

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 176, 1 (2021)	1-May-2021

Parent: ¹⁶⁰Ho: E=0; J^π=5⁺; T_{1/2}=25.6 min 3; Q(ε)=3290 15; %ε+%β⁺ decay=100.0

Parent: ¹⁶⁰Ho: E=59.918 19; J^π=2⁻; T_{1/2}=5.02 h 5; Q(ε)=3290 15; %ε+%β⁺ decay=23.8 20

¹⁶⁰Ho(59.918)-%ε+%β⁺ decay: %IT=76.2 20; %ε+%β⁺=23.8 20. Weighted average of %IT values (measured by almost the same group of authors by varied methods): 73.6 52 (2002Ad34), 73.3 30 (2003KaZR), 77.9 20 (2006KaZX) (the smallest measured unc was adopted); Other: 65 3 (1974A128).

Additional information 1.

Data set adapted from the XUNDL files entry compiled by J. Choquette, J. Roediger, and B. Singh (McMaster University).

The two Ho activities were studied as an equilibrium mixture in a source of ¹⁶⁰Er (T_{1/2}=25.6 h). Consequently, the decay scheme represents a combination of those of the two ¹⁶⁰Ho isomers.

2009Ad04: measured conversion electron spectra using permanent-magnetic-field β-spectrographs at the Laboratory of Nuclear Problems, JINR. When K-shell electron peaks corroborated with no intensities at the corresponding Eγ's, E0 character was adopted by 2009Ad04, also adopted by evaluator. Main topic of this paper is some evidence for a new 0⁺ level at 681 keV. Some of the K-conversion intensities may be from authors' earlier work 2002Ad34.

2002Ad34: ¹⁶⁰Ho (containing both 25.6-min and 5.02-h ¹⁶⁰Ho in equilibrium) was obtained from the ε decay of ¹⁶⁰Er, produced in the ¹⁶¹Dy(³He,4n) reaction, E(³He)=39 MeV, followed by mass separation. γ rays studied using various HPGe and Ge detectors and a NaI(Tl) anti-Compton detector. Conversion electrons measured using a constant magnetic field β spectrograph from 5-1500 keV and a mini-orange magnetic spectrometer from 500-2800 keV. Measured Eγ, Iγ, γγ, γγ(t), ce.

1998Kr21: ¹⁶⁰Ho source produced from the decay of mass-separated ¹⁶⁰Er. The ¹⁶⁰Er was implanted in a Gd host for low-temperature nuclear-orientation studies. Measured γ(θ,H,T) at θ=90° and 180° using an HPGe and a coaxial Ge(Li) detector. Report A₂ and A₄ for ≈30 γ's and deduce δ values for them. 1995KrZY, 1996KrZX, by some of these authors, give some of these δ data.

1998Kr07: the authors of this study are also the first three of those for 1998Kr21. They analyze the nuclear-orientation data (presumably those of 1998Kr21) to take into account the different orientation characteristics of the two ¹⁶⁰Ho isomers (having J^π=5⁺ and 2⁻) to deduce what the δ values for several of the γ transitions would have been if only one isomer had been present in the mixed source. NOTE: for the δ values that are negative, the signs of the asymmetric errors shown in this work should be interchanged.

1994SIZZ: Low-temperature nuclear orientation. Measured anisotropies of the γ rays emitted from oriented ¹⁶⁰Ho nuclei in equilibrium with ¹⁶⁰Er nuclei which had been introduced into a Gd matrix by melting. Anisotropies were measured at θ=0° and 90° over a temperature range from 17 milli-Kelvin to 56 milli-Kelvin. Deduced δ values for several γ transitions.

Related studies by various of the authors of 2002Ad34 presenting specific features of the ¹⁶⁰Ho ε decay scheme include the following: δ values for 3 low-energy γ's (2000AdZV); level energies and J^π values (2000AdZW, 2001ZvZX); ε+β⁺, IT branching ratios for the 5.02-h isomer (2003KaZR); a summary of the level energies and J^π values (2002vZZ); and identification of the lower-spin members of the S, or 'Super' band (2003AdZY).

Others: 2010BoZZ, 2009KaZY, 2008VaZU, 2007AdZY, 2006Bo37, 2006BoZW.

The level scheme is that proposed by 2002Ad34. It is more extensive than that previously adopted, which was based primarily on the work of 1969Gr14 and 1974A127 and on subsequent analyses of these data by, e.g., 1986GrZP, 1987GrZS, 1987Gr37, 1990Gr16.

**Intensities of K x-rays and two low-energy Gammas
(Measurements by 2003KaZR)**

Radiation	I ×	Radiation	I ×
Dy Kα ₂	x ray 176 3	Ho Kα ₂	x ray 113.5 20
Dy Kα ₁	x ray 315 5	Ho Kα ₁	x ray 195 5
Dy Kβ ₁ '	x ray 98.3 16	Ho Kβ ₁ '	x ray 59.5 23
Dy Kβ ₂ '	x ray 28.4 21	Ho Kβ ₂ '	x ray 15.4 5
86.788 13 (Dy)	85.4 8		
59.918 19 (Ho)	0.474 13		

× Weighted average of two measurements.

^{160}Dy Levels

According to [2009KaZY](#) in the scheme of ^{160}Ho 5^+ g.s. ε decay there is no sufficient ground for including the majority of high-spin states, except for 7^-_1 and 7^-_2 .

E(level) [†]	J^π [‡]	Comments
0.0 [#]	0 ⁺	
86.789 [#] 8	2 ⁺	
283.820 [#] 11	4 ⁺	
581.069 [#] 19	6 ⁺	
681.3? 6	(0 ⁺)	E(level): level reported in 2009Ad04 from the observation of a K-shell electron line corresponding to transition energy of 681.3 keV.
703.0?	(0 ⁺)	from 2010BoZZ based on their observance of 703.0 transition, presumably E0; by their assignment of 1594.5 transition (previously unplaced) at existing 2297.5, 2 ⁺ level; and by postulating 616.2 transition from this level to the 86.8, 2 ⁺ level (with existing 616.18 γ from 2701.0, 1 ⁻ level, this would be a doublet with).
966.174 [@] 10	2 ⁺	
966.75 [#] 6	8 ⁺	
1049.113 [@] 11	3 ⁺	
1155.851 [@] 12	4 ⁺	
1264.767 ^{&} 12	2 ⁻	
1279.945 ^b 24	0 ⁺	
1285.607 ^a 12	1 ⁻	
1286.721 ^{&} 15	3 ⁻	
1288.670 [@] 15	5 ⁺	
1349.764 ^b 18	2 ⁺	
1358.693 ^a 11	2 ⁻	
1386.455 ^{&} 18	4 ⁻	
1398.969 ^a 14	3 ⁻	
1408.47 ^{&} 4	5 ⁻	
1438.57 [@] 3	6 ⁺	
1456.757 ^c 20	0 ⁺	
1489.503 ⁱ 22	1 ⁻	
1518.421 ^c 15	2 ⁺	
1522.34 ^b 3	4 ⁺	
1535.155 ^a 17	4 ⁻	
1586.748 ^a 23	5 ⁻	
1594.38 ^{&} 8	6 ⁻	
1603.79 5	4 ⁺	
1606.83 6	6 ⁺	
1607.86 ^c 6	4 ⁺	
1613.99 ^{&} 4	7 ⁻	
1617.28 [@] 4	7 ⁺	
1643.28 ⁱ 4	3 ⁻	
1650.882 25	4 ⁻ , 5 ⁻	J^π : 2002Ad34 report $J^\pi=5^-$.
1651.95 22	4 ⁺ , 5, 6 ⁺	J^π : 2002Ad34 report $J^\pi=(4,5,6)$.
1653.66 4		J^π : 2002Ad34 report $J^\pi=(2,3)$.
1655.00 4	2 ⁺ , 3 ⁺ , 4 ⁺	
1694.368 ^d 14	4 ⁺	
1708.14 ^g 4	0 ⁺	
1720.43 ^c 20	6 ⁺	

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^{160}Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued) ^{160}Dy Levels (continued)

E(level) [†]	J^{π} [‡]	Comments
1756.920 22	2 ⁺	
1784.696 ^e 23	4 ⁻	J^{π} : 2002Ad34 report $J^{\pi}=(3,4)^-$.
1787.82 ^a 7	6 ⁻	
1801.16 [@] 7	8 ⁺	J^{π} : possible member of the γ -vibrational band. The level energy agrees with, but the γ decay pattern differs from, that reported by 2002Ju08. The evaluator has adopted the latter values.
1802.233 ^d 15	5 ⁺	
1804.675 ^f 15	1 ⁺	
1860.18 ^e 6	5 ⁻	
1869.518 ^f 21	2 ⁺	
1882.62 ^{&} 11	8 ⁻	
1901.15 ^{&} 18	9 ⁻	
1903.210 ^f 21	3 ⁺	
1929.186 ^d 21	6 ⁺	
1952.31 ^j 3	0 ⁺	
2009.535 20	1 ⁻ ,2 ⁻	
2012.85 ^j 21	2 ⁺	
2021.95 [@] 9	9 ⁺	
2049.51 6	2 ⁺ ,3	J^{π} : 2002Ad34 report $J^{\pi}=(3,4)$.
2068.08 3	1 ⁻	
2074.18 ^d 11	7 ⁺	
2077.37 3	3 ⁻	Possible $K^{\pi}=3^-$ bandhead.
2084.814 22	(1,2) ⁺	
2088.85 3	1 ⁻ ,2 ⁻ ,3 ⁻	J^{π} : 2002Ad34 report $J^{\pi}=(2^-)$.
2090.88 4	2 ⁻ ,3 ⁻	
2096.896 ^h 16	4 ⁺	
2112.70 ^a 14	8 ⁻	
2113.69 10		J^{π} : 2002Ad34 report $J^{\pi}=(4,5)$.
2126.37 4	3 ⁻	
2130.586 24	3 ⁻	
2138.21 3	2 ⁺	
2140.15 3	(3)	J^{π} : mult(1091.1)=(E1) and mult(1856.38)=(E2,M1) give opposite parities.
2141.67 15	2 ⁺ ,3,4 ⁺	J^{π} : 2002Ad34 report $J^{\pi}=(3)$.
2143.74 7	4 ⁻	
2144.56? 5		J^{π} : 2002Ad34 report $J^{\pi}=(2^-)$.
2149.84 13	1,2	
2155.33 20		J^{π} : 2002Ad34 report $J^{\pi}=(4^-)$.
2165.42 10		J^{π} : 2002Ad34 report $J^{\pi}=(2,3,4)$.
2187.00 6	4 ⁺ ,5 ⁺ ,6 ⁺	J^{π} : 2002Ad34 report $J^{\pi}=(5,6)$.
2191.03 7		J^{π} : 2002Ad34 report $J^{\pi}=(3^-)$.
2194.44 ^h 3	5 ⁺	
2200.82 4	2 ⁺ ,3,4 ⁺	J^{π} : shown as (3,4) by 2002Ad34.
2208.42 ^f 7	4 ⁺	J^{π} : shown as (2,3,4) ⁺ in table 1 of 2002Ad34, but as 4 ⁺ in their table 2.
2208.79 6	(2) ⁻	J^{π} : 2002Ad34 report $J^{\pi}=(2^-)$.
2230.52 8	2 ⁺	J^{π} : 2002Ad34 report $J^{\pi}=(2)$.
2244.94 4	2 ⁺ ,3,4 ⁺	J^{π} : 2002Ad34 report $J^{\pi}=3^+$.
2255.67 6	1 ⁺ ,2 ⁺	J^{π} : 2002Ad34 report $J^{\pi}=(1,2^+)$.
2266.98 4	3 ⁻	
2271.253 24	2 ⁻	
2279.05 10		J^{π} : 2002Ad34 report $J^{\pi}=(3^-)$.
2297.49 4	2 ⁺	
2309.91 11	2 ⁺ ,3,4 ⁺	J^{π} : 2002Ad34 report $J^{\pi}=(3,4)$.
2323.09 3	1 ⁺ ,2 ⁺	

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^{160}Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued) ^{160}Dy Levels (continued)

E(level) [†]	J^π [‡]	Comments
2325.24 9	1 ⁺ ,2 ⁺	
2327.70 5	2 ⁺	
2354.631 18	2 ⁺	
2367.47 3	2 ⁺ ,3 ⁺ ,4 ⁺	J^π : 2002Ad34 report $J^\pi=3^+$.
2372.31 3	6 ⁻	
2374.50 5		J^π : 2002Ad34 report $J^\pi=(4^-)$.
2383.70 3	6 ⁻	
2386.90 3	2 ⁺ ,3 ⁺	J^π : 2002Ad34 report $J^\pi=(3)^+$.
2393.55 6	2,3 ⁻	J^π : 2002Ad34 report $J^\pi=(2,3)$.
2396.92 21	1,2	
2450.26 5	1 ⁻	
2469.51 3	3 ⁻	
2474.97 10	2 ⁺ ,3,4 ⁺	J^π : 2002Ad34 report $J^\pi=(3)$.
2503.80 9	1 ⁺ ,2 ⁺	J^π : 2002Ad34 report $J^\pi=2^+$.
2553.5 3		J^π : 2002Ad34 report $J^\pi=(3^-)$.
2556.73 6	3 ⁻ ,4 ⁻ ,5 ⁻	
2560.02 9	2 ⁺ ,3,4 ⁺	J^π : 2002Ad34 report $J^\pi=(3,4)^+$.
2572.4 3	3 ⁺ ,4 ⁺ ,5 ⁺	J^π : 2002Ad34 report $J^\pi=(4)$.
2574.38 20	1 ⁻ ,2 ⁻ ,3 ⁻	
2602.67 4	1 ⁻ ,2 ⁻	J^π : 2002Ad34 report $J^\pi=(1,2)^-$.
2605.76 8	2 ⁺ ,3 ⁺ ,4 ⁺	
2610.01 10	2 ⁺	
2630.24 5	(1,2) ⁺	
2630.714 13	1 ⁻	
2634.74 11		J^π : 2002Ad34 report $J^\pi=(1,2,3)^+$.
2645.88 22	3 ⁻	
2647.31 24	(3) ⁻	J^π : 2002Ad34 report $J^\pi=(3,4)^-$.
2661.522 15	2 ⁻	
2665.78 5	2 ⁺ ,3 ⁺ ,4 ⁺	J^π : 2002Ad34 report $J^\pi=(3,4)^+$.
2674.720 21	1 ⁻	
2681.828 ^f 25	5 ⁺	
2696.43 3	2 ⁻ ,3 ⁻	J^π : 2002Ad34 report $J^\pi=(2,3)^-$.
2697.826 19	2 ⁺	
2701.048 ^k 16	1 ⁻	
2704.230 20	2 ⁻ ,3 ⁻	
2717.229 22	2 ⁺	
2719.02 5	2 ⁻	
2720.58 ^k 4	3 ⁻	
2727.20 10	(4)	
2729.84 3	2 ⁻	
2734.720 25	1 ⁻	
2755.04 20		
2756.3 3		
2757.13 9		J^π : 2002Ad34 report $J^\pi=(4,5)$.
2760.47 7	1 ⁺ ,2 ⁺	J^π : 2002Ad34 report $J^\pi=(1,2)$.
2763.05 5		J^π : 2002Ad34 report $J^\pi=(3,4,5,6)$.
2767.70 5	1 ⁻	
2772.10 20		J^π : 2002Ad34 report $J^\pi=(3,4,5,6)$.
2777.62 4	2 ⁺ ,3 ⁺ ,4 ⁺	J^π : 2002Ad34 report $J^\pi=(4)^+$.
2822.23 20	1 ⁺	
2833.85 17	2,3,4	
2851.73 3	1 ⁻	
2853.68 12		J^π : 2002Ad34 report $J^\pi=5^-$.
2858.17 11		J^π : 2002Ad34 report $J^\pi=3^-$.
2861.17 3	1 ⁺	

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^{160}Ho ε decay (25.6 min+5.02 h) [2002Ad34](#),[1998Kr21](#) (continued) ^{160}Dy Levels (continued)

E(level) [†]	J^π [‡]	Comments
2877.114 23	1 ⁻	
2879.47 10	2	
2885.59 5		J^π : 2002Ad34 report $J^\pi=(2,3)^-$ for this level.
2896.28 4	2 ⁺	
2904.36 8	2,3,4	
2931.75 6		J^π : 2002Ad34 report $J^\pi=(4^-)$.
2941.95 8	4,5,6	
2958.55 5		J^π : 2002Ad34 report $J^\pi=3^-$.
2969.04 17	1,2	
2969.90 7		J^π : 2002Ad34 report $J^\pi=(4,5)$.
2977.54 6		J^π : 2002Ad34 report $J^\pi=(4,5)$.
2994.69 8	2,3,4	
3004.34 10	1,2	
3024.52 17	1,2	
3033.7 3		J^π : 2002Ad34 report $J^\pi=(4,5)^-$.
3060.45 14		J^π : 2002Ad34 report $J^\pi=(3,4,5,6)$.
3061.83 5	1 ⁺	J^π : E1 γ to 2 ⁻ indicates $\pi=+$. Excitation in (γ, γ') indicates $J^\pi=1^+$, as does (M1) for the 3061 γ . However, 1775 γ to 3 ⁻ may disfavor 1 ⁺ . 2002Ad34 report $J^\pi=(1,2^+)$.
3081.4 4	(4,5,6)	
3098.98 ^f 9	6 ⁺	According to 2009KaZY there is no coin in between 1036.2 γ and 404.7 γ , and 1036.2 γ and 1481.9 γ , by which they question the existence of 3099 level, decayed by 1481.9 γ . While 1481.9 γ is the most intense one decaying the level no comments are done about the other six transitions that are decaying the level. J^π : in their table 1, 2002Ad34 show $J^\pi=7^-$ for this level, but elsewhere $J^\pi=6^+$ is shown. 7 ⁻ is probably a misprint.

[†] From a least-squares fit to the E_γ values.

[‡] From the adopted values, unless noted otherwise. In many instances, the values listed by [2002Ad34](#) are shown in parentheses. In some of these, the evaluator has not included these here.

Band(A): ground-state band.

@ Band(B): γ -vibrational band.

& Band(C): $K^\pi=2^-$ octupole-vibrational band. The dominant two-quasiparticle component in this band has configuration= $(\pi 7/2[523] - \pi 3/2[411])$.

^a Band(D): $K^\pi=1^-$ octupole-vibrational band. The two-quasiparticle state with configuration= $(\nu 5/2[642] - \nu 3/2[521])$ is the major component in the makeup of this band.

^b Band(E): first excited $K^\pi=0^+$ band.

^c Band(F): S, or 'Super', band. (second excited $K^\pi=0^+$ band).

^d Band(G): $K^\pi=4^+$ band. Configuration= $(\nu 5/2[523] + \nu 3/2[521])$.

^e Band(H): $K^\pi=4^-$ band. Configuration= $(\nu 5/2[642] + \nu 3/2[521])$.

^f Band(I): $K^\pi=1^+$ band. Configuration= $(\nu 5/2[523] - \nu 3/2[521])$. [2009KaZY](#) question the assignment of the following levels to this band: 2208, 4⁺; 2682, 5⁺, 3099, 6⁺.

^g Band(J): third excited $K^\pi=0^+$ band.

^h Band(K): second excited $K^\pi=4^+$ band.

ⁱ Band(L): possible $K^\pi=0^-$ octupole-vibrational band.

^j Band(M): fourth excited $K^\pi=0^+$ band.

^k Band(N): proposed ([1987Gr37](#)) two-phonon quadrupole (β^-)-octupole band.

^{160}Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued) ε, β^+ radiations

Computed by the evaluator from the γ +ce intensity balance at each level. Where the uncertainty in the deduced values overlaps zero, no value is shown. No log ft values should be deduced from these data, since the $\varepsilon+\beta^+$ feedings from each isomer are not available. NOTE: the evaluator has prepared a separate, but not necessarily complete, data set for the decay of the 25.6-min ^{160}Ho g.s. in order to highlight the properties of the allowed-unhindered (au) $\varepsilon+\beta^+$ transition to the members of the $K^\pi=4^+$ band in ^{160}Dy , which gives definitive information on the configurations of both the initial and final states involved. See [1996Re22](#) for that data set (which is based on the earlier data of [1969Gr14](#) and [1974A127](#)).

<u>E(decay)</u>	<u>E(level)</u>	<u>Comments</u>
(191 15)	3098.98	$I(\varepsilon+\beta^+)$: 0.110 10.
(209 15)	3081.4	$I(\varepsilon+\beta^+)$: 0.0018 5.
(228 15)	3061.83	$I(\varepsilon+\beta^+)$: 0.063 6.
(230 15)	3060.45	$I(\varepsilon+\beta^+)$: 0.033 4.
(256 15)	3033.7	$I(\varepsilon+\beta^+)$: 0.0023 7.
(265 15)	3024.52	$I(\varepsilon+\beta^+)$: 0.0038 3.
(286 15)	3004.34	$I(\varepsilon+\beta^+)$: 0.00105 23.
(295 15)	2994.69	$I(\varepsilon+\beta^+)$: 0.0287 25.
(312 15)	2977.54	$I(\varepsilon+\beta^+)$: 0.015 4.
(320 15)	2969.90	$I(\varepsilon+\beta^+)$: 0.047 11.
(321 15)	2969.04	$I(\varepsilon+\beta^+)$: 0.008 3.
(331 15)	2958.55	$I(\varepsilon+\beta^+)$: 0.081 8.
(348 15)	2941.95	$I(\varepsilon+\beta^+)$: 0.0171 9.
(358 15)	2931.75	$I(\varepsilon+\beta^+)$: 0.048 5.
(386 15)	2904.36	$I(\varepsilon+\beta^+)$: 0.0217 22.
(394 15)	2896.28	$I(\varepsilon+\beta^+)$: 0.221 14.
(404 15)	2885.59	$I(\varepsilon+\beta^+)$: 0.065 8.
(411 15)	2879.47	$I(\varepsilon+\beta^+)$: 0.060 8.
(413 15)	2877.114	$I(\varepsilon+\beta^+)$: 0.057 11.
(429 15)	2861.17	$I(\varepsilon+\beta^+)$: 0.119 8.
(432 15)	2858.17	$I(\varepsilon+\beta^+)$: 0.036 9.
(436 15)	2853.68	$I(\varepsilon+\beta^+)$: 0.040 3.
(438 15)	2851.73	$I(\varepsilon+\beta^+)$: 0.381 25.
(456 15)	2833.85	$I(\varepsilon+\beta^+)$: 0.023 5.
(468 15)	2822.23	$I(\varepsilon+\beta^+)$: 0.0035 7.
(512 15)	2777.62	$I(\varepsilon+\beta^+)$: 0.213 9.
(518 15)	2772.10	$I(\varepsilon+\beta^+)$: 0.119 23.
(522 15)	2767.70	$I(\varepsilon+\beta^+)$: 0.227 24.
(527 15)	2763.05	$I(\varepsilon+\beta^+)$: 0.050 6.
(530 15)	2760.47	$I(\varepsilon+\beta^+)$: 0.145 20.
(533 15)	2757.13	$I(\varepsilon+\beta^+)$: 0.029 5.
(534 15)	2756.3	$I(\varepsilon+\beta^+)$: 0.0277 24.
(535 15)	2755.04	$I(\varepsilon+\beta^+)$: 0.0198 25.
(555 15)	2734.720	$I(\varepsilon+\beta^+)$: 0.89 5.
(560 15)	2729.84	$I(\varepsilon+\beta^+)$: 0.53 4.
(563 15)	2727.20	$I(\varepsilon+\beta^+)$: 0.024 3.
(569 15)	2720.58	$I(\varepsilon+\beta^+)$: 0.246 17.
(571 15)	2719.02	$I(\varepsilon+\beta^+)$: 1.00 8.
(573 15)	2717.229	$I(\varepsilon+\beta^+)$: 0.52 5.
(586 15)	2704.230	$I(\varepsilon+\beta^+)$: 0.95 5.
(589 15)	2701.048	$I(\varepsilon+\beta^+)$: 2.04 6.
(592 15)	2697.826	$I(\varepsilon+\beta^+)$: 0.84 4.
(594 15)	2696.43	$I(\varepsilon+\beta^+)$: 0.40 5.
(608 15)	2681.828	$I(\varepsilon+\beta^+)$: 0.56 6.
(615 15)	2674.720	$I(\varepsilon+\beta^+)$: 2.03 8.
(624 15)	2665.78	$I(\varepsilon+\beta^+)$: 0.101 8.

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^{160}Ho ε decay (25.6 min+5.02 h) [2002Ad34,1998Kr21](#) (continued) ε, β^+ radiations (continued)

E(decay)	E(level)	Comments
(628 15)	2661.522	I($\varepsilon+\beta^+$): 2.54 12.
(643 15)	2647.31	I($\varepsilon+\beta^+$): 0.127 17.
(644 15)	2645.88	I($\varepsilon+\beta^+$): 0.156 21.
(655 15)	2634.74	I($\varepsilon+\beta^+$): 0.095 10.
(659 15)	2630.714	I($\varepsilon+\beta^+$): 5.11 16.
(660 15)	2630.24	I($\varepsilon+\beta^+$): 0.061 8.
(680 15)	2610.01	I($\varepsilon+\beta^+$): 0.063 7.
(684 15)	2605.76	I($\varepsilon+\beta^+$): 0.024 3.
(687 15)	2602.67	I($\varepsilon+\beta^+$): 0.119 13.
(716 15)	2574.38	I($\varepsilon+\beta^+$): 0.082 9.
(718 15)	2572.4	I($\varepsilon+\beta^+$): 0.0234 20.
(733 15)	2556.73	I($\varepsilon+\beta^+$): 0.106 9.
(737 15)	2553.5	I($\varepsilon+\beta^+$): 0.016 8.
(786 15)	2503.80	I($\varepsilon+\beta^+$): 0.013 4.
(815 15)	2474.97	I($\varepsilon+\beta^+$): 0.024 3.
(820 15)	2469.51	I($\varepsilon+\beta^+$): 0.185 11.
(840 15)	2450.26	I($\varepsilon+\beta^+$): 0.093 19.
(893 15)	2396.92	I($\varepsilon+\beta^+$): 0.0074 13.
(896 15)	2393.55	I($\varepsilon+\beta^+$): 0.161 17.
(903 15)	2386.90	I($\varepsilon+\beta^+$): 0.229 14.
(916 15)	2374.50	I($\varepsilon+\beta^+$): 0.026 4.
(923 15)	2367.47	I($\varepsilon+\beta^+$): 0.35 6.
(935 15)	2354.631	I($\varepsilon+\beta^+$): 0.41 3.
(962 15)	2327.70	I($\varepsilon+\beta^+$): 0.051 7.
(965 15)	2325.24	I($\varepsilon+\beta^+$): 0.0174 25.
(967 15)	2323.09	I($\varepsilon+\beta^+$): 0.257 12.
(980 15)	2309.91	I($\varepsilon+\beta^+$): 0.125 18.
(993 15)	2297.49	I($\varepsilon+\beta^+$): 0.179 18.
(1011 15)	2279.05	I($\varepsilon+\beta^+$): 0.0135 15.
(1019 15)	2271.253	I($\varepsilon+\beta^+$): 0.62 3.
(1023 15)	2266.98	I($\varepsilon+\beta^+$): 0.195 10.
(1034 15)	2255.67	I($\varepsilon+\beta^+$): 0.048 7.
(1059 15)	2230.52	I($\varepsilon+\beta^+$): 0.046 4.
(1082 15)	2208.42	I($\varepsilon+\beta^+$): 0.148 14.
(1089 15)	2200.82	I($\varepsilon+\beta^+$): 0.049 5.
(1096 15)	2194.44	I($\varepsilon+\beta^+$): 0.318 14.
(1099 15)	2191.03	I($\varepsilon+\beta^+$): 0.0095 10.
(1103 15)	2187.00	I($\varepsilon+\beta^+$): 0.065 9.
(1125 15)	2165.42	I($\varepsilon+\beta^+$): 0.016 8.
(1135 15)	2155.33	I($\varepsilon+\beta^+$): 0.0254 14.
(1140 15)	2149.84	I($\varepsilon+\beta^+$): 0.024 9.
(1146 15)	2143.74	I($\varepsilon+\beta^+$): 0.093 11.
(1148 15)	2141.67	I($\varepsilon+\beta^+$): 0.024 3.
(1150 15)	2140.15	I($\varepsilon+\beta^+$): 0.139 19.
(1152 15)	2138.21	I($\varepsilon+\beta^+$): 0.029 15.
(1159 15)	2130.586	I($\varepsilon+\beta^+$): 0.363 22.
(1164 15)	2126.37	I($\varepsilon+\beta^+$): 0.080 15.
(1177 15)	2112.70	I($\varepsilon+\beta^+$): 0.047 10.
(1193 15)	2096.896	I($\varepsilon+\beta^+$): 2.13 7.
(1199 15)	2090.88	I($\varepsilon+\beta^+$): 0.040 10.
(1201 15)	2088.85	I($\varepsilon+\beta^+$): 0.018 9.
(1213 15)	2077.37	I($\varepsilon+\beta^+$): 0.099 17.
(1216 15)	2074.18	I($\varepsilon+\beta^+$): 0.021 6.
(1222 15)	2068.08	I($\varepsilon+\beta^+$): 0.276 23.
(1280 15)	2009.535	I($\varepsilon+\beta^+$): 0.018 12.
(1361 15)	1929.186	I($\varepsilon+\beta^+$): 0.45 4.

Continued on next page (footnotes at end of table)

^{160}Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued) ε, β^+ radiations (continued)

E(decay)	E(level)	Comments
(1420 15)	1869.518	$I(\varepsilon+\beta^+)$: 0.16 4.
(1430 15)	1860.18	$I(\varepsilon+\beta^+)$: 0.082 6.
(1485 15)	1804.675	$I(\varepsilon+\beta^+)$: 0.10 10.
(1488 15)	1802.233	$I(\varepsilon+\beta^+)$: 7.9 5.
(1505 15)	1784.696	$I(\varepsilon+\beta^+)$: 0.151 11.
(1533 15)	1756.920	$I(\varepsilon+\beta^+)$: 0.07 5.
(1596 15)	1694.368	$I(\varepsilon+\beta^+)$: 54.4 13.
(1635 15)	1655.00	$I(\varepsilon+\beta^+)$: 0.083 17.
(1636 15)	1653.66	$I(\varepsilon+\beta^+)$: 0.030 17.
(1638 15)	1651.95	$I(\varepsilon+\beta^+)$: 0.118 17.
(1639 15)	1650.882	$I(\varepsilon+\beta^+)$: 0.014 10.
(1647 15)	1643.28	$I(\varepsilon+\beta^+)$: 0.144 19.
(1682 15)	1607.86	$I(\varepsilon+\beta^+)$: 0.047 10.
(1683 15)	1606.83	$I(\varepsilon+\beta^+)$: 0.075 8.
(1686 15)	1603.79	$I(\varepsilon+\beta^+)$: 0.055 15.
(1703 15)	1586.748	$I(\varepsilon+\beta^+)$: 0.063 22.
(1755 15)	1535.155	$I(\varepsilon+\beta^+)$: 0.075 11.
(1768 15)	1522.34	$I(\varepsilon+\beta^+)$: 0.032 12.
(1800 15)	1489.503	$I(\varepsilon+\beta^+)$: 0.11 6.
(1851 15)	1438.57	$I(\varepsilon+\beta^+)$: 0.17 9.
(1891 15)	1398.969	$I(\varepsilon+\beta^+)$: 0.38 7.
(1904 15)	1386.455	$I(\varepsilon+\beta^+)$: 0.186 18.
(1931 15)	1358.693	$I(\varepsilon+\beta^+)$: 1.17 14.
(2003 15)	1286.721	$I(\varepsilon+\beta^+)$: 0.31 7.
(2004 15)	1285.607	$I(\varepsilon+\beta^+)$: 1.10 8.
(3203 [†] 15)	86.789	$I(\varepsilon+\beta^+)$: 4.2 15.

[†] Existence of this branch is questionable.

γ(¹⁶⁰Dy)

I_γ normalization, I(γ+ce) normalization: 0.161 3 from 2002Ad34 deduced by requiring that the sum of the γ and ce feeding to the ¹⁶⁰Dy g.s. equals 100%.

Unplaced intensity amounts to ≈0.9%. Since the ε+β⁺ feedings from each isomer are not available, no proper normalization is available for each decay separately which made this “cumulative normalization” entirely illustrative.

The conversion-electron data are from 2002Ad34. The listed intensities (in comments) are assumed to be for the K-shell and have the same normalization as the relative intensity values. For doublets, the total K-shell intensity for the doublet is listed.

<u>E_γ</u> †‡	<u>I_γ</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&c</u>	<u>a^b</u>	<u>I_(γ+ce)</u> †	<u>Comments</u>
69.82 5	0.018 9	1349.764	2 ⁺	1279.945	0 ⁺	[E2]		10.85	0.21 11	ce(K)/(γ+ce)=0.195 4; ce(L)/(γ+ce)=0.554 7; ce(M)/(γ+ce)=0.1332 24 ce(N)/(γ+ce)=0.0298 6; ce(O)/(γ+ce)=0.00353 7; ce(P)/(γ+ce)=8.81×10 ⁻⁶ 17 α(K)=2.31 4; α(L)=6.57 10; α(M)=1.579 23 α(N)=0.353 5; α(O)=0.0418 6; α(P)=0.0001044 15 I _γ : computed from I(γ+ce) and α. 2002Ad34 report I _γ <0.01. I(ce(K))=0.04 2.
71.96 6	0.035 18	1358.693	2 ⁻	1286.721	3 ⁻	(M1)		6.18	0.25 13	ce(K)/(γ+ce)=0.724 6; ce(L)/(γ+ce)=0.1072 19; ce(M)/(γ+ce)=0.0236 5 ce(N)/(γ+ce)=0.00545 11; ce(O)/(γ+ce)=0.000796 15; ce(P)/(γ+ce)=4.53×10 ⁻⁵ 9 α(K)=5.20 8; α(L)=0.770 11; α(M)=0.1692 24 α(N)=0.0391 6; α(O)=0.00572 9; α(P)=0.000325 5 I _γ : computed from I(γ+ce) and α. 2002Ad34 report I _γ <0.01. I(ce(K))=0.05 2.
73.00 6	<0.03	1358.693	2 ⁻	1285.607	1 ⁻	(E2)		9.08		α(K)=2.17 3; α(L)=5.31 8; α(M)=1.277 19 α(N)=0.286 5; α(O)=0.0339 5; α(P)=9.51×10 ⁻⁵ 14 I(ce(K))=0.06 3.
82.96 5	<0.02	1049.113	3 ⁺	966.174	2 ⁺	M1+E2	0.65 ^a	4.52		α(K)=2.94 5; α(L)=1.222 18; α(M)=0.286 4 α(N)=0.0646 10; α(O)=0.00819 12; α(P)=0.0001728 25 I(ce(K))=0.03 1.
85.5 1	<0.02	1607.86	4 ⁺	1522.34	4 ⁺	(E2)		4.90		α(K)=1.616 23; α(L)=2.53 4; α(M)=0.606 10 α(N)=0.1358 21; α(O)=0.01620 25; α(P)=6.72×10 ⁻⁵ 10 I(ce(K))=0.04 2.
86.788 9	85.4 8	86.789	2 ⁺	0.0	0 ⁺	E2		4.63		α(K)=1.565 22; α(L)=2.35 4; α(M)=0.565 8 α(N)=0.1266 18; α(O)=0.01511 22; α(P)=6.50×10 ⁻⁵ 9 E _γ , I _γ : from 2003KaZR. 2002Ad34 report E _γ =86.79 2 and I _γ =80.8 30.
90.33 2	1.02 2	1784.696	4 ⁻	1694.368	4 ⁺	E1		0.405		I(ce(K))=12.8 12. α(K)=0.337 5; α(L)=0.0531 8; α(M)=0.01165 17 α(N)=0.00264 4; α(O)=0.000358 5; α(P)=1.532×10 ⁻⁵ 22 I(ce(K))=0.34 4.
90.8 2	0.10 3	2112.70	8 ⁻	2021.95	9 ⁺	[E1]		0.399		α(K)=0.332 5; α(L)=0.0524 8; α(M)=0.01149 18

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

<u>γ(¹⁶⁰Dy) (continued)</u>										
<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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&c</u>	<u>α^b</u>	<u>I_(γ+ce)[†]</u>	<u>Comments</u>
93.84 7	0.113 23	1358.693	2 ⁻	1264.767	2 ⁻	E2		3.44		α(N)=0.00260 4; α(O)=0.000353 6; α(P)=1.512×10 ⁻⁵ 23 I _γ : other: < 0.015 (2009KaZY). α(K)=1.310 19; α(L)=1.638 24; α(M)=0.393 6 α(N)=0.0880 13; α(O)=0.01055 16; α(P)=5.42×10 ⁻⁵ 8
99.8 3	0.072 6	1386.455	4 ⁻	1286.721	3 ⁻	(E2)		2.73 5		I(ce(K))=0.15 3. α(K)=1.128 18; α(L)=1.234 25; α(M)=0.295 6 α(N)=0.0663 13; α(O)=0.00796 16; α(P)=4.67×10 ⁻⁵ 8 I _γ : other: < 0.01 (2009KaZY). I(ce(K))=0.10 2.
106.86 2	0.010 5	1155.851	4 ⁺	1049.113	3 ⁺	(M1)		1.98		α(K)=1.667 24; α(L)=0.245 4; α(M)=0.0538 8 α(N)=0.01245 18; α(O)=0.00182 3; α(P)=0.0001039 15 E _γ : poor fit; level-energy difference=106.74. I(ce(K))=0.02 1.
107.87 2	1.22 2	1802.233	5 ⁺	1694.368	4 ⁺	M1+E2	0.40 ^a	1.94		α(K)=1.526 22; α(L)=0.325 5; α(M)=0.0737 11 α(N)=0.01685 24; α(O)=0.00230 4; α(P)=9.25×10 ⁻⁵ 13 I(ce(K))=1.59 3.
119.43 7	0.021 8	1518.421	2 ⁺	1398.969	3 ⁻	(E1)		0.192		α(K)=0.1608 23; α(L)=0.0244 4; α(M)=0.00534 8 α(N)=0.001216 18; α(O)=0.0001673 24; α(P)=7.61×10 ⁻⁶ 11 I(ce(K))=0.006 1.
120.8 2	0.005 5	2021.95	9 ⁺	1901.15	9 ⁻	[E1]		0.186		α(K)=0.1560 23; α(L)=0.0236 4; α(M)=0.00518 8 α(N)=0.001178 18; α(O)=0.0001622 24; α(P)=7.39×10 ⁻⁶ 11 I _γ : other: < 0.005 (2009KaZY).
121.7 1	0.007 3	1386.455	4 ⁻	1264.767	2 ⁻	(E2)		1.322		α(K)=0.670 10; α(L)=0.502 8; α(M)=0.1197 18 α(N)=0.0269 4; α(O)=0.00327 5; α(P)=2.85×10 ⁻⁵ 4 I(ce(K))=0.003 1.
122.53 ^e 2	0.076 ^e 17	2367.47	2 ⁺ ,3 ⁺ ,4 ⁺	2244.94	2 ⁺ ,3,4 ⁺	(M1)		1.340	0.18 4	ce(K)/(γ+ce)=0.482 4; ce(L)/(γ+ce)=0.0708 11; ce(M)/(γ+ce)=0.01555 25 ce(N)/(γ+ce)=0.00360 6; ce(O)/(γ+ce)=0.000526 9; ce(P)/(γ+ce)=3.00×10 ⁻⁵ 5 α(K)=1.128 16; α(L)=0.1656 24; α(M)=0.0364 5 α(N)=0.00841 12; α(O)=0.001231 18; α(P)=7.03×10 ⁻⁵ 10 I _γ : from I(γ+ce) and α. I _γ =0.094 8 for the composite peak.
122.53 ^e 2	0.030 ^e 9	2885.59		2763.05		(M1)		1.340	0.07 2	I(ce(K))=0.12 4. I _γ : I _γ =0.094 8 for the composite peak.

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

<u>γ(¹⁶⁰Dy) (continued)</u>									
E_γ †‡	I_γ †#	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	δ & c	α^b	Comments
126.94 2	0.218 8	1929.186	6 ⁺	1802.233	5 ⁺	M1+E2	0.37 ^a	1.203	$\alpha(K)=0.970$ 14; $\alpha(L)=0.182$ 3; $\alpha(M)=0.0409$ 6 $\alpha(N)=0.00937$ 14; $\alpha(O)=0.001306$ 19; $\alpha(P)=5.90 \times 10^{-5}$ 9 I(ce(K))=0.21 2.
130.87 2	0.0014 5	1286.721	3 ⁻	1155.851	4 ⁺	[E1]		0.1502	$\alpha(K)=0.1260$ 18; $\alpha(L)=0.0189$ 3; $\alpha(M)=0.00414$ 6 $\alpha(N)=0.000944$ 14; $\alpha(O)=0.0001306$ 19; $\alpha(P)=6.04 \times 10^{-6}$ 9
136.16 4	0.0015 7	1535.155	4 ⁻	1398.969	3 ⁻	[M1,E2]		0.94 6	$\alpha(K)=0.66$ 18; $\alpha(L)=0.214$ 92; $\alpha(M)=0.050$ 23 $\alpha(N)=0.0113$ 51; $\alpha(O)=0.00146$ 55; $\alpha(P)=3.7 \times 10^{-5}$ 16
137.0 2	0.02 1	1787.82	6 ⁻	1650.882	4 ⁻ ,5 ⁻	[M1,E2]		0.92 6	$\alpha(K)=0.65$ 18; $\alpha(L)=0.209$ 89; $\alpha(M)=0.049$ 23 $\alpha(N)=0.0110$ 49; $\alpha(O)=0.00142$ 53; $\alpha(P)=3.6 \times 10^{-5}$ 16
139.3 2	0.015 10	2021.95	9 ⁺	1882.62	8 ⁻	[E1]		0.1271	$\alpha(K)=0.1067$ 16; $\alpha(L)=0.01593$ 24; $\alpha(M)=0.00349$ 5 $\alpha(N)=0.000795$ 12; $\alpha(O)=0.0001103$ 16; $\alpha(P)=5.16 \times 10^{-6}$ 8 I_γ : other: < 0.01 (2009KaZY).
145.0 2	0.02 1	2074.18	7 ⁺	1929.186	6 ⁺	[M1,E2]		0.77 7	$\alpha(K)=0.55$ 15; $\alpha(L)=0.167$ 65; $\alpha(M)=0.039$ 17 $\alpha(N)=0.0088$ 36; $\alpha(O)=0.00114$ 39; $\alpha(P)=3.1 \times 10^{-5}$ 13 I_γ : other: < 0.01 (2009KaZY).
148.71 4	0.035 8	1535.155	4 ⁻	1386.455	4 ⁻	E2		0.650	$\alpha(K)=0.380$ 6; $\alpha(L)=0.208$ 3; $\alpha(M)=0.0493$ 7 $\alpha(N)=0.01110$ 16; $\alpha(O)=0.001369$ 20; $\alpha(P)=1.688 \times 10^{-5}$ 24 I(ce(K))=0.012 3.
154.04 4	0.060 11	2851.73	1 ⁻	2697.826	2 ⁺	E1		0.0971	$\alpha(K)=0.0817$ 12; $\alpha(L)=0.01208$ 17; $\alpha(M)=0.00264$ 4 $\alpha(N)=0.000603$ 9; $\alpha(O)=8.41 \times 10^{-5}$ 12; $\alpha(P)=4.00 \times 10^{-6}$ 6 E_γ : poor fit; level-energy difference=153.90. I(ce(K))=0.006 1.
163.35 2	0.191 9	2861.17	1 ⁺	2697.826	2 ⁺	M1+E2		0.53 7	$\alpha(K)=0.40$ 11; $\alpha(L)=0.106$ 33; $\alpha(M)=0.0245$ 84 $\alpha(N)=0.0056$ 19; $\alpha(O)=7.3 \times 10^{-4}$ 19; $\alpha(P)=2.22 \times 10^{-5}$ 91 I(ce(K))=0.09 1.
^x 166.27 5	0.017 4								
171.1 2	0.039 6	2297.49	2 ⁺	2126.37	3 ⁻	[E1]		0.0734	$\alpha(K)=0.0619$ 9; $\alpha(L)=0.00907$ 13; $\alpha(M)=0.00198$ 3 $\alpha(N)=0.000453$ 7; $\alpha(O)=6.34 \times 10^{-5}$ 9; $\alpha(P)=3.07 \times 10^{-6}$ 5
176.49 3	0.023 7	1535.155	4 ⁻	1358.693	2 ⁻	E2		0.360	$\alpha(K)=0.230$ 4; $\alpha(L)=0.1005$ 14; $\alpha(M)=0.0237$ 4 $\alpha(N)=0.00534$ 8; $\alpha(O)=0.000667$ 10; $\alpha(P)=1.065 \times 10^{-5}$ 15 I(ce(K))<0.003.
183.9 1	0.02 1	1801.16	8 ⁺	1617.28	7 ⁺	[M1,E2]		0.37 6	$\alpha(K)=0.282$ 79; $\alpha(L)=0.069$ 16; $\alpha(M)=0.0157$ 42 $\alpha(N)=0.00358$ 92; $\alpha(O)=0.00048$ 9; $\alpha(P)=1.60 \times 10^{-5}$ 65 I_γ : other: < 0.005 (2009KaZY).
187.1 1	0.026 15	1801.16	8 ⁺	1613.99	7 ⁻	[E1]		0.0580	$\alpha(K)=0.0489$ 7; $\alpha(L)=0.00712$ 10; $\alpha(M)=0.001556$ 22 $\alpha(N)=0.000356$ 5; $\alpha(O)=5.00 \times 10^{-5}$ 7; $\alpha(P)=2.45 \times 10^{-6}$ 4 I_γ : other: < 0.005 (2009KaZY).
189.66 3	0.188 23	1155.851	4 ⁺	966.174	2 ⁺	E2		0.282	$\alpha(K)=0.186$ 3; $\alpha(L)=0.0745$ 11; $\alpha(M)=0.01751$ 25 $\alpha(N)=0.00395$ 6; $\alpha(O)=0.000497$ 7; $\alpha(P)=8.75 \times 10^{-6}$ 13 I(ce(K))=0.035 10.
191.5 2	0.03 1	2074.18	7 ⁺	1882.62	8 ⁻	[E1]		0.0545	$\alpha(K)=0.0460$ 7; $\alpha(L)=0.00669$ 10; $\alpha(M)=0.001462$ 21 $\alpha(N)=0.000334$ 5; $\alpha(O)=4.70 \times 10^{-5}$ 7; $\alpha(P)=2.31 \times 10^{-6}$ 4 E_γ, I_γ : other: 191.7 keV, 0.023 5 (2009KaZY).

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †#</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^b</u>	<u>I_(γ+ce) †</u>	<u>Comments</u>
^x 192.0 2	0.30 1					E2	0.271		α(K)=0.179 3; α(L)=0.0709 11; α(M)=0.01664 25 α(N)=0.00376 6; α(O)=0.000473 7; α(P)=8.47×10 ⁻⁶ 12 I(ce(K))=0.007 2.
^x 192.7 193.4 2	0.021 5 0.02 1	1787.82	6 ⁻	1594.38	6 ⁻	[M1,E2]	0.32 6		α(K)=0.245 70; α(L)=0.057 12; α(M)=0.013 3 α(N)=0.0030 7; α(O)=0.00040 6; α(P)=1.39×10 ⁻⁵ 56 I _γ : other: < 0.008 (2009KaZY).
197.03 2	85.0 22	283.820	4 ⁺	86.789	2 ⁺	E2	0.248		α(K)=0.1659 24; α(L)=0.0638 9; α(M)=0.01495 21 α(N)=0.00338 5; α(O)=0.000426 6; α(P)=7.89×10 ⁻⁶ 11 δ: 1998Kr21 report δ(M3/E2)=-0.05 +13-14. However, from RUL<10 for an M3 transition, one expects that δ(M3/E2)<1.4×10 ⁻⁵ . I(ce(K))=14.0 13.
201.2 2	0.03 1	1787.82	6 ⁻	1586.748	5 ⁻	[M1,E2]	0.28 6		α(K)=0.219 63; α(L)=0.050 9; α(M)=0.0114 24 α(N)=0.0026 6; α(O)=0.00035 5; α(P)=1.25×10 ⁻⁵ 51
211.20 ^e 16	0.011 ^e 8	2661.522	2 ⁻	2450.26	1 ⁻	M1	0.292	0.014 10	ce(K)/(γ+ce)=0.1907 22; ce(L)/(γ+ce)=0.0277 4; ce(M)/(γ+ce)=0.00608 9 ce(N)/(γ+ce)=0.001407 21; ce(O)/(γ+ce)=0.000206 3; ce(P)/(γ+ce)=1.183×10 ⁻⁵ 18 α(K)=0.246 4; α(L)=0.0358 5; α(M)=0.00786 12 α(N)=0.00182 3; α(O)=0.000266 4; α(P)=1.528×10 ⁻⁵ 22 I _γ : I _γ =0.014 10 for the composite peak. I(ce(K))=0.004 1.
211.20 ^e 16 212.8 1	0.009 ^e 8 0.016 4	2885.59 2297.49	2 ⁺	2674.720 2084.814	1 ⁻ (1,2) ⁺	M1 [M1,E2]	0.292 0.24 5	0.011 10	I _γ : I _γ =0.014 10 for the composite peak. α(K)=0.187 55; α(L)=0.041 6; α(M)=0.0093 17 α(N)=0.0021 4; α(O)=0.00029 3; α(P)=1.07×10 ⁻⁵ 43
215.64 2	1.078 20	1264.767	2 ⁻	1049.113	3 ⁺	E1	0.0399		α(K)=0.0337 5; α(L)=0.00487 7; α(M)=0.001063 15 α(N)=0.000243 4; α(O)=3.44×10 ⁻⁵ 5; α(P)=1.721×10 ⁻⁶ 25 I(ce(K))=0.038 9.
220.8 2	0.02 1	2021.95	9 ⁺	1801.16	8 ⁺	[M1,E2]	0.21 5		α(K)=0.168 50; α(L)=0.036 5; α(M)=0.0082 13 α(N)=0.0019 3; α(O)=0.000254 19; α(P)=9.7×10 ⁻⁶ 39 E _γ , I _γ : other: 221.2 keV, < 0.015 (2009KaZY).
224.4 ^e 3	0.0021 ^e 11	1489.503	1 ⁻	1264.767	2 ⁻	E2,M1	0.20 5	0.0025 11	ce(K)/(γ+ce)=0.133 35; ce(L)/(γ+ce)=0.028 4; ce(M)/(γ+ce)=0.0064 10 ce(N)/(γ+ce)=0.00147 20; ce(O)/(γ+ce)=0.000199 15; ce(P)/(γ+ce)=7.7×10 ⁻⁶ 31 α(K)=0.161 48; α(L)=0.034 4; α(M)=0.0077 11 α(N)=0.00177 23; α(O)=0.000240 16; α(P)=9.2×10 ⁻⁶ 37 I _γ : I _γ =0.0054 27 for the composite peak. I(ce(K))<0.003.
224.4 ^e 3	0.0021 ^e 11	2674.720	1 ⁻	2450.26	1 ⁻	E2,M1	0.20 5	0.0025 11	ce(K)/(γ+ce)=0.133 35; ce(L)/(γ+ce)=0.028 4; ce(M)/(γ+ce)=0.0064 10

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

<u>γ(¹⁶⁰Dy) (continued)</u>									
<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>I_(γ+ce)[†]</u>	<u>Comments</u>
									ce(N)/(γ+ce)=0.00147 20; ce(O)/(γ+ce)=0.000199 15; ce(P)/(γ+ce)=7.7×10 ⁻⁶ 31 α(K)=0.161 48; α(L)=0.034 4; α(M)=0.0077 11 α(N)=0.00177 23; α(O)=0.000240 16; α(P)=9.2×10 ⁻⁶ 37 I _γ : I _γ =0.0054 27 for the composite peak.
^x 226.43 10	0.041 17					E2,M1	0.20 5		α(K)=0.157 47; α(L)=0.033 4; α(M)=0.0075 11 α(N)=0.00171 22; α(O)=0.000233 14; α(P)=9.0×10 ⁻⁶ 37 I(ce(K))<0.004.
230.67 6	0.140 20	1386.455	4 ⁻	1155.851	4 ⁺	(E1)	0.0335		α(K)=0.0283 4; α(L)=0.00407 6; α(M)=0.000889 13 α(N)=0.000204 3; α(O)=2.88×10 ⁻⁵ 4; α(P)=1.457×10 ⁻⁶ 21 I(ce(K))=0.0041 9.
231.7 1	0.081 15	1518.421	2 ⁺	1286.721	3 ⁻	E1	0.0332		α(K)=0.0280 4; α(L)=0.00402 6; α(M)=0.000879 13 α(N)=0.000201 3; α(O)=2.85×10 ⁻⁵ 4; α(P)=1.441×10 ⁻⁶ 21 I(ce(K))=0.0027 9.
232.84 13	0.072 13	1518.421	2 ⁺	1285.607	1 ⁻	E1	0.0327		α(K)=0.0277 4; α(L)=0.00397 6; α(M)=0.000867 13 α(N)=0.000199 3; α(O)=2.81×10 ⁻⁵ 4; α(P)=1.423×10 ⁻⁶ 20 I(ce(K))=0.0025 9.
234.81 ^e 6	0.09 ^e 4	1756.920	2 ⁺	1522.34	4 ⁺	(E2)	0.1395	0.10 5	ce(K)/(γ+ce)=0.0866 12; ce(L)/(γ+ce)=0.0278 4; ce(M)/(γ+ce)=0.00646 9 ce(N)/(γ+ce)=0.001463 21; ce(O)/(γ+ce)=0.000188 3; ce(P)/(γ+ce)=4.29×10 ⁻⁶ 6 α(K)=0.0986 14; α(L)=0.0316 5; α(M)=0.00737 11 α(N)=0.001667 24; α(O)=0.000214 3; α(P)=4.89×10 ⁻⁶ 7 E _γ : level-energy difference=234.58. E _γ =234.81 for doublet. I _γ : I _γ =0.18 2 for the composite peak. Mult.: 2002Ad34 quote E2,M1, but placement requires E2. I(ce(K))=0.018 2.
234.81 ^e 6	0.09 ^e 4	1929.186	6 ⁺	1694.368	4 ⁺	(E2)	0.1395	0.10 5	ce(K)/(γ+ce)=0.0866 12; ce(L)/(γ+ce)=0.0278 4; ce(M)/(γ+ce)=0.00646 9 ce(N)/(γ+ce)=0.001463 21; ce(O)/(γ+ce)=0.000188 3; ce(P)/(γ+ce)=4.29×10 ⁻⁶ 6 α(K)=0.0986 14; α(L)=0.0316 5; α(M)=0.00737 11 α(N)=0.001667 24; α(O)=0.000214 3; α(P)=4.89×10 ⁻⁶ 7 I _γ : I _γ =0.18 2 for the composite peak.
237.65 9	0.0090 10	1286.721	3 ⁻	1049.113	3 ⁺	E1	0.0311		α(K)=0.0263 4; α(L)=0.00376 6; α(M)=0.000822 12 α(N)=0.000188 3; α(O)=2.67×10 ⁻⁵ 4; α(P)=1.353×10 ⁻⁶ 19 I(ce(K))<0.0003.
239.57 8	0.274 11	1288.670	5 ⁺	1049.113	3 ⁺	E2	0.1308		α(K)=0.0930 13; α(L)=0.0293 5; α(M)=0.00680 10 α(N)=0.001541 22; α(O)=0.000198 3; α(P)=4.63×10 ⁻⁶ 7 I(ce(K))=0.026 3.
243.15 10	0.012 1	1398.969	3 ⁻	1155.851	4 ⁺	E1	0.0293		α(K)=0.0248 4; α(L)=0.00354 5; α(M)=0.000774 11 α(N)=0.0001773 25; α(O)=2.51×10 ⁻⁵ 4; α(P)=1.279×10 ⁻⁶ 18 I(ce(K))<0.0003.

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †#</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&c</u>	<u>α^b</u>	<u>I_(γ+ce) †</u>	<u>Comments</u>
244.1		1952.31	0 ⁺	1708.14	0 ⁺	(E0)			0.0027	E _γ , Mult.: from 2009Ad04. I _(γ+ce) : calculated by evaluator based on measured I _{(ce(K))} and ratio of electronic factors Ω _K (E0)\Ω(E0)=0.873. I _{(ce(K))} =0.0024 (2009Ad04). α(K)=0.0239 4; α(L)=0.00342 5; α(M)=0.000746 11 α(N)=0.0001710 24; α(O)=2.43×10 ⁻⁵ 4; α(P)=1.236×10 ⁻⁶ 18
246.55 8	0.103 12	1535.155	4 ⁻	1288.670	5 ⁺	E1		0.0283		I _{(ce(K))} =0.0025 3. α(K)=0.0836 12; α(L)=0.0254 4; α(M)=0.00591 9 α(N)=0.001338 19; α(O)=0.0001727 25; α(P)=4.19×10 ⁻⁶ 6
248.41 3	0.009 5	1535.155	4 ⁻	1286.721	3 ⁻	E2		0.1164		I _{(ce(K))} =0.0012 3. α(K)=0.0794 12; α(L)=0.0238 4; α(M)=0.00552 9 α(N)=0.001250 19; α(O)=0.0001616 24; α(P)=4.00×10 ⁻⁶ 6
252.8 3	0.02 1	1787.82	6 ⁻	1535.155	4 ⁻	E2		0.1101		Mult.: from (α,xny).
^x 254.59 2	0.05 1									
256.40 14	0.063 15	1860.18	5 ⁻	1603.79	4 ⁺	E1		0.0256		α(K)=0.0216 3; α(L)=0.00308 5; α(M)=0.000674 10 α(N)=0.0001544 22; α(O)=2.19×10 ⁻⁵ 3; α(P)=1.123×10 ⁻⁶ 16
265.3 2	0.02 1	1882.62	8 ⁻	1617.28	7 ⁺	E1(+M2)	1.5 15	0.50 48		I _{(ce(K))} <0.0014. α(K)=0.40 38; α(L)=0.076 73; α(M)=0.017 17 α(N)=0.0040 39; α(O)=5.7×10 ⁻⁴ 56; α(P)=3.1×10 ⁻⁵ 30
267.45 10	0.064 9	1756.920	2 ⁺	1489.503	1 ⁻	E1		0.0230		α(K)=0.0194 3; α(L)=0.00276 4; α(M)=0.000604 9 α(N)=0.0001384 20; α(O)=1.97×10 ⁻⁵ 3; α(P)=1.013×10 ⁻⁶ 15
270.65 5	0.033 3	2367.47	2 ⁺ , 3 ⁺ , 4 ⁺	2096.896	4 ⁺					I _{(ce(K))} <0.0010.
272.0 2	0.022 13	2074.18	7 ⁺	1802.233	5 ⁺	[E2]		0.0874		α(K)=0.0641 9; α(L)=0.0180 3; α(M)=0.00417 6 α(N)=0.000945 14; α(O)=0.0001231 18; α(P)=3.28×10 ⁻⁶ 5
^x 274.99 25	0.03 1									
279.76 ^d 15	0.037 ^d 6	1802.233	5 ⁺	1522.34	4 ⁺	E2		0.0800	0.04 2	ce(K)/(γ+ce)=0.0547 8; ce(L)/(γ+ce)=0.01502 21; ce(M)/(γ+ce)=0.00347 5 ce(N)/(γ+ce)=0.000787 12; ce(O)/(γ+ce)=0.0001028 15; ce(P)/(γ+ce)=2.81×10 ⁻⁶ 4 α(K)=0.0591 9; α(L)=0.01622 23; α(M)=0.00375 6 α(N)=0.000850 12; α(O)=0.0001110 16; α(P)=3.04×10 ⁻⁶ 5
279.76 ^d 15	0.037 ^d 6	2729.84	2 ⁻	2450.26	1 ⁻	(E2)		0.0800	0.04 2	I _{(ce(K))} <0.002. ce(K)/(γ+ce)=0.0547 8; ce(L)/(γ+ce)=0.01502 21;

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>I_(γ+ce)[†]</u>	<u>Comments</u>
									ce(M)/(γ+ce)=0.00347 5 ce(N)/(γ+ce)=0.000787 12; ce(O)/(γ+ce)=0.0001028 15; ce(P)/(γ+ce)=2.81×10 ⁻⁶ 4 α(K)=0.0591 9; α(L)=0.01622 23; α(M)=0.00375 6 α(N)=0.000850 12; α(O)=0.0001110 16; α(P)=3.04×10 ⁻⁶ 5
282.84 9	0.139 13	1438.57	6 ⁺	1155.851	4 ⁺	E2	0.0773		α(K)=0.0573 8; α(L)=0.01557 22; α(M)=0.00360 5 α(N)=0.000816 12; α(O)=0.0001067 15; α(P)=2.95×10 ⁻⁶ 5 I(ce(K))=0.008 2.
288.3 2	0.02 1	1882.62	8 ⁻	1594.38	6 ⁻	E2	0.0729		α(K)=0.0542 8; α(L)=0.01451 21; α(M)=0.00335 5 α(N)=0.000760 11; α(O)=9.96×10 ⁻⁵ 15; α(P)=2.80×10 ⁻⁶ 4 Mult.: from (α,xnγ).
^x 289.42 15	0.065 20					E2,M1	0.098 27		α(K)=0.079 26; α(L)=0.0147 5; α(M)=0.00331 5 α(N)=0.000758 15; α(O)=0.000105 8; α(P)=4.6×10 ⁻⁶ 19 I(ce(K))=0.0050 15.
297.25 6	7.16 23	581.069	6 ⁺	283.820	4 ⁺	E2	0.0664		α(K)=0.0496 7; α(L)=0.01297 19; α(M)=0.00299 5 α(N)=0.000679 10; α(O)=8.92×10 ⁻⁵ 13; α(P)=2.58×10 ⁻⁶ 4 δ: 1998Kr21 report δ(M3/E2)=+0.02 +12-11. I(ce(K))=0.37 5.
298.15 ^e 7	0.5 ^e 1	1586.748	5 ⁻	1288.670	5 ⁺	(E1)	0.01747	0.5 1	ce(K)/(γ+ce)=0.01454 20; ce(L)/(γ+ce)=0.00206 3; ce(M)/(γ+ce)=0.000449 7 ce(N)/(γ+ce)=0.0001030 15; ce(O)/(γ+ce)=1.469×10 ⁻⁵ 21; ce(P)/(γ+ce)=7.66×10 ⁻⁷ 11 α(K)=0.01480 21; α(L)=0.00209 3; α(M)=0.000457 7 α(N)=0.0001048 15; α(O)=1.495×10 ⁻⁵ 21; α(P)=7.80×10 ⁻⁷ 11 I _γ : I _γ =2.5 8 for the composite peak. I(ce(K))=0.038 7.
298.15 ^e 7	1.7 ^e 3	2681.828	5 ⁺	2383.70	6 ⁻	E1	0.01747	1.7 3	ce(K)/(γ+ce)=0.01454 20; ce(L)/(γ+ce)=0.00206 3; ce(M)/(γ+ce)=0.000449 7 ce(N)/(γ+ce)=0.0001030 15; ce(O)/(γ+ce)=1.469×10 ⁻⁵ 21; ce(P)/(γ+ce)=7.66×10 ⁻⁷ 11 α(K)=0.01480 21; α(L)=0.00209 3; α(M)=0.000457 7 α(N)=0.0001048 15; α(O)=1.495×10 ⁻⁵ 21; α(P)=7.80×10 ⁻⁷ 11 I _γ : I _γ =2.5 8 for the composite peak.
298.15 ^e 7	0.20 ^e 5	2858.17		2560.02	2 ⁺ ,3,4 ⁺	E1	0.01747	0.20 5	ce(K)/(γ+ce)=0.01454 20; ce(L)/(γ+ce)=0.00206 3; ce(M)/(γ+ce)=0.000449 7 ce(N)/(γ+ce)=0.0001030 15; ce(O)/(γ+ce)=1.469×10 ⁻⁵ 21; ce(P)/(γ+ce)=7.66×10 ⁻⁷ 11 α(K)=0.01480 21; α(L)=0.00209 3; α(M)=0.000457 7 α(N)=0.0001048 15; α(O)=1.495×10 ⁻⁵ 21; α(P)=7.80×10 ⁻⁷ 11 I _γ : I _γ =2.5 8 for the composite peak.
298.61 2	7.1 8	1264.767	2 ⁻	966.174	2 ⁺	E1	0.01740		α(K)=0.01474 21; α(L)=0.00208 3; α(M)=0.000455 7

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

<u>γ(¹⁶⁰Dy) (continued)</u>										
<u>E_γ ††</u>	<u>I_γ †#</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&c</u>	<u>α^b</u>	<u>I_(γ+ce) †</u>	<u>Comments</u>
306.2 4	0.034 15	1594.38	6 ⁻	1288.670	5 ⁺	E1+M2	-0.20 10	0.033 19		α(N)=0.0001044 15; α(O)=1.489×10 ⁻⁵ 21; α(P)=7.77×10 ⁻⁷ 11 I(ce(K))=0.110 17. δ: 1998Kr21 report δ(M2/E1)=-0.04 +30-24. α(K)=0.027 16; α(L)=0.0044 28; α(M)=9.8×10 ⁻⁴ 64 α(N)=2.3×10 ⁻⁴ 15; α(O)=3.2×10 ⁻⁵ 22; α(P)=1.7×10 ⁻⁶ 12
308.2 3	0.05 3	1694.368	4 ⁺	1386.455	4 ⁻	E1		0.01609		I(ce(K))<0.0003. α(K)=0.01363 20; α(L)=0.00192 3; α(M)=0.000420 6 α(N)=9.64×10 ⁻⁵ 14; α(O)=1.376×10 ⁻⁵ 20; α(P)=7.20×10 ⁻⁷ 11
309.54 ^e 2	1.1 ^e 2	1358.693	2 ⁻	1049.113	3 ⁺	E1+M2	-0.013 7	0.01598 25	1.1 2	I(ce(K))<0.0003. ce(K)/(γ+ce)=0.01327 19; ce(L)/(γ+ce)=0.00187 3; ce(M)/(γ+ce)=0.000409 6 ce(N)/(γ+ce)=9.38×10 ⁻⁵ 14; ce(O)/(γ+ce)=1.340×10 ⁻⁵ 19; ce(P)/(γ+ce)=7.02×10 ⁻⁷ 10 α(K)=0.01349 19; α(L)=0.00190 3; α(M)=0.000415 6 α(N)=9.53×10 ⁻⁵ 14; α(O)=1.361×10 ⁻⁵ 19; α(P)=7.13×10 ⁻⁷ 10
309.54 ^e 2	0.9 ^e 2	2681.828	5 ⁺	2372.31	6 ⁻	E1		0.01591	0.9 2	I _γ : I _γ =1.99 4 for the composite peak. δ: 1998Kr21 report δ(M2/E1)=+0.15 +18-16. I(ce(K))=0.028 4. ce(K)/(γ+ce)=0.01327 19; ce(L)/(γ+ce)=0.00187 3; ce(M)/(γ+ce)=0.000409 6 ce(N)/(γ+ce)=9.38×10 ⁻⁵ 14; ce(O)/(γ+ce)=1.340×10 ⁻⁵ 19; ce(P)/(γ+ce)=7.02×10 ⁻⁷ 10 α(K)=0.01349 19; α(L)=0.00190 3; α(M)=0.000415 6 α(N)=9.53×10 ⁻⁵ 14; α(O)=1.361×10 ⁻⁵ 19; α(P)=7.13×10 ⁻⁷ 10
311.90 6	0.091 7	1929.186	6 ⁺	1617.28	7 ⁺	E2,(M1)		0.080 23		I _γ : I _γ =1.99 4 for the composite peak. α(K)=0.065 22; α(L)=0.0116 8; α(M)=0.00261 11 α(N)=0.00060 3; α(O)=8.4×10 ⁻⁵ 9; α(P)=3.8×10 ⁻⁶ 16 I(ce(K))=0.0060 15.
^x 313.3 4	0.018 15									
315.33 ^e 21	0.016 ^e 10	1603.79	4 ⁺	1288.670	5 ⁺	[M1,E2]		0.077 22		α(K)=0.063 21; α(L)=0.0112 8; α(M)=0.00252 12 α(N)=0.00058 4; α(O)=8.1×10 ⁻⁵ 9; α(P)=3.7×10 ⁻⁶ 15
315.33 ^e 21	0.016 ^e 10	1804.675	1 ⁺	1489.503	1 ⁻	[E1]		0.01520		I _γ : I _γ =0.029 8 for the composite peak. α(K)=0.01288 19; α(L)=0.00182 3; α(M)=0.000396 6

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

							<u>γ(¹⁶⁰Dy) (continued)</u>		
<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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&c</u>	<u>α^b</u>	<u>Comments</u>
315.33 ^e 21	0.005 ^e 5	1929.186	6 ⁺	1613.99	7 ⁻	[E1]		0.01520	α(N)=9.10×10 ⁻⁵ 13; α(O)=1.300×10 ⁻⁵ 19; α(P)=6.82×10 ⁻⁷ 10 I _γ : I _γ =0.029 8 for the composite peak.
319.19 9	0.031 15	1607.86	4 ⁺	1288.670	5 ⁺	(E2)		0.0535	α(K)=0.01288 19; α(L)=0.00182 3; α(M)=0.000396 6 α(N)=9.10×10 ⁻⁵ 13; α(O)=1.300×10 ⁻⁵ 19; α(P)=6.82×10 ⁻⁷ 10 I _γ : I _γ =0.029 8 for the composite peak.
320.50 ^e 7	0.014 ^e 8	1286.721	3 ⁻	966.174	2 ⁺	(E1)		0.01460	α(K)=0.0405 6; α(L)=0.01004 14; α(M)=0.00230 4 α(N)=0.000524 8; α(O)=6.93×10 ⁻⁵ 10; α(P)=2.13×10 ⁻⁶ 3 I(ce(K))<0.002.
320.50 ^e 7	0.011 ^e 5	2077.37	3 ⁻	1756.920	2 ⁺	(E1)		0.01460	α(K)=0.01238 18; α(L)=0.001743 25; α(M)=0.000380 6 α(N)=8.73×10 ⁻⁵ 13; α(O)=1.248×10 ⁻⁵ 18; α(P)=6.56×10 ⁻⁷ 10 I _γ : I _γ =0.025 14 for the composite peak.
324.98 ^e 20	0.04 ^e 2	1860.18	5 ⁻	1535.155	4 ⁻	[M1,E2]		0.071 21	I(ce(K))=0.0003 1.
324.98 ^e 20	0.04 ^e 2	2112.70	8 ⁻	1787.82	6 ⁻	[E2]		0.0507	α(K)=0.01238 18; α(L)=0.001743 25; α(M)=0.000380 6 α(N)=8.73×10 ⁻⁵ 13; α(O)=1.248×10 ⁻⁵ 18; α(P)=6.56×10 ⁻⁷ 10 α(K)=0.058 20; α(L)=0.0102 9; α(M)=0.00229 14 α(N)=0.00053 4; α(O)=7.4×10 ⁻⁵ 9; α(P)=3.4×10 ⁻⁶ 14 I _γ : I _γ =0.075 11 for the composite peak.
327.3 3	0.03 2	3061.83	1 ⁺	2734.720	1 ⁻	[E1]		0.01387	α(K)=0.0385 6; α(L)=0.00941 14; α(M)=0.00216 3 α(N)=0.000491 7; α(O)=6.51×10 ⁻⁵ 10; α(P)=2.04×10 ⁻⁶ 3 I _γ : I _γ =0.075 11 for the composite peak.
328.6 1	0.22 4	1617.28	7 ⁺	1288.670	5 ⁺	E2		0.0490	α(K)=0.01176 17; α(L)=0.001654 24; α(M)=0.000361 6 α(N)=8.29×10 ⁻⁵ 12; α(O)=1.185×10 ⁻⁵ 17; α(P)=6.24×10 ⁻⁷ 9 α(K)=0.0373 6; α(L)=0.00905 13; α(M)=0.00208 3 α(N)=0.000472 7; α(O)=6.27×10 ⁻⁵ 9; α(P)=1.98×10 ⁻⁶ 3 Mult.: from (α,xny).
329.0 1	0.18 3	2113.69		1784.696	4 ⁻				
333.16 10	0.151 15	2630.714	1 ⁻	2297.49	2 ⁺	E1		0.01328	α(K)=0.01126 16; α(L)=0.001582 23; α(M)=0.000345 5 α(N)=7.93×10 ⁻⁵ 12; α(O)=1.134×10 ⁻⁵ 16; α(P)=5.99×10 ⁻⁷ 9 I(ce(K))=0.0020 15.
334.77 19	0.047 14	1929.186	6 ⁺	1594.38	6 ⁻	[E1]		0.01312	α(K)=0.01113 16; α(L)=0.001563 22; α(M)=0.000341 5 α(N)=7.83×10 ⁻⁵ 11; α(O)=1.121×10 ⁻⁵ 16; α(P)=5.92×10 ⁻⁷ 9
337.36 2	0.54 3	1386.455	4 ⁻	1049.113	3 ⁺	E1+M2	+0.028 13	0.0131 4	α(K)=0.0111 3; α(L)=0.00157 5; α(M)=0.000343 11 α(N)=7.87×10 ⁻⁵ 24; α(O)=1.13×10 ⁻⁵ 4; α(P)=5.96×10 ⁻⁷ 19 δ: from ¹⁶⁰ Tb β ⁻ decay.
340.4 3	0.030 11	2096.896	4 ⁺	1756.920	2 ⁺	[E2]		0.0441	I(ce(K))=0.0060 5. α(K)=0.0338 5; α(L)=0.00800 12; α(M)=0.00183 3 α(N)=0.000417 6; α(O)=5.55×10 ⁻⁵ 8; α(P)=1.80×10 ⁻⁶ 3
349.86 3	0.019 1	1398.969	3 ⁻	1049.113	3 ⁺	[E1]		0.01179	α(K)=0.01000 14; α(L)=0.001402 20; α(M)=0.000306 5 α(N)=7.02×10 ⁻⁵ 10; α(O)=1.006×10 ⁻⁵ 14; α(P)=5.34×10 ⁻⁷ 8
355.74 10	0.032 16	2009.535	1 ⁻ ,2 ⁻	1653.66					
357.92 11	0.108 20	1756.920	2 ⁺	1398.969	3 ⁻	E1		0.01116	α(K)=0.00947 14; α(L)=0.001325 19; α(M)=0.000289 4

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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&c</u>	<u>α^b</u>	<u>Comments</u>
									α(N)=6.64×10 ⁻⁵ 10; α(O)=9.52×10 ⁻⁶ 14; α(P)=5.06×10 ⁻⁷ 7
359.46 15	0.057 8	2630.714	1 ⁻	2271.253	2 ⁻	M1,E2		0.054 17	I(cc(K))=0.005 2. α(K)=0.044 15; α(L)=0.0075 10; α(M)=0.00168 18 α(N)=0.00039 5; α(O)=5.5×10 ⁻⁵ 9; α(P)=2.6×10 ⁻⁶ 11 I(cc(K))=0.0025 8.
362.20 12	0.082 8	1650.882	4 ⁻ ,5 ⁻	1288.670	5 ⁺	E1		0.01085	α(K)=0.00920 13; α(L)=0.001287 18; α(M)=0.000281 4 α(N)=6.45×10 ⁻⁵ 9; α(O)=9.25×10 ⁻⁶ 13; α(P)=4.92×10 ⁻⁷ 7 I(cc(K))<0.001.
363.66 3	0.773 22	1802.233	5 ⁺	1438.57	6 ⁺	E2,M1		0.052 16	α(K)=0.043 15; α(L)=0.0073 10; α(M)=0.00163 18 α(N)=0.00037 5; α(O)=5.3×10 ⁻⁵ 9; α(P)=2.5×10 ⁻⁶ 10 I(cc(K))=0.022 3.
368.26 4	0.138 6	1655.00	2 ⁺ ,3 ⁺ ,4 ⁺	1286.721	3 ⁻	E1		0.01042	α(K)=0.00885 13; α(L)=0.001236 18; α(M)=0.000270 4 α(N)=6.19×10 ⁻⁵ 9; α(O)=8.88×10 ⁻⁶ 13; α(P)=4.74×10 ⁻⁷ 7 I(cc(K))<0.0015.
370.7 3	0.02 1	2323.09	1 ⁺ ,2 ⁺	1952.31	0 ⁺	[M1,E2]		0.049 15	α(K)=0.041 14; α(L)=0.0069 10; α(M)=0.00154 18 α(N)=0.00035 5; α(O)=5.0×10 ⁻⁵ 9; α(P)=2.40×10 ⁻⁶ 96
372.47 4	0.330 7	2469.51	3 ⁻	2096.896	4 ⁺	E1		0.01014	α(K)=0.00861 12; α(L)=0.001202 17; α(M)=0.000262 4 α(N)=6.02×10 ⁻⁵ 9; α(O)=8.64×10 ⁻⁶ 13; α(P)=4.62×10 ⁻⁷ 7 E _γ : poor fit; level-energy difference=372.62. I(cc(K))=0.0030 7.
375.57 18	0.030 8	2879.47	2	2503.80	1 ⁺ ,2 ⁺				
379.34 5	0.045 15	1535.155	4 ⁻	1155.851	4 ⁺				
379.8 3	0.11 3	1869.518	2 ⁺	1489.503	1 ⁻				
^x 381.20 9	0.079 9								
382.8 2	0.061 16	2077.37	3 ⁻	1694.368	4 ⁺				
^x 384.0 2	0.042 5								
385.68 8	0.187 19	966.75	8 ⁺	581.069	6 ⁺	E2		0.0307	α(K)=0.0240 4; α(L)=0.00523 8; α(M)=0.001190 17 α(N)=0.000271 4; α(O)=3.66×10 ⁻⁵ 6; α(P)=1.303×10 ⁻⁶ 19 I(cc(K))=0.006 2. Mult.: 2002Ad34 report M1,E2. Placement requires E2.
390.33 6	0.152 14	2661.522	2 ⁻	2271.253	2 ⁻	M1,E2		0.043 14	α(K)=0.035 13; α(L)=0.0059 9; α(M)=0.00132 18 α(N)=0.00030 5; α(O)=4.3×10 ⁻⁵ 8; α(P)=2.09×10 ⁻⁶ 84 I(cc(K))=0.0035 9.
392.52 2	2.20 5	1358.693	2 ⁻	966.174	2 ⁺	E1+M2	+0.018 6	0.00902 14	α(K)=0.00765 12; α(L)=0.001067 17; α(M)=0.000233 4 α(N)=5.35×10 ⁻⁵ 9; α(O)=7.69×10 ⁻⁶ 12; α(P)=4.13×10 ⁻⁷ 7 δ: from ¹⁶⁰ Tb β ⁻ decay. I(cc(K))=0.017 3.
394.5 4	0.06 3	2297.49	2 ⁺	1903.210	3 ⁺	[M1,E2]		0.042 13	α(K)=0.034 12; α(L)=0.0057 9; α(M)=0.00128 18 α(N)=0.00029 5; α(O)=4.2×10 ⁻⁵ 8; α(P)=2.04×10 ⁻⁶ 81
^x 396.23 5	0.048 13								
400.25 6	0.135 9	3061.83	1 ⁺	2661.522	2 ⁻	E1		0.00855	α(K)=0.00726 11; α(L)=0.001010 15; α(M)=0.000220 3

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>Comments</u>
402.44 14	0.072 12	2096.896	4 ⁺	1694.368	4 ⁺	[M1,E2]	0.040 13	α(N)=5.06×10 ⁻⁵ 7; α(O)=7.28×10 ⁻⁶ 11; α(P)=3.91×10 ⁻⁷ 6 I(ce(K))<0.002.
404.7 4	0.05 3	2021.95	9 ⁺	1617.28	7 ⁺	E2	0.0268	α(K)=0.033 12; α(L)=0.0054 9; α(M)=0.00120 18 α(N)=0.00028 5; α(O)=3.9×10 ⁻⁵ 8; α(P)=1.93×10 ⁻⁶ 77
405.70 2	2.56 6	1694.368	4 ⁺	1288.670	5 ⁺	E2	0.0266	α(K)=0.0211 3; α(L)=0.00446 7; α(M)=0.001013 15 α(N)=0.000231 4; α(O)=3.13×10 ⁻⁵ 5; α(P)=1.153×10 ⁻⁶ 17
406.7 3	0.13 3	2194.44	5 ⁺	1787.82	6 ⁻	E1	0.00824	α(K)=0.0210 3; α(L)=0.00442 7; α(M)=0.001005 14 α(N)=0.000229 4; α(O)=3.10×10 ⁻⁵ 5; α(P)=1.145×10 ⁻⁶ 16 I(ce(K))=0.054 12.
410.9 1	0.02 1	2861.17	1 ⁺	2450.26	1 ⁻			α(K)=0.00700 10; α(L)=0.000972 14; α(M)=0.000212 3
416.56 6	0.117 8	2556.73	3 ⁻ ,4 ⁻ ,5 ⁻	2140.15	(3)			α(N)=4.87×10 ⁻⁵ 7; α(O)=7.01×10 ⁻⁶ 10; α(P)=3.77×10 ⁻⁷ 6 I(ce(K))<0.002.
^x 419.66 5	0.025 5							
^x 420.6 3	0.06 3							
421.50 8	0.225 20	2630.24	(1,2) ⁺	2208.79	(2) ⁻	E1	0.00758	α(K)=0.00644 9; α(L)=0.000893 13; α(M)=0.000195 3 α(N)=4.47×10 ⁻⁵ 7; α(O)=6.44×10 ⁻⁶ 9; α(P)=3.48×10 ⁻⁷ 5 I(ce(K))<0.003.
^x 422.7 1	0.03 1							
425.2 2	0.04 1	2696.43	2 ⁻ ,3 ⁻	2271.253	2 ⁻	[M1,E2]	0.034 11	α(K)=0.0283 99; α(L)=0.0046 9; α(M)=0.00103 17 α(N)=0.00024 4; α(O)=3.4×10 ⁻⁵ 7; α(P)=1.68×10 ⁻⁶ 67
426.5 2	0.04 1	2697.826	2 ⁺	2271.253	2 ⁻			
431.15 ^e 25	0.03 ^e 1	1586.748	5 ⁻	1155.851	4 ⁺	[E1]	0.00719	α(K)=0.00611 9; α(L)=0.000846 12; α(M)=0.000184 3 α(N)=4.24×10 ⁻⁵ 6; α(O)=6.11×10 ⁻⁶ 9; α(P)=3.31×10 ⁻⁷ 5 I _γ : I _γ =0.059 14 for the composite peak.
431.15 ^{ef} 25	0.02 ^e 1	2084.814	(1,2) ⁺	1653.66				I _γ : I _γ =0.059 14 for the composite peak.
431.15 ^e 25	0.02 ^e 1	3061.83	1 ⁺	2630.714	1 ⁻			I _γ : I _γ =0.059 14 for the composite peak.
432.80 4	0.030 16	1398.969	3 ⁻	966.174	2 ⁺			
433.00 7	0.205 13	2704.230	2 ⁻ ,3 ⁻	2271.253	2 ⁻	M1,E2	0.033 11	α(K)=0.0270 94; α(L)=0.0044 8; α(M)=0.00097 17 α(N)=0.00022 4; α(O)=3.2×10 ⁻⁵ 7; α(P)=1.60×10 ⁻⁶ 63 I(ce(K))=0.006 1.
443.91 16	0.054 16	2138.21	2 ⁺	1694.368	4 ⁺	[E2]	0.0208	α(K)=0.01653 24; α(L)=0.00332 5; α(M)=0.000750 11 α(N)=0.0001713 24; α(O)=2.34×10 ⁻⁵ 4; α(P)=9.14×10 ⁻⁷ 13
^x 444.24 4	0.021 7							
445.99 ^e 6	0.44 ^e 2	1804.675	1 ⁺	1358.693	2 ⁻	E1	0.00665	α(K)=0.00565 8; α(L)=0.000782 11; α(M)=0.0001703 24 α(N)=3.92×10 ⁻⁵ 6; α(O)=5.64×10 ⁻⁶ 8; α(P)=3.07×10 ⁻⁷ 5 I _γ : I _γ =0.68 5 for the composite peak.
445.99 ^e 6	0.24 ^e 2	2096.896	4 ⁺	1650.882	4 ⁻ ,5 ⁻	[E1]	0.00665	I(ce(K))=0.0038 9. α(K)=0.00565 8; α(L)=0.000782 11; α(M)=0.0001703 24 α(N)=3.92×10 ⁻⁵ 6; α(O)=5.64×10 ⁻⁶ 8; α(P)=3.07×10 ⁻⁷ 5 I _γ : I _γ =0.68 5 for the composite peak.

γ(¹⁶⁰Dy) (continued)

E_γ †‡	I_γ †‡	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	$\delta\&c$	α^b	Comments
448.05 ^e 9	0.10 ^e 5	1603.79	4 ⁺	1155.851	4 ⁺	E2		0.0203	$\alpha(K)=0.01614$ 23; $\alpha(L)=0.00322$ 5; $\alpha(M)=0.000728$ 11 $\alpha(N)=0.0001664$ 24; $\alpha(O)=2.27\times 10^{-5}$ 4; $\alpha(P)=8.93\times 10^{-7}$ 13 I_γ : $I_\gamma=0.17$ 3 for the composite peak. $I(\text{ce}(K))=0.0034$ 9.
448.05 ^e 9	0.07 ^e 2	2719.02	2 ⁻	2271.253	2 ⁻	(E2)		0.0203	$\alpha(K)=0.01614$ 23; $\alpha(L)=0.00322$ 5; $\alpha(M)=0.000728$ 11 $\alpha(N)=0.0001664$ 24; $\alpha(O)=2.27\times 10^{-5}$ 4; $\alpha(P)=8.93\times 10^{-7}$ 13 E_γ : poor fit. Level-energy difference=447.77. $E_\gamma=448.05$ for doublet. I_γ : $I_\gamma=0.17$ 3 for the composite peak.
449.5 3 452.0 3	0.035 12 0.033 12	2143.74 1607.86	4 ⁻ 4 ⁺	1694.368 4 ⁺ 1155.851 4 ⁺		E2		0.0198	$\alpha(K)=0.01577$ 23; $\alpha(L)=0.00313$ 5; $\alpha(M)=0.000708$ 10 $\alpha(N)=0.0001618$ 23; $\alpha(O)=2.21\times 10^{-5}$ 4; $\alpha(P)=8.74\times 10^{-7}$ 13 $I(\text{ce}(K))<0.001$.
453.7 3	0.05 3	2720.58	3 ⁻	2266.98	3 ⁻	[M1,E2]		0.0289 93	$\alpha(K)=0.0239$ 84; $\alpha(L)=0.0038$ 8; $\alpha(M)=0.00085$ 16 $\alpha(N)=0.00020$ 4; $\alpha(O)=2.8\times 10^{-5}$ 7; $\alpha(P)=1.42\times 10^{-6}$ 56
454.7 3 458.5 1	0.05 3 0.03 1	2383.70 2729.84	6 ⁻ 2 ⁻	1929.186 6 ⁺ 2271.253 2 ⁻		[M1,E2]		0.0281 91	$\alpha(K)=0.0233$ 81; $\alpha(L)=0.0037$ 8; $\alpha(M)=0.00083$ 15 $\alpha(N)=0.00019$ 4; $\alpha(O)=2.7\times 10^{-5}$ 6; $\alpha(P)=1.38\times 10^{-6}$ 54
459.9 1	0.35 5	2556.73	3 ⁻ ,4 ⁻ ,5 ⁻	2096.896	4 ⁺	E1		0.00620	$\alpha(K)=0.00527$ 8; $\alpha(L)=0.000728$ 11; $\alpha(M)=0.0001585$ 23 $\alpha(N)=3.65\times 10^{-5}$ 6; $\alpha(O)=5.26\times 10^{-6}$ 8; $\alpha(P)=2.86\times 10^{-7}$ 4 $I(\text{ce}(K))=0.0020$ 5.
^x 461.0 1	0.15 6					E2		0.0188	$\alpha(K)=0.01499$ 21; $\alpha(L)=0.00295$ 5; $\alpha(M)=0.000665$ 10 $\alpha(N)=0.0001521$ 22; $\alpha(O)=2.08\times 10^{-5}$ 3; $\alpha(P)=8.32\times 10^{-7}$ 12 $I(\text{ce}(K))=0.0020$ 5.
^x 465.18 5 470.0 2	0.038 9 0.37 4	1756.920	2 ⁺	1286.721	3 ⁻	E1		0.00590	$\alpha(K)=0.00502$ 7; $\alpha(L)=0.000692$ 10; $\alpha(M)=0.0001507$ 22 $\alpha(N)=3.47\times 10^{-5}$ 5; $\alpha(O)=5.00\times 10^{-6}$ 7; $\alpha(P)=2.73\times 10^{-7}$ 4 $I(\text{ce}(K))=0.0019$ 4.
471.0 ^e 3	0.21 ^e 3	1756.920	2 ⁺	1285.607	1 ⁻	E1		0.00587	$\alpha(K)=0.00500$ 7; $\alpha(L)=0.000689$ 10; $\alpha(M)=0.0001500$ 22 $\alpha(N)=3.45\times 10^{-5}$ 5; $\alpha(O)=4.98\times 10^{-6}$ 7; $\alpha(P)=2.72\times 10^{-7}$ 4 I_γ : $I_\gamma=0.27$ 5 for the composite peak. $I(\text{ce}(K))<0.0014$.
471.0 ^e 3	0.10 ^e 5	1869.518	2 ⁺	1398.969	3 ⁻	[E1]		0.00587	$\alpha(K)=0.00500$ 7; $\alpha(L)=0.000689$ 10; $\alpha(M)=0.0001500$ 22 $\alpha(N)=3.45\times 10^{-5}$ 5; $\alpha(O)=4.98\times 10^{-6}$ 7; $\alpha(P)=2.72\times 10^{-7}$ 4 I_γ : $I_\gamma=0.27$ 5 for the composite peak.
^x 473.98 4 477.2 3 479.5 3	0.02 1 0.05 2 0.05 2	2130.586 2130.586	3 ⁻ 3 ⁻	1653.66 1650.882	4 ⁻ ,5 ⁻	[E2]		0.01691	$\alpha(K)=0.01356$ 20; $\alpha(L)=0.00261$ 4; $\alpha(M)=0.000589$ 9 $\alpha(N)=0.0001346$ 19; $\alpha(O)=1.85\times 10^{-5}$ 3; $\alpha(P)=7.56\times 10^{-7}$ 11
484.62 9 486.00 14	0.03 1 0.21 3	2138.21 1535.155	2 ⁺ 4 ⁻	1653.66 1049.113	3 ⁺	E1+M2	+0.04 3	0.0056 4	$\alpha(K)=0.0048$ 3; $\alpha(L)=0.00066$ 5; $\alpha(M)=0.000144$ 10

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>I_(γ+ce)[†]</u>	<u>Comments</u>
487.0 3	0.09 3	2130.586	3 ⁻	1643.28	3 ⁻	[M1,E2]	0.0240 78		α(N)=3.32×10 ⁻⁵ 24; α(O)=4.8×10 ⁻⁶ 4; α(P)=2.63×10 ⁻⁷ 19 δ: from ¹⁶⁰ Tb β ⁻ decay. I(ce(K))=0.0012 4.
488.7 3	0.052 20	2697.826	2 ⁺	2208.79	(2) ⁻				α(K)=0.0200 70; α(L)=0.0032 7; α(M)=0.00070 14
490.62 ^e 4	0.15 ^e 4	1456.757	0 ⁺	966.174	2 ⁺	[E2]	0.01592		α(N)=0.00016 4; α(O)=2.3×10 ⁻⁵ 6; α(P)=1.19×10 ⁻⁶ 46
490.62 ^e 4	0.5 ^e 1	1929.186	6 ⁺	1438.57	6 ⁺	E2,M1	0.0236 77		α(K)=0.01279 18; α(L)=0.00243 4; α(M)=0.000548 8 α(N)=0.0001255 18; α(O)=1.728×10 ⁻⁵ 25; α(P)=7.15×10 ⁻⁷ 10 I _γ : I _γ =0.72 4 for the composite peak. I(ce(K))=0.014 4.
490.62 ^e 4	0.10 ^e 5	2077.37	3 ⁻	1586.748	5 ⁻	[E2]	0.01592		α(K)=0.01279 18; α(L)=0.00243 4; α(M)=0.000548 8 α(N)=0.0001255 18; α(O)=1.728×10 ⁻⁵ 25; α(P)=7.15×10 ⁻⁷ 10 I _γ : I _γ =0.72 4 for the composite peak.
492.50 4	0.67 4	2630.714	1 ⁻	2138.21	2 ⁺	E1	0.00531		α(K)=0.00452 7; α(L)=0.000621 9; α(M)=0.0001353 19 α(N)=3.11×10 ⁻⁵ 5; α(O)=4.50×10 ⁻⁶ 7; α(P)=2.46×10 ⁻⁷ 4 I(ce(K))=0.0031 8.
495.03 3	0.81 4	1650.882	4 ⁻ ,5 ⁻	1155.851	4 ⁺	E1	0.00525		α(K)=0.00447 7; α(L)=0.000614 9; α(M)=0.0001337 19 α(N)=3.08×10 ⁻⁵ 5; α(O)=4.44×10 ⁻⁶ 7; α(P)=2.44×10 ⁻⁷ 4 I(ce(K))=0.0037 8.
495.4	0.05 2	2112.70	8 ⁻	1617.28	7 ⁺				E _γ : from level-energy difference. E _γ =485.5 in tables 1 and 2 of 2002Ad34 seems to be a misprint.
495.6		1952.31	0 ⁺	1456.757	0 ⁺	(E0)		0.0045	E _γ ,Mult.: from 2009Ad04. I _(γ+ce) : calculated by evaluator based on measured I(ce(K)) and ratio of electronic factors Ω _K (E0)\Ω(E0)=0.874.
498.4 3	0.06 3	2112.70	8 ⁻	1613.99	7 ⁻	[M1,E2]	0.0226 74		I(ce(K))=0.0039 (2009Ad04). α(K)=0.0188 66; α(L)=0.0030 7; α(M)=0.00065 14 α(N)=0.00015 4; α(O)=2.2×10 ⁻⁵ 6; α(P)=1.12×10 ⁻⁶ 44
499.3 3	0.05 2	1787.82	6 ⁻	1288.670	5 ⁺				α(K)=0.00429 6; α(L)=0.000589 9; α(M)=0.0001283 18
504.15 ^e 20	0.07 ^e 2	1903.210	3 ⁺	1398.969	3 ⁻	(E1)	0.00504		α(N)=2.95×10 ⁻⁵ 5; α(O)=4.26×10 ⁻⁶ 6; α(P)=2.34×10 ⁻⁷ 4 I _γ : I _γ =0.14 3 for the composite peak. I(ce(K))=<0.001.
504.15 ^e 20	0.05 ^e 2	2630.714	1 ⁻	2126.37	3 ⁻	[E2]	0.01483		α(K)=0.01195 17; α(L)=0.00224 4; α(M)=0.000505 7 α(N)=0.0001155 17; α(O)=1.595×10 ⁻⁵ 23; α(P)=6.69×10 ⁻⁷ 10 I _γ : I _γ =0.14 3 for the composite peak.
504.15 ^e 20	0.05 ^e 2	2634.74		2130.586	3 ⁻		0.00508		α=0.00508; α(K)=0.00430 13; α(L)=0.00059 2 I _γ : I _γ =0.14 3 for the composite peak.
506.29 19	0.50 5	2574.38	1 ⁻ ,2 ⁻ ,3 ⁻	2068.08	1 ⁻	M1,E2	0.0217 71		α(K)=0.0181 63; α(L)=0.0028 7; α(M)=0.00063 13 α(N)=0.00014 3; α(O)=2.1×10 ⁻⁵ 5; α(P)=1.08×10 ⁻⁶ 42 I(ce(K))=0.009 2.

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

E_γ †‡	I_γ †‡	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. @	$\delta\&c$	α^b	Comments
510.8 1 513.51 4	0.20 5 8.0 3	1869.518 1802.233	2 ⁺ 5 ⁺	1358.693 1288.670	2 ⁻ 5 ⁺	E2		0.01414	$\alpha(K)=0.01141$ 16; $\alpha(L)=0.00212$ 3; $\alpha(M)=0.000478$ 7 $\alpha(N)=0.0001093$ 16; $\alpha(O)=1.511\times 10^{-5}$ 22; $\alpha(P)=6.40\times 10^{-7}$ 9 $I(\text{ce}(K))=0.092$ 9.
516.86 11 519.12 3	0.180 19 1.62 4	1903.210 1804.675	3 ⁺ 1 ⁺	1386.455 1285.607	4 ⁻ 1 ⁻	E1		0.00473	$\alpha(K)=0.00402$ 6; $\alpha(L)=0.000551$ 8; $\alpha(M)=0.0001200$ 17 $\alpha(N)=2.76\times 10^{-5}$ 4; $\alpha(O)=3.99\times 10^{-6}$ 6; $\alpha(P)=2.20\times 10^{-7}$ 3 $I(\text{ce}(K))=0.007$ 2.
521.50 7 ^x 524.19 20 ^x 528.61 25 538.54 2	0.151 22 0.07 3 0.05 3 28.5 6	2661.522 1694.368	2 ⁻ 4 ⁺	2140.15 (3) 1155.851	(3) 4 ⁺	E2+M1	+11.8 +44-20	0.01261 19	$\alpha(K)=0.01023$ 15; $\alpha(L)=0.00186$ 3; $\alpha(M)=0.000416$ 6 $\alpha(N)=9.53\times 10^{-5}$ 14; $\alpha(O)=1.324\times 10^{-5}$ 19; $\alpha(P)=5.77\times 10^{-7}$ 9 δ : from 1994SIZZ. 1998Kr21 report $\delta=+12.1 +1413-60$. $I(\text{ce}(K))=0.29$ 4.
539.92 15	0.99 17	1804.675	1 ⁺	1264.767	2 ⁻	E1		0.00433	$\alpha(K)=0.00369$ 6; $\alpha(L)=0.000505$ 7; $\alpha(M)=0.0001099$ 16 $\alpha(N)=2.53\times 10^{-5}$ 4; $\alpha(O)=3.66\times 10^{-6}$ 6; $\alpha(P)=2.02\times 10^{-7}$ 3 $I(\text{ce}(K))=0.004$ 1.
541.9 ^e 3	0.03 ^e 1	2077.37	3 ⁻	1535.155	4 ⁻	[E2,M1]		0.0183 60	$\alpha(K)=0.0152$ 53; $\alpha(L)=0.0024$ 6; $\alpha(M)=0.00052$ 12 $\alpha(N)=0.00012$ 3; $\alpha(O)=1.7\times 10^{-5}$ 5; $\alpha(P)=9.1\times 10^{-7}$ 35 I_γ : $I_\gamma=0.24$ 7 for the composite peak.
541.9 ^e 3	0.22 ^e 2	2630.714	1 ⁻	2088.85	1 ⁻ ,2 ⁻ ,3 ⁻	E2,M1		0.0183 60	$\alpha(K)=0.0152$ 53; $\alpha(L)=0.0024$ 6; $\alpha(M)=0.00052$ 12 $\alpha(N)=0.00012$ 3; $\alpha(O)=1.7\times 10^{-5}$ 5; $\alpha(P)=9.1\times 10^{-7}$ 35 I_γ : $I_\gamma=0.24$ 7 for the composite peak. $I(\text{ce}(K))=0.003$ 1.
544.59 8	0.402 24	1903.210	3 ⁺	1358.693	2 ⁻	E1		0.00425	$\alpha(K)=0.00362$ 5; $\alpha(L)=0.000495$ 7; $\alpha(M)=0.0001078$ 15 $\alpha(N)=2.48\times 10^{-5}$ 4; $\alpha(O)=3.59\times 10^{-6}$ 5; $\alpha(P)=1.98\times 10^{-7}$ 3 $I(\text{ce}(K))=0.0015$ 8.
545.94 4	1.48 9	2630.714	1 ⁻	2084.814	(1,2) ⁺	E1		0.00423	$\alpha(K)=0.00360$ 5; $\alpha(L)=0.000493$ 7; $\alpha(M)=0.0001072$ 15 $\alpha(N)=2.47\times 10^{-5}$ 4; $\alpha(O)=3.57\times 10^{-6}$ 5; $\alpha(P)=1.97\times 10^{-7}$ 3 $I(\text{ce}(K))=0.0054$ 9.
549.63 9 552.36 8	0.048 15 0.083 14	2068.08 1518.421	1 ⁻ 2 ⁺	1518.421 966.174	2 ⁺ 2 ⁺	[M1,E2]		0.0174 57	$\alpha(K)=0.0145$ 50; $\alpha(L)=0.0022$ 6; $\alpha(M)=0.00049$ 11 $\alpha(N)=0.00011$ 3; $\alpha(O)=1.64\times 10^{-5}$ 42; $\alpha(P)=8.6\times 10^{-7}$ 33
554.59 7	0.117 14	1603.79	4 ⁺	1049.113	3 ⁺	E2,M1		0.0172 56	$\alpha(K)=0.0144$ 50; $\alpha(L)=0.0022$ 6; $\alpha(M)=0.00049$ 11 $\alpha(N)=0.00011$ 3; $\alpha(O)=1.62\times 10^{-5}$ 41; $\alpha(P)=8.6\times 10^{-7}$ 33 $I(\text{ce}(K))=0.0018$ 5.

								$\gamma(^{160}\text{Dy})$ (continued)	
E_γ †‡	I_γ †#	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. @	α^b	Comments	
556.23 4	0.026 6	1522.34	4 ⁺	966.174	2 ⁺	[E2]	0.01154	$\alpha(\text{K})=0.00938$ 14; $\alpha(\text{L})=0.001683$ 24; $\alpha(\text{M})=0.000377$ 6	
558.8 2	0.065 9	1607.86	4 ⁺	1049.113	3 ⁺	[M1,E2]	0.0169 55	$\alpha(\text{N})=8.64\times 10^{-5}$ 13; $\alpha(\text{O})=1.203\times 10^{-5}$ 17; $\alpha(\text{P})=5.30\times 10^{-7}$ 8	
559.5 3	0.073 8	2697.826	2 ⁺	2138.21	2 ⁺	[M1,E2]	0.0168 55	$\alpha(\text{K})=0.0141$ 49; $\alpha(\text{L})=0.0022$ 5; $\alpha(\text{M})=0.00048$ 11	
562.59 15	0.091 11	2630.714	1 ⁻	2068.08	1 ⁻	[M1,E2]	0.0166 54	$\alpha(\text{N})=0.00011$ 3; $\alpha(\text{O})=1.59\times 10^{-5}$ 41; $\alpha(\text{P})=8.4\times 10^{-7}$ 32	
564.48 25	0.055 16	1720.43	6 ⁺	1155.851	4 ⁺	[E2]	0.01112	$\alpha(\text{N})=0.00011$ 3; $\alpha(\text{O})=1.58\times 10^{-5}$ 40; $\alpha(\text{P})=8.4\times 10^{-7}$ 32	
567.36 10	0.126 25	2697.826	2 ⁺	2130.586	3 ⁻			$\alpha(\text{K})=0.0139$ 48; $\alpha(\text{L})=0.0021$ 5; $\alpha(\text{M})=0.00047$ 11	
570.21 13	0.077 7	2372.31	6 ⁻	1802.233	5 ⁺			$\alpha(\text{N})=0.000108$ 25; $\alpha(\text{O})=1.56\times 10^{-5}$ 40; $\alpha(\text{P})=8.3\times 10^{-7}$ 31	
572.63 4	0.36 3	2661.522	2 ⁻	2088.85	1 ⁻ ,2 ⁻ ,3 ⁻	E2,M1	0.0159 52	$\alpha(\text{K})=0.00905$ 13; $\alpha(\text{L})=0.001614$ 23; $\alpha(\text{M})=0.000362$ 5	
574.73 ^e 5	0.4 ^e 1	1155.851	4 ⁺	581.069	6 ⁺	E2	0.01064	$\alpha(\text{N})=8.28\times 10^{-5}$ 12; $\alpha(\text{O})=1.154\times 10^{-5}$ 17; $\alpha(\text{P})=5.12\times 10^{-7}$ 8	
574.73 ^e 5	0.20 ^e 5	2701.048	1 ⁻	2126.37	3 ⁻	E2	0.01064	$\alpha(\text{K})=0.0133$ 46; $\alpha(\text{L})=0.0020$ 5; $\alpha(\text{M})=0.00045$ 11	
576.58 13	0.45 4	2661.522	2 ⁻	2084.814	(1,2) ⁺	E1	0.00376	$\alpha(\text{N})=0.000103$ 24; $\alpha(\text{O})=1.49\times 10^{-5}$ 38; $\alpha(\text{P})=7.9\times 10^{-7}$ 30	
577.79 13	0.22 3	2704.230	2 ⁻ ,3 ⁻	2126.37	3 ⁻	[M1,E2]	0.0155 51	$I(\text{ce(K)})=0.004$ 1.	
580.2 1	0.021 4	2187.00	4 ⁺ ,5 ⁺ ,6 ⁺	1606.83	6 ⁺			$\alpha(\text{K})=0.00867$ 13; $\alpha(\text{L})=0.001534$ 22; $\alpha(\text{M})=0.000343$ 5	
580.83 20	0.045 16	2450.26	1 ⁻	1869.518	2 ⁺			$\alpha(\text{N})=7.87\times 10^{-5}$ 11; $\alpha(\text{O})=1.098\times 10^{-5}$ 16; $\alpha(\text{P})=4.91\times 10^{-7}$ 7	
582.70 16	0.41 6	1869.518	2 ⁺	1286.721	3 ⁻	E1	0.00367	$I(\text{ce(K)})=0.0054$ 9.	
584.04 ^e 17	0.10 ^e 4	1869.518	2 ⁺	1285.607	1 ⁻			I_γ : $I_\gamma=0.600$ 13 for the composite peak.	
584.04 ^e 17	0.10 ^e 5	2661.522	2 ⁻	2077.37	3 ⁻	[M1,E2]	0.0151 49	$\alpha(\text{K})=0.00867$ 13; $\alpha(\text{L})=0.001534$ 22; $\alpha(\text{M})=0.000343$ 5	
^x 588.4 1	0.03 2							$\alpha(\text{N})=7.87\times 10^{-5}$ 11; $\alpha(\text{O})=1.098\times 10^{-5}$ 16; $\alpha(\text{P})=4.91\times 10^{-7}$ 7	
593.48 15	0.053 13	2661.522	2 ⁻	2068.08	1 ⁻	[M1,E2]	0.0145 47	$\alpha(\text{K})=0.00320$ 5; $\alpha(\text{L})=0.000436$ 7; $\alpha(\text{M})=9.50\times 10^{-5}$ 14	
594.5 ^f	<0.03	681.3?	(0 ⁺)	86.789	2 ⁺	[E2]	0.00979	$\alpha(\text{N})=2.19\times 10^{-5}$ 3; $\alpha(\text{O})=3.17\times 10^{-6}$ 5; $\alpha(\text{P})=1.758\times 10^{-7}$ 25	
595.32 ^e 10	0.05 ^e 2	2084.814	(1,2) ⁺	1489.503	1 ⁻			$I(\text{ce(K)})=0.0015$ 5.	
								$\alpha(\text{K})=0.0130$ 45; $\alpha(\text{L})=0.0020$ 5; $\alpha(\text{M})=0.00044$ 10	
								$\alpha(\text{N})=0.000101$ 24; $\alpha(\text{O})=1.45\times 10^{-5}$ 38; $\alpha(\text{P})=7.7\times 10^{-7}$ 29	
								$\alpha(\text{K})=0.00313$ 5; $\alpha(\text{L})=0.000426$ 6; $\alpha(\text{M})=9.28\times 10^{-5}$ 13	
								$\alpha(\text{N})=2.14\times 10^{-5}$ 3; $\alpha(\text{O})=3.10\times 10^{-6}$ 5; $\alpha(\text{P})=1.720\times 10^{-7}$ 24	
								$I(\text{ce(K)})=0.0013$ 4.	
								I_γ : $I_\gamma=0.20$ 4 for the composite peak.	
								$\alpha(\text{K})=0.0127$ 44; $\alpha(\text{L})=0.0019$ 5; $\alpha(\text{M})=0.00043$ 10	
								$\alpha(\text{N})=9.8\times 10^{-5}$ 23; $\alpha(\text{O})=1.41\times 10^{-5}$ 37; $\alpha(\text{P})=7.5\times 10^{-7}$ 28	
								I_γ : $I_\gamma=0.20$ 4 for the composite peak.	
								$\alpha(\text{K})=0.0122$ 42; $\alpha(\text{L})=0.0018$ 5; $\alpha(\text{M})=0.00041$ 10	
								$\alpha(\text{N})=9.4\times 10^{-5}$ 23; $\alpha(\text{O})=1.36\times 10^{-5}$ 35; $\alpha(\text{P})=7.2\times 10^{-7}$ 27	
								$\alpha(\text{K})=0.00800$ 12; $\alpha(\text{L})=0.001395$ 20; $\alpha(\text{M})=0.000312$ 5	
								$\alpha(\text{N})=7.15\times 10^{-5}$ 10; $\alpha(\text{O})=1.000\times 10^{-5}$ 14; $\alpha(\text{P})=4.54\times 10^{-7}$ 7	
								I_γ : estimate from 2009Ad04.	
								I_γ : $I_\gamma=0.140$ 24 for the composite peak.	

γ(¹⁶⁰Dy) (continued)

E_γ †‡	I_γ †#	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	α^b	Comments
595.32 ^e 10	0.09 ^e 3	2130.586	3 ⁻	1535.155	4 ⁻	[M1,E2]	0.0144 47	$\alpha(K)=0.0121$ 41; $\alpha(L)=0.0018$ 5; $\alpha(M)=0.00040$ 10 $\alpha(N)=9.3\times 10^{-5}$ 22; $\alpha(O)=1.34\times 10^{-5}$ 35; $\alpha(P)=7.2\times 10^{-7}$ 27 I_γ : $I_\gamma=0.140$ 24 for the composite peak.
600.2 1	0.05 2	2469.51	3 ⁻	1869.518	2 ⁺			
^x 601.35 6	0.06 2							
^x 602.6 1	0.05 2							
605.0 3	0.068 13	1869.518	2 ⁺	1264.767	2 ⁻			
606.0 3	0.03 2	1655.00	2 ⁺ ,3 ⁺ ,4 ⁺	1049.113	3 ⁺			
607.00 9	0.173 17	2697.826	2 ⁺	2090.88	2 ⁻ ,3 ⁻			
611.53 8	0.184 16	2696.43	2 ⁻ ,3 ⁻	2084.814	(1,2) ⁺	(E1)	0.00332	$\alpha(K)=0.00283$ 4; $\alpha(L)=0.000384$ 6; $\alpha(M)=8.35\times 10^{-5}$ 12 $\alpha(N)=1.92\times 10^{-5}$ 3; $\alpha(O)=2.79\times 10^{-6}$ 4; $\alpha(P)=1.555\times 10^{-7}$ 22 $I(\text{ce}(K))<0.0008$.
613.28 6	0.251 17	2704.230	2 ⁻ ,3 ⁻	2090.88	2 ⁻ ,3 ⁻			
616.18 10	0.105 15	2701.048	1 ⁻	2084.814	(1,2) ⁺			
616.2 ^f		703.0?	(0 ⁺)	86.789	2 ⁺	[E2]	0.00897	$\alpha(K)=0.00735$ 11; $\alpha(L)=0.001264$ 18; $\alpha(M)=0.000282$ 4 $\alpha(N)=6.47\times 10^{-5}$ 9; $\alpha(O)=9.07\times 10^{-6}$ 13; $\alpha(P)=4.18\times 10^{-7}$ 6 γ transition postulated by 2010BoZZ (unobserved member of doublet).
619.4 2	0.08 3	2704.230	2 ⁻ ,3 ⁻	2084.814	(1,2) ⁺			
621.24 5	0.679 14	2630.714	1 ⁻	2009.535	1 ⁻ ,2 ⁻	E2	0.00880	$\alpha(K)=0.00721$ 10; $\alpha(L)=0.001236$ 18; $\alpha(M)=0.000276$ 4 $\alpha(N)=6.33\times 10^{-5}$ 9; $\alpha(O)=8.88\times 10^{-6}$ 13; $\alpha(P)=4.10\times 10^{-7}$ 6 $I(\text{ce}(K))=0.006$ 2.
623.69 24	0.058 19	2701.048	1 ⁻	2077.37	3 ⁻			
626.57 10	0.102 15	2757.13		2130.586	3 ⁻			
628.95 17	0.06 2	1784.696	4 ⁻	1155.851	4 ⁺			
629.7 1	0.08 3	2697.826	2 ⁺	2068.08	1 ⁻			
^x 630.3 1	0.03 1							
632.9 ^d 6	0.04 ^d 3	2701.048	1 ⁻	2068.08	1 ⁻			
632.9 ^d 6	0.04 ^d 3	2717.229	2 ⁺	2084.814	(1,2) ⁺			
634.2 1	0.03 2	2503.80	1 ⁺ ,2 ⁺	1869.518	2 ⁺			
635.6 2	0.04 2	2074.18	7 ⁺	1438.57	6 ⁺			
636.3 3	0.15 5	2704.230	2 ⁻ ,3 ⁻	2068.08	1 ⁻			
637.8 4	0.15 5	1603.79	4 ⁺	966.174	2 ⁺			
640.1 1	0.02 1	1606.83	6 ⁺	966.75	8 ⁺	(E2)	0.00819	$\alpha(K)=0.00673$ 10; $\alpha(L)=0.001140$ 16; $\alpha(M)=0.000254$ 4 $\alpha(N)=5.83\times 10^{-5}$ 9; $\alpha(O)=8.20\times 10^{-6}$ 12; $\alpha(P)=3.83\times 10^{-7}$ 6 $\alpha(K)=0.00671$ 10; $\alpha(L)=0.001137$ 16; $\alpha(M)=0.000254$ 4 $\alpha(N)=5.82\times 10^{-5}$ 9; $\alpha(O)=8.18\times 10^{-6}$ 12; $\alpha(P)=3.83\times 10^{-7}$ 6 $I(\text{ce}(K))=0.008$ 2 for 640.1+640.6+641.1+641.7+642.9.
640.61 6	0.9 2	1929.186	6 ⁺	1288.670	5 ⁺	(E2)	0.00817	$\alpha(K)=0.00670$ 10; $\alpha(L)=0.001135$ 16; $\alpha(M)=0.000253$ 4 $\alpha(N)=5.81\times 10^{-5}$ 9; $\alpha(O)=8.16\times 10^{-6}$ 12; $\alpha(P)=3.82\times 10^{-7}$ 6 $\alpha(K)=0.00669$ 10; $\alpha(L)=0.001132$ 16; $\alpha(M)=0.000252$ 4 $\alpha(N)=5.79\times 10^{-5}$ 9; $\alpha(O)=8.14\times 10^{-6}$ 12; $\alpha(P)=3.81\times 10^{-7}$ 6
641.1 1	0.20 5	2130.586	3 ⁻	1489.503	1 ⁻	(E2)	0.00816	
641.7 1	0.10 5	1607.86	4 ⁺	966.174	2 ⁺	(E2)	0.00814	

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

E_γ ††	I_γ ††	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	δ &c	α^b	$I_{(\gamma+ce)}$ †	Comments
642.9 1	0.03 1	2851.73	1 ⁻	2208.79	(2) ⁻	(E2)		0.00810		$\alpha(K)=0.00666$ 10; $\alpha(L)=0.001126$ 16; $\alpha(M)=0.000251$ 4 $\alpha(N)=5.76\times 10^{-5}$ 8; $\alpha(O)=8.10\times 10^{-6}$ 12; $\alpha(P)=3.79\times 10^{-7}$ 6
645.24 3	102.7 26	1694.368	4 ⁺	1049.113	3 ⁺	E2+M1	-4.38 22	0.00841 13		$\alpha(K)=0.00693$ 11; $\alpha(L)=0.001152$ 17; $\alpha(M)=0.000256$ 4 $\alpha(N)=5.89\times 10^{-5}$ 9; $\alpha(O)=8.31\times 10^{-6}$ 12; $\alpha(P)=3.98\times 10^{-7}$ 6 δ : from 1994SIZZ. I(ce(K))=0.71 7.
646.40 8	17.6 24	1802.233	5 ⁺	1155.851	4 ⁺	E2		0.00800		$\alpha(K)=0.00658$ 10; $\alpha(L)=0.001110$ 16; $\alpha(M)=0.000247$ 4 $\alpha(N)=5.68\times 10^{-5}$ 8; $\alpha(O)=7.99\times 10^{-6}$ 12; $\alpha(P)=3.75\times 10^{-7}$ 6 I(ce(K))=0.12 1.
647.3 2	0.010 5	1613.99	7 ⁻	966.75	8 ⁺					
650.5 1	0.06 1	1617.28	7 ⁺	966.75	8 ⁺	E2+M1	5 8	0.0082 71		$\alpha(K)=0.0067$ 63; $\alpha(L)=0.00112$ 70; $\alpha(M)=2.5\times 10^{-4}$ 15 $\alpha(N)=5.7\times 10^{-5}$ 35; $\alpha(O)=8.1\times 10^{-6}$ 55; $\alpha(P)=3.9\times 10^{-7}$ 41
651.9 1	0.06 1	2661.522	2 ⁻	2009.535	1 ⁻ ,2 ⁻					
654.71 5	0.153 21	2704.230	2 ⁻ ,3 ⁻	2049.51	2 ⁺ ,3					
658.7 3	0.075 15	2096.896	4 ⁺	1438.57	6 ⁺					
665.3 ^e 5	0.10 ^e 3	2469.51	3 ⁻	1804.675	1 ⁺	[M2]		0.0409		$\alpha(K)=0.0340$ 5; $\alpha(L)=0.00535$ 8; $\alpha(M)=0.001187$ 17 $\alpha(N)=0.000275$ 4; $\alpha(O)=4.01\times 10^{-5}$ 6; $\alpha(P)=2.26\times 10^{-6}$ 4 I _γ : I _γ =0.37 3 for the composite peak. I(ce(K))=0.006 2 for 665.3+666.7.
665.3 ^e 5	0.27 ^e 3	2674.720	1 ⁻	2009.535	1 ⁻ ,2 ⁻	M1,E2		0.0110 35		$\alpha(K)=0.0092$ 31; $\alpha(L)=0.00137$ 35; $\alpha(M)=0.00030$ 8 $\alpha(N)=7.0\times 10^{-5}$ 18; $\alpha(O)=1.01\times 10^{-5}$ 27; $\alpha(P)=5.5\times 10^{-7}$ 20 I _γ : I _γ =0.37 3 for the composite peak. I _γ : I _γ =0.12 5 for the composite peak. I _γ : I _γ =0.12 5 for the composite peak.
666.7 ^e 3	0.03 ^e 2	1952.31	0 ⁺	1285.607	1 ⁻					
666.7 ^e 3	0.09 ^e 2	2734.720	1 ⁻	2068.08	1 ⁻					
669.1 ^{df} 2	0.047 ^d 19	2068.08	1 ⁻	1398.969	3 ⁻					
669.1 ^{df} 2	0.047 ^d 19	2077.37	3 ⁻	1408.47	5 ⁻					
672.3		1952.31	0 ⁺	1279.945	0 ⁺	(E0)			0.0037	E _γ ,Mult.: from 2009Ad04. I(ce(K))=0.002 (2009Ad04); I(ce(K))=0.0043 (2006Bo37). I _(γ+ce) : calculated by evaluator based on

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>I_(γ+ce)[†]</u>	<u>Comments</u>
673.09 7	0.27 3	2367.47	2 ⁺ ,3 ⁺ ,4 ⁺	1694.368	4 ⁺				measured I(ce(K))= 0.0032 (mean value of the measured values) and ratio of electronic factors Ω _K (E0)\Ω(E0)=0.875.
678.30 ^e 16	0.010 ^e 5	2077.37	3 ⁻	1398.969	3 ⁻				I(ce(K))=0.0079 (2006Bo37).
678.30 ^e 16	0.04 ^e 2	2630.714	1 ⁻	1952.31	0 ⁺				I _γ : I _γ =0.052 17 for the composite peak.
681.3 ^f		681.3?	(0 ⁺)	0.0	0 ⁺	(E0)		0.0027	I _γ : I _γ =0.052 17 for the composite peak.
									E _γ ,Mult.: K-shell conversion electrons observed by 2009Ad04, with no observed γ ray that could produce the K-shell conversion electrons. Previously 2008VaZU argued that they found (by γγ coin) a 682 keV doublet with the more intense component the already known 682.3 γ of relative I _γ =21.0 10 (in 2008VaZU units), α(K) _{exp} =0.0065 7, and α(K)(E2) _{theor} =0.00581, placed at 966.2, 2 ⁺ level; and the weaker 681.5 5 keV γ of relative I _γ =2.0 5 that they placed at 2096.9, 4 ⁺ level, that would exclude the E0 assignment of 2009Ad04. The explicit non-observance of such weak component by 2009Ad04, as well as their theoretical calculations (by interacting vector boson model) showing possible E0 transition close to this energy, seem to justify the E0 assignment adopted here. However considering the pros and cons from 2008VaZU and 2009Ad04 we consider this γ ray and its placement as tentative.
682.34 2	2.59 8	966.174	2 ⁺	283.820	4 ⁺	E2	0.00704		I _(γ+ce) : calculated by evaluator based on measured I(ce(K)) and ratio of electronic factors Ω _K (E0)\Ω(E0)=0.875. I(ce(K))=0.0024 (2009Ad04). B(E0)/B(E2)>0.3 (2009Ad04). α(K)=0.00581 9; α(L)=0.000962 14; α(M)=0.000214 3 α(N)=4.91×10 ⁻⁵ 7; α(O)=6.94×10 ⁻⁶ 10; α(P)=3.32×10 ⁻⁷ 5 I(ce(K))=0.015 2; I(ce(K))=0.0167 (2006Bo37).
688.37 ^e 9	0.010 ^e 5	2096.896	4 ⁺	1408.47	5 ⁻				I _γ : I _γ =0.282 8 for the composite peak.
688.37 ^e 9	0.28 ^e 1	2697.826	2 ⁺	2009.535	1 ⁻ ,2 ⁻				I _γ : I _γ =0.282 8 for the composite peak.
691.49 2	0.587 15	2701.048	1 ⁻	2009.535	1 ⁻ ,2 ⁻	M1,E2	0.0100 32		α(K)=0.0084 28; α(L)=0.00124 32; α(M)=0.00027 7 α(N)=6.3×10 ⁻⁵ 16; α(O)=9.1×10 ⁻⁶ 25; α(P)=5.0×10 ⁻⁷ 18 I(ce(K))=0.0050 15.
698.1 4	0.06 3	2096.896	4 ⁺	1398.969	3 ⁻				I _γ : I _γ =0.09 4 for the composite peak.
699.9 ^e 4	0.02 ^e 1	2602.67	1 ⁻ ,2 ⁻	1903.210	3 ⁺				I _γ : I _γ =0.09 4 for the composite peak.
699.9 ^e 4	0.08 ^e 3	2767.70	1 ⁻	2068.08	1 ⁻				
703.0 ^f		703.0?	(0 ⁺)	0.0	0 ⁺	(E0)			K-shell electron peak corroborated with no intensities at the corresponding E _γ (2010BoZZ).
707.60 2	2.79 6	1288.670	5 ⁺	581.069	6 ⁺	E2,M1	0.0094 30		α(K)=0.0079 26; α(L)=0.00117 30; α(M)=0.00026 7 α(N)=5.9×10 ⁻⁵ 15; α(O)=8.6×10 ⁻⁶ 23; α(P)=4.7×10 ⁻⁷ 17 I(ce(K))=0.020 3.

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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&c</u>	<u>α^b</u>	<u>Comments</u>
710.5 3	0.08 3	2096.896	4 ⁺	1386.455	4 ⁻				
718.70 9	0.081 20	2077.37	3 ⁻	1358.693	2 ⁻				
^x 719.8 1	0.06 2								
722.41 7	0.166 22	2674.720	1 ⁻	1952.31	0 ⁺				
728.17 2	206 4	1694.368	4 ⁺	966.174	2 ⁺	E2		0.00606	α(K)=0.00502 7; α(L)=0.000813 12; α(M)=0.000180 3 α(N)=4.15×10 ⁻⁵ 6; α(O)=5.88×10 ⁻⁶ 9; α(P)=2.88×10 ⁻⁷ 4 δ: 1998Kr21 report δ(M3/E2)=-0.002 30. 1994SIZZ report δ(M3/E2)=0.023 +7-4. However, this latter value implies a B(M3) value ≈120 times larger than that allowed by RUL. I(cc(K))=1.04 10.
735.69 25	0.11 3	1784.696	4 ⁻	1049.113	3 ⁺				
^x 736.5 5	0.03 1								
737.5 5	0.03 1	2255.67	1 ⁺ ,2 ⁺	1518.421	2 ⁺				
740.7 3	0.059 13	2610.01	2 ⁺	1869.518	2 ⁺				
745.73 9	0.145 25	2697.826	2 ⁺	1952.31	0 ⁺				
^x 747.4 1	0.126 5								
748.4 1	0.11 3	2187.00	4 ⁺ ,5 ⁺ ,6 ⁺	1438.57	6 ⁺				
748.8 1	0.45 3	2701.048	1 ⁻	1952.31	0 ⁺				
753.11 2	18.4 4	1802.233	5 ⁺	1049.113	3 ⁺	E2		0.00562	α(K)=0.00466 7; α(L)=0.000747 11; α(M)=0.0001655 24 α(N)=3.80×10 ⁻⁵ 6; α(O)=5.40×10 ⁻⁶ 8; α(P)=2.67×10 ⁻⁷ 4 δ: 1998Kr21 report δ(M3/E2)=+0.016 34. I(cc(K))=0.086 10.
755.1 3	0.02 1	2372.31	6 ⁻	1617.28	7 ⁺				
755.6 3	0.03 1	2194.44	5 ⁺	1438.57	6 ⁺				
758.31 ^e 3	0.06 ^e 2	2372.31	6 ⁻	1613.99	7 ⁻				
758.31 ^e 3	2.43 ^e 15	2661.522	2 ⁻	1903.210	3 ⁺	E1		0.00213	I _γ : I _γ =2.43 15 for the composite peak. α(K)=0.00182 3; α(L)=0.000244 4; α(M)=5.31×10 ⁻⁵ 8 α(N)=1.223×10 ⁻⁵ 18; α(O)=1.780×10 ⁻⁶ 25; α(P)=1.008×10 ⁻⁷ 15 I _γ : I _γ =2.43 15 for the composite peak. I(cc(K))=0.005 1.
761.23 6	1.68 14	2630.714	1 ⁻	1869.518	2 ⁺	E1		0.00211	α(K)=0.00180 3; α(L)=0.000242 4; α(M)=5.27×10 ⁻⁵ 8 α(N)=1.214×10 ⁻⁵ 17; α(O)=1.766×10 ⁻⁶ 25; α(P)=1.000×10 ⁻⁷ 14 I(cc(K))=0.004 1.
765.30 2	25.2 6	1049.113	3 ⁺	283.820	4 ⁺	E2+M1	-13.8 9	0.00544 9	α(K)=0.00452 7; α(L)=0.000720 11; α(M)=0.0001595 24 α(N)=3.67×10 ⁻⁵ 6; α(O)=5.22×10 ⁻⁶ 8; α(P)=2.60×10 ⁻⁷ 4 I(cc(K))=0.135 2.
766.4 1	0.14 3	2383.70	6 ⁻	1617.28	7 ⁺				
772.02 20	0.16 3	2130.586	3 ⁻	1358.693	2 ⁻				
773.37 8	0.575 24	1929.186	6 ⁺	1155.851	4 ⁺	E2		0.00529	α(K)=0.00440 7; α(L)=0.000699 10; α(M)=0.0001548 22 α(N)=3.56×10 ⁻⁵ 5; α(O)=5.06×10 ⁻⁶ 7; α(P)=2.52×10 ⁻⁷ 4 I(cc(K))=0.0030 8.
776.8 ^e 4	0.02 ^e 1	2126.37	3 ⁻	1349.764	2 ⁺				I _γ : I _γ =0.035 10 for the composite peak.

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †#</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^b</u>	<u>Comments</u>
776.8 ^e 4	0.02 ^e 1	2383.70	6 ⁻	1606.83	6 ⁺			I _γ : I _γ =0.035 10 for the composite peak.
781.86 10	0.265 21	2271.253	2 ⁻	1489.503	1 ⁻			
784.0 5	0.04 2	2851.73	1 ⁻	2068.08	1 ⁻			
^x 788.96 25	0.058 11							
790.7 3	0.05 2	2077.37	3 ⁻	1286.721	3 ⁻			
791.5 2	0.4 1	2309.91	2 ⁺ ,3,4 ⁺	1518.421	2 ⁺			
791.8 3	0.03 1	2077.37	3 ⁻	1285.607	1 ⁻			
792.0 2	0.30 5	2661.522	2 ⁻	1869.518	2 ⁺			
797.82 18	0.044 8	2602.67	1 ⁻ ,2 ⁻	1804.675	1 ⁺			
800.9 1	0.058 20	2704.230	2 ⁻ ,3 ⁻	1903.210	3 ⁺			
803.48 22	0.058 10	2068.08	1 ⁻	1264.767	2 ⁻			
^x 804.0 1	0.06 2							
805.15 ^{ef} 12	0.05 ^e 2	2610.01	2 ⁺	1804.675	1 ⁺			I _γ : I _γ =0.110 21 for the composite peak.
805.15 ^e 12	0.06 ^e 2	2674.720	1 ⁻	1869.518	2 ⁺			I _γ : I _γ =0.110 21 for the composite peak.
808.22 4	0.292 15	2096.896	4 ⁺	1288.670	5 ⁺			
810.10 12	0.062 12	2096.896	4 ⁺	1286.721	3 ⁻			
812.6 2	0.03 2	2077.37	3 ⁻	1264.767	2 ⁻			
814.57 5	0.287 11	2469.51	3 ⁻	1655.00	2 ⁺ ,3 ⁺ ,4 ⁺			
816.04 7	0.204 11	2469.51	3 ⁻	1653.66				
820.39 8	0.096 9	1869.518	2 ⁺	1049.113	3 ⁺			
826.11 2	5.92 18	2630.714	1 ⁻	1804.675	1 ⁺	E1	0.00180	α(K)=0.001535 22; α(L)=0.000205 3; α(M)=4.46×10 ⁻⁵ 7 α(N)=1.029×10 ⁻⁵ 15; α(O)=1.499×10 ⁻⁶ 21; α(P)=8.53×10 ⁻⁸ 12 E _γ : poor fit; level-energy difference=826.04. I(cc(K))=0.0085 12.
827.4 3	0.13 1	1408.47	5 ⁻	581.069	6 ⁺			
828.13 ^e 15	0.14 ^e 3	2697.826	2 ⁺	1869.518	2 ⁺			I _γ : I _γ =0.32 4 for the composite peak.
828.13 ^e 15	0.18 ^e 4	2896.28	2 ⁺	2068.08	1 ⁻			I _γ : I _γ =0.32 4 for the composite peak.
831.53 4	0.180 13	2701.048	1 ⁻	1869.518	2 ⁺			
838.57 4	0.302 20	1804.675	1 ⁺	966.174	2 ⁺	E2,M1	0.0063 19	α(K)=0.0053 17; α(L)=7.7×10 ⁻⁴ 20; α(M)=0.00017 5 α(N)=3.89×10 ⁻⁵ 98; α(O)=5.7×10 ⁻⁶ 15; α(P)=3.2×10 ⁻⁷ 11 I(cc(K))=0.0014 3.
840.62 24	0.078 17	2126.37	3 ⁻	1285.607	1 ⁻			
843.95 7	0.40 5	2130.586	3 ⁻	1286.721	3 ⁻	(E2)	0.00436	α(K)=0.00364 5; α(L)=0.000564 8; α(M)=0.0001247 18 α(N)=2.87×10 ⁻⁵ 4; α(O)=4.10×10 ⁻⁶ 6; α(P)=2.10×10 ⁻⁷ 3 I(cc(K))=0.0015 3.
847.7 2	0.05 2	2717.229	2 ⁺	1869.518	2 ⁺			
851.3 2	0.052 25	2138.21	2 ⁺	1286.721	3 ⁻			
855.0 2	0.13 4	2143.74	4 ⁻	1288.670	5 ⁺	E1	1.68×10 ⁻³	α(K)=0.001436 21; α(L)=0.000192 3; α(M)=4.17×10 ⁻⁵ 6 α(N)=9.61×10 ⁻⁶ 14; α(O)=1.401×10 ⁻⁶ 20; α(P)=7.99×10 ⁻⁸ 12 I(cc(K))<0.0002.

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †#</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&c</u>	<u>α^b</u>	<u>Comments</u>
856.8 2	1.9 5	2661.522	2 ⁻	1804.675	1 ⁺	E1		1.67×10 ⁻³	α(K)=0.001430 20; α(L)=0.000191 3; α(M)=4.15×10 ⁻⁵ 6 α(N)=9.57×10 ⁻⁶ 14; α(O)=1.395×10 ⁻⁶ 20; α(P)=7.95×10 ⁻⁸ 12 I(ce(K))=0.0027 5.
857.6 2	1.9 5	1438.57	6 ⁺	581.069	6 ⁺	E2+M1	+5 +6-2	0.00435 23	α(K)=0.00364 20; α(L)=0.000557 24; α(M)=0.000123 6 α(N)=2.83×10 ⁻⁵ 12; α(O)=4.06×10 ⁻⁶ 19; α(P)=2.10×10 ⁻⁷ 13 I(ce(K))=0.0066 12.
860.3 3	0.042 18	2729.84	2 ⁻	1869.518	2 ⁺				
862.30 12	0.19 2	2556.73	3 ⁻ ,4 ⁻ ,5 ⁻	1694.368	4 ⁺				
865.82 6	0.236 21	2130.586	3 ⁻	1264.767	2 ⁻				
870.0 1	0.16 6	2674.720	1 ⁻	1804.675	1 ⁺				
872.02 2	35.1 10	1155.851	4 ⁺	283.820	4 ⁺	E2+M1	+5.0 +20-11	0.00419 10	α(K)=0.00351 9; α(L)=0.000536 11; α(M)=0.0001181 25 α(N)=2.72×10 ⁻⁵ 6; α(O)=3.90×10 ⁻⁶ 9; α(P)=2.03×10 ⁻⁷ 6 I(ce(K))=0.119 16.
873.88 7	2.54 15	2630.714	1 ⁻	1756.920	2 ⁺	E1		1.61×10 ⁻³	α(K)=0.001377 20; α(L)=0.000184 3; α(M)=3.99×10 ⁻⁵ 6 α(N)=9.20×10 ⁻⁶ 13; α(O)=1.342×10 ⁻⁶ 19; α(P)=7.66×10 ⁻⁸ 11 I(ce(K))=0.0036 6.
879.39 2	126 3	966.174	2 ⁺	86.789	2 ⁺	E2+M1	-16.6 5	0.00401	α(K)=0.00335 5; α(L)=0.000514 8; α(M)=0.0001134 17 α(N)=2.61×10 ⁻⁵ 4; α(O)=3.74×10 ⁻⁶ 6; α(P)=1.93×10 ⁻⁷ 3 I(ce(K))=0.42 4.
^x 884.0 1	0.028 8								
890.6 1	0.05 2	3098.98	6 ⁺	2208.42	4 ⁺				
904.6 1	0.86 8	2661.522	2 ⁻	1756.920	2 ⁺	E1		1.51×10 ⁻³	α(K)=0.001289 18; α(L)=0.0001718 24; α(M)=3.73×10 ⁻⁵ 6 α(N)=8.60×10 ⁻⁶ 12; α(O)=1.255×10 ⁻⁶ 18; α(P)=7.18×10 ⁻⁸ 10 I(ce(K))=0.0011 3.
905.76 16	0.52 4	2194.44	5 ⁺	1288.670	5 ⁺	(E2)		0.00375	α(K)=0.00314 5; α(L)=0.000477 7; α(M)=0.0001053 15 α(N)=2.42×10 ⁻⁵ 4; α(O)=3.47×10 ⁻⁶ 5; α(P)=1.81×10 ⁻⁷ 3 I(ce(K))=0.0015 3.
912.58 ^e 22	0.09 ^e 3	2271.253	2 ⁻	1358.693	2 ⁻				I _γ : I _γ =0.17 3 for the composite peak.

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

E_γ †‡	I_γ †#	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. @	$\delta\&c$	α^b	Comments
912.58 ^e 22	0.08 ^e 3	2717.229	2 ⁺	1804.675	1 ⁺				I_γ : $I_\gamma=0.17$ 3 for the composite peak.
914.15 24	0.16 3	2719.02	2 ⁻	1804.675	1 ⁺				
915.5 ^e 4	0.03 ^e 2	1882.62	8 ⁻	966.75	8 ⁺	E1(+M2)	-1 4	0.0091 71	$\alpha(K)=0.0077$ 60; $\alpha(L)=0.00115$ 91; $\alpha(M)=2.5\times 10^{-4}$ 20 $\alpha(N)=5.8\times 10^{-5}$ 47; $\alpha(O)=8.6\times 10^{-6}$ 68; $\alpha(P)=4.9\times 10^{-7}$ 39 I_γ : $I_\gamma=0.076$ 25 for the composite peak.
915.5 ^e 4	0.04 ^e 2	2610.01	2 ⁺	1694.368	4 ⁺				I_γ : $I_\gamma=0.076$ 25 for the composite peak.
917.80 9	0.111 12	2674.720	1 ⁻	1756.920	2 ⁺				
921.50 ^e 16	0.15 ^e 3	2077.37	3 ⁻	1155.851	4 ⁺				I_γ : $I_\gamma=0.27$ 3 for the composite peak.
921.50 ^e 16	0.12 ^e 4	2271.253	2 ⁻	1349.764	2 ⁺				I_γ : $I_\gamma=0.27$ 3 for the composite peak.
922.5 4	0.10 3	2630.714	1 ⁻	1708.14	0 ⁺				
924.9 ^e 3	0.06 ^e 2	2729.84	2 ⁻	1804.675	1 ⁺				I_γ : $I_\gamma=0.100$ 18 for the composite peak.
924.9 ^e 3	0.04 ^e 2	2877.114	1 ⁻	1952.31	0 ⁺				I_γ : $I_\gamma=0.100$ 18 for the composite peak.
933.8 1	0.08 2	2372.31	6 ⁻	1438.57	6 ⁺				
934.4 ^e 3	0.04 ^e 2	1901.15	9 ⁻	966.75	8 ⁺	(E1+M2)	0.8 8	0.0071 57	$\alpha(K)=0.0060$ 48; $\alpha(L)=8.8\times 10^{-4}$ 72; $\alpha(M)=1.9\times 10^{-4}$ 16 $\alpha(N)=4.5\times 10^{-5}$ 37; $\alpha(O)=6.6\times 10^{-6}$ 54; $\alpha(P)=3.8\times 10^{-7}$ 31 I_γ : $I_\gamma=0.085$ 23 for the composite peak.
934.4 ^e 3	0.04 ^e 2	2469.51	3 ⁻	1535.155	4 ⁻				I_γ : $I_\gamma=0.085$ 23 for the composite peak.
935.91 6	0.52 3	2720.58	3 ⁻	1784.696	4 ⁻	E2,M1		0.0049 14	$\alpha(K)=0.0041$ 12; $\alpha(L)=0.00059$ 15; $\alpha(M)=0.00013$ 4 $\alpha(N)=3.0\times 10^{-5}$ 8; $\alpha(O)=4.3\times 10^{-6}$ 12; $\alpha(P)=2.44\times 10^{-7}$ 76 $I(\text{ce}(K))=0.0023$ 5.
940.9 1	0.5 1	2697.826	2 ⁺	1756.920	2 ⁺	E2		0.00346	$\alpha(K)=0.00290$ 4; $\alpha(L)=0.000437$ 7; $\alpha(M)=9.63\times 10^{-5}$ 14 $\alpha(N)=2.22\times 10^{-5}$ 4; $\alpha(O)=3.18\times 10^{-6}$ 5; $\alpha(P)=1.671\times 10^{-7}$ 24
941.1 1	1.9 2	2096.896	4 ⁺	1155.851	4 ⁺	E2+M1	+9 +13-3	0.00349 7	$\alpha(K)=0.00292$ 6; $\alpha(L)=0.000440$ 8; $\alpha(M)=9.70\times 10^{-5}$ 17 $\alpha(N)=2.23\times 10^{-5}$ 4; $\alpha(O)=3.21\times 10^{-6}$ 6; $\alpha(P)=1.69\times 10^{-7}$ 4 $I(\text{ce}(K))=0.0071$ 10.
941.3 1	0.05 2	1522.34	4 ⁺	581.069	6 ⁺	E2		0.00345	$\alpha(K)=0.00290$ 4; $\alpha(L)=0.000437$ 7; $\alpha(M)=9.62\times 10^{-5}$ 14 $\alpha(N)=2.21\times 10^{-5}$ 4; $\alpha(O)=3.18\times 10^{-6}$ 5; $\alpha(P)=1.669\times 10^{-7}$ 24
944.3 4	0.07 2	2701.048	1 ⁻	1756.920	2 ⁺				
946.75 9	0.202 22	3060.45		2113.69					
951.3 3	0.076 9	2309.91	2 ⁺ ,3,4 ⁺	1358.693	2 ⁻				
955.62 6	0.16 3	2354.631	2 ⁺	1398.969	3 ⁻				
962.0 1	0.5 1	2719.02	2 ⁻	1756.920	2 ⁺				
962.32 2	113 3	1049.113	3 ⁺	86.789	2 ⁺	E2+M1	-13.8 3	0.00331	$\alpha(K)=0.00278$ 4; $\alpha(L)=0.000417$ 6; $\alpha(M)=9.17\times 10^{-5}$ 13 $\alpha(N)=2.11\times 10^{-5}$ 3; $\alpha(O)=3.04\times 10^{-6}$ 5; $\alpha(P)=1.604\times 10^{-7}$ 23 $I(\text{ce}(K))=0.31$ 4 (2002Ad34); $I(\text{ce}(K))=0.283$ (2006Bo37).
963.9 1	0.4 1	2372.31	6 ⁻	1408.47	5 ⁻				
966.18 2	105 3	966.174	2 ⁺	0.0	0 ⁺	E2		0.00327	$\alpha(K)=0.00274$ 4; $\alpha(L)=0.000411$ 6; $\alpha(M)=9.05\times 10^{-5}$ 13 $\alpha(N)=2.09\times 10^{-5}$ 3; $\alpha(O)=3.00\times 10^{-6}$ 5; $\alpha(P)=1.582\times 10^{-7}$ 23 $I(\text{ce}(K))=0.28$ 4.

γ(¹⁶⁰Dy) (continued)

E_γ †‡	I_γ †#	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	δ &c	α^b	Comments
966.5 1	0.20 5	2674.720	1 ⁻	1708.14	0 ⁺				
970.9 3	0.145 13	2126.37	3 ⁻	1155.851	4 ⁺				
975.40 ^e 9	0.04 ^e 2	2374.50		1398.969	3 ⁻				I_γ : $I_\gamma=0.135$ 25 for the composite peak.
975.40 ^e 9	0.10 ^e 2	2383.70	6 ⁻	1408.47	5 ⁻				I_γ : $I_\gamma=0.135$ 25 for the composite peak.
982.33 ^e 17	0.02 ^e 1	2138.21	2 ⁺	1155.851	4 ⁺				I_γ : $I_\gamma=0.031$ 11 for the composite peak.
982.33 ^e 17	0.02 ^e 1	2851.73	1 ⁻	1869.518	2 ⁺				I_γ : $I_\gamma=0.031$ 11 for the composite peak.
984.65 ^e 20	0.04 ^e 2	2140.15	(3)	1155.851	4 ⁺				I_γ : $I_\gamma=0.091$ 14 for the composite peak.
984.65 ^e 20	0.03 ^e 1	2271.253	2 ⁻	1286.721	3 ⁻				I_γ : $I_\gamma=0.091$ 14 for the composite peak.
984.65 ^{ef} 20	0.02 ^e 1	3061.83	1 ⁺	2077.37	3 ⁻				I_γ : $I_\gamma=0.091$ 14 for the composite peak.
986.15 ^e 11	0.20 ^e 5	1952.31	0 ⁺	966.174	2 ⁺				I_γ : $I_\gamma=0.263$ 12 for the composite peak.
986.15 ^e 11	0.02 ^e 1	2372.31	6 ⁻	1386.455	4 ⁻				I_γ : $I_\gamma=0.263$ 12 for the composite peak.
987.91 ^e 11	0.28 ^e 4	2143.74	4 ⁻	1155.851	4 ⁺				I_γ : $I_\gamma=0.364$ 16 for the composite peak.
987.91 ^e 11	0.08 ^e 3	2386.90	2 ⁺ ,3 ⁺	1398.969	3 ⁻				I_γ : $I_\gamma=0.364$ 16 for the composite peak.
989.75 5	0.77 3	2697.826	2 ⁺	1708.14	0 ⁺				
992.71 11	0.188 25	2701.048	1 ⁻	1708.14	0 ⁺				
994.76 13	0.40 5	2393.55	2,3 ⁻	1398.969	3 ⁻				
995.9 3	0.09 3	2354.631	2 ⁺	1358.693	2 ⁻				
1000.2 4	0.046 15	2049.51	2 ⁺ ,3	1049.113	3 ⁺				
1002.90 5	1.98 18	1286.721	3 ⁻	283.820	4 ⁺	E1+M2	-0.013 9	1.24×10 ⁻³	$\alpha(K)=0.001063$ 16; $\alpha(L)=0.0001411$ 21; $\alpha(M)=3.06\times 10^{-5}$ 5 $\alpha(N)=7.06\times 10^{-6}$ 11; $\alpha(O)=1.032\times 10^{-6}$ 15; $\alpha(P)=5.93\times 10^{-8}$ 9 δ : from ¹⁶⁰ Tb β ⁻ decay. I(ce(K))=0.0021 4.
1004.86 ^e 2	11.5 ^e 3	1288.670	5 ⁺	283.820	4 ⁺	E2+M1	-13 +3-7	0.00303	$\alpha(K)=0.00254$ 4; $\alpha(L)=0.000378$ 6; $\alpha(M)=8.30\times 10^{-5}$ 12 $\alpha(N)=1.91\times 10^{-5}$ 3; $\alpha(O)=2.76\times 10^{-6}$ 4; $\alpha(P)=1.468\times 10^{-7}$ 22 I(ce(K))=0.032 4. I_γ : $I_\gamma=11.5$ 3 for the composite peak. δ : 1994SIZZ report $\delta=+7.1 +8-10$. I_γ : $I_\gamma=11.5$ 3 for the composite peak.
1004.86 ^e 2	0.10 ^e 5	2354.631	2 ⁺	1349.764	2 ⁺				
1006.4 3	0.10 3	2271.253	2 ⁻	1264.767	2 ⁻				
1010.8 2	0.048 10	2297.49	2 ⁺	1286.721	3 ⁻				
1013.22 15	0.044 13	1594.38	6 ⁻	581.069	6 ⁺	E1(+M2)	-0.2 7	0.0017 48	$\alpha(K)=0.0014$ 40; $\alpha(L)=1.9\times 10^{-4}$ 60; $\alpha(M)=4.E-5$ 14 $\alpha(N)=1.0\times 10^{-5}$ 31; $\alpha(O)=1.4\times 10^{-6}$ 45; $\alpha(P)=8.E-8$ 26
1018.26 5	0.363 15	2661.522	2 ⁻	1643.28	3 ⁻				
1020.63 13	0.145 23	2777.62	2 ⁺ ,3 ⁺ ,4 ⁺	1756.920	2 ⁺				
^x 1022.62 12	0.195 25								

γ(¹⁶⁰Dy) (continued)

E_γ †‡	I_γ †#	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	δ &c	α^b	Comments
1025.76 7	0.148 15	1606.83	6 ⁺	581.069	6 ⁺				
1028.26 ^e 5	0.08 ^e 3	2077.37	3 ⁻	1049.113	3 ⁺				I_γ : $I_\gamma=0.186$ 25 for the composite peak.
1028.26 ^e 5	0.10 ^e 5	2386.90	2 ⁺ ,3 ⁺	1358.693	2 ⁻				I_γ : $I_\gamma=0.186$ 25 for the composite peak.
1030.95 4	0.480 18	2681.828	5 ⁺	1650.882	4 ⁻ ,5 ⁻	(E1)		1.18×10^{-3}	$\alpha(K)=0.001009$ 15; $\alpha(L)=0.0001337$ 19; $\alpha(M)=2.90 \times 10^{-5}$ 4 $\alpha(N)=6.69 \times 10^{-6}$ 10; $\alpha(O)=9.78 \times 10^{-7}$ 14; $\alpha(P)=5.63 \times 10^{-8}$ 8 $I(\text{ce}(K))<0.001$.
1032.84 ^e 7	0.11 ^e 3	1613.99	7 ⁻	581.069	6 ⁺	E1+M2	>0.0	0.0067 55	$\alpha(K)=0.0056$ 47; $\alpha(L)=8.3 \times 10^{-4}$ 70; $\alpha(M)=1.8 \times 10^{-4}$ 16 $\alpha(N)=4.2 \times 10^{-5}$ 36; $\alpha(O)=6.2 \times 10^{-6}$ 52; $\alpha(P)=3.5 \times 10^{-7}$ 30
1032.84 ^e 7	0.03 ^e 1	2297.49	2 ⁺	1264.767	2 ⁻				I_γ : $I_\gamma=0.132$ 13 for the composite peak.
1036.22 5	0.47 4	1617.28	7 ⁺	581.069	6 ⁺	E2+M1	7.2 10	0.00287 5	I_γ : $I_\gamma=0.132$ 13 for the composite peak. $\alpha(N)=1.80 \times 10^{-5}$ 3; $\alpha(O)=2.60 \times 10^{-6}$ 4; $\alpha(P)=1.394 \times 10^{-7}$ 21 $\alpha(N)=1.778 \times 10^{-5}$ 25; $\alpha(O)=2.56 \times 10^{-6}$ 4; $\alpha(P)=1.373 \times 10^{-7}$ 20 $I(\text{ce}(K))=0.0012$ 3.
1038.59 4	0.67 5	2194.44	5 ⁺	1155.851	4 ⁺	E2		0.00281	$\alpha(K)=0.00237$ 4; $\alpha(L)=0.000349$ 5; $\alpha(M)=7.68 \times 10^{-5}$ 11 $\alpha(N)=1.769 \times 10^{-5}$ 25; $\alpha(O)=2.55 \times 10^{-6}$ 4; $\alpha(P)=1.367 \times 10^{-7}$ 20 $I(\text{ce}(K))=0.0016$ 3.
1041.94 20	0.073 11	2090.88	2 ⁻ ,3 ⁻	1049.113	3 ⁺				
1047.76 3	4.61 9	2096.896	4 ⁺	1049.113	3 ⁺	E2+M1	-2.81 +24-26	0.00299 6	$\alpha(K)=0.00252$ 5; $\alpha(L)=0.000367$ 7; $\alpha(M)=8.05 \times 10^{-5}$ 15 $\alpha(N)=1.86 \times 10^{-5}$ 4; $\alpha(O)=2.69 \times 10^{-6}$ 5; $\alpha(P)=1.47 \times 10^{-7}$ 3 δ : from 1994SIZZ. $I(\text{ce}(K))=0.010$ 2.
1049.6 5	0.109 20	3061.83	1 ⁺	2012.85	2 ⁺				
1052.63 8	0.186 19	2208.42	4 ⁺	1155.851	4 ⁺				
1055.2 1	0.01 1	2021.95	9 ⁺	966.75	8 ⁺	E2+M1	7.0 12	0.00276 5	$\alpha(K)=0.00233$ 4; $\alpha(L)=0.000341$ 6; $\alpha(M)=7.50 \times 10^{-5}$ 12 $\alpha(N)=1.73 \times 10^{-5}$ 3; $\alpha(O)=2.50 \times 10^{-6}$ 4; $\alpha(P)=1.345 \times 10^{-7}$ 21 I_γ : from the in-beam study of 2002Ju08, $I_\gamma(1055\gamma)/I_\gamma(404\gamma)=2.1$.
1058.25 4	0.296 15	2323.09	1 ⁺ ,2 ⁺	1264.767	2 ⁻				
1062.0 3	0.08 3	2665.78	2 ⁺ ,3 ⁺ ,4 ⁺	1603.79	4 ⁺				
1066.0 1	0.6 2	1349.764	2 ⁺	283.820	4 ⁺	E2		0.00267	$\alpha(K)=0.00225$ 4; $\alpha(L)=0.000330$ 5;

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

$\gamma(^{160}\text{Dy})$ (continued)										
$E_\gamma^{\ddagger\ddagger}$	$I_\gamma^{\ddagger\#}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. @	$\delta\&c$	α^b	$I_{(\gamma+ce)}^\ddagger$	Comments
1067.9 1	0.35 4	2354.631	2 ⁺	1286.721	3 ⁻					$\alpha(\text{M})=7.24\times 10^{-5}$ 11 $\alpha(\text{N})=1.669\times 10^{-5}$ 24; $\alpha(\text{O})=2.41\times 10^{-6}$ 4; $\alpha(\text{P})=1.297\times 10^{-7}$ 19 $I(\text{ce}(\text{K}))=0.0020$ 5.
1069.04 ^e 3	16.0 ^e 4	1155.851	4 ⁺	86.789	2 ⁺	E2		0.00265		$\alpha(\text{K})=0.00223$ 4; $\alpha(\text{L})=0.000328$ 5; $\alpha(\text{M})=7.20\times 10^{-5}$ 10 $\alpha(\text{N})=1.659\times 10^{-5}$ 24; $\alpha(\text{O})=2.39\times 10^{-6}$ 4; $\alpha(\text{P})=1.290\times 10^{-7}$ 18 $I(\text{ce}(\text{K}))=0.036$ 5. I_γ : $I_\gamma=16.5$ 4 for the composite peak. δ : 1998Kr21 report $\delta(\text{M3/E2})=-0.04$ 5. From low-temperature nuclear orientation, 1994SIZZ report $\delta(\text{M3/E2})=-0.079$ 21. The implied B(M3) is much larger than that consistent with RUL. Note this γ connects a member of the γ vibration with a member of the g.s. band. Such transitions typically have B(E2) values of the order of a few Weisskopf units. Choosing a reasonable value of 1.0 B(E2)(W.u.) for the B(E2) value of the 1069 γ , the evaluator finds that RUL implies $\delta(\text{M3/E2})<0.0013$.
1069.04 ^e 3	0.20 ^e 5	2354.631	2 ⁺	1285.607	1 ⁻					
1070.8 3	0.23 3	1651.95	4 ⁺ ,5,6 ⁺	581.069	6 ⁺					
1074.85 4	0.006 2	1358.693	2 ⁻	283.820	4 ⁺	M2		0.01097		$\alpha(\text{K})=0.00923$ 13; $\alpha(\text{L})=0.001363$ 19; $\alpha(\text{M})=0.000300$ 5 $\alpha(\text{N})=6.95\times 10^{-5}$ 10; $\alpha(\text{O})=1.019\times 10^{-5}$ 15; $\alpha(\text{P})=5.86\times 10^{-7}$ 9
1075.3 4	0.043 22	2719.02	2 ⁻	1643.28	3 ⁻					
1077.25 6	0.36 4	2126.37	3 ⁻	1049.113	3 ⁺					
1081.50 13	0.16 4	2130.586	3 ⁻	1049.113	3 ⁺	E1		1.08×10^{-3}		$\alpha(\text{K})=0.000924$ 13; $\alpha(\text{L})=0.0001222$ 18; $\alpha(\text{M})=2.65\times 10^{-5}$ 4 $\alpha(\text{N})=6.11\times 10^{-6}$ 9; $\alpha(\text{O})=8.94\times 10^{-7}$ 13; $\alpha(\text{P})=5.16\times 10^{-8}$ 8 $I(\text{ce}(\text{K}))<0.0005$.
1083.70 5	0.36 5	2372.31	6 ⁻	1288.670	5 ⁺	E1		1.08×10^{-3}		$\alpha(\text{K})=0.000921$ 13; $\alpha(\text{L})=0.0001217$ 17; $\alpha(\text{M})=2.64\times 10^{-5}$ 4 $\alpha(\text{N})=6.09\times 10^{-6}$ 9; $\alpha(\text{O})=8.91\times 10^{-7}$ 13; $\alpha(\text{P})=5.14\times 10^{-8}$ 8
1087.48 15	0.11 2	2681.828	5 ⁺	1594.38	6 ⁻					
1089.63 15	0.80 6	2354.631	2 ⁺	1264.767	2 ⁻	E1		1.07×10^{-3}		$\alpha(\text{K})=0.000911$ 13; $\alpha(\text{L})=0.0001205$ 17; $\alpha(\text{M})=2.61\times 10^{-5}$ 4

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ</u> †‡	<u>I_γ</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&c</u>	<u>α^b</u>	<u>Comments</u>
1091.1 3	0.36 5	2140.15	(3)	1049.113	3 ⁺				α(N)=6.03×10 ⁻⁶ 9; α(O)=8.82×10 ⁻⁷ 13; α(P)=5.09×10 ⁻⁸ 8 I(ce(K))=0.0012 2.
1094.6 1	0.13 3	2143.74	4 ⁻	1049.113	3 ⁺				Mult.: 2002Ad34 propose mult=(E1).
1095.01 ^e 3	1.6 ^e 3	2383.70	6 ⁻	1288.670	5 ⁺	(E1)		1.06×10 ⁻³	α(K)=0.000903 13; α(L)=0.0001194 17; α(M)=2.59×10 ⁻⁵ 4 α(N)=5.97×10 ⁻⁶ 9; α(O)=8.74×10 ⁻⁷ 13; α(P)=5.05×10 ⁻⁸ 7 I _γ : I _γ =1.78 5 for the composite peak. I(ce(K))=0.0018 4.
1095.01 ^e 3	0.20 ^e 5	2681.828	5 ⁺	1586.748	5 ⁻				I _γ : I _γ =1.78 5 for the composite peak.
1100.14 8	0.23 5	2386.90	2 ⁺ ,3 ⁺	1286.721	3 ⁻				
1102.60 4	0.93 4	1386.455	4 ⁻	283.820	4 ⁺	E1+M2	+0.0049 12	1.04×10 ⁻³	α(K)=0.000892 13; α(L)=0.0001179 17; α(M)=2.56×10 ⁻⁵ 4 α(N)=5.90×10 ⁻⁶ 9; α(O)=8.63×10 ⁻⁷ 12; α(P)=4.99×10 ⁻⁸ 7; α(IPF)=1.86×10 ⁻⁶ 3 δ: from ¹⁶⁰ Tb β ⁻ decay.
1106.5 3	0.15 5	2393.55	2,3 ⁻	1286.721	3 ⁻				
1107.6 3	0.16 5	2393.55	2,3 ⁻	1285.607	1 ⁻				
1111.11 ^e 18	0.14 ^e 4	2077.37	3 ⁻	966.174	2 ⁺				I _γ : I _γ =0.27 6 for the composite peak.
1111.11 ^e 18	0.13 ^e 4	2469.51	3 ⁻	1358.693	2 ⁻				I _γ : I _γ =0.27 6 for the composite peak.
1112.33 10	1.10 10	2630.714	1 ⁻	1518.421	2 ⁺	E1		1.03×10 ⁻³	α(K)=0.000878 13; α(L)=0.0001160 17; α(M)=2.51×10 ⁻⁵ 4 α(N)=5.80×10 ⁻⁶ 9; α(O)=8.49×10 ⁻⁷ 12; α(P)=4.91×10 ⁻⁸ 7; α(IPF)=2.61×10 ⁻⁶ 4 I(ce(K))=0.00097 20.
1115.16 3	2.18 4	1398.969	3 ⁻	283.820	4 ⁺	E1(+M2)	+0.001 3	1.02×10 ⁻³	α(K)=0.000874 13; α(L)=0.0001154 17; α(M)=2.50×10 ⁻⁵ 4 α(N)=5.78×10 ⁻⁶ 8; α(O)=8.45×10 ⁻⁷ 12; α(P)=4.89×10 ⁻⁸ 7; α(IPF)=2.87×10 ⁻⁶ 4 I(ce(K))=0.0019 3.
1116.3 1	0.10 5	2165.42		1049.113	3 ⁺				
1122.10 4	0.97 3	2386.90	2 ⁺ ,3 ⁺	1264.767	2 ⁻	E1		1.01×10 ⁻³	α(K)=0.000864 12; α(L)=0.0001141 16; α(M)=2.47×10 ⁻⁵ 4 α(N)=5.71×10 ⁻⁶ 8; α(O)=8.35×10 ⁻⁷ 12; α(P)=4.83×10 ⁻⁸ 7; α(IPF)=3.60×10 ⁻⁶ 5 I(ce(K))=0.0008 2.
1124.68 ^e 4	0.48 ^e 9	1408.47	5 ⁻	283.820	4 ⁺	E1		1.01×10 ⁻³	α(K)=0.000861 12; α(L)=0.0001136 16; α(M)=2.46×10 ⁻⁵ 4 α(N)=5.69×10 ⁻⁶ 8; α(O)=8.32×10 ⁻⁷ 12; α(P)=4.81×10 ⁻⁸ 7; α(IPF)=3.91×10 ⁻⁶ 6 I _γ : I _γ =0.83 3 for the composite peak. I(ce(K))=0.0007 2.
1124.68 ^e 4	0.35 ^e 4	2090.88	2 ⁻ ,3 ⁻	966.174	2 ⁺				I _γ : I _γ =0.83 3 for the composite peak.
1126.6 3	0.053 12	2661.522	2 ⁻	1535.155	4 ⁻				
1128.7 1	0.08 2	2393.55	2,3 ⁻	1264.767	2 ⁻				

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †#</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^b</u>	<u>Comments</u>
1130.71 2	6.4 2	2096.896	4 ⁺	966.174	2 ⁺	E2	0.00237	α(K)=0.00200 3; α(L)=0.000290 4; α(M)=6.36×10 ⁻⁵ 9 α(N)=1.466×10 ⁻⁵ 21; α(O)=2.12×10 ⁻⁶ 3; α(P)=1.154×10 ⁻⁷ 17; α(IPF)=8.56×10 ⁻⁷ 12 I(ce(K))=0.013 2.
1134.2 5	0.038 16	2777.62	2 ⁺ ,3 ⁺ ,4 ⁺	1643.28	3 ⁻			
1140.71 5	0.15 4	2630.24	(1,2) ⁺	1489.503	1 ⁻	E1	9.86×10 ⁻⁴	α(K)=0.000839 12; α(L)=0.0001107 16; α(M)=2.40×10 ⁻⁵ 4 α(N)=5.54×10 ⁻⁶ 8; α(O)=8.10×10 ⁻⁷ 12; α(P)=4.69×10 ⁻⁸ 7; α(IPF)=6.29×10 ⁻⁶ 9
1141.3 1	0.09 2	2630.714	1 ⁻	1489.503	1 ⁻	E2	0.00232	α(K)=0.00196 3; α(L)=0.000284 4; α(M)=6.23×10 ⁻⁵ 9 α(N)=1.437×10 ⁻⁵ 21; α(O)=2.08×10 ⁻⁶ 3; α(P)=1.133×10 ⁻⁷ 16; α(IPF)=1.208×10 ⁻⁶ 18
1143.04 9	0.097 12	2661.522	2 ⁻	1518.421	2 ⁺			
1145.33 4	0.54 2	2194.44	5 ⁺	1049.113	3 ⁺	E2	0.00231	α(K)=0.00195 3; α(L)=0.000282 4; α(M)=6.18×10 ⁻⁵ 9 α(N)=1.426×10 ⁻⁵ 20; α(O)=2.06×10 ⁻⁶ 3; α(P)=1.125×10 ⁻⁷ 16; α(IPF)=1.368×10 ⁻⁶ 20 Mult.: 2002Ad34 report mult=M1,E2. Placement requires E2. I(ce(K))=0.0014 3.
^x 1150.0 5	0.041 20							
^x 1152.2 2	0.082 20							
1154.68 9	0.64 8	1438.57	6 ⁺	283.820	4 ⁺	E2	0.00227	α(K)=0.00192 3; α(L)=0.000277 4; α(M)=6.08×10 ⁻⁵ 9 α(N)=1.401×10 ⁻⁵ 20; α(O)=2.03×10 ⁻⁶ 3; α(P)=1.107×10 ⁻⁷ 16; α(IPF)=1.80×10 ⁻⁶ 3 I(ce(K))=0.0011 3.
1156.32 9	0.84 8	2674.720	1 ⁻	1518.421	2 ⁺	E1	9.66×10 ⁻⁴	α(K)=0.000819 12; α(L)=0.0001080 16; α(M)=2.34×10 ⁻⁵ 4 α(N)=5.40×10 ⁻⁶ 8; α(O)=7.91×10 ⁻⁷ 11; α(P)=4.58×10 ⁻⁸ 7; α(IPF)=9.51×10 ⁻⁶ 14 I(ce(K))=0.00066 17.
1159.1 3	0.37 7	2208.42	4 ⁺	1049.113	3 ⁺	E2	0.00225	α(K)=0.00190 3; α(L)=0.000275 4; α(M)=6.02×10 ⁻⁵ 9 α(N)=1.389×10 ⁻⁵ 20; α(O)=2.01×10 ⁻⁶ 3; α(P)=1.099×10 ⁻⁷ 16; α(IPF)=2.04×10 ⁻⁶ 4 I(ce(K))=0.0006 2.
1160.2 3	0.33 5	2126.37	3 ⁻	966.174	2 ⁺			
1164.35 4	0.72 3	2130.586	3 ⁻	966.174	2 ⁺	E1	9.56×10 ⁻⁴	α(K)=0.000809 12; α(L)=0.0001066 15; α(M)=2.31×10 ⁻⁵ 4 α(N)=5.33×10 ⁻⁶ 8; α(O)=7.81×10 ⁻⁷ 11; α(P)=4.52×10 ⁻⁸ 7; α(IPF)=1.154×10 ⁻⁵ 17 I(ce(K))=0.0008 2.
1171.97 ^e 6	0.16 ^e 4	2138.21	2 ⁺	966.174	2 ⁺			I _γ : I _γ =1.13 5 for the composite peak.
1171.97 ^e 6	0.97 ^e 8	2661.522	2 ⁻	1489.503	1 ⁻	E2,M1	0.0029 8	α(K)=0.0025 7; α(L)=0.00035 8; α(M)=7.6×10 ⁻⁵ 17 α(N)=1.7×10 ⁻⁵ 4; α(O)=2.6×10 ⁻⁶ 6; α(P)=1.47×10 ⁻⁷ 40; α(IPF)=3.09×10 ⁻⁶ 23 I _γ : I _γ =1.13 5 for the composite peak. I(ce(K))=0.0035 8.

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γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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&c</u>	<u>α^b</u>	<u>Comments</u>
1173.95 ^e 5	0.5 ^e 1	2140.15	(3)	966.174	2 ⁺				I _γ : I _γ =2.16 6 for the composite peak.
1173.95 ^e 5	1.6 ^e 3	2630.714	1 ⁻	1456.757	0 ⁺	(E1)		9.45×10 ⁻⁴	α(K)=0.000797 12; α(L)=0.0001050 15; α(M)=2.28×10 ⁻⁵ 4 α(N)=5.25×10 ⁻⁶ 8; α(O)=7.69×10 ⁻⁷ 11; α(P)=4.46×10 ⁻⁸ 7; α(IPF)=1.432×10 ⁻⁵ 21 I(ce(K))=0.0015 3.
1177.98 3	3.96 8	1264.767	2 ⁻	86.789	2 ⁺	E1+M2	-0.0207 23	9.44×10 ⁻⁴	I _γ : I _γ =2.16 6 for the composite peak. α(K)=0.000795 12; α(L)=0.0001048 15; α(M)=2.27×10 ⁻⁵ 4 α(N)=5.24×10 ⁻⁶ 8; α(O)=7.67×10 ⁻⁷ 11; α(P)=4.45×10 ⁻⁸ 7; α(IPF)=1.558×10 ⁻⁵ 22 I(ce(K))=0.0032 5.
1182.68 3	1.65 4	2701.048	1 ⁻	1518.421	2 ⁺	E1		9.36×10 ⁻⁴	δ: from ¹⁶⁰ Tb β ⁻ decay. α(K)=0.000786 11; α(L)=0.0001036 15; α(M)=2.25×10 ⁻⁵ 4 α(N)=5.18×10 ⁻⁶ 8; α(O)=7.59×10 ⁻⁷ 11; α(P)=4.40×10 ⁻⁸ 7; α(IPF)=1.715×10 ⁻⁵ 24 I(ce(K))=0.0013 4.
1185.20 15	0.126 7	2674.720	1 ⁻	1489.503	1 ⁻				
1193.17 3	1.38 6	1279.945	0 ⁺	86.789	2 ⁺	(E2)		0.00213	α(K)=0.00180 3; α(L)=0.000258 4; α(M)=5.66×10 ⁻⁵ 8 α(N)=1.305×10 ⁻⁵ 19; α(O)=1.89×10 ⁻⁶ 3; α(P)=1.038×10 ⁻⁷ 15; α(IPF)=4.64×10 ⁻⁶ 7 I(ce(K))=0.0025 5.
1198.84 ^e 4	8.0 ^e 3	1285.607	1 ⁻	86.789	2 ⁺	E1		9.20×10 ⁻⁴	α(K)=0.000768 11; α(L)=0.0001011 15; α(M)=2.19×10 ⁻⁵ 3 α(N)=5.06×10 ⁻⁶ 7; α(O)=7.40×10 ⁻⁷ 11; α(P)=4.29×10 ⁻⁸ 6; α(IPF)=2.31×10 ⁻⁵ 4 I _γ : I _γ =8.3 3 for the composite peak. I(ce(K))=0.0060 12.
1198.84 ^e 4	0.3 ^e 1	2354.631	2 ⁺	1155.851	4 ⁺				I _γ : I _γ =8.3 3 for the composite peak.
1199.89 4	4.3 3	1286.721	3 ⁻	86.789	2 ⁺	E1+M2	-0.008 3	9.19×10 ⁻⁴	α(K)=0.000767 11; α(L)=0.0001010 15; α(M)=2.19×10 ⁻⁵ 3 α(N)=5.05×10 ⁻⁶ 7; α(O)=7.40×10 ⁻⁷ 11; α(P)=4.29×10 ⁻⁸ 6; α(IPF)=2.35×10 ⁻⁵ 4 I(ce(K))=0.0041 10. δ: from ¹⁶⁰ Tb β ⁻ decay.
1202.15 12	0.22 3	2720.58	3 ⁻	1518.421	2 ⁺				
1206.7 1	0.02 1	1787.82	6 ⁻	581.069	6 ⁺				
1208.28 12	0.32 2	2697.826	2 ⁺	1489.503	1 ⁻				
1211.71 6	0.29 2	2367.47	2 ⁺ ,3 ⁺ ,4 ⁺	1155.851	4 ⁺				
1214.45 23	0.082 18	2704.230	2 ⁻ ,3 ⁻	1489.503	1 ⁻				
1216.37 7	0.48 3	2734.720	1 ⁻	1518.421	2 ⁺	E1		9.04×10 ⁻⁴	α(K)=0.000748 11; α(L)=9.85×10 ⁻⁵ 14;

γ(¹⁶⁰Dy) (continued)

<u>E_γ</u> †‡	<u>I_γ</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&c</u>	<u>α^b</u>	<u>Comments</u>
									α(M)=2.13×10 ⁻⁵ 3 α(N)=4.93×10 ⁻⁶ 7; α(O)=7.21×10 ⁻⁷ 10; α(P)=4.19×10 ⁻⁸ 6; α(IPF)=3.04×10 ⁻⁵ 5 I(ce(K))<0.0005.
1218.05 5	0.49 3	2674.720	1 ⁻	1456.757	0 ⁺	E1		9.02×10 ⁻⁴	α(K)=0.000746 11; α(L)=9.82×10 ⁻⁵ 14; α(M)=2.13×10 ⁻⁵ 3 α(N)=4.91×10 ⁻⁶ 7; α(O)=7.19×10 ⁻⁷ 10; α(P)=4.18×10 ⁻⁸ 6; α(IPF)=3.11×10 ⁻⁵ 5 I(ce(K))<0.0005.
1221.21 5	0.28 3	1802.233	5 ⁺	581.069	6 ⁺	E2,M1		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)=2.3×10 ⁻⁶ 6; α(P)=1.34×10 ⁻⁷ 35; α(IPF)=8.3×10 ⁻⁶ 7 I(ce(K))=0.0009 3.
^x 1227.8 5	0.025 15								
1229.52 25	0.064 6	2719.02	2 ⁻	1489.503	1 ⁻				
1234.60 3	1.67 4	1518.421	2 ⁺	283.820	4 ⁺	E2		0.00200	α(K)=0.001680 24; α(L)=0.000240 4; α(M)=5.26×10 ⁻⁵ 8 α(N)=1.213×10 ⁻⁵ 17; α(O)=1.760×10 ⁻⁶ 25; α(P)=9.71×10 ⁻⁸ 14; α(IPF)=9.44×10 ⁻⁶ 14 I(ce(K))=0.0021 5.
1238.6 2	0.14 2	1522.34	4 ⁺	283.820	4 ⁺				
1240.36 20	0.55 4	2729.84	2 ⁻	1489.503	1 ⁻	E2		0.00198	α(K)=0.001665 24; α(L)=0.000238 4; α(M)=5.21×10 ⁻⁵ 8 α(N)=1.201×10 ⁻⁵ 17; α(O)=1.743×10 ⁻⁶ 25; α(P)=9.62×10 ⁻⁸ 14; α(IPF)=1.022×10 ⁻⁵ 15 I(ce(K))=0.0009 3.
1241.9 3	0.41 4	2208.42	4 ⁺	966.174	2 ⁺	E2		0.00197	α(K)=0.001661 24; α(L)=0.000237 4; α(M)=5.20×10 ⁻⁵ 8 α(N)=1.198×10 ⁻⁵ 17; α(O)=1.739×10 ⁻⁶ 25; α(P)=9.60×10 ⁻⁸ 14; α(IPF)=1.043×10 ⁻⁵ 16 I(ce(K))=0.0009 3.
1244.22 4	1.06 4	2701.048	1 ⁻	1456.757	0 ⁺	E1		8.82×10 ⁻⁴	α(K)=0.000719 10; α(L)=9.45×10 ⁻⁵ 14; α(M)=2.05×10 ⁻⁵ 3 α(N)=4.73×10 ⁻⁶ 7; α(O)=6.92×10 ⁻⁷ 10; α(P)=4.02×10 ⁻⁸ 6; α(IPF)=4.28×10 ⁻⁵ 6 I(ce(K))<0.0005.
1245.8 6	0.052 20	2734.720	1 ⁻	1489.503	1 ⁻				
1248.26 5	0.16 2	2297.49	2 ⁺	1049.113	3 ⁺				
1251.28 4	0.28 2	1535.155	4 ⁻	283.820	4 ⁺	E1(+M2)	-0.01 3	8.78×10 ⁻⁴ 16	α(K)=0.000712 13; α(L)=9.36×10 ⁻⁵ 18; α(M)=2.03×10 ⁻⁵ 4 α(N)=4.68×10 ⁻⁶ 9; α(O)=6.86×10 ⁻⁷ 14; α(P)=3.99×10 ⁻⁸ 8; α(IPF)=4.61×10 ⁻⁵ 7 δ: from ¹⁶⁰ Tb β ⁻ decay. 2002Ad34 report mult=(E1). I(ce(K))<0.0002.
1259.10 7	0.218 15	2777.62	2 ⁺ ,3 ⁺ ,4 ⁺	1518.421	2 ⁺				

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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&c</u>	<u>α^b</u>	<u>I_(γ+ce)[†]</u>	<u>Comments</u>
1260.82 20 1262.83 ^e 6	0.16 3 1.0 ^e 3	2309.91 1349.764	2 ⁺ ,3,4 ⁺ 2 ⁺	1049.113 86.789	3 ⁺ 2 ⁺	E0+E2+M1	-1.5 +7-20			α(exp)=0.017 6 α: calculated by evaluator based on measured I(ce(K)) and I _γ , calculated α(K) and α for M1+E2, and electronic factors Ω _K (E0) and Ω(E0), respectively. I(ce(K))=0.015 3. I _γ : I _γ =1.77 7 for the composite peak. δ: 1994SIZZ report δ(E2/M1)=-1.0 +∞-4. according to 2008VaZU 90% contribution in conversion gives E0 component, from which they deduced parameter B(E0)/B(E2)=0.29 6 and ρ ² =0.028 7 (the evaluator could not check these values).
1262.83 ^e 6	0.8 ^e 3	2661.522	2 ⁻	1398.969	3 ⁻					E _γ : level-energy difference=1262.55. E _γ =1262.83 for doublet.
1271.0		1952.31	0 ⁺	681.3?	(0 ⁺)	(E0)			0.0027	I _γ : I _γ =1.77 7 for the composite peak. E _γ ,Mult.: from 2009Ad04. I _(γ+ce) : calculated by evaluator based on measured I(ce(K)) and ratio of electronic factors Ω _K (E0)\Ω(E0)=0.876. I(ce(K))=0.0024 (2009Ad04).
1271.89 ^e 2	12.6 ^e 5	1358.693	2 ⁻	86.789	2 ⁺	E1+M2	+0.0166 25	8.63×10 ⁻⁴		α(K)=0.000691 10; α(L)=9.09×10 ⁻⁵ 13; α(M)=1.97×10 ⁻⁵ 3 α(N)=4.54×10 ⁻⁶ 7; α(O)=6.66×10 ⁻⁷ 10; α(P)=3.87×10 ⁻⁸ 6; α(IPF)=5.58×10 ⁻⁵ 8 I _γ : I _γ =15.5 5 for the composite peak. δ: 1998Kr21 report δ(M2/E1)=-0.07 +15-14. I(ce(K))=0.012 2.
1271.89 ^e 2	2.9 ^e 5	2630.714	1 ⁻	1358.693	2 ⁻					E _γ : level-energy difference=1272.02. E _γ =1271.89 for doublet.
1274.25 12	0.50 3	2323.09	1 ⁺ ,2 ⁺	1049.113	3 ⁺	E2		0.00188		I _γ : I _γ =15.5 5 for the composite peak. α(K)=0.001580 23; α(L)=0.000225 4; α(M)=4.92×10 ⁻⁵ 7 α(N)=1.135×10 ⁻⁵ 16; α(O)=1.648×10 ⁻⁶

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †#</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^b</u>	<u>I_(γ+ce) †</u>	<u>Comments</u>
									23; α(P)=9.13×10 ⁻⁸ 13; α(IPF)=1.520×10 ⁻⁵ 22 I(ce(K))=0.0007 2.
1276.0 ^e 3	0.05 ^e 2	2634.74		1358.693	2 ⁻				I _γ : I _γ =0.084 20 for the composite peak.
1276.0 ^e 3	0.03 ^e 1	2674.720	1 ⁻	1398.969	3 ⁻				I _γ : I _γ =0.084 20 for the composite peak.
1278.1 2	0.348 25	2734.720	1 ⁻	1456.757	0 ⁺				
1279.2 1	0.12 2	1860.18	5 ⁻	581.069	6 ⁺	E1(+M2)	0.00092 7		α(K)=0.00074 6; α(L)=9.8×10 ⁻⁵ 8; α(M)=2.12×10 ⁻⁵ 17 α(N)=4.9×10 ⁻⁶ 4; α(O)=7.2×10 ⁻⁷ 6; α(P)=4.2×10 ⁻⁸ 4; α(IPF)=5.88×10 ⁻⁵ 10
1280.0 3		1279.945	0 ⁺	0.0	0 ⁺	E0		0.0061 11	I _(γ+ce) : calculated by evaluator based on measured I(ce(K)) and ratio of electronic factors Ω _K (E0)\Ω(E0)=0.876. I(ce(K))=0.0053 10 (2002Ad34). B(E0)/B(E2)=0.3 (2009Ad04).
1280.93 3	0.86 3	2630.714	1 ⁻	1349.764	2 ⁺	(E1)	8.57×10 ⁻⁴		α(K)=0.000683 10; α(L)=8.97×10 ⁻⁵ 13; α(M)=1.94×10 ⁻⁵ 3 α(N)=4.49×10 ⁻⁶ 7; α(O)=6.57×10 ⁻⁷ 10; α(P)=3.82×10 ⁻⁸ 6; α(IPF)=6.02×10 ⁻⁵ 9
1285.60 2	10.0 2	1285.607	1 ⁻	0.0	0 ⁺	E1	8.55×10 ⁻⁴		α(K)=0.000678 10; α(L)=8.91×10 ⁻⁵ 13; α(M)=1.93×10 ⁻⁵ 3 α(N)=4.46×10 ⁻⁶ 7; α(O)=6.53×10 ⁻⁷ 10; α(P)=3.80×10 ⁻⁸ 6; α(IPF)=6.25×10 ⁻⁵ 9 I(ce(K))=0.0068 10.
1295.42 20	0.059 20	2681.828	5 ⁺	1386.455	4 ⁻				
1297.66 ^e 18	0.10 ^e 5	2696.43	2 ⁻ ,3 ⁻	1398.969	3 ⁻	E2	0.00182		α(K)=0.001525 22; α(L)=0.000216 3; α(M)=4.73×10 ⁻⁵ 7 α(N)=1.092×10 ⁻⁵ 16; α(O)=1.587×10 ⁻⁶ 23; α(P)=8.81×10 ⁻⁸ 13; α(IPF)=1.91×10 ⁻⁵ 3 I _γ : I _γ =0.15 3 for the composite peak.
1297.66 ^e 18	0.05 ^e 2	3098.98	6 ⁺	1801.16	8 ⁺	E2	0.00182		α(K)=0.001525 22; α(L)=0.000216 3; α(M)=4.73×10 ⁻⁵ 7 α(N)=1.092×10 ⁻⁵ 16; α(O)=1.587×10 ⁻⁶ 23; α(P)=8.81×10 ⁻⁸ 13; α(IPF)=1.91×10 ⁻⁵ 3 I _γ : I _γ =0.15 3 for the composite peak.
1302.84 ^e 3	0.20 ^e 5	1586.748	5 ⁻	283.820	4 ⁺	E1	8.45×10 ⁻⁴		α(K)=0.000663 10; α(L)=8.70×10 ⁻⁵ 13; α(M)=1.89×10 ⁻⁵ 3 α(N)=4.35×10 ⁻⁶ 6; α(O)=6.38×10 ⁻⁷ 9; α(P)=3.71×10 ⁻⁸ 6; α(IPF)=7.13×10 ⁻⁵ 10 I _γ : I _γ =1.10 3 for the composite peak. Mult.: 2002Ad34 report mult=E1,E2. Placement requires E1. I(ce(K))=0.0012 3.

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †#</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&c</u>	<u>α^b</u>	<u>Comments</u>
1302.84 ^e 3	0.9 ^e 2	2661.522	2 ⁻	1358.693	2 ⁻				I _γ : I _γ =1.10 3 for the composite peak.
1305.18 ^e 5	0.5 ^e 1	2271.253	2 ⁻	966.174	2 ⁺	E1		8.44×10 ⁻⁴	α(K)=0.000661 10; α(L)=8.67×10 ⁻⁵ 13; α(M)=1.88×10 ⁻⁵ 3 α(N)=4.34×10 ⁻⁶ 6; α(O)=6.36×10 ⁻⁷ 9; α(P)=3.70×10 ⁻⁸ 6; α(IPF)=7.25×10 ⁻⁵ 11 I _γ : I _γ =0.78 3 for the composite peak. Mult.: 2002Ad34 report mult=E1,E2. Placement requires E1. I(ce(K))=0.0009 2.
1305.18 ^e 5	0.3 ^e 1	2704.230	2 ⁻ ,3 ⁻	1398.969	3 ⁻				I _γ : I _γ =0.78 3 for the composite peak.
1312.16 2	3.83 8	1398.969	3 ⁻	86.789	2 ⁺	E1+M2	-0.15 3	0.00087 6	α(K)=0.00068 5; α(L)=8.9×10 ⁻⁵ 7; α(M)=1.94×10 ⁻⁵ 15 α(N)=4.5×10 ⁻⁶ 4; α(O)=6.6×10 ⁻⁷ 5; α(P)=3.8×10 ⁻⁸ 3; α(IPF)=7.59×10 ⁻⁵ 13 I(ce(K))=0.0025 5.
1316.04 ^e 8	0.10 ^e 5	2602.67	1 ⁻ ,2 ⁻	1286.721	3 ⁻				I _γ : I _γ =0.48 2 for the composite peak.
1316.04 ^e 8	0.4 ^e 1	2674.720	1 ⁻	1358.693	2 ⁻	E2		1.78×10 ⁻³	α(K)=0.001484 21; α(L)=0.000210 3; α(M)=4.60×10 ⁻⁵ 7 α(N)=1.061×10 ⁻⁵ 15; α(O)=1.542×10 ⁻⁶ 22; α(P)=8.58×10 ⁻⁸ 12; α(IPF)=2.25×10 ⁻⁵ 4 I _γ : I _γ =0.48 2 for the composite peak. I(ce(K))=0.0007 3.
1318.21 ^e 5	0.5 ^e 1	2367.47	2 ⁺ ,3 ⁺ ,4 ⁺	1049.113	3 ⁺	E2		1.77×10 ⁻³	α(K)=0.001479 21; α(L)=0.000209 3; α(M)=4.58×10 ⁻⁵ 7 α(N)=1.057×10 ⁻⁵ 15; α(O)=1.536×10 ⁻⁶ 22; α(P)=8.55×10 ⁻⁸ 12; α(IPF)=2.30×10 ⁻⁵ 4 I _γ : I _γ =0.91 3 for the composite peak. I(ce(K))=0.0013 3.
1318.21 ^e 5	0.4 ^e 1	2717.229	2 ⁺	1398.969	3 ⁻				I _γ : I _γ =0.91 3 for the composite peak.
1319.95 ^e 25	0.10 ^e 4	1603.79	4 ⁺	283.820	4 ⁺	E2		1.77×10 ⁻³	α(K)=0.001476 21; α(L)=0.000209 3; α(M)=4.57×10 ⁻⁵ 7 α(N)=1.054×10 ⁻⁵ 15; α(O)=1.532×10 ⁻⁶ 22; α(P)=8.53×10 ⁻⁸ 12; α(IPF)=2.33×10 ⁻⁵ 4 I _γ : I _γ =0.30 3 for the composite peak. I(ce(K))=0.0005 2.
1319.95 ^e 25	0.20 ^e 5	2719.02	2 ⁻	1398.969	3 ⁻				I _γ : I _γ =0.30 3 for the composite peak.
1321.5 3	0.21 3	2720.58	3 ⁻	1398.969	3 ⁻	E2		1.76×10 ⁻³	α(K)=0.001472 21; α(L)=0.000208 3; α(M)=4.56×10 ⁻⁵ 7 α(N)=1.051×10 ⁻⁵ 15; α(O)=1.528×10 ⁻⁶ 22; α(P)=8.51×10 ⁻⁸ 12; α(IPF)=2.36×10 ⁻⁵ 4 I(ce(K))=0.0003 2.
1322.86 23	0.34 4	1606.83	6 ⁺	283.820	4 ⁺	E2		1.76×10 ⁻³	α(K)=0.001469 21; α(L)=0.000208 3; α(M)=4.55×10 ⁻⁵ 7 α(N)=1.049×10 ⁻⁵ 15; α(O)=1.525×10 ⁻⁶ 22; α(P)=8.49×10 ⁻⁸ 12; α(IPF)=2.39×10 ⁻⁵ 4 I(ce(K))=0.0005 2.

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †#</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^b</u>	<u>Comments</u>
1324.94 23 1330.4 5	0.115 15 0.18 11	2674.720 2729.84	1 ⁻ 2 ⁻	1349.764 1398.969	2 ⁺ 3 ⁻	E2	1.74×10 ⁻³	α(K)=0.001453 21; α(L)=0.000205 3; α(M)=4.49×10 ⁻⁵ 7 α(N)=1.037×10 ⁻⁵ 15; α(O)=1.507×10 ⁻⁶ 22; α(P)=8.40×10 ⁻⁸ 12; α(IPF)=2.55×10 ⁻⁵ 4
1331.21 14	0.81 10	2297.49	2 ⁺	966.174	2 ⁺	E2	1.74×10 ⁻³	α(K)=0.001452 21; α(L)=0.000205 3; α(M)=4.49×10 ⁻⁵ 7 α(N)=1.036×10 ⁻⁵ 15; α(O)=1.506×10 ⁻⁶ 21; α(P)=8.39×10 ⁻⁸ 12; α(IPF)=2.56×10 ⁻⁵ 4 I(cc(K))=0.0015 2.
1333.5 4 1336.1 4 1337.8 ^e 2	0.21 8 0.07 3 0.20 ^e 5	2851.73 2734.720 2602.67	1 ⁻ 1 ⁻ 1 ⁻ ,2 ⁻	1518.421 1398.969 1264.767	2 ⁺ 3 ⁻ 2 ⁻	E2	1.72×10 ⁻³	α(K)=0.001438 21; α(L)=0.000203 3; α(M)=4.44×10 ⁻⁵ 7 α(N)=1.025×10 ⁻⁵ 15; α(O)=1.490×10 ⁻⁶ 21; α(P)=8.31×10 ⁻⁸ 12; α(IPF)=2.71×10 ⁻⁵ 4 I _γ : I _γ =1.00 15 for the composite peak.
1337.8 ^e 2	0.8 ^e 2	2696.43	2 ⁻ ,3 ⁻	1358.693	2 ⁻	E2	1.72×10 ⁻³	α(K)=0.001438 21; α(L)=0.000203 3; α(M)=4.44×10 ⁻⁵ 7 α(N)=1.025×10 ⁻⁵ 15; α(O)=1.490×10 ⁻⁶ 21; α(P)=8.31×10 ⁻⁸ 12; α(IPF)=2.71×10 ⁻⁵ 4 I _γ : I _γ =1.00 15 for the composite peak. I(cc(K))=0.0017 4.
1339.2 2 1341.5 4	0.53 5 0.20 6	2697.826 2701.048	2 ⁺ 1 ⁻	1358.693 1358.693	2 ⁻ 2 ⁻	E2,M1	0.0022 5	α(K)=0.0018 4; α(L)=0.00025 6; α(M)=5.6×10 ⁻⁵ 12 α(N)=1.3×10 ⁻⁵ 3; α(O)=1.9×10 ⁻⁶ 4; α(P)=1.1×10 ⁻⁷ 3; α(IPF)=3.01×10 ⁻⁵ 23 I(cc(K))=0.0004 1.
1343.5 3 1344.4 1 1345.08 ^e 4	0.20 6 0.10 5 1.3 ^e 1	2729.84 2393.55 2630.714	2 ⁻ 2,3 ⁻ 1 ⁻	1386.455 1049.113 1285.607	4 ⁻ 3 ⁺ 1 ⁻	E2	1.71×10 ⁻³	α(K)=0.001423 20; α(L)=0.000201 3; α(M)=4.39×10 ⁻⁵ 7 α(N)=1.013×10 ⁻⁵ 15; α(O)=1.474×10 ⁻⁶ 21; α(P)=8.22×10 ⁻⁸ 12; α(IPF)=2.87×10 ⁻⁵ 4 I _γ : I _γ =1.59 8 for the composite peak. I(cc(K))=0.0022 4.
1345.08 ^{ef} 4	0.20 ^e 5	2704.230	2 ⁻ ,3 ⁻	1358.693	2 ⁻			E _γ : poor fit. Level-energy difference=1345.53. E _γ =1345.08 for doublet. γ not used in least-squares fitting procedure. I _γ : I _γ =1.59 8 for the composite peak.
1348.09 ^e 10 1348.09 ^e 10 1349.76 10	0.15 ^e 4 0.09 ^e 2 1.23 6	1929.186 2697.826 1349.764	6 ⁺ 2 ⁺ 2 ⁺	581.069 1349.764 0.0	6 ⁺ 2 ⁺ 0 ⁺	E2	1.70×10 ⁻³	I _γ : I _γ =0.24 3 for the composite peak. I _γ : I _γ =0.24 3 for the composite peak. α(K)=0.001414 20; α(L)=0.000199 3; α(M)=4.36×10 ⁻⁵ 7 α(N)=1.006×10 ⁻⁵ 14; α(O)=1.463×10 ⁻⁶ 21; α(P)=8.17×10 ⁻⁸ 12; α(IPF)=2.98×10 ⁻⁵ 5 I(cc(K))=0.0018 4.
1350.8 1 1351.24 10	0.17 3 0.55 4	2630.714 2701.048	1 ⁻ 1 ⁻	1279.945 1349.764	0 ⁺ 2 ⁺	(E1)	8.25×10 ⁻⁴	α(K)=0.000622 9; α(L)=8.16×10 ⁻⁵ 12; α(M)=1.767×10 ⁻⁵ 25

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>Comments</u>
1357.01 5	0.43 3	2323.09	1 ⁺ ,2 ⁺	966.174	2 ⁺	(E2)	1.68×10 ⁻³	α(N)=4.08×10 ⁻⁶ 6; α(O)=5.98×10 ⁻⁷ 9; α(P)=3.49×10 ⁻⁸ 5; α(IPF)=9.92×10 ⁻⁵ 14 I(ce(K))<0.0003. α(K)=0.001399 20; α(L)=0.000197 3; α(M)=4.31×10 ⁻⁵ 6 α(N)=9.95×10 ⁻⁶ 14; α(O)=1.448×10 ⁻⁶ 21; α(P)=8.09×10 ⁻⁸ 12; α(IPF)=3.15×10 ⁻⁵ 5 I(ce(K))=0.0004 1.
1359.5 2	0.7 1	1643.28	3 ⁻	283.820	4 ⁺	E1	8.23×10 ⁻⁴	α(K)=0.000616 9; α(L)=8.07×10 ⁻⁵ 12; α(M)=1.748×10 ⁻⁵ 25 α(N)=4.04×10 ⁻⁶ 6; α(O)=5.92×10 ⁻⁷ 9; α(P)=3.45×10 ⁻⁸ 5; α(IPF)=0.0001044 15 I(ce(K))=0.0004 2.
1360.2 2	0.4 1	2719.02	2 ⁻	1358.693	2 ⁻	E2	1.68×10 ⁻³	α(K)=0.001393 20; α(L)=0.000196 3; α(M)=4.29×10 ⁻⁵ 6 α(N)=9.90×10 ⁻⁶ 14; α(O)=1.441×10 ⁻⁶ 21; α(P)=8.05×10 ⁻⁸ 12; α(IPF)=3.23×10 ⁻⁵ 5 I(ce(K))=0.0005 2.
1361.7 5	0.05 3	2327.70	2 ⁺	966.174	2 ⁺			
1362.5 4	0.06 3	2851.73	1 ⁻	1489.503	1 ⁻			
1366.06 5	0.61 3	2630.714	1 ⁻	1264.767	2 ⁻			
1368.2 3	0.5 1	1651.95	4 ⁺ ,5,6 ⁺	283.820	4 ⁺			
1368.7 3	0.3 1	2767.70	1 ⁻	1398.969	3 ⁻			
1369.90 ^e 4	4.0 ^e 3	1456.757	0 ⁺	86.789	2 ⁺	E2	1.66×10 ⁻³	α(K)=0.001374 20; α(L)=0.000193 3; α(M)=4.23×10 ⁻⁵ 6 α(N)=9.76×10 ⁻⁶ 14; α(O)=1.420×10 ⁻⁶ 20; α(P)=7.94×10 ⁻⁸ 12; α(IPF)=3.46×10 ⁻⁵ 5 I _γ : I _γ =4.5 3 for the composite peak. I(ce(K))=0.0060 12.
1369.90 ^e 4	0.5 ^e 1	1653.66		283.820	4 ⁺			I _γ : I _γ =4.5 3 for the composite peak.
1371.31 ^e 7	0.6 ^e 1	1655.00	2 ⁺ ,3 ⁺ ,4 ⁺	283.820	4 ⁺	E2	1.65×10 ⁻³	α(K)=0.001371 20; α(L)=0.000193 3; α(M)=4.22×10 ⁻⁵ 6 α(N)=9.74×10 ⁻⁶ 14; α(O)=1.417×10 ⁻⁶ 20; α(P)=7.92×10 ⁻⁸ 11; α(IPF)=3.50×10 ⁻⁵ 5 I _γ : I _γ =0.81 8 for the composite peak.
1371.31 ^e 7	0.20 ^e 5	2729.84	2 ⁻	1358.693	2 ⁻			I _γ : I _γ =0.81 8 for the composite peak.
1374.7 2	0.67 7	2661.522	2 ⁻	1286.721	3 ⁻	E2	1.65×10 ⁻³	α(K)=0.001365 20; α(L)=0.000192 3; α(M)=4.20×10 ⁻⁵ 6 α(N)=9.69×10 ⁻⁶ 14; α(O)=1.410×10 ⁻⁶ 20; α(P)=7.89×10 ⁻⁸ 11; α(IPF)=3.59×10 ⁻⁵ 5 I(ce(K))=0.0029 7.
1375.9 ^e 2	1.2 ^e 1	2661.522	2 ⁻	1285.607	1 ⁻	E2	1.64×10 ⁻³	α(K)=0.001363 19; α(L)=0.000192 3; α(M)=4.19×10 ⁻⁵ 6 α(N)=9.67×10 ⁻⁶ 14; α(O)=1.407×10 ⁻⁶ 20; α(P)=7.87×10 ⁻⁸ 11; α(IPF)=3.62×10 ⁻⁵ 5 I _γ : I _γ =1.58 8 for the composite peak. I(ce(K))=0.0040 3.
1375.9 ^e 2	0.4 ^e 1	2734.720	1 ⁻	1358.693	2 ⁻			I _γ : I _γ =1.58 8 for the composite peak.
1378.4 3	0.08 3	3098.98	6 ⁺	1720.43	6 ⁺			

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>Comments</u>
1379.8 3	0.08 3	2729.84	2 ⁻	1349.764	2 ⁺			
^x 1387.1 3	0.09 3							
1388.0 ^e 4	0.05 ^e 2	2354.631	2 ⁺	966.174	2 ⁺			I _γ : I _γ =0.10 5 for the composite peak.
1388.0 ^e 4	0.05 ^e 2	2674.720	1 ⁻	1286.721	3 ⁻			I _γ : I _γ =0.10 5 for the composite peak.
1389.02 5	0.94 6	2674.720	1 ⁻	1285.607	1 ⁻	E2,M1	0.0020 5	α(K)=0.0017 4; α(L)=0.00024 5; α(M)=5.1×10 ⁻⁵ 11 α(N)=1.19×10 ⁻⁵ 24; α(O)=1.7×10 ⁻⁶ 4; α(P)=1.01×10 ⁻⁷ 24; α(IPF)=4.3×10 ⁻⁵ 4 I(ce(K))=0.0016 4.
1393.0 4	0.032 7	2681.828	5 ⁺	1288.670	5 ⁺			
1394.9 ^e 2	0.04 ^e 2	2674.720	1 ⁻	1279.945	0 ⁺			I _γ : I _γ =0.16 3 for the composite peak.
1394.9 ^e 2	0.10 ^e 5	2851.73	1 ⁻	1456.757	0 ⁺			I _γ : I _γ =0.16 3 for the composite peak.
1396.71 4	1.06 4	2661.522	2 ⁻	1264.767	2 ⁻	E2,M1	0.0020 5	α(K)=0.0017 4; α(L)=0.00023 5; α(M)=5.1×10 ⁻⁵ 11 α(N)=1.17×10 ⁻⁵ 24; α(O)=1.7×10 ⁻⁶ 4; α(P)=9.9×10 ⁻⁸ 23; α(IPF)=4.5×10 ⁻⁵ 4 I(ce(K))=0.0016 4.
1401.2 1	0.9 3	2367.47	2 ⁺ ,3 ⁺ ,4 ⁺	966.174	2 ⁺	E2	1.59×10 ⁻³	α(K)=0.001316 19; α(L)=0.000185 3; α(M)=4.04×10 ⁻⁵ 6 α(N)=9.32×10 ⁻⁶ 13; α(O)=1.356×10 ⁻⁶ 19; α(P)=7.61×10 ⁻⁸ 11; α(IPF)=4.29×10 ⁻⁵ 6 I(ce(K))=0.0010 2.
1401.8 1	0.20 5	2760.47	1 ⁺ ,2 ⁺	1358.693	2 ⁻			
1402.7 2	2.6 3	1489.503	1 ⁻	86.789	2 ⁺	E1	8.14×10 ⁻⁴	α(K)=0.000583 9; α(L)=7.64×10 ⁻⁵ 11; α(M)=1.655×10 ⁻⁵ 24 α(N)=3.82×10 ⁻⁶ 6; α(O)=5.60×10 ⁻⁷ 8; α(P)=3.27×10 ⁻⁸ 5; α(IPF)=0.0001329 19 I(ce(K))=0.0014 2.
1407.1 2	0.171 21	2896.28	2 ⁺	1489.503	1 ⁻			
1409.0 3	0.5 1	2767.70	1 ⁻	1358.693	2 ⁻	E2,M1	0.0020 5	α(K)=0.0016 4; α(L)=0.00023 5; α(M)=5.0×10 ⁻⁵ 10 α(N)=1.15×10 ⁻⁵ 23; α(O)=1.7×10 ⁻⁶ 4; α(P)=9.8×10 ⁻⁸ 23; α(IPF)=4.9×10 ⁻⁵ 4
1409.7 1	0.20 5	2696.43	2 ⁻ ,3 ⁻	1286.721	3 ⁻	E2,M1	0.0020 4	α(K)=0.0016 4; α(L)=0.00023 5; α(M)=5.0×10 ⁻⁵ 10 α(N)=1.15×10 ⁻⁵ 23; α(O)=1.7×10 ⁻⁶ 4; α(P)=9.7×10 ⁻⁸ 23; α(IPF)=4.9×10 ⁻⁵ 4
1409.9 3	0.34 5	2674.720	1 ⁻	1264.767	2 ⁻	E2,M1	0.0020 4	α(K)=0.0016 4; α(L)=0.00023 5; α(M)=5.0×10 ⁻⁵ 10 α(N)=1.15×10 ⁻⁵ 23; α(O)=1.7×10 ⁻⁶ 4; α(P)=9.7×10 ⁻⁸ 23; α(IPF)=4.9×10 ⁻⁵ 4
1410.5 3	1.02 5	1694.368	4 ⁺	283.820	4 ⁺	E2,M1	0.0020 4	α(K)=0.0016 4; α(L)=0.00023 5; α(M)=5.0×10 ⁻⁵ 10 α(N)=1.15×10 ⁻⁵ 23; α(O)=1.7×10 ⁻⁶ 4; α(P)=9.7×10 ⁻⁸ 23; α(IPF)=4.9×10 ⁻⁵ 4 I(ce(K))=0.0030 7.
1410.7 1	0.5 1	2760.47	1 ⁺ ,2 ⁺	1349.764	2 ⁺	E2,M1	0.0020 4	α(K)=0.0016 4; α(L)=0.00023 5; α(M)=5.0×10 ⁻⁵ 10 α(N)=1.15×10 ⁻⁵ 23; α(O)=1.7×10 ⁻⁶ 4; α(P)=9.7×10 ⁻⁸ 23; α(IPF)=4.9×10 ⁻⁵ 4
1412.0 3	0.17 7	2697.826	2 ⁺	1285.607	1 ⁻			

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

$E_{\gamma}^{\dagger\dagger}$	$I_{\gamma}^{\dagger\#}$	$E_i(\text{level})$	J_i^{π}	E_f	J_f^{π}	Mult. @	$\delta\&c$	α^b	Comments
1415.46 4	0.97 3	2701.048	1 ⁻	1285.607	1 ⁻	E2,M1		0.0020 4	$\alpha(K)=0.0016$ 4; $\alpha(L)=0.00023$ 5; $\alpha(M)=4.9\times 10^{-5}$ 10 $\alpha(N)=1.14\times 10^{-5}$ 23; $\alpha(O)=1.7\times 10^{-6}$ 4; $\alpha(P)=9.7\times 10^{-8}$ 22; $\alpha(IPF)=5.1\times 10^{-5}$ 4 I(ce(K))=0.0020 4.
1417.5 ^e 3	0.16 ^e 4	2697.826	2 ⁺	1279.945	0 ⁺				I_{γ} : $I_{\gamma}=0.35$ 10 for the composite peak.
1417.5 ^e 3	0.19 ^e 4	2704.230	2 ⁻ ,3 ⁻	1286.721	3 ⁻				I_{γ} : $I_{\gamma}=0.35$ 10 for the composite peak.
1418.63 4	1.93 7	2704.230	2 ⁻ ,3 ⁻	1285.607	1 ⁻	E2		1.56×10 ⁻³	$\alpha(K)=0.001285$ 18; $\alpha(L)=0.000180$ 3; $\alpha(M)=3.94\times 10^{-5}$ 6 $\alpha(N)=9.08\times 10^{-6}$ 13; $\alpha(O)=1.323\times 10^{-6}$ 19; $\alpha(P)=7.43\times 10^{-8}$ 11; $\alpha(IPF)=4.78\times 10^{-5}$ 7 $\delta(E2/M1)=+2.1$ +46-10 (1998Kr21), but for a different placement: from 1703, 4 ⁺ to 284, 4 ⁺ . I(ce(K))=0.0025 6.
1421.13 6	0.53 3	2701.048	1 ⁻	1279.945	0 ⁺	E1		8.11×10 ⁻⁴	$\alpha(K)=0.000570$ 8; $\alpha(L)=7.47\times 10^{-5}$ 11; $\alpha(M)=1.617\times 10^{-5}$ 23 $\alpha(N)=3.73\times 10^{-6}$ 6; $\alpha(O)=5.47\times 10^{-7}$ 8; $\alpha(P)=3.20\times 10^{-8}$ 5; $\alpha(IPF)=0.0001455$ 21 I(ce(K))=0.0003 1.
1423.0 6	0.04 2	2879.47	2	1456.757	0 ⁺				
1427.82 9	0.50 3	2777.62	2 ⁺ ,3 ⁺ ,4 ⁺	1349.764	2 ⁺				
1431.66 ^e 3	2.6 ^e 3	1518.421	2 ⁺	86.789	2 ⁺	E2+M1	+2.9 +21-10	0.00162 9	$\alpha(K)=0.00133$ 8; $\alpha(L)=0.000186$ 10; $\alpha(M)=4.06\times 10^{-5}$ 22 $\alpha(N)=9.4\times 10^{-6}$ 5; $\alpha(O)=1.37\times 10^{-6}$ 8; $\alpha(P)=7.8\times 10^{-8}$ 5; $\alpha(IPF)=5.26\times 10^{-5}$ 12 I_{γ} : $I_{\gamma}=4.58$ 12 for the composite peak. I(ce(K))=0.0055 12.
1431.66 ^e 3	1.0 ^e 2	2696.43	2 ⁻ ,3 ⁻	1264.767	2 ⁻				I_{γ} : $I_{\gamma}=4.58$ 12 for the composite peak.
1431.66 ^e 3	0.9 ^e 2	2717.229	2 ⁺	1285.607	1 ⁻				I_{γ} : $I_{\gamma}=4.58$ 12 for the composite peak.
1433.28 6	0.87 6	2697.826	2 ⁺	1264.767	2 ⁻				E_{γ} : poor fit. Level-energy difference=1433.04.
1435.6 1	0.17 4	1522.34	4 ⁺	86.789	2 ⁺				
1436.2 1	0.71 4	2701.048	1 ⁻	1264.767	2 ⁻	E2,M1		0.0019 4	$\alpha(K)=0.0016$ 4; $\alpha(L)=0.00022$ 5; $\alpha(M)=4.8\times 10^{-5}$ 10 $\alpha(N)=1.10\times 10^{-5}$ 22; $\alpha(O)=1.6\times 10^{-6}$ 4; $\alpha(P)=9.4\times 10^{-8}$ 21; $\alpha(IPF)=5.7\times 10^{-5}$ 5 I(ce(K))=0.0010 3.
1437.5 3	0.13 4	2717.229	2 ⁺	1279.945	0 ⁺				
1439.50 ^e 4	1.0 ^e 2	2704.230	2 ⁻ ,3 ⁻	1264.767	2 ⁻	E2,M1		0.0019 4	$\alpha(K)=0.0016$ 4; $\alpha(L)=0.00022$ 5; $\alpha(M)=4.7\times 10^{-5}$ 10 $\alpha(N)=1.10\times 10^{-5}$ 22; $\alpha(O)=1.6\times 10^{-6}$ 4; $\alpha(P)=9.3\times 10^{-8}$ 21; $\alpha(IPF)=5.8\times 10^{-5}$ 5 I_{γ} : $I_{\gamma}=1.43$ 5 for the composite peak. I(ce(K))=0.0016 4.
1439.50 ^e 4	0.43 ^e 5	2896.28	2 ⁺	1456.757	0 ⁺				I_{γ} : $I_{\gamma}=1.43$ 5 for the composite peak.
1443.1 1	0.15 4	2729.84	2 ⁻	1286.721	3 ⁻	E2,M1		0.0019 4	$\alpha(K)=0.0016$ 4; $\alpha(L)=0.00022$ 5; $\alpha(M)=4.7\times 10^{-5}$ 10

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>Comments</u>
1444.1 1	0.5 1	2729.84	2 ⁻	1285.607	1 ⁻	E2,M1	0.0019 4	α(N)=1.09×10 ⁻⁵ 22; α(O)=1.6×10 ⁻⁶ 4; α(P)=9.3×10 ⁻⁸ 21; α(IPF)=6.0×10 ⁻⁵ 5 α(K)=0.0016 4; α(L)=0.00022 5; α(M)=4.7×10 ⁻⁵ 10 α(N)=1.09×10 ⁻⁵ 22; α(O)=1.6×10 ⁻⁶ 4; α(P)=9.2×10 ⁻⁸ 21; α(IPF)=6.0×10 ⁻⁵ 5 I(ce(K))<0.001.
1449.06 4	0.409 16	2734.720	1 ⁻	1285.607	1 ⁻	E2	1.51×10 ⁻³	α(K)=0.001235 18; α(L)=0.0001726 25; α(M)=3.77×10 ⁻⁵ 6 α(N)=8.70×10 ⁻⁶ 13; α(O)=1.267×10 ⁻⁶ 18; α(P)=7.14×10 ⁻⁸ 10; α(IPF)=5.69×10 ⁻⁵ 8 I(ce(K))=0.00038 10.
1452.37 7	0.234 19	2717.229	2 ⁺	1264.767	2 ⁻			
1454.2 ^e 3	0.06 ^e 2	2610.01	2 ⁺	1155.851	4 ⁺			I _γ : I _γ =0.157 18 for the composite peak.
1454.2 ^e 3	0.10 ^e 5	2719.02	2 ⁻	1264.767	2 ⁻			I _γ : I _γ =0.157 18 for the composite peak.
1456.7 ^f		1456.757	0 ⁺	0.0	0 ⁺	[E0]		presumably conversion electrons from this transition were observed by 2008VaZU who also report B(E0)/B(E2) < 0.0022.
1465.05 3	0.595 13	2729.84	2 ⁻	1264.767	2 ⁻	E2	1.49×10 ⁻³	α(K)=0.001209 17; α(L)=0.0001688 24; α(M)=3.69×10 ⁻⁵ 6 α(N)=8.51×10 ⁻⁶ 12; α(O)=1.240×10 ⁻⁶ 18; α(P)=6.99×10 ⁻⁸ 10; α(IPF)=6.18×10 ⁻⁵ 9 I(ce(K))=0.0007 2.
1470.0 2	0.09 3	2734.720	1 ⁻	1264.767	2 ⁻			
1473.06 3	2.97 6	1756.920	2 ⁺	283.820	4 ⁺	E2	1.47×10 ⁻³	α(K)=0.001197 17; α(L)=0.0001670 24; α(M)=3.65×10 ⁻⁵ 6 α(N)=8.41×10 ⁻⁶ 12; α(O)=1.226×10 ⁻⁶ 18; α(P)=6.92×10 ⁻⁸ 10; α(IPF)=6.43×10 ⁻⁵ 9 I(ce(K))=0.0030 6.
1476.25 8	0.141 15	2994.69	2,3,4	1518.421	2 ⁺			
1480.4 ^e 2	0.20 ^e 5	2760.47	1 ⁺ ,2 ⁺	1279.945	0 ⁺			I _γ : I _γ =0.28 3 for the composite peak.
1480.4 ^e 2	0.08 ^e 3	2879.47	2	1398.969	3 ⁻			I _γ : I _γ =0.28 3 for the composite peak.
1481.9 2	0.34 3	3098.98	6 ⁺	1617.28	7 ⁺	E2	1.46×10 ⁻³	α(K)=0.001184 17; α(L)=0.0001650 24; α(M)=3.60×10 ⁻⁵ 5 α(N)=8.31×10 ⁻⁶ 12; α(O)=1.212×10 ⁻⁶ 17; α(P)=6.84×10 ⁻⁸ 10; α(IPF)=6.72×10 ⁻⁵ 10 I(ce(K))<0.0002.
1489.51 3	1.45 4	1489.503	1 ⁻	0.0	0 ⁺	E1	8.07×10 ⁻⁴	α(K)=0.000527 8; α(L)=6.88×10 ⁻⁵ 10; α(M)=1.490×10 ⁻⁵ 21 α(N)=3.44×10 ⁻⁶ 5; α(O)=5.05×10 ⁻⁷ 7; α(P)=2.95×10 ⁻⁸ 5; α(IPF)=0.000193 3 I(ce(K))=0.0005 2.
1493.3 3	0.081 9	2851.73	1 ⁻	1358.693	2 ⁻			
1500.7 4	0.038 12	1784.696	4 ⁻	283.820	4 ⁺			
1502.6 3	0.16 2	2861.17	1 ⁺	1358.693	2 ⁻			
1504.4 ^e 3	0.10 ^e 5	2553.5		1049.113	3 ⁺			I _γ : I _γ =0.14 2 for the composite peak.
1504.4 ^e 3	0.04 ^e 2	3098.98	6 ⁺	1594.38	6 ⁻			I _γ : I _γ =0.14 2 for the composite peak.
^x 1507.7 4	0.021 6							
1510.2 3	0.07 3	2665.78	2 ⁺ ,3 ⁺ ,4 ⁺	1155.851	4 ⁺			

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>Comments</u>
1511.6 3	0.06 3	2861.17	1 ⁺	1349.764	2 ⁺			
1518.41 ^e 3	0.5 ^e 1	1518.421	2 ⁺	0.0	0 ⁺	E2	1.41×10 ⁻³	α(K)=0.001131 16; α(L)=0.0001571 22; α(M)=3.43×10 ⁻⁵ 5 α(N)=7.92×10 ⁻⁶ 11; α(O)=1.155×10 ⁻⁶ 17; α(P)=6.53×10 ⁻⁸ 10; α(IPF)=7.93×10 ⁻⁵ 12 I _γ : I _γ =1.00 3 for the composite peak. I(ce(K))=0.0011 3.
1518.41 ^e 3	0.45 ^e 3	1802.233	5 ⁺	283.820	4 ⁺	(E2)	1.41×10 ⁻³	α(K)=0.001131 16; α(L)=0.0001571 22; α(M)=3.43×10 ⁻⁵ 5 α(N)=7.92×10 ⁻⁶ 11; α(O)=1.155×10 ⁻⁶ 17; α(P)=6.53×10 ⁻⁸ 10; α(IPF)=7.93×10 ⁻⁵ 12 I _γ : I _γ =1.00 3 for the composite peak.
1518.41 ^e 3	0.05 ^e 2	2877.114	1 ⁻	1358.693	2 ⁻			I(ce(K))=0.0011 3. α(K)=0.001131 16; α(L)=0.0001571 22; α(M)=3.43×10 ⁻⁵ 5 α(N)=7.92×10 ⁻⁶ 11; α(O)=1.155×10 ⁻⁶ 17; α(P)=6.53×10 ⁻⁸ 10; α(IPF)=7.93×10 ⁻⁵ 12 I _γ : I _γ =1.00 3 for the composite peak.
1526.9 4	0.019 9	2877.114	1 ⁻	1349.764	2 ⁺			I _γ : I _γ =1.00 3 for the composite peak.
1532.6 3	0.021 7	2113.69		581.069	6 ⁺			
^x 1535.4 4	0.024 8							
^x 1544.31 15	0.102 8							
1546.51 15	0.081 10	2896.28	2 ⁺	1349.764	2 ⁺			
1556.48 6	0.73 4	1643.28	3 ⁻	86.789	2 ⁺	E1	8.12×10 ⁻⁴	α(K)=0.000489 7; α(L)=6.38×10 ⁻⁵ 9; α(M)=1.382×10 ⁻⁵ 20 α(N)=3.19×10 ⁻⁶ 5; α(O)=4.68×10 ⁻⁷ 7; α(P)=2.74×10 ⁻⁸ 4; α(IPF)=0.000242 4 I(ce(K))=0.00025 8.
1560.94 15	0.108 5	2610.01	2 ⁺	1049.113	3 ⁺	E2	1.36×10 ⁻³	α(K)=0.001074 15; α(L)=0.0001487 21; α(M)=3.24×10 ⁻⁵ 5 α(N)=7.49×10 ⁻⁶ 11; α(O)=1.093×10 ⁻⁶ 16; α(P)=6.20×10 ⁻⁸ 9; α(IPF)=9.43×10 ⁻⁵ 14 I(ce(K))<0.00018.
1565.9 1	0.18 6	2851.73	1 ⁻	1285.607	1 ⁻	E2	1.35×10 ⁻³	α(K)=0.001067 15; α(L)=0.0001478 21; α(M)=3.22×10 ⁻⁵ 5 α(N)=7.44×10 ⁻⁶ 11; α(O)=1.086×10 ⁻⁶ 16; α(P)=6.17×10 ⁻⁸ 9; α(IPF)=9.61×10 ⁻⁵ 14 I(ce(K))<0.00022.
1568.3 4	0.035 8	1655.00	2 ⁺ ,3 ⁺ ,4 ⁺	86.789	2 ⁺			
1572.1 3	0.054 6	2958.55		1386.455	4 ⁻			
1576.30 8	0.282 15	1860.18	5 ⁻	283.820	4 ⁺	E1	8.15×10 ⁻⁴	α(K)=0.000479 7; α(L)=6.25×10 ⁻⁵ 9; α(M)=1.352×10 ⁻⁵ 19 α(N)=3.12×10 ⁻⁶ 5; α(O)=4.58×10 ⁻⁷ 7; α(P)=2.69×10 ⁻⁸ 4; α(IPF)=0.000257 4 I(ce(K))=0.00009 3.
1581.2 3	0.050 11	2861.17	1 ⁺	1279.945	0 ⁺			
1583.3 6	0.05 4	2969.90		1386.455	4 ⁻			
1585.63 ^e 17	0.15 ^e 3	1869.518	2 ⁺	283.820	4 ⁺	E2	1.33×10 ⁻³	α(K)=0.001043 15; α(L)=0.0001442 21; α(M)=3.14×10 ⁻⁵ 5 α(N)=7.26×10 ⁻⁶ 11; α(O)=1.060×10 ⁻⁶ 15; α(P)=6.02×10 ⁻⁸ 9; α(IPF)=0.0001035 15 I _γ : I _γ =0.39 4 for the composite peak.
1585.63 ^e 17	0.26 ^e 4	2634.74		1049.113	3 ⁺			I _γ : I _γ =0.39 4 for the composite peak.
1586.90 17	0.46 5	2851.73	1 ⁻	1264.767	2 ⁻	E2	1.33×10 ⁻³	α(K)=0.001041 15; α(L)=0.0001439 21; α(M)=3.14×10 ⁻⁵ 5

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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^b</u>	<u>Comments</u>
								α(N)=7.25×10 ⁻⁶ 11; α(O)=1.058×10 ⁻⁶ 15; α(P)=6.02×10 ⁻⁸ 9; α(IPF)=0.0001039 15 I(cc(K))=0.00068 18.
1594.5 ^f 4	0.08 3	2297.49	2 ⁺	703.0?	(0 ⁺)			placement suggested by 2010BoZZ but not fully confirmed.
1599.5 3	0.033 9	2879.47	2	1279.945	0 ⁺			
1606.0 3	0.22 4	2187.00	4 ⁺ ,5 ⁺ ,6 ⁺	581.069	6 ⁺	E2	1.31×10 ⁻³	α(K)=0.001018 15; α(L)=0.0001406 20; α(M)=3.07×10 ⁻⁵ 5 α(N)=7.08×10 ⁻⁶ 10; α(O)=1.034×10 ⁻⁶ 15; α(P)=5.88×10 ⁻⁸ 9; α(IPF)=0.0001112 16 I(cc(K))=0.00025 8.
1607.6 3	0.075 25	1694.368	4 ⁺	86.789	2 ⁺			
1612.35 ^e 3	1.05 ^e 7	2661.522	2 ⁻	1049.113	3 ⁺	(E1)	8.22×10 ⁻⁴	α(K)=0.000461 7; α(L)=6.01×10 ⁻⁵ 9; α(M)=1.301×10 ⁻⁵ 19 α(N)=3.00×10 ⁻⁶ 5; α(O)=4.41×10 ⁻⁷ 7; α(P)=2.59×10 ⁻⁸ 4; α(IPF)=0.000284 4 I _γ : I _γ =1.25 3 for the composite peak. I(cc(K))=0.0006 2. Mult.: 2002Ad34 report mult=E1,(E2). Placement requires E1. I _γ : I _γ =1.25 3 for the composite peak.
1612.35 ^e 3	0.20 ^e 6	2877.114	1 ⁻	1264.767	2 ⁻			
1616.7 ^d 2	0.075 ^d 5	2665.78	2 ⁺ ,3 ⁺ ,4 ⁺	1049.113	3 ⁺			E _γ : in their Table 1, 2002Ad34 place this γ from the 2896 level, but in their Table 2 they also place it from this level. The evaluator has shown it deexciting both levels with the intensity undivided.
1616.7 ^d 2	0.075 ^d 5	2896.28	2 ⁺	1279.945	0 ⁺			E _γ : this is the placement given by 2002Ad34 in their Table 1, but in their Table 2 they also place it from the 2665.8 level. The evaluator has shown it deexciting both levels with the intensity undivided.
1619.36 8	0.75 5	1903.210	3 ⁺	283.820	4 ⁺	E2	1.30×10 ⁻³	α(K)=0.001003 14; α(L)=0.0001383 20; α(M)=3.02×10 ⁻⁵ 5 α(N)=6.96×10 ⁻⁶ 10; α(O)=1.017×10 ⁻⁶ 15; α(P)=5.79×10 ⁻⁸ 9; α(IPF)=0.0001164 17 I(cc(K))=0.0007 3.
1621.36 5	1.27 4	1708.14	0 ⁺	86.789	2 ⁺	E2	1.29×10 ⁻³	α(K)=0.001000 14; α(L)=0.0001380 20; α(M)=3.01×10 ⁻⁵ 5 α(N)=6.95×10 ⁻⁶ 10; α(O)=1.015×10 ⁻⁶ 15; α(P)=5.78×10 ⁻⁸ 8; α(IPF)=0.0001172 17 I(cc(K))=0.0012 4.
1636.41 9	0.088 5	2602.67	1 ⁻ ,2 ⁻	966.174	2 ⁺			
1639.1 5	0.02 1	2605.76	2 ⁺ ,3 ⁺ ,4 ⁺	966.174	2 ⁺			
1644.0 4	0.025 5	2610.01	2 ⁺	966.174	2 ⁺			
1647.2 2	0.067 7	2696.43	2 ⁻ ,3 ⁻	1049.113	3 ⁺			
1655.15 4	0.69 3	2704.230	2 ⁻ ,3 ⁻	1049.113	3 ⁺			
1664.55 3	1.92 8	2630.714	1 ⁻	966.174	2 ⁺	E1	8.33×10 ⁻⁴	α(K)=0.000437 7; α(L)=5.70×10 ⁻⁵ 8; α(M)=1.233×10 ⁻⁵ 18 α(N)=2.85×10 ⁻⁶ 4; α(O)=4.18×10 ⁻⁷ 6; α(P)=2.45×10 ⁻⁸ 4; α(IPF)=0.000323 5 I(cc(K))=0.0010 3.
1668.3 ^e 3	0.16 ^e 3	2634.74		966.174	2 ⁺			I _γ : I _γ =0.32 3 for the composite peak.
1668.3 ^e 3	0.16 ^e 4	2717.229	2 ⁺	1049.113	3 ⁺			I _γ : I _γ =0.32 3 for the composite peak.

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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&c</u>	<u>α^b</u>	<u>I_(γ+ce)[†]</u>	<u>Comments</u>
1669.8 1 1670.14 13	0.15 3 1.4 2	2719.02 1756.920	2 ⁻ 2 ⁺	1049.113 86.789	3 ⁺ 2 ⁺	E2		1.25×10 ⁻³		α(K)=0.000947 14; α(L)=0.0001302 19; α(M)=2.84×10 ⁻⁵ 4 α(N)=6.55×10 ⁻⁶ 10; α(O)=9.57×10 ⁻⁷ 14; α(P)=5.47×10 ⁻⁸ 8; α(IPF)=0.0001368 20 I(ce(K))=0.0013 4.
1671.9 ^e 5	0.15 ^e 7	2720.58	3 ⁻	1049.113	3 ⁺	(E1)		8.34×10 ⁻⁴		α(K)=0.000434 6; α(L)=5.65×10 ⁻⁵ 8; α(M)=1.224×10 ⁻⁵ 18 α(N)=2.83×10 ⁻⁶ 4; α(O)=4.15×10 ⁻⁷ 6; α(P)=2.44×10 ⁻⁸ 4; α(IPF)=0.000328 5 I _γ : I _γ =0.15 7 for the composite peak. Mult.: 2002Ad34 report mult=E1,E2. Placement requires E1. I(ce(K))<0.00019. I _γ : I _γ =0.15 7 for the composite peak.
1671.9 ^e 5 ^x 1676.3 4	0.05 ^e 2 0.05 2	2958.55		1286.721	3 ⁻					I _γ : I _γ =0.028 6 for the composite peak.
1683.28 ^d 25	0.028 ^d 14	2969.04	1,2	1285.607	1 ⁻					I _γ : I _γ =0.028 6 for the composite peak.
1683.28 ^d 25 ^x 1687.7 5	0.028 ^d 14 0.029 14	2969.90		1286.721	3 ⁻					I _γ : I _γ =0.028 6 for the composite peak.
1693.75 25	0.10 3	2958.55		1264.767	2 ⁻	E2		1.23×10 ⁻³		α(K)=0.000922 13; α(L)=0.0001266 18; α(M)=2.76×10 ⁻⁵ 4 α(N)=6.37×10 ⁻⁶ 9; α(O)=9.31×10 ⁻⁷ 13; α(P)=5.33×10 ⁻⁸ 8; α(IPF)=0.0001467 21 I(ce(K))=0.00026 9.
1695.30 6	0.523 20	2661.522	2 ⁻	966.174	2 ⁺	E1		8.40×10 ⁻⁴		α(K)=0.000424 6; α(L)=5.52×10 ⁻⁵ 8; α(M)=1.195×10 ⁻⁵ 17 α(N)=2.76×10 ⁻⁶ 4; α(O)=4.05×10 ⁻⁷ 6; α(P)=2.38×10 ⁻⁸ 4; α(IPF)=0.000346 5 I(ce(K))=0.00011 5.
1699.55 6 1704.3 4 1707.6 4 1708.2	0.079 6 0.018 8 0.020 8	2665.78 2969.04 2757.13 1708.14	2 ⁺ ,3 ⁺ ,4 ⁺ 1,2 0 ⁺	966.174 1264.767 1049.113 0.0	2 ⁺ 2 ⁻ 3 ⁺ 0 ⁺	(E0)			0.0038	E _γ ,Mult.: from 2009Ad04. I _(γ+ce) : calculated by evaluator based on measured I(ce(K)) and ratio of electronic factors Ω _K (E0)/Ω(E0)=0.877. I(ce(K))=0.0033 (2009Ad04). B(E0)/B(E2)=0.6 (2009Ad04). presumably conversion electrons from this transition were observed by 2008VaZU who also reports B(E0)/B(E2)=1.3 3.

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ^{†‡}</u>	<u>I_γ^{†#}</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&c</u>	<u>α^b</u>	<u>Comments</u>
1717.92 3	3.88 11	1804.675	1 ⁺	86.789	2 ⁺	M1+E2	-2.1 +9-13	0.00130 11	α(K)=0.00097 9; α(L)=0.000132 11; α(M)=2.88×10 ⁻⁵ 24 α(N)=6.6×10 ⁻⁶ 6; α(O)=9.7×10 ⁻⁷ 9; α(P)=5.6×10 ⁻⁸ 6; α(IPF)=0.000162 7 δ: from 1994SIZZ. 1998Kr21 report -1.4≤δ≤-0.4 for J=1 and δ=+3.6 +71-16 for J=2. I(cc(K))=0.0036 6.
1723.9 4	0.051 8	2879.47	2	1155.851	4 ⁺				
1729.3 5	0.050 9	2012.85	2 ⁺	283.820	4 ⁺				
1731.62 4	0.50 2	2697.826	2 ⁺	966.174	2 ⁺	E2		1.20×10 ⁻³	α(K)=0.000885 13; α(L)=0.0001213 17; α(M)=2.64×10 ⁻⁵ 4 α(N)=6.10×10 ⁻⁶ 9; α(O)=8.92×10 ⁻⁷ 13; α(P)=5.11×10 ⁻⁸ 8; α(IPF)=0.0001628 23 I(cc(K))=0.00060 15.
1735.0 5	0.018 8	2701.048	1 ⁻	966.174	2 ⁺				
1737.9 2	0.035 5	2704.230	2 ⁻ ,3 ⁻	966.174	2 ⁺				
1750.8 2	0.078 6	2717.229	2 ⁺	966.174	2 ⁺				
1754.32 6	0.125 8	2720.58	3 ⁻	966.174	2 ⁺				
1760.9 ^f 4	0.017 5	2727.20	(4)	966.174	2 ⁺				
1765.6 3	0.08 4	2049.51	2 ⁺ ,3	283.820	4 ⁺				
1768.2 4	0.016 5	2734.720	1 ⁻	966.174	2 ⁺				
1775.14 9	0.049 7	3061.83	1 ⁺	1286.721	3 ⁻				
1782.73 4	1.71 7	1869.518	2 ⁺	86.789	2 ⁺	E2		1.17×10 ⁻³	α(K)=0.000839 12; α(L)=0.0001146 16; α(M)=2.50×10 ⁻⁵ 4 α(N)=5.76×10 ⁻⁶ 8; α(O)=8.43×10 ⁻⁷ 12; α(P)=4.84×10 ⁻⁸ 7; α(IPF)=0.000185 3 I(cc(K))=0.0012 3.
^x 1786.6 4	0.026 12								
^x 1795.0 3	0.033 14								
1797.6 4	0.026 12	3061.83	1 ⁺	1264.767	2 ⁻				
1804.68 4	1.81 5	1804.675	1 ⁺	0.0	0 ⁺	M1		1.55×10 ⁻³	α(K)=0.001126 16; α(L)=0.0001528 22; α(M)=3.33×10 ⁻⁵ 5 α(N)=7.70×10 ⁻⁶ 11; α(O)=1.135×10 ⁻⁶ 16; α(P)=6.72×10 ⁻⁸ 10; α(IPF)=0.000230 4 Mult.: 2002Ad34 report mult=M1,E2. Placement requires M1. I(cc(K))=0.0018 4.
1811.6 2	0.031 8	2861.17	1 ⁺	1049.113	3 ⁺				
1813.1 2	0.05 2	2096.896	4 ⁺	283.820	4 ⁺				
1813.9 1	0.10 5	2969.90		1155.851	4 ⁺				
1816.39 3	1.13 3	1903.210	3 ⁺	86.789	2 ⁺	E2		1.15×10 ⁻³	α(K)=0.000810 12; α(L)=0.0001105 16; α(M)=2.41×10 ⁻⁵ 4

γ(¹⁶⁰Dy) (continued)

<u>E_γ ††</u>	<u>I_γ †#</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^b</u>	<u>Comments</u>
								α(N)=5.56×10 ⁻⁶ 8; α(O)=8.14×10 ⁻⁷ 12; α(P)=4.68×10 ⁻⁸ 7; α(IPF)=0.000200 3 I(ce(K))=0.0009 2.
^x 1822.4 3	0.024 5							
1822.4	0.024	2503.80	1 ⁺ ,2 ⁺	681.3?	(0 ⁺)			E _γ : from 2009Ad04.
1830.6 4	0.05 2	2879.47	2	1049.113	3 ⁺			
1836.49 6	0.12 4	2885.59		1049.113	3 ⁺			
1842.9 2	0.046 5	2126.37	3 ⁻	283.820	4 ⁺			
1846.9 ^e 2	0.04 ^e 2	2130.586	3 ⁻	283.820	4 ⁺			I _γ : I _γ =0.094 9 for the composite peak.
1846.9 ^e 2	0.05 ^e 2	2896.28	2 ⁺	1049.113	3 ⁺			I _γ : I _γ =0.094 9 for the composite peak.
^x 1852.0 4	0.028 6							
1856.38 5	0.23 2	2140.15	(3)	283.820	4 ⁺			Mult.: 2002Ad34 propose mult=(E2,M1). I(ce(K))<0.00041.
1857.9 2	0.058 10	2141.67	2 ⁺ ,3,4 ⁺	283.820	4 ⁺			
1865.56 4	0.61 3	1952.31	0 ⁺	86.789	2 ⁺	E2	1.13×10 ⁻³	α(K)=0.000772 11; α(L)=0.0001050 15; α(M)=2.29×10 ⁻⁵ 4 α(N)=5.28×10 ⁻⁶ 8; α(O)=7.73×10 ⁻⁷ 11; α(P)=4.46×10 ⁻⁸ 7; α(IPF)=0.000222 4 Mult.: 2002Ad34 report mult=M1,E2. Placement requires E2. I(ce(K))=0.0005 2.
1869.55 6	0.71 3	1869.518	2 ⁺	0.0	0 ⁺	E2	1.13×10 ⁻³	α(K)=0.000769 11; α(L)=0.0001046 15; α(M)=2.28×10 ⁻⁵ 4 α(N)=5.26×10 ⁻⁶ 8; α(O)=7.70×10 ⁻⁷ 11; α(P)=4.44×10 ⁻⁸ 7; α(IPF)=0.000224 4 Mult.: 2002Ad34 report mult=M1,E2. Placement requires E2. I(ce(K))=0.0006 2.
1871.5 2	0.158 8	2155.33		283.820	4 ⁺			
^x 1884.0 3	0.032 8							
^x 1889.1 3	0.019 5							
1891.5 5	0.014 6	2858.17		966.174	2 ⁺			
1903.17 9	0.053 5	2187.00	4 ⁺ ,5 ⁺ ,6 ⁺	283.820	4 ⁺			
1907.20 7	0.059 6	2191.03		283.820	4 ⁺			
1910.58 6	0.079 9	2194.44	5 ⁺	283.820	4 ⁺			
1916.95 13	0.154 18	2200.82	2 ⁺ ,3,4 ⁺	283.820	4 ⁺			
1919.38 15	0.205 10	2885.59		966.174	2 ⁺	(E1)	9.15×10 ⁻⁴	α(K)=0.000346 5; α(L)=4.49×10 ⁻⁵ 7; α(M)=9.72×10 ⁻⁶ 14 α(N)=2.25×10 ⁻⁶ 4; α(O)=3.30×10 ⁻⁷ 5; α(P)=1.95×10 ⁻⁸ 3; α(IPF)=0.000512 8 I(ce(K))<0.0001.
1922.71 4	1.94 6	2009.535	1 ⁻ ,2 ⁻	86.789	2 ⁺	E1	9.17×10 ⁻⁴	α(K)=0.000345 5; α(L)=4.48×10 ⁻⁵ 7; α(M)=9.69×10 ⁻⁶ 14 α(N)=2.24×10 ⁻⁶ 4; α(O)=3.29×10 ⁻⁷ 5; α(P)=1.94×10 ⁻⁸ 3; α(IPF)=0.000514 8 I(ce(K))=0.0007 2.
1926.0 3	0.068 13	2012.85	2 ⁺	86.789	2 ⁺			
1928.4 7	0.041 20	2977.54		1049.113	3 ⁺			
1930.0 2	0.26 3	2896.28	2 ⁺	966.174	2 ⁺			
1937.7 5	0.026 8	2904.36	2,3,4	966.174	2 ⁺			

γ(¹⁶⁰Dy) (continued)

<u>E_γ ††</u>	<u>I_γ ††</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^b</u>	<u>I_(γ+ce) †</u>	<u>Comments</u>
^x 1939.9 5	0.031 9								
1946.3 3	0.025 5	2230.52	2 ⁺	283.820	4 ⁺				
1952.6 4		1952.31	0 ⁺	0.0	0 ⁺	E0		0.0017 2	I _(γ+ce) : calculated by evaluator based on measured I _{(ce(K))} and ratio of electronic factors Ω _K (E0)\Ω(E0)=0.877. I _{(ce(K))} =0.0015 2 (2002Ad34). B(E0)/B(E2)=0.9 (2009Ad04).
^x 1955.29 8	0.060 5								
1960.9 3	0.075 15	2244.94	2 ⁺ ,3,4 ⁺	283.820	4 ⁺				
1962.7 5	0.026 11	2049.51	2 ⁺ ,3	86.789	2 ⁺				
1981.28 15	0.17 2	2068.08	1 ⁻	86.789	2 ⁺				
1983.15 4	0.659 23	2266.98	3 ⁻	283.820	4 ⁺	E1	9.41×10 ⁻⁴		α(K)=0.000329 5; α(L)=4.26×10 ⁻⁵ 6; α(M)=9.21×10 ⁻⁶ 13 α(N)=2.13×10 ⁻⁶ 3; α(O)=3.13×10 ⁻⁷ 5; α(P)=1.85×10 ⁻⁸ 3; α(IPF)=0.000558 8 I _{(ce(K))} =0.00032 8.
^x 1987.4 2	0.023 4								
1995.22 10	0.084 9	2279.05		283.820	4 ⁺				
1998.04 4	0.89 4	2084.814	(1,2) ⁺	86.789	2 ⁺	M1,E2	0.00123 15		α(K)=0.00079 11; α(L)=0.000106 15; α(M)=2.3×10 ⁻⁵ 4 α(N)=5.4×10 ⁻⁶ 8; α(O)=7.9×10 ⁻⁷ 11; α(P)=4.6×10 ⁻⁸ 7; α(IPF)=0.00031 3 I _{(ce(K))} =0.0010 2.
2002.01 4	0.70 4	2088.85	1 ⁻ ,2 ⁻ ,3 ⁻	86.789	2 ⁺	E1	9.49×10 ⁻⁴		α(K)=0.000324 5; α(L)=4.19×10 ⁻⁵ 6; α(M)=9.07×10 ⁻⁶ 13 α(N)=2.10×10 ⁻⁶ 3; α(O)=3.08×10 ⁻⁷ 5; α(P)=1.82×10 ⁻⁸ 3; α(IPF)=0.000571 8 I _{(ce(K))} =0.0004 2.
2004.1 3	0.25 3	2090.88	2 ⁻ ,3 ⁻	86.789	2 ⁺				
^x 2007.1 3	0.035 5								
2009.6 ^e 3	0.03 ^e 1	2009.535	1 ⁻ ,2 ⁻	0.0	0 ⁺				I _γ : I _γ =0.054 7 for the composite peak.
2009.6 ^e 3	0.03 ^e 1	2096.896	4 ⁺	86.789	2 ⁺				I _γ : I _γ =0.054 7 for the composite peak.
2013.3 5	0.014 6	2012.85	2 ⁺	0.0	0 ⁺				
^x 2019.85 5	0.180 5					E2	1.08×10 ⁻³		α(K)=0.000668 10; α(L)=9.02×10 ⁻⁵ 13; α(M)=1.96×10 ⁻⁵ 3 α(N)=4.53×10 ⁻⁶ 7; α(O)=6.65×10 ⁻⁷ 10; α(P)=3.85×10 ⁻⁸ 6; α(IPF)=0.000294 5 I _{(ce(K))} =0.00026 9.
2026.0 2	0.051 9	2309.91	2 ⁺ ,3,4 ⁺	283.820	4 ⁺				
2039.7 2	0.037 7	2126.37	3 ⁻	86.789	2 ⁺				
2043.87 ^e 5	0.33 ^e 5	2130.586	3 ⁻	86.789	2 ⁺	E1	9.66×10 ⁻⁴		α(K)=0.000313 5; α(L)=4.06×10 ⁻⁵ 6; α(M)=8.77×10 ⁻⁶ 13 α(N)=2.03×10 ⁻⁶ 3; α(O)=2.98×10 ⁻⁷ 5; α(P)=1.759×10 ⁻⁸ 25; α(IPF)=0.000601 9

γ(¹⁶⁰Dy) (continued)

<u>E_γ</u> †‡	<u>I_γ</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^b</u>	<u>Comments</u>
2043.87 ^e 5	0.07 ^e 2	2327.70	2 ⁺	283.820	4 ⁺			I _γ : I _γ =0.403 14 for the composite peak. I(ce(K))=0.0003 10.
2051.42 5	0.490 15	2138.21	2 ⁺	86.789	2 ⁺	E2,M1	0.00121 15	I _γ : I _γ =0.403 14 for the composite peak. α(K)=0.00074 10; α(L)=0.000101 13; α(M)=2.2×10 ⁻⁵ 3 α(N)=5.1×10 ⁻⁶ 7; α(O)=7.4×10 ⁻⁷ 10; α(P)=4.4×10 ⁻⁸ 7; α(IPF)=0.00034 3 I(ce(K))=0.0005 2.
2054.8 2	0.089 15	2141.67	2 ⁺ ,3,4 ⁺	86.789	2 ⁺			
2057.76 ^f 5	0.180 5	2144.56?		86.789	2 ⁺			
2063.1 4	0.11 5	2149.84	1,2	86.789	2 ⁺			
2068.07 4	2.75 9	2068.08	1 ⁻	0.0	0 ⁺	E1	9.76×10 ⁻⁴	α(K)=0.000307 5; α(L)=3.98×10 ⁻⁵ 6; α(M)=8.61×10 ⁻⁶ 12 α(N)=1.99×10 ⁻⁶ 3; α(O)=2.92×10 ⁻⁷ 4; α(P)=1.727×10 ⁻⁸ 25; α(IPF)=0.000618 9 I(ce(K))=0.0007 2.
2084.79 4	1.37 5	2084.814	(1,2) ⁺	0.0	0 ⁺	M1,E2	0.00120 14	α(K)=0.00072 9; α(L)=9.7×10 ⁻⁵ 13; α(M)=2.1×10 ⁻⁵ 3 α(N)=4.9×10 ⁻⁶ 7; α(O)=7.2×10 ⁻⁷ 10; α(P)=4.2×10 ⁻⁸ 6; α(IPF)=0.00035 3 I(ce(K))=0.0009 2.
2090.71 5	0.122 10	2374.50		283.820	4 ⁺			
^x 2095.84 5	0.195 8							
2109.80 13	0.062 18	2393.55	2,3 ⁻	283.820	4 ⁺			
2114.02 4	0.15 2	2200.82	2 ⁺ ,3,4 ⁺	86.789	2 ⁺			
2122.0 1	0.3 1	2208.79	(2) ⁻	86.789	2 ⁺			
2132.1 3	0.05 1	3098.98	6 ⁺	966.75	8 ⁺			
2138.2 2	0.12 6	2138.21	2 ⁺	0.0	0 ⁺	E2	1.06×10 ⁻³	α(K)=0.000602 9; α(L)=8.10×10 ⁻⁵ 12; α(M)=1.762×10 ⁻⁵ 25 α(N)=4.07×10 ⁻⁶ 6; α(O)=5.97×10 ⁻⁷ 9; α(P)=3.47×10 ⁻⁸ 5; α(IPF)=0.000350 5 I(ce(K))=0.00022 6.
2143.8 2	0.077 16	2230.52	2 ⁺	86.789	2 ⁺			
2146.6 6	0.019 7	2727.20	(4)	581.069	6 ⁺			
2149.82 13	0.036 10	2149.84	1,2	0.0	0 ⁺			
2158.28 15	0.11 2	2244.94	2 ⁺ ,3,4 ⁺	86.789	2 ⁺			
2168.87 6	0.24 4	2255.67	1 ⁺ ,2 ⁺	86.789	2 ⁺	E2,M1	0.00118 13	α(K)=0.00066 8; α(L)=8.9×10 ⁻⁵ 11; α(M)=1.95×10 ⁻⁵ 24 α(N)=4.5×10 ⁻⁶ 6; α(O)=6.6×10 ⁻⁷ 9; α(P)=3.9×10 ⁻⁸ 6; α(IPF)=0.00040 4 I(ce(K))=0.003 1.
2180.2 2	0.60 4	2266.98	3 ⁻	86.789	2 ⁺	E1	1.02×10 ⁻³	α(K)=0.000283 4; α(L)=3.66×10 ⁻⁵ 6; α(M)=7.91×10 ⁻⁶ 11 α(N)=1.83×10 ⁻⁶ 3; α(O)=2.69×10 ⁻⁷ 4; α(P)=1.589×10 ⁻⁸ 23; α(IPF)=0.000695 10 I(ce(K))=0.00020 6.

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ</u> ††	<u>I_γ</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&c</u>	<u>α^b</u>	<u>Comments</u>
2184.43 4	3.36 10	2271.253	2 ⁻	86.789	2 ⁺	E1(+M2)	-0.09 10	0.00103 4	α(K)=0.00029 4; α(L)=3.8×10 ⁻⁵ 5; α(M)=8.2×10 ⁻⁶ 11 α(N)=1.9×10 ⁻⁶ 3; α(O)=2.8×10 ⁻⁷ 4; α(P)=1.65×10 ⁻⁸ 22; α(IPF)=0.000694 16 I(ce(K))=0.0007 2. A ₂ =-0.31 13.
2191.17 10	0.102 12	2474.97	2 ⁺ ,3,4 ⁺	283.820	4 ⁺				
2210.8 2	0.057 8	2297.49	2 ⁺	86.789	2 ⁺				
2223.1 3	0.089 12	2309.91	2 ⁺ ,3,4 ⁺	86.789	2 ⁺				
2230.52 8	0.182 16	2230.52	2 ⁺	0.0	0 ⁺				
2236.21 8	0.35 5	2323.09	1 ⁺ ,2 ⁺	86.789	2 ⁺	E2		1.05×10 ⁻³	α(K)=0.000555 8; α(L)=7.45×10 ⁻⁵ 11; α(M)=1.619×10 ⁻⁵ 23 α(N)=3.74×10 ⁻⁶ 6; α(O)=5.49×10 ⁻⁷ 8; α(P)=3.20×10 ⁻⁸ 5; α(IPF)=0.000397 6 Mult.: 2002Ad34 report mult=(E1),E2. Placement requires E2. I(ce(K))=0.00016 6.
2240.89 7	0.158 15	2327.70	2 ⁺	86.789	2 ⁺	E2		1.05×10 ⁻³	α(K)=0.000553 8; α(L)=7.42×10 ⁻⁵ 11; α(M)=1.613×10 ⁻⁵ 23 α(N)=3.73×10 ⁻⁶ 6; α(O)=5.47×10 ⁻⁷ 8; α(P)=3.19×10 ⁻⁸ 5; α(IPF)=0.000399 6 I(ce(K))=0.00022 6.
^x 2243.3 5	0.020 6								
2255.2 5	0.025 13	2255.67	1 ⁺ ,2 ⁺	0.0	0 ⁺				
2267.73 8	0.254 12	2354.631	2 ⁺	86.789	2 ⁺	E0+M1+E2			α(exp)=0.0028 12 α: calculated by evaluator based on measured I(ce(K)) and I _γ , calculated α(K) and α (assuming δ=1 for E2+M1), and electronic factors Ω _K (E0) and Ω(E0), respectively. I(ce(K))=0.00036 9.
2272.8 5	0.023 5	2853.68		581.069	6 ⁺				
2276.17 10	0.131 5	2560.02	2 ⁺ ,3,4 ⁺	283.820	4 ⁺				
^x 2285.0 8	0.014 8								
2288.6 3	0.145 12	2572.4	3 ⁺ ,4 ⁺ ,5 ⁺	283.820	4 ⁺	M1		1.27×10 ⁻³	α(K)=0.000656 10; α(L)=8.85×10 ⁻⁵ 13; α(M)=1.93×10 ⁻⁵ 3 α(N)=4.45×10 ⁻⁶ 7; α(O)=6.57×10 ⁻⁷ 10; α(P)=3.90×10 ⁻⁸ 6; α(IPF)=0.000500 7
^x 2291.9 4	0.035 4								
2297.6 4	0.035 12	2297.49	2 ⁺	0.0	0 ⁺				
2299.8 4	0.042 12	2386.90	2 ⁺ ,3 ⁺	86.789	2 ⁺				
^x 2303.5 3	0.038 15								
2307.0 3	0.051 10	2393.55	2,3 ⁻	86.789	2 ⁺				
2310.1 5	0.024 6	2396.92	1,2	86.789	2 ⁺				
2321.94 8	0.10 1	2605.76	2 ⁺ ,3 ⁺ ,4 ⁺	283.820	4 ⁺	E2,M1		0.00115 11	α(K)=0.00058 6; α(L)=7.8×10 ⁻⁵ 9;

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †#</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^b</u>	<u>Comments</u>
2325.22 9	0.108 15	2325.24	1 ⁺ ,2 ⁺	0.0	0 ⁺	E2,M1	0.00115 11	α(M)=1.69×10 ⁻⁵ 18 α(N)=3.9×10 ⁻⁶ 5; α(O)=5.7×10 ⁻⁷ 7; α(P)=3.4×10 ⁻⁸ 4; α(IPF)=0.00048 5 α(K)=0.00058 6; α(L)=7.7×10 ⁻⁵ 9; α(M)=1.68×10 ⁻⁵ 18 α(N)=3.9×10 ⁻⁶ 5; α(O)=5.7×10 ⁻⁷ 7; α(P)=3.4×10 ⁻⁸ 4; α(IPF)=0.00048 5
2327.4 4	0.039 12	2327.70	2 ⁺	0.0	0 ⁺			
^x 2331.3 3	0.019 6							
^x 2340.0 5	0.013 6							
^x 2343.0 3	0.034 5							
^x 2345.5 9	0.010 5							
2354.54 7	0.23 2	2354.631	2 ⁺	0.0	0 ⁺	E2	1.05×10 ⁻³	α(K)=0.000506 7; α(L)=6.77×10 ⁻⁵ 10; α(M)=1.471×10 ⁻⁵ 21 α(N)=3.40×10 ⁻⁶ 5; α(O)=4.99×10 ⁻⁷ 7; α(P)=2.92×10 ⁻⁸ 4; α(IPF)=0.000453 7
2362.0 3	0.28 9	2645.88	3 ⁻	283.820	4 ⁺	E1	1.11×10 ⁻³	Mult.: 2002Ad34 report mult=M1,E2. Placement requires E2. α(K)=0.000250 4; α(L)=3.22×10 ⁻⁵ 5; α(M)=6.96×10 ⁻⁶ 10 α(N)=1.608×10 ⁻⁶ 23; α(O)=2.37×10 ⁻⁷ 4; α(P)=1.402×10 ⁻⁸ 20; α(IPF)=0.000815 12
2363.1 ^e 4	0.20 ^e 5	2450.26	1 ⁻	86.789	2 ⁺			I _γ : I _γ =0.28 9 for the composite peak.
2363.1 ^e 4	0.10 ^e 5	2647.31	(3) ⁻	283.820	4 ⁺			I _γ : I _γ =0.28 9 for the composite peak.
^x 2365.6 5	0.025 8							
^x 2376.65 15	0.051 8							
^x 2379.4 5	0.05 2							
2382.02 9	0.30 2	2665.78	2 ⁺ ,3 ⁺ ,4 ⁺	283.820	4 ⁺	E2,M1	0.00115 11	α(K)=0.00055 6; α(L)=7.4×10 ⁻⁵ 8; α(M)=1.60×10 ⁻⁵ 16 α(N)=3.7×10 ⁻⁶ 4; α(O)=5.4×10 ⁻⁷ 6; α(P)=3.2×10 ⁻⁸ 4; α(IPF)=0.00051 5
^x 2384.22 10	0.14 2							
2387.90 25	0.050 11	2474.97	2 ⁺ ,3,4 ⁺	86.789	2 ⁺			
^x 2390.68 14	0.193 10					E1	1.12×10 ⁻³	α(K)=0.000245 4; α(L)=3.16×10 ⁻⁵ 5; α(M)=6.83×10 ⁻⁶ 10 α(N)=1.577×10 ⁻⁶ 22; α(O)=2.32×10 ⁻⁷ 4; α(P)=1.376×10 ⁻⁸ 20; α(IPF)=0.000833 12
^x 2392.9 3	0.052 8							
2396.90 22	0.022 5	2396.92	1,2	0.0	0 ⁺			
^x 2399.87 21	0.040 18							
^x 2409.9 4	0.017 4							
2414.2 2	0.062 9	2697.826	2 ⁺	283.820	4 ⁺			
2417.2 2	0.058 5	2503.80	1 ⁺ ,2 ⁺	86.789	2 ⁺	M1	1.25×10 ⁻³	α(K)=0.000581 9; α(L)=7.82×10 ⁻⁵ 11; α(M)=1.701×10 ⁻⁵ 24 α(N)=3.94×10 ⁻⁶ 6; α(O)=5.80×10 ⁻⁷ 9; α(P)=3.45×10 ⁻⁸ 5; α(IPF)=0.000572 8
^x 2421.46 6	0.099 10							
^x 2425.87 8	0.095 12							
2433.33 6	0.50 4	2717.229	2 ⁺	283.820	4 ⁺	(E2)	1.05×10 ⁻³	α(K)=0.000477 7; α(L)=6.37×10 ⁻⁵ 9; α(M)=1.384×10 ⁻⁵ 20

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

<u>γ(¹⁶⁰Dy) (continued)</u>										
<u>E_γ ††</u>	<u>I_γ †#</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&c</u>	<u>α^b</u>	<u>I_(γ+ce) †</u>	<u>Comments</u>
										α(N)=3.20×10 ⁻⁶ 5; α(O)=4.70×10 ⁻⁷ 7; α(P)=2.75×10 ⁻⁸ 4; α(IPF)=0.000490 7 Mult.: 2002Ad34 report mult=M1,E2. Placement requires E2.
2436.80 8	0.25 3	2720.58	3 ⁻	283.820	4 ⁺	E1		1.14×10 ⁻³		α(K)=0.000238 4; α(L)=3.07×10 ⁻⁵ 5; α(M)=6.63×10 ⁻⁶ 10 α(N)=1.531×10 ⁻⁶ 22; α(O)=2.25×10 ⁻⁷ 4; α(P)=1.336×10 ⁻⁸ 19; α(IPF)=0.000862 12
2443.35 10	0.129 15	2727.20	(4)	283.820	4 ⁺					
2450.25 6	0.4 1	2450.26	1 ⁻	0.0	0 ⁺	E1		1.14×10 ⁻³		α(K)=0.000236 4; α(L)=3.04×10 ⁻⁵ 5; α(M)=6.57×10 ⁻⁶ 10 α(N)=1.518×10 ⁻⁶ 22; α(O)=2.23×10 ⁻⁷ 4; α(P)=1.325×10 ⁻⁸ 19; α(IPF)=0.000870 13 Mult.: 2002Ad34 report mult=E1,E2. Placement requires E1.
^x 2458.81 12	0.055 5									
^x 2466.3 3	0.077 11									
^x 2468.5 7	0.035 10									
2471.2 2	0.123 15	2755.04		283.820	4 ⁺					
2473.3 ^e 2	0.08 ^e 2	2560.02	2 ⁺ ,3,4 ⁺	86.789	2 ⁺					I _γ : I _γ =0.136 13 for the composite peak.
2473.3 ^e 2	0.06 ^e 2	2757.13		283.820	4 ⁺					I _γ : I _γ =0.136 13 for the composite peak.
2479.14 6	0.38 3	2763.05		283.820	4 ⁺	E2		1.05×10 ⁻³		α(K)=0.000462 7; α(L)=6.16×10 ⁻⁵ 9; α(M)=1.337×10 ⁻⁵ 19 α(N)=3.09×10 ⁻⁶ 5; α(O)=4.54×10 ⁻⁷ 7; α(P)=2.66×10 ⁻⁸ 4; α(IPF)=0.000512 8 I(cc(K))=0.00015 4.
^x 2486.27 13	0.117 12									
2488.26 20	0.74 14	2772.10		283.820	4 ⁺					
2493.87 6	0.42 2	2777.62	2 ⁺ ,3 ⁺ ,4 ⁺	283.820	4 ⁺	E2,M1		0.00115 10		α(K)=0.00050 5; α(L)=6.7×10 ⁻⁵ 6; α(M)=1.45×10 ⁻⁵ 14 α(N)=3.4×10 ⁻⁶ 3; α(O)=5.0×10 ⁻⁷ 5; α(P)=2.9×10 ⁻⁸ 3; α(IPF)=0.00057 5
^x 2499.3 5	0.023 5									
^x 2502.2 3	0.098 20									
^x 2504.6 2	0.18 3									
^x 2507.95 21	0.028 6									
2515.86 5	0.21 2	2602.67	1 ⁻ ,2 ⁻	86.789	2 ⁺					
2518.7 ^e 9	0.03 ^e 1	2605.76	2 ⁺ ,3 ⁺ ,4 ⁺	86.789	2 ⁺					I _γ : I _γ =0.102 20 for the composite peak.
2518.7 ^e 9	0.07 ^e 2	3098.98	6 ⁺	581.069	6 ⁺					I _γ : I _γ =0.102 20 for the composite peak.
^x 2520.2 6	0.06 4									
2523.0 2	0.049 8	2610.01	2 ⁺	86.789	2 ⁺					
^x 2529.9 3	0.021 6									
^x 2531.9 6	0.017 8									

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γ(¹⁶⁰Dy) (continued)

<u>E_γ ††</u>	<u>I_γ †#</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&c</u>	<u>α^b</u>	<u>Comments</u>
^x 2536.38 8	0.013 2								
2543.95 5	6.0 3	2630.714	1 ⁻	86.789	2 ⁺	E1(+M2)	+0.03 9	1.19×10 ⁻³ 2	α(K)=0.000223 13; α(L)=2.88×10 ⁻⁵ 18; α(M)=6.2×10 ⁻⁶ 4 α(N)=1.44×10 ⁻⁶ 9; α(O)=2.12×10 ⁻⁷ 13; α(P)=1.26×10 ⁻⁸ 8; α(IPF)=0.000926 15 I(cc(K))=0.0011 2. A ₂ =+0.10 9.
2548.2 3	0.069 8	2634.74		86.789	2 ⁺				
2550.1 3	0.07 3	2833.85	2,3,4	283.820	4 ⁺				
2559.1 3	0.69 9	2645.88	3 ⁻	86.789	2 ⁺	E1		1.19×10 ⁻³	α(K)=0.000221 3; α(L)=2.84×10 ⁻⁵ 4; α(M)=6.14×10 ⁻⁶ 9 α(N)=1.418×10 ⁻⁶ 20; α(O)=2.09×10 ⁻⁷ 3; α(P)=1.239×10 ⁻⁸ 18; α(IPF)=0.000936 14 I(cc(K))=0.00029 8.
2560.7 3	0.69 9	2647.31	(3) ⁻	86.789	2 ⁺	E1		1.19×10 ⁻³	α(K)=0.000220 3; α(L)=2.84×10 ⁻⁵ 4; α(M)=6.13×10 ⁻⁶ 9 α(N)=1.417×10 ⁻⁶ 20; α(O)=2.09×10 ⁻⁷ 3; α(P)=1.238×10 ⁻⁸ 18; α(IPF)=0.000937 14 I(cc(K))<0.0001.
2569.83 12	0.228 16	2853.68		283.820	4 ⁺				
2574.68 5	1.37 6	2661.522	2 ⁻	86.789	2 ⁺	E1		1.20×10 ⁻³	α(K)=0.000218 3; α(L)=2.81×10 ⁻⁵ 4; α(M)=6.08×10 ⁻⁶ 9 α(N)=1.405×10 ⁻⁶ 20; α(O)=2.07×10 ⁻⁷ 3; α(P)=1.228×10 ⁻⁸ 18; α(IPF)=0.000945 14 I(cc(K))=0.00022 7. A ₂ =+0.25 18. 1998Kr21 report δ(M2/E1)=+0.07 13, but for a different placement, namely from 2858, 3 ⁻ to 284, 4 ⁺ .
2578.9 3	0.023 5	2665.78	2 ⁺ ,3 ⁺ ,4 ⁺	86.789	2 ⁺				
^x 2581.46 6	0.135 7								
2587.93 5	0.97 5	2674.720	1 ⁻	86.789	2 ⁺	E1(+M2)	+0.09 32	0.00121 7	α(K)=2.2×10 ⁻⁴ 12; α(L)=2.9×10 ⁻⁵ 17; α(M)=6.2×10 ⁻⁶ 36 α(N)=1.44×10 ⁻⁶ 83; α(O)=2.1×10 ⁻⁷ 13; α(P)=1.26×10 ⁻⁸ 72; α(IPF)=0.00095 8 I(cc(K))=0.00017 4. A ₂ =+0.16 28.
2595.6 2	0.081 8	2879.47	2	283.820	4 ⁺				
2602.65 6	0.076 7	2602.67	1 ⁻ ,2 ⁻	0.0	0 ⁺				
2610.0 ^e 3	0.05 ^e 2	2610.01	2 ⁺	0.0	0 ⁺				I _γ : I _γ =0.15 3 for composite peak.
2610.0 ^e 3	0.10 ^e 5	2696.43	2 ⁻ ,3 ⁻	86.789	2 ⁺				I _γ : I _γ =0.15 3 for composite peak.
2611.0 3	0.20 5	2697.826	2 ⁺	86.789	2 ⁺				
2612.5 3	0.02 1	2896.28	2 ⁺	283.820	4 ⁺				
2614.25 5	4.9 2	2701.048	1 ⁻	86.789	2 ⁺	E1(+M2)	-0.03 +12-13	1.22×10 ⁻³ 2	α(K)=0.000214 21; α(L)=2.8×10 ⁻⁵ 3; α(M)=6.0×10 ⁻⁶ 7 α(N)=1.38×10 ⁻⁶ 15; α(O)=2.03×10 ⁻⁷ 22;

γ(¹⁶⁰Dy) (continued)

<u>E_γ †‡</u>	<u>I_γ †‡</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&c</u>	<u>α^b</u>	<u>Comments</u>
2617.56 16	0.55 5	2704.230	2 ⁻ ,3 ⁻	86.789	2 ⁺	E1		1.22×10 ⁻³	α(P)=1.20×10 ⁻⁸ 13; α(IPF)=0.000969 20 I(ce(K))=0.00075 20. A ₂ =+0.04 11. α(K)=0.000213 3; α(L)=2.74×10 ⁻⁵ 4; α(M)=5.93×10 ⁻⁶ 9 α(N)=1.369×10 ⁻⁶ 20; α(O)=2.02×10 ⁻⁷ 3; α(P)=1.197×10 ⁻⁸ 17; α(IPF)=0.000972 14 I(ce(K))=0.00010 5.
2620.4 4	0.028 7	2904.36	2,3,4	283.820	4 ⁺				
2630.6 ^e 3	1.5 ^e 3	2630.714	1 ⁻	0.0	0 ⁺	E1		1.23×10 ⁻³	α(K)=0.000211 3; α(L)=2.72×10 ⁻⁵ 4; α(M)=5.88×10 ⁻⁶ 9 α(N)=1.359×10 ⁻⁶ 19; α(O)=2.00×10 ⁻⁷ 3; α(P)=1.188×10 ⁻⁸ 17; α(IPF)=0.000980 14 I _γ : I _γ =1.9 3 for the composite peak. I(ce(K))=0.0011 3.
2630.6 ^e 3	0.4 ^e 1	2717.229	2 ⁺	86.789	2 ⁺				I _γ : I _γ =1.9 3 for the composite peak.
2632.15 15	4.5 4	2719.02	2 ⁻	86.789	2 ⁺	E1		1.23×10 ⁻³	α(K)=0.000211 3; α(L)=2.72×10 ⁻⁵ 4; α(M)=5.88×10 ⁻⁶ 9 α(N)=1.358×10 ⁻⁶ 19; α(O)=2.00×10 ⁻⁷ 3; α(P)=1.187×10 ⁻⁸ 17; α(IPF)=0.000981 14
2643.06 10	0.67 4	2729.84	2 ⁻	86.789	2 ⁺	E1		1.23×10 ⁻³	α(K)=0.000210 3; α(L)=2.70×10 ⁻⁵ 4; α(M)=5.84×10 ⁻⁶ 9 α(N)=1.349×10 ⁻⁶ 19; α(O)=1.99×10 ⁻⁷ 3; α(P)=1.180×10 ⁻⁸ 17; α(IPF)=0.000987 14
2647.91 ^e 5	2.7 ^e 2	2734.720	1 ⁻	86.789	2 ⁺	E1(+M2)	-0.15 +20-19	0.00124 4	α(K)=2.27×10 ⁻⁴ 67; α(L)=2.94×10 ⁻⁵ 93; α(M)=6.4×10 ⁻⁶ 21 α(N)=1.47×10 ⁻⁶ 47; α(O)=2.17×10 ⁻⁷ 70; α(P)=1.29×10 ⁻⁸ 41; α(IPF)=0.00098 5 I _γ : I _γ =3.02 15 for the composite peak. I(ce(K))=0.00048 15. A ₂ =+0.22 18.
2647.91 ^e 5	0.30 ^e 3	2931.75		283.820	4 ⁺				I _γ : I _γ =3.02 15 for the composite peak.
2658.11 8	0.106 5	2941.95	4,5,6	283.820	4 ⁺				
2669.5 3	0.172 14	2756.3		86.789	2 ⁺				
2674.71 ^e 5	7.3 ^e 4	2674.720	1 ⁻	0.0	0 ⁺	E1		1.25×10 ⁻³	α(K)=0.000206 3; α(L)=2.65×10 ⁻⁵ 4; α(M)=5.73×10 ⁻⁶ 8 α(N)=1.324×10 ⁻⁶ 19; α(O)=1.95×10 ⁻⁷ 3; α(P)=1.158×10 ⁻⁸ 17; α(IPF)=0.001007 14 I _γ : I _γ =7.6 4 for the composite peak. I(ce(K))=0.0015 2. A ₂ =+0.74 23.
2674.71 ^e 5	0.30 ^e 3	2958.55		283.820	4 ⁺				I _γ : I _γ =7.6 4 for the composite peak.
^x 2677.4 3	0.077 15								
2680.88 5	0.47 2	2767.70	1 ⁻	86.789	2 ⁺	E1		1.25×10 ⁻³	α(K)=0.000205 3; α(L)=2.64×10 ⁻⁵ 4;

¹⁶⁰Ho ε decay (25.6 min+5.02 h) [2002Ad34,1998Kr21](#) (continued)

γ(¹⁶⁰Dy) (continued)

<u>E_γ</u> †‡	<u>I_γ</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^b</u>	<u>Comments</u>
								α(M)=5.71×10 ⁻⁶ 8 α(N)=1.320×10 ⁻⁶ 19; α(O)=1.94×10 ⁻⁷ 3; α(P)=1.154×10 ⁻⁸ 17; α(IPF)=0.001010 15 I(cc(K))=0.00010 5.
2686.14 8	0.116 6	2969.90		283.820	4 ⁺			
2693.70 6	0.055 8	2977.54		283.820	4 ⁺			
2697.78 5	0.288 16	2697.826	2 ⁺	0.0	0 ⁺			
2701.04 5	0.172 8	2701.048	1 ⁻	0.0	0 ⁺			
2711.0 2	0.032 2	2994.69	2,3,4	283.820	4 ⁺			
2717.20 5	0.256 11	2717.229	2 ⁺	0.0	0 ⁺			
^x 2721.9 2	0.012 2							
2734.72 5	0.92 3	2734.720	1 ⁻	0.0	0 ⁺	E1	1.27×10 ⁻³	α(K)=0.000199 3; α(L)=2.56×10 ⁻⁵ 4; α(M)=5.54×10 ⁻⁶ 8 α(N)=1.280×10 ⁻⁶ 18; α(O)=1.88×10 ⁻⁷ 3; α(P)=1.120×10 ⁻⁸ 16; α(IPF)=0.001043 15 I(cc(K))=0.00009 3. A ₂ =+0.74 29.
2747.0 2	0.073 6	2833.85	2,3,4	86.789	2 ⁺			
2749.9 3	0.014 4	3033.7		283.820	4 ⁺			
2764.81 5	0.86 7	2851.73	1 ⁻	86.789	2 ⁺	E1	1.29×10 ⁻³	α(K)=0.000196 3; α(L)=2.52×10 ⁻⁵ 4; α(M)=5.45×10 ⁻⁶ 8 α(N)=1.259×10 ⁻⁶ 18; α(O)=1.85×10 ⁻⁷ 3; α(P)=1.102×10 ⁻⁸ 16; α(IPF)=0.001060 15 I(cc(K))=0.00010 4.
2767.8 2	0.061 12	2767.70	1 ⁻	0.0	0 ⁺			
2771.6 5	0.009 3	2858.17		86.789	2 ⁺			
2774.3 2	0.039 10	2861.17	1 ⁺	86.789	2 ⁺			
2790.4 2	0.025 3	2877.114	1 ⁻	86.789	2 ⁺			
2793.1 5	0.0083 18	2879.47	2	86.789	2 ⁺			
2797.6 4	0.011 3	3081.4	(4,5,6)	283.820	4 ⁺			
2809.2 2	0.034 6	2896.28	2 ⁺	86.789	2 ⁺			
2817.56 8	0.081 8	2904.36	2,3,4	86.789	2 ⁺			
2822.2 2	0.022 4	2822.23	1 ⁺	0.0	0 ⁺			
^x 2831.7 3	0.0083 8							
^x 2837.2 4	0.0044 20							
^x 2843.8 2	0.017 3							
2851.55 8	0.257 16	2851.73	1 ⁻	0.0	0 ⁺	(E1)	1.32×10 ⁻³	α(K)=0.000187 3; α(L)=2.41×10 ⁻⁵ 4; α(M)=5.20×10 ⁻⁶ 8 α(N)=1.201×10 ⁻⁶ 17; α(O)=1.768×10 ⁻⁷ 25; α(P)=1.052×10 ⁻⁸ 15; α(IPF)=0.001105 16
^x 2854.7 2	0.043 5							
2861.03 9	0.084 6	2861.17	1 ⁺	0.0	0 ⁺	(M1)	1.28×10 ⁻³	α(K)=0.000400 6; α(L)=5.36×10 ⁻⁵ 8; α(M)=1.165×10 ⁻⁵ 17 α(N)=2.70×10 ⁻⁶ 4; α(O)=3.98×10 ⁻⁷ 6; α(P)=2.37×10 ⁻⁸ 4; α(IPF)=0.000812 12 Mult.: 2002Ad34 report mult=(E1),E2,M1. Placement requires M1.
^x 2866.5 2	0.038 3							
2876.98 10	0.017 2	2877.114	1 ⁻	0.0	0 ⁺	E1	1.33×10 ⁻³	α(K)=0.000185 3; α(L)=2.37×10 ⁻⁵ 4; α(M)=5.13×10 ⁻⁶ 8

γ(¹⁶⁰Dy) (continued)

E_γ †‡	I_γ †‡	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	α^b	Comments
								$\alpha(N)=1.185\times 10^{-6}$ 17; $\alpha(O)=1.744\times 10^{-7}$ 25; $\alpha(P)=1.038\times 10^{-8}$ 15; $\alpha(IPF)=0.001118$ 16
2882.5 3	0.0035 8	2969.04	1,2	86.789	2 ⁺			
^x 2889.0 2	0.015 2							
2896.7 2	0.069 4	2896.28	2 ⁺	0.0	0 ⁺	E2	0.00120 9	$\alpha(K)=0.000370$ 20; $\alpha(L)=4.9\times 10^{-5}$ 3; $\alpha(M)=1.07\times 10^{-5}$ 7 $\alpha(N)=2.47\times 10^{-6}$ 16; $\alpha(O)=3.65\times 10^{-7}$ 23; $\alpha(P)=2.16\times 10^{-8}$ 15; $\alpha(IPF)=0.00077$ 7 Mult.: placement requires E2.
2907.7 3	0.0055 10	2994.69	2,3,4	86.789	2 ⁺			
^x 2915.2 2	0.016 2							
2917.5 1	0.003 1	3004.34	1,2	86.789	2 ⁺			
^x 2929.3 2	0.0077 17							
^x 2933.8 2	0.0055 10							
2937.9 3	0.0084 9	3024.52	1,2	86.789	2 ⁺			
^x 2945.6 2	0.018 2							
2968.5 7	0.0032 15	2969.04	1,2	0.0	0 ⁺			
2975.2 2	0.0192 15	3061.83	1 ⁺	86.789	2 ⁺	(M1)	1.30×10^{-3}	$\alpha(K)=0.000368$ 6; $\alpha(L)=4.92\times 10^{-5}$ 7; $\alpha(M)=1.069\times 10^{-5}$ 15 $\alpha(N)=2.47\times 10^{-6}$ 4; $\alpha(O)=3.65\times 10^{-7}$ 6; $\alpha(P)=2.17\times 10^{-8}$ 3; $\alpha(IPF)=0.000871$ 13
3004.6 4	0.0035 10	3004.34	1,2	0.0	0 ⁺			
3024.4 2	0.0153 13	3024.52	1,2	0.0	0 ⁺			
3061.3 7	0.0022 9	3061.83	1 ⁺	0.0	0 ⁺	(M1)	1.32×10^{-3}	$\alpha(K)=0.000345$ 5; $\alpha(L)=4.62\times 10^{-5}$ 7; $\alpha(M)=1.004\times 10^{-5}$ 14 $\alpha(N)=2.32\times 10^{-6}$ 4; $\alpha(O)=3.43\times 10^{-7}$ 5; $\alpha(P)=2.04\times 10^{-8}$ 3; $\alpha(IPF)=0.000914$ 13

† Values are from [2002Ad34](#), unless noted otherwise. 868 γ transitions were reported (although some are multiply placed), of which 528 are new. 33 previously reported γ rays were not confirmed. Photon intensities and I(ce(K)) listed by these authors are on the same scale.

‡ Ten E_γ values differ from their respective level-energy differences by more than three times the quoted uncertainties. Five of these γ's are unresolved doublets. The level-energy differences for these γ's are given as comments.

The unplaced γ intensity amounts to ≈0.9%.

@ Proposed by [2002Ad34](#), unless noted otherwise (and transferred to the Adopted Levels, Gammas dataset). Values are based on their ce data. Assumed mults (for E_γ<600 keV) are shown in square brackets.

& From [1998Kr21](#), unless noted otherwise. Where a δ value is consistent with E2+M3 but overlaps zero, the γ is shown as pure E2.

^a From the ce data of [2002Ad34](#).

^b [Additional information 2](#).

^c [Additional information 3](#).

^d Multiply placed with undivided intensity.

^e Multiply placed with intensity suitably divided.

$\gamma(^{160}\text{Dy})$ (continued)

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

^x γ ray not placed in level scheme.

^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

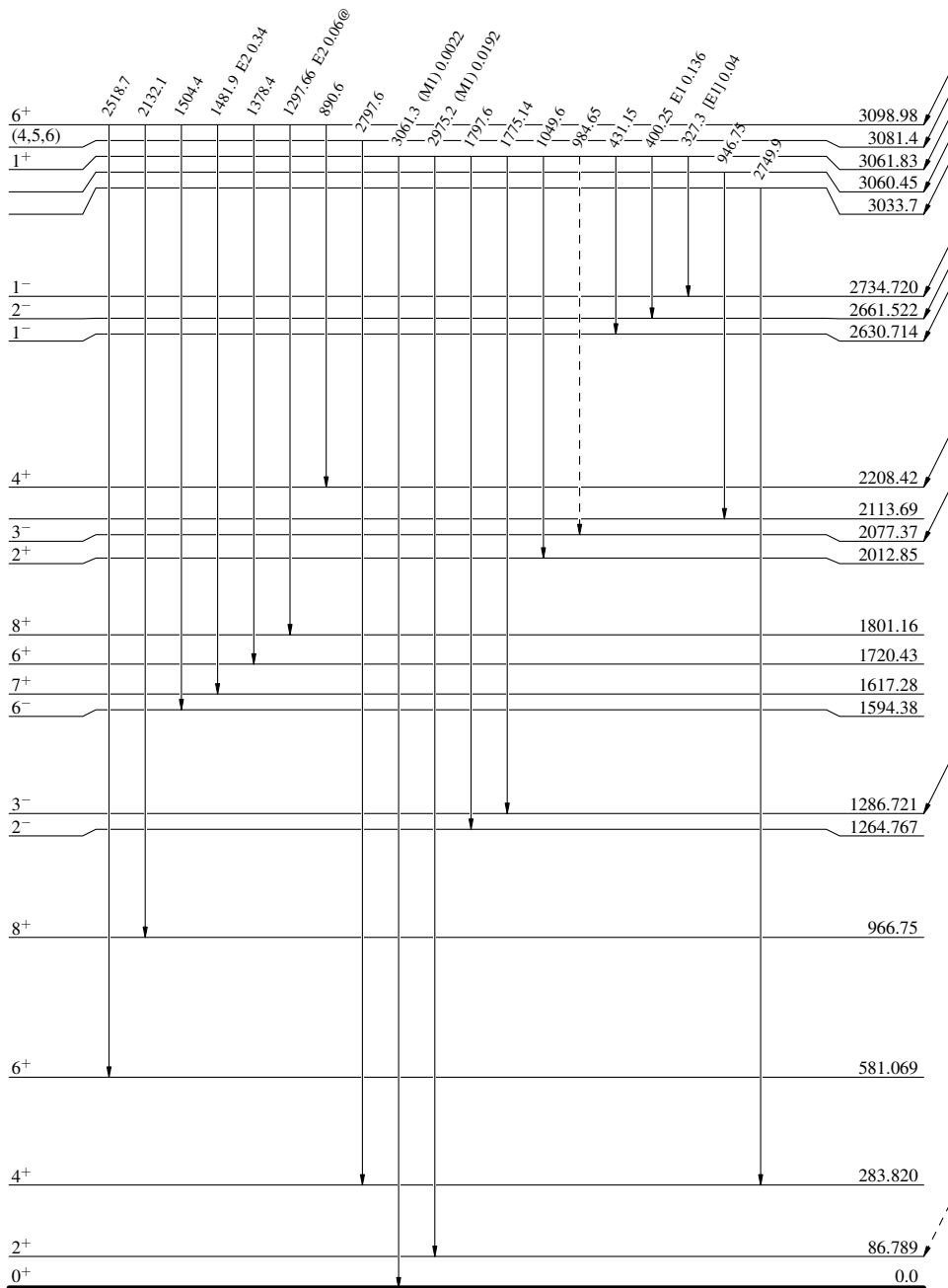
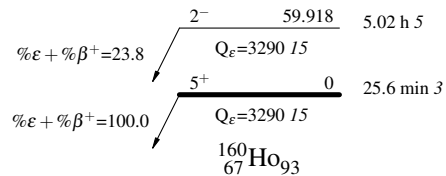
Decay Scheme

Intensities: Relative $I_{(\gamma+ce)}$

@ Multiply placed: intensity suitably divided

Legend

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



$^{160}_{66}\text{Dy}_{94}$

^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

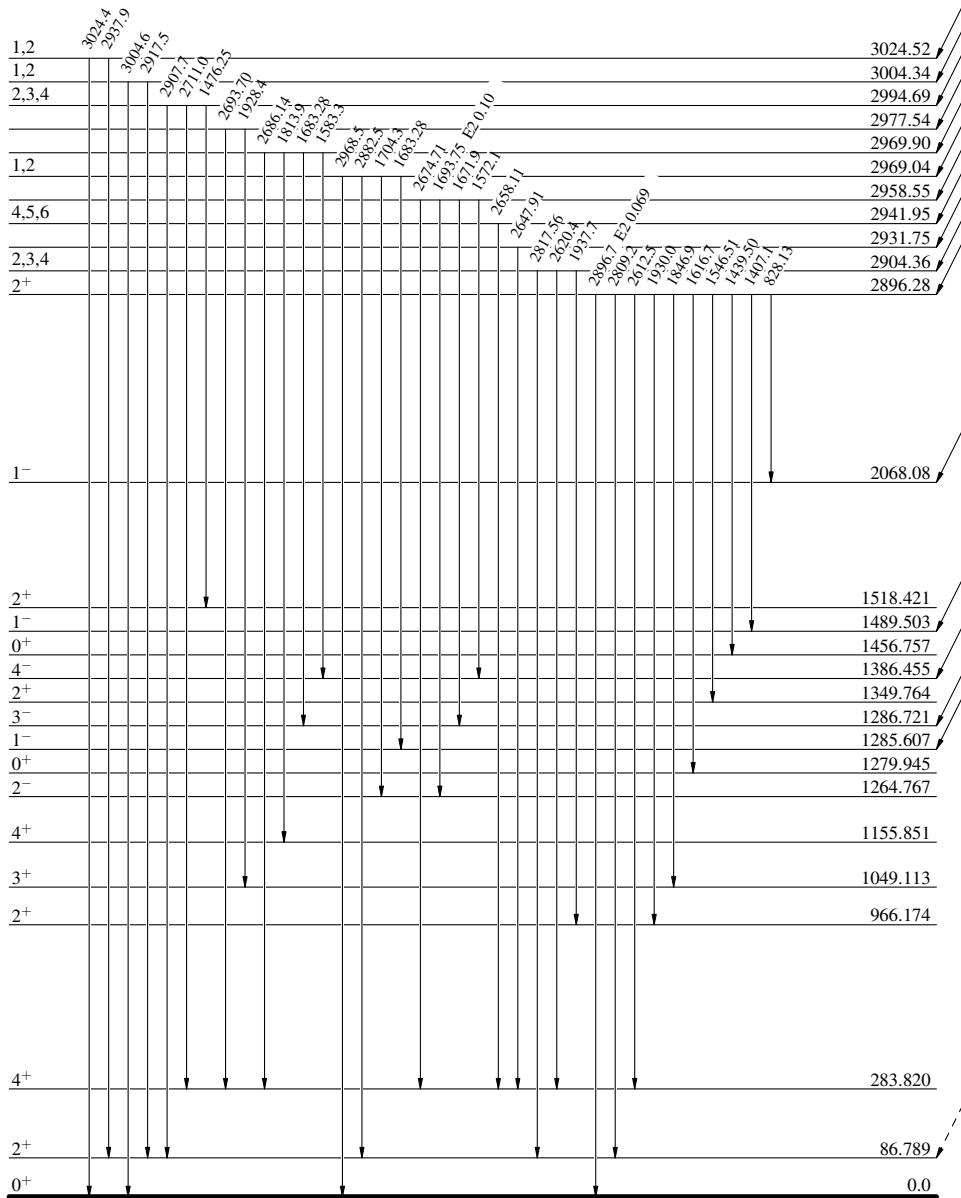
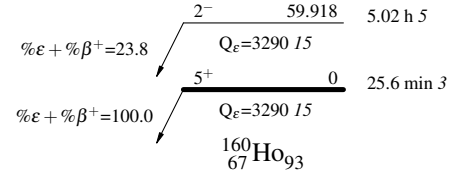
Decay Scheme (continued)

Intensities: Relative $I_{(\gamma+ce)}$

@ Multiply placed: intensity suitably divided

Legend

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



$^{160}_{66}\text{Dy}_{94}$

^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

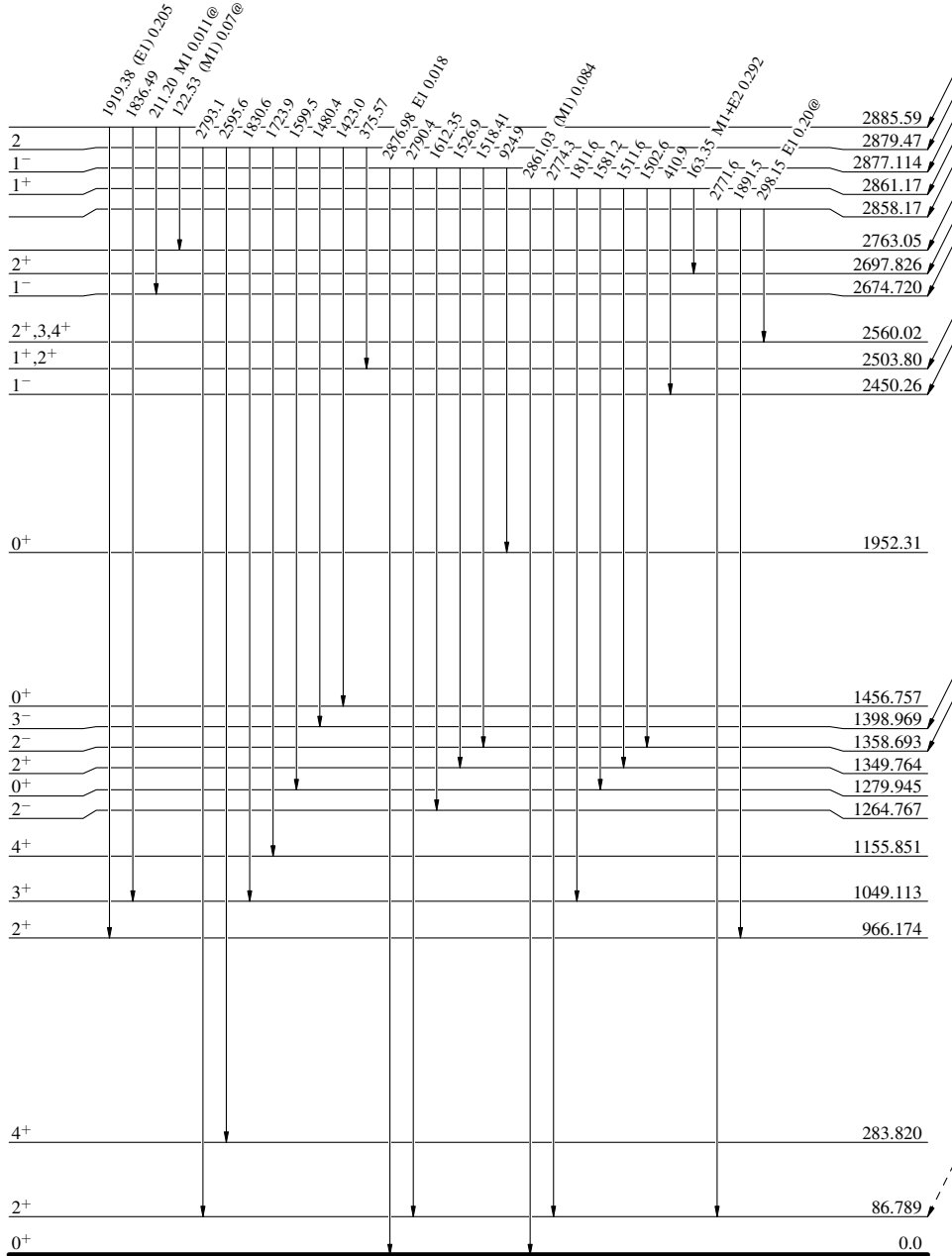
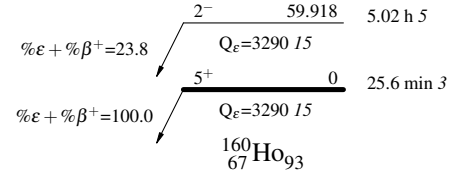
Decay Scheme (continued)

Intensities: Relative $I_{(\gamma+ce)}$

@ Multiply placed: intensity suitably divided

Legend

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



$^{160}_{66}\text{Dy}_{94}$

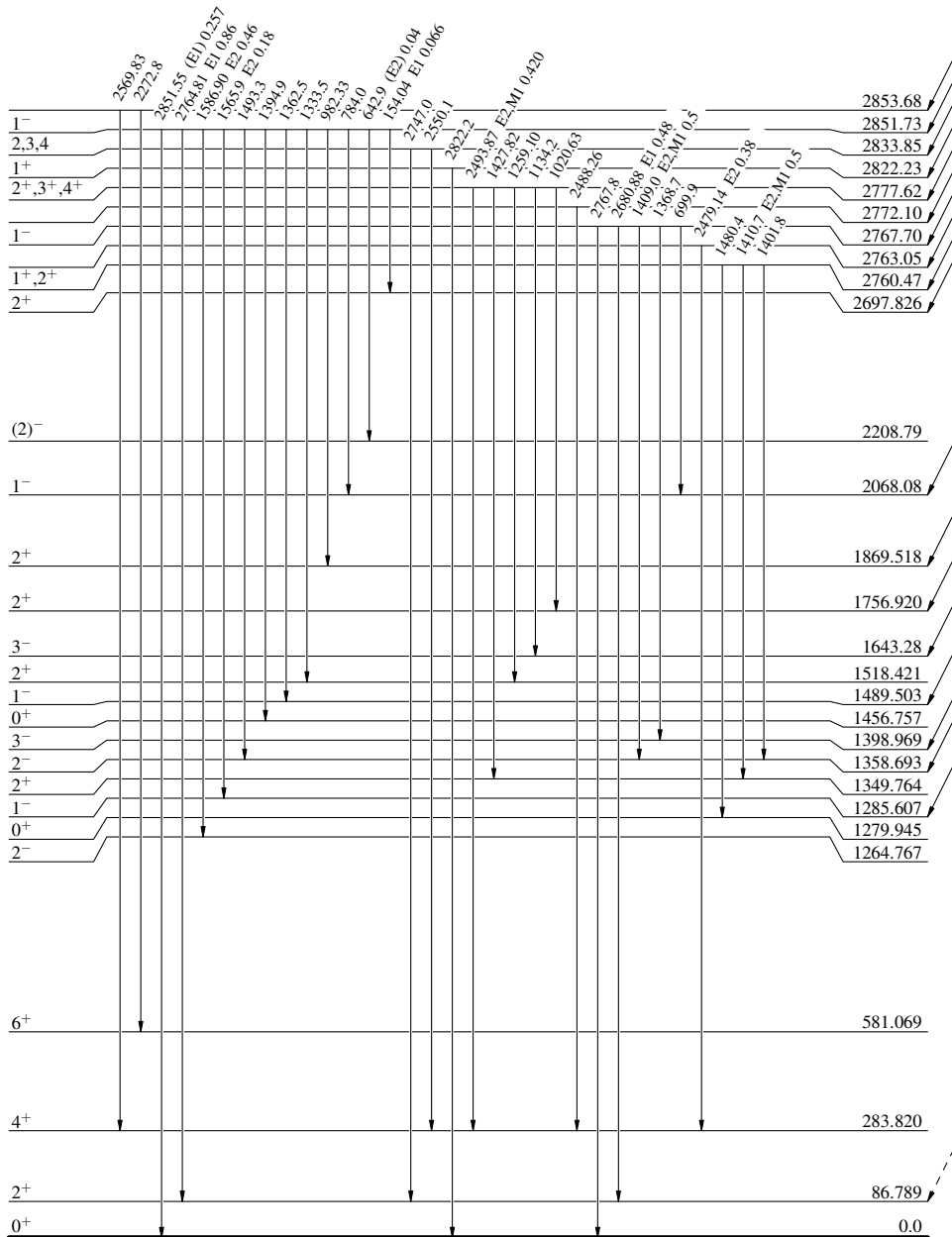
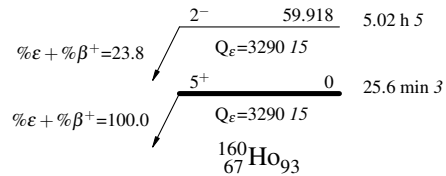
^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

Intensities: Relative $I_{(\gamma+ce)}$
@ Multiply placed: intensity suitably divided

Legend

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



$^{160}_{66}\text{Dy}_{94}$

^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

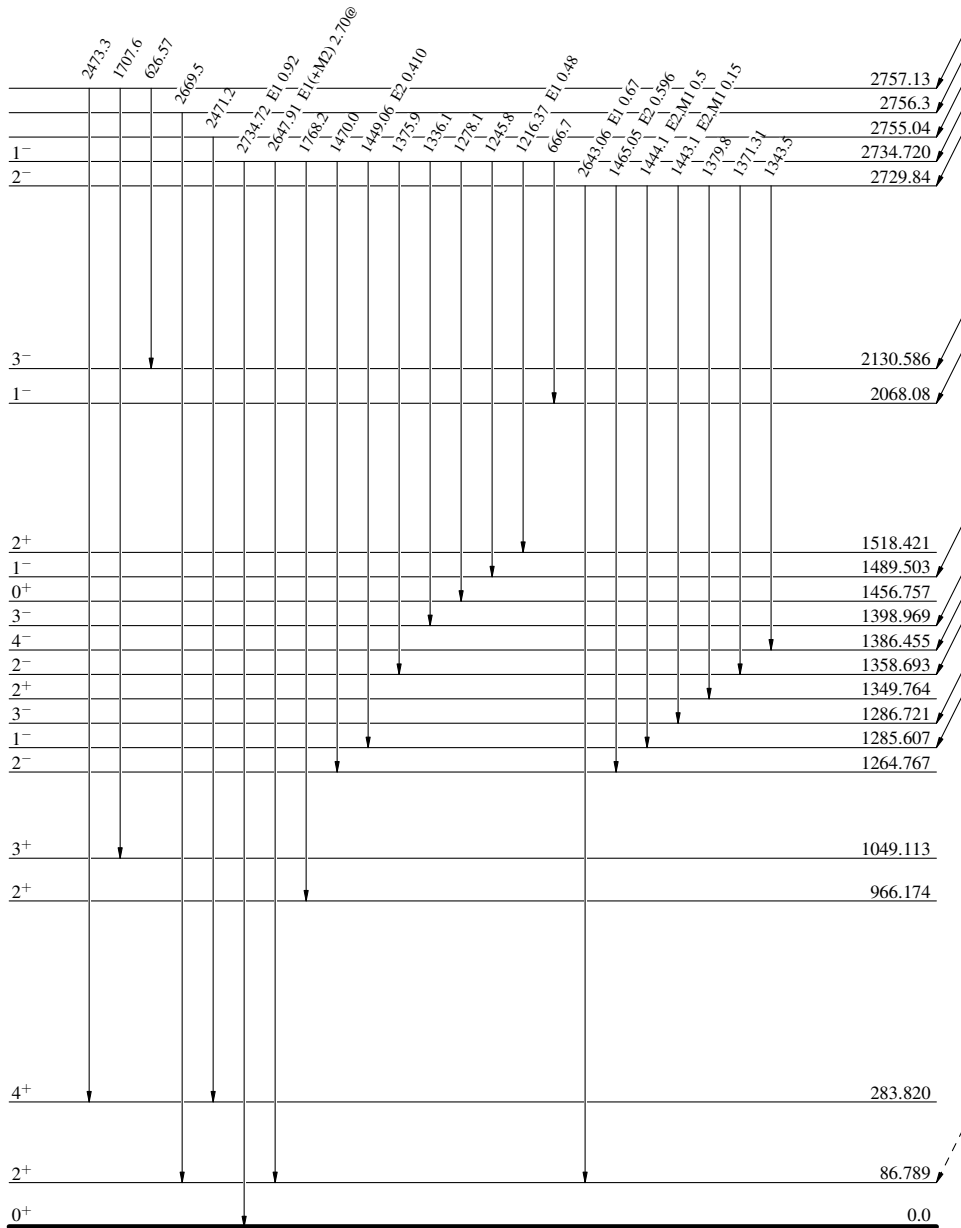
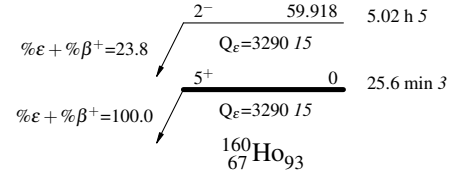
Decay Scheme (continued)

Intensities: Relative $I_{(\gamma+ce)}$

@ Multiply placed: intensity suitably divided

Legend

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



$^{160}_{66}\text{Dy}_{94}$

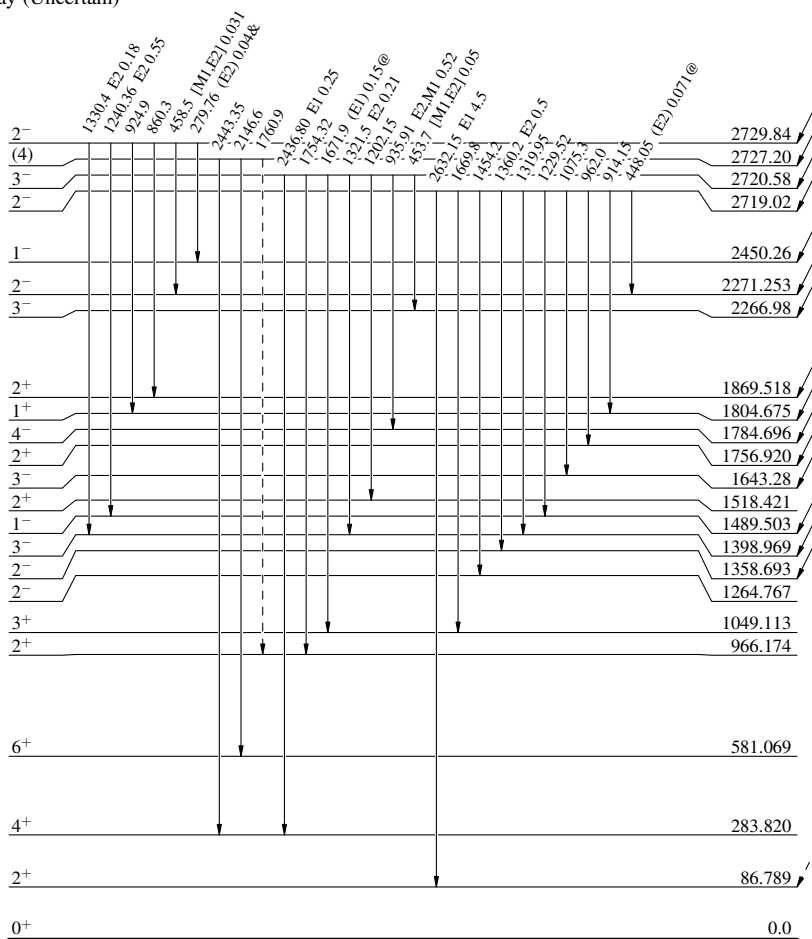
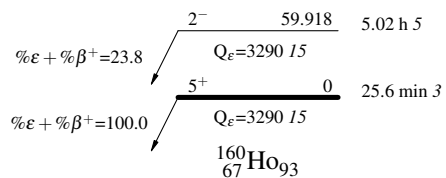
¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

Intensities: Relative I_(γ+ce)
 & 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)



¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

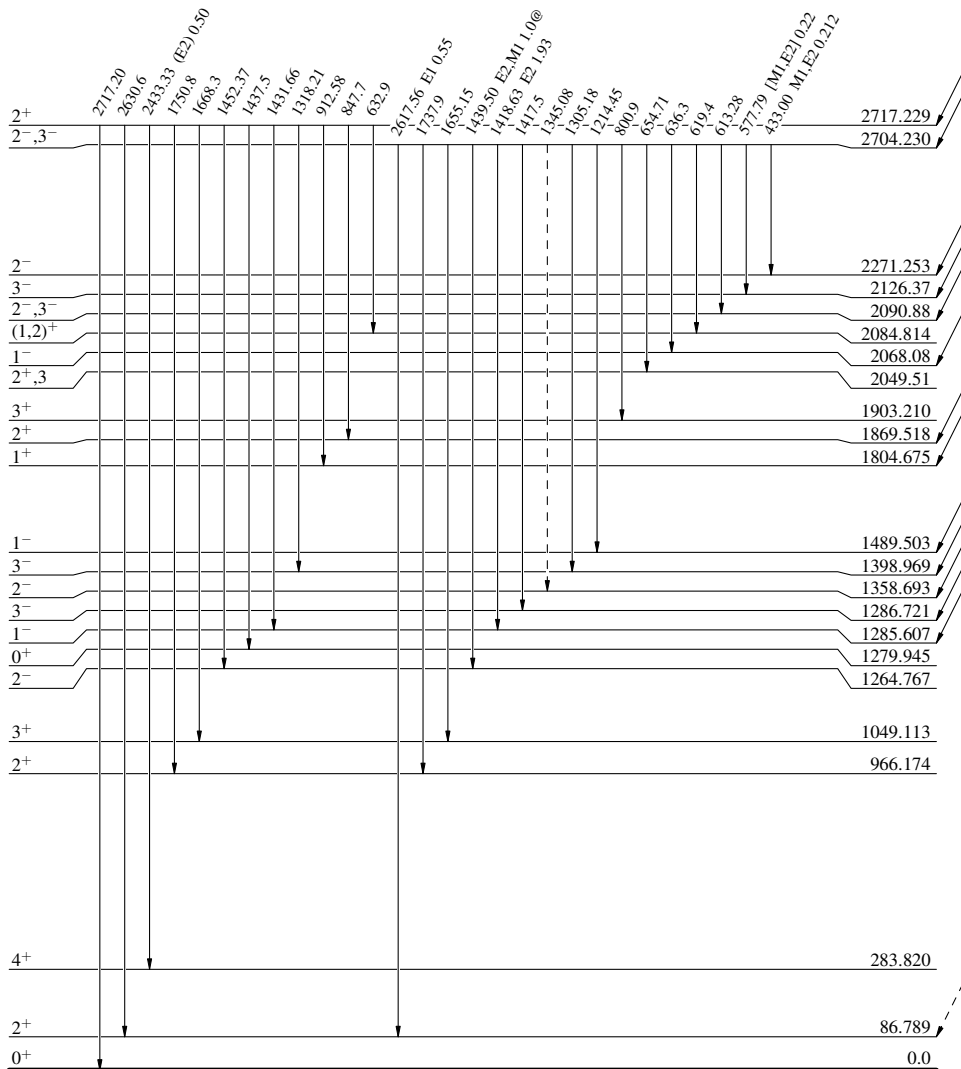
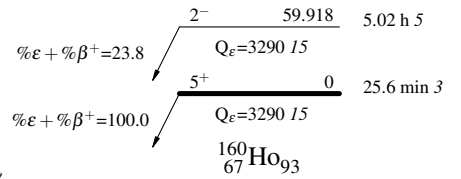
Intensities: Relative I_(γ+ce)

& 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)



¹⁶⁰Dy₉₄

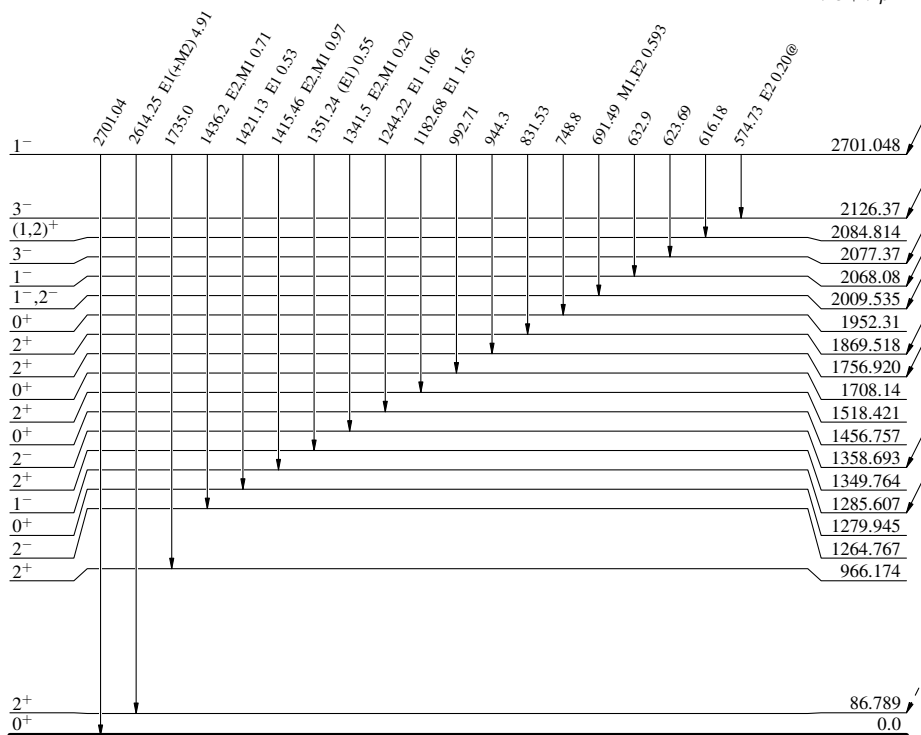
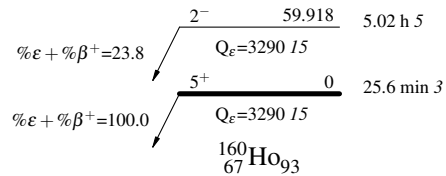
^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

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

Legend

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



$^{160}_{66}\text{Dy}_{94}$

^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

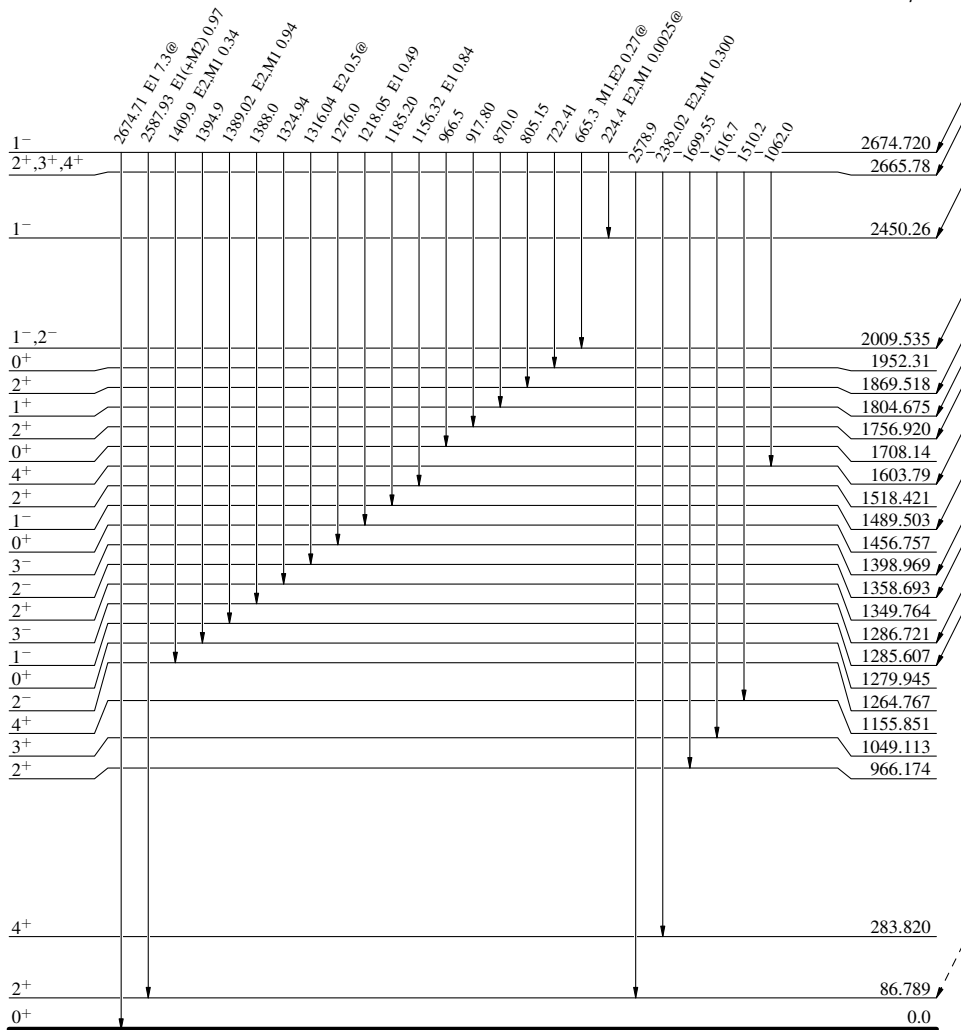
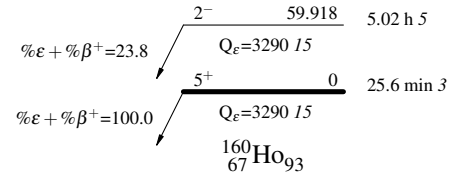
Intensities: Relative $I_{(\gamma+ce)}$

& Multiply placed: undivided intensity given

@ Multiply placed: intensity suitably divided

Legend

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



$^{160}_{66}\text{Dy}_{94}$

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

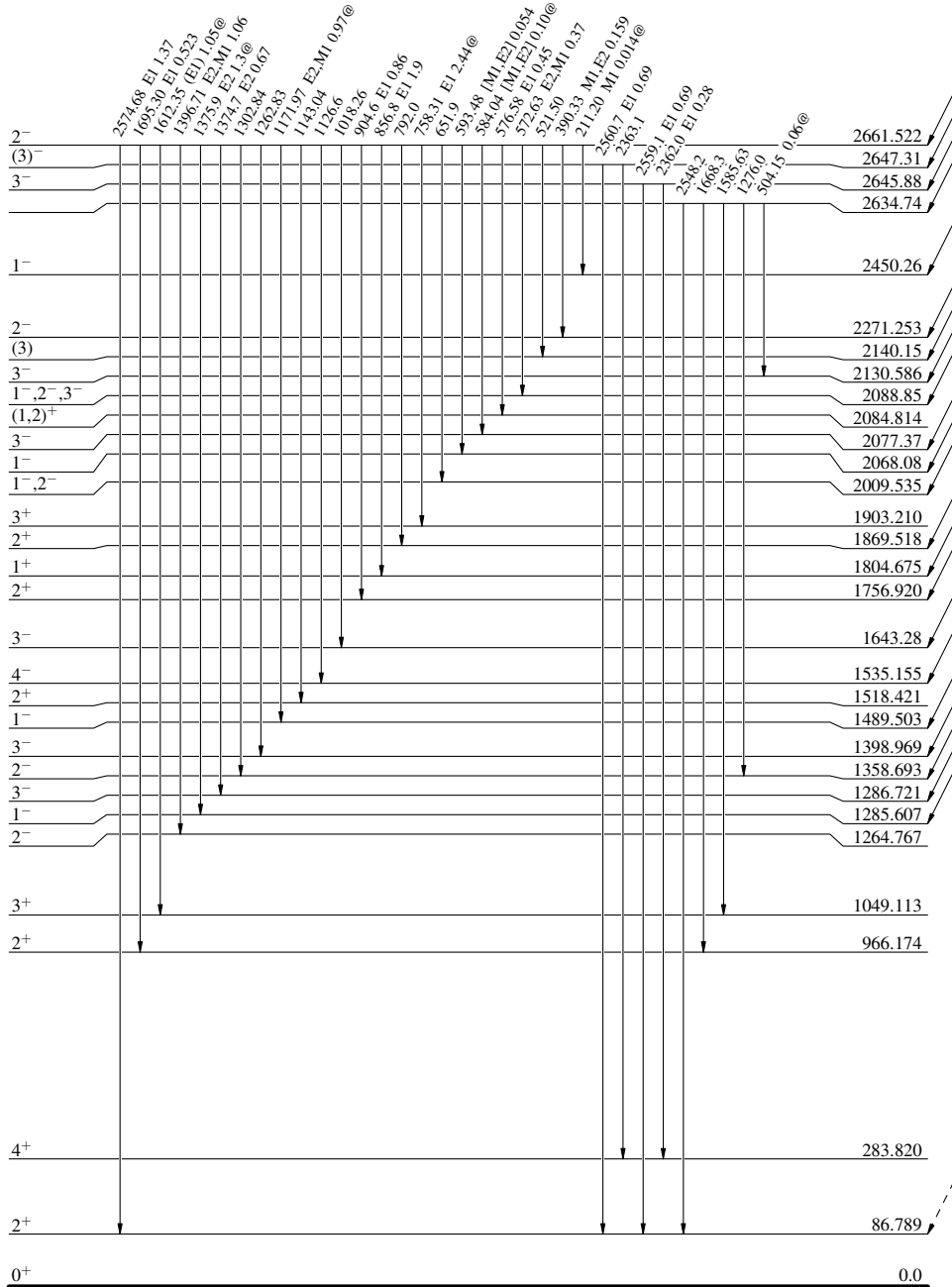
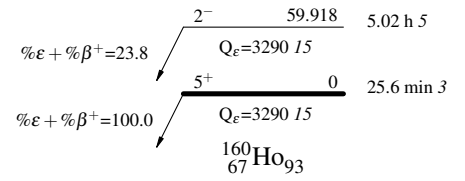
Intensities: Relative I_(γ+ce)

& 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}



¹⁶⁰Dy₉₄

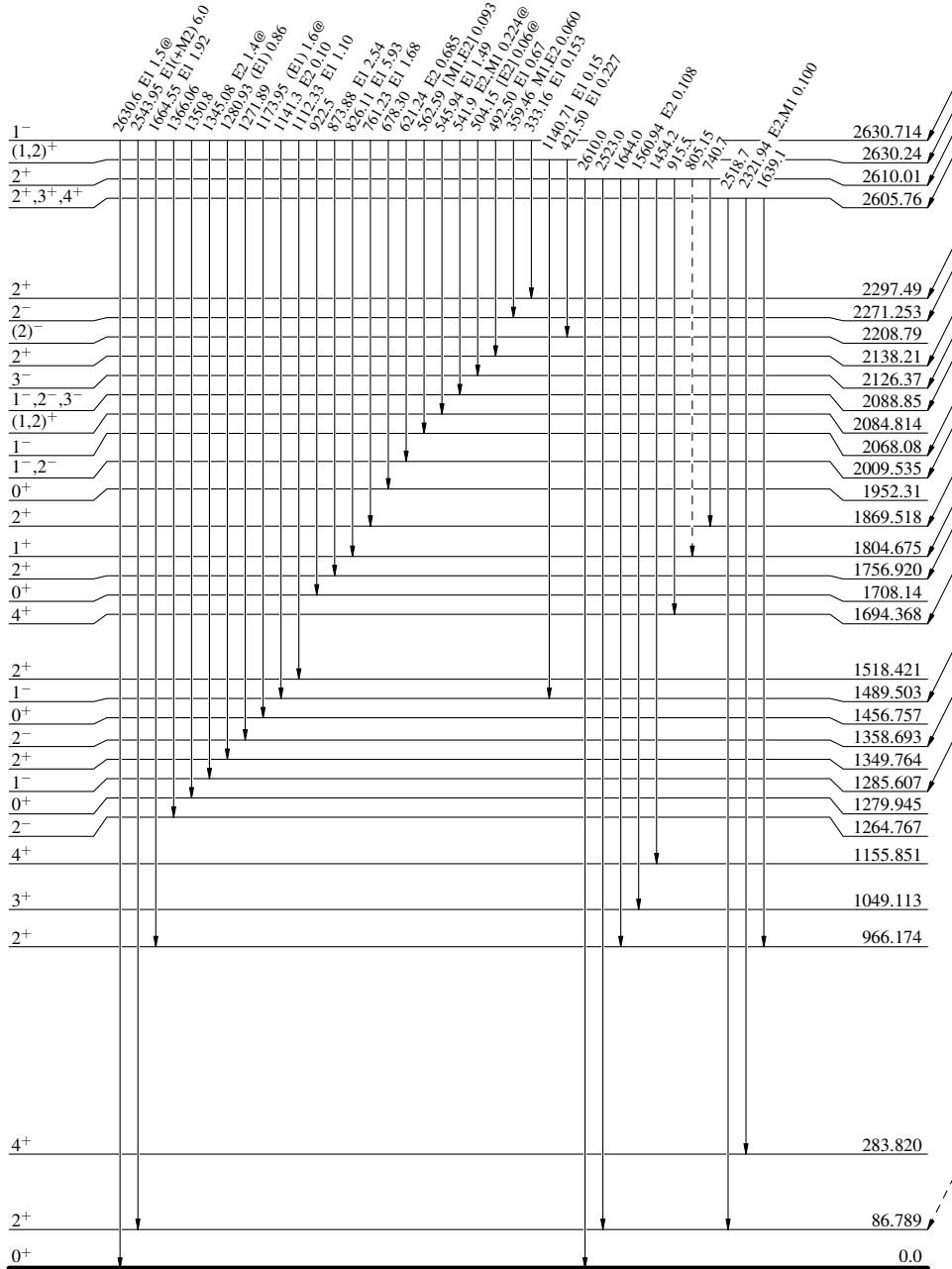
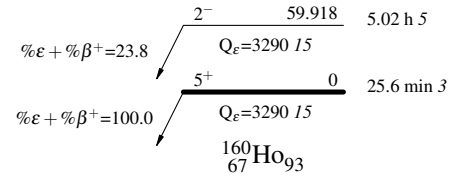
¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

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: Relative I_(γ+ce)
 & Multiply placed: undivided intensity given
 @ Multiply placed: intensity suitably divided



¹⁶⁰Dy₉₄

^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

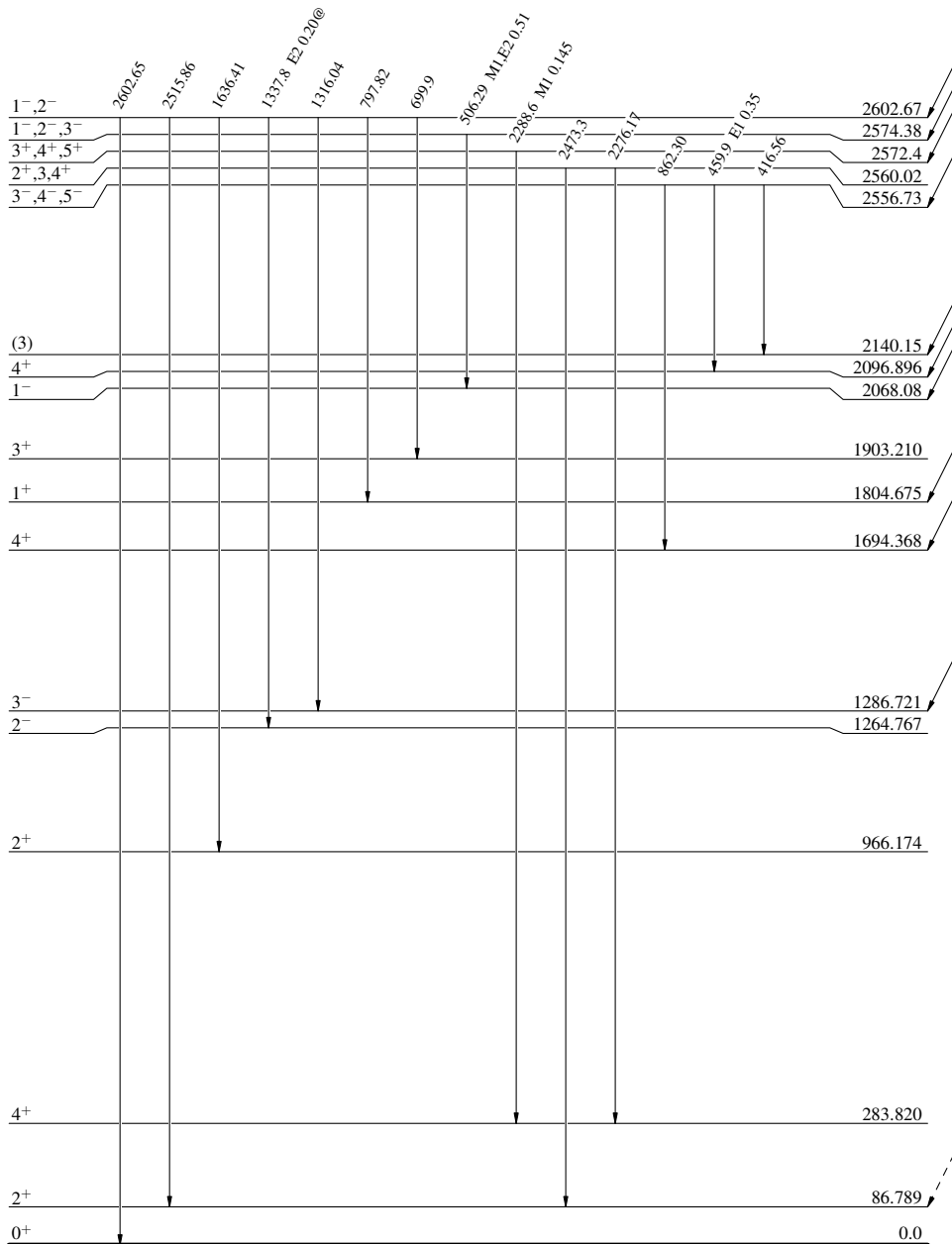
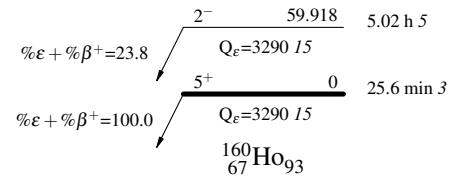
Intensities: Relative $I_{(\gamma+ce)}$

& Multiply placed: undivided intensity given

@ Multiply placed: intensity suitably divided

Legend

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



$^{160}_{66}\text{Dy}_{94}$

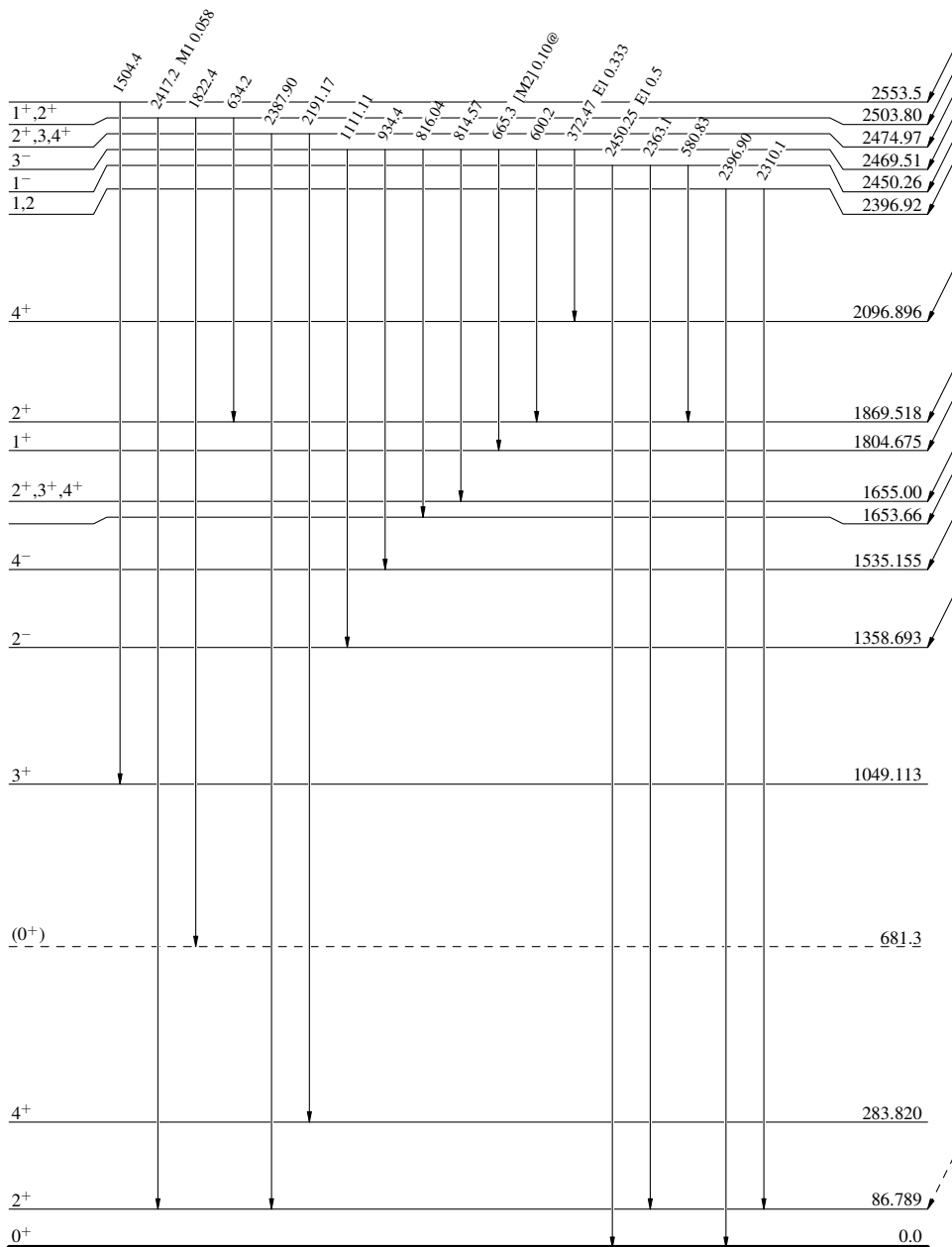
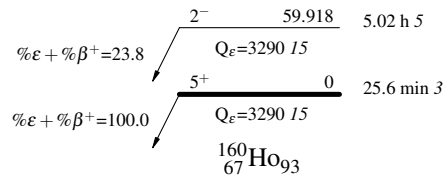
^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

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

Legend

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



$^{160}_{66}\text{Dy}_{94}$

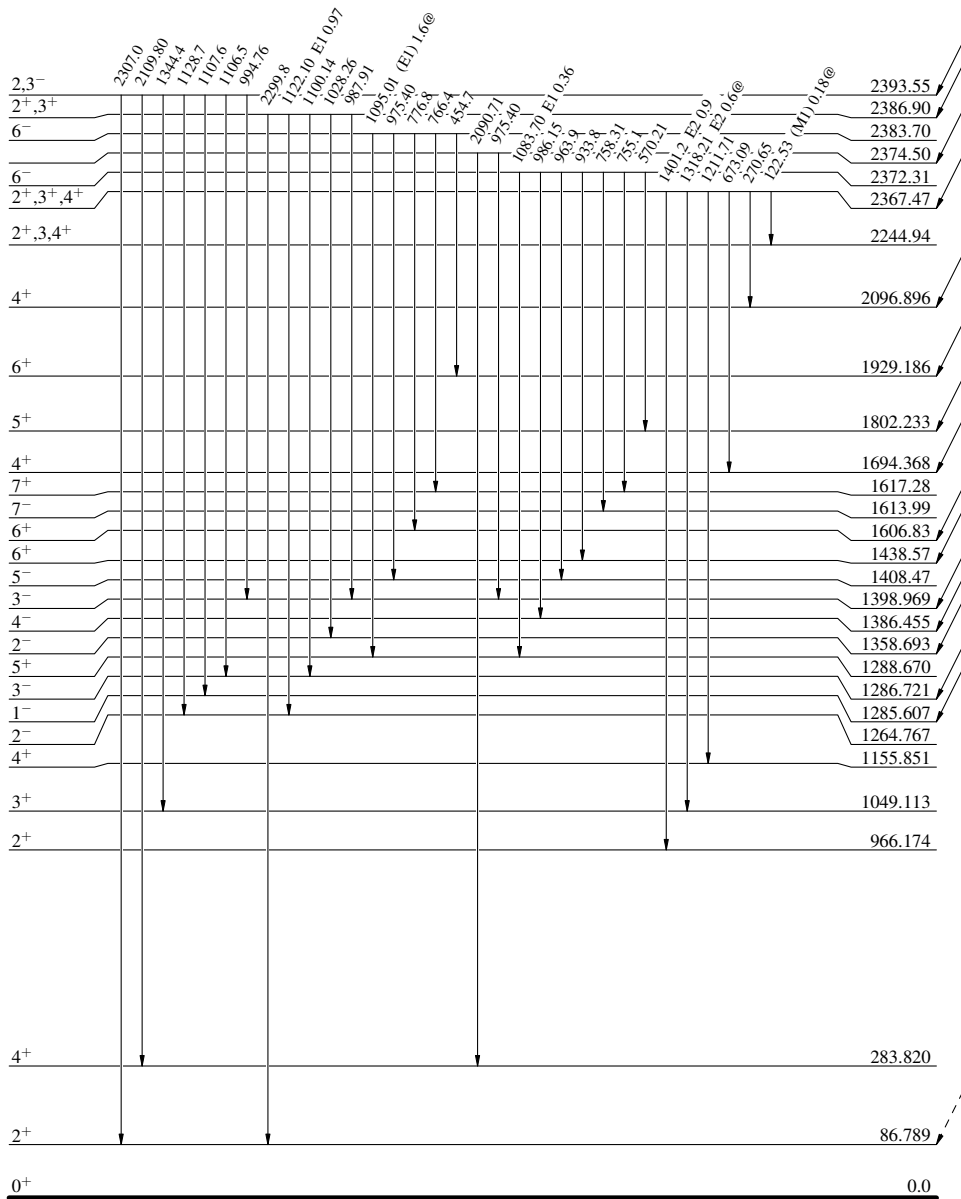
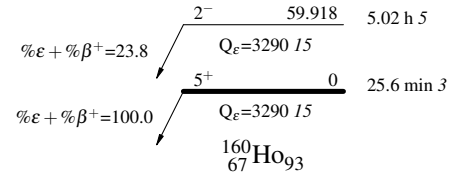
¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

Intensities: Relative I_(γ+ce)
& 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}



¹⁶⁰Dy₉₄

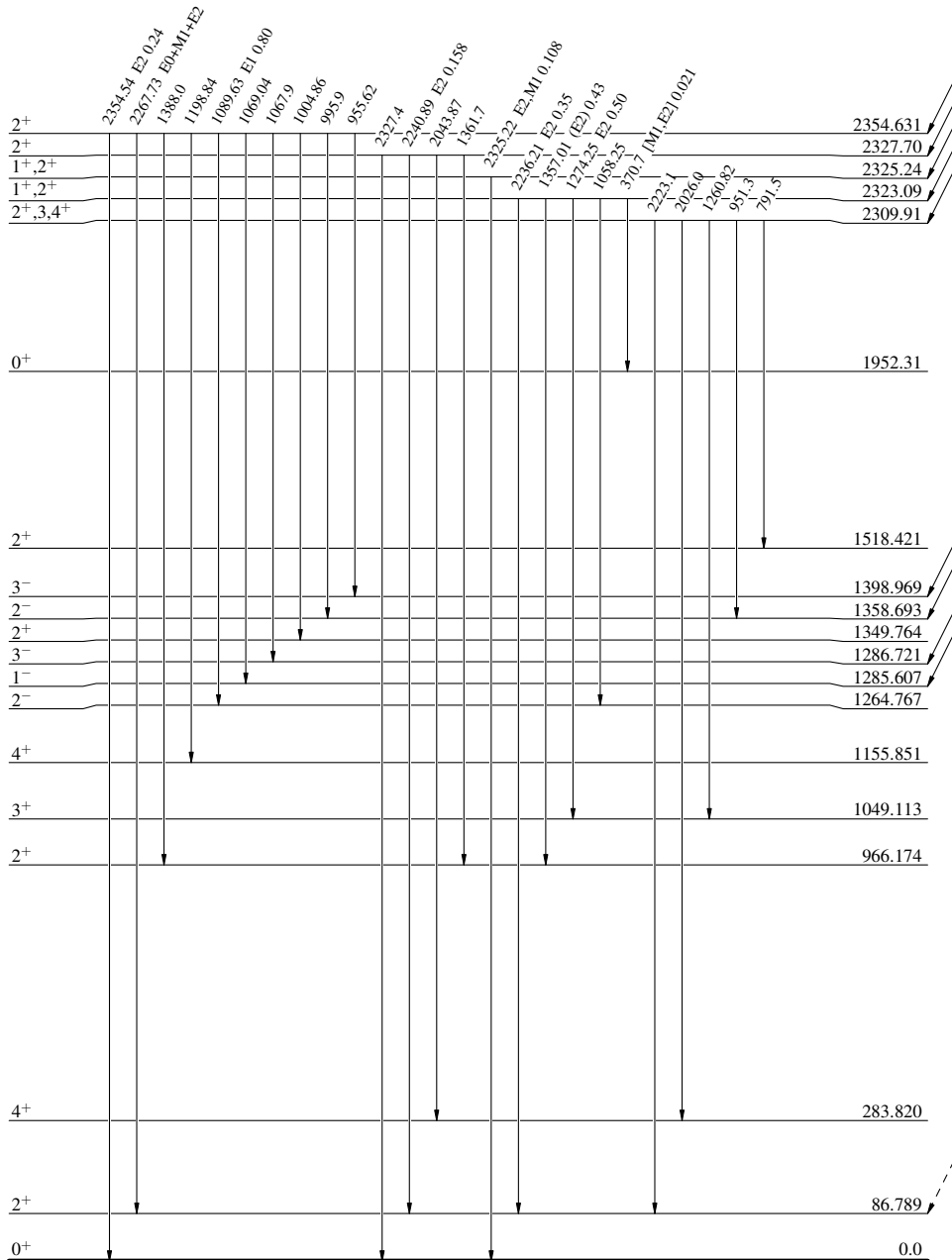
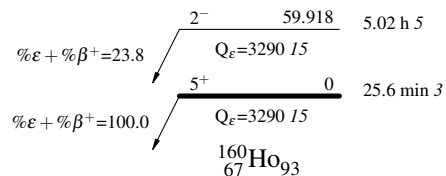
¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

Intensities: Relative I_(γ+ce)
& 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}



¹⁶⁰Dy₉₄

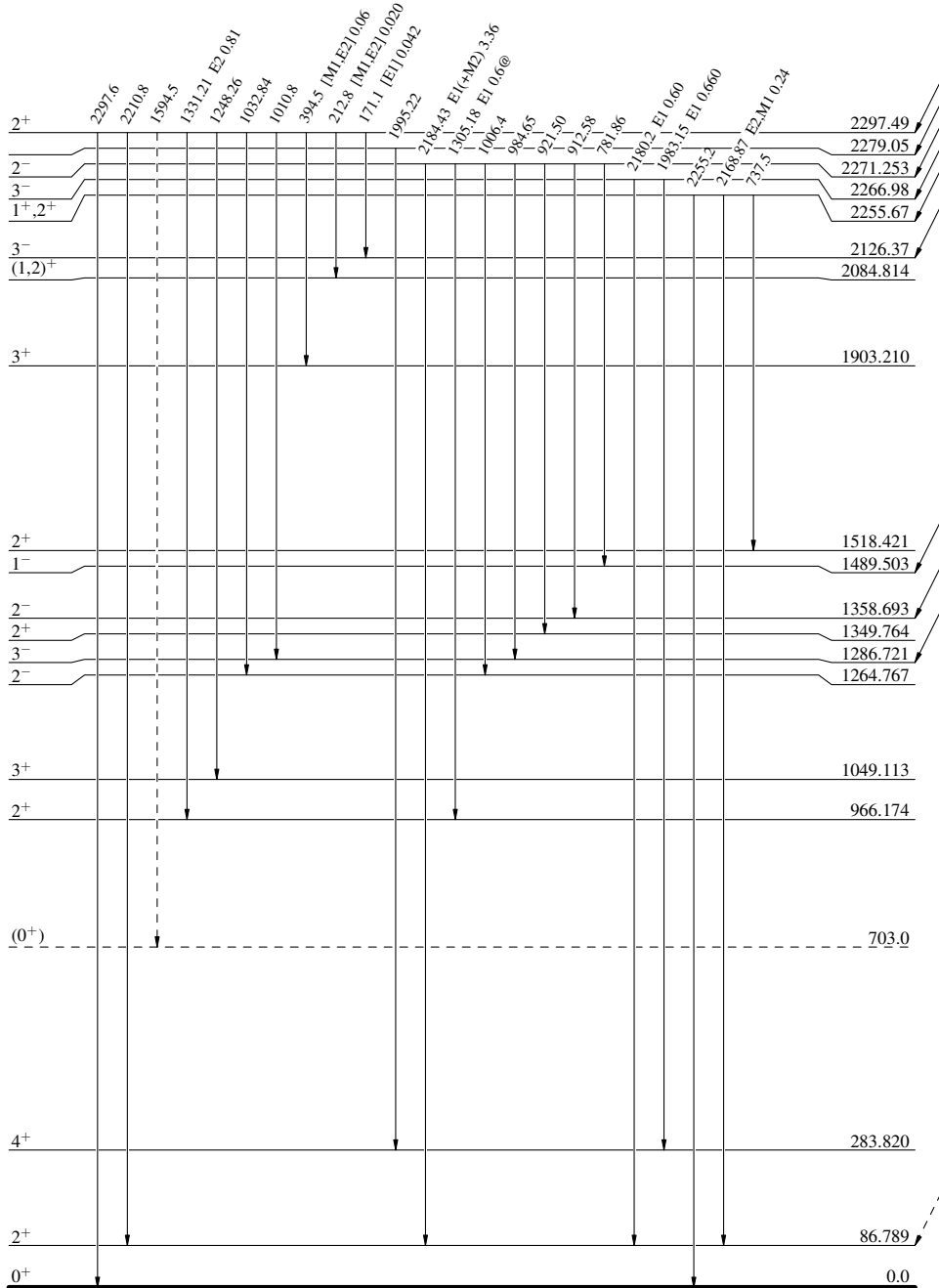
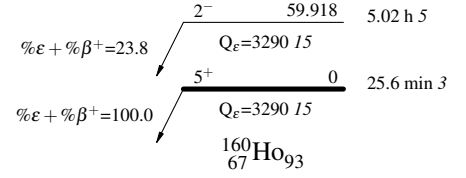
^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

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

Legend

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



$^{160}_{66}\text{Dy}_{94}$

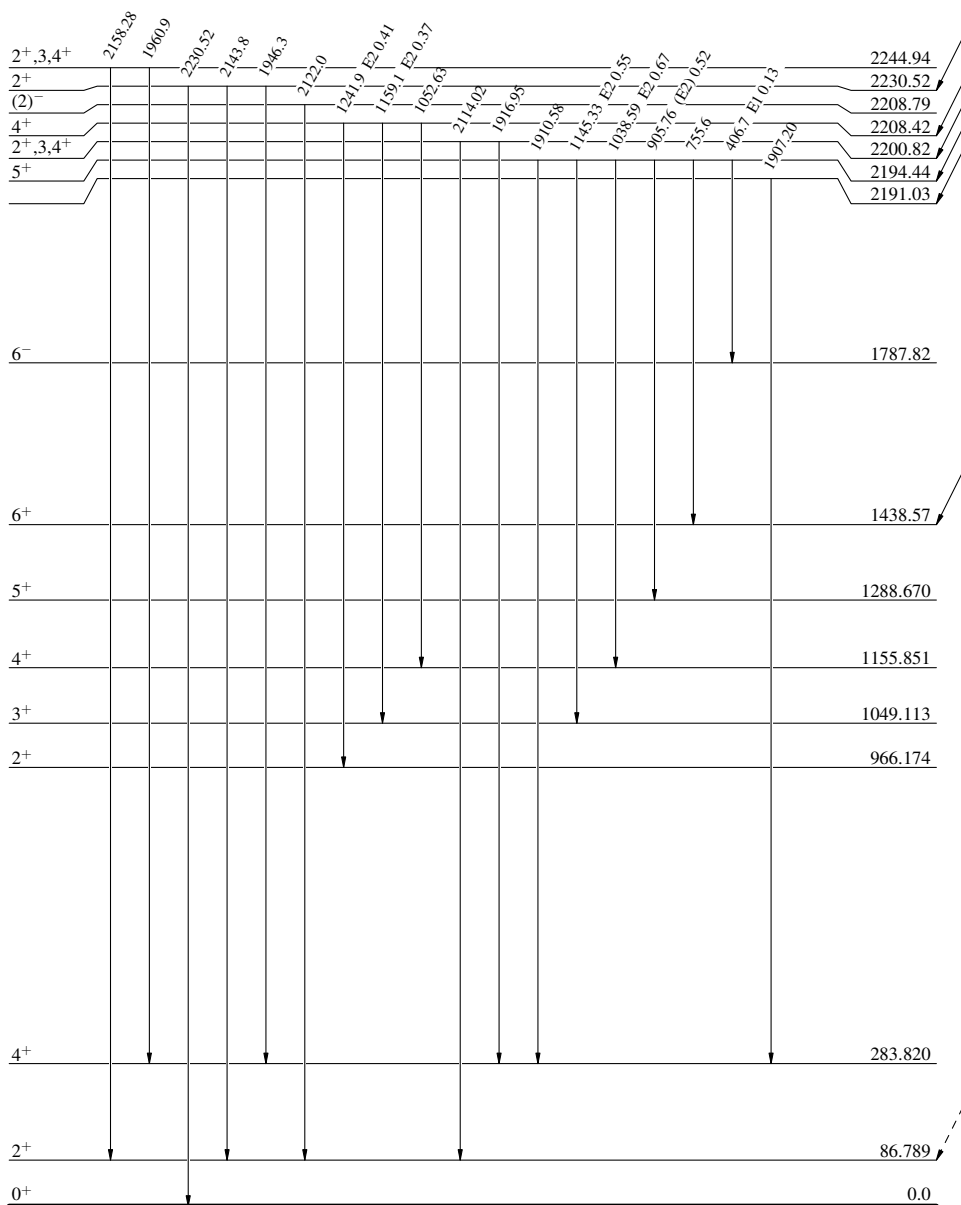
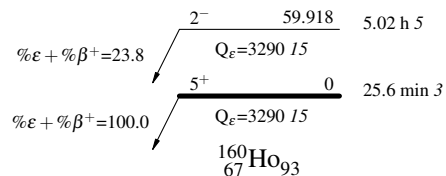
^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

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

Legend

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



$^{160}_{66}\text{Dy}_{94}$

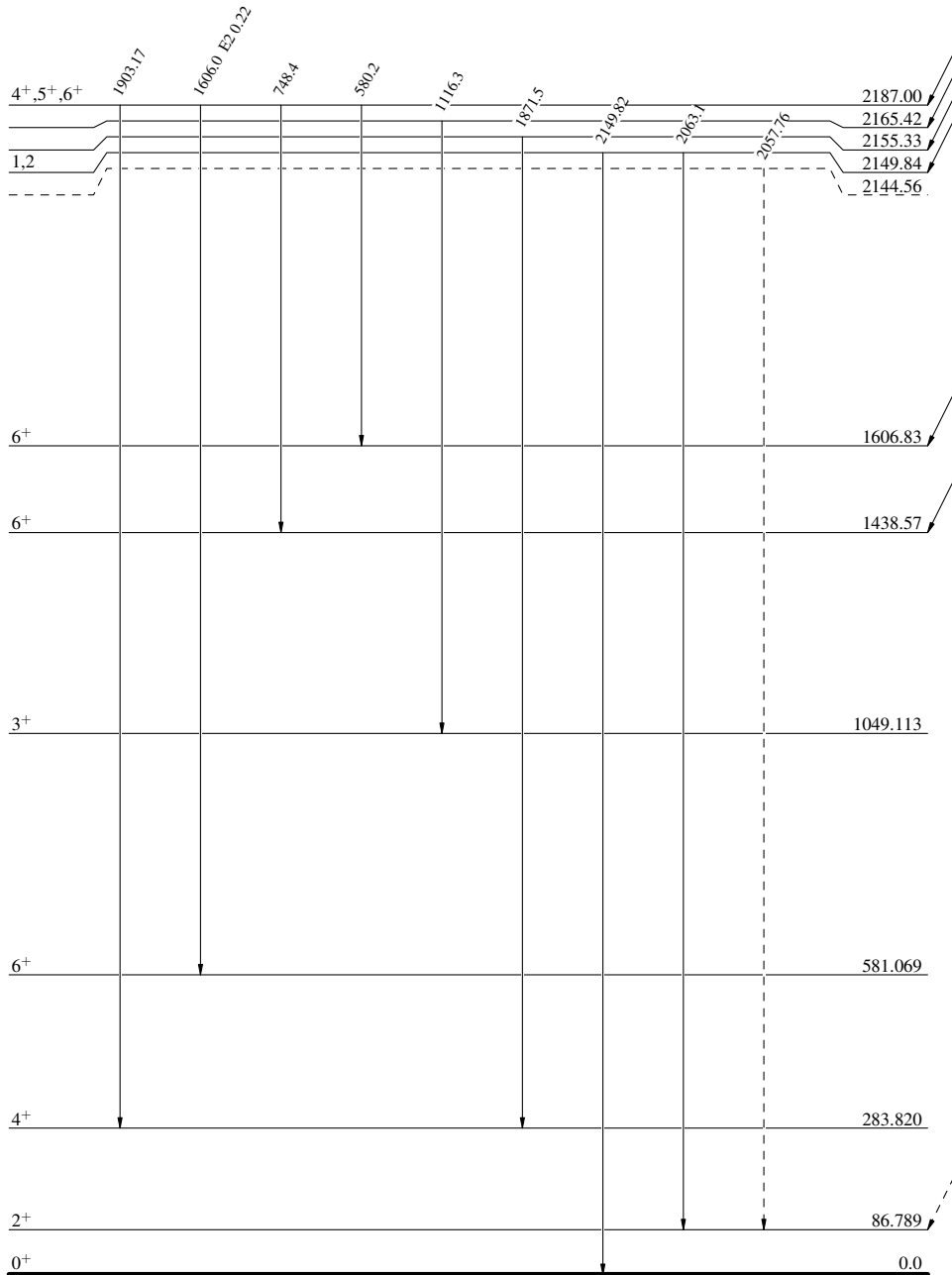
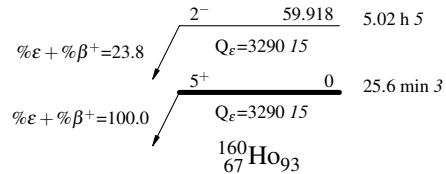
^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

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

Legend

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



$^{160}_{66}\text{Dy}_{94}$

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

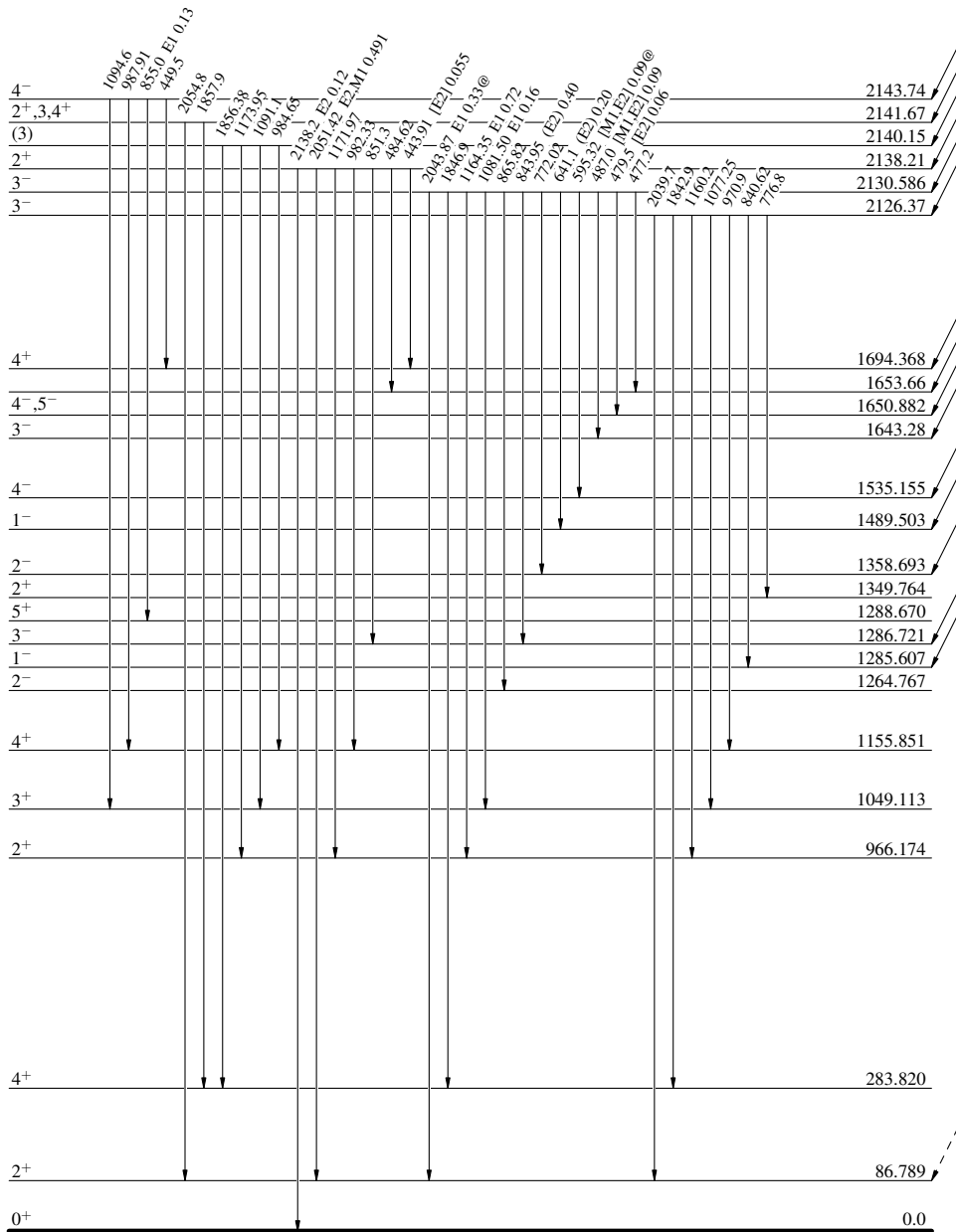
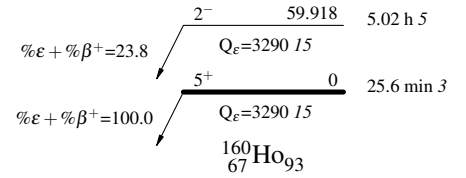
Intensities: Relative I_(γ+ce)

& 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}



¹⁶⁰Dy₉₄

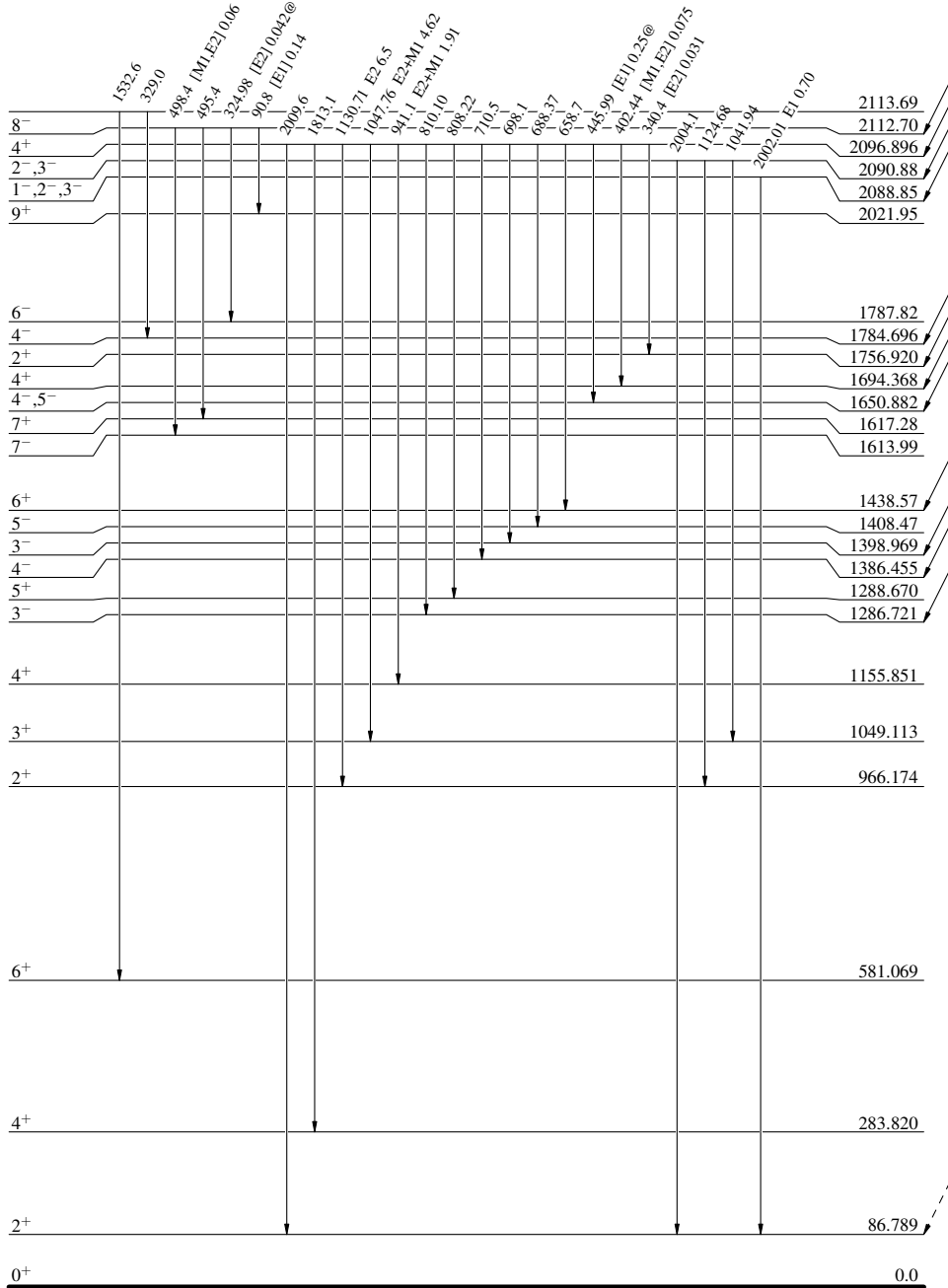
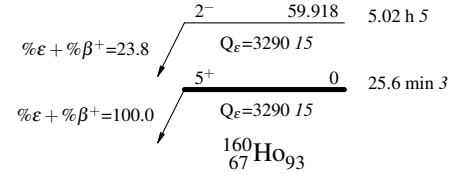
^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

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

Legend

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



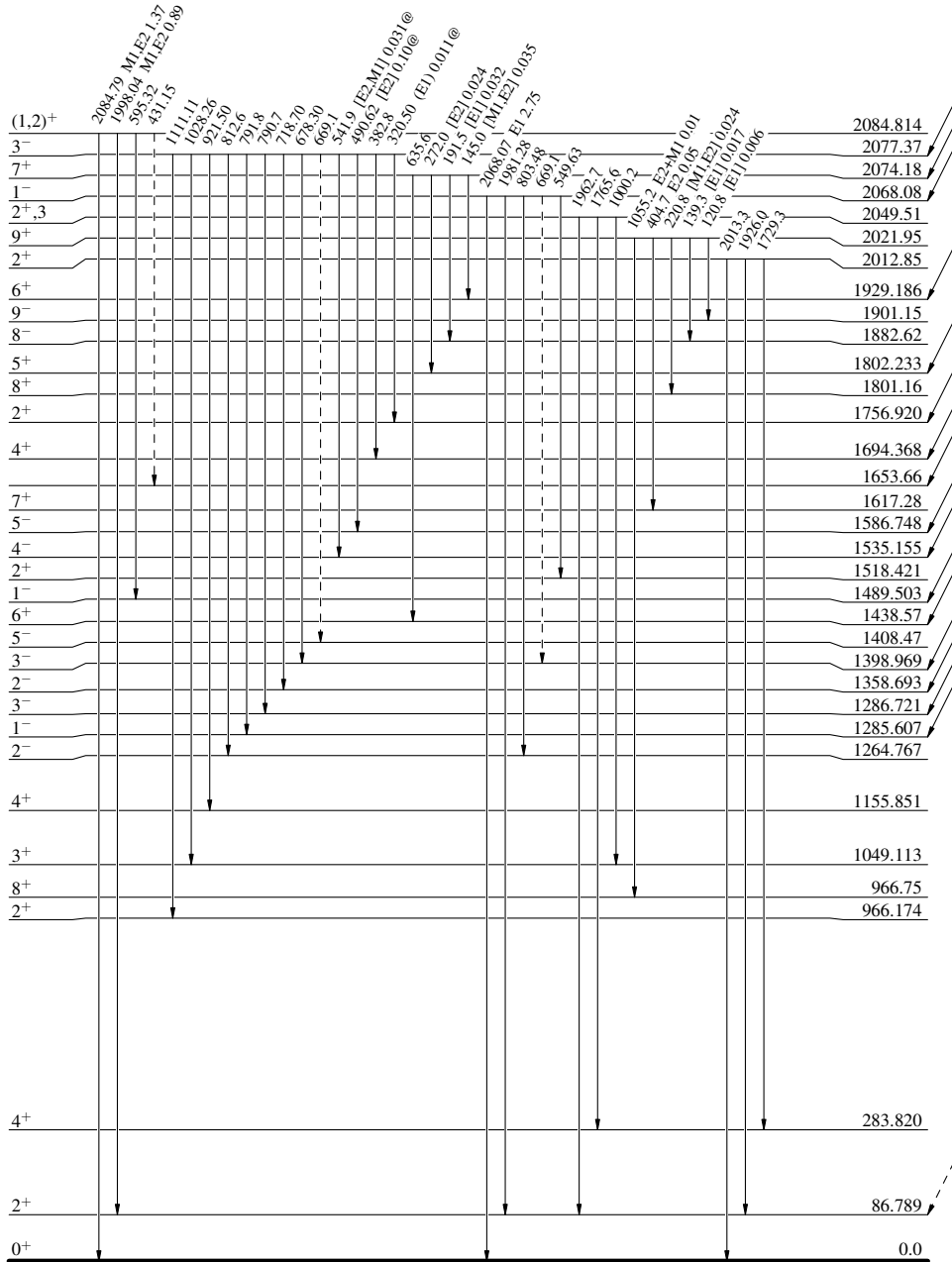
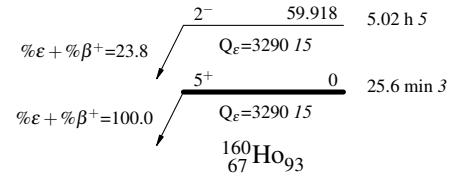
¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

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: Relative I_(γ+ce)
 & Multiply placed: undivided intensity given
 @ Multiply placed: intensity suitably divided



¹⁶⁰Dy₉₄

^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

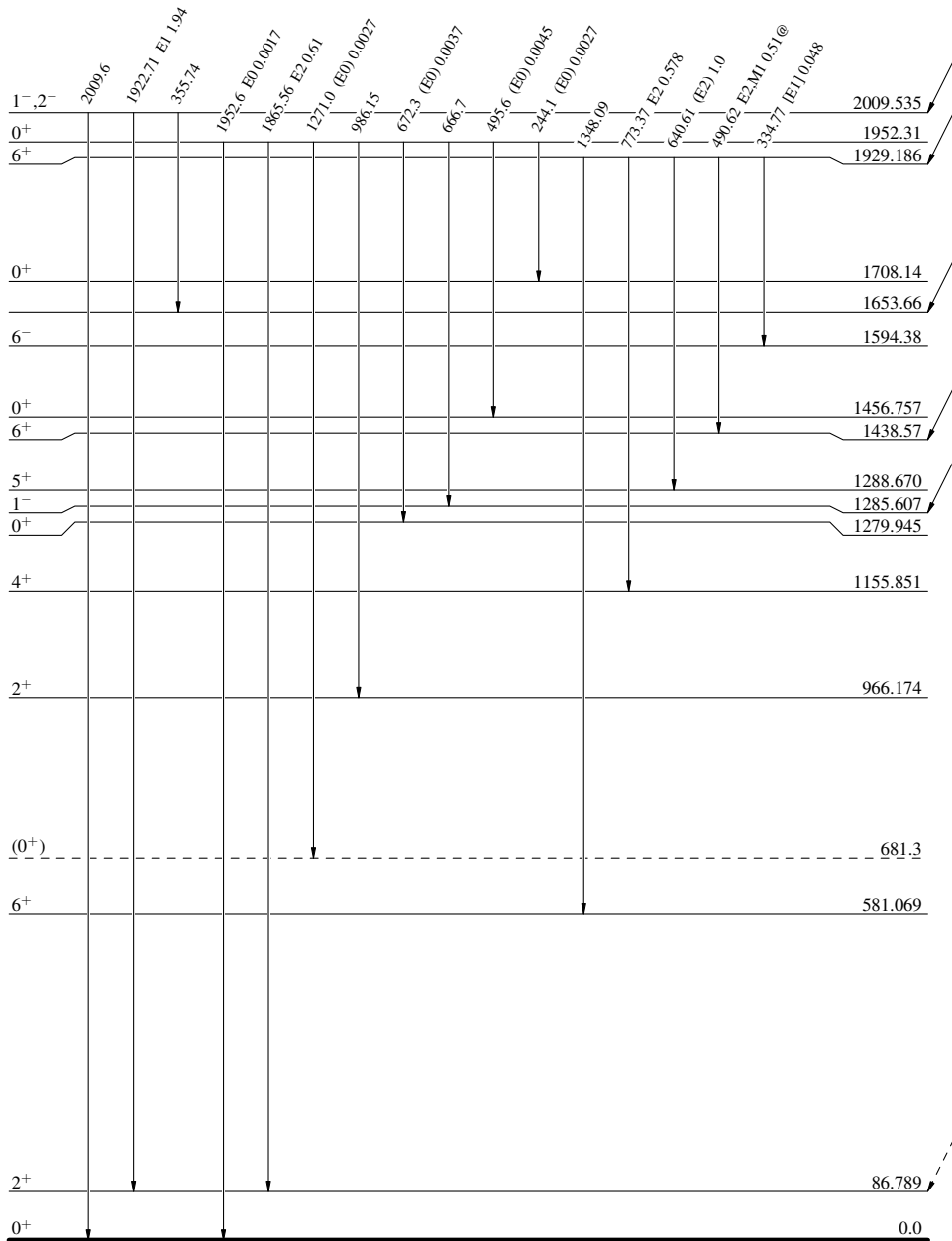
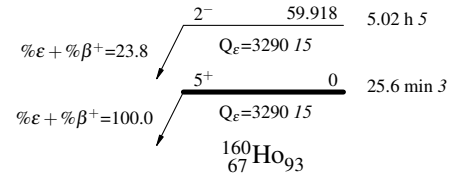
Intensities: Relative $I_{(\gamma+ce)}$

& Multiply placed: undivided intensity given

@ Multiply placed: intensity suitably divided

Legend

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



$^{160}_{66}\text{Dy}_{94}$

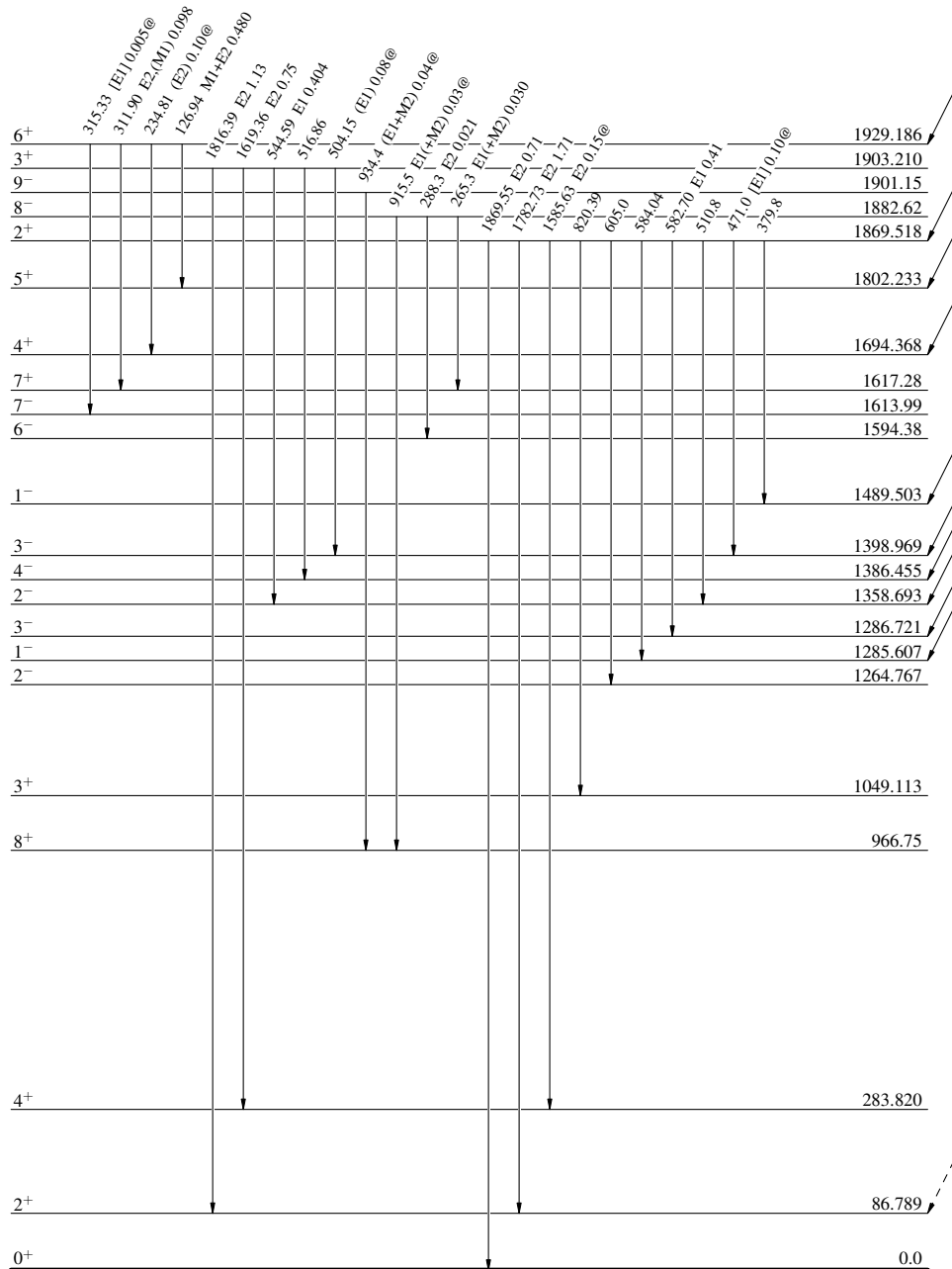
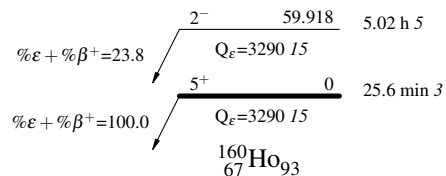
¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

Intensities: Relative I_(γ+ce)
& 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}



¹⁶⁰Dy₉₄

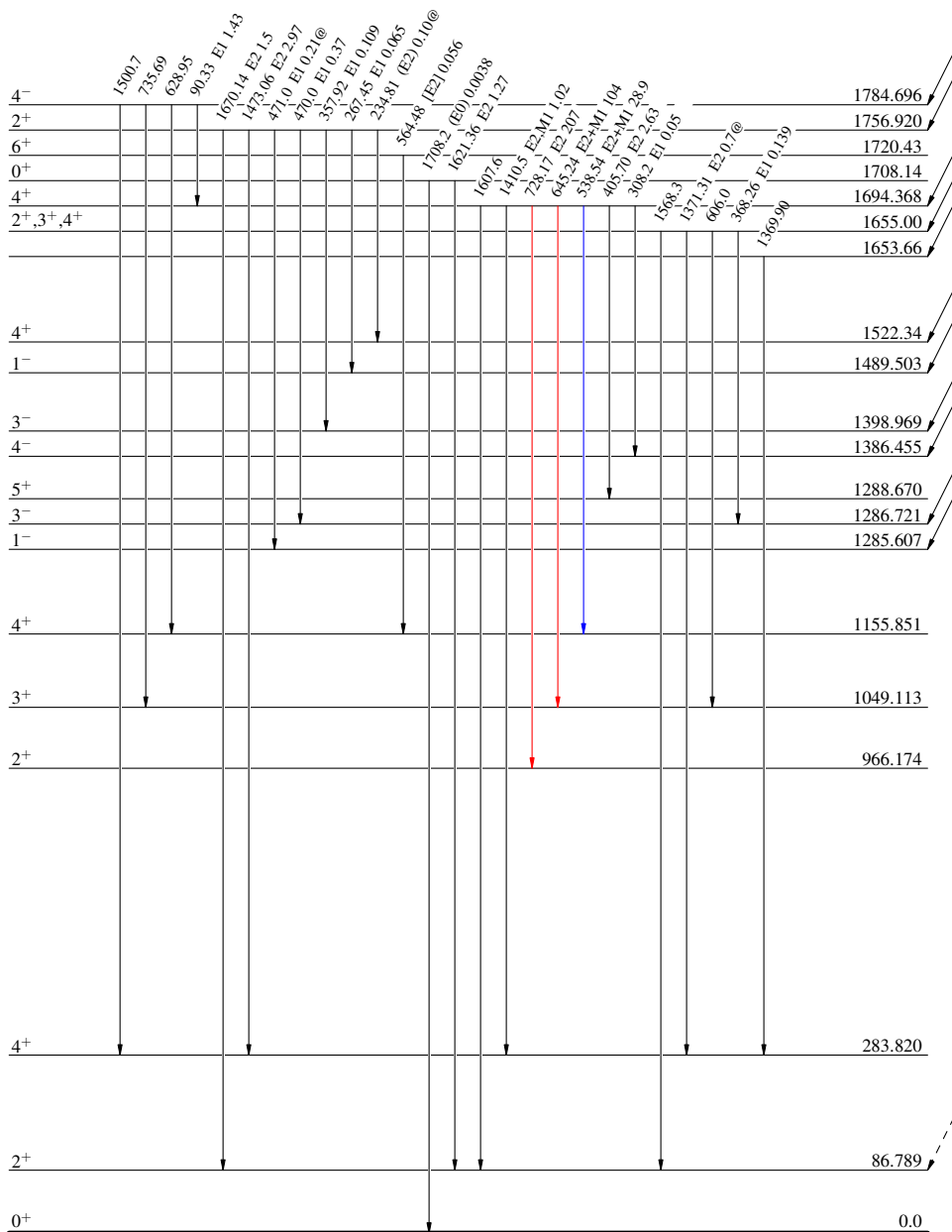
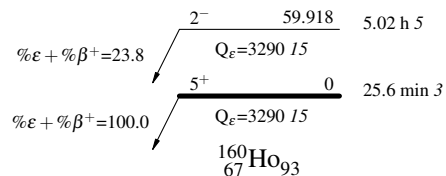
^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

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

Legend

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



$^{160}\text{Dy}_{94}$

¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

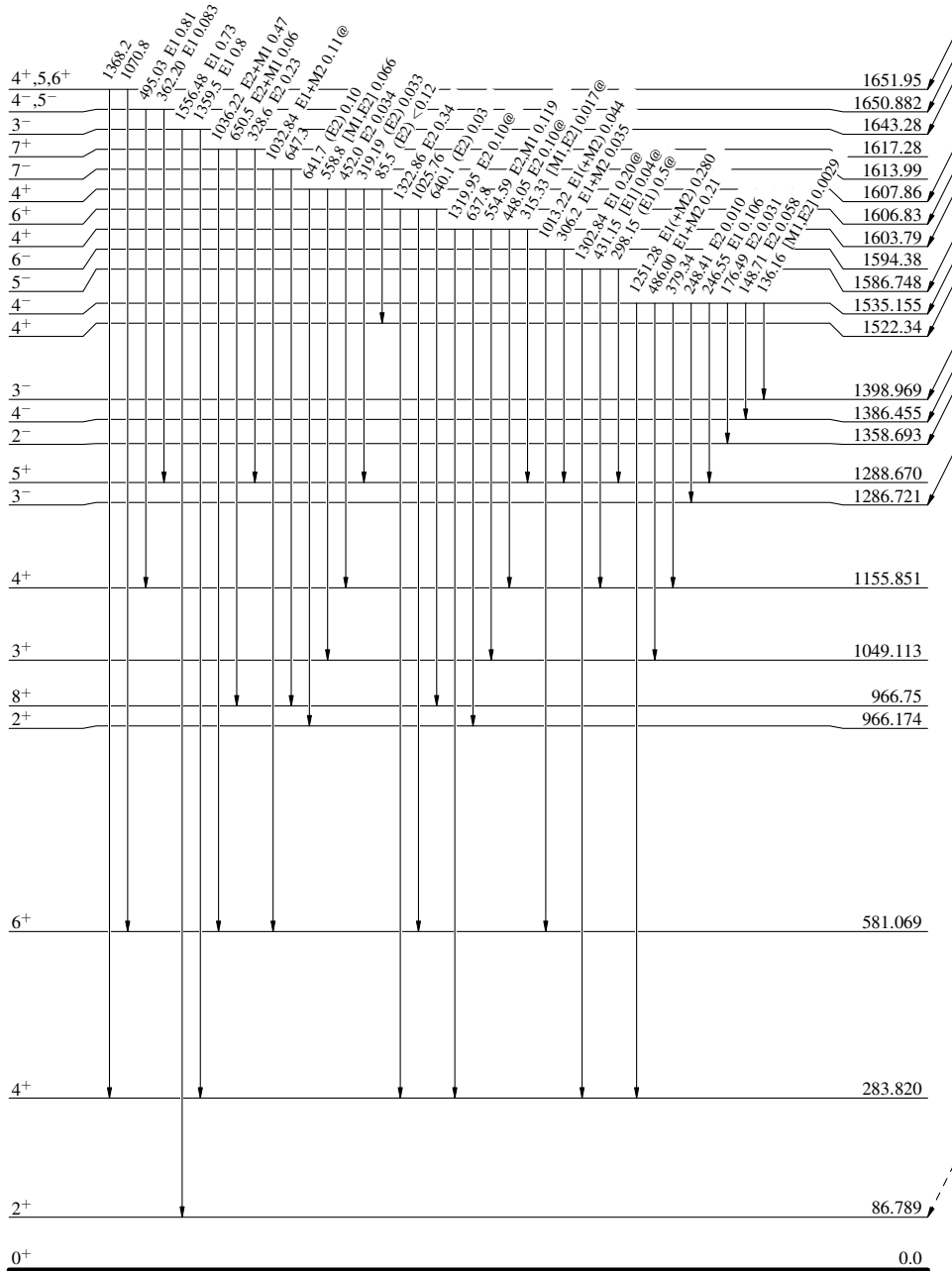
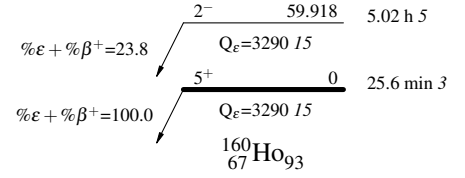
Intensities: Relative I_(γ+ce)

& 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}



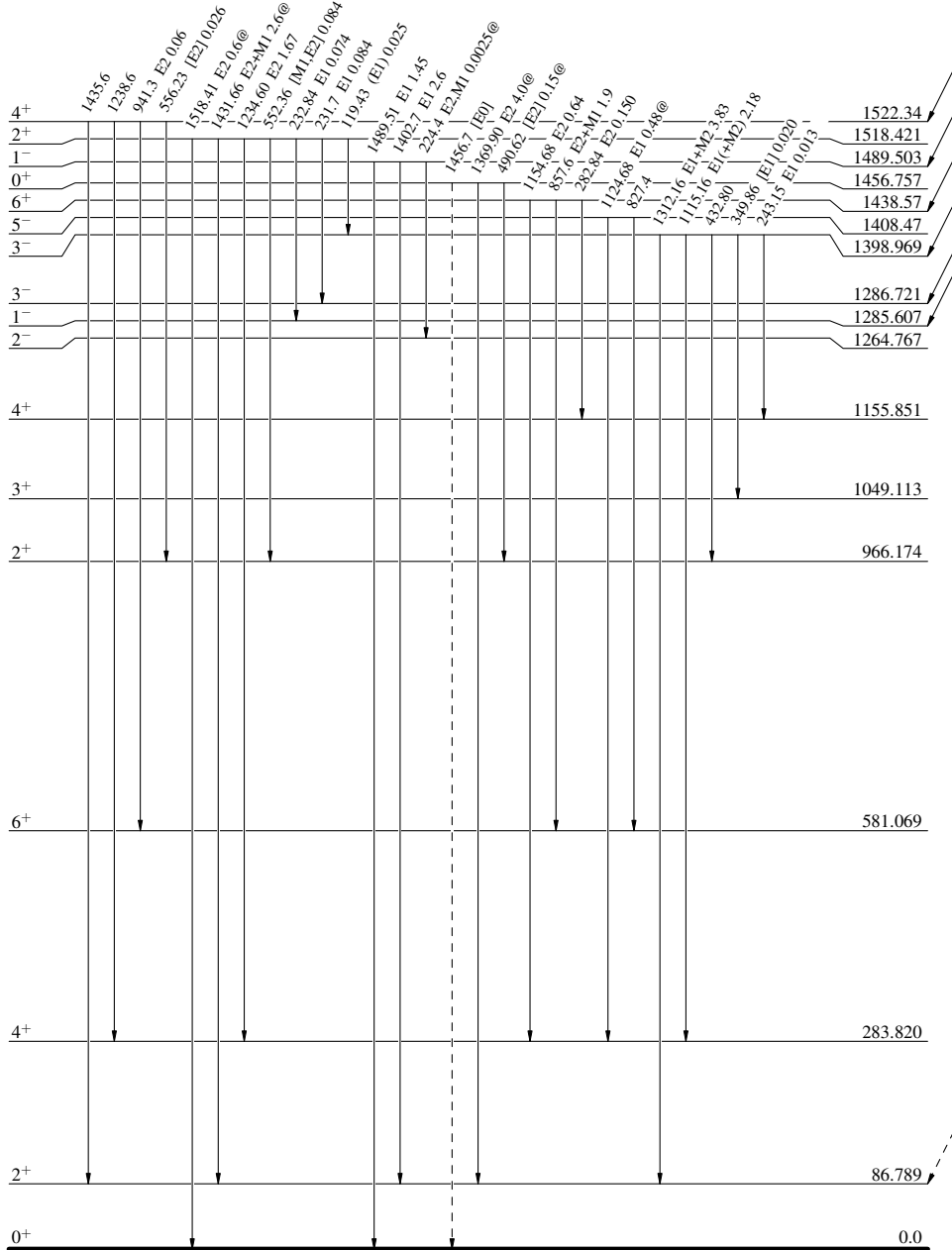
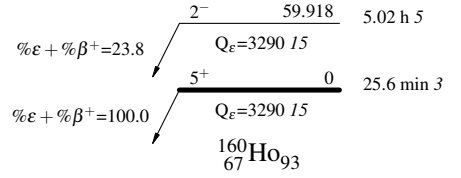
¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

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: Relative I_(γ+ce)
 & Multiply placed: undivided intensity given
 @ Multiply placed: intensity suitably divided



¹⁶⁰Dy₉₄

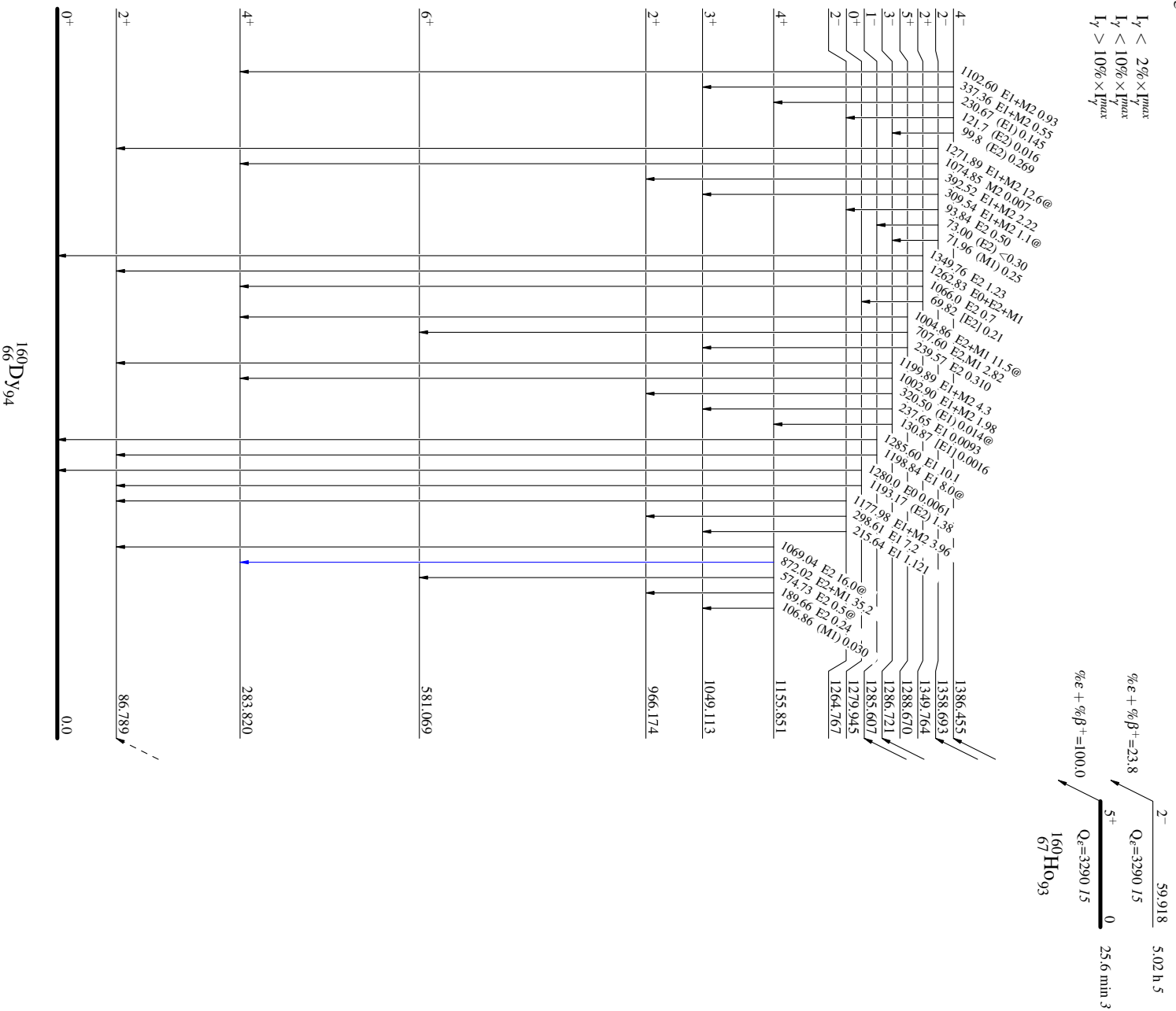
¹⁶⁰Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

Intensities: Relative I_{γ+ce}

& Multiply placed: undivided intensity given
 @ Multiply placed: intensity suitably divided

- Legend
- I_γ < 2% × I_{γmax}
 - I_γ < 10% × I_{γmax}
 - I_γ > 10% × I_{γmax}



^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21

Decay Scheme (continued)

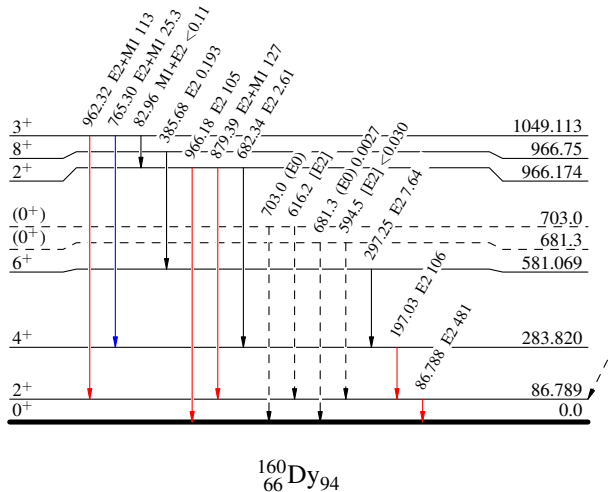
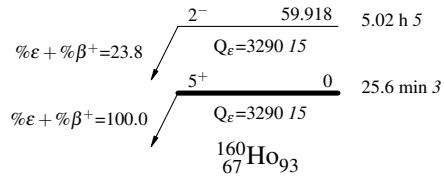
Intensities: Relative $I_{(\gamma+ce)}$

& Multiply placed: undivided intensity given

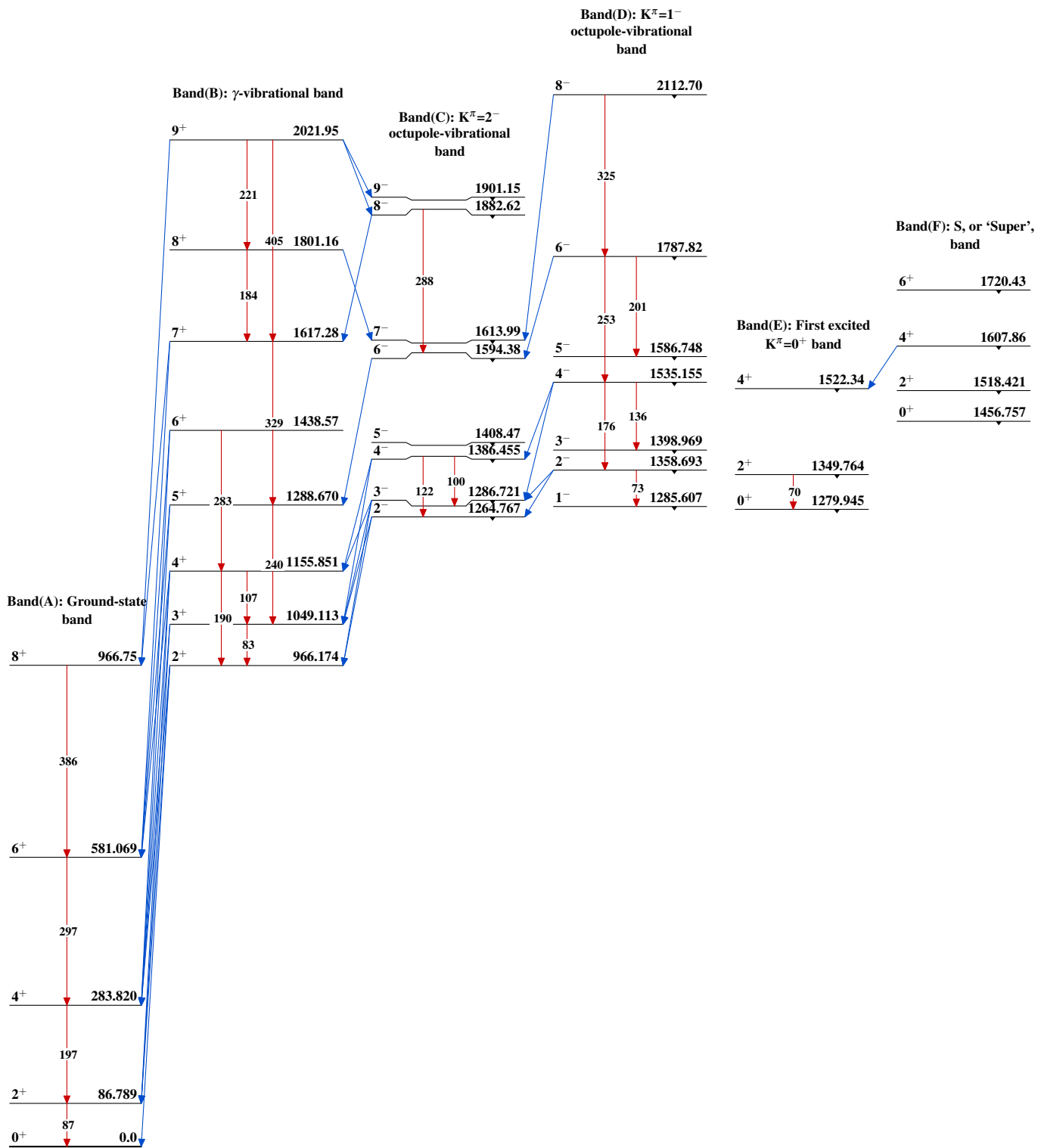
@ Multiply placed: intensity suitably divided

Legend

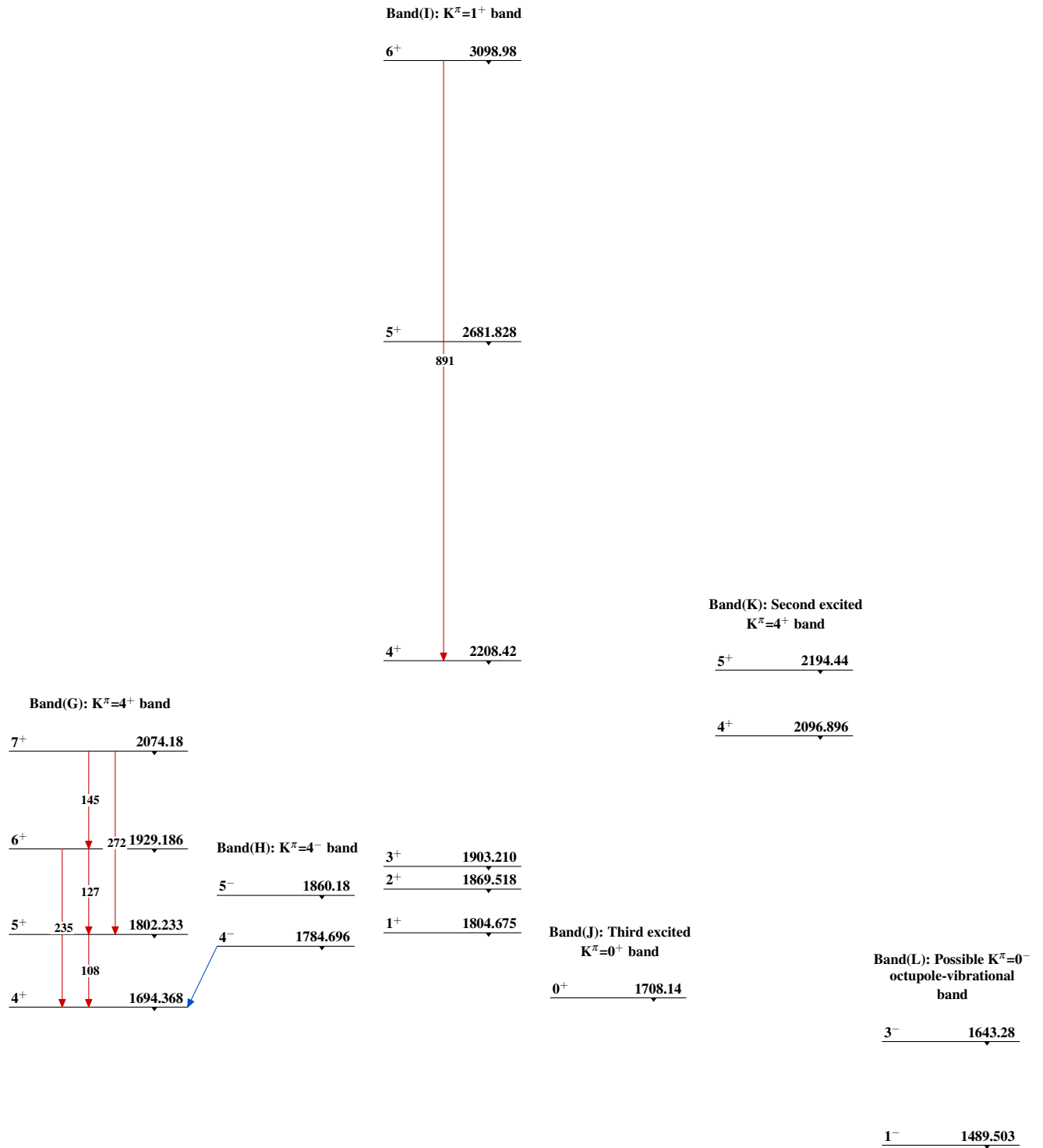
- $I_{\gamma} < 2\% \times I_{\gamma}^{max}$
- $I_{\gamma} < 10\% \times I_{\gamma}^{max}$
- $I_{\gamma} > 10\% \times I_{\gamma}^{max}$
- - - - - γ Decay (Uncertain)



^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21



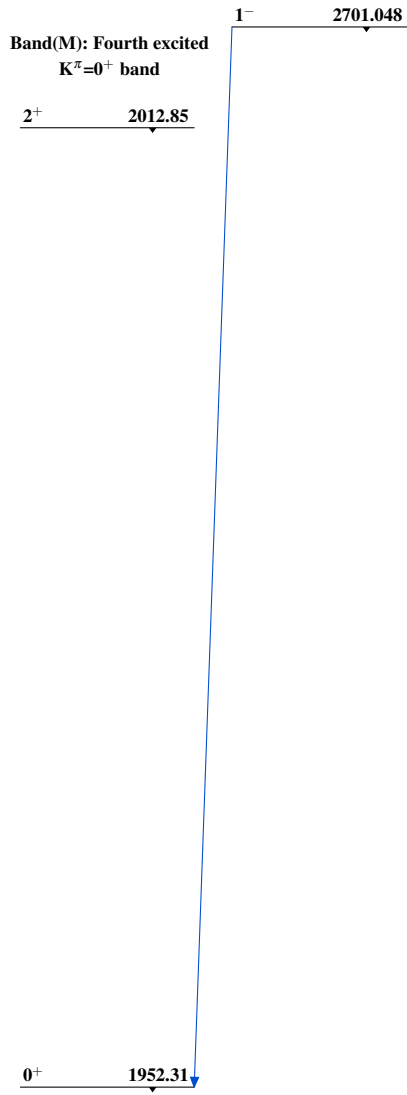
$^{160}_{66}\text{Dy}_{94}$

^{160}Ho ε decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued) $^{160}_{66}\text{Dy}_{94}$

^{160}Ho ϵ decay (25.6 min+5.02 h) 2002Ad34,1998Kr21 (continued)

Band(N): Proposed
(1987Gr37) two-phonon
quadropole (β^-)
-octupole band

3⁻ 2720.58



$^{160}_{66}\text{Dy}_{94}$