

$^{195}\text{Pt}(\text{n},\gamma) E=11.9\text{ eV}$ **1979Ci04**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong	NDS 108, 1093 (2007)	1-Jan-2006

Others: [1978Ci02](#), [1968Sa13](#).

Natural and 97.28% enriched ^{195}Pt target, $J^\pi(^{195}\text{Pt})=1/2^-$. Monochromator. Measured γ -rays, bent-crystal spectrometers,

NaI(Tl),Ge(Li): FWHM=2.5 keV at 1.33 MeV and ≈ 9 keV at 8 MeV. Measured precise E_γ , I_γ , $\gamma\gamma$ coin. Off-resonance at 10 eV also.

Level structure of ^{196}Pt has been interpreted in terms of the O(6) limit of the interacting-boson approximation of Iachello and Arima.

See [1968Sa13](#) for relative yields of some primary γ 's from 22 selected resonances ($J^\pi=1^-$).

 ^{196}Pt Levels

E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]
0.0	0 ⁺	1984.84 19	1 ⁺ ,2 ⁺	2403.57 19	2 ⁺
355.6841 20	2 ⁺	1988.205 9	1 ⁺ ,2 ⁺	2411?# 3	(0,2) ⁺
688.672 3	2 ⁺	1999.09 20	2 ⁺	2422.49 3	0 ⁺ ,1 ⁺ ,2 ⁺
876.856 5	4 ⁺	2011.2 16	2 ⁺	2443.9 2	2 ⁺
1015.025 4	3 ⁺	2046.97 6	2 ⁺	2460.1 3	0 ⁺ ,1 ⁺ ,2 ⁺
1135.292 4	0 ⁺	2069.29 20	0 ⁺ ,1 ⁺ ,2 ⁺	2470.04 24	1 ⁻ ,2 ⁺
1270.202 6	5 ⁻	2087.316 21	3 ⁻ ,4 ⁺	2488.211 24	1 ⁺ ,2 ⁺
1293.295 6	4 ⁺	2093.6 18	(2 ⁺)	2496?# 3	(0,2) ⁺
1361.566 4	2 ⁺	2124.38 3	3 ⁻ ,4 ⁺	2505.10 5	2 ⁺
1402.718 12	0 ⁺	2127.2 3	2 ⁺	2527.88 24	1 ⁺ ,2 ⁺
1447.032 6	3 ⁻	2162.68 8	2 ⁺	2529.3 3	2 ⁺
1604.467 12	2 ⁺	2174.42 12	0 ⁺ ,2 ⁺	2550?# 3	
1677.216 16	2 ⁺	2183.6 3	1 ⁺ ,2 ⁺	2571# 3	0 ⁺ ,1 ⁺ ,2 ⁺
1754.643 9	3 ⁻ ,4 ⁺	2199.43 5	0 ⁺	2600?# 3	0 ⁺ ,2 ⁺ , (0 ⁻ ,1 ⁻ ,2 ⁻)
1795.08 6	2 ⁺ , (1 ⁻)	2204.54 17	1 ⁺ ,2 ⁺	2667.16 4	1 ⁺ ,2 ⁺
1802.276 10	1 ⁺ ,2 ⁺	2229.6 3	2 ⁺	2730?# 3	1 ⁺
1823.22 8	0 ⁺	2245.8 3	1 ⁺ ,2 ⁺	2751# 3	(0,2) ⁺
1825.710 14	2 ⁺	2262.415 17	2 ⁺	2820# 3	1 ⁺
1847.31 4	2 ⁺	2309.19 3	(2 ⁺)	2980# 3	(0,2) ⁺
1853.53 6	2 ⁺	2324.09 6	1 ⁺ ,2 ⁺	3001?# 3	(0,2) ⁺
1888.125 14	1 ⁺ ,2 ⁺	2345.3 3	1 ⁺ ,2 ⁺	3117?# 3	(0,2) ⁺
1918.51 5	0 ⁺	2365.949 20	2 ⁺	3261# 3	(0,2) ⁺
1932.01 11	0 ⁺ ,1 ⁺ ,2 ⁺	2375.10 19	1 ⁺ ,2 ⁺	3329# 3	(0,2) ⁺
1968.892 14	1 ⁺ , (2 ⁺)	2383.0 4	0 ⁺ ,1 ⁺ ,2 ⁺	7922.2 4	(0 ⁻ ,1 ⁻)

[†] From least-squares fit to E_γ 's.

[‡] From Adopted Levels.

From [1968Sa13](#).

 $\gamma(^{196}\text{Pt})$

E_γ [†]	I_γ [‡]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
176.830 3	2.7 9	1447.032	3 ⁻	1270.202	5 ⁻	
^x 192.903 10	0.8 2					
201.749 20	0.8 1	1604.467	2 ⁺	1402.718	0 ⁺	E_γ : from 1968Sa13 ; I_γ : estimated by evaluators from 1968Sa13 .
^x 208.733 2	≤ 1.7					I_γ : 1.3 4 for (208.7 γ +209.6 γ).
^x 209.642 6	≤ 1.7					I_γ : 1.3 4 for (208.7 γ +209.6 γ).
226.270 3	1.2 6	1361.566	2 ⁺	1135.292	0 ⁺	
293.522 10	2.1 4	2262.415	2 ⁺	1968.892	1 ⁺ , (2 ⁺)	

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$^{195}\text{Pt}(n,\gamma) E=11.9 \text{ eV}$ **1979Ci04 (continued)** $\gamma(^{196}\text{Pt})$ (continued)

E_γ †	I_γ ‡	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
307.616 9	1.7 3	1754.643	$3^-, 4^+$	1447.032	3^-	
326.349 4	96 9	1015.025	3^+	688.672	2^+	
332.983 2	379 36	688.672	2^+	355.6841	2^+	
346.541 3	2.7 10	1361.566	2^+	1015.025	3^+	
355.684 2	1000	355.6841	2^+	0.0	0^+	
378.675 14	2.7 4	1825.710	2^+	1447.032	3^-	
^x 385.161 13	0.36 13					
393.346 7	14 2	1270.202	5^-	876.856	4^+	
416.443 6	≤ 3.7	1293.295	4^+	876.856	4^+	I_γ : 3.2 5 for (416.4 γ +418.1 γ).
^x 418.10 3						I_γ : $I_\gamma=3.2$ 5 for (416.4 γ +418.1 γ); $I_\gamma=1.2$ 3 for (418.1 γ +418.7 γ).
418.73 3	≤ 1.5	2411?	(0,2) ⁺	1988.205	$1^+, 2^+$	I_γ : 1.2 3 for (418.1 γ +418.7 γ).
423.00 3	2.4 5	1825.710	2^+	1402.718	0^+	
431.982 24	2.5 3	1447.032	3^-	1015.025	3^+	
440.709 9	0.9 3	1802.276	$1^+, 2^+$	1361.566	2^+	
446.613 3	9.9 10	1135.292	0^+	688.672	2^+	
470.567 19	0.6 3	2324.09	$1^+, 2^+$	1853.53	2^+	
484.438 11	≤ 2.6	1754.643	$3^-, 4^+$	1270.202	5^-	I_γ : 2.0 6 for (484.4 γ +484.7 γ).
484.707 25	≤ 2.6	1361.566	2^+	876.856	4^+	I_γ : 2.0 6 for (484.4 γ +484.7 γ).
521.175 5	78 10	876.856	4^+	355.6841	2^+	
^x 540.33 3	≤ 4.2					I_γ : 3.9 3 for (540 γ +541 γ).
541.174 7	≤ 4.2	1988.205	$1^+, 2^+$	1447.032	3^-	I_γ : 3.9 3 for (540.3 γ +541.2 γ).
566.174 8	≤ 2.5	1968.892	$1^+, (2^+)$	1402.718	0^+	I_γ : 2.3 2 for (566.2 γ +566.6 γ).
566.55 ^c 4	≤ 2.5	2011.2	2^+	1447.032	3^-	I_γ : 2.3 2 for (566.2 γ +566.6 γ).
570.203 18	1.9 2	1447.032	3^-	876.856	4^+	
^x 587.423 17	≤ 0.96					I_γ : 0.83 13 for (587.4 γ +589.4 γ +590.0 γ).
589.434 20	≤ 0.96	1604.467	2^+	1015.025	3^+	I_γ : 0.83 13 for (587.4 γ +589.4 γ +590.0 γ).
^x 590.00 9	≤ 0.96					I_γ : 0.83 13 for (587.4 γ +589.4 γ +590.0 γ).
604.616 7	10.9 8	1293.295	4^+	688.672	2^+	
626.636 18	1.0 4	1988.205	$1^+, 2^+$	1361.566	2^+	
641.12 ^c 4	0.51 11	2245.8	$1^+, 2^+$	1604.467	2^+	
645.95 ^c 3	0.93 14	2093.6	(2 ⁺)	1447.032	3^-	
^x 656.5 6	0.7 4					
659.389 12	5.0 4	1015.025	3^+	355.6841	2^+	
662.188 16	0.9 2	1677.216	2^+	1015.025	3^+	
^x 663.95 3	1.1 2					
^x 665.988 24	≤ 1.1					I_γ : 0.9 2 for (666 γ +667 γ).
666.99 3	≤ 1.1	1802.276	$1^+, 2^+$	1135.292	0^+	I_γ : 0.9 2 for (666.0 γ +667.0 γ).
672.900 7	23 2	1361.566	2^+	688.672	2^+	
688.667 20	0.15	688.672	2^+	0.0	0^+	E_γ : from 1968Sa13; I_γ : estimated by evaluators from 1968Sa13.
714.041 20	< 0.84	1402.718	0^+	688.672	2^+	E_γ : from 1968Sa13; I_γ : estimated by evaluators from 1968Sa13.
715.3 ^b 4	0.64 ^b 14	2162.68	2^+	1447.032	3^-	place this transition from 2469-keV level also.
715.3 ^b 4	0.64 ^b 14	2470.04	$1^-, 2^+$	1754.643	$3^-, 4^+$	place this transition from 2162-keV level also.
726.0 ^b 7	2.0 ^b 3	2087.316	$3^-, 4^+$	1361.566	2^+	place this transition from 2403-keV level also.
726.0 ^b 7	2.0 ^b 3	2411?	(0,2) ⁺	1677.216	2^+	place this transition from 2087-keV level also.
727.581 23	7.6 6	1604.467	2^+	876.856	4^+	
752.823 14	0.9 2	1888.125	$1^+, 2^+$	1135.292	0^+	
758.358 10	8.2 7	1447.032	3^-	688.672	2^+	
761.482 16	0.8 3	2365.949	2^+	1604.467	2^+	
770.8 4	0.6 4	2375.10	$1^+, 2^+$	1604.467	2^+	
775.1 5	0.5 2	2550?		1754.643	$3^-, 4^+$	
779.630 7	22 2	1135.292	0^+	355.6841	2^+	
817.112 20	3.7 3	2087.316	$3^-, 4^+$	1270.202	5^-	

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$^{195}\text{Pt}(\text{n},\gamma) \text{E}=11.9 \text{ eV}$ **1979Ci04 (continued)** $\gamma(^{196}\text{Pt})$ (continued)

E_γ [†]	I_γ [‡]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
$^x825.0$ 6	1.1 5					
833.58 5	2.3 7	1968.892	1 ⁺ , (2 ⁺)	1135.292	0 ⁺	
849.74 ^c 9	0.7 3	1984.84	1 ⁺ , 2 ⁺	1135.292	0 ⁺	
854.18 3	2.4 3	2124.38	3 ⁻ , 4 ⁺	1270.202	5 ⁻	
864.72 ^c 8	0.9 3	3329	(0,2) ⁺	2460.1	0 ⁺ , 1 ⁺ , 2 ⁺	
877.77 3	3.2 4	1754.643	3 ⁻ , 4 ⁺	876.856	4 ⁺	
$^x885.3$ 6	1.6 5					
915.80 6	8.8 7	1604.467	2 ⁺	688.672	2 ⁺	
918.81 14	1.5 6	2365.949	2 ⁺	1447.032	3 ⁻	
$^x955.37$ 13	1.1 2					
$^x976.34$ 5	2.0 5					
988.54 7	2.3 3	1677.216	2 ⁺	688.672	2 ⁺	
1005.894 20	22 2	1361.566	2 ⁺	355.6841	2 ⁺	
$^x1029.0$ 5	1.2 5					
1031.93 8	2.5 5	2046.97	2 ⁺	1015.025	3 ⁺	
1042.4 6	0.7 3	2411?	(0,2) ⁺	1361.566	2 ⁺	
1047.044 20	35 4	1402.718	0 ⁺	355.6841	2 ⁺	
1048.3 7	8 2	2183.6	1 ⁺ , 2 ⁺	1135.292	0 ⁺	
1062.66 6	0.7 2	3329	(0,2) ⁺	2262.415	2 ⁺	
1069.4 2	2.0 4	2204.54	1 ⁺ , 2 ⁺	1135.292	0 ⁺	
1080.5 [#] 4	0.6 3	2527.88	1 ⁺ , 2 ⁺	1447.032	3 ⁻	
1091.331 17	33 ^a 2	1447.032	3 ⁻	355.6841	2 ⁺	
1106.6 2	2.4 9	1795.08	2 ⁺ , (1 ⁻)	688.672	2 ⁺	
$^x1113.72$ 4	7.1 6					
1134.55 ^c 8	<0.3	1823.22	0 ⁺	688.672	2 ⁺	E_γ : from 1968Sa13; I_γ : estimated by evaluators from 1968Sa13.
$^x1137.01$ 3	3.7 9					
1143.53 5	2.2 5	2505.10	2 ⁺	1361.566	2 ⁺	
1158.82 13	2.6 5	1847.31	2 ⁺	688.672	2 ⁺	
1188.9 2	0.9 6	2324.09	1 ⁺ , 2 ⁺	1135.292	0 ⁺	
1199.50 4	4.8 [@] 14	1888.125	1 ⁺ , 2 ⁺	688.672	2 ⁺	
$^x1204.1$ 2	4. 2					
1210.2 4	1.4 3	2087.316	3 ⁻ , 4 ⁺	876.856	4 ⁺	
$^x1222.6$ 9	0.7 3					
$^x1227.6$ [#] 14	1.8 12					
1229.65 13	3.3 12	1918.51	0 ⁺	688.672	2 ⁺	
$^x1243.94$ 7	3.6 5					
1246.8 6	2.6 8	2262.415	2 ⁺	1015.025	3 ⁺	
1248.84 3	22 9	1604.467	2 ⁺	355.6841	2 ⁺	
1264.6 2	1.5 5	3329	(0,2) ⁺	2069.29	0 ⁺ , 1 ⁺ , 2 ⁺	
$^x1272.6$ 5	1.6 4					
$^x1296.49$ 6	10 2					
1305.59 4	2.5 4	3329	(0,2) ⁺	2011.2	2 ⁺	
$^x1321.74$ 4	10.2 8					
$^x1328.4$ 3	1.7 5					
1353.0 ^{bc} 4	1.8 ^b 7	2229.6	2 ⁺	876.856	4 ⁺	
1353.0 ^{bc} 4	1.8 ^b 7	2496?	(0,2) ⁺	1135.292	0 ⁺	
1358.30 8	12.0 13	2046.97	2 ⁺	688.672	2 ⁺	
$^x1360.4$ 3	7.0 11					
1404.6 ^c 2	4.8 5	2093.6	(2 ⁺)	688.672	2 ⁺	
1439.38 6	12.3 9	1795.08	2 ⁺ , (1 ⁻)	355.6841	2 ⁺	
$^x1446.84$ 12	8.5 6					
1467.53 8	37 3	1823.22	0 ⁺	355.6841	2 ⁺	
1473.97 8	8.6 9	2162.68	2 ⁺	688.672	2 ⁺	

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$^{195}\text{Pt}(n,\gamma) E=11.9 \text{ eV}$ **1979Ci04 (continued)** $\gamma(^{196}\text{Pt})$ (continued)

E_γ †	I_γ ‡	$E_i(\text{level})$	J_i^π	E_f	J_f^π
1485.81 15	19.2 14	2174.42	$0^+, 2^+$	688.672	2^+
1491.60 4	27 2	1847.31	2^+	355.6841	2^+
1497.85 6	15.7 12	1853.53	2^+	355.6841	2^+
1510.75 5	3.4 9	2199.43	0^+	688.672	2^+
1515.5 3	1.9 6	2204.54	$1^+, 2^+$	688.672	2^+
1526.7 2	5.1 @ 8	2411?	$(0,2)^+$	876.856	4^+
^x 1532.30 5	10.8 9				
1562.85 5	28 3	1918.51	0^+	355.6841	2^+
1573.5 3	8 2	2262.415	2^+	688.672	2^+
1576.32 11	7 2	1932.01	$0^+, 1^+, 2^+$	355.6841	2^+
^x 1582.5 2	3.4 5				
1604.3 3	6.4 10	1604.467	2^+	0.0	0^+
1632.4 2	7 2	1988.205	$1^+, 2^+$	355.6841	2^+
1635.2 2	13.9 12	2324.09	$1^+, 2^+$	688.672	2^+
1643.4 2	3.0 14	1999.09	2^+	355.6841	2^+
^x 1646.0 5	6.6 14				
^x 1661.9 5	2.2 5				
^x 1671.7 4	0.9 3				
1677.5 2	13 @ 2	1677.216	2^+	0.0	0^+
1686.6 3	3.5 9	2375.10	$1^+, 2^+$	688.672	2^+
1691.7 ^c 2	6.1 8	2046.97	2^+	355.6841	2^+
1713.6 2	24 @ 2	2069.29	$0^+, 1^+, 2^+$	355.6841	2^+
1731.9 3	6.6 10	2087.316	$3^-, 4^+$	355.6841	2^+
1736.9 ^c 2	13.0 11	2093.6	(2^+)	355.6841	2^+
1771.5 3	6.8 8	2127.2	2^+	355.6841	2^+
^x 1791.3 9	1.8 4				
1795.0 3	2.9 4	1795.08	$2^+, (1^-)$	0.0	0^+
1802.3 2	37 3	1802.276	$1^+, 2^+$	0.0	0^+
1807.3 2	10.6 13	2162.68	2^+	355.6841	2^+
1818.6 2	22 2	2174.42	$0^+, 2^+$	355.6841	2^+
1826.0 2	13 2	1825.710	2^+	0.0	0^+
^x 1829.2 2	1.5 4				
1839.4 3	0.8 4	2527.88	$1^+, 2^+$	688.672	2^+
^x 1870.0 7	1.4 4				
1873.9 3	3.3 6	2229.6	2^+	355.6841	2^+
1888.4 2	8 2	1888.125	$1^+, 2^+$	0.0	0^+
1907.0 6	1.7 4	2262.415	2^+	355.6841	2^+
^x 1929.8 3	2.0 3				
1953.1 ^c 6	1.3 5	2309.19	$(2)^+$	355.6841	2^+
^x 1958.0 6	1.7 5				
^x 1962.0 6	1.3 2				
1969.1 2	14 2	1968.892	$1^+, (2^+)$	0.0	0^+
^x 1971.8 3	4.0 5				
^x 1976.6 8	3.7 5				
1978.6 2	5.0 6	3329	$(0,2)^+$	1361.566	2^+
^x 2017.1 6	1.0 3				
^x 2045.3 5	3.4 8				
^x 2050.1 6	1.6 7				
^x 2068.0 3	16.7 13				
2104.4 3	3.4 5	2460.1	$0^+, 1^+, 2^+$	355.6841	2^+
2114.4 3	4.1 9	2470.04	$1^-, 2^+$	355.6841	2^+
^x 2135.7 6	6.5 10				
2173.5 3	3.3 8	2550?		355.6841	2^+
2183.6 3	9.5 10	2183.6	$1^+, 2^+$	0.0	0^+
^x 2232.5 [#] 14	3.3 9				

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$^{195}\text{Pt}(\text{n},\gamma) \text{ E}=11.9 \text{ eV}$ **1979Ci04 (continued)** $\gamma(^{196}\text{Pt})$ (continued)

$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
2245.8 3	10 2	2245.8	$1^+, 2^+$	0.0	0^+	
^x 2304.6 3	5.2 12					
^x 2310.9 3	10 2					
^x 2313.8 7	2.8 15					
^x 2321.2 3	9.0 14					
^x 2341.4 5	2.9 6					
^x 2351.0 3	7 2					
2374.8 3	8.9 9	2375.10	$1^+, 2^+$	0.0	0^+	
^x 2381.4 [#] 7	2.3 11					
^x 2392.6 4	3.1 9					
^x 2424.7 11	2.1 8					
^x 2467.3 ^{&} 7	≤ 31					I_γ : 27 4 for (2467 γ +2470 γ).
^x 2469.7 ^{&} 4	≤ 31					E_γ : the energy cutoff for this resonance study $\approx$ 2470 keV. I_γ : 27 4 for (2467 γ +2470 γ).

[†] Weighted average of γ -ray energies at thermal and 11.9-eV neutron energies. The neutron energy cutoff for the low energy 11.9-eV resonance study was $\approx$ 2470 keV, and $\approx$ 5390 keV for 11.9-eV resonance high energy experiment.

[‡] Normalized to 1000 for 355-keV transition.

[#] Questionable line.

@ Intensity corrected to account for nearby impurity.

& Unresolved multiplet for which the best estimates of centroids and intensities of the components are quoted.

^a Up to 10% of the 1091 γ intensity may be placed elsewhere in level scheme (in coincidence with 521 γ).

^b Multiply placed with undivided intensity.

^c Placement of transition in the level scheme is uncertain.

^x γ ray not placed in level scheme.

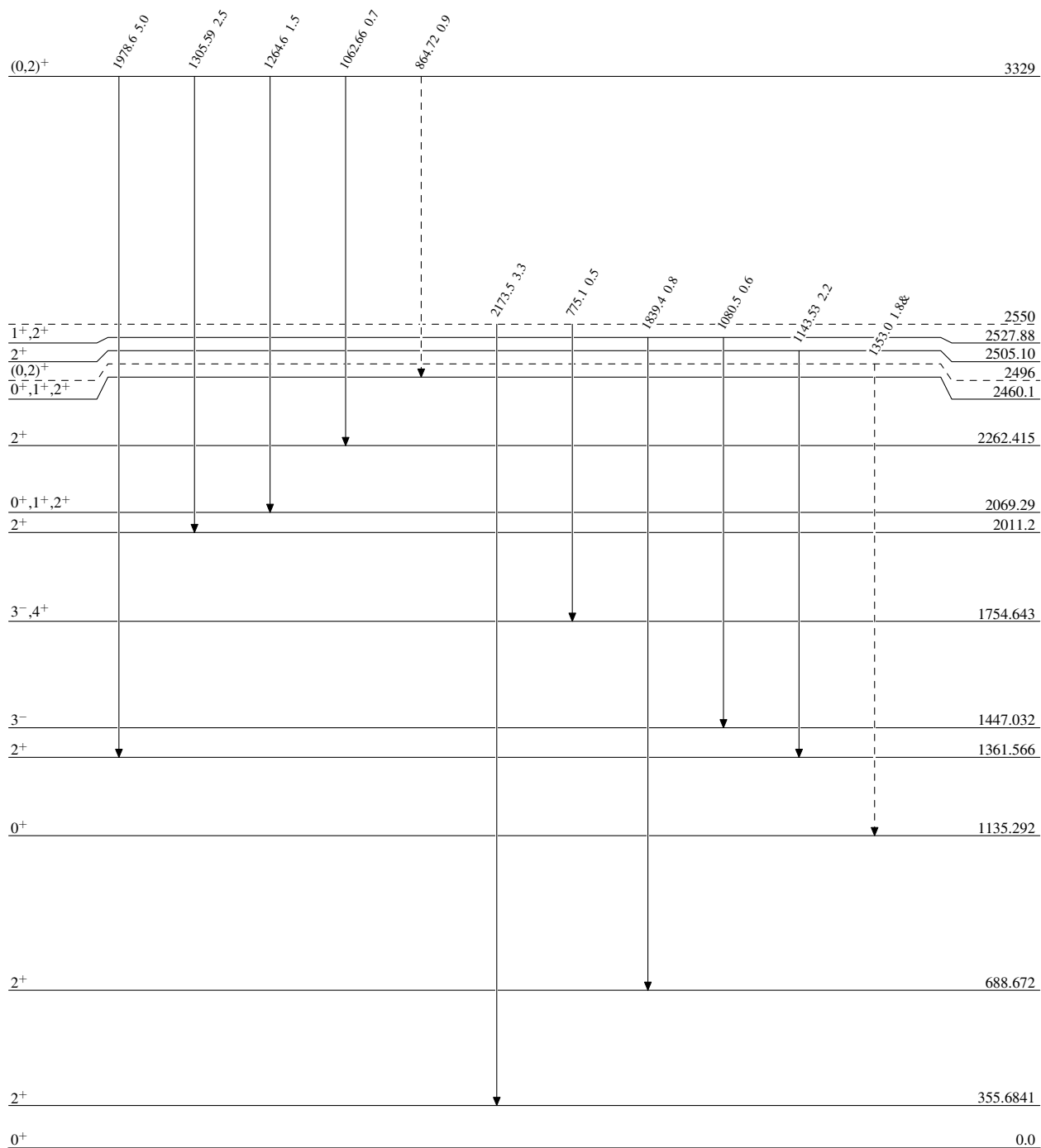
$^{195}\text{Pt}(n,\gamma) E=11.9 \text{ eV}$ 1979Ci04

Level Scheme

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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)

 $^{196}_{78}\text{Pt}_{118}$

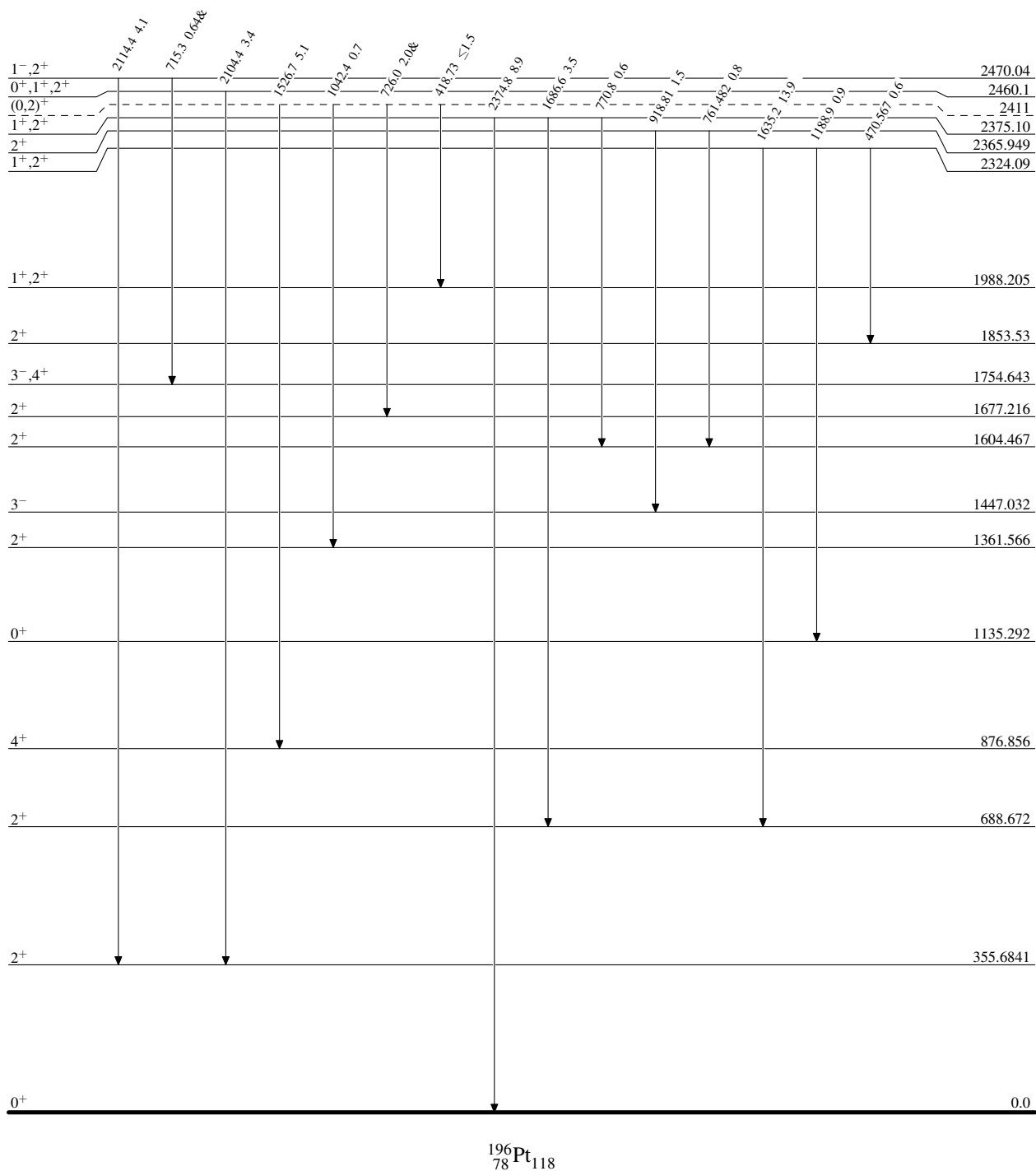
$^{195}\text{Pt}(n,\gamma) \text{ E}=11.9 \text{ eV}$ 1979Ci04

Level Scheme (continued)

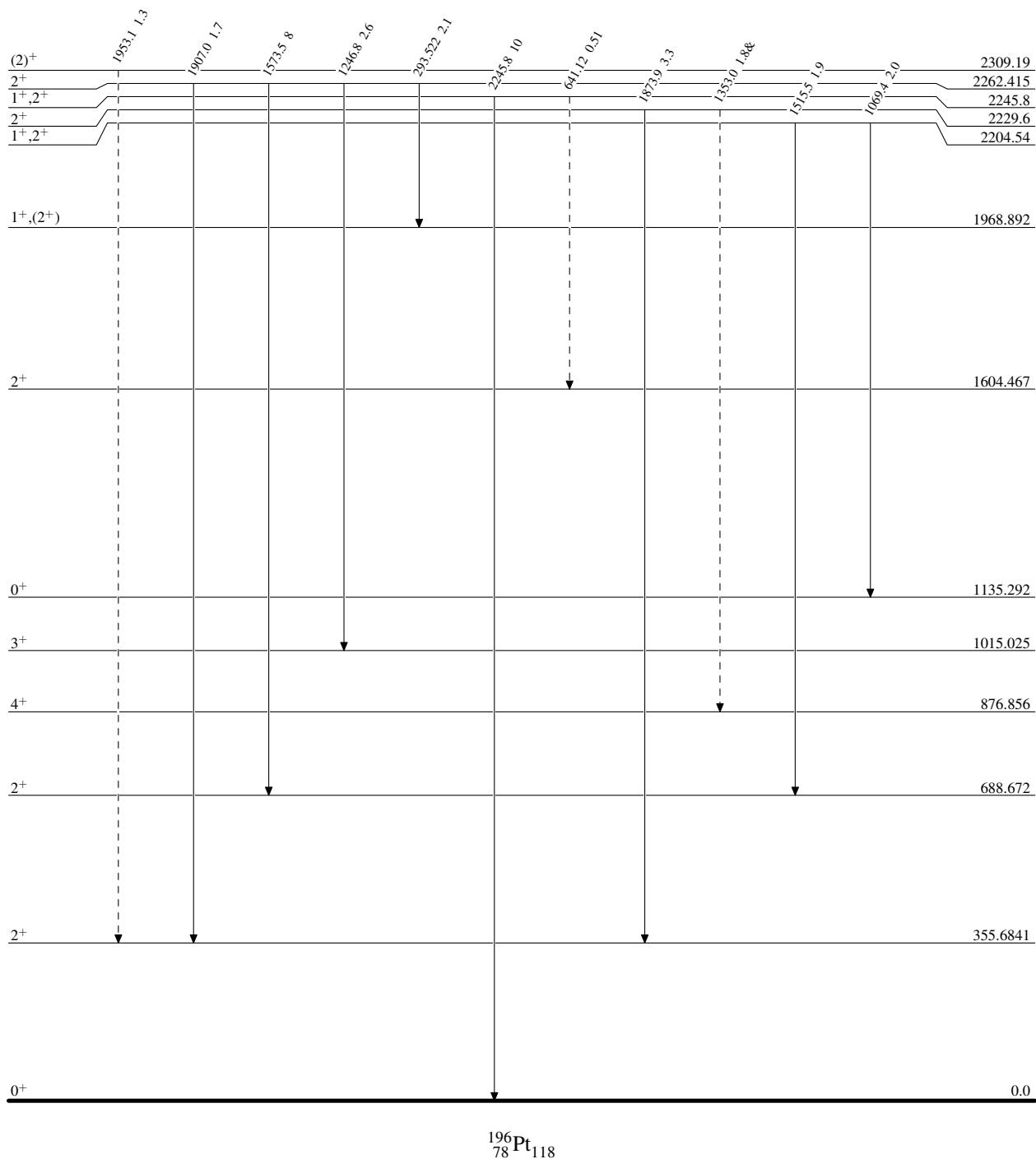
Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend

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

 $^{196}_{78}\text{Pt}_{118}$

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



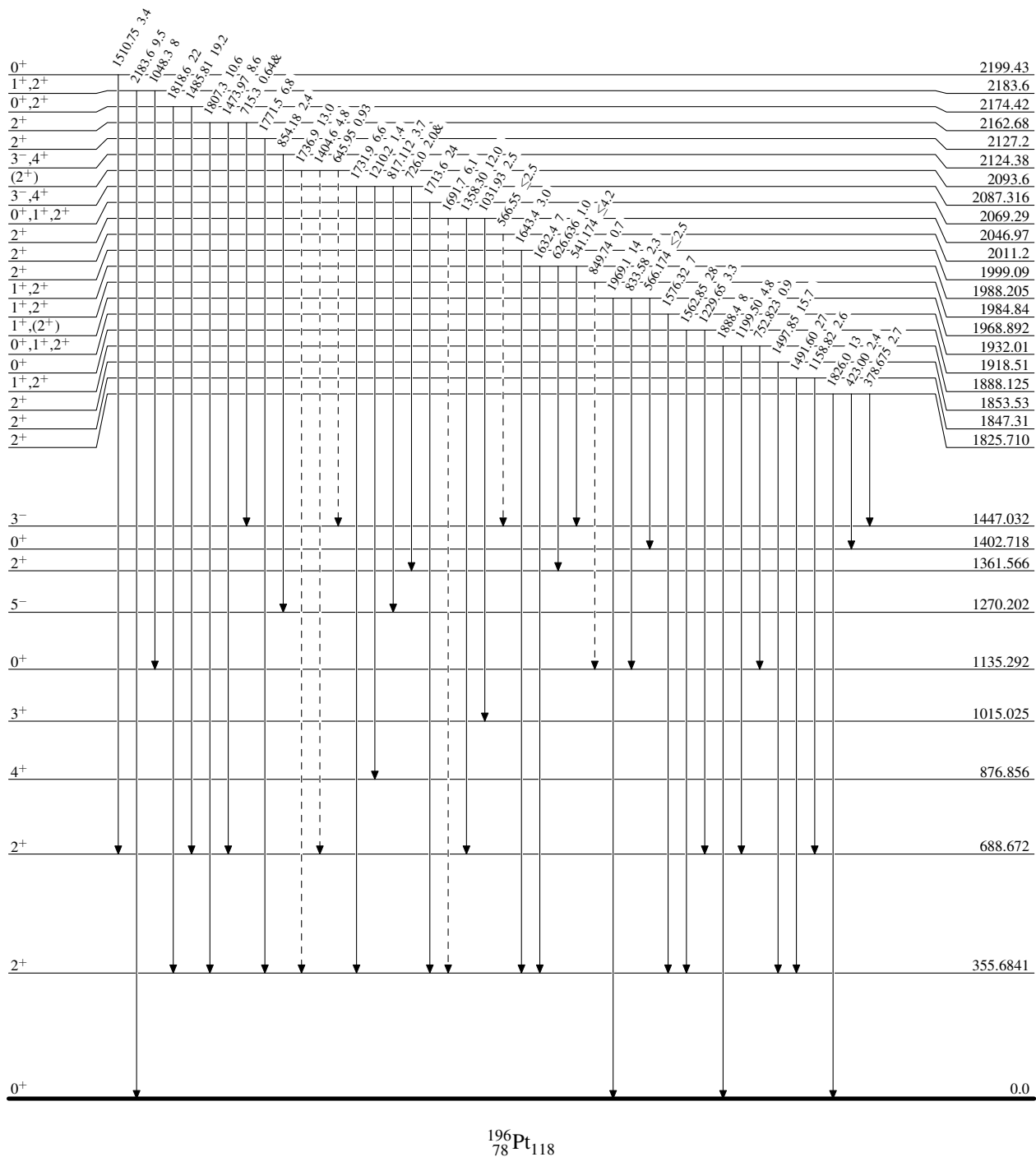
$^{195}\text{Pt}(n,\gamma) \text{E}=11.9 \text{ eV}$ $^{1979}\text{Ci04}$

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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)



¹⁹⁵Pt(n,γ) E=11.9 eV ¹⁹⁷⁹Ci04

Level Scheme (continued)

Intensities: Relative I_γ

& Multiply placed: undivided intensity given

