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Energy Levels, Classified Lines, and Zeeman Effect of Neutral Thorium

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A list of about 9500 classified lines of Th I in the range 2345–29 662 Å is given. Lines in the range 2345–9239 Å were observed and measured at NBS. Zeeman effect data for 2281 lines are listed. Lists of 254 even and 322 odd levels including their g values are presented. Among them there are 72 new levels, which were not contained in earlier publications.

Key words: Energy levels; thorium; Th I; wavelengths; Zeeman-effect of Th I

1. Introduction

A review of early research on the spectra of neutral and singly ionized thorium has been given by Zalubas [1960].[1] In the meantime light sources and spectrographs have been improved and more standard wavelengths of thorium have become available. Their development is described by Giacchetti, Stanley, and Zalubas [1970]. Therefore, at NBS I undertook a new observation and description of Th I and Th II in order to expand the analyses of these spectra. A complete line list of about 35 000 Th I and Th II lines will be published separately. That list will include all available thorium standards and will be useful for users of thorium standards. Zalubas and Corliss have published a list of classified lines in Th II [1974].

In the present paper I will review only the work on finding the energy levels and g factors of Th I.

2. Wavelengths and Classified Lines

New observations were taken on the NBS 10.7 meter Eagle spectrograph in the range 2000–12 000 Å. Electrodeless lamps and sliding sparks were used as light sources for the separation of Th I and Th II. Professor S. P. Davis supplied some spectrograms for range 2600–4500 Å produced on the Czerny-Turner spectrograph at the University of California. I measured wavelengths in the 2800–12 000 Å observation range. Stronger lines were measured on 3 to 6 plates, weaker lines (below intensity 5) on 2 to 3 plates. Small numbers of lines of intensity 1 are included which were measured only once. The wavelengths in the range 2000–2800 Å were measured only once. Internal thorium standards from Giachetti [1966], and Giacchetti, Stanley, and Zalubas [1970] were used.

All classified lines fit the energy level scheme to within ± 0.05 cm^{-1}. More than 60 percent of them do not exceed ± 0.02 cm^{-1}.

The consistency of wavelengths in this list can be demonstrated by the following test. The average absolute value of the difference between observed and calculated wavelengths expressed in cm^{-1} was 0.008 for 50 lines around each of the wavelengths 3000, 4000, 5000, 6000, and 8000 Å.

At the Laboratoire Aimé Cotton, Orsay, France wavelengths of Th I and Th II lines in the range 9239–29 662 Å were recorded by means of Fourier transform spectroscopy. The list of 3100 lines, including classified lines of Th I and Th II, was published by Giacchetti, Blaise, Corliss, and Zalubas [1974]. The average deviation between the observed and calculated wavenumbers from this list is less than 0.002 cm^{-1}.

These two lists combined together have around 35 000 lines and excel earlier observations in accuracy and extent. In order to have all classified lines of Th I at hand, the 1900 Th I lines measured by Fourier transform spectroscopy are taken from Giacchetti et al. [1974] and incorporated in table 4.

Table 4 contains about 9500 classified lines in the wavelength range 2345–29 662 Å. For the wavelength range 2345–9239 Å visually estimated relative intensities on an arbitrary scale from 1 to 5000 are given for electrodeless lamp and sliding spark. For the wavelength range 9239–29 662 Å only the electrodeless lamp intensity on a scale 0 to 9 is given. The letter symbols are used to describe the character of lines;

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

b—blend (two wavelengths measured), d—double (one wavelength measured), h—hazy, l—shaded to longer wavelength, r—reversed, s—shaded to shorter wavelength, and w—wide. In column 4 the wavenumber is given in vacuum in units of cm^{-1}. In the fifth and sixth columns the classification of a line is given by rounded-off values of the energy levels responsible for the transition, with their J-values as subscripts and a superscript degree symbol to indicate odd parity.

3. Zeeman Effect and g-Factors

B. E. Moore [1909] observed the splittings of thorium lines in the magnetic field in the range 3002–4721 Å. He observed mostly Th II lines and at that time of course did not derive J and g values.

Lier [1939] observed the Zeeman effect of 40 lines of Th I in the range 3427–6182 Å. Fifteen of these lines had resolved ZE patterns. These data were used by Schuurmans [1946], who derived g factors for all levels he found. Charles [1958] furnished ZE data for 46 lines in the range 3041–6457 Å.

In the final list I used g factors derived from my observations. I have measured ca. 2281 Zeeman patterns in a magnetic field of 2.4 teslas, produced by the electromagnet at Argonne National Laboratory. From completely resolved patterns I derived J values and g values, and from partly resolved patterns I obtained Δg, or p, or n, or a combination of these. Δg is the difference between two g values for that line. The distance from the no-field position to the most distant p component (parallel polarization) is denoted by p, and n is the distance from no-field position to the strongest n component (normal polarization). All these measurements are given in Lorentz units. The type of Zeeman pattern is described by the following numbers: 1 indicates that the n pattern shades out, 2 indicates that the n pattern shades in, 3 indicates that the n pattern is symmetrical, $J_1 = J_2$, and the p pattern shades in, and 7 indicates that the pattern is either triplet or unresolved. The values of g derived from my measurements or measured Δg, p, and n are given in table 3.

Values of g factors for the energy levels are derived from various numbers of patterns, from 60 for one level to only one for some levels. Therefore, the g-values are given with three, two, or one decimal digits. The estimated error is not greater than 2 in the last digit.

4. Energy Levels

In previous papers on Th I [Zalubas, 1959, 1968] I gave an account of the earlier analyses of Th I. Here I will give just the total number of levels contributed by those early investigators that have proved to be real. Schuurmans [1946] found 29 energy levels and properly identified the five lowest levels. Stukenbroeker and McNally [1953] contributed 7 levels. Charles [1958] found 2 levels. Steers [1967], using his far infrared observations, found 13 levels. Giacchetti and Blaise [1970] found 10 levels. The remaining levels were found by the present author. Now the total number of known even levels is 254, and 322 odd levels. There are 72 levels given here for the first time.

Th I has two very distinct systems of levels, which I have connected. One system starts with the ground state $6d^27s^2\ ^3F_2$. The other starts 7795 cm^{-1} above ground state with the $5f6d7s^2\ ^3H^\circ_4$ level.

For energy level searches I treated the two systems separately. In such searches, I used a set of programs called COMBO, written by J. Tech for the analysis of spectra. The numbers of combinations and the available ZE data were the critical factors in establishing new energy levels. I have not included levels which can be found by intercombinations between high odd levels, and high even levels, despite the fact that some chains are long. Some of them may be confirmed later by theoretical calculations and extension of the analysis. Even levels are given in table 1 and odd levels in table 2.

The uncertainty of the level values for levels below 15 000 is 0.001 cm^{-1}, and the uncertainties of most of the high levels do not exceed 0.005 cm^{-1}. Levels given with two decimal places have uncertainties of 0.01 to 0.02 cm^{-1}.

I have identified the lowest levels by using g values, and by comparison of the levels with calculations for the $6d^27s^2$ and $6d^37s$ configurations by Trees [1960]. For the low odd levels I made preliminary identifications using Martin's [1963] Ce I identifications, and also Klinkenberg's [1950] Th III identifications. Later I used Sugar's [1968] preliminary calculations for the $5f6d7s^2$ and $5f6d^27s$ configurations. Giacchetti and Blaise [1970] identified the ^5F, ^5G, ^5H, ^5I terms of the $5f5d7s7p$ configuration. In addition, Brewer [1971] identified 14 465 as $^5G^\circ_2$ of $6d^27s7p$, and 18 431 as $^3F_3$ of $5f7s^27p$. No attempt has been made to identify the terms or configurations of the high energy levels.

5. Ionization Energy

Ionov and Mittsev [1961] derived the ionization energy of Th I as 6.95 ± 0.06 eV, and Smith and Hertel [1969] as 7.5 ± 0.3 eV by the surface ionization method. Avni and Klein [1973] got 7.4 ± 0.3 eV for the ionization energy from measurements in a d.c. arc plasma, using the Saha equations. Meggers, Corliss, and Scribner [1961] estimated this energy to be about 50 000 cm^{-1}. Rauh and Ackermann [1973] obtained an ionization potential of 6.0 ± 0.1 eV from an ionization efficiency curve and from the appearance potential by electron impact. The best value of 49 000 ± 1000 cm^{-1} (6.08 ± 0.12 eV) was obtained by Sugar [1973] utilizing interpolated spectral properties of actinide atoms.

TABLE 1. *Even energy levels of* Th I

Configuration	Term	J	Level (cm^{-1})	g	Configuration	Term	J	Level (cm^{-1})	g
$6d^2\ 7s^2$	^3F	2	0.000	0.736			2	24671.898	1.118
$6d^2\ 7s^2$	^3P	0	2558.058		$5f\,6d7s7p$	^5F	3	24915.019	1.183
$6d^2\ 7s^2$	^3F	3	2869.260	1.084	$5f\,6d7s7p$	^5H	4	25405.160	0.918
$6d^2\ 7s^2$	^3P	2	3687.988	1.254			2	25890.390	1.113
$6d^2\ 7s^2$	^3P	1	3865.476	1.478			4	25923.018	0.96
$6d^2\ 7s^2$	^3F	4	4961.660	1.212			1	26111.536	0.374
$6d^3(^4F)7s$	^5F	1	5563.143	0.065			4	26255.580	1.032
$6d^3(^4F)7s$	^5F	2	6362.397	1.011			5	26380.537	1.049
$6d^2\ 7s^2$	^1D	2	7280.125	1.188			3	26796.070	0.814
$6d^3(^4F)7s$	^5F	3	7502.290	1.250			4	26971.459	1.036
$6d^2\ 7s^2$	^1G	4	8111.005	1.067	$5f\,6d7s7p$	^5I	6	26997.242	1.11
$6d^3(^4F)7s$	^5F	4	8800.251	1.310			3	27044.218	1.17
$6d^3(^4F)7s$	^5F	5	9804.808	1.366	$5f\,6d7s7p$	^5G	5	27191.358	1.116
$6d^3(^4P)7s$	^5P	1	11601.032	2.398			3	27343.737	0.690
$6d^3(^4P)7s$	^5P	2	11802.934	1.713			4	27495.586	0.998
$6d^3(^2G)7s$	^3G	3	12847.971	1.388			4	27521.523	0.925
$6d^3(^4P)7s$	^5P	3	13088.564	1.050			2	27566.853	0.811
$6d^3(^2G)7s$	^3G	4	13297.436	0.992			5	27591.803	1.10
$6d^3(^4F)7s$	^3F	2	13847.774	0.932			3	27612.267	0.928
$6d^3(^2D2)7s$	^3D	1	13962.523	0.753			3	27980.683	1.030
$6d^3(^2G)7s$	^3G	5	14204.268	1.144			5	28034.004	1.074
$6d^3(^2P)7s$	^3P	0	14226.823				4	28227.932	1.128
$6d^3(^2H)7s$	^3H	4	15493.222	0.914			2	28273.215	0.848
$6d^3(^2D2)7s$	^3D	2	15863.892	1.05			5	28342.498	1.101
$6d^3(^4F)7s$	^3F	3	15970.099	1.200			3	28358.393	1.190
$6d^2\ 7s^2$	^1S	0	16351.942				2	28531.046	0.910
$6d^3(^2H)7s$	^3H	6	16554.245	1.17			4	28562.659	1.033
$6d^3(^4P)7s$	^3P	1	17073.814	1.28			2	28679.257	0.97
$6d^3(^2H)7s$	^3H	5	17166.108	1.11			4	28845.562	0.98
$6d^3(^2D2)7s$	^3D	3	17398.399	1.19			2	28882.455	0.860
$6d^3(^4F)7s$	^3F	4	17959.898	1.17			3	28934.903	1.031
$5f\,6s^2\ 7p$	^3G	3	18431.685				4	29104.006	0.996
$6d^3(^2P)7s$	^3P	2	18549.409	1.2			5	29141.525	1.07
$6d^3(^2P)7s$	^3P	1	18574.613	1.37			2	29418.388	1.042
		2	18699.627				1	29422.086	1.104
$6d^3(^4P)7s$	^3P	2	19273.284	1.180			6	29552.52	1.18
$6d^3(^2F)7s$	^3F	4	19532.421	1.20			2	29650.955	0.84
$6d^3(^2F)7s$	^3F	3	19713.035	1.1			5	29684.194	1.175
$6d^3(^2F)7s$	^3F	2	20054.776	0.88			4	29756.400	1.090
$6d^3(^2H)7s$	^1H	5	21143.425	1.03			3	29835.046	1.065
		2	21575.040	1.19			4	29849.160	1.03
		3	21594.676	1.035			1	29961.798	1.339
$5f\,6d7s7p$	^5I	4	22098.187	0.742			3	30011.343	1.070
		1	22401.215	1.180			4	30014.330	
		3	22637.461	1.128			2	30132.640	0.75
		4	23032.983	1.084			1	30286.898	0.624
$5f\,6d7s7p$	^5G	2	22988.523	0.625			6	30372.711	1.15
$5f\,6d7s7p$	^5G	3	23201.985	0.946			5	30508.001	1.11
$5f\,6d7s7p$	^5I	5	23277.380	1.006			2	30544.560	0.970
$5f\,6d7s7p$	^5F	1	23769.872	0.468			4	30552.501	1.19
$5f\,6d7s7p$	^5F	2	23990.407	0.875			3	30651.163	1.057
$5f\,6d7s7p$	^5G	4	24032.222	1.091	$5f\,6d7s7p$	^5I	7	30726.784	
$5f\,6d7s7p$	^5H	3	24399.112	0.832			2	30758.008	0.984
		1	24627.874	0.504			1	30889.931	0.734
		3	24664.727	0.895			6	30930.435	1.2

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TABLE 1. *Even energy levels of* Th I—continued

Configuration	Term	J	Level (cm^{-1})	g	Configuration	Term	J	Level (cm^{-1})	g
		3	30964.652	1.15			5	35216.987	1.177
		1	31095.84	1.327			5	35300.91	0.87
		3	31141.795	1.096			3	35405.303	1.067
		2	31245.890	1.336			1	35421.028	1.164
		3	31265.632	1.075			3	35440.891	1.07
		5	31271.000	1.084			3	35576.514	1.192
		4	31326.971	1.15			5	35582.288	1.15
		1	31429.253	1.294			4	35633.866	1.120
		3	31537.237	0.900			4	35794.375	1.144
		5	31626.821	1.111			6	35799.978	1.075
		3	31774.590	1.05			3	35831.292	1.190
		4	31793.697	1.090			2	35877.81	1.412
		3	31929.499	1.14			2	36047.30	0.83
		4	31995.652	0.92			4	36089.691	1.09
		4	32012.954	1.2			5	36133.494	1.041
		2	32041.231	1.08			5	36210.789	1.0
		5	32201.997	1.052			4	36297.296	1.128
		5	32293.919	1.186			3	36336.196	1.10
		4	32458.177	1.132			2	36485.388	1.275
		3	32551.611	1.25			3	36515.98	0.834
		5	32737.014	1.136			2	36653.567	1.203
		4	32781.597	1.083			6	36748.997	1.13
		3	32796.121	1.156			3	36775.361	0.97
		5	32963.392	1.20			5	36781.317	1.118
		6	33068.085	1.07			3	36808.30	1.094
		3	33099.412	1.337			2	36818.110	0.95
		5	33214.534	1.028			4	36885.289	1.048
		1	33273.846	1.380			4	37085.86	1.20
		2	33309.040	1.002			2	37094.849	1.155
		1	33390.746	0.704			3	37131.059	0.88
		3	33408.661	1.113			5	37211.68	1.03
		4	33418.121	1.121			4	37303.438	1.02
		4	33459.180	0.95			3	37307.14	0.995
		4	33527.562	1.15			6	37332.502	1.00
		3	33564.851	1.1			3	37404.631	1.3
		2	33606.291	1.417			3	37521.509	1.127
		2	33689.043	1.0			3	37688.21	1.238
		2	33721.308	1.159			6	37742.28	1.1
		1	33773.617	1.410			2	37748.043	0.99
		4	33831.881	1.15			2	37784.402	1.02
		3	34167.473	1.041			4	37819.119	1.04
		1	34298.062	0.931			5	37890.46	0.97
		4	34301.432	0.905			4	37892.823	0.86
		6	34407.566	1.19			4	37992.254	1.01
		3	34431.335	1.047			2	38097.10	
		2	34444.594	1.102			5	38106.740	1.16
		4	34447.172	1.11			3	38145.74	1.07
		5	34460.873	1.175			4	38186.12	0.95
		3	34707.730	1.165			4	38366.571	1.042
		5	34849.054	1.111			3	38382.14	1.0
		4	34873.350	1.11			3	38529.930	1.0
		3	34874.059	1.095			2	38602.98	1.1
		1	35046.030	0.4			4	38700.25	1.2
		3	35089.394	1.184			3	38734.401	1.10
		2	35149.75	1.09			4	38760.633	1.05

TABLE 1. *Even energy levels of* Th I – continued

Configuration	Term	J	Level (cm^{-1})	g	Configuration	Term	J	Level (cm^{-1})	g
		2	38807.67	1.02					
		5	38953.228	1.1					
		4	38956.877	1.05					
		3	39010.164						
		3	39174.919	1.03					
		5	39252.291	1.05					
		4	39283.816	1.02					
		3	39321.807	1.01					
		5	39351.78	1.07					
		4	39520.19	1.0					
		2	39680.452	0.99					
		5	39694.33	1.006					
		3	39837.63	0.95					
		4	40052.463	0.94					
		3	40200.428	1.02					
		4	40426.73	1.01					
		3	40493.279	1.08					
		5	40582.766						
		2	40611.670	1.0					
		4	40701.33	1.07					
		2	40886.99	1.2					
		4	41230.973	1.05					
		5	41356.165	1.0					
		3	41361.409	0.91					
		2	41578.403	0.86					
		3	41686.69	1.1					
		5	41712.85	1.10					
		4	41755.863	1.09					
		2	42027.37	1.019					
		3	42286.444	0.95					
		5	42635.880						
		5	43857.368	1.05					
		6	43937.23	1.16					
		6	44437.81	1.12					

TABLE 2. *Odd energy levels of* Th I

Configuration	Term	J	Level (cm^{-1})	g	Configuration	Term	J	Level (cm^{-1})	g
$5f\,6d7s^2$	$^3H°$	4	7795.270	0.863			3	21165.099	1.306
$5f\,6d7s^2$	$^3F°$	2	8243.597	0.778			2	21252.603	0.668
$5f\,6d7s^2$	$^1G°$	4	10414.133	0.986			4	21539.593	1.154
$5f\,6d7s^2$	$^3G°$	3	10526.540	0.869			1	21668.958	1.585
$6d7s^2\ 7p$	$^3F°$	2	10783.153	0.732	$6d^3\ 7p$	$^5G°$	2	21738.052	0.529
$5f\,6d7s^2$	$^3H°$	5	11197.027	1.034			3	21890.134	0.942
$5f\,6d7s^2$	$^3F°$	3	11241.728	1.004			4	21902.272	0.984
$5f\,6d7s^2$	$^3D°$	1	11877.836	0.726			3	22141.606	1.095
$5f\,6d7s^2$	$^1D°$	2	12114.365	0.970			4	22163.133	0.992
$5f\,6d7s^2$	$^3G°$	4	13175.113	1.084			2	22248.950	1.141
$6d7s^2\ 7p$	$^3F°$	3	13945.308	1.116			3	22338.996	1.017
$5f\,6d7s^2$	$^3D°$	2	14032.084	1.125			1	22396.827	1.527
$5f\,6d7s^2$	$^3F°$	4	14206.916	1.167			5	22399.400	0.935
$5f\,6d7s^2$	$^3P°$	1	14243.992	1.200			2	22508.048	1.384
$5f\,6d7s^2$	$^3P°$	0	14247.307				3	22669.890	1.233
$6d^2\ 7s7p$	$^5G°$	2	14465.220	0.810			3	22855.301	1.133
$5f\,6d7s^2$	$^3H°$	6	14481.873	1.170			1	22877.519	0.615
$5f\,6d7s^2$	$^3D°$	3	15166.899	1.064			5	22877.583	1.198
$5f\,6d7s^2$	$^3G°$	5	15490.075	1.19			5	23015.155	1.08
$5f\,6d^2\ 7s$	$^5H°$	3	15618.985	0.600			1	23049.461	1.363
$6d^2\ 7s7p$	$^5F°$	1	15736.968	0.388			2	23093.984	1.321
$6d^2\ 7s7p$	$^5F°$	2	16217.482	1.070			4	23113.549	1.040
$5f\,6d^2\ 7s$	$^5H°$	4	16346.648	0.880			6	23306.831	1.1
$5f\,6d^2\ 7s$	$^5I°$	4	16783.847	0.712			0	23410.201	
$5f\,6d7s^2$	$^3P°$	2	17224.302	1.040			1	23481.375	0.843
$6d^2\ 7s7p$	$^3D°$	1	17354.638	0.507			3	23521.050	1.078
$6d^2\ 7s7p$	$^5F°$	3	17411.223	1.134			2	23603.522	1.379
$5f\,6d^2\ 7s$	$^5H°$	5	17501.174	1.004			5	23609.172	0.99
$6d^2\ 7s7p$	$^3D°$	2	17847.078	1.162			4	23655.141	1.2
$5f\,6d^2\ 7s$	$^5I°$	5	18011.379	0.996			1	23741.076	0.769
$6d7s^2\ 7p$	$^3F°$	4	18053.617	1.2			2	23752.688	1.112
$6d^2\ 7s7p$	$^3D°$	3	18069.066	1.136			4	23916.899	1.25
$6d^2\ 7s7p$	$^3P°$	0	18382.825				6	24084.943	1.211
$6d^2\ 7s7p$	$^3P°$	1	18614.338	1.380			2	24182.432	1.252
$6d^2\ 7s7p$	$^5F°$	4	18809.886	1.15			4	24202.565	1.376
		3	18930.293	0.970			4	24259.777	1.044
		2	19039.154	1.090			5	24274.716	
$5f\,6d^2\ 7s$	$^5H°$	6	19227.334	1.08			2	24307.749	1.518
		3	19503.144	1.086			2	24381.336	1.253
$6d^2\ 7s7p$	$^3P°$	2	19516.981	1.361			3	24421.060	1.16
$5f\,5d7s^2$	$^1H°$	5	19588.362	1.16			3	24561.653	1.177
		1	19817.182	1.572			5	24701.047	1.150
		4	19948.396	1.281			3	24769.718	1.141
$5f\,6d^2\ 7s$	$^5I°$	6	19986.166	1.2			1	24838.924	0.770
		3	20214.931	1.182			6	24850.30	
		5	20322.267	1.06			1	24880.220	0.78
		1	20423.495	1.433			3	24981.111	1.075
		2	20522.715	0.815			2	25306.763	1.166
		0	20543.845				3	25321.922	1.386
		4	20566.625	1.233			4	25355.576	0.98
		0	20724.396				3	25442.686	1.091
		1	20737.288	1.363			1	25526.314	1.066
$5f\,6d^2\ 7s$	$^5I°$	7	20867.975	1.2			4	25575.046	1.05
		2	20922.123	1.170			5	25690.475	1.209
$6d^2\ 7s7p$	$^5F°$	5	21077.152	1.252			2	25703.403	1.177

TABLE 2. *Odd energy levels of* Th I—continued

Configuration	Term	J	Level (cm^{-1})	g	Configuration	Term	J	Level (cm^{-1})	g
		5	25753.940	1.15			3	29744.522	1.148
		1	25809.306	1.568			2	29853.148	0.910
		4	25877.502	1.041			4	29881.457	1.165
		3	26036.352	0.954			3	30017.100	1.129
		4	26048.543	1.116			4	30160.006	1.11
		3	26096.986	1.001			2	30208.582	1.095
		2	26113.270	0.979			3	30255.452	1.082
		1	26287.049	0.710			1	30281.011	1.471
		2	26363.104	1.036			5	30517.108	1.18
		4	26384.927	1.060			4	30517.390	1.455
		3	26508.031	1.074			2	30553.291	1.042
		5	26645.412	1.1			0	30613.62	
		2	26651.831	1.102			1	30723.82	1.06
		4	26790.430	1.139			3	30761.719	1.192
		3	26878.162	0.903			5	30788.179	1.19
		0	26882.511				2	30812.991	0.929
		3	26995.777	1.166			1	30928.742	0.976
		2	27061.417	0.987			3	30990.520	1.097
		1	27087.981	1.162			4	31019.110	1.19
		3	27260.171	1.105			2	31075.91	1.326
		4	27266.028	1.150			5	31141.255	0.947
		1	27297.579	0.6			4	31194.703	0.730
		3	27317.393	1.087			3	31283.117	1.11
		2	27447.746	1.07			3	31523.937	1.108
		3	27670.964	1.219			2	31599.274	1.216
		2	27674.327	1.090			4	31671.155	1.18
		2	27784.368	0.860			1	31712.73	1.175
		5	27852.743	1.259			5	31716.592	1.14
		4	27948.610	1.263			3	31780.865	1.175
		1	28024.691	1.030			2	31870.097	0.944
		4	28140.870	1.222			4	31953.464	1.073
		2	28347.551	1.543			5	32023.60	1.16
		1	28372.707	1.805			1	32080.416	0.795
		4	28480.159	1.02			2	32160.486	1.080
		2	28513.300	1.100			3	32197.119	1.138
		3	28589.314	1.179			3	32285.180	1.12
		1	28649.145	1.091			4	32294.089	1.16
		2	28673.429	1.130			4	32439.049	1.141
		3	28676.243	1.093			2	32503.62	1.200
		4	28680.738	1.192			2	32575.427	0.716
		3	28884.958	1.180			1	32650.907	1.14
		2	28917.957	0.945			1	32665.561	0.82
		4	28932.654	1.111			3	32754.504	1.12
		5	29050.740	1.12			4	32862.480	1.16
		1	29157.095	0.876			2	32954.59	1.114
		3	29157.879	1.210			3	33043.332	1.134
		1	29197.326	1.141			1	33161.77	1.332
		2	29197.906	1.38			4	33270.547	1.170
		2	29252.790	0.978			3	33294.928	1.10
		4	29310.020				2	33297.133	1.26
		2	29419.232	1.680			2	33427.039	0.80
		1	29640.260	0.952			4	33560.06	1.18
		3	29686.370	1.260			3	33591.166	1.010
		5	29711.622	1.2			1	33662.23	1.018
		5	29733.325	1.18			2	33718.42	1.064

TABLE 2. *Odd energy levels of* Th I—continued

Configuration	Term	J	Level (cm^{-1})	g	Configuration	Term	J	Level (cm^{-1})	g
		2	33734.706	1.302			3	37159.544	1.00
		4	33799.730	1.15			2	37234.01	1.10
		3	33800.621	1.10			5	37571.34	1.044
		5	33844.960	1.118			4	37605.73	1.13
		3	33967.906	0.794			1	37616.308	
		4	34001.333	1.078			3	37656.975	1.134
		1	34111.17	0.850			2	37736.977	
		5	34182.708	1.09			4	37950.044	1.13
		2	34324.08	1.131			3	37954.97	1.1
		4	34344.650	1.114			2	37970.270	
		2	34371.840	1.282			3	38053.028	1.08
		3	34430.22	1.213			2	38088.99	0.9
		4	34492.022	0.898			3	38216.95	1.13
		3	34583.008	1.172			1	38278.878	0.866
		1	34591.01	1.496			4	38306.376	1.05
		3	34704.406	1.103			2	38355.312	
		3	34725.43	1.090			5	38385.213	0.98
		2	34851.666	0.866			3	38416.222	1.18
		1	34878.665	1.478			4	38580.297	1.06
		5	34886.676	1.07			5	38665.559	1.078
		1	34989.778	1.619			2	38669.77	1.027
		5	35081.021	1.100			3	38675.356	0.94
		4	35131.22	1.212			3	38788.85	0.98
		3	35240.821	1.077			2	38814.252	0.77
		5	35273.877	1.16			1	38840.559	1.2
		1	35328.63	1.272			3	38998.975	1.314
		4	35351.439	1.19			5	39062.033	
		3	35462.05	1.250			3	39264.69	1.06
		2	35533.292	1.219			4	39311.261	1.10
		1	35678.85	1.02			1	39411.899	
		4	35733.465	1.1			3	39468.675	
		3	35812.518	1.10			4	39562.09	1.12
		2	35885.887	1.567			3	39611.52	1.26
		4	36062.875	1.100			5	39873.585	1.08
		3	36074.06	1.140			4	39906.930	1.10
		5	36132.494	1.167			3	39985.716	
		4	36178.040	1.04			2	40096.226	1.21
		2	36188.95	1.41			3	40254.944	
		5	36275.186	1.12			4	40270.098	1.10
		1	36361.456	1.109			4	40425.183	1.11
		4	36382.61	1.064			5	40724.599	
		3	36427.40	1.08			4	40776.519	1.16
		2	36488.828	1.0			3	40980.714	
		1	36556.77	1.054			4	41134.911	1.04
		5	36625.920	1.15			2	41200.38	1.35
		2	36668.670	0.92			2	41720.570	1.13
		3	36762.803	1.13			1	42624.127	1.29
		4	36800.658	0.97					
		1	36837.21	0.798					
		5	36837.988	1.168					
		2	36871.91	1.250					
		5	37008.760	1.136					
		4	37041.15	1.009					
		2	37149.10	1.060					
		1	37159.282	0.9					

TABLE 3. *Zeeman effect of* Th I

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
9094.821	400	100	10992.25	2	1	0.498	2	1.007			
9063.948	200	10	11029.69	3	2	0.766	2	1.186			
9048.248	800b	75	11048.83	2	2	1.006	3	1.136			
9045.341	200	20	11052.38	1	2	1.710	3	1.140			
9016.581	300	20	11087.63	7							0.918
9012.517	150	8	11092.63	7							1.090
8997.862	100	10	11110.70	1	1	0.727	2	0.627			
8967.635	500	100	11148.15	3						0.111	
8949.114	100	20	11171.22	7							0.984
8910.844	75	4	11219.20	1							0.118
8892.973	150	15	11241.75	2	2	0.734	3	1.014			
8889.187	100	10	11246.54	2	1	1.387	2	1.717			
8875.223	100	8	11264.23	1	3	1.165	4	0.975			
8868.822	200	50	11272.36	3	5	1.243	5	1.358			
8854.899	10	3	11290.08	3						0.288	
8852.784	10	3	11292.78	1							0.628
8841.170	150	20	11307.62	1							0.864
8829.686	15	5	11322.32	3	3	0.895	3	1.170			
8810.240	15		11347.31	3						0.359	
8781.093	25	1	11384.98	7							0.892
8775.575	200	40	11392.14	7							1.031
8772.803	150	8	11395.74	3	3	1.001	3	1.125			
8766.743	100	15	11403.61	2	4	0.994	5	1.150			
8760.449	100	8	11411.81	1	3	1.392	4	1.044			
8758.247	400	75	11414.67	2	3	1.182	4	1.310			
8749.169	100	20	11426.52	3						0.288	
8748.038	400	100	11428.00	3	3	0.976	3	1.249			
8739.779	75	10	11438.80	3						0.262	
8734.023	75	8	11446.33	3						0.136	
8732.426	150	50	11448.43	3	1	1.358	1	2.398			
8730.818	15	2	11450.54	2							1.274
8724.375	40	2	11458.99	3	2	0.928	2	1.166			
8717.754	10	2	11467.70	1							0.965
8709.233	200	50	11478.91	1	2	1.254	3	1.064			
8701.117	50	3	11489.62	2					0.190		1.682
8691.333	20l	1	11502.56	1							0.125
8687.841	50	4	11507.18	1							0.698
8682.216	10	1	11514.63	7							0.869
8668.118	100	20	11533.36	2	2		3		0.135		
8665.491	400	100	11536.86	2	2	1.088	3	1.248			
8655.873	50	8	11549.68	3						0.075	
8649.144	50	5	11558.66	2	4	0.715	5	1.115			
8645.310	150	25	11563.79	3	1	0.759	1	1.068			
8639.444	150	50	11571.64	1	3	0.870	4	0.746			
8638.360	100	5	11573.09	3						0.661	
8631.350	50	2	11582.49	7							1.567
8630.770	20h	2h	11583.27	7							1.180
8621.315	75	2	11595.97	2	2	0.813	3	1.089			
8607.724	8	2	11614.28	7							0.968
8593.103	100	10	11634.04	1					0.150		
8577.279	100	15	11655.51	2	1	0.462	2	0.968			
8575.327	75	5	11658.16	3						0.376	
8573.122	500	100	11661.16	2	1	0.055	2	1.036			
8560.425	100	4	11678.46	2	1	0.864	2	1.706			
8558.448	75l	4	11681.15	3						0.250	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
8556.324	100	20	11684.05	3	4	0.736	4	0.982			
8554.945	200	50	11685.94	7							1.209
8544.593	150	50	11700.09	2							1.455
8543.721	150	40	11701.29	3						0.390	
8539.795	150	25	11706.67	2	2	1.004	3	1.136			
8516.555	150	50	11738.61	7							1.144
8510.622	150	25	11746.80	2	2	0.626	3	1.006			
8501.438	100	5	11759.48	3						0.065	
8496.449	100b		11766.39	3						0.271	
8496.340	75b		11766.54	7							1.136
8491.159	8	1	11773.72	7							1.409
8483.298	50	2	11784.63	7							1.266
8478.505	200		11791.29	7							1.294
8478.353	500		11791.50	2	1	0.074	2	0.503			
8471.823	200	50	11800.59	3	2	1.379	2	1.721			
8465.668	100	25	11809.17	7							2.420
8464.236	150	50	11811.17	3	2	0.778	2	0.878			
8446.516	500	150	11835.95	7							0.860
8445.495	200	150	11837.38	3	4	1.064	4	1.281			
8430.586	15	1	11858.31	7							1.110
8426.379	75		11864.23	7							0.375
8424.031	100		11867.54	3	1	0.375	1	1.201			
8421.227	500	100	11871.49	3	1	0.388	1	1.483			
8418.004	200	75	11876.04	3	2	0.886	2	0.978			
8416.742	500w	150	11877.82	7							0.745
8411.913	100	5	11884.64	7							1.116
8410.532	25	25	11886.59	2							1.980
8407.010	75	3	11891.57	3						0.364	
8406.674	40	2	11892.04	3						0.269	
8399.253	100	8	11902.55	2					0.320		
8398.171	75	8	11904.08	7							0.621
8388.528	100	10	11917.77	1	3	1.096	4	0.856			
8385.726	100	10	11921.75	3	3		3			0.737	
8384.927	8	2	11922.89	7							1.101
8383.073	8	2	11925.52	7							1.239
8379.219	100	8	11931.01	1	2	1.264	3	0.598			
8369.332	200	50	11945.10	7							1.084
8367.390	150	20	11947.87	1	2	0.811	3	0.591			
8366.073	150	15	11949.76	3	2	1.121	2	1.717			
8358.728	300	200	11960.26	3						0.170	
8346.537	100	3	11977.73	7					0.130		
8345.867	100	5	11978.69	1	1	1.369	2	1.038			
8340.933	20	3	11985.77	7							1.341
8339.403	5	2	11987.97	7							1.170
8335.700	100	8	11993.30	3						0.969	
8330.455	500	300	12000.85	3	3	1.088	3	1.240			
8320.859	500	150	12014.69	1	2	1.353	3	1.241			
8316.595	8	2	12020.85	1							0.226
8311.621	100	8	12028.04	1							0.731
8304.412	75	3	12038.48	3						0.142	
8297.172	100b	5	12048.99	2	1	0.390	2	1.255			
8295.542	100	8	12051.36	2					0.170		
8292.521	100	8	12055.75	3	2	0.836	2	1.078			
8288.404	100	5	12061.73	3						1.102	
8275.628	400	150	12080.35	3						0.130	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
8263.926	150	20	12097.46	2	4	0.983	5	1.359			
8261.010	100	25	12101.73	3						0.534	
8254.741	100	15	12110.92	3	3	0.870	3	1.130			
8252.398	400	50	12114.36	2	2	0.734	2	0.966			
8246.011	25	4	12123.74	7							1.009
8237.739	20	2	12135.92	1							0.739
8234.937	100	4	12140.05	3	1	0.777	1	2.399			
8227.672	75	4	12150.77	2							1.232
8227.482	100	8	12151.05	1					0.340		
8224.956	8	2	12154.78	7							1.151
8214.147	100	10	12170.77	7							1.249
8209.444	100	8	12177.75	1	3	1.200	4	0.900			
8207.475	100	10	12180.67	2							1.440
8203.199	100		12187.02	2							1.246
8202.148	100	10	12188.58	7							0.969
8198.438	10	2	12194.09	7							1.046
8195.942	8	1	12197.81	7							1.006
8194.398	150	25	12200.11	2							1.863
8186.915	500	100	12211.26	7							1.061
8169.793	400	50	12236.85	3	2	1.194	2	1.362			
8162.064	50	3	12248.44	2							1.277
8159.737	400	100	12251.93	1	1	1.402	2	1.007			
8157.540	100	8	12255.23	1							0.673
8154.176	10		12260.28	7							0.830
8143.143	500	300	12276.89	1							1.063
8137.940	100	4	12284.74	1					0.150		
8129.681	100	5	12297.22	7							1.087
8122.725	200	50	12307.75	7							1.255
8122.350	100	5	12308.32	2							1.460
8114.539	75	4	12320.17	3	4	0.715	4	1.001			
8096.253	20	3	12348.00	7							0.963
8093.631	200	75	12352.00	1	1	1.476	2	1.066			
8086.568	15	4	12362.79	7							1.301
8075.651	150	20	12379.50	3	2	1.705	2	1.253			
8070.094	25	1	12388.02	7							1.390
8066.826	75	8	12393.04	2	4	0.999	5	1.209			
8057.973	50	2	12406.66	7							1.141
8032.433	200	50	12446.11	7							1.329
8026.192	100	8	12455.78	2							1.328
8025.708	100	8	12456.53	2							1.675
8024.235	100	500	12458.82	2					0.220		
8022.310	100b	20	12461.81	3						0.211	
8022.191	150b	25	12462.00	2					0.222		
8014.499	50	3	12473.96	7							1.393
8013.499	15	2	12475.51	2					0.170		
8010.708	100	4	12479.86	2					0.148		
8006.443	15		12486.51	7							1.055
8003.446	100	5	12491.18	2							1.038
8002.179	50	5	12493.16	3						0.208	
8000.033	100	10	12496.51	2							1.370
7996.963	40	3	12501.31	7							1.287
7993.676	150	8	12506.45	2	3	0.860	4	1.084			
7991.366	50	5	12510.06	1							0.490
7978.977	500	300	12529.49	3	2	1.066	2	1.253			
7976.175	8	2	12533.89	7							0.978

TABLE 3. *Zeeman effect of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
7972.598	200	20	12539.51	1	4	1.215	5	1.018			
7961.994	100	8	12556.21	2							1.598
7961.158	75	4	12557.53	3						0.250	
7954.592	150	15	12567.90	7							0.935
7941.721	200	75	12588.27	1	3	1.031	4	0.886			
7937.727	100	20	12594.60	3	5	0.935	5	1.371			
7929.938	5		12606.97	3						0.236	
7929.809	25c	2	12607.18	3	1	0.487	1	1.328			
7927.546	50l	3	12610.78	7							0.899
7925.734	75	3	12613.66	3						0.485	
7922.235	15		12619.23	3						0.096	
7916.790	40	5	12627.91	2					0.111		1.460
7914.493	8	2	12631.57	7							1.306
7908.148	100	5	12641.71	3	2	1.081	2	1.373			
7904.411	75	5	12647.69	3	4	0.907	4	1.231			
7903.319	8	1	12649.43	7							1.075
7900.309	200	75	12654.25	1	2	0.864	3	0.614			
7899.614	100	50	12655.36	7							1.276
7897.230	15	3	12659.18	7							1.241
7893.614	75	5	12664.98	3						0.452	
7869.771	15	2	12703.35	7							1.338
7868.924	40	10	12704.72	3						0.147	
7868.396	75	10h	12705.57	3						0.159	
7865.954	400	75	12709.52	7							1.362
7862.336	15	3	12715.37	7							1.040
7853.284	20		12730.02	7							1.384
7849.892	5	1	12735.52	7							1.146
7848.441	100	40	12737.88	2							1.455
7847.536	500b	150	12739.35	3	4	1.154	4	1.307			
7842.254	100	10	12747.93	3					0.130		
7841.781	200	50	12748.70	2	2	0.862	3	1.002			
7836.456	100	5	12757.36	3						0.475	
7823.475	50	2	12778.53	7							0.911
7822.392	100	4	12780.30	2	1	2.380	2	1.245			
7817.771	500	200	12787.85	2							1.070
7809.452	100	15	12801.47	2							1.282
7807.879	40		12804.05	3						0.327	
7804.533	100	5	12809.54	3						0.131	
7804.146	75	4	12810.18	2							1.362
7802.824	10	2	12812.35	7							1.101
7798.360	600	25	12819.68	7							0.059
7793.128	10	2	12828.29	7							1.255
7788.932	500	75	12835.20	7							0.808
7782.318	150	50	12846.11	7							1.272
7778.488	75	5	12852.43	3						0.481	
7776.671	40	2	12855.43	2	2	1.170	3	1.394			
7773.744	50	5	12860.28	7							1.100
7761.704	40	4	12880.22	2							1.357
7749.325	8	2	12900.80	7							1.099
7742.552	100	2	12912.09	1					0.320		
7734.617	8	2	12925.33	7							1.096
7728.939	100	15	12934.83	7							1.178
7721.188	100	8	12947.81	3						0.290	
7710.258	100	15	12966.17	2	4	1.072	5	1.262			
7703.679	100	10	12977.24	7							1.195

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
7699.765	100	5	12983.84	3						0.191	
7697.922	75	5	12986.94	3						0.472	
7693.797	100	5	12993.91	7							1.117
7691.765	75	3	12997.34	2	2	1.286	3	1.414			
7683.010	50	1	13012.15	7							1.239
7676.212	100	15	13023.67	3	2	0.892	2	1.192			
7668.955	50	1	13036.00	2	1	0.784	2	1.710			
7666.566	100	2	13040.06	7							1.279
7660.889	150	4	13049.72	1	4	1.207	5	1.017			
7654.695	100	5	13060.28	1					0.370		
7653.827	200	10	13061.76	7							1.137
7652.317	100	3	13064.34	7							1.188
7647.380	500	50	13072.78	3	5	1.198	5	1.370			
7642.873	15		13080.48	3						0.231	
7637.385	75	2	13089.88	2					0.381		2.444
7636.173	100	4	13091.96	3						0.095	
7633.767	150	2	13096.09	1					0.270		
7630.310	100	5	13102.02	3	4	0.986	4	1.306			
7627.175	150	5	13107.41	2							1.401
7620.080	100	5	13119.61	7							1.166
7616.686	50	1	13125.46	2	1	0.748	2	1.164			
7607.519	40	1	13141.27	2							1.368
7605.083	5		13145.48	2					0.485		
7602.795	40	1	13149.44	7							1.264
7598.203	200	3	13157.38	3						0.580	
7591.999	10		13168.14	7							1.109
7591.531	20		13168.95	3						0.157	
7586.988	8		13176.83	1					0.208		
7585.783	200	10	13178.93	7							0.386
7585.688	200	15	13179.09	7							1.106
7583.422	25		13183.03	1	3	1.092	4	0.920			
7580.686	40	1	13187.79	7							1.212
7577.266	20		13193.74	3						0.182	
7573.342	50	1	13200.58	1	3	1.377	4	1.111			
7571.029	8		13204.61	7							1.046
7569.509	100	2	13207.26	3	2	0.728	2	0.876			
7567.739	300	15	13210.35	3	5	1.080	5	1.372			
7557.751	50	1	13227.81	1					0.166		
7555.326	50	1	13232.05	1	2	0.986	3	0.902			
7549.316	200	8	13242.59	3	2	0.815	2	1.187			
7537.429	100	2	13263.47	1					0.270		
7531.818	50	2	13273.35	3						0.089	
7531.142	75	2	13274.54	7							1.067
7523.133	100	3	13288.67	3	4	0.998	4	1.169			
7520.694	15		13292.99	3						0.190	
7520.127	8		13293.99	2	2	1.034	3	1.174			
7517.963	100	2	13297.81	1	1	1.400	2	1.146			
7516.737	50	1	13299.98	3						0.420	
7511.788	100	4	13308.74	1	4	1.040	5	1.384			
7508.477	100	4	13314.61	3	4	0.938	4	1.176			
7505.292	75		13320.26	3						0.135	
7501.180	8		13327.57	7							1.250
7499.643	10	1	13330.30	3						0.124	
7499.000	100	2	13331.44	3	2	0.778	2	1.186			
7495.564	75	2	13337.55	2	4	0.887	5	1.176			

TABLE 3. *Zeeman effect of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
7493.427	100	2	13341.36	2	3	1.092	4	1.304			
7487.972	100	3	13351.07	2	2	0.780	3	1.040			
7483.624	200	10	13358.83	1	1	1.471	2	1.040			
7481.352	200	15	13362.89	3	4	0.996	4	1.306			
7474.559	10	1	13375.03	3						0.267	
7469.054	40	1	13384.89	7							0.770
7465.443	100	3	13391.36	1	2	1.439	3	1.189			
7462.990	75	1	13395.77	7							0.961
7461.290	8	1	13398.82	3	2	1.170	2	1.336			
7458.753	50	2	13403.38	2	1	0.506	2	0.984			
7457.648	25	1	13405.36	2	3	0.925	4	1.170			
7456.818	20	1	13406.85	2							1.283
7455.204	100	4	13409.76	3	4	0.878	4	1.090			
7452.516	20	1	13414.59	2	2	0.944	3	1.194			
7450.213	50w	5	13418.74	7							1.201
7447.848	150	5	13423.00	3	3	0.890	3	1.002			
7443.873	50	1	13430.17	1							0.840
7442.040	15		13433.48	3						0.463	
7430.255	500	15	13454.78	1	1	1.574	2	1.012			
7428.943	800	50	13457.16	1	1	1.363	2	1.179			
7422.013	100	2	13469.72	3						0.601	
7418.548	200		13476.02	2	1	0.066	2	1.088			
7417.789	100		13477.39	1	3	1.075	4	0.871			
7411.739	100	4	13488.39	2	3	1.050	4	0.872			
7410.968	50	1	13489.80	3						0.275	
7409.221	40		13492.98	3						0.525	
7404.719	40l		13501.18	7							1.174
7403.993	100	1	13502.51	3						0.603	
7402.248	400	8	13505.69	2	3	0.864	4	1.094			
7396.895	20	1	13515.46	2							1.499
7392.637	15	1	13523.25	7							1.296
7383.712	150	8	13539.59	7							1.203
7376.879	200	8	13552.14	2	5	1.082	6	1.172			
7376.178	25		13553.42	7							1.143
7370.827	100	2	13563.26	7							0.969
7362.195	50	1	13579.16	3						0.525	
7355.179	10		13592.12	3						0.270	
7353.644	15		13594.96	7							1.084
7353.007	15		13596.13	7							0.962
7350.454	75		13600.85	2	3	1.041	4	1.233			
7341.150	500	15	13618.09	3	4	0.986	4	1.088			
7339.599	150	3	13620.97	1					0.280		
7335.568	100	15	13628.45	7							0.834
7329.488	100	5	13639.76	1	2	1.713	3	1.093			
7324.808	300	10	13648.47	3						0.590	
7323.207	100	3	13651.46	3						0.571	
7315.609	150	3	13665.64	2	1	0.734	2	1.058			
7315.064	200	3	13666.65	2	1	0.522	2	1.262			
7311.510	100	3	13673.30	3	3	0.994	3	1.174			
7309.255	100	2	13677.52	1							0.938
7302.172	50	2	13690.78	2							1.622
7298.138	200b	3	13698.35	1	3	1.162	4	0.990			
7296.265	100	3	13701.87	2					0.094		
7294.316	15	1	13705.53	3						0.239	
7284.905	500	20	13723.23	1	2	1.248	3	1.133			

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
7282.732	100	2	13727.33	2							1.436
7279.142	8		13734.10	3						0.579	
7277.013	75	1	13738.12	3						0.099	
7274.294	15	1	13743.25	3						0.224	
7272.550	100	2	13746.55	3						0.294	
7270.558	100	2	13750.31	2	2	0.673	3	1.255			
7268.834	100	2	13753.58	7							1.182
7267.096	50	1	13756.86	7							1.362
7264.118	50		13762.50	2							1.546
7262.190	10		13766.16	3						0.187	
7258.177	200	5	13773.77	2	3	1.034	4	1.164			
7256.981	150	4	13776.04	3	2	0.974	2	1.110			
7255.351	200	5	13779.13	2	3	0.942	4	1.074			
7247.988	25	2	13793.13	7							1.144
7247.599	40		13793.87	7							1.018
7244.689	200	8	13799.41	1	3	1.030	4	0.856			
7242.086	200	10	13804.37	3	5	0.990	5	1.370			
7235.890	50	1	13816.19	1					0.160		
7233.390	100		13820.97	7							1.184
7230.888	500	5	13825.75	1							0.472
7220.989	100	2	13844.70	2	1	0.500	2	0.720			
7219.156	300	10	13848.22	3						0.230	
7208.000	500	150	13869.65	2	3	1.233	4	1.323			
7206.476	400	8	13872.58	3	3	0.836	3	0.881			
7201.803	100	2	13881.59	2	2	0.740	3	0.900			
7201.042	50	1	13883.05	2					0.284		
7200.041	400	10	13884.98	2	2	1.188	3	1.304			
7179.725	150	4	13924.27	3						0.332	
7177.284	75	2	13929.01	2					0.154		
7173.372	500	20	13936.60	1							0.879
7170.357	100	2	13942.46	1					0.260		
7168.896	800	75	13945.31	2	2	0.747	3	1.116			
7167.202	150	4	13948.60	1					0.088		
7159.943	300b	8	13962.74	1	3	1.105	4	0.984			
7159.877	100b	2	13962.87	7							1.132
7156.936	300	15	13968.61	3	4	0.989	4	1.155			
7154.952	200	8	13972.48	3	2	0.665	2	1.186			
7153.587	200	10	13975.15	3						0.829	
7150.285	400	25	13981.60	1	1	1.475	2	1.167			
7148.557	400	15	13984.98	2	3	0.826	4	0.988			
7142.328	300	8	13997.18	2	1	0.370	2	0.970			
7138.142	20		14005.39	7							1.171
7132.603	200	4	14016.26	2							1.192
7131.353	150	40	14018.72	3						0.076	1.140
7130.718	200	5	14019.97	1					.080		
7130.179	100	4	14021.03	3						0.174	
7126.814	100	3	14027.65	3						0.051	
7125.515	150	2	14030.21	3	3	3			0.480		
7124.562	500	50	14032.08	3	2	0.737	2	1.125			
7112.917	100	4	14055.06	2					0.180		
7111.045	75	2	14058.76	7					0.190		
7102.589	100	2	14075.49	1							0.968
7088.822	150	2	14102.83	7							1.199
7084.165	500	75	14112.10	2	4	1.248	5	1.363			
7072.394	300	8	14135.59	1	4	1.172	5	1.104			

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
7067.513	75		14145.35	7					0.250		
7066.287	100	2	14147.80	3	3	1.164	3	1.385			
7064.451	300	10	14151.48	7							1.143
7062.418	40	1	14155.55	3						0.125	
7061.392	100	2	14157.61	1	1	1.180	2	0.770			
7060.039	300	8	14160.32	3	2	0.820	2	1.008			
7059.526	150	3	14161.35	2					0.230		
7058.488	150	5	14163.43	1	3	0.998	4	0.913			
7054.416	150	2	14171.61	3						0.189	
7038.717	75	1	14203.22	7							1.194
7036.277	400	8	14208.14	2							1.479
7033.352	100	2	14214.05	3						0.313	
7028.017	100	2	14224.84	3	1	0.401	1	1.340			
7023.523	100	3	14233.94	2							1.057
7023.145	100	3	14234.71	1	1	1.380	2	1.090			
7021.279	150	8	14238.49	2							1.389
7009.047	50	1	14263.34	7							1.274
7007.092	100	4	14267.32	3						0.202	
7002.881	200	8	14275.90	2							1.609
7000.806	500	75	14280.13	1	5	1.349	6	1.211			
6998.247	100	2	14285.35	3						0.346	
6995.141	75	2	14291.70	7							1.106
6989.657	1000	150	14302.91	3	4	0.744	4	0.874			
6986.031	150	4	14310.33	3	2	0.962	2	1.702			
6981.082	100	3	14320.48	3						0.336	
6969.301	100	3	14344.68	3						0.079	
6965.946	500l	4	14351.59	2	1	0.699	2	1.097			
6962.862	75	2	14357.95	7					0.397		
6954.655	200	5	14374.89	1	1	1.364	2	1.008			
6948.205	300	20	14388.24	3	4	0.925	4	1.169			
6945.488	200	8	14393.87	2					0.350		
6942.535	150	8	14399.99	1					0.266		
6936.651	150	4	14412.20	3	3	1.383	3	1.119			
6920.037	150	5	14446.80	1							0.596
6916.129	200	10	14454.97	2	4	1.043	5	1.376			
6911.222	800r	200	14465.22	3						0.147	
6904.578	100		14479.15	3						0.105	
6900.762	100	5	14487.16	2					0.370		
6886.404	200	10	14517.36	7							1.478
6883.311	200	10	14523.89	1	3	1.132	4	0.912			
6880.769	15	1	14529.25	7							1.173
6874.752	200	10	14541.97	3						0.143	
6870.988	150	3	14549.93	3	1	0.392	1	0.619			
6868.455	100	3	14555.30	2	4	0.989	5	1.259			
6866.756	100s	2	14558.90	7					0.140		
6866.368	150	3	14559.72	3						0.312	
6862.873	100	2	14567.14	3	2	1.099	2	1.410			
6855.315	150	4	14583.20	2					0.157		
6853.511	100	4	14587.04	2					0.220		
6852.344	100	2	14589.52	7							1.150
6850.704	100h	2	14593.01	7							1.197
6846.469	100	2	14602.04	7							0.718
6841.690	10		14612.24	7							1.043
6839.287	100	2	14617.37	7							0.864
6834.925	400	50	14626.70	1							0.928

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
6829.037	500	25	14639.31	3	3	1.095	3	1.249			
6824.678	400	20	14648.66	1	2	1.101	3	1.000			
6823.500	150	4	14651.19	3						1.010	
6815.604	100	2	14668.17	7							1.054
6809.311	150	4	14681.72	1					0.160		
6805.746	100	2	14689.41	2							1.050
6802.783	100	3	14695.81	2	2	0.864	3	1.049			
6798.483	150	3	14705.10	1					0.630		
6795.797	100	2	14710.92	2					0.360		
6795.046	75	2	14712.54	7							0.952
6791.232	400	25	14720.81	2	3	1.087	4	1.318			
6788.837	300	25	14726.00	2	4	0.970	5	1.042			
6787.734	300	25	14728.39	2							1.232
6780.126	400	75	14744.91	3	2	0.622	2	0.772			
6776.230	100	3	14753.40	1					0.200		
6772.176	400b	15	14762.23	1					0.165		
6765.683	200	100	14776.40	3						0.720	
6763.340	50	2	14781.51	7							1.126
6762.500	40	1	14783.35	7							1.224
6760.667	100	3	14787.36	7							1.212
6758.202	200	8	14792.75	3						0.837	
6757.105	100	5	14795.75	1	3	1.099	4	0.891			
6751.426	100	3	14807.60	2	1	0.378	2	0.970			
6749.315	50	1	14812.23	3						0.370	
6742.881	200	8	14826.36	2	2	1.090	3	1.386			
6738.179	200	5	14836.71	3	3	1.020	3	1.241			
6735.128	100	2	14843.43	3						0.899	
6733.748	150	5	14846.47	3						0.100	
6732.650	100	3	14848.89	3						1.191	
6728.757	150	5	14857.48	3						0.203	
6727.459	500	75	14860.35	3	1	0.069	1	1.434			
6719.198	200	5	14878.62	2					0.044		
6717.384	100	3	14882.64	7							0.982
6715.515	100	2	14886.78	3						0.199	
6713.967	300	8	14890.21	3	2	0.665	2	1.015			
6711.249	100	4	14896.24	3						1.252	
6697.708	200	5	14926.36	1	1	1.380	2	1.240			
6696.140	200	5	14929.86	2							1.595
6694.492	100	2	14933.53	2					0.630		
6687.521	150	3	14949.10	3						0.258	
6684.049	100	2	14956.86	1					0.294		
6683.368	200	3	14958.39	2	2	0.782	3	0.946			
6680.087	100	1	14965.73	2	2	0.750	3	1.080			
6678.707	200	8	14968.83	3						0.083	
6673.590	200	5	14980.30	3	4	0.887	4	1.157			
6668.826	100	2	14991.00	3	4	0.922	4	0.982			
6663.702	100	3	15002.53	3						0.152	
6662.270	800	200	15005.75	1	2	1.379	3	1.250			
6658.678	400	15	15013.85	7							1.054
6654.371	100	3	15023.57	2							1.536
6638.912	150	20	15058.55	7							1.051
6626.125	75	1	15087.61	3	1	1.018	1	1.378			
6613.376	200	8	15116.70	1	1	1.518	2	1.182			
6593.940	500	150	15161.25	7							0.069
6593.464	100	15	15162.35	2							1.362

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
6591.485	400	75	15166.90	2	2	0.736	3	1.064			
6588.540	500r	200	15173.68	1	1	1.482	2	1.092			
6583.906	400r	200	15184.36	2							1.482
6580.231	75	3	15192.84	1					0.530		
6579.482	20	2	15194.57	3						0.122	
6577.216	100	75	15199.80	3						0.163	
6564.443	150	8	15229.38	1	2	0.966	3	0.686			
6562.105	50		15234.80	3	1	0.761	1	1.141			
6558.871	100	8	15242.32	1	2	1.246	3	0.964			
6551.703	100	5	15258.99	1	2	1.524	3	1.038			
6538.301	50	4	15290.27	2	1	0.762	2	0.998			
6531.342	800r	200	15306.56	1	1	1.582	2	1.014			
6522.044	100	15	15328.38	2	1	0.376	2	0.723			
6512.366	400	15	15351.16	3	2	1.093	2	1.249			
6506.989	100	15	15363.85	2	2	1.135	3	0.866			
6501.992	100	5	15375.65	2	2	0.532	2	1.004			
6497.490	50	3	15386.31	3						0.187	
6488.882	100	4	15406.72	7							0.638
6462.606	200b	100	15469.36	7							1.184
6457.280	800r	300	15482.12	2	4	0.866	5	1.006			
6450.007	200	15	15499.58	1	2	1.542	3	1.386			
6446.771	100	8	15507.35	3						0.216	
6438.918	100	8	15526.27	2	1	0.464	2	0.794			
6437.769	200	20	15529.04	3						0.164	
6427.507	50	4	15553.83	3						0.328	
6422.106	100	8	15566.91	2							1.410
6417.908	15	2	15577.09	3						0.141	
6415.536	75	5	15582.86	2					0.264		
6413.615	400	100	15587.52	1	3	1.200	4	1.002			
6411.899	500	75	15591.69	1							1.095
6406.446	100	5	15604.96	3						0.098	
6400.696	100	8	15618.98	1							0.310
6396.951	100	8	15628.13	2							1.510
6394.045	100	8	15635.23	3						0.440	
6392.371	75	8	15639.32	7							0.995
6387.393	200	10	15651.51	1	1	1.466	2	1.356			
6376.930	500	200	15677.19	7							1.138
6369.141	200	25	15696.37	7							1.062
6362.256	100	20	15713.35	7							1.008
6359.677	75	5	15719.72	7							0.824
6355.911	800	200	15729.04	2	3	0.862	4	1.032			
6355.633	75	8	15729.72	7							1.025
6348.737	200	15	15746.81	3						0.171	
6342.860	500	150	15761.40	2					0.120		1.668
6339.663	100	15	15769.35	1	1	1.366	2	1.179			
6331.415	200	15	15789.89	1					0.220		
6327.279	500	100	15800.21	2							1.496
6326.365	200	20	15802.50	3						0.527	
6322.866	20	2	15811.24	7							1.051
6317.183	150	8	15825.47	2	2	1.135	3	1.395			
6315.774	100	8	15829.00	3						0.232	
6307.868	25	3	15848.83	7							0.953
6303.251	200	20	15860.44	1	3	1.218	4	0.995			
6301.421	200	20	15865.05	7							0.832
6300.917	150	10	15866.32	7							1.119

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
6298.903	100	5	15871.39	3	2	1.099	2	1.705			
6293.241	150	15	15885.67	3						0.693	
6292.891	100	8	15886.55	3						0.296	
6291.192	300	15	15890.84	3						0.100	
6271.544	75	5	15940.63	7							1.332
6261.418	400	150	15966.41	7							1.148
6246.173	150	8	16005.38	7							0.929
6240.949	150	8	16018.77	3						0.525	
6234.856	400	75	16034.42	2	1	1.527	2	1.014			
6224.527	400	40	16061.03	3						0.239	
6220.011	100	5	16072.69	7					0.325		
6208.686	100	5	16102.01	7					0.320		
6207.220	500	200	16105.82	3	1	0.071	1	1.589			
6205.861	100	8	16109.34	7					0.340		
6203.493	500	100	16115.49	7							1.359
6198.223	400	75	16129.19	1	1	1.582	2	1.262			
6191.906	400	50	16145.65	3	2	1.009	2	1.381			
6189.145	75	2	16152.85	7					0.090		
6180.703	200	8	16174.91	2	1	0.058	2	0.518			
6178.432	200	20	16180.86	2	3	1.072	4	1.304			
6169.822	500	200	16203.44	1	3	1.305	4	1.213			
6164.480	200	20	16217.48	2	2	0.739	2	1.077			
6162.968	40	3	16221.46	7							1.018
6161.353	150	8	16225.71	7							1.317
6157.093	100	8	16236.94	3						0.916	
6155.587	200	15	16240.91	1	2	1.189	3	1.077			
6154.068	100	15	16244.92	7							1.435
6151.993	150r		16250.40	2	2	1.112	3	1.250			
6124.485	200	15	16323.39	3	2	1.189	2	1.379			
6123.838	75	8	16325.11	1					0.200		
6121.413	150	50	16331.58	3					0.110	0.665	
6119.704	75	8	16336.14	1	1	1.210	2	0.976			
6116.172	100	8	16345.57	3						0.130	
6114.546	150	10	16349.92	7							1.399
6107.539	400	15	16368.68	7							1.167
6106.847	10	2	16370.53	3						0.257	
6104.572	300	200	16376.63	2					0.335		
6102.595	300	50	16381.93	2	3	0.814	4	0.982			
6101.726	100	10	16384.27	2	1	0.507	2	0.782			
6088.031	400	50	16421.13	2	2	0.786	3	0.894			
6085.375	100	75	16428.29	3	2	0.782	2	1.118			
6079.220	200	25	16444.93	2							1.546
6077.870	150	25	16448.58	3						0.185	
6055.592	100	10	16509.09	7					0.080		
6053.381	300	15	16515.12	2	1	0.616	2	1.009			
6035.194	100	5	16564.89	7							0.967
6032.876	75	8	16571.25	1					0.300		
6030.448	75s	5	16577.93	3						0.205	
6021.036	200s	75	16603.84	2	3	0.834	4	0.870			
6014.062	75	5	16623.09	7							1.194
6007.073	300s	75	16642.43	2	3	1.095	4	1.313			
6005.174	200	15	16647.70	1	2	1.367	3	1.087			
6000.766	100	8	16659.92	7							1.137
5996.630	100	4	16671.42	2					0.404		
5995.221	100	4	16675.33	3						0.996	

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TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
5994.126	500r	100	16678.38	7							1.483
5991.004	400s	50	16687.07	1	1	1.354	2	1.006			
5989.742	50	5	16690.59	3						0.391	
5982.095	100	5	16711.92	3						0.729	
5975.066	500	150	16731.58	3	2	1.010	2	1.323			
5973.665	500r	150	16735.50	1	1	1.433	2	1.257			
5969.742	150	10	16746.50	1	1	2.403	2	1.543			
5959.681	50	3	16774.77	3						1.043	
5956.263	100	8	16784.40	3						0.233	
5955.566	100	5	16786.37	1	2	1.709	3	1.179			
5953.587	100	4	16791.94	7					0.218		
5950.148	15	2	16801.65	7					0.234		
5949.373	50	5	16803.84	3						0.016	
5944.648	150	40	16817.19	3	3	0.696	3	0.875			
5942.359	40	3	16823.67	7							1.105
5940.567	50	3	16828.75	1					0.120		
5938.459	150	20	16834.72	3						0.869	
5937.665	100	10	16836.97	3						0.178	
5929.934	100	20	16858.92	7							1.481
5926.232	150	40	16869.45	7							0.798
5916.730	100	20	16896.55	3						0.735	
5914.648	100b	10	16902.49	1							0.068
5905.571	150	20	16928.48	2	3	0.932	4	1.214			
5902.602	100	2	16936.98	3						0.989	
5899.846	150	5	16944.90	2	1	0.071	2	1.387			
5899.521	75	4	16945.83	3						0.936	
5894.699	100	25	16959.70	3						0.796	
5892.434	75	5	16966.21	3						0.225	
5891.451	200	25	16969.04	2	3	0.859	4	0.997			
5886.531	100	8	16983.23	7							0.972
5885.702	200	50	16985.62	2	4	1.146	5	1.379			
5874.993	100	8	17016.58	3						0.084	
5874.040	50	3	17019.34	3						0.134	
5869.854	100	5	17031.48	2	2	0.833	3	1.011			
5868.382	150	25	17035.75	7							1.162
5866.814	75	5	17040.30	7							0.932
5863.720	100	8	17049.29	2	1	1.364	2	1.252			
5854.120	150	8	17077.26	3	4	1.041	4	1.313			
5853.474	100	5	17079.14	2					0.192		
5852.682	200	25	17081.45	3						0.050	
5843.805	100	5	17107.40	3						0.232	
5842.050	50	4	17112.54	3						0.236	
5840.639	100	5	17116.67	3	3					0.524	
5832.371	100	15	17140.94	7							1.144
5830.827	75	5	17145.47	3						0.264	
5829.876	50	5	17148.27	3						0.480	
5829.110	50	3	17150.52	3	2	1.117	2	1.339			
5822.796	100	8	17169.12	3						0.772	
5819.607	50	3	17178.53	7							1.132
5818.453	75	5	17181.93	7							1.296
5812.976	100	8	17198.13	2							1.154
5807.685	100	4	17213.79	3						0.433	
5806.201	40	2	17218.19	7					0.213		
5805.702	100	3	17219.67	7					0.186		
5804.141	500r	50	17224.30	3	2	0.734	2	1.045			

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
5800.830	300	20	17234.14	3	2	1.172	2	1.254			
5797.319	75	3	17244.57	3						0.282	
5796.070	200	15	17248.29	3	4	1.120	4	1.307			
5792.431	150	8	17259.12	7							1.573
5791.704	50	2	17261.29	7					0.200		
5789.644	200	15	17267.43	3	3	1.139	3	1.246			
5782.307	40b	4	17289.34	2	2	0.927	3	1.019			
5779.833	50	2	17296.74	7					0.298		
5777.398	100	8	17304.03	3						0.118	
5776.164	25	2	17307.73	7					0.128		
5773.946	150	10	17314.38	3	1	0.070	1	0.615			
5763.529	200	10	17345.67	3	3	1.085	3	1.180			
5762.796	100	10	17347.88	3						0.462	
5760.550	600r	150	17354.64	2	1	0.504	2	0.734			
5753.026	200	25	17377.34	2	3	1.016	4	1.208			
5736.031	150	8	17428.82	2	3	1.062	4	1.464			
5729.992	200d	10	17447.19	3						0.378	
5727.711	40	3	17454.14	3						0.511	
5727.021	50	3	17456.24	7							1.181
5725.390	400r	75	17461.21	2	4	1.150	5	1.368			
5724.463	75	4	17464.04	3						0.051	
5721.425	50	4	17473.32	3						0.053	
5719.625	200	50	17478.81	3	3	1.082	3	1.251			
5711.998	75	5	17502.15	7					0.080		
5708.679	50	3	17512.33	7							1.142
5705.637	50	4	17521.67	3						0.286	
5698.550	40	4	17543.46	3						0.346	
5698.292	100	5	17544.25	3	1	0.724	1	1.104			
5696.391	100	8	17550.10	1	3	1.168	4	0.921			
5685.192	100	8	17584.68	3	4	1.060	4	1.308			
5679.004	75	5	17603.84	7							0.903
5677.051	200b	8	17609.89	3						0.203	
5673.835	50	5	17619.87	2							1.436
5667.129	150	15	17640.72	2	2	0.871	3	1.016			
5665.181	200	50	17646.79	3	2	0.775	2	1.118			
5664.621	100	15	17648.53	7					0.057		
5660.662	25	3	17660.88	7					0.590		
5657.926	200	25	17669.41	2							1.632
5648.990	150	10	17697.37	2	3	1.083	4	1.233			
5646.455	100	10	17705.31	2	2	1.041	3	1.385			
5645.529	50	8	17708.22	7							1.235
5641.735	75	8	17720.13	2					0.125		
5641.562	50	5	17720.67	2					0.102		
5635.889	100	15	17738.50	7							1.233
5633.297	100	8	17746.67	7							0.907
5630.297	100	10	17756.12	3						0.754	
5629.312	50	3	17759.23	7							0.855
5624.911	50	3	17773.12	2					0.110		
5620.013	15b	5	17788.62	7					0.080		
5619.976	50b	8	17788.73	3						0.962	
5615.320	400r	15	17803.48	3	1	1.493	1	1.559			
5612.619	75	3	17812.05	7							1.126
5612.068	150	20	17813.80	3	4	0.986	4	1.128			
5610.685	200	20	17818.19	1	1	2.396	2	1.680			
5609.585	200	10	17821.68	2					0.660		

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
5606.390	150	10	17831.84	3	3	0.878	3	1.192			
5605.297	100b	8	17835.32	3						0.512	
5602.866	50	5	17843.05	2	2	0.789	3	0.844			
5601.604	200	8	17847.07	3	2	0.734	2	1.158			
5595.064	300	25	17867.94	2	1	0.374	2	0.775			
5587.027	500r	50	17893.64	2							1.425
5582.367	75	4	17908.58	2					0.546		
5580.756	100	10	17913.75	3						0.587	
5580.395	50	10	17914.90	3						0.054	
5579.359	300	40	17918.23	3	1	0.065	1	0.842			
5576.205	100	10	17928.36	2	4	0.992	5	1.098			
5573.355	400	20	17937.54	3						0.198	
5572.466	200	8	17940.40	3	3	1.094	3	1.248			
5570.928	50	2	17945.35	3	2	1.006	2	1.516			
5568.000	300b	150	17954.79	3						0.081	
5559.894	150	8	17980.96	1	1	1.570	2	1.252			
5558.342	400b	50	17985.98	2							1.227
5557.045	300	15	17990.18	3	4	1.132	4	1.306			
5555.534	75	4	17995.07	7					0.128		
5554.502	20	4	17998.42	7							1.276
5552.624	75	4	18004.50	1							0.791
5551.193	40	2	18009.14	3						0.092	
5548.176	400r	40b	18018.94	3	2	1.012	2	1.255			
5546.122	75	25	18025.61	3						0.131	
5542.890	300	10	18036.12	2	3	0.875	4	1.040			
5528.226	50b	5	18083.96	3	1	0.721	1	1.343			
5527.295	200	8	18087.01	7							1.217
5519.232	100	2	18113.43	7							1.270
5518.988	200b	50	18114.23	2	4	0.883	5	1.175			
5514.930	75b	3	18127.56	7							1.274
5514.873	200b	10	18127.74	3						0.354	
5509.993	400	20	18143.80	2	4	1.263	5	1.373			
5508.557	100	5	18148.53	3						0.177	
5507.542	100l	2	18151.88	3						0.752	
5501.281	100	10	18172.53	2	1	0.627	2	0.977			
5496.138	200	10	18189.54	2	1	0.068	2	1.106			
5494.330	75	10	18195.53	2	3	1.170	4	1.314			
5492.642	100	10	18201.12	2	2	1.177	3	1.263			
5492.416	50	10	18201.87	7					0.270		
5489.086	100	5	18212.91	7					0.544		
5482.498	100	8	18234.79	7							1.157
5479.072	75	75	18246.20	1					0.100		0.983
5478.742	50	3	18247.29	7					0.222		
5477.550	40	2	18251.26	3						0.084	
5474.733	50	3	18260.66	3						0.467	
5470.759	150	10	18273.94	7							1.064
5470.145	50	8	18275.97	3						0.192	
5464.205	200w	8	18295.84	3	3	1.082	3	1.310			
5463.771	50	4	18297.29	7					0.109		
5457.289	75	3	18319.02	7					0.110		
5455.149	100	8	18326.21	3						0.620	
5452.219	300	40	18336.06	2	4	1.222	5	1.364			
5441.213	100	8	18373.15	7							1.136
5440.600	75	2	18375.22	7					0.212		
5439.850	75	8	18377.75	3						0.522	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
5431.112	200	40	18407.32	2	2	1.014	3	1.140			
5429.105	100	5	18414.12	3						0.305	
5424.008	300	40	18431.43	7							0.981
5419.136	100	8	18448.00	3						0.371	
5417.486	400r	40	18453.62	1	2	1.257	3	1.101			
5415.528	200b	2	18460.29	3	4	0.860	4	1.030			
5410.769	400	15	18476.52	2	1	0.770	2	1.012			
5407.652	400b	40b	18487.17	3	5	1.035	5	1.174			
5403.200	200	15	18502.41	2	4	0.884	5	1.109			
5400.145	150	5	18512.87	2					0.035		
5399.175	200	10	18516.20	3						1.208	
5398.920	400	40	18517.08	2					0.184		1.622
5398.704	150	4	18517.82	2					0.215		
5398.205	150	4	18519.53	7					0.110		
5393.972	150	8	18534.06	3						0.881	
5388.057	300	20	18554.41	1							0.907
5387.812	100	4	18555.25	7							1.195
5387.152	25	2	18557.52	7					0.213		
5386.611	500	20	18559.39	2	3	1.082	4	1.216			
5384.031	75	15	18568.28	1							0.452
5379.112	300	20	18585.26	2	4	0.877	5	1.049			
5378.837	400	40	18586.21	3						0.505	
5376.778	200	50	18593.33	3						0.134	
5374.823	150	15	18600.09	7							1.479
5372.703	200	25	18607.43	2							1.085
5369.284	200	8	18619.28	2	1	0.072	2	1.245			
5361.156	100	3	18647.51	7					0.238		
5360.150	300	5	18651.01	1	2	1.249	3	1.016			
5359.827	100	4	18652.13	7							1.032
5355.638	100	3	18666.72	2					0.260		
5351.839	150	8	18679.97	3						0.928	
5351.126	200	25	18682.46	2	3	0.590	4	0.905			
5349.003	100	3	18689.87	3						0.049	
5347.973	150	5	18693.48	3						0.160	
5343.581	500r	40	18708.84	1	1	1.526	2	1.252			
5340.501	200	10	18719.63	7							1.181
5337.018	200b	10	18731.85	3						0.580	
5330.082	200b	5	18756.22	1	2	1.186	3	0.954			
5326.976	500r	40	18767.15	2	3	0.903	4	1.068			
5326.278	200b	8	18769.61	3						0.171	
5320.767	75	20	18789.06	3						0.161	
5320.099	50	2	18791.42	7							1.111
5318.110	100	3	18798.44	7					0.430		
5317.494	200	4	18800.62	2					0.400		
5315.230	150	3	18808.63	7					0.576		
5312.904	300	15	18816.86	1	2	1.193	3	1.006			
5312.643	150b	15	18817.79	7					0.086		
5312.532	400	40	18818.18	2	1	0.077	2	1.257			
5312.001	400r	25	18820.06	3	2	1.259	2	1.386			
5311.870	75b	2	18820.53	3						0.670	
5309.616	300	5	18828.52	7					0.687		
5306.987	100	4	18837.84	3						0.453	
5303.483	100	3	18850.29	7					0.180		
5303.334	50	2	18850.82	3						0.140	
5300.524	300	5	18860.81	2					0.215	0.429	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
5298.284	200	4	18868.79	2	2	0.537	3	1.089			
5297.746	300b	15	18870.70								1.587
5296.279	300	5	18875.93	2	4	1.192	5	1.372			
5295.674	50b	4b	18878.08	7							1.172
5295.089	75	1	18880.17	7					0.270		
5294.397	200	3	18882.64	1	3	1.253	4	1.073			
5291.818	200	5	18891.84	1	2	1.026	3	0.860			
5281.070	300	2	18930.29	2	2	0.728	3	0.969			
5280.346	75	2	18932.89	3						0.634	
5277.147	100	1	18944.36	3						0.324	
5274.391	100	3	18954.26	7							0.830
5274.121	300	5	18955.23	3						0.130	
5273.134	100b	10	18958.78	7					0.520		
5269.794	100	4	18970.80	3						0.067	
5262.621	100b	4	18996.65	3						0.620	
5261.474	75b	3	19000.79	7						0.106	
5258.361	400r	25	19012.41	3	1	0.615	1	1.481			
5258.212	150b	3	19012.58	7							2.402
5254.262	300l	8	19026.87	7					0.044		0.922
5238.812	75h	10	19082.98	3	2	1.047	2	1.193			
5234.107	150	1	19100.14	7					0.074		
5228.996	100	1	19118.81	2							1.460
5228.227	200	3	19121.62	3						0.198	
5220.928	100	1	19148.35	3						0.214	
5213.350	400	5	19176.18	3	4	0.863	4	1.036			
5209.724	500	3	19189.53	2	1	0.614	2	1.250			
5207.803	200	2	19196.61	7							1.078
5206.800	75	3	19200.31	3						0.158	
5205.154	200	2	19206.38	7							1.029
5203.850	500	25	19211.19	7					0.190		
5202.007	75	3	19218.00	2	1	0.724	2	1.327			
5199.323	300b	3	19227.92	1					0.100		
5198.802	500	100d	19229.85	2	3	0.869	4	1.101			
5197.236	200	5	19235.64	7					0.270		
5195.815	500	8	19240.90	3	4	1.212	4	1.380			
5194.456	400	12	19245.93	3						1.223	
5184.452	100	3	19283.07	3						0.183	
5177.621	200	3	19308.51	3						0.578	
5176.961	500	50	19310.94	3						0.354	
5175.323	200	2	19317.08	3						0.701	
5174.367	200	3	19320.65	3						0.067	
5174.242	200	75	19321.12	2							1.003
5173.671	400	2	19323.25	3						0.044	
5172.479	75	3	19327.71	3						1.439	
5161.540	400	8	19368.67	2	2	0.797	3	0.931			
5160.718	500b	150	19371.75	3						0.176	
5154.243	500r	40	19396.09	2	4	0.859	5	1.116			
5149.210	300	3	19415.05	7					0.170		
5146.059	300	10	19426.93	7					0.310		
5143.916	300b	15	19435.02	3						0.185	
5140.771	200b	5	19446.92	1					0.550		
5130.235	150	2	19486.86	7					0.324		
5125.950	300	3	19503.14	2	2	0.734	3	1.085			
5115.045	1000r	40	19544.72	7							1.481
5098.933	150	2	19606.48	7							1.093

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
5096.484	800	5	19615.90	3	1	0.842	1	1.480			
5090.052	400	5	19640.69	3						0.125	
5082.625	100	8	19669.39	3						0.338	
5067.974	1000r	75	19726.25	3						0.208	
5066.134	300	10	19733.42	7					0.166		
5065.190	300	5	19737.10	2	2	0.767	3	1.027			
5063.514	200l	50l	19743.63	2					1.090		
5062.932	300	5	19745.90	1	3	1.136	4	0.985			
5059.861	400b	75h	19757.88	3						0.374	
5057.982	300	2	19765.22	7							1.479
5051.885	500	5	19789.08	2	3	1.182	4	1.315			
5050.780	300	5	19793.40	2	1	0.844	2	1.256			
5044.715	100	8	19817.20	1	1	1.561	2	0.731			
5043.520	75	15l	19821.89	3						1.432	
5041.126	200	5	19831.31	1							0.967
5039.231	300r	8l	19838.77	2							1.536
5038.306	75	3	19842.41	3						0.336	
5034.297	100	2	19858.21	3						1.178	
5029.893	200	3	19875.60	3	1	0.768	1	1.480			
5029.013	75	2	19879.07	3						0.247	
5028.656	300r	15	19880.48	3	4	1.190	4	1.310			
5023.709	50	1	19900.06	3						0.233	
5023.486	50	1	19900.95	3						0.324	
5022.174	40	2	19906.14	3						0.798	
5018.059	150	5	19922.47	3						0.376	
5017.510	100	15	19924.65	2	1	0.708	2	1.012			
5011.478	75	4	19948.63	7							1.126
5010.417	50	4	19952.85	7					0.160		
5009.938	50b		19954.76	3						0.291	
5004.001	50	3	19978.44	3						0.233	
5002.097	500r	4	19986.05	3						0.116	
4992.638	20	5	20023.91	3						0.178	
4989.309	150	10	20037.26	1							0.890
4985.948	50	3	20050.77	7							0.926
4985.373	300	10	20053.09	2	1	0.770	2	1.254			
4982.488	150	25h	20064.70	3						0.292	
4980.186	150	10	20073.97	3						0.240	
4972.754	20	2	20103.97	3						0.179	
4972.057	40	1	20106.79	7							0.771
4965.731	200	10	20132.40	3						0.808	
4961.724	100	10	20148.66	3						0.095	
4961.379	10	2	20150.06	3						0.162	
4960.421	40b	10	20153.95	7							1.083
4958.093	50	2	20163.42	2					0.360		
4957.293	75	5	20166.67	3						0.890	
4946.663	100	100	20210.02	7							1.297
4945.458	200r	10	20214.93	2	2	0.741	3	1.182			
4943.064	200b	10	20224.72	1	2	1.321	3	1.084			
4939.642	300r	15	20238.73	2	4	0.865	5	1.074			
4939.270	75	2	20240.26	3						0.252	
4938.597	15	1	20243.02	3						0.129	
4937.829	300	8	20246.16	3	1	0.072	1	1.570			
4936.775	150	100	20250.49	1					0.188		
4933.003	20	1	20265.97	7					0.186		
4928.683	50	2	20283.73	7							1.150

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
4927.781	200	5	20287.45	3	2	0.779	2	0.910			
4927.299	50	1	20289.43	3						0.172	
4925.951	100	8	20294.98	7							1.017
4924.246	75b	2	20302.01	3						2.026	
4920.053	75b	25s	20319.31	2					0.180		
4911.380	200	10	20355.19	2					0.254		
4909.844	50	3	20361.56	2	1	0.751	2	1.131			
4907.209	100	4	20372.49	7							1.271
4907.044	50	2	20373.18	7							1.330
4901.987	50	2	20394.20	3						0.185	
4899.336	50	3	20405.23	3						0.341	
4899.240	50	3	20405.63	7							0.936
4892.758	50	2	20432.67	3						1.122	
4891.036	10	1	20439.86	7							1.089
4887.096	50	2	20456.33	7							1.210
4886.869	50	2	20457.29	3						0.354	
4886.133	25	2	20460.37	7							1.007
4881.204	75	2	20481.03	7					0.130		
4877.809	15	5	20495.28	3						0.092	
4877.265	20	1	20497.57	7							1.051
4876.495	100	5	20500.81	7							1.178
4876.244	50	2	20501.86	7							1.088
4874.365	150	10	20509.76	3					0.270	1.085	
4872.922	300r	25b	20515.84	1	1	1.467	2	1.246			
4872.030	100	4	20519.59	3						1.298	
4868.882	150	10	20532.86	3						0.114	
4865.974	50l	8l	20545.13	3						0.173	
4865.477	300r	150b	20547.23	2	4	0.862	5	1.088			
4861.720	75b	20h	20563.11	7					0.312		
4861.223	300r	50	20565.21	7							1.045
4852.868	200	50	20600.62	3						0.286	
4849.861	50	15	20613.39	3						0.648	
4849.139	50	25b	20616.46	2	4	0.684	5	0.848			
4848.363	400r	150	20619.76	3	2	1.253	2	1.512			
4847.330	150	15	20624.15	2					0.386		
4843.938	100b	50b	20638.59	7							1.171
4842.166	50	40	20646.14	7					0.256		
4840.928	100b	50	20651.43	3						0.812	
4833.674	20s	4s	20682.42	3						0.289	
4833.179	200b	50	20684.54	3						0.525	
4831.597	300r	150	20691.31	2	2	0.791	3	1.035			
4826.700	200b	50b	20712.30	3						0.931	
4823.997	200r	100h	20723.91	3						0.639	
4823.604	300r	75	20725.59	1							0.860
4822.855	300r	75	20728.81	7							1.187
4821.587	150	25	20734.26	1	2	1.386	3	1.082			
4820.463	150b	40h	20739.10	3						0.630	
4819.191	150	15	20744.57	1					0.123		
4817.017	75	8	20753.94	7							0.716
4814.919	15	3	20762.98	7							1.612
4813.893	200	100	20767.41	3						0.670	
4813.719	150	20	20768.15	7					0.220		
4813.004	75	15	20771.24	7					0.200		
4809.615	200	50	20785.88	2							1.352
4808.134	500r	150	20792.28	1	4	1.220	5	1.155			

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
4784.038	150	20	20897.00	3						0.671	
4778.294	400r	50	20922.12	3	2	0.736	2	1.169			
4775.313	100l	5b	20935.18	7					0.370		
4766.600	300r	100	20973.45	3	1	0.760	1	1.481			
4764.344	200	300	20983.38	3						0.830	
4758.145	100	75	21010.72	7							0.878
4749.968	300b	50	21046.89	1	3	1.216	4	1.064			
4749.200	400r	150	21050.30	3	4	0.858	4	0.972			
4743.693	150w	300	21074.73	7					0.250		
4741.301	150	40	21085.36	3						0.112	
4739.674	300	40	21092.60	1	1	1.802	2	1.188			
4737.915	150	15	21100.43	7							1.212
4734.046	200	10	21117.67	3						0.100	
4729.128	400b	100b	21139.64	1	3	1.028	4	0.865			
4723.438	800r	200	21165.10	2	2	0.728	3	1.298			
4722.089	300	50	21171.15	2	2	1.135	3	1.251			
4721.276	200	15	21174.79	3	2	0.779	2	1.049			
4712.481	300b	100	21214.31	2					0.175		2.053
4706.575	100	5	21240.93	3						0.298	
4695.456	200	50	21291.23	3						0.315	
4695.039	300r	100	21293.12	1	2	1.244	3	1.073			
4691.883	100	8	21307.44	3						0.171	
4691.631	300b	50b	21308.59	2	2	1.015	3	1.219			
4691.500	100	15	21309.18	7							1.174
4689.252	200l	50b	21319.40	1							0.033
4686.195	500r	50	21333.30	2	3	1.079	4	1.373			
4683.349	200	20	21346.27	2					0.210		
4682.229	150	15	21351.37	3						0.292	
4678.233	150	20b	21369.61	7							1.120
4676.971	150	25b	21375.38	7							1.116
4676.056	500r	150	21379.56	3						0.425	
4673.661	800r	150	21390.52	1							0.975
4673.042	200	25	21393.35	3						0.102	
4669.984	500r	100	21407.36	3						0.120	
4668.172	800r	150	21415.67	2	2	0.941	3	1.241			
4666.797	500r	150	21421.97	2	2	0.867	2	1.004			
4663.202	300r	10	21438.49	1	2	1.510	3	1.080			
4658.522	100	8	21460.03	7							1.102
4658.376	100	5b	21460.70	7							1.002
4655.210	200	20	21475.30	2							1.338
4650.233	200	5	21498.28	2	1	0.064	2	0.988			
4649.975	100	8	21499.47	3						0.153	
4647.249	200	20	21512.08	1	2	1.261	3	1.091			
4643.557	150	10	21529.19	2							1.273
4641.244	400b	150b	21539.92	2							1.284
4639.896	100	25	21546.18	3						0.118	
4639.520	300	50	21547.92	3						0.420	
4638.686	150	10	21551.79	3						0.236	
4633.765	300b	75b	21574.68	7							0.981
4631.644	200	50	21584.56	7							0.880
4624.314	100	4	21618.78	3						0.162	
4621.165	150	40	21633.51	7							0.886
4620.448	200	10	21636.86	3						0.110	
4615.334	200	15	21660.84	3	1	1.063	1	1.483			
4615.025	200	40	21662.29	7							1.004

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
4613.605	200	15	21668.96	1	1	1.584	2	0.744			
4610.628	300b	50	21682.95	3						0.113	
4608.620	150	8	21692.39	3						0.319	
4603.143	300b	100b	21718.20	1	1	1.335	2	0.774			
4599.704	100	10	21734.44	3						0.515	
4595.420	800r	200	21754.70	1	2	1.240	3	1.084			
4593.645	300	150	21763.11	2	2	0.863	3	1.055			
4592.668	500r	150	21767.74	2	2	0.782	3	1.077			
4570.972	500r	200	21871.05	7							1.199
4567.240	300	100	21888.92	2					0.310		
4561.348	500r	200	21917.20	7							1.208
4558.346	300	40	21931.63	2					0.280		1.966
4551.473	200	75	21964.75	2					0.148		
4548.326	100b	10	21979.95	7							0.938
4545.915	200	300	21991.61	1					0.090		0.755
4544.512	150	200	21998.40	7							0.814
4540.999	300r	75	22015.41	3						0.207	
4535.255	300r	150	22043.30	2	1	0.621	2	0.772			
4530.319	200	100	22067.31	7							1.002
4519.259	300	75	22121.32	1	1	1.560	2	1.250			
4515.118	300r	50	22141.60	2	2	0.729	3	1.093			
4513.681	400r	150	22148.65	2	4	1.073	5	1.364			
4505.216	500	100	22190.27	2	3	1.092	4	1.306			
4499.984	500	200	22216.07	1	3	1.063	4	0.858			
4498.947	800r	200	22221.19	2	1	0.052	2	0.852			
4493.334	1000r	300	22248.95	3	2	0.738	2	1.141			
4489.664	200	100	22267.13	3						0.235	
4488.312	200	100	22273.84	2							1.621
4486.898	300r	100	22280.86	7							0.767
4485.713	150	40	22286.75	7							0.962
4482.169	400r	100	22304.37	3						0.227	
4480.823	200	200	22311.07	3						0.222	
4479.637	200	75	22316.98	2	2	0.989	3	1.051			
4478.594	150	40	22322.17	7							0.793
4475.221	200	40	22338.99	2	2	0.735	3	1.020			
4470.990	200	25	22360.14	2	1	0.956	2	1.191			
4469.526	400r	150	22367.46	3						0.395	
4468.320	200	50	22373.49	3						0.608	
4463.834	200	100	22395.98	7							1.070
4461.789	200b	100	22406.24	7							1.405
4461.528	200	150	22407.56	2	2	0.777	3	1.057			
4461.241	200	100	22409.00	1	2	1.244	3	0.994			
4459.004	100	75	22420.24	3	1	0.729	1	0.931			
4458.736	150	75	22421.59	3	1	0.723	1	1.482			
4458.002	600r	200	22425.28	3	2	0.980	2	1.250			
4457.236	200	100	22429.14	7							0.942
4452.565	200	100	22452.66	3	3	1.082	3	1.388			
4445.032	200	75	22490.71	1					0.650		
4443.665	150	100	22497.63	1	1	1.463	2	1.018			
4443.086	20	200	22500.56	3						0.272	
4438.746	400	200	22522.56	2	2	1.000	3	1.180			
4432.252	400	150	22555.56	3						0.112	
4424.836	200b	50	22593.36	2	2	0.984	3	1.187			
4423.719	400	150	22599.07	2	1	0.712	2	1.252			
4422.048	600	200	22607.61	7							0.772

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
4420.256	200	20	22616.77	7							1.209
4416.844	500	100	22634.24	2	4	1.141	5	1.362			
4414.486	500d	150	22646.34	7							0.804
4408.883	800r	200	22675.12	3	2	1.036	2	1.256			
4402.927	500	150	22705.79	7							0.976
4401.581	500	200	22712.73	2	4	0.885	5	1.126			
4393.759	400	150	22753.16	3	3	1.084	3	1.244			
4392.974	400	100	22757.23	3	4	0.854	4	1.194			
4391.390	150	50	22765.44	3						0.395	
4388.967	50	25	22778.00	7							1.032
4387.734	150	40	22784.40	2	1	0.071	2	1.541			
4384.656	150b	50b	22800.40	7							1.106
4380.289	200	25	22823.13	3	2		2			1.396	
4376.532	100	20	22842.73	7							1.287
4374.124	600r	150	22855.30	2	2	0.738	3	1.133			
4373.041	200	50	22860.96	1							0.771
4369.288	50b	25	22880.59	3						0.134	
4365.930	600	150	22898.19	2	2	0.778	3	1.093			
4359.372	600r	100	22932.64	2							1.151
4358.321	500	150	22938.17	3	2	0.732	2	1.159			
4354.483	400	100	22958.39	7							0.953
4353.449	300b	100b	22963.84	3	2	1.102	2	1.253			
4351.466	100	50	22974.30	7							1.177
4349.072	400	40	22986.95	3						0.142	
4348.599	400	75	22989.45	1	1	0.798	2	0.934			
4346.432	500r	200	23000.91	1	1	1.468	2	1.187			
4345.851	150	50	23003.99	3						0.582	
4343.381	100	25	23017.07	7							1.430
4342.445	500r	100	23022.03	1	2	0.777	3	1.074			
4340.896	200	40	23030.24	1	4	1.057	5	0.945			
4338.108	400	100	23045.04	3						0.130	
4337.277	800r	100	23049.45	1	1	1.356	2	0.726			
4332.339	150	40	23075.73	2	1	1.480	2	1.710			
4330.844	300	25	23083.70	3	4		4			1.307	
4328.915	300r	25	23093.98	3	2	0.733	2	1.320			
4327.715	150	25	23100.39	1	2	1.414	3	1.048			
4327.036	100	25	23104.01	7							1.135
4325.274	200	50	23113.42	3						0.639	
4320.738	75	8	23137.69	7					0.374		
4315.254	500r	150	23167.09	3	3	0.954	3	1.077			
4314.319	300	50	23172.11	1	3	1.122	4	1.072			
4312.992	800r	200	23179.24	7							1.208
4311.798	300	100	23185.66	1	1	1.294	2	0.774			
4311.625	150b	25	23186.59	7							1.396
4311.062	150	15	23189.62	3						0.139	
4308.121	300	100	23205.45	2							1.348
4307.176	600r	200	23210.54	2	5	1.041	6	1.192			
4306.365	200b	200b	23214.91	1					0.285		
4304.955	150	10	23222.51	3	1	1.164	1	1.467			
4304.417	100	25	23225.42	7							1.013
4303.096	50	8	23232.55	7							0.487
4299.839	500r	100	23250.15	1							0.796
4299.633	200	50	23251.26	7							1.570
4297.307	300b	75	23263.85	3	5	1.042	5	1.180			
4293.770	10	3	23283.01	7							1.376

TABLE 3. *Zeeman effect of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
4291.810	400	100	23293.64	2	-2	0.790	3	0.899			
4289.655	100	40	23305.34	2	3	0.884	4	1.152			
4288.669	200	75	23310.70	2	2	0.927	3	1.248			
4288.471	200b	50b	23311.78	2							1.106
4287.082	200	40	23319.33	2							1.499
4286.229	200b	75b	23323.97	2	2	1.020	3	1.251			
4283.103	200b	50b	23340.99	7							1.340
4280.568	300r	100	23354.81	2	1	0.062	2	0.943			
4278.324	500r	200	23367.07	3	5	1.044	5	1.144			
4272.875	400r	50	23396.86	2	3	1.138	4	1.309			
4269.943	300	75	23412.92	1							1.000
4262.611	200	2	23453.20	2					0.170		
4260.984	100	2	23462.15	2	2		3		0.220		
4260.332	600r	5	23465.74	2	4	1.170	5	1.364			
4259.494	200	1	23470.36	7					0.216		
4258.521	400	2	23475.73	2	4	0.862	5	1.087			
4257.496	600r	4	23481.37	1	1	0.839	2	0.728			
4256.254	500r	8	23488.23	3	3	1.102	3	1.248			
4253.539	600r	20	23503.22	3						0.129	
4250.315	800r	75	23521.04	2	2	0.724	3	1.066			
4248.391	200	3	23531.70	3	4	0.880	4	1.160			
4235.463	600r	5	23603.52	3	2	0.732	2	1.375			
4230.427	500	5	23631.62	2					0.098		
4229.148	300r	4	23638.77	7							1.072
4228.761	150b	3	23640.93	3						0.522	
4227.387	400	8	23648.61	2	1	0.982	2	1.190			
4226.298	200	3	23654.71	2					0.107		
4221.691	75	2	23680.52	2	2	0.819	3	1.076			
4220.064	200	15	23689.65	2	1	0.064	2	0.979			
4216.068	300s	5	23712.10	1					0.080		
4214.828	200	4	23719.08	3						0.088	
4210.923	500r	10	23741.08	7							0.713
4210.765	400	10	23741.96	7							0.807
4210.455	75	2	23743.72	7							0.990
4208.412	150	4	23755.24	2					0.180		
4194.936	200	5	23831.55	2	4	0.861	5	1.111			
4187.142	50	3	23875.91	2	1	1.047	2	1.727			
4185.143	50	2	23887.31	3						0.304	
4184.603	50	3	23890.40	7							0.847
4179.314	100	8	23920.63	7					0.230		
4177.165	100	4	23932.94	3						0.256	
4170.533	500b	25	23970.99	3	4	1.111	4	1.205			
4165.766	800r	15	23998.42	3	4	0.869	4	1.090			
4162.509	400	15	24017.20	1	3	1.068	4	0.998			
4158.535	800	20	24040.15	3	5	1.119	5	1.362			
4157.280	150	5	24047.41	7							1.064
4154.719	200	5	24062.23	3						0.656	
4138.040	200	3	24159.22	3	1	1.030	1	1.478			
4136.432	200b	5b	24168.61	2	1	0.707	2	0.795			
4136.286	300	8	24169.46	2					0.104		
4134.062	200b	10b	24182.46	3	2	0.737	2	1.250			
4134.039	100b	8b	24182.60	7							2.397
4133.958	200	10	24183.07	3						0.420	
4131.207	50	2	24199.17	3						0.145	
4127.411	600b	40b	24221.43	7							0.876

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
4118.490	200	4	24273.90	2							1.156
4115.759	500r	50	24290.00	2	1	0.059	2	0.900			
4112.753	600b	15	24307.76	3	2	0.738	2	1.525			
4109.323	400r	5	24328.04	3						0.302	
4107.861	100	3	24336.70	2	1	1.024	2	1.250			
4107.050	40	2	24341.51	7							1.482
4102.617	400	3	24367.81	2	2	0.948	3	1.250			
4100.341	1000r	20	24381.33	3	2	0.734	2	1.252			
4099.553	100	4	24386.02	3	2	1.433	2	1.713			
4097.321	200	8	24399.30	2	2	1.014	3	1.192			
4096.077	150	4	24406.71	2	4	0.872	5	1.052			
4093.672	40	2	24421.06	2	2	0.741	3	1.172			
4091.737	40	2	24432.60	7							1.191
4087.285	200	5	24459.21	3						0.479	
4085.434	300r	10	24470.30	3						0.542	
4085.257	200	8	24471.36	2							1.472
4082.082	75	4	24490.39	2					0.085		1.413
4081.592	50	2	24493.33	3						0.197	
4081.368	800	8	24494.67	2					0.210		
4080.707	400	20	24498.64	2	4	0.866	5	1.186			
4080.359	100	4	24500.73	7							1.057
4078.875	75	4	24509.64	7							1.153
4073.856	200	3	24539.84	2	4	1.114	5	1.376			
4072.628	200s	5	24547.24	1							0.919
4071.750	200b	15	24552.53	2	2	0.758	3	1.145			
4070.756	100	2	24558.53	2	1	1.109	2	1.707			
4070.238	100	3	24561.65	2	2	0.735	3	1.189			
4067.451	400r	5	24578.48	7							1.098
4066.822	100	2	24582.28	7							1.110
4065.618	100	4	24589.56	3						0.550	
4064.332	400	10	24597.34	1	4	1.144	5	1.034			
4063.407	1500r	75	24602.94	2							1.279
4061.625	200	3	24613.73	7							1.210
4057.940	200	2	24636.08	1	2	1.405	3	0.985			
4057.327	50		24639.81	3	2	1.050	2	1.150			
4056.636	200	2	24644.01	3						0.183	
4054.302	200	8	24658.19	2	2	1.088	3	1.253			
4053.527	100	75	24662.91	3	4	0.862	4	1.133			
4050.888	800	25	24678.98	3						0.246	
4049.944	500	40	24684.72	1	1	1.802	2	1.252			
4048.432	800	50	24693.94	2	2	0.979	3	1.089			
4048.288	800	40	24694.83	3						0.322	
4047.058	50	1	24702.33	7							1.090
4046.824	200	15	24703.75	3						0.067	
4046.252	200	8	24707.25	2	1	0.760	2	1.036			
4045.226	200	2	24713.52	3						0.634	
4040.915	200	15	24739.88	2							1.067
4039.865	500	20	24746.31	1					0.060		
4038.960	100	2	24751.86	3						0.604	
4038.228	300	10	24756.34	1					0.390		
4037.562	500	15	24760.43	3	1	1.104	1	2.400			
4036.047	2000r	50	24769.72	2	2	0.744	3	1.143			
4035.352	150	5	24773.99	7	2			3	0.310		
4034.878	200	8	24776.90	3						0.789	
4033.907	600r	8	24782.86	2							1.381

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
4033.776	500	8	24783.67	3	1	1.082	1	1.477			
4032.595	600r	200	24790.92	2	3	1.013	4	1.312			
4029.827	400r	15	24807.95	1	1	1.481	2	1.128			
4029.658	400	15	24808.99	3	3	1.134	3	1.385			
4028.334	200	10	24817.15	3						0.258	
4027.546	150l	20	24822.00	3						0.163	
4027.007	500b	10	24825.32	3	2	1.104	2	1.248			
4026.159	150b		24830.55	7							1.042
4022.067	500b		24855.81	2	2	0.780	3	1.337			
4021.149	300	10	24861.49	7							1.297
4020.354	500	20	24866.41	3						0.172	
4019.862	200	10	24869.45	1	2	1.229	3	0.864			
4017.062	400	5	24886.78	1							0.485
4012.495	2000r	20	24915.11	2	2	0.856	3	1.074			
4011.739	500r	5b	24919.80	3						0.206	
4008.210	1500r	100	24941.74	2	4	0.860	5	1.136			
4005.960	300	8	24955.75	3	1	1.056	1	2.391			
4005.091	500	10	24961.16	2	1	1.096	2	1.255			
4003.574	400	25	24970.62	7							1.116
4001.894	300	2	24981.10	2	2	0.726	3	1.073			
4001.058	800r	40	24986.33	3	4	0.863	4	1.083			
4000.280	500	20	24991.18	1							0.767
4000.041	200b		24992.69	2					0.410		
3998.953	600	20	24999.48	3	4	1.157	4	1.322			
3998.657	300s	2	25001.33	2							1.273
3996.670	500	15	25013.76	3						0.129	
3991.731	800	40	25044.71	1	4	1.308	5	1.118			
3990.892	300	15	25049.97	3						0.991	
3990.809	300	25	25050.50	7							0.062
3990.492	800r	10	25052.48	1	1	1.476	2	0.947			
3987.219	100b	25	25073.05								0.862
3987.206	200b		25073.13	2	2	0.709	3	1.240			
3984.879	300		25087.77	7							0.941
3982.607	100	2	25102.08	1					0.268		
3975.831	150	5	25144.86	1							0.764
3975.468	200	20	25147.16	7							0.850
3974.829	200	4	25151.20	2					0.360		
3972.640	500	75	25165.06	2							1.772
3972.153	1500r	300	25168.14	2					0.350		
3971.136	100	4	25174.59	2							1.336
3969.665	300	15	25183.92	7							1.025
3967.797	100	3	25195.78	1	5	1.380	6	1.150			
3967.392	2000r	300	25198.35	3						0.393	
3966.334	200	4	25205.07	3						0.918	
3965.483	75	3	25210.48	3						0.219	
3964.329	200	3	25217.81	7							1.066
3964.030	300	15	25219.72	3						0.550	
3962.420	400r	15	25229.97	3	2	0.950	2	1.253			
3960.879	300	10	25239.78	7							1.110
3960.270	500	50	25243.66	1	2	1.275	3	1.005			
3959.300	1000r	100	25249.84	2	1	0.067	2	0.927			
3958.928	200	3	25252.22	3						0.349	
3957.798	100	2	25259.42	3						0.381	
3957.595	20h	5	25260.72	7							2.414
3957.059	100	20	25264.15	3						0.185	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3956.481	150	20	25267.83	7					0.284		
3956.005	400	10	25270.87	1							0.094
3955.891	400	50b	25271.60	3						0.570	
3955.170	800r	40	25276.21	3	5	1.095	5	1.361			
3954.727	150	2	25279.04	3						0.321	
3954.130	100	20	25282.86	3						0.228	
3953.338	400	20	25287.92	7							0.407
3952.761	500r	10	25291.62	3	1	0.876	1	1.486			
3950.804	300	8	25304.14	1					0.480		
3950.393	1000r	200	25306.77	3	2	0.742	2	1.166			
3949.975	50	2	25309.45	1							0.850
3948.133	500	40	25321.26	7					0.330		
3948.029	600r	15	25321.92	2	2	0.727	3	1.383			
3947.329	1000r	100	25326.42	2	4	1.213	5	1.359			
3946.481	400	10	25331.86	3	1	1.147	1	1.485			
3946.391	300	25	25332.44	7							1.281
3945.206	200	8	25340.04	1	3	1.118	4	0.882			
3944.253	500	20	25346.17	3	2	1.067	2	1.701			
3943.605	150	25	25350.33	7					0.170		
3942.072	500b	50	25360.19	7							0.838
3941.137	100	3	25366.21	2							1.953
3940.837	200	5	25368.14	2							1.309
3940.705	200	4	25368.99	3						0.794	
3939.538	75	2	25376.50	3						0.283	
3939.318	150	8	25377.92	2							1.150
3938.614	400b	150	25382.46	7					0.220		
3934.274	400b	50	25410.46	3						0.510	
3934.060	150	3	25411.84	1	2	1.198	3	1.008			
3933.970	150	5	25412.42	3	1	0.812	1	1.324			
3933.238	400	40	25417.15	1					0.202		
3932.911	1500r	200	25419.26	2	4	0.876	5	1.028			
3931.085	150	3	25431.07	3						1.241	
3930.658	100	3	25433.83	7							1.061
3930.331	150	20	25435.95	7							1.087
3928.865	300	50	25445.44	3						0.432	
3928.308	100	10	25449.05	3						0.476	
3927.806	400	10	25452.30	2	2	1.124	3	1.268			
3926.864	200	8	25458.40	1					0.350		
3926.056	20	1	25463.65	3						0.243	
3925.738	100	5	25465.70	3						0.247	
3925.219	600	50	25469.08	3						1.010	
3924.404	500l	10	25474.36	7							1.043
3923.799	500r	20	25478.29	1	2	1.543	3	1.083			
3922.747	50	2	25485.12	7							1.320
3922.394	100	8	25487.42	1	4	1.169	5	1.006			
3922.218	50	50	25488.56	2					0.160		1.504
3921.453	300	15	25493.53	1	1	1.248	2	0.966			
3920.442	300	15	25500.11	7							1.024
3920.058	300	10	25502.61	1					0.240		
3919.980	300	10	25503.11	7							1.145
3918.934	300	8	25509.92	3						0.243	
3918.498	300	300	25512.76	2	1	0.060	2	1.322			
3918.070	300	40	25515.54	3						0.307	
3916.417	800r	25	25526.31	1	1	1.066	2	0.738			
3915.848	200	15	25530.02	1	1	1.410	2	0.777			

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3915.295	300	8	25533.63	3						0.106	
3914.291	50	3	25540.18	7							1.537
3913.865	100	10	25542.96	7							1.109
3913.823	75	20	25543.23	3						0.611	
3913.645	200l	5	25544.39	3						0.823	
3913.082	300	25	25548.07	1	1	2.398	2	1.067			
3911.950	300b	25	25555.46	7							1.101
3911.910	500r	40	25555.72	3	4	1.223	4	1.446			
3910.978	400b	10	25561.81	1					0.080		
3910.773	300	8	25563.15	2					0.210		
3910.251	50	2	25566.56	3						0.268	
3909.991	100	8	25568.26	3						0.623	
3909.139	300	20	25573.84	2	2	0.968	3	1.238			
3908.979	300	25	25574.88	1							0.626
3908.749	500	15	25576.39	7							1.118
3908.031	100	2	25581.09	7							1.002
3907.543	50	5	25584.28	3						0.420	
3907.160	200	10	25586.79	3						0.362	
3906.387	50	5	25591.85	7							1.055
3906.308	50	3	25592.37	3						0.686	
3905.298	100	2	25598.99	7							1.146
3903.916	200	5	25608.05	3						0.344	
3903.103	1000r	150	25613.39	1	3	1.113	4	0.856			
3902.788	200	10	25615.45	7							1.274
3902.171	500	50	25619.50	7							0.958
3901.662	500	15	25622.85	3	4	0.862	4	1.121			
3900.577	1000r	50	25629.97	2							1.595
3899.019	300	75	25640.21	3						0.948	
3898.795	300	100	25641.69	3						0.559	
3898.509	300b	100	25643.57	2							1.139
3897.778	200	5	25648.37	3						0.256	
3897.612	100	3	25649.47	7							1.169
3897.316	100	2	25651.41	7							0.907
3896.168	100	2	25658.98	7							1.029
3895.418	2000r	200	25663.91	3						0.305	
3894.022	40	2	25673.11	3						0.242	
3893.817	200	8	25674.47	3						0.163	
3893.651	300	40	25675.56	3						0.355	
3893.344	300	25	25677.59	2					0.268		
3892.708	200	8	25681.78	3						0.448	
3891.725	400	10	25688.27	7							0.993
3889.906	300	4	25700.28	3						0.188	
3889.542	200	8	25702.68	2							1.344
3888.242	20	1	25711.28	3						0.257	
3888.070	15	5	25712.41	7							1.041
3887.509	300	4	25716.12	7							1.208
3887.019	800r	100	25719.37	2							1.277
3886.917	800r	500	25720.04	3						0.238	
3886.256	300	8	25724.42	7							0.600
3886.064	75	25	25725.69	7					0.280		
3885.412	25	4	25730.00	3						0.548	
3885.224	200	5	25731.25	7					0.433		
3883.767	200	15	25740.90	2							1.696
3883.536	200	5	25742.44	3						0.933	
3882.853	25	1	25746.96	7							1.019

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3882.324	200	8	25750.47	2							1.310
3881.792	100	2	25754.00	7					0.243		
3881.043	100	2	25758.97	1						0.485	0.662
3880.545	8	1	25762.27	3						0.126	
3880.323	100	3	25763.75	2					0.320		
3880.194	300	15	25764.61	7							1.116
3879.644	1000r	200	25768.26	1							0.987
3879.269	400	25	25770.75	2					0.266		
3878.662	400	150	25774.78	3	1	0.946	1	1.484			
3878.160	100	3	25778.12	7							1.121
3877.610	300b	15	25781.77	3						0.160	
3877.462	500	20	25782.75	2							1.720
3874.977	400	50	25799.29	7							1.208
3873.821	2000r	500	25806.99	7							1.085
3873.473	500r	50	25809.31	1	1	1.574	2	0.744			
3872.288	20	1	25817.21	7							1.040
3870.891	75		25826.53	7							1.062
3870.682	40	2	25827.92	7							1.230
3870.178	50	1	25831.28	7							0.707
3869.663	800r	50	25834.72	7							1.378
3868.389	200	2	25843.23	3						0.264	
3868.254	400	10	25844.13	2					0.191		
3866.907	500b	50	25853.13	1	2	1.151	3	1.004			
3866.771	200	2	25854.04	1					0.570		
3866.375	100	2	25856.69	3						0.136	
3864.837	200	25	25866.98	1							0.539
3862.654	200b	200	25881.28	7					0.150		
3862.419	500b	250b	25883.17	3						0.559	
3861.574	300b	40	25888.84	1							0.392
3861.502	300b	40	25889.32	3						0.371	
3861.051	200	2	25892.34	3						0.432	
3860.657	200	10	25894.98	3						0.240	
3859.466	40	5	25902.98	7							0.934
3858.358	200	150	25910.42	3	3	1.057	3	1.312			
3857.450	75	8	25916.51	7							1.161
3856.753	40	2	25921.20	3						0.350	
3856.622	200	15	25922.07	7							0.630
3856.354	200	40	25923.88	2	2	0.781	3	1.050			
3855.064	25	4	25932.55	3						0.640	
3854.289	100	5	25937.77	3						0.208	
3853.825	150b	15	25940.89	3						1.226	
3852.719	75	2	25948.34	7							1.254
3852.135	800r	50	25952.27	2	1	0.954	2	1.258			
3851.155	300	15	25958.87	1					0.410		
3850.690	50	2	25962.01	1	3	1.280	4	0.960			
3848.627	75	3	25975.92	3						0.300	
3847.617	500	10	25982.74	7							0.985
3846.886	1000r	100	25987.68	1	1	1.480	2	0.908			
3846.625	400	50	25989.44	3						0.116	
3845.092	400	10	25999.81	2							1.244
3844.933	400	15	26000.88	2							1.401
3844.571	50	1	26003.33	7							1.140
3843.507	200	8	26010.52	1					0.340		
3842.898	400r	75b	26014.65	3						0.074	
3840.613	200	75	26030.12	7					0.304		

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TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3840.430	300	250	26031.37	7							1.284
3838.801	50b	4b	26042.42	3						0.115	
3837.343	200b	5	26052.31	7							0.979
3837.024	200	3	26054.47	7							0.604
3836.584	800r	100	26057.46	7							1.211
3836.542	1000r	150b	26057.75	7							1.009
3836.213	100	4	26059.98	3						0.189	
3835.414	200	10	26065.41	7							1.000
3834.890	100	5	26068.97	7							0.707
3834.488	100	75	26071.51	7							1.168
3833.087	400	75	26081.24	3						0.213	
3832.583	200	3	26084.67	2					0.430		
3832.323	75	3b	26086.43	7					0.240		
3831.640	300	50	26091.08	7							1.111
3830.774	800r	150	26096.98	2	2	0.738	3	1.004			
3829.040	200	4	26108.80	3						0.250	
3828.385	3000r	300	26113.27	3	2	0.734	2	0.978			
3827.502	100	2	26119.29	2	1	0.733	2	1.083			
3826.368	400r	75	26127.03	1	2	1.205	3	0.866			
3825.515	200	25	26132.85	3						0.127	
3824.553	100b	10b	26139.43	7							1.201
3824.534	400b	15b	26139.56	7							1.188
3823.989	75	3	26143.29	3	1	0.696	1	1.096			
3823.067	500r	100	26149.59	3	1	0.062	1	1.157			
3822.709	300	25	26152.04	7					0.620		
3820.792	600r	75	26165.16	3	2	0.915	2	1.248			
3820.327	200	2	26168.34	7							0.836
3819.904	500	100b	26171.24	7							0.927
3819.189	200	10	26176.14	7							1.060
3818.685	400r	15	26179.60	1	4	1.204	5	0.939			
3817.478	400	40	26187.87	7							0.990
3817.117	300	8	26190.35	1	2	1.579	3	1.139			
3816.166	300	10	26196.87	1							0.696
3815.566	500	50	26201.00	3	2	0.772	2	1.099			
3813.815	500r	50	26213.02	3	2	0.718	2	1.008			
3812.667	75	5	26220.92	7							1.272
3812.398	400	40	26222.76	3						0.404	
3812.044	40	2	26225.20	3							1.612
3811.761	75	2	26227.15	3						0.255	
3810.995	600r	150	26232.42	7							1.202
3810.295	15	5	26237.24	3						0.372	
3808.614	500	20	26248.82	3						0.267	
3807.273	400	50	26258.07	2	4	1.100	5	1.369			
3806.317	100	1	26264.66	3						0.459	
3805.010	75		26273.68	2	2	1.052	3	1.262			
3804.699	500	50	26275.83	1							0.821
3804.127	400	20	26279.78	3						0.378	
3803.985	600r	150	26280.76	1	4	1.316	5	1.106			
3803.839	400	25	26281.77	3						0.694	
3801.571	400r	100	26297.45	7							0.902
3799.386	300	8	26312.57	7							1.029
3798.432	200	75	26319.22	1							0.582
3797.205	200	10	26327.68	3	5	1.072	5	1.372			
3796.687	400b	20	26331.27	7							1.111
3796.052	200	3	26335.68	3						0.717	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3795.386	600	100	26340.30	7							1.087
3794.981	200	3	26343.11	1					0.387		
3794.697	1500r	100	26345.09	3						0.341	
3793.815	300	25	26351.21	7							1.078
3793.504	200		26353.55	7							1.424
3793.097	300	10	26356.20	3						0.181	
3792.730	400l	75	26358.74	2	3	0.873	4	1.048			
3792.371	1000r	100	26361.24	7							0.986
3791.517	300	10	26367.18	2							1.649
3790.794	1500r	200	26372.21	1	3	1.032	4	0.860			
3790.356	300	40	26375.26	7							0.668
3787.638	300	40	26394.18	1							0.689
3787.218	75	2	26397.11	7					0.400		
3784.793	300	15	26414.02	1					0.570		
3784.574	400	20	26415.55	2							1.456
3784.138	50	2	26418.60	3						0.736	
3782.338	15	1	26431.17	7							1.134
3781.318	300	75	26438.30	3						0.216	
3780.966	300r	20b	26440.76	7							0.960
3780.147	200	8	26446.48	3						0.708	
3779.561	200	15	26450.59	2	4	1.023	5	1.208			
3778.498	300	2	26458.03	1							0.270
3778.045	300	15	26461.20	7							0.978
3777.745	200	40	26463.30	1					0.282		
3777.415	300	40	26465.61	3	3	0.794	3	1.254			
3777.184	400	8	26467.23	3						0.928	
3776.622	300	40b	26471.17	3						0.242	
3776.502	300	8	26472.01	7							0.722
3776.271	600r	150	26473.63	1					0.141		
3775.423	300	15	26479.58	2							1.278
3774.732	300	10	26484.42	7							1.070
3773.306	200	8	26494.43	3						0.376	
3772.649	400	10	26499.04	1	3	1.250	4	1.078			
3771.370	1500r	100	26508.03	2	2	0.734	3	1.074			
3770.722	100	2	26512.59	3						0.590	
3770.056	1500r	200	26517.27	3	1	0.053	1	0.783			
3768.047	200	8	26531.41	1	1	1.295	2	0.769			
3767.471	100	2	26535.46	3						0.312	
3766.447	300	10	26542.68	7							1.048
3765.412	400r	50	26549.98	1	2	1.686	3	1.084			
3764.193	200	8	26558.57	2	1	0.727	2	1.101			
3763.668	300	10	26562.28	7					0.104		
3762.257	200	8	26572.24	7							1.101
3761.704	200	20	26576.14	7							1.421
3761.470	200	25	26577.80	2	4	1.062	5	1.362			
3760.271	50b	25b	26586.27	3					0.130		
3758.706	400	20	26597.34	2	1	0.062	2	1.078			
3758.467	400r	25	26599.03	7							0.879
3757.694	1000r	200	26604.51	7							0.871
3756.451	200	8	26613.30	1					0.530		
3756.293	400	25	26614.43	7							1.019
3755.986	400	50	26616.60	3						0.296	
3755.211	800r	250	26622.09	7							1.017
3754.030	500r	50	26630.47	2	2	0.780	3	1.091			
3753.241	300	40	26636.07	1	3	1.041	4	0.853			

TABLE 3. *Zeeman effect of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3752.789	300	8	26639.28	7							1.149
3751.121	300	25	26651.12	7					0.150		
3750.493	400	25	26655.58	1	5	1.353	6	1.020			
3749.617	300	20	26661.81	7							1.432
3749.514	300	10	26662.55	2						0.446	
3749.083	200	25	26665.61	2	4	0.860	5	1.170			
3748.820	100	8	26667.48	3						1.030	
3745.658	500r	100	26689.99	2							1.489
3745.176	400l	20	26693.43	3						0.279	
3744.910	300	10	26695.33	2	3	1.001	4	1.172			
3742.923	1000r	100	26709.49	7							1.198
3742.275	200	5	26714.12	1					0.255		0.364
3742.019	75b	5	26715.95	3						0.268	
3741.884	200	8	26716.91	2							1.282
3739.683	150	5	26732.63	3						0.374	
3738.436	150	2	26741.55	3						0.283	
3737.935	100	10	26745.14	1					0.400		0.516
3737.514	600r	75	26748.15	7							1.486
3736.502	200	40b	26755.39	7							0.922
3735.363	100	3	26763.55	3						0.351	
3734.664	75	3	26768.56	7							1.024
3733.672	300r	25	26775.67	7							1.066
3732.985	400r	40	26780.60	3	3	0.872	3	0.995			
3732.535	150	3	26783.82	3						0.443	
3729.945	400	40	26802.43	2	1	0.409	2	0.786			
3729.836	400	25	26803.21	7							1.172
3727.903	1000r	150	26817.10	3						0.518	
3725.966	75	2	26831.05	2	1	0.858	2	1.188			
3724.672	100	10	26840.36	3						0.181	
3724.397	100	2	26842.35	7					0.140		
3723.921	300s	8	26845.78	2	2	0.772	3	1.186			
3722.655	75	2	26854.91	3						0.094	
3722.179	300b	25b	26858.34	3						0.420	
3721.219	500r	50	26865.27	3						0.416	
3719.837	400r	40	26875.26	3						0.150	
3717.895	50	2	26889.29	3						0.143	
3717.384	100	3	26892.99	7							0.960
3716.583	300	40	26898.78	1							0.912
3715.862	300	20	26904.00	3						0.171	
3715.561	400	50	26906.18	3						0.590	
3715.060	100	2	26909.81	3						0.606	
3714.696	100	3	26912.45	1	3	1.165	4	0.857			
3712.373	100	3	26929.28	7							1.062
3710.292	300	8	26944.39	1							0.819
3709.861	300	25	26947.52	1	1	1.480	2	0.928			
3709.404	75	3	26950.84	3						0.542	
3708.396	200	5	26958.17	3						0.696	
3706.402	200	75	26972.67	3						0.429	
3705.979	150h		26975.74	1							0.706
3705.665	100	40	26978.04	7							1.248
3704.862	500r	50	26983.88	2	2	0.917	3	1.086			
3704.147	200	50	26989.09	2					0.075		1.294
3703.775	500r	50	26991.80	3						0.482	
3703.230	400r	25	26995.77	2					0.436		
3702.479	100	2	27001.25	3						0.544	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3700.978	500		27012.20	7							1.327
3699.881	500r	50	27020.21	3	4	1.066	4	1.210			
3699.355	300	5	27024.05	3						0.440	
3699.182	500	75	27025.31	2						0.151	
3699.048	300	5	27026.29	2							1.518
3698.106	1000r	150	27033.17	3	5	1.168	5	1.362			
3695.288	500r	75	27053.79	2	4	0.872	5	1.113			
3694.177	400r	75	27061.93	7							1.034
3693.993	400r	200	27063.27	3	1	0.971	1	1.471			
3693.804	200b	25	27064.66	3						0.424	
3693.523	300l	25b	27066.72	3						0.824	
3693.247	200	10	27068.74	1	1	2.399	2	1.027			
3691.876	400r	100	27078.79	1	3	1.099	4	0.869			
3691.613	500r	200	27080.72	3						0.266	
3691.411	500r	50	27082.21	7							0.947
3690.624	600r	4	27087.98	1	1	1.164	2	0.734			
3690.115	200	300	27091.71	3						0.209	
3689.726	200	3	27094.57	7							1.106
3689.582	100	2	27095.63	1							0.916
3687.983	400r	75	27107.37	1	3	1.124	4	0.976			
3687.492	150b	5	27110.99	3						0.720	
3687.193	400l	20	27113.18	3						0.133	
3685.586	300b	10l	27125.00	3	2	0.931	2	1.252			
3685.214	200	4	27127.75	3						0.467	
3684.932	300	20	27129.82	7							1.052
3683.493	500	25	27140.42	7							0.999
3682.179	300	50	27150.10	7							1.324
3680.605	400r	40	27161.71	2	2	0.772	3	1.072			
3680.448	500r	50	27162.87	2							1.539
3679.544	400r	150	27169.54	7							1.036
3679.134	400	50	27172.57	7							0.967
3678.478	400r	50b	27177.42	1	1	1.158	2	0.773			
3677.304	150	4	27186.10	2					0.256		
3675.960	400	50	27196.04	1	2	1.715	3	1.315			
3675.790	400r	50	27197.29	2					0.310		
3675.137	500r	50	27202.12	3						0.445	
3674.891	300r	50	27203.95	3	5	1.137	5	1.361			
3674.089	300	40	27209.88	7							0.952
3674.013	300r	50b	27210.44	1	1		2		0.149		
3672.522	500	25	27221.50	1					0.130		
3672.300	500r	50	27223.14	3	3	1.090	3	1.249			
3670.654	15b		27235.35	2							1.422
3670.520	200	4	27236.34	7					0.365		
3669.640	400	50	27242.87	7							1.022
3668.390	300b	8	27252.16	3						1.176	
3667.882	20	4	27255.93	3						0.301	
3667.621	500	40	27257.87	1							0.603
3666.981	800r	75	27262.63	3	4	1.100	4	1.308			
3665.476	100b	10b	27273.82	2					0.170		1.821
3665.443	150b	500	27274.06	1	3	1.252	4	0.992			
3664.590	200	10	27280.41	7							1.103
3664.108	300	10	27284.00	1							0.875
3663.201	800r	100	27290.75	7							1.170
3662.955	150	15	27292.59	2					0.180		
3662.750	300r	20	27294.12	1	3	1.181	4	0.849			

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3662.283	100	3	27297.59	2					0.116		
3660.500	400	25	27310.89	1	1	1.496	2	1.186			
3660.091	200b	4	27313.95	3						0.523	
3659.629	600r	150	27317.39	2	2	0.737	3	1.087			
3658.808	400r	25	27323.52	2							1.468
3657.641	200s	10	27332.24	1	4	1.306	5	1.062			
3657.054	300	20	27336.63	2							1.206
3655.125	300	50	27351.05	1	3	1.250	4	1.066			
3654.461	500r	50	27356.02	3						0.084	
3653.916	20	1	27360.10	7							0.974
3653.586	40		27362.57	1					0.340		
3653.366	150	3	27364.22	7					0.050		
3651.570	100		27377.68	7							1.256
3650.204	300l	2	27387.93	3						0.136	
3649.735	1000r	100	27391.45	1	1		2		1.040		
3648.856	150	8	27398.04	3						0.165	
3647.932	300	50	27404.98	3						0.210	
3647.575	300	15	27407.67	7							1.025
3646.268	300	8b	27417.49	1	2	1.194	3	1.000			
3645.706	300	15	27421.72	2	4	0.877	5	1.177			
3645.566	200	8	27422.77	7							1.177
3644.018	100	2	27434.42	1					0.273		
3643.512	600r	50	27438.23	7							1.276
3642.573	500r	50	27445.30	1							0.870
3641.363	100b	4	27454.42	7							0.855
3640.924	200	15h	27457.73	3	1	0.823	1	1.178			
3640.390	100	3	27461.76	7					0.660		
3639.867	400l	40	27465.70	2	3	0.901	4	1.043			
3638.644	500r	50	27474.93	1					0.186		
3638.319	400r	25	27477.39	3						0.244	
3638.146	200	4	27478.69	3						0.531	
3637.772	50b		27481.52	7					0.080		
3636.834	500r	25	27488.60	7							1.481
3636.295	150	3	27492.68	3						0.277	
3635.943	2000r	150	27495.34	7							0.614
3634.902	200	4	27503.22	1					0.194		
3634.582	600r	100b	27505.64	7							0.914
3633.910	100	3	27510.73	7					0.180		
3632.830	1000r	100	27518.90	2							1.207
3632.124	100	5	27524.26	7					0.080		0.836
3631.863	150	8	27526.23	3						0.055	
3631.708	100b	2	27527.41	3						0.372	
3630.986	25	2	27532.88	7							1.003
3630.851	25		27533.90	7							0.963
3629.851	400	20	27541.49	3	1	0.716	1	1.486			
3629.017	100	4	27547.82	3						0.668	
3628.867	100	4	27548.95	3						0.276	
3628.129	75	4	27554.56	7							1.254
3628.032	100	10	27555.30	7							1.035
3627.342	50	1	27560.54	3						0.227	
3626.939	300	50	27563.60	7							0.942
3626.471	200	10	27567.16	2							1.326
3625.895	500r	400b	27571.53	5	2	0.833	2	1.177			
3625.150	300	75	27577.20	1					0.270		
3625.026	300r	100	27578.15	3						0.091	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3624.472	300	50	27582.36	3	4	1.066	4	1.305			
3624.143	100	3	27584.87	3						0.485	
3623.773	300	25	27587.68	2	2	0.778	3	1.190			
3623.297	15	1	27591.31	3						0.174	
3622.795	600r	50	27595.13	1	2		3				0.803
3622.338	500r	20b	27598.61	3		0.06		1.33			
3622.338	500r	20b	27598.61	1		1.48		1.19			
3622.290	500r	50	27598.98	2	2		3				1.550
3621.435	50		27605.49	1							0.422
3620.839	300r	50	27610.04	1	3	1.062	4	0.858			
3619.211	200	40	27622.45	3						0.090	
3617.671	300	8	27634.21	3	2	0.775	2	1.412			
3616.177	200	8	27645.63	1					0.206		
3615.849	200	4	27648.14	2					0.372		
3614.352	500r	75	27659.59	7							1.215
3614.212	500r	75	27660.66	7							0.978
3612.864	600r	5	27670.98	7					0.476		
3610.650	300	20	27687.95	2							1.485
3608.377	800r	50	27705.39	1	5	1.360	6	1.123			
3607.819	75		27709.67	1							0.749
3606.793	200	4	27717.55	7							1.295
3606.090	200	3	27722.96	7							1.471
3605.820	150	4	27725.03	1					0.300		0.274
3605.194	500	40	27729.85	1							0.770
3604.680	600r	40	27733.80	1	1	1.468	2	1.216			
3604.064	200b		27738.54	3	3	1.077	3	1.243			
3602.909	100	40	27747.43	1							0.802
3602.328	20		27751.91	7							1.040
3601.770	200	10	27756.21	3						0.313	
3601.295	300	10	27759.87	7							0.954
3600.431	300	50	27766.53	3	5	1.361	5	1.037			
3599.723	300	20	27771.99	3						0.095	
3598.691	100	5	27779.96	3						0.182	
3598.523	150	10	27781.25	1	3	1.192	4	0.861			
3597.704	20	2	27787.57	3						0.281	
3597.021	75	2	27792.86	7							1.395
3596.536	100	5	27796.60	7							1.443
3595.975	150	5	27800.94	7					0.244		
3595.756	100	10	27802.63	2					0.265		
3595.617	500r	100	27803.70	3						0.109	
3594.985	300	20	27808.59	1	2	1.723	3	1.267			
3594.721	300	10	27810.63	1	1	0.972	2	0.740			
3592.777	800r	100	27825.67	1	4				0.160		
3592.122	75		27830.76	2					0.160		1.402
3591.253	200	50	27837.49	3						0.200	
3590.924	300		27840.04	2	3	0.878	4	1.042			
3589.992	200	20	27847.27	3	1	1.175	1	1.483			
3587.831	100	5	27864.04	7							1.266
3587.102	150	40	27869.70	7							1.071
3586.703	100		27872.80	3						0.406	
3586.478	150	4	27874.55	1	1	0.986	2	0.666			
3585.244	150	5	27884.15	3						1.220	
3585.050	20		27885.65	1					0.080		0.775
3583.298	150	10	27899.29	2							1.130
3583.100	600r	25	27900.83	3						0.229	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3581.353	150	25b	27914.44	2					0.110		1.562
3581.289	100	3	27914.93	7							1.141
3579.454	200		27929.25	7					0.300		
3577.746	200	8	27942.58	1	2	1.296	3	1.064			
3574.192	50		27970.36	7							0.872
3572.067	300	20	27987.00	3						0.515	
3571.008	300	10	27995.30	3						0.201	
3570.827	100		27996.72	7							1.054
3570.523	300	10	27999.11	3						1.141	
3570.357	500	10	28000.41	3						1.404	
3569.820	1000r	25	28004.62	1	1	1.470	2	0.937			
3569.207	75		28009.43	3	2	1.014	2	1.282			
3566.099	15		28033.84	2					0.088		1.226
3565.822	300	15	28036.02	7					0.332		
3564.508	100	10	28046.35	7							1.102
3564.235	200	8	28048.50	7							1.125
3563.911	200		28051.05	7							1.130
3563.375	600	75b	28055.27	3						0.162	
3563.299	200b	25	28055.87	3						0.117	
3562.599	75	5	28061.38	7							1.155
3562.253	100	8	28064.11	7							0.994
3561.780	500r	75	28067.83	2	2	1.020	3	1.213			
3561.408	200	8	28070.77	3						0.207	
3560.896	300	40	28074.80	7							0.958
3560.688	200	5	28076.44	1					0.267		
3558.638	100		28092.61	2					0.320		
3556.973	75	10	28105.76	7							1.205
3555.013	1000r	50	28121.26	7							1.091
3554.336	75s	2	28126.61	7							1.078
3553.960	20	2	28129.59	3						0.784	
3553.110	100	200	28136.32	3						0.163	
3551.744	75	2	28147.14	7							0.948
3551.401	1000r	150	28149.86	2							1.489
3550.783	200	40	28154.76	3						0.163	
3550.718	100s		28155.28	1	1	0.064	2	1.064			
3548.664	200	8	28171.57	1	1	0.062	2	1.298			
3547.918	300	15	28177.49	3						0.136	
3547.338	200b		28182.10	3	2	0.951	2	1.251			
3546.255	20		28190.71	3						0.306	
3545.958	500b		28193.07	1							0.831
3544.250	150	3	28206.65	1					0.244		
3544.018	800r	50	28208.50	1	4	1.314	5	1.136			
3543.208	150	3	28214.95	3					0.667	0.667	
3543.023	200	4	28216.42	3						0.699	
3542.498	500r	50	28220.60	2	2	1.013	3	1.171			
3539.843	300	25	28241.77	3						1.015	
3536.976	150	4	28264.66	3						0.149	
3535.250	150b		28278.46	7							0.967
3534.675	150b		28283.06	1							0.706
3534.210	100b	10	28286.78	1	1	2.390	2	1.195			
3533.600	40	3	28291.66	7							1.089
3533.181	200b	10	28295.02	1	1	1.483	2	1.080			
3531.450	1000r	50	28308.89	3						0.186	
3531.282	200	8	28310.24	3	3	1.111	3	1.240			
3530.514	800r	50	28316.39	7							1.051

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3529.385	300l	40	28325.45	1	3	1.082	4	0.732			
3528.411	300	50	28333.27	2							1.547
3527.793	200	10	28338.23	2	4	0.857	5	1.041			
3526.764	300		28346.50	3						0.222	
3526.634	500r	10	28347.54	3	2	0.736	2	1.544			
3524.708	300	8	28363.03	2							1.217
3524.178	300	25	28367.30	3						0.660	
3523.758	300	8	28370.69	7							0.996
3523.505	300	50l	28372.72	1	1	1.812	2	0.738			
3523.022	75		28376.61	7							0.787
3521.059	500r	25	28 92.43	2	1	0.803	2	1.263			
3520.710	300	40	28395.24	3						1.151	
3518.885	400l	50	28409.97	3	2	0.788	2	1.206			
3517.961	200l	10	28417.43	3						0.194	
3517.257	40	3	28423.12	3						0.174	
3515.327	100	40	28438.72	7							1.025
3514.285	200	10	28447.16	7							0.974
3511.789	100	10h	28467.37	7							1.344
3511.157	800r	25	28472.50	3	2	1.075	2	1.249			
3510.729	75b		28475.96	7							1.125
3509.319	50		28487.41	7					0.060		
3509.089	500	25	28489.28	3	2	0.873	2	1.003			
3508.360	300	3	28495.20	1					1.183		
3508.100	300b		28497.30	3						0.133	
3507.520	100		28502.02	3						1.059	
3507.178	200	8	28504.80	3						0.133	
3506.345	300	10	28511.57	7							1.080
3506.132	300	3	28513.30	3	2	0.729	2	1.097			
3505.767	150	5	28516.27	1	1	1.475	2	1.025			
3504.992	300	8	28522.57	2	1	0.721	2	1.261			
3504.852	150	8	28523.71	1							0.745
3504.569	15		28526.02	3						1.254	
3503.786	500r	40	28532.40	1							0.948
3503.130	200	15	28537.74	7							1.136
3502.963	200	10	28539.10	7					0.104		
3499.821	200	5	28564.72	2	2	0.780	3	1.100			
3498.956	200b	20b	28571.78	3						0.322	
3498.621	800r	75	28574.51	3						0.358	
3496.811	500r	15	28589.31	2	2	0.746	3	1.179			
3496.060	200	10	28595.45	7					0.190		
3495.700	800r	25	28598.39	7							1.197
3494.801	100		28605.75	3	2	1.192	2	1.567			
3494.175	15	2	28610.87	3						0.334	
3492.158	25		28627.39	1					0.615		
3491.900	500	2	28629.51	2	3	1.017	4	1.210			
3490.848	50	1	28638.14	7					0.266		
3489.509	400	2	28649.13	1	1	1.076	2	0.730			
3488.834	500	3	28654.67	7							1.087
3487.991	150l	4	28661.60	3						0.539	
3486.551	1000r	10b	28673.44	3	2	0.738	2	1.123			
3486.269	50	1	28675.75	1							0.482
3486.210	50	1	28676.24	2	2	0.744	3	1.094			
3485.175	200b	2	28684.76	1							0.620
3484.732	200		28688.40	7					0.560		
3483.433	200b	1	28699.10	7							1.256

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3481.620	100h		28714.04	7							1.108
3480.810	100		28720.72	7							0.940
3480.052	500	3	28726.98	7							1.581
3479.684	300	2	28730.02	1	2	1.195	3	1.072			
3478.612	150	1	28738.87	3						0.652	
3476.385	200	3	28757.28	2	3	0.860	4	1.010			
3474.530	200	3	28772.63	3						0.510	
3473.545	400	8	28780.79	3						1.515	
3472.691	150	4	28787.87	7							1.021
3471.959	500r	50l	28793.94	7							1.090
3471.001	300	15	28801.89	2							1.442
3470.568	300	20	28805.48	3	4	1.120	4	1.308			
3469.345	1000r	150	28815.63	7							1.237
3465.061	200b	25	28851.25	3	2	0.776	2	1.159			
3464.882	75		28852.74	3						0.184	
3462.981	100	2	28868.58	7							1.118
3461.574	200	3	28880.32	1	3	1.240	4	1.065			
3459.907	20	2	28894.24	3						0.237	
3458.752	15		28903.88	3						1.247	
3458.142	200	8	28908.98	7							1.194
3457.829	75		28911.60	3						0.248	
3457.434	150	5	28914.90	3						0.158	
3457.069	400r	25	28917.95	3	2	0.734	2	0.949			
3456.695	200b	8	28921.08	7							1.133
3455.612	200b	10	28930.14	3						0.269	
3455.273	20	5	28932.98	3						0.193	
3454.206	200	15	28941.92	3						0.448	
3452.335	25		28957.61	7							0.970
3452.207	75	1	28958.68	7							1.014
3451.308	100		28966.22	1	1	1.276	2	1.016			
3450.948	100	15	28969.25	3						0.158	
3450.268	150	8	28974.95	3	2	1.267	2	1.707			
3448.949	300	10	28986.03	2	4	0.864	5	1.118			
3446.546	300	8	29006.24	2	3	0.793	4	1.213			
3444.795	100	3	29020.98	3	2	0.720	2	0.984			
3443.980	100	8	29027.86	3						1.435	
3443.497	150l	2	29031.93	7							0.784
3443.409	200s	3	29032.67	7						0.474	
3442.305	25	1	29041.98	3						0.167	
3441.036	100	20	29052.69	3						0.488	
3440.070	25	3	29060.84	7							0.916
3435.487	25l		29099.61	7					0.231		
3434.727	200b	2	29106.05	7							0.997
3433.238	50		29118.68	7							0.822
3432.860	20	1	29121.88	7							0.590
3431.265	200	5	29135.42	7							0.816
3429.871	100b		29147.26	7							0.876
3429.574	200	10	29149.78	3						0.726	
3427.089	200s		29170.92	3	2	1.020	2	1.216			
3425.613	100	2	29183.49	3						0.966	
3425.435	150	15	29185.01	7							0.978
3425.140	200b	2	29187.52	3						0.302	
3421.678	200	4	29217.04	7							0.833
3420.372	200		29228.20	3						0.821	
3420.196	100	3	29229.70	7							1.080

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3418.032	15		29248.21	3						0.462	
3417.498	400r	10	29252.78	3	2	0.733	2	0.978			
3416.595	150	3	29260.51	3						0.350	
3416.386	100b		29262.31	7							1.140
3415.885	500r	75	29266.60	3						0.282	
3414.299	75		29280.19	7							1.074
3412.181	200		29298.36	1					0.280		
3410.699	25		29311.09	3						0.236	
3410.184	150	3	29315.52	3	1	0.076	1	1.476			
3407.832	400b	10	29335.75	7							0.853
3406.978	10		29343.10	3						0.268	
3406.841	50		29344.29	7							1.066
3404.313	50		29366.08	3						0.263	
3403.903	200	8	29369.61	7							1.252
3400.680	25		29397.44	3						0.724	
3400.630	75	3	29397.88	3	1	1.109	1	2.408			
3399.041	100	4	29411.62	7							1.538
3398.545	1500r	50	29415.92	7							1.102
3395.986	200b	1	29438.08	7							0.959
3394.583	15	3	29450.24	3						0.332	
3393.993	200	2	29455.37	3						0.079	
3393.421	150	10	29460.33	7							1.036
3392.473	100	2	29468.57	7							1.168
3390.849	200	8	29482.67	7							1.043
3390.368	600r	75	29486.85	7							1.468
3389.038	300	8	29498.43	7							0.859
3388.348	50		29504.44	3						0.414	
3388.154	100b	5	29506.13	3						1.052	
3387.119	15		29515.14	7							0.949
3384.177	15		29540.80	3						0.495	
3383.586	200	8	29545.96	7							0.938
3382.829	15		29552.57	7							1.108
3381.907	25		29560.63	3						0.522	
3377.483	50	40	29599.35	1	1	2.407	2	1.351			
3375.587	200b		29615.97	2							1.623
3374.975	1500r	75	29621.34	7							1.283
3372.822	400r	100	29640.25	1							0.547
3370.887	100	5	29657.26	3						0.744	
3370.738	100	4	29658.58	7							0.482
3369.358	20		29670.73	7							1.192
3369.000	150	4	29673.87	3						0.427	
3368.318	10	3	29679.88	3						0.404	
3367.582	200r	10	29686.37	2	2	0.742	3	1.270			
3365.979	150	5b	29700.50	7							0.977
3365.337	400r	50	29706.17	2	2	0.724	3	1.084			
3365.137	300	15	29707.93	7							0.993
3364.154	20b	2	29716.62	2							1.294
3360.997	400r	150	29744.53	2	2	0.748	3	1.148			
3350.352	200	5	29839.04	3						0.193	
3348.288	40	1	29857.43	3	1	1.427	1	2.444			
3347.991	200	5	29860.08	7							1.018
3347.403	150		29865.32	1	4	1.303	5	1.078			
3345.170	150	3	29885.25	3						0.099	
3343.813	75s	3	29897.38	7							0.978
3343.499	150	5	29900.19	2							1.408

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3343.344	200	10	29901.57	3						0.383	
3343.164	300	5	29903.19	2	2	1.244	3	1.004			
3342.898	20		29905.56	3						0.483	
3341.550	10	2	29917.63	3						1.118	
3341.205	50	2	29920.72	3						0.505	
3340.337	100b	1	29928.49	7							1.464
3340.021	15		29931.33	7							1.123
3339.257	15		29938.18	7							1.454
3337.275	200	5	29955.95	3						0.259	
3336.074	150		29966.74	3						0.607	
3335.694	150	4	29970.15	2	1	0.050	2	1.220			
3335.238	300	5	29974.24	2					0.210		
3332.479	100b	1	29999.06	7							0.952
3331.727	50	2	30005.83	7							1.074
3330.976	150	4	30012.60	7							0.998
3330.477	1500r	40	30017.10	2	2	0.733	3	1.129			
3329.728	300r	75	30023.85	3						0.705	
3327.527	50	2	30043.70	3						0.482	
3327.193	800r	25	30046.73	7							1.275
3322.093	400r	10	30092.85	7							1.139
3321.574	300r	40	30097.55	7							0.862
3320.879	20		30103.85	3						1.020	
3320.476	400r	25	30107.50	1							0.817
3320.301	600	500	30109.09	7							0.995
3319.572	50		30115.70	3						0.941	
3318.390	200	5	30126.43	7							0.993
3317.576	25		30133.82	7							1.051
3315.848	200	2	30149.52	2	1	0.733	2	1.027			
3314.793	400r		30159.12	7							1.044
3313.647	300r		30169.55	3						0.075	1.215
3313.437	50	4	30171.46	3						0.512	
3313.387	75b		30171.91	7							0.992
3313.073	200l	40	30174.77	2							1.575
3310.637	150d	15b	30196.98	3						0.587	
3310.446	100	10b	30198.72	7							1.298
3309.365	1000r	40	30208.58	3	2	0.744	2	1.095			
3305.303	400r	40	30245.71	3	1	0.846	1	1.481			
3304.238	3000r	200	30255.45	2	2	0.732	3	1.082			
3303.281	100	5	30264.22	7							1.048
3302.192	400r	5	30274.19	1							0.710
3301.651	1500r	150	30279.16	2							1.556
3300.775	75	4	30287.20	3						0.277	
3298.811	200	8	30305.22	1							0.809
3298.697	75	4	30306.27	3						0.178	
3296.372	150	8	30327.64	1					0.570		
3292.926	200	4	30359.39	3						0.635	
3291.410	50		30373.37	7					0.150		0.566
3291.037	40l	1	30376.81	7							1.087
3289.517	100	10	30390.85	3						0.332	
3283.671	100	4	30444.95	3						0.314	
3282.837	40	2	30452.68	3						0.398	
3281.049	400r	25	30469.28	7							1.060
3280.764	150b	20	30471.92	7							0.719
3279.025	75	4	30488.09	7							0.974
3278.733	100	25	30490.80	2							1.753

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3277.702	50	3	30500.39	7							1.145
3276.721	300	5	30509.52	3						0.480	
3276.225	150	8	30514.14	7							1.328
3276.045	50	5	30515.82	3						0.287	
3272.027	800r	75	30553.29	3	2	0.730	2	1.044			
3271.892	300r	100	30554.55	7							1.080
3271.546	50	3	30557.78	2					0.280		
3270.874	150	10	30564.06	3						0.496	
3270.100	100	5	30571.20	3						0.665	
3265.604	20		30613.38	3						0.401	
3263.183	400r	20	30636.09	3						0.262	
3262.316	75	4	30644.24	7							1.256
3261.497	20		30651.93	3						0.301	
3259.061	600r	50	30674.84	7							0.961
3258.103	200r		30683.84	7							1.275
3256.503	20	3	30698.93	7							0.942
3255.920	150	8	30704.43	2					0.176		
3251.916	2000r	200	30742.23	7							1.156
3249.855	800r	25	30761.73	2	2	0.741	3	1.193			
3248.697	75b		30772.69	3						0.283	
3247.331	15		30785.64	7							0.964
3247.218	75	4	30786.71	3						0.072	
3245.994	200	8	30798.32	3						1.043	
3244.043	150	10	30816.84	3						0.255	
3243.916	50	5	30818.05	3						0.290	
3242.145	50	15b	30834.88	7							0.896
3240.644	400r	40b	30849.17	7							1.121
3238.934	400r	20	30865.45	1	2	1.307	3	1.095			
3236.573	100	8b	30887.96	1					0.240		
3234.996	400r	20	30903.02	1							1.030
3231.461	75		30936.83	7							1.049
3225.007	100	5	30998.74	2	1	0.866	2	1.194			
3222.807	200	15	31019.89	7							1.215
3221.291	400b		31034.49	7							1.128
3220.986	75b		31037.43	2							0.796
3219.490	20h	4	31051.85	7							0.859
3216.998	75	3	31075.91	3						1.185	
3215.778	100	100	31087.69	7							0.915
3214.648	150	5	31098.62	3						0.871	
3214.381	400r	25	31101.20	3						0.400	
3214.076	400r	50	31104.15	7							1.010
3211.997	100r	5	31124.29	3						0.131	
3210.779	200	5	31136.09	7							1.172
3207.938	50r	5	31163.67	3	2	0.878	2	1.262			
3202.521	200r	8	31216.38	3						0.653	
3198.969	75s		31251.04	3						0.214	
3198.694	50b		31253.73	7							0.806
3195.688	400r	50	31283.12	2	2	0.750	3	1.120			
3193.781	200r	5	31301.80	1	1	1.619	2	1.259			
3192.586	400r	20	31313.52	7							0.920
3189.711	200	8	31341.74	3						0.416	
3189.562	200	3	31343.20	7							1.109
3185.628	200	3	31381.91	3						3.269	
3184.843	300	8	31389.64	3						0.320	
3184.277	300	15b	31395.22	1					0.243		

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3183.384	100	2	31404.03	7							1.056
3181.670	500r	20	31420.95	3						0.546	
3180.194	1000r	1500	31435.53	7							1.077
3178.622	200	4	31451.07	3						0.241	
3178.244	600r	100	31454.82	7							1.028
3177.402	100	2	31463.15	3	1	1.268	1	1.462			
3176.167	200r	5	31475.38	7							1.130
3174.840	200	4	31488.54	3						0.660	
3174.020	300	8	31496.68	3						0.142	
3173.427	500r	50	31502.56	7					0.220		
3171.276	500r	75	31523.93	2	2	0.743	3	1.108			
3168.342	100	2	31553.11	7							0.852
3165.048	150	3	31585.95	2	1	0.076	2	1.073			
3161.364	200d	5	31622.76	1	3	1.078	4	0.898			
3161.148	100	2	31624.93	3						0.795	
3158.394	100		31652.50	3					0.456		
3157.221	300r	8	31664.25	7							0.952
3156.866	300		31667.81	1	1	1.466	2	1.221			
3152.395	100	3	31712.73	1	1	1.175	2	0.745			
3152.295	100	3	31713.74	3						0.235	
3151.184	300	5	31724.92	3						0.459	
3151.017	200		31726.60	3						0.203	
3150.536	100	8	31731.44	7							1.157
3147.449	200	25	31762.56	7							1.149
3146.310	200r	8	31774.07	7							1.256
3145.637	400r	25	31780.86	2	2	0.738	3	1.175			
3144.145	100	3	31795.94	3						0.102	
3142.422	100	5	31813.37	3						0.482	
3139.892	150	100	31839.00	3	4	0.968	4	1.220			
3138.200	100	10	31856.17	7							1.088
3136.829	500r	8	31870.09	3	2	0.730	2	0.941			
3136.216	1000r	100	31876.32	7							1.088
3134.203	400	5	31896.79	2							1.160
3132.102	300	5	31918.19	7							1.477
3126.414	200	2	31976.26	3						0.485	
3124.986	75	2	31990.87	7					0.180		
3120.881	400r	25	32032.94	7							1.498
3116.352	300r	10	32079.50	3	4	1.008	4	1.213			
3116.263	500r		32080.42	7							0.674
3111.280	300	8	32131.79	7							1.202
3108.636	200	3	32159.12	3						0.139	
3108.504	300r	10	32160.48	3					0.340		
3104.966	100r	3	32197.13	2	2	0.761	3	1.155			
3102.125	200	20	32226.61	7						0.383	
3099.184	100	2	32257.20	3						0.322	
3098.726	300r	5	32261.96	2	3	1.070	4	1.200			
3098.119	100		32268.28	3						0.600	
3093.719	200	3	32314.17	3						0.159	
3092.828	300r	8	32323.48	2							1.382
3082.507	100b		32431.71	7							1.624
3079.574	150	2	32462.60	3						0.825	
3078.625	150b	2	32472.61	7							1.017
3077.718	300r	5	32482.17	2							1.483
3076.410	150	30	32495.98	3	1	1.116	1	1.493			
3075.687	100	3	32503.61	3						0.956	

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
3071.632	50		32546.53	7							1.225
3065.683	200r	2	32609.68	1					0.168		
3065.038	50	10	32616.54	7							1.164
3062.454	200r	2	32644.07	3						0.325	
3061.812	400r	3	32650.91	1					0.400		
3058.029	200r	2	32691.29	3						0.427	
3047.816	500r	2	32800.84	3						0.485	
3043.248	100	5	32850.07	7							1.928
3041.941	100		32864.19	7							1.121
3034.639	400r	2	32943.26	7							1.097
3032.016	100r	2	32971.76	3	1		1			0.700	
3031.195	100r	2	32980.68	3						0.654	
3030.487	400r	8	32988.39	3						0.218	
3029.477	100		32999.39	7							0.956
3027.896	150	3	33016.62	1					0.480		
3025.448	200r	2	33043.33	2	2	0.742	3	1.132			
3021.056	300	1	33091.37	7							1.401
3019.889	300		33104.15	7							1.028
3016.096	50		33145.79	7							1.297
3014.641	150r	1	33161.79	1					0.572		
3011.745	100s	1	33193.67	7							1.274
3008.924	200	2	33224.79	7							1.224
3006.634	200	2	33250.10	7							1.101
3006.164	300r	2	33255.29	7							1.455
3004.248	150r	1	33276.50	7							1.488
3003.210	200	1	33288.00	3						0.434	
3002.687	200r	2	33293.80	3						0.587	
3002.390	100r		33297.13	3						0.897	
2999.272	75	10	33331.71	3						0.329	
2998.147	200b	1	33344.21	3						0.507	
2997.196	100	8	33354.79	3						0.261	
2995.962	100	1	33368.53	7							0.803
2995.166	100	1	33377.40	7							0.862
2993.079	100		33400.67	7							0.966
2987.672	300r	2	33461.12	3						0.464	
2981.843	100	15	33526.52	7							0.788
2980.335	150	25	33543.48	7							1.399
2980.112	200r	2	33546.04	3						0.261	
2979.043	100b		33558.04	7							1.064
2973.675	100	1	33618.61	3						0.488	
2970.566	100	2	33653.79	7							1.150
2969.378	100	8	33667.26	3						0.618	
2963.608	75	8	33732.80	7							1.178
2963.442	75		33734.69	3						0.844	
2959.854	300	25b	33775.58	7							0.881
2959.137	200	2	33783.77	3						0.466	
2958.367	100b	2	33792.57	7							1.374
2957.332	150	10	33804.39	7							1.194
2943.729	400	3	33960.59	3						0.837	
2931.783	400	4	34098.96	7							0.685
2925.526	500r	5	34171.89	7							0.843
2918.922	200	20b	34249.20	7							1.167
2916.369	500r	10	34279.18	7							0.766
2909.103	300d	8d	34364.79	7							0.990
2907.451	100		34384.32	7							1.194

TABLE 3. *Zeeman effect of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Type	J_1	g_1	J_2	g_2	Δg	p	n
	Lamp	Spark									
2905.097	100b	2	34412.18	7							1.238
2890.078	150r	5	34591.00	1					0.703		
2889.488	50	2	34598.07	7							1.506
2888.785	200	2	34606.48	7							1.396
2888.552	200	3	34609.28	7							1.307
2886.983	150b		34628.09	3						0.318	
2883.266	400	3	34672.72	7							1.329
2881.577	200	10	34693.04	7							0.912
2876.768	300	3	34751.04	7							1.073
2862.610	300r	20	34922.90	7							1.143
2860.776	100	2	34945.29	3						0.356	
2860.491	150	3	34948.77	7					0.697		
2850.597	300b	2	35070.06	3						0.820	
2848.084	300r	2	35101.01	7							1.426
2846.036	150	2	35126.26	3						0.980	
2843.906	300r	2	35152.58	7							1.234
2841.383	150h	2	35183.79	7							1.087
2832.314	1000r	400	35296.44	7							0.962
2829.346	150	10	35333.46	7							1.196
2828.502	200l	4	35344.00	7							1.079
2825.909	100b		35376.44	7							1.011
2808.323	200	2	35597.96	7							1.191
2804.912	200	2	35641.24	3						0.684	
2799.432	100	1	35711.01	7							0.990
2762.458	50r		36188.96	3						1.301	
2747.139	150b		36390.74	7							0.665

TABLE 4. *Classified lines of* Th I

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
29662.822	0		3370.304	$9804_5 - 13175_4^4$	23217.661	1		4305.891	$18549_2 - 22855_3^3$
28574.421	0		3498.679	$12847_3 - 16346_4^4$	23175.469	3		4313.730	$16554_6 - 20867_7^7$
26734.663	0		3739.442	$7502_3 - 11241_3^3$	23153.597	4		4317.805	$15736_1^1 - 20054_2$
26377.115	2		3790.131	$10414_4^4 - 14204_5$	23127.608	1		4322.657	$13088_3 - 17411_3^3$
25984.374	1		3847.417	$18549_2 - 22396_1^1$	23121.211	0		4323.853	$25690_0^0 - 30014_4$
25971.332	0		3849.349	$14204_5 - 18053_4^4$	23085.081	0		4330.620	$14243_1^1 - 18574_1$
25913.673	0		3857.914	$23113_4^4 - 26971_4$	23007.044	1		4345.309	$27948_4^4 - 32293_5$
25790.101	1		3876.399	$20522_2^2 - 24399_3$	22978.346	0		4350.736	$17224_2^2 - 21575_2$
25735.979	1		3884.551	$13962_1 - 17847_2^2$	22964.759	1		4353.310	$21902_4^4 - 26255_4$
25561.646	1		3911.044	$17166_5 - 21077_0^0$	22900.906	2		4365.448	$21890_3^3 - 26255_4$
25269.196	1		3956.308	$23015_0^0 - 26971_4$	22900.565	0		4365.513	$15166_3^3 - 19532_4$
25111.575	1		3981.141	$22399_0^0 - 26380_5$	22875.089	0		4370.375	$17224_2^2 - 21594_3$
25080.636	2		3986.052	$11877_1^1 - 15863_2$	22864.133	2		4372.469	$25180_7^7 - 29552_6$
25049.573	2		3990.995	$13175_4^4 - 17166_5$	22860.040	0		4373.252	$24561_3^3 - 28934_3$
25032.462	0		3993.723	$25690_0^0 - 29684_5$	22855.180	2		4374.182	$18614_1^1 - 22988_2$
24997.523	1		3999.305	$13847_2 - 17847_2^2$	22851.632	3		4374.861	$8800_4 - 13175_4^4$
24973.732	1		4003.115	$26723_6^6 - 30726_7$	22843.962	1		4376.330	$12847_3 - 17224_2^2$
24931.344	1		4009.921	$15493_4 - 19503_3^3$	22834.596	2		4378.125	$3865_1 - 8243_2^2$
24902.355	1		4014.589	$13945_3^3 - 17959_4$	22829.522	2		4379.098	$17959_4 - 22338_3^3$
24789.343	1		4032.891	$21890_3^3 - 25923_4$	22806.940	0		4383.434	$21539_4^4 - 25923_4$
24684.317	0		4050.050	$19227_8^8 - 23277_5$	22785.721	1		4387.516	$14226_0 - 18614_1^1$
24516.271	1		4077.811	$23113_4^4 - 27191_5$	22760.862	0		4392.308	$20522_2^2 - 24915_3$
24486.763	0		4082.725	$24259_4^4 - 28342_5$	22750.249	1		4394.357	$18699_2 - 23093_2^2$
24470.262	0		4085.478	$23481_1^1 - 27566_2$	22723.153	0		4399.597	$14032_2^2 - 18431_3$
24428.586	1		4092.448	$22163_4^4 - 26255_4$	22710.196	3		4402.107	$9804_5 - 14206_4^4$
24420.077	1		4093.874	$22877_0^0 - 26971_4$	22646.195	3		4414.548	$11802_2 - 16217_2^2$
24329.294	0		4109.150	$25575_4^4 - 29684_5$	22616.700	1		4420.305	$13962_1 - 18382_0^0$
24301.853	1		4113.790	$13297_4 - 17411_3^3$	22614.383	4		4420.758	$6362_2 - 10783_2^2$
24262.390	1		4120.481	$18549_2 - 22669_3^3$	22544.420	1		4434.477	$25321_3^3 - 29756_4$
24216.068	0		4128.363	$21575_2 - 25703_2^2$	22537.763	3		4435.787	$15618_3^3 - 20054_2$
24172.879	2		4135.739	$13088_3 - 17224_2^2$	22518.913	0		4439.500	$17959_4 - 22399_0^0$
24171.733	0		4135.935	$11601_1 - 15736_1^1$	22513.933	1		4440.482	$24701_0^0 - 29141_5$
24138.665	0		4141.601	$24421_3^3 - 28562_4$	22496.819	2		4443.860	$19588_0^0 - 24032_4$
24136.264	3		4142.013	$20522_2^2 - 24664_3$	22446.273	0		4453.867	$21594_3 - 26048_4^4$
24120.715	1		4144.683	$17501_0^0 - 21645_4$	22439.688	0		4455.174	$15493_4 - 19948_4^4$
24007.982	4		4164.145	$6362_2 - 10526_3^3$	22437.386	1		4455.631	$14243_1^1 - 18699_2$
23940.033	0		4175.964	$24182_2^2 - 28358_3$	22377.781	1		4467.499	$18809_4^4 - 23277_5$
23907.149	1		4181.708	$17959_4 - 22141_3^3$	22350.905	0		4472.871	$23093_2^2 - 27566_2$
23865.994	0		4188.919	$22855_3^3 - 27044_3$	22344.755	2		4474.102	$11877_1^1 - 16351_0$
23781.839	4		4203.742	$13297_4 - 17501_0^0$	22323.993	0		4478.263	$21902_4^4 - 26380_5$
23712.604	0		4216.016	$25336_8^8 - 29552_6$	22318.327	1		4479.400	$19273_2 - 23752_2^2$
23704.794	1		4217.405	$22163_4^4 - 26380_5$	22283.623	0		4486.376	$13945_3^3 - 18431_3$
23672.844	1		4223.097	$18809_4^4 - 23032_4$	22215.926	1		4500.047	$18549_2 - 23049_1^1$
23671.785	1		4223.286	$13175_4^4 - 17398_3$	22115.259	0		4520.531	$23752_2^2 - 28273_2$
23663.487	1		4224.767	$14206_4^4 - 18431_3$	22103.641	4		4522.907	$16554_6 - 21077_0^0$
23608.338	0		4234.636	$17411_3^3 - 21645_4$	22082.481	1		4527.241	$25321_3^3 - 29849_4$
23588.463	1		4238.204	$18431_3 - 22669_3^3$	22073.514	1		4529.080	$19503_3^3 - 24032_4$
23551.636	1		4244.831	$15970_3 - 20214_3^3$	22029.034	0		4538.225	$21575_2 - 26113_2^2$
23514.732	5		4251.493	$11241_3^3 - 15493_4$	21990.719	2		4546.132	$15166_3^3 - 19713_3$
23477.705	0		4258.198	$24421_3^3 - 28679_2$	21987.769	0		4546.742	$19713_3 - 24259_4^4$
23403.546	0		4271.691	$18930_3^3 - 23201_3$	21987.769	0		4546.742	$26882_0^0 - 31429_1$
23330.692	2		4285.030	$26645_0^0 - 30930_6$	21986.275	0		4547.051	$21143_5 - 25690_0^0$
23314.380	1		4288.028	$22508_2^2 - 26796_3$	21959.399	1		4552.616	$15970_3 - 20522_2^2$
23297.038	0		4291.220	$24850_8^8 - 29141_5$	21952.080	1		4554.134	$17847_2^2 - 22401_1$
23270.076	2		4296.192	$11197_0^0 - 15493_4$	21944.958	4		4555.612	$3687_2 - 8243_2^2$

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TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
21925.759	2		4559.601	$15863_2 - 20423^{?}_{1}$	20879.577	1		4788.062	$21575_2 - 26363^{?}_{2}$
21883.548	0		4568.396	$18069^{?}_{3} - 22637_3$	20869.452	4		4790.385	$17847^{?}_{2} - 22637_3$
21862.515	1		4572.791	$23655^{?}_{4} - 28227_4$	20863.115	0		4791.840	$23481^{?}_{1} - 28273_2$
21809.793	0		4583.845	$18053^{?}_{4} - 22637_3$	20862.579	2		4791.963	$22399^{?}_{0} - 27191_5$
21756.165	1		4595.144	$17073_1 - 21668^{?}_{1}$	20833.885	1		4798.563	$25753^{?}_{0} - 30552_4$
21749.619	1		4596.527	$15970_3 - 20566^{?}_{4}$	20792.737	1		4808.059	$14465^{?}_{2} - 19273_2$
21747.329	1		4597.011	$17501^{?}_{0} - 22098_4$	20735.100	0		4821.424	$18699_2 - 23521^{?}_{3}$
21743.999	5		4597.715	$7280_2 - 11877^{?}_{1}$	20717.817	0		4825.446	$20054_2 - 24880^{?}_{1}$
21712.571	4		4604.370	$8243^{?}_{2} - 12847_3$	20716.744	2		4825.696	$22669^{?}_{3} - 27495_4$
21706.674	1		4605.621	$14204_5 - 18809^{?}_{4}$	20715.963	0		4825.878	$25306^{?}_{2} - 30132_2$
21706.264	1		4605.708	$23752^{?}_{2} - 28358_3$	20702.372	0		4829.046	$15493_4 - 20322^{?}_{0}$
21683.632	0		4610.515	$21143_5 - 25753^{?}_{0}$	20681.631	0		4833.889	$24850^{?}_{6} - 29684_5$
21676.298	0		4612.075	$7502_3 - 12114^{?}_{2}$	20680.125	4		4834.241	$7280_2 - 12114^{?}_{2}$
21655.755	2		4616.450	$11601_1 - 16217^{?}_{2}$	20661.764	1		4838.537	$20566^{?}_{4} - 25405_4$
21628.998	4		4622.161	$11241^{?}_{3} - 15863_2$	20651.478	0		4840.947	$21539^{?}_{4} - 26380_5$
21605.654	1		4627.155	$24307^{?}_{2} - 28934_3$	20634.364	6		4844.962	$8243^{?}_{2} - 13088_3$
21599.082	1		4628.563	$22637_3 - 27266^{?}_{4}$	20618.818	0		4848.615	$19713_3 - 24561^{?}_{3}$
21580.898	0		4632.463	$22338^{?}_{3} - 26971_4$	20610.588	1		4850.551	$17398_3 - 22248^{?}_{2}$
21556.115	0		4637.789	$21252^{?}_{2} - 25890_2$	20605.987	2		4851.634	$22669^{?}_{3} - 27521_4$
21527.563	0		4643.940	$22877^{?}_{0} - 27521_4$	20584.349	0		4856.734	$24561^{?}_{3} - 29418_2$
21519.111	0		4645.764	$23916^{?}_{4} - 28562_4$	20575.042	0		4858.931	$21252^{?}_{2} - 26111_1$
21472.877	1		4655.767	$25355^{?}_{4} - 30011_3$	20562.003	0		4862.012	$16783^{?}_{4} - 21645_4$
21442.806	1		4662.296	$18431_3 - 23093^{?}_{2}$	20561.348	2		4862.167	$21645_4 - 26508^{?}_{3}$
21424.751	0		4666.225	$22855^{?}_{3} - 27521_4$	20541.715	1		4866.814	$24274^{?}_{0} - 29141_5$
21418.725	0		4667.538	$14032^{?}_{2} - 18699_2$	20513.976	0		4873.395	$15863_2 - 20737^{?}_{1}$
21415.242	2		4668.297	$19713_3 - 24381^{?}_{2}$	20489.032	1		4879.328	$6362_2 - 11241^{?}_{3}$
21406.777	1		4670.143	$19532_4 - 24202^{?}_{3}$	20478.858	1		4881.752	$24259^{?}_{3} - 29141_5$
21375.118	3		4677.060	$9804_5 - 14481^{?}_{0}$	20453.217	0		4887.872	$15166^{?}_{3} - 20054_2$
21353.185	3		4681.864	$18431_3 - 23113^{?}_{4}$	20450.008	1		4888.639	$19532_4 - 24421^{?}_{3}$
21328.149	0		4687.360	$23655^{?}_{4} - 28342_5$	20428.437	1		4893.801	$21902^{?}_{4} - 26796_3$
21319.166	1		4689.335	$22877^{?}_{1} - 27566_2$	20421.761	3		4895.401	$17959_4 - 22855^{?}_{3}$
21260.824	0		4702.203	$24850^{?}_{6} - 29552_6$	20419.379	0		4895.972	$19503^{?}_{3} - 24399_3$
21256.077	0		4703.253	$23655^{?}_{4} - 28358_3$	20392.064	0		4902.530	$26363^{?}_{2} - 31265_3$
21250.077	0		4704.581	$25306^{?}_{2} - 30011_3$	20391.719	0		4902.613	$22141^{?}_{3} - 27044_3$
21247.182	0		4705.222	$22338^{?}_{3} - 27044_3$	20381.309	3		4905.117	$21143_5 - 26048^{?}_{4}$
21239.694	1		4706.881	$23521^{?}_{3} - 28227_4$	20377.894	1		4905.939	$21890^{?}_{3} - 26796_3$
21203.367	0		4714.945	$20054_2 - 24769^{?}_{3}$	20374.476	1		4906.762	$18574_1 - 23481^{?}_{1}$
21198.664	0		4715.991	$21539^{?}_{4} - 26255_4$	20321.907	0		4919.455	$18069^{?}_{3} - 22988_2$
21173.002	1		4721.707	$15493_4 - 20214^{?}_{3}$	20317.777	4		4920.455	$23113^{?}_{4} - 28034_5$
21148.510	3		4727.175	$23306^{?}_{6} - 28034_5$	20263.141	0		4933.722	$26995^{?}_{3} - 31929_3$
21143.170	4		4728.369	$11241^{?}_{3} - 15970_3$	20234.945	0		4940.597	$17398_3 - 22338^{?}_{3}$
21132.654	2		4730.722	$19039^{?}_{2} - 23769_1$	20205.662	0		4947.757	$25703^{?}_{2} - 30651_3$
21117.677	0		4734.077	$21143_5 - 25877^{?}_{4}$	20191.383	3		4951.256	$19039^{?}_{2} - 23990_2$
21108.367	1		4736.165	$17166_5 - 21902^{?}_{3}$	20183.242	0		4953.253	$27087^{?}_{1} - 32041_2$
21095.446	0		4739.066	$15493_4 - 20232^{?}_{4}$	20158.039	2		4959.446	$12114^{?}_{2} - 17073_1$
21095.446	0		4739.066	$21645_4 - 26384^{?}_{3}$	20139.866	1		4963.921	$18069^{?}_{3} - 23032_4$
21019.525	2		4756.183	$13297_4 - 18053^{?}_{4}$	20128.687	3		4966.678	$10526^{?}_{3} - 15493_4$
21011.808	2		4757.930	$21165^{?}_{3} - 25923_4$	20122.241	0		4968.269	$20922^{?}_{2} - 25890_2$
21009.229	1		4758.514	$13088_3 - 17847^{?}_{2}$	20108.593	2		4971.641	$18549_2 - 23521^{?}_{3}$
20981.790	0		4764.737	$17398_3 - 22163^{?}_{4}$	20077.401	2		4979.365	$18053^{?}_{4} - 23032_4$
20973.743	1		4766.565	$13847_2 - 18614^{?}_{1}$	20047.945	2		4986.681	$24769^{?}_{3} - 29756_4$
20965.562	1		4768.425	$21594_3 - 26363^{?}_{2}$	19998.121	1		4999.105	$12847_3 - 17847^{?}_{2}$
20951.480	1		4771.630	$13297_4 - 18069^{?}_{3}$	19935.599	0		5014.783	$27948^{?}_{4} - 32963_5$
20920.513	1		4778.693	$26363^{?}_{2} - 31141_3$	19922.803	1		5018.004	$23916^{?}_{4} - 28934_3$
20893.881	0		4784.784	$13175^{?}_{4} - 17959_4$	19919.437	0		5018.852	$23015^{?}_{0} - 28034_5$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
19908.520	0		5021.604	$18011^{6}_{0} - 23032_{4}$	19290.328	0		5182.530	$22338^{3}_{3} - 27521_{4}$
19902.706	4		5023.071	$14204_{5} - 19227^{6}_{6}$	19273.916	2		5186.943	$10783^{2}_{2} - 15970_{3}$
19882.301	2		5028.226	$22163^{3}_{4} - 27191_{5}$	19264.749	1		5189.411	$20922^{2}_{2} - 26111_{1}$
19862.586	0		5033.217	$24981^{3}_{3} - 30014_{4}$	19261.710	0		5190.230	$20214^{0}_{3} - 25405_{4}$
19857.666	2		5034.464	$19273_{2} - 24307^{2}_{2}$	19261.001	0		5190.421	$23655^{3}_{4} - 28845_{4}$
19852.906	2		5035.671	$23306^{6}_{6} - 28342_{5}$	19257.450	0		5191.378	$13847_{2} - 19039^{2}_{2}$
19850.778	1		5036.211	$25336^{6}_{6} - 30372_{6}$	19256.382	1		5191.666	$18549_{2} - 23741^{1}_{1}$
19847.455	0		5037.054	$24381^{2}_{2} - 29418_{2}$	19244.968	0		5194.745	$24561^{3}_{3} - 29756_{4}$
19829.520	1		5041.610	$23521^{3}_{3} - 28562_{4}$	19244.035	1		5194.997	$15970_{3} - 21165^{3}_{3}$
19797.857	0		5049.673	$23481^{1}_{1} - 28531_{2}$	19241.246	0		5195.750	$21594_{3} - 26790^{4}_{4}$
19786.004	5		5052.698	$7795^{4}_{4} - 12847_{3}$	19240.420	0		5195.973	$11877^{1}_{1} - 17073_{1}$
19784.595	1		5053.058	$18699_{2} - 23752^{2}_{2}$	19204.660	1		5205.648	$12847_{3} - 18053^{4}_{4}$
19770.799	1		5056.584	$24084^{6}_{6} - 29141_{5}$	19190.670	2		5209.443	$27084^{6}_{6} - 32293_{5}$
19765.178	3		5058.022	$21738^{2}_{2} - 26796_{3}$	19178.389	2		5212.779	$23015^{0}_{0} - 28227_{4}$
19764.361	0		5058.231	$15863_{2} - 20922^{2}_{2}$	19162.549	1		5217.088	$26048^{4}_{4} - 31265_{3}$
19762.115	0		5058.806	$22508^{2}_{2} - 27566_{2}$	19151.815	4		5220.012	$5563_{1} - 10783^{2}_{2}$
19757.006	0		5060.114	$18930^{3}_{3} - 23990_{2}$	19147.846	3		5221.094	$12847_{3} - 18069^{3}_{3}$
19741.428	5		5064.107	$8111_{4} - 13175^{3}_{4}$	19143.281	1		5222.339	$18809^{4}_{4} - 24032_{4}$
19736.666	0		5065.329	$24769^{3}_{3} - 29835_{3}$	19138.077	1		5223.759	$18053^{4}_{4} - 23277_{5}$
19733.467	1		5066.150	$26363^{2}_{2} - 31429_{1}$	19138.077	1		5223.759	$23049^{1}_{1} - 28273_{2}$
19721.637	0		5069.189	$21902^{4}_{4} - 26971_{4}$	19113.116	2		5230.581	$25321^{3}_{3} - 30552_{4}$
19705.256	0		5073.403	$15493_{4} - 20566^{4}_{4}$	19091.898	0		5236.394	$23609^{6}_{6} - 28845_{4}$
19696.195	1		5075.737	$23603^{2}_{2} - 28679_{2}$	19088.610	3		5237.296	$19532_{4} - 24769^{3}_{3}$
19692.738	1		5076.628	$13962_{1} - 19039^{2}_{2}$	19080.012	1		5239.656	$24182^{2}_{2} - 29422_{1}$
19683.215	4		5079.084	$10414^{4}_{4} - 15493_{4}$	19078.887	1		5239.965	$25690^{6}_{6} - 30930_{6}$
19676.823	1		5080.734	$10783^{2}_{2} - 15863_{2}$	19074.406	3		5241.196	$14032^{2}_{2} - 19273_{2}$
19674.535	3		5081.325	$21890^{3}_{3} - 26971_{4}$	19073.289	2		5241.503	$21143_{5} - 26384^{4}_{4}$
19669.905	2		5082.521	$13847_{2} - 18930^{3}_{3}$	19050.366	0		5247.810	$14465^{2}_{2} - 19713_{3}$
19668.461	4		5082.894	$20322^{6}_{0} - 25405_{4}$	19035.208	0		5251.989	$20054_{2} - 25306^{2}_{2}$
19643.457	1		5089.364	$18431_{3} - 23521^{3}_{3}$	19033.646	1		5252.420	$24880^{1}_{1} - 30132_{2}$
19639.120	1		5090.488	$21165^{3}_{3} - 26255_{4}$	19018.615	2		5256.571	$13175^{4}_{4} - 18431_{3}$
19622.548	0		5094.787	$22248^{2}_{2} - 27343_{3}$	18984.562	0		5266.000	$18011^{6}_{0} - 23277_{5}$
19617.154	2		5096.188	$22399^{6}_{0} - 27495_{4}$	18964.790	1		5271.490	$17398_{3} - 22669^{3}_{3}$
19595.083	3		5101.928	$18930^{3}_{3} - 24032_{4}$	18958.367	1		5273.276	$22338^{3}_{3} - 27612_{3}$
19586.250	0		5104.229	$22508^{2}_{2} - 27612_{3}$	18957.939	0		5273.395	$24561^{3}_{3} - 29835_{3}$
19571.602	2		5108.049	$19273_{2} - 24381^{2}_{2}$	18942.594	0		5277.667	$26651^{2}_{2} - 31929_{3}$
19561.688	2		5110.638	$24307^{2}_{2} - 29418_{2}$	18942.109	1		5277.802	$24274^{6}_{6} - 29552_{6}$
19535.499	0		5117.489	$26878^{3}_{3} - 31995_{4}$	18938.047	1		5278.934	$23603^{2}_{2} - 28882_{2}$
19519.076	0		5121.795	$27674^{2}_{2} - 32796_{3}$	18925.238	0		5282.507	$15970_{3} - 21252^{2}_{2}$
19505.411	0		5125.383	$22855^{3}_{3} - 27980_{3}$	18919.776	2		5284.032	$12114^{2}_{2} - 17398_{3}$
19476.782	1		5132.917	$18069^{3}_{3} - 23201_{3}$	18907.334	2		5287.509	$24561^{3}_{3} - 29849_{4}$
19444.483	1		5141.443	$17847^{2}_{2} - 22988_{2}$	18904.263	0		5288.368	$19273_{2} - 24561^{3}_{3}$
19430.829	2		5145.056	$8800_{4} - 13945^{3}_{3}$	18893.288	0		5291.440	$27260^{3}_{3} - 32551_{3}$
19420.664	1		5147.749	$19516^{2}_{2} - 24664_{3}$	18886.685	6		5293.290	$7795^{4}_{4} - 13088_{3}$
19418.336	1		5148.366	$18053^{4}_{4} - 23201_{3}$	18885.154	1		5293.719	$24838^{1}_{1} - 30132_{2}$
19400.479	3		5153.105	$20737^{1}_{1} - 25890_{2}$	18865.586	3		5299.210	$16346^{4}_{4} - 21645_{4}$
19396.794	2		5154.084	$21890^{3}_{3} - 27044_{3}$	18858.490	1		5301.204	$15863_{2} - 21165^{3}_{3}$
19391.319	1		5155.539	$18614^{1}_{1} - 23769_{1}$	18850.731	2		5303.386	$21077^{6}_{0} - 26380_{5}$
19388.002	1		5156.421	$22877^{6}_{0} - 28034_{5}$	18840.854	0		5306.166	$21738^{2}_{2} - 27044_{3}$
19345.173	0		5167.837	$22098_{4} - 27266^{4}_{4}$	18824.439	0		5310.793	$22669^{3}_{3} - 27980_{3}$
19342.209	2		5168.629	$19532_{4} - 24701^{6}_{0}$	18811.879	7		5314.339	$16783^{4}_{4} - 22098_{4}$
19336.983	0		5170.026	$22396^{1}_{1} - 27566_{2}$	18802.414	3		5317.014	$16351_{0} - 21668^{1}_{1}$
19321.626	0		5174.135	$26363^{2}_{2} - 31537_{3}$	18799.282	0		5317.900	$22248^{2}_{2} - 27566_{2}$
19317.885	3		5175.137	$17073_{1} - 22248^{2}_{2}$	18788.340	0		5320.997	$18431_{3} - 23752^{2}_{2}$
19291.493	1		5182.217	$23752^{2}_{2} - 28934_{3}$	18781.224	1		5323.013	$17073_{1} - 22396^{1}_{1}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
18772.446	3		5325.502	$14206^{3}_{4} - 19532_{4}$	17987.035	1		5558.042	$22669^{3}_{3} - 28227_{4}$
18763.740	0		5327.973	$13945^{3}_{3} - 19273_{2}$	17976.979	4		5561.151	$17959_{4} - 23521^{3}_{3}$
18737.838	0		5335.338	$24421^{3}_{3} - 29756_{4}$	17969.554	0		5563.449	$24981^{0}_{3} - 30544_{2}$
18730.785	2		5337.347	$10526^{3}_{3} - 15863_{2}$	17964.920	6		5564.884	$4961_{4} - 10526^{3}_{3}$
18689.399	0		5349.166	$16554_{6} - 21903^{0}_{7}$	17962.477	0		5565.641	$19273_{2} - 24838^{1}_{1}$
18685.648	0		5350.240	$26645^{0}_{0} - 31995_{4}$	17960.037	0		5566.397	$26363^{2}_{2} - 31929_{3}$
18685.274	1		5350.347	$22877^{0}_{0} - 28227_{4}$	17955.860	2		5567.692	$20543^{0}_{0} - 26111_{1}$
18664.162	2		5356.399	$20566^{3}_{4} - 25923_{4}$	17893.451	0		5587.111	$13945^{3}_{3} - 19532_{4}$
18657.231	2		5358.389	$22163^{3}_{4} - 27521_{4}$	17887.982	3		5588.819	$20522^{2}_{2} - 26111_{1}$
18651.748	0		5359.964	$19039^{2}_{2} - 24399_{3}$	17886.677	2		5589.227	$18809^{3}_{4} - 24399_{3}$
18625.408	0		5367.544	$26645^{0}_{0} - 32012_{4}$	17886.181	0		5589.382	$24259^{3}_{4} - 29849_{4}$
18595.874	3		5376.069	$18614^{1}_{1} - 23990_{2}$	17883.051	2		5590.360	$14226_{0} - 19817^{1}_{1}$
18557.981	3		5387.046	$18382^{0}_{0} - 23769_{1}$	17873.738	2		5593.273	$24421^{3}_{3} - 30014_{4}$
18546.830	1		5390.285	$25336^{6}_{6} - 30726_{7}$	17873.620	1		5593.310	$21902^{3}_{4} - 27495_{4}$
18520.188	0		5398.039	$19516^{2}_{2} - 24915_{3}$	17872.284	1		5593.728	$19713_{3} - 25306^{2}_{2}$
18509.757	1		5401.081	$23481^{1}_{1} - 28882_{2}$	17854.649	2		5599.253	$24084^{6}_{6} - 29684_{5}$
18490.644	4		5406.664	$8800_{4} - 14206^{3}_{4}$	17849.848	1		5600.759	$20322^{0}_{0} - 25923_{4}$
18468.454	3		5413.160	$17224^{2}_{2} - 22637_{3}$	17838.977	1		5604.172	$8243^{2}_{2} - 13847_{2}$
18452.242	0		5417.916	$22855^{3}_{3} - 28273_{2}$	17834.907	1		5605.451	$21890^{3}_{3} - 27495_{4}$
18440.493	4		5421.368	$11802_{2} - 17224^{2}_{2}$	17827.385	1		5607.816	$18574_{1} - 24182^{2}_{2}$
18427.858	0		5425.085	$27674^{2}_{2} - 33099_{3}$	17826.416	0		5608.121	$18699_{2} - 24307^{2}_{2}$
18396.840	0		5434.232	$17073_{1} - 22508^{2}_{2}$	17825.875	5		5608.291	$11802_{2} - 17411^{3}_{3}$
18348.035	1		5448.687	$19532_{4} - 24981^{3}_{3}$	17823.987	1		5608.885	$19713_{3} - 25321^{3}_{3}$
18339.435	0		5451.242	$25306^{2}_{2} - 30758_{2}$	17788.214	2		5620.165	$21645_{4} - 27266^{3}_{4}$
18335.284	2		5452.476	$4961_{4} - 10414^{3}_{4}$	17783.170	4		5621.759	$17411^{3}_{3} - 23032_{4}$
18334.595	0		5452.681	$24561^{3}_{3} - 30014_{4}$	17778.391	1		5623.270	$11601_{1} - 17224^{2}_{2}$
18331.495	1		5453.603	$21890^{3}_{3} - 27343_{3}$	17763.368	0		5628.026	$26384^{3}_{4} - 32012_{4}$
18331.136	0		5453.710	$24381^{2}_{2} - 29835_{3}$	17757.108	2		5630.010	$24381^{2}_{2} - 30011_{3}$
18320.410	0		5456.903	$17398_{3} - 22855^{3}_{3}$	17752.753	1		5631.391	$21890^{3}_{3} - 27521_{4}$
18301.976	1		5462.399	$26995^{3}_{3} - 32458_{4}$	17744.898	5		5633.884	$17354^{1}_{1} - 22988_{2}$
18293.550	1		5464.915	$22877^{0}_{0} - 28342_{5}$	17742.618	0		5634.608	$22399^{0}_{0} - 28034_{5}$
18286.901	1		5466.902	$20423^{1}_{1} - 25890_{2}$	17720.358	2		5641.686	$22338^{3}_{3} - 27980_{3}$
18281.471	1		5468.526	$24182^{2}_{2} - 29650_{2}$	17717.673	0		5642.541	$19713_{3} - 25355^{3}_{4}$
18280.488	0		5468.820	$18930^{3}_{3} - 24399_{3}$	17703.673	3		5647.003	$21143_{5} - 26790^{3}_{4}$
18274.319	0		5470.666	$22141^{3}_{3} - 27612_{3}$	17688.744	2		5651.769	$21539^{3}_{4} - 27191_{5}$
18225.855	1		5485.213	$18431_{3} - 23916^{3}_{4}$	17683.810	3		5653.346	$15490^{0}_{0} - 21143_{5}$
18221.955	1		5486.387	$23655^{3}_{4} - 29141_{5}$	17683.237	0		5653.529	$22877^{1}_{1} - 28531_{2}$
18209.323	0		5490.193	$27061^{2}_{2} - 32551_{3}$	17677.481	3		5655.370	$13847_{2} - 19503^{3}_{3}$
18173.926	1		5500.886	$26036^{3}_{3} - 31537_{3}$	17670.229	1		5657.691	$24850^{6}_{6} - 30508_{5}$
18170.303	1		5501.983	$21143_{5} - 26645^{0}_{0}$	17669.614	3		5657.888	$25306^{2}_{2} - 30964_{3}$
18169.715	1		5502.161	$7795^{3}_{4} - 13297_{4}$	17663.853	0		5659.733	$25877^{3}_{4} - 31537_{3}$
18166.638	1		5503.093	$22855^{3}_{3} - 28358_{3}$	17658.896	0		5661.322	$26113^{2}_{2} - 31774_{3}$
18161.579	2		5504.626	$21539^{3}_{4} - 27044_{3}$	17649.490	2		5664.339	$24880^{1}_{1} - 30544_{2}$
18156.664	0		5506.116	$14206^{3}_{4} - 19713_{3}$	17634.332	4		5669.208	$13847_{2} - 19516^{2}_{2}$
18135.791	1		5512.453	$13297_{4} - 18809^{3}_{4}$	17633.725	0		5669.403	$23752^{2}_{2} - 29422_{1}$
18125.969	5		5515.440	$6362_{2} - 11877^{1}_{1}$	17627.118	0		5671.528	$21645_{4} - 27317^{3}_{3}$
18103.118	2		5522.402	$24850^{6}_{6} - 30372_{6}$	17626.046	3		5671.873	$15493_{4} - 21165^{3}_{3}$
18087.083	2		5527.298	$24307^{2}_{2} - 29835_{3}$	17623.094	6		5672.823	$7502_{3} - 13175^{3}_{4}$
18072.340	4		5531.807	$17501^{0}_{0} - 23032_{4}$	17614.900	1		5675.462	$20214^{3}_{3} - 25890_{2}$
18070.540	1		5532.358	$23609^{0}_{0} - 29141_{5}$	17614.015	1		5675.747	$22855^{3}_{3} - 28531_{2}$
18023.692	1		5546.738	$25180^{0}_{7} - 30726_{7}$	17597.889	1		5680.948	$14032^{2}_{2} - 19713_{3}$
18007.579	2		5551.701	$11802_{2} - 17354^{1}_{1}$	17595.542	1		5681.706	$18699_{2} - 24381^{2}_{2}$
18000.660	1		5553.835	$24202^{3}_{4} - 29756_{4}$	17584.517	7		5685.268	$9804_{5} - 15490^{0}_{0}$
17993.769	3		5555.962	$10414^{3}_{4} - 15970_{3}$	17575.945	1		5688.041	$20423^{1}_{1} - 26111_{1}$
17991.742	0		5556.588	$26645^{0}_{0} - 32202_{5}$	17573.115	3		5688.957	$20566^{3}_{4} - 26255_{4}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
17553.728	1		5695.240	$17959_4 - 23655^{3}_{4}$	17121.318	3		5839.077	$22141^{3}_{3} - 27980_3$
17552.671	4		5695.583	$17398_3 - 23093^{2}_{2}$	17120.840	0		5839.240	$27260^{3}_{3} - 33099_3$
17551.531	1		5695.953	$25575^{2}_{4} - 31271_5$	17120.083	1		5839.498	$23916^{4}_{4} - 29756_4$
17549.205	0		5696.708	$26096^{3}_{3} - 31793_4$	17113.542	2		5841.730	$13088_3 - 18930^{5}_{5}$
17547.178	0		5697.366	$27266^{4}_{4} - 32963_5$	17103.520	1		5845.153	$16554_6 - 22399^{6}_{6}$
17521.738	2		5705.638	$24838^{0}_{1} - 30544_2$	17088.335	2		5850.347	$22508^{2}_{2} - 28358_3$
17516.448	0		5707.361	$22855^{3}_{3} - 28562_4$	17085.097	0		5851.456	$24701^{0}_{0} - 30552_4$
17508.350	2		5710.001	$21902^{4}_{4} - 27612_3$	17078.798	3		5853.614	$16783^{4}_{4} - 22637_3$
17503.828	1		5711.476	$17166_5 - 22877^{6}_{6}$	17075.750	3		5854.659	$13962_1 - 19817^{1}_{1}$
17492.573	2		5715.151	$17398_3 - 23113^{4}_{4}$	17054.299	0		5862.023	$18699_2 - 24561^{3}_{3}$
17481.041	7		5718.921	$8243^{2}_{2} - 13962_1$	17028.599	1		5870.870	$22163^{4}_{4} - 28034_5$
17473.699	2		5721.324	$13088_3 - 18809^{4}_{4}$	17026.334	1		5871.651	$18549_2 - 24421^{3}_{3}$
17441.114	0		5732.013	$23113^{4}_{4} - 28845_4$	17019.670	0		5873.950	$20922^{2}_{2} - 26796_3$
17437.704	1		5733.134	$18574_1 - 24307^{2}_{2}$	17018.885	2		5874.221	$21738^{2}_{2} - 27612_3$
17404.332	4		5744.127	$14204_5 - 19948^{4}_{4}$	17014.114	1		5875.868	$19039^{2}_{2} - 24915_3$
17401.230	1		5745.151	$26048^{4}_{4} - 31793_4$	17013.556	0		5876.061	$18431_3 - 24307^{2}_{2}$
17388.612	0		5749.320	$25877^{4}_{4} - 31626_5$	17012.360	0		5876.474	$24850^{6}_{6} - 30726_7$
17385.370	4		5750.392	$25180^{7}_{7} - 30930_6$	17008.562	2		5877.786	$24880^{1}_{1} - 30758_2$
17381.909	7		5751.537	$16346^{3}_{4} - 22098_4$	17005.290	2		5878.917	$27084^{6}_{6} - 32963_5$
17380.610	5		5751.967	$6362_2 - 12114^{2}_{2}$	17004.697	3		5879.122	$21165^{3}_{3} - 27044_3$
17375.665	1		5753.604	$11601_1 - 17354^{1}_{1}$	16997.972	0		5881.448	$24769^{3}_{3} - 30651_3$
17372.868	1		5754.530	$20054_2 - 25809^{1}_{1}$	16989.777	1		5884.285	$25442^{3}_{3} - 31326_4$
17334.404	1		5767.299	$23916^{4}_{4} - 29684_5$	16976.362	0		5888.935	$22338^{3}_{3} - 28227_4$
17333.121	1		5767.726	$13945^{3}_{3} - 19713_3$	16964.222	0		5893.149	$26036^{3}_{3} - 31929_3$
17323.648	0		5770.880	$18431_3 - 24202^{4}_{4}$	16960.892	1		5894.306	$21077^{0}_{0} - 26971_4$
17311.753	1		5774.845	$24769^{3}_{3} - 30544_2$	16952.178	0		5897.336	$23521^{3}_{3} - 29418_2$
17307.662	7		5776.210	$17501^{0}_{0} - 23277_5$	16949.485	0		5898.273	$23752^{2}_{2} - 29650_2$
17290.627	1		5781.901	$14204_5 - 19986^{6}_{6}$	16945.150	0		5899.782	$26651^{2}_{2} - 32551_3$
17277.735	0		5786.215	$25355^{3}_{4} - 31141_3$	16938.730	3		5902.018	$19503^{3}_{3} - 25405_4$
17271.005	0		5788.470	$23093^{2}_{2} - 28882_2$	16918.744	0		5908.990	$26384^{4}_{4} - 32293_5$
17267.932	3		5789.500	$19532_4 - 25321^{3}_{3}$	16915.692	0		5910.056	$25355^{4}_{4} - 31265_3$
17264.172	3		5790.761	$17411^{3}_{3} - 23201_3$	16915.097	1		5910.264	$19532_4 - 25442^{3}_{3}$
17261.632	0		5791.613	$21252^{2}_{2} - 27044_3$	16900.345	1		5915.423	$25355^{4}_{4} - 31271_5$
17227.152	0		5803.205	$25442^{3}_{3} - 31245_2$	16887.173	1		5920.037	$15970_3 - 21890^{3}_{3}$
17225.670	3		5803.704	$17073_1 - 22877^{1}_{1}$	16883.454	0		5921.341	$18069^{3}_{3} - 23990_2$
17221.632	1		5805.065	$15863_2 - 21668^{1}_{1}$	16879.312	2		5922.794	$17847^{2}_{2} - 23769_1$
17217.782	2		5806.363	$21165^{3}_{3} - 26971_4$	16875.970	0		5923.967	$25321^{3}_{3} - 31245_2$
17216.726	0		5806.719	$18574_1 - 24381^{2}_{2}$	16852.625	2		5932.173	$15970_3 - 21902^{4}_{4}$
17198.807	0		5812.769	$26645^{0}_{0} - 32458_4$	16849.382	0		5933.315	$20322^{6}_{6} - 26255_4$
17195.420	0		5813.914	$20566^{4}_{4} - 26380_5$	16846.815	0		5934.219	$22338^{3}_{3} - 28273_2$
17192.605	1		5814.866	$23603^{2}_{2} - 29418_2$	16846.017	0		5934.500	$25336^{6}_{6} - 31271_5$
17186.894	2		5816.798	$19588^{6}_{6} - 25405_4$	16840.767	0		5936.350	$25690^{6}_{6} - 31626_5$
17173.440	0		5821.355	$23113^{4}_{4} - 28934_3$	16832.896	0		5939.126	$25306^{2}_{2} - 31245_2$
17168.126	0		5823.157	$19532_4 - 25355^{4}_{4}$	16820.947	1		5943.345	$23609^{6}_{6} - 29552_6$
17165.765	2		5823.958	$22855^{3}_{3} - 28679_2$	16811.787	0		5946.583	$26790^{4}_{4} - 32737_5$
17163.009	1		5824.893	$24307^{2}_{2} - 30132_2$	16801.531	0		5950.213	$24182^{2}_{2} - 30132_2$
17153.591	2		5828.091	$18431_3 - 24259^{4}_{4}$	16800.478	1		5950.586	$13088_3 - 19039^{2}_{2}$
17152.288	1		5828.534	$22399^{6}_{6} - 28227_4$	16785.229	2		5955.992	$21539^{4}_{4} - 27495_4$
17151.508	1		5828.799	$21738^{2}_{2} - 27566_2$	16785.046	2		5956.057	$15618^{3}_{3} - 21575_2$
17151.178	0		5828.911	$24182^{2}_{2} - 30011_3$	16782.389	1		5957.000	$17959_4 - 23916^{4}_{4}$
17146.766	0		5830.411	$23015^{6}_{6} - 28845_4$	16768.550	6		5961.916	$12847_3 - 18809^{4}_{4}$
17135.330	4		5834.302	$8111_4 - 13945^{3}_{3}$	16761.533	0		5964.412	$26048^{4}_{4} - 32012_4$
17134.167	4		5834.698	$23306^{6}_{6} - 29141_5$	16748.433	5		5969.077	$11197^{6}_{6} - 17166_5$
17133.189	1		5835.031	$25306^{2}_{2} - 31141_3$	16747.499	2		5969.410	$13847_2 - 19817^{1}_{1}$
17124.268	1		5838.071	$15736^{1}_{1} - 21575_2$	16741.938	0		5971.393	$25355^{4}_{4} - 31326_4$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
16730.028	3		5975.644	$17073_1 - 23049^{0}_{1}$	16211.744	0		6166.683	$26384^{3}_{4} - 32551_3$
16724.318	1		5977.684	$17224^{2}_{2} - 23201_3$	16204.604	1		6169.400	$19273_2 - 25442^{3}_{3}$
16720.218	0		5979.150	$24307^{2}_{2} - 30286_1$	16195.248	1		6172.964	$26790^{3}_{4} - 32963_5$
16712.444	3		5981.931	$21539^{3}_{4} - 27521_4$	16188.147	0		6175.672	$22669^{3}_{3} - 28845_4$
16707.945	0		5983.542	$24981^{3}_{3} - 30964_3$	16180.368	0		6178.641	$21165^{3}_{3} - 27343_3$
16704.639	3		5984.726	$18930^{3}_{3} - 24915_3$	16178.472	2		6179.365	$22163^{3}_{4} - 28342_5$
16694.697	0		5988.290	$24769^{3}_{3} - 30758_2$	16172.466	1		6181.660	$25355^{3}_{4} - 31537_3$
16691.676	1		5989.374	$18431_3 - 24421^{3}_{3}$	16147.600	3		6191.179	$12847_3 - 19039^{2}_{2}$
16688.906	1		5990.368	$19713_3 - 25703^{2}_{2}$	16145.326	1		6192.051	$22338^{3}_{3} - 28531_2$
16687.560	0		5990.851	$24561^{3}_{3} - 30552_4$	16142.758	2		6193.036	$15970_3 - 22163^{3}_{4}$
16686.678	1		5991.168	$26790^{3}_{4} - 32781_4$	16140.194	0		6194.020	$23655^{3}_{4} - 29849_4$
16624.607	2		6013.537	$18614^{1}_{1} - 24627_1$	16137.810	0		6194.935	$24769^{3}_{3} - 30964_3$
16606.290	1		6020.170	$17073_1 - 23093^{2}_{2}$	16125.805	0		6199.547	$25575^{3}_{4} - 31774_3$
16604.436	1		6020.842	$18011^{0}_{0} - 24032_4$	16109.798	5		6205.707	$13297_4 - 19503^{3}_{3}$
16599.350	3		6022.687	$14032^{2}_{2} - 20054_2$	16100.958	0		6209.114	$23752^{2}_{2} - 29961_1$
16594.999	0		6024.266	$22248^{2}_{2} - 28273_2$	16084.899	0		6215.313	$25321^{3}_{3} - 31537_3$
16589.555	1		6026.243	$15863_2 - 21890^{3}_{3}$	16081.086	1		6216.787	$22141^{3}_{3} - 28358_3$
16587.815	3		6026.875	$15618^{3}_{3} - 21645_4$	16071.988	1		6220.306	$18549_2 - 24769^{3}_{3}$
16587.044	0		6027.155	$22855^{3}_{3} - 28882_2$	16070.913	0		6220.722	$23741^{1}_{1} - 29961_1$
16569.667	0		6033.476	$19273_2 - 25306^{2}_{2}$	16068.852	1		6221.520	$19532_4 - 25753^{0}_{0}$
16540.424	5		6044.143	$11802_2 - 17847^{2}_{2}$	16056.201	0		6226.422	$22877^{0}_{0} - 29104_4$
16538.399	3		6044.883	$16351_0 - 22396^{1}_{1}$	16048.543	1		6229.393	$24701^{0}_{0} - 30930_6$
16534.332	2		6046.370	$15493_4 - 21539^{4}_{4}$	16045.762	0		6230.473	$25306^{2}_{2} - 31537_3$
16531.417	1		6047.436	$23603^{2}_{2} - 29650_2$	16038.518	3		6233.287	$24274^{0}_{0} - 30508_5$
16521.658	1		6051.008	$24838^{1}_{1} - 30889_1$	16033.162	2		6235.369	$4961_4 - 11197^{0}_{0}$
16503.791	4		6057.559	$18614^{1}_{1} - 24671_2$	16014.426	2		6242.664	$17959_4 - 24202^{4}_{4}$
16501.244	0		6058.494	$20054_2 - 26113^{2}_{2}$	16008.311	3		6245.049	$18382^{0}_{0} - 24627_1$
16461.254	1		6073.212	$19817^{1}_{1} - 25890_2$	16006.680	0		6245.685	$23306^{6}_{6} - 29552_6$
16452.932	0		6076.284	$21594_3 - 27670^{3}_{3}$	16005.763	4		6246.043	$11601_1 - 17847^{2}_{2}$
16447.180	0		6078.409	$21902^{4}_{4} - 27980_3$	15997.841	2		6249.136	$16783^{4}_{4} - 23032_4$
16414.399	1		6090.548	$21890^{3}_{3} - 27980_3$	15978.393	2		6256.742	$17398_3 - 23655^{4}_{4}$
16412.823	3		6091.133	$21252^{2}_{2} - 27343_3$	15973.502	1		6258.658	$23752^{2}_{2} - 30011_3$
16403.906	0		6094.444	$23916^{4}_{4} - 30011_3$	15972.593	0		6259.014	$25753^{0}_{0} - 32012_4$
16394.343	1		6097.999	$24274^{0}_{0} - 30372_6$	15960.024	2		6263.943	$22877^{0}_{0} - 29141_5$
16390.870	0		6099.291	$21575_2 - 27674^{2}_{2}$	15954.449	4		6266.132	$11802_2 - 18069^{3}_{3}$
16375.188	1		6105.132	$18809^{4}_{4} - 24915_3$	15941.439	0		6271.246	$25355^{4}_{4} - 31626_5$
16363.631	2		6109.444	$22248^{2}_{2} - 28358_3$	15936.069	3		6273.359	$20522^{2}_{2} - 26796_3$
16340.749	2		6117.999	$14204_5 - 20322^{0}_{0}$	15925.011	1		6277.715	$15863_2 - 22141^{3}_{3}$
16329.816	2		6122.095	$20922^{2}_{2} - 27044_3$	15924.829	0		6277.787	$24274^{0}_{0} - 30552_4$
16326.067	2		6123.501	$24421^{3}_{3} - 30544_2$	15922.130	4		6278.851	$15970_3 - 22248^{2}_{2}$
16310.703	3		6129.269	$20867^{2}_{1} - 26997_6$	15919.042	1		6280.069	$4961_4 - 11241^{3}_{3}$
16308.851	2		6129.965	$18431_3 - 24561^{3}_{3}$	15915.448	1		6281.487	$18699_2 - 24981^{3}_{3}$
16304.920	0		6131.443	$24421^{3}_{3} - 30552_4$	15913.906	0		6282.096	$22248^{2}_{2} - 28531_2$
16304.149	3		6131.733	$21902^{4}_{4} - 28034_5$	15899.553	3		6287.767	$24084^{6}_{6} - 30372_6$
16297.533	0		6134.222	$22396^{1}_{1} - 28531_2$	15895.139	1		6289.513	$18549_2 - 24838^{1}_{1}$
16284.058	1		6139.298	$18699_2 - 24838^{1}_{1}$	15893.090	1		6290.324	$25336^{6}_{6} - 31626_5$
16280.282	3		6140.722	$17166_5 - 23306^{6}_{6}$	15891.854	3		6290.813	$16346^{4}_{4} - 22637_3$
16273.373	0		6143.329	$17847^{2}_{2} - 23990_2$	15891.564	4		6290.928	$13297_4 - 19588^{0}_{0}$
16270.823	0		6144.292	$26651^{2}_{2} - 32796_3$	15887.023	1		6292.726	$24259^{4}_{4} - 30552_4$
16263.051	1		6147.228	$23609^{0}_{0} - 29756_4$	15868.987	2		6299.878	$17959_4 - 24259^{4}_{4}$
16240.450	2		6155.783	$15490^{0}_{0} - 21645_4$	15861.758	1		6302.749	$21645_4 - 27948^{4}_{4}$
16238.115	3		6156.668	$11241^{3}_{3} - 17398_3$	15854.989	1		6305.440	$24202^{4}_{4} - 30508_5$
16234.453	0		6158.057	$19532_4 - 25690^{0}_{0}$	15847.733	3		6308.327	$20054_2 - 26363^{2}_{2}$
16220.740	3		6163.263	$22399^{0}_{0} - 28562_4$	15833.507	0		6313.995	$23521^{3}_{3} - 29835_3$
16217.564	0		6164.470	$19713_3 - 25877^{4}_{4}$	15832.882	0		6314.244	$21252^{2}_{2} - 27566_2$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
15831.752	7		6314.695	$5563_{1} - 11877_{1}^{i}$
15825.176	2		6317.319	$12114_{2}^{g} - 18431_{3}$
15810.170	1		6323.315	$19713_{3} - 26036_{3}^{g}$
15807.445	0		6324.405	$23093_{2}^{g} - 29418_{2}$
15804.308	1		6325.660	$21902_{4}^{g} - 28227_{4}$
15793.353	0		6330.048	$18069_{3}^{g} - 24399_{3}$
15792.250	0		6330.490	$21165_{3}^{g} - 27495_{4}$
15791.447	1		6330.812	$18549_{2} - 24880_{1}^{i}$
15788.721	0		6331.905	$25442_{3}^{g} - 31774_{3}$
15781.849	1		6334.662	$19588_{0}^{g} - 25923_{4}$
15754.904	1		6345.496	$18053_{4}^{g} - 24399_{3}$
15743.881	2		6349.939	$24202_{4}^{g} - 30552_{4}$
15733.987	0		6353.932	$21594_{3} - 27948_{4}^{g}$
15732.702	0		6354.451	$25575_{4}^{g} - 31929_{3}$
15728.365	0		6356.203	$23655_{4}^{g} - 30011_{3}$
15727.808	0		6356.428	$21165_{3}^{g} - 27521_{4}$
15720.977	1		6359.190	$23655_{4}^{g} - 30014_{4}$
15719.798	1		6359.667	$21252_{2}^{g} - 27612_{3}$
15713.149	4		6362.358	$14204_{5} - 20566_{4}^{g}$
15702.559	1		6366.649	$8800_{4} - 15166_{3}^{g}$
15701.306	3		6367.157	$13847_{2} - 20214_{3}^{g}$
15697.019	1		6368.896	$15970_{3} - 22338_{3}^{g}$
15696.943	1		6368.927	$23049_{1}^{g} - 29418_{2}$
15676.166	3		6377.368	$23306_{6}^{g} - 29684_{5}$
15662.128	0		6383.084	$21890_{3}^{g} - 28273_{2}$
15641.777	0		6391.389	$24259_{4}^{g} - 30651_{3}$
15641.344	3		6391.566	$23741_{1}^{i} - 30132_{2}$
15634.482	2		6394.371	$19986_{6}^{g} - 26380_{5}$
15628.272	3		6396.912	$15493_{4} - 21890_{3}^{g}$
15621.888	0		6399.526	$22163_{4}^{g} - 28562_{4}$
15620.165	2		6400.232	$19713_{3} - 26113_{2}^{g}$
15616.447	1		6401.756	$21165_{3}^{g} - 27566_{2}$
15608.939	2		6404.835	$20566_{4}^{g} - 26971_{4}$
15608.145	1		6405.161	$23609_{0}^{g} - 30014_{4}$
15602.299	0		6407.561	$17073_{1} - 23481_{1}^{i}$
15598.808	4		6408.995	$7795_{4}^{g} - 14204_{5}$
15598.676	4		6409.049	$15493_{4} - 21902_{4}^{g}$
15585.229	3		6414.579	$13088_{3} - 19503_{3}^{g}$
15583.635	2		6415.235	$17354_{1}^{g} - 23769_{1}$
15576.584	6		6418.139	$16783_{4}^{g} - 23201_{3}$
15575.870	1		6418.433	$21077_{0}^{g} - 27495_{4}$
15574.463	1		6419.013	$25355_{4}^{g} - 31774_{3}$
15572.352	2		6419.883	$19503_{3}^{g} - 25923_{4}$
15572.117	4		6419.980	$16217_{2}^{g} - 22637_{3}$
15569.510	3		6421.055	$22141_{3}^{g} - 28562_{4}$
15568.155	0		6421.614	$20922_{2}^{g} - 27343_{3}$
15565.585	0		6422.674	$26645_{0}^{g} - 33068_{6}$
15553.233	2		6427.775	$15166_{3}^{g} - 21594_{3}$
15551.679	4		6428.417	$13088_{3} - 19516_{2}^{g}$
15547.561	1		6430.120	$19273_{2} - 25703_{2}^{g}$
15542.668	2		6432.144	$19948_{4}^{g} - 26380_{5}$
15537.904	0		6434.116	$22669_{3}^{g} - 29104_{4}$
15523.156	1		6440.229	$21902_{4}^{g} - 28342_{5}$
15516.436	6		6443.018	$7502_{3} - 13945_{3}^{g}$
15513.174	1		6444.373	$21077_{0}^{g} - 27521_{4}$
15508.866	1		6446.163	$22399_{0}^{g} - 28845_{4}$
15505.455	0		6447.581	$26651_{2}^{g} - 33099_{3}$
15503.005	0		6448.600	$24202_{4}^{g} - 30651_{3}$
15499.015	1		6450.260	$24307_{2}^{g} - 30758_{2}$
15475.060	1		6460.245	$12114_{2}^{g} - 18574_{1}$
15473.472	1		6460.908	$16554_{6} - 23015_{0}^{g}$
15473.326	1		6460.969	$13962_{1} - 20423_{1}^{i}$
15472.864	3		6461.162	$17959_{4} - 24421_{3}^{g}$
15456.917	1		6467.828	$25306_{2}^{g} - 31774_{3}$
15455.882	0		6468.261	$21890_{3}^{g} - 28358_{3}$
15454.759	0		6468.731	$24182_{2}^{g} - 30651_{3}$
15440.113	4		6474.867	$18930_{3}^{g} - 25405_{4}$
15439.546	2		6475.105	$15863_{2} - 22338_{3}^{g}$
15429.783	7		6479.202	$15618_{3}^{g} - 22098_{4}$
15395.715	2		6493.539	$16783_{4}^{g} - 23277_{5}$
15390.079	0		6495.917	$24769_{3}^{g} - 31265_{3}$
15373.158	0		6503.067	$26048_{4}^{g} - 32551_{3}$
15364.893	1		6506.565	$22338_{3}^{g} - 28845_{4}$
15355.694	5		6510.463	$14226_{0} - 20737_{1}^{i}$
15342.358	1		6516.122	$19532_{4} - 26048_{4}^{g}$
15336.766	0		6518.498	$17398_{3} - 23916_{4}^{g}$
15320.133	0		6525.575	$16351_{0} - 22877_{1}^{i}$
15307.300	6		6531.046	$17501_{0}^{g} - 24032_{4}$
15297.656	0		6535.163	$21738_{2}^{g} - 28273_{2}$
15295.651	0		6536.020	$19273_{2} - 25809_{1}^{i}$
15292.511	1		6537.362	$23015_{0}^{g} - 29552_{6}$
15291.203	2		6537.921	$13175_{4}^{g} - 19713_{3}$
15284.311	0		6540.869	$22877_{1}^{i} - 29418_{2}$
15282.038	2		6541.842	$9804_{5} - 16346_{4}^{g}$
15278.264	1		6543.458	$22338_{3}^{g} - 28882_{2}$
15273.332	2		6545.571	$17224_{2}^{g} - 23769_{1}$
15265.258	0		6549.033	$24880_{1}^{i} - 31429_{1}$
15264.344	2		6549.425	$18431_{3} - 24981_{3}^{g}$
15260.157	2		6551.222	$5563_{1} - 12114_{2}^{g}$
15246.115	1		6557.256	$24769_{3}^{g} - 31326_{4}$
15239.289	4		6560.193	$13962_{1} - 20522_{2}^{g}$
15215.038	0		6570.649	$23113_{4}^{g} - 29684_{5}$
15203.638	0		6575.576	$24182_{2}^{g} - 30758_{2}$
15195.303	0		6579.183	$17411_{3}^{g} - 23990_{2}$
15190.777	3		6581.143	$20214_{3}^{g} - 26796_{3}$
15190.369	2		6581.320	$13962_{1} - 20543_{0}^{g}$
15167.182	0		6591.381	$26508_{3}^{g} - 33099_{3}$
15158.232	1		6595.273	$18809_{4}^{g} - 25405_{4}$
15157.340	0		6595.661	$18069_{3}^{g} - 24664_{3}$
15156.775	1		6595.907	$22338_{3}^{g} - 28934_{3}$
15143.355	2		6601.752	$17959_{4} - 24561_{3}^{g}$
15137.607	0		6604.259	$21668_{1}^{i} - 28273_{2}$
15112.474	2		6615.242	$10783_{2}^{g} - 17398_{3}$
15100.835	2		6620.341	$21738_{2}^{g} - 28358_{3}$
15099.336	4		6620.998	$17411_{3}^{g} - 24032_{4}$
15095.376	1		6622.735	$25306_{2}^{g} - 31929_{3}$
15090.817	2		6624.736	$20566_{4}^{g} - 27191_{1}$
15065.723	1		6635.770	$17354_{1}^{g} - 23990_{1}$
15051.950	2		6641.842	$24084_{6}^{g} - 30726_{4}$
15049.671	2		6642.848	$23113_{4}^{g} - 29756_{4}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
15045.413	3		6644.728	$20922_{2}^{2} - 27566_{2}$	14695.579	3		6802.908	$21539_{4}^{4} - 28342_{5}$
15037.137	0		6648.385	$15493_{4} - 22141_{3}^{3}$	14690.666	0		6805.183	$21143_{5} - 27948_{4}^{3}$
15035.312	0		6649.192	$20322_{0}^{0} - 26971_{4}$	14689.932	0		6805.523	$23481_{1}^{1} - 30286_{1}$
15031.317	1		6650.959	$13297_{4} - 19948_{4}^{4}$	14688.909	0		6805.997	$15863_{2} - 22669_{3}^{3}$
15021.804	3		6655.171	$12847_{3} - 19503_{3}^{3}$	14687.576	0		6806.615	$22877_{0}^{0} - 29684_{5}$
15017.893	0		6656.904	$24307_{2}^{2} - 30964_{3}$	14680.667	0		6809.818	$17959_{4} - 24769_{3}^{3}$
15010.031	3		6660.391	$21902_{4}^{4} - 28562_{4}$	14677.249	5		6811.404	$11802_{2} - 18614_{1}^{1}$
15007.406	0		6661.556	$14481_{6}^{6} - 21143_{5}$	14661.334	0		6818.798	$21539_{4}^{4} - 28358_{3}$
14994.654	3		6667.221	$19588_{0}^{0} - 26255_{4}$	14654.914	7		6821.785	$11877_{1}^{1} - 18699_{2}$
14994.569	2		6667.259	$17073_{1} - 23741_{1}^{1}$	14651.482	3		6823.383	$20054_{2} - 26878_{3}^{3}$
14990.632	1		6669.010	$12847_{3} - 19516_{2}^{2}$	14644.393	1		6826.686	$18699_{2} - 25526_{1}^{1}$
14988.603	4		6669.913	$15493_{4} - 22163_{4}^{4}$	14638.811	0		6829.289	$20214_{3}^{3} - 27044_{3}$
14984.882	4		6671.569	$11877_{1}^{1} - 18549_{2}$	14638.217	1		6829.566	$20737_{1}^{1} - 27566_{2}$
14982.726	1		6672.529	$21890_{3}^{3} - 28562_{4}$	14628.703	2		6834.008	$23015_{0}^{0} - 29849_{4}$
14980.034	0		6673.728	$25321_{3}^{3} - 31995_{4}$	14618.976	7		6838.555	$3687_{2} - 10526_{3}^{3}$
14977.332	3		6674.932	$22877_{0}^{0} - 29552_{6}$	14615.924	1		6839.983	$19273_{2} - 26113_{2}^{2}$
14968.497	2		6678.872	$17073_{1} - 23752_{2}^{2}$	14604.155	2		6845.495	$24084_{6}^{6} - 30930_{6}$
14960.529	0		6682.429	$22163_{4}^{4} - 28845_{4}$	14603.558	3		6845.775	$15493_{4} - 22338_{3}^{3}$
14956.476	2		6684.240	$24561_{3}^{3} - 31245_{2}$	14603.174	0		6845.955	$18069_{3}^{3} - 24915_{3}$
14955.641	1		6684.613	$26096_{3}^{3} - 32781_{4}$	14599.499	1		6847.678	$19948_{4}^{4} - 26796_{3}$
14951.792	1		6686.334	$16346_{4}^{4} - 23032_{4}$	14591.907	1		6851.241	$19039_{2}^{2} - 25890_{2}$
14947.310	2		6688.339	$21539_{4}^{4} - 28227_{4}$	14573.635	2		6859.831	$13088_{3} - 19948_{4}^{4}$
14947.021	1		6688.468	$26048_{4}^{4} - 32737_{5}$	14570.349	3		6861.378	$17398_{3} - 24259_{4}^{4}$
14943.987	6		6689.826	$8800_{4} - 15490_{6}^{6}$	14563.603	0		6864.556	$24381_{2}^{2} - 31245_{2}$
14928.485	4		6696.773	$11877_{1}^{1} - 18574_{1}$	14553.980	1		6869.095	$20322_{0}^{0} - 27191_{5}$
14921.758	0		6699.792	$15970_{3} - 22669_{3}^{3}$	14548.134	2		6871.855	$10526_{3}^{3} - 17398_{3}$
14911.028	2		6704.613	$22399_{0}^{0} - 29104_{4}$	14545.954	2		6872.885	$14204_{5} - 21077_{0}^{0}$
14880.943	0		6718.168	$11241_{3}^{3} - 17959_{4}$	14541.314	1		6875.078	$18431_{3} - 25306_{2}^{2}$
14875.259	1		6720.735	$24421_{3}^{3} - 31141_{3}$	14533.419	4		6878.813	$22877_{0}^{0} - 29756_{4}$
14873.575	1		6721.496	$23113_{4}^{4} - 29835_{3}$	14519.935	2		6885.201	$15970_{3} - 22855_{3}^{3}$
14850.034	0		6732.151	$18574_{1} - 25306_{2}^{2}$	14510.851	0		6889.511	$13847_{2} - 20737_{1}^{1}$
14842.404	0		6735.612	$23113_{4}^{4} - 29849_{4}$	14502.932	1		6893.273	$18549_{2} - 25442_{3}^{3}$
14830.215	3		6741.148	$17959_{4} - 24701_{0}^{0}$	14493.424	2		6897.795	$23113_{4}^{4} - 30011_{3}$
14830.001	1		6741.245	$23015_{0}^{0} - 29756_{4}$	14491.248	1		6898.831	$23609_{0}^{0} - 30508_{5}$
14809.031	2		6750.791	$17166_{5} - 23916_{4}^{4}$	14476.391	0		6905.911	$24421_{3}^{3} - 31326_{4}$
14806.456	5		6751.965	$7280_{2} - 14032_{2}^{2}$	14475.836	4		6906.176	$15493_{4} - 22399_{0}^{0}$
14805.415	3		6752.440	$19503_{3}^{3} - 26255_{4}$	14469.188	2		6909.349	$17398_{3} - 24307_{2}^{2}$
14805.099	1		6752.584	$16554_{6} - 23306_{6}^{6}$	14467.109	0		6910.342	$22508_{2}^{2} - 29418_{2}$
14796.452	0		6756.530	$20214_{3}^{3} - 26971_{4}$	14452.427	0		6917.362	$23093_{2}^{2} - 30011_{3}$
14789.356	1		6759.772	$26036_{3}^{3} - 32796_{3}$	14452.147	2		6917.496	$13297_{4} - 20214_{3}^{3}$
14784.758	1		6761.874	$13962_{1} - 20724_{0}^{0}$	14451.758	4		6917.682	$3865_{1} - 10783_{2}^{2}$
14781.114	0		6763.541	$23609_{0}^{0} - 30372_{6}$	14449.799	1		6918.620	$25877_{4}^{4} - 32796_{3}$
14777.907	1		6765.009	$22338_{3}^{3} - 29104_{4}$	14449.350	2		6918.835	$17166_{5} - 24084_{6}^{6}$
14777.230	1		6765.319	$24561_{3}^{3} - 31326_{4}$	14438.799	3		6923.891	$18431_{3} - 25355_{4}^{4}$
14772.419	0		6767.522	$24769_{3}^{3} - 31537_{3}$	14424.537	7		6930.737	$16346_{4}^{4} - 23277_{5}$
14772.031	3		6767.700	$25690_{0}^{0} - 32458_{4}$	14423.392	2		6931.287	$15166_{3}^{3} - 22098_{4}$
14764.746	2		6771.039	$16217_{2}^{2} - 22988_{2}$	14412.536	4		6936.508	$14206_{4}^{4} - 21143_{5}$
14756.630	3		6774.763	$13962_{1} - 20737_{1}^{1}$	14407.785	1		6938.795	$19713_{3} - 26651_{2}^{2}$
14751.515	0		6777.112	$20566_{4}^{4} - 27343_{3}$	14403.474	1		6940.872	$22163_{4}^{4} - 29104_{4}$
14741.329	5		6781.795	$11601_{1} - 18382_{0}^{0}$	14403.132	0		6941.037	$23603_{2}^{2} - 30544_{2}$
14740.403	0		6782.221	$24182_{2}^{2} - 30964_{3}$	14398.454	2		6943.292	$21902_{4}^{4} - 28845_{4}$
14736.470	0		6784.031	$17398_{3} - 24182_{2}^{2}$	14374.424	2		6954.899	$20566_{4}^{4} - 27521_{4}$
14719.449	1		6791.876	$23752_{2}^{2} - 30544_{2}$	14373.329	1		6955.429	$21890_{3}^{3} - 28845_{4}$
14718.799	5		6792.176	$19588_{0}^{0} - 26380_{5}$	14370.393	0		6956.850	$21077_{0}^{0} - 28034_{5}$
14716.370	2		6793.297	$22141_{3}^{3} - 28934_{3}$	14364.711	2		6959.602	$13962_{1} - 20922_{2}^{2}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
14363.687	2		6960.098	$18930^{3}_{3} - 25890_{2}$	14028.560	4		7126.367	$13088_{3} - 20214^{3}_{3}$
14358.938	2		6962.400	$22141^{3}_{3} - 29104_{4}$	14026.605	5		7127.360	$11802_{2} - 18930^{3}_{3}$
14357.839	3		6962.933	$7502_{3} - 14465^{2}_{2}$	14008.158	0		7136.746	$22877^{0}_{0} - 30014_{4}$
14355.909	0		6963.869	$7280_{2} - 14243^{1}_{1}$	14007.173	0		7137.248	$23752^{2}_{2} - 30889_{1}$
14340.036	0		6971.577	$22877^{0}_{0} - 29849_{4}$	13995.011	0		7143.450	$15970_{3} - 23113^{4}_{4}$
14326.032	1		6978.392	$22163^{4}_{4} - 29141_{5}$	13993.145	1		7144.403	$21738^{2}_{2} - 28882_{2}$
14324.702	0		6979.040	$9804_{5} - 16783^{4}_{4}$	13976.090	2		7153.121	$22399^{0}_{0} - 29552_{6}$
14323.255	1		6979.745	$22855^{3}_{3} - 29835_{3}$	13975.932	4		7153.202	$19227^{6}_{6} - 26380_{5}$
14313.992	4		6984.262	$10414^{4}_{4} - 17398_{3}$	13974.383	1		7153.995	$18549_{2} - 25703^{2}_{2}$
14306.560	2		6987.890	$17411^{3}_{3} - 24399_{3}$	13970.381	2		7156.044	$22855^{3}_{3} - 30011_{3}$
14297.496	0		6992.320	$21890^{3}_{3} - 28882_{2}$	13964.777	2		7158.916	$12114^{2}_{2} - 19273_{2}$
14296.656	2		6992.731	$18930^{3}_{3} - 25923_{4}$	13936.736	5		7173.320	$20322^{0}_{0} - 27495_{4}$
14294.346	0		6993.861	$22855^{3}_{3} - 29849_{4}$	13930.234	3		7176.668	$15493_{4} - 22669^{3}_{3}$
14283.487	1		6999.178	$23015^{0}_{0} - 30014_{4}$	13904.491	6		7189.955	$11241^{3}_{3} - 18431_{3}$
14271.876	1		7004.872	$24769^{3}_{3} - 31774_{3}$	13898.031	1		7193.297	$21165^{3}_{3} - 28358_{3}$
14270.962	1		7005.321	$23752^{2}_{2} - 30758_{2}$	13886.527	4		7199.256	$20322^{0}_{0} - 27521_{4}$
14259.243	5		7011.078	$19986^{6}_{6} - 26997_{6}$	13882.834	1		7201.171	$23306^{6}_{6} - 30508_{5}$
14254.713	5		7013.306	$11601_{1} - 18614^{0}_{1}$	13872.468	0		7206.552	$25575^{4}_{4} - 32781_{4}$
14254.065	0		7013.625	$15863_{2} - 22877^{0}_{1}$	13862.050	0		7211.968	$23752^{2}_{2} - 30964_{3}$
14253.783	1		7013.764	$19273_{2} - 26287^{0}_{1}$	13859.106	1		7213.500	$21668^{0}_{1} - 28882_{2}$
14244.211	2		7018.477	$15618^{3}_{3} - 22637_{3}$	13844.566	0		7221.076	$25575^{4}_{4} - 32796_{3}$
14239.881	1		7020.611	$21252^{2}_{2} - 28273_{2}$	13818.508	1		7234.693	$18574_{1} - 25809^{1}_{1}$
14238.660	2		7021.213	$17959_{4} - 24981^{3}_{3}$	13815.598	1		7236.217	$11802_{2} - 19039^{2}_{2}$
14237.955	1		7021.561	$22396^{1}_{1} - 29418_{2}$	13828.453	1		7229.490	$24307^{2}_{2} - 31537_{3}$
14235.729	2		7022.659	$17398_{3} - 24421^{3}_{3}$	13814.181	0		7236.959	$23521^{3}_{3} - 30758_{2}$
14234.902	2		7023.067	$19948^{4}_{4} - 26971_{4}$	13813.265	0		7237.439	$23049^{1}_{1} - 30286_{1}$
14234.902	2		7023.067	$21539^{4}_{4} - 28562_{4}$	13809.796	1		7239.257	$21902^{4}_{4} - 29141_{5}$
14233.051	0		7023.980	$24769^{3}_{3} - 31793_{4}$	13799.139	0		7244.848	$25306^{2}_{2} - 32551_{3}$
14231.327	4		7024.831	$13297_{4} - 20322^{0}_{0}$	13795.378	1		7246.823	$24182^{2}_{2} - 31429_{1}$
14230.620	0		7025.180	$20566^{4}_{4} - 27591_{5}$	13792.422	5		7248.376	$16783^{4}_{4} - 24032_{4}$
14230.460	0		7025.259	$22396^{1}_{1} - 29422_{1}$	13786.380	1		7251.553	$15736^{1}_{1} - 22988_{2}$
14217.138	1		7031.842	$24981^{3}_{3} - 32012_{4}$	13779.592	1		7255.125	$22877^{1}_{1} - 30132_{2}$
14214.389	0		7033.202	$20054_{2} - 27087^{1}_{1}$	13774.118	1		7258.008	$19532_{4} - 26790^{4}_{4}$
14192.323	4		7044.137	$20522^{2}_{2} - 27566_{2}$	13760.203	2		7265.348	$21077^{0}_{0} - 28342_{5}$
14191.050	2		7044.769	$21890^{3}_{3} - 28934_{3}$	13752.928	2		7269.191	$13297_{4} - 20566^{4}_{4}$
14189.283	0		7045.646	$20566^{4}_{4} - 27612_{3}$	13752.277	0		7269.535	$20322^{0}_{0} - 27591_{5}$
14187.489	2		7046.537	$25690^{0}_{0} - 32737_{5}$	13748.535	0		7271.514	$24769^{3}_{3} - 32041_{2}$
14170.625	0		7054.923	$16554_{6} - 23609^{0}_{0}$	13748.149	2		7271.718	$18431_{3} - 25703^{2}_{2}$
14168.671	7		7055.896	$8111_{4} - 15166^{3}_{3}$	13745.894	0		7272.911	$25690^{0}_{0} - 32963_{5}$
14160.194	1		7060.120	$24981^{3}_{3} - 32041_{2}$	13739.956	5		7276.054	$18614^{0}_{1} - 25890_{2}$
14154.750	0		7062.835	$21165^{3}_{3} - 28227_{4}$	13738.583	3		7276.781	$22141^{3}_{3} - 29418_{2}$
14148.646	2		7065.882	$23306^{6}_{6} - 30372_{6}$	13735.446	2		7278.443	$21252^{2}_{2} - 28531_{2}$
14107.467	1		7086.507	$22669^{3}_{3} - 29756_{4}$	13734.218	2		7279.094	$19516^{2}_{2} - 26796_{3}$
14101.396	3		7089.558	$20522^{2}_{2} - 27612_{3}$	13731.271	2		7280.656	$20214^{3}_{3} - 27495_{4}$
14100.879	2		7089.818	$19273_{2} - 26363^{2}_{2}$	13727.340	1		7282.741	$19713_{3} - 26995^{3}_{3}$
14095.249	1		7092.650	$24701^{0}_{0} - 31793_{4}$	13723.460	0		7284.800	$22399^{0}_{0} - 29684_{5}$
14090.246	7		7095.168	$3687_{2} - 10783^{2}_{2}$	13680.790	0		7307.521	$17073_{1} - 24381^{2}_{2}$
14079.818	5		7100.423	$12847_{3} - 19948^{4}_{4}$	13680.494	1		7307.679	$11241^{3}_{3} - 18549_{2}$
14063.614	2		7108.604	$17166_{5} - 24274^{0}_{0}$	13677.064	2		7309.512	$23655^{4}_{4} - 30964_{3}$
14063.614	2		7108.604	$17073_{1} - 24182^{2}_{2}$	13672.580	0		7311.909	$24701^{0}_{0} - 32012_{4}$
14061.486	0		7109.680	$18699_{2} - 25809^{1}_{1}$	13672.490	0		7311.957	$22338^{3}_{3} - 29650_{2}$
14061.215	1		7109.817	$14465^{2}_{2} - 21575_{2}$	13668.402	0		7314.144	$25753^{0}_{0} - 33068_{6}$
14054.652	1		7113.137	$18809^{4}_{4} - 25923_{4}$	13662.574	2		7317.264	$17354^{1}_{1} - 24671_{2}$
14038.143	0		7121.502	$24307^{2}_{2} - 31429_{1}$	13662.466	1		7317.322	$13847_{2} - 21165^{3}_{3}$
14032.419	1		7124.407	$24202^{4}_{4} - 31326_{4}$	13647.606	5		7325.289	$18930^{3}_{3} - 26255_{4}$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
13628.932	1		7335.326	$14204_5 - 21539^{\frac{3}{4}}_4$	13348.625	1		7489.360	$25306^{\frac{1}{2}}_2 - 32796_3$
13612.012	0		7344.444	$22669^{\frac{3}{2}}_3 - 30014_4$	13342.411	1		7492.848	$23015^{\frac{5}{2}}_0 - 30508_5$
13609.614	2		7345.738	$19532_4 - 26878^{\frac{3}{2}}_3$	13336.712	3		7496.050	$22338^{\frac{3}{2}}_3 - 29835_3$
13599.702	3		7351.092	$20922^{\frac{1}{2}}_2 - 28273_2$	13334.671	1		7497.197	$18614^{\frac{9}{2}}_1 - 26111_1$
13598.599	3		7351.688	$24850^{\frac{7}{2}}_2 - 32202_5$	13322.946	0		7503.795	$17411^{\frac{3}{2}}_3 - 24915_3$
13598.167	2		7351.922	$20214^{\frac{3}{2}}_3 - 27566_2$	13315.518	1		7507.981	$8111_4 - 15618^{\frac{3}{2}}_3$
13597.830	1		7352.104	$24274^{\frac{5}{2}}_0 - 31626_5$	13314.704	1		7508.440	$24421^{\frac{3}{2}}_3 - 31929_3$
13595.363	0		7353.438	$25442^{\frac{3}{2}}_3 - 32796_3$	13303.409	1		7514.815	$24259^{\frac{9}{2}}_4 - 31774_3$
13592.829	0		7354.809	$24182^{\frac{1}{2}}_2 - 31537_3$	13296.036	1		7518.982	$24274^{\frac{5}{2}}_0 - 31793_4$
13588.783	4		7356.999	$22399^{\frac{5}{2}}_0 - 29756_4$	13292.355	0		7521.064	$22163^{\frac{9}{2}}_4 - 29684_5$
13587.748	0		7357.559	$23015^{\frac{5}{2}}_0 - 30372_6$	13290.823	1		7521.931	$15493_4 - 23015^{\frac{5}{2}}_0$
13579.410	4		7362.077	$15493_4 - 22855^{\frac{3}{2}}_3$	13286.526	0		7524.364	$25575^{\frac{9}{2}}_4 - 33099_3$
13572.266	0		7365.952	$21165^{\frac{3}{2}}_3 - 28531_2$	13281.453	4		7527.238	$19516^{\frac{1}{2}}_2 - 27044_3$
13570.411	3		7366.959	$12847_3 - 20214^{\frac{3}{2}}_3$	13279.662	0		7528.253	$21890^{\frac{3}{2}}_3 - 29418_2$
13565.665	7		7369.536	$15618^{\frac{3}{2}}_3 - 22988_2$	13275.351	5		7530.698	$16554_6 - 24084^{\frac{7}{2}}_6$
13562.388	2		7371.317	$17398_3 - 24769^{\frac{3}{2}}_3$	13269.677	1		7533.918	$24259^{\frac{9}{2}}_4 - 31793_4$
13549.102	2		7378.545	$19273_2 - 26651^{\frac{1}{2}}_2$	13267.880	2		7534.938	$17166_5 - 24701^{\frac{5}{2}}_0$
13540.748	3		7383.097	$19588^{\frac{5}{2}}_0 - 26971_4$	13263.633	2		7537.351	$23015^{\frac{5}{2}}_0 - 30552_4$
13538.429	2		7384.362	$15493_4 - 22877^{\frac{5}{2}}_0$	13261.338	0		7538.655	$18574_1 - 26113^{\frac{3}{2}}_2$
13532.204	2		7387.759	$14206^{\frac{3}{4}}_4 - 21594_3$	13257.081	3		7541.076	$19503^{\frac{3}{2}}_3 - 27044_3$
13529.689	1		7389.132	$16351_0 - 23741^{\frac{1}{2}}_1$	13253.863	5		7542.907	$15490^{\frac{5}{2}}_0 - 23032_4$
13518.143	6		7395.443	$11877^{\frac{1}{2}}_1 - 19273_2$	13250.406	1		7544.875	$2869_3 - 10414^{\frac{9}{2}}_4$
13517.712	2		7395.679	$17959_4 - 25355^{\frac{9}{2}}_4$	13248.848	2		7545.762	$10414^{\frac{9}{2}}_4 - 17959_4$
13514.671	1		7397.343	$20214^{\frac{3}{2}}_3 - 27612_3$	13247.730	4		7546.399	$8800_4 - 16346^{\frac{9}{2}}_4$
13508.886	0		7400.511	$25336^{\frac{7}{2}}_2 - 32737_5$	13246.336	0		7547.193	$19948^{\frac{9}{2}}_4 - 27495_4$
13501.001	4		7404.833	$13847_2 - 21252^{\frac{5}{2}}_2$	13245.664	2		7547.576	$18549_2 - 26096^{\frac{3}{2}}_3$
13491.454	1		7410.073	$23916^{\frac{9}{2}}_4 - 31326_4$	13239.744	4		7550.951	$15970_3 - 23521^{\frac{3}{2}}_3$
13484.963	1		7413.640	$18699_2 - 26113^{\frac{5}{2}}_2$	13236.164	3		7552.993	$19713_3 - 27266^{\frac{9}{2}}_4$
13484.304	3		7414.002	$15618^{\frac{3}{2}}_3 - 23032_4$	13234.852	2		7553.742	$3687_2 - 11241^{\frac{3}{2}}_3$
13478.127	0		7417.400	$22338^{\frac{3}{2}}_3 - 29756_4$	13219.366	0		7562.591	$14032^{\frac{5}{2}}_2 - 21594_3$
13465.671	0		7424.261	$24202^{\frac{9}{2}}_4 - 31626_5$	13217.149	0		7563.859	$18549_2 - 26113^{\frac{5}{2}}_2$
13449.197	4		7433.355	$10526^{\frac{3}{2}}_3 - 17959_4$	13216.178	1		7564.415	$21539^{\frac{9}{2}}_4 - 29104_4$
13448.036	1		7433.997	$24561^{\frac{3}{2}}_3 - 31995_4$	13215.207	0		7564.971	$22396^{\frac{1}{2}}_1 - 29961_1$
13447.755	4		7434.152	$13088_3 - 20522^{\frac{5}{2}}_2$	13205.290	6		7570.652	$18809^{\frac{9}{2}}_4 - 26380_5$
13443.925	4		7436.270	$20922^{\frac{5}{2}}_2 - 28358_3$	13202.889	1		7572.029	$24202^{\frac{9}{2}}_4 - 31774_3$
13440.583	4		7438.119	$11601_1 - 19039^{\frac{5}{2}}_2$	13200.969	1		7573.130	$19948^{\frac{9}{2}}_4 - 27521_4$
13439.085	1		7438.948	$14206^{\frac{3}{4}}_4 - 21645_4$	13184.286	2		7582.713	$17398_3 - 24981^{\frac{3}{2}}_3$
13436.414	0		7440.427	$17224^{\frac{5}{2}}_2 - 24664_3$	13183.941	3		7582.911	$6362_2 - 13945^{\frac{3}{2}}_3$
13433.332	3		7442.134	$14226_0 - 21668^{\frac{1}{2}}_1$	13183.783	3		7583.002	$15618^{\frac{3}{2}}_3 - 23201_3$
13426.907	3		7445.695	$18809^{\frac{9}{2}}_4 - 26255_4$	13176.103	2		7587.422	$18699_2 - 26287^{\frac{1}{2}}_1$
13426.686	2		7445.818	$18431_3 - 25877^{\frac{9}{2}}_4$	13169.665	0		7591.131	$24202^{\frac{9}{2}}_4 - 31793_4$
13423.480	2		7447.596	$17224^{\frac{5}{2}}_2 - 24671_2$	13168.345	0		7591.892	$24421^{\frac{3}{2}}_3 - 32012_4$
13419.576	4		7449.763	$22399^{\frac{5}{2}}_0 - 29849_4$	13167.879	0		7592.161	$24182^{\frac{1}{2}}_2 - 31774_3$
13418.102	0		7450.581	$23093^{\frac{1}{2}}_2 - 30544_2$	13156.601	1		7598.669	$12114^{\frac{1}{2}}_2 - 19713_3$
13404.943	4		7457.895	$11241^{\frac{3}{2}}_3 - 18699_2$	13150.947	1		7601.936	$21539^{\frac{9}{2}}_4 - 29141_5$
13395.136	1		7463.355	$19532_4 - 26995^{\frac{3}{2}}_3$	13146.765	1		7604.354	$19713_3 - 27317^{\frac{5}{2}}_3$
13387.914	0		7467.381	$20566^{\frac{3}{4}}_4 - 28034_5$	13146.229	1		7604.664	$18431_3 - 26036^{\frac{3}{2}}_3$
13386.236	2		7468.317	$19503^{\frac{3}{2}}_3 - 26971_4$	13144.547	1		7605.637	$19986^{\frac{7}{2}}_6 - 27591_5$
13382.214	4		7470.562	$15166^{\frac{3}{2}}_3 - 22637_3$	13136.162	0		7610.492	$23655^{\frac{9}{2}}_4 - 31265_3$
13370.573	1		7477.066	$24981^{\frac{3}{2}}_3 - 32458_4$	13128.501	2		7614.933	$22399^{\frac{5}{2}}_0 - 30014_4$
13368.792	6		7478.062	$13088_3 - 20566^{\frac{3}{4}}_4$	13127.923	5		7615.268	$16783^{\frac{9}{2}}_4 - 24399_3$
13360.349	0		7482.788	$17959_4 - 25442^{\frac{5}{2}}_3$	13126.337	0		7616.188	$20054_2 - 27670^{\frac{3}{2}}_3$
13355.490	0		7485.510	$21077^{\frac{5}{2}}_0 - 28562_4$	13124.108	1		7617.482	$15863_2 - 23481^{\frac{1}{2}}_1$
13353.446	0		7486.656	$23655^{\frac{9}{2}}_4 - 31141_3$	13120.544	1		7619.551	$20054_2 - 27674^{\frac{5}{2}}_2$
13352.939	0		7486.940	$18549_2 - 26036^{\frac{3}{2}}_3$	13119.476	1		7620.171	$24421^{\frac{3}{2}}_3 - 32041_2$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
13116.755	1		7621.752	$24307\frac{2}{2} - 31929_{3}$	12866.644	7		7769.909	$19227\frac{0}{6} - 26997_{6}$
13111.862	0		7624.596	$22508\frac{2}{2} - 30132_{2}$	12861.651	4		7772.925	$16217\frac{2}{2} - 23990_{2}$
13107.912	1		7626.894	$25336\frac{6}{6} - 32963_{5}$	12854.102	1		7777.490	$25321\frac{3}{3} - 33099_{3}$
13103.036	0		7629.732	$13945\frac{3}{3} - 21575_{2}$	12846.823	1		7781.897	$24769\frac{3}{3} - 32551_{3}$
13102.832	1		7629.851	$21252\frac{2}{2} - 28882_{2}$	12845.690	1		7782.583	$15970_{3} - 23752\frac{2}{2}$
13101.858	1		7630.418	$22877\frac{0}{6} - 30508_{5}$	12841.750	2		7784.971	$19532_{4} - 27317\frac{3}{3}$
13079.586	1		7643.411	$19948\frac{4}{4} - 27591_{5}$	12837.894	2		7787.309	$15490\frac{0}{6} - 23277_{5}$
13070.834	6		7648.529	$10783\frac{2}{2} - 18431_{3}$	12836.536	1		7788.133	$19273_{2} - 27061\frac{2}{2}$
13069.399	3		7649.369	$13945\frac{3}{3} - 21594_{3}$	12831.063	0		7791.455	$10783\frac{2}{2} - 18574_{1}$
13056.097	2		7657.162	$15863_{2} - 23521\frac{3}{3}$	12830.547	3		7791.768	$20566\frac{4}{4} - 28358_{3}$
13055.889	6		7657.284	$2869_{3} - 10526\frac{3}{3}$	12828.379	1		7793.085	$24202\frac{4}{4} - 31995_{4}$
13049.034	2		7661.307	$20566\frac{4}{4} - 28227_{4}$	12827.456	0		7793.646	$22338\frac{3}{3} - 30132_{2}$
13048.139	1		7661.832	$23609\frac{6}{6} - 31271_{5}$	12826.806	3		7794.041	$17959_{4} - 25753\frac{0}{6}$
13045.340	1		7663.476	$18699_{2} - 26363\frac{2}{2}$	12799.956	2		7810.390	$24202\frac{4}{4} - 32012_{4}$
13043.407	4		7664.612	$7502_{3} - 15166\frac{3}{3}$	12782.294	1		7821.182	$13847_{2} - 21668\frac{1}{1}$
13034.773	2		7669.689	$6362_{2} - 14032\frac{2}{2}$	12782.059	2		7821.326	$18069\frac{3}{3} - 25890_{2}$
13031.133	3		7671.831	$23655\frac{4}{4} - 31326_{4}$	12781.578	4		7821.620	$15166\frac{3}{3} - 22988_{2}$
13030.257	0		7672.347	$22338\frac{3}{3} - 30011_{3}$	12773.189	1		7826.757	$19516\frac{2}{2} - 27343_{3}$
13026.187	6		7674.744	$12847_{3} - 20522\frac{2}{2}$	12762.096	6		7833.560	$13088_{3} - 20922\frac{2}{2}$
13023.092	1		7676.568	$23752\frac{2}{2} - 31429_{1}$	12750.649	0		7840.593	$19503\frac{3}{3} - 27343_{3}$
13010.439	1		7684.034	$21738\frac{2}{2} - 29422_{1}$	12738.275	0		7848.209	$22163\frac{4}{4} - 30011_{3}$
13010.154	3		7684.202	$17166_{5} - 24850\frac{8}{8}$	12733.582	3		7851.102	$23113\frac{4}{4} - 30964_{3}$
13008.742	0		7685.036	$15970_{3} - 23655\frac{4}{4}$	12709.820	4		7865.780	$18930\frac{3}{3} - 26796_{3}$
13007.832	5		7685.574	$16346\frac{4}{4} - 24032_{4}$	12709.330	5		7866.083	$15166\frac{3}{3} - 23032_{4}$
12994.532	3		7693.440	$22141\frac{3}{3} - 29835_{3}$	12703.962	0		7869.407	$18053\frac{4}{4} - 25923_{4}$
12989.585	1		7696.370	$9804_{5} - 17501\frac{0}{6}$	12703.428	1		7869.738	$22141\frac{3}{3} - 30011_{3}$
12988.177	1		7697.204	$22855\frac{3}{3} - 30552_{4}$	12691.421	4		7877.183	$15863_{2} - 23741\frac{1}{1}$
12986.920	4		7697.949	$7795\frac{4}{4} - 15493_{4}$	12685.466	1		7880.881	$16783\frac{4}{4} - 24664_{3}$
12983.105	0		7700.211	$11802_{2} - 19503\frac{3}{3}$	12684.317	0		7881.595	$6362_{2} - 14243\frac{1}{1}$
12982.529	1		7700.553	$13945\frac{3}{3} - 21645_{4}$	12683.507	1		7882.098	$23655\frac{4}{4} - 31537_{3}$
12970.735	2		7707.555	$22141\frac{3}{3} - 29849_{4}$	12682.679	0		7882.613	$22669\frac{3}{3} - 30552_{4}$
12966.746	0		7709.926	$23916\frac{4}{4} - 31626_{5}$	12680.944	1		7883.691	$22248\frac{2}{2} - 30132_{2}$
12963.697	2		7711.739	$20322\frac{6}{6} - 28034_{5}$	12673.959	2		7888.036	$25180\frac{7}{7} - 33068_{6}$
12959.819	7		7714.047	$11802_{2} - 19516\frac{2}{2}$	12670.355	1		7890.280	$13847_{2} - 21738\frac{2}{2}$
12952.082	5		7718.655	$12847_{3} - 20566\frac{4}{4}$	12668.767	2		7891.269	$14206\frac{4}{4} - 22098_{4}$
12949.037	1		7720.470	$16554_{6} - 24274\frac{6}{6}$	12648.388	1		7903.983	$17501\frac{0}{6} - 25405_{4}$
12948.255	0		7720.936	$24274\frac{6}{6} - 31995_{4}$	12646.536	8		7905.141	$10526\frac{3}{3} - 18431_{3}$
12938.933	2		7726.499	$8243\frac{2}{2} - 15970_{3}$	12645.697	4		7905.665	$20322\frac{6}{6} - 28227_{4}$
12936.840	1		7727.749	$19532_{4} - 27260\frac{3}{3}$	12641.383	3		7908.363	$17398_{3} - 25306\frac{2}{2}$
12935.233	3		7728.709	$18382\frac{6}{6} - 26111_{1}$	12636.142	5		7911.643	$18011\frac{0}{6} - 25923_{4}$
12933.760	1		7729.589	$20054_{2} - 27784\frac{2}{2}$	12632.545	3		7913.896	$2869_{3} - 10783\frac{2}{2}$
12932.107	2		7730.577	$17959_{4} - 25690\frac{8}{8}$	12629.269	0		7915.949	$11601_{1} - 19516\frac{2}{2}$
12930.425	1		7731.583	$25336\frac{6}{6} - 33068_{6}$	12617.200	1		7923.521	$17398_{3} - 25321\frac{3}{3}$
12925.197	1		7734.710	$19713_{3} - 27447\frac{2}{2}$	12611.214	0		7927.282	$24274\frac{6}{6} - 32202_{5}$
12923.256	0		7735.872	$24259\frac{4}{4} - 31995_{4}$	12604.640	2		7931.416	$18431_{3} - 26363\frac{2}{2}$
12920.304	0		7737.639	$18549_{2} - 26287\frac{1}{1}$	12587.889	4		7941.971	$20737\frac{1}{1} - 28679_{2}$
12919.299	3		7738.241	$24274\frac{6}{6} - 32012_{4}$	12583.229	1		7944.912	$21890\frac{3}{3} - 29835_{3}$
12916.981	4		7739.630	$15863_{2} - 23603\frac{2}{2}$	12580.239	1		7946.800	$15970_{3} - 23916\frac{4}{4}$
12900.246	2		7749.670	$19817\frac{1}{1} - 27566_{2}$	12580.100	1		7946.888	$21902\frac{4}{4} - 29849_{4}$
12898.865	4		7750.500	$20522\frac{2}{2} - 28273_{2}$	12571.690	2		7952.204	$18699_{2} - 26651\frac{2}{2}$
12888.182	2		7756.924	$19039\frac{2}{2} - 26796_{3}$	12563.833	0		7957.177	$17398_{3} - 25355\frac{4}{4}$
12881.709	0		7760.822	$21890\frac{3}{3} - 29650_{2}$	12562.651	2		7957.926	$19713_{3} - 27670\frac{3}{3}$
12874.595	1		7765.110	$17073_{1} - 24838\frac{1}{1}$	12561.555	3		7958.620	$18549_{2} - 26508\frac{3}{3}$
12873.533	1		7765.751	$20214\frac{3}{3} - 27980_{3}$	12561.165	1		7958.867	$14204_{5} - 22163\frac{4}{4}$
12872.702	3		7766.252	$10783\frac{2}{2} - 18549_{2}$	12558.855	1		7960.331	$20922\frac{2}{2} - 28882_{2}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
12553.032	5		7964.024	$19227_{6}^{8} - 27191_{5}$	12312.736	2		8119.450	$23655_{4}^{3} - 31774_{3}$
12552.801	4		7964.170	$23306_{6}^{6} - 31271_{5}$	12310.069	3		8121.209	$21890_{3}^{3} - 30011_{3}$
12540.971	2		7971.683	$23655_{4}^{3} - 31626_{5}$	12295.924	0		8130.551	$24421_{3}^{3} - 32551_{3}$
12522.256	1		7983.597	$8800_{4} - 16783_{4}^{4}$	12294.985	1		8131.172	$16783_{4}^{4} - 24915_{3}$
12518.195	3		7986.187	$18809_{4}^{4} - 26796_{3}$	12283.851	1		8138.542	$19532_{4} - 27670_{3}^{3}$
12508.396	2		7992.443	$19503_{3}^{3} - 27495_{4}$	12283.851	1		8138.542	$23655_{4}^{3} - 31793_{4}$
12502.774	2		7996.037	$20566_{4}^{4} - 28562_{4}$	12276.430	0		8143.462	$20214_{3}^{3} - 28358_{3}$
12488.669	1		8005.068	$19039_{2}^{2} - 27044_{3}$	12273.859	2		8145.168	$20737_{1}^{1} - 28882_{2}$
12477.297	7		8012.364	$3865_{1} - 11877_{1}^{1}$	12271.398	2		8146.801	$16554_{6} - 24701_{0}^{0}$
12476.305	3		8013.001	$20214_{3}^{3} - 28227_{4}$	12263.449	1		8152.082	$23113_{4}^{4} - 31265_{3}$
12474.364	2		8014.248	$11802_{2} - 19817_{1}^{1}$	12262.250	1		8152.879	$13945_{3}^{3} - 22098_{4}$
12471.346	1		8016.187	$23521_{3}^{3} - 31537_{3}$	12261.910	2		8153.105	$22399_{0}^{0} - 30552_{4}$
12469.228	4		8017.549	$10414_{4}^{4} - 18431_{3}$	12256.743	2		8156.542	$20522_{2}^{2} - 28679_{2}$
12466.651	0		8019.206	$24274_{0}^{0} - 32293_{5}$	12249.188	4		8161.573	$18809_{4}^{4} - 26971_{4}$
12465.053	3		8020.234	$20322_{0}^{0} - 28342_{5}$	12245.483	3		8164.042	$13088_{3} - 21252_{2}^{2}$
12460.967	4		8022.864	$10526_{3}^{3} - 18549_{2}$	12242.874	0		8165.782	$21252_{2}^{2} - 29418_{2}$
12455.465	0		8026.408	$24769_{3}^{3} - 32796_{3}$	12237.332	1		8169.480	$21252_{2}^{2} - 29422_{1}$
12453.262	3		8027.828	$15493_{4} - 23521_{3}^{3}$	12236.549	2		8170.003	$14226_{0} - 22396_{1}^{1}$
12447.488	5		8031.552	$11241_{3}^{3} - 19273_{2}$	12234.949	1		8171.071	$23603_{2}^{2} - 31774_{3}$
12446.347	1		8032.288	$19948_{4}^{4} - 27980_{3}$	12233.199	5		8172.240	$14465_{2}^{2} - 22637_{3}$
12445.393	3		8032.904	$15736_{1}^{1} - 23769_{1}$	12231.942	8		8173.080	$10526_{3}^{3} - 18699_{2}$
12442.013	5		8035.086	$15166_{3}^{3} - 23201_{3}$	12229.332	1		8174.824	$7795_{4}^{4} - 15970_{3}$
12440.650	2		8035.966	$24701_{0}^{0} - 32737_{5}$	12226.604	1		8176.648	$17398_{3} - 25575_{4}^{4}$
12437.583	0		8037.948	$22248_{2}^{2} - 30286_{1}$	12226.177	4		8176.934	$11877_{1}^{1} - 20054_{2}$
12430.756	1		8042.362	$13847_{2} - 21890_{3}^{3}$	12223.788	2		8178.532	$18699_{2} - 26878_{3}^{3}$
12429.285	1		8043.314	$17847_{2}^{2} - 25890_{2}$	12219.156	0		8181.632	$16217_{2}^{2} - 24399_{3}$
12422.300	4		8047.837	$19986_{6}^{6} - 28034_{5}$	12216.424	1		8183.462	$24274_{0}^{0} - 32458_{4}$
12419.161	2		8049.871	$19516_{2}^{2} - 27566_{2}$	12211.865	2		8186.517	$18069_{3}^{3} - 26255_{4}$
12415.160	5		8052.465	$16346_{4}^{4} - 24399_{3}$	12206.894	7		8189.851	$3687_{2} - 11877_{1}^{1}$
12406.195	1		8058.284	$20214_{3}^{3} - 28273_{2}$	12188.866	1		8201.964	$18053_{4}^{4} - 26255_{4}$
12397.849	4		8063.709	$19503_{3}^{3} - 27566_{2}$	12182.019	3		8206.574	$9804_{5} - 18011_{0}^{0}$
12396.828	0		8064.373	$21077_{0}^{0} - 29141_{5}$	12178.456	2		8208.975	$24084_{6}^{6} - 32293_{5}$
12381.813	3		8074.152	$12847_{3} - 20922_{2}^{2}$	12171.815	4		8213.454	$4961_{4} - 13175_{4}^{4}$
12378.451	1		8076.345	$18431_{3} - 26508_{3}^{3}$	12167.821	3		8216.150	$11601_{1} - 19817_{1}^{1}$
12378.290	2		8076.450	$17959_{4} - 26036_{3}^{3}$	12166.851	0		8216.805	$21539_{4}^{4} - 29756_{4}$
12377.115	0		8077.217	$18574_{1} - 26651_{2}^{2}$	12161.908	0		8220.144	$18431_{3} - 26651_{2}^{2}$
12372.007	2		8080.552	$24701_{0}^{0} - 32781_{4}$	12143.705	0		8232.466	$15970_{3} - 24202_{4}^{4}$
12364.267	1		8085.610	$19948_{4}^{4} - 28034_{5}$	12140.955	3		8234.331	$18809_{4}^{4} - 27044_{3}$
12359.625	2		8088.647	$17959_{4} - 26048_{4}^{4}$	12140.751	1		8234.469	$24561_{3}^{3} - 32796_{3}$
12355.491	0		8091.353	$24202_{4}^{4} - 32293_{5}$	12139.017	1		8235.645	$8111_{4} - 16346_{4}^{4}$
12349.478	2		8095.293	$19516_{2}^{2} - 27612_{3}$	12132.020	3		8240.395	$20322_{0}^{0} - 28562_{4}$
12348.314	0		8096.056	$23916_{4}^{4} - 32012_{4}$	12129.427	5		8242.157	$13297_{4} - 21539_{4}^{4}$
12346.884	0		8096.994	$21738_{2}^{2} - 29835_{3}$	12128.913	1		8242.506	$21890_{3}^{3} - 30132_{2}$
12338.612	0		8102.422	$18549_{2} - 26651_{2}^{2}$	12127.302	8		8243.601	$0_{2} - 8243_{2}^{2}$
12337.998	7		8102.825	$6362_{2} - 14465_{2}^{2}$	12126.918	1		8243.862	$24307_{2}^{2} - 32551_{3}$
12330.800	1		8107.555	$20423_{1}^{1} - 28531_{2}$	12126.419	5		8244.201	$18011_{0}^{0} - 26255_{4}$
12329.207	2		8108.603	$22399_{0}^{0} - 30508_{5}$	12119.644	3		8248.810	$9804_{5} - 18053_{4}^{4}$
12328.492	1		8109.073	$21902_{4}^{4} - 30011_{3}$	12117.950	0		8249.963	$22508_{2}^{2} - 30758_{2}$
12328.408	0		8109.128	$19503_{3}^{3} - 27612_{3}$	12113.062	0		8253.292	$21165_{3}^{3} - 29418_{2}$
12323.962	0		8112.054	$21902_{4}^{4} - 30014_{4}$	12109.655	0		8255.614	$24202_{4}^{4} - 32458_{4}$
12322.400	1		8113.082	$24850_{6}^{6} - 32963_{5}$	12109.434	3		8255.765	$20423_{1}^{1} - 28679_{2}$
12321.120	3		8113.925	$18930_{3}^{3} - 27044_{3}$	12109.313	1		8255.847	$23015_{0}^{0} - 31271_{5}$
12318.050	3		8115.947	$15493_{4} - 23609_{0}^{0}$	12099.785	2		8262.348	$24701_{0}^{0} - 32963_{5}$
12316.913	2		8116.696	$7502_{3} - 15618_{3}^{3}$	12083.777	0		8273.294	$21738_{2}^{2} - 30011_{3}$
12316.372	1		8117.053	$24084_{6}^{6} - 32202_{5}$	12082.221	2		8274.359	$23655_{4}^{3} - 31929_{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
12075.537	1		8278.939	$20566^{3}_{4} - 28845_{4}$	11829.730	4		8450.965	$15970_{3} - 24421^{3}_{3}$
12074.667	2		8279.536	$19948^{3}_{4} - 28227_{4}$	11829.640	5		8451.029	$13088_{3} - 21539^{2}_{4}$
12066.559	0		8285.099	$23916^{3}_{4} - 32202_{5}$	11827.583	4		8452.499	$17073_{1} - 25526^{0}_{1}$
12059.895	0		8289.677	$15970_{3} - 24259^{2}_{4}$	11824.901	1		8454.416	$16217^{2}_{2} - 24671_{2}$
12058.422	0		8290.690	$11241^{3}_{3} - 19532_{4}$	11822.640	4		8456.033	$19817^{0}_{1} - 28273_{2}$
12055.291	0		8292.843	$21668^{0}_{1} - 29961_{1}$	11821.839	1		8456.606	$22508^{2}_{2} - 30964_{3}$
12051.267	1		8295.612	$22248^{2}_{2} - 30544_{2}$	11821.500	0		8456.848	$7280_{2} - 15736^{0}_{1}$
12050.486	0		8296.150	$18699_{2} - 26995^{3}_{3}$	11818.546	1		8458.962	$20423^{0}_{1} - 28882_{2}$
12038.242	1		8304.588	$19039^{2}_{2} - 27343_{3}$	11811.926	2		8463.703	$19516^{2}_{2} - 27980_{3}$
12037.639	4		8305.004	$17398_{3} - 25703^{2}_{2}$	11811.055	0		8464.327	$20214^{3}_{3} - 28679_{2}$
12020.095	1		8317.125	$12847_{3} - 21165^{3}_{3}$	11804.617	6		8468.943	$5563_{1} - 14032^{2}_{2}$
12018.718	7		8318.078	$16346^{2}_{4} - 24664_{3}$	11804.116	3		8469.303	$21903^{3}_{7} - 30372_{6}$
12018.054	4		8318.538	$15863_{2} - 24182^{2}_{2}$	11802.102	1		8470.748	$13175^{2}_{4} - 21645_{4}$
12015.950	4		8319.994	$23306^{2}_{6} - 31626_{5}$	11801.327	0		8471.304	$11241^{3}_{3} - 19713_{3}$
12015.478	1		8320.321	$19532_{4} - 27852^{0}_{0}$	11793.069	1		8477.236	$24259^{2}_{4} - 32737_{5}$
12007.313	0		8325.979	$23603^{2}_{2} - 31929_{3}$	11792.645	1		8477.541	$19503^{3}_{3} - 27980_{3}$
12005.953	1		8326.922	$18053^{2}_{4} - 26380_{5}$	11790.382	1		8479.168	$17411^{3}_{3} - 25890_{2}$
11986.392	0		8340.511	$23655^{2}_{4} - 31995_{4}$	11779.528	2		8486.981	$16351_{0} - 24838^{0}_{1}$
11980.135	1		8344.867	$22163^{2}_{4} - 30508_{5}$	11775.163	4		8490.127	$10783^{2}_{2} - 19273_{2}$
11976.025	1		8347.731	$20214^{3}_{3} - 28562_{4}$	11772.698	1		8491.905	$23521^{3}_{3} - 32012_{4}$
11974.134	1		8349.049	$24202^{2}_{4} - 32551_{3}$	11761.537	1		8499.963	$20922^{2}_{2} - 29422_{1}$
11961.578	1		8357.813	$23655^{2}_{4} - 32012_{4}$	11746.174	1		8511.080	$19273_{2} - 27784^{2}_{2}$
11956.759	0		8361.182	$22396^{0}_{1} - 30758_{2}$	11729.339	1		8523.296	$14465^{2}_{2} - 22988_{2}$
11955.885	0		8361.793	$18699_{2} - 27061^{2}_{2}$	11729.339	1		8523.296	$20322^{0}_{0} - 28845_{4}$
11952.063	4		8364.467	$19227^{0}_{6} - 27591_{5}$	11723.279	2		8527.702	$19039^{2}_{2} - 27566_{2}$
11946.618	1		8368.279	$20566^{3}_{4} - 28934_{3}$	11722.487	1		8528.278	$16351_{0} - 24880^{0}_{1}$
11945.362	6		8369.159	$18011^{0}_{0} - 26380_{5}$	11712.220	3		8535.754	$17354^{0}_{1} - 25890_{2}$
11942.130	5		8371.424	$15618^{3}_{3} - 23990_{2}$	11709.471	0		8537.758	$24561^{3}_{3} - 33099_{3}$
11940.638	7		8372.470	$2869_{3} - 11241^{3}_{3}$	11704.645	1		8541.278	$23916^{3}_{4} - 32458_{4}$
11927.809	0		8381.475	$18809^{2}_{4} - 27191_{5}$	11703.457	7		8542.145	$15490^{0}_{0} - 24032_{4}$
11916.586	3		8389.369	$22163^{2}_{4} - 30552_{4}$	11698.831	3		8545.523	$13962_{1} - 22508^{2}_{2}$
11910.840	0		8393.416	$22877^{0}_{0} - 31271_{5}$	11695.263	2		8548.130	$17959_{4} - 26508^{3}_{3}$
11909.862	1		8394.105	$19948^{3}_{4} - 28342_{5}$	11694.285	3		8548.845	$21738^{2}_{2} - 30286_{1}$
11904.795	2		8397.678	$19273_{2} - 27670^{3}_{3}$	11694.000	2		8549.053	$13847_{2} - 22396^{0}_{1}$
11899.837	4		8401.177	$13847_{2} - 22248^{2}_{2}$	11690.334	0		8551.734	$22877^{0}_{1} - 31429_{1}$
11894.942	3		8404.634	$12847_{3} - 21252^{2}_{2}$	11682.909	1		8557.169	$15863_{2} - 24421^{3}_{3}$
11887.357	1		8409.997	$19948^{3}_{4} - 28358_{3}$	11678.305	1		8560.543	$18699_{2} - 27260^{3}_{3}$
11886.085	2		8410.897	$22141^{3}_{3} - 30552_{4}$	11673.465	1		8564.092	$18431_{3} - 26995^{3}_{3}$
11884.530	5		8411.997	$11802_{2} - 20214^{3}_{3}$	11667.638	5		8568.369	$16346^{2}_{4} - 24915_{3}$
11882.776	2		8413.239	$15618^{3}_{3} - 24032_{4}$	11661.167	3		8573.124	$19039^{2}_{2} - 27612_{3}$
11878.611	2		8416.189	$19532_{4} - 27948^{2}_{4}$	11657.259	1		8575.998	$22669^{3}_{3} - 31245_{2}$
11874.629	2		8419.011	$22338^{3}_{3} - 30758_{2}$	11653.134	1		8579.034	$24202^{2}_{4} - 32781_{4}$
11873.851	2		8419.563	$13175^{2}_{4} - 21594_{3}$	11648.509	1		8582.440	$21252^{2}_{2} - 29835_{3}$
11870.629	1		8421.848	$17501^{0}_{0} - 25923_{4}$	11641.195	1		8587.832	$17166_{5} - 25753^{0}_{0}$
11868.045	0		8423.682	$15493_{4} - 23916^{3}_{4}$	11636.590	2		8591.231	$18930^{3}_{3} - 27521_{4}$
11864.247	7		8426.378	$3687_{2} - 12114^{2}_{2}$	11636.496	1		8591.300	$21165^{3}_{3} - 29756_{4}$
11858.382	4		8430.546	$14206^{2}_{4} - 22637_{3}$	11636.155	3		8591.552	$15970_{3} - 24561^{3}_{3}$
11853.098	1		8434.304	$13962_{1} - 22396^{0}_{1}$	11634.601	4		8592.699	$13297_{4} - 21890^{3}_{3}$
11848.313	1		8437.710	$23603^{2}_{2} - 32041_{2}$	11630.479	0		8595.745	$22669^{3}_{3} - 31265_{3}$
11840.529	0		8443.257	$23093^{2}_{2} - 31537_{3}$	11618.190	3		8604.837	$13297_{4} - 21902^{2}_{4}$
11839.689	1		8443.856	$15863_{2} - 24307^{2}_{2}$	11617.462	5		8605.376	$14032^{2}_{2} - 22637_{3}$
11837.186	2		8445.642	$19588^{0}_{0} - 28034_{5}$	11615.211	1		8607.044	$21077^{0}_{0} - 29684_{5}$
11836.168	0		8446.368	$18549_{2} - 26995^{3}_{3}$	11609.914	2		8610.971	$8800_{4} - 17411^{3}_{3}$
11834.938	1		8447.246	$16217^{2}_{2} - 24664_{3}$	11606.246	1		8613.692	$24182^{2}_{2} - 32796_{3}$
11831.941	0		8449.386	$22877^{0}_{0} - 31326_{4}$	11605.473	3		8614.266	$19948^{3}_{4} - 28562_{4}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
11602.596	0		8616.402	$22141_{3}^{3} - 30758_{2}$	11411.321	1		8760.829	$24202_{4}^{4} - 32963_{5}$
11600.761	0		8617.765	$18699_{2} - 27317_{3}^{3}$	11402.009	0		8767.984	$18549_{2} - 27317_{3}^{3}$
11600.523	0		8617.942	$21668_{1}^{1} - 30286_{1}$	11386.235	5		8780.130	$15618_{3}^{3} - 24399_{3}$
11597.002	1		8620.558	$11802_{2} - 20423_{1}^{0}$	11384.471	3		8781.491	$15493_{4} - 24274_{0}^{0}$
11595.985	6		8621.314	$16783_{4}^{4} - 25405_{4}$	11383.920	3		8781.916	$18809_{4}^{4} - 27591_{5}$
11589.953	4		8625.801	$16554_{6} - 25180_{7}^{7}$	11371.299	1		8791.663	$24307_{2}^{2} - 33099_{3}$
11584.866	0		8629.589	$17073_{1} - 25703_{2}^{2}$	11369.091	2		8793.370	$24274_{0}^{0} - 33068_{6}$
11584.675	1		8629.731	$18431_{3} - 27061_{2}^{2}$	11366.315	2		8795.518	$14481_{6}^{6} - 23277_{5}$
11583.465	0		8630.633	$20214_{3}^{3} - 28845_{4}$	11358.564	1		8801.520	$22163_{4}^{4} - 30964_{3}$
11577.991	1		8634.713	$23916_{4}^{4} - 32551_{3}$	11358.499	3		8801.570	$13088_{3} - 21890_{3}^{3}$
11575.518	4		8636.558	$18930_{3}^{3} - 27566_{2}$	11357.450	0		8802.383	$18809_{4}^{4} - 27612_{3}$
11573.652	1		8637.950	$17398_{3} - 26036_{3}^{3}$	11356.910	0		8802.802	$22338_{3}^{3} - 31141_{3}$
11571.485	5		8639.568	$19588_{0}^{0} - 28227_{4}$	11356.608	1		8803.036	$23655_{4}^{4} - 32458_{4}$
11558.214	3		8649.488	$13088_{3} - 21738_{2}^{2}$	11354.715	8		8804.503	$6362_{2} - 15166_{3}^{3}$
11557.337	3		8650.144	$17398_{3} - 26048_{4}^{4}$	11352.128	2		8806.510	$21738_{2}^{2} - 30544_{2}$
11557.225	0		8650.228	$21902_{4}^{4} - 30552_{4}$	11351.924	6		8806.668	$19227_{6}^{6} - 28034_{5}$
11554.767	0		8652.068	$24084_{6}^{6} - 32737_{5}$	11346.494	1		8810.883	$14204_{5} - 23015_{0}^{0}$
11551.616	0		8654.428	$21890_{3}^{3} - 30544_{2}$	11343.709	4		8813.046	$11241_{3}^{3} - 20054_{2}$
11543.824	2		8660.270	$13847_{2} - 22508_{2}^{2}$	11342.857	3		8813.708	$13088_{3} - 21902_{4}^{4}$
11541.028	0		8662.368	$21890_{3}^{3} - 30552_{4}$	11335.713	0		8819.262	$20322_{0}^{0} - 29141_{5}$
11536.071	2		8666.090	$17224_{2}^{2} - 25890_{2}$	11332.045	4		8822.117	$13847_{2} - 22669_{3}^{3}$
11530.938	3		8669.948	$21165_{3}^{3} - 29835_{3}$	11331.384	1		8822.632	$14226_{0} - 23049_{1}^{1}$
11526.460	4		8673.316	$14204_{5} - 22877_{0}^{0}$	11326.973	3		8826.067	$14206_{4}^{4} - 23032_{4}$
11517.393	1		8680.144	$23113_{4}^{4} - 31793_{4}$	11323.876	0		8828.481	$18431_{3} - 27260_{3}^{3}$
11516.456	5		8680.850	$5563_{1} - 14243_{1}^{1}$	11321.659	2		8830.210	$8243_{2}^{2} - 17073_{1}$
11514.959	4		8681.979	$18930_{3}^{3} - 27612_{3}$	11321.249	2		8830.530	$17959_{4} - 26790_{4}^{4}$
11512.063	3		8684.163	$5563_{1} - 14247_{0}^{0}$	11307.314	3		8841.412	$19516_{2}^{2} - 28358_{3}$
11511.566	6		8684.538	$20867_{7}^{7} - 29552_{6}$	11303.787	5		8844.171	$13297_{4} - 22141_{3}^{3}$
11511.286	1		8684.749	$23609_{0}^{0} - 32293_{5}$	11303.544	4		8844.361	$7502_{3} - 16346_{4}^{4}$
11510.028	3		8685.698	$18809_{4}^{4} - 27495_{4}$	11303.544	4		8844.361	$17411_{3}^{3} - 26255_{4}$
11506.079	1		8688.679	$24274_{0}^{0} - 32963_{5}$	11301.136	1		8846.246	$21165_{3}^{3} - 30011_{3}$
11502.185	3		8691.621	$12847_{3} - 21539_{4}^{4}$	11297.608	1		8849.008	$23609_{0}^{0} - 32458_{4}$
11501.478	4		8692.155	$13945_{3}^{3} - 22637_{3}$	11289.645	2		8855.250	$19503_{3}^{3} - 28358_{3}$
11494.068	2		8697.759	$15863_{2} - 24561_{3}^{3}$	11277.612	0		8864.698	$23916_{4}^{4} - 32781_{4}$
11489.885	5		8700.925	$8800_{4} - 17501_{0}^{0}$	11276.818	4		8865.322	$15166_{3}^{3} - 24032_{4}$
11478.781	1		8709.342	$15493_{4} - 24202_{4}^{4}$	11276.338	2		8865.700	$13297_{4} - 22163_{4}^{4}$
11476.910	0		8710.762	$18549_{2} - 27260_{3}^{3}$	11273.574	4		8867.873	$21890_{3}^{3} - 30758_{2}$
11476.074	1		8711.396	$17166_{5} - 25877_{4}^{4}$	11260.143	1		8878.451	$24084_{6}^{6} - 32963_{5}$
11475.757	3		8711.637	$18809_{4}^{4} - 27521_{4}$	11258.986	4		8879.363	$17501_{0}^{0} - 26380_{5}$
11472.823	2		8713.865	$19817_{1}^{1} - 28531_{2}$	11258.130	3		8880.038	$21252_{2}^{2} - 30132_{2}$
11471.073	0		8715.194	$7502_{3} - 16217_{2}^{2}$	11255.513	0		8882.103	$23113_{4}^{4} - 31995_{4}$
11465.039	5		8719.781	$11802_{2} - 20522_{2}^{2}$	11255.092	3		8882.435	$17166_{5} - 26048_{4}^{4}$
11464.786	2		8719.973	$20214_{3}^{3} - 28934_{3}$	11249.018	0		8887.231	$17224_{2}^{2} - 26111_{1}$
11458.461	1		8724.787	$19503_{3}^{3} - 28227_{4}$	11246.685	1		8889.075	$20214_{3}^{3} - 29104_{4}$
11455.545	1d		8727.008	$18069_{3}^{3} - 26796_{3}$	11245.412	2		8890.081	$12847_{3} - 21738_{2}^{2}$
11444.419	2		8735.492	$17073_{1} - 25809_{1}^{1}$	11238.982	2		8895.167	$23306_{6}^{6} - 32202_{5}$
11442.751	1		8736.765	$14465_{2}^{2} - 23201_{3}$	11238.344	0		8895.672	$20522_{2}^{2} - 29418_{2}$
11432.593	4		8744.528	$14243_{1}^{1} - 22988_{2}$	11236.858	1		8896.849	$24202_{4}^{4} - 33099_{3}$
11429.704	6		8746.738	$10526_{3}^{3} - 19273_{2}$	11233.671	2		8899.373	$20522_{2}^{2} - 29422_{1}$
11427.901	1		8748.118	$18699_{2} - 27447_{2}^{2}$	11230.255	9		8902.080	$5563_{1} - 14465_{2}^{2}$
11426.433	0		8749.242	$22877_{0}^{0} - 31626_{5}$	11225.532	3		8905.825	$15863_{2} - 24769_{3}^{3}$
11420.044	1		8754.137	$19588_{0}^{0} - 28342_{5}$	11221.176	1		8909.282	$14204_{5} - 23113_{4}^{4}$
11419.693	1		8754.406	$17501_{0}^{0} - 26255_{4}$	11215.651	2		8913.671	$20737_{1}^{1} - 29650_{2}$
11417.309	3		8756.234	$19516_{2}^{2} - 28273_{2}$	11212.583	1		8916.110	$22877_{0}^{0} - 31793_{4}$
11415.542	1		8757.589	$22508_{2}^{2} - 31265_{3}$	11211.484	0		8916.984	$24182_{2}^{2} - 33099_{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
11205.579	4		8921.683	$11601_1 - 20522^{?}_{2}$	10956.004	1		9124.916	$18549_2 - 27674^{?}_{2}$
11203.831	1		8923.075	$13175^{?}_{4} - 22098_4$	10948.154	4		9131.459	$13962_1 - 23093^{?}_{2}$
11195.293	1		8929.880	$10783^{?}_{2} - 19713_3$	10942.432	3		9136.234	$16554_6 - 25690^{?}_{0}$
11189.689	2		8934.352	$11802_2 - 20737^{?}_{1}$	10942.432	3		9136.234	$11601_1 - 20737^{?}_{1}$
11185.925	5		8937.359	$7280_2 - 16217^{?}_{2}$	10938.909	1		9139.176	$16783^{?}_{4} - 25923_4$
11184.628	0		8938.395	$22855^{?}_{3} - 31793_4$	10923.725	2		9151.880	$21738^{?}_{2} - 30889_1$
11179.105	3		8942.811	$11601_1 - 20543^{?}_{0}$	10913.581	3		9160.386	$13088_3 - 22248^{?}_{2}$
11171.377	1		8948.997	$17847^{?}_{2} - 26796_3$	10911.329	2		9162.277	$19516^{?}_{2} - 28679_2$
11162.099	3		8956.436	$14032^{?}_{2} - 22988_2$	10901.193	4		9170.796	$18809^{?}_{4} - 27980_3$
11157.560	1		8960.079	$18011^{?}_{0} - 26971_4$	10894.875	1		9176.114	$19503^{?}_{3} - 28679_2$
11151.802	0		8964.706	$17398_3 - 26363^{?}_{2}$	10890.287	4		9179.980	$18011^{?}_{0} - 27191_5$
11148.272	0		8967.544	$21165^{?}_{3} - 30132_2$	10887.285	0		9182.511	$23916^{?}_{4} - 33099_3$
11147.197	0		8968.409	$21539^{?}_{4} - 30508_5$	10883.902	1		9185.365	$22141^{?}_{3} - 31326_4$
11139.881	3		8974.299	$19588^{?}_{0} - 28562_4$	10883.233	0		9185.930	$22855^{?}_{3} - 32041_2$
11138.971	1		8975.032	$15863_2 - 24838^{?}_{1}$	10882.569	1		9186.490	$10526^{?}_{3} - 19713_3$
11138.821	4		8975.153	$18069^{?}_{3} - 27044_3$	10882.153	0		9186.842	$23015^{?}_{0} - 32202_5$
11134.469	1		8978.661	$22163^{?}_{4} - 31141_3$	10869.967	4		9197.141	$17847^{?}_{2} - 27044_3$
11128.287	5		8983.649	$4961_4 - 13945^{?}_{3}$	10866.949	1		9199.695	$16554_6 - 25753^{?}_{0}$
11125.541	4		8985.866	$18011^{?}_{0} - 26997_6$	10864.601	2		9201.683	$13847_2 - 23049^{?}_{1}$
11124.745	2		8986.509	$19948^{?}_{4} - 28934_3$	10862.508	4		9203.456	$20214^{?}_{3} - 29418_2$
11124.026	3		8987.090	$23306^{?}_{6} - 32293_5$	10857.355	1		9207.824	$15493_4 - 24701^{?}_{0}$
11114.372	0		8994.896	$20423^{?}_{1} - 29418_2$	10853.458	3		9211.130	$8800_4 - 18011^{?}_{0}$
11114.157	3		8995.070	$14206^{?}_{4} - 23201_3$	10844.405	4		9218.820	$17166_5 - 26384^{?}_{4}$
11101.804	5		9005.079	$9804_5 - 18809^{?}_{4}$	10837.713	0		9224.512	$20737^{?}_{1} - 29961_1$
11098.788	2		9007.526	$13847_2 - 22855^{?}_{3}$	10826.499	0		9234.067	$19039^{?}_{2} - 28273_2$
11094.494	2		9011.012	$15970_3 - 24981^{?}_{3}$	10813.573	4		9245.105	$2869_3 - 12114^{?}_{2}$
11092.159	1		9012.909	$21539^{?}_{4} - 30552_4$	10813.395	6		9245.257	$4961_4 - 14206^{?}_{4}$
11090.735	3		9014.066	$19516^{?}_{2} - 28531_2$	10812.281	5		9246.209	$13847_2 - 23093^{?}_{2}$
11073.735	3		9027.904	$19503^{?}_{3} - 28531_2$	10807.344	3		9250.433	$13088_3 - 22338^{?}_{3}$
11071.478	1		9029.745	$13847_2 - 22877^{?}_{1}$	10803.918	4		9253.367	$8800_4 - 18053^{?}_{4}$
11057.009	4		9041.561	$13297_4 - 22338^{?}_{3}$	10802.535	1		9254.551	$14226_0 - 23481^{?}_{1}$
11054.989	4		9043.213	$13945^{?}_{3} - 22988_2$	10800.157	4		9256.589	$6362_2 - 15618^{?}_{3}$
11051.898	7		9045.742	$15618^{?}_{3} - 24664_3$	10800.053	5		9256.678	$13945^{?}_{3} - 23201_3$
11050.978	1		9046.495	$23916^{?}_{4} - 32963_5$	10788.554	1		9266.544	$22508^{?}_{2} - 31774_3$
11046.224	4		9050.389	$18930^{?}_{3} - 27980_3$	10786.371	3		9268.420	$20566^{?}_{4} - 29835_3$
11043.146	3		9052.911	$15618^{?}_{3} - 24671_2$	10785.912	4		9268.814	$8800_4 - 18069^{?}_{3}$
11042.986	2		9053.042	$13088_3 - 22141^{?}_{3}$	10779.100	2		9274.672	$18069^{?}_{3} - 27343_3$
11036.319	4		9058.511	$16346^{?}_{4} - 25405_4$	10778.635	1		9275.072	$23521^{?}_{3} - 32796_3$
11035.091	0		9059.519	$19503^{?}_{3} - 28562_4$	10776.984	4		9276.493	$15493_4 - 24769^{?}_{3}$
11031.608	1		9062.380	$21902^{?}_{4} - 30964_3$	10774.344	1		9278.766	$23015^{?}_{0} - 32293_5$
11028.089	1		9065.271	$19817^{?}_{1} - 28882_2$	10759.049	1		9291.956	$21252^{?}_{2} - 30544_2$
11021.768	3		9070.470	$14206^{?}_{4} - 23277_5$	10754.878	0		9295.560	$21077^{?}_{6} - 30372_6$
11016.787	4		9074.571	$13088_3 - 22163^{?}_{4}$	10754.328	4		9296.035	$15618^{?}_{3} - 24915_3$
11001.800	3		9086.933	$13962_1 - 23049^{?}_{1}$	10752.475	2		9297.637	$18930^{?}_{3} - 28227_4$
11000.900	1		9087.676	$13945^{?}_{3} - 23032_4$	10749.434	3d		9300.268	$17959_4 - 27260^{?}_{3}$
10999.236	0		9089.051	$21668^{?}_{1} - 30758_2$	10744.370	2		9304.651	$14465^{?}_{2} - 23769_1$
10983.633	5		9101.963	$13297_4 - 22399^{?}_{6}$	10732.245	5		9315.163	$12847_3 - 22163^{?}_{4}$
10982.982	3		9102.502	$22163^{?}_{4} - 31265_3$	10726.926	8		9319.782	$2558_0 - 11877^{?}_{1}$
10982.910	4		9102.562	$14204_5 - 23306^{?}_{6}$	10725.418	6		9321.092	$11601_1 - 20922^{?}_{2}$
10976.518	0		9107.863	$22163^{?}_{4} - 31271_5$	10720.051	0		9325.759	$22669^{?}_{3} - 31995_4$
10974.389	1		9109.630	$17398_3 - 26508^{?}_{3}$	10707.531	1		9336.663	$15970_3 - 25306^{?}_{2}$
10965.252	1		9117.220	$15863_2 - 24981^{?}_{3}$	10700.359	1		9342.921	$18930^{?}_{3} - 28273_2$
10964.829	1		9117.572	$20566^{?}_{4} - 29684_5$	10700.194	0		9343.065	$22669^{?}_{3} - 32012_4$
10963.975	1		9118.282	$10414^{?}_{4} - 19532_4$	10690.175	1		9351.822	$15970_3 - 25321^{?}_{3}$
10962.885	5		9119.189	$11802_2 - 20922^{?}_{2}$	10678.631	1		9361.931	$20322^{?}_{6} - 29684_5$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
10678.369	3		9362.161	$11802_2 - 21165_3^3$	10469.974	1		9548.506	$18809_4^3 - 28358_3$
10668.486	2		9370.834	$7795_4^3 - 17166_5$	10477.700	1		9541.465	$20214_3^3 - 29756_4$
10666.640	0		9372.456	$13297_4 - 22669_3^3$	10481.173	0		9538.303	$20423_1^1 - 29961_1$
10664.767	0		9374.102	$22163_4^3 - 31537_3$	10450.448	3		9566.346	$19986_6^6 - 29552_6$
10664.234	5		9374.570	$6362_2 - 15736_1^1$	10439.505	3		9576.374	$16346_4^4 - 25923_4$
10663.178	1		9375.499	$21890_3^3 - 31265_3$	10436.870	2		9578.792	$15863_2 - 25442_3^3$
10651.842	0		9385.476	$15970_3 - 25355_4^3$	10435.094	3		9580.422	$18011_0^0 - 27591_5$
10649.651	1		9387.407	$21165_3^3 - 30552_4$	10434.109	1		9581.326	$13088_3 - 22669_3^3$
10646.516	2		9390.171	$8111_4 - 17501_0^0$	10424.126	1		9590.502	$22338_3^3 - 31929_3$
10640.329	1		9395.631	$22141_3^3 - 31537_3$	10421.511	0		9592.909	$21165_3^3 - 30758_2$
10629.842	2		9404.901	$14204_5 - 23609_0^0$	10417.881	1		9596.251	$22399_0^0 - 31995_4$
10615.008	4		9418.044	$18809_4^4 - 28227_4$	10412.996	4		9600.753	$18930_3^3 - 28531_2$
10613.388	4		9419.481	$13088_3 - 22508_2^2$	10412.507	0		9601.204	$19817_1^1 - 29418_2$
10609.955	1		9422.529	$9804_5 - 19227_6^6$	10410.424	2		9603.125	$7795_4^3 - 17398_3$
10607.108	1		9425.058	$21539_4^4 - 30964_3$	10408.497	1		9604.903	$19817_1^1 - 29422_1$
10605.464	4		9426.519	$18069_3^3 - 27495_4$	10403.056	1		9609.927	$20522_2^2 - 30132_2$
10601.345	2		9430.182	$23306_6^6 - 32737_5$	10401.401	1		9611.456	$22163_4^3 - 31774_3$
10600.597	1		9430.847	$21077_0^0 - 30508_5$	10392.041	0		9620.113	$20214_3^3 - 29835_3$
10596.909	1		9434.129	$20322_0^0 - 29756_4$	10387.498	1		9624.320	$17166_5 - 26790_4^4$
10595.264	1		9435.594	$22338_3^3 - 31774_3$	10378.821	1		9632.366	$18930_3^3 - 28562_4$
10594.780	1		9436.025	$20214_3^3 - 29650_2$	10378.146	1		9632.993	$17411_3^3 - 27044_3$
10592.495	0		9438.061	$23113_4^4 - 32551_3$	10377.490	2		9633.601	$13847_2 - 23481_1^1$
10591.350	2		9439.081	$20522_2^2 - 29961_1$	10376.812	0		9634.231	$20214_3^3 - 29849_4$
10587.100	3		9442.870	$15863_2 - 25306_2^2$	10376.020	1		9634.966	$21902_4^4 - 31537_3$
10586.930	1		9443.022	$23015_0^0 - 32458_4$	10369.528	4		9640.998	$13962_1 - 23603_2^2$
10585.524	0		9444.276	$23655_4^4 - 33099_3$	10362.966	1		9647.103	$21890_3^3 - 31537_3$
10585.028	2		9444.718	$20566_4^4 - 30011_3$	10358.167	3		9651.573	$11601_1 - 21252_2^2$
10581.711	1		9447.679	$13962_1 - 23410_0^0$	10357.615	0		9652.087	$22141_3^3 - 31793_4$
10579.481	1		9449.670	$11802_2 - 21252_2^2$	10350.334	1		9658.877	$18614_1^1 - 28273_2$
10578.136	1		9450.872	$14204_5 - 23655_4^4$	10349.051	5		9660.074	$12847_3 - 22508_2^2$
10576.362	2		9452.457	$18069_3^3 - 27521_4$	10346.540	3		9662.419	$15863_2 - 25526_1^1$
10570.129	0		9458.031	$15863_2 - 25321_3^3$	10345.899	0		9663.017	$17398_3 - 27061_2^2$
10569.146	0		9458.911	$23609_0^0 - 33068_6$	10334.926	3		9673.277	$13847_2 - 23521_3^3$
10567.177	1		9460.673	$12114_2^2 - 21575_2$	10316.894	4		9690.184	$17501_0^0 - 27191_5$
10565.306	6		9462.349	$13175_4^4 - 22637_3$	10314.894	2		9692.063	$20322_0^0 - 30014_4$
10559.107	0		9467.904	$18053_4^4 - 27521_4$	10308.549	5		9698.028	$19986_6^6 - 29684_5$
10556.454	7		9470.283	$17501_0^0 - 26971_4$	10304.082	2		9702.233	$22338_3^3 - 32041_2$
10554.837	4		9471.734	$16783_4^4 - 26255_4$	10294.714	0		9711.062	$17959_4 - 27670_3^3$
10553.890	1		9472.584	$15970_3 - 25442_3^3$	10293.052	4		9712.630	$14204_5 - 23916_4^4$
10545.902	1		9479.759	$17398_3 - 26878_3^3$	10285.485	0		9719.775	$17847_2^2 - 27566_2$
10545.290	2		9480.309	$12114_2^2 - 21594_3$	10283.118	4		9722.012	$7502_3 - 17224_2^2$
10540.958	5		9484.205	$18011_0^0 - 27495_4$	10278.860	1		9726.040	$21539_4^4 - 31265_3$
10536.866	2		9487.888	$15493_4 - 24981_3^3$	10275.694	0		9729.036	$20922_2^2 - 30651_3$
10533.385	3		9491.024	$12847_3 - 22338_3^3$	10271.191	2		9733.302	$15970_3 - 25703_2^2$
10527.789	5		9496.069	$17501_0^0 - 26997_6$	10268.554	1		9735.801	$19948_4^4 - 29684_5$
10527.134	1		9496.660	$17847_2^2 - 27343_3$	10257.374	5		9746.413	$14243_1^1 - 23990_2$
10518.190	2		9504.735	$20867_7^7 - 30372_6$	10255.580	2		9748.118	$15166_3^3 - 24915_3$
10512.209	5		9510.143	$18011_0^0 - 27521_4$	10250.684	4		9752.773	$18809_4^4 - 28562_4$
10502.592	4		9518.851	$13962_1 - 23481_1^1$	10247.561	4		9755.746	$13847_2 - 23603_2^2$
10498.496	5		9522.565	$14247_0^0 - 23769_1$	10241.779	2		9761.253	$23306_6^6 - 33068_6$
10495.610	1		9525.183	$14465_2^2 - 23990_2$	10236.031	4		9766.735	$13088_3 - 22855_3^3$
10494.843	6		9525.879	$14243_1^1 - 23769_1$	10223.662	3		9778.551	$13962_1 - 23741_1^1$
10492.255	6		9528.229	$10526_3^3 - 20054_2$	10218.434	5		9783.554	$9804_5 - 19588_0^0$
10487.427	1		9532.615	$18809_4^4 - 28342_5$	10214.442	1		9787.377	$21539_4^4 - 31326_4$
10459.723	4		9557.864	$13297_4 - 22855_3^3$	10211.538	2		9790.161	$13962_1 - 23752_2^2$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
10205.020	1		9796.414	$20214_3^3 - 30011_3$	9970.467	4		10026.872	$13175_4^4 - 23201_3$
10202.133	1		9799.186	$21738_2^2 - 31537_3$	9963.495	3		10033.888	$16346_4^3 - 26380_5$
10193.720	0		9807.273	$20737_1^0 - 30544_2$	9958.059	1		10039.365	$21890_3^3 - 31929_3$
10192.965	0		9808.000	$19948_4^4 - 29756_4$	9952.375	3		10045.099	$13945_3^3 - 23990_2$
10184.539	2		9816.114	$13297_4 - 23113_4^4$	9948.171	1		10049.344	$17398_3 - 27447_2^2$
10180.596	2		9819.916	$17224_2^2 - 27044_3$	9947.082	1		10050.444	$20322_5^5 - 30372_6$
10178.522	5		9821.917	$12847_3 - 22669_3^3$	9938.839	1		10058.779	$22399_5^5 - 32458_4$
10175.012	4		9825.305	$14206_4^4 - 24032_4$	9935.203	2		10062.461	$20867_7^7 - 30930_6$
10160.324	0		9839.509	$15863_2 - 25703_2^2$	9934.723	1		10062.947	$19948_4^4 - 30011_3$
10156.406	0		9843.305	$19039_2^2 - 28882_2$	9932.777	0		10064.918	$18614_1^1 - 28679_2$
10144.266	4		9855.084	$6362_2 - 16217_2^2$	9929.814	3		10067.922	$11601_1 - 21668_1^1$
10141.399	6		9857.870	$13175_4^4 - 23032_4$	9927.326	2		10070.445	$14204_5 - 24274_6^6$
10140.434	4		9858.808	$20867_7^7 - 30726_7$	9923.310	1		10074.520	$18574_1 - 28649_1^1$
10137.390	2		9861.769	$17398_3 - 27260_3^3$	9919.448	0		10078.443	$15970_3 - 26048_4^4$
10136.787	0		9862.355	$15493_4 - 25355_4^4$	9916.122	1		10081.823	$15493_4 - 25575_4^4$
10131.371	2		9867.628	$17398_3 - 27266_4^4$	9913.628	1		10084.360	$17411_3^3 - 27495_4$
10127.552	0		9871.349	$22141_3^3 - 32012_4$	9912.205	2		10085.807	$22877_6^6 - 32963_5$
10126.557	1		9872.318	$21902_4^4 - 31774_3$	9911.116	4		10086.915	$13945_3^3 - 24032_4$
10117.993	2		9880.675	$14204_5 - 24084_6^6$	9910.837	2		10087.199	$11802_2 - 21890_3^3$
10111.877	1		9886.651	$19948_4^4 - 29835_3$	9907.464	1q		10090.634	$17501_6^6 - 27591_5$
10107.000	0		9891.421	$21902_4^4 - 31793_4$	9906.948	1		10091.159	$16554_6 - 26645_6^6$
10105.549	0		9892.842	$17959_4 - 27852_6^6$	9904.771	1		10093.377	$21902_4^4 - 31995_4$
10105.080	2		9893.301	$13847_2 - 23741_1^1$	9902.362	4		10095.833	$19588_6^6 - 29684_5$
10104.307	1		9894.058	$16217_2^2 - 26111_1$	9898.356	2		10099.918	$17166_5 - 27266_4^4$
10102.579	2		9895.750	$19039_2^2 - 28934_3$	9896.050	3		10102.272	$13175_4^4 - 23277_5$
10098.624	1		9899.625	$22141_3^3 - 32041_2$	9873.821	3		10125.015	$18809_4^4 - 28934_3$
10097.463	1		9900.764	$19948_4^4 - 29849_4$	9872.635	1		10126.231	$22669_3^3 - 32796_3$
10089.136	7		9908.935	$7502_3 - 17411_3^3$	9871.998	2		10126.885	$15970_3 - 26096_3^3$
10089.136	7		9908.935	$16346_4^4 - 26255_4$	9868.922	2		10130.041	$8800_4 - 18930_3^3$
10086.406	2		9911.617	$18069_3^3 - 27980_3$	9867.890	2		10131.101	$7280_2 - 17411_3^3$
10083.788	5		9914.190	$19227_6^6 - 29141_5$	9865.451	1		10133.605	$17847_2^2 - 27980_3$
10082.880	4		9915.083	$15490_6^6 - 25405_4$	9862.127	0		10137.021	$11601_1 - 21738_2^2$
10082.719	1		9915.242	$19503_3^3 - 29418_2$	9855.745	3		10143.585	$9804_5 - 19948_4^4$
10082.719	1		9915.242	$18930_3^3 - 28845_4$	9840.923	1		10158.863	$18069_3^3 - 28227_4$
10081.227	1		9916.709	$18614_1^1 - 28531_2$	9838.008	1		10161.873	$21165_3^3 - 31326_4$
10078.906	1		9918.993	$17398_3 - 27317_3^3$	9837.258	0		10162.648	$14465_2^2 - 24627_1$
10065.187	1		9932.512	$17411_3^3 - 27343_3$	9833.424	8		10166.610	$3865_1 - 14032_2^2$
10056.214	2		9941.375	$20566_4^4 - 30508_5$	9826.452	7		10173.823	$5563_1 - 15736_1^1$
10054.960	1		9942.615	$8111_4 - 18053_4^4$	9819.178	1		10181.360	$9804_5 - 19986_6^6$
10053.375	0		9944.182	$7280_2 - 17224_2^2$	9814.962	1		10185.733	$20322_5^5 - 30508_5$
10048.041	3		9949.461	$15493_4 - 25442_3^3$	9813.153	0		10187.611	$16783_4^4 - 26971_4$
10045.316	2		9952.160	$18930_3^3 - 28882_2$	9812.698	7		10188.083	$8243_2^2 - 18431_3$
10039.364	7		9958.060	$8111_4 - 18069_3^3$	9801.710	0		10199.505	$14465_2^2 - 24664_3$
10039.101	2		9958.321	$14032_2^2 - 23990_2$	9797.252	1		10204.145	$18069_3^3 - 28273_2$
10033.226	2		9964.152	$19588_6^6 - 29552_6$	9796.200	5		10205.241	$4961_4 - 15166_3^3$
10029.545	1		9967.809	$20922_2^2 - 30889_1$	9789.508	2		10212.218	$17354_1^1 - 27566_2$
10011.398	3		9985.877	$20566_4^4 - 30552_4$	9785.356	0		10216.551	$18011_6^6 - 28227_4$
9999.614	0		9997.645	$21539_4^4 - 31537_3$	9782.141	0		10219.908	$13962_1 - 24182_2^2$
9998.963	2		9998.296	$14204_5 - 24202_4^4$	9769.538	2		10233.092	$15863_2 - 26096_3^3$
9992.656	3		10004.607	$18930_3^3 - 28934_3$	9764.606	0		10238.261	$15166_3^3 - 25405_4$
9991.846	0		10005.418	$13088_3 - 23093_2^2$	9757.222	1		10246.009	$12847_3 - 23093_2^2$
9989.939	2		10007.327	$12847_3 - 22855_3^3$	9754.019	1		10249.374	$15863_2 - 26113_2^2$
9987.636	6		10009.635	$8800_4 - 18809_4^4$	9753.597	2		10249.817	$21077_6^6 - 31326_4$
9985.052	5		10012.225	$16783_4^4 - 26796_3$	9746.464	7		10257.318	$3687_2 - 13945_3^3$
9974.693	3		10022.623	$18011_6^6 - 28034_5$	9743.565	4		10260.370	$16783_4^4 - 27044_3$

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TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
9738.624	1		10265.576	$12847_3 - 23113^{\circ}_{4}$	9436.815	2		10593.889	$11802_2 - 22396^{\circ}_{1}$
9736.216	1		10268.115	$18614^{\circ}_{1} - 28882_2$	9431.600	5		10599.747	$3865_1 - 14465^{\circ}_{2}$
9716.146	2		10289.325	$18069^{\circ}_{3} - 28358_3$	9430.921	0		10600.510	$17073_1 - 27674^{\circ}_{2}$
9702.272	3		10304.038	$15618^{\circ}_{3} - 25923_4$	9422.317	0		10610.190	$18069^{\circ}_{3} - 28679_2$
9701.580	1		10304.773	$18053^{\circ}_{4} - 28358_3$	9420.621	2u		10612.100	$14226_0 - 24838^{\circ}_{1}$
9700.564	7		10305.852	$2869_3 - 13175^{\circ}_{4}$	9417.463	0		10615.659	$19516^{\circ}_{2} - 30132_2$
9695.033	2		10311.732	$13297_4 - 23609^{\circ}_{0}$	9414.090	2		10619.462	$13297_4 - 23916^{\circ}_{4}$
9678.235	0		10329.629	$20214^{\circ}_{3} - 30544_2$	9409.353	4		10624.808	$16346^{\circ}_{4} - 26971_4$
9676.940	0		10331.012	$8243^{\circ}_{2} - 18574_1$	9399.091	7		10636.408	$7795^{\circ}_{4} - 18431_3$
9676.840	3		10331.118	$18011^{\circ}_{0} - 28342_5$	9392.268	0		10644.135	$15863_2 - 26508^{\circ}_{3}$
9676.107	2		10331.901	$19503^{\circ}_{3} - 29835_3$	9390.588	2		10646.040	$14204_5 - 24850^{\circ}_{6}$
9674.790	2		10333.308	$11241^{\circ}_{3} - 21575_2$	9388.933	4		10647.916	$11601_1 - 22248^{\circ}_{2}$
9664.700	6		10344.096	$3687_2 - 14032^{\circ}_{2}$	9388.933	4		10647.916	$18549_2 - 29197^{\circ}_{1}$
9663.647	1		10345.223	$13962_1 - 24307^{\circ}_{2}$	9384.103	0		10653.397	$14226_0 - 24880^{\circ}_{1}$
9656.439	1		10352.945	$11241^{\circ}_{3} - 21594_3$	9383.275	5		10654.337	$5563_1 - 16217^{\circ}_{2}$
9652.004	0		10357.702	$13297_4 - 23655^{\circ}_{4}$	9380.642	0		10657.327	$4961_4 - 15618^{\circ}_{3}$
9643.322	1		10367.027	$14032^{\circ}_{2} - 24399_3$	9366.797	0u		10673.079	$12847_3 - 23521^{\circ}_{3}$
9643.147	0		10367.215	$20522^{\circ}_{2} - 30889_1$	9357.253	0		10683.966	$17847^{\circ}_{2} - 28531_2$
9636.906	1		10373.929	$17073_1 - 27447^{\circ}_{2}$	9344.207	1u		10698.882	$8111_4 - 18809^{\circ}_{4}$
9632.647	6		10378.516	$3865_1 - 14243^{\circ}_{1}$	9344.096	1d		10699.009	$20566^{\circ}_{4} - 31265_3$
9630.745	1		10380.565	$14247^{\circ}_{0} - 24627_1$	9340.708	4		10702.890	$8800_4 - 19503^{\circ}_{3}$
9629.572	6		10381.830	$3865_1 - 14247^{\circ}_{0}$	9336.161	1q		10708.102	$14206^{\circ}_{4} - 24915_3$
9629.231	0		10382.198	$22399^{\circ}_{0} - 32781_4$	9320.071	0		10726.589	$13945^{\circ}_{3} - 24671_2$
9627.672	1		10383.879	$14243^{\circ}_{1} - 24627_1$	9317.727	3		10729.287	$10414^{\circ}_{4} - 21143_5$
9625.204	3		10386.541	$19986^{\circ}_{6} - 30372_6$	9310.448	2		10737.675	$16783^{\circ}_{4} - 27521_4$
9623.414	0		10388.473	$22163^{\circ}_{4} - 32551_3$	9307.899	4		10740.616	$19986^{\circ}_{6} - 30726_7$
9619.222	1		10393.001	$15970_3 - 26363^{\circ}_{2}$	9300.018	1		10749.718	$20214^{\circ}_{3} - 30964_3$
9608.933	1		10404.129	$11241^{\circ}_{3} - 21645_4$	9294.976	1		10755.549	$12847_3 - 23603^{\circ}_{2}$
9605.809	0		10407.513	$16783^{\circ}_{4} - 27191_5$	9289.564	5		10761.815	$9804_5 - 20566^{\circ}_{4}$
9595.395	4		10418.808	$13962_1 - 24381^{\circ}_{2}$	9276.273	5		10777.234	$3687_2 - 14465^{\circ}_{2}$
9588.809	0		10425.964	$19588^{\circ}_{0} - 30014_4$	9271.181	1		10783.153	$0_2 - 10783^{\circ}_{2}$
9587.027	1		10427.902	$14243^{\circ}_{1} - 24671_2$	9270.155	2		10784.347	$19588^{\circ}_{0} - 30372_6$
9582.816	4		10432.484	$13088_3 - 23521^{\circ}_{3}$	9266.920	4		10788.111	$8800_4 - 19588^{\circ}_{0}$
9571.505	1		10444.813	$19516^{\circ}_{2} - 29961_1$	9266.208	6		10788.941	$7280_2 - 18069^{\circ}_{3}$
9570.405	1		10446.013	$11802_2 - 22248^{\circ}_{2}$	9263.682	0		10791.882	$10783^{\circ}_{2} - 21575_2$
9567.826	2		10448.829	$11197^{\circ}_{0} - 21645_4$	9260.327	2		10795.792	$11601_1 - 22396^{\circ}_{1}$
9567.283	1		10449.422	$16346^{\circ}_{4} - 26796_3$	9250.579	0		10807.168	$12847_3 - 23655^{\circ}_{4}$
9561.245	5		10456.021	$8243^{\circ}_{2} - 18699_2$	9245.257	1		10813.389	$18069^{\circ}_{3} - 28882_2$
9510.950	0		10511.313	$17847^{\circ}_{2} - 28358_3$	9239.328	1		10820.329	$15970_3 - 26790^{\circ}_{4}$
9507.656	2		10514.955	$13088_3 - 23603^{\circ}_{2}$	9237.550	2		10822.411	$20423^{\circ}_{1} - 31245_2$
9505.395	5		10517.456	$9804_5 - 20322^{\circ}_{6}$	9234.396	3		10826.108	$18930^{\circ}_{3} - 29756_4$
9501.443	0		10521.831	$19986^{\circ}_{6} - 30508_5$	9233.858	50	5	10826.738	$16217^{\circ}_{2} - 27044_3$
9500.302	2		10523.095	$12114^{\circ}_{2} - 22637_3$	9232.493	50	4	10828.339	$13088_3 - 23916^{\circ}_{4}$
9497.191	7		10526.541	$0_2 - 10526^{\circ}_{3}$	9230.616	1		10830.541	$21165^{\circ}_{3} - 31995_4$
9495.500	7		10528.416	$4961_4 - 15490^{\circ}_{6}$	9229.218	1		10832.181	$17847^{\circ}_{2} - 28679_2$
9486.929	3		10537.928	$15970_3 - 26508^{\circ}_{3}$	9227.870	1		10833.764	$22855^{\circ}_{3} - 33689_2$
9474.882	7		10551.327	$7502_3 - 18053^{\circ}_{4}$	9227.517	300	50	10834.178	$18011^{\circ}_{0} - 28845_4$
9470.684	6		10556.003	$3687_2 - 14243^{\circ}_{1}$	9227.057	2		10834.718	$21902^{\circ}_{4} - 32737_5$
9467.200	5		10559.888	$16783^{\circ}_{4} - 27343_3$	9222.345	20	5	10840.254	$19713_3 - 30553^{\circ}_{2}$
9461.208	3		10566.576	$13088_3 - 23655^{\circ}_{4}$	9221.439	40	5	10841.319	$17501^{\circ}_{0} - 28342_5$
9461.031	6		10566.774	$7502_3 - 18069^{\circ}_{3}$	9218.851	2		10844.363	$21594_3 - 32439^{\circ}_{4}$
9460.871	2		10566.952	$7280_2 - 17847^{\circ}_{2}$	9218.670	1		10844.576	$18574_1 - 29419^{\circ}_{2}$
9458.629	0		10569.457	$17411^{\circ}_{3} - 27980_3$	9218.612	1		10844.644	$18574_1 - 29419^{\circ}_{2}$
9455.205	2q		10573.284	$13847_2 - 24421^{\circ}_{3}$	9218.612	1		10844.644	$18574_1 - 29419^{\circ}_{2}$
9450.464	1		10578.589	$16217^{\circ}_{2} - 26796_3$	9208.593	50		10856.443	$11241^{\circ}_{3} - 22098_4$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
9208.035	8	2	10857.101	$13175^{3}_{4} - 24032_{4}$	9061.672	2		11032.463	$13847_{2} - 24880^{0}_{1}$
9203.988	500	75	10861.874	$6362_{2} - 17224^{2}_{2}$	9059.264	3		11035.395	$17847^{2}_{2} - 28882_{2}$
9200.638	1h		10865.829	$18069^{3}_{3} - 28934_{3}$	9056.071	15	2	11039.286	$18382^{0}_{0} - 29422_{1}$
9199.676	8		10866.966	$11802_{2} - 22669^{3}_{3}$	9054.306	2		11041.438	$19503^{3}_{3} - 30544_{2}$
9197.246	3		10869.837	$18549_{2} - 29419^{2}_{2}$	9048.503	50		11048.519	$10526^{3}_{3} - 21575_{2}$
9191.681	2		10876.418	$13962_{1} - 24838^{0}_{1}$	9048.248	800b	75	11048.830	$6362_{2} - 17411^{3}_{3}$
9188.503	2		10880.179	$21143_{5} - 32023^{0}_{0}$	9046.960	3		11050.403	$18053^{3}_{4} - 29104_{4}$
9186.364	1		10882.713	$22508^{2}_{2} - 33390_{1}$	9046.137	4		11051.409	$22163^{3}_{4} - 33214_{5}$
9179.820	2		10890.471	$15490^{0}_{0} - 26380_{5}$	9046.137	4		11051.409	$22669^{3}_{3} - 33721_{2}$
9178.777	200	15	10891.708	$15493_{4} - 26384^{3}_{4}$	9045.341	200	20	11052.381	$11802_{2} - 22855^{3}_{3}$
9176.967	2		10893.856	$21902^{3}_{4} - 32796_{3}$	9041.717	2		11056.811	$22508^{2}_{2} - 33564_{3}$
9175.085	2		10896.091	$22877^{0}_{1} - 33773_{1}$	9039.277	2		11059.796	$22399^{0}_{0} - 33459_{4}$
9171.262	2		10900.633	$22508^{2}_{2} - 33408_{3}$	9038.935	2		11060.214	$20566^{3}_{4} - 31626_{5}$
9170.810	100	4	10901.170	$11197^{0}_{0} - 22098_{4}$	9037.880	200	10	11061.505	$17501^{0}_{0} - 28562_{4}$
9167.793	20	2	10904.758	$18930^{3}_{3} - 29835_{3}$	9034.490	2		11065.656	$18574_{1} - 29640^{0}_{1}$
9167.469	1		10905.143	$13297_{4} - 24202^{3}_{4}$	9032.457	3		11068.146	$10526^{3}_{3} - 21594_{3}$
9166.738	1		10906.013	$21890^{3}_{3} - 32796_{3}$	9031.811	150	10	11068.938	$12847_{3} - 23916^{3}_{4}$
9165.890	400	25	10907.022	$11601_{1} - 22508^{2}_{2}$	9026.157	2		11075.872	$21575_{2} - 32650^{0}_{1}$
9165.008	5	1	10908.071	$15970_{3} - 26878^{3}_{3}$	9026.004	2		11076.059	$2869_{3} - 13945^{3}_{3}$
9164.261	4		10908.961	$21594_{3} - 32503^{2}_{2}$	9016.581	300	20	11087.634	$12114^{2}_{2} - 23201_{3}$
9156.909	4		10917.719	$13962_{1} - 24880^{0}_{1}$	9016.382	3		11087.879	$18053^{3}_{4} - 29141_{5}$
9155.929	4	1	10918.888	$18930^{3}_{3} - 29849_{4}$	9013.959	5	1	11090.860	$17959_{4} - 29050^{0}_{0}$
9153.352	8	2	10921.962	$13847_{2} - 24769^{3}_{3}$	9013.959	5	1	11090.860	$18549_{2} - 29640^{0}_{1}$
9152.771	3		10922.655	$19039^{2}_{2} - 29961_{1}$	9013.581	1		11091.325	$15970_{3} - 27061^{2}_{2}$
9147.790	3	1	10928.602	$21575_{2} - 32503^{2}_{2}$	9012.517	150	8	11092.634	$18011^{0}_{0} - 29104_{4}$
9141.782	8	2	10935.785	$21077^{0}_{0} - 32012_{4}$	9011.500	4	1	11093.886	$13088_{3} - 24182^{2}_{2}$
9141.337	2h		10936.317	$22163^{3}_{4} - 33099_{3}$	8997.862	100	10	11110.701	$11877^{0}_{1} - 22988_{2}$
9141.245	1		10936.427	$22669^{3}_{3} - 33606_{2}$	8995.178	100	10	11114.016	$13088_{3} - 24202^{3}_{4}$
9137.725	8	2	10940.640	$18699_{2} - 29640^{0}_{1}$	8994.447	2		11114.919	$17398_{3} - 28513^{3}_{2}$
9134.679	150	10	10944.288	$19986^{8}_{8} - 30930_{6}$	8991.072	1		11119.092	$20922^{2}_{2} - 32041_{2}$
9132.261	40	8	10947.186	$17411^{3}_{3} - 28358_{3}$	8990.879	10	2	11119.330	$10526^{3}_{3} - 21645_{4}$
9129.173	20	5	10950.889	$17073_{1} - 28024^{0}_{1}$	8987.396	75	10	11123.640	$13297_{4} - 24421^{3}_{3}$
9126.321	20	4	10954.311	$22877^{0}_{1} - 33831_{4}$	8985.270	15	4	11126.271	$16217^{2}_{2} - 27343_{3}$
9123.393	1		10957.827	$22141^{3}_{3} - 33099_{3}$	8983.722	2		11128.189	$22399^{0}_{0} - 33527_{4}$
9118.125	50	3	10964.158	$19588^{0}_{0} - 30552_{4}$	8982.127	2		11130.165	$18011^{0}_{0} - 29141_{5}$
9113.239	1		10970.036	$22338^{3}_{3} - 33309_{2}$	8980.723	10	3	11131.905	$15863_{2} - 26995^{3}_{3}$
9110.964	2		10972.775	$17959_{4} - 28932^{3}_{4}$	8978.886	3		11134.182	$19516^{2}_{2} - 30651_{3}$
9107.788	2		10976.601	$22855^{3}_{3} - 33831_{4}$	8976.639	3	1	11136.969	$18549_{2} - 29686^{3}_{3}$
9107.216	100		10977.291	$13297_{4} - 24274^{0}_{0}$	8969.853	100	15	11145.395	$19227^{8}_{6} - 30372_{6}$
9103.165	2		10982.176	$19273_{2} - 30255^{3}_{3}$	8967.635	500	100	11148.151	$8800_{4} - 19948^{3}_{4}$
9101.064	20	3	10984.711	$19532_{4} - 30517^{0}_{0}$	8965.074	2		11151.336	$14204_{5} - 25355^{3}_{4}$
9099.364	2		10986.763	$18699_{2} - 29686^{3}_{3}$	8956.495	2		11162.017	$22669^{3}_{3} - 33831_{4}$
9095.713	4		10991.173	$13847_{2} - 24838^{0}_{1}$	8955.834	200	15	11162.841	$2869_{3} - 14032^{2}_{2}$
9094.821	400	100	10992.251	$6362_{2} - 17354^{0}_{1}$	8952.133	2		11167.456	$22141^{3}_{3} - 33309_{2}$
9090.809	200	10	10997.103	$16346^{3}_{4} - 27343_{3}$	8949.114	100	20	11171.223	$13088_{3} - 24259^{3}_{4}$
9084.511	3		11004.726	$20322^{0}_{0} - 31326_{4}$	8944.447	1		11177.052	$15618^{3}_{3} - 26796_{3}$
9082.305	3	1	11007.399	$20922^{2}_{2} - 31929_{3}$	8942.502	2		11179.483	$21575_{2} - 32754^{3}_{3}$
9076.185	8	1	11014.821	$15493_{4} - 26508^{3}_{3}$	8941.641	8	2	11180.560	$10414^{3}_{4} - 21594_{3}$
9074.980	1		11016.284	$19948^{3}_{4} - 30964_{3}$	8935.225	1		11188.588	$22338^{3}_{3} - 33527_{4}$
9072.954	1		11018.744	$22399^{0}_{0} - 33418_{4}$	8933.357	1		11190.928	$17398_{3} - 28589^{3}_{3}$
9067.890	1		11024.897	$22248^{2}_{2} - 33273_{1}$	8930.006	2		11195.127	$18549_{2} - 29744^{3}_{3}$
9067.657	2		11025.181	$18809^{3}_{4} - 29835_{3}$	8928.384	2		11197.161	$21902^{3}_{4} - 33099_{3}$
9067.234	5	1	11025.695	$15970_{3} - 26995^{3}_{3}$	8928.078	25	5	11197.545	$15863_{2} - 27061^{2}_{2}$
9063.948	200	10	11029.692	$8243^{2}_{2} - 19273_{2}$	8927.723	15	5	11197.990	$17959_{4} - 29157^{3}_{3}$
9062.879	2		11030.993	$20214^{3}_{3} - 31245_{2}$	8924.217	3w		11202.389	$18930^{3}_{3} - 30132_{2}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
8922.566	2		11204.462	$18809^{3}_{4} - 30014_{4}$	8786.029	2		11378.581	$19948^{3}_{4} - 31326_{4}$
8918.698	1		11209.321	$21890^{3}_{3} - 33099_{3}$	8784.139	3	1	11381.029	$21077^{6}_{6} - 32458_{4}$
8918.584	1		11209.465	$22396^{1}_{1} - 33606_{2}$	8781.093	25	1	11384.977	$4961_{4} - 16346^{4}_{4}$
8912.867	2		11216.655	$21645_{4} - 32862^{2}_{4}$	8780.337	1		11385.958	$22141^{3}_{3} - 33527_{4}$
8910.844	75	4	11219.201	$13088_{3} - 24307^{2}_{2}$	8779.898	1		11386.527	$21165^{3}_{3} - 32551_{3}$
8907.016	40	2	11224.023	$13175^{4}_{4} - 24399_{3}$	8775.575	200	40	11392.136	$8111_{4} - 19503^{3}_{3}$
8905.566	2		11225.850	$22338^{3}_{3} - 33564_{3}$	8773.524	5	1	11394.799	$16217^{2}_{2} - 27612_{3}$
8902.815	2		11229.319	$19532_{4} - 30761^{3}_{3}$	8772.803	150	8	11395.736	$11241^{3}_{3} - 22637_{3}$
8900.891	2		11231.746	$10414^{4}_{4} - 21645_{4}$	8772.384	8	1	11396.280	$15863_{2} - 27260^{3}_{3}$
8893.533	15	5	11241.039	$19516^{2}_{2} - 30758_{2}$	8771.465	1		11397.474	$21645_{4} - 33043^{3}_{3}$
8892.973	150	15	11241.747	$0_{2} - 11241^{3}_{3}$	8768.195	5	1	11401.725	$22163^{4}_{4} - 33564_{3}$
8892.778	2		11241.993	$21539^{4}_{4} - 32781_{4}$	8766.743	100	15	11403.613	$13297_{4} - 24701^{6}_{6}$
8889.970	2		11245.544	$22163^{4}_{4} - 33408_{3}$	8760.449	100	8	11411.806	$12847_{3} - 24259^{4}_{4}$
8889.187	100	10	11246.535	$11802_{2} - 23049^{1}_{1}$	8758.247	400	75	11414.675	$8800_{4} - 20214^{3}_{3}$
8882.601	1		11254.873	$19503^{3}_{3} - 30758_{2}$	8755.001	3	1	11418.907	$21890^{3}_{3} - 33309_{2}$
8877.739	1		11261.037	$22401_{1} - 33662^{1}_{1}$	8753.738	2h		11420.555	$22877^{1}_{1} - 34298_{1}$
8875.223	100	8	11264.229	$13297_{4} - 24561^{3}_{3}$	8751.202	10	2	11423.864	$22877^{6}_{6} - 34301_{4}$
8874.156	2		11265.584	$22508^{2}_{2} - 33773_{1}$	8750.176	1		11425.204	$14465^{2}_{2} - 25890_{2}$
8872.787	1		11267.322	$22338^{3}_{3} - 33606_{2}$	8748.038	400	100	11427.996	$7502_{3} - 18930^{3}_{3}$
8872.409	1		11267.802	$21594_{3} - 32862^{4}_{4}$	8747.498	2		11428.701	$19817^{1}_{1} - 31245_{2}$
8868.822	200	50	11272.359	$9804_{5} - 21077^{6}_{6}$	8747.258	2		11429.015	$20566^{4}_{4} - 31995_{4}$
8867.740	1		11273.735	$17073_{1} - 28347^{2}_{2}$	8744.965	2	1	11432.012	$23015^{6}_{6} - 34447_{4}$
8865.566	100	8	11276.499	$11601_{1} - 22877^{1}_{1}$	8744.598	5	1	11432.492	$22399^{6}_{6} - 33831_{4}$
8862.284	2		11280.675	$19227^{8}_{8} - 30508_{5}$	8743.269	15	2	11434.229	$23655^{4}_{4} - 35089_{3}$
8860.973	4	1	11282.344	$17398_{3} - 28680^{4}_{4}$	8739.251	1		11439.486	$17073_{1} - 28513^{2}_{2}$
8857.869	4	1	11286.298	$23015^{6}_{6} - 34301_{4}$	8735.735	2		11444.091	$16783^{4}_{4} - 28227_{4}$
8854.899	10	3	11290.083	$15970_{3} - 27260^{3}_{3}$	8734.482	5	1	11445.732	$23015^{6}_{6} - 34460_{5}$
8854.136	1		11291.056	$11802_{2} - 23093^{2}_{2}$	8734.023	75	8	11446.334	$20566^{4}_{4} - 32012_{4}$
8852.784	10	3	11292.781	$13088_{3} - 24381^{2}_{2}$	8732.992	2		11447.685	$19516^{2}_{2} - 30964_{3}$
8852.552	1		11293.077	$21165^{3}_{3} - 32458_{4}$	8732.426	150	50	11448.427	$11601_{1} - 23049^{1}_{1}$
8850.543	2		11295.640	$21143_{5} - 32439^{4}_{4}$	8730.818	15	2	11450.536	$19273_{2} - 30723^{1}_{1}$
8848.294	8	3	11298.511	$16554_{6} - 27852^{6}_{6}$	8728.550	2		11453.511	$15863_{2} - 27317^{3}_{3}$
8847.513	2		11299.508	$14226_{0} - 25526^{1}_{1}$	8727.446	4		11454.960	$17224^{2}_{2} - 28679_{2}$
8843.549	2		11304.573	$20322^{6}_{6} - 31626_{5}$	8724.375	40	2	11458.992	$13847_{2} - 25306^{2}_{2}$
8842.359	1		11306.095	$19713_{3} - 31019^{4}_{4}$	8723.718	15	2	11459.855	$13945^{3}_{3} - 25405_{4}$
8841.841	4		11306.757	$17224^{2}_{2} - 28531_{2}$	8722.459	15	2	11461.509	$19503^{3}_{3} - 30964_{3}$
8841.170	150	20	11307.615	$7502_{3} - 18809^{4}_{4}$	8717.754	10	2	11467.695	$18549_{2} - 30017^{3}_{3}$
8836.139	3		11314.053	$17166_{5} - 28480^{4}_{4}$	8716.427	2		11469.441	$8243^{2}_{2} - 19713_{3}$
8833.471	2		11317.471	$18699_{2} - 30017^{3}_{3}$	8715.065	1		11471.233	$17411^{3}_{3} - 28882_{2}$
8829.686	15	5	11322.322	$20214^{3}_{3} - 31537_{3}$	8714.917	1		11471.428	$20322^{6}_{6} - 31793_{4}$
8829.470	2		11322.599	$19948^{3}_{4} - 31271_{5}$	8714.257	8	1	11472.297	$13297_{4} - 24769^{3}_{3}$
8827.897	2		11324.616	$17354^{1}_{1} - 28679_{2}$	8713.654	20	2	11473.090	$13088_{3} - 24561^{3}_{3}$
8821.739	4	1	11332.521	$13088_{3} - 24421^{3}_{3}$	8712.838	10	2	11474.165	$13847_{2} - 25321^{3}_{3}$
8820.409	50b	10	11334.230	$7280_{2} - 18614^{1}_{1}$	8710.410	50	2	11477.363	$8111_{4} - 19588^{6}_{6}$
8820.214	20	3	11334.481	$12847_{3} - 24182^{2}_{2}$	8709.233	200	50	11478.914	$3687_{2} - 15166^{3}_{3}$
8812.507	4		11344.393	$17501^{6}_{6} - 28845_{4}$	8707.356	75	3	11481.389	$15490^{6}_{6} - 26971_{4}$
8810.240	15		11347.312	$15970_{3} - 27317^{3}_{3}$	8704.855	25	3	11484.688	$6362_{2} - 17847^{2}_{2}$
8808.667	2		11349.339	$18069^{3}_{3} - 29418_{2}$	8703.697	25	2	11486.216	$14204_{5} - 25690^{6}_{6}$
8806.220	2		11352.492	$15618^{3}_{3} - 26971_{4}$	8703.340	3		11486.687	$19532_{4} - 31019^{4}_{4}$
8804.580	75	3	11354.607	$12847_{3} - 24202^{4}_{4}$	8702.021	8	1	11488.428	$19273_{2} - 30761^{3}_{3}$
8800.465	3		11359.916	$21594_{3} - 32954^{2}_{2}$	8701.117	50	3	11489.622	$13175^{4}_{4} - 24664_{3}$
8799.353	1		11361.352	$21738^{2}_{2} - 33099_{3}$	8693.669	2		11499.465	$19227^{8}_{8} - 30726_{7}$
8798.171	10	3	11362.878	$19713_{3} - 31075^{2}_{2}$	8691.333	20l	1	11502.556	$15493_{4} - 26995^{3}_{3}$
8792.058	100	5	11370.779	$14204_{5} - 25575^{4}_{4}$	8689.176	8	3	11505.411	$19039^{2}_{2} - 30544_{2}$
8790.372	10	2	11372.960	$19516^{2}_{2} - 30889_{1}$	8688.429	2		11506.400	$21902^{4}_{4} - 33408_{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
8687.841	50	4	11507.179	$15490_{6}^{0} - 26997_{6}$
8682.216	10	1	11514.634	$17166_{5} - 28680_{4}^{3}$
8681.305	2		11515.842	$21902_{4}^{3} - 33418_{4}$
8679.439	15	1	11518.318	$18614_{1}^{2} - 30132_{2}$
8679.303	1		11518.499	$20522_{2}^{2} - 32041_{2}$
8679.303	1		11518.499	$21890_{3}^{3} - 33408_{3}$
8678.490	10	1	11519.578	$17398_{3} - 28917_{2}^{2}$
8676.629	2s		11522.048	$8800_{4} - 20322_{6}^{0}$
8675.392	15	2	11523.691	$17411_{3}^{3} - 28934_{3}$
8674.634	1		11524.698	$22248_{2}^{2} - 33773_{1}$
8672.281	1		11527.825	$17354_{1}^{2} - 28882_{2}$
8672.159	3		11527.987	$21890_{3}^{3} - 33418_{4}$
8668.118	100	20	11533.362	$12847_{3} - 24381_{2}^{2}$
8667.444	15	2	11534.258	$17398_{3} - 28932_{4}^{4}$
8665.491	400	100	11536.858	$7502_{3} - 19039_{2}^{2}$
8663.348	4		11539.712	$19273_{2} - 30812_{2}^{2}$
8662.270	2		11541.148	$18011_{6}^{0} - 29552_{6}$
8660.494	1		11543.515	$21252_{2}^{2} - 32796_{3}$
8659.754	2		11544.501	$20054_{2} - 31599_{2}^{2}$
8657.541	3		11547.452	$22141_{3}^{3} - 33689_{2}$
8655.873	50	8	11549.677	$14204_{5} - 25753_{6}^{0}$
8651.256	3		11555.841	$18699_{2} - 30255_{3}^{3}$
8650.455	2		11556.911	$21902_{4}^{3} - 33459_{4}$
8649.144	50	5	11558.663	$16783_{4}^{4} - 28342_{5}$
8648.386	40	4	11559.676	$20214_{3}^{3} - 31774_{3}$
8648.282	5		11559.815	$21539_{4}^{4} - 33099_{3}$
8645.310	150	25	11563.789	$13962_{1} - 25526_{1}^{1}$
8642.849	1		11567.081	$22877_{1}^{1} - 34444_{2}$
8641.383	3	1	11569.044	$21890_{3}^{3} - 33459_{4}$
8640.972	4		11569.594	$22877_{1}^{1} - 34447_{4}$
8639.655	8		11571.358	$17847_{2}^{2} - 29418_{2}$
8639.444	150	5	11571.640	$10526_{3}^{3} - 22098_{4}$
8638.360	100	5	11573.092	$12847_{3} - 24421_{3}^{3}$
8637.271	5	1	11574.551	$16783_{4}^{4} - 28358_{3}$
8636.928	2		11575.011	$17847_{2}^{2} - 29422_{1}$
8636.680	2		11575.343	$17073_{1} - 28649_{1}^{1}$
8634.114	3		11578.784	$20214_{3}^{3} - 31793_{4}$
8634.022	5h	1	11578.907	$19516_{2}^{2} - 31095_{1}$
8633.966	3		11578.982	$18382_{6}^{0} - 29961_{1}$
8633.455	3	1	11579.667	$22141_{3}^{3} - 33721_{2}$
8632.169	3	1	11581.393	$18699_{2} - 30281_{1}^{1}$
8631.788	2		11581.904	$18069_{3}^{3} - 29650_{2}$
8631.350	50	2	11582.491	$14226_{0} - 25809_{1}^{1}$
8630.770	20h	2h	11583.270	$22877_{6}^{0} - 34460_{5}$
8630.330	5	1	11583.860	$15863_{2} - 27447_{2}^{2}$
8626.611	1		11588.854	$19948_{4}^{4} - 31537_{3}$
8626.254	1		11589.334	$22855_{3}^{3} - 34444_{2}$
8622.093	5	1	11594.927	$13847_{2} - 25442_{3}^{3}$
8621.315	75	2	11595.973	$2869_{3} - 14465_{2}^{2}$
8618.598	5	1	11599.629	$17073_{1} - 28673_{2}^{2}$
8616.218	100	10	11602.833	$17501_{6}^{0} - 29104_{4}$
8614.687	5	1	11604.895	$21668_{1}^{1} - 33273_{1}$
8611.754	3		11608.847	$19532_{4} - 31141_{6}^{0}$
8609.370	4	1	11612.062	$19817_{1}^{1} - 31429_{1}$
8607.724	8	2	11614.282	$18930_{3}^{3} - 30544_{2}$
8605.146	2		11617.762	$20423_{1}^{2} - 32041_{2}$
8604.922	4		11618.064	$10783_{2}^{2} - 22401_{1}$
8601.844	1		11622.221	$18930_{3}^{3} - 30552_{4}$
8600.016	3		11624.692	$21645_{4} - 33270_{4}^{4}$
8596.686	5		11629.195	$15166_{3}^{3} - 26796_{3}$
8596.466	8	1	11629.492	$20922_{2}^{2} - 32551_{3}$
8595.655	1		11630.590	$18053_{4}^{4} - 29684_{5}$
8595.359	1		11630.990	$21165_{3}^{3} - 32796_{3}$
8595.307	1		11631.060	$21165_{3}^{3} - 32796_{3}$
8594.965	1		11631.523	$22669_{3}^{3} - 34301_{4}$
8593.103	100	10	11634.044	$16346_{4}^{4} - 27980_{3}$
8589.687	3		11638.670	$19503_{3}^{3} - 31141_{3}$
8588.435	50	2	11640.367	$17501_{6}^{0} - 29141_{5}$
8588.221	8		11640.657	$19986_{6}^{0} - 31626_{5}$
8583.974	2		11646.416	$14243_{1}^{1} - 25890_{2}$
8582.016	4		11649.074	$21645_{4} - 33294_{3}^{3}$
8579.355	3		11652.687	$21738_{2}^{2} - 33390_{1}$
8577.279	100	15	11655.507	$12114_{2}^{2} - 23769_{1}$
8575.327	75	5	11658.160	$17224_{2}^{2} - 28882_{2}$
8574.577	2		11659.180	$18549_{2} - 30208_{2}^{2}$
8574.081	50	10	11659.854	$21077_{6}^{0} - 32737_{5}$
8573.122	500	100	11661.159	$5563_{1} - 17224_{2}^{2}$
8572.075	4	1	11662.583	$21902_{4}^{3} - 33564_{3}$
8564.748	50	4	11672.560	$18614_{1}^{1} - 30286_{1}$
8564.570	5		11672.803	$18011_{6}^{0} - 29684_{5}$
8564.141	25	3	11673.387	$20322_{6}^{0} - 31995_{4}$
8563.151	15	2	11674.737	$21890_{3}^{3} - 33564_{3}$
8563.003	3		11674.939	$21539_{4}^{4} - 33214_{5}$
8562.314	5	1	11675.878	$21594_{3} - 33270_{4}^{4}$
8560.425	100	4	11678.454	$11802_{2} - 23481_{1}^{1}$
8558.448	75l	4	11681.152	$13088_{3} - 24769_{3}^{3}$
8556.589	10b		11683.690	$13297_{4} - 24981_{3}^{3}$
8556.324	100	20	11684.052	$10414_{4}^{4} - 22098_{4}$
8554.945	200	50	11685.935	$2558_{0} - 14243_{1}^{1}$
8553.895	1		11687.370	$16346_{4}^{4} - 28034_{5}$
8551.763	8	1	11690.284	$22141_{3}^{3} - 33831_{4}$
8551.460	2		11690.698	$20322_{6}^{0} - 32012_{4}$
8549.932	1		11692.787	$17411_{3}^{3} - 29104_{4}$
8543.721	150	40	11701.287	$15490_{6}^{0} - 27191_{5}$
8542.618	3h		11702.798	$18053_{4}^{4} - 29756_{4}$
8540.232	4	1	11706.068	$18549_{2} - 30255_{3}^{3}$
8539.795	150	25	11706.667	$6362_{2} - 18069_{3}^{3}$
8537.379	3		11709.979	$22401_{1} - 34111_{1}^{1}$
8534.674	50	2	11713.691	$12847_{3} - 24561_{3}^{3}$
8532.907	10	1	11716.117	$14206_{4}^{4} - 25923_{4}$
8532.096	8	1	11717.230	$19273_{2} - 30990_{3}^{3}$
8531.445	50	2	11718.124	$11802_{2} - 23521_{3}^{3}$
8530.911	40	3	11718.858	$19039_{2}^{2} - 30758_{2}$
8530.159	2		11719.891	$21575_{2} - 33294_{3}^{3}$
8528.762	3		11721.811	$21668_{1}^{1} - 33390_{1}$
8528.548	2		11722.105	$21575_{2} - 33297_{2}^{2}$
8526.603	3		11724.779	$15618_{3}^{3} - 27343_{3}$
8525.651	4		11726.088	$20054_{2} - 31780_{3}^{3}$
8525.386	3		11726.452	$17959_{4} - 29686_{3}^{3}$
8524.785	2		11727.279	$20566_{4}^{4} - 32293_{5}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
8521.620	4		11731.635	$18549_2 - 30281^{\circ}_{1}$	8434.780	2		11852.417	$22855^{3}_{3} - 34707_3$
8519.327	50	3	11734.792	$9804_5 - 21539^{4}_{4}$	8433.885	8	1	11853.674	$18699_2 - 30553^{2}_{2}$
8516.555	150	50	11738.612	$19588^{6}_{6} - 31326_4$	8432.485	10	2	11855.643	$13847_2 - 25703^{2}_{2}$
8515.615	2		11739.907	$13175^{4}_{4} - 24915_3$	8430.586	15	1	11858.313	$14032^{2}_{2} - 25890_2$
8514.901	8	1	11740.892	$13962_1 - 25703^{2}_{2}$	8426.379	75		11864.233	$14247^{6}_{6} - 26111_1$
8513.624	2		11742.653	$18809^{4}_{4} - 30552_4$	8424.031	100		11867.540	$14243^{1}_{1} - 26111_1$
8511.906	50	3	11745.023	$18011^{6}_{6} - 29756_4$	8423.529	3		11868.247	$21738^{2}_{2} - 33606_2$
8510.622	150	25	11746.795	$11241^{3}_{3} - 22988_2$	8422.942	2h		11869.075	$21539^{4}_{4} - 33408_3$
8509.273	2		11748.657	$19516^{2}_{2} - 31265_3$	8422.464	1		11869.748	$22098_4 - 33967^{3}_{3}$
8508.186	5	1	11750.158	$23655^{4}_{4} - 35405_3$	8421.227	500	100	11871.492	$3865_1 - 15736^{0}_{1}$
8501.756	8		11759.045	$7280_2 - 19039^{2}_{2}$	8419.431	2		11874.024	$20922^{2}_{2} - 32796_3$
8501.438	50	5	11759.485	$17398_3 - 29157^{3}_{3}$	8418.004	200	75	11876.037	$12114^{2}_{2} - 23990_2$
8500.011	10	2	11761.459	$22669^{3}_{3} - 34431_3$	8417.605	8	2	11876.600	$15618^{3}_{3} - 27495_4$
8498.731	2		11763.230	$16217^{2}_{2} - 27980_3$	8417.071	75	3	11877.353	$15166^{3}_{3} - 27044_3$
8496.449	50b		11766.390	$8800_4 - 20566^{4}_{4}$	8416.742	500w	150	11877.818	$0_2 - 11877^{0}_{1}$
8496.340	25b		11766.541	$17166_5 - 28932^{4}_{4}$	8415.375	75	4	11879.747	$20322^{6}_{6} - 32202_5$
8496.044	4		11766.951	$15493_4 - 27260^{3}_{3}$	8414.938	50	1	11880.364	$11601_1 - 23481^{0}_{1}$
8491.811	10		11772.816	$15493_4 - 27266^{4}_{4}$	8414.273	4		11881.303	$16346^{4}_{4} - 28227_4$
8491.368	2		11773.430	$17959_4 - 29733^{6}_{6}$	8414.005	2		11881.681	$21645^{4}_{4} - 33527_4$
8488.564	1		11777.320	$22669^{3}_{3} - 34447_4$	8411.913	100	5	11884.636	$17166_5 - 29050^{6}_{6}$
8487.478	15	1	11778.826	$16783^{4}_{4} - 28562_4$	8410.763	5		11886.261	$19713_3 - 31599^{2}_{2}$
8486.561	50	2	11780.099	$18069^{3}_{3} - 29849_4$	8407.010	75	3	11891.567	$20566^{4}_{4} - 32458_4$
8486.108	2		11780.728	$20214^{3}_{3} - 31995_4$	8406.674	40	2	11892.043	$11877^{1}_{1} - 23769_1$
8485.600	3		11781.433	$18053^{4}_{4} - 29835_3$	8406.314	20	1	11892.552	$13088_3 - 24981^{3}_{3}$
8483.298	50	2	11784.630	$17959_4 - 29744^{3}_{3}$	8401.986	100	8	11898.678	$14481^{6}_{6} - 26380_5$
8482.478	1		11785.769	$23655^{4}_{4} - 35440_3$	8400.154	2		11901.273	$22396^{1}_{1} - 34298_1$
8478.505	200		11791.292	$11241^{3}_{3} - 23032_4$	8399.253	100	8	11902.550	$15618^{3}_{3} - 27521_4$
8478.353	500		11791.504	$5563_1 - 17354^{1}_{1}$	8398.171	100	8	11904.083	$18382^{6}_{6} - 30286_1$
8473.657	1		11798.038	$20214^{3}_{3} - 32012_4$	8392.847	50	3	11911.634	$17398_3 - 29310^{4}_{4}$
8472.593	40	3	11799.520	$17398_3 - 29197^{2}_{2}$	8392.397	40		11912.273	$19516^{2}_{2} - 31429_1$
8471.823	200	50	11800.592	$11802_2 - 23603^{2}_{2}$	8388.528	100	10	11917.767	$7795^{4}_{4} - 19713_3$
8470.358	5		11802.633	$19273_2 - 31075^{2}_{2}$	8385.726	100	10	11921.750	$12847_3 - 24769^{3}_{3}$
8469.451	3		11803.897	$17847^{2}_{2} - 29650_2$	8384.927	8	2	11922.886	$22401_1 - 34324^{2}_{2}$
8468.973	8	2	11804.563	$15166^{3}_{3} - 26971_4$	8384.639	1		11923.295	$22508^{2}_{2} - 34431_3$
8467.164	5	1	11807.086	$15863_2 - 27670^{3}_{3}$	8383.073	8	2	11925.522	$19039^{2}_{2} - 30964_3$
8465.668	100	25	11809.172	$11601_1 - 23410^{6}_{6}$	8379.754	75	4	11930.246	$18614^{1}_{1} - 30544_2$
8464.753	50	3	11810.448	$15863_2 - 27674^{2}_{2}$	8379.219	100	8	11931.008	$3687_2 - 15618^{3}_{3}$
8464.236	150	50	11811.170	$8243^{2}_{2} - 20054_2$	8376.896	3		11934.316	$21165^{3}_{3} - 33099_3$
8462.015	4		11814.270	$15970_3 - 27784^{2}_{2}$	8375.333	1		11936.543	$22508^{2}_{2} - 34444_2$
8456.341	50	2	11822.197	$4961_4 - 16783^{4}_{4}$	8374.766	50	2	11937.351	$21668^{1}_{1} - 33606_2$
8455.209	2		11823.780	$19503^{3}_{3} - 31326_4$	8374.202	50	3	11938.155	$11802_2 - 23741^{1}_{1}$
8454.924	50	4	11824.178	$15493_4 - 27317^{3}_{3}$	8371.658	2		11941.783	$21890^{3}_{3} - 33831_4$
8453.419	5	1	11826.283	$20214^{3}_{3} - 32041_2$	8371.303	1		11942.290	$18069^{3}_{3} - 30011_3$
8451.839	2		11828.494	$22338^{3}_{3} - 34167_3$	8369.332	200	50	11945.102	$13945^{3}_{3} - 25890_2$
8450.836	15b		11829.898	$15736^{1}_{1} - 27566_2$	8367.390	150	20	11947.874	$15618^{3}_{3} - 27566_2$
8449.925	2		11831.173	$21890^{3}_{3} - 33721_2$	8366.073	150	15	11949.755	$11802_2 - 23752^{2}_{2}$
8447.968	4	1	11833.914	$23015^{6}_{6} - 34849_5$	8365.198	2		11951.005	$21738^{2}_{2} - 33689_2$
8446.516	500	150	11835.948	$11197^{6}_{6} - 23032_4$	8360.487	75	5	11957.739	$18053^{4}_{4} - 30011_3$
8445.495	200	150	11837.379	$8111_4 - 19948^{4}_{4}$	8358.728	150	200	11960.256	$11241^{3}_{3} - 23201_3$
8445.214	100b	8	11837.773	$18011^{6}_{6} - 29849_4$	8357.829	50	3	11961.542	$13847_2 - 25809^{1}_{1}$
8440.671	25		11844.145	$17073_1 - 28917^{2}_{2}$	8357.192	1		11962.454	$22338^{3}_{3} - 34301_4$
8440.660	50w	4	11844.160	$17073_1 - 28917^{2}_{2}$	8355.142	50	4	11965.389	$21594_3 - 33560^{4}_{4}$
8440.578	25		11844.275	$14204_5 - 26048^{4}_{4}$	8350.865	2		11971.517	$22877^{1}_{1} - 34849_5$
8439.849	1		11845.298	$19948^{4}_{4} - 31793_4$	8346.537	50	3	11977.725	$13945^{3}_{3} - 25923_4$
8438.789	8		11846.786	$13962_1 - 25809^{1}_{1}$	8345.867	50	5	11978.686	$18574_1 - 30553^{2}_{2}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
8344.174	8	2	11981.117	$19948^{3}_{4} - 31929_{3}$	8252.398	400	50	12114.360	$0_{2} - 12114^{2}_{2}$
8341.475	50	8	11984.993	$20566^{4}_{4} - 32551_{3}$	8246.170	2h		12123.509	$17073_{1} - 29197^{1}_{1}$
8339.403	5	2	11987.971	$17847^{2}_{2} - 29835_{3}$	8246.011	25	4	12123.743	$21594_{3} - 33718^{2}_{2}$
8337.330	2h	1	11990.952	$21077^{6}_{6} - 33068_{6}$	8245.781	2		12124.081	$17073_{1} - 29197^{2}_{2}$
8336.934	20	2	11991.521	$19532_{4} - 31523^{3}_{3}$	8243.712	2		12127.124	$21143_{5} - 33270^{4}_{4}$
8335.700	50	8	11993.297	$15618^{3}_{3} - 27612_{3}$	8239.619	5	1	12133.148	$12847_{3} - 24981^{3}_{3}$
8333.441	50	5	11996.548	$21594_{3} - 33591^{3}_{3}$	8237.739	20	2	12135.917	$20322^{6}_{6} - 32458_{4}$
8330.455	500	300	12000.848	$7502_{3} - 19503^{3}_{3}$	8236.739	4		12137.390	$21077^{6}_{6} - 33214_{5}$
8329.299	2		12002.513	$11601_{1} - 23603^{2}_{2}$	8235.819	4	1	12138.746	$19532_{4} - 31671^{3}_{4}$
8328.990	15	2	12002.959	$18011^{6}_{6} - 30014_{4}$	8235.484	1		12139.240	$23655^{4}_{4} - 35794_{4}$
8328.338	15	2	12003.898	$18549_{2} - 30553^{2}_{2}$	8234.937	50	4	12140.046	$11601_{1} - 23741^{1}_{1}$
8327.213	15	2	12005.520	$15490^{6}_{6} - 27495_{4}$	8234.937	50	4	12140.046	$21594_{3} - 33734^{2}_{2}$
8326.068	5	1	12007.171	$17411^{3}_{3} - 29418_{2}$	8234.346	25	3	12140.918	$16217^{2}_{2} - 28358_{3}$
8322.891	5	1	12011.754	$16346^{4}_{4} - 28358_{3}$	8233.377	2		12142.347	$20054_{2} - 32197^{3}_{3}$
8320.859	500	150	12014.688	$7502_{3} - 19516^{2}_{2}$	8232.673	1		12143.385	$21575_{2} - 33718^{2}_{2}$
8317.106	2		12020.109	$21668^{1}_{1} - 33689_{2}$	8232.451	3		12143.712	$18614^{1}_{1} - 30758_{2}$
8316.595	8	2	12020.848	$17398_{3} - 29419^{2}_{2}$	8232.310	2		12143.920	$21165^{3}_{3} - 33309_{2}$
8314.281	4	1	12024.193	$18699_{2} - 30723^{1}_{1}$	8231.410	100	15	12145.248	$13297_{4} - 25442^{3}_{3}$
8314.067	5	1	12024.503	$13297_{4} - 25321^{3}_{3}$	8228.725	1		12149.211	$18574_{1} - 30723^{1}_{1}$
8313.281	2		12025.640	$20054_{2} - 32080^{1}_{1}$	8227.672	50	4	12150.766	$13962_{1} - 26113^{2}_{2}$
8311.019	2		12028.913	$20522^{2}_{2} - 32551_{3}$	8227.482	50	8	12151.046	$16783^{4}_{4} - 28934_{3}$
8309.257	15		12031.463	$15490^{6}_{6} - 27521_{4}$	8227.096	3		12151.617	$11601_{1} - 23752^{2}_{2}$
8307.245	1		12034.377	$18930^{3}_{3} - 30964_{3}$	8224.956	8	2	12154.778	$21645_{4} - 33800^{3}_{3}$
8306.411	1		12035.586	$21738^{2}_{2} - 33773_{1}$	8223.407	8		12157.068	$19713_{3} - 31870^{2}_{2}$
8304.844	5	1	12037.857	$22669^{3}_{3} - 34707_{3}$	8221.666	1		12159.642	$21575_{2} - 33734^{2}_{2}$
8304.412	50	3	12038.483	$19588^{6}_{6} - 31626_{5}$	8220.872	3		12160.817	$15863_{2} - 28024^{1}_{1}$
8304.030	8	1	12039.037	$18574_{1} - 30613^{6}_{6}$	8214.147	100	10	12170.773	$15970_{3} - 28140^{4}_{4}$
8298.353	10	2	12047.273	$19948^{4}_{4} - 31995_{4}$	8212.219	5	1	12173.630	$14206^{4}_{4} - 26380_{5}$
8297.984	3		12047.808	$22399^{6}_{6} - 34447_{4}$	8210.525	2		12176.142	$23655^{4}_{4} - 35831_{3}$
8297.377	25	2	12048.690	$14206^{4}_{4} - 26255_{4}$	8210.047	4		12176.851	$15166^{3}_{3} - 27343_{3}$
8297.172	50b	5	12048.987	$3687_{2} - 15736^{1}_{1}$	8209.444	100	8	12177.745	$15493_{4} - 27670^{3}_{3}$
8295.542	100	8	12051.355	$17501^{6}_{6} - 29552_{6}$	8208.596	2		12179.003	$17073_{1} - 29252^{2}_{2}$
8294.880	8c		12052.317	$21668^{1}_{1} - 33721_{2}$	8208.596	2		12179.003	$17073_{1} - 29252^{2}_{2}$
8292.521	100	8	12055.745	$16217^{2}_{2} - 28273_{2}$	8207.475	100	10	12180.666	$14204_{5} - 26384^{4}_{4}$
8292.039	4		12056.446	$21252^{2}_{2} - 33309_{2}$	8205.892	8		12183.016	$17501^{6}_{6} - 29684_{5}$
8291.869	1		12056.693	$19039^{2}_{2} - 31095_{1}$	8205.103	20	2	12184.188	$19532_{4} - 31716^{6}_{6}$
8291.523	2		12057.196	$17959_{4} - 30017^{3}_{3}$	8202.148	100	10	12188.577	$13847_{2} - 26036^{3}_{3}$
8290.864	2		12058.155	$13297_{4} - 25355^{4}_{4}$	8201.354	1		12189.757	$22401_{1} - 34591^{1}_{1}$
8289.447	2		12060.216	$14226_{0} - 26287^{1}_{1}$	8198.438	10	2	12194.093	$17224^{2}_{2} - 29418_{2}$
8288.404	50	5	12061.733	$16783^{4}_{4} - 28845_{4}$	8195.942	8	1	12197.806	$17224^{2}_{2} - 29422_{1}$
8287.110	25	3	12063.617	$18069^{3}_{3} - 30132_{2}$	8194.698	3		12199.658	$22508^{2}_{2} - 34707_{3}$
8287.023	8		12063.744	$17354^{1}_{1} - 29418_{2}$	8194.398	100	25	12200.105	$17959_{4} - 30160^{4}_{4}$
8284.481	3		12067.445	$17354^{1}_{1} - 29422_{1}$	8194.398	100	25	12200.105	$20867^{7}_{7} - 33068_{6}$
8276.232	20	2	12079.473	$14032^{2}_{2} - 26111_{1}$	8193.239	5	1	12201.831	$23015^{6}_{6} - 35216_{5}$
8275.628	400	150	12080.354	$11197^{6}_{6} - 23277_{5}$	8192.136	3		12203.473	$22669^{3}_{3} - 34873_{4}$
8273.609	8	1	12083.302	$17073_{1} - 29157^{1}_{1}$	8191.069	10	1	12205.063	$21594_{3} - 33799^{4}_{4}$
8270.940	3	1	12087.202	$21575_{2} - 33662^{1}_{1}$	8190.889	50	8	12205.331	$19588^{6}_{6} - 31793_{4}$
8267.412	2		12092.360	$22338^{3}_{3} - 34431_{3}$	8190.479	2		12205.942	$21594_{3} - 33800^{3}_{3}$
8263.926	150	20	12097.460	$9804_{5} - 21902^{4}_{4}$	8189.938	4		12206.749	$19039^{2}_{2} - 31245_{2}$
8261.010	100	25	12101.731	$15490^{6}_{6} - 27591_{5}$	8186.915	500	100	12211.256	$8111_{4} - 20322^{6}_{6}$
8260.391	1		12102.638	$19039^{2}_{2} - 31141_{3}$	8186.217	8		12212.297	$18549_{2} - 30761^{3}_{3}$
8259.505	100	8	12103.936	$8111_{4} - 20214^{3}_{3}$	8183.838	10	2	12215.847	$19986^{6}_{6} - 32202_{5}$
8258.339	8	2	12105.645	$22338^{3}_{3} - 34444_{2}$	8183.723	2		12216.019	$16346^{4}_{4} - 28562_{4}$
8254.741	100	15	12110.921	$10526^{3}_{3} - 22637_{3}$	8179.030	8	1	12223.028	$7280_{2} - 19503^{3}_{3}$
8253.613	75	8	12112.576	$11877^{1}_{1} - 23990_{2}$	8178.829	2		12223.329	$10414^{4}_{4} - 22637_{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
8178.318	2		12224.092	$19817^{\circ}_{1} - 32041_{2}$	8092.238	75	5	12354.124	$18574_{1} - 30928^{\circ}_{1}$
8174.704	2		12229.496	$20566^{3}_{4} - 32796_{3}$	8091.356	2		12355.470	$21645_{4} - 34001^{3}_{4}$
8174.328	2		12230.059	$13175^{3}_{4} - 25405_{4}$	8089.896	4		12357.700	$16783^{3}_{4} - 29141_{5}$
8174.086	4		12230.421	$20054_{2} - 32285^{3}_{5}$	8089.481	75	8	12358.334	$9804_{5} - 22163^{3}_{4}$
8172.122	50	3	12233.360	$13088_{3} - 25321^{3}_{5}$	8088.701	4		12359.526	$15493_{4} - 27852^{0}_{6}$
8171.652	2		12234.064	$22855^{3}_{5} - 35089_{3}$	8087.495	5	2	12361.369	$18011^{0}_{6} - 30372_{6}$
8169.793	400	50	12236.848	$7280_{2} - 19516^{2}_{2}$	8087.263	2		12361.723	$15618^{3}_{5} - 27980_{3}$
8168.775	5		12238.373	$18574_{1} - 30812^{2}_{2}$	8085.228	200	50	12364.835	$8800_{4} - 21165^{3}_{5}$
8167.865	3		12239.736	$17411^{3}_{5} - 29650_{2}$	8084.451	1		12366.023	$22508^{2}_{2} - 34874_{3}$
8163.355	1		12246.498	$22098_{4} - 34344^{3}_{4}$	8076.980	5	1	12377.461	$15970_{3} - 28347^{2}_{2}$
8162.064	50	3	12248.435	$19532_{4} - 31780^{3}_{5}$	8075.651	150	20	12379.498	$11802_{2} - 24182^{2}_{2}$
8161.552	2		12249.204	$13847_{2} - 26096^{3}_{5}$	8074.472	3		12381.306	$18431_{3} - 30812^{2}_{2}$
8159.737	400	100	12251.928	$6362_{2} - 18614^{0}_{1}$	8070.785	2		12386.962	$20922^{2}_{2} - 33309_{2}$
8159.016	2		12253.011	$21165^{3}_{5} - 33418_{4}$	8068.729	5	1	12390.118	$19039^{2}_{2} - 31429_{1}$
8157.540	50	8	12255.228	$17501^{0}_{6} - 29756_{4}$	8066.826	75	8	12393.041	$13297_{4} - 25690^{0}_{6}$
8155.949	5	1	12257.619	$19516^{2}_{2} - 31774_{3}$	8064.380	2		12396.800	$20566^{3}_{4} - 32963_{5}$
8151.973	2		12263.597	$18549_{2} - 30812^{2}_{2}$	8062.640	200	50	12399.475	$19227^{5}_{6} - 31626_{5}$
8150.878	1		12265.245	$21902^{3}_{4} - 34167_{3}$	8062.345	4		12399.929	$15166^{3}_{5} - 27566_{2}$
8150.703	25		12265.508	$13847_{2} - 26113^{2}_{2}$	8061.918	3		12400.586	$13962_{1} - 26363^{2}_{2}$
8149.704	50	4	12267.011	$13088_{3} - 25355^{3}_{4}$	8057.973	50	2	12406.657	$21594_{3} - 34001^{3}_{4}$
8148.901	3		12268.220	$22163^{3}_{4} - 34431_{3}$	8054.929	2		12411.345	$21890^{3}_{5} - 34301_{4}$
8146.748	5		12271.462	$19503^{3}_{5} - 31774_{3}$	8052.715	5		12414.758	$20322^{0}_{6} - 32737_{5}$
8146.237	5		12272.232	$22877^{0}_{1} - 35149_{2}$	8051.486	1		12416.653	$21143_{5} - 33560^{3}_{4}$
8144.017	4		12275.577	$18614^{0}_{1} - 30889_{1}$	8050.067	5	1	12418.841	$10783^{2}_{2} - 23201_{3}$
8143.143	500	300	12276.895	$8800_{4} - 21077^{0}_{6}$	8048.611	2		12421.088	$19532_{4} - 31953^{3}_{4}$
8142.679	20	3	12277.595	$13297_{4} - 25575^{3}_{4}$	8046.838	5		12423.825	$17411^{3}_{5} - 29835_{3}$
8138.474	200	100	12283.938	$5563_{1} - 17847^{2}_{2}$	8046.331	8	3	12424.608	$19588^{0}_{6} - 32012_{4}$
8137.940	50	4	12284.744	$12114^{2}_{2} - 24399_{3}$	8045.182	5	1	12426.382	$19503^{3}_{5} - 31929_{3}$
8137.367	4		12285.609	$17847^{2}_{2} - 30132_{2}$	8044.989	4b		12426.680	$17224^{2}_{2} - 29650_{2}$
8137.256	2		12285.777	$23015^{0}_{6} - 35300_{5}$	8043.239	1		12429.384	$21738^{2}_{2} - 34167_{3}$
8135.798	2		12287.979	$17398_{3} - 29686^{3}_{5}$	8038.691	2		12436.416	$21252^{2}_{2} - 33689_{2}$
8134.633	5		12289.738	$22141^{3}_{5} - 34431_{3}$	8037.699	3		12437.951	$17411^{3}_{5} - 29849_{4}$
8134.085	2		12290.566	$19503^{3}_{5} - 31793_{4}$	8035.618	50		12441.172	$21165^{3}_{5} - 33606_{2}$
8133.855	1		12290.914	$18699_{2} - 30990^{3}_{5}$	8032.883	10		12445.408	$15166^{3}_{5} - 27612_{3}$
8132.964	50	1	12292.260	$21539^{3}_{4} - 33831_{4}$	8032.433	200	50	12446.105	$7502_{3} - 19948^{3}_{4}$
8131.517	5	1	12294.448	$22855^{3}_{5} - 35149_{2}$	8031.574	1		12447.436	$19713_{3} - 32160^{2}_{2}$
8129.681	50	5	12297.224	$16351_{0} - 28649^{0}_{1}$	8030.188	50	4	12449.585	$4961_{4} - 17411^{3}_{5}$
8129.405	150	25	12297.642	$2869_{3} - 15166^{3}_{5}$	8027.103	3		12454.369	$18053^{3}_{4} - 30508_{5}$
8125.877	4		12302.981	$22141^{3}_{5} - 34444_{2}$	8026.438	10	1	12455.401	$15493_{4} - 27948^{3}_{4}$
8122.725	200	50	12307.755	$19986^{3}_{6} - 32293_{5}$	8026.192	50	8	12455.783	$18809^{3}_{4} - 31265_{3}$
8121.058	15	1	12310.282	$13945^{3}_{5} - 26255_{4}$	8025.708	50	8	12456.534	$13297_{4} - 25753^{0}_{6}$
8117.557	5		12315.591	$18930^{3}_{5} - 31245_{2}$	8024.235	100	100	12458.821	$12847_{3} - 25306^{2}_{2}$
8114.539	50	4	12320.171	$16783^{3}_{4} - 29104_{4}$	8023.886	2		12459.363	$20322^{0}_{6} - 32781_{4}$
8108.929	4	1	12328.695	$15166^{3}_{5} - 27495_{4}$	8022.733	3		12461.153	$18809^{3}_{4} - 31271_{5}$
8107.508	3		12330.855	$14465^{2}_{2} - 26796_{3}$	8022.191	75b	25	12461.995	$10526^{3}_{5} - 22988_{2}$
8106.805	2		12331.925	$18809^{3}_{4} - 31141_{3}$	8014.499	50	3	12473.955	$12847_{3} - 25321^{3}_{5}$
8104.536	2		12335.377	$18930^{3}_{5} - 31265_{3}$	8013.499	15	2	12475.512	$18069^{3}_{5} - 30544_{2}$
8103.669	3	1	12336.697	$20214^{3}_{5} - 32551_{3}$	8010.708	50	4	12479.859	$22669^{3}_{5} - 35149_{2}$
8101.873	2		12339.432	$22877^{0}_{1} - 35216_{5}$	8008.645	2		12483.073	$17398_{3} - 29881^{3}_{4}$
8100.839	1		12341.007	$21077^{0}_{6} - 33418_{4}$	8008.397	5		12483.460	$18069^{3}_{5} - 30552_{4}$
8097.857	4		12345.551	$19948^{3}_{4} - 32293_{5}$	8008.272	2		12483.655	$15863_{2} - 28347^{2}_{2}$
8097.483	4		12346.122	$17398_{3} - 29744^{3}_{5}$	8007.988	1		12484.098	$19713_{3} - 32197^{3}_{5}$
8096.253	20	3	12347.997	$17501^{0}_{6} - 29849_{4}$	8006.477	25		12486.454	$13088_{3} - 25575^{3}_{4}$
8093.631	200	75	12351.997	$3865_{1} - 16217^{2}_{2}$	8006.443	15		12486.507	$20922^{2}_{2} - 33408_{3}$
8092.238	75	5	12354.124	$13088_{3} - 25442^{3}_{5}$	8003.446	50	5	12491.182	$19532_{4} - 32023^{0}_{6}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
8002.589	4		12492.520	$19503^{3}_{3} - 31995_{4}$
8000.033	100	10	12496.511	$16554_{6} - 29050^{6}_{6}$
7999.045	2		12498.055	$19039^{2}_{2} - 31537_{3}$
7999.009	4		12498.111	$19039^{2}_{2} - 31537_{3}$
7998.488	2		12498.925	$16346^{4}_{4} - 28845_{4}$
7996.963	40	3	12501.309	$18574_{1} - 31075^{2}_{2}$
7994.709	3		12504.833	$11802_{2} - 24307^{2}_{2}$
7993.676	150	8	12506.449	$10526^{3}_{3} - 23032_{4}$
7993.253	15	1	12507.111	$18382^{6}_{6} - 30889_{1}$
7992.936	10	2	12507.607	$12847_{3} - 25355^{4}_{4}$
7992.936	10	2	12507.607	$19273_{2} - 31780^{3}_{3}$
7992.156	50	3	12508.828	$15863_{2} - 28372^{1}_{1}$
7991.515	4h		12509.831	$19503^{3}_{3} - 32012_{4}$
7991.515	4h		12509.831	$19948^{2}_{4} - 32458_{4}$
7991.366	50	5	12510.064	$15970_{3} - 28480^{4}_{4}$
7989.163	8	1	12513.514	$12114^{2}_{2} - 24627_{1}$
7987.974	200	50	12515.377	$14481^{6}_{6} - 26997_{6}$
7986.904	1		12517.053	$18809^{4}_{4} - 31326_{4}$
7984.603	1		12520.660	$20054_{2} - 32575^{2}_{2}$
7984.032	1		12521.556	$21645^{4}_{4} - 34167_{3}$
7982.495	10	2	12523.967	$21165^{3}_{3} - 33689_{2}$
7982.289	8	2	12524.290	$19516^{2}_{2} - 32041_{2}$
7980.878	2		12526.504	$18549_{2} - 31075^{2}_{2}$
7978.977	500	300	12529.489	$3687_{2} - 16217^{2}_{2}$
7976.870	3		12532.798	$20566^{4}_{4} - 33099_{3}$
7975.874	2		12534.363	$22338^{3}_{3} - 34873_{4}$
7974.743	3		12536.141	$21575_{2} - 34111^{1}_{1}$
7974.459	4		12536.587	$20737^{1}_{1} - 33273_{1}$
7974.164	100	8	12537.051	$7280_{2} - 19817^{1}_{1}$
7972.598	200	20	12539.514	$4961_{4} - 17501^{6}_{6}$
7970.254	50	5	12543.201	$15970_{3} - 28513^{2}_{2}$
7969.785	10	1	12543.940	$15490^{6}_{6} - 28034_{5}$
7969.359	4		12544.610	$22163^{4}_{4} - 34707_{3}$
7968.784	2		12545.515	$17166_{5} - 29711^{6}_{6}$
7966.264	2		12549.484	$20724^{6}_{6} - 33273_{1}$
7965.711	8	1	12550.355	$12114^{2}_{2} - 24664_{3}$
7961.994	100	8	12556.214	$21165^{3}_{3} - 33721_{2}$
7961.343	50	8	12557.241	$17959_{4} - 30517^{6}_{6}$
7961.158	50	4	12557.533	$12114^{2}_{2} - 24671_{2}$
7960.474	1		12558.612	$21902^{4}_{4} - 34460_{5}$
7955.709	4	1	12566.133	$22141^{3}_{3} - 34707_{3}$
7955.491	2		12566.478	$17073_{1} - 29640^{1}_{1}$
7955.066	75	4	12567.149	$23015^{6}_{6} - 35582_{5}$
7954.592	150	15	12567.898	$6362_{2} - 18930^{3}_{3}$
7952.148	3		12571.760	$20737^{1}_{1} - 33309_{2}$
7951.885	8	1	12572.176	$19713_{3} - 32285^{3}_{3}$
7949.019	3	1	12576.709	$20522^{2}_{2} - 33099_{3}$
7947.930	4		12578.432	$11802_{2} - 24381^{2}_{2}$
7946.113	100	8	12581.309	$22508^{2}_{2} - 35089_{3}$
7946.074	2		12581.370	$11601_{1} - 24182^{2}_{2}$
7945.611	3		12582.103	$18069^{3}_{3} - 30651_{3}$
7944.708	2		12583.534	$18699_{2} - 31283^{3}_{3}$
7943.393	2		12585.617	$22855^{3}_{3} - 35440_{3}$
7943.050	20	2	12586.160	$14204_{5} - 26790^{4}_{4}$
7941.721	200	75	12588.266	$16346^{4}_{4} - 28934_{3}$
7941.164	2		12589.149	$14206^{2}_{4} - 26796_{3}$
7937.727	100	20	12594.600	$9804_{5} - 22399^{6}_{6}$
7936.762	4		12596.132	$20054_{2} - 32650^{1}_{1}$
7932.280	3	1	12603.249	$19948^{4}_{4} - 32551_{3}$
7929.938	5		12606.971	$18930^{3}_{3} - 31537_{3}$
7929.809	25c	2	12607.176	$17354^{1}_{1} - 29961_{1}$
7928.680	3		12608.971	$15618^{3}_{3} - 28227_{4}$
7927.546	25	3	12610.775	$20054_{2} - 32665^{1}_{1}$
7925.734	50	3	12613.658	$19588^{6}_{6} - 32202_{5}$
7924.977	50	4	12614.863	$13088_{3} - 25703^{2}_{2}$
7922.912	8	2	12618.151	$11802_{2} - 24421^{3}_{3}$
7922.549	50	5	12618.729	$17398_{3} - 30017^{3}_{3}$
7922.235	15		12619.229	$15970_{3} - 28589^{3}_{3}$
7917.236	15	1	12627.197	$22098_{4} - 34725^{3}_{3}$
7916.790	40	5	12627.908	$21539^{2}_{4} - 34167_{3}$
7914.493	8	2	12631.573	$18614^{1}_{1} - 31245_{2}$
7908.484	8	2	12641.171	$20322^{6}_{6} - 32963_{5}$
7908.148	50	5	12641.708	$22508^{2}_{2} - 35149_{2}$
7907.856	4		12642.175	$23655^{3}_{4} - 36297_{4}$
7904.411	50	5	12647.685	$15493_{4} - 28140^{4}_{4}$
7904.294	4		12647.872	$20566^{2}_{4} - 33214_{5}$
7903.319	8	1	12649.432	$15863_{2} - 28513^{2}_{2}$
7900.778	5		12653.500	$20737^{1}_{1} - 33390_{1}$
7900.309	200	75	12654.251	$15618^{3}_{3} - 28273_{2}$
7899.018	8	1	12656.320	$21143_{5} - 33799^{4}_{4}$
7896.541	5		12660.290	$13847_{2} - 26508^{3}_{3}$
7893.614	50	5	12664.984	$16217^{2}_{2} - 28882_{2}$
7892.770	8		12666.338	$20724^{6}_{6} - 33390_{1}$
7886.273	400l	50	12676.773	$6362_{2} - 19039^{2}_{2}$
7883.595	4		12681.080	$23655^{3}_{4} - 36336_{3}$
7881.667	2		12684.182	$20922^{2}_{2} - 33606_{2}$
7880.577	5		12685.936	$22163^{4}_{4} - 34849_{5}$
7878.483	5		12689.308	$13962_{1} - 26651^{2}_{2}$
7869.771	15	2	12703.355	$15970_{3} - 28673^{2}_{2}$
7868.924	40	10	12704.722	$22877^{1}_{1} - 35582_{5}$
7868.396	75	10h	12705.575	$19588^{6}_{6} - 32293_{5}$
7867.683	40l	3	12706.726	$11601_{1} - 24307^{2}_{2}$
7865.954	400	75	12709.519	$14481^{6}_{6} - 27191_{5}$
7865.248	10	2	12710.660	$15970_{3} - 28680^{4}_{4}$
7865.077	8		12710.936	$22163^{4}_{4} - 34874_{3}$
7864.009	100	8	12712.663	$7502_{3} - 20214^{3}_{3}$
7862.336	15	3	12715.368	$17166_{5} - 29881^{4}_{4}$
7858.703	2		12721.246	$22855^{3}_{3} - 35576_{3}$
7858.583	2		12721.440	$17411^{3}_{3} - 30132_{2}$
7855.074	3		12727.123	$12847_{3} - 25575^{4}_{4}$
7854.919	8		12727.374	$18809^{4}_{4} - 31537_{3}$
7853.645	2		12729.439	$21594_{3} - 34324^{2}_{2}$
7853.284	20		12730.024	$20543^{6}_{6} - 33273_{1}$
7852.227	1		12731.738	$22141^{3}_{3} - 34873_{4}$
7851.006	3		12733.718	$18549_{2} - 31283^{3}_{3}$
7848.645	5h		12737.548	$17224^{2}_{2} - 29961_{1}$
7848.441	100	40	12737.879	$15490^{6}_{6} - 28227_{4}$
7847.784	100b	40	12738.946	$13297_{4} - 26036^{3}_{3}$
7847.536	500b	150	12739.348	$8800_{4} - 21539^{4}_{4}$
7843.545	4	1	12745.830	$20322^{6}_{6} - 33068_{6}$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
7842.254	100	10	12747.928	$13175_{4}^{3} - 25923_{4}$
7841.781	200	50	12748.697	$11241_{3}^{3} - 23990_{2}$
7841.596	5		12748.998	$21575_{2} - 34324_{2}^{2}$
7841.134	8		12749.749	$2869_{3} - 15618_{3}^{3}$
7840.992	8		12749.980	$21594_{3} - 34344_{4}^{4}$
7840.445	100	75	12750.870	$19986_{6}^{8} - 32737_{5}$
7840.290	100	50	12751.122	$13297_{4} - 26048_{4}^{4}$
7839.276	10	2	12752.771	$19532_{4} - 32285_{3}^{3}$
7838.062	2		12754.746	$21077_{6}^{8} - 33831_{4}$
7836.456	100	5	12757.360	$16346_{4}^{4} - 29104_{4}$
7835.620	100		12758.721	$11802_{2} - 24561_{3}^{3}$
7828.073	3		12771.022	$22669_{3}^{3} - 35440_{3}$
7825.245	2		12775.637	$21668_{1}^{1} - 34444_{2}$
7824.291	1		12777.195	$21594_{3} - 34371_{2}^{2}$
7823.787	2		12778.018	$17354_{1}^{1} - 30132_{2}$
7823.475	50	2	12778.528	$22855_{3}^{3} - 35633_{4}$
7822.392	100	4	12780.297	$11601_{1} - 24381_{2}^{2}$
7819.888	2		12784.389	$21645_{4} - 34430_{3}^{3}$
7819.350	3		12785.269	$15863_{2} - 28649_{1}^{1}$
7818.694	2		12786.342	$20522_{2}^{2} - 33309_{2}$
7817.771	500	200	12787.851	$10414_{4}^{4} - 23201_{3}$
7817.130	4		12788.900	$13088_{3} - 25877_{4}^{4}$
7816.135	50	4	12790.528	$11241_{3}^{3} - 24032_{4}$
7813.970	50	5	12794.072	$11877_{1}^{1} - 24671_{2}$
7813.970	50	5	12794.072	$15736_{1}^{1} - 28531_{2}$
7813.481	50	8	12794.872	$16346_{4}^{4} - 29141_{5}$
7810.627	100	10	12799.547	$13297_{4} - 26096_{3}^{3}$
7809.950	2		12800.657	$12114_{2}^{2} - 24915_{3}$
7809.245	25b	2	12801.813	$17959_{4} - 30761_{3}^{3}$
7807.879	40		12804.052	$13847_{2} - 26651_{2}^{2}$
7804.533	50	5	12809.542	$15863_{2} - 28673_{2}^{2}$
7804.146	50	4	12810.177	$17398_{3} - 30208_{2}^{2}$
7803.811	3	1	12810.727	$22338_{3}^{3} - 35149_{2}$
7802.824	10	2	12812.347	$15863_{2} - 28676_{3}^{3}$
7801.945	2		12813.791	$15166_{3}^{3} - 27980_{3}$
7800.029	3		12816.938	$18809_{4}^{4} - 31626_{5}$
7799.629	8	1	12817.596	$21890_{3}^{3} - 34707_{3}$
7799.629	8	1	12817.596	$22399_{6}^{6} - 35216_{5}$
7798.360	300	25	12819.681	$5563_{1} - 18382_{6}^{6}$
7795.533	1		12824.330	$18699_{2} - 31523_{3}^{3}$
7793.128	10	2	12828.288	$17959_{4} - 30788_{6}^{6}$
7790.132	10		12833.221	$19948_{4}^{4} - 32781_{4}$
7788.932	500	75	12835.199	$11197_{6}^{6} - 24032_{4}$
7787.659	25		12837.297	$14206_{4}^{4} - 27044_{3}$
7785.771	2h		12840.410	$22248_{2}^{2} - 35089_{3}$
7784.779	3		12842.046	$20566_{4}^{4} - 33408_{3}$
7783.417	5	1	12844.293	$18930_{3}^{3} - 31774_{3}$
7782.742	4	1	12845.407	$16351_{0} - 29197_{1}^{1}$
7782.318	150	50	12846.107	$21645_{4} - 34492_{4}^{4}$
7781.843	100	4	12846.891	$20543_{6}^{6} - 33390_{1}$
7781.329	2		12847.740	$19948_{4}^{4} - 32796_{3}$
7779.741	8	2	12850.362	$20423_{1}^{1} - 33273_{1}$
7779.472	2		12850.806	$13945_{3}^{3} - 26796_{3}$
7778.488	50	5	12852.432	$15490_{6}^{6} - 28342_{5}$
7776.804	4		12855.215	$21575_{2} - 34430_{3}^{3}$
7776.671	40	2	12855.435	$12847_{3} - 25703_{2}^{2}$
7775.688	2		12857.060	$17398_{3} - 30255_{3}^{3}$
7773.389	3		12860.863	$23655_{4}^{4} - 36515_{3}$
7772.457	2		12862.405	$19713_{3} - 32575_{2}^{2}$
7771.942	100	50	12863.257	$10414_{4}^{4} - 23277_{5}$
7769.052	2		12868.042	$20522_{2}^{2} - 33390_{1}$
7768.470	2		12869.006	$20737_{1}^{1} - 33606_{2}$
7767.963	3		12869.846	$19588_{6}^{6} - 32458_{4}$
7766.941	4		12871.540	$17501_{6}^{6} - 30372_{6}$
7762.722	50	3	12878.535	$14465_{2}^{2} - 27343_{3}$
7759.127	2		12884.502	$20214_{3}^{3} - 33099_{3}$
7758.486	3		12885.566	$20423_{1}^{1} - 33309_{2}$
7758.251	3h		12885.957	$20522_{2}^{2} - 33408_{3}$
7755.600	4		12890.362	$19039_{2}^{2} - 31929_{3}$
7754.748	1		12891.778	$21539_{4}^{4} - 34431_{3}$
7754.433	1		12892.301	$20322_{6}^{6} - 33214_{5}$
7754.271	2		12892.571	$20566_{4}^{4} - 33459_{4}$
7752.440	3		12895.616	$18069_{3}^{3} - 30964_{3}$
7751.435	5		12897.288	$22508_{2}^{2} - 35405_{3}$
7749.578	5		12900.378	$16783_{4}^{4} - 29684_{5}$
7749.325	8	2	12900.799	$22248_{2}^{2} - 35149_{2}$
7748.880	3		12901.540	$22399_{6}^{6} - 35300_{5}$
7745.813	15	3	12906.649	$19532_{4} - 32439_{4}^{4}$
7745.235	3		12907.612	$21539_{4}^{4} - 34447_{4}$
7744.786	4		12908.360	$17224_{2}^{2} - 30132_{2}$
7742.552	100	2	12912.085	$15618_{3}^{3} - 28531_{2}$
7742.019	2		12912.974	$22508_{2}^{2} - 35421_{1}$
7740.867	15	1	12914.895	$21252_{2}^{2} - 34167_{3}$
7739.704	2		12916.836	$22877_{1}^{1} - 35794_{4}$
7738.356	5	1	12919.086	$18011_{6}^{6} - 30930_{6}$
7737.779	4		12920.049	$13962_{1} - 26882_{6}^{6}$
7736.364	2		12922.412	$22877_{1}^{1} - 35799_{6}$
7735.479	2		12923.891	$19273_{2} - 32197_{3}^{3}$
7733.362	2		12927.429	$22401_{1} - 35328_{1}^{1}$
7730.107	5	1	12932.872	$22508_{2}^{2} - 35440_{3}$
7728.939	100	15	12934.827	$7280_{2} - 20214_{3}^{3}$
7727.552	2		12937.148	$21645_{4} - 34583_{3}^{3}$
7726.384	2		12939.104	$22855_{3}^{3} - 35794_{4}$
7723.641	3		12943.699	$15618_{3}^{3} - 28562_{4}$
7721.780	2		12946.819	$21902_{4}^{4} - 34849_{5}$
7721.188	100	8	12947.811	$22141_{3}^{3} - 35089_{3}$
7718.812	3		12951.797	$20737_{1}^{1} - 33689_{2}$
7713.337	4		12960.990	$20566_{4}^{4} - 33527_{4}$
7712.394	50	4	12962.575	$15970_{3} - 28932_{4}^{4}$
7711.113	40	3	12964.728	$18809_{4}^{4} - 31774_{3}$
7710.258	100	15	12966.166	$8111_{4} - 21077_{6}^{6}$
7709.882	50		12966.798	$11802_{2} - 24769_{3}^{3}$
7708.149	2		12969.714	$21738_{2}^{2} - 34707_{3}$
7706.909	1		12971.800	$21902_{4}^{4} - 34874_{3}$
7706.448	3		12972.576	$16783_{4}^{4} - 29756_{4}$
7705.268	2		12974.563	$18549_{2} - 31523_{3}^{3}$
7703.679	100	10	12977.239	$19986_{6}^{6} - 32963_{5}$
7699.765	100	5	12983.836	$18809_{4}^{4} - 31793_{4}$
7699.660	10	1	12984.013	$20737_{1}^{1} - 33721_{2}$
7699.399	75	1	12984.453	$14206_{4}^{4} - 27191_{5}$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
7698.035	20b		12986.754	$10783\frac{2}{2} - 23769_1$	7634.919	3		13094.111	$20214\frac{3}{3} - 33309_2$
7697.922	75		12986.944	$15493_4 - 28480\frac{4}{4}$	7633.767	75	2	13096.087	$15493_4 - 28589\frac{3}{3}$
7697.077	2		12988.370	$21594_3 - 34583\frac{3}{3}$	7632.129	50	2	13098.898	$13962_1 - 27061\frac{2}{2}$
7693.797	100	5	12993.907	$17166_5 - 30160\frac{4}{4}$	7632.129	50	2	13098.898	$13945\frac{3}{3} - 27044_3$
7690.658	5		12999.211	$18930\frac{3}{3} - 31929_3$	7630.536	50	2	13101.633	$14465\frac{2}{2} - 27566_2$
7689.993	1		13000.335	$22877\frac{1}{1} - 35877_2$	7630.310	100	5	13102.021	$8800_4 - 21902\frac{4}{4}$
7688.949	3		13002.100	$19039\frac{2}{2} - 32041_2$	7627.428	3		13106.971	$20054_2 - 33161\frac{1}{1}$
7686.149	50	1	13006.836	$17501\frac{0}{0} - 30508_5$	7627.428	3		13106.971	$20054_2 - 33161\frac{1}{1}$
7683.150	3b		13011.913	$19273_2 - 32285\frac{3}{3}$	7627.175	150	5	13107.406	$4961_4 - 18069\frac{3}{3}$
7683.010	50	1	13012.150	$14032\frac{2}{2} - 27044_3$	7625.705	150	5	13109.933	$14481\frac{6}{6} - 27591_5$
7682.438	3		13013.119	$18699_2 - 31712\frac{1}{1}$	7625.120	50	2	13110.938	$18930\frac{3}{3} - 32041_2$
7681.318	3		13015.017	$19948\frac{4}{4} - 32963_5$	7620.815	5		13118.345	$23015\frac{0}{0} - 36133_5$
7678.123	150	5	13020.432	$7502_3 - 20522\frac{2}{2}$	7620.443	3		13118.985	$17398_3 - 30517\frac{4}{4}$
7676.888	2		13022.527	$22855\frac{3}{3} - 35877_2$	7620.080	100	5	13119.610	$18809\frac{4}{4} - 31929_3$
7675.925	2		13024.161	$22396\frac{1}{1} - 35421_1$	7617.255	2		13124.476	$22669\frac{3}{3} - 35794_4$
7675.621	3		13024.677	$13088_3 - 26113\frac{2}{2}$	7616.686	50	1	13125.456	$13962_1 - 27087\frac{1}{1}$
7675.621	3		13024.677	$18574_1 - 31599\frac{2}{2}$	7614.421	1		13129.360	$21575_2 - 34704\frac{3}{3}$
7672.749	2		13029.552	$12847_3 - 25877\frac{4}{4}$	7612.122	4	1	13133.326	$17411\frac{3}{3} - 30544_2$
7672.252	50	2	13030.396	$13847_2 - 26878\frac{3}{3}$	7611.293	8		13134.756	$17073_1 - 30208\frac{2}{2}$
7672.123	1		13030.615	$17959_4 - 30990\frac{3}{3}$	7610.378	2		13136.335	$21165\frac{3}{3} - 34301_4$
7669.750	8		13034.647	$19516\frac{2}{2} - 32551_3$	7610.101	5		13136.813	$14206\frac{4}{4} - 27343_3$
7668.955	50	1	13035.998	$11802_2 - 24838\frac{1}{1}$	7609.546	2		13137.772	$22163\frac{4}{4} - 35300_5$
7667.018	2		13039.291	$21143_5 - 34182\frac{0}{0}$	7609.359	3		13138.094	$18574_1 - 31712\frac{1}{1}$
7665.734	8		13041.475	$19713_3 - 32754\frac{3}{3}$	7607.824	100	4	13140.745	$6362_2 - 19503\frac{3}{3}$
7665.344	2		13042.139	$20522\frac{2}{2} - 33564_3$	7607.519	40	1	13141.272	$17411\frac{3}{3} - 30552_4$
7661.621	8	1	13048.476	$19503\frac{3}{3} - 32551_3$	7606.314	5		13143.354	$7280_2 - 20423\frac{1}{1}$
7661.162	2		13049.258	$20724\frac{0}{0} - 33773_1$	7605.083	5		13145.481	$15736\frac{1}{1} - 28882_2$
7660.889	150	4	13049.723	$4961_4 - 18011\frac{0}{0}$	7604.177	3		13147.048	$14465\frac{2}{2} - 27612_3$
7660.029	75	1	13051.188	$5563_1 - 18614\frac{1}{1}$	7603.623	40	1	13148.005	$13847_2 - 26995\frac{3}{3}$
7660.029	75	1	13051.188	$16783\frac{4}{4} - 29835_3$	7603.249	40	1	13148.652	$19588\frac{0}{0} - 32737_5$
7658.323	150	5	13054.096	$8111_4 - 21165\frac{3}{3}$	7602.795	40	1	13149.437	$19713_3 - 32862\frac{4}{4}$
7655.702	8		13058.565	$21645_4 - 34704\frac{3}{3}$	7602.247	2		13150.385	$21575_2 - 34725\frac{3}{3}$
7655.307	2		13059.239	$17959_4 - 31019\frac{4}{4}$	7601.880	5		13151.020	$19948\frac{4}{4} - 33099_3$
7654.695	100	5	13060.283	$15618\frac{3}{3} - 28679_2$	7600.637	2		13153.171	$23655\frac{4}{4} - 36808_3$
7653.827	200	10	13061.764	$14204_5 - 27266\frac{4}{4}$	7599.815	2		13154.593	$6362_2 - 19516\frac{2}{2}$
7653.327	1		13062.617	$17224\frac{2}{2} - 30286_1$	7599.638	5		13154.900	$17398_3 - 30553\frac{2}{2}$
7652.317	100	3	13064.341	$7502_3 - 20566\frac{4}{4}$	7598.203	200	3	13157.384	$16554_6 - 29711\frac{0}{0}$
7651.739	100	2	13065.328	$16783\frac{4}{4} - 29849_4$	7598.203	200	3	13157.384	$11241\frac{3}{3} - 24399_3$
7651.143	1		13066.346	$22338\frac{3}{3} - 35405_3$	7591.999	10		13168.136	$21539\frac{4}{4} - 34707_3$
7650.996	75	1	13066.597	$19227\frac{8}{8} - 32293_5$	7586.988	8		13176.833	$18069\frac{3}{3} - 31245_2$
7649.891	2		13068.484	$22508\frac{2}{2} - 35576_3$	7586.207	20		13178.190	$11802_2 - 24981\frac{3}{3}$
7648.545	4		13070.784	$14226_0 - 27297\frac{1}{1}$	7585.783	200	10	13178.926	$2558_0 - 15736\frac{1}{1}$
7647.380	500	50	13072.775	$9804_5 - 22877\frac{0}{0}$	7585.688	200	15	13179.091	$16554_6 - 29733\frac{0}{0}$
7647.380	500	50	13072.775	$18069\frac{3}{3} - 31141_3$	7583.574	2		13182.765	$20423\frac{1}{1} - 33606_2$
7646.337	2		13074.558	$23015\frac{0}{0} - 36089_4$	7583.534	2		13182.835	$20423\frac{1}{1} - 33606_2$
7644.737	25	1	13077.295	$11802_2 - 24880\frac{1}{1}$	7583.422	25		13183.029	$15493_4 - 28676\frac{3}{3}$
7643.413	1		13079.560	$21645_4 - 34725\frac{3}{3}$	7581.856	4		13185.752	$18809\frac{4}{4} - 31995_4$
7642.873	15		13080.484	$13175\frac{4}{4} - 26255_4$	7581.088	2		13187.088	$21902\frac{3}{3} - 35089_3$
7642.425	2		13081.251	$18699_2 - 31780\frac{3}{3}$	7580.866	4		13187.474	$15493_4 - 28680\frac{4}{4}$
7642.028	10	1	13081.931	$19986\frac{8}{8} - 33068_6$	7580.829	5		13187.539	$15493_4 - 28680\frac{4}{4}$
7641.605	2		13082.655	$18930\frac{3}{3} - 32012_4$	7580.686	40	1	13187.787	$15970_3 - 29157\frac{3}{3}$
7641.066	1		13083.578	$20522\frac{2}{2} - 33606_2$	7580.340	50	1	13188.389	$12847_3 - 26036\frac{3}{3}$
7638.777	100	3	13087.498	$13297_4 - 26384\frac{4}{4}$	7579.456	3		13189.928	$17354\frac{1}{1} - 30544_2$
7637.385	75	2	13089.883	$8800_4 - 21890\frac{3}{3}$	7578.274	2		13191.985	$21252\frac{2}{2} - 34444_2$
7636.173	100	4	13091.961	$4961_4 - 18053\frac{4}{4}$	7578.274	2		13191.985	$22248\frac{2}{2} - 35440_3$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
7578.274	2		13191.985	$22855_{3}^{3} - 36047_{2}$	7517.963	50	2	13297.814	$20423_{1}^{?} - 33721_{2}$
7577.550	25		13193.245	$19588_{6}^{6} - 32781_{4}$	7515.504	1		13302.164	$19273_{2} - 32575_{2}^{?}$
7577.266	20		13193.740	$20214_{3}^{3} - 33408_{3}$	7514.681	2		13303.621	$21575_{2} - 34878_{1}^{?}$
7574.484	5		13198.585	$20522_{2}^{?} - 33721_{2}$	7512.237	3		13307.949	$21738_{2}^{?} - 35046_{1}$
7574.116	3		13199.227	$21890_{3}^{3} - 35089_{3}$	7511.788	100	4	13308.745	$9804_{5} - 23113_{4}^{?}$
7573.342	50	1	13200.576	$12847_{3} - 26048_{4}^{?}$	7510.144	1		13311.658	$14032_{2}^{?} - 27343_{3}$
7573.155	3		13200.902	$16217_{2}^{?} - 29418_{2}$	7509.595	2		13312.631	$20214_{3}^{3} - 33527_{4}$
7572.973	4		13201.219	$21143_{5} - 34344_{4}^{?}$	7508.477	100	4	13314.614	$14206_{4}^{?} - 27521_{4}$
7571.931	3		13203.036	$18809_{4}^{?} - 32012_{4}$	7507.923	75		13315.596	$18011_{6}^{6} - 31326_{4}$
7571.029	8		13204.609	$16217_{2}^{?} - 29422_{1}$	7507.737	50		13315.926	$15618_{3}^{3} - 28934_{3}$
7570.636	2		13205.294	$20322_{6}^{6} - 33527_{4}$	7505.292	50		13320.264	$17224_{2}^{?} - 30544_{2}$
7569.509	50	2	13207.260	$10783_{2}^{2} - 23990_{2}$	7505.052	1		13320.690	$18549_{2} - 31870_{2}^{?}$
7567.739	300	15	13210.349	$9804_{5} - 23015_{6}^{6}$	7503.829	50	8	13322.861	$14243_{1}^{?} - 27566_{2}$
7567.596	50	3	13210.599	$13297_{4} - 26508_{3}^{3}$	7503.626	2		13323.221	$17959_{4} - 31283_{3}^{3}$
7566.732	3		13212.107	$22877_{6}^{6} - 36089_{4}$	7501.180	8		13327.566	$22248_{2}^{?} - 35576_{3}$
7565.850	50	2	13213.647	$13847_{2} - 27061_{2}^{?}$	7499.786	1		13330.043	$19532_{4} - 32862_{4}^{?}$
7563.711	5		13217.384	$18053_{4}^{3} - 31271_{5}$	7499.579	8	1	13330.411	$21077_{6}^{6} - 34407_{6}$
7557.751	50	1	13227.807	$15970_{3} - 29197_{2}^{?}$	7499.000	75	2	13331.440	$8243_{2}^{?} - 21575_{2}$
7557.438	2		13228.355	$19986_{6}^{6} - 33214_{5}$	7497.552	10	1	13334.015	$15863_{2} - 29197_{2}^{?}$
7556.646	1		13229.742	$20543_{6}^{6} - 33773_{1}$	7497.305	3		13334.454	$21539_{4}^{?} - 34874_{3}$
7556.309	2		13230.332	$19273_{2} - 32503_{2}^{?}$	7496.988	15	1	13335.018	$13962_{1} - 27297_{1}^{?}$
7556.225	5		13230.479	$16783_{4}^{4} - 30014_{4}$	7495.564	50	2	13337.551	$16346_{4}^{?} - 29684_{5}$
7553.974	10w	2	13234.421	$22399_{6}^{6} - 35633_{4}$	7494.237	2		13339.913	$15970_{3} - 29310_{4}^{?}$
7553.974	10w	2	13234.421	$22855_{3}^{3} - 36089_{4}$	7493.427	75	2	13341.355	$8800_{4} - 22141_{3}^{3}$
7553.753	2		13234.808	$17959_{4} - 31194_{4}^{?}$	7490.379	5		13346.784	$17411_{3}^{3} - 30758_{2}$
7551.997	4		13237.886	$11601_{1} - 24838_{1}^{?}$	7489.709	50	2	13347.978	$13297_{4} - 26645_{6}^{6}$
7550.831	1		13239.930	$17411_{3}^{3} - 30651_{3}$	7489.612	50	2	13348.151	$7795_{4}^{?} - 21143_{5}$
7550.677	5		13240.200	$13847_{2} - 27087_{1}^{?}$	7489.361	1		13348.598	$21143_{5} - 34492_{4}^{?}$
7549.923	2		13241.522	$19713_{3} - 32954_{2}^{?}$	7487.972	100	3	13351.074	$8243_{2}^{?} - 21594_{3}$
7549.532	4		13242.208	$22163_{4}^{4} - 35405_{3}$	7487.869	3		13351.258	$17166_{5} - 30517_{4}^{?}$
7549.439	1		13242.371	$20054_{2} - 33297_{2}^{?}$	7485.500	5		13355.483	$15490_{6}^{6} - 28845_{4}$
7549.316	200	8	13242.587	$7280_{2} - 20522_{2}^{?}$	7483.624	200	10	13358.831	$3865_{1} - 17224_{2}^{?}$
7547.742	3		13245.348	$20922_{2}^{?} - 34167_{3}$	7481.352	200	15	13362.888	$8800_{4} - 22163_{4}^{?}$
7545.657	5		13249.008	$12847_{3} - 26096_{3}^{3}$	7481.110	50	1	13363.320	$17398_{3} - 30761_{3}^{3}$
7544.592	2		13250.879	$20522_{2}^{?} - 33773_{1}$	7480.802	2		13363.870	$22098_{4} - 35462_{3}^{3}$
7540.596	15		13257.901	$18069_{3}^{3} - 31326_{4}$	7477.364	8		13370.015	$21077_{6}^{6} - 34447_{4}$
7539.622	4		13259.613	$18011_{6}^{6} - 31271_{5}$	7474.559	10	1	13375.032	$19588_{6}^{6} - 32963_{5}$
7537.429	50	2	13263.471	$15618_{3}^{3} - 28882_{2}$	7474.043	2		13375.956	$20922_{2}^{?} - 34298_{1}$
7536.407	50	10	13265.270	$20566_{4}^{?} - 33831_{4}$	7473.440	20	1	13377.035	$21668_{1}^{?} - 35046_{1}$
7536.244	1		13265.557	$20423_{1}^{?} - 33689_{2}$	7471.346	5		13380.784	$18699_{2} - 32080_{1}^{?}$
7535.850	5		13266.250	$21165_{3}^{3} - 34431_{3}$	7469.705	4		13383.724	$21077_{6}^{6} - 34460_{5}$
7531.818	50	2	13273.352	$18053_{4}^{3} - 31326_{4}$	7469.054	40	1	13384.890	$14206_{4}^{?} - 27591_{5}$
7531.142	75	2	13274.543	$13088_{3} - 26363_{2}^{2}$	7466.819	5		13388.897	$15863_{2} - 29252_{2}^{?}$
7529.408	2		13277.600	$22401_{1} - 35678_{1}^{?}$	7465.443	100	3	13391.364	$20214_{3}^{3} - 33606_{2}$
7529.318	3		13277.759	$22163_{4}^{4} - 35440_{3}$	7465.236	50	1	13391.736	$15493_{4} - 28884_{3}^{3}$
7528.919	5		13278.463	$19503_{3}^{3} - 32781_{4}$	7465.025	15	1	13392.114	$18809_{4}^{?} - 32202_{5}$
7528.490	40	8	13279.220	$11601_{1} - 24880_{1}^{?}$	7463.427	1		13394.981	$22399_{6}^{6} - 35794_{4}$
7526.832	2		13282.145	$23015_{6}^{6} - 36297_{4}$	7462.990	75	1	13395.766	$15166_{3}^{3} - 28562_{4}$
7523.335	8		13288.318	$16351_{0} - 29640_{1}^{?}$	7461.502	5		13398.437	$13945_{3}^{3} - 27343_{3}$
7523.133	100	3	13288.675	$14206_{4}^{?} - 27495_{4}$	7461.385	3		13398.647	$21902_{4}^{?} - 35300_{5}$
7520.694	15		13292.985	$19503_{3}^{3} - 32796_{3}$	7461.290	8	1	13398.818	$17847_{2}^{?} - 31245_{2}$
7520.567	2		13293.209	$15863_{2} - 29157_{1}^{?}$	7460.310	10	1	13400.578	$22399_{6}^{6} - 35799_{6}$
7520.127	8		13293.987	$15863_{2} - 29157_{3}^{3}$	7458.753	50	2	13403.375	$17354_{1}^{?} - 30758_{2}$
7519.279	1		13295.486	$18574_{1} - 31870_{2}^{?}$	7457.648	25	1	13405.361	$14206_{4}^{?} - 27612_{3}$
7518.780	50	1	13296.369	$13088_{3} - 26384_{4}^{?}$	7455.204	100	4	13409.756	$16346_{4}^{?} - 29756_{4}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
7453.730	20	1	13412.408	$13847_2 - 27260_3^0$
7453.188	5		13413.383	$22163_4^3 - 35576_3$
7452.516	20	1	13414.593	$17398_3 - 30812_2^2$
7452.432	2		13414.744	$21575_2 - 34989_1^0$
7450.306	8		13418.572	$17847_2^0 - 31265_3$
7449.979	3		13419.161	$22163_4^3 - 35582_5$
7449.808	75	2	13419.469	$13088_3 - 26508_3^3$
7449.605	75	3	13419.834	$7502_3 - 20922_2^2$
7447.848	150	5	13423.000	$11241_3^3 - 24664_3$
7445.697	3		13426.878	$17224_2^2 - 30651_3$
7445.697	3		13426.878	$18614_1^0 - 32041_2$
7444.751	200	8	13428.584	$8111_4 - 21539_4^4$
7444.373	8	1	13429.266	$17501_0^0 - 30930_6$
7443.873	50	1	13430.168	$11241_3^3 - 24671_2$
7443.573	1		13430.709	$23655_4^4 - 37085_4$
7442.040	15		13433.476	$16217_2^2 - 29650_2$
7441.125	25	1	13435.128	$21645_4 - 35081_0^0$
7439.314	3		13438.398	$18431_3 - 31870_2^2$
7437.331	1		13441.981	$22855_3^3 - 36297_4$
7433.375	8		13449.135	$15970_3 - 29419_2^2$
7433.005	5		13449.804	$13847_2 - 27297_1^0$
7430.255	500	15	13454.782	$6362_2 - 19817_1^0$
7429.212	3		13456.671	$19817_1^0 - 33273_1$
7428.943	800	50	13457.159	$7280_2 - 20737_1^0$
7427.224	2		13460.273	$19948_4^4 - 33408_3$
7426.906	4		13460.849	$18699_2 - 32160_2^2$
7422.013	75	2	13469.724	$19948_4^4 - 33418_4$
7421.465	5		13470.718	$22163_4^4 - 35633_4$
7419.593	10		13474.117	$20214_3^3 - 33689_2$
7418.548	200		13476.015	$5563_1 - 19039_2^2$
7417.789	100		13477.394	$2869_3 - 16346_4^4$
7416.503	3		13479.731	$19588_0^0 - 33068_6$
7415.923	10		13480.785	$21668_1^0 - 35149_2$
7415.817	5		13480.978	$22396_1^0 - 35877_2$
7415.679	3		13481.228	$19273_2 - 32754_3^3$
7414.361	10		13483.625	$18053_4^4 - 31537_3$
7414.139	3		13484.029	$18809_4^4 - 32293_5$
7413.592	25		13485.024	$15618_3^3 - 29104_4$
7413.484	3		13485.220	$13962_1 - 27447_2^2$
7413.410	2		13485.355	$21645_4 - 35131_4^4$
7411.739	100	4	13488.395	$16346_4^4 - 29835_3$
7411.322	10		13489.154	$3865_1 - 17354_1^0$
7409.836	3		13491.859	$19817_1^0 - 33309_2$
7409.618	1		13492.256	$22141_3^3 - 35633_4$
7409.618	1		13492.256	$22338_3^3 - 35831_3$
7409.221	40		13492.979	$13297_4 - 26790_4^4$
7404.262	50		13502.016	$9804_5 - 23306_6^6$
7403.993	50	1	13502.506	$16346_4^4 - 29849_4$
7403.698	2		13503.044	$21902_4^4 - 35405_3$
7403.273	3		13503.819	$11802_2 - 25306_2^2$
7402.248	400	8	13505.689	$10526_3^3 - 24032_4$
7401.872	50		13506.375	$20214_3^3 - 33721_2$
7400.309	2		13509.228	$20922_2^2 - 34431_3$
7400.071	40	2	13509.663	$19227_6^6 - 32737_5$
7399.391	8		13510.904	$19532_4 - 33043_3^3$
7398.583	50	1	13512.380	$15166_3^3 - 28679_2$
7398.540	8		13512.458	$19039_2^2 - 32551_3$
7397.074	4		13515.136	$12847_3 - 26363_2^2$
7396.895	20	1	13515.463	$14465_2^2 - 27980_3$
7394.970	1		13518.981	$11802_2 - 25321_3^3$
7390.097	50		13527.896	$18930_3^3 - 32458_4$
7388.403	5		13530.997	$18549_2 - 32080_1^0$
7386.924	50	2	13533.706	$17224_2^2 - 30758_2$
7386.347	50	10	13534.764	$14032_2^2 - 27566_2$
7386.055	8		13535.299	$17354_1^0 - 30889_1$
7385.498	500	15	13536.320	$3687_2 - 17224_2^2$
7385.391	8b		13536.516	$21594_3 - 35131_4^4$
7385.154	20		13536.950	$12847_3 - 26384_4^4$
7384.174	200	5	13538.747	$8800_4 - 22338_3^3$
7383.712	150	8	13539.594	$20867_7^7 - 34407_6$
7383.596	50	2	13539.806	$17073_1 - 30613_0^0$
7378.165	2		13549.773	$21539_4^4 - 35089_3$
7377.891	40	1	13550.276	$13945_3^3 - 27495_4$
7377.626	2		13550.763	$21890_3^3 - 35440_3$
7376.879	200	8	13552.135	$14481_6^6 - 28034_5$
7376.178	25		13553.423	$17411_3^3 - 30964_3$
7375.142	1		13555.327	$15863_2 - 29419_2^2$
7374.483	5		13556.538	$23655_4^4 - 37211_5$
7373.960	1		13557.500	$15493_4 - 29050_0^0$
7373.960	1		13557.500	$19713_3 - 33270_4^4$
7370.827	50	2	13563.262	$13088_3 - 26651_2^2$
7370.409	4		13564.031	$17959_4 - 31523_3^3$
7365.427	50	20	13573.206	$18053_4^4 - 31626_5$
7365.233	50	20	13573.564	$19817_1^0 - 33390_1$
7365.166	3h		13573.687	$20724_0^0 - 34298_1$
7363.794	10	1	13576.216	$13945_3^3 - 27521_4$
7362.195	50	1	13579.165	$19948_4^4 - 33527_4$
7361.348	150	5	13580.727	$13297_4 - 26878_3^3$
7360.715	2		13581.895	$19713_3 - 33294_3^3$
7360.553	2		13582.194	$17847_2^2 - 31429_1$
7360.428	3		13582.425	$19516_2^2 - 33099_3$
7359.530	2		13584.082	$19713_3 - 33297_2^2$
7358.738	2		13585.544	$18699_2 - 32285_3^3$
7358.568	8		13585.858	$18574_1 - 32160_2^2$
7355.179	10		13592.118	$17398_3 - 30990_3^3$
7353.644	15		13594.955	$21645_4 - 35240_3^3$
7352.937	8		13596.262	$19503_3^3 - 33099_3$
7351.371	1		13599.158	$8800_4 - 22399_6^6$
7350.934	5		13599.967	$13847_2 - 27447_2^2$
7350.454	50		13600.855	$20566_4^4 - 34167_3$
7346.898	2		13607.438	$20054_2 - 33662_1^0$
7346.671	2		13607.858	$22877_1^0 - 36485_2$
7344.939	10		13611.067	$18549_2 - 32160_2^2$
7343.396	5h		13613.927	$15490_0^0 - 29104_4$
7342.573	150	5	13615.453	$18011_0^0 - 31626_5$
7342.300	75	2	13615.959	$10783_2^2 - 24399_3$
7342.035	75	2	13616.451	$19948_4^4 - 33564_3$
7341.769	5		13616.944	$20214_3^3 - 33831_4$
7341.433	8		13617.567	$16217_2^2 - 29835_3$
7341.150	500	15	13618.092	$10414_4^4 - 24032_4$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
7339.729	3		13620.729	$17398_3 - 31019^{\circ}_{4}$
7339.599	150	3	13620.970	$13175^{\circ}_{4} - 26796_3$
7339.409	50	1	13621.322	$18930^{\circ}_{3} - 32551_3$
7339.330	2		13621.469	$21252^{\circ}_{2} - 34874_3$
7339.005	8		13622.072	$17166_5 - 30788^{\circ}_{6}$
7336.798	4		13626.170	$19588^{\circ}_{6} - 33214_5$
7336.134	2		13627.403	$22669^{\circ}_{3} - 36297_4$
7335.802	5		13628.020	$21645_4 - 35273^{\circ}_{6}$
7335.357	1		13628.847	$22248^{\circ}_{2} - 35877_2$
7334.067	4		13631.244	$22163^{\circ}_{4} - 35794_4$
7331.906	2		13635.262	$22098_4 - 35733^{\circ}_{4}$
7329.488	100	5	13639.760	$11802_2 - 25442^{\circ}_{3}$
7328.283	300s	50d	13642.003	$7280_2 - 20922^{\circ}_{2}$
7326.801	5		13644.762	$20522^{\circ}_{2} - 34167_3$
7326.058	3		13646.146	$21594_3 - 35240^{\circ}_{3}$
7325.219	8		13647.709	$18549_2 - 32197^{\circ}_{3}$
7324.894	20b		13648.314	$23655^{\circ}_{4} - 37303_4$
7324.808	300	10	13648.475	$14204_5 - 27852^{\circ}_{6}$
7323.988	10		13650.003	$17073_1 - 30723^{\circ}_{1}$
7323.740	2		13650.465	$22396^{\circ}_{1} - 36047_2$
7323.207	100	3	13651.458	$15490^{\circ}_{6} - 29141_5$
7318.595	8		13660.061	$12847_3 - 26508^{\circ}_{3}$
7318.272	2h		13660.664	$22855^{\circ}_{3} - 36515_3$
7317.122	3		13662.811	$7502_3 - 21165^{\circ}_{3}$
7316.676	2		13663.644	$20054_2 - 33718^{\circ}_{2}$
7316.124	100	1	13664.675	$15493_4 - 29157^{\circ}_{3}$
7315.609	150		13665.637	$17224^{\circ}_{2} - 30889_1$
7315.064	200	3	13666.655	$3687_2 - 17354^{\circ}_{1}$
7314.743	2		13667.255	$21738^{\circ}_{2} - 35405_3$
7311.510	100	3	13673.298	$11241^{\circ}_{3} - 24915_3$
7311.003	10	2	13674.246	$21902^{\circ}_{4} - 35576_3$
7309.311	2b		13677.412	$21539^{\circ}_{4} - 35216_5$
7309.255	100	2	13677.516	$17398_3 - 31075^{\circ}_{2}$
7308.640	150	3	13678.667	$15166^{\circ}_{3} - 28845_4$
7307.933	4		13679.991	$21902^{\circ}_{4} - 35582_5$
7307.233	4		13681.301	$19273_2 - 32954^{\circ}_{2}$
7307.176	5		13681.408	$15736^{\circ}_{1} - 29418_2$
7305.193	50	1	13685.122	$15736^{\circ}_{1} - 29422_1$
7304.521	4		13686.381	$21890^{\circ}_{3} - 35576_3$
7302.496	3b		13690.176	$17847^{\circ}_{2} - 31537_3$
7302.428	75	2	13690.303	$22399^{\circ}_{6} - 36089_4$
7298.138	200b	3	13698.351	$13297_4 - 26995^{\circ}_{3}$
7296.265	100	3	13701.867	$13088_3 - 26790^{\circ}_{4}$
7294.316	15	1	13705.528	$18069^{\circ}_{3} - 31774_3$
7294.217	5		13705.714	$11601_1 - 25306^{\circ}_{2}$
7293.374	15	1	13707.298	$20737^{\circ}_{1} - 34444_2$
7292.864	2		13708.257	$21165^{\circ}_{3} - 34873_4$
7292.864	2		13708.257	$22338^{\circ}_{3} - 36047_2$
7292.494	3		13708.952	$21165^{\circ}_{3} - 34874_3$
7291.276	8	2	13711.242	$17959_4 - 31671^{\circ}_{4}$
7289.812	4		13713.996	$19713_3 - 33427^{\circ}_{2}$
7289.659	2		13714.284	$22098_4 - 35812^{\circ}_{3}$
7288.990	10	1	13715.543	$15166^{\circ}_{3} - 28882_2$
7288.610	50	1	13716.258	$15970_3 - 29686^{\circ}_{3}$
7286.110	3		13720.964	$18053^{\circ}_{4} - 31774_3$
7284.905	500	20	13723.233	$3687_2 - 17411^{\circ}_{3}$
7284.419	40	1	13724.149	$16783^{\circ}_{4} - 30508_5$
7284.166	8	1	13724.626	$18069^{\circ}_{3} - 31793_4$
7281.962	2		13728.780	$18431_3 - 32160^{\circ}_{2}$
7280.478	20	1	13731.578	$21902^{\circ}_{4} - 35633_4$
7279.142	8		13734.098	$22399^{\circ}_{6} - 36133_5$
7278.767	1		13734.806	$20566^{\circ}_{4} - 34301_4$
7278.272	1		13735.740	$18549_2 - 32285^{\circ}_{3}$
7278.101	3		13736.063	$19227^{\circ}_{6} - 32963_5$
7278.032	4		13736.193	$22141^{\circ}_{3} - 35877_2$
7277.013	75	1	13738.116	$19532_4 - 33270^{\circ}_{4}$
7276.453	10	1	13739.174	$17073_1 - 30812^{\circ}_{2}$
7275.972	2		13740.082	$18053^{\circ}_{4} - 31793_4$
7275.833	15	1	13740.344	$17224^{\circ}_{2} - 30964_3$
7274.294	15	1	13743.251	$21143_5 - 34886^{\circ}_{0}$
7274.048	3		13743.716	$21890^{\circ}_{3} - 35633_4$
7273.732	40	1	13744.313	$16217^{\circ}_{2} - 29961_1$
7270.993	8		13749.491	$23655^{\circ}_{4} - 37404_3$
7270.558	100	2	13750.313	$7502_3 - 21252^{\circ}_{2}$
7268.834	100	2	13753.575	$21575_2 - 35328^{\circ}_{1}$
7268.490	5	1	13754.226	$20543^{\circ}_{0} - 34298_1$
7267.096	50	1	13756.864	$19516^{\circ}_{2} - 33273_1$
7264.747	2		13761.312	$21539^{\circ}_{4} - 35300_5$
7264.118	50		13762.504	$19532_4 - 33294^{\circ}_{3}$
7262.578	2		13765.422	$18431_3 - 32197^{\circ}_{3}$
7262.190	10		13766.157	$23015^{\circ}_{0} - 36781_5$
7261.217	5		13768.002	$15166^{\circ}_{3} - 28934_3$
7260.874	5		13768.652	$16783^{\circ}_{4} - 30552_4$
7260.258	8		13769.821	$17501^{\circ}_{0} - 31271_5$
7258.177	200	5	13773.769	$14206^{\circ}_{4} - 27980_3$
7257.334	2		13775.369	$20522^{\circ}_{2} - 34298_1$
7256.981	150	2	13776.039	$12114^{\circ}_{2} - 25890_2$
7256.807	75	2	13776.369	$15863_2 - 29640^{\circ}_{1}$
7255.351	200	5	13779.133	$8111_4 - 21890^{\circ}_{3}$
7253.672	100	3	13782.323	$18011^{\circ}_{0} - 31793_4$
7251.943	2		13785.609	$20922^{\circ}_{2} - 34707_3$
7250.100	15		13789.113	$19817^{\circ}_{1} - 33606_2$
7249.842	75	1	13789.604	$13088_3 - 26878^{\circ}_{3}$
7248.964	75	1	13791.274	$8111_4 - 21902^{\circ}_{4}$
7248.547	2		13792.067	$19516^{\circ}_{2} - 33309_2$
7247.843	2		13793.407	$21252^{\circ}_{2} - 35046_1$
7247.599	40		13793.872	$16217^{\circ}_{2} - 30011_3$
7246.370	3		13796.211	$21077^{\circ}_{6} - 34873_4$
7246.318	5h		13796.310	$17398_3 - 31194^{\circ}_{4}$
7245.500	8		13797.868	$14226_0 - 28024^{\circ}_{1}$
7245.292	2		13798.264	$22855^{\circ}_{3} - 36653_2$
7244.689	200	8	13799.412	$7795^{\circ}_{4} - 21594_3$
7244.689	200	8	13799.412	$15618^{\circ}_{3} - 29418_2$
7242.345	150	2	13803.878	$12847_3 - 26651^{\circ}_{2}$
7242.282	20b		13803.998	$18699_2 - 32503^{\circ}_{2}$
7242.086	200	10	13804.372	$9804_5 - 23609^{\circ}_{6}$
7241.280	2		13805.908	$19503^{\circ}_{3} - 33309_2$
7240.181	100	2	13808.004	$14465^{\circ}_{2} - 28273_2$
7238.404	8		13811.394	$22399^{\circ}_{6} - 36210_5$
7236.257	20		13815.492	$22669^{\circ}_{3} - 36485_2$
7235.899	50	1	13816.175	$21645_4 - 35462^{\circ}_{3}$
7235.551	20		13816.840	$15493_4 - 29310^{\circ}_{4}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
7233.390	100		13820.967	$17959_4 - 31780^{8}_{8}$	7180.959	8		13921.879	$20522^{2}_{2} - 34444_2$
7232.946	10		13821.816	$13962_1 - 27784^{2}_{2}$	7179.725	150	4	13924.272	$21165^{8}_{8} - 35089_3$
7226.246	15		13834.631	$17411^{8}_{8} - 31245_2$	7179.189	1		13925.312	$11601_1 - 25526^{6}_{7}$
7225.125	20	5	13836.778	$21252^{2}_{2} - 35089_3$	7178.539	10	1	13926.572	$18069^{8}_{8} - 31995_4$
7220.989	100	2	13844.703	$10783^{2}_{2} - 24627_1$	7178.252	8		13927.129	$18809^{4}_{4} - 32737_5$
7219.782	25	1	13847.017	$19713_3 - 33560^{4}_{4}$	7177.284	50	2	13929.008	$18574_1 - 32503^{2}_{2}$
7219.156	300	10	13848.218	$4961_4 - 18809^{4}_{4}$	7173.372	500	20	13936.604	$13847_2 - 27784^{2}_{2}$
7218.056	500	75	13850.328	$9804_5 - 23655^{4}_{4}$	7173.372	500	20	13936.604	$14204_5 - 28140^{4}_{4}$
7216.911	8		13852.526	$6362_2 - 20214^{8}_{8}$	7173.117	8		13937.099	$15166^{8}_{8} - 29104_4$
7216.666	40	2	13852.996	$17166_5 - 31019^{4}_{4}$	7172.867	8		13937.585	$21143_5 - 35081^{6}_{6}$
7215.933	8		13854.403	$17411^{8}_{8} - 31265_3$	7170.575	2		13942.040	$18053^{4}_{4} - 31995_4$
7215.667	10		13854.914	$17073_1 - 30928^{7}_{7}$	7170.357	100	2	13942.464	$12847_3 - 26790^{4}_{4}$
7212.687	500	50	13860.638	$14481^{6}_{6} - 28342_5$	7169.621	4		13943.895	$18069^{8}_{8} - 32012_4$
7211.769	2		13862.403	$18431_3 - 32294^{4}_{4}$	7168.896	800	75	13945.305	$0_2 - 13945^{8}_{8}$
7210.562	2		13864.723	$20566^{4}_{4} - 34431_3$	7167.202	150	4	13948.601	$14032^{2}_{2} - 27980_3$
7210.036	5		13865.735	$21539^{4}_{4} - 35405_3$	7165.492	8	1	13951.930	$20922^{2}_{2} - 34874_3$
7209.981	5		13865.840	$18930^{8}_{8} - 32796_3$	7165.176	25	1	13952.545	$20214^{8}_{8} - 34167_3$
7209.177	5		13867.387	$21594_3 - 35462^{8}_{8}$	7164.508	2		13953.846	$5563_1 - 19516^{2}_{2}$
7208.275	100b		13869.122	$13175^{4}_{4} - 27044_3$	7164.323	8		13954.206	$18549_2 - 32503^{2}_{2}$
7208.000	500	150	13869.651	$8800_4 - 22669^{8}_{8}$	7163.374	2		13956.055	$19503^{8}_{8} - 33459_4$
7207.756	50b	2	13870.121	$23015^{6}_{6} - 36885_4$	7163.180	5		13956.433	$19817^{7}_{7} - 33773_1$
7207.392	5		13870.821	$19588^{6}_{6} - 33459_4$	7162.250	8	1	13958.245	$21575_2 - 35533^{2}_{2}$
7207.016	50	2	13871.545	$17224^{2}_{2} - 31095_1$	7161.689	2		13959.339	$18053^{4}_{4} - 32012_4$
7206.476	400	8	13872.584	$10526^{8}_{8} - 24399_3$	7159.943	300b	8	13962.743	$13297_4 - 27260^{8}_{8}$
7205.435	2		13874.589	$20423^{7}_{7} - 34298_1$	7159.877	100b	2	13962.871	$16554_6 - 30517^{6}_{6}$
7204.761	3h		13875.887	$18053^{4}_{4} - 31929_3$	7156.936	300	15	13968.609	$4961_4 - 18930^{8}_{8}$
7203.593	4		13878.136	$19713_3 - 33591^{8}_{8}$	7156.936	300	15	13968.609	$13297_4 - 27266^{4}_{4}$
7202.335	5		13880.560	$20566^{4}_{4} - 34447_4$	7155.349	8		13971.707	$18809^{4}_{4} - 32781_4$
7201.803	100	2	13881.586	$10783^{2}_{2} - 24664_3$	7154.952	200	8	13972.482	$7280_2 - 21252^{2}_{2}$
7201.042	50	1	13883.053	$15970_3 - 29853^{2}_{2}$	7154.762	200	20	13972.853	$13088_3 - 27061^{2}_{2}$
7200.815	2		13883.490	$19948^{4}_{4} - 33831_4$	7153.587	200	10	13975.149	$17166_5 - 31141^{6}_{6}$
7200.171	50		13884.732	$17398_3 - 31283^{8}_{8}$	7151.525	20	1	13979.178	$20322^{6}_{6} - 34301_4$
7200.041	400	10	13884.983	$7280_2 - 21165^{8}_{8}$	7150.285	400	25	13981.602	$3865_1 - 17847^{2}_{2}$
7198.986	5		13887.018	$21575_2 - 35462^{8}_{8}$	7149.224	5		13983.677	$22669^{8}_{8} - 36653_2$
7198.214	4		13888.507	$19273_2 - 33161^{7}_{7}$	7148.923	8	1	13984.266	$18011^{6}_{6} - 31995_4$
7198.092	20		13888.742	$10783^{2}_{2} - 24671_2$	7148.728	50	1	13984.647	$21165^{8}_{8} - 35149_2$
7196.791	2		13891.253	$17354^{7}_{7} - 31245_2$	7148.557	400	15	13984.982	$10414^{4}_{4} - 24399_3$
7196.569	8		13891.682	$19516^{2}_{2} - 33408_3$	7147.913	3		13986.242	$18809^{4}_{4} - 32796_3$
7195.797	4		13893.172	$14465^{2}_{2} - 28358_3$	7147.423	15	1	13987.201	$19227^{6}_{6} - 33214_5$
7195.236	3		13894.255	$20566^{4}_{4} - 34460_5$	7147.167	2		13987.702	$21890^{8}_{8} - 35877_2$
7193.357	1		13897.885	$22399^{6}_{6} - 36297_4$	7146.373	8	1	13989.256	$15863_2 - 29853^{2}_{2}$
7192.019	40	2	13900.470	$11802_2 - 25703^{2}_{2}$	7144.169	8		13993.572	$17959_4 - 31953^{4}_{4}$
7191.585	3		13901.309	$21539^{4}_{4} - 35440_3$	7142.328	300	8	13997.179	$12114^{2}_{2} - 26111_1$
7190.332	2		13903.731	$22877^{7}_{7} - 36781_5$	7140.080	4		14001.585	$18011^{6}_{6} - 32012_4$
7190.124	5		13904.134	$19817^{7}_{7} - 33721_2$	7138.142	20		14005.387	$19713_3 - 33718^{2}_{2}$
7190.050	5		13904.277	$21890^{8}_{8} - 35794_4$	7137.635	3		14006.382	$11802_2 - 25809^{7}_{7}$
7189.407	10	1	13905.520	$19503^{8}_{8} - 33408_3$	7137.133	5		14007.367	$18431_3 - 32439^{4}_{4}$
7189.323	1		13905.683	$22141^{8}_{8} - 36047_2$	7136.956	8		14007.714	$22877^{7}_{7} - 36885_4$
7188.530	100	3	13907.217	$13088_3 - 26995^{8}_{8}$	7136.841	4		14007.940	$22508^{2}_{2} - 36515_3$
7185.031	3		13913.989	$15736^{7}_{7} - 29650_2$	7134.484	8		14012.568	$11877^{7}_{7} - 25890_2$
7184.721	4		13914.590	$2869_3 - 16783^{4}_{4}$	7132.603	200	4	14016.263	$13175^{4}_{4} - 27191_5$
7184.542	3		13914.936	$19503^{8}_{8} - 33418_4$	7130.718	200	5	14019.968	$13297_4 - 27317^{8}_{8}$
7184.426	4		13915.161	$16217^{2}_{2} - 30132_2$	7130.179	100	4	14021.028	$14206^{4}_{4} - 28227_4$
7184.111	8		13915.771	$17411^{8}_{8} - 31326_4$	7129.871	20		14021.634	$19273_2 - 33294^{8}_{8}$
7183.225	2		13917.488	$17224^{2}_{2} - 31141_3$	7128.450	8	1	14024.429	$19503^{8}_{8} - 33527_4$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
7127.640	10		14026.022	$18549_2 - 32575^{\frac{5}{2}}_{\frac{3}{2}}$
7126.814	100	3	14027.648	$19532_4 - 33560^{\frac{7}{2}}_{\frac{9}{2}}$
7126.324	8		14028.613	$17166_5 - 31194^{\frac{9}{2}}_{\frac{7}{2}}$
7126.009	5		14029.233	$14243^{\circ}_{1} - 28273_2$
7125.515	150	2	14030.205	$12847_3 - 26878^{\frac{3}{2}}_{\frac{5}{2}}$
7125.313	10	1	14030.603	$8111_4 - 22141^{\frac{3}{2}}_{\frac{5}{2}}$
7124.556	1000	50	14032.094	$0_2 - 14032^{\frac{5}{2}}_{\frac{3}{2}}$
7122.887	3		14035.382	$13945^{\frac{5}{2}}_{\frac{3}{2}} - 27980_3$
7122.098	3		14036.937	$21539^{\frac{9}{2}}_{\frac{7}{2}} - 35576_3$
7121.908	8		14037.311	$7502_3 - 21539^{\frac{9}{2}}_{\frac{7}{2}}$
7119.870	3		14041.329	$17224^{\frac{5}{2}}_{\frac{3}{2}} - 31265_3$
7119.174	2		14042.702	$21539^{\frac{9}{2}}_{\frac{7}{2}} - 35582_5$
7116.992	20	1	14047.007	$15970_3 - 30017^{\frac{3}{2}}_{\frac{5}{2}}$
7116.551	8		14047.878	$19516^{\frac{5}{2}}_{\frac{3}{2}} - 33564_3$
7114.394	150	3	14052.137	$8111_4 - 22163^{\frac{3}{2}}_{\frac{1}{2}}$
7113.007	5h		14054.877	$18699_2 - 32754^{\frac{3}{2}}_{\frac{5}{2}}$
7112.917	100	4	14055.055	$8800_4 - 22855^{\frac{3}{2}}_{\frac{5}{2}}$
7111.045	75	2	14058.755	$19532_4 - 33591^{\frac{3}{2}}_{\frac{5}{2}}$
7110.278	2		14060.271	$19039^{\frac{9}{2}}_{\frac{7}{2}} - 33099_3$
7109.857	150	4	14061.104	$6362_2 - 20423^{\circ}_{1}$
7109.550	40	2	14061.711	$19503^{\frac{3}{2}}_{\frac{5}{2}} - 33564_3$
7109.320	10		14062.166	$13962_1 - 28024^{\circ}_{1}$
7109.175	50		14062.453	$15490^{\circ}_{0} - 29552_6$
7108.550	2		14063.689	$17959_4 - 32023^{\circ}_{0}$
7107.469	10	1	14065.828	$14465^{\frac{5}{2}}_{\frac{3}{2}} - 28531_2$
7105.654	10		14069.421	$16217^{\frac{5}{2}}_{\frac{3}{2}} - 30286_1$
7104.404	4l		14071.896	$18431_3 - 32503^{\frac{5}{2}}_{\frac{3}{2}}$
7103.029	8		14074.620	$17354^{\circ}_{1} - 31429_1$
7102.185	10		14076.293	$18574_1 - 32650^{\circ}_{1}$
7101.660	4		14077.334	$8800_4 - 22877^{\circ}_{0}$
7100.391	2		14079.850	$22098_4 - 36178^{\frac{9}{2}}_{\frac{7}{2}}$
7099.094	4		14082.422	$17847^{\frac{5}{2}}_{\frac{3}{2}} - 31929_3$
7097.645	5		14085.297	$20322^{\circ}_{0} - 34407_6$
7097.032	10		14086.513	$20214^{\frac{3}{2}}_{\frac{5}{2}} - 34301_4$
7096.665	5		14087.242	$22248^{\frac{5}{2}}_{\frac{3}{2}} - 36336_3$
7096.478	4		14087.613	$19713_3 - 33800^{\frac{3}{2}}_{\frac{5}{2}}$
7096.000	3		14088.562	$22396^{\circ}_{1} - 36485_2$
7095.623	4		14089.311	$19516^{\frac{5}{2}}_{\frac{3}{2}} - 33606_2$
7094.803	3		14090.939	$18574_1 - 32665^{\circ}_{1}$
7093.128	3		14094.266	$21539^{\frac{9}{2}}_{\frac{7}{2}} - 35633_4$
7089.489	8		14101.501	$18549_2 - 32650^{\circ}_{1}$
7089.052	8		14102.370	$11601_1 - 25703^{\frac{5}{2}}_{\frac{3}{2}}$
7088.663	1		14103.144	$19503^{\frac{3}{2}}_{\frac{5}{2}} - 33606_2$
7088.330	8		14103.807	$21575_2 - 35678^{\circ}_{1}$
7087.506	3		14105.446	$22669^{\frac{3}{2}}_{\frac{5}{2}} - 36775_3$
7084.165	500	75	14112.099	$9804_5 - 23916^{\frac{9}{2}}_{\frac{7}{2}}$
7082.137	20		14116.140	$18549_2 - 32665^{\circ}_{1}$
7077.740	4		14124.909	$20322^{\circ}_{0} - 34447_4$
7077.422	50b	3	14125.544	$17398_3 - 31523^{\frac{3}{2}}_{\frac{5}{2}}$
7077.380	50b	4	14125.628	$17501^{\circ}_{0} - 31626_5$
7077.194	4		14125.999	$17411^{\frac{3}{2}}_{\frac{5}{2}} - 31537_3$
7074.257	50	1	14131.863	$10783^{\frac{5}{2}}_{\frac{3}{2}} - 24915_3$
7073.110	8		14134.155	$22163^{\frac{3}{2}}_{\frac{1}{2}} - 36297_4$
7072.394	300	8	14135.586	$14206^{\frac{3}{2}}_{\frac{1}{2}} - 28342_5$
7071.482	100		14137.409	$15618^{\frac{3}{2}}_{\frac{5}{2}} - 29756_4$
7071.096	150	3	14138.181	$10526^{\frac{3}{2}}_{\frac{5}{2}} - 24664_3$
7070.984	10		14138.405	$22669^{\frac{3}{2}}_{\frac{5}{2}} - 36808_3$
7070.891	2		14138.591	$20322^{\circ}_{0} - 34460_5$
7070.793	1		14138.787	$21594_3 - 35733^{\frac{3}{2}}_{\frac{1}{2}}$
7070.279	2		14139.815	$21077^{\circ}_{0} - 35216_5$
7068.330	2		14143.713	$18431_3 - 32575^{\frac{5}{2}}_{\frac{3}{2}}$
7067.513	75		14145.348	$10526^{\frac{3}{2}}_{\frac{5}{2}} - 24671_2$
7067.247	10		14145.881	$14226_0 - 28372^{\circ}_{1}$
7066.996	3		14146.383	$22338^{\frac{3}{2}}_{\frac{5}{2}} - 36485_2$
7066.287	100	2	14147.803	$12847_3 - 26995^{\frac{3}{2}}_{\frac{5}{2}}$
7064.451	300	10	14151.480	$14206^{\frac{3}{2}}_{\frac{1}{2}} - 28358_3$
7063.844	8		14152.696	$21252^{\frac{5}{2}}_{\frac{3}{2}} - 35405_3$
7063.585	10		14153.214	$15863_2 - 30017^{\frac{3}{2}}_{\frac{5}{2}}$
7063.314	8		14153.757	$19273_2 - 33427^{\frac{5}{2}}_{\frac{3}{2}}$
7062.418	40	1	14155.553	$22401_1 - 36556^{\circ}_{1}$
7061.607	1		14157.179	$21890^{\frac{3}{2}}_{\frac{5}{2}} - 36047_2$
7061.392	100	2	14157.610	$8243^{\frac{5}{2}}_{\frac{3}{2}} - 22401_1$
7060.651	400	10	14159.096	$3687_2 - 17847^{\frac{5}{2}}_{\frac{3}{2}}$
7060.039	300	8	14160.323	$6362_2 - 20522^{\frac{5}{2}}_{\frac{3}{2}}$
7059.526	150	3	14161.352	$16346^{\frac{3}{2}}_{\frac{1}{2}} - 30508_5$
7058.488	150	5	14163.435	$11241^{\frac{3}{2}}_{\frac{5}{2}} - 25405_4$
7058.221	2		14163.970	$23655^{\frac{3}{2}}_{\frac{1}{2}} - 37819_4$
7056.885	4		14166.652	$21645_4 - 35812^{\frac{3}{2}}_{\frac{5}{2}}$
7056.595	10		14167.234	$20922^{\frac{5}{2}}_{\frac{3}{2}} - 35089_3$
7055.900	50		14168.629	$13175^{\frac{3}{2}}_{\frac{1}{2}} - 27343_3$
7055.660	1		14169.111	$18930^{\frac{3}{2}}_{\frac{5}{2}} - 33099_3$
7054.416	150	2	14171.610	$13088_3 - 27260^{\frac{3}{2}}_{\frac{5}{2}}$
7051.787	50		14176.893	$13847_2 - 28024^{\circ}_{1}$
7051.503	8		14177.464	$13088_3 - 27266^{\frac{3}{2}}_{\frac{1}{2}}$
7049.844	20		14180.801	$16783^{\frac{3}{2}}_{\frac{1}{2}} - 30964_3$
7047.762	2		14184.990	$20522^{\frac{5}{2}}_{\frac{3}{2}} - 34707_3$
7047.319	2		14185.882	$19503^{\frac{3}{2}}_{\frac{5}{2}} - 33689_2$
7046.560	40		14187.409	$21902^{\frac{3}{2}}_{\frac{1}{2}} - 36089_4$
7046.124	10		14188.287	$21252^{\frac{5}{2}}_{\frac{3}{2}} - 35440_3$
7045.332	1		14189.882	$15970_3 - 30160^{\frac{3}{2}}_{\frac{1}{2}}$
7044.969	50	1	14190.613	$18011^{\circ}_{0} - 32202_5$
7043.714	15		14193.142	$15493_4 - 29686^{\frac{3}{2}}_{\frac{5}{2}}$
7043.228	8		14194.121	$15490^{\circ}_{0} - 29684_5$
7042.997	8		14194.587	$22141^{\frac{3}{2}}_{\frac{5}{2}} - 36336_3$
7042.031	3		14196.534	$23015^{\circ}_{0} - 37211_5$
7040.530	2		14199.560	$21890^{\frac{3}{2}}_{\frac{5}{2}} - 36089_4$
7039.877	5		14200.878	$17398_3 - 31599^{\frac{5}{2}}_{\frac{3}{2}}$
7038.165	40		14204.332	$19516^{\frac{5}{2}}_{\frac{3}{2}} - 33721_2$
7037.852	10		14204.964	$17224^{\frac{5}{2}}_{\frac{3}{2}} - 31429_1$
7037.781	8		14205.107	$18549_2 - 32754^{\frac{3}{2}}_{\frac{5}{2}}$
7037.410	4		14205.856	$16346^{\frac{3}{2}}_{\frac{1}{2}} - 30552_4$
7036.277	400	8	14208.143	$11197^{\circ}_{0} - 25405_4$
7036.206	50b		14208.287	$11601_1 - 25809^{\circ}_{1}$
7033.646	50	1	14213.458	$12847_3 - 27061^{\frac{5}{2}}_{\frac{3}{2}}$
7033.352	100	2	14214.052	$14465^{\frac{5}{2}}_{\frac{3}{2}} - 28679_2$
7032.924	100	1	14214.917	$8800_4 - 23015^{\circ}_{0}$
7032.677	3		14215.416	$22669^{\frac{3}{2}}_{\frac{5}{2}} - 36885_4$
7032.350	3		14216.077	$15618^{\frac{3}{2}}_{\frac{5}{2}} - 29835_3$
7032.178	15	1	14216.425	$20214^{\frac{3}{2}}_{\frac{5}{2}} - 34431_3$
7031.469	15	1	14217.858	$21594_3 - 35812^{\frac{3}{2}}_{\frac{5}{2}}$
7031.310	50	1	14218.180	$19503^{\frac{3}{2}}_{\frac{5}{2}} - 33721_2$
7031.194	10		14218.415	$15493_4 - 29711^{\circ}_{0}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
7030.858	50	1	14219.094	$19948_{4}^{3} - 34167_{3}$	6980.543	4	1	14321.583	$20724_{6}^{0} - 35046_{1}$
7028.017	100	2	14224.842	$15736_{1}^{0} - 29961_{1}$	6979.944	1		14322.812	$18431_{3} - 32754_{3}^{3}$
7026.454	100	1	14228.006	$8111_{4} - 22338_{3}^{3}$	6978.753	2		14325.256	$17959_{4} - 32285_{3}^{3}$
7026.041	8		14228.842	$13088_{3} - 27317_{3}^{3}$	6978.241	50	2	14326.307	$14032_{2}^{2} - 28358_{3}$
7025.379	1		14230.183	$15618_{3}^{3} - 29849_{4}$	6977.875	3		14327.059	$16217_{2}^{2} - 30544_{2}$
7025.188	4		14230.570	$22855_{3}^{3} - 37085_{4}$	6977.462	25	1	14327.907	$13945_{3}^{3} - 28273_{2}$
7023.776	8		14233.431	$11802_{2} - 26036_{3}^{3}$	6977.061	3	1	14328.730	$19503_{3}^{3} - 33831_{4}$
7023.636	25	1	14233.715	$11877_{1}^{0} - 26111_{1}$	6976.839	2		14329.186	$22098_{4} - 36427_{3}^{3}$
7023.523	100	3	14233.944	$16554_{6} - 30788_{0}^{0}$	6974.446	10		14334.103	$22877_{1}^{0} - 37211_{5}$
7023.145	100	3	14234.710	$19039_{2}^{2} - 33273_{1}$	6974.381	1		14334.236	$17959_{4} - 32294_{4}^{4}$
7022.847	2		14235.314	$23655_{4}^{4} - 37890_{5}$	6970.054	5	1	14343.135	$18069_{3}^{3} - 32412_{4}$
7022.619	8		14235.776	$7502_{3} - 21738_{2}^{2}$	6969.779	2		14343.701	$18699_{2} - 33043_{3}^{3}$
7021.899	40		14237.236	$17959_{4} - 32197_{3}^{3}$	6969.301	100	3	14344.685	$15863_{2} - 30208_{2}^{2}$
7021.784	2		14237.469	$21575_{2} - 35812_{3}^{3}$	6966.905	3		14349.618	$22399_{0}^{0} - 36749_{6}$
7021.668	3		14237.704	$23655_{4}^{4} - 37892_{4}$	6966.064	3h		14351.350	$20522_{2}^{2} - 34874_{3}$
7021.279	150	8	14238.493	$15970_{3} - 30208_{2}^{2}$	6965.946	500l	4	14351.593	$19039_{2}^{2} - 33390_{1}$
7020.476	100	1	14240.121	$15493_{4} - 29733_{0}^{0}$	6965.240	5		14353.048	$19948_{4}^{4} - 34301_{4}$
7019.970	4		14241.148	$14032_{2}^{2} - 28273_{2}$	6964.271	50	1	14355.045	$2869_{3} - 17224_{2}^{2}$
7018.784	3		14243.554	$19588_{0}^{0} - 33831_{4}$	6963.930	50	1	14355.748	$14206_{4}^{4} - 28562_{4}$
7018.563	500	75	14244.003	$0_{2} - 14243_{1}^{1}$	6962.862	75	2	14357.950	$16783_{4}^{4} - 31141_{3}$
7015.311	100	3	14250.605	$10414_{4}^{4} - 24664_{3}$	6962.310	100	4	14359.088	$15490_{0}^{0} - 29849_{4}$
7014.965	100	4	14251.308	$15493_{4} - 29744_{3}^{3}$	6960.232	4		14363.375	$17411_{3}^{3} - 31774_{3}$
7014.873	50	1	14251.495	$15166_{3}^{3} - 29418_{2}$	6957.265	1		14369.501	$19039_{2}^{2} - 33408_{3}$
7013.617	8		14254.047	$5563_{1} - 19817_{1}^{1}$	6956.113	1		14371.880	$16351_{0} - 30723_{1}^{1}$
7013.171	1		14254.954	$18699_{2} - 32954_{2}^{2}$	6955.315	100	3	14373.529	$13297_{4} - 27670_{3}^{3}$
7007.092	100	4	14267.321	$19532_{4} - 33799_{4}^{4}$	6954.655	200	5	14374.893	$6362_{2} - 20737_{1}^{1}$
7006.655	4		14268.210	$19532_{4} - 33800_{3}^{3}$	6954.387	2		14375.447	$20054_{2} - 34430_{3}^{3}$
7006.113	50	2	14269.314	$20054_{2} - 34324_{2}^{2}$	6952.796	1		14378.737	$18930_{3}^{3} - 33309_{2}$
7005.825	8		14269.901	$19039_{2}^{2} - 33309_{2}$	6952.189	2		14379.992	$18574_{1} - 32954_{2}^{2}$
7002.881	200	8	14275.900	$14204_{5} - 28480_{4}^{4}$	6951.654	20	1	14381.099	$3687_{2} - 18069_{3}^{3}$
7000.806	500	75	14280.131	$9804_{5} - 24084_{6}^{6}$	6951.259	5	1	14381.916	$22399_{0}^{0} - 36781_{5}$
6999.624	100	3	14282.543	$18011_{0}^{0} - 32293_{5}$	6950.990	5		14382.473	$17398_{3} - 31780_{3}^{3}$
6998.247	100	2	14285.353	$15970_{3} - 30255_{3}^{3}$	6950.990	5		14382.473	$17411_{3}^{3} - 31793_{4}$
6997.412	50	1	14287.058	$14243_{1}^{1} - 28531_{2}$	6949.754	10		14385.030	$13962_{1} - 28347_{2}^{2}$
6996.812	1		14288.283	$19713_{3} - 34001_{4}^{4}$	6948.391	100	3	14387.852	$7502_{3} - 21890_{3}^{3}$
6996.757	50l		14288.395	$8111_{4} - 22399_{0}^{0}$	6948.205	300	20	14388.237	$15493_{4} - 29881_{4}^{4}$
6996.202	8		14289.528	$18809_{4}^{4} - 33099_{3}$	6948.090	75	1	14388.475	$10526_{3}^{3} - 24915_{3}$
6995.141	75	2	14291.696	$21539_{4}^{4} - 35831_{3}$	6947.914	100	3	14388.840	$7280_{2} - 21668_{1}^{1}$
6994.736	100	3	14292.523	$17501_{0}^{0} - 31793_{4}$	6947.783	2		14389.111	$18069_{3}^{3} - 32458_{4}$
6993.988	100	2	14294.052	$11802_{2} - 26096_{3}^{3}$	6946.599	50	3	14391.564	$15863_{2} - 30255_{3}^{3}$
6989.657	1000	150	14302.909	$7795_{4}^{4} - 22098_{4}$	6946.210	100	3	14392.370	$15618_{3}^{3} - 30011_{3}$
6988.871	20	1	14304.517	$16346_{4}^{4} - 30651_{3}$	6945.488	200	8	14393.866	$8243_{2}^{2} - 22637_{3}$
6987.790	20	2	14306.730	$20566_{4}^{4} - 34873_{4}$	6944.926	2		14395.031	$21902_{4}^{4} - 36297_{4}$
6987.444	3		14307.439	$20566_{4}^{4} - 34874_{3}$	6944.773	8		14395.348	$15618_{3}^{3} - 30014_{4}$
6986.565	3		14309.239	$21738_{2}^{2} - 36047_{2}$	6944.611	8		14395.684	$15736_{1}^{1} - 30132_{2}$
6986.159	2		14310.070	$22508_{2}^{2} - 36818_{2}$	6943.612	800	200	14397.755	$9804_{5} - 24202_{4}^{4}$
6986.031	150	4	14310.332	$11802_{2} - 26113_{2}^{2}$	6942.535	150	8	14399.988	$7502_{3} - 21902_{4}^{4}$
6985.783	10	1	14310.840	$21575_{2} - 35885_{2}^{2}$	6940.327	50	3	14404.569	$18053_{4}^{4} - 32458_{4}$
6984.952	3		14312.543	$19532_{4} - 33844_{0}^{0}$	6940.037	3		14405.171	$18549_{2} - 32954_{2}^{2}$
6984.759	5		14312.939	$17224_{2}^{2} - 31537_{3}$	6937.618	10		14410.194	$13962_{1} - 28372_{1}^{1}$
6984.585	4		14313.295	$8800_{4} - 23113_{4}^{4}$	6937.033	8		14411.409	$21165_{3}^{3} - 35576_{3}$
6983.965	5		14314.566	$22338_{3}^{3} - 36653_{2}$	6936.651	150	4	14412.203	$12847_{3} - 27260_{3}^{3}$
6982.752	3		14317.052	$20054_{2} - 34371_{2}^{2}$	6936.223	10		14413.092	$13945_{3}^{3} - 28358_{3}$
6982.608	50	2	14317.348	$23015_{0}^{0} - 37332_{6}$	6934.839	4	1	14415.969	$22669_{3}^{3} - 37085_{4}$
6981.082	100	3	14320.477	$13175_{4}^{4} - 27495_{4}$	6934.488	15	1	14416.698	$13175_{4}^{4} - 27591_{5}$

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TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6934.274	100b	5	14417.143	$15863_2 - 30281\bar{1}$	6882.807	200	8	14524.948	$13847_2 - 28372\bar{1}$
6934.232	100b	3	14417.231	$14465\bar{2} - 28882_2$	6881.932	2		14526.795	$20322\bar{0} - 34849_5$
6933.836	2		14418.054	$12847_3 - 27266\bar{4}$	6881.674	5		14527.340	$19273_2 - 33800\bar{3}$
6932.227	15	1	14421.400	$19986\bar{6} - 34407_6$	6881.250	5		14528.235	$20054_2 - 34583\bar{3}$
6931.784	3h		14422.322	$14226_0 - 28649\bar{1}$	6880.945	1		14528.879	$18930\bar{3} - 33459_4$
6930.094	5		14425.839	$22877\bar{0} - 37303_4$	6879.376	1		14532.193	$21645_4 - 36178\bar{4}$
6928.959	3		14428.202	$21645_4 - 36074\bar{3}$	6877.469	2		14536.222	$20054_2 - 34591\bar{1}$
6927.721	2		14430.780	$18431_3 - 32862\bar{4}$	6875.440	2		14540.512	$16217\bar{2} - 30758_2$
6926.311	2		14433.718	$16217\bar{2} - 30651_3$	6874.984	10		14541.476	$4961_4 - 19503\bar{3}$
6925.566	8		14435.271	$14243\bar{1} - 28679_2$	6874.752	200	10	14541.967	$2869_3 - 17411\bar{3}$
6925.471	10	1	14435.469	$19532_4 - 33967\bar{3}$	6874.192	50b		14543.151	$16783\bar{4} - 31326_4$
6925.040	4		14436.367	$22338\bar{3} - 36775_3$	6872.234	8		14547.295	$15970_3 - 30517\bar{4}$
6924.657	50	1	14437.166	$13175\bar{4} - 27612_3$	6871.271	50		14549.334	$22855\bar{3} - 37404_3$
6920.834	1		14445.141	$19273_2 - 33718\bar{2}$	6870.988	150	3	14549.933	$15736\bar{1} - 30286_1$
6920.391	5		14446.065	$21890\bar{3} - 36336_3$	6870.911	2		14550.096	$21539\bar{4} - 36089_4$
6920.037	150	5	14446.804	$18011\bar{0} - 32458_4$	6870.807	2		14550.316	$17224\bar{2} - 31774_3$
6919.415	1		14448.103	$22855\bar{3} - 37303_4$	6870.727	150	3	14550.486	$17166_5 - 31716\bar{0}$
6916.129	200	10	14454.967	$9804_5 - 24259\bar{4}$	6868.455	100	3	14555.299	$13297_4 - 27852\bar{0}$
6914.713	100	2	14457.928	$7280_2 - 21738\bar{2}$	6866.756	100s	2	14558.900	$8111_4 - 22669\bar{3}$
6913.173	2		14461.148	$22669\bar{3} - 37131_3$	6866.368	150	3	14559.723	$6362_2 - 20922\bar{2}$
6913.051	4		14461.403	$19273_2 - 33734\bar{2}$	6866.157	100	2	14560.170	$11802_2 - 26363\bar{2}$
6912.694	2		14462.150	$18699_2 - 33161\bar{1}$	6863.104	8		14566.647	$20522\bar{2} - 35089_3$
6911.222	800r	200	14465.231	$0_2 - 14465\bar{2}$	6862.873	100	2	14567.138	$19039\bar{2} - 33606_2$
6909.222	100l	1	14469.418	$12847_3 - 27317\bar{3}$	6858.317	1		14576.814	$16351_0 - 30928\bar{1}$
6908.989	100	2	14469.906	$9804_5 - 24274\bar{0}$	6857.436	2		14578.687	$21252\bar{2} - 35831_3$
6908.630	2		14470.658	$22401_1 - 36871\bar{2}$	6855.689	100	3	14582.402	$13088_3 - 27670\bar{3}$
6908.599	2h		14470.723	$22401_1 - 36871\bar{2}$	6855.315	150	4	14583.198	$15970_3 - 30553\bar{2}$
6906.698	20	1	14474.705	$19986\bar{6} - 34460_5$	6854.107	400	10	14585.768	$13088_3 - 27674\bar{2}$
6905.856	40	1	14476.470	$14204_5 - 28680\bar{4}$	6853.511	100	4	14587.036	$16554_6 - 31141\bar{0}$
6904.578	50		14479.150	$17959_4 - 32439\bar{4}$	6852.344	50	2	14589.521	$15166\bar{3} - 29756_4$
6904.468	8		14479.380	$21594_3 - 36074\bar{3}$	6852.099	1		14590.042	$21143_5 - 35733\bar{4}$
6903.317	8		14481.795	$16783\bar{4} - 31265_3$	6850.111	8		14594.276	$21594_3 - 36188\bar{2}$
6902.957	10		14482.550	$18069\bar{3} - 32551_3$	6849.623	25		14595.316	$18699_2 - 33294\bar{3}$
6902.767	2		14482.948	$19948\bar{4} - 34431_3$	6848.697	3		14597.290	$18930\bar{3} - 33527_4$
6902.210	150	3	14484.117	$11802_2 - 26287\bar{1}$	6848.279	2		14598.181	$21738\bar{2} - 36336_3$
6901.357	10		14485.907	$22399\bar{0} - 36885_4$	6847.989	3		14598.799	$18809\bar{4} - 33408_3$
6901.019	3		14486.617	$21645_4 - 36132\bar{0}$	6847.517	4		14599.805	$12847_3 - 27447\bar{2}$
6900.762	100	5	14487.156	$16783\bar{4} - 31271_5$	6846.603	15	1	14601.754	$17411\bar{3} - 32012_4$
6900.442	10		14487.828	$18930\bar{3} - 33418_4$	6843.556	3		14608.255	$18809\bar{4} - 33418_4$
6898.073	25		14492.804	$20214\bar{3} - 34707_3$	6842.724	50		14610.031	$7280_2 - 21890\bar{3}$
6897.277	20		14494.476	$17501\bar{0} - 31995_4$	6841.962	8		14611.659	$18431_3 - 33043\bar{3}$
6895.227	10		14498.786	$19948\bar{4} - 34447_4$	6841.690	10		14612.239	$22163\bar{4} - 36775_3$
6895.116	8		14499.019	$21575_2 - 36074\bar{3}$	6840.993	2		14613.728	$21902\bar{4} - 36515_3$
6894.229	50	4	14500.884	$10414\bar{4} - 24915_3$	6840.899	2		14613.929	$21575_2 - 36188\bar{2}$
6893.626	10	1	14502.153	$20543\bar{0} - 35046_1$	6839.287	100	2	14617.373	$13945\bar{3} - 28562_4$
6892.247	200	5	14505.054	$17166_5 - 31671\bar{4}$	6838.979	2		14618.032	$16346\bar{4} - 30964_3$
6889.052	8	1	14511.781	$17501\bar{0} - 32012_4$	6838.902	8		14618.196	$22163\bar{4} - 36781_5$
6888.832	100	3	14512.245	$11601_1 - 26113\bar{2}$	6836.881	50		14622.518	$20423\bar{1} - 35046_1$
6888.158	50	2	14513.665	$15618\bar{3} - 30132_2$	6836.651	3		14623.009	$22508\bar{2} - 37131_3$
6886.404	200	10	14517.362	$3865_1 - 18382\bar{0}$	6835.613	8		14625.230	$21252\bar{2} - 35877_2$
6885.964	2		14518.289	$17411\bar{3} - 31929_3$	6834.925	400	50	14626.702	$4961_4 - 19588\bar{0}$
6885.721	1		14518.802	$20922\bar{2} - 35440_3$	6834.780	5b		14627.012	$20522\bar{2} - 35149_2$
6883.849	75		14522.750	$20566\bar{4} - 35089_3$	6834.585	1		14627.430	$19817\bar{1} - 34444_2$
6883.311	200	10	14523.885	$15493_4 - 30017\bar{3}$	6833.697	3		14629.330	$21645_4 - 36275\bar{0}$
6883.135	50	4	14524.256	$15490\bar{0} - 30014_4$	6833.373	10		14630.024	$17411\bar{3} - 32041_2$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6831.719	3		14633.566	$22669^{8}_{3} - 37303_{4}$	6787.913	25		14728.004	$18053^{3}_{4} - 32781_{4}$
6831.621	2		14633.776	$22141^{8}_{3} - 36775_{3}$	6787.734	300	25	14728.392	$14204_{5} - 28932^{3}_{4}$
6831.249	8		14634.573	$18930^{3}_{3} - 33564_{3}$	6784.927	10		14734.485	$19039^{2}_{2} - 33773_{1}$
6829.339	100	3	14638.666	$14206^{3}_{4} - 28845_{4}$	6784.807	50	2	14734.746	$22669^{3}_{3} - 37404_{3}$
6829.212	8		14638.938	$17073_{1} - 31712^{0}_{1}$	6782.498	1		14739.762	$22098_{4} - 36837_{6}$
6829.037	500	25	14639.313	$7502_{3} - 22141^{3}_{3}$	6781.676	3		14741.549	$13847_{2} - 28589^{3}_{3}$
6826.296	50l	2	14645.191	$22163^{3}_{4} - 36808_{3}$	6781.234	3		14742.509	$18053^{3}_{4} - 32796_{3}$
6824.678	400	20	14648.663	$11241^{3}_{3} - 25890_{2}$	6780.415	400	100	14744.290	$8111_{4} - 22855^{3}_{3}$
6824.380	1		14649.303	$18809^{3}_{4} - 33459_{4}$	6780.126	400	1	14744.919	$8243^{3}_{2} - 22988_{2}$
6824.097	8		14649.911	$19039^{2}_{2} - 33689_{2}$	6779.323	100	1	14746.665	$7502_{3} - 22248^{2}_{2}$
6823.911	10	1	14650.310	$19532_{4} - 34182_{6}$	6779.085	4		14747.183	$16217^{2}_{2} - 30964_{3}$
6823.500	150	4	14651.192	$13297_{4} - 27948^{3}_{4}$	6778.312	400	40	14748.865	$3865_{1} - 18614^{0}_{1}$
6819.796	10		14659.150	$20214^{3}_{3} - 34874_{3}$	6776.230	100	3	14753.396	$16783^{3}_{4} - 31537_{3}$
6819.549	5		14659.681	$14481^{6}_{6} - 29141_{5}$	6775.501	2		14754.984	$18809^{3}_{4} - 33564_{3}$
6818.996	5		14660.870	$7502_{3} - 22163^{3}_{4}$	6775.101	15	2	14755.855	$22338^{3}_{3} - 37094_{2}$
6817.248	2		14664.629	$22098_{4} - 36762^{3}_{3}$	6774.254	1		14757.700	$21539^{3}_{4} - 36297_{4}$
6816.821	25		14665.547	$13847_{2} - 28513^{2}_{2}$	6774.086	8		14758.066	$22401_{1} - 37159^{0}_{1}$
6816.510	50	2	14666.216	$21165^{3}_{3} - 35831_{3}$	6773.770	40	1	14758.754	$18930^{3}_{3} - 33689_{2}$
6816.510	50	2	14666.216	$22855^{3}_{3} - 37521_{3}$	6772.237	50b		14762.095	$17398_{3} - 32160^{2}_{2}$
6816.246	50w		14666.784	$15493_{4} - 30160^{3}_{4}$	6772.176	400	15	14762.228	$15493_{4} - 30255^{3}_{3}$
6815.604	100	2	14668.166	$15166^{3}_{3} - 29835_{3}$	6771.623	5		14763.433	$21890^{3}_{3} - 36653_{2}$
6814.184	2		14671.222	$21539^{3}_{4} - 36210_{5}$	6770.175	5		14766.591	$8111_{4} - 22877^{8}_{6}$
6813.602	10		14672.476	$16217^{2}_{2} - 30889_{1}$	6768.511	3		14770.221	$18011^{8}_{6} - 32781_{4}$
6811.958	50	1	14676.017	$18930^{3}_{3} - 33606_{2}$	6765.683	200	100	14776.395	$18614^{0}_{1} - 33390_{1}$
6811.725	4		14676.519	$22141^{3}_{3} - 36818_{2}$	6764.987	1		14777.915	$21738^{2}_{2} - 36515_{3}$
6809.504	100	3	14681.306	$11241^{3}_{3} - 25923_{4}$	6763.532	8	1	14781.094	$19516^{2}_{2} - 34298_{1}$
6809.311	150	4	14681.722	$12114^{2}_{2} - 26796_{3}$	6763.340	50	2	14781.514	$21645_{4} - 36427^{3}_{3}$
6809.103	400	10	14682.170	$19039^{2}_{2} - 33721_{2}$	6760.667	100	3	14787.358	$17166_{5} - 31953^{3}_{4}$
6808.530	75	2	14683.406	$18053^{3}_{4} - 32737_{5}$	6760.400	2		14787.942	$21594_{3} - 36382^{3}_{4}$
6808.373	2		14683.744	$20737^{0}_{1} - 35421_{1}$	6758.716	2		14791.627	$15970_{3} - 30761^{3}_{3}$
6807.314	100	3	14686.029	$11601_{1} - 26287^{0}_{1}$	6758.521	5		14792.053	$22338^{3}_{3} - 37131_{3}$
6807.108	8	1	14686.473	$22399^{8}_{6} - 37085_{4}$	6758.202	200	8	14792.752	$17501^{8}_{6} - 32293_{5}$
6807.035	15	1	14686.631	$13962_{1} - 28649^{0}_{1}$	6757.349	15		14794.619	$17959_{4} - 32754^{3}_{3}$
6805.746	100	2	14689.412	$15863_{2} - 30553^{2}_{2}$	6757.105	100	5	14795.153	$16346^{3}_{4} - 31141_{3}$
6803.292	10		14694.711	$18614^{0}_{1} - 33309_{2}$	6756.454	800b	75	14796.579	$2558_{0} - 17354^{0}_{1}$
6802.783	100	3	14695.810	$13088_{3} - 27784^{2}_{2}$	6756.323	15		14796.866	$20054_{2} - 34851^{2}_{2}$
6802.410	3		14696.616	$20724^{8}_{6} - 35421_{1}$	6756.323	15		14796.866	$20054_{2} - 34851^{2}_{2}$
6801.772	2		14697.995	$22396^{0}_{1} - 37094_{2}$	6755.663	4		14798.311	$19503^{3}_{3} - 34301_{4}$
6800.461	100	4	14700.828	$17501^{8}_{6} - 32202_{5}$	6755.475	20	1	14798.723	$17398_{3} - 32197^{3}_{3}$
6799.707	2		14702.458	$22098_{4} - 36800^{3}_{4}$	6755.305	2		14799.096	$22508^{2}_{2} - 37307_{3}$
6798.743	100	3	14704.543	$17847^{2}_{2} - 32551_{3}$	6754.265	150	4	14801.374	$13847_{2} - 28649^{0}_{1}$
6798.483	150	3	14705.105	$11802_{2} - 26508^{3}_{3}$	6753.657	150	4	14802.707	$6362_{2} - 21165^{3}_{3}$
6795.797	100	2	14710.917	$13962_{1} - 28673^{2}_{2}$	6751.426	100	3	14807.598	$15736^{0}_{1} - 30544_{2}$
6795.046	75	2	14712.543	$18069^{3}_{3} - 32781_{4}$	6749.315	50	1	14812.230	$19532_{4} - 34344^{3}_{4}$
6794.965	25	1	14712.719	$21165^{3}_{3} - 35877_{2}$	6747.402	2		14816.429	$21668^{0}_{1} - 36485_{2}$
6794.795	8	1	14713.087	$19588^{6}_{6} - 34301_{4}$	6747.172	5		14816.934	$17224^{2}_{2} - 32041_{2}$
6792.900	15	1	14717.191	$19713_{3} - 34430^{3}_{3}$	6746.137	75	2	14819.207	$19588^{6}_{6} - 34407_{6}$
6792.674	4		14717.681	$18809^{3}_{4} - 33527_{4}$	6743.199	10		14825.664	$13847_{2} - 28673^{2}_{2}$
6791.232	400	25	14720.806	$8800_{4} - 23521^{3}_{3}$	6742.881	200	8	14826.363	$12847_{3} - 27674^{2}_{2}$
6789.000	100		14725.645	$18011^{8}_{6} - 32737_{5}$	6741.924	100	2	14828.468	$13847_{2} - 28676^{3}_{3}$
6788.837	300	25	14725.999	$11197^{8}_{6} - 25923_{4}$	6739.963	50h		14832.782	$22401_{1} - 37234^{2}_{2}$
6788.730	50h	1	14726.231	$20423^{0}_{1} - 35149_{2}$	6738.179	200	5	14836.709	$7502_{3} - 22338^{3}_{3}$
6788.343	20		14727.071	$18069^{3}_{3} - 32796_{3}$	6737.643	50	8	14837.889	$19273_{2} - 34111^{0}_{1}$
6788.180	50		14727.424	$18699_{2} - 33427^{2}_{2}$	6737.281	50		14838.687	$20566^{3}_{4} - 35405_{3}$
6787.913	25		14728.004	$14206^{3}_{4} - 28934_{3}$	6735.686	2		14842.201	$7795^{3}_{4} - 22637_{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6735.369	100	2	14842.899	$15970_3 - 30812\frac{2}{2}$	6701.373	10	1	14918.196	$21890\frac{3}{3} - 36808_3$
6735.128	100	2	14843.430	$13297_4 - 28140\frac{4}{4}$	6701.010	2		14919.004	$16346\frac{4}{4} - 31265_3$
6734.667	20		14844.446	$15166\frac{3}{3} - 30011_3$	6700.798	8		14919.477	$21143_5 - 36062\frac{4}{4}$
6734.003	4		14845.910	$22248\frac{2}{2} - 37094_2$	6699.335	2		14922.735	$22163\frac{3}{4} - 37085_4$
6733.748	150	5	14846.472	$14204_5 - 29050\frac{6}{6}$	6698.610	10		14924.350	$16346\frac{3}{4} - 31271_5$
6733.314	8		14847.429	$15166\frac{3}{3} - 30014_4$	6698.516	2		14924.559	$21165\frac{3}{3} - 36089_4$
6732.650	50	3	14848.893	$11802_2 - 26651\frac{1}{2}$	6698.029	200	4	14925.644	$19948\frac{4}{4} - 34874_3$
6731.047	25		14852.430	$18574_1 - 33427\frac{2}{2}$	6697.708	200	5	14926.360	$3687_2 - 18614\frac{1}{1}$
6729.932	50	1	14854.890	$8800_4 - 23655\frac{4}{4}$	6697.139	5		14927.628	$19516\frac{2}{2} - 34444_2$
6728.757	300	5	14857.484	$17166_5 - 32023\frac{6}{6}$	6696.996	1		14927.947	$21890\frac{3}{3} - 36818_2$
6728.117	150	5	14858.898	$13175\frac{4}{4} - 28034_5$	6696.886	1		14928.192	$19503\frac{3}{3} - 34431_3$
6727.649	100s	2	14859.931	$15863_2 - 30723\frac{1}{1}$	6696.140	200	5	14929.855	$12114\frac{2}{2} - 27044_3$
6727.459	500	75	14860.351	$5563_1 - 20423\frac{1}{1}$	6695.175	8	1	14932.007	$20867\frac{7}{7} - 35799_6$
6726.946	10	2	14861.484	$7280_2 - 22141\frac{3}{3}$	6694.492	100	2	14933.530	$15618\frac{3}{3} - 30552_4$
6726.310	100	2	14862.889	$19986\frac{6}{6} - 34849_5$	6694.002	100	1	14934.623	$14206\frac{4}{4} - 29141_5$
6725.482	2		14864.719	$22877\frac{1}{1} - 37742_6$	6693.205	75		14936.401	$12847_3 - 27784\frac{2}{2}$
6725.128	1		14865.502	$18431_3 - 33297\frac{2}{2}$	6690.906	50		14941.534	$22877\frac{6}{6} - 37819_4$
6723.120	2		14869.941	$19713_3 - 34583\frac{3}{3}$	6690.271	4		14942.952	$22098_4 - 37041\frac{4}{4}$
6722.852	1		14870.534	$22877\frac{1}{1} - 37748_2$	6689.783	5		14944.042	$19503\frac{3}{3} - 34447_4$
6721.958	5		14872.512	$19588\frac{6}{6} - 34460_5$	6687.521	150	3	14949.096	$15863_2 - 30812\frac{2}{2}$
6721.703	1		14873.076	$21902\frac{4}{4} - 36775_3$	6686.214	10		14952.019	$18011\frac{6}{6} - 32963_5$
6721.089	25		14874.435	$20214\frac{3}{3} - 35089_3$	6685.701	4		14953.166	$14465\frac{2}{2} - 29418_2$
6720.699	1		14875.298	$23015\frac{6}{6} - 37890_5$	6684.687	8		14955.434	$13962_1 - 28917\frac{2}{2}$
6719.630	20		14877.664	$18549_2 - 33427\frac{2}{2}$	6684.049	50	2	14956.862	$14465\frac{2}{2} - 29422_1$
6719.307	2		14878.380	$16217\frac{2}{2} - 31095_1$	6683.991	8b		14956.991	$17501\frac{6}{6} - 32458_4$
6719.198	200	5	14878.621	$10526\frac{3}{3} - 25405_4$	6683.368	200	3	14958.386	$8243\frac{2}{2} - 23201_3$
6719.011	3		14879.035	$21902\frac{4}{4} - 36781_5$	6682.838	5		14959.572	$5563_1 - 20522\frac{2}{2}$
6717.582	1		14882.200	$21165\frac{3}{3} - 36047_2$	6681.486	15		14962.599	$18699_2 - 33662\frac{1}{1}$
6717.384	100	3	14882.639	$15490\frac{6}{6} - 30372_6$	6680.943	2		14963.815	$22855\frac{3}{3} - 37819_4$
6716.215	3		14885.229	$21890\frac{3}{3} - 36775_3$	6680.664	2		14964.440	$22338\frac{3}{3} - 37303_4$
6715.515	100	2	14886.781	$17398_3 - 32285\frac{3}{3}$	6680.087	50	1	14965.733	$15166\frac{3}{3} - 30132_2$
6713.967	300	8	14890.213	$6362_2 - 21252\frac{2}{2}$	6678.994	1		14968.182	$22338\frac{3}{3} - 37307_3$
6713.602	100		14891.023	$18382\frac{6}{6} - 33273_1$	6678.707	200	8	14968.825	$7280_2 - 22248\frac{2}{2}$
6712.838	2		14892.717	$22855\frac{3}{3} - 37748_2$	6677.964	15		14970.490	$14226_0 - 29197\frac{1}{1}$
6712.194	5		14894.146	$21594_3 - 36488\frac{2}{2}$	6675.341	4		14976.373	$21539\frac{4}{4} - 36515_3$
6711.495	50		14895.698	$17398_3 - 32294\frac{3}{4}$	6675.023	8		14977.086	$23015\frac{6}{6} - 37992_4$
6711.249	100	4	14896.243	$9804_5 - 24701\frac{6}{6}$	6674.698	400	8	14977.816	$2869_3 - 17847\frac{2}{2}$
6710.865	10		14897.096	$14206\frac{4}{4} - 29104_4$	6674.339	5		14978.621	$20322\frac{6}{6} - 35300_5$
6710.545	100	2	14897.806	$15863_2 - 30761\frac{3}{3}$	6673.590	200	5	14980.302	$16346\frac{4}{4} - 31326_4$
6710.545	100	2	14897.806	$19532_4 - 34430\frac{3}{3}$	6673.428	5		14980.666	$5563_1 - 20543\frac{6}{6}$
6710.325	3		14898.295	$20522\frac{2}{2} - 35421_1$	6672.971	2		14981.692	$21575_2 - 36556\frac{1}{1}$
6709.443	2		14900.253	$13945\frac{3}{3} - 28845_4$	6672.383	1		14983.012	$21902\frac{4}{4} - 36885_4$
6709.248	2		14900.686	$19948\frac{4}{4} - 34849_5$	6671.684	3		14984.582	$21668\frac{1}{1} - 36653_2$
6708.839	50	1	14901.595	$18930\frac{3}{3} - 33831_4$	6670.741	1		14986.700	$4961_4 - 19948\frac{4}{4}$
6708.391	5		14902.590	$17959_4 - 32862\frac{4}{4}$	6669.531	3		14989.419	$22141\frac{3}{3} - 37131_3$
6708.283	5		14902.830	$14032\frac{2}{2} - 28934_3$	6669.463	8		14989.572	$13945\frac{3}{3} - 28934_3$
6707.733	3h		14904.052	$22399\frac{6}{6} - 37303_4$	6668.826	100		14991.004	$10414\frac{4}{4} - 25405_4$
6706.835	15	1	14906.047	$21902\frac{4}{4} - 36808_3$	6668.673	8		14991.348	$19713_3 - 34704\frac{3}{3}$
6706.451	2		14906.901	$22877\frac{1}{1} - 37784_2$	6668.673	8		14991.348	$19713_3 - 34704\frac{3}{3}$
6705.428	8		14909.175	$20922\frac{2}{2} - 35831_3$	6668.414	8		14991.930	$18614\frac{1}{1} - 33606_2$
6705.151	10		14909.791	$18053\frac{4}{4} - 32963_5$	6666.987	4		14995.139	$21890\frac{3}{3} - 36885_4$
6703.348	5		14913.801	$21575_2 - 36488\frac{2}{2}$	6663.702	50	3	15002.531	$8111_4 - 23113\frac{4}{4}$
6703.091	2		14914.373	$19516\frac{2}{2} - 34431_3$	6662.270	800	200	15005.755	$7502_3 - 22508\frac{2}{2}$
6702.576	1		14915.519	$21738\frac{2}{2} - 36653_2$	6661.320	3		15007.895	$18382\frac{6}{6} - 33390_1$
6701.373	10	1	14918.196	$20522\frac{2}{2} - 35440_3$	6659.331	3		15012.378	$19713_3 - 34725\frac{3}{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
6659.266	2		15012.524	$21077_0^6 - 36089_4$
6659.118	10	2	15012.858	$22877_0^6 - 37890_5$
6658.869	2		15013.419	$22508_2^2 - 37521_3$
6658.678	400	15	15013.850	$11241_3^3 - 26255_4$
6658.071	2		15015.219	$22877_0^6 - 37892_4$
6657.879	3		15015.652	$20566_4^4 - 35582_5$
6656.876	50	1	15017.914	$15490_0^0 - 30508_5$
6656.708	4		15018.293	$22669_3^3 - 37688_3$
6656.503	1		15018.756	$18699_2 - 33718_2^2$
6655.773	15		15020.403	$15970_3 - 30990_3^3$
6655.494	50	2	15021.033	$15736_1^1 - 30758_2$
6655.071	5		15021.988	$18809_4^4 - 33831_4$
6654.236	10		15023.872	$15493_4 - 30517_0^6$
6654.110	5		15024.157	$15493_4 - 30517_4^4$
6652.225	2		15028.414	$16217_2^2 - 31245_2$
6651.371	5		15030.344	$18069_3^3 - 33099_3$
6650.561	50	1	15032.174	$15618_3^3 - 30651_3$
6649.487	1		15034.602	$21143_5 - 36178_4^4$
6649.278	8	1	15035.075	$18699_2 - 33734_2^2$
6648.347	5		15037.180	$13847_2 - 28884_3^3$
6646.814	8		15040.648	$17398_3 - 32439_4^4$
6646.323	20	1	15041.760	$18549_2 - 33591_3^3$
6644.839	2		15045.119	$23655_4^4 - 38700_4$
6644.661	200	150	15045.522	$9804_5 - 24850_6^6$
6644.550	4	1	15045.773	$18053_4^4 - 33099_3$
6644.029	50	2	15046.953	$17411_3^3 - 32458_4$
6643.501	3		15048.149	$16217_2^2 - 31265_3$
6643.120	8		15049.012	$15970_3 - 31019_4^4$
6642.426	40b	1	15050.584	$19532_4 - 34583_3^3$
6642.333	50b	4	15050.795	$11601_1 - 26651_2^2$
6642.333	50b	4	15050.795	$19273_2 - 34324_2^2$
6641.668	4		15052.302	$13088_3 - 28140_4^4$
6641.439	4		15052.821	$13175_4^4 - 28227_4$
6641.006	4		15053.802	$20522_2^2 - 35576_3$
6639.726	8		15056.704	$18011_0^0 - 33068_6$
6638.912	150	20	15058.551	$11197_0^6 - 26255_4$
6638.774	8		15058.864	$7280_2 - 22338_3^3$
6637.204	15	1	15062.426	$15490_0^0 - 30552_4$
6636.143	2		15064.834	$15863_2 - 30928_1^1$
6633.784	50	2	15070.191	$13847_2 - 28917_2^2$
6633.581	8		15070.652	$14481_6^6 - 29552_6$
6632.110	5		15073.995	$21594_3 - 36668_2^2$
6631.568	40	1	15075.227	$11802_2 - 26878_3^3$
6629.447	1		15080.050	$21738_2^2 - 36818_2$
6626.544	2		15086.656	$17073_1 - 32160_2^2$
6626.125	50	1	15087.610	$18574_1 - 33662_1^1$
6623.482	2		15093.630	$21575_2 - 36668_2^2$
6621.329	1		15098.538	$19273_2 - 34371_2^2$
6620.408	40	1	15100.639	$12847_3 - 27948_4^4$
6620.248	2		15101.004	$18699_2 - 33800_3^3$
6618.398	10	1	15105.225	$17398_3 - 32503_2^2$
6618.163	200	8	15105.761	$15970_3 - 31075_2^2$
6618.163	200	8	15105.761	$14204_5 - 29310_4^4$
6617.626	5		15106.987	$18614_1^1 - 33721_2$
6617.512	75	4	15107.247	$10783_2^2 - 25890_2$
6615.071	50	2	15112.822	$18549_2 - 33662_1^1$
6613.376	200	8	15116.695	$7280_2 - 22396_1^1$
6613.280	4h		15116.914	$21645_4 - 36762_3^3$
6609.668	5		15125.175	$20922_2^2 - 36047_2$
6609.031	5	1	15126.633	$15863_2 - 30990_3^3$
6608.438	50	2	15127.991	$17166_5 - 32294_4^4$
6606.790	25	2	15131.764	$21143_5 - 36275_0^6$
6606.597	20	2	15132.206	$21165_3^3 - 36297_4$
6604.528	1		15136.947	$22855_3^3 - 37992_4$
6603.788	5	1	15138.643	$19713_3 - 34851_2^2$
6603.618	75	5	15139.033	$15618_3^3 - 30758_2$
6603.026	20	2	15140.390	$17411_3^3 - 32551_3$
6602.771	100	8	15140.975	$19948_4^4 - 35089_3$
6601.452	3	1	15144.000	$22163_4^4 - 37307_3$
6600.730	50	2	15145.656	$16783_4^4 - 31929_3$
6599.183	3		15149.207	$21668_1^1 - 36818_2$
6599.183	3		15149.207	$22669_3^3 - 37819_4$
6597.542	2		15152.975	$15736_1^1 - 30889_1$
6596.750	10	1	15154.794	$21645_4 - 36800_4^4$
6594.798	2		15159.280	$18614_1^1 - 33773_1$
6594.442	8	1	15160.098	$18574_1 - 33734_2^2$
6593.940	500	150	15161.252	$5563_1 - 20724_0^6$
6593.464	100	15	15162.347	$16554_6 - 31716_0^6$
6591.485	400	75	15166.899	$0_2 - 15166_3^3$
6591.278	8	1	15167.375	$13175_4^4 - 28342_5$
6591.181	100	40	15167.598	$7502_3 - 22669_3^3$
6588.540	500r	200	15173.678	$3865_1 - 19039_2^2$
6588.340	50	5	15174.139	$5563_1 - 20737_1^1$
6588.247	1		15174.353	$14243_1^1 - 29418_2$
6588.063	2		15174.777	$14247_0^6 - 29422_1$
6586.624	4		15178.092	$14243_1^1 - 29422_1$
6585.696	100	5	15180.231	$19227_6^6 - 34407_6$
6584.615	100	8	15182.723	$13297_4 - 28480_4^4$
6584.374	50	5	15183.279	$13175_4^4 - 28358_3$
6583.906	400r	200	15184.358	$2869_3 - 18053_4^4$
6583.501	8	2	15185.292	$18549_2 - 33734_2^2$
6583.177	10	2	15186.039	$20054_2 - 35240_3^3$
6582.431	1		15187.760	$21575_2 - 36762_3^3$
6581.297	4		15190.377	$20214_3^3 - 35405_3$
6581.135	1		15190.751	$19516_2^2 - 34707_3$
6580.544	3		15192.116	$21645_4 - 36837_0^6$
6580.231	75	3	15192.838	$11802_2 - 26995_3^3$
6579.482	20	2	15194.568	$13962_1 - 29157_1^1$
6578.980	3		15195.727	$21890_3^3 - 37085_4$
6577.216	100	75	15199.803	$2869_3 - 18069_3^3$
6576.123	75	8	15202.329	$14481_6^6 - 29684_5$
6575.770	2		15203.145	$18011_0^0 - 33214_5$
6575.148	3		15204.583	$19503_3^3 - 34707_3$
6574.542	4		15205.985	$21594_3 - 36800_4^4$
6572.026	10	2	15211.806	$16783_4^4 - 31995_4$
6571.937	5		15212.012	$15863_2 - 31075_2^2$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6568.423	3	1	15220.150	$21077_{6}^{6} - 36297_{4}$	6515.875	5		15342.894	$22399_{6}^{6} - 37742_{6}$
6567.213	2		15222.954	$22669_{3}^{3} - 37892_{4}$	6514.699	3		15345.663	$15618_{3}^{3} - 30963_{3}$
6565.068	50	5	15227.928	$7280_{2} - 22508_{2}^{2}$	6513.200	2		15349.195	$22338_{3}^{3} - 37688_{3}$
6564.700	2		15228.782	$21902_{4}^{4} - 37131_{3}$	6513.052	20	1	15349.544	$13847_{2} - 29197_{1}^{1}$
6564.443	100	8	15229.378	$12114_{2}^{2} - 27343_{3}$	6512.802	4		15350.133	$13847_{2} - 29197_{2}^{2}$
6562.647	4		15233.546	$19227_{6}^{6} - 34460_{5}$	6512.366	400	15	15351.161	$3687_{2} - 19039_{2}^{2}$
6562.105	50		15234.804	$13962_{1} - 29197_{1}^{1}$	6511.583	4		15353.007	$7502_{3} - 22855_{3}^{3}$
6561.854	3		15235.387	$13962_{1} - 29197_{2}^{2}$	6511.050	3		15354.263	$19532_{4} - 34886_{6}^{6}$
6560.849	5		15237.720	$7795_{4}^{4} - 23032_{4}$	6510.269	5		15356.105	$17398_{3} - 32754_{3}^{3}$
6559.876	5	1	15239.981	$18069_{3}^{3} - 33309_{2}$	6509.975	1		15356.799	$21738_{2}^{2} - 37094_{2}$
6559.462	1		15240.942	$21890_{3}^{3} - 37131_{3}$	6509.857	3		15357.077	$19516_{2}^{2} - 34874_{3}$
6559.217	50	8	15241.512	$22163_{4}^{4} - 37404_{3}$	6509.653	2		15357.559	$18809_{4}^{4} - 34167_{3}$
6559.120	5h		15241.737	$21539_{4}^{4} - 36781_{5}$	6509.311	3		15358.365	$22163_{4}^{4} - 37521_{3}$
6558.871	100	8	15242.316	$3687_{2} - 18930_{3}^{3}$	6509.053	150	8	15358.974	$5563_{1} - 20922_{2}^{2}$
6554.563	1		15252.334	$17847_{2}^{2} - 33099_{3}$	6508.362	50	1	15360.605	$4961_{4} - 20322_{6}^{6}$
6554.160	150	40	15253.272	$4961_{4} - 20214_{3}^{3}$	6508.292	2		15360.770	$16351_{0} - 31712_{1}^{1}$
6551.917	4		15258.493	$11802_{2} - 27061_{2}^{2}$	6507.948	4	1	15361.582	$20214_{3}^{3} - 35576_{3}$
6551.703	100	5	15258.992	$13088_{3} - 28347_{2}^{2}$	6507.409	1		15362.854	$21645_{4} - 37008_{6}^{6}$
6551.265	4		15260.012	$20322_{6}^{6} - 35582_{5}$	6506.989	100	15	15363.846	$10526_{3}^{3} - 25890_{2}$
6550.335	5		15262.178	$21575_{2} - 36837_{1}^{1}$	6505.221	1		15368.022	$18431_{3} - 33799_{4}^{4}$
6549.820	4		15263.378	$21252_{2}^{2} - 36515_{3}$	6504.835	2		15368.933	$18431_{3} - 33800_{3}^{3}$
6547.720	2		15268.274	$18699_{2} - 33967_{3}^{3}$	6504.458	5		15369.824	$14465_{2}^{2} - 29835_{3}$
6547.618	1		15268.512	$15493_{4} - 30761_{3}^{3}$	6504.226	15	2	15370.372	$17411_{3}^{3} - 32781_{4}$
6547.531	3		15268.714	$21539_{4}^{4} - 36808_{3}$	6501.992	100	5	15375.653	$6362_{2} - 21738_{2}^{2}$
6545.880	2		15272.566	$22248_{2}^{2} - 37521_{3}$	6500.659	75	3	15378.806	$13297_{4} - 28676_{3}^{3}$
6545.719	100	8	15272.941	$17166_{5} - 32439_{4}^{4}$	6498.769	8	1	15383.279	$13297_{4} - 28680_{4}^{4}$
6545.345	1		15273.814	$20054_{2} - 35328_{1}^{1}$	6497.788	2		15385.601	$15166_{3}^{3} - 30552_{4}$
6543.893	1		15277.203	$21594_{3} - 36871_{2}^{2}$	6497.490	50	3	15386.307	$14032_{2}^{2} - 29418_{2}$
6542.511	50	3	15280.430	$17501_{6}^{6} - 32781_{4}$	6496.965	8	1	15387.550	$13175_{4}^{4} - 28562_{4}$
6542.049	50	3	15281.509	$11601_{1} - 26882_{6}^{6}$	6496.028	10	1	15389.770	$7280_{2} - 22669_{3}^{3}$
6540.542	15	1	15285.030	$11802_{2} - 27087_{1}^{1}$	6495.930	5		15390.002	$14032_{2}^{2} - 29422_{1}$
6538.301	50	4	15290.269	$13962_{1} - 29252_{2}^{2}$	6495.595	3		15390.796	$18382_{6}^{6} - 33773_{1}$
6537.615	75	5	15291.873	$13297_{4} - 28589_{3}^{3}$	6495.255	20	2	15391.601	$13088_{3} - 28480_{3}^{3}$
6537.178	50	2	15292.896	$12847_{3} - 28140_{4}^{4}$	6495.004	1		15392.196	$19039_{2}^{2} - 34431_{3}$
6536.295	2		15294.961	$15493_{4} - 30788_{6}^{6}$	6493.702	4		15395.282	$21645_{4} - 37041_{4}^{4}$
6535.486	4		15296.855	$21575_{2} - 36871_{2}^{2}$	6493.198	150	8	15396.477	$10526_{3}^{3} - 25923_{4}$
6531.342	800r	200	15306.560	$6362_{2} - 21668_{1}^{1}$	6491.222	2		15401.164	$21902_{4}^{4} - 37303_{4}$
6530.500	4	1	15308.534	$20522_{2}^{2} - 35831_{3}$	6490.736	500	50	15402.317	$8800_{4} - 24202_{4}^{4}$
6530.500	4	1	15308.534	$22877_{6}^{6} - 38186_{4}$	6489.598	10	1	15405.018	$13847_{2} - 29252_{2}^{2}$
6530.157	20	2	15309.338	$13847_{2} - 29157_{1}^{1}$	6489.362	2		15405.578	$18053_{4}^{4} - 33459_{4}$
6530.125	25	3	15309.413	$21902_{4}^{4} - 37211_{5}$	6488.882	50	4	15406.718	$7795_{4}^{4} - 23201_{3}$
6529.994	25	2	15309.720	$19273_{2} - 34583_{3}^{3}$	6488.882	50	4	15406.716	$18011_{6}^{6} - 33418_{4}$
6529.877	3h		15309.994	$20737_{1}^{1} - 36047_{2}$	6488.785	2		15406.948	$14243_{1}^{1} - 29650_{2}$
6529.597	20	2	15310.651	$17959_{4} - 33270_{4}^{4}$	6487.920	3		15409.002	$22338_{3}^{3} - 37748_{2}$
6529.193	1		15311.598	$20322_{6}^{6} - 35633_{4}$	6487.479	50	4	15410.050	$8111_{4} - 23521_{3}^{3}$
6528.592	4		15313.008	$15970_{3} - 31283_{3}^{3}$	6486.848	4		15411.549	$18699_{2} - 34111_{1}^{1}$
6527.858	1		15314.730	$19986_{6}^{6} - 35300_{5}$	6484.067	15	3	15418.159	$16783_{4}^{4} - 32202_{5}$
6526.584	20	2	15317.719	$19273_{2} - 34591_{1}^{1}$	6484.067	15	3	15418.159	$19713_{3} - 35131_{4}^{4}$
6525.714	2		15319.761	$16217_{2}^{2} - 31537_{3}$	6483.931	2		15418.482	$18549_{2} - 33967_{3}^{3}$
6525.490	3		15320.287	$21165_{3}^{3} - 36485_{2}$	6483.741	3	1	15418.934	$20214_{3}^{3} - 35633_{4}$
6522.499	20	5	15327.312	$17224_{2}^{2} - 32551_{3}$	6483.618	20	1	15419.226	$15863_{2} - 31283_{3}^{3}$
6522.044	100	15	15328.381	$10783_{2}^{2} - 26111_{1}$	6481.299	50	5	15424.743	$13088_{3} - 28513_{2}^{2}$
6520.998	4		15330.840	$22855_{3}^{3} - 38186_{4}$	6480.444	5	1	15426.778	$17847_{2}^{2} - 33273_{1}$
6519.224	1		15335.012	$17959_{4} - 33294_{3}^{3}$	6479.952	4		15427.950	$16346_{4}^{4} - 31774_{3}$
6517.277	3		15339.593	$18069_{3}^{3} - 33408_{3}$	6478.616	8	1	15431.131	$19273_{2} - 34704_{3}^{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6474.742	50	5	15440.364	$15490^{0}_{0} - 30930_{6}$	6430.684	2		15546.148	$14465^{2}_{2} - 30011_{3}$
6472.193	1		15446.445	$21594_{3} - 37041^{4}_{4}$	6430.499	5	1	15546.596	$22141^{3}_{3} - 37688_{3}$
6471.936	10	1	15447.058	$16346^{4}_{4} - 31793_{4}$	6429.673	2		15548.593	$19532_{4} - 35081^{0}_{0}$
6467.807	3		15456.919	$19948^{4}_{4} - 35405_{3}$	6428.773	40	2	15550.770	$9804_{5} - 25355^{4}_{3}$
6467.671	50	4	15457.244	$11802_{2} - 27260^{3}_{3}$	6427.507	50	4	15553.832	$15970_{3} - 31523^{3}_{3}$
6467.145	8	1	15458.502	$18069^{3}_{3} - 33527_{4}$	6427.507	50	4	15553.832	$22338^{3}_{3} - 37892_{4}$
6466.712	75	4	15459.537	$8800_{4} - 24259^{4}_{4}$	6427.264	3		15554.421	$21594_{3} - 37149^{2}_{2}$
6466.352	50	100	15460.397	$11601_{1} - 27061^{2}_{2}$	6426.723	1		15555.730	$21252^{2}_{2} - 36808_{3}$
6465.692	5	1	15461.976	$17847^{2}_{2} - 33309_{2}$	6426.534	2		15556.187	$17398_{3} - 32954^{2}_{2}$
6465.585	10	2	15462.231	$17501^{0}_{0} - 32963_{5}$	6426.151	5		15557.115	$16217^{2}_{2} - 31774_{3}$
6462.606	200b	100	15469.359	$16554_{6} - 32023^{0}_{0}$	6422.948	4		15564.873	$21594_{3} - 37159^{3}_{3}$
6461.454	2		15472.117	$20322^{0}_{0} - 35794_{4}$	6422.683	2		15565.515	$21252^{2}_{2} - 36818_{2}$
6460.689	2		15473.949	$18053^{4}_{4} - 33527_{4}$	6422.106	100	8	15566.913	$17501^{0}_{0} - 33068_{6}$
6460.470	50	3	15474.473	$8800_{4} - 24274^{0}_{0}$	6421.194	2		15569.124	$21738^{2}_{2} - 37307_{3}$
6459.295	5	1	15477.288	$14206^{4}_{4} - 29684_{5}$	6420.980	3		15569.643	$18431_{3} - 34001^{4}_{4}$
6459.116	5	1	15477.717	$20322^{0}_{0} - 35799_{6}$	6420.225	2		15571.474	$13847_{2} - 29419^{2}_{2}$
6458.118	2		15480.109	$22338^{3}_{3} - 37819_{4}$	6420.080	3		15571.826	$17224^{2}_{2} - 32796_{3}$
6457.280	800r	300	15482.118	$7795^{4}_{4} - 23277_{5}$	6419.849	5	1	15572.386	$19516^{2}_{2} - 35089_{3}$
6455.987	1		15485.219	$21645^{4}_{4} - 37131_{3}$	6419.160	2		15574.057	$21575_{2} - 37149^{2}_{2}$
6455.265	50	4	15486.951	$11601_{1} - 27087^{1}_{1}$	6418.697	4		15575.181	$7280_{2} - 22855^{3}_{3}$
6454.629	4		15488.477	$21165^{3}_{3} - 36653_{2}$	6417.908	15	2	15577.096	$17073_{1} - 32650^{1}_{1}$
6453.551	3		15491.064	$22399^{0}_{0} - 37890_{5}$	6416.930	3		15579.470	$20214^{3}_{3} - 35794_{4}$
6453.344	5	1	15491.561	$18809^{4}_{4} - 34301_{4}$	6415.536	50	5	15582.855	$16346^{4}_{4} - 31929_{3}$
6452.951	40	2	15492.504	$19948^{4}_{4} - 35440_{3}$	6414.703	15	2	15584.878	$13088_{3} - 28673^{2}_{2}$
6452.057	25	2	15494.651	$11802_{2} - 27297^{1}_{1}$	6414.148	75	10	15586.227	$19503^{3}_{3} - 35089_{3}$
6451.582	2		15495.792	$18069^{3}_{3} - 33564_{3}$	6413.615	400	100	15587.522	$13297_{4} - 28884^{3}_{3}$
6451.258	4		15496.570	$14465^{2}_{2} - 29961_{1}$	6412.977	1		15589.073	$22508^{2}_{2} - 38097_{2}$
6450.956	150	8	15497.295	$15493_{4} - 30990^{3}_{3}$	6412.129	2		15591.134	$15166^{3}_{3} - 30758_{2}$
6450.697	5		15497.917	$12114^{2}_{2} - 27612_{3}$	6411.899	500	75	15591.694	$7502_{3} - 23093^{2}_{2}$
6450.593	5		15498.167	$8111_{4} - 23609^{0}_{0}$	6411.412	2		15592.878	$22399^{0}_{0} - 37992_{4}$
6450.007	200	15	15499.575	$12847_{3} - 28347^{2}_{2}$	6410.091	1		15596.091	$19986^{2}_{2} - 35582_{5}$
6449.518	5		15500.751	$13088_{3} - 28589^{3}_{3}$	6410.069	2		15596.145	$19986^{2}_{2} - 35582_{5}$
6449.164	2		15501.601	$17073_{1} - 32575^{2}_{2}$	6409.553	3		15597.401	$7280_{2} - 22877^{1}_{1}$
6448.850	3		15502.356	$21902^{4}_{4} - 37404_{3}$	6408.425	2		15600.146	$17959_{4} - 33560^{4}_{4}$
6446.771	100	8	15507.355	$14204_{5} - 29711^{0}_{0}$	6406.446	100	5	15604.965	$4961_{4} - 20566^{4}_{4}$
6446.133	25	1	15508.890	$10414^{4}_{4} - 25923_{4}$	6403.860	4		15611.266	$7502_{3} - 23113^{4}_{4}$
6445.639	75	2	15510.079	$16783^{4}_{4} - 32293_{5}$	6400.696	100	8	15618.983	$0_{2} - 15618^{3}_{3}$
6444.150	1		15513.663	$21645_{4} - 37159^{3}_{3}$	6399.944	40		15620.819	$8800_{4} - 24421^{3}_{3}$
6444.150	1		15513.663	$21645_{4} - 37159^{3}_{3}$	6399.571	20		15621.729	$19227^{3}_{3} - 34849_{5}$
6443.878	10	1	15514.318	$18930^{3}_{3} - 34444_{2}$	6398.602	1		15624.095	$20054_{2} - 35678^{1}_{1}$
6443.819	25	1	15514.460	$11802_{2} - 27317^{3}_{3}$	6398.451	15	2	15624.463	$18699_{2} - 34324^{2}_{2}$
6443.090	4		15516.215	$18011^{0}_{0} - 33527_{4}$	6397.447	20	2	15626.915	$15618^{3}_{3} - 31245_{2}$
6443.090	4		15516.215	$22669^{3}_{3} - 38186_{4}$	6396.951	200	8	15628.127	$14206^{4}_{4} - 29835_{3}$
6440.353	5	1	15522.809	$15618^{3}_{3} - 31141_{3}$	6396.518	3	1	15629.185	$15970_{3} - 31599^{2}_{2}$
6440.245	1		15523.069	$20566^{4}_{4} - 36089_{4}$	6395.617	3	1	15631.387	$21890^{3}_{3} - 37521_{3}$
6439.418	4		15525.063	$22163^{4}_{4} - 37688_{3}$	6395.279	3		15632.213	$12847_{3} - 28480^{4}_{4}$
6438.918	50	8	15526.268	$8243^{2}_{2} - 23769_{1}$	6395.057	75	4	15632.756	$19516^{2}_{2} - 35149_{2}$
6438.303	20	2	15527.751	$6362_{2} - 21890^{3}_{3}$	6394.589	3	1	15633.900	$19948^{4}_{4} - 35582_{5}$
6437.769	200	20	15529.039	$14204_{5} - 29733^{0}_{0}$	6394.045	200	8	15635.230	$13297_{4} - 28932^{4}_{4}$
6437.769	200	20	15529.039	$19516^{2}_{2} - 35046_{1}$	6393.201	5	1	15637.294	$18809^{4}_{4} - 34447_{4}$
6435.108	1		15535.461	$22248^{2}_{2} - 37784_{2}$	6392.371	75	8	15639.324	$21594_{3} - 37234^{2}_{2}$
6434.800	2		15536.204	$18431_{3} - 33967^{3}_{3}$	6391.173	50	2	15642.256	$14206^{4}_{4} - 29849_{4}$
6434.654	3		15536.557	$18574_{1} - 34111^{1}_{1}$	6390.388	5	1	15644.177	$20566^{4}_{4} - 36210_{5}$
6431.715	5		15543.656	$17847^{2}_{2} - 33390_{1}$	6390.126	75	4	15644.819	$11802_{2} - 27447^{2}_{2}$
6431.518	2		15544.132	$8111_{4} - 23655^{4}_{3}$	6389.391	200b	15	15646.618	$15618^{3}_{3} - 31265_{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6389.391	200b	15	15646.618	$19503_3^3 - 35149_2$	6342.292	4	1	15762.812	$18069_3^3 - 33831_4$
6388.813	100	8	15648.034	$15493_4 - 31141_0^0$	6341.873	5h	1	15763.854	$21539_4^4 - 37303_4$
6388.416	100	5	15649.006	$16346_4^2 - 31995_4$	6340.383	5	1	15767.558	$21539_4^4 - 37307_3$
6387.595	2		15651.018	$18809_4^2 - 34460_5$	6339.663	100	15	15769.349	$7280_2 - 23049_1^1$
6387.393	200	10	15651.513	$3865_1 - 19516_2^2$	6339.297	10	1	15770.259	$9804_5 - 25575_3^3$
6387.096	8	1	15652.240	$18069_3^3 - 33721_2$	6337.620	100	4	15774.432	$11197_0^0 - 26971_4$
6386.780	4	1	15653.015	$21165_3^3 - 36818_2$	6337.528	2		15774.661	$18549_2 - 34324_2^2$
6385.059	20	3	15657.234	$21143_5 - 36800_4^4$	6336.416	10	2	15777.429	$18930_3^3 - 34707_3$
6383.911	2		15660.049	$15863_2 - 31523_3^3$	6336.081	10	2	15778.264	$18053_4^4 - 33831_4$
6381.759	25	2	15665.330	$12847_3 - 28513_2^2$	6335.701	10	1	15779.210	$6362_2 - 22141_3^3$
6381.361	50	5	15666.307	$16346_4^2 - 32012_4$	6335.012	8	2	15780.926	$15490_0^0 - 31271_5$
6380.445	3		15668.556	$19039_2^2 - 34707_3$	6333.017	1		15785.897	$21902_4^4 - 37688_3$
6379.673	50	8	15670.452	$13175_4^4 - 28845_4$	6332.684	8	1	15786.727	$22399_0^0 - 38186_4$
6379.105	3		15671.848	$21077_0^0 - 36749_6$	6331.415	200	15	15789.891	$15493_4 - 31283_3^3$
6379.005	4		15672.093	$21539_4^4 - 37211_5$	6330.374	10	2	15792.488	$13847_2 - 29640_1^1$
6378.958	1		15672.209	$18699_2 - 34371_2^2$	6328.807	50	2	15796.398	$13088_3 - 28884_3^3$
6378.092	1		15674.337	$16783_4^4 - 32458_4$	6328.263	2		15797.756	$15166_3^3 - 30964_3$
6376.930	500	200	15677.193	$14204_5 - 29881_4^4$	6328.115	1		15798.126	$21890_3^3 - 37688_3$
6376.712	50	5	15677.729	$13962_1 - 29640_1^1$	6327.279	500	100	15800.213	$11197_0^0 - 26997_6$
6374.269	5	1	15683.737	$18614_1^1 - 34298_1$	6326.365	200	20	15802.496	$11241_3^3 - 27044_3$
6372.460	50	2	15688.190	$17411_3^3 - 33099_3$	6326.178	8	2	15802.963	$14032_2^2 - 29835_3$
6372.125	50	8	15689.014	$11877_1^1 - 27566_2$	6325.590	8l	1	15804.432	$14206_4^4 - 30011_3$
6371.944	150	15	15689.460	$5563_1 - 21252_2^2$	6325.003	5		15805.898	$8111_4 - 23916_4^4$
6370.796	25	2	15692.287	$15736_1^1 - 31429_1$	6324.662	2		15806.751	$22338_3^3 - 38145_3$
6369.876	2		15694.554	$21143_5 - 36837_0^0$	6324.395	40	2	15807.418	$14206_4^4 - 30014_4$
6369.141	200	25	15696.365	$17166_5 - 32862_4^4$	6324.104	3		15808.145	$21077_0^0 - 36885_4$
6369.071	50b	2	15696.537	$11601_1 - 27297_1^1$	6323.055	2		15810.768	$15970_3 - 31780_3^3$
6367.242	15		15701.046	$15970_3 - 31671_4^4$	6322.866	20	2	15811.240	$20322_0^0 - 36133_5$
6367.066	3		15701.480	$15493_4 - 31194_4^4$	6321.965	2		15813.494	$20522_2^2 - 36336_3$
6365.984	2		15704.149	$21077_0^0 - 36781_5$	6321.820	75	5	15813.856	$7280_2 - 23093_2^2$
6364.651	20	3	15707.438	$22399_0^0 - 38106_5$	6321.298	50	2	15815.162	$3687_2 - 19503_3^3$
6364.431	10	2	15707.981	$15618_3^3 - 31326_4$	6319.753	2		15819.029	$19532_4 - 35351_4^4$
6364.265	5	1	15708.390	$19532_4 - 35240_3^3$	6319.261	20	3	15820.260	$19713_3 - 35533_2^2$
6362.797	2		15712.015	$16217_2^2 - 31929_3$	6319.163	40	5	15820.506	$18011_0^0 - 33831_4$
6362.583	2		15712.543	$19588_0^0 - 35300_5$	6318.693	8	1	15821.682	$14465_2^2 - 30286_1$
6362.256	100	20	15713.351	$17501_0^0 - 33214_5$	6318.399	1		15822.419	$18549_2 - 34371_2^2$
6361.796	3		15714.487	$14247_0^0 - 29961_1$	6318.299	8	1	15822.669	$22877_0^0 - 38700_4$
6360.981	2		15716.500	$19273_2 - 34989_1^1$	6317.183	150	8	15825.464	$12847_3 - 28673_2^2$
6360.466	5		15717.773	$17847_2^2 - 33564_3$	6316.061	5	1	15828.276	$12847_3 - 28676_3^3$
6359.488	5		15720.190	$21165_3^3 - 36885_4$	6315.774	100	8	15828.995	$3687_2 - 19516_2^2$
6357.363	2		15725.445	$22877_1^1 - 38602_2$	6315.271	2		15830.256	$18614_1^1 - 34444_2$
6356.603	2		15727.325	$22163_4^4 - 37890_5$	6314.440	2		15832.339	$20214_3^3 - 36047_2$
6356.139	2		15728.473	$16351_0 - 32080_1^1$	6314.269	8	2	15832.768	$12847_3 - 28680_4^4$
6355.911	800	200	15729.037	$10526_3^3 - 26255_4$	6312.622	50	4	15836.898	$15490_0^0 - 31326_4$
6355.633	75	8	15729.725	$11241_3^3 - 26971_4$	6311.945	8	2	15838.597	$13847_2 - 29686_3^3$
6355.283	10	1	15730.591	$18699_2 - 34430_3^3$	6311.453	10	1	15839.832	$17959_4 - 33799_4^4$
6352.709	4		15736.965	$0_2 - 15736_1^1$	6311.097	5	1	15840.725	$17959_4 - 33800_3^3$
6350.893	8	1	15741.465	$19532_4 - 35273_0^0$	6310.808	150	8	15841.451	$10414_4^4 - 26255_4$
6348.737	200	15	15746.810	$8243_2^2 - 23990_2$	6309.756	4		15844.092	$13088_3 - 28932_4^4$
6348.213	2		15748.110	$20737_1^1 - 36485_2$	6308.710	20	2	15846.719	$11601_1 - 27447_2^2$
6346.963	1		15751.212	$22141_3^3 - 37892_4$	6307.868	25	3	15848.834	$15863_2 - 31712_1^1$
6346.119	100	8	15753.306	$13297_4 - 29050_0^0$	6305.276	50	4	15855.349	$16346_4^4 - 32202_5$
6344.331	4		15757.746	$20054_2 - 35812_3^3$	6303.251	200	20	15860.443	$13297_4 - 29157_3^3$
6343.728	1		15759.244	$17847_2^2 - 33606_2$	6301.421	200	20	15865.049	$23655_4^4 - 39520_4$
6342.860	500	150	15761.401	$8800_4 - 24561_3^3$	6300.917	150	10	15866.318	$12114_2^2 - 27980_3$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6298.903	50	5	15871.391	$11802_2 - 27674^{2}_{2}$	6261.418	400	150	15966.407	$10414^{3}_{4} - 26380_5$
6297.777	10	1	15874.229	$17847^{2}_{2} - 33721_2$	6260.218	8	1	15969.467	$8800_4 - 24769^{3}_{3}$
6297.581	1		15874.723	$20214^{3}_{3} - 36089_4$	6258.097	2		15974.880	$15166^{3}_{3} - 31141_3$
6297.426	3		15875.113	$17224^{2}_{2} - 33099_3$	6257.424	200	8	15976.598	$6362_2 - 22338^{3}_{3}$
6296.426	1		15877.634	$22401_1 - 38278^{0}_{1}$	6255.531	5	1	15981.432	$11802_2 - 27784^{2}_{2}$
6295.170	10	1	15880.802	$17073_1 - 32954^{2}_{2}$	6255.344	4	1	15981.910	$21539^{4}_{4} - 37521_3$
6295.170	10	1	15880.802	$18549_2 - 34430^{3}_{3}$	6254.774	20	2	15983.367	$15970_3 - 31953^{4}_{4}$
6294.340	2		15882.896	$19948^{3}_{4} - 35831_3$	6252.887	4	1	15988.190	$21902^{4}_{4} - 37890_5$
6294.283	2		15883.040	$22877^{0}_{0} - 38760_4$	6252.314	8	1	15989.655	$19227^{6}_{6} - 35216_5$
6293.480	5		15885.067	$17959_4 - 33844^{0}_{0}$	6251.964	8	2	15990.550	$21902^{4}_{4} - 37892_4$
6293.241	150	15	15885.670	$9804_5 - 25690^{6}_{6}$	6250.484	50	4	15994.337	$11197^{0}_{0} - 27191_5$
6293.036	3		15886.188	$20922^{2}_{2} - 36808_3$	6249.270	3		15997.444	$17411^{3}_{3} - 33408_3$
6292.891	100	8	15886.554	$6362_2 - 22248^{2}_{2}$	6249.146	5	1	15997.761	$16783^{4}_{4} - 32781_4$
6292.187	4		15888.331	$19516^{2}_{2} - 35405_3$	6247.222	3		16002.688	$21890^{3}_{3} - 37892_4$
6292.061	50	3	15888.649	$14243^{1}_{1} - 30132_2$	6246.664	1		16004.117	$22141^{3}_{3} - 38145_3$
6291.629	50	15	15889.740	$13945^{3}_{3} - 29835_3$	6246.400	4		16004.794	$18699_2 - 34704^{3}_{3}$
6291.192	150	15	15890.844	$14481^{6}_{6} - 30372_6$	6246.173	75	8	16005.376	$13847_2 - 29853^{2}_{2}$
6290.576	2		15892.400	$18431_3 - 34324^{2}_{2}$	6245.848	5	1	16006.208	$15863_2 - 31870^{2}_{2}$
6289.159	2		15895.981	$20922^{2}_{2} - 36818_2$	6245.601	50	15	16006.841	$19039^{2}_{2} - 35046_1$
6288.852	3	1	15896.757	$13847_2 - 29744^{3}_{3}$	6245.149	3		16008.000	$17959_4 - 33967^{3}_{3}$
6288.424	8	1	15897.839	$17411^{3}_{3} - 33309_2$	6244.875	2		16008.702	$21077^{0}_{0} - 37085_4$
6288.074	2		15898.724	$17398_3 - 33297^{2}_{2}$	6244.381	8h	2	16009.969	$21738^{2}_{2} - 37748_2$
6287.570	50	3	15899.998	$15970_3 - 31870^{2}_{2}$	6243.953	2		16011.066	$21594_3 - 37605^{4}_{4}$
6287.254	75	4	15900.797	$8800_4 - 24701^{0}_{0}$	6243.358	50	4	16012.592	$13297_4 - 29310^{4}_{4}$
6286.712	3		15902.168	$19503^{3}_{3} - 35405_3$	6241.873	10	3	16016.402	$18574_1 - 34591^{1}_{1}$
6286.043	50	4	15903.860	$13945^{3}_{3} - 29849_4$	6240.949	150	8	16018.773	$7502_3 - 23521^{3}_{3}$
6285.453	1		15905.353	$22855^{3}_{3} - 38760_4$	6240.305	15	2	16020.426	$19713_3 - 35733^{4}_{4}$
6282.449	2		15912.958	$18431_3 - 34344^{4}_{4}$	6239.742	2		16021.871	$22508^{2}_{2} - 38529_3$
6281.543	5		15915.253	$18382^{0}_{0} - 34298_1$	6239.306	5	1	16022.991	$22163^{4}_{4} - 38186_4$
6280.875	2b		15916.946	$17501^{0}_{0} - 33418_4$	6238.208	5		16025.811	$18699_2 - 34725^{3}_{3}$
6280.359	2		15918.254	$15618^{3}_{3} - 31537_3$	6238.080	20	2	16026.140	$14481^{6}_{6} - 30508_5$
6279.982	75	4	15919.209	$17354^{1}_{1} - 33273_1$	6237.982	5	1	16026.392	$17501^{0}_{0} - 33527_4$
6279.369	2		15920.763	$21165^{3}_{3} - 37085_4$	6237.101	5	1	16028.655	$17398_3 - 33427^{2}_{2}$
6278.125	4		15923.918	$19516^{2}_{2} - 35440_3$	6235.176	1		16033.604	$18549_2 - 34583^{3}_{3}$
6277.512	2		15925.473	$21645_4 - 37571^{0}_{0}$	6234.856	400	75	16034.427	$6362_2 - 22396^{1}_{1}$
6276.162	100	8	15928.899	$13175^{4}_{4} - 29104_4$	6234.200	150	10	16036.114	$17354^{1}_{1} - 33390_1$
6275.849	3		15929.693	$14032^{2}_{2} - 29961_1$	6233.858	3		16036.994	$12847_3 - 28884^{3}_{3}$
6275.679	2		15930.125	$22877^{1}_{1} - 38807_2$	6233.004	8		16039.191	$23655^{4}_{4} - 39694_5$
6274.523	2		15933.059	$22669^{3}_{3} - 38602_2$	6232.845	2		16039.600	$14247^{6}_{6} - 30286_1$
6272.676	3		15937.751	$19503^{3}_{3} - 35440_3$	6232.186	8	1	16041.296	$21575_2 - 37616^{1}_{1}$
6271.733	1		15940.147	$18431_3 - 34371^{2}_{2}$	6232.129	25	1	16041.443	$17959_4 - 34001^{4}_{4}$
6271.544	75	5	15940.628	$2869_3 - 18809^{4}_{4}$	6232.068	50	4	16041.600	$18549_2 - 34591^{1}_{1}$
6271.131	2		15941.678	$23015^{0}_{0} - 38956_4$	6230.933	3		16044.522	$22141^{3}_{3} - 38186_4$
6270.331	8	2	15943.711	$22163^{4}_{4} - 38106_5$	6230.548	1		16045.514	$19588^{0}_{0} - 35633_4$
6268.923	2		15947.292	$16346^{4}_{4} - 32293_5$	6230.221	1		16046.356	$21738^{2}_{2} - 37784_2$
6268.200	20	2	15949.132	$9804_5 - 25753^{6}_{6}$	6227.179	8		16054.194	$14226_0 - 30281^{1}_{1}$
6267.800	2		15950.150	$21738^{2}_{2} - 37688_3$	6226.370	100	8	16056.280	$2558_0 - 18614^{1}_{1}$
6267.188	2		15951.707	$3865_1 - 19817^{1}_{1}$	6225.105	5	1	16059.543	$19516^{2}_{2} - 35576_3$
6266.614	75	5	15953.168	$16783^{4}_{4} - 32737_5$	6224.678	8	1	16060.645	$19817^{1}_{1} - 35877_2$
6265.962	3		15954.828	$22098_4 - 38053^{3}_{3}$	6224.527	400	40	16061.034	$2869_3 - 18930^{3}_{3}$
6265.604	75	10	15955.740	$14204_5 - 30160^{4}_{4}$	6224.043	5		16062.283	$21594_3 - 37656^{3}_{3}$
6264.715	100	8	15958.004	$17501^{0}_{0} - 33459_4$	6223.308	5		16064.180	$18809^{4}_{4} - 34874_3$
6262.884	3		15962.669	$20522^{2}_{2} - 36485_2$	6222.769	4h	1	16065.572	$16346^{4}_{4} - 32412_4$
6261.584	2h		15965.983	$21165^{3}_{3} - 37131_3$	6222.588	3		16066.039	$13945^{3}_{3} - 30011_3$
6261.418	400	150	15966.407	$13175^{4}_{4} - 29141_5$	6221.426	5		16069.040	$13945^{3}_{3} - 30014_4$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6221.320	100	15	16069.313	$13088_3 - 29157_3^3$	6180.285	1		16176.007	$18549_2 - 34725_3^3$
6221.059	75	3	16069.988	$12847_3 - 28917_2^2$	6179.548	4		16177.937	$15493_4 - 31671_4^4$
6220.011	100	5	16072.695	$9804_5 - 25877_4^4$	6178.930	15	2	16179.555	$16783_4^4 - 32963_5$
6219.775	50	3	16073.305	$11601_1 - 27674_2^2$	6178.432	200	20	16180.859	$8800_4 - 24981_3^3$
6219.672	1		16073.571	$19227_6^6 - 35300_5$	6177.489	1		16183.329	$11601_1 - 27784_2^2$
6218.862	2		16075.665	$22877_1^1 - 38953_5$	6177.081	1		16184.398	$17224_2^2 - 33408_3$
6217.572	10	1	16079.000	$15166_3^3 - 31245_2$	6176.490	4		16185.946	$14465_2^2 - 30651_3$
6217.437	1		16079.349	$14465_2^2 - 30544_2$	6175.956	10	1	16187.346	$13945_3^3 - 30132_2$
6217.437	1		16079.349	$22877_1^1 - 38956_4$	6174.797	4		16190.384	$15970_3 - 32160_2^2$
6216.865	15	2	16080.829	$20737_1^1 - 36818_2$	6173.881	4		16192.786	$17398_3 - 33591_3^3$
6216.441	4	1	16081.925	$21575_2 - 37656_3^3$	6173.004	2		16195.087	$17411_3^3 - 33606_2$
6216.270	3		16082.368	$20214_3^3 - 36297_4$	6170.733	15	2	16201.047	$19532_4 - 35733_4^4$
6215.360	1		16084.722	$17224_2^2 - 33309_2$	6170.652	15	2	16201.260	$7280_2 - 23481_1^1$
6214.106	5	1	16087.968	$17073_1 - 33161_1^1$	6169.822	500	200	16203.439	$4961_4 - 21165_3^3$
6213.328	3		16089.983	$21902_4^4 - 37992_4$	6169.394	1		16204.563	$21902_4^4 - 38106_5$
6212.721	100	5	16091.555	$8111_4 - 24202_4^4$	6168.837	4	1	16206.026	$19588_6^6 - 35794_4$
6209.949	8	1	16098.738	$15166_3^3 - 31265_3$	6168.482	2		16206.959	$21890_3^3 - 38097_2$
6209.659	2		16099.489	$19713_3 - 35812_3^3$	6166.709	4	1	16211.619	$19588_6^6 - 35799_6$
6208.986	8	1	16101.234	$7502_3 - 23603_2^2$	6165.538	4	1	16214.697	$20566_4^4 - 36781_5$
6208.861	2		16101.559	$22855_3^3 - 38956_4$	6164.842	8	1	16216.528	$15863_2 - 32080_1^1$
6208.686	100	5	16102.013	$11241_3^3 - 27343_3$	6164.480	200	20	16217.480	$0_2 - 16217_2^2$
6207.751	150	8	16104.438	$17166_5 - 33270_4^4$	6163.732	100	5	16219.448	$18930_3^3 - 35149_2$
6207.220	500	200	16105.815	$5563_1 - 21668_1^1$	6162.968	40	3	16221.459	$13088_3 - 29310_4^4$
6205.861	100	8	16109.342	$13088_3 - 29197_2^2$	6162.854	8	1	16221.759	$11802_2 - 28024_1^1$
6205.018	50	2	16111.531	$16346_4^4 - 32458_4$	6162.456	4		16222.807	$17959_4 - 34182_6^6$
6203.493	500	100	16115.492	$4961_4 - 21077_6^6$	6162.261	2		16223.320	$17073_1 - 33297_2^2$
6203.169	3	1	16116.333	$17411_3^3 - 33527_4$	6161.765	50	4	16224.626	$19986_6^6 - 36210_5$
6198.223	400	75	16129.193	$3687_2 - 19817_1^1$	6161.646	1		16224.939	$22141_3^3 - 38366_4$
6197.591	1		16130.838	$20522_2^2 - 36653_2$	6158.829	1		16232.361	$18069_3^3 - 34301_4$
6196.311	5		16134.171	$20054_2 - 36188_2^2$	6157.093	100	8	16236.937	$7795_4^4 - 24032_4$
6196.172	4		16134.532	$21077_6^6 - 37211_5$	6156.114	8	1	16239.519	$21165_3^3 - 37404_3$
6195.322	25	3	16136.746	$15490_6^6 - 31626_5$	6155.587	200	15	16240.910	$7280_2 - 23521_3^3$
6194.928	1		16137.772	$22669_3^3 - 38807_2$	6155.299	8	1	16241.670	$20566_4^4 - 36808_3$
6193.576	2		16141.295	$19948_4^4 - 36089_4$	6154.627	4	1	16243.443	$21902_4^4 - 38145_3$
6193.290	2		16142.040	$21165_3^3 - 37307_3$	6154.515	40	8	16243.738	$9804_5 - 26048_4^4$
6193.194	5		16142.291	$21594_3 - 37736_2^2$	6154.419	3		16243.992	$12114_2^2 - 28358_3$
6191.906	400	50	16145.648	$6362_2 - 22508_2^2$	6154.068	100	15	16244.918	$14481_6^6 - 30726_7$
6191.261	2		16147.330	$19986_6^6 - 36133_5$	6152.950	2		16247.870	$18053_4^4 - 34301_4$
6190.771	10	2	16148.609	$21539_4^4 - 37688_3$	6151.993	150r		16250.398	$7502_3 - 23752_2^2$
6190.710	10		16148.768	$8111_4 - 24259_4^4$	6151.517	8	2	16251.655	$17354_1^1 - 33606_2$
6189.145	50	2	16152.851	$7502_3 - 23655_4^4$	6151.142	1		16252.646	$20522_2^2 - 36775_3$
6188.863	1		16153.587	$17411_3^3 - 33564_3$	6150.683	20	4	16253.859	$11241_3^3 - 27495_4$
6188.126	200	75	16155.511	$8243_2^2 - 24399_3$	6150.323	4	1	16254.810	$14032_2^2 - 30286_1$
6186.763	2		16159.070	$18930_3^3 - 35089_3$	6150.120	2		16255.347	$21077_6^6 - 37332_6$
6186.380	8	1	16160.070	$15166_3^3 - 31326_4$	6150.031	1		16255.582	$21890_3^3 - 38145_3$
6185.774	25	2	16161.654	$17398_3 - 33560_4^4$	6148.361	3	1	16259.997	$19273_2 - 35533_2^2$
6185.683	1		16161.891	$21575_2 - 37736_2^2$	6147.959	2		16261.060	$10783_2^2 - 27044_3$
6184.985	4		16163.715	$8111_4 - 24274_6^6$	6145.128	2		16268.551	$22401_1 - 38669_2^2$
6184.985	4		16163.715	$8111_4 - 24274_6^6$	6145.000	2		16268.890	$21252_2^2 - 37521_3$
6184.788	150	15	16164.230	$13088_3 - 29252_2^2$	6144.760	20	3	16269.526	$10526_3^3 - 26796_3$
6183.942	5		16166.441	$17224_2^2 - 33390_1$	6144.414	1		16270.442	$20214_3^3 - 36485_2$
6182.830	50b		16169.349	$13847_2 - 30017_3^3$	6141.928	1		16277.027	$18574_1 - 34851_2^2$
6182.623	500	1	16169.890	$2869_3 - 19039_2^2$	6141.629	2		16277.820	$17411_3^3 - 33689_2$
6181.537	10	1	16172.731	$20922_2^2 - 37094_2$	6140.994	1		16279.503	$18809_4^4 - 35089_3$
6180.703	200	8	16174.913	$5563_1 - 21738_2^2$	6140.994	1		16279.503	$21539_4^4 - 37819_4$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6140.884	4		16279.795	$11241^{3}_{3} - 27521_{4}$	6104.572	300	200	16376.631	$15618^{3}_{3} - 31995_{4}$
6140.772	25	4	16280.092	$19532_{4} - 35812^{3}_{3}$	6104.170	4	1	16377.710	$18053^{3}_{4} - 34431_{3}$
6140.449	1		16280.948	$22248^{2}_{2} - 38529_{3}$	6104.027	5	1	16378.094	$18069^{3}_{3} - 34447_{4}$
6139.364	2		16283.825	$21902^{3}_{4} - 38186_{4}$	6103.354	2		16379.899	$21575_{2} - 37954^{3}_{3}$
6137.025	5	1	16290.031	$18011^{0}_{0} - 34301_{4}$	6102.595	300	50	16381.937	$10414^{2}_{4} - 26796_{3}$
6135.996	5	1	16292.763	$14465^{2}_{2} - 30758_{2}$	6101.726	100	10	16384.270	$8243^{2}_{2} - 24627_{1}$
6135.628	5	1	16293.740	$18431_{3} - 34725^{3}_{3}$	6101.554	3	1	16384.732	$17959_{4} - 34344^{2}_{4}$
6135.014	2		16295.371	$20522^{2}_{2} - 36818_{2}$	6100.414	3	1	16387.793	$19948^{2}_{4} - 36336_{3}$
6134.563	8	1	16296.569	$15863_{2} - 32160^{2}_{2}$	6099.994	50	3	16388.922	$13297_{4} - 29686^{3}_{3}$
6133.821	50	2	16298.540	$11197^{6}_{6} - 27495_{4}$	6099.458	2		16390.362	$16346^{2}_{4} - 32737_{5}$
6133.671	2		16298.939	$16351_{0} - 32650^{1}_{1}$	6098.126	200	25	16393.942	$17166_{5} - 33560^{2}_{4}$
6133.064	75	4	16300.552	$14243^{1}_{1} - 30544_{2}$	6097.821	4	1	16394.762	$11197^{6}_{6} - 27591_{5}$
6132.874	50	4	16301.057	$14206^{2}_{4} - 30508_{5}$	6097.592	5		16395.378	$11877^{1}_{1} - 28273_{2}$
6132.874	50	4	16301.057	$20214^{3}_{3} - 36515_{3}$	6097.292	4		16396.184	$18011^{6}_{6} - 34407_{6}$
6132.426	4	1	16302.248	$18549_{2} - 34851^{2}_{2}$	6095.389	1		16401.303	$17398_{3} - 33799^{2}_{4}$
6131.753	3		16304.037	$18574_{1} - 34878^{1}_{1}$	6095.050	20	4	16402.216	$17398_{3} - 33800^{3}_{3}$
6131.673	5	1	16304.250	$15736^{1}_{1} - 32041_{2}$	6094.089	10	1	16404.802	$12847_{3} - 29252^{2}_{2}$
6130.765	25	2	16306.665	$20054_{2} - 36361^{1}_{1}$	6093.813	5	1	16405.545	$19273_{2} - 35678^{1}_{1}$
6130.459	20	1	16307.479	$6362_{2} - 22669^{3}_{3}$	6093.558	1		16406.232	$22877^{6}_{6} - 39283_{4}$
6129.551	75	8	16309.894	$12847_{3} - 29157^{3}_{3}$	6093.240	8	1	16407.088	$18809^{2}_{4} - 35216_{5}$
6129.492	15	2	16310.051	$8111_{4} - 24421^{3}_{3}$	6093.027	10	1	16407.661	$21738^{2}_{2} - 38145_{3}$
6129.322	2		16310.504	$15618^{3}_{3} - 31929_{3}$	6090.607	2		16414.181	$13297_{4} - 29711^{6}_{6}$
6128.448	25	2	16312.830	$14204_{5} - 30517^{6}_{6}$	6090.451	15	2	16414.601	$7502_{3} - 23916^{2}_{4}$
6128.344	40	3	16313.107	$14204_{5} - 30517^{2}_{4}$	6090.241	1		16415.167	$18574_{1} - 34989^{1}_{1}$
6128.160	10	2	16313.596	$16351_{0} - 32665^{1}_{1}$	6088.828	10	2	16418.976	$17354^{1}_{1} - 33773_{1}$
6127.899	3		16314.291	$19516^{2}_{2} - 35831_{3}$	6088.459	4	1	16419.972	$18431_{3} - 34851^{2}_{2}$
6127.609	50	2	16315.063	$15970_{3} - 32285^{3}_{3}$	6088.203	10	2	16420.662	$17411^{3}_{3} - 33831_{4}$
6127.425	50	2	16315.553	$16783^{3}_{4} - 33099_{3}$	6088.031	400	50	16421.126	$8243^{2}_{2} - 24664_{3}$
6126.509	1		16317.993	$22098_{4} - 38416^{3}_{3}$	6086.702	8	1	16424.711	$14465^{2}_{2} - 30889_{1}$
6126.328	2		16318.475	$13962_{1} - 30281^{1}_{1}$	6085.375	100	75	16428.293	$8243^{2}_{2} - 24671_{2}$
6126.328	2		16318.475	$13962_{1} - 30281^{1}_{1}$	6084.486	2		16430.693	$16783^{3}_{4} - 33214_{5}$
6125.610	4		16320.387	$17847^{2}_{2} - 34167_{3}$	6084.127	5	1	16431.663	$18614^{1}_{1} - 35046_{1}$
6124.485	200	15	16323.385	$7280_{2} - 23603^{2}_{2}$	6083.533	2		16433.267	$13847_{2} - 30281^{1}_{1}$
6124.073	50	3	16324.483	$11197^{6}_{6} - 27521_{4}$	6083.242	10	2	16434.053	$20054_{2} - 36488^{2}_{2}$
6123.838	75	8	16325.110	$11241^{3}_{3} - 27566_{2}$	6082.910	2h		16434.950	$16346^{2}_{4} - 32781_{4}$
6122.709	3		16328.120	$19503^{3}_{3} - 35831_{3}$	6082.669	4		16435.601	$21252^{2}_{2} - 37688_{3}$
6121.757	2		16330.659	$13088_{3} - 29419^{2}_{2}$	6082.561	10	1	16435.893	$13297_{4} - 29733^{6}_{6}$
6120.801	50	4	16333.210	$15863_{2} - 32197^{3}_{3}$	6081.299	1		16439.304	$22401_{1} - 38840^{1}_{1}$
6120.359	8	2	16334.389	$17354^{1}_{1} - 33689_{2}$	6080.900	5	1	16440.382	$18549_{2} - 34989^{1}_{1}$
6119.649	25	2	16336.285	$17398_{3} - 33734^{2}_{2}$	6079.469	50	4	16444.252	$14206^{2}_{4} - 30651_{3}$
6118.056	4	1	16340.538	$17224^{2}_{2} - 33564_{3}$	6079.220	200	25	16444.926	$10526^{3}_{3} - 26971_{4}$
6116.172	100	8	16345.572	$14206^{2}_{4} - 30552_{4}$	6078.419	200	40	16447.093	$13297_{4} - 29744^{3}_{3}$
6114.931	8	1	16348.889	$19948^{2}_{4} - 36297_{4}$	6077.870	150	25	16448.578	$14481^{6}_{6} - 30930_{6}$
6114.546	150	10	16349.918	$12847_{3} - 29197^{2}_{2}$	6077.533	4	1	16449.490	$16346^{2}_{4} - 32796_{3}$
6113.314	3		16353.213	$17073_{1} - 33427^{2}_{2}$	6077.533	4	1	16449.490	$18011^{6}_{6} - 34460_{5}$
6111.700	2		16357.532	$20737^{1}_{1} - 37094_{2}$	6077.103	100	15	16450.654	$8111_{4} - 24561^{3}_{3}$
6110.677	3		16360.270	$21594_{3} - 37954^{3}_{3}$	6076.984	4	1	16450.977	$17847^{2}_{2} - 34298_{1}$
6110.476	2		16360.808	$13847_{2} - 30208^{2}_{2}$	6074.001	5		16459.056	$20322^{6}_{6} - 36781_{5}$
6110.476	2		16360.808	$19516^{2}_{2} - 35877_{2}$	6073.561	3		16460.248	$15493_{4} - 31953^{3}_{4}$
6110.331	51	1	16361.197	$22399^{6}_{6} - 38760_{4}$	6072.894	5	1	16462.056	$12847_{3} - 29310^{2}_{4}$
6108.293	100	5	16366.655	$17354^{1}_{1} - 33721_{2}$	6072.799	20	2	16462.313	$21143_{5} - 37605^{3}_{4}$
6106.919	5	1	16370.338	$15166^{3}_{3} - 31537_{3}$	6072.061	3	1	16464.314	$21902^{3}_{4} - 38366_{4}$
6106.847	10	2	16370.531	$11241^{3}_{3} - 27612_{3}$	6071.981	15	2	16464.531	$20867^{7}_{7} - 37332_{6}$
6105.304	4	1	16374.668	$19503^{3}_{3} - 35877_{2}$	6071.904	3		16464.740	$17224^{2}_{2} - 33689_{2}$
6104.970	2		16375.564	$18069^{3}_{3} - 34444_{2}$	6071.802	1		16465.017	$19713_{3} - 36178^{2}_{4}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
6070.458	1		16468.662	$22338^{3}_{3} - 38807_{2}$	6024.835	2		16593.370	$20214^{3}_{3} - 36808_{3}$
6070.339	25	2	16468.985	$15970_{3} - 32439^{4}_{4}$	6024.082	1		16595.444	$18809^{4}_{4} - 35405_{3}$
6069.844	20	2	16470.328	$17959_{4} - 34430^{3}_{3}$	6023.332	3b		16597.510	$17847^{2}_{2} - 34444_{2}$
6069.019	100	5	16472.567	$7280_{2} - 23752^{2}_{2}$	6023.229	100	8	16597.794	$13088_{3} - 29686^{3}_{3}$
6068.136	1		16474.964	$18930^{3}_{3} - 35405_{3}$	6022.702	5	1	16599.246	$13945^{3}_{3} - 30544_{2}$
6064.289	1		16485.415	$22248^{2}_{2} - 38734_{3}$	6022.387	5	1	16600.114	$19532_{4} - 36132^{0}_{0}$
6062.846	8		16489.338	$14481^{6}_{6} - 30971_{5}$	6021.036	200s	75	16603.839	$7795^{4}_{4} - 24399_{3}$
6062.225	1		16491.028	$18809^{4}_{4} - 35300_{5}$	6020.502	25	2	16605.312	$15970_{3} - 32575^{2}_{2}$
6061.535	75	3	16492.905	$6362_{2} - 22855^{3}_{3}$	6019.821	5	1	16607.190	$13945^{3}_{3} - 30552_{4}$
6059.136	10	1	16499.435	$14465^{2}_{2} - 30964_{3}$	6019.642	25	3	16607.684	$15166^{3}_{3} - 31774_{3}$
6058.438	4	1	16501.336	$19588^{0}_{0} - 36089_{4}$	6019.411	1		16608.321	$20522^{2}_{2} - 37131_{3}$
6056.881	5		16505.578	$15490^{0}_{0} - 31995_{4}$	6016.362	50	4	16616.738	$16346^{4}_{4} - 32963_{5}$
6055.592	50	10	16509.091	$13175^{4}_{4} - 29684_{5}$	6014.307	50	2	16622.416	$19588^{0}_{0} - 36210_{5}$
6055.036	8	1	16510.607	$18930^{3}_{3} - 35440_{3}$	6014.062	75	5	16623.093	$17959_{4} - 34583^{3}_{3}$
6054.350	1		16512.478	$14032^{2}_{2} - 30544_{2}$	6013.442	8	2	16624.807	$16783^{4}_{4} - 33408_{3}$
6053.790	3		16514.005	$14243^{1}_{1} - 30758_{2}$	6012.410	3	1	16627.661	$21902^{4}_{4} - 38529_{3}$
6053.381	300	15	16515.121	$6362_{2} - 22877^{1}_{1}$	6011.537	50	5	16630.075	$10414^{4}_{4} - 27044_{3}$
6052.444	8	1	16517.678	$10526^{3}_{3} - 27044_{3}$	6011.203	15	3	16630.999	$18809^{4}_{4} - 35440_{3}$
6050.981	100	4	16521.671	$8800_{4} - 25321^{3}_{3}$	6010.253	50b	8	16633.628	$17166_{5} - 33799^{4}_{4}$
6050.545	1		16522.862	$15490^{0}_{0} - 32012_{4}$	6010.163	100	10	16633.877	$2869_{3} - 19503^{3}_{3}$
6050.457	3		16523.102	$21165^{3}_{3} - 37688_{3}$	6010.028	40	3	16634.251	$16783^{4}_{4} - 33418_{4}$
6049.051	800	100	16526.942	$3687_{2} - 20214^{3}_{3}$	6008.052	5	1	16639.721	$15863_{2} - 32503^{2}_{2}$
6047.794	10s	1	16530.377	$15493_{4} - 32023^{0}_{0}$	6007.261	10	1	16641.912	$21575_{2} - 38216^{3}_{3}$
6047.273	3		16531.802	$21252^{2}_{2} - 37784_{2}$	6007.073	300s	75	16642.433	$8800_{4} - 25442^{3}_{3}$
6047.159	1		16532.113	$17959_{4} - 34492^{4}_{4}$	6006.294	4		16644.592	$17073_{1} - 33718^{2}_{2}$
6046.643	10	2	16533.524	$15970_{3} - 32503^{2}_{2}$	6005.921	1		16645.625	$19532_{4} - 36178^{4}_{4}$
6045.246	1		16537.345	$19039^{2}_{2} - 35576_{3}$	6005.600	10	1	16646.515	$21539^{4}_{4} - 38186_{4}$
6044.554	8		16539.238	$19273_{2} - 35812^{3}_{3}$	6005.174	200	15	16647.696	$2869_{3} - 19516^{2}_{2}$
6043.676	2h		16541.641	$19532_{4} - 36074^{3}_{3}$	6003.946	5		16651.101	$13962_{1} - 30613^{0}_{0}$
6042.750	2		16544.175	$19503^{3}_{3} - 36047_{2}$	6002.198	10	1	16655.950	$13088_{3} - 29744^{3}_{3}$
6042.593	75	5	16544.605	$11802_{2} - 28347^{2}_{2}$	6001.734	10	2	16657.238	$3865_{1} - 20522^{2}_{2}$
6042.401	5	1	16545.131	$19588^{0}_{0} - 36133_{5}$	6001.207	300	15	16658.701	$8111_{4} - 24769^{3}_{3}$
6040.873	5		16549.316	$17224^{2}_{2} - 33773_{1}$	6000.766	50	8	16659.925	$13175^{4}_{4} - 29835_{3}$
6039.228	15	2	16553.824	$22399^{0}_{0} - 38953_{5}$	6000.554	5	1	16660.513	$21645_{4} - 38306^{4}_{4}$
6038.681	75	5	16555.323	$8800_{4} - 25355^{4}_{4}$	6000.418	8	1	16660.891	$17073_{1} - 33734^{2}_{2}$
6037.942	3g		16557.349	$10414^{4}_{4} - 26971_{4}$	5999.594	5	1	16663.179	$18382^{0}_{0} - 35046_{1}$
6037.697	400	150	16558.021	$3865_{1} - 20423^{1}_{1}$	5997.788	5		16668.197	$19817^{1}_{1} - 36485_{2}$
6036.765	50	2	16560.578	$10783^{2}_{2} - 27343_{3}$	5997.010	8	1	16670.359	$20214^{3}_{3} - 36885_{4}$
6035.365	1		16564.419	$20566^{4}_{4} - 37131_{3}$	5996.630	50	4	16671.415	$8243^{2}_{2} - 24915_{3}$
6035.194	75	5	16564.889	$12114^{2}_{2} - 28679_{2}$	5995.682	10		16674.051	$13175^{4}_{4} - 29849_{4}$
6034.334	3		16567.249	$21539^{4}_{4} - 38106_{5}$	5995.221	50	4	16675.333	$16783^{4}_{4} - 33459_{4}$
6034.215	5		16567.576	$19948^{4}_{4} - 36515_{3}$	5994.126	500r	100	16678.380	$3865_{1} - 20543^{0}_{0}$
6033.515	15	2	16569.498	$17398_{3} - 33967^{3}_{3}$	5993.960	50	8	16678.842	$17166_{5} - 33844^{0}_{0}$
6033.416	50	5	16569.770	$11802_{2} - 28372^{1}_{1}$	5993.494	40	1	16680.138	$7502_{3} - 24182^{2}_{2}$
6032.876	75	8	16571.253	$12847_{3} - 29419^{2}_{2}$	5991.457	15		16685.809	$5563_{1} - 22248^{2}_{2}$
6032.555	2		16572.135	$20522^{2}_{2} - 37094_{2}$	5991.004	400s	50	16687.071	$6362_{2} - 23049^{1}_{1}$
6032.370	50b	8	16572.643	$19227^{6}_{6} - 35799_{6}$	5989.445	20	2	16691.414	$18549_{2} - 35240^{3}_{3}$
6030.448	75s	5	16577.925	$4961_{4} - 21539^{4}_{4}$	5986.268	50	3	16700.273	$7502_{3} - 24202^{4}_{4}$
6030.189	5	1	16578.637	$16217^{2}_{2} - 32796_{3}$	5985.679	20	1	16701.916	$14226_{0} - 30928^{1}_{1}$
6029.651	50	2	16580.116	$9804_{5} - 26384^{4}_{4}$	5984.998	15	3	16703.816	$21575_{2} - 38278^{1}_{1}$
6029.228	50	4	16581.279	$13175^{4}_{4} - 29756_{4}$	5984.390	3l		16705.513	$13847_{2} - 30553^{2}_{2}$
6028.631	3	1	16582.922	$21165^{3}_{3} - 37748_{2}$	5984.278	2		16705.826	$13945^{3}_{3} - 30651_{3}$
6026.047	50	2	16590.032	$8111_{4} - 24701^{0}_{0}$	5983.163	5		16708.939	$19588^{0}_{0} - 36297_{4}$
6025.784	75b	5	16590.756	$13962_{1} - 30553^{2}_{2}$	5982.651	10		16710.369	$11802_{2} - 28513^{2}_{2}$
6025.049	1		16592.780	$22141^{3}_{3} - 38734_{3}$	5982.229	5		16711.548	$15863_{2} - 32575^{2}_{2}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5982.171	5		16711.710	$21594_3 - 38306_4^4$	5946.027	8		16813.294	$21077_6^6 - 37890_5$
5982.095	50	5	16711.922	$15490_6^6 - 32202_5$	5945.480	10	1	16814.841	$14204_5 - 31019_4^4$
5981.782	1		16712.797	$21890_3^3 - 38602_2$	5945.334	4		16815.254	$22141_3^3 - 38956_4$
5981.233	2		16714.331	$19713_3 - 36427_3^3$	5945.191	8	1	16815.658	$21077_6^6 - 37892_4$
5979.325	4		16719.664	$13297_4 - 30017_3^3$	5944.806	15	1	16816.747	$22877_6^6 - 39694_5$
5977.087	10	2	16725.925	$14032_2^2 - 30758_2$	5944.648	150	40	16817.194	$10526_3^3 - 27343_3$
5975.066	500	150	16731.582	$6362_2 - 23093_2^2$	5943.934	1		16819.214	$19516_2^2 - 36336_3$
5973.665	500r	150	16735.506	$3687_2 - 20423_1^1$	5943.496	25	3	16820.454	$18053_4^4 - 34874_3$
5973.203	10	1	16736.800	$20566_4^4 - 37303_4$	5943.470	50	4	16820.528	$12114_2^2 - 28934_3$
5972.300	3		16739.331	$21645_4 - 38385_0^0$	5942.259	8	1	16823.956	$18809_4^4 - 35633_4$
5971.881	3		16740.505	$20566_4^4 - 37307_3$	5941.568	2		16825.912	$20922_2^2 - 37748_2$
5971.369	3		16741.941	$21077_6^6 - 37819_4$	5941.188	3		16826.988	$19948_4^4 - 36775_3$
5971.073	4		16742.771	$19532_4 - 36275_0^0$	5941.188	3		16826.988	$21539_4^4 - 38366_4$
5970.456	50	2	16744.501	$17959_4 - 34704_3^3$	5941.126	5	1	16827.164	$21165_3^3 - 37992_4$
5969.742	150	10	16746.504	$11601_1 - 28347_2^2$	5940.567	50	3	16828.747	$15166_3^3 - 31995_4$
5967.515	50	2	16752.753	$16346_4^4 - 33099_3$	5939.374	5b		16832.127	$21902_4^4 - 38734_3$
5966.273	5		16756.240	$17411_3^3 - 34167_3$	5939.044	15		16833.063	$19503_3^3 - 36336_3$
5965.832	40	1	16757.479	$7502_3 - 24259_4^4$	5938.825	400	75	16833.683	$5563_1 - 22396_1^1$
5965.745	15	1	16757.723	$14206_4^4 - 30964_3$	5938.459	150	20	16834.721	$3687_2 - 20522_2^2$
5964.714	4h		16760.620	$21594_3 - 38355_2^2$	5938.285	15	1	16835.214	$17166_5 - 34001_4^4$
5964.481	40	2	16761.275	$13962_1 - 30723_1^1$	5938.041	1	3	16835.906	$22338_3^3 - 39174_3$
5964.012	15	1	16762.593	$15166_3^3 - 31929_3$	5937.925	50	3	16836.235	$13175_4^4 - 30011_3$
5963.930	15	1	16762.823	$19986_6^6 - 36749_6$	5937.665	100	2	16836.972	$11197_6^6 - 28034_5$
5963.661	10	1	16763.579	$20322_6^6 - 37085_4$	5937.297	25	2	16838.016	$20566_4^4 - 37404_3$
5963.308	10	1	16764.572	$13088_3 - 29853_2^2$	5937.166	100	10	16838.387	$12847_3 - 29686_3^3$
5962.975	3		16765.508	$17959_4 - 34725_3^3$	5936.876	20	2	16839.210	$13175_4^4 - 30014_4$
5962.773	4		16766.076	$20922_2^2 - 37688_3$	5936.876	20	2	16839.210	$15618_3^3 - 32458_4$
5962.579	5		16766.621	$18809_4^4 - 35576_3$	5936.387	50	5	16840.597	$9804_5 - 26645_0^0$
5962.060	40	3	16768.081	$12114_2^2 - 28882_2$	5934.458	50b	3	16846.071	$15166_3^3 - 32012_4$
5961.249	4		16770.362	$21645_4 - 38416_3^3$	5934.412	75b	15	16846.201	$11802_2 - 28649_1^1$
5960.785	50		16771.668	$11601_1 - 28372_1^1$	5934.103	1		16847.078	$22163_4^4 - 39010_3$
5960.529	5		16772.388	$18809_4^4 - 35582_5$	5932.911	15	1	16850.463	$13962_1 - 30812_2^2$
5959.681	50	3	16774.774	$8800_4 - 25575_4^4$	5932.426	50	2	16851.841	$14243_1^1 - 31095_1$
5958.811	15	1	16777.223	$10414_4^4 - 27191_5$	5932.056	4		16852.892	$22399_6^6 - 39252_5$
5957.592	50	2	16780.656	$14465_2^2 - 31245_2$	5930.311	10	1	16857.851	$14032_2^2 - 30889_1$
5957.472	50	2	16780.994	$16783_4^4 - 33564_3$	5929.934	100	20	16858.923	$3865_1 - 20724_6^6$
5956.514	5		16783.693	$10783_2^2 - 27566_2$	5929.586	10	2	16859.912	$19948_4^4 - 36808_3$
5956.263	100	8	16784.400	$15970_3 - 32754_3^3$	5929.328	20	2	16860.646	$17847_2^2 - 34707_3$
5955.566	100	5	16786.365	$11802_2 - 28589_3^3$	5928.861	20	2	16861.974	$18011_6^6 - 34873_4$
5954.588	40	2	16789.122	$14481_6^6 - 31271_5$	5928.755	3		16862.275	$20922_2^2 - 37784_2$
5953.587	100	4	16791.945	$15493_4 - 32285_3^3$	5928.654	15	2	16862.563	$13297_4 - 30160_4^4$
5953.255	50	2	16792.881	$13088_3 - 29881_4^4$	5928.123	4	1	16864.073	$18930_3^3 - 35794_4$
5952.807	2		16794.145	$19503_3^3 - 36297_4$	5926.545	4		16868.563	$22141_3^3 - 39010_3$
5952.456	2		16795.135	$19986_6^6 - 36781_5$	5926.232	150	40	16869.454	$7795_4^4 - 24664_3$
5950.641	25	2	16800.258	$17501_0^0 - 34301_4$	5926.001	50	4	16870.112	$8111_4 - 24981_3^3$
5950.429	50	2	16800.856	$15493_4 - 32294_4^4$	5925.719	15	1	16870.914	$20214_3^3 - 37085_4$
5950.148	15	2	16801.650	$15863_2 - 32665_1^1$	5925.404	100	8	16871.811	$3865_1 - 20737_1^1$
5949.373	50	5	16803.838	$15490_6^6 - 32293_5$	5924.519	15	2	16874.332	$15166_3^3 - 32041_2$
5949.218	15	1	16804.276	$18069_3^3 - 34873_4$	5924.519	15	2	16874.332	$20867_7^7 - 37742_6$
5948.965	5		16804.991	$18069_3^3 - 34874_3$	5923.919	20	1	16876.041	$13847_2 - 30723_1^1$
5948.803	100	8	16805.448	$7502_3 - 24307_2^2$	5922.860	50	2	16879.058	$7502_3 - 24381_2^2$
5948.393	15	1	16806.607	$21143_5 - 37950_4^4$	5921.102	4		16884.069	$21645_4^4 - 38529_3$
5947.502	4		16809.124	$18431_3 - 35240_3^3$	5920.977	15	2	16884.426	$22399_6^6 - 39283_4$
5947.243	1		16809.857	$16351_0 - 33161_1^1$	5919.224	15	2	16889.426	$20322_6^6 - 37211_5$
5946.239	40	2	16812.695	$13945_3^3 - 30758_2$	5918.946	100	8	16890.220	$8800_4 - 25690_6^6$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
5918.946	100	8	16890.220	$17411_{3}^{3} - 34301_{4}$
5918.189	15	1	16892.380	$15970_{3} - 32862_{4}^{4}$
5917.285	10	1	16894.961	$19532_{4} - 36427_{3}^{3}$
5916.730	100	20	16896.545	$12847_{3} - 29744_{3}^{3}$
5915.168	3		16901.007	$18930_{3}^{3} - 35831_{3}$
5914.716	50b	7	16902.299	$7280_{2} - 24182_{2}^{2}$
5913.362	50	5	16906.169	$19227_{6}^{6} - 36133_{5}$
5913.286	8	2	16906.386	$17501_{0}^{0} - 34407_{6}$
5911.229	50	8	16912.269	$11601_{1} - 28513_{2}^{2}$
5911.097	8	1	16912.647	$18549_{2} - 35462_{3}^{3}$
5910.640	4	1	16913.954	$13847_{2} - 30761_{3}^{3}$
5910.237	15	2	16915.108	$21077_{0}^{0} - 37992_{4}$
5909.887	1		16916.109	$20214_{3}^{3} - 37131_{3}$
5908.957	200		16918.772	$7502_{3} - 24421_{3}^{3}$
5906.550	3		16925.666	$17398_{3} - 34324_{2}^{2}$
5906.164	3		16926.773	$17959_{4} - 34886_{0}^{0}$
5905.571	150	20	16928.472	$4961_{4} - 21890_{3}^{3}$
5905.176	50	2	16929.605	$10414_{4}^{4} - 27343_{3}$
5903.646	2		16933.992	$21668_{1}^{1} - 38602_{2}$
5903.496	20	2	16934.422	$21645_{4} - 38580_{4}^{4}$
5903.337	15	1	16934.879	$14206_{4}^{4} - 31141_{3}$
5902.602	50	2	16936.987	$14204_{5} - 31141_{0}^{0}$
5900.448	2		16943.170	$17224_{2}^{2} - 34167_{3}$
5900.355	5		16943.437	$17354_{1}^{1} - 34298_{1}$
5899.846	150	5	16944.899	$5563_{1} - 22508_{2}^{2}$
5899.521	50	4	16945.832	$15493_{4} - 32439_{4}^{4}$
5899.466	8b	1	16945.990	$17501_{0}^{0} - 34447_{4}$
5897.246	1		16952.370	$22399_{0}^{0} - 39351_{5}$
5896.786	20l	1	16953.692	$8800_{4} - 25753_{0}^{0}$
5896.114	2		16955.624	$19713_{3} - 36668_{2}^{2}$
5895.283	150	25	16958.014	$13297_{4} - 30255_{3}^{3}$
5895.053	10	1	16958.676	$18574_{1} - 35533_{2}^{2}$
5894.699	50	25	16959.694	$17501_{0}^{0} - 34460_{5}$
5893.191	20	2	16964.034	$14465_{2}^{2} - 31429_{1}$
5892.780	8		16965.217	$13847_{2} - 30812_{2}^{2}$
5892.434	50	5	16966.213	$13962_{1} - 30928_{1}^{1}$
5891.774	5	1	16968.114	$15490_{0}^{0} - 32458_{4}$
5891.670	5		16968.414	$19516_{2}^{2} - 36485_{2}$
5891.451	200	25	16969.044	$10526_{3}^{3} - 27495_{4}$
5887.919	8		16979.223	$18699_{2} - 35678_{1}^{1}$
5887.437	2		16980.613	$21165_{3}^{3} - 38145_{3}$
5886.851	5		16982.304	$22855_{3}^{3} - 39837_{3}$
5886.456	15		16983.443	$19227_{6}^{6} - 36210_{5}$
5886.093	15	1	16984.491	$15970_{3} - 32954_{2}^{2}$
5885.702	200	50	16985.619	$9804_{5} - 26790_{4}^{4}$
5885.502	75	2	16986.196	$11241_{3}^{3} - 28227_{4}$
5884.033	50	2	16990.437	$14204_{5} - 31194_{4}^{4}$
5882.460	10	1	16994.980	$10526_{3}^{3} - 27521_{4}$
5881.988	2		16996.344	$21738_{2}^{2} - 38734_{3}$
5881.065	4		16999.011	$19516_{2}^{2} - 36515_{3}$
5879.127	50	2	17004.615	$11877_{1}^{1} - 28882_{2}$
5878.933	100	3	17005.176	$12847_{3} - 29853_{2}^{2}$
5877.186	2		17010.231	$20322_{0}^{0} - 37332_{6}$
5877.013	25	2	17010.732	$20737_{1}^{1} - 37748_{2}$
5876.647	3		17011.791	$22163_{4}^{4} - 39174_{3}$
5874.993	150	8	17016.580	$17166_{5} - 34182_{0}^{0}$
5874.040	50	3	17019.341	$13945_{3}^{3} - 30964_{3}$
5873.920	4	1	17019.689	$21645_{4} - 38665_{0}^{0}$
5873.774	8	1	17020.112	$17411_{3}^{3} - 34431_{3}$
5873.462	8		17021.016	$21165_{3}^{3} - 38186_{4}$
5873.332	10		17021.393	$18809_{4}^{4} - 35831_{3}$
5871.405	15		17026.979	$17847_{2}^{2} - 34874_{3}$
5871.186	100	20	17027.614	$7280_{2} - 24307_{2}^{2}$
5870.054	20	1	17030.898	$11197_{0}^{0} - 28227_{4}$
5869.854	100	5	17031.478	$11241_{3}^{3} - 28273_{2}$
5869.200	2b		17033.376	$17411_{3}^{3} - 34444_{2}$
5869.164	8		17033.480	$12847_{3} - 29881_{4}^{4}$
5868.382	150	25	17035.750	$18053_{4}^{4} - 35089_{3}$
5867.841	20	1	17037.321	$17073_{1} - 34111_{1}^{1}$
5867.542	1		17038.189	$18382_{0}^{0} - 35421_{1}$
5866.814	50	5	17040.303	$10526_{3}^{3} - 27566_{2}$
5864.128	4		17048.108	$11601_{1} - 28649_{1}^{1}$
5863.720	100	8	17049.294	$3687_{2} - 20737_{1}^{1}$
5863.562	10		17049.754	$19713_{3} - 36762_{3}^{3}$
5863.146	3	1	17050.963	$21902_{4}^{4} - 38953_{5}$
5861.894	2		17054.605	$21902_{4}^{4} - 38956_{4}$
5861.289	8		17056.366	$16217_{2}^{2} - 33273_{1}$
5861.192	15		17056.648	$3865_{1} - 20922_{2}^{2}$
5860.480	15	1	17058.720	$14206_{4}^{4} - 31265_{3}$
5860.259	15	1	17059.363	$7502_{3} - 24561_{3}^{3}$
5859.348	15	1	17062.016	$16346_{4}^{4} - 33408_{3}$
5858.752	50	3	17063.751	$14032_{2}^{2} - 31095_{1}$
5858.641	50	2	17064.075	$14206_{4}^{4} - 31271_{5}$
5857.725	2		17066.743	$21890_{3}^{3} - 38956_{4}$
5856.112	15	1	17071.444	$13088_{3} - 30160_{4}^{4}$
5855.914	5		17072.021	$14465_{2}^{2} - 31537_{3}$
5855.789	1		17072.385	$11601_{1} - 28673_{2}^{2}$
5854.858	3		17075.100	$21594_{3} - 38669_{2}^{2}$
5854.120	150	8	17077.253	$8800_{4} - 25877_{4}^{4}$
5853.474	100	5	17079.137	$2869_{3} - 19948_{4}^{4}$
5852.945	10		17080.681	$18069_{3}^{3} - 35149_{2}$
5852.844	15		17080.976	$13847_{2} - 30928_{1}^{1}$
5852.682	200	25	17081.449	$10414_{4}^{4} - 27495_{4}$
5852.487	100	8	17082.018	$11802_{2} - 28884_{3}^{3}$
5851.214	8	2	17085.734	$10526_{3}^{3} - 27612_{3}$
5850.566	5		17087.627	$19713_{3} - 36800_{4}^{4}$
5850.378	10	1	17088.176	$19273_{2} - 36361_{1}^{1}$
5850.270	3		17088.491	$20214_{3}^{3} - 37303_{4}$
5849.765	8	1	17089.966	$17354_{1}^{1} - 34444_{2}$
5849.514	15	1	17090.700	$15863_{2} - 32954_{2}^{2}$
5849.217	10		17091.567	$16217_{2}^{2} - 33309_{2}$
5848.554	25	2	17093.505	$19532_{4} - 36625_{0}^{0}$
5848.277	1		17094.315	$20054_{2} - 37149_{2}^{2}$
5848.135	4		17094.729	$21575_{2} - 38669_{2}^{2}$
5845.919	100	5	17101.209	$7280_{2} - 24381_{2}^{2}$
5844.873	5		17104.270	$18574_{1} - 35678_{1}^{1}$
5844.793	75	3	17104.504	$20054_{2} - 37159_{1}^{1}$
5844.704	3		17104.765	$20054_{2} - 37159_{3}^{3}$
5843.805	50	5	17107.396	$10414_{4}^{4} - 27521_{4}$
5843.267	10	1	17108.971	$21077_{0}^{0} - 38186_{4}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5843.012	5		17109.718	$14032_{2}^{2} - 31141_{3}$	5807.685	50	4	17213.792	$21575_{2} - 38788_{3}^{3}$
5842.050	50	4	17112.535	$16346_{4}^{3} - 33459_{4}$	5806.201	40	2	17218.191	$16346_{4}^{3} - 33564_{3}$
5841.915	15	2	17112.930	$18699_{2} - 35812_{3}^{3}$	5805.702	50	3	17219.671	$13297_{4} - 30517_{5}^{6}$
5841.758	3		17113.390	$13962_{1} - 31075_{2}^{2}$	5805.612	1		17219.938	$13297_{4} - 30517_{4}^{4}$
5841.281	4		17114.788	$21645_{4}^{3} - 38760_{4}$	5805.495	25	1	17220.285	$17224_{2}^{2} - 34444_{2}$
5841.199	10		17115.028	$11802_{2} - 28917_{2}^{2}$	5805.244	2		17221.030	$21539_{4}^{3} - 38760_{4}$
5840.639	50	5	17116.669	$11241_{3}^{3} - 28358_{3}$	5804.141	500r	50	17224.302	$0_{2} - 17224_{2}^{2}$
5840.535	8		17116.974	$18930_{3}^{3} - 36047_{2}$	5803.805	5	1	17225.299	$20522_{2}^{2} - 37748_{2}$
5839.850	40	2	17118.982	$6362_{2} - 23481_{1}^{1}$	5803.735	8	1	17225.507	$19986_{6}^{6} - 37211_{5}$
5839.584	40	2	17119.761	$7795_{4}^{4} - 24915_{3}$	5802.851	50l	1	17228.131	$13847_{2} - 31075_{2}^{2}$
5839.492	50	8	17120.031	$13088_{3} - 30208_{2}^{2}$	5802.097	3		17230.370	$19532_{4} - 36762_{3}^{3}$
5839.266	8		17120.694	$22163_{4}^{4} - 39283_{4}$	5801.027	40	1	17233.548	$14032_{2}^{2} - 31265_{3}$
5833.849	8		17136.591	$19516_{2}^{2} - 36653_{2}$	5800.830	200	20	17234.133	$3687_{2} - 20922_{2}^{2}$
5833.132	2		17138.697	$21668_{1}^{1} - 38807_{2}$	5800.159	1	1	17236.127	$8800_{4} - 26036_{3}^{3}$
5832.371	100	15	17140.934	$7280_{2} - 24421_{3}^{3}$	5798.479	50	4	17241.121	$6362_{2} - 23603_{2}^{2}$
5831.923	5	1	17142.250	$22141_{3}^{3} - 39283_{4}$	5798.260	4		17241.772	$21143_{5} - 38385_{6}^{6}$
5831.754	8		17142.747	$13847_{2} - 30990_{3}^{3}$	5798.088	5		17242.284	$17847_{2}^{2} - 35089_{3}$
5831.682	5		17142.959	$21645_{4} - 38788_{3}^{3}$	5797.319	75	3	17244.571	$8111_{4} - 25355_{4}^{4}$
5831.002	3	1	17144.958	$14481_{8}^{8} - 31626_{5}$	5796.521	50	1	17246.945	$15490_{6}^{6} - 32737_{5}$
5830.827	50	5	17145.472	$11197_{6}^{6} - 28342_{5}$	5796.070	200	15	17248.287	$8800_{4} - 26048_{4}^{4}$
5827.900	2		17154.083	$19273_{2} - 36427_{3}^{3}$	5795.407	1		17250.260	$17073_{1} - 34324_{2}^{2}$
5826.344	40b	1	17158.665	$6362_{2} - 23521_{3}^{3}$	5792.685	4		17258.366	$19516_{2}^{2} - 36775_{3}$
5826.280	50b	5	17158.853	$19713_{3} - 36871_{2}^{2}$	5792.431	150	8	17259.123	$2558_{0} - 19817_{1}^{1}$
5826.097	25	2	17159.392	$18930_{3}^{3} - 36089_{4}$	5791.704	50	2	17261.289	$15493_{4} - 32754_{3}^{3}$
5825.675	8		17160.635	$19588_{8}^{8} - 36749_{6}$	5791.558	5	1	17261.724	$20522_{2}^{2} - 37784_{2}$
5825.003	40	3	17162.615	$15618_{3}^{3} - 32781_{4}$	5791.032	5	1	17263.292	$19948_{4}^{4} - 37211_{5}$
5824.895	50	5	17162.933	$21143_{5} - 38306_{4}^{4}$	5789.644	200	15	17267.431	$7502_{3} - 24769_{3}^{3}$
5823.555	3		17166.882	$13088_{3} - 30255_{3}^{3}$	5789.374	10	1	17268.236	$19532_{4} - 36800_{4}^{4}$
5823.261	2		17167.749	$22669_{3}^{3} - 39837_{3}$	5788.027	4		17272.255	$19503_{3}^{3} - 36775_{3}$
5822.796	100	8	17169.120	$12847_{3} - 30017_{3}^{3}$	5787.896	3		17272.646	$21902_{4}^{4} - 39174_{3}$
5822.054	40	1	17171.308	$17959_{4} - 35131_{4}^{4}$	5786.209	3	2	17277.681	$19817_{1}^{1} - 37094_{2}$
5821.691	3		17172.379	$22508_{2}^{2} - 39680_{2}$	5785.122	8	1	17280.928	$17959_{4} - 35240_{3}^{3}$
5820.820	10		17174.948	$20922_{2}^{2} - 38097_{2}$	5784.913	4		17281.552	$7280_{2} - 24561_{3}^{3}$
5820.081	25	2	17177.129	$15618_{3}^{3} - 32796_{3}$	5782.307	40b	5	17289.341	$11241_{3}^{3} - 28531_{2}$
5819.902	15	1	17177.657	$10414_{4}^{4} - 27591_{5}$	5781.655	50	1	17291.290	$15166_{3}^{3} - 32458_{4}$
5819.607	50	3	17178.528	$17166_{5} - 34344_{4}^{4}$	5780.438	2		17294.931	$22399_{6}^{6} - 39694_{5}$
5819.367	4b		17179.236	$20054_{2} - 37234_{2}^{2}$	5779.833	50	2	17296.741	$8800_{4} - 26096_{3}^{3}$
5819.302	15	1	17179.428	$15863_{2} - 33043_{3}^{3}$	5779.735	8	3	17297.034	$19039_{2}^{2} - 36336_{3}$
5819.130	20	1	17179.936	$4961_{4} - 22141_{3}^{3}$	5779.407	20	2	17298.016	$17073_{1} - 34371_{2}^{2}$
5818.453	50	5	17181.935	$14247_{6}^{6} - 31429_{1}$	5778.594	10	1	17300.450	$15970_{3} - 33270_{4}^{4}$
5818.218	2		17182.629	$19948_{4}^{4} - 37131_{3}$	5778.364	1		17301.138	$19516_{2}^{2} - 36818_{2}$
5817.545	10	1	17184.617	$17398_{3} - 34583_{3}^{3}$	5777.856	10	1	17302.659	$17847_{2}^{2} - 35149_{2}$
5816.188	15	1	17188.626	$22163_{4}^{4} - 39351_{5}$	5777.398	75	8	17304.031	$12114_{2}^{2} - 29418_{2}$
5815.823	2		17189.705	$20214_{3}^{3} - 37404_{3}$	5777.023	2		17305.154	$19503_{3}^{3} - 36808_{3}$
5814.729	50	2	17192.939	$19588_{6}^{6} - 36781_{5}$	5776.550	2		17306.571	$20214_{3}^{3} - 37521_{3}$
5814.101	8	2	17194.796	$21539_{4}^{4} - 38734_{3}$	5776.164	25	2	17307.728	$12114_{2}^{2} - 29422_{1}$
5813.534	1		17196.473	$13945_{3}^{3} - 31141_{3}$	5775.615	8	1	17309.373	$14465_{2}^{2} - 31774_{3}$
5813.181	8		17197.517	$10783_{2}^{2} - 27980_{3}$	5775.312	3		17310.281	$16351_{0} - 33662_{1}^{1}$
5812.976	100	8	17198.124	$10414_{4}^{4} - 27612_{3}$	5774.981	5	1	17311.273	$18574_{1} - 35885_{2}^{2}$
5812.709	50	2	17198.914	$17847_{2}^{2} - 35046_{1}$	5774.726	10	1	17312.038	$12847_{3} - 30160_{4}^{4}$
5811.848	40	1	17201.462	$4961_{4} - 22163_{4}^{4}$	5774.073	8	2	17313.995	$17959_{4} - 35273_{6}^{6}$
5810.453	5		17205.591	$18011_{6}^{6} - 35216_{5}$	5773.946	150	10	17314.376	$5563_{1} - 22877_{1}^{1}$
5808.659	50	25	17210.905	$8111_{4} - 25321_{3}^{3}$	5773.750	10	1	17314.964	$19503_{3}^{3} - 36818_{2}$
5807.932	1		17213.060	$22098_{4} - 39311_{4}^{4}$	5771.960	15	1	17320.334	$13945_{3}^{3} - 31265_{3}$
5807.685	50	4	17213.792	$14032_{2}^{2} - 31245_{2}$	5771.758	75	5	17320.940	$11241_{3}^{3} - 28562_{4}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5770.865	10	2	17323.620	$18809\frac{3}{4} - 36133_5$	5734.579	8		17433.236	$15863_2 - 33297\frac{3}{2}$
5770.795	5	1	17323.830	$20566\frac{3}{4} - 37890_5$	5733.887	20	2	17435.340	$13847_2 - 31283\frac{3}{3}$
5770.562	4	1	17324.530	$20423\frac{3}{1} - 37748_2$	5733.651	4	1	17436.057	$19713_3 - 37149\frac{3}{2}$
5770.461	10	1	17324.833	$15970_3 - 33294\frac{3}{3}$	5733.388	5	1	17436.857	$21738\frac{3}{2} - 39174_3$
5770.100	15b		17325.917	$17166_5 - 34492\frac{3}{4}$	5733.096	20	2	17437.745	$4961_4 - 22399\frac{3}{6}$
5769.730	8		17327.028	$15970_3 - 33297\frac{3}{2}$	5730.307	2		17446.232	$19039\frac{3}{2} - 36485_2$
5769.730	8		17327.028	$17398_3 - 34725\frac{3}{3}$	5729.236	2		17449.493	$21902\frac{3}{4} - 39351_5$
5768.633	10	1	17330.323	$14206\frac{3}{4} - 31537_3$	5729.119	5		17449.850	$11802_2 - 29252\frac{3}{2}$
5768.181	200	15	17331.681	$8111_4 - 25442\frac{3}{3}$	5727.997	8		17453.268	$17398_3 - 34851\frac{3}{2}$
5767.779	150	10	17332.889	$13175\frac{3}{4} - 30508_5$	5727.711	40	3	17454.139	$10526\frac{3}{3} - 27980_3$
5766.662	5		17336.246	$18069\frac{3}{3} - 35405_3$	5727.021	50	3	17456.242	$19948\frac{3}{4} - 37404_3$
5766.589	1		17336.466	$18549_2 - 35885\frac{3}{2}$	5726.792	1		17456.940	$15970_3 - 33427\frac{3}{2}$
5763.529	200	10	17345.670	$2869_3 - 20214\frac{3}{3}$	5725.390	300	75	17461.215	$9804_5 - 27266\frac{3}{4}$
5763.312	5	1	17346.323	$19986\frac{3}{6} - 37332_6$	5724.863	2		17462.822	$17411\frac{3}{3} - 34874_3$
5762.959	15	1	17347.386	$16217\frac{3}{2} - 33564_3$	5724.463	75	4	17464.043	$8111_4 - 25575\frac{3}{4}$
5762.796	100	10	17347.876	$17501\frac{3}{0} - 34849_5$	5724.386	20	2	17464.277	$13297_4 - 30761\frac{3}{3}$
5762.078	3b		17350.038	$21902\frac{3}{4} - 39252_5$	5724.386	20	2	17464.277	$14465\frac{3}{2} - 31929_3$
5761.527	25	2	17351.697	$18053\frac{3}{4} - 35405_3$	5724.240	100	10	17464.723	$13088_3 - 30553\frac{3}{2}$
5760.550	600r	150	17354.640	$0_2 - 17354\frac{3}{1}$	5723.532	10	1	17466.883	$14204_5 - 31671\frac{3}{4}$
5760.447	75b	15	17354.950	$11802_2 - 29157\frac{3}{3}$	5722.012	2		17471.523	$16217\frac{3}{2} - 33689_2$
5759.190	5	1	17358.738	$19948\frac{3}{4} - 37307_3$	5721.425	50	4	17473.316	$15490\frac{3}{0} - 32963_5$
5758.471	5		17360.906	$20423\frac{3}{1} - 37784_2$	5720.185	500r	150	17477.103	$3687_2 - 21165\frac{3}{3}$
5757.360	1		17364.256	$21645\frac{3}{4} - 39010_3$	5719.625	200	50	17478.815	$7502_3 - 24981\frac{3}{3}$
5757.336	1		17364.328	$21645\frac{3}{4} - 39010_3$	5719.098	20	2	17480.425	$15618\frac{3}{3} - 33099_3$
5756.904	4	1	17365.631	$11197\frac{3}{0} - 28562_4$	5718.657	2		17481.773	$21252\frac{3}{2} - 38734_3$
5756.463	1		17366.961	$18930\frac{3}{3} - 36297_4$	5718.118	8	1	17483.421	$17224\frac{3}{2} - 34707_3$
5756.445	1		17367.016	$18930\frac{3}{3} - 36297_4$	5717.526	20	2	17485.231	$16346\frac{3}{4} - 33831_4$
5754.844	8	1	17371.847	$18069\frac{3}{3} - 35440_3$	5717.172	50	15	17486.314	$5563_1 - 23049\frac{3}{1}$
5754.734	15	3	17372.179	$17501\frac{3}{0} - 34873_4$	5716.815	10	1	17487.406	$18809\frac{3}{4} - 36297_4$
5753.984	3		17374.444	$18699_2 - 36074\frac{3}{3}$	5716.106	1		17489.575	$7280_2 - 24769\frac{3}{3}$
5753.026	200	25	17377.337	$4961_4 - 22338\frac{3}{3}$	5715.948	8	1	17490.058	$10783\frac{3}{2} - 28273_2$
5752.580	15	1	17378.684	$6362_2 - 23741\frac{3}{1}$	5715.725	20	2	17490.741	$13297_4 - 30788\frac{3}{0}$
5751.629	4b	1	17381.557	$21902\frac{3}{4} - 39283_4$	5713.732	2		17496.842	$20322\frac{3}{0} - 37819_4$
5751.594	5b	1	17381.663	$13945\frac{3}{3} - 31326_4$	5711.998	50	5	17502.153	$17959_4 - 35462\frac{3}{3}$
5751.432	10	2	17382.153	$19503\frac{3}{3} - 36885_4$	5711.454	1		17503.820	$16217\frac{3}{2} - 33721_2$
5749.782	50b	8	17387.141	$3865_1 - 21252\frac{3}{2}$	5711.023	1		17505.141	$14032\frac{3}{2} - 31537_3$
5749.733	20b	3	17387.289	$18053\frac{3}{4} - 35440_3$	5710.270	4		17507.449	$18069\frac{3}{3} - 35576_3$
5749.230	15	1	17388.810	$16217\frac{3}{2} - 33606_2$	5709.858	1		17508.713	$19532_4 - 37041\frac{3}{4}$
5748.741	150	25	17390.289	$6362_2 - 23752\frac{3}{2}$	5708.679	50	3	17512.329	$14204_5 - 31716\frac{3}{0}$
5748.323	100	8	17391.554	$17959_4 - 35351\frac{3}{4}$	5705.866	8	1	17520.962	$19713_3 - 37234\frac{3}{2}$
5747.193	50	4	17394.973	$11802_2 - 29197\frac{3}{2}$	5705.637	50	4	17521.665	$19227\frac{3}{6} - 36749_6$
5747.058	2		17395.382	$19273_2 - 36668\frac{3}{2}$	5705.483	10	1	17522.138	$21143_5 - 38665\frac{3}{0}$
5746.468	4		17397.168	$14032\frac{3}{2} - 31429_1$	5705.232	4	1	17522.909	$18053\frac{3}{4} - 35576_3$
5745.233	5	1	17400.908	$18809\frac{3}{4} - 36210_5$	5704.124	8	1	17526.313	$18809\frac{3}{4} - 36336_3$
5743.583	8	1	17405.906	$18930\frac{3}{3} - 36336_3$	5702.650	50	25	17530.843	$5563_1 - 23093\frac{3}{2}$
5743.063	15	1	17407.483	$12847_3 - 30255\frac{3}{3}$	5702.543	1		17531.172	$22163\frac{3}{4} - 39694_5$
5741.829	50	10	17411.224	$0_2 - 17411\frac{3}{3}$	5700.782	50	8	17536.587	$12114\frac{3}{2} - 29650_2$
5741.715	5	1	17411.569	$23015\frac{3}{0} - 40426_4$	5698.292	50	5	17544.250	$11877\frac{3}{1} - 29422_1$
5740.196	2		17416.177	$21645_4 - 39062\frac{3}{0}$	5696.391	50	8	17550.105	$15493_4 - 33043\frac{3}{3}$
5739.837	3	1	17417.266	$21539\frac{3}{4} - 38956_4$	5694.434	10	1	17556.136	$16217\frac{3}{2} - 33773_1$
5738.965	20	2	17419.912	$14206\frac{3}{4} - 31626_5$	5693.759	1		17558.218	$17847\frac{3}{2} - 35405_3$
5737.645	2		17423.920	$21575_2 - 38998\frac{3}{3}$	5693.571	8		17558.798	$7280_2 - 24838\frac{3}{1}$
5736.031	100	8	17428.823	$13088_3 - 30517\frac{3}{4}$	5692.159	10	1	17563.153	$15863_2 - 33427\frac{3}{2}$
5735.304	8	1	17431.032	$15863_2 - 33294\frac{3}{3}$	5691.906	3		17563.934	$19273_2 - 36837\frac{3}{1}$
5735.146	1		17431.512	$22248\frac{3}{2} - 39680_2$	5691.681	5		17564.628	$3687_2 - 21252\frac{3}{2}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5691.060	10b		17566.545	$10414^{2}_{4} - 27980_{3}$	5653.838	2		17682.193	$20054_{2} - 37736^{2}_{2}$
5690.693	40	3	17567.678	$14206^{3}_{4} - 31774_{3}$	5653.426	2		17683.481	$21077^{0}_{0} - 38760_{4}$
5690.118	10	3	17569.453	$20214^{3}_{3} - 37784_{2}$	5652.570	1		17686.159	$23015^{0}_{0} - 40701_{4}$
5689.647	10	1	17570.907	$18011^{0}_{0} - 35582_{5}$	5651.326	5		17690.052	$15618^{3}_{3} - 33309_{2}$
5689.477	1		17571.432	$22855^{3}_{3} - 40426_{4}$	5650.912	1		17691.348	$17354^{1}_{1} - 35046_{1}$
5688.527	1		17574.367	$20522^{2}_{2} - 38097_{2}$	5650.354	75	15	17693.095	$13297_{4} - 30990^{3}_{3}$
5687.997	2c		17576.004	$14465^{2}_{2} - 32041_{2}$	5649.737	1		17695.028	$22401_{1} - 40096^{2}_{2}$
5687.350	50l	3	17578.004	$15490^{0}_{0} - 33068_{6}$	5648.990	75	10	17697.368	$2869_{3} - 20566^{4}_{4}$
5686.876	10	1	17579.469	$8111_{4} - 25690^{0}_{0}$	5647.708	20	2	17701.385	$10526^{3}_{3} - 28227_{4}$
5685.826	3		17582.715	$19503^{3}_{3} - 37085_{4}$	5646.455	50	10	17705.313	$12847_{3} - 30553^{2}_{2}$
5685.192	100	8	17584.676	$8800_{4} - 26384^{4}_{4}$	5646.255	1		17705.940	$21645^{4}_{4} - 39351_{5}$
5684.866	4		17585.684	$18930^{3}_{3} - 36515_{3}$	5646.205	1		17706.097	$18809^{4}_{4} - 36515_{3}$
5683.486	20	2	17589.954	$15970_{3} - 33560^{4}_{4}$	5645.668	50	20	17707.781	$8800_{4} - 26508^{3}_{3}$
5682.846	8	1	17591.935	$13945^{3}_{3} - 31537_{3}$	5645.529	50	8	17708.217	$4961_{4} - 22669^{3}_{3}$
5682.238	4		17593.818	$17847^{2}_{2} - 35440_{3}$	5643.346	8	1	17715.067	$19588^{0}_{0} - 37303_{4}$
5681.441	1		17596.286	$11601_{1} - 29197^{1}_{1}$	5643.110	20	2	17715.808	$17501^{0}_{0} - 35216_{5}$
5679.535	3		17602.191	$20054_{2} - 37656^{3}_{3}$	5641.735	75	8	17720.125	$14481^{6}_{6} - 32202_{5}$
5679.004	50	5	17603.836	$11241^{3}_{3} - 28845_{4}$	5641.562	50	5	17720.669	$12114^{2}_{2} - 29835_{3}$
5677.729	2h		17607.790	$20922^{2}_{2} - 38529_{3}$	5641.242	20	5	17721.674	$13297_{4} - 31019^{4}_{4}$
5677.051	200b	8	17609.892	$7795^{2}_{4} - 25405_{4}$	5640.363	50	2	17724.436	$13088_{3} - 30812^{2}_{2}$
5675.701	2		17614.081	$19516^{2}_{2} - 37131_{3}$	5639.460	10	1	17727.274	$15863_{2} - 33591^{3}_{3}$
5675.601	2		17614.391	$19039^{2}_{2} - 36653_{2}$	5638.767	1		17729.452	$17847^{2}_{2} - 35576_{3}$
5675.501	15	2	17614.702	$15166^{3}_{3} - 32781_{4}$	5636.625	1		17736.190	$19039^{2}_{2} - 36775_{3}$
5674.990	200b	25	17616.288	$11802_{2} - 29419^{2}_{2}$	5635.889	75	15	17738.506	$17411^{3}_{3} - 35149_{2}$
5674.461	15	2	17617.930	$21902^{3}_{4} - 39520_{4}$	5635.482	2		17739.787	$19948^{4}_{4} - 37688_{3}$
5674.171	2		17618.830	$21645_{4} - 39264^{3}_{3}$	5635.175	5	1	17740.753	$18053^{3}_{4} - 35794_{4}$
5673.955	5	1	17619.501	$20566^{4}_{4} - 38186_{4}$	5634.619	10	2	17742.504	$14032^{2}_{2} - 31774_{3}$
5673.835	50	5	17619.874	$10414^{2}_{4} - 28034_{5}$	5634.097	8s	1	17744.148	$19588^{0}_{0} - 37332_{6}$
5673.009	5	1	17622.439	$18011^{0}_{0} - 35633_{4}$	5633.297	75	8	17746.668	$10526^{3}_{3} - 28273_{2}$
5672.724	5	1	17623.325	$19588^{0}_{0} - 37211_{5}$	5632.903	2b		17747.909	$10783^{2}_{2} - 28531_{2}$
5671.498	15	2	17627.134	$19532_{4} - 37159^{3}_{3}$	5632.776	50	3	17748.309	$15970_{3} - 33718^{2}_{2}$
5671.250	10	2	17627.905	$19503^{3}_{3} - 37131_{3}$	5632.494	25	1	17749.198	$14204_{5} - 31953^{4}_{4}$
5671.072	40	2	17628.458	$16554_{6} - 34182^{0}_{0}$	5632.164	5b		17750.238	$13962_{1} - 31712^{1}_{1}$
5670.827	3		17629.220	$15166^{3}_{3} - 32796_{3}$	5630.297	75	10	17756.123	$19986^{6}_{6} - 37742_{6}$
5670.199	1		17631.172	$18431_{3} - 36062^{4}_{4}$	5629.312	50	3	17759.230	$16351_{0} - 34111^{1}_{1}$
5668.402	3		17636.762	$13962_{1} - 31599^{2}_{2}$	5628.365	8	1	17762.218	$18069^{3}_{3} - 35831_{3}$
5668.016	1		17637.963	$21645^{4}_{4} - 39283_{4}$	5627.606	3		17764.614	$15970_{3} - 33734^{2}_{2}$
5667.509	2		17639.541	$18549_{2} - 36188^{2}_{2}$	5627.012	3		17766.489	$8111_{4} - 25877^{4}_{4}$
5667.129	150	15	17640.723	$11241^{3}_{3} - 28882_{2}$	5626.169	1		17769.151	$19039^{2}_{2} - 36808_{3}$
5666.419	10	1	17642.934	$8111_{4} - 25753^{0}_{0}$	5624.911	50	3	17773.125	$11877^{1}_{1} - 29650_{2}$
5665.181	200	50	17646.789	$8243^{2}_{2} - 25890_{2}$	5624.775	15	2	17773.555	$17959_{4} - 35733^{3}_{4}$
5664.621	75	15	17648.534	$11197^{0}_{0} - 28845_{4}$	5623.581	25	2	17777.329	$15493_{4} - 33270^{3}_{3}$
5664.228	40	2	17649.758	$17224^{2}_{2} - 34874_{3}$	5623.474	1		17777.667	$18053^{3}_{4} - 35831_{3}$
5663.041	50	3	17653.458	$2869_{3} - 20522^{2}_{2}$	5623.411	2		17777.866	$17073_{1} - 34851^{2}_{2}$
5662.949	3		17653.745	$15736^{1}_{1} - 33390_{1}$	5621.788	20	3	17782.998	$18011^{0}_{0} - 35794_{4}$
5660.364	1		17661.807	$18699_{2} - 36361^{1}_{1}$	5621.287	8	2	17784.583	$20322^{0}_{0} - 38106_{5}$
5659.878	2		17663.323	$16783^{3}_{4} - 34447_{4}$	5620.013	15b	5	17788.615	$18011^{0}_{0} - 35799_{6}$
5659.216	5	1	17665.389	$21645_{4} - 39311^{4}_{4}$	5619.976	50b	8	17788.732	$14206^{4}_{4} - 31995_{4}$
5657.926	100	25	17669.417	$12847_{3} - 30517^{4}_{4}$	5619.719	5b	1	17789.546	$13175^{4}_{4} - 30964_{3}$
5656.729	40	2	17673.156	$13088_{3} - 30761^{3}_{3}$	5619.684	4b		17789.656	$15618^{3}_{3} - 33408_{3}$
5656.302	10	2	17674.490	$22163^{4}_{4} - 39837_{3}$	5619.526	1		17790.156	$19516^{2}_{2} - 37307_{3}$
5655.750	10	3	17676.215	$13847_{2} - 31523^{3}_{3}$	5619.478	1		17790.308	$21890^{3}_{3} - 39680_{2}$
5655.490	20	2	17677.028	$16783^{3}_{4} - 34460_{5}$	5619.017	50	4	17791.768	$21165^{3}_{3} - 38956_{4}$
5655.213	2		17677.893	$20214^{3}_{3} - 37892_{4}$	5618.927	15	1	17792.053	$21902^{4}_{4} - 39694_{5}$
5655.135	2		17678.137	$17411^{3}_{3} - 35089_{3}$	5617.964	2		17795.103	$17354^{1}_{1} - 35149_{2}$

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TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5617.291	15	2	17797.235	$14243\frac{1}{1} - 32041_2$	5584.983	2		17900.187	$20054_2 - 37954\frac{8}{3}$
5616.945	3	1	17798.331	$15863_2 - 33662\frac{1}{1}$	5584.430	4		17901.960	$13088_3 - 30990\frac{8}{3}$
5616.691	20	2	17799.136	$15618\frac{8}{3} - 33418_4$	5582.865	50	2	17906.978	$11197\frac{6}{0} - 29104_4$
5616.503	10	2	17799.732	$17501\frac{6}{0} - 35300_5$	5582.678	50	3	17907.578	$13962_1 - 31870\frac{2}{2}$
5616.438	2		17799.938	$20566\frac{4}{4} - 38366_4$	5582.367	75	4	17908.575	$15618\frac{8}{3} - 33527_4$
5616.328	8	2	17800.286	$19503\frac{8}{3} - 37303_4$	5580.756	100	10	17913.745	$12847_3 - 30761\frac{8}{3}$
5615.879	10	3	17801.709	$15493_4 - 33294\frac{8}{3}$	5580.395	50	10	17914.904	$17166_5 - 35081\frac{6}{0}$
5615.320	400r	15	17803.482	$3865_1 - 21668\frac{1}{1}$	5580.221	3		17915.462	$20054_2 - 37970\frac{2}{2}$
5614.515	5	1	17806.034	$14206\frac{4}{4} - 32012_4$	5580.076	50	2	17915.928	$4961_4 - 22877\frac{6}{0}$
5613.659	5		17808.749	$18069\frac{8}{3} - 35877_2$	5579.990	4		17916.204	$21645_4 - 39562\frac{4}{4}$
5612.619	75	3	17812.049	$14481\frac{6}{6} - 32293_5$	5579.359	300	40	17918.230	$5563_1 - 23481\frac{1}{1}$
5612.619	75	3	17812.049	$18549_2 - 36361\frac{1}{1}$	5578.091	2		17922.303	$21252\frac{2}{2} - 39174_3$
5612.068	150	20	17813.798	$10414\frac{4}{4} - 28227_4$	5577.602	10		17923.875	$16783\frac{4}{4} - 34707_3$
5610.685	200	20	17818.189	$11601_1 - 29419\frac{2}{2}$	5577.115	5	1	17925.440	$17224\frac{2}{2} - 35149_2$
5610.329	50	3	17819.320	$14204_5 - 32023\frac{6}{0}$	5576.300	40	3	17928.060	$15490\frac{6}{0} - 33418_4$
5610.235	75	5	17819.618	$7502_3 - 25321\frac{8}{3}$	5576.205	100	10	17928.365	$10414\frac{4}{4} - 28342_5$
5610.111	75	4	17820.012	$6362_2 - 24182\frac{2}{2}$	5575.524	3		17930.555	$13088_3 - 31019\frac{4}{4}$
5609.857	15	1	17820.819	$16346\frac{4}{4} - 34167_3$	5575.446	4		17930.806	$20214\frac{8}{3} - 38145_3$
5609.585	150	10	17821.683	$17224\frac{2}{2} - 35046_1$	5574.028	2		17935.367	$21902\frac{4}{4} - 39837_3$
5607.197	15	1	17829.273	$13945\frac{8}{3} - 31774_3$	5573.599	2		17936.748	$15863_2 - 33800\frac{8}{3}$
5607.087	10	1	17829.623	$15970_3 - 33799\frac{4}{4}$	5573.355	400	20	17937.533	$8111_4 - 26048\frac{4}{4}$
5606.390	100	10	17831.839	$10526\frac{3}{3} - 28358_3$	5572.766	10s	1	17939.429	$18549_2 - 36488\frac{2}{2}$
5604.814	2		17836.853	$21575_2 - 39411\frac{1}{1}$	5572.466	200	8	17940.394	$7502_3 - 25442\frac{3}{3}$
5603.764	20	1	17840.195	$15618\frac{8}{3} - 33459_4$	5572.095	20	1	17941.589	$11802_2 - 29744\frac{3}{3}$
5603.060	8s		17842.437	$17398_3 - 35240\frac{8}{3}$	5571.253	75b	10	17944.301	$10414\frac{4}{4} - 28358_3$
5602.627	15	1	17843.816	$13297_4 - 31141\frac{6}{0}$	5570.928	50	2	17945.347	$6362_2 - 24307\frac{2}{2}$
5602.216	2b		17845.125	$8800_4 - 26645\frac{6}{0}$	5570.762	8	1	17945.882	$15618\frac{8}{3} - 33564_3$
5601.934	2		17846.023	$22855\frac{3}{3} - 40701_4$	5570.265	1		17947.483	$21890\frac{8}{3} - 39837_3$
5601.604	200	8	17847.074	$0_2 - 17847\frac{2}{2}$	5569.486	2		17949.993	$16217\frac{2}{2} - 34167_3$
5601.604	200	8	17847.074	$5563_1 - 23410\frac{6}{0}$	5568.840	15		17952.076	$15736\frac{1}{1} - 33689_2$
5601.506	8b		17847.387	$12114\frac{2}{2} - 29961_1$	5568.542	50	3	17953.036	$17398_3 - 35351\frac{4}{4}$
5601.191	4		17848.390	$13945\frac{3}{3} - 31793_4$	5568.000	300b	150	17954.784	$16346\frac{4}{4} - 34301_4$
5599.865	3		17852.617	$17959_4 - 35812\frac{3}{3}$	5567.942	25b	10	17954.971	$18930\frac{3}{3} - 36885_4$
5599.655	50	2	17853.286	$7502_3 - 25355\frac{4}{4}$	5564.806	25	2	17965.089	$17166_5 - 35131\frac{4}{4}$
5599.573	2		17853.548	$14226_0 - 32080\frac{1}{1}$	5564.691	2		17965.461	$18809\frac{4}{4} - 36775_3$
5599.274	10b		17854.501	$15863_2 - 33718\frac{2}{2}$	5563.582	4		17969.042	$18699_2 - 36668\frac{2}{2}$
5598.445	4		17857.145	$18699_2 - 36556\frac{1}{1}$	5562.847	5		17971.416	$18809\frac{4}{4} - 36781_5$
5596.836	5		17862.278	$11241\frac{3}{3} - 29104_4$	5560.000	3h		17980.618	$21539\frac{4}{4} - 39520_4$
5595.962	75	8	17865.068	$17224\frac{2}{2} - 35089_3$	5559.894	150	8	17980.961	$3687_2 - 21668\frac{1}{1}$
5595.847	50	3	17865.435	$2558_0 - 20423\frac{1}{1}$	5559.526	3		17982.151	$18574_1 - 36556\frac{1}{1}$
5595.778	5		17865.656	$20737\frac{1}{1} - 38602_2$	5558.882	8b	3	17984.234	$17847\frac{2}{2} - 35831_3$
5595.064	300	25	17867.935	$8243\frac{2}{2} - 26111_1$	5558.848	75b	3	17984.344	$15736\frac{1}{1} - 33721_2$
5594.161	15	1	17870.820	$15863_2 - 33734\frac{2}{2}$	5558.848	75b	3	17984.344	$19227\frac{6}{6} - 37211_5$
5592.597	2		17875.817	$19273_2 - 37149\frac{2}{2}$	5558.433	75b	25b	17985.687	$13297_4 - 31283\frac{3}{3}$
5591.907	15b	3	17878.023	$18549_2 - 36427\frac{3}{3}$	5558.342	400b	50	17985.981	$8111_4 - 26096\frac{3}{3}$
5591.907	15b	3	17878.023	$18930\frac{3}{3} - 36808_3$	5557.924	25	5	17987.334	$13088_3 - 31075\frac{2}{2}$
5590.215	20		17883.434	$11802_2 - 29686\frac{3}{3}$	5557.045	300	15	17990.179	$8800_4 - 26790\frac{4}{4}$
5589.560	1		17885.530	$20922\frac{2}{2} - 38807_2$	5555.839	10	1	17994.084	$17411\frac{3}{3} - 35405_3$
5589.412	2		17886.003	$19273_2 - 37159\frac{1}{1}$	5555.534	75	4	17995.072	$14206\frac{4}{4} - 32202_5$
5589.328	5	1	17886.272	$19273_2 - 37159\frac{3}{3}$	5554.695	5		17997.790	$15970_3 - 33967\frac{3}{3}$
5587.027	500r	50	17893.638	$4961_4 - 22855\frac{3}{3}$	5554.546	10b	2	17998.273	$20054_2 - 38053\frac{3}{3}$
5586.255	2		17896.111	$10783\frac{2}{2} - 28679_2$	5554.502	20	4	17998.415	$18809\frac{4}{4} - 36808_3$
5585.981	4		17896.989	$12114\frac{2}{2} - 30011_3$	5552.624	75	4	18004.503	$10526\frac{3}{3} - 28531_2$
5585.884	5b		17897.300	$13297_4 - 31194\frac{4}{4}$	5551.744	25	5	18007.357	$18549_2 - 36556\frac{1}{1}$
5585.848	15l	1	17897.415	$14032\frac{2}{2} - 31929_3$	5551.193	40	2	18009.144	$14032\frac{2}{2} - 32041_2$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
5550.988	2		18009.809	$21165\frac{3}{3} - 39174_3$
5550.476	2		18011.470	$21668\frac{1}{1} - 39680_2$
5550.456	1		18011.535	$21668\frac{1}{1} - 39680_2$
5548.377	15	5	18018.284	$12114\frac{2}{2} - 30132_2$
5548.176	400r	40b	18018.937	$6362_2 - 24381\frac{2}{2}$
5547.654	15	1	18020.632	$18069\frac{3}{3} - 36089_4$
5547.135	75	3	18022.318	$13847_2 - 31870\frac{2}{2}$
5546.638	4		18023.933	$19713_3 - 37736\frac{2}{2}$
5545.806	15		18026.637	$7280_2 - 25306\frac{2}{2}$
5545.586	2		18027.352	$22399\frac{0}{0} - 40426_4$
5544.879	1		18029.651	$17411\frac{3}{3} - 35440_3$
5544.543	2		18030.743	$17847\frac{2}{2} - 35877_2$
5544.385	3		18031.257	$15970_3 - 34001\frac{4}{4}$
5544.385	3		18031.257	$15970_3 - 34001\frac{4}{4}$
5544.252	4	1	18031.690	$22855\frac{3}{3} - 40886_2$
5543.480	10	1	18034.201	$20054_2 - 38088\frac{2}{2}$
5542.890	300	10	18036.121	$10526\frac{3}{3} - 28562_4$
5542.027	3		18038.929	$19532_4 - 37571\frac{0}{0}$
5541.936	50	2	18039.225	$11601_1 - 29640\frac{1}{1}$
5541.936	50	2	18039.225	$18614\frac{1}{1} - 36653_2$
5541.581	50	2	18040.381	$5563_1 - 23603\frac{2}{2}$
5541.146	50	2	18041.797	$7280_2 - 25321\frac{3}{3}$
5540.521	2		18043.832	$19948\frac{4}{4} - 37992_4$
5540.380	1		18044.292	$20322\frac{0}{0} - 38366_4$
5539.262	500r	50	18047.933	$9804_5 - 27852\frac{0}{0}$
5538.608	75	4	18050.065	$3687_2 - 21738\frac{2}{2}$
5537.749	1		18052.864	$2869_3 - 20922\frac{2}{2}$
5537.555	50	2	18053.497	$4961_4 - 23015\frac{0}{0}$
5536.436	4		18057.146	$18431_3 - 36488\frac{2}{2}$
5535.970	50	1	18058.666	$6362_2 - 24421\frac{3}{3}$
5534.586	5		18063.181	$18699_2 - 36762\frac{3}{3}$
5534.439	5		18063.661	$17398_3 - 35462\frac{3}{3}$
5533.963	4		18065.215	$16783\frac{4}{4} - 34849_5$
5533.608	5		18066.374	$17354\frac{1}{1} - 35421_1$
5533.467	5	1	18066.834	$15493_4 - 33560\frac{4}{4}$
5533.219	10b		18067.644	$13945\frac{3}{3} - 32012_4$
5532.780	5		18069.077	$0_2 - 18069\frac{3}{3}$
5532.481	1		18070.054	$15618\frac{3}{3} - 33689_2$
5531.483	1		18073.314	$19532_4 - 37605\frac{4}{4}$
5530.843	2		18075.405	$18809\frac{4}{4} - 36885_4$
5530.075	50	2	18077.916	$8800_4 - 26878\frac{3}{3}$
5529.472	8		18079.887	$18053\frac{4}{4} - 36133_5$
5529.096	75	10	18081.117	$17501\frac{0}{0} - 35582_5$
5528.226	50b	5	18083.962	$11877\frac{1}{1} - 29961_1$
5527.480	10	1	18086.403	$14465\frac{2}{2} - 32551_3$
5527.295	200	8	18087.008	$14206\frac{4}{4} - 32293_5$
5527.074	2		18087.731	$22338\frac{3}{3} - 40426_4$
5526.983	1		18088.029	$20922\frac{2}{2} - 39010_3$
5526.528	50	8	18089.518	$16783\frac{4}{4} - 34873_4$
5526.434	8	1	18089.826	$14204_5 - 32294\frac{4}{4}$
5526.313	8		18090.222	$16783\frac{4}{4} - 34874_3$
5525.799	2		18091.905	$19039\frac{2}{2} - 37131_3$
5525.155	20	2	18094.013	$18574_1 - 36668\frac{2}{2}$
5524.583	150b	10b	18095.887	$13175\frac{4}{4} - 31271_5$
5523.951	10		18097.957	$15493_4 - 33591\frac{3}{3}$
5523.539	8	2	18099.307	$10783\frac{2}{2} - 28882_2$
5523.451	5		18099.596	$21738\frac{2}{2} - 39837_3$
5523.164	25	1	18100.536	$16346\frac{4}{4} - 34447_4$
5522.616	8		18102.332	$15618\frac{3}{3} - 33721_2$
5522.416	3		18102.988	$17959_4 - 36062\frac{4}{4}$
5522.104	8		18104.010	$15863_2 - 33967\frac{3}{3}$
5521.751	200	8	18105.168	$19227\frac{8}{8} - 37332_6$
5520.954	5		18107.781	$17166_5 - 35273\frac{0}{0}$
5518.988	200b	50	18114.232	$16346\frac{4}{4} - 34460_5$
5517.874	3		18117.889	$13962_1 - 32080\frac{1}{1}$
5517.616	4		18118.736	$21165\frac{3}{3} - 39283_4$
5517.455	4		18119.265	$18549_2 - 36668\frac{2}{2}$
5515.845	4		18124.554	$19532_4 - 37656\frac{3}{3}$
5514.873	200b	10	18127.748	$7795\frac{4}{4} - 25923_4$
5513.370	2		18132.690	$17501\frac{0}{0} - 35633_4$
5513.084	2		18133.630	$20566\frac{4}{4} - 38700_4$
5510.495	20	1	18142.150	$15166\frac{3}{3} - 33309_2$
5510.372	15	1	18142.555	$12847_3 - 30990\frac{3}{3}$
5509.993	400	20	18143.803	$9804_5 - 27948\frac{4}{4}$
5508.557	75	5	18148.533	$10414\frac{4}{4} - 28562_4$
5508.050	8	1	18150.203	$21902\frac{4}{4} - 40052_4$
5507.542	100l	2	18151.877	$4961_4 - 23113\frac{4}{4}$
5507.542	100l	2	18151.877	$13175\frac{4}{4} - 31326_4$
5507.295	1		18152.691	$10526\frac{3}{3} - 28679_2$
5506.919	50	5	18153.931	$19588\frac{0}{0} - 37742_6$
5506.676	1		18154.732	$21539\frac{4}{4} - 39694_5$
5506.423	3		18155.566	$18930\frac{3}{3} - 37085_4$
5506.078	5		18156.703	$21165\frac{3}{3} - 39321_3$
5505.934	5		18157.178	$18053\frac{4}{4} - 36210_5$
5505.547	2		18158.455	$19948\frac{4}{4} - 38106_5$
5504.302	200	20	18162.562	$7280_2 - 25442\frac{3}{3}$
5503.698	2		18164.555	$18930\frac{3}{3} - 37094_2$
5503.473	3		18165.298	$17411\frac{3}{3} - 35576_3$
5502.718	5		18167.790	$20566\frac{4}{4} - 38734_3$
5501.701	8	2	18171.148	$12847_3 - 31019\frac{4}{4}$
5501.467	5		18171.921	$22098_4 - 40270\frac{4}{4}$
5501.281	100	10	18172.536	$12114\frac{2}{2} - 30286_1$
5500.032	8		18176.662	$11241\frac{3}{3} - 29418_2$
5499.647	75	5	18177.935	$5563_1 - 23741\frac{1}{1}$
5499.255	300	40	18179.230	$2558_0 - 20737\frac{1}{1}$
5498.716	8	1	18181.012	$17224\frac{2}{2} - 35405_3$
5497.401	2b		18185.361	$17166_5 - 35351\frac{4}{4}$
5496.138	200	10	18189.540	$5563_1 - 23752\frac{2}{2}$
5494.797	2		18193.979	$20566\frac{4}{4} - 38760_4$
5494.619	5		18194.569	$13088_3 - 31283\frac{3}{3}$
5494.330	75	10	18195.526	$8800_4 - 26995\frac{3}{3}$
5493.973	5		18196.708	$17224\frac{2}{2} - 35421_1$
5493.594	10	1	18197.963	$13962_1 - 32160\frac{2}{2}$
5493.196	100	8	18199.282	$6362_2 - 24561\frac{3}{3}$
5492.912	15	3	18200.223	$17847\frac{2}{2} - 36047_2$
5492.642	100	10	18201.117	$7502_3 - 25703\frac{2}{2}$
5492.332	40	20	18202.145	$3687_2 - 21890\frac{3}{3}$
5489.086	75	5	18212.909	$15618\frac{3}{3} - 33831_4$
5488.795	3		18213.874	$16217\frac{2}{2} - 34431_3$
5488.207	4		18215.826	$23015\frac{0}{0} - 41230_4$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5487.971	15	1	18216.609	$17224_{2}^{2} - 35440_{3}$	5449.058	1		18346.697	$12847_{3} - 31194_{4}^{4}$
5487.837	15	2	18217.054	$22669_{3}^{3} - 40886_{2}$	5448.272	50	3	18349.344	$13847_{2} - 32197_{3}^{3}$
5487.505	15	2	18218.156	$17959_{4} - 36178_{4}^{4}$	5447.574	2		18351.695	$15493_{4} - 33844_{6}^{6}$
5485.714	4		18224.104	$20054_{2} - 38278_{1}^{1}$	5447.417	2		18352.223	$17224_{2}^{2} - 35576_{3}$
5484.988	50	3	18226.516	$13297_{4} - 31523_{3}^{3}$	5447.071	1		18353.389	$22877_{0}^{0} - 41230_{4}$
5484.556	20	1	18227.951	$12847_{3} - 31075_{2}^{2}$	5446.894	10		18353.986	$15970_{3} - 34324_{2}^{2}$
5484.469	8	1	18228.241	$18069_{3}^{3} - 36297_{4}$	5446.321	8		18355.917	$10526_{3}^{3} - 28882_{2}$
5483.709	2		18230.767	$19588_{0}^{0} - 37819_{4}$	5444.668	2		18361.489	$20054_{2} - 38416_{3}^{3}$
5483.623	3		18231.053	$19516_{2}^{2} - 37748_{2}$	5444.477	5	1	18362.133	$13175_{4}^{4} - 31537_{3}$
5483.143	50	2	18232.649	$13847_{2} - 32080_{1}^{1}$	5444.421	1		18362.322	$22338_{3}^{3} - 40701_{4}$
5482.498	75	8	18234.794	$14204_{5} - 32439_{4}^{4}$	5443.481	1		18365.493	$19039_{2}^{2} - 37404_{3}$
5481.828	8	1	18237.023	$19713_{3} - 37950_{4}^{4}$	5441.213	75	8	18373.148	$18930_{3}^{3} - 37303_{4}$
5481.612	2		18237.741	$19948_{4}^{4} - 38186_{4}$	5441.042	25	1	18373.726	$13297_{4} - 31671_{4}^{4}$
5481.211	5		18239.075	$16351_{0} - 34591_{1}^{1}$	5440.796	3		18374.556	$15970_{3} - 34344_{4}^{4}$
5480.402	4	1	18241.768	$15166_{3}^{3} - 33408_{3}$	5440.600	50	2	18375.218	$7502_{3} - 25877_{4}^{4}$
5479.462	8		18244.897	$19503_{3}^{3} - 37748_{2}$	5440.385	4		18375.944	$19713_{3} - 38088_{2}^{2}$
5479.072	75	75	18246.196	$7280_{2} - 25526_{1}^{1}$	5440.116	4		18376.853	$18930_{3}^{3} - 37307_{3}$
5478.742	50	3	18247.295	$15863_{2} - 34111_{1}^{1}$	5439.495	2		18378.951	$22508_{2}^{2} - 40886_{2}$
5477.550	40	2	18251.266	$14206_{4}^{4} - 32458_{4}$	5438.250	10	1	18383.159	$17411_{3}^{3} - 35794_{4}$
5476.482	20	2	18254.825	$11877_{1}^{1} - 30132_{2}$	5437.958	3		18384.146	$20423_{1}^{1} - 38807_{2}$
5476.482	20	2	18254.825	$17073_{1} - 35328_{1}^{1}$	5437.232	10	1	18386.600	$20566_{4}^{4} - 38953_{5}$
5475.767	4h		18257.208	$19713_{3} - 37970_{2}^{2}$	5436.814	2		18388.014	$20214_{3}^{3} - 38602_{2}$
5474.145	2		18262.618	$18574_{1} - 36837_{1}^{1}$	5436.326	2		18389.665	$19503_{3}^{3} - 37892_{4}$
5473.849	10	1	18263.606	$22163_{4}^{4} - 40426_{4}$	5436.146	1		18390.273	$20566_{4}^{4} - 38956_{4}$
5472.701	8		18267.437	$19516_{2}^{2} - 37784_{2}$	5434.152	100	10	18397.022	$8111_{4} - 26508_{3}^{3}$
5472.535	25	1	18267.991	$19039_{2}^{2} - 37307_{3}$	5433.876	15	2	18397.956	$15166_{3}^{3} - 33564_{3}$
5470.759	150	10	18273.921	$8111_{4} - 26384_{4}^{4}$	5432.127	2		18403.879	$19588_{0}^{0} - 37992_{4}$
5470.145	50	8	18275.972	$18809_{4}^{4} - 37085_{4}$	5431.605	15	2	18405.648	$11802_{2} - 30208_{2}^{2}$
5468.569	1		18281.239	$19503_{3}^{3} - 37784_{2}$	5431.112	150	40	18407.319	$6362_{2} - 24769_{3}^{3}$
5468.166	2		18282.586	$18053_{4}^{4} - 36336_{3}$	5430.807	4		18408.353	$10526_{3}^{3} - 28934_{3}$
5467.403	5	1	18285.138	$22141_{3}^{3} - 40426_{4}$	5430.593	10		18409.078	$11877_{1}^{1} - 30286_{1}$
5467.167	75	4	18285.927	$18011_{0}^{0} - 36297_{4}$	5430.121	3		18410.678	$21575_{2} - 39985_{3}^{3}$
5466.602	5	1	18287.817	$18549_{2} - 36837_{1}^{1}$	5429.105	100	5	18414.124	$17398_{3} - 35812_{3}^{3}$
5465.268	5		18292.281	$15166_{3}^{3} - 33459_{4}$	5428.069	10		18417.638	$19532_{4} - 37950_{4}^{4}$
5464.205	200w	8	18295.839	$2869_{3} - 21165_{3}^{3}$	5427.767	15	1	18418.663	$21143_{5} - 39562_{4}^{4}$
5463.771	50	4	18297.293	$18574_{1} - 36871_{2}^{2}$	5427.618	20	2	18419.168	$13297_{4} - 31716_{6}^{6}$
5463.320	40	10h	18298.803	$17501_{0}^{0} - 35799_{6}$	5427.352	2h		18420.071	$17411_{3}^{3} - 35831_{3}$
5462.809	3b		18300.515	$20054_{2} - 38355_{2}^{2}$	5426.621	15b	1	18422.552	$19532_{4} - 37954_{3}^{3}$
5462.336	50	15	18302.099	$19588_{0}^{0} - 37890_{5}$	5426.574	10b		18422.712	$17959_{4} - 36382_{4}^{4}$
5461.636	5	2b	18304.445	$19588_{0}^{0} - 37892_{4}$	5426.407	50	3	18423.279	$7280_{2} - 25703_{2}^{2}$
5461.314	3		18305.524	$16783_{4}^{4} - 35089_{3}$	5426.170	50	2	18424.084	$14226_{0} - 32650_{1}^{1}$
5461.019	5		18306.513	$15493_{4} - 33799_{4}^{4}$	5424.368	5		18430.204	$12114_{2}^{2} - 30544_{2}$
5459.171	15	3	18312.710	$13847_{2} - 32160_{2}^{2}$	5424.008	300	40	18431.427	$10414_{4}^{4} - 28845_{4}$
5458.492	1		18314.988	$20214_{3}^{3} - 38529_{3}$	5423.501	20b	3	18433.150	$16783_{4}^{4} - 35216_{5}$
5457.289	50	3	18319.025	$10526_{3}^{3} - 28845_{4}$	5422.914	15	1	18435.146	$12847_{3} - 31283_{3}^{3}$
5456.654	8	1	18321.157	$18809_{4}^{4} - 37131_{3}$	5422.847	8b		18435.373	$13088_{3} - 31523_{3}^{3}$
5456.255	40	2	18322.497	$18549_{2} - 36871_{2}^{2}$	5422.250	2		18437.403	$13847_{2} - 32285_{3}^{3}$
5454.919	10	1	18326.984	$22098_{4} - 40425_{4}^{4}$	5421.966	5	1	18438.369	$20322_{0}^{0} - 38760_{4}$
5453.757	1		18330.889	$14465_{2}^{2} - 32796_{3}$	5421.664	100	5	18439.396	$15166_{3}^{3} - 33606_{2}$
5453.686	4	1	18331.128	$18431_{3} - 36762_{3}^{3}$	5420.451	4		18443.522	$20566_{4}^{4} - 39010_{3}$
5453.297	5		18332.435	$16554_{6} - 34886_{0}^{0}$	5419.463	1		18446.884	$18069_{3}^{3} - 36515_{3}$
5452.219	300	40	18336.060	$9804_{5} - 28140_{4}^{4}$	5418.702	3		18449.475	$18699_{2} - 37149_{2}^{2}$
5451.091	15	2	18339.854	$21645_{4} - 39985_{3}^{3}$	5417.808	75	1	18452.520	$11802_{2} - 30255_{3}^{3}$
5450.511	25		18341.806	$15490_{0}^{0} - 33831_{4}$	5417.486	400r	40	18453.616	$3687_{2} - 22141_{3}^{3}$
5450.146	5		18343.034	$19273_{2} - 37616_{1}^{1}$	5415.775	4		18459.446	$17073_{1} - 35533_{2}^{2}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5415.711	8		18459.664	$18699_2 - 37159^{i}_{i}$	5379.112	300	20	18585.261	$7795^{g}_{4} - 26380_5$
5415.558	75b		18460.186	$15863_2 - 34324^{g}_{2}$	5378.837	400	40	18586.211	$14481^{g}_{6} - 33068_6$
5415.528	200b	2	18460.288	$7795^{g}_{4} - 26255_4$	5378.169	50	4	18588.520	$17501^{h}_{0} - 36089_4$
5414.920	5	1	18462.361	$18053^{g}_{4} - 36515_3$	5377.970	10	1	18589.207	$14206^{g}_{4} - 32796_3$
5414.920	5	1	18462.361	$21738^{g}_{2} - 40200_3$	5376.778	200	50	18593.328	$11241^{g}_{3} - 29835_3$
5413.917	10	1	18465.781	$8800_4 - 27266^{g}_{4}$	5376.600	4		18593.944	$19503^{g}_{3} - 38097_2$
5411.406	3		18474.350	$18930^{g}_{3} - 37404_3$	5376.366	2b		18594.753	$18809^{g}_{4} - 37404_3$
5411.311	5		18474.674	$15493_4 - 33967^{g}_{3}$	5375.497	20		18597.759	$19588^{h}_{0} - 38186_4$
5410.769	400	15	18476.525	$6362_2 - 24838^{i}_{i}$	5374.998	50	8h	18599.486	$13175^{g}_{4} - 31774_3$
5410.313	15b		18478.082	$11802_2 - 30281^{i}_{i}$	5373.394	40	2	18605.038	$17073_1 - 35678^{i}_{i}$
5409.603	2		18480.507	$18614^{g}_{1} - 37094_2$	5372.703	200	25	18607.431	$11241^{g}_{3} - 29849_4$
5409.304	4		18481.528	$14481^{g}_{6} - 32963_5$	5372.230	1		18609.069	$21645_4 - 40254^{g}_{3}$
5408.749	20	2h	18483.425	$13297_4 - 31780^{g}_{3}$	5372.117	3		18609.460	$18431_3 - 37041^{g}_{4}$
5408.192	2		18485.328	$20214^{g}_{3} - 38700_4$	5371.999	8		18609.869	$18549_2 - 37159^{i}_{i}$
5407.652	400b	40b	18487.175	$11197^{h}_{6} - 29684_5$	5371.678	3		18610.981	$7502_3 - 26113^{g}_{2}$
5407.567	75b	10b	18487.465	$20522^{g}_{2} - 39010_3$	5371.124	50	1	18612.901	$13962_1 - 32575^{g}_{2}$
5406.755	50	4	18490.241	$16217^{g}_{2} - 34707_3$	5371.124	50	1	18612.901	$15970_3 - 34583^{g}_{3}$
5405.787	20	1	18493.552	$18809^{g}_{4} - 37303_4$	5370.709	150	2	18614.339	$0_2 - 18614^{i}_{i}$
5404.708	15		18497.244	$18809^{g}_{4} - 37307_3$	5370.522	5		18614.987	$20054_2 - 38669^{g}_{2}$
5403.200	200	15	18502.407	$16346^{g}_{4} - 34849_5$	5369.890	10	1	18617.178	$21077^{h}_{6} - 39694_5$
5401.582	8b	1u	18507.949	$15863_2 - 34371^{g}_{2}$	5369.447	200	5	18618.714	$6362_2 - 24981^{g}_{3}$
5401.536	10b	1	18508.107	$15493_4 - 34001^{g}_{4}$	5369.284	200	8	18619.279	$5563_1 - 24182^{g}_{2}$
5400.775	8		18510.714	$13088_3 - 31599^{g}_{2}$	5368.902	5		18620.604	$20054_2 - 38675^{g}_{3}$
5400.145	150	5	18512.874	$13945^{g}_{3} - 32458_4$	5368.654	10	1	18621.464	$16783^{g}_{4} - 35405_3$
5399.620	50	100	18514.674	$11241^{g}_{3} - 29756_4$	5367.849	3		18624.257	$21645_4 - 40270^{g}_{4}$
5399.427	8h		18515.336	$21165^{g}_{3} - 39680_2$	5367.234	5l		18626.391	$22098_4 - 40724^{h}_{6}$
5398.920	400	40	18517.075	$16783^{g}_{4} - 35300_5$	5366.557	2		18628.740	$19516^{g}_{2} - 38145_3$
5398.704	150	4	18517.815	$6362_2 - 24880^{i}_{i}$	5365.913	2		18630.976	$20322^{h}_{6} - 38953_5$
5398.510	8	1	18518.481	$19588^{h}_{6} - 38106_5$	5365.520	50b	3b	18632.341	$17501^{h}_{0} - 36133_5$
5398.205	150	4	18519.527	$14032^{g}_{2} - 32551_3$	5364.985	4	1	18634.199	$14465^{g}_{2} - 33099_3$
5397.890	20	1	18520.608	$19532_4 - 38053^{g}_{3}$	5364.682	8b		18635.251	$10783^{g}_{2} - 29418_2$
5397.731	1		18521.153	$21575_2 - 40096^{g}_{2}$	5364.447	15	5	18636.067	$17411^{g}_{3} - 36047_2$
5397.499	2		18521.949	$15970_3 - 34492^{g}_{4}$	5363.931	5		18637.860	$16351_0 - 34989^{i}_{i}$
5397.445	5		18522.135	$15166^{g}_{3} - 33689_2$	5363.880	5		18638.037	$22248^{g}_{2} - 40886_2$
5397.139	20l		18523.185	$17354^{i}_{i} - 35877_2$	5362.576	200	5	18642.570	$3865_1 - 22508^{g}_{2}$
5396.109	50	4	18526.720	$16346^{g}_{4} - 34873_4$	5361.156	75	3	18647.507	$4961_4 - 23609^{h}_{6}$
5396.109	50	4	18526.720	$16351_0 - 34878^{i}_{i}$	5360.697	8		18649.104	$19039^{g}_{2} - 37688_3$
5394.761	300	20	18531.350	$3865_1 - 22396^{i}_{i}$	5360.150	300	5	18651.007	$3687_2 - 22338^{g}_{3}$
5393.972	150	8	18534.060	$7502_3 - 26036^{g}_{3}$	5359.827	100	4	18652.131	$11197^{h}_{6} - 29849_4$
5393.873	50b	3	18534.401	$8111_4 - 26645^{h}_{6}$	5359.432	5		18653.506	$17224^{g}_{2} - 35877_2$
5393.873	50b	3	18534.401	$18699_2 - 37234^{g}_{2}$	5358.713	300	15	18656.009	$13297_4 - 31953^{g}_{4}$
5392.768	5		18538.198	$22163^{g}_{4} - 40701_4$	5358.558	2		18656.548	$16217^{g}_{2} - 34874_3$
5390.575	2		18545.740	$20214^{g}_{3} - 38760_4$	5358.415	3		18657.046	$16783^{g}_{4} - 35440_3$
5390.429	300	75	18546.242	$7502_3 - 26048^{g}_{4}$	5358.081	5		18658.209	$14204_5 - 32862^{g}_{4}$
5388.057	300	20	18554.407	$15166^{g}_{3} - 33721_2$	5357.743	8	1	18659.386	$18574_1 - 37234^{g}_{2}$
5386.611	500	20	18559.388	$4961_4 - 23521^{g}_{3}$	5357.338	2		18660.797	$21539^{g}_{4} - 40200_3$
5386.611	500	20	18559.388	$11197^{h}_{6} - 29756_4$	5356.672	10		18663.117	$19227^{g}_{6} - 37890_5$
5386.149	2b		18560.980	$3687_2 - 22248^{g}_{2}$	5356.278	1		18664.490	$17398_3 - 36062^{g}_{4}$
5386.111	20l		18561.110	$15736^{i}_{i} - 34298_1$	5356.137	10		18664.981	$15166^{g}_{3} - 33831_4$
5384.301	100	15	18567.350	$17166_5 - 35733^{g}_{4}$	5355.638	100	3	18666.720	$11877^{i}_{i} - 30544_2$
5382.175	15b	1u	18574.684	$14206^{g}_{4} - 32781_4$	5354.602	40	1	18670.332	$2869_3 - 21539^{g}_{4}$
5381.368	25b	1	18577.470	$10526^{g}_{3} - 29104_4$	5353.977	5h		18672.511	$21165^{g}_{3} - 39837_3$
5379.884	8	1	18582.594	$13088_3 - 31671^{g}_{4}$	5353.154	2		18675.382	$21594_3 - 40270^{g}_{4}$
5379.325	8b		18584.525	$18069^{g}_{3} - 36653_2$	5353.154	2		18675.382	$9804_5 - 28480^{g}_{3}$
5379.285	10b	1	18584.663	$18574_1 - 37159^{i}_{i}$	5353.073	50	4	18675.664	$17398_3 - 36074^{g}_{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5352.992	50b	15	18675.947	$12847_3 - 31523^{3}_{3}$	5319.023	2		18795.216	$20214^{3}_{3} - 39010_3$
5352.304	3b		18678.347	$22098_4 - 40776^{3}_{4}$	5318.110	75	3	18798.443	$16783^{3}_{4} - 35582_5$
5352.272	5b		18678.459	$17411^{3}_{3} - 36089_4$	5317.912	8		18799.143	$22401_1 - 41200^{2}_{2}$
5351.996	10		18679.423	$8111_4 - 26790^{3}_{4}$	5317.494	200	4	18800.620	$8243^{2}_{2} - 27044_3$
5351.839	150	8	18679.970	$11601_1 - 30281^{1}_{1}$	5316.783	15		18803.135	$13847_2 - 32650^{1}_{1}$
5351.126	200	25	18682.459	$15618^{3}_{3} - 34301_4$	5315.834	5		18806.491	$17847^{2}_{2} - 36653_2$
5350.538	50	4	18684.512	$19532_4 - 38216^{3}_{3}$	5315.230	150		18808.629	$14465^{2}_{2} - 33273_1$
5350.206	50	1	18685.672	$20566^{3}_{4} - 39252_5$	5314.251	8b	1	18812.093	$17073_1 - 35885^{2}_{2}$
5349.425	3		18688.400	$13962_1 - 32650^{1}_{1}$	5314.205	10b	2	18812.256	$19948^{3}_{4} - 38760_4$
5349.003	75	3	18689.874	$10414^{3}_{4} - 29104_4$	5314.178	10b		18812.352	$15618^{3}_{3} - 34431_3$
5348.532	4	1	18691.520	$22669^{3}_{3} - 41361_3$	5313.233	5h		18815.698	$19273_2 - 38088^{2}_{2}$
5348.310	50	1	18692.296	$13088_3 - 31780^{3}_{3}$	5312.904	200	15	18816.863	$7280_2 - 26096^{3}_{3}$
5347.973	150	5	18693.474	$4961_4 - 23655^{3}_{4}$	5312.781	50	3	18817.298	$11197^{0}_{0} - 30014_4$
5346.766	50	2	18697.694	$23015^{0}_{0} - 41712_5$	5312.643	150	15	18817.787	$13847_2 - 32665^{1}_{1}$
5345.241	5		18703.028	$13962_1 - 32665^{1}_{1}$	5312.532	400	40	18818.180	$5563_1 - 24381^{2}_{2}$
5344.308	3		18706.293	$18069^{3}_{3} - 36775_3$	5312.001	400r	25	18820.062	$3687_2 - 22508^{2}_{2}$
5343.581	500r	40	18708.838	$3687_2 - 22396^{1}_{1}$	5311.870	75b	2	18820.526	$13175^{3}_{4} - 31995_4$
5343.361	50b		18709.608	$17501^{0}_{0} - 36210_5$	5311.174	20	1	18822.992	$17224^{2}_{2} - 36047_2$
5341.206	75	3	18717.157	$20566^{3}_{4} - 39283_4$	5310.432	5		18825.622	$15618^{3}_{3} - 34444_2$
5340.650	20l		18719.106	$15863_2 - 34583^{3}_{3}$	5309.616	150	5	18828.515	$16217^{2}_{2} - 35046_1$
5340.501	200	10	18719.628	$16554_6 - 35273^{0}_{0}$	5309.052	2h		18830.515	$21594_3 - 40425^{3}_{4}$
5339.896	50	5	18721.749	$18053^{3}_{4} - 36775_3$	5308.808	10	1	18831.381	$22855^{3}_{3} - 41686_3$
5338.641	40	1	18726.150	$13297_4 - 32023^{0}_{0}$	5308.726	10	1	18831.672	$18053^{3}_{4} - 36885_4$
5338.366	40	15	18727.114	$15863_2 - 34591^{1}_{1}$	5308.310	100	10	18833.147	$7280_2 - 26113^{2}_{2}$
5338.285	25b	1	18727.399	$10414^{3}_{4} - 29141_5$	5306.987	75	4	18837.842	$13175^{3}_{4} - 32012_4$
5338.215	50b	1	18727.644	$13847_2 - 32575^{2}_{2}$	5306.166	5		18840.757	$17959_4 - 36800^{3}_{4}$
5337.502	2		18730.146	$21143_5 - 39873^{0}_{0}$	5305.304	5l		18843.818	$14465^{2}_{2} - 33309_2$
5336.785	50	1	18732.662	$14481^{6}_{6} - 33214_5$	5303.557	20	1	18850.025	$16783^{3}_{4} - 35633_4$
5336.315	40	1	18734.312	$15970_3 - 34704^{3}_{3}$	5303.483	75	3	18850.288	$12114^{2}_{2} - 30964_3$
5335.373	10	3	18737.620	$18011^{0}_{0} - 36749_6$	5303.334	50	2	18850.818	$13945^{3}_{3} - 32796_3$
5334.145	75l	1	18741.933	$20214^{3}_{3} - 38956_4$	5303.162	40	1	18851.429	$15493_4 - 34344^{3}_{3}$
5333.386	75b	1	18744.601	$5563_1 - 24307^{2}_{2}$	5302.779	1		18852.791	$19532_4 - 38385^{0}_{0}$
5333.200	8b		18745.254	$19039^{2}_{2} - 37784_2$	5302.407	10		18854.114	$18930^{3}_{3} - 37784_2$
5332.120	2		18749.051	$18069^{3}_{3} - 36818_2$	5300.524	300	5	18860.811	$7502_3 - 26363^{2}_{2}$
5331.749	50	2	18750.356	$11802_2 - 30553^{2}_{2}$	5300.321	4		18861.534	$15863_2 - 34725^{3}_{3}$
5331.481	8		18751.298	$12847_3 - 31599^{2}_{2}$	5299.787	2		18863.434	$19503^{3}_{3} - 38366_4$
5330.517	8		18754.689	$18053^{3}_{4} - 36808_3$	5299.376	2		18864.897	$13088_3 - 31953^{3}_{4}$
5330.340	5l		18755.312	$15970_3 - 34725^{3}_{3}$	5298.714	8	2	18867.254	$19713_3 - 38580^{3}_{4}$
5330.082	200b	5	18756.220	$7280_2 - 26036^{3}_{3}$	5298.559	75	2	18867.806	$10783^{2}_{2} - 29650_2$
5330.016	50b		18756.452	$14206^{3}_{4} - 32963_5$	5298.284	200	4	18868.785	$2869_3 - 21738^{2}_{2}$
5329.605	2		18757.899	$18930^{3}_{3} - 37688_3$	5297.844	100b	5	18870.352	$16346^{3}_{4} - 35216_5$
5328.009	8		18763.517	$21143_5 - 39906^{3}_{4}$	5297.746	300b	15	18870.701	$8800_4 - 27670^{3}_{3}$
5327.862	10		18764.035	$14032^{2}_{2} - 32796_3$	5296.845	50	2	18873.911	$18011^{0}_{0} - 36885_4$
5326.976	500r	40	18767.156	$8111_4 - 26878^{3}_{3}$	5296.279	300	5	18875.928	$9804_5 - 28680^{3}_{4}$
5326.278	100b	8	18769.615	$11241^{3}_{3} - 30011_3$	5295.674	50b	4b	18878.085	$17959_4 - 36837^{0}_{0}$
5326.192	50	2	18769.918	$18011^{0}_{0} - 36781_5$	5295.089	50	1	18880.170	$11877^{1}_{1} - 30758_2$
5325.434	100	2	18772.590	$11241^{3}_{3} - 30014_4$	5294.697	25b	1	18881.568	$15970_3 - 34851^{2}_{2}$
5324.591	10		18775.562	$12114^{2}_{2} - 30889_1$	5294.397	200	3	18882.638	$7502_3 - 26384^{3}_{4}$
5323.851	15l	3	18778.172	$19588^{0}_{0} - 38366_4$	5294.070	50	1	18883.804	$19532_4 - 38416^{3}_{3}$
5323.527	8	1	18779.315	$21645_4 - 40425^{3}_{4}$	5293.435	3	1	18886.070	$17411^{3}_{3} - 36297_4$
5323.406	150	3	18779.741	$19273_2 - 38053^{3}_{3}$	5293.137	50	1	18887.133	$21539^{3}_{4} - 40426_4$
5322.901	200	5	18781.523	$13088_3 - 31870^{2}_{2}$	5293.077	3		18887.347	$21165^{3}_{3} - 40052_4$
5321.873	2		18785.151	$20566^{3}_{4} - 39351_5$	5292.666	3		18888.814	$18930^{3}_{3} - 37819_4$
5321.691	3		18785.793	$19817^{1}_{1} - 38602_2$	5292.077	10		18890.916	$11241^{3}_{3} - 30132_2$
5319.742	8		18792.676	$16783^{3}_{4} - 35576_3$	5291.818	200	5	18891.840	$10526^{3}_{3} - 29418_2$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5291.638	3		18892.483	$14206\frac{3}{4} - 33099_3$	5253.534	8		19029.509	$20322\frac{5}{6} - 39351_5$
5289.624	75	2	18899.676	$13297_4 - 32197\frac{3}{5}$	5252.568	15		19033.009	$2869_3 - 21902\frac{3}{4}$
5287.648	3		18906.739	$13847_2 - 32754\frac{3}{5}$	5251.373	50l	2	19037.340	$18699_2 - 37736\frac{2}{3}$
5285.183	3h		18915.557	$20922\frac{2}{3} - 39837_3$	5250.874	50	1	19039.149	$0_2 - 19039\frac{2}{3}$
5283.697	50	2	18920.877	$11802_2 - 30723\frac{1}{2}$	5250.171	10		19041.698	$18574_1 - 37616\frac{1}{2}$
5282.552	15		18924.978	$17411\frac{3}{5} - 36336_3$	5248.587	10		19047.445	$16783\frac{3}{4} - 35831_3$
5282.402	200	4	18925.515	$14465\frac{2}{3} - 33390_1$	5248.199	20		19048.853	$17959_4 - 37008\frac{5}{6}$
5281.070	300	2	18930.288	$0_2 - 18930\frac{3}{5}$	5247.361	40		19051.895	$10783\frac{2}{3} - 29835_3$
5280.520	50		18932.260	$16217\frac{2}{3} - 35149_2$	5247.200	50b	2	19052.480	$8800_4 - 27852\frac{5}{6}$
5280.346	50	2	18932.884	$12847_3 - 31780\frac{3}{5}$	5245.698	10		19057.935	$19039\frac{2}{3} - 38097_2$
5279.766	2		18934.964	$14226_0 - 33161\frac{1}{2}$	5244.647	8b	1	19061.754	$19948\frac{3}{4} - 39010_3$
5279.200	50	1	18936.994	$15493_4 - 34430\frac{3}{5}$	5244.594	10b	1	19061.947	$18069\frac{3}{5} - 37131_3$
5277.404	10		18943.438	$14465\frac{2}{3} - 33408_3$	5244.594	10b	1	19061.947	$18930\frac{3}{5} - 37992_4$
5277.341	3		18943.665	$19273_2 - 38216\frac{3}{5}$	5243.746	50	1	19065.029	$14243\frac{1}{2} - 33309_2$
5277.147	75	1	18944.361	$6362_2 - 25306\frac{2}{3}$	5243.406	8		19066.265	$14204_5 - 33270\frac{3}{4}$
5276.198	2		18947.768	$21252\frac{2}{3} - 40200_3$	5243.237	3		19066.880	$18549_2 - 37616\frac{1}{2}$
5274.948	8	1	18952.258	$11601_1 - 30553\frac{2}{3}$	5243.120	3		19067.305	$14032\frac{2}{3} - 33099_3$
5274.581	5		18953.577	$20566\frac{3}{4} - 39520_4$	5242.687	20		19068.880	$20214\frac{3}{5} - 39283_4$
5274.391	75	3	18954.260	$16346\frac{3}{4} - 35300_5$	5241.858	50	20	19071.896	$13088_3 - 32160\frac{2}{3}$
5274.121	200	5	18955.230	$4961_4 - 23916\frac{3}{4}$	5241.223	8	1	19074.206	$17411\frac{3}{5} - 36485_2$
5273.595	2		18957.121	$15490\frac{5}{6} - 34447_4$	5241.153	8	1	19074.461	$18011\frac{5}{6} - 37085_4$
5273.531	40		18957.351	$18699_2 - 37656\frac{3}{5}$	5240.789	3		19075.786	$19713_3 - 38788\frac{3}{5}$
5273.134	100b	10	18958.778	$11802_2 - 30761\frac{3}{5}$	5240.789	3		19075.786	$19713_3 - 38788\frac{3}{5}$
5272.929	100	20	18959.515	$6362_2 - 25321\frac{3}{5}$	5240.341	2		19077.417	$18053\frac{3}{4} - 37131_3$
5272.092	5		18962.525	$18930\frac{3}{5} - 37892_4$	5239.984	2		19078.717	$21645_4 - 40724\frac{5}{6}$
5271.023	20	3	18966.371	$17166_5 - 36132\frac{5}{6}$	5239.550	50	3	19080.297	$6362_2 - 25442\frac{3}{5}$
5270.832	50	2	18967.058	$19986\frac{5}{6} - 38953_5$	5239.079	2		19082.012	$19273_2 - 38355\frac{2}{3}$
5269.794	75	4	18970.794	$15490\frac{5}{6} - 34460_5$	5238.812	75h	10	19082.985	$7280_2 - 26363\frac{2}{3}$
5268.539	2		18975.313	$21077\frac{5}{6} - 40052_4$	5237.989	3		19085.983	$19516\frac{2}{3} - 38602_2$
5268.158	2		18976.685	$16351_0 - 35328\frac{1}{2}$	5237.229	5	1	19088.753	$15618\frac{3}{5} - 34707_3$
5266.829	2		18981.474	$12114\frac{2}{3} - 31095_1$	5236.766	10	1	19090.440	$17398_3 - 36488\frac{2}{3}$
5266.710	300	15	18981.902	$3687_2 - 22669\frac{3}{5}$	5235.720	4	1	19094.254	$16346\frac{3}{4} - 35440_3$
5266.073	1		18984.199	$17398_3 - 36382\frac{3}{4}$	5234.243	75		19099.642	$14465\frac{2}{3} - 33564_3$
5265.081	10		18987.775	$15863_2 - 34851\frac{1}{2}$	5234.107	100	1	19100.138	$8243\frac{2}{3} - 27343_3$
5264.335	20		18990.466	$19817\frac{1}{2} - 38807_2$	5232.841	8		19104.759	$17411\frac{3}{5} - 36515_3$
5263.892	15b	1	18992.064	$13962_1 - 32954\frac{2}{3}$	5232.341	40b	2	19106.585	$19039\frac{2}{3} - 38145_3$
5262.621	50b	4	18996.651	$13297_4 - 32294\frac{3}{4}$	5232.278	25b	1	19106.815	$13847_2 - 32954\frac{2}{3}$
5262.024	5	1	18998.806	$15493_4 - 34492\frac{3}{4}$	5231.800	40	1	19108.561	$13088_3 - 32197\frac{3}{5}$
5261.530	50b	1	19000.590	$15166\frac{3}{5} - 34167_3$	5231.659	3		19109.076	$17166_5 - 36275\frac{5}{6}$
5261.474	50b	3	19000.792	$7795\frac{3}{4} - 26796_3$	5231.160	1000r	40	19110.899	$2558_0 - 21668\frac{1}{2}$
5260.106	200	8	19005.734	$7502_3 - 26508\frac{3}{5}$	5230.012	15		19115.093	$17073_1 - 36188\frac{2}{3}$
5259.779	75	2	19006.915	$7280_2 - 26287\frac{1}{2}$	5228.996	75	1	19118.807	$13175\frac{3}{4} - 32293_5$
5259.587	20	1	19007.609	$14206\frac{3}{4} - 33214_5$	5227.904	8		19122.801	$11601_1 - 30723\frac{1}{2}$
5259.353	3		19008.455	$19948\frac{3}{4} - 38956_4$	5227.461	8		19124.421	$10526\frac{3}{5} - 29650_2$
5258.908	8		19010.063	$11802_2 - 30812\frac{2}{3}$	5227.078	40		19125.823	$11802_2 - 30928\frac{1}{2}$
5258.779	5		19010.530	$16783\frac{3}{4} - 35794_4$	5226.527	50		19127.839	$9804_5 - 28932\frac{3}{4}$
5258.361	400r	25	19012.041	$3865_1 - 22877\frac{1}{2}$	5225.755	5	1	19130.665	$21645_4 - 40776\frac{3}{4}$
5258.212	150b	3	19012.580	$11601_1 - 30613\frac{5}{6}$	5225.518	4		19131.532	$12114\frac{2}{3} - 31245_2$
5257.607	4		19014.767	$15863_2 - 34878\frac{1}{2}$	5224.928	3		19133.693	$18614\frac{1}{2} - 37748_2$
5257.051	10	1	19016.778	$18069\frac{3}{5} - 37085_4$	5224.693	5		19134.553	$15166\frac{3}{5} - 34301_4$
5255.921	10b		19020.867	$2869_3 - 21890\frac{3}{5}$	5222.909	2		19141.089	$14465\frac{2}{3} - 33606_2$
5255.576	100	3	19022.115	$12847_3 - 31870\frac{2}{3}$	5222.765	40	1	19141.617	$13297_4 - 32439\frac{3}{4}$
5254.262	150l	8	19026.872	$13175\frac{3}{4} - 32202_5$	5222.268	50	1	19143.438	$14247\frac{5}{6} - 33390_1$
5254.111	40	4	19027.419	$12114\frac{2}{3} - 31141_3$	5220.928	100	1	19148.352	$8800_4 - 27948\frac{3}{4}$
5253.682	50	2	19028.973	$17398_3 - 36427\frac{3}{5}$	5220.707	100	1	19149.162	$8111_4 - 27260\frac{3}{5}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
5220.131	4		19151.275	$12114\frac{5}{2} - 31265_3$	5189.464	3		19264.448	$15166\frac{5}{3} - 34431_3$
5219.357	20	1	19154.115	$13945\frac{5}{3} - 33099_3$	5189.008	50	1	19266.141	$19986\frac{5}{6} - 39252_5$
5219.110	400r	15	19155.022	$8111_4 - 27266\frac{4}{4}$	5187.948	40		19270.077	$10414\frac{4}{4} - 29684_5$
5218.272	2		19158.098	$18053\frac{4}{4} - 37211_5$	5187.773	40	1	19270.727	$15970_3 - 35240\frac{3}{3}$
5217.284	8h		19161.726	$21539\frac{4}{4} - 40701_4$	5187.336	300	200	19272.350	$2869_3 - 22141\frac{3}{3}$
5217.109	2		19162.368	$18574_1 - 37736\frac{2}{2}$	5187.166	100	75b	19272.982	$11802_2 - 31075\frac{2}{2}$
5216.683	20		19163.933	$6362_2 - 25526\frac{1}{1}$	5186.412	100	75	19275.784	$5563_1 - 24838\frac{1}{1}$
5215.762	5		19167.317	$3687_2 - 22855\frac{3}{3}$	5185.895	15	2	19277.706	$15166\frac{3}{3} - 34444_2$
5214.414	4	1	19172.272	$19588\frac{0}{0} - 38760_4$	5185.215	100		19280.234	$15166\frac{3}{3} - 34447_4$
5213.930	2		19174.052	$18431_3 - 37605\frac{4}{4}$	5184.803	10		19281.766	$21143_5 - 40425\frac{4}{4}$
5213.485	75	2	19175.688	$11197\frac{0}{0} - 30372_6$	5184.452	100	3	19283.071	$13175\frac{4}{4} - 32458_4$
5213.350	400	5	19176.185	$7795\frac{4}{4} - 26971_4$	5183.336	50	3	19287.223	$16346\frac{4}{4} - 35633_4$
5212.681	15	1	19178.646	$10783\frac{2}{2} - 29961_1$	5183.086	50	15	19288.153	$7502_3 - 26790\frac{4}{4}$
5211.668	4		19182.374	$18809\frac{4}{4} - 37992_4$	5182.405	5		19290.688	$19516\frac{2}{2} - 38807_2$
5211.231	600r	25	19183.982	$3865_1 - 23049\frac{1}{1}$	5182.135	3	1	19291.693	$17224\frac{2}{2} - 36515_3$
5210.253	10	1	19187.583	$11802_2 - 30990\frac{3}{3}$	5181.553	8	1	19293.860	$2869_3 - 22163\frac{4}{4}$
5210.185	8	1	19187.834	$16217\frac{2}{2} - 35405_3$	5180.718	100	3	19296.969	$18809\frac{4}{4} - 38106_5$
5209.724	300	3	19189.531	$3687_2 - 22877\frac{1}{1}$	5180.406	3		19298.131	$4961_4 - 24259\frac{4}{4}$
5208.087	8		19195.563	$13847_2 - 33043\frac{3}{3}$	5180.184	4b		19298.958	$17354\frac{1}{1} - 36653_2$
5207.803	100	2	19196.610	$13088_3 - 32285\frac{3}{3}$	5179.140	20		19302.849	$11241\frac{3}{3} - 30544_2$
5207.670	20	1	19197.100	$19503\frac{3}{3} - 38700_4$	5178.852	3		19303.922	$19948\frac{4}{4} - 39252_5$
5207.084	50	1	19199.261	$13962_1 - 33161\frac{1}{1}$	5178.691	5h		19304.522	$19503\frac{3}{3} - 38807_2$
5206.990	3		19199.607	$17959_4 - 37159\frac{3}{3}$	5178.486	150	3	19305.286	$20214\frac{3}{3} - 39520_4$
5206.800	50	3	19200.308	$18011\frac{0}{0} - 37211_5$	5178.338	75	2	19305.838	$16783\frac{4}{4} - 36089_4$
5206.410	5		19201.746	$14206\frac{4}{4} - 33408_3$	5177.621	100	3	19308.512	$10526\frac{3}{3} - 29835_3$
5205.928	15	2	19203.524	$16217\frac{2}{2} - 35421_1$	5177.482	100	2	19309.030	$15736\frac{1}{1} - 35046_1$
5205.154	200	2	19206.379	$8111_4 - 27317\frac{3}{3}$	5176.961	500	50	19310.973	$11197\frac{0}{0} - 30508_5$
5203.850	300	25	19211.192	$14206\frac{4}{4} - 33418_4$	5176.546	8	3	19312.521	$12847_3 - 32160\frac{2}{2}$
5203.850	300	25	19211.192	$15493_4 - 34704\frac{3}{3}$	5176.402	75	1	19313.059	$4961_4 - 24274\frac{0}{0}$
5203.641	5		19211.964	$11601_1 - 30812\frac{2}{2}$	5176.297	5		19313.450	$22399\frac{0}{0} - 41712_5$
5202.410	5		19216.510	$17166_5 - 36382\frac{4}{4}$	5176.145	8		19314.017	$13847_2 - 33161\frac{1}{1}$
5202.007	75	3	19217.998	$11877\frac{1}{1} - 31095_1$	5175.911	100	3	19314.891	$12114\frac{2}{2} - 31429_1$
5199.323	300b	3	19227.919	$7280_2 - 26508\frac{3}{3}$	5175.323	100	2	19317.085	$5563_1 - 24880\frac{1}{1}$
5199.164	1000r	25b	19228.507	$3865_1 - 23093\frac{2}{2}$	5174.367	100	3	19320.654	$14206\frac{4}{4} - 33527_4$
5198.802	500	100d	19229.846	$10526\frac{3}{3} - 29756_4$	5174.242	100	75	19321.121	$18011\frac{0}{0} - 37332_6$
5198.162	4		19232.213	$15493_4 - 34725\frac{3}{3}$	5173.838	50		19322.629	$10526\frac{3}{3} - 29849_4$
5197.577	8		19234.378	$18069\frac{3}{3} - 37303_4$	5173.671	200	2	19323.253	$8243\frac{2}{2} - 27566_2$
5197.236	200	5	19235.640	$16346\frac{4}{4} - 35582_5$	5172.691	40		19326.914	$16351_0 - 35678\frac{1}{1}$
5196.574	5		19238.090	$18069\frac{3}{3} - 37307_3$	5172.479	75	3	19327.706	$11601_1 - 30928\frac{1}{1}$
5195.815	500	8	19240.900	$4961_4 - 24202\frac{4}{4}$	5172.212	10		19328.704	$21902\frac{4}{4} - 41230_4$
5195.581	15	4	19241.767	$14032\frac{2}{2} - 33273_1$	5170.631	1		19334.614	$13962_1 - 33297\frac{2}{2}$
5194.456	400	12	19245.934	$9804_5 - 29050\frac{0}{0}$	5170.569	1		19334.846	$21645_4 - 40980\frac{3}{3}$
5193.946	75	2	19247.824	$17501\frac{0}{0} - 36749_6$	5170.300	8		19335.852	$18809\frac{4}{4} - 38145_3$
5193.636	8b		19248.973	$7795\frac{4}{4} - 27044_3$	5169.019	4		19340.643	$8800_4 - 28140\frac{4}{4}$
5193.406	15	1	19249.825	$18053\frac{4}{4} - 37303_4$	5168.920	100	1	19341.014	$6362_2 - 25703\frac{2}{2}$
5192.746	50	1	19252.272	$14206\frac{4}{4} - 33459_4$	5168.583	100	2	19342.275	$10414\frac{4}{4} - 29756_4$
5192.409	4	1	19253.522	$18053\frac{4}{4} - 37307_3$	5166.650	40b	1	19349.511	$10783\frac{2}{2} - 30132_2$
5192.176	5		19254.385	$15618\frac{3}{3} - 34873_4$	5166.618	10b		19349.631	$16783\frac{4}{4} - 36133_5$
5191.986	20	1	19255.090	$15618\frac{3}{3} - 34874_3$	5166.392	4		19350.477	$13088_3 - 32439\frac{4}{4}$
5191.919	2		19255.339	$18699_2 - 37954\frac{3}{3}$	5166.245	50	1	19351.028	$18053\frac{4}{4} - 37404_3$
5191.715	4	1	19256.095	$14465\frac{2}{2} - 33721_2$	5165.610	100	5	19353.407	$18699_2 - 38053\frac{3}{3}$
5191.487	3		19256.941	$20423\frac{1}{1} - 39680_2$	5165.055	20	3	19355.486	$11197\frac{0}{0} - 30552_4$
5191.337	15		19257.497	$19503\frac{3}{3} - 38760_4$	5164.975	20	1	19355.786	$14204_5 - 33560\frac{4}{4}$
5190.368	8		19261.093	$17224\frac{2}{2} - 36485_2$	5164.789	3l	1	19356.483	$22399\frac{0}{0} - 41755_4$
5190.219	5		19261.645	$21165\frac{3}{3} - 40426_4$	5164.400	50	2	19357.941	$14206\frac{4}{4} - 33564_3$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
5164.206	40	1	19358.669	$14032^{9}_{2} - 33390_{1}$
5164.108	40	1	19359.036	$16217^{9}_{2} - 35576_{3}$
5163.459	400	250	19361.469	$3687_{2} - 23049^{?}_{1}$
5163.236	25	1	19362.305	$14243^{?}_{1} - 33606_{2}$
5162.852	8		19363.745	$13945^{9}_{3} - 33309_{2}$
5162.740	4		19364.166	$17411^{9}_{3} - 36775_{3}$
5162.673	15	1	19364.417	$17398_{3} - 36762^{9}_{3}$
5162.553	50	8	19364.867	$19588^{9}_{6} - 38953_{5}$
5162.356	75	5	19365.606	$19986^{9}_{6} - 39351_{5}$
5161.540	400	8	19368.667	$8243^{9}_{2} - 27612_{3}$
5160.718	300	50	19371.752	$7280_{2} - 26651^{9}_{2}$
5160.280	5		19373.396	$19948^{9}_{4} - 39321_{3}$
5159.621	100	2	19375.871	$7502_{3} - 26878^{9}_{3}$
5159.451	20	2	19376.509	$13175^{9}_{4} - 32551_{3}$
5159.339	15		19376.930	$15863_{2} - 35240^{9}_{3}$
5158.605	800r	50	19379.687	$2869_{3} - 22248^{9}_{2}$
5157.426	100	2	19384.117	$17501^{9}_{6} - 36885_{4}$
5154.243	500	40	19396.088	$7795^{9}_{4} - 27191_{5}$
5153.975	4b		19397.096	$17411^{9}_{3} - 36808_{3}$
5152.305	4		19403.383	$19948^{9}_{4} - 39351_{5}$
5151.612	500	15	19405.993	$3687_{2} - 23093^{9}_{2}$
5151.382	50	1	19406.860	$17411^{9}_{3} - 36818_{2}$
5150.701	50	2	19409.426	$11241^{9}_{3} - 30651_{3}$
5149.816	100	10	19412.761	$15736^{?}_{1} - 35149_{2}$
5149.210	300	3	19415.046	$13088_{3} - 32503^{9}_{2}$
5147.135	40	1	19422.873	$12114^{9}_{2} - 31537_{3}$
5146.059	200	10	19426.934	$16783^{9}_{4} - 36210_{5}$
5143.916	300b	15	19435.027	$10414^{9}_{4} - 29849_{4}$
5143.823	150b	4	19435.379	$14226_{0} - 33662^{?}_{1}$
5141.264	50	1	19445.052	$14243^{?}_{1} - 33689_{2}$
5140.983	3	1	19446.115	$12847_{3} - 32294^{9}_{4}$
5140.771	200b	5	19446.917	$6362_{2} - 25809^{?}_{1}$
5140.716	100b	20b	19447.125	$13847_{2} - 33294^{9}_{3}$
5140.543	50	1	19447.779	$16346^{9}_{4} - 35794_{4}$
5140.126	40	50	19449.357	$13847_{2} - 33297^{9}_{2}$
5139.314	3		19452.430	$18069^{9}_{3} - 37521_{3}$
5138.961	15		19453.766	$19503^{9}_{3} - 38956_{4}$
5138.934	15		19453.868	$21902^{9}_{4} - 41356_{5}$
5138.086	8	1	19457.079	$13297_{4} - 32754^{9}_{3}$
5137.531	10b		19459.181	$21902^{9}_{4} - 41361_{3}$
5137.475	150b	1	19459.393	$4961_{4} - 24421^{9}_{3}$
5137.375	2		19459.772	$17166_{5} - 36625^{9}_{6}$
5137.357	1		19459.840	$17166_{5} - 36625^{9}_{6}$
5137.300	3		19460.056	$17847^{9}_{2} - 37307_{3}$
5136.396	15		19463.481	$17354^{?}_{1} - 36818_{2}$
5136.121	100	1	19464.523	$13962_{1} - 33427^{9}_{2}$
5136.067	10b		19464.728	$15863_{2} - 35328^{?}_{1}$
5135.856	5	1	19465.527	$20214^{9}_{3} - 39680_{2}$
5135.585	75	1	19466.554	$19532_{4} - 38998^{9}_{3}$
5134.746	300	3	19469.735	$2869_{3} - 22338^{9}_{3}$
5134.572	50	2	19470.395	$15618^{9}_{3} - 35089_{3}$
5134.337	15	1	19471.286	$21890^{9}_{3} - 41361_{3}$
5133.922	3		19472.860	$13945^{9}_{3} - 33418_{4}$
5133.751	50	1	19473.509	$17398_{3} - 36871^{9}_{2}$
5133.602	5		19474.074	$17411^{9}_{3} - 36885_{4}$
5133.389	10		19474.882	$11601_{1} - 31075^{9}_{2}$
5132.748	50	1	19477.314	$14243^{?}_{1} - 33721_{2}$
5131.992	150	1	19480.183	$11802_{2} - 31283^{9}_{3}$
5131.257	5		19482.973	$17073_{1} - 36556^{?}_{1}$
5130.814	20b		19484.656	$16346^{9}_{4} - 35831_{3}$
5130.777	20b		19484.796	$10526^{9}_{3} - 30011_{3}$
5130.235	150	2	19486.855	$13088_{3} - 32575^{9}_{2}$
5129.988	8		19487.793	$10526^{9}_{3} - 30014_{4}$
5129.656	20		19489.054	$21645_{4} - 41134^{9}_{4}$
5129.206	50	1	19490.764	$19039^{9}_{2} - 38529_{3}$
5128.891	2		19491.961	$15970_{3} - 35462^{9}_{3}$
5128.574	20		19493.166	$19516^{9}_{2} - 39010_{3}$
5128.489	300	5	19493.489	$7502_{3} - 26995^{9}_{3}$
5125.950	200	3	19503.144	$0_{2} - 19503^{9}_{3}$
5125.827	50b	1	19503.612	$18549_{2} - 38053^{9}_{3}$
5125.797	50b	2	19503.727	$10783^{9}_{2} - 30286_{1}$
5125.307	5b		19505.591	$21077^{9}_{6} - 40582_{5}$
5124.925	3		19507.045	$19503^{9}_{3} - 39010_{3}$
5123.239	50	3	19513.464	$16783^{9}_{4} - 36297_{4}$
5123.131	50		19513.876	$13945^{9}_{3} - 33459_{4}$
5123.006	8		19514.352	$18574_{1} - 38088^{9}_{2}$
5122.226	10		19517.323	$18699_{2} - 38216^{9}_{3}$
5121.953	4		19518.364	$18431_{3} - 37950^{9}_{4}$
5121.699	2		19519.332	$22508^{9}_{2} - 42027_{2}$
5120.593	4		19523.548	$22163^{9}_{4} - 41686_{3}$
5119.867	20		19526.316	$14247^{9}_{6} - 33773_{1}$
5119.000	1		19529.623	$14243^{?}_{1} - 33773_{1}$
5118.176	15		19532.767	$14032^{9}_{2} - 33564_{3}$
5116.661	2h		19538.551	$18431_{3} - 37970^{9}_{2}$
5115.045	500r	40	19544.724	$3865_{1} - 23410^{9}_{6}$
5114.065	8	1	19548.469	$7795^{9}_{4} - 27343_{3}$
5113.733	2		19549.738	$22163^{9}_{4} - 41712_{5}$
5113.050	10	3	19552.349	$16783^{9}_{4} - 36336_{3}$
5111.911	4		19556.706	$18809^{9}_{4} - 38366_{4}$
5111.685	25	2	19557.570	$17847^{9}_{2} - 37404_{3}$
5111.280	150	4	19559.120	$7502_{3} - 27061^{9}_{2}$
5111.063	200	5	19559.951	$8111_{4} - 27670^{9}_{3}$
5110.555	150	2	19561.895	$13175^{9}_{4} - 32737_{5}$
5110.216	25		19563.192	$15970_{3} - 35533^{9}_{2}$
5110.056	50	2	19563.805	$19039^{9}_{2} - 38602_{2}$
5109.735	200	3	19565.034	$13297_{4} - 32862^{9}_{4}$
5107.970	3		19571.794	$19948^{9}_{4} - 39520_{4}$
5107.338	5		19574.216	$14032^{9}_{2} - 33606_{2}$
5106.023	5		19579.257	$13847_{2} - 33427^{9}_{2}$
5105.242	5		19582.252	$13945^{9}_{3} - 33527_{4}$
5102.509	3		19592.741	$22163^{9}_{4} - 41755_{4}$
5102.228	2		19593.820	$17224^{9}_{2} - 36818_{2}$
5101.799	40	1	19595.468	$14204_{5} - 33799^{9}_{4}$
5101.344	40	1	19597.215	$10414^{9}_{4} - 30011_{3}$
5101.130	300	4	19598.037	$7280_{2} - 26878^{9}_{3}$
5100.621	300b		19599.993	$4961_{4} - 24561^{9}_{3}$
5100.573	150b	2b	19600.178	$10414^{9}_{4} - 30014_{4}$
5099.030	50	1	19606.109	$10526^{9}_{3} - 30132_{2}$
5098.933	150	2	19606.482	$13175^{9}_{4} - 32781_{4}$
5097.644	8	1	19611.439	$17959_{4} - 37571^{9}_{6}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
5097.039	2		19613.767	$16217\frac{2}{2} - 35831_3$
5096.484	500	5	19615.903	$3865_1 - 23481\frac{1}{1}$
5095.644	5	1	19619.137	$18069\frac{3}{3} - 37688_3$
5095.539	3		19619.541	$13945\frac{3}{3} - 33564_3$
5095.149	20h		19621.043	$13175\frac{4}{4} - 32796_3$
5095.074	300	50	19621.331	$18431_3 - 38053\frac{3}{3}$
5094.546	20	3	19623.365	$21738\frac{2}{2} - 41361_3$
5094.334	2		19624.182	$21077\frac{0}{0} - 40701_4$
5094.127	200	50	19624.979	$14206\frac{4}{4} - 33831_4$
5092.023	1		19633.088	$21143_5 - 40776\frac{2}{4}$
5091.641	2h		19634.561	$17166_5 - 36800\frac{4}{4}$
5090.548	300	2	19638.777	$2869_3 - 22508\frac{2}{2}$
5090.052	400	5	19640.690	$14204_5 - 33844\frac{0}{0}$
5086.180	150	3	19655.642	$12847_3 - 32503\frac{2}{2}$
5085.839	15	1	19656.960	$14032\frac{2}{2} - 33689_2$
5085.761	4		19657.261	$18431_3 - 38088\frac{2}{2}$
5084.997	200	8	19660.215	$12114\frac{2}{2} - 31774_3$
5084.800	150		19660.976	$13945\frac{3}{3} - 33606_2$
5084.038	15	1	19663.923	$19588\frac{0}{0} - 39252_5$
5083.516	1		19665.942	$13088_3 - 32754\frac{3}{3}$
5082.625	100	8	19669.390	$15863_2 - 35533\frac{2}{2}$
5082.005	20	8	19671.789	$19503\frac{3}{3} - 39174_3$
5081.778	15	2	19672.668	$18930\frac{3}{3} - 38602_2$
5081.449	200	4	19673.942	$6362_2 - 26036\frac{3}{3}$
5081.326	2		19674.418	$17847\frac{2}{2} - 37521_3$
5080.157	1		19678.945	$18069\frac{3}{3} - 37748_2$
5079.911	15	2	19679.898	$8800_4 - 28480\frac{4}{4}$
5078.848	40	1	19684.017	$15736\frac{1}{1} - 35421_1$
5077.510	5	1	19689.204	$14032\frac{2}{2} - 33721_2$
5075.955	50	1	19695.236	$19039\frac{2}{2} - 38734_3$
5074.807	10		19699.691	$13962_1 - 33662\frac{1}{1}$
5074.649	25	1	19700.304	$7795\frac{4}{4} - 27495_4$
5072.885	150	1	19707.155	$15166\frac{3}{3} - 34874_3$
5070.781	75	2	19715.332	$18069\frac{3}{3} - 37784_2$
5070.456	50	1	19716.595	$18699_2 - 38416\frac{3}{3}$
5069.626	1		19719.823	$17411\frac{3}{3} - 37131_3$
5069.337	200	4	19720.948	$16554_6 - 36275\frac{0}{0}$
5069.093	20	2	19721.897	$21165\frac{3}{3} - 40886_2$
5068.829	25	2	19722.924	$11241\frac{3}{3} - 30964_3$
5067.974	1000r	75	19726.251	$7795\frac{4}{4} - 27521_4$
5067.807	20		19726.901	$15490\frac{0}{0} - 35216_5$
5067.667	5	5	19727.446	$12847_3 - 32575\frac{2}{2}$
5067.138	50	2	19729.506	$18549_2 - 38278\frac{1}{1}$
5066.959	80	20	19730.203	$20322\frac{0}{0} - 40052_4$
5066.777	200	40	19730.911	$18011\frac{0}{0} - 37742_6$
5066.461	4		19732.142	$16783\frac{4}{4} - 36515_3$
5066.134	300	10	19733.416	$11197\frac{0}{0} - 30930_6$
5065.190	300	5	19737.093	$8243\frac{2}{2} - 27980_3$
5064.945	300r	8	19738.048	$3865_1 - 23603\frac{2}{2}$
5064.601	300	40	19739.389	$4961_4 - 24701\frac{0}{0}$
5064.004	100b	2d	19741.716	$8111_4 - 27852\frac{0}{0}$
5063.658	8	1	19743.065	$16346\frac{4}{4} - 36089_4$
5063.565	20h		19743.427	$13847_2 - 33591\frac{3}{3}$
5063.514	200l	50l	19743.626	$5563_1 - 25306\frac{2}{2}$
5062.932	300	5	19745.896	$13297_4 - 33043\frac{3}{3}$
5062.494	50	2	19747.604	$15493_4 - 35240\frac{3}{3}$
5061.654	200	5	19750.881	$6362_2 - 26113\frac{2}{2}$
5060.366	3		19755.908	$13962_1 - 33718\frac{2}{2}$
5059.861	400b	75	19757.880	$7502_3 - 27260\frac{3}{3}$
5059.021	8	1	19761.161	$17398_3 - 37159\frac{3}{3}$
5058.446	100	3	19763.407	$17073_1 - 36837\frac{1}{1}$
5058.446	100	3	19763.407	$19588\frac{0}{0} - 39351_5$
5058.359	200	3	19763.747	$7502_3 - 27266\frac{4}{4}$
5057.137	5		19768.522	$19039\frac{2}{2} - 38807_2$
5056.766	10		19769.973	$18930\frac{3}{3} - 38700_4$
5056.194	50	2	19772.209	$13962_1 - 33734\frac{2}{2}$
5055.751	10b		19773.942	$13088_3 - 32862\frac{4}{4}$
5055.225	300	4	19775.999	$13945\frac{3}{3} - 33721_2$
5054.493	3		19778.863	$19532_4 - 39311\frac{4}{4}$
5053.067	3		19784.445	$21902\frac{4}{4} - 41686_3$
5052.854	8	1	19785.279	$18431_3 - 38216\frac{3}{3}$
5052.448	15		19786.869	$16346\frac{4}{4} - 36133_5$
5051.885	500	5	19789.074	$8800_4 - 28589\frac{3}{3}$
5050.780	300	5	19793.403	$3687_2 - 23481\frac{1}{1}$
5050.029	5b		19796.347	$11802_2 - 31599\frac{2}{2}$
5049.976	10b		19796.554	$7795\frac{4}{4} - 27591_5$
5049.976	10b		19796.554	$21890\frac{3}{3} - 41686_3$
5049.841	50b	1	19797.083	$14204_5 - 34001\frac{4}{4}$
5049.580	40	8	19798.107	$17073_1 - 36871\frac{2}{2}$
5048.937	20	1	19800.628	$2869_3 - 22669\frac{3}{3}$
5047.600	2		19805.873	$18549_2 - 38355\frac{2}{2}$
5047.122	5h	1	19807.748	$18011\frac{0}{0} - 37819_4$
5047.047	150b	5	19808.043	$4961_4 - 24769\frac{3}{3}$
5045.417	3		19814.442	$13847_2 - 33662\frac{1}{1}$
5045.252	100	5	19815.090	$7502_3 - 27317\frac{3}{3}$
5044.715	400r	8	19817.199	$0_2 - 19817\frac{1}{1}$
5044.349	5	1	19818.637	$19503\frac{3}{3} - 39321_3$
5043.520	75	15l	19821.895	$15618\frac{3}{3} - 35440_3$
5041.514	2		19829.782	$16217\frac{2}{2} - 36047_2$
5041.377	3		19830.320	$18930\frac{3}{3} - 38760_4$
5041.126	150	5	19831.308	$17501\frac{0}{0} - 37332_6$
5040.683	25l	1	19833.051	$3687_2 - 23521\frac{3}{3}$
5040.032	2		19835.612	$17398_3 - 37234\frac{2}{2}$
5039.717	1		19836.852	$18053\frac{4}{4} - 37890_5$
5039.529	50	1	19837.592	$8111_4 - 27948\frac{4}{4}$
5039.231	300r	8l	19838.765	$2558_0 - 22396\frac{1}{1}$
5038.618	1		19841.179	$17847\frac{2}{2} - 37688_3$
5038.306	75	3	19842.407	$15970_3 - 35812\frac{3}{3}$
5036.623	3		19849.038	$19713_3 - 39562\frac{4}{4}$
5035.466	5		19853.598	$21902\frac{4}{4} - 41755_4$
5034.297	100	2	19858.209	$15493_4 - 35351\frac{4}{4}$
5033.010	2		19863.286	$19817\frac{1}{1} - 39680_2$
5032.786	1		19864.171	$16346\frac{4}{4} - 36210_5$
5032.119	4		19866.803	$18549_2 - 38416\frac{3}{3}$
5031.815	10		19868.004	$10783\frac{2}{2} - 30651_3$
5031.148	20		19870.638	$13847_2 - 33718\frac{2}{2}$
5030.116	2		19874.714	$18431_3 - 38306\frac{4}{4}$
5030.031	3		19875.050	$17166_5 - 37041\frac{4}{4}$
5029.893	200	3	19875.595	$3865_1 - 23741\frac{1}{1}$
5029.013	75	2	19879.073	$18011\frac{0}{0} - 37890_5$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
5028.656	300b	15	19880.485	$8800_4 - 28680^{\circ}_{4}$
5027.679	5		19884.348	$14226_0 - 34111^{\circ}_{1}$
5027.318	2		19885.776	$22141^{\circ}_{3} - 42027_2$
5027.122	4		19886.551	$13945^{\circ}_{3} - 33831_4$
5027.024	5		19886.939	$13847_2 - 33734^{\circ}_{2}$
5026.956	5		19887.208	$3865_1 - 23752^{\circ}_{2}$
5026.159	5		19890.361	$18809^{\circ}_{4} - 38700_4$
5024.110	8		19898.473	$19713_3 - 39611^{\circ}_{3}$
5023.709	50	1	19900.061	$11241^{\circ}_{3} - 31141_3$
5023.486	50	1	19900.945	$17847^{\circ}_{2} - 37748_2$
5022.070	5		19906.556	$12847_3 - 32754^{\circ}_{3}$
5022.005	75	2	19906.813	$9804_5 - 29711^{\circ}_{0}$
5021.254	75	2	19909.791	$11802_2 - 31712^{\circ}_{1}$
5019.806	200	25	19915.534	$3687_2 - 23603^{\circ}_{2}$
5019.752	10b		19915.748	$15970_3 - 35885^{\circ}_{2}$
5018.059	150	5	19922.467	$15166^{\circ}_{3} - 35089_3$
5017.877	10	2	19923.190	$18069^{\circ}_{3} - 37992_4$
5017.769	10	2	19923.619	$18431_3 - 38355^{\circ}_{2}$
5017.589	5		19924.333	$13175^{\circ}_{4} - 33099_3$
5017.510	100	15	19924.647	$6362_2 - 26287^{\circ}_{1}$
5016.951	8		19926.867	$12114^{\circ}_{2} - 32041_2$
5016.535	40	2	19928.520	$9804_5 - 29733^{\circ}_{0}$
5012.274	5		19945.461	$7502_3 - 27447^{\circ}_{2}$
5011.478	75	4	19948.629	$15863_2 - 35812^{\circ}_{3}$
5011.478	75	4	19948.629	$21738^{\circ}_{2} - 41686_3$
5010.951	100	2	19950.727	$18809^{\circ}_{4} - 38760_4$
5010.417	50	4	19952.853	$13847_2 - 33800^{\circ}_{3}$
5009.938	50b		19954.761	$13088_3 - 33043^{\circ}_{3}$
5009.240	10	1	19957.541	$15618^{\circ}_{3} - 35576_3$
5008.481	2		19960.565	$14206^{\circ}_{4} - 34167_3$
5007.087	5		19966.123	$14465^{\circ}_{2} - 34431_3$
5006.405	5		19968.842	$15493_4 - 35462^{\circ}_{3}$
5006.073	1		19970.167	$18699_2 - 38669^{\circ}_{2}$
5005.970	20	5	19970.578	$20522^{\circ}_{2} - 40493_3$
5005.334	15	1	19973.115	$13297_4 - 33270^{\circ}_{4}$
5004.900	2		19974.847	$10783^{\circ}_{2} - 30758_2$
5004.685	1		19975.705	$18699_2 - 38675^{\circ}_{3}$
5004.128	150	10	19977.929	$11802_2 - 31780^{\circ}_{3}$
5004.001	50	3	19978.436	$14204_5 - 34182^{\circ}_{0}$
5003.857	20	2	19979.011	$14481^{\circ}_{8} - 34460_5$
5003.767	3		19979.370	$14465^{\circ}_{2} - 34444_2$
5003.597	75	4	19980.049	$7280_2 - 27260^{\circ}_{3}$
5003.385	10s	2	19980.895	$18011^{\circ}_{6} - 37992_4$
5002.898	15	3	19982.840	$15166^{\circ}_{3} - 35149_2$
5002.472	3		19984.542	$18431_3 - 38416^{\circ}_{3}$
5002.225	3		19985.529	$20214^{\circ}_{3} - 40200_3$
5002.097	500r	40	19986.040	$2869_3 - 22855^{\circ}_{3}$
5001.450	8	1	19988.626	$18614^{\circ}_{1} - 38602_2$
5001.068	2		19990.152	$17959_4 - 37950^{\circ}_{4}$
5001.068	2		19990.152	$17959_4 - 37950^{\circ}_{4}$
5000.730	15	1	19991.504	$16783^{\circ}_{4} - 36775_3$
5000.252	100	25d	19993.414	$17411^{\circ}_{3} - 37404_3$
4999.841	2		19995.058	$17959_4 - 37954^{\circ}_{3}$
4999.239	10	2	19997.466	$16783^{\circ}_{4} - 36781_5$
4998.419	1		20000.746	$6362_2 - 26363^{\circ}_{2}$
4997.566	3		20004.160	$11241^{\circ}_{3} - 31245_2$
4996.229	5	1	20009.513	$16351_0 - 36361^{\circ}_{1}$
4994.982	10		20014.509	$12847_3 - 32862^{\circ}_{4}$
4994.891	5		20014.873	$15618^{\circ}_{3} - 35633_4$
4994.576	10	3	20016.135	$20566^{\circ}_{4} - 40582_5$
4994.105	50	2	20018.023	$10526^{\circ}_{3} - 30544_2$
4993.749	50	4	20019.450	$4961_4 - 24981^{\circ}_{3}$
4993.111	1		20022.008	$15863_2 - 35885^{\circ}_{2}$
4992.638	20	5	20023.905	$11241^{\circ}_{3} - 31265_3$
4992.375	8	2	20024.960	$19227^{\circ}_{6} - 39252_5$
4992.125	15	2	20025.963	$10526^{\circ}_{3} - 30552_4$
4991.603	1		20028.057	$18069^{\circ}_{3} - 38097_2$
4989.309	150	10	20037.265	$7280_2 - 27317^{\circ}_{3}$
4988.772	4		20039.422	$13175^{\circ}_{4} - 33214_5$
4988.262	1		20041.471	$20054_2 - 40096^{\circ}_{2}$
4985.948	50	3	20050.772	$14247^{\circ}_{6} - 34298_1$
4985.373	300	10	20053.085	$3687_2 - 23741^{\circ}_{1}$
4985.125	8		20054.082	$14243^{\circ}_{1} - 34298_1$
4982.488	150	25h	20064.696	$3687_2 - 23752^{\circ}_{2}$
4981.877	4l		20067.157	$11802_2 - 31870^{\circ}_{2}$
4980.757	20	3	20071.669	$16554_6 - 36625^{\circ}_{6}$
4980.186	150	10	20073.970	$11197^{\circ}_{6} - 31271_5$
4979.521	4b		20076.651	$9804_5 - 29881^{\circ}_{4}$
4979.521	4b		20076.651	$18069^{\circ}_{3} - 38145_3$
4978.727	2		20079.853	$18930^{\circ}_{3} - 39010_3$
4977.522	5		20084.714	$8800_4 - 28884^{\circ}_{3}$
4977.389	8	1	20085.251	$11241^{\circ}_{3} - 31326_4$
4976.471	1		20088.956	$20522^{\circ}_{2} - 40611_2$
4976.406	1		20089.218	$18699_2 - 38788^{\circ}_{3}$
4975.524	5		20092.779	$15970_3 - 36062^{\circ}_{4}$
4975.442	3		20093.110	$17959_4 - 38053^{\circ}_{3}$
4975.254	2		20093.869	$10414^{\circ}_{4} - 30508_5$
4975.088	10	1	20094.540	$14206^{\circ}_{4} - 34301_4$
4972.754	20	2	20103.971	$15970_3 - 36074^{\circ}_{3}$
4972.258	15	1	20105.977	$19588^{\circ}_{6} - 39694_5$
4972.057	40	1	20106.789	$10783^{\circ}_{2} - 30889_1$
4971.553	2		20108.828	$21252^{\circ}_{2} - 41361_3$
4970.074	150b	2	20114.812	$8243^{\circ}_{2} - 28358_3$
4969.518	2		20117.062	$18069^{\circ}_{3} - 38186_4$
4968.753	200	20	20120.159	$13847_2 - 33967^{\circ}_{3}$
4967.649	5		20124.631	$10526^{\circ}_{3} - 30651_3$
4967.334	5	1	20125.907	$18549_2 - 38675^{\circ}_{3}$
4967.334	5	1	20125.907	$21594_3 - 41720^{\circ}_{2}$
4965.731	200	10	20132.404	$8800_4 - 28932^{\circ}_{4}$
4964.538	2		20137.242	$21890^{\circ}_{3} - 42027_2$
4964.255	10	2	20138.390	$10414^{\circ}_{4} - 30552_4$
4963.763	75	50	20140.386	$14204_5 - 34344^{\circ}_{4}$
4963.031	8		20143.356	$18809^{\circ}_{4} - 38953_5$
4962.466	5		20145.650	$6362_2 - 26508^{\circ}_{3}$
4961.724	200	10	20148.662	$13962_1 - 34111^{\circ}_{1}$
4958.878	2		20160.226	$17073_1 - 37234^{\circ}_{2}$
4958.093	50	2	20163.418	$11877^{\circ}_{1} - 32041_2$
4957.057	15		20167.632	$7280_2 - 27447^{\circ}_{2}$
4956.798	20b		20168.685	$7502_3 - 27670^{\circ}_{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
4956.637	50	2	20169.340	$16346^{4}_{4} - 36515_{3}$	4924.246	75b	2	20302.010	$16783^{0}_{4} - 37085_{4}$
4955.303	3		20174.770	$18011^{0}_{6} - 38186_{4}$	4923.690	5		20304.302	$15490^{0}_{6} - 35794_{4}$
4953.936	25	3	20180.337	$17224^{2}_{2} - 37404_{3}$	4922.338	2		20309.879	$15490^{0}_{6} - 35799_{6}$
4953.646	2		20181.519	$10783^{2}_{2} - 30964_{3}$	4922.231	5		20310.321	$15736^{0}_{1} - 36047_{2}$
4953.529	50	10	20181.995	$13088_{3} - 33270^{4}_{0}$	4921.653	40b		20312.706	$10783^{2}_{2} - 31095_{1}$
4952.688	40	3	20185.422	$7795^{4}_{4} - 27980_{3}$	4920.624	50	2	20316.954	$3865_{1} - 24182^{2}_{2}$
4952.009	2		20188.190	$20423^{0}_{1} - 40611_{2}$	4920.053	75b	25s	20319.312	$15493_{4} - 35812^{3}_{3}$
4950.755	8		20193.303	$18614^{0}_{1} - 38807_{2}$	4920.018	75b	2	20319.456	$2558_{0} - 22877^{0}_{1}$
4950.250	150	10	20195.363	$12847_{3} - 33043^{3}_{3}$	4918.659	3		20325.070	$15863_{2} - 36188^{2}_{2}$
4949.065	2		20200.199	$20054_{2} - 40254^{3}_{3}$	4916.383	2h		20334.479	$19503^{3}_{3} - 39837_{3}$
4948.964	8		20200.611	$14243^{0}_{1} - 34444_{2}$	4915.823	10	1	20336.796	$17411^{3}_{3} - 37748_{2}$
4948.565	1		20202.240	$23655^{4}_{4} - 43857_{5}$	4915.416	50	1	20338.480	$13088_{3} - 33427^{2}_{2}$
4947.015	5		20208.570	$13088_{3} - 33297^{2}_{2}$	4913.480	5	1	20346.493	$17959_{4} - 38306^{4}_{4}$
4946.220	2		20211.818	$20214^{3}_{3} - 40426_{4}$	4912.043	10	1	20352.445	$13175^{3}_{4} - 33527_{4}$
4945.458	200r	10	20214.932	$0_{2} - 20214^{3}_{3}$	4911.784	2		20353.519	$18930^{3}_{3} - 39283_{4}$
4943.130	50b	2	20224.452	$14206^{3}_{4} - 34431_{3}$	4911.380	200	10	20355.193	$9804_{5} - 30160^{4}_{4}$
4943.064	200b	10	20224.722	$2869_{3} - 23093^{2}_{2}$	4911.380	200	10	20355.193	$18011^{0}_{6} - 38366_{4}$
4941.415	15	1	20231.471	$10526^{3}_{3} - 30758_{2}$	4910.807	100b	2	20357.568	$11802_{2} - 32160^{2}_{2}$
4940.907	20	2	20233.551	$13175^{4}_{4} - 33408_{3}$	4910.792	100b	2	20357.630	$8800_{4} - 29157^{3}_{3}$
4940.057	5		20237.033	$10414^{4}_{4} - 30651_{3}$	4910.549	15	1	20358.637	$10783^{2}_{2} - 31141_{3}$
4939.642	300r	15	20238.733	$7795^{3}_{4} - 28034_{5}$	4910.158	100	4	20360.259	$4961_{4} - 25321^{3}_{3}$
4939.270	75	2	20240.257	$14206^{3}_{4} - 34447_{4}$	4909.844	50	3	20361.561	$13962_{1} - 34324^{2}_{2}$
4939.059	10	1	20241.122	$17501^{0}_{6} - 37742_{6}$	4909.213	15	1	20364.178	$14226_{0} - 34591^{0}_{1}$
4938.720	3		20242.511	$14465^{2}_{2} - 34707_{3}$	4909.010	8	1	20365.020	$18809^{3}_{4} - 39174_{3}$
4938.597	15	1	20243.015	$13175^{4}_{4} - 33418_{4}$	4908.478	100	1	20367.227	$14481^{0}_{8} - 34849_{5}$
4938.439	10	1	20243.663	$18431_{3} - 38675^{3}_{3}$	4908.012	5		20369.161	$8111_{4} - 28480^{3}_{4}$
4938.283	15		20244.302	$2869_{3} - 23113^{3}_{4}$	4907.044	50	2	20373.179	$17411^{3}_{3} - 37784_{2}$
4938.206	20	2	20244.618	$18930^{3}_{3} - 39174_{3}$	4906.731	2		20374.479	$19532_{4} - 39906^{4}_{4}$
4937.829	300	8	20246.164	$5563_{1} - 25809^{0}_{1}$	4905.631	2		20379.047	$20322^{0}_{8} - 40701_{4}$
4936.889	25	1	20250.019	$17847^{2}_{2} - 38097_{2}$	4904.407	1		20384.133	$21902^{3}_{4} - 42286_{3}$
4936.775	150	100	20250.486	$8800_{4} - 29050^{0}_{8}$	4903.057	8	1	20389.746	$13175^{3}_{4} - 33564_{3}$
4935.929	20	1	20253.957	$14206^{3}_{4} - 34460_{5}$	4902.793	75	5	20390.843	$7280_{2} - 27670^{3}_{3}$
4935.177	5		20257.043	$17959_{4} - 38216^{3}_{3}$	4902.600	50	5	20391.646	$17501^{0}_{6} - 37892_{4}$
4934.807	3		20258.562	$17398_{3} - 37656^{3}_{3}$	4902.177	2		20393.406	$17354^{0}_{1} - 37748_{2}$
4934.748	1		20258.804	$15618^{3}_{3} - 35877_{2}$	4902.051	75	5	20393.930	$4961_{4} - 25355^{4}_{4}$
4934.337	15	1	20260.492	$20322^{0}_{6} - 40582_{5}$	4901.987	50	2	20394.196	$7280_{2} - 27674^{2}_{2}$
4933.825	15b		20262.594	$13297_{4} - 33560^{4}_{4}$	4901.987	50	2	20394.196	$11802_{2} - 32197^{3}_{3}$
4933.283	3		20264.820	$18549_{2} - 38814^{2}_{2}$	4901.479	4		20396.310	$21890^{3}_{3} - 42286_{3}$
4933.003	20	1	20265.970	$14032^{2}_{2} - 34298_{1}$	4901.371	3		20396.759	$20214^{3}_{3} - 40611_{2}$
4932.250	5		20269.064	$11601_{1} - 31870^{2}_{2}$	4899.336	50	3	20405.231	$17166_{5} - 37571^{0}_{6}$
4931.373	10b		20272.669	$19713_{3} - 39985^{3}_{3}$	4898.697	10	1	20407.893	$17411^{3}_{3} - 37819_{4}$
4931.050	10		20273.997	$15166^{3}_{3} - 35440_{3}$	4898.358	25b	1	20409.305	$13962_{1} - 34371^{2}_{2}$
4930.322	3		20276.990	$17411^{3}_{3} - 37688_{3}$	4897.586	8	1	20412.522	$14032^{2}_{2} - 34444_{2}$
4929.832	5		20279.006	$21077^{0}_{6} - 41356_{5}$	4897.586	8	1	20412.522	$15970_{3} - 36382^{4}_{4}$
4929.086	100	3	20282.075	$7502_{3} - 27784^{2}_{2}$	4895.168	3		20422.605	$12847_{3} - 33270^{4}_{4}$
4928.949	5		20282.639	$19039^{2}_{2} - 39321_{3}$	4894.955	400r	10	20423.494	$0_{2} - 20423^{0}_{1}$
4928.683	50	2	20283.733	$16554_{6} - 36837^{0}_{8}$	4894.520	4		20425.309	$17959_{4} - 38385^{0}_{8}$
4928.604	8		20284.058	$13175^{4}_{4} - 33459_{4}$	4893.910	4		20427.855	$16783^{0}_{4} - 37211_{5}$
4927.781	200	5	20287.446	$8243^{2}_{2} - 28531_{2}$	4893.704	10	1	20428.715	$16346^{4}_{4} - 36775_{3}$
4927.299	50	1	20289.431	$6362_{2} - 26651^{2}_{2}$	4893.444	50	2	20429.800	$11197^{0}_{8} - 31626_{5}$
4926.254	40	2	20293.734	$13297_{4} - 33591^{3}_{3}$	4892.758	50	2	20432.664	$7795^{4}_{4} - 28227_{4}$
4925.822	8b	1b	20295.514	$11241^{3}_{3} - 31537_{3}$	4892.415	1		20434.097	$21252^{2}_{2} - 41686_{3}$
4925.339	5	2	20297.505	$18069^{3}_{3} - 38366_{4}$	4892.276	5	1	20434.677	$16346^{4}_{4} - 36781_{5}$
4925.097	3b		20298.502	$16217^{2}_{2} - 36515_{3}$	4892.038	5		20435.671	$8243^{2}_{2} - 28679_{2}$
4924.896	8	1	20299.330	$18699_{2} - 38998^{3}_{3}$	4891.658	15	1	20437.259	$12114^{2}_{2} - 32551_{3}$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
4891.453	4		20438.115	$10526\frac{3}{3} - 30964_3$
4890.455	50	8	20442.286	$3865_1 - 24307\frac{2}{2}$
4889.489	50	2	20446.325	$7502_3 - 27948\frac{4}{4}$
4888.811	4		20449.161	$12847_3 - 33297\frac{2}{2}$
4888.714	4		20449.566	$18549_2 - 38998\frac{3}{3}$
4887.822	1		20453.298	$19532_4 - 39985\frac{3}{3}$
4887.538	1		20454.486	$16554_6 - 37008\frac{0}{0}$
4887.096	50	2	20456.336	$17959_4 - 38416\frac{3}{3}$
4886.869	50	2	20457.287	$15970_3 - 36427\frac{3}{3}$
4886.014	3b		20460.867	$18069\frac{3}{3} - 38529_3$
4885.825	4l		20461.658	$16346\frac{2}{4} - 36808_3$
4885.565	5b	1	20462.747	$10783\frac{2}{2} - 31245_2$
4885.290	2		20463.899	$17224\frac{2}{2} - 37688_3$
4885.241	3		20464.104	$19588\frac{0}{0} - 40052_4$
4884.549	50	2	20467.003	$19227\frac{6}{6} - 39694_5$
4883.663	2		20470.716	$15618\frac{3}{3} - 36089_4$
4883.490	3	1	20471.441	$13088_3 - 33560\frac{4}{4}$
4882.894	5		20473.940	$18809\frac{2}{4} - 39283_4$
4882.328	3		20476.313	$13847_2 - 34324\frac{2}{2}$
4882.328	3		20476.313	$18053\frac{3}{4} - 38529_3$
4881.853	75	2	20478.306	$8111_4 - 28589\frac{3}{3}$
4881.597	50	2	20479.380	$11601_1 - 32080\frac{1}{1}$
4881.204	75	2	20481.029	$4961_4 - 25442\frac{3}{3}$
4881.070	3		20481.591	$17411\frac{3}{3} - 37892_4$
4880.912	50b	2	20482.254	$11802_2 - 32285\frac{3}{3}$
4880.859	25b	2	20482.476	$10783\frac{2}{2} - 31265_3$
4880.190	15b	1	20485.284	$16351_0 - 36837\frac{1}{1}$
4880.010	5	1	20486.040	$13945\frac{3}{3} - 34431_3$
4878.733	300b	8	20491.402	$2558_0 - 23049\frac{1}{1}$
4878.009	100	3	20494.443	$3687_2 - 24182\frac{2}{2}$
4877.265	20	1	20497.569	$15863_2 - 36361\frac{1}{1}$
4876.856	4		20499.288	$13945\frac{3}{3} - 34444_2$
4876.495	100	5	20500.806	$14206\frac{4}{4} - 34707_3$
4876.244	50	2	20501.861	$13945\frac{3}{3} - 34447_4$
4876.142	3		20502.290	$13297_4 - 33799\frac{4}{4}$
4876.067	4		20502.605	$13088_3 - 33591\frac{3}{3}$
4875.677	4		20504.245	$7280_2 - 27784\frac{2}{2}$
4874.365	150	10	20509.764	$8800_4 - 29310\frac{4}{4}$
4873.855	2		20511.910	$18809\frac{2}{4} - 39321_3$
4872.922	300r	25b	20515.838	$3865_1 - 24381\frac{2}{2}$
4872.229	10b	1	20518.756	$15970_3 - 36488\frac{2}{2}$
4872.030	100	4	20519.594	$16783\frac{4}{4} - 37303_4$
4871.558	3		20521.582	$21165\frac{3}{3} - 41686_3$
4871.286	50	2	20522.728	$0_2 - 20522\frac{2}{2}$
4868.882	150	10	20532.860	$11241\frac{3}{3} - 31774_3$
4868.636	8h	1	20533.898	$18069\frac{3}{3} - 38602_2$
4867.502	5b	1b	20538.682	$16346\frac{4}{4} - 36885_4$
4866.740	2		20541.898	$18809\frac{2}{4} - 39351_5$
4865.477	300r	150b	20547.230	$7795\frac{4}{4} - 28342_5$
4865.415	75b	15b	20547.492	$13297_4 - 33844\frac{0}{0}$
4864.985	2		20549.308	$19503\frac{3}{3} - 40052_4$
4864.789	2		20550.136	$5563_1 - 26113\frac{2}{2}$
4864.433	8	2	20551.640	$17398_3 - 37950\frac{4}{4}$
4864.357	3	1	20551.961	$11241\frac{3}{3} - 31793_4$
4862.962	4		20557.856	$16217\frac{2}{2} - 36775_3$
4862.597	1		20559.399	$11601_1 - 32160\frac{2}{2}$
4861.720	75b	20h	20563.108	$7795\frac{4}{4} - 28358_3$
4861.635	50	2	20563.467	$15863_2 - 36427\frac{3}{3}$
4861.223	300r	50	20565.210	$8111_4 - 28676\frac{3}{3}$
4860.738	3	1	20567.262	$18431_3 - 38998\frac{3}{3}$
4860.173	5	2	20569.653	$15493_4 - 36062\frac{4}{4}$
4857.949	5	1	20579.070	$12847_3 - 33427\frac{2}{2}$
4857.536	100	15	20580.819	$14465\frac{2}{2} - 35046_1$
4857.536	100	15	20580.819	$15493_4 - 36074\frac{3}{3}$
4852.868	200	50	20600.616	$16217\frac{2}{2} - 36818_2$
4851.676	5	2	20605.677	$17501\frac{0}{0} - 38106_5$
4849.861	50	15	20613.389	$4961_4 - 25575\frac{3}{3}$
4849.417	2		20615.276	$10526\frac{3}{3} - 31141_3$
4848.363	400r	150	20619.758	$3687_2 - 24307\frac{2}{2}$
4848.216	20	8	20620.383	$17959_4 - 38580\frac{4}{4}$
4847.330	150	15	20624.152	$14465\frac{2}{2} - 35089_3$
4847.144	20	2	20624.943	$15863_2 - 36488\frac{2}{2}$
4845.990	1		20629.854	$13088_3 - 33718\frac{2}{2}$
4845.161	100	10	20633.384	$6362_2 - 26995\frac{3}{3}$
4844.929	75	5	20634.372	$19948\frac{4}{4} - 40582_5$
4844.612	5b		20635.722	$21077\frac{0}{0} - 41712_5$
4843.938	100b	50b	20638.594	$7502_3 - 28140\frac{4}{4}$
4843.876	75b	10b	20638.858	$8243\frac{2}{2} - 28882_2$
4843.103	3	1	20642.152	$14206\frac{4}{4} - 34849_5$
4840.843	400r	75	20651.789	$2869_3 - 23521\frac{3}{3}$
4839.780	2		20656.324	$20922\frac{2}{2} - 41578_2$
4839.674	5	2b	20656.777	$13175\frac{4}{4} - 33831_4$
4837.903	1		20664.339	$20566\frac{4}{4} - 41230_4$
4837.409	40	4	20666.449	$14206\frac{4}{4} - 34873_4$
4837.245	20	3	20667.150	$14206\frac{4}{4} - 34874_3$
4836.091	3		20672.081	$20214\frac{3}{3} - 40886_2$
4834.632	2		20678.319	$15618\frac{3}{3} - 36297_4$
4834.537	3	1	20678.726	$21077\frac{0}{0} - 41755_4$
4833.674	20s	4s	20682.418	$14204_5 - 34886\frac{0}{0}$
4833.179	200b	50	20684.536	$14465\frac{2}{2} - 35149_2$
4833.112	50b	8	20684.823	$15493_4 - 36178\frac{4}{4}$
4832.423	5l	2l	20687.772	$11241\frac{3}{3} - 31929_3$
4831.767	1		20690.580	$17398_3 - 38088\frac{2}{2}$
4831.597	300r	150	20691.309	$8243\frac{2}{2} - 28934_3$
4831.121	500r	200	20693.347	$3687_2 - 24381\frac{2}{2}$
4830.206	1		20697.267	$19503\frac{3}{3} - 40200_3$
4829.796	50	8	20699.024	$6362_2 - 27061\frac{2}{2}$
4829.407	5	2	20700.691	$11802_2 - 32503\frac{2}{2}$
4828.658	20	4	20703.902	$13297_4 - 34001\frac{4}{4}$
4828.246	1		20705.669	$17959_4 - 38665\frac{0}{0}$
4826.700	200b	50b	20712.301	$30517\frac{0}{0} - 9804_5$
4826.637	50b	15b	20712.571	$9804_5 - 30517\frac{4}{4}$
4826.008	50	4	20715.271	$18549_2 - 39264\frac{3}{3}$
4825.553	5	1	20717.224	$15618\frac{3}{3} - 36336_3$
4824.736	1		20720.732	$15490\frac{0}{0} - 36210_5$
4823.997	200r	100h	20723.906	$5563_1 - 26287\frac{1}{1}$
4823.604	300r	75	20725.595	$6362_2 - 27087\frac{1}{1}$
4823.122	5b	1	20727.666	$10414\frac{4}{4} - 31141_3$
4822.855	300r	75	20728.814	$4961_4 - 25690\frac{0}{0}$
4821.862	15	2	20733.082	$3687_2 - 24421\frac{3}{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
4821.587	150	25	20734.265	$2869_3 - 23603^{\frac{3}{2}}_{2}$
4821.387	50	15	20735.125	$14481^{\frac{5}{2}}_{6} - 35216_5$
4820.884	100	200	20737.288	$0_2 - 20737^{\frac{1}{2}}_{1}$
4820.788	2h	1	20737.701	$16783^{\frac{3}{4}}_{4} - 37521_3$
4820.463	150b	40h	20739.099	$10526^{\frac{3}{2}}_{3} - 31265_3$
4819.508	10	3	20743.209	$12847_3 - 33591^{\frac{3}{2}}_{3}$
4819.191	150	15	20744.573	$7280_2 - 28024^{\frac{1}{2}}_{1}$
4818.294	5	2	20748.435	$15736^{\frac{1}{2}}_{1} - 36485_2$
4818.102	4	2	20749.262	$18011^{\frac{5}{2}}_{6} - 38760_4$
4817.017	75	8	20753.935	$11241^{\frac{3}{2}}_{3} - 31995_4$
4816.566	1		20755.879	$17847^{\frac{5}{2}}_{2} - 38602_2$
4815.046	5	2	20762.431	$13945^{\frac{3}{2}}_{3} - 34707_3$
4814.919	15	3	20762.978	$14226_0 - 34989^{\frac{1}{2}}_{1}$
4814.553	2		20764.557	$20922^{\frac{5}{2}}_{2} - 41686_3$
4813.893	200	100	20767.404	$7795^{\frac{3}{4}}_{4} - 28562_4$
4813.499	1		20769.103	$18699_2 - 39468^{\frac{3}{2}}_{3}$
4813.004	75	15	20771.239	$11241^{\frac{3}{2}}_{3} - 32012_4$
4812.712	1		20772.500	$11802_2 - 32575^{\frac{5}{2}}_{2}$
4812.373	150	25	20773.963	$8111_4 - 28884^{\frac{3}{4}}_{3}$
4810.519	8	4	20781.969	$15493_4 - 36275^{\frac{5}{2}}_{6}$
4809.615	200	50	20785.875	$2869_3 - 23655^{\frac{3}{4}}_{4}$
4808.764	5	2	20789.554	$20566^{\frac{3}{4}}_{4} - 41356_5$
4808.134	500r	150	20792.278	$4961_4 - 25753^{\frac{5}{2}}_{6}$
4807.550	4	2	20794.803	$20566^{\frac{3}{4}}_{4} - 41361_3$
4806.459	5	2	20799.524	$11241^{\frac{3}{2}}_{3} - 32041_2$
4806.355	5	1	20799.974	$5563_1 - 26363^{\frac{5}{2}}_{2}$
4806.248	3	1	20800.437	$10526^{\frac{3}{2}}_{3} - 31326_4$
4805.244	15	3	20804.782	$15863_2 - 36668^{\frac{5}{2}}_{2}$
4802.670	10	3	20815.933	$11197^{\frac{5}{2}}_{6} - 32012_4$
4801.951	2		20819.050	$14481^{\frac{5}{2}}_{6} - 35300_5$
4801.349	4	1	20821.660	$8111_4 - 28932^{\frac{3}{4}}_{4}$
4801.054	25	4	20822.939	$19273_2 - 40096^{\frac{5}{2}}_{2}$
4799.670	3	1	20828.943	$17959_4 - 38788^{\frac{3}{2}}_{3}$
4798.734	4	2	20833.006	$18431_3 - 39264^{\frac{3}{2}}_{3}$
4797.497	75	50	20838.378	$19588^{\frac{5}{2}}_{6} - 40426_4$
4796.667	3	1	20841.983	$14032^{\frac{5}{2}}_{2} - 34874_3$
4795.913	150	75	20845.260	$7502_3 - 28347^{\frac{5}{2}}_{2}$
4795.289	3	1	20847.973	$11802_2 - 32650^{\frac{1}{2}}_{1}$
4794.474	2		20851.516	$10414^{\frac{3}{4}}_{4} - 31265_3$
4793.285	8		20856.689	$13847_2 - 34704^{\frac{3}{2}}_{3}$
4793.246	100l	25	20856.858	$10414^{\frac{3}{4}}_{4} - 31271_5$
4792.007	3		20862.251	$21165^{\frac{3}{2}}_{3} - 42027_2$
4791.921	5	1	20862.625	$11802_2 - 32665^{\frac{1}{2}}_{1}$
4791.362	8	3	20865.059	$16346^{\frac{3}{4}}_{4} - 37211_5$
4789.387	400r	75	20873.663	$3687_2 - 24561^{\frac{3}{2}}_{3}$
4788.678	25	5	20876.754	$14204_5 - 35081^{\frac{5}{2}}_{6}$
4788.542	3	1	20877.347	$16217^{\frac{5}{2}}_{2} - 37094_2$
4788.472	2		20877.652	$13847_2 - 34725^{\frac{3}{2}}_{3}$
4788.079	1		20879.366	$13088_3 - 33967^{\frac{3}{2}}_{3}$
4787.148	150	25	20883.426	$2869_3 - 23752^{\frac{5}{2}}_{2}$
4786.914	5	1	20884.447	$18809^{\frac{3}{4}}_{4} - 39694_5$
4786.724	75	5	20885.276	$13297_4 - 34182^{\frac{5}{2}}_{6}$
4786.532	200	50	20886.114	$8800_4 - 29686^{\frac{3}{2}}_{3}$
4785.780	5	2	20889.395	$15493_4 - 36382^{\frac{3}{4}}_{4}$
4785.007	1		20892.770	$19532_4 - 40425^{\frac{3}{4}}_{4}$
4784.163	2h		20896.456	$17073_1 - 37970^{\frac{5}{2}}_{2}$
4784.038	150	20	20897.002	$15618^{\frac{3}{2}}_{3} - 36515_3$
4783.864	150l	10b	20897.762	$6362_2 - 27260^{\frac{3}{2}}_{3}$
4783.605	2b		20898.893	$15863_2 - 36762^{\frac{5}{2}}_{2}$
4782.936	5	2	20901.816	$15970_3 - 36871^{\frac{5}{2}}_{2}$
4781.671	8	2	20907.346	$18930^{\frac{3}{2}}_{3} - 39837_3$
4781.527	100	5	20907.976	$17398_3 - 38306^{\frac{3}{4}}_{4}$
4781.363	2		20908.693	$20322^{\frac{5}{2}}_{6} - 41230_4$
4780.751	75	8	20911.369	$8800_4 - 29711^{\frac{5}{2}}_{6}$
4780.633	3		20911.885	$18699_2 - 39611^{\frac{3}{2}}_{3}$
4780.427	150	25	20912.786	$13088_3 - 34001^{\frac{3}{4}}_{4}$
4779.728	50	5	20915.845	$4961_4 - 25877^{\frac{3}{4}}_{4}$
4779.661	4	1	20916.138	$13962_1 - 34878^{\frac{1}{2}}_{1}$
4779.566	2b		20916.554	$15736^{\frac{1}{2}}_{1} - 36653_2$
4778.453	5	2	20921.425	$17224^{\frac{5}{2}}_{2} - 38145_3$
4778.294	400r	50	20922.122	$0_2 - 20922^{\frac{5}{2}}_{2}$
4778.021	2		20923.317	$2558_0 - 23481^{\frac{1}{2}}_{1}$
4777.421	1		20925.945	$20054_2 - 40980^{\frac{3}{2}}_{3}$
4777.192	300	75	20926.948	$14204_5 - 35131^{\frac{3}{4}}_{4}$
4775.793	100	15	20933.078	$8800_4 - 29733^{\frac{5}{2}}_{6}$
4775.313	100l	5b	20935.182	$6362_2 - 27297^{\frac{1}{2}}_{1}$
4774.275	40b		20939.734	$8111_4 - 29050^{\frac{5}{2}}_{6}$
4773.241	100	8	20944.270	$8800_4 - 29744^{\frac{3}{4}}_{3}$
4772.962	3		20945.494	$18011^{\frac{5}{2}}_{6} - 38956_4$
4771.533	4	1	20951.767	$12847_3 - 33799^{\frac{3}{4}}_{4}$
4771.330	8	2	20952.658	$12847_3 - 33800^{\frac{3}{2}}_{3}$
4770.796	15	1	20955.003	$6362_2 - 27317^{\frac{3}{2}}_{3}$
4770.440	10b	3	20956.567	$18053^{\frac{3}{4}}_{4} - 39010_3$
4770.390	15b	3	20956.787	$16346^{\frac{3}{4}}_{4} - 37303_4$
4769.543	50	3	20960.508	$16346^{\frac{3}{4}}_{4} - 37307_3$
4766.600	300r	100	20973.450	$3865_1 - 24838^{\frac{1}{2}}_{1}$
4766.382	2		20974.409	$11601_1 - 32575^{\frac{5}{2}}_{2}$
4766.098	1		20975.659	$14465^{\frac{5}{2}}_{2} - 35440_3$
4765.593	100b	100	20977.881	$7502_3 - 28480^{\frac{3}{4}}_{4}$
4763.963	4	1	20985.059	$12114^{\frac{5}{2}}_{2} - 33099_3$
4762.805	2		20990.161	$19503^{\frac{3}{2}}_{3} - 40493_3$
4762.302	8	2	20992.378	$13175^{\frac{3}{4}}_{4} - 34167_3$
4759.687	75	10	21003.911	$13847_2 - 34851^{\frac{5}{2}}_{2}$
4759.441	2		21004.997	$11197^{\frac{5}{2}}_{6} - 32202_5$
4758.286	50	15	21010.095	$14206^{\frac{3}{4}}_{4} - 35216_5$
4758.150	100	75	21010.696	$10526^{\frac{3}{2}}_{3} - 31537_3$
4758.075	50	15	21011.027	$7502_3 - 28513^{\frac{5}{2}}_{2}$
4757.415	15	2	21013.942	$14032^{\frac{5}{2}}_{2} - 35046_1$
4757.133	50	5	21015.187	$17073_1 - 38088^{\frac{5}{2}}_{2}$
4756.699	100	25	21017.105	$16554_6 - 37571^{\frac{5}{2}}_{6}$
4756.532	75		21017.843	$17398_3 - 38416^{\frac{3}{2}}_{3}$
4753.581	2l		21030.890	$13847_2 - 34878^{\frac{1}{2}}_{1}$
4752.900	10	3	21033.904	$20322^{\frac{5}{2}}_{6} - 41356_5$
4752.588	50b	10b	21035.284	$16783^{\frac{3}{4}}_{4} - 37819_4$
4752.199	2		21037.006	$18431_3 - 39468^{\frac{3}{2}}_{3}$
4749.968	300b	50	21046.887	$8111_4 - 29157^{\frac{3}{2}}_{3}$
4749.892	20	4	21047.224	$13297_4 - 34344^{\frac{3}{4}}_{4}$
4749.795	25	3	21047.654	$2869_3 - 23916^{\frac{3}{4}}_{4}$
4749.466	3b	1	21049.111	$21575_2 - 42624^{\frac{1}{2}}_{1}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
4749.287	5		21049.905	$11601_1 - 32650^{i}_{i}$	4718.051	100	5	21189.264	$20566^{g}_{4} - 41755_4$
4749.200	400r	150	21050.290	$7795^{g}_{4} - 28845_4$	4717.487	3	1	21191.798	$17411^{g}_{3} - 38602_2$
4747.617	100	4	21057.309	$14032^{g}_{2} - 35089_3$	4717.390	20	2	21192.233	$3687_2 - 24880^{i}_{i}$
4745.629	8	2	21066.130	$18614^{i}_{i} - 39680_2$	4716.862	5b		21194.605	$13297_4 - 34492^{g}_{4}$
4745.331	200b	25b	21067.453	$7280_2 - 28347^{g}_{2}$	4716.849	8b	1	21194.664	$12114^{g}_{2} - 33309_2$
4744.838	5	1	21069.642	$14204_5 - 35273^{g}_{6}$	4715.955	5b	1	21198.682	$18053^{g}_{4} - 39252_5$
4744.797	5	2	21069.824	$19817^{i}_{i} - 40886_2$	4715.856	8	1	21199.127	$15618^{g}_{3} - 36818_2$
4744.706	3		21070.228	$13945^{g}_{3} - 35015_2$	4714.673	150	8	21204.446	$13945^{g}_{3} - 35149_2$
4744.516	2		21071.072	$15970_3 - 37041^{g}_{4}$	4713.789	25	4b	21208.422	$16783^{g}_{4} - 37992_4$
4742.114	200	8	21081.745	$3687_2 - 24769^{g}_{3}$	4712.839	100	8	21212.698	$10414^{g}_{4} - 31626_5$
4741.301	150	40	21085.360	$6362_2 - 27447^{g}_{2}$	4712.481	300b	100	21214.309	$9804_5 - 31019^{g}_{4}$
4740.951	200b	15	21086.916	$4961_4 - 26048^{g}_{4}$	4712.004	50	4	21216.456	$11241^{g}_{3} - 32458_4$
4740.929	100b	8	21087.014	$7502_3 - 28589^{g}_{3}$	4711.917	5	1	21216.848	$8800_4 - 30017^{g}_{3}$
4740.332	15	3	21089.670	$16217^{g}_{2} - 37307_3$	4711.417	75	5	21219.100	$17166_5 - 38385^{g}_{6}$
4739.674	300	40	21092.598	$7280_2 - 28372^{i}_{i}$	4708.948	3	1	21230.225	$18053^{g}_{4} - 39283_4$
4739.353	5	2	21094.026	$14206^{g}_{4} - 35300_5$	4708.294	200	25	21233.174	$7280_2 - 28513^{g}_{2}$
4738.839	8	2	21096.314	$21539^{g}_{4} - 42635_5$	4707.772	25b	3	21235.529	$13088_3 - 34324^{g}_{2}$
4737.915	150	15	21100.428	$14481^{g}_{6} - 35582_5$	4706.691	10	2	21240.406	$11802_2 - 33043^{g}_{3}$
4737.604	10l	2	21101.813	$14226_0 - 35328^{i}_{i}$	4706.575	100	5	21240.929	$18011^{g}_{6} - 39252_5$
4737.529	20	3	21102.148	$17959_4 - 39062^{g}_{6}$	4705.873	8	1	21244.098	$19532_4 - 40776^{g}_{4}$
4736.523	10	2	21106.629	$16783^{g}_{4} - 37890_5$	4704.997	5	1	21248.053	$10526^{g}_{3} - 31774_3$
4735.995	200	20	21108.982	$16783^{g}_{4} - 37892_4$	4704.935	8	2	21248.333	$17354^{i}_{i} - 38602_2$
4735.474	4	1	21111.305	$14465^{g}_{2} - 35576_3$	4703.990	500r	200	21252.602	$0_2 - 21252^{g}_{2}$
4734.046	200	10	21117.673	$14032^{g}_{2} - 35149_2$	4703.213	50	2	21256.112	$13088_3 - 34344^{g}_{4}$
4733.536	2		21119.948	$12847_3 - 33967^{g}_{3}$	4703.190	50	5	21256.216	$13175^{g}_{4} - 34431_3$
4733.504	1		21120.091	$20566^{g}_{4} - 41686_3$	4702.778	15	2	21258.079	$10783^{g}_{2} - 32041_2$
4733.224	1		21121.340	$18053^{g}_{4} - 39174_3$	4702.591	25	3	21258.924	$15490^{g}_{6} - 36749_6$
4732.826	4	1	21123.116	$10414^{g}_{4} - 31537_3$	4702.475	25	3	21259.449	$17501^{g}_{6} - 38760_4$
4732.103	40	4	21126.344	$13175^{g}_{4} - 34301_4$	4701.388	20	4	21264.364	$16351_0 - 37616^{i}_{i}$
4731.192	20	3	21130.411	$15166^{g}_{3} - 36297_4$	4700.959	50	4	21266.304	$15618^{g}_{3} - 36885_4$
4730.657	150	8	21132.801	$13297_4 - 34430^{g}_{3}$	4700.772	200	8	21267.150	$10526^{g}_{3} - 31793_4$
4730.089	40	5	21135.339	$4961_4 - 26096^{g}_{3}$	4700.655	2		21267.679	$19713_3 - 40980^{g}_{3}$
4729.128	400b	100b	21139.634	$7795^{g}_{4} - 28934_3$	4700.234	8	1	21269.584	$15493_4 - 36762^{g}_{3}$
4728.985	50	8	21140.273	$17166_5 - 38306^{g}_{4}$	4699.602	10	2	21272.445	$18011^{g}_{6} - 39283_4$
4728.591	40	3	21142.034	$13847_2 - 34989^{i}_{i}$	4698.732	25b	3	21276.383	$12114^{g}_{2} - 33390_1$
4728.133	300	25d	21144.082	$13945^{g}_{3} - 35089_3$	4697.600	10	2	21281.510	$17073_1 - 38355^{g}_{2}$
4727.619	3h		21146.381	$10783^{g}_{2} - 31929_3$	4697.359	2		21282.602	$19948^{g}_{4} - 41230_4$
4727.440	75	4	21147.182	$14204_5 - 35351^{g}_{4}$	4697.212	10	3	21283.268	$13088_3 - 34371^{g}_{2}$
4726.598	5	2	21150.949	$3687_2 - 24838^{i}_{i}$	4696.697	15b	4b	21285.602	$13297_4 - 34583^{g}_{3}$
4726.441	8		21151.651	$11802_2 - 32954^{g}_{2}$	4696.667	25b	8b	21285.738	$13175^{g}_{4} - 34460_5$
4726.054	4		21153.383	$12847_3 - 34001^{g}_{4}$	4696.588	2		21286.096	$18699_2 - 39985^{g}_{3}$
4725.384	8	2	21156.383	$15618^{g}_{3} - 36775_3$	4695.705	1		21290.099	$20737^{i}_{i} - 42027_2$
4724.691	2		21159.486	$12114^{g}_{2} - 33273_1$	4695.456	200	50	21291.228	$15490^{g}_{6} - 36781_5$
4724.292	2		21161.273	$19039^{g}_{2} - 40200_3$	4695.039	300r	100	21293.119	$3687_2 - 24981^{g}_{3}$
4723.438	800r	200	21165.099	$0_2 - 21165^{g}_{3}$	4694.537	5	1	21295.396	$15863_2 - 37159^{i}_{i}$
4722.499	75	5	21169.307	$15166^{g}_{3} - 36336_3$	4694.478	15	3b	21295.663	$15863_2 - 37159^{g}_{3}$
4722.089	300	50	21171.145	$7502_3 - 28673^{g}_{2}$	4692.465	3	1	21304.798	$17959_4 - 39264^{g}_{3}$
4721.456	3		21173.983	$7502_3 - 28676^{g}_{3}$	4691.883	100	8	21307.441	$15493_4 - 36800^{g}_{4}$
4721.276	200	15	21174.791	$8243^{g}_{2} - 29418_2$	4691.631	300b	50b	21308.586	$6362_2 - 27670^{g}_{3}$
4720.780	150	15	21177.015	$14243^{i}_{i} - 35421_1$	4691.603	50b	8b	21308.713	$7795^{g}_{4} - 29104_4$
4720.457	75	8	21178.465	$7502_3 - 28680^{g}_{4}$	4691.500	100	15	21309.181	$7280_2 - 28589^{g}_{3}$
4720.338	3	1	21178.998	$15970_3 - 37149^{g}_{2}$	4691.346	100	15	21309.880	$11241^{g}_{3} - 32551_3$
4720.160	50	3	21179.797	$18431_3 - 39611^{g}_{3}$	4690.894	15	2	21311.934	$6362_2 - 27674^{g}_{2}$
4719.692	150	5	21181.897	$17398_3 - 38580^{g}_{4}$	4690.623	300	40b	21313.165	$2869_3 - 24182^{g}_{2}$
4719.441	20	2	21183.024	$2558_0 - 23741^{i}_{i}$	4689.532	4		21318.123	$14481^{g}_{6} - 35799_6$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
4689.451	50	5	21318.491	$15166_3^3 - 36485_2$	4659.568	200	40	21455.210	$8800_4 - 30255_3^3$
4689.252	200l	50b	21319.396	$5563_1 - 26882_6^6$	4659.458	5		21455.717	$17501_6^6 - 38956_4$
4688.458	5h	2	21323.006	$16783_4^3 - 38106_5$	4657.033	1		21466.889	$15618_3^3 - 37085_4$
4686.195	500r	50	21333.303	$2869_3 - 24202_4^4$	4656.548	50	4	21469.125	$10526_3^3 - 31995_4$
4684.634	40	3	21340.412	$18011_6^6 - 39351_5$	4655.974	3		21471.771	$20214_3^3 - 41686_3$
4684.362	50b	3	21341.651	$13088_3 - 34430_3^3$	4655.818	4	1	21472.491	$16346_4^4 - 37819_4$
4683.349	200	20	21346.267	$7795_4^4 - 29141_5$	4655.328	1		21474.751	$17847_2^2 - 39321_3$
4682.728	75	5	21349.098	$15166_3^3 - 36515_3$	4655.210	100	20	21475.295	$18431_3 - 39906_4^4$
4682.662	3b		21349.399	$17411_3^3 - 38760_4$	4655.030	75	10	21476.126	$12847_3 - 34324_2^2$
4682.229	150	15	21351.373	$17959_4 - 39311_4^4$	4654.002	50	3	21480.869	$13847_2 - 35328_1^1$
4681.743	1		21353.590	$11601_1 - 32954_2^2$	4652.743	20	2	21486.682	$15166_3^3 - 36653_2$
4680.588	50b	10b	21358.859	$11802_2 - 33161_1^1$	4651.584	75b		21492.036	$11802_2 - 33294_3^3$
4680.387	100	8	21359.776	$8800_4 - 30160_4^4$	4651.112	75	5	21494.216	$11802_2 - 33297_2^2$
4680.235	200	15	21360.470	$10414_4^4 - 31774_3$	4651.062	75b	4	21494.447	$13088_3 - 34583_3^3$
4679.919	3		21361.912	$16783_4^4 - 38145_3$	4650.628	50	4	21496.453	$18930_3^3 - 40426_4$
4679.575	4	2	21363.482	$20214_3^3 - 41578_2$	4650.233	100	5	21498.279	$5563_1 - 27061_2^2$
4679.390	3		21364.327	$20922_2^2 - 42286_3$	4649.975	75	8	21499.472	$17166_5 - 38665_6^6$
4679.001	20	1	21366.103	$13962_1 - 35328_1^1$	4647.953	100	5	21508.825	$18011_6^6 - 39520_4$
4678.358	5	2	21369.040	$7280_2 - 28649_1^1$	4647.249	150	20	21512.083	$2869_3 - 24381_2^2$
4678.233	150	20b	21369.611	$14206_4^4 - 35576_3$	4647.249	150	20	21512.083	$15618_3^3 - 37131_3$
4678.145	8	2	21370.012	$19516_2^2 - 40886_2$	4647.068	50	2	21512.921	$11877_1^1 - 33390_1$
4676.971	150	25b	21375.377	$14206_4^4 - 35582_5$	4646.685	150	15	21514.694	$10526_3^3 - 32041_2$
4676.248	2		21378.681	$17224_2^2 - 38602_2$	4646.538	75b	4	21515.375	$10414_4^4 - 31929_3$
4676.248	2		21378.681	$17224_2^2 - 38602_2$	4646.505	8b	1	21515.528	$15493_4 - 37008_6^6$
4676.056	500r	150	21379.559	$10414_4^4 - 31793_4$	4645.186	3		21521.637	$18574_1 - 40096_2^2$
4675.375	200	15	21382.673	$7502_3 - 28884_3^3$	4644.707	150	50	21523.856	$12847_3 - 34371_2^2$
4675.115	3	2	21383.862	$19503_3^3 - 40886_2$	4644.495	4		21524.839	$5563_1 - 27087_1^1$
4674.006	3		21388.936	$14032_2^2 - 35421_1$	4643.557	100	10	21529.187	$14204_5 - 35733_4^4$
4673.805	2		21389.856	$9804_5 - 31194_4^4$	4643.266	1		21530.536	$16217_2^2 - 37748_2$
4673.661	800r	150	21390.515	$2869_3 - 24259_4^4$	4642.816	3		21532.623	$13175_4^4 - 34707_3$
4673.042	200	25	21393.348	$7280_2 - 28673_2^2$	4641.687	5	1	21537.860	$22399_6^6 - 43937_6$
4672.632	8	1	21395.225	$15490_6^6 - 36885_4$	4641.244	300b	150b	21539.916	$11241_3^3 - 32781_4$
4672.436	50	20	21396.123	$7280_2 - 28676_3^3$	4641.024	2		21540.937	$20214_3^3 - 41755_4$
4672.370	2		21396.425	$17411_3^3 - 38807_2$	4640.396	1		21543.852	$16346_4^4 - 37890_5$
4672.332	5	1	21396.599	$18699_2 - 40096_2^2$	4639.896	75	25	21546.174	$16346_4^4 - 37892_4$
4671.091	2		21402.284	$16783_4^4 - 38186_4$	4639.857	40b	5	21546.355	$4961_4 - 26508_3^3$
4670.942	50	3	21402.966	$10526_3^3 - 31929_3$	4639.755	5		21546.828	$18549_2 - 40096_2^2$
4670.832	10	1	21403.471	$13088_3 - 34492_4^4$	4639.520	200	50	21547.920	$15493_4 - 37041_4^4$
4670.059	15b	1	21407.013	$13297_4 - 34704_3^3$	4638.686	150	10	21551.794	$2869_3 - 24421_3^3$
4669.984	500r	100	21407.357	$8243_2^2 - 29650_2$	4638.127	150	10	21554.391	$11241_3^3 - 32796_3$
4669.665	75	4	21408.819	$14032_2^2 - 35440_3$	4637.191	50	2	21558.742	$21077_6^6 - 42635_5$
4668.492	3		21414.198	$17166_5 - 38580_4^4$	4636.758	4	1	21560.755	$11601_1 - 33161_1^1$
4668.172	800r	150	21415.666	$7502_3 - 28917_2^2$	4634.605	8	2	21570.771	$13962_1 - 35533_2^2$
4666.797	500r	150	21421.976	$6362_2 - 27784_2^2$	4634.227	3		21572.530	$19039_2^2 - 40611_2$
4666.515	200	8	21423.270	$4961_4 - 26384_4^4$	4633.765	300b	75b	21574.681	$12114_2^2 - 33689_2$
4665.713	40	3	21426.953	$14206_4^4 - 35633_4$	4633.620	150	8	21575.356	$8111_4 - 29686_3^3$
4665.483	5	1	21428.009	$13297_4 - 34725_3^3$	4632.294	3		21581.532	$10414_4^4 - 31995_4$
4664.968	100	4	21430.375	$7502_3 - 28932_4^4$	4632.173	5b	1	21582.096	$14465_2^2 - 36047_2$
4664.784	25	2	21431.220	$11877_1^1 - 33309_2$	4632.140	8b	2	21582.250	$12847_3 - 34430_3^3$
4663.670	5	2	21436.339	$18549_2 - 39985_3^3$	4632.038	5	1	21582.725	$16783_4^4 - 38366_4$
4663.202	300r	10	21438.490	$2869_3 - 24307_2^2$	4631.901	2		21583.363	$17224_2^2 - 38807_2$
4662.590	20	2	21441.304	$3865_1 - 25306_2^2$	4631.644	100	50	21584.561	$11197_6^6 - 32781_4$
4660.254	20	2	21452.052	$14226_0 - 35678_1^1$	4631.021	50	3	21587.464	$14206_4^4 - 35794_4$
4660.254	20	2	21452.052	$17501_6^6 - 38953_5$	4630.640	8	1	21589.241	$13297_4 - 34886_6^6$
4660.039	4	1	21453.042	$17354_1^1 - 38807_2$	4630.165	5		21591.455	$8243_2^2 - 29835_3$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm⁻¹)	Classification
	Lamp	Spark		
4629.199	15		21595.961	$17073_{1} - 38669^{\circ}_{2}$
4628.579	15b		21598.854	$10414^{\circ}_{4} - 32012_{4}$
4628.558	75b	40	21598.952	$17411^{\circ}_{3} - 39010_{3}$
4628.202	200	4	21600.613	$8111_{4} - 29711^{\circ}_{0}$
4627.503	3		21603.876	$20423^{\circ}_{1} - 42027_{2}$
4627.298	200	20	21604.833	$7280_{2} - 28884^{\circ}_{3}$
4626.521	5	1	21608.461	$15166^{\circ}_{3} - 36775_{3}$
4625.893	2		21611.395	$18069^{\circ}_{3} - 39680_{2}$
4625.274	100	5	21614.287	$13847_{2} - 35462^{\circ}_{3}$
4624.939	5		21615.852	$13088_{3} - 34704^{\circ}_{3}$
4624.314	75	4	21618.774	$3687_{2} - 25306^{\circ}_{2}$
4623.553	8b	1	21622.332	$8111_{4} - 29733^{\circ}_{0}$
4623.169	10b	1	21624.128	$11802_{2} - 33427^{\circ}_{2}$
4623.118	50b	5	21624.367	$14206^{\circ}_{4} - 35831_{3}$
4621.657	50	2	21631.203	$13945^{\circ}_{3} - 35576_{3}$
4621.165	150	40	21633.506	$8111_{4} - 29744^{\circ}_{3}$
4621.076	50	2	21633.922	$3687_{2} - 25321^{\circ}_{3}$
4620.705	3b		21635.659	$15970_{3} - 37605^{\circ}_{4}$
4620.448	150	10	21636.862	$13088_{3} - 34725^{\circ}_{3}$
4620.241	200	15	21637.832	$7280_{2} - 28917^{\circ}_{2}$
4619.624	50	4	21640.722	$18053^{\circ}_{4} - 39694_{5}$
4619.223	2		21642.600	$19588^{\circ}_{0} - 41230_{4}$
4617.384	3		21651.220	$15166^{\circ}_{3} - 36818_{2}$
4617.295	25	2	21651.637	$14481^{\circ}_{6} - 36133_{5}$
4617.295	25	2	21651.637	$17959_{4} - 39611^{\circ}_{3}$
4616.451	75	100	21655.596	$7502_{3} - 29157^{\circ}_{3}$
4615.669	50	4	21659.265	$12114^{\circ}_{2} - 33773_{1}$
4615.334	150	15	21660.837	$3865_{1} - 25526^{\circ}_{1}$
4615.025	200	40	21662.287	$6362_{2} - 28024^{\circ}_{1}$
4614.538	2		21664.573	$18431_{3} - 40096^{\circ}_{2}$
4614.278	8	2	21665.794	$20054_{2} - 41720^{\circ}_{2}$
4614.162	50	4	21666.339	$15493_{4} - 37159^{\circ}_{3}$
4613.605	150	15	21668.954	$0_{2} - 21668^{\circ}_{1}$
4610.628	300b	50	21682.945	$18011^{\circ}_{0} - 39694_{5}$
4610.532	10	1	21683.397	$18809^{\circ}_{4} - 40493_{3}$
4610.456	2		21683.754	$4961_{4} - 26645^{\circ}_{0}$
4610.307	5	1	21684.455	$15618^{\circ}_{3} - 37303_{4}$
4610.078	100	4	21685.532	$13847_{2} - 35533^{\circ}_{2}$
4609.796	2		21686.859	$15970_{3} - 37656^{\circ}_{3}$
4609.516	2		21688.176	$15618^{\circ}_{3} - 37307_{3}$
4609.439	2		21688.538	$13945^{\circ}_{3} - 35633_{4}$
4608.620	150	8	21692.392	$2869_{3} - 24561^{\circ}_{3}$
4607.935	300	20	21695.617	$7502_{3} - 29197^{\circ}_{2}$
4607.834	50	5	21696.093	$11601_{1} - 33297^{\circ}_{2}$
4607.377	150	50	21698.245	$13175^{\circ}_{4} - 34873_{4}$
4607.224	3		21698.965	$13175^{\circ}_{4} - 34874_{3}$
4605.825	40	2	21705.556	$18549_{2} - 40254^{\circ}_{3}$
4605.425	2		21707.441	$19273_{2} - 40980^{\circ}_{3}$
4603.537	2		21716.344	$13962_{1} - 35678^{\circ}_{1}$
4603.434	1		21716.830	$8800_{4} - 30517^{\circ}_{0}$
4603.143	300b	100b	21718.202	$8243^{\circ}_{2} - 29961_{1}$
4603.113	50b	8b	21718.344	$15166^{\circ}_{3} - 36885_{4}$
4602.795	2		21719.845	$20566^{\circ}_{4} - 42286_{3}$
4602.420	20	2	21721.614	$15490^{\circ}_{0} - 37211_{5}$
4601.347	40	4	21726.680	$19986^{\circ}_{6} - 41712_{5}$
4601.104	4	1	21727.827	$19503^{\circ}_{3} - 41230_{4}$
4600.969	3		21728.464	$11877^{\circ}_{1} - 33606_{2}$
4600.872	100	8	21728.922	$14481^{\circ}_{6} - 36210_{5}$
4599.704	100	10	21734.440	$5563_{1} - 27297^{\circ}_{1}$
4598.939	40	2	21738.055	$0_{2} - 21738^{\circ}_{2}$
4598.888	4	1	21738.296	$19948^{\circ}_{4} - 41686_{3}$
4598.434	50	4	21740.442	$17073_{1} - 38814^{\circ}_{2}$
4597.243	4		21746.075	$16783^{\circ}_{4} - 38529_{3}$
4596.308	200	50	21750.498	$7502_{3} - 29252^{\circ}_{2}$
4596.176	100	8	21751.123	$17501^{\circ}_{0} - 39252_{5}$
4595.902	3		21752.420	$15863_{2} - 37616^{\circ}_{1}$
4595.420	800r	200	21754.701	$3687_{2} - 25442^{\circ}_{3}$
4594.260	2		21760.194	$16346^{\circ}_{4} - 38106_{5}$
4594.046	2		21761.208	$19817^{\circ}_{1} - 41578_{2}$
4593.645	300	150	21763.107	$13088_{3} - 34851^{\circ}_{2}$
4593.524	4	2	21763.681	$17411^{\circ}_{3} - 39174_{3}$
4593.362	8	1	21764.448	$19948^{\circ}_{4} - 41712_{5}$
4592.958	100	5	21766.362	$11197^{\circ}_{0} - 32963_{5}$
4592.877	3		21766.746	$17073_{1} - 38840^{\circ}_{1}$
4592.851	1		21766.869	$15970_{3} - 37736^{\circ}_{2}$
4592.668	500r	150	21767.737	$8243^{\circ}_{2} - 30011_{3}$
4592.519	15	2	21768.443	$10783^{\circ}_{2} - 32551_{3}$
4592.097	8		21770.444	$8111_{4} - 29881^{\circ}_{4}$
4591.972	1		21771.036	$18930^{\circ}_{3} - 40701_{4}$
4591.581	8	1	21772.890	$18809^{\circ}_{4} - 40582_{5}$
4589.526	3		21782.639	$17501^{\circ}_{0} - 39283_{4}$
4589.328	5		21783.579	$13297_{4} - 35081^{\circ}_{0}$
4588.846	8	1	21785.867	$17224^{\circ}_{2} - 39010_{3}$
4588.426	500r	200	21787.861	$10414^{\circ}_{4} - 32202_{5}$
4588.350	100b	25	21788.222	$11802_{2} - 33591^{\circ}_{3}$
4587.332	3		21793.057	$15863_{2} - 37656^{\circ}_{3}$
4586.047	50b	2	21799.163	$14032^{\circ}_{2} - 35831_{3}$
4585.175	2		21803.309	$14243^{\circ}_{1} - 36047_{2}$
4584.300	5	2	21807.470	$19948^{\circ}_{4} - 41755_{4}$
4584.247	10	2	21807.722	$7502_{3} - 29310^{\circ}_{4}$
4583.514	1		21811.210	$11877^{\circ}_{1} - 33689_{2}$
4583.063	5		21813.356	$15490^{\circ}_{0} - 37303_{4}$
4580.981	3		21823.270	$18431_{3} - 40254^{\circ}_{3}$
4580.405	15	2	21826.014	$11601_{1} - 33427^{\circ}_{2}$
4579.829	200	15	21828.759	$4961_{4} - 26790^{\circ}_{4}$
4579.367	75	3	21830.961	$16554_{6} - 38385^{\circ}_{0}$
4578.778	5b		21833.769	$13297_{4} - 35131^{\circ}_{4}$
4577.905	100	3	21837.933	$3865_{1} - 25703^{\circ}_{2}$
4577.823	100s	4	21838.324	$3687_{2} - 25526^{\circ}_{1}$
4577.582	150	5	21839.474	$16346^{\circ}_{4} - 38186_{4}$
4576.964	4		21842.423	$15490^{\circ}_{0} - 37332_{6}$
4576.742	100	2	21843.482	$11877^{\circ}_{1} - 33721_{2}$
4576.542	20	2	21844.437	$19516^{\circ}_{2} - 41361_{3}$
4576.272	8	2	21845.726	$14032^{\circ}_{2} - 35877_{2}$
4575.821	1		21847.879	$19039^{\circ}_{2} - 40886_{2}$
4575.247	200	50	21850.620	$17501^{\circ}_{0} - 39351_{5}$
4574.028	200	20	21856.443	$12847_{3} - 34704^{\circ}_{3}$
4573.574	75	3	21858.613	$14204_{5} - 36062^{\circ}_{4}$
4573.433	3		21859.286	$11802_{2} - 33662^{\circ}_{1}$
4571.959	100	20	21866.334	$9804_{5} - 31671^{\circ}_{4}$

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TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
4570.972	500r	200	21871.055	$11197_6^8 - 33068_6$	4541.501	10	2	22012.980	$10783_2^3 - 32796_3$
4570.655	20h	3	21872.572	$17411_3^8 - 39283_4$	4541.039	8b		22015.219	$14032_2^3 - 36047_2$
4570.551	2		21873.070	$15863_2 - 37736_2^3$	4540.999	300r	75	22015.413	$3687_2 - 25703_2^3$
4569.736	100	5	21876.971	$7280_2 - 29157_1^7$	4540.566	75	5	22017.513	$11197_6^8 - 33214_5$
4569.636	20	2	21877.449	$12847_3 - 34725_3^8$	4540.255	50b	15	22019.021	$17501_6^8 - 39520_4$
4569.574	5	2	21877.746	$7280_2 - 29157_3^8$	4540.070	4		22019.918	$16346_4^8 - 38366_4$
4569.148	150	20	21879.786	$10414_4^8 - 32293_5$	4537.143	100	3	22034.123	$4961_4 - 26995_3^8$
4568.523	100	10	21882.779	$14206_4^8 - 36089_4$	4536.322	2		22038.111	$13847_2 - 35885_2^3$
4568.143	200	40	21884.599	$5563_1 - 27447_2^3$	4535.979	100	8	22039.778	$7795_4^8 - 29835_3$
4567.856	4	1	21885.974	$13945_3^8 - 35831_3$	4535.546	100	8	22041.882	$13175_4^8 - 35216_5$
4567.240	300	100	21888.926	$7795_4^8 - 29684_5$	4535.388	10	3	22042.650	$13088_3 - 35131_4^8$
4566.988	10		21890.134	$0_2 - 21890_3^8$	4535.255	300r	150	22043.296	$8243_2^3 - 30286_1$
4566.713	15	4	21891.452	$18809_4^8 - 40701_4$	4535.103	2		22044.035	$10414_4^8 - 32458_4$
4565.805	40b	5	21895.806	$11877_1^7 - 33773_1$	4534.402	50	4	22047.443	$15736_1^7 - 37784_2$
4565.783	75b	10	21895.911	$17166_5 - 39062_6^8$	4533.717	4		22050.774	$14465_2^3 - 36515_3$
4564.835	150	10	21900.458	$2869_3 - 24769_3^8$	4533.071	300	75	22053.916	$7795_4^8 - 29894_4$
4563.658	400r	200b	21906.106	$8111_4 - 30017_3^8$	4531.574	3		22061.202	$11601_1 - 33662_1^7$
4562.727	8	1	21910.576	$17411_3^8 - 39321_3$	4531.531	1		22061.411	$19516_2^3 - 41578_2$
4562.476	75	5	21911.782	$9804_5 - 31716_6^8$	4530.319	200	100	22067.313	$11241_3^8 - 33309_2$
4562.081	200	50	21913.679	$17959_4 - 39873_6^8$	4529.922	40	5	22069.247	$15618_3^8 - 37688_3$
4561.704	5	2	21915.490	$11802_2 - 33718_2^3$	4527.115	21		22082.930	$15970_3 - 38053_3^8$
4561.495	200	25	21916.494	$4961_4 - 26878_3^8$	4525.447	40	3	22091.069	$15863_2 - 37954_3^8$
4561.397	100b	10	21916.965	$7502_3 - 29419_2^3$	4524.129	100	10	22097.505	$17224_2^3 - 39321_3$
4561.348	500r	200	21917.200	$7280_2 - 29197_1^7$	4523.211	2		22101.990	$13945_3^8 - 36047_2$
4561.228	150	10	21917.777	$7280_2 - 29197_2^3$	4522.315	50	4	22106.369	$15863_2 - 37970_2^3$
4560.981	2		21918.964	$15166_3^8 - 37085_4$	4521.332	15b	4	22111.175	$5563_1 - 27674_2^3$
4560.067	3		21923.357	$13962_1 - 35885_2^3$	4521.305	150l	20	22111.307	$16554_6 - 38665_6^8$
4559.396	2		21926.583	$14206_4^8 - 36133_5$	4521.196	500r	75	22111.840	$2869_3 - 24981_3^8$
4559.312	50	5	21926.987	$16351_0 - 38278_1^7$	4521.059	50	5	22112.510	$15493_4 - 37605_4^8$
4559.108	1		21927.969	$15166_3^8 - 37094_2$	4519.259	300	75	22121.317	$3687_2 - 25809_1^7$
4559.058	100	3	21928.209	$16217_2^3 - 38145_3$	4518.609	5b		22124.499	$19588_6^8 - 41712_5$
4558.346	300	40	21931.634	$10526_3^8 - 32458_4$	4518.342	50		22125.807	$13175_4^8 - 35300_5$
4555.903	300	150	21943.394	$13297_4 - 35240_3^8$	4517.725	4b	2	22128.829	$19227_6^8 - 41356_5$
4555.809	500r	100	21943.847	$3865_1 - 25809_1^7$	4517.680	4b		22129.049	$15618_3^8 - 37748_2$
4555.143	100	5	21947.055	$17959_4 - 39906_4^8$	4517.629	8b	3	22129.299	$14206_4^8 - 36336_3$
4554.415	100	3	21950.563	$16783_4^8 - 38734_3$	4516.736	3		22133.674	$11601_1 - 33734_2^3$
4553.474	3		21955.099	$21902_4^8 - 43857_5$	4516.540	40	4	22134.634	$14226_0 - 36361_1^7$
4552.222	100b	8	21961.138	$7795_4^8 - 29756_4$	4515.629	10	2	22139.100	$7280_2 - 29419_2^3$
4552.154	300r	150	21961.466	$8800_4 - 30761_3^8$	4515.401	10	2	22140.218	$15166_3^8 - 37307_3$
4551.597	25	5	21964.153	$15166_3^8 - 37131_3$	4515.118	300r	50	22141.605	$0_2 - 22141_3^8$
4551.473	200	75	21964.751	$13847_2 - 35812_3^8$	4514.548	10	2	22144.401	$13945_3^8 - 36089_4$
4549.833	40	2	21972.669	$7280_2 - 29252_2^3$	4514.398	3	1	22145.137	$17166_5 - 39311_4^8$
4549.606	5b		21973.765	$14204_5 - 36178_4^8$	4514.059	75	5	22146.800	$18053_4^8 - 40200_3$
4549.052	2		21976.441	$13297_4 - 35273_6^8$	4513.681	400r	150	22148.654	$9804_5 - 31953_4^8$
4548.979	20	4	21976.794	$16783_4^8 - 38760_4$	4513.224	200	50	22150.897	$6362_2 - 28513_2^3$
4548.326	100b	10	21979.949	$15970_3 - 37950_4^8$	4512.950	2		22152.242	$13088_3 - 35240_3^8$
4547.611	5	1	21983.404	$18069_3^8 - 40052_4$	4510.611	75		22163.729	$15493_4 - 37656_3^8$
4547.248	200	25	21985.160	$6362_2 - 28347_2^3$	4510.611	75		22163.729	$17398_3 - 39562_4^8$
4546.675	75		21987.930	$8800_4 - 30788_6^8$	4510.433	4		22164.604	$13297_4 - 35462_3^8$
4544.729	3b		21997.345	$18614_1^7 - 40611_2$	4509.960	100	8	22166.928	$11241_3^8 - 33408_3$
4544.657	20	4	21997.694	$11802_2 - 33800_3^8$	4509.844	20	4	22167.498	$19588_6^8 - 41755_4$
4544.422	2		21998.831	$18053_4^8 - 40052_4$	4509.461	2		22169.381	$16783_4^8 - 38953_5$
4543.412	100b	8b	22003.721	$12847_3 - 34851_2^3$	4509.390	2		22169.730	$19516_2^3 - 41686_3$
4543.384	20b	5	22003.857	$14206_4^8 - 36210_5$	4508.715	2		22173.049	$16783_4^8 - 38956_4$
4542.049	8	1	22010.324	$6362_2 - 28372_1^7$	4508.035	100	20	22176.394	$11241_3^8 - 33418_4$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
4507.639	2		22178.342	$14204_5 - 36382_4^?$
4506.549	150	40	22183.706	$12114_2^? - 34298_1$
4506.474	200	75	22184.075	$7502_3 - 29686_3^?$
4505.607	8	3	22188.344	$14465_2^? - 36653_2$
4505.448	2		22189.127	$15863_2 - 38053_3^?$
4505.216	500r	100	22190.269	$8800_4 - 30990_3^?$
4504.630	100	20	22193.156	$17501_0^? - 39694_5$
4503.214	15	3	22200.135	$15618_3^? - 37819_4$
4501.177	4	2	22210.181	$19817_1^? - 42027_2$
4500.581	20	3	22213.122	$17398_3 - 39611_3^?$
4499.984	500	200	22216.069	$7795_4^? - 30011_3$
4499.705	50	5	22217.446	$11241_3^? - 33459_4$
4499.431	15	3	22218.799	$9804_5 - 32023_0^?$
4499.383	20	8	22219.037	$7795_4^? - 30014_4$
4498.947	800r	200	22221.190	$5563_1 - 27784_2^?$
4498.156	40	3	22225.097	$15863_2 - 38088_2^?$
4497.908	150b	50	22226.323	$16783_4^? - 39010_3$
4497.908	150b	50	22226.323	$13847_2 - 36074_3^?$
4497.888	50b		22226.421	$13962_1 - 36188_2^?$
4497.780	3	1	22226.955	$6362_2 - 28589_3^?$
4497.125	4	2	22230.192	$13175_4^? - 35405_3$
4495.598	15	4	22237.743	$15166_3^? - 37404_3$
4494.863	2		22241.380	$14243_1^? - 36485_2$
4494.692	100	8	22242.225	$7502_3 - 29744_3^?$
4493.763	2		22246.824	$15970_3 - 38216_3^?$
4493.568	100	20	22247.789	$3865_1 - 26113_2^?$
4493.334	1000r	300	22248.948	$0_2 - 22248_2^?$
4492.677	20	5	22252.201	$15490_0^? - 37742_6$
4492.573	8	3	22252.716	$19503_3^? - 41755_4$
4492.102	200	20	22255.050	$10526_3^? - 32781_4$
4490.673	200	4	22262.131	$11197_0^? - 33459_4$
4490.524	2		22262.870	$13088_3 - 35351_4^?$
4489.664	200	100	22267.134	$14481_6^? - 36749_6$
4489.245	2		22269.213	$17411_3^? - 39680_2$
4488.554	5	2	22272.641	$18614_1^? - 40886_2$
4488.312	200	100	22273.842	$15618_3^? - 37892_4$
4486.898	300	100	22280.861	$2558_0 - 24838_1^?$
4486.419	8	2	22283.240	$12847_3 - 35131_4^?$
4485.898	5	2	22285.828	$11241_3^? - 33527_4$
4485.713	150	40	22286.747	$6362_2 - 28649_1^?$
4484.038	200		22295.072	$17959_4 - 40254_3^?$
4483.346	300	1	22298.513	$4961_4 - 27260_3^?$
4482.911	5	2	22300.677	$18930_3^? - 41230_4$
4482.855	3	1	22300.955	$8243_2^? - 30544_2$
4482.169	400r	100	22304.368	$4961_4 - 27266_4^?$
4481.391	20	3	22308.241	$11802_2 - 34111_1^?$
4481.226	10	8	22309.062	$14206_4^? - 36515_3$
4481.010	8	3	22310.137	$14465_2^? - 36775_3$
4480.547	25l	10	22312.443	$16217_2^? - 38529_3$
4480.308	1		22313.633	$20322_0^? - 42635_5$
4480.267	25	3	22313.837	$6362_2 - 28676_3^?$
4479.781	15	4	22316.258	$10783_2^? - 33099_3$
4479.637	200	75	22316.975	$12114_2^? - 34431_3$
4478.594	150	40	22322.172	$2558_0 - 24880_1^?$
4478.402	150	40	22323.130	$11241_3^? - 33564_3$
4477.865	3		22325.806	$17354_1^? - 39680_2$
4477.216	50	8	22329.043	$15490_0^? - 37819_4$
4477.037	8		22329.935	$14226_0 - 36556_1^?$
4476.977	5	2	22330.235	$12114_2^? - 34444_2$
4475.765	75	8	22336.281	$15970_3 - 38306_4^?$
4475.410	2		22338.053	$17073_1 - 39411_1^?$
4475.410	2		22338.053	$19948_4^? - 42286_3$
4475.221	200	40	22338.996	$0_2 - 22338_3^?$
4474.819	50	8	22341.003	$8800_4 - 31141_0^?$
4474.789	10		22341.153	$13847_2 - 36188_2^?$
4474.403	5		22343.080	$14465_2^? - 36808_3$
4473.337	2		22348.405	$3687_2 - 26036_3^?$
4472.844	200	50	22350.868	$7502_3 - 29853_2^?$
4472.620	20	5	22351.987	$13945_3^? - 36297_4$
4472.348	3		22353.347	$17847_2^? - 40200_3$
4471.871	25	2	22355.731	$4961_4 - 27317_3^?$
4471.483	3		22357.671	$18069_3^? - 40426_4$
4470.990	200	25	22360.136	$7280_2 - 29640_1^?$
4470.990	200	25	22360.136	$15736_1^? - 38097_2$
4470.105	5	2	22364.563	$11241_3^? - 33606_2$
4469.526	400r	150	22367.460	$10414_4^? - 32781_4$
4468.320	200	50	22373.497	$13088_3 - 35462_3^?$
4467.188	2		22379.166	$7502_3 - 29881_4^?$
4465.975	150	2	22385.245	$15970_3 - 38355_2^?$
4465.471	3		22387.771	$16346_4^? - 38734_3$
4464.848	50	20	22390.895	$13945_3^? - 36336_3$
4464.140	10	3	22394.446	$8800_4 - 31194_4^?$
4463.834	200	100	22395.981	$17166_5 - 39562_4^?$
4463.668	200	75	22396.814	$0_2 - 22396_1^?$
4463.245	4	2	22398.937	$13962_1 - 36361_1^?$
4462.757	3		22401.386	$13175_4^? - 35576_3$
4461.815	15b		22406.115	$8111_4 - 30517_0^?$
4461.789	200b	100	22406.246	$7280_2 - 29686_3^?$
4461.602	15		22407.185	$13175_4^? - 35582_5$
4461.241	200	100	22408.998	$3687_2 - 26096_3^?$
4459.976	15	4	22415.354	$18011_0^? - 40426_4$
4458.736	150	75	22421.588	$3865_1 - 26287_1^?$
4458.002	600r	200	22425.279	$3687_2 - 26113_2^?$
4457.782	2		22426.386	$17411_3^? - 39837_2$
4456.809	2		22431.282	$18549_2 - 40980_3^?$
4455.867	150	25	22436.024	$13297_4 - 35733_4^?$
4455.148	2		22439.645	$18053_4^? - 40493_3$
4454.139	75	10	22444.728	$13088_3 - 35533_2^?$
4453.860	8	3	22446.134	$15970_3 - 38416_3^?$
4452.565	200	100	22452.662	$2869_3 - 25321_3^?$
4452.437	50	4	22453.308	$14032_2^? - 36485_2$
4451.871	1		22456.162	$17224_2^? - 39680_2$
4451.740	20	4	22456.823	$15493_4 - 37950_4^?$
4451.359	40	15	22458.745	$13175_4^? - 35633_4$
4450.802	100	40	22461.556	$5563_1 - 28024_1^?$
4450.238	5		22464.402	$7280_2 - 29744_3^?$
4450.066	2		22465.271	$17959_4 - 40425_4^?$
4449.437	5	1	22468.446	$16783_4^? - 39252_5$
4447.230	150	25	22479.597	$11241_3^? - 33721_2$
4446.584	100	15	22482.862	$8800_4 - 31283_3^?$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
4445.901	200	150	22486.316	$2869_3 - 25355^{\circ}_{4}$
4445.447	3	1	22488.612	$16351_0 - 38840^{\circ}_{1}$
4445.309	200b	40b	22489.310	$9804_5 - 32294^{\circ}_{4}$
4445.032	200	75	22490.712	$10783^{\circ}_{2} - 33273_1$
4444.901	1		22491.375	$15863_2 - 38355^{\circ}_{2}$
4443.665	150	100	22497.631	$3865_1 - 26363^{\circ}_{2}$
4443.203	4	2	22499.970	$16783^{\circ}_{4} - 39283_4$
4442.513	20	5	22503.465	$12847_3 - 35351^{\circ}_{4}$
4441.659	50	4	22507.791	$16554_6 - 39062^{\circ}_{6}$
4441.609	100	5	22508.045	$0_2 - 22508^{\circ}_{2}$
4441.512	25	3	22508.536	$17398_3 - 39906^{\circ}_{4}$
4441.198	40	5	22510.128	$11601_1 - 34111^{\circ}_{1}$
4441.149	15	3	22510.376	$19516^{\circ}_{2} - 42027_2$
4440.353	300	75	22514.411	$8243^{\circ}_{2} - 30758_2$
4440.276	300	75	22514.802	$7502_3 - 30017^{\circ}_{3}$
4440.230	2		22515.035	$13297_4 - 35812^{\circ}_{3}$
4439.858	100	4	22516.921	$16217^{\circ}_{2} - 38734_3$
4439.000	8	2	22521.273	$15166^{\circ}_{3} - 37688_3$
4438.746	400	200	22522.562	$6362_2 - 28884^{\circ}_{3}$
4438.092	150	8	22525.881	$10783^{\circ}_{2} - 33309_2$
4437.446	300	20	22529.160	$18053^{\circ}_{4} - 40582_5$
4435.705	4	1	22538.003	$16783^{\circ}_{4} - 39321_3$
4435.296	100	10	22540.081	$13945^{\circ}_{3} - 36485_2$
4434.075	150	40	22546.288	$18809^{\circ}_{4} - 41356_5$
4433.490	150	50	22549.263	$10414^{\circ}_{4} - 32963_5$
4432.252	400	150	22555.561	$6362_2 - 28917^{\circ}_{2}$
4431.416	100	8	22559.816	$15493_4 - 38053^{\circ}_{3}$
4429.979	100	8	22567.134	$15618^{\circ}_{3} - 38186_4$
4429.822	200	20	22567.934	$16783^{\circ}_{4} - 39351_5$
4429.722	8	2	22568.443	$14206^{\circ}_{4} - 36775_3$
4429.633	200	20h	22568.897	$11802_2 - 34371^{\circ}_{2}$
4428.828	5	2	22572.999	$7280_2 - 29853^{\circ}_{2}$
4428.744	100	5	22573.427	$2869_3 - 25442^{\circ}_{3}$
4428.553	200	40	22574.400	$14206^{\circ}_{4} - 36781_5$
4427.530	100b	8	22579.616	$13847_2 - 36427^{\circ}_{3}$
4427.232	100	15	22581.136	$15166^{\circ}_{3} - 37748_2$
4426.019	1		22587.325	$17398_3 - 39985^{\circ}_{3}$
4425.460	200	20	22590.177	$16217^{\circ}_{2} - 38807_2$
4424.836	200b	50	22593.363	$12114^{\circ}_{2} - 34707_3$
4424.661	4	2	22594.257	$13962_1 - 36556^{\circ}_{1}$
4424.243	75	5	22596.392	$14204_5 - 36800^{\circ}_{4}$
4423.719	400	150	22599.068	$3687_2 - 26287^{\circ}_{1}$
4423.263	100	10	22601.398	$14206^{\circ}_{4} - 36808_3$
4422.048	600	200	22607.608	$10783^{\circ}_{2} - 33390_1$
4420.925	100	8	22613.350	$17224^{\circ}_{2} - 39837_3$
4420.782	300b	100b	22614.082	$12847_3 - 35462^{\circ}_{3}$
4420.256	200	20	22616.773	$15490^{\circ}_{6} - 38106_5$
4420.112	100	10	22617.509	$15166^{\circ}_{3} - 37784_2$
4419.768	100	20	22619.270	$13175^{\circ}_{4} - 35794_4$
4418.554	75	3	22625.484	$10783^{\circ}_{2} - 33408_3$
4418.201	15	2	22627.292	$11802_2 - 34430^{\circ}_{3}$
4417.229	10	3	22632.271	$18069^{\circ}_{3} - 40701_4$
4416.946	25	3	22633.721	$14204_5 - 36837^{\circ}_{6}$
4416.844	500	100	22634.244	$9804_5 - 32439^{\circ}_{4}$
4414.767	75	10	22644.892	$13088_3 - 35733^{\circ}_{4}$
4414.486	500d	150	22646.334	$8243^{\circ}_{2} - 30889_1$
4414.216	75	5	22647.719	$18053^{\circ}_{4} - 40701_4$
4414.142	15	3	22648.098	$18930^{\circ}_{3} - 41578_2$
4413.632	200	25	22650.715	$8111_4 - 30761^{\circ}_{3}$
4413.589	1		22650.936	$18549_2 - 41200^{\circ}_{2}$
4413.343	10b	3	22652.199	$15166^{\circ}_{3} - 37819_4$
4412.565	300b	50b	22656.193	$13175^{\circ}_{4} - 35831_3$
4412.270	25s	2	22657.707	$7502_3 - 30160^{\circ}_{3}$
4411.139	50	5	22663.517	$16346^{\circ}_{4} - 39010_3$
4409.899	100	5	22669.889	$0_2 - 22669^{\circ}_{3}$
4408.883	800r	200	22675.113	$3687_2 - 26363^{\circ}_{2}$
4408.481	300	150	22677.181	$8111_4 - 30788^{\circ}_{6}$
4408.251	20	2	22678.364	$14206^{\circ}_{4} - 36885_4$
4406.472	5	2	22687.520	$19948^{\circ}_{4} - 42635_5$
4405.999	15	3	22689.955	$18011^{\circ}_{6} - 40701_4$
4404.820	15	3	22696.028	$15490^{\circ}_{6} - 38186_4$
4404.474	1		22697.811	$17398_3 - 40096^{\circ}_{2}$
4404.113	300	40	22699.672	$15970_3 - 38669^{\circ}_{2}$
4403.425	50	3	22703.218	$18431_3 - 41134^{\circ}_{4}$
4402.927	500	150	22705.786	$2869_3 - 25575^{\circ}_{4}$
4402.601	75	10	22707.467	$17166_5 - 39873^{\circ}_{6}$
4402.448	50	5	22708.256	$13945^{\circ}_{3} - 36653_2$
4402.246	200	50	22709.299	$4961_4 - 27670^{\circ}_{3}$
4401.581	500	200	22712.729	$7795^{\circ}_{4} - 30508_5$
4399.968	150	50	22721.055	$8243^{\circ}_{2} - 30964_3$
4399.583	8	2	22723.044	$11601_1 - 34324^{\circ}_{2}$
4399.453	15	3	22723.715	$15493_4 - 38216^{\circ}_{3}$
4399.027	50	15	22725.916	$15166^{\circ}_{3} - 37892_4$
4398.272	15	3	22729.817	$14481^{\circ}_{6} - 37211_5$
4397.009	200w	40	22736.346	$16783^{\circ}_{4} - 39520_4$
4396.140	100	10	22740.840	$17166_5 - 39906^{\circ}_{4}$
4395.674	10	2	22743.251	$14032^{\circ}_{2} - 36775_3$
4394.838	50	15	22747.577	$15618^{\circ}_{3} - 38366_4$
4393.759	400	150	22753.163	$7502_3 - 30255^{\circ}_{3}$
4393.131	4	2	22756.416	$18930^{\circ}_{3} - 41686_3$
4392.974	400	100	22757.229	$7795^{\circ}_{4} - 30552_4$
4392.495	100b	10	22759.710	$12114^{\circ}_{2} - 34874_3$
4391.531	100	25	22764.706	$17959_4 - 40724^{\circ}_{6}$
4391.390	150	50	22765.437	$13297_4 - 36062^{\circ}_{4}$
4390.613	15	3	22769.466	$19516^{\circ}_{2} - 42286_3$
4389.308	3	1	22776.236	$14032^{\circ}_{2} - 36808_3$
4389.234	8	2	22776.620	$13297_4 - 36074^{\circ}_{3}$
4388.569	10	3	22780.071	$11802_2 - 34583^{\circ}_{3}$
4388.541	1		22780.216	$21077^{\circ}_{6} - 43857_5$
4388.101	50	5	22782.500	$10526^{\circ}_{3} - 33309_2$
4387.734	150	40	22784.406	$5563_1 - 28347^{\circ}_{2}$
4387.028	100b	40	22788.072	$11802_2 - 34591^{\circ}_{1}$
4386.138	3		22792.696	$16217^{\circ}_{2} - 39010_3$
4385.753	25	5	22794.697	$6362_2 - 29157^{\circ}_{1}$
4384.656	150b	50b	22800.400	$10414^{\circ}_{4} - 33214_5$
4383.872	100	40	22804.478	$14204_5 - 37008^{\circ}_{6}$
4383.602	15	3	22805.882	$15863_2 - 38669^{\circ}_{2}$
4382.893	100	15	22809.571	$5563_1 - 28372^{\circ}_{1}$
4382.526	3		22811.481	$15863_2 - 38675^{\circ}_{3}$
4382.205	20	5	22813.152	$15493_4 - 38306^{\circ}_{4}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
4381.130	2		22818.750	$15970_3 - 38788^{\frac{3}{3}}$
4380.879	4	1	22820.057	$3687_2 - 26508^{\frac{3}{3}}$
4380.716	15		22820.906	$13847_2 - 36668^{\frac{2}{2}}$
4380.289	200	25	22823.131	$10783^{\frac{2}{2}} - 33606_2$
4379.860	20	4	22825.366	$15166^{\frac{3}{3}} - 37992_4$
4378.177	500r	100	22834.140	$2869_3 - 25703^{\frac{2}{2}}$
4378.026	100	3	22834.928	$6362_2 - 29197^{\frac{1}{1}}$
4377.650	8		22836.889	$14204_5 - 37041^{\frac{4}{4}}$
4376.682	8	2	22841.940	$14465^{\frac{2}{2}} - 37307_3$
4376.257	25	5	22844.158	$15970_3 - 38814^{\frac{2}{2}}$
4374.710	8	3	22852.236	$8243^{\frac{2}{2}} - 31095_1$
4374.124	600	150	22855.298	$0_2 - 22855^{\frac{3}{3}}$
4374.013	150	40	22855.878	$7795^{\frac{4}{4}} - 30651_3$
4373.206	40	8	22860.095	$21077^{\frac{0}{0}} - 43937_6$
4372.067	1		22866.051	$15736^{\frac{1}{1}} - 38602_2$
4371.140	75	8	22870.900	$8800_4 - 31671^{\frac{4}{4}}$
4370.980	10	3	22871.737	$17398_3 - 40270^{\frac{4}{4}}$
4370.068	5	2	22876.510	$15490^{\frac{0}{0}} - 38366_4$
4369.876	200	50	22877.515	$0_2 - 22877^{\frac{1}{1}}$
4369.602	50	25	22878.950	$14206^{\frac{4}{4}} - 37085_4$
4369.496	100	25	22879.505	$8111_4 - 30990^{\frac{3}{3}}$
4369.288	50b	25	22880.594	$13297_4 - 36178^{\frac{4}{4}}$
4368.995	20	4	22882.128	$10526^{\frac{3}{3}} - 33408_3$
4368.352	5	2	22885.497	$12847_3 - 35733^{\frac{4}{4}}$
4367.418	100	15	22890.391	$6362_2 - 29252^{\frac{2}{2}}$
4367.287	50	15	22891.077	$4961_4 - 27852^{\frac{0}{0}}$
4367.191	5	2	22891.581	$10526^{\frac{3}{3}} - 33418_4$
4367.113	3	1	22891.989	$15493_4 - 38385^{\frac{0}{0}}$
4365.930	600	150	22898.192	$8243^{\frac{2}{2}} - 31141_3$
4365.302	4	1	22901.486	$11802_2 - 34704^{\frac{3}{3}}$
4365.020	25	8	22902.966	$18809^{\frac{4}{4}} - 41712_5$
4364.506	8	3	22905.663	$16346^{\frac{4}{4}} - 39252_5$
4364.461	5	2	22905.899	$10783^{\frac{2}{2}} - 33689_2$
4364.040	25	4	22908.109	$8111_4 - 31019^{\frac{4}{4}}$
4363.798	2		22909.379	$13962_1 - 36871^{\frac{2}{2}}$
4363.589	1		22910.476	$16783^{\frac{4}{4}} - 39694_5$
4363.500	8	2	22910.944	$15618^{\frac{3}{3}} - 38529_3$
4362.720	15	3	22915.040	$13847_2 - 36762^{\frac{3}{3}}$
4362.472	50	8	22916.343	$8800_4 - 31716^{\frac{0}{0}}$
4361.201	4	1	22923.021	$15493_4 - 38416^{\frac{3}{3}}$
4360.991	5	1	22924.125	$14206^{\frac{4}{4}} - 37131_3$
4360.825	3	1	22924.997	$15863_2 - 38788^{\frac{3}{3}}$
4360.167	100	15	22928.457	$7280_2 - 30208^{\frac{2}{2}}$
4359.836	10	2	22930.198	$15166^{\frac{3}{3}} - 38097_2$
4359.558	15	4	22931.660	$12114^{\frac{2}{2}} - 35046_1$
4359.372	600r	100	22932.638	$10526^{\frac{3}{3}} - 33459_4$
4358.321	500	150	22938.168	$10783^{\frac{2}{2}} - 33721_2$
4358.082	15	5	22939.426	$14465^{\frac{2}{2}} - 37404_3$
4357.974	8	2	22939.995	$13945^{\frac{3}{3}} - 36885_4$
4356.835	3	1	22945.992	$18809^{\frac{4}{4}} - 41755_4$
4356.045	75	20	22950.153	$5563_1 - 28513^{\frac{2}{2}}$
4354.660	5	2	22957.452	$16217^{\frac{2}{2}} - 39174_3$
4354.483	400	100	22958.386	$13175^{\frac{4}{4}} - 36133_5$
4353.449	300b	100b	22963.838	$3687_2 - 26651^{\frac{2}{2}}$
4352.613	150	25b	22968.249	$2558_0 - 25526^{\frac{1}{1}}$
4351.466	100	50	22974.303	$13088_3 - 36062^{\frac{4}{4}}$
4351.274	200	50	22975.317	$7280_2 - 30255^{\frac{3}{3}}$
4351.120	8	3	22976.130	$17224^{\frac{2}{2}} - 40200_3$
4351.017	50	10	22976.673	$15863_2 - 38840^{\frac{1}{1}}$
4350.272	100	10	22980.609	$8800_4 - 31780^{\frac{3}{3}}$
4349.630	40	5	22984.000	$15618^{\frac{3}{3}} - 38602_2$
4349.346	20	4	22985.501	$13088_3 - 36074^{\frac{3}{3}}$
4349.072	400	40	22986.949	$4961_4 - 27948^{\frac{4}{4}}$
4348.828	3	1	22988.239	$19039^{\frac{2}{2}} - 42027_2$
4348.599	400	75	22989.449	$13847_2 - 36837^{\frac{1}{1}}$
4348.498	4	1	22989.983	$11601_1 - 34591^{\frac{1}{1}}$
4348.403	3	1	22990.485	$10783^{\frac{2}{2}} - 33773_1$
4347.638	100	15	22994.531	$10414^{\frac{4}{4}} - 33408_3$
4346.432	500r	200	23000.911	$7280_2 - 30281^{\frac{1}{1}}$
4346.410	15b		23001.028	$10526^{\frac{3}{3}} - 33527_4$
4345.851	150	50	23003.986	$10414^{\frac{4}{4}} - 33418_4$
4345.702	25	10	23004.775	$14206^{\frac{4}{4}} - 37211_5$
4343.744	5		23015.144	$7502_3 - 30517^{\frac{4}{4}}$
4343.381	100	25	23017.068	$3865_1 - 26882^{\frac{0}{0}}$
4342.973	15	4	23019.230	$15166^{\frac{3}{3}} - 38186_4$
4342.674	100	20	23020.815	$17959_4 - 40980^{\frac{3}{3}}$
4342.445	500r	100	23022.029	$8243^{\frac{2}{2}} - 31265_3$
4342.049	50	4	23024.128	$13847_2 - 36871^{\frac{2}{2}}$
4340.896	200	40	23030.244	$8111_4 - 31141^{\frac{0}{0}}$
4339.924	10	2	23035.402	$12114^{\frac{2}{2}} - 35149_2$
4339.449	8	2	23037.923	$12847_3 - 35885^{\frac{2}{2}}$
4339.374	15	3	23038.321	$10526^{\frac{3}{3}} - 33564_3$
4339.069	3	1	23039.941	$17847^{\frac{2}{2}} - 40886_2$
4338.108	400	100	23045.045	$10414^{\frac{4}{4}} - 33459_4$
4337.639	15	4	23047.536	$19588^{\frac{0}{0}} - 42635_5$
4337.277	800r	100	23049.460	$0_2 - 23049^{\frac{1}{1}}$
4336.986	50	10	23051.006	$7502_3 - 30553^{\frac{2}{2}}$
4335.992	5	2	23056.291	$14465^{\frac{2}{2}} - 37521_3$
4335.731	200b	50b	23057.678	$9804_5 - 32862^{\frac{4}{4}}$
4335.347	25b	8	23059.721	$11241^{\frac{3}{3}} - 34301_4$
4333.552	10	3	23069.272	$20867^{\frac{2}{2}} - 43937_6$
4333.284	75	4	23070.699	$15736^{\frac{1}{1}} - 38807_2$
4332.339	150	40	23075.731	$11802_2 - 34878^{\frac{1}{1}}$
4331.582	5	1	23079.764	$10526^{\frac{3}{3}} - 33606_2$
4331.291	4b	2b	23081.314	$15618^{\frac{3}{3}} - 38700_4$
4330.844	300	25	23083.697	$8111_4 - 31194^{\frac{4}{4}}$
4330.565	8b	3	23085.184	$13297_4 - 36382^{\frac{4}{4}}$
4330.412	50	20	23086.000	$5563_1 - 28649^{\frac{1}{1}}$
4328.915	300r	25	23093.983	$0_2 - 23093^{\frac{2}{2}}$
4328.436	3	1	23096.539	$14206^{\frac{4}{4}} - 37303_4$
4327.981	15	3	23098.966	$14032^{\frac{2}{2}} - 37131_3$
4327.715	150	25	23100.386	$13088_3 - 36188^{\frac{2}{2}}$
4327.036	100	25	23104.011	$17166_5 - 40270^{\frac{4}{4}}$
4325.860	150	8	23110.292	$5563_1 - 28673^{\frac{2}{2}}$
4325.274	200	50	23113.423	$10414^{\frac{4}{4}} - 33527_4$
4324.901	20	4	23115.416	$15618^{\frac{3}{3}} - 38734_3$
4323.634	20	5	23122.190	$13175^{\frac{4}{4}} - 36297_4$
4322.181	3		23129.963	$13297_4 - 36427^{\frac{3}{3}}$
4321.224	5	2	23135.085	$15863_2 - 38998^{\frac{3}{3}}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
4318.523	20	8	23149.555	$13945_{3}^{3} - 37094_{2}$	4288.471	200b	50b	23311.775	$13847_{2} - 37159_{3}^{3}$
4317.838	100	5	23153.227	$8800_{4} - 31953_{4}^{4}$	4287.082	200	40	23319.328	$16554_{6} - 39873_{0}^{0}$
4316.371	25	5	23161.096	$13175_{4}^{4} - 36336_{3}$	4286.229	200b	75b	23323.969	$6362_{2} - 29686_{3}^{3}$
4316.218	10	3	23161.917	$18069_{3}^{3} - 41230_{4}$	4285.757	3	1	23326.537	$12114_{2}^{2} - 35440_{3}$
4316.109	200	50	23162.502	$10526_{3}^{3} - 33689_{2}$	4285.398	10	3	23328.491	$13297_{4} - 36625_{0}^{0}$
4315.254	500r	150	23167.091	$2869_{3} - 26036_{3}^{3}$	4283.103	200b	50b	23340.991	$12847_{3} - 36188_{2}^{2}$
4315.052	100	15	23168.176	$11877_{1}^{1} - 35046_{1}$	4283.073	50b	20b	23341.155	$15970_{3} - 39311_{4}^{4}$
4314.491	8	3	23171.188	$18549_{2} - 41720_{2}^{2}$	4282.084	150b	50b	23346.546	$7795_{4}^{4} - 31141_{3}$
4314.319	300	50	23172.112	$8111_{4} - 31283_{3}^{3}$	4280.568	300r	100	23354.814	$5563_{1} - 28917_{2}^{2}$
4314.279	2		23172.327	$15493_{4} - 38665_{0}^{0}$	4280.322	8	3	23356.156	$18930_{3}^{3} - 42286_{3}$
4314.053	20	8	23173.541	$16346_{4}^{4} - 39520_{4}$	4279.281	25	3	23361.837	$13945_{3}^{3} - 37307_{3}$
4313.778	25	8	23175.018	$17959_{4} - 41134_{4}^{4}$	4279.064	300	40	23363.022	$15166_{3}^{3} - 38529_{3}$
4313.335	2		23177.398	$18053_{4}^{4} - 41230_{4}$	4278.324	500r	200	23367.063	$14204_{5} - 37571_{0}^{0}$
4312.992	800r	200	23179.241	$2869_{3} - 26048_{4}^{4}$	4275.567	50	4	23382.130	$6362_{2} - 29744_{3}^{3}$
4312.992	800r	200	23179.241	$4961_{4} - 28140_{4}^{4}$	4275.165	15	2	23384.329	$10783_{2}^{2} - 34167_{3}$
4311.798	300	100	23185.660	$8243_{2}^{2} - 31429_{1}$	4274.817	200	25	23386.233	$13847_{2} - 37234_{2}^{2}$
4311.625	150b	25	23186.590	$13962_{1} - 37149_{2}^{2}$	4273.911	15	3	23391.190	$15618_{3}^{3} - 39010_{3}$
4311.576	100b	25	23186.854	$11802_{2} - 34989_{1}^{1}$	4272.875	400r	50	23396.862	$8800_{4} - 32197_{3}^{3}$
4311.062	150	15	23189.618	$11241_{3}^{3} - 34431_{3}$	4272.303	300r	100	23399.994	$3687_{2} - 27087_{1}^{1}$
4310.957	75	5	23190.183	$3687_{2} - 26878_{3}^{3}$	4270.734	100	15	23408.591	$14481_{6}^{6} - 37890_{5}$
4310.101	15	5	23194.788	$10526_{3}^{3} - 33721_{2}$	4269.943	300	75	23412.927	$8111_{4} - 31523_{3}^{3}$
4309.886	150	50	23195.945	$3865_{1} - 27061_{2}^{2}$	4269.272	3	1	23416.607	$16783_{4}^{4} - 40200_{3}$
4309.557	25	4	23197.716	$14206_{4}^{4} - 37404_{3}$	4269.063	100	5	23417.753	$10414_{4}^{4} - 33831_{4}$
4308.599	100b	20	23202.874	$11241_{3}^{3} - 34444_{2}$	4266.447	15	3	23432.111	$3865_{1} - 27297_{1}^{1}$
4308.121	300	100	23205.449	$11241_{3}^{3} - 34447_{4}$	4264.338	200l	20	23443.700	$7280_{2} - 30723_{1}^{1}$
4307.176	600r	200	23210.540	$11197_{0}^{0} - 34407_{6}$	4261.492	150	4	23459.356	$13945_{3}^{3} - 37404_{3}$
4305.495	5	2	23219.602	$18011_{0}^{0} - 41230_{4}$	4260.984	100	2	23462.153	$12114_{2}^{2} - 35576_{3}$
4304.955	150	10	23222.514	$3865_{1} - 27087_{1}^{1}$	4260.802	150	1	23463.155	$15490_{6}^{6} - 38953_{5}$
4304.868	8	3	23222.984	$14465_{2}^{2} - 37688_{3}$	4260.395	15	1	23465.397	$13297_{4} - 36762_{3}^{3}$
4304.801	8	3	23223.345	$8800_{4} - 32023_{0}^{0}$	4260.332	800r	5	23465.744	$9804_{5} - 33270_{4}^{4}$
4304.290	8	3	23226.102	$12847_{3} - 36074_{3}^{3}$	4260.288	75b	1	23465.986	$11241_{3}^{3} - 34707_{3}$
4303.988	75	5	23227.732	$2869_{3} - 26096_{3}^{3}$	4260.138	20		23466.812	$15490_{6}^{6} - 38956_{4}$
4300.370	3	1	23247.273	$19039_{2}^{2} - 42286_{3}$	4259.494	200	1	23470.360	$7795_{4}^{4} - 31265_{3}$
4299.839	500r	100	23250.144	$11197_{0}^{0} - 34447_{4}$	4258.521	400	2	23475.723	$7795_{4}^{4} - 31271_{5}$
4299.633	200	50	23251.258	$2558_{0} - 25809_{1}^{1}$	4257.496	600r	4	23481.375	$0_{2} - 23481_{1}^{1}$
4298.121	75	5	23259.437	$7502_{3} - 30761_{3}^{3}$	4257.459	10h		23481.579	$7280_{2} - 30761_{3}^{3}$
4297.938	100	20	23260.428	$14481_{6}^{6} - 37742_{6}$	4256.254	500r	8	23488.226	$7502_{3} - 30990_{3}^{3}$
4297.307	300b	75	23263.843	$11197_{0}^{0} - 34460_{5}$	4256.039	10		23489.413	$14032_{2}^{2} - 37521_{3}$
4295.902	2	1	23271.451	$13962_{1} - 37234_{2}^{2}$	4255.795	150b	4	23490.760	$6362_{2} - 29853_{2}^{2}$
4295.816	100	40	23271.917	$11877_{1}^{1} - 35149_{2}$	4255.759	50b	3	23490.958	$16346_{4}^{4} - 39837_{3}$
4295.584	200	25	23273.174	$7280_{2} - 30553_{2}^{2}$	4255.237	200	3	23493.840	$2869_{3} - 26363_{2}^{2}$
4295.236	25	5	23275.060	$14032_{2}^{2} - 37307_{3}$	4254.380	100	1	23498.572	$15970_{3} - 39468_{3}^{3}$
4294.756	75b	25b	23277.661	$11601_{1} - 34878_{1}^{1}$	4253.539	600r	20	23503.218	$13297_{4} - 36800_{4}^{4}$
4294.720	100b	25	23277.856	$6362_{2} - 29640_{1}^{1}$	4253.388	10b		23504.053	$14243_{1}^{1} - 37748_{2}$
4293.800	8b	3	23282.844	$14465_{2}^{2} - 37748_{2}$	4251.421	5		23514.927	$10783_{2}^{2} - 34298_{1}$
4292.681	4	1	23288.913	$18431_{3} - 41720_{2}^{2}$	4251.286	50		23515.674	$2869_{3} - 26384_{4}^{4}$
4292.305	50	10	23290.953	$12114_{2}^{2} - 35405_{3}$	4251.077	4		23516.830	$7502_{3} - 31019_{4}^{4}$
4291.810	400	100	23293.639	$8243_{2}^{2} - 31537_{3}$	4250.775	100	2	23518.501	$4961_{4} - 28480_{4}^{4}$
4291.635	50	10	23294.589	$15970_{3} - 39264_{3}^{3}$	4250.315	800r	75	23521.046	$0_{2} - 23521_{3}^{3}$
4290.394	200	50	23301.327	$13847_{2} - 37149_{2}^{2}$	4249.476	150	1	23525.690	$11802_{2} - 35328_{1}^{1}$
4289.655	100	40	23305.341	$10526_{3}^{3} - 33831_{4}$	4248.518	50	1	23530.995	$8243_{2}^{2} - 31774_{3}$
4289.414	8	3	23306.650	$12114_{2}^{2} - 35421_{1}$	4248.391	200	3	23531.698	$7795_{4}^{4} - 31326_{4}$
4289.204	8	2	23307.791	$3687_{2} - 26995_{3}^{3}$	4248.274	4		23532.346	$17354_{1}^{1} - 40886_{2}$
4289.204	8	2	23307.791	$18053_{4}^{4} - 41361_{3}$	4248.181	5		23532.861	$7280_{2} - 30812_{2}^{2}$
4288.669	200	75	23310.699	$7502_{3} - 30812_{2}^{2}$	4247.861	150	2	23534.634	$12847_{3} - 36382_{4}^{4}$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
4247.777	10		23535.099	$20322_{6}^{0} - 43857_{5}$
4246.796	10b		23540.536	$13297_{4} - 36837_{6}^{0}$
4246.324	20	1	23543.153	$11877_{1}^{0} - 35421_{1}$
4245.451	100	3	23547.994	$15863_{2} - 39411_{1}^{0}$
4244.022	25	1	23555.922	$15618_{3}^{3} - 39174_{3}$
4243.261	100	2	23560.147	$8111_{4} - 31671_{4}^{4}$
4241.697	4		23568.834	$15493_{4} - 39062_{6}^{0}$
4241.096	100	2	23572.173	$3687_{2} - 27260_{3}^{3}$
4239.791	15		23579.429	$12847_{3} - 36427_{3}^{3}$
4239.276	4		23582.293	$3865_{1} - 27447_{2}^{2}$
4239.276	4		23582.293	$17398_{3} - 40980_{3}^{3}$
4237.535	10		23591.982	$15970_{3} - 39562_{4}^{4}$
4237.182	20		23593.947	$5563_{1} - 29157_{1}^{1}$
4236.049	50	1	23600.258	$13175_{4}^{4} - 36775_{3}$
4235.463	600r	5	23603.523	$0_{2} - 23603_{2}^{2}$
4235.238	20	1	23604.777	$15863_{2} - 39468_{3}^{3}$
4235.092	50	1	23605.591	$8111_{4} - 31716_{6}^{0}$
4234.231	50	1	23610.390	$17166_{5} - 40776_{4}^{4}$
4233.907	50	1	23612.197	$14206_{4}^{4} - 37819_{4}$
4232.478	1		23620.169	$16217_{2}^{2} - 39837_{3}$
4231.617	10		23624.975	$14481_{6}^{6} - 38106_{5}$
4231.136	4		23627.661	$4961_{4} - 28589_{3}^{3}$
4230.823	150	1	23629.409	$3687_{2} - 27317_{3}^{3}$
4230.427	500	5	23631.621	$11241_{3}^{3} - 34873_{4}$
4230.299	15		23632.336	$11241_{3}^{3} - 34874_{3}$
4229.961	10		23634.224	$5563_{1} - 29197_{1}^{1}$
4229.864	20		23634.766	$5563_{1} - 29197_{2}^{2}$
4229.148	300	4	23638.767	$2869_{3} - 26508_{3}^{3}$
4228.761	150b	3	23640.931	$10526_{3}^{3} - 34167_{3}$
4228.677	25b	2	23641.400	$15970_{3} - 39611_{3}^{3}$
4228.418	100	3	23642.848	$16783_{4}^{4} - 40426_{4}$
4227.387	400	8	23648.614	$7280_{2} - 30928_{1}^{1}$
4226.775	100	2	23652.038	$11197_{6}^{0} - 34849_{5}$
4226.298	200		23654.708	$6362_{2} - 30017_{3}^{3}$
4226.047	10		23656.113	$14032_{2}^{2} - 37688_{3}$
4225.489	50l	2	23659.236	$18053_{4}^{4} - 41712_{5}$
4225.095	3		23661.443	$10783_{2}^{2} - 34444_{2}$
4224.871	3		23662.697	$17224_{2}^{2} - 40886_{2}$
4224.488	3		23664.843	$15618_{3}^{3} - 39283_{4}$
4223.589	150b	3	23669.880	$8111_{4} - 31780_{3}^{3}$
4222.439	20		23676.326	$11197_{6}^{0} - 34873_{4}$
4221.691	75	2	23680.521	$14465_{2}^{2} - 38145_{3}$
4221.151	100	2	23683.550	$14206_{4}^{4} - 37890_{5}$
4220.730	150	2	23685.913	$8243_{2}^{2} - 31929_{3}$
4220.730	150	2	23685.913	$14206_{4}^{4} - 37892_{4}$
4220.570	3		23686.810	$18069_{3}^{3} - 41755_{4}$
4220.064	200	15	23689.650	$5563_{1} - 29252_{2}^{2}$
4219.569	20	1	23692.430	$7502_{3} - 31194_{4}^{4}$
4217.185	100b	2b	23705.823	$16346_{4}^{4} - 40052_{4}$
4216.543	3		23709.432	$16783_{4}^{4} - 40493_{3}$
4216.371	200l	3	23710.399	$7280_{2} - 30990_{3}^{3}$
4216.205	75	1	23711.333	$13297_{4} - 37008_{6}^{0}$
4216.068	300s	5	23712.103	$13088_{3} - 36800_{4}^{4}$
4215.625	150	1	23714.595	$4961_{4} - 28676_{3}^{3}$
4215.383	3		23715.956	$14032_{2}^{2} - 37748_{2}$
4215.210	4		23716.930	$12114_{2}^{2} - 35831_{3}$
4214.828	200	4	23719.079	$4961_{4} - 28680_{4}^{4}$
4213.315	15	1	23727.596	$11601_{1} - 35328_{1}^{1}$
4213.067	400	5	23728.993	$2558_{0} - 26287_{1}^{1}$
4212.923	50	1	23729.804	$17501_{6}^{6} - 41230_{4}$
4212.653	4		23731.325	$17847_{2}^{2} - 41578_{2}$
4210.923	900r	10	23741.075	$0_{2} - 23741_{1}^{1}$
4210.765	400	10	23741.965	$7795_{4}^{4} - 31537_{3}$
4210.600	2		23742.896	$13945_{3}^{3} - 37688_{3}$
4210.455	75	2	23743.713	$13297_{4} - 37041_{4}^{4}$
4210.089	75	3	23745.778	$14204_{5} - 37950_{4}^{4}$
4208.921	100b	10b	23752.367	$14032_{2}^{2} - 37784_{2}$
4208.867	200b		23752.672	$0_{2} - 23752_{2}^{2}$
4208.750	100b	5	23753.332	$10414_{4}^{4} - 34167_{3}$
4208.412	150	4	23755.240	$9804_{5} - 33560_{4}^{4}$
4207.612	25	1	23759.756	$3687_{2} - 27447_{2}^{2}$
4207.176	20	1	23762.218	$15490_{6}^{6} - 39252_{5}$
4206.058	10	1	23768.535	$13847_{2} - 37616_{1}^{1}$
4205.540	10		23771.462	$15493_{4} - 39264_{3}^{3}$
4205.012	4		23774.447	$13962_{1} - 37736_{2}^{2}$
4204.930	3		23774.911	$10526_{3}^{3} - 34301_{4}$
4203.884	75	2	23780.826	$7502_{3} - 31283_{3}^{3}$
4203.575	15	1	23782.574	$2869_{3} - 26651_{2}^{2}$
4203.437	4	1	23783.355	$13088_{3} - 36871_{2}^{2}$
4203.085	15	1	23785.346	$14206_{4}^{4} - 37992_{4}$
4202.266	50	2	23789.982	$15166_{3}^{3} - 38956_{4}$
4200.686	2		23798.930	$16783_{4}^{4} - 40582_{5}$
4200.149	2		23801.973	$17398_{3} - 41200_{2}^{2}$
4200.017	2		23802.721	$13945_{3}^{3} - 37748_{2}$
4198.936	20	1	23808.849	$3865_{1} - 27674_{2}^{2}$
4198.876	15	1	23809.189	$13847_{2} - 37656_{3}^{3}$
4197.317	2		23818.032	$15493_{4} - 39311_{4}^{4}$
4197.016	2		23819.740	$17411_{3}^{3} - 41230_{4}$
4196.846	10s		23820.705	$12847_{3} - 36668_{2}^{2}$
4194.936	200	5	23831.551	$7795_{4}^{4} - 31626_{5}$
4193.601	1		23839.137	$13945_{3}^{3} - 37784_{2}$
4193.518	15	2	23839.609	$17847_{2}^{2} - 41686_{3}$
4193.017	600	15	23842.457	$8111_{4} - 31953_{4}^{4}$
4192.877	2		23843.253	$15166_{3}^{3} - 39010_{3}$
4192.362	150	3	23846.182	$6362_{2} - 30208_{2}^{2}$
4191.146	15	1	23853.101	$14243_{1}^{1} - 38097_{2}$
4191.028	3		23853.772	$16346_{4}^{4} - 40200_{3}$
4190.813	5	1	23854.996	$17501_{6}^{6} - 41356_{5}$
4190.620	15	1	23856.095	$5563_{1} - 29419_{2}^{2}$
4189.633	5	1	23861.715	$15490_{6}^{6} - 39351_{5}$
4189.563	100	3	23862.113	$13297_{4} - 37159_{3}^{3}$
4187.512	1		23873.800	$13945_{3}^{3} - 37819_{4}$
4187.142	50	3	23875.910	$11802_{2} - 35678_{1}^{1}$
4185.143	50	2	23887.314	$10414_{4}^{4} - 34301_{4}$
4184.138	200	4	23893.052	$6362_{2} - 30255_{3}^{3}$
4182.933	20	2	23899.934	$14206_{4}^{4} - 38106_{5}$
4182.707	4		23901.226	$15618_{3}^{3} - 39520_{4}$
4182.080	50	2	23904.809	$10526_{3}^{3} - 34431_{3}$
4181.518	2		23908.022	$11241_{3}^{3} - 35149_{2}$
4180.720	10	1	23912.585	$8111_{4} - 32023_{6}^{0}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
4180.326	20	2	23914.839	$12847_3 - 36762^8_3$	4143.648	100	2	24126.520	$2869_3 - 26995^8_3$
4179.861	1		23917.499	$16783^9_4 - 40701_4$	4143.337	5	1	24128.331	$13175^4_4 - 37303_4$
4179.760	10	2	23918.077	$10526^8_3 - 34444_2$	4142.325	100	3	24134.225	$7795^4_4 - 31929_3$
4179.620	200b	5	23918.878	$3865_1 - 27784^2_2$	4141.719	100	3	24137.757	$14465^2_2 - 38602_2$
4179.314	100	8	23920.630	$10526^8_3 - 34447_4$	4138.040	200	3	24159.216	$3865_1 - 28024^0_1$
4179.220	150	3	23921.168	$2869_3 - 26790^4_4$	4136.286	300	8	24169.461	$11877^0_1 - 36047_2$
4178.848	200	3	23923.297	$4961_4 - 28884^3_3$	4136.132	8	1	24170.361	$16554_6 - 40724^0_6$
4178.624	2		23924.579	$10783^2_2 - 34707_3$	4135.480	300	3	24174.171	$8111_4 - 32285^3_3$
4177.281	4	1	23932.271	$11601_1 - 35533^2_2$	4134.323	50	3	24180.936	$14204_5 - 38385^0_5$
4177.165	100	4	23932.936	$12114^2_2 - 36047_2$	4134.062	200b	10b	24182.463	$0_2 - 24182^2_2$
4176.480	10	1	23936.861	$15970_3 - 39906^4_4$	4133.958	200	10	24183.071	$8111_4 - 32294^4_4$
4175.322	4		23943.499	$15736^1_1 - 39680_2$	4132.620	150	3	24190.901	$6362_2 - 30553^2_2$
4174.620	2		23947.526	$13945^3_3 - 37892_4$	4131.710	150	3	24196.229	$4961_4 - 29157^3_3$
4173.720	25	1	23952.690	$12847_3 - 36800^4_4$	4131.662	200b	3	24196.510	$9804_5 - 34001^4_4$
4173.448	50	4	23954.251	$8800_4 - 32754^3_3$	4131.207	25	2	24199.175	$11241^3_3 - 35440_3$
4170.533	500b	25	23970.993	$4961_4 - 28932^4_4$	4131.002	800	15	24200.375	$7795^4_4 - 31995_4$
4169.762	4		23975.425	$15493_4 - 39468^3_3$	4130.168	10	1	24205.262	$13847_2 - 38053^3_3$
4169.085	15	1	23979.319	$7795^4_4 - 31774_3$	4129.073	3		24211.681	$17501^0_0 - 41712_5$
4168.455	50	4	23982.943	$16217^2_2 - 40200_3$	4128.050	100	2	24217.681	$7795^4_4 - 32012_4$
4167.864	20	1	23986.343	$3687_2 - 27674^2_2$	4127.345	150b	10	24221.818	$12114^2_2 - 36336_3$
4165.766	800r	15	23998.423	$7795^4_4 - 31793_4$	4126.032	10	1	24229.526	$13175^4_4 - 37404_3$
4165.496	3		23999.979	$11877^0_1 - 35877_2$	4124.105	5b		24240.847	$13945^3_3 - 38186_4$
4164.972	50	3	24002.998	$7280_2 - 31283^3_3$	4124.043	150	5	24241.211	$13847_2 - 38088^2_2$
4163.947	100	2	24008.907	$2869_3 - 26878^3_3$	4123.726	100	3	24243.074	$8800_4 - 33043^3_3$
4163.827	10	1	24009.599	$11802_2 - 35812^3_3$	4123.601	150	3	24243.809	$7280_2 - 31523^3_3$
4162.782	75	5	24015.626	$15970_3 - 39985^3_3$	4121.744	3		24254.732	$17501^0_0 - 41755_4$
4162.509	400	15	24017.201	$10414^2_4 - 34431_3$	4120.364	15	1	24262.855	$10783^2_2 - 35046_1$
4162.029	3		24019.971	$11197^6_6 - 35216_5$	4118.490	200	4	24273.895	$13297_4 - 37571^6_6$
4161.738	150	5	24021.650	$7502_3 - 31523^3_3$	4118.225	5	1	24275.457	$17411^3_3 - 41686_3$
4161.344	2		24023.925	$12847_3 - 36871^2_2$	4117.698	4b	1	24278.564	$7502_3 - 31780^3_3$
4160.272	2b		24030.115	$15490^6_6 - 39520_4$	4116.635	25b	4b	24284.833	$15970_3 - 40254^3_3$
4159.764	20	1	24033.049	$10414^2_4 - 34447_4$	4116.635	25b	4b	24284.833	$11601_1 - 35885^2_2$
4159.152	75	2	24036.586	$13175^4_4 - 37211_5$	4115.759	500r	50	24290.002	$5563_1 - 29853^2_2$
4158.535	800	20	24040.152	$9804_5 - 33844^6_6$	4113.873	20	1	24301.137	$12847_3 - 37149^2_2$
4157.391	150b	3	24046.767	$10414^2_4 - 34460_5$	4112.753	600b	15	24307.755	$0_2 - 24307^2_2$
4157.363	25b	2b	24046.929	$13945^3_3 - 37992_4$	4112.713	300b		24307.991	$8243^2_2 - 32551_3$
4156.481	50b	10b	24052.031	$14226_0 - 38278^1_1$	4112.665	40b	2	24308.275	$13297_4 - 37605^4_4$
4155.010	5		24060.546	$13088_3 - 37149^2_2$	4112.104	10	1	24311.591	$12847_3 - 37159^3_3$
4154.719	200	5	24062.232	$8800_4 - 32862^4_4$	4110.829	200b	10b	24319.131	$7280_2 - 31599^2_2$
4153.573	8	1	24068.870	$15493_4 - 39562^4_4$	4110.317	2		24322.160	$17398_3 - 41720^2_2$
4153.204	5		24071.009	$13088_3 - 37159^3_3$	4110.174	4		24323.007	$14206^4_4 - 38529_3$
4152.561	2		24074.736	$18549_2 - 42624^1_1$	4109.323	400r	5	24328.044	$8111_4 - 32439^4_4$
4152.147	15		24077.137	$5563_1 - 29640^1_1$	4108.183	4		24334.794	$11241^3_3 - 35576_3$
4152.032	3		24077.803	$11601_1 - 35678^1_1$	4107.861	100	3	24336.702	$3687_2 - 28024^1_1$
4151.144	50b	2	24082.954	$11802_2 - 35885^2_2$	4106.522	4		24344.637	$17411^3_3 - 41755_4$
4150.598	5		24086.122	$8111_4 - 32197^3_3$	4106.154	15b	2b	24346.819	$10526^3_3 - 34873_4$
4150.087	200b	5	24089.088	$4961_4 - 29050^6_6$	4106.034	10	1	24347.530	$10526^3_3 - 34874_3$
4148.829	50	3	24096.392	$3687_2 - 27784^2_2$	4105.894	25b		24348.361	$4961_4 - 29310^4_4$
4148.724	100	3	24097.001	$7502_3 - 31599^2_2$	4105.062	25	2	24353.295	$15166^3_3 - 39520_4$
4147.538	100	3	24103.892	$11197^6_6 - 35300_5$	4103.692	20b	2	24361.425	$6362_2 - 30723^1_1$
4146.968	15	1	24107.205	$13847_2 - 37954^3_3$	4102.820	20		24366.603	$10783^2_2 - 35149_2$
4145.858	5b		24113.659	$14032^2_2 - 38145_3$	4102.617	400r	3	24367.809	$7502_3 - 31870^2_2$
4145.296	20	2	24116.928	$15166^3_3 - 39283_4$	4101.234	5		24376.026	$14204_5 - 38580^4_4$
4144.342	40	3	24122.480	$13847_2 - 37970^2_2$	4100.919	40	2	24377.898	$9804_5 - 34182^6_6$
4143.711	5		24126.153	$15970_3 - 40096^2_2$	4100.341	1000r	20	24381.334	$0_2 - 24381^2_2$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
4099.553	100	4	24386.021	$11802_2 - 36188^{2}_{2}$	4060.062	200	1	24623.211	$10526^{3}_{3} - 35149_2$
4099.553	100	4	24386.021	$12847_3 - 37234^{2}_{2}$	4059.847	200	10	24624.515	$11802_2 - 36427^{3}_{3}$
4098.730	100s	2	24390.917	$2869_3 - 27260^{3}_{3}$	4059.253	1500r	20	24628.119	$6362_2 - 30990^{3}_{3}$
4097.747	500b	8	24396.768	$2869_3 - 27266^{4}_{4}$	4058.936	75	8	24630.042	$19227^{8}_{6} - 43857_5$
4097.321	200	8	24399.305	$6362_2 - 30761^{3}_{3}$	4057.940	200	2	24636.087	$11241^{3}_{3} - 35877_2$
4096.077	150	4	24406.714	$7795^{3}_{4} - 32202_5$	4056.718	10		24643.508	$8111_4 - 32754^{3}_{3}$
4094.901	50	3	24413.724	$15493_4 - 39906^{4}_{4}$	4056.636	200	2	24644.006	$13175^{4}_{4} - 37819_4$
4093.672	40	2	24421.053	$0_2 - 24421^{3}_{3}$	4056.399	100	2	24645.446	$5563_1 - 30208^{2}_{2}$
4091.988	8	1	24431.103	$13847_2 - 38278^{1}_{1}$	4056.007	150	1	24647.828	$3865_1 - 28513^{2}_{2}$
4091.737	40	2	24432.602	$7280_2 - 31712^{1}_{1}$	4055.908	200	1	24648.430	$13088_3 - 37736^{2}_{2}$
4091.590	10	1	24433.479	$15618^{3}_{3} - 40052_4$	4054.387	200	8	24657.676	$13945^{3}_{3} - 38602_2$
4089.138	400	8	24448.130	$2869_3 - 27317^{3}_{3}$	4054.302	300	8	24658.193	$7502_3 - 32160^{2}_{2}$
4088.728	500	8	24450.582	$6362_2 - 30812^{2}_{2}$	4054.080	20		24659.543	$3687_2 - 28347^{2}_{2}$
4088.629	100	3	24451.174	$7502_3 - 31953^{3}_{4}$	4053.841	40		24660.997	$12114^{2}_{2} - 36775_3$
4087.285	200	5	24459.214	$10414^{3}_{4} - 34873_4$	4053.527	1000r	75	24662.907	$7795^{3}_{4} - 32458_4$
4087.166	50l	2	24459.926	$10414^{3}_{4} - 34874_3$	4052.240	100b		24670.740	$15166^{3}_{3} - 39837_3$
4086.936	15	1	24461.303	$14204_5 - 38665^{0}_{0}$	4051.913	40		24672.731	$17354^{1}_{1} - 42027_2$
4085.434	500	10	24470.296	$8800_4 - 33270^{4}_{4}$	4051.500	500	15	24675.246	$10414^{3}_{4} - 35089_3$
4085.257	200	8	24471.356	$14481^{6}_{6} - 38953_5$	4049.944	500	40	24684.726	$3687_2 - 28372^{1}_{1}$
4083.469	500	8	24482.071	$3865_1 - 28347^{2}_{2}$	4049.535	200	25	24687.219	$9804_5 - 34492^{4}_{4}$
4081.592	50	2	24493.329	$14206^{4}_{4} - 38700_4$	4048.432	800	50	24693.945	$12114^{2}_{2} - 36808_3$
4081.368	800	8	24494.673	$8800_4 - 33294^{3}_{3}$	4048.288	800	40	24694.824	$7502_3 - 32197^{3}_{3}$
4080.707	400	20	24498.641	$7795^{3}_{4} - 32293_5$	4047.058	50	1	24702.329	$14032^{2}_{2} - 38734_3$
4080.359	150	4	24500.730	$7280_2 - 31780^{3}_{3}$	4046.824	200	15	24703.757	$12114^{2}_{2} - 36818_2$
4079.273	25b	1	24507.253	$3865_1 - 28372^{1}_{1}$	4046.252	200	8	24707.249	$13962_1 - 38669^{2}_{2}$
4078.302	100	2	24513.087	$13175^{4}_{4} - 37688_3$	4045.848	40b	2	24709.717	$14465^{2}_{2} - 39174_3$
4077.623	15	1	24517.169	$13088_3 - 37605^{4}_{4}$	4045.818	50b	3	24709.900	$19227^{8}_{6} - 43937_6$
4075.907	150	5	24527.491	$14206^{4}_{4} - 38734_3$	4045.226	200	2	24713.516	$6362_2 - 31075^{2}_{2}$
4075.503	400r	10	24529.922	$2558_0 - 27087^{1}_{1}$	4044.926	300	8	24715.349	$13175^{4}_{4} - 37890_5$
4073.960	25	1	24539.213	$12114^{2}_{2} - 36653_2$	4044.515	200b	2	24717.860	$5563_1 - 30281^{1}_{1}$
4073.856	200	3	24539.839	$9804_5 - 34344^{4}_{4}$	4043.394	1000r	50	24724.713	$4961_4 - 29686^{3}_{3}$
4073.007	20	1	24544.954	$14465^{2}_{2} - 39010_3$	4040.971	100		24739.538	$2558_0 - 27297^{1}_{1}$
4071.750	200b	15	24552.532	$8243^{3}_{2} - 32796_3$	4039.865	800	20	24746.311	$14206^{4}_{4} - 38953_5$
4071.731	100b		24552.646	$11241^{3}_{3} - 35794_4$	4039.268	100	2	24749.968	$4961_4 - 29711^{6}_{6}$
4071.553	100	1	24553.719	$14206^{4}_{4} - 38760_4$	4039.268	100	2	24749.968	$14206^{4}_{4} - 38956_4$
4070.756	100	2	24558.527	$11802_2 - 36361^{1}_{1}$	4039.022	150	1	24751.475	$8111_4 - 32862^{4}_{4}$
4070.238	150	3	24561.652	$0_2 - 24561^{3}_{3}$	4038.635	100		24753.847	$11802_2 - 36556^{1}_{1}$
4070.115	25	1	24562.394	$15490^{6}_{6} - 40052_4$	4038.456	300	2	24754.944	$13945^{3}_{3} - 38700_4$
4070.041	75	1	24562.841	$10526^{3}_{3} - 35089_3$	4038.228	300	10	24756.342	$7795^{3}_{4} - 32551_3$
4069.901	5		24563.686	$14243^{1}_{1} - 38807_2$	4037.993	15		24757.783	$12847_3 - 37605^{4}_{4}$
4069.461	500r	15	24566.342	$6362_2 - 30928^{1}_{1}$	4037.663	100	2	24759.806	$8800_4 - 33560^{4}_{4}$
4069.112	50	2	24568.449	$13847_2 - 38416^{3}_{3}$	4037.562	500	15	24760.425	$11601_1 - 36361^{1}_{1}$
4068.705	75		24570.906	$14032^{2}_{2} - 38602_2$	4036.047	2000r	50	24769.719	$0_2 - 24769^{3}_{3}$
4068.470	50	2	24572.325	$16783^{4}_{4} - 41356_5$	4035.931	200	8	24770.431	$14481^{6}_{6} - 39252_5$
4067.451	400r	5	24578.481	$2869_3 - 27447^{2}_{2}$	4035.730	300	1	24771.665	$4961_4 - 29733^{0}_{0}$
4066.961	50	1	24581.442	$15618^{3}_{3} - 40200_3$	4035.089	100		24775.600	$14032^{2}_{2} - 38807_2$
4066.822	100	2	24582.283	$18053^{4}_{4} - 42635_5$	4034.878	200	8	24776.896	$15493_4 - 40270^{4}_{4}$
4066.435	25		24584.622	$13945^{3}_{3} - 38529_3$	4033.907	600r	8	24782.860	$4961_4 - 29744^{3}_{3}$
4065.889	100	3	24587.923	$11601_1 - 36188^{2}_{2}$	4033.776	500	8	24783.664	$3865_1 - 28649^{1}_{1}$
4065.618	100	4	24589.562	$11241^{3}_{3} - 35831_3$	4032.596	600r	200	24790.916	$8800_4 - 33591^{3}_{3}$
4065.551	50	1	24589.968	$7280_2 - 31870^{2}_{2}$	4032.199	20		24793.357	$10783^{2}_{2} - 35576_3$
4064.332	400	10	24597.343	$11197^{6}_{6} - 35794_4$	4030.842	2000r	50	24801.704	$2869_3 - 27670^{3}_{3}$
4063.407	1500r	75	24602.942	$11197^{6}_{6} - 35799_6$	4030.590	20		24803.254	$14206^{4}_{4} - 39010_3$
4061.625	300	3	24613.736	$14226_0 - 38840^{1}_{1}$	4030.292	300	40	24805.088	$2869_3 - 27674^{2}_{2}$
4060.241	5		24622.126	$10783^{2}_{2} - 35405_3$	4030.214	100	1	24805.568	$11241^{3}_{3} - 36047_2$

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TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
4030.078	25		24806.405	$15970_3 - 40776^{\circ}_4$	4000.445	200	3	24990.153	$5563_1 - 30553^{\circ}_2$
4029.827	400r	15	24807.951	$3865_1 - 28673^{\circ}_2$	4000.280	800	20	24991.184	$10414^{\circ}_4 - 35405_3$
4029.658	400	15	24808.991	$12847_3 - 37656^{\circ}_3$	4000.041	200b		24992.677	$15618^{\circ}_3 - 40611_2$
4028.334	200	10	24817.145	$13175^{\circ}_4 - 37992_4$	4000.024	100b		24992.783	$13847_2 - 38840^{\circ}_1$
4027.546	150l	20	24822.000	$13847_2 - 38669^{\circ}_2$	3998.953	600	20	24999.477	$8800_4 - 33799^{\circ}_4$
4027.007	500r	10	24825.322	$3687_2 - 28513^{\circ}_2$	3998.800	100b	5	25000.433	$13088_3 - 38088^{\circ}_2$
4026.644	4		24827.560	$13847_2 - 38675^{\circ}_3$	3998.733	400b	5	25000.852	$7795^{\circ}_4 - 32796_3$
4024.801	300r	8	24838.929	$0_2 - 24838^{\circ}_1$	3998.657	300s	2	25001.327	$7502_3 - 32503^{\circ}_2$
4023.338	400	10	24847.961	$11241^{\circ}_3 - 36089_4$	3998.061	300	5	25005.054	$7280_2 - 32285^{\circ}_3$
4022.728	75	1	24851.729	$13962_1 - 38814^{\circ}_2$	3997.443	15b		25008.920	$13297_4 - 38306^{\circ}_4$
4022.067	500b		24855.813	$8243^{\circ}_2 - 33099_3$	3997.347	200	4	25009.521	$16346^{\circ}_4 - 41356_5$
4021.940	200b	4	24856.598	$14465^{\circ}_2 - 39321_3$	3997.172	50	1	25010.615	$15970_3 - 40980^{\circ}_3$
4021.750	200	8	24857.772	$14204_5 - 39062^{\circ}_6$	3997.109	300	5	25011.009	$13175^{\circ}_4 - 38186_4$
4021.149	300	10	24861.487	$13088_3 - 37950^{\circ}_4$	3997.019	300	8	25011.573	$13945^{\circ}_3 - 38956_4$
4021.007	75	2	24862.365	$13945^{\circ}_3 - 38807_2$	3996.670	500	15	25013.757	$11197^{\circ}_6 - 36210_5$
4020.462	100		24865.735	$11802_2 - 36668^{\circ}_2$	3996.508	100	2	25014.771	$16346^{\circ}_4 - 41361_3$
4020.354	500	20	24866.403	$13088_3 - 37954^{\circ}_3$	3996.203	300	25	25016.680	$12114^{\circ}_2 - 37131_3$
4019.787	200	5	24869.911	$14481^{\circ}_6 - 39351_5$	3994.038	5		25030.240	$8243^{\circ}_2 - 33273_1$
4018.932	25	2	24875.201	$17411^{\circ}_3 - 42286_3$	3993.515	200	15	25033.518	$15166^{\circ}_3 - 40200_3$
4018.354	200	15	24878.779	$10526^{\circ}_3 - 35405_3$	3993.397	100		25034.258	$11802_2 - 36837^{\circ}_1$
4018.118	50b		24880.241	$0_2 - 24880^{\circ}_1$	3991.731	800r	40	25044.706	$8800_4 - 33844^{\circ}_6$
4018.099	400b	15	24880.358	$7280_2 - 32160^{\circ}_2$	3991.624	300b	40	25045.377	$14206^{\circ}_4 - 39252_5$
4017.461	8		24884.309	$16346^{\circ}_4 - 41230_4$	3991.289	15		25047.479	$18809^{\circ}_4 - 43857_5$
4017.257	100	2	24885.573	$15166^{\circ}_3 - 40052_4$	3990.892	300	15	25049.971	$10526^{\circ}_3 - 35576_3$
4017.062	400	5	24886.781	$10414^{\circ}_4 - 35300_5$	3990.809	300	25	25050.492	$5563_1 - 30613^{\circ}_6$
4016.896	10		24887.809	$11601_1 - 36488^{\circ}_2$	3990.492	800r	10	25052.482	$3865_1 - 28917^{\circ}_2$
4016.112	100	2	24892.668	$11197^{\circ}_6 - 36089_4$	3990.020	150b	40	25055.445	$4961_4 - 30017^{\circ}_3$
4014.716	400	10	24901.323	$3687_2 - 28589^{\circ}_3$	3990.002	20b	3	25055.558	$11241^{\circ}_3 - 36297_4$
4014.472	40	2	24902.837	$16783^{\circ}_4 - 41686_3$	3988.953	25		25062.147	$17224^{\circ}_2 - 42286_3$
4012.610	25	2	24914.392	$10526^{\circ}_3 - 35440_3$	3988.519	25	4	25064.874	$13945^{\circ}_3 - 39010_3$
4012.495	2000r	150	24915.106	$2869_3 - 27784^{\circ}_2$	3988.429	75		25065.440	$8243^{\circ}_2 - 33309_2$
4012.190	150	2	24917.000	$7280_2 - 32197^{\circ}_3$	3988.078	10b	8b	25067.646	$11601_1 - 36668^{\circ}_2$
4011.739	800r	5b	24919.801	$4961_4 - 29881^{\circ}_4$	3987.867	150	2	25068.972	$11802_2 - 36871^{\circ}_2$
4011.591	500r	40	24920.721	$6362_2 - 31283^{\circ}_3$	3987.206	200b		25073.128	$7502_3 - 32575^{\circ}_2$
4009.816	400b	10	24931.752	$13175^{\circ}_4 - 38106_5$	3986.604	200	25	25076.914	$14206^{\circ}_4 - 39283_4$
4009.783	200b	2	24931.957	$15493_4 - 40425^{\circ}_4$	3986.215	25		25079.361	$2869_3 - 27948^{\circ}_4$
4009.724	400	10	24932.324	$8111_4 - 33043^{\circ}_3$	3985.815	8		25081.878	$9804_5 - 34886^{\circ}_6$
4009.057	1500r	100	24936.472	$11197^{\circ}_6 - 36133_5$	3985.737	4		25082.369	$15618^{\circ}_3 - 40701_4$
4009.012	300r	50	24936.752	$7502_3 - 32439^{\circ}_4$	3984.879	300	40	25087.769	$13297_4 - 38385^{\circ}_6$
4008.443	10		24940.292	$11877^{\circ}_1 - 36818_2$	3984.095	200		25092.706	$15490^{\circ}_6 - 40582_5$
4008.312	100		24941.107	$13847_2 - 38788^{\circ}_3$	3983.815	2		25094.470	$11241^{\circ}_3 - 36336_3$
4008.210	1500	100	24941.741	$7795^{\circ}_4 - 32737_5$	3983.783	10		25094.671	$10783^{\circ}_2 - 35877_2$
4005.960	300	8	24955.750	$11601_1 - 36556^{\circ}_1$	3982.894	200	8	25100.272	$11197^{\circ}_6 - 36297_4$
4005.297	75	1	24959.881	$11802_2 - 36762^{\circ}_3$	3982.607	100	2	25102.081	$12847_3 - 37950^{\circ}_4$
4005.091	500r	10	24961.165	$3687_2 - 28649^{\circ}_1$	3981.827	300	100	25106.998	$12847_3 - 37954^{\circ}_3$
4004.560	20		24964.474	$13088_3 - 38053^{\circ}_3$	3980.575	15		25114.895	$14206^{\circ}_4 - 39321_3$
4004.238	8	1	24966.482	$13847_2 - 38814^{\circ}_2$	3979.956	200	8	25118.801	$13297_4 - 38416^{\circ}_3$
4003.993	4		24968.009	$14206^{\circ}_4 - 39174_3$	3979.402	75	2	25122.298	$12847_3 - 37970^{\circ}_2$
4003.574	400	25	24970.622	$13175^{\circ}_4 - 38145_3$	3978.438	50	1	25128.385	$13088_3 - 38216^{\circ}_3$
4002.376	75	3	24978.096	$14032^{\circ}_2 - 39010_3$	3977.434	15		25134.728	$17501^{\circ}_6 - 42635_5$
4001.992	50		24980.493	$12114^{\circ}_2 - 37094_2$	3976.152	50b	1	25142.831	$14032^{\circ}_2 - 39174_3$
4001.894	300	2	24981.105	$0_2 - 24981^{\circ}_3$	3975.976	20		25143.944	$16217^{\circ}_2 - 41361_3$
4001.198	100h		24985.450	$3687_2 - 28673^{\circ}_2$	3975.831	150	5	25144.862	$14206^{\circ}_4 - 39351_5$
4001.058	800r	40	24986.324	$7795^{\circ}_4 - 32781_4$	3975.468	200	20	25147.157	$8243^{\circ}_2 - 33390_1$
4000.748	200		24988.261	$3687_2 - 28676^{\circ}_3$	3975.008	5s		25150.067	$15736^{\circ}_1 - 40886_2$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
3974.829	200	4	25151.200	$13847_2 - 38998^8_8$	3941.682	10		25362.701	$8243^9_2 - 33606_2$
3973.507	25	2	25159.568	$8111_4 - 33270^4_4$	3941.232	100	2	25365.597	$5563_1 - 30928^7_7$
3973.333	500	10	25160.669	$5563_1 - 30723^7_7$	3941.137	100	3	25366.208	$16346^3_4 - 41712_5$
3973.196	1000r	50	25161.537	$6362_2 - 31523^3_3$	3940.837	200	5	25368.139	$13297_4 - 38665^0_0$
3973.063	40b	1	25162.379	$10414^8_4 - 35576_3$	3940.705	200	4	25368.989	$12847_3 - 38216^3_3$
3972.640	500	75	25165.058	$8243^9_2 - 33408_3$	3940.422	5		25370.811	$7280_2 - 32650^7_7$
3972.230	75	2	25167.656	$8800_4 - 33967^3_3$	3939.538	75	2	25376.503	$13945^3_3 - 39321_3$
3972.153	1500r	300	25168.144	$7795^4_4 - 32963_5$	3939.318	150	8	25377.921	$13297_4 - 38675^3_3$
3972.153	1500r	300	25168.144	$10414^8_4 - 35582_5$	3938.956	75	2	25380.253	$10414^8_4 - 35794_4$
3969.665	300	15	25183.918	$8111_4 - 33294^3_3$	3938.614	400b	150	25382.457	$8800_4 - 34182^0_0$
3967.610	200	2	25196.961	$3687_2 - 28884^3_3$	3938.152	200	8	25385.434	$7280_2 - 32665^7_7$
3967.392	2000r	300	25198.346	$4961_4 - 30160^4_4$	3937.861	100	2b	25387.310	$3865_1 - 29252^2_2$
3966.334	200	4	25205.067	$12847_3 - 38053^3_3$	3934.465	15	1	25409.223	$16346^3_4 - 41755_4$
3965.483	100	3	25210.476	$19227^6_6 - 44437_6$	3934.060	150	3	25411.838	$11241^3_3 - 36653_2$
3964.455	75	2	25217.013	$11877^7_7 - 37094_2$	3933.238	400	40	25417.149	$10414^8_4 - 35831_3$
3964.329	200	3	25217.814	$13088_3 - 38306^4_4$	3933.034	200	5	25418.467	$6362_2 - 31780^3_3$
3964.030	300	15	25219.717	$10414^8_4 - 35633_4$	3932.911	1500r	200	25419.262	$7795^4_4 - 33214_5$
3962.475	100	3	25229.613	$13945^3_3 - 39174_3$	3931.085	150	3	25431.069	$11802_2 - 37234^2_2$
3962.420	400r	15	25229.964	$3687_2 - 28917^2_2$	3930.252	150	4	25436.459	$14243^7_7 - 39680_2$
3962.371	75	5b	25230.276	$15970_3 - 41200^2_2$	3929.291	300	8	25442.680	$0_2 - 25442^3_3$
3962.197	200	8	25231.384	$15493_4 - 40724^6_6$	3928.967	200b	40b	25444.778	$15166^3_3 - 40611_2$
3960.685	10		25241.015	$12847_3 - 38088^2_2$	3928.865	300	50	25445.439	$8243^2_2 - 33689_2$
3960.270	500	50	25243.661	$11241^3_3 - 36485_2$	3928.308	100	10	25449.046	$8111_4 - 33560^4_4$
3959.300	1000r	100	25249.845	$5563_1 - 30812^2_2$	3927.806	400	10	25452.299	$7502_3 - 32954^2_2$
3958.928	200	3	25252.217	$7502_3 - 32754^3_3$	3926.864	200	8	25458.404	$12847_3 - 38306^4_4$
3957.736	40		25259.823	$15166^3_3 - 40426_4$	3925.596	300	8	25466.628	$2558_0 - 28024^7_7$
3957.059	100	20	25264.144	$10783^2_2 - 36047_2$	3925.219	400	50	25469.074	$9804_5 - 35273^0_0$
3956.481	150	20	25267.835	$10526^3_3 - 35794_4$	3925.093	1000r	200b	25469.891	$3687_2 - 29157^3_3$
3956.005	400	10	25270.875	$11601_1 - 36871^2_2$	3924.404	500l	10	25474.363	$7280_2 - 32754^3_3$
3955.891	400	50b	25271.604	$2869_3 - 28140^4_4$	3923.799	500r	20	25478.290	$2869_3 - 28347^2_2$
3955.477	15		25274.249	$11241^3_3 - 36515_3$	3923.510	100	2	25480.167	$8111_4 - 33591^3_3$
3955.170	800	40	25276.210	$9804_5 - 35081^0_0$	3922.394	100	8	25487.416	$14206^4_4 - 39694_5$
3954.130	100	20	25282.858	$13297_4 - 38580^4_4$	3921.782	25	4	25491.394	$13297_4 - 38788^3_3$
3954.068	100	10	25283.255	$15493_4 - 40776^4_4$	3921.731	15		25491.725	$13088_3 - 38580^4_4$
3953.056	4		25289.727	$14032^2_2 - 39321_3$	3920.058	300	10	25502.604	$16783^4_4 - 42286_3$
3952.967	75	1	25290.296	$12114^2_2 - 37404_3$	3919.275	200	5	25507.699	$6362_2 - 31870^2_2$
3952.761	500r	10	25291.614	$3865_1 - 29157^7_7$	3919.023	1000r	100	25509.339	$3687_2 - 29197^7_7$
3952.421	25		25293.790	$4961_4 - 30255^3_3$	3918.934	300	8	25509.919	$3687_2 - 29197^2_2$
3950.804	300	8	25304.142	$7795^4_4 - 33099_3$	3917.270	500	50	25520.755	$10526^3_3 - 36047_2$
3950.707	100s	3	25304.763	$10526^3_3 - 35831_3$	3916.597	200	8	25525.140	$13175^4_4 - 38700_4$
3950.393	1000r	200	25306.775	$0_2 - 25306^2_2$	3916.417	500r	25	25526.313	$0_2 - 25526^7_7$
3948.133	500	40	25321.261	$8243^2_2 - 33564_3$	3915.848	200	15	25530.022	$8243^2_2 - 33773_1$
3948.029	600r	15	25321.928	$0_2 - 25321^3_3$	3915.295	300	8	25533.628	$11241^3_3 - 36775_3$
3947.329	1000r	100	25326.418	$9804_5 - 35131^4_4$	3915.172	5		25534.430	$15166^3_3 - 40701_4$
3947.136	500	50	25327.656	$13088_3 - 38416^3_3$	3914.163	200s	8	25541.012	$7502_3 - 33043^3_3$
3946.481	400	10	25331.860	$3865_1 - 29197^7_7$	3913.645	200l	5	25544.393	$8800_4 - 34344^4_4$
3946.391	300	25	25332.438	$3865_1 - 29197^2_2$	3913.302	75	2	25546.632	$9804_5 - 35351^4_4$
3945.206	200	8	25340.046	$16346^4_4 - 41686_3$	3913.082	300	25	25548.068	$11601_1 - 37149^2_2$
3944.253	500	20	25346.169	$11802_2 - 37149^2_2$	3912.738	75	3	25550.314	$17073_1 - 42624^7_7$
3943.605	300	25	25350.333	$6362_2 - 31712^7_7$	3912.485	75l	1	25551.966	$11197^0_0 - 36749_6$
3943.459	300	40	25351.272	$10526^3_3 - 35877_2$	3912.211	75	2	25553.756	$3865_1 - 29419^2_2$
3942.907	300	20	25354.821	$13175^4_4 - 38529_3$	3911.950	300b	25	25555.460	$4961_4 - 30517^0_0$
3942.628	100		25356.615	$11802_2 - 37159^3_3$	3911.910	500r	40	25555.722	$4961_4 - 30517^4_4$
3942.072	500b	50	25360.192	$7502_3 - 32862^4_4$	3911.523	200	3	25558.250	$11601_1 - 37159^7_7$
3941.962	10	1	25360.899	$16217^2_2 - 41578_2$	3911.364	15		25559.289	$13175^4_4 - 38734_3$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
3910.773	300	8	25563.152	$10526_{3}^{3} - 36089_{4}$	3877.610	500b	15	25781.774	$13175_{4}^{4} - 38956_{4}$
3910.622	50	2	25564.139	$13847_{2} - 39411_{1}^{1}$	3877.462	500	20	25782.758	$8800_{4} - 34583_{3}^{3}$
3910.521	100	2	25564.799	$3687_{2} - 29252_{2}^{2}$	3875.646	500r	25	25794.838	$7502_{3} - 33297_{2}^{2}$
3910.251	50	2	25566.564	$11241_{3}^{3} - 36808_{3}$	3875.374	1500r	200	25796.649	$10414_{4}^{4} - 36210_{5}$
3909.991	100	8	25568.264	$12847_{3} - 38416_{3}^{3}$	3875.157	300	2	25798.093	$6362_{2} - 32160_{2}^{2}$
3909.139	300	20	25573.837	$12114_{2}^{2} - 37688_{3}$	3874.862	1500r	200	25800.057	$4961_{4} - 30761_{3}^{3}$
3908.979	300	25	25574.883	$13945_{3}^{3} - 39520_{4}$	3874.244	1000r	50	25804.173	$2869_{3} - 28673_{2}^{2}$
3908.749	500	15	25576.388	$11241_{3}^{3} - 36818_{2}$	3873.821	2000r	500	25806.990	$2869_{3} - 28676_{3}^{3}$
3908.014	75	1	25581.198	$13088_{3} - 38669_{2}^{2}$	3873.473	500r	50	25809.309	$0_{2} - 25809_{1}^{1}$
3907.543	50	5	25584.282	$11197_{0}^{0} - 36781_{5}$	3873.421	400b	20	25809.655	$10526_{3}^{3} - 36336_{3}$
3907.352	2		25585.532	$13175_{4}^{4} - 38760_{4}$	3873.147	400	10	25811.481	$2869_{3} - 28680_{4}^{4}$
3907.160	200	10	25586.790	$13088_{3} - 38675_{3}^{3}$	3872.861	200	4	25813.387	$11802_{2} - 37616_{1}^{1}$
3903.481	300	3	25610.905	$2869_{3} - 28480_{4}^{4}$	3872.672	200b	5	25814.647	$2558_{0} - 28372_{1}^{1}$
3903.315	200	5	25611.994	$15618_{3}^{3} - 41230_{4}$	3870.891	75		25826.524	$4961_{4} - 30788_{0}^{0}$
3903.103	1000r	150	25613.385	$7795_{4}^{4} - 33408_{3}$	3870.763	75	2	25827.378	$12847_{3} - 38675_{3}^{3}$
3901.957	20	2	25620.907	$13847_{2} - 39468_{3}^{3}$	3869.663	800r	50	25834.720	$6362_{2} - 32197_{3}^{3}$
3901.662	300	15	25622.844	$7795_{4}^{4} - 33418_{4}$	3868.254	400	10	25844.130	$11241_{3}^{3} - 37085_{4}$
3900.577	600r	50	25629.971	$8800_{4} - 34430_{3}^{3}$	3868.040	100	3	25845.559	$14206_{4}^{4} - 40052_{4}$
3900.464	40	1	25630.714	$14206_{4}^{4} - 39837_{3}$	3867.974	100	200	25846.001	$18011_{0}^{0} - 43857_{5}$
3898.795	300	100	25641.686	$15493_{4} - 41134_{4}^{4}$	3867.069	40	10	25852.049	$16783_{4}^{4} - 42635_{5}$
3898.509	300b	100	25643.567	$11241_{3}^{3} - 36885_{4}$	3866.907	500b	50	25853.132	$11241_{3}^{3} - 37094_{2}$
3898.438	500r	25	25644.034	$2869_{3} - 28513_{2}^{2}$	3866.771	200	2	25854.041	$11802_{2} - 37656_{3}^{3}$
3897.778	200	5	25648.376	$14032_{2}^{2} - 39680_{2}$	3866.375	100	2	25856.689	$15863_{2} - 41720_{2}^{2}$
3895.418	2000r	200	25663.914	$7795_{4}^{4} - 33459_{4}$	3866.338	40	1	25856.937	$8111_{4} - 33967_{3}^{3}$
3894.601	8		25669.298	$14204_{5} - 39873_{0}^{0}$	3864.970	200b	40b	25866.089	$15490_{0}^{0} - 41356_{5}$
3893.817	200	8	25674.466	$7280_{2} - 32954_{2}^{2}$	3862.654	200b	200	25881.597	$7280_{2} - 33161_{1}^{1}$
3893.651	300	40	25675.561	$10414_{4}^{4} - 36089_{4}$	3862.419	500b	250b	25883.172	$10414_{4}^{4} - 36297_{4}$
3891.725	400	10	25688.267	$11197_{0}^{0} - 36885_{4}$	3861.574	300b	40	25888.835	$11197_{0}^{0} - 37085_{4}$
3891.657	75	1	25688.716	$8111_{4} - 33799_{4}^{4}$	3861.502	300b	40	25889.318	$11241_{3}^{3} - 37131_{3}$
3891.520	300	3	25689.621	$8111_{4} - 33800_{3}^{3}$	3861.351	300	10	25890.331	$8111_{4} - 34001_{4}^{4}$
3889.906	300	4	25700.279	$13088_{3} - 38788_{3}^{3}$	3861.051	200	2	25892.342	$13945_{3}^{3} - 39837_{3}$
3889.715	100	2	25701.541	$13297_{4} - 38998_{3}^{3}$	3859.289	20		25904.163	$8800_{4} - 34704_{3}^{3}$
3889.609	150	3	25702.242	$10783_{2}^{2} - 36485_{2}$	3858.927	100b	10	25906.593	$11877_{1}^{1} - 37784_{2}$
3889.542	200	8	25702.685	$14204_{5} - 39906_{4}^{4}$	3858.358	200	150	25910.414	$13088_{3} - 38998_{3}^{3}$
3889.432	15		25703.411	$0_{2} - 25703_{2}^{2}$	3856.622	300	15	25922.077	$10414_{4}^{4} - 36336_{3}$
3887.220	40		25718.037	$6362_{2} - 32080_{1}^{1}$	3856.516	300	50	25922.789	$6362_{2} - 32285_{3}^{3}$
3887.019	800r	100	25719.367	$10414_{4}^{4} - 36133_{5}$	3856.354	400r	40	25923.878	$8243_{2}^{2} - 34167_{3}$
3886.917	800r	500	25720.042	$2869_{3} - 28589_{3}^{3}$	3856.222	100	8b	25924.766	$7502_{3} - 33427_{2}^{2}$
3886.064	75	25	25725.688	$13088_{3} - 38814_{2}^{2}$	3853.985	100	8	25939.813	$16346_{4}^{4} - 42286_{3}$
3885.224	200	5	25731.250	$3687_{2} - 29419_{2}^{2}$	3853.825	200b	15	25940.890	$12847_{3} - 38788_{3}^{3}$
3885.066	200	10	25732.296	$7795_{4}^{4} - 33527_{4}$	3852.135	800r	50	25952.270	$3687_{2} - 29640_{1}^{1}$
3884.985	25		25732.833	$10783_{2}^{2} - 36515_{3}$	3851.155	300	15	25958.874	$10526_{3}^{3} - 36485_{2}$
3884.629	200	8	25735.191	$13945_{3}^{3} - 39680_{2}$	3851.072	300	20	25959.434	$15618_{3}^{3} - 41578_{2}$
3884.629	200	8	25735.191	$14465_{2}^{2} - 40200_{3}$	3850.058	20		25966.270	$12847_{3} - 38814_{2}^{2}$
3883.767	200	15	25740.902	$15490_{0}^{0} - 41230_{4}$	3849.910	400	15	25967.269	$13297_{4} - 39264_{3}^{3}$
3883.536	200	5	25742.433	$15618_{3}^{3} - 41361_{3}$	3847.617	500	10	25982.743	$12114_{2}^{2} - 38097_{2}$
3882.324	200	8	25750.470	$15970_{3} - 41720_{2}^{2}$	3846.886	1000r	100	25987.681	$3865_{1} - 29853_{2}^{2}$
3880.404	50	2	25763.211	$7280_{2} - 33043_{3}^{3}$	3846.625	400	50	25989.444	$10526_{3}^{3} - 36515_{3}$
3880.323	100	3	25763.748	$13847_{2} - 39611_{3}^{3}$	3846.024	15		25993.505	$14206_{4}^{4} - 40200_{3}$
3880.194	300	15	25764.605	$13297_{4} - 39062_{0}^{0}$	3845.302	100	2	25998.386	$3687_{2} - 29686_{3}^{3}$
3879.644	1000r	200	25768.257	$7502_{3} - 33270_{4}^{4}$	3845.092	400	10	25999.805	$13175_{4}^{4} - 39174_{3}$
3879.445	400b	10	25769.579	$7795_{4}^{4} - 33564_{3}$	3843.019	300	40	26013.830	$13297_{4} - 39311_{4}^{4}$
3879.269	400	25	25770.748	$10526_{3}^{3} - 36297_{4}$	3842.898	400r	75b	26014.649	$11197_{0}^{0} - 37211_{5}$
3878.662	400	150	25774.781	$3865_{1} - 29640_{1}^{1}$	3842.803	200	5	26015.292	$11601_{1} - 37616_{1}^{1}$
3878.160	100	3	25778.117	$13175_{4}^{4} - 38953_{5}$	3842.742	200	4	26015.705	$2869_{3} - 28884_{3}^{3}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
3842.549	400	40	26017.012	$7280_2 - 33297^{\frac{5}{2}}$
3840.918	25	10	26028.059	$14465^{\frac{5}{2}} - 40493_3$
3840.799	600r	40	26028.866	$4961_4 - 30990^{\frac{3}{2}}$
3840.430	300	250	26031.367	$12114^{\frac{3}{2}} - 38145_3$
3839.898	50	10	26034.973	$10783^{\frac{3}{2}} - 36818_2$
3839.695	800r	200	26036.349	$0_2 - 26036^{\frac{3}{2}}$
3837.875	1500r	200	26048.696	$2869_3 - 28917^{\frac{5}{2}}$
3837.024	200	3	26054.473	$8243^{\frac{3}{2}} - 34298_1$
3836.721	300	20	26056.531	$3687_2 - 29744^{\frac{3}{2}}$
3836.584	800r	100	26057.461	$4961_4 - 31019^{\frac{7}{2}}$
3836.542	1000r	150b	26057.747	$7502_3 - 33560^{\frac{3}{2}}$
3835.960	75	8	26061.700	$11241^{\frac{3}{2}} - 37303_4$
3835.711	200	5	26063.392	$2869_3 - 28932^{\frac{7}{2}}$
3835.414	200	10	26065.410	$11241^{\frac{3}{2}} - 37307_3$
3835.349	200	10	26065.852	$14204_5 - 40270^{\frac{7}{2}}$
3835.077	100	2	26067.700	$15618^{\frac{3}{2}} - 41686_3$
3834.890	100	5	26068.971	$16217^{\frac{5}{2}} - 42286_3$
3834.488	100	75	26071.704	$8111_4 - 34182^{\frac{5}{2}}$
3832.323	75	3b	26086.433	$8800_4 - 34886^{\frac{5}{2}}$
3831.962	100	2	26088.890	$7502_3 - 33591^{\frac{3}{2}}$
3831.640	300	50	26091.083	$2558_0 - 28649^{\frac{1}{2}}$
3830.774	800r	150	26096.981	$0_2 - 26096^{\frac{3}{2}}$
3830.198	50	2	26100.905	$14481^{\frac{5}{2}} - 40582_5$
3830.061	500r	50	26101.839	$10414^{\frac{7}{2}} - 36515_3$
3829.393	50b		26106.392	$11197^{\frac{5}{2}} - 37303_4$
3829.283	150b	4b	26107.142	$13945^{\frac{3}{2}} - 40052_4$
3828.385	3000r	300	26113.265	$0_2 - 26113^{\frac{3}{2}}$
3826.368	400r	75	26127.030	$10526^{\frac{3}{2}} - 36653_2$
3825.132	500r	200	26135.472	$11197^{\frac{5}{2}} - 37332_6$
3824.927	20	2	26136.873	$15618^{\frac{3}{2}} - 41755_4$
3823.527	10		26146.443	$14465^{\frac{5}{2}} - 40611_2$
3823.458	300	25	26146.915	$7280_2 - 33427^{\frac{5}{2}}$
3823.067	500r	100	26149.589	$5563_1 - 31712^{\frac{1}{2}}$
3822.863	300	40	26150.984	$12847_3 - 38998^{\frac{3}{2}}$
3822.709	300	25	26152.038	$11802_2 - 37954^{\frac{3}{2}}$
3821.119	15		26162.920	$11241^{\frac{3}{2}} - 37404_3$
3820.792	600r	75	26165.159	$3687_2 - 29853^{\frac{5}{2}}$
3820.474	300b	10	26167.337	$11802_2 - 37970^{\frac{5}{2}}$
3820.327	200	2	26168.343	$14032^{\frac{5}{2}} - 40200_3$
3819.904	500	100b	26171.241	$13297_4 - 39468^{\frac{3}{2}}$
3819.189	200	10	26176.141	$13088_3 - 39264^{\frac{3}{2}}$
3819.112	300	10	26176.668	$13175^{\frac{7}{2}} - 39351_5$
3818.685	400r	15	26179.595	$4961_4 - 31141^{\frac{5}{2}}$
3817.495	100		26187.756	$8243^{\frac{3}{2}} - 34431_3$
3816.510	15	1	26194.514	$15166^{\frac{3}{2}} - 41361_3$
3815.566	500	50	26200.995	$8243^{\frac{3}{2}} - 34444_2$
3813.815	500r	50	26213.024	$6362_2 - 32575^{\frac{5}{2}}$
3812.905	75	2	26219.280	$11877^{\frac{1}{2}} - 38097_2$
3812.827	15		26219.816	$14206^{\frac{7}{2}} - 40426_4$
3812.667	75	5	26220.917	$14204_5 - 40425^{\frac{7}{2}}$
3812.398	400	40	26222.767	$15490^{\frac{5}{2}} - 41712_5$
3810.995	600r	150	26232.420	$7502_3 - 33734^{\frac{5}{2}}$
3810.906	75	1	26233.033	$4961_4 - 31194^{\frac{7}{2}}$
3808.614	500	20	26248.819	$10526^{\frac{3}{2}} - 36775_3$
3808.430	15		26250.088	$11802_2 - 38053^{\frac{3}{2}}$
3807.700	200	5b	26255.120	$13945^{\frac{3}{2}} - 40200_3$
3807.273	400	50	26258.065	$9804_5 - 36062^{\frac{7}{2}}$
3806.317	100	1	26264.660	$13297_4 - 39562^{\frac{7}{2}}$
3806.153	200	8	26265.791	$15490^{\frac{5}{2}} - 41755_4$
3805.227	200	10	26272.183	$16351_0 - 42624^{\frac{1}{2}}$
3804.127	400	20	26279.779	$11241^{\frac{3}{2}} - 37521_3$
3803.985	600r	150	26280.761	$8800_4 - 35081^{\frac{5}{2}}$
3803.839	400	25	26281.769	$10526^{\frac{3}{2}} - 36808_3$
3803.173	5b	3	26286.371	$14206^{\frac{7}{2}} - 40493_3$
3803.075	3000r	200	26287.049	$0_2 - 26287^{\frac{1}{2}}$
3802.864	500	10	26288.507	$6362_2 - 32650^{\frac{1}{2}}$
3802.589	3		26290.408	$15736^{\frac{1}{2}} - 42027_2$
3802.420	400	25	26291.577	$10526^{\frac{3}{2}} - 36818_2$
3801.571	400r	100	26297.448	$7502_3 - 33799^{\frac{7}{2}}$
3801.443	800r	100	26298.334	$7502_3 - 33800^{\frac{3}{2}}$
3800.745	2		26303.163	$6362_2 - 32665^{\frac{1}{2}}$
3800.197	400	15	26306.956	$5563_1 - 31870^{\frac{5}{2}}$
3799.166	75	1	26314.095	$13297_4 - 39611^{\frac{3}{2}}$
3798.432	200	75	26319.180	$8111_4 - 34430^{\frac{3}{2}}$
3798.103	500r	150	26321.460	$4961_4 - 31283^{\frac{3}{2}}$
3797.205	200	10	26327.684	$9804_5 - 36132^{\frac{5}{2}}$
3796.997	200	10	26329.126	$3687_2 - 30017^{\frac{3}{2}}$
3796.731	500b	20	26330.971	$8800_4 - 35131^{\frac{7}{2}}$
3794.981	200	3	26343.113	$3865_1 - 30208^{\frac{5}{2}}$
3794.697	1500r	100	26345.084	$13175^{\frac{7}{2}} - 39520_4$
3793.097	300	10	26356.197	$17501^{\frac{5}{2}} - 43857_5$
3792.730	400l	75	26358.747	$10526^{\frac{3}{2}} - 36885_4$
3792.371	1000r	100	26361.242	$10414^{\frac{7}{2}} - 36775_3$
3792.104	150	3	26363.098	$0_2 - 26363^{\frac{5}{2}}$
3791.517	300	10	26367.180	$10414^{\frac{7}{2}} - 36781_5$
3791.221	150	8	26369.238	$11601_1 - 37970^{\frac{5}{2}}$
3790.794	1500r	200	26372.209	$7795^{\frac{7}{2}} - 34167_3$
3790.646	100	5	26373.238	$9804_5 - 36178^{\frac{7}{2}}$
3790.269	300	10	26375.861	$14206^{\frac{7}{2}} - 40582_5$
3789.659	50	1	26380.107	$13088_3 - 39468^{\frac{3}{2}}$
3789.529	75	2	26381.012	$8111_4 - 34492^{\frac{7}{2}}$
3789.372	300	10	26382.105	$7280_2 - 33662^{\frac{1}{2}}$
3789.167	500r	100	26383.532	$2869_3 - 29252^{\frac{5}{2}}$
3787.934	300	3	26392.120	$6362_2 - 32754^{\frac{3}{2}}$
3787.638	300	40	26394.182	$10414^{\frac{7}{2}} - 36808_3$
3785.771	100	2	26407.199	$13847_2 - 40254^{\frac{3}{2}}$
3785.154	200	2	26411.503	$15166^{\frac{3}{2}} - 41578_2$
3784.793	300	15	26414.022	$11802_2 - 38216^{\frac{3}{2}}$
3784.574	400	20	26415.551	$3865_1 - 30281^{\frac{1}{2}}$
3784.574	400	20	26415.551	$12114^{\frac{5}{2}} - 38529_3$
3784.406	100	3	26416.723	$12847_3 - 39264^{\frac{3}{2}}$
3783.680	50b		26421.792	$14465^{\frac{5}{2}} - 40886_2$
3781.638	10		26436.059	$17501^{\frac{5}{2}} - 43937_6$
3781.318	300	75	26438.296	$7280_2 - 33718^{\frac{5}{2}}$
3780.966	300r	20b	26440.757	$2869_3 - 29310^{\frac{7}{2}}$
3780.147	200	8	26446.486	$11241^{\frac{3}{2}} - 37688_3$
3778.987	200	3	26454.603	$7280_2 - 33734^{\frac{5}{2}}$
3778.045	300	15	26461.199	$14032^{\frac{5}{2}} - 40493_3$
3777.745	200	40	26463.301	$12847_3 - 39311^{\frac{7}{2}}$
3777.626	50b		26464.134	$8243^{\frac{3}{2}} - 34707_3$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
3777.415	300	40	26465.612	$7502_3 - 33967\frac{8}{3}$	3748.820	100	8	26667.480	$15618\frac{8}{3} - 42286_3$
3776.732	10		26470.399	$9804_5 - 36275\frac{6}{0}$	3748.225	20b	5	26671.713	$10414\frac{8}{4} - 37085_4$
3776.622	300	40b	26471.169	$10414\frac{8}{4} - 36885_4$	3746.929	4		26680.938	$6362_2 - 33043\frac{8}{3}$
3776.502	300	8	26472.010	$8111_4 - 34583\frac{8}{3}$	3745.176	400l	20	26693.427	$11197\frac{8}{6} - 37890_5$
3776.271	600r	150	26473.630	$8800_4 - 35273\frac{6}{0}$	3744.847	100	5	26695.772	$11197\frac{8}{6} - 37892_4$
3775.937	15		26475.971	$11802_2 - 38278\frac{1}{1}$	3742.923	1000r	100	26709.494	$4961_4 - 31671\frac{8}{4}$
3775.157	150	15	26481.442	$13945\frac{8}{3} - 40426_4$	3742.275	200	5	26714.119	$12847_3 - 39562\frac{8}{4}$
3774.223	50b		26487.995	$11601_1 - 38088\frac{2}{2}$	3741.884	200	8	26716.910	$10414\frac{8}{4} - 37131_3$
3774.133	100	8	26488.627	$12114\frac{2}{2} - 38602_2$	3740.731	40	2	26725.145	$11877\frac{1}{1} - 38602_2$
3773.306	200	8	26494.432	$14206\frac{4}{4} - 40701_4$	3737.514	600r	75	26748.147	$3865_1 - 30613\frac{6}{0}$
3772.649	400	10	26499.046	$7502_3 - 34001\frac{8}{4}$	3736.655	100	5	26754.296	$11601_1 - 38355\frac{2}{2}$
3771.629	100b	5	26506.212	$7795\frac{4}{4} - 34301_4$	3736.566	50	1	26754.933	$4961_4 - 31716\frac{6}{0}$
3771.616	300b	10	26506.303	$11241\frac{8}{3} - 37748_2$	3736.411	5		26756.043	$13945\frac{8}{3} - 40701_4$
3771.370	1500r	100	26508.032	$0_2 - 26508\frac{8}{3}$	3735.827	50b	2	26760.226	$15863_2 - 42624\frac{1}{1}$
3770.056	1500r	200	26517.271	$5563_1 - 32080\frac{1}{1}$	3735.363	100	3	26763.550	$12847_3 - 39611\frac{8}{3}$
3769.778	50	1	26519.226	$13175\frac{4}{4} - 39694_5$	3733.672	300r	25	26775.671	$8111_4 - 34886\frac{6}{0}$
3769.697	75	10	26519.796	$15166\frac{8}{3} - 41686_3$	3733.501	10	1	26776.897	$10526\frac{8}{3} - 37303_4$
3769.615	200b	40	26520.373	$14204_5 - 40724\frac{6}{0}$	3732.985	400r	40	26780.599	$10526\frac{8}{3} - 37307_3$
3769.592	400b	50	26520.535	$7280_2 - 33800\frac{8}{3}$	3730.946	50	3	26795.234	$11197\frac{8}{6} - 37992_4$
3769.101	75	1	26523.990	$10783\frac{2}{2} - 37307_3$	3730.623	75	4	26797.554	$10414\frac{8}{4} - 37211_5$
3766.447	300	10	26542.679	$11241\frac{8}{3} - 37784_2$	3730.368	800r	200l	26799.386	$6362_2 - 33161\frac{1}{1}$
3766.083	300b	50	26545.244	$11197\frac{8}{6} - 37742_6$	3729.945	400	40	26802.425	$8243\frac{2}{2} - 35046_1$
3765.696	200	4	26547.972	$13945\frac{8}{3} - 40493_3$	3727.903	1000r	150	26817.106	$2869_3 - 29686\frac{8}{3}$
3765.412	400r	50	26549.975	$2869_3 - 29419\frac{2}{2}$	3727.725	75	2	26818.386	$13088_3 - 39906\frac{4}{4}$
3765.241	800r	200	26551.181	$8800_4 - 35351\frac{4}{4}$	3727.612	400r	40	26819.199	$4961_4 - 31780\frac{8}{3}$
3765.067	150	2	26552.408	$11802_2 - 38355\frac{2}{2}$	3727.346	300	40	26821.113	$9804_5 - 36625\frac{6}{0}$
3764.089	4		26559.306	$10526\frac{8}{3} - 37085_4$	3727.251	300	40	26821.797	$7502_3 - 34324\frac{2}{2}$
3763.668	300	10	26562.277	$4961_4 - 31523\frac{8}{3}$	3725.966	75	2	26831.047	$7280_2 - 34111\frac{1}{1}$
3762.934	500r	100	26567.458	$3687_2 - 30255\frac{8}{3}$	3724.397	100	2	26842.350	$7502_3 - 34344\frac{4}{4}$
3762.815	300b	25	26568.298	$10526\frac{8}{3} - 37094_2$	3723.921	300s	8	26845.781	$8243\frac{2}{2} - 35089_3$
3762.257	200	8	26572.239	$14204_5 - 40776\frac{4}{4}$	3722.655	75	2	26854.910	$14032\frac{2}{2} - 40886_2$
3761.704	200	20	26576.145	$13297_4 - 39873\frac{6}{0}$	3722.591	100b	5	26855.372	$11241\frac{8}{3} - 38097_2$
3761.527	200	20	26577.396	$11241\frac{8}{3} - 37819_4$	3722.179	300b	25b	26858.344	$3865_1 - 30723\frac{1}{1}$
3761.470	200	25	26577.798	$9804_5 - 36382\frac{4}{4}$	3721.881	10b		26860.495	$15166\frac{8}{3} - 42027_2$
3761.217	200	8	26579.586	$14032\frac{2}{2} - 40611_2$	3721.219	500r	50	26865.273	$3687_2 - 30553\frac{2}{2}$
3759.886	50		26588.995	$15166\frac{8}{3} - 41755_4$	3721.003	100	10	26866.833	$11802_2 - 38669\frac{2}{2}$
3759.433	500r	75	26592.199	$6362_2 - 32954\frac{2}{2}$	3720.628	20	15	26869.540	$7502_3 - 34371\frac{2}{2}$
3759.314	200r	100	26593.041	$3687_2 - 30281\frac{1}{1}$	3719.837	400r	40	26875.254	$2869_3 - 29744\frac{8}{3}$
3759.262	300r	100	26593.408	$8111_4 - 34704\frac{8}{3}$	3719.546	300	15	26877.356	$13175\frac{4}{4} - 40052_4$
3758.706	400	20	26597.342	$5563_1 - 32160\frac{2}{2}$	3719.435	3000	200	26878.158	$0_2 - 26878\frac{8}{3}$
3758.467	400r	25	26599.033	$2558_0 - 29157\frac{1}{1}$	3717.895	50	2	26889.291	$10414\frac{8}{4} - 37303_4$
3757.694	1000r	200	26604.505	$10526\frac{8}{3} - 37131_3$	3717.384	100	3	26892.988	$10414\frac{8}{4} - 37307_3$
3756.451	200	8	26613.308	$11802_2 - 38416\frac{8}{3}$	3716.992	100b	4	26895.824	$12114\frac{2}{2} - 39010_3$
3756.293	400	25	26614.428	$8111_4 - 34725\frac{8}{3}$	3716.942	100	2	26896.186	$14465\frac{2}{2} - 41361_3$
3755.498	25s	3	26620.061	$12114\frac{2}{2} - 38734_3$	3716.808	100	2	26897.155	$13088_3 - 39985\frac{8}{3}$
3755.211	800r	250	26622.096	$11197\frac{8}{6} - 37819_4$	3715.862	300	20	26904.003	$11241\frac{8}{3} - 38145_3$
3754.030	500r	50	26630.471	$8243\frac{2}{2} - 34874_3$	3715.561	400	50	26906.182	$8243\frac{2}{2} - 35149_2$
3753.241	300	40	26636.069	$7795\frac{4}{4} - 34431_3$	3715.060	100	2	26909.810	$11197\frac{8}{6} - 38106_5$
3752.789	300	8	26639.277	$2558_0 - 29197\frac{1}{1}$	3714.696	100	3	26912.447	$7795\frac{4}{4} - 34707_3$
3752.265	10	1	26642.997	$14243\frac{1}{1} - 40886_2$	3712.299	40	2	26929.824	$11877\frac{1}{1} - 38807_2$
3751.121	300	25	26651.122	$11241\frac{8}{3} - 37892_4$	3712.187	25	8	26930.636	$14204_5 - 41134\frac{4}{4}$
3751.021	300r	10	26651.833	$0_2 - 26651\frac{2}{2}$	3711.926	200	5	26932.530	$6362_2 - 33294\frac{8}{3}$
3749.617	300	20	26661.812	$8800_4 - 35462\frac{8}{3}$	3711.833	200	15	26933.205	$8800_4 - 35733\frac{4}{4}$
3749.514	300	10	26662.544	$13175\frac{4}{4} - 39837_3$	3711.623	600r	50	26934.729	$6362_2 - 33297\frac{2}{2}$
3749.083	200	25	26665.609	$7795\frac{4}{4} - 34460_5$	3711.357	75	4b	26936.659	$17501\frac{6}{0} - 44437_6$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
3710.830	100	1	26940.484	$5563_1 - 32503^{2}_{2}$
3710.665	100l	2	26941.682	$13945^{3}_{3} - 40886_2$
3710.292	300	8	26944.391	$11241^{3}_{3} - 38186_4$
3709.861	300	25	26947.521	$3865_1 - 30812^{2}_{2}$
3708.483	75	2	26957.534	$13297_4 - 40254^{3}_{3}$
3707.465	200	8	26964.936	$10783^{2}_{2} - 37748_2$
3706.767	2000r	300	26970.013	$8111_4 - 35081^{0}_{0}$
3706.402	200	75	26972.669	$13297_4 - 40270^{4}_{4}$
3704.862	500r	50	26983.880	$2869_3 - 29853^{2}_{2}$
3704.584	100	5	26985.905	$11802_2 - 38788^{3}_{3}$
3704.147	200	50	26989.089	$11197^{0}_{0} - 38186_4$
3703.951	75b		26990.517	$10414^{4}_{4} - 37404_3$
3703.775	500r	50	26991.800	$4961_4 - 31953^{4}_{4}$
3703.342	200	2	26994.955	$10526^{3}_{3} - 37521_3$
3703.230	400r	25	26995.772	$0_2 - 26995^{3}_{3}$
3702.479	100	2	27001.247	$10783^{2}_{2} - 37784_2$
3701.594	150b	3	27007.703	$13088_3 - 40096^{2}_{2}$
3701.099	200	2	27011.315	$11802_2 - 38814^{2}_{2}$
3700.978	500r	100	27012.198	$2869_3 - 29881^{4}_{4}$
3699.881	500r	50	27020.207	$8111_4 - 35131^{4}_{4}$
3699.355	300	5	27024.048	$14206^{4}_{4} - 41230_4$
3699.182	500	75	27025.312	$13175^{4}_{4} - 40200_3$
3698.106	1000r	150	27033.176	$9804_5 - 36837^{6}_{6}$
3697.743	300	10	27035.829	$3687_2 - 30723^{1}_{1}$
3697.497	300	3	27037.628	$11802_2 - 38840^{1}_{1}$
3695.288	500r	75	27053.790	$7795^{4}_{4} - 34849_5$
3694.579	50	2	27058.982	$12847_3 - 39906^{4}_{4}$
3694.365	300r	50	27060.549	$12114^{2}_{2} - 39174_3$
3694.246	300r	10	27061.421	$0_2 - 27061^{2}_{2}$
3694.177	400r	75	27061.926	$4961_4 - 32023^{6}_{6}$
3693.993	400r	200	27063.274	$3865_1 - 30928^{1}_{1}$
3693.804	200b	25	27064.659	$6362_2 - 33427^{2}_{2}$
3693.247	200	10	27068.741	$11601_1 - 38669^{2}_{2}$
3692.566	1000r	100	27073.733	$3687_2 - 30761^{3}_{3}$
3691.972	300b	5	27078.088	$7795^{4}_{4} - 34873_4$
3691.876	400r	100	27078.792	$7795^{4}_{4} - 34874_3$
3691.613	500r	200	27080.722	$7502_3 - 34583^{3}_{3}$
3691.411	500r	50	27082.203	$2558_0 - 29640^{1}_{1}$
3690.649	100b	8b	27087.795	$5563_1 - 32650^{1}_{1}$
3690.624	600r	4	27087.978	$0_2 - 27087^{1}_{1}$
3690.115	200	300	27091.715	$7280_2 - 34371^{2}_{2}$
3688.658	300	20	27102.416	$5563_1 - 32665^{1}_{1}$
3687.983	400r	75	27107.376	$10414^{4}_{4} - 37521_3$
3687.193	400l	20	27113.184	$14465^{2}_{2} - 41578_2$
3686.326	2		27119.560	$15166^{3}_{3} - 42286_3$
3685.586	300b	10l	27125.005	$3687_2 - 30812^{2}_{2}$
3685.214	200	4	27127.743	$13297_4 - 40425^{4}_{4}$
3684.932	300	20	27129.819	$8111_4 - 35240^{3}_{3}$
3683.856	20		27137.743	$12847_3 - 39985^{3}_{3}$
3682.759	10b		27145.827	$15490^{0}_{0} - 42635_5$
3682.486	800r	50	27147.839	$2869_3 - 30017^{3}_{3}$
3682.295	300	20	27149.247	$14206^{4}_{4} - 41356_5$
3682.179	300	50	27150.103	$7280_2 - 34430^{3}_{3}$
3680.605	400r	40	27161.713	$8243^{2}_{2} - 35405_3$
3680.448	500r	50	27162.871	$8111_4 - 35273^{6}_{6}$
3679.970	75	2	27166.400	$13088_3 - 40254^{3}_{3}$
3679.544	400r	150	27169.545	$11197^{0}_{0} - 38366_4$
3678.478	400r	50b	27177.418	$8243^{2}_{2} - 35421_1$
3675.960	400	50	27196.034	$11802_2 - 38998^{3}_{3}$
3675.790	400r	50	27197.292	$8243^{2}_{2} - 35440_3$
3675.137	500r	50	27202.124	$7502_3 - 34704^{3}_{3}$
3674.891	300r	50	27203.945	$9804_5 - 37008^{6}_{6}$
3674.420	50	5	27207.432	$12114^{2}_{2} - 39321_3$
3674.013	300r	50b	27210.446	$3865_1 - 31075^{2}_{2}$
3673.639	50	1	27213.216	$11601_1 - 38814^{2}_{2}$
3672.522	500	25	27221.493	$10526^{3}_{3} - 37748_2$
3672.522	500	25	27221.493	$14465^{2}_{2} - 41686_3$
3672.300	500r	50	27223.138	$7502_3 - 34725^{3}_{3}$
3671.540	600r	150	27228.773	$6362_2 - 33591^{3}_{3}$
3671.242	75	2	27230.983	$14481^{6}_{6} - 41712_5$
3670.520	200	4	27236.340	$9804_5 - 37041^{4}_{4}$
3669.968	2000r	100	27240.436	$8111_4 - 35351^{4}_{4}$
3668.914	100	4	27248.261	$12847_3 - 40096^{2}_{2}$
3667.621	500	40	27257.867	$10526^{3}_{3} - 37784_2$
3667.311	5	1	27260.171	$0_2 - 27260^{3}_{3}$
3666.981	800r	75	27262.625	$8800_4 - 36062^{4}_{4}$
3665.476	100b	10b	27273.818	$8800_4 - 36074^{3}_{3}$
3665.443	150b	500	27274.064	$10414^{4}_{4} - 37688_3$
3663.543	300	15	27288.208	$11241^{3}_{3} - 38529_3$
3663.201	1500r	100	27290.756	$2869_3 - 30160^{4}_{4}$
3662.955	150	15	27292.589	$10526^{3}_{3} - 37819_4$
3662.750	300r	20	27294.116	$7795^{4}_{4} - 35089_3$
3662.283	100	3	27297.596	$0_2 - 27297^{1}_{1}$
3661.982	150	15	27299.840	$6362_2 - 33662^{1}_{1}$
3661.622	500r	75	27302.524	$3687_2 - 30990^{3}_{3}$
3661.575	500r	200	27302.874	$7280_2 - 34583^{3}_{3}$
3660.500	400	25	27310.892	$7280_2 - 34591^{1}_{1}$
3660.091	200b	4	27313.944	$10783^{2}_{2} - 38097_2$
3659.629	600r	150	27317.392	$0_2 - 27317^{3}_{3}$
3658.808	400r	25	27323.522	$4961_4 - 32285^{3}_{3}$
3657.641	200s	10	27332.240	$8800_4 - 36132^{6}_{6}$
3657.054	300	20	27336.627	$13088_3 - 40425^{4}_{4}$
3656.693	500r	50	27339.325	$2869_3 - 30208^{2}_{2}$
3655.125	300	50	27351.053	$8111_4 - 35462^{3}_{3}$
3654.915	3		27352.624	$13847_2 - 41200^{2}_{2}$
3654.461	500r	50	27356.023	$6362_2 - 33718^{2}_{2}$
3653.586	40		27362.574	$10783^{2}_{2} - 38145_3$
3653.090	100	2	27366.289	$10526^{3}_{3} - 37892_4$
365.9284	20	1	27372.328	$6362_2 - 33734^{2}_{2}$
3650.436	200	50	27386.185	$2869_3 - 30255^{3}_{3}$
3650.204	300l	2	27387.925	$3687_2 - 31075^{2}_{2}$
3649.735	1000r	100	27391.445	$5563_1 - 32954^{2}_{2}$
3647.932	300	50	27404.982	$10414^{4}_{4} - 37819_4$
3647.662	25		27407.011	$12847_3 - 40254^{3}_{3}$
3647.575	300	15	27407.665	$13175^{4}_{4} - 40582_5$
3646.452	15		27416.105	$13945^{3}_{3} - 41361_3$
3645.706	300	15	27421.715	$7795^{4}_{4} - 35216_5$
3645.648	200	8	27422.151	$12847_3 - 40270^{4}_{4}$
3645.365	200b	25b	27424.280	$7280_2 - 34704^{3}_{3}$
3644.981	200	3	27427.169	$13297_4 - 40724^{6}_{6}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
3643.512	600r	50	27438.227	$6362_2 - 33800^{\frac{3}{3}}$
3642.573	500r	50	27445.300	$7280_2 - 34725^{\frac{3}{3}}$
3642.249	2000r	100	27447.741	$0_2 - 27447^{\frac{2}{2}}$
3640.820	10		27458.514	$11241^{\frac{3}{3}} - 38700_4$
3640.390	100	3	27461.757	$11802_2 - 39264^{\frac{3}{3}}$
3639.867	400l	40	27465.703	$10526^{\frac{3}{3}} - 37992_4$
3638.644	500r	50	27474.935	$8800_4 - 36275^{\frac{5}{6}}$
3638.460	40	2	27476.324	$10414^{\frac{4}{4}} - 37890_5$
3638.319	400r	25	27477.389	$4961_4 - 32439^{\frac{4}{4}}$
3638.146	200	4	27478.695	$10414^{\frac{4}{4}} - 37892_4$
3638.097	150	4	27479.066	$13297_4 - 40776^{\frac{4}{4}}$
3638.004	75	4	27479.768	$14206^{\frac{4}{4}} - 41686_3$
3636.295	150	3	27492.682	$11241^{\frac{3}{3}} - 38734_3$
3634.902	200	4	27503.218	$11197^{\frac{6}{6}} - 38700_4$
3634.582	600r	100b	27505.640	$7795^{\frac{4}{4}} - 35300_5$
3634.546	500b	50b	27505.912	$14206^{\frac{4}{4}} - 41712_5$
3633.910	100	3	27510.726	$16346^{\frac{4}{4}} - 43857_5$
3632.830	1000r	100	27518.905	$11241^{\frac{3}{3}} - 38760_4$
3631.863	150	8	27526.231	$13175^{\frac{4}{4}} - 40701_4$
3629.214	15		27546.323	$14032^{\frac{2}{2}} - 41578_2$
3628.867	100	4	27548.956	$14206^{\frac{4}{4}} - 41755_4$
3626.939	300	50	27563.600	$11197^{\frac{6}{6}} - 38760_4$
3626.631	200b	10	27565.941	$11241^{\frac{3}{3}} - 38807_2$
3626.613	50b		27566.078	$12114^{\frac{2}{2}} - 39680_2$
3626.025	50	3	27570.548	$10526^{\frac{3}{3}} - 38097_2$
3625.895	500r	400b	27571.537	$7280_2 - 34851^{\frac{2}{2}}$
3625.150	300	75	27577.203	$12847_3 - 40425^{\frac{4}{4}}$
3625.026	300r	100	27578.146	$10414^{\frac{4}{4}} - 37992_4$
3624.472	300	50	27582.361	$8800_4 - 36382^{\frac{2}{2}}$
3623.773	300	25	27587.681	$8243^{\frac{2}{2}} - 35831_3$
3622.795	600r	50	27595.129	$3687_2 - 31283^{\frac{3}{3}}$
3622.338	500r	20b	27598.610	$5563_1 - 33161^{\frac{1}{1}}$
3621.435	50		27605.492	$6362_2 - 33967^{\frac{3}{3}}$
3620.977	5		27608.983	$11802_2 - 39411^{\frac{1}{1}}$
3620.839	300r	50	27610.035	$7795^{\frac{4}{4}} - 35405_3$
3619.633	100	20	27619.234	$10526^{\frac{3}{3}} - 38145_3$
3619.211	200	40	27622.455	$8111_4 - 35733^{\frac{4}{4}}$
3618.597	200	10	27627.142	$8800_4 - 36427^{\frac{3}{3}}$
3618.363	800r	50	27628.928	$7502_3 - 35131^{\frac{4}{4}}$
3617.818	150	10	27633.090	$13945^{\frac{3}{3}} - 41578_2$
3617.671	300	8	27634.213	$8243^{\frac{2}{2}} - 35877_2$
3616.177	200	8	27645.629	$7795^{\frac{4}{4}} - 35440_3$
3615.849	200	4	27648.137	$2869_3 - 30517^{\frac{3}{3}}$
3615.004	100	5	27654.600	$14032^{\frac{2}{2}} - 41686_3$
3614.352	500r	75	27659.588	$10526^{\frac{3}{3}} - 38186_4$
3613.547	200	5	27665.750	$11802_2 - 39468^{\frac{3}{3}}$
3612.864	600r	5	27670.980	$0_2 - 27670^{\frac{3}{3}}$
3612.427	1500r	75	27674.327	$0_2 - 27674^{\frac{2}{2}}$
3611.257	25	5	27683.293	$13297_4 - 40980^{\frac{3}{3}}$
3611.158	200s	10	27684.052	$2869_3 - 30553^{\frac{2}{2}}$
3610.650	300	20	27687.947	$13088_3 - 40776^{\frac{4}{4}}$
3608.880	300	4	27701.526	$8111_4 - 35812^{\frac{3}{3}}$
3607.819	75		27709.673	$7280_2 - 34989^{\frac{1}{1}}$
3606.090	200	3	27722.958	$2558_0 - 30281^{\frac{1}{1}}$
3604.965	20		27731.609	$10414^{\frac{4}{4}} - 38145_3$
3604.680	600r	40	27733.802	$3865_1 - 31599^{\frac{2}{2}}$
3604.657	100		27733.979	$5563_1 - 33297^{\frac{2}{2}}$
3604.064	200b		27738.542	$7502_3 - 35240^{\frac{3}{3}}$
3603.694	150	4	27741.390	$13945^{\frac{3}{3}} - 41686_3$
3601.770	200	10	27756.208	$11197^{\frac{6}{6}} - 38953_5$
3601.295	300	10	27759.869	$11197^{\frac{6}{6}} - 38956_4$
3600.431	300	50	27766.531	$9804_5 - 37571^{\frac{6}{6}}$
3600.182	100	25	27768.451	$11241^{\frac{3}{3}} - 39010_3$
3599.723	300	20	27771.992	$10414^{\frac{4}{4}} - 38186_4$
3598.523	150	10	27781.252	$7795^{\frac{4}{4}} - 35576_3$
3598.245	75	10	27783.399	$14243^{\frac{1}{1}} - 42027_2$
3598.120	2000r	50	27784.364	$0_2 - 27784^{\frac{2}{2}}$
3597.776	10		27787.020	$7795^{\frac{4}{4}} - 35582_5$
3597.021	75	2	27792.853	$4961_4 - 32754^{\frac{3}{3}}$
3595.975	150	5	27800.937	$9804_5 - 37605^{\frac{4}{4}}$
3595.756	100	10	27802.630	$11877^{\frac{1}{1}} - 39680_2$
3595.617	500r	100	27803.705	$8243^{\frac{2}{2}} - 36047_2$
3594.985	300	20	27808.593	$11802_2 - 39611^{\frac{3}{3}}$
3593.535	15		27819.813	$10783^{\frac{2}{2}} - 38602_2$
3593.352	5		27821.230	$14465^{\frac{2}{2}} - 42286_3$
3592.777	800r	100	27825.682	$8800_4 - 36625^{\frac{6}{6}}$
3591.452	800r	50	27835.948	$3687_2 - 31523^{\frac{3}{3}}$
3591.253	300	50	27837.490	$13297_4 - 41134^{\frac{4}{4}}$
3590.924	400		27840.041	$10526^{\frac{3}{3}} - 38366_4$
3589.992	300	20	27847.268	$3865_1 - 31712^{\frac{1}{1}}$
3589.748	1000r	75	27849.161	$7502_3 - 35351^{\frac{4}{4}}$
3586.703	100		27872.803	$13847_2 - 41720^{\frac{2}{2}}$
3584.175	800r	50	27892.462	$2869_3 - 30761^{\frac{3}{3}}$
3583.100	600r	25	27900.830	$4961_4 - 32862^{\frac{4}{4}}$
3581.754	200	10	27911.315	$3687_2 - 31599^{\frac{2}{2}}$
3579.543	300	50	27928.554	$12847_3 - 40776^{\frac{4}{4}}$
3578.947	400	10	27933.205	$11241^{\frac{3}{3}} - 39174_3$
3577.596	200	10	27943.753	$2869_3 - 30812^{\frac{2}{2}}$
3576.633	300	40	27951.277	$10783^{\frac{2}{2}} - 38734_3$
3576.557	400r	150	27951.871	$8111_4 - 36062^{\frac{4}{4}}$
3576.481	300		27952.465	$10414^{\frac{4}{4}} - 38366_4$
3575.546	50		27959.774	$7502_3 - 35462^{\frac{3}{3}}$
3575.427	100	10	27960.705	$7280_2 - 35240^{\frac{3}{3}}$
3575.301	50b		27961.690	$6362_2 - 34324^{\frac{2}{2}}$
3575.121	500r	50	27963.098	$8111_4 - 36074^{\frac{3}{3}}$
3571.008	300	10	27995.304	$14032^{\frac{2}{2}} - 42027_2$
3570.523	300	10	27999.107	$7795^{\frac{4}{4}} - 35794_4$
3570.357	500	10	28000.408	$8800_4 - 36800^{\frac{4}{4}}$
3569.977	100	5	28003.389	$10526^{\frac{3}{3}} - 38529_3$
3569.820	1000r	25	28004.620	$3865_1 - 31870^{\frac{2}{2}}$
3569.207	75		28009.430	$6362_2 - 34371^{\frac{2}{2}}$
3567.672	200	20	28021.481	$8111_4 - 36132^{\frac{6}{6}}$
3567.264	1000r	50	28024.686	$0_2 - 28024^{\frac{1}{1}}$
3566.459	20	1	28031.011	$7502_3 - 35533^{\frac{2}{2}}$
3565.822	300	15	28036.018	$7795^{\frac{4}{4}} - 35831_3$
3565.604	200	10	28037.732	$8800_4 - 36837^{\frac{6}{6}}$
3565.049	40		28042.097	$11241^{\frac{3}{3}} - 39283_4$
3564.508	100	10	28046.353	$13088_3 - 41134^{\frac{4}{4}}$
3564.235	200	8	28048.501	$7280_2 - 35328^{\frac{1}{1}}$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
3563.375	600r	75b	28055.270	$11197^{6}_{6} - 39252_{5}$
3563.299	300	25	28055.869	$13175^{3}_{4} - 41230_{4}$
3561.879	40		28067.053	$8111_{4} - 36178^{4}_{4}$
3561.780	500r	75	28067.833	$6362_{2} - 34430^{3}_{3}$
3560.688	200	5	28076.441	$10526^{3}_{3} - 38602_{2}$
3560.295	20		28079.540	$14206^{4}_{4} - 42286_{3}$
3560.226	40	5	28080.084	$11241^{3}_{3} - 39321_{3}$
3560.021	300r	50	28081.701	$4961_{4} - 33043^{3}_{3}$
3559.378	200b		28086.774	$11197^{6}_{6} - 39283_{4}$
3558.638	100		28092.614	$8243^{2}_{2} - 36336_{3}$
3558.599	8		28092.922	$3687_{2} - 31780^{3}_{3}$
3557.818	150	5	28099.089	$5563_{1} - 33662^{0}_{1}$
3556.206	8		28111.826	$13088_{3} - 41200^{2}_{2}$
3555.705	500r	50	28115.787	$10414^{4}_{4} - 38529_{3}$
3555.013	1000r	50	28121.259	$2869_{3} - 30990^{3}_{3}$
3551.984	20		28145.239	$9804_{5} - 37950^{4}_{3}$
3551.401	1000r	150	28149.860	$2869_{3} - 31019^{4}_{3}$
3550.878	300	40	28154.006	$14481^{8}_{6} - 42635_{5}$
3550.783	300	40	28154.759	$11197^{6}_{6} - 39351_{5}$
3550.718	100s		28155.274	$5563_{1} - 33718^{2}_{2}$
3549.596	1000r	75	28164.174	$8111_{4} - 36275^{0}_{0}$
3549.396	50	25	28165.761	$2558_{0} - 30723^{1}_{0}$
3548.664	300	8	28171.570	$5563_{1} - 33734^{2}_{2}$
3547.469	150l		28181.060	$13175^{4}_{4} - 41356_{5}$
3547.364	300b		28181.894	$7280_{2} - 35462^{3}_{3}$
3547.338	200b		28182.100	$3687_{2} - 31870^{2}_{2}$
3547.252	100	5	28182.784	$11802_{2} - 39985^{3}_{3}$
3546.809	75		28186.304	$13175^{4}_{4} - 41361_{3}$
3544.250	150	3	28206.654	$2869_{3} - 31075^{2}_{2}$
3544.097	200		28207.872	$10526^{3}_{3} - 38734_{3}$
3544.018	800r	50	28208.500	$8800_{4} - 37008^{0}_{0}$
3543.208	150	3	28214.949	$3865_{1} - 32080^{1}_{1}$
3542.498	500r	50	28220.604	$6362_{2} - 34583^{3}_{3}$
3541.692	40		28227.026	$10783^{2}_{2} - 39010_{3}$
3541.493	150		28228.612	$6362_{2} - 34591^{1}_{1}$
3540.807	2		28234.081	$10526^{3}_{3} - 38760_{4}$
3539.951	8b		28240.908	$8800_{4} - 37041^{4}_{4}$
3539.843	300	25	28241.770	$8243^{2}_{2} - 36485_{2}$
3538.415	3		28253.167	$7280_{2} - 35533^{2}_{2}$
3538.264	15	2	28254.372	$14032^{2}_{2} - 42286_{3}$
3536.009	500r	20	28272.390	$8243^{2}_{2} - 36515_{3}$
3535.250	150b		28278.460	$11241^{3}_{3} - 39520_{4}$
3534.916	15		28281.132	$10526^{3}_{3} - 38807_{2}$
3533.396	40	1	28293.298	$11802_{2} - 40096^{2}_{2}$
3533.181	200b	10	28295.019	$3865_{1} - 32160^{2}_{2}$
3531.450	1000r	50	28308.888	$4961_{4} - 33270^{4}_{4}$
3531.282	200	8	28310.235	$7502_{3} - 35812^{3}_{3}$
3530.514	800r	50	28316.393	$8111_{4} - 36427^{3}_{3}$
3530.030	50	3	28320.276	$10414^{4}_{4} - 38734_{3}$
3529.670	200b	15	28323.164	$11197^{6}_{6} - 39520_{4}$
3529.385	300l	40	28325.451	$2869_{3} - 31194^{4}_{4}$
3528.411	300	50	28333.270	$4961_{4} - 33294^{3}_{3}$
3527.793	200	10	28338.233	$7795^{4}_{4} - 36133_{5}$
3527.434	4s		28341.117	$13945^{3}_{3} - 42286_{3}$
3527.322	200	50	28342.017	$6362_{2} - 34704^{3}_{3}$
3526.764	300		28346.501	$10414^{4}_{4} - 38760_{4}$
3526.634	500r	10	28347.546	$0_{2} - 28347^{2}_{2}$
3526.029	15l	1	28352.410	$12847_{3} - 41200^{2}_{2}$
3525.171	8		28359.310	$8800_{4} - 37159^{3}_{3}$
3524.708	300	8	28363.035	$6362_{2} - 34725^{3}_{3}$
3524.178	300	25	28367.301	$15490^{0}_{0} - 43857_{5}$
3523.758	300	8	28370.682	$2558_{0} - 30928^{1}_{1}$
3523.505	300		28372.719	$0_{2} - 28372^{1}_{1}$
3522.154	100	2	28383.602	$7502_{3} - 35885^{2}_{2}$
3521.141	100	2	28391.767	$10783^{2}_{2} - 39174_{3}$
3521.059	500r	25	28392.428	$3687_{2} - 32080^{1}_{1}$
3520.453	5		28397.315	$14226_{0} - 42624^{1}_{1}$
3520.277	15		28398.735	$7280_{2} - 35678^{1}_{1}$
3518.885	400l	50	28409.969	$8243^{2}_{2} - 36653_{2}$
3518.404	1000r	40	28413.853	$2869_{3} - 31283^{3}_{3}$
3518.197	100	5	28415.524	$7795^{4}_{4} - 36210_{5}$
3516.530	3		28428.994	$14206^{4}_{4} - 42635_{5}$
3515.327	100	40	28438.723	$11241^{3}_{3} - 39680_{2}$
3514.285	200	10	28447.155	$15490^{0}_{0} - 43937_{6}$
3513.682	75s	4	28452.037	$11802_{2} - 40254^{3}_{3}$
3511.157	800r	25	28472.497	$3687_{2} - 32160^{2}_{2}$
3509.784	10		28483.635	$10526^{3}_{3} - 39010_{3}$
3509.089	500	25	28489.276	$6362_{2} - 34851^{2}_{2}$
3508.360	300	3	28495.196	$11601_{1} - 40096^{2}_{2}$
3508.100	300b		28497.307	$11197^{6}_{6} - 39694_{5}$
3507.520	100		28502.020	$7795^{4}_{4} - 36297_{4}$
3506.645	300	5	28509.131	$3687_{2} - 32197^{3}_{3}$
3506.345	150	10	28511.571	$13175^{4}_{4} - 41686_{3}$
3506.132	300	3	28513.303	$0_{2} - 28513^{2}_{2}$
3505.934	10		28514.913	$8111_{4} - 36625^{0}_{0}$
3505.767	150	5	28516.271	$6362_{2} - 34878^{1}_{1}$
3503.863	75		28531.766	$8243^{2}_{2} - 36775_{3}$
3503.786	500r	40	28532.393	$7280_{2} - 35812^{3}_{3}$
3503.130	200	15	28537.736	$13175^{4}_{4} - 41712_{5}$
3503.017	100	5	28538.657	$10783^{2}_{2} - 39321_{3}$
3502.963	200	10	28539.097	$10414^{4}_{4} - 38953_{5}$
3502.739	200b		28540.922	$7795^{4}_{4} - 36336_{3}$
3502.514	100	2	28542.755	$10414^{4}_{4} - 38956_{4}$
3501.866	150b	25	28548.037	$5563_{1} - 34111^{1}_{1}$
3500.326	50	10	28560.596	$7502_{3} - 36062^{4}_{4}$
3499.821	200	5	28564.717	$8243^{2}_{2} - 36808_{3}$
3498.956	200b	20b	28571.779	$7502_{3} - 36074^{3}_{3}$
3498.621	800r	75	28574.514	$8243^{2}_{2} - 36818_{2}$
3497.901	50	10	28580.396	$9804_{5} - 38385^{0}_{0}$
3497.856	50	3	28580.764	$13175^{4}_{4} - 41755_{4}$
3496.811	500r	15	28589.305	$0_{2} - 28589^{3}_{3}$
3496.003	200	10	28595.912	$11241^{3}_{3} - 39837_{3}$
3495.847	15		28597.188	$3687_{2} - 32285^{3}_{3}$
3495.700	800r	25	28598.390	$4961_{4} - 33560^{4}_{4}$
3494.801	100		28605.747	$7280_{2} - 35885^{2}_{2}$
3492.158	25		28627.396	$6362_{2} - 34989^{1}_{1}$
3491.900	500	2	28629.511	$4961_{4} - 33591^{3}_{3}$
3490.848	20	1	28638.139	$3865_{1} - 32503^{2}_{2}$
3489.602	100l	1	28648.364	$10526^{3}_{3} - 39174_{3}$
3489.509	400	2	28649.128	$0_{2} - 28649^{1}_{1}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
3489.185	500	4	28651.788	$8111_4 - 36762^{8}_{3}$	3442.578	800r	20	29039.676	$4961_4 - 34001^{4}_{4}$
3488.834	500	3	28654.670	$2869_3 - 31523^{8}_{3}$	3441.527	200	5	29048.544	$8111_4 - 37159^{3}_{3}$
3487.991	150l	4	28661.596	$13962_1 - 42624^{1}_{1}$	3440.827	8		29054.453	$10783^{2}_{2} - 39837_3$
3486.551	1000r	10b	28673.433	$0_2 - 28673^{2}_{2}$	3439.748	100b		29063.567	$8243^{2}_{2} - 37307_3$
3486.269	50	1	28675.752	$7502_3 - 36178^{4}_{4}$	3439.399	400b	8	29066.516	$3687_2 - 32754^{3}_{3}$
3486.210	50	1	28676.238	$0_2 - 28676^{8}_{8}$	3437.645	50b	5b	29081.346	$7280_2 - 36361^{1}_{1}$
3484.943	100	1	28686.663	$7502_3 - 36188^{2}_{2}$	3437.307	2000r	75	29084.206	$2869_3 - 31953^{4}_{4}$
3484.580	8		28689.651	$8111_4 - 36800^{4}_{4}$	3436.726	1500r	50	29089.122	$3865_1 - 32954^{2}_{2}$
3480.810	100		28720.723	$7795^{4}_{4} - 36515_3$	3436.621	200	4	29090.011	$7795^{4}_{4} - 36885_4$
3480.052	500	3	28726.979	$8111_4 - 36837^{6}_{6}$	3435.487	25l		29099.613	$6362_2 - 35462^{3}_{3}$
3479.684	300	2	28730.017	$2869_3 - 31599^{2}_{2}$	3434.727	200b	2	29106.052	$10414^{4}_{4} - 39520_4$
3479.221	300b	2	28733.840	$11877^{1}_{1} - 40611_2$	3434.103	50b		29111.340	$13175^{4}_{4} - 42286_3$
3476.385	200	3	28757.280	$10526^{3}_{3} - 39283_4$	3429.871	100b		29147.259	$7280_2 - 36427^{3}_{3}$
3475.961	100b		28760.788	$10414^{4}_{4} - 39174_3$	3429.574	200	10	29149.783	$8800_4 - 37950^{4}_{4}$
3475.943	100b		28760.937	$5563_1 - 34324^{2}_{2}$	3429.086	50		29153.931	$10526^{3}_{3} - 39680_2$
3474.717	200	10	28771.084	$8800_4 - 37571^{6}_{6}$	3428.998	1500r	50	29154.679	$2558_0 - 31712^{1}_{1}$
3474.530	200	3	28772.633	$12114^{2}_{2} - 40886_2$	3428.714	300r	8	29157.094	$0_2 - 29157^{1}_{1}$
3474.188	3		28775.465	$9804_5 - 38580^{3}_{3}$	3428.621	300r	4	29157.885	$0_2 - 29157^{3}_{3}$
3472.989	15b		28785.399	$3865_1 - 32650^{1}_{1}$	3428.248	50	3	29161.057	$8243^{2}_{2} - 37404_3$
3471.959	500r	50l	28793.938	$7280_2 - 36074^{8}_{8}$	3427.619	5		29166.408	$7502_3 - 36668^{2}_{2}$
3471.800	50b		28795.257	$10526^{3}_{3} - 39321_3$	3427.089	200s		29170.919	$6362_2 - 35533^{2}_{2}$
3471.216	1000r	50b	28800.102	$3865_1 - 32665^{1}_{1}$	3426.285	2		29177.764	$11802_2 - 40980^{3}_{3}$
3471.001	300	15	28801.885	$2869_3 - 31671^{3}_{3}$	3425.435	150	15	29185.004	$11241^{3}_{3} - 40426_4$
3470.568	300	20	28805.479	$8800_4 - 37605^{3}_{3}$	3423.990	1500r	50	29197.320	$0_2 - 29197^{1}_{1}$
3470.181	5	2	28808.691	$5563_1 - 34371^{2}_{2}$	3423.923	200b		29197.891	$0_2 - 29197^{2}_{2}$
3469.345	1000r	150	28815.633	$3687_2 - 32503^{2}_{2}$	3422.655	1000r	40	29208.708	$7280_2 - 36488^{2}_{2}$
3466.644	600r	100	28838.083	$4961_4 - 33799^{4}_{4}$	3421.210	2000r		29221.044	$4961_4 - 34182^{6}_{6}$
3466.538	600r	40	28838.965	$4961_4 - 33800^{3}_{3}$	3420.196	100	3	29229.707	$11197^{6}_{6} - 40426_4$
3465.061	200b	25	28851.258	$8243^{2}_{2} - 37094_2$	3418.170	15		29247.032	$12114^{2}_{2} - 41361_3$
3464.560	25	2	28855.430	$11197^{6}_{6} - 40052_4$	3417.642	100		29251.550	$11241^{3}_{3} - 40493_3$
3463.921	50	2	28860.753	$9804_5 - 38665^{8}_{8}$	3417.498	400r	10	29252.783	$0_2 - 29252^{2}_{2}$
3461.801	8		28878.426	$6362_2 - 35240^{3}_{3}$	3416.595	150	3	29260.514	$7502_3 - 36762^{3}_{3}$
3461.574	200	3	28880.320	$7502_3 - 36382^{4}_{4}$	3415.885	500r	75	29266.595	$3687_2 - 32954^{2}_{2}$
3461.215	2000r	75	28883.315	$4961_4 - 33844^{8}_{8}$	3414.712	200	2	29276.649	$7280_2 - 36556^{1}_{1}$
3461.018	1500r	50	28884.959	$0_2 - 28884^{3}_{3}$	3414.565	100b	1	29277.909	$8243^{2}_{2} - 37521_3$
3460.724	75	2	28887.413	$3687_2 - 32575^{2}_{2}$	3414.299	75		29280.190	$10414^{4}_{4} - 39694_5$
3460.724	75	2	28887.413	$8243^{2}_{2} - 37131_3$	3413.327	100	3	29288.528	$5563_1 - 34851^{2}_{2}$
3459.536	50b		28897.333	$10783^{2}_{2} - 39680_2$	3413.086	300b	25	29290.596	$7795^{4}_{4} - 37085_4$
3459.488	75	8	28897.734	$8111_4 - 37008^{6}_{6}$	3413.013	1000r	25	29291.222	$2869_3 - 32160^{2}_{2}$
3458.299	20		28907.669	$10414^{4}_{4} - 39321_3$	3412.422	15		29296.295	$3865_1 - 33161^{1}_{1}$
3457.829	75		28911.598	$2869_3 - 31780^{3}_{3}$	3412.181	200		29298.364	$7502_3 - 36800^{4}_{4}$
3457.069	400r	25	28917.954	$0_2 - 28917^{2}_{2}$	3410.699	25		29311.094	$10526^{3}_{3} - 39837_3$
3456.217	2		28925.082	$7502_3 - 36427^{3}_{3}$	3410.184	150	3	29315.521	$5563_1 - 34878^{1}_{1}$
3455.612	200b	10	28930.146	$8111_4 - 37041^{4}_{4}$	3410.076	300	50	29316.449	$6362_2 - 35678^{1}_{1}$
3453.513	300b	10	28947.729	$15490^{6}_{6} - 44437_6$	3408.750	1000r	25	29327.853	$2869_3 - 32197^{3}_{3}$
3452.207	75	1	28958.680	$11241^{3}_{3} - 40200_3$	3405.558	1500r	50	29355.341	$3687_2 - 33043^{3}_{3}$
3451.702	800r	100	28962.916	$3687_2 - 32650^{1}_{1}$	3403.903	300	8	29369.613	$7502_3 - 36871^{2}_{2}$
3451.308	100		28966.223	$6362_2 - 35328^{1}_{1}$	3403.222	15		29375.490	$14481^{6}_{6} - 43857_5$
3449.949	200	5	28977.623	$3687_2 - 32665_1$	3402.354	15		29382.984	$4961_4 - 34344^{4}_{4}$
3448.949	300	10	28986.034	$7795^{4}_{4} - 36781_5$	3401.711	500r	25	29388.538	$7280_2 - 36668^{2}_{2}$
3448.891	15h		28986.522	$7502_3 - 36488^{2}_{2}$	3400.680	25		29397.447	$11802_2 - 41200^{2}_{2}$
3447.189	40		29000.833	$2869_3 - 31870^{2}_{2}$	3398.545	1500r	50	29415.914	$2869_3 - 32285^{3}_{3}$
3446.546	300	8	29006.243	$4961_4 - 33967^{3}_{3}$	3398.490	150b	4	29416.390	$7795^{4}_{4} - 37211_5$
3446.200	15		29009.155	$11877^{1}_{1} - 40886_2$	3398.457	100b	4	29416.676	$8800_4 - 38216^{3}_{3}$
3443.980	100	8	29027.854	$5563_1 - 34591^{1}_{1}$	3398.162	25		29419.230	$0_2 - 29419^{2}_{2}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
3397.516	1500r	50b	29424.823	$2869_3 - 32294^{\circ}_4$
3397.306	50	1	29426.642	$5563_1 - 34989^{\circ}_1$
3396.727	800r	50	29431.658	$3865_1 - 33297^{\circ}_2$
3395.234	20	1	29444.600	$8243^{\circ}_2 - 37688_3$
3393.993	200	2	29455.365	$14481^{\circ}_6 - 43937_6$
3393.421	150	10	29460.331	$8111_4 - 37571^{\circ}_0$
3393.373	4b		29460.747	$13175^{\circ}_4 - 42635_5$
3392.993	25		29464.046	$12114^{\circ}_2 - 41578_2$
3392.473	100	2	29468.563	$4961_4 - 34430^{\circ}_3$
3391.872	400r	40	29473.784	$3687_2 - 33161^{\circ}_1$
3390.849	200	8	29482.676	$7280_2 - 36762^{\circ}_3$
3389.463	800r	40	29494.731	$8111_4 - 37605^{\circ}_4$
3388.348	50		29504.437	$8243^{\circ}_2 - 37748_2$
3388.154	150b	5	29506.126	$8800_4 - 38306^{\circ}_4$
3388.117	40b	2	29506.448	$9804_5 - 39311^{\circ}_4$
3387.920	600r	15	29508.164	$7795^{\circ}_4 - 37303_4$
3387.493	50b		29511.883	$7795^{\circ}_4 - 37307_3$
3386.291	5		29522.359	$2558_0 - 32080^{\circ}_1$
3386.159	15	5	29523.509	$6362_2 - 35885^{\circ}_2$
3385.373	4		29530.364	$4961_4 - 34492^{\circ}_4$
3384.403	200	4	29538.827	$7502_3 - 37041^{\circ}_4$
3384.177	15		29540.800	$8243^{\circ}_2 - 37784_2$
3383.586	200	8	29545.959	$8111_4 - 37656^{\circ}_3$
3382.310	4		29557.106	$7280_2 - 36837^{\circ}_1$
3381.800	2		29561.563	$3865_1 - 33427^{\circ}_2$
3380.859	600r	20	29569.790	$2869_3 - 32439^{\circ}_4$
3380.571	3		29572.309	$12114^{\circ}_2 - 41686_3$
3379.124	10b		29584.973	$8800_4 - 38385^{\circ}_0$
3378.348	2		29591.768	$7280_2 - 36871^{\circ}_2$
3377.483	100	15	29599.346	$11601_1 - 41200^{\circ}_2$
3376.617	25		29606.937	$3687_2 - 33294^{\circ}_3$
3376.367	300	1	29609.130	$3687_2 - 33297^{\circ}_2$
3375.587	200b		29615.971	$8800_4 - 38416^{\circ}_3$
3374.975	1500r	75	29621.341	$4961_4 - 34583^{\circ}_3$
3373.493	800r	75	29634.354	$2869_3 - 32503^{\circ}_2$
3372.822	400r	100	29640.249	$0_2 - 29640^{\circ}_1$
3372.253	10		29645.250	$11241^{\circ}_3 - 40886_2$
3372.077	8		29646.798	$7502_3 - 37149^{\circ}_2$
3371.664	10		29650.429	$14206^{\circ}_4 - 43857_5$
3370.887	200	5	29657.263	$7502_3 - 37159^{\circ}_3$
3369.000	200	4	29673.874	$10526^{\circ}_3 - 40200_3$
3367.582	400r	10	29686.368	$0_2 - 29686^{\circ}_3$
3365.337	400r	50	29706.171	$2869_3 - 32575^{\circ}_2$
3364.888	25		29710.135	$10783^{\circ}_2 - 40493_3$
3362.443	10b		29731.738	$7502_3 - 37234^{\circ}_2$
3361.196	300r	25	29742.768	$4961_4 - 34704^{\circ}_3$
3360.997	400r	150	29744.529	$0_2 - 29744^{\circ}_3$
3356.986	8		29780.068	$8800_4 - 38580^{\circ}_4$
3355.106	500r	10	29796.754	$3865_1 - 33662^{\circ}_1$
3351.753	3		29826.561	$6362_2 - 36188^{\circ}_2$
3350.352	200	5	29839.033	$8111_4 - 37950^{\circ}_4$
3349.800	40b		29843.950	$8111_4 - 37954^{\circ}_3$
3348.790	400b		29852.950	$3865_1 - 33718^{\circ}_2$
3348.770	1500r	20	29853.129	$0_2 - 29853^{\circ}_2$
3347.403	150		29865.319	$8800_4 - 38665^{\circ}_0$
3346.992	100	3	29868.987	$7280_2 - 37149^{\circ}_2$
3346.966	300	3	29869.219	$3865_1 - 33734^{\circ}_2$
3345.851	200r	8b	29879.172	$7280_2 - 37159^{\circ}_1$
3345.822	200r	8	29879.431	$7280_2 - 37159^{\circ}_3$
3345.170	150	3	29885.255	$2869_3 - 32754^{\circ}_3$
3344.310	20	2	29892.940	$7795^{\circ}_4 - 37688_3$
3343.499	150	5	29900.190	$10526^{\circ}_3 - 40426_4$
3343.281	100b		29902.140	$8243^{\circ}_2 - 38145_3$
3343.164	300	5	29903.186	$3687_2 - 33591^{\circ}_3$
3342.069	200	10	29912.984	$12114^{\circ}_2 - 42027_2$
3341.550	10	2	29917.630	$11802_2 - 41720^{\circ}_2$
3340.724	300r	5	29925.026	$4961_4 - 34886^{\circ}_0$
3337.505	10		29953.888	$7280_2 - 37234^{\circ}_2$
3337.275	200	5	29955.952	$14481^{\circ}_6 - 44437_6$
3336.074	150		29966.736	$10526^{\circ}_3 - 40493_3$
3335.694	150	4	29970.150	$5563_1 - 35533^{\circ}_2$
3335.238	300	5	29974.247	$3687_2 - 33662^{\circ}_1$
3333.571	10	1	29989.236	$11241^{\circ}_3 - 41230_4$
3333.128	1000r	20b	29993.222	$2869_3 - 32862^{\circ}_4$
3332.479	100b	1	29999.062	$6362_2 - 36361^{\circ}_1$
3330.976	150	4	30012.598	$10414^{\circ}_4 - 40426_4$
3330.477	1500r	40	30017.095	$0_2 - 30017^{\circ}_3$
3329.728	400r	75	30023.847	$7795^{\circ}_4 - 37819_4$
3328.997	10s		30030.439	$3687_2 - 33718^{\circ}_2$
3328.608	4		30033.949	$11197^{\circ}_6 - 41230_4$
3327.193	800r	25	30046.721	$3687_2 - 33734^{\circ}_2$
3322.945	200b		30085.131	$10526^{\circ}_3 - 40611_2$
3322.924	10		30085.321	$2869_3 - 32954^{\circ}_2$
3322.093	400r	10	30092.847	$2558_0 - 32650^{\circ}_1$
3321.835	5	1	30095.184	$7795^{\circ}_4 - 37890_5$
3321.574	300r	40	30097.549	$7795^{\circ}_4 - 37892_4$
3321.067	3		30102.143	$9804_5 - 39906^{\circ}_4$
3320.879	20		30103.847	$10783^{\circ}_2 - 40886_2$
3320.476	400r	25	30107.501	$2558_0 - 32665^{\circ}_1$
3319.910	400r	75b	30112.634	$3687_2 - 33800^{\circ}_3$
3319.572	50		30115.700	$5563_1 - 35678^{\circ}_1$
3319.149	25b		30119.538	$11601_1 - 41720^{\circ}_2$
3319.133	300b	40	30119.683	$11241^{\circ}_3 - 41361_3$
3318.390	200	5	30126.426	$6362_2 - 36488^{\circ}_2$
3315.848	200	2	30149.521	$11877^{\circ}_1 - 42027_2$
3314.793	400r		30159.117	$11197^{\circ}_6 - 41356_5$
3313.744	20b		30168.663	$10414^{\circ}_4 - 40582_5$
3313.647	500r		30169.546	$4961_4 - 35131^{\circ}_4$
3313.367	25b		30172.096	$12114^{\circ}_2 - 42286_3$
3313.151	5	1	30174.063	$2869_3 - 33043^{\circ}_3$
3313.073	300l	40	30174.773	$10526^{\circ}_3 - 40701_4$
3310.922	8	2	30194.376	$6362_2 - 36556^{\circ}_1$
3310.814	25	4	30195.361	$8111_4 - 38306^{\circ}_4$
3310.637	150d	15b	30196.975	$7795^{\circ}_4 - 37992_4$
3310.446	200	10b	30198.717	$8800_4 - 38998^{\circ}_3$
3309.365	1000r	40	30208.582	$0_2 - 30208^{\circ}_2$
3306.506	2b		30234.701	$7502_3 - 37736^{\circ}_2$
3305.303	400r	40	30245.705	$3865_1 - 34111^{\circ}_1$
3304.238	3000r	200	30255.453	$0_2 - 30255^{\circ}_3$
3303.546	20		30261.791	$8800_4 - 39062^{\circ}_0$

TABLE 4. *Classified lines of* Th I – continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
3302.192	400r	5	30274.198	$8111_4 - 38385^0_0$	3257.366	1000r	50	30690.800	$2869_3 - 33560^4_4$
3301.651	1500r	150	30279.159	$4961_4 - 35240^3_3$	3255.920	200	8	30704.430	$10526^3_3 - 41230_4$
3301.570	200	8	30279.902	$3687_2 - 33967^3_3$	3254.834	8b		30714.674	$7502_3 - 38216^3_3$
3301.449	150	3	30281.011	$0_2 - 30281^1_1$	3254.067	300r	20	30721.914	$2869_3 - 33591^3_3$
3300.870	20	4	30286.323	$8243^2_2 - 38529_3$	3253.866	300r	50	30723.811	$0_2 - 30723^1_1$
3300.775	150	4	30287.194	$10414^4_4 - 40701_4$	3253.684	300r	40	30725.530	$3865_1 - 34591^1_1$
3298.811	300	8	30305.226	$8111_4 - 38416^3_3$	3251.916	2000r	200	30742.234	$3687_2 - 34430^3_3$
3298.697	75	4	30306.273	$6362_2 - 36668^2_2$	3249.855	800r	25	30761.730	$0_2 - 30761^3_3$
3298.119	75	3	30311.584	$7795^4_4 - 38106_5$	3249.344	50	3	30766.567	$8243^2_2 - 39010_3$
3298.050	500r	40	30312.218	$4961_4 - 35273^0_0$	3248.790	3		30771.813	$4961_4 - 35733^4_4$
3296.901	30h	2	30322.782	$5563_1 - 35885^2_2$	3247.331	15		30785.639	$11241^3_3 - 42027_2$
3295.444	25		30336.188	$7280_2 - 37616^1_1$	3247.218	75	4	30786.710	$6362_2 - 37149^2_2$
3292.926	300	4	30359.384	$8243^2_2 - 38602_2$	3246.319	5	1	30795.235	$10783^2_2 - 41578_2$
3292.810	50b	4	30360.454	$10526^3_3 - 40886_2$	3246.144	75	4	30796.895	$6362_2 - 37159^1_1$
3291.037	40l	1	30376.810	$7280_2 - 37656^3_3$	3246.116	20	2	30797.161	$6362_2 - 37159^3_3$
3289.631	150l	10	30389.792	$4961_4 - 35351^4_4$	3245.994	200	8	30798.319	$5563_1 - 36361^1_1$
3289.517	150	10	30390.845	$7795^4_4 - 38186_4$	3245.386	3	1	30804.088	$7502_3 - 38306^4_4$
3288.478	2		30400.447	$6362_2 - 36762^3_3$	3244.883	100	5	30808.863	$7280_2 - 38088^2_2$
3288.387	300r	8	30401.288	$2869_3 - 33270^4_4$	3244.628	4		30811.284	$8800_4 - 39611^3_3$
3286.019	20	3	30423.196	$3687_2 - 34111^1_1$	3244.448	1000r	50	30812.994	$0_2 - 30812^2_2$
3285.752	800r	20	30425.668	$2869_3 - 33294^3_3$	3244.043	150	10	30816.840	$10414^4_4 - 41230_4$
3285.514	200r	5	30427.872	$2869_3 - 33297^2_2$	3243.585	40	2	30821.192	$11802_2 - 42624^1_1$
3283.671	100	4	30444.949	$11241^3_3 - 41686_3$	3242.145	50	15b	30834.880	$10526^3_3 - 41361_3$
3283.369	8	2	30447.749	$7502_3 - 37950^4_4$	3240.644	400r	40b	30849.162	$2869_3 - 33718^2_2$
3282.837	40	2	30452.683	$7502_3 - 37954^3_3$	3240.236	40	3	30853.046	$7502_3 - 38355^2_2$
3282.385	50	3	30456.877	$7280_2 - 37736^2_2$	3238.934	400r	20	30865.448	$2869_3 - 33734^2_2$
3282.198	8	1	30458.612	$3865_1 - 34324^2_2$	3238.287	25	3	30871.615	$6362_2 - 37234^2_2$
3281.189	300	5	30467.978	$7502_3 - 37970^2_2$	3236.573	100	8b	30887.963	$8111_4 - 38998^3_3$
3281.049	400r	25	30469.278	$8111_4 - 38580^4_4$	3234.996	400r	20	30903.020	$3687_2 - 34591^1_1$
3280.451	20		30474.832	$6362_2 - 36837^1_1$	3234.791	10	2	30904.978	$7795^4_4 - 38700_4$
3278.733	200	25	30490.800	$8243^2_2 - 38734_3$	3233.853	5	2	30913.942	$7502_3 - 38416^3_3$
3277.702	50	3	30500.390	$4961_4 - 35462^3_3$	3233.240	15	2	30919.803	$9804_5 - 40724^6_6$
3277.062	200	4	30506.347	$3865_1 - 34371^2_2$	3232.305	500r	25	30928.747	$0_2 - 30928^1_1$
3276.721	300	5	30509.521	$6362_2 - 36871^2_2$	3232.124	300r		30930.479	$2869_3 - 33799^4_4$
3276.562	25	3	30511.002	$8800_4 - 39311^4_4$	3232.031	200r		30931.368	$2869_3 - 33800^3_3$
3276.225	200	8	30514.140	$11241^3_3 - 41755_4$	3231.461	75		30936.824	$7280_2 - 38216^3_3$
3276.045	50	5	30515.817	$11197^6_6 - 41712_5$	3231.221	5		30939.122	$7795^4_4 - 38734_3$
3272.301	5		30550.730	$7502_3 - 38053^3_3$	3230.368	25	2	30947.291	$10414^4_4 - 41361_3$
3272.027	800r	75	30553.288	$0_2 - 30553^2_2$	3228.485	25	3	30965.341	$7795^4_4 - 38760_4$
3271.892	300r	100	30554.549	$8111_4 - 38665^0_0$	3227.820	10		30971.720	$9804_5 - 40776^4_4$
3271.546	50	3	30557.780	$2869_3 - 33427^2_2$	3225.863	50	8	30990.509	$0_2 - 30990^3_3$
3271.433	2		30558.836	$11197^6_6 - 41755_4$	3225.539	100	8	30993.621	$5563_1 - 36556^1_1$
3270.874	150	10	30564.058	$8243^2_2 - 38807_2$	3225.007	100	5	30998.734	$7280_2 - 38278^1_1$
3270.100	100	5	30571.292	$7795^4_4 - 38366_4$	3223.504	8	2	31013.187	$3865_1 - 34878^1_1$
3269.352	3		30578.286	$10783^2_2 - 41361_3$	3223.168	200r	5	31016.420	$3687_2 - 34704^3_3$
3268.453	300	75	30586.697	$7502_3 - 38088^2_2$	3222.475	10l		31023.090	$11601_1 - 42624^1_1$
3266.635	500r	50	30603.719	$2558_0 - 33161^1_1$	3220.986	75b		31037.431	$3687_2 - 34725^3_3$
3264.859	40	3	30620.366	$9804_5 - 40425^4_4$	3219.490	20h	4	31051.852	$10526^3_3 - 41578_2$
3263.183	400r	20	30636.092	$3687_2 - 34324^2_2$	3217.265	40	2	31073.326	$8800_4 - 39736^0_0$
3259.744	25	2	30668.412	$8800_4 - 39468^3_3$	3216.998	75	3	31075.905	$0_2 - 31075^2_2$
3259.061	600r	50	30674.839	$7280_2 - 37954^3_3$	3216.761	40		31078.195	$8243^2_2 - 39321_3$
3258.744	100	3	30677.823	$8111_4 - 38788^3_3$	3214.648	150	5	31098.622	$2869_3 - 33967^3_3$
3258.274	15	2	30682.248	$13175^4_4 - 43857_5$	3214.381	400r	25	31101.205	$4961_4 - 36062^4_4$
3258.103	400r		30683.858	$3687_2 - 34371^2_2$	3214.076	400r	50	31104.156	$2558_0 - 33662^1_1$
3257.435	200	75	30690.150	$7280_2 - 37970^2_2$	3213.937	8	1	31105.501	$5563_1 - 36668^2_2$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
3213.818	3		31106.653	$8800_4 - 39906^{\frac{0}{4}}$
3211.997	200r	5	31124.288	$3865_1 - 34989^{\frac{0}{1}}$
3211.195	400r	25	31132.061	$2869_3 - 34001^{\frac{4}{4}}$
3210.779	200	5	31136.095	$7280_2 - 38416^{\frac{3}{3}}$
3208.971	15		31153.636	$8111_4 - 39264^{\frac{3}{3}}$
3208.527	100	3	31157.947	$7795^{\frac{4}{4}} - 38953_5$
3208.152	25		31161.589	$7795^{\frac{4}{4}} - 38956_4$
3207.938	100	5	31163.668	$3687_2 - 34851^{\frac{2}{2}}$
3207.548	4		31167.457	$7502_3 - 38669^{\frac{2}{2}}$
3205.696	50	3	31185.462	$8800_4 - 39985^{\frac{3}{3}}$
3205.162	3		31190.658	$3687_2 - 34878^{\frac{1}{1}}$
3202.521	200r	8	31216.379	$4961_4 - 36178^{\frac{4}{4}}$
3199.669	1		31244.202	$10783^{\frac{2}{2}} - 42027_2$
3196.611	20	2	31274.091	$5563_1 - 36837^{\frac{1}{1}}$
3195.688	400r	50	31283.123	$0_2 - 31283^{\frac{3}{3}}$
3194.518	5		31294.580	$6362_2 - 37656^{\frac{3}{3}}$
3194.096	200	5	31298.715	$10414^{\frac{4}{4}} - 41712_5$
3193.781	200r	5	31301.802	$3687_2 - 34989^{\frac{1}{1}}$
3192.586	400r	20	31313.518	$4961_4 - 36275^{\frac{0}{0}}$
3190.895	150b	2	31330.112	$9804_5 - 41134^{\frac{0}{4}}$
3189.711	200	8	31341.741	$10414^{\frac{4}{4}} - 41755_4$
3188.092	8b		31357.656	$8111_4 - 39468^{\frac{3}{3}}$
3186.371	75	2	31374.592	$6362_2 - 37736^{\frac{2}{2}}$
3185.857	1		31379.654	$7795^{\frac{4}{4}} - 39174_3$
3184.843	300	8	31389.644	$7280_2 - 38669^{\frac{2}{2}}$
3184.277	300	15b	31395.223	$7280_2 - 38675^{\frac{3}{3}}$
3181.670	500r	20	31420.947	$4961_4 - 36382^{\frac{4}{4}}$
3180.062	100	5	31436.835	$8243^{\frac{2}{2}} - 39680_2$
3179.858	25	2	31438.851	$11197^{\frac{0}{0}} - 42635_5$
3178.622	200	4	31451.076	$8111_4 - 39562^{\frac{4}{4}}$
3178.244	600r	100	31454.816	$2869_3 - 34324^{\frac{2}{2}}$
3178.018	3		31457.053	$7795^{\frac{4}{4}} - 39252_5$
3177.402	100	2	31463.151	$3865_1 - 35328^{\frac{1}{1}}$
3176.723	4		31469.876	$8800_4 - 40270^{\frac{4}{4}}$
3176.167	200r	5	31475.385	$2869_3 - 34344^{\frac{4}{4}}$
3174.840	200	4	31488.540	$7795^{\frac{4}{4}} - 39283_4$
3174.020	300	8	31496.675	$7502_3 - 38998^{\frac{3}{3}}$
3173.634	2		31500.506	$8111_4 - 39611^{\frac{3}{3}}$
3173.427	500r	50	31502.560	$2869_3 - 34371^{\frac{2}{2}}$
3172.808	8		31508.706	$7280_2 - 38788^{\frac{3}{3}}$
3171.276	500r	75	31523.927	$0_2 - 31523^{\frac{3}{3}}$
3171.015	10	3	31526.521	$7795^{\frac{4}{4}} - 39321_3$
3170.250	5	1	31534.129	$7280_2 - 38814^{\frac{2}{2}}$
3168.342	100	2	31553.118	$2558_0 - 34111^{\frac{1}{1}}$
3165.048	150	3	31585.956	$5563_1 - 37149^{\frac{2}{2}}$
3164.386	25	3	31592.564	$6362_2 - 37954^{\frac{3}{3}}$
3164.239	200	3	31594.031	$8243^{\frac{2}{2}} - 39837_3$
3163.715	200	3	31599.264	$0_2 - 31599^{\frac{2}{2}}$
3162.856	100b		31607.846	$6362_2 - 37970^{\frac{2}{2}}$
3161.364	200	5	31622.762	$2869_3 - 34492^{\frac{4}{4}}$
3161.148	100		31624.923	$8800_4 - 40425^{\frac{4}{4}}$
3159.577	10		31640.647	$3687_2 - 35328^{\frac{1}{1}}$
3157.221	300r	8	31664.257	$4961_4 - 36625^{\frac{0}{0}}$
3156.866	300		31667.818	$3865_1 - 35533^{\frac{2}{2}}$
3152.395	100	3	31712.730	$0_2 - 31712^{\frac{1}{1}}$
3152.295	100	3	31713.736	$2869_3 - 34583^{\frac{3}{3}}$
3151.184	300	5	31724.917	$7795^{\frac{4}{4}} - 39520_4$
3151.017	200		31726.598	$6362_2 - 38088^{\frac{2}{2}}$
3147.449	200	25	31762.562	$8111_4 - 39873^{\frac{0}{0}}$
3146.310	200r	8	31774.060	$3687_2 - 35462^{\frac{3}{3}}$
3145.637	400r	25	31780.858	$0_2 - 31780^{\frac{3}{3}}$
3144.145	100	3	31795.939	$8111_4 - 39906^{\frac{4}{4}}$
3143.632	1		31801.127	$4961_4 - 36762^{\frac{3}{3}}$
3142.422	100	5	31813.372	$3865_1 - 35678^{\frac{1}{1}}$
3140.272	600r	50	31835.152	$2869_3 - 34704^{\frac{3}{3}}$
3139.892	150	100	31839.005	$4961_4 - 36800^{\frac{4}{4}}$
3139.273	150		31845.282	$3687_2 - 35533^{\frac{2}{2}}$
3138.359	40	2	31854.556	$6362_2 - 38216^{\frac{3}{3}}$
3138.200	100	10	31856.170	$2869_3 - 34725^{\frac{3}{3}}$
3136.829	400r	8	31870.093	$0_2 - 31870^{\frac{2}{2}}$
3136.612	10		31872.298	$10414^{\frac{4}{4}} - 42286_3$
3136.216	800r	100	31876.322	$4961_4 - 36837^{\frac{0}{0}}$
3133.980	200	5	31899.064	$7795^{\frac{4}{4}} - 39694_5$
3131.496	20	2	31924.366	$8800_4 - 40724^{\frac{0}{0}}$
3128.314	100	3	31956.838	$8243^{\frac{2}{2}} - 40200_3$
3126.414	200	2	31976.258	$8800_4 - 40776^{\frac{4}{4}}$
3125.812	150	2	31982.416	$2869_3 - 34851^{\frac{2}{2}}$
3125.601	500r	20	31984.575	$7280_2 - 39264^{\frac{3}{3}}$
3124.986	75	2	31990.869	$3687_2 - 35678^{\frac{1}{1}}$
3122.102	15b		32020.419	$3865_1 - 35885^{\frac{2}{2}}$
3120.881	400r	25	32032.946	$2558_0 - 34591^{\frac{1}{1}}$
3119.963	100	20	32042.371	$7795^{\frac{4}{4}} - 39837_3$
3119.504	200r		32047.085	$4961_4 - 37008^{\frac{0}{0}}$
3118.848	15	1	32053.826	$6362_2 - 38416^{\frac{3}{3}}$
3118.266	4		32059.808	$7502_3 - 39562^{\frac{4}{4}}$
3116.352	300r	10	32079.498	$4961_4 - 37041^{\frac{4}{4}}$
3116.263	500r		32080.414	$0_2 - 32080^{\frac{1}{1}}$
3111.982	50	2	32124.544	$3687_2 - 35812^{\frac{3}{3}}$
3111.280	300	8	32131.792	$7280_2 - 39411^{\frac{1}{1}}$
3110.102	200		32143.962	$8111_4 - 40254^{\frac{3}{3}}$
3108.636	200	3	32159.120	$8111_4 - 40270^{\frac{4}{4}}$
3108.504	300r	10	32160.485	$0_2 - 32160^{\frac{2}{2}}$
3107.214	3		32173.837	$5563_1 - 37736^{\frac{2}{2}}$
3105.794	200b		32188.546	$7280_2 - 39468^{\frac{3}{3}}$
3104.966	200r	3	32197.130	$0_2 - 32197^{\frac{3}{3}}$
3104.892	200r	25	32197.897	$4961_4 - 37159^{\frac{3}{3}}$
3102.595	20		32221.734	$10414^{\frac{4}{4}} - 42635_5$
3099.902	20l		32249.725	$8243^{\frac{2}{2}} - 40493_3$
3099.184	100	2	32257.196	$7795^{\frac{4}{4}} - 40052_4$
3098.726	300r	5	32261.963	$2869_3 - 35131^{\frac{4}{4}}$
3096.498	25		32285.176	$0_2 - 32285^{\frac{3}{3}}$
3094.373	2		32307.346	$6362_2 - 38669^{\frac{2}{2}}$
3093.832	4		32312.995	$6362_2 - 38675^{\frac{3}{3}}$
3093.719	200	3	32314.176	$8111_4 - 40425^{\frac{4}{4}}$
3093.102	15		32320.621	$2558_0 - 34878^{\frac{1}{1}}$
3092.828	300r	8	32323.484	$3865_1 - 36188^{\frac{2}{2}}$
3088.567	200r	10	32368.076	$8243^{\frac{2}{2}} - 40611_2$
3088.235	15	1	32371.556	$2869_3 - 35240^{\frac{3}{3}}$
3086.852	50	1	32386.059	$3687_2 - 36074^{\frac{3}{3}}$
3085.084	3b		32404.618	$7502_3 - 39906^{\frac{4}{4}}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
3085.038	4		32405.101	$7795^{8}_{4} - 40200_{3}$	3025.448	200r	2	33043.334	$0_{2} - 33043^{8}_{3}$
3083.003	75b		32426.490	$6362_{2} - 38788^{8}_{3}$	3024.883	150		33049.506	$6362_{2} - 39411^{0}_{1}$
3082.507	150r	3	32431.707	$2558_{0} - 34989^{0}_{1}$	3022.567	3	1	33074.829	$3687_{2} - 36762^{8}_{3}$
3080.593	3		32451.857	$6362_{2} - 38814^{2}_{2}$	3021.056	300	1	33091.370	$4961_{4} - 38053^{8}_{3}$
3078.100	3		32478.139	$6362_{2} - 38840^{0}_{1}$	3018.644	100		33117.810	$8243^{3}_{2} - 41361_{3}$
3077.718	300r	5	32482.170	$2869_{3} - 35351^{4}_{4}$	3015.785	40	3	33149.205	$3687_{2} - 36837^{0}_{1}$
3077.600	25	1	32483.415	$7502_{3} - 39985^{8}_{3}$	3014.641	150r	1	33161.784	$0_{2} - 33161^{0}_{1}$
3076.410	150	30	32495.980	$3865_{1} - 36361^{0}_{1}$	3012.630	150		33183.919	$3687_{2} - 36871^{2}_{2}$
3075.938	5		32500.966	$3687_{2} - 36188^{2}_{2}$	3010.736	200r	2	33204.794	$2869_{3} - 36074^{8}_{3}$
3075.687	100	3	32503.618	$0_{2} - 32503^{2}_{2}$	3007.476	100	1	33240.785	$11197^{6}_{6} - 44437_{6}$
3073.589	2		32525.804	$5563_{1} - 38088^{2}_{2}$	3006.720	3		33249.143	$6362_{2} - 39611^{8}_{3}$
3068.908	300r	5	32575.414	$0_{2} - 32575^{2}_{2}$	3006.164	300r	2	33255.292	$4961_{4} - 38216^{8}_{3}$
3067.270	25		32592.809	$2869_{3} - 35462^{8}_{3}$	3004.163	3b		33277.442	$5563_{1} - 38840^{0}_{1}$
3067.163	100b		32593.946	$7502_{3} - 40096^{2}_{2}$	3003.605	200	1	33283.624	$3865_{1} - 37149^{2}_{2}$
3065.683	200r	2	32609.680	$4961_{4} - 37571^{6}_{6}$	3002.687	200r	2	33293.799	$3865_{1} - 37159^{0}_{1}$
3065.314	15b	4	32613.606	$8111_{4} - 40724^{6}_{6}$	3002.390	100b	10	33297.092	$0_{2} - 33297^{2}_{2}$
3064.396	2		32623.375	$3865_{1} - 36488^{2}_{2}$	3001.336	50r		33308.785	$2869_{3} - 36178^{4}_{4}$
3063.637	8b		32631.457	$7795^{8}_{4} - 40426_{4}$	3000.353	100b		33319.697	$2869_{3} - 36188^{2}_{2}$
3063.157	75b		32636.570	$6362_{2} - 38998^{8}_{3}$	2998.103	150b		33344.702	$4961_{4} - 38306^{4}_{4}$
3062.517	100	10	32643.391	$8243^{3}_{2} - 40886_{2}$	2995.962	100	1	33368.530	$3865_{1} - 37234^{2}_{2}$
3062.454	200r	2	32644.062	$4961_{4} - 37605^{4}_{4}$	2991.032	75b		33423.528	$4961_{4} - 38385^{6}_{6}$
3061.812	400r	3	32650.907	$0_{2} - 32650^{0}_{1}$	2990.717	75		33427.048	$0_{2} - 33427^{2}_{2}$
3060.928	100		32660.336	$11197^{6}_{6} - 43857_{5}$	2989.272	40l		33443.206	$10414^{4}_{4} - 43857_{5}$
3060.582	75		32664.028	$2869_{3} - 35533^{2}_{2}$	2988.255	300r		33454.587	$4961_{4} - 38416^{8}_{3}$
3060.440	500r	10	32665.543	$0_{2} - 32665^{0}_{1}$	2987.672	300r	2	33461.115	$3687_{2} - 37149^{2}_{2}$
3059.698	200	1	32673.465	$3687_{2} - 36361^{0}_{1}$	2986.740	100r	2	33471.556	$3687_{2} - 37159^{8}_{3}$
3058.029	200r	2	32691.297	$3865_{1} - 36556^{0}_{1}$	2986.127	2		33478.427	$7502_{3} - 40980^{8}_{3}$
3057.651	100		32695.338	$4961_{4} - 37656^{8}_{3}$	2980.112	200r	2	33545.996	$3687_{2} - 37234^{2}_{2}$
3056.693	150	1	32705.585	$7280_{2} - 39985^{8}_{3}$	2979.035	100		33558.123	$2869_{3} - 36427^{8}_{3}$
3053.536	200	1	32739.397	$3687_{2} - 36427^{8}_{3}$	2978.791	75	2	33560.872	$7795^{8}_{4} - 41356_{5}$
3053.462	150	1	32740.190	$11197^{6}_{6} - 43937_{6}$	2978.325	100	1	33566.122	$7795^{8}_{4} - 41361_{3}$
3052.296	3		32752.697	$7502_{3} - 40254^{8}_{3}$	2976.103	200r	3	33591.182	$0_{2} - 33591^{8}_{3}$
3052.128	100	1	32754.500	$0_{2} - 32754^{8}_{3}$	2973.675	100	1	33618.608	$4961_{4} - 38580^{4}_{4}$
3050.892	4b		32767.769	$7502_{3} - 40270^{4}_{4}$	2973.590	15		33619.569	$2869_{3} - 36488^{2}_{2}$
3050.631	200r	2	32770.572	$2558_{0} - 35328^{0}_{1}$	2972.438	10		33632.598	$7502_{3} - 41134^{4}_{4}$
3049.054	100b		32787.521	$7795^{8}_{4} - 40582_{5}$	2969.822	200r	4	33662.223	$0_{2} - 33662^{0}_{1}$
3048.621	10		32792.177	$5563_{1} - 38355^{2}_{2}$	2966.662	5		33698.077	$7502_{3} - 41200^{2}_{2}$
3047.816	500r	2	32800.838	$3687_{2} - 36488^{2}_{2}$	2966.441	8		33700.587	$7280_{2} - 40980^{8}_{3}$
3046.401	4		32816.073	$7280_{2} - 40096^{2}_{2}$	2966.150	100l	5	33703.894	$4961_{4} - 38665^{6}_{6}$
3041.941	100		32864.185	$2869_{3} - 35733^{4}_{4}$	2965.290	15		33713.668	$4961_{4} - 38675^{8}_{3}$
3041.515	300r	100	32868.788	$3687_{2} - 36556^{0}_{1}$	2963.521	2		33733.792	$6362_{2} - 40096^{2}_{2}$
3041.433	40b		32869.674	$8111_{4} - 40980^{8}_{3}$	2963.442	75		33734.691	$0_{2} - 33734^{2}_{2}$
3038.417	100l		32902.300	$6362_{2} - 39264^{8}_{3}$	2959.137	200	2	33783.767	$8243^{3}_{2} - 42027_{2}$
3038.070	100		32906.057	$7795^{8}_{4} - 40701_{4}$	2957.767	75	3	33799.414	$2869_{3} - 36668^{2}_{2}$
3036.518	10b	2	32922.875	$7502_{3} - 40425^{4}_{4}$	2957.660	100r	5	33800.637	$0_{2} - 33800^{8}_{3}$
3034.639	400r	2	32943.260	$2869_{3} - 35812^{8}_{3}$	2957.421	10b		33803.368	$2558_{0} - 36361^{0}_{1}$
3033.595	15		32954.597	$0_{2} - 32954^{2}_{2}$	2955.339	10		33827.181	$4961_{4} - 38788^{8}_{3}$
3032.016	100r	2	32971.758	$3865_{1} - 36837^{0}_{1}$	2953.454	25	1	33848.770	$5563_{1} - 39411^{0}_{1}$
3031.733	75b		32974.836	$7280_{2} - 40254^{8}_{3}$	2951.471	50	1	33871.511	$3865_{1} - 37736^{2}_{2}$
3031.195	100r	2	32980.688	$3687_{2} - 36668^{2}_{2}$	2949.736	20	2	33891.433	$7795^{8}_{4} - 41686_{3}$
3030.487	400r	8	32988.393	$4961_{4} - 37950^{4}_{4}$	2949.639	50	2	33892.547	$6362_{2} - 40254^{8}_{3}$
3030.035	75		32993.314	$4961_{4} - 37954^{8}_{3}$	2949.551	100r	15b	33893.559	$2869_{3} - 36762^{8}_{3}$
3028.830	200	2	33006.439	$3865_{1} - 36871^{2}_{2}$	2947.462	100	3	33917.579	$7795^{8}_{4} - 41712_{5}$
3027.896	150	3	33016.620	$2869_{3} - 35885^{2}_{2}$	2947.229	200	25	33920.261	$7280_{2} - 41200^{2}_{2}$
3027.228	200b	15	33023.906	$8111_{4} - 41134^{4}_{4}$	2946.528	100	20	33928.330	$3687_{2} - 37616^{0}_{1}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark		
2946.258	200r	50	33931.439	$2869_3 - 36800^{\frac{3}{4}}$
2943.729	400	3	33960.589	$7795^{\frac{3}{4}} - 41755_4$
2943.095	300r	2	33967.904	$0_2 - 33967^{\frac{3}{5}}$
2943.000	300r	20	33969.001	$3687_2 - 37656^{\frac{3}{5}}$
2940.432	40h		33998.666	$2558_0 - 36556^{\frac{1}{2}}$
2940.088	800r	50	34002.644	$2869_3 - 36871^{\frac{1}{2}}$
2937.095	5		34037.292	$4961_4 - 38998^{\frac{3}{5}}$
2936.617	150h	3	34042.832	$8243^{\frac{3}{2}} - 42286_3$
2936.089	500	5	34048.954	$3687_2 - 37736^{\frac{2}{3}}$
2931.663	150b	25	34100.356	$4961_4 - 39062^{\frac{5}{6}}$
2931.281	300r	2	34104.800	$3865_1 - 37970^{\frac{2}{3}}$
2930.735	4		34111.153	$0_2 - 34111^{\frac{1}{2}}$
2925.526	500r	5	34171.887	$2869_3 - 37041^{\frac{3}{4}}$
2921.560	15b		34218.273	$7502_3 - 41720^{\frac{2}{3}}$
2916.369	500r	10	34279.177	$2558_0 - 36837^{\frac{1}{2}}$
2916.313	75b	2	34279.835	$2869_3 - 37149^{\frac{2}{3}}$
2916.105	100	2	34282.280	$3687_2 - 37970^{\frac{2}{3}}$
2915.424	100	2	34290.287	$2869_3 - 37159^{\frac{3}{5}}$
2912.553	100	3	34324.087	$0_2 - 34324^{\frac{2}{3}}$
2910.390	150	2	34349.595	$4961_4 - 39311^{\frac{3}{4}}$
2909.103	300d	8d	34364.791	$2869_3 - 37234^{\frac{2}{3}}$
2909.080	50b	5b	34365.063	$3687_2 - 38053^{\frac{3}{5}}$
2908.507	200r	20	34371.833	$0_2 - 34371^{\frac{1}{2}}$
2902.714	300	2	34440.426	$7280_2 - 41720^{\frac{2}{3}}$
2898.556	100	2	34489.829	$3865_1 - 38355^{\frac{2}{3}}$
2898.443	8b		34491.174	$7795^{\frac{3}{4}} - 42286_3$
2897.112	40b	20b	34507.019	$4961_4 - 39468^{\frac{3}{5}}$
2895.271	150	3	34528.960	$3687_2 - 38216^{\frac{3}{5}}$
2890.746	40		34583.007	$0_2 - 34583^{\frac{3}{5}}$
2890.078	150r	5	34591.000	$0_2 - 34591^{\frac{1}{2}}$
2889.290	150r	15	34600.433	$4961_4 - 39562^{\frac{3}{4}}$
2885.169	75		34649.852	$4961_4 - 39611^{\frac{3}{5}}$
2883.713	200w	2	34667.346	$3687_2 - 38355^{\frac{2}{3}}$
2880.632	200r	3	34704.423	$0_2 - 34704^{\frac{3}{5}}$
2878.657	150b		34728.232	$3687_2 - 38416^{\frac{3}{5}}$
2877.974	5		34736.473	$2869_3 - 37605^{\frac{3}{4}}$
2873.734	75b		34787.722	$2869_3 - 37656^{\frac{3}{5}}$
2869.589	2		34837.969	$6362_2 - 41200^{\frac{2}{3}}$
2869.374	5		34840.580	$7795^{\frac{3}{4}} - 42635_5$
2868.460	300r	10	34851.681	$0_2 - 34851^{\frac{2}{3}}$
2867.141	40b		34867.713	$2869_3 - 37736^{\frac{2}{3}}$
2866.241	40		34878.661	$0_2 - 34878^{\frac{1}{2}}$
2863.510	10		34911.924	$4961_4 - 39873^{\frac{5}{6}}$
2860.776	100	2	34945.287	$4961_4 - 39906^{\frac{3}{4}}$
2860.491	150	3	34948.769	$3865_1 - 38814^{\frac{2}{3}}$
2857.336	10		34987.356	$3687_2 - 38675^{\frac{3}{5}}$
2857.138	100	2	34989.781	$0_2 - 34989^{\frac{1}{2}}$
2854.342	300	3	35024.054	$4961_4 - 39985^{\frac{3}{5}}$
2851.558	50r	4	35058.246	$2558_0 - 37616^{\frac{1}{2}}$
2849.725	10	1	35080.796	$2869_3 - 37950^{\frac{3}{4}}$
2849.326	100	25	35085.708	$2869_3 - 37954^{\frac{3}{5}}$
2848.084	300r	2	35101.007	$2869_3 - 37970^{\frac{2}{3}}$
2846.036	150	2	35126.265	$3687_2 - 38814^{\frac{2}{3}}$
2843.906	300r	2	35152.572	$3687_2 - 38840^{\frac{1}{2}}$
2841.383	150h	2	35183.784	$2869_3 - 38053^{\frac{3}{5}}$
2838.483	300r	2	35219.729	$2869_3 - 38088^{\frac{2}{3}}$
2836.783	3		35240.834	$0_2 - 35240^{\frac{3}{5}}$
2832.568	100		35293.271	$4961_4 - 40254^{\frac{3}{5}}$
2831.146	20	4	35310.997	$3687_2 - 38998^{\frac{3}{5}}$
2829.732	150r	2	35328.641	$0_2 - 35328^{\frac{1}{2}}$
2828.502	200l	4	35344.003	$7280_2 - 42624^{\frac{1}{2}}$
2828.206	150r	4	35347.702	$2869_3 - 38216^{\frac{3}{5}}$
2821.072	100s	2	35437.086	$2869_3 - 38306^{\frac{3}{4}}$
2818.971	15		35463.496	$4961_4 - 40425^{\frac{3}{4}}$
2817.180	5		35486.041	$2869_3 - 38355^{\frac{2}{3}}$
2813.434	100		35533.287	$0_2 - 35533^{\frac{2}{3}}$
2812.395	8b		35546.414	$3865_1 - 39411^{\frac{1}{2}}$
2810.002	100		35576.683	$3687_2 - 39264^{\frac{3}{5}}$
2805.228	4	1	35637.226	$5563_1 - 41200^{\frac{2}{3}}$
2801.957	25		35678.826	$0_2 - 35678^{\frac{1}{2}}$
2799.432	100	1	35711.006	$2869_3 - 38580^{\frac{3}{4}}$
2798.421	75		35723.907	$3687_2 - 39411^{\frac{1}{2}}$
2795.368	100		35762.921	$4961_4 - 40724^{\frac{5}{6}}$
2792.433	15	1	35800.508	$2869_3 - 38669^{\frac{2}{3}}$
2791.999	50	1	35806.073	$2869_3 - 38675^{\frac{3}{5}}$
2791.499	100b		35812.486	$0_2 - 35812^{\frac{3}{5}}$
2782.871	100		35923.513	$3687_2 - 39611^{\frac{3}{5}}$
2781.209	50		35944.979	$2869_3 - 38814^{\frac{2}{3}}$
2775.488	100		36019.067	$4961_4 - 40980^{\frac{3}{5}}$
2772.176	4		36062.098	$7795^{\frac{3}{4}} - 43857_5$
2771.257	75		36074.056	$0_2 - 36074^{\frac{3}{5}}$
2766.988	50		36129.709	$2869_3 - 38998^{\frac{3}{5}}$
2763.655	40b		36173.280	$4961_4 - 41134^{\frac{3}{4}}$
2762.458	100r		36188.953	$0_2 - 36188^{\frac{2}{3}}$
2759.272	8		36230.737	$3865_1 - 40096^{\frac{2}{3}}$
2756.912	3		36261.750	$6362_2 - 42624^{\frac{1}{2}}$
2755.336	75		36282.490	$2558_0 - 38840^{\frac{1}{2}}$
2754.179	8		36297.731	$3687_2 - 39985^{\frac{3}{5}}$
2749.351	50	2	36361.468	$0_2 - 36361^{\frac{1}{2}}$
2746.786	100		36395.421	$2869_3 - 39264^{\frac{3}{5}}$
2744.376	20		36427.381	$0_2 - 36427^{\frac{3}{5}}$
2743.274	3		36442.013	$2869_3 - 39311^{\frac{3}{4}}$
2739.753	50		36488.844	$0_2 - 36488^{\frac{2}{3}}$
2734.661	40	2	36556.783	$0_2 - 36556^{\frac{1}{2}}$
2733.900	50		36566.959	$3687_2 - 40254^{\frac{3}{5}}$
2726.317	20l		36668.661	$0_2 - 36668^{\frac{2}{3}}$
2724.522	25		36692.818	$2869_3 - 39562^{\frac{3}{4}}$
2720.857	50		36742.241	$2869_3 - 39611^{\frac{3}{5}}$
2719.333	·15b		36762.831	$0_2 - 36762^{\frac{3}{5}}$
2713.843	75		36837.197	$0_2 - 36837^{\frac{1}{2}}$
2712.620	2		36853.804	$2558_0 - 39411^{\frac{1}{2}}$
2711.288	5		36871.909	$0_2 - 36871^{\frac{2}{3}}$
2699.153	2		37037.670	$2869_3 - 39906^{\frac{3}{4}}$
2693.425	50h		37116.433	$2869_3 - 39985^{\frac{3}{5}}$
2691.057	200r		37149.091	$0_2 - 37149^{\frac{2}{3}}$
2690.319	10		37159.281	$0_2 - 37159^{\frac{1}{2}}$
2685.426	3		37226.984	$2869_3 - 40096^{\frac{2}{3}}$
2680.688	100r		37292.777	$3687_2 - 40980^{\frac{3}{5}}$
2677.666	10		37334.863	$3865_1 - 41200^{\frac{2}{3}}$
2674.029	3		37385.640	$2869_3 - 40254^{\frac{3}{5}}$

TABLE 4. *Classified lines of* Th I—continued

Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification	Wavelength (Å)	Intensity		Wavenumber (cm^{-1})	Classification
	Lamp	Spark				Lamp	Spark		
2664.996	8		37512.351	$3687_2 - 41200^2_2$	2577.288	75r	3	38788.861	$0_2 - 38788^3_3$
2657.633	3		37616.274	$0_2 - 37616^2_1$	2575.599	3		38814.295	$0_2 - 38814^2_2$
2654.762	4		37656.952	$0_2 - 37656^3_3$	2573.854	3		38840.609	$0_2 - 38840^2_1$
2640.865	10		37855.102	$3865_1 - 41720^2_2$	2563.402	2		38998.967	$0_2 - 38998^3_3$
2633.914	2		37954.997	$0_2 - 37954^3_3$	2546.052	100		39264.707	$0_2 - 39264^3_3$
2632.854	20	1	37970.277	$0_2 - 37970^2_2$	2536.540	25		39411.940	$0_2 - 39411^2_1$
2627.128	5		38053.031	$0_2 - 38053^3_3$	2523.760	25		39611.503	$0_2 - 39611^3_3$
2624.647	100r		38088.999	$0_2 - 38088^2_2$	2500.142	10		39985.674	$0_2 - 39985^3_3$
2623.100	100r		38111.461	$2869_3 - 40980^3_3$	2495.126	10		40066.053	$2558_0 - 42624^2_1$
2615.858	5		38216.966	$0_2 - 38216^3_3$	2493.250	100		40096.198	$0_2 - 40096^2_2$
2611.626	15	2	38278.891	$0_2 - 38278^2_1$	2483.418	50		40254.930	$0_2 - 40254^3_3$
2606.425	20		38355.270	$0_2 - 38355^2_2$	2439.433	150r		40980.707	$0_2 - 40980^3_3$
2602.290	4		38416.212	$0_2 - 38416^3_3$	2345.372	50		42624.104	$0_2 - 42624^2_1$
2585.224	3		38669.796	$0_2 - 38669^2_2$					
2584.851	2		38675.375	$0_2 - 38675^3_3$					

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