Wavelengths, Energy Level Classifications, and Energy Levels for the Spectrum of Neutral Mercury

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A comprehensive critically evaluated compilation of the most accurate wavelength measurements for classified lines of neutral mercury (Hg I) for both the single isotope ^{198}Hg and for mercury in its natural isotopic abundance has been prepared. Data from 12 sources spanning the region from 1849 to 40 050 Å are included for ^{198}Hg. Data from 39 sources spanning the region from 745 to 64 918 Å are included for the natural isotope mixture. Based on these line lists we have derived optimized values for the energy levels of neutral mercury for both ^{198}Hg and the natural isotopic mixture. Tabular data for 105 classified lines and 60 energy levels are provided for ^{198}Hg and 658 lines and 275 energy levels are provided for the natural isotopic mixture. © *2006 by the U.S. Secretary of Commerce on behalf of the United States. All rights reserved*. [DOI: 10.1063/1.2204960]

Key words: atomic energy levels; atomic spectra; atomic wavelengths; atomic wave numbers; energy level classifications; infrared wavelengths; mercury; ultraviolet wavelengths; wavelength standards.

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1. Introduction

The mercury spectrum has been studied for many years. A list of 92 lines claimed as due to mercury was published by Kayser and Runge[1] in 1891. Mercury lamps are convenient sources for wavelength calibration lines and are widely used to calibrate spectrometers. Several ^{198}Hg lines are recommended as secondary wavelength standards.[95]

The natural isotopic abundance of mercury is made up of seven stable isotopes: ^{196}Hg, 0.15%; ^{198}Hg, 9.97%; ^{199}Hg, 16.87%; ^{200}Hg, 23.10%; ^{201}Hg, 13.18%; ^{202}Hg, 29.86%; and ^{204}Hg, 6.87% (Böhlke *et al.*[99]). This leads to a rather complex line shape that makes high precision measurement of wavelengths difficult. It is possible to produce almost pure ^{198}Hg by bombarding gold, which consists of only one stable isotope (^{197}Au), with neutrons. Use of ^{198}Hg in an appropriate lamp results in very sharp lines well suited to precision measurements.[39]

In 1958 Moore[54] published a compilation of energy levels of the natural isotopic mixture of Hg I. She included 253 energy levels. In 1980, Reader *et al.*[78] published a list of 125 spectral lines for this mixture and 67 lines for ^{198}Hg based on the contribution of R. W. Stanley. Since these compilations were completed, additional work on Hg I has been published. As a result, we are able to provide a considerably larger list of Hg I lines and a complete redetermination of the energy levels.

All energy levels are given in units of centimeter^{-1}, the customary unit for atomic energy levels. It is related to the SI unit for energy (joule) by 1 cm^{-1}=1.986 445 61(34) $\times 10^{-23}$ J (Mohr and Taylor[100]). All wavelengths are given in units of angstrom (0.1 nm). Ionization energies are provided in both centimeter^{-1} and electron volts. We use the conversion factor $(8065.544\,45 \pm 0.000\,69)$ cm^{-1}/eV as determined by Mohr and Taylor.[100]

This comprehensive, critically evaluated compilation takes into account published work through December 2004. There are occasional exceptions when later work is used.

The ground-state configuration of neutral mercury is $5d^{10}6s^2$. The excited states we compile are of the form $5d^{10}6snl$ and $5d^9 6s^2 nl'$ with $l=s, p, d, f$, or g and $l'=s, p$, or f. We also include levels of the $5d^{10}6p^2$ configuration.

We tabulate only those lines that have wavelengths consistent with differences in the tabulated levels. Only experimentally observed lines are included (with one exception for the 1849 $\AA$ line of ^{198}Hg). Decisions are made about which of several possible classifications of a given line to include by calculating the respective transition probabilities with the Cowan atomic structure codes.[79] As a result of this process, in a few cases, the line classifications may differ from those given in the stated references.

Several photoabsorption papers[74,82,91] and laser-spectroscopy papers,[87,92,93,96,98] provide data about Rydberg series with results up to very high values of the principal quantum number n. In this compilation we limit the tabulated levels (and thus also the corresponding lines) to include only $n \leq 20$. We do not include parity forbidden lines that appear when electric fields mix the parity of the energy levels in light sources or absorbing atoms.[13,14,83] Such lines are likely to exhibit large Stark shifts. Except for the $5d^{10}6p^2$ configuration, we also have not included lines and levels that involve two-electron excitations from the ground state. Examples of these are in a report by Mansfield[74] of a series of levels $5d^{10}6p(^2P^o_{3/2})nd$ with $n=6-15$ and in a report by Connerade and Mansfield[73] of excitations from the $4f$ and $5s$ shells.

In this work we use air wavelengths for all lines between 2000 and 20 000 Å. All other wavelengths are vacuum wavelengths. We classify all $5d^{10}6snl$ and $5d^{10}6p^2$ levels in Russell-Saunders or LS coupling and all $5d^9 6s^2 nl$ levels in pair or jK coupling. jK coupling is where all but the final electron are coupled to form angular momentum j. Then the orbital angular momentum, l, of the final electron is coupled to j to form angular momentum K and finally this electron's spin, s, is coupled to K to form the total angular momentum J. The term is denoted $^{2s+1}[K]_J$.[79]

Although they are often difficult to ascertain, uncertainties in most of the referenced publications of energy levels and lines are likely to be 1σ values. In many cases only the number of decimal places indicates the uncertainty in the quoted values. We generally use a "rule of 20" whereby an uncertainty of greater than 20 in the least significant digit serves as the criterion for dropping that digit.

This compilation does not attempt to provide a complete review of all work on neutral mercury. Rather, it intends to credit the major contributions, especially those from which values are included in the line and level tables.

2. Preliminary Energy Level Compilations

A preliminary set of energy levels is needed in order to classify the observed lines and to provide the initial input to the energy level optimization procedure. Levels were obtained separately for the natural isotope mixture of mercury and for the single isotope ^{198}Hg.

2.1. Natural Isotope Mixture of Neutral Mercury

The energy levels for a mixture of isotopes are those values that fit the observed wavelengths obtained from the lines produced by light sources containing that mixture of isotopes. The preliminary values of 280 energy levels of the natural isotope mixture of Hg I have been compiled from ten sources: Moore,[54] Garton and Connerade,[69] Learner and Morris,[72] Mansfield,[74] Dalby and Sanders,[80] Chéron *et al.*,[85] Duncan and Devonshire,[88] Baig *et al.*,[91] Zia *et al.*,[96] and Zia and Baig.[98] The source of 142 of the levels we use comes from Moore[54] who obtained values from the collected experimental work up to 1955. In addition we obtained preliminary levels from the following: Duncan and Devonshire[88] who studied four two-photon transitions and obtained improved values for the $5d^{10}6s7p\ ^3P^o_{0,1,2}$ and $5d^{10}6s8p\ ^3P^o_2$ levels; Learner and Morris,[72] who observed emission lines and were able to classify five levels from the configurations $5d^9 6s^2 6p$, $5d^9 6s^2 7s$, and $5d^{10}6p^2$; Dalby and Sanders,[80] who used four photon excitation to define the $5d^{10}6sng\ ^{1,3}G_4$ levels for $n=5-11$; Baig *et al.*,[91] who provided an improved value for the $5d^{10}6s9p\ ^1P^o_1$ level; Zia *et al.*,[96] who used two-photon transitions to determine $5d^{10}6snf\ ^3F^o_2$ levels for $n=10-20$ and $5d^{10}6snp\ ^3P^o_0$ for $n=19$ and 20; Zia and Baig,[98] who used two-step excitation to determine 38 $5d^{10}6snp$ levels for $n=10-20$; Chéron *et al.*,[85] who provided the value for the $5d^{10}6p^2\ ^3P_0$ level; Garton and Connerade,[69] who used absorption spectroscopy to provide 51 autoionizing levels; and Mansfield,[74] who expanded the last mentioned work to provide 11 more autoionizing levels.

There was disagreement between values reported by Zia and Baig[98] and by Kasimov *et al.*[93] about the energy level values of the $5d^{10}6snp\ ^1P^o_1$ series. We tried to fit the respective data sets to the Ritz formula and found that only those taken from Zia and Baig[98] fit well. Therefore only that set was used.

Moore[54] provides levels for the $5d^{10}6snf\ ^1F^o_3$ with $n=9-13$ which were based on data from Murakawa.[33] These levels do not fit the Ritz formula well, and so these levels were not included in the preliminary list. It was noted by Tomkins and Mahon[81] that these $nf\ ^1F^o_3$ levels in Moore[54] are actually $(n+3)p\ ^1P^o_1$ levels.

2.2. ^{198}Hg

The preliminary values of 60 energy levels of ^{198}Hg I were compiled from five sources: Burns and Adams,[42] Herzberg,[49] Kaufman,[58] Peck *et al.*,[59] and Humphreys and Paul.[66] Burns and Adams[42] and Kaufman[58] used photographic Fabry-Perot interferometry and their results each provided 17 energy levels to the preliminary list. Herzberg[49] used a 6.4 m grating spectrograph to measure a number of ^{198}Hg I wavelengths from which we calculated 15 energy levels using the values of Kaufman[58] and Burns and Adams[42] levels as a basis. Peck *et al.*[59] used a Michelson type interferometer to measure wavelengths from which we obtained another level using one of the Kaufman[58] levels as a basis. Humphreys and Paul[66] used a grating spectrometer in the infrared and determined eight levels and provided lines from which we calculated two more.

3. Wavelength Compilations

Lines of the natural mixture of Hg I were reported by many sources.

Year	Author(s)	Year	Author(s)
1891	Kayser and Runge[1]	1937	Masaki and Morita[30]
1900	Huff[2]	1937	Suga *et al.*[31]
1909	Paschen[3]	1937	Wiedmann and Schmidt[32]
1909	Paschen[4]	1938	Murakawa[33]
1909	Stiles[5]	1939	Harrison[34]
1911	Paschen[6]	1943	Kamiyama[35]
1912	Wiedman[7]	1950	Burns *et al.*[38]
1914	Volk[8]	1953	Humphreys[44]
1914	Volk[9]	1954	Fowles[45]
1915	Cardaun[10]	1955	Garton and Rajaratnam[46]
1921	Dingle[11]	1955	Plyler *et al.*[47]
1922	Walters[12]	1955	Wilkinson[48]
1925	Laffay[15]	1963	Wilkinson and Andrew[63]
1925	McLennan *et al.*[16]	1964	Convert *et al.*[64]
1926	Sawyer[17]	1965	Junkes *et al.*[68]
1927	Déjardin[18]	1969	Garton and Connerade[69]
1928	Paschen [19]	1971	Learner and Morris[72]
1929	McAlister[20]	1973	Connerade and Mansfield[73]
1930	Takamine and Suga[22]	1973	Mansfield[74]
1931	Unger[23]	1983	Baig[82]
1933	Beutler[24]	1990	Tursunov *et al.*[87]
1933	Beutler[25]	1996	Sansonetti *et al.*[90]
1934	Walerstein[26]	1997	Baig *et al.*[91]
1935	Murakawa[27]	1997	Clevenger *et al.*[92]
1936	Masaki *et al.*[28]	1998	Kasimov *et al.*[93]
1936	Murakawa[29]	2004	Zia and Baig[98]

The lines of Hg I with the natural isotope ratio compiled in this work were drawn from 39 sources which are summarized in Table 1a.

Lines of ^{198}Hg were reported by several sources, as summarized in the following.

Year	Author(s)	Year	Author(s)	Year	Author(s)
1949	Pérard and Terrien[36]	1956	Rank *et al.*[50]	1963	Baird *et al.*[60]
1950	Blank[37]	1958	Baird and Smith[52]	1963	Schweitzer[61]
1950	Meggers and Westfall[39]	1958	Humphreys and Paul[53]	1965	Humphreys and Paul[66]
1950	Meggers and Kessler[40]	1959	Humphreys and Paul[55]	1965	Humphreys and Paul[67]
1951	Barrell[41]	1961	Barger and Kessler[57]	1974	Kaufman and Edlén[75]
1952	Burns and Adams[42]	1962	Kaufman[58]	2004	Salit *et al.*[97]
1956	Herzberg[49]	1962	Peck *et al.*[59]	2005	Veza *et al.*[101]

TABLE 1a. Sources of natural-isotope-mixture Hg I lines

Source	Number of classifications	Light source[a,b]	Wavelength range (Å)	Uncertainty (Å)
2	1	arc	2169	0.5
5	2	arc and spark	4026 and 5679	0.08
7	7	1500 W arc	3591 to 5219	0.2
8	1		19 706	5
9	1		11 888	5
10	2	360 W vacuum lamp and spark	3984 and 5790	0.05
11	1	luminous vapor of mercury	2441	0.02
12	1	arc	6073	0.01
16	1	high current quartz Hg lamp	7022	1
17	1	arc	1775	0.7
18	3	EDL	2002 to 2593	0.02
19	2	hallow cathode with He carrier gas	5277 and 6123	0.5 and 0.05
20	5	300 W quartz vacuum arc	12159 to 18539	3 to 5
23	14	325 W arc	13634 to 21086	10
24	3	absorption of noble-gas and H_2 discharges	1269 to 1436	0.02
25	6	absorption of He and Ar continua	788 to 1127	0.07–0.10
26	115	luminous Hg vapor drawn into a low-pressure chamber	2166 to 10140	0.03–0.05
27	45	"ordinary mercury lamp"	6234 to 10716	0.5
28	1	3600 W quartz lamp with Hg electrodes	7341	2
29	23	"ordinary mercury lamp"	8071 to 11287	0.1–0.4
30	2	5400 W Geissler tube	9808 and 12 215	2
31	49	30 A arc	7302 to 13 479	0.4–2
32	9		7171 to 10 335	0.6
33	2		10 321 and 11 368	1
34	3	Pfund-type arc	3701 to 4344	0.02
35	105	luminous vapor of mercury	6716 to 8557	0.3
38	26	Nutting tube with 800 Pa Ne carrier gas	2302 to 4916	0.001 to 0.01
44	22	H-11 lamp	13 210 to 19 700	0.2
45	19	EDL with no carrier gas	4883 to 7729	0.005
47	7	100-W Western Union arc	22 499 to 45 134	0.05–0.65
63	15	Ge hollow cathode	1849 to 3027	0.0002 to 0.002
64	1	lasing in Hg discharge	64 918	100
68	10	hollow cathode with He carrier gas	1833 to 2248	0.02
69	48	absorption of Hopfield He_2 continuum from discharge tube	745 to 869	0.009–0.05
72	14	DC arc for $\lambda < 3390$ Å and Mazda M2 instrument panel light for $\lambda > 3390$ Å	1728 to 5890	0.1–3
74	10	absorption of radiation from BRV source	745 to 887	0.025
85	2	commercial spectral lamps or EDL	1973 and 2775	0.02
90	18	Hg pencil-type discharge lamps	2537 to 5791	0.001
91	26	absorption of synchrotron radiation	1194 to 1308	0.002
98	35	laser with optogalvanic spectroscopy	4671 to 5354	0.011–0.014

[a]EDL is an electrodeless discharge lamp.
[b]133.3224 Pa is equal to 1 Torr.

The lines of ^{198}Hg I compiled in this work were drawn from 12 sources which are summarized in Table 1b. For each source the tables specify the number of lines contributed to the final list, the light source used (when known), the range of included wavelengths, and an estimate of the experimental uncertainty of lines from that source.

For each observed line we have selected the most accurate available measurement. We did not average measurements from multiple sources. The full lists of lines with their classifications are given in Tables 2a and 2b for the natural mixture and for ^{198}Hg, respectively. Line classifications were made using the preliminary energy levels (see Sec. 4). Unclassified lines reported in some sources have not been included.

TABLE 1b. Sources of ^{198}Hg I lines

Source	Number of classifications	Light source[a,b]	Wavelength range (Å)	Uncertainty (Å)
42	35	EDL with 267 to 400 Pa Ar carrier gas	2302 to 6907	0.0002–0.001
49	23	EDL with Kr carrier gas	1849 (Ritz)	0.0002
			4822 to 11 177	0.002–0.005
53	4	EDL with 267 Pa Ar or Kr carrier gas	16 921 to 17 110	0.005
55	4	EDL	12 072 to 15 296	0.0014–0.0021
57	1	Atomic beam light source	2537	0.00003
59	2	EDL with Ar carrier gas	10 140 and 11 287	0.0002 and 0.0004
60	4	EDL with about 33 Pa Ar carrier gas	4358 to 5791	0.00004–0.00006
66	5	EDL	35 227 to 40 050	0.05–0.5
67	1	EDL	39 293	0.08
75	1	EDL with 33 Pa Ar carrier gas	2753	0.0001
97	1	EDL with 33 Pa Ar carrier gas	3650	0.00005
101	24	EDL with 33 Pa Ar carrier gas	2535 to 4916	0.00004–0.00014

[a]EDL is an electrodeless discharge lamp.
[b]133.3224 Pa is equal to 1 Torr.

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I

Observed vacuum wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
744.573	134305.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})20p$	$^2[1/2]^o$	1	0.025	74
744.810	134262.4		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})19p$	$^2[1/2]^o$	1	0.009	69
745.308	134172.7		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})18p$	$^2[1/2]^o$	1	0.009	69
745.834	134078.1		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})17p$	$^2[1/2]^o$	1	0.009	69
746.533	133952.6		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})16p$	$^2[1/2]^o$	1	0.009	69
746.543	133951.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})13f$	$^2[3/2]^o$	1	0.025	74
747.245	133824.9		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})12f$	$^2[3/2]^o$	1	0.009	69
747.315	133812.4		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})15p$	$^2[1/2]^o$	1	0.009	69
748.338	133629.5		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})11f$	$^2[3/2]^o$	1	0.009	69
748.520	133597.0		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})14p$	$^2[1/2]^o$	1	0.009	69
749.814	133366.4		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})10f$	$^2[3/2]^o$	1	0.009	69
749.960	133340.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})13p$	$^2[3/2]^o$	1	0.025	74
750.040	133326.2		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})13p$	$^2[1/2]^o$	1	0.009	69
751.788	133016.2		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})9f$	$^2[3/2]^o$	1	0.009	69
752.070	132966.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})12p$	$^2[3/2]^o$	1	0.025	74
752.272	132930.6		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})12p$	$^2[1/2]^o$	1	0.009	69
754.788	132487.5		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})8f$	$^2[3/2]^o$	1	0.009	69
755.368	132386.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})11p$	$^2[3/2]^o$	1	0.025	74
755.523	132358.6		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})11p$	$^2[1/2]^o$	1	0.009	69
759.537	131659.2		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})7f$	$^2[3/2]^o$	1	0.009	69
760.302	131526.7		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})10p$	$^2[3/2]^o$	1	0.009	69
760.724	131453.7		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})10p$	$^2[1/2]^o$	1	0.009	69
767.527	130288.6		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})6f$	$^2[3/2]^o$	1	0.009	69
768.951	130047.3		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})9p$	$^2[3/2]^o$	1	0.009	69
769.67	129926.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})9p$	$^2[1/2]^o$	1	0.05	69
782.64	127773.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})5f$	$^2[3/2]^o$	1	0.05	69
785.840	127252.4		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})8p$	$^2[3/2]^o$	1	0.009	69
787.57	126973.	10 h	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})8p$	$^2[1/2]^o$	1	0.07	25
828.44	120709.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})7p$	$^2[3/2]^o$	1	0.05	69
833.66	119953.	20 hs	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})7p$	$^2[1/2]^o$	1	0.07	25
838.422	119271.7		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})20p$	$^2[3/2]^o$	1	0.009	69
838.870	119208.0		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})19p$	$^2[3/2]^o$	1	0.009	69
839.371	119136.8		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})18p$	$^2[3/2]^o$	1	0.009	69
840.071	119037.6		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})17p$	$^2[3/2]^o$	1	0.009	69

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed vacuum wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
840.827	118931.	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})13f$	$^2[3/2]^o$	1	0.025	74
840.827	118931.	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})13f$	$^2[1/2]^o$	1	0.025	74
840.960	118911.7		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})16p$	$^2[3/2]^o$	1	0.009	69
841.877	118782.2	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})12f$	$^2[3/2]^o$	1	0.009	69
841.877	118782.2	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})12f$	$^2[1/2]^o$	1	0.009	69
841.922	118775.8		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})15p$	$^2[3/2]^o$	1	0.009	69
843.238	118590.5	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})11f$	$^2[1/2]^o$	1	0.009	69
843.238	118590.5	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})11f$	$^2[3/2]^o$	1	0.009	69
843.339	118576.3		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})14p$	$^2[3/2]^o$	1	0.009	69
845.059	118334.9	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})10f$	$^2[1/2]^o$	1	0.009	69
845.059	118334.9	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})10f$	$^2[3/2]^o$	1	0.009	69
845.225	118311.7		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})13p$	$^2[3/2]^o$	1	0.009	69
847.692	117967.4	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})9f$	$^2[3/2]^o$	1	0.009	69
847.692	117967.4	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})9f$	$^2[1/2]^o$	1	0.009	69
847.962	117929.8		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})12p$	$^2[3/2]^o$	1	0.009	69
851.527	117436.1	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})8f$	$^2[1/2]^o$	1	0.009	69
851.527	117436.1	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})8f$	$^2[3/2]^o$	1	0.009	69
851.993	117371.9		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})11p$	$^2[3/2]^o$	1	0.009	69
857.537	116613.0	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})7f$	$^2[3/2]^o$	1	0.009	69
857.537	116613.0	*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})7f$	$^2[1/2]^o$	1	0.009	69
858.341	116503.8		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})10p$	$^2[3/2]^o$	1	0.009	69
867.724	115244.0		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})6f$	$^2[1/2]^o$	1	0.009	69
867.852	115227.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})6f$	$^2[3/2]^o$	1	0.025	74
869.25	115042.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})9p$	$^2[3/2]^o$	1	0.05	69
887.127	112723.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})5f$	$^2[1/2]^o$	1	0.025	74
887.301	112701.		$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})5f$	$^2[3/2]^o$	1	0.025	74
890.69	112273.	10 h	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})8p$	$^2[3/2]^o$	1	0.07	25
944.45	105882.	20 H	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})7p$	$^2[3/2]^o$	1	0.07	25
1066.8	93738.	8	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})6p$	$^2[3/2]^o$	1	0.07	25
1126.6	88763.	100 Hs	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{3/2})6p$	$^2[1/2]^o$	1	0.1	25
1193.977	83753.71		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)20p$	$^1P^o$	1	0.002	91
1194.113	83744.17		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)20p$	$^3P^o$	1	0.002	91
1194.824	83694.33		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)19p$	$^1P^o$	1	0.002	91
1194.990	83682.71		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)19p$	$^3P^o$	1	0.002	91
1195.859	83621.90		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)18p$	$^1P^o$	1	0.002	91
1196.068	83607.29		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)18p$	$^3P^o$	1	0.002	91
1197.147	83531.93		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)17p$	$^1P^o$	1	0.002	91
1197.409	83513.65		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)17p$	$^3P^o$	1	0.002	91
1198.772	83418.70		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)16p$	$^1P^o$	1	0.002	91
1199.109	83395.25		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)16p$	$^3P^o$	1	0.002	91
1200.867	83273.17		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)15p$	$^1P^o$	1	0.002	91
1201.311	83242.39		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)15p$	$^3P^o$	1	0.002	91
1203.634	83081.73		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)14p$	$^1P^o$	1	0.002	91
1204.234	83040.34		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)14p$	$^3P^o$	1	0.002	91
1207.384	82823.69		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)13p$	$^1P^o$	1	0.002	91
1208.232	82765.56		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)13p$	$^3P^o$	1	0.002	91
1212.656	82463.62		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)12p$	$^1P^o$	1	0.002	91
1213.914	82378.16		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)12p$	$^3P^o$	1	0.002	91
1220.376	81941.96		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)11p$	$^1P^o$	1	0.002	91
1222.379	81807.69		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)11p$	$^3P^o$	1	0.002	91
1232.237	81153.22		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)10p$	$^1P^o$	1	0.002	91
1235.845	80916.30		$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)10p$	$^3P^o$	1	0.002	91
1250.567	79963.73	*200*	$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)9p$	$^1P^o$	1	0.002	91
1259.245	79412.66	*11*	$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)9p$	$^3P^o$	1	0.002	91
1268.82	78813.4	*300*	$5d^{10}6s^2$	^{1}S	0	—	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	1	0.02	24

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed vacuum wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
1301.007	76863.54		$5d^{10}6s^2$	^1S	0	—	$5d^{10}6s(^2S)8p$	$^1P^o$	1	0.002	91
1307.749	76467.27	*6*	$5d^{10}6s^2$	^1S	0	—	$5d^{10}6s(^2S)8p$	$^3P^o$	1	0.002	91
1402.70	71291.1	*30*	$5d^{10}6s^2$	^1S	0	—	$5d^{10}6s(^2S)7p$	$^1P^o$	1	0.02	24
1435.53	69660.7	*14*	$5d^{10}6s^2$	^1S	0	—	$5d^{10}6s(^2S)7p$	$^3P^o$	1	0.02	24
1728.	57870		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	2	3.	72
1762.	56754		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6p^2$	^3P	2	3.	72
1774.9	56341	4	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6p^2$	^3P	1	0.7	17
1832.57	54568.2	*6*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6p^2$	^3P	1	0.02	68
1849.4994	54068.685	*5000* R	$5d^{10}6s^2$	^1S	0	—	$5d^{10}6s(^2S)6p$	$^1P^o$	1	0.0002	63
1877.	53277		$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	2	3.	72
1885.	53050		$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	3	3.	72
1917.	52165		$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6p^2$	^3P	2	3.	72
1972.87	50687.6		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6p^2$	^3P	0	0.02	85

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
2001.91	49936.1	2 d	$5d^{10}6s(^2S)6p$	^3P	2	—	$5d^{10}6p^2$	^3P	1	0.02	18
2165.80	46157.8		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)20d$	^3D	1	0.03	26
2168.12	46108.4		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)19d$	^3D	1	0.03	26
2169.2	46085.	1	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)20s$	^3S	1	0.5	2
2170.98	46047.7	0 hw	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)18d$	^3D	1	0.02	68
2173.05	46003.8		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)19s$	^3S	1	0.03	26
2174.45	45974.2	0 hw	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)17d$	^3D	1	0.02	68
2177.08	45918.7		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)18s$	^3S	1	0.03	26
2178.76	45883.3	1 hw	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)16d$	^3D	1	0.02	68
2182.06	45813.9		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)17s$	^3S	1	0.03	26
2184.21	45768.8	1 hw	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)15d$	^3D	1	0.02	68
2188.46	45679.9		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)16s$	^3S	1	0.03	26
2191.25	45621.8		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)14d$	^3D	1	0.03	26
2196.86	45505.3		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)15s$	^3S	1	0.03	26
2200.58	45428.4	2	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)13d$	^3D	1	0.02	68
2208.26	45270.4	0	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)14s$	^3S	1	0.02	68
2213.38	45165.7	3	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)12d$	^3D	1	0.02	68
2224.19	44946.2		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)13s$	^3S	1	0.03	26
2231.57	44797.6	6	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)11d$	^3D	1	0.02	68
2247.57	44478.7	*6*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)12s$	^3S	1	0.02	68
2252.05	44390.2	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)20d$	^3D	1	0.03	26
2252.05	44390.2	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)20d$	^3D	2	0.03	26
2254.59	44340.2	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)19d$	^3D	1	0.03	26
2254.59	44340.2	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)19d$	^3D	2	0.03	26
2256.46	44303.5		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)20s$	^3S	1	0.03	26
2257.63	44280.5	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)18d$	^3D	2	0.03	26
2257.63	44280.5	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)18d$	^3D	1	0.03	26
2258.71	44259.4		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)10d$	^3D	1	0.03	26
2259.93	44235.5		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)19s$	^3S	1	0.03	26
2261.36	44207.5	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)17d$	^3D	2	0.03	26
2261.36	44207.5	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)17d$	^3D	1	0.03	26
2261.36	44207.5	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)17d$	^1D	2	0.03	26
2264.21	44151.9		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)18s$	^3S	1	0.03	26
2266.02	44116.6	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)16d$	^3D	2	0.03	26
2266.02	44116.6	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)16d$	^3D	1	0.03	26
2266.02	44116.6	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)16d$	^1D	2	0.03	26
2269.61	44046.8		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)17s$	^3S	1	0.03	26

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
2271.90	44002.4	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)15d$	^3D	2	0.03	26
2271.90	44002.4	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)15d$	^3D	1	0.03	26
2271.90	44002.4	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)15d$	^1D	2	0.03	26
2276.54	43912.7		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)16s$	^3S	1	0.03	26
2279.51	43855.5	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)14d$	^3D	2	0.03	26
2279.51	43855.5	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)14d$	^3D	1	0.03	26
2279.51	43855.5	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)14d$	^1D	2	0.03	26
2283.91	43771.1		$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)11s$	^3S	1	0.03	26
2285.66	43737.5		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)15s$	^3S	1	0.03	26
2289.62	43661.9	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)13d$	^3D	2	0.03	26
2289.62	43661.9	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)13d$	^3D	1	0.03	26
2289.88	43656.9		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)13d$	^1D	2	0.03	26
2297.03	43521.1		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)14s$	^1S	0	0.03	26
2297.97	43503.3		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)14s$	^3S	1	0.03	26
2302.059	43426.00	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)9d$	^3D	1	0.004	38
2303.43	43400.2	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)12d$	^3D	2	0.03	26
2303.43	43400.2	*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)12d$	^3D	1	0.03	26
2303.78	43393.6		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)12d$	^1D	2	0.03	26
2313.88	43204.2		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)13s$	^1S	0	0.03	26
2315.21	43179.4		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)13s$	^3S	1	0.03	26
2323.03	43034.0		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11d$	^3D	2	0.03	26
2323.197	43030.92	*20*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11d$	^3D	1	0.004	38
2323.56	43024.2		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11d$	^1D	2	0.03	26
2338.55	42748.4		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)12s$	^1S	0	0.03	26
2340.55	42711.9	*6*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)12s$	^3S	1	0.02	18
2345.43	42623.1	*200*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)10s$	^3S	1	0.03	26
2352.41	42496.6	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10d$	^3D	2	0.03	26
2352.65	42492.3		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10d$	^3D	1	0.03	26
2353.18	42482.7		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10d$	^1D	2	0.03	26
2376.77	42061.1		$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11s$	^1S	0	0.03	26
2378.324	42033.59	*4000*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)8d$	^3D	1	0.002	63
2380.08	42002.6	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11s$	^3S	1	0.03	26
2399.35	41665.3	70	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	2	0.03	26
2399.727	41658.72	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	1	0.004	38
2400.493	41645.43	*14*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9d$	^1D	2	0.004	38
2441.03	40953.9	*6*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10s$	^1S	0	0.02	11
2446.895	40855.74	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10s$	^3S	1	0.004	38
2464.057	40571.21	*20*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)9s$	^3S	1	0.004	38
2482.001	40277.91	*300*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	2	0.002	63
2482.716	40266.31	*90*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	1	0.002	63
2483.815	40248.50	*170*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^1D	2	0.004	38
2514.37	39759.4	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)20d$	^3D	2	0.03	26
2514.37	39759.4	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)20d$	^3D	3	0.03	26
2517.49	39710.2	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)19d$	^3D	3	0.03	26
2517.49	39710.2	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)19d$	^3D	2	0.03	26
2519.91	39672.0		$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)20s$	^3S	1	0.03	26
2521.27	39650.6	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)18d$	^3D	3	0.03	26
2521.27	39650.6	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)18d$	^3D	2	0.03	26
2524.20	39604.6		$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)19s$	^3S	1	0.03	26
2525.94	39577.3	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)17d$	^3D	3	0.03	26
2525.94	39577.3	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)17d$	^3D	2	0.03	26
2529.53	39521.2		$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)18s$	^3S	1	0.03	26
2531.72	39487.0	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)16d$	^3D	3	0.03	26
2531.72	39487.0	*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)16d$	^3D	2	0.03	26
2534.772	39439.43	*2000*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)7d$	^3D	1	0.002	63

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
2536.521	39412.235	*900000*	$5d^{10}6s^2$	^{1}S	0	—	$5d^{10}6s(^2S)6p$	^{3}P^o	1	0.001	90
2539.07	39372.7	*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)15d$	^{3}D	3	0.03	26
2539.07	39372.7	*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)15d$	^{3}D	2	0.03	26
2544.94	39281.9		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)16s$	^{3}S	1	0.03	26
2548.53	39226.5	*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)14d$	^{3}D	3	0.03	26
2548.53	39226.5	*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)14d$	^{3}D	2	0.03	26
2556.35	39106.5		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)15s$	^{3}S	1	0.03	26
2561.15	39033.3		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)13d$	^{3}D	3	0.03	26
2561.33	39030.5		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)13d$	^{3}D	2	0.03	26
2561.61	39026.2		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)13d$	^{1}D	2	0.03	26
2563.855	38992.08	*40*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)9s$	^{1}S	0	0.006	38
2571.76	38872.2		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)14s$	^{3}S	1	0.03	26
2576.285	38803.96	*100*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)9s$	^{3}S	1	0.006	38
2578.39	38772.3		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)12d$	^{3}D	3	0.03	26
2578.59	38769.3		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)12d$	^{3}D	2	0.03	26
2578.912	38764.44	*6*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)12d$	^{1}D	2	0.006	38
2593.41	38547.7	1	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)13s$	^{3}S	1	0.02	18
2602.97	38406.2		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)11d$	^{3}D	3	0.03	26
2603.20	38402.8		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)11d$	^{3}D	2	0.03	26
2603.42	38399.5		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)11d$	^{3}D	1	0.03	26
2603.82	38393.6		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)11d$	^{1}D	2	0.03	26
2625.192	38081.09	*20*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)12s$	^{3}S	1	0.006	38
2639.780	37870.66	*6*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)10d$	^{3}D	3	0.006	38
2640.15	37865.4		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)10d$	^{3}D	2	0.03	26
2640.65	37858.2		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)10d$	^{3}D	1	0.03	26
2641.08	37852.0		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)10d$	^{1}D	2	0.03	26
2652.039	37695.61	*1600*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)7d$	^{3}D	2	0.006	38
2653.690	37672.16	*6000*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)7d$	^{3}D	1	0.002	63
2655.134	37651.68	*400*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)7d$	^{1}D	2	0.002	63
2674.908	37373.36	*6*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)11s$	^{3}S	1	0.006	38
2698.828	37042.13	*200*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)9d$	^{3}D	3	0.006	38
2699.36	37034.8	*100*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)9d$	^{3}D	2	0.03	26
2699.81	37028.7		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)9d$	^{3}D	1	0.03	26
2700.80	37015.1		$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)9d$	^{1}D	2	0.03	26
2752.777	36316.22	*400*	$5d^{10}6s(^2S)6p$	^{3}P^o	0	—	$5d^{10}6s(^2S)8s$	^{3}S	1	0.002	63
2759.705	36225.05	*10*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)10s$	^{3}S	1	0.002	63
2774.58	36030.9		$5d^{10}6s(^2S)6p$	^{1}P^o	1	—	$5d^{10}6p^2$	^{3}P	0	0.02	85
2803.466	35659.62	*180*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)8d$	^{3}D	3	0.002	63
2804.434	35647.32	*40*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)8d$	^{3}D	2	0.006	38
2805.344	35635.75	*3*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)8d$	^{3}D	1	0.006	38
2806.773	35617.61	*3*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)8d$	^{1}D	2	0.002	63
2856.935	34992.27	*20*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)8s$	^{1}S	0	0.002	63
2893.601	34548.887	*800*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)8s$	^{3}S	1	0.001	90
2925.414	34173.20	*70*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)9s$	^{3}S	1	0.002	63
2967.283	33691.025	*3000*	$5d^{10}6s(^2S)6p$	^{3}P^o	0	—	$5d^{10}6s(^2S)6d$	^{3}D	1	0.001	90
3021.504	33086.464	*1200*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)7d$	^{3}D	3	0.001	90
3023.471	33064.94	*300*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)7d$	^{3}D	2	0.002	63
3025.606	33041.61	*30*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)7d$	^{3}D	1	0.006	38
3027.490	33021.05	*60*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)7d$	^{1}D	2	0.002	63
3125.674	31983.828	*4000*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)6d$	^{3}D	2	0.001	90
3131.555	31923.765	*3000*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)6d$	^{3}D	1	0.001	90
3131.844	31920.819	*4000*	$5d^{10}6s(^2S)6p$	^{3}P^o	1	—	$5d^{10}6s(^2S)6d$	^{1}D	2	0.001	90
3341.484	29918.221	*700*	$5d^{10}6s(^2S)6p$	^{3}P^o	2	—	$5d^{10}6s(^2S)8s$	^{3}S	1	0.001	90
3362.71	29729.4		$5d^{10}6s(^2S)6p$	^{1}P^o	1	—	$5d^{10}6s(^2S)20d$	^{1}D	2	0.03	26
3368.15	29681.4		$5d^{10}6s(^2S)6p$	^{1}P^o	1	—	$5d^{10}6s(^2S)19d$	^{1}D	2	0.03	26

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
3371.73	29649.8		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)20s$	^1S	0	0.03	26
3374.93	29621.7		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)18d$	^1D	2	0.03	26
3379.44	29582.2		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)19s$	^1S	0	0.03	26
3383.30	29548.5		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)17d$	^1D	2	0.03	26
3388.78	29500.7		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)18s$	^1S	0	0.03	26
3393.71	29457.8		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)16d$	^1D	2	0.03	26
3400.68	29397.4		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)17s$	^1S	0	0.03	26
3406.99	29343.0		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)15d$	^1D	2	0.03	26
3415.98	29265.8		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)16s$	^1S	0	0.03	26
3424.26	29195.0		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)14d$	^1D	2	0.03	26
3436.15	29094.0		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)15s$	^1S	0	0.03	26
3446.64	29005.5		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)13d$	^3D	2	0.03	26
3447.27	29000.2		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)13d$	^1D	2	0.03	26
3463.52	28864.1		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)14s$	^1S	0	0.03	26
3478.04	28743.6		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)12d$	^3D	2	0.03	26
3478.91	28736.4		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)12d$	^1D	2	0.03	26
3502.00	28546.9		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)13s$	^1S	0	0.03	26
3523.02	28376.6		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)11d$	^3D	2	0.03	26
3524.27	28366.6		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)11d$	^1D	2	0.03	26
3543.4	28213.4	60	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	3	0.1	72
3558.73	28091.9		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)12s$	^1S	0	0.03	26
3591.01	27839.4		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)10d$	^3D	2	0.03	26
3591.48	27835.7	1	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)10d$	^3D	1	0.2	7
3592.74	27826.0		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)10d$	^1D	2	0.03	26
3650.158	27388.271	*9000*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)6d$	^3D	3	0.001	90
3654.842	27353.171	*3000*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)6d$	^3D	2	0.001	90
3662.887	27293.095	*500*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)6d$	^3D	1	0.001	90
3663.284	27290.138	*2000*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)6d$	^1D	2	0.001	90
3701.442	27008.81	*50*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	2	0.02	34
3702.4	27001.8	1	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	1	0.2	7
3704.1655	26988.954	*9*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9d$	^1D	2	0.001	38
3790.1	26377.0	80	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	3	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	2	0.1	72
3801.6583	26296.845	*50*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)10s$	^1S	0	0.001	38
3815.8	26199.4	1	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)10s$	^3S	1	0.2	7
3820.4	26167.8	50	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	3	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	3	0.1	72
3861.0	25892.7	30	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	3	0.1	72
3901.868	25621.49	*30*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	2	0.008	38
3903.638	25609.87	0.5	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	1	0.02	34
3906.371	25591.96	*40*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8d$	^1D	2	0.008	38
3983.920	25093.8	2	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6p^2$	^3P	1	0.05	10
4025.954	24831.8	4	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^96s^2(^2D_{3/2})6p$	$^2[1/2]^o$	1	0.08	5
4046.565	24705.339	*12000*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)7s$	^3S	1	0.001	90
4077.837	24515.883	*1000*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7s$	^1S	0	0.001	90
4108.054	24335.56	*70*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9s$	^1S	0	0.008	38
4140.0	24147.8	0	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9s$	^3S	1	0.2	7
4339.2232	23039.122	*50*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7d$	^3D	2	0.001	38
4343.634	23015.73	1.3	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7d$	^3D	1	0.02	34
4347.4945	22995.290	*150*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7d$	^1D	2	0.001	38
4358.335	22938.095	*12000*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7s$	^3S	1	0.001	90
4670.831	21403.48		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)20p$	$^1P^o$	1	0.011	98
4671.717	21399.42		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)20p$	$^3P^o$	2	0.011	98
4672.918	21393.92	*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)20p$	$^3P^o$	0	0.011	98
4672.918	21393.92	*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)20p$	$^3P^o$	1	0.011	98
4683.819	21344.13		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)19p$	$^1P^o$	1	0.011	98
4684.926	21339.08		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)19p$	$^3P^o$	2	0.011	98

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
4686.386	21332.43	*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)19p$	$^3P^o$	1	0.011	98
4686.386	21332.43	*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)19p$	$^3P^o$	0	0.011	98
4699.797	21271.56		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)18p$	$^1P^o$	1	0.011	98
4701.171	21265.35		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)18p$	$^3P^o$	2	0.011	98
4703.011	21257.03		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)18p$	$^3P^o$	1	0.011	98
4703.051	21256.84		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)18p$	$^3P^o$	0	0.011	98
4719.742	21181.67		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)17p$	$^1P^o$	1	0.011	98
4721.512	21173.73		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)17p$	$^3P^o$	2	0.011	98
4723.814	21163.41		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)17p$	$^3P^o$	1	0.011	98
4723.919	21162.94		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)17p$	$^3P^o$	0	0.011	98
4745.148	21068.27		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)16p$	$^1P^o$	1	0.011	98
4747.458	21058.01		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)16p$	$^3P^o$	2	0.011	98
4750.393	21045.00		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)16p$	$^3P^o$	1	0.011	98
4750.560	21044.26		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)16p$	$^3P^o$	0	0.011	98
4778.118	20922.89		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)15p$	$^1P^o$	1	0.011	98
4781.274	20909.08		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)15p$	$^3P^o$	2	0.011	98
4785.153	20892.13		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)15p$	$^3P^o$	1	0.011	98
4785.354	20891.26		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)15p$	$^3P^o$	0	0.011	98
4822.204	20731.61		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)14p$	$^1P^o$	1	0.012	98
4826.594	20712.76		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)14p$	$^3P^o$	2	0.012	98
4831.878	20690.11		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)14p$	$^3P^o$	1	0.012	98
4832.238	20688.56		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)14p$	$^3P^o$	0	0.012	98
4882.999	20473.50	*6*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)13p$	$^1P^o$	1	0.005	45
4889.489	20446.33		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)13p$	$^3P^o$	2	0.012	98
4896.914	20415.32		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)13p$	$^3P^o$	1	0.012	98
4897.482	20412.96		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)13p$	$^3P^o$	0	0.012	98
4916.068	20335.78	*20*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8s$	^1S	0	0.010	38
4960.1	20155.3	100	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	4	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]^o$	3	0.1	72
4970.370	20113.61	*6*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)12p$	$^1P^o$	1	0.005	45
4980.640	20072.14	*6*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)12p$	$^3P^o$	2	0.005	45
4991.601	20028.07		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)12p$	$^3P^o$	1	0.012	98
4992.593	20024.09		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)12p$	$^3P^o$	0	0.012	98
5025.6	19892.6	3	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8s$	^3S	1	0.2	7
5045.8	19812.9	2	$5d^{10}6s(^2S)5f$	$^3F^o$	4	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	3	0.2	7
5102.705	19591.989	*30*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)11p$	$^1P^o$	1	0.005	45
5120.637	19523.380	*70*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)11p$	$^3P^o$	2	0.005	45
5137.940	19457.632	*30*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)11p$	$^3P^o$	1	0.005	45
5139.926	19450.11		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)11p$	$^3P^o$	0	0.013	98
5218.9	19155.8	2	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)14p$	$^1P^o$	1	0.2	7
5277.3	18943.8	1.5	$5d^{10}6s(^2S)5f$	$^1F^o$	3	—	$5d^{10}6p^2$	^3P	2	0.5	19
5290.740	18895.690	*30*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)13p$	$^1P^o$	1	0.005	45
5316.776	18803.160	*6*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)10p$	$^1P^o$	1	0.005	45
5354.034	18672.31	*130*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)10p$	$^3P^o$	2	0.014	98
5365.5	18632.4	12	$5d^96s^2(^2D_{5/2})6p$	$^2[5/2]^o$	2	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	2	0.1	72
5384.626	18566.230	*50*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)10p$	$^3P^o$	1	0.005	45
5388.810	18551.814		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)10p$	$^3P^o$	0	0.005	45
5393.468	18535.793		$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)12p$	$^1P^o$	1	0.005	45
5404.8	18496.9	3	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	1	—	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	2	0.1	72
5460.750	18307.415	*6000*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)7s$	^3S	1	0.001	90
5549.634	18014.203	*50*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)11p$	$^1P^o$	1	0.005	45
5675.811	17613.7	*600*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)9p$	$^1P^o$	1	0.08	5
5769.610	17327.389	*1000*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)6d$	^3D	2	0.001	90
5789.690	17267.29	*30*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)6d$	^3D	1	0.05	10
5790.670	17264.372	*900*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)6d$	^1D	2	0.001	90
5803.782	17225.368	*400*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)10p$	$^1P^o$	1	0.005	45

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
5818.3	17182.4	2	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[5/2]^{o}$	3	—	$5d^{9}6s^{2}(^{2}D_{5/2})7s$	$^{2}[5/2]$	2	0.1	72
5859.254	17062.290	*130*	$5d^{10}6s(^{2}S)7s$	^{3}S	1	—	$5d^{10}6s(^{2}S)9p$	$^{3}P^{o}$	1	0.005	45
5871.975	17025.326	*30*	$5d^{10}6s(^{2}S)7s$	^{3}S	1	—	$5d^{10}6s(^{2}S)9p$	$^{3}P^{o}$	0	0.005	45
5890.2	16972.6	12	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[5/2]^{o}$	3	—	$5d^{9}6s^{2}(^{2}D_{5/2})7s$	$^{2}[5/2]$	3	0.1	72
6072.64	16462.74	*30*	$5d^{10}6s(^{2}S)7s$	^{3}S	1	—	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	1	0.01	12
6123.27	16326.62	3	$5d^{10}6s(^{2}S)7s$	^{3}S	1	—	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[5/2]^{o}$	2	0.05	19
6234.39	16035.6	*50*	$5d^{10}6s(^{2}S)7s$	^{1}S	0	—	$5d^{10}6s(^{2}S)9p$	$^{1}P^{o}$	1	0.5	27
6716.40	14884.8	*600*	$5d^{10}6s(^{2}S)7s$	^{1}S	0	—	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	1	0.3	35
6725.18	14865.4	1*	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)19d$	^{3}D	3	0.3	35
6725.18	14865.4	1*	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)19d$	^{3}D	2	0.3	35
6811.65	14676.7	2	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)18s$	^{3}S	1	0.3	35
6827.00	14643.7	5*	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)16d$	^{3}D	3	0.3	35
6827.00	14643.7	5*	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)16d$	^{3}D	2	0.3	35
6880.42	14530.0	4	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)15d$	^{3}D	3	0.3	35
6888.564	14512.810		$5d^{10}6s(^{2}S)7s$	^{3}S	1	—	$5d^{10}6s(^{2}S)8p$	$^{1}P^{o}$	1	0.005	45
6907.38	14473.3	*1000*	$5d^{10}6s(^{2}S)7s$	^{3}S	1	—	$5d^{10}6s(^{2}S)8p$	$^{3}P^{o}$	2	0.3	35
6924.29	14437.9	3	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)16s$	^{3}S	1	0.3	35
6950.73	14383.0	5	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)14d$	^{3}D	3	0.3	35
7009.25	14262.9	4	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)15s$	^{3}S	1	0.3	35
7022.	14237.	0	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	0	—	$5d^{10}6s(^{2}S)19d$	^{3}D	1	1.	16
7045.68	14189.2	8	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)13d$	^{3}D	3	0.3	35
7081.901	14116.610	*1000*	$5d^{10}6s(^{2}S)7s$	^{3}S	1	—	$5d^{10}6s(^{2}S)8p$	$^{3}P^{o}$	1	0.005	45
7091.860	14096.787	*800*	$5d^{10}6s(^{2}S)7s$	^{3}S	1	—	$5d^{10}6s(^{2}S)8p$	$^{3}P^{o}$	0	0.005	45
7126.3	14028.7	0*	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)14s$	^{3}S	1	0.5	27
7126.3	14028.7	0*	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)18d$	^{1}D	2	0.5	27
7134.98	14011.6	4	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	0	—	$5d^{10}6s(^{2}S)16d$	^{3}D	1	0.3	35
7162.20	13958.3	5	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)17d$	^{3}D	2	0.3	35
7170.6	13942.0	0	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	0	—	$5d^{10}6s(^{2}S)17s$	^{3}S	1	0.6	32
7177.82	13928.0	10	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)12d$	^{3}D	3	0.3	35
7190.94	13902.6	3	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)18s$	^{3}S	1	0.3	35
7193.49	13897.6	4	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	0	—	$5d^{10}6s(^{2}S)15d$	^{3}D	1	0.3	35
7209.11	13867.5	6*	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)16d$	^{3}D	2	0.3	35
7209.11	13867.5	6*	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)16d$	^{3}D	1	0.3	35
7245.66	13797.6	3	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)17s$	^{3}S	1	0.3	35
7269.11	13753.1	5*	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)15d$	^{3}D	2	0.3	35
7269.11	13753.1	5*	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)15d$	^{3}D	1	0.3	35
7270.74	13750.0	5*	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	0	—	$5d^{10}6s(^{2}S)14d$	^{3}D	1	0.3	35
7270.74	13750.0	5*	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)15d$	^{1}D	2	0.3	35
7294.94	13704.4	7	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)13s$	^{3}S	1	0.3	35
7301.68	13691.7	4	$5d^{10}6s(^{2}S)16p$	$^{3}P^{o}$	2	—	$5d^{9}6s^{2}(^{2}D_{5/2})7s$	$^{2}[5/2]^{o}$	3	0.4	31
7303.58	13688.1		$5d^{10}6s(^{2}S)18p$	$^{1}P^{o}$	1	—	$5d^{9}6s^{2}(^{2}D_{5/2})7s$	$^{2}[5/2]$	2	0.3	35
7317.11	13662.8	4	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)16s$	^{3}S	1	0.3	35
7332.97	13633.3	3	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	0	—	$5d^{10}6s(^{2}S)15s$	^{3}S	1	0.3	35
7341.	13618.	1 d	$5d^{10}6s(^{2}S)19p$	$^{1}P^{o}$	1	—	$5d^{9}6s^{2}(^{2}D_{5/2})7s$	$^{2}[5/2]$	2	2.	28
7348.7	13604.1	0 d	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)14d$	^{3}D	1	0.5	27
7371.48	13562.1	10	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)11d$	^{3}D	3	0.3	35
7374.51	13556.5	4	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	0	—	$5d^{10}6s(^{2}S)13d$	^{3}D	1	0.3	35
7412.15	13487.6	4	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)15s$	^{3}S	1	0.3	35
7453.87	13412.2	8*	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)13d$	^{3}D	2	0.3	35
7453.87	13412.2	8*	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)13d$	^{3}D	1	0.3	35
7456.69	13407.1	3	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)13d$	^{1}D	2	0.3	35
7461.33	13398.7	2	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	0	—	$5d^{10}6s(^{2}S)14s$	^{3}S	1	0.3	35
7520.06	13294.1	9	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	0	—	$5d^{10}6s(^{2}S)12d$	^{3}D	1	0.3	35
7542.94	13253.8	4	$5d^{10}6s(^{2}S)7p$	$^{3}P^{o}$	1	—	$5d^{10}6s(^{2}S)14s$	^{3}S	1	0.3	35
7552.14	13237.6	7	$5d^{9}6s^{2}(^{2}D_{5/2})6p$	$^{2}[3/2]^{o}$	2	—	$5d^{10}6s(^{2}S)12s$	^{3}S	1	0.3	35

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
7602.13	13150.6	7	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)12d$	^3D	2	0.3	35
7605.92	13144.0	4	$5d^{10}6s(^2S)14p$	$^3P^o$	1	—	$5d^{10}6p^2$	^3P	2	0.3	35
7646.37	13074.5	3	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)13s$	^3S	1	0.3	35
7674.04	13027.4	5	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)10d$	^3D	3	0.3	35
7677.32	13021.8	3	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)10d$	^3D	2	0.3	35
7728.825	12935.018	*30*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)8p$	$^1P^o$	1	0.005	45
7732.60	12928.7	5	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)13s$	^3S	1	0.3	35
7734.7	12925.2	0	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)11d$	^3D	1	0.5	27
7820.73	12783.0	8	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11d$	^3D	2	0.3	35
7822.52	12780.1	1	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11d$	^3D	1	0.5	27
7826.04	12774.3	4	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11d$	^1D	2	0.3	35
7899.1	12656.2	00*	$5d^{10}6s(^2S)9d$	^3D	2	—	$5d^96s^2(^2D_{3/2})6p$	$^2[3/2]^o$	1	0.6	32
7899.1	12656.2	00*	$5d^{10}6s(^2S)14f$	$^3F^o$	3	—	$5d^{10}6p^2$	^3P	2	0.6	32
7929.78	12607.2	3	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)12s$	^3S	1	0.3	35
7936.90	12595.9	1*	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	3	—	$5d^{10}6s(^2S)16d$	^3D	2	0.3	35
7936.90	12595.9	1*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)20d$	^3D	1	0.3	35
7936.90	12595.9	1*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)20d$	^3D	2	0.3	35
7968.63	12545.8	0*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)19d$	^3D	3	0.3	35
7968.63	12545.8	0*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)19d$	^3D	2	0.3	35
7973.27	12538.5	1	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)8p$	$^3P^o$	1	0.3	35
7979.09	12529.3	7	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)11s$	^3S	1	0.3	35
7998.65	12498.7	0	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)12s$	^1S	0	0.3	35
8007.13	12485.4	1*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)18d$	^3D	3	0.3	35
8007.13	12485.4	1*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)18d$	^3D	2	0.3	35
8022.29	12461.8	6	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)12s$	^3S	1	0.3	35
8031.87	12447.0	0 d	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)19f$	$^3F^o$	2	0.3	35
8054.08	12412.7	2*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)17d$	^3D	3	0.3	35
8054.08	12412.7	2*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)17d$	^3D	2	0.3	35
8058.37	12406.0	1	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)18f$	$^3F^o$	2	0.3	35
8070.70	12387.09	5	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)10d$	^3D	1	0.1	29
8090.40	12356.9	1 d*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)18s$	^3S	1	0.3	35
8090.40	12356.9	1 d*	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)19s$	^1S	0	0.3	35
8113.11	12322.3	4*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)16d$	^3D	3	0.3	35
8113.11	12322.3	4*	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)17d$	^1D	2	0.3	35
8129.25	12297.9	1 d*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)19p$	$^1P^o$	1	0.3	35
8129.25	12297.9	1 d*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)16f$	$^3F^o$	2	0.3	35
8145.40	12273.5	2	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)18s$	^1S	0	0.4	31
8163.43	12246.4	10	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10d$	^3D	2	0.3	35
8166.42	12241.9	8	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10d$	^3D	1	0.3	35
8172.76	12232.4	9	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10d$	^1D	2	0.3	35
8173.76	12230.9	5	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)16d$	^1D	2	0.5	27
8177.20	12225.8	0*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)18p$	$^1P^o$	1	0.3	35
8177.20	12225.8	0*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)15f$	$^3F^o$	2	0.3	35
8189.18	12207.9	3*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)15d$	^3D	3	0.3	35
8189.18	12207.9	3*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)15d$	^3D	2	0.3	35
8189.18	12207.9	3*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)15f$	$^3F^o$	3	0.3	35
8195.72	12198.1	10*	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)17p$	$^1P^o$	1	0.3	35
8195.72	12198.1	10*	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)9d$	^3D	3	0.3	35
8197.4	12195.6	2	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)14f$	$^3F^o$	2	0.6	32
8200.58	12190.9	8	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)9d$	^3D	2	0.3	35
8205.26	12184.0	2	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)9d$	^3D	1	0.3	35
8214.20	12170.7	3	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)17s$	^1S	0	0.3	35
8231.8	12144.7	00	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	3	—	$5d^{10}6s(^2S)13d$	^3D	3	0.6	32
8238.35	12135.0	4*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)14f$	$^3F^o$	2	0.3	35
8238.35	12135.0	4*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)14f$	$^3F^o$	3	0.3	35

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
8250.74	12116.8	4	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)15d$	^1D	2	0.3	35
8262.19	12100.0	4	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)14f$	$^3F^o$	3	0.3	35
8272.17	12085.4	0 d	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)16p$	$^1P^o$	1	0.5	27
8275.05	12081.2	4	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)13f$	$^3F^o$	2	0.3	35
8288.57	12061.5	5	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)14d$	^3D	3	0.3	35
8303.69	12039.5	0	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)16s$	^1S	0	0.5	27
8316.43	12021.1	5*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)13f$	$^3F^o$	3	0.3	35
8316.43	12021.1	5*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)13f$	$^3F^o$	2	0.3	35
8338.36	11989.5	0 d	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)13f$	$^3F^o$	4	0.5	27
8340.47	11986.4	5	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)13f$	$^3F^o$	3	0.3	35
8372.96	11939.9	1 d	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)15p$	$^1P^o$	1	0.5	27
8374.04	11938.4	5*	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)12f$	$^3F^o$	3	0.3	35
8374.04	11938.4	5*	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)12f$	$^3F^o$	2	0.3	35
8376.45	11935.0	4	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)12f$	$^3F^o$	2	0.3	35
8401.65	11899.2	5	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)11s$	^3S	1	0.3	35
8418.61	11875.2	4*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)12f$	$^3F^o$	3	0.3	35
8418.61	11875.2	4*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)12f$	$^3F^o$	2	0.3	35
8423.42	11868.4	5	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)13d$	^3D	3	0.3	35
8443.31	11840.4	5	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)12f$	$^3F^o$	4	0.3	35
8452.03	11828.2	0*	$5d^{10}6s(^2S)10d$	^3D	2	—	$5d^96s^2(^2D_{3/2})6p$	$^2[3/2]^o$	1	0.3	35
8452.03	11828.2	0*	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)15p$	$^3P^o$	2	0.3	35
8464.06	11811.4	0	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11s$	^1S	0	0.3	35
8491.05	11773.9	4	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)13d$	^1D	2	0.3	35
8505.57	11753.8	6	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11s$	^3S	1	0.3	35
8511.82	11745.1	4 d	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)11f$	$^3F^o$	2	0.5	27
8513.50	11742.8	4	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)11f$	$^3F^o$	2	0.3	35
8539.00	11707.8	0	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)14s$	^3S	1	0.5	27
8557.27	11682.8	5	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)11f$	$^3F^o$	2	0.3	35
8582.41	11648.5	2 d	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)11f$	$^3F^o$	4	0.5	27
8613.52	11606.5	2*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)12d$	^3D	3	0.5	27
8613.52	11606.5	2*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)12d$	^3D	2	0.5	27
8618.7	11599.5	0	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)12d$	^1D	2	0.6	32
8652.72	11553.9	7	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)9d$	^3D	1	0.5	27
8679.6	11518.1	0	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)12d$	^3D	2	0.6	32
8704.55	11485.1	5 d	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)10f$	$^3F^o$	2	0.5	27
8706.45	11482.6	1	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)10f$	$^3F^o$	2	0.5	27
8746.09	11430.5	3	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)13p$	$^3P^o$	1	0.4	31
8751.55	11423.4	1*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)10f$	$^3F^o$	3	0.5	27
8751.55	11423.4	1*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)10f$	$^3F^o$	2	0.5	27
8757.98	11415.0	7	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	2	0.5	27
8763.00	11408.5	5	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	1	0.5	27
8773.13	11395.3	5	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9d$	^1D	2	0.5	27
8778.25	11388.7	1	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)10f$	$^3F^o$	4	0.5	27
8783.80	11381.5	5	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)10s$	^3S	1	0.5	27
8796.32	11365.3	0	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)13p$	$^3P^o$	2	0.4	31
8830.88	11320.8	0	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)13s$	^1S	0	0.5	27
8893.78	11240.7	2	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)11d$	^3D	3	0.5	27
8965.79	11150.4	0	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)11d$	^3D	2	0.4	31
8973.65	11140.7	8 d	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)11d$	^1D	2	0.4	31
8988.73	11121.99	1 d*	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)9f$	$^3F^o$	3	0.1	29
8988.73	11121.99	1 d*	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)9f$	$^3F^o$	2	0.1	29
8991.4	11118.7	0.5 d	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)9f$	$^3F^o$	2	0.2	29
9039.97	11058.95	1 d*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)9f$	$^3F^o$	3	0.1	29
9039.97	11058.95	1 d*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)9f$	$^3F^o$	2	0.1	29
9051.15	11045.3	1	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)12p$	$^3P^o$	1	0.4	31

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
9057.57	11037.5	1	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)12p$	$^3P^o$	0	0.4	31
9067.54	11025.32	1 d	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)9f$	$^3F^o$	4	0.1	29
9095.0	10992.0	00	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)12p$	$^3P^o$	2	0.4	31
9157.86	10916.6	1	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)12s$	^3S	1	0.5	27
9200.77	10865.7	1	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)12s$	^1S	0	0.5	27
9243.22	10815.8	10	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)8d$	^3D	3	0.5	27
9253.70	10803.5	3	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)8d$	^3D	2	0.5	27
9263.67	10791.9	0	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)8d$	^3D	1	0.5	27
9279.1	10774.0	0	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)8d$	^1D	2	0.5	27
9298.6	10751.4	0	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)10s$	^3S	1	0.5	27
9338.38	10705.6	8	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)10d$	^3D	3	0.4	31
9342.53	10700.8	1	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)10d$	^3D	2	0.4	29
9346.2	10696.6	0	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)10d$	^3D	1	0.4	29
9354.7	10686.9	0	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)10d$	^1D	2	0.4	29
9419.38	10613.5	3	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)10d$	^3D	2	0.4	31
9425.64	10606.4	2	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10s$	^3S	1	0.4	29
9432.06	10599.2	9	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)10d$	^1D	2	0.4	31
9438.46	10592.0	7	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)8f$	$^1F^o$	3	0.4	29
9442.75	10587.2	9	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)8f$	$^3F^o$	2	0.4	31
9487.2	10537.6	0	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)11p$	$^3P^o$	2	0.6	32
9495.86	10528.0	6	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)8f$	$^3F^o$	3	0.4	29
9526.21	10494.5	7	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)8f$	$^1F^o$	3	0.4	31
9544.66	10474.2	0	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)11p$	$^3P^o$	1	0.4	31
9547.3	10471.3	1	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)11p$	$^3P^o$	1	0.4	29
9554.1	10463.8	1.5	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)11p$	$^3P^o$	0	0.4	29
9574.26	10441.8	3	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)11p$	$^3P^o$	2	0.4	31
9602.0	10411.6	1*	$5d^{10}6s(^2S)16s$	^3S	1	—	$5d^96s^2(^2D_{3/2})6p$	$^2[3/2]^o$	1	0.4	31
9602.0	10411.6	1*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)11p$	$^3P^o$	1	0.4	31
9792.90	10208.7	2*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)11s$	^3S	1	0.4	31
9792.90	10208.7	2*	$5d^{10}6s(^2S)16d$	^3D	1	—	$5d^96s^2(^2D_{3/2})6p$	$^2[3/2]^o$	1	0.4	31
9792.90	10208.7	2*	$5d^{10}6s(^2S)16d$	^3D	2	—	$5d^96s^2(^2D_{3/2})6p$	$^2[3/2]^o$	1	0.4	31
9808.	10193.	1	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	3	—	$5d^{10}6s(^2S)6g$	^3G	4	2.	30
9821.75	10178.7	3	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)11s$	^1S	0	0.4	31
9832.28	10167.8	1	$5d^{10}6s(^2S)18s$	^1S	0	—	$5d^96s^2(^2D_{3/2})6p$	$^2[3/2]^o$	1	0.4	31
9838.06	10161.8	0.5	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)8d$	^3D	1	0.5	27
9969.34	10028.0	0.5	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	2	0.5	27
9980.90	10016.4	0	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	1	0.5	27
9999.0	9998.3	0	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^1D	2	0.5	27
10121.61	9877.1	0	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)9d$	^3D	3	0.5	27
10129.57	9869.4	00	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)9d$	^3D	2	0.5	27
10139.75	9859.47	*1600*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7s$	^1S	0	0.05	26
10180.56	9820.0	0	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)10p$	$^1P^o$	1	0.4	31
10220.4	9781.7	4 d*	$5d^{10}6s(^2S)8s$	^3S	1	—	$5d^{10}6s(^2S)20p$	$^3P^o$	0	0.8	31
10220.4	9781.7	4 d*	$5d^{10}6s(^2S)8s$	^3S	1	—	$5d^{10}6s(^2S)20p$	$^3P^o$	1	0.8	31
10220.4	9781.7	4 d*	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	2	0.8	31
10230.0	9772.5	1 d	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)7f$	$^1F^o$	3	0.5	27
10235.01	9767.7	5	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)7f$	$^3F^o$	2	0.4	29
10240.7	9762.3	0.5	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9d$	^1D	2	0.5	27
10296.2	9709.7	1 d	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)7f$	$^1F^o$	3	0.5	27
10320.8	9686.5	0.5	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)10p$	$^3P^o$	2	1.	33
10332.34	9675.7	10	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)7f$	$^3F^o$	4	0.4	31
10335.0	9673.2	1	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)7f$	$^3F^o$	3	0.6	32
10423.52	9591.1	2	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)10p$	$^3P^o$	2	0.4	31
10431.80	9583.4	2	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)10p$	$^3P^o$	1	0.4	31
10435.6	9580.0	0	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)10p$	$^3P^o$	1	0.4	29

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
10444.5	9571.8	00*	$5d^{10}6s(^2S)8s$	^3S	1	—	$5d^{10}6s(^2S)17p$	$^1P^o$	1	0.4	29
10444.5	9571.8	00*	$5d^{10}6s(^2S)8s$	^3S	1	—	$5d^{10}6s(^2S)14f$	$^3F^o$	2	0.4	29
10450.81	9566.0	2	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)10p$	$^3P^o$	0	0.4	31
10464.6	9553.4	0*	$5d^{10}6s(^2S)8s$	^3S	1	—	$5d^{10}6s(^2S)17p$	$^3P^o$	1	0.4	29
10464.6	9553.4	0*	$5d^{10}6s(^2S)8s$	^3S	1	—	$5d^{10}6s(^2S)17p$	$^3P^o$	0	0.4	29
10501.1	9520.2	0	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)10p$	$^3P^o$	1	0.4	29
10715.6	9329.6	1	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)9s$	^3S	1	0.5	27
11022.24	9070.1	5	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)10s$	^1S	0	0.4	31
11033.65	9060.7	5	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)10s$	^3S	1	0.4	31
11176.86	8944.6	10	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)7p$	$^1P^o$	1	0.4	31
11287.1	8857.2	*1000*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)7p$	$^3P^o$	2	0.4	29
11353.9	8805.1	0	$5d^{10}6s(^2S)8s$	^3S	1	—	$5d^{10}6s(^2S)13p$	$^3P^o$	1	0.4	31
11368.0	8794.2	1	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^96s^2(^2D_{5/2})6p$	$^2[5/2]^o$	3	1.	33
11436.64	8741.4	2	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9s$	^1S	0	0.4	31
11491.61	8699.6	4	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)9s$	^3S	1	0.4	31
11687.00	8554.2	5	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9s$	^3S	1	0.4	31
11768.93	8494.6	6	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)8d$	^3D	3	0.4	31
11885.20	8411.5	5	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)6f$	$^1F^o$	3	0.4	31
11887.66	8410.	10 d	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)6f$	$^3F^o$	2	5.	9
11890.55	8407.7	5	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)6f$	$^3F^o$	2	0.4	31
11910.10	8393.9	0	$5d^{10}6s(^2S)10s$	^1S	0	—	$5d^96s^2(^2D_{3/2})6p$	$^2[1/2]^o$	1	0.4	31
11951.54	8364.8	2	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8d$	^1D	2	0.4	31
11976.33	8347.5	4	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)6f$	$^3F^o$	2	0.4	31
12019.59	8317.5	5	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)6f$	$^3F^o$	4	0.4	31
12071.50	8281.7	6	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7s$	^3S	1	0.4	31
12128.5	8242.8	5	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)7d$	^3D	3	0.4	31
12159.	8222.	3	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)7d$	^3D	2	3.	20
12215.	8184.4	1 d	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)9p$	$^3P^o$	2	2.	30
12378.1	8076.6	0	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)9p$	$^3P^o$	1	0.4	31
13209.95	7567.98	*400*	$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)7d$	^3D	1	0.2	44
13426.57	7445.88	*400*	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7d$	^3D	2	0.2	44
13468.38	7422.77	*130*	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7d$	^3D	1	0.2	44
13479.2	7416.8	0	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	1	2.	31
13505.58	7402.32	*200*	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7d$	^1D	2	0.2	44
13570.21	7367.07	*200*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)7p$	$^1P^o$	1	0.2	44
13634.	7333.	*	$5d^{10}6s(^2S)8p$	$^3P^o$	1	—	$5d^{10}6s(^2S)20d$	^3D	1	10.	23
13634.	7333.	*	$5d^{10}6s(^2S)8p$	$^3P^o$	1	—	$5d^{10}6s(^2S)20d$	^3D	2	10.	23
13673.51	7311.41	*300*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)7p$	$^3P^o$	1	0.2	44
13950.55	7166.22	*200*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)7p$	$^3P^o$	0	0.2	44
13979.	7152.		$5d^{10}6s(^2S)8p$	$^3P^o$	1	—	$5d^{10}6s(^2S)17d$	^1D	2	10.	23
14064.	7108.4	0.3	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9s$	^1S	0	3.	20
14160.	7060.		$5d^{10}6s(^2S)8s$	^3S	1	—	$5d^{10}6s(^2S)10p$	$^3P^o$	2	10.	23
15186.	6583.2	0.5	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	4	—	$5d^{10}6s(^2S)16d$	^3D	3	3.	20
15295.82	6535.95	*600*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	0.2	44
16881.48	5922.03	*300*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)7d$	^3D	3	0.2	44
16920.16	5908.50	*1600*	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)5f$	$^1F^o$	3	0.2	44
16933.27	5903.92	4	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)5f$	$^3F^o$	2	0.2	44
16942.00	5900.88	*50*	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)5f$	$^3F^o$	2	0.2	44
17014.	5875.9	0.4	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)7d$	^3D	1	5.	20
17072.79	5855.67	*80*	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)5f$	$^3F^o$	4	0.2	44
17109.93	5842.96	*50*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)5f$	$^3F^o$	3	0.2	44
17116.75	5840.64	*30*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)5f$	$^3F^o$	2	0.2	44
17198.67	5812.82	30	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7d$	^3D	2	0.2	44
17206.15	5810.29	5	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)5f$	$^1F^o$	3	0.2	44
17213.20	5807.91	*30*	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)5f$	$^3F^o$	3	0.2	44

TABLE 2a. Spectral lines of natural-isotope-mixture Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
17269.	5789.	*	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7d$	^3D	1	10.	23
17269.	5789	*	$5d^{10}6s(^2S)5f$	$^3F^o$	4	—	$5d^{10}6s(^2S)13d$	^3D	3	10.	23
17329.41	5768.96	*160*	$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7d$	^1D	2	0.2	44
17436.18	5733.64	*50*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)7p$	$^3P^o$	1	0.2	44
17696.	5649.		$5d^{10}6s(^2S)8s$	^3S	1	—	$5d^{10}6s(^2S)9p$	$^3P^o$	2	10.	23
17980.	5560.		$5d^{10}6s(^2S)8s$	^1S	0	—	$5d^{10}6s(^2S)9p$	$^1P^o$	1	10.	23
18084.	5528.	*	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)8p$	$^1P^o$	1	10.	23
18084.	5528.	*	$5d^{10}6s(^2S)9s$	^3S	1	—	$5d^{10}6s(^2S)20p$	$^3P^o$	1	10.	23
18130.38	5514.10	*100*	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	4	0.2	44
18539.	5392.6	0.6	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)8p$	$^3P^o$	2	5.	20
19481.	5132.		$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)8p$	$^3P^o$	1	10.	23
19571.	5108.		$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)8p$	$^3P^o$	0	10.	23
19700.17	5074.71	*70*	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)8s$	^3S	1	0.2	44
19705.94	5073.2		$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)8p$	$^3P^o$	1	5.	8

Observed vacuum wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
21086.	4742.	*	$5d^{10}6s(^2S)7d$	^3D	3	—	$5d^{10}6s(^2S)11p$	$^3P^o$	2	10.	23
21086.	4742.	*	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8s$	^1S	0	10.	23
22499.42	4444.559		$5d^{10}6s(^2S)7p$	$^3P^o$	0	—	$5d^{10}6s(^2S)8s$	^3S	1	0.05	47
23259.42	4299.33	*30*	$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8s$	^3S	1	0.11	47
32156.83	3109.76		$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8s$	^1S	0	0.21	47
36312.93	2753.840	*	$5d^{10}6s(^2S)8d$	^3D	3	—	$5d^{10}6s(^2S)9f$	$^3F^o$	4	0.07	47
36312.93	2753.840	*	$5d^{10}6s(^2S)7p$	$^3P^o$	2	—	$5d^{10}6s(^2S)8s$	^3S	1	0.07	47
39294.32	2544.90		$5d^{10}6s(^2S)5f$	$^3F^o$	3	—	$5d^{10}6s(^2S)5g$	^3G	4	0.65	47
45134.34	2215.61		$5d^{10}6s(^2S)9d$	^1D	2	—	$5d^{10}6s(^2S)15p$	$^1P^o$	1	0.55	47
64918.	1540.		$5d^{10}6s(^2S)8p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9s$	^1S	0	100.	64

TABLE 2b. Spectral Lines of ^{198}Hg I

Observed vacuum wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
1849.4918	54068.907	*5000 C*	$5d^{10}6s^2$	^1S	0	—	$5d^{10}6s(^2S)6p$	$^3P^o$	1	0.0002	49

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
2302.0651	43425.888	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)9d$	^3D	1	0.0002	42
2345.4400	42622.869	*200*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)10s$	^3S	1	0.0002	42
2378.3246	42033.579	*4000*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)8d$	^3D	1	0.0002	42
2380.0040	42003.921	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)11s$	^3S	1	0.0002	42
2399.3485	41665.295	*70*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	2	0.0002	42
2399.7293	41658.684	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	1	0.0002	42
2400.497	41645.363	*14*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9d$	^1D	2	0.001	42
2446.8998	40855.663	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10s$	^3S	1	0.0002	42
2464.0636	40571.097	*20*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)9s$	^3S	1	0.0002	42
2481.9993	40277.938	*300*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	2	0.0002	42

TABLE 2b. Spectral Lines of ^{198}Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
2482.7131	40266.359	*90*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	1	0.0002	42
2483.8215	40248.391	*170*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^1D	2	0.0002	42
2534.76855	39439.4819	*2000*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)7d$	^3D	1	0.00012	101
2536.50659	39412.4593	*900000*	$5d^{10}6s^2$	^1S	0	—	$5d^{10}6s(^2S)6p$	$^3P^o$	1	0.00003	57
2563.8610	38991.986	*40*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9s$	^1S	0	0.0002	42
2576.2904	38803.880	*100*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)9s$	^3S	1	0.0002	42
2639.790	37870.517	*6*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)10d$	^3D	3	0.001	42
2652.04284	37695.5598	*1600*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7d$	^3D	2	0.00005	101
2653.68302	37672.2625	*6000*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7d$	^3D	1	0.00008	101
2655.13029	37651.7291	*400*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7d$	^1D	2	0.00007	101
2674.917	37373.230	*6*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)11s$	^3S	1	0.001	42
2698.8314	37042.084	*200*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)9d$	^3D	3	0.0002	42
2699.378	37034.584	*100*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)9d$	^3D	2	0.001	42
2752.7830	36316.1378	*400*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)8s$	^3S	1	0.0001	75
2759.7103	36224.983	*10*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)10s$	^3S	1	0.0002	42
2803.47012	35659.5707	*180*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)8d$	^3D	3	0.00006	101
2804.4378	35647.267	*40*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)8d$	^3D	2	0.0002	42
2805.347	35635.714	*3*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)8d$	^3D	1	0.001	42
2806.765	35617.712	*3*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)8d$	^1D	2	0.001	42
2856.9389	34992.220	*20*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8s$	^1S	0	0.0002	42
2893.59825	34548.9198	*800*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8s$	^3S	1	0.00005	101
2925.41339	34173.2024	*70*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)9s$	^3S	1	0.00009	101
2967.28345	33691.0203	*3000*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)6d$	^3D	1	0.00005	101
3021.49975	33086.5108	*1200*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)7d$	^3D	3	0.00005	101
3023.47626	33064.8824	*300*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)7d$	^3D	2	0.00005	101
3025.6080	33041.587	*30*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)7d$	^3D	1	0.0002	42
3027.48949	33021.0535	*60*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)7d$	^1D	2	0.00009	101
3125.67013	31983.8675	*4000*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)6d$	^3D	2	0.00005	101
3131.55125	31923.8035	*3000*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)6d$	^3D	1	0.00005	101
3131.84226	31920.8372	*4000*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)6d$	^1D	2	0.00005	101
3341.48148	29918.2431	*700*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)8s$	^3S	1	0.00004	101
3650.15679	27388.2797	*9000*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)6d$	^3D	3	0.00005	97
3654.83939	27353.1906	*3000*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)6d$	^3D	2	0.00005	101
3662.88282	27293.1265	*500*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)6d$	^3D	1	0.00008	101
3663.28096	27290.1603	*2000*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)6d$	^1D	2	0.00005	101
3701.4322	27008.8836	*50*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9d$	^3D	2	0.0002	42
3704.1698	26988.9230	*9*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9d$	^1D	2	0.0002	42
3801.6601	26296.8322	*50*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)10s$	^1S	0	0.0002	42
3901.8668	25621.4996	*30*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	2	0.0002	42
3906.37146	25591.9547	*40*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8d$	^1D	2	0.00014	101
4046.57150	24705.2989	*12000*	$5d^{10}6s(^2S)6p$	$^3P^o$	0	—	$5d^{10}6s(^2S)7s$	^3S	1	0.00007	101
4077.83806	24515.8765	*1000*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7s$	^1S	0	0.00007	101
4108.0574	24335.5386	*70*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9s$	^1S	0	0.0002	42
4339.22475	23039.1140	*50*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7d$	^3D	2	0.00011	101
4347.49578	22995.2833	*150*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7d$	^1D	2	0.00006	101
4358.33730	22938.0827	*12000*	$5d^{10}6s(^2S)6p$	$^3P^o$	1	—	$5d^{10}6s(^2S)7s$	^3S	1	0.00004	60
4822.196	20731.646		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)14p$	$^1P^o$	1	0.002	49
4882.991	20473.534	*6*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)13p$	$^1P^o$	1	0.002	49
4896.861	20415.545		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)13p$	$^3P^o$	1	0.002	49
4916.06952	20335.7762	*20*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)8s$	^1S	0	0.00012	101
4970.368	20113.622	*6*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)12p$	$^1P^o$	1	0.002	49
4991.536	20028.326		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)12p$	$^3P^o$	1	0.002	49
5102.699	19592.012	*30*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)11p$	$^1P^o$	1	0.002	49
5137.930	19457.670	*30*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)11p$	$^3P^o$	1	0.002	49

TABLE 2b. Spectral Lines of ^{198}Hg I—Continued

Observed air wavelength (Å)	Observed wave number (cm^{-1})	Intensity and comment	Classification							Uncertainty of observed wavelength (Å)	Source of line
			Configuration	Term	J		Configuration	Term	J		
5290.729	18895.729	*30*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)13p$	$^1P^o$	1	0.002	49
5316.769	18803.184	*6*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)10p$	$^1P^o$	1	0.002	49
5354.029	18672.330	*130*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)10p$	$^3P^o$	2	0.001	42
5384.615	18566.567	*50*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)10p$	$^3P^o$	1	0.002	49
5393.454	18535.841		$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)12p$	$^1P^o$	1	0.002	49
5460.75298	18307.40529	*6000*	$5d^{10}6s(^2S)6p$	$^3P^o$	2	—	$5d^{10}6s(^2S)7s$	^3S	1	0.00004	60
5549.635	18014.200	*50*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)11p$	$^1P^o$	1	0.002	49
5675.9225	17613.3938	*600*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)9p$	$^1P^o$	1	0.0002	42
5769.59818	17327.42411	*1000*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)6d$	^3D	2	0.00005	60
5790.66265	17264.39341	*900*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)6d$	^1D	2	0.00006	60
5803.779	17225.377	*400*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)10p$	$^1P^o$	1	0.002	49
5859.245	17062.316	*130*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)9p$	$^3P^o$	1	0.002	49
6072.7128	16462.5473	*30*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	1	0.0002	42
6234.4020	16035.5947		$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)9p$	$^1P^o$	1	0.0002	42
6716.4289	14884.7553	*600*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	1	0.0002	42
6888.576	14512.784		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)8p$	$^1P^o$	1	0.002	49
6907.4612	14473.1063	*1000*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)8p$	$^3P^o$	2	0.0002	42
7081.900	14116.612	*1000*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)8p$	$^3P^o$	1	0.002	49
7728.831	12935.007	*30*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)8p$	$^1P^o$	1	0.002	49
9425.915	10606.140		$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)10s$	^3S	1	0.002	49
9968.936	10028.411		$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^3D	2	0.005	49
9998.394	9998.865		$5d^{10}6s(^2S)7p$	$^3P^o$	1	—	$5d^{10}6s(^2S)8d$	^1D	2	0.005	49
10139.7934	9859.43132	*1600*	$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7s$	^1S	0	0.0002	59
10240.323	9762.641		$5d^{10}6s(^2S)7p$	$^1P^o$	1	—	$5d^{10}6s(^2S)9d$	^1D	2	0.005	49
11176.792	8944.662		$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)7p$	$^1P^o$	1	0.005	49
11287.4068	8857.0056	*1000*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)7p$	$^3P^o$	2	0.0004	59
12071.6030	8281.6376		$5d^{10}6s(^2S)6p$	$^1P^o$	1	—	$5d^{10}6s(^2S)7s$	^3S	1	0.0021	55
13570.5714	7366.8721	*200*	$5d^{10}6s(^2S)7s$	^1S	0	—	$5d^{10}6s(^2S)7p$	$^1P^o$	1	0.0019	55
13673.3964	7311.4727	*300*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^{10}6s(^2S)7p$	$^3P^o$	1	0.0014	55
15295.9745	6535.8818	*600*	$5d^{10}6s(^2S)7s$	^3S	1	—	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	0.0016	55
16920.664	5908.3197	*1600*	$5d^{10}6s(^2S)6d$	^1D	2	—	$5d^{10}6s(^2S)5f$	$^1F^o$	3	0.005	53
16942.479	5900.7122	*50*	$5d^{10}6s(^2S)6d$	^3D	1	—	$5d^{10}6s(^2S)5f$	$^3F^o$	2	0.005	53
17073.125	5855.5592	*80*	$5d^{10}6s(^2S)6d$	^3D	3	—	$5d^{10}6s(^2S)5f$	$^3F^o$	4	0.005	53
17109.898	5842.9743	*50*	$5d^{10}6s(^2S)6d$	^3D	2	—	$5d^{10}6s(^2S)5f$	$^3F^o$	3	0.005	53
Observed vacuum wavelength (Å)	**Observed wave number (cm^{-1})**	**Intensity and comment**	**Classifcation**							**Uncertainty of observed wavelength (Å)**	**Source of line**
			Configuration	**Term**	**J**	**—**	**Configuration**	**Term**	**J**		
35227.1	2838.72	200	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	4	—	$5d^{10}6s(^2S)5g$	^3G	5	0.5	66
39265.38	2546.773	600	$5d^{10}6s(^2S)5f$	$^3F^o$	2	—	$5d^{10}6s(^2S)5g$	^3G	3	0.05	66
39292.56	2545.011		$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	—	$5d^{10}6s(^2S)6d$	^3D	3	0.08	67
39300.82	2544.476	1500	$5d^{10}6s(^2S)5f$	$^3F^o$	3	—	$5d^{10}6s(^2S)5g$	^3G	4	0.05	66
39335.42	2542.238	1000	$5d^{10}6s(^2S)5f$	$^1F^o$	3	—	$5d^{10}6s(^2S)5g$	^1G	4	0.05	66
40050.42	2496.853	700	$5d^{10}6s(^2S)5f$	$^3F^o$	4	—	$5d^{10}6s(^2S)5g$	^3G	5	0.05	66

In an attempt to put the intensities of the more prominent Hg I lines on a common scale, we took the work of Crosswhite and Dieke[51] as the basis for intensities and adjusted the more extensive list of intensities quoted in Reader *et al.*[78] to these values. The 121 values so obtained are printed in an italic font in Table 2a. This is also done in Table 2b for those lines determined for the separated isotope. For the lines whose intensities were not determined by this method, we quote the intensities, if available, from the original reference. Those values are not on a common scale and are useful only in comparing lines from the same reference. Some references use “0” and “00” as intensities. “0” is an intensity somewhat less than “1” but not zero. “00” is an intensity somewhat less than “0.”

It must be noted that the intensity of a line is extremely source dependent. It can differ greatly in different light sources and even totally disappear in some. Even in the same type of source the relative intensity of lines can change greatly under different operating and observation conditions. We note that the source used by Crosswhite and Dieke[51] was a "low-pressure neon-mercury discharge." The source was not specified in Reader *et al.*[78] Some of our considerations in selecting the data presented are summarized below.

3.1. Natural isotope mixture of neutral mercury

The uncertainties quoted for the wavelengths of observed lines are mostly those of the authors. When there was no estimate of uncertainty, an estimate was made by comparing results of common lines with those that were well determined in other references. In several cases (Volk,[8,9] Cardaun,[10] Murakawa,[27] Harrison,[34] Kamiyama,[35] and Plyler *et al.*[47]) comparison of common lines with more precise measurements led us to increase the stated uncertainty. Burns *et al.*[38] quoted very low uncertainties. However they used photographic detection of Fabry-Perot interference patterns. This is sensitive to different parts of the complex multi-isotopic line shape depending on the degree of exposure of the photographic plates. As a result, wherever possible, we used the wavelengths of Sansonetti *et al.*[90] instead of Burns *et al.*[38] We also increased the uncertainty quoted for the Burns *et al.*[38] wavelengths.

The wavelengths of some very early references had to be adjusted from their quoted values by about 0.2 Å because they refer their wavelength measurements to "Rowland standards" rather than to "international standards." In Table 2a, this affected only the lines from Wiedmann.[7]

We did not include possible transitions observed in emission from autoionizing upper levels whose energy levels were greater than 105 000 cm^{-1}. These can appear in energetic light sources. Classification of these lines is uncertain due to the presence of strong electric fields and associated Stark shifts and parity-violating transitions.

The 2699.514 Å line of Burns *et al.*[38] is inconsistent with values quoted for different separated isotopes (Burns and Adams[42] and Burns and Adams[43]). We replaced it with the 2699.36 Å line from Walerstein.[26]

3.2. ^{198}Hg

The quoted value for the Hg I resonance line at 1849.4918 Å (vacuum wavelength) is calculated by Herzberg[49] from determined energy levels using the combination principle. This is the only example of a line not directly observed being included in this compilation. It was included in the line list because of its importance; however, it was not used in the optimization of the energy levels. Using our optimized energy levels (see Sec. 5) a value of 1849.4919 Å would be obtained. Except for this line, all the intensities in Table 2b for wavelengths below 18 000 Å use the unified intensities and are printed in italic type. Intensities for wavelengths above 35 000 Å are taken from Humphreys and Paul.[66]

With the high precision of the ^{198}Hg measurements, the pressure shift caused by the noble-gas carrier gas of the light source becomes important. Where known, we have included this pressure value in Table 1b. The best results were from light sources with a carrier-gas pressure of 33 Pa (0.25 Torr). The older data (Burns and Admas[42]and Herzberg[49]) were likely taken at higher pressures and have higher uncertainties.

4. Classification of lines

The classification of all emission lines was reviewed by comparing the observed wavelengths with those predicted for electric dipole transitions between preliminary values of the energy levels. This occasionally leads to a change from the classification given in the quoted reference.

For a significant number of observed lines, more than one possible classification could be assigned on the basis of the preliminary energy level values. To clarify the assignments for these lines, multiconfiguration Hartree-Fock calculations (with frozen radial functions) were made using the atomic structure codes RCN and RCG of Cowan.[79] The calculations included the configurations $5d^{10}6s^2$, $5d^{10}6p^2$, $5d^{10}6s7s$—$18s$, $5d^{10}6s6d$—$19d$, $5d^{10}6s5g$—$11g$, $5d^96s^27s$, $5d^{10}6s6p$—$18p$, $5d^{10}6s5f$—$18f$, $5d^96s^26p$—$18p$, $5d^96s^25f$—$13f$. The configuration average energies were adjusted to obtain improved agreement with the experimentally determined energies. The semiempirical wave functions obtained in this way were used to calculate oscillator strengths for all dipole-allowed transitions. These oscillator strengths were used as a guide in assigning classifications in cases where the appropriate classification was otherwise ambiguous.

5. Optimization of the level values

Once the classified line list was complete, a least squares adjustment of the energy levels was made using a modified version of the level optimization program ELCALC.[71] This is an iterative procedure that minimizes the differences between the observed wave numbers and those predicted from the optimized level values. For the natural mixture of isotopes, in the first iteration, the lines are weighted according to the inverse square of the uncertainties of their wave numbers. For succeeding iterations, the weight assigned to each line in determining a given level is recalculated based on both the uncertainty of the wave number and the uncertainty determined for the combining level of opposite parity in the previous iteration. For ^{198}Hg, in all iterations, lines are weighted according to the inverse square of the uncertainties of their wave numbers. It was confirmed that using the same weighting method as used for the natural mixture produced only negligible changes in the results.

5.1. Natural isotope mixture of neutral mercury

In addition to using the lines of the natural mixture wavelength compilation [Table 2a] in the fit, we also used the data for two-photon transitions of Duncan and Devonshire[88] and Zia *et al.*[96] and the four-photon data of Dalby and Sanders.[80] With multiply classified lines we did not include the classifications which we calculated to have lower gf values than the dominant classification except when this provided the only information about a given level and the probability of the alternate classification was close to the largest one.

The process resulted in five $5d^{10}6snf$ levels which were included by Moore[54] no longer being defined. These undefined levels were the $5d^{10}6s6f\ ^3F^o_3$, $5d^{10}6s8f\ ^3F^o_4$, $5d^{10}6s11f\ ^3F^o_3$, $5d^{10}6s14f\ ^3F^o_4$, and $5d^{10}6s15f\ ^3F^o_4$. These levels are not included in our level list since there are no transitions to support them.

The result of the optimization of the energy levels for the natural isotope mixture of Hg I is reported in Table 3a.

TABLE 3a. Energy levels of natural-isotope-mixture Hg I

Energy level (cm^{-1})	Uncertainty (cm^{-1})	Parity[a]	Configuration	Term	J	g_J[b]
0.000	0.007	0	$5d^{10}6s^2$	^1S	0	
37644.978	0.007	1	$5d^{10}6s(^2S)6p$	$^3P^o$	0	
39412.234	0.004	1	$5d^{10}6s(^2S)6p$	$^3P^o$	1	1.486094(8) a
44042.906	0.003	1	$5d^{10}6s(^2S)6p$	$^3P^o$	2	1.50100(9) b
54068.681	0.003	1	$5d^{10}6s(^2S)6p$	$^1P^o$	1	1.01453(15) c
62350.322	0.003	0	$5d^{10}6s(^2S)7s$	^3S	1	2.00285(15) b
63928.117	0.006	0	$5d^{10}6s(^2S)7s$	^1S	0	
68886.41	0.05	1	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2	
70932.5	0.4	1	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	3	1.0867(5) d
76945.27	0.06	1	$5d^96s^2(^2D_{5/2})6p$	$^2[7/2]^o$	4	
78676.99	0.14	1	$5d^96s^2(^2D_{5/2})6p$	$^2[5/2]^o$	2	1.1170 f
78813.07	0.03	1	$5d^96s^2(^2D_{5/2})6p$	$^2[3/2]^o$	1	1.2103(48) f
80127.4	0.3	1	$5d^96s^2(^2D_{5/2})6p$	$^2[5/2]^o$	3	
69516.571	0.012	1	$5d^{10}6s(^2S)7p$	$^3P^o$	0	
69661.80	0.02	1	$5d^{10}6s(^2S)7p$	$^3P^o$	1	
71207.294	0.009	1	$5d^{10}6s(^2S)7p$	$^3P^o$	2	
71294.85	0.08	1	$5d^{10}6s(^2S)7p$	$^1P^o$	1	
71333.051	0.004	0	$5d^{10}6s(^2S)6d$	^1D	2	1.05803(16) b
71336.002	0.006	0	$5d^{10}6s(^2S)6d$	^3D	1	0.49864(9) b
71396.071	0.004	0	$5d^{10}6s(^2S)6d$	^3D	2	1.10908(6) b
71431.177	0.008	0	$5d^{10}6s(^2S)6d$	^3D	3	1.33430(17) b
73961.131	0.007	0	$5d^{10}6s(^2S)8s$	^3S	1	2.00375(26) e
74404.50	0.02	0	$5d^{10}6s(^2S)8s$	^1S	0	
76447.109	0.011	1	$5d^{10}6s(^2S)8p$	$^3P^o$	0	
76466.935	0.011	1	$5d^{10}6s(^2S)8p$	$^3P^o$	1	1.4946 f
76823.43	0.07	1	$5d^{10}6s(^2S)8p$	$^3P^o$	2	1.4825(3) f
76863.135	0.008	1	$5d^{10}6s(^2S)8p$	$^1P^o$	1	
77063.968	0.007	0	$5d^{10}6s(^2S)7d$	^1D	2	1.0219(1) f
77084.42	0.03	0	$5d^{10}6s(^2S)7d$	^3D	1	0.4996(12) f
77107.806	0.007	0	$5d^{10}6s(^2S)7d$	^3D	2	1.1465(6) f
77129.369	0.011	0	$5d^{10}6s(^2S)7d$	^3D	3	1.3306 f
77236.85	0.08	1	$5d^{10}6s(^2S)5f$	$^3F^o$	2	
77239.06	0.04	1	$5d^{10}6s(^2S)5f$	$^3F^o$	3	
77241.50	0.06	1	$5d^{10}6s(^2S)5f$	$^1F^o$	3	
77286.85	0.07	1	$5d^{10}6s(^2S)5f$	$^3F^o$	4	
78216.12	0.03	0	$5d^{10}6s(^2S)9s$	^3S	1	2.0088 f
78404.24	0.05	0	$5d^{10}6s(^2S)9s$	^1S	0	
79375.649	0.015	1	$5d^{10}6s(^2S)9p$	$^3P^o$	0	
79412.613	0.015	1	$5d^{10}6s(^2S)9p$	$^3P^o$	1	
79614.8	1.5	1	$5d^{10}6s(^2S)9p$	$^3P^o$	2	
79963.80	0.14	1	$5d^{10}6s(^2S)9p$	$^1P^o$	1	

TABLE 3a. Energy levels of natural-isotope-mixture Hg I—Continued

Energy level (cm^{-1})	Uncertainty (cm^{-1})	Parity[a]	Configuration	Term	J	g_J[b]
79660.56	0.04	0	$5d^{10}6s(^2S)8d$	^1D	2	1.028(3) g
79678.56	0.03	0	$5d^{10}6s(^2S)8d$	^3D	1	
79690.16	0.03	0	$5d^{10}6s(^2S)8d$	^3D	2	
79702.529	0.014	0	$5d^{10}6s(^2S)8d$	^3D	3	
79743.7	0.2	1	$5d^{10}6s(^2S)6f$	$^3F^o$	2	
79744.6	0.3	1	$5d^{10}6s(^2S)6f$	$^1F^o$	3	
79748.7	0.3	1	$5d^{10}6s(^2S)6f$	$^3F^o$	4	
79783.96	0.06	0	$5d^{10}6s(^2S)5g$	^3G	4	
79784.	2.	0	$5d^{10}6s(^2S)5g$	^1G	4	
80267.96	0.02	0	$5d^{10}6s(^2S)10s$	^3S	1	
80365.526	0.007	0	$5d^{10}6s(^2S)10s$	^1S	0	
80902.137	0.018	1	$5d^{10}6s(^2S)10p$	$^3P^o$	0	
80916.545	0.019	1	$5d^{10}6s(^2S)10p$	$^3P^o$	1	
81022.63	0.05	1	$5d^{10}6s(^2S)10p$	$^3P^o$	2	
81153.481	0.012	1	$5d^{10}6s(^2S)10p$	$^1P^o$	1	
81057.636	0.008	0	$5d^{10}6s(^2S)9d$	^1D	2	
81070.96	0.05	0	$5d^{10}6s(^2S)9d$	^3D	1	
81077.44	0.14	0	$5d^{10}6s(^2S)9d$	^3D	2	
81085.01	0.09	0	$5d^{10}6s(^2S)9d$	^3D	3	
81103.7	0.4	1	$5d^{10}6s(^2S)7f$	$^3F^o$	2	
81104.4	0.6	1	$5d^{10}6s(^2S)7f$	$^3F^o$	3	
81105.6	0.3	1	$5d^{10}6s(^2S)7f$	$^1F^o$	3	
81106.9	0.4	1	$5d^{10}6s(^2S)7f$	$^3F^o$	4	
81125.7	1.6	0	$5d^{10}6s(^2S)6g$	^3G	4	
81126.	2.	0	$5d^{10}6s(^2S)6g$	^1G	4	
81416.16	0.12	0	$5d^{10}6s(^2S)11s$	^3S	1	
81473.4	0.3	0	$5d^{10}6s(^2S)11s$	^1S	0	
81800.43	0.05	1	$5d^{10}6s(^2S)11p$	$^3P^o$	0	
81807.95	0.02	1	$5d^{10}6s(^2S)11p$	$^3P^o$	1	
81873.701	0.019	1	$5d^{10}6s(^2S)11p$	$^3P^o$	2	
81942.313	0.014	1	$5d^{10}6s(^2S)11p$	$^1P^o$	1	
81894.54	0.19	0	$5d^{10}6s(^2S)10d$	^1D	2	
81903.5	0.3	0	$5d^{10}6s(^2S)10d$	^3D	1	
81908.19	0.16	0	$5d^{10}6s(^2S)10d$	^3D	2	
81913.55	0.09	0	$5d^{10}6s(^2S)10d$	^3D	3	
81923.2	0.4	1	$5d^{10}6s(^2S)8f$	$^3F^o$	2	
81924.1	0.4	1	$5d^{10}6s(^2S)8f$	$^3F^o$	3	
81925.4	0.4	1	$5d^{10}6s(^2S)8f$	$^1F^o$	3	
81936.	2.	0	$5d^{10}6s(^2S)7g$	^1G	4	
81936.	2.	0	$5d^{10}6s(^2S)7g$	^3G	4	
82123.98	0.08	0	$5d^{10}6s(^2S)12s$	^3S	1	
82160.56	0.19	0	$5d^{10}6s(^2S)12s$	^1S	0	
82374.40	0.05	1	$5d^{10}6s(^2S)12p$	$^3P^o$	0	
82378.36	0.06	1	$5d^{10}6s(^2S)12p$	$^3P^o$	1	
82422.46	0.02	1	$5d^{10}6s(^2S)12p$	$^3P^o$	2	
82463.918	0.017	1	$5d^{10}6s(^2S)12p$	$^1P^o$	1	
82435.7	0.3	0	$5d^{10}6s(^2S)11d$	^1D	2	
82443.10	0.09	0	$5d^{10}6s(^2S)11d$	^3D	1	

TABLE 3a. Energy levels of natural-isotope-mixture Hg I—Continued

Energy level (cm^{-1})	Uncertainty (cm^{-1})	Parity[a]	Configuration	Term	J	g_J[b]
82445.4	0.2	0	$5d^{10}6s(^2S)11d$	^3D	2	
82448.7	0.4	0	$5d^{10}6s(^2S)11d$	^3D	3	
82454.99	0.09	1	$5d^{10}6s(^2S)9f$	$^3F^o$	2	
82455.03	0.09	1	$5d^{10}6s(^2S)9f$	$^3F^o$	3	
82456.371	0.015	1	$5d^{10}6s(^2S)9f$	$^3F^o$	4	
82468.	2.	0	$5d^{10}6s(^2S)8g$	^1G	4	
82468.	2.	0	$5d^{10}6s(^2S)8g$	^3G	4	
82590.9	0.2	0	$5d^{10}6s(^2S)13s$	^3S	1	
82615.7	0.2	0	$5d^{10}6s(^2S)13s$	^1S	0	
82763.28	0.05	1	$5d^{10}6s(^2S)13p$	$^3P^o$	0	
82765.66	0.05	1	$5d^{10}6s(^2S)13p$	$^3P^o$	1	
82796.65	0.05	1	$5d^{10}6s(^2S)13p$	$^3P^o$	2	
82823.812	0.015	1	$5d^{10}6s(^2S)13p$	$^1P^o$	1	
82807.0	0.3	0	$5d^{10}6s(^2S)12d$	^1D	2	
82810.7	0.3	0	$5d^{10}6s(^2S)12d$	^3D	1	
82812.32	0.19	0	$5d^{10}6s(^2S)12d$	^3D	2	
82814.6	0.5	0	$5d^{10}6s(^2S)12d$	^3D	3	
82818.80	0.13	1	$5d^{10}6s(^2S)10f$	$^3F^o$	2	
82819.5	0.7	1	$5d^{10}6s(^2S)10f$	$^3F^o$	3	
82819.8	0.6	1	$5d^{10}6s(^2S)10f$	$^3F^o$	4	
82832.	2.	0	$5d^{10}6s(^2S)9g$	^1G	4	
82832.	2.	0	$5d^{10}6s(^2S)9g$	^3G	4	
82915.3	0.2	3	$5d^{10}6s(^2S)14s$	^3S	1	
82932.9	0.3	0	$5d^{10}6s(^2S)14s$	^1S	0	
83038.89	0.05	1	$5d^{10}6s(^2S)14p$	$^3P^o$	0	
83040.42	0.05	1	$5d^{10}6s(^2S)14p$	$^3P^o$	1	
83063.08	0.05	1	$5d^{10}6s(^2S)14p$	$^3P^o$	2	
83081.92	0.06	1	$5d^{10}6s(^2S)14p$	$^1P^o$	1	
83068.90	0.19	0	$5d^{10}6s(^2S)13d$	^1D	2	
83073.6	0.3	0	$5d^{10}6s(^2S)13d$	^3D	1	
83074.0	0.2	0	$5d^{10}6s(^2S)13d$	^3D	2	
83075.9	0.3	0	$5d^{10}6s(^2S)13d$	^3D	3	
83078.94	0.13	1	$5d^{10}6s(^2S)11f$	$^3F^o$	2	
83079.7	0.7	1	$5d^{10}6s(^2S)11f$	$^3F^o$	4	
83087.	3.	0	$5d^{10}6s(^2S)10g$	^1G	4	
83087.	3.	0	$5d^{10}6s(^2S)10g$	^3G	4	
83149.7	0.3	0	$5d^{10}6s(^2S)15s$	^3S	1	
83162.7	0.3	0	$5d^{10}6s(^2S)15s$	^1S	0	
83241.58	0.05	1	$5d^{10}6s(^2S)15p$	$^3P^o$	0	
83242.45	0.05	1	$5d^{10}6s(^2S)15p$	$^3P^o$	1	
83259.40	0.05	1	$5d^{10}6s(^2S)15p$	$^3P^o$	2	
83273.23	0.03	1	$5d^{10}6s(^2S)15p$	$^1P^o$	1	
83263.7	0.3	0	$5d^{10}6s(^2S)14d$	^1D	2	
83266.5	0.4	0	$5d^{10}6s(^2S)14d$	^3D	1	
83267.8	0.6	0	$5d^{10}6s(^2S)14d$	^3D	2	
83269.2	0.3	0	$5d^{10}6s(^2S)14d$	^3D	3	
83271.26	0.12	1	$5d^{10}6s(^2S)12f$	$^3F^o$	2	

TABLE 3a. Energy levels of natural-isotope-mixture Hg I—Continued

Energy level (cm^{-1})	Uncertainty (cm^{-1})	Parity[a]	Configuration	Term	J	g_J[b]
83271.3	0.3	1	$5d^{10}6s(^2S)12f$	$^3F^o$	3	
83271.6	0.4	1	$5d^{10}6s(^2S)12f$	$^3F^o$	4	
83283.	5.	0	$5d^{10}6s(^2S)11g$	^1G	4	
83283.	5.	0	$5d^{10}6s(^2S)11g$	^3G	4	
83324.7	0.2	0	$5d^{10}6s(^2S)16s$	^3S	1	
83334.5	0.2	0	$5d^{10}6s(^2S)16s$	^1S	0	
83394.59	0.05	1	$5d^{10}6s(^2S)16p$	$^3P^o$	0	
83395.32	0.05	1	$5d^{10}6s(^2S)16p$	$^3P^o$	1	
83408.34	0.05	1	$5d^{10}6s(^2S)16p$	$^3P^o$	2	
83418.60	0.05	1	$5d^{10}6s(^2S)16p$	$^1P^o$	1	
83411.7	0.2	0	$5d^{10}6s(^2S)15d$	^1D	2	
83413.9	0.4	0	$5d^{10}6s(^2S)15d$	^3D	1	
83414.8	0.4	0	$5d^{10}6s(^2S)15d$	^3D	2	
83415.6	0.4	0	$5d^{10}6s(^2S)15d$	^3D	3	
83417.40	0.13	1	$5d^{10}6s(^2S)13f$	$^3F^o$	2	
83417.4	0.3	1	$5d^{10}6s(^2S)13f$	$^3F^o$	3	
83420.6	0.7	1	$5d^{10}6s(^2S)13f$	$^3F^o$	4	
83459.1	0.3	0	$5d^{10}6s(^2S)17s$	^3S	1	
83466.0	0.3	0	$5d^{10}6s(^2S)17s$	^1S	0	
83513.27	0.05	1	$5d^{10}6s(^2S)17p$	$^3P^o$	0	
83513.74	0.05	1	$5d^{10}6s(^2S)17p$	$^3P^o$	1	
83524.05	0.05	1	$5d^{10}6s(^2S)17p$	$^3P^o$	2	
83532.00	0.05	1	$5d^{10}6s(^2S)17p$	$^1P^o$	1	
83526.4	0.3	0	$5d^{10}6s(^2S)16d$	^1D	2	
83528.6	0.3	0	$5d^{10}6s(^2S)16d$	^3D	1	
83528.9	0.4	0	$5d^{10}6s(^2S)16d$	^3D	2	
83529.8	0.3	0	$5d^{10}6s(^2S)16d$	^3D	3	
83531.1	0.3	1	$5d^{10}6s(^2S)14f$	$^3F^o$	3	
83531.34	0.13	1	$5d^{10}6s(^2S)14f$	$^3F^o$	2	
83564.0	0.3	0	$5d^{10}6s(^2S)18s$	^3S	1	
83569.1	0.3	0	$5d^{10}6s(^2S)18s$	^1S	0	
83603.9	0.4	1	$5d^{10}6s(^2S)15f$	$^3F^o$	3	
83621.46	0.14	1	$5d^{10}6s(^2S)15f$	$^3F^o$	2	
83607.17	0.05	1	$5d^{10}6s(^2S)18p$	$^3P^o$	0	
83607.34	0.05	1	$5d^{10}6s(^2S)18p$	$^3P^o$	1	
83615.67	0.05	1	$5d^{10}6s(^2S)18p$	$^3P^o$	2	
83621.88	0.05	1	$5d^{10}6s(^2S)18p$	$^1P^o$	1	
83617.2	0.2	0	$5d^{10}6s(^2S)17d$	^1D	2	
83619.2	0.4	0	$5d^{10}6s(^2S)17d$	^3D	1	
83619.9	0.4	0	$5d^{10}6s(^2S)17d$	^3D	2	
83620.1	0.3	0	$5d^{10}6s(^2S)17d$	^3D	3	
83647.9	0.4	0	$5d^{10}6s(^2S)19s$	^3S	1	
83651.1	0.3	0	$5d^{10}6s(^2S)19s$	^1S	0	
83682.72	0.15	1	$5d^{10}6s(^2S)19p$	$^3P^o$	0	
83682.75	0.05	1	$5d^{10}6s(^2S)19p$	$^3P^o$	1	
83689.40	0.05	1	$5d^{10}6s(^2S)19p$	$^3P^o$	2	
83694.43	0.05	1	$5d^{10}6s(^2S)19p$	$^1P^o$	1	

TABLE 3a. Energy levels of natural-isotope-mixture Hg I—Continued

Energy level (cm^{-1})	Uncertainty (cm^{-1})	Parity[a]	Configuration	Term	J	g_J[b]
83690.4	0.3	0	$5d^{10}6s(^2S)18d$	^1D	2	
83692.7	0.3	0	$5d^{10}6s(^2S)18d$	^3D	1	
83693.0	0.4	0	$5d^{10}6s(^2S)18d$	^3D	2	
83693.1	0.4	0	$5d^{10}6s(^2S)18d$	^3D	3	
83694.11	0.13	1	$5d^{10}6s(^2S)16f$	$^3F^o$	2	
83715.3	0.5	0	$5d^{10}6s(^2S)20s$	^3S	1	
83718.5	0.3	0	$5d^{10}6s(^2S)20s$	^1S	0	
83744.23	0.05	1	$5d^{10}6s(^2S)20p$	$^3P^o$	1	
83744.23	0.15	1	$5d^{10}6s(^2S)20p$	$^3P^o$	0	
83749.74	0.05	1	$5d^{10}6s(^2S)20p$	$^3P^o$	2	
83753.79	0.05	1	$5d^{10}6s(^2S)20p$	$^1P^o$	1	
83750.0	0.3	0	$5d^{10}6s(^2S)19d$	^1D	2	
83752.8	0.4	0	$5d^{10}6s(^2S)19d$	^3D	3	
83752.9	0.3	0	$5d^{10}6s(^2S)19d$	^3D	2	
83752.9	0.5	0	$5d^{10}6s(^2S)19d$	^3D	1	
83753.63	0.15	1	$5d^{10}6s(^2S)17f$	$^3F^o$	2	
83798.1	0.3	0	$5d^{10}6s(^2S)20d$	^1D	2	
83802.3	0.5	0	$5d^{10}6s(^2S)20d$	^3D	3	
83802.7	0.4	0	$5d^{10}6s(^2S)20d$	^3D	2	
83802.9	0.4	0	$5d^{10}6s(^2S)20d$	^3D	1	
83802.77	0.16	1	$5d^{10}6s(^2S)18f$	$^3F^o$	2	
83843.99	0.18	1	$5d^{10}6s(^2S)19f$	$^3F^o$	2	
83878.99	0.15	1	$5d^{10}6s(^2S)20f$	$^3F^o$	2	
84184.15	0.05	—	Hg II $(^2S_{1/2})$	Limit	—	
88759.6	0.3	1	$5d^96s^2(^2D_{3/2})6p$	$^2[1/2]^o$	1	
93736.3	0.4	1	$5d^96s^2(^2D_{3/2})6p$	$^2[3/2]^o$	1	
90099.6	0.2	0	$5d^{10}6p^2$	^3P	0	
93980.0	0.4	0	$5d^{10}6p^2$	^3P	1	
96184.5	0.5	0	$5d^{10}6p^2$	^3P	2	
97100.2	0.2	0	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	3	
97309.8	0.2	0	$5d^96s^2(^2D_{5/2})7s$	$^2[5/2]$	2	
105882.	8.	1	$5d^96s^2(^2D_{5/2})7p$	$^2[3/2]^o$	1	
112273.	9.	1	$5d^96s^2(^2D_{5/2})8p$	$^2[3/2]^o$	1	
115042.	7.	1	$5d^96s^2(^2D_{5/2})9p$	$^2[3/2]^o$	1	
116503.8	1.2	1	$5d^96s^2(^2D_{5/2})10p$	$^2[3/2]^o$	1	
117371.9	1.2	1	$5d^96s^2(^2D_{5/2})11p$	$^2[3/2]^o$	1	
117929.8	1.3	1	$5d^96s^2(^2D_{5/2})12p$	$^2[3/2]^o$	1	
118311.7	1.3	1	$5d^96s^2(^2D_{5/2})13p$	$^2[3/2]^o$	1	
118576.3	1.3	1	$5d^96s^2(^2D_{5/2})14p$	$^2[3/2]^o$	1	
118775.8	1.3	1	$5d^96s^2(^2D_{5/2})15p$	$^2[3/2]^o$	1	
118911.7	1.3	1	$5d^96s^{22}(^2D_{5/2})16p$	$^2[3/2]^o$	1	
119037.6	1.3	1	$5d^96s^2(^2D_{5/2})17p$	$^2[3/2]^o$	1	
119136.8	1.3	1	$5d^96s^2(^2D_{5/2})18p$	$^2[3/2]^o$	1	
119208.0	1.3	1	$5d^96s^2(^2D_{5/2})19p$	$^2[3/2]^o$	1	
119271.7	1.3	1	$5d^96s^2(^2D_{5/2})20p$	$^2[3/2]^o$	1	
112701.	3.	1	$5d^96s^2(^2D_{5/2})5f$	$^2[3/2]^o$	1	
112723.	3.	1	$5d^96s^2(^2D_{5/2})5f$	$^2[1/2]^o$	1	

TABLE 3a. Energy levels of natural-isotope-mixture Hg I—Continued

Energy level (cm^{-1})	Uncertainty (cm^{-1})	Parity[a]	Configuration	Term	J	g_J[b]
115227.	3.	1	$5d^96s^2(^2D_{5/2})6f$	$^2[3/2]^o$	1	
115244.0	1.2	1	$5d^96s^2(^2D_{5/2})6f$	$^2[1/2]^o$	1	
116613.0	1.2	1	$5d^96s^2(^2D_{5/2})7f$	$^2[3/2]^o$	1	
116613.0	1.2	1	$5d^96s^2(^2D_{5/2})7f$	$^2[1/2]^o$	1	
117436.1	1.2	1	$5d^96s^2(^2D_{5/2})8f$	$^2[3/2]^o$	1	
117436.1	1.2	1	$5d^96s^2(^2D_{5/2})8f$	$^2[1/2]^o$	1	
117967.4	1.3	1	$5d^96s^2(^2D_{5/2})9f$	$^2[3/2]^o$	1	
117967.4	1.3	1	$5d^96s^2(^2D_{5/2})9f$	$^2[1/2]^o$	1	
118334.9	1.3	1	$5d^96s^2(^2D_{5/2})10f$	$^2[3/2]^o$	1	
118334.9	1.3	1	$5d^96s^2(^2D_{5/2})10f$	$^2[1/2]^o$	1	
118590.5	1.3	1	$5d^96s^2(^2D_{5/2})11f$	$^2[3/2]^o$	1	
118590.5	1.3	1	$5d^96s^2(^2D_{5/2})11f$	$^2[1/2]^o$	1	
118782.2	1.3	1	$5d^96s^2(^2D_{5/2})12f$	$^2[3/2]^o$	1	
118782.2	1.3	1	$5d^96s^2(^2D_{5/2})12f$	$^2[1/2]^o$	1	
118931.	4.	1	$5d^96s^2(^2D_{5/2})13f$	$^2[3/2]^o$	1	
118931.	4.	1	$5d^96s^2(^2D_{5/2})13f$	$^2[1/2]^o$	1	
119700.	1.	—	Hg II $(^2D_{5/2})$	Limit	—	
119953.	10.	1	$5d^96s^2(^2D_{3/2})7p$	$^2[1/2]^o$	1	
120709.	7.	1	$5d^96s^2(^2D_{3/2})7p$	$^2[3/2]^o$	1	
126973.	11.	1	$5d^96s^2(^2D_{3/2})8p$	$^2[1/2]^o$	1	
127252.4	1.5	1	$5d^96s^2(^2D_{3/2})8p$	$^2[3/2]^o$	1	
127773.	8.	1	$5d^96s^2(^2D_{3/2})5f$	$^2[3/2]^o$	1	
130288.6	1.5	1	$5d^96s^2(^2D_{3/2})6f$	$^2[3/2]^o$	1	
131659.2	1.6	1	$5d^96s^2(^2D_{3/2})7f$	$^2[3/2]^o$	1	
132487.5	1.6	1	$5d^96s^2(^2D_{3/2})8f$	$^2[3/2]^o$	1	
133016.2	1.6	1	$5d^96s^2(^2D_{3/2})9f$	$^2[3/2]^o$	1	
133366.4	1.6	1	$5d^96s^2(^2D_{3/2})10f$	$^2[3/2]^o$	1	
133629.5	1.6	1	$5d^96s^2(^2D_{3/2})11f$	$^2[3/2]^o$	1	
133824.9	1.6	1	$5d^96s^2(^2D_{3/2})12f$	$^2[3/2]^o$	1	
133951.	4.	1	$5d^96s^2(^2D_{3/2})13f$	$^2[3/2]^o$	1	
129926.	8.	1	$5d^96s^2(^2D_{3/2})9p$	$^2[1/2]^o$	1	
130047.3	1.5	1	$5d^96s^2(^2D_{3/2})9p$	$^2[3/2]^o$	1	
131453.7	1.6	1	$5d^96s^2(^2D_{3/2})10p$	$^2[1/2]^o$	1	
131526.7	1.6	1	$5d^96s^2(^2D_{3/2})10p$	$^2[3/2]^o$	1	
132358.6	1.6	1	$5d^96s^2(^2D_{3/2})11p$	$^2[1/2]^o$	1	
132386.	4.	1	$5d^96s^2(^2D_{3/2})11p$	$^2[3/2]^o$	1	
132930.6	1.6	1	$5d^96s^2(^2D_{3/2})12p$	$^2[1/2]^o$	1	
132966.	4.	1	$5d^96s^2(^2D_{3/2})12p$	$^2[3/2]^o$	1	
133326.2	1.6	1	$5d^96s^2(^2D_{3/2})13p$	$^2[1/2]^o$	1	
133340.	4.	1	$5d^96s^2(^2D_{3/2})13p$	$^2[3/2]^o$	1	
133597.0	1.6	1	$5d^96s^2(^2D_{3/2})14p$	$^2[1/2]^o$	1	
133812.4	1.6	1	$5d^96s^2(^2D_{3/2})15p$	$^2[1/2]^o$	1	
133952.6	1.6	1	$5d^96s^2(^2D_{3/2})16p$	$^2[1/2]^o$	1	
134078.1	1.6	1	$5d^96s^2(^2D_{3/2})17p$	$^2[1/2]^o$	1	
134172.7	1.6	1	$5d^96s^2(^2D_{3/2})18p$	$^2[1/2]^o$	1	
134262.4	1.6	1	$5d^96s^2(^2D_{3/2})19p$	$^2[1/2]^o$	1	

TABLE 3a. Energy levels of natural-isotope-mixture Hg I—Continued

Energy level (cm^{-1})	Uncertainty (cm^{-1})	Parity[a]	Configuration	Term	J	g_J[b]
134305.	5.	1	$5d^9 6s^2(^2D_{3/2})20p$	$^2[1/2]^o$	1	
134746.	1.	—	Hg II ($^2D_{3/2}$)	Limit	—	

[a]"0" indicates even parity and "1" indicates odd parity.
[b]The uncertainty in the last digits of the quoted value of g_J is given in parentheses. Where no uncertainty was specified in the reference, we estimate an uncertainty about ±0.005. The references for the values of g_J are as follows: a: Kohler and Thaddeus[65]; b: Huet[76]; c: Huet[70]; d: McDermott and Lichten[56]; e: Huet and Chantepie[77]; f: Van Kleef and Fred[62]; and g: Blagoev *et al.*.[89]

5.2. ^{198}Hg

The optimization of the ^{198}Hg levels show, as expected, the largest deviations in the weighted fitting of lines taken with light sources having higher carrier-gas pressures (Burns and Adams[42] and Herzberg[49]). This is due to pressure shifts of the mercury lines by light-source carrier gas.

The result of the optimization of the energy levels for ^{198}Hg I is reported in Table 3b.

TABLE 3b. Energy levels of ^{198}Hg I

Energy level (cm^{-1})	Uncertainty (cm^{-1})	Parity[a]	Configuration	Term	J
0.0000	0.0005	0	$5d^{10}6s^2$	^1S	0
37645.2429	0.0004	1	$5d^{10}6s(^2S)6p$	$^3P^o$	0
39412.4593	0.0003	1	$5d^{10}6s(^2S)6p$	$^3P^o$	1
44043.1366	0.0002	1	$5d^{10}6s(^2S)6p$	$^3P^o$	2
54068.9038	0.0002	1	$5d^{10}6s(^2S)6p$	$^1P^o$	1
62350.5417	0.0002	0	$5d^{10}6s(^2S)7s$	^3S	1
63928.3354	0.0004	0	$5d^{10}6s(^2S)7s$	^1S	0
68886.4232	0.0008	1	$5d^9 6s^2(^2D_{5/2})6p$	$^2[3/2]^o$	2
76945.11	0.04	1	$5d^9 6s^2(^2D_{5/2})6p$	$^2[7/2]^o$	4
78813.0900	0.0007	1	$5d^9 6s^2(^2D_{5/2})6p$	$^2[3/2]^o$	1
69662.011	0.004	1	$5d^{10}6s(^2S)7p$	$^3P^o$	1
71207.5474	0.0004	1	$5d^{10}6s(^2S)7p$	$^3P^o$	2
71295.2063	0.0016	1	$5d^{10}6s(^2S)7p$	$^1P^o$	1
71333.2971	0.0002	0	$5d^{10}6s(^2S)6d$	^1D	2
71336.2630	0.0004	0	$5d^{10}6s(^2S)6d$	^3D	1
71396.3277	0.0003	0	$5d^{10}6s(^2S)6d$	^3D	2
71431.4164	0.0004	0	$5d^{10}6s(^2S)6d$	^3D	3
73961.3796	0.0004	0	$5d^{10}6s(^2S)8s$	^3S	1
74404.6799	0.0005	0	$5d^{10}6s(^2S)8s$	^1S	0
76467.154	0.004	1	$5d^{10}6s(^2S)8p$	$^3P^o$	1
76823.6480	0.0005	1	$5d^{10}6s(^2S)8p$	$^3P^o$	2
76863.336	0.006	1	$5d^{10}6s(^2S)8p$	$^1P^o$	1
77064.1875	0.0005	0	$5d^{10}6s(^2S)7d$	^1D	2
77084.7227	0.0012	0	$5d^{10}6s(^2S)7d$	^3D	1
77108.0186	0.0005	0	$5d^{10}6s(^2S)7d$	^3D	2
77129.6474	0.0006	0	$5d^{10}6s(^2S)7d$	^3D	3
77236.9752	0.0018	1	$5d^{10}6s(^2S)5f$	$^3F^o$	2
77239.3020	0.0017	1	$5d^{10}6s(^2S)5f$	$^3F^o$	3
77241.6168	0.0018	1	$5d^{10}6s(^2S)5f$	$^1F^o$	3
77286.9755	0.0017	1	$5d^{10}6s(^2S)5f$	$^3F^o$	4
78216.3391	0.0010	0	$5d^{10}6s(^2S)9s$	^3S	1
78404.4428	0.0012	0	$5d^{10}6s(^2S)9s$	^1S	0
79412.858	0.006	1	$5d^{10}6s(^2S)9p$	$^3P^o$	1
79963.9323	0.0019	1	$5d^{10}6s(^2S)9p$	$^1P^o$	1

TABLE 3b. Energy levels of ^{198}Hg I—Continued

Energy level (cm^{-1})	Uncertainty (cm^{-1})	Parity[a]	Configuration	Term	J
79660.8585	0.0012	0	$5d^{10}6s(^2S)8d$	^1D	2
79678.821	0.003	0	$5d^{10}6s(^2S)8d$	^3D	1
79690.4037	0.0016	0	$5d^{10}6s(^2S)8d$	^3D	2
79702.7072	0.0008	0	$5d^{10}6s(^2S)8d$	^3D	3
79783.748	0.004	0	$5d^{10}6s(^2S)5g$	^3G	3
79783.778	0.004	0	$5d^{10}6s(^2S)5g$	^3G	4
79783.828	0.004	0	$5d^{10}6s(^2S)5g$	^3G	5
79783.855	0.004	0	$5d^{10}6s(^2S)5g$	^1G	4
80268.131	0.009	0	$5d^{10}6s(^2S)10s$	^3S	1
80365.7361	0.0014	0	$5d^{10}6s(^2S)10s$	^1S	0
80916.809	0.007	1	$5d^{10}6s(^2S)10p$	$^3P^o$	1
81022.872	0.004	1	$5d^{10}6s(^2S)10p$	$^3P^o$	2
81153.718	0.007	1	$5d^{10}6s(^2S)10p$	$^1P^o$	1
81057.829	0.003	0	$5d^{10}6s(^2S)9d$	^1D	2
81071.138	0.005	0	$5d^{10}6s(^2S)9d$	^3D	1
81077.782	0.006	0	$5d^{10}6s(^2S)9d$	^3D	2
81085.221	0.003	0	$5d^{10}6s(^2S)9d$	^3D	3
81416.380	0.004	0	$5d^{10}6s(^2S)11s$	^3S	1
81808.212	0.008	1	$5d^{10}6s(^2S)11p$	$^3P^o$	1
81942.543	0.008	1	$5d^{10}6s(^2S)11p$	$^1P^o$	1
81913.654	0.014	0	$5d^{10}6s(^2S)10d$	^3D	3
82378.868	0.008	1	$5d^{10}6s(^2S)12p$	$^3P^o$	1
82464.171	0.007	1	$5d^{10}6s(^2S)12p$	$^1P^o$	1
82766.086	0.008	1	$5d^{10}6s(^2S)13p$	$^3P^o$	1
82824.069	0.007	1	$5d^{10}6s(^2S)13p$	$^1P^o$	1
83082.188	0.009	1	$5d^{10}6s(^2S)14p$	$^1P^o$	1

[a]"0" indicates even parity and "1" indicates odd parity.

6. Description of the tables of compiled lines and levels

The list of Hg I transitions with their classifications is presented in Tables 2a and 2b for the natural isotopic mixture and for ^{198}Hg, respectively. Wavelengths between 2000 and 20 000 Å are reported in standard air. All others are vacuum wavelengths. The first column contains the observed wavelength. Its uncertainty is given in column 10 and the source of the measurement in column 11. The reported uncertainty includes only the measurement uncertainty and has not been expanded to cover possible source dependent shifts. The second column contains the vacuum wave number. In most cases the wave number has been rounded to an appropriate number of significant digits using a rule that an uncertainty greater than 20 in the last digit causes that digit to be dropped. The absence of a decimal point in whole numbers is used to indicate that the last digit is not significant. The third column is the relative emission intensity assigned to the line. Values in italics are the unified intensities discussed in Sec. 3 whereas the others are values quoted by the stated references. Letters or symbols in the intensity column are codes that have the following meanings:

Symbol	Definition
*	observed intensity shared by more than one classification
C	calculated (Ritz) value
d	diffuse
h	hazy
H	very hazy
R	self-reversed
s	shaded towards shorter wavelengths
w	wide

Columns four to nine contain the line classification giving first the configuration, term, and J value for the lower level and then the same information for the upper level. Designations are given in LS or jK coupling notation.

The optimized energy levels for neutral Hg obtained in this work are presented in Tables 3a and 3b for the natural isotopic mixture and for ^{198}Hg, respectively. The first column contains the level energy in centimeter^{-1} derived from our least-squares optimization. The uncertainty is given in col-

TABLE 3c. Observed splitting of the $5d^96s^2(^2D_{5/2})nf$ energy levels Ding *et al.*[86] $^2[1/2]^o_1 - ^2[3/2]^o_1$

n	Splitting (cm^{-1})
5	22.2±1.0
6	11.4±0.4
7	6.6±0.2
8	4.45±0.20
9	3.04±0.18
10	2.17±0.14
11	1.59±0.12
12	1.19±0.11
13	0.91±0.14

umn two. The uncertainties given in Tables 3a and 3b represent the one standard deviation statistical uncertainty of the level values. The third column specifies the parity of the level: "0" for even parity and "1" for odd parity. Columns four to six specify the classification of the level by giving its configuration, term, and J value. Table 3a has a final column which gives the Landé g_J value for the level. The uncertainty of the last digits of this value is given in parentheses. The letter following this identifies the source of the g_J value quoted. These g_J values were compiled from seven sources: McDermott and Lichten,[56] Van Kleef and Fred,[62] Kohler and Thaddeus,[65] Huet,[70] Huet,[76] Huet and Chantepie,[77] and Blagoev *et al.*[89]

We also include Table 3c taken from Ding *et al.*[86] which gives for the natural isotopic mixture the splittings of the $5d^96s^2(^2D_{5/2})nf\ ^2[1/2]^o_1$ and $5d^96s^2(^2D_{5/2})nf\ ^2[3/2]^o_1$ autoionizing energy levels for $n=5-13$.

7. Ionization energy

The first ionization energy of the natural isotopic mixture of mercury was determined by Zia *et al.*[96] and Zia and Baig[98] to be 84 184.15(5) cm^{-1} [10.437 504(6) eV] by means of spectral analysis of different Rydberg series, which they determined using optogalvanic spectroscopy. Hormes *et al.*[84] obtained the $5d^96s^2\ ^2D_{5/2}$ and $5d^96s^2\ ^2D_{3/2}$ limits as 119 700(1) cm^{-1} [14.8409(2) eV] and 134 746(1) cm^{-1} [16.7064(2) eV] by means of spectral analysis of the Rydberg series, which they observed in the absorption of synchrotron radiation. However, using the first ionization energy from above and the energy levels determined for Hg II by Sansonetti and Reader[94] we obtain for the $5d^96s^2\ ^2D_{5/2}$ limit 119 698.77(5) cm^{-1} [14.840 755(6) eV] and for the $5d^96s^2\ ^2D_{3/2}$ limit 134 739.72(5) cm^{-1} [16.705 595(6) eV].

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