]	
2474.149	140 <i>r</i>	25	40405.73	+0.01	⁵ D ₄ - 466 ₄ [°]	3
2474.316	1		40403.00	-0.14	19826 ₅ - 602 ₅ [°]	
2474.478	10	2	40400.36	0.00	³ G ₄ - 568 ₄ [°]	
2474.865	4		40394.04			
2475.088	25		40390.40	0.00	17 ₃ - 580 ₃ [°]	
2475.392	2		40385.44	+0.02	³ H ₅ -55455 ₅ [°]	
2476.016	15	1	40375.26	+0.15	15 ₃ - 558 ₂ [°]	
				+0.02	⁵ S ₂ - 586 ₂ [°]	
2476.302	1		40370.60	-0.08	18 ₂ - 584 ₃ [°]	
2476.656	6		40364.83	+0.04	17 ₄ - 574 ₄ [°]	
2476.809	10		40362.34	+0.08	³ P ₁ - 536 ₂ [°]	
2476.992	3		40359.35			
2478.458	4		40335.49			
2478.644	6		40332.46	+0.18	19826 ₅ - 601 ₄ [°]	
2478.756	5		40330.64	0.00	19 ₃ - 601 ₄ [°]	
2479.361	4		40320.80	0.00	³ G ₃ - 536 ₂ [°]	
2479.720	3		40314.96	+0.02	⁵ S ₂ - 585 ₂ [°]	
2480.130	100 <i>r</i>	15	40308.29	-0.04	⁵ D ₁ - 419 ₂ [°]	
2480.658	20	2	40299.71	0.00	⁷ S ₃ - 432 ₄ [°]	
2480.955	60 <i>r</i>	6	40294.89	-0.06	⁵ D ₁ - 419 ₀ [°]	
2481.440	150 <i>r</i>	30	40287.02	-0.02	⁵ D ₄ - 465 ₅ [°]	
2481.504	5		40285.98	+0.16	³ G ₄ - 567 ₃ [°]	
2482.10	35 <i>r</i>	6	40276.3	-0.07	⁷ S ₃ - 432 ₂ [°]	
2482.212	30 <i>r</i>	5	40274.49	+0.01	³ H ₄ - 524 ₄ [°]	Res
2484.741	80 <i>r</i>	10	40233.50	-0.04	³ H ₄ - 523 ₅ [°]	7
2486.302	18	1	40208.24	0.00	17 ₄ - 573 ₄ [°]	
2486.708	5		40201.67			
2486.988	5		40197.15	-0.05	18 ₃ - 591 ₄ [°]	
2487.495	50 <i>r</i>	7	40188.96	-0.06	⁵ D ₃ - 450 ₂ [°]	Res
2487.770	12	1	40184.52	-0.02	⁵ D ₃ - 450 ₃ [°]	
2487.945	7		40181.68	+0.11	13 ₂ - 539 ₂ [°]	
2488.468	3		40173.25	-0.09	18 ₂ - 582 ₁ [°]	
2488.932	15	7 <i>s</i>	40165.76	-0.37	⁵ D ₄ - 463 ₃ [°]	
2489.306	2		40159.72	+0.07	15 ₃ - 556 ₂ [°]	
2489.720	35 <i>r</i>	8	40153.04	-0.01	⁵ D ₂ - 434 ₃ [°]	Res
2490.309	2		40143.55	+0.05	19 ₄ - 593 ₃ [°]	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2490.495	15	1	40140.55	+0.07	³ H ₆ - 571° ₆	Res
2490.718	12	25 s	40136.95	+0.06	15 ₃ - 555° ₄	
2490.846	25	2	40134.89	+0.05	13 ₂ -53912° ₂	
2491.998	8	1	40116.34			
2492.360	30	3	40110.51	-0.06	⁵ D ₃ - 449° ₄	
2492.522	5		40107.91	+0.07	14 ₂ -55084° ₂	
2493.160	18	1	40097.65	+0.10	13 ₂ - 538° ₁	
2493.394	30	4	40093.88	+0.04	³ H ₄ - 522° ₃	
2493.877	4		40086.12	+0.07	15 ₃ - 555° ₃	
2494.831	30	3	40070.79	0.00	³ G ₄ - 565° ₄	
2495.011	3		40067.90			
2495.264	100 r	10	40063.84	0.00	⁵ D ₁ - 417° ₂	
2495.72	10		40056.52	+0.02	14 ₂ -55032° ₂	
2495.931	15	1	40053.13	+0.11	³ G ₄ - 564° ₃	
2496.110	3	1	40050.26			
2496.249	4		40048.03	+0.03	23 ₆ - 635° ₆	Res
2496.97	25	2	40036.47	0.00	17 ₄ - 571° ₅	
2497.293	18	2	40031.29	+0.01	17 ₃ - 577° ₃	
2497.697	8	2	40024.81	+0.04	17 ₄ - 571° ₃	
				+0.03	19 ₆ - 596° ₅	
2498.638	6		40009.74	+0.04	⁵ S ₂ - 582° ₁	
2498.788	3		40007.34	-0.05	19 ₄ - 592° ₅	
2499.432	25	3	39997.04	+0.08	³ G ₃ -53345° ₃	
2500.638	3		39977.74	-0.08	³ P ₁ - 532° ₂	
2500.829	1		39974.69	-0.05	18 ₂ - 580° ₃	
2500.905	5		39973.48	+0.07	³ H ₅ - 550° ₄	
2501.440	5		39964.93	+0.10	14 ₂ - 549° ₁	
2501.780	20	3	39959.5	+0.05	⁷ S ₃ - 429° ₄	
2501.896	30		39957.65	-0.24	³ P ₂ - 592° ₂	
2503.042	12	1	39939.35	+0.06	³ H ₅ -55009° ₅	
2503.226	4		39936.42	+0.06	³ G ₃ - 532° ₂	
2503.61	4		39930.3	+0.15	15 ₃ - 553° ₂	
2503.956	30	1	39924.76	+0.04	14 ₂ - 549° ₃	
2504.26	3		39919.9	-0.03	³ P ₁ - 532° ₁	
2504.305	4		39919.21	+0.08	³ H ₄ - 520° ₅	
2504.376	4		39918.08	-0.10	17 ₃ - 576° ₃	
2504.526	25	3	39915.69	+0.05	³ P ₀ - 494° ₁	
2504.698	60 r	15	39912.95	0.00	⁵ D ₁ - 415° ₂	
2505.374	18	1	39902.18	+0.05	⁵ D ₂ - 432° ₂	
2505.646	30	3	39897.85	+0.03	³ H ₄ - 520° ₄	
2506.020	20		39891.89	+0.09	⁵ D ₂ - 432° ₁	
2506.146	20		39889.89	+0.04	³ G ₃ - 532° ₄	
2506.373	4	1	39886.28	+0.09	15 ₃ - 553° ₄	
2506.578	3		39883.02	+0.05	14 ₂ - 548° ₂	
2506.63	3		39882.2			
2507.051	12	2	39875.49	-0.02	19535 ₅ - 594° ₆	
2507.122	3	2	39874.36	-0.03	18 ₃ - 588° ₄	
2508.444	40	4	39853.35	+0.03	³ H ₄ - 520° ₃	
2508.734	45	4	39848.74	+0.05	⁵ D ₄ - 460° ₃	
2508.827	3		39847.26	-0.02	19826 ₅ - 596° ₅	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2509.178	6	1	39841.69	+0.01	³ H ₅ - 549° ₄	Res
2510.166	30	4	39826.01	-0.02	³ H ₅ - 548° ₆	
2510.211	4		39825.30			
2510.272	6		39824.33	-0.01	³ G ₄ - 562° ₄	
2510.88	4		39814.7			
2511.103	10		39811.15	+0.05	⁵ S ₂ - 580° ₃	
2511.373	3		39806.87			
2511.593	2		39803.38	+0.09	18 ₃ - 587° ₄	
2512.938	25		39782.09	-0.01	³ H ₆ - 567° ₇	
2513.366	8		39775.31			
2513.664	7		39770.60	-0.02	17 ₃ - 574° ₄	
2513.726	4		39769.61	-0.12	³ G ₃ - 531° ₄	
2513.934	30	4	39766.32	+0.04	⁵ D ₃ - 445° ₂	
2514.206	7		39762.02	+0.04	19 ₆ - 594° ₆	
2515.388	3		39743.34	+0.02	³ G ₄ - 561° ₄	
2515.922	4		39734.90	0.00	³ P ₁ - 530° ₁	
2516.16	20		39731.14			
2516.328	3		39728.49	-0.13	19535 ₅ - 592° ₅	
2516.549	10	7	39725.00	+0.34	17 ₄ - 568° ₄	
2516.632	16		39723.69			
2518.235	1		39698.41	-0.03	19 ₆ - 593° ₇	
2518.348	4		39696.63	+0.01	³ P ₁ - 530° ₂	
2518.504	18		39694.17	+0.03	³ H ₄ - 518° ₄	
2519.182	18		39683.49			
2519.330	3		39681.16		18 ₃ - 586° ₂	
2519.580	4		39677.22	+0.09	³ G ₄ - 561° ₃	
2519.874	50	3	39672.59			
2520.455	50	8	39663.45	0.00	³ H ₅ - 547° ₆	
2520.978	30	2	39655.22	+0.06	³ G ₃ - 530° ₂	
2521.244	5		39651.03	-0.11	17 ₃ - 573° ₃	
2521.323	100	10	39649.79	+0.02	⁵ D ₄ - 458° ₄	
2521.686	3	3 s	39644.09	-0.04	⁷ S ₃ - 426° ₃	
2522.156	12		39636.70	+0.08	³ G ₃ - 529° ₄	
				0.00	⁵ D ₀ - 396° ₁	
					19 ₅ - 591° ₄	
2522.96	10	3	39624.06	+0.05	15 ₃ -55084° ₂	
2523.410	60 r	12	39617.00	-0.02	⁵ D ₃ - 444° ₃	
2523.484	3		39615.84	+0.22	18 ₂ - 577° ₃	
2523.531	5	1	39615.10	+0.01	19 ₆ - 592° ₅	
2523.592	12	2	39614.14	+0.07	17 ₃ - 573° ₄	
2523.686	2		39612.67	-0.04	13 ₂ -53390° ₃	
2523.845	4		39610.18	+0.06	17 ₄ - 567° ₃	
2524.808	16	1	39595.06	+0.14	³ G ₃ - 529° ₃	
2524.904	3		39593.56	-0.23	19535 ₅ - 591° ₆	
2525.084	3		39590.74			
2525.550	12		39583.43	+0.10	15 ₃ - 550° ₄	
2525.684	18	3	39581.34	+0.01	⁷ S ₃ - 425° ₄	
2525.749	1		39580.32	+0.07	14 ₂ - 545° ₃	
2525.873	1		39578.38	-0.02	³ P ₁ - 528° ₂	
2526.232	5		39572.75	+0.09	15 ₃ -55032° ₂	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2526.328	5		39571.24	-0.02	20 ₁ - 599 ₂	
2526.416	12	3	39569.87	+0.06	⁵ D ₄ - 457 ₅	
2526.542	3		39567.90	+0.09	13 ₂ -53345 ₃	
2526.86	4		39562.9	+0.05	⁷ S ₃ - 425 ₃	
2527.262	9		39556.62	+0.03	³ G ₄ - 559 ₅	
2527.763	40	6	39548.78	+0.08	³ H ₆ - 565 ₇	
2528.486	50	6	39537.47	-0.03	⁵ D ₃ - 443 ₂	
2529.329	12	1	39524.30	+0.25	³ G ₄ - 559 ₄	
2529.510	1		39521.47	-0.09	19 ₄ - 587 ₄	
2529.722	40	4	39518.16	+0.09	³ H ₆ - 565 ₆	3
2530.048	4		39513.07	+0.06	18 ₃ - 584 ₃	
2530.417	5		39507.30	+0.09	13 ₂ - 532 ₂	
2530.986	5	50 s	39498.42	+0.11	⁷ S ₃ - 424 ₂	
2532.148	3		39480.30	+0.04	19 ₆ - 591 ₆	
2533.551	25	2	39458.44	+0.08	⁵ D ₄ - 456 ₃	Res
2533.635	35 r	5	39457.13	+0.04	⁵ D ₁ - 411 ₀	7
2533.985	25	1	39451.68	+0.08	15 ₃ - 549 ₄	
2534.678	30		39440.90	+0.01	15 ₃ - 549 ₃	
2534.89	5		39437.6	+0.01	19826 ₅ - 592 ₅	
2535.106	35	3	39434.24	+0.01	⁵ D ₁ - 411 ₂	
2535.335	25	1	39430.68	+0.08	17 ₃ - 571 ₃	
2537.356	15		39399.27	+0.13	15 ₃ - 548 ₂	
2537.621	10		39395.16	+0.07	17 ₄ - 565 ₄	
2538.096	6		39387.78	-0.08	19 ₄ - 586 ₃	
2538.343	10		39383.95	+0.15	19 ₃ - 592 ₂	
2538.76	4		39377.5	+0.18	17 ₄ - 564 ₃	
2539.614	10		39364.24	+0.07	³ G ₄ - 557 ₅	
2540.303	3	1	39353.57			
2540.755	2		39346.57	+0.09	³ P ₁ - 526 ₂	
2540.925	10	4 s	39343.93	-0.10	19 ₃ - 591 ₄	
2541.063	6	20 s	39341.80	-0.06	19 ₂ - 585 ₂	
2541.144	8		39340.54			
2541.696	20	2	39332.00	+0.01	⁵ D ₄ - 455 ₃	Res
2541.948	3		39328.10			
2542.237	8		39323.63	+0.07	³ G ₅ - 591 ₅	
2543.050	4		39311.06	-0.02	³ H ₄ - 514 ₄	
2543.436	40	2	39305.10	+0.08	³ G ₃ - 526 ₂	
2543.586	5	1	39302.78	+0.02	19826 ₅ - 591 ₆	
2543.656	4		39301.70	0.00	22852 ₄ - 621 ₅	
2543.758	1		39300.12	-0.10	⁷ S ₃ - 422 ₃	
2543.903	1		39297.88	-0.24	17 ₃ - 569 ₂	
2544.170	15	1	39293.76	+0.17	14 ₂ - 542 ₃	
2545.340	50 r	12	39275.70	+0.04	⁵ D ₂ - 426 ₃	
2545.583	30	2	39271.95	0.00	³ H ₆ - 562 ₅	
2546.077	5		39264.33	+0.04	13 ₂ - 530 ₁	
2546.357	4		39260.01	+0.01	³ P ₀ - 487 ₁	
2546.649	12		39255.51	+0.07	19 ₆ - 589 ₅	
2553.168	70	50 s	39155.29	-0.12	⁵ D ₃ - 439 ₄	2
2547.136	100 r	25	39248.00	+0.04	⁵ D ₂ - 425 ₁	Res
2547.466	25	1	39242.92	+0.13	19535 ₅ - 587 ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2547.626	15	1	39240.46	+0.09	³ H ₅ - 543° ₅	Res
2547.943	6		39235.58	+0.10	18 ₂ - 573° ₃	
2548.053	1		39233.88	-0.06	19 ₂ - 584° ₃	
2548.148	25	1	39232.42	+0.10	⁵ D ₄ - 454° ₅	
2548.562	40	2	39226.05	+0.04	13 ₂ - 530° ₂	
				+0.10	19535 ₅ - 587° ₆	
2550.08	20	30 s	39202.70	-0.02	23 ₆ - 626° ₆	Res
2550.131	5		39201.91			
2550.378	60 r	8	39198.12	+0.01	⁵ D ₁ - 408° ₂	
2550.497	12	2	39196.29	-0.02	³ P ₁ - 525° ₂	
2550.843	4		39190.98	-0.02	⁵ D ₃ - 440° ₃	Res
2551.00	25	4	39188.56	-0.05	⁵ D ₂ - 425° ₃	
2551.349	200 r	30	39183.20	0.00	⁵ D ₀ - 391° ₁	
2551.986	25		39173.42	-0.02	17 ₄ - 562° ₅	
2552.489	30		39165.70	-0.07	13 ₂ - 529° ₃	
2553.606	30	2	39148.57	-0.07	17 ₄ - 562° ₄	3
2553.824	100 r	8	39145.23	+0.01	⁵ D ₃ - 439° ₂	
2554.092	30	1	39141.12			
2554.795	2		39130.35	-0.14	17 ₃ - 568° ₄	
2554.906	6		39128.65	-0.12	³ H ₄ - 512° ₅	
2555.207	40	4	39124.04	-0.03	⁵ D ₂ - 424° ₂	3
2555.664	4		39117.05	-0.02	18 ₃ - 580° ₃	
2555.816	2		39114.72	-0.03	³ G ₄ - 555° ₃	
2555.968	6		39112.40	-0.02	19 ₆ - 587° ₆	
2556.266	20	1	39107.84	+0.05	13 ₂ - 528° ₂	
2556.51	3		39104.1			3
2556.749	40 r	8	39100.45	-0.04	⁵ D ₁ - 407° ₁	
2557.008	18		39096.49	+0.07	15 ₃ - 545° ₃	
2557.57	20	2	39087.9	+0.02	³ G ₃ - 524° ₄	
2558.234	2		39077.75	-0.19	19826 ₅ - 589° ₅	
2558.484	20		39073.94	+0.05	19 ₄ -58330° ₄	3
2558.90	4	2	39067.58	-0.04	17 ₄ - 561° ₄	
2559.339	15	1	39060.88	-0.03	³ G ₄ -55492° ₅	
2560.124	40	6	39048.91	+0.06	³ H ₅ - 541° ₄	
2560.502	8		39043.14	-0.08	⁵ D ₄ - 452° ₄	
2560.758	25		39039.24	0.00	23 ₆ - 625° ₆	3
2561.445	6	1	39028.77	-0.08	13 ₂ - 528° ₃	
2561.528	20	2	39027.50	+0.17	⁷ S ₃ - 419° ₂	
				-0.17	19535 ₅ - 585° ₅	
2561.762	3		39023.94	-0.10	³ G ₄ -55455° ₅	
2561.846	3		39022.66	-0.20	19826 ₅ - 588° ₄	3
2561.968	100 r	20	39020.80	-0.04	⁵ D ₃ - 438° ₃	
2562.296	4		39015.81	-0.14	17 ₃ - 567° ₃	
2562.358	10	3	39014.86	-0.08	18 ₂ - 571° ₃	
2563.244	4		39001.38	-0.05	17 ₄ - 561° ₃	
2563.343	6		38999.87	-0.05	22476 ₄ - 614° ₅	3
2563.720	6	1	38994.14	-0.02	20 ₁ - 594° ₂	
2564.458	4		38982.92	-0.18	14 ₂ - 539° ₂	
2564.696	45	3	38979.30	-0.10	³ H ₆ - 559° ₅	
2565.232	2		38971.16			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2565.806	4		38962.44			
2566.104	7		38957.91	-0.08	3G_4 553 ₃	
2566.206	6		38956.37			
2566.518	6		38951.64	-0.12	19826 ₅ - 587 ₄	
2566.608	1	1	38950.27	-0.15	19 ₃ - 587 ₄	
2566.648	6		38949.66	-0.10	19 ₄ - 582 ₃	
2566.968	6		38944.81			
2567.258	3		38940.40			
2567.506	20	3	38936.64	-0.13	5D_2 - 422 ₁	
2567.62	10	30 s	38934.91	-0.01	19826 ₅ - 587 ₆	
2568.214	30	4	38925.90	-0.10	3P_1 - 522 ₀	
				-0.08	5D_2 - 422 ₃	
2568.401	2	1	38923.08	-0.06	19 ₄ - 581 ₅	
2568.564	30	4	38920.61	-0.04	7S_3 - 418 ₄	
2568.85	10	30 s	38916.27	-0.20	18 ₁ - 569 ₂	
2568.992	40	2	38914.12	-0.02	19 ₆ - 585 ₅	
2569.248	30		38910.25	+0.03	3H_4 - 510 ₃	
2569.505	6		38906.35			
2569.761	3		38902.48			
2569.986	8		38899.07	-0.01	14 ₂ - 538 ₁	
2570.099	35	3	38897.36	-0.08	5D_4 - 451 ₄	Res
2571.181	12	1	38880.99	+0.10	17 ₄ - 559 ₅	
2571.523	7		38875.83	-0.04	13 ₂ - 526 ₂	
2572.447	15		38861.86	-0.04	3P_0 - 483 ₁	
2573.152	12		38851.21	-0.09	5S_2 - 571 ₃	
2573.346	12		38848.29	-0.06	17 ₄ - 559 ₄	
2573.531	40	4	38845.49	-0.03	3P_1 - 521 ₂	
2573.952	15	7 s	38839.14	-0.04	3H_6 - 558 ₆	
2574.048	3		38837.69	-0.33	19 ₂ - 580 ₃	
2574.206	12	*	38835.31	-0.03	19 ₄ - 580 ₃	
2574.684	7		38828.10	+0.06	19 ₃ - 586 ₂	
2575.468	20	1	38816.28	-0.14	19 ₃ - 586 ₃	
2575.898	20	2	38809.80	+0.04	15 ₃ - 542 ₃	
2576.278	5		38804.07	+0.01	3G_3 - 521 ₂	
2576.507	1		38800.63	-0.29	17 ₃ - 565 ₄	
2576.87	4		38795.15	-0.06	5D_4 - 450 ₃	
				+0.03	19535 ₅ -58330 ₄	
2577.029	35	4	38792.76	-0.03	3H_5 - 538 ₅	
2577.411	30	2	38787.01	+0.03	3H_6 - 557 ₅	
2577.69	18	1	38782.81	-0.03	7S_3 - 417 ₂	
2577.781	5		38781.45	0.00	19535 ₅ -58316 ₄	
2577.96	9		38778.76	+0.06	3H_5 - 538 ₄	
2578.695	8	3 s	38767.70	-0.04	19 ₃ - 585 ₂	
2579.192	3		38760.24	+0.01	17 ₄ - 558 ₄	
2579.357	4		38757.75	-0.20	18 ₃ - 577 ₃	
2579.409	20	5	38756.98	0.00	3P_1 - 520 ₂	
2580.040	12		38747.49	-0.02	3H_4 - 509 ₄	
2580.337	30	5	38743.04	-0.01	7S_3 - 416 ₃	
2580.487	125 r	20	38740.78	-0.05	5D_1 - 404 ₁	
2580.76	3		38736.68	+0.04	19826 ₅ - 585 ₅	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2581.062	35	2	38732.16	0.00	³ H ₄ -50894 ₃	2
2581.490	15	1	38725.73	+0.03	13 ₂ - 525 ₂	
2581.954	2		38718.77	-0.05	⁵ S ₂ - 569 ₂	
2582.039	3		38717.49			
2582.156	2		38715.74	+0.22	³ G ₃ - 520 ₂	
2582.460	5		38711.18	-0.04	³ G ₃ - 520 ₄	
2583.222	30	4	38699.76	-0.10	13 ₂ - 524 ₁	
2583.664	15		38693.14	-0.04	14 ₂ - 536 ₂	
2584.236	12	5 s	38684.58	-0.09	⁵ D ₃ - 435 ₂	
2584.386	70	10	38682.33	+0.01	³ H ₆ - 556 ₇	
2584.932	3		38674.16			
2585.235	50	4	38669.63	-0.09	23 ₆ - 621 ₅	
2585.431	45	3	38666.70	-0.02	³ G ₃ - 520 ₃	
2585.508	20		38665.55			
2585.970	10		38658.64	-0.13	15 ₃ - 541 ₄	
2586.048	2		38657.48			
2586.350	8	25 s	38652.96	-0.12	⁵ D ₂ - 419 ₂	
2586.644	25	1	38648.57	-0.01	⁵ D ₃ - 434 ₃	
2586.894	8	1	38644.83	-0.02	18 ₃ - 576 ₃	
2586.944	40	4	38644.08	-0.03	³ H ₄ - 508 ₅	
2587.324	15		38638.41	-0.07	³ H ₄ - 508 ₃	
2587.766	30	3	38631.81	-0.10	⁷ S ₃ - 415 ₂	
2588.304	10		38623.78	-0.02	22852 ₄ - 614 ₅	
2589.088	25		38612.09	+0.06	³ G ₄ - 550 ₄	
2589.727	5		38602.56			
2591.174	7		38581.01			
2591.386	40	4	38577.85	-0.06	³ G ₄ - 550 ₅	
2593.388	25		38548.07	-0.07	⁷ S ₃ - 414 ₃	
2593.44	2		38547.3	-0.12	19 ₄ - 578 ₄	
2594.43	5		38532.6			
2594.549	7	7	38530.82	-0.02	19 ₆ - 581 ₅	
2595.04	3		38523.53			
2596.118	8		38507.54	0.00	³ G ₃ - 518 ₄	
2596.348	35	2	38504.13	+0.04	19826 ₅ -58330 ₄	
2596.666	25	5	38499.41	+0.14	15 ₃ - 539 ₂	
2597.29	7 b	2	38490.16	-0.26	19826 ₅ -58316 ₄	
				+0.29	17 ₄ - 555 ₄	
2597.384	2		38488.77	-0.01	19 ₃ -58316 ₄	
2597.726	25	3	38483.70	-0.02	³ H ₆ -55492 ₅	
2597.954	15		38480.32	+0.02	³ G ₄ - 549 ₄	
2598.104	15	1	38478.11	+0.02	13 ₂ - 522 ₃	
2598.234	4		38476.18	-0.04	19 ₄ - 577 ₃	
2598.416	30	2	38473.49	+0.04	17 ₃ - 561 ₄	
2598.672	7	7 s	38469.70	+0.11	³ G ₄ - 549 ₃	
2599.126	2		38462.97			
2599.316	4		38460.16			
2599.568	4		38456.43	+0.09	³ P ₁ - 517 ₁	
2600.209	20	2	38446.96	+0.01	³ H ₆ -55455 ₅	
2600.734	30	3	38439.20	+0.15	17 ₄ - 555 ₃	
2600.904	6	1	38436.70	+0.05	⁵ S ₂ - 567 ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2601.052	6		38434.50			
2601.963	40 <i>r</i>	4	38421.04	+0.04	⁵ D ₃ — 432 ₄	Res
2602.42	12		38414.3	+0.06	14 ₂ —53390 ₃	
2602.804	25	2	38408.63	+0.03	⁵ D ₂ — 417 ₂	
2603.170	5		38403.23			
2603.544	40 <i>r</i>	5	38397.71	+0.05	⁵ D ₃ — 432 ₂	Res
2604.156	15	1	38388.69	+0.07	15 ₃ — 538 ₄	
2604.282	6	1	38386.83	+0.08	³ P ₁ —51693 ₂	
2604.385	18	3	38385.32	+0.11	17 ₄ —55492 ₅	
2604.464	12	1	38384.15	-0.01	19535 ₅ — 579 ₆	
2604.902	6		38377.70	-0.11	18 ₃ — 573 ₃	
2605.462	10	1	38369.45	+0.11	14 ₂ —53345 ₃	
2605.508	8	2	38368.77	-0.04	⁵ D ₂ — 416 ₃	
2605.597	2		38367.46	-0.03	18 ₂ — 564 ₃	
2605.708	10		38365.83	+0.03	19 ₂ — 576 ₃	
2605.884	15	3	38363.24	+0.12	19 ₄ — 576 ₃	
2606.388	35 <i>r</i>	5	38355.82	-0.02	⁵ D ₀ — 383 ₁	
2606.556	4		38353.35	+0.01	19826 ₅ — 581 ₅	
2606.892	15	1	38348.40	+0.06	17 ₄ —55455 ₅	
2607.103	12		38345.30	+0.01	³ C ₃ —51693 ₂	
2607.378	35 <i>r</i>	6	38341.26	+0.05	⁵ D ₁ — 400 ₂	Res
2607.724	12	1	38336.17	+0.07	17 ₃ — 560 ₂	
2607.808	4		38334.94			
2608.222	3		38328.85			
2608.32	50 <i>r</i>	8	38327.41	-0.02	⁵ D ₄ — 445 ₅	Res
2609.592	8		38308.74	0.00	14 ₂ — 532 ₂	
2609.874	15	1	38304.59	0.00	19 ₄ — 575 ₅	
2610.208	20	1	38299.69	+0.01	³ P ₁ —51606 ₂	
2610.495	3		38295.47			
2610.744	20	3	38291.82	-0.06	³ P ₀ — 478 ₁	
2611.113	10		38286.41	+0.04	13 ₂ — 520 ₂	
2611.392	20	1	38282.32	+0.03	17 ₄ — 553 ₃	
2612.188	30	4	38270.66	+0.03	19 ₆ — 579 ₆	
2613.076	80 <i>r</i>	20	38257.65	-0.02	⁵ D ₂ — 415 ₂	Res
2613.315	15		38254.16	-0.02	17 ₃ — 559 ₄	
2613.443	4		38252.28	+0.32	³ C ₃ — 516 ₃	
2613.547	4		38250.76	-0.09	14 ₂ — 532 ₁	
2613.818	50 <i>r</i>	12	38246.80	-0.05	⁷ S ₃ — 411 ₄	Res
2614.452	15		38237.52	-0.05	13 ₂ — 520 ₃	
2615.124	40	4	38227.69	0.00	⁵ D ₄ — 444 ₃	Res
2615.980	2		38215.2	+0.04	18 ₂ — 563 ₃	
2616.353	10	3	38209.74			
2616.666	15	1	38205.17			
2616.760	6		38203.8	-0.05	⁵ S ₂ — 564 ₃	
2617.652	5		38190.78			
2618.416	4		38179.64			
2618.808	25	3	38173.92	+0.02	⁵ D ₂ — 414 ₃	
2619.178	40	15 <i>s</i>	38168.53	+0.05	³ H ₅ — 532 ₄	
2619.254	3		38167.42	+0.13	19535 ₅ — 577 ₆	
2619.342	2		38166.14	+0.08	17 ₃ — 558 ₄	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2619.717	8		38160.67			
2619.868	6		38158.47	-0.02	$^3H_{5-}$ 532 $^{\circ}_6$	
2619.954	15	2	38157.22	-0.05	18_{3-} 571 $^{\circ}_3$	
2620.215	50	60 s	38153.42	+0.19	$^7S_{3-}$ 411 $^{\circ}_2$	
2620.516	3		38149.04			
2620.996	6		38142.05	+0.23	$^3H_{4-}$ 503 $^{\circ}_3$	
2621.542	16		38134.11	+0.17	17_{3-} 558 $^{\circ}_2$	
2622.16	30 d		38125.12	0.00	16_{4-} 545 $^{\circ}_3$	
2622.214	35	5	38124.34	+0.02	$^3H_{5-}$ 531 $^{\circ}_5$	
2622.328	30	2	38122.68	0.00	$^3H_{4-}$ 502 $^{\circ}_4$	
2623.463	2		38106.2			
2623.988	2		38098.57	-0.19	19_{2-} 573 $^{\circ}_3$	
2624.154	20	1	38096.16	+0.08	19_{4-} 573 $^{\circ}_3$	
2624.366	9		38093.08	-0.05	19826 $_{5-}$ 579 $^{\circ}_6$	
2624.996	20		38083.94			
2625.220	60 r	10	38080.69	-0.05	$^5D_{3-}$ 429 $^{\circ}_4$	Res
2625.742	2	1	38073.12			
2626.244	40	3	38065.84	+0.02	14_{2-} 530 $^{\circ}_1$	
2626.456	3		38062.77			
2626.717	12	1	38058.99	-0.02	19_{4-} 573 $^{\circ}_4$	
2627.225	1		38051.63	+0.11	$^5S_{2-}$ 563 $^{\circ}_3$	
2627.451	18	1	38048.36	0.00	$^3H_{5-}$ 531 $^{\circ}_4$	
2628.255	40	5	38036.73	0.00	$^5D_{1-}$ 397 $^{\circ}_2$	
2628.89	25	1	38027.53	-0.01	14_{2-} 530 $^{\circ}_2$	
2629.086	7		38024.70	-0.09	18_{3-} 569 $^{\circ}_2$	
2629.152	15	2	38023.74	0.00	$^3H_{4-}$ 501 $^{\circ}_3$	
2629.30	3		38021.6			
2630.568	5		38003.28			
2630.742	10		38000.76	+0.04	$^3H_{6-}$ 550 $^{\circ}_5$	
2631.357	7		37991.88	+0.06	23_{6-} 614 $^{\circ}_5$	
2631.780	25	1	37985.77	+0.04	13_{2-} 517 $^{\circ}_1$	
2632.344	2		37977.63	+0.01	19826 $_{5-}$ 578 $^{\circ}_4$	
2632.485	35 r	7 s	37975.60	+0.01	$^3H_{4-}$ 501 $^{\circ}_5$	
2632.695	80 r	6	37972.57	+0.03	$^7S_{3-}$ 409 $^{\circ}_3$	Res
2633.129	150 r	15	37966.32	-0.01	$^5D_{1-}$ 396 $^{\circ}_1$	3
2633.42	6		37962.12			
2634.012	15		37953.59	+0.01	$^3P_{1-}$ 512 $^{\circ}_1$	
2634.864	20	9	37941.32			
2635.205	5		37936.41	+0.08	17_{4-} 550 $^{\circ}_4$	
2635.618	45	1	37930.47	+0.06	15_{3-} 53390 $^{\circ}_3$	
2636.326	3		37920.28	-0.16	18_{2-} 560 $^{\circ}_2$	
2636.544	30	3	37917.14	+0.03	$^7S_{3-}$ 408 $^{\circ}_2$	
2636.616	12	1	37916.11	-0.03	13_{2-} 51693 $^{\circ}_2$	Res
2636.885	5		37912.24	-0.05	19_{6-} 575 $^{\circ}_5$	
2637.085	9		37909.36	+0.04	14_{2-} 528 $^{\circ}_2$	
2637.161	5		37908.27	-0.14	22476 $_{4-}$ 603 $^{\circ}_4$	
2637.406	10		37904.75	-0.03	19_{3-} 577 $^{\circ}_3$	
2637.576	15	25 s	37902.31	+0.10	17_{4-} 550 $^{\circ}_5$	
2638.032	6		37895.75	+0.03	17_{3-} 555 $^{\circ}_4$	
2638.615	45	9	37887.38	+0.14	19_{4-} 571 $^{\circ}_5$	
				-0.08	17_{6-} 548 $^{\circ}_6$	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2638.746	30	3	37885.50	-0.01	15 ₃ -53345 ₃	Res
2639.20	7	1	37878.98	-0.01	³ G ₄ - 543 ₅	
2639.406	3		37876.03	-0.23	19826 ₅ - 577 ₆	
2639.896	5 b		37869.0			
2640.364	6		37862.29	-0.05	20 ₁ - 582 ₁	Res
2640.724	8	1	37857.13	-0.03	18 ₃ - 568 ₄	
2641.116	3	3	37851.51			
2641.581	4		37844.84	-0.04	17 ₃ - 555 ₃	
2642.024	15		37838.50	+0.04	³ G ₄ - 542 ₃	
2642.349	12		37833.85	+0.03	³ G ₃ - 511 ₂	
2642.681	15		37829.10	+0.03	13 ₂ -51606 ₂	
2642.758	6		37828.00	+0.04	⁵ S ₂ - 561 ₃	
2642.974	3		37824.91	0.00	³ D ₃ - 532 ₂	
2643.122	25		37822.78	-0.03	13 ₂ - 516 ₃	
2643.920	2		37811.38			Res
2644.396	20		37804.56	-0.04	17 ₄ - 549 ₄	
2644.600	30	3	37801.64	-0.03	⁵ D ₄ - 440 ₃	
2645.143	20	4	37793.88	-0.01	17 ₄ - 549 ₃	
2645.302	9	2	37791.62	-0.06	19 ₃ - 576 ₃	
2645.692	25	7 s	37786.04	-0.01	³ H ₅ - 528 ₆	7
2646.185	70	12	37779.00	+0.01	⁵ D ₂ - 411 ₂	
2646.365	2		37776.44	-0.05	18 ₁ - 558 ₁	
2646.536	15	1	37774.00	-0.04	⁵ D ₀ - 377 ₁	
2646.730	80	8	37771.22	+0.05	⁵ D ₃ - 426 ₃	
2647.091	60	5	37766.07	-0.01	⁵ D ₄ - 439 ₄	3
2648.043	12		37752.49	+0.20	18 ₁ - 558 ₂	
				-0.01	22476 ₄ - 602 ₅	
2648.325	3 b		37748.47			
2648.524	3		37745.64	-0.10	³ P ₂ - 569 ₂	
2648.730	15		37742.70	+0.08	18 ₃ - 567 ₃	3
2649.024	3		37738.51			
2649.284	15		37734.81	+0.02	19826 ₅ - 575 ₅	
2649.792	6		37727.58	+0.11	³ P ₀ - 472 ₁	
2649.98	30	3	37724.90	+0.02	³ H ₆ - 547 ₆	
2650.071	10		37723.60	-0.02	³ G ₃ - 510 ₃	3
2650.452	40	2	37718.18	+0.10	18 ₂ - 558 ₂	
2650.707	2		37714.55	+0.01	⁷ S ₃ - 406 ₃	
2651.388	6	1	37704.86	-0.06	⁵ D ₄ - 439 ₅	
2651.439	10	1	37704.14	-0.03	³ H ₅ - 527 ₅	
2651.546	5		37702.62	0.00	⁵ D ₃ - 425 ₄	3
2652.007	25	1	37696.07	-0.01	23 ₆ - 611 ₇	
2652.507	4		37688.96	-0.02	17 ₃ - 553 ₂	
2652.592	50		37687.76	-0.36	17 ₃ - 553 ₃	
				+0.29	³ G ₄ - 541 ₄	
2652.71	5		37686.08			3
2652.844	8		37684.18	+0.04	⁵ D ₃ - 425 ₃	
2653.015	10	8 s	37681.75	+0.11	22476 ₄ - 601 ₄	
2653.314	20		37677.50	+0.10	14 ₂ - 526 ₂	
2654.499	10 b		37660.68	-0.40	20 ₂ - 586 ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2654.659	60	6	37658.40	+0.12	³ D ₃ - 531 [°] ₄	Res
2655.558	15		37645.66	-0.10	19826 ₅ - 574 [°] ₄	
2655.667	15	20 s	37644.12	0.00	19 ₃ - 574 [°] ₄	
2656.171	20		37636.98			
2656.540	300 r	30	37631.75	-0.03	⁷ S ₃ - 405 [°] ₄	
2656.896	20	1	37626.70	+0.08	³ H ₄ - 497 [°] ₄	
2657.361	60	5	37620.12	-0.12	⁵ D ₃ - 424 [°] ₄	
2657.399	40	4	37619.58	-0.02	⁵ D ₃ - 424 [°] ₂	
2657.794	1		37614.00	+0.03	19535 ₅ - 571 [°] ₆	
2657.906	15		37612.42	+0.02	20 ₂ - 585 [°] ₂	
2658.178	30	3	37608.56	+0.09	19535 ₅ - 571 [°] ₅	Res
2658.393	10		37605.52	+0.10	23 ₃ - 615 [°] ₄	
2658.555	12		37603.24			
2658.898	25		37598.38	+0.08	⁵ D ₂ - 409 [°] ₃	
2659.836	3 b		37585.12			
2660.283	2		37578.80	-0.04	⁵ S ₂ - 558 [°] ₁	
2660.526	40	3	37575.38	-0.05	19 ₄ - 568 [°] ₄	
2661.552	40	7	37560.90	-0.01	³ G ₃ - 509 [°] ₄	
2661.793	4		37557.48			
2661.987	1		37554.76	+0.12	⁵ S ₂ - 558 [°] ₂	
2662.644	20	2	37545.48	-0.08	³ G ₃ -50894 [°] ₃	Res
2662.835	200 r	20	37542.80	-0.07	⁵ D ₂ - 408 [°] ₂	
2663.259	12		37536.82	-0.01	18 ₁ - 556 [°] ₂	
2663.556	50	4	37532.64	-0.04	15 ₃ - 529 [°] ₄	
2663.945	18		37527.16	-0.07	14 ₂ - 525 [°] ₂	
2664.321	80		37521.86	-0.18	⁵ D ₄ - 437 [°] ₅	
2664.966	100	10	37512.78	-0.13	⁵ D ₁ - 391 [°] ₁	
2665.779	30	4	37501.34	-0.20	⁵ D ₄ - 437 [°] ₄	
2665.852	15	4	37500.30	-0.14	19 ₆ - 571 [°] ₆	
2666.238	7		37494.89	-0.05	19 ₆ - 571 [°] ₅	
2666.638	8		37489.26	+0.05	19826 ₅ - 573 [°] ₄	3
2666.765	7		37487.46	-0.11	19 ₃ - 573 [°] ₄	
2667.054	3		37483.40	-0.07	15 ₃ - 529 [°] ₃	
2667.206	3		37481.28			
2667.684	2	20	37474.56	0.00	³ H ₄ - 496 [°] ₄	
2668.473	50	1	37463.48	-0.09	19 ₂ - 567 [°] ₃	
2668.661	6		37460.84	-0.05	19 ₄ - 567 [°] ₃	
2669.301	20		37451.86	-0.02	³ G ₃ - 508 [°] ₃	
2669.473	5		37449.44	+0.02	17 ₄ - 545 [°] ₃	
2669.777	40	2	37445.18	-0.07	⁵ D ₂ - 407 [°] ₁	
2670.766	5		37431.32	-0.09	³ G ₄ - 538 [°] ₅	Res
2670.916	7		37429.22	0.00	18 ₂ - 555 [°] ₃	
2671.181	18		37425.50	+0.01	15 ₃ - 528 [°] ₂	
2671.472	200	20	37421.42	-0.09	⁵ D ₃ - 422 [°] ₃	
2671.763	40 d	15	37417.34	+0.02	³ G ₄ - 538 [°] ₄	
2672.158	25		37411.82	+0.02	³ P ₁ - 507 [°] ₂	
2672.665	20		37404.72	+0.05	13 ₂ - 511 [°] ₂	
2673.172	8		37397.62			
2674.232	8		37382.80	-0.04	17 ₃ -55084 [°] ₂	
2674.692	50	1	37376.38	0.00	22852 ₄ - 602 [°] ₅	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2675.126	40		37370.30	-0.04	³ G ₃ - 507 [°] ₂	Res
2675.398	35	2	37366.52	+0.01	³ H ₅ - 524 [°] ₄	
2675.598	2		37363.72			
2675.867	60		37359.96	0.00	⁵ D ₁ - 390 [°] ₂	
2676.415	25		37352.32	-0.06	³ H ₄ - 495 [°] ₃	
2676.832	12		37346.50	-0.05	15 ₃ - 528 [°] ₃	
2677.149	18		37342.07	-0.09	17 ₃ - 550 [°] ₄	
2677.276	100	20	37340.30	-0.02	⁵ D ₂ - 406 [°] ₃	
2677.913	25	1	37331.42	-0.07	17 ₃ -55032 [°] ₂	
2678.34	10		37325.47	-0.10	³ H ₅ - 523 [°] ₅	
2678.532	35	3	37322.80	-0.14	19826 ₅ - 571 [°] ₆	
2678.878	150	8	37317.98	-0.08	⁷ S ₃ - 402 [°] ₃	
2678.924	20	2	37317.34	-0.10	19826 ₅ - 571 [°] ₅	
2679.884	20		37303.96	-0.14	19 ₃ - 571 [°] ₃	
2680.046	60	6	37301.72	-0.08	³ H ₆ - 543 [°] ₅	
2680.344	12		37297.56			Res
2680.412	3		37296.61	-0.05	19535 ₅ - 568 [°] ₄	
2680.57	15		37294.42	-0.05	13 ₂ - 510 [°] ₃	
2681.422	400 r	50	37282.57	-0.11	⁷ S ₃ - 402 [°] ₄	
2681.638	30	2	37279.56	-0.06	14 ₂ - 522 [°] ₃	
2681.883	5		37276.15			
2682.146	7		37272.50	+0.04	18 ₂ - 553 [°] ₃	
2682.219	4		37271.49			
2682.50	4		37267.59	+0.05	18 ₂ - 553 [°] ₁	
2682.648	20		37265.52	-0.06	⁵ S ₂ - 555 [°] ₃	
2683.105	5		37259.19	-0.06	⁵ D ₄ - 434 [°]	
2683.347	100	8	37255.82	-0.12	³ H ₄ - 494 [°] ₃	
2684.072	25		37245.76	-0.10	19 ₄ - 565 [°] ₄	
2685.160	20		37230.67	-0.10	19 ₂ - 564 [°] ₃	
2685.366	6	12 s	37227.82	-0.27	19 ₄ - 564 [°] ₃	
2685.472	8		37226.34	-0.11	³ P ₁ - 505 [°] ₁	Res
2685.722	30		37222.88	-0.10	20 ₂ - 582 [°] ₃	
2686.628	20		37210.33	-0.10	17 ₃ - 549 [°] ₄	
2687.141	20		37203.23	-0.06	17 ₄ - 543 [°] ₅	
2687.369	80	2	37200.07	-0.05	18 ₃ - 561 [°] ₄	
2687.624	12		37196.54	-0.10	22476 ₄ - 596 [°] ₅	
2687.84	10	3	37193.55	-0.02	15 ₃ - 526 [°] ₂	
2688.002	30		37191.30			
2688.29	25		37187.33	-0.11	³ P ₁ - 504 [°] ₂	
2689.077	1		37176.44	0.00	14 ₂ - 521 [°] ₂	
2689.435	4	1	37171.50	-0.12	19 ₃ - 569 [°]	
2689.656	25		37168.44			
2690.069	10		37162.74	-0.02	17 ₄ - 542 [°] ₃	
2690.416	20		37157.95	-0.02	17 ₃ - 548 [°] ₂	
2690.577	15		37155.71			
2691.094	100	8	37148.58	-0.04	⁵ D ₃ - 419 [°] ₂	Res
2691.289	70	1	37145.90	-0.08	³ G ₃ - 504 [°] ₂	
2691.566	30	1	37142.06	0.00	19 ₆ - 567 [°] ₇	
2692.159	40	1	37133.88	-0.05	18 ₃ - 561 [°] ₃	
2692.43	10		37130.15			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
2692.968	3		37122.72			
2693.918	15		37109.63	-0.05	⁵ S ₂ - 553° ₂	
2694.006	10	15	37108.42	-0.14	20 ₂ - 580° ₃	
2694.338	6		37103.86	-0.04	⁵ S ₂ - 553° ₁	
2694.442	5		37102.42			
2694.873	3		37096.48			
2695.22	3		37091.71			
2695.50	4		37087.86	-0.04	14 ₂ - 520° ₂	
2695.67	150 r	15	37085.52	-0.07	⁵ D ₂ - 404° ₁	7
2696.198	2		37078.26	-0.18	19 ₂ - 563° ₃	
2696.384	16		37075.70	-0.06	19 ₄ - 563° ₃	
2697.514	60	3	37060.17	-0.04	⁷ S ₃ - 400° ₂	
2698.735	3		37043.40	0.00	15 ₃ - 525° ₂	
2698.844	80	6	37041.90	-0.04	⁵ D ₃ - 418° ₄	Res
2699.041	8	12 s	37039.21	+0.11	14 ₂ - 520° ₃	
2699.594	150 r	20	37031.62	-0.05	⁵ D ₄ - 432° ₄	Res
2700.012	100	15	37025.89	-0.07	³ H ₄ - 491° ₅	Res
2700.141	6		37024.11	-0.10	19 ₄ - 562° ₅	
2700.244	20		37022.71	-0.02	13 ₂ - 508° ₃	
2701.036	8	10 s	37011.85	+0.08	17 ₄ - 541° ₄	
2701.691	6		37011.10	-0.06	³ H ₅ - 520° ₅	
2701.485	20	60 s	37005.70	+0.07	19826 ₅ - 568° ₄	
2701.814	25		37001.20	+0.01	18 ₁ -55084° ₂	
2701.95	10		36999.33	-0.08	19 ₄ - 562° ₄	
2702.366	8		36993.64			
2702.524	50	5	36991.47	-0.09	19535 ₅ - 565° ₆	
2702.649	10	1	36989.76	-0.09	³ H ₅ - 520° ₄	
2702.934	8		36985.85	-0.14	³ H ₄ - 491° ₄	
2703.306	8		36980.77	-0.08	18 ₃ - 559° ₄	
2703.625	25		36976.40	-0.03	15 ₃ - 524° ₄	
2703.974	4	1	36971.64			
2704.040	6		36970.74			
2704.308	30	1	36967.07	-0.02	19 ₅ - 565° ₄	
2705.174	60	2	36955.24	+0.02	³ G ₃ - 503° ₃	3
2705.599	10	35 s	36949.43	-0.41	18 ₁ -55032° ₂	
2706.017	50	3	36943.73	-0.09	⁵ D ₂ - 402° ₃	
2706.204	25	1	36941.18	-0.01	13 ₂ - 507° ₂	
2706.579	100	10	36936.07	-0.01	³ G ₃ - 502° ₄	
2707.026	25		36929.96	-0.09	23 ₆ - 604° ₆	
2707.42	6		36924.58	-0.04	24 ₃ - 615° ₄	
2707.877	80	3	36918.35	-0.04	19 ₄ - 561° ₄	3
2708.064	6		36915.80	-0.03	18 ₂ -55032° ₂	
2708.188	50	3	36914.11	-0.10	³ G ₄ -53345° ₃	
2708.36	4	2 s	36911.77	-0.15	³ H ₄ - 490° ₅	
2708.493	2		36909.96	-0.22	³ H ₄ - 490° ₃	
2708.592	100	15	36908.61	-0.14	³ H ₅ - 519° ₆	
				-0.05	19 ₆ - 565° ₇	
2708.797	30	3	36905.82	-0.03	⁵ D ₁ - 385° ₀	
2708.927	80	8	36904.04	-0.09	⁵ D ₃ - 417° ₂	
2709.118	3 b		36901.44			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2709.76	30		36892.70	-0.03	18 ₃ - 558 ₄ ^o	
2710.004	35	2	36889.38	-0.07	19 ₃ - 567 ₃ ^o	
2710.842	10		36877.98	-0.05	19 ₆ - 565 ₆ ^o	
2711.846	8	1	36864.33	-0.01	⁵ D ₃ - 416 ₃ ^o	
2711.949	3 b		36862.92			
2712.128	4	2	36860.48	-0.13	18 ₃ - 558 ₂ ^o	
2712.302	12	2	36858.12	-0.06	18 ₁ - 549 ₁ ^o	
2712.516	6		36855.22	-0.03	17 ₃ - 545 ₃ ^o	
2712.549	2		36854.77	-0.11	19 ₂ - 561 ₃ ^o	
2712.591	15		36854.20	-0.02	³ H ₆ - 538 ₅ ^o	
2712.743	1		36852.13	-0.07	19 ₄ - 561 ₃ ^o	
2713.718	12 b		36838.90			
2713.856	16		36837.02	-0.12	³ G ₃ - 501 ₃ ^o	
2714.82	12		36823.94	-0.23	18 ₂ - 549 ₁ ^o	
2715.086	4		36820.33	-0.19	22852 ₄ - 596 ₅ ^o	
2715.503	75	7	36814.68	-0.09	⁵ D ₄ - 430 ₅ ^o	(b)
2716.064	10		36807.08	-0.02	³ G ₄ - 532 ₄ ^o	
2716.178	3		36805.53			
2716.322	30	80 s	36803.58	+0.04	⁵ S ₂ -55084 ₂ ^o	
2716.89	35	35 s	36795.90	+0.11	³ G ₃ - 522 ₃ ^o	
2717.53	30	1	36787.22	-0.04	14 ₂ - 517 ₁ ^o	
2717.612	30	1	36786.11	-0.06	³ H ₅ - 518 ₄ ^o	
2717.795	5		36783.62	-0.10	³ P ₂ - 560 ₂ ^o	
2718.55	3		36773.42			
2718.906	250 r	30	36768.60	-0.07	⁷ S ₃ - 397 ₄ ^o	Res
2719.284	30	1	36763.50	-0.07	³ P ₀ - 462 ₁ ^o	
2719.331	50	6	36762.86	-0.08	³ G ₄ - 531 ₅ ^o	
2719.858	50	6	36755.73	0.00	⁷ S ₃ - 397 ₂ ^o	
2720.046	30	3	36753.20	0.00	⁵ D ₃ - 415 ₂ ^o	
2720.118	10		36752.22	+0.03	⁵ S ₂ -55032 ₂ ^o	
2720.326	8		36749.42	-0.02	20 ₂ - 577 ₃ ^o	
2720.616	25		36745.50	+0.06	19535 ₅ - 562 ₅ ^o	
2720.701	18		36744.34	-0.06	23 ₆ - 602 ₅ ^o	
2720.856	10		36742.26	-0.05	18 ₂ - 548 ₂ ^o	
2720.906	35	3	36741.58	-0.04	17 ₄ - 538 ₄ ^o	
2721.65	50		36731.53	-0.13	19 ₄ - 559 ₅ ^o	
2722.243	10		36723.53			
2722.456	50	8	36720.66	+0.02	19535 ₅ - 562 ₄ ^o	
2722.674	30	2	36717.72	+0.05	14 ₂ -51693 ₂ ^o	
2722.739	3		36716.85	+0.02	13 ₂ - 504 ₂ ^o	
2723.946	35	2	36700.58	+0.05	19826 ₅ - 565 ₆ ^o	
2724.352	300 r	50	36695.10	-0.02	⁷ S ₃ - 396 ₃ ^o	
2724.536	20	2	36692.62	+0.01	15 ₃ - 521 ₂ ^o	
2724.624	35	7	36691.44	+0.03	⁵ D ₄ - 429 ₄ ^o	
2725.033	60	6	36685.94	-0.03	⁵ D ₂ - 400 ₂ ^o	
2725.062	60	6	36685.55	0.00	⁵ D ₁ - 383 ₁ ^o	
2725.765	12	1	36676.08	+0.02	19826 ₅ - 565 ₄ ^o	
2725.892	25	1	36674.38	-0.04	19 ₃ - 565 ₄ ^o	
2726.26	30	1	36669.43	0.00	⁵ D ₃ - 414 ₃ ^o	
2726.496	4		36666.26			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2726.918	8		36660.58	+0.05	⁵ S ₂ — 549° ₁	Res
2727.208	6		36656.68	+0.03	19 ₃ — 564° ₃	
2727.954	40	4	36646.65	-0.02	⁵ D ₄ — 428° ₅	
2728.064	20	1	36645.18	+0.03	18 ₃ — 556° ₂	
2728.321	20	2	36641.73			
2729.052	20		36631.91	0.00	19 ₆ — 562° ₅	
2729.157	12		36630.50	-0.10	14 ₂ — 51606° ₂	
2729.336	10	1	36628.10			
2729.62	25	75 s	36624.29	-0.05	14 ₂ — 516° ₃	
2729.761	35		36622.41	+0.02	18 ₃ — 555° ₄	
2730.05	3		36618.53			
2730.146	6		36617.24	-0.23	³ G ₃ — 499° ₃	
2730.279	3		36615.46			
2730.61	2		36611.02	+0.02	19 ₄ — 558° ₄	
2731.006	8	1	36605.71	-0.05	19 ₂ — 558° ₁	
2731.125	30	1	36604.12	+0.05	15 ₃ — 520° ₂	
2731.451	7		36599.74	-0.03	15 ₃ — 520° ₄	
2732.809	25	2	36581.56	0.00	19 ₂ — 558° ₂	
2733.026	4		36578.65	-0.02	⁵ S ₂ — 548° ₂	
2733.178	50	5	36576.61	+0.05	³ P ₀ — 461° ₁	
2733.562	15		36571.48	-0.07	18 ₃ — 555° ₃	
2733.775	40	2	36568.63	+0.04	17 ₃ — 542° ₃	
2734.316	4	3	36561.40	+0.02	³ G ₄ — 529° ₄	
2734.409	4	2	36560.16			
2734.771	40		36555.31	+0.04	15 ₃ — 520° ₃	
2735.402	15		36546.88	-0.06	22852 ₄ — 593° ₃	
2735.618	6		36544.00	-0.08	23 ₁ — 599° ₂	
2735.975	50	3	36539.22	-0.02	19 ₄ — 557° ₅	
2736.888	4	2	36527.04			
2737.426	5		36519.86			
2738.002	40	4	36512.18	+0.01	³ G ₄ — 529° ₃	
2738.562	6		36504.71			
2738.769	10		36501.95			
2739.564	40	2	36491.36	-0.02	³ P ₁ — 497° ₀	
2739.903	3		36486.84			
2741.129	3		36470.53			
2742.306	8		36454.88	-0.13	23 ₃ — 603° ₄	
2742.471	15	30 s	36452.68	-0.21	19535 ₅ — 559° ₅	
2743.068	4		36444.75			
2743.426	50	5	36440.00	-0.02	³ G ₃ — 497° ₄	
2744.209	20	1	36429.60	-0.01	19826 ₅ — 562° ₄	
2744.338	20	1	36427.88	-0.09	19 ₃ — 562° ₄	
2744.386	25	1	36427.25	-0.05	22476 ₄ — 589° ₅	
2744.910	15		36420.30	-0.05	19535 ₅ — 559° ₄	
2745.113	12		36417.60	0.00	17 ₃ — 541° ₄	
2745.268	1		36415.54	-0.11	18 ₃ — 553° ₂	
2745.325	10		36414.80	+0.01	18 ₃ — 553° ₃	
2745.626	12	1	36410.80	-0.03	22852 ₄ — 592° ₅	
2745.837	20	2	36408.00	+0.01	13 ₂ — 501° ₃	
2746.206	40	3	36403.11	0.00	³ H ₅ — 514° ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2746.734	40		36396.11	+0.02	15 ₃ - 518 ₄ [°]	
2747.005	50	2	36392.52	+0.06	³ P ₁ - 496 ₂ [°]	
2747.155	15	3	36390.54			
2747.826	40	2	36381.65	-0.21	⁵ D ₄ - 426 ₃ [°]	
				+0.16	⁵ D ₂ - 397 ₂ [°]	
2748.312	20	15 s	36375.21	-0.04	³ G ₄ - 528 ₃ [°]	
2748.577	30	3	36371.71	+0.02	18 ₃ - 553 ₄ [°]	
2748.767	5		36369.20	-0.10	20 ₂ - 573 ₃ [°]	
2748.844	80	20	36368.17	+0.03	⁵ D ₃ - 411 ₄ [°]	
2748.997	25	2	36366.15	+0.15	19 ₂ - 556 ₂ [°]	
2749.538	1	2	36359.01			
2749.641	10		36357.65			
2750.145	40	4	36350.98	-0.02	³ G ₃ - 496 ₂ [°]	
2750.325	10	20 s	36348.60	+0.01	19826 ₅ - 561 ₄ [°]	
2750.444	10		36347.03	+0.08	19 ₃ - 561 ₄ [°]	
2750.763	15		36342.82	+0.03	³ G ₄ - 527 ₅ [°]	
2750.948	3		36340.38	-0.28	19 ₄ - 555 ₄ [°]	
2751.027	3		36339.32	-0.04	19 ₆ - 559 ₅ [°]	
2751.210	15		36336.90	+0.06	18 ₁ - 544 ₁ [°]	
2751.559	8		36332.30	+0.07	19535 ₅ - 558 ₄ [°]	
2751.691	5		36330.55			
2752.051	9		36325.80			
2752.172	10		36324.20			
2752.418	10		36320.95	+0.07	⁵ D ₂ - 396 ₃ [°]	
2752.570	6		36318.95	+0.04	22852 ₄ - 591 ₄ [°]	
2752.996	30	3	36313.33	+0.04	⁵ D ₄ - 425 ₄ [°]	
2753.049	15	2	36312.63	-0.04	19535 ₅ - 558 ₆ [°]	
2753.159	20		36311.18	+0.09	⁵ D ₂ - 396 ₁ [°]	
2753.648	3		36304.72			
2753.793	3		36302.81	-0.02	18 ₂ - 544 ₁ [°]	
2753.940	1		36300.88	-0.24	22476 ₄ - 587 ₄ [°]	
2754.258	3		36296.69			
2754.402	12		36294.80	-0.01	⁵ D ₄ - 425 ₃ [°]	
2754.58	5		36292.45	-0.05	19 ₂ - 555 ₃ [°]	
2754.78	3		36289.81	-0.01	19 ₄ - 555 ₃ [°]	
2754.915	30	3	36288.03	+0.07	³ G ₃ - 496 ₄ [°]	
2755.266	40	3	36283.41	0.00	17 ₄ -53390 ₃ [°]	
2755.465	8		36280.79	+0.03	19 ₃ - 561 ₃ [°]	
2755.584	15		36279.22			
2755.830	3		36275.99	+0.04	⁵ S ₂ - 545 ₃ [°]	
2755.942	40	4	36274.51	-0.01	⁵ D ₃ - 411 ₂ [°]	
2756.360	12		36269.01			
2756.694	12		36264.62			
2757.008	8		36260.49	+0.02	19535 ₅ - 557 ₅ [°]	
2757.201	8	10	36257.95	-0.01	18 ₂ - 543 ₁ [°]	
2758.683	20	1	36238.47	-0.04	17 ₄ -53345 ₃ [°]	
2758.876	20	1	36235.93	-0.05	19 ₄ -55492 ₅ [°]	
2759.035	25	2	36233.85	+0.01	15 ₃ -51693 ₂ [°]	
2759.122	6		36232.71	-0.03	³ P ₀ - 457 ₁ [°]	
2759.257	10		36230.93	+0.02	⁵ D ₄ - 424 ₄ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2759.904	5		36222.44			
2760.036	30	5	36220.71	-0.09	³ H ₅ - 512 ₅ [°]	
2760.100	8		36219.87	-0.05	³ H ₆ - 532 ₆ [°]	
2760.409	7		36215.81			
2760.742	12	10 s	36211.44	+0.07	17 ₃ -53912 ₂ [°]	
2760.84	40	1	36210.16	0.00	³ P ₁ - 495 ₂ [°]	
2761.142	30		36206.20	0.00	14 ₂ - 511 ₂ [°]	
2761.685	12		36199.08	-0.03	19 ₄ -55455 ₅ [°]	
				-0.06	19 ₆ -55847 ₆ [°]	
2762.339	150	15	36190.51	+0.02	⁵ D ₀ - 361 ₁ [°]	
2762.499	6	15 s	36188.42	+0.10	13 ₂ - 499 ₃ [°]	
				-0.12	23 ₆ - 596 ₅ [°]	
2762.70	35	2	36185.78	0.00	³ H ₆ - 531 ₅ [°]	
2763.55	4	1	36174.66			
2763.614	5		36173.82			
2764.004	30	2	36168.72	+0.02	³ G ₃ - 495 ₂ [°]	
2764.344	10		36164.27	-0.18	³ H ₄ - 483 ₃ [°]	
2764.638	4		36160.42			
2765.131	4		36153.97			
2765.211	12	3	36152.93	0.00	18 ₂ - 542 ₃ [°]	
2765.535	2		36148.69	-0.07	20 ₂ - 571 ₃ [°]	
2765.642	50 l	1	36147.30	-0.15	17 ₃ - 538 ₄ [°]	
				+0.36	19 ₆ - 557 ₅ [°]	
				+0.53	15 ₃ -51606 ₂ [°]	
2766.268	3		36139.11	-0.08	⁵ S ₂ - 544 ₁ [°]	
2766.464	8	4	36136.56	-0.04	19 ₂ - 553 ₂ [°]	
2766.531	3		36135.68	-0.06	19 ₂ - 553 ₃ [°]	
2766.731	20		36133.07	+0.01	19 ₄ - 553 ₃ [°]	
2766.861	4		36131.37	-0.03	17 ₄ - 532 ₄ [°]	
2766.898	6		36130.89	+0.07	19 ₂ - 553 ₁ [°]	
2767.144	50	1	36127.68	0.00	19 ₃ - 559 ₄ [°]	
2767.472	5		36123.39			
2768.534	12		36109.54	+0.03	18 ₃ -55084 ₂ [°]	
2768.848	6	2	36105.44			
2768.982	100	12	36103.70	+0.03	⁵ D ₁ - 377 ₁ [°]	Res
2769.576	10		36095.95	-0.05	14 ₂ - 510 ₃ [°]	
2769.741	80	8	36093.80	-0.03	⁵ D ₃ - 409 ₃ [°]	
2770.042	15	8	36089.88	-0.08	19 ₄ - 553 ₄ [°]	
2770.215	30		36087.61			
2770.349	6		36085.88	-0.12	22476 ₄ - 585 ₅ [°]	
2770.880	200 r	20	36078.96	0.00	⁷ S ₃ - 390 ₂ [°]	
2771.628	50	1	36069.23	-0.11	³ C ₃ - 494 ₃ [°]	
2772.188	30		36061.94	+0.05	19535 ₅ - 555 ₄ [°]	
2772.485	30		36058.08	-0.08	18 ₃ -55032 ₂ [°]	
2773.022	6		36051.10	-0.08	22852 ₄ - 589 ₅ [°]	
2773.702	80	4	36042.26	-0.02	19 ₆ - 556 ₇ [°]	
2773.918	8		36039.45	-0.11	19 ₃ - 558 ₄ [°]	
2773.999	200 r	20	36038.40	0.00	⁵ D ₃ - 408 ₂ [°]	
2774.476	300 r	50	36032.20	+0.02	⁵ D ₄ - 422 ₃ [°]	
2775.290	4		36021.64	0.00	19826 ₅ - 558 ₆ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2775.71	1		36016.19	-0.11	23 ₂ - 599 ₂ [°]	
				-0.09	20 ₂ - 569 ₂ [°]	
2775.988	8 <i>d</i>	6	36012.58	-0.45	15 ₃ - 514 ₄ [°]	
2776.095	40	2	36011.19	-0.09	17 ₄ - 531 ₄ [°]	
2776.30	5		36008.53	-0.06	³ H ₄ - 481 ₃ [°]	
2776.392	6		36007.35	-0.09	19 ₃ - 558 ₂ [°]	
2776.564	10		36005.12	-0.01	³ G ₄ - 524 ₄ [°]	
2776.916	3		36000.55			
2777.269	15		35995.97	-0.13	22852 ₄ - 588 ₄ [°]	
2777.786	10		35989.27	-0.02	⁵ S ₂ - 542 ₃ [°]	
2778.787	1		35976.31	-0.11	³ H ₄ - 481 ₅ [°]	
2779.321	15	1	35969.39	-0.05	19826 ₅ - 557 ₅ [°]	
2779.52	1		35966.82	-0.16	23 ₁ - 594 ₂ [°]	
2779.642	15	1	35965.24			
2779.733	30	4	35964.07	-0.12	³ G ₄ - 523 ₅ [°]	
2779.824	8		35962.89	-0.16	³ P ₁ - 492 ₂ [°]	
2780.285	60	40 <i>s</i>	35956.94	-0.27	19535 ₅ -55492 ₅ [°]	
2781.376	4 <i>b</i>		35942.82			
2781.820	15		35937.09	-0.01	18 ₃ - 549 ₄ [°]	
2782.658	12		35926.26	-0.13	18 ₃ - 549 ₃ [°]	
2782.692	1		35925.82	+0.08	23 ₆ - 594 ₆ [°]	
2782.763	3	5	35924.90	-0.10	22852 ₄ - 587 ₄ [°]	
2783.022	10		35921.57	-0.03	³ G ₃ - 492 ₂ [°]	
2783.131	40	12	35920.16	-0.18	19535 ₅ -55455 ₅ [°]	
2783.679	20		35913.09			
2785.806	15	1	35885.67	-0.01	17 ₄ - 529 ₄ [°]	
2785.896	25	2	35884.51	-0.13	18 ₃ - 548 ₂ [°]	
2786.102	8		35881.86	-0.07	³ H ₅ - 509 ₆ [°]	
2786.52	30		35876.48	+0.03	18 ₁ - 539 ₂ [°]	
2787.131	6		35868.61			
2787.632	10		35862.16	-0.04	23 ₆ - 593 ₇ [°]	
2787.984	50	5	35857.63	-0.04	⁵ D ₂ - 391 ₁ [°]	Res
2788.778	10	3	35847.43	-0.05	³ H ₆ - 528 ₆ [°]	
2788.906	6		35845.78	-0.16	³ P ₀ - 453 ₁ [°]	
2789.074	30	2	35843.62	-0.06	19 ₆ -55492 ₅ [°]	
2789.170	10		35842.39	-0.05	18 ₂ - 539 ₂ [°]	
2789.380	25		35839.69	+0.14	³ H ₅ - 509 ₄ [°]	
2789.623	5		35836.56	+0.09	17 ₄ - 529 ₃ [°]	
2789.684	25	2	35835.78	-0.07	⁵ D ₃ - 406 ₃ [°]	
2790.103	3		35830.41	-0.05	19 ₂ -55084 ₂ [°]	
2790.210	2		35829.03			
2790.576	25		35824.33	-0.16	³ G ₄ - 522 ₃ [°]	
				+0.07	14 ₂ -50800 ₃ [°]	
2791.604	4		35811.14	-0.05	19 ₂ - 553 ₄ [°]	
2791.961	80	8	35806.56	-0.10	³ H ₄ - 479 ₄ [°]	3
2792.216	20	1	35803.29	-0.09	³ G ₃ - 491 ₂ [°]	
2792.526	25	4	35799.32	-0.07	³ G ₃ - 491 ₄ [°]	
2792.696	60 <i>r</i>	20	35797.14	-0.01	⁷ S ₃ - 387 ₄ [°]	Res
2792.781	35	3	35796.05	+0.04	⁵ D ₁ - 374 ₂ [°]	
2793.105	12	1	35791.90	-0.08	19 ₃ - 556 ₂ [°]	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
2793.496	8	1	35786.89	-0.21	19 ₄ - 550 ₄ [°]	
2794.127	12		35778.81	-0.04	23 ₆ - 592 ₅ [°]	
2794.278	3		35776.87			
2794.506	8		35773.96	-0.25	24 ₃ - 603 ₄ [°]	
2794.752	6		35770.81	-0.05	19826 ₅ - 555 ₄ [°]	
2794.882	5		35769.14	-0.08	19 ₃ - 555 ₄ [°]	
2795.165	10		35765.52	-0.08	³ H ₆ - 527 ₅ [°]	
2795.723	3		35758.38	-0.04	18 ₂ - 538 ₁ [°]	
2795.906	2		35756.04			
2796.153	30	3	35752.88	-0.19	⁵ D ₃ - 405 ₄ [°]	
				-0.10	19 ₄ - 550 ₅ [°]	
2796.958	4		35742.60	-0.12	14 ₂ - 507 ₂ [°]	
2797.201	25	2	35739.49	-0.06	13 ₂ - 495 ₂ [°]	
2797.464	25	2	35736.13	-0.01	³ H ₅ - 508 ₅ [°]	
2797.633	10		35733.97	-0.14	20 ₂ - 567 ₃ [°]	
2798.005	6		35729.22	-0.10	22476 ₄ - 582 ₃ [°]	
2798.286	3		35725.63			
2798.455	12		35723.47	-0.11	³ G ₃ - 490 ₃ [°]	
2798.544	6		35722.34	-0.03	15 ₃ - 511 ₂ [°]	
2798.860	5		35718.30	-0.08	19 ₃ - 555 ₃ [°]	
2799.688	15	1	35707.74			Res
2799.928	50	10	35704.68	-0.04	⁵ D ₂ - 390 ₂ [°]	
2800.097	8		35702.53	-0.17	22476 ₄ - 581 ₅ [°]	
2800.333	8		35699.52	-0.03	17 ₄ - 528 ₃ [°]	
2800.886	10		35692.47			
2801.172	25	4	35688.83	-0.05	³ H ₄ - 478 ₅ [°]	
2801.410	6		35685.80			
2801.469	5		35685.04	-0.08	20 ₀ - 558 ₁ [°]	
2801.644	8		35682.81	-0.17	27 ₅ - 635 ₆ [°]	
2801.848	3		35680.22			
2801.958	15	1	35678.81	+0.01	⁵ S ₂ - 539 ₂ [°]	
2802.884	15	2	35667.03	-0.06	17 ₄ - 527 ₅ [°]	
2802.958	20	3	35666.09	-0.09	19826 ₅ -55492 ₅ [°]	
				+0.10	13 ₂ - 494 ₁ [°]	
2803.800	7		35655.38	+0.01	19 ₄ - 549 ₄ [°]	
2804.020	30	4	35652.58	-0.03	⁵ D ₄ - 418 ₄ [°]	
2804.243	30	6	35649.75	-0.03	³ G ₄ - 520 ₅ [°]	
2804.676	40	6	35644.24	-0.10	17 ₃ -53345 ₃ [°]	
				+0.22	23 ₆ - 591 ₆ [°]	
2804.996	6		35640.18	-0.01	13 ₂ - 494 ₃ [°]	
2805.427	4		35634.70	-0.02	22852 ₄ - 584 ₃ [°]	
2805.632	30	2	35632.10	+0.03	⁵ S ₂ -53912 ₂ [°]	
2806.787	4		35617.44			
2805.874	10		35629.02	-0.29	19826 ₅ -55455 ₅ [°]	
2807.208	6		35612.09	-0.08	15 ₃ - 510 ₃ [°]	
2807.725	35	2	35605.54	-0.05	19 ₂ - 548 ₂ [°]	
2807.938	12	3	35602.84			
2808.574	20		35594.78	0.00	⁵ S ₂ - 538 ₁ [°]	
2809.231	10	2	35586.45	-0.08	18 ₁ - 536 ₂ [°]	
2809.430	3		35583.93	-0.04	³ G ₄ - 520 ₃ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2809.594	15	1	35581.85	-0.07	18 ₃ - 545° ₃	Res
2811.122	10	1	35562.51	+0.03	19 ₃ - 553° ₂	
2811.185	2		35561.71	+0.09	19 ₃ - 553° ₃	
2811.534	12		35557.30	-0.07	14 ₂ - 505° ₁	
2811.911	4		35552.53	+0.01	18 ₂ - 536° ₂	
2812.324	10		35547.31	-0.13	24 ₃ - 601° ₄	
2813.128	35	4	35537.16	-0.07	17 ₃ - 532° ₄	
2813.902	3		35527.38	+0.01	³ H ₄ - 476° ₄	
2814.478	6		35520.11	-0.05	19826 ₅ - 553° ₄	
2814.604	8		35518.52	0.00	19 ₃ - 553° ₄	
2815.416	40	4	35508.28	-0.05	19535 ₅ - 550° ₄	
2815.880	6		35502.43			
2815.975	4		35501.23	-0.08	20 ₂ - 564° ₃	
2816.326	8		35496.80			
2816.685	12		35492.28	-0.17	13 ₂ - 492° ₂	
2817.590	10	1	35480.88	-0.08	³ P ₁ - 487° ₁	
2818.060	250 r	40	35474.96	-0.05	⁵ D ₄ - 416° ₃	
2818.138	40		35473.98	-0.23	19535 ₅ - 550° ₅	
2818.480	4		35469.68	+0.02	23 ₃ - 593° ₃	
2818.957	2		35463.68	+0.02	22852 ₄ -58316° ₄	
2819.108	4		35461.78			
2819.330	3		35458.98			
2820.092	12		35449.40	-0.06	15 ₃ - 509° ₄	
2820.702	20	2	35441.74			
2820.900	3		35439.25	-0.10	⁵ D ₃ - 402° ₃	
				+0.05	23 ₂ - 594° ₂	
2821.310	20	2	35434.10	-0.10	15 ₃ -50894° ₃	
2821.522	15		35431.44	-0.04	³ H ₄ - 475° ₃	
2821.629	6	1	35430.09			
2822.054	7		35424.76	-0.03	³ G ₄ - 518° ₄	
2822.597	30		35417.95			
2822.659	5		35417.17	+0.06	17 ₃ - 531° ₄	
2823.460	1		35407.12	-0.16	20 ₁ - 558° ₂	
2823.710	30	2	35403.98	+0.01	⁵ D ₃ - 402° ₄	
2824.467	5		35394.50			
2824.983	3		35388.03	-0.19	24 ₃ - 599° ₂	
2825.072	6		35386.92	-0.08	³ H ₆ - 523° ₅	
2825.248	3		35384.71			
2825.366	3		35383.24			
2825.891	3		35376.66	+0.06	19535 ₅ - 549° ₄	
2826.084	15	1	35374.25	+0.02	13 ₂ - 491° ₂	
2826.598	5		35367.82			
2826.861	3		35364.52			
2827.149	12	2	35360.92	-0.03	19535 ₅ - 548° ₆	
2827.286	18	6	35359.21	-0.04	³ H ₅ - 504° ₆	
2827.651	4		35354.64			
2828.117	3		35348.82	-0.16	20 ₂ - 563° ₃	
2828.796	15		35340.34	-0.09	15 ₃ - 508° ₃	
2828.958	5		35338.32			
2829.158	3		35335.82			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
2829.668	2		35329.45	+0.02	17 ₄ - 524 ₄ ^o	Res
2829.821	50	10	35327.54	+0.02	³ G ₃ - 486 ₄ ^o	
				-0.06	14 ₂ - 503 ₃ ^o	
2829.898	8		35326.58	0.00	22852 ₄ - 581 ₅ ^o	
2830.286	30	2	35321.73	+0.01	³ H ₄ - 474 ₃ ^o	
2831.379	250 <i>r</i>	40	35308.10	-0.01	⁷ S ₃ - 382 ₄ ^o	
2831.828	6	6	35302.50	-0.04	17 ₃ - 530 ₂ ^o	
2832.073	1		35299.44	+0.10	28 ₅ - 635 ₆ ^o	
2832.322	10	3	35296.34	0.00	³ P ₁ - 486 ₀ ^o	
2832.478	30	3	35294.40	-0.03	13 ₂ - 490 ₃ ^o	
2832.710	5		35291.50	-0.01	17 ₃ - 529 ₄ ^o	
2832.954	20	2	35288.47	-0.02	17 ₄ - 523 ₅ ^o	
2833.630	120 <i>r</i>	30	35280.05	-0.05	⁵ D ₄ - 414 ₃ ^o	
2834.155	15		35273.51	-0.07	18 ₂ -53390 ₃ ^o	
2834.495	6	4	35269.28			
2835.334	8	5 <i>s</i>	35258.85	-0.04	15 ₃ - 507 ₂ ^o	
2835.544	5		35256.24	-0.10	19 ₃ -55084 ₂ ^o	
2835.638	60	6	35255.07	-0.02	⁷ S ₃ - 382 ₃ ^o	
2836.057	3		35249.86			
2836.254	30	3	35247.41	-0.01	19 ₆ - 548 ₆ ^o	
2836.426	3		35245.27			
2836.663	3		35242.33	+0.03	17 ₃ - 529 ₃ ^o	
2836.718	1		35241.64	+0.01	23 ₃ - 591 ₄ ^o	
2837.345	60	5	35233.86	-0.01	⁵ D ₁ - 369 ₂ ^o	
2837.768	40	4	35228.60	-0.08	18 ₂ -53345 ₃ ^o	
2838.682	20	2	35217.26	-0.04	19826 ₅ - 550 ₄ ^o	
2838.819	10		35215.56	0.00	19 ₃ - 550 ₄ ^o	
2838.894	20	2	35214.63	-0.08	³ H ₅ - 502 ₄ ^o	
2839.120	5		35211.83			
2839.340	50	5	35209.10	-0.05	³ P ₀ - 447 ₁ ^o	
2840.104	15	1	35199.63	-0.15	³ H ₄ - 473 ₃ ^o	
2840.222	15	2	35198.17	-0.06	³ H ₄ - 473 ₄ ^o	
2840.738	10	1	35191.78	-0.04	20 ₁ - 556 ₂ ^o	
2841.128	8		35186.95			
2841.345	5		35184.26	-0.06	17 ₃ - 528 ₂ ^o	
2841.570	80 <i>r</i>	10	35181.47	-0.03	⁵ D ₃ - 400 ₂ ^o	
2841.752	4		35179.22			
2841.843	2		35178.10			
2842.566	25	1	35169.15	-0.06	³ G ₄ - 516 ₃ ^o	
2842.818	12		35166.03	-0.08	³ P ₂ - 544 ₁ ^o	
2843.780	30	2	35154.13			
2844.220	2		35148.70	-0.09	17 ₄ - 522 ₃ ^o	
2844.578	5		35144.27	0.00	18 ₃ - 541 ₄ ^o	
				+0.07	18 ₁ - 532 ₁ ^o	
2844.711	4		35142.63	-0.05	22476 ₄ - 576 ₃ ^o	
2844.922	50	2	35140.02	-0.06	28 ₆ - 635 ₆ ^o	
2845.392	6		35134.22			
2846.446	10		35121.21	-0.03	³ P ₂ - 543 ₁ ^o	
2847.366	25	3	35109.86	-0.08	⁵ S ₂ -53390 ₃ ^o	
2847.736	5		35105.30	-0.08	17 ₃ - 528 ₃ ^o	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
2847.832	20	10	35104.12			
2848.022	180 <i>r</i>	50	35101.78	+0.02	⁷ S ₃ - 380° ₃	
2849.333	8		35085.63	+0.06	19826 ₅ - 549° ₄	
2849.395	8		35084.86	+0.02	19 ₆ - 547° ₆	
2849.468	10	2	35083.97	+0.04	19 ₃ - 549° ₄	
2849.560	12	2	35082.83	-0.03	³ P ₁ - 483° ₁	
2849.961	6		35077.90	0.00	23 ₆ - 585° ₅	
2850.399	15	1	35072.51	-0.08	³ H ₆ - 520° ₅	
2850.610	3	1	35069.91	-0.01	19826 ₅ - 548° ₆	
2850.808	35	8 <i>s</i>	35067.48	-0.14	³ H ₅ - 501° ₅	
2851.009	5		35065.00	-0.04	⁵ S ₂ -53345° ₃	
2851.456	3		35059.51			
2851.901	18	2	35054.04	-0.02	19 ₄ - 543° ₅	
2852.250	6		35049.74	-0.09	⁷ S ₃ - 380° ₄	
2852.914	15	3	35041.59	-0.14	³ G ₄ - 514° ₄	
2853.023	3		35040.25			
2853.143	8		35038.78			
2853.502	50	5	35034.37	-0.16	15 ₃ - 504° ₂	
2853.841	30	2	35030.20	-0.11	⁵ D ₂ - 383° ₁	Res
2854.998	8		35016.02	-0.19	³ P ₂ - 542° ₃	
2855.354	25	2	35011.65	-0.09	³ P ₁ - 483° ₂	
2855.470	8		35010.22	-0.13	13 ₂ - 487° ₁	
2856.030	150 <i>r</i>	15	35003.36	-0.05	⁵ D ₁ - 366° ₂	
2856.202	10		35001.25			
2856.720	6		34994.90	-0.22	22476 ₄ - 574° ₄	
2857.145	50	5	34989.70	-0.15	14 ₂ - 499° ₃	Res
2857.549	4		34984.76	-0.01	18 ₃ - 539° ₂	
2858.042	60	6	34978.72	-0.09	⁵ D ₄ - 411° ₄	Res
2858.430	25	2	34973.97	-0.11	17 ₄ - 520° ₅	
2858.742	30	2	34970.16	-0.02	³ H ₆ - 519° ₆	
2859.647	8		34959.08	-0.09	18 ₁ - 530° ₁	
2859.780	10	1	34957.46	-0.06	³ P ₁ - 482° ₀	
2859.870	10	1	34956.36	-0.18	20 ₁ - 553° ₁	
2860.170	12	3	34952.69	-0.08	17 ₄ - 520° ₄	
2860.316	1		34950.90	+0.04	22852 ₄ - 578° ₄	
2860.668	10		34946.60	+0.05	⁵ S ₂ - 532° ₁	
2860.736	7		34945.78			
2861.149	2		34940.74	+0.06	27 ₄ - 621° ₅	
2861.443	12	2	34937.15	-0.04	³ P ₁ - 482° ₂	
2862.432	10		34925.08	-0.08	18 ₂ - 530° ₁	
2862.781	8		34920.82	-0.07	18 ₁ - 530° ₂	
2863.012	50	5	34918.00	-0.03	⁵ D ₁ - 365° ₀	
2863.892	35	7	34907.27	-0.07	19826 ₅ - 547° ₆	1
2864.858	3	10 <i>s</i>	34895.51	-0.22	³ G ₃ - 482° ₂	
2865.318	10	1	34889.90	-0.06	⁵ D ₃ - 397° ₄	
2865.568	12		34886.86	-0.02	18 ₂ - 530° ₂	
2866.062	200 <i>r</i>	40	34880.84	-0.01	⁵ D ₂ - 382° ₃	
2866.387	25	3	34876.89	-0.13	⁵ D ₃ - 397° ₂	
2866.600	4	8 <i>s</i>	34874.30	+0.18	18 ₃ - 538° ₄	
2867.564	20		34862.58	+0.04	19 ₄ - 541° ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2867.814	3		34859.54	+0.12	³ G ₄ - 512° ₅	
2868.436	3		34851.98	-0.12	20 ₂ - 558° ₂	
2868.796	8		34847.61	-0.11	23 ₃ - 587° ₄	
2869.117	50	2	34843.71	-0.06	15 ₃ - 503° ₃	
2869.552	4		34838.42	-0.15	22476 ₄ - 573° ₄	
2869.625	10	10	34837.54	-0.16	27 ₅ - 626° ₆	
2869.826	6		34835.10	-0.06	23 ₁ - 582° ₁	
2870.416	5	3	34827.94			
2870.528	6		34826.58	-0.06	18 ₂ - 529° ₃	
2870.630	4		34825.34	-0.06	³ P ₀ - 443° ₁	
2870.690	3		34824.62	-0.01	15 ₃ - 502° ₄	
2870.786	2		34823.45			
2870.855	4		34822.61			
2870.906	18	10 s	34822.00	+0.01	³ G ₃ - 481° ₃	
2871.363	30	6	34816.45	+0.04	⁵ D ₃ - 396° ₃	
2872.505	12		34802.60	-0.07	18 ₁ - 528° ₂	
2873.40	7		34791.77			
2873.643	2		34788.83	-0.03	24 ₃ - 593° ₃	
2874.418	6		34779.44			
2874.762	1		34775.29	0.00	19535 ₅ - 543° ₅	
2874.845	3		34774.28			
2875.208	30	3	34769.89	+0.01	³ H ₄ - 469° ₄	
2875.314	5		34768.61	-0.05	18 ₂ - 528° ₂	
2875.474	10	3	34766.68	-0.13	20 ₀ - 549° ₁	
2875.906	2		34761.46	-0.06	⁵ S ₂ - 530° ₁	
2876.934	20	10 s	34749.01	-0.01	17 ₄ - 518° ₄	
2878.083	10	8 s	34735.16	-0.10	17 ₃ - 524° ₄	
2878.721	50	5	34727.47	-0.05	⁵ D ₂ - 380° ₃	
2878.882	1		34725.53	-0.11	23 ₃ - 586° ₂	
2879.112	150 r	25	34722.75	-0.04	⁷ S ₃ - 376° ₃	Res
2879.396	140 r	20	34719.33	0.00	⁵ D ₀ - 347° ₁	
2880.349	2		34707.84	-0.19	22852 ₄ - 575° ₅	
2880.521	3		34705.77	+0.05	³ P ₂ - 539° ₂	
2880.634	25	3	34704.40	-0.10	⁵ D ₄ - 409° ₃	
2881.080	4		34699.03			
2881.438	4		34694.72	-0.13	18 ₃ - 536° ₂	
				+0.12	23 ₆ - 581° ₅	
2881.606	80	12	34692.70	+0.05	⁵ D ₄ - 409° ₅	
				-0.14	³ H ₄ - 468° ₅	
2881.847	2		34689.80	+0.08	18 ₂ - 528° ₃	
2882.196	10		34685.60			
2883.152	3	3 s	34674.10	-0.12	27 ₅ - 625° ₆	
2883.247	6	4 s	34672.95	+0.03	23 ₂ - 586° ₂	
2883.367	3		34671.50			
2883.569	10		34669.08			
2884.084	3		34662.89	-0.11	⁵ S ₂ - 529° ₃	
2884.180	25	3	34661.74	-0.02	19 ₆ - 543° ₅	
2884.233	2		34661.10	-0.20	23 ₂ - 586° ₃	
2884.412	4		34658.96	-0.03	³ P ₂ -53912° ₂	
2884.641	15		34656.20	+0.02	20 ₁ -55084° ₂	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2884.888	4		34653.24			
2885.058	5	2	34651.20			
2885.921	12	2	34640.83	-0.04	³ G ₄ - 510° ₃	
2886.280	2		34636.52	-0.12	20 ₂ - 556° ₂	
2886.645	6		34632.14	-0.20	24 ₂ - 594° ₂	
2887.518	4		34621.67	-0.03	³ P ₂ - 538° ₁	
2887.662	20	3	34619.94	-0.12	³ G ₃ - 479° ₄	
2887.743	2		34618.97	-0.03	22852 ₄ - 574° ₄	
2888.318	15	8 s	34612.08	-0.17	13 ₂ - 483° ₁	
2888.788	6		34606.45	-0.03	19 ₄ - 538° ₅	
2888.924	4		34604.82	-0.01	20 ₁ -55032° ₂	
2889.968	25	1	34592.32	-0.07	19 ₄ - 538° ₄	
2890.314	5 b		34588.18			
2890.687	3		34583.72	-0.05	19535 ₅ - 541° ₄	
2891.76	3		34570.88	+0.13	18 ₁ - 526° ₂	
2892.120	8	2	34566.58	-0.01	³ H ₅ - 496° ₄	
2892.413	7		34563.08	+0.04	20 ₂ - 555° ₃	
2892.608	12		34560.75	-0.08	24 ₃ - 591° ₄	
2893.124	25	2	34554.59	-0.03	17 ₃ - 522° ₃	
2893.616	20	2	34548.72	+0.02	13 ₂ - 483° ₃	
2894.257	20	3	34541.06	-0.07	13 ₂ - 483° ₂	z d
				-0.02	14 ₂ - 495° ₂	
2894.500	10		34538.16	0.00	14 ₂ - 495° ₃	
2894.624	15	1	34536.68	-0.06	18 ₂ - 526° ₂	
2895.143	3		34530.49			
2895.525	1		34525.94	-0.14	⁵ S ₂ - 528° ₃	
2896.009	150 r	30	34520.16	-0.04	⁵ D ₁ - 361° ₁	
2896.442	400 r	80	34515.00	-0.01	⁷ S ₃ - 374° ₂	
2896.918	6		34509.32			
2897.062	1		34507.62			
2897.202	15	2	34505.95	-0.07	15 ₃ - 499° ₃	
2897.726	2	3 s	34499.70	+0.18	22852 ₄ - 573° ₃	
2898.248	20	2	34493.50	-0.01	17 ₄ - 516° ₃	
2899.029	1		34484.20	-0.06	19826 ₅ - 543° ₅	
2899.193	3		34482.26			
2899.723	8	2	34475.96			
2900.442	15		34467.40	-0.12	14 ₂ - 494° ₁	
2900.518	25	4	34466.51	+0.01	13 ₂ - 482° ₂	
2900.812	15	2	34463.01	-0.08	³ H ₄ - 466° ₄	
2900.866	8	1	34462.36	-0.09	22852 ₄ - 573° ₄	
2901.789	35	5	34451.40	-0.04	17 ₃ - 521° ₂	
2902.040	15	2	34448.43	0.00	⁵ D ₂ - 377° ₁	
2902.201	30	20 s	34446.52	0.00	⁵ D ₄ - 406° ₃	
2902.429	5		34443.82			
2902.602	12	20	34441.76	+0.04	14 ₂ - 494° ₃	Res
2903.230	4		34434.31	-0.08	23 ₆ - 579° ₆	
2904.788	40	2	34415.84	-0.07	18 ₃ -53390° ₃	
				+0.04	³ P ₂ - 536° ₂	
2905.182	35	2	34411.18			
2905.545	2		34406.88	-0.26	20 ₂ - 553° ₂	

TABLE 3. *Observed and classified lines of W I*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2905.602	8	12 s	34406.20	-0.08	20 ₂ - 553 ₃ [°]	Res
2906.022	2		34401.23	-0.13	20 ₂ - 553 ₁	
2906.134	3		34399.90	-0.15	23 ₃ -58330 ₄ [°]	
2906.576	20	2	34394.68	-0.06	18 ₁ - 524 ₁ [°]	
2906.734	15	2	34392.81	-0.03	13 ₂ - 481 ₃	
2907.260	35	4	34386.58	+0.01	18 ₂ - 525 ₂ [°]	
2907.660	8		34381.85			
2907.848	6		34379.63			
2908.266	20	2	34374.69	-0.08	³ G ₄ - 508 ₅ [°]	
2908.403	30	3	34373.07	-0.03	⁵ S ₂ - 526 ₂	
2909.120	50	6	34364.59	+0.03	³ P ₀ - 438 ₁ [°]	Res
2909.188	5		34363.79	+0.05	⁵ D ₄ - 405 ₄ [°]	
2909.274	5		34362.77	-0.13	17 ₃ - 520 ₂ [°]	
2909.460	6		34360.58	-0.15	18 ₂ - 524 ₁ [°]	
2909.633	10		34358.53	-0.07	17 ₃ - 520 ₄ [°]	
2909.930	3		34355.03	+0.04	22476 ₄ - 568 ₄ [°]	
2910.483	100	25	34348.50	-0.05	⁵ D ₂ - 376 ₃	
2910.607	3		34347.04			
2910.834	6	2	34344.36	-0.05	³ H ₄ - 465 ₅ [°]	
2910.997	100	20	34342.43	-0.01	⁵ D ₀ - 343 ₁ [°]	
2911.142	10		34340.73	-0.04	³ G ₃ - 476 ₄ [°]	Res
2912.034	3		34330.20			
2912.187	4	12 l	34328.40	-0.17	15 ₃ - 497 ₄ [°]	
2912.251	10	3	34327.66	-0.05	19535 ₅ - 538 ₅ [°]	
2912.756	15		34321.70	+0.02	27 ₄ - 615 ₄ [°]	
2913.412	3		34313.96	-0.14	17 ₃ - 520 ₃ [°]	
2913.973	7		34307.37	-0.01	23 ₂ - 582 ₁ [°]	
2914.204	6		34304.65	-0.05	27 ₅ - 621 ₅ [°]	
2915.040	10		34294.81	+0.01	28 ₆ - 626 ₆ [°]	
2915.118	12	2	34293.89	-0.09	14 ₂ - 492 ₂ [°]	
2915.210	5		34292.81	+0.07	19826 ₅ - 541 ₄ [°]	Res
2915.356	5		34291.10	0.00	19 ₃ - 541 ₄ [°]	
2915.395	1		34290.64	-0.04	22852 ₄ - 571 ₅ [°]	
2915.587	50	8	34288.38	-0.04	³ H ₆ - 512 ₇ [°]	
2916.108	15	2	34282.25	+0.02	³ H ₆ - 512 ₅ [°]	
2916.388	7		34278.96	-0.02	22852 ₄ - 571 ₃ [°]	
2917.295	20	1	34268.30			
2917.668	20	2	34263.92	+0.02	18 ₃ - 532 ₄ [°]	
2917.768	10	1	34262.74	-0.04	27 ₄ - 614 ₅ [°]	
2918.254	100	20	34257.03	-0.06	⁵ D ₄ - 404 ₅ [°]	
2918.419	4		34255.10			Res
2919.288	30	2	34244.90	+0.02	³ G ₃ - 475 ₃ [°]	
2919.685	6		34240.25	-0.20	22476 ₄ - 567 ₃ [°]	
2919.749	6		34239.50	-0.05	15 ₃ - 496 ₂ [°]	
2919.849	3		34238.33	+0.31	24 ₃ - 588 ₄ [°]	
2920.381	4		34232.09			
2921.13	20	3	34223.34	-0.16	³ H ₄ - 463 ₃ [°]	
				+0.14	23 ₂ - 582 ₃ [°]	
2921.17	20	3	34222.87	-0.06	⁵ S ₂ - 525 ₂ [°]	
2921.633	4		34217.43	-0.08	23 ₆ - 577 ₆ [°]	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
2921.908	10	12 s	34214.21	+0.03	19 ₆₋ 538 ₅ [°]	Res
2923.103	150	10	34200.23	-0.02	⁵ D ₃₋ 390 ₂ [°]	
2923.382	5	10 s	34196.95	-0.14	⁵ S ₂₋ 524 ₁ [°]	
2923.539	60	6	34195.12	+0.05	⁷ S ₃₋ 371 ₄ [°]	
2924.038	4		34189.28			
2924.515	2		34183.70	-0.02	17 ₄₋ 512 ₅ [°]	
2924.664	3		34181.96			
2925.134	40	6	34176.47	-0.04	15 ₃₋ 496 ₄ [°]	
2925.205	10		34175.64	-0.12	14 ₂₋ 491 ₂ [°]	
2925.963	4	2	34166.79	-0.13	24 ₃₋ 587 ₄ [°]	
2926.436	8	1	34161.27	-0.23	23 ₃₋ 580 ₃ [°]	
2926.662	3		34158.62			
2926.990	40	10 s	34154.80	-0.12	17 ₃₋ 518 ₄ [°]	
2927.378	3		34150.27	0.00	18 ₁₋ 522 ₀ [°]	
2927.538	10	1	34148.40			
2927.812	3		34145.20			
2927.932	20	5	34143.80	+0.02	18 ₃₋ 531 ₄ [°]	
2928.194	50	5	34140.75	-0.02	⁵ D ₂₋ 374 ₂ [°]	
2928.348	2		34138.95	-0.01	18 ₂₋ 522 ₃ [°]	
2928.536	5		34136.76	-0.10	³ P ₂₋ 53390 ₃ [°]	
2928.662	30	3	34135.29	+0.17	³ G ₃₋ 474 ₃ [°]	
				-0.14	³ P ₁₋ 474 ₂ [°]	
2928.762	2		34134.13	-0.05	19 ₄₋ 53390 ₃ [°]	
2928.986	20		34131.52	-0.08	19 ₃₋ 539 ₂ [°]	
2930.154	40	4	34117.91	-0.08	³ H ₅₋ 491 ₅ [°]	
2930.931	3	1	34108.86	+0.08	23 ₂₋ 580 ₃ [°]	
2932.044	12	1	34095.92	-0.04	14 ₂₋ 490 ₃ [°]	
2932.215	10		34093.93	-0.04	³ G ₃₋ 474 ₂ [°]	
2932.669	6		34088.65			
2932.994	8		34084.87	0.00	19 ₃₋ 53912 ₂ [°]	
2933.592	2		34077.93	-0.09	³ H ₅₋ 491 ₄ [°]	
2933.769	2		34075.88	-0.17	23 ₆₋ 575 ₅ [°]	
2934.129	7		34071.70	-0.10	29 ₇₋ 635 ₆ [°]	
2934.297	2		34069.75	-0.04	18 ₁₋ 521 ₂ [°]	
2934.996	250 r	50	34061.63	-0.04	⁵ D ₁₋ 357 ₂ [°]	
2935.358	8	25 s	34057.43	+0.18	15 ₃₋ 495 ₂ [°]	
2935.629	30	3	34054.29	-0.04	15 ₃₋ 495 ₃ [°]	
2936.009	50	5	34049.88	-0.14	⁵ D ₄₋ 402 ₃ [°]	
				+0.23	20 ₂₋ 55032 ₂ [°]	
2936.468	4		34044.56			Res
2936.66	40	12 s	34042.34	+0.11	13 ₂₋ 478 ₁ [°]	3
2937.142	60	15	34036.75	+0.07	19826 ₅₋ 538 ₅ [°]	
2937.20	8	15 s	34036.08	+0.30	18 ₂₋ 521 ₂ [°]	
2937.464	2		34033.01	-0.21	24 ₃₋ 586 ₃ [°]	
2937.606	10	12 s	34031.37	+0.01	³ P ₂₋ 532 ₂ [°]	
2937.677	8		34030.55	-0.14	³ P ₁₋ 473 ₂ [°]	
2937.774	2	4 s	34029.42	+0.21	18 ₃₋ 530 ₂ [°]	
2938.104	2		34025.60	+0.18	22476 ₄₋ 565 ₄ [°]	
2938.364	3		34022.59	0.00	19826 ₅₋ 538 ₄ [°]	
2938.506	20	3	34020.95	0.00	19 ₃₋ 538 ₄ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
2938.746	6	2	34018.17	-0.01	18 ₃ - 529 ₄ [°]	
2939.047	30 <i>r</i>	6	34014.68	+0.04	⁵ D ₄ - 402 ₄ [°]	
2939.180	15	2	34013.15	-0.03	³ C ₃ - 473 ₃ [°]	
2939.318	6		34011.55	-0.08	³ C ₃ - 473 ₄ [°]	
2939.54	4 <i>b</i>		34008.98			
2940.954	12		33992.63	-0.04	17 ₃ -51693 ₂ [°]	
2941.023	3		33991.83	0.00	20 ₁ - 544 ₁ [°]	
2941.246	30	3	33989.26	+0.03	³ C ₃ - 473 ₂ [°]	
2941.665	4		33984.42	-0.12	24 ₃ - 585 ₂ [°]	
2941.854	1		33982.23	+0.06	19 ₄ - 532 ₄ [°]	
2941.938	1		33981.26	+0.01	18 ₁ - 520 ₂ [°]	
2942.128	12	10 <i>s</i>	33979.07	+0.20	22852 ₄ - 568 ₄ [°]	
2942.452	25	3	33975.33	+0.01	⁵ S ₂ - 522 ₃ [°]	
2942.618	3	10 <i>s</i>	33973.41	-0.06	³ P ₂ - 532 ₁ [°]	
2943.006	4		33968.93	-0.04	18 ₃ - 529 ₃ [°]	
2943.326	20	2	33965.24	+0.07	17 ₄ - 510 ₃ [°]	
2943.966	12	1	33957.85	-0.04	15 ₃ - 494 ₃ [°]	
2944.398	300 <i>r</i>	60	33952.87	0.00	⁷ S ₃ - 369 ₂ [°]	
2944.784	1		33948.42	-0.03	³ P ₁ - 472 ₁ [°]	
2944.916	7	2	33946.90	-0.06	20 ₁ - 543 ₁ [°]	
2945.064	3		33945.20			
2945.224	6		33943.35	-0.01	³ H ₆ - 509 ₆ [°]	
2945.691	8		33937.97	-0.04	19 ₄ - 531 ₅ [°]	
2946.344	8		33930.45			
2946.522	20		33928.40			
2946.782	5		33925.41			
2946.989	300 <i>r</i>	60	33923.02	-0.05	⁷ S ₃ - 368 ₃ [°]	Res
2947.388	150 <i>r</i>	25	33918.43	-0.01	⁵ D ₃ - 387 ₄ [°]	Res
2948.470	5		33905.98	-0.08	³ H ₄ - 460 ₃ [°]	
2948.660	6		33903.80			
2948.921	5		33900.80			
2949.122	15	2	33898.49	+0.05	18 ₂ - 520 ₃ [°]	
2950.703	15 <i>b</i>		33880.33			
2951.076	5		33876.04	-0.09	20 ₂ - 548 ₂ [°]	
2951.226	4		33874.32			
2951.416	10	1	33872.14	0.00	⁵ S ₂ - 521 ₂ [°]	
2951.795	20	2	33867.79	-0.01	20 ₁ - 542 ₀ [°]	
2951.950	1		33866.01	-0.05	24 ₂ - 586 ₂ [°]	
2952.091	1		33864.40	+0.07	22852 ₄ - 567 ₃ [°]	
2952.262	75	100 <i>s</i>	33862.44	+0.39	19 ₄ - 531 ₄ [°]	z d
2952.880	5		33855.35	+0.03	22476 ₄ - 563 ₃ [°]	
2952.974	4	4 <i>s</i>	33854.27	-0.17	24 ₂ - 586 ₃ [°]	
2953.788	4		33844.93			
2954.070	4	3 <i>s</i>	33841.71	+0.03	19 ₃ - 536 ₂ [°]	
2954.262	4		33839.51			
2954.904	35	5	33832.16	+0.11	18 ₃ - 528 ₃ [°]	(0)
2955.910	6		33820.65			
2956.076	4		33818.75			
2956.338	2		33815.76	+0.03	13 ₂ - 475 ₃ [°]	
2956.67	20	10 <i>s</i>	33811.96	+0.08	14 ₂ - 487 ₁ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2956.822	12	1	33810.22	+0.07	15 ₃ - 492 ₂ [°]	(0)
2957.501	25	5	33802.45	-0.01	17 ₄ - 509 ₄ [°]	
2957.927	20	3	33797.58	+0.01	³ H ₆ - 508 ₅ [°]	
2958.73	12		33788.41	-0.03	³ P ₂ - 530 ₁ [°]	
2958.846	10		33787.09	-0.02	17 ₄ -50894 ₃ [°]	
2959.40	3		33780.76			Res
2959.564	6		33778.89	-0.08	22476 ₄ - 562 ₄ [°]	
2959.741	3		33776.87			
2960.146	60	6	33772.25	-0.05	³ P ₁ - 470 ₂ [°]	
2961.712	15		33754.39	0.00	³ G ₄ - 501 ₃ [°]	
2962.122	2		33749.72	+0.06	23 ₂ - 577 ₃ [°]	
2962.206	3		33748.76			
2962.613	3		33744.13			
2963.284	2		33736.49	+0.04	19 ₄ - 529 ₄ [°]	
2963.432	8		33734.80	0.00	⁵ S ₂ - 520 ₃ [°]	
2963.620	3		33732.66			Res
2963.782	10		33730.82	-0.02	³ G ₃ - 470 ₂ [°]	
2964.520	150	20	33722.42	+0.01	⁷ S ₃ - 366 ₂ [°]	
2965.860	12	2	33707.19	+0.05	³ H ₄ - 458 ₄ [°]	
2965.981	12		33705.81	-0.16	13 ₂ - 474 ₃ [°]	
				+0.23	24 ₃ -58316 ₄ [°]	
2966.197	4		33703.36	-0.04	19535 ₅ - 532 ₄ [°]	
2966.417	4	2 s	33700.86	-0.20	20 ₀ - 538 ₁ [°]	
2966.575	35	5	33699.07	+0.01	17 ₄ - 508 ₅ [°]	
2966.679	5		33697.88	-0.07	22476 ₄ - 561 ₄ [°]	
				+0.02	24 ₂ - 584 ₃ [°]	
2967.073	40	6	33693.41	-0.02	17 ₄ - 508 ₃ [°]	
				0.00	19535 ₅ - 532 ₆ [°]	
2967.438	8 c		33689.27	0.00	³ P ₀ - 432 ₁ [°]	
				-0.01	23 ₃ - 576 ₃ [°]	
2967.554	35	4	33687.95	+0.01	15 ₃ - 491 ₄ [°]	
2968.206	10		33680.55	-0.06	18 ₁ - 517 ₁ [°]	
2968.358	6		33678.82	-0.25	18 ₃ - 526 ₂ [°]	
2968.788	10	1	33673.95			
2969.618	60 d	6	33664.53	-0.29	13 ₂ - 474 ₂ [°]	
				+0.33	23 ₆ - 571 ₆ [°]	
2970.191	3		33658.04			Res
2970.977	5		33649.14	-0.16	22852 ₄ - 565 ₄ [°]	
2971.203	10		33646.57	-0.03	18 ₂ - 517 ₁ [°]	
2971.482	3		33643.42			
2971.675	40	6	33641.23	-0.04	⁵ D ₁ - 353 ₂ [°]	
2972.498	25	2	33631.92	-0.02	³ P ₂ - 528 ₂ [°]	
2972.922	50	8 s	33627.17	-0.01	³ H ₄ - 457 ₅ [°]	
2973.546	3		33620.07			
2973.792	3		33617.29			
2974.019	25	2	33614.72	-0.03	³ H ₅ - 486 ₆ [°]	
2974.261	6		33611.99	-0.14	15 ₃ - 490 ₃ [°]	Res
2975.748	5		33595.19	+0.07	24 ₃ - 582 ₃ [°]	
2976.074	6		33591.51			
2976.802	40	6	33583.30	+0.02	³ G ₃ - 469 ₄ [°]	
				+0.02	19535 ₅ - 531 ₄ [°]	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
2977.106	60	12	33579.87	-0.01	19 ₆ - 532 ₆ [°]	3
2977.214	30	6	33578.65	+0.02	⁵ D ₂ - 369 ₂ [°]	
2977.682	10		33573.37	-0.04	20 ₂ - 545 ₃ [°]	
2978.624	10		33562.76	+0.02	19 ₃ -53390 ₃ [°]	3
2978.868	4		33560.01	-0.07	13 ₂ - 473 ₂ [°]	
2979.496	5		33552.93	-0.07	³ P ₂ - 528 ₃ [°]	
2979.714	30	4	33550.47	+0.15	19 ₄ - 528 ₃ [°]	7
2979.860	70 <i>r</i>	25	33548.83	0.00	⁵ D ₂ - 368 ₃ [°]	
2980.138	6		33545.70	-0.01	19 ₆ - 531 ₅ [°]	
2980.283	2		33544.07	-0.21	23 ₁ - 569 ₂ [°]	
2981.129	10		33524.55	-0.17	³ G ₄ - 499 ₃ [°]	
2981.407	5		33531.42	-0.02	20 ₁ - 539 ₂ [°]	
2981.631	15	1	33528.90	0.00	18 ₃ - 525 ₂ [°]	
2981.762	3		33527.43	-0.15	27 ₄ - 607 ₅ [°]	
2982.606	40	8	33517.94	+0.08	19 ₄ - 527 ₅ [°]	Res
2982.810	10		33515.65	-0.08	³ H ₄ - 456 ₃ [°]	Res
2984.140	40	4	33500.71	+0.08	⁵ D ₄ - 397 ₄ [°]	
2984.264	3		33499.32	-0.03	³ P ₁ - 468 ₂ [°]	
2985.254	2		33488.21			
2985.668	12	1	33483.57	-0.11	18 ₂ -51693 ₂ [°]	
2985.884	12		33481.15	-0.05	17 ₃ - 511 ₂ [°]	
2986.185	12	2	33477.78	-0.06	13 ₂ - 472 ₁ [°]	
2987.608	5		33461.83	-0.10	18 ₃ - 524 ₄ [°]	
2987.960	15		33457.89	0.00	³ G ₃ - 468 ₂ [°]	
2988.244	6		33454.71			
2988.502	4		33451.82			
2988.898	8		33447.39	-0.03	20 ₁ - 538 ₁ [°]	
2990.506	40	8	33429.41	+0.01	⁵ D ₃ - 382 ₄ [°]	
2990.714	50	2	33427.08	0.00	⁵ D ₄ - 396 ₃ [°]	
2991.946	10		33413.32	-0.05	⁵ S ₂ -51693 ₂ [°]	
2992.178	18	1	33410.73	0.00	19 ₃ - 532 ₄ [°]	
2992.931	16	1	33402.32	-0.06	19826 ₅ - 528 ₆ [°]	
2993.157	2		33399.80	-0.22	³ P ₂ - 526 ₂ [°]	
2993.614	125 <i>r</i>	25	33394.70	-0.02	⁵ D ₄ - 396 ₃ [°]	
2993.886	5		33391.67	-0.11	20 ₂ - 543 ₁ [°]	
2993.995	5		33390.45	-0.11	22476 ₄ - 558 ₄ [°]	
2994.107	5		33389.20	-0.16	³ H ₄ - 455 ₃ [°]	
2995.258	60	12	33376.37	-0.01	⁵ D ₃ - 382 ₃ [°]	
2995.514	10		33373.52			
2995.748	12	2	33370.91	-0.09	17 ₃ - 510 ₃ [°]	
2995.992	15	5	33368.19	-0.02	19826 ₅ - 531 ₅ [°]	
2996.978	20	2	33357.22	-0.05	³ G ₄ - 497 ₄ [°]	
2997.616	20	3	33350.12	-0.11	14 ₂ - 483 ₃ [°]	3
2997.793	75	15	33348.15	-0.02	⁵ D ₂ - 366 ₂ [°]	
2998.288	10	1	33342.64	-0.02	14 ₂ - 483 ₂ [°]	
2999.117	5		33333.43			
3000.163	5		33321.81	-0.02	22852 ₄ - 561 ₄ [°]	
3000.242	40	8	33320.93	-0.04	19535 ₅ - 528 ₆ [°]	
3000.439	30	1	33318.74	-0.06	22476 ₄ - 557 ₅ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3000.882	3		33313.82			
3001.536	6		33306.57	-0.03	$^3P_1-$ 466 ₀	
3001.625	1		33305.58	-0.24	23 ₆₋ 567 ₇	
3001.982	60	6	33301.62	-0.07	13 ₂₋ 470 ₂	Res
3002.418	4		33296.78			
3002.827	35	7	33292.24	-0.01	19826 ₅₋ 531 ₄	
3002.981	10		33290.54	-0.07	19 ₃₋ 531 ₄	
3003.824	5		33281.20	-0.09	18 ₃₋ 522 ₃	
3004.260	7		33276.37	-0.12	$^3G_3-$ 466 ₄	
3005.010	35	3	33268.06	-0.05	14 ₂₋ 482 ₂	Res
3006.318	50	12	33253.59			
3006.658	20	1	33249.83	-0.02	$^3P_2-$ 525 ₂	3
3007.135	5		33244.55			
3007.328	3		33242.42			
3007.411	15	5	33241.50	-0.02	20 ₁₋ 536 ₂	
3007.637	12		33239.01	-0.08	19535 ₅₋ 527 ₅	
3008.036	12		33234.63			
3008.502	4		33229.45			
3008.768	40	4	33226.52	0.00	29 ₇₋ 626 ₆	
3008.987	5		33224.10	+0.09	$^3P_2-$ 524 ₁	
3009.086	80		33223.00	-0.05	$^5D_3-$ 380 ₃	Res
3009.724	10		33215.96	-0.11	15 ₃₋ 486 ₄	
3010.418	20	4	33208.30	+0.01	17 ₃₋ 509 ₄	(0)
3010.495	15	3	33207.45	+0.01	19 ₆₋ 528 ₆	
3010.693	8		33205.27	+0.06	$^3G_4-$ 496 ₄	
3011.682	20	2	33194.36	-0.01	14 ₂₋ 481 ₃	(b)
3011.816	3 _c		33192.89	-0.05	17 ₃₋ 50894 ₃	
				+0.11	24 ₃₋ 578 ₄	
3013.192	30	3	33177.73	+0.10	17 ₄₋ 502 ₄	3
3013.442	1		33176.05	+0.01	19 ₃₋ 530 ₂	
3013.788	120	12	33171.17	+0.05	$^5D_3-$ 380 ₄	Res
3014.200	6	3 _s	33166.64	-0.01	19826 ₅₋ 529 ₄	
3014.348	2		33165.01	0.00	19 ₃₋ 529 ₄	
3016.272	3	1	33143.85	+0.01	18 ₂₋ 512 ₁	
3016.466	150	15	33141.72	+0.04	$^5D_4-$ 393 ₅	Res
3016.685	8	2	33139.31	+0.05	19 ₄₋ 523 ₅	
3017.077	2		33135.01	-0.09	22852 ₄₋ 559 ₅	
3017.436	200	20	33131.07	+0.06	$^7S_3-$ 360 ₄	Res
3017.617	5		33129.08	+0.03	$^3H_6-$ 501 ₅	
3017.936	12		33125.58	+0.02	19 ₆₋ 527 ₅	
3018.304	1		33121.54	-0.04	24 ₃₋ 577 ₃	
3018.414	3		33120.34	+0.12	22476 ₄₋ 555 ₄	
3018.820	3		33115.88	+0.08	19 ₃₋ 529 ₃	
3020.040	5		33102.50	-0.06	22852 ₄₋ 559 ₄	
3020.214	15	3	33100.59	0.00	$^3H_4-$ 452 ₄	3
3020.328	2		33099.35	+0.09	17 ₃₋ 508 ₃	
3021.206	3		33089.73	+0.16	18 ₃₋ 520 ₂	
3021.614	20	2	33085.26	-0.01	18 ₃₋ 520 ₄	
3021.734	4		33083.94	+0.04	28 ₆₋ 614 ₅	
3021.823	6		33082.97	-0.06	$^3G_4-$ 495 ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3022.774	2		33072.56	+0.14	23 ₆ - 565° ₇	
3023.152	12		33068.43	-0.02	³ H ₅ - 481° ₅	
3023.410	1		33065.60	+0.06	18 ₂ - 511° ₂	
3023.646	12	3	33063.03	-0.01	29 ₇ - 625° ₆	
3024.124	5		33057.79	-0.03	19 ₃ - 528° ₂	
3024.590	1		33052.71	-0.12	20 ₀ - 532° ₁	
3024.928	100	10	33049.01	-0.03	⁵ D ₁ - 347° ₁	
3025.263	50	5	33045.36	-0.07	³ P ₀ - 425° ₁	
3025.590	8		33041.72	-0.07	23 ₆ - 565° ₆	
3025.685	6		33040.74	-0.03	18 ₃ - 520° ₃	
3026.039	4		33036.88	-0.02	³ G ₃ - 463° ₃	
3026.672	50	10	33029.97	+0.03	19826 ₅ - 528° ₆	
3026.788	50	10	33028.71	-0.03	13 ₂ - 468° ₂	3
3026.962	10	2	33026.81			
3027.527	6		33020.64	-0.01	³ P ₁ - 463° ₂	
3027.792	30	3	33017.75	+0.03	17 ₃ - 507° ₂	(0)
3027.902	2	1	33016.56	+0.06	23 ₂ - 569° ₂	
3028.008	4		33015.40	+0.04	27 ₄ - 602° ₅	
3028.094	3		33014.46	+0.02	22852 ₄ - 558° ₄	
3028.651	1		33008.39	-0.09	24 ₃ - 576° ₃	
3029.217	10		33002.22	-0.02	³ P ₂ - 522° ₃	
3030.354	12		32989.84			
3030.656	6		32986.55	-0.04	³ G ₄ - 494° ₃	
3030.840	8	1	32984.55	+0.02	³ P ₁ - 462° ₁	
3031.366	25	2	32978.82	-0.06	19 ₃ - 528° ₃	
3031.584	2		32976.45	+0.19	20 ₂ - 539° ₂	
3033.523	20		32955.38	+0.04	18 ₂ - 510° ₃	(0)
3033.558	30		32955.00	+0.19	³ H ₄ - 451° ₄	
3034.054	2	1	32949.61			
3034.188	40	8	32948.16	+0.16	19826 ₅ - 527° ₅	Res
3034.290	6		32947.05			
3034.516	4		32944.59	+0.09	27 ₄ - 601° ₄	
3035.900	5		32929.58	+0.05	20 ₂ -53912° ₂	
3037.460	12	3	32912.67	+0.05	22476 ₄ - 553° ₃	
3038.488	8	2	32901.53	+0.10	19535 ₅ - 524° ₄	(0)
				-0.06	23 ₃ - 568° ₄	
3038.708	25	3	32899.15	+0.09	³ P ₂ - 521° ₂	3
3039.312	50	10	32892.61			
3040.333	3		32881.56	-0.03	18 ₃ - 518° ₄	
3041.730	25	3	32866.46	+0.06	15 ₃ - 483° ₃	3
3041.863	80	20 s	32865.03	+0.07	⁵ D ₂ - 361° ₁	
3042.282	4		32860.50	+0.01	19535 ₅ - 523° ₅	3
3042.416	15	2	32859.06	+0.04	17 ₄ - 499° ₃	(0)
3042.717	2		32855.80			
3043.010	12	2	32852.64	+0.06	³ H ₄ - 450° ₃	
3043.800	150	25	32844.11	+0.03	⁵ D ₃ - 376° ₃	Res
3045.052	2		32830.61			
3045.473	2		32826.08	+0.18	19 ₃ - 526° ₂	
3045.576	15	2	32824.96	+0.11	19 ₄ - 520° ₅	(0)
3046.440	120	20	32815.65	+0.08	⁵ D ₁ - 344° ₂	Res

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3047.556	40	4	32803.63	+0.09	19 ₄ - 520 ₄	3
3048.120	15		32797.57	+0.05	³ P ₁ - 461 ₁	7
3048.502	3		32793.46	+0.10	17 ₃ - 504 ₂	
3048.657	20	4	32791.78	+0.08	⁵ S ₂ - 510 ₃	
3049.000	20	3	32788.10	-0.06	28 ₆ - 611 ₇	(b)
3049.348	10		32784.36	+0.08	15 ₃ - 482 ₂	
3049.688	120	20	32780.70	-0.03	⁷ S ₃ - 357 ₂	Res
3049.992	20	8 s	32777.43	+0.15	18 ₂ -50894 ₃	
3051.452	6		32761.75	+0.03	³ P ₂ - 520 ₃	
3051.838	10	2	32757.61			
3051.925	10	2	32756.68	+0.07	³ G ₄ - 491 ₅	
3052.816	10		32747.12	+0.16	19 ₆ - 523 ₅	
3053.354	6	s	32741.34	-0.10	24 ₃ - 573 ₃	
3054.008	50	5	32734.34	+0.10	³ P ₀ - 422 ₁	7
3054.376	5		32730.41			
3055.134	4	1	32722.26			
3055.384	30	3	32719.59	+0.13	³ G ₃ - 460 ₃	Res
3056.218	10	1	32710.67	+0.13	15 ₃ - 481 ₃	
3056.787	2		32704.57	+0.20	24 ₃ - 573 ₄	
3057.773	2		32694.01			
3057.836	1		32693.35	+0.09	22852 ₄ - 555 ₃	
3058.104	3		32690.50			
3058.488	4		32686.39	+0.05	20 ₂ - 536 ₂	
3058.733	8		32683.77	+0.17	18 ₂ - 508 ₃	
3058.932	8		32681.65	+0.08	17 ₄ - 497 ₄	
3059.474	4		32675.86	+0.13	19 ₃ - 525 ₂	
3059.818	8		32672.19	+0.04	⁵ D ₁ - 343 ₁	
3059.990	3		32670.35			
3060.178	3	1	32668.34	-0.03	⁷ F ₀ -52057 ₁	
3060.448	5		32665.45			
3062.600	20	2	32642.51	-0.06	³ G ₄ - 490 ₅	(0)
3062.885	15	2	32639.47	+0.05	22852 ₄ -55492 ₅	(b)
3063.174	60	6	32636.39	+0.09	⁵ D ₃ - 374 ₂	Res
3063.560	15	2	32632.28	+0.01	18 ₃ -51606 ₂	
3064.140	10	1	32626.10	+0.09	18 ₃ - 516 ₃	
3064.768	15	2	32619.41	+0.01	³ H ₅ - 476 ₄	
3064.927	60	6	32617.72	+0.08	⁵ D ₂ - 359 ₃	Res
3065.233	4		32614.47	+0.31	20 ₁ - 530 ₁	
3065.303	5		32613.72	+0.08	⁵ S ₂ -50894 ₃	
3065.606	8		32610.50	-0.10	22 ₀ - 553 ₁	
				+0.10	19826 ₅ - 524 ₄	
3065.861	6		32607.78	+0.03	13 ₂ - 463 ₃	
3066.382	12		32602.25	-0.30	22852 ₄ -55455 ₅	
				+0.19	18 ₂ - 507 ₂	
3066.602	5		32599.91	+0.05	19 ₄ - 518 ₄	3
3067.722	6		32588.00			
3068.146	10	2	32583.51	+0.05	17 ₃ - 502 ₄	(0)
3068.256	4	2	32582.33	+0.07	23 ₁ - 560 ₂	
3069.460	20	2	32569.55	+0.09	19826 ₅ - 523 ₅	
3069.720	5		32566.80	+0.14	22476 ₄ - 550 ₄	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3069.887	3	1	32565.03	0.00	27 ₅ — 604 ₆ [°]	Res
3070.910	12	1	32554.18	-0.07	23 ₃ — 564 ₃ [°]	
3071.302	5		32550.02	-0.02	13 ₂ — 463 ₂ [°]	
3071.512	3		32547.80	-0.06	⁷ S ₃ — 354 ₃ [°]	
3071.678	5		32546.03	-0.05	19535 ₅ — 520 ₅ [°]	
3072.578	5		32536.50	0.00	22852 ₄ — 553 ₃ [°]	
3072.956	6		32532.51	-0.03	22476 ₄ — 550 ₅ [°]	
3073.276	120	6 s	32529.12	+0.01	⁵ D ₄ — 387 ₄ [°]	
3073.692	20	2	32524.71	-0.06	19535 ₅ — 520 ₄ [°]	
3074.084	50	8 s	32520.56	+0.02	³ G ₃ — 458 ₄ [°]	
3074.713	5		32513.91	-0.01	13 ₂ — 462 ₁ [°]	
3075.218	6		32508.57	-0.04	15 ₃ — 479 ₄ [°]	
3075.324	5		32507.45	-0.05	14 ₂ — 474 ₃ [°]	
3076.170	10		32498.51	-0.02	18 ₃ — 514 ₄ [°]	
3076.852	12	4	32491.31			
3078.717	3		32471.63	0.00	³ H ₅ — 475 ₆ [°]	3
3078.838	6		32470.36			
3079.032	15		32468.31	+0.17	⁷ F ₂ — 53 ₃ [°]	
3079.218	30	3	32466.35	0.00	14 ₂ — 474 ₂ [°]	
3080.038	6		32457.70	+0.04	20 ₁ — 528 ₂ [°]	
3080.416	25		32453.72	+0.02	³ P ₁ — 457 ₁ [°]	3
3080.696	20		32450.77	+0.05	18 ₁ — 505 ₁ [°]	3
3080.883	5		32448.80			(0) 3
3081.368	12	1	32443.69	+0.02	19535 ₅ — 519 ₆ [°]	
3081.862	30		32438.49	+0.07	⁵ S ₂ — 507 ₂ [°]	
3082.200	6		32434.94	+0.01	22476 ₄ — 549 ₄ [°]	Res
3082.417	1		32432.65	+0.10	19 ₆ — 520 ₅ [°]	
3082.842	5		32428.18	+0.06	19 ₃ — 522 ₃ [°]	
3083.227	1		32424.14	-0.08	22476 ₄ — 549 ₃ [°]	
3083.934	6		32416.71	0.00	18 ₂ — 505 ₁ [°]	
3084.220	12		32413.70			
3084.413	8		32411.67	-0.04	18 ₁ — 504 ₂ [°]	
3084.826	20	2	32407.33	0.00	17 ₄ — 495 ₃ [°]	
3084.910	25	2	32406.45	+0.02	⁵ D ₂ — 357 ₂ [°]	
3085.113	2		32404.31	+0.01	23 ₁ — 558 ₁ [°]	
3085.340	10		32401.93	+0.01	23 ₃ — 563 ₃ [°]	
3086.973	40	4	32384.79	-0.01	³ H ₄ — 445 ₅ [°]	
3087.180	3		32382.62			
3087.640	20		32377.79	+0.09	18 ₂ — 504 ₂ [°]	
3089.055	25	2	32362.96	+0.06	23 ₆ — 558 ₆ [°]	
3089.180	30	3	32361.65	+0.04	14 ₂ — 473 ₂ [°]	Res
3089.308	25	2	32360.31	+0.04	⁷ S ₃ — 353 ₂ [°]	
3089.424	2		32359.10			
3089.974	2		32353.33	+0.11	³ P ₂ — 51606 ₂ [°]	
3090.088	10	1	32352.14			
3090.413	15	3	32348.75	+0.05	28 ₆ — 607 ₅ [°]	Res
3090.580	40	2	32347.00	+0.04	³ P ₂ — 516 ₃ [°]	
3090.836	5	1	32344.31	+0.03	19 ₄ — 516 ₃ [°]	
3091.042	3	2	32342.17	+0.05	24 ₂ — 571 ₃ [°]	
3092.184	8	1	32330.21	+0.07	19 ₆ — 519 ₆ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3092.280	15	2	32329.21	+0.08	³ G ₃ - 456° ₃	Res
3092.510	12	1	32326.81	-0.10	13 ₂ - 461° ₁	
3092.676	3		32325.07	+0.13	19 ₃ - 521° ₂	
3093.084	4		32320.81	-0.28	19535 ₅ - 518° ₄	
3093.310	10	1	32318.45			
3093.500	100	10	32316.46	+0.10	⁵ D ₃ - 371° ₄	
3093.62	4		32315.21			
3094.026	15		32310.97	+0.08	17 ₄ - 494° ₃	
3094.05		10	32310.72	+0.02	23 ₆ - 557° ₅	
3094.25	2		32308.63	+0.11	27 ₅ - 601° ₄	
3094.757	5		32303.33	-0.04	20 ₀ - 524° ₁	(b)
3094.887	6		32301.98	+0.08	20 ₂ - 532° ₂	
3094.98	2		32301.01	+0.17	29853 ₄ - 621° ₅	
3095.051	4		32300.28			
3096.00	15		32290.37	+0.06	13 ₂ - 460° ₃	
3096.414	10		32286.05	+0.24	⁷ F ₃ - 55° ₄	
3096.498	10	1	32285.17	+0.11	³ H ₄ - 444° ₃	
3096.837	20	2	32281.65			
3097.053	4		32279.40	+0.03	14 ₂ - 472° ₁	
3097.574	4		32273.97	+0.20	⁵ D ₁ - 339° ₂	
3098.436	30		32264.98	+0.13	17 ₃ - 499° ₃	Res
3099.035	20		32258.75			
3101.427	3		32233.87	+0.13	19826 ₅ - 520° ₄	
3101.580	10	1	32232.27	+0.17	19 ₃ - 520° ₄	
3101.852	5		32229.45	+0.13	15 ₃ - 476° ₄	
3102.654	6		32221.12			
3103.050	15	2	32217.01	+0.21	19 ₄ - 514° ₄	
3103.321	4		32214.20	+0.14	⁵ S ₂ - 504° ₂	
3103.918	20		32208.00	+0.13	18 ₃ - 511° ₂	
3104.088	8		32206.23	+0.19	23 ₆ - 556° ₇	
3104.413	15		32202.87	+0.11	³ G ₃ - 455° ₃	Res
3105.876	40	8	32187.70	+0.10	19 ₃ - 520° ₃	
3106.49	2		32181.36	-0.03	28 ₅ - 604° ₆	
3107.227	100	10	32173.70	+0.08	⁵ D ₂ - 354° ₃	
3108.018	100	4	32165.51	+0.02	⁷ S ₃ - 351° ₄	
3108.128	3		32164.40	-0.24	23 ₁ - 556° ₂	
3110.116	4		32143.82	+0.12	31 ₅ - 635° ₆	
3111.036	4		32134.31			
3111.116	30	30	32133.49	+0.06	15 ₃ - 475° ₃	
3111.578	3		32128.71			
3111.948	20		32124.89	+0.12	13 ₂ - 459° ₂	Res
3113.656	5		32107.27	+0.07	23 ₃ - 560° ₂	
3113.746	5	5	32106.35	+0.10	24 ₃ - 567° ₃	
3113.876	8		32105.01			
3114.042	5		32103.29	+0.07	14 ₂ - 470° ₂	
3114.58	15	2	32097.75	+0.08	18 ₃ - 510° ₃	
3115.464	8		32088.64			
3115.59	3		32087.34	-0.06	17 ₃ - 497° ₄	
3116.21	25	2	32080.96	+0.05	17 ₄ - 491° ₅	
3116.333	20	2	32079.69	-0.06	22476 ₄ - 545° ₃	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3116.864	25	3	32074.23	+0.07	⁵ D ₃ - 369° ₂	
3117.38	15	1	32068.92	+0.06	18 ₂ - 501° ₃	
3117.572	120	12	32066.95	+0.05	³ P ₁ - 453° ₁	
3118.346	20	2	32058.99	+0.01	20 ₂ - 530° ₁	
3118.776	8		32054.57	+0.09	23 ₂ - 560° ₂	
3119.237	5	12 s	32049.83	+0.02	27 ₄ - 592° ₅	
3119.528	4	3	32046.84			
3119.762	50	5	32044.44	+0.08	⁵ D ₃ - 368° ₃	
3120.098	15	2	32040.99	+0.05	17 ₄ - 491° ₄	
3120.18	60	6	32040.14	+0.07	⁵ D ₄ - 382° ₄	
3120.718	20	5	32034.62	+0.13	19 ₄ - 512° ₅	
3121.146	2		32030.23	+0.17	19826 ₅ - 518° ₄	
3121.794	8		32023.58	-0.09	15 ₃ - 474° ₃	
3121.99	5		32021.57			
3122.455	4		32016.80			
3123.36	5	1	32007.52	+0.08	23 ₆ -55492° ₅	
3123.63	5		32004.76	+0.09	⁷ F° ₄ -56768° ₅	
3124.11	4		31999.84	+0.05	³ P ₁ - 453° ₀	
3124.50	12	2	31995.84	+0.10	28 ₅ - 602° ₅	
3124.722	15	2	31993.57	+0.07	⁷ F° ₁ - 52 ₁	
3125.063	3		31990.08			
3125.348	50	5	31987.16	+0.11	⁵ D ₄ - 382° ₃	Res
3125.46	20	2	31986.02	-0.01	⁵ D ₂ - 353° ₂	
3127.328	60	6	31966.91	+0.04	17 ₄ - 490° ₅	Res
3127.498	8	1	31965.17	+0.04	17 ₄ - 490° ₃	(0)
3127.946	3		31960.60	+0.14	20 ₂ - 529° ₃	
3130.152	15	2	31938.07	+0.04	19535 ₅ - 514° ₄	
3130.452	30	3	31935.01	+0.05	18 ₃ - 509° ₄	
3130.994	5		31929.48	+0.12	23 ₁ - 553° ₁	
3131.047	2		31928.94	+0.12	³ P ₂ - 511° ₂	
3131.183	4	1	31927.56	+0.09	24 ₂ - 567° ₃	
3132.51	2		31914.03	+0.04	³ G ₃ - 452° ₄	
3132.593	25		31913.19			
3133.37	6		31905.27	+0.05	⁵ S ₂ - 501° ₃	
3133.633	6	2	31902.60	+0.12	20 ₂ - 528° ₂	
3133.716	12		31901.75	+0.02	15 ₃ - 473° ₃	
3133.884	80	8	31900.04	+0.06	13 ₂ - 456° ₃	Res
3135.028	3		31888.40			
3136.07	40	4	31877.81	+0.03	15 ₃ - 473° ₂	Res
3136.18		2	31876.69	+0.17	23 ₂ - 558° ₁	
3136.584	20		31872.58	+0.04	⁷ F° ₁ - 51 ₂	
3137.224	4	8 s	31866.08	-0.09	19 ₃ -51693° ₂	
3137.416	4		31864.13			
3137.63	25	5	31861.96	+0.05	³ H ₅ - 469° ₄	
3137.912	15	2	31859.09	+0.05	³ H ₄ - 440° ₃	
3138.88	15		31849.27	+0.08	18 ₂ - 499° ₃	
3139.422	12		31843.77	+0.07	⁵ D ₃ - 366° ₂	
3140.146	6		31836.43	-0.05	28 ₆ - 602° ₅	
3140.411	30	3	31833.74	+0.02	⁵ D ₄ - 380° ₃	Res
3140.752	60	6	31830.29	+0.02	14 ₂ - 468° ₂	Res

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3141.174	12	1	31826.01	+0.08	18 ₃ - 508 ₃ [°]	Res (0) Res
3141.420	100	10	31823.52	+0.07	³ H ₄ - 439 ₄ [°]	
3141.898	5		31818.68	+0.06	³ P ₂ - 510 ₃ [°]	
3142.147	80	4	31816.16	+0.08	17 ₃ - 495 ₂ [°]	
3142.724	20 <i>b</i>		31810.31	+0.16	⁷ F ₄ -56573 ₅ [°]	
3143.215	25		31805.35	+0.09	20 ₁ - 522 ₀ [°]	Res
3144.415	3		31793.21	+0.12	22476 ₄ - 542 ₃ [°]	
3145.24	12	2	31784.87	0.00	³ H ₅ - 468 ₅ [°]	
3145.54	50	5	31781.84	+0.05	⁵ D ₄ - 380 ₄ [°]	
3145.804	3		31779.17	+0.07	19 ₃ -51606 ₂ [°]	
3146.034	3		31776.85			
3146.352	20	2	31773.64	+0.03	13 ₂ - 455 ₃ [°]	
3146.428	8		31772.87	+0.03	19 ₃ - 516 ₃ [°]	
3147.176	3		31765.32			
3147.547	4		31761.57			
3148.12	6		31755.79	+0.07	19535 ₅ - 512 ₅ [°]	Res
3149.252	2		31744.38	-0.01	18 ₃ - 507 ₂ [°]	
3149.747	1		31739.39	+0.15	³ G ₄ - 481 ₃ [°]	
3150.46	2	1	31732.21			
3151.685	6	4 <i>v</i>	31719.87	-0.01	29 ₇ - 611 ₇ [°]	
3151.996	15	2	31716.74	+0.02	17 ₃ - 494 ₃ [°]	
3152.104	10		31715.66	+0.01	18 ₁ - 497 ₀ [°]	
3152.484	25	100 <i>s</i>	31711.84	-0.08	³ P ₁ - 450 ₂ [°]	
3152.954	80	4	31707.11	+0.04	³ G ₄ - 481 ₅ [°]	
3153.653	3		31700.08			
3154.172	5	10 <i>s</i>	31694.87	+0.20	24 ₂ - 564 ₃ [°]	Res
3154.762	8	2	31688.94	+0.06	³ H ₄ - 438 ₃ [°]	
3155.09	60	6	31685.64	+0.09	⁵ S ₂ - 499 ₃ [°]	
3155.52	25	5	31681.33	+0.02	⁷ S ₃ - 346 ₄ [°]	
3156.59	3		31670.59	+0.13	³ G ₃ - 450 ₂ [°]	
3158.16	15		31654.84			3
3158.32	4		31653.24	+0.01	19 ₄ - 509 ₄ [°]	
3158.804	30	6	31648.39	+0.01	19 ₆ - 512 ₇ [°]	
3159.042	5	1	31646.00	+0.11	22 ₀ - 544 ₁ [°]	
3159.181	60	6	31644.61	+0.06	13 ₂ - 454 ₂ [°]	
3159.418	10	2	31642.24	+0.14	22476 ₄ - 541 ₄ [°]	
3159.572	12	3	31640.70	+0.02	22476 ₄ - 541 ₃ [°]	
				+0.14	³ P ₂ -50894 ₃ [°]	
3159.858	2		31637.83	-0.05	19 ₄ - 508 ₃ [°]	
3160.134	3		31635.07	-0.01	27 ₄ - 588 ₄ [°]	
3161.715	2		31619.25	-0.14	15 ₃ - 470 ₂ [°]	2
3161.972	15		31616.68	-0.05	18 ₁ - 496 ₂ [°]	
3162.616	3		31610.24	-0.01	⁷ F ₃ - 54 ₃ [°]	
3163.416	80	15	31602.25	-0.04	³ H ₅ - 466 ₆ [°]	
3164.008	12	2	31596.34	+0.05	13 ₂ - 453 ₁ [°]	
3164.44	60	12	31592.03	+0.02	³ G ₃ - 449 ₄ [°]	Res Res
3165.375	60	8	31582.69	-0.03	18 ₂ - 496 ₂ [°]	
3165.708	5		31579.37	-0.04	³ H ₄ - 437 ₅ [°]	
3165.875	4	1	31577.71	+0.06	23 ₁ -55032 ₂ [°]	
3166.74	10	2	31569.08	+0.01	17 ₄ - 486 ₄ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3167.272	10		31563.78	+0.03	24 ₃ - 561° ₄	(b)
3167.585	30	5	31560.66	-0.06	27 ₅ - 594° ₆	
3168.674	1		31549.81	-0.02	19 ₄ - 508° ₅	
3168.976	15	2	31546.81	-0.07	³ P ₂ -50800° ₃	
3169.242	2		31544.16	-0.04	19 ₄ -50800° ₃	
3169.336	1		31543.22	-0.12	24 ₂ - 563° ₃	(b)
3169.934	40	4	31537.27	-0.04	³ G ₄ - 479° ₄	
3170.206	60	6	31534.57	0.00	⁷ S ₃ - 344° ₂	
3170.342	25	1	31533.21			
3171.643	15	1	31520.28	-0.11	20 ₂ - 525° ₂	
3173.114	4		31505.67			7
3173.336	4		31503.46			
3176.533	6		31471.76	-0.07	15 ₃ - 469° ₄	
3176.601	150	15	31471.09	0.00	⁵ D ₁ - 331° ₂	
3177.20	30	120 s	31465.15	-0.19	³ P ₂ - 507° ₂	
3177.25	5		31464.66	-0.03	19826 ₅ - 512° ₅	3
3177.708	4		31460.12	+0.04	23 ₃ - 553° ₂	
3177.97	5		31457.53	+0.03	22852 ₄ - 543° ₅	
3178.256	25	2	31454.70	-0.05	⁵ D ₄ - 376° ₃	
3179.06	80	8	31446.74	-0.03	17 ₃ - 491° ₄	
3179.17	4		31445.65			3
3180.113	4		31436.33	-0.11	³ H ₅ - 465° ₅	
3180.198	5		31435.49			
3180.31	20	2	31434.38	-0.05	18 ₁ - 495° ₂	
3180.745	60	10	31430.09	-0.02	³ P ₁ - 447° ₁	
3181.125	2	2	31426.33	-0.07	24 ₃ - 560° ₂	Res
3181.816	100	10	31419.51	-0.02	³ G ₄ - 478° ₅	
3181.868	6		31418.99	-0.05	⁵ S ₂ - 496° ₂	
3182.074	8		31416.96	+0.01	22852 ₄ - 542° ₃	
3182.167	4		31416.04	-0.08	23 ₃ - 553° ₄	
3182.66	6		31411.17	-0.01	23 ₆ - 548° ₆	Res
3182.86	60	6	31409.20	-0.08	14 ₂ - 463° ₃	
3183.045	4		31407.37	+0.01	23 ₂ - 553° ₂	
3183.514	30	2	31402.75	-0.04	⁷ S ₃ - 343° ₃	
3183.752	20	2	31400.40	-0.02	18 ₂ - 495° ₂	
3184.05	50	5	31397.46	-0.04	18 ₂ - 495° ₃	7
3184.418	120	12	31393.83	+0.03	⁵ D ₂ - 347° ₁	
3185.206	25	3	31386.07	+0.03	22476 ₄ - 538° ₅	
3185.402	6	1	31384.14			
3186.743	15	3	31370.93	-0.03	17 ₃ - 490° ₃	
3186.971	8		31368.69			(0)
3187.768	20	5	31360.84	-0.03	18 ₁ - 494° ₁	
3188.392	12	2	31354.71	+0.01	19 ₃ - 511° ₂	
3188.709	3		31351.59	+0.02	14 ₂ - 463° ₂	
3189.238	50	100 s	31346.39	-0.05	15 ₃ - 468° ₂	
3191.228	10	1	31326.84	-0.02	18 ₂ - 494° ₁	7
3191.572	200	20	31323.47	-0.01	⁵ D ₀ - 313° ₁	
3191.732	8	2	31321.90	-0.01	27 ₅ - 591° ₄	
3192.266	8	1	31316.66	+0.04	³ H ₄ - 434° ₃	
3192.39	15	2	31315.44	-0.01	14 ₂ - 462° ₁	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3192.936	15	3	31310.09	-0.04	18 ₃ - 502° ₄	(0)
3193.624	4		31303.34	+0.02	19 ₆ - 509° ₆	
3193.856	30		31301.07	+0.01	18 ₂ - 494° ₃	(b)
3193.984	20	1	31299.81			
3194.546	25	1	31294.31			
3195.070	25	2	31289.17	-0.01	³ P ₁ - 445° ₂	Res
3195.953	6	1	31280.53	-0.09	28 ₆ - 596° ₅	
3196.01	6	1	31279.97	-0.02	³ P ₂ - 505° ₁	
3196.12	6	1	31278.90	-0.10	27 ₅ - 591° ₆	
3196.926	8	2	31271.01	-0.05	19535 ₅ - 508° ₅	3
3197.436	6		31266.02	+0.01	20 ₁ -51693° ₂	
3198.262	10		31257.95	-0.07	³ G ₄ - 476° ₄	
3198.840	200	20	31252.30	0.00	⁵ D ₃ - 360° ₄	Res
3199.314	15	1	31247.67	-0.05	³ G ₃ - 445° ₂	
3199.816	4		31242.77	+0.05	³ P ₀ - 407° ₁	
3199.877	4		31242.17	-0.03	³ H ₆ - 482° ₇	
3199.966	30	6	31241.30	-0.01	13 ₂ - 450° ₂	3
3200.428	25		31236.79	+0.01	⁵ S ₂ - 495° ₂	
3200.73	25	2	31233.85	-0.01	⁵ S ₂ - 495° ₃	
3202.030	8		31221.17	+0.01	⁷ F ₁ - 51° ₀	
3202.21	6		31219.41	+0.01	17 ₄ - 483° ₃	
3203.055	40	4	31211.17	-0.02	18 ₃ - 501° ₃	3
3203.684	10		31205.05			
3205.502	25	2	31187.35	+0.02	18 ₁ - 492° ₂	(0)
3206.557	3		31177.09	+0.01	28 ₅ - 594° ₆	
3207.25	300	30	31170.35	-0.04	⁷ S ₃ - 341° ₄	Res
3207.80	25	2	31165.01	-0.03	15 ₃ - 466° ₄	
3207.988	20	2	31163.18	-0.04	⁵ S ₂ - 494° ₁	
3208.10	40	6	31162.09	-0.07	³ G ₄ - 475° ₃	
3208.28	200	20	31160.35	+0.02	⁵ D ₂ - 344° ₂	Res
3208.566	60	12	31157.57	+0.04	19 ₆ - 508° ₅	
3208.843	12		31154.88			
3209.008	12	2	31153.28	-0.04	18 ₂ - 492° ₂	
3210.31	3		31140.64			
3210.642	20	2	31137.42	0.00	⁵ S ₂ - 494° ₃	
3210.922	1		31134.71	-0.23	31 ₅ - 625° ₆	
3211.422	5	1	31129.86	-0.02	³ H ₆ - 481° ₅	
3211.837	6	1	31125.84	+0.02	19826 ₅ - 509° ₆	
3212.235	5		31121.98			
3213.136	12	3	31113.26	+0.09	⁵ D ₃ - 359° ₃	
3214.23	10		31102.67	+0.03	27 ₄ -58316° ₄	
3214.666	6	1	31098.45	-0.01	³ G ₃ - 444° ₃	
3215.146	8		31093.81			
3215.354	6		31091.79	-0.05	14 ₂ - 460° ₃	
3215.562	200	40	31089.78	-0.05	⁵ D ₄ - 373° ₅	Res
3215.648		30 s	31088.95	-0.09	³ H ₄ - 432° ₄	
3216.214	20	2	31083.48	+0.05	19826 ₅ - 509° ₄	
3216.99	4		31075.98			
3217.70	12		31069.13	+0.02	18 ₁ - 491° ₂	
3217.977	2		31066.45	+0.01	19 ₃ -50894° ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3218.444	3		31061.94			
3218.605	60	6	31060.39	-0.01	$^3P_{1-}$ 443 $^{\circ}_2$	Res
3219.054	10	2	31056.06			
3219.44	4	1	31052.33	-0.04	$^3G_{4-}$ 474 $^{\circ}_3$	
3220.06	30	3	31046.36	0.00	$^3P_{1-}$ 443 $^{\circ}_1$	
3221.11	4		31036.24	-0.03	$^3H_{5-}$ 461 $^{\circ}_6$	
3221.212	75	15	31035.25	+0.15	18 $_{2-}$ 491 $^{\circ}_2$	7
3221.515	3		31032.34	+0.08	20 $_{2-}$ 520 $^{\circ}_3$	
3221.617	25	4	31031.35	-0.02	17 $_{4-}$ 481 $^{\circ}_5$	
3221.914	60	20 s	31028.49	-0.06	$^5D_{2-}$ 343 $^{\circ}_3$	Res
3222.67	8		31021.21			
3223.120	25	3	31016.88	-0.03	$^5D_{2-}$ 343 $^{\circ}_1$	(0)
3223.83	1		31010.05	+0.13	22852 $_{4-}$ 538 $^{\circ}_5$	
3224.027	4		31008.16			
3224.968	1		30999.11	+0.01	27 $_{5-}$ 588 $^{\circ}_4$	
3225.29	1	1	30996.01	+0.17	22852 $_{4-}$ 538 $^{\circ}_4$	
3225.632	50	5	30992.73	-0.04	$^7S_{3-}$ 339 $^{\circ}_2$	Res
3225.743	3		30991.66	+0.14	18 $_{3-}$ 499 $^{\circ}_3$	
3225.947	15	3	30989.70	+0.02	$^5S_{2-}$ 492 $^{\circ}_2$	3
3226.32	2		30986.12	+0.10	24 $_{3-}$ 555 $^{\circ}_4$	
3226.413	2		30985.23	+0.01	27 $_{1-}$ 586 $^{\circ}_2$	
3226.526	4	1	30984.14			
3226.793	4		30981.58	+0.05	23 $_{3-}$ 549 $^{\circ}_4$	
3227.492	30	6	30974.87	-0.03	17 $_{3-}$ 486 $^{\circ}_4$	
3229.227	3		30958.23	+0.02	23 $_{2-}$ 549 $^{\circ}_1$	
3229.530	15	2	30955.32	+0.02	18 $_{2-}$ 490 $^{\circ}_3$	
3229.641	20	10	30954.26	-0.02	28 $_{6-}$ 593 $^{\circ}_7$	
3229.687	5		30953.82	-0.03	29 $_{7-}$ 604 $^{\circ}_6$	
3231.297	2		30938.39	+0.12	28 $_{5-}$ 591 $^{\circ}_4$	
3231.628	4		30935.23	+0.05	24 $_{3-}$ 555 $^{\circ}_3$	
3231.954	6		30932.11	-0.03	$^3P_{2-}$ 501 $^{\circ}_3$	
3232.132	15	6 s	30930.40	-0.03	$^3G_{4-}$ 473 $^{\circ}_3$	
3232.23	8	1	30929.47	+0.01	19 $_{4-}$ 501 $^{\circ}_3$	
3232.302	2		30928.77	-0.11	$^3G_{4-}$ 473 $^{\circ}_4$	
3232.487	80	8	30927.01	-0.02	$^5D_{4-}$ 371 $^{\circ}_4$	Res
3232.57	2		30926.21	-0.09	14 $_{2-}$ 459 $^{\circ}_2$	
3232.654	60	12 s	30925.41	-0.04	15 $_{3-}$ 463 $^{\circ}_3$	3
3233.24	4		30919.80	+0.02	23 $_{1-}$ 543 $^{\circ}_1$	
3234.994	30	6	30903.04	-0.03	$^5D_{2-}$ 342 $^{\circ}_3$	Res
3235.108	15	2	30901.95	-0.01	$^5D_{3-}$ 357 $^{\circ}_2$	
3235.922	25	5	30894.18	+0.01	19535 $_{5-}$ 504 $^{\circ}_6$	(b)
3236.486	4		30888.79			
3237.087	80	8	30883.06	0.00	$^3P_{0-}$ 404 $^{\circ}_1$	7
3237.786	10	2	30876.39	+0.04	23 $_{2-}$ 548 $^{\circ}_2$	
3237.91	8		30875.21			
3238.118	5	3	30873.23			
3238.303	2		30871.47	+0.01	$^5S_{2-}$ 491 $^{\circ}_2$	
3238.496	50	5	30869.62	+0.03	$^7F^{\circ}_{3-}$ 53 $^{\circ}_3$	3
3238.69	12	2	30867.77	+0.03	15 $_{3-}$ 463 $^{\circ}_2$	
3239.338	10	1	30861.60	-0.01	17 $_{4-}$ 479 $^{\circ}_4$	3

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3240.966	2		30846.1			
3241.114	3	1 <i>b</i>	30844.69			
3241.408	20	4	30841.89	-0.01	⁷ F ₁ —50906 ₁	
3241.55	3		30840.54	-0.08	23 ₁ — 542 ₀	
3242.026	100	10	30836.01	+0.01	⁷ F ₂ — 52 ₃	7
3242.554	3		30830.99			
3242.672	4	1	30829.87	-0.13	24 ₂ — 556 ₂	
3243.122	6		30825.59	+0.07	23 ₆ — 543 ₅	
3244.449	2		30812.99			
3245.01	4		30807.66			
3246.698	4		30791.64	-0.02	⁵ S ₂ — 490 ₃	
3247.436	15		30784.64	+0.02	14 ₂ — 457 ₁	
3247.883	2		30780.41	+0.01	20 ₂ — 517 ₁	
3248.031	2 <i>v</i>	3	30779.00	-0.28	24 ₃ — 553 ₂	
3248.098	6		30778.37	-0.05	24 ₃ — 553 ₃	3
3249.848	10	30 <i>s</i>	30761.80	+0.07	22476 ₄ — 532 ₄	
3251.13	3		30749.67	+0.04	19535 ₅ — 502 ₄	
3251.23	40	40 <i>s</i>	30748.72	-0.06	³ H ₄ — 429 ₄	
3251.744	6	8 <i>b</i>	30743.86	+0.03	17 ₄ — 478 ₅	
3252.292	100	10	30738.68	-0.01	⁷ F ₃ — 53 ₄	7
3252.566	4	1	30736.09	-0.01	28 ₆ — 591 ₆	
3252.64	15	2	30735.39	+0.07	24 ₃ — 553 ₄	
3252.727	3		30734.57	+0.13	⁷ F ₂ — 52 ₂	
3254.360	50	5	30719.15	-0.06	³ H ₅ — 457 ₅	3
3254.526	12	2	30717.58	+0.01	22476 ₄ — 531 ₅	
3254.660	6		30716.32	+0.05	⁵ D ₁ — 323 ₀	
3255.067	20		30712.48	+0.01	³ P ₂ — 499 ₃	
3255.23	2	2	30710.94	+0.11	20 ₂ —51693 ₂	
3255.35	10	2	30709.81	+0.02	19 ₄ — 499 ₃	
3255.957	60	20 <i>s</i>	30704.08	+0.08	³ H ₄ — 428 ₅	
3256.230	100	10	30701.51	0.00	14 ₂ — 456 ₃	Res
3256.493	25	5	30699.03			
3258.140	12	2	30683.51	-0.03	⁵ D ₀ — 306 ₁	(0)
3259.434	60	6	30671.33	+0.11	18 ₂ — 487 ₁	
3259.66	60	8	30669.20	+0.05	⁵ D ₃ — 354 ₃	
3259.778	12	2	30668.09	-0.03	³ P ₁ — 439 ₂	
3259.905	12	2	30666.90	+0.04	19 ₃ — 504 ₂	3
3261.163	40	2	30655.07	+0.04	⁵ D ₄ — 368 ₃	
3262.586	1		30641.7	+0.09	22476 ₄ — 531 ₄	
3262.676	3		30640.85			
3263.100	40	4	30636.87	+0.02	³ G ₃ — 439 ₄	Res
3264.19	6	1	30626.64	-0.02	³ G ₃ — 439 ₂	
3264.34	15		30625.24	+0.01	17 ₃ — 483 ₃	
3265.06	4	1	30618.48	-0.05	⁵ D ₂ — 339 ₂	
3265.152	60	1	30617.62	+0.01	⁷ F ₄ — 55 ₅	
				-0.04	17 ₃ — 483 ₂	
3266.073	12	1	30608.99	-0.05	⁷ F ₂ — 52 ₁	
3266.182	8		30607.97	-0.04	15 ₃ — 460 ₃	
3266.620	40	4	30603.86	-0.04	⁷ D ₁ — 52 ₁	
3266.695	3		30603.16	+0.02	19826 ₅ — 504 ₆	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3266.766	30	6	30602.49	-0.05	19535 ₅ - 501 ₅ [°]	7
3266.970	3		30600.58	+0.08	24 ₂ - 553 ₂ [°]	
3267.603	2		30594.65	-0.07	24 ₂ - 553 ₁ [°]	
3268.124	12	2	30589.78	-0.01	13 ₂ - 443 ₂ [°]	
3268.574	25	12	30585.57	+0.05	³ P ₁ - 438 ₁ [°]	3
3268.924	40		30582.29	-0.03	17 ₄ - 476 ₄ [°]	
3269.622	50	10 s	30575.76	+0.01	13 ₂ - 443 ₁ [°]	
3269.694	4		30575.09	-0.05	14 ₂ - 455 ₃ [°]	
3270.266	60	6	30569.74	+0.01	⁷ F ₄ - 55 ₄ [°]	
3271.634	8	1	30556.96	-0.06	28291 ₃ - 588 ₄ [°]	
3272.00	15	1	30553.54	+0.05	⁷ F ₂ -52002 ₃ [°]	
3273.12	20	2	30543.09	-0.02	17 ₃ - 482 ₂ [°]	
3273.154	3		30542.77	+0.02	18 ₃ - 495 ₂ [°]	
3273.474	15	1	30539.78	-0.05	18 ₃ - 495 ₃ [°]	
3274.616	10		30529.13			(0)
3275.524	3		30520.67	+0.06	18 ₁ - 486 ₀ [°]	
3275.74	3		30518.66	+0.02	27 ₄ - 577 ₃ [°]	
3276.018	6	1	30516.07	+0.06	22476 ₄ - 529 ₄ [°]	
3276.532	5		30511.28	0.00	28 ₆ - 589 ₅ [°]	
3276.928	25	2	30507.59	+0.01	⁵ S ₂ - 487 ₁ [°]	
3277.50	8		30502.27	-0.01	³ G ₃ - 438 ₃ [°]	
3277.608	3	3 v s	30501.27	-0.03	28347 ₃ - 588 ₄ [°]	
3278.524	12	1	30492.74	+0.02	22852 ₄ -53345 ₃ [°]	
3278.924	12	20 s	30489.02	+0.01	19 ₆ - 501 ₅ [°]	
3279.03	30	3	30488.04	-0.04	⁷ F ₂ -51936 ₂ [°]	Res
3279.207	12	1	30486.39	-0.04	17 ₄ - 475 ₃ [°]	
3279.578	40	4	30482.95	+0.01	⁷ D ₁ - 51 ₂ [°]	
3279.724	6		30481.59	+0.03	⁵ D ₃ - 353 ₂ [°]	
3280.306	5 b		30476.18	+0.08	19 ₃ - 503 ₃ [°]	
3281.041	3	1	30469.35	-0.02	17 ₃ - 481 ₃ [°]	
3281.938	120	12	30461.03	-0.02	⁷ F ₁ - 50 ₂ [°]	
3282.196	15	2	30458.63	+0.03	19826 ₅ - 502 ₄ [°]	
3282.376	10		30456.96	0.00	19 ₃ - 502 ₄ [°]	
3283.554	50		30446.03	+0.03	³ P ₂ - 496 ₂ [°]	
				-0.05	14 ₂ - 454 ₂ [°]	(b)
3283.94	5		30442.45	-0.02	15 ₃ - 459 ₂ [°]	
3284.288	25	3	30439.23	0.00	³ H ₄ - 426 ₃ [°]	
3284.536	3		30436.93	+0.06	23 ₂ - 544 ₁ [°]	
3284.682	2		30435.58			
3285.02	12	2	30432.45	-0.01	24 ₃ - 550 ₄ [°]	
3285.992	15	2	30423.45	-0.04	³ G ₄ - 468 ₅ [°]	
3286.177	1		30421.73	-0.06	24 ₃ -55084 ₂ [°]	
3287.125	2		30412.96			
3287.915	2		30405.65	+0.11	27 ₄ - 576 ₃ [°]	
3288.758	10		30397.86	+0.04	14 ₂ - 453 ₁ [°]	
3289.728	2		30388.90			
3290.043	2 b		30386.0	+0.39	22852 ₄ - 532 ₄ [°]	
3290.51	30	6	30381.68	-0.04	³ H ₅ - 454 ₅ [°]	
3290.660	20	5	30380.29	+0.01	19 ₄ - 496 ₄ [°]	
3290.906	2		30378.02	+0.08	23 ₆ - 538 ₅ [°]	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3291.054	25	5	30376.65	-0.02	17 ₄ - 474 ₃ [°]	
3291.524	12	1	30372.32	+0.01	³ G ₃ - 437 ₄ [°]	
3291.712	20		30370.58	-0.08	³ H ₄ - 425 ₄ [°]	
3292.802	60	6	30360.53			
3292.938	20	2	30359.27	-0.08	20 ₀ - 505 ₁ [°]	
3293.070	6		30358.06	+0.04	19 ₃ - 501 ₃ [°]	
3293.712	80	12	30352.14	-0.04	³ H ₄ - 425 ₃ [°]	
3293.946	3		30349.98			
3294.266	2		30347.04	+0.03	27 ₄ - 575 ₅ [°]	
3295.062	3	1	30339.71	+0.02	23 ₃ - 542 ₃ [°]	
3295.200	3	1	30338.43			3
3295.564	8	1	30335.09			
3296.187	25 <i>b</i>	2 <i>b</i>	30329.35	-0.23	27 ₅ - 581 ₅ [°]	
				+0.11	28 ₅ - 585 ₅ [°]	
3298.130	60	6	30311.48	-0.03	19826 ₅ - 501 ₅ [°]	
3298.507	2		30308.02	-0.10	28347 ₃ - 586 ₂ [°]	3
3298.606	12	2	30307.11	-0.02	18 ₁ - 483 ₁ [°]	
3298.937	3	4	30304.07			
3299.300	10	1	30300.73	0.00	24 ₃ - 549 ₄ [°]	
3299.660	6		30297.43	+0.01	22476 ₄ - 527 ₅ [°]	
3299.858	6		30295.61	-0.04	18 ₃ - 492 ₂ [°]	Res
3300.344	5	12 <i>s</i>	30291.15	+0.09	20 ₁ - 507 ₂ [°]	
3300.660	8	1	30288.25	-0.03	³ H ₄ - 424 ₄ [°]	
3300.822	150	40	30286.77	-0.01	⁵ D ₃ - 351 ₄ [°]	
3301.81	8		30277.7	+0.04	20 ₂ - 512 ₁ [°]	
3302.275	2		30273.44	+0.32	18 ₂ - 483 ₁ [°]	
3302.842	4		30268.24	+0.02	22 ₀ - 530 ₁ [°]	
3303.338	12	1	30263.70	0.00	³ P ₂ - 495 ₂ [°]	(0)
3303.660	8	1	30260.75	-0.03	³ P ₂ - 495 ₃ [°]	
3304.250	3		30255.34			
3304.324	4	3 <i>s</i>	30254.66	-0.07	17 ₄ - 473 ₃ [°]	
3304.45	20		30253.5	-0.07	19535 ₅ - 497 ₄ [°]	
3304.482	20		30253.22	+0.04	17 ₄ - 473 ₄ [°]	
3305.570	25	2	30243.26	-0.03	13 ₂ - 440 ₃ [°]	
3305.825	3		30240.93	-0.05	33 ₅ - 635 ₆ [°]	Res
3306.365	30	3	30235.99	-0.02	18 ₁ - 483 ₂ [°]	
3308.358	3	60 <i>s</i>	30217.77	+0.09	15 ₃ - 456 ₃ [°]	
3308.417	2		30217.24			
3308.76	1		30214.1	-0.24	23 ₁ - 536 ₂ [°]	
3309.258	2		30209.56	-0.01	18 ₂ - 483 ₃ [°]	Res
3309.478	30	3	30207.55	-0.03	³ P ₁ - 435 ₂ [°]	
3310.083	5		30202.03	+0.03	18 ₂ - 483 ₂ [°]	
3310.246	2		30200.54			
3310.38	5 <i>b</i>		30199.3	-0.06	20 ₂ - 511 ₂ [°]	
3310.57	1		30197.6	+0.09	13 ₂ - 439 ₂ [°]	Res
3310.72	1		30196.2			
3310.994	1		30193.72	+0.02	³ G ₄ - 466 ₄ [°]	
3311.118	25	5	30192.59	-0.03	³ H ₅ - 452 ₄ [°]	
3311.388	200	40	30190.13	+0.04	⁷ S ₃ - 331 ₂ [°]	
3311.552	5		30188.63	-0.07	23 ₃ - 541 ₄ [°]	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3312.303	3		30181.79	0.00	18 ₁ - 482 ₀	
3312.776	3		30177.48	+0.05	18 ₃ - 491 ₂	
3313.226	6	5 b	30173.38	-0.06	18 ₃ - 491 ₄	
3313.606	4		30169.92	-0.06	28 ₆ - 585 ₅	
3314.020	25	2	30166.15	+0.03	³ G ₃ - 435 ₂	(b)
3314.538	15	2	30161.44	-0.02	18 ₁ - 482 ₂	
3315.090	80	4	30156.42	0.00	⁷ F ₅ - 56 ₆	(b)
3316.088	60	6	30147.34	0.00	⁵ D ₁ - 318 ₂	
3316.91	10	5	30139.9	+0.01	22852 ₄ - 529 ₄	
				-0.05	28347 ₃ - 584 ₃	
3317.078	15	1	30138.34	-0.01	19 ₃ - 499 ₃	
3317.50	3		30134.5	-0.06	23 ₂ - 541 ₃	
3317.75	4	1	30132.2			
3317.996	40	4	30130.01	-0.01	³ G ₃ - 434 ₃	Res
3319.664	8		30114.87	-0.04	13 ₂ - 438 ₁	
3320.257	8	1	30109.48	0.00	⁵ S ₂ - 483 ₁	
3320.364	40	4	30108.52	-0.04	³ P ₀ - 396 ₁	7
3320.664	2		30105.8	+0.09	20 ₁ - 505 ₁	
3321.140	25		30101.48	-0.03	19535 ₅ - 496 ₄	
				+0.05	27 ₄ - 573 ₄	
3321.45	2	1	30098.7			
3321.569	35	4	30097.59	-0.04	18 ₃ - 490 ₃	3
3322.256	80	8	30091.37	+0.06	15 ₃ - 455 ₃	
3322.504	12	1	30089.13	-0.03	20 ₂ - 510 ₃	
3322.856	2		30085.94	-0.04	28204 ₂ - 582 ₁	
3324.064	30	3	30075.01	-0.05	³ G ₄ - 465 ₅	(0)
3324.280	4		30073.05	-0.08	13 ₂ - 438 ₃	
3324.696	20	4	30069.29	-0.08	27 ₅ - 579 ₆	(0)
3324.984	10		30066.68	-0.02	20 ₁ - 504 ₂	
3326.196	120	12	30055.73	-0.04	⁵ D ₄ - 362 ₅	Res
3326.424	20	2	30053.67	-0.04	18 ₂ - 481 ₃	
3327.19	12	2	30046.75	-0.09	³ H ₅ - 451 ₄	
3327.63	50	5	30042.78	-0.06	14 ₂ - 450 ₂	3
3328.124	60	6	30038.32	-0.04	⁵ S ₂ - 483 ₂	3
3328.34	2		30036.4			
3329.135	4		30029.2	0.00	23 ₃ -53912 ₂	
3329.650	2		30024.55	-0.03	28291 ₃ -58316 ₄	
3330.53	15		30016.6	0.00	³ P ₂ - 492 ₂	
3331.687	150	8	30006.19	-0.10	⁷ S ₃ - 329 ₃	Res
3332.175	2		30001.8	0.00	28204 ₂ - 582 ₃	
3333.704	6	1	29988.04	-0.11	17 ₃ - 476 ₄	(0)
3334.606	5		29979.93			
3336.581	40	4	29962.18	-0.07	15 ₃ - 454 ₂	
3336.860	30	2	29959.68	-0.08	22476 ₄ - 524 ₄	3
3337.514	15 b	1	29953.81	+0.05	22852 ₄ - 528 ₃	
				-0.05	27 ₅ - 578 ₄	
3337.690	60	6	29952.23	0.00	⁷ D ₂ - 53 ₃	(b)
3338.447	1		29945.44	-0.11	24 ₃ - 545 ₃	
3339.996	6	1	29931.55	-0.13	19 ₄ - 491 ₅	
3340.115	12		29930.48			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3340.206	3		29929.67	+0.01	27 ₄ - 571 ₅ [°]	
3341.146	3	1	29921.25	-0.05	22852 ₄ - 527 ₅ [°]	
3341.412	3		29918.87	+0.05	22476 ₄ - 523 ₅ [°]	
3341.446	1		29918.56	+0.01	23 ₃ - 538 ₄ [°]	
3342.28	2		29911.1	0.00	20 ₂ -50894 ₃ [°]	
3343.246	50	2	29902.45	+0.01	³ G ₃ - 432 ₄ [°]	
3343.696	3		29898.43	+0.05	³ P ₂ - 491 ₂ [°]	
3343.852	20		29897.03	-0.03	⁷ F ₅ [°] -56573 ₅ [°]	
3344.16	2		29894.3	+0.13	⁷ F ₄ - 54 ₃ [°]	
3344.40	3		29892.1	-0.16	17 ₃ - 475 ₃ [°]	
3344.450	20	2	29891.69	-0.02	19 ₄ - 491 ₄ [°]	
3344.63	6		29890.1	+0.03	⁵ S ₂ - 481 ₃ [°]	
3345.088	60	6	29885.99	-0.01	29 ₇ - 593 ₇ [°]	3
3345.858	100	80 s	29879.11	+0.01	³ G ₃ - 432 ₂ [°]	
3346.114	40		29876.83	0.00	⁷ S ₃ - 328 ₄ [°]	(0)
3346.66	5	5	29872.0	+0.12	19 ₃ - 496 ₂ [°]	
3346.81	3		29870.6	-0.04	³ H ₅ - 449 ₄ [°]	
3348.496	5		29855.57	+0.08	26 ₂ - 567 ₃ [°]	
3349.538	6	1	29846.28	-0.02	³ H ₆ - 468 ₅ [°]	
3351.202	15	8	29831.47	-0.09	⁷ D ₁ - 51 ₀ [°]	(0)
3351.391	3	4	29829.78	-0.12	23 ₁ - 532 ₂ [°]	
3351.971	15	3	29824.62	-0.21	17 ₄ - 469 ₄ [°]	
3352.651	5	1	29818.57	-0.01	³ P ₂ - 490 ₃ [°]	
3352.954	20	15 s	29815.88	+0.03	⁵ D ₂ - 331 ₂ [°]	z d
				-0.02	19 ₄ - 490 ₃ [°]	
3353.554	30	3	29810.55	+0.07	19826 ₅ - 496 ₄ [°]	
3353.738	30	6	29808.91	+0.07	19 ₃ - 496 ₄ [°]	Res
3354.452	120	12	29802.57	-0.03	⁵ D ₃ - 346 ₄ [°]	Res
				+0.03	15 ₃ - 452 ₄ [°]	
3356.241	4	2 s	29786.68	0.00	28 ₆ - 581 ₅ [°]	
3356.505	2		29784.33	+0.02	29479 ₄ - 592 ₅ [°]	
3356.712	15	2	29782.50	0.00	17 ₃ - 474 ₃ [°]	
3357.086	4		29779.18	+0.06	22476 ₄ - 522 ₃ [°]	
3357.892	3	2	29772.03	+0.02	23 ₁ - 532 ₁ [°]	
3360.63	2		29747.8	+0.01	17 ₄ - 468 ₅ [°]	
3360.740	6	1	29746.81	+0.03	³ P ₁ - 430 ₀ [°]	
3361.104	40	100 s	29743.58	-0.06	23 ₆ - 532 ₆ [°]	
3361.364	20	2	29741.28	-0.07	17 ₃ - 474 ₂ [°]	Res
3361.852	15	2	29736.97	0.00	13 ₂ - 435 ₂ [°]	
3361.98	4	1	29735.8	-0.08	20 ₂ - 507 ₂ [°]	
3363.336	80	8	29723.85	+0.01	⁵ D ₄ - 359 ₃ [°]	Res
3364.792	4	1	29710.98	-0.05	27 ₅ - 575 ₅ [°]	
3364.898	6	1	29710.05	+0.07	³ H ₄ - 418 ₄ [°]	
3365.936	40	4	29700.89	+0.02	13 ₂ - 434 ₃ [°]	(0)
3367.214	15	2	29689.61	+0.03	19 ₃ - 495 ₂ [°]	(0)
3367.550	15	2	29686.65	-0.01	19 ₃ - 495 ₃ [°]	
3367.656	8	3	29685.72	-0.01	28 ₅ - 579 ₆ [°]	(0)
3369.680	20	2	29667.89	+0.02	29 ₇ - 591 ₆ [°]	(b)
3370.157	10	2	29663.69	-0.03	³ H ₆ - 466 ₆ [°]	
3370.508	30	3	29660.60	+0.04	17 ₃ - 473 ₃ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3370.691	12	2	29658.99	-0.02 +0.10	17 ₃ - 473 ₄ [°] 24 ₃ - 542 ₃ [°]	1
3370.94	6	1	29656.8	+0.04	15 ₃ - 451 ₄ [°]	
3371.044	40	4	29655.88	+0.02	⁵ D ₃ - 344 ₂ [°]	
3371.12	20 _g	4	29655.2	+0.06	³ P ₀ - 391 ₁ [°]	
3371.352	50	5	29653.17	-0.02	⁵ D ₁ - 313 ₁ [°]	
3373.231	20	2	29636.66	-0.05 +0.05	³ G ₄ - 460 ₃ [°] 17 ₃ - 473 ₂ [°]	
3373.752	300	30	29632.08	+0.03	⁵ D ₂ - 329 ₃ [°]	
3374.574	3		29624.86	-0.04	30 ₂ - 599 ₂ [°]	
3375.112	40	4	29620.14	+0.04	14 ₂ - 445 ₂ [°]	
3375.361	4	2	29617.95	+0.10	27 ₄ - 568 ₄ [°]	
3376.898	20	1	29604.47	+0.06	22476 ₄ - 520 ₃ [°]	(0) Res
3378.515	40	4	29590.31	+0.09	19 ₃ - 494 ₃ [°]	
3378.728	5		29588.44	-0.12	28898 ₂ - 584 ₃ [°]	
3379.096	8		29585.22	+0.08	24 ₂ - 543 ₁ [°]	
3379.264	6		29583.75	+0.11	22852 ₄ - 524 ₄ [°]	
3380.032	4		29577.03			
3380.406	3		29573.75			
3381.725	40	4	29562.22	+0.04	³ G ₃ - 429 ₄ [°]	
3382.086	30	3	29559.06	+0.05	15 ₃ - 450 ₂ [°]	
3382.598	50	40 _s	29554.59	+0.06	15 ₃ - 450 ₃ [°]	
3384.332	80	8	29539.45	+0.07 -0.01	19 ₆ - 491 ₅ [°] ⁵ S ₂ - 478 ₁ [°]	(b)
3384.888	25	20 _s	29534.60	+0.10	³ P ₂ - 487 ₁ [°]	
3385.818	30	15	29526.48	+0.01	28 ₆ - 579 ₆ [°]	
3386.090	80	8	29524.11	+0.03	⁵ D ₃ - 343 ₃ [°]	
3386.778	8	1	29518.11	+0.07	17 ₄ - 466 ₄ [°]	
3387.492	1		29511.89	+0.11	28291 ₃ - 578 ₄ [°]	
3387.93	3		29508.1	+0.20	24 ₃ - 541 ₄ [°]	
3388.116	6		29506.46	-0.02	24 ₃ - 541 ₃ [°]	
3388.822	150	6	29500.31	0.00	⁷ F ₂ -50949 ₁ [°]	
3389.10	5		29497.9	+0.03	³ H ₆ - 465 ₅ [°]	
3389.82	3		29491.6			(b)
3391.090	80	8	29480.58	+0.02	15 ₃ - 449 ₄ [°]	
3391.520	80	8	29476.84	+0.01	³ H ₅ - 445 ₅ [°]	
3392.204	6		29470.90	+0.06	14 ₂ - 444 ₃ [°]	
3392.25	1		29470.5	+0.14	26 ₂ - 563 ₃ [°]	
3392.462	2		29468.66	-0.20	28 ₅ - 577 ₆ [°]	
3392.820	12	3	29465.55	+0.10	27 ₅ - 573 ₄ [°]	
3393.427	2		29460.28	-0.06	23 ₃ -53390 ₃ [°]	
3393.748	10	2	29457.49	+0.05	⁷ F ₂ -50906 ₁ [°]	
3394.613	8	2	29449.99	+0.04	13 ₂ - 432 ₂ [°]	
3395.472	12	2	29442.54	+0.06	19 ₃ - 492 ₂ [°]	3 Res
3395.806	40	4	29439.64	+0.02	13 ₂ - 432 ₁ [°]	
3396.395	3		29434.54			
3396.850	6	1	29430.59	+0.11	23 ₁ - 528 ₂ [°]	
3397.455	8	1	29425.35	+0.01	19 ₆ - 490 ₅ [°]	
3398.089	50	5	29419.86	+0.02	19 ₄ - 486 ₄ [°]	
3398.585	12	1	29415.57	+0.13	23 ₃ -53345 ₃ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3400.453	5	1	29399.41	+0.05	17 ₄ - 465 ₅	
3400.548	12	1	29398.59	-0.01	⁵ D ₃ - 342 ₃	
3400.859	6	1	29395.90	+0.20	33 ₅ - 626 ₆	
3401.388	30	3	29391.33	+0.01	14 ₂ - 443 ₂	
3402.758	12	2	29379.50	+0.08	22476 ₄ - 518 ₄	
3402.895	4	1	29378.31	+0.09	17 ₃ - 470 ₂	
3403.010	1		29377.32	+0.04	14 ₂ - 443 ₁	
3403.370	5	1	29374.21			
3403.785	8		29370.63	-0.01	20 ₁ - 497 ₀	
3404.216	30	3	29366.91	+0.07	18 ₂ - 474 ₃	
3404.704	2		29362.70	-0.02	23 ₂ -53345 ₃	z d (0)
3404.792	25	5	29361.95	-0.07	19826 ₅ - 491 ₅	
3405.052	4		29359.70	0.00	18 ₁ - 474 ₂	
3405.266	25	3	29357.86	+0.03	³ G ₄ - 457 ₅	
3405.952	25	2	29351.95	+0.05	18 ₃ - 483 ₃	
3406.824	30	40 s	29344.43	+0.10	18 ₃ - 483 ₂	
3407.244	2		29340.81	+0.15	32 ₄ - 614 ₅	
3407.628	40	4	29337.51	+0.04	³ H ₄ - 414 ₃	
3408.379	150	5	29331.05	+0.14	⁷ F ₃ - 52 ₄	
3408.770	5		29327.68	-0.02	24 ₂ - 541 ₃	
3409.003	12		29325.67	-0.02	18 ₂ - 474 ₂	
3409.164	5	1	29324.29	+0.03	19 ₃ - 491 ₂	
3409.432	20	3	29321.99	+0.08	19826 ₅ - 491 ₄	
3409.608	12	1	29320.47	-0.02	³ H ₅ - 443 ₆	
3410.483	15	2	29312.95	-0.01	⁵ S ₂ - 475 ₃	
3410.872	40	4	29309.61	+0.01	28 ₆ - 577 ₆	
3411.008	12	1	29308.44	+0.11	23 ₃ - 532 ₄	
3411.780	2		29301.81	+0.14	24 ₃ -53912 ₂	
3411.997	5	1	29299.95	-0.03	29 ₇ - 587 ₆	
3412.078	12	2	29299.25	+0.07	27 ₅ - 571 ₆	
3412.736	3	30 s	29293.60	-0.08	27 ₅ - 571 ₅	Res
3412.956	80	8	29291.71	+0.03	⁵ D ₃ - 341 ₄	
3413.410	4	1	29287.82	+0.08	⁵ D ₄ - 355 ₅	
3413.528	80	15	29286.80	+0.07	⁷ S ₃ - 322 ₃	
3414.336	5		29279.87	+0.05	⁵ D ₄ - 354 ₃	
3415.016	3		29274.04			
3415.288	5	1	29271.71	-0.01	20 ₁ - 496 ₂	
				-0.05	28347 ₃ - 576 ₃	
3415.406	4	6 s	29270.70	+0.19	27 ₄ - 564 ₃	
3415.548	20	2	29269.48	-0.02	20 ₀ - 494 ₁	
3415.908	5	1	29266.40	+0.01	³ P ₁ - 425 ₁	(0)
3417.508	6		29252.70	+0.07	³ G ₃ - 426 ₃	
3418.07	2		29247.9	+0.06	19826 ₅ - 490 ₅	
3418.241	10		29246.42	+0.04	³ G ₄ - 456 ₃	
3418.456	20	4	29244.59	+0.13	19 ₃ - 490 ₃	
3419.170	3		29238.48	+0.12	28 ₅ - 574 ₄	
3419.277	30	4	29237.56	+0.11	⁷ F ₃ - 52 ₃	
				-0.19	24 ₃ - 538 ₄	
3420.075	3	2	29230.74	+0.08	17 ₃ - 469 ₄	
3420.348	25	2	29228.41	+0.12	22852 ₄ - 520 ₅	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3421.216	3		29221.00	+0.05	18 ₂ - 473 ₂	(b)
3422.415	100	10	29210.76	+0.05	⁷ F ₄ - 53 ₅	
3422.849	8	1	29207.05	+0.07	22852 ₄ - 520 ₄	
3423.110	1		29204.83			
3423.293	20	4	29203.27	+0.07	⁵ S ₂ - 474 ₃	
3423.834	10	1	29198.65	+0.09	23 ₁ - 526 ₂	Res 3
3424.127	3		29196.15	+0.11	18 ₃ - 481 ₃	
3424.816	10	2	29190.28			
3424.909	5	1	29189.49			
3425.044	10	2	29188.34	+0.13	23 ₃ - 531 ₄	
3425.538	25	3	29184.13	+0.07	³ G ₃ - 425 ₄	Res 3
3426.881	8	1	29172.69	-0.03	18 ₁ - 472 ₁	
3427.580	20	3	29166.74			
3427.710	80	10	29165.63	+0.05	³ G ₃ - 425 ₃	
3428.131	12	1	29162.05	0.00	⁵ S ₂ - 474 ₂	
3428.530	6		29158.66			7
3429.128	2	1	29153.57	+0.06	⁷ F ₄ - 53 ₃	
3429.592	100	20	29149.63	-0.04	19535 ₅ - 486 ₆	
3430.255	30	6	29144.00	+0.08	⁷ D ₃ - 55 ₄	
3430.426	15	1	29142.54	+0.04	³ P ₁ - 424 ₂	
3430.871	15	5	29138.76	+0.05	18 ₂ - 472 ₁	(0)
3432.578	2		29124.27	+0.07	28347 ₃ - 574 ₄	
3432.625	2		29123.87	+0.03	22476 ₄ - 516 ₃	
3433.074	12	1	29120.07	+0.06	³ G ₄ - 455 ₃	
3433.774	40	4	29114.13	+0.07	⁵ D ₃ - 339 ₂	
3434.814	4		29105.31	+0.04	17 ₃ - 468 ₂	(0) z d
3435.235	20	2	29101.75	+0.07	³ G ₃ - 424 ₄	
3435.710	30	6 s	29097.73	+0.03	³ H ₆ - 461 ₆	
3436.716	2		29089.21	-0.21	20 ₁ - 495 ₂	
3437.133	6		29085.68	+0.08	24 ₂ - 538 ₁	
3437.574	4		29081.95	+0.14	28 ₅ - 573 ₄	(b)
3437.654	2		29081.27	+0.01	⁵ S ₂ - 473 ₂	
3438.191	20	2	29076.73	+0.14	⁷ F ₂ - 50 ₂	
3438.808	50	5	29071.51	+0.06	⁷ D ₁ - 50 ₂	
3438.954	15	5	29070.28	+0.11	19 ₄ - 483 ₃	
3439.372	10	1	29066.74	+0.11	27 ₄ - 562 ₅	(b)
3439.542	3		29065.31	+0.03	³ P ₂ - 483 ₂	
3439.991	15	3	29061.51			
3440.340	5		29058.57	+0.09	24 ₃ - 536 ₂	
3440.426	6		29057.84			
3440.482	4		29057.37	+0.06	⁵ S ₂ - 473 ₂	Res
3441.31	2		29050.4	+0.08	29853 ₄ - 589 ₅	
3441.962	25	5	29044.87	+0.05	14 ₂ - 440 ₃	
3442.311	8	4	29041.93	+0.10	27 ₄ - 562 ₄	
3442.998	80	8	29036.13	-0.01	19 ₆ - 486 ₆	
3443.687	3	2	29030.33			Res
3444.224	3	1	29025.80	+0.05	31 ₅ - 604 ₆	
3444.598	30	3	29022.65	+0.10	23 ₁ - 524 ₁	
				+0.04	⁷ F ₄ - 53 ₄	
3444.874	1		29020.32	-0.02	³ G ₄ - 454 ₅	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3445.395	15	2	29015.93	+0.07	20 ₁ — 494 ₁ ^o	3
3445.710	30	6	29013.28	+0.03	⁵ D ₁ — 306 ₁ ^o	
3446.888	12	3	29003.37	+0.07	22852 ₄ — 518 ₄ ^o	
3447.566	2		28997.66	-0.02	26 ₂ — 558 ₁ ^o	(b)
3447.712	8	1	28996.43	-0.14	18 ₁ — 470 ₂ ^o	
3447.984	15	4	28994.15	+0.04	18 ₃ — 479 ₄ ^o	(b)
3448.208	40	10	28992.26	+0.01	⁷ D ₂ —52956 ₁	
3448.381	4		28990.81	+0.08	³ P ₂ — 482 ₂ ^o	
3448.826	50	8	28987.07	+0.06	15 ₃ — 444 ₃ ^o	
3449.302	12	2	28983.07	+0.06	20 ₂ — 499 ₃ ^o	
3449.437	8	1	28981.93	+0.06	27 ₅ — 568 ₄ ^o	
3450.118	2		28976.21			
3450.246	2		28975.14	+0.07	⁵ S ₂ — 472 ₁ ^o	
3450.442	3		28973.49	+0.01	26 ₂ — 558 ₂ ^o	
3451.136	6		28967.67	+0.02	28347 ₃ — 573 ₄ ^o	
3451.739	50	5	28962.61	+0.05	18 ₂ — 470 ₂ ^o	
3451.956	12	1	28960.79	+0.11	23 ₂ — 529 ₃ ^o	
				-0.02	27 ₄ — 561 ₄ ^o	
3452.616	30	3	28955.25	+0.05	³ P ₁ — 422 ₁ ^o	
3455.918	2	1	28927.58	0.00	28204 ₂ — 571 ₃ ^o	
3456.358	10	1	28923.90	+0.01	17 ₃ — 466 ₄ ^o	
3457.238	3	1	28916.54	+0.10	14 ₂ — 438 ₁ ^o	
3457.360	20	3	28915.52	+0.04	³ H ₅ — 439 ₄ ^o	
				-0.02	28 ₅ — 571 ₆ ^o	
3457.489	5	1	28914.44	+0.13	19 ₄ — 481 ₃ ^o	
3457.713	60	12	28912.57	+0.08	⁵ D ₂ — 322 ₃ ^o	1
3457.838	4		28911.52			Res
3458.006	4	1	28910.12	+0.08	28 ₅ — 571 ₅ ^o	
3458.310	25	5	28907.58	+0.09	15 ₃ — 443 ₂ ^o	
3458.855	3		28903.02	+0.07	³ G ₃ — 422 ₃ ^o	Res
3458.995	8	1	28901.85			
3459.516	30	5	28897.50	+0.05	⁵ D ₄ — 351 ₄ ^o	
3460.036	2		28893.16			
3460.460	1		28889.62	+0.09	⁷ F ₃ — 51 ₂ ^o	
3461.012	2		28885.01			
3461.354	15	3	28882.16	+0.02	19 ₄ — 481 ₅ ^o	
3461.642	2	2	28879.75	+0.05	24 ₂ — 536 ₂ ^o	
3461.802	15		28878.42	+0.04	⁷ P ₄ —56768 ₅	
3461.870	2		28877.85			
3462.248	4		28874.70	+0.04	14 ₂ — 438 ₃ ^o	
3462.850	2		28869.68			
3463.247	50	5	28866.37	+0.03	⁷ S ₃ — 318 ₂ ^o	Res
3464.668	1		28854.53	+0.21	³ H ₅ — 439 ₅ ^o	
3465.114	1		28850.82	+0.01	29479 ₄ —58330 ₄ ^o	
3465.206	2		28850.05	+0.01	19826 ₅ — 486 ₄ ^o	
3465.399	6		28848.44	+0.04	19 ₃ — 486 ₄ ^o	
3466.136	3	1	28842.31	-0.01	20 ₁ — 492 ₂ ^o	
3466.407	6		28840.06	-0.04	31 ₅ — 602 ₅ ^o	
3466.650	4	1	28838.03			
3466.741	1		28837.28	+0.14	29479 ₄ —58316 ₄ ^o	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3467.460	4	1	28831.30	+0.06	³ G ₄ - 452° ₄	7 (0)
3467.663	3		28829.61			
3467.876	15	3	28827.84	+0.06	³ P ₀ - 383° ₁	
3468.398	40	4	28823.50	+0.02	13 ₂ - 426° ₃	
3469.534	3		28814.06	+0.01	22476 ₄ - 512° ₅	
3470.932	2		28802.46			z d
3471.111	3	1	28800.97			
3471.350	8	1	28798.99	+0.07	⁵ S ₂ - 470° ₂	
3472.957	4	1	28785.67			
3474.928	1		28769.34	+0.10	31 ₅ - 601° ₄	
3475.823	40	8	28761.93	+0.06	³ H ₄ - 409° ₃	7
				-0.16	17 ₄ - 458° ₄	
3476.496	30	8 s	28756.36	+0.08	28 ₆ - 571° ₆	
3477.170	4		28750.79	+0.01	28 ₆ - 571° ₅	
3477.262	8	1	28750.03	+0.01	³ H ₄ - 409° ₅	
3477.536	1		28747.76	+0.04	22852 ₄ - 516° ₃	7
3477.943	80	8	28744.40	0.00	⁷ F ₅ - 55° ₆	
3478.702	4		28738.13			
3478.906	8		28736.44	+0.01	13 ₂ - 425° ₃	
3479.121	5	1	28734.67	+0.03	24 ₃ -53345° ₃	
3480.405	1		28724.07	-0.03	20 ₁ - 491° ₂	(0) 3
3480.453	10	2	28723.67	+0.05	18 ₁ - 468° ₂	
3481.320	8	2	28716.52	-0.02	20 ₂ - 496° ₂	
3481.520	1	3	28714.87	+0.05	18 ₃ - 476° ₄	
3481.816	40	4	28712.43	+0.05	19 ₄ - 479° ₄	
3482.428	2	1	28707.38	-0.04	28291 ₃ - 569° ₂	(b)
3482.765	20	2	28704.60	+0.08	⁷ F ₅ - 55° ₅	
3483.60	1		28697.7	+0.10	23 ₁ - 521° ₂	
3484.580	2		28689.65	+0.04	18 ₂ - 468° ₂	
3485.208	2		28684.48	+0.20	17 ₃ - 463° ₃	
3485.278	15	1	28683.91	+0.05	⁷ P ₄ -56573° ₅	7
3485.490	30	3	28682.16	+0.03	17 ₄ - 457° ₅	
3486.785	4	1	28671.51	-0.01	³ P ₁ - 419° ₂	
				+0.07	³ H ₅ - 437° ₅	
3487.142	2		28668.57			
3488.407	4		28658.18	+0.04	³ P ₁ - 419° ₀	7
3488.590	3	2	28656.67	+0.03	⁷ F ₅ - 55° ₄	
3489.12	1		28652.3	0.00	27 ₅ - 565° ₄	
3489.280	20	2	28651.01	+0.07	³ H ₅ - 437° ₄	
3491.38	2		28633.8	-0.06	29853 ₄ - 584° ₃	
3491.827	15	1	28630.11	+0.05	³ G ₃ - 419° ₂	3
3492.132	3		28627.61	+0.08	24 ₃ - 532° ₄	
3492.250	4	1	28626.64	+0.07	17 ₃ - 463° ₂	
3493.025	8	2	28620.29	+0.05	22852 ₄ - 514° ₄	
3493.187	10	1	28618.96	+0.03	18 ₃ - 475° ₃	
3493.803	3	1	28613.92	+0.06	20 ₀ - 487° ₁	Res
3494.364	1		28609.33	+0.27	23 ₁ - 520° ₂	
3494.752	4		28606.15			
3495.082	3		28603.45	+0.08	19535 ₅ - 481° ₅	
3495.236	75	15	28602.19	+0.03	19 ₆ - 482° ₇	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3495.683	2		28598.53	+0.30	28 ₅ - 568 [°] ₄	Res
3495.927	3		28596.53	+0.22	23 ₆ - 520 [°] ₅	
3496.154	3	1	28594.68	+0.08	19 ₄ - 478 [°] ₅	
3498.760	3		28573.38	+0.05	23 ₃ - 525 [°] ₂	
3499.620	15	2	28566.36	-0.02	³ P ₂ - 478 [°] ₁	
3500.272	40	8	28561.04	+0.05	15 ₃ - 440 [°] ₃	3
3500.905	3		28555.87	+0.01	24 ₂ -53345 [°] ₃	
3502.88	2		28539.77	-0.02	28291 ₃ - 568 [°] ₄	
3503.030	30		28538.55	+0.05	14 ₂ - 435 [°] ₂	
3503.554	20	1	28534.28	+0.04	20 ₂ - 495 [°] ₂	
3503.909	4	1	28531.39	+0.07	20 ₂ - 495 [°] ₃	(0)
3504.244	4	1	28528.67	+0.15	26 ₂ - 553 [°] ₂	
3504.57	2	2	28526.0	+0.03	⁵ S ₂ - 468 [°] ₂	
3504.643	15	2	28525.42	+0.02	15 ₃ - 439 [°] ₄	
3504.886	3		28523.44	+0.06	³ G ₃ - 418 [°] ₄	
3505.240	1		28520.56	-0.05	23 ₂ - 525 [°] ₂	3
3505.897	2		28515.21	0.00	15 ₃ - 439 [°] ₂	
3506.634	20	2	28509.22	+0.05	18 ₃ - 474 [°] ₃	
				-0.04	³ G ₄ - 449 [°] ₄	
3506.85	3 <i>b</i>		28507.47	+0.06	24 ₃ - 531 [°] ₄	
3507.277	30	3	28503.99	+0.10	³ H ₄ - 406 [°] ₃	(0)
3507.918	6		28498.79	+0.06	19 ₃ - 483 [°] ₃	
3508.352	2 <i>b</i>		28495.26	0.00	24 ₂ - 532 [°] ₂	
3508.732	40		28492.17	+0.07	⁵ D ₂ - 318 [°] ₂	
3508.849	8		28491.22	+0.06	19 ₃ - 483 [°] ₂	
3509.011	20	2	28489.91	+0.07	19 ₆ - 481 [°] ₅	Res
3509.374	3		28486.96	+0.06	22 ₀ - 512 [°] ₁	
3509.661	10	1	28484.63	+0.04	13 ₂ - 422 [°] ₁	
3510.025	200	20	28481.68	+0.06	⁷ S ₃ - 314 [°] ₄	
3511.666	3	2	28468.37		⁷ D ₃ - 54 [°] ₃	
3511.718	3	2	28467.95	-0.07	18 ₃ - 474 [°] ₂	
3512.613	8	1	28460.70	+0.02	20 ₂ - 494 [°] ₁	
3512.911	3	1	28458.28	+0.09	29 ₇ - 579 [°] ₆	
3513.51	2	2	28453.43	+0.07	28898 ₂ - 573 [°] ₃	
3514.196	3		28447.88			
3514.633	6	1	28444.34	+0.03	17 ₄ - 455 [°] ₃	(0)
3514.775	8	2	28443.19	+0.04	³ H ₆ - 454 [°] ₅	
3515.797	6	1	28434.92	+0.04	20 ₂ - 494 [°] ₃	
3515.955	12	2	28433.64	+0.03	19535 ₅ - 479 [°] ₄	
3516.018	3		28433.13	+0.04	19 ₄ - 476 [°] ₄	
3516.352	1		28430.43	-0.22	27 ₅ - 562 [°] ₅	
3516.771	10	1	28427.05	+0.02	³ P ₁ - 417 [°] ₂	
3517.502	30	3	28421.14	+0.03	³ H ₄ - 405 [°] ₄	
3518.055	5	1	28416.67	+0.06	19 ₃ - 482 [°] ₂	
3518.473	40	4	28413.30	+0.03	⁵ D ₄ - 346 [°] ₄	
3519.394	3	1	28405.86	+0.01	27 ₅ - 562 [°] ₄	Res
3520.374	1		28397.95	+0.05	28 ₆ - 567 [°] ₇	
3521.014	1		28392.80	-0.04	24 ₃ - 530 [°] ₂	
3521.706	20	2	28387.21	-0.02	18 ₃ - 473 [°] ₃	
3521.907	40	4	28385.59	+0.02	³ G ₃ - 417 [°] ₂	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3522.367	3		28381.89	+0.08	24 ₃ - 529 ₄	
3523.446	3		28373.19			
3524.236	15	1	28366.83	-0.01	17 ₃ - 460 ₃	3
3524.674	6		28363.31	+0.03	18 ₃ - 473 ₂	
3525.050	2		28360.28	+0.06	20 ₁ - 487 ₁	
3526.850	30		28345.81	+0.03	³ G ₃ - 416 ₃	
3526.995	30		28344.64	0.00	17 ₄ - 454 ₅	
3527.210	6	2	28342.92	+0.05	19 ₃ - 481 ₃	
3527.588	8	2	28339.88	0.00	³ P ₂ - 475 ₃	
3527.920	10		28337.21	+0.01	19 ₄ - 475 ₃	(0)
3528.490	6	1	28332.64	+0.04	24 ₃ - 529 ₃	
3528.897	5		28329.37	-0.02	22476 ₄ - 508 ₅	
3529.350	6		28325.73	+0.01	23 ₃ - 522 ₃	
				+0.01	29853 ₄ - 581 ₅	
3529.594	10		28323.77	+0.01	22476 ₄ - 508 ₃	
3529.955	3		28320.88			
3530.581	8	1	28315.86	+0.03	19535 ₅ - 478 ₅	
3530.754	20	3	28314.47	+0.01	³ H ₄ - 404 ₅	
3531.018	12	2	28312.35	+0.01	19826 ₅ - 481 ₅	
3531.126	6		28311.49	+0.11	⁵ D ₃ - 331 ₂	
3533.80	1 b		28290.06	+0.22	263 ₂ - 54 ₃	
3533.922	1		28289.09			
3534.165	4		28287.14	0.00	20 ₂ - 492 ₂	
3534.543	1		28284.12	-0.12	31 ₅ - 596 ₅	
3535.254	3	3	28278.43	+0.03	27 ₄ -55492 ₅	
				+0.01	28 ₁ - 569 ₂	
3535.539	100	20	28276.15	+0.05	³ P ₁ - 415 ₂	Res
3536.024	2		28272.27			
3536.486	6		28268.58	-0.04	18 ₂ - 463 ₃	
				-0.08	28 ₅ - 565 ₄	
3537.156	2		28263.22			
3537.446	80	15	28260.91	+0.05	15 ₃ - 437 ₄	Res
3538.626	15	1	28251.48	0.00	14 ₂ - 432 ₂	3
3539.323	8	1	28245.92	+0.02	³ P ₀ - 377 ₁	(0)
3539.455	3	4 s	28244.87	-0.05	18 ₁ - 463 ₂	
3539.588	5		28243.80	+0.10	33 ₅ - 615 ₄	
3539.88	1		28241.47	-0.06	27 ₄ -55455 ₅	
3539.924	10		28241.12	-0.03	14 ₂ - 432 ₁	
3540.206	2		28238.87	+0.04	23 ₁ -51693 ₂	
3540.734	20	2	28234.66	+0.02	³ G ₃ - 415 ₂	Res
3540.86	2 b		28233.66			
3540.96	1		28232.86	+0.02	28898 ₂ - 571 ₃	
3541.307	2		28230.09	-0.03	³ P ₂ - 474 ₃	
3541.639	25	2	28227.45	+0.01	19 ₄ - 474 ₃	(b)
3542.268	1	3 b	28222.44	-0.10	23 ₃ - 521 ₂	
3542.647	6		28219.42	+0.04	22852 ₄ - 510 ₃	
3543.106	8	15 l	28215.76	0.00	20 ₀ - 483 ₁	(0)
3543.325	1		28214.02	-0.04	24 ₂ - 530 ₂	
3543.710	12		28210.95	+0.04	18 ₂ - 463 ₂	7
3543.98	4		28208.8	0.00	18 ₁ - 462 ₁	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3544.16	2		28207.37	+0.09	⁷ F ₂ — 49 ₃	3 7
3544.79	12	1	28202.36	+0.06	19 ₆ — 478 ₅	
3544.973	12	1	28200.90	-0.01	13 ₂ — 419 ₂	
3545.220	200	40	28198.94	+0.04	⁵ D ₀ — 281 ₁	
3545.623	4		28195.73	+0.05	24 ₃ — 528 ₃	
3546.354	4		28189.92			
3546.474	3	3 s	28188.97	0.00	³ P ₂ — 474 ₂	
3547.00	1		28184.79	+0.01	33 ₅ — 614 ₅	3 7
3547.466	15	2	28181.08	+0.01	³ H ₅ — 432 ₄	
3548.160	3	1	28175.57	-0.03	20 ₁ — 486 ₀	
				+0.09	27 ₄ — 553 ₃	
3548.258	15	12 s	28174.79	0.00	18 ₂ — 462 ₁	
3548.75	2 b		28170.9	-0.13	26 ₂ —55032 ₂	
3549.60	3		28164.14			
3550.682	20	3	28155.56	+0.02	17 ₄ — 452 ₄	Res
3550.838	40		28154.32	0.00	19535 ₅ — 476 ₄	
3551.024	30		28152.85			
3551.142	2		28151.91	+0.15	23 ₁ —51606 ₂	
3551.268	10		28150.91	+0.04	³ G ₃ — 414 ₃	
3552.320	8		28142.58	0.00	19826 ₅ — 479 ₄	
3552.883	3 b		28138.12	+0.02	27 ₅ — 559 ₅	
3553.303	2		28134.79	+0.04	⁵ D ₄ — 343 ₃	3
3554.02	2		28129.12			
3554.206	100	3	28127.64	+0.06	⁵ D ₃ — 329 ₃	
3554.325	3		28126.70			
3555.746	15	1	28115.46	+0.01	³ G ₄ — 445 ₅	
3556.01	1		28113.37	+0.05	30 ₂ — 584 ₃	
3556.676	2	1	28108.11	-0.07	³ P ₂ — 473 ₃	
3556.764	3	1	28107.42	+0.03	³ H ₄ — 402 ₃	(0)
3557.008	6		28105.49	-0.01	19 ₄ — 473 ₃	
3557.08	2		28104.92	+0.03	18 ₃ — 470 ₂	
				-0.06	⁵ S ₂ — 463 ₃	
3557.203	40	4	28103.95	0.00	19 ₄ — 473 ₄	
3558.226	2		28095.87	+0.03	24 ₂ — 528 ₂	
3558.571	3 b	1	28093.14	+0.01	⁷ D ₂ — 52 ₁	
3559.080	6		28089.12	0.00	20 ₂ — 490 ₃	(0)
3559.44	3	1	28086.28			
3559.59	a	4	28085.10	-0.10	23 ₃ — 520 ₃	
3559.702	25		28084.22	-0.01	³ P ₂ — 473 ₂	
3560.060	12	1	28081.39	+0.11	23 ₂ — 520 ₂	
				-0.12	29479 ₄ — 575 ₅	
3560.30	2		28079.5	+0.13	26 ₂ — 549 ₁	
3561.244	12	1	28072.06	+0.05	³ H ₄ — 402 ₄	(0)
3563.444	40	4	28054.73	+0.06	15 ₃ — 435 ₂	
3564.41	2		28047.12	-0.15	⁵ S ₂ — 463 ₂	
				+0.11	28 ₅ — 562 ₅	
3565.146	10	1	28041.33	+0.01	22852 ₄ — 508 ₃	
3565.609	12	1	28037.69	+0.06	⁷ D ₂ —52002 ₃	
3567.245	10		28024.83	+0.03	19826 ₅ — 478 ₅	
3567.64	3		28021.73	-0.06	18 ₁ — 461 ₁	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3567.68	5		28021.42	-0.02	31 ₅ - 594 ₆ [°]	3
3568.036	60	6	28018.62	+0.05	15 ₃ - 434 ₃ [°]	
3568.404	12	2	28015.73	+0.02	³ G ₄ - 444 ₃ [°]	
3568.618	3		28014.05	+0.03	⁷ F ₁ - e ³ D ₂	
3568.85	2		28012.23			
3568.983	20		28011.19	+0.04	⁵ S ₂ - 462 ₁ [°]	7
3569.16	12	1	28009.80	+0.04	17 ₄ - 451 ₄ [°]	
3569.222	15	1	28009.31	+0.04	⁵ D ₄ - 342 ₃ [°]	
3569.577	20	2	28006.53	-0.02	19535 ₅ - 475 ₆ [°]	
3570.17	1		28001.87	-0.12	³ P ₂ - 472 ₁ [°]	
3570.648	150	15	27998.13	+0.18	⁵ D ₂ - 313 ₁ [°]	z d
				+0.01	⁵ D ₃ - 328 ₄ [°]	
3571.034	6		27995.10			
3571.166	3		27994.07			
3571.362	2b		27992.53	+0.05	29479 ₄ - 574 ₄ [°]	
3571.972	3	8 s	27987.75	-0.03	18 ₂ - 461 ₁ [°]	
3573.410	50	4	27976.49	-0.02	17 ₃ - 456 ₃ [°]	
3573.960	8		27972.18	+0.01	⁷ D ₂ - 51 ₂ [°]	Res
3575.220	80	8	27962.32	0.00	³ H ₆ - 449 ₇ [°]	
3575.34	3		27961.38			2
3575.852	15	1	27957.38	+0.05	18 ₃ - 469 ₄ [°]	(0)
3575.968	60	6	27956.47	+0.05	13 ₂ - 417 ₂ [°]	
3576.370	10	2	27953.33	+0.06	22852 ₄ - 508 ₅ [°]	3
3576.87	1		27949.42	+0.24	27 ₁ - 556 ₂ [°]	
3577.088	2		27947.72	+0.08	22852 ₄ -50800 ₃ [°]	
3578.011	2	1	27940.51			
3578.490	3b		27936.77			
3579.86	4		27926.08	+0.06	23 ₃ - 518 ₄ [°]	
3580.40	2		27921.9			
3581.062	12	1	27916.71	+0.08	13 ₂ - 416 ₃ [°]	
3581.222	30	3	27915.46	+0.06	³ H ₆ - 449 ₆ [°]	
3582.233	25		27907.58	+0.05	17 ₄ - 450 ₃ [°]	
3582.638	3	2	27904.43	+0.19	28204 ₂ - 561 ₃ [°]	
3582.898	10	1	27902.40	+0.05	⁵ D ₄ - 341 ₄ [°]	
3584.094	50	5	27893.09	+0.07	19 ₆ - 475 ₆ [°]	
3584.333	3b		27891.23	+0.23	20 ₁ - 483 ₂ [°]	Res
3584.771	8	1	27887.82	+0.07	28 ₆ - 562 ₅ [°]	
3585.05	2		27885.65			
3585.91	2	2	27879.0	+0.20	29853 ₄ - 577 ₃ [°]	
3586.475	1b		27874.57	+0.02	31 ₅ - 592 ₅ [°]	
3587.922	8		27863.33	+0.04	19826 ₅ - 476 ₄ [°]	
3588.134	5		27861.69	+0.04	19 ₃ - 476 ₄ [°]	
3589.624	8		27850.12	-0.02	17 ₃ - 455 ₃ [°]	
3589.692	10		27849.59	+0.01	³ G ₃ - 411 ₄ [°]	
3590.822	60	6	27840.83	+0.02	³ H ₅ - 429 ₄ [°]	
3591.340	6		27836.82	+0.04	20 ₁ - 482 ₀ [°]	
3591.45	4		27835.96	+0.03	29479 ₄ - 573 ₄ [°]	
3591.765	15	1	27833.52	-0.04	17 ₄ - 449 ₄ [°]	
3591.968	15	2	27831.95	+0.01	18 ₃ - 468 ₂ [°]	
3592.274	2		27829.58	+0.06	27 ₄ - 550 ₄ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3592.79	3		27825.58	+0.02	24 ₃ — 524 ₄	
3592.846	8		27825.15	-0.03	19535 ₅ — 473 ₄	
3592.975	10		27824.15	+0.01	⁵ S ₂ — 461 ₁	
3593.482	2		27820.22	-0.06	³ P ₁ — 411 ₀	
3593.555	8		27819.66	+0.01	18 ₁ — 459 ₂	
3593.73	2 <i>b</i>		27818.3	+0.13	28898 ₂ — 567 ₃	
3593.966	30		27816.48	+0.03	20 ₁ — 482 ₂	Res (b)
3594.525	25		27812.15	+0.01	23 ₆ — 512 ₇	
3595.055	1 <i>b</i>		27808.05	+0.09	22476 ₄ — 502 ₄	
3595.32	2		27806.0	+0.05	23 ₆ — 512 ₅	
3595.382	15		27805.52	+0.03	13 ₂ — 415 ₂	
3595.440	8		27805.07	+0.03	20 ₂ — 487 ₁	
3596.428	12		27797.43	+0.01	³ P ₁ — 411 ₂	
3596.601	8		27796.10	+0.03	³ H ₅ — 428 ₅	
3596.69	2		27795.4	0.00	27 ₄ — 550 ₅	
3597.260	40	4	27791.01	+0.02	15 ₃ — 432 ₄	(0)
3597.710	15	2	27787.53	-0.01	⁵ S ₂ — 460 ₃	
3597.956	8	1	27785.63	-0.01	18 ₂ — 459 ₂	
3598.12	2		27784.4			
3598.874	40	2	27778.54	+0.04	⁵ D ₀ — 277 ₁	(0)
3599.173	3		27776.24	-0.06	⁷ D ₄ —56573 ₅	
3600.287	10		27767.64	-0.01	15 ₃ — 432 ₂	
3600.532	2		27765.75	-0.01	19 ₃ — 475 ₃	
3600.783	3		27763.82	+0.05	23 ₃ —51693 ₂	
3601.164	2		27760.88	+0.04	28347 ₃ — 561 ₃	
3601.796	5		27756.01	+0.05	³ C ₃ — 411 ₂	
3602.00	1		27754.43	-0.03	28 ₅ — 559 ₅	
3603.907	10	1	27739.75	+0.03	31 ₅ — 591 ₆	(b) Res
3606.063	150	15	27723.16	+0.05	⁵ D ₁ — 293 ₂	
3606.249	12		27721.74	+0.02	13 ₂ — 414 ₃	
3606.333	10		27721.09	+0.01	17 ₃ — 454 ₂	
3607.059	80	8	27715.51	-0.01	19826 ₅ — 475 ₆	
3607.898	4		27709.07	+0.05	22476 ₄ — 501 ₃	
3608.146	2		27707.16	-0.01	29853 ₄ — 575 ₅	
3608.904	4		27701.34			
3609.348	2		27697.93	+0.14	27 ₄ — 549 ₄	
3609.443	3	4	27697.20			
3609.952	3		27693.30			
3610.421	2		27689.70	+0.02	28347 ₃ — 560 ₂	
3610.634	2		27688.07	+0.07	29 ₇ — 571 ₆	
3610.75	1		27687.18	+0.05	⁷ P ₂ — 53 ₃	
3611.956	1 <i>b</i>	1	27677.93	-0.04	18 ₁ — 457 ₁	
3612.27	1		27675.5	-0.10	19 ₄ — 469 ₄	
3612.70	2		27672.2			
3612.947	1		27670.34	-0.10	23 ₃ — 516 ₃	
3614.24	3		27660.44			
3614.798	15 <i>b</i>		27656.17	+0.17	19 ₃ — 474 ₃	
3615.124	2	1	27653.68			
3615.536	10		27650.53	-0.01	18 ₃ — 466 ₄	
3616.155	5 <i>b</i>		27645.80	+0.06	20 ₀ — 478 ₁	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3616.398	8		27643.94	-0.02	18 ₂ - 457° ₁	
3616.595	3		27642.43	+0.01	27 ₅ -55492° ₅	
3617.104	4 <i>b</i>		27639.54			
3617.515	500	50	27635.40	+0.05	⁷ S ₃ - 305° ₃	
3618.103	2		27630.91	-0.01	28204 ₂ - 558° ₂	
3618.877	5		27625.00	-0.01	14 ₂ - 426° ₃	
3619.269	25	2	27622.01	+0.01	⁵ S ₂ - 459° ₂	3
3620.20	1 <i>b</i>		27614.91	+0.06	19 ₃ - 474° ₂	
3620.282	1		27614.28	+0.04	28 ₅ - 558° ₆	
3621.128	4	2	27607.83	+0.07	28347 ₃ - 559° ₄	
3621.422	3		27605.59	+0.04	27 ₅ -55455° ₅	
3622.104	3		27600.39			
3622.337	60	12	27598.62	+0.06	19 ₄ - 468° ₅	
3622.506	20	1	27597.33	+0.02	14 ₂ - 425° ₁	
3622.584	1		27596.74	-0.06	⁷ D ₃ - 53 ₄	
3623.509	30	2	27589.69	0.00	³ G ₄ - 440° ₃	
3624.058	2		27585.51	+0.14	28898 ₂ - 564° ₃	
3625.059	2		27577.89			
3625.398	60	6	27575.32	+0.05	³ G ₃ - 409° ₃	Res
3627.132	2		27562.13	+0.09	28 ₅ - 557° ₅	
3627.237	80	8	27561.34	-0.03	17 ₃ - 452° ₄	(b)
				+0.04	³ P ₁ - 408° ₂	
3627.611	2		27558.49			
3627.673	2		27558.02	+0.02	³ H ₄ - 397° ₄	
3628.348	1		27552.90	+0.01	³ P ₂ - 468° ₂	
3629.660	2		27542.94	-0.02	23 ₃ - 514° ₄	
3629.817	3		27541.75	+0.01	24 ₃ - 521° ₂	
3630.317	50	5	27537.95	-0.01	14 ₂ - 425° ₃	Res
3630.447	2		27536.97			
3630.819	60	5	27534.15	0.00	19826 ₅ - 473° ₄	(b)
3631.038	3		27532.49	-0.02	19 ₃ - 473° ₄	
3631.649	2		27527.85			
3631.943	200	20	27525.62	+0.07	⁵ D ₁ - 291° ₂	Res
3632.704	30	3	27519.86	+0.02	³ G ₃ - 408° ₂	
3633.569	5		27513.31	+0.15	26 ₂ - 543° ₁	
3634.02	1		27509.9	-0.21	19 ₃ - 473° ₂	
3634.554	2		27505.85			
3635.256	3 <i>b</i>		27500.54			
3636.478	3		27491.30	-0.02	⁷ P ₄ - 55° ₅	
3636.726	10		27489.42	+0.07	22476 ₄ - 499° ₃	
3636.962	2		27487.64	+0.12	28347 ₃ - 558° ₂	
3637.380	60	3	27484.48	+0.03	³ H ₄ - 396° ₃	
3637.932	8		27480.31	-0.01	⁵ S ₂ - 457° ₁	
3638.35	2		27477.15			
3638.53	2		27475.8			
3639.371	2	1	27469.45			
3640.134	40	2	27463.69	+0.01	³ P ₁ - 407° ₁	
3640.266	6		27462.69	0.00	³ H ₅ - 425° ₄	
3640.412	2		27461.59	0.00	29853 ₄ - 573° ₄	
3640.641	2		27459.86	+0.04	31 ₅ - 588° ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3641.259	10		27455.20	+0.22	28 ₆ — 558° ₆	
3641.664	2		27452.15	+0.06	³ H ₄ — 396° ₅	
3641.848	20	2	27450.76	+0.03	15 ₃ — 429° ₄	
3642.095	8	1	27448.90	0.00	24 ₃ — 520° ₄	
3642.813	20	1	27443.49	+0.05	⁷ P° ₄ — 55° ₄	
3643.310	10		27439.75	0.00	17 ₄ — 445° ₅	
3644.002	4		27434.54	-0.06	18 ₂ — 455° ₃	
3644.360	3		27431.84	0.00	22852 ₄ — 502° ₄	
3645.992	3		27419.56	+0.03	³ G ₄ — 438° ₃	
3646.517	20		27415.62	+0.03	17 ₃ — 451° ₄	
3647.138	8		27410.95	0.00	18 ₃ — 463° ₃	
3647.522	40	2	27408.06	+0.04	⁵ D ₃ — 322° ₃	
3647.661	15	1	27407.02	+0.08	20 ₂ — 483° ₁	
3648.004	1		27404.44	+0.04	24 ₃ — 520° ₃	
3648.213	2		27402.87	+0.09	28 ₆ — 557° ₅	
3649.016	15		27396.84	+0.01	19535 ₅ — 469° ₄	
3649.230	3 <i>b</i>	2 <i>b</i>	27395.23			
3650.089	8		27388.79	+0.07	31 ₅ — 587° ₄	
3650.997	60	6	27381.98	+0.06	³ H ₆ — 443° ₃	3
3651.222	2		27380.29	-0.02	³ H ₅ — 424° ₄	
3651.471	2		27378.42			
3652.752	5		27368.82	+0.01	19 ₄ — 466° ₄	
3653.05	2		27366.6			
3653.14	2		27365.9			
3653.525	4		27363.03	+0.07	24 ₂ — 521° ₂	
3654.194	100	10	27358.02	+0.01	⁵ D ₂ — 306° ₁	(0)
3654.441	2		27356.17			
3654.952	1		27352.35	0.00	29479 ₄ — 568° ₄	
3655.128	8 <i>b</i>		27351.03			
3655.64	2		27347.2			
3656.150	6 <i>b</i>		27343.38	-0.01	20 ₂ — 483° ₃	
3656.677	15	1	27339.44	+0.01	18 ₁ — 454° ₂	
3657.207	3		27335.48	+0.34	20 ₂ — 483° ₂	
3658.07	2		27329.03			
3658.362	10	1	27326.85	+0.04	13 ₂ — 411° ₂	
3659.308	10	1	27319.79	0.00	19535 ₅ — 468° ₅	
3659.354	3		27319.44			
3659.56	8 <i>b</i>		27317.9	+0.06	17 ₃ — 450° ₂	
3660.165	25	1	27313.39	+0.03	17 ₃ — 450° ₃	
3660.359	20	2	27311.94	+0.04	22476 ₄ — 497° ₄	
3660.604	30	6 <i>s</i>	27310.12	+0.06	³ G ₄ — 437° ₅	
3661.228	5	1	27305.46	+0.04	18 ₂ — 454° ₂	
3662.207	1		27298.16	+0.04	28 ₆ — 556° ₇	
3662.281	2		27297.61	-0.01	⁷ F° ₅ — 53° ₅	
3662.586	3		27295.34			
3662.669	2		27294.72			
3663.144	30	3	27291.18	+0.01	18 ₁ — 453° ₁	
3663.353	100	5	27289.62	+0.06	³ G ₄ — 437° ₄	
3663.696	3		27287.07			
3663.821	20	2	27286.14	+0.02	14 ₂ — 422° ₁	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3664.821	2		27278.70			
3664.888	1		27278.20	+0.08	29853 ₄ - 571 ₃ [°]	
3664.953	2		27277.71	-0.17	23 ₂ - 512 ₁ [°]	
3665.273	3		27275.33	0.00	14 ₂ - 422 ₃ [°]	
3665.389	3		27274.47	+0.05	24 ₂ - 520 ₂ [°]	
3665.875	40	4	27270.85	+0.01	⁵ S ₂ - 455 ₃ [°]	Res
3666.106	2		27269.13			
3666.804	15		27263.94	+0.06	23 ₁ - 507 ₂ [°]	
3667.174	50	2	27261.19	+0.08	⁵ D ₂ - 305 ₃ [°]	(0)
3667.486	8		27258.87	+0.09	28 ₅ -55492 ₅ [°]	
3667.711	60	4	27257.20	+0.04	18 ₂ - 453 ₁ [°]	
3668.46	1		27251.63	-0.09	19 ₃ - 470 ₂ [°]	
3668.658	60	4	27250.16	+0.03	19 ₄ - 465 ₅ [°]	Res
3669.323	6	1	27245.22	0.00	24 ₃ - 518 ₄ [°]	
3669.64	2		27242.87			
3670.108	2 <i>b</i>		27239.40	+0.01	17 ₃ - 449 ₄ [°]	
3670.761	20	2	27234.55	+0.04	³ G ₃ - 405 ₄ [°]	
3671.766	2		27227.10			
3671.962	3		27225.64	+0.02	24 ₂ - 520 ₃ [°]	
3672.173	15		27224.08	+0.02	18 ₁ - 453 ₀ [°]	
3672.905	8 <i>b</i>		27218.65			
3672.961	1		27218.24			
3673.164	2		27216.73			
3674.131	3		27209.57	+0.09	28898 ₂ - 561 ₃ [°]	
3674.19	2		27209.13			
3674.575	50	5	27206.28	+0.02	19 ₆ - 468 ₅ [°]	Res
3675.554	80	8	27199.04	-0.01	³ H ₄ - 393 ₅ [°]	Res
3676.286	8		27193.62	+0.08	27 ₅ - 550 ₄ [°]	
3676.797	40	4	27189.84	0.00	⁷ F ₆ [°] - 56 ₆ [°]	3
3677.112	3		27187.51	-0.02	20 ₂ - 481 ₃ [°]	
3679.600	40	4	27169.13	0.00	³ H ₅ - 422 ₆ [°]	(0)
3679.892	5 <i>b</i>		27166.97			
3680.448	2		27162.87			
3680.710	2		27160.94			
3680.854	4		27159.87	+0.03	22476 ₄ - 496 ₄ [°]	
3680.920	4		27159.39	-0.03	27 ₅ - 550 ₅ [°]	
3682.084	200	20	27150.80	+0.09	⁵ D ₄ - 333 ₅ [°]	1
3682.538	3		27147.45			
3682.718	6		27146.13	+0.01	13 ₂ - 409 ₃ [°]	
3683.296	40	4	27141.87	+0.09	⁵ S ₂ - 454 ₂ [°]	Res
3683.388	30	3	27141.19	+0.01	15 ₃ - 426 ₃ [°]	Res
3683.930	60	10	27137.20	-0.01	19535 ₅ - 466 ₆ [°]	(b)
3684.650	40	4	27131.89	-0.01	³ P ₂ - 463 ₃ [°]	(b)
3685.010	35	3	27129.24	+0.02	19 ₄ - 463 ₃ [°]	(0)
3685.586	15	1	27125.00	0.00	⁷ F ₆ [°] -56768 ₅ [°]	
3686.994	3 <i>b</i>		27114.65			
3688.057	200	15	27106.83			
3688.190	5	1	27105.85	+0.05	19826 ₅ - 469 ₄ [°]	
3688.414	20	1	27104.21	+0.05	19 ₃ - 469 ₄ [°]	
3689.047	12	1	27099.56	+0.04	28 ₆ -55492 ₅ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3689.333	2		27097.46	+0.04	28291 ₃ - 553 ₃ [°]	
3689.506	5		27096.19	-0.03	29 ₇ - 565 ₇ [°]	
3689.866	50	3	27093.54	+0.03	18 ₃ - 460 ₃ [°]	3
3690.248	50	6	27090.74	+0.05	13 ₂ - 408 ₂ [°]	3
3690.347	3		27090.01	-0.03	19535 ₅ - 466 ₄ [°]	
3690.45	2		27089.25	-0.13	23 ₂ - 510 ₃ [°]	
3690.61	3		27088.08			
3691.09	2		27084.56			
3691.546	6		27081.21	-0.14	20 ₀ - 472 ₁ [°]	
3691.909	3		27078.55	+0.02	23 ₁ - 505 ₁ [°]	
3692.332	2		27075.45			
3692.49	2		27074.29	+0.10	³ P ₂ - 463 ₂ [°]	
3692.715	15		27072.64	+0.03	15 ₃ - 425 ₄ [°]	
3693.668	2 <i>b</i>	3 <i>b</i>	27065.65	+0.06	29 ₇ - 565 ₆ [°]	
3694.07	3		27062.71	+0.06	28 ₆ -55455 ₅ [°]	
3694.193	1		27061.81	0.00	27 ₅ - 549 ₄ [°]	
3694.500	40		27059.56	0.00	⁷ D ₅ - 56 ₆ [°]	
3695.240	10		27054.14	+0.01	15 ₃ - 425 ₃ [°]	
3695.665	2		27051.03	+0.12	26 ₂ -53912 ₂ [°]	
3696.161	3	3 <i>b</i>	27047.40	+0.13	³ G ₄ - 434 ₃ [°]	
3696.808	3		27042.67	+0.11	28347 ₃ - 553 ₂ [°]	
3697.431	4		27038.11	+0.04	³ P ₂ - 462 ₁ [°]	
3697.483	4		27037.73	+0.07	22476 ₄ - 495 ₃ [°]	
3698.196	3		27032.52			
3698.712	30	3	27028.75	-0.01	19826 ₅ - 468 ₅ [°]	Res
3699.406	50	5	27023.67	-0.01	19 ₆ - 466 ₆ [°]	Res
3700.178	4 <i>b</i>		27018.04			
3700.642	8	1	27014.65	-0.04	20 ₁ - 474 ₂ [°]	
3700.929	2		27012.55			
3702.310	50	5	27002.48	+0.04	14 ₂ - 419 ₂ [°]	3
3702.832	3		26998.67	+0.07	28347 ₃ - 553 ₄ [°]	
3703.202	6		26995.97	+0.07	24 ₃ -51606 ₂ [°]	
3703.323	10		26995.09	+0.05	276 ₂ - 54 ₃ [°]	
3703.380	12		26994.68	-0.04	⁷ D ₅ -56768 ₅ [°]	
3703.597	50	3	26993.10	+0.03	13 ₂ - 407 ₁ [°]	(0)
3704.080	1		26989.58	-0.01	15 ₃ - 424 ₂ [°]	
3704.339	8		26987.69	+0.06	⁵ D ₃ - 318 ₂ [°]	
3704.790	60	3	26984.40	0.00	⁷ D ₂ -50949 ₁ [°]	Res
3705.480	40	4	26979.38	-0.01	23 ₃ - 509 ₄ [°]	
3705.585	2		26978.61	-0.16	19 ₃ - 468 ₂ [°]	
3706.578	2		26971.40	+0.04	19535 ₅ - 465 ₅ [°]	
3707.611	4 <i>b</i>		26963.87	-0.17	23 ₃ - 508 ₃ [°]	
3707.922	300	30	26961.61	+0.05	⁷ S ₃ - 299 ₃ [°]	Res
3710.274	8		26944.52	+0.12	23 ₆ - 504 ₆ [°]	
3710.504	2		26942.85			
3710.672	2 <i>b</i>		26941.63	+0.10	⁷ D ₂ -50906 ₁ [°]	
3711.418	2		26936.21	+0.02	18 ₁ - 450 ₂ [°]	
3711.475	10	1	26935.80	+0.02	22852 ₄ - 497 ₄ [°]	
3712.202	3	12 <i>s</i>	26930.53	-0.05	⁷ F ₆ -56573 ₅ [°]	
3714.232	30	1	26915.81	+0.06	³ H ₆ - 439 ₅ [°]	(b)

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3714.842	30	1	26911.39	+0.07	23 ₂ -50894 ₃	(0)
3715.034	40	2	26910.00	+0.05	20 ₁ - 473 ₂	
3715.696	4		26905.20	+0.24	27 ₄ - 541 ₄	
3715.832	5	8 s	26904.22	+0.03	24789 ₂ -51693 ₂	
3715.912	4		26903.64	+0.10	27 ₄ - 541 ₃	
3716.722	30	2	26897.78	+0.08	18 ₂ - 450 ₃	
3717.082	30	3	26895.17	+0.07	17 ₃ - 445 ₂	
3717.160	20	2	26894.61	+0.02	18 ₃ - 458 ₄	
3718.676	4		26883.64	+0.06	27 ₅ - 547 ₆	
3718.962	2		26881.57			
3719.391	100	10	26878.47	+0.07	17 ₄ - 439 ₄	3
3720.504	40	2	26870.43	+0.07	23 ₃ -50800 ₃	
3721.732	4		26861.57			
3722.235	60	12	26857.94	+0.11	19 ₆ - 465 ₅	
3723.862	8		26846.20	+0.02	19826 ₅ - 466 ₆	
3725.153	15		26836.90	-0.02	20 ₂ - 478 ₁	
3726.429	4		26827.71	0.00	20 ₁ - 472 ₁	
3726.776	2		26825.21			
3727.528	5		26819.80	+0.11	³ G ₄ - 432 ₄	
3727.819	6		26817.71	+0.07	23 ₂ -50800 ₃	
3727.882	8		26817.25	+0.01	17 ₄ - 439 ₅	
3728.273	15	1	26814.44	-0.02	³ P ₂ - 460 ₃	
3729.195	8		26807.81	+0.09	26 ₂ - 536 ₂	
3729.990	5		26802.10	+0.09	³ H ₅ - 418 ₄	
3730.251	3		26800.22	+0.02	⁷ D ₅ -56573 ₅	
3730.419	60	6	26799.02	+0.01	19826 ₅ - 466 ₄	
3730.646	8		26797.39	+0.02	19 ₃ - 466 ₄	
3731.461	2		26791.53	+0.03	15 ₃ - 422 ₃	
3731.532	3		26791.02			
3731.818	1		26788.97	+0.15	23 ₃ - 507 ₂	
3732.093	2		26787.00			3
3732.541	20		26783.78	+0.06	22852 ₄ - 496 ₄	
3733.016	2		26780.37			
3733.670	6	1	26775.68	-0.10	28 ₅ - 550 ₅	
3734.030	3 b		26773.10			
3734.394	5 b		26770.50			(0)
3734.757	4 b	1	26767.90	+0.02	278 ₄ - 54 ₃	
3735.142	4		26765.13			
3735.530	5		26762.35			
3735.938	3		26759.43			
3736.141	8		26757.98	+0.03	14 ₂ - 417 ₂	
3736.348	5		26756.49			
3736.762	4		26753.53			
3737.200	4		26750.39			
3737.346	2		26749.35	+0.16	27 ₁ - 544 ₁	
3737.636	3		26747.27			
3737.838	10	1	26745.83	-0.01	17 ₃ - 444 ₃	
3738.110	20		26743.88	+0.05	17 ₄ - 438 ₃	
3738.551	6		26740.73	-0.06	28291 ₃ -55032 ₂	
3738.888	25	2	26738.32	+0.07	⁵ D ₄ - 329 ₃	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3739.024	4		26737.34			
3739.481	40	4	26734.08	+0.02	⁵ S ₂ — 450° ₃	
3739.996	3		26730.40			
3740.502	5		26726.78			
3741.016	4		26723.11			
3741.182	8	10	26721.92			
3741.338	2		26720.81	+0.11	28898 ₂ — 556° ₂	
3741.540	2		26719.36			
3741.706	30	12 s	26718.18	+0.02	14 ₂ — 416° ₃	z d
3742.076	3		26715.54			
3742.601	15	1	26711.79			
3742.676	20	2	26711.25	+0.01	22476 ₄ — 491° ₅	
3743.177	4 b		26707.68			
3743.807	20	2	26703.19	+0.01	18 ₃ — 456° ₃	
3744.047	8		26701.47			
3744.899	6 b		26695.40	+0.09	29479 ₄ — 561° ₄	
3745.886	2		26688.37			
3745.961	1		26687.83			
3746.063	4		26687.10			
3746.344	1		26685.10	+0.03	28347 ₃ —55032° ₂	
3746.734	3 b		26682.32			
3747.321	3		26678.15	-0.02	28 ₅ — 543° ₅	
3747.448	8	1	26677.24			
3747.581	3		26676.29			
3747.953	1		26673.65			
3748.027	2		26673.12			
3748.285	5	1	26671.28	+0.01	22476 ₄ — 491° ₄	
3748.475	4		26669.93	+0.01	22 ₀ — 494° ₁	
3748.610	2		26668.97	-0.31	28 ₁ —55390° ₂	
3748.981	2		26666.33	+0.01	17 ₃ — 443° ₂	
3749.456	10		26662.95	+0.01	³ G ₃ — 400° ₂	
3749.531	6		26662.42	-0.01	³ P ₀ — 361° ₁	
3749.655	50	b	26661.54	0.00	22852 ₄ — 495° ₃	Res
3749.935	2		26659.55			
3750.164	2		26657.92			
3750.605	3		26654.80	-0.15	28204 ₂ — 548° ₂	
3750.69	2		26654.18	-0.20	18 ₁ — 447° ₁	
3751.062	3		26651.54	-0.02	20 ₁ — 470° ₂	
3751.422	20	3 b	26648.98	+0.08	27 ₄ — 538° ₅	(0)
3751.688	2		26647.09	-0.01	28898 ₂ — 555° ₃	
3752.570	4		26640.83			
3753.480	8		26634.37	+0.01	17 ₄ — 437° ₅	
3754.148	6		26629.63	+0.07	⁷ F ₂ — 48° ₂	
3754.872	10 b		26624.50	+0.08	⁷ D ₁ — 48° ₂	
3755.450	4		26620.40	+0.03	18 ₂ — 447° ₁	
3755.532	4		26619.82	+0.09	28291 ₃ — 549° ₄	
3756.372	10	1	26613.87	+0.01	17 ₄ — 437° ₄	
3756.867	10	6	26610.36	-0.06	20 ₂ — 475° ₃	
3757.082	25	2	26608.84	+0.05	⁵ D ₄ — 328° ₄	
				+0.11	⁷ F ₃ — 49° ₃	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3757.338	6		26607.02	0.00	14 ₂ - 415° ₂	
3757.482	2		26606.00			
3757.604	1		26605.14			
3757.736	2		26604.21			
3757.923	200	40	26602.88	-0.03 +0.09	⁵ D ₃ - 314° ₄ ³ G ₄ - 430° ₅	Res
3759.448	2 <i>b</i>		26592.10			
3759.678	2		26590.46			
3760.126	200	40	26587.30	-0.02	⁵ D ₂ - 299° ₃	Res
3760.630	15	1	26583.73	-0.03	⁷ D ₄ - 55° ₅	
3761.212	2		26579.62			
3761.608	10	1	26576.82	+0.01	18 ₃ - 455° ₃	3
3762.183	1		26572.76			
3762.404	1		26571.20	+0.01	19535 ₅ - 461° ₆	
3763.256	2		26565.18	+0.08	22852 ₄ - 494° ₃	
3763.420	3		26564.03	+0.02	28291 ₃ - 549° ₄	
3763.882	2		26560.77	+0.09	⁷ D ₂ - 50° ₂	
3763.974	2		26560.12			
3764.312	20	2	26557.73	-0.05	19 ₃ - 463° ₃	3
3765.302	6		26550.75	0.00	23 ₂ - 505° ₁	
3766.576	2		26541.77			
3767.418	10	1	26535.84	-0.04	⁷ D ₄ - 55° ₄	
3767.838	30	3	26532.88	-0.02	19 ₄ - 457° ₅	
3768.122	2		26530.88			
3768.447	250	50	26528.59	-0.02	⁵ D ₁ - 281° ₁	
3769.207	50	5	26523.24	0.00	14 ₂ - 414° ₃	
3769.536	1		26520.93			
3769.860	50	5	26518.65	+0.04	15 ₃ - 419° ₂	
3769.992	2		26517.72			
3770.320	2		26515.41			
3770.598	6		26513.46	+0.01	18 ₁ - 445° ₂	
3771.492	2		26507.17	-0.07	³ P ₂ - 457° ₁	
3772.050	8	3 <i>l s</i>	26503.25	-0.01	28 ₆ - 548° ₆	
3772.420	10	1	26500.65	-0.01	20 ₂ - 474° ₃	
3772.500	6		26500.09	+0.02	19 ₃ - 463° ₂	
3773.706	150	30	26491.62	-0.02	13 ₂ - 402° ₃	
3774.460	3		26486.33			
3774.800	2		26483.94	+0.06	26 ₂ -53345° ₃	
3775.442	15	2	26479.44	0.00 +0.01	18 ₂ - 445° ₂ ³ G ₄ - 429° ₄	3
3776.634	3 <i>b</i>		26471.08	+0.06	24 ₂ - 512° ₁	
3776.990	2		26468.59			
3778.144	10	2	26460.50	0.00	27 ₅ - 543° ₅	
3778.550	20	2	26457.66	0.00	19 ₆ - 461° ₆	
3778.686	30	8 <i>s</i>	26456.71	-0.02	⁵ S ₂ - 447° ₁	
3779.966	12		26447.75	0.00	18 ₃ - 454° ₂	
3780.340	2		26445.13			
3780.458	2		26444.31			
3780.772	200	40	26442.11	0.00	⁷ S ₃ - 293° ₂	
3780.921	6	4	26441.07			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3781.837	30	2	26434.67	-0.02	³ G ₄₋ 428 [°] ₅	(b)
3782.680	15	12 l	26428.77	-0.02	⁷ P ₃₋ 53 ₃	
3782.966	2		26426.78	-0.01	29853 ₄₋ 562 [°] ₅	
3783.727	40	4	26421.46	+0.01	19 ₄₋ 456 [°] ₃	
3784.550	3		26415.72			
3785.086	6		26411.97	+0.04	15 ₃₋ 418 [°] ₄	
3786.370	25	2	26403.02	+0.02	³ H ₆₋ 434 [°] ₇	
3786.510	4	1	26402.04	+0.05	29853 ₄₋ 562 [°] ₄	
3786.813	6		26399.93	+0.01	³ P ₁₋ 397 [°] ₂	
3787.646	2 b		26394.12	+0.12	⁷ F ₁₋ e ⁵ D ₁	
3790.875	4		26371.64	+0.07	17 ₄₋ 434 [°] ₃	Res
3791.770	2		26365.42	+0.03	26 ₂₋ 532 [°] ₁	
3792.570	3		26359.86	+0.11	⁷ F ₄₋ e ⁵ D ₄	
3792.759	100	10	26358.54	+0.08	³ G ₃₋ 397 [°] ₂	
3793.311	12		26354.71	-0.06	20 ₂₋ 473 [°] ₂	
3794.13	2		26349.02			3
3794.340	50	5	26347.56	-0.03	³ H ₅₋ 414 [°] ₆	
3796.282	20	2	26334.08	-0.01	19535 ₅₋ 458 [°] ₄	
3796.935	6		26329.55	+0.03	³ P ₁₋ 396 [°] ₁	
3798.344	30	3	26319.79	-0.03	17 ₃₋ 440 [°] ₃	
3798.48	2 g		26318.85			3
3798.915	15	2	26315.83	+0.03	⁵ S ₂₋ 445 [°] ₂	
3801.026	1		26301.22	+0.06	259 [°] ₁ -52284 ₃	
3801.165	2		26300.25			
3801.405	2		26298.59	0.00	24 ₃₋ 509 [°] ₄	
3801.512	30	3	26297.85	+0.09	³ P ₂₋ 455 [°] ₃	(0)
				-0.02	³ G ₃₋ 396 [°] ₃	
				-0.04	⁷ P ₃₋ 53 ₄	
3801.909	40	4	26295.11	+0.03	19 ₄₋ 455 [°] ₃	(b)
				-0.04	22852 ₄₋ 491 [°] ₄	
3802.053	3 g		26294.11			
3802.922	12		26288.10	+0.06	18 ₃₋ 452 [°] ₄	
3803.409	5		26284.74	+0.07	18 ₁₋ 443 [°] ₂	
3803.480	3		26284.25	+0.02	17 ₃₋ 439 [°] ₄	
3803.620	2		26283.28	+0.04	24 ₃₋ 50894 [°] ₃	
3804.072	15		26280.16	0.00	19826 ₅₋ 461 [°] ₆	
3804.244	6		26278.97			
3804.942	10		26274.15	+0.03	15 ₃₋ 417 [°] ₂	
				+0.11	17 ₃₋ 439 [°] ₂	
3805.446	8		26270.67	+0.04	18 ₁₋ 443 [°] ₁	
3806.308	2		26264.72	+0.17	28291 ₃₋ 545 [°] ₃	
3807.622	6		26255.66	+0.04	23 ₃₋ 501 [°] ₃	
3807.840	5	3 b	26254.15	+0.02	19535 ₅₋ 457 [°] ₅	
3808.90	2		26246.85			
3809.220	150	15	26244.64	+0.09	⁷ S ₃₋ 291 [°] ₂	
3809.848	15		26240.31	-0.03	19 ₃₋ 460 [°] ₃	Res
3810.380	100	10	26236.65	+0.03	18 ₂₋ 443 [°] ₁	
3810.790	120	12	26233.83	+0.04	13 ₂₋ 400 [°] ₂	
3812.646	10	1	26221.06	-0.02	22852 ₄₋ 490 [°] ₅	
3812.896	4		26219.34	0.00	22852 ₄₋ 490 [°] ₃	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3814.418	5	6 <i>b s</i>	26208.88	+0.05	28347 ₃ - 545 ₃ [°]	Res
3815.026	3		26204.70	-0.08	27 ₁ - 538 ₁ [°]	
3815.768	15	1	26199.61	+0.01	259 ₁ -52183 ₂	
3816.386	40	4	26195.36	-0.05	19 ₄ - 454 ₅ [°]	
3817.294	12 <i>g</i>		26189.13	-0.03	7 [°] <i>D</i> ₃ -52378 ₄	
3817.480	400	40	26187.86	+0.03	7 [°] <i>S</i> ₃ - 291 ₃ [°]	
3817.760	2 <i>g</i>		26185.94	+0.08	20 ₁ - 466 ₀ [°]	
3817.960	6		26184.56			
3818.344	2 <i>b</i>		26181.93			
3818.576	4 <i>b</i>		26180.34	-0.02	26 ₂ - 530 ₁ [°]	
3819.040	2		26177.16			Res
3819.402	2 <i>b</i>		26174.68			
3820.110	50	5	26169.83	-0.05	3 [°] <i>C</i> ₄ - 426 ₃ [°]	
3823.062	3	10 <i>s</i>	26149.62	-0.04	17 ₃ - 438 ₃ [°]	
3824.146	25	3	26142.21	-0.05	18 ₃ - 451 ₄ [°]	
3824.388	60	6	26140.55	-0.05	19 ₆ - 457 ₅ [°]	
3826.193	50	5	26128.22	+0.01	3 [°] <i>H</i> ₅ - 411 ₄ [°]	
				-0.12	14 ₂ - 411 ₂ [°]	
3826.667	1		26125.00			
3826.934	8	2 <i>l</i>	26123.16	-0.03	15 ₃ - 415 ₂ [°]	
3827.344	10		26120.37	-0.07	3 [°] <i>P</i> ₂ - 453 ₁ [°]	
3827.69	1 <i>b</i>		26118.0			
3827.788	2		26117.34	-0.09	20 ₀ - 462 ₁ [°]	
3828.81	1		26110.36			
3829.128	50	5	26108.20	-0.01	5 [°] <i>D</i> ₁ - 277 ₁ [°]	
3829.690	2		26104.37	-0.09	24 ₂ -50894 ₃ [°]	
3830.130	12 <i>b</i>		26101.37	-0.14	3 [°] <i>H</i> ₅ - 411 ₆ [°]	
				+0.06	3 [°] <i>C</i> ₄ - 425 ₄ [°]	
3830.714	20		26097.39	-0.05	3 [°] <i>H</i> ₄ - 382 ₄ [°]	
3830.99	8 <i>b</i>		26095.51	-0.05	7 [°] <i>D</i> ₃ - 52 ₃ [°]	
3832.247	8		26086.95	-0.07	5 [°] <i>S</i> ₂ - 443 ₂ [°]	
3832.628	4		26084.35	-0.07	7 [°] <i>P</i> ₄ - 53 ₅ [°]	
3832.71	2		26083.8			
3832.862	15		26082.76	-0.07	3 [°] <i>G</i> ₄ - 425 ₃ [°]	
				+0.04	31 ₅ - 574 ₄ [°]	
3832.999	3		26081.83	-0.01	26 ₂ - 529 ₃ [°]	
3834.040	15		26074.75	-0.05	19 ₃ - 459 ₂ [°]	
3834.312	1		26072.9	-0.08	5 [°] <i>S</i> ₂ - 443 ₁ [°]	
3834.612	3		26070.86			
3834.735	4		26070.02	-0.04	32 ₄ - 582 ₃ [°]	
3835.058	250	25	26067.83	-0.04	5 [°] <i>D</i> ₂ - 293 ₂ [°]	Res
3835.31	2		26066.11			Res (0)
3835.523	2		26064.67			
3835.890	8		26062.17	-0.07	23 ₁ - 495 ₂ [°]	
3836.952	15		26054.96	-0.03	7 [°] <i>P</i> ₂ - 52 ₃ [°]	
3838.511	80	8	26044.38	-0.13	18 ₃ - 450 ₂ [°]	
				-0.06	3 [°] <i>H</i> ₄ - 382 ₃ [°]	
3838.96	4		26041.33	-0.09	19 ₃ - 458 ₄ [°]	
3839.25	15		26039.37	-0.05	15 ₃ - 414 ₃ [°]	
3839.866	2		26035.19			

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3841.050	3		26027.16	-0.06	⁷ P ₄ °- 53 ₃	
3841.274	4		26025.64	+0.04	³ H ₆ °- 430 ₅	
3841.31	1		26025.40			
3841.974	2		26020.90			
3842.164	4		26019.62	-0.07	17 ₃ °- 437 ₄	
3842.310	50		26018.63	-0.06	⁵ D ₄ °- 322 ₃	(b)
3843.162	4		26012.86	-0.06	27 ₅ °- 538 ₅	
				-0.04	29479 ₄ -55492 ₅	
3843.476	3 <i>b</i>		26010.73	-0.05	24 ₂ -50800 ₃	
3845.784	1		25995.12			
3846.218	300	30	25992.19	-0.04	⁵ D ₁ °- 276 ₂	Res
3847.020	4 <i>b</i>		25986.77			
3847.244	4		25985.26			
3847.498	150	15	25983.54	-0.06	⁵ D ₀ °- 259 ₁	7
3847.958	1		25980.44	+0.01	27 ₄ °- 531 ₅	
3848.620	2 <i>b</i>		25975.97	-0.06	29479 ₄ -55455 ₅	
3849.222	2		25971.91		33 ₅ °- 592 ₅	
3850.090	3 <i>d</i>		25966.05	-0.01	18 ₃ °- 449 ₄	
3851.954	2		25953.50	+0.07	⁷ P ₂ °-52183 ₂	
3852.01	3		25953.11	-0.13	259 ₁ °- 51 ₂	
3852.835	12		25947.55	-0.10	14 ₂ °- 409 ₃	
3853.23	3		25944.89	-0.03	26 ₂ °- 528 ₃	
3853.778	8		25941.20			
3854.515	2	3	25936.24			
3855.554	50	5	25929.25	-0.06	13 ₂ °- 397 ₂	3
3855.880	3		25927.06	-0.03	17 ₄ °- 430 ₅	
				-0.08	34 ₄ °- 602 ₅	
3856.023	3		25926.10	-0.07	31 ₅ °- 573 ₄	
3857.30	10		25917.52	+0.08	263 ₂ °- 52 ₃	(b)
				-0.08	28 ₆ °- 543 ₅	
3858.847	5		25907.13			
3859.303	60	6	25904.07	-0.09	18 ₂ °- 440 ₃	
3859.929	20		25899.87	-0.04	20 ₁ °- 463 ₂	(0)
3861.066	30	3	25892.24	-0.15	18 ₁ °- 439 ₂	z d
				+0.02	14 ₂ °- 408 ₂	
3861.245	25	2	25891.04	-0.05	³ H ₄ °- 380 ₃	(0)
3862.672	1		25881.47			
3863.480	15		25876.06	-0.04	³ P ₁ °- 391 ₁	3
3864.343	60	6	25870.28	-0.03	⁵ D ₂ °- 291 ₂	Res
3864.592	5		25868.62	-0.08	13 ₂ °- 396 ₃	
3865.326	8		25863.70	-0.09	20 ₁ °- 462 ₁	Res
3866.055	25		25858.83	-0.08	13 ₂ °- 396 ₁	Res
3866.257	4		25857.47	-0.03	³ H ₆ °- 428 ₅	
3866.849	3		25853.52			
3867.158	3		25851.45			
3867.373	1		25850.01	0.00	19 ₃ °- 456 ₃	
3867.422	3		25849.69	-0.04	22476 ₄ °- 483 ₃	
3867.544	4		25848.87			
3867.666	5		25848.06			
3867.986	600	60	25845.92	-0.03	⁷ S ₃ °- ⁷ D ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3868.460	6		25842.75			
3868.578	12		25841.96	-0.09	³ H ₅ - 409° ₅	
3868.857	2		25840.10			
3869.007	2		25839.10	-0.06	³ H ₄ - 380° ₄	
3869.312	3		25837.06	+0.06	33 ₅ - 591° ₆	
3869.928	2 <i>b</i>		25832.95			
3870.684	3		25827.90	-0.13	⁷ P ₂ - 52° ₁	
3870.818	6		25827.01	+0.11	28291 ₃ - 541° ₄	
3871.370	3		25823.33	-0.10	20 ₂ - 468° ₂	
				+0.05	22852 ₄ - 486° ₄	
3871.694	4		25821.17			
3871.845	3		25820.16	-0.04	³ G ₄ - 422° ₃	
3872.487	12		25815.88	-0.04	263 ₂ -52183° ₂	
3872.840	100	10	25813.52	-0.07	⁵ D ₂ - 291° ₃	z d
				+0.02	17 ₃ - 435° ₂	
3873.410	2		25809.73	-0.06	18 ₁ - 438° ₁	
3874.412	50	5	25803.05	-0.06	19 ₆ - 454° ₅	Res
3875.684	40	4	25794.58	-0.02	14 ₂ - 407° ₁	Res
3877.42	3		25783.04			
3877.516	3		25782.40			
3877.838	2 <i>b</i>		25780.25			
3878.279	1 <i>b</i>		25777.32	-0.08	17 ₃ - 434° ₃	
3878.524	6	1	25775.70	-0.08	18 ₂ - 438° ₁	
3879.002	6	1	25772.52	-0.01	⁷ P ₂ -52002° ₃	
3879.20	5	2	25771.07	-0.11	28347 ₃ - 541° ₄	
3879.43	1		25769.68	+0.08	28347 ₃ - 541° ₃	
3879.482	3		25769.33	-0.15	23 ₃ - 496° ₂	
3880.082	12	1	25765.35	-0.11	³ P ₂ - 450° ₂	
3880.57	2		25762.1			
3880.77	8 <i>b</i>	2 <i>b</i>	25760.78	-0.20	³ P ₂ - 450° ₃	
3880.90	3		25759.91	+0.01	31 ₅ - 571° ₆	
3880.951	2		25759.6			
3881.052	5		25758.91	-0.08	17 ₄ - 428° ₅	
3881.15	5 <i>g</i>		25758.26	-0.04	19 ₄ - 450° ₃	
3881.405	250	25	25756.56	-0.08	⁵ D ₃ - 305° ₃	Res
3881.877	2		25753.43			
3882.170	2		25751.49			
3882.274	2		25750.80			
3882.530	3 <i>b</i>		25749.10			
3883.336	2	3 <i>s</i>	25743.76	-0.13	24 ₂ - 505° ₁	
3883.832	20		25740.47	-0.05	⁵ S ₂ - 440° ₃	(0)
3884.197	4	3	25738.05	-0.08	15 ₃ - 411° ₄	
3885.123	2		25731.92			
3885.456	1		25729.71	+0.05	27 ₄ - 529° ₃	
3885.784	2	1	25727.54	0.00	19535 ₅ - 452° ₄	
3886.452	20	2	25723.12	-0.03	³ P ₁ - 390° ₂	
3887.405		1 <i>b</i>	25716.81	+0.05	23 ₂ - 496° ₂	
3888.886	5		25707.02			
3888.976	4		25706.42	-0.02	23 ₃ - 496° ₄	
3889.207	1		25704.90	+0.02	24 ₂ - 504° ₂	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3889.470	2		25703.16	+0.02	23 ₆ - 491 ₅ [°]	(0)
3890.126	1		25698.82	+0.03	28 ₁ - 544 ₁ [°]	
3890.420	8	2	25696.88	-0.04	23 ₁ - 491 ₂ [°]	
3890.746	12	1	25694.73	-0.01	⁵ S ₂ - 439 ₂ [°]	
3891.252	6		25691.39	+0.02	⁷ D ₂ - ⁶ D ₃	
3892.330	10		25684.27	-0.06	19 ₄ - 449 ₄ [°]	
3892.724	40	4	25681.67	-0.02	³ G ₃ - 390 ₂ [°]	
3893.473	8	1	25676.73	-0.05	20 ₁ - 461 ₁ [°]	
3893.931	8	3	25673.71	-0.05	24 ₃ - 502 ₄ [°]	
3894.874	1		25667.50	+0.10	28291 ₃ -53959 ₂ [°]	
3895.758	3		25661.67	-0.03	22476 ₄ - 481 ₅ [°]	(0)
3896.930	3	20 s	25653.95	+0.03	28 ₁ - 543 ₁ [°]	
3897.912	30	3	25647.49	-0.05	⁷ D ₅ - 55 ₆	
3898.773	2		25641.83	+0.06	26 ₂ - 525 ₂ [°]	
3899.782	2	3 s	25635.19	+0.22	263 ₂ -52002 ₃	
3901.250	3	1 b	25625.55	-0.06	19826 ₅ - 454 ₅ [°]	
3901.826	20	1	25621.76	-0.01	18 ₃ - 445 ₂ [°]	
3902.672	4		25616.21	+0.03	22 ₀ - 483 ₁ [°]	
3902.730	1		25615.83	-0.10	26 ₂ - 524 ₁ [°]	
3902.820	2		25615.24	+0.05	28 ₅ - 538 ₄ [°]	
3903.294	12		25612.13	-0.01	⁵ S ₂ - 438 ₁ [°]	Res
3903.984	20	2	25607.60	-0.06	⁷ D ₅ - 55 ₅	
3904.890	2		25601.66	-0.03	29853 ₄ -55455 ₅ [°]	
3905.660	1		25596.61	+0.09	32 ₄ - 577 ₃ [°]	
3905.972	20	4	25594.57	-0.01	19 ₃ - 454 ₂ [°]	
3906.240	4		25592.81	+0.07	27 ₄ - 528 ₃ [°]	
3907.090	2		25587.25	+0.07	23 ₃ - 495 ₂ [°]	
3907.190	8		25586.59	-0.01	20 ₀ - 457 ₁ [°]	
3907.924	1		25581.78	+0.02	19535 ₅ - 451 ₄ [°]	
3909.790	2	1	25569.57			
3911.280	5		25559.83	+0.05	⁷ D ₅ - 55 ₄	(0)
3911.740	1		25556.83	+0.08	28291 ₃ - 538 ₄ [°]	
3912.810	10	1	25549.84	+0.02	17 ₃ - 432 ₄ [°]	
3914.16	2 b		25541.03			
3915.15	2		25534.57	+0.11	23 ₂ - 495 ₂ [°]	
3915.614	3		25531.54	0.00	23 ₂ - 495 ₃ [°]	
3916.386	4		25526.51	+0.03	17 ₃ - 432 ₂ [°]	
3917.260	2		25520.82	+0.11	28898 ₂ - 544 ₁ [°]	
3917.624	6		25518.45	+0.01	291 ₃ - 54 ₃	
3918.195	2		25514.73			
3918.266	1 b		25514.27	+0.15	24 ₂ - 503 ₃ [°]	3
3918.438	3		25513.14	0.00	³ H ₅ - 405 ₄ [°]	
3918.587	20		25512.17	+0.05	³ H ₄ - 376 ₃ [°]	
3920.025	4		25509.32			
3920.646	1		25498.77			
3922.326	8		25487.86	+0.04	23 ₃ - 494 ₃ [°]	
3922.606	1 b		25486.04	+0.04	33 ₅ - 587 ₄ [°]	
3922.716	1		25485.32	+0.20	30 ₂ - 558 ₁ [°]	
3924.362	10		25474.63	-0.01	20 ₁ - 459 ₂ [°]	
3924.687	10		25472.53	+0.02	18 ₃ - 444 ₃ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
3925.058	1		25470.11	+0.09	28 ₆ - 538 ₅ [°]	3
3926.027	10		25463.83	+0.01	15 ₃ - 409 ₃ [°]	
3926.35	2 <i>b</i>		25461.74	+0.02	291 ₂ - 54 ₃ [°]	
3926.46	1 <i>b</i>		25461.02	+0.12	23 ₂ - 494 ₁ [°]	
3929.294	3		25442.65	+0.06	31 ₅ - 568 ₄ [°]	
3929.664	3		25440.26			Res (b) Res
3930.232	12	2	25436.58	+0.07	19826 ₅ - 452 ₄ [°]	
3930.474	15	2	25435.02	+0.04	29 ₇ - 548 ₆ [°]	
3930.96	12	2	25431.81	-0.04	18 ₁ - 435 ₂ [°]	
3931.44	2		25428.77			
3931.926	4		25425.62	+0.01	17 ₄ - 425 ₄ [°]	Res
3934.593	4		25408.39	0.00	15 ₃ - 408 ₂ [°]	
3934.887	5		25406.49	0.00	³ H ₅ - 404 ₅ [°]	
3935.033	25	2	25405.55	+0.06	13 ₂ - 391 ₁ [°]	
				-0.01	19535 ₅ - 449 ₄ [°]	
3935.352	5		25403.50			Res
3935.912	3		25399.88	0.00	³ G ₃ - 387 ₄ [°]	
3936.062	4		25398.91			
3936.220	12		25397.89	+0.05	18 ₂ - 435 ₂ [°]	
3936.488	1		25396.16	+0.12	24 ₂ - 501 ₃ [°]	
3936.782	1		25394.27	+0.11	26 ₂ - 522 ₃ [°]	Res
3936.974	25		25393.03	+0.04	18 ₃ - 443 ₂ [°]	
3937.614	15		25388.90	+0.01	19535 ₅ - 449 ₆ [°]	
3937.73	1		25388.15			
3938.777	3 <i>b</i>		25381.40			
3939.434	8	3 <i>s</i>	25377.17			Res
3939.684	1 <i>b</i>		25375.56			
3939.894	5		25374.21	+0.05	22476 ₄ - 478 ₅ [°]	
3940.415	1		25370.85	+0.04	28898 ₂ - 542 ₃ [°]	
3941.824	8		25361.78	+0.04	18 ₂ - 434 ₃ [°]	
3942.338	4 <i>b</i>	1 <i>b</i>	25358.48			3
3944.790	6		25342.71	-0.01	³ P ₂ - 445 ₂ [°]	
3945.197	5		25340.10	+0.02	23 ₃ - 492 ₂ [°]	
3945.971	1 <i>b</i>		25335.13	-0.02	314 ₄ - 56768 ₅ [°]	
3946.296	8 <i>b</i>		25333.04	+0.08	20 ₁ - 457 ₁ [°]	
				0.00	23 ₁ - 487 ₁ [°]	(b)
3947.977	20	2	25322.25	-0.03	19 ₆ - 449 ₇ [°]	
3948.673	2		25317.79	+0.04	22852 ₄ - 481 ₃ [°]	
3949.636	2		25311.62			
3950.113	5	3 <i>l</i>	25308.56	-0.05	20 ₂ - 462 ₁ [°]	
3950.384	1		25306.83			(b)
3951.161	4 <i>b</i>		25301.86	0.00	259 ₁ - 51 ₀ [°]	
3951.876	6	1	25297.28			
3952.254	5		25294.85			
3952.517	25	2	25293.17	0.00	14 ₂ - 402 ₃ [°]	
3952.897	20		25290.74	+0.01	19826 ₅ - 451 ₄ [°]	(b) (0)
3953.152	30	3	25289.11	+0.02	19 ₃ - 451 ₄ [°]	
3953.422	5		25287.38	+0.02	23 ₂ - 492 ₂ [°]	
3953.708	6		25285.55	-0.03	22852 ₄ - 481 ₅ [°]	
3955.304	40	4	25275.35	-0.01	19 ₆ - 449 ₆ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3955.763	2		25272.42	+0.02	29 ₇ - 547 ₆ [°]	
3956.29	2		25269.05	+0.01	³ P ₁ - 385 ₀ [°]	
3957.066	3 <i>b</i>		25264.09	-0.07	293 ₂ [°] - 54 ₃	
3957.219	1		25263.12	+0.09	³ G ₄ - 416 ₃ [°]	
3958.874	20		25252.56	+0.02	13 ₂ - 390 ₂ [°]	3
3961.756	4		25234.19	-0.01	⁵ S ₂ - 435 ₂ [°]	
3962.324	15	2	25230.57	+0.01	³ H ₆ - 422 ₆ [°]	3
3963.562	1		25222.69	+0.07	27 ₄ - 524 ₄ [°]	
3963.695	4		25221.84	-0.02	23 ₃ - 491 ₂ [°]	
3964.319	3		25217.87	0.00	23 ₃ - 491 ₄ [°]	
3964.798	1 <i>b</i>		25214.83	-0.19	27 ₁ - 528 ₂ [°]	
3964.992	10		25213.59	+0.01	⁵ D ₄ - 314 ₄ [°]	
3965.137	20	1	25212.67	+0.02	22476 ₄ - 476 ₄ [°]	Res
3965.483	4 <i>b</i>		25210.47			
3965.632	3		25209.52	-0.04	17 ₃ - 429 ₄ [°]	
3965.905	1		25207.8			
3966.210	3		25205.85	+0.01	15 ₃ - 406 ₃ [°]	
3966.754	5 <i>b</i>		25202.39	-0.05	26 ₂ - 520 ₂ [°]	
3967.175	2		25199.72	-0.08	20 ₀ - 453 ₁ [°]	
3967.392	1 <i>b</i>		25198.34	+0.24	⁵ S ₂ - 434 ₃ [°]	
3968.171	6		25193.39	-0.07	³ P ₂ - 444 ₃ [°]	
3968.502	6		25191.29	+0.02	³ P ₀ - 347 ₁ [°]	
3968.590	20	2	25190.73	-0.05	19 ₄ - 444 ₃ [°]	
3969.004	1		25188.11			
3969.195	15	2	25186.89	+0.03	19 ₃ - 450 ₃ [°]	
3970.798	30	3	25176.73	-0.13	⁷ D ₄ [°] - 53 ₅	(b)
3971.539	1		25172.03		30 ₂ - 555 ₃ [°]	
3972.002	6		25169.10	-0.04	23 ₂ - 491 ₂ [°]	
3972.806	4		25164.00	-0.04	³ H ₅ - 402 ₄ [°]	
3973.290	5	50	25160.94	+0.02	⁷ F ₁ [°] - e ⁵ D ₀	
3974.15	2		25155.50	-0.06	29853 ₄ - 550 ₅ [°]	
3974.306	2		25154.50		28 ₁ - 538 ₁ [°]	
3974.451	1		25153.60	-0.04	26 ₂ - 520 ₃ [°]	
3974.84	1		25151.13			
3975.470	12		25147.14	-0.06	³ H ₄ - 373 ₅ [°]	
3975.896	8		25144.45	-0.05	17 ₄ - 422 ₃ [°]	
3976.290	4		25141.95	-0.11	23 ₃ - 490 ₃ [°]	
3976.52	2		25140.5	-0.13	314 ₄ -56573 ₅ [°]	
3977.001	2		25137.46	-0.03	31 ₅ - 565 ₆ [°]	
3978.822	2		25125.96			
3979.290	30	3	25123.00	-0.06	15 ₃ - 405 ₄ [°]	(b)
3979.519	1		25121.55	-0.05	20 ₂ - 461 ₁ [°]	
3979.56	1 <i>b</i>		25121.29			
3979.84	1 <i>b</i>	1 <i>b l</i>	25119.53	-0.13	⁷ D ₄ [°] - 53 ₃	
3980.298	4		25116.64	-0.12	22476 ₄ - 475 ₃ [°]	
3980.644	25	3	25114.46	-0.07	19826 ₅ - 449 ₄ [°]	(b)
3980.742	3		25113.84	-0.10	³ P ₂ - 443 ₂ [°]	
3980.910	4		25112.77	-0.12	19 ₃ - 449 ₄ [°]	
3981.233	6		25110.74	-0.08	18 ₂ - 432 ₂ [°]	
3981.578	2		25108.57			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
3982.45	1		25103.07			
3982.874	6		25100.40	-0.09	18 ₂ - 432° ₁	
3982.968	10	1	25099.80	-0.10	³ P ₂ - 443° ₁	
3983.173	1		25098.51	-0.03	28291 ₃ -53390° ₃	
3983.292	50	5 s	25097.76	-0.10	19826 ₅ - 449° ₆	z d
3984.634	2		25089.31	-0.03	24 ₂ - 490° ₃	
3984.757	1		25088.53	-0.15	24 ₃ - 496° ₂	
3985.668	5		25082.80	-0.05	⁵ D ₃ - 299° ₃	
3985.788	4		25082.04			
3987.531	5 b		25071.08			
3987.854	3		25069.05			
3988.010	8		25068.07	-0.05	³ G ₄ - 414° ₃	
3990.614	1		25051.71			
3991.227	15	1	25047.86	0.00	⁷ F ₂ - ⁷ D ₃	
3991.518	4		25046.04	-0.12	22 ₀ - 478° ₁	
3992.018	1 b		25042.90	+0.08	28347 ₃ -53390° ₃	
3992.756	12		25038.27	-0.06	33 ₅ -58330° ₄	
3993.911	8		25031.03	+0.02	⁷ F ₃ - ^e D ₂	
3994.774	3		25025.62	-0.02	24 ₃ - 496° ₄	
3996.450	3		25015.13	+0.03	30 ₂ - 553° ₃	
3997.008	1		25011.63	-0.12	19535 ₅ - 445° ₅	
3997.136	8		25010.83	-0.07	18 ₃ - 439° ₄	
3997.341	6		25009.55	+0.01	⁷ F ₂ - ^e D ₁	
3997.757	5		25006.95	-0.05	22476 ₄ - 474° ₃	
3997.891	2		25006.11	-0.07	27 ₅ - 528° ₆	
3998.160	10		25004.43	+0.03	⁷ D ₁ - ^e D ₁	
3998.756	15	1	25000.70	-0.01	18 ₃ - 439° ₂	
3999.188	3		24998.00	-0.04	22852 ₄ - 478° ₅	
				+0.08	28347 ₃ -53345° ₃	
3999.675	2		24994.96	-0.02	28 ₅ - 532° ₆	
3999.76	1		24994.43	+0.01	20 ₁ - 454° ₂	
4000.695	15	1	24988.59	-0.17	⁷ D ₄ - 53° ₄	3
4001.380	20	2	24984.31	-0.09	³ H ₄ - 371° ₄	3
4002.656	3		24976.34	+0.04	28898 ₂ - 538° ₁	
4002.782	1		24975.56			
4002.956	1		24974.47			
4005.152	1		24960.78	-0.03	28 ₅ - 531° ₅	
4005.404	25		24959.21	+0.04	⁵ D ₁ - 266° ₀	(0)
4005.688	1		24957.44			
4005.893	8		24956.16			
4007.355	1		24947.06	-0.12	⁵ S ₂ - 432° ₂	
4007.437	1		24946.55	+0.02	28291 ₃ - 532° ₄	
4008.753	1000	100	24938.36	-0.03	⁷ S ₃ - ⁷ P ₄	
4009.005	5	2	24936.79	-0.06	⁵ S ₂ - 432° ₁	
4009.454	3		24934.00	+0.06	⁷ D ₃ - ^e D ₄	
4010.377	15	1	24928.26	+0.03	⁷ F ₃ - ⁷ D ₄	
4011.022	3		24924.25	-0.05	27 ₅ - 527° ₅	
4011.302	4		24922.51	-0.09	259° ₁ -50906° ₁	
4011.810	4		24919.35	-0.11	20 ₂ - 459° ₂	
4012.492	1 b		24915.12			

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4012.704	1		24913.81			
4012.988	1		24912.04			
4013.186	10		24910.81	-0.03	3G_3 - 382° ₄	
4013.440	1 <i>b</i>		14909.23			
4014.935	6		24899.96	-0.05	17 ₃ - 426° ₃	
4015.218	100	40	24898.20	-0.02	19 ₆ - 445° ₅	
4016.108	6		24892.68	+0.03	7F_4 - e^5D_3	
4016.524	50	3	24890.11	0.0	7P_3 - 52° ₄	Res
4016.922	3		24887.64	+0.06	33 ₅ - 581° ₅	
4017.348	5		24885.00	-0.06	22476 ₄ - 473° ₃	
				+0.15	28 ₅ - 531° ₅	
4018.313	3		24879.03	-0.02	20 ₁ - 453° ₀	
4018.750	3		24876.32	-0.01	18 ₃ - 438° ₃	
4018.898	1		24875.41			
4019.123	2		24874.01			
4019.227	60	3	24873.37	0.00	5D_2 - 281° ₁	
4020.204	2		24867.33	+0.06	27 ₄ - 520° ₅	
4021.746	3		24857.79	-0.03	3G_3 - 382° ₃	
4022.115	15		24855.51	-0.03	7F_1 - 7D_2	(b)
4022.830	4		24851.09			
4022.994	1 <i>b</i>		24850.08			
4023.492	2		24847.01			
4023.666	1		24845.93	-0.03	27 ₄ - 520° ₄	
4025.194	5		24836.50	-0.03	22852 ₄ - 476° ₄	
4025.348	1		24835.55	-0.17	28 ₆ - 532° ₆	
4025.888	1		24832.22	+0.01	26 ₂ -51693° ₂	
4026.028	2		24831.35	-0.09	17 ₃ - 425° ₄	
4026.822	1 <i>b</i>		24826.46	+0.05	28291 ₃ - 531° ₄	
4028.786	40	2	24814.35	-0.03	3P_0 - 343° ₁	
4029.023	5		24812.90	-0.06	17 ₃ - 425° ₃	
4029.603	6		24809.32	-0.02	15 ₃ - 402° ₃	
4029.922	3		24807.36			
4029.982	3		24807.00	-0.02	24 ₃ - 494° ₃	
4030.844	1		24801.70	+0.15	28 ₆ - 531° ₅	
4031.668	6		24796.62	-0.03	7P_3 - 52° ₃	
4032.382	4		24792.23			
4032.622	3		24790.75			
4033.466	1 <i>b</i>		24785.56	+0.01	31 ₅ - 561° ₄	
4034.744	2		24777.71	-0.07	20 ₂ - 457° ₁	
4034.898	1 <i>b</i>		24776.77			
4035.356	12		24773.96	0.00	15 ₃ - 402° ₄	
4036.227	2		24768.62	+0.02	19 ₃ - 445° ₂	
4036.428	2		24767.38	-0.06	3P_2 - 440° ₃	
4036.520	2		24766.82	-0.01	3G_4 - 411° ₄	
4036.855	40	2	24764.77	-0.01	19 ₄ - 440° ₃	(b)
4039.418	8		24749.05	-0.11	17 ₃ - 424° ₄	
4039.854	12		24746.38	+0.02	18 ₃ - 437° ₄	
4039.922	5		24745.97	-0.03	23 ₃ - 486° ₄	
4040.588	10		24741.88	0.00	19 ₆ - 443° ₆	
4040.80	3		24740.6	-0.04	22852 ₄ - 475° ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4041.08	2		24738.88	0.00	26 ₂ - 516 ₃	(0) Res
4042.390	6		24730.86	+0.02	14 ₂ - 397 ₂	
4042.674	3		24729.12	-0.05	19 ₄ - 439 ₄	
4043.408	3		24724.63	-0.05	24 ₂ - 495 ₃	
4043.526	2		24723.91			
4043.894	8		24721.66	0.00	³ P ₂ - 439 ₂	
4044.048	3		24720.72	0.00	19826 ₅ - 445 ₅	
4044.280	30		24719.30	0.00	⁷ P ₂ -50949 ₁	
4045.404	5 <i>b</i>		24712.43	+0.03	³ H ₄ - 368 ₃	
4045.594	100	10	24711.27	+0.04	⁷ S ₃ - 276 ₂	
4046.702	25	2	24704.51	+0.02	³ G ₃ - 380 ₃	
4046.98	1		24702.81	-0.04	29853 ₄ - 545 ₃	
4047.938	12	1	24696.96	-0.03	⁵ D ₁ - 263 ₂	
4048.136	2		24695.75		32 ₄ - 568 ₄	
4048.320	5		24694.63	-0.04	20 ₂ - 456 ₃	
4048.854	5		24691.37			
4050.493	1		24681.38	+0.08	28204 ₂ - 528 ₂	
4051.300	3 <i>b</i>		24676.47	+0.04	⁷ P ₂ -50906 ₁	
4052.32	6		24670.26	+0.03	14 ₂ - 396 ₃	
4052.68	2 <i>b</i>		24668.07	+0.06	19 ₄ - 439 ₅	
4053.932	15	2	24660.45	+0.01	14 ₂ - 396 ₁	
4055.056	1		24653.61	+0.01	23 ₆ - 481 ₅	
4055.23	5		24652.56	0.00	³ G ₃ - 380 ₄	
4055.642	4		24650.05	+0.02	³ H ₅ - 397 ₄	
4056.181	2 <i>b</i>		24646.77	-0.11	⁵ F ₃ - 53 ₄	
4056.459	2		24645.08	-0.01	28347 ₃ - 529 ₄	
4056.908	2		24642.36	+0.08	27 ₄ - 518 ₄	
4057.460	4		24639.01	-0.05	³ P ₂ - 438 ₁	
4059.244	4		24628.18	-0.06	24 ₂ - 494 ₃	
4060.166	1	2 <i>s</i>	24622.58	+0.04	28 ₅ - 528 ₆	
4060.234	2		24622.17	-0.07	276 ₂ - 52 ₃	
4060.705	12		24619.32	-0.02	19 ₃ - 444 ₃	
4062.260	1		24609.9			
4064.580	4		24595.85	-0.03	28347 ₃ - 529 ₃	
4064.791	40	4	24594.57	-0.03	19 ₄ - 438 ₃	
4065.320	6		24591.37	+0.08	⁷ F ₄ - ⁷ D ₅	
4065.992	5		24587.30	-0.03	17 ₄ - 416 ₃	
4066.910	8		24581.76	-0.03	263 ₂ -50949 ₁	
4067.513	2		24578.11	-0.02	13 ₂ - 383 ₁	
4069.154	4		24568.20	-0.10	20 ₂ - 455 ₃	
4069.794	12	3	24564.34	-0.04	19826 ₅ - 443 ₆	Res
4069.950	80	8	24563.40	0.00	⁵ D ₃ - 293 ₂	
4070.608	60	2	24559.42	-0.06	⁵ D ₁ - ⁷ P ₂	
4070.890	1 <i>b</i>		24557.72			
4071.928	25		24551.46	-0.03	15 ₃ - 400 ₂	Res
4073.150	12		24544.10	-0.02	³ H ₅ - 396 ₅	
4073.864	3		24539.80	-0.02	19 ₃ - 443 ₂	
4074.358	600	60	24536.82	0.00	⁷ S ₃ - ⁷ P ₃	
4076.124	2		24526.19			
4077.043	5		24520.66	-0.02	276 ₂ -52183 ₂	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4078.119	6		24514.19	+0.05	⁷ P ₃ ^o -52002 ₃	
4079.258	4		24507.35	-0.04	22852 ₄ - 473 ₄	
4079.458	1		24506.15	0.00	28 ₁ - 532 ₁	
4079.804	3		24504.08	+0.01	18 ₃ - 434 ₃	
4080.166	1 b		24501.90			
4081.737	1		24492.46	-0.06	³ G ₄ - 409 ₃	
4082.054	3		24490.56	-0.10	18 ₁ - 425 ₁	
4082.958	30	3	24485.14	+0.01	19 ₄ - 437 ₅	(0)
4083.711	6		24480.62	-0.05	³ G ₄ - 409 ₅	
4085.044	2		24472.64			
4086.00	2		24466.91	+0.05	³ P ₁ - 377 ₁	
4086.525	3		24463.77			
4086.961	2		24461.16	-0.10	24 ₃ - 490 ₃	
4087.388	4		24458.60	0.00	31 ₅ - 558 ₆	
4087.729	1		24456.56	-0.09	18 ₂ - 425 ₁	
4087.980	1		24455.06	-0.10	22476 ₄ - 469 ₄	
4088.330	30	1	24452.97	0.00	⁵ D ₂ - 277 ₁	
4088.768	10		24450.35	-0.05	19535 ₅ - 439 ₄	
4089.054	2 b		24448.64	-0.09	⁷ P ₃ ^o - 51 ₂	
4089.380	8		24446.68	+0.02	⁷ F ₅ ^o - e ⁵ D ₄	
4090.30	2		24441.2			
4090.636	6		24439.19	-0.01	20 ₂ - 454 ₂	
4091.040	4		24436.77			
4091.212	3		24435.74			
4092.392	10 b		24428.70	+0.03	13 ₂ - 382 ₃	
4093.134	10 b		24424.27			
4094.747	3		24414.65			
4095.693	15		24409.01	-0.01	³ H ₆ - 414 ₆	3
4095.992	2		24407.22	+0.06	23 ₂ - 483 ₁	
4096.424	2 b		24404.65	-0.05	277 ₁ -52183 ₂	
4096.756	1 b		24402.67			
4097.344	2 b		24399.18	+0.14	26 ₂ - 512 ₁	
4097.664	10		24397.27	-0.03	18 ₂ - 425 ₃	
4097.826	3		24396.30	-0.03	23 ₃ - 483 ₃	
4098.028	2 b		24395.10	+0.02	⁷ P ₄ ^o -52284 ₃	
4098.48	3		24392.4	-0.02	17 ₄ - 414 ₃	
4099.016	10		24389.22	-0.02	19535 ₅ - 439 ₅	
4100.334	2		24381.37	-0.03	28 ₆ - 527 ₅	
4100.891	6		24378.07	-0.05	22476 ₄ - 468 ₅	
4101.648	3		24373.57			
4101.845	8		24372.40			
4102.367	2 b		24369.30	-0.01	29479 ₄ - 538 ₄	
4102.702	100	10	24367.31	0.00	⁵ D ₄ - 305 ₃	
4102.942	4		24365.88	+0.04	⁵ D ₂ - 291 ₂	
4103.118	6		24364.84	-0.08	23 ₁ - 478 ₁	
4106.698	6		24343.60	-0.01	23 ₂ - 483 ₃	
4107.816	5		24336.97	-0.02	⁵ D ₂ - 276 ₂	
4108.529	12		24332.75	-0.01	18 ₂ - 424 ₂	
4109.746	30	3	24325.54	+0.02	³ G ₃ - 376 ₃	
4110.572	8		24320.66	-0.05	⁵ S ₂ - 426 ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4111.672	5		24314.15	-0.06	23 ₃ - 482 ₂ [°]	
4111.815	25		24313.30	-0.01	⁵ D ₁ - 259 ₁ [°]	
4112.484	8		24309.35	-0.02	20 ₁ - 447 ₁ [°]	
4114.19	1	2 s	24299.27	+0.06	28204 ₂ - 525 ₂ [°]	
4114.821	6 b		24295.54	-0.04	⁷ P ₂ - 50 ₂ [°]	
4115.585	12		24291.03	-0.05	³ H ₅ - 393 ₅ [°]	
4116.718	3		24284.35			
4118.052	25	3	24276.48	-0.01	18 ₃ - 432 ₄ [°]	
4118.186	15	2	24275.69	-0.02	19 ₆ - 439 ₅ [°]	
4118.246	5		24275.34	0.00	13 ₂ - 380 ₃ [°]	
4118.976	6		24271.04			
4119.287	1 b	b	24269.21	+0.18	33 ₅ - 575 ₅ [°]	
4120.22	1 b		24263.7	0.00	29853 ₄ - 541 ₃ [°]	
4120.356	1 b		24262.9			
4120.854	15		24259.98	+0.03	15 ₃ - 397 ₄ [°]	
4122.014	12		24253.15	0.00	18 ₃ - 432 ₂ [°]	
4123.051	10		24247.05	+0.04	15 ₃ - 397 ₂ [°]	
4124.164	2 b		24240.50	+0.03	23 ₃ - 481 ₃ [°]	
4125.164	20	2	24234.63	+0.09	³ G ₄ - 406 ₃ [°]	
4125.325	8		24233.68	+0.02	⁵ S ₂ - 425 ₃ [°]	
4125.727	2		24231.32	+0.03	27 ₅ - 520 ₅ [°]	
4126.803	30	3	24225.00	-0.02	³ P ₂ - 434 ₃ [°]	
4127.257	5		24222.34	0.00	19 ₄ - 434 ₃ [°]	
4129.982	3		24206.36	0.00	19535 ₅ - 437 ₅ [°]	
4130.539	1		24203.10	+0.10	28 ₅ - 524 ₄ [°]	
4132.202	10		24193.35	+0.03	19 ₃ - 440 ₃ [°]	
4132.472	3 b		24191.77			
4133.160	2 b		24187.74	-0.01	23 ₂ - 481 ₃ [°]	
4133.388	8		24186.41	+0.01	15 ₃ - 396 ₃ [°]	
4133.481	5		24185.87	+0.01	19535 ₅ - 437 ₄ [°]	
4134.581	1		24179.43	-0.04	18 ₁ - 422 ₁ [°]	
4136.348	5		24169.10	-0.02	⁵ S ₂ - 424 ₂ [°]	
4137.457	80	8	24162.62	+0.04	⁵ D ₂ - ⁷ P ₃ [°]	
4138.018	40	4	24159.35	-0.02	19826 ₅ - 439 ₄ [°]	
4138.304	15	2	24157.68	-0.05	19 ₃ - 439 ₄ [°]	
4139.318	10	1	24151.76	0.00	³ G ₄ - 405 ₄ [°]	
4140.039	8		24147.56	+0.02	19 ₃ - 439 ₂ [°]	
4140.400	8		24145.45	-0.01	18 ₂ - 422 ₁ [°]	
4140.797	1		24143.13	+0.09	28898 ₂ - 530 ₁ [°]	
4142.253	25	2	24134.65	-0.02	18 ₂ - 422 ₃ [°]	
4142.693	2		24132.08			
4144.812	2		24119.75	+0.04	32 ₄ - 562 ₄ [°]	
4145.160	25	1	24117.72	-0.02	³ G ₃ - 374 ₂ [°]	
4145.860	4		24113.65	0.00	⁷ D ₂ - ⁶ D ₂ [°]	
4145.947	10		24113.14	0.00	³ H ₄ - 362 ₅ [°]	
4147.385	2		24104.78	+0.02	28898 ₂ - 530 ₂ [°]	
4148.516	3		24098.22	+0.01	19826 ₅ - 439 ₅ [°]	
4149.074	3 b		24094.97			
4149.435	10		24092.88	+0.05	19 ₆ - 437 ₅ [°]	
4149.737	6		24091.12	-0.01	17 ₄ - 411 ₄ [°]	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
4151.822	2		24079.03	-0.01	22852 ₄ - 469° ₄	(0)
4152.182	2		24076.94	+0.03	27 ₄ - 512° ₅	
4154.096	2		24065.84			
4154.664	20	2	24062.55	0.00	⁷ F° ₀ - ⁷ D ₁	
4155.277	2 <i>b</i>		24059.0			
4155.527	2 <i>b</i>		24057.56			
4156.064	3 <i>b</i>		24054.45			
4157.677	2		24045.09	-0.02	³ G ₄ - 404° ₅	
4158.822	2		24038.50	-0.04	23 ₃ - 479° ₄	
4158.954	2		24037.73			
4159.609	4		24033.95			
4159.782	5		24032.95	0.00	17 ₃ - 417° ₂	
4160.030	8	1	24031.52	0.00	20 ₂ - 450° ₃	
4160.341	8	1	24029.72	+0.03	22476 ₄ - 465° ₅	
4161.476	4		24023.17	+0.01	19 ₃ - 438° ₃	
4163.914	3		24009.10	+0.04	29853 ₄ - 538° ₅	
4164.398	2		24006.31	+0.01	27 ₅ - 518° ₄	
4164.998	1		24002.85	+0.05	28 ₆ - 523° ₅	
4165.152	4		24001.96	-0.04	22852 ₄ - 468° ₅	
4166.139	10		23996.28	+0.03	13 ₂ - 377° ₁	
4166.40	2		23994.78	+0.02	19 ₄ - 432° ₄	
4166.676	2		23993.19	+0.03	17 ₃ - 416° ₃	
4166.846	4		23992.21			
4167.002	2 <i>b</i>		23991.31			
4168.652	12	4	23981.82	0.00	⁵ S ₂ - 422° ₁	
4169.996	4		23974.08	-0.02	³ P ₂ - 432° ₂	
4170.526	30	3	23971.04	+0.01	⁵ S ₂ - 422° ₃	
4170.820	1		23969.35			
4171.174	60	6	23967.32	+0.08	⁵ D ₃ - ⁷ D ₄	
4171.415	2		23965.93			
4171.794	2		23963.75	-0.02	³ P ₂ - 432° ₁	
4172.934	2		23957.20	+0.08	31 ₅ - 553° ₄	
4174.52	2 <i>b</i>		23948.1	+0.01	⁵ F° ₄ - 55° ₅	
4175.988	5		23939.68	+0.02	20 ₁ - 443° ₂	
4176.589	2		23936.24	+0.01	18 ₃ - 429° ₄	
4177.822	8 <i>b</i>		23929.18			
4178.054	2		23927.85			
4178.445	1		23925.61	-0.01	20 ₁ - 443° ₁	
4179.366	2 <i>b</i>		23920.33	-0.01	³ H ₄ - 360° ₄	
4180.232	10		23915.38	+0.05	19826 ₅ - 437° ₅	
4181.388	5		23908.77	-0.01	22476 ₄ - 463° ₃	
4182.305	2		23903.53	+0.05	³ H ₆ - 409° ₅	
4182.89	2		23900.18	-0.03	314° ₄ - 55° ₄	
4183.655	10		23895.81	+0.02	18 ₁ - 419° ₂	
4183.816	12	1	23894.90	+0.07	19826 ₅ - 437° ₄	
4186.002	6		23882.41	0.00	18 ₁ - 419° ₀	
4187.643	1 <i>b</i>		23873.06	-0.09	299° ₃ - 53° ₄	
4189.149	3 <i>b</i>		23864.47			
4189.619	2		23861.80	+0.02	18 ₂ - 419° ₂	
4189.788	1		23860.84	+0.10	28291 ₃ - 521° ₂	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4189.960	1		23859.86	-0.02	28204 ₂ - 520 ₂	
4190.136	3 <i>b</i>		23858.85	-0.05	281 ₁ -52057 ₁	
4190.395	1 <i>b</i>		23857.38	+0.12	26 ₂ - 507 ₂	
4192.087	2		23847.75	+0.10	28 ₅ - 520 ₅	
4192.363	1		23846.2			
4192.578	1		23844.96			
4193.786	6		23838.09	+0.05	³ G ₄ - 402 ₃	
4193.950	5		23837.16	+0.02	23 ₂ - 478 ₁	
4195.54	1		23828.1			
4195.840	1		23826.42	+0.08	28 ₅ - 520 ₄	
4197.044	1		23819.58			
4197.530	2		23816.83	+0.01	17 ₄ - 409 ₅	
4197.982	1 <i>b</i>		23814.26			
4198.57	1		23810.93	-0.15	28204 ₂ - 520 ₃	
4199.617	8		23805.00	+0.03	17 ₄ - 409 ₅	
4200.020	15		23802.71	+0.05	³ G ₄ - 402 ₄	
4200.419	2		23800.45	-0.08	23 ₁ - 472 ₁	
4200.885	4		23797.81	+0.01	³ G ₃ - 371 ₄	
4201.615	1		23793.68			
4203.165	1		23784.90			
4203.816	15	2	23781.21	0.00	³ H ₄ - 359 ₃	
4203.957	2		23780.41			
4204.405	30	3	23777.88	+0.02	19 ₄ - 430 ₅	(0)
4204.724	2		23776.08			
4205.550	12		23771.41	+0.09	⁷ D ₁ - ⁶ D ₀	
4206.164	2		23767.94	+0.04	28291 ₃ - 520 ₄	
4206.236	15		23767.53	+0.09	29 ₇ - 532 ₆	
4207.052	50	5	23762.92	-0.04	19 ₆ - 434 ₇	
4207.71	1		23759.21	-0.04	23 ₃ - 476 ₄	
4208.135	2		23756.81	+0.12	28 ₁ - 524 ₁	
4208.888	3	1	23752.56			
4209.50	2		23749.1			
4209.776	3		23747.55			
4210.185	5		23745.24	0.00	28 ₅ - 519 ₆	
4212.886	5	1	23730.02			
4214.056	4		23723.43	+0.03	28291 ₃ - 520 ₃	
4214.954	6		23718.37	-0.05	20 ₀ - 438 ₁	
4215.376	25		23716.00	+0.01	19535 ₅ - 432 ₄	
4215.548	2 <i>b</i>	3 <i>b</i>	23715.03	+0.10	29479 ₄ - 531 ₅	
4216.048	2 <i>b</i>	1	23712.22	+0.04	28347 ₃ - 520 ₄	
4216.797	2 <i>b</i>	1	23708.01	+0.05	24 ₃ - 483 ₂	
4218.552	15	2	23698.14	0.00	⁵ S ₂ - 419 ₂	
4219.011	2		23695.57	-0.08	27 ₄ - 509 ₄	
4219.372	80	8	23693.54	+0.02	⁵ D ₄ - 299 ₃	
4220.273	6	2	23688.48	-0.11	13 ₂ - 374 ₂	
				+0.09	28 ₆ - 520 ₅	
4220.534	5		23687.02	+0.02	19 ₃ - 435 ₂	
4221.717	6	1	23680.38	+0.08	27 ₄ -50894 ₃	
4222.045	20	2	23678.54	+0.03	³ H ₅ - 387 ₄	
4223.978	4		23667.70	+0.02	28347 ₃ - 520 ₃	

Res

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4224.763	20	2	23663.30	-0.06	23 ₃ - 475° ₃	
4225.260	3 <i>b</i>		23660.52			
4225.627	3 <i>b</i>		23658.47			
4226.338	20	2	23654.49	-0.01	19 ₄ - 429° ₄	
4226.503	4	1	23653.56	-0.01	22852 ₄ - 465° ₅	
4226.915	25	2	23651.26	-0.04	18 ₁ - 417° ₂	
4229.792	1		23635.17	+0.14	⁷ P ₃ - ^e 5D ₄	
4230.150	2 <i>h</i>		23633.17	-0.24	24 ₃ - 482° ₂	
				+0.27	26 ₂ - 504° ₂	
4231.320	8	1	23626.64	-0.04	18 ₃ - 426° ₃	
4231.734	12	1	23624.33	-0.05	23 ₁ - 470° ₂	
4231.938	4		23623.19	-0.05	27 ₅ - 514° ₄	
4232.035	2	1	23622.64	-0.02	28 ₅ - 518° ₄	
4232.996	20	2	23617.28	-0.01	18 ₂ - 417° ₂	
4234.345	40	4	23609.76	0.00	19 ₄ - 428° ₅	
4236.622	8	1	23597.07	+0.01	³ P ₁ - 369° ₂	
4237.487	2		23592.25	0.00	27 ₄ - 508° ₅	
4240.140	15		23577.49	-0.01	18 ₂ - 416° ₃	
4240.913	3		23573.19			
4241.445	100	10	23570.24	0.00	15 ₃ - 390° ₂	
4243.350	8		23559.65	-0.02	24 ₃ - 481° ₃	
4243.630	20		23558.10	-0.01	18 ₃ - 425° ₄	
4244.088	1		23555.56	+0.04	³ G ₃ - 369° ₂	
4244.364	200	20	23554.03	+0.02	⁵ D ₄ - ⁷ D° ₅	
4245.557	10	1	23547.41	+0.03	20 ₁ - 439° ₂	
4247.006	1		23539.37	-0.26	18 ₃ - 425° ₃	
4248.852	5		23529.15	-0.03	24 ₂ - 483° ₂	
4249.452	20	2	23525.83	+0.03	³ G ₃ - 368° ₃	
4250.812	10		23518.30			
4250.894	5		23517.84	-0.01	22 ₀ - 462° ₁	
4251.880	5	1	23512.39	-0.06	23 ₃ - 474° ₂	
4253.242	3	1	23504.86			
4254.052	12	1	23500.39	+0.02	18 ₁ - 415° ₂	
4254.284	15	1	23499.10	+0.01	19535 ₅ - 430° ₅	
4254.675	2		23496.94	-0.02	17 ₃ - 411° ₄	
4255.594	3		23491.87	+0.01	29853 ₄ -53345° ₃	
4257.978	3		23478.72			
4258.458	10	1	23476.07	+0.01	17 ₄ - 405° ₄	
4258.524	5		23475.71	-0.02	18 ₃ - 424° ₄	
4258.626	1		23475.15	+0.06	18 ₃ - 424° ₂	
4259.351	80	8	23471.16	+0.08	⁷ F° ₂ - ^e 7D ₂	
4259.932	12	1	23467.95	+0.03	³ H ₆ - 404° ₅	
4260.130	2		23466.86	+0.02	⁷ D° ₃ - ^e 5D ₃	
4260.287	30	3	23466.00	+0.06	⁷ D° ₁ - ^e 7D ₂	
4260.511	3		23464.76	-0.02	20 ₁ - 438° ₁	
4260.652	2		23463.99	-0.01	20 ₂ - 444° ₃	
4260.86	2		23462.84	-0.02	333° ₅ - 56° ₆	
4262.267	4	1	23455.10			
4263.304	50	5	23449.39	+0.08	⁷ F° ₃ - ⁷ D ₃	
4264.664	1		23441.91	-0.23	26 ₂ - 503° ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4264.840	5	1	23440.94	+0.01	27 ₅ - 512 ₅ [°]	
4264.980	10	1	23440.17			
4266.538	20	2	23431.61	-0.05	23 ₃ - 473 ₃ [°]	
4266.822	3		23430.06	-0.05	23 ₃ - 473 ₄ [°]	
4267.745	6		23424.99	+0.03	19826 ₅ - 432 ₄ [°]	
4268.045	12	1	23423.34	+0.02	19 ₃ - 432 ₄ [°]	
4269.382	200	20	23416.01	+0.02	⁷ S ₃ - 263 ₂ [°]	
4269.774	40	4	23413.86	0.00	⁵ S ₂ - 416 ₃ [°]	
4270.900	10	1	23407.68	-0.03	23 ₃ - 473 ₂ [°]	
4271.228	4 _g		23405.89			
4271.695	1		23403.33	-0.01	17 ₃ - 411 ₂ [°]	
4272.300	8	1	23400.01	+0.03	19 ₃ - 432 ₂ [°]	
4272.985	1 _b		23396.26	-0.06	28204 ₂ - 516 ₃ [°]	
4273.210	2		23395.03	+0.03	29 ₇ - 528 ₆ [°]	
4273.356	5		23394.23			
4273.688	20	2	23392.41	-0.01	22476 ₄ - 458 ₄ [°]	
4273.850	5		23391.53			
4274.136	1 _b		23389.96			
4274.548	100	10	23387.71	+0.03	⁷ F ₁ - ⁷ D ₁	
4274.932	10	2	23385.61	+0.05	19 ₆ - 430 ₅ [°]	
4275.142	6	1	23384.46	-0.02	20 ₂ - 443 ₂ [°]	
4275.486	50	5	23382.58	-0.01	18 ₂ - 414 ₃ [°]	
4275.800	6	1	23380.86	-0.03	24 ₂ - 481 ₃ [°]	
4276.016	20	1	23379.68	+0.02	14 ₂ - 383 ₁ [°]	
4276.740	60	6	23375.72	-0.01	19535 ₅ - 429 ₄ [°]	
4277.310	3		23372.60			
4277.703	3		23370.46	+0.02	20 ₂ - 443 ₁ [°]	
4277.898	4		23369.39	-0.02	17 ₄ - 404 ₅ [°]	
4278.405	12	1	23366.62	+0.02	³ P ₁ - 366 ₂ [°]	
4280.280	1 _{b b}		23356.39	+0.11	32 ₄ -55492 ₅ [°]	
4280.540	2		23354.97	-0.02	23 ₂ - 473 ₂ [°]	
4280.760	4	_g	23353.77			
4281.210	4	_g	23351.32	-0.11	23 ₁ - 468 ₂ [°]	
4281.898	3		23347.57	-0.06	³ P ₂ - 426 ₃ [°]	
4282.040	2		23346.79			
4282.345	30	3	23345.13	+0.02	³ H ₄ - 355 ₅ [°]	
4282.723	2	_g	23343.07	-0.13	28 ₁ - 520 ₂ [°]	
4282.922	1		23341.98			
4283.180	1 _l		23340.57	-0.02	29853 ₄ - 531 ₅ [°]	
4283.800	20	2	23337.20	+0.01	³ H ₄ - 354 ₃ [°]	
4284.359	3		23334.15			
4284.964	25	3	23330.86	-0.13	19535 ₅ - 428 ₅ [°]	
				+0.02	22 ₀ - 461 ₁ [°]	
4286.008	30	5	23325.17	+0.03	³ G ₃ - 366 ₂ [°]	
4286.208	6	1	23324.08	+0.02	26 ₂ - 501 ₃ [°]	
4286.982	2		23319.87	-0.06	³ P ₂ - 425 ₁ [°]	
4287.914	1 _b		23314.81	-0.09	28291 ₃ -51606 ₂ [°]	
4288.350	2		23312.44	-0.02	22476 ₄ - 457 ₅ [°]	
4290.138	10	1	23302.72	0.00	⁵ S ₂ - 415 ₂ [°]	
4290.530	2		23300.59			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
4291.502	3		23295.31	+0.15	30 ₂ - 536 ₂ [°]	
4292.149	1		23291.80			
4292.730	4		23288.65	0.00	³ G ₄ - 397 ₄ [°]	
4293.110	2		23286.59	+0.04	276 ₂ -50949 ₁	
4293.280	2		23285.66			
4293.535	3		23284.28			
4294.097	30	5	23281.24	+0.02	³ P ₁ - 365 ₀ [°]	
4294.606	800	80	23278.48	0.00	⁷ S ₃ - ⁷ P ₂ [°]	
4294.996	12	2	23276.36	-0.02	19 ₄ - 425 ₄ [°]	
4295.683	6	1	23272.64	-0.11	23 ₂ - 472 ₁ [°]	
4297.140	3		23264.75	+0.12	29853 ₄ - 531 ₄ [°]	
4297.860	3 <i>b</i>		23260.85	+0.27	³ P ₂ - 425 ₃ [°]	
4298.410	10		23257.88	-0.02	19 ₄ - 425 ₃ [°]	
4302.110	200	20	23237.88	-0.03	⁷ S ₃ - ⁷ D ₃ [°]	
4302.897	4	<i>g</i>	23233.62	+0.16	⁷ P ₄ - <i>e</i> ⁵ D ₄	
4303.528	3		23230.22	+0.02	14 ₂ - 382 ₃ [°]	
4304.934	3		23222.63	-0.02	17 ₃ - 409 ₃ [°]	
4305.318	3		23220.56			
4305.614	10	1	23218.96	+0.01	⁵ S ₂ - 414 ₃ [°]	
4306.325	4		23215.13	+0.03	³ G ₄ - 396 ₃ [°]	
4306.870	60	6	23212.19	+0.04	⁷ F ₄ - ⁷ D ₄	
4307.638	50	5	23208.06	0.00	19826 ₅ - 430 ₅ [°]	
4308.496	4		23203.43	-0.07	333 ₅ -56573 ₅	
4308.944	15	1	23201.02	+0.01	22476 ₄ - 456 ₃ [°]	
4309.260	4 <i>b</i>		23199.32	-0.04	305 ₃ - 53 ₄	
4309.864	8		23196.07	+0.03	³ P ₂ - 424 ₂ [°]	
4310.248	20	1	23194.00	0.00	19 ₄ - 424 ₄ [°]	
4311.084	6		23189.50	+0.03	³ H ₅ - 382 ₄ [°]	
4311.290	3		23188.39			
4312.336	15	1	23182.77	+0.03	³ G ₄ - 396 ₅ [°]	
4314.424	2		23171.55			
4314.625	1		23170.47	-0.10	277 ₁ -50949 ₁	
4315.237	6		23167.18	-0.04	17 ₃ - 408 ₂ [°]	
4315.486	3		23165.85			
4316.574	2		23160.01			
4316.802	20	1	23158.79	+0.11	23 ₁ - 466 ₀ [°]	(0)
4317.650	2		23154.24			
4318.570	8	1	23149.30	-0.02	23 ₃ - 470 ₂ [°]	
4318.760	4		23148.29			
4319.865	4		23142.37			
4320.479	3		23139.08	+0.05	29853 ₄ - 529 ₄ [°]	
4320.985	3		23136.37			
4322.124	2		23130.27			
4322.740	12	1	23126.97	+0.01	17 ₄ - 402 ₄ [°]	
4323.280	4		23124.09			
4326.960	4		23104.42	+0.03	26 ₂ - 499 ₃ [°]	
4327.400	3		23102.07	+0.01	27 ₅ - 509 ₆ [°]	
4328.408	2		23096.69	+0.04	13 ₂ - 368 ₃ [°]	
4328.782	1 <i>b b</i>		23094.70			
4330.306	2		23086.57		281 ₁ -51285 ₀	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
4330.658	20	2	23084.69	-0.01	19826 ₅ - 429 ₄ [°]	
4330.967	30	3	23083.04	-0.02	19 ₃ - 429 ₄ [°]	
4331.620	2 <i>b</i>		23079.56			
4332.130	25	2	23076.85	-0.02	14 ₂ - 380 ₃ [°]	
4332.536	4		23074.68	+0.04	22476 ₄ - 455 ₃ [°]	
4333.760	2		23068.17			
4336.326	4 <i>b</i>		23054.52			
4337.630	3		23047.59			
4338.213	3		23044.49	-0.06	18 ₁ - 411 ₀ [°]	
4338.288	4		23044.09	+0.01	291 ₃ [°] -52183 ₂	
4338.727	3		23041.76	+0.01	⁵ D ₂ - 263 ₂ [°]	
4339.070	8	1	23039.94	-0.02	19826 ₅ - 428 ₅ [°]	
4339.446	15	1	23037.94	-0.04	20 ₂ - 440 ₃ [°]	
4340.270	2		23033.57			
4340.90	2 <i>b</i>		23030.22	-0.06	24 ₂ - 478 ₁ [°]	
4341.124	4		23029.04			
4341.61	3		23026.46			
4342.53	1		23021.58	-0.01	23 ₆ - 465 ₅ [°]	
4342.781	6	1	23020.25			
4343.533	2		23016.27	-0.03	22852 ₄ - 458 ₄ [°]	
4344.376	3		23011.80	+0.04	32 ₁ - 553 ₂ [°]	
4344.634	4		23010.43			
4344.963	8		23008.69	-0.05	³ P ₂ - 422 ₁ [°]	
4345.828	20	1	23004.11	0.00	18 ₃ - 419 ₂ [°]	
4346.280	6		23001.72	-0.04	23 ₃ - 469 ₄ [°]	
4346.977	30	3	22998.03	+0.08	³ P ₂ - 422 ₃ [°]	
4347.495	20	2	22995.29	+0.02	19 ₄ - 422 ₃ [°]	
4348.108	20	25 <i>s</i>	22992.05	-0.15	20 ₂ - 439 ₂ [°]	
4348.927	1		22987.72	+0.04	18 ₂ - 411 ₂ [°]	
4348.995	5		22987.36	0.00	291 ₂ [°] -52183 ₂	
4351.097	2 <i>b</i>		22976.25			
4351.336	2 <i>b</i>		22975.00	+0.03	22476 ₄ - 454 ₅ [°]	
4352.110	2 <i>b</i>		22970.9			
4353.10	10	2	22965.68			
4353.29	8		22964.68	+0.01	17 ₃ - 406 ₃ [°]	
4354.72	6	1	22957.14	+0.02	29479 ₄ - 524 ₄ [°]	
4354.90	6	1	22956.19	-0.08	27 ₅ - 508 ₅ [°]	
4355.166	40	4	22954.79	-0.03	³ H ₄ - 351 ₄ [°]	Res
4359.37	2		22932.66			
4359.663	3		22931.11	-0.08	³ H ₅ - 380 ₄ [°]	
4361.066	10	1	22923.73	0.00	27 ₄ - 501 ₅ [°]	
4361.534	8	3 <i>s</i>	22921.28	+0.06	31 ₅ - 543 ₅ [°]	
4361.814	25	3	22919.80	-0.01	⁵ D ₄ - 291 ₃ [°]	
4362.228	3		22917.63			
4362.670	3		22915.30	+0.07	19535 ₅ - 424 ₄ [°]	
4363.754	3		22909.61	+0.01	20 ₂ - 438 ₁ [°]	
4364.40	3		22906.22			
4364.778	40	8	22904.24	0.00	⁵ D ₂ - ⁷ P ₂ [°]	Res
4365.954	15	3	22898.07	+0.04	28 ₆ - 512 ₅ [°]	(0)
4366.073	20	3	22897.44	+0.01	18 ₃ - 418 ₄ [°]	(0)

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4366.346	6		22896.01	+0.02	13 ₂ - 366 ₂ [°]	Res
4368.762	12	1	22883.35	-0.04	³ P ₁ - 361 ₁ [°]	
4369.045	10	1	22881.87	-0.02	17 ₃ - 405 ₄ [°]	
4370.795	5		22872.71	-0.02	23 ₁ - 463 ₂ [°]	
4371.732	10		22867.80	-0.02	20 ₂ - 438 ₃ [°]	
4372.522	40	4	22863.67	0.00	⁵ D ₂ - ⁷ D ₃ [°]	
4373.063	3 <i>b</i>		22860.84			
4377.460	1		22837.88	-0.04	26 ₂ - 496 ₂ [°]	
4378.484	50	10	22832.54	+0.02	⁵ D ₃ - 276 ₂ [°]	
4379.048	2		22829.60	-0.14	34 ₄ - 571 ₃ [°]	
4380.118	12	1	22824.02	-0.02	⁵ S ₂ - 411 ₂ [°]	7
				-0.04	27 ₁ - 504 ₂ [°]	
4381.862	5		22814.94			
4384.850	40	4	22799.39	0.00	15 ₃ - 382 ₄ [°]	
4385.168	5		22797.74	-0.04	14 ₂ - 377 ₁ [°]	
				+0.02	291 ₃ -51936 ₂ [°]	
4386.770	15	1	22789.41	-0.08	20 ₁ - 432 ₁ [°]	
4387.450	2		22785.88	+0.01	22476 ₄ - 452 ₄ [°]	
4389.837	20	2	22773.49	-0.02	19 ₃ - 426 ₃ [°]	
4391.115	3		22766.87			
4392.510	1		22759.63	+0.01	18 ₃ - 417 ₂ [°]	
4394.074	30	3	22751.53	-0.03	18 ₂ - 408 ₂ [°]	
4394.510	3	1	22749.28	-0.03	24 ₃ - 473 ₄ [°]	
4395.077	10		22746.34	-0.03	15 ₃ - 382 ₃ [°]	
4397.518	3		22733.71	-0.03	³ G ₃ - 360 ₄ [°]	
4398.270	2 <i>b</i>		22729.83	+0.13	31 ₅ - 541 ₄ [°]	
4398.698	1		22727.62			
4398.850	2		22726.83	-0.08	24 ₃ - 473 ₂ [°]	
4399.194	1		22725.05	-0.01	³ P ₂ - 419 ₂ [°]	
4399.317	1		22724.42	-0.16	28347 ₃ - 510 ₃ [°]	
4400.203	12	2	22719.85	+0.02	18 ₃ - 416 ₃ [°]	
4400.850	2		22716.50			
4401.316	2		22714.10			
4402.652	3		22707.21			
4403.274	6		22704.00	-0.05	19535 ₅ - 422 ₆ [°]	
4403.947	40	4	22700.53	-0.01	³ H ₆ - 397 ₇ [°]	
4404.458	4		22697.89	-0.01	14 ₂ - 376 ₃ [°]	
4405.024	3		22694.98	+0.01	23 ₃ - 466 ₄ [°]	
4405.996	1	1	22689.97	+0.05	28204 ₂ -50894 ₃ [°]	
4406.390	8	1	22687.94	-0.01	18 ₁ - 407 ₁ [°]	
4406.676	4		22686.47	+0.01	19 ₃ - 425 ₃ [°]	
4406.88	2		22685.42			
4408.282	50	5	22678.20	0.00	⁷ F ₅ - ⁷ D ₅ [°]	
4408.706	8		22676.02	-0.01	28 ₅ - 509 ₄ [°]	
4409.946	2		22669.65			
4412.188	40	4	22658.13	+0.06	⁵ D ₂ - 259 ₁ [°]	
				+0.02	⁵ D ₃ - ⁷ P ₃ [°]	
4413.006	5		22653.93	-0.01	18 ₂ - 407 ₁ [°]	
4413.240	2		22652.73	+0.03	26 ₂ - 495 ₃ [°]	
4413.860	4		22649.55	-0.05	23 ₁ - 461 ₁ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
4415.075	25		22643.31	-0.04	⁵ S ₂ - 409° ₃	
4415.703	12		22640.09	0.00	22476 ₄ - 451° ₄	
4418.441	15	1	22626.06	+0.02	20 ₁ - 430° ₀	
4418.811	6		22624.17	-0.03	19826 ₅ - 424° ₄	
4419.247	12		22621.94	+0.02	19 ₃ - 424° ₂	
4420.463	40	4	22615.72	+0.02	19 ₄ - 418° ₄	
4420.998	20	2	22612.98	+0.03	17 ₄ - 397° ₄	
4421.836	15	3 s	22608.69	0.00	18 ₃ - 417° ₂	
4422.447	3		22605.57	+0.02	³ H ₆ - 396° ₅	
4423.507	2 v		22600.15	-0.07	22 ₀ - 453° ₁	
4423.769	20	3	22598.81	-0.04	22852 ₄ - 454° ₅	
4424.888	8		22593.10	+0.06	15 ₃ - 380° ₃	
4425.912	30	6	22587.87	-0.05	⁵ S ₂ - 408° ₂	
4427.366	8		22580.45	-0.01	29479 ₄ - 520° ₄	
4428.476	6		22574.79	+0.03	27 ₄ - 497° ₄	
4430.830	2		22562.8	+0.19	32 ₁ - 549° ₁	
4431.522	3		22559.28	+0.12	28 ₆ - 509° ₆	
4431.963	2		22557.03			
4432.175	10		22555.95	+0.07	33 ₅ - 558° ₆	
4433.482	1 b		22549.3	+0.29	18 ₂ - 406° ₃	
4433.634	2		22548.53			
4435.102	3 b		22541.07	-0.04	15 ₃ - 380° ₄	
4435.43	4 b		22539.4	0.00	17 ₄ - 396° ₃	
4435.733	10		22537.86	0.00	22476 ₄ - 450° ₃	
4436.898	40	4	22531.94	-0.01	⁷ D ₂ - ⁷ D ₃	
4438.284	25	3	22524.91	-0.01	18 ₃ - 414° ₃	
4439.709	12		22517.68	-0.02	29 ₇ - 519° ₆	
4441.808	20	1	22507.04	0.00	17 ₄ - 396° ₅	
4442.443	3 b		22503.82	+0.18	33 ₅ - 557° ₅	
4444.066	4		22495.60	+0.04	20 ₂ - 434° ₃	
4444.440	6		22493.71	+0.08	⁷ D ₂ - e ⁵ D ₁	
4445.143	30	3	22490.15	+0.03	14 ₂ - 374° ₂	
4447.047	1	a	22480.52	-0.05	³ P ₂ - 417° ₂	
4449.000	40	3	22470.65	+0.02	³ H ₄ - 346° ₄	
4450.340	20	2	22463.89	0.00	22476 ₄ - 449° ₄	
4452.016	4 b		22455.43	+0.05	23 ₃ - 463° ₃	
4453.608	2		22447.40	-0.06	23 ₁ - 459° ₂	
4455.458	20	2	22438.08	-0.02	19 ₄ - 416° ₃	
4456.096	15	2	22434.87	+0.03	27 ₅ - 502° ₄	
4458.086	20	2	22424.85	-0.01	³ P ₁ - 357° ₂	
4458.284	10		22423.86	+0.03	19 ₃ - 422° ₃	
4458.523	1 b l		22422.66	-0.04	27 ₄ - 496° ₄	
4460.486	40	4	22412.80	+0.02	13 ₂ - 361° ₁	
4462.514	8	1	22402.61	-0.05	23 ₂ - 463° ₃	
4463.498	12	1	22397.67	0.00	23 ₃ - 463° ₂	
4466.344	50	5	22383.40	0.00	³ G ₃ - 357° ₂	
4466.742	40	4	22381.40			
4467.68	3		22376.7	-0.08	29479 ₄ - 518° ₄	
4467.885	1		22375.68	+0.14	329° ₃ - 55° ₄	
4468.79	2		22371.14	-0.16	28347 ₃ - 507° ₂	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4469.714	10		22366.52			
4472.514	8		22352.52	+0.01	³ H ₆ — 393° ₅	
4474.03	15	1	22344.94	-0.01	23 ₂ — 463° ₂	
4475.64	4		22336.91	-0.02	19535 ₅ — 418° ₄	
4477.824	4	3 b	22326.01	+0.11	⁷ D ₄ — e ⁵ D ₄	
4478.826	2		22321.02	+0.06	24 ₃ — 469° ₄	
4479.594	3 b		22317.19	+0.06	³ G ₄ — 387° ₄	
4481.270	15	2	22308.84	+0.01	23 ₂ — 462° ₁	
4484.188	100	10	22294.33	-0.05	⁵ D ₁ — ⁷ D ₂	
				+0.05	18 ₂ — 404° ₁	
4485.091	12 c g		22289.84	+0.10	24 ₂ — 470° ₂	
4485.476	4 c		22287.93	+0.18	27 ₅ — 501° ₅	
4487.156	4		22279.58	+0.20	30 ₂ — 526° ₂	
4489.010	25	1	22270.38	+0.03	299° ₃ —52183° ₂	
4490.302	2 d		22263.97	0.00	22852 ₄ — 451° ₄	
4492.298	15	1	22254.08	+0.08	17 ₄ — 393° ₅	
4493.958	20	4	22245.86	-0.01	³ P ₂ — 414° ₃	
4494.177	1		22244.78	+0.14	20 ₂ — 432° ₂	
4494.497	50	5	22243.19	0.00	19 ₄ — 414° ₃	
4495.294	40	4	22239.25	+0.02	³ H ₅ — 373° ₅	
4496.228	5	1	22234.63			
4497.674	5		22227.48	+0.05	29853 ₄ — 520° ₅	
4498.448	15	2	22223.66	+0.03	18 ₃ — 411° ₄	
4499.094	3		22220.46			
4501.103	3		22210.55	+0.05	26 ₂ — 490° ₃	
4502.590	4	g	22203.21			
4503.136	3		22200.52	+0.10	33 ₅ —55492° ₅	
4504.133	30	1	22195.60	+0.03	24 ₃ — 468° ₂	
4504.838	60	6	22192.13	0.00	³ H ₄ — 343° ₃	
4509.300	4 b		22170.17			
4509.753	2		22167.95	+0.02	⁷ P ₃ — e ⁵ D ₃	
4510.276	2		22165.38	0.00	13 ₂ — 359° ₃	
4511.301	3 b		22160.34			
4512.880	50	6	22152.58	+0.07	18 ₂ — 402° ₃	
4513.252	60	5	22150.76	+0.17	³ G ₃ — 354° ₃	
				-0.18	19 ₃ — 419° ₂	
4514.284	5		22145.70	+0.05	20 ₁ — 425° ₁	
4515.860	4		22137.97	+0.03	23 ₃ — 460° ₃	
4516.620	2		22134.24			
4517.344	12	1	22130.70	+0.06	⁵ S ₂ — 404° ₁	
4519.153	15	1	22121.83	+0.01	23 ₂ — 461° ₁	
4519.950	6 b		22117.94			
4522.200	5 b		22106.93			
4526.114	4		22087.82	+0.05	22852 ₄ — 449° ₄	
4528.443	2		22076.45	+0.02	³ H ₅ — 371° ₄	
4529.740	20	1	22070.14	+0.06	22476 ₄ — 445° ₅	
4530.448	25	1	22066.69	+0.05	³ H ₄ — 342° ₃	
4534.685	30	3	22046.07	+0.17	19826 ₅ — 418° ₄	
4535.031	30	3	22044.38	+0.12	19 ₃ — 418° ₄	
4535.389	2		22042.64			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4536.636	40	4	22036.58	+0.10	28 ₆ — 504 ₆ [°]	
4539.674	4		22021.84	+0.08	20 ₁ — 424 ₂ [°]	
4540.279	5		22018.91	+0.13	17 ₃ — 397 ₄ [°]	
4542.873	30	2	22006.33	+0.04	15 ₃ — 374 ₂ [°]	
4543.245	8	1	22004.53	+0.07	³ P ₁ — 353 ₂ [°]	
4543.491	60	6	22003.34	+0.12	⁷ F ₂ — ⁷ D ₁ [°]	
4544.545	10	1	21998.24	+0.16	⁷ D ₁ — ⁷ D ₁ [°]	
4546.469	50	5	21988.93	+0.06	⁵ S ₂ — 402 ₃ [°]	
4549.510	6		21974.23	+0.13	27 ₄ — 491 ₅ [°]	
4550.280	8		21970.51	+0.17	22476 ₄ — 444 ₃ [°]	
4551.820	100	8	21963.08	0.00	333 ₅ — 55 ₄ [°]	
				+0.08	³ C ₃ — 353 ₂ [°]	
4552.500	25	2	21959.80	+0.08	³ H ₄ — 341 ₄ [°]	
4553.639	6		21954.30	+0.05	13 ₂ — 357 ₂ [°]	
4554.664	2		21949.36	+0.04	18 ₃ — 409 ₃ [°]	
4555.297	4		21946.32			
4555.528	3		21945.20	-0.03	17 ₃ — 396 ₃ [°]	
4556.190	4		21942.01	+0.11	19 ₄ — 411 ₄ [°]	
4556.828	20	1	21938.94	-0.08	23 ₃ — 458 ₄ [°]	
				+0.16	27 ₅ — 497 ₄ [°]	
4558.943	12	1	21928.76	+0.09	18 ₁ — 400 ₂ [°]	
4559.102	12	1	21928.00	+0.02	14 ₂ — 369 ₂ [°]	
4560.474	4		21921.40			
4563.570	30	2	21906.53	+0.08	19 ₃ — 417 ₂ [°]	
4564.048	10	1	21904.23	+0.12	28 ₅ — 501 ₅ [°]	
4565.297	25	1	21898.24	+0.06	14 ₂ — 368 ₃ [°]	
4566.031	1		21894.72	+0.06	18 ₂ — 400 ₂ [°]	
4566.198	8		21893.92	+0.03	18 ₃ — 408 ₂ [°]	
4567.566	12	1	21887.36			
4568.597	4		21882.42	-0.09	19535 ₅ — 414 ₆ [°]	
4570.638	80	8	21872.66	+0.13	230 ₃ — ⁷ D ₂ [°]	
4571.872	10	1	21866.75	+0.09	19 ₃ — 416 ₃ [°]	
4575.352	2		21850.12			
4575.661	3		21848.64	+0.09	⁷ P ₂ — ^ε D ₂ [°]	
4578.316	20	2	21835.97	+0.03	29 ₇ — 512 ₇ [°]	
4579.688	25	1	21829.43	-0.01	328 ₄ — 54 ₃ [°]	
4579.952	4		21828.17	+0.08	³ C ₄ — 382 ₄ [°]	
4581.635	3 b		21820.15	+0.21	28898 ₂ — 507 ₂ [°]	
4584.244	3		21807.74			
4584.536	3		21806.35	-0.05	34 ₄ — 561 ₃ [°]	
4585.624	3		21801.17			
4586.832	40	4	21795.43	+0.01	³ P ₀ — 313 ₁ [°]	
4588.734	60	6	21786.40	+0.06	⁷ D ₃ — ⁷ D ₄ [°]	
4592.390	20	2	21769.05	+0.07	19 ₆ — 414 ₆ [°]	
4592.566	15	1	21768.22	0.00	³ C ₃ — 351 ₄ [°]	
4592.907	1		21766.60	+0.24	⁷ P ₄ — ^ε D ₃ [°]	
4599.940	40	6	21733.32	+0.09	⁷ F ₄ — ⁷ D ₃ [°]	
4600.413	15	2	21731.09	+0.07	⁵ S ₂ — 400 ₂ [°]	
4603.270	4		21717.60	+0.18	33 ₅ — 550 ₅ [°]	
4603.410	5		21716.94	+0.07	24 ₃ — 463 ₂ [°]	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4606.998	4 <i>b</i>		21700.03	+0.05	329 ₃ —54 ₃	
4607.565	6 <i>b</i>		21697.36	-0.16	14 ₂ —366 ₂	
4608.816	8		21691.47	+0.13	18 ₃ —406 ₃	
4609.886	25	3	21686.44	+0.09	15 ₃ —371 ₄	
4612.987	5		21671.86	+0.10	19 ₃ —414 ₃	
4613.296	40	4	21670.40	+0.05	⁵ D ₄ — ⁷ P ₄	
4613.886	2		21667.63	+0.04	19 ₄ —409 ₃	
4614.830	6		21663.20	+0.07	19535 ₅ —411 ₄	
4616.396	3		21655.85	+0.11	19 ₄ —409 ₅	
4619.448	4 <i>c</i>		21641.55	+0.12	17 ₄ —387 ₄	
4620.520	15	1	21636.53	+0.10	19535 ₅ —411 ₆	
4622.266	2		21628.35			
4623.140	5		21624.26	+0.07	18 ₁ —397 ₂	
4623.645	10	1	21621.90	+0.16	³ G ₄ —380 ₃	
4623.768	3		21621.32	+0.08	23 ₃ —455 ₃	
4624.446	6		21618.16	-0.01	20 ₂ —426 ₃	
4625.140	8		21614.91	+0.07	³ P ₂ —408 ₂	
4625.756	4		21612.03			
4626.730	3		21607.48			
4627.591	6		21603.47	-0.14	31 ₅ —529 ₄	
4629.230	4		21595.81	+0.01	24 ₂ —463 ₂	
4629.561	5 <i>b</i>		21594.27	+0.05	22852 ₄ —444 ₃	
4630.139	2		21591.58	+0.10	19826 ₅ —414 ₆	
4630.372	6		21590.49	+0.02	20 ₂ —425 ₁	
4634.786	20	4	21569.93	+0.12	³ G ₄ —380 ₄	
4635.054	4		21568.68	+0.16	23 ₂ —455 ₃	
4636.044	4		21564.07	+0.07	23 ₁ —450 ₂	
4637.102	4	1	21559.15			
4637.857	8		21555.64	-0.03	293 ₂ —50949 ₁	
4638.251	2 <i>b</i>		21553.82	+0.03	18 ₁ —396 ₁	
4639.46	4		21548.2	+0.22	322 ₃ —53 ₄	
4640.270	8		21544.44	+0.12	22476 ₄ —440 ₃	
4641.764	10		21537.50	+0.22	⁵ D ₃ —263 ₂	
				+0.10	20 ₁ —419 ₀	
4642.530	40	2	21533.95	+0.10	13 ₂ —353 ₂	
4643.116	10		21531.23	+0.11	20 ₂ —425 ₃	
4643.446	2		21529.70	+0.13	18 ₂ —396 ₃	
4644.880	5		21523.05	+0.15	19 ₆ —411 ₆	
4645.72	1		21519.16			
4646.135	8		21517.24	+0.02	³ P ₂ —407 ₁	
4651.52	3		21492.33	+0.15	23 ₃ —454 ₂	
4656.72	4		21468.33			
4657.034	4		21466.88	-0.02	31 ₅ —528 ₆	
4657.416	40	2	21465.12	+0.12	⁷ P ₄ — ⁷ D ₅	
4659.867	60	6	21453.83	-0.07	⁵ D ₀ — ⁷ D ₁	
4661.235	8		21447.54	-0.03	22476 ₄ —439 ₅	
4661.975	10		21444.13	-0.02	15 ₃ —369 ₂	
4662.642	2		21441.07	+0.09	28347 ₃ —497 ₄	
4662.94	6		21439.69	+0.23	23 ₂ —454 ₂	
4665.760	4	3 <i>s</i>	21426.74	+0.20	⁵ S ₂ —397 ₂	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
4668.176	2		21415.64	-0.03	305 ₃ [°] -52002 ₃	
4668.460	15		21414.34	-0.01	15 ₃ [°] 368 ₃ [°]	
4668.895	2		21412.35	+0.12	³ P ₁ - 347 ₁ [°]	
				+0.06	³ P ₂ - 406 ₃ [°]	
4671.626	8		21399.83	+0.06	⁵ D ₃ - ⁷ P ₂ [°]	
4672.553	2		21395.59			
4675.090	4		21383.98			
4676.623	20		21376.97	0.00	19535 ₅ - 409 ₅ [°]	
4676.93	2		21375.56			
4677.374	4		21373.54			
4677.690	20		21372.09	-0.01	19826 ₅ - 411 ₄ [°]	
4678.48	1		21368.48			
4679.04	8		21365.92	-0.01	⁵ S ₂ - 396 ₃ [°]	
4680.509	80	8	21359.22	+0.02	⁵ D ₃ - ⁷ D ₃ [°]	
4681.182	5		21356.15	+0.01	⁵ S ₂ - 396 ₁ [°]	
4682.558	6		21349.87	+0.07	⁷ D ₅ - ^e D ₄ [°]	
4683.542	30	1	21345.39	-0.01	19826 ₅ - 411 ₆ [°]	
4686.00	1		21334.2			
4686.373	3		21332.49	+0.02	23 ₃ - 452 ₄ [°]	
4687.118	3		21329.10	+0.03	17 ₃ - 390 ₂ [°]	
4687.612	6		21326.86	+0.03	19 ₄ - 405 ₄ [°]	
4689.168	2		21319.78	+0.13	30 ₂ -51693 ₂ [°]	
4690.237	1		21314.92	-0.04	24 ₂ - 461 ₁ [°]	
4690.62	1		21313.18	+0.12	28204 ₂ - 495 ₂ [°]	
4691.55	5		21308.96	+0.05	26861 ₂ - 481 ₃ [°]	
4692.112	2		21306.40	+0.11	20 ₁ - 417 ₂ [°]	
4693.719	40	2	21299.11	+0.05	⁷ F ₅ - ⁷ D ₄ [°]	
4694.636	6		21294.95	+0.11	18 ₃ - 402 ₃ [°]	
4695.527	2		21290.90	-0.06	32 ₁ - 536 ₂ [°]	
4698.108	8		21279.21	-0.07	20 ₂ - 422 ₁ [°]	
4698.62	10		21276.89	+0.05	19 ₃ - 411 ₂ [°]	
4700.422	15		21268.73	-0.05	⁵ D ₄ - ⁷ P ₃ [°]	
4701.590	4		21263.45	+0.01	19 ₆ - 409 ₅ [°]	
4702.17	2		21260.83			
4702.47	10		21259.47	+0.01	18 ₃ - 402 ₄ [°]	
4705.64	1		21245.15			
4705.834	2		21244.27	+0.08	22476 ₄ - 437 ₄ [°]	
4706.16	8		21242.80	+0.03	³ G ₄ - 376 ₃ [°]	
4709.58	2		21227.38			
4709.75	2		21226.61			
4710.32	6		21224.04	-0.04	27 ₅ - 490 ₅ [°]	
4711.173	12		21220.20	+0.02	19 ₄ - 404 ₅ [°]	
4712.486	15		21214.29	-0.02	14 ₂ - 361 ₁ [°]	
4713.355	2		21210.37	+0.08	299 ₃ - ^e D ₄ [°]	
4713.51	2		21209.68	+0.10	32 ₄ -53345 ₃ [°]	
4713.852	5		21208.14	+0.06	³ H ₄ - 333 ₅ [°]	
4714.507	5		21205.19	+0.02	³ H ₅ - 362 ₅ [°]	
4716.864	8		21194.60	-0.02	³ H ₆ - 382 ₆ [°]	
4718.618	8		21186.72	+0.03	23 ₃ - 451 ₄ [°]	
4720.392	10		21178.76	0.00	³ P ₁ - 344 ₂ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4723.076	2		21166.72	-0.02	28347 ₃ - 495 ₃ [°]	
4725.118	20	2	21157.57	+0.01	³ P ₂ - 404 ₁ [°]	
4725.592	2		21155.45	-0.03	³ P ₀ - 306 ₁ [°]	
4726.274	5		21152.40	+0.01	17 ₄ - 382 ₄ [°]	
4728.768	4		21141.24	-0.02	23 ₁ - 445 ₂ [°]	
4729.648	20	2	21137.31	+0.01	³ G ₃ - 344 ₂ [°]	
4730.695	4		21132.63	+0.02	22852 ₄ - 439 ₄ [°]	
4731.027	2		21131.15			
4736.036	3		21108.80			
4736.95	2 <i>b</i>		21104.72	+0.20	342 ₃ - 55 ₄ [°]	
4737.86	2 <i>b</i>		21100.67	+0.30	18 ₁ - 391 ₁ [°]	
4738.152	4		21099.37	0.00	17 ₄ - 382 ₃ [°]	
4741.498	4		21084.48	+0.02	23 ₃ - 450 ₃ [°]	
4745.586	8 <i>b</i>		21066.32	-0.04	18 ₂ - 391 ₁ [°]	
4746.785	3 <i>b</i>		21061.00			
4747.964	2		21055.77	-0.04	29853 ₄ - 509 ₄ [°]	
4749.697	5		21048.09	+0.03	19535 ₅ - 405 ₄ [°]	
4749.909	1		21047.15	-0.11	17 ₃ - 387 ₄ [°]	
4751.363	6		21040.71	-0.01	19 ₃ - 408 ₂ [°]	
4752.200	8		21037.00	+0.01	18 ₃ - 400 ₂ [°]	
4752.584	8		21035.30	-0.04	³ P ₁ - 343 ₁ [°]	
4753.388	6		21031.74	0.00	23 ₂ - 450 ₃ [°]	
4756.98	3		21015.86	+0.07	³ P ₂ - 402 ₃ [°]	
4757.542	30	3	21013.38	0.00	⁷ S ₃ - ⁷ D ₂ [°]	
4757.781	8		21012.32	-0.05	³ H ₅ - 360 ₄ [°]	
4758.197	10		21010.48	-0.01	23 ₃ - 449 ₄ [°]	
4759.340	2 <i>b</i>		21005.44	-0.08	³ G ₃ - 343 ₃ [°]	
4760.714	3		20999.38			
4761.02	3		20998.03	-0.01	22852 ₄ - 438 ₃ [°]	
4765.63	2		20977.72	-0.01	19 ₄ - 402 ₄ [°]	
4767.782	8		20968.25	+0.05	29 ₇ - 504 ₆ [°]	
4768.057	3		20967.04	+0.05	14 ₂ - 359 ₃ [°]	
4770.724	3		20955.32	+0.15	⁷ D ₂ - ⁷ D ₂ [°]	
4772.492	8		20947.56	+0.14	18 ₁ - 390 ₂ [°]	
4773.89	15		20941.42	+0.01	19535 ₅ - 404 ₅ [°]	
4777.02	2		20927.70			
4780.29	2		20913.40	-0.01	18 ₂ - 390 ₂ [°]	
4780.50	6		20912.47	-0.01	23 ₁ - 443 ₂ [°]	
4783.694	2		20898.50	+0.06	23 ₁ - 443 ₁ [°]	
4784.72	1		20894.02	-0.09	17 ₄ - 380 ₄ [°]	
4787.206	2 <i>b l</i>		20883.17			
4787.925	10		20880.03	-0.01	³ G ₃ - 342 ₃ [°]	
4788.421	10		20877.87	+0.02	³ G ₄ - 373 ₅ [°]	
4792.806	2		20858.77	-0.03	⁷ D ₄ - ^e D ₃ [°]	
4797.030	3		20840.40	-0.04	28 ₅ - 490 ₅ [°]	
4797.546	10		20838.16	-0.01	19 ₃ - 406 ₃ [°]	
4799.907	25	1	20827.91	+0.03	19 ₆ - 404 ₅ [°]	
4806.31	4 <i>b b l</i>		20800.17	-0.18	28347 ₃ - 491 ₄ [°]	
4807.380	20		20795.54	-0.08	³ H ₄ - 329 ₃ [°]	
4809.642	3		20785.76			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
4810.887	3		20780.38	+0.12	28291 ₃ - 490 [°] ₃	
4812.58	5		20773.07	-0.05	³ G ₃ - 341 [°] ₄	
4816.105	6		20757.86	-0.08	³ P ₂ - 400 [°] ₂	
4816.845	8 b		20754.67	+0.26	23 ₂ - 447 [°] ₁	
				-0.13	27 ₄ - 479 [°] ₄	
4817.675	6		20751.10	-0.01	20 ₂ - 417 [°] ₂	
4818.358	3		20748.16	-0.24	346 [°] ₄ - 55 ₅	
4826.943	2		20711.26	-0.06	20 ₂ - 416 [°] ₃	
4835.01	15		20676.70	+0.02	20 ₁ - 411 [°] ₂	
4837.48	8		20666.14	-0.03	³ H ₄ - 328 [°] ₄	
				-0.06	23 ₃ - 445 [°] ₂	
4843.810	400	20	20639.14	0.00	⁵ D ₂ - ⁷ D [°] ₂	
4844.30	6		20637.05	+0.09	³ P ₁ - 339 [°] ₂	
				+0.03	27 ₄ - 478 [°] ₅	
4847.754	8	a	20622.34	+0.05	15 ₃ - 360 [°] ₄	
4848.724	3		20618.22	-0.08	28898 ₂ - 495 [°] ₂	
4853.831	5 n		20596.53	-0.05	20 ₀ - 407 [°] ₁	
4854.082	40		20595.46	-0.04	³ G ₃ - 339 [°] ₂	
4858.596	12		20576.33	-0.05	13 ₂ - 343 [°] ₃	
4860.774	4		20567.11	+0.04	17 ₄ - 376 [°] ₃	
4861.84	3 c		20562.6			
4862.89	2		20558.16	-0.06	17 ₃ - 382 [°] ₄	
4863.062	15		20557.43	+0.01	22476 ₄ - 430 [°] ₅	
				-0.01	⁷ D [°] ₄ - ⁷ D [°] ₅	
4864.98	3 c		20549.33	+0.05	28 ₁ - 492 [°] ₂	
4865.33	3		20547.85			
4866.55	3		20542.70			
4868.025	15		20536.47	-0.03	305 [°] ₃ - e ⁵ D ₄	
4871.884	3 b		20520.21	+0.01	23 ₁ - 439 [°] ₂	
4872.790	10 b		20516.39	-0.02	20 ₂ - 414 [°] ₃	
4874.055	3 b		20511.07			
4875.424	8		20505.31	+0.11	17 ₃ - 382 [°] ₃	
4876.690	6		20499.98	-0.12	26 ₂ - 473 [°] ₃	
4878.28	20		20493.30	-0.01	18 ₁ - 385 [°] ₀	
4879.686	4		20487.40	-0.03	⁷ P [°] ₃ - ⁷ D ₄	
4880.713	8		20483.09	-0.09	15 ₃ - 359 [°] ₃	
4882.122	2		20477.18			
4882.528	3		20475.47	-0.04	27 ₄ - 476 [°] ₄	
4882.744	3		20474.57	-0.13	259 [°] ₁ - e ⁵ D ₁	
4883.520	3		20471.31			
4884.541	4		20467.03	+0.01	31 ₅ - 518 [°] ₄	
4885.225	5		20464.17	-0.05	23 ₂ - 444 [°] ₃	
4886.191	2		20460.12	-0.08	291 [°] ₂ - e ⁵ D ₃	
4886.899	200	20	20457.16	+0.01	⁵ D ₄ - ⁷ F [°] ₅	
4887.770	4		20453.51	+0.05	³ P ₂ - 397 [°] ₂	
4888.371	20		20451.00	+0.10	13 ₂ - 342 [°] ₃	
4890.273	25		20443.04	-0.01	³ G ₄ - 368 [°] ₃	
4890.602	1 b		20441.67	0.00	19 ₃ - 402 [°] ₃	
4890.872	10		20440.54	-0.02	20 ₁ - 408 [°] ₂	
4891.142	2		20439.41	-0.06	23 ₆ - 439 [°] ₅	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
4891.621	10		20437.41	-0.01	23 ₃ - 443 ₂ [°]	
4892.422	40		20434.06	0.00	22476 ₄ - 429 ₄ [°]	
4893.165	3		20430.96	-0.02	29853 ₄ - 502 ₄ [°]	
4896.518	2		20416.97			
4896.806	2		20415.77	-0.03	276 ₂ - <i>e</i> ⁵ <i>D</i> ₂	
4897.718	1		20411.97	-0.26	³ <i>P</i> ₁ - 347 ₁ [°]	
4898.682	2		20407.95	+0.02	19826 ₅ - 402 ₄ [°]	
4899.068	4		20406.34	+0.05	19 ₃ - 402 ₄ [°]	
4901.033	2		20398.16	-0.04	22852 ₄ - 432 ₄ [°]	
4902.073	2		20393.84	-0.07	26 ₂ - 472 ₁ [°]	
4902.320	25		20392.81	-0.04	³ <i>P</i> ₂ - 396 ₃ [°]	
4902.950	20		20390.19	+0.02	19 ₄ - 396 ₃ [°]	
4903.157	4		20389.32	0.00	22476 ₄ - 428 ₅ [°]	
4904.32	3 <i>b b</i>	3 <i>l s</i>	20384.50	-0.20	23 ₂ - 443 ₂ [°]	
				+0.30	28291 ₃ - 486 ₄ [°]	
4904.67	1		20383.04	-0.02	³ <i>P</i> ₂ - 396 ₁ [°]	
4905.487	5		20379.64	+0.02	27 ₄ - 475 ₃ [°]	
4908.894	3		20365.50	-0.07	318 ₂ -52183 ₂ [°]	
4910.744	20		20357.83	+0.02	19 ₄ - 396 ₅ [°]	
4912.192	4		20351.82	-0.05	17 ₃ - 380 ₃ [°]	
4913.113	3		20348.01			
4914.331	5		20342.97	+0.03	20 ₁ - 407 ₁ [°]	
4916.178	30		20335.32	-0.06	14 ₂ - 353 ₂ [°]	
4916.986	2		20331.98	-0.06	29853 ₄ - 501 ₃ [°]	
4917.844	3		20328.44	-0.04	28347 ₃ - 486 ₄ [°]	
4919.807	2		20320.33			
4920.802	1		20316.21			
4922.496	3		20309.22	-0.04	29479 ₄ - 497 ₄ [°]	
4922.926	15		20307.45	+0.03	⁷ <i>D</i> ₃ - ⁷ <i>D</i> ₃	
4924.561	15	<i>a</i>	20300.71	+0.05	³ <i>H</i> ₆ - 373 ₅ [°]	
4925.112	2 <i>b</i>		20298.44	0.00	362 ₅ -56573 ₅ [°]	
4926.711	6		20291.85	-0.13	28 ₆ - 486 ₆ [°]	
4927.510	2		20288.56	-0.02	27 ₅ - 481 ₅ [°]	
4931.551	50	1	20271.93	-0.02	15 ₃ - 357 ₂ [°]	
4932.048	2		20269.90	+0.04	27 ₄ - 474 ₃ [°]	
4932.777	4		20266.90	+0.05	⁷ <i>P</i> ₂ - ⁷ <i>D</i> ₃	
4933.816	5		20262.63	-0.01	293 ₂ - <i>e</i> ⁵ <i>D</i> ₃	
4934.542	2		20259.65	+0.09	32 ₄ - 523 ₅ [°]	
4935.784	2		20254.55	+0.16	34 ₄ - 545 ₃ [°]	
4936.74	2 <i>v</i>	1	20250.63			
4937.73	1		20246.57			
4939.26	2		20240.3	+0.13	318 ₂ -52057 ₁ [°]	
4940.09	4		20236.9	-0.02	20 ₀ - 404 ₁ [°]	
4941.942	3		20229.31	-0.05	24 ₂ - 450 ₂ [°]	
4943.21	2 <i>b</i>		20224.12			
4945.089	2 <i>b b</i>		20216.44	+0.10	351 ₄ - 55 ₄ [°]	
4947.186	3		20207.87			
4948.587	10		20202.14	-0.01	17 ₄ - 373 ₅ [°]	
4952.790	3		20185.00	+0.05	19535 ₅ - 397 ₄ [°]	
4953.075	15		20183.84	+0.02	19 ₃ - 400 ₂ [°]	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
4953.713	2		20181.24	-0.06	22852 ₄ - 430 ₅ [°]	
4956.61	2 <i>b</i>		20169.45			
4957.366	30.		20166.37	+0.02	13 ₂ - 339 ₂ [°]	
4959.600	3		20157.29	+0.09	29479 ₄ - 496 ₄ [°]	
4960.432	1		20153.91			
4961.514	5		20149.52	+0.06	27 ₁ - 478 ₁ [°]	
4961.91	2		20147.90	-0.02	27 ₄ - 473 ₃ [°]	
4962.288	8		20146.37	0.00	27 ₄ - 473 ₄ [°]	
4967.685	4		20124.48	-0.03	22476 ₄ - 426 ₃ [°]	
4968.428	4		20121.47	-0.03	20 ₂ - 411 ₂ [°]	
4969.110	2		20118.71	-0.11	27 ₅ - 479 ₄ [°]	
4970.68	3		20112.36	-0.01	29853 ₄ - 499 ₃ [°]	
4972.56	30		20104.75	-0.02	19 ₄ - 393 ₅ [°]	
4974.024	2		20098.83			
4975.260	3		20093.84			
4976.00	4		20090.85	-0.07	23 ₃ - 440 ₃ [°]	
4976.333	10		20089.51	-0.03	18 ₂ - 382 ₃ [°]	
4977.253	15		20085.80	-0.06	⁷ P ₄ - ⁷ D ₄ [°]	
4977.706	4		20083.97	+0.01	31 ₅ - 514 ₄ [°]	
4979.840	50		20075.36	0.00	⁵ S ₂ - 383 ₁ [°]	
4981.47	2		20068.79			
4981.88	2		20067.14	-0.04	28 ₁ - 487 ₁ [°]	
4982.593	200	4	20064.27	-0.03	⁵ D ₀ - ⁷ F ₁ [°]	
4983.529	15		20060.50	0.00	19 ₆ - 397 ₇ [°]	
4984.16	5		20057.96	+0.02	22852 ₄ - 429 ₄ [°]	
4984.698	20		20055.80	+0.06	18 ₃ - 390 ₂ [°]	
4986.92	80		20046.86	+0.02	15 ₅ - 351 ₄ [°]	
4987.330	3 <i>b</i>		20045.21	+0.07	23 ₃ - 439 ₂ [°]	
4988.050	3 <i>b</i>		20042.32			
4989.08	15		20038.18	-0.02	23 ₂ - 440 ₃ [°]	
4989.87	5		20035.01	-0.01	29479 ₄ - 495 ₃ [°]	
4990.82	1		20031.19			
4991.85	2		20027.06	+0.10	28291 ₃ - 483 ₂ [°]	
4992.374	4		20024.96	0.00	346 ₄ - 54 ₃ [°]	
4994.083	6		20018.11			
4995.29	20		20013.27	+0.07	22852 ₄ - 428 ₅ [°]	
5000.49	4		19992.46	+0.04	23 ₂ - 439 ₂ [°]	
5001.072	5		19990.13			
5002.79	12		19983.27	-0.01	20 ₁ - 404 ₁ [°]	
5003.933	2		19978.70	-0.11	28347 ₃ - 483 ₃ [°]	
5005.216	4		19973.58	+0.02	22476 ₄ - 424 ₄ [°]	
5005.392	6		19972.88	-0.02	17 ₃ - 376 ₃ [°]	
5006.150	60	6	19969.86	-0.01	⁵ D ₄ - ⁷ D ₃ [°]	
5007.221	8		19965.58	+0.07	19 ₆ - 396 ₅ [°]	
5008.110	4		19962.04	+0.06	313 ₁ -51285 ₀ [°]	
5009.874	4		19955.01			
5010.366	5 <i>b</i>		19953.05			
5011.454	3		19948.72			
5011.768	1		19947.47	-0.08	24 ₂ - 447 ₁ [°]	
5012.29	3 <i>b b</i>		19945.40	+0.22	322 ₃ - 52 ₂ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
5013.436	10		19940.83	-0.02	20 ₂ - 409 ₃ [°]	
5013.980	4		19938.67	+0.09	29479 ₄ - 494 ₃ [°]	
				-0.04	305 ₃ - 50 ₂	
5014.57	8		19936.32	+0.11	18 ₂ - 380 ₃ [°]	
5015.304	50	5	19933.41	+0.02	⁵ D ₃ - ⁷ F ₄ [°]	
5017.212	12		19925.83	-0.07	⁵ S ₂ - 382 ₃ [°]	
5018.504	4		19920.69	-0.07	23 ₃ - 438 ₃	
5019.520	3		19916.66			
5021.324	5	2 s	19909.51	-0.31	23 ₂ - 438 ₁ [°]	
5022.496	5		19904.86	-0.08	28 ₅ - 481 ₅	
5023.423	2 b		19901.20			
5025.270	5		19893.88	-0.04	19826 ₅ - 397 ₄ [°]	
5025.684	6	5 b	19892.24	-0.04	19 ₃ - 397 ₄ [°]	
5027.44	5		19885.29	-0.09	20 ₂ - 408 ₂ [°]	
5028.934	20		19879.38	+0.04	19 ₃ - 397 ₂ [°]	
				+0.04	32 ₄ - 520 ₃	
				-0.04	281 ₁ - 48 ₂	
5029.112	6		19878.68	+0.01	28291 ₃ - 481 ₃ [°]	
5029.498	2 b		19877.15			
5031.813	15		19868.01	-0.03	23 ₂ - 438 ₃ [°]	
5034.364	2 b		19857.94	-0.06	28 ₆ - 482 ₇ [°]	
5035.75	4		19852.47	+0.05	341 ₄ - 53 ₅	
5035.998	5		19851.50	-0.05	15 ₃ - 353 ₂ [°]	
5039.028	10		19839.56	+0.03	27 ₅ - 476 ₄ [°]	
5040.360	60	2	19834.32	+0.04	³ P ₁ - 331 ₂ [°]	
5041.41	3 b		19830.19			
5041.768	4 b		19828.78	-0.06	266 ₀ - ^e ⁵ D ₁	
5042.482	3		19825.97	-0.03	19535 ₅ - 393 ₅ [°]	
5044.32	20		19818.74	+0.01	19 ₃ - 396 ₃ [°]	
5044.908	4	a	19816.44			
5051.41	1 c		19790.93	+0.14	23 ₃ - 437 ₄ [°]	
5052.23	30		19787.72	-0.04	20 ₂ - 407 ₁ [°]	
5053.276	400	40	19783.62	+0.01	⁵ D ₁ - ⁷ D ₁ [°]	
5054.596	150	15	19778.46	-0.01	⁵ D ₁ - ⁷ F ₂ [°]	
5055.516	50	1	19774.86	+0.03	22476 ₄ - 422 ₃ [°]	
5056.094	4		19772.60	+0.03	⁵ S ₂ - 380 ₃ [°]	
5056.50	2		19771.02			
5056.84	2		19769.68			
5057.45	2		19767.30	-0.05	17 ₄ - 368 ₃ [°]	
5058.006	30		19765.12	0.00	17 ₃ - 374 ₂ [°]	
5059.342	2		19759.90			
5062.08	2		19749.20			
5063.142	5		19745.07			
5063.638	8		19743.14	-0.01	14 ₂ - 347 ₁ [°]	
5064.807	5		19738.58			
5065.682	4		19735.17	-0.01	28 ₅ - 479 ₄ [°]	
5066.573	3		19731.70			
5067.19	2		19729.30			
5069.118	120	10	19721.80	+0.02	⁵ D ₂ - ⁷ F ₃ [°]	
5071.515	6		19712.47	0.00	19 ₆ - 393 ₅ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
5071.735	150	10	19711.62	0.00	${}^7F_{6-}$ 7D_5	
5072.504	3		19708.63	+0.03	29479 ₄₋ 491 ₅	
5077.010	10		19691.14	+0.01	18 ₁₋ 377 ₁	
5079.204	4		19682.63	-0.20	20 ₂₋ 406 ₃	
5079.922	3		19679.85	+0.03	22852 ₄₋ 425 ₄	
5080.72	10		19676.76	+0.02	28291 ₃₋ 479 ₄	
5082.00	3		19671.80			
5082.722	4		19669.01	-0.07	28 ₁₋ 483 ₁	
5083.142	4		19667.38	+0.07	27 ₁₋ 473 ₂	
5085.876	5 <i>bb</i>		19656.81	+0.02	15 ₃₋ 351 ₄	
5089.982	20		19640.96	-0.02	27 ₄₋ 468 ₅	
5093.92	2		19625.76	+0.17	313 ₁₋ 50949 ₁	
5094.173	6		19624.80			
5095.02	2 <i>c</i>		19621.55	-0.15	371 ₄₋ 56768 ₅	
5096.126	2		19617.28	-0.12	28 ₅₋ 478 ₅	
5096.50	2		19615.84	+0.10	28204 ₂₋ 478 ₁	
5098.25	2		19609.10	+0.08	${}^3G_{3-}$ 329 ₃	
5101.276	3 <i>b</i>		19597.47	+0.03	22852 ₄₋ 424 ₄	
5104.643	2		19584.55	-0.05	23 ₃₋ 435 ₂	
5104.885	1		19583.62	-0.04	20 ₁₋ 400 ₂	
5105.144	4		19582.62	-0.10	313 ₁₋ 50906 ₁	
5105.478	20	1	19581.34	0.00	${}^7D_{5-}$ 7D_5	
5106.411	4		19577.76	-0.08	24 ₂₋ 443 ₂	
5107.78	5		19572.52			
5108.25	2		19570.72			
5110.36	15		19562.64	-0.03	${}^3H_{5-}$ 346 ₄	
5111.774	10		19557.23	-0.01	18 ₂₋ 376 ₃	
5113.90	3 <i>bb</i>		19549.1	-0.22	23 ₆₋ 430 ₅	
5114.59	3	3 <i>s</i>	19546.46	-0.13	34 ₄₋ 538 ₄	
5115.29	4		19543.78	+0.04	28 ₁₋ 482 ₀	
5117.612	20		19534.91	-0.06	19826 ₅₋ 393 ₅	
5118.418	8		19531.84	-0.04	23 ₂₋ 435 ₂	
5120.553	20		19523.70	-0.04	373 ₅₋ 56 ₆	
5123.625	1		19511.99	+0.13	${}^3G_{4-}$ 359 ₃	
5124.234	40		19509.67	-0.01	14 ₂₋ 344 ₂	
5125.32	1		19505.54			
5127.88	4 <i>c</i>		19495.80	+0.02	23 ₂₋ 434 ₃	
5128.49	20		19493.48	0.00	${}^5S_{2-}$ 377 ₁	
5128.836	6		19492.17	-0.03	19 ₄₋ 387 ₄	
5129.81	25		19488.47	-0.05	22 ₀₋ 422 ₁	
5130.114	50		19487.31	0.00	${}^7D_{2-}$ 7D_1	
5131.318	10		19482.74			
5132.11	2 <i>c</i>		19479.72	+0.16	${}^3G_{3-}$ 328 ₄	
5133.11	20		19475.93			
5136.08	5 <i>bb</i>		19464.66	+0.08	32 ₄₋ 516 ₃	
5136.70	12		19462.34	-0.08	20 ₀₋ 396 ₁	
5137.63	3		19458.80	-0.08	373 ₅₋ 56768 ₅	
5137.798	6		19458.17	+0.03	28 ₆₋ 478 ₅	
5138.400	25		19455.88	-0.01	28 ₅₋ 476 ₄	
5141.248	12		19445.11	-0.07	17 ₃₋ 371 ₄	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
5145.453	8	4	19429.22			
5145.774	25		19428.00	-0.10	20 ₂ - 404 ₁ [°]	
5147.72	3 <i>c</i>		19420.67	+0.03	329 ₃ - 52 ₄ [°]	
5148.727	6		19416.86	-0.13	31 ₅ - 508 ₅ [°]	
5149.765	3		19412.95			
5150.252	4		19411.11	-0.12	27 ₄ - 466 ₄ [°]	
5150.79	5		19409.09	+0.17	27 ₁ - 470 ₂ [°]	
5151.286	3		19407.22			
5153.555	40		19398.67	-0.04	22852 ₄ - 422 ₃ [°]	
5153.880	20		19397.45	0.00	28291 ₃ - 476 ₄ [°]	
5154.462	30		19395.26	0.00	22476 ₄ - 418 ₄ [°]	
5154.904	15		19393.60	0.00	⁵ S ₂ - 376 ₃ [°]	
5156.722	4		19386.76			
5157.618	4		19383.39	+0.08	18 ₁ - 374 ₂ [°]	
5158.187	15		19381.25	+0.03	23 ₆ - 428 ₅ [°]	
5159.095	2		19377.84	-0.06	14 ₂ - 343 ₃ [°]	
5159.564	3		19376.08			
5160.00	5		19374.44	-0.09	24 ₃ - 439 ₄ [°]	
5160.322	4		19373.24			
5161.06	4		19370.46			
5162.146	8		19366.39	+0.13	14 ₂ - 343 ₁ [°]	
5162.874	4		19363.66	-0.01	13 ₂ - 331 ₂ [°]	
5163.48	4		19361.39			
5166.648	2		19349.52	+0.16	18 ₂ - 374 ₂ [°]	
5168.78	2 <i>b b</i>		19341.53	+0.03	346 ₄ - 53 ₅ [°]	
5170.65	2		19334.54			
5172.626	3		19327.15	-0.03	329 ₃ -52284 ₃ [°]	
5173.64	4		19323.36			
5174.31	5		19320.86	-0.06	23 ₃ - 432 ₄ [°]	
5175.732	6		19315.55	+0.10	32 ₁ -51693 ₂ [°]	
5177.76	8		19308.00	-0.12	28 ₅ - 475 ₆ [°]	
5179.51	10		19301.46	-0.10	28291 ₃ - 475 ₃ [°]	
5180.04	3		19299.49			
5180.57	1 <i>b</i>		19297.53	-0.05	23 ₃ - 432 ₂ [°]	
5181.94	5 <i>b</i>		19292.41	-0.14	27 ₄ - 465 ₅ [°]	
5182.30	3 <i>b</i>	2	19291.07			
5183.586	6		19286.29	-0.04	20 ₂ - 402 ₃ [°]	
5183.965	40		19284.88	-0.01	18 ₃ - 382 ₄ [°]	
5185.52	2		19279.10	-0.08	20 ₁ - 397 ₂ [°]	
5187.537	6		19271.60	+0.01	28898 ₂ - 481 ₃ [°]	
5188.867	10	1	19266.66	+0.06	³ H ₆ - 362 ₅ [°]	
5189.516	3		19264.25	-0.13	373 ₅ -56573 ₅ [°]	
5192.705	40		19252.42	0.00	14 ₂ - 342 ₃ [°]	
5195.63	40		19241.58	-0.04	259 ₁ - <i>e</i> ⁵ D ₀	
5196.49	9		19238.40	+0.07	28204 ₂ - 474 ₂ [°]	
5198.28	5		19231.78	-0.09	18 ₃ - 382 ₃ [°]	
5199.96	2		19225.55	-0.07	329 ₃ - 52 ₂ [°]	
5201.44	4		19220.09	-0.13	29853 ₄ - 490 ₅ [°]	
5202.11	2		19217.63	-0.03	22476 ₄ - 416 ₃ [°]	
5203.25	10	2	19213.39	-0.04	19535 ₅ - 387 ₄ [°]	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
5204.52	12	3	19208.71	-0.07	20 ₁ - 396 ₁ [°]	
5205.18	4		19206.30	-0.08	26 ₂ - 460 ₃ [°]	
5206.18	12	3	19202.60	+0.03	19 ₃ - 390 ₂ [°]	
5207.78	2		19196.70	-0.06	29479 ₄ - 486 ₄ [°]	
5209.12	5		19191.76	-0.04	28291 ₃ - 474 ₃ [°]	
5210.74	1		19185.78	-0.04	⁵ S ₂ - 374 ₂ [°]	
5212.34	3		19179.88	+0.01	13 ₂ - 329 ₃ [°]	
5212.81	16	6	19178.17	-0.13	⁷ D ₄ - ⁷ D ₄	
5214.175	12		19173.15	-0.03	17 ₃ - 368 ₃ [°]	
5215.55	3		19168.09	0.00	17 ₄ - 362 ₅ [°]	
5218.194	4		19158.38	-0.03	354 ₃ - 54 ₃	
5218.432	10		19157.51	-0.03	28204 ₂ - 473 ₃ [°]	
5219.22	3		19154.61	-0.16	32 ₄ - 512 ₅ [°]	
5219.56	2		19153.37	-0.03	346 ₄ - 53 ₄	
5220.354	4b		19150.45	-0.20	28291 ₃ - 474 ₂ [°]	
5224.27	4		19136.10	+0.02	28347 ₃ - 474 ₃ [°]	
5224.657	250	25	19134.67	+0.01	⁵ D ₃ - ⁷ D ₂ [°]	
5229.127	25		19118.29	-0.12	23 ₁ - 425 ₁ [°]	
5230.246	2		19114.25			
5233.523	150		19102.26	-0.02	³ P ₂ - 383 ₁ [°]	
5239.092	4		19081.96	-0.08	27 ₅ - 469 ₄ [°]	
5239.786	60		19079.43	-0.03	³ P ₁ - 323 ₀ [°]	
5240.782	15		19075.81	+0.05	³ G ₄ - 355 ₅ [°]	
5242.56	40		19069.34	-0.06	305 ₃ - e ⁵ D ₃	
5242.98	250		19067.81	-0.03	³ G ₄ - 354 ₃ [°]	
5243.996	5b		19064.11			
5245.686	4		19057.97	-0.05	362 ₅ - 55 ₄	
5247.417	25		19051.70	-0.05	³ H ₅ - 341 ₄ [°]	
5249.045	3		19045.78	-0.13	28291 ₃ - 473 ₂ [°]	
5250.131	1b b		19041.84	+0.08	331 ₂ - 52 ₂	
5250.406	12		19040.84	0.00	26 ₂ - 459 ₂ [°]	
5254.542	100		19025.85	0.00	15 ₃ - 344 ₂ [°]	
5255.396	120		19022.76	+0.01	22476 ₄ - 414 ₃ [°]	
5259.342	300		19008.49	-0.02	⁷ P ₃ - ⁷ D ₃	
5262.818	3		18995.93			
5263.215	100		18994.50	-0.08	23 ₁ - 424 ₂ [°]	
5267.054	6		18980.66	0.00	23 ₃ - 429 ₄ [°]	
5268.550	80		18975.27	-0.02	17 ₄ - 360 ₄ [°]	
5269.326	100		18972.48	-0.04	17 ₃ - 366 ₂ [°]	
5274.787	15		18952.83	+0.01	³ P ₂ - 382 ₃	
5275.529	150		18950.17	+0.03	19 ₄ - 382 ₃ [°]	
5278.59	20		18939.18	-0.02	291 ₃ - e ⁵ D ₂	
5279.81	5b		18934.81			
5281.21	5		18929.79			
5282.646	4b		18924.65			
5283.274	15		18922.40	0.00	19826 ₅ - 387 ₄ [°]	
5283.732	4		18920.76	0.00	19 ₃ - 387 ₄ [°]	
5284.077	5		18919.52			
5285.52	5		18914.35			
5287.017	3b		18908.64			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
5288.505	3		18903.68	-0.12	24 ₃ - 435 [°] ₂	
5290.637	4		18896.06	+0.10	30 ₂ - 492 [°] ₂	
5290.774	15		18895.57	+0.01	31 ₅ - 502 [°] ₄	
5292.486	2		18889.46	0.00	³ G ₃ - 322 [°] ₃	
5293.034	20		18887.50			
5294.449	5		18882.46	-0.02	291 [°] ₂ - e ⁵ D ₂	
5295.252	6		18879.59			
5296.462	20		18875.28	+0.08	28204 ₂ - 470 [°] ₂	
5298.585	8		18867.72	+0.02	24 ₃ - 434 [°] ₃	
5302.378	15		18854.22	+0.02	27 ₄ - 460 [°] ₃	
5305.939	12		18841.57	+0.03	22852 ₄ - 416 [°] ₃	
5307.459	15		18836.17	+0.01	17 ₄ - 359 [°] ₃	
5308.036	4		18834.12	+0.02	276 [°] ₂ - ⁷ D ₃	
5310.37	4		18825.85			
5311.353	20		18822.36	-0.06	27 ₅ - 466 [°] ₆	
				-0.06	29853 ₄ - 486 [°] ₄	
5311.64	1		18821.34	+0.01	18 ₁ - 369 [°] ₂	
5312.282	5		18819.07			
5313.124	6 <i>b</i>		18816.09	+0.04	26 ₂ - 456 [°] ₃	
5314.384	8 <i>b</i>		18811.63			
5316.037	5 <i>b</i>		18805.78			
5317.831	15		18799.43	-0.06	³ P ₂ - 380 [°] ₃	
5318.862	40	1	18795.79	+0.01	276 [°] ₂ - e ⁵ D ₁	
5320.604	10		18789.64	-0.08	29 ₇ - 482 [°] ₇	
5321.282	3 <i>b</i>		18787.24	-0.08	18 ₂ - 369 [°] ₂	
5325.769	6 <i>b</i>		18771.41			
5326.575	1 <i>b</i>		18768.57	-0.02	15 ₃ - 342 [°] ₃	
5326.77	1		18767.89	-0.09	33 ₅ - 520 [°] ₄	
5327.052	4		18766.89	-0.04	380 [°] ₄ -56768 ₅	
5329.711	5		18757.53	+0.01	18 ₂ - 368 [°] ₃	
5332.57	4 <i>b</i>		18747.47			
5336.23	3		18734.61			
5337.348	40		18730.69	+0.05	261 [°] ₃ - ⁷ D ₂	
5339.260	8		18723.98	-0.02	20 ₂ - 397 [°] ₂	
5339.940	10		18721.60	-0.05	28 ₁ - 474 [°] ₂	
5343.002	6		18710.87			
5344.84	5 <i>b</i>		18704.44			
5345.887	3 <i>b</i>		18700.77			
5346.193	4 <i>b</i>		18699.70	+0.13	18 ₃ - 376 [°] ₃	
5346.691	5		18697.96	+0.02	30 ₂ - 490 [°] ₃	
5348.058	5 <i>b</i>		18693.18			
5348.932	60	2	18690.13	+0.06	⁷ P ₂ - ⁷ D ₂	
5349.854	8		18686.90	+0.02	33 ₅ - 519 [°] ₆	
5350.434	40		18684.88	-0.04	293 [°] ₂ - e ⁵ D ₂	
5351.892	30		18679.79	-0.01	277 [°] ₁ - e ⁵ D ₁	
5354.446	50		18670.88	+0.04	³ P ₀ - 281 [°] ₁	
5355.25	25		18668.08	-0.03	19535 ₅ - 382 [°] ₆	
5356.601	20		18663.37	-0.02	20 ₂ - 396 [°] ₃	
5357.094	40		18661.65	-0.02	15 ₃ - 341 [°] ₄	
5358.32	25		18657.38	+0.11	27 ₁ - 463 [°] ₂	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
5361.41	15		18646.63	0.00	22852 ₄ - 414 ₃ [°]	
5362.864	12		18641.57	+0.13	34 ₄ - 529 ₃ [°]	
5363.337	5 <i>b</i>		18639.93	-0.03	28291 ₃ - 469 ₄ [°]	
5363.716	2		18638.61			
5365.085	2		18633.86			
5367.124	2 <i>b</i>		18626.78			
5368.014	5		18623.68	0.00	⁵ S ₂ - 369 ₂ [°]	
5368.685	40	1	18621.36	0.00	28 ₅ - 468 ₅ [°]	
5369.534	1 <i>b</i>		18618.41	+0.02	23 ₂ - 426 ₃ [°]	
5370.004	4 <i>b</i>		18616.79	+0.01	24 ₃ - 432 ₂ [°]	
5371.967	2		18609.98			
5372.828	25		18607.00	+0.06	⁷ P ₄ - ⁷ D ₃ [°]	
5374.138	40	1	18602.47	+0.06	20 ₁ - 390 ₂ [°]	
				-0.07	23 ₃ - 425 ₄ [°]	
5374.418	15		18601.50			
5376.117	2 <i>b b</i>		18595.62			
5376.603	2 <i>b b</i>		18593.94	+0.06	⁵ S ₂ - 368 ₃ [°]	
5377.488	3		18590.88	+0.01	18 ₁ - 366 ₂ [°]	
5379.438	10 <i>b</i>		18584.14	+0.08	23 ₃ - 425 ₃ [°]	
5381.992	10		18575.32	0.00	27 ₄ - 457 ₅ [°]	
5382.813	4 <i>b</i>		18572.49	+0.07	380 ₄ -56573 ₅ [°]	
5388.004	40	2	18554.59	+0.01	19 ₆ - 382 ₆ [°]	
5388.584	15	1	18552.59	+0.03	263 ₂ - ⁷ D ₂ [°]	
5389.661	3		18548.89			
5391.070	30		18544.04	-0.02	⁵ D ₄ - ⁷ F ₄ [°]	
5392.54	2		18539.0			
5392.78	4		18538.16			
5393.81	2		18534.62	-0.05	28 ₁ - 472 ₁ [°]	
5394.736	10		18531.44	+0.10	23 ₂ - 425 ₃ [°]	
5396.506	5		18525.36			
5397.020	25		18523.60	0.00	23 ₁ - 419 ₂ [°]	
5397.948	30	1	18520.41	+0.01	³ P ₂ - 377 ₁ [°]	
5398.212	8		18519.51	-0.01	23 ₃ - 424 ₂ [°]	
5399.388	1		18515.47			
5399.602	5 <i>b</i>		18514.74	+0.17	28291 ₃ - 468 ₂ [°]	
5400.289	8		18512.36	0.00	26 ₂ - 453 ₁ [°]	
5400.936	15		18510.17	-0.05	23 ₁ - 419 ₀ [°]	
5402.296	3		18505.51	+0.02	18 ₁ - 365 ₀ [°]	
5402.628	1		18504.37	-0.14	34 ₄ - 528 ₃ [°]	
5404.322	25		18498.57	0.00	³ H ₆ - 355 ₅ [°]	
5406.302	15		18491.79	0.00	18 ₃ - 374 ₂ [°]	
5408.136	1		18485.52			
5408.576	15		18484.02	-0.03	15 ₃ - 339 ₂ [°]	
5412.055	1 <i>b</i>		18472.14	+0.08	34 ₄ - 527 ₅ [°]	
5412.960	6		18469.05	-0.02	³ G ₃ - 318 ₂ [°]	
5413.832	10		18466.07	-0.04	19535 ₅ - 380 ₄ [°]	
5414.826	1 <i>b</i>		18462.68	-0.10	28898 ₂ - 473 ₃ [°]	
5415.528	12		18460.29	-0.02	13 ₂ - 322 ₃ [°]	
5415.974	3		18458.77	+0.01	368 ₃ - 55 ₄ [°]	
5419.390	40		18447.14	-0.01	22476 ₄ - 409 ₃ [°]	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
5421.858	15		18438.74	-0.04	28 ₅ - 466 ₆ [°]	
5422.090	2		18437.95	-0.05	24 ₂ - 432 ₂ [°]	
5422.876	40		18435.28	-0.02	22476 ₄ - 409 ₅ [°]	
5423.21	1		18434.14	0.00	27 ₁ - 461 ₁ [°]	
5423.44	12		18433.36	0.00	19826 ₅ - 382 ₄ [°]	
5423.93	40		18431.70	-0.02	19 ₃ - 382 ₄ [°]	
5424.63	4		18429.32			
5424.91	2		18428.37			
5425.10	1		18427.72	+0.05	24 ₂ - 432 ₁ [°]	
5425.99	2		18424.70	+0.02	³ H ₄ - 305 ₃ [°]	
5427.21	10		18420.56	+0.04	³ P ₂ - 376 ₃ [°]	
5427.99	5		18417.91	+0.07	19 ₄ - 380 ₃ [°]	
5429.14	3		18414.01	+0.15	30 ₂ - 487 ₁ [°]	
5430.94	2		18407.91			
5433.256	6		18400.06	0.00	17 ₄ - 355 ₅ [°]	
5433.884	2		18397.93			
5435.032	100	5	18394.05	+0.01	⁵ D ₁ - ⁷ F ₁ [°]	
5435.59	30		18392.16	+0.02	17 ₄ - 354 ₃ [°]	
5435.75	4		18391.62	+0.01	28 ₅ - 466 ₄ [°]	
5437.637	2 b		18385.23			
5438.852	8		18381.13	+0.01	17 ₃ - 360 ₄ [°]	
5439.568	15		18378.71	+0.01	19 ₃ - 382 ₃ [°]	
5440.05	25		18377.08	0.00	19826 ₅ - 382 ₆ [°]	
5441.11	8		18373.50			
5441.696	4		18371.52	0.00	29479 ₄ - 478 ₅ [°]	
5442.01	1		18370.46	+0.04	382 ₆ -56573 ₅ [°]	
5443.35	12		18365.94			
5446.126	5		18356.58	-0.01	28898 ₂ - 472 ₁ [°]	
5448.90	3		18347.23			
5449.454	2		18345.37	+0.03	22852 ₄ - 411 ₄ [°]	
5451.79	4		18337.51	+0.01	27 ₄ - 455 ₃ [°]	
5452.49	1		18335.15			
5456.58	30		18321.41	-0.02	23 ₃ - 422 ₃ [°]	
5457.92	12		18316.91	+0.02	29853 ₄ - 481 ₃ [°]	
5459.35	3 b		18312.11			
5460.52	3 b		18308.19			
5462.93	1		18300.11	0.00	³ H ₅ - 333 ₅ [°]	
5464.45	3 b		18295.02	+0.06	328 ₄ - ^e ⁵ D ₄ [°]	
5466.95	4		18286.66	-0.19	35499 ₃ - 53 ₄ [°]	
5467.53	12		18284.72	0.00	29853 ₄ - 481 ₅ [°]	
5468.60	1		18281.14			
5469.092	15		18279.49	-0.01	23 ₂ - 422 ₁ [°]	
				-0.03	28 ₆ - 466 ₆ [°]	
5469.70	2		18277.46	+0.01	28347 ₃ - 466 ₄ [°]	
5469.932	2		18276.69			
5471.02	2 b		18273.05	+0.12	28 ₅ - 465 ₅ [°]	
5471.50	3		18271.45			
5472.314	6		18268.73	+0.02	23 ₂ - 422 ₃ [°]	
5475.110	30		18259.40	0.00	281 ₁ - ^e ⁵ D ₁ [°]	
5476.032	15		18256.33	-0.07	27 ₅ - 461 ₆ [°]	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
5477.776	80		18250.51	+0.07	³ P ₀ - 277° ₁	
5478.656	3		18247.58	+0.14	31 ₅ - 496° ₄	
5479.229	10		18245.68			
5480.617	15		18241.06			
5482.866	2		18233.57			
5483.276	2		18232.21	+0.21	27 ₁ - 459° ₂	
5484.486	4		18228.19			
5485.312	2		18225.44	+0.07	19 ₃ - 380° ₃	
5486.006	60		18223.14	+0.01	314° ₄ - e ⁵ D ₃	
5487.766	40		18217.29	-0.02	⁵ D ₃ - ⁷ F° ₃	
5488.466	6		18214.97			
5489.13	4	1	18212.77	+0.03	³ P ₂ - 374° ₂	
5489.96	20		18210.01	0.00	29479 ₄ - 476° ₄	
5492.306	150	4	18202.23	+0.03	⁷ D° ₅ - ⁷ D ₄	
5492.56	3		18201.39	+0.10	³ G ₄ - 346° ₄	
5492.908	4		18200.24	+0.06	20 ₂ - 391° ₁	
5495.256	3		18192.46			
5496.234	30		18189.23	+0.06	22476 ₄ - 406° ₃	
5498.622	12		18181.33	+0.07	28204 ₂ - 463° ₃	
				+0.09	33 ₅ - 514° ₄	
5500.490	75		18175.15	+0.07	19826 ₅ - 380° ₄	
5500.996	10		18173.48	+0.04	19 ₃ - 380° ₄	
5501.47	5		18171.91	+0.06	18 ₃ - 371° ₄	
5503.44	100	2	18165.41	+0.21	14 ₂ - 331° ₂	
				-0.06	299° ₃ - e ⁵ D ₂	
				-0.15	329° ₃ - e ⁵ D ₄	
5506.48	12		18155.38	+0.23	32 ₁ - 505° ₁	
5508.474	4		18148.81	+0.11	32 ₄ - 502° ₄	
5508.61	20		18148.36	+0.06	20 ₁ - 385° ₀	
5512.81	1		18134.54	+0.14	34 ₄ - 524° ₄	
5514.676	300	30	18128.41	+0.04	⁵ D ₂ - ⁷ D° ₁	
5515.06	3		18127.14			
5515.20	2		18126.68			
5518.80	1 b		18114.85	-0.11	29853 ₄ - 479° ₄	
5519.135	2		18113.75	+0.01	339° ₂ - 52° ₁	
5521.004	10		18107.62	-0.04	18 ₁ - 361° ₁	
5525.276	1 b		18093.62	+0.04	28291 ₃ - 463° ₃	
5526.644	2 b		18089.14			
5528.090	6		18084.41	+0.06	³ G ₃ - 314° ₄	
5531.384	30		18073.64	-0.01	18 ₂ - 361° ₁	
5533.026	6		18068.28			
5537.289	3 b		18054.37			
5537.722	10		18052.95	+0.03	19 ₄ - 373° ₅	
5538.68	2		18049.83	+0.07	32 ₄ - 501° ₃	
5539.482	6		18047.22	-0.01	20 ₂ - 390° ₂	
5539.91	2		18045.83			
5542.368	2		18037.82	-0.04	28347 ₃ - 463° ₃	
5542.94	1		18035.95	+0.08	28291 ₃ - 463° ₂	
5548.078	3 b		18019.26	-0.04	27 ₅ - 458° ₄	
5550.319	4		18011.98			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
5551.012	5		18009.73	-0.04	17 ₄ - 351 ₄ [°]	
5552.685	1		18004.31	-0.05	29479 ₄ - 474 ₃ [°]	
5554.112	4 <i>b</i>		17999.68	-0.06	22476 ₄ - 404 ₅ [°]	
5554.887	3		17997.17	-0.01	29853 ₄ - 478 ₅ [°]	
5555.320	4		17995.77	-0.05	23 ₂ - 419 ₂ [°]	
5559.764	4		17981.38	-0.02	14 ₂ - 329 ₃ [°]	
5562.12	3		17973.77	+0.04	359 ₃ - 53 ₃ [°]	
5563.97	4 <i>b</i>		17967.8			
5568.086	10		17954.51	-0.09	342 ₃ -52183 ₂ [°]	
5570.43	3		17946.96			
5571.99	2		17941.93	+0.07	23 ₃ - 418 ₄ [°]	
5572.822	3		17939.25	-0.09	27 ₅ - 457 ₅ [°]	
5575.812	4		17929.63	-0.02	18 ₃ - 369 ₂ [°]	
5576.318	6		17928.01	+0.01	20 ₁ - 383 ₁ [°]	
5577.945	1		17922.78	+0.01	³ G ₄ - 343 ₃ [°]	
5578.26	2		17921.76	-0.01	314 ₄ - ⁷ D ₅ [°]	
5579.925	5		17916.42			
5584.00	3 <i>b</i>		17903.34	+0.08	24 ₃ - 425 ₃ [°]	
5585.09	1		17899.86	+0.01	18 ₃ - 368 ₃ [°]	
5588.12	2		17890.14	+0.02	19 ₄ - 371 ₄ [°]	
5590.53	1		17882.43	+0.01	29479 ₄ - 473 ₃ [°]	
5591.03	2		17880.83	-0.04	29479 ₄ - 473 ₄ [°]	
5592.67	1		17875.58	+0.01	26 ₂ - 447 ₁ [°]	
5593.56	10		17872.74	-0.02	28 ₅ - 461 ₆ [°]	
5594.37	1		17870.15	+0.06	30 ₂ - 482 ₂ [°]	
5601.818	1		17846.39	-0.01	19 ₃ - 376 ₃ [°]	
5604.31	40		17838.46	+0.05	318 ₂ - ^e D ₃ [°]	
5605.20	3		17835.62	-0.05	29853 ₄ - 476 ₄ [°]	
5608.134	5		17826.30	-0.03	18 ₂ - 359 ₃ [°]	
5612.303	4		17813.05	0.00	22852 ₄ - 406 ₃ [°]	
5615.16	2		17803.99	-0.06	23 ₃ - 417 ₂ [°]	
5616.15	6		17800.85	+0.13	27 ₄ - 450 ₃ [°]	
5617.05	5		17798.00	+0.03	17 ₃ - 354 ₃ [°]	
5617.26	5		17797.33	+0.04	³ G ₄ - 342 ₃ [°]	
5618.74	2		17792.65	-0.02	22476 ₄ - 402 ₃ [°]	
5623.97	2		17776.10	-0.04	28291 ₃ - 460 ₃ [°]	
5624.58	6		17774.17	+0.02	19535 ₅ - 373 ₅ [°]	
5629.67	8		17758.10	-0.09	³ H ₅ - 328 ₄ [°]	
5629.90	3		17757.38	+0.09	22476 ₄ - 402 ₄ [°]	
5631.27	10	1	17753.06	-0.04	333 ₅ - ^e D ₄ [°]	
5631.94	20	2	17750.95	+0.06	³ H ₄ - 299 ₃ [°]	
5635.50	5		17739.73	-0.05	29853 ₄ - 475 ₃ [°]	
5637.11	4		17734.66	+0.02	26 ₂ - 445 ₂ [°]	
5639.64	5		17726.71	-0.04	27 ₄ - 449 ₄ [°]	
5641.39	5		17721.21			
5642.03	6		17719.20	+0.06	⁵ D ₁ - ⁷ F ₀ [°]	
5643.85	1		17713.49	-0.01	28 ₆ - 461 ₆ [°]	
5644.47	5		17711.54	0.00	23 ₂ - 416 ₃ [°]	
5647.02	3 <i>b</i>		17703.54	+0.02	27 ₁ - 453 ₁ [°]	
5648.37	50	5	17699.31	+0.12	18 ₃ - 366 ₂ [°]	
				-0.07	⁷ D ₄ - ⁷ D ₃ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
5651.24	2		17690.32	-0.05	³ G ₄₋ 341° ₄	
5652.41	2		17686.66	0.00	23 ₆₋ 411° ₆	
5654.10	3		17681.37	0.00	15 ₃₋ 331° ₂	
5657.00	3		17672.31	-0.05	23 ₁₋ 411° ₀	
5657.88	2		17669.56			
5660.07	6		17662.73	+0.04	⁵ S ₂₋ 359° ₃	
5660.72	20	2	17660.70	+0.08	19 ₆₋ 373° ₅	
5663.30	3 <i>b</i>		17652.65	+0.01	32 ₄₋ 497° ₄	
5663.98	3		17650.53	-0.07	³ P ₂₋ 369° ₂	
5664.33	8		17649.44	-0.06	23 ₁₋ 411° ₂	
5667.18	4		17640.57	-0.06	24 ₃₋ 422° ₃	
5670.56	1		17630.05	+0.03	29853 ₄₋ 474° ₃	
5673.53	5		17620.82	+0.02	³ P ₂₋ 368° ₃	
5674.39	10	1	17618.15	+0.03	19 ₄₋ 368° ₃	
5675.37	5		17615.11	-0.01	18 ₂₋ 357° ₂	
5676.60	6		17611.29	-0.06	19535 ₅₋ 371° ₄	
5676.90	8		17610.36	-0.02	17 ₃₋ 353° ₂	
5678.90	4		17604.16			
5679.64	3		17601.87	+0.02	27 ₅₋ 454° ₅	
5680.08	4		17600.50	+0.10	23 ₂₋ 415° ₂	
5689.68	2		17570.81	+0.06	28 ₁₋ 462° ₁	
5690.13	3		17569.42	+0.07	23 ₃₋ 414° ₃	
5693.73	4 <i>b</i>		17558.31			
5694.56	3		17555.75	+0.05	28 ₅₋ 457° ₅	
5695.06	3		17554.21	+0.15	34 ₄₋ 518° ₄	
5697.79	10		17545.80	+0.03	13 ₂₋ 313° ₁	
5704.37	4		17525.56	-0.03	17 ₄₋ 346° ₄	
5705.71	5		17521.44	-0.06	28347 ₃₋ 458° ₄	
5707.29	1		17516.59	-0.04	23 ₂₋ 414° ₃	
5708.00	2		17514.41	+0.15	33 ₅₋ 508° ₅	
5709.05	4 <i>b</i>		17511.19	0.00	371° ₄₋ 54° ₃	
5712.47	3		17500.71	+0.13	32 ₄₋ 496° ₄	
5715.38	4		17491.80	+0.12	305° ₃₋ ^e ⁵ D ₂	
5718.18	2		17483.23	+0.11	19826 ₅₋ 373° ₅	
5721.10	2		17474.31			
5721.35	1		17473.55	+0.06	28204 ₂₋ 456° ₃	
5721.88	1		17471.93	+0.04	393° ₅₋ 56° ₆	
5723.05	8		17468.35	-0.03	259° ₁₋ ⁷ D ₁	
5724.54	1 <i>b</i>		17463.81	-0.06	347° ₁₋ 52183° ₂	
5726.43	2		17458.04			
5728.56	4		17451.55	+0.07	⁵ S ₂₋ 357° ₂	
5735.09	50	5	17431.68	-0.05	⁷ P ₃₋ ⁷ D ₂	
5738.87	3		17420.20	+0.06	³ P ₂₋ 366° ₂	
5739.60	10		17417.99	-0.03	322° ₃₋ ^e ⁵ D ₃	
5740.06	2		17416.59	+0.04	22852 ₄₋ 402° ₃	
5741.12	4		17413.38	0.00	23 ₁₋ 408° ₂	
5747.27	8 <i>b</i>		17394.74	-0.04	306° ₁₋ ^e ⁵ D ₂	
5749.24	20		17388.78	-0.12	305° ₃₋ ⁷ D ₄	
5750.22	4		17385.82	+0.01	28291 ₃₋ 456° ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
5751.37	2		17382.34	+0.03	18 ₂ - 354 ₃	
5752.65	3		17378.47	+0.07	32 ₄ - 495 ₃	
5753.34	4 <i>b</i>		17376.39	-0.05	³ P ₁ - 306 ₁	
5753.85	6		17374.85			
5754.57	5		17372.67	-0.15	20 ₂ - 383 ₁	
5756.10	8		17368.06	-0.05	15 ₃ - 328 ₄	
5759.65	10		17357.35	-0.15	291 ₃ - ⁷ D ₃	
5763.40	3 <i>b</i>		17346.06	-0.06	20 ₁ - 377 ₁	
5767.76	2 <i>b</i>		17332.95	+0.01	27 ₄ - 445 ₅	
5768.74	2		17330.00	-0.09	28347 ₃ - 456 ₃	
5771.98	6		17320.28	-0.04	19826 ₅ - 371 ₄	
5773.48	5		17315.78	+0.02	23 ₁ - 407 ₁	
5784.76	3		17282.01	+0.06	32 ₄ - 494 ₃	
5789.81	4		17266.94	-0.03	27 ₅ - 451 ₄	
5791.33	3		17262.41	-0.05	291 ₂ - <i>e</i> ⁵ D ₁	
5791.80	1 <i>b</i>		17261.00	-0.06	24 ₃ - 418 ₄	
5792.34	1 <i>b</i>		17259.40	-0.04	28291 ₃ - 455 ₃	
5792.65	3 <i>b</i>		17258.47			
5793.06	10		17257.25	-0.07	276 ₂ - ⁷ D ₂	
5796.49	8		17247.04	-0.03	17 ₄ - 343 ₃	
5797.75	2		17243.29	+0.01	22476 ₄ - 397 ₄	
5799.51	5		17238.06	-0.02	³ G ₃ - 305 ₃	
5801.13	1		17233.24	+0.04	27 ₄ - 444 ₃	
5803.04	3		17227.57			
5804.46	2		17223.36	0.00	20 ₂ - 382 ₃	
5804.85	40	4	17222.20	-0.01	⁷ P ₂ - ⁷ D ₁	
5806.05	3		17218.64	-0.03	⁵ S ₂ - 354 ₃	
5806.24	6		17218.08	+0.02	28204 ₂ - 454 ₂	
5810.46	1		17205.57	-0.09	28898 ₂ - 461 ₁	
5814.14	2		17194.68	-0.04	18 ₂ - 353 ₂	
5815.36	1		17191.07	-0.19	374 ₂ - 54 ₃	
5818.57	1		17181.59	-0.01	28 ₁ - 459 ₂	
5821.00	4	1	17174.42	-0.02	23 ₃ - 411 ₂	
5822.13	1		17171.09	+0.09	34 ₄ - 514 ₄	
5822.60	10		17169.70	-0.03	22476 ₄ - 396 ₃	
5826.10	2		17159.39	+0.03	26861 ₂ - 440 ₃	
5832.26	5		17141.26	-0.08	277 ₁ - ⁷ D ₂	
5833.61	8		17137.29	-0.08	22476 ₄ - 396 ₅	
5835.94	1		17130.45	+0.07	28291 ₃ - 454 ₂	
5838.97	8		17121.56	-0.03	17 ₄ - 342 ₃	
5841.68	2		17113.62	+0.04	26 ₂ - 439 ₂	
5843.70	1 <i>b</i>		17107.71	-0.08	18 ₃ - 360 ₄	
5845.27	10	1	17103.11	-0.11	293 ₂ - ⁷ D ₃	
5848.81	2		17092.76			
5849.52	4		17090.68	-0.09	27 ₅ - 449 ₄	
5851.58	10	1	17084.67	-0.03	263 ₂ - ⁷ D ₁	
5854.39	5		17076.47	-0.01	19 ₃ - 369 ₂	
5856.61	6		17069.99	-0.04	20 ₂ - 380 ₃	
5857.70	2		17066.82	+0.09	27 ₁ - 447 ₁	
5858.22	4		17065.30	0.00	32 ₁ - 494 ₁	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
5860.42	1	1	17058.89	-0.06	28 ₆ - 454 ₅	
5862.75	1		17052.11	+0.13	32 ₄ - 491 ₅	
5864.16	1		17048.02	-0.10	397 ₄ -56768 ₅	
5864.63	12		17046.65	-0.03	19 ₃ - 368 ₃	
5866.02	1 b		17042.61	+0.07	368 ₃ - 53 ₃	
5867.46	1	1	17038.44	-0.02	20 ₁ - 374 ₂	
5870.03	4		17030.97	-0.11	⁵ S ₂ - 353 ₂	
				-0.01	26 ₂ - 438 ₁	
5870.65	1		17029.17	+0.06	28 ₅ - 452 ₄	
5871.37	1		17027.08	+0.03	29479 ₄ - 465 ₅	
5871.64	4 b		17026.30	-0.02	281 ₁ - e ⁵ D ₀	
5874.22	6		17018.82	-0.04	19 ₄ - 362 ₅	
5875.69	5		17014.56	-0.11	17 ₄ - 341 ₄	
5876.28	2		17012.85	+0.11	369 ₂ - 53 ₃	
5879.44	1		17003.71	+0.19	28898 ₂ - 459 ₂	
5879.69	2		17002.99			
5880.21	10		17001.48	+0.02	341 ₄ - e ⁵ D ₄	
5882.82	1		16993.94	+0.19	23 ₃ - 409 ₃	
5883.17	2		16992.93	+0.09	33 ₅ - 502 ₄	
5883.48	2		16992.03			
5884.62	4	1	16988.74	+0.05	34 ₄ - 512 ₅	
5884.96	1		16987.76	+0.22	30 ₂ - 473 ₃	
5888.65	1		16977.12	-0.04	³ H ₄ - 291 ₃	
5890.32	5		16972.30	-0.02	24 ₃ - 415 ₂	
5891.61	8		16968.59	-0.07	18 ₃ - 359 ₃	
5893.34	1		16963.61	+0.02	30 ₂ - 473 ₂	
5895.98	1		16956.01	-0.09	23 ₁ - 404 ₁	
5900.02	1		16944.40	-0.07	24 ₂ - 417 ₂	
5901.20	8		16941.01	-0.02	23 ₂ - 409 ₃	
5902.00	4		16938.72	-0.01	³ G ₄ - 333 ₅	
5902.30	4		16937.85	-0.08	32 ₄ - 490 ₅	
5902.64	20		16936.88	-0.05	³ P ₂ - 361 ₁	
5904.57	1		16931.34	-0.08	17 ₃ - 346 ₄	
5905.05	4		16929.97			
5906.52	2 b		16925.75	-0.05	27 ₁ - 445 ₂	
5906.76	2	1	16925.07			
5910.32	2		16914.87	-0.08	28347 ₃ - 452 ₄	
5913.39	5		16906.09	-0.05	29479 ₄ - 463 ₃	
5913.92	3		16904.57	-0.11	24 ₂ - 416 ₃	
5917.42	3 b		16894.57	+0.03	342 ₃ - e ⁵ D ₄	
5919.66	3 b		16888.18			
5920.60	4		16885.50	-0.10	23 ₂ - 408 ₂	
5921.05	3		16884.22	-0.11	22476 ₄ - 393 ₅	
5921.37	3		16883.31	-0.02	28 ₅ - 451 ₄	
5921.87	1		16881.88	+0.12	32 ₁ - 492 ₂	
5922.07	1		16881.31	-0.04	30 ₂ - 472 ₁	
5927.05	3		16867.13	-0.03	22852 ₄ - 397 ₄	
5928.58	10		16862.77	-0.07	22 ₀ - 396 ₁	
5928.93	1		16861.78	-0.06	28898 ₂ - 457 ₁	
5931.13	2		16855.52			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
5934.49	8		16845.98	-0.04	19 ₃ - 366 ₂ [°]	
5936.14	1		16841.30	-0.15	14 ₂ - 318 ₂ [°]	
5937.08	3		16838.63			
5940.89	10		16827.83	-0.15	⁵ D ₄ - ⁷ F ₃ [°]	
				-0.09	328 ₄ - ^e D ₃ [°]	
5941.54	3		16825.99	-0.07	19 ₄ - 360 ₄ [°]	
5941.94	3		16824.86	-0.03	28291 ₃ - 451 ₄ [°]	
5947.08	8		16810.32	-0.02	28204 ₂ - 450 ₃ [°]	
5947.57	30		16808.93	0.00	13 ₂ - 305 ₃ [°]	
5948.19	3		16807.18	0.00	27 ₄ - 440 ₃ [°]	
5949.44	4		16803.65			
5953.96	8		16790.89	-0.05	20 ₂ - 377 ₁ [°]	
5956.19	10		16784.61	-0.07	17 ₃ - 344 ₂ [°]	
5958.23	1		16778.86	+0.13	28898 ₂ - 456 ₃ [°]	
5958.53	2		16778.01	0.00	15 ₃ - 322 ₃ [°]	
5960.83	15		16771.54	-0.05	27 ₄ - 439 ₄ [°]	
				+0.15	29853 ₄ - 466 ₄ [°]	
5964.48	3	5 s	16761.28	+0.03	22852 ₄ - 396 ₅ [°]	
5965.86	40	2	16757.39	-0.06	18 ₃ - 357 ₂ [°]	
5972.03	3		16740.09	0.00	19535 ₅ - 362 ₅ [°]	
5972.51	25		16738.74	-0.03	⁵ D ₂ - ⁷ F ₁ [°]	
5973.40	1		16736.25			
5973.56	2		16735.80	+0.03	23 ₃ - 406 ₃ [°]	
5976.65	8		16727.15	+0.01	28291 ₃ - 450 ₂ [°]	
5978.86	15		16720.96	+0.02	281 ₁ - ⁷ D ₂ [°]	
5980.95	2		16715.12			
5982.60	2		16710.51	+0.08	27 ₄ - 439 ₅ [°]	
5983.82	20		16707.11	-0.02	28 ₅ - 449 ₄ [°]	
5984.50	2 b		16705.21	+0.01	30 ₂ - 470 ₂ [°]	
5986.94	6		16698.40	-0.06	329 ₃ - ^e D ₃ [°]	
5987.43	12 b		16697.03	+0.01	27 ₁ - 443 ₂ [°]	
				+0.07	27 ₅ - 445 ₅ [°]	
5989.59	10		16691.02	-0.04	20 ₂ - 376 ₃ [°]	
5990.11	5		16689.56	-0.05	³ P ₂ - 359 ₃ [°]	
5991.07	3		16686.89	-0.04	19 ₄ - 359 ₃ [°]	
5992.15	1		16683.88	-0.17	354 ₃ -52183 ₂ [°]	
5992.46	8		16683.02	-0.03	23 ₂ - 406 ₃ [°]	
				+0.04	27 ₁ - 443 ₁ [°]	
5993.21	2 b		16680.93			
5996.20	2		16672.61			
5998.28	3		16666.83	-0.11	28347 ₃ - 450 ₃ [°]	
6001.02	2		16659.22			
6003.21	4		16653.14	+0.02	28 ₁ - 453 ₁ [°]	
6009.01	10		16637.07	+0.05	27 ₄ - 438 ₃ [°]	
6009.17	1		16636.63	+0.13	18 ₁ - 347 ₁ [°]	
6009.68	8		16635.21	-0.07	³ H ₄ - ⁷ D ₄ [°]	
6012.78	50	5	16626.64	+0.08	19 ₆ - 362 ₅ [°]	
6015.64	3 b		16618.73	-0.03	⁵ D ₃ - ⁷ F ₂ [°]	
6016.27	2		16616.99	+0.05	26 ₂ - 434 ₃ [°]	
6019.73	3		16607.44	+0.01	34 ₄ - 509 ₄ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
6021.52	40		16602.52	+0.03	18 ₂ - 347° ₁	
6027.16	1		16586.97	-0.29	24 ₃ - 411° ₄	
6028.32	15		16583.78	+0.01	299° ₃ - 7D ₃	
6029.84	5		16579.60	+0.06	31 ₅ - 479° ₄	
6030.64	2 <i>v</i>		16577.40			
6034.72	3 <i>b</i>		16566.19			
6035.42	4		16564.27	-0.02	3G ₃ - 299° ₃	
6037.31	3 <i>b</i>		16559.08			
6038.28	2		16556.42	-0.06	23 ₁ - 400° ₂	
6041.62	10		16547.27	-0.02	19535 ₅ - 360° ₄	
6043.31	25		16542.64	+0.01	314° ₄ - 7D ₄	
6046.80	3		16533.09	+0.08	28204 ₂ - 447° ₁	
6048.87	2 <i>b</i>		16527.44	+0.02	17 ₃ - 342° ₃	
6049.25	1 <i>b</i>		16526.40	+0.13	3G ₄ - 329° ₃	
				-0.16	328° ₄ - 7D ₅	
6049.92	12		16524.57	-0.07	18 ₃ - 354° ₃	
6053.17	2 <i>b</i>		16515.70			
6055.93	2		16508.17	-0.04	22852 ₄ - 393° ₅	
6057.41	5 <i>b</i>		16504.13	+0.10	34 ₄ - 508° ₅	
6061.29	1		16493.57	-0.07	24 ₃ - 411° ₂	
6065.08	15		16483.27	-0.01	20 ₂ - 374° ₂	
6066.88	4		16478.37	-0.03	3P ₂ - 357° ₂	
6067.64	10		16476.31	-0.01	20 ₁ - 369° ₂	
6077.70	1		16449.04	-0.02	19535 ₅ - 362° ₅	
6081.44	30		16438.92	+0.07	5S ₂ - 347° ₁	
6082.89	3		16435.00			
6083.88	4		16432.33	+0.08	30 ₂ - 468° ₂	
6092.38	5		16409.40	-0.02	22 ₀ - 391° ₁	
6094.75	5		16403.02	-0.01	18 ₁ - 344° ₂	
6107.42	10		16369.00	-0.02	18 ₂ - 344° ₂	
6111.66	15		16357.64	+0.02	15 ₃ - 318° ₂	
6115.52	12		16347.31	+0.01	14 ₂ - 313° ₁	
6119.39	4		16336.98	-0.07	18 ₃ - 353° ₂	
6128.25	20		16313.36	+0.04	28 ₅ - 445° ₅	
6129.60	3		16309.76	-0.06	29479 ₄ - 457° ₅	
6131.63	2		16304.36	-0.04	28291 ₃ - 445° ₂	
6131.79	1		16303.94	+0.05	23 ₃ - 402° ₄	
6133.19	4		16300.22	-0.03	31 ₅ - 476° ₄	
6138.36	1		16286.49	-0.06	23 ₂ - 402° ₃	
6141.04	1		16279.38			
6143.94	12		16271.70	-0.06	22476 ₄ - 387° ₄	
6146.52	1		16264.87	+0.11	27 ₄ - 434° ₃	
6147.23	3		16262.99	-0.04	17 ₄ - 333° ₅	
6148.15	2 <i>b</i>		16260.56	-0.13	318° ₂ - e ⁵ D ₂	
6151.81	1		16250.88	+0.05	19 ₄ - 355° ₅	
6153.72	2 <i>b</i>		16245.84	-0.02	20 ₁ - 366° ₂	
6154.87	6		16242.80	-0.02	28204 ₂ - 444° ₃	
				-0.08	17 ₃ - 339° ₂	
6161.43	8		16225.51	-0.09	18 ₂ - 343° ₁	
6162.70	1		16222.16	+0.02	27 ₁ - 438° ₁	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
6165.70	1		16214.27	-0.09	29853 ₄ - 460 ₃ [°]	
6169.11	10		16205.31	-0.07	⁵ S ₂ - 344 ₂ [°]	
6176.18	1		16186.76			
6179.66	3		16177.64			
6181.39	2		16173.11			
6186.24	15		16160.44	-0.04	20 ₁ - 365 ₀ [°]	
6187.57	5		16156.96	-0.02	28 ₅ - 443 ₆ [°]	
6188.73	3		16153.93	-0.13	28 ₆ - 445 ₅ [°]	
6193.23	10		16142.20	-0.07	18 ₃ - 351 ₄ [°]	
6195.78	1		16135.55	-0.06	27 ₅ - 439 ₄ [°]	
6195.96	10	2	16135.08	-0.06	13 ₂ - 299 ₃ [°]	
6196.36	10	1	16134.04	-0.13	24 ₂ - 409 ₃ [°]	
6198.19	2		16129.28	+0.01	23 ₆ - 396 ₅ [°]	
6203.51	20	1	16115.45	-0.04	19 ₃ - 359 ₃ [°]	
6216.65	3 <i>b</i>		16081.39	-0.03	23 ₃ - 400 ₂ [°]	
6219.36	2		16074.38	-0.07	27 ₅ - 439 ₅ [°]	
6220.31	2 <i>b</i>		16071.92	-0.08	29479 ₄ - 455 ₃ [°]	
6224.18	3		16061.93	-0.03	⁵ S ₂ - 343 ₁ [°]	
6225.75	4		16057.88	-0.12	³ P ₂ - 353 ₂ [°]	
6234.74	1 <i>b</i>		16034.73	+0.12	32 ₄ - 481 ₃ [°]	
6237.69	2		16027.14			
6239.27	2 <i>b</i>		16023.09			
6240.54	5		16019.82	-0.08	28347 ₃ - 443 ₂ [°]	
6241.94	4 <i>b</i>		16016.23	-0.06	20 ₀ - 361 ₁ [°]	
6243.10	2		16013.25			
6243.72	2		16011.66			
6245.79	8 <i>b</i>		16006.36	0.00	351 ₄ - <i>e</i> ⁵ <i>D</i> ₄	
6251.48	5		15991.79			
6253.63	6		15986.29			
6254.28	25		15984.63	-0.01	333 ₅ - ⁷ <i>D</i> ₅	
6258.88	5		15972.88	-0.02	15 ₃ - 314 ₄ [°]	
6259.11	4 <i>b</i>		15972.29	+0.10	24 ₃ - 405 ₄ [°]	
				-0.04	29479 ₄ - 454 ₅ [°]	
6269.28	4		15946.38			
6279.68	3 <i>b v</i>		15919.97			
6285.88	25		15904.27	-0.01	19 ₃ - 357 ₂ [°]	
6288.75	3		15897.01			
6289.10	2		15896.13			
6291.01	8		15891.30	-0.04	20 ₂ - 368 ₃ [°]	
6292.02	60	3	15888.75	+0.01	³ P ₁ - 291 ₂ [°]	
6297.31	3		15875.41	+0.01	28 ₁ - 445 ₂ [°]	
6298.57	6		15872.23			
6302.96	1		15861.17	-0.06	18 ₁ - 339 ₂ [°]	
6303.21	20		15860.55	+0.01	19 ₄ - 351 ₄ [°]	
6304.03	3		15858.48	-0.05	19 ₆ - 355 ₅ [°]	
6308.50	10		15847.25	-0.03	³ G ₃ - 291 ₂ [°]	
6309.71	2		15844.21	+0.01	27 ₁ - 435 ₂ [°]	
6313.15	2		15835.57	+0.06	34 ₄ - 501 ₅ [°]	
6314.32	3		15832.64	-0.04	32 ₄ - 479 ₄ [°]	
6319.24	8		15820.31	-0.03	27 ₄ - 430 ₅ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
6324.67	2 <i>b</i>		15806.73	+0.02	³ G ₄₋ 322° ₃	
6331.44	4		15789.83	-0.05	23 ₃₋ 397° ₄	
6335.10	3		15780.71	-0.01	291 ₃₋ ⁷ D ₂	
6336.60	2		15776.97	+0.03	23 ₃₋ 397° ₂	
6342.40	3		15762.54	-0.11	20 ₁₋ 361° ₁	
6344.50	2		15757.33			
6346.66	2		15751.96	-0.01	28 ₅₋ 439° ₄	
6351.68	2		15739.51	-0.04	26 ₂₋ 426° ₃	
6352.51	4 <i>b</i>		15737.46	-0.06	322° ₃₋ ⁷ D ₄	
6355.66	3		15729.66	-0.04	22476 ₄₋ 382° ₃	
6355.90	10		15729.06	-0.05	28291 ₃₋ 440° ₃	
6357.98	3		15723.92	-0.08	291° ₂₋ ⁷ D ₂	
6359.14	6		15721.05	-0.06	17 ₄₋ 328° ₄	
6361.06	4		15716.31	-0.02	23 ₃₋ 396° ₃	
6362.35	1		15713.12			
6363.79	1		15709.55			
6364.73	10		15707.24	-0.12	14 ₂₋ 306° ₁	
6368.73	1		15697.38	+0.06	28898 ₂₋ 445° ₂	
6370.32	6		15693.46	-0.07	28291 ₃₋ 439° ₄	
6371.43	20		15690.73	+0.05	20 ₂₋ 366° ₂	
6375.40	10		15680.96	-0.07	19826 ₅₋ 355° ₅	
6378.47	3		15673.41	+0.01	28347 ₃₋ 440° ₃	
				-0.07	277° ₁₋ ⁷ D ₁	
6379.29	3		15671.39	-0.07	19 ₃₋ 354° ₃	
6382.49	8		15663.54	-0.04	⁵ S ₂₋ 339° ₂	
				-0.07	23 ₂₋ 396° ₃	
6384.72	8		15658.07	+0.02	18 ₃₋ 346° ₄	
6386.47	20		15653.77	+0.05	23 ₂₋ 396° ₁	
6387.13	4		15652.16	-0.02	27 ₄₋ 428° ₅	
6389.39	2		15646.62	-0.02	28204 ₂₋ 438° ₃	
6393.07	4		15637.61	-0.20	28347 ₃₋ 439° ₄	
				+0.16	29479 ₄₋ 451° ₄	
				+0.10	353° ₂₋ 50949 ₁	
6395.20	1		15632.41	-0.17	28 ₁₋ 443° ₁	
6397.30	3		15627.28			
6399.74	10		15621.32	-0.14	24 ₂₋ 404° ₁	
6402.07	12		15615.63	-0.06	13 ₂₋ 293° ₂	
6404.21	30		15610.41	-0.05	14 ₂₋ 305° ₃	
6409.34	1		15597.91			
6415.03	1		15584.09			
6416.00	12		15581.73	-0.04	19535 ₅₋ 351° ₄	
6417.36	4		15578.43			
6418.22	2		15576.34	+0.03	22476 ₄₋ 380° ₃	
6418.69	3		15575.20	+0.01	23 ₁₋ 390° ₂	
6425.42	10		15558.88	-0.08	28291 ₃₋ 438° ₃	
6426.12	4		15557.18	0.00	27 ₁₋ 432° ₂	
6427.70	5		15553.36	-0.03	32 ₄₋ 476° ₄	
6429.89	3		15548.07	+0.01	28898 ₂₋ 444° ₃	
6430.43	1		15546.76	+0.09	27 ₁₋ 432° ₁	
6432.12	3		15542.68	-0.08	31 ₅₋ 469° ₄	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
6435.24	8		15535.14	-0.08	29479 ₄ - 450 ₃ [°]	
6435.58	12		15534.32	-0.04	341 ₄ - e ⁵ D ₃ [°]	
6438.12	4		15528.19	-0.09	30 ₂ - 459 ₂ [°]	
6438.85	3		15526.43	+0.01	293 ₂ - ⁷ D ₂ [°]	
6439.70	15		15524.38	+0.04	22476 ₄ - 380 ₄ [°]	
6443.08	1		15516.24			
6443.95	2		15514.15			
6445.12	50		15511.33	+0.04	18 ₃ - 344 ₂ [°]	
6445.78	10		15509.74	-0.10	29 ₇ - 449 ₇ [°]	
6447.25	1		15506.20			
6448.25	6		15503.80			
6448.76	1		15502.57			
6449.93	3		15499.76			
6450.12	2		15499.30			
6450.76	1		15497.76			
6451.24	2		15496.61			
6456.61	7		15483.73	-0.15	19 ₃ - 353 ₂ [°]	
6458.35	10		15479.55	-0.13	24 ₂ - 402 ₃ [°]	
6461.78	5		15471.34			
6462.62	2		15469.32	-0.16	365 ₀ -52057 ₁	
6463.00	2 <i>b</i>		15468.42	-0.12	28898 ₂ - 443 ₂ [°]	
6464.13	18		15465.71	+0.06	³ P ₂ - 347 ₁ [°]	
				-0.01	31 ₅ - 468 ₅ [°]	
6464.43	4		15465.00			
6468.86	2		15454.41	-0.09	28898 ₂ - 443 ₁ [°]	
6471.25	1		15448.70	+0.02	³ G ₃ - ⁷ D ₄ [°]	
6474.84	8		15440.13	-0.01	17 ₃ - 331 ₂ [°]	
6479.51	10		15429.00	+0.01	28291 ₃ - 437 ₄ [°]	
6480.19	4		15427.38	-0.06	342 ₃ - e ⁵ D ₃ [°]	
6484.09	25		15418.11	-0.02	13 ₂ - 291 ₂ [°]	
6487.38	2		15410.29	-0.11	368 ₃ - 52 ₃ [°]	
6491.50	6		15400.50	-0.12	24 ₃ - 400 ₂ [°]	
				-0.16	26 ₂ - 422 ₁ [°]	
6494.75	6		15392.80	-0.08	33 ₅ - 486 ₆ [°]	
6499.96	5		15380.46	-0.14	369 ₂ - 52 ₃ [°]	
6500.38	15		15379.47	-0.10	18 ₃ - 343 ₃ [°]	
6501.70	1		15376.34	+0.02	19 ₄ - 346 ₄ [°]	
6502.09	4		15375.42	+0.02	411 ₄ -56573 ₅	
6503.07	3		15373.10	-0.17	28347 ₃ - 437 ₄ [°]	
6506.26	6 <i>b</i>		15365.57			
6508.05	20		15361.34	+0.07	13 ₂ - 291 ₃ [°]	
6513.44	5		15348.63	+0.06	28 ₆ - 437 ₅ [°]	
6514.65	2		15345.78			
6515.44	3		15343.92			
6519.46	1		15334.46	-0.02	34 ₄ - 496 ₄ [°]	
6521.98	4		15328.53	-0.02	366 ₂ -52002 ₃	
6523.01	6		15326.11	-0.04	³ H ₄ - ⁷ P ₃ [°]	
6523.73	1		15324.42			
6526.15	12		15318.74	+0.06	27 ₄ - 425 ₄ [°]	
6526.66	1		15317.54			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
6529.66	4		15310.50	+0.04	28204 ₂ - 435 [°] ₂	
6532.39	25		15304.11	+0.01	20 ₁ - 357 [°] ₂	
6533.29	5		15302.00	+0.04	343 ₃ - <i>e</i> ⁵ <i>D</i> ₃	
6534.03	8		15300.26	+0.04	27 ₄ - 425 [°] ₃	
6538.11	30		15290.72	+0.02	19826 ₅ - 351 [°] ₄	
6541.41	8		15283.00	-0.14	31 ₅ - 466 [°] ₆	
6544.89	2		15274.88			
6545.18	1		15274.20	+0.16	28204 ₂ - 434 [°] ₃	
6549.96	2		15263.05	+0.06	29853 ₄ - 451 [°] ₄	
				-0.09	366 ₂ - 51 ₂	
6552.84	15		15256.34	-0.11	17 ₃ - 329 [°] ₃	
6553.83	8		15254.04	+0.05	18 ₃ - 342 [°] ₃	
6554.25	20		15253.06	+0.02	281 ₁ - 43 ₁	
6561.43	1		15236.37	+0.07	27 ₄ - 424 [°] ₄	
6562.26	1		15234.44			
6562.89	8 <i>b</i>		15232.98	-0.02	34 ₄ - 493 [°] ₅	
6563.20	25		15232.26	+0.04	³ <i>P</i> ₂ - 344 [°] ₂	
6567.32	7		15222.71	+0.07	28291 ₃ - 435 [°] ₂	
6567.79	15		15221.62	-0.22	24 ₂ - 400 [°] ₂	
6569.77	5		15217.03	-0.09	357 ₂ -50949 ₁	
6571.81	3		15212.31	+0.01	34 ₄ - 495 [°] ₃	
6573.93	30		15207.40	-0.07	20 ₂ - 361 [°] ₁	
6577.08	1		15200.11	-0.14	22852 ₄ - 380 [°] ₃	
6578.27	4		15197.37	-0.03	22476 ₄ - 376 [°] ₃	
6579.77	1		15193.90			
6582.91	12		15186.66	+0.04	28291 ₃ - 434 [°] ₃	
6590.06	1		15170.18	0.00	344 ₂ - <i>e</i> ⁵ <i>D</i> ₃	
6594.13	3		15160.82	-0.06	29853 ₄ - 450 [°] ₃	
6599.98	2		15147.38	+0.04	328 ₄ - ⁷ <i>D</i> ₄	
6600.10	8		15147.10	-0.07	18 ₃ - 341 [°] ₄	
6602.37	1		15141.89			
6603.95	1		15138.27	-0.13	371 ₄ - 52 ₃	
6605.46	2		15134.81	-0.01	313 ₁ - <i>e</i> ⁵ <i>D</i> ₁	
6607.13	18		15130.99	-0.02	17 ₄ - 322 [°] ₃	
				-0.01	28347 ₃ - 434 [°] ₃	
6608.50	8		15127.85	-0.04	368 ₃ -52002 ₃	
6609.05	18		15126.59	-0.04	15 ₃ - 305 [°] ₃	
6611.62	20		15120.71	-0.04	329 ₃ - <i>e</i> ⁵ <i>D</i> ₂	
6612.24	2		15119.29			
6613.20	4 <i>b</i>		15117.10	-0.19	31 ₅ - 465 [°] ₅	
				+0.12	26 ₂ - 419 [°] ₂	
6613.90	2		15115.50	+0.04	34 ₄ - 494 [°] ₃	
6616.19	2		15110.27			
6620.64	10		15100.11	-0.06	23 ₃ - 390 [°] ₂	
6621.51	15		15098.13	+0.04	369 ₂ -52002 ₃	
6621.74	20		15097.60	+0.01	19535 ₅ - 346 [°] ₄	
6622.42	8		15096.05	-0.09	24 ₃ - 397 [°] ₂	
6622.91	4		15094.93			
6626.00	4		15087.90			
6626.51	5		15086.73	-0.18	29853 ₄ - 449 [°] ₄	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
6631.10	2 <i>b</i>		15076.29	+0.03	28898 2- 439° ₂	
6634.54	2		15068.47			
6635.04	6		15067.34	-0.10	29479 4- 445° ₅	
6636.02	6		15065.11			
6636.49	4		15064.05	-0.08	32 1- 474° ₂	
6636.68	10		15063.61	-0.16	402 3- 55° ₄	
				-0.10	314 4- 7D ₃	
6638.97	4		15058.42	-0.13	18 1- 331° ₂	
6639.56	1		15057.08			
6643.58	5		15047.97	-0.09	30 2- 454° ₂	
6643.86	3		15047.34	-0.11	23 2- 390° ₂	
6645.27	1		15044.14			
6648.12	2		15037.69	0.00	27 4- 422° ₃	
6651.91	1		15029.12			
6652.37	1		15028.09			
6652.98	1		15026.71			
6653.96	10		15024.50	-0.04	18 2- 331° ₂	
6654.44	5		15023.41	-0.05	28204 2- 432° ₂	
				-0.03	346 4- e ⁵ D ₃	
6656.54	12		15018.67	-0.13	28 6- 434° ₇	
6656.84	1		15017.99	+0.03	329 3- 7D ₄	
6657.03	10 <i>b</i>		15017.56	0.00	28 5- 432° ₄	
6657.66	4		15016.15	-0.05	27 5- 428° ₅	
6659.04	4		15013.03	-0.10	28204 2- 432° ₁	
6659.36	1		15012.31			
6663.18	1		15003.70			
6663.61	1		15002.74			
6664.16	15		15001.50	-0.10	3G ₄ - 314° ₄	
6664.80	25		15000.06	-0.12	22 6- 377° ₁	
6666.75	2 <i>b</i>		14995.67			
6669.22	2		14990.12			
6671.59	1		14984.80			
6674.12	1		14979.11			
6675.97	15		14974.96	-0.08	3P ₂ - 342° ₃	
6677.17	15		14972.27	-0.09	19 4- 342° ₃	
6678.42	80		14969.47	-0.08	18 3- 339° ₂	
6679.28	2		14967.54	-0.16	29479 4- 444° ₃	
6679.79	1		14966.40			
6682.60	12		14960.10	-0.05	20 2- 359° ₃	
6682.90	1		14959.44	+0.05	32 1- 473° ₂	
6693.08	30		14936.68	+0.01	14 2- 299° ₃	
6696.32	3		14929.45	+0.01	29 7- 443° ₆	
6701.81	4		14917.22	-0.14	24 2- 397° ₂	
6705.68	4		14908.62			
6708.17	2		14903.08	+0.07	27 1- 425° ₁	
6708.60	2		14902.13			
6709.24	4		14900.70	-0.12	23 1- 383° ₁	
6710.57	3		14897.75			
6713.28	15		14891.74	-0.06	3P ₁ - 281° ₁	
6713.96	4		14890.23			

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
6718.59	5		14879.97	-0.09	28347 ₃ - 432 ₂ [°]	
6719.89	8		14877.09	-0.06	32 ₁ - 472 ₁ [°]	
6725.18	15		14865.39	-0.05	19 ₄ - 341 ₄ [°]	
6726.42	4		14862.64			
6729.15	4		14856.61	-0.09	404 ₅ - 55 ₄	
6733.04	14		14848.04	0.00	362 ₅ - <i>e</i> ⁵ <i>D</i> ₄	
6734.00	1		14845.92	+0.01	34 ₄ - 491 ₄ [°]	
6740.08	12 <i>b</i>		14832.53	+0.05	22476 ₄ - 373 ₅ [°]	
6744.36	1		14823.12			
6745.47	7		14820.67			
6746.56	15		14818.28	-0.08	23 ₃ - 387 ₄ [°]	
6750.19	1		14810.31			
6752.67	1		14804.87	-0.05	19 ₃ - 346 ₄ [°]	
6754.60	10		14800.64	-0.02	28 ₅ - 430 ₅ [°]	
6755.75	4		14798.13			
6756.38	2		14796.75			
6756.78	1		14795.86	-0.04	32 ₄ - 469 ₄ [°]	
6757.84	5 <i>b</i>		14793.54	+0.15	357 ₂ - 50 ₂ [°]	
6764.45	15		14779.09	-0.03	27 ₁ - 424 ₂ [°]	
6766.04	1		14775.62			
6767.78	8		14771.81	-0.03	34 ₄ - 490 ₅ [°]	
6770.04	8		14766.88			
6778.33	10		14748.82	-0.12	20 ₂ - 357 ₂ [°]	
6782.78	2 <i>b</i>		14739.15			
6787.69	1		14728.49			
6792.42	4		14718.23	-0.11	23 ₆ - 382 ₆ [°]	
6792.98	10		14717.02	-0.10	31 ₅ - 461 ₆ [°]	
				+0.12	374 ₂ - 52 ₂	
6793.64	3		14715.58	-0.13	361 ₁ -50906 ₁	
6795.56	2		14711.44			
6796.34	6		14709.74			
6799.30	12		14703.34	-0.07	³ <i>H</i> ₅ - ⁷ <i>D</i> ₅ [°]	
6804.08	10		14693.01	-0.09	29853 ₄ - 445 ₅ [°]	
6805.31	25		14690.36	-0.14	³ <i>P</i> ₂ - 339 ₂ [°]	
6808.78	1		14682.87	+0.05	27 ₅ - 425 ₄ [°]	
6811.38	12		14677.26	-0.04	28 ₅ - 429 ₄ [°]	
6812.58	1		14674.69			
6814.92	20		14669.64	-0.04	22476 ₄ - 371 ₄ [°]	
6816.24	12		14666.80			
6817.70	1		14663.66			
6819.89	4		14658.96			
6820.27	20		14658.13	-0.05	19 ₃ - 344 ₂ [°]	
				+0.01	27 ₄ - 418 ₄ [°]	
6825.92	1		14646.00			
6826.49	4		14644.78	-0.04	30 ₂ - 450 ₂ [°]	
6828.43	20		14640.61	-0.06	318 ₂ - <i>e</i> ⁵ <i>D</i> ₁	
6829.75	1		14637.78	-0.01	26 ₂ - 414 ₃ [°]	
6832.19	8		14632.56	0.00	28 ₅ - 428 ₅ [°]	
6838.63	8		14618.78	-0.08	28291 ₃ - 429 ₄ [°]	
6840.08	8		14615.68	-0.05	28898 ₂ - 435 ₂ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
6844.88	10		14605.43	-0.07	333 ₅ [°] 7D ₄	
6846.90	1		14601.12			
6847.25	12		14600.38	-0.06	27 ₅ [°] 424 ₄ [°]	
6851.25	2		14591.85	+0.03	27 ₁ [°] 422 ₁ [°]	
6852.84	2		14588.47			
6853.74	30		14586.54	-0.13	19535 ₅ [°] 341 ₄ [°]	
6857.00	1 b		14579.61	-0.01	28898 ₂ [°] 434 ₃ [°]	
6861.16	1		14570.77			
6862.07	5		14568.84			
6864.81	15		14563.03	-0.11	28347 ₃ [°] 429 ₄ [°]	
6866.65	2		14559.12	+0.08	33 ₅ [°] 478 ₅ [°]	
6871.13	1		14549.63			
6874.84	10		14541.78	+0.10	306 ₁ [°] e ⁵ D ₀	
				+0.10	29479 ₄ [°] 440 ₃ [°]	
6875.16	3		14541.10	-0.10	³ G ₃ [°] ⁷ P ₄ [°]	
6876.01	20		14539.30	+0.04	351 ₄ [°] e ⁵ D ₃	
6876.73	2		14537.78			
6877.23	1		14536.73	-0.11	17 ₃ [°] 322 ₃ [°]	
6877.59	15		14535.97	+0.02	374 ₂ [°] 52002 ₃ [°]	
6882.15	5		14526.33	-0.07	19 ₃ [°] 343 ₃ [°]	
6887.03	5		14516.04	-0.09	20 ₂ [°] 354 ₃ [°]	
6887.81	10		14514.40	-0.12	³ H ₄ [°] ⁷ F ₅ [°]	
6891.43	4		14506.77			
6891.80	8		14506.00	-0.09	29479 ₄ [°] 439 ₄ [°]	
6893.20	2		14503.05			
6900.54	12		14487.62			
6903.80	2 b		14480.78			
6904.20	3		14479.94	-0.08	31 ₅ [°] 458 ₄ [°]	
6904.88	3		14478.52			
6906.73	3		14474.64			
6907.46	5		14473.11	-0.19	28 ₆ [°] 428 ₅ [°]	
6908.29	20		14471.37	-0.03	³ P ₁ [°] 277 ₁ [°]	
6915.52	10		14456.24	-0.12	22852 ₄ [°] 373 ₅ [°]	
6917.19	10		14452.75	-0.09	15 ₃ [°] 299 ₃ [°]	
6920.97	20		14444.86	-0.07	29479 ₄ [°] 439 ₅ [°]	
6926.65	1 b		14433.01			
6929.02	1 b		14428.08	+0.03	32 ₁ [°] 468 ₂ [°]	
6934.23	30		14417.23	+0.01	14 ₂ [°] 293 ₂ [°]	
6942.10	3		14400.89	-0.03	19 ₃ [°] 342 ₃ [°]	
6942.56	3		14399.94	-0.12	31 ₅ [°] 457 ₅ [°]	
6943.08	3 b		14398.86			
6943.68	12		14397.61	-0.07	22476 ₄ [°] 368 ₃ [°]	
				+0.08	33 ₅ [°] 476 ₄ [°]	
6944.00	3		14396.95	-0.04	28204 ₂ [°] 426 ₃ [°]	
6952.55	2		14379.24			
6955.59	15		14372.96	-0.08	23 ₂ [°] 383 ₁ [°]	
6956.32	1		14371.45	-0.07	29479 ₄ [°] 438 ₃ [°]	
6956.84	10		14370.38	-0.05	32 ₄ [°] 465 ₅ [°]	
6957.39	2		14369.24	-0.05	28204 ₂ [°] 425 ₁ [°]	
6958.77	8		14366.39			

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
6964.12	25		14355.36	-0.06	$^3P_{1-}$ 276 $^{\circ}_2$	
6964.96	4		14353.63			
6969.43	6		14344.42	-0.06	353 $^{\circ}_2-$ e^5D_3	
6971.64	15		14339.87			
6974.11	3		14334.79	-0.07	361 $^{\circ}_1-$ 50 $_2$	
6974.89	4		14333.19	-0.01	305 $^{\circ}_3-$ 7D_2	
6977.29	5		14328.26	-0.28	20 $_2-$ 353 $^{\circ}_2$	
6977.84	2		14327.13			
6978.47	3		14325.84	-0.06	17 $_4-$ 314 $^{\circ}_4$	
6981.88	6		14318.84	-0.10	23 $_1-$ 377 $^{\circ}_1$	
6984.27	40		14313.94	-0.02	$^3G_{3-}$ 276 $^{\circ}_2$	
6985.80	1		14310.80			
6989.27	15		14303.70	-0.03	18 $_1-$ 323 $^{\circ}_0$	
6991.50	12		14299.14	-0.04	28 $_5-$ 425 $^{\circ}_4$	
6991.84	1		14298.44			
6992.96	10		14296.15			
6993.27	30		14295.52	-0.12	19826 $_5-$ 341 $^{\circ}_4$	
6993.65	4		14294.74	-0.02	27 $_1-$ 419 $^{\circ}_0$	
6994.06	15		14293.90	-0.10	19 $_3-$ 341 $^{\circ}_4$	
7001.56	2		14278.59			
7002.70	10		14276.26	-0.04	23 $_3-$ 382 $^{\circ}_3$	
7009.68	8		14262.05	0.00	29479 $_4-$ 437 $^{\circ}_5$	
7011.40	6		14258.55	-0.05	322 $^{\circ}_3-$ 7D_3	
7013.38	1		14254.53			
7014.52	3 b		14252.21			
7015.76	8		14249.70	-0.06	33 $_5-$ 475 $^{\circ}_6$	
7016.22	8		14248.76	-0.02	368 $^{\circ}_3-$ e^5D_4	
7017.88	20		14245.39	-0.01	28204 $_2-$ 424 $^{\circ}_2$	
7020.26	8		14240.56	-0.03	24 $_2-$ 390 $^{\circ}_2$	
7027.89	5		14225.10			
7028.68	12		14223.50	-0.08	23 $_2-$ 382 $^{\circ}_3$	
7030.50	10		14219.82	+0.16	14 $_2-$ 291 $^{\circ}_2$	
7031.56	2		14217.67			
7031.99	3		14216.80	0.00	28 $_5-$ 424 $^{\circ}_4$	
7032.38	4		14216.02			
7033.14	2		14214.48			
7033.32	3		14214.11			
7034.80	3		14211.12			
7043.94	4 b		14192.68			
7056.16	12		14168.11	-0.13	20 $_0-$ 343 $^{\circ}_1$	
7056.59	3		14167.25	-0.09	29853 $_4-$ 440 $^{\circ}_3$	
7058.73	10		14162.95	+0.01	14 $_2-$ 291 $^{\circ}_3$	
				+0.07	377 $^{\circ}_1-$ 51 $_2$	
7060.86	5		14158.68			
7061.04	10		14158.32	-0.04	28291 $_3-$ 424 $^{\circ}_4$	
7061.36	12		14157.68	-0.04	28291 $_3-$ 424 $^{\circ}_2$	
7061.76	2		14156.87	-0.02	354 $^{\circ}_3-$ e^5D_3	
7066.88	2 b		14146.62			
7067.49	2 b		14145.40			
7070.44	5		14139.49	-0.06	$^3G_{3-}$ 7P_3	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
7070.70	2		14138.98			
7071.45	3		14137.48	-0.08	24 ₃ - 387° ₄	
7071.81	2 <i>b</i>		14136.75			
7073.78	1		14132.81			
7074.30	4		14131.78	+0.03	29853 ₄ - 439° ₄	
7075.01	2 <i>b</i>		14130.36	+0.21	380° ₃ -52183 ₂	
7075.85	1		14128.68			
7076.75	2		14126.88			
7078.74	2		14122.91	-0.06	23 ₃ - 380° ₃	
7079.61	1		14121.18	0.00	18 ₂ - 322° ₃	
7081.21	1		14117.99			
7082.03	8 <i>b</i>		14116.35	-0.03	19 ₃ - 339° ₂	
				-0.10	17 ₃ - 318° ₂	
7083.32	6		14113.78	-0.02	19 ₄ - 333° ₅	
7083.81	1		14112.80			
7088.99	1		14102.49	-0.15	28347 ₃ - 424° ₄	
7089.29	10		14101.90	-0.10	28347 ₃ - 424° ₂	
7091.96	1		14096.59			
7092.21	1		14096.09			
7100.52	2		14079.59			
7104.48	1		14071.75	+0.01	323° ₀ - <i>e</i> ⁵ <i>D</i> ₁	
7104.86	3		14070.99	-0.05	23 ₃ - 380° ₄	
7105.26	4		14070.20	-0.05	23 ₂ - 380° ₃	
7108.57	8		14063.65	0.00	27 ₁ - 417° ₂	
7109.16	1		14062.48	-0.09	31 ₅ - 454° ₅	
7109.34	6		14062.13	-0.06	26 ₂ - 409° ₃	
7111.18	10		14058.49	-0.09	293° ₂ - ⁷ <i>D</i> ₁	
7116.85	6		14047.29	-0.02	28204 ₂ - 422° ₃	
7118.19	2 <i>b</i>		14044.64			
7127.05	10		14027.18	-0.06	³ <i>H</i> ₄ - ⁷ <i>D</i> ₃	
7128.71	2		14023.92			
7129.64	5		14022.09	-0.05	27 ₅ - 418° ₄	
7132.89	1		14015.70			
7133.23	3		14015.03			
7134.34	1		14012.85			
7137.50	8		14006.65	-0.11	26 ₂ - 408° ₂	
7138.04	3		14005.58	-0.04	28 ₅ - 422° ₆	
7140.52	40		14000.72	-0.07	13 ₂ - 277° ₁	
7142.40	2 <i>b</i>		13997.04	-0.14	29853 ₄ - 438° ₃	
7147.00	3 <i>b</i>		13988.03			
7148.92	10		13984.27	-0.05	27 ₄ - 411° ₄	
7149.55	8		13983.04	-0.03	18 ₃ - 329° ₃	
7150.90	1 <i>b</i>		13980.40			
7151.20	1		13979.81			
7151.46	1		13979.30	+0.04	30 ₂ - 443° ₁	
7152.80	1		13976.69	-0.09	371° ₄ - <i>e</i> ⁵ <i>D</i> ₄	
				-0.13	382° ₃ -52183 ₂	
7155.30	1		13971.80			
7155.84	1		13970.75			
7156.36	1		13969.73			

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
7161.59	5		13959.53	-0.10	28291 ₃ - 422 ₃ [°]	
7162.64	50		13957.49	-0.05	⁵ S ₂ - 322 ₃ [°]	
7163.53	3		13955.75			
7166.90	10		13949.19	-0.16	32 ₁ - 463 ₂ [°]	
7173.38	5 <i>b</i>		13936.59			
7176.49	4		13930.55			
7179.85	10		13924.03	-0.05	357 ₂ - <i>e</i> ⁵ D ₃	
7183.83	4		13916.32			
7184.29	5		13915.42			
7184.77	12		13914.50	-0.10	20 ₁ - 343 ₁ [°]	
7185.70	2 <i>h</i>		13912.70	-0.02	27 ₁ - 415 ₂ [°]	
7187.56	6		13909.10	-0.04	26 ₂ - 407 ₁ [°]	
7191.33	20		13901.80	+0.06	313 ₁ - <i>e</i> ⁵ D ₀	
7195.68	4		13893.40			
7198.62	20		13887.72	-0.10	³ P ₂ - 331 ₂ [°]	
				+0.01	29853 ₄ - 437 ₅ [°]	
7200.16	40		13884.75	-0.06	13 ₂ - 276 ₂ [°]	
7202.94	1		13879.40			
7204.36	1		13876.66			
7206.02	4		13873.46	-0.01	31 ₅ - 452 ₄ [°]	
7216.35	20		13853.60	-0.01	18 ₃ - 328 ₄ [°]	
7218.22	6 <i>b</i>		13850.01			
7219.18	2		13848.17			
7220.18	8		13846.26	-0.10	28 ₆ - 422 ₆ [°]	
7226.06	20		13834.99	-0.04	19535 ₅ - 333 ₅ [°]	
7230.38	1		13826.72			
7231.66	6		13824.27	-0.11	23 ₆ - 373 ₅ [°]	
7237.12	30		13813.84	-0.14	373 ₅ - <i>e</i> ⁵ D ₄	
7240.57	1		13807.26			
7242.20	4		13804.15	-0.06	26 ₂ - 406 ₃ [°]	
7245.21	12		13798.42	0.00	22476 ₄ - 362 ₅ [°]	
7245.88	1		13797.14			
7249.04	1		13791.13	-0.03	23 ₂ - 377 ₁ [°]	
7256.40	2		13777.14			
7259.30	4		13771.64	-0.04	29479 ₄ - 432 ₄ [°]	
7267.91	5 <i>b</i>		13755.33			
7269.97	4 <i>b</i>		13751.42			
7273.94	8		13743.92	-0.08	23 ₃ - 376 ₃ [°]	
7274.47	30		13742.92	+0.07	382 ₄ -52002 ₃ [°]	
7278.24	100		13735.80	-0.03	15 ₃ - 291 ₂ [°]	
				-0.08	343 ₁ - <i>e</i> ⁵ D ₂	
7279.68	1		13733.08	-0.08	32 ₄ - 458 ₄ [°]	
7280.44	10		13731.65	-0.08	17 ₃ - 314 ₄ [°]	
7282.70	10 <i>b</i>		13727.39	+0.08	³ H ₅ - ⁷ D ₄ [°]	
7282.98	10 <i>b</i>		13726.86			
7285.81	60		13721.53	+0.03	19 ₆ - 333 ₅ [°]	
7288.48	1		13716.50			
7291.74	8 <i>b</i>		13710.37	-0.03	13 ₂ - ⁷ P ₃ [°]	
7291.97	6 <i>b</i>		13709.94	-0.07	27 ₄ - 409 ₃ [°]	
7295.16	8		13703.94	-0.08	³ P ₂ - 329 ₃ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
7296.11	5		13702.16	-0.07	28898 ₂ - 426 ₃ [°]	
7296.55	80		13701.33	-0.01	19 ₄ - 329 ₃ [°]	
7296.87	15		13700.73	-0.06	18 ₂ - 318 ₂ [°]	
7298.25	18		13698.14	-0.02	27 ₄ - 409 ₅ [°]	
7301.89	1		13691.31	+0.03	23 ₂ - 376 ₃ [°]	
7308.43	3		13679.05	-0.06	15 ₃ - 291 ₃ [°]	
7309.14	1		13677.74			
7310.27	3		13675.62			
7310.91	3		13674.42	-0.11	28898 ₂ - 425 ₁ [°]	
7313.00	4		13670.51			
7318.95	1		13659.40			
7322.29	3		13653.17	-0.03	32 ₄ - 457 ₅ [°]	
7324.79	2		13648.50	-0.02	24 ₃ - 382 ₄ [°]	
7325.68	1		13646.85	+0.05	30 ₂ - 440 ₃ [°]	
7334.93	1		13629.64			
7337.49	3		13624.89	-0.03	29853 ₄ - 434 ₃ [°]	
7340.42	2		13619.45			
7344.49	2 <i>b</i>		13611.90			
7347.91	12		13605.56	-0.06	22476 ₄ - 360 ₄ [°]	
7351.35	3		13599.20			
7355.00	8		13592.45	-0.01	344 ₂ - <i>e</i> ⁵ <i>D</i> ₂	
7361.69	6		13580.10	+0.04	28291 ₃ - 418 ₄ [°]	
7363.73	1		13576.34			
7365.16	8		13573.70	-0.04	360 ₄ - <i>e</i> ⁵ <i>D</i> ₃	
7366.32	2 <i>b</i>		13571.56			
7368.48	10		13567.58	-0.14	27 ₅ - 414 ₆ [°]	
7372.90	1		13559.45			
7377.25	2		13551.45	-0.04	31 ₅ - 449 ₄ [°]	
7381.31	15		13544.00	0.00	19826 ₅ - 333 ₅ [°]	
7384.12	8 <i>b</i>		13538.84	-0.20	329 ₃ - ⁷ <i>D</i> ₃	
7385.08	60		13537.08	-0.07	⁵ <i>S</i> ₂ - 318 ₂ [°]	
7385.62	4		13536.10	-0.12	23 ₃ - 374 ₂ [°]	
7386.35	1		13534.76	-0.06	31 ₅ - 449 ₆ [°]	
7386.56	2		13534.38			
7389.02	6		13529.87	-0.06	28204 ₂ - 417 ₂ [°]	
7390.12	1		13527.85			
7392.05	3		13524.32	-0.02	28347 ₃ - 418 ₄ [°]	
7410.82	2		13490.06	-0.08	28204 ₂ - 416 ₃ [°]	
7416.29	1		13480.11			
7416.64	1		13479.47	-0.16	17 ₄ - 305 ₃ [°]	
7429.10	5		13456.87	-0.03	27 ₁ - 411 ₀ [°]	
7431.78	2		13452.02	-0.01	27 ₄ - 406 ₃ [°]	
7433.40	3		13449.09	-0.05	23 ₁ - 369 ₂ [°]	
				+0.03	376 ₃ - <i>e</i> ⁵ <i>D</i> ₄	
7437.19	8		13442.23	+0.06	24 ₃ - 380 ₃ [°]	
				-0.02	28291 ₃ - 417 ₂ [°]	
7439.45	8		13438.15			
7448.21	6 <i>b</i>		13422.35	+0.05	22852 ₄ - 362 ₅ [°]	
7451.39	15		13416.62	-0.09	22 ₀ - 361 ₁ [°]	
				-0.10	24 ₂ - 382 ₃ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
7452.08	2 <i>b</i>		13415.38	0.00	32 ₄ - 455 ₃ [°]	
7456.37	10		13407.66	-0.05	26 ₂ - 402 ₃ [°]	
7459.27	12		13402.45	-0.01	28291 ₃ - 416 ₃ [°]	
7462.19	4		13397.20	-0.14	29853 ₄ - 432 ₄ [°]	
7466.11	5		13390.17	-0.07	24 ₃ - 380 ₄ [°]	
7467.74	2		13387.25	-0.04	34 ₄ - 476 ₄ [°]	
7468.22	8		13386.39	-0.14	28347 ₃ - 417 ₂ [°]	
7470.41	7		13382.46	+0.06	32 ₁ - 457 ₁ [°]	
7471.56	15		13380.40	-0.02	33 ₅ - 466 ₆ [°]	
7473.90	1		13376.21			
7483.35	30		13359.32	-0.10	20 ₂ - 343 ₁ [°]	
7489.50	4		13348.35	+0.01	27 ₅ - 411 ₄ [°]	
7493.08	3		13341.98	-0.05	³ G ₄ - ⁷ D ₅ [°]	
7497.96	2		13333.30	+0.05	33 ₅ - 466 ₄ [°]	
7504.13	40		13322.33	-0.03	³ P ₁ - 266 ₀ [°]	
7504.59	2		13321.51	-0.13	27 ₅ - 411 ₆ [°]	
7507.21	1		13316.86	-0.06	331 ₂ - <i>e</i> ⁵ D ₁ [°]	
7507.88	6		13315.68	-0.03	32 ₄ - 454 ₅ [°]	
7509.00	40		13313.68	-0.02	19 ₃ - 331 ₂ [°]	
7515.08	1		13302.91			
7520.66	20		13293.05	-0.06	19535 ₅ - 328 ₄ [°]	
7521.59	6		13291.40	+0.08	28291 ₃ - 415 ₂ [°]	
				0.00	34 ₄ - 475 ₃ [°]	
7525.54	1		13284.42			
7532.38	1		13272.36	-0.02	360 ₄ - ⁷ D ₅ [°]	
7537.45	50		13263.44	-0.07	18 ₃ - 322 ₃ [°]	
				+0.05	24 ₂ - 380 ₃ [°]	
7537.95	10		13262.56	-0.04	27 ₄ - 404 ₅ [°]	
7542.89	4 <i>b</i>		13253.87			
7543.46	1 <i>b</i>		13252.86			
7550.48	40		13240.54	-0.11	18 ₁ - 313 ₁ [°]	
7556.57	1		13229.87			
7561.68	3		13220.94			
7563.00	2		13218.62	-0.06	23 ₁ - 366 ₂ [°]	
7564.38	4		13216.21	-0.07	23 ₃ - 371 ₄ [°]	
7569.36	2		13207.52	-0.03	28291 ₃ - 414 ₃ [°]	
7569.92	80		13206.54	-0.10	18 ₂ - 313 ₁ [°]	
7574.84	2		13197.96	+0.04	27 ₁ - 408 ₂ [°]	
7576.81	1		13194.53			
7581.93	1		13185.62			
7582.17	1		13185.20			
7582.88	50		13183.97	-0.11	28 ₅ - 414 ₆ [°]	
7590.55	1		13170.65			
7595.37	2		13162.29			
7598.06	1		13157.63	-0.05	31 ₅ - 445 ₅ [°]	
7600.78	10 <i>b</i>		13152.92	-0.03	390 ₂ -52183 ₂ [°]	
7601.48	15		13151.71	-0.12	28347 ₃ - 414 ₃ [°]	
7606.85	1		13142.43			
7607.97	3		13140.49	+0.01	30 ₂ - 435 ₂ [°]	
7612.18	50		13133.22	-0.08	23 ₁ - 365 ₀ [°]	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
7614.15	150		13129.83	-0.07	19 ₃ - 329 ₃ [°]	
7626.06	2		13109.32			
7627.94	3 <i>b</i>		13106.09			
7628.90	8		13104.44	+0.06	30 ₂ - 434 ₃ [°]	
7630.24	10		13102.14	-0.07	318 ₂ - ⁷ D ₂	
7631.29	40		13100.34	+0.04	27 ₁ - 407 ₁ [°]	
7631.88	3		13099.32			
7637.57	2		13089.57			
7637.91	2		13088.98			
7641.04	3		13083.62			
7642.34	3		13081.40	-0.21	422 ₃ - 55 ₄ [°]	
7643.41	20		13079.56	-0.02	362 ₅ - ⁷ D ₅	
7644.09	3 <i>b</i>		13078.40			
7653.63	30		13062.10	-0.08	27 ₅ - 409 ₅ [°]	
7654.81	80		13060.09	-0.09	³ P ₁ - 263 ₂ [°]	
7656.48	2		13057.23	+0.15	29853 ₄ - 429 ₄ [°]	
7657.48	10		13055.54	+0.01	27 ₄ - 402 ₃ [°]	
7657.94	1		13054.75			
7658.80	4		13053.28	-0.02	29479 ₄ - 425 ₄ [°]	
7664.88	200		13042.93	-0.07	⁵ S ₂ - 313 ₁ [°]	
7666.95	2		13039.41			
7669.72	1		13034.70	-0.12	29479 ₄ - 425 ₃ [°]	
7672.29	15		13030.33	-0.06	22476 ₄ - 355 ₅ [°]	
7675.61	20		13024.70	-0.12	28 ₆ - 414 ₆ [°]	
7676.98	6		13022.38	-0.09	22476 ₄ - 354 ₃ [°]	
7678.57	6		13019.68			
7679.18	40		13018.64	-0.08	³ G ₃ - 263 ₂ [°]	
7680.12	1		13017.05			
7681.30	4		13015.05			
7688.97	80		13002.06	-0.02	19826 ₅ - 328 ₄ [°]	
7689.97	25		13000.37	-0.07	19 ₃ - 328 ₄ [°]	
7692.80	6		12995.59	-0.01	32 ₁ - 453 ₁ [°]	
7693.90	4		12993.73			
7694.36	3		12992.96	-0.11	409 ₃ - 53 ₃ [°]	
7696.04	2		12990.12			
7698.00	10		12986.81			
7699.48	20		12984.32	+0.02	24 ₂ - 377 ₁ [°]	
7701.01	40		12981.74	-0.04	19 ₄ - 322 ₃ [°]	
7701.54	1		12980.84	+0.01	32 ₄ - 451 ₄ [°]	
7702.63	2 <i>b</i>		12979.01			
7704.00	1 <i>b</i>		12976.70			
7705.58	6		12974.04	-0.04	23 ₃ - 369 ₂ [°]	
7706.80	5 <i>b</i>		12971.98	-0.02	390 ₂ -52183 ₂ [°]	
7711.08	1		12964.78			
7721.49	2 <i>b</i>		12947.30			
7722.06	12		12946.35			
7723.34	12		12944.20	-0.08	23 ₃ - 368 ₃ [°]	
7726.81	4		12938.39			
7727.07	20		12937.96	-0.04	28 ₅ - 411 ₆ [°]	
7729.36	2		12934.12			

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
7732.06	4		12929.61	-0.01	383 ₁ — 51 ₀	
7736.29	8		12922.54	-0.13	³ P ₁ — ⁷ P ₂	
7746.08	20		12906.20	-0.06	28291 ₃ — 411 ₄	
7747.07	3		12904.56			
7749.65	6		12900.26	-0.06	28204 ₂ — 411 ₂	
7754.92	6		12891.49	-0.07	23 ₂ — 368 ₃	
7758.58	20		12885.41	-0.05	17 ₃ — 305 ₃	
7761.16	40		12881.13	-0.08	³ G ₃ — ⁷ P ₂	
7761.61	1		12880.38			
7771.65	6		12863.74	0.00	382 ₄ — <i>e</i> ⁵ D ₄	
7772.52	8		12862.30	-0.06	28 ₁ — 415 ₂	
7774.68	10		12858.73	-0.03	351 ₄ — ⁷ D ₄	
7776.73	30		12855.34	-0.08	24 ₃ — 374 ₂	
7777.81	6		12853.55	+0.09	30 ₂ — 432 ₂	
7779.71	5		12850.41	-0.13	28347 ₃ — 411 ₄	
7782.77	12		12845.36	-0.02	26 ₂ — 397 ₂	
7784.15	100		12843.08	-0.04	18 ₃ — 318 ₂	
7785.65	3		12840.61	-0.03	³ G ₃ — ⁷ D ₃	
7790.13	5		12833.23			
7793.33	4		12827.96			
7797.57	5		12820.98			
7798.39	6		12819.63	-0.12	³ H ₅ — ⁷ P ₄	
7799.64	1		12817.58			
7801.60	8		12814.36	-0.04	33 ₅ — 461 ₆	
7802.65	2		12812.63	-0.01	28291 ₃ — 411 ₂	
7805.87	2		12807.35			
7806.81	8		12805.81	-0.03	17 ₄ — 299 ₃	
7808.96	60		12802.28	-0.04	14 ₂ — 277 ₁	
7812.44	7		12796.58			
7819.14	1		12785.61			
7819.67	7		12784.75	-0.02	26 ₂ — 396 ₃	
7820.28	2		12783.75			
7823.82	40		12777.96	-0.12	29 ₇ — 422 ₆	
7825.64	3		12774.99	+0.01	26 ₂ — 396 ₁	
7826.86	3		12773.00			
7827.42	15		12772.09	-0.10	29479 ₄ — 422 ₃	
7835.82	12		12758.40			
7836.78	5		12756.83	-0.09	28347 ₃ — 411 ₂	
7838.84	4		12753.48	-0.16	391 ₁ — 51 ₂	
7839.50	12		12752.41			
7844.95	7		12743.55	-0.07	23 ₃ — 366 ₂	
7846.33	5 <i>b</i>		12741.31			
7849.93	2		12735.46	-0.01	23 ₁ — 361 ₁	
7863.47	60		12713.54	0.00	20 ₁ — 331 ₂	
7867.04	50		12707.77	-0.04	³ G ₄ — 291 ₃	
7877.51	15		12690.88	-0.02	23 ₂ — 366 ₂	
7878.48	5		12689.31			
7880.40	70		12686.22	-0.12	14 ₂ — 276 ₂	
7883.16	10		12681.78	-0.04	322 ₃ — ⁷ D ₂	
7884.96	7		12678.88	-0.08	29853 ₄ — 425 ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
7885.25	6		12678.42	-0.12	28 ₅ - 409 ₅ [°]	
7886.48	80		12676.44	-0.06	³ P ₁ - 259 ₁ [°]	
7892.81	5		12666.28	-0.05	17 ₄ - ⁷ D ₅ [°]	
7894.08	2		12664.24	+0.04	28204 ₂ - 408 ₂ [°]	
7894.61	2		12663.39			
7896.48	6		12660.39	-0.09	29853 ₄ - 425 ₃ [°]	
7901.83	3 <i>b</i>		12651.82			
7905.30	40		12646.26	-0.09	22852 ₄ - 354 ₃ [°]	
7906.37	1		12644.55			
7909.21	40		12640.01	-0.09	22476 ₄ - 351 ₄ [°]	
7912.64	8		12634.53	-0.03	³ H ₆ - ⁷ F ₆ [°]	
7914.31	15		12631.87	-0.08	28291 ₃ - 409 ₃ [°]	
7917.64	5		12626.55	-0.07	27 ₅ - 404 ₅ [°]	
7918.27	2		12625.55			
7934.00	6		12600.52	+0.05	28898 ₂ - 414 ₃ [°]	
7940.92	120		12589.54	-0.03	13 ₂ - 263 ₂ [°]	
7947.45	7		12579.19	+0.02	354 ₃ - <i>e</i> ⁵ D ₂	
7948.12	3 <i>b</i>		12578.13			
7949.17	5		12576.47	-0.05	28291 ₃ - 408 ₂ [°]	
7953.03	2		12570.36			
7955.41	25		12566.61	+0.03	28204 ₂ - 407 ₁ [°]	
7957.06	40		12564.00	-0.07	³ P ₂ - 318 ₂ [°]	
7965.76	5		12550.28	-0.08	383 ₁ -50906 ₁	
7967.14	20		12548.10			
7968.15	2		12546.51	-0.07	396 ₁ -52183 ₂	
7975.38	10		12535.14	-0.03	31 ₅ - 439 ₅ [°]	
7977.18	2		12532.31			
7979.54	1		12528.60			
7981.08	1		12526.19			
7985.51	12		12519.24	-0.04	28 ₆ - 409 ₅ [°]	
7985.91	2		12518.61			
7988.72	10		12514.21	-0.03	339 ₂ - <i>e</i> ⁵ D ₁	
7990.20	4		12511.89	-0.04	14 ₂ - ⁷ P ₃ [°]	
7991.62	25		12509.67	-0.01	371 ₄ - <i>e</i> ⁵ D ₃	
7992.89	2		12507.68			
7993.87	4		12506.15	+0.01	27 ₄ - 397 ₄ [°]	
7998.74	2		12498.53			
8017.19	120		12469.77	-0.03	18 ₂ - 305 ₃ [°]	
8022.40	20		12461.67	+0.02	28204 ₂ - 406 ₃ [°]	
8024.52	6		12458.38	-0.02	18 ₃ - 314 ₄ [°]	
8028.62	1		12452.02	-0.04	13 ₂ - ⁷ P ₂ [°]	
8037.22	1		12438.69			
8039.04	1		12435.88			
8043.11	1		12429.58	-0.09	15 ₃ - ⁷ P ₄ [°]	
8054.89	30		12411.41	-0.08	13 ₂ - ⁷ D ₃ [°]	
8055.64	120		12410.25	-0.09	19 ₃ - 322 ₃ [°]	
8057.13	10		12407.96			
8058.15	20		12406.38	-0.12	28 ₁ - 411 ₀ [°]	
8060.38	60		12402.95	-0.11	⁵ S ₂ - 306 ₁ [°]	
8061.78	2 <i>b</i>		12400.80			

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
8064.83	5		12396.11			
8072.09	1		12384.96			
8076.41	2		12378.34			
8078.58	2 <i>b</i>		12375.01	+0.07	341 ₄ ° - 7D ₃	
8079.26	5		12373.97	0.00	28291 ₃ ° - 406 ₃	
8084.54	12		12365.89	-0.04	3G ₄ ° - 7D ₄	
8091.14	30		12355.80	-0.04	396 ₃ ° - 52002 ₃	
8093.44	15		12352.29	0.00	31 ₅ ° - 437 ₅	
8100.80	1		12341.07	+0.05	27 ₁ ° - 400 ₂	
8101.05	1		12340.69			
8106.88	5		12331.81	+0.02	31 ₅ ° - 437 ₄	
8111.86	3		12324.24			
8112.70	10		12322.96	-0.05	34 ₄ ° - 466 ₄	
8115.85	8		12318.18	-0.07	28347 ₃ ° - 406 ₃	
8122.63	1		12307.90			
8123.82	150		12306.10	-0.06	5S ₂ ° - 305 ₃	
8125.08	1		12304.19			
8125.47	10		12303.60			
8127.78	5		12300.10	-0.12	396 ₁ ° - 51936 ₂	
8128.76	4		12298.62			
8132.35	15		12293.19	-0.09	24 ₃ ° - 369 ₂	
8136.26	2 <i>b</i>		12287.28			
8136.98	1		12286.20	+0.06	445 ₅ ° - 56 ₆	
8137.38	8		12285.59			
8137.96	1		12284.72			
8139.57	30		12282.28	-0.01	397 ₄ ° - 52002 ₃	
8143.19	60		12276.82	-0.12	23 ₁ ° - 357 ₂	
8145.58	1		12273.22	-0.04	400 ₂ ° - 52284 ₃	
8146.35	1		12272.06			
8149.33	1		12267.58			
8150.86	1		12265.27			
8151.80	1		12263.86			
8160.80	5		12250.33			
8161.04	1		12249.97			
8161.44	5		12249.37			
8165.72	30		12242.95	-0.03	28 ₅ ° - 404 ₅	
8175.02	1		12229.02			
8180.26	1		12221.19			
8181.34	1		12219.58			
8186.69	12		12211.59	-0.08	17 ₃ ° - 299 ₃	
8188.61	1		12208.73			
8189.36	15		12207.61	-0.08	23 ₂ ° - 361 ₁	
8190.74	2		12205.55			
8192.80	3		12202.48	-0.03	15 ₃ ° - 276 ₂	
8210.22	50		12176.60	-0.07	19 ₄ ° - 314 ₄	
8215.08	1		12169.39			
8215.52	5		12168.74	+0.13	26861 ₂ ° - 39030 ₂	
8222.52	1		12158.38	+0.02	20 ₂ ° - 331 ₂	
8226.73	1		12152.16	-0.06	23 ₃ ° - 360 ₄	
8229.81	4		12147.61	+0.09	28 ₁ ° - 408 ₂	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
8230.25	1		12146.96			
8234.99	8		12139.97	+0.03	30 ₂ - 425° ₃	
8242.81	3 <i>b</i>		12128.45	-0.05	313° ₁ - 7 <i>D</i> ₁	
8248.90	3 <i>b</i>		12119.50			
8251.89	1		12115.11			
8252.38	8		12114.39	-0.05	24 ₂ - 369° ₂	
8260.68	12		12102.22	+0.06	418° ₄ - 53° ₅	
8263.42	2 <i>b</i>		12098.20			
8265.50	15		12095.16			
8268.09	1		12091.37			
8269.02	2		12090.01			
8270.47	1		12087.89			
8272.74	10		12084.57	-0.13	24 ₂ - 368° ₃	
8273.36	8		12083.67	-0.05	28 ₆ - 404° ₅	
8278.44	1		12076.25			
8282.85	5		12069.82	-0.10	3 <i>P</i> ₂ - 313° ₁	
8283.20	1		12069.31			
8283.50	2		12068.88			
8286.05	10		12065.16	+0.01	28204 ₂ - 402° ₃	
8287.72	8		12062.73	-0.09	24 ₃ - 366° ₂	
8289.01	1		12060.85			
8290.44	10		12058.77			
8292.64	1		12055.57			
8294.39	1 <i>b</i>		12053.03			
8294.79	1		12052.45			
8296.02	2		12050.66	-0.13	402° ₄ -52284° ₃	
8299.56	8		12045.52	0.00	373° ₅ - 7 <i>D</i> ₅	
8301.18	1		12043.17			
8306.12	3		12036.01			
8308.83	6		12032.08	-0.03	17 ₄ - 291° ₃	
8311.63	25		12028.03	-0.07	15 ₃ - 7 <i>P</i> ₃	
8312.66	1		12026.54			
8313.64	1		12025.12			
8313.80	1		12024.89	+0.02	28898 ₂ - 409° ₃	
8317.14	15		12020.06	-0.05	29479 ₄ - 414° ₃	
8322.05	50		12012.97	-0.12	23 ₃ - 359° ₃	
8329.37	1		12002.41			
8330.70	1 <i>h</i>		12000.50			
8336.00	1		11992.87			
8336.50	1		11992.14			
8338.08	120		11989.87	-0.08	19 ₃ - 318° ₂	
8339.07	4		11988.45			
8343.61	6		11981.93	-0.03	376° ₃ - <i>e</i> ⁵ <i>D</i> ₃	
8344.08	1		11981.25			
8346.72	5		11977.46	+0.01	28291 ₃ - 402° ₃	
8348.81	50		11974.46	-0.10	20 ₂ - 329° ₃	
8350.24	15		11972.41	-0.03	344° ₂ - <i>e</i> ⁵ <i>D</i> ₁	
8354.60	5		11966.17	+0.03	27 ₁ - 396° ₁	
8357.32	1		11962.27	+0.01	329° ₃ - 7 <i>D</i> ₂	
8358.72	75		11960.27	-0.10	23 ₂ - 359° ₃	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
8359.85	20		11958.65	-0.07	20 ₁ - 323° ₀	
8364.78	1 _h		11951.60			
8367.97	1		11947.05			
8368.27	6		11946.62			
8369.06	20		11945.49	-0.06	22 ₀ - 347° ₁	
8382.94	30		11925.71	-0.13	³ P ₀ - ⁷ D ₁	
8385.81	2		11921.63	-0.12	28347 ₃ - 402° ₃	
8387.87	1 _h		11918.70			
8389.46	1		11916.44			
8390.39	10		11915.12			
8398.18	1		11904.07			
8399.59	2		11902.07			
8401.08	6		11899.96			
8402.60	40		11897.81	-0.09	19535 ₅ - 314° ₄	
8403.30	1		11896.82			
8404.28	1 _b		11895.43			
8405.86	5		11893.20	-0.04	360° ₄ - ⁷ D ₄	
8409.44	8		11888.13	+0.03	30 ₂ - 422° ₁	
8417.13	40		11877.27	-0.13	22476 ₄ - 343° ₃	
				-0.04	30 ₂ - 422° ₃	
8421.01	3		11871.80	-0.02	28898 ₂ - 407° ₁	
8422.20	4		11870.12	-0.04	27 ₅ - 397° ₄	
8423.15	1		11868.78			
8428.10	1		11861.81			
8431.95	20		11856.40	-0.14	23 ₁ - 353° ₂	
8433.12	1		11854.75			
8434.88	1		11852.28			
8436.90	3		11849.44	-0.03	32 ₄ - 439° ₄	
8449.01	4		11832.46			
8466.97	1		11807.36	+0.06	28204 ₂ - 400° ₂	
8470.08	4		11803.02			
8470.53	5		11802.39			
8470.95	15		11801.81	-0.07	23 ₃ - 357° ₂	
8475.14	40		11795.97	-0.04	18 ₂ - 299° ₃	
8486.81	20		11779.75	-0.05	22852 ₄ - 346° ₄	
8495.07	15		11768.30	+0.02	402° ₄ -52002 ₃	
8495.70	8		11767.43			
8496.70	1		11766.04	+0.06	34 ₄ - 460° ₃	
8497.42	4		11765.05			
8498.00	1		11764.24	-0.01	27 ₅ - 396° ₅	
8499.51	12		11762.15	+0.02	393° ₅ - e ⁵ D ₄	
8506.97	30		11751.84	-0.08	22476 ₄ - 342° ₃	
8508.93	4		11749.13	-0.03	23 ₂ - 357° ₂	
8509.43	1		11748.44			
8515.40	25		11740.20			
8516.34	20		11738.91	-0.06	347° ₁ - e ⁵ D ₁	
8518.87	4		11735.42			
8522.08	3		11731.00			
8527.98	8		11722.89	-0.11	391° ₁ -50906 ₁	
8530.99	15		11718.75	-0.07	29479 ₄ - 411° ₄	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
8533.77	2		11714.93	+0.03	32 ₄ - 438 ₃ [°]	
8537.07	2		11710.40	-0.06	29 ₇ - 411 ₆ [°]	
8537.77	1		11709.44			
8542.90	3		11702.41			
8543.51	1		11701.58			
8550.37	8		11692.19	-0.03	17 ₃ - 293 ₂ [°]	
8551.86	1		11690.15	-0.08	17 ₄ - 287 ₄ [°]	
8566.61	1		11670.02			
8571.16	4		11663.83	-0.07	28347 ₃ - 400 ₂ [°]	
8571.80	1		11662.96			
8574.70	2		11659.01			
8577.69	5		11654.95	+0.03	380 ₄ - <i>e</i> ⁵ <i>D</i> ₃	
8577.95	2		11654.60			
8584.51	2		11645.69	-0.08	29853 ₄ - 414 ₃ [°]	
8585.11	300		11644.88	-0.12	22476 ₄ - 341 ₄ [°]	
				-0.14	31 ₅ - 430 ₅ [°]	
8587.43	1		11641.73			
8592.85	1		11634.39	+0.04	318 ₂ - <i>7D</i> ₁	
8593.94	3		11632.91	-0.06	449 ₄ -56573 ₅	
8594.42	120		11632.26	-0.11	⁵ <i>S</i> ₂ - 299 ₃ [°]	
				+0.16	33 ₅ - 449 ₆ [°]	
8613.27	50		11606.80	-0.07	19826 ₅ - 314 ₄ [°]	
8614.50	30		11605.15	-0.08	19 ₃ - 314 ₄ [°]	
8615.02	3		11604.45	+0.03	30 ₂ - 419 ₂ [°]	
8616.12	1		11602.96	-0.03	380 ₃ - <i>e</i> ⁵ <i>D</i> ₃	
8619.49	2		11598.43			
8621.14	1		11596.21			
8626.00	10		11589.68			
8628.04	1		11586.94			
8640.12	1		11570.74			
8640.59	3		11570.11			
8641.42	25		11569.00	-0.07	23 ₃ - 354 ₃ [°]	
8641.75	20		11568.55	-0.11	22 ₀ - 343 ₁ [°]	
8651.92	1		11554.96			
8654.77	2		11551.15			
8660.29	1		11543.79			
8662.53	1		11540.80			
8673.93	2		11525.63	-0.09	404 ₁ -51936 ₂	
8676.93	6		11521.65	-0.01	31 ₅ - 429 ₄ [°]	
8680.98	5		11516.27	-0.08	23 ₂ - 354 ₃ [°]	
8683.59	1		11512.81	+0.09	27 ₁ - 391 ₁ [°]	
8684.86	6		11511.13	-0.08	27 ₅ - 393 ₅ [°]	
8686.40	8		11509.09	0.00	396 ₅ - <i>e</i> ⁵ <i>D</i> ₄	
8691.03	1 <i>b</i>		11502.96			
8692.38	5		11501.17	-0.11	22852 ₄ - 343 ₃ [°]	
8697.32	4		11494.64	-0.02	17 ₃ - 291 ₂ [°]	
8697.70	1		11494.14	-0.06	26 ₂ - 383 ₁ [°]	
8698.35	8		11493.28			
8703.45	2		11486.54	+0.08	28 ₅ - 397 ₄ [°]	
8710.77	12		11476.89	-0.03	31 ₅ - 428 ₅ [°]	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
8714.98	4		11471.34			
8723.90	1		11459.62			
8731.48	1		11449.67	+0.01	382° ₃ - e ⁵ D ₃	
8732.93	3		11447.77			
8737.18	1		11442.20	-0.01	28204 ₂ - 396° ₃	
8740.47	25		11437.89	-0.05	17 ₃ - 291° ₃	
8744.60	15		11432.49	+0.07	28204 ₂ - 396° ₁	
8746.63	40		11429.84	-0.14	³ P ₂ - 306° ₁	
8754.76	10		11419.22	+0.04	405° ₄ -52002 ₃	
8766.00	4		11404.58	-0.04	366° ₂ - e ⁵ D ₂	
8767.08	1		11403.17	-0.01	397° ₄ - e ⁵ D ₄	
8772.12	1		11396.62	-0.02	382° ₄ - e ⁵ D ₃	
8776.42	8		11391.04	-0.06	14 ₂ - 263° ₂	
8777.43	12		11389.73	-0.06	20 ₁ - 318° ₂	
8784.47	6		11380.60	-0.01	28 ₅ - 396° ₅	
8786.31	1		11378.22			
8788.24	4		11375.72	-0.08	22852 ₄ - 342° ₃	
8791.89	1		11370.99			
8800.39	1		11360.01			
8821.37	5		11333.00	-0.08	³ P ₂ - 305° ₃	
8823.42	7		11330.36	-0.04	19 ₄ - 305° ₃	
8834.34	1		11316.36			
8838.86	1		11310.57	0.00	18 ₁ - 293° ₂	
8865.53	10		11276.55	-0.01	18 ₂ - 293° ₂	
8871.62	8		11268.80	-0.08	22852 ₄ - 341° ₄	
8875.20	1 b		11264.25			
8882.52	1 b		11254.97			
8883.66	5		11253.53	-0.06	14 ₂ - 262° ₂	
8909.14	1		11221.35			
8914.99	1		11213.98			
8915.83	8		11212.93	-0.09	14 ₂ - ⁷ D ₃	
8922.98	5		11203.94	-0.02	368° ₃ - e ⁵ D ₂	
8936.80	5		11186.62	-0.08	23 ₃ - 351° ₄	
8946.76	1		11174.16	0.00	369° ₂ - e ⁵ D ₂	
8947.10	1		11173.74			
8966.47	3		11149.60	-0.01	34 ₄ - 454° ₅	
8977.15	1		11136.34	+0.06	32 ₁ - 435° ₂	
8981.39	20		11131.08			
8984.25	6		11127.54	-0.03	28 ₅ - 393° ₅	
8989.52	2		11121.01			
8992.09	6 b		11117.83			
8996.08	6		11112.90	-0.11	18 ₁ - 291° ₂	
				-0.02	⁵ S ₂ - 293° ₂	
9005.61	1		11101.14	-0.04	368° ₃ - ⁷ D ₄	
9007.55	1		11098.75	+0.13	33 ₅ - 443° ₆	
9009.73	1		11096.06	0.00	17 ₃ - 287° ₄	
9010.34	1		11095.32	+0.04	382° ₄ - ⁷ D ₅	
9017.84	1		11086.09			
9018.33	1		11085.48			
9023.80	1		11078.76	-0.24	18 ₂ - 291° ₂	

TABLE 3. Observed and classified lines of W I

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o-c		
9041.53	0		11057.04	+0.24	³ G ₄ - ⁷ P ₃ [°] ₁	
9050.80	1		11045.72	+0.14	27 ₄ - 382 ₄ [°]	
9069.98	5		11022.36	+0.08	18 ₂ - 291 ₃ [°]	
9082.33	3		11007.37	-0.05	14 ₂ - 259 ₁ [°]	
9083.90	2		11005.47			
9090.86	2		10997.04	-0.06	29479 ₄ - 404 ₅ [°]	
9110.83	10		10972.94			
9114.72	1		10968.25	-0.06	28 ₆ - 393 ₅ [°]	
9139.70	5		10938.28	-0.06	18 ₃ - 299 ₃ [°]	
9157.89	1		10916.55			
9158.90	20		10915.35	-0.01	⁵ S ₂ - 291 ₂ [°]	
9161.47	6		10912.28	-0.04	26 ₂ - 377 ₁ [°]	
9165.38	4		10907.63	+0.03	387 ₄ - ^e ⁵ D ₃	
9165.78	1		10907.15	-0.12	15 ₃ - 263 ₂ [°]	
9167.00	4		10905.70	+0.04	27 ₁ - 385 ₀ [°]	
9169.77	2		10902.41			
9175.52	2		10895.58	-0.06	20 ₁ - 313 ₁ [°]	
9177.39	7		10893.36	0.00	22476 ₄ - 333 ₅ [°]	
9181.75	4		10888.18	-0.09	24 ₃ - 354 ₃ [°]	
9182.46	1		10887.34			
9203.07	0		10862.96			
9203.80	3		10862.10			
9206.78	3		10858.58	-0.06	⁵ S ₂ - 291 ₃ [°]	
9214.14	2		10849.91	-0.07	31 ₅ - 422 ₆ [°]	
9227.14	2		10834.62	+0.01	20 ₂ - 318 ₂ [°]	
9234.42	5		10826.08	+0.03	28204 ₂ - 390 ₂ [°]	
9246.28	3 <i>b</i>		10812.19	0.00	29853 ₄ - 406 ₃ [°]	
9253.21	1		10804.10			
9262.88	1		10792.82			
9265.32	2		10789.98			
9267.65	3		10787.26	-0.04	27 ₄ - 380 ₄ [°]	
9270.69	1		10783.72			
9282.81	7		10769.64	-0.12	15 ₃ - 262 ₂ [°]	
9292.09	5		10758.89	-0.07	19 ₃ - 305 ₃ [°]	
9317.84	5 <i>b</i>		10729.16	-0.03	15 ₃ - 261 ₃ [°]	
9320.32	7		10726.30	-0.04	357 ₂ - ^e ⁵ D ₁	
9341.08	1		10702.46			
9342.76	4		10700.54	+0.02	346 ₄ - 55 ₄	
9353.72	2		10688.00			
9379.00	5		10659.19	-0.10	³ P ₂ - 299 ₃ [°]	
9381.36	30		10656.51	-0.10	19 ₄ - 299 ₃ [°]	
9389.99	3		10646.72	0.00	404 ₅ - ^e ⁵ D ₄	
9399.03	1		10636.48	-0.08	440 ₃ - 54 ₃	
9402.58	1		10632.46			
9485.24	1		10539.80	-0.27	405 ₄ - ^e ⁵ D ₄	
9505.62	2 <i>b</i>		10517.21	-0.03	22852 ₄ - 333 ₅ [°]	
9507.62	2		10515.00	0.00	28 ₅ - 387 ₄ [°]	
9512.85	2		10509.21			
9515.88	5		10505.87	-0.03	24 ₃ - 351 ₄ [°]	
				-0.02	347 ₁ - ^e ⁵ D ₀	

TABLE 3. Observed and classified lines of W 1

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
9518.50	1		10502.98	+0.16	414 ₃ — 52 ₃	
9529.67	1		10490.67			
9531.25	7		10488.93			
9538.58	20		10480.87	-0.03	22476 ₄ — 329 ₃	
9590.74	1		10423.86	-0.14	23 ₃ — 343 ₃	
9595.35	3		10418.86	-0.03	18 ₃ — 293 ₂	
9615.88	1		10396.61	+0.03	30 ₂ — 407 ₁	
9632.98	1		10378.16			
9639.47	1		10371.17			
9668.13	1		10340.43	-0.03	20 ₂ — 313 ₁	
9707.53	1		10298.46	-0.06	23 ₃ — 342 ₃	
9726.08	2		10278.82			
9728.03	2		10276.76			
9736.31	1		10268.02	+0.21	361 ₁ — <i>e</i> ⁵ <i>D</i> ₁	
9747.98	4		10255.72	-0.02	20 ₁ — 306 ₁	
9755.27	2		10248.06	0.00	29 ₇ — 397 ₇	
9757.51	5		10245.71			
9764.61	6		10238.26	-0.07	19535 ₅ — ⁷ <i>D</i> ₅	
9778.95	0		10223.24			
9780.79	4		10221.32	-0.01	18 ₃ — 291 ₂	
9809.43	12		10191.48	-0.12	23 ₃ — 341 ₄	
9813.74	10		10187.00	+0.04	13 ₂ — ⁷ <i>D</i> ₂	
9833.12	0		10166.92	-0.17	29479 ₄ — 396 ₃	
9835.20	10		10164.78	+0.17	18 ₃ — 291 ₃	
9847.80	1		10151.77	+0.13	28204 ₂ — 383 ₁	
9859.46	3		10139.76	-0.08	³ <i>P</i> ₂ — 293 ₂	
9874.07	8		10124.76	-0.04	19 ₆ — ⁷ <i>D</i> ₅	
9908.53	0		10089.55			
9912.76	3		10085.24	+0.07	19 ₃ — 299 ₃	
9915.98	10		10081.97	-0.09	18 ₂ — 281 ₁	
9928.10	5		10069.66			
9944.44	6		10053.12			
9963.75	0		10033.63	+0.38	422 ₃ —52284 ₃	
9968.85	2		10028.50			
9983.22	2		10014.06	+0.08	23 ₃ — 339 ₂	
10000.66	1		9996.60			
10002.65	15		9994.61	+0.09	19 ₆ — ⁷ <i>F</i> ₆	
10021.50	2		9975.81			
10050.31	4		9947.22	-0.08	19826 ₅ — ⁷ <i>D</i> ₅	
10079.52	1		9918.39	-0.03	⁵ <i>S</i> ₂ — 281 ₁	
10101.67	1		9896.64			
10103.91	2		9894.44			
10115.52	3		9883.09	+0.21	19 ₄ — 291 ₃	
10126.93	2		9871.96	+0.02	382 ₃ — <i>e</i> ⁵ <i>D</i> ₂	
10140.54	1		9858.71	-0.07	28347 ₃ — 382 ₃	
10217.38	0		9784.56	-0.04	366 ₂ — <i>e</i> ⁵ <i>D</i> ₁	
10241.63	4		9761.40	+0.06	22476 ₄ — 322 ₃	
10306.04	0		9700.39	-0.13	20 ₂ — 306 ₁	
10347.27	3		9661.74	+0.08	18 ₂ — 277 ₁	
10409.77	2		9603.73	+0.11	20 ₂ — 305 ₃	

TABLE 3. *Observed and classified lines of W 1*

Wavelength Å	Intensity		Wavenumber (cm ⁻¹)		Classification	Zeeman effect
	Arc	Spark	Observed	o - c		
10450.97	1		9565.87	+0.15	19 ₃ — 293 ₂ [°]	
10477.97	0		9541.22	+0.22	19 ₄ — ⁷ D ₄ [°]	

(Paper 72A6-522)