

## Annexe

**Table 3.** Classified lines of Yb V. The experimentally measured wavelengths ( $\lambda_{meas}$ ) are followed by the deviations  $\Delta\lambda = \lambda_{exp} - \lambda_{Ritz}$  from the Ritz wavelengths ( $\lambda_{Ritz}$ ), all given in Å, symbol for Ångström. Wavenumbers ( $\sigma_{exp}$ ) and level energies are in  $cm^{-1}$ . Intensities  $Int$  are in arbitrary units, calculated transition probabilities  $gA$  (in  $10^6 s^{-1}$ ),  $g$  being the statistical weight of the upper level.

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level <sup>d</sup>	Upper level <sup>d</sup>	$E_{lower}$	$E_{upper}$	Comment <sup>e</sup>
463.214	215882.8	463.210	0.004	6	869.8	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2F) <sup>3</sup> G2 5	0.00	215884.7	
475.941	210110.1	475.942	-0.001	6	60.0	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2I) <sup>1</sup> I 6	0.00	210109.5	
486.897	205382.1	486.894	0.003	15	817.4	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2D) <sup>3</sup> G2 5	0.00	205383.7	
487.962	204933.9	487.961	0.001	4	208.8	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2F) <sup>1</sup> F2 3	16877.3	221811.9	bl D
487.962	204933.9	487.958	0.004	4	323.5	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2H) <sup>3</sup> H1 5	0.00	204935.55	bl D
494.995	202022.2	494.994	0.001	8	1.6	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 6s(4I) <sup>5</sup> I 7	0.00	202022.73	
500.343	199862.9	500.339	0.004	21	50.7	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2H) <sup>3</sup> G1 5	9579.89	209444.5	
500.982	199607.9	500.982	0.000	36	1879	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2H) <sup>1</sup> G1 4	9579.89	209187.9	
501.933	199229.8	501.932	0.001	8	313.3	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> G1 4	6112.03	205342.1	
505.721	197737.3	505.722	-0.001	42	2300	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> Fb 3	14405.00	212142.3	
507.033	197225.7	507.032	0.001	9	391.4	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> F 4	6112.03	203338.2	
508.047	196832.3	508.046	0.001	20	760.5	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> Gb 3	14405.00	211237.7	
510.061	196054.9	510.060	0.001	11	480.4	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2H) <sup>1</sup> F1 3	14405.00	210460.3	
510.673	195819.9	510.670	0.003	9	205.0	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2L) <sup>3</sup> I 5	6112.03	201933.2	
510.717	195803.1	510.715	0.002	19	534.7	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2D) <sup>3</sup> G2 5	9579.89	205383.7	
510.824	195762.3	510.824	0.000	23	1118	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2H) <sup>3</sup> G1 4	9579.89	205342.1	
511.261	195594.7	511.260	0.001	8	838.2	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2G) <sup>3</sup> D2 3	31319.7	226914.8	
512.879	194977.9	512.875	0.004	10	359.4	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> G 3	6112.03	201091.3	
513.093	194896.3	513.090	0.003	11	660.1	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> F2 3	24192.89	219090.5	
513.393	194782.7	513.392	0.001	11	551.6	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2H) <sup>1</sup> G1 4	14405.00	209187.9	
515.232	194087.4	515.230	0.002	9	464.8	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2H) <sup>1</sup> F1 3	16372.19	210460.3	
516.024	193789.4	516.022	0.002	58	2754	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4D) <sup>3</sup> G 5	0.00	193790.3	
516.107	193758.2	516.107	0.000	47	2102	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4D) <sup>3</sup> F 4	9579.89	203338.2	
516.343	193669.7	516.339	0.004	11	25.8	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2L) <sup>3</sup> I 6	0.00	193671.1	
516.581	193580.4	516.574	0.007	31	501.3	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2H) <sup>1</sup> F1 3	16877.3	210460.3	
517.543	193220.6	517.541	0.001	61	2236.0	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2H) <sup>3</sup> F1 4	9579.89	202801.1	
518.630	192815.6	518.629	0.001	7	42.9	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2F) <sup>3</sup> P2 2	16877.3	209693.2	bl D
518.630	192815.6	518.630	0.000	7	227.6	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2H) <sup>1</sup> G1 4	16372.19	209187.9	bl D
518.841	192737.2	518.844	-0.003	10	264.8	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 3	14405.00	207141.0	
519.878	192352.9	519.877	0.001	22	565.1	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2L) <sup>3</sup> I 5	9579.89	201933.2	
521.453	191771.7	521.450	0.003	44	1334.0	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2I) <sup>3</sup> Ib 5	0.00	191772.8	
521.867	191619.8	521.865	0.002	57	1968.0	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2I) <sup>3</sup> I 5	0.00	191620.3	
522.695	191316.2	522.693	0.002	20	509.1	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 3	6112.03	197428.8	
523.732	190937.2	523.733	-0.001	10	328.8	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> G1 4	14405.00	205342.1	
524.199	190767.4	524.195	0.004	51	761.9	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 3	16372.19	207141.0	
524.763	190562.4	524.763	0.000	11	204.7	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> H 4	6112.03	196674.4	
524.851	190530.3	524.850	0.001	7	140.4	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> H1 5	14405.00	204935.55	
524.915	190507.0	524.917	-0.002	18	311.5	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>3</sup> Gb 3	16372.19	206878.6	
524.955	190492.5	524.955	0.000	43	1006.0	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2K) <sup>1</sup> K 7	0.00	190492.5	bl D
524.955	190492.5	524.956	-0.001	43	1777.0	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2F) <sup>1</sup> F2 3	31319.7	221811.9	bl D
525.590	190262.5	525.586	0.004	12	72.3	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 3	16877.3	207141.0	
526.196	190043.4	526.203	-0.007	15	211.4	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>3</sup> I 5	0.00	190040.7	
526.293	190008.4	526.293	0.000	20	181.6	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2I) <sup>3</sup> K 6	0.00	190008.2	
526.325	189996.8	526.324	0.001	14	409.1	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>3</sup> F 2	16372.19	206369.1	
526.616	189891.5	526.616	0.000	31	794.7	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 3	6112.03	196003.7	
526.970	189764.1	526.971	-0.001	15	190.2	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> H 5	6112.03	195875.9	
527.727	189491.8	527.727	0.000	4	207.4	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> F 2	16877.3	206369.1	
529.285	188934.1	529.288	-0.003	6	300.6	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> F 4	14405.00	203338.2	
530.518	188494.9	530.518	0.000	37	1781	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 5	6112.03	194607.2	
530.797	188396.1	530.797	0.000	5	230.9	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> F1 4	14405.00	202801.1	
531.796	188042.1	531.797	-0.001	13	413.6	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2K) <sup>3</sup> K 6	0.00	188041.6	
531.872	188015.2	531.872	0.000	34	1171	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2G) <sup>1</sup> I2 6	39037.9	227053.1	
532.058	187949.3	532.058	0.000	2	524.7	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> Fb 3	24192.89	212142.3	
532.563	187771.3	532.564	-0.001	4	482.7	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2D) <sup>3</sup> F2 3	31319.7	219090.5	
532.826	187678.7	532.827	-0.001	6	327.5	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> G 5	6112.03	193790.3	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level <sup>d</sup>	Upper level <sup>d</sup>	$E_{lower}$	$E_{upper}$	Comment <sup>e</sup>
533.251	187529.1	533.253	-0.002	23	1570	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2L) <sup>3</sup> I 5	14405.00	201933.2	
533.733	187359.7	533.733	-0.000	4	145.1	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 3	6112.03	193471.5	
534.495	187092.6	534.489	0.006	37	1059	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2I) <sup>3</sup> H 4	9579.89	196674.4	
534.627	187046.3	534.631	-0.004	40	3057	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> Gb 3	24192.89	211237.7	
534.854	186966.8	534.857	-0.003	19	841.8	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>3</sup> F 4	16372.19	203338.2	
535.168	186857.1	535.165	0.003	6	574.1	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2D) <sup>1</sup> P2 1	31319.7	218177.8	
535.227	186836.6	535.228	-0.001	5	112.0	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 4	6112.03	192948.4	
535.658	186686.2	535.658	0.000	10	229.8	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> G 3	14405.00	201091.3	
536.077	186540.4	536.077	0.000	10	604.2	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 4	14405.00	200945.4	
536.302	186462.1	536.302	0.000	67	12900	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2L) <sup>3</sup> I 7	0.00	186462.0	
536.398	186428.7	536.397	0.001	37	1954	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2H) <sup>3</sup> F1 4	16372.19	202801.1	
536.444	186412.9	536.442	0.001	27	640.3	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 4	6112.03	192525.3	
536.695	186325.5	536.695	0.000	16	635.1	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 2	16372.19	202697.8	
536.781	186295.7	536.780	0.001	31	2056	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2I) <sup>3</sup> H 5	9579.89	195875.9	
538.151	185821.3	538.154	-0.003	7	576.6	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 2	16877.3	202697.8	
538.463	185713.6	538.457	0.006	16	264	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2K) <sup>3</sup> I 5	0.00	185715.7	
538.617	185660.8	538.617	0.000	10	408.5	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> Ib 5	6112.03	191772.8	
538.931	185552.5	538.931	-0.000	6	319.9	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> H 4	6112.03	191664.4	
539.060	185508.2	539.059	0.001	21	1037	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> I 5	6112.03	191620.3	
539.223	185451.9	539.222	0.001	11	508.8	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 3	6112.03	191564.4	
540.105	185149.1	540.103	0.002	50	836.2	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 4	6112.03	191261.8	
540.218	185110.4	540.217	0.001	5	13.45	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2H) <sup>3</sup> F1 3	16372.19	201482.8	
540.464	185026.1	540.461	0.003	15	162.8	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 5	9579.89	194607.2	
540.554	184995.4	540.555	-0.001	32	733.4	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2H) <sup>1</sup> G1 4	24192.89	209187.9	
540.990	184846.4	540.987	0.003	45	1322	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2P) <sup>1</sup> F 3	14405.00	199252.2	
541.363	184719.1	541.362	0.001	41	341.3	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>3</sup> G 3	16372.19	201091.3	
541.695	184605.8	541.696	-0.001	55	869.8	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2H) <sup>3</sup> F1 3	16877.3	201482.8	
541.792	184572.8	541.790	0.002	54	1958	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 4	16372.19	200945.4	
542.298	184400.6	542.298	0.000	28	296.6	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 2	16372.19	200772.6	
542.847	184213.9	542.847	0.000	62	1521	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> G 3	16877.3	201091.3	
543.205	184092.7	543.197	0.008	128	2359	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2D) <sup>1</sup> G1 4	6112.03	190207.3	
543.205	184092.7	543.209	-0.004	128	5677	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2L) <sup>3</sup> I 6	9579.89	193671.1	
543.692	183927.8	543.689	0.003	21	320.3	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> I 5	6112.03	190040.7	
543.788	183895.1	543.788	0.000	18	383.5	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 2	16877.3	200772.6	
544.062	183802.4	544.059	0.003	26	160.3	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>5</sup> I 5	0.00	183803.6	
544.083	183795.5	544.084	-0.001	44	3910	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2G) <sup>3</sup> D2 3	43119.5	226914.8	
545.063	183464.9	545.061	0.002	33	663.6	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> F 3	6112.03	189577.8	
545.114	183447.7	545.114	0.000	17	249.1	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 1	16877.3	200325.3	
545.145	183437.4	545.144	0.001	48	1339	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>3</sup> F 3	16372.19	199809.9	
545.350	183368.4	545.350	0.000	9	109.9	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 4	9579.89	192948.4	
546.377	183023.7	546.377	0.000	44	1392	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 3	14405.00	197428.8	
546.649	182932.8	546.649	0.000	13	186.6	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> F 3	16877.3	199809.9	
546.806	182880.2	546.807	-0.001	22	298.8	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2P) <sup>1</sup> F 3	16372.19	199252.2	
547.391	182684.8	547.390	0.001	31	1860	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(2G) <sup>3</sup> D2 1	41080.9	223766.1	bl D
547.391	182684.8	547.388	0.003	31	756.8	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> Gb 3	24192.89	206878.6	bl D
547.411	182678.0	547.413	-0.002	51	1574	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2I) <sup>1</sup> G 4	6112.03	188789.6	
548.140	182435.1	548.140	0.000	61	2561	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2G) <sup>3</sup> H1 5	0.00	182435.1	
548.320	182375.3	548.321	-0.001	7	168	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2P) <sup>1</sup> F 3	16877.3	199252.2	
548.638	182269.6	548.638	-0.000	59	1273	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> H 4	14405.00	196674.4	
549.195	182084.7	549.195	-0.000	44	1180	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4G) <sup>3</sup> H 4	9579.89	191664.4	
549.600	181950.4	549.602	-0.002	45	526	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> G2 3	6112.03	188061.9	
550.414	181681.4	550.412	0.001	55	473.5	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 4	9579.89	191261.8	bl D
550.414	181681.4	550.415	-0.001	55	830.4	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> G 5	6112.03	187793.0	bl D
550.494	181655.0	550.493	0.001	79	2778	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 5	0.00	181655.2	
550.664	181598.9	550.665	-0.001	20	415	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 3	14405.00	196003.7	
551.052	181470.9	551.053	-0.001	9	86.8	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> H 5	14405.00	195875.9	
551.900	181192.3	551.904	-0.004	34	854.4	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> G2 5	24192.89	205383.7	
551.976	181167.3	551.975	0.001	5	46.3	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 4	6112.03	187279.7	
552.313	181056.9	552.313	-0.000	56	1651	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 3	16372.19	197428.8	
552.734	180918.8	552.733	0.001	6	196.1	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2D) <sup>3</sup> P2 1	31319.7	212238.9	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level <sup>d</sup>	Upper level <sup>d</sup>	$E_{lower}$	$E_{upper}$	Comment <sup>e</sup>
552.951	180847.8	552.952	-0.001	65	1722	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2H) <sup>1</sup> H2 5	6112.03	186959.7	
553.029	180822.2	553.028	0.001	39	1069	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> Fb 3	31319.7	212142.3	
553.272	180742.9	553.273	-0.001	46	1060	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> H1 5	24192.89	204935.55	
553.348	180718.2	553.349	-0.001	44	754.9	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> F1 4	6112.03	186829.8	
553.567	180646.8	553.567	0.000	15	416.2	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2G) <sup>3</sup> D2 1	43119.5	223766.1	
553.626	180627.2	553.626	0.000	50	1125	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2D) <sup>1</sup> G1 4	9579.89	190207.3	
553.860	180551.0	553.859	0.001	56	2513	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 3	16877.3	197428.8	
553.988	180509.2	553.987	0.001	8	158.2	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> Db 4	14405.00	194914.8	
554.138	180460.5	554.137	0.001	45	1076	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4G) <sup>3</sup> I 5	9579.89	190040.7	
554.237	180428.1	554.237	0.000	40	1425	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2I) <sup>3</sup> K 6	9579.89	190008.2	
554.558	180323.8	554.559	-0.001	86	2558	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>5</sup> Fb 5	0.00	180323.5	
554.622	180302.9	554.624	-0.002	77	2498	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2I) <sup>3</sup> H 4	16372.19	196674.4	
554.934	180201.5	554.932	0.002	93	7415	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 5	14405.00	194607.2	
555.812	179916.9	555.809	0.003	33	516.7	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2D) <sup>3</sup> Gb 3	31319.7	211237.7	
556.444	179712.4	556.445	-0.001	87	2019	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hc 3	6112.03	185824.2	bl D
556.444	179712.4	556.447	-0.003	87	577.5	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2K) <sup>1</sup> I 6	0.00	179711.6	bl D
556.782	179603.5	556.782	0.000	66	1111	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2K) <sup>3</sup> I 5	6112.03	185715.7	
557.385	179409.4	557.384	0.001	77	3925	4f <sup>12</sup> 1S 0	4f <sup>11</sup> 5d(2F) <sup>1</sup> P1 1	83804.0	263213.4	
557.458	179385.7	557.459	-0.001	39	647	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> G 5	14405.00	193790.3	
558.003	179210.5	558.005	-0.002	39	791.4	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2I) <sup>1</sup> G 4	9579.89	188789.6	
558.211	179143.6	558.206	0.005	93	1587	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> F 4	24192.89	203338.2	bl D
558.211	179143.6	558.221	-0.010	93	2068	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2H) <sup>1</sup> F1 3	31319.7	210460.3	bl D
558.265	179126.3	558.265	0.000	36	696.6	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 3	16877.3	196003.7	
558.450	179067.1	558.452	-0.002	8	145.3	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 3	14405.00	193471.5	
558.689	178990.5	558.686	0.003	95	2250	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>5</sup> F 5	0.00	178991.4	
559.882	178608.9	559.885	-0.003	48	1130	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> F1 4	24192.89	202801.1	
560.089	178543.0	560.088	0.001	42	1260	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 4	14405.00	192948.4	bl D
560.089	178543.0	560.090	-0.001	42	23.96	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>5</sup> Db 4	16372.19	194914.8	bl D
560.346	178461.3	560.344	0.002	78	1166	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2K) <sup>3</sup> K 6	9579.89	188041.6	
560.356	178457.9	560.356	-0.000	57	723.2	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hb 3	6112.03	184569.9	
560.582	178386.1	560.582	0.000	8	230.2	4f <sup>12</sup> 3P 0	4f <sup>11</sup> 5d(2D) <sup>1</sup> P2 1	39791.700	218177.8	
560.622	178373.3	560.621	0.001	39	1234	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2F) <sup>3</sup> P2 2	31319.7	209693.2	
561.127	178212.6	561.126	0.001	21	161.4	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4D) <sup>5</sup> G 5	9579.89	187793.0	
561.418	178120.5	561.418	0.000	60	612.6	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 4	14405.00	192525.3	
561.477	178101.7	561.478	-0.001	22	227.2	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> S 1	16877.3	194978.6	
562.617	177740.8	562.619	-0.002	106	8190	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2L) <sup>3</sup> I 5	24192.89	201933.2	
562.654	177729.1	562.649	0.005	61	407.3	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 4	6112.03	183842.6	
562.654	177729.1	562.656	-0.002	61	156.1	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2K) <sup>3</sup> Hb 5	0.00	177728.4	
562.748	177699.6	562.747	0.001	78	1361	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 4	9579.89	187279.7	
562.775	177690.9	562.773	0.002	49	396.9	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> I 5	6112.03	183803.6	
563.568	177440.8	563.567	0.001	64	1153	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>5</sup> G 2	16372.19	193813.3	
563.760	177380.3	563.762	-0.002	84	1155	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2H) <sup>1</sup> H2 5	9579.89	186959.7	
563.799	177368.2	563.800	-0.001	10	64.89	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> Ib 5	14405.00	191772.8	
563.941	177323.4	563.940	0.001	93	2758	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2D) <sup>3</sup> D1 1	16877.3	194201.2	
564.048	177289.8	564.048	0.000	75	1685	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> F1 3	24192.89	201482.8	
564.146	177259.2	564.145	0.001	74	1341	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> H 4	14405.00	191664.4	
564.177	177249.3	564.175	0.002	10	32.35	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2D) <sup>3</sup> F1 4	9579.89	186829.8	
564.285	177215.4	564.285	0.000	16	192.1	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> I 5	14405.00	191620.3	
564.458	177161.1	564.452	0.006	146	4530	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2K) <sup>1</sup> H 5	6112.03	183275.1	bl D
564.458	177161.1	564.463	-0.005	146	2127	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 3	14405.00	191564.4	bl D
564.534	177137.3	564.537	-0.003	46	391.7	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> D 3	6112.03	183248.4	
564.658	177098.3	564.655	0.003	26	174.4	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 3	16372.19	193471.5	bl D
564.658	177098.3	564.663	-0.005	26	274.1	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(2D) <sup>1</sup> P2 1	41080.9	218177.8	bl D
564.999	176991.5	564.999	-0.000	69	2145	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 1	31319.7	208311.0	
565.291	176900.1	565.296	-0.005	52	231	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> G 3	24192.89	201091.3	
565.428	176857.1	565.429	-0.001	18	251.9	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 4	14405.00	191261.8	
565.458	176847.7	565.461	-0.003	39	1207	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2F) <sup>3</sup> G2 5	39037.9	215884.7	
565.762	176752.9	565.763	-0.001	87	3067	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 4	24192.89	200945.4	
566.327	176576.3	566.328	-0.001	62	1373	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 4	16372.19	192948.4	
566.823	176421.9	566.822	0.001	89	2062	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 2	16372.19	192794.4	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
567.140	176323.2	567.141	-0.001	32	266	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2G) <sup>3</sup> H1 5	6112.03	182435.1	
567.252	176288.6	567.251	0.001	129	5471	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>3</sup> H 6	0.00	176288.8	
567.603	176179.4	567.603	0.000	28	251.7	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> I 4	6112.03	182291.4	
567.688	176153.3	567.688	0.000	34	119.5	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 4	16372.19	192525.3	bl D
567.688	176153.3	567.692	-0.004	34	1486	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 3	14405.00	190556.8	bl D
567.743	176136.1	567.744	-0.001	102	3196	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2K) <sup>3</sup> I 5	9579.89	185715.7	
568.274	175971.5	568.275	-0.001	24	619.4	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2D) <sup>3</sup> F2 3	43119.5	219090.5	
568.756	175822.3	568.759	-0.003	16	298.5	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 3	31319.7	207141.0	
568.819	175802.8	568.821	-0.002	43	467.9	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2D) <sup>1</sup> G1 4	14405.00	190207.3	
569.152	175700.1	569.154	-0.002	37	282.6	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> H 3	6112.03	181811.4	
569.360	175635.8	569.360	-0.000	9	75.2	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> I 5	14405.00	190040.7	
569.610	175558.7	569.609	0.001	25	486.1	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> Gb 3	31319.7	206878.6	
569.661	175543.1	569.660	0.001	13	111.1	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 5	6112.03	181655.2	
570.475	175292.5	570.476	-0.001	52	814.5	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4G) <sup>3</sup> H 4	16372.19	191664.4	
570.640	175241.7	570.639	0.001	78	1650	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2D) <sup>1</sup> D1 2	16372.19	191614.2	
570.802	175192.0	570.802	0.000	14	239.6	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 3	16372.19	191564.4	
571.235	175059.2	571.235	0.000	126	5732	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2P) <sup>1</sup> F 3	24192.89	199252.2	bl D
571.235	175059.2	571.238	-0.003	126	3317	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2D) <sup>1</sup> P2 1	43119.5	218177.8	bl D
571.790	174889.4	571.789	0.001	10	69.3	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 4	16372.19	191261.8	
572.155	174777.7	572.154	0.001	116	3054	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>5</sup> I 6	0.00	174778.0	
572.288	174737.3	572.289	-0.001	8	108.3	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2D) <sup>1</sup> D1 2	16877.3	191614.2	
572.453	174686.9	572.452	0.001	15	190.2	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 3	16877.3	191564.4	
572.984	174525.1	572.984	-0.000	72	810.5	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> F 3	6112.03	180636.9	
573.374	174406.3	573.375	-0.001	109	1833	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 5	0.00	174405.8	
573.469	174377.3	573.469	0.000	29	300.7	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> P 3	14405.00	188782.2	
573.848	174262.2	573.846	0.002	24	249	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 4	9579.89	183842.6	
573.974	174223.9	573.975	-0.001	16	134.3	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4G) <sup>5</sup> I 5	9579.89	183803.6	
574.014	174211.7	574.015	-0.001	6	61.6	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> Fb 5	6112.03	180323.5	
575.255	173835.9	575.258	-0.003	15	173.8	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2D) <sup>1</sup> G1 4	16372.19	190207.3	
575.342	173809.6	575.343	-0.001	78	1752	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2G) <sup>3</sup> F1 3	16372.19	190181.6	
575.719	173695.9	575.721	-0.002	11	102.8	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2K) <sup>1</sup> H 5	9579.89	183275.1	
575.775	173678.9	575.773	0.002	8	397.2	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 3	16877.3	190556.8	
575.835	173660.8	575.836	-0.001	62	479.3	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> F 4	6112.03	179772.6	
575.851	173656.0	575.848	0.003	75	72.9	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> G2 3	14405.00	188061.9	
576.740	173388.3	576.741	-0.001	12	65.1	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> G 5	14405.00	187793.0	
576.939	173328.6	576.937	0.002	78	884	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>3</sup> I 7	0.00	173329.1	
577.021	173303.9	577.020	0.001	31	305.2	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2G) <sup>3</sup> F1 3	16877.3	190181.6	
577.148	173265.8	577.150	-0.002	36	754.9	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 1	31319.7	204584.8	
577.217	173245.0	577.218	-0.001	113	2796	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4S) <sup>3</sup> Db 3	6112.03	179356.9	
577.255	173233.6	577.247	0.008	98	214.9	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 3	24192.89	197428.8	bl D
577.255	173233.6	577.257	-0.002	98	1459	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2D) <sup>3</sup> S1 1	16877.3	190110.4	bl D
578.449	172876.2	578.438	0.011	138	940	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> F 5	6112.03	178991.4	
578.449	172876.2	578.454	-0.005	138	2186	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 4	14405.00	187279.7	
578.898	172742.2	578.897	0.001	22	165	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4G) <sup>5</sup> Db 2	16372.19	189114.6	
579.771	172481.9	579.772	-0.001	32	459	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> H 4	24192.89	196674.4	
579.889	172446.9	579.888	0.001	11	153.9	4f <sup>12</sup> 3P 0	4f <sup>11</sup> 5d(2D) <sup>3</sup> P2 1	39791.700	212238.9	
579.962	172425.0	579.963	-0.001	82	2173	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> F1 4	14405.00	186829.8	
579.985	172418.3	579.988	-0.003	38	400.5	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2I) <sup>1</sup> G 4	16372.19	188789.6	
580.547	172251.4	580.548	-0.001	109	2451	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 6	0.00	172251.1	
580.593	172237.6	580.594	-0.001	23	198.9	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4G) <sup>5</sup> Db 2	16877.3	189114.6	
581.140	172075.6	581.141	-0.001	112	2812	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 5	9579.89	181655.2	
581.176	172064.9	581.176	0.000	105	4696	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2H) <sup>1</sup> I1 6	39037.9	211102.9	
581.717	171904.9	581.717	0.000	28	244.9	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4D) <sup>5</sup> P 3	16877.3	188782.2	
582.033	171811.6	582.036	-0.003	4	57.9	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 3	24192.89	196003.7	
582.469	171682.9	582.469	0.000	4	138.1	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> H 5	24192.89	195875.9	
582.695	171616.4	582.695	0.000	44	434.5	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2K) <sup>3</sup> Hb 5	6112.03	177728.4	
583.367	171418.8	583.365	0.002	65	450.9	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hc 3	14405.00	185824.2	
583.426	171401.3	583.427	-0.001	74	853.2	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 4	6112.03	177513.1	
583.501	171379.4	583.500	0.001	75	1118	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4G) <sup>3</sup> F 2	16372.19	187751.8	
583.541	171367.5	583.546	-0.005	107	1802	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> D 3	6112.03	177478.1	
583.731	171311.9	583.735	-0.004	10	98.0	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2K) <sup>3</sup> I 5	14405.00	185715.7	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
584.163	171185.2	584.165	-0.002	17	130.5	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(2H) <sup>3</sup> G2 3	16877.3	188061.9	
584.552	171071.3	584.551	0.001	135	19080	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2I) <sup>1</sup> I 6	39037.9	210109.5	
584.813	170994.7	584.818	-0.005	78	638.7	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2H) <sup>3</sup> G2 5	0.00	170993.3	
585.112	170907.3	585.112	0.000	52	617.2	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 4	16372.19	187279.7	
585.225	170874.6	585.225	0.000	48	490.1	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4G) <sup>3</sup> F 2	16877.3	187751.8	
585.671	170744.2	585.673	-0.002	76	1352	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4G) <sup>5</sup> Fb 5	9579.89	180323.5	
585.746	170722.3	585.748	-0.002	79	2269	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> Db 4	24192.89	194914.8	
586.807	170413.8	586.805	0.002	55	707.9	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 5	24192.89	194607.2	
586.829	170407.5	586.832	-0.003	54	1627	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2H) <sup>3</sup> G1 5	39037.9	209444.5	
586.919	170381.3	586.918	0.001	35	222.2	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>5</sup> G 5	0.00	170381.4	
587.099	170329.1	587.102	-0.003	14	98.7	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4F) <sup>5</sup> H 6	0.00	170328.1	
587.342	170258.4	587.344	-0.002	41	265.1	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> G 4	6112.03	176370.1	
587.564	170194.1	587.569	-0.005	8	34.0	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4G) <sup>3</sup> F 4	9579.89	179772.6	
587.671	170163.3	587.665	0.006	34	16.7	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hb 3	14405.00	184569.9	
587.671	170163.3	587.671	0.000	34	381.7	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2H) <sup>3</sup> F1 3	31319.7	201482.8	
587.775	170133.1	587.780	-0.005	63	570.9	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2K) <sup>1</sup> I 6	9579.89	179711.6	
588.516	169918.9	588.517	-0.001	74	642.5	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 6	0.00	169918.7	
588.949	169793.9	588.949	0.000	51	397.0	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4G) <sup>3</sup> D 2	16372.19	186166.2	
589.028	169771.1	589.027	0.001	15	382.7	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> G 3	31319.7	201091.3	
589.411	169660.9	589.412	-0.001	46	350.0	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> Fc 4	6112.03	175772.6	
589.608	169604.1	589.609	-0.001	107	1861	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gc 3	6112.03	175716.1	
590.136	169452.4	590.138	-0.002	18	130.3	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hc 3	16372.19	185824.2	
590.193	169436.0	590.188	0.005	62	512.4	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 4	14405.00	183842.6	
590.283	169410.4	590.279	0.004	69	755.2	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4G) <sup>5</sup> F 5	9579.89	178991.4	
590.324	169398.4	590.324	0.000	59	371.1	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> I 5	14405.00	183803.6	
591.298	169119.6	591.298	0.000	13	347.0	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2D) <sup>3</sup> P2 1	43119.5	212238.9	
591.635	169023.2	591.636	-0.001	30	540.5	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> Fb 3	43119.5	212142.3	
591.696	169005.7	591.696	0.000	23	392.0	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 1	31319.7	200325.3	
591.795	168977.4	591.798	-0.003	41	265.9	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> Db 3	14405.00	183381.5	
591.900	168947.3	591.902	-0.002	8	83.3	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hc 3	16877.3	185824.2	
592.039	168907.8	592.042	-0.003	73	557.5	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> G2 3	6112.03	175018.9	
592.170	168870.4	592.171	-0.001	101	2486	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2K) <sup>1</sup> H 5	14405.00	183275.1	
592.270	168841.9	592.265	0.005	71	46.5	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> D 3	14405.00	183248.4	
592.270	168841.9	592.272	-0.002	71	435.9	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4F) <sup>5</sup> G2 5	0.00	168841.3	
592.573	168755.5	592.573	0.000	66	1662	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> F 4	24192.89	192948.4	
593.076	168612.5	593.077	-0.001	54	1285	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(2F) <sup>3</sup> P2 2	41080.9	209693.2	
593.402	168519.9	593.404	-0.002	17	292.6	4f <sup>12</sup> 3P 0	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 1	39791.700	208311.0	
593.661	168446.2	593.663	-0.002	6	56.6	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4G) <sup>5</sup> G 6	0.00	168445.8	
594.062	168332.5	594.063	-0.001	89	1215	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 4	24192.89	192525.3	
594.198	168294.1	594.199	-0.001	74	440.7	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 5	6112.03	174405.8	
594.538	168197.7	594.538	-0.000	80	1093	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hb 3	16372.19	184569.9	
594.713	168148.4	594.712	0.001	113	2633	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(2K) <sup>3</sup> Hb 5	9579.89	177728.4	
595.033	168057.9	595.035	-0.002	45	253.1	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> F 3	6112.03	174169.4	
595.475	167933.2	595.475	0.000	12	13.4	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 4	9579.89	177513.1	
595.475	167933.2	595.477	-0.002	12	93.2	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(2P) <sup>1</sup> F 3	31319.7	199252.2	
595.641	167886.3	595.641	0.000	37	333.8	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> I 4	14405.00	182291.4	
596.329	167692.6	596.329	0.000	28	162.9	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hb 3	16877.3	184569.9	
596.729	167580.1	596.730	-0.001	59	813	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> Ib 5	24192.89	191772.8	
597.117	167471.5	597.116	0.001	36	547.1	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> H 4	24192.89	191664.4	
597.273	167427.7	597.274	-0.001	25	422.1	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2I) <sup>3</sup> I 5	24192.89	191620.3	
597.348	167406.7	597.349	-0.001	24	178.1	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> H 3	14405.00	181811.4	
597.474	167371.2	597.473	0.001	44	489.3	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 3	24192.89	191564.4	
597.580	167341.6	597.583	-0.003	57	1292	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2H) <sup>1</sup> F1 3	43119.5	210460.3	
597.728	167300.3	597.728	0.000	6	32.17	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 5	6112.03	173412.2	
597.980	167229.8	597.978	0.002	28	588	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 1	41080.9	208311.0	
598.553	167069.5	598.555	-0.002	19	131.1	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 4	24192.89	191261.8	
598.766	167010.1	598.769	-0.003	9	39.2	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4G) <sup>3</sup> Db 3	16372.19	183381.5	
599.558	166789.4	599.556	0.002	77	575.4	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4F) <sup>3</sup> G 4	9579.89	176370.1	
599.847	166709.1	599.848	-0.001	56	547.8	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4G) <sup>3</sup> H 6	9579.89	176288.8	
600.335	166573.7	600.337	-0.002	21	104.6	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> G 3	6112.03	172685.1	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
600.550	166514.0	600.549	0.001	101	1462	$4f^{12} \ ^3F \ 4$	$4f^{11}5d(4F)^3F2 \ 4$	6112.03	172626.4	
600.584	166504.5	600.586	-0.002	58	557	$4f^{12} \ ^3F \ 2$	$4f^{11}5d(4G)^3Db \ 3$	16877.3	183381.5	
600.943	166405.2	600.940	0.003	25	175.8	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4I)^3Hc \ 5$	0.00	166405.9	
601.571	166231.4	601.569	0.002	18	181.6	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4G)^3F \ 3$	14405.00	180636.9	
601.711	166192.6	601.711	-0.000	73	715.3	$4f^{12} \ ^3H \ 5$	$4f^{11}5d(4F)^3Fc \ 4$	9579.89	175772.6	
602.009	166110.5	602.014	-0.005	6	122.3	$4f^{12} \ ^1D \ 2$	$4f^{11}5d(2I)^3G \ 3$	31319.7	197428.8	
602.708	165917.7	602.705	0.002	14	94.9	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4G)^5Fb \ 5$	14405.00	180323.5	
602.966	165846.8	602.962	0.004	34	407.4	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(4G)^3I \ 5$	24192.89	190040.7	
603.498	165700.6	603.495	0.003	47	237.1	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4F)^3G \ 5$	0.00	165701.5	
603.654	165657.7	603.656	-0.002	28	254.2	$4f^{12} \ ^3F \ 3$	$4f^{11}5d(4G)^5D \ 2$	16372.19	182029.4	
604.453	165438.9	604.452	0.001	60	637.7	$4f^{12} \ ^3F \ 3$	$4f^{11}5d(4G)^5H \ 3$	16372.19	181811.4	
604.654	165383.9	604.653	0.001	24	155.3	$4f^{12} \ ^3F \ 4$	$4f^{11}5d(4G)^5G \ 4$	6112.03	171496.1	
604.713	165367.6	604.713	-0.000	52	483.6	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4G)^3F \ 4$	14405.00	179772.6	
605.335	165197.8	605.334	0.001	64	390.4	$4f^{12} \ ^3H \ 5$	$4f^{11}5d(4G)^5I \ 6$	9579.89	174778.0	
605.361	165190.8	605.358	0.003	45	909.0	$4f^{12} \ ^3P \ 2$	$4f^{11}5d(4D)^3D \ 1$	43119.5	208311.0	
605.502	165152.3	605.502	0.000	16	149.9	$4f^{12} \ ^3F \ 2$	$4f^{11}5d(4G)^5D \ 2$	16877.3	182029.4	
606.241	164950.9	606.237	0.004	41	450.2	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4S)^3Db \ 3$	14405.00	179356.9	bl D
606.241	164950.9	606.235	0.006	41	17.4	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4I)^3Ic \ 6$	0.00	164952.6	bl D
606.304	164933.8	606.303	0.001	34	272	$4f^{12} \ ^3F \ 2$	$4f^{11}5d(4G)^5H \ 3$	16877.3	181811.4	
606.491	164882.8	606.497	-0.006	16	76.1	$4f^{12} \ ^3F \ 4$	$4f^{11}5d(2H)^3G2 \ 5$	6112.03	170993.3	
606.677	164832.4	606.682	-0.005	28	21.7	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4F)^5H \ 7$	0.00	164831.0	
606.822	164793.1	606.822	0.000	6	76.8	$4f^{12} \ ^3P \ 0$	$4f^{11}5d(4D)^5F \ 1$	39791.700	204584.8	
607.231	164681.9	607.223	0.008	41	288.7	$4f^{12} \ ^1D \ 2$	$4f^{11}5d(4D)^3D \ 3$	31319.7	196003.7	
607.551	164595.2	607.546	0.005	12	57.2	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(2I)^1G \ 4$	24192.89	188789.6	
608.778	164263.4	608.774	0.005	5	228.8	$4f^{12} \ ^3F \ 3$	$4f^{11}5d(4G)^3F \ 3$	16372.19	180636.9	
608.897	164231.5	608.893	0.004	6	202.3	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4I)^3Kb \ 6$	0.00	164232.46	
610.383	163831.5	610.380	0.003	15	1063	$4f^{12} \ ^3H \ 5$	$4f^{11}5d(2K)^3H \ 5$	9579.89	173412.2	
610.657	163758.1	610.651	0.006	3	247.5	$4f^{12} \ ^3F \ 2$	$4f^{11}5d(4G)^3F \ 3$	16877.3	180636.9	
611.570	163513.7	611.569	0.001	11	314.7	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4I)^5Ib \ 5$	0.00	163513.8	
611.609	163503.1	611.606	0.003	7	379.6	$4f^{12} \ ^3P \ 1$	$4f^{11}5d(4D)^5F \ 1$	41080.9	204584.8	
613.097	163106.4	613.090	0.007	16	666.3	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4F)^3H \ 4$	14405.00	177513.1	
613.222	163073.0	613.222	0.000	7	397.3	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4F)^3D \ 3$	14405.00	177478.1	
613.328	163044.8	613.322	0.006	6	185.7	$4f^{12} \ ^3H \ 5$	$4f^{11}5d(4F)^3F2 \ 4$	9579.89	172626.4	
613.722	162940.2	613.718	0.004	16	656.8	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4I)^3Hb \ 5$	0.00	162941.4	
614.378	162766.3	614.376	0.002	18	1237	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(2H)^1H2 \ 5$	24192.89	186959.7	
615.414	162492.2	615.409	0.005	1	222.4	$4f^{12} \ ^1D \ 2$	$4f^{11}5d(4D)^5G \ 2$	31319.7	193813.3	
615.605	162441.8	615.602	0.003	2	165.6	$4f^{12} \ ^3F \ 4$	$4f^{11}5d(4S)^3D \ 3$	6112.03	168554.6	
617.411	161966.6	617.409	0.002	37	2258	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4I)^3Ib \ 6$	0.00	161967.2	bl D
617.411	161966.6	617.417	-0.006	37	172.2	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4F)^3G \ 4$	14405.00	176370.1	bl D
617.605	161915.7	617.603	0.002	5	78.6	$4f^{12} \ ^3H \ 5$	$4f^{11}5d(4G)^5G \ 4$	9579.89	171496.1	
617.847	161852.4	617.846	0.001	15	523.2	$4f^{12} \ ^3F \ 4$	$4f^{11}5d(4S)^5Db \ 4$	6112.03	167964.8	
618.695	161630.6	618.692	0.003	1	149.4	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(4G)^5Hc \ 3$	24192.89	185824.2	
619.105	161523.6	619.108	-0.003	15	472.6	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(2K)^3I \ 5$	24192.89	185715.7	
619.296	161473.6	619.292	0.004	2	143.9	$4f^{12} \ ^1D \ 2$	$4f^{11}5d(4D)^5D \ 2$	31319.7	192794.4	
619.327	161465.6	619.328	-0.001	3	320.8	$4f^{12} \ ^3P \ 2$	$4f^{11}5d(4D)^5F \ 1$	43119.5	204584.8	
619.706	161366.8	619.703	0.003	15	746.8	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4F)^3Fc \ 4$	14405.00	175772.6	
621.260	160963.2	621.257	0.003	29	1264	$4f^{12} \ ^3F \ 4$	$4f^{11}5d(4F)^5Gb \ 4$	6112.03	167076.1	
621.983	160776.2	621.981	0.002	32	1095	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4I)^3K \ 6$	0.00	160776.5	
622.095	160747.2	622.091	0.004	5	101.2	$4f^{12} \ ^3H \ 5$	$4f^{11}5d(4F)^5H \ 6$	9579.89	170328.1	
622.667	160599.5	622.662	0.005	4	85.8	$4f^{12} \ ^3F \ 2$	$4f^{11}5d(4F)^3D \ 3$	16877.3	177478.1	
623.528	160377.6	623.531	-0.003	16	32.1	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(4G)^5Hb \ 3$	24192.89	184569.9	
623.856	160293.5	623.852	0.004	12	374.4	$4f^{12} \ ^1D \ 2$	$4f^{11}5d(2D)^1D1 \ 2$	31319.7	191614.2	
625.000	160000.0	624.997	0.003	15	412.5	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4F)^3H \ 5$	14405.00	174405.8	
625.000	160000.0	625.008	-0.008	15	295.9	$4f^{12} \ ^3F \ 3$	$4f^{11}5d(4F)^3G \ 4$	16372.19	176370.1	
625.491	159874.4	625.488	0.003	22	840.8	$4f^{12} \ ^3F \ 4$	$4f^{11}5d(4S)^5D \ 4$	6112.03	165987.1	
626.366	159651.0	626.371	-0.005	25	42.1	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(2D)^3G1 \ 4$	24192.89	183842.6	
626.609	159589.2	626.608	0.001	12	207.0	$4f^{12} \ ^3F \ 4$	$4f^{11}5d(4F)^3G \ 5$	6112.03	165701.5	
626.653	159577.9	626.652	0.001	5	238.0	$4f^{12} \ ^3P \ 2$	$4f^{11}5d(4D)^5F \ 2$	43119.5	202697.8	
627.352	159400.1	627.351	0.001	28	1122	$4f^{12} \ ^3F \ 3$	$4f^{11}5d(4F)^3Fc \ 4$	16372.19	175772.6	
627.578	159342.7	627.573	0.005	7	299.2	$4f^{12} \ ^3F \ 3$	$4f^{11}5d(4I)^3Gc \ 3$	16372.19	175716.1	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
627.612	159334.2	627.610	0.002	6	136.1	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>5</sup> D 4	6112.03	165446.6	
627.899	159261.2	627.899	0.001	18	495.2	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4F) <sup>5</sup> G2 5	9579.89	168841.3	
628.597	159084.3	628.594	0.003	25	403.0	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(2H) <sup>3</sup> I2 7	0.00	159085.2	bl D
628.597	159084.3	628.606	-0.009	25	407.3	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2K) <sup>1</sup> H 5	24192.89	183275.1	bl D
629.304	158905.7	629.307	-0.003	14	163.0	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4F) <sup>3</sup> D 2	16372.19	175277.2	
631.313	158400.1	631.313	-0.000	9	164.0	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4F) <sup>3</sup> D 2	16877.3	175277.2	
631.353	158389.9	631.351	0.002	16	254.4	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 4	6112.03	164502.40	
631.461	158362.9	631.459	0.002	6	140.3	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2H) <sup>3</sup> F1 3	43119.5	201482.8	
631.793	158279.7	631.791	0.002	8	135.1	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> G 3	14405.00	172685.1	
631.878	158258.3	631.879	-0.001	16	53.3	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4G) <sup>5</sup> F 3	31319.7	189577.8	
632.028	158220.9	632.026	0.002	13	180.5	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> F2 4	14405.00	172626.4	
632.344	158141.7	632.345	-0.001	11	227.7	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4F) <sup>3</sup> G2 3	16877.3	175018.9	
633.595	157829.7	633.595	0.000	8	102.1	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 3	6112.03	163941.6	
633.725	157797.1	633.725	0.000	29	835.6	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4F) <sup>3</sup> F 3	16372.19	174169.4	
634.937	157496.1	634.936	0.001	10	264.0	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4F) <sup>5</sup> Gb 4	9579.89	167076.1	
635.313	157402.6	635.317	-0.004	35	1076	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 5	6112.03	163513.8	
635.759	157292.4	635.760	-0.001	8	219.6	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4F) <sup>3</sup> F 3	16877.3	174169.4	
636.577	157090.2	636.573	0.004	11	199.8	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> G 4	14405.00	171496.1	
637.646	156826.9	637.636	0.010	39	109.4	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	6112.03	162941.4	bl D
637.646	156826.9	637.649	-0.003	39	1217	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hc 5	9579.89	166405.9	bl D
638.616	156588.5	638.617	-0.001	6	64.7	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(2H) <sup>3</sup> G2 5	14405.00	170993.3	
640.266	156185.2	640.267	-0.001	7	65.1	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 3	6112.03	162296.9	
640.481	156132.6	640.481	0.000	20	771.7	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2P) <sup>1</sup> F 3	43119.5	199252.2	
640.481	156132.6	640.489	-0.008	20	59.0	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> Fb 5	24192.89	180323.5	
640.526	156121.6	640.526	-0.000	13	148.5	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4F) <sup>3</sup> G 5	9579.89	165701.5	
641.119	155977.4	641.119	0.000	39	312.8	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 7	0.00	155977.3	
641.119	155977.4	641.123	-0.004	39	354.2	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> G 5	14405.00	170381.4	
641.574	155866.7	641.574	0.000	5	155.7	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4F) <sup>5</sup> D 4	9579.89	165446.6	
642.794	155570.9	642.800	-0.006	27	299.6	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2I) <sup>3</sup> G 5	39037.9	194607.2	
643.614	155372.6	643.614	0.000	29	598.3	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ic 6	9579.89	164952.6	
644.146	155244.3	644.147	-0.001	46	254.1	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 4	6112.03	161356.2	
644.383	155187.2	644.384	-0.001	12	557.3	4f <sup>12</sup> 3P 0	4f <sup>11</sup> 5d(4D) <sup>3</sup> S 1	39791.700	194978.6	
644.642	155124.8	644.646	-0.004	8	128.4	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4G) <sup>5</sup> G 4	16372.19	171496.1	
646.035	154790.4	646.038	-0.003	47	800.2	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 6	0.00	154789.62	
646.691	154633.3	646.692	-0.001	20	690.6	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2L) <sup>3</sup> I 6	39037.9	193671.1	
647.229	154504.8	647.230	-0.001	17	308.5	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hc 3	31319.7	185824.2	
647.628	154409.5	647.629	-0.001	2	185.1	4f <sup>12</sup> 3P 0	4f <sup>11</sup> 5d(2D) <sup>3</sup> D1 1	39791.700	194201.2	
649.337	154003.2	649.339	-0.002	77	1791	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 6	0.00	154002.75	
649.624	153935.1	649.629	-0.005	10	15.2	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 5	9579.89	163513.8	
649.785	153897.1	649.782	0.003	11	145.4	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(4D) <sup>3</sup> S 1	41080.9	194978.6	
650.227	153792.5	650.227	-0.000	12	120.5	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 5	6112.03	159904.4	
651.211	153560.2	651.212	-0.001	26	385.6	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 4	14405.00	167964.8	
651.318	153534.8	651.315	0.003	14	37.6	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2K) <sup>3</sup> Hb 5	24192.89	177728.4	
652.054	153361.5	652.054	0.000	51	1022	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	9579.89	162941.4	
652.232	153319.8	652.230	0.002	9	156.5	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 4	24192.89	177513.1	
653.081	153120.4	653.081	0.000	3	69.6	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(2D) <sup>3</sup> D1 1	41080.9	194201.2	
653.604	152997.9	653.605	-0.001	67	663.5	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 7	0.00	152997.54	
654.086	152885.1	654.090	-0.004	9	74.6	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(4D) <sup>3</sup> D 3	43119.5	196003.7	
654.712	152738.9	654.713	-0.001	52	523.9	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 5	0.00	152738.66	
654.730	152734.8	654.729	0.001	26	226.5	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2I) <sup>3</sup> Ib 5	39037.9	191772.8	
654.730	152734.8	654.740	-0.010	26	314.4	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(4D) <sup>5</sup> G 2	41080.9	193813.3	
656.217	152388.5	656.223	-0.006	30	408.8	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ib 6	9579.89	161967.2	
657.132	152176.3	657.129	0.003	12	72.7	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> G 4	24192.89	176370.1	
657.624	152062.6	657.627	-0.003	9	71.1	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4G) <sup>3</sup> Db 3	31319.7	183381.5	
658.198	151929.9	658.203	-0.005	21	477.9	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4G) <sup>3</sup> D 3	31319.7	183248.4	
658.860	151777.3	658.864	-0.004	9	95.4	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 4	9579.89	161356.2	
659.133	151714.4	659.137	-0.004	35	512.1	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(4D) <sup>5</sup> D 2	41080.9	192794.4	
659.234	151691.2	659.234	-0.000	11	50.5	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4F) <sup>5</sup> P 3	14405.00	166096.1	
659.290	151678.2	659.294	-0.004	5	47.1	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4S) <sup>3</sup> D 3	16877.3	168554.6	
659.703	151583.3	659.708	-0.005	33	24.0	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4S) <sup>5</sup> D 4	14405.00	165987.1	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
659.959	151524.5	659.965	-0.006	30	44.0	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gc 3	24192.89	175716.1	
660.264	151454.5	660.264	0.000	25	660.6	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2K) <sup>1</sup> K 7	39037.9	190492.5	
660.952	151296.9	660.954	-0.002	13	89.2	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> G 5	14405.00	165701.5	
661.387	151197.4	661.390	-0.004	8	73.9	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> K 6	9579.89	160776.5	
662.067	151042.1	662.069	-0.002	9	114.9	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4F) <sup>5</sup> D 4	14405.00	165446.6	
662.156	151021.8	662.158	-0.002	85	1490	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 6	0.00	151021.29	
663.019	150825.3	663.016	0.003	4	51.8	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4F) <sup>3</sup> G2 3	24192.89	175018.9	
665.229	150324.2	665.228	0.002	10	99.2	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 5	9579.89	159904.4	
665.256	150318.1	665.253	0.003	18	158.1	4f <sup>12</sup> 3P 0	4f <sup>11</sup> 5d(2D) <sup>3</sup> S1 1	39791.700	190110.4	
666.171	150111.5	666.173	-0.002	73	1107	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>3</sup> I 7	0.00	150111.23	
666.235	150097.2	666.234	0.001	49	472.8	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 4	14405.00	164502.40	
666.870	149954.3	666.871	-0.001	55	414.4	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 5	0.00	149953.96	
667.892	149724.8	667.896	-0.004	17	159.7	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4F) <sup>5</sup> P 3	16372.19	166096.1	
668.724	149538.5	668.733	-0.009	20	115.6	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 3	14405.00	163941.6	
670.152	149219.9	670.155	-0.003	6	60.7	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 5	24192.89	173412.2	
670.568	149127.2	670.570	-0.002	14	116.7	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 4	9579.89	158706.85	
670.663	149106.2	670.651	0.012	14	49.0	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 5	14405.00	163513.8	
670.806	149074.5	670.806	0.000	28	320	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4F) <sup>5</sup> D 4	16372.19	165446.6	
671.007	149029.8	671.008	-0.001	7	182.9	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(2D) <sup>3</sup> S1 1	41080.9	190110.4	
673.236	148536.3	673.236	0.000	30	334.4	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	14405.00	162941.4	
673.421	148495.4	673.425	-0.004	7	257.8	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2D) <sup>1</sup> D1 2	43119.5	191614.2	
673.518	148474.1	673.523	-0.005	7	57.1	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 6	9579.89	158053.0	
673.649	148445.2	673.651	-0.002	20	617.9	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 3	43119.5	191564.4	
675.080	148130.6	675.082	-0.002	22	161.6	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 4	16372.19	164502.40	
675.505	148037.4	675.506	-0.001	37	426.7	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 3	31319.7	179356.9	
676.165	147892.9	676.170	-0.005	15	106.7	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 3	14405.00	162296.9	
676.405	147840.5	676.405	-0.000	9	41.87	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 5	9579.89	157420.26	
678.085	147474.1	678.087	-0.002	24	158.4	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 4	9579.89	157053.57	
678.866	147304.4	678.872	-0.006	4	59.80	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4G) <sup>5</sup> G 4	24192.89	171496.1	
679.971	147065.1	679.975	-0.004	52	759.1	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 3	16877.3	163941.6	
681.218	146795.8	681.221	-0.003	72	726.5	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 7	0.00	146795.2	
681.768	146677.4	681.766	0.002	10	111.9	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2K) <sup>3</sup> I 5	39037.9	185715.7	
681.798	146671.0	681.799	-0.001	6	74.8	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(4G) <sup>3</sup> F 2	41080.9	187751.8	
682.001	146627.3	682.004	-0.003	70	831.3	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 5	6112.03	152738.66	
682.788	146458.5	682.788	0.000	14	346.9	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(4G) <sup>5</sup> F 3	43119.5	189577.8	
684.184	146159.6	684.189	-0.005	10	155	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4F) <sup>3</sup> D 3	31319.7	177478.1	
685.100	145964.1	685.104	-0.004	65	600.3	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> I 6	9579.89	155543.1	
686.703	145623.4	686.709	-0.006	17	113.1	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>5</sup> Gc 4	9579.89	155202.0	
687.290	145499.1	687.288	0.002	32	243.2	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 5	14405.00	159904.4	
687.356	145485.0	687.357	-0.001	53	321.8	4f <sup>12</sup> 3H 6	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 6	0.00	145484.7	
687.663	145420.1	687.665	-0.002	38	442.5	4f <sup>12</sup> 3F 2	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 3	16877.3	162296.9	
688.764	145187.6	688.765	-0.001	57	481.3	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 5	9579.89	154767.34	
689.249	145085.4	689.250	-0.001	13	245.2	4f <sup>12</sup> 3P 1	4f <sup>11</sup> 5d(4G) <sup>3</sup> D 2	41080.9	186166.2	
689.730	144984.2	689.731	-0.001	37	292.8	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 4	16372.19	161356.2	
689.930	144942.3	689.929	0.001	12	135.1	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(2H) <sup>3</sup> G2 3	43119.5	188061.9	
692.412	144422.7	692.411	0.001	42	183.9	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 6	9579.89	154002.75	
692.541	144395.9	692.538	0.003	14	153.2	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gc 3	31319.7	175716.1	
692.991	144302.0	692.992	-0.001	40	304	4f <sup>12</sup> 3H 4	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 4	14405.00	158706.85	
693.307	144236.4	693.302	0.005	9	137.2	4f <sup>12</sup> 1I 6	4f <sup>11</sup> 5d(2K) <sup>1</sup> H 5	39037.9	183275.1	
694.657	143955.9	694.650	0.008	26	27.8	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4F) <sup>3</sup> D 2	31319.7	175277.2	bl D
694.657	143955.9	694.658	-0.001	26	147.1	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 5	9579.89	153535.7	bl D
695.206	143842.2	695.208	-0.002	82	802.8	4f <sup>12</sup> 3F 4	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 5	6112.03	149953.96	
695.545	143772.1	695.546	-0.001	5	57.6	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 4	24192.89	167964.8	
695.898	143699.1	695.898	0.000	9	57.1	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4F) <sup>3</sup> G2 3	31319.7	175018.9	
698.526	143158.7	698.525	0.001	16	56.6	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 5	9579.89	152738.66	
700.038	142849.4	700.037	0.001	10	91.4	4f <sup>12</sup> 1D 2	4f <sup>11</sup> 5d(4F) <sup>3</sup> F 3	31319.7	174169.6	
700.748	142704.7	700.748	0.000	2	55.2	4f <sup>12</sup> 3P 2	4f <sup>11</sup> 5d(4G) <sup>5</sup> Hc 3	43119.5	185824.2	
702.572	142334.1	702.570	0.002	38	261.6	4f <sup>12</sup> 3F 3	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 4	16372.19	158706.85	
705.252	141793.4	705.247	0.005	1	40.3	4f <sup>12</sup> 1G 4	4f <sup>11</sup> 5d(4S) <sup>5</sup> D 4	24192.89	165987.1	
707.010	141440.7	707.007	0.003	2	30.4	4f <sup>12</sup> 3H 5	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 6	9579.89	151021.29	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
709.481	140948.1	709.479	0.002	10	89.1	$4f^{12} \ ^3P \ 1$	$4f^{11}5d(4G)^5D \ 2$	41080.9	182029.4	
710.834	140679.9	710.826	0.008	34	214.1	$4f^{12} \ ^3F \ 3$	$4f^{11}5d(4I)^5I \ 4$	16372.19	157053.57	
710.869	140672.9	710.865	0.004	16	173.7	$4f^{12} \ ^1I \ 6$	$4f^{11}5d(2K)^1I \ 6$	39037.9	179711.6	
712.388	140372.9	712.382	0.006	11	66.5	$4f^{12} \ ^3H \ 5$	$4f^{11}5d(4I)^3G \ 5$	9579.89	149953.96	
712.959	140260.5	712.951	0.008	9	44.4	$4f^{12} \ ^3P \ 2$	$4f^{11}5d(4G)^3Db \ 3$	43119.5	183381.5	
713.633	140128.0	713.629	0.004	5	98.4	$4f^{12} \ ^3P \ 2$	$4f^{11}5d(4G)^3D \ 3$	43119.5	183248.4	
717.769	139320.6	717.767	0.002	6	42.1	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(4I)^5Ib \ 5$	24192.89	163513.8	
720.303	138830.5	720.306	-0.003	11	240.3	$4f^{12} \ ^3F \ 3$	$4f^{11}5d(4I)^5Gc \ 4$	16372.19	155202.0	
720.728	138748.7	720.729	-0.001	2	18.0	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(4I)^3Hb \ 5$	24192.89	162941.4	
721.784	138545.7	721.787	-0.003	4	50.9	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4I)^5Gb \ 4$	14405.00	152950.0	
722.890	138333.7	722.890	0.000	12	126.9	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4I)^3Gb \ 5$	14405.00	152738.66	
723.022	138308.3	723.026	-0.004	11	87.6	$4f^{12} \ ^3F \ 4$	$4f^{11}5d(4I)^5G \ 5$	6112.03	144419.7	
727.183	137516.9	727.181	0.002	9	131.2	$4f^{12} \ ^3P \ 2$	$4f^{11}5d(4G)^3F \ 3$	43119.5	180636.9	
728.677	137235.1	728.678	-0.001	8	88.4	$4f^{12} \ ^1D \ 2$	$4f^{11}5d(4S)^3D \ 3$	31319.7	168554.6	
731.985	136614.8	731.985	0.000	14	23.1	$4f^{12} \ ^3H \ 6$	$4f^{11}5d(4I)^5G \ 6$	0.00	136614.9	
735.810	135904.6	735.809	0.001	15	40.4	$4f^{12} \ ^3H \ 5$	$4f^{11}5d(4I)^5H \ 6$	9579.89	145484.7	
736.857	135711.6	736.857	-0.000	22	28.3	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(4I)^5I \ 5$	24192.89	159904.4	
737.743	135548.5	737.741	0.002	32	177.3	$4f^{12} \ ^3H \ 4$	$4f^{11}5d(4I)^3G \ 5$	14405.00	149953.96	
740.419	135058.7	740.421	-0.002	1	13.5	$4f^{11}5d(4I)^5Gb \ 4$	$4f^{11}6p(4F)^5Gb \ 4$	152950.0	288008.29	
741.622	134839.5	741.621	0.001	21	38.6	$4f^{12} \ ^3H \ 5$	$4f^{11}5d(4I)^5G \ 5$	9579.89	144419.7	
741.971	134776.1	741.970	0.001	23	52.9	$4f^{12} \ ^1D \ 2$	$4f^{11}5d(4F)^5P \ 3$	31319.7	166096.1	
743.421	134513.3	743.417	0.004	10	31.9	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(4I)^5H \ 4$	24192.89	158706.85	
744.068	134396.2	744.067	0.001	4	212.7	$4f^{11}5d(4I)^5H \ 7$	$4f^{11}6p(2H)^3H2 \ 6$	137790.2	272186.73	
744.193	134373.7	744.193	0.000	7	102.1	$4f^{12} \ ^1S \ 0$	$4f^{11}5d(2D)^1P2 \ 1$	83804.0	218177.8	
744.275	134358.9	744.277	-0.002	6	53.6	$4f^{12} \ ^3P \ 2$	$4f^{11}5d(4F)^3D \ 3$	43119.5	177478.1	
745.182	134195.4	745.177	0.005	17	39.7	$4f^{12} \ ^3P \ 1$	$4f^{11}5d(4F)^3D \ 2$	41080.9	175277.2	
750.517	133241.5	750.520	-0.003	8	15.8	$4f^{11}5d(4I)^3H \ 5$	$4f^{11}6p(4F)^5Gb \ 4$	154767.34	288008.29	
758.153	131899.5	758.154	-0.001	23	60.0	$4f^{12} \ ^3P \ 2$	$4f^{11}5d(4F)^3G2 \ 3$	43119.5	175018.9	
765.815	130579.8	765.821	-0.006	37	14.7	$4f^{11}5d(4I)^5G \ 3$	$4f^{11}6p(4F)^5Gb \ 4$	157429.4	288008.29	
773.343	129308.7	773.344	-0.001	20	25.5	$4f^{11}5d(4I)^5G \ 5$	$4f^{11}6p(4I)^5I \ 6$	144419.7	273728.28	
776.162	128839.0	776.161	0.001	5	122.6	$4f^{11}5d(4I)^5I \ 4$	$4f^{11}6p(4F)^5F \ 4$	157053.57	285892.87	
777.578	128604.4	777.577	0.001	18	216.1	$4f^{11}5d(4I)^5G \ 3$	$4f^{11}6p(4F)^5D \ 3$	157429.4	286033.97	
777.937	128545.1	777.933	0.004	30	32.84	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(4I)^3Gb \ 5$	24192.89	152738.66	
778.604	128434.9	778.605	-0.001	7	14.04	$4f^{12} \ ^1S \ 0$	$4f^{11}5d(2D)^3P2 \ 1$	83804.0	212238.9	
782.794	127747.6	782.795	-0.001	8	160.9	$4f^{11}5d(4I)^5I \ 8$	$4f^{11}6p(4I)^5K \ 8$	140784.8	268532.23	
782.899	127730.4	782.892	0.007	5	141.7	$4f^{11}5d(4I)^5H \ 6$	$4f^{11}6p(4I)^5Kb \ 7$	145484.7	273216.25	
785.929	127237.9	785.928	0.001	9	430.3	$4f^{11}5d(4I)^3Gb \ 5$	$4f^{11}6p(4F)^3F \ 4$	152738.66	279976.85	
791.434	126352.9	791.437	-0.003	22	196.7	$4f^{11}5d(4I)^5L \ 7$	$4f^{11}6p(4F)^5G \ 6$	152997.54	279350.06	
791.539	126336.1	791.543	-0.004	22	152.9	$4f^{11}5d(4I)^5Ib \ 8$	$4f^{11}6p(4I)^5Kb \ 7$	146880.7	273216.25	
792.847	126127.7	792.836	0.011	5	152.1	$4f^{11}5d(4I)^5I \ 5$	$4f^{11}6p(4F)^5G \ 5$	159904.4	286033.82	
793.730	125987.4	793.723	0.007	8	113.4	$4f^{11}5d(4I)^5I \ 5$	$4f^{11}6p(4F)^5F \ 4$	159904.4	285892.87	
795.163	125760.4	795.159	0.004	33	21.09	$4f^{12} \ ^1G \ 4$	$4f^{11}5d(4I)^3G \ 5$	24192.89	149953.96	
795.478	125710.6	795.473	0.005	7	86.94	$4f^{11}5d(4I)^3G \ 3$	$4f^{11}6p(4F)^5Gb \ 4$	162296.9	288008.29	
795.926	125639.9	795.928	-0.002	8	352.7	$4f^{11}5d(4I)^5G \ 4$	$4f^{11}6p(4F)^5F \ 5$	149901.5	275541.01	
796.260	125587.2	796.260	-0.000	6	197.5	$4f^{11}5d(4I)^3G \ 5$	$4f^{11}6p(4F)^5F \ 5$	149953.96	275541.01	
798.361	125256.5	798.357	0.005	2	106.7	$4f^{11}5d(4I)^3K \ 6$	$4f^{11}6p(4F)^5G \ 5$	160776.5	286033.82	
798.661	125209.6	798.661	-0.000	3	12.97	$4f^{11}5d(4I)^3H \ 5$	$4f^{11}6p(4F)^3F \ 4$	154767.34	279976.85	
798.768	125192.8	798.773	-0.005	4	98.63	$4f^{11}5d(4I)^3H \ 5$	$4f^{11}6p(4F)^3G \ 5$	154767.34	279959.30	
798.912	125170.2	798.915	-0.003	2	55.24	$4f^{11}5d(4I)^5L \ 6$	$4f^{11}6p(4F)^3G \ 5$	154789.62	279959.30	
799.579	125065.8	799.572	0.007	11	67.16	$4f^{11}5d(4I)^3Hb \ 5$	$4f^{11}6p(4F)^5Gb \ 4$	162941.4	288008.29	
800.550	124914.2	800.549	0.001	35	1349	$4f^{11}5d(4I)^5G \ 5$	$4f^{11}6p(4I)^3I \ 6$	144419.7	269333.95	
800.877	124863.1	800.885	-0.008	12	96.85	$4f^{11}5d(4I)^3Hb \ 6$	$4f^{11}6p(4F)^5Fb \ 5$	154002.75	278864.67	
801.547	124758.8	801.556	-0.009	21	92.90	$4f^{11}5d(4I)^5Gc \ 4$	$4f^{11}6p(4F)^3G \ 5$	155202.0	279959.30	
802.074	124676.8	802.069	0.005	167	383.5	$4f^{11}5d(4F)^5G \ 4$	$4f^{11}6p(4F)^5G \ 5$	161356.2	286033.82	
802.074	124676.8	802.068	0.006	167	130.4	$4f^{11}5d(4F)^5G \ 4$	$4f^{11}6p(4F)^5D \ 3$	161356.2	286033.97	
802.818	124561.2	802.823	-0.005	12	69.66	$4f^{11}5d(4I)^5L \ 6$	$4f^{11}6p(4F)^5G \ 6$	154789.62	279350.06	
802.980	124536.2	802.976	0.004	7	313.6	$4f^{11}5d(4F)^5G \ 4$	$4f^{11}6p(4F)^5F \ 4$	161356.2	285892.87	
803.482	124458.3	803.478	0.004	5	213.7	$4f^{11}5d(4I)^5L \ 8$	$4f^{11}6p(4I)^5Kb \ 7$	148757.3	273216.25	
803.568	124444.9	803.570	-0.002	20	485.1	$4f^{11}5d(4I)^5G \ 5$	$4f^{11}6p(4I)^5H \ 5$	144419.7	268864.41	
803.885	124395.9	803.876	0.009	31	15.45	$4f^{11}5d(4I)^5G \ 4$	$4f^{11}6p(4F)^5G \ 4$	149901.5	274298.83	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
804.905	124238.3	804.902	0.003	8	21.52	$4f^{11}5d(4I)^5I\ 5$	$4f^{11}6p(4G)^3G\ 5$	159904.4	284143.17	
805.572	124135.4	805.573	-0.001	73	3171	$4f^{11}5d(4I)^5G\ 6$	$4f^{11}6p(4I)^3I\ 7$	136614.9	260750.18	
805.818	124097.5	805.819	-0.001	18	88.99	$4f^{11}5d(4I)^3H\ 5$	$4f^{11}6p(4F)^5Fb\ 5$	154767.34	278864.67	
805.965	124074.9	805.964	0.001	11	247.8	$4f^{11}5d(4I)^5L\ 6$	$4f^{11}6p(4F)^5Fb\ 5$	154789.62	278864.67	
806.015	124067.2	806.018	-0.003	16	255.8	$4f^{11}5d(4I)^3Gb\ 3$	$4f^{11}6p(4F)^5Gb\ 4$	163941.6	288008.29	
806.015	124067.2	806.019	-0.004	16	370.2	$4f^{11}5d(4I)^3Ib\ 6$	$4f^{11}6p(4F)^5G\ 5$	161967.2	286033.82	
807.139	123894.3	807.141	-0.002	37	879.7	$4f^{11}5d(4I)^5G\ 6$	$4f^{11}6p(4I)^3H\ 6$	136614.9	260509.01	
807.432	123849.4	807.433	-0.001	40	691.8	$4f^{11}5d(4I)^5H\ 6$	$4f^{11}6p(4I)^3I\ 6$	145484.7	269333.95	
807.714	123806.3	807.709	0.005	23	329.3	$4f^{11}5d(4I)^3I\ 6$	$4f^{11}6p(4F)^5G\ 6$	155543.1	279350.06	
807.922	123774.4	807.922	0.000	41	1115	$4f^{11}5d(4I)^3G\ 5$	$4f^{11}6p(4I)^5I\ 6$	149953.96	273728.28	
808.090	123748.7	808.089	0.001	65	3019	$4f^{11}5d(4I)^5H\ 6$	$4f^{11}6p(4I)^5I\ 7$	145484.7	269233.49	
808.268	123721.3	808.265	0.003	17	513.1	$4f^{11}5d(4I)^5G\ 4$	$4f^{11}6p(4I)^5Ib\ 5$	149901.5	273623.27	
808.649	123663.0	808.652	-0.003	29	546.4	$4f^{11}5d(4I)^5Gc\ 4$	$4f^{11}6p(4F)^5Fb\ 5$	155202.0	278864.67	
808.947	123617.5	808.950	-0.003	9	187.8	$4f^{11}5d(4I)^3I\ 7$	$4f^{11}6p(4I)^5I\ 6$	150111.23	273728.28	
810.509	123379.2	810.506	0.003	11	179.9	$4f^{11}5d(4I)^5H\ 6$	$4f^{11}6p(4I)^5H\ 5$	145484.7	268864.41	
810.509	123379.2	810.512	-0.003	11	68.36	$4f^{11}5d(4I)^5G\ 5$	$4f^{11}6p(4F)^5Db\ 4$	144419.7	267798.48	
810.585	123367.7	810.592	-0.007	22	177.3	$4f^{11}5d(4I)^3K\ 6$	$4f^{11}6p(4G)^3G\ 5$	160776.5	284143.17	
811.231	123269.5	811.228	0.003	9	112.6	$4f^{11}5d(4I)^3Gb\ 5$	$4f^{11}6p(4I)^5I\ 4$	152738.66	267008.50	
811.966	123157.9	811.964	0.002	16	281.7	$4f^{11}5d(4I)^5G\ 5$	$4f^{11}6p(4I)^5Kb\ 5$	144419.7	267577.92	
812.314	123105.1	812.315	-0.001	31	1055	$4f^{11}5d(4I)^3I\ 7$	$4f^{11}6p(4I)^5Kb\ 7$	150111.23	273216.25	
812.384	123094.5	812.380	0.004	37	984.7	$4f^{11}5d(4I)^5G\ 4$	$4f^{11}6p(4I)^5H\ 4$	149901.5	272996.60	
812.384	123094.5	812.398	-0.014	37	750.1	$4f^{11}5d(4I)^3Hb\ 5$	$4f^{11}6p(4F)^5G\ 5$	162941.4	286033.82	
813.267	122960.8	813.273	-0.006	47	835.9	$4f^{11}5d(4I)^5H\ 7$	$4f^{11}6p(4I)^3I\ 7$	137790.2	260750.18	
814.224	122816.3	814.225	-0.001	2	141.3	$4f^{11}5d(4I)^3Gb\ 5$	$4f^{11}6p(4I)^3K\ 6$	152738.66	275554.90	
814.313	122802.9	814.317	-0.004	19	379.8	$4f^{11}5d(4I)^3Gb\ 5$	$4f^{11}6p(4F)^5F\ 5$	152738.66	275541.01	
814.416	122787.4	814.419	-0.003	4	339.8	$4f^{11}5d(4F)^5G\ 4$	$4f^{11}6p(4G)^3G\ 5$	161356.2	284143.17	
814.870	122718.9	814.871	-0.001	33	565.2	$4f^{11}5d(4I)^5H\ 7$	$4f^{11}6p(4I)^3H\ 6$	137790.2	260509.01	
814.948	122707.2	814.949	-0.001	26	902.2	$4f^{11}5d(4I)^3H\ 6$	$4f^{11}6p(4I)^5I\ 6$	151021.29	273728.28	
815.718	122591.3	815.721	-0.003	84	730.2	$4f^{11}5d(4I)^5Gb\ 4$	$4f^{11}6p(4F)^5F\ 5$	152950.0	275541.01	
815.945	122557.3	815.950	-0.005	22	142.7	$4f^{11}5d(4I)^5K\ 5$	$4f^{11}6p(4F)^3F\ 4$	157420.26	279976.85	
816.011	122547.3	816.010	0.001	10	127.6	$4f^{11}5d(4I)^5G\ 3$	$4f^{11}6p(4F)^3F\ 4$	157429.4	279976.85	
816.069	122538.6	816.068	0.001	20	341.1	$4f^{11}5d(4I)^5I\ 7$	$4f^{11}6p(4I)^3I\ 6$	146795.2	269333.95	
816.069	122538.6	816.066	0.002	20	182.4	$4f^{11}5d(4I)^5K\ 5$	$4f^{11}6p(4F)^3G\ 5$	157420.26	279959.30	
816.740	122437.9	816.738	0.002	33	873.5	$4f^{11}5d(4I)^5I\ 7$	$4f^{11}6p(4I)^5I\ 7$	146795.2	269233.49	
816.806	122428.1	816.807	-0.001	90	691.8	$4f^{11}5d(4I)^5H\ 7$	$4f^{11}6p(4I)^5I\ 8$	137790.2	260218.14	
817.309	122352.7	817.309	0.000	9	236.7	$4f^{11}5d(4I)^5Ib\ 8$	$4f^{11}6p(4I)^5I\ 7$	146880.7	269233.49	
817.360	122345.1	817.359	0.001	29	1154	$4f^{11}5d(4I)^5G\ 3$	$4f^{11}6p(4F)^3D\ 3$	157429.4	279774.7	
817.610	122307.7	817.616	-0.006	15	175.4	$4f^{11}5d(4F)^3G\ 5$	$4f^{11}6p(4F)^5Gb\ 4$	165701.5	288008.29	
818.367	122194.6	818.364	0.003	26	993.5	$4f^{11}5d(4I)^3H\ 6$	$4f^{11}6p(4I)^5Kb\ 7$	151021.29	273216.25	
818.487	122176.6	818.492	-0.005	15	337.9	$4f^{11}5d(4I)^3Ib\ 6$	$4f^{11}6p(4G)^3G\ 5$	161967.2	284143.17	
818.936	122109.6	818.936	0.000	18	394.5	$4f^{11}5d(4I)^5G\ 4$	$4f^{11}6p(2H)^3G2\ 5$	149901.5	272011.18	
819.289	122057.0	819.288	0.001	5	219.7	$4f^{11}5d(4I)^3G\ 5$	$4f^{11}6p(2H)^3G2\ 5$	149953.96	272011.18	
819.533	122020.7	819.530	0.003	49	181.5	$4f^{11}5d(4S)^5D\ 4$	$4f^{11}6p(4F)^5Gb\ 4$	165987.1	288008.29	
819.533	122020.7	819.543	-0.010	49	1465	$4f^{11}5d(4F)^5G\ 5$	$4f^{11}6p(4I)^3K\ 6$	153535.7	275554.90	
819.641	122004.6	819.636	0.005	66	978	$4f^{11}5d(4F)^5G\ 5$	$4f^{11}6p(4F)^5F\ 5$	153535.7	275541.01	
819.999	121951.4	820.000	-0.001	5	16.87	$4f^{11}5d(4I)^3Gb\ 3$	$4f^{11}6p(4F)^5F\ 4$	163941.6	285892.87	
820.144	121929.8	820.144	0.000	13	907.4	$4f^{11}5d(4I)^5K\ 5$	$4f^{11}6p(4F)^5G\ 6$	157420.26	279350.06	
820.942	121811.2	820.943	-0.001	12	752.3	$4f^{11}5d(4I)^5I\ 4$	$4f^{11}6p(4F)^5Fb\ 5$	157053.57	278864.67	
821.444	121736.9	821.443	0.001	14	810.5	$4f^{11}5d(4I)^5I\ 7$	$4f^{11}6p(4I)^5K\ 8$	146795.2	268532.23	
822.023	121651.1	822.020	0.003	46	1237	$4f^{11}5d(4I)^5Ib\ 8$	$4f^{11}6p(4I)^5K\ 8$	146880.7	268532.23	
822.350	121602.7	822.352	-0.002	15	367.8	$4f^{11}5d(4I)^3Hc\ 5$	$4f^{11}6p(4F)^5Gb\ 4$	166405.9	288008.29	
822.695	121551.7	822.692	0.003	18	1265	$4f^{11}5d(4I)^3Hb\ 6$	$4f^{11}6p(4I)^3K\ 6$	154002.75	275554.90	
822.837	121530.8	822.832	0.005	41	560.1	$4f^{11}5d(4I)^5Ib\ 4$	$4f^{11}6p(4F)^5G\ 5$	164502.40	286033.82	
822.837	121530.8	822.832	0.005	41	106.5	$4f^{11}5d(4I)^5Ib\ 4$	$4f^{11}6p(4F)^5D\ 3$	164502.40	286033.97	
824.425	121296.6	824.422	0.003	38	3437	$4f^{11}5d(4F)^5G\ 6$	$4f^{11}6p(4F)^5G\ 6$	158053.0	279350.06	
824.812	121239.8	824.802	0.010	22	723.7	$4f^{11}5d(4I)^3H\ 5$	$4f^{11}6p(4I)^5I\ 4$	154767.34	276008.50	
825.076	121200.9	825.070	0.005	10	504.2	$4f^{11}5d(4I)^3Hb\ 5$	$4f^{11}6p(4G)^3G\ 5$	162941.4	284143.17	
826.518	120989.5	826.517	0.001	12	1418	$4f^{11}5d(4I)^3Gb\ 5$	$4f^{11}6p(4I)^5I\ 6$	152738.66	273728.28	
826.518	120989.5	826.515	0.003	12	160.9	$4f^{11}5d(4I)^3H\ 6$	$4f^{11}6p(2H)^3G2\ 5$	151021.29	272011.18	
828.053	120765.3	828.053	0.000	15	1887	$4f^{11}5d(4I)^5L\ 6$	$4f^{11}6p(4I)^3K\ 6$	154789.62	275554.90	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
828.150	120751.1	828.148	0.002	10	1521	$4f^{11}5d(4I)^5L\ 6$	$4f^{11}6p(4F)^5F\ 5$	154789.62	275541.01	
828.292	120730.3	828.289	0.003	19	2097	$4f^{11}5d(4I)^5L\ 7$	$4f^{11}6p(4I)^5I\ 6$	152997.54	273728.28	
828.333	120724.4	828.332	0.001	10	1732	$4f^{11}5d(4F)^5Gb\ 4$	$4f^{11}6p(4F)^3F\ 3$	167076.1	287800.7	
829.272	120587.7	829.274	-0.002	9	2065	$4f^{11}5d(4F)^5D\ 4$	$4f^{11}6p(4F)^5D\ 3$	165446.6	286033.97	
830.041	120475.9	830.039	0.002	27	2459	$4f^{11}5d(4I)^5L\ 8$	$4f^{11}6p(4I)^5I\ 7$	148757.3	269233.49	
831.819	120218.5	831.817	0.002	12	1769	$4f^{11}5d(4I)^5L\ 7$	$4f^{11}6p(4I)^5Kb\ 7$	152997.54	273216.25	
832.831	120072.4	832.831	0.000	12	1516	$4f^{11}5d(4I)^5I\ 5$	$4f^{11}6p(4F)^3F\ 4$	159904.4	279976.85	
833.247	120012.4	833.251	-0.004	6	28.09	$4f^{11}5d(4I)^5I\ 6$	$4f^{11}6p(4I)^3K\ 6$	155543.1	275554.90	
833.571	119965.7	833.574	-0.003	31	2020	$4f^{11}5d(4I)^5I\ 8$	$4f^{11}6p(4I)^3I\ 7$	140784.8	260750.18	
833.642	119955.6	833.644	-0.002	11	972.9	$4f^{11}5d(2H)^3K2\ 7$	$4f^{11}6p(2H)^3H2b\ 6$	164006.6	283961.9	
834.899	119774.9	834.899	-0.000	28	2410	$4f^{11}5d(4I)^5L\ 8$	$4f^{11}6p(4I)^5K\ 8$	148757.3	268532.23	
835.216	119729.6	835.216	-0.000	13	1172	$4f^{11}5d(4I)^3Kb\ 6$	$4f^{11}6p(2H)^3H2b\ 6$	164232.46	283961.9	
835.835	119640.8	835.835	-0.000	29	674.8	$4f^{11}5d(4I)^5Ib\ 4$	$4f^{11}6p(4G)^3G\ 5$	164502.40	284143.17	
835.979	119620.3	835.977	0.002	20	1872	$4f^{11}5d(4I)^3Hb\ 6$	$4f^{11}6p(4I)^5Ib\ 5$	154002.75	273623.27	
836.913	119486.8	836.911	0.002	6	1429	$4f^{11}5d(4I)^3Hc\ 5$	$4f^{11}6p(4F)^5F\ 4$	166405.9	285892.87	
837.189	119447.3	837.184	0.005	6	135.6	$4f^{11}5d(4I)^3Gb\ 5$	$4f^{11}6p(2H)^3H2\ 6$	152738.66	272186.73	
837.285	119433.6	837.287	-0.002	51	2293	$4f^{11}5d(4I)^5I\ 8$	$4f^{11}6p(4I)^5I\ 8$	140784.8	260218.14	
838.766	119222.8	838.766	-0.000	31	2472	$4f^{11}5d(4I)^3I\ 7$	$4f^{11}6p(4I)^3I\ 6$	150111.23	269333.95	
839.410	119131.3	839.413	-0.003	8	1498	$4f^{11}5d(4F)^5H\ 7$	$4f^{11}6p(2H)^3H2b\ 6$	164831.0	283961.9	
839.410	119131.3	839.418	-0.008	8	47.13	$4f^{11}5d(4I)^5G\ 5$	$4f^{11}6p(4F)^5D\ 4$	144419.7	263549.91	
839.903	119061.3	839.904	-0.001	6	833.1	$4f^{11}5d(4I)^5Gb\ 4$	$4f^{11}6p(2H)^3G2\ 5$	152950.0	272011.18	
840.597	118963.0	840.598	-0.001	20	1987	$4f^{11}5d(4I)^5G\ 4$	$4f^{11}6p(4I)^5H\ 5$	149901.5	268864.41	
840.631	118958.2	840.634	-0.003	6	1276	$4f^{11}5d(4F)^5Gb\ 4$	$4f^{11}6p(4F)^5D\ 3$	167076.1	286033.97	
840.656	118954.7	840.654	0.001	6	1034	$4f^{11}5d(4I)^5I\ 4$	$4f^{11}6p(4I)^5I\ 4$	157053.57	276008.50	
840.967	118910.7	840.969	-0.002	26	1840	$4f^{11}5d(4I)^3G\ 5$	$4f^{11}6p(4I)^5H\ 5$	149953.96	268864.41	
841.354	118856.0	841.355	-0.001	11	1373	$4f^{11}5d(4I)^3H\ 5$	$4f^{11}6p(4I)^5Ib\ 5$	154767.34	273623.27	
841.516	118833.1	841.512	0.003	3	881.2	$4f^{11}5d(4I)^5L\ 6$	$4f^{11}6p(4I)^5Ib\ 5$	154789.62	273623.27	
843.028	118620.0	843.023	0.005	4	1202	$4f^{11}5d(4F)^5G\ 4$	$4f^{11}6p(4F)^3F\ 4$	161356.2	279976.85	
843.256	118587.9	843.254	0.002	36	3321	$4f^{11}5d(4I)^5K\ 5$	$4f^{11}6p(4I)^5I\ 4$	157420.26	276008.50	
843.737	118520.3	843.738	-0.001	49	2794	$4f^{11}5d(4I)^5I\ 8$	$4f^{11}6p(4I)^5K\ 9$	140784.8	259305.05	
844.446	118420.9	844.445	0.001	11	878.2	$4f^{11}5d(4I)^3I\ 7$	$4f^{11}6p(4I)^5K\ 8$	150111.23	268532.23	bl D
844.446	118420.9	844.443	0.003	11	422.5	$4f^{11}5d(4I)^5Gc\ 4$	$4f^{11}6p(4I)^5Ib\ 5$	155202.0	273623.27	bl D
844.466	118418.0	844.463	0.003	2	917.1	$4f^{11}5d(4F)^5G\ 4$	$4f^{11}6p(4F)^3D\ 3$	161356.2	279774.7	
845.814	118229.3	845.814	-0.000	29	2448	$4f^{11}5d(4I)^3H\ 5$	$4f^{11}6p(4I)^5H\ 4$	154767.34	272996.60	
845.935	118212.4	845.936	-0.001	8	660.9	$4f^{11}5d(4I)^3H\ 6$	$4f^{11}6p(4I)^5I\ 7$	151021.29	269233.49	
846.589	118121.1	846.591	-0.002	4	859.9	$4f^{11}5d(4I)^5K\ 5$	$4f^{11}6p(4F)^5F\ 5$	157420.26	275541.01	
846.875	118081.2	846.882	-0.007	34	1429	$4f^{11}5d(4I)^3I\ 6$	$4f^{11}6p(4I)^5Ib\ 5$	155543.1	273623.27	
846.960	118069.3	846.961	-0.001	10	1404	$4f^{11}5d(4S)^5Db\ 4$	$4f^{11}6p(4F)^5D\ 3$	167964.8	286033.97	bl D
846.960	118069.3	846.962	-0.002	10	123.7	$4f^{11}5d(4S)^5Db\ 4$	$4f^{11}6p(4F)^5G\ 5$	167964.8	286033.82	bl D
847.388	118009.7	847.397	-0.009	14	160.8	$4f^{11}5d(4I)^3Hb\ 6$	$4f^{11}6p(2H)^3G2\ 5$	154002.75	272011.18	
847.974	117928.1	847.974	-0.000	3	409.7	$4f^{11}5d(4S)^5Db\ 4$	$4f^{11}6p(4F)^5F\ 4$	167964.8	285892.87	
848.584	117843.3	848.586	-0.002	5	854.8	$4f^{11}5d(4I)^3H\ 6$	$4f^{11}6p(4I)^5H\ 5$	151021.29	268864.41	
848.940	117793.9	848.935	0.005	59	5331	$4f^{11}5d(4I)^5Gc\ 4$	$4f^{11}6p(4I)^5H\ 4$	155202.0	272996.60	
849.788	117676.4	849.788	0.000	9	1016	$4f^{11}5d(4I)^5G\ 4$	$4f^{11}6p(4I)^5Kb\ 5$	149901.5	267577.92	
850.327	117601.8	850.329	-0.002	4	555.8	$4f^{11}5d(4I)^5G\ 5$	$4f^{11}6p(4I)^5K\ 6$	144419.7	262021.27	
850.425	117588.2	850.427	-0.002	3	1062	$4f^{11}5d(4G)^5G\ 6$	$4f^{11}6p(4F)^5G\ 5$	168445.8	286033.82	
850.661	117555.6	850.658	0.003	3	1417	$4f^{11}5d(4I)^3Hc\ 5$	$4f^{11}6p(2H)^3H2b\ 6$	166405.9	283961.9	
851.048	117502.2	851.050	-0.002	28	3013	$4f^{11}5d(4F)^5G\ 6$	$4f^{11}6p(4I)^3K\ 6$	158053.0	275554.90	
851.150	117488.1	851.151	-0.001	49	4267	$4f^{11}5d(4F)^5G\ 6$	$4f^{11}6p(4F)^5F\ 5$	158053.0	275541.01	
851.214	117479.3	851.213	0.001	6	1551	$4f^{11}5d(4S)^3D\ 3$	$4f^{11}6p(4F)^5D\ 3$	168554.6	286033.97	bl D
851.214	117479.3	851.225	-0.011	6	178.6	$4f^{11}5d(4I)^3G\ 3$	$4f^{11}6p(4F)^3D\ 3$	162296.9	279774.7	bl D
852.502	117301.8	852.503	-0.001	7	1272	$4f^{11}5d(4I)^5H\ 4$	$4f^{11}6p(4I)^5I\ 4$	158706.85	276008.50	
853.301	117191.9	853.297	0.004	36	4219	$4f^{11}5d(4F)^5G2\ 5$	$4f^{11}6p(4F)^5G\ 5$	168841.3	286033.82	
854.213	117066.8	854.211	0.002	16	1112	$4f^{11}5d(4F)^5Gb\ 4$	$4f^{11}6p(4G)^3G\ 5$	167076.1	284143.17	
854.326	117051.4	854.324	0.002	60	8003	$4f^{11}5d(4F)^5G2\ 5$	$4f^{11}6p(4F)^5F\ 4$	168841.3	285892.87	
854.443	117035.3	854.442	0.001	6	1280	$4f^{11}5d(4I)^3Hb\ 5$	$4f^{11}6p(4F)^3F\ 4$	162941.4	279976.85	
854.595	117014.5	854.591	0.004	38	4876	$4f^{11}5d(2H)^3G2\ 5$	$4f^{11}6p(4F)^5Gb\ 4$	170993.3	288008.29	
855.456	116896.7	855.451	0.005	8	1476	$4f^{11}5d(4I)^3Ib\ 6$	$4f^{11}6p(4F)^5Fb\ 5$	161967.2	278864.67	
855.913	116834.3	855.914	-0.001	2	659.4	$4f^{11}5d(4I)^5H\ 4$	$4f^{11}6p(4F)^5F\ 5$	158706.85	275541.01	
856.317	116779.2	856.315	0.002	10	308.9	$4f^{11}5d(4I)^5I\ 4$	$4f^{11}6p(4F)^5F\ 3$	157053.57	273832.99	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
857.048	116679.6	857.045	0.003	24	594.5	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> Dc 4	162296.9	278976.88	
857.667	116595.3	857.668	-0.001	60	4228	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 5	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 6	152738.66	269333.95	
857.857	116569.6	857.856	0.001	12	1455	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> Ib 5	157053.57	273623.27	
857.899	116563.8	857.898	0.001	5	514.7	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 8	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 7	140784.8	257348.77	
858.592	116469.7	858.592	0.000	50	4203	4f <sup>11</sup> 5d(2H) <sup>3</sup> I2 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 6	159085.2	275554.90	
859.681	116322.3	859.680	0.001	16	38.03	4f <sup>11</sup> 5d(4F) <sup>3</sup> G 5	4f <sup>11</sup> 6p(4G) <sup>3</sup> H 6	165701.5	282023.84	
859.794	116306.9	859.786	0.008	4	126.2	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 6	157420.26	273728.28	
860.321	116235.7	860.319	0.002	41	1025	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 7	152997.54	269233.49	
860.562	116203.1	860.563	-0.001	2	708.4	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> Ib 5	157420.26	273623.27	
860.743	116178.7	860.745	-0.002	4	1026	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 4	4f <sup>11</sup> 6p(4G) <sup>3</sup> G 5	167964.8	284143.17	
861.135	116125.8	861.135	-0.000	15	1172	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 5	152738.66	268864.41	
861.213	116115.2	861.214	-0.001	42	5915	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 5	169918.7	286033.82	
861.301	116103.5	861.296	0.005	5	93.44	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 4	159904.4	276008.50	
861.409	116088.9	861.406	0.003	75	4356	4f <sup>11</sup> 5d(4I) <sup>5</sup> G 5	4f <sup>11</sup> 6p(4I) <sup>3</sup> H 6	144419.7	260509.01	
861.806	116035.5	861.805	0.001	35	1360	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> Dc 4	162941.4	278976.88	bl D
861.806	116035.5	861.807	-0.001	35	943.7	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 3	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 4	163941.6	279976.85	bl D
862.639	115923.3	862.640	-0.001	19	1823	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> Fb 5	162941.4	278864.67	
862.704	115914.6	862.706	-0.002	68	5158	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 5	152950.0	268864.41	
863.569	115798.5	863.571	-0.002	17	1255	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 5	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 6	153535.7	269333.95	
864.105	115726.6	864.104	0.001	8	1409	4f <sup>11</sup> 5d(4I) <sup>3</sup> Kb 6	4f <sup>11</sup> 6p(4F) <sup>3</sup> G 5	164232.46	279959.30	
864.259	115706.0	864.262	-0.003	95	9850	4f <sup>11</sup> 5d(4F) <sup>5</sup> H 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 5	170328.1	286033.82	
864.322	115697.6	864.324	-0.002	59	7117	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 6	4f <sup>11</sup> 6p(4G) <sup>3</sup> G 5	168445.8	284143.17	
864.659	115652.6	864.674	-0.015	16	182.9	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 5	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 6	159904.4	275554.90	bl
864.742	115641.4	864.742	0.000	171	42540	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 10	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 9	143663.6	259305.05	
865.297	115567.2	865.297	-0.000	32	2838	4f <sup>11</sup> 5d(4I) <sup>5</sup> G 3	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 4	157429.4	272996.60	
865.542	115534.6	865.541	0.001	18	461.7	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 8	152997.54	268532.23	
865.680	115516.1	865.680	0.000	56	6313	4f <sup>11</sup> 5d(4G) <sup>3</sup> G 6	4f <sup>11</sup> 6p(2H) <sup>3</sup> H2b 6	168445.8	283961.9	
866.693	115381.1	866.687	0.006	51	2690	4f <sup>11</sup> 5d(4F) <sup>3</sup> F2 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> Gb 4	172626.4	288008.29	
866.926	115350.1	866.920	0.006	11	867	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> Fb 5	163513.8	278864.67	
866.975	115343.6	866.976	-0.001	39	4425	4f <sup>11</sup> 5d(2H) <sup>3</sup> K2 7	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 6	164006.6	279350.06	
867.071	115330.8	867.068	0.003	23	2175	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 6	154002.75	269333.95	
867.082	115329.3	867.087	-0.005	37	2843	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 5	153535.7	268864.41	
867.562	115265.5	867.562	-0.000	78	4876	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 7	145484.7	260750.18	
867.824	115230.7	867.824	0.000	28	1895	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 7	154002.75	269233.49	
868.252	115173.9	868.249	0.003	24	2989	4f <sup>11</sup> 5d(4F) <sup>3</sup> F2 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 3	172626.4	287800.7	
868.304	115167.0	868.304	0.000	158	37850	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 9	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 8	153365.2	268532.23	
868.615	115125.8	868.613	0.003	50	142.5	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 3	158706.85	273832.99	
868.677	115117.5	868.677	0.000	34	3391	4f <sup>11</sup> 5d(4I) <sup>3</sup> Kb 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 6	164232.46	279350.06	
869.380	115024.6	869.381	-0.001	82	4187	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> H 6	145484.7	260509.01	
869.514	115006.8	869.515	-0.001	23	1941	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ic 6	4f <sup>11</sup> 6p(4F) <sup>3</sup> G 5	164952.6	279959.30	
869.886	114957.6	869.886	0.000	9	1359	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 4	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	157053.57	272011.18	
870.198	114916.4	870.198	0.000	56	4751	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> Ib 5	158706.85	273623.27	
870.582	114865.6	870.582	0.000	156	26040	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 9	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 8	145352.4	260218.14	
871.245	114778.3	871.244	0.001	18	1760	4f <sup>11</sup> 5d(4I) <sup>3</sup> K 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 6	160776.5	275554.90	
871.333	114766.7	871.335	-0.002	5	399.3	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 5	4f <sup>11</sup> 6p(2H) <sup>3</sup> H2 6	157420.26	272186.73	
871.355	114763.7	871.349	0.006	12	1196	4f <sup>11</sup> 5d(4I) <sup>3</sup> K 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 5	160776.5	275541.01	
872.274	114642.9	872.272	0.002	115	11540	4f <sup>11</sup> 5d(2H) <sup>3</sup> I2 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 6	159085.2	273728.28	
872.354	114632.4	872.355	-0.001	8	1519	4f <sup>11</sup> 5d(4I) <sup>3</sup> Kb 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> Fb 5	164232.46	278864.67	
872.628	114596.4	872.630	-0.002	7	1267	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> Gb 4	173412.2	288008.29	
872.673	114590.4	872.669	0.004	70	1162	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 5	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	157420.26	272011.18	
872.855	114566.6	872.855	0.000	62	2857	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 5	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 6	154767.34	269333.95	
873.074	114537.9	873.074	0.000	38	2532	4f <sup>11</sup> 5d(4G) <sup>5</sup> G 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 3	171496.1	286033.97	
873.136	114529.6	873.132	0.004	20	2450	4f <sup>11</sup> 5d(4F) <sup>5</sup> D 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 4	165446.6	279976.85	
873.216	114519.2	873.217	-0.001	117	22860	4f <sup>11</sup> 5d(4F) <sup>5</sup> H 7	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 6	164831.0	279350.06	
873.555	114474.8	873.557	-0.002	9	1491	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> Dc 4	164502.40	278976.88	
873.996	114416.9	873.996	0.000	136	21710	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 8	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 7	154816.5	269233.49	
874.147	114397.3	874.145	0.002	74	3650	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ic 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 6	164952.6	279350.06	
874.147	114397.3	874.151	-0.004	74	3504	4f <sup>11</sup> 5d(4G) <sup>5</sup> G 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 4	171496.1	285892.87	
874.681	114327.4	874.676	0.005	3	1009	4f <sup>11</sup> 5d(4F) <sup>5</sup> D 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> D 3	165446.6	279774.7	
874.970	114289.6	874.969	0.001	39	3217	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 4	158706.85	272996.60	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
875.086	114274.5	875.079	0.007	58	3004	$4f^{11}5d(4F)^3G\ 5$	$4f^{11}6p(4F)^3F\ 4$	165701.5	279976.85	
875.212	114258.0	875.214	-0.002	1	624.5	$4f^{11}5d(4F)^3G\ 5$	$4f^{11}6p(4F)^3G\ 5$	165701.5	279959.30	
875.465	114225.0	875.469	-0.004	4	1137	$4f^{11}5d(2K)^3H\ 6$	$4f^{11}6p(4G)^3G\ 5$	169918.7	284143.17	
876.187	114130.8	876.186	0.001	65	6997	$4f^{11}5d(2H)^3I2\ 7$	$4f^{11}6p(4I)^5Kb\ 7$	159085.2	273216.25	
876.444	114097.5	876.447	-0.003	44	3200	$4f^{11}5d(4I)^3H\ 5$	$4f^{11}6p(4I)^5H\ 5$	154767.34	268864.41	
877.404	113972.6	877.407	-0.003	10	52.51	$4f^{11}5d(4S)^5D\ 4$	$4f^{11}6p(4F)^3G\ 5$	165987.1	279959.30	
877.540	113954.9	877.539	0.001	105	10310	$4f^{11}5d(4I)^5I\ 7$	$4f^{11}6p(4I)^3I\ 7$	146795.2	260750.18	
877.557	113952.8	877.557	0.000	134	11220	$4f^{11}5d(4I)^5K\ 9$	$4f^{11}6p(4I)^5K\ 9$	145352.4	259305.05	
877.868	113912.4	877.870	-0.002	116	8949	$4f^{11}5d(4I)^3Ic\ 6$	$4f^{11}6p(4F)^5Fb\ 5$	164952.6	278864.67	
878.200	113869.2	878.198	0.002	95	7986	$4f^{11}5d(4I)^5Ib\ 8$	$4f^{11}6p(4I)^3I\ 7$	146880.7	260750.18	
878.411	113841.9	878.408	0.003	8	119.8	$4f^{11}5d(4I)^3G\ 5$	$4f^{11}6p(4I)^5K\ 5$	149953.96	263796.29	
878.442	113837.9	878.434	0.008	7	55.35	$4f^{11}5d(4F)^3F\ 3$	$4f^{11}6p(4F)^5Gb\ 4$	174169.4	288008.29	
878.543	113824.8	878.550	-0.007	6	1135	$4f^{11}5d(4I)^5I\ 5$	$4f^{11}6p(4I)^5I\ 6$	159904.4	273728.28	
878.807	113790.6	878.805	0.002	101	10900	$4f^{11}5d(4I)^3I\ 6$	$4f^{11}6p(4I)^3I\ 6$	155543.1	269333.95	
879.356	113719.5	879.361	-0.005	56	6300	$4f^{11}5d(4I)^5I\ 5$	$4f^{11}6p(4I)^5Ib\ 5$	159904.4	273623.27	
879.385	113715.8	879.386	-0.001	113	11060	$4f^{11}5d(4I)^5K\ 8$	$4f^{11}6p(4I)^5K\ 8$	154816.5	268532.23	bl D
879.385	113715.8	879.401	-0.016	113	2172	$4f^{11}5d(4I)^5I\ 7$	$4f^{11}6p(4I)^3H\ 6$	146795.2	260509.01	bl D
879.420	113711.3	879.418	0.002	40	2897	$4f^{11}5d(4I)^3G\ 5$	$4f^{11}6p(4I)^5I\ 4$	162296.9	276008.50	
879.584	113690.1	879.582	0.002	22	2162	$4f^{11}5d(4I)^3I\ 6$	$4f^{11}6p(4I)^5I\ 7$	155543.1	269233.49	
879.676	113678.3	879.673	0.003	11	1927	$4f^{11}5d(4F)^5P\ 3$	$4f^{11}6p(4F)^3D\ 3$	166096.1	279774.7	
879.801	113662.1	879.798	0.003	47	3312	$4f^{11}5d(4I)^5Gc\ 4$	$4f^{11}6p(4I)^5H\ 5$	155202.0	268864.41	
879.906	113648.5	879.906	0.000	23	245.5	$4f^{11}5d(4F)^3G\ 5$	$4f^{11}6p(4F)^5G\ 6$	165701.5	279350.06	bl D
879.906	113648.5	879.907	-0.001	23	1398	$4f^{11}5d(4I)^5G\ 4$	$4f^{11}6p(4F)^5D\ 4$	149901.5	263549.91	bl D
880.036	113631.7	880.039	-0.003	35	1062	$4f^{11}5d(4F)^3F\ 3$	$4f^{11}6p(4F)^3F\ 3$	174169.4	287800.7	
880.258	113603.1	880.262	-0.004	42	6535	$4f^{11}5d(4F)^3H\ 5$	$4f^{11}6p(4F)^5Gb\ 4$	174405.8	288008.29	
880.374	113588.1	880.377	-0.003	54	1698	$4f^{11}5d(4I)^3Ib\ 6$	$4f^{11}6p(4I)^3K\ 6$	161967.2	275554.90	
880.453	113577.9	880.452	0.001	37	966.4	$4f^{11}5d(4G)^3H\ 6$	$4f^{11}6p(4G)^3H\ 6$	168445.8	2825203.84	
880.487	113573.5	880.485	0.002	75	7242	$4f^{11}5d(4I)^3Ib\ 6$	$4f^{11}6p(4F)^5F\ 5$	161967.2	275541.01	
880.821	113530.4	880.822	-0.001	24	2520	$4f^{11}5d(4F)^5D\ 4$	$4f^{11}6p(4F)^5Dc\ 4$	165446.6	278976.88	
881.654	113423.2	881.656	-0.002	31	2164	$4f^{11}5d(4I)^5I\ 7$	$4f^{11}6p(4I)^5I\ 8$	146795.2	260218.14	
881.692	113418.2	881.694	-0.002	20	1985	$4f^{11}5d(4F)^5D\ 4$	$4f^{11}6p(4F)^5Fb\ 5$	165446.6	278864.67	
882.174	113356.3	882.171	0.003	91	11230	$4f^{11}5d(4I)^5Ib\ 7$	$4f^{11}6p(4I)^3I\ 6$	155977.3	269333.95	
882.231	113348.9	882.232	-0.001	2	1154	$4f^{11}5d(4F)^3G\ 3$	$4f^{11}6p(4F)^5D\ 3$	172685.1	286033.97	
882.319	113337.7	882.321	-0.002	121	13620	$4f^{11}5d(4I)^5Ib\ 8$	$4f^{11}6p(4I)^5I\ 8$	146880.7	260218.14	
882.446	113321.4	882.447	-0.001	52	2779	$4f^{11}5d(4I)^3I\ 6$	$4f^{11}6p(4I)^5H\ 5$	155543.1	268864.41	
882.804	113275.4	882.804	-0.000	28	1049	$4f^{11}5d(4F)^3G\ 5$	$4f^{11}6p(4F)^5Dc\ 4$	165701.5	278976.88	
882.870	113266.9	882.874	-0.004	19	460.5	$4f^{11}5d(4F)^3F2\ 4$	$4f^{11}6p(4F)^5F\ 4$	172626.4	285892.87	
882.954	113256.1	882.954	0.000	114	14140	$4f^{11}5d(4I)^5Ib\ 7$	$4f^{11}6p(4I)^5I\ 7$	155977.3	269233.49	
883.676	113163.7	883.680	-0.004	36	2945	$4f^{11}5d(4F)^3G\ 5$	$4f^{11}6p(4F)^5Fb\ 5$	165701.5	278864.67	
883.785	113149.7	883.784	0.001	66	7213	$4f^{11}5d(2H)^3G2\ 5$	$4f^{11}6p(4G)^3G\ 5$	170993.3	284143.17	
884.160	113101.8	884.161	-0.001	60	4889	$4f^{11}5d(2H)^3I2\ 7$	$4f^{11}6p(2H)^3H2\ 6$	159085.2	272186.73	
884.226	113093.2	884.234	-0.008	33	2466	$4f^{11}5d(4I)^5I\ 5$	$4f^{11}6p(4I)^5H\ 4$	159904.4	272996.60	
884.707	113031.8	884.712	-0.005	26	522.9	$4f^{11}5d(4I)^3H\ 5$	$4f^{11}6p(4F)^5Db\ 4$	154767.34	267798.48	
885.204	112968.4	885.202	0.002	43	1764	$4f^{11}5d(2H)^3G2\ 5$	$4f^{11}6p(2H)^3H2b\ 6$	170993.3	283961.9	
885.331	112952.2	885.333	-0.002	78	6146	$4f^{11}5d(4I)^3K\ 6$	$4f^{11}6p(4I)^5I\ 6$	160776.5	273728.28	
885.400	112943.3	885.393	0.007	53	491	$4f^{11}5d(4I)^3Hc\ 5$	$4f^{11}6p(4F)^5G\ 6$	166405.9	279350.06	bl D
885.400	112943.3	885.405	-0.005	53	3760	$4f^{11}5d(4F)^5G\ 4$	$4f^{11}6p(4F)^5G\ 4$	161356.2	274298.83	bl D
885.886	112881.3	885.890	-0.004	8	1359	$4f^{11}5d(4F)^5P\ 3$	$4f^{11}6p(4F)^5Dc\ 4$	166096.1	278976.88	
886.155	112847.1	886.157	-0.002	65	5745	$4f^{11}5d(4I)^3K\ 6$	$4f^{11}6p(4I)^5Ib\ 5$	160776.5	273623.27	
886.718	112775.4	886.721	-0.003	38	106.9	$4f^{11}5d(4I)^3H\ 6$	$4f^{11}6p(4I)^5K\ 5$	151021.29	263796.29	
887.331	112697.6	887.322	0.009	48	127.5	$4f^{11}5d(4F)^5Gb\ 4$	$4f^{11}6p(4F)^3D\ 3$	167076.1	279774.7	
887.921	112622.6	887.929	-0.008	43	1096	$4f^{11}5d(2K)^3H\ 5$	$4f^{11}6p(4F)^5G\ 5$	173412.2	286033.82	
888.089	112601.3	888.102	-0.013	18	888.2	$4f^{11}5d(4I)^3Hb\ 5$	$4f^{11}6p(4F)^5F\ 5$	162941.4	275541.01	
888.125	112596.7	888.127	-0.002	32	2020	$4f^{11}5d(4I)^5Gc\ 4$	$4f^{11}6p(4F)^5Db\ 4$	155202.0	267798.48	
888.323	112571.7	888.328	-0.005	10	1523	$4f^{11}5d(4I)^3Hc\ 5$	$4f^{11}6p(4F)^5Dc\ 4$	166405.9	278976.88	
888.452	112555.3	888.455	-0.003	18	1529	$4f^{11}5d(4I)^5Ib\ 7$	$4f^{11}6p(4I)^5K\ 8$	155977.3	268532.23	
888.926	112495.3	888.931	-0.005	49	4180	$4f^{11}5d(4I)^5Ib\ 5$	$4f^{11}6p(4I)^5I\ 4$	163513.8	276008.50	
889.061	112478.2	889.072	-0.011	26	2439	$4f^{11}5d(4F)^5G\ 4$	$4f^{11}6p(4F)^5F\ 3$	161356.2	273832.99	
889.209	112459.5	889.215	-0.006	21	263.6	$4f^{11}5d(4I)^3Hc\ 5$	$4f^{11}6p(4F)^5Fb\ 5$	166405.9	278864.67	
889.357	112440.8	889.365	-0.008	60	974.3	$4f^{11}5d(4I)^3K\ 6$	$4f^{11}6p(4I)^5Kb\ 7$	160776.5	273216.25	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
889.482	112424.9	889.487	-0.005	16	1335	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 8	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 9	146880.7	259305.05	
889.867	112376.4	889.870	-0.003	23	1802	4f <sup>11</sup> 5d(4I) <sup>5</sup> Gc 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> Kb 5	155202.0	267577.92	
891.999	112107.8	892.007	-0.008	20	2187	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 5	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	159904.4	272011.18	
892.016	112105.7	892.020	-0.004	44	1571	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4G) <sup>3</sup> H 6	169918.7	282023.84	
892.321	112067.3	892.321	0.000	12	309.8	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 6	149953.96	262021.27	bl D
892.321	112067.3	892.324	-0.003	12	1205	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 3	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 4	163941.6	276008.50	bl D
892.578	112035.0	892.580	-0.002	46	3162	4f <sup>11</sup> 5d(4I) <sup>3</sup> I 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> Kb 5	155543.1	267577.92	
892.640	112027.3	892.640	-0.000	63	6895	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 5	163513.8	275541.01	
892.762	112011.9	892.761	0.001	7	1106	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 4	167964.8	279976.85	
892.837	112002.6	892.842	-0.005	15	1515	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 4	162296.9	274298.83	
892.909	111993.4	892.901	0.008	88	502.2	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> G 5	167964.8	279959.30	bl D
892.909	111993.4	892.914	-0.005	88	6318	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 8	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 7	148757.3	260750.18	bl D
893.572	111910.4	893.575	-0.003	24	1380	4f <sup>11</sup> 5d(4I) <sup>3</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 6	150111.23	262021.27	
893.935	111864.9	893.938	-0.003	101	1731	4f <sup>11</sup> 5d(4F) <sup>3</sup> F 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 3	174169.4	286033.97	
893.935	111864.9	893.942	-0.007	101	3218	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 7	145484.7	257348.77	
894.364	111811.3	894.368	-0.004	52	2888	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 5	157053.57	268864.41	
894.364	111811.3	894.375	-0.011	52	106.1	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> D 3	167964.8	279774.7	
894.769	111760.7	894.766	0.003	44	3413	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ib 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 6	161967.2	273728.28	
895.065	111723.7	895.067	-0.002	5	1738	4f <sup>11</sup> 5d(4F) <sup>3</sup> F 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 4	174169.4	285892.87	
895.286	111696.1	895.289	-0.003	24	1449	4f <sup>11</sup> 5d(4F) <sup>5</sup> H 6	4f <sup>11</sup> 6p(4G) <sup>3</sup> H 6	170328.1	282023.84	
895.390	111683.2	895.396	-0.006	107	9808	4f <sup>11</sup> 5d(4I) <sup>5</sup> G 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 5	149901.5	261583.94	
895.820	111629.6	895.817	0.003	89	2979	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 5	149953.96	261583.94	
896.212	111580.8	896.210	0.001	103	8259	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 6	145484.7	257065.63	
896.472	111548.4	896.473	-0.001	57	3229	4f <sup>11</sup> 5d(2H) <sup>3</sup> K2 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 6	164006.6	275554.90	
896.569	111536.3	896.571	-0.002	38	3274	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 3	162296.9	273832.99	
896.813	111505.9	896.812	0.001	12	1629	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 4	164502.40	276008.50	
896.964	111487.2	896.965	-0.001	8	1197	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 4	174405.8	285892.87	
897.174	111461.1	897.176	-0.002	45	2744	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 8	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 8	148757.3	260218.14	
897.308	111444.4	897.310	-0.002	18	1439	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 5	157420.26	268864.41	
897.419	111430.7	897.420	-0.001	33	3998	4f <sup>11</sup> 5d(4F) <sup>3</sup> G 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 3	176370.1	287800.7	
897.479	111423.2	897.487	-0.008	49	934.5	4f <sup>11</sup> 5d(4S) <sup>3</sup> D 3	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 4	168554.6	279976.85	
897.587	111409.9	897.584	0.003	58	3072	4f <sup>11</sup> 5d(4I) <sup>3</sup> K 6	4f <sup>11</sup> 6p(2H) <sup>3</sup> H2 6	160776.5	272186.73	
898.007	111357.7	898.009	-0.002	51	2825	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 4	162941.4	274298.83	
898.290	111322.6	898.292	-0.002	3	649.5	4f <sup>11</sup> 5d(4I) <sup>3</sup> Kb 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 6	164232.46	275554.90	
898.404	111308.5	898.404	0.000	51	4078	4f <sup>11</sup> 5d(4I) <sup>3</sup> Kb 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 5	164232.46	275541.01	
898.672	111275.3	898.670	0.002	162	19790	4f <sup>11</sup> 5d(4I) <sup>5</sup> G 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 7	136614.9	247890.51	
898.829	111255.9	898.829	0.000	37	4439	4f <sup>11</sup> 5d(4G) <sup>3</sup> I 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 5	174778.0	286033.82	
898.874	111250.3	898.884	-0.010	4	504.1	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ib 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> Kb 7	161967.2	273216.25	
899.003	111234.4	899.000	0.003	44	2010	4f <sup>11</sup> 5d(4I) <sup>3</sup> K 6	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	160776.5	272011.18	
900.588	111038.5	900.588	0.000	7	1201	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 5	164502.40	275541.01	
900.808	111011.4	900.803	0.005	9	898.2	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> Dc 4	167964.8	278976.88	
900.903	110999.7	900.901	0.002	14	776.4	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 6	151021.29	262021.27	
902.151	110846.2	902.150	0.001	51	2277	4f <sup>11</sup> 5d(4I) <sup>5</sup> Gb 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 5	152950.0	263796.29	
902.431	110811.8	902.434	-0.003	32	1774	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 5	158053.0	268864.41	
902.635	110786.8	902.634	0.001	18	1468	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 6	162941.4	273728.28	bl D
902.635	110786.8	902.649	-0.014	18	149.8	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 4	163513.8	274298.83	bl D
902.669	110782.6	902.667	0.002	99	5599	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 8	137790.2	248573.04	
902.884	110756.2	902.879	0.005	4	858.9	4f <sup>11</sup> 5d(4F) <sup>3</sup> D 2	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 3	175277.2	286033.97	
902.978	110744.6	902.976	0.002	44	2877	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> Db 4	157053.57	267798.48	
903.153	110723.2	903.147	0.006	10	18.69	4f <sup>11</sup> 5d(4F) <sup>5</sup> H 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 6	164831.0	275554.90	
903.492	110681.7	903.490	0.002	37	2558	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> Ib 5	162941.4	273623.27	
903.713	110654.6	903.710	0.003	33	2126	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 4	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	161356.2	272011.18	
903.844	110638.5	903.841	0.003	77	4832	4f <sup>11</sup> 5d(4I) <sup>3</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 7	150111.23	260750.18	
904.140	110602.3	904.140	-0.000	81	604.4	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ic 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 6	164952.6	275554.90	
904.161	110599.8	904.160	0.001	97	5798	4f <sup>11</sup> 5d(4I) <sup>5</sup> Gb 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 4	152950.0	263549.91	
904.467	110562.4	904.465	0.002	68	2732	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 5	151021.29	261583.94	
904.534	110554.2	904.527	0.007	160	9745	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 5	4f <sup>11</sup> 6p(4I) <sup>3</sup> H 6	149953.96	260509.01	
904.534	110554.2	904.539	-0.005	160	5671	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 7	146795.2	257348.77	
905.246	110467.2	905.239	0.007	132	7400	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 8	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 7	146880.7	257348.77	
905.619	110421.7	905.614	0.005	7	1005	4f <sup>11</sup> 5d(4S) <sup>3</sup> D 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> Dc 4	168554.6	278976.88	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
905.645	110418.5	905.642	0.003	16	1642	$4f^{11}5d(4G)^5G\ 6$	$4f^{11}6p(4F)^5Fb\ 5$	168445.8	278864.67	
905.818	110397.4	905.815	0.003	77	5294	$4f^{11}5d(4I)^3I\ 7$	$4f^{11}6p(4I)^3H\ 6$	150111.23	260509.01	
905.977	110378.1	905.976	0.001	64	3602	$4f^{11}5d(4I)^5K\ 5$	$4f^{11}6p(4F)^5Db\ 4$	157420.26	267798.48	
906.053	110368.8	906.051	0.002	90	6037	$4f^{11}5d(4I)^5G\ 3$	$4f^{11}6p(4F)^5Db\ 4$	157429.4	267798.48	
906.144	110357.7	906.148	-0.004	13	610.9	$4f^{11}5d(4I)^3Gb\ 3$	$4f^{11}6p(4F)^5G\ 4$	163941.6	274298.83	
906.472	110317.8	906.471	0.001	6	32.67	$4f^{11}5d(4I)^3Gc\ 3.0$	$4f^{11}6p(4F)^5D\ 3$	175716.1	286033.97	
906.867	110269.7	906.861	0.006	77	3388	$4f^{11}5d(4I)^5I\ 7$	$4f^{11}6p(4I)^5H\ 6$	146795.2	257065.63	
906.943	110260.5	906.942	0.001	93	6077	$4f^{11}5d(4F)^5G\ 5$	$4f^{11}6p(4I)^5K\ 5$	153535.7	263796.29	
907.329	110213.6	907.322	0.007	14	109.9	$4f^{11}5d(4I)^5Ib\ 5$	$4f^{11}6p(4I)^5I\ 6$	163513.8	273728.28	
907.790	110157.6	907.790	0.000	77	4993	$4f^{11}5d(4I)^5K\ 5$	$4f^{11}6p(4I)^5Kb\ 5$	157420.26	267577.92	
907.790	110157.6	907.791	-0.001	77	708.7	$4f^{11}5d(4I)^5H\ 4$	$4f^{11}6p(4I)^5H\ 5$	158706.85	268864.41	
907.969	110135.9	907.972	-0.003	30	821.9	$4f^{11}5d(4F)^5G2\ 5$	$4f^{11}6p(4F)^5Dc\ 4$	168841.3	278976.88	
908.206	110107.2	908.208	-0.002	14	696	$4f^{11}5d(4I)^3I\ 7$	$4f^{11}6p(4I)^5I\ 8$	150111.23	260218.14	
908.263	110100.2	908.263	0.000	170	13910	$4f^{11}5d(4I)^5H\ 7$	$4f^{11}6p(4I)^5H\ 7$	137790.2	247890.51	
908.740	110042.5	908.728	0.012	29	1993	$4f^{11}5d(4I)^3Ib\ 6$	$4f^{11}6p(2H)^3G2\ 5$	161967.2	272011.18	
908.760	110040.1	908.755	0.005	27	2337	$4f^{11}5d(2K)^3H\ 6$	$4f^{11}6p(4F)^3G\ 5$	169918.7	279959.30	
908.919	110020.8	908.914	0.005	13	2235	$4f^{11}5d(4S)^5D\ 4$	$4f^{11}6p(4I)^5I\ 4$	165987.1	276008.50	
908.980	110013.5	908.973	0.007	79	4396	$4f^{11}5d(4F)^5G\ 5$	$4f^{11}6p(4F)^5D\ 4$	153535.7	263549.91	
909.991	109891.2	909.989	0.002	21	1820	$4f^{11}5d(4I)^3Gb\ 3$	$4f^{11}6p(4F)^5F\ 3$	163941.6	273832.99	
910.777	109796.3	910.776	0.001	12	1240	$4f^{11}5d(4I)^5Ib\ 4$	$4f^{11}6p(4F)^5G\ 4$	164502.40	274298.83	
910.804	109793.1	910.800	0.004	47	3407	$4f^{11}5d(4I)^3Hb\ 6$	$4f^{11}6p(4I)^5K\ 5$	154002.75	263796.29	
910.977	109772.2	910.973	0.004	21	1442	$4f^{11}5d(4F)^3H\ 6$	$4f^{11}6p(4G)^3H\ 6$	172251.1	282023.84	
911.269	109737.0	911.267	0.002	7	1124	$4f^{11}5d(4F)^3H\ 5$	$4f^{11}6p(4G)^3G\ 5$	174405.8	284143.17	
911.341	109728.4	911.337	0.004	43	2167	$4f^{11}5d(4I)^3H\ 6$	$4f^{11}6p(4I)^3I\ 7$	151021.29	260750.18	
911.399	109721.4	911.397	0.002	34	2853	$4f^{11}5d(2H)^3K2\ 7$	$4f^{11}6p(4I)^5I\ 6$	164006.6	273728.28	
912.152	109630.9	912.149	0.003	16	2375	$4f^{11}5d(4F)^5H\ 6$	$4f^{11}6p(4F)^3G\ 5$	170328.1	279959.30	
912.446	109595.6	912.447	-0.001	31	1617	$4f^{11}5d(4G)^5G\ 5$	$4f^{11}6p(4F)^3F\ 4$	170381.4	279976.85	
912.592	109577.9	912.593	-0.001	47	4062	$4f^{11}5d(4G)^5G\ 5$	$4f^{11}6p(4F)^3G\ 5$	170381.4	279959.30	
913.034	109524.9	913.034	-0.000	105	10080	$4f^{11}5d(4F)^5G\ 6$	$4f^{11}6p(4I)^5Kb\ 5$	158053.0	267577.92	
913.278	109495.7	913.277	0.001	6	1091	$4f^{11}5d(4I)^3Kb\ 6$	$4f^{11}6p(4I)^5I\ 6$	164232.46	273728.28	
913.347	109487.4	913.344	0.003	100	6608	$4f^{11}5d(4I)^3H\ 6$	$4f^{11}6p(4I)^3H\ 6$	151021.29	260509.01	
913.831	109429.4	913.830	0.001	27	479.3	$4f^{11}5d(4I)^5I\ 5$	$4f^{11}6p(4I)^3I\ 6$	159904.4	269333.95	
914.157	109390.4	914.154	0.003	39	611.8	$4f^{11}5d(4I)^3Kb\ 6$	$4f^{11}6p(4I)^5Ib\ 5$	164232.46	273623.27	
914.656	109330.7	914.657	-0.001	34	722.6	$4f^{11}5d(4I)^5Ib\ 4$	$4f^{11}6p(4F)^5F\ 3$	164502.40	273832.99	
915.061	109282.4	915.059	0.002	83	4640	$4f^{11}5d(4I)^3Gb\ 5$	$4f^{11}6p(4I)^5K\ 6$	152738.66	262021.27	
916.418	109120.5	916.415	0.003	13	1466	$4f^{11}5d(4I)^5Ib\ 4$	$4f^{11}6p(4I)^5Ib\ 5$	164502.40	273623.27	
916.665	109091.1	916.661	0.004	24	1626	$4f^{11}5d(4I)^5H\ 4$	$4f^{11}6p(4F)^5Db\ 4$	168706.85	267798.48	
916.846	109069.6	916.844	0.002	28	1514	$4f^{11}5d(4I)^3Hb\ 5$	$4f^{11}6p(2H)^3G2\ 5$	162941.4	272011.18	
916.971	109054.6	916.968	0.003	36	2001	$4f^{11}5d(4I)^3Gb\ 3$	$4f^{11}6p(4I)^5H\ 4$	163941.6	272996.60	
917.190	109028.7	917.188	0.002	46	2274	$4f^{11}5d(4I)^3H\ 5$	$4f^{11}6p(4I)^5K\ 5$	154767.34	263796.29	
917.234	109023.4	917.232	0.003	149	16050	$4f^{11}5d(4I)^5L\ 7$	$4f^{11}6p(4I)^5K\ 6$	152997.54	262021.27	
917.287	109017.1	917.289	-0.002	31	1531	$4f^{11}5d(4G)^5F\ 5$	$4f^{11}6p(4F)^5Gb\ 4$	178991.4	288008.29	
917.379	109006.2	917.375	0.004	162	13950	$4f^{11}5d(4I)^5L\ 6$	$4f^{11}6p(4I)^5K\ 5$	154789.62	263796.29	
917.511	108990.5	917.512	-0.001	197	26530	$4f^{11}5d(4I)^3L\ 9$	$4f^{11}6p(4I)^3K\ 8$	139582.6	248573.04	
917.777	108958.9	917.768	0.009	69	134.8	$4f^{11}5d(4I)^5I\ 5$	$4f^{11}6p(4I)^5H\ 5$	159904.4	268864.41	
918.004	108931.9	918.000	0.004	24	1378	$4f^{11}5d(4F)^5Gb\ 4$	$4f^{11}6p(4I)^5I\ 4$	167076.1	276008.50	
918.517	108871.2	918.518	-0.001	24	912.1	$4f^{11}5d(4I)^5H\ 4$	$4f^{11}6p(4I)^5Kb\ 5$	158706.85	267577.92	
918.736	108845.1	918.735	0.001	85	4875	$4f^{11}5d(4I)^3Gb\ 5$	$4f^{11}6p(4I)^5I\ 5$	152738.66	261583.94	
919.271	108781.9	919.265	0.006	25	1260	$4f^{11}5d(4I)^3H\ 5$	$4f^{11}6p(4F)^5D\ 4$	154767.34	263549.91	
919.329	108774.9	919.323	0.006	37	888.7	$4f^{11}5d(4I)^3Ic\ 6$	$4f^{11}6p(4I)^5I\ 6$	164952.6	273728.28	
920.009	108694.6	920.008	0.001	21	16550	$4f^{11}5d(4G)^3I\ 7$	$4f^{11}6p(4G)^3H\ 6$	173329.1	282023.84	
920.198	108672.2	920.192	0.006	22	1375	$4f^{11}5d(4I)^5Ib\ 5$	$4f^{11}6p(2H)^3H2\ 6$	163513.8	272186.73	bl D
920.198	108672.2	920.212	-0.014	22	290.3	$4f^{11}5d(4I)^3Ic\ 6$	$4f^{11}6p(4I)^5Ib\ 5$	164952.6	273623.27	bl D
920.835	108597.0	920.833	0.002	77	6185	$4f^{11}5d(4F)^3G\ 5$	$4f^{11}6p(4F)^5G\ 4$	165701.5	274298.83	
920.884	108591.3	920.883	0.001	150	15900	$4f^{11}5d(4I)^5L\ 8$	$4f^{11}6p(4I)^5K\ 7$	148757.3	257348.77	
921.352	108536.2	921.348	0.004	13	1049	$4f^{11}5d(4F)^5H\ 6$	$4f^{11}6p(4F)^5Fb\ 5$	170328.1	278864.67	
921.701	108495.1	921.708	-0.007	90	381.4	$4f^{11}5d(4I)^5Ib\ 4$	$4f^{11}6p(4I)^5H\ 4$	164502.40	272996.60	
921.802	108483.2	921.801	0.001	22	1592	$4f^{11}5d(4G)^5G\ 5$	$4f^{11}6p(4F)^5Fb\ 5$	170381.4	278864.67	
922.628	108386.1	922.625	0.003	8	309.3	$4f^{11}5d(4F)^5D\ 4$	$4f^{11}6p(4F)^5F\ 3$	165446.6	273832.99	
922.628	108386.1	922.635	-0.007	8	43.52	$4f^{11}5d(4F)^5H\ 7$	$4f^{11}6p(4I)^5Kb\ 7$	164831.0	273216.25	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
922.764	108370.1	922.760	0.004	6	48.66	4f <sup>11</sup> 5d(4F) <sup>3</sup> Fc 4	4f <sup>11</sup> 6p(4G) <sup>3</sup> G 5	175772.6	284143.17	
923.261	108311.7	923.261	0.000	22	467.5	4f <sup>11</sup> 5d(4S) <sup>5</sup> D 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 4	165987.1	274298.83	
924.386	108179.9	924.384	0.002	107	11590	4f <sup>11</sup> 5d(2H) <sup>3</sup> K2 7	4f <sup>11</sup> 6p(2H) <sup>3</sup> H2 6	164006.6	272186.73	
924.519	108164.3	924.518	0.001	10	1556	4f <sup>11</sup> 5d(2K) <sup>3</sup> Hb 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 4	177728.4	285892.87	
925.511	108048.4	925.513	-0.002	20	1015	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 5	153535.7	261583.94	
925.556	108043.2	925.551	0.005	3	662.4	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 4	167964.8	276008.50	
925.770	108018.2	925.767	0.003	102	6168	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 6	154002.75	262021.27	
926.318	107954.3	926.318	-0.000	65	4174	4f <sup>11</sup> 5d(4I) <sup>3</sup> Kb 6	4f <sup>11</sup> 6p(2H) <sup>3</sup> H2 6	164232.46	272186.73	
926.836	107893.9	926.835	0.001	26	1307	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> Db 4	159904.4	267798.48	
926.850	107892.4	926.845	0.005	46	3217	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hc 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 4	166405.9	274298.83	
927.175	107854.6	927.176	-0.001	8	1472	4f <sup>11</sup> 5d(4G) <sup>5</sup> H 6	4f <sup>11</sup> 6p(4G) <sup>3</sup> G 5	176288.8	284143.17	
927.246	107846.2	927.249	-0.003	6	279.1	4f <sup>11</sup> 5d(4S) <sup>5</sup> D 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 3	165987.1	273832.99	
927.748	107787.9	927.745	0.003	193	14210	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 8	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 8	140784.8	248573.04	
927.828	107778.6	927.827	0.001	26	1780	4f <sup>11</sup> 5d(4I) <sup>3</sup> Kb 6	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	164232.46	272011.18	
927.900	107770.2	927.899	0.001	32	1278	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 5	4f <sup>11</sup> 6p(4I) <sup>3</sup> H 6	152738.66	260509.01	
928.049	107752.9	928.051	-0.002	42	1070	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 7	152997.54	260750.18	
928.436	107708.1	928.434	0.002	72	8342	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4F) <sup>3</sup> G 5	172251.1	279959.30	
928.634	107685.0	928.636	-0.002	10	1286	4f <sup>11</sup> 5d(4G) <sup>5</sup> Fb 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> Gb 4	180323.5	288008.29	
928.731	107673.8	928.734	-0.003	42	1775	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> Kb 5	159904.4	267577.92	
929.533	107580.9	929.530	0.003	47	2364	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 5	154002.75	261583.94	
929.797	107550.4	929.800	-0.003	13	32.83	4f <sup>11</sup> 5d(4F) <sup>5</sup> D 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 4	165446.6	272996.60	
930.135	107511.3	930.133	0.002	12	1180	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> H 6	152997.54	260509.01	
930.158	107508.6	930.157	0.001	61	3121	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 4	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	164502.40	272011.18	bl D
930.158	107508.6	930.162	-0.004	61	1233	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 5	161356.2	268864.41	bl D
931.480	107356.0	931.483	-0.003	59	3286	4f <sup>11</sup> 5d(4F) <sup>5</sup> H 7	4f <sup>11</sup> 6p(2H) <sup>3</sup> H2 6	164831.0	272186.73	
932.365	107254.1	932.367	-0.002	11	886.1	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 6	154767.34	262021.27	
932.438	107245.8	932.437	0.001	21	2804	4f <sup>11</sup> 5d(4G) <sup>3</sup> I 6	4f <sup>11</sup> 6p(4G) <sup>3</sup> H 6	174778.0	282023.84	
932.508	107237.7	932.509	-0.001	101	5991	4f <sup>11</sup> 5d(4I) <sup>3</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 7	150111.23	257348.77	
932.537	107234.4	932.539	-0.002	27	2070	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ic 6	4f <sup>11</sup> 6p(2H) <sup>3</sup> H2 6	164952.6	272186.73	
932.562	107231.5	932.560	0.001	34	1851	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 6	154789.62	262021.27	
933.604	107111.8	933.605	-0.001	56	2432	4f <sup>11</sup> 5d(4I) <sup>3</sup> G 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 6	149953.96	257065.63	
933.656	107105.8	933.657	-0.001	127	7647	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 8	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 7	140784.8	247890.51	
934.072	107058.2	934.068	0.004	36	906.3	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ic 6	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	164952.6	272011.18	
934.215	107041.7	934.209	0.006	59	158.5	4f <sup>11</sup> 5d(4G) <sup>5</sup> F 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 5	178991.4	286033.82	
934.979	106954.3	934.978	0.001	71	3240	4f <sup>11</sup> 5d(4I) <sup>3</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 6	150111.23	257065.63	
935.483	106896.6	935.478	0.005	4	155.8	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ib 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 5	161967.2	268864.41	
936.180	106817.0	936.184	-0.004	43	1604	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 5	154767.34	261583.94	
936.319	106801.2	936.317	0.002	3	491.5	4f <sup>11</sup> 5d(4I) <sup>3</sup> K 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> Kb 5	160776.5	267577.92	
936.792	106747.3	936.791	0.001	45	1698	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 7	154002.75	260750.18	
936.833	106742.6	936.832	0.001	15	589.3	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 5	157053.57	263796.29	
937.825	106629.7	937.822	0.003	9	99.10	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 4	4f <sup>11</sup> 6p(4G) <sup>3</sup> G 5	177513.1	284143.17	
937.962	106614.1	937.967	-0.005	36	2449	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> Fb 5	172251.1	278864.67	
938.397	106564.7	938.397	0.000	32	252.9	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 5	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 4	173412.2	279976.85	bl D
938.397	106564.7	938.398	-0.001	32	1793	4f <sup>11</sup> 5d(4F) <sup>5</sup> D 4	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	165446.6	272011.18	bl D
938.560	106546.2	938.552	0.008	35	1179	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 5	4f <sup>11</sup> 6p(4F) <sup>3</sup> G 5	173412.2	279959.30	
938.909	106506.6	938.912	-0.003	7	270.6	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> H 6	154002.75	260509.01	
939.001	106496.1	938.999	0.002	28	1738	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 4	157053.57	263549.91	
939.160	106478.1	939.160	0.000	18	771.6	4f <sup>11</sup> 5d(4I) <sup>3</sup> I 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 6	155543.1	262021.27	
939.475	106442.4	939.476	-0.001	21	1367	4f <sup>11</sup> 5d(4F) <sup>5</sup> G 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> Db 4	161356.2	267798.48	
939.911	106393.1	939.915	-0.004	5	705.4	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 6	162941.4	269333.95	
940.011	106381.7	940.009	0.002	32	1384	4f <sup>11</sup> 5d(4I) <sup>5</sup> Gc 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 5	155202.0	261583.94	
940.057	106376.5	940.061	-0.004	10	711.3	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 5	157420.26	263796.29	
940.486	106327.9	940.491	-0.005	51	1595	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 7	151021.29	257348.77	
942.242	106129.9	942.244	-0.002	2	447.7	4f <sup>11</sup> 5d(4I) <sup>5</sup> K 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 4	157420.26	263549.91	
942.323	106120.8	942.325	-0.002	5	554.6	4f <sup>11</sup> 5d(4I) <sup>5</sup> G 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 4	157429.4	263549.91	bl D
942.323	106120.8	942.327	-0.004	5	174.2	4f <sup>11</sup> 5d(4G) <sup>3</sup> F 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 4	179772.6	285892.87	bl D
942.999	106044.7	943.002	-0.003	81	3789	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 6	151021.29	257065.63	bl D
942.999	106044.7	943.005	-0.006	81	161.4	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 6	155977.3	262021.27	bl D
943.181	106024.2	943.182	-0.001	6	341.3	4f <sup>11</sup> 5d(4S) <sup>5</sup> D 4	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	165987.1	272011.18	
943.742	105961.2	943.747	-0.005	13	568.2	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 7	154789.62	260750.18	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
944.085	105922.7	944.082	0.003	61	661.7	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 5	162941.4	268864.41	
945.116	105807.1	945.113	0.003	6	538.8	4f <sup>11</sup> 5d(4F) <sup>3</sup> F 3	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 4	174169.4	279976.85	
945.761	105734.9	945.760	0.001	52	1054	4f <sup>11</sup> 5d(4G) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4G) <sup>3</sup> H 6	176288.8	282023.84	
945.900	105719.4	945.900	-0.000	3	162.2	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> H 6	154789.62	260509.01	
946.775	105621.8	946.770	0.005	127	63.30	4f <sup>11</sup> 5d(2K) <sup>3</sup> H 6	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 5	169918.7	275541.01	
946.873	105610.8	946.874	-0.001	23	1607	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ib 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> Kb 5	161967.2	267577.92	
946.922	105605.3	946.922	-0.000	29	1901	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hc 5	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	166405.9	272011.18	
947.388	105553.4	947.387	0.001	17	497.1	4f <sup>11</sup> 5d(4F) <sup>3</sup> H 5	4f <sup>11</sup> 6p(4F) <sup>3</sup> G 5	174405.8	279959.30	
948.799	105396.4	948.793	0.006	5	25.78	4f <sup>11</sup> 5d(4G) <sup>3</sup> F 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 3	180636.9	286033.97	
952.234	105016.2	952.243	-0.009	19	246.1	4f <sup>11</sup> 5d(2H) <sup>3</sup> G2 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 4	170993.3	276008.50	
952.960	104936.2	952.970	-0.01	4	198	4f <sup>11</sup> 5d(4F) <sup>5</sup> Gb 4	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	167076.1	272011.18	
954.128	104807.8	954.130	-0.002	8	1094	4f <sup>11</sup> 5d(4F) <sup>3</sup> F 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> Dc 4	174169.4	278976.88	
955.698	104635.6	955.689	0.009	30	84.31	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> Kb 5	162941.4	267577.92	
956.653	104531.2	956.648	0.005	4	125.3	4f <sup>11</sup> 5d(4I) <sup>5</sup> Ib 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> H 6	155977.3	260509.01	bl D
956.653	104531.2	956.660	-0.007	4	317.5	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 5	157053.57	261583.94	bl D
958.298	104351.6	958.302	-0.004	24	1004	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 7	152997.54	257348.77	
958.519	104327.7	958.525	-0.006	2	470	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 6	152738.66	257065.63	
959.653	104204.3	959.650	0.003	11	45.91	4f <sup>11</sup> 5d(4G) <sup>5</sup> I 5	4f <sup>11</sup> 6p(4F) <sup>5</sup> Gb 4	163941.6	288008.29	bl D
959.653	104204.3	959.654	-0.001	11	1244	4f <sup>11</sup> 5d(4F) <sup>3</sup> Fc	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 4	175772.6	279976.85	bl D
959.814	104186.8	959.815	-0.001	4	861	4f <sup>11</sup> 5d(4F) <sup>3</sup> Fc	4f <sup>11</sup> 6p(4F) <sup>3</sup> G 5	175772.6	279959.30	
960.907	104068.3	960.909	-0.002	5	498.2	4f <sup>11</sup> 5d(4I) <sup>5</sup> L 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 6	152997.54	257065.63	
961.105	104046.9	961.110	-0.005	6	575.3	4f <sup>11</sup> 5d(4S) <sup>5</sup> Db 4	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	167964.8	272011.18	
962.860	103857.2	962.863	-0.004	10	889.6	4f <sup>11</sup> 5d(4I) <sup>3</sup> Gb 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> Db 4	163941.6	267798.48	
967.623	103346.0	967.623	0.000	18	32.03	4f <sup>11</sup> 5d(4I) <sup>3</sup> Hb 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 7	154002.75	257348.77	bl D
967.623	103346.0	967.628	-0.005	18	881.5	4f <sup>11</sup> 5d(4I) <sup>3</sup> Kb 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> Kb 5	164232.46	267577.92	bl D
967.623	103346.0	967.629	-0.006	18	183.4	4f <sup>11</sup> 5d(4F) <sup>5</sup> G2 5	4f <sup>11</sup> 6p(2H) <sup>3</sup> H2 6	168841.3	272186.73	bl D
969.276	103169.8	969.275	0.001	16	877.1	4f <sup>11</sup> 5d(4F) <sup>5</sup> G2 5	4f <sup>11</sup> 6p(2H) <sup>3</sup> G2 5	168841.3	272011.18	
972.032	102877.3	972.034	-0.002	20	807.1	4f <sup>11</sup> 5d(4I) <sup>5</sup> H 4	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 5	158706.85	261583.94	
977.544	102297.2	977.533	0.01	11	46.76	4f <sup>11</sup> 5d(4I) <sup>3</sup> H 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 6	154767.34	257065.63	bl D
977.544	102297.2	977.550	-0.006	11	157.3	4f <sup>11</sup> 5d(4F) <sup>3</sup> D 3	4f <sup>11</sup> 6p(4F) <sup>3</sup> D 3	177478.1	279774.7	bl D
979.910	102050.2	979.909	0.001	5	24.13	4f <sup>11</sup> 5d(2D) <sup>3</sup> G1 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 4	183842.6	285892.87	
982.026	101830.3	982.038	-0.01	21	24.43	4f <sup>11</sup> 5d(4I) <sup>3</sup> Ib 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 5	161967.2	263796.29	
982.534	101777.7	982.532	0.002	19	488.3	4f <sup>11</sup> 5d(4I) <sup>5</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 8	146795.2	248573.04	
983.263	101702.2	983.261	0.002	4	477.3	4f <sup>11</sup> 5d(4F) <sup>5</sup> P 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> Db 4	166096.1	267798.48	
1455.583	68701.01	1455.584	-0.001	42	793.4	4f <sup>11</sup> 6s(4F) <sup>5</sup> F 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> Gb 4	219307.35	288008.29	
1467.956	68121.91	1467.955	0.001	108	4891	4f <sup>11</sup> 6s(4I) <sup>5</sup> I 8	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 7	192628.22	260750.18	
1469.269	68061.04	1469.269	0.000	22	50.43	4f <sup>11</sup> 5d(2H) <sup>3</sup> H1 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> H 4	204935.55	272996.60	
1470.889	67986.09	1470.887	0.002	107	3615	4f <sup>11</sup> 6s(4I) <sup>3</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> K 6	194035.09	262021.27	
1479.508	67590.03	1479.511	-0.003	209	16050	4f <sup>11</sup> 6s(4I) <sup>5</sup> I 8	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 8	192628.22	260218.14	
1484.268	67373.29	1484.265	0.003	156	4070	4f <sup>11</sup> 6s(4F) <sup>5</sup> F 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 4	208635.08	276008.50	
1485.636	67311.24	1485.636	0.000	129	4528	4f <sup>11</sup> 6s(4I) <sup>5</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 6	202022.73	269333.95	
1487.853	67210.90	1487.855	-0.002	140	2732	4f <sup>11</sup> 6s(4F) <sup>5</sup> Fb 5	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 4	212766.00	279976.85	bl D
1487.853	67210.90	1487.857	-0.004	140	14240	4f <sup>11</sup> 6s(4I) <sup>5</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 7	202022.73	269233.49	bl D
1487.902	67208.74	1487.907	-0.005	119	6429	4f <sup>11</sup> 6s(4I) <sup>5</sup> I 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 6	206519.78	273728.28	
1488.239	67193.52	1488.244	-0.005	152	3469	4f <sup>11</sup> 6s(4F) <sup>5</sup> Fb 5	4f <sup>11</sup> 6p(4F) <sup>3</sup> G 5	212766.00	279959.30	
1489.834	67121.58	1489.836	-0.002	166	6716	4f <sup>11</sup> 6s(4F) <sup>3</sup> F 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 4	212855.37	279976.85	
1490.008	67113.70	1490.009	-0.001	116	2657	4f <sup>11</sup> 6s(4F) <sup>5</sup> F 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 3	218920.29	286033.97	bl D
1490.008	67113.70	1490.013	-0.005	116	15320	4f <sup>11</sup> 6s(4F) <sup>5</sup> F 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> G 5	218920.29	286033.82	bl D
1490.233	67103.60	1490.226	0.007	134	2278	4f <sup>11</sup> 6s(4F) <sup>3</sup> F 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> G 5	212855.37	279959.30	bl D
1490.233	67103.60	1490.235	-0.002	134	10570	4f <sup>11</sup> 6s(4I) <sup>5</sup> I 5	4f <sup>11</sup> 6p(4I) <sup>5</sup> Ib 5	206519.78	273623.27	bl D
1492.096	67019.82	1492.099	-0.003	125	5957	4f <sup>11</sup> 6s(4I) <sup>5</sup> I 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 5	208521.33	275541.01	
1493.144	66972.78	1493.148	-0.004	125	5688	4f <sup>11</sup> 6s(4F) <sup>5</sup> F 4	4f <sup>11</sup> 6p(4F) <sup>5</sup> F 4	218920.29	285892.87	
1494.048	66932.25	1494.050	-0.002	132	11120	4f <sup>11</sup> 6s(4I) <sup>3</sup> I 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> I 6	206796.10	273728.28	
1494.335	66919.40	1494.326	0.009	178	1.8080	4f <sup>11</sup> 6s(4F) <sup>5</sup> F 5	4f <sup>11</sup> 6p(4I) <sup>3</sup> K 6	208635.08	275554.90	bl D
1494.335	66919.40	1494.337	-0.002	178	9471	4f <sup>11</sup> 6s(4F) <sup>3</sup> F 4	4f <sup>11</sup> 6p(4F) <sup>3</sup> D 3	212855.37	279774.7	bl D
1494.629	66906.22	1494.636	-0.007	115	8448	4f <sup>11</sup> 6s(4F) <sup>5</sup> F 5	4f <sup>11</sup> 6p(4F) <sup>3</sup> F 5	208635.08	275541.01	
1496.400	66827.05	1496.397	0.003	137	4569	4f <sup>11</sup> 6s(4I) <sup>3</sup> I 6	4f <sup>11</sup> 6p(4I) <sup>5</sup> Ib 5	206796.10	273623.27	
1496.875	66805.85	1496.876	-0.001	169	14000	4f <sup>11</sup> 6s(4I) <sup>5</sup> I 6	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 6	202528.13	269333.95	
1498.649	66726.78	1498.652	-0.003	131	6767	4f <sup>11</sup> 6s(4F) <sup>5</sup> F 3	4f <sup>11</sup> 6p(4F) <sup>5</sup> D 3	219307.35	286033.97	
1498.909	66715.19	1498.911	-0.002	193	16410	4f <sup>11</sup> 6s(4I) <sup>3</sup> I 7	4f <sup>11</sup> 6p(4I) <sup>3</sup> I 7	194035.09	260750.18	

Table 3. (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
1499.130	66705.38	1499.130	0.000	122	7833	$4f^{11}6s(4I)^5I 6$	$4f^{11}6p(4I)^5I 7$	202528.13	269233.49	
1499.774	66676.73	1499.771	0.003	283	27920	$4f^{11}6s(4I)^5I 8$	$4f^{11}6p(4I)^5K 9$	192628.22	259305.05	
1501.831	66585.39	1501.828	0.003	155	5383	$4f^{11}6s(4F)^5F 3$	$4f^{11}6p(4F)^5F 4$	219307.35	285892.87	
1501.859	66584.13	1501.861	-0.002	189	17920	$4f^{11}6s(4F)^5Fb 5$	$4f^{11}6p(4F)^5G 6$	212766.00	279350.06	
1503.544	66509.50	1503.545	-0.001	237	24650	$4f^{11}6s(4I)^5I 7$	$4f^{11}6p(4I)^5K 8$	202022.73	268532.23	
1504.282	66476.89	1504.284	-0.002	179	11450	$4f^{11}6s(4I)^5I 5$	$4f^{11}6p(4I)^5H 4$	206519.78	272996.60	
1504.350	66473.91	1504.349	0.001	223	13600	$4f^{11}6s(4I)^3I 7$	$4f^{11}6p(4I)^3H 6$	194035.09	260509.01	
1505.571	66419.97	1505.567	0.004	218	21360	$4f^{11}6s(4I)^3I 6$	$4f^{11}6p(4I)^5Kb 7$	206796.10	273216.25	
1507.468	66336.39	1507.471	-0.003	273	12720	$4f^{11}6s(4I)^5I 6$	$4f^{11}6p(4I)^5H 5$	202528.13	268864.41	
1510.328	66210.79	1510.326	0.002	74	982.9	$4f^{11}6s(4F)^5Fb 5$	$4f^{11}6p(4F)^5Dc 4$	212766.00	278976.88	
1510.967	66182.79	1510.961	0.006	282	9223	$4f^{11}6s(4I)^3I 7$	$4f^{11}6p(4I)^5I 8$	194035.09	260218.14	
1512.367	66121.52	1512.367	0.000	153	2398	$4f^{11}6s(4F)^3F 4$	$4f^{11}6p(4F)^5Dc 4$	212855.37	278976.88	
1512.894	66098.48	1512.890	0.004	166	5337	$4f^{11}6s(4F)^5Fb 5$	$4f^{11}6p(4F)^5Fb 5$	212766.00	278864.67	
1514.937	66009.33	1514.938	-0.001	136	3724	$4f^{11}6s(4F)^3F 4$	$4f^{11}6p(4F)^5Fb 5$	212855.37	278864.67	
1522.834	65667.03	1522.836	-0.002	45	628.3	$4f^{11}6s(4I)^5I 5$	$4f^{11}6p(2H)^3H2 6$	206519.78	272186.73	
1522.907	65663.88	1522.910	-0.003	21	109.4	$4f^{11}6s(4F)^5F 5$	$4f^{11}6p(4F)^5G 4$	208635.08	274298.83	
1526.917	65491.44	1526.918	-0.001	24	304.4	$4f^{11}6s(4I)^5I 5$	$4f^{11}6p(2H)^3G2 5$	206519.78	272011.18	
1529.272	65390.61	1529.271	0.001	124	907.7	$4f^{11}6s(4I)^3I 6$	$4f^{11}6p(2H)^3H2 6$	206796.10	272186.73	
1537.285	65049.76	1537.284	0.001	92	964.2	$4f^{11}6s(4I)^5I 6$	$4f^{11}6p(4I)^5Kb 5$	202528.13	267577.92	
1545.103	64720.62	1545.104	-0.001	19	123.4	$4f^{11}6s(4I)^5I 8$	$4f^{11}6p(4I)^5K 7$	192628.22	257348.77	
1553.728	64361.34	1553.723	0.005	60	231.2	$4f^{11}6s(4F)^5F 5$	$4f^{11}6p(4I)^5H 4$	208635.08	272996.60	
1577.883	63376.04	1577.882	0.001	109	310.8	$4f^{11}6s(4F)^5F 5$	$4f^{11}6p(2H)^3G2 5$	208635.08	272011.18	
1579.434	63313.83	1579.437	-0.003	52	646	$4f^{11}6s(4I)^3I 7$	$4f^{11}6p(4I)^5K 7$	194035.09	257348.77	
1581.210	63242.71	1581.215	-0.005	62	169.3	$4f^{11}6s(4F)^5Fb 5$	$4f^{11}6p(4I)^5I 4$	212766.00	276008.50	
1583.450	63153.25	1583.453	-0.003	49	140	$4f^{11}6s(4F)^3F 4$	$4f^{11}6p(4I)^5I 4$	212855.37	276008.50	
1586.534	63030.48	1586.532	0.002	93	1360	$4f^{11}6s(4I)^3I 7$	$4f^{11}6p(4I)^5H 6$	194035.09	257065.63	
1595.272	62685.24	1595.262	0.01	87	585.6	$4f^{11}6s(4F)^5F 4$	$4f^{11}6p(4F)^5F 5$	212855.37	275541.01	
1603.981	62344.89	1603.987	-0.006	37	334.2	$4f^{11}6s(4I)^5I 5$	$4f^{11}6p(4I)^5H 5$	206519.78	268864.41	
1611.129	62068.29	1611.128	0.001	46	365.1	$4f^{11}6s(4I)^3I 6$	$4f^{11}6p(4I)^5H 5$	206796.10	268864.41	
1693.307	59056.05	1693.291	0.016	117	256.7	$4f^{11}6s(4I)^5I 4$	$4f^{11}6p(4I)^5Kb 5$	208521.33	267577.92	bl D
1693.307	59056.05	1693.313	-0.006	117	652.6	$4f^{11}6s(4I)^5I 6$	$4f^{11}6p(4I)^5I 5$	202528.13	261583.94	bl D
1709.796	58486.49	1709.803	-0.007	102	523.6	$4f^{11}6s(4I)^5I 7$	$4f^{11}6p(4I)^3H 6$	202022.73	260509.01	
1717.565	58221.95	1717.562	0.003	118	332.7	$4f^{11}6s(4I)^5I 6$	$4f^{11}6p(4I)^3I 7$	202528.13	260750.18	
1724.712	57980.68	1724.706	0.006	124	541.6	$4f^{11}6s(4I)^5I 6$	$4f^{11}6p(4I)^3H 6$	202528.13	260509.01	
1753.466	57029.89	1753.459	0.007	73	494.9	$4f^{11}6s(4I)^5I 5$	$4f^{11}6p(4F)^5D 4$	206519.78	263549.91	
1782.589	56098.19	1782.582	0.007	131	303	$4f^{11}6s(4F)^5Fb 5$	$4f^{11}6p(4I)^5H 5$	212766.00	268864.41	
1787.473	55944.91	1787.475	-0.002	317	5613	$4f^{11}6s(4I)^5I 8$	$4f^{11}6p(4I)^3K 8$	192628.22	248573.04	
1801.748	55501.66	1801.753	-0.005	393	5248	$4f^{11}6s(4I)^5I 5$	$4f^{11}6p(4I)^5K 6$	206519.78	262021.27	
1805.757	55378.44	1805.754	0.003	185	3419	$4f^{11}6s(4F)^5F 4$	$4f^{11}6p(4F)^5G 4$	218920.29	274298.83	
1807.469	55325.99	1807.467	0.002	295	4382	$4f^{11}6s(4I)^5I 7$	$4f^{11}6p(4I)^5K 7$	202022.73	257348.77	
1809.145	55274.74	1809.137	0.008	266	5377	$4f^{11}6s(4I)^5I 4$	$4f^{11}6p(4I)^5K 5$	208521.33	263796.29	
1809.556	55262.17	1809.552	0.004	500	9810	$4f^{11}6s(4I)^5I 8$	$4f^{11}6p(4I)^5H 7$	192628.22	247890.51	
1810.772	55225.08	1810.769	0.003	222	2957	$4f^{11}6s(4I)^3I 6$	$4f^{11}6p(4I)^5K 6$	206796.10	262021.27	
1812.862	55161.38	1812.868	-0.006	235	3540	$4f^{11}6s(4F)^5F 5$	$4f^{11}6p(4I)^5K 5$	208635.08	263796.29	
1816.071	55063.94	1816.063	0.008	789	2288	$4f^{11}6s(4I)^5I 5$	$4f^{11}6p(4I)^5I 5$	206519.78	261583.94	
1816.770	55042.74	1816.765	0.005	332	7468	$4f^{11}6s(4I)^5I 7$	$4f^{11}6p(4I)^5H 6$	202022.73	257065.63	
1817.108	55032.52	1817.109	-0.001	254	5089	$4f^{11}6s(4F)^5Fb 5$	$4f^{11}6p(4F)^5Db 4$	212766.00	267798.48	
1817.226	55028.93	1817.238	-0.012	216	2026	$4f^{11}6s(4I)^5I 4$	$4f^{11}6p(4F)^5D 4$	208521.33	263549.91	
1818.464	54991.48	1818.464	0.000	271	3189	$4f^{11}6s(4F)^5F 3$	$4f^{11}6p(4F)^5G 4$	219307.35	274298.83	
1820.065	54943.08	1820.064	0.001	138	1976	$4f^{11}6s(4F)^3F 4$	$4f^{11}6p(4F)^5Db 4$	212855.37	267798.48	
1821.004	54914.76	1821.002	0.002	217	4785	$4f^{11}6s(4F)^5F 5$	$4f^{11}6p(4F)^5D 4$	208635.08	263549.91	
1821.074	54912.66	1821.072	0.002	257	3514	$4f^{11}6s(4F)^5F 4$	$4f^{11}6p(4F)^5F 3$	218920.29	273832.99	
1824.134	54820.53	1824.130	0.004	321	7217	$4f^{11}6s(4I)^5I 6$	$4f^{11}6p(4I)^5K 7$	202528.13	257348.77	
1824.420	54811.95	1824.421	-0.001	192	3248	$4f^{11}6s(4F)^5Fb 5$	$4f^{11}6p(4I)^5Kb 5$	212766.00	267577.92	
1825.220	54787.91	1825.223	-0.003	383	6131	$4f^{11}6s(4I)^3I 6$	$4f^{11}6p(4I)^5I 5$	206796.10	261583.94	
1827.394	54722.75	1827.400	-0.006	221	4418	$4f^{11}6s(4F)^3F 4$	$4f^{11}6p(4I)^5Kb 5$	212855.37	267577.92	
1833.587	54537.90	1833.585	0.002	431	8361	$4f^{11}6s(4I)^3I 7$	$4f^{11}6p(4I)^3K 8$	194035.09	248573.04	bl D
1833.587	54537.90	1833.601	-0.014	431	2170	$4f^{11}6s(4I)^5I 6$	$4f^{11}6p(4I)^5H 6$	202528.13	257065.63	bl D
1834.001	54525.60	1834.000	0.001	104	1319	$4f^{11}6s(4F)^5F 3$	$4f^{11}6p(4F)^5F 3$	219307.35	273832.99	
1852.225	53989.14	1852.221	0.004	203	1128	$4f^{11}6s(4I)^5I 5$	$4f^{11}6p(4I)^3H 6$	206519.78	260509.01	

**Table 3.** (continued)

$\lambda_{meas}$	$\sigma_{exp}$	$\lambda_{Ritz}$	$\Delta\lambda$	Int	$gA$	Lower level	Upper level	$E_{lower}$	$E_{upper}$	Comment
1856.819	53855.53	1856.823	-0.004	217	2478	$4f^{11}6s(4I)^3I\ 7$	$4f^{11}6p(4I)^5H\ 7$	194035.09	247890.51	
1861.745	53713.05	1861.750	-0.005	103	665.6	$4f^{11}6s(4I)^3I\ 6$	$4f^{11}6p(4I)^3H\ 6$	206796.10	260509.01	

d: the level designation is given according to the main component of the level in LS coupling scheme. The last integer is the total momentum quantum number  $J$ . A number inserted after the LS term means a different parent term with the same name, according to the notation used in the Cowan's code (example :  $4f^{11}5d(2F)^3G2\ 5$  ). A letter b or c inserted after the LS term means a level with an identical main component with respectively one or two other levels (example:  $4f^{11}5d(4D)^3Fb\ 3$  )

e: comments

bl: line partially resolved in a blended emission peak with components of similar intensities

D: doubly classified