^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 134, 149 (2016)	15-Apr-2015

Others: 1953Ki45, 1958Gr01, 1962Tr04, 1966Ma52, 1966Vo04, 1967Ma20, 1967Pr09, 1967Sp03, 1969MuZQ, 1969Sa01, 1970Or05, 1972St06, 1987Kn08, 2007ChZX, 2012HuZZ, 2014Hu02.

2014Hu02: 274 mg, 92.7% 9 isotopically-enriched ^{182}W WO_2 target (%^{183}W=2.0 *3*, %^{184}W=4.8 *9*, %^{186}W=0.5 *1*) suspended In vacuum In teflon bag; T≈120 K, E≈4.2 meV supermirror-guided near-thermal n beam; low-background environment; closed-end coaxial n-type HPGe detector 23 cm from target; measured Eγ (0.05 *11*11 MeV), Iγ (corrected for self attenuation In target); monte carlo statistical decay calculations using DICEBOX code; deduced level scheme is complete for E(level)≤490, σ_n=20.5 b *14* and S(n)=6190.88 *6*. Partial level scheme (43 transitions). see also 2012HuZZ.

2011Bo09: 91.6% isotopically-enriched ^{182}W target; neutrons from LWR-15 reactor At Rez; 2 HPGe detectors (FWHM=2 keV At 1.3 MeV,≈4.5 keV At 6 MeV), one with Pb shield between target and detector; energy calibration from ^{152}Eu and ^{133}Ba sources and from ^{35}Cl(n,γ); absolute Iγ determined using activation lines from β decay of ^{187}W target contaminant; measured Eγ, Iγ (782 transitions, many of which remain unplaced), $\gamma\gamma$ coin.

2007ChZX: this evaluation includes new elemental photon cross section data measured At the Budapest reactor; Eγ, Iγ reported for≈53 transitions.

1997Pr02: analysis and discussion of the data reported by 1993Pr09.

1993Pr09: metallic target enriched In ^{182}W to 94.5% (γ singles) or 91.6% ($\gamma\gamma$ coin); Ge detectors (FWHM=2.0 keV At 1.3 MeV for singles spectrum); x-ray detector for 46γ gate In $\gamma\gamma$ coin; measured singles and coincidence γ spectra; deduced S(n)(^{183}W). 428 transitions reported.

σ_n=19.9 *3* (2006MuZX) cf. 19.6 *3* (1987Kn08), 20.0 *6* (2011Bo09), 20.5 *14* (2014Hu02).

^{183}W Levels

E(level)[†]	J$^\pi$[‡]
0.0[#]	1/2$^-$
46.515[#] *15*	3/2$^-$
99.042[#] *14*	5/2$^-$
206.986[#] *20*	7/2$^-$
208.777[@] *13*	3/2$^-$
291.681[@] *17*	5/2$^-$
308.92[#] *4*	9/2$^-$
309.39 *6*	11/2$^+$
412.109[@] *19*	7/2$^-$
453.023[&] *22*	7/2$^-$
475.0[#] *3*	11/2$^-$
485.1	
551.28[@] *10*	9/2$^-$
595.33[&] *7*	9/2$^-$
622.54[a] *6*	9/2$^+$
740.3[@] *9*	11/2$^-$
766.9[&] *3*	11/2$^-$
774.4[a] *20*	11/2$^+$
776.8 *9*	7/2$^+$
903.464[b] *20*	5/2$^-$
934.693[c] *23*	1/2$^-$
999.47[b] *11*	7/2$^-$
1026.372[c] *14*	3/2$^-$
1053.26[c] *4*	5/2$^-$

Continued on next page (footnotes at end of table)

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

^{183}W Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	Comments
1069.38[d] *24*	7/2$^-$	
1149.89[e] *3*	3/2$^-$	
1214.9[d] *6*	9/2$^-$	band assignment from 1997Pr02 and 2011Bo09; 1993Pr09 nominated a 1223 level instead for the J=9/2 band member.
1229.31[e] *7*	5/2$^-$	
1261.4 *5*		
1275.13 *6*	5/2$^+$	
1291.65 *7*	3/2$^-$	
1309.391[f] *22*	3/2$^-$	
1319.58 *4*	5/2$^+$	J$^{\pi}$: ($\leq$5/2$^+$) proposed by 1997Pr02, 5/2$^+$ by 2011Bo09. No primary γ feeds level. However, 768γ and 725γ feed 9/2$^-$ levels, implying M2 multipolarity for each, and this seems improbable. The evaluator adopts (9/2$^-$).
1335.42 *4*		
1337.8[e] *8*	7/2$^-$	
1372.23[f] *7*	5/2$^-$	
1376.43 *13*	7/2$^+$	
1437.35 *7*	3/2	J$^{\pi}$: proposed by 1997Pr02.
1463.21 *8*	1/2	J$^{\pi}$: proposed by 1997Pr02.
1471.07[g] *4*	1/2$^-$	
1485.45 *22*	(1/2,3/2)	J$^{\pi}$: suggested by 1997Pr02.
1510.61 *7*		
1542.9 *5*		
1550.56[h] *13*	5/2$^-$	
1556.24[g] *5*	3/2$^-$	
1569.86 *7*		
1586.52 *7*	(1/2$^-$,3/2$^-$)	J$^{\pi}$: from 1993Pr09.
1612.06 *5*		
1628.24[e] *5*	3/2$^-$	
1633.33 *12*	1/2$^-$,3/2$^-$	J$^{\pi}$: suggested by 1997Pr02.
1660.59 *11*		
1663.63 *20*		
1672.76 *4*	1/2$^-$,3/2$^-$	J$^{\pi}$: proposed by 1997Pr02.
1683.2 *7*		
1686.26 *9*		
1698.2 *3*		
1716.6 *6*		
1725.65 *12*		J$^{\pi}$: 1/2$^-$,3/2$^-$ proposed by 1997Pr02 for 1723.7 *6* level; presumed here to be the same As the 1725.62 level from 2011Bo09.
1730.50 *4*	1/2$^-$,3/2$^-$	J$^{\pi}$: proposed by 1997Pr02.
1734.72 *25*	5/2$^+$	
1737.2 *4*		
1784.58 *16*	5/2$^+$	
1789.55 *19*		
1811.12[g] *4*	1/2$^-$	
1823.87[g] *5*	1/2$^-$	
1833.78 *13*		
1837.2 *4*		
1840.2 *3*		
1846.8 *4*		
1869.70 *10*		
1886.66 *4*	(1/2$^-$,3/2$^-$)	J$^{\pi}$: proposed by 1997Pr02.
1893.84 *10*		
1900.85 *11*		
1915.40 *20*		

Continued on next page (footnotes at end of table)

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

^{183}W Levels (continued)

E(level)[†]	Jπ[‡]	Comments
1944.31[e] 5	3/2−	
1964.74 17		
1975.77 25		
1982.22[e] 9	3/2−	
1990.54 7	1/2−,3/2−	Jπ: proposed by 1997Pr02.
2028.48 7	1/2−,3/2−	
2059.37 12	1/2−,3/2−	Jπ: proposed by 1997Pr02.
2091.5 5		
2098.1 5		
2099.27 13	1/2,3/2	Jπ: proposed by 1997Pr02.
2126.38[e] 7	3/2−	
2157.50 19		
2164.85 6	1/2−,3/2−	Jπ: suggested by 1997Pr02.
2169.81 8		
2176.77 6	1/2−,3/2−	Jπ: proposed by 1997Pr02.
2209.07 9	1/2+,3/2+	
2231.48 17		
2235.73 11	(3/2,5/2)	Jπ: proposed by 1997Pr02.
2248.10 7		
2259.6 4		
2266.31 16		
2282.99 6		
2292.61 11		
2303.94 5		
2315.01 23		
2324.81 9		
2349.7 4		
2359.77 23		
2367.4 10		
2369.07 6		
2372.5 4		
2384.09 14		
2392.71 5		
2417.50 7		
2428.06 10		
2433.65 6		
2450.59 6		
2460.5 3		
2481.47 9		
2485.63 19		
2493.00 7		
2503.28 8		
2517.50 11		
2517.67 10		
2522.53 5		
2523.01 5		
2535.18 6		
2593.42 12		
2609.53 18		
2611.76 7		
2612.7 5		
2615.46 9		
2623.05 8		
2629.19 12		
2656.26 13		
2668.7 5		

Continued on next page (footnotes at end of table)

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

^{183}W Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	Comments
2687.68 *19*		
2697.0 *4*		
2699.22 *8*		
2708.12 *9*		
2715.53 *8*		
2722.94 *9*		
2741.3 *3*		
2768.57 *22*		
2770.5 *6*		
2772.9 *3*		
2782.86 *12*		
2805.04 *15*		
2813.42 *8*		
2815.8 *3*		
2833.95 *10*		
2846.43 *8*		
2884.13 *7*		
2898.7 *3*		
2915.17 *23*		
2979.10 *7*		
3097.60 *7*		
3210.77 *12*		
3667.4 *5*		
3786.68 *17*		
3922.4 *3*		
3993.90 *23*		
(6190.992 *16*)	1/2^{+}	E(level): from least-squares fit to Eγ. S(n)=6190.81 *5* from 2012Wa38. J$^{\pi}$: S wave capture by 0^{+} ^{182}W target.

[†] From least-squares fit to Eγ, excluding uncertainly-placed γ-rays, unless all transitions associated with a given level are of that character.
[‡] Values recommended by 2011Bo09, except As noted.
[#] Band(A): 1/2[510] band.
[@] Band(B): 3/2[512] band.
[&] Band(C): 7/2[503] band.
[a] Band(D): 9/2[624] band.
[b] Band(E): 5/2[512] band.
[c] Band(F): 1/2[521] band.
[d] Band(G): 7/2[514] band.
[e] Band(H): 3/2[501] band.
[f] Band(I): K$^{\pi}$=3/2−? $\beta\gamma$ vibration band.
[g] Band(J): 1/2[501] band.
[h] Band(K): 5/2[503] band.

γ(^{183}W)

Iγ normalization: to convert Iγ/10^5 captures to Iγ/100 n captures. This gives I(6145γ)=4.12 *9* cf. 4.8 (1953Ki45 and 2014Hu02), 5.6 (1958Gr01), 6.6 (1962Tr04) and 3.39 *22* (2007ChZX). with this normalization, Σ (primary Iγ)=36.0 *5* and Σ (I(γ+ce) to g.s.)= 77.2% 3.

Coincidence information is taken from 1997Pr02; weak or uncertain coincidences are not indicated. the γγ coin data from 1997Pr02 are presumed to supersede those from 1993Pr09, where several additional coincidences are reported. see fig. 1 of 2011Bo09 for γ spectrum gated on the 313-keV doublet.

E_γ [†]	I_γ [‡g]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α [h]	Comments
17.2 *4*	0.0527 *20*	308.92	9/2−	291.681	5/2−	[E2]	1.64×10^4 *21*	E_γ: from level energy difference. Eγ=17.2 *2* In 2014Hu02 probably deduced similarly because γ was not, In fact, observed. I_γ: from 2014Hu02 for unobserved γ; existence proposed based on DICEBOX statistical model calculations alone.
40.976 *10*	9.1 *10*	453.023	7/2−	412.109	7/2−	M1	11.01	E_γ,I_γ: unobserved γ-ray proposed by 2014Hu02; Eγ, mult and branching from Adopted Gammas.
46.36 *5*	5.26×10^3 *45*	46.515	3/2−	0.0	1/2−			E_γ: from 2014Hu02. Transition used As gate In γγ coin measurements by 1993Pr09, but Eγ not stated there. $I_{(\gamma+ce)}$: ≥(I(γ+ce) to 47 level)=22.3%.
52.52 *5*	148.8×10^1 *12*	99.042	5/2−	46.515	3/2−			E_γ,I_γ: from 2014Hu02.
82.79 *5*	120 *12*	291.681	5/2−	208.777	3/2−			E_γ,I_γ: from 2014Hu02.
84.56 *5*	442 *34*	291.681	5/2−	206.986	7/2−			E_γ,I_γ: from 2014Hu02.
[x]97.91[f] *12*	198 *42*							
98.90 *5*	1347 *13*	99.042	5/2−	0.0	1/2−	[E2]	4.08	other Eγ (Iγ): 99.09 *1* (3754 *198*) (1993Pr09); 98.94 *9* (2007ChZX), 98.90 *1* (1668 *59*) (2014Hu02). Unweighted average Eγ from 2014Hu02, 2011Bo09 and 1993Pr09 is 99.00 *5*.
102.2 *3*	58 *10*	308.92	9/2−	206.986	7/2−			E_γ: see comment on 103γ from 412 level. I_γ: other: 27.3 *19* (2014Hu02).
102.481 *3*		309.39	11/2+	206.986	7/2−			E_γ: from Adopted Gammas; not resolved by 2014Hu02 from 102γ or from a 101.8γ arising from the ^{186}W target impurity.
103.06[f] *12*	166 *73*	412.109	7/2−	308.92	9/2−			placement from 1997Pr02. 2011Bo09 report only Eγ=102.2 *3*, placed (As In (n,n′γ)) from 309 level. implied branchings for both placements exceed adopted values so observed transitions May be complex. γ absent In 2007ChZX and a multiplet In 2014Hu02 (with component energies assumed from the literature) and Iγ(doublet)=51 *9*.
107.86 *2*	1176 *8*	206.986	7/2−	99.042	5/2−			other Eγ (Iγ): 107.93 *1* (3546 *187*) (1993Pr09). 107.75 *11* (1566 *83*) (2014Hu02).
109.66 *4*	405 *7*	208.777	3/2−	99.042	5/2−			other Eγ (Iγ): 109.74 *1* (1154 *73*) (1993Pr09); 109.63 *12* (365 *29*) (2007ChZX); 109.55 *5* (552 *29*) (2014Hu02).
[x]118.4 *6*	18 *5*							
120.05 *21*	9.9 *20*	412.109	7/2−	291.681	5/2−			E_γ,I_γ: from 2014Hu02.
[x]126.0 *5*	25 *5*							

$^{183}_{74}W_{109}$-5

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ [†]	I_γ [‡ g]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α [h]	Comments
142.0 [a] *6*		1291.65	3/2−	1149.89	3/2−			Iγ:I(1193γ)≈9:100 *1* (2011Bo09).
142.25 *9*	77 *4*	595.33	9/2−	453.023	7/2−			other Eγ (Iγ): 142.24 *2* (146 *31*) (1993Pr09); 141.3 *3* (137 *27*) (2007ChZX); 142.11 *5* (85 *5*) (2014Hu02).
144.10 *15*	48 *4*	453.023	7/2−	308.92	9/2−			other Eγ (Iγ): 144.16 *4* (86 *18*) (1993Pr09); 143.97 *6* (51 *4*) (2014Hu02).
153.8 [ci] *19*	≈4	776.8	7/2+	622.54	9/2+			
160.63 *10*	486 *21*	206.986	7/2−	46.515	3/2−	[E2]	0.657	other Eγ (Iγ): 160.67 *2* (759 *125*) for multiplet (1993Pr09); 160.39 *11* (348 *22*) (2007ChZX); 160.36 *5* (485 *30*) (2014Hu02).
161.17 *5*	171 *11*	453.023	7/2−	291.681	5/2−			E_γ,I_γ: from 2014Hu02 alone.
162.27 *2*	3746 *28*	208.777	3/2−	46.515	3/2−			other Eγ (Iγ): 162.32 *1* (6864 *728*; corrected for background γ contaminant) (1993Pr09); 162.21 *9* (3409 *91*) (2007ChZX); 162.11 *5* (4795 *132*) (2014Hu02).
166.39 *15*	21.4 *21*	475.0	11/2−	308.92	9/2−			E_γ,I_γ: from 2014Hu02.
[x]166.4 *6*	10 *3*							
171.6 *3*	23 *3*	766.9	11/2−	595.33	9/2−			
175.89 *5*	8 *3*	485.1		309.39	11/2+			E_γ,I_γ: from 2014Hu02).
192.65 *7*	84 *3*	291.681	5/2−	99.042	5/2−			other Eγ (Iγ): 192.62 *2* (104 *10*) (1993Pr09); 192.79 *25* (62 *20*) (2007ChZX); 192.49 *5* (102 *5*) (2014Hu02).
203.28 *5*	71 *2*	412.109	7/2−	208.777	3/2−			other Eγ (Iγ): 203.26 *2* (87 *8*) (1993Pr09); 203.10 *5* (83 *4*) (2014Hu02).
205.05 *2*	153 *2*	412.109	7/2−	206.986	7/2−			other Eγ (Iγ): 205.09 *1* (208 *21*) (1993Pr09); 204.91 *5* (236 *10*) (2014Hu02).
208.80 *2*	461 *5*	208.777	3/2−	0.0	1/2−			other Eγ (Iγ): 208.81 *1* (562 *31*) (1993Pr09); 208.81 *11* (397 *44*) (2007ChZX); 208.64 *5* (560 *21*) (2014Hu02).
209.86 *4*	278 *5*	308.92	9/2−	99.042	5/2−	[E2]	0.262	other Eγ (Iγ): 209.88 *1* (333 *21*) (1993Pr09); 209.79 *16* (204 *42*) (2007ChZX); 209.69 *5* (369 *14*) (2014Hu02).
[x]218.9 *4*	7 *2*							
[x]221.7 *3*	8 *2*							
244.24 *13*	147 *8*	453.023	7/2−	208.777	3/2−			other Eγ (Iγ): 244.26 *2* (177 *10*) (1993Pr09); 244.13 *14* (193 *18*) (2007ChZX); 244.25 *5* (226 *10*) (2014Hu02).
245.2 *5*	89 *21*	291.681	5/2−	46.515	3/2−			other Eγ (Iγ): 245.13 *7* (94 *10*) (1993Pr09); 245.24 *5* (132 *9*) (2014Hu02).
246.04 *8*	456 *22*	453.023	7/2−	206.986	7/2−			other Eγ (Iγ): 246.06 *2* (562 *31*) (1993Pr09); 245.92 *10* (514 *22*) (2007ChZX); 245.88 *5* (521 *26*) (2014Hu02).
259.51 *13*	27 *2*	551.28	9/2−	291.681	5/2−			other Eγ (Iγ): 259.66 *9* (33 *5*) (1993Pr09); 259.44 *9* (38 *5*) (2014Hu02).
265.3 *8*	27 *11*	740.3	11/2−	475.0	11/2−			other Eγ (Iγ): 265.36 *8* (24 *4*) (1993Pr09).
265.7 [a] *4*		1291.65	3/2−	1026.372	3/2−			Iγ:I(1193γ)≈6:100 *1* (2011Bo09).
268.0 *3*	11 *2*	475.0	11/2−	206.986	7/2−			other Eγ (Iγ): 268.29 *10* (16 *3*) (1993Pr09); 268.7 *3* (57 *22*) (2007ChZX); 267.92 *18* (21 *5*) (2014Hu02).
[x]278.98 [f] *11*	14 *3*							
[x]284.9 *7*	6 *2*							
286.39 *5*	2.5 *13*	595.33	9/2−	308.92	9/2−			E_γ,I_γ: reported by 2014Hu02 for unobserved transition; Eγ and branching taken by authors from the literature.
286.6 [i] *5*	8 *2*	2231.48		1944.31	3/2−			Iγ:I(2022γ)=11 *3*:100 *14* (2011Bo09).
291.71 *2*	961 *14*	291.681	5/2−	0.0	1/2−	[E2]	0.0925	other Eγ (Iγ): 291.68 *4* (1040 *52*) (1993Pr09); 291.64 *9* (848 *35*) (2007ChZX); 291.57 *5* (1224 *45*) (2014Hu02).
[x]308.96 [f] *16*	9 *4*							tentative placement by 1997Pr02 from 1628 level unconfirmed by other studies.

$^{183}_{74}W_{109}$-6

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ [†]	I_γ [‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
310[b]	≈19	1309.391	3/2⁻	999.47	7/2⁻	I_γ: from Iγ:I(1101γ)≈4:100 *8* In table 2 and I(1101γ) In table 1 of 2011Bo09.
313.15[@&] *2*	1176[@] *10*	412.109	7/2⁻	99.042	5/2⁻	presumably deexcites 623 level also, As In Adopted Levels, Gammas. other Eγ (Iγ): 313.06 *5* (1290 *62*) (1993Pr09); 313.14 *9* (985 *73*) (2007ChZX); 313.02 *5* (1600 *88*) for doublet In 2014Hu02.
313.15[i] *2*	1176 *10*	622.54	9/2⁺	309.39	11/2⁺	E_γ: 312.72 *5* (1600 *88*) for doublet (2014Hu02). placement from 2014Hu02; see comment on 313γ from 412 level.
320.02 *18*	40 *3*	1319.58	5/2⁺	999.47	7/2⁻	E_γ: unresolved by 1993Pr09 from 321γ. Iγ:I(867γ)=15 *4*:100 *3* (2011Bo09).
321.17 *12*	59 *3*	1471.07	1/2⁻	1149.89	3/2⁻	other Eγ (Iγ): 320.97 *8* (77 *5*) (1993Pr09); May include 320.0γ. Iγ:I(1425γ)=18 *2*:100 *4* (2011Bo09).
[x]325.3[f] *3*	7 *3*					placed by 1997Pr02 from 1229 level.
326.8 *6*	29 *8*	1556.24	3/2⁻	1229.31	5/2⁻	Iγ:I(1510γ)=8 *3*:100 *6* (2011Bo09). other Eγ (Iγ): 326.55 *8* (23 *4*; Iγ corrected for background γ) (1993Pr09); 325.50 *25* (71 *31*) (2007ChZX).
340[b]	≈5	1811.12	1/2⁻	1471.07	1/2⁻	I_γ: from Iγ:I(1765γ)≈2:100 *4* In table 2 and I(1765γ) In table 1 of 2011Bo09.
344.38 *21*	14 *2*	551.28	9/2⁻	206.986	7/2⁻	other Eγ (Iγ): 344.19 *14* (14 *4*) (1993Pr09); 344.02 *13* (24 *5*) (2014Hu02).
[x]347.7 *8*	5 *2*					
354.00 *2*	178 *2*	453.023	7/2⁻	99.042	5/2⁻	other Eγ (Iγ): 353.88 *10* (177 *10*) (1993Pr09); 353.84 *5* (241 *11*) (2014Hu02).
365.61 *5*	94 *2*	412.109	7/2⁻	46.515	3/2⁻	other Eγ (Iγ): 365.56 *8* (99 *6*) (1993Pr09); 365.44 *11* (283 *27*) (2007ChZX); 365.39 *5* (138 *8*) (2014Hu02).
[x]367.4 *5*	10 *2*					
371.6 *3*	17 *2*	1275.13	5/2⁺	903.464	5/2⁻	Iγ:I(653γ)=4 *1*:100 *1* (2011Bo09). other Eγ (Iγ): 371.59 *16* (14 *3*) (1993Pr09).
[x]373.2 *8*	7 *2*					
375[b]	33 *19*	1309.391	3/2⁻	934.693	1/2⁻	I_γ: from Iγ:I(1101γ)=7 *4*:100 *8* In table 2 and I(1101γ) In table 1 of 2011Bo09.
[x]384.0 *3*	15 *2*					other Eγ (Iγ): 384.41 *17* (17 *3*) (1993Pr09); placed from 1438 level by 1997Pr02.
388[b]		1291.65	3/2⁻	903.464	5/2⁻	Iγ:I(1193γ)≈2:100 *1* (2011Bo09).
388.3 *4*	12 *2*	1944.31	3/2⁻	1556.24	3/2⁻	Iγ:I(1736γ)=2 *1*:100 *2* (2011Bo09). other Eγ (Iγ): 388.31 *20* (10 *3*) (1993Pr09).
400.73 *14*	27 *2*	1335.42		934.693	1/2⁻	Iγ:I(1289γ)=11 *2*:100 *4* (2011Bo09). other Eγ (Iγ): 400.86 *25* (30 *3*) (1993Pr09). tentatively placed by 1997Pr02 from 1551 level but placement not ADOPTED.
405[b]	9 *3*	999.47	7/2⁻	595.33	9/2⁻	I_γ: from Iγ:I(708γ)=12 *4*:100 *7* In table 2 and I(708γ) In table 1 of 2011Bo09.
406[b]	43 *19*	1309.391	3/2⁻	903.464	5/2⁻	I_γ: from Iγ:I(1101γ)=9 *4*:100 *8* In table 2 and I(1101γ) In table 1 of 2011Bo09. other Eγ (Iγ): 406.55 *27* (43 *3*) for doublet (1993Pr09). 1997Pr02 estimate Iγ=31 for this placement.
406.37[@&] *10*	45[@] *2*	453.023	7/2⁻	46.515	3/2⁻	other Eγ (Iγ): 406.55 *27* (43 *3*) for doublet (1993Pr09); 405.8 *3* (78 *26*) (2007ChZX); 406.23 *7* (55 *5*) (2014Hu02). 1997Pr02 estimate Iγ=8 for this placement.
406.5[a] *3*		1556.24	3/2⁻	1149.89	3/2⁻	Iγ:I(1510γ)=15 *2*:100 *6* (2011Bo09).
[x]414.0 *7*	5 *2*					
416.08 *5*	111 *2*	1319.58	5/2⁺	903.464	5/2⁻	Iγ:I(867γ)=77 *3*:100 *3* (2011Bo09). other Eγ (Iγ): 416.4 *3* (115 *1*) (1993Pr09).

$^{183}_{74}W_{109}$-7

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ [†]	I_γ [‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]417.5 *9*	7 *2*					
420.2 *9*	16 *6*	1569.86		1149.89	3/2$^-$	Iγ:I(1570γ)=7 *3*:100 *5* (2011Bo09). other Eγ (Iγ): 420.3 *3* (23 *3*) (1993Pr09).
431.7[i] *3*	14 *1*	740.3	11/2$^-$	308.92	9/2$^-$	
448[b]	4.6 *23*	999.47	7/2$^-$	551.28	9/2$^-$	I_γ: from Iγ:I(708γ)=6 *3*:100 *7* In table 2 and I(708γ) In table 1 of 2011Bo09.
451[b]	≈5.3	903.464	5/2$^-$	453.023	7/2$^-$	I_γ: from Iγ:I(695γ)≈1:100 *3* In table 2 and I(695γ) In table 1 of 2011Bo09.
452.09 *20*	17 *2*	551.28	9/2$^-$	99.042	5/2$^-$	other Eγ (Iγ): 453.0 *5* (20 *3*) (1993Pr09); 451.62 *14* (2007ChZX); 452.37 *9* (25 *3*) (2014Hu02).
459.2[a] *7*		1734.72	5/2$^+$	1275.13	5/2$^+$	Iγ:I(1323γ)=17 *8*:100 *20* (2011Bo09).
465.3[@&i] *20*	≈16[@]	774.4	11/2$^+$	309.39	11/2$^+$	
467.5[i] *9*	6 *3*	776.8	7/2$^+$	309.39	11/2$^+$	
473.8 *3*	6 *3*	1944.31	3/2$^-$	1471.07	1/2$^-$	Iγ:I(1736γ)=4 *2*:100 *2* (2011Bo09). other Eγ (Iγ): 473.9 *5* (22 *3*) (1993Pr09); 474.60 *8* (2007ChZX). placed from 1069 level by 1997Pr02 and 2007ChZX.
479.2[a] *5*		1628.24	3/2$^-$	1149.89	3/2$^-$	Iγ:I(1628γ)≈1:100 *3* (2011Bo09).
[x]480.3[f] *5*	22 *3*					
491.3 *4*	11 *2*	903.464	5/2$^-$	412.109	7/2$^-$	Iγ:I(695γ)=6 *2*:100 *3* (2011Bo09). other Eγ (Iγ): 491.9 *5* (11 *3*) (1993Pr09; Iγ corrected for background γ); 365.44 *11* (283 *27*) (2007ChZX).
496.7[i] *5*	8 *2*	1789.55		1291.65	3/2$^-$	
522.4[a] *5*		1672.76	1/2$^-$,3/2$^-$	1149.89	3/2$^-$	Iγ:I(1626γ)≈1:100 *3* (2011Bo09).
[x]533.78 *22*	16 *2*					other Eγ (Iγ): 533.62 *10* (25 *5*) (1993Pr09).
547[b]	≈2.3	999.47	7/2$^-$	453.023	7/2$^-$	I_γ: from Iγ:I(708γ)≈3:100 *7* In table 2 and I(708γ) In table 1 of 2011Bo09.
553.3[a] *18*		1990.54	1/2$^-$,3/2$^-$	1437.35	3/2	I_γ: Iγ:I(1699γ)=12 *7*:100 *15* (2011Bo09).
556.0[ci] *19*	≈5	1628.24	3/2$^-$	1069.38	7/2$^-$	placement from table 1; branch absent In table 2 of 2011Bo09.
559.2[a] *16*		1869.70		1309.391	3/2$^-$	Iγ:I(1870γ)=5 *3*:100 *7* (2011Bo09). other Eγ (Iγ): 559.91 *6* (47 *4*) (1993Pr09). Placed by 1997Pr02 FROM1463 level.
560.08 *17*	46 *3*	1586.52	(1/2$^-$,3/2$^-$)	1026.372	3/2$^-$	Iγ:I(1587γ)=46 *6*:100 *23* (2011Bo09).
567.1 *3*	15 *2*	1886.66	(1/2$^-$,3/2$^-$)	1319.58	5/2$^+$	Iγ:I(1595γ)=6 *2*:100 *3* (2011Bo09). other Eγ (Iγ): 566.86 *13* (14 *3*) (1993Pr09).
[x]569.1 *4*	11 *2*					
[x]571.1 *5*	10 *2*					
575.9[a] *3*		1725.65		1149.89	3/2$^-$	Iγ:I(1726γ)=10 *2*:100 *4* (2011Bo09). Eγ=575.7 *4*, Iγ=17 *3* In table 1 of 2011Bo09. other Eγ (Iγ): 575.42 *10* (18 *3*) (1993Pr09).
581.7 *5*	10 *2*	1485.45	(1/2,3/2)	903.464	5/2$^-$	other Eγ (Iγ): 581.59 *20* (8 *3*) (1993Pr09).
[x]585.2 *6*	6 *2*					
587.29 *13*	36 *3*	999.47	7/2$^-$	412.109	7/2$^-$	Iγ:I(708γ)=43 *3*:100 *7* (2011Bo09). other Eγ (Iγ): 587.11 *9* (30 *4*) (1993Pr09).
[x]591.1 *3*	15 *4*					other Eγ (Iγ): 591.03 *17* (10 *3*) (1993Pr09).
[x]593.0 *7*	8 *5*					

$^{183}_{74}W_{109}$-8

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ †	I_γ ‡ g	E_i(level)	J_i^π	E_f	J_f^π	Comments
594.8 *12*	12 *5*	903.464	5/2$^-$	308.92	9/2$^-$	Iγ:I(695γ)≈2:100 *3* (2011Bo09).
x598.9 *6*	6 *3*					
x602.71 *16*	27 *3*					other Eγ (Iγ): 602.65 *6* (25 *4*) (1993Pr09; for multiplet).
606.8 i *6*	14 *3*	2176.77	1/2$^-$,3/2$^-$	1569.86		Iγ:I(2177γ)=3 *1*:100 *3* (2011Bo09).
611.75 *4*	152 *5*	903.464	5/2$^-$	291.681	5/2$^-$	Iγ:I(695γ)=26 *2*:100 *3* (2011Bo09). other Eγ (Iγ): 611.61 *6* (156 *10*) (1993Pr09).
615 b	≈11.5	1026.372	3/2$^-$	412.109	7/2$^-$	I_γ: from Iγ:I(1026γ)≈0.4:100.0 *8* In table 2 and I(1026γ) In table 1 of 2011Bo09.
x620.6 *6*	9 *3*					
623.3 *5*	9 *3*	1915.40		1291.65	3/2$^-$	Iγ:I(1916γ)=23 *9*:100 *11* (2011Bo09). placement from table 2 of 2011Bo09.
x630.1 *12*	6 *3*					
633.95 *7*	58 *2*	1229.31	5/2$^-$	595.33	9/2$^-$	Iγ:I(776γ)=57 *3*:100 *5* (2011Bo09). other Eγ (Iγ): 633.80 *7* (61 *5*) (1993Pr09).
x636.0 *4*	5 *3*					
639.9 *8*	16 *4*	1542.9		903.464	5/2$^-$	
641.4 a *3*	33 *4*	1053.26	5/2$^-$	412.109	7/2$^-$	other Eγ (Iγ): 640.83 *10* (24 *3*) (1993Pr09); Eγ=641.3 *6* from table 1 of 2011Bo09. Iγ:I(846γ)=9 *1*:100 *1* (2011Bo09).
x642.33 f *16*	15 *3*					placement by 1997Pr02 from 935 level not confirmed by 2011Bo09.
651.7 a *6*		1586.52	(1/2$^-$,3/2$^-$)	934.693	1/2$^-$	Iγ:I(1587γ)=55 *10*:100 *23* (2011Bo09).
652.59 a *2*		1275.13	5/2$^+$	622.54	9/2$^+$	Eγ=652.22 *2*, Iγ=406 *3* In table 1 for complex line that primarily deexcites the 1275 level. the adopted Eγ is presumably from coincidence data, although table 2 of 2011Bo09 does not indicate this. other Eγ (Iγ): 652.11 *6* (426 *21*) (1993Pr09). placed by 1997Pr02 from an otherwise unknown 1064 level. Coincident with 313γ (1993Pr09, 1997Pr02, 2011Bo09).
x655.9 *7*	5 *3*					
657.4 *3*	16 *4*	1069.38	7/2$^-$	412.109	7/2$^-$	placement taken from 1997Pr02 and table 2 of 2011Bo09. other Eγ (Iγ): 657.14 *14* (16 *3*) (1993Pr09).
661.5 a *4*		1811.12	1/2$^-$	1149.89	3/2$^-$	Iγ:I(1765γ)=5 *3*:100 *4* (2011Bo09).
x665.3 *5*	11 *2*					
x673.2 *3*	14 *2*					
x681.5 *7*	13 *3*					
683.07 *16*	54 *3*	1586.52	(1/2$^-$,3/2$^-$)	903.464	5/2$^-$	Iγ:I(1587γ)=31 *10*:100 *23* (2011Bo09). other Eγ (Iγ): 682.72 *8* (48 *5*) (1993Pr09).
694.69 *2*	529 *4*	903.464	5/2$^-$	208.777	3/2$^-$	other Eγ (Iγ): 694.65 *7* (551 *31*) (1993Pr09).
697.04 a *11*	402 *20*	1149.89	3/2$^-$	453.023	7/2$^-$	Eγ=696.78 *3*, Iγ=478 *5* In table 1 for complex line dominated by this placement (2011Bo09). I_γ: see comment on 697γ from 1320 level. other Eγ (Iγ): 696.71 *7* (510 *21*) (1993Pr09); 696.56 *10* (552 *44*) (2007ChZX).
697.04 a *5*	101 *19*	1319.58	5/2$^+$	622.54	9/2$^+$	Eγ=696.78 *3*, Iγ=478 *5* In table 1 for complex line (2011Bo09). I_γ: from Iγ:I(867γ)=76 *14*:100 *3* In table 2 and I(867γ) of 2011Bo09. this leaves Iγ=402 *20* for placement from 1150 level.
700.6 *4*	18 *4*	1975.77		1275.13	5/2$^+$	other Eγ (Iγ): 700.40 *14* (21 *4*) (1993Pr09).
706.9 a *13*		2176.77	1/2$^-$,3/2$^-$	1471.07	1/2$^-$	Iγ:I(2177γ)=2 *1*:100 *3* (2011Bo09).

$^{183}_{74}W_{109}$-9

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ †	I_γ ‡g	E_i(level)	J_i^π	E_f	J_f^π	Comments
707.79[i] *19*	76 *7*	999.47	7/2$^-$	291.681	5/2$^-$	other Eγ (Iγ): 707.74 *7* (74 *6*) (1993Pr09); 706.42 *11* (839 *55*) (2007ChZX; γ appears to be contaminated and/or misplaced).
709.4[#] *6*	7 *3*	1612.06		903.464	5/2$^-$	other Eγ (Iγ): 709.34 *21* (14 *3*) (1993Pr09).
713.4[a] *9*		2176.77	1/2$^-$,3/2$^-$	1463.21	1/2	Iγ:I(2177γ)=3 *1*:100 *3* (2011Bo09). Eγ=713.4 *11*, Iγ=18 *7* In table 1 of 2011Bo09. other Eγ (Iγ): 713.30 *10* (23 *3*) (1993Pr09).
716[b]	≈8	1944.31	3/2$^-$	1229.31	5/2$^-$	I_γ: from Iγ:I(1736γ)≈1:100 *2* In table 2 and I(1736γ) In table 1 of 2011Bo09.
720.0 *11*	5 *2*	2028.48	1/2$^-$,3/2$^-$	1309.391	3/2$^-$	Iγ:I(2029γ)=3 *2*:100 *6* (2011Bo09).
[x]723.83[f] *13*	8 *4*					
724.6[a] *6*		1319.58	5/2$^+$	595.33	9/2$^-$	Iγ:I(867γ)=9 *3*:100 *3* (2011Bo09).
724.7[a] *12*		1628.24	3/2$^-$	903.464	5/2$^-$	Iγ:I(1612γ)≈1:100 *5* (2011Bo09). other Eγ (Iγ): 723.83 *13* (9 *4*; corrected for background contribution) (1993Pr09).
726[b]	≈11	934.693	1/2$^-$	208.777	3/2$^-$	I_γ: from Iγ:I(888γ)≈1:100 *2* In table 2 and I(888γ) In table 1 of 2011Bo09. Eγ=726.2 *4*, Iγ=15 *2* for complex line (2011Bo09). other Eγ (Iγ): 725.78 *22* (12 *4*) (1993Pr09).
[x]728.0 *12*	9 *3*					other Eγ (Iγ): 727.3 *3* (9 *4*) (1993Pr09).
[x]729.6 *16*	6 *3*					
734.6 *4*	16 *3*	1026.372	3/2$^-$	291.681	5/2$^-$	Iγ:I(1026γ)=0.5 *1*:100.0 *8* (2011Bo09). other Eγ (Iγ): 734.79 *12* (23 *5*) (1993Pr09).
738.9[i] *6*	8 *3*	1149.89	3/2$^-$	412.109	7/2$^-$	Iγ:I(697γ)≈1:100 *12* (2011Bo09).
[x]740.5 *8*	12 *3*					
742.5 *8*	10 *2*	1337.8	7/2$^-$	595.33	9/2$^-$	
[x]744.4 *5*	16 *2*					
[x]751.7 *16*	6 *3*					
753.5[a] *5*		1376.43	7/2$^+$	622.54	9/2$^+$	Iγ:I(781γ)=27 *8*:100 *9* (2011Bo09). Eγ=753.4 *9*, Iγ=9 *3* In table 1 of 2011Bo09. other Eγ (Iγ): 753.15 *22* (8 *3*) (1993Pr09).
761.8[a] *4*	11 *4*	1053.26	5/2$^-$	291.681	5/2$^-$	Eγ=761.8 *11* from table 1 of 2011Bo09. Iγ:I(846γ)=3 *1*:100 *1* (2011Bo09).
761.8 *11*	11 *4*	2433.65		1672.76	1/2$^-$,3/2$^-$	
[x]763.2 *7*	7 *4*					other Eγ (Iγ): 762.50 *18* (12 *4*) (1993Pr09).
765.1[a] *11*		1915.40		1149.89	3/2$^-$	Iγ:I(1916γ)=20 *10*:100 *11* (2011Bo09).
767.7[a] *3*		1319.58	5/2$^+$	551.28	9/2$^-$	Iγ:I(867γ)=13 *3*:100 *3* (2011Bo09). other Eγ (Iγ): 768.82 *14* (14 *3*) (1993Pr09).
769.36 *19*	31 *3*	1672.76	1/2$^-$,3/2$^-$	903.464	5/2$^-$	Iγ:I(1626γ)=4 *1*:100 *3* (2011Bo09). other Eγ (Iγ): 768.82 *14* (14 *3*) (1993Pr09).
776.21 *21*	101 *5*	1229.31	5/2$^-$	453.023	7/2$^-$	other Eγ (Iγ): 776.25 *6* (106 *7*) (1993Pr09); 774.97 *19* (2007ChZX).
777.7 *5*	36 *5*	1069.38	7/2$^-$	291.681	5/2$^-$	other Eγ (Iγ): 777.77 *9* (42 *4*) (1993Pr09); 777.8 *4* (109 *73*) (2007ChZX).
781.02[a] *12*		1376.43	7/2$^+$	595.33	9/2$^-$	Eγ=781.3 *3*, Iγ=34 *3* In table 1 of 2011Bo09. other Eγ (Iγ): 781.00 *8* (32 *4*) (1993Pr09).
[x]782.96[f] *13*	20 *3*					
790.05 *21*	39 *4*	2099.27	1/2,3/2	1309.391	3/2$^-$	other Eγ (Iγ): 790.43 *10* (32 *4*) (1993Pr09).

$^{183}_{74}W_{109}$-10

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ [†]	I_γ [‡ g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
794.5 *3*	19 *3*	1944.31	3/2$^-$	1149.89	3/2$^-$	Iγ:I(1736γ)=3 *1*:100 *2* (2011Bo09). other Eγ (Iγ): 794.57.12 (23 *4*) (1993Pr09);
[x]799.6 *11*	5 *3*					
802.6 *6*	15 *4*	1214.9	9/2$^-$	412.109	7/2$^-$	other Eγ (Iγ): 802.90 *17* (21 *3*) (1993Pr09). placement tentative In 2011Bo09 but definite In 1997Pr02.
804.34 *18*	55 *5*	903.464	5/2$^-$	99.042	5/2$^-$	Iγ:I(695γ)=6 *2*:100 *3* (2011Bo09). other Eγ (Iγ): 804.48 *9* (43 *5*) (1993Pr09).
[x]807.4 *5*	13 *7*					
[x]810.7 *3*	19 *2*					
812.5[a] *12*		2282.99		1471.07	1/2$^-$	Iγ:I(1133γ)=7 *3*:24 *5* (2011Bo09).
[x]813.8 *3*	4 *2*					
817.36[a] *13*	39 *18*	1229.31	5/2$^-$	412.109	7/2$^-$	Iγ:I(776γ)=44 *5*:100 *5* (2011Bo09). Eγ=817.49 *4*, Iγ=358 *5* In table 1 of 2011Bo09 for complex line. I$_\gamma$: see comment on 817γ from 1026 level.
817.73[a] *10*	319 *17*	1026.372	3/2$^-$	208.777	3/2$^-$	Eγ=817.49 *4*, Iγ=358 *5* In table 1 for complex line dominated by this placement (2011Bo09). other Eγ (Iγ): 817.59 *5* (374 *52*) (1993Pr09). I$_\gamma$: from Iγ:I(1026γ)=11.1 *6*:100.0 *8* In table 2 and I(1026γ) In table 1 of 2011Bo09. this leaves Iγ=39 *18* to be placed from 1229 level.
822.12 *13*	50 *3*	1275.13	5/2$^+$	453.023	7/2$^-$	Iγ:I(653γ)=12 *1*:100 *1* (2011Bo09). other Eγ (Iγ): 822.16 *8* (47 *4*) (1993Pr09).
[x]824.5 *22*	≈14					other Eγ (Iγ): 824.39 *22* (19 *4*) (1993Pr09).
825.9 *3*	35 *13*	1975.77		1149.89	3/2$^-$	other Eγ (Iγ): 825.85 *12* (38 *5*) (1993Pr09).
830.9[a] *9*		2059.37	1/2$^-$,3/2$^-$	1229.31	5/2$^-$	Iγ:I(1851γ)=20 *7*:100 *7* (2011Bo09).
832.9[a] *7*		1982.22	3/2$^-$	1149.89	3/2$^-$	Iγ:I(1691γ)=15 *5*:100 *16* (2011Bo09). Eγ=834.2 *11*, Iγ=31 *20* In table 1 of 2011Bo09. other Eγ (Iγ): 834.53 *16* (36 *8*) (1993Pr09).
835.2 *13*	≈30	934.693	1/2$^-$	99.042	5/2$^-$	Iγ:I(888γ)=2 *1*:100 *2* (2011Bo09).
841.8 *3*	41 *10*	2176.77	1/2$^-$,3/2$^-$	1335.42		Iγ:I(2177γ)=13 *2*:100 *3* (2011Bo09). other Eγ (Iγ): 841.84 *9* (41 *4*) (1993Pr09).
[x]843.9 *8*	13 *5*					
846.26 *3*	373 *4*	1053.26	5/2$^-$	206.986	7/2$^-$	other Eγ (Iγ): 846.34 *6* (374 *21*) (1993Pr09); 846.06 *12* (403 *40*) (2007ChZX).
849.8[a] *13*		1261.4		412.109	7/2$^-$	Iγ:I(952γ)=70 *40*:100 *40* (2011Bo09).
850.1 *7*	16 *9*	2169.81		1319.58	5/2$^+$	Iγ:I(895γ)=60 *30*:100 *13* (2011Bo09).
[x]852.10 *19*	42 *8*					other Eγ (Iγ): 852.04 *10* (33 *4*) (1993Pr09).
[x]855.2 *7*	17 *8*					
857.0 *11*	59 *34*	903.464	5/2$^-$	46.515	3/2$^-$	Iγ:I(695γ)=14 *2*:100 *3* (2011Bo09).
858.1 *5*	145 *37*	1149.89	3/2$^-$	291.681	5/2$^-$	Iγ:I(697γ)=37 *6*:100 *12* (2011Bo09). other Eγ (Iγ): 858.06 *7* (218 *10*) (1993Pr09).
858.3[a] *15*		2176.77	1/2$^-$,3/2$^-$	1319.58	5/2$^+$	Iγ:I(2177γ)=2 *1*:100 *3* (2011Bo09).
[x]860.9 *5*	23 *8*					
863.6 *4*	18 *4*	1275.13	5/2$^+$	412.109	7/2$^-$	Iγ:I(653γ)=4 *1*:100 *1* (2011Bo09).
866.60 *4*	133 *3*	1319.58	5/2$^+$	453.023	7/2$^-$	other Eγ (Iγ): 866.49 *8* (166 *10*) (1993Pr09).
[x]872.2 *8*	7 *3*					

$^{183}_{74}W_{109}$-11

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ[†]	I_γ[‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]873.8 *9*	12 *3*					
[x]877.3 *3*	8 *2*					
[x]882.0 *6*	7 *4*					
885.56 *14*	72 *3*	2176.77	1/2$^-$,3/2$^-$	1291.65	3/2$^-$	Iγ:I(2177γ)=14 *2*:100 *3* (2011Bo09).
888.17 *2*	1143 *4*	934.693	1/2$^-$	46.515	3/2$^-$	other Eγ (Iγ): 888.07 *3* (1196 *62*) (1993Pr09); 888.17 *9* (1440 *73*) (2007ChZX).
894.69 *6*	26 *3*	2169.81		1275.13	5/2$^+$	
900.51 *24*	29 *3*	2235.73	(3/2,5/2)	1335.42		Iγ:I(2137γ)=16 *6*:100 *8* (2011Bo09).
903.7[a] *12*		903.464	5/2$^-$	0.0	1/2$^-$	Iγ:I(695γ)=3 *2*:100 *3* (2011Bo09).
907.5 *6*	20 *4*	1319.58	5/2$^+$	412.109	7/2$^-$	Iγ:I(867γ)=14 *3*:100 *3* (2011Bo09).
[x]912.4 *5*	14 *4*					
918.3[a] *4*		1944.31	3/2$^-$	1026.372	3/2$^-$	Iγ:I(1736γ)=3 *1*:100 *2* (2011Bo09).
[x]922.0 *25*	≈7					
923[b]	12 *7*	1335.42		412.109	7/2$^-$	I$_\gamma$: from Iγ:I(1289γ)=5 *3*:100 *4* In table 2 and I(1289γ) In table 1 of 2011Bo09.
923.8[i] *11*	14 *6*	1214.9	9/2$^-$	291.681	5/2$^-$	
927.29 *2*	469 *4*	1026.372	3/2$^-$	99.042	5/2$^-$	Iγ:I(1026γ)=16.3 *3*:100.0 *8* (2011Bo09). other Eγ (Iγ): 927.30 *4* (447 *21*) (1993Pr09); 927.04 *9* (438 *22*) (2007ChZX).
933.6[a] *7*		2209.07	1/2$^+$,3/2$^+$	1275.13	5/2$^+$	Iγ:I(2163γ)=7 *3*:100 *10* (2011Bo09).
935.3[i] *8*	11 *3*	934.693	1/2$^-$	0.0	1/2$^-$	Iγ:I(888γ)=3 *2*:100 *2* (2011Bo09).
937.58 *18*	51 *3*	1229.31	5/2$^-$	291.681	5/2$^-$	Iγ:I(776γ)=51 *3*:100 *5* (2011Bo09). other Eγ (Iγ): 937.1 *4* (61 *11*) (1993Pr09).
941.09 *3*	269 *3*	1149.89	3/2$^-$	208.777	3/2$^-$	Iγ:I(697γ)=62 *6*:100 *12* (2011Bo09). other Eγ (Iγ): 941.17 *9* (281 *21*) (1993Pr09).
952.4[a] *5*		1261.4		308.92	9/2$^-$	
[x]952.8 *12*	26 *11*					
954.3 *6*	58 *11*	1053.26	5/2$^-$	99.042	5/2$^-$	Iγ:I(846γ)=15 *3*:100 *1* (2011Bo09). other Eγ (Iγ): 953.9 *5* (63 *17*) (1993Pr09); 955.0 *6* (109 *73*) (2007ChZX).
956.8[a] *7*		2248.10		1291.65	3/2$^-$	Iγ:I(2202γ)=5 *3*:100 *5* (2011Bo09). Eγ=957.6 *4*, Iγ=27 *4* In table 1 of 2011Bo09.
960.06 *9*	121 *4*	1372.23	5/2$^-$	412.109	7/2$^-$	Iγ:I(1163γ)=89 *3*:100 *4* (2011Bo09). other Eγ (Iγ): 959.97 *25* (125 *21*) (1993Pr09); 959.8 *3* (190 *40*) (2007ChZX).
964.5[a] *16*		1990.54	1/2$^-$,3/2$^-$	1026.372	3/2$^-$	Iγ:I(1699γ)=16 *9*:100 *15* (2011Bo09).
[x]965.6[&] *7*	15 *8*					
967[b]	10 *5*	1869.70		903.464	5/2$^-$	I$_\gamma$: from Iγ:I(1870γ)=6 *3*:100 *7* In table 2 and I(1870γ) In table 1 of 2011Bo09.
967.4[i] *8*	12 *6*	1900.85		934.693	1/2$^-$	placed from 1901 level In table 1 of 2011Bo09 but omitted from table 2 of 2011Bo09.
969.2[a] *15*		1261.4		291.681	5/2$^-$	Iγ:I(952γ)=95 *30*:100 *40* (2011Bo09). other Eγ (Iγ): 969.5 *10* (30 *16*) (1993Pr09).
[x]970.1 *4*	24 *8*					
974.2[a] *9*		2248.10		1275.13	5/2$^+$	Iγ:I(2202γ)=10 *3*:100 *5* (2011Bo09).
978[b]	≈9	2126.38	3/2$^-$	1149.89	3/2$^-$	I$_\gamma$: from Iγ:I(2080γ)≈4:100 *4* In table 2 and I(2080γ) In table 1 of 2011Bo09.
979.88 *2*	1766 *8*	1026.372	3/2$^-$	46.515	3/2$^-$	Iγ:I(1026γ)=61.5 *7*:100.0 *8* (2011Bo09). other Eγ (Iγ): 979.87 *3* (1747 *94*) (1993Pr09); 979.58 *9* (1896 *73*) (2007ChZX).
983.6[i] *8*	18 *7*	1886.66	(1/2$^-$,3/2$^-$)	903.464	5/2$^-$	Iγ:I(1595γ)=3 *1*:100 *3* (2011Bo09).

$^{183}_{74}W_{109}$-12

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ[†]	I_γ[‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]989.6[&] 7	18 4					
990.9[a] 11		1990.54	1/2$^-$,3/2$^-$	999.47	7/2$^-$	Iγ:I(1699γ)=39 9:100 15 (2011Bo09).
996.3[a] 6		1900.85		903.464	5/2$^-$	Iγ:I(1692γ)=8 3:100 12 (2011Bo09).
						Eγ=995.62 8, Iγ=73 3 In table 1 for unplaced γ (2011Bo09).
						other Eγ (Iγ): 995.9 8 (51 22) (1993Pr09).
1006.89 17	51 6	1053.26	5/2$^-$	46.515	3/2$^-$	Iγ:I(846γ)=14 2:100 1 (2011Bo09).
						placement taken from table 2 of 2011Bo09.
						other Eγ (Iγ): 1007.3 15 (29 19) (1993Pr09).
1015.9 8	18 4	2324.81		1309.391	3/2$^-$	Iγ:I(2326γ)=16 4:100 14 (2011Bo09).
1017.71 6	221 4	1309.391	3/2$^-$	291.681	5/2$^-$	Iγ:I(1101γ)=63 7:100 8 (2011Bo09).
						other Eγ (Iγ): 1018.07 15 (302 31) (1993Pr09). placed by 1997Pr02 from an otherwise unknown 1064 level.
1020.4 4	25 5	1229.31	5/2$^-$	208.777	3/2$^-$	Iγ:I(776γ)=25 5:100 5 (2011Bo09).
1026.38 2	2873 12	1026.372	3/2$^-$	0.0	1/2$^-$	other Eγ (Iγ): 1026.37 3 (2870 146) (1993Pr09); 1026.17 8 (2990 109) (2007ChZX).
[x]1034.2 8	10 3					
[x]1040.8 6	11 3					
1043.73 12	54 2	1335.42		291.681	5/2$^-$	Iγ:I(1289γ)=21 3:100 4 (2011Bo09).
						other Eγ (Iγ): 1043.78 20 (55 8) (1993Pr09).
[x]1047.7 8	13 4					
1050.4[i] 8	11 3	1149.89	3/2$^-$	99.042	5/2$^-$	Iγ:I(697γ)=3 1:100 12 (2011Bo09).
[x]1055.1 11	13 4					
1057.9[a] 12		2126.38	3/2$^-$	1069.38	7/2$^-$	Eγ: presumably from coincidence data, but not so indicated In table 2; Eγ=1057.1 11, Iγ=24 5 from table 1 of 2011Bo09.
						Iγ:I(2080γ)=10 3:100 4 (2011Bo09).
						other Eγ (Iγ): 1057.6 3 (34 7) (1993Pr09).
[x]1058.8 21	13 5					
[x]1060.6 19	10 4					
1062.4[a] 12		1964.74		903.464	5/2$^-$	Iγ:I(1918γ)=10 6:100 8 (2011Bo09).
1062.9[a] 8		1372.23	5/2$^-$	308.92	9/2$^-$	Iγ:I(1163γ)=9 3:100 4 (2011Bo09).
						other Eγ (Iγ): 1064.0 6 (50 18) for doublet (1993Pr09). Placed instead by 1997Pr02 from an otherwise unknown 1064 level.
1063.72[@&i] 7	47[@] 3	1686.26		622.54	9/2$^+$	
1064.5[a] 12		2384.09		1319.58	5/2$^+$	Iγ:I(2286γ)=41 9:100 10 (2011Bo09).
						other Eγ (Iγ): 1064.0 6 (50 18) for doublet (1993Pr09).
1067.2[a] 8		1376.43	7/2$^+$	309.39	11/2$^+$	Iγ:I(781γ)=38 16:100 9 (2011Bo09).
						Eγ=1066.7 5, Iγ=52 7 In table 1 of 2011Bo09.
						other Eγ (Iγ): 1066.8 7 (40 16) (1993Pr09).
[x]1068.3 15	17 7					
1080.72 19	68 4	1372.23	5/2$^-$	291.681	5/2$^-$	Iγ:I(1163γ)=50 3:100 4 (2011Bo09).
						other Eγ (Iγ): 1080.90 17 (104 10) (1993Pr09).
1082.8 3	61 6	1291.65	3/2$^-$	208.777	3/2$^-$	Iγ:I(1193γ)=23 2:100 1 (2011Bo09).
1085.66[@&] 6	80[@] 3	2523.01		1437.35	3/2	other Eγ (Iγ): 1085.15 18 (125 10) (1993Pr09).

$^{183}_{74}W_{109}$-13

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ †	I_γ ‡ g	E_i(level)	J_i^π	E_f	J_f^π	Comments
1086.6 a 5		1990.54	1/2$^-$,3/2$^-$	903.464	5/2$^-$	Iγ:I(1699γ)=27 *11*:100 *15* (2011Bo09).
x1090.4 *6*	11 *4*					
1093.9 *3*	24 *3*	2028.48	1/2$^-$,3/2$^-$	934.693	1/2$^-$	Iγ:I(2029γ)=9 *3*:100 *6* (2011Bo09).
1098.3 i *8*	25 *5*	2433.65		1335.42		
1100.60 *2*	475 *3*	1309.391	3/2$^-$	208.777	3/2$^-$	other Eγ (Iγ): 1100.74 *7* (530 *31*) (1993Pr09); 1100.21 *14* (438 *91*) (2007ChZX). γ indicated As a multiplet by 1997Pr02 but not by 1993Pr09; No alternative placement(S) given. 1997Pr02 estimate Iγ=129 for this placement.
1103.50 *16*	50 *3*	1149.89	3/2$^-$	46.515	3/2$^-$	Iγ:I(697γ)=13 *4*:100 *12* (2011Bo09).
x1107.7 *5*	18 *4*					other Eγ (Iγ): 1108.1 *4* (40 *8*) (1993Pr09); apparently for 1107.7γ+1109.4γ doublet.
1109.4 *3*	19 *4*	2384.09		1275.13	5/2$^+$	Iγ:I(2286γ)=56 *8*:100 *10* (2011Bo09). other Eγ (Iγ): 1108.1 *4* (40 *8*) (1993Pr09); apparently for 1107.7γ+1109.4γ doublet.
1112 b	≈2	1734.72	5/2$^+$	622.54	9/2$^+$	I_γ: from Iγ:I(1323γ)≈9:100 *20* In table 2 and I(1323γ) In table 1 of 2011Bo09.
x1115.48 *11*	45 *3*					other Eγ (Iγ): 1115.25 *18* (87 *9*) (1993Pr09).
x1121.33 *17*	11 *3*					
1125.9 *6*	18 *4*	2417.50		1291.65	3/2$^-$	
1128.39 *10*	128 *4*	1335.42		206.986	7/2$^-$	Iγ:I(1289γ)=48 *4*:100 *4* (2011Bo09). other Eγ (Iγ): 1128.40 *12* (146 *10*) (1993Pr09).
x1130.6 *9*	13 *3*					
1133.3 *3*	32 *3*	2282.99		1149.89	3/2$^-$	Iγ:I(2236γ)=24 *5*:100 *6* (2011Bo09).
1138.4 a *14*		2164.85	1/2$^-$,3/2$^-$	1026.372	3/2$^-$	Iγ:I(2118γ)=6 *2*:100 *3* (2011Bo09). Eγ=1138.4 *4*, Iγ=13 *4* In table 1 for complex line (2011Bo09).
x1140.2 & *3*	23 *4*					
1145.5 i *6*	35 *7*	1437.35	3/2	291.681	5/2$^-$	Iγ:I(1438γ)=19 *4*:100 *12* (2011Bo09).
1149.94 *7*	126 *3*	1149.89	3/2$^-$	0.0	1/2$^-$	Iγ:I(697γ)=34 *6*:100 *12* (2011Bo09). other Eγ (Iγ): 1149.88 *17* (85 *12*) (1993Pr09); 1151.0 *5* (108 *46*) (2007ChZX).
1150.5 a *10*		2176.77	1/2$^-$,3/2$^-$	1026.372	3/2$^-$	Iγ:I(2177γ)=3 *1*:100 *3* (2011Bo09).
1154.5 a *12*		2303.94		1149.89	3/2$^-$	Iγ:I(2304γ)=7 *3*:100 *4* (2011Bo09).
1156.3 *6*		2059.37	1/2$^-$,3/2$^-$	903.464	5/2$^-$	Iγ:I(1851γ)=10 *6*:100 *7* (2011Bo09). E_γ: presumably from coincidence data, but not so indicated In table 2. Eγ=1158.3 *4*, Iγ=17 *3* In table 1 for complex line that primarily deexcites a 1570 level (2011Bo09).
1158.1 a *5*	14 *7*	1569.86		412.109	7/2$^-$	Eγ=1158.3 *4*, Iγ=17 *3* In table 1 for complex line (2011Bo09). I_γ: from Iγ:I(1570γ)=6 *3* In table 2 and I(1570γ). this leaves Iγ=3 *8* for placement elsewhere.
1163.38 *17*	135 *6*	1372.23	5/2$^-$	208.777	3/2$^-$	
1164.2 a *15*		2099.27	1/2,3/2	934.693	1/2$^-$	Iγ:I(1891γ)=16 *11*:100 *15* (2011Bo09). other Eγ (Iγ): 1164.28 *9* (198 *42*) for multiplet (1993Pr09); probably for 1163.4γ to 1165.4γ multiplet.
1165.35 *20*	119 *6*	1372.23	5/2$^-$	206.986	7/2$^-$	Iγ:I(1163γ)=88 *4*:100 *4* (2011Bo09).
1176.5 a *10*		1628.24	3/2$^-$	453.023	7/2$^-$	Iγ:I(1612γ)≈2:100 *5* (2011Bo09).
x1179.5 *4*	31 *5*					
1182.6 *4*	87 *25*	2209.07	1/2$^+$,3/2$^+$	1026.372	3/2$^-$	Iγ:I(2163γ)=28 *6*:100 *10* (2011Bo09). other Eγ (Iγ): 1182.70 *26* (80 *16*) (1993Pr09).
1187.5 *3*	39 *5*	2523.01		1335.42		

$^{183}_{74}W_{109}$-14

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ[†]	I_γ[‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]1192.0 *3*	83 *20*					
1192.72 *9*	267 *21*	1291.65	3/2$^-$	99.042	5/2$^-$	other Eγ (Iγ): 1192.46 *7* (312 *31*) (1993Pr09); probably for 1192.0γ+1192.7γ doublet.
1192.9[a] *16*		2126.38	3/2$^-$	934.693	1/2$^-$	Eγ: presumably from coincidence data, but not so indicated In table 2. Possibly the unplaced Eγ=1192.0 *3*, Iγ=83 *20* line from table 1 of 2011Bo09. Iγ:I(2080γ)=8 *3*:100 *4* (2011Bo09).
[x]1204.7[&] *3*	20 *3*					
1210.35 *21*	93 *5*	1309.391	3/2$^-$	99.042	5/2$^-$	Iγ:I(1101γ)=19 *6*:100 *8* (2011Bo09). other Eγ (Iγ): 1210.80 *14* (90 *16*) (1993Pr09); 1210.19 *23* (140 *36*) (2007ChZX).
[x]1214.0 *3*	23 *3*					
1217.7 *3*	32 *4*	1840.2		622.54	9/2$^+$	
1223.3 *3*	34 *4*	2126.38	3/2$^-$	903.464	5/2$^-$	Iγ:I(2080γ)=17 *4*:100 *4* (2011Bo09).
[x]1226.2 *7*	21 *4*					other Eγ (Iγ): 1226.6 *7* (38 *12*) (1993Pr09).
1228.3 *5*	49 *4*	1437.35	3/2	208.777	3/2$^-$	Iγ:I(1438γ)=27 *4*:100 *12* (2011Bo09).
1230.2 *7*	67 *12*	1683.2		453.023	7/2$^-$	other Eγ (Iγ): 1229.8 *4* (72 *14*) (1993Pr09).
1230.6[a] *16*		2164.85	1/2$^-$,3/2$^-$	934.693	1/2$^-$	Iγ:I(2118γ)=5 *2*:100 *3* (2011Bo09).
1231.7[i] *20*	21 *12*	2523.01		1291.65	3/2$^-$	
1233.7 *5*	31 *4*	2611.76		1376.43	7/2$^+$	
1236.34 *9*	107 *3*	1335.42		99.042	5/2$^-$	Iγ:I(1289γ)=42 *4*:100 *4* (2011Bo09). other Eγ (Iγ): 1235.53 *15* (94 *9*) (1993Pr09); May include 1233.7γ.
[x]1240.6 *6*	23 *7*					
1243.3[a] *11*		2176.77	1/2$^-$,3/2$^-$	934.693	1/2$^-$	Iγ:I(2177γ)=4 *2*:100 *3* (2011Bo09). Eγ=1243.3 *7*, Iγ=26 *5* In table 1.
1245.31[@] *22*	84[@] *5*	1291.65	3/2$^-$	46.515	3/2$^-$	Iγ:I(1193γ)=25 *2*:100 *1* (2011Bo09). other Eγ (Iγ): 1245.31 *17* (70 *9*) (1993Pr09).
1250.9 *6*	12 *2*	1542.9		291.681	5/2$^-$	
1257[b]	≈7	2282.99		1026.372	3/2$^-$	I_γ: from Iγ:I(1133γ)≈5:24 *5* In table 2 and I(1133γ) In table 1 of 2011Bo09.
1262[b]	≈3	2164.85	1/2$^-$,3/2$^-$	903.464	5/2$^-$	I_γ: from Iγ:I(2118γ)≈1:100 *3* In table 2 and I(2118γ) In table 1 of 2011Bo09.
1262.1[a] *12*		1672.76	1/2$^-$,3/2$^-$	412.109	7/2$^-$	Iγ:I(1626γ)=2 *1*:100 *3* (2011Bo09).
1262.6 *3*	259 *23*	1471.07	1/2$^-$	208.777	3/2$^-$	Iγ:I(1425γ)=44 *3*:100 *4* (2011Bo09). other Eγ (Iγ): 1262.55 *7* (322 *21*) for doublet (1993Pr09), Iγ=164 estimated for this placement by 1997Pr02; 1262.37 *18* (328 *44*) (2007ChZX). May include 1262.1γ.
1263.1[a] *6*	95 *42*	1309.391	3/2$^-$	46.515	3/2$^-$	Eγ=1261.2 *12*, Iγ=52 *23* In table 1 for complex line (2011Bo09). I_γ: from Iγ/I(1101γ)=20 *8*:100 *8* In table 2 and Iγ(1101γ) of 2011Bo09 this leaves No Iγ for placement elsewhere. other Eγ (Iγ): 1262.55 *7* (322 *21*) for doublet (1993Pr09); 1997Pr02 estimate Iγ=38 for this placement.
1264.6 *4*	56 *5*	1556.24	3/2$^-$	291.681	5/2$^-$	Iγ:I(1510γ)=21 *4*:100 *6* (2011Bo09). other Eγ (Iγ): 1262.55 *7* (322 *21*) for doublet (1993Pr09; 1997Pr02 estimate Iγ=120 for this placement.
[x]1271.7 *12*	11 *4*					
1273.7 *10*	43 *10*	2503.28		1229.31	5/2$^-$	other Eγ (Iγ): 1274.8 *4* (48 *9*) (1993Pr09); placed from 2209 by 1997Pr02.
1277.8 *6*	16 *3*	1730.50	1/2$^-$,3/2$^-$	453.023	7/2$^-$	Iγ:I(1684γ)=6 *2*:100 *5* (2011Bo09).

$^{183}_{74}W_{109}$-15

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ †	I_γ ‡ g	E_i(level)	J_i^π	E_f	J_f^π	Comments
1284.4 *4*	40 *7*	1737.2		453.023	7/2$^-$	other Eγ (Iγ): 1283.18 *28* (77 *9*) (1993Pr09).
x1286.0 *15*	≈9					
1288.96 *6*	248 *4*	1335.42		46.515	3/2$^-$	other Eγ (Iγ): 1289.09 *8* (322 *21*) (1993Pr09).
1291.8 *3*	79 *6*	1291.65	3/2$^-$	0.0	1/2$^-$	Iγ:I(1193γ)=30 *2*:100 *1* (2011Bo09).
1293.7@ *7*	72@ *9*	2523.01		1229.31	5/2$^-$	
1294.2a *10*		1586.52	(1/2$^-$,3/2$^-$)	291.681	5/2$^-$	Iγ:I(1587γ)=37 *10*:100 *23* (2011Bo09). other Eγ (Iγ): 1294.37 *9* (146 *21*; Iγ corrected for background-peak contamination) (1993Pr09).
x1295.5 *3*	129 *11*					other Eγ (Iγ): 1294.37 *9* (146 *21*) (1993Pr09); possibly for 1294γ to 1296γ multiplet.
1300.5 *4*	22 *4*	2450.59		1149.89	3/2$^-$	other Eγ (Iγ): 1300.3 *4* (51 *9*) (1993Pr09).
1302.7i *5*	22 *4*	2235.73	(3/2,5/2)	934.693	1/2$^-$	Iγ:I(2137γ)=18 *7*:100 *8* (2011Bo09).
1306.5 *5*	19 *6*	2535.18		1229.31	5/2$^-$	
x1311.1 *4*	25 *7*					
x1320.17 *16*	77 *6*					other Eγ (Iγ): 1321.1 *3* (53 *11*) (1993Pr09); May include 1322.8γ.
1322.8 *3*	27 *5*	1734.72	5/2$^+$	412.109	7/2$^-$	
1332.3a *15*		1784.58	5/2$^+$	453.023	7/2$^-$	Iγ:I(1373γ)≈15:100 *12* (2011Bo09).
x1332.91f *9*	52 *17*					Eγ,Iγ: for multiplet.
1335.8i *3*	33 *5*	1335.42		0.0	1/2$^-$	
1338.23 *23*	74 *5*	1437.35	3/2	99.042	5/2$^-$	Iγ:I(1438γ)=42 *6*:100 *12* (2011Bo09). other Eγ (Iγ): 1338.2 *3* (92 *9*) (1993Pr09). γ indicated As a multiplet by 1997Pr02 but not by 1993Pr09; No alternative placement(S) given. placement from table 2 of 2011Bo09.
1343.49 *21*	80 *12*	1550.56	5/2$^-$	206.986	7/2$^-$	other Eγ (Iγ): 1343.5 *4* (78 *11*) (1993Pr09). Placement is shown In parentheses In table 1 of 2011Bo09, but shown As definite by 1997Pr02.
x1346.8 *5*	33 *20*					
1347.4a *3*		1556.24	3/2$^-$	208.777	3/2$^-$	Iγ:I(1510γ)=19 *4*:100 *6* (2011Bo09). Eγ=1348.1 *5*, Iγ=58 *22* from table 1. other Eγ (Iγ): 1347.6 *3* (99 *11*) (1993Pr09; possibly for 1347γ to 1348γ multiplet); 1347.19 *25* (346 *44*) (2007ChZX; apparently for contaminated γ).
1348b	≈7	2282.99		934.693	1/2$^-$	Iγ: from Iγ:I(1133γ)≈5:24 *5* In table 2 and I(1133γ) In table 1 of 2011Bo09.
1350.5i *4*	19 *6*	2503.28		1149.89	3/2$^-$	
x1354.3 *4*	20 *3*					
1361.06 *14*	35 *3*	1569.86		208.777	3/2$^-$	Iγ:I(1570γ)=15 *3*:100 *5* (2011Bo09). other Eγ (Iγ): 1363.0 *5* (43 *14*) (1993Pr09); possibly for 1361γ to 1364γ multiplet.
1363b	≈23	1569.86		206.986	7/2$^-$	Iγ: from Iγ:I(1570γ)≈10:100 *5* In table 2 and I(1570γ) In table 1 of 2011Bo09.
1364.0 *3*	21 *2*	3210.77		1846.8		other Eγ (Iγ): 1363.0 *5* (43 *14*) (1993Pr09); possibly for 1361γ to 1364γ multiplet.
1366.5i *6*	23 *3*	2517.50		1149.89	3/2$^-$	
x1368.6 *3*	58 *4*					
1370.2a *12*		2303.94		934.693	1/2$^-$	Iγ:I(2304γ)=10 *3*:100 *4* (2011Bo09).
x1370.80 *19*	85 *5*					other Eγ (Iγ): 1370.89 *15* (156 *21*) (1993Pr09) for doublet placed by 1997Pr02 from 1578 level and 1823 level, with calculated relative Iγ of 10:4.6.
1371.6a *11*		1663.63		291.681	5/2$^-$	Iγ:I(1618γ)=9 *5*:100 *15* (2011Bo09).
1372.6 *3*	50 *6*	1784.58	5/2$^+$	412.109	7/2$^-$	

$^{183}_{74}W_{109}$-16

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ [†]	I_γ [‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]1378.08 *20*	33 *3*					
1380.2[a] *13*		1586.52	(1/2$^-$,3/2$^-$)	206.986	7/2$^-$	Iγ:I(1587γ)=59 *17*:100 *23* (2011Bo09).
1381.09 *12*	75 *3*	1672.76	1/2$^-$,3/2$^-$	291.681	5/2$^-$	Iγ:I(1626γ)=9 *1*:100 *3* (2011Bo09). other Eγ (Iγ): 1380.66 *18* (125 *21*) (1993Pr09).
1386.4 *3*	35 *4*	1485.45	(1/2,3/2)	99.042	5/2$^-$	other Eγ (Iγ): 1387.2 *9* (43 *18*) (1993Pr09.
1390.82 *22*	54 *3*	1437.35	3/2	46.515	3/2$^-$	Iγ:I(1438γ)=31 *4*:100 *12* (2011Bo09). other Eγ (Iγ): 1391.1 *10* (38 *15*) (1993Pr09).
[x]1396.3 *7*	9 *3*					
1402.8 *3*	30 *5*	1612.06		208.777	3/2$^-$	Iγ:I(1612γ)=16 *3*:100 *5* (2011Bo09).
1407.3[&] *3*	141 *45*	2433.65		1026.372	3/2$^-$	other Eγ (Iγ): 1407.22 *19* (146 *10*) (1993Pr09).
1411.56 *6*	250 *13*	1510.61		99.042	5/2$^-$	other Eγ (Iγ): 1411.68 *14* (239 *21*) (1993Pr09); placed from 1824 level by 1997Pr02.
[x]1414.7 *9*	14 *7*					
1416.78 *10*	284 *7*	1463.21	1/2	46.515	3/2$^-$	other Eγ (Iγ): 1416.74 *9* (281 *21*) (1993Pr09).
[x]1422.54 *22*	100 *8*					
1423.9[a] *4*		1633.33	1/2$^-$,3/2$^-$	208.777	3/2$^-$	Iγ:I(1634γ)≈10:100 *13* (2011Bo09).
1424.61 *7*	452 *8*	1471.07	1/2$^-$	46.515	3/2$^-$	other Eγ (Iγ): 1424.26 *5* (489 *31*) (1993Pr09); 1423.97 *14* (620 *55*) (2007ChZX; possibly for 1422.5γ+1424.6γ doublet).
[x]1429.3 *9*	16 *6*					
1437.52 *23*	179 *22*	1437.35	3/2	0.0	1/2$^-$	other Eγ (Iγ): 1437.88 *8* (250 *21*) (1993Pr09).
1438.9[a] *8*		1730.50	1/2$^-$,3/2$^-$	291.681	5/2$^-$	Iγ:I(1684γ)=16 *5*:100 *5* (2011Bo09). Eγ=1439.10 *24*, Iγ=93 *23* In table 1 of 2011Bo09.
1441.9[a] *9*		1734.72	5/2$^+$	291.681	5/2$^-$	Iγ:I(1323γ)=70 *30*:100 *20* (2011Bo09).
[x]1447.4 *4*	22 *3*					
1451.5[i] *7*	9 *5*	1660.59		208.777	3/2$^-$	
1454.2[@] *8*	47[@] *22*	2523.01		1069.38	7/2$^-$	
1455.2[a] *3*		1663.63		208.777	3/2$^-$	Iγ:I(1618γ)=26 *8*:100 *15* (2011Bo09). Eγ=1455.3 *8*, Iγ=69 *22* In table 1 of 2011Bo09. other Eγ (Iγ): 1455.81 *15* (166 *21*)for multiplet (1993Pr09).
1457.2 *7*	57 *12*	1556.24	3/2$^-$	99.042	5/2$^-$	Iγ:I(1510γ)=27 *4*:100 *6* (2011Bo09).
[x]1460.1[&] *4*	59 *8*					
1463.4[@] *3*	285[@] *21*	1463.21	1/2	0.0	1/2$^-$	Iγ:I(1417γ)=80 *10*:100 *12* (2011Bo09). other Eγ (Iγ): 1463.58 *7* (374 *21*) for doublet (1993Pr09). 1997Pr02 estimate Iγ=156 for this placement.
1464.13[a] *15*		1672.76	1/2$^-$,3/2$^-$	208.777	3/2$^-$	Iγ:I(1626γ)=11 *2*:100 *3* (2011Bo09). other Eγ (Iγ): 1463.58 *7* (374 *21*) for doublet (1993Pr09); presumably the 1464γ+1466γ doublet.
1465.5 *4*	57 *8*	1672.76	1/2$^-$,3/2$^-$	206.986	7/2$^-$	Iγ:I(1626γ)=6 *1*:100 *3* (2011Bo09).
1470.75 *9*	155 *20*	1471.07	1/2$^-$	0.0	1/2$^-$	Iγ:I(1425γ)=32 *7*:100 *4* (2011Bo09). other Eγ (Iγ): 1470.93 *11* (239 *21*) (1993Pr09), 1471.1 *4* (201 *73*) (2007ChZX); possibly for 1470.8+1471.5γ doublet).
[x]1471.5 *5*	60 *18*					see comment on 1470.75γ.
[x]1477.9 *6*	51 *18*					other Eγ (Iγ): 1478.39 *27* (85 *14*; Iγ corrected for escape-peak contaminant) (1993Pr09);

$^{183}_{74}W_{109}$-17

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ[†]	I_γ[‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
						possibly for 1477.9γ+1478.5γ doublet. placed by 1997Pr02 from an otherwise unknown 1478 level.
1478.5[@] *4*	45[@] *19*	2708.12		1229.31	5/2$^-$	other Eγ (Iγ): 1478.39 *27* (85 *14*) (1993Pr09); possibly for 1477.9γ+1478.5γ doublet.
1485.49[@] *12*	142[@] *9*	3097.60		1612.06		other Eγ (Iγ): 1485.86 *15* (177 *21*) (1993Pr09). placed by 1997Pr02 from 1486 level.
1487.53 *23*	55 *5*	1586.52	(1/2$^-$,3/2$^-$)	99.042	5/2$^-$	Iγ:I(1587γ)=52 *11*:100 *23* (2011Bo09).
1492.7 *3*	23 *3*	1784.58	5/2$^+$	291.681	5/2$^-$	Iγ:I(1373γ)=45 *10*:100 *12* (2011Bo09).
[x]1501.2 *3*	12 *4*					
1504.04 *13*	23 *2*	1550.56	5/2$^-$	46.515	3/2$^-$	
1504.06[@] *7*	200[@] *5*	2813.42		1309.391	3/2$^-$	other Eγ (Iγ): 1504.04 *13* (239 *21*) (1993Pr09).
[x]1508.8 *4*	108 *30*					
1510.2[a] *3*		1556.24	3/2$^-$	46.515	3/2$^-$	Eγ=1510.35 *12*, Iγ=350 *30* In table 1 for complex line (2011Bo09). other Eγ (Iγ): 1510.17 *6* (530 *31*) (1993Pr09); 1510.17 *25* (419 *55*) (2007ChZX; possible contribution from 1509γ and/or 1513γ. fits placement poorly.
1512.82 *21*	70 *6*	1612.06		99.042	5/2$^-$	Iγ:I(1612γ)=36 *4*:100 *5* (2011Bo09).
1516.9 *8*	30 *8*	1725.65		208.777	3/2$^-$	Iγ:I(1726γ)=18 *2*:100 *4* (2011Bo09).
1519.2 *6*	53 *7*	1811.12	1/2$^-$	291.681	5/2$^-$	Iγ:I(1765γ)=17 *3*:100 *4* (2011Bo09). other Eγ (Iγ): 1518.5 *6* (53 *31*) (1993Pr09).
1521.8[a] *4*		1730.50	1/2$^-$,3/2$^-$	208.777	3/2$^-$	Iγ:I(1684γ)=17 *3*:100 *5* (2011Bo09). Eγ=1521.4 *7*, Iγ=45 *8* In table 1 of 2011Bo09.
1523.37[@] *14*	185[@] *6*	1569.86		46.515	3/2$^-$	Iγ:I(1570γ)=80 *5*:100 *5* (2011Bo09). other Eγ (Iγ): 1523.16 *17* (218 *21*) (1993Pr09).
[x]1526.4 *6*	24 *10*					
1527.9[a] *8*		1734.72	5/2$^+$	206.986	7/2$^-$	Iγ:I(1323γ)=90 *30*:100 *20* (2011Bo09).
1528.68 *23*	130 *20*	1628.24	3/2$^-$	99.042	5/2$^-$	Iγ:I(1612γ)=30 *2*:100 *5* (2011Bo09). other Eγ (Iγ): 1529.28 *13* (229 *21*) (1993Pr09); presumably for 1529γ+1530γ doublet.
[x]1530.3[&] *4*	100 *20*					other Eγ (Iγ): 1529.28 *13* (229 *21*) (1993Pr09); presumably for 1529γ+1530γ doublet.
1532[a] *1*		1633.33	1/2$^-$,3/2$^-$	99.042	5/2$^-$	Iγ:I(1634γ)=16 *10*:100 *13* (2011Bo09).
1532[b]	≈7	1823.87	1/2$^-$	291.681	5/2$^-$	from Iγ:I(1615γ)≈1:100 *3* In table 2 and I(1615γ) In table 1 of 2011Bo09.
[x]1537.5 *6*	37 *16*					
1540[b]	≈30	1586.52	(1/2$^-$,3/2$^-$)	46.515	3/2$^-$	I$_\gamma$: from Iγ:I(1587γ)≈17:100 *23* In table 2 and I(1587γ) In table 1 of 2011Bo09. Eγ=1540.5 *9*, Iγ=40 *20* In table 1 for complex line (2011Bo09). other Eγ (Iγ): 1539.5 *4* (30 *8*; Iγ corrected for escape-peak contamination) (1993Pr09).
1542.08[a] *15*		1833.78		291.681	5/2$^-$	Iγ:I(1625γ)=70 *19*:100 *21* (2011Bo09).
1543.3[i] *7*	47 *21*	2612.7		1069.38	7/2$^-$	other Eγ (Iγ): 1543.38 *21* (104 *10*) (1993Pr09).
1545.0[a] *14*		1837.2		291.681	5/2$^-$	Iγ:I(1629γ)=57 *25*:100 *25* (2011Bo09). Eγ=1545.3 *3*, Iγ=55 *7* In table 1 for complex line that primarily deexcites the 2482 level (2011Bo09).
1545.3[i] *3*	55 *7*	2481.47		934.693	1/2$^-$	
1552.1 *5*	41 *9*	1964.74		412.109	7/2$^-$	Iγ:I(1918γ)=68 *15*:100 *8* (2011Bo09).
[x]1554.1 *4*	56 *8*					
1556.28 *9*	256 *6*	1556.24	3/2$^-$	0.0	1/2$^-$	Iγ:I(1510γ)=94 *6*:100 *6* (2011Bo09). other Eγ (Iγ): 1555.69 *12* (322 *31*) (1993Pr09); 1555.60 *25* (255 *55*) (2007ChZX).

$^{183}_{74}W_{109}$-18

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ [†]	I_γ [‡ g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
1561.73 [i] *16*	63 *6*	1660.59		99.042	5/2⁻	
1565.51 *11*	128 *6*	1612.06		46.515	3/2⁻	Iγ:I(1612γ)=67 *4*:100 *5* (2011Bo09). other Eγ (Iγ): 1564.4 *5* (125 *21*) (1993Pr09).
1569.80 [@] *10*	230 [@] *6*	1569.86		0.0	1/2⁻	other Eγ (Iγ): 1569.5 *3* (291 *31*) (1993Pr09).
1573.52 *11*	121 *7*	1672.76	1/2⁻,3/2⁻	99.042	5/2⁻	Iγ:I(1626γ)=12 *1*:100 *3* (2011Bo09). other Eγ (Iγ): 1573.6 *3* (156 *21*) (1993Pr09).
1575.8 *13*	19 *7*	1784.58	5/2⁺	208.777	3/2⁻	Iγ:I(1373γ)=39 *15*:100 *12* (2011Bo09).
1580.6 *5*	≈50	1789.55		208.777	3/2⁻	Iγ:I(1790γ)=50 *20*:100 *33* (2011Bo09).
1581.4 *3*	170 *50*	1628.24	3/2⁻	46.515	3/2⁻	Iγ:I(1612γ)=33 *2*:100 *5* (2011Bo09). other Eγ (Iγ): 1581.55 *17* (322 *31*) (1993Pr09).
[x]1584.2 *4*	41 *13*					
1586.83 [@] *12*	178 [@] *6*	1586.52	(1/2⁻,3/2⁻)	0.0	1/2⁻	other Eγ (Iγ): 1587.32 *24* (229 *21*) (1993Pr09); May include 1589.8γ. placed by 1997Pr02 from 1633 level.
1586.9 [a] *7*		1633.33	1/2⁻,3/2⁻	46.515	3/2⁻	Iγ:I(1634γ)=84 *14*:100 *13* (2011Bo09). see comment on 1587γ from 1587 level.
1589.8 *3*	44 *6*	2615.46		1026.372	3/2⁻	
1595.09 *4*	412 *5*	1886.66	(1/2⁻,3/2⁻)	291.681	5/2⁻	other Eγ (Iγ): 1595.11 *11* (478 *31*) (1993Pr09).
[x]1599.55 *21*	49 *5*					
1602 [b]	≈18	1893.84		291.681	5/2⁻	I_γ: from Iγ:I(1848γ)≈10:100 *8* In table 2 and I(1848γ) In table 1 of 2011Bo09.
1602.43 *7*	281 *7*	1811.12	1/2⁻	208.777	3/2⁻	Iγ:I(1765γ)=99 *4*:100 *4* (2011Bo09). other Eγ (Iγ): 1602.25 *15* (343 *31*) (1993Pr09).
1609.4 [@] *3*	44 [@] *6*	1900.85		291.681	5/2⁻	Iγ:I(1692γ)≈6:100 *12* (2011Bo09).
1612.16 *7*	191 *5*	1612.06		0.0	1/2⁻	other Eγ (Iγ): 1610.7 *4* (166 *31*) (1993Pr09); possibly for 1609γ+1612γ doublet.
1614 *1*		1660.59		46.515	3/2⁻	Iγ:I(1661γ)=49 *16*:100 *16* (2011Bo09). placement from table 2. Eγ=1615.06 *7* (Iγ=669 *36*) from table 1 primarily deexcites the 1824 level (2011Bo09). other Eγ (Iγ): 1615.13 *9* (905 *52*) (1993Pr09); probably for 1615γ to 1617γ multiplet.
1615.06 *7*	669 *26*	1823.87	1/2⁻	208.777	3/2⁻	other Eγ (Iγ): 1615.13 *9* (905 *52*) (1993Pr09); primarily deexcites 1661 level.
1617.7 [a] *6*		1663.63		46.515	3/2⁻	Eγ=1616.7 *3*, Iγ=165 *24* In table 1 of 2011Bo09.
1618.8 [i] *7*	31 *7*	2522.53		903.464	5/2⁻	
1624.6 [a] *9*		1915.40		291.681	5/2⁻	Iγ:I(1916γ)=60 *30*:100 *11* (2011Bo09).
1625.1 [a] *11*		1833.78		208.777	3/2⁻	
1626.29 *8*	748 *16*	1672.76	1/2⁻,3/2⁻	46.515	3/2⁻	other Eγ (Iγ): 1627.09 *5* (1331 *73*) for doublet (1993Pr09); presumably for 1626γ+1628γ doublet. 1997Pr02 estimate Iγ=562 for this placement.
1628.35 *8*	589 *16*	1628.24	3/2⁻	0.0	1/2⁻	other Eγ (Iγ): 1627.09 *5* (1331 *73*) for doublet (1993Pr09); presumably for 1626γ+1628γ doublet. 1997Pr02 estimate Iγ=770 for this placement.
1628.5 [a] *6*		1837.2		208.777	3/2⁻	Eγ=1626.29 *8*, Iγ=748 *16* In table 1 of 2011Bo09.
1631.52 *13*	108 *12*	1730.50	1/2⁻,3/2⁻	99.042	5/2⁻	Iγ:I(1684γ)=53 *6*:100 *5* (2011Bo09). other Eγ (Iγ): 1633.07 *20* (291 *31*) (1993Pr09); probably for 1632γ+1634γ doublet.
1633.77 *23*	182 *12*	1633.33	1/2⁻,3/2⁻	0.0	1/2⁻	other Eγ (Iγ): 1633.07 *20* (291 *31*) (1993Pr09); probably for 1632γ+1634γ doublet.
[x]1636.4 *5*	38 *13*					
[x]1640.2 *3*	26 *7*					

$^{183}_{74}W_{109}$-19

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ [†]	I_γ [‡ g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]1646.9 *3*	55 *24*					other Eγ (Iγ): 1647.1 *3* (69 *9*) (1993Pr09).
1652.9[a] *8*		1944.31	3/2$^-$	291.681	5/2$^-$	Iγ:I(1736γ)=5 *1*:100 *2* (2011Bo09). Eγ=1652.33 *8*, Iγ=234 *6* In table 1 for complex line (2011Bo09). other Eγ (Iγ): 1652.59 *8* (250 *21*) (1993Pr09); May include 1654.9γ.
[x]1654.9 *4*	31 *7*					
1660.59 *11*	182 *9*	1660.59		0.0	1/2$^-$	other Eγ (Iγ): 1661.03 *9* (250 *21*) (1993Pr09); probably for 1661γ to 1663γ multiplet.
1660.7[a] *4*		1869.70		208.777	3/2$^-$	Iγ:I(1870γ)=23 *4*:100 *7* (2011Bo09).
1663.2 *3*	61 *6*	1663.63		0.0	1/2$^-$	Iγ:I(1618γ)=29 *13*:100 *15* (2011Bo09).
1672.86[@] *11*	121[@] *6*	1672.76	1/2$^-$,3/2$^-$	0.0	1/2$^-$	Iγ:I(1626γ)=14 *1*:100 *3* (2011Bo09). other Eγ (Iγ): 1672.66 *15* (156 *10*) (1993Pr09).
1673.4[a] *20*		1964.74		291.681	5/2$^-$	Iγ:I(1918γ)=30 *20*:100 *8* (2011Bo09).
1674[b]	≈9	2126.38	3/2$^-$	453.023	7/2$^-$	I$_\gamma$: from Iγ:I(2080γ)≈4:100 *4* In table 2 and I(2080γ) In table 1 of 2011Bo09.
1677.2[a] *5*		1886.66	(1/2$^-$,3/2$^-$)	208.777	3/2$^-$	Iγ:I(1595γ)=11 *2*:100 *3* (2011Bo09). Eγ=1676.3 *6*, Iγ=25 *6* In table 1 of 2011Bo09. other Eγ (Iγ): 1677.5 *3* (68 *9*) (1993Pr09); probably for 1677γ+1678γ doublet.
1678.0 *5*	48 *6*	2612.7		934.693	1/2$^-$	other Eγ (Iγ): 1677.5 *3* (68 *9*) (1993Pr09); probably for 1677γ+1678γ doublet.
1684.11 *7*	234 *5*	1730.50	1/2$^-$,3/2$^-$	46.515	3/2$^-$	other Eγ (Iγ): 1684.36 *8* (229 *21*) (1993Pr09).
1686.3[a] *16*		2099.27	1/2,3/2	412.109	7/2$^-$	Iγ:I(1891γ)=18 *9*:100 *15* (2011Bo09).
1690.6[@] *3*	152[@] *44*	1982.22	3/2$^-$	291.681	5/2$^-$	other Eγ (Iγ): 1691.44 *5* (395 *21*) (1993Pr09); presumably for 1691γ+1692γ doublet.
1692.1 *3*	142 *42*	1900.85		208.777	3/2$^-$	other Eγ (Iγ): 1691.44 *5* (395 *21*) (1993Pr09) γ indicated As a doublet by 1997Pr02 but not by 1993Pr09.
1694.6[@] *3*	56[@] *12*	2629.19		934.693	1/2$^-$	
1698.93 *10*	117 *7*	1990.54	1/2$^-$,3/2$^-$	291.681	5/2$^-$	other Eγ (Iγ): 1698.69 *20* (83 *12*) (1993Pr09); placed from a 1906 level by 1997Pr02.
1707.5[a] *9*		1915.40		208.777	3/2$^-$	Iγ:I(1916γ)=45 *20*:100 *11* (2011Bo09).
1711.7[a] *15*		1811.12	1/2$^-$	99.042	5/2$^-$	Iγ:I(1765γ)=5 *3*:100 *4* (2011Bo09).
1711.9[a] *4*		2164.85	1/2$^-$,3/2$^-$	453.023	7/2$^-$	Iγ:I(2118γ)=12 *3*:100 *3* (2011Bo09).
1713.7[a] *6*		2126.38	3/2$^-$	412.109	7/2$^-$	Iγ:I(2080γ)=7 *3*:100 *4* (2011Bo09).
[x]1719.3 *3*	43 *7*					other Eγ (Iγ): 1719.6 *4* (53 *9*) (1993Pr09).
[x]1723.2 *3*	59 *6*					
1725.77 *14*	171 *7*	1725.65		0.0	1/2$^-$	other Eγ (Iγ): 1724.98 *15* (187 *10*) (1993Pr09).
1730.7 *3*	58 *8*	1730.50	1/2$^-$,3/2$^-$	0.0	1/2$^-$	Iγ:I(1684γ)=23 *4*:100 *5* (2011Bo09). other Eγ (Iγ): 1729.9 *3* (87 *9*) (1993Pr09).
1735.56 *7*	796 *16*	1944.31	3/2$^-$	208.777	3/2$^-$	other Eγ (Iγ): 1735.63 *4* (863 *42*) (1993Pr09) for doublet. 1997Pr02 estimate Iγ=686 for this placement.
1736[b]	28 *21*	1833.78		99.042	5/2$^-$	I$_\gamma$: from Iγ:I(1625γ)=28 *22*:100 *21* In table 2 and I(1625γ) In table 1 of 2011Bo09.
1737.1[a] *6*		2028.48	1/2$^-$,3/2$^-$	291.681	5/2$^-$	Iγ:I(2029γ)=46 *7*:100 *6* (2011Bo09). other Eγ (Iγ): 1735.63 *4* (863 *52*) (1993Pr09) for doublet. 1997Pr02 estimate Iγ=177 for this placement.
1742.4[&] *3*	70 *5*	2768.57		1026.372	3/2$^-$	other Eγ (Iγ): 1743.60 *22* (84 *11*) (1993Pr09).
1743[b]	≈15	1789.55		46.515	3/2$^-$	I$_\gamma$: from Iγ:I(1790γ)≈15:100 *33* In table 2 and I(1790γ) In table 1 of 2011Bo09.
1746.1 *4*	49 *25*	2772.9		1026.372	3/2$^-$	

$^{183}_{74}W_{109}$-20

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ[†]	I_γ[‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]1750.1 *5*	38 *16*					
[x]1752.7 *3*	85 *16*					other Eγ (Iγ): 1751.6 *3* (60 *12*) (1993Pr09); May include 1750γ.
1752.9[a] *12*		2164.85	1/2$^-$,3/2$^-$	412.109	7/2$^-$	other Iγ: 44 *22* from (n,γ) E=4.1 eV. Iγ:I(2118γ)=6 *2*:100 *3* (2011Bo09).
1757.3[a] *16*		1964.74		208.777	3/2$^-$	Iγ:I(1918γ)=43 *18*:100 *8* (2011Bo09).
[x]1758.7[&] *3*	37 *6*					other Eγ (Iγ): 1760.3 *6* (60 *11*) (1993Pr09); probably for 1759γ+1762γ doublet.
1762.3[i] *4*	48 *8*	2697.0		934.693	1/2$^-$	other Eγ (Iγ): 1760.3 *6* (60 *11*) (1993Pr09); probably for 1759γ+1762γ doublet.
1764.59 *12*	267 *8*	1811.12	1/2$^-$	46.515	3/2$^-$	other Eγ (Iγ): 1764.65 *9* (312 *31*) (1993Pr09).
1767.5 *4*	29 *7*	2059.37	1/2$^-$,3/2$^-$	291.681	5/2$^-$	Iγ:I(1851γ)=26 *9*:100 *7* (2011Bo09).
[x]1770.2 *4*	36 *8*					other Eγ (Iγ): 1771.2 *4* (47 *11*) (1993Pr09).
1777[b]	13 *7*	1823.87	1/2$^-$	46.515	3/2$^-$	I_γ: from Iγ:I(1615γ)=2 *1*:100 *3* In table 2 and I(1615γ) In table 1 of 2011Bo09.
[x]1777.5 *3*	63 *5*					
[x]1779.9 *6*	41 *5*					
1782.4 *3*	69 *6*	1990.54	1/2$^-$,3/2$^-$	208.777	3/2$^-$	Iγ:I(1699γ)=58 *15*:100 *15* (2011Bo09). other Eγ (Iγ): 1782.68 *24* (94 *12*) (1993Pr09); May include 1784γ.
1783[b]	≈15	2235.73	(3/2,5/2)	453.023	7/2$^-$	I_γ: from Iγ:I(901γ)≈8:16 *6* In table 2 and I(901γ) In table 1 of 2011Bo09.
1784[b]	≈19	1990.54	1/2$^-$,3/2$^-$	206.986	7/2$^-$	I_γ: from Iγ:I(1699γ)≈16:100 *15* In table 2 and I(1699γ) In table 1 of 2011Bo09.
1786.6[a] *12*		1886.66	(1/2$^-$,3/2$^-$)	99.042	5/2$^-$	Iγ:I(1595γ)=6 *2*:100 *3* (2011Bo09). Eγ=1785.7 *5*, Iγ=36 *7* In table 1 of 2011Bo09.
1787.8[a] *12*		1833.78		46.515	3/2$^-$	Iγ:I(1625γ)=48 *10*:100 *21* (2011Bo09).
1789.5 *8*	99 *33*	1789.55		0.0	1/2$^-$	other Eγ (Iγ): 1789.88 *13* (146 *10*) (1993Pr09).
[x]1790.8 *9*	73 *32*					
1795.76 *10*	140 *5*	2699.22		903.464	5/2$^-$	other Eγ (Iγ): 1795.9 *3* (114 *21*) (1993Pr09).
[x]1799.4 *4*	71 *7*					other Eγ (Iγ): 1799.4 *8* (50 *14*) (1993Pr09).
1800[b]	≈10	2091.5		291.681	5/2$^-$	I_γ: from Iγ:I(2092γ)≈20:60 *30* In table 2 and I(2092γ) In table 1 of 2011Bo09.
1801.4 *8*	32 *7*	1900.85		99.042	5/2$^-$	Iγ:I(1692γ)=10 *7*:100 *12* (2011Bo09).
[x]1805.8 *4*	35 *5*					
1807.7[a] *19*		2099.27	1/2,3/2	291.681	5/2$^-$	Iγ:I(1891γ)=25 *11*:100 *15* (2011Bo09).
[x]1808.5 *6*	21 *5*					other Eγ (Iγ): 1807.1 *8* (30 *17*) (1993Pr09). placed by 1997Pr02 from a 1906 level.
1811.1 *5*	11 *4*	1811.12	1/2$^-$	0.0	1/2$^-$	Iγ:I(1765γ)=8 *2*:100 *4* (2011Bo09).
[x]1814.0 *5*	19 *4*					other Eγ (Iγ): 1814.3 *4* (60 *17*; Iγ corrected for escape-peak contamination) (1993Pr09); possibly for 1814γ+1816γ doublet.
1816.2[i] *3*	53 *5*	1915.40		99.042	5/2$^-$	other Eγ (Iγ): 1814.3 *4* (60 *17*) (1993Pr09); possibly for 1814γ+1816γ doublet.
1818.88[i] *20*	86 *5*	2722.94		903.464	5/2$^-$	other Eγ (Iγ): 1818.6 *4* (125 *21*) (1993Pr09); possibly for multiplet.
1819.6[a] *6*		2028.48	1/2$^-$,3/2$^-$	208.777	3/2$^-$	Iγ:I(2029γ)=17 *4*:100 *6* (2011Bo09).
[x]1821.3 *4*	25 *5*					other Eγ (Iγ): 1823.5 *5* (59 *4*) (1993Pr09); possibly for 1821γ+1824γ doublet.
1824.0 *4*	24 *5*	1823.87	1/2$^-$	0.0	1/2$^-$	Iγ:I(1615γ)=5 *1*:100 *3* (2011Bo09). other Eγ (Iγ): 1823.5 *5* (59 *4*) (1993Pr09); possibly for 1821γ+1824γ doublet.
1824[b]	7 *4*	1869.70		46.515	3/2$^-$	I_γ: from Iγ:I(1870γ)=4 *2*:100 *7* In table 2 and I(1870γ) In table 1 of 2011Bo09.
[x]1829.8 *4*	19 *4*					other Eγ (Iγ): 1830.8 *5* (48 *15*) (1993Pr09); possibly for 1830γ+1831γ++1834γ multiplet.
1831[b]	≈9	2282.99		453.023	7/2$^-$	I_γ: from Iγ:I(1133γ)=7 *4*:24 *5* In table 2 and I(1133γ) In table 1 of 2011Bo09.

$^{183}_{74}W_{109}$-21

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ [†]	I_γ [‡ g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
1834.2 *5*	33 *4*	1833.78		0.0	1/2$^-$	Iγ:I(1625γ)=27 *8*:100 *21* (2011Bo09). other Eγ (Iγ): 1830.8 *5* (48 *15*) (1993Pr09); possibly for 1830γ+1831γ+1834γ multiplet.
1836 [b]	14 *7*	2126.38	3/2$^-$	291.681	5/2$^-$	I_γ: from Iγ:I(2080γ)=6 *3*:100 *4* In table 2 and I(2080γ) In table 1 of 2011Bo09.
1837.1 [a] *11*		1837.2		0.0	1/2$^-$	Iγ:I(1629γ)=72 *27*:100 *25* (2011Bo09). Eγ=1837.32 *15*, Iγ=173 *5* In table 1 of 2011Bo09 for complex line. other Eγ (Iγ): 1837.35 *10* (250 *31*) (1993Pr09).
1839.8 *4*	30 *5*	1886.66	(1/2$^-$,3/2$^-$)	46.515	3/2$^-$	Iγ:I(1595γ)=15 *2*:100 *3* (2011Bo09).
1844.2 [a] *15*		1944.31	3/2$^-$	99.042	5/2$^-$	Iγ:I(1736γ)=2 *1*:100 *2* (2011Bo09).
1847.74 *14*	182 *5*	1893.84		46.515	3/2$^-$	other Eγ (Iγ): 1848.31 *13* (239 *21*) (1993Pr09); May include 1851γ.
1850.6 *4*	100 *5*	2059.37	1/2$^-$,3/2$^-$	208.777	3/2$^-$	
1852.6 [a] *18*		2059.37	1/2$^-$,3/2$^-$	206.986	7/2$^-$	Iγ:I(1851γ)=17 *8*:100 *7* (2011Bo09).
1854.16 [@] *18*	115 [@] *5*	1900.85		46.515	3/2$^-$	Iγ:I(1692γ)=36 *10*:100 *12* (2011Bo09). other Eγ (Iγ): 1853.7 *4* (125 *21*) (1993Pr09); possibly for 1853γ+1854γ doublet.
[x]1857.0 *6*	21 *5*					other Eγ (Iγ): 1857.8 *14* (37 *15*) (1993Pr09).
[x]1859.8 *6*	≈7					
1864.7 [a] *19*	32 *6*	2157.50		291.681	5/2$^-$	Iγ:I(2158γ)=18 *12*:100 *22* (2011Bo09). Eγ=1865.3 *5*, Iγ=32 *6* In table 1 of 2011Bo09.
1868.6 [a] *9*		1915.40		46.515	3/2$^-$	Iγ:I(1916γ)=90 *30*:100 *11* (2011Bo09). Eγ=1867.6 *9*, Iγ=37 *6* In table 1 of 2011Bo09.
1869.75 *18*	166 *6*	1869.70		0.0	1/2$^-$	other Eγ (Iγ): 1869.48 *15* (218 *21*) (1993Pr09); possibly for 1868γ+1870γ doublet.
1872 [b]	≈7	2282.99		412.109	7/2$^-$	I_γ: from Iγ:I(1133γ)≈5:24 *5* In table 2 and I(1133γ) In table 1 of 2011Bo09.
1872.8 *6*	28 *4*	2164.85	1/2$^-$,3/2$^-$	291.681	5/2$^-$	Iγ:I(2118γ)=10 *2*:100 *3* (2011Bo09).
1876.2 [i] *6*	22 *4*	2813.42		934.693	1/2$^-$	other Eγ (Iγ): 1876.0 *12* (27 *17*) (1993Pr09). Placed by 1997Pr02 from 2165 level.
1877 [b]	≈3	2169.81		291.681	5/2$^-$	I_γ: from Iγ:I(895γ)≈10:100 *13* In table 2 and I(895γ) In table 1 of (2011Bo09). other Eγ (Iγ): 895.7 *15* (19 *10*) (1993Pr09).
1885.8 [a] *12*		2176.77	1/2$^-$,3/2$^-$	291.681	5/2$^-$	Iγ:I(2177γ)=5 *2*:100 *3* (2011Bo09). other Eγ (Iγ): 1885.07 *25* (146 *21*) (1993Pr09); probably for 1885γ+1888γ doublet.
1886.5 [a] *7*		1886.66	(1/2$^-$,3/2$^-$)	0.0	1/2$^-$	Iγ:I(1595γ)=18 *2*:100 *3* (2011Bo09). Eγ=1884.8 *3*, Iγ=88 *5* In table 1 of 2011Bo09. other Eγ (Iγ): 1885.07 *25* (146 *21*) (1993Pr09).
[x]1887.9 *6*	34 *4*					other Eγ (Iγ): 1885.07 *25* (146 *21*) (1993Pr09); probably for 1886γ+1888γ doublet.
1890.77 *24*	80 *4*	2099.27	1/2,3/2	208.777	3/2$^-$	other Eγ (Iγ): 1890.96 *25* (146 *21*) for doublet (1993Pr09). 1997Pr02 estimate Iγ=6.2 for this placement.
1891 [b]	≈15	1990.54	1/2$^-$,3/2$^-$	99.042	5/2$^-$	I_γ: from Iγ:I(1699γ)≈13:100 *15* In table 2 and I(1699γ) In table 1 of 2011Bo09. other Eγ (Iγ): 1890.96 *25* (146 *21*) (1993Pr09) for doublet. 1997Pr02 estimate Iγ=83 for this placement.
1894.20 *24*	69 *4*	1893.84		0.0	1/2$^-$	Iγ:I(1848γ)=53 *8*:100 *8* (2011Bo09).
1897.88 *14*	174 *5*	1944.31	3/2$^-$	46.515	3/2$^-$	Iγ:I(1736γ)=21 *2*:100 *2* (2011Bo09). other Eγ (Iγ): 1897.58 *15* (229 *31*) (1993Pr09).
1900.2 [a] *23*		1900.85		0.0	1/2$^-$	Iγ:I(1692γ)=12 *7*:100 *12* (2011Bo09). Eγ=1901.1 *4*, Iγ=35 *6* In table 1 for complex line (2011Bo09).

$^{183}_{74}W_{109}$-22

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ [†]	I_γ [‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]1906.6 *5*	26 *6*					other Eγ (Iγ): 1907.1 *4* (59 *23*; Iγ corrected for escape-peak contamination) (1993Pr09); probably for 1907γ+1909γ doublet.
[x]1908.7 *7*	15 *6*					other Eγ (Iγ): 1907.1 *4* (59 *23*) (1993Pr09); probably for 1907γ+1909γ doublet.
1915.7 *4*	26 *5*	1915.40		0.0	1/2$^-$	
1917.4[a] *12*		2126.38	3/2$^-$	208.777	3/2$^-$	Iγ:I(2080γ)=10 *4*:100 *4* (2011Bo09). other Eγ (Iγ): 1917.5 *6* (63 *17*) (1993Pr09).
1918.3 *4*	60 *5*	1964.74		46.515	3/2$^-$	other Eγ (Iγ): 1917.5 *6* (63 *17*) (1993Pr09); May include 1916γ.
[x]1921.1 *4*	43 *5*					other Eγ (Iγ): 1922.2 *5* (68 *18*) (1993Pr09); probably for 1921γ+1924γ doublet.
[x]1923.5 *4*	32 *5*					see comment on 1921γ.
1929.0[&] *3*	32 *5*	2028.48	1/2$^-$,3/2$^-$	99.042	5/2$^-$	Iγ:I(2029γ)=19 *4*:100 *6* (2011Bo09). other Eγ (Iγ): 1928.7 *5* (59 *17*) (1993Pr09).
[x]1933.0 *5*	17 *4*					see comment on 1936γ.
1935.9 *4*	37 *5*	1982.22	3/2$^-$	46.515	3/2$^-$	Iγ:I(1691γ)=38 *5*:100 *16* (2011Bo09). other Eγ (Iγ): 1935.2 *4* (73 *22*) (1993Pr09); probably for 1933γ+1936γ doublet.
[x]1941.2 *4*	28 *5*					
1944[b]	≈24	2235.73	(3/2,5/2)	291.681	5/2$^-$	Iγ: from Iγ:I(901γ)=13 *8*:16 *6* In table 2 and I(901γ) In table 1 of 2011Bo09. other Eγ (Iγ): 1944.46 *18* (146 *31*) for doublet (1993Pr09). 1997Pr02 estimate Iγ=83 for this placement.
1944.42 *24*	105 *5*	1944.31	3/2$^-$	0.0	1/2$^-$	Iγ:I(1736γ)=8 *2*:100 *2* (2011Bo09). other Eγ (Iγ): 1944.46 *18* (146 *31*) (1993Pr09) for doublet. 1997Pr02 estimate Iγ=58 for this placement.
1944.6[a] *8*		1990.54	1/2$^-$,3/2$^-$	46.515	3/2$^-$	Iγ:I(1699γ)=96 *16*:100 *15* (2011Bo09).
[x]1947.0 *5*	15 *5*					
1950.4[a] *14*		2157.50		208.777	3/2$^-$	Iγ:I(2158γ)=20 *12*:100 *22* (2011Bo09). Eγ=1950.6 *4*, Iγ=30 *5* In table 1 of 2011Bo09.
1956.2[@] *3*	95[@] *5*	2164.85	1/2$^-$,3/2$^-$	208.777	3/2$^-$	Iγ:I(2118γ)=30 *3*:100 *3* (2011Bo09). other Eγ (Iγ): 1957.06 *21* (125 *31*) (1993Pr09). May include 1959γ. Iγ corrected for escape-peak contamination.
1957.3[a] *16*		2248.10		291.681	5/2$^-$	Iγ:I(2202γ)=13 *3*:100 *5* (2011Bo09).
[x]1958.7 *5*	12 *5*					
1964.4 *5*	21 *6*	1964.74		0.0	1/2$^-$	Iγ:I(1918γ)=35 *10*:100 *8* (2011Bo09). other Eγ (Iγ): 1962.5 *4* (52 *25*; Iγ corrected for escape-peak contamination) (1993Pr09); apparently includes a contaminant.
1968.33 *21*	72 *7*	2176.77	1/2$^-$,3/2$^-$	208.777	3/2$^-$	Iγ:I(2177γ)=14 *2*:100 *3* (2011Bo09). other Eγ (Iγ): 1967.8 *3* (135 *31*) (1993Pr09); apparently includes a contaminant.
1975.3 *4*	26 *6*	2266.31		291.681	5/2$^-$	Iγ:I(2266γ)=32 *8*:100 *14* (2011Bo09). 2011Bo09 report that this γ deexcites a 2066 level, but Eγ does not fit that placement; E(level) is presumably misprinted and should have been 2266 instead (consistent with table 2 of 2011Bo09). other Eγ (Iγ): 1975.03 *4* (73 *42*) (1993Pr09).
1982.2[a] *10*		2028.48	1/2$^-$,3/2$^-$	46.515	3/2$^-$	Iγ:I(2029γ)=43 *11*:100 *6* (2011Bo09).
1982.41 *23*	176 *6*	1982.22	3/2$^-$	0.0	1/2$^-$	Iγ:I(1691γ)=90 *16*:100 *16* (2011Bo09). other Eγ (Iγ): 1982.41 *23* (208 *21*; Iγ corrected for escape-peak contamination) (1993Pr09); probably for 1982γ doublet.

$^{183}_{74}W_{109}$-23

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ †	I_γ ‡ g	E_i(level)	J_i^π	E_f	J_f^π	Comments
x1986.4 *4*	28 *6*					
1990.16 *23*	61 *6*	1990.54	1/2$^-$,3/2$^-$	0.0	1/2$^-$	Iγ:I(1699γ)=54 *13*:100 *15* (2011Bo09). other Eγ (Iγ): 1989.5 *4* (76 *18*: Iγ corrected for escape-peak contaminant) (1993Pr09).
1992.0 a *16*		2282.99		291.681	5/2$^-$	Eγ=1993.2 *5*, Iγ=28 *7* In table 1 for complex line (2011Bo09). Iγ:I(1133γ)=9 *3*:24 *5* (2011Bo09). other Eγ (Iγ): 1993.4 *8* (46 *14*) (1993Pr09).
1992.4 a *17*	≈15	2091.5		99.042	5/2$^-$	I$_\gamma$: from Iγ:I(2092γ)=30 *20*:60 *30* In table 2 and I(2092γ) In table 1 of 2011Bo09.
x1997.0 *7*	16 *6*					
2000.6 a *14*		2209.07	1/2$^+$,3/2$^+$	208.777	3/2$^-$	Iγ:I(2163γ)≈10:100 *10* (2011Bo09). other Eγ (Iγ): 2001.6 *3* (48 *15*; Iγ corrected for escape-peak contamination) (1993Pr09).
x2000.8 *3*	48 *7*					
x2004.5 *3*	39 *6*					
x2010.8 *7*	36 *13*					
2012.8 *4*	97 *12*	2059.37	1/2$^-$,3/2$^-$	46.515	3/2$^-$	Iγ:I(1851γ)=82 *11*:100 *7* (2011Bo09). other Eγ (Iγ): 2012.80 *21* (82 *18*) (1993Pr09).
2013.6 a *13*		2303.94		291.681	5/2$^-$	Iγ:I(2304γ)=11 *3*:100 *4* (2011Bo09).
x2015.8 *5*	45 *8*					
2022.3 *7*	73 *10*	2231.48		208.777	3/2$^-$	other Eγ (Iγ): 2022.19 *23* (125 *10*) (1993Pr09).
x2026.4 *7*	48 *10*					
2027.6 a *6*		2126.38	3/2$^-$	99.042	5/2$^-$	Iγ:I(2080γ)≈4:100 *4* (2011Bo09).
2028.1 a *16*		2235.73	(3/2,5/2)	208.777	3/2$^-$	Iγ:I(2137γ)=35 *9*:100 *8* (2011Bo09).
2028.61 *21*	201 *15*	2028.48	1/2$^-$,3/2$^-$	0.0	1/2$^-$	other Eγ (Iγ): 2028.21 *12* (250 *21*) (1993Pr09).
2034.5 a *4*		2324.81		291.681	5/2$^-$	Iγ:I(2326γ)=18 *11*:100 *14* (2011Bo09). Eγ=2033.4 *3*, Iγ=69 *6* In table 1 of 2011Bo09. other Eγ (Iγ): 2034.0 *3* (98 *15*) (1993Pr09); possibly for 2034γ+2036γ doublet.
x2035.8 *4*	52 *6*					
2039.2 a *23*		2248.10		208.777	3/2$^-$	Iγ:I(2202γ)=7 *3*:100 *5* (2011Bo09).
2043.8 a *12*	≈52	2091.5		46.515	3/2$^-$	I$_\gamma$: from Iγ:I(2092γ)=100 *30*:60 *30* In table 2 and I(2092γ) In table 1 of 2011Bo09. Eγ=2045.04 *18*, Iγ=66 *5* In table 1 of 2011Bo09. other Eγ (Iγ): 2045.0 *5* (59 *17*) (1993Pr09).
x2050.2 & *7*	20 *5*					
2052.3 a *16*		2099.27	1/2,3/2	46.515	3/2$^-$	Iγ:I(1891γ)=24 *10*:100 *15* (2011Bo09).
x2054.2 *15*	19 *5*					
2056.6 *8*	36 *9*	2266.31		208.777	3/2$^-$	Iγ:I(2266γ)=14 *4*:100 *14* (2011Bo09).
2059.1 a *16*		2157.50		99.042	5/2$^-$	Iγ:I(2158γ)=50 *21*:100 *22* (2011Bo09).
2059.9 a *10*		2059.37	1/2$^-$,3/2$^-$	0.0	1/2$^-$	Iγ:I(1851γ)=50 *6*:100 *7* (2011Bo09). Eγ=2059.0 *7*, Iγ=71 *10* In table 1 for complex line (2011Bo09). other Eγ (Iγ): 2058.6 *5* (87 *18*) (1993Pr09); possibly for 2057γ+2059γ doublet.
x2062.6 & *5*	78 *14*					other Eγ (Iγ): 2062.6 *3* (86 *19*; Iγ corrected for escape-peak contamination) (1993Pr09).
2072 b	4 *2*	2169.81		99.042	5/2$^-$	I$_\gamma$: from Iγ:I(895γ)=16 *6*:100 *13* In table 2 and I(895γ) In table 1 of (2011Bo09). other Eγ (Iγ): 2072.40 *21* (70 *17*; Iγ corrected for escape-peak contamination) (1993Pr09).
2074.2 i *4*	50 *5*	2282.99		208.777	3/2$^-$	Iγ:I(1133γ)=38 *13*:24 *5* (2011Bo09).

$^{183}_{74}W_{109}$-24

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ †	I_γ ‡ g	E_i(level)	J_i^π	E_f	J_f^π	Comments
2077.3 a 16	28 13	2367.4		291.681	5/2$^-$	Eγ=2077.8 6, Iγ=28 13 In table 1 of 2011Bo09 for doublet. Iγ:I(2366γ)=32 9:≈83 (2011Bo09).
2079 b	≈5	2176.77	1/2$^-$,3/2$^-$	99.042	5/2$^-$	I_γ: from Iγ:I(2177γ)≈1:100 3 In table 2 and I(2079γ) In table 1 of 2011Bo09.
2080.0 3	233 17	2126.38	3/2$^-$	46.515	3/2$^-$	other Eγ (Iγ): 2080.19 8 (364 31) (1993Pr09).
2080 a 2		2369.07		291.681	5/2$^-$	Iγ:I(2369γ)=22 11:≈100 (2011Bo09). Eγ=2077.8 6, Iγ=28 13 In table 1 of 2011Bo09 for doublet.
x2082.4 4	62 7					
x2085.7 6	20 6					
x2088.6 7	9 3					
2092.3 i 4	31 5	2091.5		0.0	1/2$^-$	
2093.2 a 18		2384.09		291.681	5/2$^-$	Iγ:I(2286γ)=26 7:100 10 (2011Bo09).
2097 b	≈11	2303.94		206.986	7/2$^-$	I_γ: from Iγ:I(2304γ)≈5:100 4 In table 2 and I(2304γ) In table 1 of 2011Bo09.
2098.1 i 5	43 8	2098.1		0.0	1/2$^-$	
2099.3 a 13		2099.27	1/2,3/2	0.0	1/2$^-$	Iγ:I(1891γ)=34 16:100 15 (2011Bo09). other Eγ (Iγ): 2099.8 7 (40 17) (1993Pr09); probably for 2099γ+2101γ.
2100.6 7	29 8	2392.71		291.681	5/2$^-$	other Eγ (Iγ): 2099.8 7 (40 17) (1993Pr09); probably for 2099γ+2101γ.
x2106.2 4	36 9					other Eγ (Iγ): 2107.8 7 (50 14) (1993Pr09).
2110.1 i 8	39 9	2522.53		412.109	7/2$^-$	
2111.8 a 16		2157.50		46.515	3/2$^-$	Iγ:I(2158γ)=50 21:100 22 (2011Bo09).
x2112.3 6	42 9					other Eγ (Iγ): 2112.5 3 (74 17) for multiplet (1993Pr09).
2118.34 8	256 6	2164.85	1/2$^-$,3/2$^-$	46.515	3/2$^-$	other Eγ (Iγ): 2118.28 9 (281 21) (1993Pr09).
x2123.6 5	52 12					
2126.4 @ 3	92 @ 9	2126.38	3/2$^-$	0.0	1/2$^-$	Iγ:I(2080γ)=27 4:100 4 (2011Bo09). other Eγ (Iγ): 2124.7 3 (99 12) (1993Pr09); possibly includes 2124γ.
2129.60 13	166 9	2176.77	1/2$^-$,3/2$^-$	46.515	3/2$^-$	Iγ:I(2177γ)=35 6:100 3 (2011Bo09). other Eγ (Iγ): 2129.55 16 (166 10) (1993Pr09).
x2134.6 7	18 9					
2136.9 @ 5	106 @ 11	2235.73	(3/2,5/2)	99.042	5/2$^-$	other Eγ (Iγ): 2136.85 14 (103 14; Iγ corrected for escape-peak contaminant) (1993Pr09).
x2145.9 6	11 5					
x2152.7 8	39 10					
2157.7 4	45 17	2157.50		0.0	1/2$^-$	other Eγ (Iγ): 2158.4 5 (59 15) (1993Pr09).
2158 a 2		2367.4		208.777	3/2$^-$	Iγ:I(2366γ)≈17:≈83 (2011Bo09). Eγ=2160.7 6, Iγ=80 13 In table 1 for doublet (2011Bo09).
2162.0 a 6	80 13	2369.07		208.777	3/2$^-$	Iγ:I(2369γ)=86 13:≈100 (2011Bo09). Eγ=2160.7 6, Iγ=80 13 In table 1 of 2011Bo09 for doublet.
2162.8 5	102 14	2209.07	1/2$^+$,3/2$^+$	46.515	3/2$^-$	other Eγ (Iγ): 2162.2 4 (125 21) (1993Pr09).
2165.8 7	48 7	2164.85	1/2$^-$,3/2$^-$	0.0	1/2$^-$	Iγ:I(2118γ)=9 3:100 3 (2011Bo09). other Eγ (Iγ): 2166.6 8 (51 15) (1993Pr09).
x2168.0 7	32 7					
2176.3 a 12		2384.09		208.777	3/2$^-$	Iγ:I(2286γ)=66 10:100 10 (2011Bo09).
2177.0 5	468 6	2176.77	1/2$^-$,3/2$^-$	0.0	1/2$^-$	other Eγ (Iγ): 2177.21 5 (468 31) (1993Pr09).
x2181.2 4	32 10					

$^{183}_{74}W_{109}$-25

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ[†]	I_γ[‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
2183.3[a] *18*		2282.99		99.042	5/2⁻	Iγ:I(1133γ)=6 *4*:24 *5* (2011Bo09).
2184.02 *8*	240 *6*	2392.71		208.777	3/2⁻	
2184.6[a] *16*		2231.48		46.515	3/2⁻	Iγ:I(2022γ)=27 *10*:100 *14* (2011Bo09). other Eγ (Iγ): 2184.03 *9* (239 *21*) (1993Pr09).
2189.5[&] *6*	57 *22*	2481.47		291.681	5/2⁻	other Eγ (Iγ): 2189.66 *21* (46 *14*) (1993Pr09).
2196.68[i] *22*	63 *5*	(6190.992)	1/2⁺	3993.90		
2201.71[@] *9*	180[@] *6*	2248.10		46.515	3/2⁻	other Eγ (Iγ): 2202.19 *23* (135 *21*) (1993Pr09).
2203[b]	≈11	2303.94		99.042	5/2⁻	I_γ: from Iγ:I(2304γ)≈5:100 *4* In table 2 and I(2304γ) In table 1 of 2011Bo09.
[x]2205.15 *24*	55 *10*					
2209.2[@#] *3*	120[@] *13*	2209.07	1/2⁺,3/2⁺	0.0	1/2⁻	Iγ:I(2163γ)=74 *11*:100 *10* (2011Bo09). other Eγ (Iγ): 2209.6 *3* (98 *15*) (1993Pr09).
2211.3 *8*	34 *12*	2503.28		291.681	5/2⁻	
[x]2214.0 *4*	21 *5*					
2231.1 *4*	15 *4*	2231.48		0.0	1/2⁻	Iγ:I(2022γ)=21 *6*:100 *14* (2011Bo09).
[x]2233.6 *4*	28 *5*					
2236.2[a] *7*		2235.73	(3/2,5/2)	0.0	1/2⁻	Iγ:I(2137γ)=83 *10*:100 *8* (2011Bo09). other Eγ (Iγ): 2236.17 *14* (260 *21*) (1993Pr09).
2236.46[@] *9*	211[@] *14*	2282.99		46.515	3/2⁻	Iγ:I(1133γ)=100 *6*:24 *5* (2011Bo09).
[x]2240.2 *6*	39 *12*					
2242.2 *4*	65 *12*	2450.59		208.777	3/2⁻	other Eγ (Iγ): 2243.4 *6* (61 *14*) (1993Pr09).
2246.26 *23*	49 *8*	2292.61		46.515	3/2⁻	Iγ:I(2293γ)=70 *13*:100 *11* (2011Bo09).
2248.8[a] *12*		2248.10		0.0	1/2⁻	Iγ:I(2202γ)=15 *3*:100 *5* (2011Bo09). Eγ=2249.65 *19*, Iγ=56 *8* In table 1 for complex line (2011Bo09). other Eγ (Iγ): 2249.0 *5* (69 *14*) (1993Pr09).
[x]2254.8 *5*	≈12					
2258.01 *21*	41 *6*	2303.94		46.515	3/2⁻	Iγ:I(2304γ)=27 *5*:100 *4* (2011Bo09). other Eγ (Iγ): 2257.3 *4* (59 *15*) (1993Pr09).
2262.3[i] *4*	10 *6*	2715.53		453.023	7/2⁻	
2266.1 *3*	62 *7*	2266.31		0.0	1/2⁻	other Eγ (Iγ): 2267.23 *22* (125 *21*) (1993Pr09); presumably for 2266γ+2269γ doublet.
2268[a] *2*		2367.4		99.042	5/2⁻	Iγ:I(2366γ)=29 *9*:≈83 (2011Bo09).
2268.6[@#] *3*	61[@] *6*	(6190.992)	1/2⁺	3922.4		
2271[a] *2*		2369.07		99.042	5/2⁻	Iγ:I(2369γ)=22 *9*:≈100 (2011Bo09).
2273.5[&] *5*	34 *10*	2481.47		208.777	3/2⁻	
2278.5 *4*	26 *12*	2324.81		46.515	3/2⁻	Iγ:I(2326γ)=23 *8*:100 *14* (2011Bo09).
2283.1[a] *16*		2282.99		0.0	1/2⁻	Iγ:I(1133γ)=6 *4*:24 *5* (2011Bo09). Eγ=2283.6 *5*, Iγ=44 *16* In table 1 for complex line (2011Bo09).
2285.8[a] *8*		2384.09		99.042	5/2⁻	E_γ: presumably from coincidence data, but not so indicated In table 2 of 2011Bo09; Eγ=2285.5 *4*, Iγ=92 *16* In table 1 for complex line. other Eγ (Iγ): 2285.41 *17* (76 *11*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]2288.4 *16*	22 *7*					
2292.9[&] *3*	87 *6*	2292.61		0.0	1/2⁻	other Eγ (Iγ): 2293.04 *22* (94 *9*) (1993Pr09).

$^{183}_{74}W_{109}$-26

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ [†]	I_γ [‡g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]2297.8 *6*	16 *4*					
2304.18 *12*	214 *8*	2303.94		0.0	1/2$^-$	other Eγ (Iγ): 2304.33 *12* (218 *21*) (1993Pr09).
2307.8[&i] *4*	49 *4*	2517.50		208.777	3/2$^-$	
2314.3[&] *4*	19 *5*	2523.01		208.777	3/2$^-$	
2319[bi]		2367.4		46.515	3/2$^-$	Iγ:I(2366γ)≈4:≈83 (2011Bo09). Eγ=2319.8 *6*, Iγ=68 *5* from table 1 of 2011Bo09 presumably includes this transition. other Eγ (Iγ): 2320.78 *25* (98 *12*) (1993Pr09); presumably for 2320γ+2322γ doublet.
2323.3[a] *11*		2369.07		46.515	3/2$^-$	Iγ:I(2369γ)=57 *11*:≈100 (2011Bo09). Eγ=2322.2 *5*, Iγ=40 *5* In table 1 of 2011Bo09 for doublet. see comment on 2319γ.
2325.9[a] *8*		2324.81		0.0	1/2$^-$	Eγ=2325.17 *14*, Iγ=230 *13* In table 1 for complex line which May be partly a primary γ (2011Bo09). other Eγ (Iγ): 2325.54 *12* (364 *21*) (1993Pr09).
2327.4[i] *3*	93 *15*	2535.18		208.777	3/2$^-$	
2332.2 *6*	39 *6*	2623.05		291.681	5/2$^-$	other Eγ (Iγ): 2332.7 *6* (85 *22*) (1993Pr09).
[x]2334.9 *6*	25 *5*					
2337.4 *7*	34 *5*	2384.09		46.515	3/2$^-$	Iγ:I(2286γ)=84 *10*:100 *10* (2011Bo09). other Eγ (Iγ): 2336.3 *5* (69 *21*) (1993Pr09).
[x]2342.5[f] *9*	57 *14*					
2346.2 *3*	63 *7*	2392.71		46.515	3/2$^-$	other Eγ (Iγ): 2346.8 *5* (125 *10*) (1993Pr09).
[x]2351.3 *4*	120 *11*					other Eγ (Iγ): 2351.71 *22* (198 *21*) (1993Pr09).
[x]2356.9 *6*	51 *25*					other Eγ (Iγ): 2357.79 *23* (81 *12*) (1993Pr09).
[x]2362.4 *6*	20 *5*					other Eγ (Iγ): 2363.8 *5* (47 *12*; Iγ corrected for escape-peak contamination) (1993Pr09).
2366[a] *2*		2367.4		0.0	1/2$^-$	Eγ=2367.8 *6*, Iγ=47 *15* In table 1 (2011Bo09).
2369[a] *2*		2369.07		0.0	1/2$^-$	Eγ=2369.9 *6*, Iγ=72 *15* In table 1 for complex line (2011Bo09). other Eγ (Iγ): 2369.03 *17* (166 *21*; Iγ corrected for escape-peak contamination) (1993Pr09).
2380.6 *4*	61 *5*	2428.06		46.515	3/2$^-$	other Eγ (Iγ): 2380.8 *4* (82 *12*) (1993Pr09).
2383.2[i] *5*	41 *5*	2384.09		0.0	1/2$^-$	Iγ:I(2286γ)=87 *26*:100 *10* (2011Bo09). This is the only branch reported in (n,γ): $\gamma\gamma$ coin.
[x]2386.9 *3*	32 *4*					other Eγ (Iγ): 2386.18 *21* (70 *15*; Iγ corrected for escape-peak contamination) (1993Pr09).
2392.7 *4*	60 *11*	2392.71		0.0	1/2$^-$	other Eγ (Iγ): 2393.35 *23* (114 *10*) (1993Pr09); presumably for 2393γ+2395γ doublet.
2394.8[i] *9*	27 *11*	2493.00		99.042	5/2$^-$	see comment on 2393γ.
2404.29[@i] *17*	198[@] *9*	(6190.992)	1/2$^+$	3786.68		other Eγ (Iγ): 2404.30 *19* (239 *21*) (1993Pr09).
[x]2407.3 *4*	41 *5*					
2413.6[@] *3*	50[@] *6*	2623.05		208.777	3/2$^-$	other Eγ (Iγ): 2413.4 *11* (83 *42*) (1993Pr09).
2417.93 *20*	78 *8*	2417.50		0.0	1/2$^-$	other Eγ (Iγ): 2418.0 *6* (81 *42*; Iγ corrected for escape-peak contamination) (1993Pr09).
2423.2[i] *3*	38 *12*	2522.53		99.042	5/2$^-$	other Eγ (Iγ): 2422.8 *7* (81 *42*) (1993Pr09).
[x]2432.4 *3*	65 *6*					other Eγ (Iγ): 2433.77 *27* (166 *31*) (1993Pr09); probably includes 2435γ.
2434.9[i] *3*	28 *6*	2481.47		46.515	3/2$^-$	see comment on 2432γ.
2438.9 *3*	26 *4*	2485.63		46.515	3/2$^-$	other Eγ (Iγ): 2439.5 *4* (81 *26*) (1993Pr09).
[x]2443.8 *3*	36 *8*					other Eγ (Iγ): 2445.74 *22* (76 *27*; Iγ corrected for escape-peak contamination) (1993Pr09); probably for 2444γ+2447γ doublet.
2446.5 *4*	≈10	2493.00		46.515	3/2$^-$	

$^{183}_{74}W_{109}$-27

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ[†]	I_γ[‡g]	E_i(level)	E_f	J_f^π	Comments
[x]2453.8 *4*	18 *5*				other Eγ (Iγ): 2454.06 *24* (95 *25*; Iγ corrected for escape-peak contamination) (1993Pr09); apparently includes an impurity.
2457.12[@] *19*	131[@] *5*	2503.28	46.515	3/2$^-$	other Eγ (Iγ): 2458.65 *25* (114 *21*; Iγ corrected for escape-peak contamination) (1993Pr09); possibly includes 2461γ.
2460.5[i] *3*	23 *4*	2460.5	0.0	1/2$^-$	
[x]2469.4 *3*	35 *11*				other Eγ (Iγ): 2470.53 *17* (34 *15*; Iγ corrected for escape-peak contamination) (1993Pr09); possibly for 2469γ+2471γ doublet.
2471.3[i] *3*	37 *9*	2517.67	46.515	3/2$^-$	
[x]2473.8 *5*	11 *5*				
2476.38[@#] *15*	161[@] *5*	2523.01	46.515	3/2$^-$	other Eγ (Iγ): 2476.41 *15* (208 *21*; Iγ corrected for escape-peak contamination) (1993Pr09).
2479.3 *3*	51 *4*	2687.68	208.777	3/2$^-$	see comment on 2482γ.
2482.02 *15*	60 *4*	2481.47	0.0	1/2$^-$	other Eγ (Iγ): 2481.78 *17* (114 *10*; Iγ corrected for escape-peak contamination) (1993Pr09); presumably for 2479γ+2482γ doublet.
2488.42 *11*	88 *4*	2535.18	46.515	3/2$^-$	other Eγ (Iγ): 2488.80 *22* (156 *10*) (1993Pr09).
2492.71 *10*	83 *4*	2493.00	0.0	1/2$^-$	other Eγ (Iγ): 2493.5 *3* (125 *10*) (1993Pr09).
[x]2499.5 *3*	50 *4*				other Eγ (Iγ): 2499.99 *20* (166 *21*) (1993Pr09); possibly 2500γ+2503γ doublet.
2502.5 *3*	38 *4*	2503.28	0.0	1/2$^-$	
[x]2505.4 *4*	15 *4*				other Eγ (Iγ): 2505.0 *3* (94 *14*) (1993Pr09).
[x]2510.80 *17*	58 *7*				other Eγ (Iγ): 2511.21 *17* (166 *21*) (1993Pr09).
2517.78[i] *16*	58 *6*	2517.67	0.0	1/2$^-$	other Eγ (Iγ): 2517.63 *25* (114 *21*) (1993Pr09).
2523.00[#] *6*	174 *7*	2523.01	0.0	1/2$^-$	other Eγ (Iγ): 2523.06 *13* (250 *21*) (1993Pr09).
[x]2530.1 *3*	25 *4*				other Eγ (Iγ): 2530.68 *21* (99 *23*) (1993Pr09).
[x]2539.27 *18*	33 *4*				other Eγ (Iγ): 2539.27 *18* (56 *14*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]2543.0 *3*	38 *5*				other Eγ (Iγ): 2545.00 *25* (52 *15*; Iγ corrected for escape-peak contamination) (1993Pr09); presumably for 2543γ+2546γ doublet.
[x]2545.8 *3*	20 *6*				see comment on 2543γ.
[x]2553.3 *6*	≈20				other Eγ (Iγ): 2552.41 *25* (53 *15*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]2557.7 *6*	≈12				other Eγ (Iγ): 2557.1 *4* (56 *14*) (1993Pr09).
[x]2561.9 *3*	136 *9*				other Eγ (Iγ): 2562.01 *20* (260 *21*) (1993Pr09).
2565.0 *3*	108 *9*	2611.76	46.515	3/2$^-$	other Eγ (Iγ): 2567.31 *27* (125 *10*) (1993Pr09); probably for 2565γ+2569γ doublet.
2568.9 *3*	61 *7*	2615.46	46.515	3/2$^-$	see comment on 2565γ.
2574.50[@] *16*	96[@] *8*	2782.86	208.777	3/2$^-$	other Eγ (Iγ): 2574.10 *14* (114 *10*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]2589.3 *5*	32 *11*				
[x]2591.0 *4*	55 *9*				other Eγ (Iγ): 2591.77 *19* (146 *21*) (1993Pr09); presumably for 2591γ+2593γ doublet.
2593.3[#] *4*	55 *7*	2593.42	0.0	1/2$^-$	see comment on 2591γ.
2609.51[i] *18*	69 *5*	2609.53	0.0	1/2$^-$	other Eγ (Iγ): 2610.5 *3* (72 *14*) (1993Pr09).
[x]2613.8 *3*	36 *5*				
2617.4[i] *4*	28 *7*	2615.46	0.0	1/2$^-$	other Eγ (Iγ): 2617.11 *25* (53 *15*); Iγ corrected for escape-peak contamination) (1993Pr09).
2624.6[i] *4*	21 *4*	2623.05	0.0	1/2$^-$	other Eγ (Iγ): 2625.9 *3* (57 *17*) (1993Pr09); possibly for 2625γ+2628γ doublet.
[x]2627.5 *6*	17 *4*				
2630.1[i] *3*	40 *5*	2629.19	0.0	1/2$^-$	
2640.9[i] *3*	51 *5*	2687.68	46.515	3/2$^-$	other Eγ (Iγ): 2639.4 *10* (62 *42*) (1993Pr09).

$^{183}_{74}W_{109}$-28

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ[†]	I_γ[‡g]	E_i(level)	E_f	J^π_f	Comments
[x]2644.0 *4*	51 *6*				
2656.18 *14*	67 *6*	2656.26	0.0	1/2−	other Eγ (Iγ): 2655.4 *4* (83 *31*) (1993Pr09).
2662.0 *3*	39 *7*	2708.12	46.515	3/2−	
2669.01 *22*	95 *7*	2715.53	46.515	3/2−	
2676.25 *11*	74 *5*	2722.94	46.515	3/2−	other Eγ (Iγ): 2676.8 *6* (73 *31*) (1993Pr09).
[x]2682.93 *8*	95 *5*				
[x]2690.9 *4*	13 *7*				
[x]2694.7 *4*	12 *8*				
2700.3[i] *3*	27 *12*	2699.22	0.0	1/2−	
[x]2702.8 *5*	43 *11*				
2708.2 *3*	40 *9*	2708.12	0.0	1/2−	other Eγ (Iγ): 2707.2 *13* (26 *21*) (1993Pr09).
2715.53 *16*	88 *5*	2715.53	0.0	1/2−	other Eγ (Iγ): 2715.4 *6* (104 *31*) (1993Pr09).
[x]2718.87 *14*	44 *5*				
2722.5 *5*	9 *4*	2722.94	0.0	1/2−	
[x]2726.4 *3*	28 *7*				other Eγ (Iγ): 2726.0 *4* (55 *14*) (1993Pr09).
[x]2735.16 *7*	76 *4*				other Eγ (Iγ): 2735.44 *15* (99 *18*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]2738.87 *20*	60 *6*				
2741.3[i] *3*	26 *6*	2741.3	0.0	1/2−	other Eγ (Iγ): 2741.24 *25* (51 *14*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]2744.2 *3*	29 *4*				
[x]2747.05 *9*	106 *5*				other Eγ (Iγ): 2747.73 *21* (135 *21*) (1993Pr09).
[x]2750.49 *23*	25 *8*				
2758.48[i] *9*	79 *4*	2805.04	46.515	3/2−	other Eγ (Iγ): 2758.7 *3* (81 *17*) (1993Pr09).
2764.4[i] *3*	20 *4*	2813.42	46.515	3/2−	
2767.2[i] *3*	41 *4*	2768.57	0.0	1/2−	
[x]2770.35 *20*	70 *4*				other Eγ (Iγ): 2770.6 *5* (99 *14*) (1993Pr09).
[x]2773.7 *3*	63 *5*				
[x]2776.26 *14*	46 *5*				
[x]2785.24 *7*	83 *4*				other Eγ (Iγ): 2784.23 *22* (73 *18*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]2788.2 *3*	39 *5*				other Eγ (Iγ): 2789.7 *5* (96 *12*) (1993Pr09); probably for 2788γ+2791γ doublet.
[x]2790.5 *3*	63 *5*				see comment on 2788γ.
[x]2794.68 *12*	81 *4*				other Eγ (Iγ): 2794.8 *4* (73 *14*; Iγ corrected for escape-peak contamination) (1993Pr09).
2805.5 *3*	32 *5*	2805.04	0.0	1/2−	other Eγ (Iγ): 2807.7 *5* (31 *4*; Iγ corrected for escape-peak contamination) (1993Pr09); May include 2810γ.
[x]2809.6 *3*	17 *3*				see comment on 2806γ.
2815.8[i] *3*	18 *4*	2815.8	0.0	1/2−	
[x]2823.7 *3*	25 *4*				
[x]2827.0 *4*	16 *5*				
2832.75[i] *18*	52 *6*	2833.95	0.0	1/2−	other Eγ (Iγ): 2833.5 *4* (100 *22*; Iγ corrected for escape-peak contamination) (1993Pr09).
2836.35[i] *23*	42 *5*	2884.13	46.515	3/2−	other Eγ (Iγ): 2836.9 *11* (43 *21*) (1993Pr09).
[x]2844.28 *22*	31 *5*				other Eγ (Iγ): 2845.09 *20* (104 *21*; Iγ corrected for escape-peak contamination) (1993Pr09); apparently includes contaminant.
[x]2847.55 *11*	80 *6*				other Eγ (Iγ): 2849.9 *3* (135 *10*) (1993Pr09); probably for 2848γ+2852γ doublet.
[x]2851.56 *10*	83 *5*				see comment on 2848γ.
[x]2857.03 *24*	30 *6*				other Eγ (Iγ): 2856.2 *9* (33 *11*) (1993Pr09).

$^{183}_{74}W_{109}$-29

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ [†]	I_γ [‡ g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
x2862.6 3	37 5					
2868.63 i 23	59 5	2915.17		46.515	3/2−	
x2880.4 3	46 10					other Eγ (Iγ): 2880.5 9 (35 14; Iγ corrected for escape-peak contamination) (1993Pr09).
x2885.63 18	41 5					
x2889.5 3	33 4					
2898.7 i 3	20 5	2898.7		0.0	1/2−	
x2901.98 & 24	75 5					other Eγ (Iγ): 2901.9 6 (94 31) (1993Pr09).
x2910.42 f 22	33 15					I_γ: corrected for escape-peak contamination.
x2918.2 3	56 4					
x2927.92 18	96 5					other Eγ (Iγ): 2928.90 21 (146 10) (1993Pr09).
x2931.2 5	53 6					
x2933.3 5	56 6					other Eγ (Iγ): 2934.08 19 (69 15; Iγ corrected for escape-peak contamination) (1993Pr09); possibly for 2933γ+2936γ doublet.
x2935.9 5	26 5					see comment on 2933γ.
x2938.6 3	30 5					
x2947.4 4	112 33					other Eγ (Iγ): 2947.71 12 (156 10) (1993Pr09).
x2953.3 6	20 7					
x2959.8 4	11 5					
x2966.2 3	55 10					
x2971.34 23	25 5					
2980.08 16	114 7	(6190.992)	1/2+	3210.77		other Eγ (Iγ): 2979.9 3 (260 52) (1993Pr09) apparently for contaminated line.
x2983.7 4	72 10					other Eγ (Iγ): 2985.7 4 (166 42) (1993Pr09); probably for 2984γ+2987γ doublet.
x2986.5 4	64 11					
x3004.56 14	24 4					
x3007.84 24	37 4					
x3011.9 & 3	12 3					
x3016.8 3	21 4					
x3029.2 5	9 2					
x3033.36 19	56 3					other Eγ (Iγ): 3033.5 4 (55 12) (1993Pr09).
x3042.91 9	98 6					
x3056.63 22	20 6					
x3067.6 3	66 9					
x3078.1 3	35 6					other Eγ (Iγ): 3079.8 9 (47 12) (1993Pr09).
x3083.1 6	72 41					other Eγ (Iγ): 3084.45 20 (187 21) (1993Pr09); probably for 3083γ+3085γ doublet.
x3085.3 6	75 45					see comment on 3083γ.
3093.35 8	228 6	(6190.992)	1/2+	3097.60		other Eγ (Iγ): 3093.20 11 (260 21) (1993Pr09).
x3098.62 24	42 6					
x3101.85 24	64 6					other Eγ (Iγ): 3100.90 23 (104 10) (1993Pr09).
x3106.5 & 3	46 5					Eγ consistent with expectation for primary γ to 3083.7.
x3110.30 23	61 5					Eγ consistent with expectation for primary γ to 3078.6.
x3114.35 16	39 5					
x3124.8 4	16 4					
x3132.6 4	26 4					

$^{183}_{74}W_{109}$-30

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ [†]	I_γ [‡ g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
x3136.2 3	32 3					other Eγ (Iγ): 3136.6 9 (53 19) (1993Pr09).
x3148.5 4	22 5					
x3155.6 5	82 30					
x3160.57 22	112 6					other Eγ (Iγ): 3159.8 8 (198 31) (1993Pr09).
3164.11 [@] 16	100 [@] 4	3210.77		46.515	3/2$^-$	
x3172.76 23	87 13					other Eγ (Iγ): 3173.83 27 (187 42) (1993Pr09); probably for 3173γ+3175γ doublet.
x3175.43 23	44 11					see comment on 3173γ.
x3178.72 19	40 6					
x3186.33 16	21 6					other Eγ (Iγ): 3188.0 13 (38 19) (1993Pr09).
x3192.3 [&] 3	≈39					other Eγ (Iγ): 3192.3 13 (37 19) (1993Pr09).
x3200.0 6	43 10					
x3202.9 3	85 10					other Eγ (Iγ): 3203.29 22 (135 10) (1993Pr09).
x3206.71 16	85 5					
3211.86 6	270 6	(6190.992)	1/2$^+$	2979.10		other Eγ (Iγ): 3211.32 13 (250 21) (1993Pr09).
x3218.89 13	37 7					
x3224.85 22	43 6					
x3234.1 3	63 9					
x3236.85 23	86 10					other Eγ (Iγ): 3235.1 3 (95 14) (1993Pr09).
x3244.6 3	85 28					other Eγ (Iγ): 3245.0 3 (47 14; Iγ corrected for escape-peak contamination) (1993Pr09).
x3251.62 18	59 4					other Eγ (Iγ): 3252.2 3 (57 15; Iγ corrected for escape-peak contamination) (1993Pr09).
x3255.21 21	27 4					
x3267.9 3	11 5					
x3273.3 5	42 12					
x3275.9 4	63 12					other Eγ (Iγ): 3275.05 18 (166 10) (1993Pr09).
x3290.8 3	64 5					other Eγ (Iγ): 3290.5 7 (114 21) (1993Pr09).
x3299.8 4	27 16					
3306.71 7	115 4	(6190.992)	1/2$^+$	2884.13		other Eγ (Iγ): 3306.63 23 (198 21) (1993Pr09).
x3320.26 15	27 3					other Eγ (Iγ): 3319.8 3 (57 14; Iγ corrected for escape-peak contamination) (1993Pr09).
x3333.2 3	≈10					other Eγ (Iγ): 3333.8 9 (50 22) (1993Pr09).
3344.53 7	224 10	(6190.992)	1/2$^+$	2846.43		other Eγ (Iγ): 3344.32 11 (135 31; Iγ corrected for escape-peak contamination) (1993Pr09).
3357.01 9	192 14	(6190.992)	1/2$^+$	2833.95		other Eγ (Iγ): 3357.06 15 (187 42; Iγ corrected for escape-peak contamination) (1993Pr09).
3375.11 [i] 19	133 21	(6190.992)	1/2$^+$	2815.8		other Eγ (Iγ): 3375.13 24 (76 22; Iγ corrected for escape-peak contamination) (1993Pr09).
3379.3 5	53 12	(6190.992)	1/2$^+$	2813.42		other Eγ (Iγ): 3379.2 3 (156 21) (1993Pr09).
3386.05 16	45 3	(6190.992)	1/2$^+$	2805.04		other Eγ (Iγ): 3386.1 3 (55 15; Iγ corrected for escape-peak contamination) (1993Pr09).
x3391.13 19	52 4					other Eγ (Iγ): 3391.7 7 (70 15) (1993Pr09).
x3394.3 5	30 6					
3408.59 17	213 19	(6190.992)	1/2$^+$	2782.86		other Eγ (Iγ): 3408.37 11 (239 21) (1993Pr09).
3417.6 4	56 7	(6190.992)	1/2$^+$	2772.9		other Eγ (Iγ): 3418.4 3 (125 21) (1993Pr09).
3420.5 6	76 27	(6190.992)	1/2$^+$	2770.5		
3422.6 3	176 30	(6190.992)	1/2$^+$	2768.57		other Eγ (Iγ): 3422.42 19 (229 21) (1993Pr09).
x3435.1 4	36 5					
x3444.15 20	28 3					
3448.94 [i] 16	88 4	(6190.992)	1/2$^+$	2741.3		other Eγ (Iγ): 3448.6 6 (90 18) (1993Pr09).

$^{183}_{74}W_{109}$-31

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ [†]	I_γ [‡ g]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]3456.27 *24*	35 *4*					
3467.74 *14*	156 *6*	(6190.992)	1/2$^+$	2722.94		other Eγ (Iγ): 3468.06 *17* (177 *21*) (1993Pr09).
3475.43 *9*	211 *6*	(6190.992)	1/2$^+$	2715.53		other Eγ (Iγ): 3475.03 *13* (250 *21*) (1993Pr09).
3482.87 *10*	184 *6*	(6190.992)	1/2$^+$	2708.12		other Eγ (Iγ): 3482.82 *16* (187 *10*) (1993Pr09).
3491.96 *13*	180 *8*	(6190.992)	1/2$^+$	2699.22		other Eγ (Iγ): 3492.33 *26* (239 *21*) (1993Pr09).
3503.37[&] *23*	113 *13*	(6190.992)	1/2$^+$	2687.68		other Eγ (Iγ): 3503.18 *9* (187 *31*; Iγ corrected for escape-peak contamination) (1993Pr09).
3522.3 *5*	64 *14*	(6190.992)	1/2$^+$	2668.7		other Eγ (Iγ): 3522.96 *22* (77 *15*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]3524.4 *5*	41 *13*					
3534.4[&] *3*	134 *24*	(6190.992)	1/2$^+$	2656.26		other Eγ (Iγ): 3535.04 *27* (69 *15*; Iγ corrected for escape-peak contamination) (1993Pr09).
3561.78 *13*	116 *10*	(6190.992)	1/2$^+$	2629.19		other Eγ (Iγ): 3561.44 *25* (135 *10*) (1993Pr09).
3567.87 *8*	180 *6*	(6190.992)	1/2$^+$	2623.05		other Eγ (Iγ): 3567.80 *16* (229 *21*) (1993Pr09).
3575.56 *9*	178 *6*	(6190.992)	1/2$^+$	2615.46		other Eγ (Iγ): 3575.8 *4* (250 *52*) (1993Pr09).
3579.15[&] *7*	195 *6*	(6190.992)	1/2$^+$	2611.76		probably feeds both the 2611 and 2613 levels. other Eγ (Iγ): 3579.5 *6* (229 *31*) (1993Pr09).
3583.13[i] *14*	66 *4*	(6190.992)	1/2$^+$	2609.53		other Eγ (Iγ): 3583.3 *8* (73 *42*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]3593.1 *4*	15 *4*					May be a primary γ feeding a known 2598 level.
3597.53 *12*	87 *4*	(6190.992)	1/2$^+$	2593.42		other Eγ (Iγ): 3597.43 *26* (125 *21*) (1993Pr09).
[x]3618.3 *5*	37 *10*					
3620.8[i] *5*	35 *10*	3667.4		46.515	3/2$^-$	other Eγ (Iγ): 3620.3 *3* (61 *18*; Iγ corrected for escape-peak contamination) (1993Pr09).
[x]3626.48 *14*	78 *4*					other Eγ (Iγ): 3626.3 *4* (86 *17*) (1993Pr09).
[x]3637.95 *17*	79 *4*					other Eγ (Iγ): 3638.5 *3* (73 *11*) (1993Pr09).
[x]3642.3 *4*	15 *3*					possible primary γ to a 2547 level known In (n,γ) E=thermal: γγ coin.
3655.71 *6*	235 *5*	(6190.992)	1/2$^+$	2535.18		other Eγ (Iγ): 3655.56 *20* (260 *21*) (1993Pr09).
3668.42 *4*	435 *6*	(6190.992)	1/2$^+$	2522.53		other Eγ (Iγ): 3668.38 *14* (468 *31*) (1993Pr09).
3673.34 *11*	123 *5*	(6190.992)	1/2$^+$	2517.50		other Eγ (Iγ): 3673.5 *4* (125 *10*) (1993Pr09).
3687.68 *8*	267 *9*	(6190.992)	1/2$^+$	2503.28		other Eγ (Iγ): 3688.11 *16* (354 *31*) (1993Pr09).
3697.78 *8*	98 *5*	(6190.992)	1/2$^+$	2493.00		other Eγ (Iγ): 3697.78 *15* (85 *29*; Iγ corrected for escape-peak contamination) (1993Pr09).
3705.19 *24*	43 *5*	(6190.992)	1/2$^+$	2485.63		other Eγ (Iγ): 3706.8 *5* (135 *31*) (1993Pr09).
3709.76 *10*	144 *6*	(6190.992)	1/2$^+$	2481.47		other Eγ (Iγ): 3710.8 *5* (135 *31*) (1993Pr09).
3714.5[i] *3*	19 *6*	3922.4		208.777	3/2$^-$	
3731.3[i] *3*	60 *14*	(6190.992)	1/2$^+$	2460.5		other Eγ (Iγ): 3731.0 *5* (96 *15*) (1993Pr09; uncertain assignment to ^{183}W).
3740.37 *6*	279 *10*	(6190.992)	1/2$^+$	2450.59		other Eγ (Iγ): 3740.25 *19* (322 *21*) (1993Pr09).
3757.30 *6*	148 *3*	(6190.992)	1/2$^+$	2433.65		other Eγ (Iγ): 3757.06 *22* (156 *10*) (1993Pr09).
3762.83 *10*	121 *7*	(6190.992)	1/2$^+$	2428.06		other Eγ (Iγ): 3763.11 *26* (125 *10*) (1993Pr09).
3773.50 *7*	134 *3*	(6190.992)	1/2$^+$	2417.50		other Eγ (Iγ): 3773.49 *27* (135 *21*) (1993Pr09).
[x]3778.6[f] *22*	17 *11*					assignment to ^{183}W is UNCERTAIN..
3798.29 *6*	337 *10*	(6190.992)	1/2$^+$	2392.71		other Eγ (Iγ): 3798.38 *11* (364 *21*) (1993Pr09).
3807.03 *16*	175 *8*	(6190.992)	1/2$^+$	2384.09		other Eγ (Iγ): 3807.43 *13* (198 *10*) (1993Pr09).
3818.4[i] *4*	25 *4*	(6190.992)	1/2$^+$	2372.5		
3821.89[&] *5*	243 *5*	(6190.992)	1/2$^+$	2369.07		other Eγ (Iγ): 3821.76 *11* (229 *21*) (1993Pr09).
3831.18 *23*	45 *5*	(6190.992)	1/2$^+$	2359.77		other Eγ (Iγ): 3831.1 *6* (38 *13*) (1993Pr09).
3841.2 *4*	19 *4*	(6190.992)	1/2$^+$	2349.7		other Eγ (Iγ): 3841.5 *12* (26 *15*) (1993Pr09; assignment to ^{183}W is uncertain).

$^{183}_{74}W_{109}$-32

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

γ(^{183}W) (continued)

E_γ [†]	I_γ [‡g]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
[x]3864.2[f] *10*	83 *31*						
3866.24 *9*	232 *9*	(6190.992)	1/2$^+$	2324.81			other Eγ (Iγ): 3867.87 *25* (114 *42*; Iγ corrected for escape-peak contamination) (1993Pr09).
3875.94 *23*	37 *8*	(6190.992)	1/2$^+$	2315.01			
3887.09 *5*	299 *5*	(6190.992)	1/2$^+$	2303.94			other Eγ (Iγ): 3887.18 *8* (312 *21*) (1993Pr09).
3898.45 *13*	113 *5*	(6190.992)	1/2$^+$	2292.61			other Eγ (Iγ): 3898.31 *18* (135 *10*) (1993Pr09).
3907.98 *8*	257 *5*	(6190.992)	1/2$^+$	2282.99			other Eγ (Iγ): 3907.87 *9* (281 *21*) (1993Pr09).
3924.67 *22*	26 *2*	(6190.992)	1/2$^+$	2266.31			other Eγ (Iγ): 3924.8 *9* (25 *9*) (1993Pr09).
3931.3[i] *4*	12 *3*	(6190.992)	1/2$^+$	2259.6			
3943.04 *10*	184 *6*	(6190.992)	1/2$^+$	2248.10			other Eγ (Iγ): 3943.10 *12* (218 *10*) (1993Pr09); 3943.1 *5* (109 *55*) (2007ChZX).
3955.30 *12*	158 *5*	(6190.992)	1/2$^+$	2235.73	(3/2,5/2)		other Eγ (Iγ): 3955.76 *17* (187 *10*) (1993Pr09).
3959.35 *19*	39 *3*	(6190.992)	1/2$^+$	2231.48			
3981.89 *10*	143 *6*	(6190.992)	1/2$^+$	2209.07	1/2$^+$,3/2$^+$		other Eγ (Iγ): 3981.77 *17* (109 *55*) (1993Pr09); 3981.4 *5* (109 *55*) (2007ChZX).
3993.85[i] *23*	26 *4*	3993.90		0.0	1/2$^-$		
4014.19 *7*	718 *14*	(6190.992)	1/2$^+$	2176.77	1/2$^-$,3/2$^-$	*e*	other Eγ (Iγ): 4014.18 *6* (863 *52*) (1993Pr09); 4014.64 *16* (1003 *73*) (2007ChZX).
4021.5 *4*	52 *4*	(6190.992)	1/2$^+$	2169.81			other Eγ (Iγ): 4021.2 *6* (95 *17*) (1993Pr09).
4026.16 *9*	370 *5*	(6190.992)	1/2$^+$	2164.85	1/2$^-$,3/2$^-$		other Eγ (Iγ): 4026.24 *13* (437 *31*) (1993Pr09); 4025.6 *3* (365 *55*) (2007ChZX).
4033.56 *22*	59 *4*	(6190.992)	1/2$^+$	2157.50			other Eγ (Iγ): 4034.0 *4* (92 *18*) (1993Pr09).
4064.61 *7*	316 *7*	(6190.992)	1/2$^+$	2126.38	3/2$^-$		other Eγ (Iγ): 4064.51 *11* (416 *31*) (1993Pr09); 4064.1 *3* (346 *55*) (2007ChZX).
4092.07 *22*	153 *13*	(6190.992)	1/2$^+$	2099.27	1/2,3/2		other Eγ (Iγ): 4091.91 *14* (177 *21*; Iγ corrected by authors for escape-peak contaminant) (1993Pr09).
4099.1 *7*	20 *3*	(6190.992)	1/2$^+$	2091.5			
4131.60 *14*	124 *5*	(6190.992)	1/2$^+$	2059.37	1/2$^-$,3/2$^-$		other Eγ (Iγ): 4132.3 *7* (146 *31*) (1993Pr09).
4162.47 *7*	257 *6*	(6190.992)	1/2$^+$	2028.48	1/2$^-$,3/2$^-$		other Eγ (Iγ): 4162.34 *21* (291 *31*) (1993Pr09).
4200.50 *12*	100 *5*	(6190.992)	1/2$^+$	1990.54	1/2$^-$,3/2$^-$		other Eγ (Iγ): 4201.18 *27* (96 *13*) (1993Pr09).
4208.79 *10*	40 *5*	(6190.992)	1/2$^+$	1982.22	3/2$^-$		
4216.8[i] *3*	25 *5*	(6190.992)	1/2$^+$	1975.77			
4226.12 *23*	41 *5*	(6190.992)	1/2$^+$	1964.74			
4246.72 *6*	925 *7*	(6190.992)	1/2$^+$	1944.31	3/2$^-$	*e*	other Eγ (Iγ): 4246.62 *5* (1019 *62*) (1993Pr09); 4245.8 *4* (784 *73*) (2007ChZX).
4275.7 *3*	28 *3*	(6190.992)	1/2$^+$	1915.40			other Eγ (Iγ): 4275.6 *6* (43 *11*) (1993Pr09).
4289.95 *16*	95 *5*	(6190.992)	1/2$^+$	1900.85			other Eγ (Iγ): 4289.9 *3* (84 *9*) (1993Pr09).
4297.64 *14*	81 *4*	(6190.992)	1/2$^+$	1893.84			other Eγ (Iγ): 4297.4 *3* (104 *10*) (1993Pr09).
4304.72 *8*	469 *7*	(6190.992)	1/2$^+$	1886.66	(1/2$^-$,3/2$^-$)		other Eγ (Iγ): 4304.65 *7* (478 *31*) (1993Pr09); 4305.1 *4* (401 *55*) (2007ChZX).
4321.26 *12*	116 *3*	(6190.992)	1/2$^+$	1869.70			other Eγ (Iγ): 4321.22 *17* (146 *10*) (1993Pr09).
4345.4[ci] *13*	7 *3*	(6190.992)	1/2$^+$	1846.8			
4353.8 *5*	28 *6*	(6190.992)	1/2$^+$	1837.2			
4357.4 *3*	48 *6*	(6190.992)	1/2$^+$	1833.78			other Eγ (Iγ): 4357.3 *4* (61 *11*) (1993Pr09).
4367.06 *5*	527 *6*	(6190.992)	1/2$^+$	1823.87	1/2$^-$		other Eγ (Iγ): 4367.19 *5* (624 *31*) (1993Pr09); 4367.1 *3* (438 *55*) (2007ChZX).
4379.87 *5*	388 *4*	(6190.992)	1/2$^+$	1811.12	1/2$^-$		other Eγ (Iγ): 4379.78 *6* (416 *21*) (1993Pr09); 4380.0 *4* (328 *55*) (2007ChZX).
4401.35 *21*	46 *3*	(6190.992)	1/2$^+$	1789.55			other Eγ (Iγ): 4402.8 *5* (46 *14*) (1993Pr09).
4406.33 *24*	37 *3*	(6190.992)	1/2$^+$	1784.58	5/2$^+$		
[x]4439.5[f] *9*	22 *7*						assignment to ^{183}W is uncertain. probably not a ^{183}W primary γ because implied 1751 level is otherwise unknown.

$^{183}_{74}W_{109}$-33

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)

$\gamma(^{183}W)$ (continued)

E_γ[†]	I_γ[‡ g]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
4454.6[f] *7*	46 *8*	(6190.992)	1/2$^+$	1737.2			
4460.52 *5*	266 *5*	(6190.992)	1/2$^+$	1730.50	1/2$^-$,3/2$^-$		other Eγ (Iγ): 4460.60 *11* (302 *21*) (1993Pr09); 4460.7 *4* (204 *38*) (2007ChZX).
4465.76 *24*	30 *3*	(6190.992)	1/2$^+$	1725.65			other Eγ (Iγ): 4467.2 *6* (51 *8*) (1993Pr09).
4474.3 *6*	15 *3*	(6190.992)	1/2$^+$	1716.6			other Eγ (Iγ): 4474.1 *6* (43 *8*) (1993Pr09).
4492.7 *3*	18 *2*	(6190.992)	1/2$^+$	1698.2			
4518.18 *4*	885 *8*	(6190.992)	1/2$^+$	1672.76	1/2$^-$,3/2$^-$	*e*	other Eγ (Iγ): 4518.12 *6* (926 *52*) (1993Pr09); 4517.93 *19* (802 *109*) (2007ChZX).
4528.0 *12*	≈49	(6190.992)	1/2$^+$	1663.63			
4530.8 *10*	≈30	(6190.992)	1/2$^+$	1660.59			other Eγ (Iγ): 4530.0 *6* (74 *22*) (1993Pr09).
4557.65 *15*	83 *4*	(6190.992)	1/2$^+$	1633.33	1/2$^-$,3/2$^-$		other Eγ (Iγ): 4557.6 *8* (125 *31*) (1993Pr09).
4562.72 *5*	638 *6*	(6190.992)	1/2$^+$	1628.24	3/2$^-$		other Eγ (Iγ): 4562.87 *17* (624 *52*) (1993Pr09).
4579.09 *12*	93 *4*	(6190.992)	1/2$^+$	1612.06			other Eγ (Iγ): 4578.4 *7* (70 *21*) (1993Pr09).
4604.67 *11*	89 *3*	(6190.992)	1/2$^+$	1586.52	(1/2$^-$,3/2$^-$)		other Eγ (Iγ): 4604.8 *7* (73 *31*) (1993Pr09).
4620.9 *3*	26 *5*	(6190.992)	1/2$^+$	1569.86			
4634.73 *6*	319 *5*	(6190.992)	1/2$^+$	1556.24	3/2$^-$		other Eγ (Iγ): 4634.80 *11* (354 *21*) (1993Pr09); 4634.4 *4* (219 *55*) (2007ChZX).
4705.3 *4*	11 *4*	(6190.992)	1/2$^+$	1485.45	(1/2,3/2)		
4719.78 *5*	402 *5*	(6190.992)	1/2$^+$	1471.07	1/2$^-$		other Eγ (Iγ): 4719.86 *8* (416 *29*) (1993Pr09); 4719.61 *23* (399 *40*) (2007ChZX).
4727.94 *14*	64 *5*	(6190.992)	1/2$^+$	1463.21	1/2		other Eγ (Iγ): 4727.9 *8* (43 *9*) (1993Pr09).
4753.1 *12*	30 *13*	(6190.992)	1/2$^+$	1437.35	3/2		
4818.1 *5*	11 *3*	(6190.992)	1/2$^+$	1372.23	5/2$^-$		
4855.4 *4*	14 *3*	(6190.992)	1/2$^+$	1335.42			
4881.36 *7*	116 *4*	(6190.992)	1/2$^+$	1309.391	3/2$^-$		other Eγ (Iγ): 4881.14 *18* (135 *10*) (1993Pr09).
4899.2[ci] *9*	≈9	(6190.992)	1/2$^+$	1291.65	3/2$^-$		
5040.9 *3*	18 *3*	(6190.992)	1/2$^+$	1149.89	3/2$^-$		
5164.62 *9*	4.05×10^3 *32*	(6190.992)	1/2$^+$	1026.372	3/2$^-$	*e*	other Eγ (Iγ): 5164.50 *5* (4066 *125*) (1993Pr09); 5164.24 *14* (4120 *164*) (2007ChZX).
5256.19 *4*	265 *4*	(6190.992)	1/2$^+$	934.693	1/2$^-$		other Eγ (Iγ): 5256.15 *13* (291 *21*) (1993Pr09).
5981.70 *22*	66 *4*	(6190.992)	1/2$^+$	208.777	3/2$^-$		
6091.2 *3*	26 *3*	(6190.992)	1/2$^+$	99.042	5/2$^-$		
6144.15 *4*	4115 *92*	(6190.992)	1/2$^+$	46.515	3/2$^-$	D[de]	other Eγ (Iγ): 6144.23 *8* (3941 *218*) (1993Pr09); 6144.21 *18* (3391 *219*) (2007ChZX); 6144.28 *6* (4771 *185*) (2014Hu02).
6190.60 *4*	11.15×10^3 *25*	(6190.992)	1/2$^+$	0.0	1/2$^-$	D[de]	other Eγ (Iγ): 6190.66 *10* (10816 *624*) (1993Pr09); 6190.78 *6* (13366 *185*) (2014Hu02).

[†] From table 1 of 2011Bo09, except As noted. Note that data from 2014Hu02 frequently fail to agree within stated uncertainties with those from 2011Bo09 and 1993Pr09 and decay studies, and are consistently lower. reason for discrepancy is not known.

[‡] From table 1 of 2011Bo09, except As noted. 2011Bo09 report intensities per 100,000 neutron captures. They also provide branching data from $\gamma\gamma$ coin measurements and the latter are given here In comments on the relevant transitions; for D-D sequences, angular correlation effects are expected to contribute 15% uncertainty At most. Data from 1993Pr09, 2014Hu02 and 2007ChZX are given In comments for comparison. relative Iγ from 1993Pr09 have been scaled by a factor of 10.4 as recommended by 2011Bo09 to obtain gammas/10^5 n captures and Iγ from 2007ChZX was calculated from elemental photon σ assuming

$^{183}_{74}W_{109}$-34

$\gamma(^{183}W)$ (continued)

%Abundance(^{182}W)=16.50 *16* and σ_n=20.7 *5* (2006MuZX); these Iγ would be 3.5% larger were σ_n=20.0 *6* from 2011Bo09 assumed. agreement between Iγ data from 2014Hu02, 2011Bo09 and 1997Pr02 is poor.

[#] May be partially a primary γ-ray transition.

[@] For multiplet; 2011Bo09 indicate In table 1 only the principal placement for this transition.

[&] Complex line.

[a] From table 2 of 2011Bo09; value obtained from coincidence spectrum.

[b] Very weak peak observed only In coincidence spectrum; from table 2 of 2011Bo09, uncertainty unstated by authors.

[c] Existence of transition is questionable (2011Bo09).

[d] D from (pol n,γ) (1972St06).

[e] Strength of transition favors E1 multipolarity based on systematics for thermal (n,γ) reaction primary transitions.

[f] From 1993Pr09 only.

[g] For intensity per 100 neutron captures, multiply by 0.001.

[h] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[i] Placement of transition in the level scheme is uncertain.

[x] γ ray not placed in level scheme.

$^{183}_{74}W_{109}$-35

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme

Intensities: Iγ per 100 N captures.

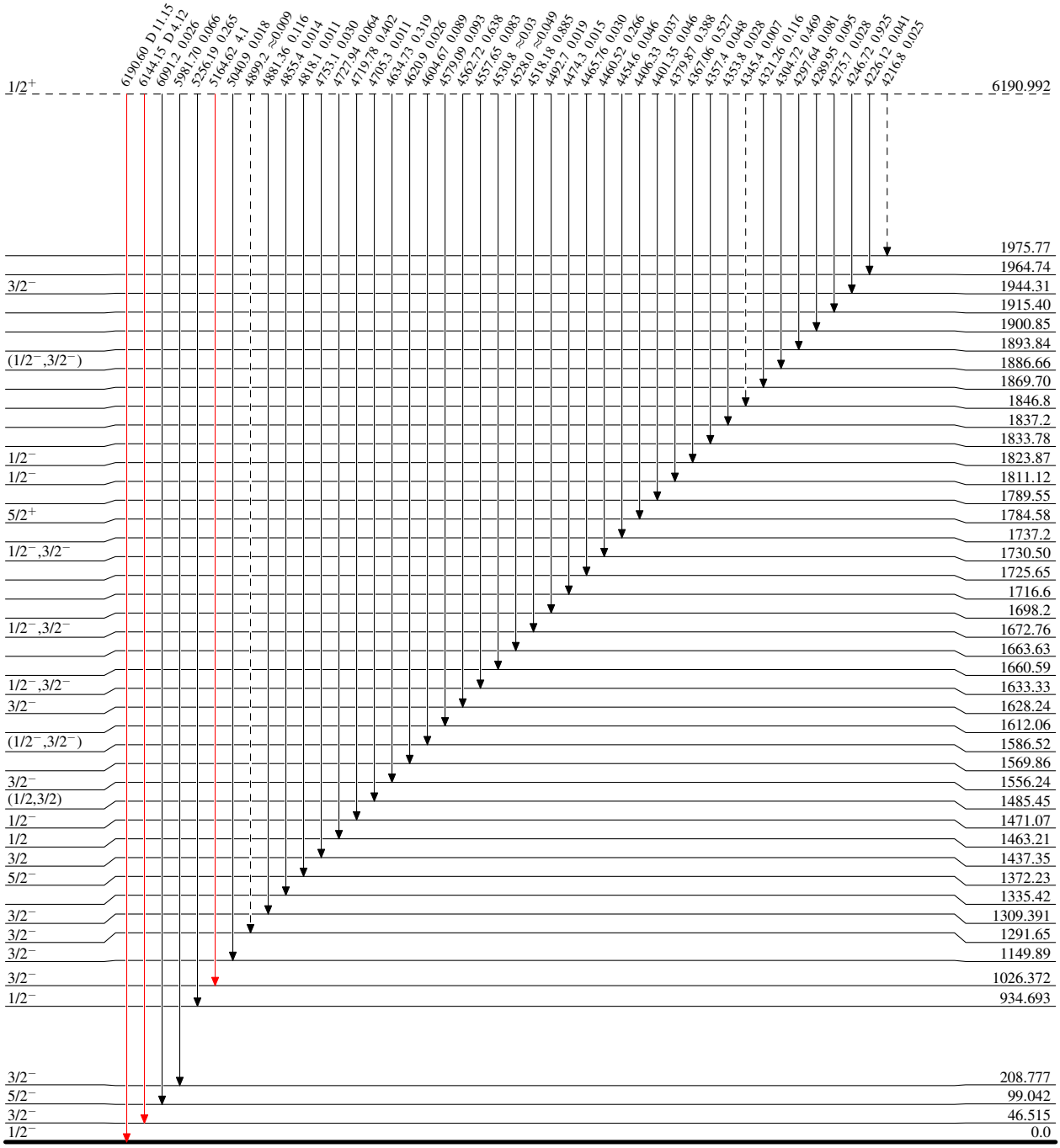
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

γ Decay (Uncertain)



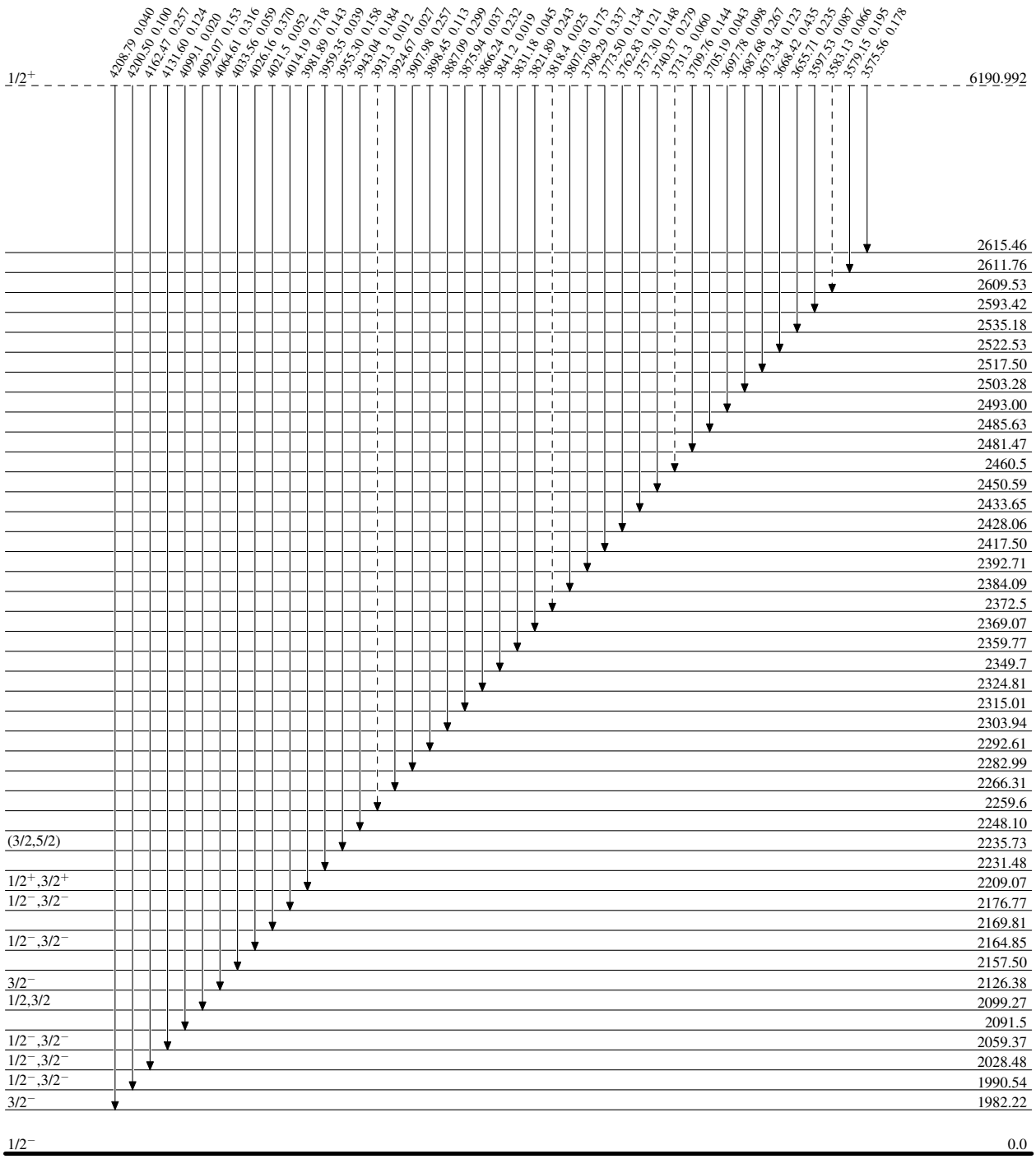
$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{183}_{74}W_{109}$

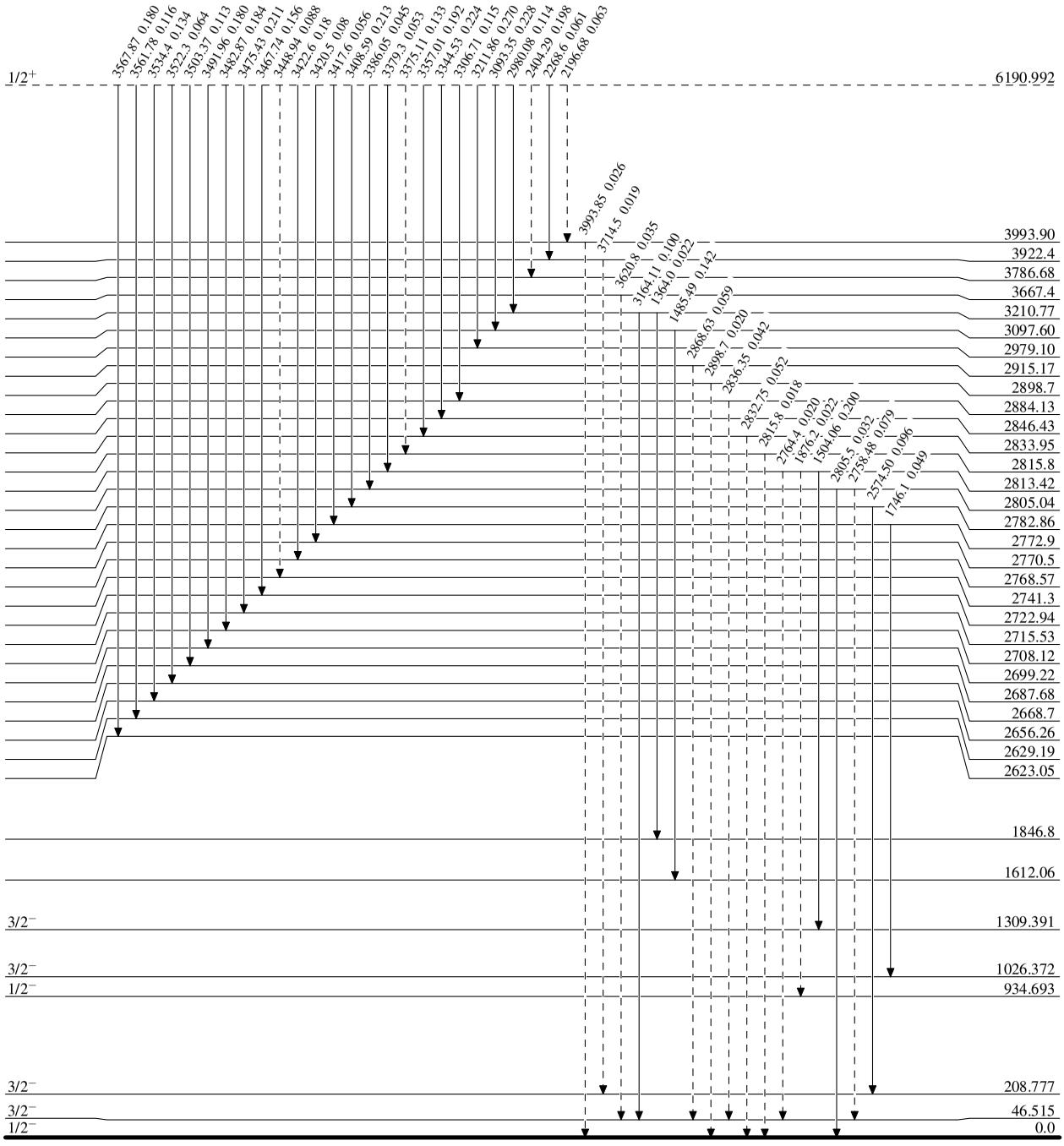
^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{183}_{74}W_{109}$

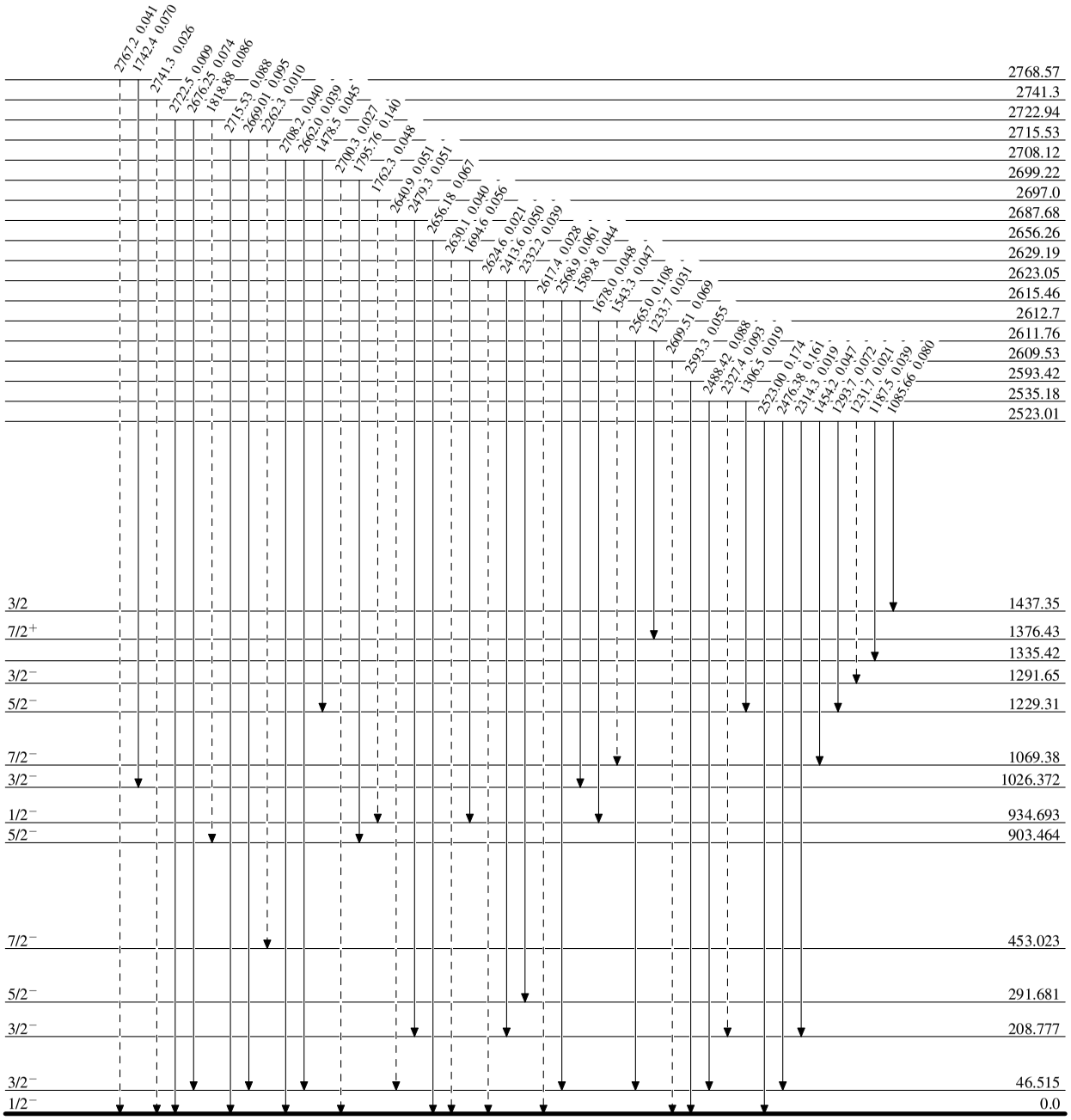
^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)

Level Scheme (continued)

Intensities: Iγ per 100 N captures.



$^{183}_{74}W_{109}$

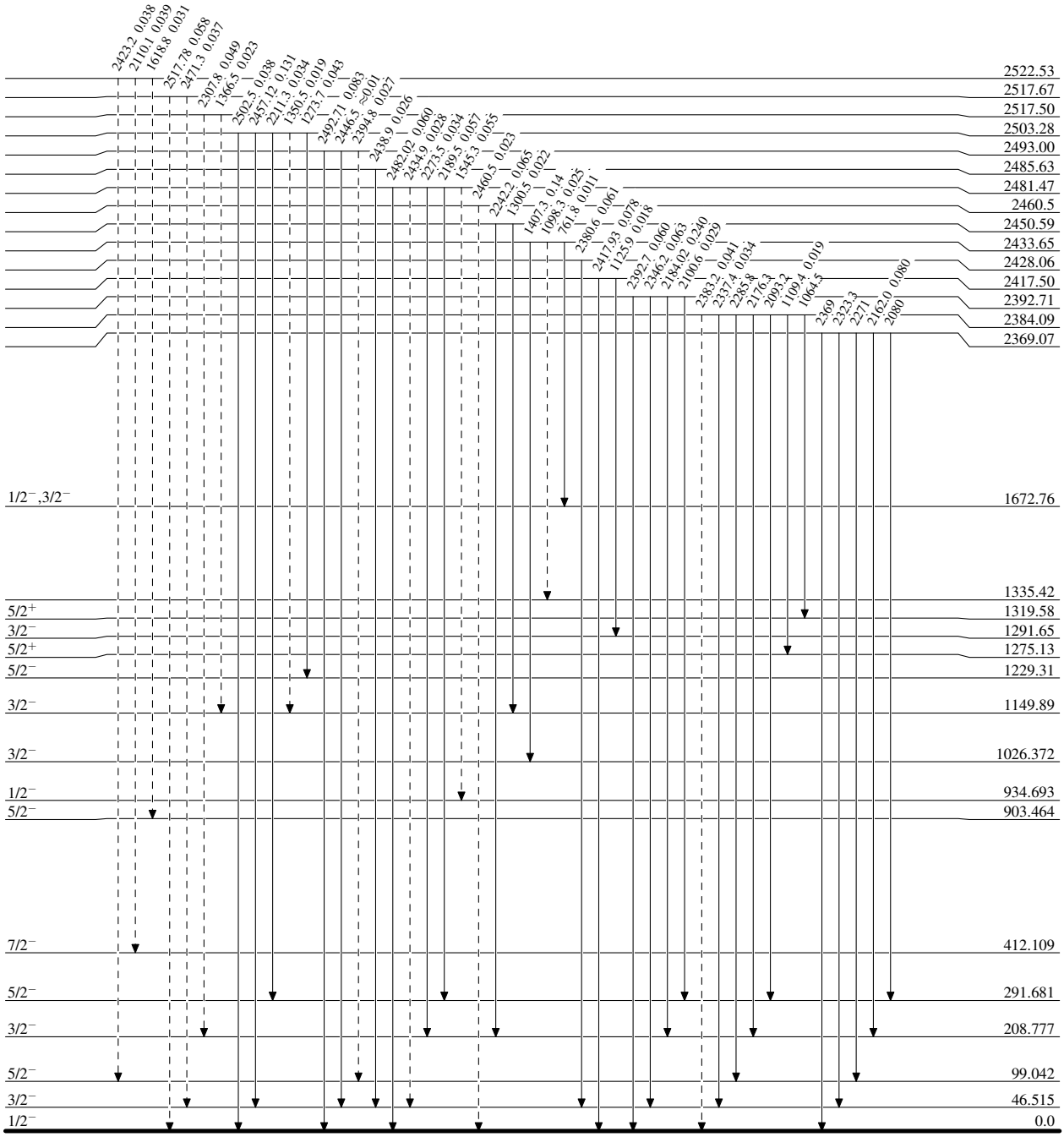
^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{183}_{74}W_{109}$

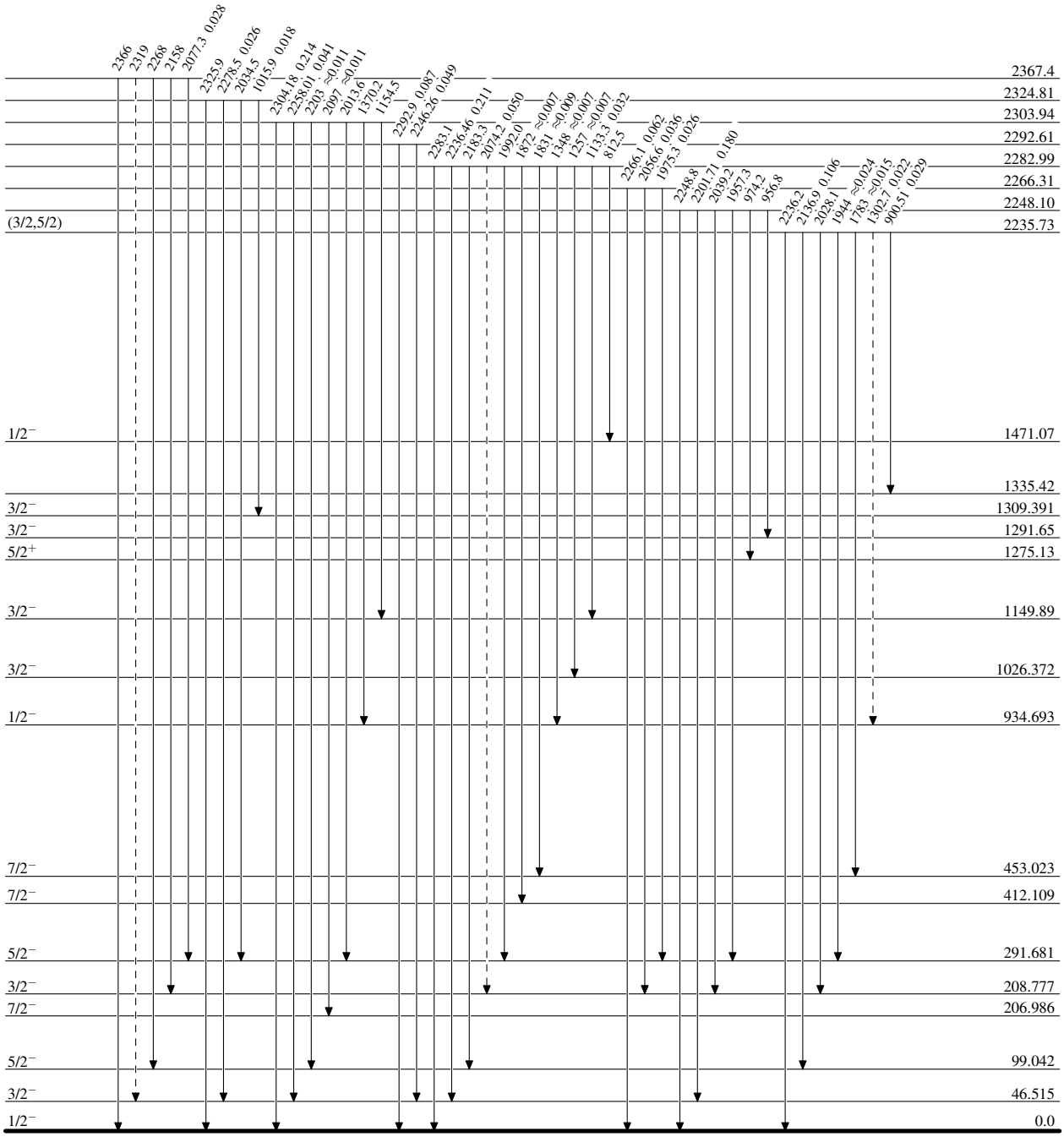
^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)

Level Scheme (continued)

Intensities: Iγ per 100 N captures.



$^{183}_{74}W_{109}$

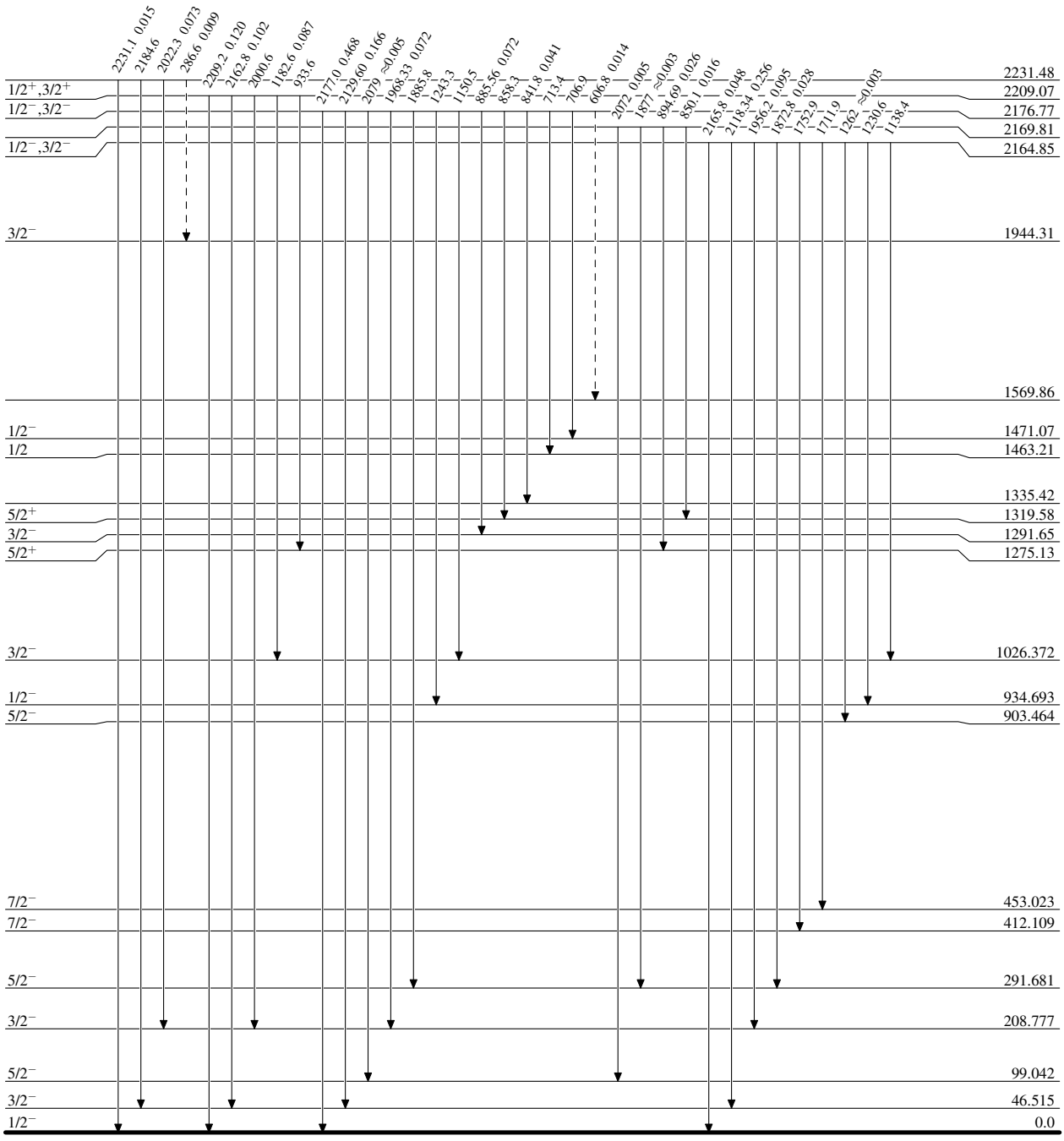
^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)

Level Scheme (continued)

Intensities: Iγ per 100 N captures.



$^{183}_{74}W_{109}$

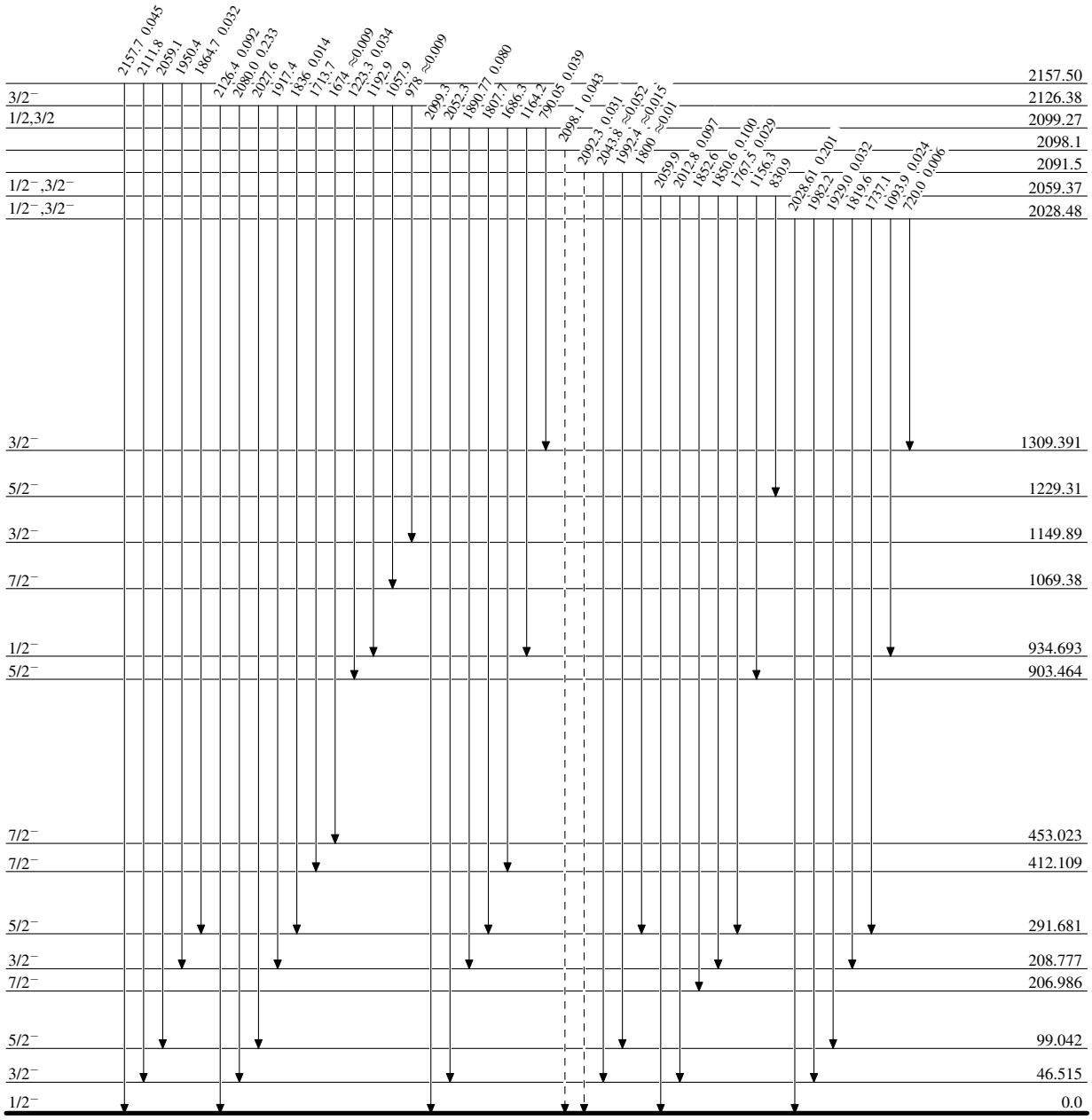
^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)

Level Scheme (continued)

Intensities: Iγ per 100 N captures.



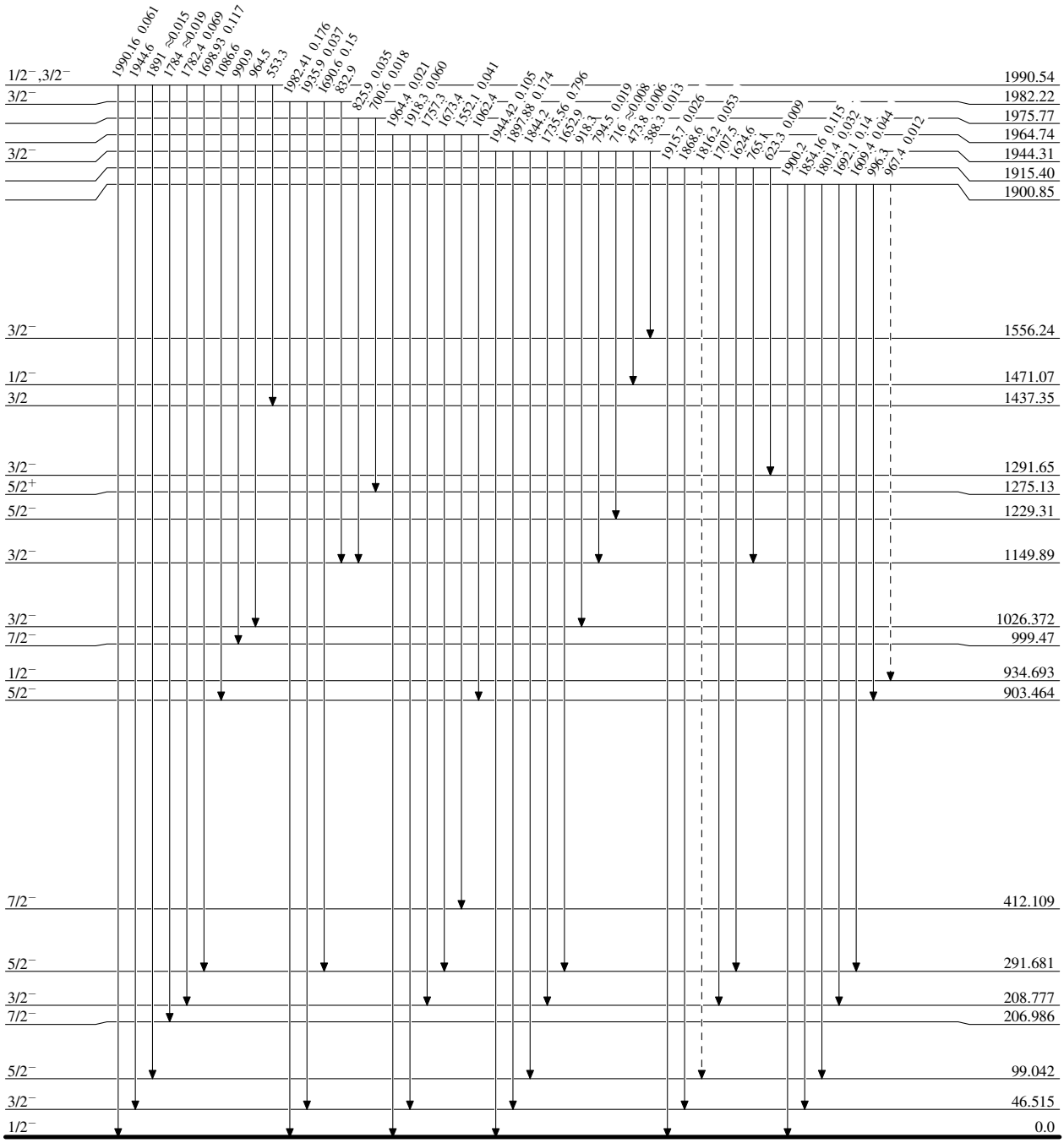
$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



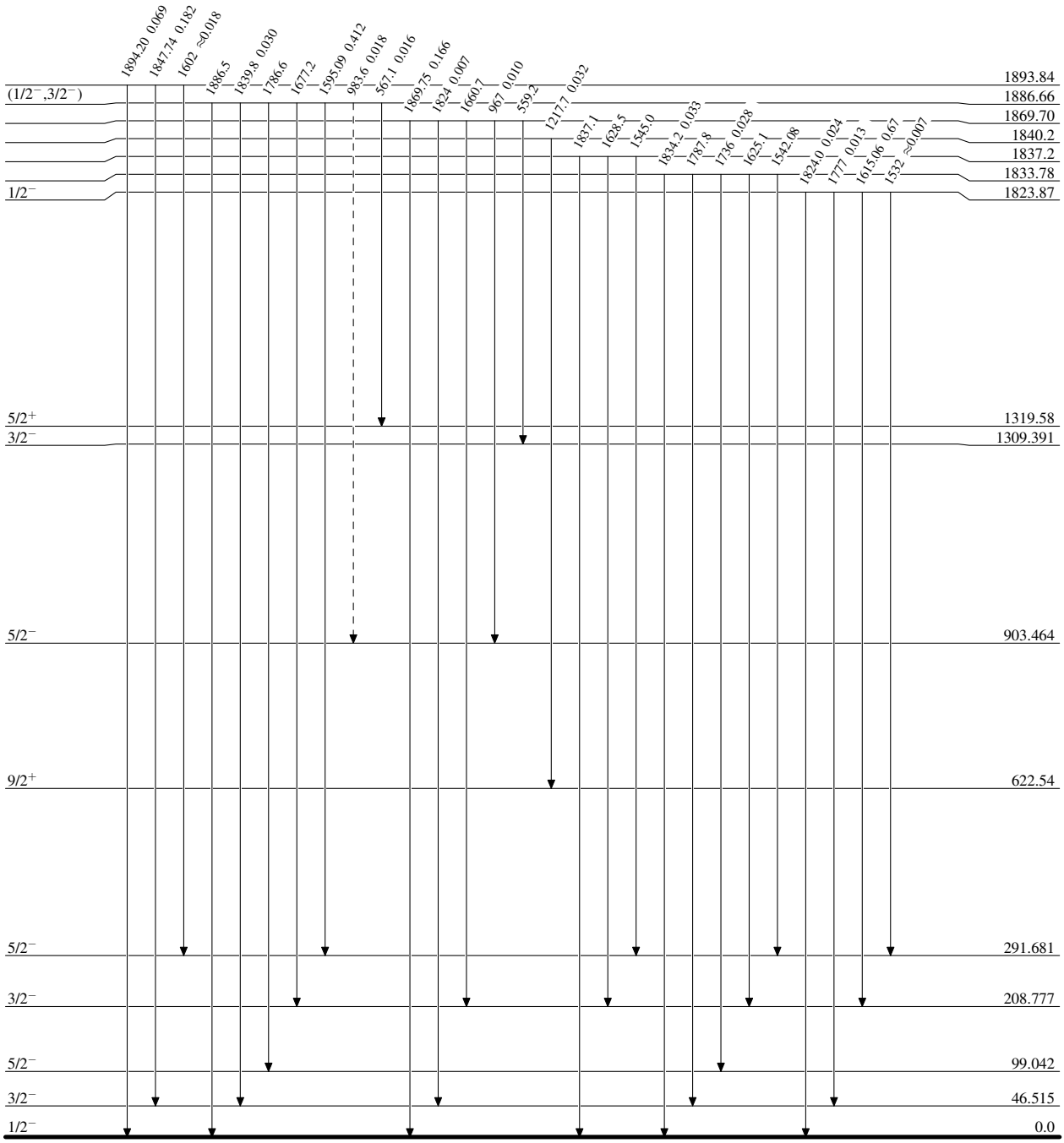
$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



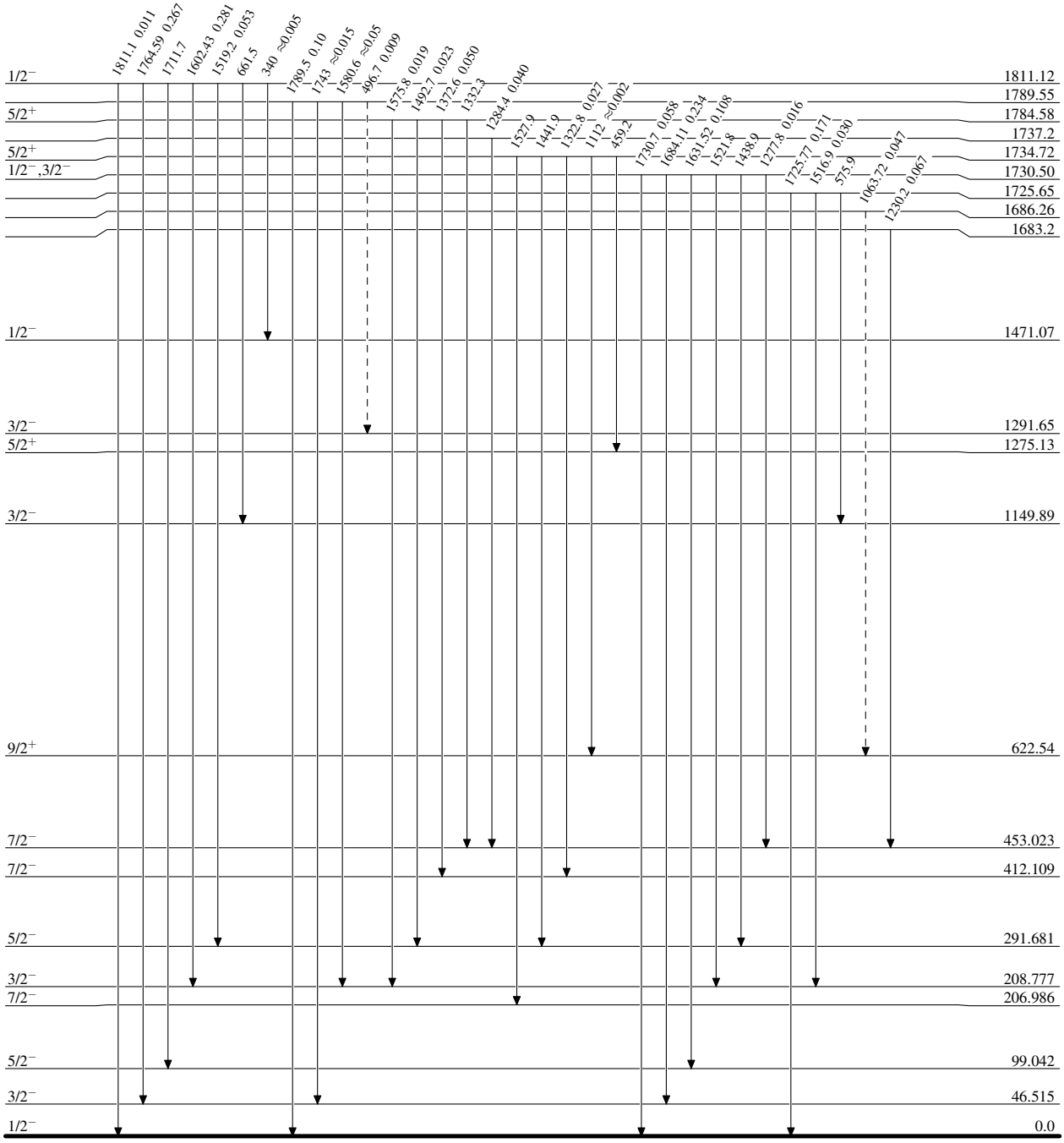
$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)

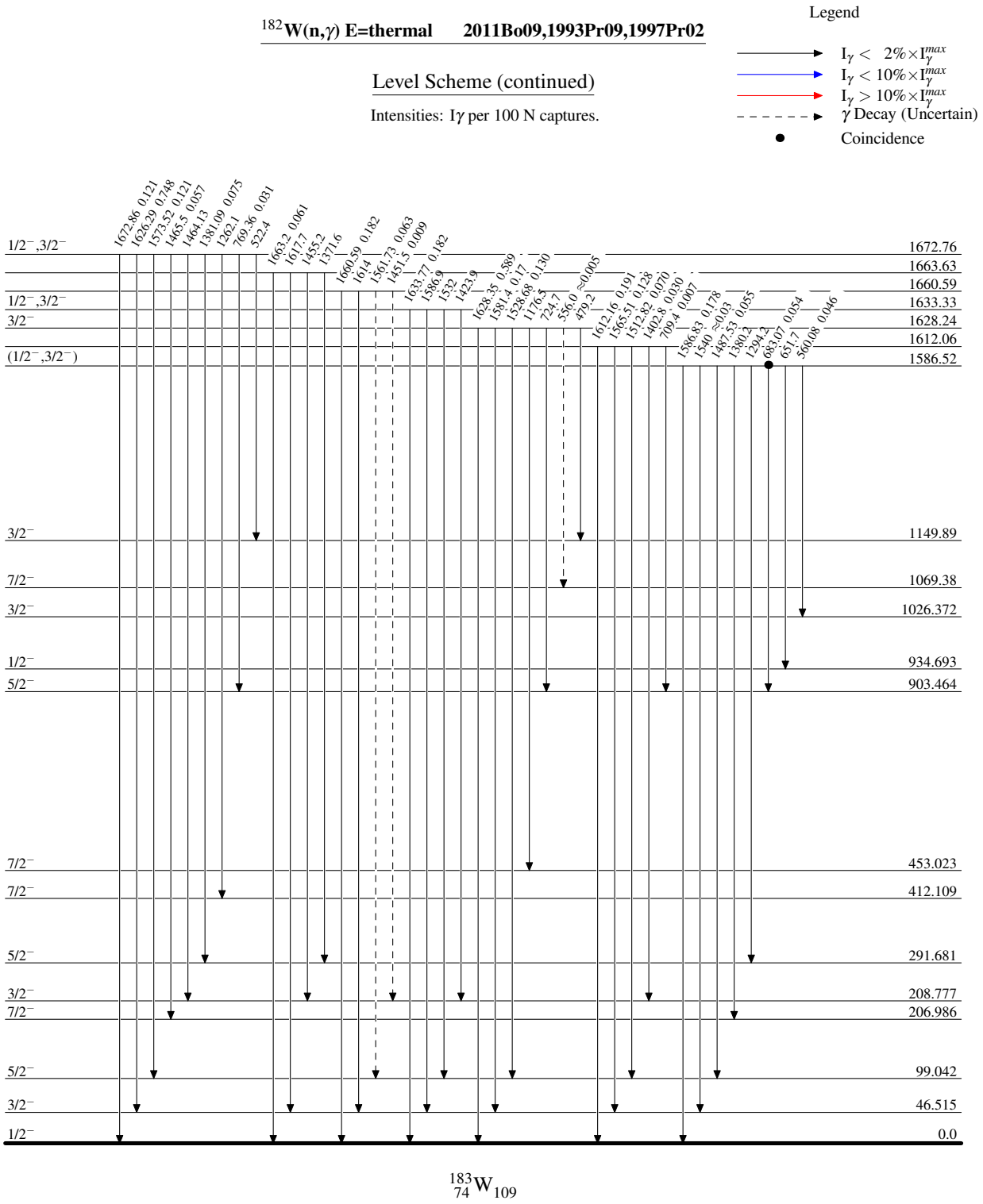


$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.



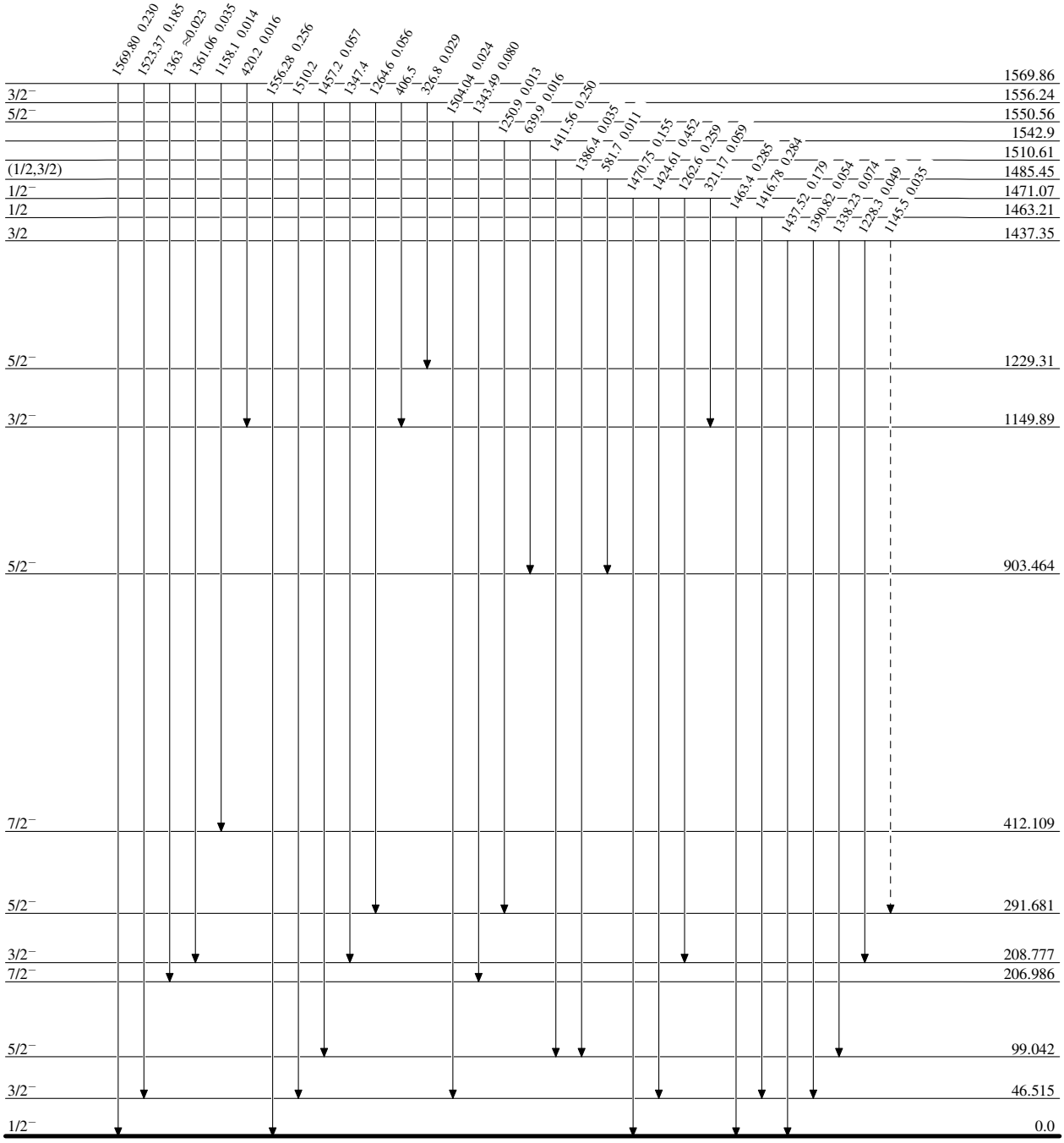
$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)

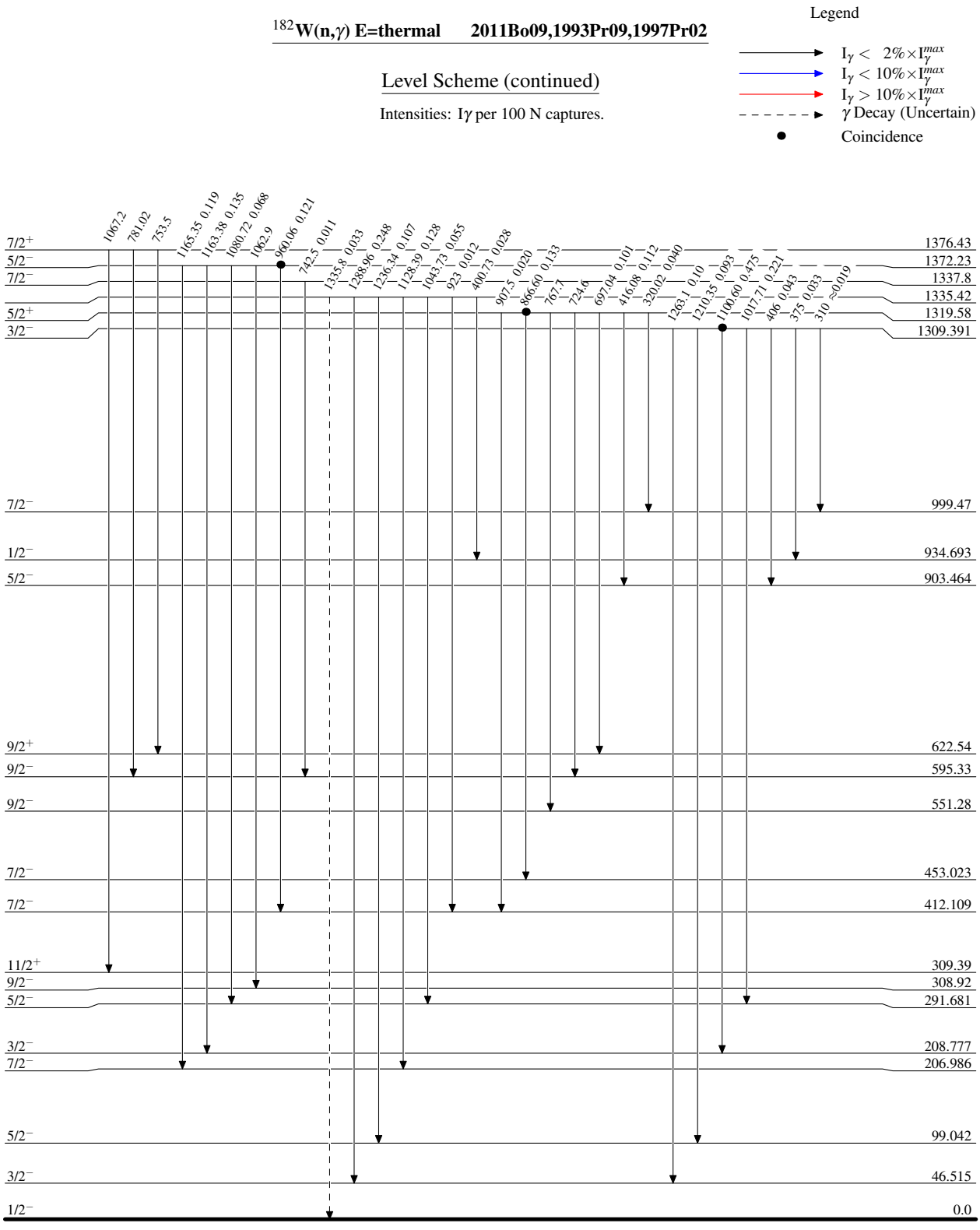


$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.

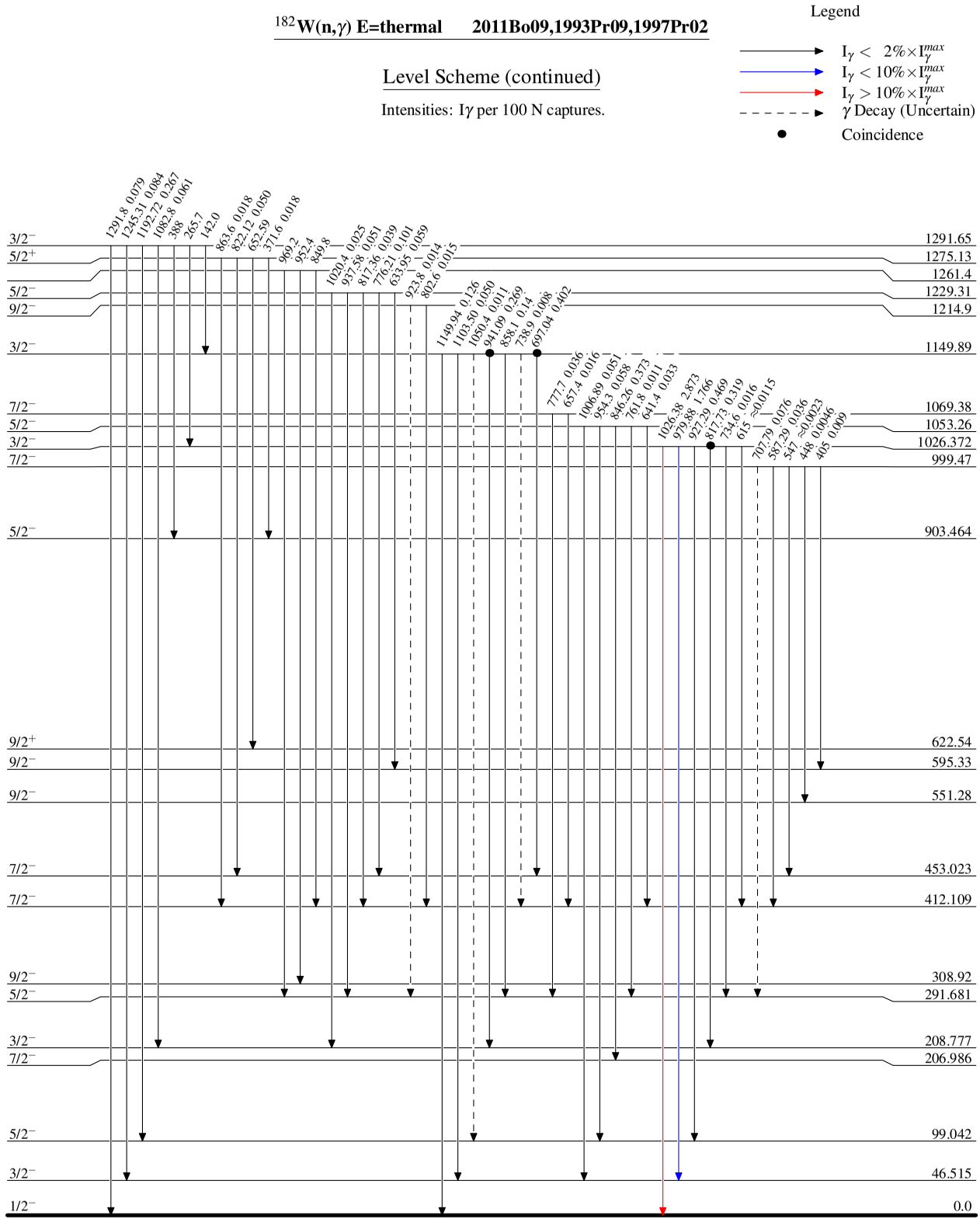


$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.

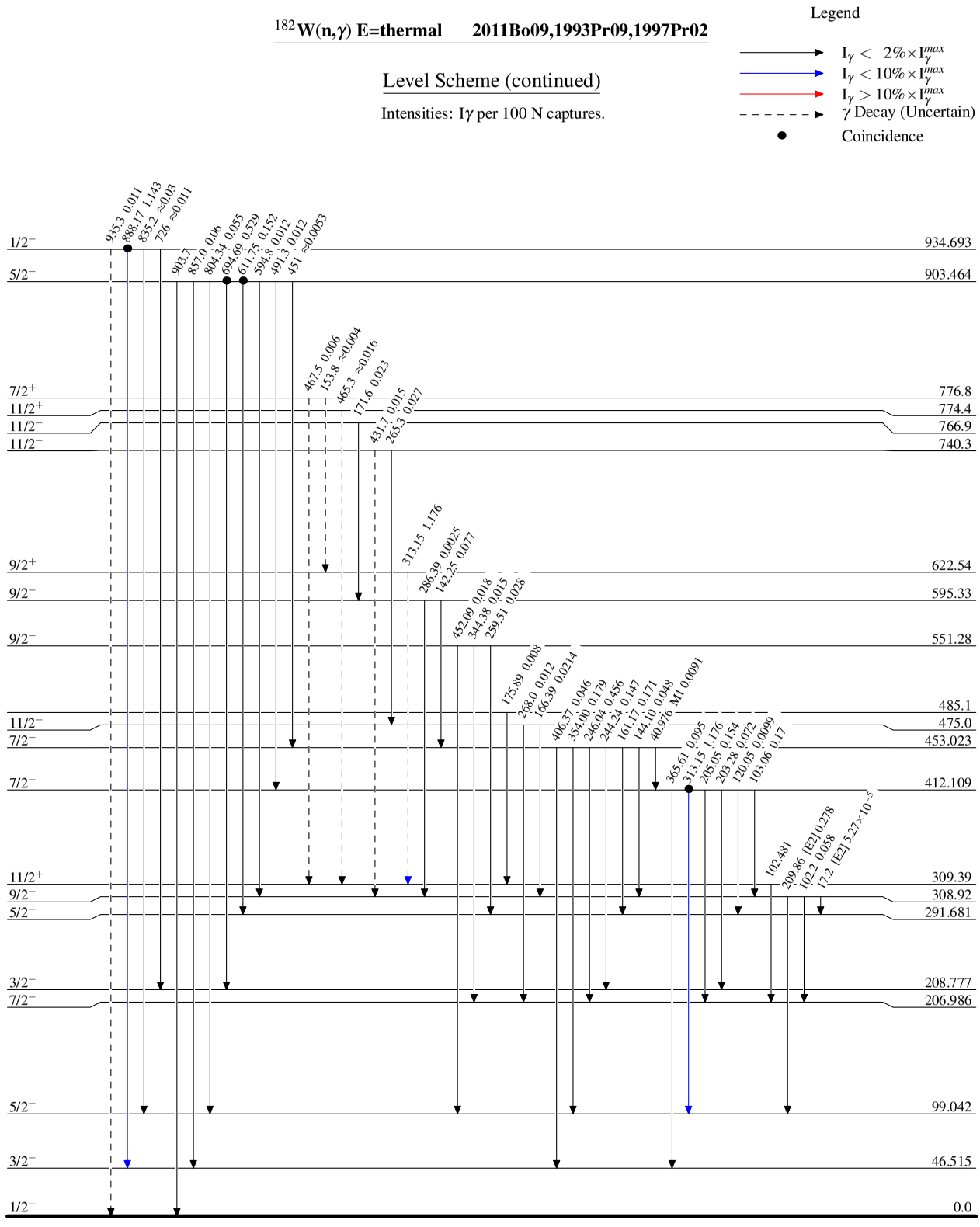


$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Level Scheme (continued)

Intensities: Iγ per 100 N captures.



$^{183}_{74}W_{109}$

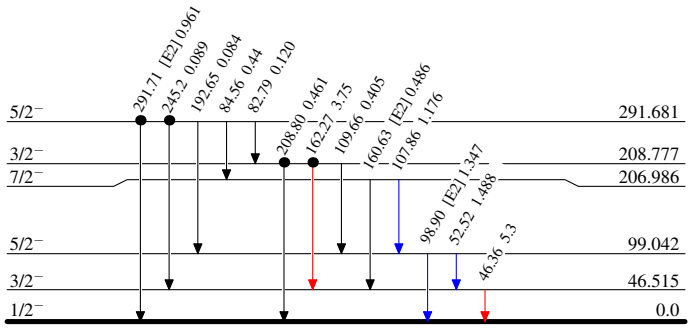
^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
Coincidence

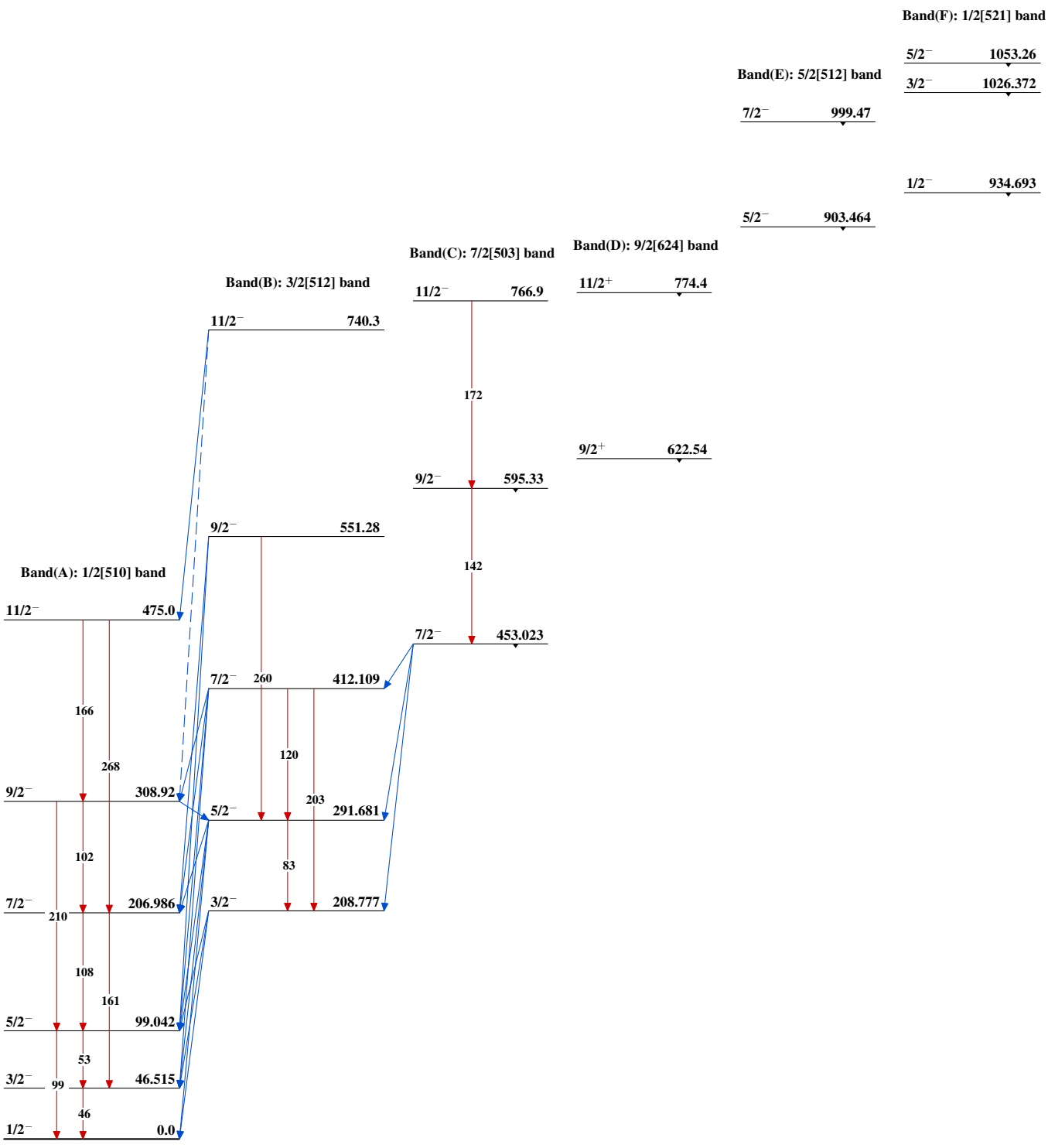
Level Scheme (continued)

Intensities: Iγ per 100 N captures.



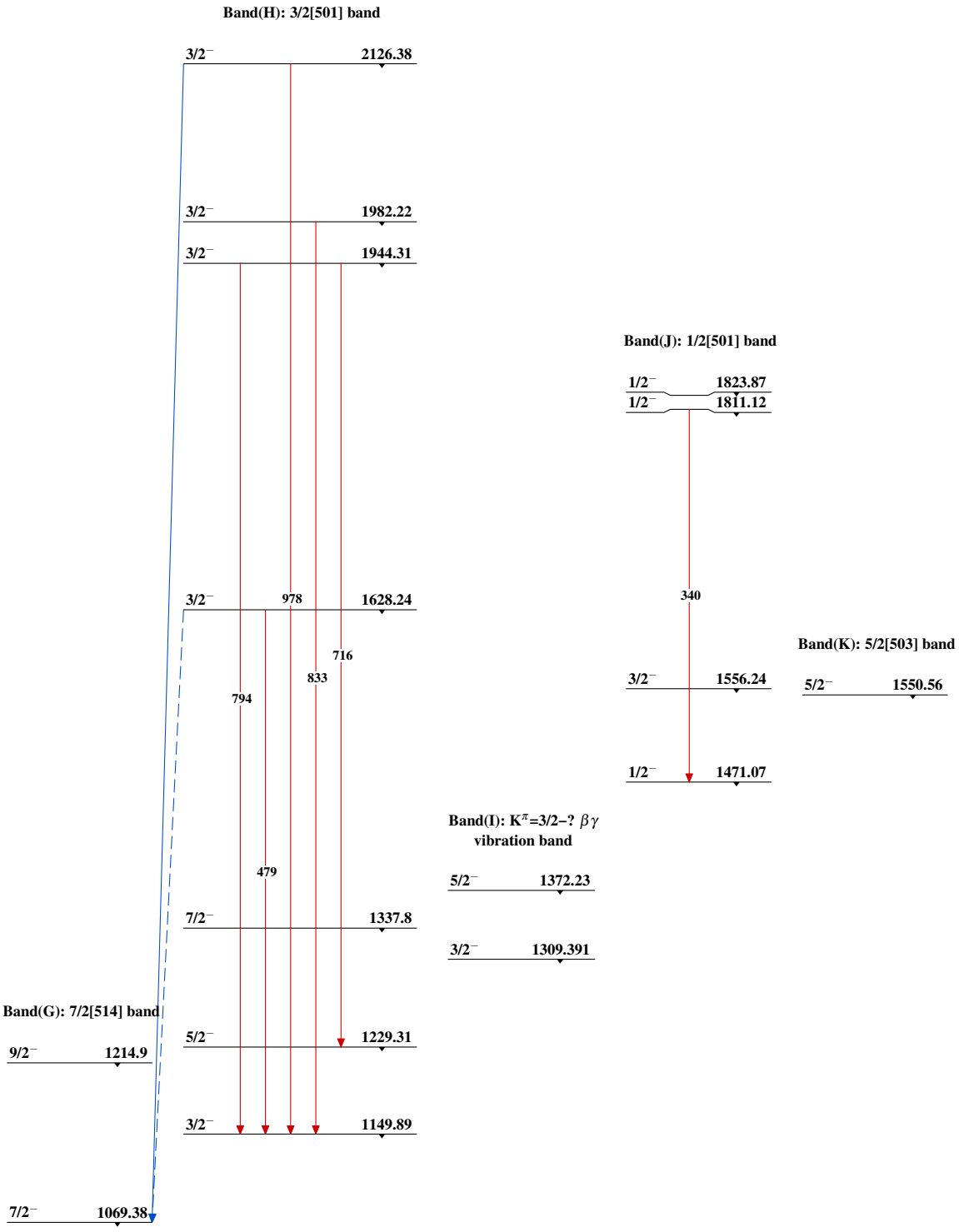
$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02



$^{183}_{74}W_{109}$

^{182}W(n,γ) E=thermal 2011Bo09,1993Pr09,1997Pr02 (continued)



$^{183}_{74}W_{109}$