

^{153}Dy ε decay 1980Ab19,1980Ab21

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 170, 1 (2020)	16-Aug-2020

Parent: ^{153}Dy : $E=0.0$; $J^\pi=7/2^-$; $T_{1/2}=6.4$ h I ; $Q(\varepsilon)=2170.4$ $I9$; $\% \varepsilon + \% \beta^+$ decay=100.0

Sources produced in 660-MeV proton spallation of Ta target followed by chemical and mass separations (1980Ab19, 1978Gr13, 1977Al29, and 1977Al28), $^{154}\text{Gd}(^3\text{He},4n)$ with chemical separation (1977De05), and $^{155}\text{Gd}(\alpha,6n)$ with chemical separation (1972Ha41). Measured $E\gamma$, $I\gamma$, I_{ce} , and $\gamma\gamma$, γ -ce, and γ - β^+ coincidences.

The decay scheme is from 1980Ab19 and is based on earlier work by 1978Gr13, 1977De05 and 1972Ha41. Other measurements: 1977Al29, 1977Al28, 1975ZuZZ.

 ^{153}Tb Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [#]	Comments
0.0	5/2 ⁺	2.34 d I	$T_{1/2}$: from Adopted Levels.
80.7202 $I9$	7/2 ⁺	0.49 ns 2	
147.570 3	(3/2) ⁺	0.84 ns 3	
163.175 5	11/2 ⁻	186 μs 4	$T_{1/2}$: From ^{153}Tb IT decay (186 μs).
213.742 5	(7/2) ⁻		
218.628 8	3/2 ⁺ , 5/2 ⁺		
240.530 4	(5/2) ⁺		
254.200 6	7/2 ⁺		
262.831 5	9/2 ⁻	0.22 ns 2	
274.730 6	5/2 ⁻		
324.968 5	9/2 ⁺		
371.541 11	5/2 ⁺		
389.551 6	(7/2) ⁺		
444.695 8	9/2 ⁺		
510.290 14	7/2 ⁺		
529.383 10	11/2 ⁺	0.60 ns 3	
537.374 8	5/2 ⁻ , 7/2 ⁻		
543.15 5	5/2 ⁺		
571.949 10	9/2 ⁺		
597.286 12	(9/2) ⁻		
630.420 23	11/2 ⁺		
651.72 4			
660.171 23	5/2 ⁺		
694.905 22	7/2 ⁻ , 9/2 ⁻		
722.417 21	7/2 ⁺ , 9/2 ⁺		
725.526 11	9/2 ⁻		
726.557 20	5/2 ⁻ , 7/2 ⁻		
740.555 11	(7/2) ⁺		
773.07 6	(5/2, 7/2) ⁻		
789.96 4	7/2 ⁺ , 9/2 ⁺		
800.18 3	(5/2) ⁺		
807.464 18	9/2 ⁻		
957.17 3			
959.94 3	7/2 ⁻		
1082.85 5	7/2 ⁻		
1104.67 4	(5/2 ⁻ , 7/2 ⁻)		
1130.65 3	5/2 ⁻ , 7/2 ⁻		
1151.545 20	7/2 ⁻		
1226.47 6	(5/2, 7/2) ⁺		
1240.38 4	(7/2) ⁺		
1341.45 4	7/2 ⁻ , 9/2 ⁻		
1364.84 3	9/2 ⁻		
1429.32 3	9/2 ⁻		

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¹⁵³Dy ε decay **1980Ab19,1980Ab21 (continued)**

¹⁵³Tb Levels (continued)

E(level) [†]	Jπ [‡]	E(level) [†]	Jπ [‡]	E(level) [†]	Jπ [‡]
1762.03 7	(5/2,7/2,9/2) ⁻	1835.72 5	(7/2) ⁻	2023.78 5	(7/2 ⁻ ,9/2 ⁻)
1779.35 10	(7/2) ⁻	1858.09 8	7/2 ⁻	2120.07 6	(7/2,9/2) ⁻
1791.38 3	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	1912.505 25	(9/2) ⁻	2120.97 7	
1822.56 4	(9/2,11/2,13/2) ⁻	1940.25 10	(7/2) ⁻		
1824.69 8	(9/2) ⁻	2011.35 6	5/2 ⁻ ,7/2 ⁻		

[†] From least-squares fit to γ energies.

[‡] From ¹⁵³Tb Adopted Levels.

From 1977A129, unless otherwise noted.

ε,β⁺ radiations

E(decay) [†]	E(level)	Iβ ⁺ [‡] @	Iε [@]	Log ft	I(ε+β ⁺) [#] @	Comments
(49.4 19)	2120.97		0.62 4	4.01 5	0.62 4	εL=0.717 3; εM+=0.283 3
(50.3 19)	2120.07		0.66 3	4.00 5	0.66 3	εL=0.718 3; εM+=0.282 3
(146.6 19)	2023.78		0.54 6	5.64 6	0.54 6	εK=0.711 3; εL=0.2189 20; εM+=0.0700 8
(159.0 19)	2011.35		0.36 4	5.92 5	0.36 4	εK=0.7264 22; εL=0.2076 16; εM+=0.0659 6
(230.1 19)	1940.25		0.87 6	5.95 4	0.87 6	εK=0.7734 8; εL=0.1732 6; εM+=0.05346 20
(257.9 19)	1912.505		4.62 13	5.343 16	4.62 13	εK=0.7829 6; εL=0.1662 5; εM+=0.05097 15
(312.3 19)	1858.09		0.86 5	6.27 3	0.86 5	εK=0.7955 4; εL=0.1568 3; εM+=0.04765 10
(334.7 19)	1835.72		0.60 5	6.50 4	0.60 5	εK=0.7993 3; εL=0.15402 22; εM+=0.04666 8
(345.7 19)	1824.69		1.23 7	6.22 3	1.23 7	εK=0.8010 3; εL=0.15280 21; εM+=0.04623 8
(347.8 19)	1822.56		1.59 7	6.111 21	1.59 7	εK=0.8013 3; εL=0.15258 20; εM+=0.04615 7
(379.0 19)	1791.38		3.22 11	5.889 17	3.22 11	εK=0.8053 3; εL=0.14963 17; εM+=0.04511 6
(391.0 19)	1779.35		0.96 6	6.45 3	0.96 6	εK=0.8066 2; εL=0.14863 16; εM+=0.04476 6
(408.4 19)	1762.03		1.14 6	6.413 25	1.14 6	εK=0.8084 2; εL=0.1473 2; εM+=0.04430 5
(741.1 19)	1429.32		1.89 8	6.758 20	1.89 8	εK=0.8250; εL=0.13503 4; εM+=0.03999 2
(805.6 19)	1364.84		2.19 11	6.771 23	2.19 11	εK=0.8265; εL=0.13391 3; εM+=0.03960 1
(930.0 19)	1240.38		0.92 7	7.28 4	0.92 7	εK=0.8288; εL=0.13222 3; εM+=0.039016 8
(943.9 19)	1226.47		0.63 6	7.46 5	0.63 6	εK=0.8290; εL=0.13206 3; εM+=0.038961 8
(1018.9 19)	1151.545		0.91 6	7.37 3	0.91 6	εK=0.8300; εL=0.13128 2; εM+=0.038690 7
(1039.7 19)	1130.65		1.07 4	7.315 18	1.07 4	εK=0.8303; εL=0.13108 2; εM+=0.038621 6
(1065.7 19)	1104.67		1.32 8	7.25 3	1.32 8	εK=0.8306; εL=0.13085 2; εM+=0.038541 6
(1087.5 19)	1082.85		0.58 5	7.62 4	0.58 5	εK=0.8309; εL=0.13066 2; εM+=0.038476 6
(1210.5 19)	959.94		1.29 9	7.37 4	1.29 9	εK=0.8321; εL=0.1297; εM+=0.038156 5
(1213.2 19)	957.17		0.55 4	7.74 4	0.55 4	εK=0.8321; εL=0.1297; εM+=0.038149 5
(1362.9 19)	807.464	0.00132 7	2.43 11	7.203 21	2.43 11	av Eβ=167.79 86; εK=0.8329; εL=0.1288; εM+=0.037825 4
(1380.4 19)	789.96		0.33 7	8.08 10	0.33 7	εK=0.8329; εL=0.1287; εM+=0.037789 4
(1397.3 19)	773.07		0.07 5	8.8 4	0.07 5	εK=0.8329; εL=0.1286; εM+=0.037754 4
(1429.8 19)	740.555	0.00284 14	2.44 11	7.244 21	2.44 11	av Eβ=197.75 85; εK=0.8328; εL=0.1284; εM+=0.037687 4
(1443.8 19)	726.557	0.00083 8	0.62 6	7.85 5	0.62 6	av Eβ=203.98 85; εK=0.8327; εL=0.1283; εM+=0.037658 4
(1444.9 19)	725.526	0.0064 4	4.70 24	6.968 24	4.71 24	av Eβ=204.44 85; εK=0.8327; εL=0.1283; εM+=0.037656 4
(1448.0 19)	722.417	4.×10 ⁻⁵ 13	0.03 9	9.2 13	0.03 9	av Eβ=205.82 85; εK=0.8327; εL=0.1283; εM+=0.037649 4
(1475.5 19)	694.905	0.00092 11	0.51 6	7.95 6	0.51 6	av Eβ=218.04 85; εK=0.8325; εL=0.1281; εM+=0.037591 4
(1510.2 19)	660.171	0.00094 17	0.39 7	8.09 8	0.39 7	av Eβ=233.64 85; εK=0.8322; εL=0.12785 2; εM+=0.037516 5

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^{153}Dy ε decay **1980Ab19,1980Ab21** (continued)

ε, β^+ radiations (continued)

E(decay) [†]	E(level)	$I\beta^+$ ‡@	$I\varepsilon$ @	Log <i>ft</i>	$I(\varepsilon + \beta^+)$ #@	Comments
(1518.7 19)	651.72	0.0002 2	0.09 8	8.7 4	0.09 8	av $E\beta=237.38$ 85; $\varepsilon K=0.8321$; $\varepsilon L=0.12779$ 2; $\varepsilon M+=0.037497$ 5
(1540.0 19)	630.420	0.0012 2	0.40 8	8.10 9	0.40 8	av $E\beta=246.43$ 84; $\varepsilon K=0.8318$; $\varepsilon L=0.12765$ 2; $\varepsilon M+=0.037449$ 5
(1573.1 19)	597.286	0.0004 4	0.10 9	8.7 4	0.10 9	av $E\beta=261.19$ 84; $\varepsilon K=0.8313$; $\varepsilon L=0.12741$ 2; $\varepsilon M+=0.037373$ 5
(1598.5 19)	571.949	0.0016 4	0.34 9	8.20 12	0.34 9	av $E\beta=272.35$ 84; $\varepsilon K=0.8308$; $\varepsilon L=0.12722$ 2; $\varepsilon M+=0.037311$ 5
(1627.2 19)	543.15	0.0042 4	0.74 7	7.88 5	0.74 7	av $E\beta=285.02$ 84; $\varepsilon K=0.8302$; $\varepsilon L=0.12699$ 2; $\varepsilon M+=0.037239$ 5
(1633.0 19)	537.374	0.015 2	2.6 3	7.34 5	2.6 3	av $E\beta=287.56$ 84; $\varepsilon K=0.8300$; $\varepsilon L=0.12694$ 2; $\varepsilon M+=0.037224$ 5
(1641.0 19)	529.383	0.0043 4	0.70 7	7.91 5	0.70 7	av $E\beta=291.07$ 84; $\varepsilon K=0.8298$; $\varepsilon L=0.12688$ 2; $\varepsilon M+=0.037203$ 5
(1660.1 19)	510.290	0.0129 9	1.87 13	7.49 3	1.88 13	av $E\beta=299.46$ 84; $\varepsilon K=0.8293$; $\varepsilon L=0.12671$ 2; $\varepsilon M+=0.037152$ 6
(1725.7 19)	444.695	0.0112 11	1.12 11	7.75 5	1.13 11	av $E\beta=328.26$ 84; $\varepsilon K=0.8270$; $\varepsilon L=0.12611$ 2; $\varepsilon M+=0.036964$ 6
(1780.8 19)	389.551	0.0320 25	2.42 19	7.44 4	2.45 19	av $E\beta=352.45$ 84; $\varepsilon K=0.8246$ 1; $\varepsilon L=0.12554$ 2; $\varepsilon M+=0.036789$ 7
(1798.9 19)	371.541	0.0162 14	1.12 10	7.79 4	1.14 10	av $E\beta=360.35$ 84; $\varepsilon K=0.8237$ 1; $\varepsilon L=0.12534$ 3; $\varepsilon M+=0.036727$ 7
(1845.4 19)	324.968	0.027 3	1.54 19	7.67 6	1.57 19	av $E\beta=380.78$ 84; $\varepsilon K=0.8212$ 2; $\varepsilon L=0.12479$ 3; $\varepsilon M+=0.036560$ 8
(1895.7 19)	274.730	0.071 15	3.2 7	7.37 10	3.3 7	av $E\beta=402.82$ 84; $\varepsilon K=0.8179$ 2; $\varepsilon L=0.12414$ 3; $\varepsilon M+=0.036362$ 8
(1907.6 19)	262.831	0.610 20	26.4 8	6.467 15	27.0 8	av $E\beta=408.04$ 84; $\varepsilon K=0.8171$ 2; $\varepsilon L=0.12398$ 3; $\varepsilon M+=0.036313$ 8
(1916.2 19)	254.200	0.051 9	2.1 4	7.56 8	2.2 4	av $E\beta=411.83$ 84; $\varepsilon K=0.8165$ 2; $\varepsilon L=0.12386$ 3; $\varepsilon M+=0.036277$ 8
(1929.9 19)	240.530	0.033 5	1.31 20	7.78 7	1.34 21	av $E\beta=417.83$ 84; $\varepsilon K=0.8155$ 2; $\varepsilon L=0.12367$ 3; $\varepsilon M+=0.036218$ 9
(1951.8 19)	218.628	0.030 3	1.08 11	7.88 5	1.11 11	av $E\beta=427.45$ 84; $\varepsilon K=0.8138$ 2; $\varepsilon L=0.12335$ 3; $\varepsilon M+=0.036121$ 9
(1956.7 19)	213.742	0.076 11	2.7 4	7.48 7	2.8 4	av $E\beta=429.59$ 84; $\varepsilon K=0.8134$ 2; $\varepsilon L=0.12327$ 3; $\varepsilon M+=0.036099$ 9
(2007.2 19)	163.175	0.2 2	7 5	7.1 4	7 5	av $E\beta=451.80$ 84; $\varepsilon K=0.8090$ 2; $\varepsilon L=0.12247$ 4; $\varepsilon M+=0.03586$ 1 Log <i>ft</i> : The calculated value is not consistent with a $7/2^{(-)}$ to $11/2^{-}$ transition.
(2022.8 19)	147.570	0.014 5	1.8 6	8.87 ^{1u} 15	1.8 6	av $E\beta=475.83$ 83; $\varepsilon K=0.8228$; $\varepsilon L=0.13069$ 2; $\varepsilon M+=0.038557$ 6
(2170.4 19)	0.0	0.08 7	1.3 12	7.9 4	1.4 13	av $E\beta=523.64$ 84; $\varepsilon K=0.7915$ 3; $\varepsilon L=0.11942$ 4; $\varepsilon M+=0.03495$ 2

[†] Measured values of $E\beta^+$ include 1069 keV 10, 886 keV 2 and 427 keV 22 by 1978Gr13; 980 keV 40 and 670 keV 20 by 1977De05. 1978Gr13 suggest that their observed branches populate levels at 80.8 keV ($7/2^+$), 262.9 keV ($9/2^-$) and 725.6 keV ($9/2^-$) or 740.7 keV ($7/2^+$), respectively, but they must each represent branches to several levels.

[‡] See 1978Gr13 for measured $I(\beta^+)/I_K(254 \gamma)$ ratios. They decompose the β^+ spectrum into three components, but each of their components must represent several branches.

From intensity balances at the excited levels and an assumed $I_{(\varepsilon+\beta^+)}(0)=1.4\%$ 13. The large number of unplaced γ 's has not been taken into account, but they would move some of the ε intensity to higher levels and thereby reduce the average β^+ energy per decay.

@ Absolute intensity per 100 decays.

γ(¹⁵³Tb)

I_γ normalization: From Σ I(γ+ce) to gs=100. From β⁺ spectra of **1978Gr13**, I_{β⁺}(gs)<0.2% (**1980Ab21**) yielding I(ε+β⁺)(gs)<4%. Also, from I(β⁺)/I_K(254 γ) data of **1978Gr13**, one gets I(β⁺)(262 level)=0.56% *4* compared with 0.591% *12* deduced from the decay scheme using the adopted normalization. Note, however, that absolute I_γ measurements of **1970Ch09** give an average normalization factor of 0.085 *5*, which leads to I(ε+β⁺)to gs = 25% *5*.

There are many differences between the E_γ and I_γ values of **1980Ab19**, **1977De05**, and **1975ZuZZ** (and partially repeated in **1977Al28**). Some of these differences are noted in comments associated with specific γ's, but there are also many cases where a γ is reported in only one paper or is reported as a singlet in one paper and as a doublet in another paper.

E _γ [†]	I _γ ^{‡b}	E _i (level)	J _i ^π	E _f	J _f ^π	Mult.#	δ ^{@a}	α&	I _(γ+ce) ^b	Comments
11.90 <i>10</i>		274.730	5/2 ⁻	262.831	9/2 ⁻				7.5 <i>7</i>	
61.044 <i>25</i>	0.41 <i>16</i>	274.730	5/2 ⁻	213.742	(7/2) ⁻	M1+E2	0.55 <i>6</i>	11.1 <i>4</i>		α(K)=6.55 <i>21</i> ; α(L)=3.5 <i>4</i> ; α(M)=0.83 <i>10</i> α(N)=0.186 <i>22</i> ; α(O)=0.025 <i>3</i> ; α(P)=0.000482 <i>18</i>
62.14 <i>5</i>	0.58 <i>6</i>	324.968	9/2 ⁺	262.831	9/2 ⁻	E1		1.058		α(K)=0.871 <i>13</i> ; α(L)=0.1462 <i>21</i> ; α(M)=0.0319 <i>5</i> α(N)=0.00720 <i>11</i> ; α(O)=0.001009 <i>15</i> ; α(P)=4.54×10 ⁻⁵ <i>7</i>
^x 64.60	<0.4									E _γ ,I _γ : From 1975ZuZZ ; conversion electrons have been reported for such a γ.
70.780 <i>9</i>	0.78 <i>16</i>	324.968	9/2 ⁺	254.200	7/2 ⁺	M1+E2	0.10 <i>4</i>	5.99 <i>10</i>		α(K)=4.98 <i>8</i> ; α(L)=0.78 <i>5</i> ; α(M)=0.172 <i>12</i> α(N)=0.040 <i>3</i> ; α(O)=0.0060 <i>4</i> ; α(P)=0.000372 <i>6</i>
71.00 <i>5</i>	0.27 <i>4</i>	218.628	3/2 ⁺ ,5/2 ⁺	147.570	(3/2) ⁺	M1+E2	0.31 <i>2</i>	6.22 <i>10</i>		α(K)=4.74 <i>8</i> ; α(L)=1.15 <i>6</i> ; α(M)=0.262 <i>13</i> α(N)=0.060 <i>3</i> ; α(O)=0.0085 <i>4</i> ; α(P)=0.000350 <i>6</i>
^x 78.26 <i>3</i>	0.40 <i>7</i>					M1+E2	0.20 <i>2</i>	4.53		α(K)=3.68 <i>6</i> ; α(L)=0.663 <i>25</i> ; α(M)=0.148 <i>6</i> α(N)=0.0339 <i>14</i> ; α(O)=0.00503 <i>17</i> ; α(P)=0.000273 <i>4</i>
										α(K) _{exp} =6.25 (1980Ab19). I _γ : Value from 1975ZuZZ is 1.13 <i>17</i> , but 1977De05 give 0.57 <i>21</i> .
80.723 <i>2</i>	100.0 <i>20</i>	80.7202	7/2 ⁺	0.0	5/2 ⁺	M1+E2	0.13 <i>1</i>	4.10		α(K)=3.40 <i>5</i> ; α(L)=0.544 <i>10</i> ; α(M)=0.1198 <i>24</i> α(N)=0.0276 <i>6</i> ; α(O)=0.00418 <i>8</i> ; α(P)=0.000253 <i>4</i> α(K) _{exp} =2.51 (1980Ab19).
82.464 <i>4</i>	8.7 <i>8</i>	163.175	11/2 ⁻	80.7202	7/2 ⁺	M2		43.9		α(K)=31.9 <i>5</i> ; α(L)=9.24 <i>13</i> ; α(M)=2.17 <i>3</i> α(N)=0.505 <i>7</i> ; α(O)=0.0750 <i>11</i> ; α(P)=0.00416 <i>6</i> α(K) _{exp} =24.368 (1980Ab19).
^x 88.290 <i>20</i>	3.4 <i>3</i>					M1		3.14		α(K)=2.65 <i>4</i> ; α(L)=0.387 <i>6</i> ; α(M)=0.0845 <i>12</i> α(N)=0.0195 <i>3</i> ; α(O)=0.00301 <i>5</i> ; α(P)=0.000197 <i>3</i> α(K) _{exp} =2.735 (1980Ab19).
^x 88.922 <i>8</i>	3.4 <i>3</i>									I _γ : Value from 1977De05 is 1.63 <i>21</i> .

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

E_γ †	I_γ ‡ ^b	E_i (level)	J_i^π	E_f	J_f^π	Mult. #	δ @ <i>a</i>	α &	$I_{(\gamma+ce)}$ ^b	Comments
92.957 2	8.94 21	240.530	(5/2) ⁺	147.570	(3/2) ⁺	M1+E2	0.18 +1-2	2.73		$\alpha(K)=2.25$ 4; $\alpha(L)=0.372$ 10; $\alpha(M)=0.0823$ 23 $\alpha(N)=0.0189$ 5; $\alpha(O)=0.00285$ 7; $\alpha(P)=0.0001670$ 25 $\alpha(K)_{exp}=2.461$ (1980Ab19). $\alpha(K)=19.7$ 3; $\alpha(L)=5.34$ 8; $\alpha(M)=1.249$ 18 $\alpha(N)=0.290$ 4; $\alpha(O)=0.0432$ 6; $\alpha(P)=0.00243$ 4 $\alpha(K)_{exp}=10.000$ (1980Ab19). I_γ : Value from 1977De05 is 2.13 21.
^x 94.090 20	1.50 22					(M2)		26.6		$\alpha(K)=2.17$ 3; $\alpha(L)=0.316$ 5; $\alpha(M)=0.0692$ 10 $\alpha(N)=0.01599$ 23; $\alpha(O)=0.00246$ 4; $\alpha(P)=0.0001617$ 23 $\alpha(K)_{exp}=5.714$ (1980Ab19). I_γ : Value from 1977De05 is 3.1 3. $\alpha(K)_{exp}=0.417$ (1980Ab19). Mult.: Assigned (E1), but J^π 's require M1,E2.
^x 94.63 7	2.10 20					(M1)		2.57		
96.27 5	0.36 7	2120.07	(7/2,9/2) ⁻	2023.78	(7/2 ⁻ ,9/2 ⁻)					
96.750 20	0.60 11	371.541	5/2 ⁺	274.730	5/2 ⁻	[E1]		0.328		$\alpha(K)=0.274$ 4; $\alpha(L)=0.0422$ 6; $\alpha(M)=0.00920$ 13 $\alpha(N)=0.00209$ 3; $\alpha(O)=0.000301$ 5; $\alpha(P)=1.515 \times 10^{-5}$ 22
99.659 2	94.7 9	262.831	9/2 ⁻	163.175	11/2 ⁻	M1+E2	0.095 10	2.22		$\alpha(K)=1.86$ 3; $\alpha(L)=0.280$ 5; $\alpha(M)=0.0615$ 10 $\alpha(N)=0.01419$ 22; $\alpha(O)=0.00217$ 4; $\alpha(P)=0.0001386$ 20 $\alpha(K)_{exp}=1.943$ (1980Ab19). ce(K)=0.5 1 ce(K)/(γ+ce)=0.39 6; ce(L)/(γ+ce)=0.142 63; ce(M)/(γ+ce)=0.033 18 ce(N)/(γ+ce)=0.0074 40; ce(O)/(γ+ce)=1.01 × 10 ⁻³ 48; ce(P)/(γ+ce)=2.5 × 10 ⁻⁵ 10
119.735 20	<0.2	444.695	9/2 ⁺	324.968	9/2 ⁺	M1+E2+E0		1.33 3	0.7 1	$\alpha(K)=0.91$ 21; $\alpha(L)=0.33$ 17; $\alpha(M)=0.077$ 42 $\alpha(N)=0.0174$ 93; $\alpha(O)=0.0024$ 12; $\alpha(P)=5.9 \times 10^{-5}$ 24 $\alpha(K)_{exp}>2.500$ (1980Ab19). $\alpha(K)=0.1403$ 20; $\alpha(L)=0.0209$ 3; $\alpha(M)=0.00455$ 7
124.43 3	0.87 11	1364.84	9/2 ⁻	1240.38	(7/2) ⁺	E1		0.1669		

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¹⁵³Dy ε decay [1980Ab19,1980Ab21](#) (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>δ@a</u>	<u>α&</u>	<u>Comments</u>
125.164 19	1.38 15	722.417	7/2 ⁺ ,9/2 ⁺	597.286	(9/2) ⁻	E1		0.1643	α(N)=0.001036 15; α(O)=0.0001515 22; α(P)=8.02×10 ⁻⁶ 12 α(K)exp=0.159 (1980Ab19). α(K)=0.1381 20; α(L)=0.0206 3; α(M)=0.00448 7 α(N)=0.001020 15; α(O)=0.0001491 21; α(P)=7.91×10 ⁻⁶ 11 α(K)exp=0.138 (1980Ab19).
127.126 10	2.90 15	274.730	5/2 ⁻	147.570	(3/2) ⁺	E1		0.1576	I _γ : Value from 1977De05 is 2.12 22. α(K)=0.1325 19; α(L)=0.0197 3; α(M)=0.00429 6 α(N)=0.000977 14; α(O)=0.0001429 20; α(P)=7.60×10 ⁻⁶ 11 α(K)exp=0.0965 (1980Ab19).
128.236 11	2.85 16	725.526	9/2 ⁻	597.286	(9/2) ⁻	M1+E2	0.23 +4-5	1.080	α(K)=0.895 14; α(L)=0.144 5; α(M)=0.0319 12 α(N)=0.0073 3; α(O)=0.00111 4; α(P)=6.59×10 ⁻⁵ 12 α(K)exp=0.947 (1980Ab19).
131.00 3	0.34 9	371.541	5/2 ⁺	240.530	(5/2) ⁺	[M1,E2]		1.000 23	α(K)=0.70 16; α(L)=0.23 11; α(M)=0.053 26 α(N)=0.0121 58; α(O)=0.00165 69; α(P)=4.6×10 ⁻⁵ 18
132.990 12	3.3 3	213.742	(7/2) ⁻	80.7202	7/2 ⁺	E1		0.1396	α(K)=0.1174 17; α(L)=0.01739 25; α(M)=0.00378 6 α(N)=0.000862 12; α(O)=0.0001264 18; α(P)=6.78×10 ⁻⁶ 10 α(K)exp=0.154 (1980Ab19). I _γ : Value from 1977De05 is 2.27 14.
^x 134.340 20	0.27 5								
135.510 20	0.27 5	389.551	(7/2) ⁺	254.200	7/2 ⁺	M1		0.924	α(K)=0.780 11; α(L)=0.1132 16; α(M)=0.0247 4 α(N)=0.00572 8; α(O)=0.000881 13; α(P)=5.80×10 ⁻⁵ 9 α(K)exp=1.481 (1980Ab19).
138.77 5	0.45 14	510.290	7/2 ⁺	371.541	5/2 ⁺	M1		0.864	α(K)=0.729 11; α(L)=0.1058 15; α(M)=0.0231 4 α(N)=0.00534 8; α(O)=0.000823 12; α(P)=5.42×10 ⁻⁵ 8 α(K)exp=0.889 (1980Ab19).
143.37 4	0.98 13	740.555	(7/2) ⁺	597.286	(9/2) ⁻				
^x 144.122 21	1.60 23								
147.560 3	35 3	147.570	(3/2) ⁺	0.0	5/2 ⁺	M1+E2	0.47 5	0.712 11	α(K)=0.573 11; α(L)=0.109 4; α(M)=0.0244 10 α(N)=0.00559 21; α(O)=0.00082 3; α(P)=4.11×10 ⁻⁵ 10 α(K)exp=0.441 (1980Ab19).
149.010 5	8.7 8	389.551	(7/2) ⁺	240.530	(5/2) ⁺	M1+E2	0.22 +3-2	0.703	α(K)=0.587 9; α(L)=0.0914 19; α(M)=0.0201 5 α(N)=0.00464 10; α(O)=0.000704 13; α(P)=4.32×10 ⁻⁵ 7 α(K)exp=0.517 (1980Ab19).
157.778 18	0.77 17	371.541	5/2 ⁺	213.742	(7/2) ⁻	E1		0.0883	α(K)=0.0744 11; α(L)=0.01085 16; α(M)=0.00236 4 α(N)=0.000539 8; α(O)=7.96×10 ⁻⁵ 12; α(P)=4.39×10 ⁻⁶ 7 α(K)exp=0.078 (1980Ab19). I _γ : Value from 1977De05 is 1.09 15.
159.85 3	0.85 11	240.530	(5/2) ⁺	80.7202	7/2 ⁺	M1+E2	0.23 +8-13	0.576 9	α(K)=0.481 10; α(L)=0.075 3; α(M)=0.0164 8

¹⁵³Dy ε decay [1980Ab19,1980Ab21](#) (continued)

γ(¹⁵³Tb) (continued)

E_γ^\dagger	$I_\gamma^{\ddagger b}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. #	$\delta^{@a}$	$\alpha^\&$	$I_{(\gamma+ce)}^b$	Comments
173.509 12	2.91 16	254.200	7/2 ⁺	80.7202	7/2 ⁺	M1+E2	0.25 2	0.457		$\alpha(N)=0.00378$ 17; $\alpha(O)=0.000575$ 20; $\alpha(P)=3.54\times 10^{-5}$ 10 $\alpha(K)\text{exp}=0.588$ (1980Ab19). I_γ : Value from 1977De05 is 0.55 14. $\alpha(K)=0.381$ 6; $\alpha(L)=0.0590$ 10; $\alpha(M)=0.01297$ 21 $\alpha(N)=0.00299$ 5; $\alpha(O)=0.000455$ 7; $\alpha(P)=2.80\times 10^{-5}$ 5 $\alpha(K)\text{exp}=0.309$ (1980Ab19). $\alpha(K)=0.27$ 7; $\alpha(L)=0.065$ 17; $\alpha(M)=0.0149$ 42 $\alpha(N)=0.00339$ 92; $\alpha(O)=0.00048$ 10; $\alpha(P)=1.84\times 10^{-5}$ 69 $\alpha(K)\text{exp}=0.295$ (1980Ab19). I_γ : Value from 1977De05 is 2.50 21, but 1975ZuZZ gives 3.3 3. $\alpha(K)=0.326$ 5; $\alpha(L)=0.0470$ 7; $\alpha(M)=0.01026$ 15 $\alpha(N)=0.00237$ 4; $\alpha(O)=0.000366$ 6; $\alpha(P)=2.42\times 10^{-5}$ 4 I_γ : The reported $I_\gamma(185.20+185.49)=0.96$ 14 has been divided.
182.388 10	3.39 21	571.949	9/2 ⁺	389.551	(7/2) ⁺	M1+E2		0.36 5		
^x 185.20 5	0.87 15					M1		0.386		
185.49 5	0.12 5	510.290	7/2 ⁺	324.968	9/2 ⁺					
185.91 5	1.58 33	630.420	11/2 ⁺	444.695	9/2 ⁺	M1+E2	0.31 +14-21	0.374 9		$\alpha(K)=0.311$ 12; $\alpha(L)=0.0490$ 25; $\alpha(M)=0.0108$ 7 $\alpha(N)=0.00249$ 14; $\alpha(O)=0.000377$ 15; $\alpha(P)=2.28\times 10^{-5}$ 11 $\alpha(K)\text{exp}=0.273$ (1980Ab19). $\alpha(K)=0.0480$ 7; $\alpha(L)=0.00692$ 10; $\alpha(M)=0.001504$ 21 $\alpha(N)=0.000344$ 5; $\alpha(O)=5.11\times 10^{-5}$ 8; $\alpha(P)=2.89\times 10^{-6}$ 4 I_γ : The reported $I_\gamma(185.91+186.11)=1.83$ 21 has been divided.
^x 186.11 5	≤0.51					(E1)		0.0568		
188.06 4	0.19 12	2023.78	(7/2 ⁻ ,9/2 ⁻)	1835.72	(7/2) ⁻	(M1)		0.370		$\alpha(K)=0.312$ 5; $\alpha(L)=0.0450$ 7; $\alpha(M)=0.00983$ 14 $\alpha(N)=0.00227$ 4; $\alpha(O)=0.000350$ 5; $\alpha(P)=2.32\times 10^{-5}$ 4 $\alpha(K)\text{exp}=0.315$ (1980Ab19). $\text{ce}(K)=0.15$ $\text{ce}(K)/(\gamma+ce)=0.19$ 4; $\text{ce}(L)/(\gamma+ce)=0.043$ 10;
189.07 3	0.24 7	726.557	5/2 ⁻ ,7/2 ⁻	537.374	5/2 ⁻ ,7/2 ⁻	M1+E2+E0		0.32 5	0.41 8	

¹⁵³Dy ε decay [1980Ab19,1980Ab21](#) (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>δ@<i>a</i></u>	<u>α&</u>	<u>Comments</u>
									ce(M)/(γ+ce)=0.0099 26 ce(N)/(γ+ce)=0.0023 6; ce(O)/(γ+ce)=0.00032 6; ce(P)/(γ+ce)=1.26×10 ⁻⁵ 47 α(K)=0.25 7; α(L)=0.057 13; α(M)=0.0130 34 α(N)=0.0030 8; α(O)=0.00042 8; α(P)=1.66×10 ⁻⁵ 62 α(K)exp=0.625 (1980Ab19).
190.495 7	8.86 20	444.695	9/2 ⁺	254.200	7/2 ⁺	M1+E2	0.25 +6-7	0.352 6	α(K)=0.294 6; α(L)=0.0449 10; α(M)=0.00987 23 α(N)=0.00228 6; α(O)=0.000347 7; α(P)=2.16×10 ⁻⁵ 5 α(K)exp=0.226 (1980Ab19).
194.019 11	3.69 20	274.730	5/2 ⁻	80.7202	7/2 ⁺	E1		0.0509	α(K)=0.0430 6; α(L)=0.00618 9; α(M)=0.001344 19 α(N)=0.000307 5; α(O)=4.57×10 ⁻⁵ 7; α(P)=2.61×10 ⁻⁶ 4 α(K)exp=0.041 (1980Ab19).
^x 197.5 5 204.406 11	0.92 20 3.45 19	529.383	11/2 ⁺	324.968	9/2 ⁺	M1+E2	0.59 8	0.273 6	α(K)=0.222 6; α(L)=0.0397 10; α(M)=0.00886 25 α(N)=0.00203 6; α(O)=0.000301 7; α(P)=1.58×10 ⁻⁵ 6 α(K)exp=0.159 (1980Ab19). I _γ : Value from 1977Al28 is 2.6 5, but 1977De05 give 2.9 4.
∞ 213.754 5	98.2 20	213.742	(7/2) ⁻	0.0	5/2 ⁺	E1		0.0395	α(K)=0.0334 5; α(L)=0.00477 7; α(M)=0.001036 15 α(N)=0.000237 4; α(O)=3.54×10 ⁻⁵ 5; α(P)=2.04×10 ⁻⁶ 3 α(K)exp=0.019 (1980Ab19).
^x 215.42 4	1.47 18					E2		0.179	α(K)=0.1255 18; α(L)=0.0415 6; α(M)=0.00963 14 α(N)=0.00218 3; α(O)=0.000297 5; α(P)=7.30×10 ⁻⁶ 11 α(K)exp=0.109 (1980Ab19). I _γ : Value from 1975ZuZZ is < 0.5.
218.629 8	13.1 6	218.628	3/2 ⁺ ,5/2 ⁺	0.0	5/2 ⁺	M1+E2	0.47 +30-36	0.231 15	α(K)=0.191 17; α(L)=0.0314 19; α(M)=0.0069 5 α(N)=0.00160 11; α(O)=0.000240 10; α(P)=1.38×10 ⁻⁵ 16 α(K)exp=0.130 (1980Ab19).
235.519 17	1.97 16	510.290	7/2 ⁺	274.730	5/2 ⁻	E1		0.0307	α(K)=0.0260 4; α(L)=0.00368 6; α(M)=0.000800 12 α(N)=0.000183 3; α(O)=2.74×10 ⁻⁵ 4; α(P)=1.606×10 ⁻⁶ 23 α(K)exp=0.020 (1980Ab19).
240.564 17	3.33 25	240.530	(5/2) ⁺	0.0	5/2 ⁺	M1+E2	0.83 +17-15	0.162 7	α(K)=0.131 7; α(L)=0.0245 6; α(M)=0.00548 14 α(N)=0.00126 3; α(O)=0.000184 3; α(P)=9.2×10 ⁻⁶ 6 α(K)exp=0.120 (1980Ab19).
242.001 37	1.9 3	389.551	(7/2) ⁺	147.570	(3/2) ⁺	E2		0.1226	α(K)=0.0887 13; α(L)=0.0263 4; α(M)=0.00607 9 α(N)=0.001374 20; α(O)=0.000189 3; α(P)=5.29×10 ⁻⁶ 8 α(K)exp=0.070 (1980Ab19). I _γ : Value from 1977De05 is 1.24 15, but 1975ZuZZ give 2.1 3.
244.249 5	38.7 8	324.968	9/2 ⁺	80.7202	7/2 ⁺	M1+E2	0.56 4	0.166 3	α(K)=0.137 3; α(L)=0.0227 4; α(M)=0.00503 8 α(N)=0.001157 18; α(O)=0.0001733 25; α(P)=9.83×10 ⁻⁶

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

$\gamma(^{153}\text{Tb})$ (continued)

E_γ [†]	I_γ ^{‡b}	E_i (level)	J_i^π	E_f	J_f^π	Mult.#	δ ^{@a}	α ^{&}	Comments
247.49 5	6.3 5	510.290	7/2 ⁺	262.831	9/2 ⁻	E1		0.0270	21 $\alpha(\text{K})_{\text{exp}}=0.101$ (1980Ab19). $\alpha(\text{K})=0.0229$ 4; $\alpha(\text{L})=0.00323$ 5; $\alpha(\text{M})=0.000702$ 10 $\alpha(\text{N})=0.0001609$ 23; $\alpha(\text{O})=2.41\times 10^{-5}$ 4; $\alpha(\text{P})=1.421\times 10^{-6}$ 20 $\alpha(\text{K})_{\text{exp}}=0.0079$ (1980Ab19).
250.00 5	1.60 20	694.905	7/2 ⁻ ,9/2 ⁻	444.695	9/2 ⁺	E1		0.0263	I_γ : Value from 1975ZuZZ is 4.7 4. $\alpha(\text{K})=0.0223$ 4; $\alpha(\text{L})=0.00315$ 5; $\alpha(\text{M})=0.000684$ 10 $\alpha(\text{N})=0.0001567$ 22; $\alpha(\text{O})=2.35\times 10^{-5}$ 4; $\alpha(\text{P})=1.386\times 10^{-6}$ 20 $\alpha(\text{K})_{\text{exp}}=0.016$ (1980Ab19).
^x 252.00 10 254.259 17	3.9 8 77.3 20	254.200	7/2 ⁺	0.0	5/2 ⁺	M1+E2	0.35 4	0.156 3	$\alpha(\text{K})=0.1304$ 23; $\alpha(\text{L})=0.0199$ 3; $\alpha(\text{M})=0.00436$ 7 $\alpha(\text{N})=0.001006$ 15; $\alpha(\text{O})=0.0001532$ 22; $\alpha(\text{P})=9.52\times 10^{-6}$ 19 $\alpha(\text{K})_{\text{exp}}=0.122$ (1980Ab19).
^x 254.94 5	5.3 5					E1		0.0250	$\alpha(\text{K})=0.0212$ 3; $\alpha(\text{L})=0.00299$ 5; $\alpha(\text{M})=0.000650$ 10 $\alpha(\text{N})=0.0001489$ 21; $\alpha(\text{O})=2.23\times 10^{-5}$ 4; $\alpha(\text{P})=1.321\times 10^{-6}$ 19
255.87 9	3.4 3	510.290	7/2 ⁺	254.200	7/2 ⁺	M1		0.1593	$\alpha(\text{K})=0.1346$ 19; $\alpha(\text{L})=0.0193$ 3; $\alpha(\text{M})=0.00421$ 6 $\alpha(\text{N})=0.000973$ 14; $\alpha(\text{O})=0.0001501$ 21; $\alpha(\text{P})=9.95\times 10^{-6}$ 14 $\alpha(\text{K})_{\text{exp}}=0.137$ (1980Ab19).
^x 258.0 3 ^x 261.0 3	2.0 4 1.16 24								E_γ, I_γ : Reported only by 1977De05. I_γ : Value from 1977De05 is 0.35 21 and γ is placed from 789 level.
262.597 18	7.03 19	537.374	5/2 ⁻ ,7/2 ⁻	274.730	5/2 ⁻	M1		0.1485	$\alpha(\text{K})=0.1255$ 18; $\alpha(\text{L})=0.0180$ 3; $\alpha(\text{M})=0.00392$ 6 $\alpha(\text{N})=0.000907$ 13; $\alpha(\text{O})=0.0001398$ 20; $\alpha(\text{P})=9.28\times 10^{-6}$ 13 $\alpha(\text{K})_{\text{exp}}=0.134$ (1980Ab19).
^x 263.5 3	1.3 3								E_γ, I_γ : Values from 1977De05 are 264.0 4 keV and 0.43 21 and γ is placed from 807 level.
270.10 20 ^x 271.00 20 272.55 9 274.673 ^d 15	1.3 3 1.7 3 2.26 21 28 ^d 5	807.464 597.286 274.730	9/2 ⁻ (9/2) ⁻ 5/2 ⁻	537.374 324.968 0.0	5/2 ⁻ ,7/2 ⁻ 9/2 ⁺ 5/2 ⁺	[E1]		0.0207	I_γ : Value from 1977De05 is 1.64 22. $\alpha(\text{K})=0.01753$ 25; $\alpha(\text{L})=0.00246$ 4; $\alpha(\text{M})=0.000535$ 8 $\alpha(\text{N})=0.0001227$ 18; $\alpha(\text{O})=1.84\times 10^{-5}$ 3; $\alpha(\text{P})=1.101\times 10^{-6}$ 16 I_γ : From I_γ for multiplet and I_γ 's assigned to other placements.
274.673 ^d 15	18 ^d 2	537.374	5/2 ⁻ ,7/2 ⁻	262.831	9/2 ⁻	[E2]		0.0820	$\alpha(\text{K})=0.0610$ 9; $\alpha(\text{L})=0.01627$ 23; $\alpha(\text{M})=0.00373$ 6 $\alpha(\text{N})=0.000846$ 12; $\alpha(\text{O})=0.0001178$ 17; $\alpha(\text{P})=3.74\times 10^{-6}$ 6
275.32 5	0.20 4	529.383	11/2 ⁺	254.200	7/2 ⁺	[E2]		0.0814	I_γ : Photon peak unresolved from 274 γ . I_γ calculated from measured I_K using $\alpha(\text{E}2)$.
^x 281.25 4	2.27 14					E1		0.0195	$\alpha(\text{K})=0.01652$ 24; $\alpha(\text{L})=0.00232$ 4; $\alpha(\text{M})=0.000504$ 7 $\alpha(\text{N})=0.0001155$ 17; $\alpha(\text{O})=1.737\times 10^{-5}$ 25; $\alpha(\text{P})=1.039\times 10^{-6}$ 15 $\alpha(\text{K})_{\text{exp}}=0.0061$ (1980Ab19).
283.13 7	1.32 11	537.374	5/2 ⁻ ,7/2 ⁻	254.200	7/2 ⁺	E1		0.0191	I_γ : Value from 1975ZuZZ is 0.9 2, but 1977De05 give 1.95 23. $\alpha(\text{K})=0.01624$ 23; $\alpha(\text{L})=0.00228$ 4; $\alpha(\text{M})=0.000495$ 7 $\alpha(\text{N})=0.0001135$ 16; $\alpha(\text{O})=1.708\times 10^{-5}$ 24; $\alpha(\text{P})=1.023\times 10^{-6}$ 15 $\alpha(\text{K})_{\text{exp}}=0.0143$ (1980Ab19).

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>δ@a</u>	<u>α&</u>	<u>Comments</u>
288.85 14	1.94 21	543.15	5/2 ⁺	254.200	7/2 ⁺	M1+E2	4.0 9	0.0727 19	α(K)=0.0553 18; α(L)=0.01353 20; α(M)=0.00309 5 α(N)=0.000701 10; α(O)=9.87×10 ⁻⁵ 15; α(P)=3.49×10 ⁻⁶ 15 α(K)exp=0.067 (1980Ab19).
290.74 5	5.6 3	371.541	5/2 ⁺	80.7202	7/2 ⁺	M1+E2		0.091 23	α(K)=0.074 22; α(L)=0.0134 3; α(M)=0.00300 5 α(N)=0.000686 10; α(O)=0.000101 6; α(P)=5.1×10 ⁻⁶ 20 α(K)exp=0.071 (1980Ab19).
293.0 3	0.541 25	1082.85	7/2 ⁻	789.96	7/2 ⁺ ,9/2 ⁺				
^x 294.5 3	0.541 23								
296.04 5	3.2 5	740.555	(7/2 ⁺)	444.695	9/2 ⁺	M1+E2		0.086 22	α(K)=0.070 21; α(L)=0.0127 4; α(M)=0.00283 4 α(N)=0.000648 12; α(O)=9.5×10 ⁻⁵ 6; α(P)=4.9×10 ⁻⁶ 19 α(K)exp=0.063 (1980Ab19). I _γ : Value from 1977De05 is 1.8 4.
296.69 5	9.4 7	510.290	7/2 ⁺	213.742	(7/2) ⁻	E1		0.01702	α(K)=0.01445 21; α(L)=0.00202 3; α(M)=0.000439 7 α(N)=0.0001007 15; α(O)=1.517×10 ⁻⁵ 22; α(P)=9.13×10 ⁻⁷ 13 α(K)exp=0.0063 (1980Ab19). I _γ : Value from 1977De05 is 1.72 23. I _γ : Value from 1975ZuZZ is 0.78 14. I _γ : From I _K =0.10 2 and theoretical α(M1,E2). I _γ : From I _γ for doublet and I _γ for 302 component.
298.0 3	0.43 8	2120.97		1822.56	(9/2,11/2,13/2) ⁻				
299.55 5	0.430 20	959.94	7/2 ⁻	660.171	5/2 ⁺				
302.57 5	1.4 5	543.15	5/2 ⁺	240.530	(5/2) ⁺				
^x 303.36 5	<1.0								
305.63 5	1.14 9	630.420	11/2 ⁺	324.968	9/2 ⁺	(E2)		0.0589	α(K)=0.0447 7; α(L)=0.01100 16; α(M)=0.00251 4 α(N)=0.000570 8; α(O)=8.02×10 ⁻⁵ 12; α(P)=2.80×10 ⁻⁶ 4 α(K)exp=0.022 (1980Ab19).
308.75 5	1.19 10	389.551	(7/2) ⁺	80.7202	7/2 ⁺	M1+E2		0.077 20	α(K)=0.062 19; α(L)=0.0111 6; α(M)=0.00247 7 α(N)=0.000567 20; α(O)=8.4×10 ⁻⁵ 7; α(P)=4.4×10 ⁻⁶ 17 α(K)exp=0.050 (1980Ab19). I _γ : Value from 1977A128 is ≤ 0.5.
^x 311.60 14	0.41 9					M1		0.0939	α(K)=0.0795 12; α(L)=0.01132 16; α(M)=0.00247 4 α(N)=0.000571 8; α(O)=8.81×10 ⁻⁵ 13; α(P)=5.86×10 ⁻⁶ 9 α(K)exp=0.0975 (1980Ab19).
315.72 6	0.78 6	529.383	11/2 ⁺	213.742	(7/2) ⁻	[M2]		0.369	α(K)=0.300 5; α(L)=0.0536 8; α(M)=0.01204 17 α(N)=0.00279 4; α(O)=0.000425 6; α(P)=2.64×10 ⁻⁵ 4
317.72 4	1.11 7	571.949	9/2 ⁺	254.200	7/2 ⁺				I _γ : Value from 1977De05 is 1.49 14.
323.665 20	10.6 3	537.374	5/2 ⁻ ,7/2 ⁻	213.742	(7/2) ⁻	M1+E2		0.067 18	α(K)=0.055 17; α(L)=0.0096 7; α(M)=0.00213 10

¹⁵³Dy ε decay [1980Ab19](#),[1980Ab21](#) (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α&</u>	<u>Comments</u>
324.980 23	7.28 23	324.968	9/2 ⁺	0.0	5/2 ⁺	E2	0.0489	α(N)=0.00049 3; α(O)=7.3×10 ⁻⁵ 7; α(P)=3.8×10 ⁻⁶ 15 α(K)exp=0.047 (1980Ab19). α(K)=0.0375 6; α(L)=0.00883 13; α(M)=0.00201 3 α(N)=0.000457 7; α(O)=6.46×10 ⁻⁵ 9; α(P)=2.37×10 ⁻⁶ 4 α(K)exp=0.0247 (1980Ab19).
326.3 3	0.52 9	957.17		630.420	11/2 ⁺			
331.00 ^e 10	1.35 22	571.949	9/2 ⁺	240.530	(5/2) ⁺			α(K)exp=0.0296 (1980Ab19).
332.50 10	1.35 22	722.417	7/2 ⁺ ,9/2 ⁺	389.551	(7/2) ⁺	(E2)	0.0457	α(K)=0.0352 5; α(L)=0.00815 12; α(M)=0.00185 3 α(N)=0.000422 6; α(O)=5.97×10 ⁻⁵ 9; α(P)=2.23×10 ⁻⁶ 4 α(K)exp=0.0296 (1980Ab19). I _γ : Value from 1977De05 is 0.78 15.
334.52 4	3.62 23	597.286	(9/2) ⁻	262.831	9/2 ⁻	(E2)	0.0449	α(K)=0.0346 5; α(L)=0.00798 12; α(M)=0.00181 3 α(N)=0.000413 6; α(O)=5.85×10 ⁻⁵ 9; α(P)=2.20×10 ⁻⁶ 3 α(K)exp=0.022 (1980Ab19). I _γ : Value from 1977De05 is 2.00 22, and 1975ZuZZ give 2.76 24.
336.98 17	0.75 15	726.557	5/2 ⁻ ,7/2 ⁻	389.551	(7/2) ⁺			
340.30 ^e 10	0.39 7	1130.65	5/2 ⁻ ,7/2 ⁻	789.96	7/2 ⁺ ,9/2 ⁺			
342.00 10	0.63 9	1082.85	7/2 ⁻	740.555	(7/2 ⁺)			
^x 345.9 3	0.9 3							
346.44 13	0.20 3	1429.32	9/2 ⁻	1082.85	7/2 ⁻			
^x 348.4 3	0.77 9							
350.42 10	1.5 5	722.417	7/2 ⁺ ,9/2 ⁺	371.541	5/2 ⁺	(E2)	0.0391	α(K)=0.0304 5; α(L)=0.00679 10; α(M)=0.001541 22 α(N)=0.000351 5; α(O)=4.99×10 ⁻⁵ 7; α(P)=1.94×10 ⁻⁶ 3 α(K)exp=0.017 (1980Ab19). I _γ : Value from 1977De05 is 0.46 8, and 1975ZuZZ give I _γ (350.9+351.3)=0.49 18. α(K)exp=0.014 (1980Ab19). I _γ : Value from 1977De05 is 0.15 8. I _γ : Calculated from I _K =0.015 2 and α _K (M1,E2)=0.041 13. I _γ : 1980Ab19 placed the 364 γ from the 1104 level to the 740 level, which would require mult=E1 and leading to I _γ =10 3 from the observed I _K . This is inconsistent with the measured I _γ (363.9+364.1)=2.70 20 which implies the transition was misplaced by 1980Ab19 .
362.10 20	0.58 14	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	1429.32	9/2 ⁻			
363.94 4	0.37 14	444.695	9/2 ⁺	80.7202	7/2 ⁺			
^x 364.10 5	2.2 9							
^x 365.9 2	0.39 15							E _γ ,I _γ : Values are from 1977De05 and γ is placed from 529 level.
367.80 20	0.31 7	630.420	11/2 ⁺	262.831	9/2 ⁻			
370.00 20	0.53 9	694.905	7/2 ⁻ ,9/2 ⁻	324.968	9/2 ⁺			
371.70 3	8.1 3	371.541	5/2 ⁺	0.0	5/2 ⁺	E2	0.0329	α(K)=0.0258 4; α(L)=0.00556 8; α(M)=0.001257 18 α(N)=0.000286 4; α(O)=4.09×10 ⁻⁵ 6; α(P)=1.665×10 ⁻⁶ 24 α(K)exp=0.0198 (1980Ab19).
^x 374.150 20	1.5 2					E1+M2	0.0117 21	α(K)=0.0099 17; α(L)=0.0014 3; α(M)=0.00031 7

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

								$\gamma(^{153}\text{Tb})$ (continued)	
E_γ^\dagger	$I_\gamma^{\ddagger b}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. #	$\alpha\&$	Comments	
376.07 3	4.9 3	630.420	11/2 ⁺	254.200	7/2 ⁺	E2	0.0318	$\alpha(\text{N})=7.1\times 10^{-5}$ 15; $\alpha(\text{O})=1.08\times 10^{-5}$ 23; $\alpha(\text{P})=6.7\times 10^{-7}$ 15 $\alpha(\text{K})_{\text{exp}}=0.0133$ (1980Ab19). $\alpha(\text{K})=0.0250$ 4; $\alpha(\text{L})=0.00534$ 8; $\alpha(\text{M})=0.001208$ 17 $\alpha(\text{N})=0.000275$ 4; $\alpha(\text{O})=3.94\times 10^{-5}$ 6; $\alpha(\text{P})=1.615\times 10^{-6}$ 23 $\alpha(\text{K})_{\text{exp}}=0.0287$ (1980Ab19). E_γ, I_γ : Both 1977De05 and 1975ZuZZ report a doublet at this energy with the second component from the 1365 level, and their I_γ values are 3.1 4 and 3.6 5, respectively, for the doublet.	
378.00 10	0.40 9	1104.67	(5/2 ⁻ , 7/2 ⁻)	726.557	5/2 ⁻ , 7/2 ⁻	E2	0.0314	$\alpha(\text{K})=0.0246$ 4; $\alpha(\text{L})=0.00525$ 8; $\alpha(\text{M})=0.001187$ 17 $\alpha(\text{N})=0.000271$ 4; $\alpha(\text{O})=3.87\times 10^{-5}$ 6; $\alpha(\text{P})=1.593\times 10^{-6}$ 23 $\alpha(\text{K})_{\text{exp}}=0.0175$ (1980Ab19).	
379.30 10	0.54 9	1104.67	(5/2 ⁻ , 7/2 ⁻)	725.526	9/2 ⁻	(E2)	0.0300	$\alpha(\text{K})=0.0236$ 4; $\alpha(\text{L})=0.00499$ 7; $\alpha(\text{M})=0.001128$ 16 $\alpha(\text{N})=0.000257$ 4; $\alpha(\text{O})=3.69\times 10^{-5}$ 6; $\alpha(\text{P})=1.532\times 10^{-6}$ 22 $\alpha(\text{K})_{\text{exp}}=0.0125$ (1980Ab19).	
383.74 5	2.4 3	597.286	(9/2) ⁻	213.742	(7/2) ⁻				
384.08 ^e 5	2.4 3	1341.45	7/2 ⁻ , 9/2 ⁻	957.17		(E2)	0.0300	$\alpha(\text{K})=0.0236$ 4; $\alpha(\text{L})=0.00498$ 7; $\alpha(\text{M})=0.001125$ 16 $\alpha(\text{N})=0.000256$ 4; $\alpha(\text{O})=3.68\times 10^{-5}$ 6; $\alpha(\text{P})=1.529\times 10^{-6}$ 22 $\alpha(\text{K})_{\text{exp}}=0.0167$ (1980Ab19). I_γ : Value from 1977De05 is 1.17 23.	
388.00 20	0.57 10	959.94	7/2 ⁻	571.949	9/2 ⁺	E2	0.0288	$\alpha(\text{K})=0.0227$ 4; $\alpha(\text{L})=0.00475$ 7; $\alpha(\text{M})=0.001073$ 15 $\alpha(\text{N})=0.000245$ 4; $\alpha(\text{O})=3.51\times 10^{-5}$ 5; $\alpha(\text{P})=1.474\times 10^{-6}$ 21 $\alpha(\text{K})_{\text{exp}}=0.0234$ (1980Ab19).	
389.531 16	13.7 4	389.551	(7/2) ⁺	0.0	5/2 ⁺				
^x 392.00 20	0.57 10					M1+E2	0.040 12	$\alpha(\text{K})=0.033$ 11; $\alpha(\text{L})=0.0054$ 8; $\alpha(\text{M})=0.00120$ 15 $\alpha(\text{N})=0.00027$ 4; $\alpha(\text{O})=4.1\times 10^{-5}$ 7; $\alpha(\text{P})=2.32\times 10^{-6}$ 88 $\alpha(\text{K})_{\text{exp}}=0.035$ (1980Ab19).	
^x 394.00 20	0.36 7					E1	0.00835	$\alpha(\text{K})=0.00710$ 10; $\alpha(\text{L})=0.000978$ 14; $\alpha(\text{M})=0.000212$ 3 $\alpha(\text{N})=4.87\times 10^{-5}$ 7; $\alpha(\text{O})=7.39\times 10^{-6}$ 11; $\alpha(\text{P})=4.59\times 10^{-7}$ 7 $\alpha(\text{K})_{\text{exp}}=0.0083$ (1980Ab19). I_γ : Value from 1977De05 is 0.85 15, and 1975ZuZZ give 0.86 14.	
395.90 20	0.86 9	543.15	5/2 ⁺	147.570	(3/2) ⁺				
397.50 4	1.20 9	651.72		254.200	7/2 ⁺				
400.80 5	1.56 13	725.526	9/2 ⁻	324.968	9/2 ⁺	E1+M2	0.0098 17	$\alpha(\text{K})=0.0083$ 14; $\alpha(\text{L})=0.00119$ 23; $\alpha(\text{M})=0.00026$ 6 $\alpha(\text{N})=6.0\times 10^{-5}$ 12; $\alpha(\text{O})=9.1\times 10^{-6}$ 19; $\alpha(\text{P})=5.6\times 10^{-7}$ 12 $\alpha(\text{K})_{\text{exp}}=0.0321$ (1980Ab19).	
404.00 20	0.15 4	1130.65	5/2 ⁻ , 7/2 ⁻	726.557	5/2 ⁻ , 7/2 ⁻	M1+E2	0.036 11	$\alpha(\text{K})=0.0300$ 98; $\alpha(\text{L})=0.0049$ 8; $\alpha(\text{M})=0.00108$ 15 $\alpha(\text{N})=0.00025$ 4; $\alpha(\text{O})=3.7\times 10^{-5}$ 7; $\alpha(\text{P})=2.12\times 10^{-6}$ 80 $\alpha(\text{K})_{\text{exp}}=0.0364$ (1980Ab19).	
405.87 3	4.4 4	660.171	5/2 ⁺	254.200	7/2 ⁺				
408.92 3	1.4 4	571.949	9/2 ⁺	163.175	11/2 ⁻	E1	0.00781	$\alpha(\text{K})=0.00664$ 10; $\alpha(\text{L})=0.000914$ 13; $\alpha(\text{M})=0.000198$ 3 $\alpha(\text{N})=4.55\times 10^{-5}$ 7; $\alpha(\text{O})=6.91\times 10^{-6}$ 10; $\alpha(\text{P})=4.30\times 10^{-7}$ 6 $\alpha(\text{K})_{\text{exp}}<0.0071$ (1980Ab19).	
410.66 10	1.04 12	1151.545	7/2 ⁻	740.555	(7/2) ⁺	E1	0.00773	$\alpha(\text{K})=0.00658$ 10; $\alpha(\text{L})=0.000905$ 13; $\alpha(\text{M})=0.000196$ 3	

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

								<u>γ(¹⁵³Tb) (continued)</u>	
<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult. #</u>	<u>α&</u>	<u>Comments</u>	
415.580 17	10.1 3	740.555	(7/2 ⁺)	324.968	9/2 ⁺	(M1+E2)	0.034 10	α(N)=4.51×10 ⁻⁵ 7; α(O)=6.84×10 ⁻⁶ 10; α(P)=4.26×10 ⁻⁷ 6 α(K)exp=0.0077 (1980Ab19).	
417.8 3	0.46 9	807.464	9/2 ⁻	389.551	(7/2) ⁺			α(K)=0.0282 92; α(L)=0.0046 8; α(M)=0.00101 15	
419.81 3	5.55 20	957.17		537.374	5/2 ⁻ ,7/2 ⁻	M1+E2	0.0331 99	α(N)=0.00023 4; α(O)=3.5×10 ⁻⁵ 7; α(P)=1.99×10 ⁻⁶ 75 α(K)exp=0.0197 (1980Ab19).	
^x 424.46 15	0.40 4							α(K)=0.0275 90; α(L)=0.0044 7; α(M)=0.00098 15	
425.98 5	1.00 10	1151.545	7/2 ⁻	725.526	9/2 ⁻	M1+E2	0.0319 95	α(N)=0.00022 4; α(O)=3.4×10 ⁻⁵ 7; α(P)=1.94×10 ⁻⁶ 73 α(K)exp=0.0216 (1980Ab19).	
429.61 9	2.96 16	510.290	7/2 ⁺	80.7202	7/2 ⁺	M1+E2	0.0312 94	α(K)=0.0264 87; α(L)=0.0042 7; α(M)=0.00094 14 α(N)=0.00200 4; α(O)=3.2×10 ⁻⁵ 6; α(P)=1.87×10 ⁻⁶ 70 α(K)exp=0.0287 (1980Ab19).	
434.101 21	11.0 3	597.286	(9/2) ⁻	163.175	11/2 ⁻	M1	0.0394	α(K)=0.0259 85; α(L)=0.0041 7; α(M)=0.00092 14 α(N)=0.00021 4; α(O)=3.2×10 ⁻⁵ 6; α(P)=1.83×10 ⁻⁶ 69 α(K)exp=0.0202 (1980Ab19).	
438.0 4	1.0 5	651.72		213.742	(7/2) ⁻			α(K)=0.0334 5; α(L)=0.00471 7; α(M)=0.001025 15	
441.49 5	3.09 16	660.171	5/2 ⁺	218.628	3/2 ⁺ ,5/2 ⁺	E2	0.0203	α(N)=0.000237 4; α(O)=3.66×10 ⁻⁵ 6; α(P)=2.45×10 ⁻⁶ 4 α(K)exp=0.0338 (1980Ab19).	
444.731 25	6.69 23	444.695	9/2 ⁺	0.0	5/2 ⁺	E2	0.0199	α(K)=0.01622 23; α(L)=0.00317 5; α(M)=0.000712 10 α(N)=0.0001627 23; α(O)=2.36×10 ⁻⁵ 4; α(P)=1.071×10 ⁻⁶ 15 α(K)exp=0.0162 (1980Ab19).	
448.664 22	9.5 3	529.383	11/2 ⁺	80.7202	7/2 ⁺	E2	0.0194	α(K)=0.01591 23; α(L)=0.00310 5; α(M)=0.000696 10 α(N)=0.0001589 23; α(O)=2.31×10 ⁻⁵ 4; α(P)=1.052×10 ⁻⁶ 15 α(K)exp=0.0179 (1980Ab19). I _γ : Value from 1977De05 is 12 3.	
450.80 10	2.16 16	725.526	9/2 ⁻	274.730	5/2 ⁻			α(K)=0.01555 22; α(L)=0.00301 5; α(M)=0.000677 10	
451.90 10	2.16 16	726.557	5/2 ⁻ ,7/2 ⁻	274.730	5/2 ⁻			α(N)=0.0001546 22; α(O)=2.24×10 ⁻⁵ 4; α(P)=1.029×10 ⁻⁶ 15	
456.60 3	2.10 9	537.374	5/2 ⁻ ,7/2 ⁻	80.7202	7/2 ⁺	E1	0.00604	α(K)exp=0.0115 (1980Ab19). I _γ : Value from 1977De05 is 4.4 3, and 1975ZuZZ give 4.1 5. α(K)=0.00515 8; α(L)=0.000704 10; α(M)=0.0001526 22 α(N)=3.51×10 ⁻⁵ 5; α(O)=5.33×10 ⁻⁶ 8; α(P)=3.35×10 ⁻⁷ 5 α(K)exp=0.0052 (1980Ab19).	
^x 461.61 5	7.27 23							ce(K)=0.38	
462.63 5	5.9 15	725.526	9/2 ⁻	262.831	9/2 ⁻	M1+E2+E0	0.0257 78	α(K)=0.0214 70; α(L)=0.0034 7; α(M)=0.00074 13 α(N)=0.00017 3; α(O)=2.6×10 ⁻⁵ 6; α(P)=1.51×10 ⁻⁶ 57 α(K)exp>0.0523 (1980Ab19).	
^x 465.63 10	1.10 13					E1	0.00578	I _γ : Calculated from I _γ for doublet and I _γ (461 γ) determined from measured I _K and assumed mult(461 γ)=E1. α(K)=0.00492 7; α(L)=0.000673 10; α(M)=0.0001457 21	

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

E_γ^\dagger	$I_\gamma^{\ddagger b}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.#	$\alpha\&$	Comments
								$\alpha(N)=3.35\times 10^{-5}$ 5; $\alpha(O)=5.10\times 10^{-6}$ 8; $\alpha(P)=3.21\times 10^{-7}$ 5 $\alpha(K)\text{exp}=0.0047$ (1980Ab19).
^x 467.70 20	1.24 11							
^x 468.33 6	1.87 14							
471.352 16	12.1 4	725.526	9/2 ⁻	254.200	7/2 ⁺	E1	0.00562	$\alpha(K)=0.00479$ 7; $\alpha(L)=0.000654$ 10; $\alpha(M)=0.0001417$ 20 $\alpha(N)=3.26\times 10^{-5}$ 5; $\alpha(O)=4.96\times 10^{-6}$ 7; $\alpha(P)=3.12\times 10^{-7}$ 5 $\alpha(K)\text{exp}=0.0049$ (1980Ab19).
473.5 3	0.49 10	1104.67	(5/2 ⁻ , 7/2 ⁻)	630.420	11/2 ⁺			
^x 477.69 6	1.30 10					E1	0.00545	$\alpha(K)=0.00465$ 7; $\alpha(L)=0.000634$ 9; $\alpha(M)=0.0001373$ 20 $\alpha(N)=3.16\times 10^{-5}$ 5; $\alpha(O)=4.81\times 10^{-6}$ 7; $\alpha(P)=3.03\times 10^{-7}$ 5 $\alpha(K)\text{exp}=0.0038$ (1980Ab19).
481.11 5	3.48 21	1822.56	(9/2, 11/2, 13/2) ⁻	1341.45	7/2 ⁻ , 9/2 ⁻	E2	0.01610	$\alpha(K)=0.01298$ 19; $\alpha(L)=0.00243$ 4; $\alpha(M)=0.000544$ 8 $\alpha(N)=0.0001244$ 18; $\alpha(O)=1.81\times 10^{-5}$ 3; $\alpha(P)=8.65\times 10^{-7}$ 13 $\alpha(K)\text{exp}=0.0144$ (1980Ab19).
482.59 9	1.81 16	807.464	9/2 ⁻	324.968	9/2 ⁺	E1	0.00533	$\alpha(K)=0.00454$ 7; $\alpha(L)=0.000619$ 9; $\alpha(M)=0.0001341$ 19 $\alpha(N)=3.09\times 10^{-5}$ 5; $\alpha(O)=4.70\times 10^{-6}$ 7; $\alpha(P)=2.97\times 10^{-7}$ 5 $\alpha(K)\text{exp}<0.0166$ (1980Ab19).
486.11 3	3.02 15	726.557	5/2 ⁻ , 7/2 ⁻	240.530	(5/2) ⁺	E1+M2	0.0061 9	$\alpha(K)=0.0052$ 8; $\alpha(L)=0.00073$ 13; $\alpha(M)=0.00016$ 3 $\alpha(N)=3.7\times 10^{-5}$ 7; $\alpha(O)=5.6\times 10^{-6}$ 10; $\alpha(P)=3.5\times 10^{-7}$ 7 $\alpha(K)\text{exp}=0.0099$ (1980Ab19).
491.15 7	0.96 15	571.949	9/2 ⁺	80.7202	7/2 ⁺	M1+E2	0.0220 68	$\alpha(K)=0.0183$ 61; $\alpha(L)=0.0028$ 6; $\alpha(M)=0.00063$ 12 $\alpha(N)=0.00014$ 3; $\alpha(O)=2.2\times 10^{-5}$ 5; $\alpha(P)=1.30\times 10^{-6}$ 48 $\alpha(K)\text{exp}=0.0208$ (1980Ab19).
499.941 24	2.62 11	740.555	(7/2) ⁺	240.530	(5/2) ⁺	M1+E2	0.0210 65	$\alpha(K)=0.0175$ 58; $\alpha(L)=0.0027$ 6; $\alpha(M)=0.00060$ 12 $\alpha(N)=0.00014$ 3; $\alpha(O)=2.1\times 10^{-5}$ 5; $\alpha(P)=1.24\times 10^{-6}$ 46 $\alpha(K)\text{exp}=0.0229$ (1980Ab19).
^x 503.08 7	0.76 8							
507.80 20	0.49 10	726.557	5/2 ⁻ , 7/2 ⁻	218.628	3/2 ⁺ , 5/2 ⁺			
509.00 ^e 20	1.31 15	722.417	7/2 ⁺ , 9/2 ⁺	213.742	(7/2) ⁻			
^x 510.50 20	10.2 8							
512.00 20	16.2 8	725.526	9/2 ⁻	213.742	(7/2) ⁻	(E2)	0.01367	$\alpha(K)=0.01109$ 16; $\alpha(L)=0.00202$ 3; $\alpha(M)=0.000450$ 7 $\alpha(N)=0.0001030$ 15; $\alpha(O)=1.510\times 10^{-5}$ 22; $\alpha(P)=7.43\times 10^{-7}$ 11 $\alpha(K)\text{exp}=0.0093$ (1980Ab19). I_γ : Value from 1977De05 is 23 3.
514.50 20	1.47 15	1240.38	(7/2) ⁺	725.526	9/2 ⁻			
^x 516.00 20	0.49 11							
518.89 6	2.10 20	773.07	(5/2, 7/2) ⁻	254.200	7/2 ⁺	E1	0.00453	$\alpha(K)=0.00386$ 6; $\alpha(L)=0.000525$ 8; $\alpha(M)=0.0001136$ 16 $\alpha(N)=2.61\times 10^{-5}$ 4; $\alpha(O)=3.98\times 10^{-6}$ 6; $\alpha(P)=2.53\times 10^{-7}$ 4 $\alpha(K)\text{exp}=0.0238$ (1980Ab19). I_γ : Value from 1977De05 is 1.50 22 and 1975ZuZZ give 1.3 3.
522.0 4	0.47 25	740.555	(7/2) ⁺	218.628	3/2 ⁺ , 5/2 ⁺			I_γ : Value from 1977De05 is 1.24 23.

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α&</u>	<u>I_(γ+ce)^b</u>	<u>Comments</u>
525.5 4 527.17 6	0.8 3 4.5 4	800.18 789.96	(5/2) ⁺ 7/2 ⁺ ,9/2 ⁺	274.730 262.831	5/2 ⁻ 9/2 ⁻	E1	0.00437		α(K)=0.00373 6; α(L)=0.000506 7; α(M)=0.0001096 16 α(N)=2.52×10 ⁻⁵ 4; α(O)=3.85×10 ⁻⁶ 6; α(P)=2.45×10 ⁻⁷ 4 α(K)exp=0.0266 (1980Ab19).
532.97 ^e 11	1.30 12	773.07	(5/2,7/2) ⁻	240.530	(5/2) ⁺	E1	0.00427		α(K)=0.00364 6; α(L)=0.000494 7; α(M)=0.0001070 15 α(N)=2.46×10 ⁻⁵ 4; α(O)=3.75×10 ⁻⁶ 6; α(P)=2.39×10 ⁻⁷ 4 α(K)exp=0.0385 (1980Ab19).
535.62 6	2.70 20	789.96	7/2 ⁺ ,9/2 ⁺	254.200	7/2 ⁺	M1	0.0230		α(K)=0.0195 3; α(L)=0.00273 4; α(M)=0.000594 9 α(N)=0.0001375 20; α(O)=2.12×10 ⁻⁵ 3; α(P)=1.425×10 ⁻⁶ 20 α(K)exp=0.0222 (1980Ab19).
537.225 18	12.0 3	537.374	5/2 ⁻ ,7/2 ⁻	0.0	5/2 ⁺	E1	0.00420		I _γ : Value from 1977De05 is 1.84 23. α(K)=0.00358 5; α(L)=0.000485 7; α(M)=0.0001051 15 α(N)=2.42×10 ⁻⁵ 4; α(O)=3.69×10 ⁻⁶ 6; α(P)=2.35×10 ⁻⁷ 4 α(K)exp=0.0208 (1980Ab19).
543.31 12	2.70 2	543.15	5/2 ⁺	0.0	5/2 ⁺	E2	0.01174		α(K)=0.00957 14; α(L)=0.001694 24; α(M)=0.000377 6 α(N)=8.64×10 ⁻⁵ 13; α(O)=1.272×10 ⁻⁵ 18; α(P)=6.45×10 ⁻⁷ 9 α(K)exp=0.0111 (1980Ab19).
544.76 6	4.8 5	807.464	9/2 ⁻	262.831	9/2 ⁻	M1+E2	0.0169 52		α(K)=0.0141 46; α(L)=0.0021 5; α(M)=0.00047 10 α(N)=0.000109 23; α(O)=1.6×10 ⁻⁵ 4; α(P)=1.00×10 ⁻⁶ 37 α(K)exp=0.0167 (1980Ab19).
553.17 5	1.51 22	807.464	9/2 ⁻	254.200	7/2 ⁺	E1	0.00394		α(K)=0.00336 5; α(L)=0.000455 7; α(M)=9.84×10 ⁻⁵ 14 α(N)=2.26×10 ⁻⁵ 4; α(O)=3.46×10 ⁻⁶ 5; α(P)=2.21×10 ⁻⁷ 3 α(K)exp=0.00265 (1980Ab19).
557.46 11	0.83 13	1364.84	9/2 ⁻	807.464	9/2 ⁻	M1+E2	0.0159 49		α(K)=0.0133 44; α(L)=0.0020 5; α(M)=0.00044 10 α(N)=0.000102 22; α(O)=1.6×10 ⁻⁵ 4; α(P)=9.5×10 ⁻⁷ 34 α(K)exp=0.00145 (1980Ab19).
559.63 4	<0.5	800.18	(5/2) ⁺	240.530	(5/2) ⁺	M1+E2+E0	0.0157 49	0.5	ce(K)=0.03 ce(K)/(γ+ce)=0.0130 42; ce(L)/(γ+ce)=0.0020 5; ce(M)/(γ+ce)=0.00043 10 ce(N)/(γ+ce)=0.000100 22; ce(O)/(γ+ce)=1.5×10 ⁻⁵ 4; ce(P)/(γ+ce)=9.2×10 ⁻⁷ 34 α(K)=0.0132 43; α(L)=0.0020 5; α(M)=0.00044 10 α(N)=0.000101 22; α(O)=1.5×10 ⁻⁵ 4; α(P)=9.4×10 ⁻⁷ 34 α(K)exp>0.060 (1980Ab19).
562.248 25	5.76 21	725.526	9/2 ⁻	163.175	11/2 ⁻	M1+E2	0.0156 48		α(K)=0.0130 43; α(L)=0.0020 5; α(M)=0.00043 10

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

E_γ †	I_γ ‡b	E_i (level)	J_i^π	E_f	J_f^π	Mult.#	α &	Comments
^x 566.16 23	0.41 12					E1	0.00374	$\alpha(N)=0.000100$ 22; $\alpha(O)=1.5\times 10^{-5}$ 4; $\alpha(P)=9.3\times 10^{-7}$ 34 $\alpha(K)_{\text{exp}}=0.0139$ (1980Ab19).
571.00 20 572.00 20	2.05 17 2.94 25	1912.505 571.949	(9/2 ⁻) 9/2 ⁺	1341.45 0.0	7/2 ⁻ ,9/2 ⁻ 5/2 ⁺	E2	0.01031	$\alpha(K)=0.00319$ 5; $\alpha(L)=0.000432$ 6; $\alpha(M)=9.34\times 10^{-5}$ 14 $\alpha(N)=2.15\times 10^{-5}$ 3; $\alpha(O)=3.28\times 10^{-6}$ 5; $\alpha(P)=2.10\times 10^{-7}$ 3 $\alpha(K)_{\text{exp}}=0.0317$ (1980Ab19). I_γ : Value from 1977De05 is 1.01 23. $\alpha(K)=0.00844$ 12; $\alpha(L)=0.001462$ 21; $\alpha(M)=0.000325$ 5 $\alpha(N)=7.45\times 10^{-5}$ 11; $\alpha(O)=1.101\times 10^{-5}$ 16; $\alpha(P)=5.71\times 10^{-7}$ 8 $\alpha(K)_{\text{exp}}=0.0102$ (1980Ab19).
^x 574.90 4	0.90 9					M1+E2	0.0147 46	$\alpha(K)=0.0123$ 40; $\alpha(L)=0.0019$ 5; $\alpha(M)=0.00041$ 9 $\alpha(N)=9.4\times 10^{-5}$ 21; $\alpha(O)=1.4\times 10^{-5}$ 4; $\alpha(P)=8.8\times 10^{-7}$ 32 $\alpha(K)_{\text{exp}}=0.0111$ (1980Ab19).
^x 575.85 5	2.37 10					E1	0.00361	$\alpha(K)=0.00308$ 5; $\alpha(L)=0.000416$ 6; $\alpha(M)=9.00\times 10^{-5}$ 13 $\alpha(N)=2.07\times 10^{-5}$ 3; $\alpha(O)=3.16\times 10^{-6}$ 5; $\alpha(P)=2.03\times 10^{-7}$ 3 $\alpha(K)_{\text{exp}}=0.00253$ (1980Ab19).
^x 579.04 4	3.5 4					E2	0.01000	$\alpha(K)=0.00819$ 12; $\alpha(L)=0.001413$ 20; $\alpha(M)=0.000314$ 5 $\alpha(N)=7.20\times 10^{-5}$ 10; $\alpha(O)=1.064\times 10^{-5}$ 15; $\alpha(P)=5.55\times 10^{-7}$ 8 $\alpha(K)_{\text{exp}}=0.0071$ (1980Ab19).
581.57 5	2.47 13	800.18	(5/2 ⁺)	218.628	3/2 ⁺ ,5/2 ⁺	M1+E2	0.0143 44	$\alpha(K)=0.0120$ 39; $\alpha(L)=0.0018$ 4; $\alpha(M)=0.00040$ 9 $\alpha(N)=9.1\times 10^{-5}$ 21; $\alpha(O)=1.4\times 10^{-5}$ 4; $\alpha(P)=8.5\times 10^{-7}$ 31 $\alpha(K)_{\text{exp}}=0.0126$ (1980Ab19). I_γ : Value from 1977De05 is 1.00 23. I_γ : Value from 1977De05 is 3.5 7.
582.5 3 585.59 6 593.731 22	0.54 9 0.23 6 10.1 3	1822.56 957.17 807.464	(9/2,11/2,13/2) ⁻ 9/2 ⁻	1240.38 371.541 213.742	(7/2) ⁺ 5/2 ⁺ (7/2) ⁻	M1+E2	0.0136 42	$\alpha(K)=0.0114$ 37; $\alpha(L)=0.0017$ 4; $\alpha(M)=0.00037$ 9 $\alpha(N)=8.6\times 10^{-5}$ 20; $\alpha(O)=1.3\times 10^{-5}$ 4; $\alpha(P)=8.1\times 10^{-7}$ 29 $\alpha(K)_{\text{exp}}=0.0128$ (1980Ab19).
^x 597.16 22	0.53 12					M1	0.01749	$\alpha(K)=0.01485$ 21; $\alpha(L)=0.00207$ 3; $\alpha(M)=0.000450$ 7 $\alpha(N)=0.0001041$ 15; $\alpha(O)=1.609\times 10^{-5}$ 23; $\alpha(P)=1.081\times 10^{-6}$ 16 $\alpha(K)_{\text{exp}}=0.0226$ (1980Ab19).
^x 601.23 6	0.35 5					M1+E2	0.0132 41	$\alpha(K)=0.0110$ 36; $\alpha(L)=0.0017$ 4; $\alpha(M)=0.00036$ 8 $\alpha(N)=8.4\times 10^{-5}$ 19; $\alpha(O)=1.3\times 10^{-5}$ 4; $\alpha(P)=7.9\times 10^{-7}$ 28 $\alpha(K)_{\text{exp}}=0.0097$ (1980Ab19).
^x 604.31 6 ^x 609.45 7	0.48 8 1.41 19					M1+E2	0.0127 39	$\alpha(K)=0.0107$ 35; $\alpha(L)=0.0016$ 4; $\alpha(M)=0.00035$ 8 $\alpha(N)=8.1\times 10^{-5}$ 19; $\alpha(O)=1.2\times 10^{-5}$ 3; $\alpha(P)=7.6\times 10^{-7}$ 27 $\alpha(K)_{\text{exp}}=0.0078$ (1980Ab19).
614.229 ^c 24	4.2 ^c 3	694.905	7/2 ⁻ ,9/2 ⁻	80.7202	7/2 ⁺	E1	0.00314	$\alpha(K)=0.00268$ 4; $\alpha(L)=0.000361$ 5; $\alpha(M)=7.81\times 10^{-5}$ 11 $\alpha(N)=1.80\times 10^{-5}$ 3; $\alpha(O)=2.75\times 10^{-6}$ 4; $\alpha(P)=1.771\times 10^{-7}$

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α^{&}</u>	<u>Comments</u>
								25 α(K)exp=0.0019 (1980Ab19). Mult.: Assigned E1, but J ^π 's require M1,E2. I _γ : Value from 1977De05 is 1.24 23.
614.229 ^c 24	4.2 ^c 3	1151.545	7/2 ⁻	537.374	5/2 ⁻ ,7/2 ⁻			
618.0 3	0.70 16	1858.09	7/2 ⁻	1240.38	(7/2) ⁺			
619.0 3	0.70 16	1341.45	7/2 ⁻ ,9/2 ⁻	722.417	7/2 ⁺ ,9/2 ⁺			
621.8 3	0.43 9	1151.545	7/2 ⁻	529.383	11/2 ⁺			
^x 623.5 3	0.74 18							
^x 625.3 3	0.85 20					M1+E2	0.0119 37	α(K)=0.0100 33; α(L)=0.0015 4; α(M)=0.00033 8 α(N)=7.5×10 ⁻⁵ 18; α(O)=1.1×10 ⁻⁵ 3; α(P)=7.1×10 ⁻⁷ 25 α(K)exp=0.0106 (1980Ab19).
627.7 3	0.57 15	1779.35	(7/2) ⁻	1151.545	7/2 ⁻			
^x 635.71 6	0.46 9							
637.9 3	1.6 3	1364.84	9/2 ⁻	726.557	5/2 ⁻ ,7/2 ⁻			
639.8 ^e 3	2.9 3	1364.84	9/2 ⁻	725.526	9/2 ⁻			
641.5 3	0.75 9	722.417	7/2 ⁺ ,9/2 ⁺	80.7202	7/2 ⁺			
643.0 3	0.74 20	1240.38	(7/2) ⁺	597.286	(9/2) ⁻			
644.19 6	2.1 3	807.464	9/2 ⁻	163.175	11/2 ⁻	M1+E2	0.0111 34	α(K)=0.0093 30; α(L)=0.0014 4; α(M)=0.00030 7 α(N)=7.0×10 ⁻⁵ 17; α(O)=1.06×10 ⁻⁵ 27; α(P)=6.6×10 ⁻⁷ 23 α(K)exp=0.0099 (1980Ab19). I _γ : Value from 1977De05 is 3.0 4.
646.51 6	0.62 9	2011.35	5/2 ⁻ ,7/2 ⁻	1364.84	9/2 ⁻	E2	0.00764	α(K)=0.00631 9; α(L)=0.001044 15; α(M)=0.000231 4 α(N)=5.30×10 ⁻⁵ 8; α(O)=7.89×10 ⁻⁶ 11; α(P)=4.30×10 ⁻⁷ 6 α(K)exp=0.0058 (1980Ab19).
651.6 3	1.7 4	651.72		0.0	5/2 ⁺	M1	0.01406	α(K)=0.01194 17; α(L)=0.001660 24; α(M)=0.000361 5 α(N)=8.34×10 ⁻⁵ 12; α(O)=1.290×10 ⁻⁵ 19; α(P)=8.68×10 ⁻⁷ 13 α(K)exp=0.0108 (1980Ab19).
^x 653.4 3	0.97 25							
654.8 3	0.44 9	1226.47	(5/2,7/2) ⁺	571.949	9/2 ⁺			I _γ : Value from 1977De05 is 0.77 15.
658.5 3	1.5 3	2023.78	(7/2 ⁻ ,9/2 ⁻)	1364.84	9/2 ⁻			I _γ : Value from 1977De05 is 0.70 15.
659.835 19	9.9 3	740.555	(7/2 ⁺)	80.7202	7/2 ⁺	M1	0.01363	α(K)=0.01158 17; α(L)=0.001608 23; α(M)=0.000350 5 α(N)=8.08×10 ⁻⁵ 12; α(O)=1.250×10 ⁻⁵ 18; α(P)=8.41×10 ⁻⁷ 12 α(K)exp=0.0109 (1980Ab19).
^x 673.65 5	2.69 19					E1	0.00259	α(K)=0.00221 3; α(L)=0.000296 5; α(M)=6.41×10 ⁻⁵ 9 α(N)=1.476×10 ⁻⁵ 21; α(O)=2.26×10 ⁻⁶ 4; α(P)=1.465×10 ⁻⁷ 21 α(K)exp=0.0038 (1980Ab19).
681.12 6	1.5 3	1341.45	7/2 ⁻ ,9/2 ⁻	660.171	5/2 ⁺			
^x 685.79 8	1.41 14					E2	0.00665	α(K)=0.00551 8; α(L)=0.000893 13; α(M)=0.000197 3 α(N)=4.53×10 ⁻⁵ 7; α(O)=6.77×10 ⁻⁶ 10; α(P)=3.76×10 ⁻⁷ 6 α(K)exp=0.0058 (1980Ab19).
688.5 3	0.44 9	1429.32	9/2 ⁻	740.555	(7/2) ⁺			
^x 694.65 15	0.58 13					M1+E2	0.0092 28	α(K)=0.0078 25; α(L)=0.0011 3; α(M)=0.00025 6 α(N)=5.7×10 ⁻⁵ 14; α(O)=8.8×10 ⁻⁶ 23; α(P)=5.5×10 ⁻⁷ 19 α(K)exp=0.0062 (1980Ab19).

¹⁵³Dy ε decay [1980Ab19,1980Ab21](#) (continued)

γ(¹⁵³Tb) (continued)

E_γ †	I_γ ‡b	E_i (level)	J_i^π	E_f	J_f^π	Mult.#	α &	Comments
697.31 9	0.98 10	959.94	7/2 ⁻	262.831	9/2 ⁻	M1+E2	0.0091 28	$\alpha(K)=0.0077$ 24; $\alpha(L)=0.0011$ 3; $\alpha(M)=0.00025$ 6 $\alpha(N)=5.7\times 10^{-5}$ 14; $\alpha(O)=8.7\times 10^{-6}$ 22; $\alpha(P)=5.5\times 10^{-7}$ 19 $\alpha(K)_{\text{exp}}=0.0082$ (1980Ab19). I_γ : Value from 1977De05 is 2.5 4. I_γ : Value from 1977De05 is 5.8 15.
^x 703.8 3	1.5 3							
705.83 12	2.7 4	959.94	7/2 ⁻	254.200	7/2 ⁺			
709.6 3	0.77 15	789.96	7/2 ⁺ , 9/2 ⁺	80.7202	7/2 ⁺			
711.5 3	0.93 21	1082.85	7/2 ⁻	371.541	5/2 ⁺	(E1)	0.00231	$\alpha(K)=0.00198$ 3; $\alpha(L)=0.000264$ 4; $\alpha(M)=5.71\times 10^{-5}$ 8 $\alpha(N)=1.316\times 10^{-5}$ 19; $\alpha(O)=2.02\times 10^{-6}$ 3; $\alpha(P)=1.312\times 10^{-7}$ 19 $\alpha(K)_{\text{exp}}=0.0035$ (1980Ab19). Mult.: Assigned E1,E2 from ce data, but J^π 's eliminate E2.
^x 713.92 7	1.70 16					E1	0.00230	$\alpha(K)=0.00196$ 3; $\alpha(L)=0.000262$ 4; $\alpha(M)=5.67\times 10^{-5}$ 8 $\alpha(N)=1.307\times 10^{-5}$ 19; $\alpha(O)=2.00\times 10^{-6}$ 3; $\alpha(P)=1.303\times 10^{-7}$ 19 $\alpha(K)_{\text{exp}}=0.0129$ (1980Ab19).
719.20 11	0.95 9	959.94	7/2 ⁻	240.530	(5/2) ⁺	E1	0.00226	$\alpha(K)=0.00193$ 3; $\alpha(L)=0.000258$ 4; $\alpha(M)=5.59\times 10^{-5}$ 8 $\alpha(N)=1.287\times 10^{-5}$ 18; $\alpha(O)=1.97\times 10^{-6}$ 3; $\alpha(P)=1.284\times 10^{-7}$ 18 $\alpha(K)_{\text{exp}}=0.0126$ (1980Ab19).
^x 721.10 5	1.95 13					E2	0.00592	$\alpha(K)=0.00491$ 7; $\alpha(L)=0.000784$ 11; $\alpha(M)=0.0001730$ 25 $\alpha(N)=3.97\times 10^{-5}$ 6; $\alpha(O)=5.95\times 10^{-6}$ 9; $\alpha(P)=3.37\times 10^{-7}$ 5 $\alpha(K)_{\text{exp}}=0.0056$ (1980Ab19).
726.60 10	1.30 18	726.557	5/2 ⁻ , 7/2 ⁻	0.0	5/2 ⁺			
726.80 10	1.00 18	807.464	9/2 ⁻	80.7202	7/2 ⁺			
740.50 4	2.56 14	740.555	(7/2 ⁺)	0.0	5/2 ⁺	E2	0.00557	$\alpha(K)=0.00463$ 7; $\alpha(L)=0.000733$ 11; $\alpha(M)=0.0001615$ 23 $\alpha(N)=3.71\times 10^{-5}$ 6; $\alpha(O)=5.57\times 10^{-6}$ 8; $\alpha(P)=3.18\times 10^{-7}$ 5 $\alpha(K)_{\text{exp}}=0.0039$ (1980Ab19).
^x 744.87 24	1.3 4					E1	0.00211	$\alpha(K)=0.00180$ 3; $\alpha(L)=0.000240$ 4; $\alpha(M)=5.20\times 10^{-5}$ 8 $\alpha(N)=1.197\times 10^{-5}$ 17; $\alpha(O)=1.84\times 10^{-6}$ 3; $\alpha(P)=1.198\times 10^{-7}$ 17 $\alpha(K)_{\text{exp}}=0.0015$ (1980Ab19).
746.13 23	1.4 4	959.94	7/2 ⁻	213.742	(7/2) ⁻	M1	0.01005	$\alpha(K)=0.00854$ 12; $\alpha(L)=0.001182$ 17; $\alpha(M)=0.000257$ 4 $\alpha(N)=5.94\times 10^{-5}$ 9; $\alpha(O)=9.19\times 10^{-6}$ 13; $\alpha(P)=6.19\times 10^{-7}$ 9 $\alpha(K)_{\text{exp}}=0.0079$ (1980Ab19). I_γ : Value from 1977De05 is 2.2 3.
752.57 10	1.57 13	1835.72	(7/2) ⁻	1082.85	7/2 ⁻	M1	0.00984	$\alpha(K)=0.00837$ 12; $\alpha(L)=0.001157$ 17; $\alpha(M)=0.000251$ 4 $\alpha(N)=5.81\times 10^{-5}$ 9; $\alpha(O)=8.99\times 10^{-6}$ 13; $\alpha(P)=6.06\times 10^{-7}$ 9 $\alpha(K)_{\text{exp}}=0.0070$ (1980Ab19).
^x 754.40 9	1.85 16					E1	0.00206	$\alpha(K)=0.001757$ 25; $\alpha(L)=0.000234$ 4; $\alpha(M)=5.06\times 10^{-5}$ 7 $\alpha(N)=1.166\times 10^{-5}$ 17; $\alpha(O)=1.79\times 10^{-6}$ 3; $\alpha(P)=1.168\times 10^{-7}$ 17 $\alpha(K)_{\text{exp}}=0.0022$ (1980Ab19).
757.87 6	1.85 15	1082.85	7/2 ⁻	324.968	9/2 ⁺	E1	0.00204	$\alpha(K)=0.001741$ 25; $\alpha(L)=0.000232$ 4; $\alpha(M)=5.01\times 10^{-5}$ 7 $\alpha(N)=1.155\times 10^{-5}$ 17; $\alpha(O)=1.771\times 10^{-6}$ 25; $\alpha(P)=1.157\times 10^{-7}$ 17 $\alpha(K)_{\text{exp}}=0.0022$ (1980Ab19). I_γ : Value from 1977De05 is 1.41 15.
^x 761.85 8	0.65 6					M1	0.00955	$\alpha(K)=0.00812$ 12; $\alpha(L)=0.001122$ 16; $\alpha(M)=0.000244$ 4

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α^{&}</u>	<u>Comments</u>
^x 763.38 11	0.44 6							α(N)=5.64×10 ⁻⁵ 8; α(O)=8.72×10 ⁻⁶ 13; α(P)=5.88×10 ⁻⁷ 9 α(K)exp=0.0102 (1980Ab19). I _γ : Value from 1977De05 is 1.8 3.
^x 765.94 5	0.77 6					M1	0.00942	α(K)=0.00801 12; α(L)=0.001107 16; α(M)=0.000241 4 α(N)=5.56×10 ⁻⁵ 8; α(O)=8.61×10 ⁻⁶ 12; α(P)=5.81×10 ⁻⁷ 9 α(K)exp=0.0083 (1980Ab19).
777.70 14	0.48 5	1429.32	9/2 ⁻	651.72				
779.92 4	2.43 10	1151.545	7/2 ⁻	371.541	5/2 ⁺	E1	0.00192	α(K)=0.001644 23; α(L)=0.000219 3; α(M)=4.73×10 ⁻⁵ 7 α(N)=1.090×10 ⁻⁵ 16; α(O)=1.671×10 ⁻⁶ 24; α(P)=1.094×10 ⁻⁷ 16 α(K)exp=0.0165 (1980Ab19).
781.87 6	1.44 7	1912.505	(9/2 ⁻)	1130.65	5/2 ⁻ ,7/2 ⁻	E2	0.00492	α(K)=0.00411 6; α(L)=0.000640 9; α(M)=0.0001407 20 α(N)=3.24×10 ⁻⁵ 5; α(O)=4.87×10 ⁻⁶ 7; α(P)=2.82×10 ⁻⁷ 4 α(K)exp=0.0043 (1980Ab19). I _γ : Value from 1977De05 is 0.23 15.
^x 786.0 3	0.54 9							I _γ : Value from 1977De05 is 0.93 23.
789.0 3	1.47 19	1940.25	(7/2) ⁻	1151.545	7/2 ⁻	E1	0.00187	α(K)=0.001601 23; α(L)=0.000213 3; α(M)=4.60×10 ⁻⁵ 7 α(N)=1.060×10 ⁻⁵ 15; α(O)=1.626×10 ⁻⁶ 23; α(P)=1.065×10 ⁻⁷ 15 α(K)exp=0.00176 (1980Ab19). I _γ : Value from 1977De05 is 1.5 3.
^x 790.6 3	0.85 18							
793.0 3	1.97 18	1364.84	9/2 ⁻	571.949	9/2 ⁺	E1	0.00186	α(K)=0.001591 23; α(L)=0.000212 3; α(M)=4.57×10 ⁻⁵ 7 α(N)=1.053×10 ⁻⁵ 15; α(O)=1.616×10 ⁻⁶ 23; α(P)=1.059×10 ⁻⁷ 15 α(K)exp=0.00198 (1980Ab19).
795.6 3	0.75 15	1240.38	(7/2) ⁺	444.695	9/2 ⁺	M1+E2	0.0067 20	α(K)=0.0056 17; α(L)=0.00081 20; α(M)=0.00018 5 α(N)=4.1×10 ⁻⁵ 10; α(O)=6.2×10 ⁻⁶ 16; α(P)=4.0×10 ⁻⁷ 13 α(K)exp=0.0052 (1980Ab19). I _γ : Value from 1977De05 is 0.38 15.
802.0 3	1.27 13	1762.03	(5/2,7/2,9/2) ⁻	959.94	7/2 ⁻	E2	0.00465	α(K)=0.00388 6; α(L)=0.000601 9; α(M)=0.0001321 19 α(N)=3.04×10 ⁻⁵ 5; α(O)=4.57×10 ⁻⁶ 7; α(P)=2.67×10 ⁻⁷ 4 α(K)exp=0.0034 (1980Ab19). I _γ : Value from 1977De05 is 0.78 23.
^x 803.8 3	1.08 13							
805.2 3	2.07 15	1762.03	(5/2,7/2,9/2) ⁻	957.17		E2	0.00461	α(K)=0.00385 6; α(L)=0.000595 9; α(M)=0.0001308 19 α(N)=3.01×10 ⁻⁵ 5; α(O)=4.53×10 ⁻⁶ 7; α(P)=2.65×10 ⁻⁷ 4 α(K)exp=0.0035 (1980Ab19).
^x 813.60 20	0.85 18					E2	0.00451	α(K)=0.00377 6; α(L)=0.000580 9; α(M)=0.0001275 18 α(N)=2.93×10 ⁻⁵ 5; α(O)=4.42×10 ⁻⁶ 7; α(P)=2.59×10 ⁻⁷ 4 α(K)exp=0.0035 (1980Ab19).
^x 816.00 20	1.08 18					E1	1.76×10 ⁻³	α(K)=0.001504 21; α(L)=0.000200 3; α(M)=4.32×10 ⁻⁵ 6

¹⁵³Dy ε decay [1980Ab19,1980Ab21](#) (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α&</u>	<u>Comments</u>
								α(N)=9.94×10 ⁻⁶ 14; α(O)=1.526×10 ⁻⁶ 22; α(P)=1.002×10 ⁻⁷ 14 α(K)exp=0.0016 (1980Ab19).
^x 819.00 20	0.58 12							
^x 820.29 10	1.24 16							
^x 824.2 3	0.66 17							
827.50 20	3.7 4	1364.84	9/2 ⁻	537.374	5/2 ⁻ ,7/2 ⁻	E2	0.00434	α(K)=0.00363 5; α(L)=0.000557 8; α(M)=0.0001223 18 α(N)=2.81×10 ⁻⁵ 4; α(O)=4.24×10 ⁻⁶ 6; α(P)=2.50×10 ⁻⁷ 4 α(K)exp=0.0041 (1980Ab19).
829.20 ^e 20	2.2 3	1082.85	7/2 ⁻	254.200	7/2 ⁺			
831.20 20	1.39 22	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	959.94	7/2 ⁻	M1	0.00771	α(K)=0.00656 10; α(L)=0.000904 13; α(M)=0.000196 3 α(N)=4.54×10 ⁻⁵ 7; α(O)=7.03×10 ⁻⁶ 10; α(P)=4.75×10 ⁻⁷ 7 α(K)exp=0.0079 (1980Ab19).
^x 836.20 20	1.24 18							
^x 842.00 20	1.70 23					E2	0.00418	α(K)=0.00350 5; α(L)=0.000534 8; α(M)=0.0001172 17 α(N)=2.70×10 ⁻⁵ 4; α(O)=4.07×10 ⁻⁶ 6; α(P)=2.41×10 ⁻⁷ 4 α(K)exp=0.0033 (1980Ab19).
^x 845.2 3	0.67 16							
^x 847.3 3	0.77 16					M1+E2	0.0057 17	α(K)=0.0049 14; α(L)=0.00069 17; α(M)=0.00015 4 α(N)=3.5×10 ⁻⁵ 9; α(O)=5.4×10 ⁻⁶ 14; α(P)=3.5×10 ⁻⁷ 11 α(K)exp=0.0055 (1980Ab19).
^x 849.0 3	0.64 16					M1+E2	0.0057 17	α(K)=0.0048 14; α(L)=0.00069 17; α(M)=0.00015 4 α(N)=3.5×10 ⁻⁵ 9; α(O)=5.3×10 ⁻⁶ 14; α(P)=3.4×10 ⁻⁷ 11 α(K)exp=0.0053 (1980Ab19).
857.38 8	1.7 4	1429.32	9/2 ⁻	571.949	9/2 ⁺	E1	1.60×10 ⁻³	α(K)=0.001366 20; α(L)=0.000181 3; α(M)=3.91×10 ⁻⁵ 6 α(N)=9.01×10 ⁻⁶ 13; α(O)=1.384×10 ⁻⁶ 20; α(P)=9.11×10 ⁻⁸ 13 α(K)exp=0.00135 (1980Ab19).
863.88 11	1.4 3	1104.67	(5/2 ⁻ ,7/2 ⁻)	240.530	(5/2 ⁺)	E1	1.57×10 ⁻³	α(K)=0.001346 19; α(L)=0.0001783 25; α(M)=3.85×10 ⁻⁵ 6 α(N)=8.88×10 ⁻⁶ 13; α(O)=1.363×10 ⁻⁶ 19; α(P)=8.98×10 ⁻⁸ 13 α(K)exp=0.0017 (1980Ab19).
^x 869.50 20	1.04 11							
^x 871.85 5	2.9 4					E2	0.00387	α(K)=0.00325 5; α(L)=0.000491 7; α(M)=0.0001078 15 α(N)=2.48×10 ⁻⁵ 4; α(O)=3.75×10 ⁻⁶ 6; α(P)=2.24×10 ⁻⁷ 4 α(K)exp=0.00265 (1980Ab19).
^x 873.5 3	0.56 10							
^x 877.0 3	0.60 11					(E1)	1.53×10 ⁻³	I _γ : Value from 1977De05 is 1.35 25. α(K)=0.001307 19; α(L)=0.0001730 25; α(M)=3.74×10 ⁻⁵ 6 α(N)=8.62×10 ⁻⁶ 12; α(O)=1.323×10 ⁻⁶ 19; α(P)=8.72×10 ⁻⁸ 13
879.0 3	0.90 20	959.94	7/2 ⁻	80.7202	7/2 ⁺	E1	1.52×10 ⁻³	α(K)=0.001302 19; α(L)=0.0001723 25; α(M)=3.72×10 ⁻⁵ 6 α(N)=8.58×10 ⁻⁶ 12; α(O)=1.317×10 ⁻⁶ 19;

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

								<u>γ(¹⁵³Tb) (continued)</u>	
<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α&</u>	<u>Comments</u>	
								α(P)=8.68×10 ⁻⁸ 13 α(K)exp<0.0026 (1980Ab19).	
^x 887.12 7	1.50 19								
^x 889.2 3	0.46 9								
^x 891.21 14	0.91 24					M1	0.00651	α(K)=0.00554 8; α(L)=0.000761 11; α(M)=0.0001653 24 α(N)=3.82×10 ⁻⁵ 6; α(O)=5.92×10 ⁻⁶ 9; α(P)=4.00×10 ⁻⁷ 6 α(K)exp=0.0070 (1980Ab19). I _γ : Value from 1977De05 is 1.7 3.	
^x 895.5 3	1.00 6								
^x 897.2 3	1.23 7								
900.04 5	2.95 17	1429.32	9/2 ⁻	529.383	11/2 ⁺	E1	1.45×10 ⁻³	α(K)=0.001244 18; α(L)=0.0001645 23; α(M)=3.55×10 ⁻⁵ 5 α(N)=8.19×10 ⁻⁶ 12; α(O)=1.258×10 ⁻⁶ 18; α(P)=8.30×10 ⁻⁸ 12 α(K)exp=0.0013 (1980Ab19). I _γ : Value from 1977De05 is 2.02 23.	
^x 904.8 3	0.70 15								
906.5 3	0.93 22	2011.35	5/2 ⁻ ,7/2 ⁻	1104.67	(5/2 ⁻ ,7/2 ⁻)	E2	0.00356	α(K)=0.00299 5; α(L)=0.000448 7; α(M)=9.82×10 ⁻⁵ 14 α(N)=2.26×10 ⁻⁵ 4; α(O)=3.42×10 ⁻⁶ 5; α(P)=2.06×10 ⁻⁷ 3 α(K)exp=0.0039 (1980Ab19).	
915.5 3	0.51 12	1240.38	(7/2) ⁺	324.968	9/2 ⁺	M1	0.00610	α(K)=0.00519 8; α(L)=0.000713 10; α(M)=0.0001547 22 α(N)=3.58×10 ⁻⁵ 5; α(O)=5.54×10 ⁻⁶ 8; α(P)=3.75×10 ⁻⁷ 6 α(K)exp=0.0035 (1980Ab19).	
^x 917.9 3	0.47 10								
920.29 ^e 11	1.47 18	1082.85	7/2 ⁻	163.175	11/2 ⁻			α(K)exp=0.0064 (1980Ab19). Mult.: M1 suggested by 1980Ab18 is contradicted by ΔJ ^π .	
^x 922.0 3	0.71 15								
^x 926.5 3	0.19 6								
928.5 3	0.40 10	2011.35	5/2 ⁻ ,7/2 ⁻	1082.85	7/2 ⁻				
938.0 3	0.97 23	1151.545	7/2 ⁻	213.742	(7/2) ⁻	E2	0.00331	α(K)=0.00278 4; α(L)=0.000414 6; α(M)=9.06×10 ⁻⁵ 13 α(N)=2.09×10 ⁻⁵ 3; α(O)=3.16×10 ⁻⁶ 5; α(P)=1.92×10 ⁻⁷ 3 α(K)exp=0.0029 (1980Ab19).	
^x 940.3 3	0.97 23					M1+E2	0.0045 13	α(K)=0.0038 11; α(L)=0.00054 13; α(M)=0.00012 3 α(N)=2.7×10 ⁻⁵ 7; α(O)=4.2×10 ⁻⁶ 11; α(P)=2.71×10 ⁻⁷ 81 α(K)exp=0.0037 (1980Ab19).	
^x 943.0 3	0.94 23								
^x 945.0 3	1.02 23					M1+E2	0.0045 12	α(K)=0.0038 11; α(L)=0.00053 13; α(M)=0.00012 3 α(N)=2.7×10 ⁻⁵ 7; α(O)=4.1×10 ⁻⁶ 10; α(P)=2.68×10 ⁻⁷ 79 α(K)exp=0.0043 (1980Ab19).	
^x 950.00 20	1.64 30					E2	0.00322	α(K)=0.00271 4; α(L)=0.000402 6; α(M)=8.80×10 ⁻⁵ 13 α(N)=2.03×10 ⁻⁵ 3; α(O)=3.07×10 ⁻⁶ 5; α(P)=1.87×10 ⁻⁷ 3 α(K)exp=0.0027 (1980Ab19).	

¹⁵³Dy ε decay [1980Ab19,1980Ab21](#) (continued)

γ(¹⁵³Tb) (continued)

E_γ †	I_γ ‡b	E_i (level)	J_i^π	E_f	J_f^π	Mult.#	$\delta@a$	$\alpha\&$	Comments
952.00 20	1.4 3	1226.47	(5/2,7/2) ⁺	274.730	5/2 ⁻				
954.0 ^e 3	0.62 14	1762.03	(5/2,7/2,9/2) ⁻	807.464	9/2 ⁻				
957.2 3	0.46 10	957.17		0.0	5/2 ⁺				
960.06 4	6.8 3	959.94	7/2 ⁻	0.0	5/2 ⁺	E1		1.29×10 ⁻³	$\alpha(K)=0.001101$ 16; $\alpha(L)=0.0001451$ 21; $\alpha(M)=3.13\times 10^{-5}$ 5 $\alpha(N)=7.22\times 10^{-6}$ 11; $\alpha(O)=1.111\times 10^{-6}$ 16; $\alpha(P)=7.36\times 10^{-8}$ 11 $\alpha(K)_{\text{exp}}=0.00074$ (1980Ab19).
^x 963.08 9	1.27 10					M1		0.00540	$\alpha(K)=0.00459$ 7; $\alpha(L)=0.000630$ 9; $\alpha(M)=0.0001367$ 20 $\alpha(N)=3.16\times 10^{-5}$ 5; $\alpha(O)=4.89\times 10^{-6}$ 7; $\alpha(P)=3.31\times 10^{-7}$ 5 $\alpha(K)_{\text{exp}}=0.0046$ (1980Ab19).
965.58 11	0.93 10	1240.38	(7/2) ⁺	274.730	5/2 ⁻				
^x 971.0 3	0.76 12								
^x 972.1 3	1.90 12					E1		1.26×10 ⁻³	$\alpha(K)=0.001075$ 15; $\alpha(L)=0.0001417$ 20; $\alpha(M)=3.06\times 10^{-5}$ 5 $\alpha(N)=7.05\times 10^{-6}$ 10; $\alpha(O)=1.085\times 10^{-6}$ 16; $\alpha(P)=7.19\times 10^{-8}$ 10 $\alpha(K)_{\text{exp}}=0.0014$ (1980Ab19).
^x 974.7 3	0.93 11								
^x 977.00 20	1.49 12								
979.00 20	2.72 25	1779.35	(7/2) ⁻	800.18	(5/2) ⁺	E1		1.24×10 ⁻³	$\alpha(K)=0.001061$ 15; $\alpha(L)=0.0001398$ 20; $\alpha(M)=3.02\times 10^{-5}$ 5 $\alpha(N)=6.96\times 10^{-6}$ 10; $\alpha(O)=1.070\times 10^{-6}$ 15; $\alpha(P)=7.09\times 10^{-8}$ 10 $\alpha(K)_{\text{exp}}=0.00066$ (1980Ab19).
983.0 3	0.60 10	1130.65	5/2 ⁻ ,7/2 ⁻	147.570	(3/2) ⁺				
986.5 4	0.81 13	1240.38	(7/2) ⁺	254.200	7/2 ⁺	M1+E2		0.0040 11	$\alpha(K)=0.00342$ 92; $\alpha(L)=0.00048$ 12; $\alpha(M)=0.000105$ 25 $\alpha(N)=2.4\times 10^{-5}$ 6; $\alpha(O)=3.7\times 10^{-6}$ 9; $\alpha(P)=2.43\times 10^{-7}$ 70 $\alpha(K)_{\text{exp}}=0.0032$ (1980Ab19).
^x 987.0 4	0.86 13								
^x 988.7 3	1.16 14								
999.70 20	1.18 15	1240.38	(7/2) ⁺	240.530	(5/2) ⁺	M1+E2		0.0039 11	I_γ : Value from 1977De05 is 0.50 17. $\alpha(K)=0.00332$ 88; $\alpha(L)=0.00047$ 11; $\alpha(M)=0.000102$ 24 $\alpha(N)=2.3\times 10^{-5}$ 6; $\alpha(O)=3.6\times 10^{-6}$ 9; $\alpha(P)=2.36\times 10^{-7}$ 68 $\alpha(K)_{\text{exp}}=0.0031$ (1980Ab19).
1002.02 20	3.4 3	1082.85	7/2 ⁻	80.7202	7/2 ⁺	E1		1.19×10 ⁻³	I_γ : Value from 1977De05 is 0.62 23. $\alpha(K)=0.001016$ 15; $\alpha(L)=0.0001337$ 19;

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

E_γ^\dagger	$I_\gamma^{\ddagger b}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.#	$\delta@a$	$\alpha\&$	Comments
									$\alpha(M)=2.89\times 10^{-5}$ 4 $\alpha(N)=6.65\times 10^{-6}$ 10; $\alpha(O)=1.024\times 10^{-6}$ 15; $\alpha(P)=6.80\times 10^{-8}$ 10 $\alpha(K)\text{exp}=0.0014$ (1980Ab19).
^x 1002.50 20	1.27 15								
1006.4 4	1.0 3	1779.35	(7/2) ⁻	773.07	(5/2,7/2) ⁻				
^x 1010.7 3	1.06 18								
1012.70 6	3.3 3	1226.47	(5/2,7/2) ⁺	213.742	(7/2) ⁻	E1		1.16×10^{-3}	$\alpha(K)=0.000996$ 14; $\alpha(L)=0.0001310$ 19; $\alpha(M)=2.83\times 10^{-5}$ 4 $\alpha(N)=6.52\times 10^{-6}$ 10; $\alpha(O)=1.004\times 10^{-6}$ 14; $\alpha(P)=6.66\times 10^{-8}$ 10 $\alpha(K)\text{exp}<0.0017$ (1980Ab19).
^x 1014.20 20	1.22 16								
1016.8 3	0.80 15	1341.45	7/2 ⁻ ,9/2 ⁻	324.968	9/2 ⁺	E1		1.15×10^{-3}	$\alpha(K)=0.000989$ 14; $\alpha(L)=0.0001300$ 19; $\alpha(M)=2.81\times 10^{-5}$ 4 $\alpha(N)=6.47\times 10^{-6}$ 9; $\alpha(O)=9.96\times 10^{-7}$ 14; $\alpha(P)=6.62\times 10^{-8}$ 10 $\alpha(K)\text{exp}=0.0011$ (1980Ab19).
1023.99 4	9.8 5	1104.67	(5/2 ⁻ ,7/2 ⁻)	80.7202	7/2 ⁺	E1		1.14×10^{-3}	$\alpha(K)=0.000976$ 14; $\alpha(L)=0.0001283$ 18; $\alpha(M)=2.77\times 10^{-5}$ 4 $\alpha(N)=6.39\times 10^{-6}$ 9; $\alpha(O)=9.83\times 10^{-7}$ 14; $\alpha(P)=6.53\times 10^{-8}$ 10 $\alpha(K)\text{exp}=0.00078$ (1980Ab19).
1026.50 22	1.7 3	1240.38	(7/2) ⁺	213.742	(7/2) ⁻				
^x 1030.8 3	0.73 15					E1,E2			$\alpha(K)\text{exp}=0.0018$ (1980Ab19).
1032.0 ^e 3	0.45 10	1822.56	(9/2,11/2,13/2) ⁻	789.96	7/2 ⁺ ,9/2 ⁺				
1034.60 10	1.81 20	1824.69	(9/2) ⁻	789.96	7/2 ⁺ ,9/2 ⁺	(E1)		1.12×10^{-3}	$\alpha(K)=0.000958$ 14; $\alpha(L)=0.0001258$ 18; $\alpha(M)=2.72\times 10^{-5}$ 4 $\alpha(N)=6.26\times 10^{-6}$ 9; $\alpha(O)=9.64\times 10^{-7}$ 14; $\alpha(P)=6.41\times 10^{-8}$ 9 $\alpha(K)\text{exp}=0.0015$ (1980Ab19). Mult.: Assigned E1,E2 from ce data, but J^π 's eliminate E2.
1039.88 3	6.02 19	1364.84	9/2 ⁻	324.968	9/2 ⁺	E1		1.11×10^{-3}	$\alpha(K)=0.000949$ 14; $\alpha(L)=0.0001246$ 18; $\alpha(M)=2.69\times 10^{-5}$ 4 $\alpha(N)=6.20\times 10^{-6}$ 9; $\alpha(O)=9.55\times 10^{-7}$ 14; $\alpha(P)=6.35\times 10^{-8}$ 9 $\alpha(K)\text{exp}=0.00071$ (1980Ab19).
^x 1047.5 3	1.00 14								
1049.93 3	10.2 3	1130.65	5/2 ⁻ ,7/2 ⁻	80.7202	7/2 ⁺	E1		1.09×10^{-3}	$\alpha(K)=0.000932$ 13; $\alpha(L)=0.0001224$ 18; $\alpha(M)=2.64\times 10^{-5}$ 4 $\alpha(N)=6.09\times 10^{-6}$ 9; $\alpha(O)=9.38\times 10^{-7}$ 14; $\alpha(P)=6.24\times 10^{-8}$ 9

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α&</u>	<u>Comments</u>
^x 1056.26 10	1.55 20					E2	0.00258	α(K)exp=0.00086 (1980Ab19). I _γ : Value from 1977De05 is 13.4 15. α(K)=0.00218 3; α(L)=0.000316 5; α(M)=6.91×10 ⁻⁵ 10 α(N)=1.592×10 ⁻⁵ 23; α(O)=2.42×10 ⁻⁶ 4; α(P)=1.507×10 ⁻⁷ 21 α(K)exp=0.0018 (1980Ab19).
^x 1058.0 3	0.50 12							
^x 1059.1 3	1.72 3							
1063.0 3	0.52 15	1835.72	(7/2) ⁻	773.07	(5/2,7/2) ⁻			I _γ : Value from 1977De05 is 2.1 3.
1067.1 3	0.52 15	1762.03	(5/2,7/2,9/2) ⁻	694.905	7/2 ⁻ ,9/2 ⁻	M1	0.00422	α(K)=0.00359 5; α(L)=0.000491 7; α(M)=0.0001065 15 α(N)=2.46×10 ⁻⁵ 4; α(O)=3.81×10 ⁻⁶ 6; α(P)=2.59×10 ⁻⁷ 4 α(K)exp=0.0035 (1980Ab19).
1069.00 20	1.6 3	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	722.417	7/2 ⁺ ,9/2 ⁺			
^x 1074.0 3	0.33 8							
^x 1076.0 3	0.48 12							
1078.0 ^e 3	0.57 15	1341.45	7/2 ⁻ ,9/2 ⁻	262.831	9/2 ⁻			
1081.4 3	0.57 15	1822.56	(9/2,11/2,13/2) ⁻	740.555	(7/2 ⁺)			
1087.38 6	1.78 25	1341.45	7/2 ⁻ ,9/2 ⁻	254.200	7/2 ⁺	E1	1.02×10 ⁻³	α(K)=0.000874 13; α(L)=0.0001146 16; α(M)=2.47×10 ⁻⁵ 4 α(N)=5.70×10 ⁻⁶ 8; α(O)=8.78×10 ⁻⁷ 13; α(P)=5.85×10 ⁻⁸ 9 α(K)exp=0.00067 (1980Ab19).
^x 1091.8 3	0.49 12							
^x 1096.8 3	0.68 15							
1099.6 3	1.56 22	1824.69	(9/2) ⁻	725.526	9/2 ⁻	E2	0.00238	α(K)=0.00201 3; α(L)=0.000290 4; α(M)=6.32×10 ⁻⁵ 9 α(N)=1.456×10 ⁻⁵ 21; α(O)=2.22×10 ⁻⁶ 4; α(P)=1.390×10 ⁻⁷ 20 α(K)exp=0.0022 (1980Ab19).
1102.5 3	2.05 23	1824.69	(9/2) ⁻	722.417	7/2 ⁺ ,9/2 ⁺			
1104.31 5	8.90 20	1429.32	9/2 ⁻	324.968	9/2 ⁺	E1	9.94×10 ⁻⁴	α(K)=0.000850 12; α(L)=0.0001114 16; α(M)=2.40×10 ⁻⁵ 4 α(N)=5.54×10 ⁻⁶ 8; α(O)=8.54×10 ⁻⁷ 12; α(P)=5.69×10 ⁻⁸ 8; α(IPF)=2.07×10 ⁻⁶ 3 α(K)exp=0.00067 (1980Ab19).
1110.25 7	1.54 17	1762.03	(5/2,7/2,9/2) ⁻	651.72				
^x 1118.2 3	0.74 22							
^x 1119.02 8	1.91 15					E1,E2		α(K)exp=0.0025 (1980Ab19).
1122.53 7	2.41 34	1912.505	(9/2) ⁻	789.96	7/2 ⁺ ,9/2 ⁺	E1	9.66×10 ⁻⁴	α(K)=0.000825 12; α(L)=0.0001081 16; α(M)=2.33×10 ⁻⁵ 4 α(N)=5.38×10 ⁻⁶ 8; α(O)=8.28×10 ⁻⁷ 12; α(P)=5.53×10 ⁻⁸ 8; α(IPF)=3.81×10 ⁻⁶ 6 α(K)exp=0.00037 (1980Ab19).
^x 1128.98 11	1.88 19					E2	0.00226	α(K)=0.00191 3; α(L)=0.000274 4; α(M)=5.97×10 ⁻⁵ 9

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ †</u>	<u>I_γ ‡b</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α&</u>	<u>Comments</u>
								α(N)=1.375×10 ⁻⁵ 20; α(O)=2.10×10 ⁻⁶ 3; α(P)=1.319×10 ⁻⁷ 19; α(IPF)=8.32×10 ⁻⁷ 12 α(K)exp=0.0020 (1980Ab19).
1131.7 3	1.06 18	1762.03	(5/2,7/2,9/2) ⁻	630.420	11/2 ⁺			
1132.7 3	1.82 20	1858.09	7/2 ⁻	725.526	9/2 ⁻	E2	0.00224	α(K)=0.00190 3; α(L)=0.000272 4; α(M)=5.92×10 ⁻⁵ 9 α(N)=1.365×10 ⁻⁵ 20; α(O)=2.08×10 ⁻⁶ 3; α(P)=1.310×10 ⁻⁷ 19; α(IPF)=9.42×10 ⁻⁷ 17 α(K)exp=0.0022 (1980Ab19).
1140.2 3	1.04 18	1940.25	(7/2) ⁻	800.18	(5/2) ⁺	E1	9.42×10 ⁻⁴	α(K)=0.000802 12; α(L)=0.0001050 15; α(M)=2.27×10 ⁻⁵ 4 α(N)=5.22×10 ⁻⁶ 8; α(O)=8.05×10 ⁻⁷ 12; α(P)=5.38×10 ⁻⁸ 8; α(IPF)=6.44×10 ⁻⁶ 11 α(K)exp=0.0013 (1980Ab19).
1140.8 3	1.04 18	1835.72	(7/2) ⁻	694.905	7/2 ⁻ ,9/2 ⁻			
^x 1142.9 3	0.23 6							
1145.6 3	0.51 12	1226.47	(5/2,7/2) ⁺	80.7202	7/2 ⁺			
^x 1147.9 3	0.80 22					E2	0.00218	α(K)=0.00185 3; α(L)=0.000264 4; α(M)=5.75×10 ⁻⁵ 8 α(N)=1.326×10 ⁻⁵ 19; α(O)=2.02×10 ⁻⁶ 3; α(P)=1.276×10 ⁻⁷ 18; α(IPF)=1.52×10 ⁻⁶ 3 α(K)exp=0.0016 (1980Ab19).
1150.9 3	1.85 23	1364.84	9/2 ⁻	213.742	(7/2) ⁻	M1+E2	0.0028 7	α(K)=0.0024 6; α(L)=0.00034 8; α(M)=7.3×10 ⁻⁵ 16 α(N)=1.7×10 ⁻⁵ 4; α(O)=2.6×10 ⁻⁶ 6; α(P)=1.71×10 ⁻⁷ 45; α(IPF)=1.77×10 ⁻⁶ 12 α(K)exp=0.0020 (1980Ab19).
^x 1153.2 3	1.29 18							
1159.1 3	1.65 22	1240.38	(7/2) ⁺	80.7202	7/2 ⁺			I _γ : Value from 1977De05 is 0.55 23.
1160.2 3	0.56 15	2120.07	(7/2,9/2) ⁻	959.94	7/2 ⁻			
1161.2 3	2.5 3	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	630.420	11/2 ⁺			α(K)exp=0.0023 (1980Ab19).
1166.28 8	1.75 14	1429.32	9/2 ⁻	262.831	9/2 ⁻	(E2)	0.00212	Mult.: ce data imply M1+E2 but ΔJ ^π requires E1, M2 or E3. α(K)=0.00179 3; α(L)=0.000255 4; α(M)=5.56×10 ⁻⁵ 8 α(N)=1.281×10 ⁻⁵ 18; α(O)=1.96×10 ⁻⁶ 3; α(P)=1.236×10 ⁻⁷ 18; α(IPF)=2.53×10 ⁻⁶ 4 α(K)exp=0.0013 (1980Ab19).
^x 1175.4 3	1.07 17							
^x 1176.4 3	1.16 16					M1+E2	0.0027 7	α(K)=0.0023 6; α(L)=0.00032 7; α(M)=6.9×10 ⁻⁵ 15 α(N)=1.6×10 ⁻⁵ 4; α(O)=2.5×10 ⁻⁶ 6; α(P)=1.63×10 ⁻⁷ 42; α(IPF)=3.47×10 ⁻⁶ 23 α(K)exp=0.0021 (1980Ab19).
1185.4 3	0.48 12	1912.505	(9/2 ⁻)	726.557	5/2 ⁻ ,7/2 ⁻			
1187.3 3	0.66 17	1912.505	(9/2 ⁻)	725.526	9/2 ⁻	M1	0.00328	α(K)=0.00279 4; α(L)=0.000380 6; α(M)=8.23×10 ⁻⁵ 12 α(N)=1.90×10 ⁻⁵ 3; α(O)=2.95×10 ⁻⁶ 5; α(P)=2.00×10 ⁻⁷ 3; α(IPF)=4.73×10 ⁻⁶ 8 α(K)exp=0.0030 (1980Ab19).

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α&</u>	<u>Comments</u>
1191.7 3	0.64 17	1822.56	(9/2,11/2,13/2) ⁻	630.420	11/2 ⁺			
^x 1194.35 9	1.72 23					E2	0.00202	α(K)=0.001706 24; α(L)=0.000242 4; α(M)=5.28×10 ⁻⁵ 8 α(N)=1.217×10 ⁻⁵ 17; α(O)=1.86×10 ⁻⁶ 3; α(P)=1.180×10 ⁻⁷ 17; α(IPF)=4.84×10 ⁻⁶ 7 α(K)exp=0.0019 (1980Ab19).
1200.1 3	1.46 19	1940.25	(7/2) ⁻	740.555	(7/2 ⁺)			
1201.8 3	2.4 3	1364.84	9/2 ⁻	163.175	11/2 ⁻	M1	0.00319	α(K)=0.00271 4; α(L)=0.000369 6; α(M)=8.00×10 ⁻⁵ 12 α(N)=1.85×10 ⁻⁵ 3; α(O)=2.86×10 ⁻⁶ 4; α(P)=1.95×10 ⁻⁷ 3; α(IPF)=6.35×10 ⁻⁶ 10 α(K)exp=0.0033 (1980Ab19). I _γ : Value from 1977De05 is 4.3 6.
1206.30 14	1.08 15	1858.09	7/2 ⁻	651.72				
1211.0 3	0.38 9	1429.32	9/2 ⁻	218.628	3/2 ⁺ ,5/2 ⁺			
1215.1 3	0.60 13	1429.32	9/2 ⁻	213.742	(7/2) ⁻	M1	0.00311	α(K)=0.00264 4; α(L)=0.000359 5; α(M)=7.79×10 ⁻⁵ 11 α(N)=1.80×10 ⁻⁵ 3; α(O)=2.79×10 ⁻⁶ 4; α(P)=1.90×10 ⁻⁷ 3; α(IPF)=8.05×10 ⁻⁶ 12 α(K)exp=0.0027 (1980Ab19). I _γ : Value from 1977De05 is 1.5 3. I _γ : Value from 1977De05 is 0.23 15.
1217.3 3	0.55 14	1364.84	9/2 ⁻	147.570	(3/2) ⁺			
1224.50 20	1.16 15	1762.03	(5/2,7/2,9/2) ⁻	537.374	5/2 ⁻ ,7/2 ⁻			
1225.30 20	2.00 22	1822.56	(9/2,11/2,13/2) ⁻	597.286	(9/2) ⁻			
^x 1230.41 11	0.76 14							
1233.60 20	0.37 9	2023.78	(7/2 ⁻ ,9/2 ⁻)	789.96	7/2 ⁺ ,9/2 ⁺			
1235.8 3	0.47 12	1779.35	(7/2) ⁻	543.15	5/2 ⁺			
1240.6 3	0.67 17	1240.38	(7/2) ⁺	0.0	5/2 ⁺			
1245.1 3	0.28 9	1940.25	(7/2) ⁻	694.905	7/2 ⁻ ,9/2 ⁻			α(K)exp=0.0054 (1980Ab19).
1252.4 3	1.21 16	1912.505	(9/2) ⁻	660.171	5/2 ⁺			
1253.96 4	4.52 12	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	537.374	5/2 ⁻ ,7/2 ⁻	E2	0.00184	α(K)=0.001551 22; α(L)=0.000219 3; α(M)=4.76×10 ⁻⁵ 7 α(N)=1.097×10 ⁻⁵ 16; α(O)=1.678×10 ⁻⁶ 24; α(P)=1.072×10 ⁻⁷ 15; α(IPF)=1.231×10 ⁻⁵ 18 α(K)exp=0.00155 (1980Ab19). I _γ : Value from 1977De05 is 1.10 25.
^x 1265.1 3	0.56 14							
^x 1267.3 3	1.12 13					M1	0.00282	α(K)=0.00239 4; α(L)=0.000325 5; α(M)=7.04×10 ⁻⁵ 10 α(N)=1.629×10 ⁻⁵ 23; α(O)=2.52×10 ⁻⁶ 4; α(P)=1.717×10 ⁻⁷ 24; α(IPF)=1.621×10 ⁻⁵ 24 α(K)exp=0.0031 (1980Ab19).
1269.4 3	1.06 14	1779.35	(7/2) ⁻	510.290	7/2 ⁺			
1271.5 3	1.07 14	2011.35	5/2 ⁻ ,7/2 ⁻	740.555	(7/2 ⁺)			
^x 1274.2 3	0.36 12							I _γ : Value from 1977De05 is 0.94 25.
1280.1 3	1.07 15	1940.25	(7/2) ⁻	660.171	5/2 ⁺			
1281.2 3	2.49 22	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	510.290	7/2 ⁺	E1	8.22×10 ⁻⁴	α(K)=0.000652 10; α(L)=8.50×10 ⁻⁵ 12; α(M)=1.83×10 ⁻⁵ 3

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α&</u>	<u>Comments</u>
1284.35 20	1.65 15	1364.84	9/2 ⁻	80.7202	7/2 ⁺	E1	8.20×10 ⁻⁴	α(N)=4.23×10 ⁻⁶ 6; α(O)=6.52×10 ⁻⁷ 10; α(P)=4.38×10 ⁻⁸ 7; α(IPF)=6.14×10 ⁻⁵ 9 α(K)exp=0.0088 (1980Ab19). I _γ : Value from 1977De05 is 3.8 7. α(K)=0.000649 9; α(L)=8.46×10 ⁻⁵ 12; α(M)=1.82×10 ⁻⁵ 3 α(N)=4.21×10 ⁻⁶ 6; α(O)=6.49×10 ⁻⁷ 9; α(P)=4.36×10 ⁻⁸ 7; α(IPF)=6.30×10 ⁻⁵ 9 α(K)exp<0.0013 (1980Ab19). α(K)exp=0.0031 (1980Ab19). I _γ : Value from 1977De05 is 2.5 4. I _γ : Value from 1977De05 is 0.70 23.
1285.5 ^e 3	0.71 13	2011.35	5/2 ⁻ ,7/2 ⁻	725.526	9/2 ⁻			
1286.5 3	1.88 12	1858.09	7/2 ⁻	571.949	9/2 ⁺			
1293.2 3	0.80 18	1822.56	(9/2,11/2,13/2) ⁻	529.383	11/2 ⁺			
1295.6 3	0.97 18	1824.69	(9/2) ⁻	529.383	11/2 ⁺			
1297.8 3	1.09 16	2023.78	(7/2 ⁻ ,9/2 ⁻)	725.526	9/2 ⁻			I _γ : Value from 1977De05 is 1.8 3.
^x 1300.6 3	0.75 15							
1301.9 3	0.69 15	2023.78	(7/2 ⁻ ,9/2 ⁻)	722.417	7/2 ⁺ ,9/2 ⁺			I _γ : Value from 1977De05 is 1.14 23. I _γ : Value from 1977De05 is 1.27 25.
^x 1305.8 3	0.52 14							
^x 1307.3 3	0.52 14							
^x 1310.1 3	0.55 12							
1313.6 3	0.82 15	2120.97		807.464	9/2 ⁻			
1315.2 3	7.31 18	1912.505	(9/2) ⁻	597.286	(9/2) ⁻	M1+E2	0.0021 5	α(K)=0.0018 4; α(L)=0.00025 5; α(M)=5.4×10 ⁻⁵ 11 α(N)=1.24×10 ⁻⁵ 25; α(O)=1.9×10 ⁻⁶ 4; α(P)=1.3×10 ⁻⁷ 3; α(IPF)=2.42×10 ⁻⁵ 16 α(K)exp=0.00178 (1980Ab19).
1325.0 ^e 3	0.36 12	1835.72	(7/2) ⁻	510.290	7/2 ⁺			
^x 1333.18 22	0.53 8							
1340.83 13	0.75 7	1912.505	(9/2) ⁻	571.949	9/2 ⁺			
^x 1344.16 12	0.91 9							
1347.39 ^e 6	1.9 7	1858.09	7/2 ⁻	510.290	7/2 ⁺			
1375.16 4	7.21 21	1912.505	(9/2) ⁻	537.374	5/2 ⁻ ,7/2 ⁻	E2	1.56×10 ⁻³	α(K)=0.001297 19; α(L)=0.000180 3; α(M)=3.92×10 ⁻⁵ 6 α(N)=9.05×10 ⁻⁶ 13; α(O)=1.387×10 ⁻⁶ 20; α(P)=8.97×10 ⁻⁸ 13; α(IPF)=3.64×10 ⁻⁵ 5 α(K)exp=0.00153 (1980Ab19).
1379.54 7	4.72 17	2120.07	(7/2,9/2) ⁻	740.555	(7/2 ⁺)	E1	7.87×10 ⁻⁴	α(K)=0.000573 8; α(L)=7.45×10 ⁻⁵ 11; α(M)=1.606×10 ⁻⁵ 23 α(N)=3.71×10 ⁻⁶ 6; α(O)=5.72×10 ⁻⁷ 8; α(P)=3.85×10 ⁻⁸ 6; α(IPF)=0.0001188 17 α(K)exp=0.00053 (1980Ab19).
1382.94 8	3.01 12	1912.505	(9/2) ⁻	529.383	11/2 ⁺	(E1)	7.86×10 ⁻⁴	α(K)=0.000571 8; α(L)=7.42×10 ⁻⁵ 11; α(M)=1.599×10 ⁻⁵ 23

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

								<u>γ(¹⁵³Tb) (continued)</u>	
<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α^{&}</u>	<u>Comments</u>	
1390.04 ^e 9	2.8 3	1779.35	(7/2) ⁻	389.551	(7/2) ⁺	E1	7.85×10 ⁻⁴	α(N)=3.69×10 ⁻⁶ 6; α(O)=5.69×10 ⁻⁷ 8; α(P)=3.83×10 ⁻⁸ 6; α(IPF)=0.0001210 17 α(K)exp=0.00083 (1980Ab19). α(K)=0.000566 8; α(L)=7.35×10 ⁻⁵ 11; α(M)=1.585×10 ⁻⁵ 23 α(N)=3.66×10 ⁻⁶ 6; α(O)=5.64×10 ⁻⁷ 8; α(P)=3.80×10 ⁻⁸ 6; α(IPF)=0.0001258 18 α(K)exp=0.0047 (1980Ab19).	
^x 1398.80 20 1402.13 6	0.81 18 5.66 27	1912.505	(9/2) ⁻	510.290	7/2 ⁺	E1	7.84×10 ⁻⁴	α(K)=0.000557 8; α(L)=7.24×10 ⁻⁵ 11; α(M)=1.561×10 ⁻⁵ 22 α(N)=3.60×10 ⁻⁶ 5; α(O)=5.56×10 ⁻⁷ 8; α(P)=3.74×10 ⁻⁸ 6; α(IPF)=0.0001339 19 α(K)exp=0.00042 (1980Ab19).	
^x 1405.9 3 1410.4 3	0.69 13 1.00 12	1940.25	(7/2) ⁻	529.383	11/2 ⁺				
^x 1422.8 3 1426.1 3	0.89 15 0.51 12	2023.78	(7/2 ⁻ ,9/2 ⁻)	597.286	(9/2) ⁻				
^x 1430.9 3 1433.1 3	1.08 14 1.28 12	1822.56	(9/2,11/2,13/2) ⁻	389.551	(7/2) ⁺			I _γ : Value from 1977De05 is 1.8 3.	
1446.36 12 ^x 1452.5 ^e 3	0.96 13 1.36 14	1835.72 2023.78	(7/2) ⁻ (7/2 ⁻ ,9/2 ⁻)	389.551 571.949	(7/2) ⁺ 9/2 ⁺			I _γ : Value from 1977De05 is 1.6 3. I _γ : Value from 1977De05 is 2.0 3.	
1454.6 3 ^x 1461.1 3	1.75 17 0.72 12	1779.35	(7/2) ⁻	324.968	9/2 ⁺				
^x 1465.9 3 1467.6 3	0.56 13 1.28 14	1912.505	(9/2) ⁻	444.695	9/2 ⁺				
^x 1472.4 3 ^x 1479.6 3	0.56 14 0.46 11								
1487.0 3 1495.6 3	0.40 12 0.47 12	1858.09 1940.25	7/2 ⁻ (7/2) ⁻	371.541 444.695	5/2 ⁺ 9/2 ⁺				
1497.7 3 1499.9 3	0.57 14 0.33 8	1822.56 1824.69	(9/2,11/2,13/2) ⁻ (9/2) ⁻	324.968 324.968	9/2 ⁺ 9/2 ⁺				
^x 1506.9 3 1508.5 3	1.35 14 1.82 18	1762.03	(5/2,7/2,9/2) ⁻	254.200	7/2 ⁺	(E1)	7.82×10 ⁻⁴	α(K)=0.000492 7; α(L)=6.38×10 ⁻⁵ 9; α(M)=1.375×10 ⁻⁵ 20 α(N)=3.17×10 ⁻⁶ 5; α(O)=4.90×10 ⁻⁷ 7; α(P)=3.31×10 ⁻⁸ 5; α(IPF)=0.000209 3 α(K)exp=0.00077 (1980Ab19). I _γ : Value from 1977De05 is 3.5 7. Mult.: Assigned E1,E2 from ce data, but J ^π 's eliminate E2.	
1511.2 3 1516.6 3	0.47 11 0.27 8	1835.72 1791.38	(7/2) ⁻ 5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	324.968 274.730	9/2 ⁺ 5/2 ⁻			I _γ : Value from 1977De05 is 0.70 23.	
^x 1518.2 3 1523.1 3	0.41 9 0.68 15	1912.505	(9/2) ⁻	389.551	(7/2) ⁺				
1525.2 3 ^x 1527.4 3	0.55 12 1.38 15	1779.35	(7/2) ⁻	254.200	7/2 ⁺				

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

$\gamma(^{153}\text{Tb})$ (continued)

E_γ [†]	I_γ ^{‡b}	E_i (level)	J_i^π	E_f	J_f^π	Mult.#	α ^{&}	Comments
1528.6 3	2.6 3	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	262.831	9/2 ⁻	E2	1.33×10 ⁻³	$\alpha(\text{K})=0.001061$ 15; $\alpha(\text{L})=0.0001458$ 21; $\alpha(\text{M})=3.16\times 10^{-5}$ 5 $\alpha(\text{N})=7.30\times 10^{-6}$ 11; $\alpha(\text{O})=1.122\times 10^{-6}$ 16; $\alpha(\text{P})=7.34\times 10^{-8}$ 11; $\alpha(\text{IPF})=8.34\times 10^{-5}$ 12 $\alpha(\text{K})_{\text{exp}}=0.0011$ (1980Ab19). I_γ : Value from 1977De05 is 4.4 8.
1533.3 3	0.42 9	1858.09	7/2 ⁻	324.968	9/2 ⁺			
1537.32 6	5.06 17	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	254.200	7/2 ⁺	E1	7.85×10 ⁻⁴	$\alpha(\text{K})=0.000477$ 7; $\alpha(\text{L})=6.18\times 10^{-5}$ 9; $\alpha(\text{M})=1.331\times 10^{-5}$ 19 $\alpha(\text{N})=3.07\times 10^{-6}$ 5; $\alpha(\text{O})=4.74\times 10^{-7}$ 7; $\alpha(\text{P})=3.21\times 10^{-8}$ 5; $\alpha(\text{IPF})=0.000230$ 4 $\alpha(\text{K})_{\text{exp}}=0.00034$ (1980Ab19).
^x 1543.0 3	0.35 9							
^x 1545.7 3	0.28 7							
1549.2 3	0.77 15	2120.97		571.949	9/2 ⁺			
^x 1553.8 3	0.46 9							
^x 1556.5 3	0.60 10							
1559.5 3	0.130 25	1822.56	(9/2,11/2,13/2) ⁻	262.831	9/2 ⁻			I_γ : Value from 1977De05 is 1.2 3.
1561.6 3	0.56 14	1824.69	(9/2) ⁻	262.831	9/2 ⁻			
1565.6 3	0.28 7	1779.35	(7/2) ⁻	213.742	(7/2) ⁻			
1570.6 3	3.53 22	1824.69	(9/2) ⁻	254.200	7/2 ⁺	E1	7.91×10 ⁻⁴	$\alpha(\text{K})=0.000460$ 7; $\alpha(\text{L})=5.96\times 10^{-5}$ 9; $\alpha(\text{M})=1.283\times 10^{-5}$ 18 $\alpha(\text{N})=2.96\times 10^{-6}$ 5; $\alpha(\text{O})=4.57\times 10^{-7}$ 7; $\alpha(\text{P})=3.09\times 10^{-8}$ 5; $\alpha(\text{IPF})=0.000255$ 4 $\alpha(\text{K})_{\text{exp}}=0.00057$ (1980Ab19). I_γ : Value from 1977De05 is 5.1 7.
1572.5 3	0.7 3	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	218.628	3/2 ⁺ ,5/2 ⁺			
1577.59 6	6.94 22	1791.38	5/2 ⁻ ,7/2 ⁻ ,9/2 ⁻	213.742	(7/2) ⁻	E2	1.28×10 ⁻³	$\alpha(\text{K})=0.001000$ 14; $\alpha(\text{L})=0.0001369$ 20; $\alpha(\text{M})=2.97\times 10^{-5}$ 5 $\alpha(\text{N})=6.86\times 10^{-6}$ 10; $\alpha(\text{O})=1.054\times 10^{-6}$ 15; $\alpha(\text{P})=6.92\times 10^{-8}$ 10; $\alpha(\text{IPF})=0.0001011$ 15 $\alpha(\text{K})_{\text{exp}}=0.00091$ (1980Ab19). $\alpha(\text{K})_{\text{exp}}=0.00078$ (1980Ab19). I_γ : Value from 1977De05 is 4.3 7.
1583.58 8	2.81 14	2120.97		537.374	5/2 ⁻ ,7/2 ⁻			
1595.09 11	1.35 15	1858.09	7/2 ⁻	262.831	9/2 ⁻	E2	1.26×10 ⁻³	$\alpha(\text{K})=0.000980$ 14; $\alpha(\text{L})=0.0001340$ 19; $\alpha(\text{M})=2.91\times 10^{-5}$ 4 $\alpha(\text{N})=6.71\times 10^{-6}$ 10; $\alpha(\text{O})=1.031\times 10^{-6}$ 15; $\alpha(\text{P})=6.78\times 10^{-8}$ 10; $\alpha(\text{IPF})=0.0001077$ 15 $\alpha(\text{K})_{\text{exp}}=0.00111$ (1980Ab19).
1606.8 ^e 3	1.24 12	1824.69	(9/2) ⁻	218.628	3/2 ⁺ ,5/2 ⁺			
1608.80 6	4.17 22	1822.56	(9/2,11/2,13/2) ⁻	213.742	(7/2) ⁻	E2	1.25×10 ⁻³	$\alpha(\text{K})=0.000964$ 14; $\alpha(\text{L})=0.0001317$ 19; $\alpha(\text{M})=2.86\times 10^{-5}$ 4 $\alpha(\text{N})=6.59\times 10^{-6}$ 10; $\alpha(\text{O})=1.014\times 10^{-6}$ 15; $\alpha(\text{P})=6.67\times 10^{-8}$ 10; $\alpha(\text{IPF})=0.0001130$ 16 $\alpha(\text{K})_{\text{exp}}=0.0012$ (1980Ab19). I_γ : Value from 1977De05 is 6.6 14.
1614.9 3	0.66 11	1762.03	(5/2,7/2,9/2) ⁻	147.570	(3/2) ⁺			
1617.0 3	0.36 11	1835.72	(7/2) ⁻	218.628	3/2 ⁺ ,5/2 ⁺			
1621.4 3	0.23 6	2011.35	5/2 ⁻ ,7/2 ⁻	389.551	(7/2) ⁺			

¹⁵³Dy ε decay **1980Ab19,1980Ab21** (continued)

γ(¹⁵³Tb) (continued)

<u>E_γ[†]</u>	<u>I_γ^{‡b}</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.#</u>	<u>α&</u>	<u>Comments</u>
^x 1627.4 3	0.15 6							
1632.20 ^e 20	1.18 12	1779.35	(7/2) ⁻	147.570	(3/2) ⁺			I _γ : Value from 1977De05 is 2.2 5.
1634.4 3	0.66 12	2023.78	(7/2 ⁻ ,9/2 ⁻)	389.551	(7/2) ⁺			
1637.7 3	0.37 8	1912.505	(9/2 ⁻)	274.730	5/2 ⁻			
1640.4 3	0.26 6	2011.35	5/2 ⁻ ,7/2 ⁻	371.541	5/2 ⁺			
^x 1642.0 3	0.52 13							
^x 1645.3 3	0.45 10							
^x 1648.7 3	0.93 12							
1649.8 3	2.32 18	1912.505	(9/2 ⁻)	262.831	9/2 ⁻	(M1)	1.67×10 ⁻³	α(K)=0.001295 19; α(L)=0.0001746 25; α(M)=3.78×10 ⁻⁵ 6 α(N)=8.75×10 ⁻⁶ 13; α(O)=1.356×10 ⁻⁶ 19; α(P)=9.26×10 ⁻⁸ 13; α(IPF)=0.0001495 21
1658.3 3	1.86 19	1912.505	(9/2 ⁻)	254.200	7/2 ⁺	(E1)	8.10×10 ⁻⁴	α(K)exp=0.0012 (1980Ab19). α(K)=0.000420 6; α(L)=5.43×10 ⁻⁵ 8; α(M)=1.170×10 ⁻⁵ 17 α(N)=2.70×10 ⁻⁶ 4; α(O)=4.17×10 ⁻⁷ 6; α(P)=2.83×10 ⁻⁸ 4; α(IPF)=0.000320 5
^x 1658.8 3	1.86 19					(E1)	8.10×10 ⁻⁴	α(K)exp=0.0011 (1980Ab19). α(K)=0.000420 6; α(L)=5.43×10 ⁻⁵ 8; α(M)=1.169×10 ⁻⁵ 17 α(N)=2.70×10 ⁻⁶ 4; α(O)=4.17×10 ⁻⁷ 6; α(P)=2.83×10 ⁻⁸ 4; α(IPF)=0.000321 5
^x 1664.4 3	0.83 15							
^x 1666.4 3	0.53 11							
1672.9 3	0.32 6	1835.72	(7/2) ⁻	163.175	11/2 ⁻			
1675.4 3	0.33 6	1822.56	(9/2,11/2,13/2) ⁻	147.570	(3/2) ⁺			I _γ : Value from 1977De05 is 0.70 23.
1677.3 ^e 3	0.11 3	1824.69	(9/2) ⁻	147.570	(3/2) ⁺			
^x 1684.3 3	0.13 6							
1688.1 3	0.16 5	1835.72	(7/2) ⁻	147.570	(3/2) ⁺			
^x 1693.0 3	0.17 5							
1698.96 13	0.82 7	1912.505	(9/2 ⁻)	213.742	(7/2) ⁻			
^x 1703.4 3	0.37 5							
^x 1709.4 3	0.25 5							
^x 1719.7 3	0.054 25							
^x 1726.8 3	0.18 5							
^x 1735.9 3	0.27 5							
^x 1738.1 3	0.35 8							
^x 1741.2 3	0.81 14							
^x 1742.4 3	0.45 12							
^x 1745.2 3	0.36 8							
^x 1747.9 3	0.95 12							
1749.5 3	1.33 14	1912.505	(9/2 ⁻)	163.175	11/2 ⁻			
^x 1752.9 3	0.25 5							
^x 1756.0 3	0.25 8							
^x 1758.7 3	0.35 8							
^x 1764.2 3	0.16 3							

¹⁵³Dy ε decay [1980Ab19](#),[1980Ab21](#) (continued)

γ(¹⁵³Tb) (continued)

E_γ [†]	I_γ ^{‡b}	E_i (level)	J_i^π	E_f	J_f^π	Comments
1770.2 4	0.11 3	2023.78	(7/2 ⁻ ,9/2 ⁻)	254.200	7/2 ⁺	
^x 1772.6 4	0.11 3					
1776.93 27	0.78 15	1940.25	(7/2) ⁻	163.175	11/2 ⁻	
1779.7 4	0.11 3	1779.35	(7/2) ⁻	0.0	5/2 ⁺	
^x 1786.8 4	0.12 6					
1793.1 4	0.12 5	2011.35	5/2 ⁻ ,7/2 ⁻	218.628	3/2 ⁺ ,5/2 ⁺	
1796.2 3	0.71 12	2120.97		324.968	9/2 ⁺	
1797.6 3	0.57 13	2011.35	5/2 ⁻ ,7/2 ⁻	213.742	(7/2) ⁻	
^x 1803.2 4	0.10 3					
^x 1806.3 3	0.10 3					
^x 1808.5 4	0.31 7					
^x 1811.4 4	0.20 7					
^x 1813.4 4	0.10 3					
^x 1819.4 4	0.070 20					
1831.3 4	0.24 7	1912.505	(9/2) ⁻	80.7202	7/2 ⁺	
^x 1832.4 3	0.44 8					
1836.2 3	0.20 5	1835.72	(7/2) ⁻	0.0	5/2 ⁺	
^x 1838.9 3	0.20 5					
^x 1841.1 3	0.12 2					
^x 1847.4 3	0.13 2					
^x 1852.30 20	0.07 2					
1857.3 3	0.21 4	2120.07	(7/2,9/2) ⁻	262.831	9/2 ⁻	
1859.5 3	0.19 3	1940.25	(7/2) ⁻	80.7202	7/2 ⁺	I_γ : Value from 1977De05 is 0.70 15.
^x 1918.8 3	0.11 3					
^x 1922.1 3	0.10 3					
^x 1933.90 20	0.40 10					
^x 1940.7 3	0.10 3					
^x 1947.3 3	0.23 6					
^x 1962.5 4	0.070 20					
^x 1976.7 3	0.14 3					
2011.0 3	0.06 3	2011.35	5/2 ⁻ ,7/2 ⁻	0.0	5/2 ⁺	
^x 2016.5 3	0.11 3					
^x 2020.70 10	0.42 5					

[†] From [1980Ab19](#), unless noted otherwise; other: [1977De05](#). A comparison of the E_γ with the level energy differences indicates that the E_γ uncertainties are somewhat underestimated; for example, from about 280 such comparisons one expects about 14 to be outside of 2σ , but 26 are outside this value.

[‡] From [1980Ab19](#), unless noted otherwise. Where the value of [1977De05](#) or [1975ZuZZ](#) differs significantly, this is noted; these sets of I_γ were normalized at the 80.7 γ for γ 's below 150 keV and separately at the 254.2 γ for γ 's above 150 keV.

Listed values are those given by [1980Ab19](#) and were deduced from measured c_{eK} and I_γ .

@ From [1977Al28](#).

$\gamma(^{153}\text{Tb})$ (continued)

- & Additional information 1.
- ^a Additional information 2.
- ^b For absolute intensity per 100 decays, multiply by 0.1122 24.
- ^c Multiply placed with undivided intensity.
- ^d Multiply placed with intensity suitably divided.
- ^e Placement of transition in the level scheme is uncertain.
- ^x γ ray not placed in level scheme.

¹⁵³Dy ε decay 1980Ab19,1980Ab21

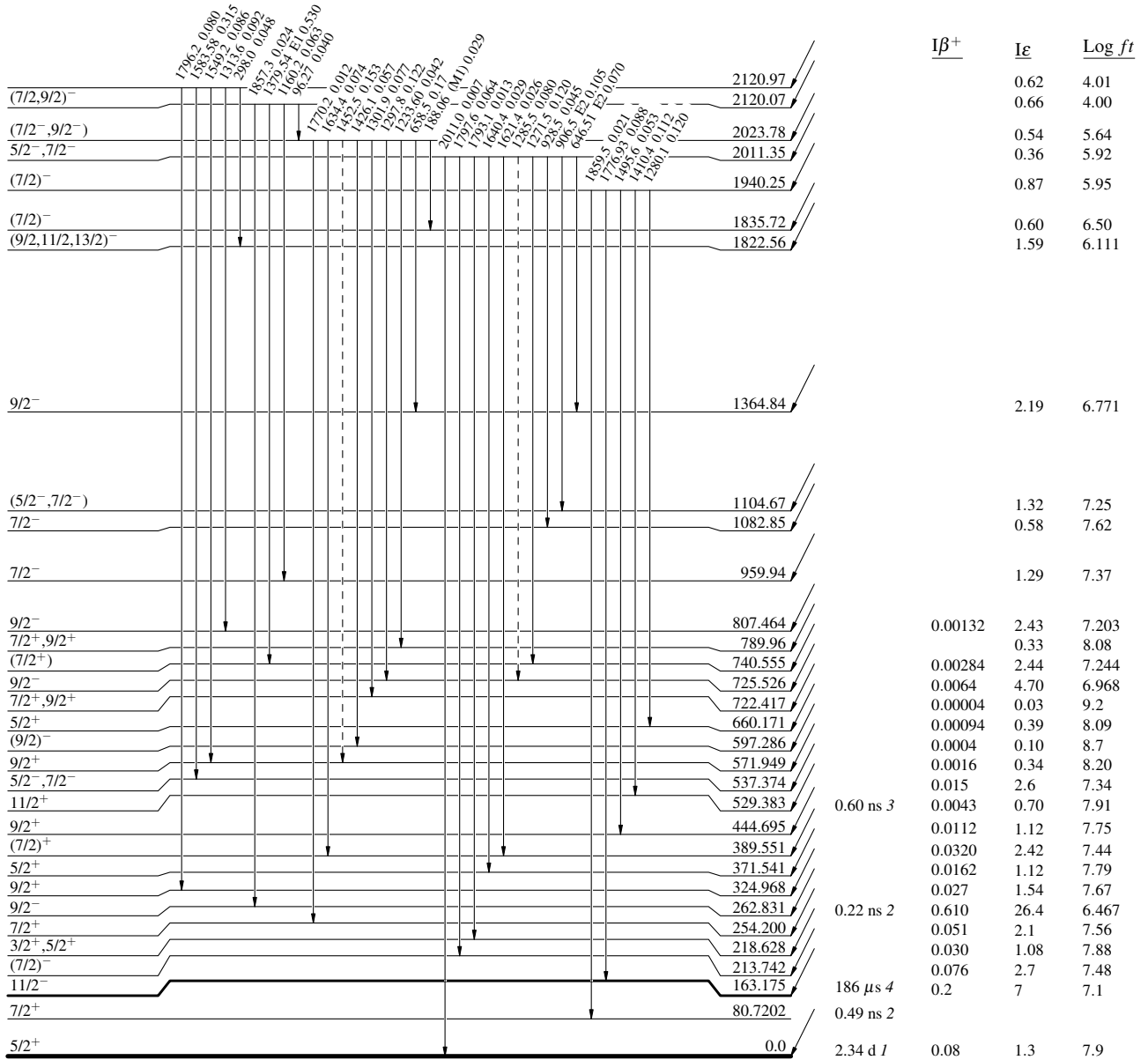
Decay Scheme

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}
- - - - - γ Decay (Uncertain)

Intensities: I_(γ+ε) per 100 parent decays

7/2⁽⁻⁾ 0.0 6.4 h t
 Q_ε=2170.4 19
¹⁵³Dy₈₇
 %ε + %β⁺=100



¹⁵³Tb₈₈

¹⁵³Dy ε decay 1980Ab19,1980Ab21

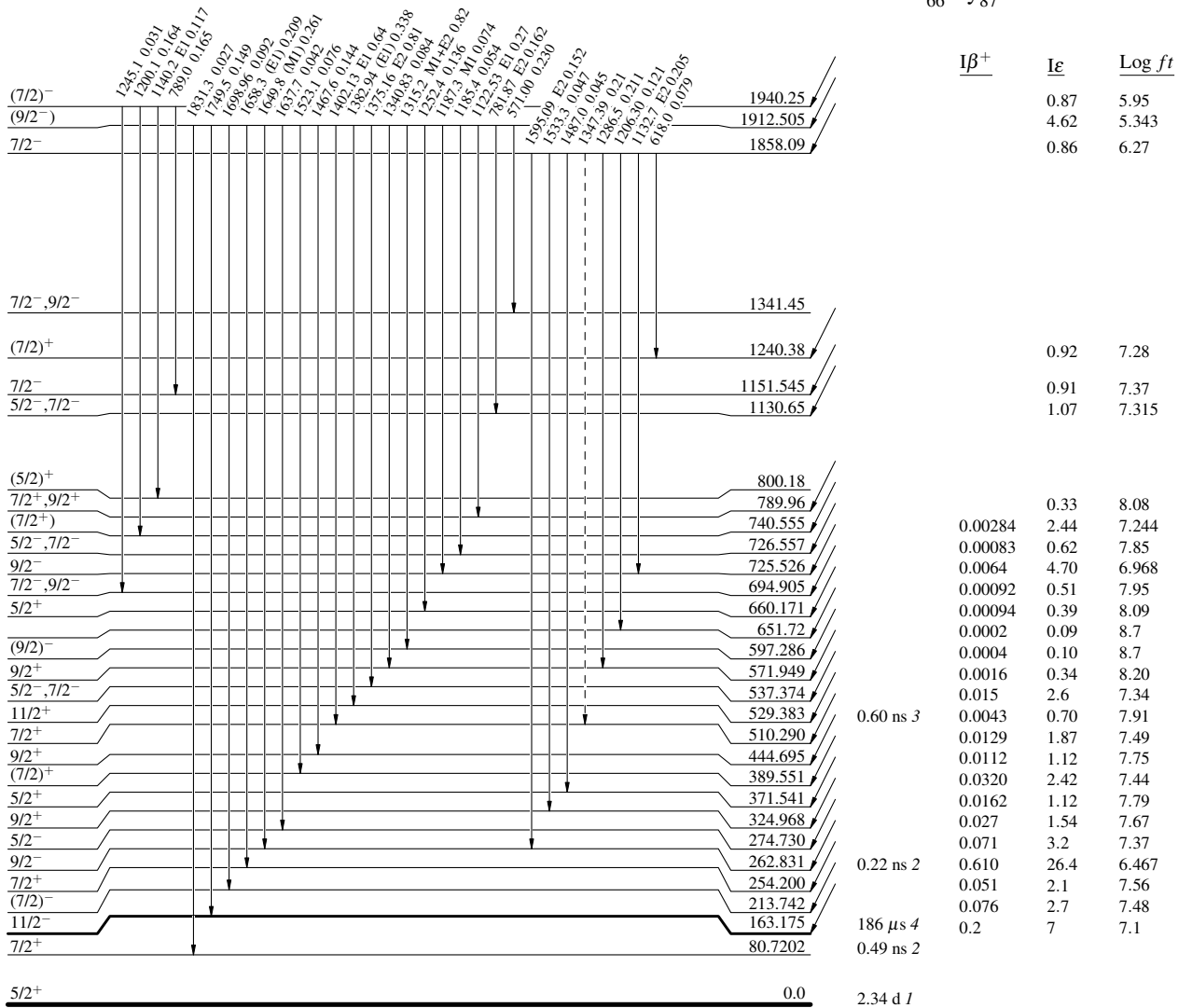
Decay Scheme (continued)

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}
- - - - - γ Decay (Uncertain)

Intensities: I(γ+ε) per 100 parent decays

¹⁵³Dy₈₇ 7/2(-) 0.0 6.4 h T
 Q_ε=2170.4 19
 %ε + %β⁺=100



¹⁵³Tb₈₈

^{153}Dy ϵ decay 1980Ab19,1980Ab21

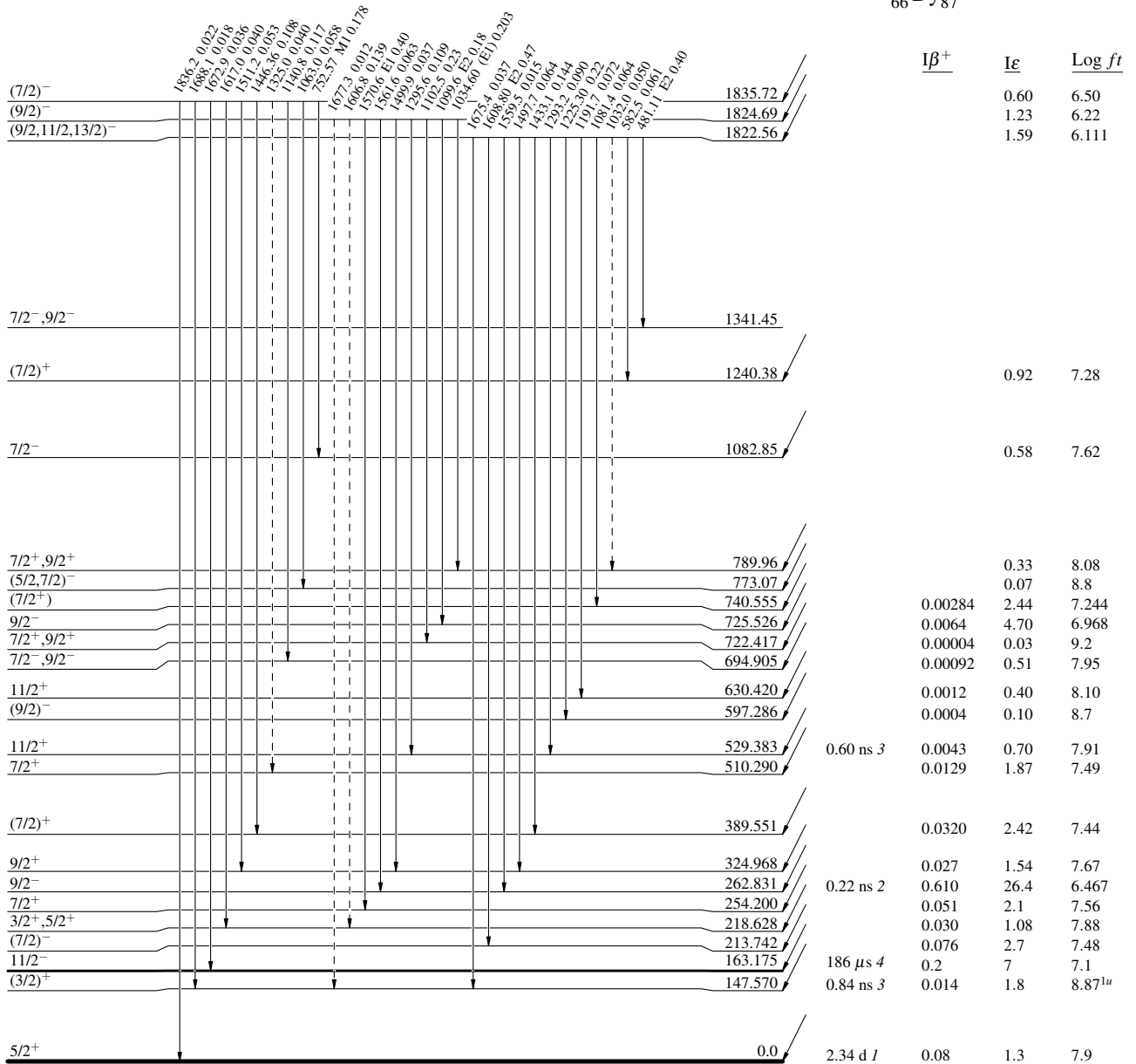
Decay Scheme (continued)

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)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

$^{153}\text{Dy}_{87}$ $7/2^{-}$ 0.0 6.4 h 1
 $Q_\epsilon = 2170.4$ 19
 $\% \epsilon + \% \beta^+ = 100$



$^{153}\text{Tb}_{88}$

¹⁵³Dy ε decay 1980Ab19,1980Ab21

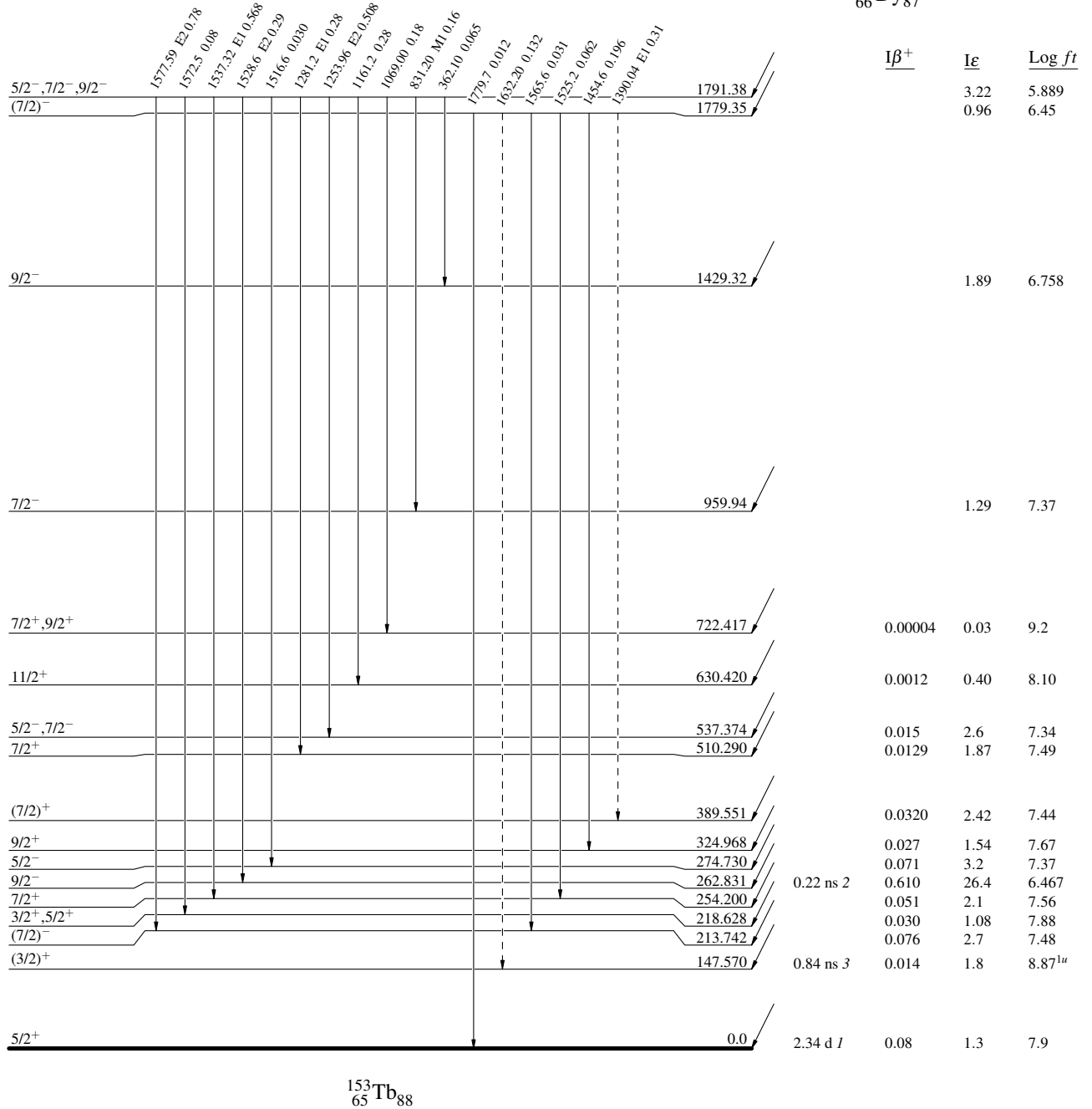
Decay Scheme (continued)

Intensities: I_(γ+ce) per 100 parent decays

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}
- - - - - γ Decay (Uncertain)

¹⁵³Dy₈₇ 7/2⁽⁻⁾ 0.0 6.4 h *t*
 Q_ε=2170.4 19
 %ε + %β⁺=100



¹⁵³Tb₈₈

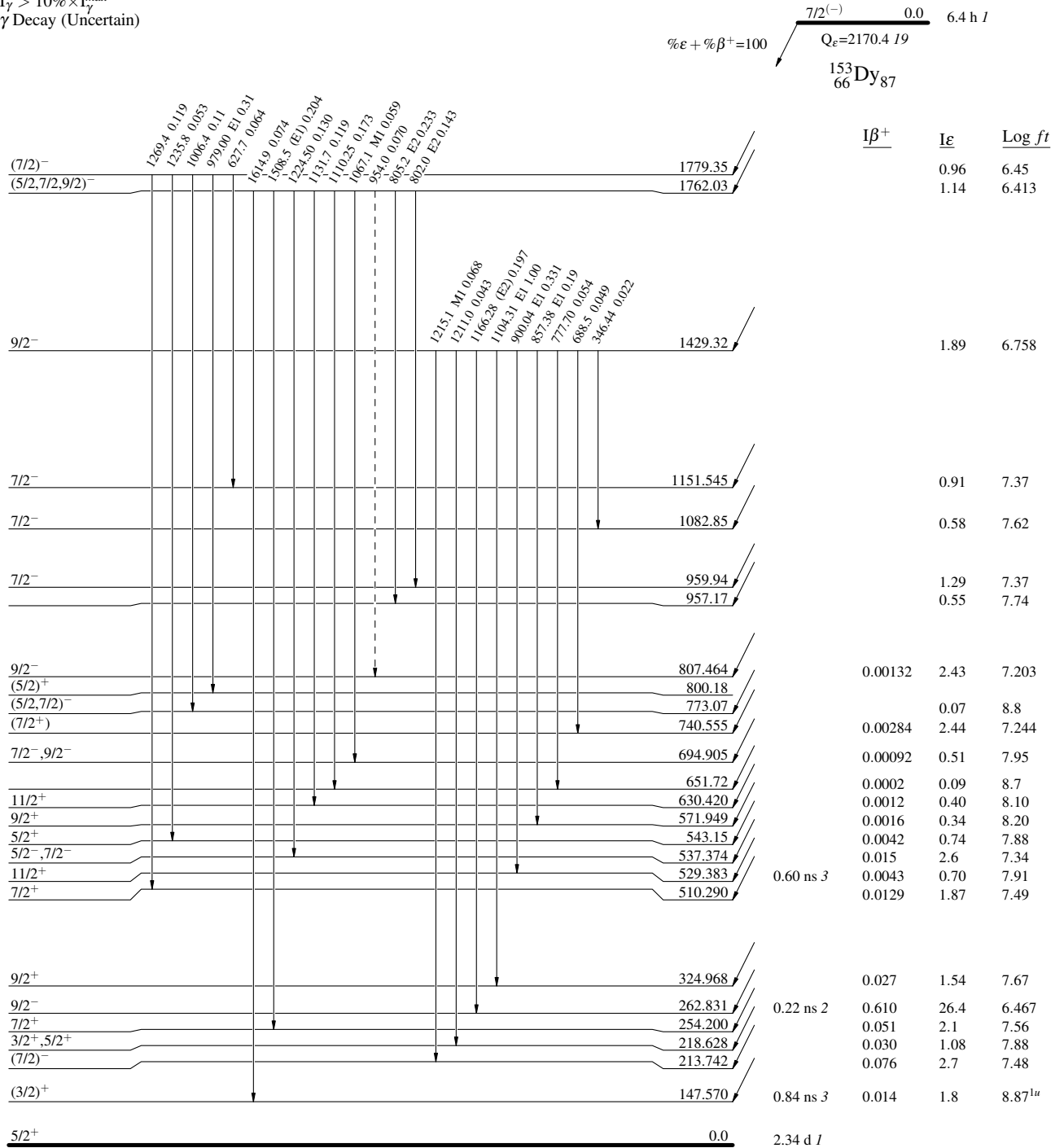
^{153}Dy ϵ decay 1980Ab19,1980Ab21

Decay Scheme (continued)

Intensities: $I_{(\gamma+ee)}$ per 100 parent decays

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)



$^{153}\text{Tb}_{88}$

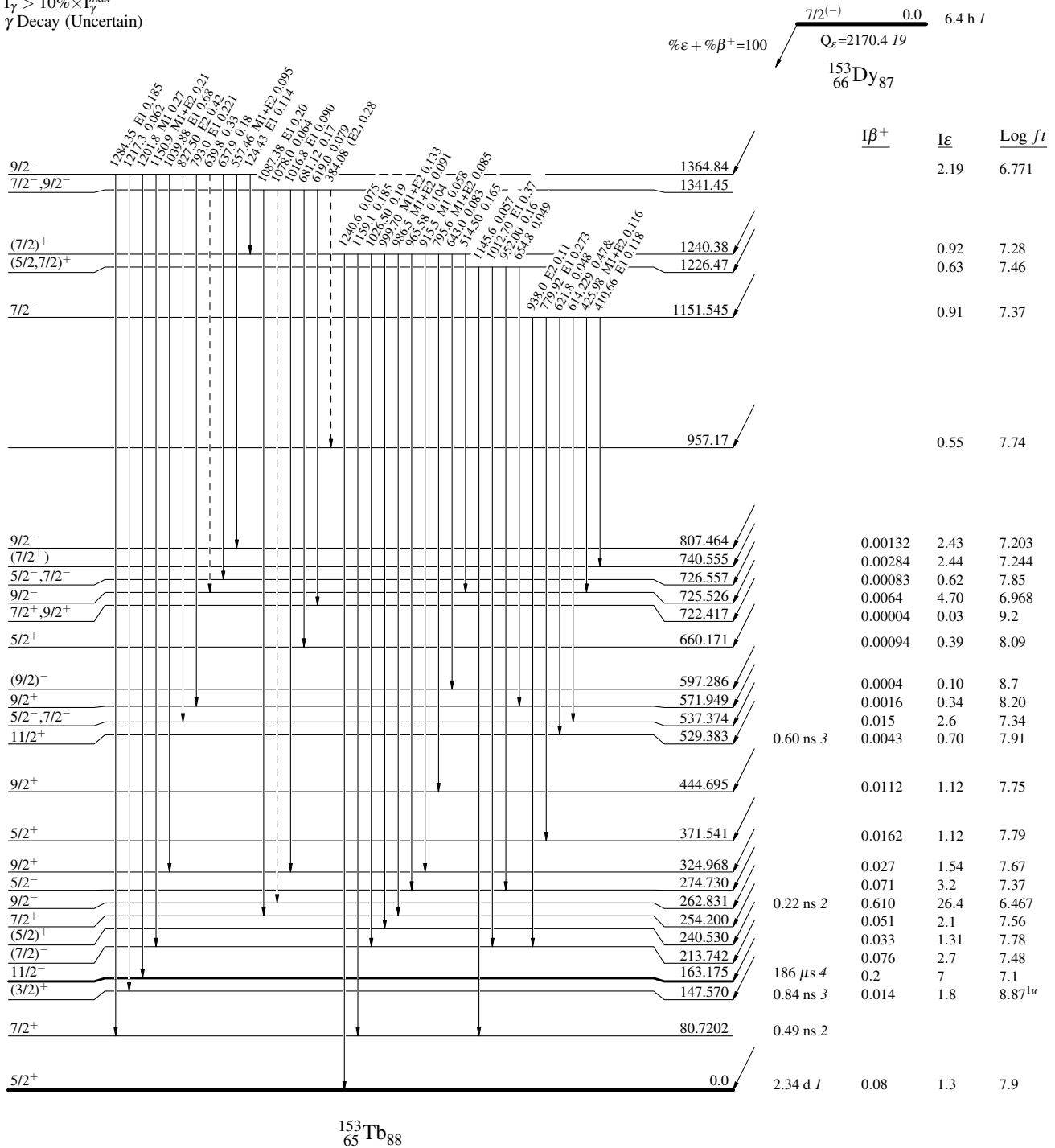
¹⁵³Dy ε decay 1980Ab19,1980Ab21

Decay Scheme (continued)

Legend

- ▶ I_γ < 2% × I_γ^{max}
- ▶ I_γ < 10% × I_γ^{max}
- ▶ I_γ > 10% × I_γ^{max}
- - - - -▶ γ Decay (Uncertain)

Intensities: I_(γ+ε) per 100 parent decays
& Multiply placed: undivided intensity given



¹⁵³Tb₈₈

¹⁵³Dy ε decay 1980Ab19,1980Ab21

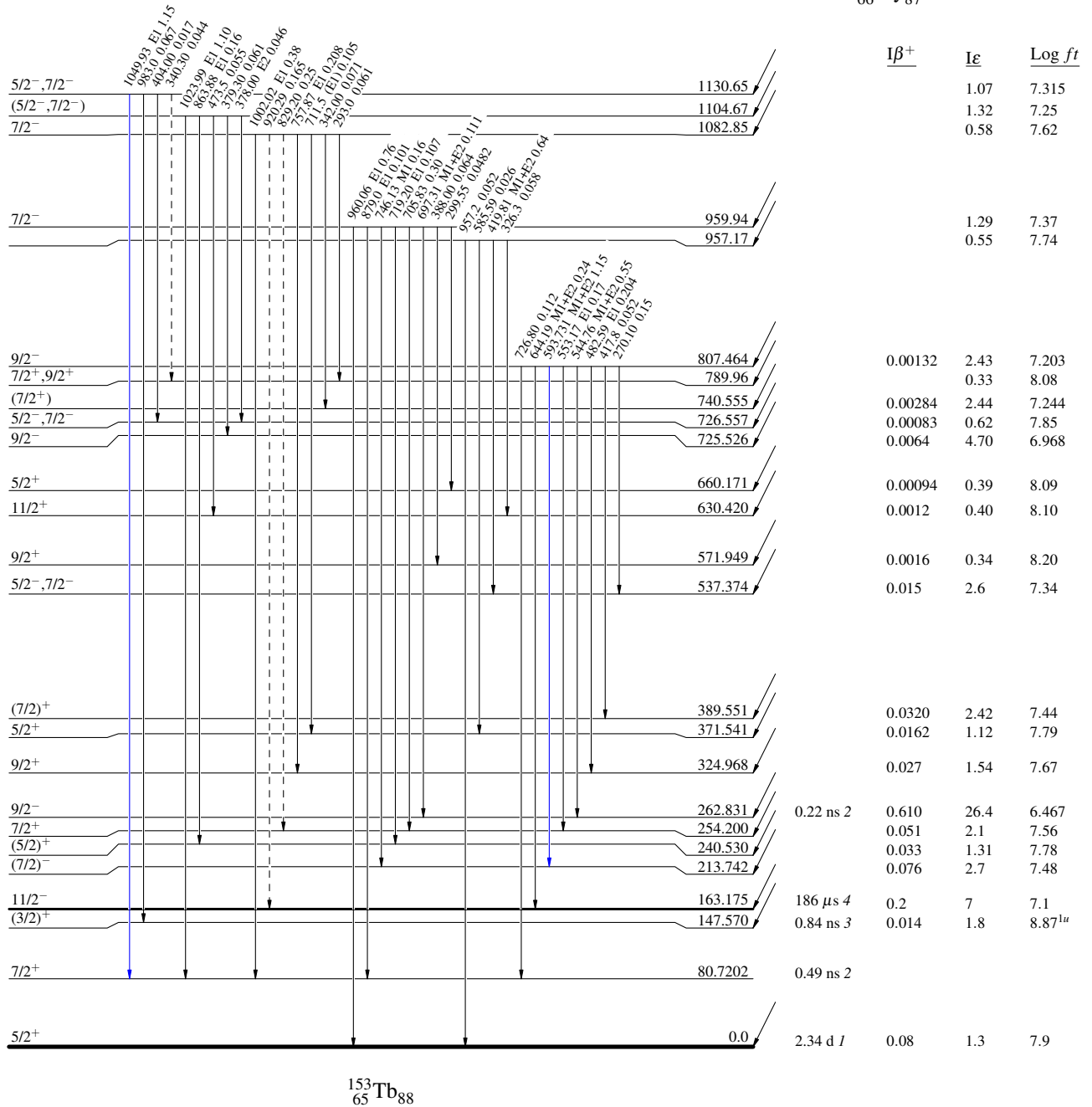
Decay Scheme (continued)

Legend

- ▶ I_γ < 2% × I_γ^{max}
- ▶ I_γ < 10% × I_γ^{max}
- ▶ I_γ > 10% × I_γ^{max}
- - - - -▶ γ Decay (Uncertain)

Intensities: I(γ+ε) per 100 parent decays
& Multiply placed: undivided intensity given

¹⁵³Dy₈₇ 7/2⁽⁻⁾ 0.0 6.4 h *t*
Q_ε=2170.4 19
%ε + %β⁺=100



¹⁵³Tb₈₈

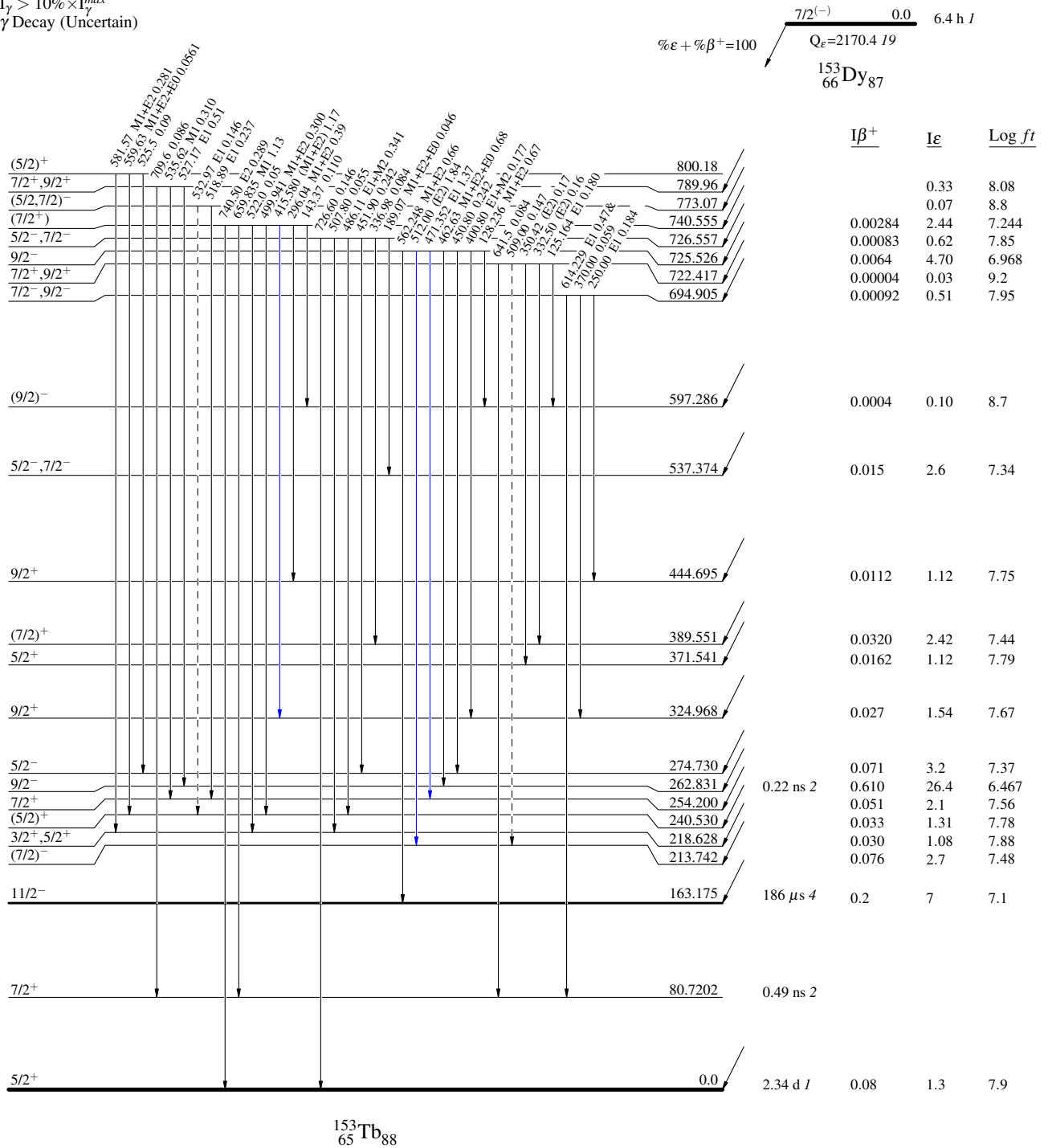
¹⁵³Dy ε decay 1980Ab19,1980Ab21

Decay Scheme (continued)

Intensities: I(γ+ce) per 100 parent decays
& Multiply placed: undivided intensity given

Legend

- ▶ I_γ < 2% × I_γ^{max}
- ▶ I_γ < 10% × I_γ^{max}
- ▶ I_γ > 10% × I_γ^{max}
- - - - -▶ γ Decay (Uncertain)



¹⁵³Dy ε decay 1980Ab19,1980Ab21

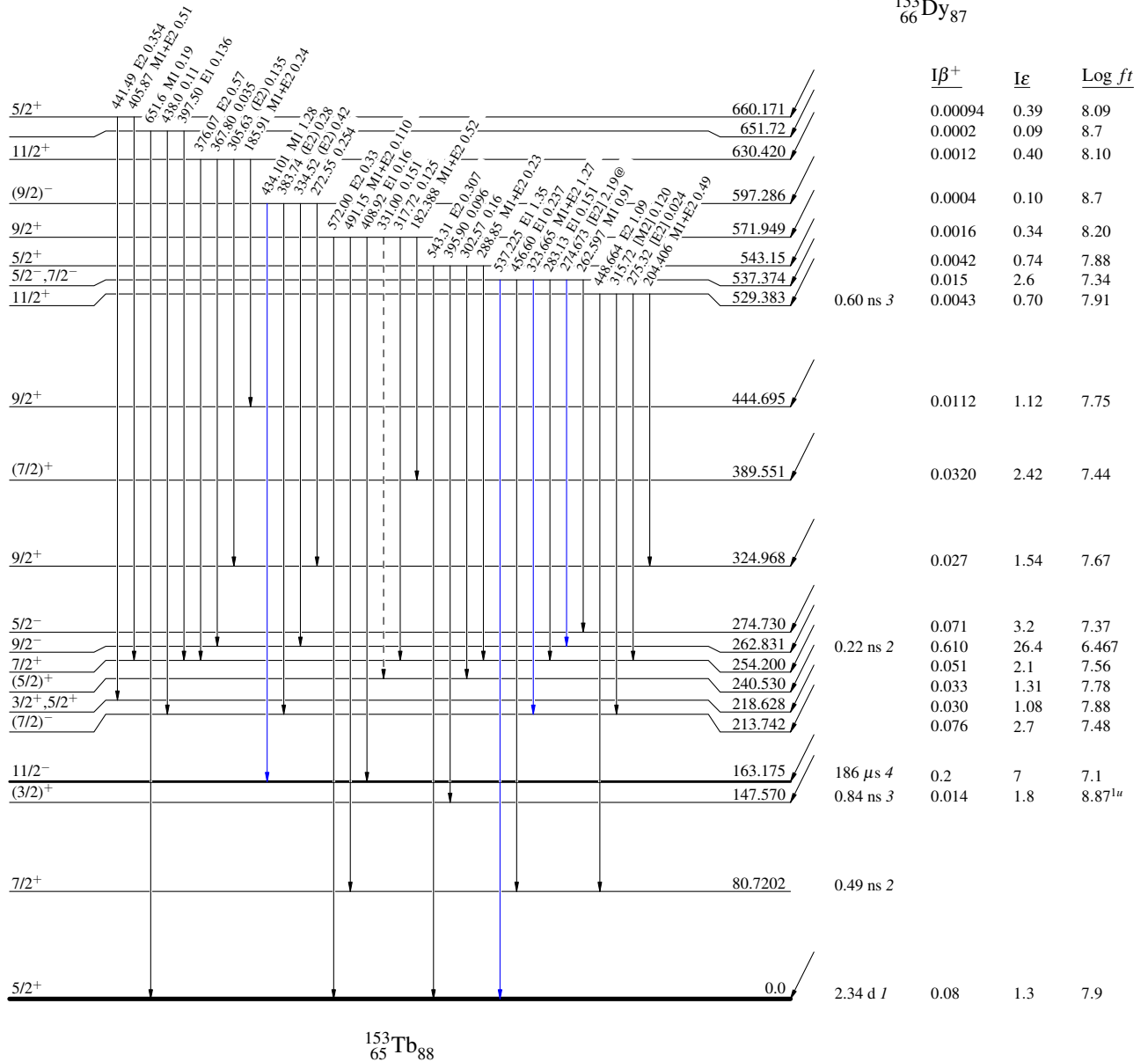
Decay Scheme (continued)

Intensities: I(γ+ce) per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}
- - - - - γ Decay (Uncertain)

¹⁵³Dy₈₇ 7/2⁽⁻⁾ 0.0 6.4 h t
Q_e=2170.4 19
%ε + %β⁺=100



¹⁵³Tb₈₈

^{153}Dy ϵ decay 1980Ab19,1980Ab21

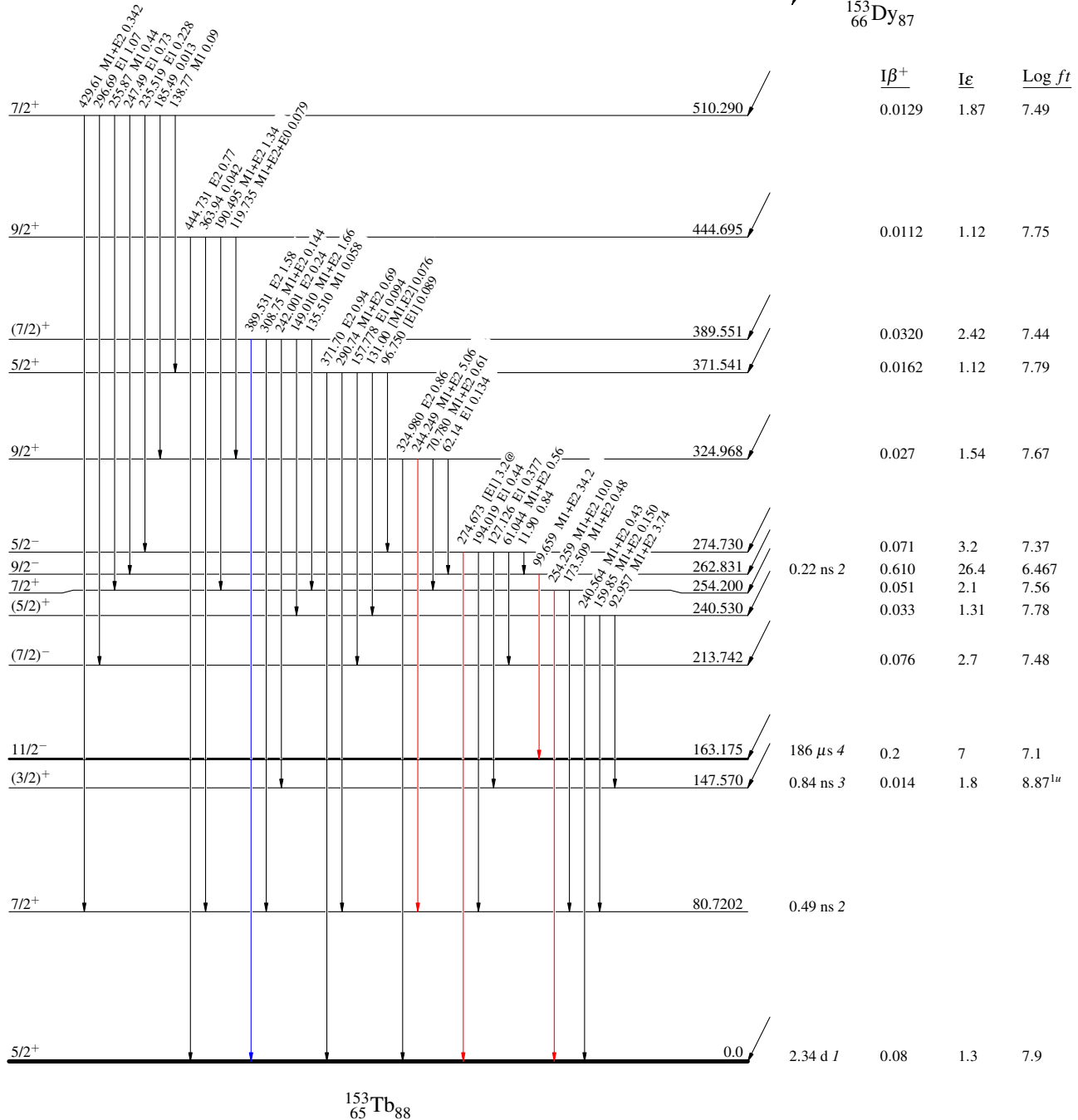
Decay Scheme (continued)

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

Legend

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

$^{153}\text{Dy}_{87}$ $7/2^{-}$ 0.0 6.4 h I
 $Q_{\epsilon} = 2170.4$ 19
 $\% \epsilon + \% \beta^{+} = 100$



^{153}Dy ϵ decay **1980Ab19,1980Ab21**

Decay Scheme (continued)

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

Legend

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

