

$^{183}\text{W}(n,\gamma) E=\text{thermal}$  **2004Lo22,1975Bu01,1974Gr11**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111,275 (2010)	1-Oct-2009

Dataset includes (pol  $n,\gamma$ )  $E=\text{thermal}$ .

$J^\pi(^{183}\text{W})=1/2^-$ .

$\sigma_n=10.4$  2 (2006MuZX). abundance( $^{183}\text{W}$ )=14.31% 4.

Others: 1972St06 (circular polarization of 4 primary  $\gamma$ -rays); 2007ChZX.

2007ChZX (supersedes 2003ChZS):  $^{nat}\text{W}$  target; thermal neutrons from Budapest reactor; Ge(Li); measured  $E_\gamma$ ,  $I_\gamma$  for strongest primary and secondary transitions (67 transitions).

2004Lo22: 80%  $^{183}\text{W}$  and  $^{nat}\text{W}$  targets; planar HPGe detector; measured  $E_\gamma, I_\gamma$  ( $E_\gamma=30-7500$ ), primary and secondary transition  $I_\gamma$  on same scale. Observed 359 transitions.  $E_\gamma$  corrected by authors for recoil.

1975Bu01: data obtained with an internal-target facility; measured  $E_\gamma$  ( $E_\gamma=607-2690, 5007-7412$ ),  $I_\gamma$  for 97 transitions.

1974Gr11:  $^{nat}\text{W}$  and 82.5%  $^{183}\text{W}$  oxide targets (29.6-1990  $\text{mg}/\text{cm}^2$ ); Ge(Li) detectors;  $E_\gamma$ ,  $I_\gamma$  data obtained using a highly pure thermal beam resulting from the use of an external source and a quartz filter (238 transitions);  $E_\gamma=80-2733, 3349-7412$ ;  $I_\gamma$  corrected for self-absorption.

The level scheme is based on 1974Gr11 with the addition of several levels proposed by 1975Bu01.

$^{184}\text{W}$  Levels

E(level) $\dagger\ddagger$	$J^\pi c$	E(level) $\dagger\ddagger$	$J^\pi c$	E(level) $\dagger\ddagger$	$J^\pi c$	E(level) $\dagger\ddagger$	$J^\pi c$
0.0	0 <sup>+</sup>	2060.90 8		2758.1 9		3328.9 7	
111.216 10	2 <sup>+</sup>	2089.9 3	(1) <sup>-</sup>	2764.0 6		3351.6 11	
364.072 14	4 <sup>+</sup>	2097.8 3	(1) <sup>+</sup>	2797.8 13		3364.7 20	
748.15 20	6 <sup>+</sup>	2104.21 8	(2) <sup>+</sup>	2802.0 6		3371.5 20	
903.281 18	2 <sup>+</sup>	2112.50 18		2814.4 5		3377.5 15	
1002.49 4	0 <sup>+</sup>	2126.08 5		2849.2? 8		3386.1 7	
1005.956 19	3 <sup>+</sup>	2168.17 5	(1) <sup>+</sup>	2855.6? 10		3428.5? 9	
1121.404 24	2 <sup>+</sup>	2221.90 21	( $\leq 4$ )	2871.5 13	(0 <sup>+</sup> )	3448.2 7	
1130.023 19	(2) <sup>-</sup>	2228.29?& 7	(2 <sup>-</sup> ,3,4 <sup>-</sup> )	2902.0 8		3454.3 8	
1133.74 4	4 <sup>+</sup>	2246.32 <sup>a</sup> 22	(2) <sup>+</sup>	2919.3 8		3487.1 16	
1221.297?# 20	3 <sup>-</sup>	2294.54 8	(2) <sup>+</sup>	2950.8 6	1	3501.0 7	
1284.88 10	5 <sup>-</sup>	2320.4 3	(0 <sup>-</sup> ,2 <sup>-</sup> )	2968.2 6	(1 <sup>+</sup> )	3517.8 7	
1294.07 25	5 <sup>+</sup>	2352.0 <sup>b</sup> 3	(1) <sup>-</sup>	2982.4? 12		3546.9 6	
1322.13 3	(0) <sup>+</sup>	2370.2 3	(1) <sup>+</sup>	3004.1 11		3571.9 9	
1345.33 4	(4) <sup>-</sup>	2389.2 3	(1) <sup>+</sup>	3017.5 9		3617.6 5	
1386.22 3	2 <sup>+</sup>	2395.53 22	(1) <sup>+</sup>	3026.5? 7		3634.5 4	
1424.981 23	(3) <sup>+</sup>	2403.7 6	0 <sup>+</sup>	3035.5 9	(1 <sup>+</sup> )	3652.0 7	
1431.00 5	2 <sup>+</sup>	2429.6 11		3068.9 6		3686.3 6	
1523.27 8	(3 <sup>+</sup> )	2439.7 6		3104.5 6		3703.2 7	
1536.88 5	(4 <sup>+</sup> )	2458.7 7	1	3112.1 8		3714.9 6	
1570.20?@ 25	(2 <sup>+</sup> )	2486.7? 12		3135.7 6		3743.9 6	
1613.51 7	(1 <sup>+</sup> )	2509.4? 10		3168.3 9		3770.6 5	
1614.87 6	(1,2) <sup>+</sup>	2519.0 7		3184.4 5		3782.3 7	
1627.67 3	(1) <sup>+</sup>	2555.2 10		3192.8? 8		3807.0 5	
1713.44 10	(0) <sup>+</sup>	2573.4 11		3200.3 7		3882.8 11	
1775.38 7	(2) <sup>+</sup>	2591.0? 12		3220.6 9		3930.2 13	
1808.54 9	(2 <sup>+</sup> )	2613.6 7		3227.1 8		3961.9 5	
1876.69 9	(2) <sup>+</sup>	2619.3 21		3244.6 8		3971.9 6	
1995.47 21	1 <sup>(-)</sup>	2629.9 6		3251.1 6		4061.6 6	
2012.90 10	(2) <sup>+</sup>	2649.7 6		3264.6 6		(7411.18 9)	0 <sup>-</sup> ,1 <sup>-d</sup>
2031.3 4	0 <sup>+</sup>	2707.4 6		3290.5 6			
2035.57 18	1 <sup>+</sup> ,2 <sup>+</sup>	2720.4? 12		3307.9 8			
2056.31 15	(1) <sup>-</sup>	2730.3 7		3316.6 9			

Continued on next page (footnotes at end of table)

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 ${}^{183}\text{W}(\text{n},\gamma)$  E=thermal **2004Lo22,1975Bu01,1974Gr11 (continued)**

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 ${}^{184}\text{W}$  Levels (continued)

- † Based on assumption that the 6507.7 $\gamma$  feeds the level at 903.283 20 (E(level) from  ${}^{184}\text{Re}$  decay). Energies are from least-squares fit to the primary and secondary transition  $E\gamma$  data.
- ‡ Data from **1975Bu01** are based on assumption that the 6507.8 $\gamma$  feeds the 903.283 level. These energies are 0.8 keV lower than those given by the authors based on the assumption that the 7411.9 $\gamma$  feeds the ground state.
- # Primary  $\gamma$  due mainly to  ${}^{182}\text{W}(\text{n},\gamma)$  ground state transition, but authors do not rule out possible contribution from  ${}^{183}\text{W}(\text{n},\gamma)$ . **1974Gr11** assign all the intensity of this transition to the impurity reaction.
- @ Proposed by evaluator based on a level seen in (n, $\gamma$ ) E=7.6 eV (**1973Ca02**).
- & Not reported by **1975Bu01**. Also, not seen in (n, $\gamma$ ) with E>th. All deexciting transitions can be placed elsewhere.
- <sup>a</sup> Primary  $\gamma$  due partly to  ${}^{182}\text{W}(\text{n},\gamma)$ . **1974Gr11** assign all the intensity of the 5168 $\gamma$  to this impurity reaction.
- <sup>b</sup> **1974Gr11** report uncertain level At 2349.4 II.
- <sup>c</sup> From Adopted Levels.
- <sup>d</sup> s-wave capture on  $J^\pi=1/2^-$  target.

γ(<sup>184</sup>W)

I<sub>γ</sub> normalization: 0.054 is obtained from I(6144γ+6190γ) per 100 n-captures for W(n,γ) from [1970Or05](#), authors' ratio I(7300γ+7411γ)/I(6144γ+6190γ) for a natural W target, and known abundance and σ data ([1969Gr41](#)) (which implies I(7411γ+7300γ)=6.8 per 100 n-captures in <sup>183</sup>W). The above normalization procedure, somewhat different from that outlined in [1974Gr11](#), is the procedure actually used by those authors (private communication from one of the authors (R. C. Greenwood)). [2004Lo22](#), however, deduce a normalization factor of 0.082 *I2* assuming I(7724γ)=30.0 *I5* for <sup>27</sup>Al(n,γ) E=thermal, but the latter datum is somewhat higher than that recommended by [2007ChZX](#). Alternatively, based on measured absolute elemental σ(7412γ)=0.072 *I4* b, σ(903γ)=0.113 *I4* b, σ(253γ)=0.101 *I3* and σ(111γ)=0.162 *I4* b ([2007ChZX](#), Budapest data) and σ<sub>n</sub>, the evaluator deduces factors of 0.048 *I3*, 0.037 *I3*, 0.058 *I5* and 0.034 *I4*, respectively. In view of the disagreement, the evaluator suggests a factor of 0.06 *I2*. An assumption that Σ (I(γ+ce) to g.s.)=100% would give upper limits of 0.062 *I4* and 0.080 *I2* depending on whether I(111γ) from [1974Gr11](#) or from [2007ChZX](#) is used.

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#I</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>†</sup></u>	<u>δ<sup>‡</sup></u>	<u>α<sup>m</sup></u>	<u>Comments</u>
<sup>x</sup> 80.04 <sup>d</sup> <i>I2</i>	1.2 <i>I3</i>								
91.31 <i>I5</i>	1.09 <i>I6</i>	1221.297?	3 <sup>-</sup>	1130.023	(2) <sup>-</sup>	M1+E2	0.62 <i>I4</i>	6.03	other E <sub>γ</sub> : 92.61 <i>I5</i> ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 96.01 <sup>d</sup> <i>I1</i>	0.99 <i>I5</i>								
111.218 <i>I0</i>	323 <i>I23</i>	111.216	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2		2.57	other E <sub>γ</sub> (I <sub>γ</sub> ): 111.194 <i>I7</i> (209 <i>I33</i> ) ( <a href="#">2004Lo22</a> ); 111.11 <i>I9</i> (225 <i>I6</i> ) ( <a href="#">2007ChZX</a> , Budapest data). I <sub>γ</sub> : the discrepancy between data from different sources is troubling; I <sub>γ</sub> from <a href="#">1974Gr11</a> was corrected for self absorption; it is unclear whether data from <a href="#">2004Lo22</a> and <a href="#">2007ChZX</a> required or received similar corrections.
<sup>x</sup> 118.42 <sup>a</sup> <i>I26</i>	1.1 <sup>a</sup> <i>I5</i>								
124.071 <i>I5</i>	11.3 <sup>k</sup> <i>I11</i>	1130.023	(2) <sup>-</sup>	1005.956	3 <sup>+</sup>	(E1)		0.214	other E <sub>γ</sub> (I <sub>γ</sub> ): 124.05 <i>I4</i> (7 <i>I1</i> ) ( <a href="#">2004Lo22</a> ); 124.09 <i>I9</i> ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 130.24 <sup>a</sup> <i>I19</i>	0.8 <sup>a</sup> <i>I3</i>								
<sup>x</sup> 134.26 <sup>a</sup> <i>I7</i>	3.8 <sup>a</sup> <i>I4</i>								
<sup>x</sup> 139.69 <i>I5</i>	1.4 <sup>f</sup> <i>I4</i>								
<sup>x</sup> 148.91 <sup>d</sup> <i>I15</i>	0.99 <sup>g</sup> <i>I25</i>								
<sup>x</sup> 173.82 <i>I4</i>	2.4 <i>I4</i>								
<sup>x</sup> 177.36 <i>I6</i>	1.6 <i>I3</i>								
<sup>x</sup> 186.05 <i>I8</i>	1.8 <i>I4</i>								
<sup>x</sup> 195.28 <sup>a</sup> <i>I20</i>	2 <sup>a</sup> <i>I1</i>								
<sup>x</sup> 198.06 <i>I0</i>	1.4 <i>I4</i>								
203.56 <i>I0</i>	2.2 <sup>h</sup> <i>I4</i>	1424.981	(3) <sup>+</sup>	1221.297?	3 <sup>-</sup>	[E1]		0.0599	other E <sub>γ</sub> (I <sub>γ</sub> ): 203.38 <i>I3</i> (4 <i>I1</i> ) ( <a href="#">2004Lo22</a> ).
211.63 <i>I5</i>	1.6 <i>I4</i>	1345.33	(4) <sup>-</sup>	1133.74	4 <sup>+</sup>	[E1]		0.0542	
215.332 <i>I2</i>	17.2 <i>I2</i>	1221.297?	3 <sup>-</sup>	1005.956	3 <sup>+</sup>	E1		0.0519	other E <sub>γ</sub> (I <sub>γ</sub> ): 215.32 <i>I2</i> (19 <i>I1</i> ) ( <a href="#">2004Lo22</a> ); 215.24 <i>I2</i> (14.3 <i>I8</i> ) ( <a href="#">2007ChZX</a> , Budapest data).
226.743 <i>I2</i>	116 <i>I6</i>	1130.023	(2) <sup>-</sup>	903.281	2 <sup>+</sup>	E1+M2+E3		0.059 <i>I5</i>	other E <sub>γ</sub> (I <sub>γ</sub> ): 226.742 <i>I2</i> (128 <i>I4</i> ) ( <a href="#">2004Lo22</a> ); 226.98 <i>I3</i> (61 <i>I3</i> ) ( <a href="#">2007ChZX</a> , Budapest data).
241.46 <i>I6</i>	1.4 <i>I3</i>	1627.67	(1) <sup>+</sup>	1386.22	2 <sup>+</sup>	[M1]		0.396	

<sup>183</sup>W(n,γ) E=thermal 2004Lo22,1975Bu01,1974Gr11 (continued)

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>†</sup></u>	<u>δ<sup>†</sup></u>	<u>α<sup>m</sup></u>	<u>Comments</u>
252.850 12	118 6	364.072	4 <sup>+</sup>	111.216	2 <sup>+</sup>	E2		0.1437	other E <sub>γ</sub> (I <sub>γ</sub> ): 252.842 11 (139 8) (2004Lo22); 252.93 9 (140 4) (2007ChZX, Budapest data).
294.962 15	16.6 8	1424.981	(3) <sup>+</sup>	1130.023	(2) <sup>-</sup>	E1		0.0238	other E <sub>γ</sub> (I <sub>γ</sub> ): 294.945 24 (20 1) (2004Lo22); 294.72 12 (17.4 18) (2007ChZX, Budapest data).
315.59 5	2.6 7	1536.88	(4) <sup>+</sup>	1221.297?	3 <sup>-</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 315.38 15 (3 1) (2004Lo22).
318.017 15	33.1 17	1221.297?	3 <sup>-</sup>	903.281	2 <sup>+</sup>	E1+M2	-0.020 10	0.0202 5	other E <sub>γ</sub> (I <sub>γ</sub> ): 318.015 17 (39 2) (2004Lo22); 318.01 10 (22.5 26) (2007ChZX, Budapest data).
339.34 4	5.9 12	1345.33	(4) <sup>-</sup>	1005.956	3 <sup>+</sup>	[E1]		0.0170 3	other E <sub>γ</sub> (I <sub>γ</sub> ): 339.62 6 (8 1) (2004Lo22); 339.5 3 (5.3 22) (2007ChZX, Budapest data).
<sup>x</sup> 359.30 7	2.6 4								
<sup>x</sup> 363.74 <sup>d</sup> 15	1.4 4								
<sup>x</sup> 376.72 <sup>d</sup> 15	1.4 <sup>j</sup> 4								
380.24 9	2.0 5	1386.22	2 <sup>+</sup>	1005.956	3 <sup>+</sup>	M1+E2	1.3 +23-6	0.070 22	other E <sub>γ</sub> (I <sub>γ</sub> ): 380.6 3 (4.2 14) (2007ChZX, Budapest data).
<sup>x</sup> 382.776 25	7.5 8								
383.98 6	4.0 4	748.15	6 <sup>+</sup>	364.072	4 <sup>+</sup>	E2		0.0419	other E <sub>γ</sub> (I <sub>γ</sub> ): 383.68 13 (13.3 17) (2007ChZX, Budapest data).
418.847 20	14.1 10	1322.13	(0) <sup>+</sup>	903.281	2 <sup>+</sup>	[E2]		0.0331	other E <sub>γ</sub> (I <sub>γ</sub> ): 418.87 4 (17 1) (2004Lo22); 419.21 12 (24 4) (2007ChZX, Budapest data).
<sup>x</sup> 421.2 <sup>a</sup> 2	2 <sup>a</sup> 1								
424.36 15	1.8 <sup>j</sup> 4	1431.00	2 <sup>+</sup>	1005.956	3 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 424.5 2 (3 1) (2004Lo22).
446.64 <sup>dp</sup> 25	1.4 3	2221.90	(≤4)	1775.38	(2) <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 446.62 14 (2007ChZX, Budapest data).
<sup>x</sup> 462.0 <sup>a</sup> 2	3 <sup>a</sup> 1								
<sup>x</sup> 465.0 3	1.2 <sup>h</sup> 3								
482.93 3	9.9 10	1386.22	2 <sup>+</sup>	903.281	2 <sup>+</sup>	M1+E2		0.042 20	other E <sub>γ</sub> (I <sub>γ</sub> ): 482.9 3 (3.6 18) (2007ChZX, Budapest data).
<sup>x</sup> 498.5 <sup>a</sup> 3	2 <sup>a</sup> 1								
<sup>x</sup> 499.87 <sup>d</sup> 20	0.8 <sup>g</sup> 3								
<sup>x</sup> 526.00 12	2.0 3								
536.67 25	1.6 4	1284.88	5 <sup>-</sup>	748.15	6 <sup>+</sup>	E1+M2+E3		0.0068 1	
539.38 25	2.6 6	903.281	2 <sup>+</sup>	364.072	4 <sup>+</sup>	E2		0.01743	other E <sub>γ</sub> (I <sub>γ</sub> ): 539.1 2 (4 1) (2004Lo22).
<sup>x</sup> 554.8 <sup>a</sup> 2	3 <sup>a</sup> 1								
<sup>x</sup> 572.1 <sup>a</sup> 3	3 <sup>a</sup> 1								
<sup>x</sup> 580.1 <sup>a</sup> 2	4 <sup>a</sup> 1								
<sup>x</sup> 584.0 <sup>a</sup> 2	3 <sup>a</sup> 1								
<sup>x</sup> 586.1 <sup>a</sup> 3	4 <sup>a</sup> 1								
586.94 <sup>p</sup> 7	3.0 3	1808.54	(2) <sup>+</sup>	1221.297?	3 <sup>-</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 586.1 3 (4 1) (2004Lo22).
<sup>x</sup> 592.9 <sup>a</sup> 2	4 <sup>a</sup> 1								
<sup>x</sup> 603.1 <sup>a</sup> 2	6 <sup>a</sup> 1								
607.620 25	17.8 9	1613.51	(1) <sup>+</sup>	1005.956	3 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 607.4 2 (20 4) (1975Bu01); 607.73 4 (22

<sup>183</sup>W(n,γ) E=thermal [2004Lo22](#),[1975Bu01](#),[1974Gr11](#) (continued)

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>†</sup></u>	<u>δ<sup>†</sup></u>	<u>α<sup>m</sup></u>	<u>Comments</u>
									<i>l</i> ) ( <a href="#">2004Lo22</a> ); 607.63 <i>21</i> (8.9 <i>26</i> ) ( <a href="#">2007ChZX</a> , Budapest data). alternative placement from 2223 level suggested by <a href="#">1975Bu01</a> .
<sup>x</sup> 608.6 <sup>@</sup> 6	2.0 <sup>&amp;</sup> 12								
635.92 <sup>p</sup> 8	4.2 <sup>h</sup> 6	2060.90		1424.981	(3) <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 636.1 <i>1</i> (6 <i>1</i> ) ( <a href="#">2004Lo22</a> ).
641.87 3	13.7 7	1005.956	3 <sup>+</sup>	364.072	4 <sup>+</sup>	M1+E2	-8.5 8	0.01183 18	other E <sub>γ</sub> (I <sub>γ</sub> ): 641.7 <i>1</i> (8.7 <i>16</i> ) ( <a href="#">1975Bu01</a> ); 641.95 <i>5</i> (18 <i>1</i> ) ( <a href="#">2004Lo22</a> );
<sup>x</sup> 646.59 8	4.6 <sup>k</sup> 7								
655.38 12	2.0 4	1876.69	(2) <sup>+</sup>	1221.297?	3 <sup>-</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 655.5 <i>3</i> (6 <i>1</i> ) ( <a href="#">2004Lo22</a> ); 655.83 <i>17</i> ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 671.24 20	1.4 <sup>j</sup> 6								
<sup>x</sup> 676.1 <sup>a</sup> 3	3 <sup>a</sup> 1								
678.17 6	6.7 7	1808.54	(2) <sup>+</sup>	1130.023	(2) <sup>-</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 678.37 <i>8</i> (10 <i>1</i> ) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 683.9 <sup>a</sup> 4	3 <sup>a</sup> 1								
<sup>x</sup> 700.8 <sup>a</sup> 3	3 <sup>a</sup> 1								
<sup>x</sup> 708.3 <sup>a</sup> 2	3 <sup>a</sup> 1								
710.08 6	16.8 17	1613.51	(1) <sup>+</sup>	903.281	2 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 710.1 <i>3</i> (13.9 <i>20</i> ) ( <a href="#">1975Bu01</a> ); 710.25 <i>5</i> (19 <i>1</i> ) ( <a href="#">2004Lo22</a> ); 709.11 <i>24</i> (21 <i>3</i> ) ( <a href="#">2007ChZX</a> , Budapest data).
711.58 6	17.4 17	1614.87	(1,2) <sup>+</sup>	903.281	2 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 711.4 <i>3</i> (7.9 <i>20</i> ) ( <a href="#">1975Bu01</a> ); 711.76 <i>5</i> (18 <i>1</i> ) ( <a href="#">2004Lo22</a> ); 711.6 <i>4</i> (13 <i>3</i> ) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 720.2 <sup>a</sup> 2	3 <sup>a</sup> 1								
724.39 3	28.5 14	1627.67	(1) <sup>+</sup>	903.281	2 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 724.4 <i>1</i> (23.8 <i>20</i> ) ( <a href="#">1975Bu01</a> ); 724.41 <i>4</i> (35 <i>2</i> ) ( <a href="#">2004Lo22</a> ); 724.3 <i>3</i> (18 <i>6</i> ) ( <a href="#">2007ChZX</a> , Budapest data).
743.19 4	8.3 8	2168.17	(1) <sup>+</sup>	1424.981	(3) <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 742.8 <i>3</i> (8.1 <i>16</i> ) ( <a href="#">1975Bu01</a> ); 743.25 <i>7</i> (11 <i>2</i> ) ( <a href="#">2004Lo22</a> ); 743.5 <i>3</i> (10.1 <i>26</i> ) ( <a href="#">2007ChZX</a> , Budapest data). alternative placement from 2370 level suggested by <a href="#">1975Bu01</a> .
746.59 15	3.6 <sup>h</sup> 7	1876.69	(2) <sup>+</sup>	1130.023	(2) <sup>-</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 748.39 <i>23</i> (11.5 <i>26</i> ) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 751.5 <sup>a</sup> 4	6 <sup>a</sup> 2								
<sup>x</sup> 752.5 <sup>a</sup> 2	11 <sup>a</sup> 2								
757.31 3	43.4 22	1121.404	2 <sup>+</sup>	364.072	4 <sup>+</sup>	E2		0.00803	other E <sub>γ</sub> (I <sub>γ</sub> ): 757.25 <i>6</i> (37.6 <i>20</i> ) ( <a href="#">1975Bu01</a> ); 757.38 <i>3</i> (48 <i>2</i> ) ( <a href="#">2004Lo22</a> ); 757.37 <i>14</i> (43 <i>6</i> ) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 763.10 6	11.3 <sup>k</sup> 8								
<sup>x</sup> 766.0 <sup>@</sup> 6	4.0 <sup>&amp;</sup> 20								
<sup>x</sup> 768.1 <sup>a</sup> 3	5 <sup>a</sup> 2								

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<sup>183</sup>W(n,γ) E=thermal [2004Lo22](#),[1975Bu01](#),[1974Gr11](#) (continued)

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>†</sup></u>	<u>δ<sup>†</sup></u>	<u>α<sup>m</sup></u>	<u>Comments</u>
769.44 <sup>o</sup> 4	12.6 <sup>oi</sup> 15	1133.74	4 <sup>+</sup>	364.072	4 <sup>+</sup>	M1+E2	-6.3 +20-32	0.0080 4	other E <sub>γ</sub> (I <sub>γ</sub> ): 769.60 6 (17 2) ( <a href="#">2004Lo22</a> ).
769.44 <sup>o</sup> 4	3.4 <sup>oi</sup> 16	1775.38	(2) <sup>+</sup>	1005.956	3 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 769.33 10 (23.8 20 for doublet) ( <a href="#">1975Bu01</a> ); 769.60 6 (17 2) ( <a href="#">2004Lo22</a> ); 769.66 19 ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 771.4 <sup>@</sup> 6	4.0 <sup>&amp;</sup> 20								
<sup>x</sup> 777.33 12	3.2 5								
782.2 <sup>ndp</sup> 3	1.8 <sup>ng</sup> 7	2104.21	(2) <sup>+</sup>	1322.13	(0) <sup>+</sup>				
782.2 <sup>np</sup> 3	1.8 <sup>ng</sup> 7	2168.17	(1) <sup>+</sup>	1386.22	2 <sup>+</sup>				
782.2 <sup>np</sup> 3	1.8 <sup>ng</sup> 7	2395.53	(1) <sup>+</sup>	1613.51	(1) <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 782.13 9 (199 8) ( <a href="#">2007ChZX</a> , Budapest data); line is presumably heavily contaminated.
<sup>x</sup> 786.0 <sup>d</sup> 4	1.0 <sup>j</sup> 4								
792.06 3	198 10	903.281	2 <sup>+</sup>	111.216	2 <sup>+</sup>	M1+E2	-16.8 5	0.00733	other E <sub>γ</sub> (I <sub>γ</sub> ): 792.12 6 ( <a href="#">1975Bu01</a> ); 792.079 14 (223 4) ( <a href="#">2004Lo22</a> ); 791.86 9 (157 8) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 796.5 <sup>@</sup> 2	5.9 <sup>&amp;</sup> 20								
<sup>x</sup> 797.32 16	3.4 7								
<sup>x</sup> 798.1 <sup>a</sup> 3	3 <sup>a</sup> 1								
802.53 20	2.8 <sup>h</sup> 6	1808.54	(2) <sup>+</sup>	1005.956	3 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 802.9 1 (3 1) ( <a href="#">2004Lo22</a> ).
810.16 10	5.0 7	1713.44	(0) <sup>+</sup>	903.281	2 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 810.4 2 (8 1) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 814.6 <sup>a</sup> 4	3 <sup>a</sup> 1								
<sup>x</sup> 817.5 <sup>a</sup> 3	6 <sup>a</sup> 1								
<sup>x</sup> 822.4 <sup>a</sup> 2	5 <sup>a</sup> 1								
<sup>x</sup> 829.6 <sup>a</sup> 3	2 <sup>a</sup> 1								
<sup>x</sup> 831.3 <sup>d</sup> 4	0.8 <sup>g</sup> 3								
<sup>x</sup> 834.0 <sup>d</sup> 3	2.2 <sup>h</sup> 7								other E <sub>γ</sub> (I <sub>γ</sub> ): 834.8 5 (3 1) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 844.4 <sup>a</sup> 4	3 <sup>a</sup> 1								
846.21 25	3.0 9	2168.17	(1) <sup>+</sup>	1322.13	(0) <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 846.7 1 (11 1) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 850.9 <sup>a</sup> 2	4 <sup>a</sup> 1								
<sup>x</sup> 856.0 <sup>a</sup> 2	4 <sup>a</sup> 1								
<sup>x</sup> 866.6 <sup>d</sup> 4	1.4 <sup>g</sup> 6								
871.56 8	6.7 <sup>k</sup> 13	1775.38	(2) <sup>+</sup>	903.281	2 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 871.46 9 (12 1) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 875.0 <sup>a</sup> 3	4 <sup>a</sup> 1								
<sup>x</sup> 880.9 <sup>@</sup> 6	5.9 <sup>&amp;</sup> 20								
882.75 <sup>n</sup> 15	4.0 <sup>nh</sup> 8	2012.90	(2) <sup>+</sup>	1130.023	(2) <sup>-</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 883.3 2 (4 1) ( <a href="#">2004Lo22</a> ).
882.75 <sup>n</sup> 15	4.0 <sup>nh</sup> 8	2228.29?	(2 <sup>-</sup> ,3,4 <sup>-</sup> )	1345.33	(4) <sup>-</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 883.3 2 (4 1) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 890.5 <sup>@</sup> 3	6.7 <sup>&amp;</sup> 10								
891.27 4	100 5	1002.49	0 <sup>+</sup>	111.216	2 <sup>+</sup>	[E2]		0.00575	other E <sub>γ</sub> (I <sub>γ</sub> ): 891.5 2 (93.0 20) ( <a href="#">1975Bu01</a> ); 891.304 17 (132 2) ( <a href="#">2004Lo22</a> ).

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<sup>183</sup>W(n,γ) E=thermal [2004Lo22](#),[1975Bu01](#),[1974Gr11](#) (continued)

$\gamma(^{184}\text{W})$ (continued)									
$E_\gamma$ ‡	$I_\gamma$ #l	$E_i$ (level)	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. †	$\delta^\ddagger$	$\alpha^m$	Comments
894.75 4	113 6	1005.956	3 <sup>+</sup>	111.216	2 <sup>+</sup>	M1+E2	-13.2 9	0.00569 8	other E $\gamma$ (I $\gamma$ ): 894.8 1 (106.9 20) ( <a href="#">1975Bu01</a> ); 894.769 17 (128 3) ( <a href="#">2004Lo22</a> ); 494.52 9 (108 6) ( <a href="#">2007ChZX</a> , Budapest data).
903.26 4	204 10	903.281	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2		0.00554 8	other E $\gamma$ (I $\gamma$ ): 903.1 1 (192 4) ( <a href="#">1975Bu01</a> ); 903.289 16 (231 4) ( <a href="#">2004Lo22</a> ); 903.16 9 (157 6) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 905.1 <sup>ab</sup> 2	8 <sup>a</sup> 2								
<sup>x</sup> 917.8 <sup>a</sup> 3	3 <sup>a</sup> 1								
920.81 10	5.5 8	1284.88	5 <sup>-</sup>	364.072	4 <sup>+</sup>	E1+M2+E3		0.0030 2	other E $\gamma$ (I $\gamma$ ): 920.8 2 (7.9 20) ( <a href="#">1975Bu01</a> ); 921.10 9 (8 2) ( <a href="#">2004Lo22</a> ).
930.00 25	4.0 6	1294.07	5 <sup>+</sup>	364.072	4 <sup>+</sup>				other E $\gamma$ (I $\gamma$ ): 930.3 2 (3 1) ( <a href="#">2004Lo22</a> ); 929.93 12 (14.9 14) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 941.33 20	2.8 <sup>j</sup> 8								
<sup>x</sup> 953.4 <sup>d</sup> 4	2.2 4								
<sup>x</sup> 959.2 <sup>a</sup> 3	4 <sup>a</sup> 1								
<sup>x</sup> 962.2 <sup>ab</sup> 3	3 <sup>a</sup> 1								
982.44 <sup>n</sup> 18	2.8 <sup>n</sup> 6	2104.21	(2) <sup>+</sup>	1121.404	2 <sup>+</sup>				other E $\gamma$ (I $\gamma$ ): 982.3 2 (4 1) ( <a href="#">2004Lo22</a> ).
982.44 <sup>n</sup> 18	2.8 <sup>ng</sup> 6	2112.50		1130.023	(2) <sup>-</sup>				other E $\gamma$ (I $\gamma$ ): 982.3 28 (4 1) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 989.98 <sup>e</sup> 25	1.6 <sup>f</sup> 4								
996.06 5	8.7 9	2126.08		1130.023	(2) <sup>-</sup>				other E $\gamma$ (I $\gamma$ ): 995.7 3 (7.9 20) ( <a href="#">1975Bu01</a> ); 996.23 8 (11 1) ( <a href="#">2004Lo22</a> ); 995.6 3 (9 3) ( <a href="#">2007ChZX</a> , Budapest data).
1004.47 8	7.3 7	2126.08		1121.404	2 <sup>+</sup>				other E $\gamma$ (I $\gamma$ ): 1005.3 4 (5.9 20) ( <a href="#">1975Bu01</a> ); 1004.4 1 (10 2) ( <a href="#">2004Lo22</a> ).
1007.03 <sup>n</sup> 12	5.5 <sup>n</sup> 6	2012.90	(2) <sup>+</sup>	1005.956	3 <sup>+</sup>				other E $\gamma$ (I $\gamma$ ): 1006.9 2 (7 1) ( <a href="#">2004Lo22</a> ).
1007.03 <sup>n</sup> 12	5.5 <sup>n</sup> 6	2228.29?	(2 <sup>-</sup> ,3,4 <sup>-</sup> )	1221.297?	3 <sup>-</sup>				other E $\gamma$ (I $\gamma$ ): 1006.9 2 (7 1) ( <a href="#">2004Lo22</a> ).
1010.25 3	57 3	1121.404	2 <sup>+</sup>	111.216	2 <sup>+</sup>	M1+E2+E0			other E $\gamma$ (I $\gamma$ ): 1010.4 1 (55.4 20) ( <a href="#">1975Bu01</a> ); 1010.30 3 (68 3) ( <a href="#">2004Lo22</a> ); 1009.64 17 (47 6) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 1013.10 <sup>e</sup> 12	4.2 <sup>f</sup> 4								
1018.63 8	5.7 <sup>f</sup> 6	1130.023	(2) <sup>-</sup>	111.216	2 <sup>+</sup>	(E1)			other E $\gamma$ (I $\gamma$ ): 1018.84 7 (18 1) ( <a href="#">2004Lo22</a> ).
1022.57 5	9.3 9	1133.74	4 <sup>+</sup>	111.216	2 <sup>+</sup>	E2		0.00431 6	other E $\gamma$ (I $\gamma$ ): 1022.5 8 (6.9 10) ( <a href="#">1975Bu01</a> ); 1022.52 9 (12 1) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 1038.5 <sup>d</sup> 3	2.0 6								
<sup>x</sup> 1041.9 <sup>a</sup> 2	6 <sup>a</sup> 2								
1046.4 <sup>dp</sup> 3	3.0 9	2168.17	(1) <sup>+</sup>	1121.404	2 <sup>+</sup>				
<sup>x</sup> 1055.4 <sup>a</sup> 3	5 <sup>a</sup> 1								
1060.85 15	4.0 6	1424.981	(3) <sup>+</sup>	364.072	4 <sup>+</sup>	E2		0.00400	other E $\gamma$ (I $\gamma$ ): 1061.2 2 (5 1) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 1090.5 <sup>a</sup> 2	4 <sup>a</sup> 1								
<sup>x</sup> 1096.2 <sup>a</sup> 3	4 <sup>a</sup> 1								

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<sup>183</sup>W(n,γ) E=thermal [2004Lo22](#),[1975Bu01](#),[1974Gr11](#) (continued)

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>†</sup></u>	<u>δ<sup>†</sup></u>	<u>α<sup>m</sup></u>	<u>Comments</u>
1098.28 <sup>n</sup> 8	6.7 <sup>n</sup> 7	2104.21	(2) <sup>+</sup>	1005.956	3 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 1096.2 3 (4 I) ( <a href="#">2004Lo22</a> ); 1099.5 8 (4.0 20) ( <a href="#">1975Bu01</a> );
1098.28 <sup>n</sup> 8	6.7 <sup>n</sup> 7	2228.29?	(2 <sup>-</sup> ,3,4 <sup>-</sup> )	1130.023	(2) <sup>-</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 1099.5 8 (4.0 20) ( <a href="#">1975Bu01</a> ); 1096.2 3 (4 I) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 1106.7 <sup>a</sup> 2	4 <sup>a</sup> 1								
1109.88 20	3.0 5	1221.297?	3 <sup>-</sup>	111.216	2 <sup>+</sup>	E1+M2	+0.08 3	0.00159 10	other E <sub>γ</sub> (I <sub>γ</sub> ): 1109.8 12 (2.0 10) ( <a href="#">1975Bu01</a> ); 1110.1 2 (9 I) ( <a href="#">2004Lo22</a> ).
1121.39 4	22.2 16	1121.404	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2		0.00359	other E <sub>γ</sub> (I <sub>γ</sub> ): 1121.6 3 (20.0 20) ( <a href="#">1975Bu01</a> ); 1121.42 4 (10 I) ( <a href="#">2004Lo22</a> ); 1121.09 17 (23 3) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 1126.2 <sup>d</sup> 3	4.2 13								
<sup>x</sup> 1130.9 <sup>a</sup> 2	6 <sup>a</sup> 1								
1132.36 20	3.0 6	2035.57	1 <sup>+</sup> ,2 <sup>+</sup>	903.281	2 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 1130.9 2 (6 I) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 1150.8 <sup>a</sup> 4	4 <sup>a</sup> 1								
<sup>x</sup> 1159.3 <sup>a</sup> 3	6 <sup>a</sup> 1								
<sup>x</sup> 1163.1 <sup>a</sup> 3	4 <sup>a</sup> 1								
<sup>x</sup> 1165.6 <sup>a</sup> 2	6 <sup>a</sup> 2								
<sup>x</sup> 1182.0 <sup>a</sup> 2	7 <sup>a</sup> 2								
<sup>x</sup> 1188.0 <sup>a</sup> 3	5 <sup>a</sup> 1								
<sup>x</sup> 1192.59 <sup>d</sup> 25	2.8 <sup>j</sup> 11								
<sup>x</sup> 1256.63 20	3.6 7								
<sup>x</sup> 1263.3 <sup>a</sup> 2	8 <sup>a</sup> 2								
1265.5 <sup>@</sup> 6	2 <sup>&amp;</sup> 1	2168.17	(1) <sup>+</sup>	903.281	2 <sup>+</sup>				other E <sub>γ</sub> (I <sub>γ</sub> ): 1266.4 4 (5 I) ( <a href="#">2004Lo22</a> ).
1275.07 5	50.7 25	1386.22	2 <sup>+</sup>	111.216	2 <sup>+</sup>	M1+E2	≥+3		other E <sub>γ</sub> (I <sub>γ</sub> ): 1275.2 1 (40 2) ( <a href="#">1975Bu01</a> ); 1275.15 5 (58 3) ( <a href="#">2004Lo22</a> ). 1274.51 9 (181 7) ( <a href="#">2007ChZX</a> , Budapest data), presumed to include impurity.
<sup>x</sup> 1305.8 <sup>a</sup> 3	7 <sup>a</sup> 1								
<sup>x</sup> 1308.8 <sup>a</sup> 6	4 <sup>a</sup> 1								
<sup>x</sup> 1311.3 <sup>a</sup> 6	4 <sup>a</sup> 1								
1313.72 7	12.3 12	1424.981	(3) <sup>+</sup>	111.216	2 <sup>+</sup>	E2		0.00266 4	other E <sub>γ</sub> (I <sub>γ</sub> ): 1313.7 4 (9.9 20) ( <a href="#">1975Bu01</a> ); 1313.7 4 (9.9 20) <a href="#">1975Bu01</a> , 1314.0 1 (18 I) ( <a href="#">2004Lo22</a> ); 1313.9 5 (10 3) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 1317.2 <sup>a</sup> 4	5 <sup>a</sup> 1								
1319.84 6	21.4 <sup>k</sup> 15	1431.00	2 <sup>+</sup>	111.216	2 <sup>+</sup>	M1+E2+E0			other E <sub>γ</sub> (I <sub>γ</sub> ): 1319.8 2 (17.0 16) ( <a href="#">1975Bu01</a> ); 1319.93 7 (25 6) ( <a href="#">2004Lo22</a> ); 1319.5 3 (13 3) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 1338.32 16	4.0 6								
<sup>x</sup> 1371.7 <sup>a</sup> 6	4 <sup>a</sup> 2								
<sup>x</sup> 1373.32 16	4.0 6								
1386.36 5	40.6 20	1386.22	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2		0.00242 4	other E <sub>γ</sub> (I <sub>γ</sub> ): 1386.4 1 (27.7 20) ( <a href="#">1975Bu01</a> );



<sup>183</sup>W(n,γ) E=thermal **2004Lo22,1975Bu01,1974Gr11** (continued)

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#l</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>†</sup></u>	<u>α<sup>m</sup></u>	<u>Comments</u>
								1386.43 4 (49 3) (2004Lo22); 1386.20 21 (32 6) (2007ChZX, Budapest data).
1391.23 8	7.1 7	2294.54	(2) <sup>+</sup>	903.281	2 <sup>+</sup>			other E <sub>γ</sub> (I <sub>γ</sub> ): 1391.3 7 (5.9 20) (1975Bu01); 1391.5 1 (8 3) (2004Lo22).
<sup>x</sup> 1402.8 <sup>a</sup> 2	5 <sup>a</sup> 2							
<sup>x</sup> 1408.0 <sup>a</sup> 2	4 <sup>a</sup> 2							
1412.05 8	14.5 <sup>h</sup> 10	1523.27	(3) <sup>+</sup>	111.216	2 <sup>+</sup>			other E <sub>γ</sub> (I <sub>γ</sub> ): 1412.3 5 (11.5 16) (1975Bu01); 1411.92 8 (16 1) (2004Lo22). 1411.32 15 (26 3) (2007ChZX, Budapest data) suggest presence of an impurity.
<sup>x</sup> 1421.63 25	3.0 6							
<sup>x</sup> 1422.7 <sup>a</sup> 4	6 <sup>a</sup> 2							
1424.6 <sup>dp</sup> 4	2.0 <sup>g</sup> 5	1536.88	(4) <sup>+</sup>	111.216	2 <sup>+</sup>			other E <sub>γ</sub> (I <sub>γ</sub> ): 1425.7 3 (7 2) (2004Lo22).
<sup>x</sup> 1425.7 <sup>a</sup> 3	7 <sup>a</sup> 2							
1430.97 6	16.8 12	1431.00	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2	0.00230 4	other E <sub>γ</sub> (I <sub>γ</sub> ): 1431.5 3 (15.6 18) (1975Bu01); 1431.09 8 (22 2) (2004Lo22); 1430.7 4 (14 6) (2007ChZX, Budapest data).
<sup>x</sup> 1435.3 <sup>@</sup> 5	3.6 <sup>&amp;</sup> 18							
1444.5 <sup>dp</sup> 3	5.3 13	1808.54	(2) <sup>+</sup>	364.072	4 <sup>+</sup>			
<sup>x</sup> 1487.6 3	5.5 11							
1500.8 <sup>@</sup> 3	6.3 <sup>&amp;</sup> 2	2403.7	0 <sup>+</sup>	903.281	2 <sup>+</sup>			other E <sub>γ</sub> (I <sub>γ</sub> ): 1500.8 3 (7.9 12) (1974Gr11).
<sup>x</sup> 1502.0 <sup>ab</sup> 4	9 <sup>a</sup> 2							
1502.35 8	4.3 <sup>c</sup> 22	1613.51	(1) <sup>+</sup>	111.216	2 <sup>+</sup>			other E <sub>γ</sub> (I <sub>γ</sub> ): 1502.0 4 (9 2) (2004Lo22).
1503.74 15	9.5 <sup>c</sup> 24	1614.87	(1,2) <sup>+</sup>	111.216	2 <sup>+</sup>			other E <sub>γ</sub> (I <sub>γ</sub> ): 1503.7 3 (9.1 18) (1975Bu01); 1504.4 2 (17 2) or 1502.0 4 (9 2) (2004Lo22); 1503.23 21 (32 4) (2007ChZX, Budapest data).
<sup>x</sup> 1504.4 <sup>ab</sup> 2	17 <sup>a</sup> 2							
<sup>x</sup> 1523.6 5	5.7 12							
<sup>x</sup> 1543.1 <sup>d</sup> 7	3.4 17							
<sup>x</sup> 1554.9 <sup>d</sup> 4	5.3 13							
<sup>x</sup> 1568.3 <sup>a</sup> 3	5 <sup>a</sup> 1							
1570.19 25	5.0 10	1570.20?	(2) <sup>+</sup>	0.0	0 <sup>+</sup>			other E <sub>γ</sub> (I <sub>γ</sub> ): 1568.3 3 (5 1) (2004Lo22); 1569.59 23 (18 4) (2007ChZX, Budapest data).
<sup>x</sup> 1577.6 <sup>a</sup> 5	5 <sup>a</sup> 1							
<sup>x</sup> 1585.5 4	7.9 12							other E <sub>γ</sub> (I <sub>γ</sub> ): 1584.2 4 (6 1) (2004Lo22).
<sup>x</sup> 1608.35 25	5.3 11							
<sup>x</sup> 1624.8 <sup>e</sup> 3	8.7 17							
<sup>x</sup> 1626.6 <sup>@</sup> 3	3.0 <sup>&amp;</sup> 16							
<sup>x</sup> 1629.44 <sup>e</sup> 25	10.9 16							
<sup>x</sup> 1633.45 <sup>e</sup> 20	8.5 17							
1697.5 3	6.1 9	1808.54	(2) <sup>+</sup>	111.216	2 <sup>+</sup>			
<sup>x</sup> 1735.27 <sup>e</sup> 25	6.7 13							
<sup>x</sup> 1761.2 <sup>a</sup> 3	4 <sup>a</sup> 2							
1765.6 <sup>dp</sup> 4	7.5 23	1876.69	(2) <sup>+</sup>	111.216	2 <sup>+</sup>			other E <sub>γ</sub> (I <sub>γ</sub> ): 1766.5 3 (5.7 10) (1975Bu01); 1766.2 2 (11 2) (2004Lo22); 1764.18 22 (15 3) (2007ChZX, Budapest data).

$^{183}\text{W}(n,\gamma)$  E=thermal [2004Lo22](#),[1975Bu01](#),[1974Gr11](#) (continued) $\gamma(^{184}\text{W})$  (continued)

$E_\gamma$ ‡	$I_\gamma$ #l	$E_i$ (level)	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. †	Comments
$^{x1772.1^a}_4$	$5^a_2$						
$^{x1783.7^a}_3$	$4^a_2$						
$^{x1786.07}_{12}$	$10.3_{15}$						
1808.5 4	4.6 9	1808.54	(2 <sup>+</sup> )	0.0	0 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 1809.6 5 (4 2) ( <a href="#">2004Lo22</a> ).
$^{x1815.3^{ab}}_4$	$8^a_2$						
$^{x1826.8^e}_6$	$6.1_{15}$						
$^{x1834.63^e}_{20}$	$8.1_{16}$						
$^{x1848.42}_{20}$	$6.7_{13}$						
$^{x1854.6^e}_6$	$3.6_{14}$						
$^{x1858.5^a}_5$	$5^a_2$						
$^{x1869.7}_3$	$11.9_{18}$						
1877.3 4	6.9 14	1876.69	(2 <sup>+</sup> )	0.0	0 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 1877.8 3 (11 2) ( <a href="#">2004Lo22</a> ); 1877.2 3 (4.6 10) ( <a href="#">1975Bu01</a> ).
$^{x1882.1^a}_4$	$9^a_2$						
$^{x1891.7^a}_4$	$5^a_2$						
$^{x1895.7^e}_4$	8.1 20						
1901.9 @ 3	2.6 & 8	2012.90	(2 <sup>+</sup> )	111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 1902.8 5 (6.9 17) ( <a href="#">1974Gr11</a> ; possible escape peak); 1901.6 3 (9 2) ( <a href="#">2004Lo22</a> ).
$^{x1905.3^a}_4$	$6^a_2$						
$^{x1910.1^a}_3$	$5^a_2$						
1920.1 4	6.1 15	2031.3	0 <sup>+</sup>	111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 1919.0 3 (26 6) ( <a href="#">2007ChZX</a> , Budapest data); this $I_\gamma$ appears excessively large.
$^{x1943.1^a}_1$	$7^a_2$						other $E_\gamma$ ( $I_\gamma$ ): 1942.9 5 (19.4 12) ( <a href="#">1975Bu01</a> ).
1945.3 3	18 3	2056.31	(1) <sup>-</sup>	111.216	2 <sup>+</sup>	[E1]	other $E_\gamma$ ( $I_\gamma$ ): 1945.1 3 (7.5 16) ( <a href="#">1975Bu01</a> ); 1945.1 2 (14 2) ( <a href="#">2004Lo22</a> ); 1945.4 3 (28 4) ( <a href="#">2007ChZX</a> , Budapest data).
1949.60 25	15.4 23	2060.90		111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 1949.4 2 (17 3) ( <a href="#">2004Lo22</a> ), 1949.0 4 (4.4 14) ( <a href="#">1975Bu01</a> ).
$^{x1951.2@}_3$	$6.7&_{16}$						
$^{x1952.4^a}_2$	$15^a_3$						
$^{x1978.0^{de}}_6$	$3.3_{13}$						
$^{x1983.5^a}_5$	$9^a_2$						
1986.6 4	6.7 13	2097.8	(1) <sup>+</sup>	111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 1987.1 4 (3.8 16) ( <a href="#">1975Bu01</a> ); 1987.0 3 (11 2) ( <a href="#">2004Lo22</a> ).
$^{x1993.0^a}_6$	$5^a_2$						
1995.33 <sup>D</sup> 25	17 3	1995.47	1 <sup>(-)</sup>	0.0	0 <sup>+</sup>	D	other $E_\gamma$ ( $I_\gamma$ ): 1996.0 3 (8.5 14) ( <a href="#">1975Bu01</a> ); 1995.7 2 (17 2) ( <a href="#">2004Lo22</a> ); 1996.5 7 (13 4) ( <a href="#">2007ChZX</a> , Budapest data).
$^{x2000.1^{ab}}_4$	$8^a_2$						other $E_\gamma$ ( $I_\gamma$ ): 2000.6 6 (2.0 12) ( <a href="#">1975Bu01</a> ).
$^{x2002.7}_{14}$	$3.8_{15}$						
$^{x2004.5^a}_3$	$8^a_2$						other $E_\gamma$ ( $I_\gamma$ ): 2004.8 7 (1.2 16) ( <a href="#">1975Bu01</a> ).
$^{x2012.9^a}_3$	$13^a_2$						
2015.32 20	16.6 17	2126.08		111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 2014.9 3 (9.1 14) ( <a href="#">1975Bu01</a> ); 2015.8 2 (20 2) ( <a href="#">2004Lo22</a> ); 2014.2 5 (13 4) ( <a href="#">2007ChZX</a> , Budapest data).
2035.1 <sup>e</sup> 4	17 3	2035.57	1 <sup>+</sup> ,2 <sup>+</sup>	0.0	0 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 2036.0 3 (4.6 14) ( <a href="#">1975Bu01</a> ); 2037.0 6 (5 2) ( <a href="#">2004Lo22</a> ); 2035.89 22 (35 4) ( <a href="#">2007ChZX</a> , Budapest data).

$^{183}\text{W}(n,\gamma)$  E=thermal [2004Lo22](#),[1975Bu01](#),[1974Gr11](#) (continued)

$\gamma(^{184}\text{W})$  (continued)

$E_\gamma$ ‡	$I_\gamma$ #l	$E_i$ (level)	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. †	Comments
$^{x2037.0ab} 6$	$5^a 2$						
$^{x2040.5^a} 6$	$5^a 2$						
$2056.34^n 20$	$14.5^n 22$	2056.31	(1) <sup>-</sup>	0.0	0 <sup>+</sup>	[E1]	other $E_\gamma$ ( $I_\gamma$ ): 2056.6 3 (9.1 14) ( <a href="#">1975Bu01</a> ); 2056.6 2 (16 2) ( <a href="#">2004Lo22</a> ).
$2056.34^n 20$	$14.5^n 22$	2168.17	(1) <sup>+</sup>	111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 2056.6 3 (9.1 14) ( <a href="#">1975Bu01</a> ); 2056.6 2 (16 2) ( <a href="#">2004Lo22</a> ).
$^{x2083.2^a} 8$	$3^a 1$						
$2097.7 4$	$8.3 12$	2097.8	(1) <sup>+</sup>	0.0	0 <sup>+</sup>	[M1]	other $E_\gamma$ ( $I_\gamma$ ): 2097.7 3 (6.7 14) ( <a href="#">1975Bu01</a> ); 2097.5 2 (14 2) ( <a href="#">2004Lo22</a> ).
$2110.0^e 4$	$6.7 17$	2221.90	( $\leq 4$ )	111.216	2 <sup>+</sup>		
$^{x2130.6^a} 3$	$9^a 2$						
$2135.1 3$	$6.1 18$	2246.32	(2) <sup>+</sup>	111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 2134.8 6 (5.0 16) ( <a href="#">1975Bu01</a> ); 2135.2 2 (11 2) ( <a href="#">2004Lo22</a> ); 2136.7 5 (18 4) ( <a href="#">2007ChZX</a> , Budapest data).
$^{x2144.8^a} 3$	$8^a 2$						
$^{x2178.6^a} 3$	$8^a 1$						
$2183.62 15$	$15.4 23$	2294.54	(2) <sup>+</sup>	111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 2183.6 3 (7.7 16) ( <a href="#">1975Bu01</a> ); 2183.6 1 (18 5) ( <a href="#">2004Lo22</a> ); 2182.66 23 (31 4) ( <a href="#">2007ChZX</a> , Budapest data).
$^{x2188.3^a} 3$	$9^a 1$						
$^{x2201.0ab} 3$	$8^a 1$						
$^{x2217.3^a} 4$	$16^a 2$						
$^{x2243.5^a} 3$	$8^a 1$						
$^{x2249.5^a} 6$	$6^a 1$						
$2258.6^e 4$	$8.5 21$	2370.2	(1) <sup>+</sup>	111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 2258.1 5 (9 2) ( <a href="#">2004Lo22</a> ).
$^{x2267.6^e} 5$	$7.9 20$						
$^{x2272.1^a} 4$	$7^a 2$						
$^{x2278.6ab} 4$	$9^a 1$						
$2284.2 4$	$18 3$	2395.53	(1) <sup>+</sup>	111.216	2 <sup>+</sup>		other $E_\gamma$ ( $I_\gamma$ ): 2284.6 2 (8.5 12) ( <a href="#">1975Bu01</a> ); 2284.2 2 (22 2) ( <a href="#">2004Lo22</a> ); 2284.38 23 (26 4) ( <a href="#">2007ChZX</a> , Budapest data).
$^{x2289^a} 1$	$6^a 2$						
$^{x2292.3ab} 4$	$7^a 2$						
$^{x2298.8^a} 7$	$7^a 1$						
$^{x2303.6^a} 7$	$8^a 2$						
$^{x2307.5^a} 7$	$6^a 2$						
$^{x2313.9^a} 4$	$6^a 1$						
$^{x2320.5^a} 5$	$8^a 2$						
$^{x2323.4ab} 6$	$7^a 1$						
$^{x2328.2^b} 4$	$14.9 22$						other $E_\gamma$ ( $I_\gamma$ ): 2328.8 2 (11 1) ( <a href="#">2004Lo22</a> ).
$^{x2335.0^a} 7$	$5^a 1$						
$^{x2347.0ab} 4$	$7^a 1$						
$^{x2358.6^a} 6$	$5^a 2$						
$^{x2361.1^a} 4$	$9^a 2$						
$^{x2368.2^a} 8$	$4^a 1$						

<sup>183</sup>W(n,γ) E=thermal [2004Lo22](#),[1975Bu01](#),[1974Gr11](#) (continued)

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Comments</u>
2370.4 4	7.9 12	2370.2	(1) <sup>+</sup>	0.0	0 <sup>+</sup>	other E <sub>γ</sub> (I <sub>γ</sub> ): 2370.9 4 (4.6 14) ( <a href="#">1975Bu01</a> ); 2369.4 3 (25 4) ( <a href="#">2007ChZX</a> , Budapest data).
<sup>x</sup> 2373.0 <sup>a</sup> 7	7 <sup>a</sup> 2					
<sup>x</sup> 2377.3 <sup>a</sup> 6	6 <sup>a</sup> 2					
2389.7 6	5.7 17	2389.2	(1) <sup>+</sup>	0.0	0 <sup>+</sup>	other E <sub>γ</sub> (I <sub>γ</sub> ): 2390.6 2 (3.2 12) ( <a href="#">1975Bu01</a> ); 2390.8 3 (8 3) ( <a href="#">2004Lo22</a> ).
2395.9 <sup>@</sup> 5	3.2 <sup>&amp;</sup> 12	2395.53	(1) <sup>+</sup>	0.0	0 <sup>+</sup>	other E <sub>γ</sub> (I <sub>γ</sub> ): 2396.1 9 (11 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 2399.5 <sup>ab</sup> 6	4 <sup>a</sup> 2					
<sup>x</sup> 2404.5 <sup>a</sup> 6	6 <sup>a</sup> 2					
<sup>x</sup> 2417.6 <sup>a</sup> 5	6 <sup>a</sup> 1					
<sup>x</sup> 2445.1 <sup>ab</sup> 5	3 <sup>a</sup> 1					
<sup>x</sup> 2450.2 <sup>ab</sup> 5	6 <sup>a</sup> 2					
<sup>x</sup> 2458.4 <sup>b</sup> 4	9.3 14					other E <sub>γ</sub> (I <sub>γ</sub> ): 2457.2 3 (6 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 2461.6 <sup>ab</sup> 3	11 <sup>a</sup> 2					other E <sub>γ</sub> (I <sub>γ</sub> ): 2461.2 5 (1.6 14) ( <a href="#">1975Bu01</a> ).
<sup>x</sup> 2463.8 <sup>a</sup> 7	7 <sup>a</sup> 2					
<sup>x</sup> 2470.5 <sup>a</sup> 6	8 <sup>a</sup> 1					
<sup>x</sup> 2477.0 <sup>ab</sup> 6	5 <sup>a</sup> 2					
<sup>x</sup> 2487.8 <sup>a</sup> 6	9 <sup>a</sup> 1					
<sup>x</sup> 2500.4 <sup>ab</sup> 5	7 <sup>a</sup> 2					
<sup>x</sup> 2521.9 <sup>ab</sup> 3	11 <sup>a</sup> 1					
<sup>x</sup> 2538.2 <sup>a</sup> 3	5 <sup>a</sup> 2					
<sup>x</sup> 2544.4 <sup>ab</sup> 10	11 <sup>a</sup> 2					
<sup>x</sup> 2591.0 <sup>ab</sup> 5	6 <sup>a</sup> 2					
<sup>x</sup> 2630.9 <sup>ab</sup> 4	8 <sup>a</sup> 1					
<sup>x</sup> 2650.5 <sup>ab</sup> 4	6 <sup>a</sup> 2					
<sup>x</sup> 2660.6 <sup>a</sup> 4	9 <sup>a</sup> 2					
<sup>x</sup> 2690.7 <sup>b</sup> 4	9.3 23					other E <sub>γ</sub> (I <sub>γ</sub> ): 2692.6 3 (16 2) ( <a href="#">2004Lo22</a> ); 2690.0 5 (3.6 12) <a href="#">1975Bu01</a> .
<sup>x</sup> 2698.1 <sup>a</sup> 6	4 <sup>a</sup> 2					
<sup>x</sup> 2703.9 <sup>b</sup> 4	13.3 27					other E <sub>γ</sub> (I <sub>γ</sub> ): 2704.5 5 (13 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 2720.4 <sup>a</sup> 5	7 <sup>a</sup> 1					
<sup>x</sup> 2733.1 7	7.1 14					other E <sub>γ</sub> (I <sub>γ</sub> ): 2732.5 5 (8 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 2743.0 <sup>a</sup> 4	8 <sup>a</sup> 1					
<sup>x</sup> 2748.7 <sup>a</sup> 6	7 <sup>a</sup> 2					
<sup>x</sup> 2757.8 <sup>a</sup> 5	8 <sup>a</sup> 2					
<sup>x</sup> 2763.5 <sup>ab</sup> 3	12 <sup>a</sup> 1					
<sup>x</sup> 2774.6 <sup>a</sup> 3	9 <sup>a</sup> 2					
<sup>x</sup> 2780.0 <sup>ab</sup> 4	8 <sup>a</sup> 1					
<sup>x</sup> 2793.1 <sup>a</sup> 4	7 <sup>a</sup> 2					
<sup>x</sup> 2799.4 <sup>ab</sup> 7	7 <sup>a</sup> 3					

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#l</sup></u>	<u>E<sub>i</sub>(level)</u>
x2838.4 <sup>ab</sup> 6	8 <sup>a</sup> 2	
x2843.2 <sup>a</sup> 4	10 <sup>a</sup> 2	
x2846.7 <sup>a</sup> 7	8 <sup>a</sup> 2	
x2877.5 <sup>a</sup> 9	5 <sup>a</sup> 2	
x2887.3 <sup>ab</sup> 10	5 <sup>a</sup> 2	
x2918.1 <sup>ab</sup> 9	7 <sup>a</sup> 1	
x2925.6 <sup>ab</sup> 4	3 <sup>a</sup> 2	
x2942.2 <sup>ab</sup> 4	6 <sup>a</sup> 2	
x2946.9 <sup>a</sup> 6	5 <sup>a</sup> 2	
x2954.4 <sup>a</sup> 7	9 <sup>a</sup> 2	
x2968.8 <sup>ab</sup> 6	10 <sup>a</sup> 2	
x2995.3 <sup>a</sup> 7	8 <sup>a</sup> 2	
x3002.9 <sup>a</sup> 11	7 <sup>a</sup> 1	
x3007.4 <sup>a</sup> 5	10 <sup>a</sup> 3	
x3012.9 <sup>a</sup> 6	9 <sup>a</sup> 2	
x3018.0 <sup>ab</sup> 4	8 <sup>a</sup> 2	
x3046.7 <sup>a</sup> 9	4 <sup>a</sup> 2	
x3052.9 <sup>ab</sup> 6	10 <sup>a</sup> 2	
x3057.1 <sup>ab</sup> 7	15 <sup>a</sup> 2	
x3072.5 <sup>ab</sup> 5	8 <sup>a</sup> 3	
x3078.3 <sup>a</sup> 7	9 <sup>a</sup> 2	
x3084.3 <sup>a</sup> 4	11 <sup>a</sup> 2	
x3091.2 <sup>ab</sup> 4	8 <sup>a</sup> 1	
x3100.7 <sup>a</sup> 6	11 <sup>a</sup> 2	
x3104.7 <sup>ab</sup> 3	11 <sup>a</sup> 2	
x3130.4 <sup>a</sup> 6	7 <sup>a</sup> 2	
x3134.1 <sup>ab</sup> 7	6 <sup>a</sup> 1	
x3169.4 <sup>a</sup> 9	5 <sup>a</sup> 1	
x3179.6 <sup>ab</sup> 8	6 <sup>a</sup> 2	
x3183.6 <sup>a</sup> 5	10 <sup>a</sup> 2	
x3190.0 <sup>a</sup> 7	8 <sup>a</sup> 3	
x3195.3 <sup>ab</sup> 2	13 <sup>a</sup> 3	
x3212.7 <sup>a</sup> 7	7 <sup>a</sup> 2	
x3220.4 <sup>ab</sup> 4	9 <sup>a</sup> 1	
x3224.7 <sup>a</sup> 4	12 <sup>a</sup> 3	
x3229.3 <sup>ab</sup> 8	9 <sup>a</sup> 3	
x3232.7 <sup>a</sup> 7	8 <sup>a</sup> 2	

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>Comments</u>
x3236.1 <sup>ab</sup> 5	10 <sup>a</sup> 2				
x3242.1 <sup>a</sup> 4	13 <sup>a</sup> 3				
x3244.6 <sup>a</sup> 12	4 <sup>a</sup> 2				
x3288.9 <sup>ab</sup> 8	8 <sup>a</sup> 2				
x3317.9 <sup>ab</sup> 6	7 <sup>a</sup> 2				
x3327.2 <sup>ab</sup> 9	4 <sup>a</sup> 2				
x3338.0 <sup>ab</sup> 4	5 <sup>a</sup> 2				
3349.3 8	4.4 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	4061.6	
x3352.4 <sup>ab</sup> 5	9 <sup>a</sup> 3				
x3370.3 <sup>a</sup> 14	7 <sup>a</sup> 3				
x3374.7 <sup>a</sup> 4	9 <sup>a</sup> 3				
x3402.4 <sup>ab</sup> 5	8 <sup>a</sup> 3				
x3408.1 <sup>a</sup> 5	9 <sup>a</sup> 2				
3439.0 8	2.5 8	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3971.9	
x3442.5 <sup>a</sup> 6	7 <sup>a</sup> 2				
3449.0 7	4.2 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3961.9	
3480.8 15	1.8 7	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3930.2	
x3486.1 <sup>a</sup> 3	6 <sup>a</sup> 2				
3528.2 12	5.6 17	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3882.8	
x3549.5 <sup>a</sup> 10	6 <sup>a</sup> 2				
x3562.5 <sup>ab</sup> 6	7 <sup>a</sup> 1				
x3573.4 <sup>ab</sup> 3	15 <sup>a</sup> 2				
x3586.3 <sup>a</sup> 5	13 <sup>a</sup> 2				
x3591.4 <sup>a</sup> 5	15 <sup>a</sup> 2				
3604.0 7	3.8 11	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3807.0	
x3622.0 <sup>ab</sup> 5	8 <sup>a</sup> 2				
3628.6 10	2.1 6	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3782.3	
x3635.7 <sup>ab</sup> 3	12 <sup>a</sup> 2				
3640.4 8	3.4 10	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3770.6	
x3645.7 <sup>a</sup> 4	5 <sup>a</sup> 2				
3667.0 8	4.4 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3743.9	other E <sub>γ</sub> (I <sub>γ</sub> ): 3668.1 3 (26 7) (2007ChZX, Budapest data); this I <sub>γ</sub> appears excessively large.
x3677.5 <sup>a</sup> 5	9 <sup>a</sup> 1				
3696.0 7	3.5 11	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3714.9	other E <sub>γ</sub> (I <sub>γ</sub> ): 3696.7 4 (9 2) (2004Lo22); 3696.3 3 (15 4) (2007ChZX, Budapest data).
x3703.2 <sup>a</sup> 6	10 <sup>a</sup> 2				
3707.8 9	4.7 9	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3703.2	other E <sub>γ</sub> (I <sub>γ</sub> ): 3707.9 6 (11 3) (2007ChZX, Budapest data).
x3709.8 <sup>a</sup> 4	11 <sup>a</sup> 2				
x3712.0 <sup>a</sup> 6	15 <sup>a</sup> 2				
3724.6 9	3.3 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3686.3	
3759.0 10	3.6 14	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3652.0	other E <sub>γ</sub> (I <sub>γ</sub> ): 3759.9 6 (5 1) (2004Lo22).

<sup>183</sup>W(n,γ) E=thermal [2004Lo22](#),[1975Bu01](#),[1974Gr11](#) (continued)

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>Comments</u>
3776.5 7	4.4 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3634.5	other E <sub>γ</sub> (I <sub>γ</sub> ): 3776.1 3 (13 3) ( <a href="#">2004Lo22</a> ).
3793.3 8	2.4 10	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3617.6	other E <sub>γ</sub> (I <sub>γ</sub> ): 3793.8 3 (12 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 3797.3 <sup>a</sup> 7	6 <sup>a</sup> 2				
<sup>x</sup> 3816.3 <sup>a</sup> 6	7 <sup>a</sup> 1				
<sup>x</sup> 3829.7 <sup>a</sup> 9	6 <sup>a</sup> 1				
<sup>x</sup> 3834.3 <sup>a</sup> 6	7 <sup>a</sup> 2				
3839.2 9	3.4 10	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3571.9	
3864.3 6	3.7 7	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3546.9	other E <sub>γ</sub> (I <sub>γ</sub> ): 3865.7 5 (15 4) ( <a href="#">2007ChZX</a> , Budapest data); this I <sub>γ</sub> appears excessively large.
<sup>x</sup> 3874.8 <sup>a</sup> 4	14 <sup>a</sup> 4				
<sup>x</sup> 3878.0 <sup>a</sup> 4	13 <sup>a</sup> 1				
<sup>x</sup> 3891.4 <sup>a</sup> 4	12 <sup>a</sup> 2				
3910.1 7	3.2 6	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3501.0	
3924.0 16	1.7 7	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3487.1	other E <sub>γ</sub> (I <sub>γ</sub> ): 3925.0 3 (10 3) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 3949.2 <sup>a</sup> 8	13 <sup>a</sup> 5				
<sup>x</sup> 3954.6 <sup>a</sup> 2	9 <sup>a</sup> 2				
3956.8 8	3.7 11	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3454.3	other E <sub>γ</sub> (I <sub>γ</sub> ): 3957.1 6 (15 2) ( <a href="#">2004Lo22</a> ).
3962.9 7	3.9 12	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3448.2	
<sup>x</sup> 3977.5 <sup>a</sup> 8	7 <sup>a</sup> 2				
3982.6 <sup>dp</sup> 9	2.2 9	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3428.5?	other E <sub>γ</sub> (I <sub>γ</sub> ): 3984.8 4 (11 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 3984.8 <sup>a</sup> 4	11 <sup>a</sup> 2				
<sup>x</sup> 4012.5 <sup>a</sup> 4	11 <sup>a</sup> 2				
4025.0 7	4.4 9	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3386.1	
4033.6 15	2.5 10	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3377.5	
4039.6 20	1.9 8	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3371.5	
<sup>x</sup> 4042.8 <sup>a</sup> 11	6 <sup>a</sup> 2				
4046.4 20	1.2 5	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3364.7	
<sup>x</sup> 4050.6 <sup>a</sup> 10	7 <sup>a</sup> 2				
4059.5 11	2.0 6	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3351.6	
<sup>x</sup> 4062.0 <sup>a</sup> 10	10 <sup>a</sup> 2				
4082.2 7	2.5 10	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3328.9	other E <sub>γ</sub> (I <sub>γ</sub> ): 4082.51 25 (35 4) ( <a href="#">2007ChZX</a> , Budapest data); large I <sub>γ</sub> May indicate presence of an impurity.
4094.5 <sup>dp</sup> 9	1.1 6	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3316.6	
<sup>x</sup> 4100.6 <sup>a</sup> 5	9 <sup>a</sup> 3				
4103.2 8	2.3 7	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3307.9	
<sup>x</sup> 4107.9 <sup>a</sup> 6	16 <sup>a</sup> 4				
4120.6 6	6.1 9	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3290.5	
<sup>x</sup> 4129.5 <sup>a</sup> 7	12 <sup>a</sup> 3				
<sup>x</sup> 4136.2 <sup>a</sup> 8	11 <sup>a</sup> 4				
4146.5 6	5.7 9	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3264.6	
4160.0 6	7.8 12	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3251.1	
4166.5 8	3.2 10	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3244.6	
4184.0 8	3.7 11	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	3227.1	

$\gamma(^{184}\text{W})$  (continued)

$E_\gamma$ ‡	$I_\gamma$ #†	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
4190.5 9	3.0 9	(7411.18)	$0^-,1^-$	3220.6		other $E_\gamma$ ( $I_\gamma$ ): 4192.6 7 (8 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 4203.5 <sup>a</sup> 8	8 <sup>a</sup> 3					
4210.8 7	3.2 13	(7411.18)	$0^-,1^-$	3200.3		other $E_\gamma$ ( $I_\gamma$ ): 4210.8 6 (7 1) ( <a href="#">2004Lo22</a> ).
4218.3 <sup>dp</sup> 8	2.4 10	(7411.18)	$0^-,1^-$	3192.8?		
4226.7 5	10.6 11	(7411.18)	$0^-,1^-$	3184.4		other $E_\gamma$ ( $I_\gamma$ ): 4227.5 5 (18 2) ( <a href="#">2004Lo22</a> ); 4226.2 3 (10 3) ( <a href="#">2007ChZX</a> , Budapest data).
4242.8 9	6.0 9	(7411.18)	$0^-,1^-$	3168.3		
4275.4 6	6.0 9	(7411.18)	$0^-,1^-$	3135.7		
<sup>x</sup> 4289.3 <sup>a</sup> 4	9 <sup>a</sup> 1					
4299.0 8	4.2 13	(7411.18)	$0^-,1^-$	3112.1		other $E_\gamma$ ( $I_\gamma$ ): 4298.9 3 (16 3) ( <a href="#">2004Lo22</a> ).
4306.6 6	13.5 14	(7411.18)	$0^-,1^-$	3104.5		other $E_\gamma$ ( $I_\gamma$ ): 4307.2 3 (13 2) ( <a href="#">2004Lo22</a> ) for triplet.
4342.2 6	4.3 9	(7411.18)	$0^-,1^-$	3068.9		other $E_\gamma$ ( $I_\gamma$ ): 4340.5 5 (11 3) ( <a href="#">2004Lo22</a> ).
4375.6 9	5.9 18	(7411.18)	$0^-,1^-$	3035.5	(1 <sup>+</sup> )	
<sup>x</sup> 4378.2 <sup>a</sup> 9	10 <sup>a</sup> 2					
4384.6 <sup>dp</sup> 7	10 3	(7411.18)	$0^-,1^-$	3026.5?		$E_\gamma=4389.8$ 8, $I_\gamma=19$ 4 In <a href="#">2004Lo22</a> suggests $\gamma$ is a multiplet.
4393.6 9	6.1 18	(7411.18)	$0^-,1^-$	3017.5		see comment on 4385 $\gamma$ .
4407.0 11	1.8 5	(7411.18)	$0^-,1^-$	3004.1		other $E_\gamma$ ( $I_\gamma$ ): 4407.7 3 (9 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 4407.7 <sup>a</sup> 3	9 <sup>a</sup> 2					
<sup>x</sup> 4414.3 <sup>a</sup> 7	9 <sup>a</sup> 3					
4428.7 <sup>dp</sup> 12	1.3 4	(7411.18)	$0^-,1^-$	2982.4?		
4442.9 6	6.7 7	(7411.18)	$0^-,1^-$	2968.2	(1 <sup>+</sup> )	other $E_\gamma$ ( $I_\gamma$ ): 4442.7 2 (10 1) ( <a href="#">2004Lo22</a> ).
4460.3 6	4.7 7	(7411.18)	$0^-,1^-$	2950.8	1	
4491.8 8	3.7 7	(7411.18)	$0^-,1^-$	2919.3		
4509.1 8	2.7 5	(7411.18)	$0^-,1^-$	2902.0		
<sup>x</sup> 4518.9 <sup>a</sup> 4	8 <sup>a</sup> 2					
4539.6 13	1.9 6	(7411.18)	$0^-,1^-$	2871.5	(0 <sup>+</sup> )	other $E_\gamma$ ( $I_\gamma$ ): 4539.8 5 (7 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 4539.8 <sup>a</sup> 5	7 <sup>a</sup> 2					
<sup>x</sup> 4545.4 <sup>a</sup> 5	6 <sup>a</sup> 1					
4555.5 <sup>dp</sup> 10	1.6 5	(7411.18)	$0^-,1^-$	2855.6?		
4561.9 <sup>dp</sup> 8	2.7 8	(7411.18)	$0^-,1^-$	2849.2?		other $E_\gamma$ ( $I_\gamma$ ): 4562.1 3 (39 7) ( <a href="#">2007ChZX</a> , Budapest data). This $I_\gamma$ suggests presence of an impurity.
<sup>x</sup> 4572.1 <sup>a</sup> 6	8 <sup>a</sup> 1					
4596.7 5	9.3 9	(7411.18)	$0^-,1^-$	2814.4		other $E_\gamma$ ( $I_\gamma$ ): 4596.7 3 (13 4) ( <a href="#">2004Lo22</a> ) for doublet.
4609.1 6	10.3 15	(7411.18)	$0^-,1^-$	2802.0		
4613.3 13	2.1 8	(7411.18)	$0^-,1^-$	2797.8		other $E_\gamma$ ( $I_\gamma$ ): 4613.3 3 (14 2) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 4634.1 <sup>a</sup> 9	14 <sup>a</sup> 2					
4647.1 6	14.1 21	(7411.18)	$0^-,1^-$	2764.0		other $E_\gamma$ ( $I_\gamma$ ): 4646.8 3 (16 5) ( <a href="#">2004Lo22</a> ).
4653.0 9	4.3 13	(7411.18)	$0^-,1^-$	2758.1		
<sup>x</sup> 4661.3 <sup>a</sup> 4	8 <sup>a</sup> 2					
<sup>x</sup> 4677.4 <sup>a</sup> 7	10 <sup>a</sup> 2					
4680.8 7	5.4 11	(7411.18)	$0^-,1^-$	2730.3		
4690.7 <sup>d</sup> 12	3.3 13	(7411.18)	$0^-,1^-$	2720.4?		other $E_\gamma$ ( $I_\gamma$ ): 4693.1 3 (5 3) ( <a href="#">2004Lo22</a> ).
<sup>x</sup> 4693.1 <sup>a</sup> 3	5 <sup>a</sup> 3					



γ(<sup>184</sup>W) (continued)

E <sub>γ</sub> <sup>‡</sup>	I <sub>γ</sub> <sup>#</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Comments
4703.7 6	5.2 5	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2707.4		other E <sub>γ</sub> (I <sub>γ</sub> ): 4704.7 6 (9 1) (2004Lo22).
<sup>x</sup> 4754.2 <sup>a</sup> 4	9 <sup>a</sup> 3					
4761.4 6	2.5 4	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2649.7		
4781.2 6	3.0 5	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2629.9		
4791.8 21	1.7 7	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2619.3		other E <sub>γ</sub> (I <sub>γ</sub> ): 4790.8 5 (10 2) (2004Lo22).
4797.5 7	6.4 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2613.6		
4820.1 <sup>dp</sup> 12	0.7 3	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2591.0?		
4837.7 11	1.0 3	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2573.4		
4855.9 10	1.6 5	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2555.2		
<sup>x</sup> 4864.2 <sup>a</sup> 6	6 <sup>a</sup> 1					
<sup>x</sup> 4867.9 <sup>a</sup> 7	12 <sup>a</sup> 3					
<sup>x</sup> 4885.7 <sup>a</sup> 5	8 <sup>a</sup> 1					
4892.1 7	4.5 7	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2519.0		
4901.7 <sup>dp</sup> 10	2.5 8	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2509.4?		
<sup>x</sup> 4906.0 <sup>a</sup> 7	11 <sup>a</sup> 2					
4924.4 <sup>dp</sup> 12	1.8 5	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2486.7?		
4952.4 7	6.2 9	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2458.7	1	other E <sub>γ</sub> (I <sub>γ</sub> ): 4952.5 7 (12 3) (2007ChZX, Budapest data).
4971.4 6	3.9 6	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2439.7		
4981.5 11	0.6 3	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2429.6		
5007.7 <sup>@</sup> 3	5.2 8	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2403.7	0 <sup>+</sup>	other E <sub>γ</sub> : 5007.4 6 (1974Gr11). other I <sub>γ</sub> : 7.3 15 (1975Bu01).
5016.1 <sup>@</sup> 3	25.9 18	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2395.53	(1) <sup>+</sup>	other E <sub>γ</sub> : 5015.9 5 (1974Gr11), 5016.1 8 (2007ChZX, Budapest data), 5015.9 3 (2004Lo22). other I <sub>γ</sub> : 33.4 15 (1975Bu01), 24 6 (2007ChZX, Budapest data), 27 2 (2004Lo22).
5021.9 <sup>@</sup> 3	7.2 <sup>&amp;</sup> 3	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2389.2	(1) <sup>+</sup>	other E <sub>γ</sub> (I <sub>γ</sub> ): 5020.6 10 (11 1) for doublet (2004Lo22).
<sup>x</sup> 5040.7 <sup>a</sup> 3	13 <sup>a</sup> 1					
5041.2 <sup>@</sup> 3	3.9 6	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2370.2	(1) <sup>+</sup>	
5059.1 <sup>@</sup> 3	1.0 <sup>&amp;</sup> 1	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2352.0	(1) <sup>-</sup>	E <sub>γ</sub> : 1974Gr11 report 5061.6 13, I(γ)=0.7 3.
5090.7 <sup>@</sup> 3	1.2 <sup>&amp;</sup> 1	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2320.4	(0 <sup>-</sup> ,2 <sup>-</sup> )	other E <sub>γ</sub> (I <sub>γ</sub> ): 5090.0 4 (19 3) (2007ChZX, Budapest data); I <sub>γ</sub> suggests presence of an impurity. absent in 1974Gr11 and 2004Lo22.
5116.9 <sup>@</sup> 3	18.4 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2294.54	(2) <sup>+</sup>	other E <sub>γ</sub> : 5116.4 5 (1974Gr11), 5116.3 7 (2007ChZX, Budapest data). other I <sub>γ</sub> : 16.1 6 (1975Bu01), 11 3 (2007ChZX, Budapest data).
5164.8 <sup>@</sup> 3	<7.6 <sup>&amp;</sup>	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2246.32	(2) <sup>+</sup>	I <sub>γ</sub> : I(γ)=7.3 3, due partly to <sup>182</sup> W(n,γ). 1974Gr11 assign all the intensity of the 5164.8γ to this impurity reaction. γ not observed by 2004Lo22.
5182.8 9	1.20 24	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2228.29?	(2 <sup>-</sup> ,3,4 <sup>-</sup> )	E <sub>γ</sub> : not seen by 1975Bu01, 2004Lo22 or 2007ChZX or in (n,γ) with E>thermal.
<sup>x</sup> 5186.7 <sup>a</sup> 9	7 <sup>a</sup> 2					
5189.2 <sup>@</sup> 4	2.0 <sup>&amp;</sup> 2	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2221.90	(≤4)	
5243.3 <sup>@</sup> 3	9.6 10	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2168.17	(1) <sup>+</sup>	other E <sub>γ</sub> : 5242.9 5 (1974Gr11), 5243.3 8 (2007ChZX, Budapest data), 5242.7 7 (2004Lo22). other I <sub>γ</sub> : 10.2 5 (1975Bu01), 8 4 (2007ChZX, Budapest data), 13 2 (2004Lo22).
5285.0 <sup>@</sup> 3	18.2 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2126.08		other E <sub>γ</sub> : 5284.6 5 (1974Gr11), 5284.3 5 (2007ChZX, Budapest data), 5285.6 2 (2004Lo22). other I <sub>γ</sub> : 11.7 4 (1975Bu01), 18 4 (2007ChZX, Budapest data), 32 6 (2004Lo22).

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Comments</u>
5297.6 7	1.8 4	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2112.50		E <sub>γ</sub> : not reported by 1975Bu01. other E <sub>γ</sub> (I <sub>γ</sub> ): 5298.3 8 (9 3) (2007ChZX, Budapest data), 5297.3 7 (13 3) (2004Lo22).
5307.3 @ 4	1.6 & 2	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2104.21	(2) <sup>+</sup>	
5313.8 @ 3	3.6 5	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2097.8	(1) <sup>+</sup>	other E <sub>γ</sub> : 5312.8 6 (1974Gr11).
5321.2 @ 3	4.7 & 3	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2089.9	(1) <sup>-</sup>	I <sub>γ</sub> : perturbed by strong <sup>14</sup> N impurity line (1975Bu01).
5348.7 @ 3	4.4 & 5	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2060.90		
5355.1 @ 3	0.73 & 12	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2056.31	(1) <sup>-</sup>	
5375.9 @ 3	4.2 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2035.57	1 <sup>+</sup> ,2 <sup>+</sup>	
5380.6 @ 3	2.5 10	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2031.3	0 <sup>+</sup>	
5398.6 @ 3	1.9 4	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	2012.90	(2) <sup>+</sup>	
5415.3 @ 4	0.22 & 7	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1995.47	1 <sup>(-)</sup>	
5533.7 5	8.4 6	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1876.69	(2) <sup>+</sup>	I <sub>γ</sub> : 1975Bu01 report that E <sub>γ</sub> =5533.6 10 arises primarily from <sup>182</sup> W(n,γ), but they cannot rule out a contribution from <sup>183</sup> W. Other E <sub>γ</sub> (I <sub>γ</sub> ): 5533.5 3 (17 3) (2007ChZX, Budapest data), 5533.0 5 (20 2) (2004Lo22).
5603.1 @ 3	2.7 4	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1808.54	(2) <sup>+</sup>	other E <sub>γ</sub> : 5602.4 6 (1974Gr11).
5636.3 @ 3	1.6 3	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1775.38	(2) <sup>+</sup>	
5697.7 @ 3	1.75 & 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1713.44	(0) <sup>+</sup>	
5783.7 @ 3	4.1 4	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1627.67	(1) <sup>+</sup>	
5796.9 @ 3	37.4 26	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1613.51	(1) <sup>+</sup>	probably a doublet feeding the 1614 and 1615 levels. other E <sub>γ</sub> : 5796.7 5 (1974Gr11), 5797.0 3 (2007ChZX, Budapest data), 5796.73 13 (2004Lo22). other I <sub>γ</sub> : 15.0 6 (1975Bu01), 22 3 (2007ChZX, Budapest data), 29 4 (2004Lo22).
5980.8 @ 3	6.0 6	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1431.00	2 <sup>+</sup>	other E <sub>γ</sub> : 5979.9 5 (1974Gr11), 5979.5 7 (2004Lo22). other I <sub>γ</sub> : 3.5 2 (1975Bu01), 9 2 (2004Lo22).
6024.2 @ 3	58 3	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1386.22	2 <sup>+</sup>	other E <sub>γ</sub> : 6024.5 5 (1974Gr11), 624.6 33 (2007ChZX, Budapest data), 6024.4 3 3 (2004Lo22). other I <sub>γ</sub> : 23.3 10 (1975Bu01), 47 6 (2007ChZX, Budapest data), 66 3 (2004Lo22).
6089.1 @ 3	1.24 & 8	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1322.13	(0) <sup>+</sup>	
6190.6 d@p 3	42.3 & 14	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1221.297?	3 <sup>-</sup>	I <sub>γ</sub> : from 1975Bu01; may include small contribution from <sup>182</sup> W(n,γ) transition to g.s.. Not reported by 2004Lo22. I <sub>γ</sub> =7125 250 (2007ChZX, attributed by evaluator to <sup>182</sup> W present in natural W target.
6281.5 @ 4	2.6 5	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1130.023	(2) <sup>-</sup>	other E <sub>γ</sub> : 6280.2 8 (1974Gr11). other I <sub>γ</sub> : 2.0 2 (1975Bu01).
6289.6 @ 3	38.1 19	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1121.404	2 <sup>+</sup>	other E <sub>γ</sub> : 6289.5 5 (1974Gr11), 6289.9 3 (2007ChZX, Budapest data), 6290.3 2 (2004Lo22). other I <sub>γ</sub> : 43.4 20 (1975Bu01), 32 3 (2007ChZX, Budapest data), 46 2 (2004Lo22).
6408.5 @ 3	70 4	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	1002.49	0 <sup>+</sup>	other E <sub>γ</sub> : 6408.5 5 (1974Gr11), 6408.86 21 (2007ChZX, Budapest data), 6408.7 1 (2004Lo22). other I <sub>γ</sub> : 73 3 (1975Bu01), 53 4 (2007ChZX, Budapest data), 69 3 (2004Lo22). circular polarization favors J=0 for level fed by this γ (1972St06).
6507.8 @ 3	15.5 8	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	903.281	2 <sup>+</sup>	other E <sub>γ</sub> : 6507.7 5 (1974Gr11), 6507.2 3 (2007ChZX, Budapest data), 6508.6 3 (2004Lo22). other I <sub>γ</sub> : 17.8 9 (1975Bu01), 14.4 18 (2007ChZX, Budapest data), 22 1 (2004Lo22).
7300.7 @ 5	25.0 13	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	111.216	2 <sup>+</sup>	other E <sub>γ</sub> : 7300.0 6 (1974Gr11), 7299.7 3 (2007ChZX, Budapest data), 7300.2 3 (2004Lo22).

γ(<sup>184</sup>W) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>#l</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Comments</u>	
7411.9 <sup>@</sup>	3	100.0	(7411.18)	0 <sup>-</sup> ,1 <sup>-</sup>	0.0	0 <sup>+</sup>	other I <sub>γ</sub> : 30.2 22 (1975Bu01), 26 3 (2007ChZX, Budapest data), 28 1 (2004Lo22). other E <sub>γ</sub> : 7300.7 3 (1975Bu01), 7299.7 3 (2007ChZX). other E <sub>γ</sub> : 7411.2 6 (1974Gr11), 7411.28 12 (2004Lo22, authors' recoil correction removed), 7412.02 24 (2007ChZX, Budapest data). circular polarization confirms J=0 for level fed by this γ (1972St06).

<sup>†</sup> From Adopted Gammas.

<sup>‡</sup> Data are from 1974Gr11 except as noted.

<sup>#</sup> from 1974Gr11 except as noted; corrected for self absorption and attenuation in <sup>6</sup>LiF neutron filter. 1974Gr11 report I<sub>γ</sub> relative to I(792γ)=100 5 for secondary gammas and relative to I(7411γ)=100 for primary gammas, with conversion factors of 0.107 and 0.054, respectively, to obtain gammas/100 N captures. consequently, the evaluator has multiplied the secondary I<sub>γ</sub> data in table 3 of 1974Gr11 by a factor of 1.98 so that primary and secondary photon intensities given here are all on the same scale, namely one for which I(7411γ)=100. Since data from various sources had to be scaled to convert them to the same intensity scale, I<sub>γ</sub> data have not been averaged, but the other data are given in comments; many data show only poor to fair agreement.

<sup>@</sup> From 1975Bu01.

<sup>&</sup> From 1975Bu01. Primary γ I<sub>γ</sub> normalized to I<sub>γ</sub> of 1974Gr11 by requiring sum I(7411γ+7300γ+6508γ+6408γ+6290γ) to be the same for the two sets of data; thus, I<sub>γ</sub> from 1975Bu01 has been multiplied by 0.730 15. secondary γ I<sub>γ</sub> scaled so I(792γ)=198 as adopted here.

<sup>a</sup> From 2004Lo22.

<sup>b</sup> Transition probably observed in (n,γ) E=thermal: γγ coin also; please see that data set for its possible placement.

<sup>c</sup> I<sub>γ</sub>=13.7 10 for the 1503-keV doublet has been divided by the evaluator on the basis of adopted branching.

<sup>d</sup> 1974Gr11 consider transition to be questionable.

<sup>e</sup> There is some possibility that this line is really a double-escape peak (1974Gr11).

<sup>f</sup> A correction of 20-30% was made by authors to account for other W(n,γ) components in the peak (1974Gr11).

<sup>g</sup> A correction of >40% was made by authors to account for other W(n,γ) components in the peak (1974Gr11).

<sup>h</sup> A correction of 10-20% was made by authors to account for other W(n,γ) components in the peak (1974Gr11).

<sup>i</sup> I<sub>γ</sub>(769γ)=16.0 11. Based on I(769γ)/I(1022γ)=1.35 8 from Adopted Gammas, I(769γ from 1133 level)=12.6 15; thus, I(769γ from 1775 level)=3.4 16.

<sup>j</sup> A correction of 30-40% was made by authors to account for other W(n,γ) components in the peak (1974Gr11).

<sup>k</sup> A correction of <10% was made by authors to account for other W(n,γ) components in the peak (1974Gr11).

<sup>l</sup> For intensity per 100 neutron captures, multiply by 0.06 2.

<sup>m</sup> Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

<sup>n</sup> Multiply placed with undivided intensity.

<sup>o</sup> Multiply placed with intensity suitably divided.

<sup>p</sup> Placement of transition in the level scheme is uncertain.

<sup>x</sup> γ ray not placed in level scheme.

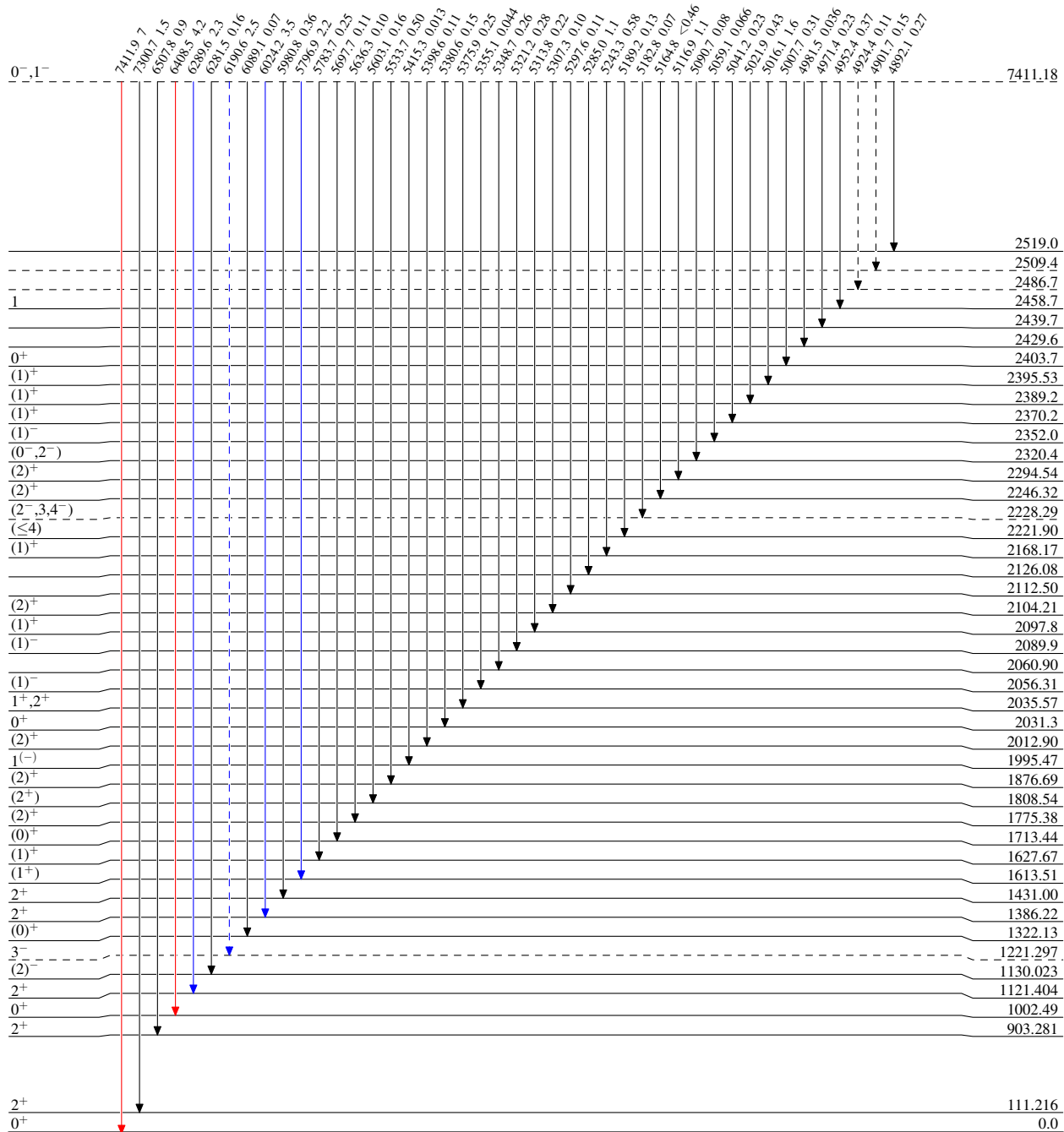
<sup>183</sup>W(n,γ) E=thermal 2004Lo22,1975Bu01,1974Gr11

Legend

Level Scheme

Intensities: I<sub>(γ+ce)</sub> per 100 neutron captures

- I<sub>γ</sub> < 2% × I<sub>γ</sub><sup>max</sup>
- I<sub>γ</sub> < 10% × I<sub>γ</sub><sup>max</sup>
- I<sub>γ</sub> > 10% × I<sub>γ</sub><sup>max</sup>
- - - - - γ Decay (Uncertain)



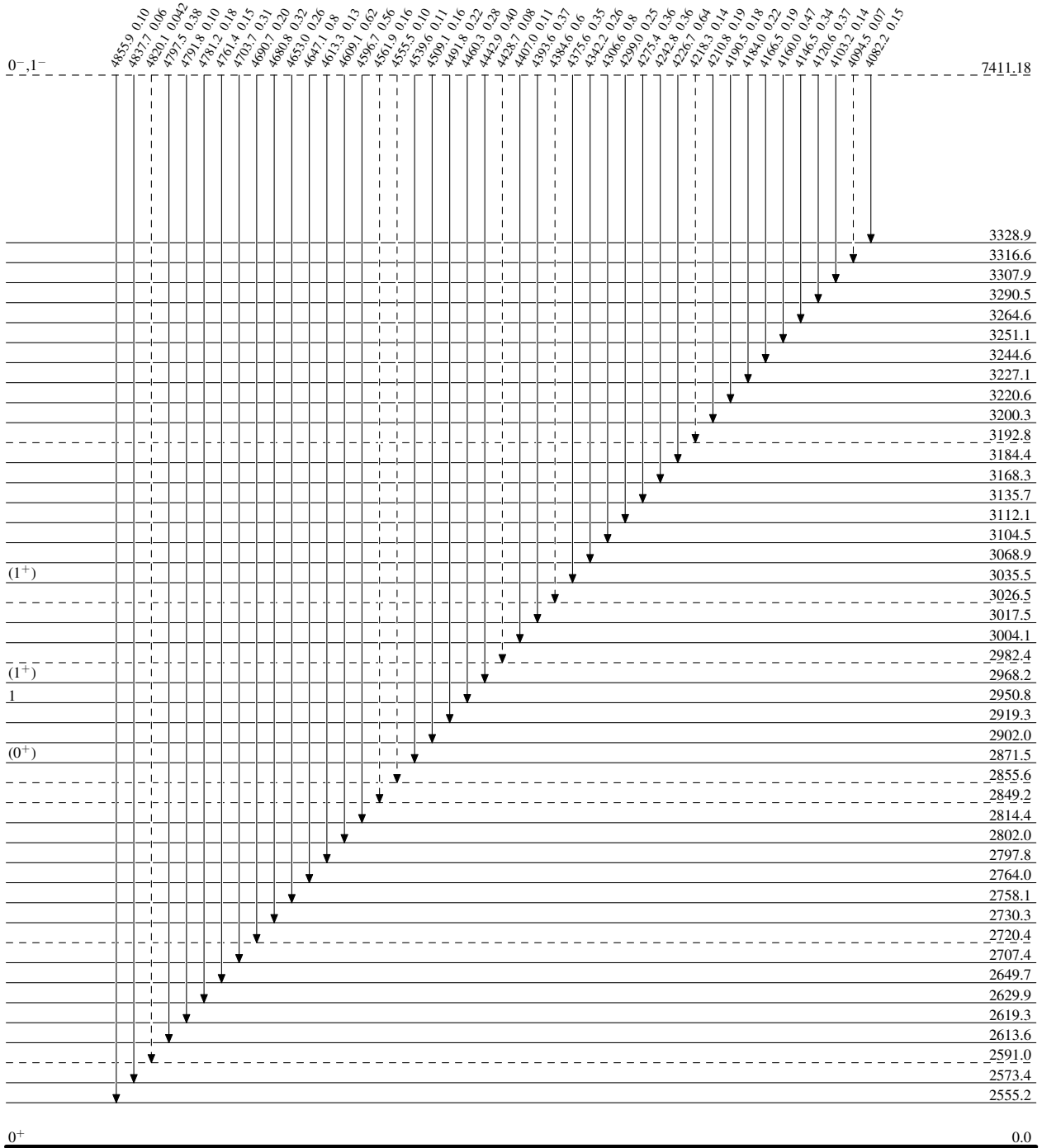
<sup>183</sup>W(n,γ) E=thermal 2004Lo22,1975Bu01,1974Gr11

Legend

Level Scheme (continued)

Intensities: I<sub>(γ+ce)</sub> per 100 neutron captures

- I<sub>γ</sub> < 2% × I<sub>γ</sub><sup>max</sup>
- I<sub>γ</sub> < 10% × I<sub>γ</sub><sup>max</sup>
- I<sub>γ</sub> > 10% × I<sub>γ</sub><sup>max</sup>
- - - - - → γ Decay (Uncertain)



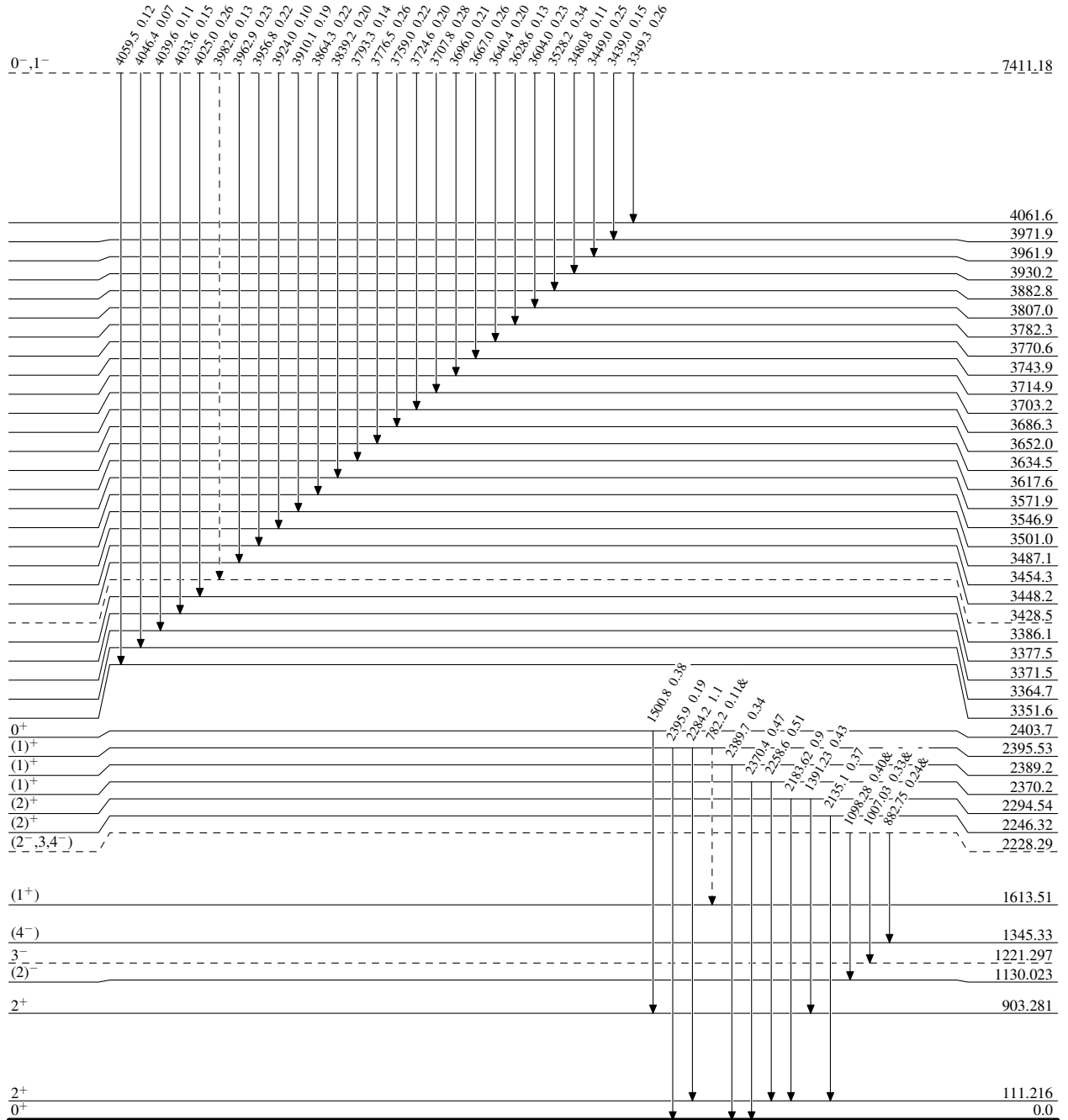
<sup>183</sup>W(n,γ) E=thermal 2004Lo22,1975Bu01,1974Gr11

Level Scheme (continued)

Intensities: I<sub>(γ+ce)</sub> per 100 neutron captures  
& Multiply placed: undivided intensity given

Legend

- I<sub>γ</sub> < 2% × I<sub>γ</sub><sup>max</sup>
- I<sub>γ</sub> < 10% × I<sub>γ</sub><sup>max</sup>
- I<sub>γ</sub> > 10% × I<sub>γ</sub><sup>max</sup>
- - - - - γ Decay (Uncertain)



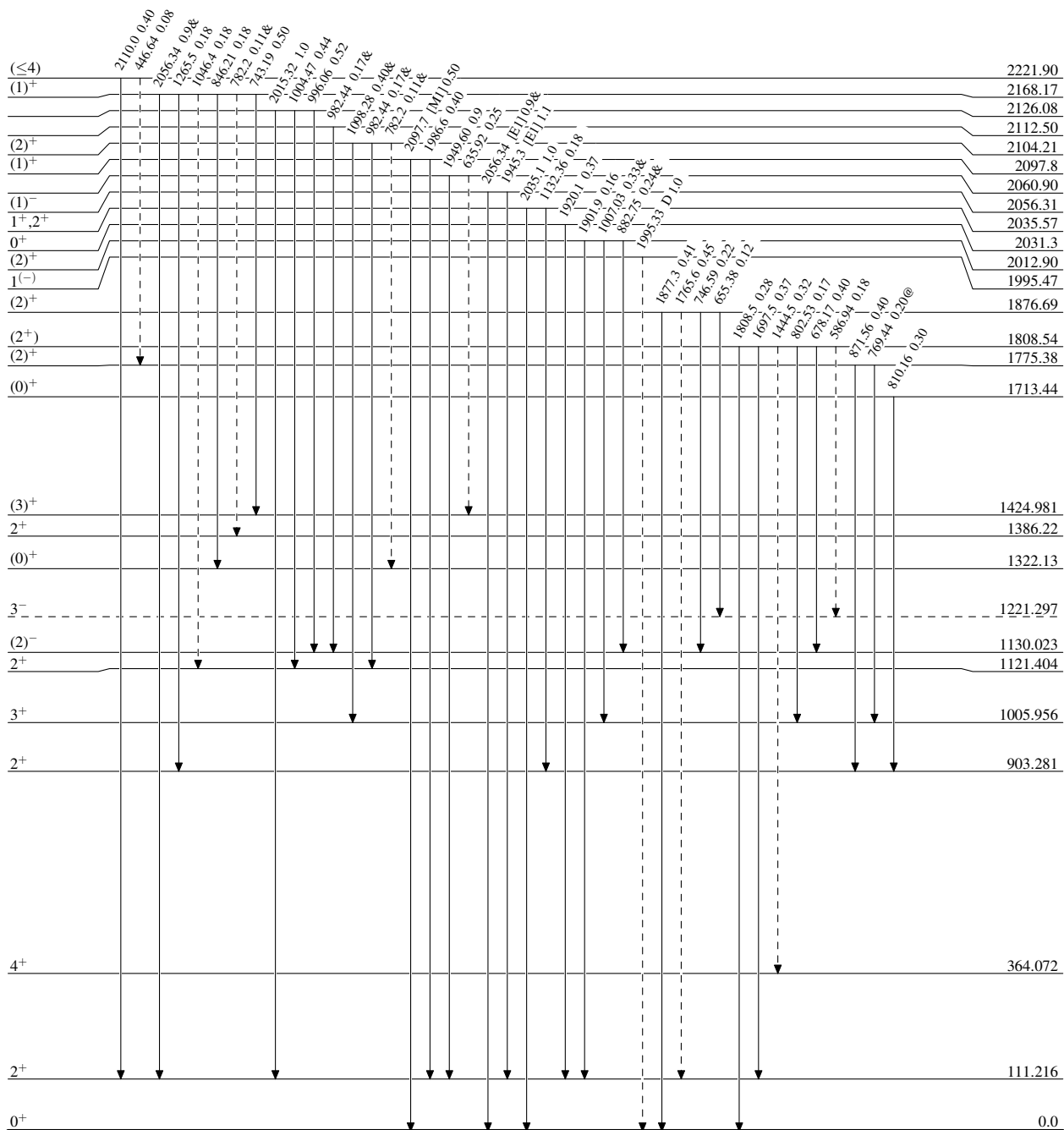
<sup>183</sup>W(n,γ) E=thermal 2004Lo22,1975Bu01,1974Gr11

Level Scheme (continued)

Intensities: I<sub>(γ+ce)</sub> per 100 neutron captures  
 & Multiply placed: undivided intensity given  
 @ Multiply placed: intensity suitably divided

Legend

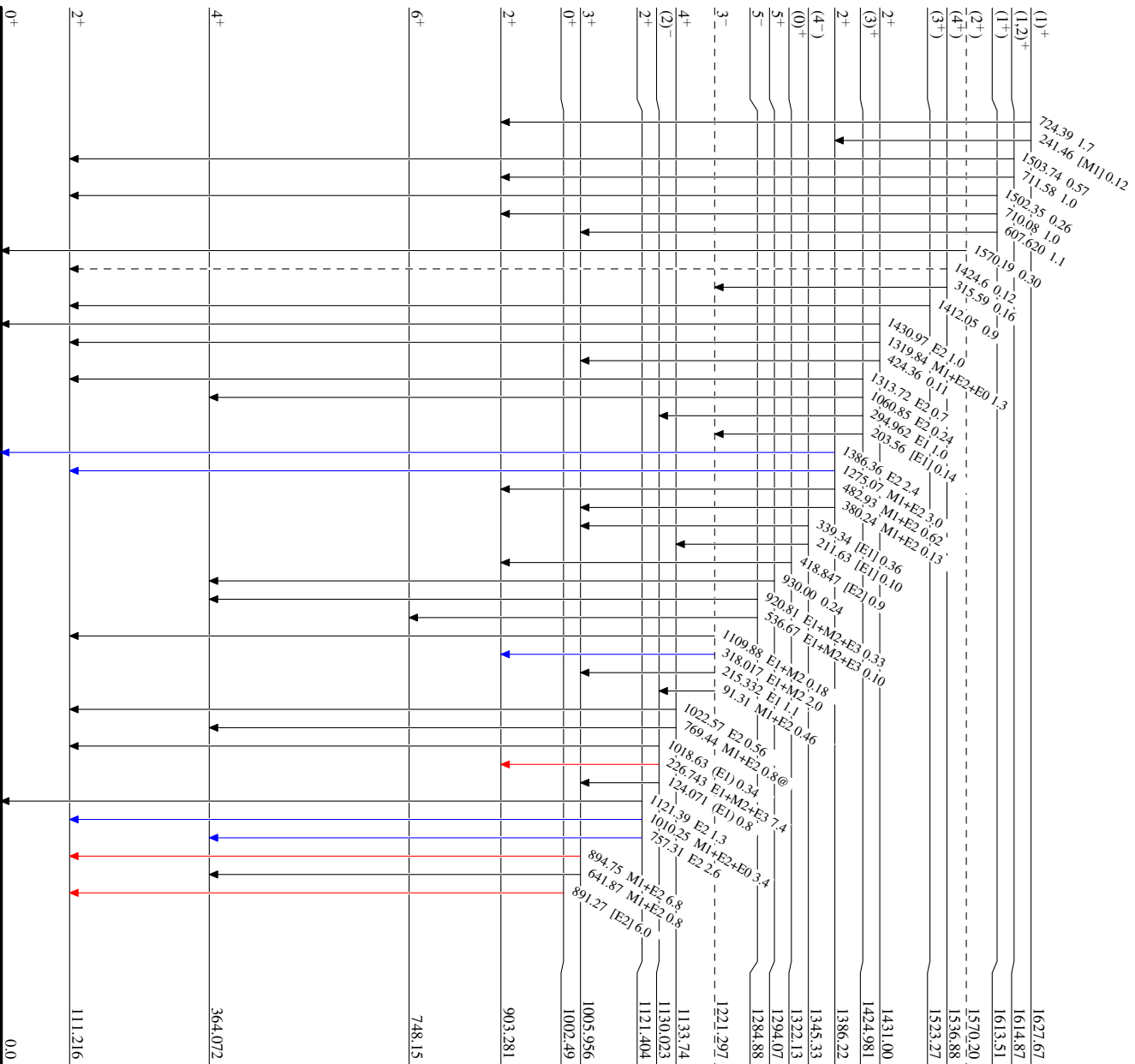
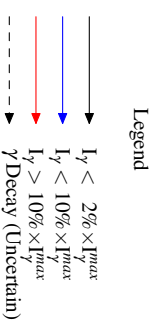
- I<sub>γ</sub> < 2% × I<sub>γ</sub><sup>max</sup>
- I<sub>γ</sub> < 10% × I<sub>γ</sub><sup>max</sup>
- I<sub>γ</sub> > 10% × I<sub>γ</sub><sup>max</sup>
- - - - - γ Decay (Uncertain)



<sup>183</sup>W(n, $\gamma$ ) E=thermal 2004L022,1975Bu01,1974Gr11

Level Scheme (continued)

Intensities:  $I_{\gamma+ec}$  per 100 neutron captures  
& Multiply placed: undivided intensity given  
@ Multiply placed: intensity suitably divided



<sup>184</sup>W  
74 110



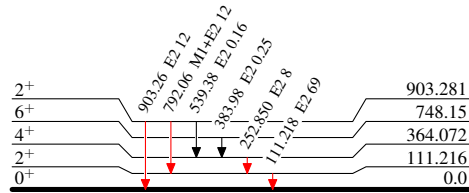
$^{183}\text{W}(n,\gamma) \text{E=thermal}$  2004Lo22,1975Bu01,1974Gr11

## Level Scheme (continued)

Intensities:  $I_{(\gamma+ce)}$  per 100 neutron captures  
 & Multiply placed: undivided intensity given  
 @ Multiply placed: intensity suitably divided

## Legend

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

 $^{184}_{74}\text{W}_{110}$