

$^{199}\text{Hg}(n,\gamma) E=175.1 \text{ eV res}$ [1975Lo03](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 192,1 (2023)	1-Aug-2023

 $J^{\pi}(^{199}\text{Hg})=1/2^{-}$.

Beam: neutrons produced by the NRU reactor; Target: liquid Hg and thin powder HgO samples of natural isotopic abundances;

Detectors: two Ge(Li) shielded from the scattered neutrons by a thick ^6LiF plate.Other: [1974Br02](#). ^{200}Hg Levels

E(level) [†]	J^{π} [‡]	$T_{1/2}$
0.0	0 ⁺	stable
367.6 4	2 ⁺	
946.9 11	4 ⁺	
1029.1 5	0 ⁺	
1253.0 4	2 ⁺	
1570.1 4	1 ⁺	
1572.8 6	2 ⁺	
1592.4 5	2 ⁺	
1628.8 12		
1630.3 8	1 ⁺	
1640.5 7	2 ⁺	
1716.0 10	1 ⁺	
1732 5	2 ⁺	
1775.6 21	3 ⁺	
1857.8 11	0 ⁺	
1965 4		
1972.2 6	(2) ⁺	
2060.1 8	1 ⁺	
2075.7 11	(2) ⁺	
2117.3 11	0 ⁺	
2126.1 6	2 ⁺	
2188.8 6	1 ⁺	
2227.8 12	1 ⁺	
2246.8 10	(1,2) ⁺	
2275.7 11	(2) ⁺	
2290.0 11	2 ⁺	
2295.3 6	1 ⁺	
2369.8 6	1 ⁺	
2411.5 7	(2) ⁺	
2462.5 8	(1 ⁺)	
2490.6 6	(2) ⁺	
2563.0 8	(2) ⁺	
2640.2 6	1 ⁺	
2693.2 21	(1,2) ⁺	
2701.9 6	2 ⁺	
2761.8 12	(1,2) ⁺	
2794.5 12	(1,2) ⁺	
2833.6 21	(1 ⁻)	
2856.0 21	(1,2) ⁺	
2861.5 7	(1,2) ⁺	
2879.2 13	1 ⁺	
2940 3	1 ⁺ , 2 ⁺	
2949.9 7	(2) ⁺	
2979.3 6	1 ⁺	
3029.2 21		

Continued on next page (footnotes at end of table)

$^{199}\text{Hg}(n,\gamma)$ E=175.1 eV res **1975Lo03** (continued) ^{200}Hg Levels (continued)

E(level) [†]	J ^π [‡]	Comments
3043.1 7		
3055.6 21	1 ⁺	
3063.9 11	(2) ⁺	
3076.3 7	1 ⁺	
3106 3	(2) ⁺	
3132.4 14	(2) ⁺	
3181.4 9	(2) ⁺	
3199.9 21		
3220 3	(2) ⁺	
3229.0 9	(1) ⁺	
3259.1 18	(2) ⁺	
3272.2 14	1 ⁺	
3291.8 6	1 ⁺	
3324 6	(2) ⁺	
3339.1 11		
3354.1 21	1 ⁺	
3371.3 13	(2) ⁺	
3387.1 22	(2) ⁺	
3402.7 22	(0) ⁺	
3414.7 9	(2) ⁺	
3443 6		
3460.3 18		
3477 4		
3513.0 18	(2) ⁺	
3537.4 19		
3555.7 17		
3576.6 16		
3588 3	(2) ⁺	
3644.3 8		
3658.6 19	(1) ⁺	
3684.8 14		
3702.6 19	(2) ⁺	
3782 5		
3826.7 13	(2) ⁺	
8029.6 4	1 ⁻	J ^π : From 1975Lo03 (resonance state).

[†] From a least-squares fit to E_γ.

[‡] From Adopted Levels, unless otherwise stated.

 $\gamma(^{200}\text{Hg})$

E _γ [†]	I _γ ^{†#}	E _i (level)	J _i ^π	E _f	J _f ^π	E _γ [†]	I _γ ^{†#}	E _i (level)	J _i ^π	E _f	J _f ^π
368.2 5	82.7 5	367.6	2 ⁺	0.0	0 ⁺	1570.0 4	3.4 4	1570.1	1 ⁺	0.0	0 ⁺
540.7 6	0.3 4	1570.1	1 ⁺	1029.1	0 ⁺	1604.8 5	0.9 4	1972.2	(2) ⁺	367.6	2 ⁺
556.3 12	1.8 7	2126.1	2 ⁺	1570.1	1 ⁺	1692.5 7	0.8 5	2060.1	1 ⁺	367.6	2 ⁺
579.3 10	4.7 5	946.9	4 ⁺	367.6	2 ⁺	^x 1696.3 11	0.6 6				
661.4 5	6.7 5	1029.1	0 ⁺	367.6	2 ⁺	4202.9 12	0.38 21	8029.6	1 ⁻	3826.7	(2) ⁺
885.9 6	6.8 5	1253.0	2 ⁺	367.6	2 ⁺	4247.2 50	1.22 40	8029.6	1 ⁻	3782	
1201.2 12	4.9 5	1570.1	1 ⁺	367.6	2 ⁺	4327.0 18	<0.5	8029.6	1 ⁻	3702.6	(2) ⁺
1205.2 5	4.8 5	1572.8	2 ⁺	367.6	2 ⁺	4344.8 13	0.56 26	8029.6	1 ⁻	3684.8	
1225.2 5	3.4 5	1592.4	2 ⁺	367.6	2 ⁺	4371.0 18	0.63 26	8029.6	1 ⁻	3658.6	(1) ⁺
1253.7 7	1.6 4	1253.0	2 ⁺	0.0	0 ⁺	4385.3 7	0.43 23	8029.6	1 ⁻	3644.3	
1262.7 7	3.1 4	1630.3	1 ⁺	367.6	2 ⁺	4442.0 28	0.73 22	8029.6	1 ⁻	3588	(2) ⁺
1273.3 7	1.6 4	1640.5	2 ⁺	367.6	2 ⁺	4453.0 15	<0.3	8029.6	1 ⁻	3576.6	

Continued on next page (footnotes at end of table)

$^{199}\text{Hg}(n,\gamma) E=175.1 \text{ eV res}$ **1975Lo03 (continued)** $\gamma(^{200}\text{Hg})$ (continued)

E_γ †	I_γ †#	$E_i(\text{level})$	J_i^π	E_f	J_f^π
4473.9 16	<0.3	8029.6	1 ⁻	3555.7	
4492.2 18	0.8 24	8029.6	1 ⁻	3537.4	
4516.6 17	0.61 20	8029.6	1 ⁻	3513.0 (2) ⁺	
4552.2 33	<0.25	8029.6	1 ⁻	3477	
4569.3 17	0.36 18	8029.6	1 ⁻	3460.3	
4587.0 54	<0.3	8029.6	1 ⁻	3443	
4614.9 8	<0.3	8029.6	1 ⁻	3414.7 (2) ⁺	
4626.9 21	<0.3	8029.6	1 ⁻	3402.7 (0) ⁺	
4642.5 21	<0.3	8029.6	1 ⁻	3387.1 (2) ⁺	
4658.3 12	0.7 27	8029.6	1 ⁻	3371.3 (2) ⁺	
4675.5 20	0.77 28	8029.6	1 ⁻	3354.1 1 ⁺	
4690.5 10	0.42 25	8029.6	1 ⁻	3339.1	
4705.4 52	0.48 25	8029.6	1 ⁻	3324 (2) ⁺	
4737.8 5	0.58 20	8029.6	1 ⁻	3291.8 1 ⁺	
4757.4 13	0.9 2	8029.6	1 ⁻	3272.2 1 ⁺	
4770.5 17	<0.3	8029.6	1 ⁻	3259.1 (2) ⁺	
4800.6 8	4.60 25	8029.6	1 ⁻	3229.0 (1) ⁺	
4809.4 25	<0.3	8029.6	1 ⁻	3220 (2) ⁺	
4829.7 20	1.56 30	8029.6	1 ⁻	3199.9	
4848.2 8	2.9 3	8029.6	1 ⁻	3181.4 (2) ⁺	
4897.2 13	<0.3	8029.6	1 ⁻	3132.4 (2) ⁺	
4923.9 27	<0.4	8029.6	1 ⁻	3106 (2) ⁺	
4953.3 6	0.96 24	8029.6	1 ⁻	3076.3 1 ⁺	
4965.7 10	0.64 20	8029.6	1 ⁻	3063.9 (2) ⁺	
4974.0 20	<0.3	8029.6	1 ⁻	3055.6 1 ⁺	
4986.5 6	0.84 30	8029.6	1 ⁻	3043.1	
5000.4 ‡ 20	<0.12 ‡	8029.6	1 ⁻	3029.2	
5050.3 5	0.33 16	8029.6	1 ⁻	2979.3 1 ⁺	
5079.7 6	2.60 23	8029.6	1 ⁻	2949.9 (2) ⁺	
5089.3 30	<0.3	8029.6	1 ⁻	2940 1 ⁺ , 2 ⁺	
5150.4 12	<0.3	8029.6	1 ⁻	2879.2 1 ⁺	
5168.1 6	1.3 2	8029.6	1 ⁻	2861.5 (1,2) ⁺	
5173.6 ‡ 20	0.31 ‡ 6	8029.6	1 ⁻	2856.0 (1,2) ⁺	
5196.0 ‡ 20	<0.12 ‡	8029.6	1 ⁻	2833.6 (1 ⁻)	
5235.1 11	<0.3	8029.6	1 ⁻	2794.5 (1,2) ⁺	
5267.8 11	<0.3	8029.6	1 ⁻	2761.8 (1,2) ⁺	
5327.7 5	1.20 25	8029.6	1 ⁻	2701.9 2 ⁺	
5336.4 ‡ 20	<0.12 ‡	8029.6	1 ⁻	2693.2 (1,2) ⁺	
5389.4 5	1.63 20	8029.6	1 ⁻	2640.2 1 ⁺	
5466.6 7	1.22 30	8029.6	1 ⁻	2563.0 (2) ⁺	
5539.0 5	11.04 44	8029.6	1 ⁻	2490.6 (2) ⁺	
5567.1 7	0.71 27	8029.6	1 ⁻	2462.5 (1 ⁺)	
5618.1 6	3.20 31	8029.6	1 ⁻	2411.5 (2) ⁺	
5659.8 5	1.3 3	8029.6	1 ⁻	2369.8 1 ⁺	
5734.2 5	7.32 25	8029.6	1 ⁻	2295.3 1 ⁺	
5739.5 ‡ 10	3.7 ‡ 2	8029.6	1 ⁻	2290.0 2 ⁺	
5753.8 ‡ 10	0.42 ‡ 9	8029.6	1 ⁻	2275.7 (2) ⁺	
5782.7 9	0.73 23	8029.6	1 ⁻	2246.8 (1,2) ⁺	
5801.7 11	0.48 21	8029.6	1 ⁻	2227.8 1 ⁺	
5840.7 5	2.73 33	8029.6	1 ⁻	2188.8 1 ⁺	
5903.5 5	0.56 20	8029.6	1 ⁻	2126.1 2 ⁺	
5912.2 ‡ 10	1.54 ‡ 15	8029.6	1 ⁻	2117.3 0 ⁺	
5953.8 ‡ 10	1.14 ‡ 11	8029.6	1 ⁻	2075.7 (2) ⁺	

Continued on next page (footnotes at end of table)

$^{199}\text{Hg}(n,\gamma) E=175.1 \text{ eV res}$ **1975Lo03 (continued)** $\gamma(^{200}\text{Hg})$ (continued)

E_γ [†]	I_γ ^{†#}	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ [†]	I_γ ^{†#}	$E_i(\text{level})$	J_i^π	E_f	J_f^π
5969.8 27	1.6 22	8029.6	1 ⁻	2060.1	1 ⁺	6400.7 11	<0.3	8029.6	1 ⁻	1628.8	
6058.6 11	<0.3	8029.6	1 ⁻	1972.2	(2) ⁺	6437.9 7	0.62 10	8029.6	1 ⁻	1592.4	2 ⁺
6064.3 36	<0.3	8029.6	1 ⁻	1965		6458.8 5	3.3 3	8029.6	1 ⁻	1570.1	1 ⁺
6171.7 [‡] 10	1.36 [‡] 14	8029.6	1 ⁻	1857.8	0 ⁺	6777.2 5	<0.2	8029.6	1 ⁻	1253.0	2 ⁺
6253.9 20	1.26 23	8029.6	1 ⁻	1775.6	3 ⁺	7001.7 16	1.60 16	8029.6	1 ⁻	1029.1	0 ⁺
6297.4 45	1.21 2	8029.6	1 ⁻	1732	2 ⁺	7661.3 7	2.2 2	8029.6	1 ⁻	367.6	2 ⁺
6313.5 9	1.83 23	8029.6	1 ⁻	1716.0	1 ⁺	8028.3 6	0.41 10	8029.6	1 ⁻	0.0	0 ⁺
6390.1 12	<0.3	8029.6	1 ⁻	1640.5	2 ⁺						

[†] From 1975Lo03, unless otherwise stated.

[‡] Seen only by 1974Br02. I_γ is normalized to 5734 γ in 1975Lo03.

For intensity per 100 neutron captures, multiply by 1.

^x γ ray not placed in level scheme.

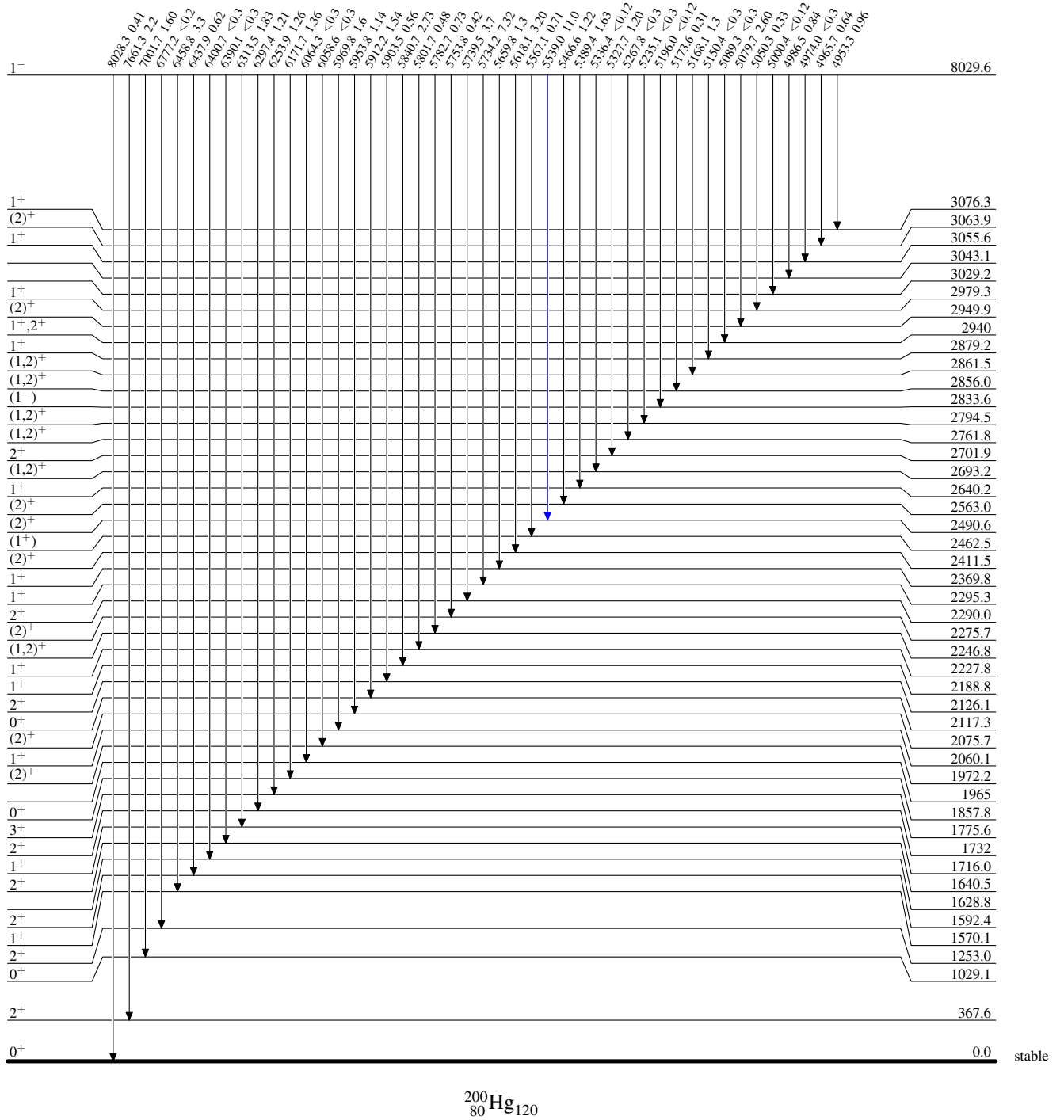
$^{199}\text{Hg}(n,\gamma)$ E=175.1 eV res 1975Lo03

Legend

Level Scheme

Intensities: I_γ per 100 neutron captures

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



$^{200}_{80}\text{Hg}_{120}$

$^{199}\text{Hg}(n,\gamma) E=175.1 \text{ eV res } 1975\text{Lo03}$

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures

Legend

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

