Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, A. Rodionov and G. Shulyak	NDS 136, 163 (2016)	14-Jul-2016

Q(β^-)=−11317 *9*; S(n)=12384 *9*; S(p)=3.54×10^3 *10*; Q(α)=1980 *29* 2012Wa38

Produced and identified by 1981AlZO and 1981Al23; tungsten target bombarded with 1 GeV protons.

The level scheme of ^{146}Dy is constructed on the basis of ε decay data, $\gamma\gamma$ coincidences, γ(t), delayed proton measurements and the reactions data.

^{146}Dy Levels

Cross Reference (XREF) Flags

A ^{146}Ho ε decay (3.32 s)
B ^{146}Dy IT decay (150 ms)
C (HI,xnγ)
D ^{147}Er εp decay

E(level)†	J$^\pi$‡	T$_{1/2}$	XREF	Comments
0.0	0$^+$	33.2 s *7*	ABCD	%ε+%β^+=100 T$_{1/2}$: from Iγ(t) (1993Al03). Other: 29 s *3* (1982No08).
682.62 *18*	2$^+$		ABCD	
1607.75 *21*	4$^+$		ABCD	
1782.8 *3*	3$^-$		ABC	
2281.24 *23*	5$^-$		ABC	
2458.3 *4*	(5,6$^+$)		C	
2518.1 *4*	7$^-$		ABC	
2634.9 *4*	6$^+$		A C	
2805.1 *6*	(6,7)		C	
2807.3 *4*	7$^-$		ABC	
2807.4 *6*	(4,5)$^-$		C	
2934.5 *4*	10$^+$	150 ms *20*	ABC	%IT=100 J$^\pi$: 10$^+$ state is the only possible seniority-two configuration for the T$_{1/2}$=150 ms half-life (1982Gu07). T$_{1/2}$: from Iγ(t) (1982Gu07).
2986.0 *4*	(8)$^+$		A C	
3091.6 *5*	(7,9$^-$)		C	
3160.0 *4*	8$^-$		A C	
3299.9 *6*	(7,8$^+$)		C	
3336.2 *5*	(7,8$^+$)		C	
3338.5 *5*	(8,9)$^-$		C	
3438.7 *4*	9$^-$		C	
3630.4 *4*	11$^+$		C	
3691.8 *7*	(9,11$^-$)		C	
3769.3 *6*	9$^-$		C	
3898.6 *4*	10$^-$		C	
4026.5 *4*	12$^+$		C	
4194.4 *5*	11$^-$		C	
4262.9 *4*	(11$^-$)		C	
4472.6 *4*	(12$^-$)		C	
4848.0 *5*	(13$^-$)		C	
4848.9 *5*	13$^+$		C	
5011.5 *4*	(14$^-$)		C	
5065.1 *5*	(13$^-$)		C	
5153.7 *5*	14$^+$		C	
5259.4 *6*	13$^+$		C	

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Adopted Levels, Gammas (continued)

^{146}Dy Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	E(level)[†]	J$^{\pi}$[‡]	XREF	E(level)[†]	J$^{\pi}$[‡]	XREF
5268.9 5	(14$^-$)	C	6046.0 5	15$^+$	C	7035.9 6	(19$^-$)	C
5327.9 6	(14$^-$)	C	6092.5 5	16$^+$	C	7188.3 6	19$^+$	C
5331.6 4	(15$^-$)	C	6114.6 5	(16$^-$)	C	7261.3 6	(19$^+$)	C
5376.9 5	14$^+$	C	6184.1 5	(16)	C	7267.1 5	(18$^-$)	C
5417.8 4	(15$^-$)	C	6258.6 5	(17$^-$)	C	7278.9 6	(18$^-$)	C
5550.7 5	(15$^-$)	C	6324.1 5	(17$^-$)	C	7424.1 6	(19$^-$)	C
5731.7 7	(15$^-$)	C	6370.0 7	(17$^-$)	C	7445.1 7	(19$^-$)	C
5741.5 5	(16$^-$)	C	6466.4 8	(18$^-$)	C	7501.2 6	(19$^-$)	C
5808.4 8	(15,16)	C	6563.1 5	17$^+$	C	7740.9 6	(20$^-$)	C
5858.1 10	(14$^+$)	C	6576.4 6	(18$^-$)	C	7790.6 7	(20$^-$)	C
5919.8 6		C	6717.7 6	(17$^-$)	C	7942.8 7	(21$^-$)	C
5931.8 5	(16$^-$)	C	6723.1 6	(18$^-$)	C	8058.1 7	(21$^-$)	C
5981.3 5	15$^+$	C	6892.8 6	18$^+$	C	8508.9 8	(22$^-$)	C
5983.6 8	(16)	C	6923.6 5	18$^+$	C	8886.4 9	(23$^-$)	C

[†] From a least-squares fit to Eγ data, normalized χ^2=0.65. Where uncertainty is not known it is assumed to be 1 keV.
[‡] From α(exp), $\gamma(\theta)$(DCO) data, shell model calculations and systematics for N=80 even-even nuclei.

γ(^{146}Dy)

E$_i$(level)	J$^{\pi}_i$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$^{\pi}_f$	Mult.[@]	α[a]	Comments
682.62	2$^+$	682.62[‡] 18	100	0.0	0$^+$	E2	0.00704	
1607.75	4$^+$	925.12[‡] 10	100	682.62	2$^+$	E2	0.00358	
1782.8	3$^-$	1100.25[‡] 25	100	682.62	2$^+$	(E1)	1.05×10^{-3}	
2281.24	5$^-$	498.6[‡] 5	10.5 18	1782.8	3$^-$	E2	0.01526	
		673.5[‡] 1	100 16	1607.75	4$^+$	(E1)	0.00271	
2458.3	(5,6$^+$)	850.5 3	100	1607.75	4$^+$			
2518.1	7$^-$	236.95[‡] 25	100	2281.24	5$^-$	E2	0.1355	
2634.9	6$^+$	1027.0 3	100	1607.75	4$^+$	E2	0.00288	
2805.1	(6,7)	346.8 4	100	2458.3	(5,6$^+$)			
2807.3	7$^-$	289.2[‡] 3	100	2518.1	7$^-$	M1,E2	0.10 3	
2807.4	(4,5)$^-$	1199.6 5	100	1607.75	4$^+$	(E1)	9.19×10^{-4}	
2934.5	10$^+$	127.0[#] 3	5[#] 5	2807.3	7$^-$	E3	13.34 25	B(E3)(W.u.)=0.3 +4−3
		416.5[#] 3	100[#] 30	2518.1	7$^-$	E3	0.0799	B(E3)(W.u.)=0.0016 9
2986.0	(8)$^+$	178.8 3	59 11	2807.3	7$^-$	(E1)	0.0653	
		350.94[‡] 21	100 13	2634.9	6$^+$			
3091.6	(7,9$^-$)	573.5 4	100	2518.1	7$^-$	[&]		
3160.0	8$^-$	352.52 20	69 15	2807.3	7$^-$			
		642.0 2	100 23	2518.1	7$^-$	M1	0.01578	
3299.9	(7,8$^+$)	665.0 4	100	2634.9	6$^+$			
3336.2	(7,8$^+$)	701.3 3	100	2634.9	6$^+$			
3338.5	(8,9)$^-$	531.6 4	100	2807.3	7$^-$			
3438.7	9$^-$	100.5 3	18 9	3338.5	(8,9)$^-$			
		278.6 2	100 18	3160.0	8$^-$	M1	0.1377	
3630.4	11$^+$	695.9 1	100	2934.5	10$^+$	M1	0.01291	
3691.8	(9,11$^-$)	600.2 4	100	3091.6	(7,9$^-$)	[&]		
3769.3	9$^-$	1251.2 5	100	2518.1	7$^-$	E2	0.00195	
3898.6	10$^-$	738.6 2	100	3160.0	8$^-$	E2	0.00587	
4026.5	12$^+$	395.7 5	21 3	3630.4	11$^+$	M1	0.0544	

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Adopted Levels, Gammas (continued)

$\gamma(^{146}Dy)$ (continued)

E_i(level)	J^π_i	E_γ [†]	I_γ [†]	E_f	J^π_f	Mult. [@]	α [a]
4026.5	12+	1092.1 *1*	100 *15*	2934.5	10+	E2	0.00254
4194.4	11−	755.7 *3*	100	3438.7	9−	E2	0.00557
4262.9	(11−)	236.4 *3*	8 *3*	4026.5	12+		
		632.4 *2*	16 *5*	3630.4	11+	&	
		1328.5 *2*	100 *15*	2934.5	10+	(E1)	8.33×10−4
4472.6	(12−)	209.8 *3*	53 *9*	4262.9	(11−)	M1	0.298
		446.0 *1*	100 *7*	4026.5	12+	&	
		842.2 *2*	53 *8*	3630.4	11+		
4848.0	(13−)	375.5 *4*	69 *7*	4472.6	(12−)	M1	0.0623
		821.5 *3*	100 *5*	4026.5	12+		
4848.9	13+	822.4 *3*	35 *6*	4026.5	12+		
		1218.5 *5*	100 *18*	3630.4	11+	E2	0.00205
5011.5	(14−)	163.5 *3*	9.3 *23*	4848.0	(13−)	M1	0.594
		538.9 *1*	100 *17*	4472.6	(12−)	E2	0.01250
5065.1	(13−)	592.5 *4*	100	4472.6	(12−)	M1	0.0193
5153.7	14+	1127.3 *3*	100	4026.5	12+	E2	0.00238
5259.4	13+	1233.5 *6*	100 *30*	4026.5	12+		
		1628.5 *6*	33 *30*	3630.4	11+		
5268.9	(14−)	203.8 *3*	64 *9*	5065.1	(13−)	M1	0.322
		257.5 *2*	73 *9*	5011.5	(14−)		
		420.9 *3*	100 *18*	4848.0	(13−)	M1	0.0463
5327.9	(14−)	316.4 *4*	100	5011.5	(14−)		
5331.6	(15−)	320.1 *1*	100 *16*	5011.5	(14−)	M1	0.0950
		483.5 *4*	23 *3*	4848.0	(13−)	E2	0.01655
5376.9	14+	117.5 *5*	57 *14*	5259.4	13+	M1	1.51 *3*
		223.2 *5*	29 *14*	5153.7	14+		
		1350.3 *3*	100 *14*	4026.5	12+	E2	1.70×10−3
5417.8	(15−)	149.1 *3*	54 *8*	5268.9	(14−)	M1	0.769
		406.3 *1*	100 *15*	5011.5	(14−)	M1	0.0507
5550.7	(15−)	173.8 *2*	100 *20*	5376.9	14+		
		397.5 *5*	28 *9*	5153.7	14+		
5731.7	(15−)	403.8 *4*	100	5327.9	(14−)	M1	0.0516
5741.5	(16−)	323.7 *1*	100 *14*	5417.8	(15−)	M1	0.0922
		409.8 *2*	93 *14*	5331.6	(15−)	M1	0.0496
		730.5 *4*	36 *7*	5011.5	(14−)		
5808.4	(15,16)	539.5 *6*	100	5268.9	(14−)		
5858.1	(14+)	1831.6 *9*	100	4026.5	12+		
5919.8		178.3 *3*	100	5741.5	(16−)		
5931.8	(16−)	514.1 *2*	100	5417.8	(15−)	M1	0.0277
5981.3	15+	712.3 *3*	100 *17*	5268.9	(14−)	(E1)	0.00242
		1132.5 *4*	50 *17*	4848.9	13+	E2	0.00236
5983.6	(16)	251.9 *3*	100	5731.7	(15−)		
6046.0	15+	1196.9 *4*	100	4848.9	13+	E2	0.00212
6092.5	16+	760.3 *3*	100 *18*	5331.6	(15−)		
		938.7 *2*	82 *12*	5153.7	14+	E2	0.00347
6114.6	(16−)	68.6 *3*	63 *13*	6046.0	15+		
		133.3 *4*	75 *13*	5981.3	15+		
		783.1 *4*	100 *13*	5331.6	(15−)	M1	0.00964
6184.1	(16)	252.6 *3*	100 *30*	5931.8	(16−)		
		633.4 *3*	91 *30*	5550.7	(15−)		
6258.6	(17−)	517.1 *2*	100	5741.5	(16−)	M1	0.0273
6324.1	(17−)	209.5 *3*	71 *12*	6114.6	(16−)	M1	0.299
		231.6 *2*	100 *18*	6092.5	16+		
6370.0	(17−)	438.2 *5*	100	5931.8	(16−)	M1	0.0417
6466.4	(18−)	534.6 *6*	100	5931.8	(16−)	E2	0.01276

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Adopted Levels, Gammas (continued)

$\gamma(^{146}Dy)$ (continued)

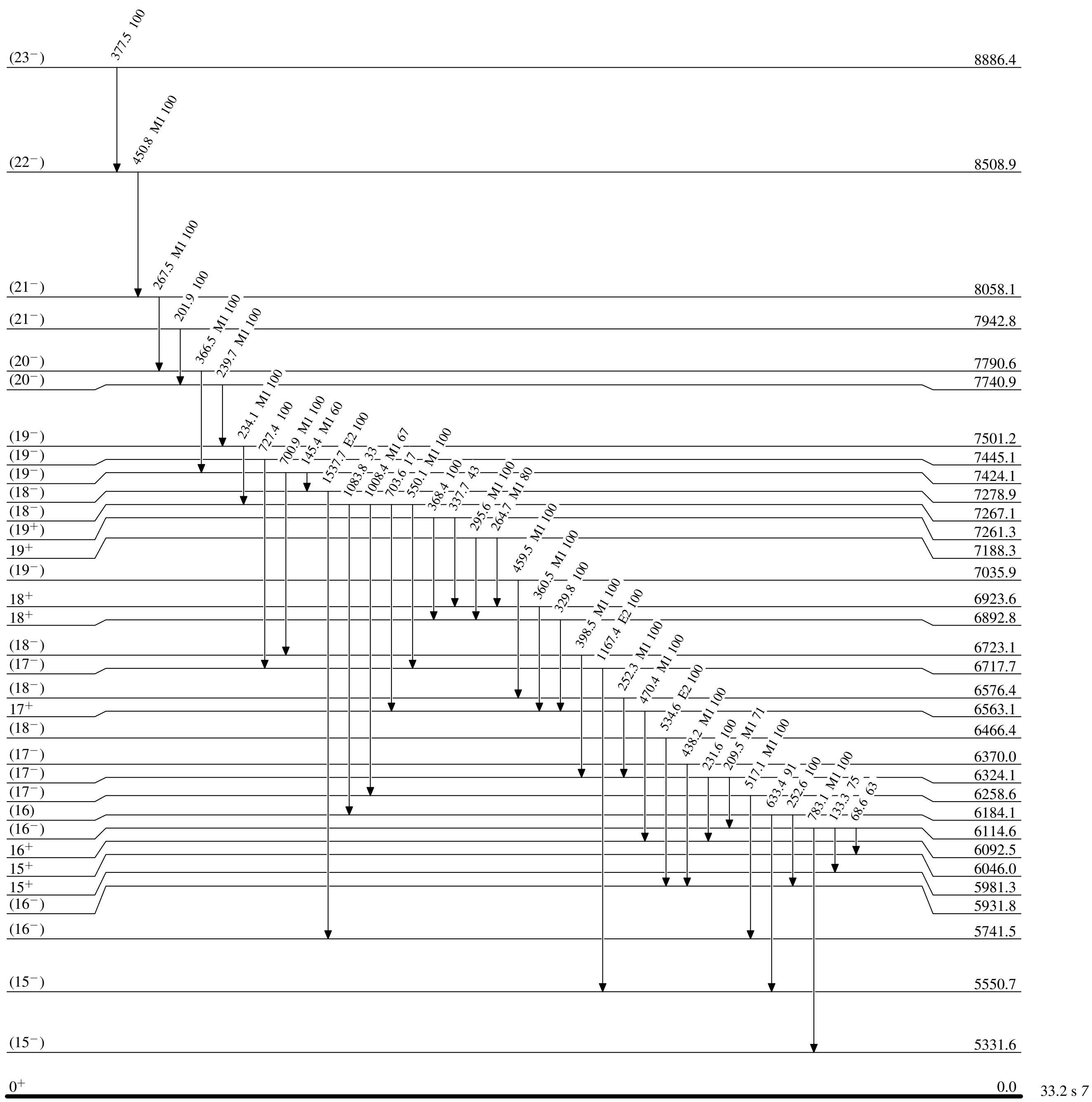
E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[@]	α[a]
6563.1	17^+	470.4 *2*	100	6092.5	16^+	M1	0.0347
6576.4	(18^-)	252.3 *3*	100	6324.1	(17^-)	M1	0.180
6717.7	(17^-)	1167.4 *4*	100	5550.7	(15^-)	E2	0.00222
6723.1	(18^-)	398.5 *5*	100	6324.1	(17^-)	M1	0.0534
6892.8	18^+	329.8 *3*	100	6563.1	17^+		
6923.6	18^+	360.5 *2*	100	6563.1	17^+	M1	0.0694
7035.9	(19^-)	459.5 *2*	100	6576.4	(18^-)	M1	0.0369
7188.3	19^+	264.7 *2*	80 *20*	6923.6	18^+	M1	0.1580
		295.6 *3*	100 *20*	6892.8	18^+	M1	0.1175
7261.3	(19^+)	337.7 *3*	43 *21*	6923.6	18^+		
		368.4 *3*	100 *21*	6892.8	18^+		
7267.1	(18^-)	550.1 *5*	100 *17*	6717.7	(17^-)	M1	0.0233
		703.6 *3*	17 *17*	6563.1	17^+		
		1008.4 *5*	67 *17*	6258.6	(17^-)	M1	0.00520
		1083.8 *5*	33 *17*	6184.1	(16)		
7278.9	(18^-)	1537.7 *4*	100	5741.5	(16^-)	E2	1.39×10^{-3}
7424.1	(19^-)	145.4 *3*	60 *12*	7278.9	(18^-)	M1	0.826
		700.9 *2*	100 *18*	6723.1	(18^-)	M1	0.01268
7445.1	(19^-)	727.4 *4*	100	6717.7	(17^-)		
7501.2	(19^-)	234.1 *2*	100	7267.1	(18^-)	M1	0.220
7740.9	(20^-)	239.7 *3*	100	7501.2	(19^-)	M1	0.207
7790.6	(20^-)	366.5 *3*	100	7424.1	(19^-)	M1	0.0664
7942.8	(21^-)	201.9 *2*	100	7740.9	(20^-)		
8058.1	(21^-)	267.5 *2*	100	7790.6	(20^-)	M1	0.1536
8508.9	(22^-)	450.8 *4*	100	8058.1	(21^-)	M1	0.0388
8886.4	(23^-)	377.5 *4*	100	8508.9	(22^-)		

† From (HI,xnγ) data except as noted.
‡ Weighted average of ^{146}Ho ε decay and (HI,xnγ) data.
# From ^{146}Ho ε decay data.
@ From α(exp), $\gamma(\theta)$(DCO) data.
& ΔJ=0 or 2 from DCO ratio >1 (not crossover transition) (2001Ro15).
a Additional information 1.

Adopted Levels, Gammas

Level Scheme

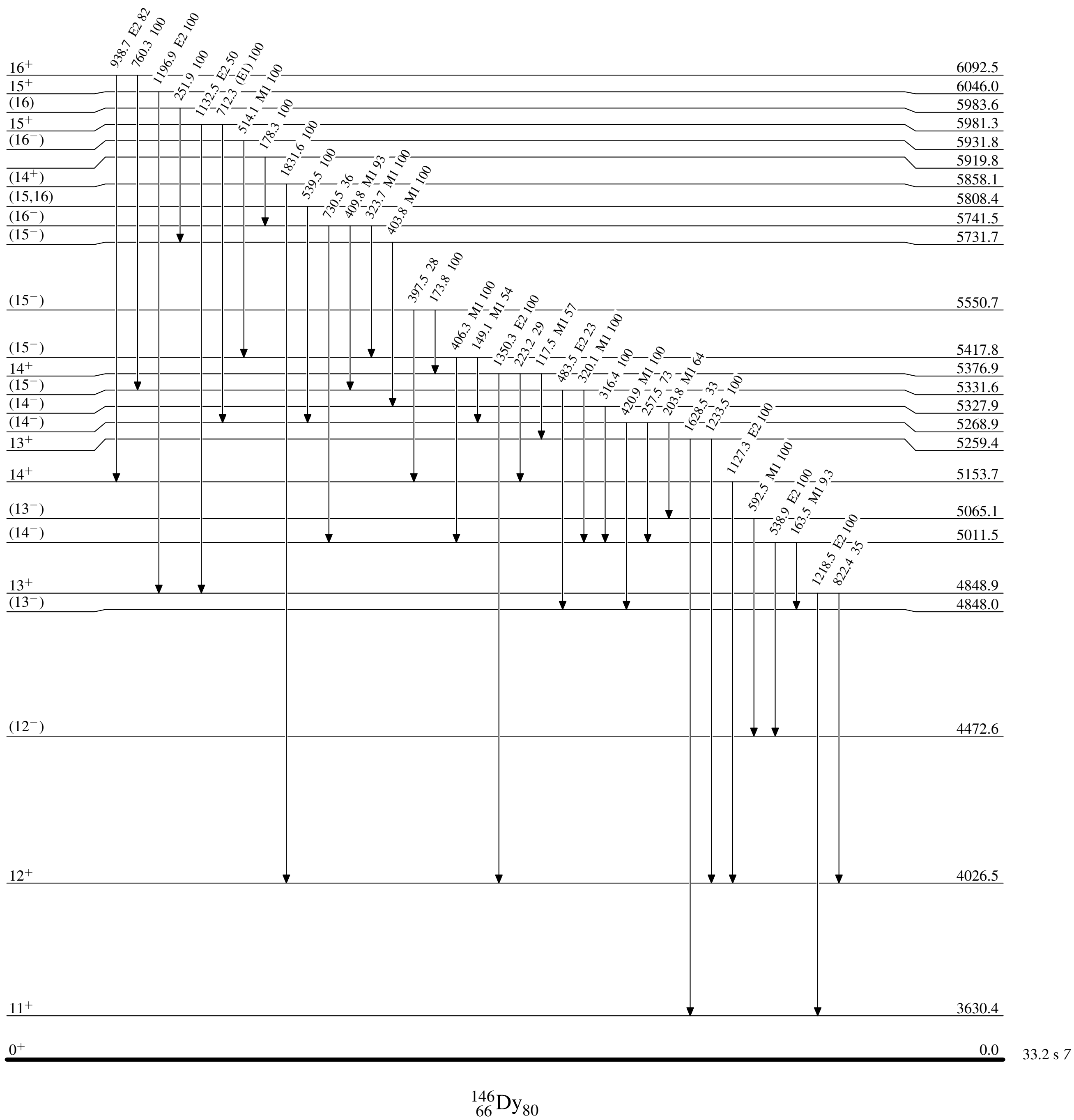
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

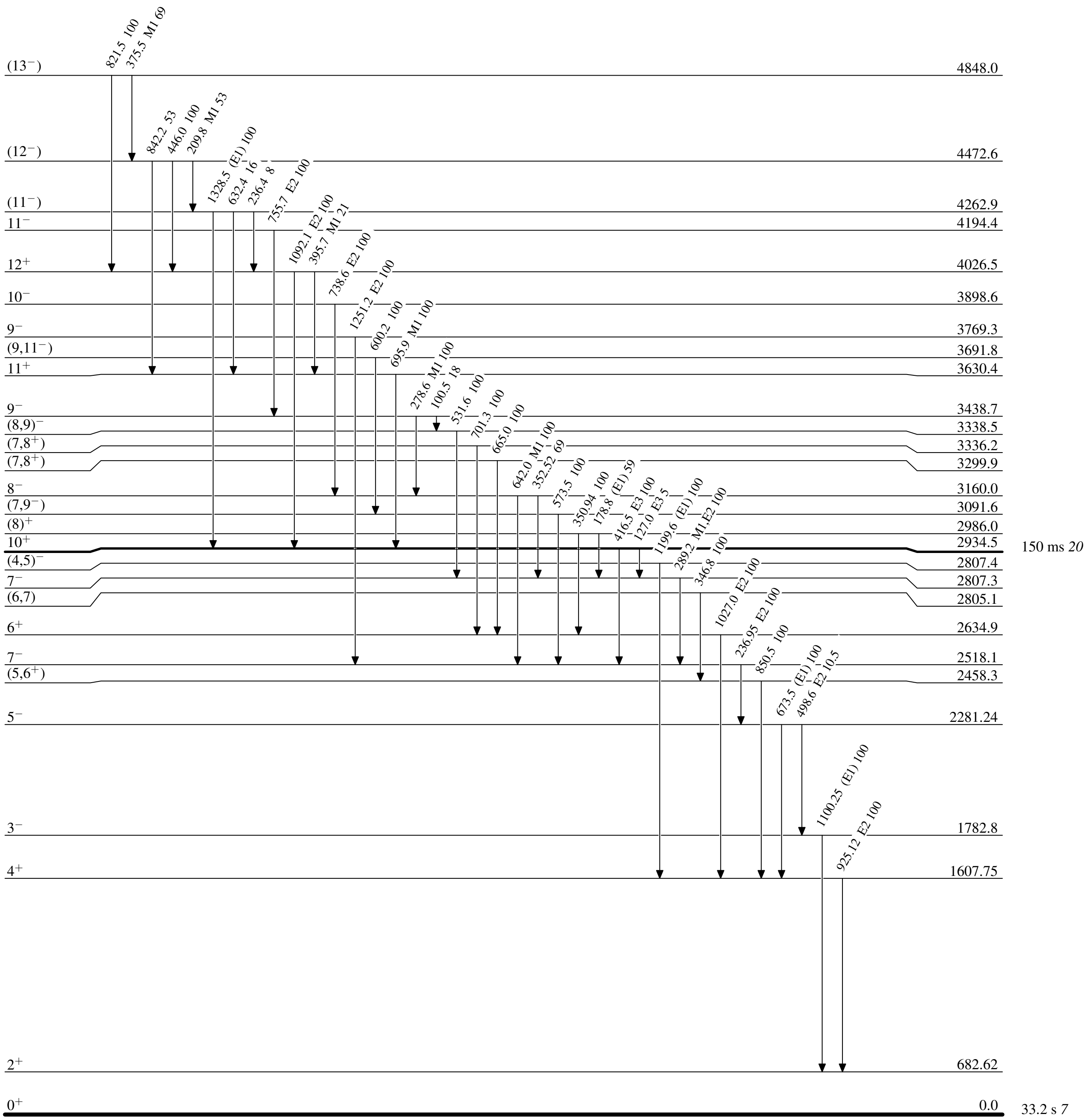
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{146}_{66}Dy_{80}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 117, 1 (2014)	1-Oct-2013

Q(β^-)=−9860 *80*; S(n)=11728 *13*; S(p)=4400 *12*; Q(α)=1481 *29* 2012Wa38
Mass measurement (Penning trap): 2007Ra37, 2000Be42.
Gamow-Teller giant state (total absorption spectroscopy): 2004Al35.

^{148}Dy Levels

Cross Reference (XREF) Flags

A	^{148}Ho ε decay (2.2 s)	D	^{149}Er εp decay (8.9 s)
B	^{148}Ho ε decay (9.59 s)	E	^{152}Er α decay
C	^{149}Er εp decay (4 s)	F	(HI,xnγ)

E(level)[#]	J^π[†]	$T_{1/2}$	XREF	Comments
0.0	0^+	3.3 min *2*	AB EF	%ε+%β^+=100 $T_{1/2}$: unweighted average of 3.1 min *1* (1975To03) and 3.5 min *2* (1974GrYZ,1974La32,1975Gr35). rms charge radius $<r^2>^{1/2}$=5.0538 fm *2030* (2004An14); others: see 2000Ga58.
1677.3	2^+		AB F	J^π: γ to 0^+ is E2.
1687.5	3^-		B F	J^π: γ to 0^+ is E3.
2348.3	5^-		B F	J^π: E2 to 3^- and log *ft*=5.8 from $(5)^-$.
2426.7	4^+		B F	
2731.0	6^+		B F	
2738.1	7^-		B F	
2832.2	8^+	65 ns *10*	B F	$T_{1/2}$: from 1980Kl09 (HI,xnγ).
2853.9	$(5,6)^-$		B	J^π: log *ft*=5.5 from $(5)^-$ and M1 to 5^-.
2919.1	10^+	471 ns *20*	F	$T_{1/2}$: from 1981Ha17 (HI,xnγ). Other: 480 ns *30* (1978Da14) (HI,xnγ).
2969.6	$(5,6,7)^-$[‡]		B	
2995.2	$(4)^-$		B	
3115.4	$(6,7)^-$		B	J^π: log *ft*=6.2 from $(5)^-$ and M1 to 7^-.
3171.7	$(5,6,7)^-$[‡]		B	
3188.6	$(5,6,7)^-$[‡]		B	
3279.6	$(6)^-$		B	
3323.2	$(6)^-$		B	
3327.7	$(5)^-$		B	
3405.0	$(8)^-$		B	
3755.8	$(5,6,7)^-$[‡]		B	
3980.7	(11^-)		F	
4289.5	$(5,6,7)^-$[‡]		B	
4393.0	$(5,6,7)^-$[‡]		B	
4459.8	$(5,6,7)^-$[‡]		B	
4477.2	(12^-)		F	
4634.2	$(5,6,7)^-$[‡]		B	
4761.9	$(5,6,7)^-$[‡]		B	
4851.4	(12^+)		F	
5054.6	$(5,6,7)^-$[‡]		B	
5261.0	$(5,6,7)^-$[‡]		B	
5270.4	(13)		F	
5410.5	(14^+)		F	
5522.9	(14^-)		F	

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Adopted Levels, Gammas (continued)

^{148}Dy Levels (continued)

E(level)[#]	J^{π}[†]	XREF	E(level)[#]	J^{π}[†]	XREF	E(level)[#]	J^{π}[†]	XREF
5772.4	(15^-)	F	8532.0	(20)	F	10111.5	(23)	F
5985.5	(16^-)	F	8785.4		F	10456.4		F
6264.5	(17^-)	F	9017.4		F	10933.5		F
6591.8	(18)	F	9169.6		F	11816.4		F
6601?[@]		F	9289.8	(21)	F	12536.8		F
7115.7	(17^-)	F	9704.3		F	12651.5		F
7434.6	(18^+)	F	10058.0		F	13220.0		F
8198.5	(19)	F	10103.1		F	14235.0		F

† The values of J^{π} are based on unpublished data on $\gamma(\theta)$ and α(K)exp (1989DrZZ,1986DiZZ), see also 1982JuZY, 1981Kl05, and 1981Ha17 (HI,xnγ); the values of J^{π} for levels populated only in ε decay were derived from branching and log *ft* data (1989Ta11).

‡ From log *ft* values for ε decay from $(5)^-$.

\# Levels with E>2919.1 and J>10 are from 1989DrZZ.

@ From 1981Ha17, not observed in 1989DrZZ.

$\gamma(^{148}Dy)$

E_i(level)	J^{π}_i	E_{γ}[†]	I_{γ}	E_f	J^{π}_f	Mult.[†]	α[#]	Comments
1677.3	2^+	1677.3 *1*	100	0.0	0^+	E2	1.24×10^{-3}	α(K)=0.000939 *14*; α(L)=0.0001291 *18*; α(M)=2.81×10^{-5} *4* α(N)=6.50×10^{-6} *9*; α(O)=9.49×10^{-7} *14*; α(P)=5.42×10^{-8} *8*; α(IPF)=0.0001398 *20*
1687.5	3^-	(10)	≈0.75	1677.3	2^+	[E1]	27.0	
		1687.5 *1*	100	0.0	0^+	E3	0.00213	α(K)=0.001726 *25*; α(L)=0.000258 *4*; α(M)=5.67×10^{-5} *8* α(N)=1.310×10^{-5} *19*; α(O)=1.90×10^{-6} *3*; α(P)=1.035×10^{-7} *15*; α(IPF)=7.09×10^{-5} *10*
2348.3	5^-	660.8 *1*	100	1687.5	3^-	E2[‡]	0.00759	α(K)=0.00625 *9*; α(L)=0.001047 *15*; α(M)=0.000233 *4* α(N)=5.35×10^{-5} *8*; α(O)=7.54×10^{-6} *11*; α(P)=3.57×10^{-7} *5*
2426.7	4^+	739.4 *1*	100 *7*	1687.5	3^-	E1	0.00224	α(K)=0.00191 *3*; α(L)=0.000257 *4*; α(M)=5.59×10^{-5} *8* α(N)=1.288×10^{-5} *18*; α(O)=1.87×10^{-6} *3*; α(P)=1.059×10^{-7} *15*
		749.4 *2*	50 *4*	1677.3	2^+	E2	0.00568	α(K)=0.00471 *7*; α(L)=0.000756 *11*; α(M)=0.0001676 *24* α(N)=3.85×10^{-5} *6*; α(O)=5.47×10^{-6} *8*; α(P)=2.70×10^{-7} *4*
2731.0	6^+	304.3 *1*	100	2426.7	4^+	E2	0.0618	α(K)=0.0464 *7*; α(L)=0.01191 *17*; α(M)=0.00274 *4* α(N)=0.000623 *9*; α(O)=8.20×10^{-5} *12*; α(P)=2.42×10^{-6} *4*
		382.7		2348.3	5^-	E1	0.00951	α(K)=0.00807 *12*; α(L)=0.001126 *16*; α(M)=0.000245 *4* α(N)=5.64×10^{-5} *8*; α(O)=8.10×10^{-6} *12*; α(P)=4.34×10^{-7} *6*
2738.1	7^-	389.8 *1*	100	2348.3	5^-	E2[‡]	0.0298	α(K)=0.0233 *4*; α(L)=0.00505 *7*; α(M)=0.001148

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{148}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ	E_f	J^π_f	Mult.[†]	α[#]	Comments
								17 α(N)=0.000262 *4*; α(O)=3.53×10⁻⁵ *5*; α(P)=1.268×10⁻⁶ *18*
2832.2	8⁺	94.1 *2*	100 *20*	2738.1	7⁻	E1	0.363 *6*	B(E1)(W.u.)≈4.5×10⁻⁶ α(K)=0.303 *5*; α(L)=0.0474 *8*; α(M)=0.01039 *16* α(N)=0.00236 *4*; α(O)=0.000320 *5*; α(P)=1.384×10⁻⁵ *21*
		101.2 *6*	20 *4*	2731.0	6⁺	E2	2.59 *7*	B(E2)(W.u.)=3.8 *13* α(K)=1.090 *23*; α(L)=1.16 *4*; α(M)=0.277 *9* α(N)=0.0621 *20*; α(O)=0.00747 *23*; α(P)=4.52×10⁻⁵ *10*
2853.9	(5,6)⁻	504.3 *2*	100	2348.3	5⁻	M1[‡]	0.0291	α(K)=0.0246 *4*; α(L)=0.00348 *5*; α(M)=0.000762 *11* α(N)=0.0001764 *25*; α(O)=2.59×10⁻⁵ *4*; α(P)=1.504×10⁻⁶ *22*
2919.1	10⁺	86.9	100	2832.2	8⁺	E2	4.60	B(E2)(W.u.)=0.93 *7* α(K)=1.561 *22*; α(L)=2.34 *4*; α(M)=0.562 *8* α(N)=0.1258 *18*; α(O)=0.01502 *21*; α(P)=6.48×10⁻⁵ *9*
2969.6	(5,6,7)⁻	115.6 *3*	23 *1*	2853.9	(5,6)⁻	M1[‡]	1.58 *3*	α(K)=1.332 *22*; α(L)=0.196 *4*; α(M)=0.0430 *7* α(N)=0.00994 *16*; α(O)=0.001454 *23*; α(P)=8.30×10⁻⁵ *14*
		542.0 *5*	12 *2*	2426.7	4⁺			
		620 *1*	49 *14*	2348.3	5⁻			
		1281.3 *2*	100 *3*	1687.5	3⁻			
2995.2	(4)⁻	567.3 *2*	81 *6*	2426.7	4⁺			
		1307.2 *2*	100 *9*	1687.5	3⁻			
3115.4	(6,7)⁻	261.5 *5*	13 *3*	2853.9	(5,6)⁻			
		282.2 *5*	10 *2*	2832.2	8⁺			
		376.1 *5*	28 *4*	2738.1	7⁻	M1[‡]	0.0621	α(K)=0.0525 *8*; α(L)=0.00751 *11*; α(M)=0.001644 *24* α(N)=0.000380 *6*; α(O)=5.58×10⁻⁵ *8*; α(P)=3.23×10⁻⁶ *5*
		765.9 *2*	100 *5*	2348.3	5⁻			
3171.7	(5,6,7)⁻	1483.4 *2*	100	1687.5	3⁻			
3188.6	(5,6,7)⁻	1500.3 *2*	100	1687.5	3⁻			
3279.6	(6)⁻	164.1 *3*	28 *4*	3115.4	(6,7)⁻	M1[‡]	0.588	α(K)=0.495 *8*; α(L)=0.0724 *11*; α(M)=0.01589 *24* α(N)=0.00368 *6*; α(O)=0.000538 *8*; α(P)=3.08×10⁻⁵ *5*
		425.7 *4*	31 *6*	2853.9	(5,6)⁻			
		930.0 *3*	100 *7*	2348.3	5⁻			
3323.2	(6)⁻	353.6 *4*	33 *5*	2969.6	(5,6,7)⁻	M1[‡]	0.0730	α(K)=0.0617 *9*; α(L)=0.00884 *13*; α(M)=0.00194 *3* α(N)=0.000448 *7*; α(O)=6.58×10⁻⁵ *10*; α(P)=3.80×10⁻⁶ *6*
		583.7 *3*	24 *6*	2738.1	7⁻			
		973.6 *2*	100 *3*	2348.3	5⁻			
3327.7	(5)⁻	1639.4 *4*	100	1687.5	3⁻			
3405.0	(8)⁻	665.8 *4*	100	2738.1	7⁻			
3755.8	(5,6,7)⁻	1328.3 *5*	28 *6*	2426.7	4⁺			
		1405.9 *2*	100 *6*	2348.3	5⁻			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{148}Dy)$ (continued)

E_i(level)	J^π_i	E_γ †	I_γ	E_f	J^π_f	Mult. †	α #	Comments
3980.7	(11⁻)	1061.1	100	2919.1	10⁺	E1	1.12×10⁻³	α(K)=0.000957 *14*; α(L)=0.0001266 *18*; α(M)=2.75×10⁻⁵ *4* α(N)=6.34×10⁻⁶ *9*; α(O)=9.26×10⁻⁷ *13*; α(P)=5.34×10⁻⁸ *8*
4289.5	(5,6,7)⁻	1101.0 *3*	63 *3*	3188.6	(5,6,7)⁻			
		1320.0 *2*	55 *3*	2969.6	(5,6,7)⁻			
		1861.5 *4*	26 *3*	2426.7	4⁺			
		1939.7 *3*	100 *4*	2348.3	5⁻			
		2600.9 *4*	16 *2*	1687.5	3⁻			
4393.0	(5,6,7)⁻	1397.3 *3*	100 *10*	2995.2	(4)⁻			
		1661.5 *8*	31 *7*	2731.0	6⁺			
		2043.4 *4*	35 *8*	2348.3	5⁻			
4459.8	(5,6,7)⁻	2110.2 *4*	100	2348.3	5⁻			
4477.2	(12⁻)	496.5	100	3980.7	(11⁻)	M1	0.0302	α(K)=0.0256 *4*; α(L)=0.00363 *5*; α(M)=0.000794 *12* α(N)=0.000184 *3*; α(O)=2.70×10⁻⁵ *4*; α(P)=1.566×10⁻⁶ *22*
4634.2	(5,6,7)⁻	2284.6 *4*	100 *8*	2348.3	5⁻			
		2945.8 *10*	17 *6*	1687.5	3⁻			
4761.9	(5,6,7)⁻	2412.4 *4*	100 *8*	2348.3	5⁻			
		3073.4 *6*	27 *6*	1687.5	3⁻			
4851.4	(12⁺)	1932.3	100	2919.1	10⁺	E2	1.10×10⁻³	α(K)=0.000724 *11*; α(L)=9.82×10⁻⁵ *14*; α(M)=2.14×10⁻⁵ *3* α(N)=4.93×10⁻⁶ *7*; α(O)=7.23×10⁻⁷ *11*; α(P)=4.18×10⁻⁸ *6*; α(IPF)=0.000253 *4*
5054.6	(5,6,7)⁻	2705.0 *4*	100	2348.3	5⁻			
5261.0	(5,6,7)⁻	2291.4 *4*	100	2969.6	(5,6,7)⁻			
5270.4	(13)	418.3		4851.4	(12⁺)			
		794.0		4477.2	(12⁻)	D		
5410.5	(14⁺)	559.1	100	4851.4	(12⁺)	E2	0.01139	α(K)=0.00927 *13*; α(L)=0.001659 *24*; α(M)=0.000372 *6* α(N)=8.52×10⁻⁵ *12*; α(O)=1.185×10⁻⁵ *17*; α(P)=5.23×10⁻⁷ *8*
5522.9	(14⁻)	1045.7	100	4477.2	(12⁻)	E2	0.00277	α(K)=0.00234 *4*; α(L)=0.000344 *5*; α(M)=7.56×10⁻⁵ *11* α(N)=1.742×10⁻⁵ *25*; α(O)=2.51×10⁻⁶ *4*; α(P)=1.348×10⁻⁷ *19*
5772.4	(15⁻)	361.8		5410.5	(14⁺)	E1	0.01087	α(K)=0.00923 *13*; α(L)=0.001291 *18*; α(M)=0.000281 *4* α(N)=6.47×10⁻⁵ *9*; α(O)=9.27×10⁻⁶ *13*; α(P)=4.94×10⁻⁷ *7*
		502.2		5270.4	(13)	Q		
5985.5	(16⁻)	212.7		5772.4	(15⁻)			
		462.9		5522.9	(14⁻)	E2	0.0186	α(K)=0.01484 *21*; α(L)=0.00291 *4*; α(M)=0.000657 *10* α(N)=0.0001501 *21*; α(O)=2.06×10⁻⁵ *3*; α(P)=8.24×10⁻⁷ *12*
6264.5	(17⁻)	279.4		5985.5	(16⁻)	M1	0.1366	α(K)=0.1153 *17*; α(L)=0.01664 *24*; α(M)=0.00365 *6* α(N)=0.000844 *12*; α(O)=0.0001238 *18*; α(P)=7.12×10⁻⁶ *10*
		491.4		5772.4	(15⁻)	E2	0.01586	α(K)=0.01274 *18*; α(L)=0.00242 *4*; α(M)=0.000546 *8*

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Adopted Levels, Gammas (continued)

$\gamma(^{148}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ	E_f	J^π_f	Mult.[†]	α[#]	Comments
								α(N)=0.0001249 *18*; α(O)=1.720×10^{-5} *24*; α(P)=7.12×10^{-7} *10*
6591.8	(18)	327.3	100	6264.5	(17$^-$)	D		
6601?		829[@]	100	5772.4	(15$^-$)			
7115.7	(17$^-$)	851.6		6264.5	(17$^-$)			
		1130.9		5985.5	(16$^-$)	(D)		
7434.6	(18$^+$)	318.4		7115.7	(17$^-$)	D		
		1170.6		6264.5	(17$^-$)	(E1)	9.49×10^{-4}	α(K)=0.000801 *12*; α(L)=0.0001056 *15*; α(M)=2.29×10^{-5} *4* α(N)=5.28×10^{-6} *8*; α(O)=7.73×10^{-7} *11*; α(P)=4.48×10^{-8} *7*; α(IPF)=1.331×10^{-5} *19*
8198.5	(19)	763.95	100	7434.6	(18$^+$)	D		
8532.0	(20)	333.5	100	8198.5	(19)	D		
8785.4		586.9	100	8198.5	(19)			
9017.4		818.9		8198.5	(19)			
9169.6		152.0		9017.4		D		
		637.9		8532.0	(20)			
		971.0		8198.5	(19)			
9289.8	(21)	757.8	100	8532.0	(20)	D		
9704.3		535.2		9169.6		D		
		1171.9		8532.0	(20)			
10058.0		353.7	100	9704.3		D		
10103.1		933.5	100	9169.6				
10111.5	(23)	407.1		9704.3				
		821.8		9289.8	(21)	Q		
10456.4		353.3		10103.1				
		398.5		10058.0				
		750.5		9704.3				
10933.5		477.4		10456.4				
		821.0[@]		10111.5	(23)			
11816.4		882.9	100	10933.5		Q		
12536.8		720.4	100	11816.4		D		
12651.5		114.7		12536.8		D		
13220.0		568.5	100	12651.5		(D)		
14235.0		1015.0	100	13220.0				

[†] Data for γ's from levels with E>2919.1 and J>10 are from 1989DrZZ. γ's with mult labeled D and Q are stretched ΔJ=1 and ΔJ=2 transitions respectively (from $\gamma(\theta)$) (1989DrZZ).

[‡] From ce data in ^{148}Ho ε decay (9.59 s).

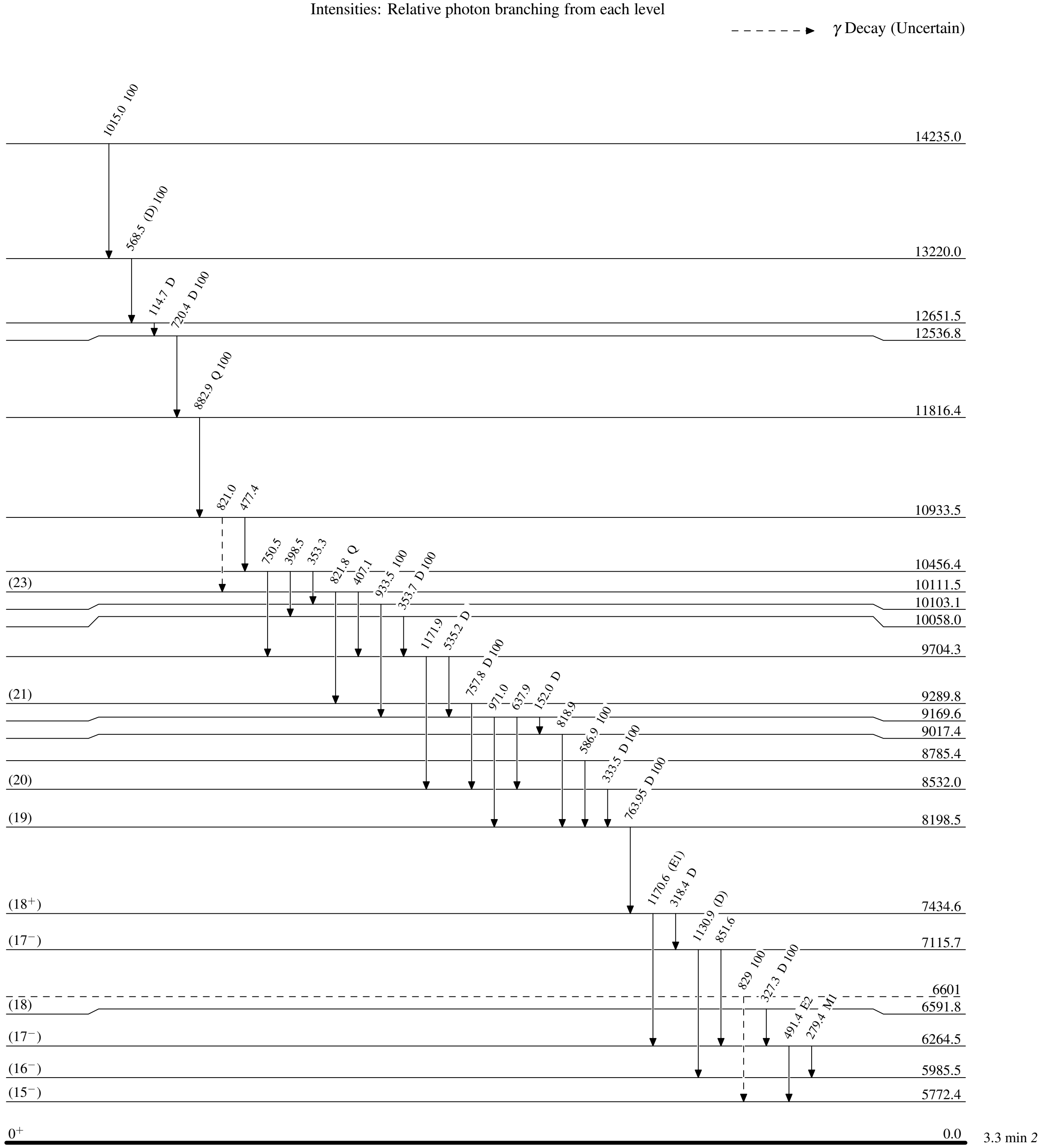
[#] Additional information 1.

[@] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

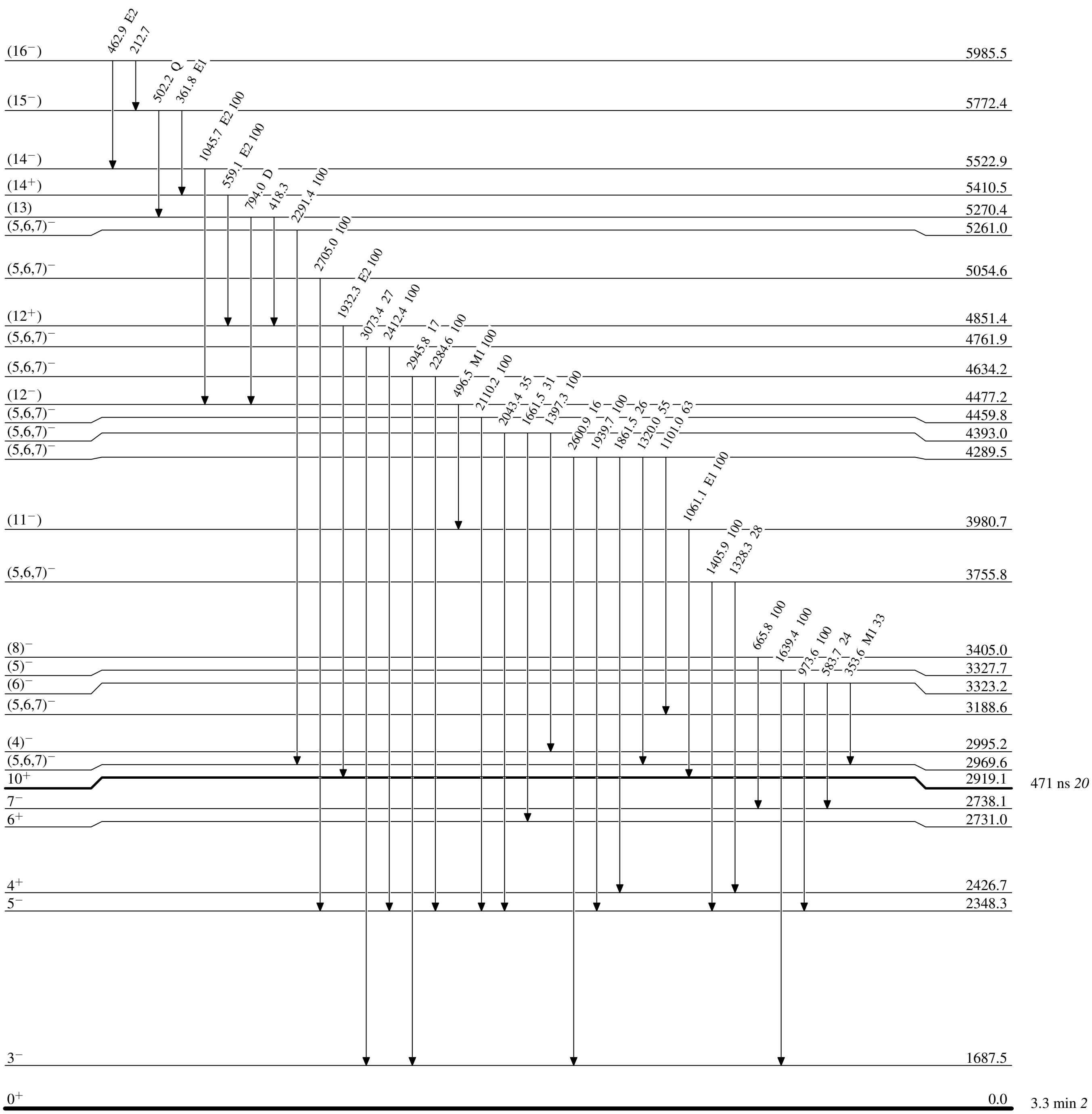


$^{148}_{66}Dy_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

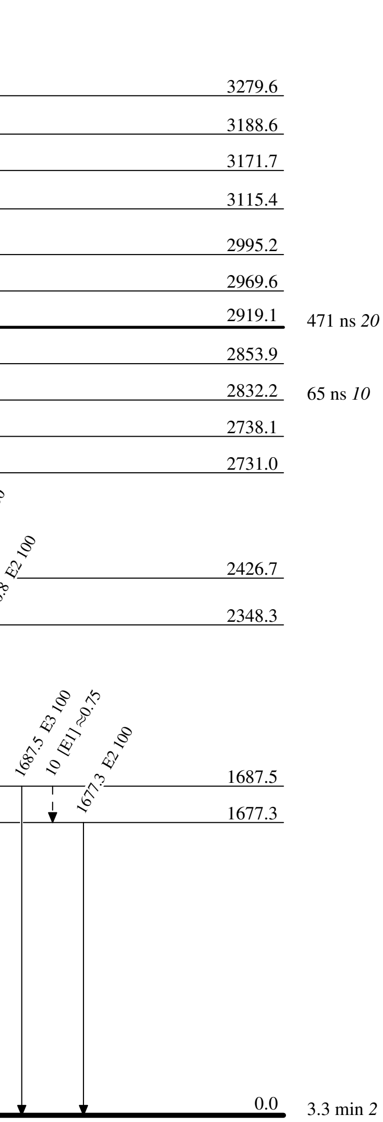


$^{148}_{66}Dy_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{148}_{66}Dy_{82}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni	NDS 114, 435 (2013)	1-Apr-2013

Q(β^-)=−7364 *14*; S(n)=9685 *10*; S(p)=5110 *5*; Q(α)=4351.3 *15* 2017Wa10
Q(ε)=1796 *8*; S(2n)=17593 *10*; S(2p)=7618 *5* 2017Wa10
Additional information 1.

^{150}Dy Levels

Cross Reference (XREF) Flags

A	^{150}Ho ε decay (23.5 s)	E	^{152}Gd(α,6nγ)
B	^{150}Ho ε decay (72 s)	F	^{114}Cd(^{40}Ar,4nγ)
C	^{154}Er α decay	G	^{144}Sm(^{12}C,2p4nγ)
D	^{124}Sn(^{32}S,6nγ)	H	^{141}Pr(^{16}O,P6NG)

E(level)[†]	J$^\pi$[#]	T$_{1/2}$	XREF	Comments
0[&]	0$^+$	7.17 min *5*	ABCDEFGH	%ε+%β^+=64 *5*; %α=36 *5* %α: α-branch was determined by a comparison of α-lines from parent and daughter in equilibrium (1977Ha48). 1974To07 give %α=36 *3* assuming 397 γ ray is 100% branch. Other: 1973Bi06. T$_{1/2}$: from 1973Bi06. 7.3 min *1* given by 1982Bo04.
803.64[&] *9*	2$^+$		AB EFGH	J$^\pi$: E2 γ to 0$^+$ g.s.
1394.97[a] *10*	(3$^-$)		B	J$^\pi$: by analogy with ^{148}Gd.
1456.96[&] *10*	4$^+$		AB EFGH	J$^\pi$: E2 γ to 2$^+$, member of g.s. cascade.
1786.37 *11*	2$^+$		B	
1850.8[&] *4*	6$^+$		A EFGH	J$^\pi$: E2 γ to 4$^+$, member of g.s. cascade.
1892.98 *14*	(0$^+$)		B	
1983.18 *11*	(2$^+$)		B	
2051.31 *12*	(4$^-$)		B	
2186.83[a] *17*	(5$^-$)		B	
2226.09 *11*	3,2$^-$,(2$^+$)		B	
2253.84 *21*	0$^+$ to 2,(3$^-$)		B	
2317.69 *16*	2$^+$,(1)		B	
2321.69 *12*	(2$^+$)		B	
2330.88 *13*	4$^+$,3$^+$,(2$^+$,3$^-$)		B	
2337.08 *12*	2$^+$,(1$^-$)		B	
2346.62 *13*	2$^+$,(1$^-$)		B	
2401.6[&] *5*	8$^+$		A EFGH	
2411.96 *16*	4$^+$,(2$^+$,3)		B	
2418.99 *20*	3$^-$,4,5$^-$		B	
2434.86 *20*	1$^-$,2		B	
2460.94 *14*	2$^+$,(1$^-$)		B	
2509.6 *5*			B	
2521.03 *15*	3,4$^+$		B	
2529.18 *15*	2$^+$		B	
2583.2 *5*	(6,7,8)		A	J$^\pi$: fed from J^π=(8,9,10) levels but not from (9)$^+$ ^{150}Ho parent.
2618.47 *17*	3,4$^+$,(2$^+$)		B	
2635.3 *5*	2,3,4		B	
2671.63 *18*	0$^+$		B	
2686.9 *6*	(8)		A	J$^\pi$: fed in (9)$^+$ ^{150}Ho ε decay; decays to 6$^+$ level.
2697.08 *15*	2,3,4		B	
2713.56 *13*	2$^+$,(1$^-$)		B	
2715.0 *5*	(8)		A	J$^\pi$: fed in (9)$^+$ ^{150}Ho ε decay; decays to 6$^+$ level.

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Adopted Levels, Gammas (continued)

^{150}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
2740.86 *14*	$3^-,(2^+)$		B	
2800.60 *15*	$2^+,(1^-)$		B	
2812.7 *5*	9^-		A EF	
2836.5 *4*			B	
2844.92 *16*	$1^-,2,3^-$		B	
2855.81 *19*	$3,(2^+,4^+)$		B	
2910.9 *5*	(4,5,6)		B	
2928.2 *5*			B	
2930.32 *17*	$4,(3^-)$		B	
2943.90 *18*	$4,(3,5^-)$		B	
2946.8 *5*	(3,4,5)		B	
2955.70 *14*	$3^-,4^+$		B	
2971.97 *17*	$2^+,(1^-)$		B	
2979.79 *16*	2,3		B	
3005.94 *16*	$4^+,3^-$		B	
3010.3 *3*	$0^+,1,2,(3^-)$		B	
3025.6[&] *5*	10^+	1.1 ns *3*	A EFGH	$T_{1/2}$: from 1980LuZV, 1979LuZZ in (α,6nγ).
3038.67 *16*	$2^+,(1^-)$		B	
3067.9 *4*	$2,3,4,(1^-)$		B	
3069.36 *16*	$1,(2^+)$		B	
3082.8 *5*	(3,4,5)		B	
3101.88 *15*	$2,(1^-,3^-)$		B	
3108.0 *5*	(3,4,5)		B	
3112.59 *17*	$3,(2^+,4^+)$		B	
3131.40 *19*	$2,3,(4^+,1^-)$		B	
3133.9 *5*	(3,4,5)		B	
3141.1 *5*	$0^+,1,2,3,(4^+)$		B	
3150.43 *23*	$4,(3^-,5^-)$		B	
3152.0 *3*	$3,(2^+,4^+)$		B	
3156.45 *21*	$3,(4^+)$		B	
3172.7 *3*	(2,3)		B	
3177.24 *20*	$4^+,(3^-)$		B	
3183.32 *17*	$2^-,3^-$		B	
3194.6 *4*	(0^+ to 3)		B	
3197.6 *4*	(2,3)		B	
3199.03 *21*	(3,4)		B	
3243.8 *5*	(8,9,10)[@]		A	
3257.9 *5*	(2,3,4)		B	
3279.3 *3*	$2^+,(1^-)$		B	
3292.34 *17*	(3)		B	
3294.2 *3*	(4)		B	
3304.8 *3*	(3,4)		B	
3326.5 *5*	(0^+ to 3)		B	
3335.4 *3*	$1,2^+$		B	
3339.51 *15*	$2^+,(1^-)$		B	
3348.9 *5*	(3,4,5)		B	
3356.4 *3*	(3)		B	
3366.2 *5*	(2,3,4)		B	
3378.84 *17*	3^-		B	
3383.2 *3*	(3)		B	
3395.0 *5*	(3,4,5)		B	
3405.1 *3*	(3,4)		B	
3413.0 *5*	(3,4,5)		B	
3414.4 *4*	(3,4)		B	
3422.7 *5*	(1,2,3)		B	
3440.7 *4*	(1,2,3)		B	

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Adopted Levels, Gammas (continued)

^{150}Dy Levels (continued)

E(level)[†]	J$^{\pi}$[#]	XREF
3441.1 5	(3,4,5)	B
3458.74 21	$3^-,4^+$	B
3464.6 5	(2,3,4)	B
3465.3 5	(2,3,4)	B
3467.0 5	(3,4,5)	B
3472.0 9	(11^-)	EF
3473.8 5	(2,3,4)	B
3480.5 3	(2,3)	B
3496.1 5	(0^+ to 3)	B
3497.0 4	(0^+,2,3,4)	B
3500.66 18	(2,3)	B
3528.6 3	3,(4^-)	B
3529.4 4	(0^+ to 3)	B
3530.4 4	(1,2,3)	B
3535.77 22	$(2,3)^-$	B
3542.3 5	(0^+ to 3)	B
3550.2 5	(2,3,4)	B
3565.0 5	(2,3,4)	B
3567.51 21	3^-	B
3577.8 5	(0^+ to 3)	B
3586.1 5	(3,4,5)	B
3588.9 3	(1^-)&(3^-)	B
3600.6 3	(3,4)	B
3613.1 5	(3,4,5)	B
3638.7 4	(3,4)	B
3654.7 4	$(2,3)^-$	B
3660.3 4	(3,4)	B
3690.58 22	3^-	B
3693.5 5		B
3704.26 18	3^-	B
3724.1 5	(2,3,4)	B
3733.19 22	3^-	B
3743.6 5	(3,4,5)	B
3749.7 3	(1,2,3)	B
3766.6 3	(2,3,4)	B
3782.8 5	(2,3,4)	B
3789.0 4	(0^+ to 3)	B
3792.6 3	$2^+,1^-$	B
3804.1 3	2^+	B
3812.8 4	3^-	B
3814.3 7	(8,9,10)[@]	A
3834.3 3	1^-	B
3834.7[&] 9	12^+	EFGH
3857.86 14	1^-&3^-	B
3870.0 3	3^-	B
3873.60 22	$(2,3)^-$	B
3892.2 5	$(3,2)^-$	B
3895.7 3	1^-	B
3900.8 4	3^-	B
3903.7 5	$(3,2)^-$	B
3916.01 19	3^-	B
3924.19 18	3^-	B
3927.0 5	$(2,3)^-$	B
3929.8 5	$(2,3)^-$	B
3968.4 3	3^-	B
3980.9 4	3^-	B
4000.3 3	$(3,2)^-$	B
4009.4 5	1^-	B
4014.1 7	(8,9,10)[@]	A
4045.84 22	$(2,3)^-$	B
4052.6 5	$(2,3)^-$	B
4086.90 23	1^-	B
4100.00 22	1^-	B
4102.33 18	1^-&$(2,3)^-$	B
4110.2 12		F
4116.7 5	$(2,3)^-$	B
4118.9 4	$(3,2)^-$	B
4129.2 4	$(2,3)^-$	B
4149.1 7	(8,9,10)[@]	A
4151.6 5	$(3,2)^-$	B
4154.1 3	$(2,3)^-$	B
4162.8 3	3^-	B
4170.68 24	3^-&1^-	B
4196.6 5	$(2,3)^-$	B
4199.1 5	1^-	B
4208.5 5	$(2,3)^-$	B
4216.4 5	$(3,2)^-$	B
4220.65 20	3^-	B
4224.4 4	$(3,2)^-$	B
4233.9 5	1^-	B
4253.5 4	$(3,2)^-$	B
4255.5 5	1^-	B
4264.6 5	$(2,3)^-$	B
4270.4 5	$(2,3)^-$	B
4278.4 5	3^-	B
4293.77 24	3^-	B
4294.3 6	(8,9,10)[@]	A
4304.97 20	1^-	B
4311.4 5	$(2,3)^-$	B
4322.0 4	$(2,3)^-$	B
4337.3[&] 12	14^+	EFGH
4340.2 4	$(2,3)^-$	B
4342.4 5	1^-	B
4344.61 13	1^-&$(2,3)^-$	B
4355.1 5	1^-	B
4356.72 15	$(2,3)^-$	B
4361.59 17	1^-	B
4373.4 3	$(3)^-$	B
4377.49 24	1^-	B
4389.7 3	$(2,3)^-$	B
4401.05 13	3^-	B
4417.17 18	$(2,3)^-$	B
4421.62 12	3^-	B
4427.13 16	$(3,2)^-$	B
4429.1 5	$(3,2)^-$	B
4431.72 18	1^-	B
4439.15 18	$(2,3)^-$	B
4443.09 15	$(2,3)^-$	B
4444.3 5	1^-	B
4445.95 15	3^-	B
4449.63 21	1^-	B
4460.7 3	$(3)^-$	B

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{150}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
4469.7 *3*	$(2,3)^-$		B	
4480.6 *3*	1^-		B	
4482.64 *15*	3^-		B	
4486.64 *15*	$(3)^-$		B	
4487.9 *3*	1^-		B	
4491.77 *13*	3^-		B	
4495.52 *13*	3^-		B	
4511.69 *16*	1^-&$(2,3)^-$		B	
4518.50 *22*	1^-		B	
4519.5 *4*	$(3,2)^-$		B	
4521.68 *21*	3^-		B	
4523.53 *21*	$(2,3)^-$		B	
4544.47 *22*	1^-&3^-		B	
4546.6 *4*	$(3,2)^-$		B	
4548.97 *24*	$(2,3)^-$		B	
4549.87 *24*	$(2,3)^-$		B	
4552.14 *22*	$(2,3)^-$		B	
4553.00 *21*	$(3)^-$		B	
4566.9[&] *16*	16^+	1.7 ns *2*	EFGH	$T_{1/2}$: from 1980LuZV, 1979LuZZ in (α,6nγ).
4574.26 *14*	3^-		B	
4576.5 *3*	$(3)^-$		B	
4584.4 *5*	1^-		B	
4594.7 *5*	1^-		B	
4597.24 *19*	$(2,3)^-$		B	
4601.9 *3*	3^-		B	
4605.86 *19*	1^-		B	
4607.7 *5*	$(3,2)^-$		B	
4610.1 *4*	3^-		B	
4640.5 *4*	$(2,3)^-$		B	
4649.0 *4*	$(2,3)^-$		B	
4653.0 *5*	1^-		B	
4660.26 *24*	$(2,3)^-$		B	
4665.93 *24*	$(2,3)^-$		B	
4668.1 *5*	$(2,3)^-$		B	
4694.97 *21*	3^-		B	
4698.11 *19*	1^-&3^-		B	
4706.15 *15*	$(2,3)^-$		B	
4712.3 *5*	1^-		B	
4718.3 *4*	$(3,2)^-$		B	
4733.47 *24*	$(2,3)^-$		B	
4743.77 *24*	1^-		B	
4753.98 *24*	3^-		B	
4757.8 *3*	$(2,3)^-$		B	
4759.4 *3*	3^-		B	
4766.59 *21*	$(2,3)^-$		B	
4769.7 *5*	$(3,2)^-$		B	
4785.2 *3*	$(2,3)^-$		B	
4789.4 *4*	3^-		B	
4794.1 *5*	1^-		B	
4799.3 *5*	$(2,3)^-$		B	
4803.8 *3*	$(2,3)^-$		B	
4808.15 *21*	3^-		B	
4809.2 *5*	1^-		B	
4835.10 *21*	$(2,3)^-$		B	
4849.6 *4*	3^-		B	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{150}Dy Levels (continued)

E(level)[†]	J$^{\pi}$[#]	XREF	E(level)[†]	J$^{\pi}$[#]	$T_{1/2}$	XREF
4870.3 *5*	$(2,3)^-$	B	7000.4 *21*	$22^{(-)}$		F
4872.8 *4*	$(2,3)^-$	B	7047.3 *22*			F
4881.6 *4*	3^-	B	7102.3 *22*	22^+		F
4883.2 *5*	1^-	B	7288.7 *21*			F
4901.2 *3*	$(2,3)^-$	B	7372.5? *22*			D
4909.7 *5*	$(2,3)^-$	B	7473.7 *21*	22^-		D F H
4937.7 *5*	$(2,3)^-$	B	7650.3 *22*			F
4949.4 *3*	3^-	B	7725.8? *23*			D
4956.4 *5*	3^-	B	7741.0 *21*	23^-		D F H
4972.8 *5*	$(2,3)^-$	B	7755.1? *22*			D
4995.5 *3*	$(2,3)^-$	B	7955.2 *22*			F
5000.7 *5*	1^-	B	8008.2 *21*	24^-		D F H
5005.9 *5*	$(2,3)^-$	B	8123? *3*			D
5010.6 *4*	$(2,3)^-$	B	8303.2 *22*			F
5031.6 *5*	1^-	B	8404.9? *23*			D
5032.8 *5*	$(2,3)^-$	B	8425.1 *22*			F
5035.3 *5*	$(2,3)^-$	B	8445.1 *22*			F
5067.7 *5*	$(2,3)^-$	B	8481.2 *22*			F
5071.1[&] *18*	18^+	DEFGH	8544.8 *22*			F
5076.8 *5*	$(2,3)^-$	B	8610.8 *22*	25^-		D F H
5088.6 *3*	3^-	B	8729.4 *22*			F
5098.5 *5*	$(2,3)^-$	B	8763.8 *22*			F
5106.3 *5*	$(2,3)^-$	B	8777.8 *23*			F
5110.7 *5*	$(2,3)^-$	B	8828.9? *23*			D
5129.0 *5*	$(2,3)^-$	B	8843.6 *22*	(23^-)		F
5142.8 *4*	$(3,2)^-$	B	8868.1 *22*			F
5165.6 *4*	3^-	B	8904.7 *22*			F
5176.2 *5*	$(2,3)^-$	B	8921.2 *22*	(23^-)		F H
5181.1 *5*	$(2,3)^-$	B	8951.6 *23*			F
5193.7 *5*	$(2,3)^-$	B	9063.4 *22*			F
5207.7 *5*	$(2,3)^-$	B	9106.8 *22*	26^+		F H
5211.3 *5*	$(2,3)^-$	B	9274.5 *21*	(25^-)		F H
5218.7 *4*	$(2,3)^-$	B	9305.9 *23*	(27^+)		F H
5225.0 *5*	$(3,2)^-$	B	9398.9? *23*			F
5246.7 *5*	$(2,3)^-$	B	9896.1 *22*	(26^-)		F H
5250.4 *3*	3^-	B	9974.8 *22*	(27^-)		F H
5251.6 *5*	$(3,2)^-$	B	10238.6 *24*	(29^-)		F
5254.6 *3*	3^-	B	10327.3 *22*	(29^-)	1.6[b] ns *6*	F H
5296.1 *4*	3^-	B	10889.2 *23*			F
5327.5 *5*	$(2,3)^-$	B	11005.9 *24*	(30^-)		F H
5334.1 *5*	$(2,3)^-$	B	11218.4 *24*	(31^-)		F
5353.2 *5*	3^-	B	11304.8 *23*	(31^-)		F H
5359.6 *5*	1^-	B	11392.3 *24*			F
5414.7 *5*	$(2,3)^-$	B	11701.8 *24*	(32^-)		F H
5415.9[‡] *18*	$17^{(+)}$	EF	11803 *3*			F
5450.8 *5*	$(2,3)^-$	B	12317 *3*			F
5613.3[‡] *19*	$18^{(-)}$	EF	12352.5 *24*	(33^-)		F H
5661.9 *5*	$(2,3)^-$	B	12498.2 *25*	(33)		F
5725.5 *5*	$(2,3)^-$	B	12735.7 *25*	(34^+)		F H
5813.1 *19*	19^-	DEFGH	12776.4 *25*	(34^-)		F H
5880.4 *5*	$(2,3)^-$	B	12927 *3*	(35)		F H
5887.9 *5*	$(2,3)^-$	B	13598 *3*	(36)		F H
6018.6 *20*	20^-	DEFGH	13803 *3*	(36^+)		F H
6394.7 *21*	21^-	DEF H	14056 *3*	(37)		F H
6815.6 *21*		F	14992 *3*	(39)		F

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Adopted Levels, Gammas (continued)

^{150}Dy Levels (continued)

E(level)[†]	XREF
15947 *3*	F
16291 *3*	F

[†] From least squares fit to γ-energies, except otherwise noted.
[‡] The order of the 200-, 197-, and 849-keV γ rays was not established by the data.
[#] J^π assignments for levels up to 21$^-$ are from (α,6nγ) (1980LuZV, 1979LuZZ) and are based on multipolarities determined by authors from their ce and $\gamma(\theta)$ data, unless otherwise noted. A cascade to g.s. consisting of stretched Q transitions is built up to 18$^+$. The higher J^π values are from 1987De23 based on t, $\gamma(\theta)$, and constraints on different cascades ending at the same level and other systematics. See 1987De23 for suggested configurations for high-spin levels. The low-spin values are derived mainly from log *ft* values as well as gamma decay pattern.
[@] Fed in ε decay from (9)$^+$ parent.
[&] Band(A): Yrast band.
[a] Band(B): Negative parity band.
[b] From ^{141}Pr(^{16}O,P6NG).

γ(^{150}Dy)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.[#]	α[&]	Comments
803.64	2$^+$	803.62 *16*	100	0	0$^+$	E2	0.00486 *7*	α(K)=0.00405 *6*; α(L)=0.000636 *9*; α(M)=0.0001407 *20*; α(N)=3.24$\times10^{-5}$ *5*; α(O)=4.61$\times10^{-6}$ *7* α(P)=2.33$\times10^{-7}$ *4*; α(N+..)=3.72$\times10^{-5}$ *6* E_γ: weighted average of 803.3 *2* (^{150}Ho ε decay (23.3 s)), 803.7 *1* (^{150}Ho ε decay (72 s)).
1394.97	(3$^-$)	591.3 *2*	100	803.64	2$^+$			
1456.96	4$^+$	653.38 *16*	100	803.64	2$^+$	E2	0.00780 *11*	α(K)=0.00642 *9*; α(L)=0.001079 *16*; α(M)=0.000240 *4*; α(N)=5.52$\times10^{-5}$ *8*; α(O)=7.77$\times10^{-6}$ *11* α(P)=3.66$\times10^{-7}$ *6*; α(N+..)=6.33$\times10^{-5}$ *9* E_γ: weighted average of 653.3 *3* (^{150}Ho ε decay (23.3 s)), 653.41 *19* (^{150}Ho ε decay (72 s)).
1786.37	2$^+$	983.1 *5*	100	803.64	2$^+$			
		1786.2 *5*	57	0	0$^+$			
1850.8	6$^+$	393.8 *4*	100	1456.96	4$^+$	E2	0.0289	α(K)=0.0227 *4*; α(L)=0.00487 *7*; α(M)=0.001109 *16*; α(N)=0.000253 *4*; α(O)=3.41$\times10^{-5}$ *5* α(P)=1.235$\times10^{-6}$ *18*; α(N+..)=0.000288 *4* E_γ: from ^{150}Ho ε decay (23.3 s).
1892.98	(0$^+$)	1089.4 *5*	100	803.64	2$^+$			
1983.18	(2$^+$)	1180.1 *5*	100	803.64	2$^+$			
		1983.2 *5*	52	0	0$^+$			
2051.31	(4$^-$)	656.8 *5*	100	1394.97	(3$^-$)			
2186.83	(5$^-$)	730.4 *5*	72	1456.96	4$^+$			
		792.2 *5*	100	1394.97	(3$^-$)			
2226.09	3,2$^-$,(2$^+$)	243.5 *5*	4.4	1983.18	(2$^+$)			
		831.5 *5*	100	1394.97	(3$^-$)			
		1422.3 *5*	68	803.64	2$^+$			

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^{π}_i	E_γ	I_γ	E_f	J^{π}_f	Mult.#	α&	Comments
2253.84	0^+ to 2,(3^-)	1449.9 *5*	100	803.64	2^+			
2317.69	2^+,(1)	425.3 *5*	1.92	1892.98	(0^+)			
		1514.2 *5*	100	803.64	2^+			
2321.69	(2^+)	338.6 *5*	3.0	1983.18	(2^+)			
		427.9 *5*	0.175	1892.98	(0^+)			
		535.7 *5*	6.3	1786.37	2^+			
		927.0 *5*	100	1394.97	(3^-)			
2330.88	4^+,3^+,(2^+,3^-)	874.2 *5*	100	1456.96	4^+			
		1527.1 *5*	30	803.64	2^+			
2337.08	2^+,(1^-)	942.5 *5*	2.6	1394.97	(3^-)			
		1533.2 *5*	15.0	803.64	2^+			
		2337.2 *5*	100	0	0^+			
2346.62	2^+,(1^-)	363.8 *5*	3.6	1983.18	(2^+)			
		453.9 *5*	0.70	1892.98	(0^+)			
		560.9 *5*	11.1	1786.37	2^+			
		1542.8 *5*	15.6	803.64	2^+			
		2346.6 *5*	100	0	0^+			
2401.6	8^+	550.8 *2*	100	1850.8	6^+	E2	0.01182	α(K)=0.00960 *14*; α(L)=0.001731 *25*; α(M)=0.000388 *6*; α(N)=8.89×10^{-5} *13* α(O)=1.236×10^{-5} *18*; α(P)=5.42×10^{-7} *8*; α(N+..)=0.0001018 *15* E_γ: from ^{150}Ho ε decay (23.3 s).
2411.96	4^+,(2^+,3)	625.4 *5*	2.01	1786.37	2^+			
		955.5 *5*	40	1456.96	4^+			
		1017.2 *5*	5.2	1394.97	(3^-)			
		1608.9 *5*	100	803.64	2^+			
2418.99	3^-,4,5^-	232.2 *5*	1.76	2186.83	(5^-)			
		962.2 *5*	100	1456.96	4^+			
		1023.7 *5*	14.1	1394.97	(3^-)			
2434.86	1^-,2	1040.4 *5*	6.4	1394.97	(3^-)			
		1631.2 *5*	100	803.64	2^+			
2460.94	2^+,(1^-)	1066.2 *5*	27	1394.97	(3^-)			
		1657.0 *5*	100	803.64	2^+			
		2460.9 *5*	39	0	0^+			
2509.6		1706.0 *5*	100	803.64	2^+			
2521.03	3,4^+	470.1 *5*	8.8	2051.31	(4^-)			
		538.1 *5*	9.9	1983.18	(2^+)			
		734.0 *5*	45	1786.37	2^+			
		1064.5 *5*	100	1456.96	4^+			
		1126.6 *5*	33	1394.97	(3^-)			
		1717.4 *5*	77	803.64	2^+			
2529.18	2^+	1072.1 *5*	4.3	1456.96	4^+			
		1134.5 *5*	33	1394.97	(3^-)			
		1725.4 *5*	22.3	803.64	2^+			
		2529.2 *5*	100	0	0^+			
2583.2	(6,7,8)	732.5 *4*	100	1850.8	6^+			
2618.47	3,4^+,(2^+)	1161.8 *5*	29	1456.96	4^+			
		1814.8 *5*	100	803.64	2^+			
2635.3	2,3,4	1240.3 *5*	100	1394.97	(3^-)			
2671.63	0^+	885.6 *5*	2.06	1786.37	2^+			
		1868.0 *5*	100	803.64	2^+			
2686.9	(8)	836.1 *5*	100	1850.8	6^+			
2697.08	2,3,4	366.5 *5*	20.7	2330.88	4^+,3^+,(2^+,3^-)			

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.#	α&	Comments
2697.08	2,3,4	1240.4 *5*	100	1456.96	4^+			
		1302.4 *5*	14.6	1394.97	(3^-)			
2713.56	$2^+,(1^-)$	927.4 *5*	5.4	1786.37	2^+			
		1319.0 *5*	38	1394.97	(3^-)			
		1910.2 *5*	13.7	803.64	2^+			
		2713.3 *5*	100	0	0^+			
2715.0	(8)	864.2 *2*	100	1850.8	6^+			
2740.86	$3^-,(2^+)$	757.9 *5*	13.5	1983.18	(2^+)			
		954.6 *5*	16.0	1786.37	2^+			
		1284.3 *5*	100	1456.96	4^+			
		1345.8 *5*	7.1	1394.97	(3^-)			
		1937.6 *5*	40	803.64	2^+			
2800.60	$2^+,(1^-)$	818.0 *5*	2.17	1983.18	(2^+)			
		1014.4 *5*	19.7	1786.37	2^+			
		1997.4 *5*	28	803.64	2^+			
		2800.2 *5*	100	0	0^+			
2812.7	9^-	411.2 *3*	100	2401.6	8^+	E1	0.00803 *12*	α(K)=0.00682 *10*; α(L)=0.000947 *14*; α(M)=0.000206 *3*; α(N)=4.75×10^{-5} *7*; α(O)=6.83×10^{-6} *10* α(P)=3.68×10^{-7} *6*; α(N+..)=5.46×10^{-5} *8* E_γ: from ^{150}Ho ε decay (23.3 s).
2836.5		1049.6 *5*	4.0	1786.37	2^+			
		2033.4 *5*	100	803.64	2^+			
2844.92	$1^-,2,3^-$	862.0 *5*	7.4	1983.18	(2^+)			
		1058.4 *5*	3.4	1786.37	2^+			
		1449.6 *5*	58	1394.97	(3^-)			
		2041.3 *5*	100	803.64	2^+			
2855.81	$3,(2^+,4^+)$	872.8 *5*	12.1	1983.18	(2^+)			
		1069.0 *5*	23.7	1786.37	2^+			
		1399.2 *5*	100	1456.96	4^+			
		2051.7 *5*	47	803.64	2^+			
2910.9	(4,5,6)	724.1 *5*	100	2186.83	(5^-)			
2928.2		1141.8 *5*	100	1786.37	2^+			
2930.32	$4,(3^-)$	704.1 *5*	16.2	2226.09	$3,2^-,(2^+)$			
		744.0 *5*	2.15	2186.83	(5^-)			
		879.1 *5*	100	2051.31	(4^-)			
2943.90	$4,(3,5^-)$	525.2 *5*	9.0	2418.99	$3^-,4,5^-$			
		1486.8 *5*	17.3	1456.96	4^+			
		1548.9 *5*	100	1394.97	(3^-)			
2946.8	(3,4,5)	1489.8 *5*	100	1456.96	4^+			
2955.70	$3^-,4^+$	625.0 *5*	4.0	2330.88	$4^+,3^+,(2^+,3^-)$			
		634.0 *5*	2.7	2321.69	(2^+)			
		730.2 *5*	8.7	2226.09	$3,2^-,(2^+)$			
		769.1 *5*	4.4	2186.83	(5^-)			
		904.3 *5*	5.9	2051.31	(4^-)			
		972.6 *5*	3.8	1983.18	(2^+)			
		1499.0 *5*	21.8	1456.96	4^+			
		1560.9 *5*	15.3	1394.97	(3^-)			
		2152.1 *5*	100	803.64	2^+			
2971.97	$2^+,(1^-)$	1185.9 *5*	14.2	1786.37	2^+			
		2168.5 *5*	100	803.64	2^+			
		2972.0 *5*	52	0	0^+			
2979.79	2,3	996.7 *5*	5.0	1983.18	(2^+)			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.#	α&	Comments
2979.79	2,3	2175.9 *5*	100	803.64	2^+			
3005.94	$4^+,3^-$	684.0 *5*	15.9	2321.69	(2^+)			
		780.0 *5*	10.8	2226.09	$3,2^-,(2^+)$			
		818.7 *5*	1.81	2186.83	(5^-)			
		1022.8 *5*	2.9	1983.18	(2^+)			
		1220.0 *5*	40	1786.37	2^+			
		1610.7 *5*	100	1394.97	(3^-)			
3010.3	$0^+,1,2,(3^-)$	673.3 *5*	12.2	2337.08	$2^+,(1^-)$			
		2206.8 *5*	100	803.64	2^+			
3025.6	10^+	212.9		2812.7	9^-			E_γ: observed only in $^{152}Gd(\alpha,6n\gamma)$ and $^{114}Cd(^{40}Ar,4n\gamma)$.
		624.0 *2*		2401.6	8^+	E2	0.00870 *13*	α(K)=0.00713 *10*; α(L)=0.001221 *17*; α(M)=0.000272 *4*; α(N)=6.25×10^{-5} *9*; α(O)=8.77×10^{-6} *13* α(P)=4.06×10^{-7} *6*; α(N+..)=7.17×10^{-5} *10* E_γ: from ^{150}Ho ε decay (23.3 s).
3038.67	$2^+,(1^-)$	1643.7 *5*	100	1394.97	(3^-)			
		2234.7 *5*	64	803.64	2^+			
		3039.0 *5*	84	0	0^+			
3067.9	$2,3,4,(1^-)$	737.1 *5*	100	2330.88	$4^+,3^+,(2^+,3^-)$			
3069.36	$1,(2^+)$	3069.4 *5*	100	0	0^+			
3082.8	(3,4,5)	1031.5 *5*	100	2051.31	(4^-)			
3101.88	$2,(1^-,3^-)$	1315.3 *5*	6.7	1786.37	2^+			
		2298.2 *5*	100	803.64	2^+			
3108.0	(3,4,5)	1651.0 *5*	100	1456.96	4^+			
3112.59	$3,(2^+,4^+)$	781.2 *5*	11.0	2330.88	$4^+,3^+,(2^+,3^-)$			
		859.3 *5*	24.3	2253.84	0^+ to $2,(3^-)$			
		1129.1 *5*	28	1983.18	(2^+)			
		1326.6 *5*	57	1786.37	2^+			
		1655.6 *5*	100	1456.96	4^+			
		2308.7 *5*	64	803.64	2^+			
3131.40	$2,3,(4^+,1^-)$	610.7 *5*	46	2521.03	$3,4^+$			
		785.0 *5*	9.7	2346.62	$2^+,(1^-)$			
		1345.4 *5*	53	1786.37	2^+			
		2327.9 *5*	100	803.64	2^+			
3133.9	(3,4,5)	1676.9 *5*	100	1456.96	4^+			
3141.1	$0^+,1,2,3,(4^+)$	2337.4 *5*	100	803.64	2^+			
3150.43	$4,(3^-,5^-)$	731.0 *5*	18.8	2418.99	$3^-,4,5^-$			
		963.7 *5*	100	2186.83	(5^-)			
		1099.4 *5*	18.1	2051.31	(4^-)			
		1755.2 *5*	70	1394.97	(3^-)			
3152.0	$3,(2^+,4^+)$	830.6 *5*	20.3	2321.69	(2^+)			
		925.6 *5*	100	2226.09	$3,2^-,(2^+)$			
		1695.0 *5*	22.0	1456.96	4^+			
3156.45	$3,(4^+)$	835.1 *5*	18.7	2321.69	(2^+)			
		1105.6 *5*	62	2051.31	(4^-)			
		1699.2 *5*	29	1456.96	4^+			
		1761.5 *5*	100	1394.97	(3^-)			
3172.7	(2,3)	835.9 *5*	5.7	2337.08	$2^+,(1^-)$			
		946.8 *5*	33	2226.09	$3,2^-,(2^+)$			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
3172.7	(2,3)	1777.5 *5*	28	1394.97	(3^-)
		2368.9 *5*	100	803.64	2^+
3177.24	$4^+,(3^-)$	855.6 *5*	10.9	2321.69	(2^+)
		951.3 *5*	78	2226.09	$3,2^-,(2^+)$
		990.8 *5*	9.7	2186.83	(5^-)
		1126.4 *5*	55	2051.31	(4^-)
		1781.8 *5*	100	1394.97	(3^-)
3183.32	$2^-,3^-$	1132.1 *5*	10.8	2051.31	(4^-)
		2379.3 *5*	100	803.64	2^+
3194.6	$(0^+$ to 3)	2391.0 *5*	100	803.64	2^+
3197.6	(2,3)	2393.5 *5*	100	803.64	2^+
3199.03	(3,4)	787.4 *5*	77	2411.96	$4^+,(2^+,3)$
		1742.4 *5*	100	1456.96	4^+
3243.8	(8,9,10)	842.2 *2*	100	2401.6	8^+
3257.9	(2,3,4)	1862.9 *5*	100	1394.97	(3^-)
3279.3	$2^+,(1^-)$	3279.6 *5*	100	0	0^+
3292.34	(3)	955.4 *5*	4.2	2337.08	$2^+,(1^-)$
		1066.7 *5*	9.7	2226.09	$3,2^-,(2^+)$
		1240.8 *5*	25	2051.31	(4^-)
		1897.4 *5*	31	1394.97	(3^-)
		2488.6 *5*	100	803.64	2^+
3294.2	(4)	875.1 *5*	15.7	2418.99	$3^-,4,5^-$
		1068.5 *5*	100	2226.09	$3,2^-,(2^+)$
		1107.1 *5*	13.5	2186.83	(5^-)
3304.8	(3,4)	967.7 *5*	7.1	2337.08	$2^+,(1^-)$
		1078.8 *5*	32	2226.09	$3,2^-,(2^+)$
		1253.8 *5*	18.6	2051.31	(4^-)
		1909.6 *5*	100	1394.97	(3^-)
3326.5	$(0^+$ to 3)	1540.1 *5*	100	1786.37	2^+
3335.4	$1,2^+$	1005.4 *5*	53	2330.88	$4^+,3^+,(2^+,3^-)$
		1442.4 *5*	67	1892.98	(0^+)
		1548.7 *5*	93	1786.37	2^+
		3335.0 *5*	100	0	0^+
3339.51	$2^+,(1^-)$	904.5 *5*	4.6	2434.86	$1^-,2$
		1446.8 *5*	39	1892.98	(0^+)
		2535.6 *5*	30	803.64	2^+
		3339.6 *5*	100	0	0^+
3348.9	(3,4,5)	1891.9 *5*	100	1456.96	4^+
3356.4	(3)	1018.8 *5*	22.0	2337.08	$2^+,(1^-)$
		1129.9 *5*	29	2226.09	$3,2^-,(2^+)$
		1305.6 *5*	28	2051.31	(4^-)
		1961.8 *5*	100	1394.97	(3^-)
3366.2	(2,3,4)	845.2 *5*	100	2521.03	$3,4^+$
3378.84	3^-	1921.9 *5*	100	1456.96	4^+
		1983.3 *5*	26	1394.97	(3^-)
		2574.6 *5*	11.4	803.64	2^+
3383.2	(3)	1399.8 *5*	20.2	1983.18	(2^+)
		1926.6 *5*	100	1456.96	4^+
		1988.0 *5*	48	1394.97	(3^-)
		2579.5 *5*	71	803.64	2^+
3395.0	(3,4,5)	1938.0 *5*	100	1456.96	4^+
3405.1	(3,4)	1354.1 *5*	83	2051.31	(4^-)
		1948.3 *5*	100	1456.96	4^+
		2009.7 *5*	54	1394.97	(3^-)
3413.0	(3,4,5)	1956.0 *5*	100	1456.96	4^+
3414.4	(3,4)	1363.1 *5*	100	2051.31	(4^-)

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^{π}_i	E_{γ}	I_{γ}	E_f	J^{π}_f
3414.4	(3,4)	2019.3 5	40	1394.97	(3^-)
3422.7	(1,2,3)	2619.0 5	100	803.64	2^+
3440.7	(1,2,3)	1109.7 5	34	2330.88	$4^+,3^+,(2^+,3^-)$
		2637.1 5	100	803.64	2^+
3441.1	(3,4,5)	1389.8 5	100	2051.31	(4^-)
3458.74	$3^-,4^+$	1127.3 5	6.3	2330.88	$4^+,3^+,(2^+,3^-)$
		1271.4 5	5.7	2186.83	(5^-)
		2001.3 5	13.7	1456.96	4^+
		2064.0 5	17.1	1394.97	(3^-)
		2655.8 5	100	803.64	2^+
3464.6	(2,3,4)	1133.7 5	100	2330.88	$4^+,3^+,(2^+,3^-)$
3465.3	(2,3,4)	2070.3 5	100	1394.97	(3^-)
3467.0	(3,4,5)	2010.0 5	100	1456.96	4^+
3472.0	(11^-)	659.5	100	2812.7	9^-
3473.8	(2,3,4)	2078.8 5	100	1394.97	(3^-)
3480.5	(2,3)	2677.0 5	100	803.64	2^+
3496.1	$(0^+$ to 3)	2692.4 5	100	803.64	2^+
3497.0	$(0^+,2,3,4)$	1166.3 5	59	2330.88	$4^+,3^+,(2^+,3^-)$
		1270.7 5	100	2226.09	$3,2^-,(2^+)$
3500.66	(2,3)	1163.7 5	27	2337.08	$2^+,(1^-)$
		1274.4 5	34	2226.09	$3,2^-,(2^+)$
		1517.3 5	26	1983.18	(2^+)
		1714.4 5	72	1786.37	2^+
		2105.2 5	100	1394.97	(3^-)
3528.6	$3,(4^-)$	2070.9 5	100	1456.96	4^+
		2134.2 5	13.2	1394.97	(3^-)
3529.4	$(0^+$ to 3)	1303.4 5	29	2226.09	$3,2^-,(2^+)$
		2725.6 5	100	803.64	2^+
3530.4	(1,2,3)	1199.3 5	87	2330.88	$4^+,3^+,(2^+,3^-)$
		1744.2 5	100	1786.37	2^+
3535.77	$(2,3)^-$	1198.9 5	4.0	2337.08	$2^+,(1^-)$
		1214.1 5	5.9	2321.69	(2^+)
		1749.5 5	10.0	1786.37	2^+
		2731.8 5	100	803.64	2^+
3542.3	$(0^+$ to 3)	1755.9 5	100	1786.37	2^+
3550.2	(2,3,4)	2155.2 5	100	1394.97	(3^-)
3565.0	(2,3,4)	2170.0 5	100	1394.97	(3^-)
3567.51	3^-	637.2 5	7.6	2930.32	$4,(3^-)$
		722.7 5	19.4	2844.92	$1^-,2,3^-$
		1342.0 5	39	2226.09	$3,2^-,(2^+)$
		1516.0 5	65	2051.31	(4^-)
		1583.7 5	12.5	1983.18	(2^+)
		2110.6 5	100	1456.96	4^+
		2172.6 5	90	1394.97	(3^-)
3577.8	$(0^+$ to 3)	2774.1 5	100	803.64	2^+
3586.1	(3,4,5)	1534.8 5	100	2051.31	(4^-)
3588.9	$(1^-)\&(3^-)$	1537.3 5	20.0	2051.31	(4^-)
		2194.0 5	100	1394.97	(3^-)
		3589.1 5	45	0	0^+
3600.6	(3,4)	1374.8 5	31	2226.09	$3,2^-,(2^+)$
		1549.1 5	100	2051.31	(4^-)
3613.1	(3,4,5)	1561.8 5	100	2051.31	(4^-)
3638.7	(3,4)	1587.4 5	31	2051.31	(4^-)
		2243.6 5	100	1394.97	(3^-)
3654.7	$(2,3)^-$	1428.6 5	6.1	2226.09	$3,2^-,(2^+)$
		2851.0 5	100	803.64	2^+

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.#	α&	Comments
3660.3	(3,4)	1608.4 5	48	2051.31	(4^-)			
		2265.8 5	100	1394.97	(3^-)			
3690.58	3^-	760.5 5	10.2	2930.32	4,(3^-)			
		1271.4 5	2.18	2418.99	3^-,4,5^-			
		1639.5 5	6.4	2051.31	(4^-)			
		2233.4 5	8.2	1456.96	4^+			
		2295.6 5	18.1	1394.97	(3^-)			
		2886.8 5	100	803.64	2^+			
3693.5		848.6 5	100	2844.92	1^-,2,3^-			
3704.26	3^-	724.4 5	2.8	2979.79	2,3			
		760.6 5	18.5	2943.90	4,(3,5^-)			
		848.7 5	0.59	2855.81	3,(2^+,4^+)			
		859.6 5	7.4	2844.92	1^-,2,3^-			
		1382.7 5	7.2	2321.69	(2^+)			
		1652.6 5	4.6	2051.31	(4^-)			
		1720.9 5	16.3	1983.18	(2^+)			
		2247.2 5	9.6	1456.96	4^+			
		2309.2 5	100	1394.97	(3^-)			
		2900.4 5	39	803.64	2^+			
3724.1	(2,3,4)	2329.1 5	100	1394.97	(3^-)			
3733.19	3^-	1402.2 5	67	2330.88	4^+,3^+,(2^+,3^-)			
		1507.1 5	20.4	2226.09	3,2^-,(2^+)			
		1750.2 5	64	1983.18	(2^+)			
		2276.3 5	58	1456.96	4^+			
		2338.4 5	49	1394.97	(3^-)			
		2929.1 5	100	803.64	2^+			
3743.6	(3,4,5)	2286.6 5	100	1456.96	4^+			
3749.7	(1,2,3)	1009.2 5	19.8	2740.86	3^-,(2^+)			
		1402.9 5	12.7	2346.62	2^+,(1^-)			
		1766.4 5	100	1983.18	(2^+)			
3766.6	(2,3,4)	1354.8 5	67	2411.96	4^+,(2^+,3)			
		1540.8 5	33	2226.09	3,2^-,(2^+)			
		2371.1 5	100	1394.97	(3^-)			
3782.8	(2,3,4)	2387.8 5	100	1394.97	(3^-)			
3789.0	(0^+ to 3)	1452.1 5	61	2337.08	2^+,(1^-)			
		1562.8 5	100	2226.09	3,2^-,(2^+)			
3792.6	2^+,1^-	1121.3 5	14.0	2671.63	0^+			
		1899.6 5	100	1892.98	(0^+)			
		2006.3 5	74	1786.37	2^+			
		2397.2 5	91	1394.97	(3^-)			
3804.1	2^+	2347.2 5	33	1456.96	4^+			
		2409.3 5	29	1394.97	(3^-)			
		3803.9 5	100	0	0^+			
3812.8	3^-	2355.4 5	100	1456.96	4^+			
		3009.5 5	79	803.64	2^+			
3814.3	(8,9,10)	1412.7 5	100	2401.6	8^+			
3834.3	1^-	1373.8 5	26	2460.94	2^+,(1^-)			
		1940.8 5	8.0	1892.98	(0^+)			
		3834.2 5	100	0	0^+			
3834.7	12^+	363		3472.0	(11^-)			E_γ: observed only in $^{114}Cd(^{40}Ar,4n\gamma)$.
		808.9		3025.6	10^+	E2	0.00479 7	α(K)=0.00399 6; α(L)=0.000625 9; α(M)=0.0001384 20;

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Comments
						$\alpha(N)=3.18\times10^{-5}$ *5*; $\alpha(O)=4.54\times10^{-6}$ *7* $\alpha(P)=2.29\times10^{-7}$ *4*; $\alpha(N+..)=3.66\times10^{-5}$ *6* E_γ: from $^{152}Gd(\alpha,6n\gamma)$.
3857.86	1^-&3^-	913.6 *5*	2.34	2943.90	4,(3,5^-)	
		927.0 *5*	2.6	2930.32	4,(3^-)	
		1117.3 *5*	2.25	2740.86	3^-,(2^+)	
		1161.2 *5*	2.5	2697.08	2,3,4	
		1328.8 *5*	2.5	2529.18	2^+	
		1520.8 *5*	1.89	2337.08	2^+,(1^-)	
		1526.5 *5*	2.34	2330.88	4^+,3^+,(2^+,3^-)	
		1535.9 *5*	7.2	2321.69	(2^+)	
		1631.4 *5*	3.7	2226.09	3,2^-,(2^+)	
		1807.4 *5*	1.17	2051.31	(4^-)	
		1874.6 *5*	10.5	1983.18	(2^+)	
		1965.0 *5*	7.0	1892.98	(0^+)	
		2071.4 *5*	9.5	1786.37	2^+	
		2400.9 *5*	36	1456.96	4^+	
		2462.8 *5*	100	1394.97	(3^-)	
		3054.5 *5*	10.5	803.64	2^+	
		3857.8 *5*	21.1	0	0^+	
3870.0	3^-	926.4 *5*	100	2943.90	4,(3,5^-)	
		1644.1 *5*	53	2226.09	3,2^-,(2^+)	
		2412.7 *5*	83	1456.96	4^+	
		2474.8 *5*	50	1394.97	(3^-)	
3873.60	(2,3)$^-$	1028.4 *5*	14.1	2844.92	1^-,2,3^-	
		1132.8 *5*	8.2	2740.86	3^-,(2^+)	
		1551.5 *5*	31	2321.69	(2^+)	
		2087.7 *5*	29	1786.37	2^+	
		2478.9 *5*	52	1394.97	(3^-)	
		3069.8 *5*	100	803.64	2^+	
3892.2	(3,2)$^-$	2497.2 *5*	100	1394.97	(3^-)	
3895.7	1^-	1558.7 *5*	7.5	2337.08	2^+,(1^-)	
		3092.0 *5*	60	803.64	2^+	
		3895.5 *5*	100	0	0^+	
3900.8	3^-	2443.6 *5*	100	1456.96	4^+	
		2506.0 *5*	57	1394.97	(3^-)	
3903.7	(3,2)$^-$	2508.7 *5*	100	1394.97	(3^-)	
3916.01	3^-	935.8 *5*	5.3	2979.79	2,3	
		985.8 *5*	17.2	2930.32	4,(3^-)	
		1689.9 *5*	17.2	2226.09	3,2^-,(2^+)	
		1864.7 *5*	18.9	2051.31	(4^-)	
		1932.8 *5*	27	1983.18	(2^+)	
		2129.7 *5*	86	1786.37	2^+	
		2459.2 *5*	100	1456.96	4^+	
		2520.8 *5*	92	1394.97	(3^-)	
		3112.6 *5*	99	803.64	2^+	
3924.19	3^-	945.0 *5*	11.5	2979.79	2,3	
		980.1 *5*	47	2943.90	4,(3,5^-)	
		1079.6 *5*	14.8	2844.92	1^-,2,3^-	
		1577.3 *5*	7.8	2346.62	2^+,(1^-)	
		1602.4 *5*	65	2321.69	(2^+)	
		1697.8 *5*	60	2226.09	3,2^-,(2^+)	
		1872.7 *5*	30	2051.31	(4^-)	
		2138.3 *5*	43	1786.37	2^+	
		2467.0 *5*	28	1456.96	4^+	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f
3924.19	3^-	2529.0 *5*	100	1394.97	(3^-)
3927.0	$(2,3)^-$	3123.3 *5*	100	803.64	2^+
3929.8	$(2,3)^-$	2143.4 *5*	100	1786.37	2^+
3968.4	3^-	1742.2 *5*	46	2226.09	$3,2^-,(2^+)$
		2511.4 *5*	30	1456.96	4^+
		2573.6 *5*	100	1394.97	(3^-)
3980.9	3^-	1997.5 *5*	30	1983.18	(2^+)
		2524.2 *5*	100	1456.96	4^+
4000.3	$(3,2)^-$	1653.3 *5*	26	2346.62	$2^+,(1^-)$
		2214.3 *5*	99	1786.37	2^+
		2605.4 *5*	100	1394.97	(3^-)
4009.4	1^-	2116.4 *5*	100	1892.98	(0^+)
4014.1	(8,9,10)	1612.5 *5*	100	2401.6	8^+
4045.84	$(2,3)^-$	863.2 *5*	1.83	3183.32	$2^-,3^-$
		1246.0 *5*	0.69	2800.60	$2^+,(1^-)$
		1584.6 *5*	7.1	2460.94	$2^+,(1^-)$
		1707.8 *5*	2.8	2337.08	$2^+,(1^-)$
		2650.7 *5*	26	1394.97	(3^-)
		3242.1 *5*	100	803.64	2^+
4052.6	$(2,3)^-$	1706.0 *5*	100	2346.62	$2^+,(1^-)$
4086.90	1^-	1373.6 *5*	1.86	2713.56	$2^+,(1^-)$
		2103.5 *5*	1.97	1983.18	(2^+)
		2193.9 *5*	1.54	1892.98	(0^+)
		3282.9 *5*	34	803.64	2^+
		4087.1 *5*	100	0	0^+
4100.00	1^-	1638.9 *5*	17.9	2460.94	$2^+,(1^-)$
		1753.8 *5*	17.5	2346.62	$2^+,(1^-)$
		1846.0 *5*	28	2253.84	0^+ to $2,(3^-)$
		2117.0 *5*	9.0	1983.18	(2^+)
		2206.3 *5*	8.5	1892.98	(0^+)
		4100.3 *5*	100	0	0^+
4102.33	$1^-\&(2,3)^-$	918.5 *5*	3.4	3183.32	$2^-,3^-$
		1130.8 *5*	3.4	2971.97	$2^+,(1^-)$
		1573.0 *5*	18.6	2529.18	2^+
		1765.2 *5*	3.9	2337.08	$2^+,(1^-)$
		1785.0 *5*	12.3	2317.69	$2^+,(1)$
		1848.7 *5*	7.3	2253.84	0^+ to $2,(3^-)$
		2209.3 *5*	29	1892.98	(0^+)
		2707.0 *5*	17.3	1394.97	(3^-)
		3298.7 *5*	97	803.64	2^+
		4102.2 *5*	100	0	0^+
4110.2		638	100	3472.0	(11^-)
4116.7	$(2,3)^-$	3313.0 *5*	100	803.64	2^+
4118.9	$(3,2)^-$	1772.4 *5*	51	2346.62	$2^+,(1^-)$
		2723.7 *5*	100	1394.97	(3^-)
4129.2	$(2,3)^-$	1798.4 *5*	16.1	2330.88	$4^+,3^+,(2^+,3^-)$
		3325.4 *5*	100	803.64	2^+
4149.1	(8,9,10)	1747.5 *5*	100	2401.6	8^+
4151.6	$(3,2)^-$	2756.6 *5*	100	1394.97	(3^-)
4154.1	$(2,3)^-$	1115.1 *5*	26	3038.67	$2^+,(1^-)$
		1413.3 *5*	36	2740.86	$3^-,(2^+)$
		2171.1 *5*	100	1983.18	(2^+)
4162.8	3^-	1841.2 *5*	22.4	2321.69	(2^+)
		2705.5 *5*	100	1456.96	4^+
		2767.9 *5*	67	1394.97	(3^-)
4170.68	$3^-\&1^-$	1101.8 *5*	43	3069.36	$1,(2^+)$

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.#	α&	Comments
4170.68	3^-&1^-	1916.7 *5*	100	2253.84	0^+ to 2,(3^-)			
		2278.2 *5*	40	1892.98	(0^+)			
		2384.1 *5*	98	1786.37	2^+			
		2713.0 *5*	43	1456.96	4^+			
4196.6	$(2,3)^-$	3392.9 *5*	100	803.64	2^+			
4199.1	1^-	4199.0 *5*	100	0	0^+			
4208.5	$(2,3)^-$	1877.6 *5*	100	2330.88	4^+,3^+,(2^+,3^-)			
4216.4	$(3,2)^-$	2821.4 *5*	100	1394.97	(3^-)			
4220.65	3^-	927.6 *5*	17.3	3292.34	(3)			
		1479.9 *5*	73	2740.86	3^-,(2^+)			
		1523.9 *5*	83	2697.08	2,3,4			
		1808.4 *5*	98	2411.96	4^+,(2^+,3)			
		1874.5 *5*	52	2346.62	2^+,(1^-)			
		1890.0 *5*	67	2330.88	4^+,3^+,(2^+,3^-)			
		1899.0 *5*	100	2321.69	(2^+)			
		2763.4 *5*	42	1456.96	4^+			
4224.4	$(3,2)^-$	1907.0 *5*	36	2317.69	2^+,(1)			
		2829.1 *5*	100	1394.97	(3^-)			
4233.9	1^-	4233.8 *5*	100	0	0^+			
4253.5	$(3,2)^-$	2270.3 *5*	50	1983.18	(2^+)			
		2858.5 *5*	100	1394.97	(3^-)			
4255.5	1^-	4255.4 *5*	100	0	0^+			
4264.6	$(2,3)^-$	3460.9 *5*	100	803.64	2^+			
4270.4	$(2,3)^-$	3466.7 *5*	100	803.64	2^+			
4278.4	3^-	2821.4 *5*	100	1456.96	4^+			
4293.77	3^-	1972.0 *5*	4.2	2321.69	(2^+)			
		2507.2 *5*	22.0	1786.37	2^+			
		2837.0 *5*	100	1456.96	4^+			
		2898.6 *5*	9.9	1394.97	(3^-)			
		3490.3 *5*	19.8	803.64	2^+			
4294.3	(8,9,10)	1711.1 *5*	80 *5*	2583.2	(6,7,8)			
		1892.7 *5*	100 *5*	2401.6	8^+			
4304.97	1^-	965.4 *5*	0.245	3339.51	2^+,(1^-)			
		1591.4 *5*	1.53	2713.56	2^+,(1^-)			
		1844.1 *5*	2.7	2460.94	2^+,(1^-)			
		1870.3 *5*	0.74	2434.86	1^-,2			
		1983.6 *5*	1.72	2321.69	(2^+)			
		2518.3 *5*	6.2	1786.37	2^+			
		4304.6 *5*	100	0	0^+			
4311.4	$(2,3)^-$	1964.8 *5*	100	2346.62	2^+,(1^-)			
4322.0	$(2,3)^-$	2926.7 *5*	13.3	1394.97	(3^-)			
		3518.7 *5*	100	803.64	2^+			
4337.3	14^+	227		4110.2				E_γ: observed only in $^{114}Cd(^{40}Ar,4n\gamma)$.
		502.7		3834.7	12^+	E2	0.01494	α(K)=0.01204 *17*; α(L)=0.00226 *4*; α(M)=0.000509 *8*; α(N)=0.0001165 *17* α(O)=1.608×10^{-5} *23*; α(P)=6.74×10^{-7} *10*; α(N+..)=0.0001333 *19* E_γ: from $^{152}Gd(\alpha,6n\gamma)$.
4340.2	$(2,3)^-$	2003.7 *5*	100	2337.08	2^+,(1^-)			
		2018.0 *5*	20.0	2321.69	(2^+)			
4342.4	1^-	4342.3 *5*	100	0	0^+			
4344.61	1^-&$(2,3)^-$	816.0 *5*	5.3	3528.6	3,(4^-)			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f
4344.61	1^-&$(2,3)^-$	844.3 *5*	7.8	3500.66	(2,3)
		1005.1 *5*	2.33	3339.51	$2^+,(1^-)$
		1150.1 *5*	4.4	3194.6	(0^+ to 3)
		1242.6 *5*	0.41	3101.88	$2,(1^-,3^-)$
		1274.8 *5*	3.4	3069.36	$1,(2^+)$
		1305.8 *5*	1.64	3038.67	$2^+,(1^-)$
		1335.0 *5*	20.5	3010.3	$0^+,1,2,(3^-)$
		1365.5 *5*	9.5	2979.79	2,3
		1373.3 *5*	11.0	2971.97	$2^+,(1^-)$
		1543.9 *5*	1.51	2800.60	$2^+,(1^-)$
		1631.1 *5*	18.6	2713.56	$2^+,(1^-)$
		1673.1 *5*	36	2671.63	0^+
		1815.4 *5*	21.1	2529.18	2^+
		1883.4 *5*	14.4	2460.94	$2^+,(1^-)$
		1909.9 *5*	11.5	2434.86	$1^-,2$
		1998.0 *5*	10.5	2346.62	$2^+,(1^-)$
		2007.6 *5*	24.1	2337.08	$2^+,(1^-)$
		2022.7 *5*	15.5	2321.69	(2^+)
		2026.5 *5*	2.33	2317.69	$2^+,(1)$
		2090.0 *5*	8.4	2253.84	0^+ to $2,(3^-)$
		2361.4 *5*	96	1983.18	(2^+)
		2451.9 *5*	48	1892.98	(0^+)
		3540.8 *5*	54	803.64	2^+
		4344.0 *5*	100	0	0^+
4355.1	1^-	4355.0 *5*	100	0	0^+
4356.72	$(2,3)^-$	1173.8 *5*	2.27	3183.32	$2^-,3^-$
		1287.5 *5*	5.0	3069.36	$1,(2^+)$
		1318.2 *5*	5.0	3038.67	$2^+,(1^-)$
		1385.2 *5*	5.4	2971.97	$2^+,(1^-)$
		1643.2 *5*	9.4	2713.56	$2^+,(1^-)$
		1827.2 *5*	3.4	2529.18	2^+
		1835.8 *5*	6.3	2521.03	$3,4^+$
		1895.8 *5*	9.9	2460.94	$2^+,(1^-)$
		2010.0 *5*	9.6	2346.62	$2^+,(1^-)$
		2035.2 *5*	7.6	2321.69	(2^+)
		2130.4 *5*	7.8	2226.09	$3,2^-,(2^+)$
		2305.3 *5*	3.2	2051.31	(4^-)
		2569.9 *5*	46	1786.37	2^+
		2961.4 *5*	37	1394.97	(3^-)
		3552.9 *5*	100	803.64	2^+
4361.59	1^-	982.8 *5*	0.93	3378.84	3^-
		1022.1 *5*	0.27	3339.51	$2^+,(1^-)$
		1177.4 *5*	0.33	3183.32	$2^-,3^-$
		1351.0 *5*	0.66	3010.3	$0^+,1,2,(3^-)$
		1689.8 *5*	2.09	2671.63	0^+
		1927.0 *5*	1.48	2434.86	$1^-,2$
		2015.5 *5*	1.26	2346.62	$2^+,(1^-)$
		2107.7 *5*	1.81	2253.84	0^+ to $2,(3^-)$
		2379.1 *5*	1.70	1983.18	(2^+)
		3557.9 *5*	36	803.64	2^+
		4361.3 *5*	100	0	0^+
4373.4	$(3)^-$	2051.9 *5*	28	2321.69	(2^+)
		2321.9 *5*	66	2051.31	(4^-)
		3569.8 *5*	100	803.64	2^+
4377.49	1^-	1275.7 *5*	1.25	3101.88	$2,(1^-,3^-)$
		1706.2 *5*	7.5	2671.63	0^+

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
4377.49	1^-	1916.5 5	10.0	2460.94	$2^+,(1^-)$
		3573.5 5	25	803.64	2^+
		4377.3 5	100	0	0^+
4389.7	$(2,3)^-$	1676.5 5	34	2713.56	$2^+,(1^-)$
		1928.4 5	29	2460.94	$2^+,(1^-)$
		2071.6 5	33	2317.69	$2^+,(1)$
		2406.8 5	100	1983.18	(2^+)
4401.05	3^-	899.9 5	1.77	3500.66	(2,3)
		942.0 5	1.94	3458.74	$3^-,4^+$
		1021.6 5	2.47	3378.84	3^-
		1108.8 5	6.0	3292.34	(3)
		1201.8 5	1.94	3199.03	(3,4)
		1250.3 5	1.77	3150.43	$4,(3^-,5^-)$
		1270.1 5	1.59	3131.40	$2,3,(4^+,1^-)$
		1362.7 5	5.3	3038.67	$2^+,(1^-)$
		1395.8 5	13.8	3005.94	$4^+,3^-$
		1421.2 5	6.5	2979.79	2,3
		1445.6 5	3.4	2955.70	$3^-,4^+$
		1457.0 5	12.7	2943.90	$4,(3,5^-)$
		1470.9 5	6.2	2930.32	$4,(3^-)$
		1545.1 5	1.24	2855.81	$3,(2^+,4^+)$
		1556.2 5	6.2	2844.92	$1^-,2,3^-$
		1600.8 5	1.41	2800.60	$2^+,(1^-)$
		1703.7 5	8.0	2697.08	2,3,4
		1782.5 5	2.47	2618.47	$3,4^+,(2^+)$
		1880.1 5	10.8	2521.03	$3,4^+$
		1940.0 5	10.2	2460.94	$2^+,(1^-)$
		1982.1 5	1.59	2418.99	$3^-,4,5^-$
		1989.0 5	52	2411.96	$4^+,(2^+,3)$
		2070.3 5	34	2330.88	$4^+,3^+,(2^+,3^-)$
		2417.8 5	46	1983.18	(2^+)
		2614.8 5	20.1	1786.37	2^+
		2944.0 5	78	1456.96	4^+
		3597.4 5	100	803.64	2^+
4417.17	$(2,3)^-$	1378.5 5	4.0	3038.67	$2^+,(1^-)$
		1444.7 5	5.7	2971.97	$2^+,(1^-)$
		1676.6 5	9.7	2740.86	$3^-,(2^+)$
		1887.9 5	56	2529.18	2^+
		1956.7 5	4.0	2460.94	$2^+,(1^-)$
		2079.9 5	26	2337.08	$2^+,(1^-)$
		2099.3 5	33	2317.69	$2^+,(1)$
		2190.6 5	23.4	2226.09	$3,2^-,(2^+)$
		2631.2 5	31	1786.37	2^+
		3613.6 5	100	803.64	2^+
4421.62	3^-	821.1 5	3.4	3600.6	(3,4)
		920.9 5	0.43	3500.66	(2,3)
		941.0 5	0.47	3480.5	(2,3)
		962.6 5	0.98	3458.74	$3^-,4^+$
		1042.7 5	2.9	3378.84	3^-
		1222.6 5	0.60	3199.03	(3,4)
		1244.7 5	0.213	3177.24	$4^+,(3^-)$
		1265.6 5	0.98	3156.45	$3,(4^+)$
		1271.2 5	0.68	3150.43	$4,(3^-,5^-)$
		1290.1 5	0.72	3131.40	$2,3,(4^+,1^-)$
		1309.4 5	1.66	3112.59	$3,(2^+,4^+)$
		1353.8 5	0.68	3067.9	$2,3,4,(1^-)$

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f
4421.62	3^-	1415.4 *5*	1.36	3005.94	$4^+,3^-$
		1449.0 *5*	0.34	2971.97	$2^+,(1^-)$
		1466.1 *5*	1.06	2955.70	$3^-,4^+$
		1491.1 *5*	4.4	2930.32	$4,(3^-)$
		1576.4 *5*	3.5	2844.92	$1^-,2,3^-$
		1621.4 *5*	0.43	2800.60	$2^+,(1^-)$
		1681.2 *5*	0.64	2740.86	$3^-,(2^+)$
		1707.8 *5*	6.3	2713.56	$2^+,(1^-)$
		1725.0 *5*	0.68	2697.08	2,3,4
		1803.2 *5*	4.6	2618.47	$3,4^+,(2^+)$
		1892.3 *5*	7.0	2529.18	2^+
		1900.4 *5*	7.2	2521.03	$3,4^+$
		1961.1 *5*	0.85	2460.94	$2^+,(1^-)$
		2009.8 *5*	2.6	2411.96	$4^+,(2^+,3)$
		2090.6 *5*	8.0	2330.88	$4^+,3^+,(2^+,3^-)$
		2099.8 *5*	4.4	2321.69	(2^+)
		2195.7 *5*	5.2	2226.09	$3,2^-,(2^+)$
		2369.8 *5*	4.0	2051.31	(4^-)
		2438.3 *5*	1.79	1983.18	(2^+)
		2964.5 *5*	22.8	1456.96	4^+
		3026.5 *5*	100	1394.97	(3^-)
		3617.8 *5*	10.6	803.64	2^+
4427.13	$(3,2)^-$	925.8 *5*	4.0	3500.66	(2,3)
		1048.3 *5*	3.5	3378.84	3^-
		1087.8 *5*	1.06	3339.51	$2^+,(1^-)$
		1244.2 *5*	5.1	3183.32	$2^-,3^-$
		1270.5 *5*	7.2	3156.45	$3,(4^+)$
		1358.1 *5*	2.39	3069.36	$1,(2^+)$
		1421.1 *5*	10.6	3005.94	$4^+,3^-$
		1471.4 *5*	4.5	2955.70	$3^-,4^+$
		1966.3 *5*	12.5	2460.94	$2^+,(1^-)$
		2090.3 *5*	5.3	2337.08	$2^+,(1^-)$
		2201.0 *5*	29	2226.09	$3,2^-,(2^+)$
		2443.8 *5*	34	1983.18	(2^+)
		3032.1 *5*	100	1394.97	(3^-)
		3623.2 *5*	6.1	803.64	2^+
4429.1	$(3,2)^-$	1449.3 *5*	100	2979.79	2,3
4431.72	1^-	1362.6 *5*	5.3	3069.36	$1,(2^+)$
		1393.2 *5*	17.7	3038.67	$2^+,(1^-)$
		1717.8 *5*	21.2	2713.56	$2^+,(1^-)$
		1760.0 *5*	39	2671.63	0^+
		1902.7 *5*	32	2529.18	2^+
		2095.2 *5*	22.1	2337.08	$2^+,(1^-)$
		2113.8 *5*	9.7	2317.69	$2^+,(1)$
		2538.2 *5*	9.7	1892.98	(0^+)
		4431.6 *5*	100	0	0^+
4439.15	$(2,3)^-$	1240.6 *5*	0.93	3199.03	(3,4)
		1459.3 *5*	3.4	2979.79	2,3
		1594.2 *5*	4.2	2844.92	$1^-,2,3^-$
		1742.3 *5*	1.55	2697.08	2,3,4
		1820.4 *5*	2.02	2618.47	$3,4^+,(2^+)$
		2108.4 *5*	3.9	2330.88	$4^+,3^+,(2^+,3^-)$
		2117.5 *5*	3.9	2321.69	(2^+)
		2213.7 *5*	11.0	2226.09	$3,2^-,(2^+)$
		3043.6 *5*	7.9	1394.97	(3^-)
		3634.8 *5*	100	803.64	2^+

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f
4443.09	$(2,3)^-$	907.5 5	2.38	3535.77	$(2,3)^-$
		942.7 5	3.2	3500.66	(2,3)
		1064.1 5	7.0	3378.84	3^-
		1374.0 5	4.3	3069.36	$1,(2^+)$
		1404.3 5	6.4	3038.67	$2^+,(1^-)$
		1463.5 5	5.7	2979.79	2,3
		1470.6 5	0.95	2971.97	$2^+,(1^-)$
		1487.9 5	1.59	2955.70	$3^-,4^+$
		1921.6 5	3.3	2521.03	$3,4^+$
		2106.1 5	9.1	2337.08	$2^+,(1^-)$
		2121.9 5	8.4	2321.69	(2^+)
		2391.6 5	5.7	2051.31	(4^-)
		2655.8 5	11.1	1786.37	2^+
		3048.0 5	15.4	1394.97	(3^-)
		3639.7 5	100	803.64	2^+
4444.3	1^-	4444.2 5	100	0	0^+
4445.95	3^-	1067.7 5	3.7	3378.84	3^-
		1105.9 5	1.58	3339.51	$2^+,(1^-)$
		1167.0 5	0.53	3279.3	$2^+,(1^-)$
		1289.8 5	4.5	3156.45	$3,(4^+)$
		1343.9 5	1.32	3101.88	$2,(1^-,3^-)$
		1589.9 5	0.53	2855.81	$3,(2^+,4^+)$
		1601.0 5	22.4	2844.92	$1^-,2,3^-$
		1749.1 5	3.4	2697.08	2,3,4
		1827.8 5	10.0	2618.47	$3,4^+,(2^+)$
		1916.7 5	12.4	2529.18	2^+
		1924.6 5	22.1	2521.03	$3,4^+$
		2027.2 5	2.9	2418.99	$3^-,4,5^-$
		2033.9 5	65	2411.96	$4^+,(2^+,3)$
		2219.7 5	6.1	2226.09	$3,2^-,(2^+)$
		2394.5 5	31	2051.31	(4^-)
		2462.2 5	15.5	1983.18	(2^+)
		2659.7 5	27	1786.37	2^+
		2988.9 5	100	1456.96	4^+
4449.63	1^-	913.7 5	0.57	3535.77	$(2,3)^-$
		1110.1 5	0.33	3339.51	$2^+,(1^-)$
		1380.9 5	0.43	3069.36	$1,(2^+)$
		1778.0 5	0.62	2671.63	0^+
		2132.0 5	1.90	2317.69	$2^+,(1)$
		3645.5 5	16.4	803.64	2^+
		4449.4 5	100	0	0^+
4460.7	$(3)^-$	2139.1 5	81	2321.69	(2^+)
		2234.7 5	100	2226.09	$3,2^-,(2^+)$
		2409.3 5	98	2051.31	(4^-)
		3656.9 5	88	803.64	2^+
4469.7	$(2,3)^-$	1129.9 5	1.65	3339.51	$2^+,(1^-)$
		2132.6 5	26	2337.08	$2^+,(1^-)$
		2152.0 5	27	2317.69	$2^+,(1)$
		3666.1 5	100	803.64	2^+
4480.6	1^-	1808.7 5	9.5	2671.63	0^+
		2045.8 5	14.8	2434.86	$1^-,2$
		2587.9 5	13.6	1892.98	(0^+)
		4480.3 5	100	0	0^+
4482.64	3^-	1190.9 5	3.4	3292.34	(3)
		1284.6 5	8.8	3197.6	(2,3)
		1298.9 5	8.8	3183.32	$2^-,3^-$

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Adopted Levels, Gammas (continued)

γ(^{150}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$	I$_\gamma$	E$_f$	J$^\pi_f$
4482.64	3$^-$	1380.8 5	4.9	3101.88	2,(1$^-$,3$^-$)
		1476.6 5	7.3	3005.94	4$^+$,3$^-$
		1502.8 5	9.8	2979.79	2,3
		1526.8 5	4.9	2955.70	3$^-$,4$^+$
		1741.6 5	16.1	2740.86	3$^-$,(2$^+$)
		1768.5 5	25	2713.56	2$^+$,(1$^-$)
		2021.2 5	10.2	2460.94	2$^+$,(1$^-$)
		2071.4 5	25	2411.96	4$^+$,(2$^+$,3)
		2152.1 5	13.7	2330.88	4$^+$,3$^+$,(2$^+$,3$^-$)
		2161.2 5	28	2321.69	(2$^+$)
		2296.6 5	3.9	2186.83	(5$^-$)
		2499.5 5	44	1983.18	(2$^+$)
		2695.6 5	100	1786.37	2$^+$
		3087.9 5	42	1394.97	(3$^-$)
		3678.8 5	91	803.64	2$^+$
4486.64	(3)$^-$	1194.6 5	2.6	3292.34	(3)
		1355.7 5	1.70	3131.40	2,3,(4$^+$,1$^-$)
		1374.4 5	10.2	3112.59	3,(2$^+$,4$^+$)
		1384.9 5	6.8	3101.88	2,(1$^-$,3$^-$)
		1480.6 5	18.7	3005.94	4$^+$,3$^-$
		1506.2 5	10.2	2979.79	2,3
		1773.0 5	33	2713.56	2$^+$,(1$^-$)
		1868.2 5	3.4	2618.47	3,4$^+$,(2$^+$)
		1965.4 5	100	2521.03	3,4$^+$
		2025.0 5	12.3	2460.94	2$^+$,(1$^-$)
		2140.0 5	12.3	2346.62	2$^+$,(1$^-$)
		2149.8 5	37	2337.08	2$^+$,(1$^-$)
		2164.5 5	10.6	2321.69	(2$^+$)
		2168.5 5	29	2317.69	2$^+$,(1)
		2261.0 5	13.2	2226.09	3,2$^-$,(2$^+$)
		2435.7 5	15.3	2051.31	(4$^-$)
		3683.0 5	21.7	803.64	2$^+$
4487.9	1$^-$	1515.9 5	18.2	2971.97	2$^+$,(1$^-$)
		1643.0 5	64	2844.92	1$^-$,2,3$^-$
		2504.5 5	100	1983.18	(2$^+$)
		4488.0 5	100	0	0$^+$
4491.77	3$^-$	1112.5 5	2.7	3378.84	3$^-$
		1199.4 5	1.44	3292.34	(3)
		1314.7 5	2.05	3177.24	4$^+$,(3$^-$)
		1390.3 5	1.03	3101.88	2,(1$^-$,3$^-$)
		1485.8 5	16.6	3005.94	4$^+$,3$^-$
		1511.3 5	5.1	2979.79	2,3
		1536.0 5	11.9	2955.70	3$^-$,4$^+$
		1561.4 5	11.3	2930.32	4,(3$^-$)
		1778.1 5	12.9	2713.56	2$^+$,(1$^-$)
		1873.4 5	10.9	2618.47	3,4$^+$,(2$^+$)
		1962.4 5	13.8	2529.18	2$^+$
		1971.2 5	19.7	2521.03	3,4$^+$
		2030.6 5	15.8	2460.94	2$^+$,(1$^-$)
		2079.4 5	80	2411.96	4$^+$,(2$^+$,3)
		2154.4 5	7.6	2337.08	2$^+$,(1$^-$)
		2161.0 5	34	2330.88	4$^+$,3$^+$,(2$^+$,3$^-$)
		2170.6 5	13.6	2321.69	(2$^+$)
		2265.6 5	16.0	2226.09	3,2$^-$,(2$^+$)
		2305.5 5	1.03	2186.83	(5$^-$)
		2440.2 5	14.4	2051.31	(4$^-$)

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
4491.77	3^-	2508.8 *5*	49	1983.18	(2^+)
		2705.4 *5*	100	1786.37	2^+
		3034.6 *5*	47	1456.96	4^+
		3096.3 *5*	48	1394.97	(3^-)
		3688.7 *5*	37	803.64	2^+
4495.52	3^-	1116.9 *5*	2.20	3378.84	3^-
		1203.2 *5*	0.59	3292.34	(3)
		1216.2 *5*	0.73	3279.3	$2^+,(1^-)$
		1296.9 *5*	1.03	3199.03	(3,4)
		1383.4 *5*	4.1	3112.59	$3,(2^+,4^+)$
		1394.1 *5*	0.88	3101.88	$2,(1^-,3^-)$
		1540.2 *5*	5.4	2955.70	$3^-,4^+$
		1551.4 *5*	21.8	2943.90	$4,(3,5^-)$
		1565.1 *5*	11.7	2930.32	$4,(3^-)$
		1639.8 *5*	1.61	2855.81	$3,(2^+,4^+)$
		1694.5 *5*	1.17	2800.60	$2^+,(1^-)$
		1754.3 *5*	3.7	2740.86	$3^-,(2^+)$
		1781.6 *5*	23.3	2713.56	$2^+,(1^-)$
		1798.4 *5*	17.3	2697.08	2,3,4
		1877.1 *5*	9.4	2618.47	$3,4^+,(2^+)$
		1974.5 *5*	33	2521.03	$3,4^+$
		2034.7 *5*	3.8	2460.94	$2^+,(1^-)$
		2083.5 *5*	51	2411.96	$4^+,(2^+,3)$
		2148.8 *5*	17.2	2346.62	$2^+,(1^-)$
		2158.5 *5*	4.3	2337.08	$2^+,(1^-)$
		2164.6 *5*	18.0	2330.88	$4^+,3^+,(2^+,3^-)$
		2269.3 *5*	41	2226.09	$3,2^-,(2^+)$
		2444.3 *5*	18.9	2051.31	(4^-)
		2512.3 *5*	34	1983.18	(2^+)
		3038.4 *5*	100	1456.96	4^+
		3100.4 *5*	41	1394.97	(3^-)
		3691.4 *5*	48	803.64	2^+
4511.69	1^-&$(2,3)^-$	1473.4 *5*	1.58	3038.67	$2^+,(1^-)$
		1710.3 *5*	0.63	2800.60	$2^+,(1^-)$
		1814.3 *5*	2.06	2697.08	2,3,4
		1983.2 *5*	4.1	2529.18	2^+
		2189.4 *5*	4.9	2321.69	(2^+)
		2194.3 *5*	2.22	2317.69	$2^+,(1)$
		2285.7 *5*	6.0	2226.09	$3,2^-,(2^+)$
		2459.5 *5*	5.2	2051.31	(4^-)
		2527.8 *5*	5.2	1983.18	(2^+)
		2725.7 *5*	8.9	1786.37	2^+
		3708.4 *5*	100	803.64	2^+
		4512.5 *5*	2.7	0	0^+
4518.50	1^-	1335.5 *5*	3.1	3183.32	$2^-,3^-$
		1846.8 *5*	19.8	2671.63	0^+
		2172.2 *5*	4.7	2346.62	$2^+,(1^-)$
		2196.4 *5*	9.3	2321.69	(2^+)
		2625.6 *5*	10.1	1892.98	(0^+)
		4518.1 *5*	100	0	0^+
4519.5	$(3,2)^-$	1513.2 *5*	72	3005.94	$4^+,3^-$
		3124.9 *5*	100	1394.97	(3^-)
4521.68	3^-	1550.2 *5*	10.9	2971.97	$2^+,(1^-)$
		1676.4 *5*	38	2844.92	$1^-,2,3^-$
		2001.0 *5*	38	2521.03	$3,4^+$
		2190.8 *5*	43	2330.88	$4^+,3^+,(2^+,3^-)$

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.#	α&	Comments
4521.68	3^-	2295.6 *5*	79	2226.09	$3,2^-,(2^+)$			
		2735.3 *5*	100	1786.37	2^+			
		3064.1 *5*	48	1456.96	4^+			
4523.53	$(2,3)^-$	1244.4 *5*	0.32	3279.3	$2^+,(1^-)$			
		1422.0 *5*	0.32	3101.88	$2,(1^-,3^-)$			
		1810.4 *5*	6.1	2713.56	$2^+,(1^-)$			
		2186.3 *5*	5.6	2337.08	$2^+,(1^-)$			
		2539.8 *5*	5.0	1983.18	(2^+)			
		3128.6 *5*	5.3	1394.97	(3^-)			
		3719.5 *5*	100	803.64	2^+			
4544.47	1^-&3^-	1802.8 *5*	7.2	2740.86	$3^-,(2^+)$			
		1925.9 *5*	18.7	2618.47	$3,4^+,(2^+)$			
		2132.7 *5*	21.6	2411.96	$4^+,(2^+,3)$			
		2223.0 *5*	5.0	2321.69	(2^+)			
		3740.6 *5*	100	803.64	2^+			
		4545.0 *5*	80	0	0^+			
4546.6	$(3,2)^-$	2229.2 *5*	23.3	2317.69	$2^+,(1)$			
		3151.3 *5*	100	1394.97	(3^-)			
4548.97	$(2,3)^-$	1447.1 *5*	10.7	3101.88	$2,(1^-,3^-)$			
		1479.4 *5*	100	3069.36	$1,(2^+)$			
		1577.1 *5*	21.4	2971.97	$2^+,(1^-)$			
		1748.6 *5*	21.4	2800.60	$2^+,(1^-)$			
		2762.4 *5*	86	1786.37	2^+			
4549.87	$(2,3)^-$	1809.3 *5*	34	2740.86	$3^-,(2^+)$			
		1836.2 *5*	42	2713.56	$2^+,(1^-)$			
		2566.2 *5*	16.0	1983.18	(2^+)			
		3155.1 *5*	67	1394.97	(3^-)			
		3746.2 *5*	100	803.64	2^+			
4552.14	$(2,3)^-$	1482.6 *5*	10.3	3069.36	$1,(2^+)$			
		1513.5 *5*	69	3038.67	$2^+,(1^-)$			
		2091.4 *5*	76	2460.94	$2^+,(1^-)$			
		2205.6 *5*	93	2346.62	$2^+,(1^-)$			
		2214.6 *5*	100	2337.08	$2^+,(1^-)$			
		2234.7 *5*	72	2317.69	$2^+,(1)$			
4553.00	$(3)^-$	1213.4 *5*	19.2	3339.51	$2^+,(1^-)$			
		1422.1 *5*	17.3	3131.40	$2,3,(4^+,1^-)$			
		1856.2 *5*	31	2697.08	2,3,4			
		2222.2 *5*	62	2330.88	$4^+,3^+,(2^+,3^-)$			
		2230.6 *5*	75	2321.69	(2^+)			
		2327.0 *5*	100	2226.09	$3,2^-,(2^+)$			
		2501.4 *5*	96	2051.31	(4^-)			
4566.9	16^+	229.6	100	4337.3	14^+	E2	0.1500	α(K)=0.1054 *15*; α(L)=0.0345 *5*; α(M)=0.00805 *12*; α(N)=0.00182 *3*; α(O)=0.000233 *4* α(P)=5.19×10^{-6} *8*; α(N+..)=0.00206 *3* B(E2)(W.u.)=9 *2* E_γ: from $^{152}Gd(\alpha,6n\gamma)$.
4574.26	3^-	1194.7 *5*	5.6	3378.84	3^-			
		1375.2 *5*	1.86	3199.03	(3,4)			
		1397.1 *5*	2.7	3177.24	$4^+,(3^-)$			
		1461.0 *5*	3.2	3112.59	$3,(2^+,4^+)$			
		1473.0 *5*	1.06	3101.88	$2,(1^-,3^-)$			
		1594.7 *5*	6.4	2979.79	2,3			
		1618.7 *5*	4.5	2955.70	$3^-,4^+$			
		1644.1 *5*	21.8	2930.32	$4,(3^-)$			
		1774.1 *5*	2.7	2800.60	$2^+,(1^-)$			

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f
4574.26	3^-	1860.6 *5*	37	2713.56	$2^+,(1^-)$
		1877.1 *5*	26	2697.08	2,3,4
		1955.9 *5*	27	2618.47	$3,4^+,(2^+)$
		2044.8 *5*	9.0	2529.18	2^+
		2053.2 *5*	7.2	2521.03	$3,4^+$
		2227.6 *5*	20.7	2346.62	$2^+,(1^-)$
		2243.4 *5*	44	2330.88	$4^+,3^+,(2^+,3^-)$
		2252.8 *5*	19.9	2321.69	(2^+)
		2522.8 *5*	27	2051.31	(4^-)
		2591.1 *5*	15.7	1983.18	(2^+)
		2787.7 *5*	38	1786.37	2^+
		3117.2 *5*	100	1456.96	4^+
		3179.3 *5*	66	1394.97	(3^-)
4576.5	$(3)^-$	2349.7 *5*	58	2226.09	$3,2^-,(2^+)$
		2525.5 *5*	91	2051.31	(4^-)
		3773.1 *5*	100	803.64	2^+
4584.4	1^-	4584.3 *5*	100	0	0^+
4594.7	1^-	2701.7 *5*	100	1892.98	(0^+)
4597.24	$(2,3)^-$	1591.2 *5*	24.0	3005.94	$4^+,3^-$
		1796.6 *5*	11.6	2800.60	$2^+,(1^-)$
		1883.8 *5*	39	2713.56	$2^+,(1^-)$
		2076.9 *5*	19.9	2521.03	$3,4^+$
		2275.5 *5*	26	2321.69	(2^+)
		2370.7 *5*	39	2226.09	$3,2^-,(2^+)$
		2613.7 *5*	100	1983.18	(2^+)
		2810.7 *5*	94	1786.37	2^+
		3793.8 *5*	49	803.64	2^+
4601.9	3^-	1263.0 *5*	19.0	3339.51	$2^+,(1^-)$
		1904.6 *5*	43	2697.08	2,3,4
		3144.6 *5*	100	1456.96	4^+
4605.86	1^-	2170.9 *5*	37	2434.86	$1^-,2$
		2268.8 *5*	59	2337.08	$2^+,(1^-)$
		2284.0 *5*	26	2321.69	(2^+)
		2288.0 *5*	28	2317.69	$2^+,(1)$
		2623.0 *5*	16.3	1983.18	(2^+)
		2712.7 *5*	11.6	1892.98	(0^+)
		2820.0 *5*	22.4	1786.37	2^+
		4605.4 *5*	100	0	0^+
4607.7	$(3,2)^-$	3212.7 *5*	100	1394.97	(3^-)
4610.1	3^-	3152.8 *5*	100	1456.96	4^+
		3215.3 *5*	76	1394.97	(3^-)
4640.5	$(2,3)^-$	1927.0 *5*	2.9	2713.56	$2^+,(1^-)$
		3836.8 *5*	100	803.64	2^+
4649.0	$(2,3)^-$	1936.1 *5*	47	2713.56	$2^+,(1^-)$
		2862.0 *5*	100	1786.37	2^+
4653.0	1^-	4652.9 *5*	100	0	0^+
4660.26	$(2,3)^-$	1476.6 *5*	12.1	3183.32	$2^-,3^-$
		1859.4 *5*	19.0	2800.60	$2^+,(1^-)$
		2199.7 *5*	31	2460.94	$2^+,(1^-)$
		2323.1 *5*	22.4	2337.08	$2^+,(1^-)$
		3856.8 *5*	100	803.64	2^+
4665.93	$(2,3)^-$	1483.2 *5*	6.1	3183.32	$2^-,3^-$
		1595.7 *5*	6.1	3069.36	$1,(2^+)$
		1626.8 *5*	11.0	3038.67	$2^+,(1^-)$
		2137.0 *5*	35	2529.18	2^+
		3862.7 *5*	100	803.64	2^+

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
4668.1	(2,3)$^-$	2321.5 *5*	100	2346.62	2$^+$,(1$^-$)
4694.97	3$^-$	1738.6 *5*	8.7	2955.70	3$^-$,4$^+$
		1954.5 *5*	20.4	2740.86	3$^-$,(2$^+$)
		1997.1 *5*	12.6	2697.08	2,3,4
		2283.3 *5*	21.4	2411.96	4$^+$,(2$^+$,3)
		2712.3 *5*	15.5	1983.18	(2$^+$)
		2908.8 *5*	100	1786.37	2$^+$
		3237.9 *5*	26	1456.96	4$^+$
4698.11	1$^-$&3$^-$	1585.0 *5*	18.7	3112.59	3,(2$^+$,4$^+$)
		1629.3 *5*	5.5	3069.36	1,(2$^+$)
		1743.0 *5*	9.9	2955.70	3$^-$,4$^+$
		1956.8 *5*	18.7	2740.86	3$^-$,(2$^+$)
		2351.4 *5*	14.3	2346.62	2$^+$,(1$^-$)
		2366.8 *5*	54	2330.88	4$^+$,3$^+$,(2$^+$,3$^-$)
		3241.2 *5*	42	1456.96	4$^+$
		4698.2 *5*	100	0	0$^+$
4706.15	(2,3)$^-$	1225.8 *5*	11.7	3480.5	(2,3)
		1593.4 *5*	3.2	3112.59	3,(2$^+$,4$^+$)
		1603.5 *5*	1.21	3101.88	2,(1$^-$,3$^-$)
		1636.0 *5*	1.61	3069.36	1,(2$^+$)
		1762.7 *5*	21.0	2943.90	4,(3,5$^-$)
		1776.5 *5*	4.4	2930.32	4,(3$^-$)
		1850.0 *5*	2.42	2855.81	3,(2$^+$,4$^+$)
		1965.7 *5*	6.9	2740.86	3$^-$,(2$^+$)
		2009.4 *5*	14.1	2697.08	2,3,4
		2359.7 *5*	6.5	2346.62	2$^+$,(1$^-$)
		2375.4 *5*	56	2330.88	4$^+$,3$^+$,(2$^+$,3$^-$)
		2479.3 *5*	9.7	2226.09	3,2$^-$,(2$^+$)
		2723.2 *5*	5.6	1983.18	(2$^+$)
		2919.5 *5*	17.3	1786.37	2$^+$
		3311.2 *5*	50	1394.97	(3$^-$)
		3902.7 *5*	100	803.64	2$^+$
4712.3	1$^-$	4712.2 *5*	100	0	0$^+$
4718.3	(3,2)$^-$	2387.1 *5*	58	2330.88	4$^+$,3$^+$,(2$^+$,3$^-$)
		3323.5 *5*	100	1394.97	(3$^-$)
4733.47	(2,3)$^-$	1394.5 *5*	1.88	3339.51	2$^+$,(1$^-$)
		1932.3 *5*	1.88	2800.60	2$^+$,(1$^-$)
		2507.6 *5*	35	2226.09	3,2$^-$,(2$^+$)
		2750.2 *5*	48	1983.18	(2$^+$)
		3929.6 *5*	100	803.64	2$^+$
4743.77	1$^-$	1641.4 *5*	2.31	3101.88	2,(1$^-$,3$^-$)
		1674.0 *5*	2.31	3069.36	1,(2$^+$)
		2030.7 *5*	8.7	2713.56	2$^+$,(1$^-$)
		2851.0 *5*	3.5	1892.98	(0$^+$)
		4743.8 *5*	100	0	0$^+$
4753.98	3$^-$	1652.0 *5*	2.8	3101.88	2,(1$^-$,3$^-$)
		2967.8 *5*	100	1786.37	2$^+$
		3297.3 *5*	81	1456.96	4$^+$
		3359.0 *5*	21.1	1394.97	(3$^-$)
		3949.8 *5*	29	803.64	2$^+$
4757.8	(2,3)$^-$	1626.1 *5*	7.4	3131.40	2,3,(4$^+$,1$^-$)
		3362.5 *5*	26	1394.97	(3$^-$)
		3954.6 *5*	100	803.64	2$^+$
4759.4	3$^-$	1657.0 *5*	1.96	3101.88	2,(1$^-$,3$^-$)
		2776.2 *5*	10.8	1983.18	(2$^+$)
		2973.0 *5*	40	1786.37	2$^+$

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^{π}_i	E_{γ}	I_{γ}	E_f	J^{π}_f
4759.4	3^-	3302.8 *5*	100	1456.96	4^+
4766.59	$(2,3)^-$	1426.6 *5*	8.7	3339.51	$2^+,(1^-)$
		1966.2 *5*	8.7	2800.60	$2^+,(1^-)$
		2419.5 *5*	91	2346.62	$2^+,(1^-)$
		2429.1 *5*	61	2337.08	$2^+,(1^-)$
		2449.6 *5*	65	2317.69	$2^+,(1)$
		2783.9 *5*	87	1983.18	(2^+)
		2980.0 *5*	100	1786.37	2^+
4769.7	$(3,2)^-$	1657.1 *5*	100	3112.59	$3,(2^+,4^+)$
4785.2	$(2,3)^-$	1716.0 *5*	9.7	3069.36	$1,(2^+)$
		2801.8 *5*	87	1983.18	(2^+)
		2998.8 *5*	100	1786.37	2^+
4789.4	3^-	3332.8 *5*	100	1456.96	4^+
		3985.4 *5*	26	803.64	2^+
4794.1	1^-	4794.0 *5*	100	0	0^+
4799.3	$(2,3)^-$	2816.1 *5*	100	1983.18	(2^+)
4803.8	$(2,3)^-$	2578.2 *5*	21.1	2226.09	$3,2^-,(2^+)$
		2820.0 *5*	17.3	1983.18	(2^+)
		3408.8 *5*	46	1394.97	(3^-)
		4000.2 *5*	100	803.64	2^+
4808.15	3^-	1706.0 *5*	2.04	3101.88	$2,(1^-,3^-)$
		2461.7 *5*	22.4	2346.62	$2^+,(1^-)$
		2582.0 *5*	41	2226.09	$3,2^-,(2^+)$
		2825.7 *5*	12.2	1983.18	(2^+)
		3350.7 *5*	24.5	1456.96	4^+
		3412.9 *5*	76	1394.97	(3^-)
		4004.5 *5*	100	803.64	2^+
4809.2	1^-	4809.1 *5*	100	0	0^+
4835.10	$(2,3)^-$	1651.2 *5*	3.1	3183.32	$2^-,3^-$
		1879.6 *5*	3.5	2955.70	$3^-,4^+$
		2035.0 *5*	1.15	2800.60	$2^+,(1^-)$
		2514.0 *5*	10.0	2321.69	(2^+)
		2851.5 *5*	50	1983.18	(2^+)
		3440.1 *5*	12.3	1394.97	(3^-)
		4031.0 *5*	100	803.64	2^+
4849.6	3^-	3392.3 *5*	43	1456.96	4^+
		3454.8 *5*	100	1394.97	(3^-)
4870.3	$(2,3)^-$	4066.6 *5*	100	803.64	2^+
4872.8	$(2,3)^-$	2175.9 *5*	42	2697.08	2,3,4
		2541.6 *5*	100	2330.88	$4^+,3^+,(2^+,3^-)$
4881.6	3^-	3424.8 *5*	71	1456.96	4^+
		4077.7 *5*	100	803.64	2^+
4883.2	1^-	4883.1 *5*	100	0	0^+
4901.2	$(2,3)^-$	2554.5 *5*	11.8	2346.62	$2^+,(1^-)$
		2564.2 *5*	31	2337.08	$2^+,(1^-)$
		2918.5 *5*	100	1983.18	(2^+)
		3114.2 *5*	81	1786.37	2^+
4909.7	$(2,3)^-$	4106.0 *5*	100	803.64	2^+
4937.7	$(2,3)^-$	4134.0 *5*	100	803.64	2^+
4949.4	3^-	2761.9 *5*	6.8	2186.83	(5^-)
		2966.2 *5*	100	1983.18	(2^+)
		3492.9 *5*	16.9	1456.96	4^+
		4145.7 *5*	25	803.64	2^+
4956.4	3^-	3499.4 *5*	100	1456.96	4^+
4972.8	$(2,3)^-$	3186.4 *5*	100	1786.37	2^+
4995.5	$(2,3)^-$	2298.6 *5*	8.5	2697.08	2,3,4

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J_i^{π}	E_{γ}	I_{γ}	E_f	J_f^{π}	Mult.#	α&	Comments
4995.5	$(2,3)^-$	2658.4 *5*	8.5	2337.08	$2^+,(1^-)$			
		4191.5 *5*	100	803.64	2^+			
5000.7	1^-	5000.6 *5*	100	0	0^+			
5005.9	$(2,3)^-$	4202.2 *5*	100	803.64	2^+			
5010.6	$(2,3)^-$	3026.8 *5*	100	1983.18	(2^+)			
		4207.5 *5*	79	803.64	2^+			
5031.6	1^-	5031.5 *5*	100	0	0^+			
5032.8	$(2,3)^-$	3049.6 *5*	100	1983.18	(2^+)			
5035.3	$(2,3)^-$	4231.6 *5*	100	803.64	2^+			
5067.7	$(2,3)^-$	4264.0 *5*	100	803.64	2^+			
5071.1	18^+	504.3	100	4566.9	16^+	E2	0.01482	α(K)=0.01194 *17*; α(L)=0.00224 *4*; α(M)=0.000504 *7*; α(N)=0.0001154 *17* α(O)=1.593×10^{-5} *23*; α(P)=6.69×10^{-7} *10*; α(N+..)=0.0001320 *19* E_{γ}: from ^{152}Gd(α,6nγ).
5076.8	$(2,3)^-$	4273.1 *5*	100	803.64	2^+			
5088.6	3^-	3631.7 *5*	88	1456.96	4^+			
		3693.7 *5*	100	1394.97	(3^-)			
		4284.7 *5*	88	803.64	2^+			
5098.5	$(2,3)^-$	4294.8 *5*	100	803.64	2^+			
5106.3	$(2,3)^-$	4302.6 *5*	100	803.64	2^+			
5110.7	$(2,3)^-$	4307.0 *5*	100	803.64	2^+			
5129.0	$(2,3)^-$	4325.3 *5*	100	803.64	2^+			
5142.8	$(3,2)^-$	2445.5 *5*	36	2697.08	2,3,4			
		3748.0 *5*	100	1394.97	(3^-)			
5165.6	3^-	3709.0 *5*	61	1456.96	4^+			
		3770.1 *5*	100	1394.97	(3^-)			
5176.2	$(2,3)^-$	4372.5 *5*	100	803.64	2^+			
5181.1	$(2,3)^-$	4377.4 *5*	100	803.64	2^+			
5193.7	$(2,3)^-$	4390.0 *5*	100	803.64	2^+			
5207.7	$(2,3)^-$	4404.0 *5*	100	803.64	2^+			
5211.3	$(2,3)^-$	4407.6 *5*	100	803.64	2^+			
5218.7	$(2,3)^-$	3823.0 *5*	54	1394.97	(3^-)			
		4415.6 *5*	100	803.64	2^+			
5225.0	$(3,2)^-$	3830.0 *5*	100	1394.97	(3^-)			
5246.7	$(2,3)^-$	4443.0 *5*	100	803.64	2^+			
5250.4	3^-	3792.7 *5*	21.4	1456.96	4^+			
		3855.7 *5*	46	1394.97	(3^-)			
		4447.0 *5*	100	803.64	2^+			
5251.6	$(3,2)^-$	3856.6 *5*	100	1394.97	(3^-)			
5254.6	3^-	3798.0 *5*	43	1456.96	4^+			
		3859.9 *5*	36	1394.97	(3^-)			
		4450.2 *5*	100	803.64	2^+			
5296.1	3^-	3839.0 *5*	50	1456.96	4^+			
		4492.5 *5*	100	803.64	2^+			
5327.5	$(2,3)^-$	4523.8 *5*	100	803.64	2^+			
5334.1	$(2,3)^-$	4530.4 *5*	100	803.64	2^+			
5353.2	3^-	3896.2 *5*	100	1456.96	4^+			
5359.6	1^-	3466.6 *5*	100	1892.98	(0^+)			
5414.7	$(2,3)^-$	4611.0 *5*	100	803.64	2^+			
5415.9	$17^{(+)}$	849.0	100	4566.9	16^+	(M1)	0.00790 *11*	α(K)=0.00671 *10*; α(L)=0.000933 *13*; α(M)=0.000204 *3*; α(N)=4.72×10^{-5} *7*; α(O)=6.94×10^{-6} *10* α(P)=4.06×10^{-7} *6*; α(N+..)=5.45×10^{-5} *8* E_{γ}: from ^{152}Gd(α,6nγ).

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Adopted Levels, Gammas (continued)

γ(^{150}Dy) (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.#	α&	Comments
5450.8	(2,3)$^-$	4647.1 5	100	803.64	2$^+$			
5613.3	18$^{(-)}$	197.3	100	5415.9	17$^{(+)}$			E_γ: from ^{152}Gd(α,6nγ).
5661.9	(2,3)$^-$	4858.2 5	100	803.64	2$^+$			
5725.5	(2,3)$^-$	4921.8 5	100	803.64	2$^+$			
5813.1	19$^-$	200.2		5613.3	18$^{(-)}$			E_γ: from ^{152}Gd(α,6nγ); observed only in ^{152}Gd(α,6nγ) and ^{114}Cd(^{40}Ar,4nγ).
		742.0		5071.1	18$^+$	(E1)	0.00222 4	E_γ: from ^{152}Gd(α,6nγ).
5880.4	(2,3)$^-$	5076.7 5	100	803.64	2$^+$			
5887.9	(2,3)$^-$	5084.2 5	100	803.64	2$^+$			
6018.6	20$^-$	205.9		5813.1	19$^-$	M1	0.313	α(K)=0.264 4; α(L)=0.0384 6; α(M)=0.00843 12; α(N)=0.00195 3; α(O)=0.000286 4 α(P)=1.639×10^{-5} 23; α(N+..)=0.00225 4 E_γ: from ^{152}Gd(α,6nγ).
		405		5613.3	18$^{(-)}$			E_γ: observed only in ^{114}Cd(^{40}Ar,4nγ).
6394.7	21$^-$	376.3	100	6018.6	20$^-$	M1	0.0620	α(K)=0.0524 8; α(L)=0.00750 11; α(M)=0.001642 23; α(N)=0.000380 6; α(O)=5.57×10^{-5} 8 α(P)=3.22×10^{-6} 5; α(N+..)=0.000439 7 E_γ: from ^{152}Gd(α,6nγ).
6815.6		797.0	100	6018.6	20$^-$			
7000.4	22$^{(-)}$	185		6815.6				
		981.4		6018.6	20$^-$			
7047.3		1028.7	100	6018.6	20$^-$			
7102.3	22$^+$	707.0	100	6394.7	21$^-$			
7288.7		473		6815.6				
		894		6394.7	21$^-$			
7372.5?		977	100	6394.7	21$^-$			
7473.7	22$^-$	185		7288.7				E_γ: observed only in ^{114}Cd(^{40}Ar,4nγ).
		473		7000.4	22$^{(-)}$			E_γ: observed only in ^{114}Cd(^{40}Ar,4nγ).
		1455.2		6018.6	20$^-$	(Q)@		E_γ: from ^{114}Cd(^{40}Ar,4nγ).
7650.3		1255.3	100	6394.7	21$^-$			
7725.8?		353	100	7372.5?				
7741.0	23$^-$	267		7473.7	22$^-$	(M1,E2)		E_γ: from ^{114}Cd(^{40}Ar,4nγ).
		452		7288.7				E_γ: observed only in ^{114}Cd(^{40}Ar,4nγ).
		1346.3		6394.7	21$^-$	(Q)@		E_γ: from ^{114}Cd(^{40}Ar,4nγ).
7755.1?		382	100	7372.5?				
7955.2		853.3	100	7102.3	22$^+$			
8008.2	24$^-$	253†		7755.1?				E_γ: observed only in ^{124}Sn(^{32}S,6nγ).
		267		7741.0	23$^-$	(D)@		E_γ: from ^{114}Cd(^{40}Ar,4nγ).
		534.8‡		7473.7	22$^-$			E_γ: observed only in ^{114}Cd(^{40}Ar,4nγ).
8123?		397	100	7725.8?				
8303.2		561.6		7741.0	23$^-$			
		653.3		7650.3				
8404.9?		650		7755.1?				
		679		7725.8?				
8425.1		1322.8		7102.3	22$^+$			
		2030.9		6394.7	21$^-$			
8445.1		489.1		7955.2				
		1343.5		7102.3	22$^+$			
8481.2		2087.0	100	6394.7	21$^-$			
8544.8		590.5		7955.2				
		804		7741.0	23$^-$			
		1440		7102.3	22$^+$			
8610.8	25$^-$	602.6		8008.2	24$^-$			E_γ: from ^{114}Cd(^{40}Ar,4nγ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Comments
8610.8	25⁻	855		7755.1?		E_γ: observed only in $^{124}Sn(^{32}S,6n\gamma)$.
		869.7		7741.0	23⁻	E_γ: observed only in $^{114}Cd(^{40}Ar,4n\gamma)$.
8729.4		2334.6	100	6394.7	21⁻	
8763.8		809	100	7955.2		
8777.8		769.7	100	8008.2	24⁻	
8828.9?		1074		7755.1?		
		1103		7725.8?		
8843.6	(23⁻)	1369.9		7473.7	22⁻	
		2449.1		6394.7	21⁻	
8868.1		860.0	100	8008.2	24⁻	
8904.7		2510.2	100	6394.7	21⁻	
8921.2	(23⁻)	1270.1		7650.3		E_γ: observed only in $^{114}Cd(^{40}Ar,4n\gamma)$.
		2527.0		6394.7	21⁻	E_γ: from $^{114}Cd(^{40}Ar,4n\gamma)$.
8951.6		943.2	100	8008.2	24⁻	
9063.4		195		8868.1		
		452.1		8610.8	25⁻	
9106.8	26⁺	155		8951.6		E_γ: observed only in $^{114}Cd(^{40}Ar,4n\gamma)$.
		239		8868.1		E_γ: observed only in $^{114}Cd(^{40}Ar,4n\gamma)$.
		329		8777.8		E_γ: observed only in $^{114}Cd(^{40}Ar,4n\gamma)$.
		495.6		8610.8	25⁻	E_γ: from $^{114}Cd(^{40}Ar,4n\gamma)$.
9274.5	(25⁻)	353		8921.2	(23⁻)	
		370		8904.7		
		431		8843.6	(23⁻)	
		511		8763.8		
		545		8729.4		
		728		8544.8		
		793.7		8481.2		
		829.2		8445.1		
		850		8425.1		
		971.1		8303.2		
		1533.9		7741.0	23⁻	
		2173.2		7102.3	22⁺	
9305.9	(27⁺)	199	100	9106.8	26⁺	
9398.9?		125[a]	100	9274.5	(25⁻)	
9896.1	(26⁻)	621.8	100	9274.5	(25⁻)	E_γ: from $^{114}Cd(^{40}Ar,4n\gamma)$.
9974.8	(27⁻)	79		9896.1	(26⁻)	
		700.4		9274.5	(25⁻)	
		910.7		9063.4		
10238.6	(29⁻)	932.7	100	9305.9	(27⁺)	
10327.3	(29⁻)	352		9974.8	(27⁻)	
		929.1[a]		9398.9?		
		1021.4		9305.9	(27⁺)	
10889.2		561.6		10327.3	(29⁻)	
		650.5		10238.6	(29⁻)	
11005.9	(30⁻)	678.5	100	10327.3	(29⁻)	
11218.4	(31⁻)	212		11005.9	(30⁻)	
		891.1		10327.3	(29⁻)	
11304.8	(31⁻)	415[a]		10889.2		
		977.8		10327.3	(29⁻)	
11392.3		503.3	100	10889.2		
11701.8	(32⁻)	397		11304.8	(31⁻)	
		483		11218.4	(31⁻)	
		696.3		11005.9	(30⁻)	
11803		411	100	11392.3		
12317		924.3	100	11392.3		
12352.5	(33⁻)	650.5		11701.8	(32⁻)	

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Dy)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Comments
12352.5	(33⁻)	1047.6		11304.8	(31⁻)	
12498.2	(33)	796.2	100	11701.8	(32⁻)	
12735.7	(34⁺)	383		12352.5	(33⁻)	
		419.1		12317		
		932.7		11803		
12776.4	(34⁻)	278		12498.2	(33)	
		1074.8		11701.8	(32⁻)	
12927	(35)	151	100	12776.4	(34⁻)	
13598	(36)	670.4	100	12927	(35)	
13803	(36⁺)	1067.2	100	12735.7	(34⁺)	E_γ: from $^{114}Cd(^{40}Ar,4n\gamma)$.
14056	(37)	253		13803	(36⁺)	
		458		13598	(36)	
14992	(39)	936.4	100	14056	(37)	
15947		954.7	100	14992	(39)	
16291		1299	100	14992	(39)	

† From $(^{32}S,6n\gamma)$.

‡ From $(^{40}Ar,4n\gamma)$.

Multipolarities are from $(\alpha,6n\gamma)$ (1980LuZV,1979LuZZ), unless otherwise noted.

@ From $^{124}Sn(^{32}S,6n\gamma)$.

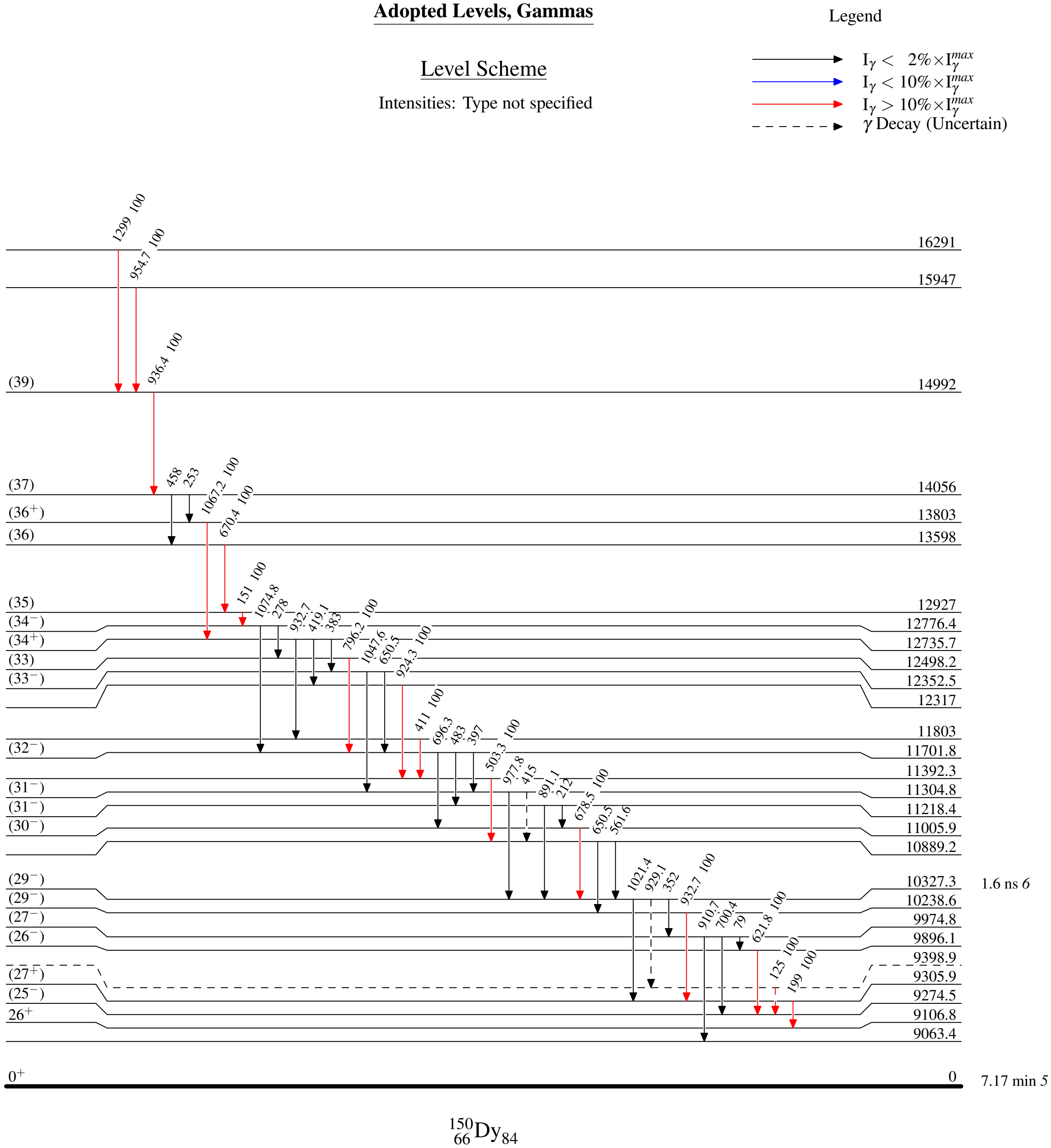
& Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[a] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified



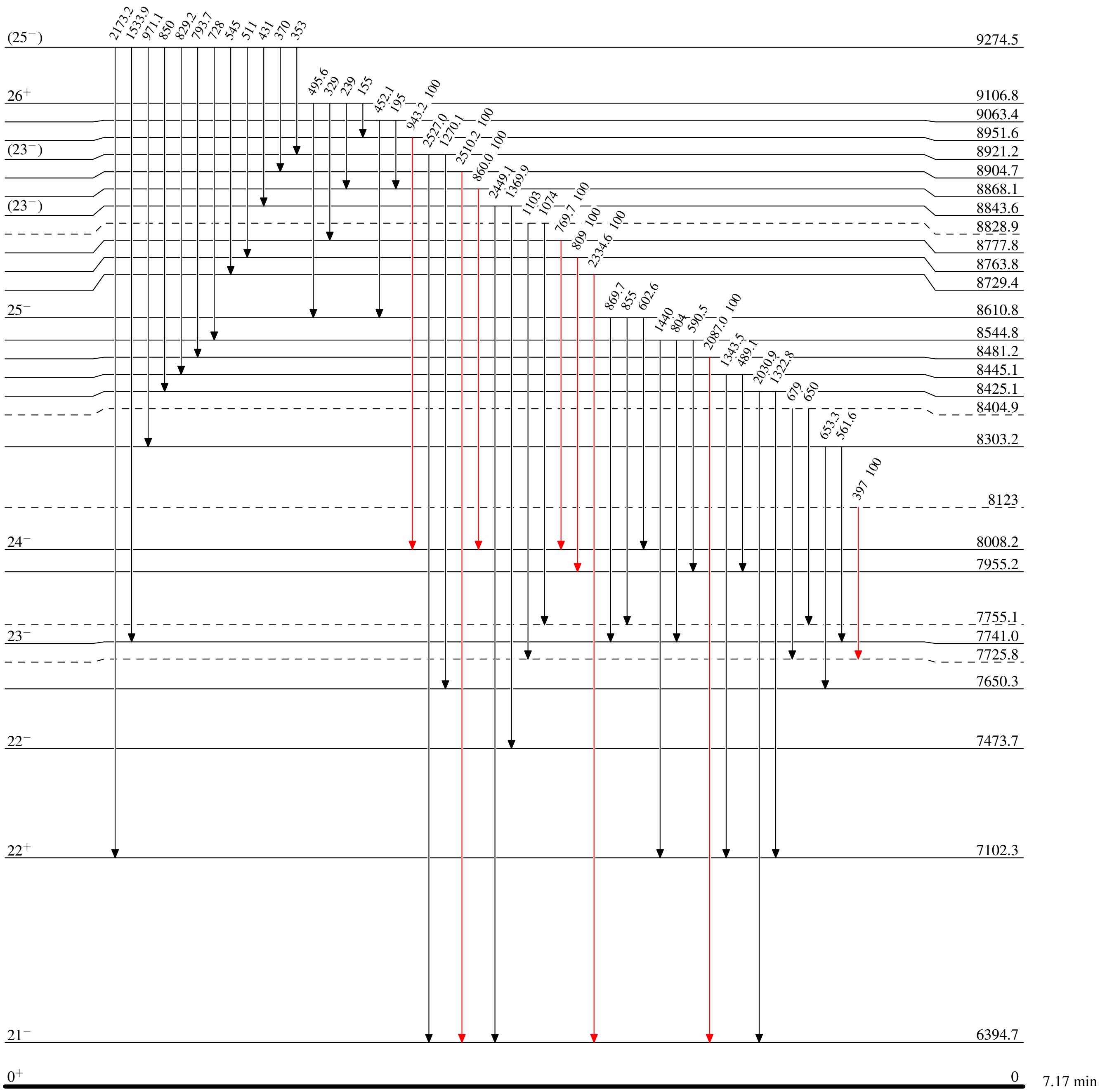
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

Legend

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

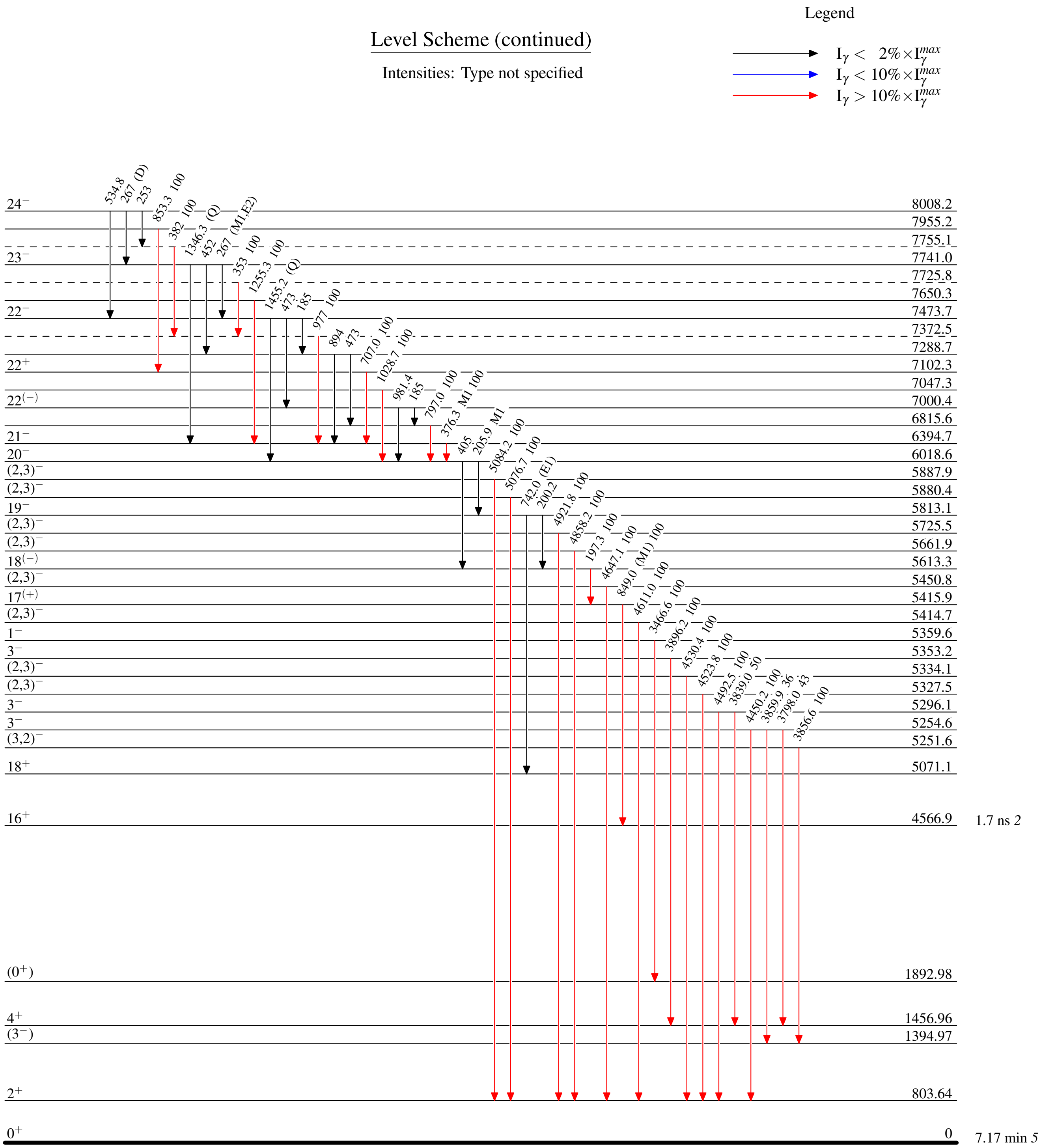


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

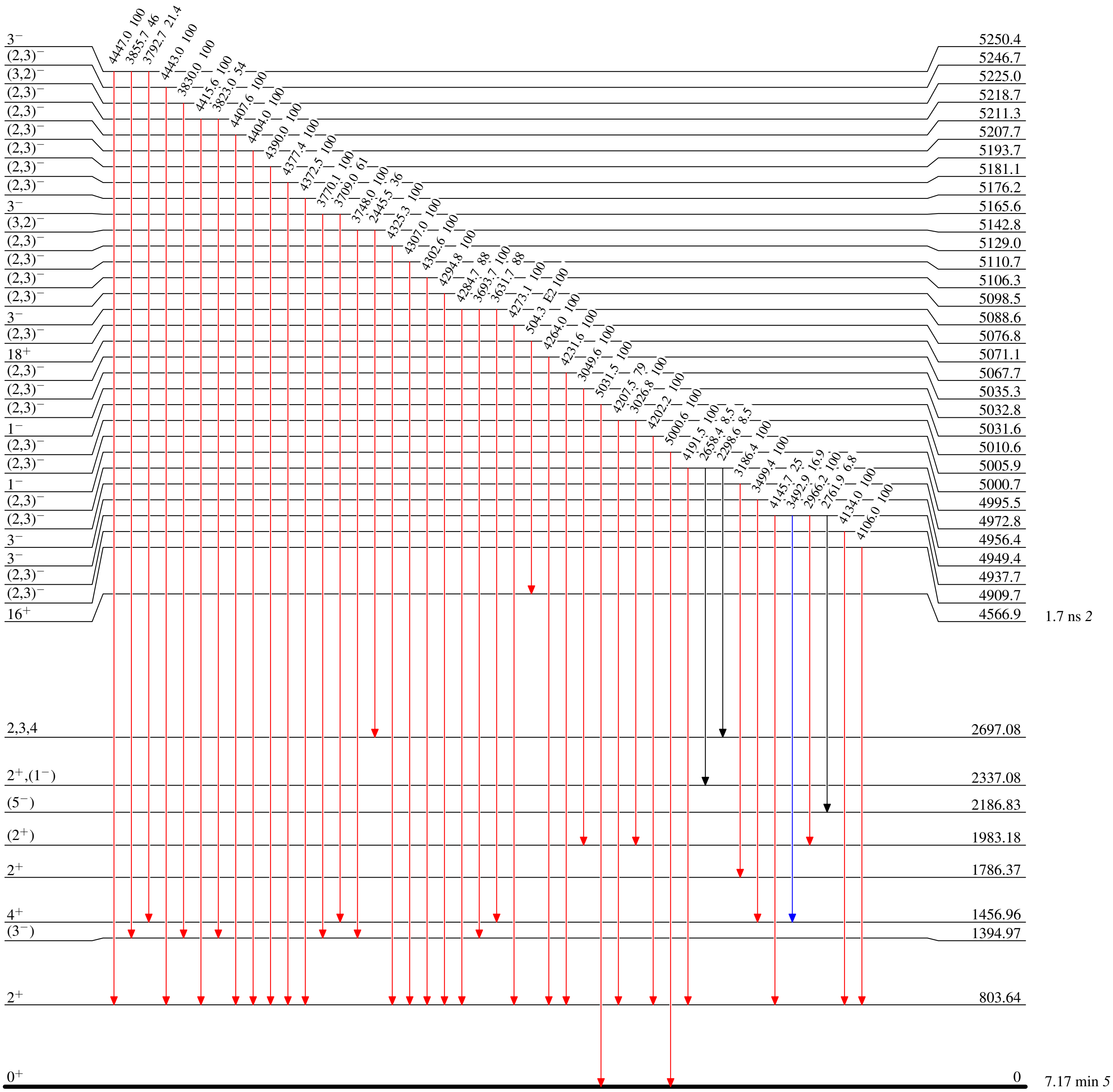
Intensities: Type not specified

Legend

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

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

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

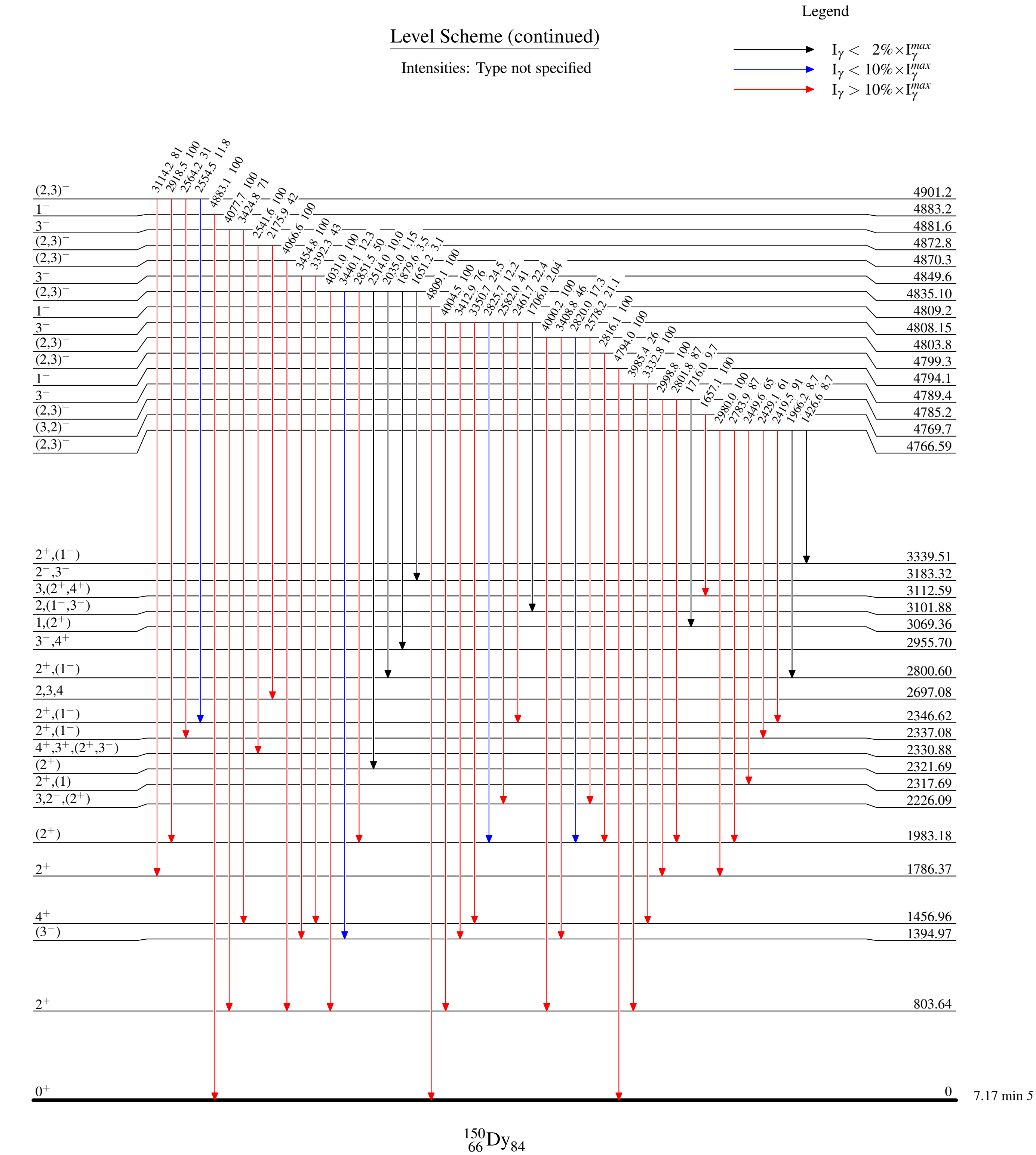


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

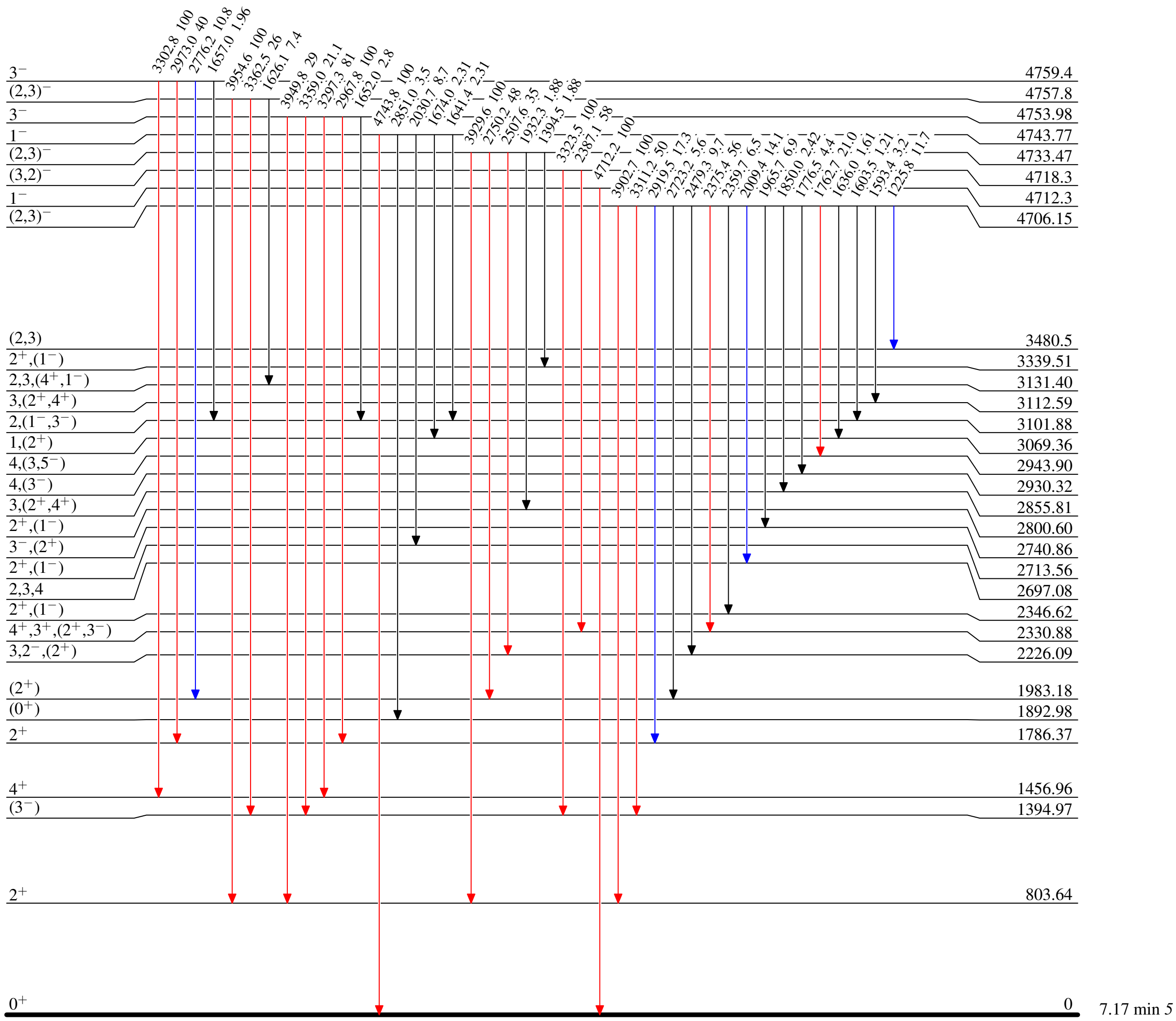
Intensities: Type not specified

Legend

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

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

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

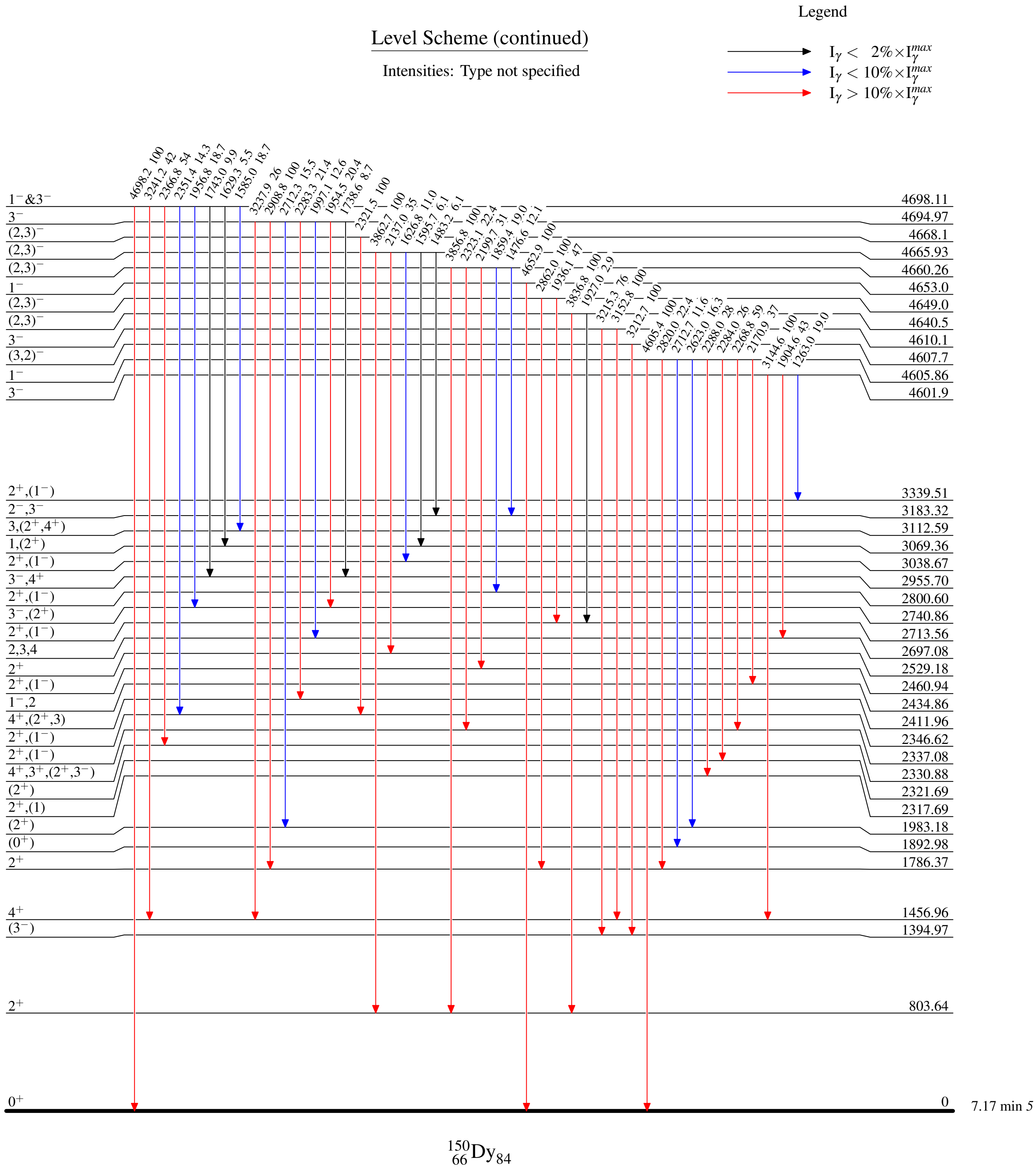


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



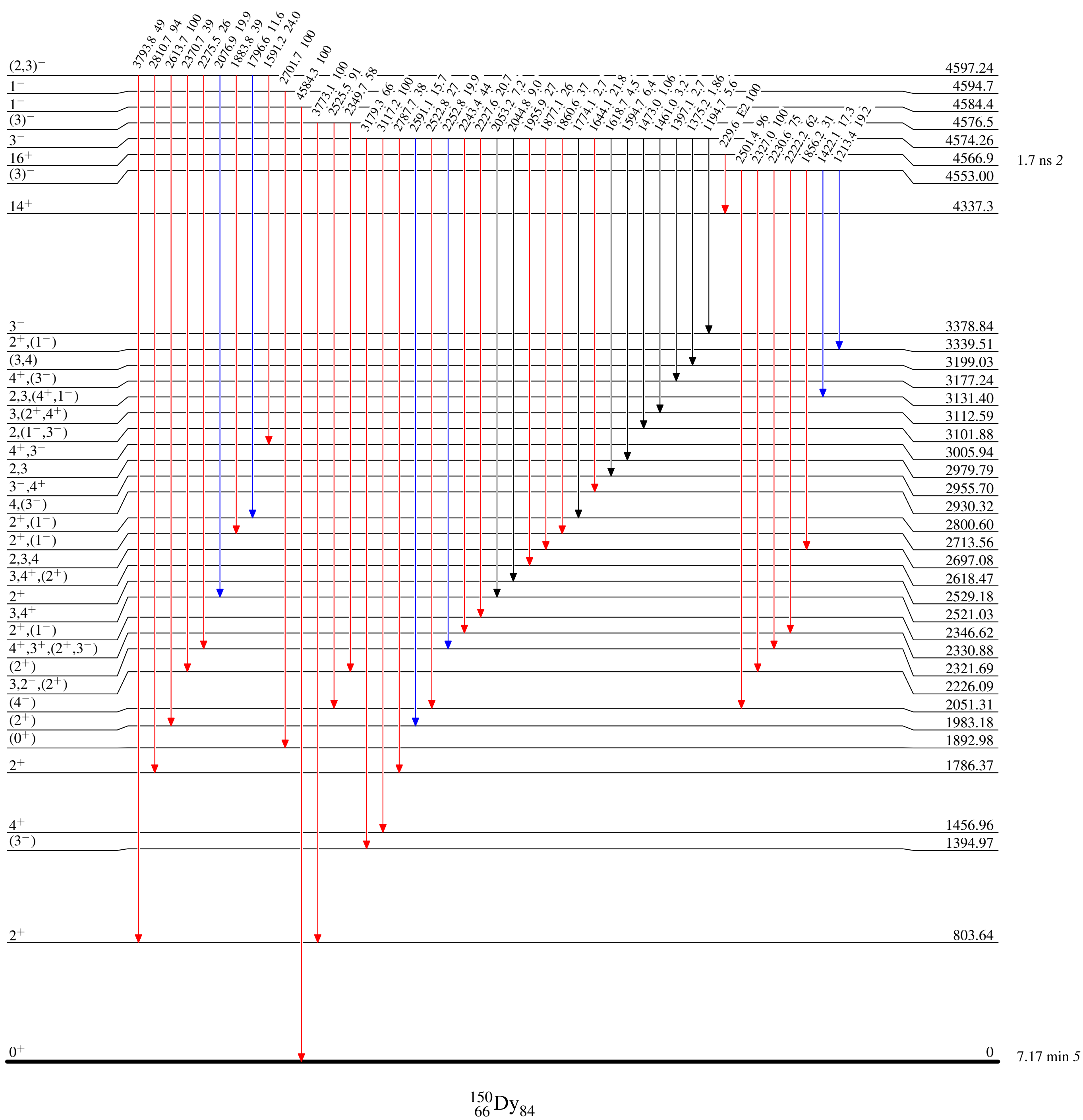
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

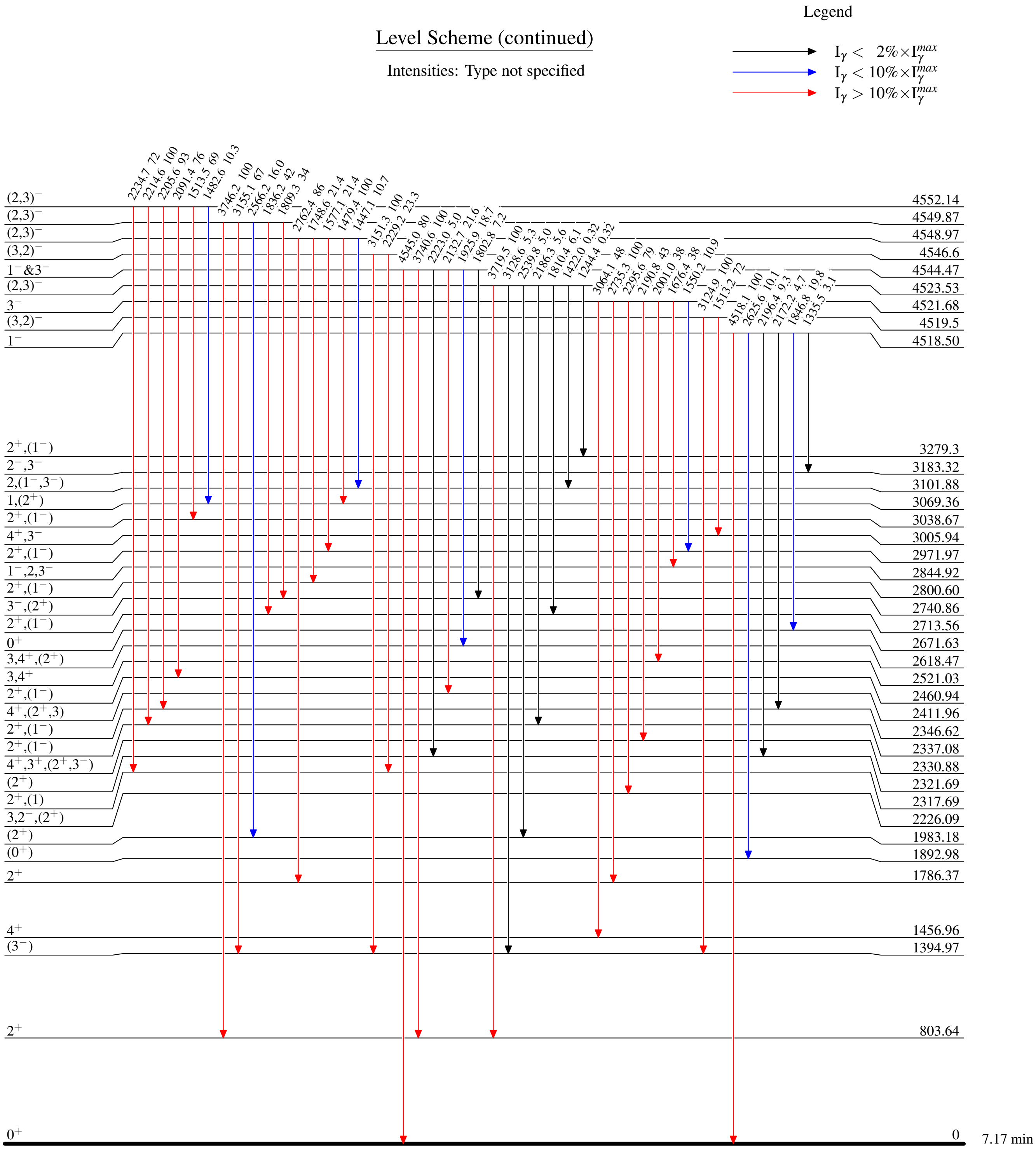
Intensities: Type not specified



Adopted Levels, Gammas

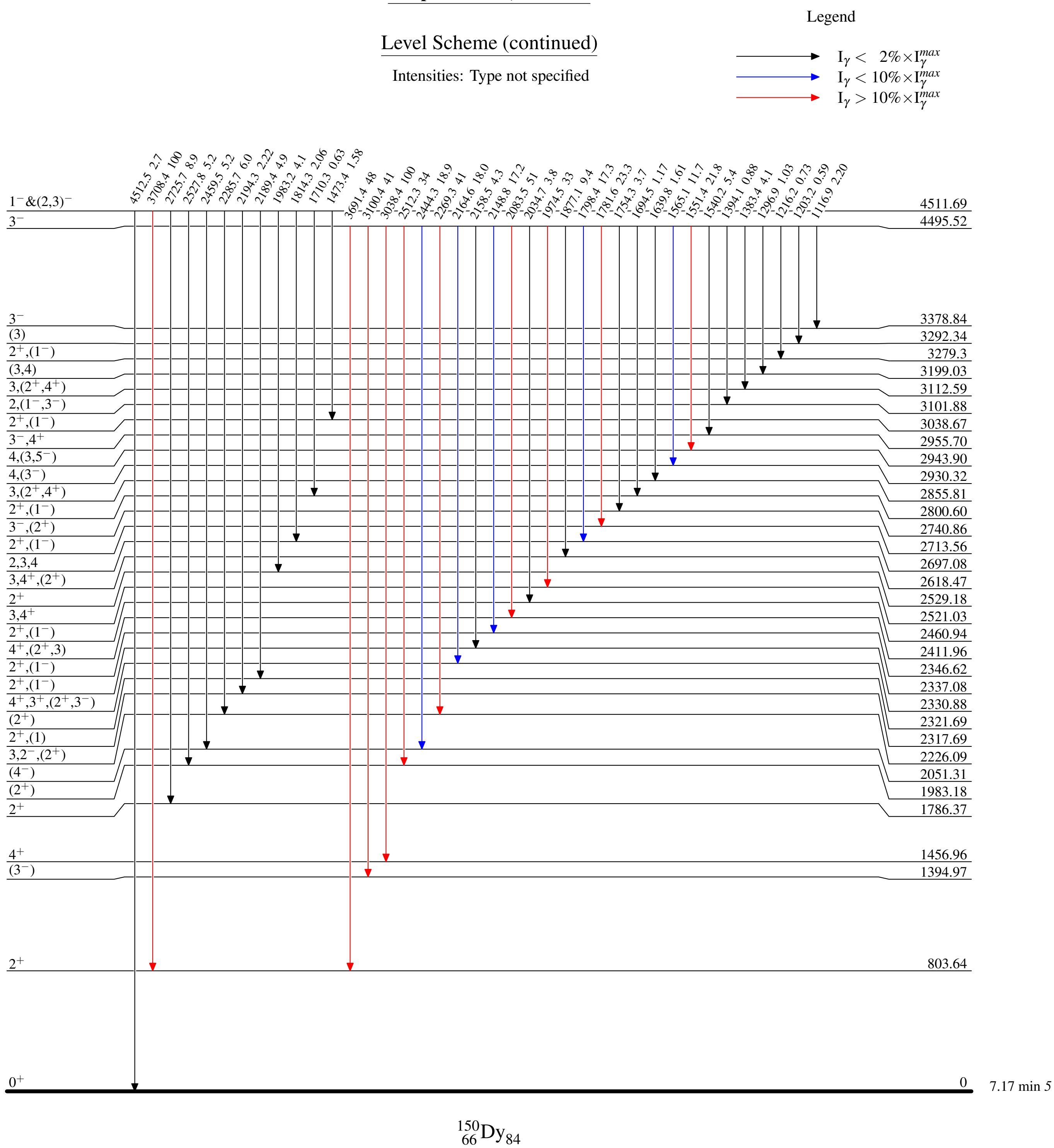
Level Scheme (continued)

Intensities: Type not specified



$^{150}_{66}Dy_{84}$

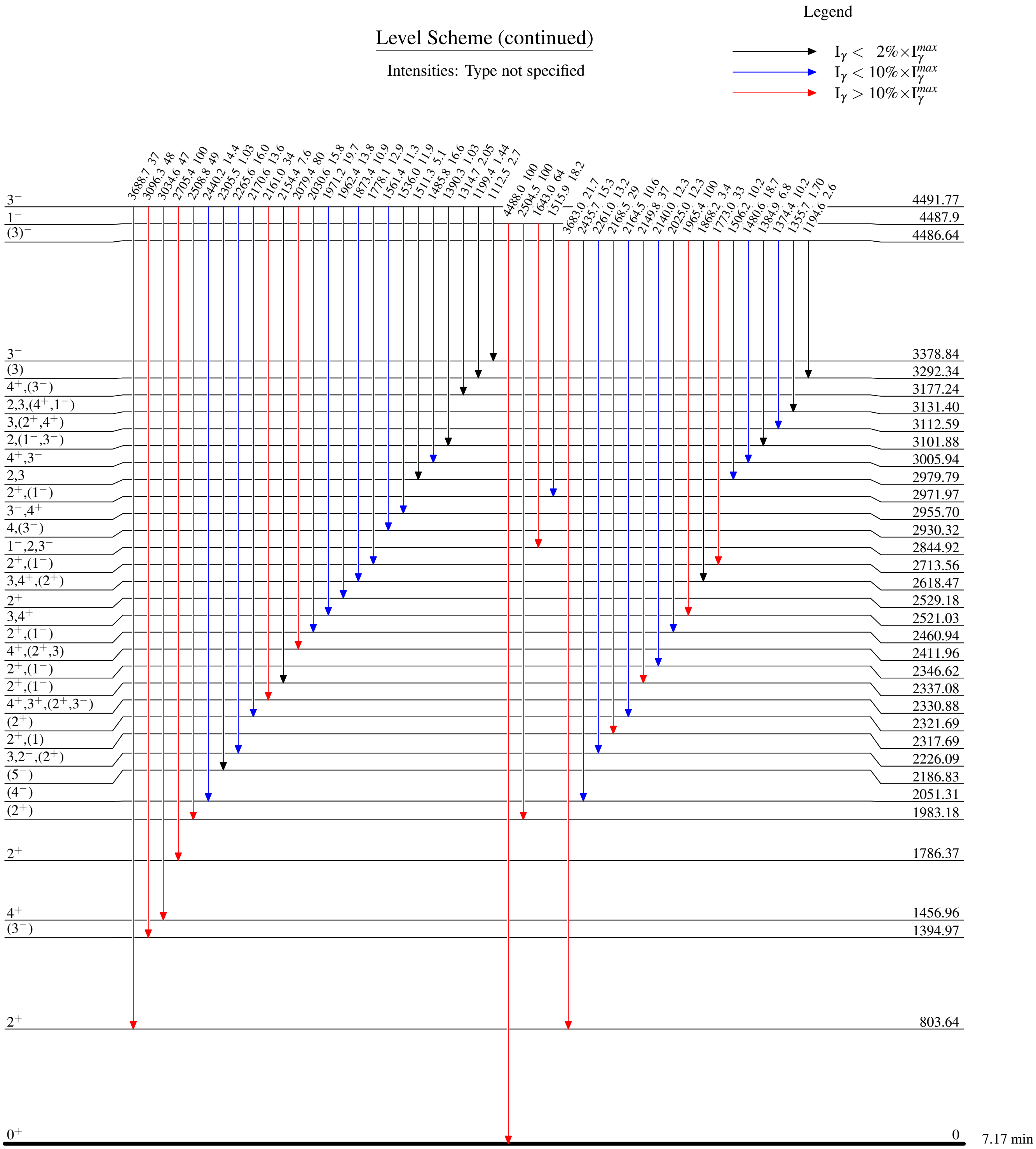
Adopted Levels, Gammas



Adopted Levels, Gammas

Level Scheme (continued)

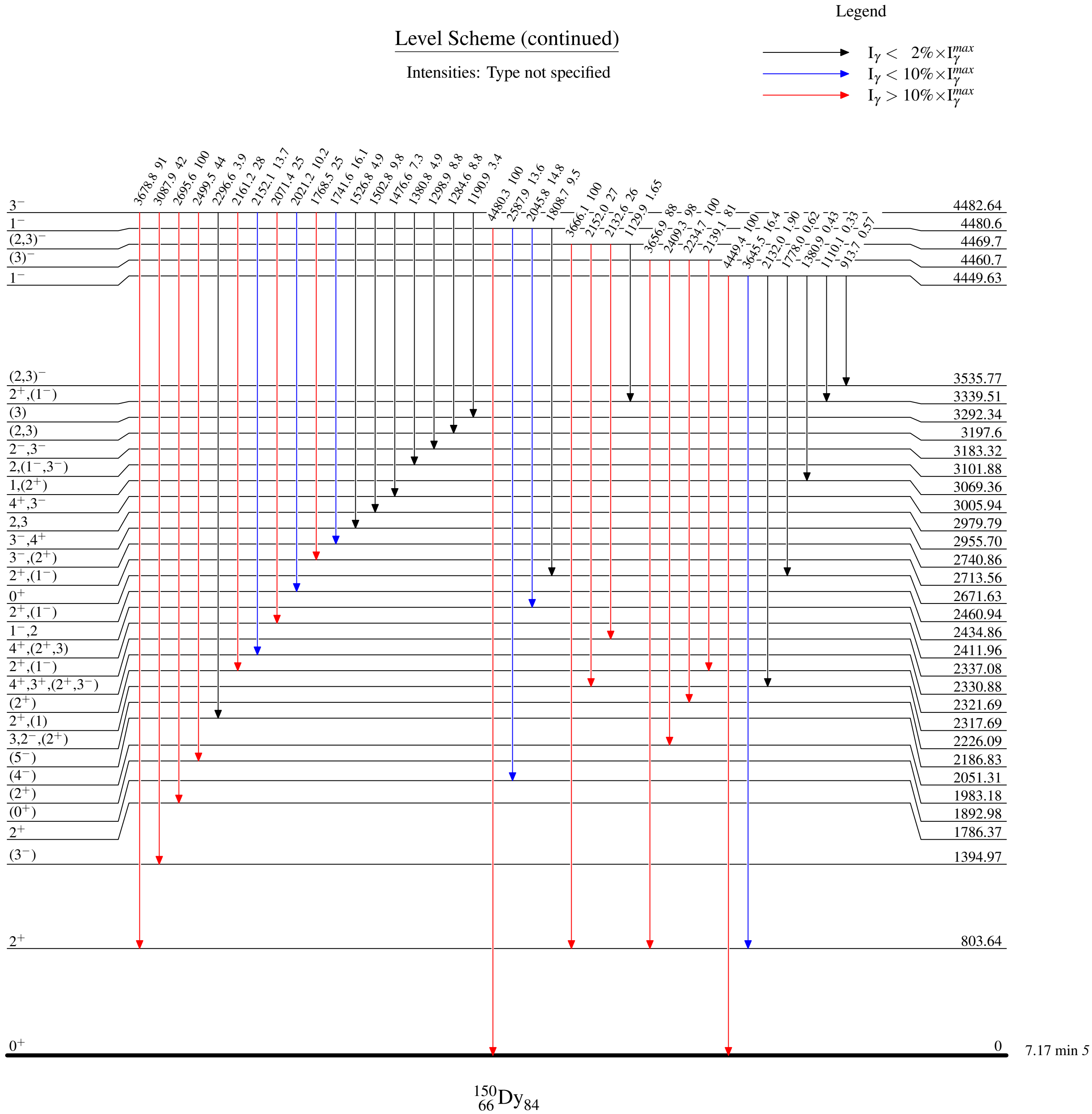
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

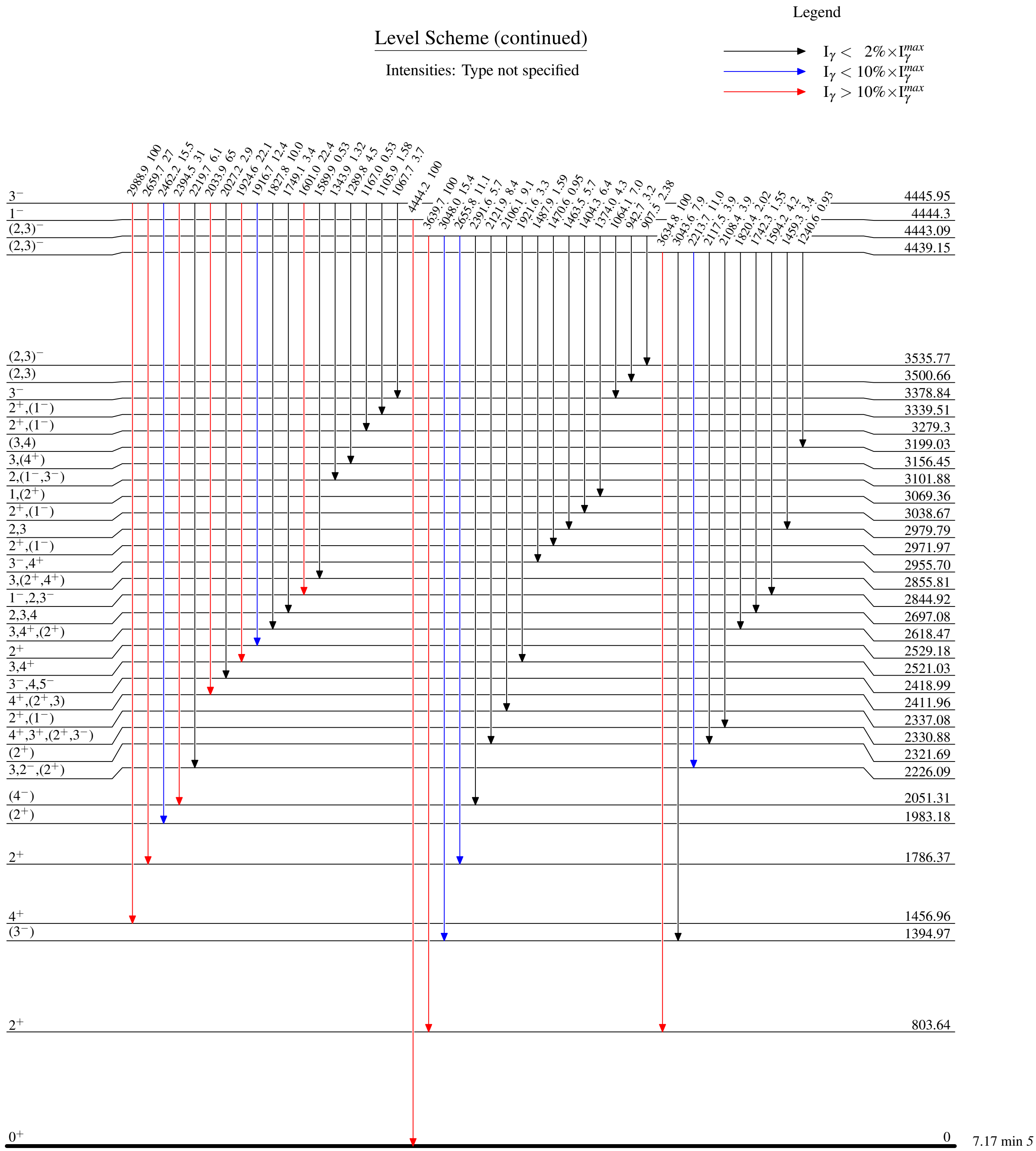
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

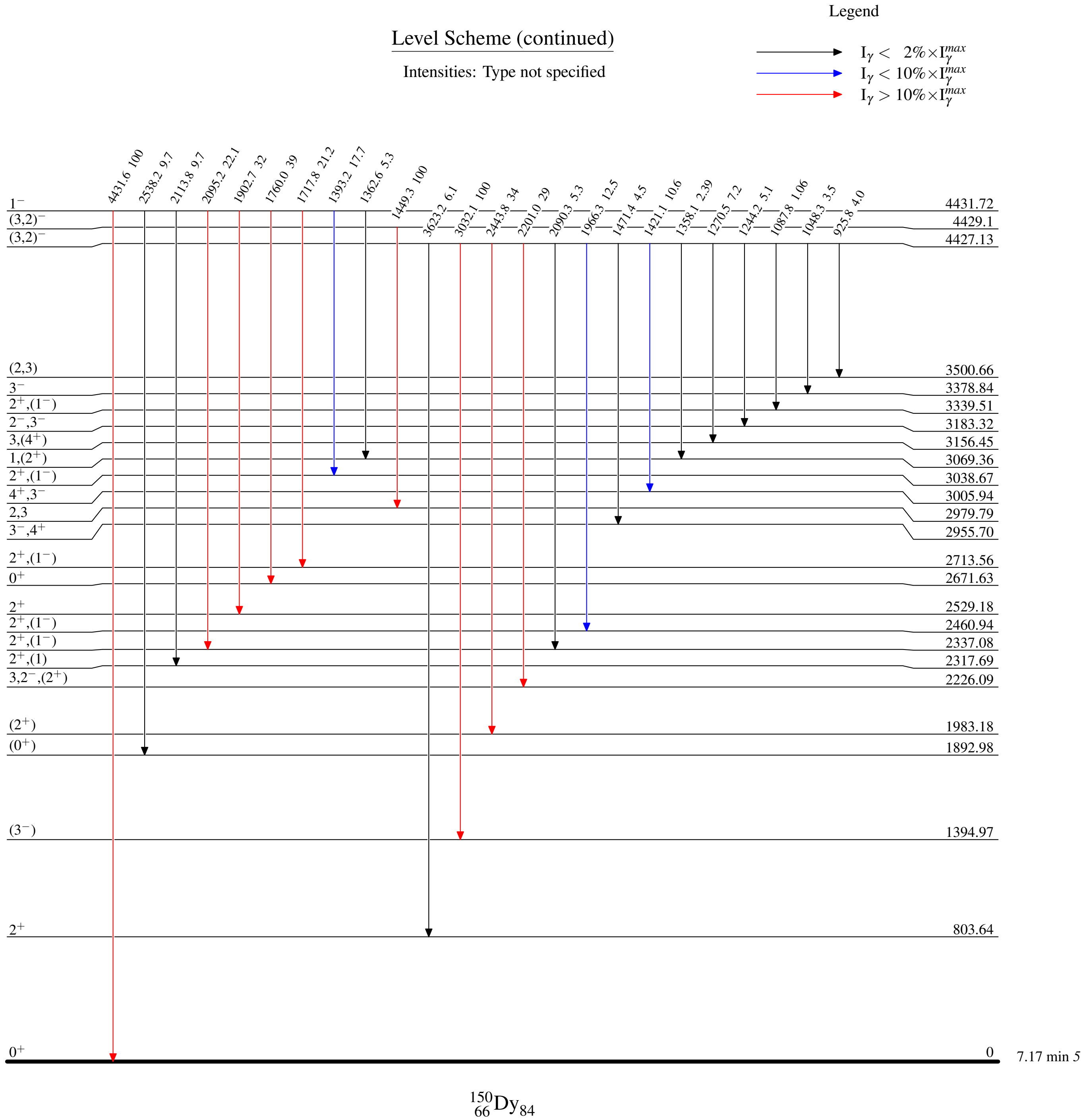


$^{150}_{66}Dy_{84}$

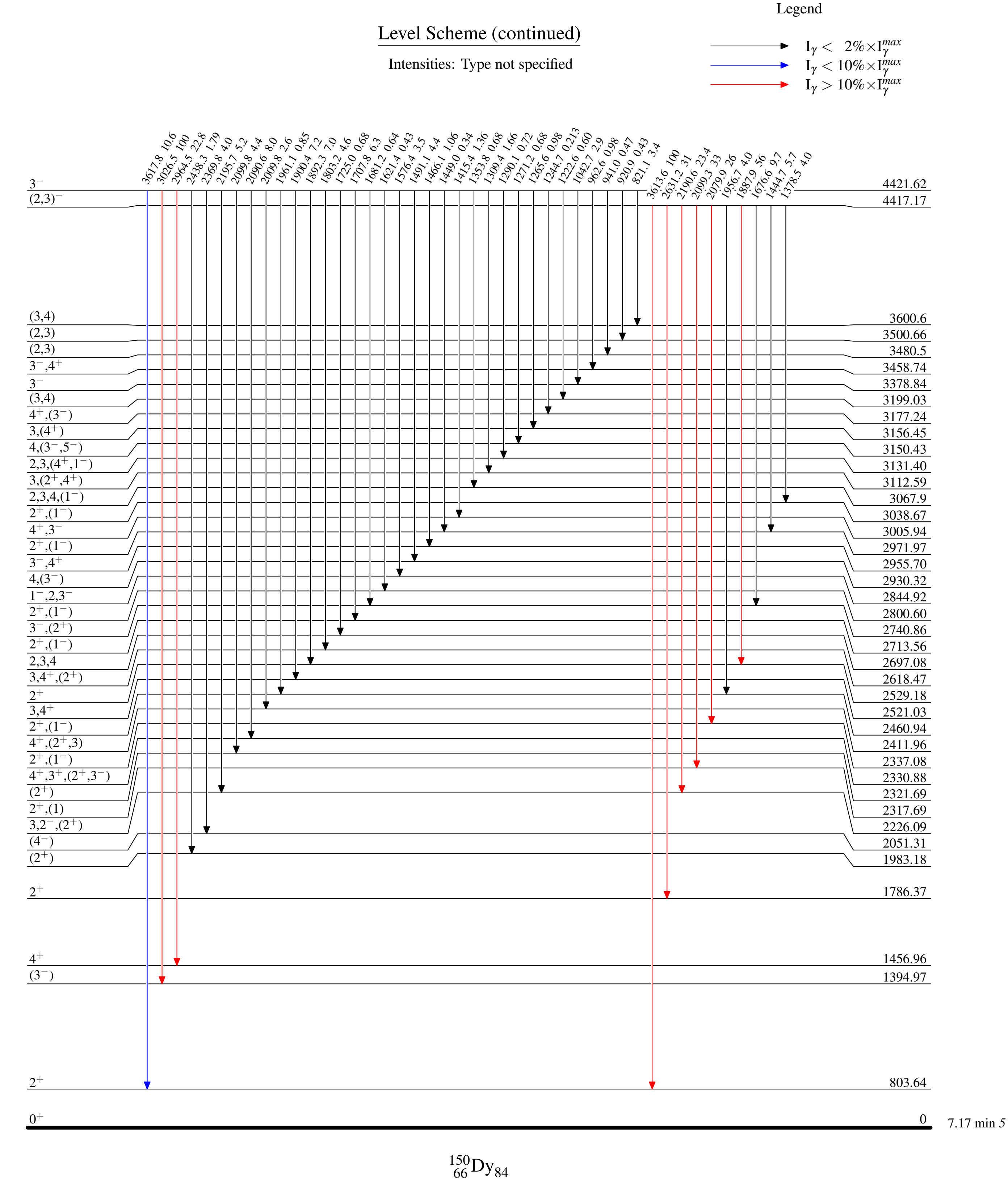
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



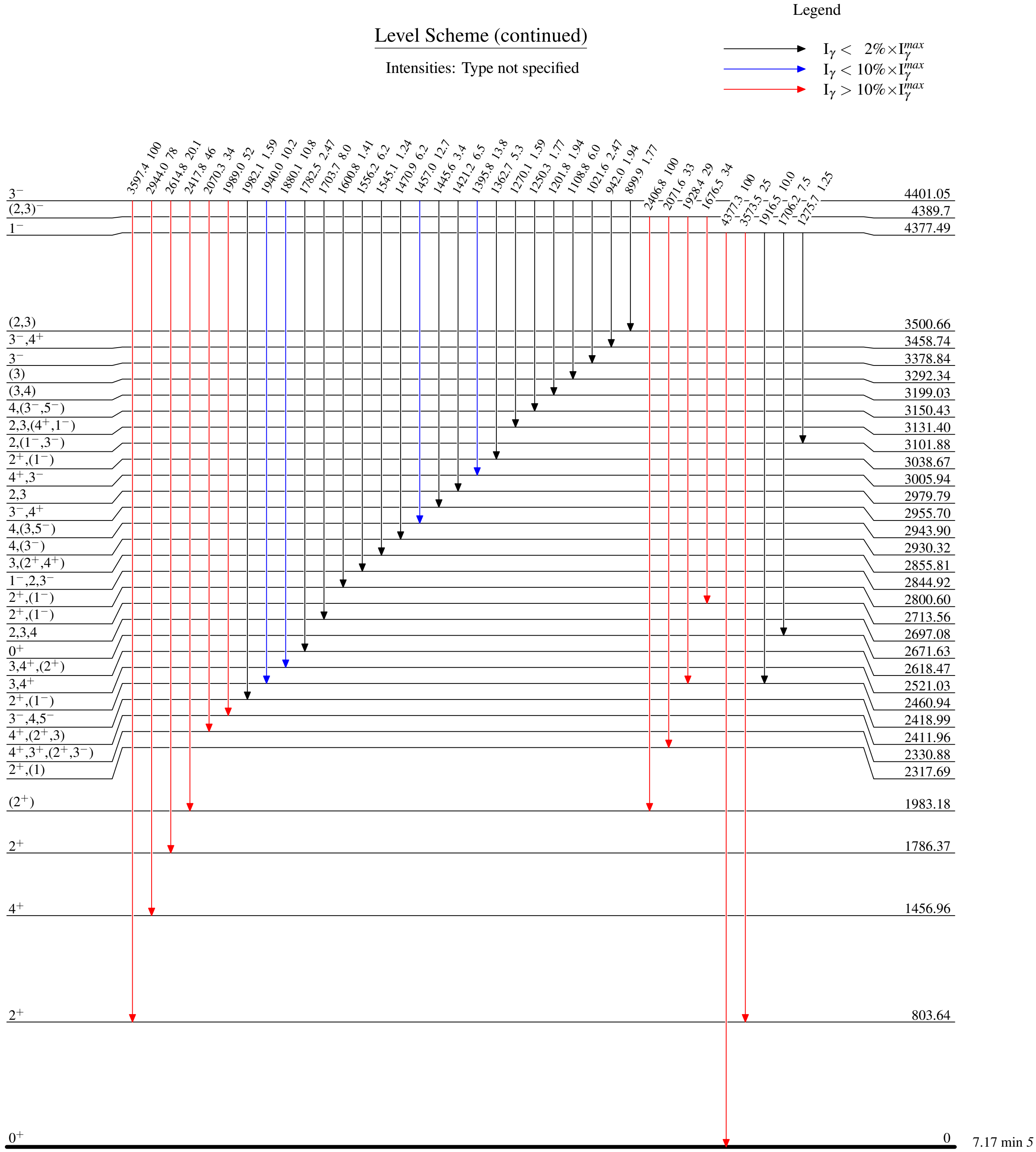
Adopted Levels, Gammas



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

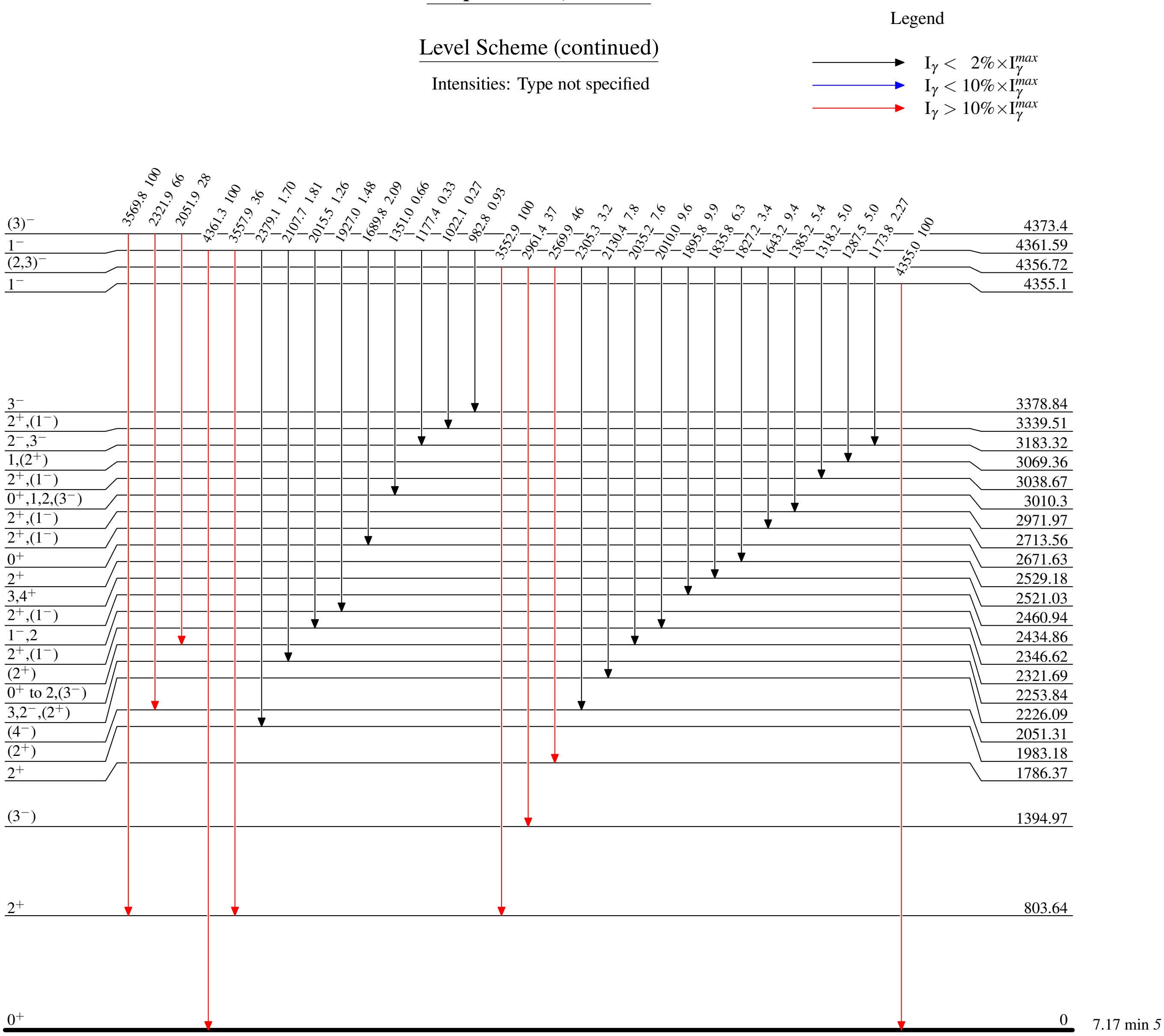


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

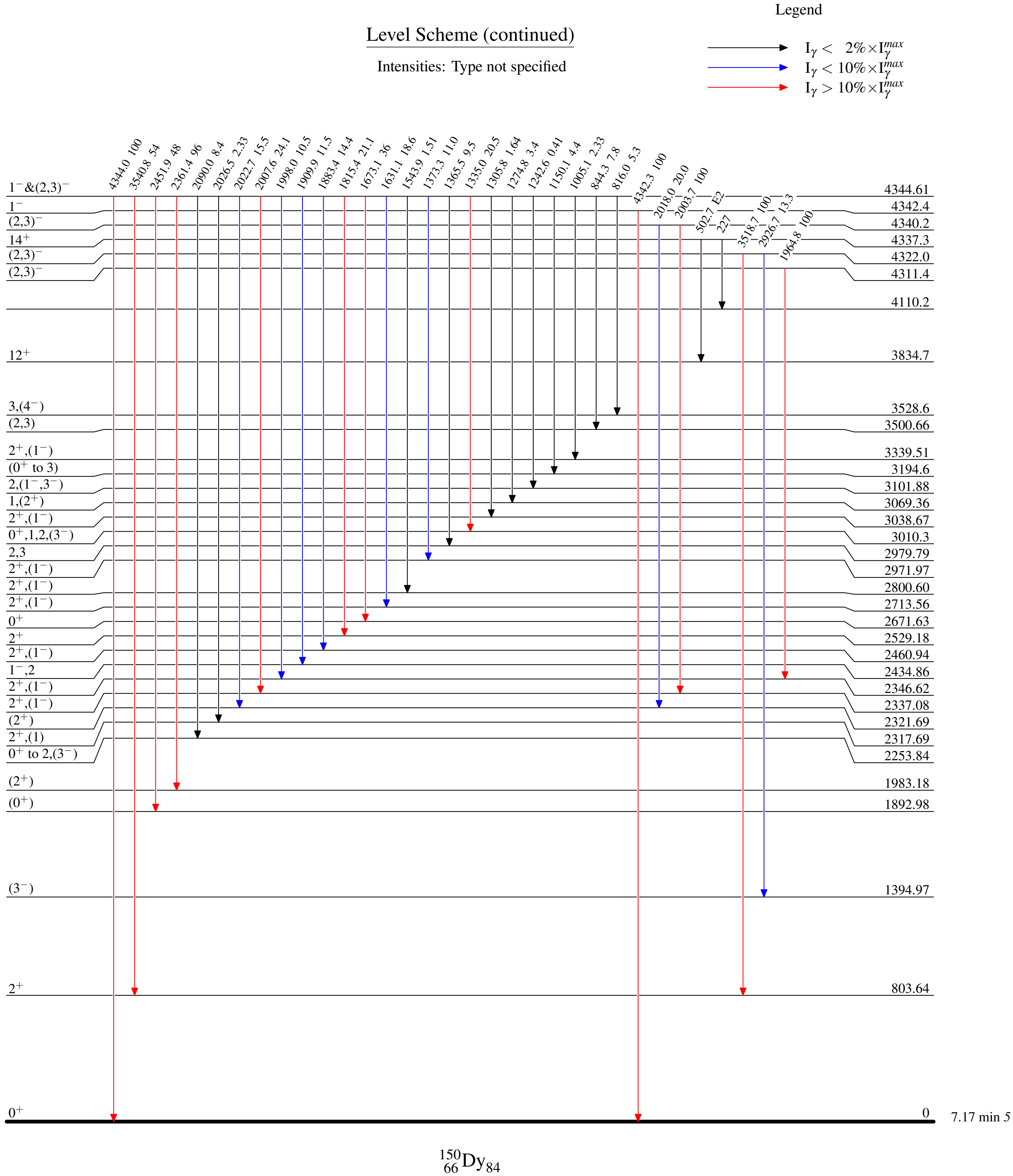


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

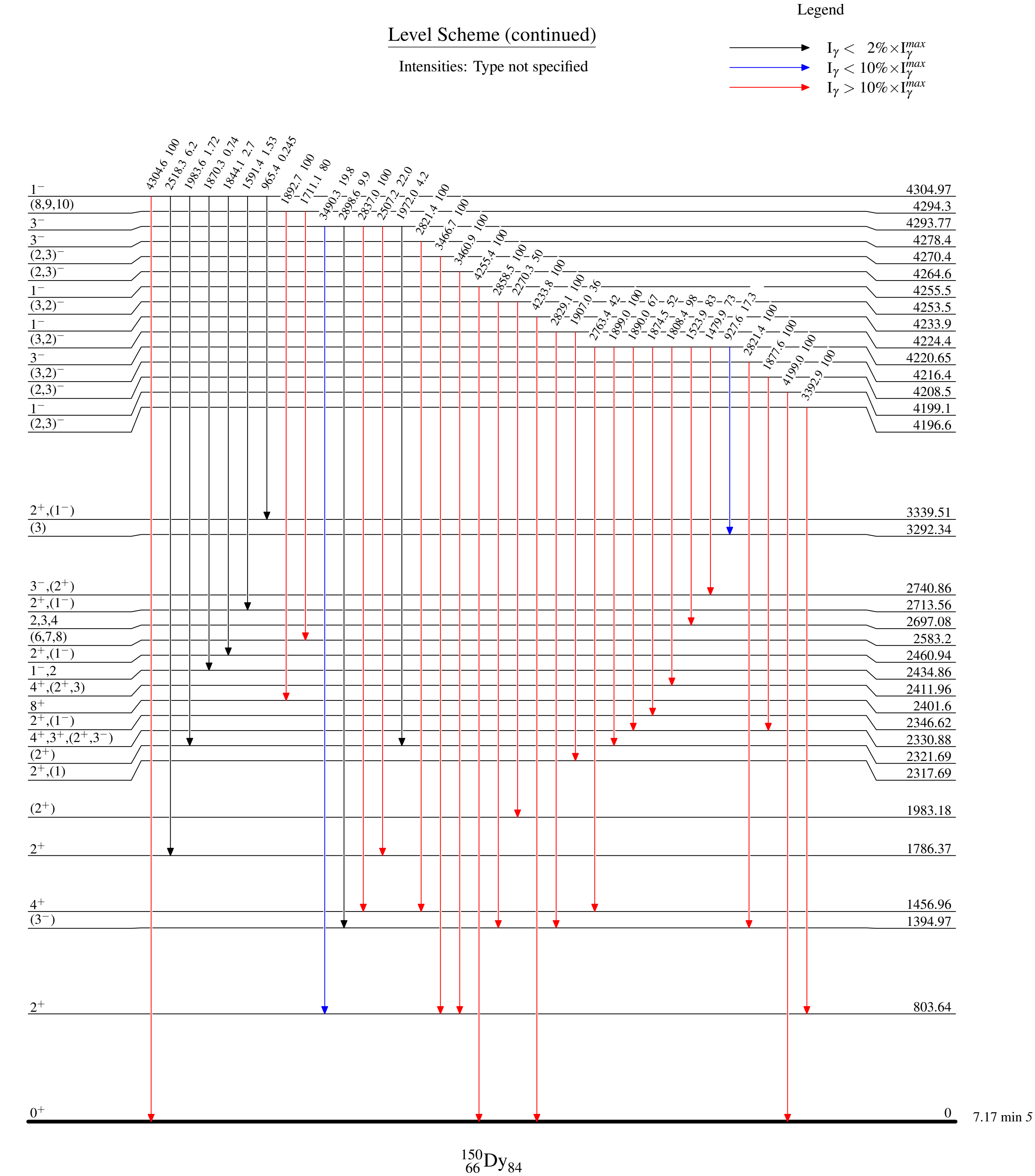
Intensities: Type not specified



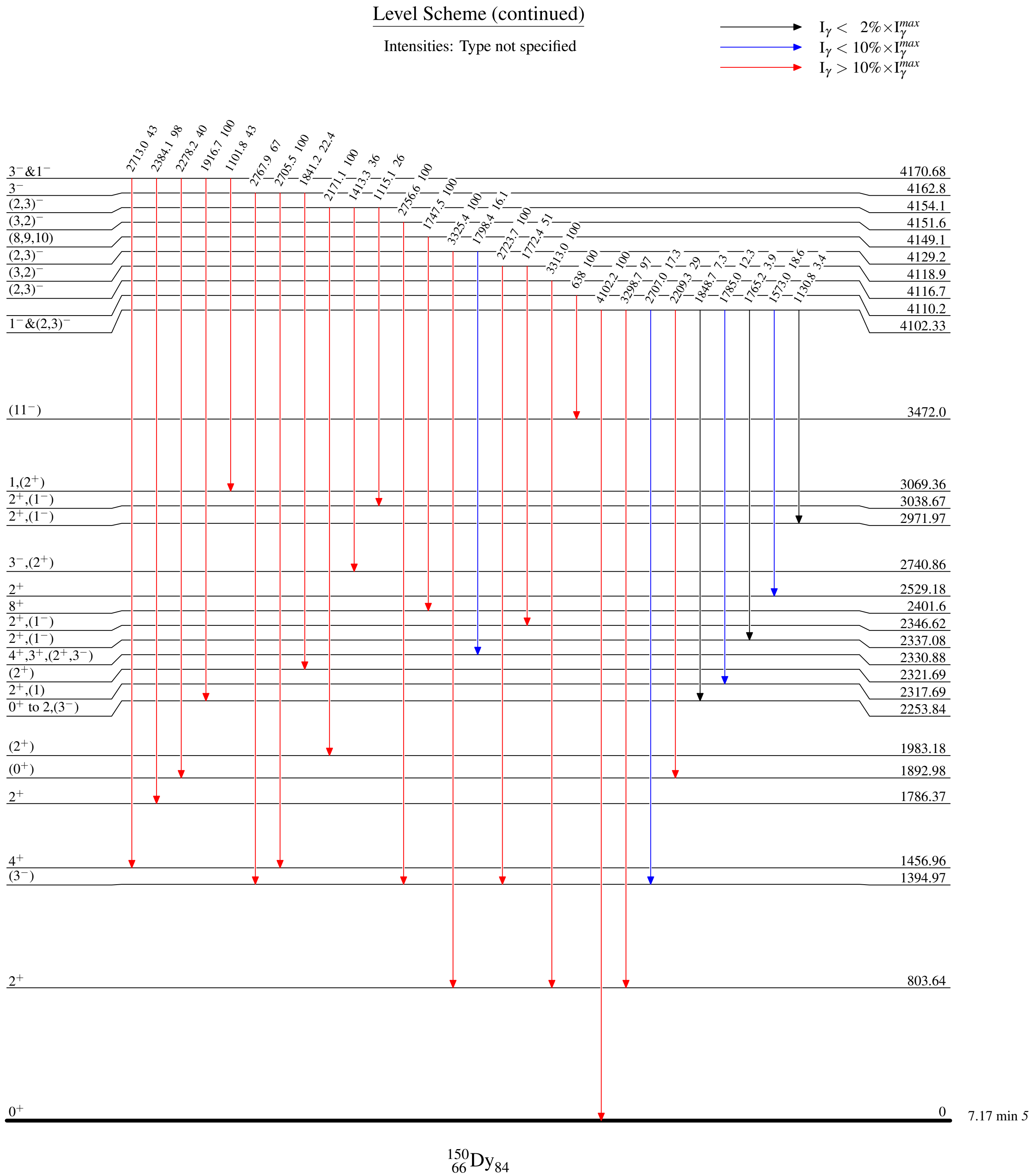
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



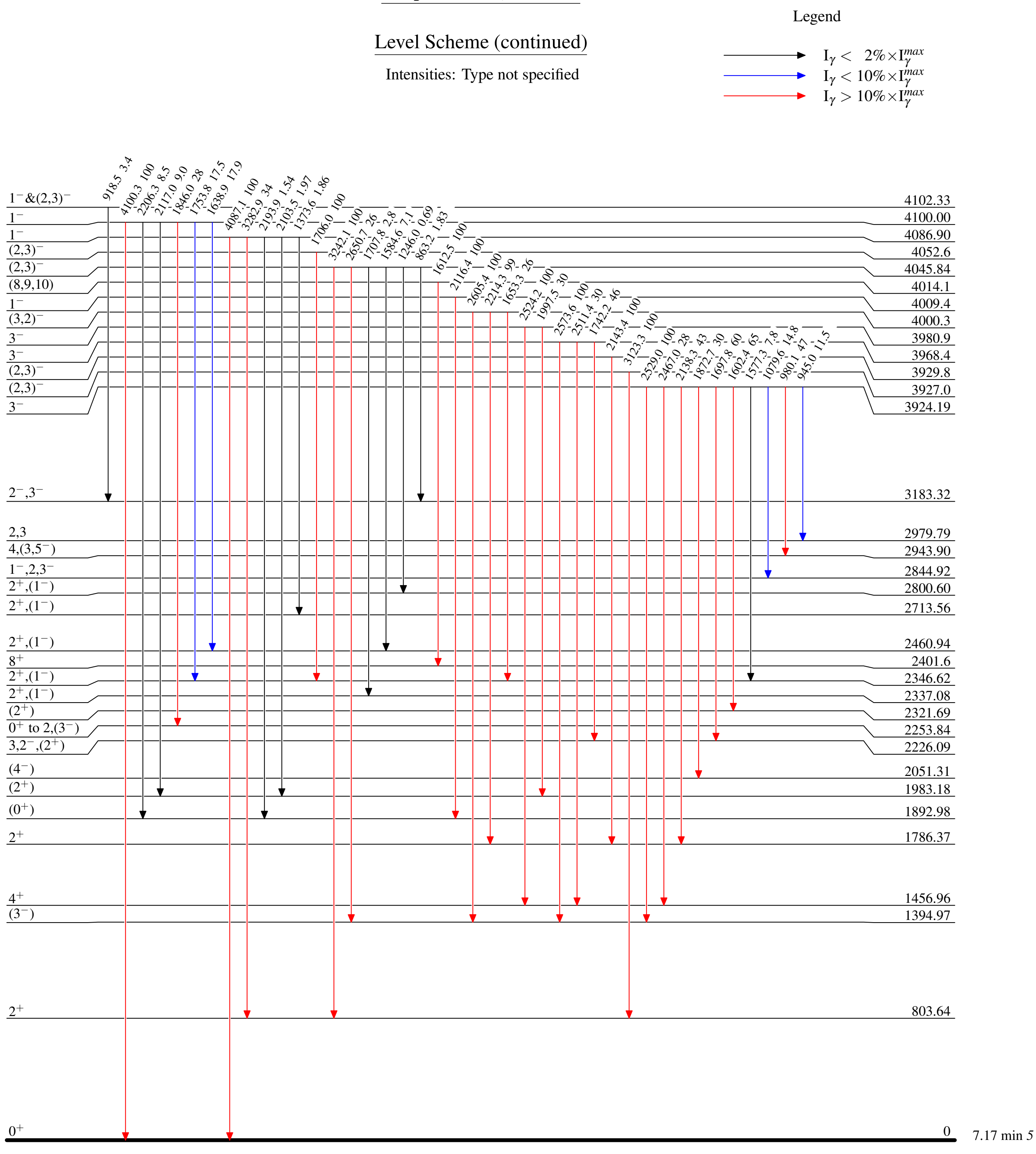
Adopted Levels, Gammas



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

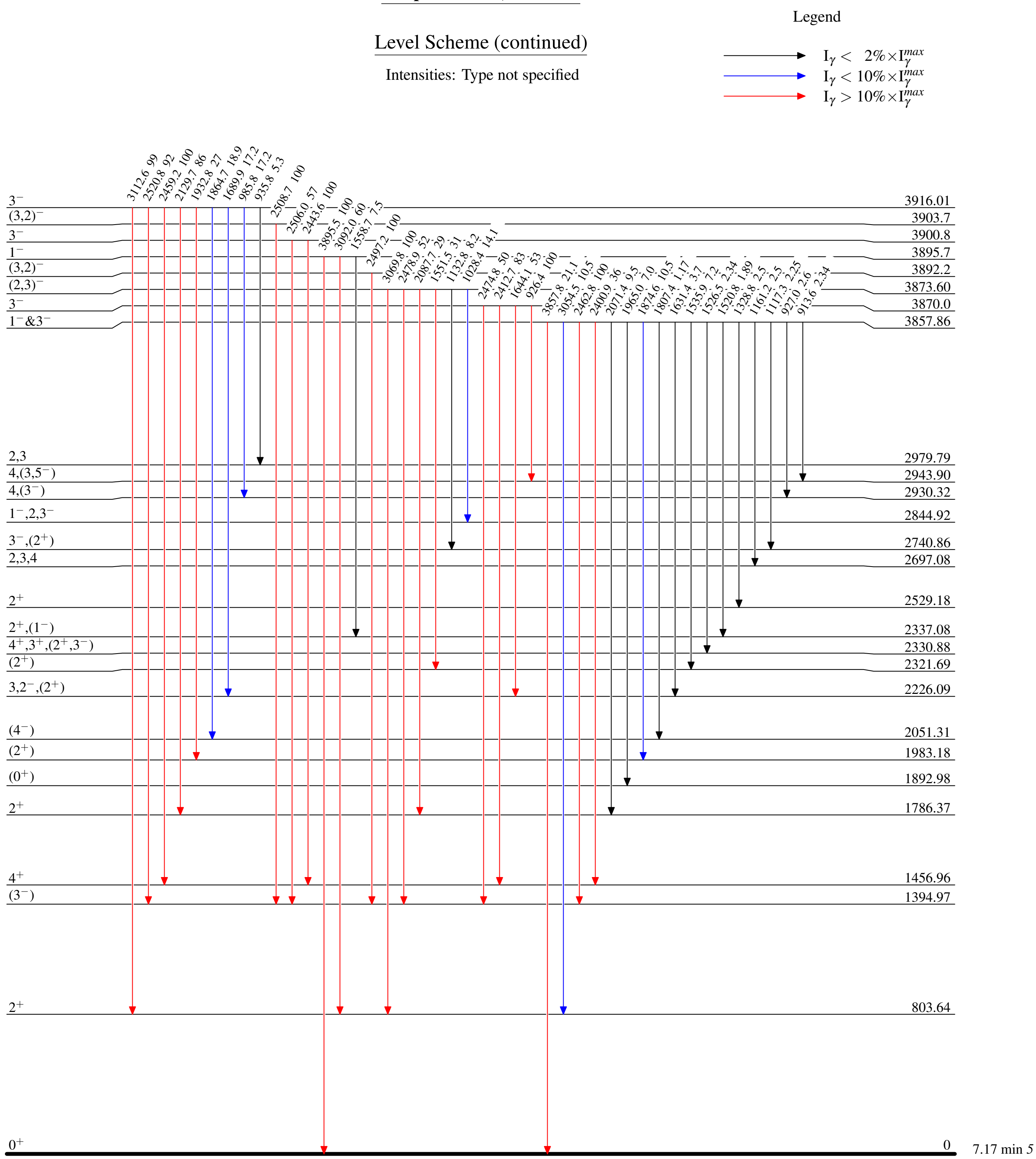


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

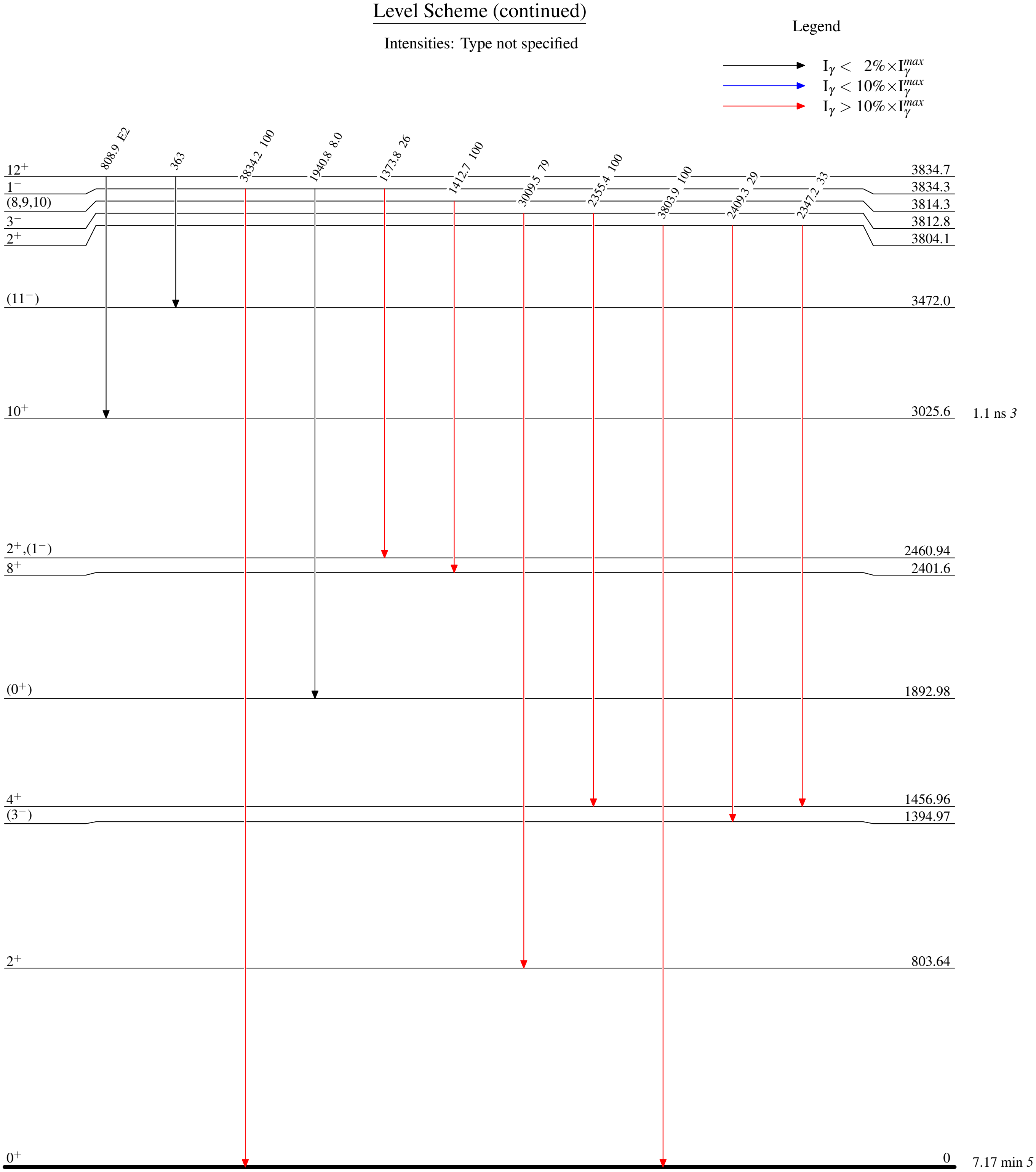


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

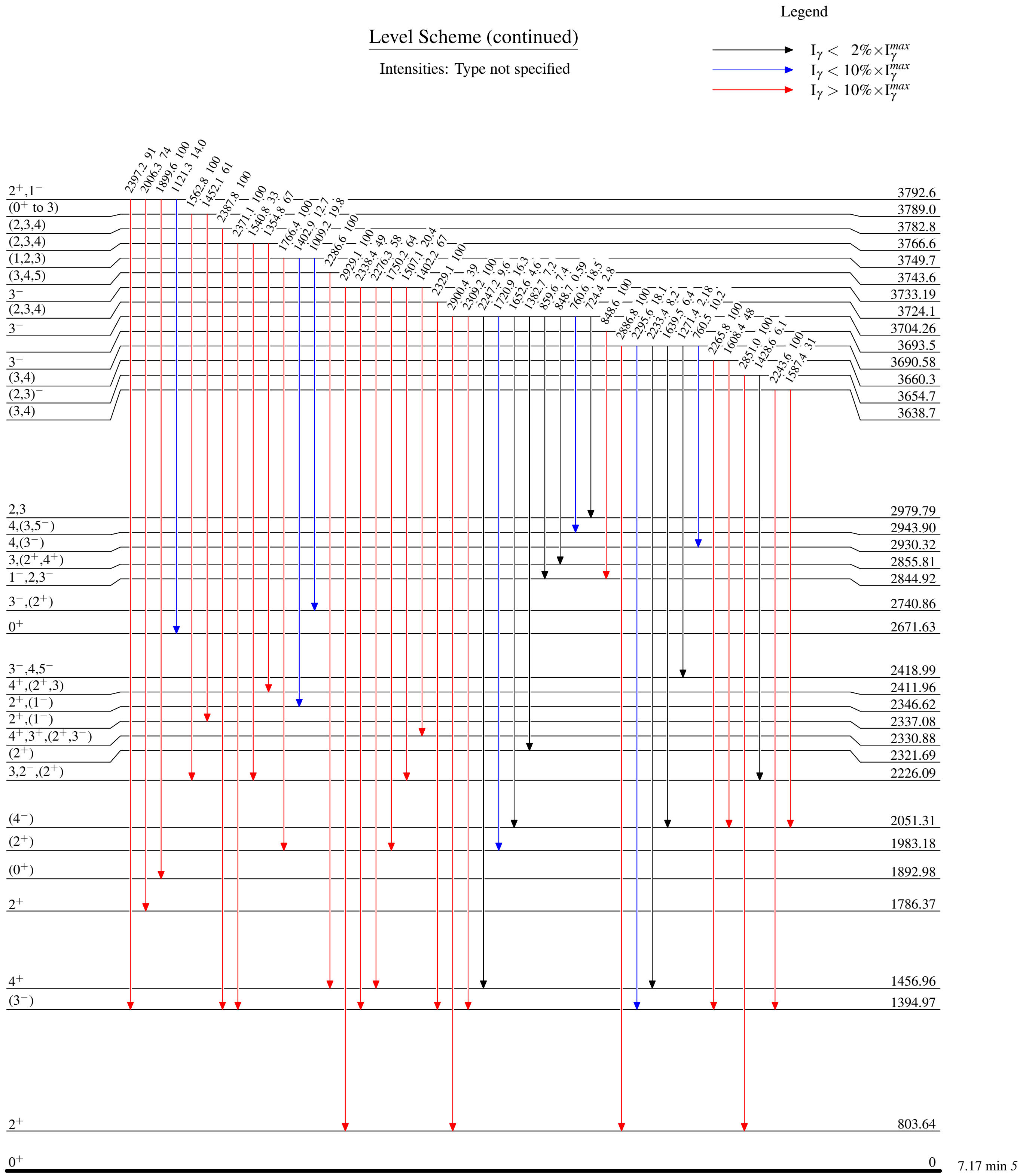


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

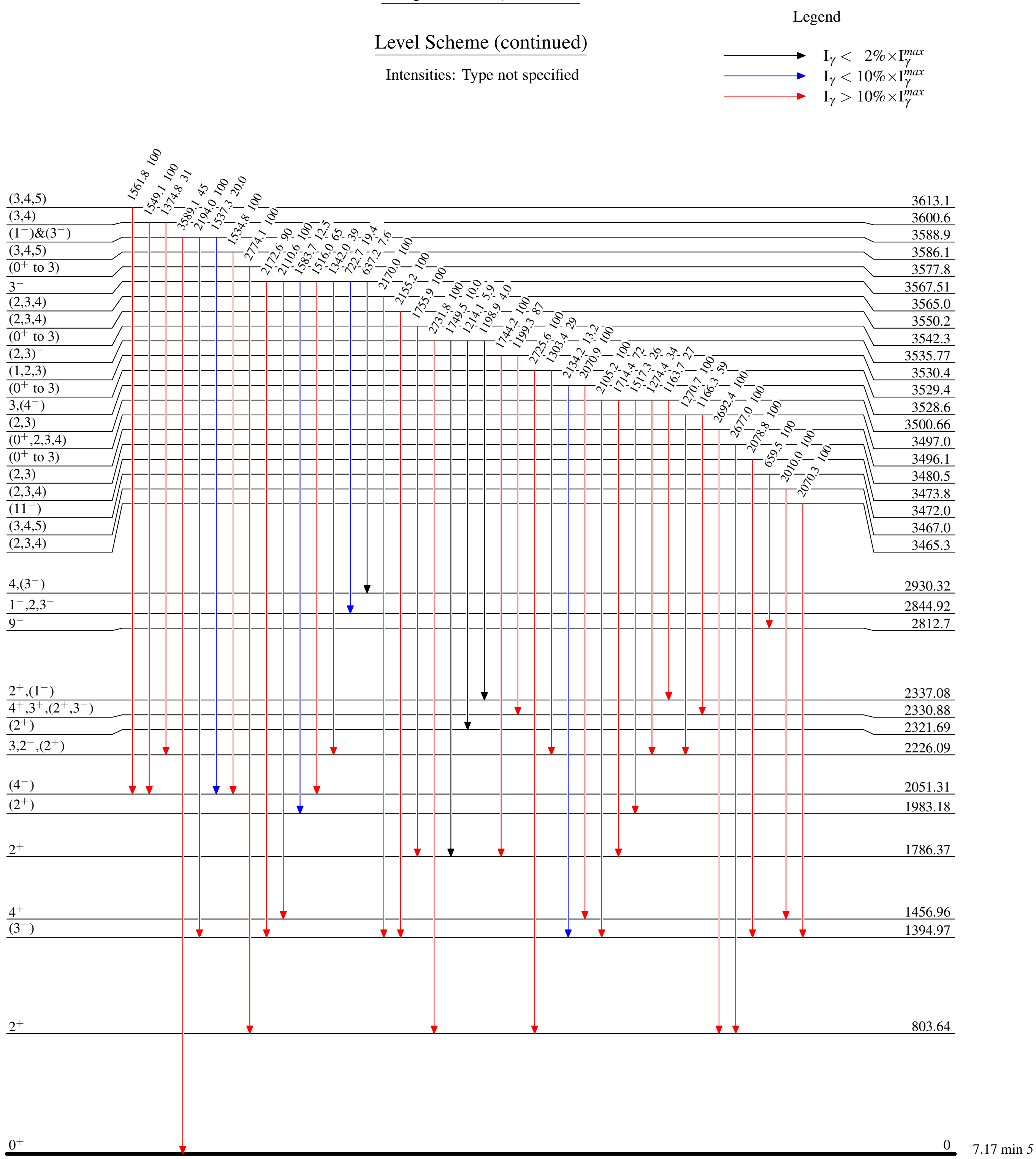


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

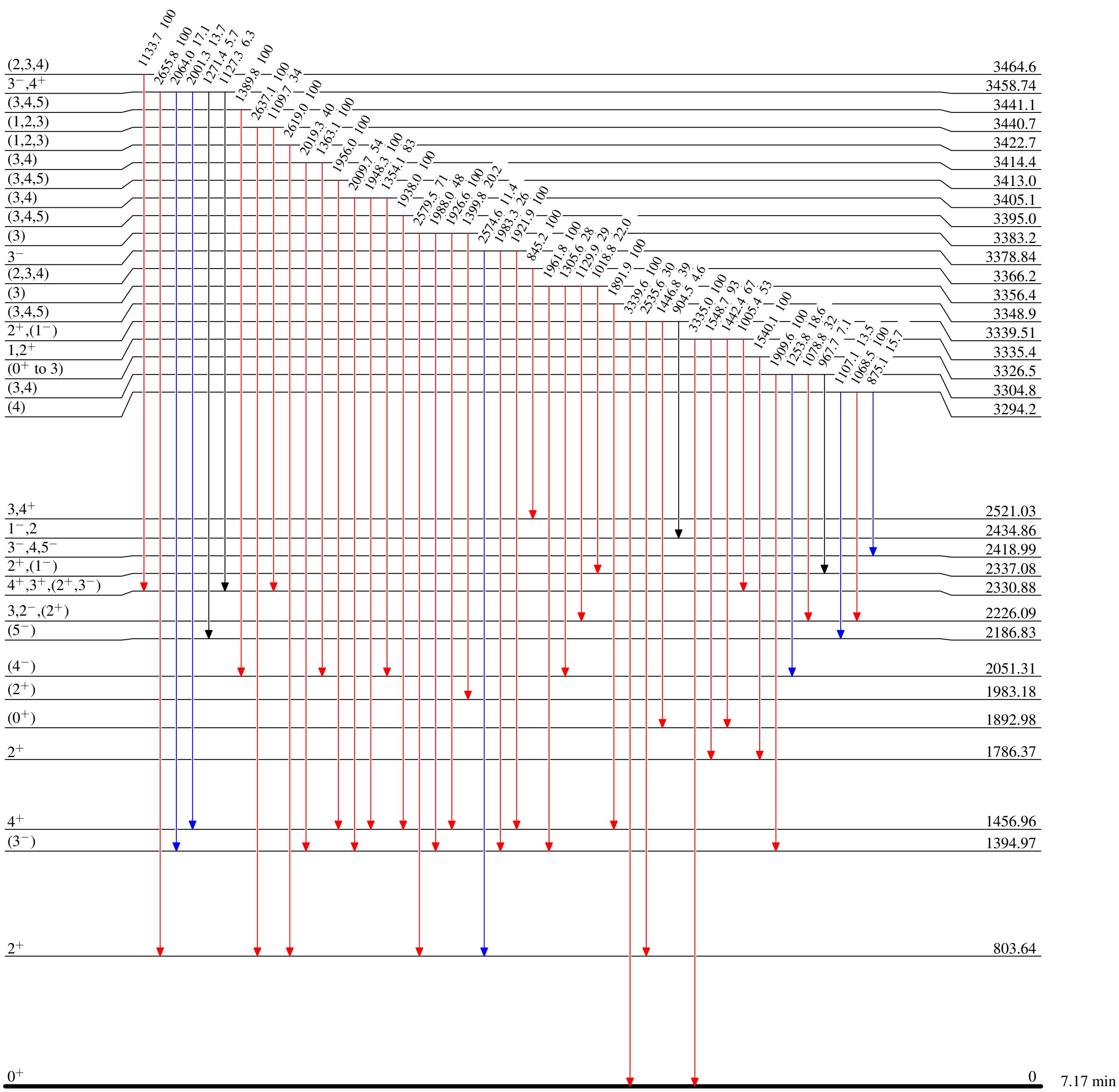
Intensities: Type not specified

Legend

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

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

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

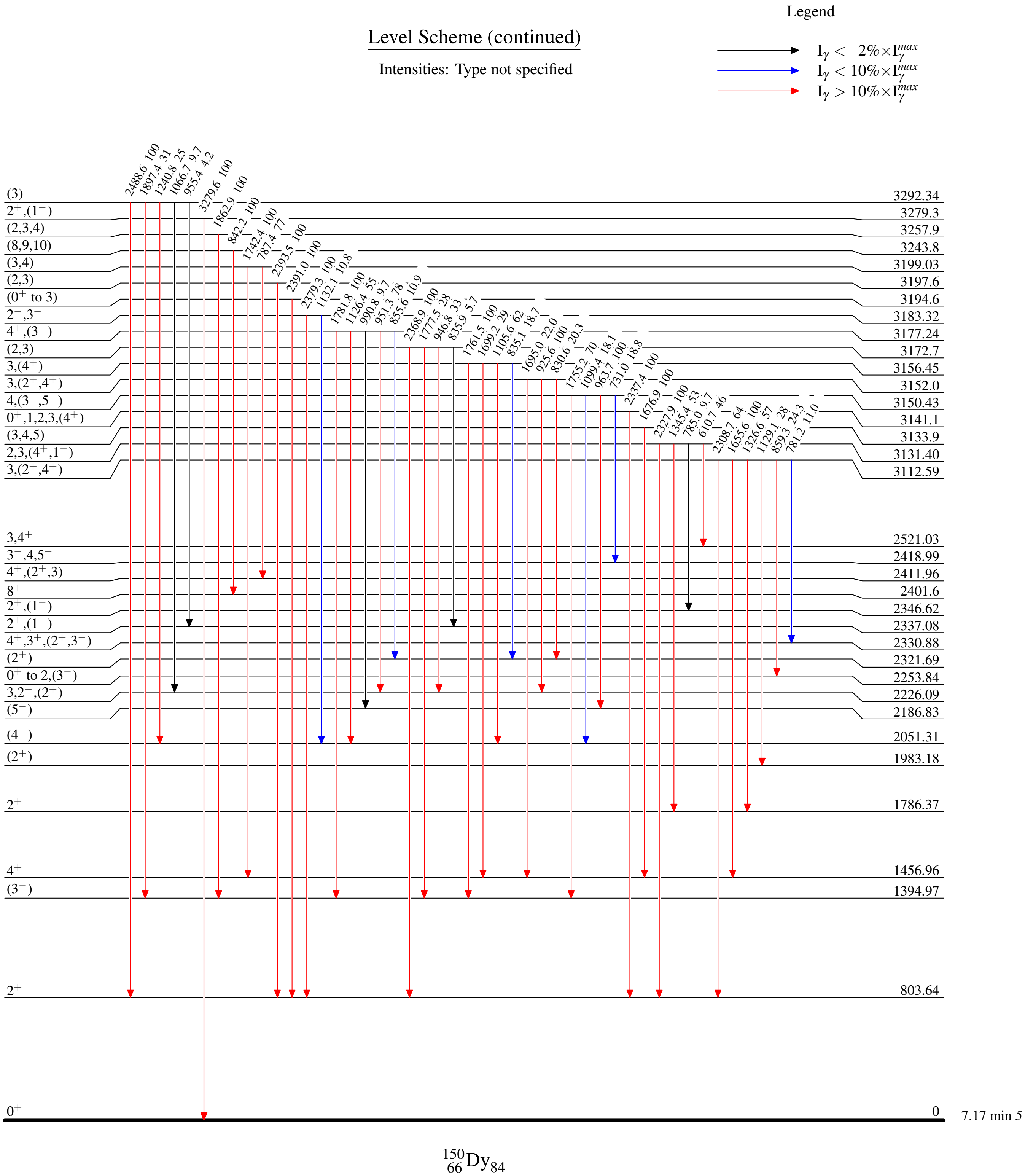


$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

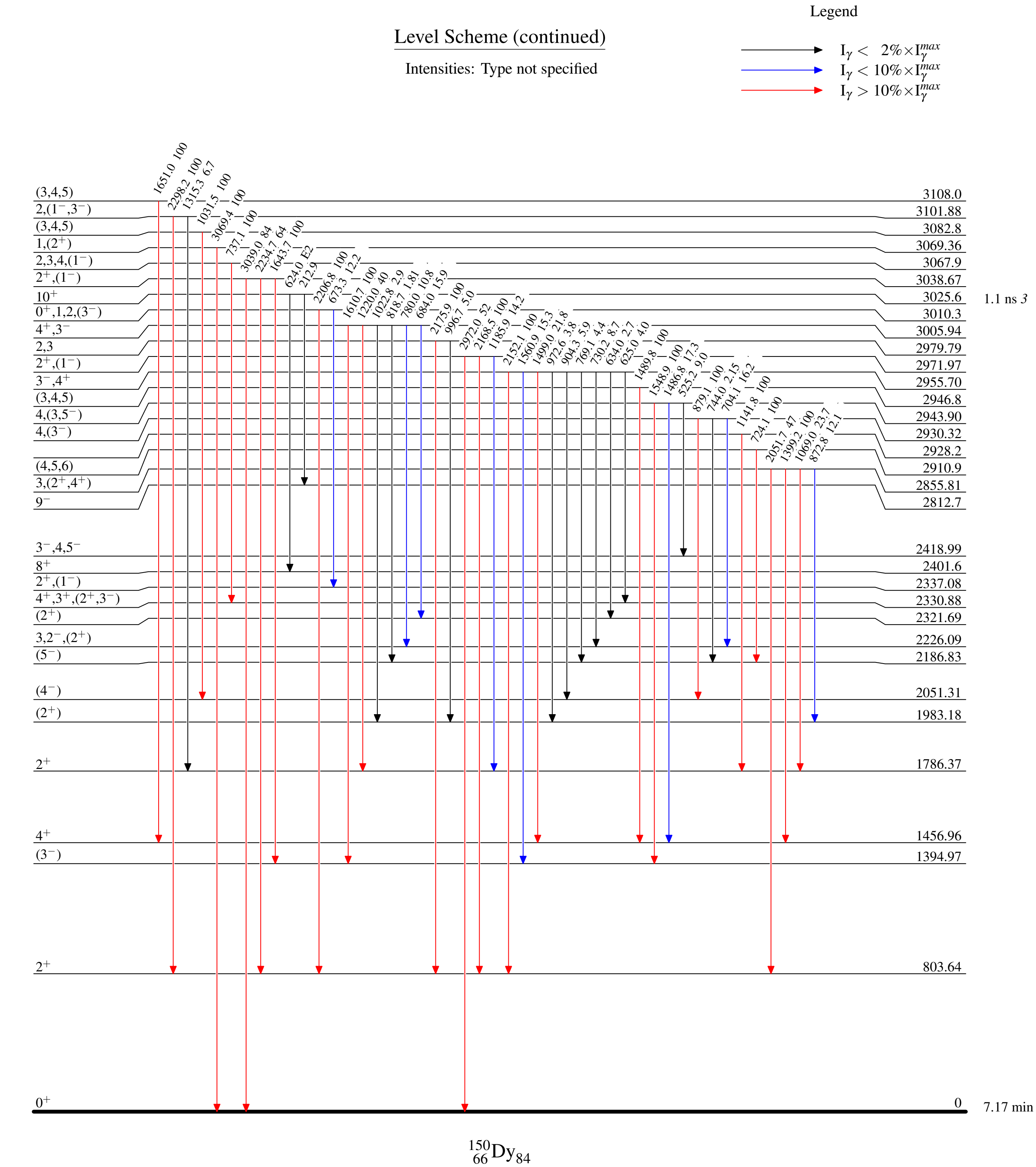
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



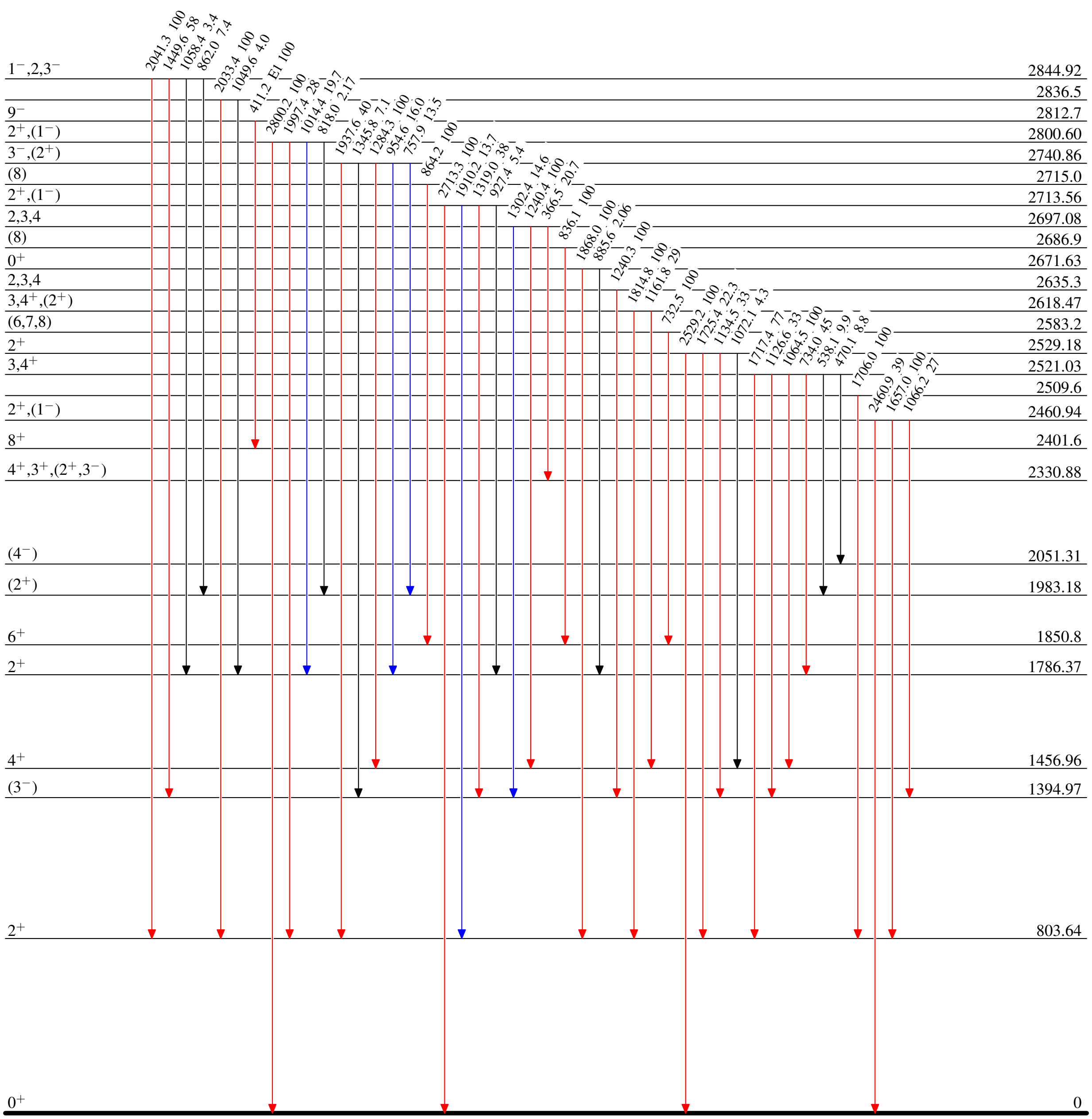
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

Legend

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



$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

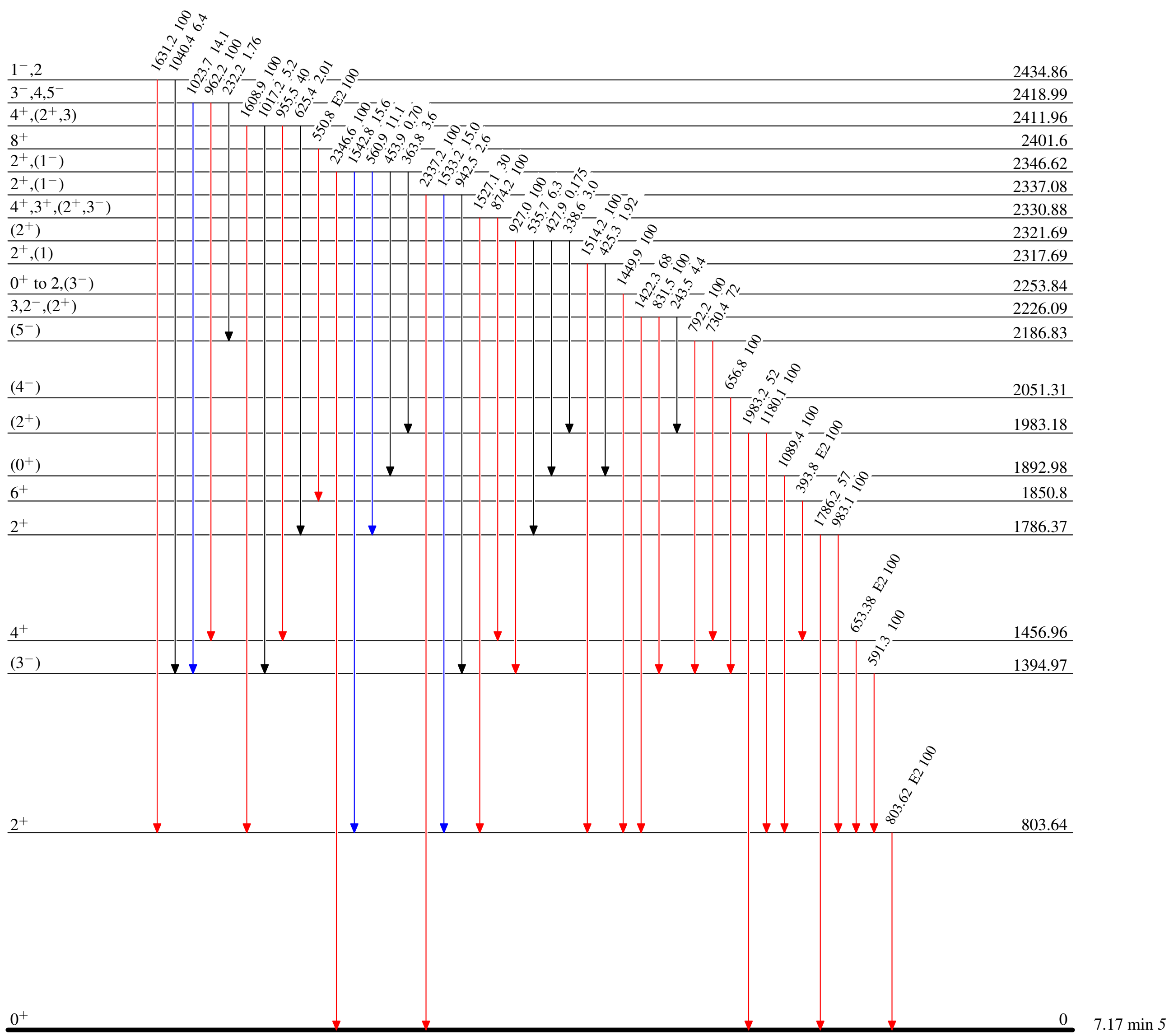
Intensities: Type not specified

Legend

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

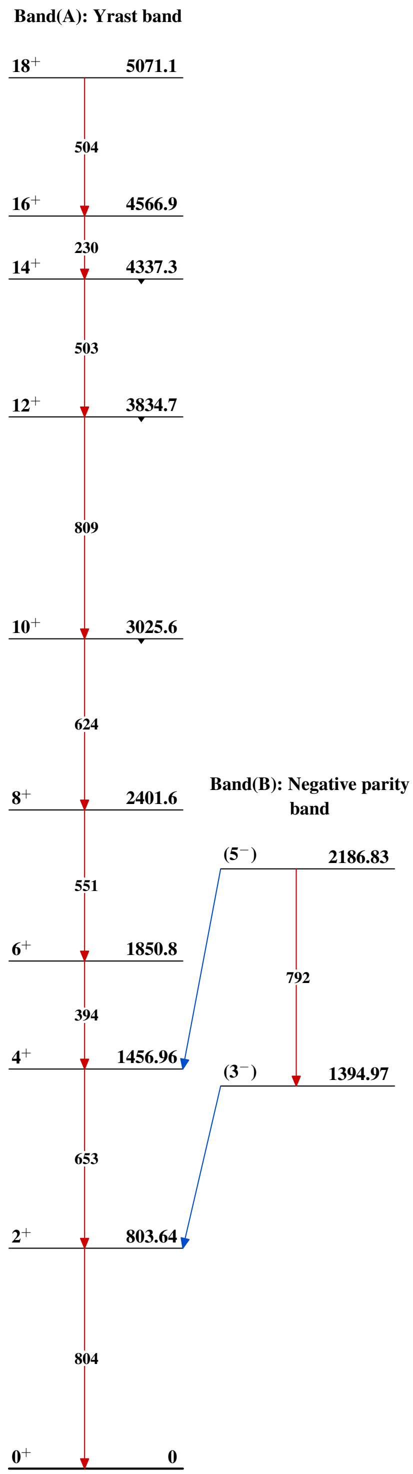
$I_\gamma < 10\% \times I_\gamma^{max}$

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



$^{150}_{66}$Dy$_{84}$

Adopted Levels, Gammas



$^{150}_{66}Dy_{84}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin	NDS 114, 1497 (2013)	31-Aug-2013

$Q(\beta^-)=-6513$ *13*; S(n)=9437 *5*; S(p)=5783 *6*; $Q(\alpha)=3727$ *4* 2017Wa10
$Q(\varepsilon)=6.0\times10^2$ *4*; S(2n)=16951 *5*; S(2p)=8932 *6* 2017Wa10
Additional information 1.
Additional information 2.

1993Ga10 (1993Ra08) present evidence for a hyperdeformed band from the reaction ^{120}Sn(^{37}Cl,p4nγ)^{152}Dy or ^{120}Sn(^{37}Cl,p3nγ)^{153}Dy, consisting of a cascade of stretched quadrupole (from DCO ratio) gammas with a spacing of 30 keV *3*, and tentative discrete transitions of 1237, 1266, 1299, 1327, 1356, 1383, 1411, 1442, 1471, 1501, 1525. The 30 keV γ-ray spacing leads to $\beta_2\geq0.9$, consistent with a hyperdeformed prolate shape with major-to-minor axis ratio of 3:1. The estimated spins of this band ranged from 78 to 98 (if dynamic moment of inertia=static moment of inertia) to 60 to 80 (from total Routhian surface calculation). 1995Vi02 (1995Lu03,1997Lu11) found evidence for a similar HD band, and assigned it to ^{152}Dy by showing that the 30 keV γ-ray ridge is in coin with ^{152}Dy γ's above the 17^+, 60-ns isomer. The intensity of this band was ≈10% of that for SD-1 band. This band is omitted here since its existence has not been confirmed in more recent work with better statistics (1996TwZZ,1997Lu05,1997Lu11,1997Sm11,2000Ri03).

See 2000Sm03 for suggested structure of the non SD bands.

^{152}Dy Levels

Cross Reference (XREF) Flags

A	^{152}Ho ε decay (161.8 s)	D	^{108}Pd(^{48}Ca,4nγ):SD
B	^{152}Ho ε decay (50.0 s)	E	^{156}Er α decay
C	Gd(α,xnγ),(HI,xnγ)		

E(level)[†]	J^π[‡]	$T_{1/2}$[#]	XREF	Comments
0.0[f]	0^+	2.38 h *2*	ABCDE	%ε+%β^+=99.900 *7*; %α=0.100 *7* $T_{1/2}$: weighted average of 2.41 h *5* (1962Si14) and 2.37 h *2* (1965Ma51). Others: 2.55 h *17* (1972Fl09), 1960Ba31, 1958To27, 1957Su23, 1953Ra02. %α: from 1974To07. $<r^2>^{1/2}$=5.10 fm 22 (2004An14).
613.83[f] *5*	2^+	10 ps *5*	ABC	J^π: E2 γ to 0^+ g.s.
1227.83[g] *16*	3^-		ABC	J^π: E2 γ from 5^- level; γ to 2^+ level.
1261.20[f] *8*	4^+	10.6 ps *16*	ABC	J^π: E2, ΔJ=2 γ to 2^+ level; g.s. rotational band.
1313.7 *3*	(2^+)		AB	J^π: γ to g.s.: J^π=1,2$^+$; γ from 4^+ level.
1448.2 *5*	(2^+)		A	J^π: (E2) γ to g.s.
1452.8 *4*	$1^+,2^+$		A	J^π: γ to g.s.: J=1,2$^+$; E2 γ to 2^+ level.
1697.9 *5*	1^-		A	J^π: E1 γ to g.s.
1750.71 *20*	4^+		AB	J^π: M1 γ to 4^+ level; γ to 2^+ level; γ from 6^+ level.
1781.90 *11*	5^-		BC	J^π: E1, ΔJ=1 γ to 4^+ level; γ from 6^+ level.
1840.6 *5*	$1^-,2^-,3^-$		A	J^π: E1 γ to 2^+ level.
1944.60[f] *10*	6^+	5.1 ps *21*	BC	J^π: E2, ΔJ=2 γ to 4^+ level; g.s. rotational band.
2071.02 *14*	6^+		B	J^π: E2 γ to 4^+. E2 γ from 8^+.
2296.56 *13*	$(7)^+$		B	J^π: M1 and (M1) γ's to 6^+ levels; no γ's to levels with J<6.
2342.63 *11*	7^-		BC	J^π: E2, ΔJ=2 γ to 5^- level; E1 γ to 6^+ level.
2437.42[f] *12*	8^+	10 ps *3*	BC	J^π: E2 γ to 6^+ level; log *ft*=4.56 for ε decay from 9^+ ^{152}Ho.
2703.09[h] *12*	8^+		BC	J^π: E2 γ to 6^+ level; log *ft*=5.26 for ε decay from 9^+ ^{152}Ho.
2726.7 *6*	$(8)^-$		B	J^π: M1 γ to 7^- level; no γ's to levels with J<7.
2906.05 *13*	9^-		BC	J^π: E2, ΔJ=2 γ to 7^- level; log *ft*=5.79 for ε decay from 9^+ ^{152}Ho.
2930.1 *6*	$(7)^-$		B	J^π: E1 γ to 6^+ level; no γ's to levels with J<6.
3149.7 *6*	8^-		B	J^π: E1 γ to 7^+ level; log *ft*=6.18 (log $f^{1u}t$=7.71) for ε decay from 9^+ ^{152}Ho.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{152}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	XREF	Comments
3160.63 *19*	$(10)^-$	3.9 ns *9*	CD	J^{π}: See comment in Gd(α,xnγ),(HI,xnγ).
3172.8 *4*	(10^-)		BC	J^{π}: (M1) γ to 9^- level; no γ to levels with J<9.
3173.37[f] *15*	10^+		BC	J^{π}: E2, ΔJ=2 γ to 8^+ level; log *ft*=5.77 for ε decay from 9^+ ^{152}Ho.
3183.69 *18*	10^+		BC	J^{π}: E2, ΔJ=2 γ to 8^+ level; log *ft*=5.72 for ε decay from 9^+ ^{152}Ho.
3227.6 *4*	8^-		B	J^{π}: E1 γ to 7^+ level; log *ft*=5.97 (log $f^{1u}t$=7.49) for ε decay from 9^+ ^{152}Ho.
3244.0 *4*	$(9)^+$		B	J^{π}: E2 γ to 7^+ level; log *ft*=6.08 for ε decay from 9^+ ^{152}Ho.
3395.19[h] *15*	10^+		C	
3487.1[j] *10*	(11^-)		C	J^{π}: Probable ΔJ=3 E2 γ to 9^-. Band structure.
3535.0 *6*	$8^-,9^-$		B	J^{π}: E1 γ to 8^+ level; log *ft*=5.95 (log $f^{1u}t$=7.42) for ε decay from 9^+ ^{152}Ho.
3820.20[f] *18*	12^+		BC	J^{π}: E2, ΔJ=2 γ to 10^+ level; γ to 11^- level.
3969.22 *24*	(12^-)		C	J^{π}: ΔJ=2, E2 γ to (10^-).
3992.0 *4*	(12^-)		C	J^{π}: γ to $(10)^-$ level; γ from (14^-) level.
4015.8 *6*	8^+		B	J^{π}: M1 γ to 7^+ level; log *ft*=5.99 for ε decay from 9^+ ^{152}Ho.
4016.89[h] *18*	12^+		C	
4125.6[j] *11*	(13^-)		C	
4135.1 *6*			C	
4430.20[f] *20*	14^+		C	J^{π}: E2, ΔJ=2 γ to 12^+ level; γ to 13^- level.
4495.0[i] *9*	(12^-)		C	J^{π}: Assigned as 12^- by 2000Sm03 on the basis of excitation energy arguments.
4650.49[g] *21*	14^+		C	
4659.0 *9*	(14^-)		C	J^{π}: The 690γ is assumed by 2000Sm03 to be ΔJ=2, E2.
4734.5 *3*	$(13^+,14^-)$		C	J^{π}: γ to (12^-) level; γ from 15^+ level.
4804.87 *24*	$13^+,14^+$		C	J^{π}: γ to 12^+. γ from 15^+.
4817.7[j] *11*	(15^-)		C	
5034.79 *21*	15^+		C	J^{π}: M1, ΔJ=1 γ to 14^+ level.
5088.1 *3*	17^+	60 ns *4*	C	J^{π}: E2 γ to 15^+. No transition to J<15. If J^{π} were 16^+, for example, one would have B(E2)(W.u.)=0.0016xBRANCHING, where branching is the branching ratio for the unobserved 658γ to the 14^+ 4430 level.
5177.7[i] *8*	(14^-)		C	
5215.59[h] *23*	16^+		C	
5341.7 *3*	18^+		C	J^{π}: M1, ΔJ=1 γ to 17^+ level; no γ's to levels with J<17.
5531.7[j] *11*	(17^-)		C	
5762.20[h] *25*	18^+		C	
5867.0 *4*	19^-		C	J^{π}: E1, ΔJ=1 γ to 18^+ level; no γ to level with J<18.
5884.3[i] *8*	(16^-)		C	
6051.6 *6*	(20^+)		C	J^{π}: stretched Q γ to 18^+ level.
6111.4 *4*	(20^+)		C	J^{π}: stretched Q γ to 18^+ level.
6129.4 *4*	21^-	9.5 ns *7*	C	μ=+11.6 *12* (1979Me01,2005St24) J^{π}: E2, ΔJ=2 γ to 19^- level; no γ to level with J<19. μ: TDPAD method (1979Me01).
6171.8 *4*			C	
6225.4[j] *5*	(20)		C	J^{π}: (D) γ to 19^- level.
6258.5[j] *11*	(19^-)		C	
6370.3[h] *3*	20^+		C	
6536.0 *11*			C	
6625.1[i] *8*	(18^-)		C	
6737.0 *5*	(22^+)		C	J^{π}: stretched Q γ to (20^+) level; γ to 21^- level.
7024.5[j] *11*	(21^-)		C	
7050.6[h] *3*	22^+	0.63[@] ps *6*	C	
7120.1 *4*	23^-		C	J^{π}: E2, ΔJ=2 γ to 21^- level; γ to (22^+) level.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{152}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	XREF	Comments
7227.0 *10*	(24$^+$)		C	J^{π}: stretched Q γ to (22$^+$) level; no γ to level with J<22.
7413.5[i] *8*	(20$^-$)		C	
7661.3 *5*	25$^-$		C	J^{π}: E2, ΔJ=2 γ to 23$^-$ level; no go to level with J<23.
7710.0 *10*	(24$^+$)		C	J^{π}: γ's to (22$^+$) and (24$^+$). No feeding to J<22.
7803.9[h] *3*	24$^+$	0.64[@] ps *5*	C	
7848.6[j] *11*	(23$^-$)		C	
7881.9 *5*	27$^-$	1.6 ns *2*	C	μ=+2.4 *14* (2004Fu36) J^{π}: E2, ΔJ=2 γ to 25$^-$ level; no γ to level with J<25.
8185.9 *12*			C	
8238.7[i] *8*	(22$^-$)		C	
8337.9 *12*			C	
8628.8[h] *4*	26$^+$	0.172[@] ps *14*	C	
8735.9[j] *11*	(25$^-$)		C	
8848.8 *6*	28$^+$	24 ps *8*	C	J^{π}: E1, ΔJ=1 γ to 27$^-$ level; no γ to level with J<27.
8996.2 *6*	29$^+$	35 ps *10*	C	J^{π}: M1, ΔJ=1 γ to 28$^+$ level; no γ to level with J<28.
9117.5[i] *8*	(24$^-$)		C	
9180? *2*	(26$^+$ to 30$^+$)		E	J^{π}: γ from (28$^+$).
9398.6 *6*	30$^+$	7 ps *1*	C	J^{π}: M1, ΔJ=1 γ to 29$^+$ level; no γ to level with J<29.
9523.0[h] *4*	28$^+$	0.168[@] ps *14*	C	
9687.9[j] *11*	(27$^-$)		C	
10012.3 *8*			C	
10048.5[i] *8*	(26$^-$)		C	
10110.2 *6*	31$^+$		C	J^{π}: M1, ΔJ=1 γ to 30$^+$ level; E2, ΔJ=2 γ to 29$^+$ level.
10257.2 *9*			C	
10484.3[h] *4*	30$^+$	0.112[@] ps *7*	C	
10541.1 *7*	(32$^+$)	6.2 ps *6*	C	J^{π}: (M1) γ to 31$^+$ level; γ to 30$^+$ level.
10643.0[&] *16*	(24$^+$)		E	Q(intrinsic)=17.5 *+4−2* (1997Ni01), 17.5 *2* (1996Sa15), 18 *3* (1991Be12). J^{π}: J^{π}=24$^+$ proposed by 1994Da20. Theoretical analysis suggests J=24 or 26 (1993Ra07).
10705.3[j] *11*	(29$^-$)		C	
10795.1 *7*	(33$^+$)	15 ps *5*	C	J^{π}: Q γ to 31$^+$ level; D γ to (32$^+$) level.
10961.0 *9*			C	
11032.7[i] *8*	(28$^-$)		C	
11209.0 *8*			C	
11245.4[&] *16*	(26$^+$)		E	
11395.4 *10*			C	
11442.9 *9*			C	
11511.9[h] *4*	32$^+$	0.063[@] ps *7*	C	
11574.6 *7*	(34$^-$)		C	J^{π}: E1, ΔJ=1 γ to (33$^+$) level.
11602.1 *9*			C	
11788.7[j] *11*	(31$^-$)		C	
11793.0 *11*			C	
11859.0 *9*			C	
11892.9[&] *16*	(28$^+$)		E	
11963.2 *8*	(35$^-$)	1.2 ps *4*	C	J^{π}: M1, ΔJ=1 γ to (34$^-$) level.
12071.9[i] *8*	(30$^-$)		C	
12178.9 *9*			C	
12325.1 *10*	(36$^-$)		C	J^{π}: D, ΔJ=1 γ to (35$^-$) level; γ to (34$^-$) level.
12428.7 *9*			C	
12585.6[&] *16*	(30$^+$)	30 fs	E	
12604.3[h] *4*	34$^+$	0.056[@] ps *7*	C	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{152}Dy Levels (continued)

E(level)[†]	Jπ[‡]	T1/2[#]	XREF	Comments
12716.9 *10*			C	
12938.2[j] *11*	(33⁻)		C	
12946.2 *13*			C	
13048.9 *11*			C	
13117.1 *14*			C	
13169.0[i] *9*	(32⁻)		C	
13253.4 *14*			C	
13323.7[&] *16*	(32⁺)	22 fs	E	
13396.7 *10*			C	
13493.1 *14*			C	
13517.1 *14*			C	
13687.1 *14*			C	
13721.9 *14*			C	
13762.7[h] *4*	36⁺	0.035[@] ps *7*	C	
14107.7[&] *16*	(34⁺)	16 fs	E	
14154.1[j] *11*	(35⁻)		C	
14237.4[e] *17*	(31⁻)		E	
14325.3[i] *9*	(34⁻)		C	
14484.9 *17*			C	
14663.2 *17*			C	
14741.9 *17*			C	
14937.6[&] *16*	(36⁺)	12 fs	E	
14984.0[h] *4*	38⁺	0.077[@] ps *7*	C	
14998.9[e] *17*	(33⁻)		E	
15435.6[j] *11*	(37⁻)		C	
15543.0[i] *9*	(36⁻)		C	
15803.4[e] *17*	(35⁻)		E	
15814.1[&] *16*	(38⁺)	9.3 fs	E	
16267.0[h] *5*	40⁺	0.063[@] ps *14*	C	
16397.0 *20*			C	
16653.0[e] *17*	(37⁻)		E	
16737.3[&] *16*	(40⁺)	7.1 fs	E	
16778.9[j] *11*	(39⁻)		C	
16824.4[i] *9*	(38⁻)		C	
17539.0 *22*			C	
17547.9[e] *17*	(39⁻)		E	
17608.6[h] *5*	(42⁺)	<0.021[@] ps	C	Jπ: member of rotational band.
17707.5[&] *16*	(42⁺)	5.5 fs	E	
18172.1[i] *9*	(40⁻)		C	
18179.2[j] *11*	(41⁻)		C	
18489.0[e] *17*	(41⁻)		E	
18724.9[&] *17*	(44⁺)	4.4 fs	E	
19008.4[h] *5*	(44⁺)	<0.021[@] ps	C	Jπ: member of rotational band.
19475.1[e] *17*	(43⁻)		E	
19590.2[i] *11*	(42⁻)		C	
19789.8[&] *17*	(46⁺)	3.5 fs	E	
20467.4[h] *5*	(46⁺)	<0.021[@] ps	C	Jπ: member of rotational band.
20506.5[e] *17*	(45⁻)		E	
20902.5[&] *17*	(48⁺)	2.8 fs	E	
21077.8[i] *12*	(44⁻)		C	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{152}Dy Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
21583.8[e] 17	(47⁻)		E	
22063.0[&] 17	(50⁺)	2.3 fs	E	
22706.5[e] 17	(49⁻)		E	
23271.6[&] 17	(52⁺)	1.8 fs	E	
23873.6[e] 17	(51⁻)		E	
24528.2[&] 17	(54⁺)	1.5 fs	E	
25085.2[e] 17	(53⁻)		E	
25833.0[&] 17	(56⁺)	1.2 fs	E	
26341.9[e] 18	(55⁻)		E	
27185.9[&] 17	(58⁺)	1.0 fs	E	
27641.8[e] 18	(58⁻)		E	
28587.2[&] 17	(60⁺)	0.90 fs	E	
28986.1[e] 18	(59⁻)		E	
30036.8[&] 17	(62⁺)	0.69 fs	E	
30374.5[e] 18	(61⁻)		E	
31534.6[&] 17	(64⁺)		E	
31808.0[e] 21	(63⁻)		E	
33080.2[&] 18	(66⁺)		E	
33286.1[e] 23	(65⁻)		E	
34660.2[&] 21	(68⁺)		E	
x[a]	(34)		E	Additional information 3.
825.9+x[a] 10	(36)		E	
1681.3+x[a] 11	(38)		E	
2576.5+x[a] 11	(40)		E	
3508.7+x[a] 11	(42)		E	
4478.6+x[a] 12	(44)		E	
5487.1+x[a] 13	(46)		E	
6536.3+x[a] 13	(48)		E	
7628.9+x[a] 13	(50)		E	
8766.5+x[a] 14	(52)		E	
9949.9+x[a] 14	(54)		E	
11180.5+x[a] 14	(56)		E	
12458.2+x[a] 14	(58)		E	
13785.7+x[a] 15	(60)		E	
15162.8+x[a] 18	(62)		E	
16586.4+x[a] 21	(64)		E	
18063.5+x[a] 23	(66)		E	
y[b]	(36)		E	Additional information 4.
793.00+y[b] 20	(38)		E	
1632.7+y[b] 3	(40)		E	
2523.9+y[b] 4	(42)		E	
3468.7+y[b] 4	(44)		E	
4466.9+y[b] 5	(46)		E	
5519.3+y[b] 5	(48)		E	
6624.2+y[b] 6	(50)		E	
7781.1+y[b] 6	(52)		E	
8989.0+y[b] 6	(54)		E	
10249.4+y[b] 7	(56)		E	

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Adopted Levels, Gammas (continued)

^{152}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
11563.2+y[b] *7*	(58)	E	
12931.9+y[b] *7*	(60)	E	
14357.7+y[b] *8*	(62)	E	
15840.4+y[b] *8*	(64)	E	
17384.5+y[b] *8*	(66)	E	
18989.2+y[b] *8*	(68)	E	
z[c]	(27^-)	E	Additional information 5.
669.6+z[c] *5*	(29^-)	E	
1390.6+z[c] *6*	(31^-)	E	
2163.4+z[c] *6*	(33^-)	E	
2988.4+z[c] *6*	(35^-)	E	
3865.2+z[c] *7*	(37^-)	E	
4794.2+z[c] *7*	(39^-)	E	
5772.9+z[c] *7*	(41^-)	E	
6802.7+z[c] *8*	(43^-)	E	
7883.5+z[c] *8*	(45^-)	E	
9014.1+z[c] *8*	(47^-)	E	
10194.4+z[c] *8*	(49^-)	E	
11422.4+z[c] *9*	(51^-)	E	
12703.4+z[c] *10*	(53^-)	E	
14031.2+z[c] *12*	(55^-)	E	
15407.1+z[c] *15*	(57^-)	E	
u[d]	(26^-)	E	Additional information 6.
642.1+u[d] *5*	(28^-)	E	
1337.0+u[d] *7*	(30^-)	E	
2084.0+u[d] *7*	(32^-)	E	
2882.8+u[d] *7*	(34^-)	E	
3733.9+u[d] *8*	(36^-)	E	
4635.2+u[d] *8*	(38^-)	E	
5589.0+u[d] *8*	(40^-)	E	
6594.1+u[d] *10*	(42^-)	E	
7649.1+u[d] *10*	(44^-)	E	
8754.1+u[d] *10*	(46^-)	E	
9909.9+u[d] *11*	(48^-)	E	
11115.7+u[d] *11*	(50^-)	E	
12369.5+u[d] *12*	(52^-)	E	
13673.7+u[d] *13*	(54^-)	E	

† From a least-squares fit to the Eγ data. For the fit, Eγ values quoted with no uncertainties are assigned ΔE=0.5 keV when given to the nearest tenth of a keV and ΔE=1 keV when quoted only to the nearest keV.

‡ In addition to the arguments given, the transitions within the normal bands are ΔJ=2, from $\gamma(\theta)$ and DCO in Gd(α,xnγ),(HI,xnγ). assignments for SD-1 are from 2002La02, those for SD-6 are from 2002La35, and for the other SD bands are from 1994Da20. an implicit assumption is that J increases with level energy, an assumption backed by the absence of transitions to levels with lower J.

From Gd(α,xnγ),(HI,xnγ) for normal deformed levels and from (^{48}Ca,4nγ):SD dataset for superdeformed levels, unless otherwise noted.

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Adopted Levels, Gammas (continued)

^{152}Dy Levels (continued)

[@] From DSAM in Gd(α,xnγ),(HI,xnγ) (2000Sm03).

[&] Band(A): SD-1 band (1986Tw01,1994Da20,1991Be12,2002La02,2002La35,1997Ni01, 1996Sa15,1995Ce08,1992Sm01,1992Mu10). Q(intrinsic)=17.5 *+4−2* (1997Ni01), 17.5 *2* (1996Sa15), 18 *4* (1995Ce08), 18 *3* (1991Be12). Configuration: $\pi6^{+4}\nu7^{+2}$ (1993Cu06,1991Be12). Percent population in different reactions: 1.47 *7* in (^{48}Ca,4nγ) E= 200 MeV (1992Sm01); 1.80 *15* (E=317 MeV), 2.25 *19* (E=328 MeV), 2.07 *20* (E=339 MeV) in ^{74}Ge(^{82}Se,4nγ) (1992Sm01); 1.12 in ^{120}Sn(^{36}S,4nγ) E= 170 MeV (1992Sm01); 0.7 *2* (E=160 MeV), 1.1 *3* (E=170 MeV) in ^{124}Sn(^{33}S,5nγ) (1992Mu10).

[a] Band(B): SD-2 band (1994Da20). If π=+, configuration=($\pi6^{+4}$)($\pi7^{+1}$)(π1/2[301]$^{-1}$)($\nu7^{+2}$) (1994Da20). If π=−, configuration=($\pi6^{+3}$)($\pi7^{+1}$)(π3/2[651]$^{-1}$)($\nu7^{+2}$) (1994Da20). Relative population=7.5% *15* of SD-1 band (1994Da20).

[b] Band(C): SD-3 band (1994Da20). Relative population=8.4% *11* of SD-1 band (1994Da20).

[c] Band(D): SD-4 band (1994Da20). SD-4 and SD-5 are possible signature partners with configuration=($\pi6^{+4}$)($\nu7^{+1}$)(ν,5/2[402]$^{+1}$) (1994Da20). Relative population=4% *1* of SD-1 band (1994Da20).

[d] Band(E): SD-5 band (1994Da20). SD-4 and SD-5 are possible signature partners with configuration=($\pi6^{+4}$)($\nu7^{+1}$)(ν,5/2[402]$^{+1}$) (1994Da20). Relative population=4% *1* of SD-1 band (1994Da20).

[e] Band(F): SD-6 band (1994Da20,2002La35). Possible configuration: $\pi6^4\nu7^3$ (yrast SD of ^{153}Dy) coupled to a hole in any of the following neutron orbitals: 1/2[411], 5/2[642], 1/2[651] (1994Da20). Relative population: 5% *1* of SD-1 band (1994Da20). Interconnections of SD-6 to SD-1 band reported by 2002La35 with 53% *8* of the decay of this band proceeding through SD-1 band.

[f] Band(G): Quasi-vibrational yrast state.

[g] Band(H): Negative parity yrast band built on the 1228 level.

[h] Band(I): Positive parity ΔJ=2 quasi-rotational band built on the g.s. band.

[i] Band(J): Negative parity ΔJ=2 band built on the 4495 level.

[j] Band(K): Negative parity ΔJ=2 band built on the 3487 level.

Adopted Levels, Gammas (continued)

$\gamma(^{152}$Dy)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
613.83	2^+	613.83 5		0.0	0^+	E2	0.00905	α(K)=0.00742 11; α(L)=0.001277 18; α(M)=0.000285 4; α(N+..)=7.50×10^{-5} 11 α(N)=6.54×10^{-5} 10; α(O)=9.17×10^{-6} 13; α(P)=4.22×10^{-7} 6 B(E2)(W.u.)=13 +14−4
1227.83	3^-	613.7 5		613.83	2^+			
1261.20	4^+	647.37 6		613.83	2^+	E2	0.00797	B(E2)(W.u.)=9.6 +18−12 α(K)=0.00655 10; α(L)=0.001106 16; α(M)=0.000246 4; α(N+..)=6.49×10^{-5} 9 α(N)=5.66×10^{-5} 8; α(O)=7.96×10^{-6} 12; α(P)=3.74×10^{-7} 6
1313.7	(2^+)	700.0	100	613.83	2^+	(E2)	0.00664	α(K)=0.00548 8; α(L)=0.000900 13; α(M)=0.000200 3; α(N+..)=5.27×10^{-5} 8 α(N)=4.59×10^{-5} 7; α(O)=6.49×10^{-6} 10; α(P)=3.14×10^{-7} 5
		1313.7	43	0.0	0^+			
1448.2	(2^+)	1448.2		0.0	0^+	(E2)	1.51×10^{-3}	α(K)=0.001236 18; α(L)=0.0001728 25; α(M)=3.77×10^{-5} 6; α(N+..)=6.67×10^{-5} 10 α(N)=8.71×10^{-6} 13; α(O)=1.269×10^{-6} 18; α(P)=7.14×10^{-8} 10; α(IPF)=5.66×10^{-5} 8
1452.8	$1^+,2^+$	839.1	100	613.83	2^+	E2	0.00442	α(K)=0.00369 6; α(L)=0.000572 8; α(M)=0.0001265 18; α(N+..)=3.35×10^{-5} 5 α(N)=2.91×10^{-5} 4; α(O)=4.16×10^{-6} 6; α(P)=2.12×10^{-7} 3
		1452.6	32	0.0	0^+			
1697.9	1^-	1697.9		0.0	0^+	E1	8.41×10^{-4}	α(K)=0.000423 6; α(L)=5.51×10^{-5} 8; α(M)=1.192×10^{-5} 17; α(N+..)=0.000351 5 α(N)=2.75×10^{-6} 4; α(O)=4.04×10^{-7} 6; α(P)=2.38×10^{-8} 4; α(IPF)=0.000347 5
1750.71	4^+	437.0	5	1313.7	(2^+)			
		489.5	100	1261.20	4^+	M1	0.0314	α(K)=0.0266 4; α(L)=0.00376 6; α(M)=0.000824 12; α(N+..)=0.000220 4 α(N)=0.000191 3; α(O)=2.80×10^{-5} 4; α(P)=1.624×10^{-6} 24
		1136.8	41	613.83	2^+			
1781.90	5^-	520.66 8	100 16	1261.20	4^+	E1	0.00469	α(K)=0.00400 6; α(L)=0.000548 8; α(M)=0.0001192 17; α(N+..)=3.16×10^{-5} 5 α(N)=2.74×10^{-5} 4; α(O)=3.97×10^{-6} 6; α(P)=2.18×10^{-7} 3
		554.05 13	54 14	1227.83	3^-	E2	0.01166	α(K)=0.00947 14; α(L)=0.001702 24; α(M)=0.000382 6; α(N+..)=0.0001001 14 α(N)=8.74×10^{-5} 13; α(O)=1.216×10^{-5} 17; α(P)=5.35×10^{-7} 8
1840.6	$1^-,2^-,3^-$	1226.8		613.83	2^+	E1	8.95×10^{-4}	α(K)=0.000737 11; α(L)=9.70×10^{-5} 14; α(M)=2.10×10^{-5} 3; α(N+..)=4.05×10^{-5} 6 α(N)=4.85×10^{-6} 7; α(O)=7.10×10^{-7} 10; α(P)=4.12×10^{-8} 6; α(IPF)=3.49×10^{-5} 6
1944.60	6^+	162.6 2	0.7 3	1781.90	5^-	[E1]	0.0841	B(E1)(W.u.)=8×10^{-5} +6−4 α(K)=0.0708 11; α(L)=0.01042 15; α(M)=0.00228 4; α(N+..)=0.000597 9 α(N)=0.000520 8; α(O)=7.27×10^{-5} 11; α(P)=3.49×10^{-6} 5

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$\gamma(^{152}Dy)$ (continued)

E_i(level)	J_i^π	E_γ‡	I_γ‡	E_f	J_f^π	Mult.#	α†	$I_{(\gamma+ce)}$	Comments
1944.60	6^+	683.47 *8*	100	1261.20	4^+	E2	0.00702		α(K)=0.00579 *9*; α(L)=0.000958 *14*; α(M)=0.000213 *3*; α(N+..)=5.62×10^{-5} *8* α(N)=4.89×10^{-5} *7*; α(O)=6.91×10^{-6} *10*; α(P)=3.31×10^{-7} *5* B(E2)(W.u.)=16 *+10−5*
2071.02	6^+	126.3 *3*	11 *3*	1944.60	6^+	M1	1.230 *20*		α(K)=1.035 *16*; α(L)=0.1519 *24*; α(M)=0.0334 *6*; α(N+..)=0.00891 *14* α(N)=0.00772 *12*; α(O)=0.001129 *18*; α(P)=6.45×10^{-5} *10*
		320.3 *2*	58 *3*	1750.71	4^+	E2	0.0529		α(K)=0.0401 *6*; α(L)=0.00991 *14*; α(M)=0.00228 *4*; α(N+..)=0.000588 *9* α(N)=0.000517 *8*; α(O)=6.85×10^{-5} *10*; α(P)=2.12×10^{-6} *3*
		809.7 *2*	100 *16*	1261.20	4^+	E2	0.00478		α(K)=0.00398 *6*; α(L)=0.000624 *9*; α(M)=0.0001380 *20*; α(N+..)=3.65×10^{-5} *6* α(N)=3.17×10^{-5} *5*; α(O)=4.53×10^{-6} *7*; α(P)=2.29×10^{-7} *4*
2296.56	$(7)^+$	225.50 *15*	63 *4*	2071.02	6^+	M1	0.244		α(K)=0.206 *3*; α(L)=0.0299 *5*; α(M)=0.00656 *10*; α(N+..)=0.001753 *25* α(N)=0.001518 *22*; α(O)=0.000222 *4*; α(P)=1.276×10^{-5} *18*
		352.2 *3*	100 *6*	1944.60	6^+	(M1)	0.0738		α(K)=0.0624 *9*; α(L)=0.00894 *13*; α(M)=0.00196 *3*; α(N+..)=0.000523 *8* α(N)=0.000453 *7*; α(O)=6.65×10^{-5} *10*; α(P)=3.84×10^{-6} *6*
2342.63	7^-	398.03 *8*	100 *9*	1944.60	6^+	E1	0.00867		α(K)=0.00736 *11*; α(L)=0.001024 *15*; α(M)=0.000223 *4*; α(N+..)=5.91×10^{-5} *9* α(N)=5.13×10^{-5} *8*; α(O)=7.37×10^{-6} *11*; α(P)=3.96×10^{-7} *6*
		560.69 *10*	72 *9*	1781.90	5^-	E2	0.01131		α(K)=0.00920 *13*; α(L)=0.001645 *23*; α(M)=0.000369 *6*; α(N+..)=9.67×10^{-5} *14* α(N)=8.45×10^{-5} *12*; α(O)=1.176×10^{-5} *17*; α(P)=5.20×10^{-7} *8*
2437.42	8^+	140.8 *1*	2.5 *3*	2296.56	$(7)^+$	M1	0.904		B(M1)(W.u.)=0.018 *+8−5* α(K)=0.761 *11*; α(L)=0.1115 *16*; α(M)=0.0245 *4*; α(N+..)=0.00654 *10* α(N)=0.00567 *8*; α(O)=0.000829 *12*; α(P)=4.74×10^{-5} *7*
		366.3 *2*	3.4 *4*	2071.02	6^+	E2	0.0356		B(E2)(W.u.)=5.5 *+25−15* α(K)=0.0276 *4*; α(L)=0.00622 *9*; α(M)=0.001418 *20*; α(N+..)=0.000368 *6* α(N)=0.000323 *5*; α(O)=4.33×10^{-5} *7*; α(P)=1.488×10^{-6} *21*
		492.85 *6*	100 *5*	1944.60	6^+	E2	0.01573		B(E2)(W.u.)=37 *+16−9* α(K)=0.01265 *18*; α(L)=0.00240 *4*; α(M)=0.000541 *8*; α(N+..)=0.0001415 *20* α(N)=0.0001237 *18*; α(O)=1.705×10^{-5} *24*; α(P)=7.07×10^{-7} *10*
2703.09	8^+	265.5 *3*	4.7 *19*	2437.42	8^+	M1	0.1567		α(K)=0.1323 *19*; α(L)=0.0191 *3*; α(M)=0.00419 *6*; α(N+..)=0.001120 *16* α(N)=0.000970 *14*; α(O)=0.0001422 *21*; α(P)=8.18×10^{-6} *12*
		360.4 *3*	2.8 *9*	2342.63	7^-				
		406.8 *2*	5.7 *19*	2296.56	$(7)^+$	(M1)	0.0506		α(K)=0.0428 *6*; α(L)=0.00610 *9*; α(M)=0.001336 *19*; α(N+..)=0.000357 *5* α(N)=0.000309 *5*; α(O)=4.54×10^{-5} *7*; α(P)=2.63×10^{-6} *4*
		758.48 *6*	100 *6*	1944.60	6^+	E2	0.00553		α(K)=0.00459 *7*; α(L)=0.000733 *11*; α(M)=0.0001626 *23*; α(N+..)=4.29×10^{-5} *6* α(N)=3.74×10^{-5} *6*; α(O)=5.31×10^{-6} *8*; α(P)=2.63×10^{-7} *4*
2726.7	$(8)^-$	384.1		2342.63	7^-	M1	0.0588		α(K)=0.0497 *8*; α(L)=0.00710 *11*; α(M)=0.001555 *23*; α(N+..)=0.000416

$^{152}_{66}Dy_{86}$-9

$\gamma(^{152}Dy)$ (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
								6
								α(N)=0.000360 *6*; α(O)=5.28×10^{-5} *8*; α(P)=3.05×10^{-6} *5*
2906.05	9^-	202.98 *9*	13 *3*	2703.09	8^+			
		563.37 *10*	100 *10*	2342.63	7^-	E2	0.01118	α(K)=0.00910 *13*; α(L)=0.001623 *23*; α(M)=0.000364 *5*; α(N+..)=9.54×10^{-5} *14* α(N)=8.33×10^{-5} *12*; α(O)=1.160×10^{-5} *17*; α(P)=5.14×10^{-7} *8*
2930.1	$(7)^-$	859.1		2071.02	6^+	E1	1.67×10^{-3}	α(K)=0.001423 *20*; α(L)=0.000190 *3*; α(M)=4.13×10^{-5} *6*; α(N+..)=1.098×10^{-5} *16* α(N)=9.52×10^{-6} *14*; α(O)=1.388×10^{-6} *20*; α(P)=7.91×10^{-8} *12*
3149.7	8^-	853.1		2296.56	$(7)^+$	E1	1.69×10^{-3}	α(K)=0.001442 *21*; α(L)=0.000193 *3*; α(M)=4.18×10^{-5} *6*; α(N+..)=1.114×10^{-5} *16* α(N)=9.65×10^{-6} *14*; α(O)=1.407×10^{-6} *20*; α(P)=8.02×10^{-8} *12*
3160.63	$(10)^-$	254.5 *2*		2906.05	9^-	[M1,E2]	0.14 *4*	B(E2)(W.u.)≤2.6 *+7−5*; B(M1)(W.u.)≤0.00029 *+8−6* α(K)=0.11 *4*; α(L)=0.0223 *10*; α(M)=0.0050 *4*; α(N+..)=0.00132 *7* α(N)=0.00115 *7*; α(O)=0.0001586 *25*; α(P)=7.E−6 *3* Mult.: See comment in Gd(α,xnγ),(HI,xnγ).
3172.8	(10^-)	266.8 *3*		2906.05	9^-	(M1)	0.1547	α(K)=0.1306 *19*; α(L)=0.0189 *3*; α(M)=0.00414 *6*; α(N+..)=0.001106 *16* α(N)=0.000957 *14*; α(O)=0.0001403 *21*; α(P)=8.07×10^{-6} *12*
3173.37	10^+	735.94 *10*		2437.42	8^+	E2	0.00592	α(K)=0.00490 *7*; α(L)=0.000791 *11*; α(M)=0.0001756 *25*; α(N+..)=4.64×10^{-5} *7* α(N)=4.04×10^{-5} *6*; α(O)=5.72×10^{-6} *8*; α(P)=2.81×10^{-7} *4*
3183.69	10^+	746.34 *17*	100 *14*	2437.42	8^+	E2	0.00573	α(K)=0.00475 *7*; α(L)=0.000764 *11*; α(M)=0.0001694 *24*; α(N+..)=4.47×10^{-5} *7* α(N)=3.89×10^{-5} *6*; α(O)=5.53×10^{-6} *8*; α(P)=2.73×10^{-7} *4*
3227.6	8^-	931.0 *3*		2296.56	$(7)^+$	E1	1.43×10^{-3}	α(K)=0.001220 *18*; α(L)=0.0001624 *23*; α(M)=3.53×10^{-5} *5*; α(N+..)=9.39×10^{-6} *14* α(N)=8.13×10^{-6} *12*; α(O)=1.187×10^{-6} *17*; α(P)=6.80×10^{-8} *10*
3244.0	$(9)^+$	947.4 *3*		2296.56	$(7)^+$	E2	0.00341	α(K)=0.00286 *4*; α(L)=0.000430 *6*; α(M)=9.47×10^{-5} *14*; α(N+..)=2.51×10^{-5} *4* α(N)=2.18×10^{-5} *3*; α(O)=3.13×10^{-6} *5*; α(P)=1.647×10^{-7} *23*
3395.19	10^+	692.1 *1*		2703.09	8^+	E2@	0.00681	α(K)=0.00563 *8*; α(L)=0.000927 *13*; α(M)=0.000206 *3*; α(N+..)=5.43×10^{-5} *8* α(N)=4.73×10^{-5} *7*; α(O)=6.69×10^{-6} *10*; α(P)=3.22×10^{-7} *5*
3487.1	(11^-)	581		2906.05	9^-	(Q)		Mult.: Probable ΔJ=2 transition.
3535.0	$8^-,9^-$	1097.6		2437.42	8^+	E1	1.05×10^{-3}	α(K)=0.000899 *13*; α(L)=0.0001189 *17*; α(M)=2.58×10^{-5} *4*; α(N+..)=6.87×10^{-6} *10* α(N)=5.95×10^{-6} *9*; α(O)=8.70×10^{-7} *13*; α(P)=5.03×10^{-8} *7*
3820.20	12^+	636.55 *13*	94 *12*	3183.69	10^+	E2	0.00830	α(K)=0.00681 *10*; α(L)=0.001157 *17*; α(M)=0.000258 *4*; α(N+..)=6.79×10^{-5} *10* α(N)=5.92×10^{-5} *9*; α(O)=8.32×10^{-6} *12*; α(P)=3.88×10^{-7} *6*
		646.8 *2*	100 *18*	3173.37	10^+			

$^{152}_{66}Dy_{86}$-10

γ(^{152}Dy) (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
3820.20	12^+	659.5 *2*	53 *11*	3160.63	$(10)^-$			
3969.22	(12^-)	808.6 *2*		3160.63	$(10)^-$	E2	0.00479	α(K)=0.00399 *6*; α(L)=0.000626 *9*; α(M)=0.0001385 *20*; α(N+..)=3.66×10^{-5} *6* α(N)=3.19×10^{-5} *5*; α(O)=4.54×10^{-6} *7*; α(P)=2.29×10^{-7} *4*
3992.0	(12^-)	831.3		3160.63	$(10)^-$			
4015.8	8^+	1719.2		2296.56	$(7)^+$	M1	1.66×10^{-3}	α(K)=0.001259 *18*; α(L)=0.0001711 *24*; α(M)=3.73×10^{-5} *6*; α(N+..)=0.000196 *3* α(N)=8.62×10^{-6} *12*; α(O)=1.271×10^{-6} *18*; α(P)=7.52×10^{-8} *11*; α(IPF)=0.000186 *3*
4016.89	12^+	621.7 *1*		3395.19	10^+	Q@		
4125.6	(13^-)	638.5 *1*	100	3487.1	(11^-)	Q@		
4135.1		962.2		3172.8	(10^-)			
4430.20	14^+	461.2		3969.22	(12^-)			
		610.0 *1*		3820.20	12^+	E2	0.00919	α(K)=0.00753 *11*; α(L)=0.001299 *19*; α(M)=0.000290 *4*; α(N+..)=7.63×10^{-5} *11* α(N)=6.66×10^{-5} *10*; α(O)=9.32×10^{-6} *13*; α(P)=4.28×10^{-7} *6*
4495.0	(12^-)	526		3969.22	(12^-)			Mult.: DCO suggest ΔJ=2 or 0.
4650.49	14^+	633.6 *1*		4016.89	12^+	Q@		
4659.0	(14^-)	690		3969.22	(12^-)			
4734.5	$(13^+,14^-)$	742.4		3992.0	(12^-)			
		765.2 *3*		3969.22	(12^-)			
4804.87	$13^+,14^+$	374.4		4430.20	14^+			
		984.7 *2*		3820.20	12^+			
4817.7	(15^-)	692.1 *1*		4125.6	(13^-)	Q@		
5034.79	15^+	229.9 *3*		4804.87	$13^+,14^+$			
		300.2 *2*		4734.5	$(13^+,14^-)$			
		604.6 *1*		4430.20	14^+	M1	0.0183	α(K)=0.01555 *22*; α(L)=0.00219 *3*; α(M)=0.000478 *7*; α(N+..)=0.0001279 *18* α(N)=0.0001107 *16*; α(O)=1.627×10^{-5} *23*; α(P)=9.47×10^{-7} *14*
5088.1	17^+	53.3 *2*		5034.79	15^+	E2	31.3 *8*	α(L)=24.1 *6*; α(M)=5.78 *14*; α(N+..)=1.44 *4* α(N)=1.29 *3*; α(O)=0.152 *4*; α(P)=0.000177 *3* B(E2)(W.u.)=14.1 *11*
5177.7	(14^-)	519		4659.0	(14^-)			
		683		4495.0	(12^-)			
5215.59	16^+	565.1 *1*		4650.49	14^+	Q@		
5341.7	18^+	253.6 *1*		5088.1	17^+	M1	0.1774	α(K)=0.1497 *21*; α(L)=0.0217 *3*; α(M)=0.00475 *7*; α(N+..)=0.001270 *18* α(N)=0.001099 *16*; α(O)=0.0001611 *23*; α(P)=9.26×10^{-6} *13*
5531.7	(17^-)	714.0 *1*		4817.7	(15^-)	Q@		
5762.20	18^+	546.6 *1*		5215.59	16^+	Q@		
5867.0	19^-	525.3 *2*		5341.7	18^+	E1	0.00460	α(K)=0.00392 *6*; α(L)=0.000537 *8*; α(M)=0.0001169 *17*;

$^{152}_{66}Dy_{86}$-11

$\gamma(^{152}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[†]	Comments
								α(N+..)=3.10×10^{-5} *5* α(N)=2.69×10^{-5} *4*; α(O)=3.89×10^{-6} *6*; α(P)=2.14×10^{-7} *3*
5884.3	(16$^-$)	706.6 *1*		5177.7	(14$^-$)	Q[@]		
6051.6	(20$^+$)	709.9 *5*		5341.7	18$^+$	Q[@]		
6111.4	(20$^+$)	769.65 *21*		5341.7	18$^+$	Q[@]		
6129.4	21$^-$	262.45 *6*		5867.0	19$^-$	E2	0.0978	B(E2)(W.u.)=0.90 *+8−6* α(K)=0.0711 *10*; α(L)=0.0206 *3*; α(M)=0.00478 *7*; α(N+..)=0.001227 *18* α(N)=0.001083 *16*; α(O)=0.0001405 *20*; α(P)=3.61×10^{-6} *5*
6171.8		304.8 *2*		5867.0	19$^-$	D[&]		
6225.4	(20)	358.4 *3*		5867.0	19$^-$	D[&]		
6258.5	(19$^-$)	726.8 *1*		5531.7	(17$^-$)	Q[@]		
6370.3	20$^+$	608.1 *1*		5762.20	18$^+$	Q[@]		
6536.0		669		5867.0	19$^-$			
6625.1	(18$^-$)	740.8 *1*		5884.3	(16$^-$)	Q[@]		
6737.0	(22$^+$)	609.0[a] *10*	≈36	6129.4	21$^-$			E_γ: From 1987St15 but not confirmed by 1989Zu01 even though the 625γ is 3 to 4 times stronger than in the work of 1987St15.
		625.5 *3*	100	6111.4	(20$^+$)	Q[@]		
7024.5	(21$^-$)	766.0 *1*		6258.5	(19$^-$)	Q[@]		
7050.6	22$^+$	680.3 *1*		6370.3	20$^+$	E2	0.00709	α(K)=0.00585 *9*; α(L)=0.000969 *14*; α(M)=0.000216 *3*; α(N+..)=5.68×10^{-5} *8* α(N)=4.95×10^{-5} *7*; α(O)=6.99×10^{-6} *10*; α(P)=3.34×10^{-7} *5* B(E2)(W.u.)=128 *+14−11* Mult.: ΔJ=2. RUL rules out M2.
7120.1	23$^-$	382		6737.0	(22$^+$)			
		990.7 *2*		6129.4	21$^-$	E2	0.00310	α(K)=0.00261 *4*; α(L)=0.000388 *6*; α(M)=8.55×10^{-5} *12*; α(N+..)=2.27×10^{-5} *4* α(N)=1.97×10^{-5} *3*; α(O)=2.83×10^{-6} *4*; α(P)=1.504×10^{-7} *21*
7227.0	(24$^+$)	490.0 *10*		6737.0	(22$^+$)	Q[@]		
7413.5	(20$^-$)	788.4 *1*	100 *8*	6625.1	(18$^-$)	Q[@]		
		1546	33 *8*	5867.0	19$^-$			
7661.3	25$^-$	541.2 *2*		7120.1	23$^-$	E2	0.01237	α(K)=0.01003 *14*; α(L)=0.00182 *3*; α(M)=0.000409 *6*; α(N+..)=0.0001072 *15* α(N)=9.36×10^{-5} *14*; α(O)=1.300×10^{-5} *19*; α(P)=5.65×10^{-7} *8*
7710.0	(24$^+$)	483	36 *18*	7227.0	(24$^+$)			
		973	100 *36*	6737.0	(22$^+$)			
7803.9	24$^+$	753.3 *1*		7050.6	22$^+$	E2	0.00561	α(K)=0.00466 *7*; α(L)=0.000746 *11*; α(M)=0.0001654 *24*; α(N+..)=4.37×10^{-5} *7* α(N)=3.80×10^{-5} *6*; α(O)=5.40×10^{-6} *8*; α(P)=2.67×10^{-7} *4* B(E2)(W.u.)=76 *+7−6* Mult.: ΔJ=2. RUL rules out M2.
7848.6	(23$^-$)	824.1 *1*		7024.5	(21$^-$)	Q[@]		
7881.9	27$^-$	220.6 *2*		7661.3	25$^-$	E2	0.1709	B(E2)(W.u.)=12.0 *+17−13* α(K)=0.1186 *17*; α(L)=0.0405 *6*; α(M)=0.00944 *14*; α(N+..)=0.00241 *4* α(N)=0.00214 *3*; α(O)=0.000273 *4*; α(P)=5.79×10^{-6} *9*

$^{152}_{66}Dy_{86}$-12

$\gamma(^{152}Dy)$ (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
8185.9		304		7881.9	27−			
8238.7	(22−)	825.2 2		7413.5	(20−)	Q@		
8337.9		456		7881.9	27−			
8628.8	26+	824.9 1		7803.9	24+	E2	0.00459	α(K)=0.00382 6; α(L)=0.000596 9; α(M)=0.0001318 19; α(N+..)=3.49×10^{-5} 5 α(N)=3.03×10^{-5} 5; α(O)=4.33×10^{-6} 6; α(P)=2.20×10^{-7} 3 B(E2)(W.u.)=178 +16−13 Mult.: ΔJ=2. RUL rules out M2.
8735.9	(25−)	887.3 1		7848.6	(23−)	Q@		
8848.8	28+	966.9 2		7881.9	27−	E1	1.33×10^{-3}	B(E1)(W.u.)=1.1×10^{-5} +6−3 α(K)=0.001136 16; α(L)=0.0001510 22; α(M)=3.28×10^{-5} 5; α(N+..)=8.73×10^{-6} 13 α(N)=7.56×10^{-6} 11; α(O)=1.104×10^{-6} 16; α(P)=6.34×10^{-8} 9
8996.2	29+	147.4 1		8848.8	28+	M1	0.794	B(M1)(W.u.)=0.11 +4−3 α(K)=0.669 10; α(L)=0.0980 14; α(M)=0.0215 3; α(N+..)=0.00575 9 α(N)=0.00498 7; α(O)=0.000728 11; α(P)=4.16×10^{-5} 6
9117.5	(24−)	878.8 1		8238.7	(22−)	Q@		
9398.6	30+	402.3 2		8996.2	29+	M1	0.0521	B(M1)(W.u.)=0.046 +8−6 α(K)=0.0440 7; α(L)=0.00628 9; α(M)=0.001376 20; α(N+..)=0.000368 6 α(N)=0.000318 5; α(O)=4.67×10^{-5} 7; α(P)=2.70×10^{-6} 4
9523.0	28+	894.2 1		8628.8	26+	E2	0.00385	α(K)=0.00322 5; α(L)=0.000492 7; α(M)=0.0001085 16; α(N+..)=2.87×10^{-5} 4 α(N)=2.50×10^{-5} 4; α(O)=3.58×10^{-6} 5; α(P)=1.86×10^{-7} 3 B(E2)(W.u.)=122 11 Mult.: ΔJ=2. RUL rules out M2.
9687.9	(27−)	952.0 1		8735.9	(25−)	Q@		
10012.3		613		9398.6	30+			
		1016		8996.2	29+			
10048.5	(26−)	931.0 1		9117.5	(24−)	Q@		
10110.2	31+	97		10012.3				
		711.5 3	72 14	9398.6	30+	M1	0.01221	α(K)=0.01036 15; α(L)=0.001450 21; α(M)=0.000317 5; α(N+..)=8.47×10^{-5} 12 α(N)=7.33×10^{-5} 11; α(O)=1.078×10^{-5} 16; α(P)=6.29×10^{-7} 9
		1114.2 3	100 15	8996.2	29+	E2	0.00244	α(K)=0.00206 3; α(L)=0.000299 5; α(M)=6.57×10^{-5} 10; α(N+..)=1.79×10^{-5} 3 α(N)=1.514×10^{-5} 22; α(O)=2.19×10^{-6} 3; α(P)=1.188×10^{-7} 17; α(IPF)=4.76×10^{-7} 9
10257.2		858		9398.6	30+			
10484.3	30+	961.3 1		9523.0	28+	E2	0.00330	α(K)=0.00277 4; α(L)=0.000416 6; α(M)=9.16×10^{-5} 13; α(N+..)=2.43×10^{-5} 4 α(N)=2.11×10^{-5} 3; α(O)=3.03×10^{-6} 5; α(P)=1.599×10^{-7} 23 B(E2)(W.u.)=127 8 Mult.: ΔJ=2. RUL rules out M2.

From ENSDF

$^{152}_{66}Dy_{86}$-13

γ(^{152}Dy) (continued)

E_i(level)	J^{π}_i	E_{γ}‡	I_{γ}‡	E_f	J^{π}_f	Mult.#	α†	Comments
10541.1	(32+)	431.0 *3*		10110.2	31+	(M1)	0.0435	α(K)=0.0368 *6*; α(L)=0.00524 *8*; α(M)=0.001148 *17*; α(N+..)=0.000307 *5* α(N)=0.000266 *4*; α(O)=3.90×10^{-5} *6*; α(P)=2.26×10^{-6} *4* B(M1)(W.u.)≤0.048
		1142		9398.6	30+	[E2]	0.00232	B(E2)(W.u.)≤1.1 α(K)=0.00196 *3*; α(L)=0.000284 *4*; α(M)=6.22×10^{-5} *9*; α(N+..)=1.777×10^{-5} *25* α(N)=1.435×10^{-5} *20*; α(O)=2.08×10^{-6} *3*; α(P)=1.131×10^{-7} *16*; α(IPF)=1.235×10^{-6} *18*
10705.3	(29−)	1017.4 *1*		9687.9	(27−)	Q@		
10795.1	(33+)	254.2 *3*	100 *10*	10541.1	(32+)	[M1,E2]	0.14 *4*	α(K)=0.11 *4*; α(L)=0.0224 *10*; α(M)=0.0051 *4*; α(N+..)=0.00132 *7* α(N)=0.00116 *7*; α(O)=0.0001592 *25*; α(P)=7.E−6 *3* B(M1)(W.u.)≤0.11; B(E2)(W.u.)≤680
		684.9 *3*	34 *7*	10110.2	31+	E2	0.00698	α(K)=0.00576 *8*; α(L)=0.000952 *14*; α(M)=0.000212 *3*; α(N+..)=5.58×10^{-5} *8* α(N)=4.86×10^{-5} *7*; α(O)=6.87×10^{-6} *10*; α(P)=3.29×10^{-7} *5* B(E2)(W.u.)=1.3 *+7−4*
10961.0		703		10257.2				
		851		10110.2	31+			
11032.7	(28−)	984.2 *1*		10048.5	(26−)	Q@		
11209.0		248		10961.0				
		668		10541.1	(32+)			
		952		10257.2				
11245.4	(26+)	602.4 *1*	100	10643.0	(24+)			
		3364 *4*	≈1.5	7881.9	27−			
		3585 *4*	≈2.3	7661.3	25−			
11395.4		600		10795.1	(33+)			
11442.9		901		10541.1	(32+)			
11511.9	32+	1027.6 *1*		10484.3	30+	E2	0.00288	α(K)=0.00242 *4*; α(L)=0.000358 *5*; α(M)=7.86×10^{-5} *11*; α(N+..)=2.09×10^{-5} *3* α(N)=1.81×10^{-5} *3*; α(O)=2.61×10^{-6} *4*; α(P)=1.396×10^{-7} *20* B(E2)(W.u.)=162 *+21−17* Mult.: ΔJ=2. RUL rules out M2.
11574.6	(34−)	131		11442.9				
		613		10961.0				
		779.6 *3*		10795.1	(33+)	E1	0.00201	α(K)=0.001720 *25*; α(L)=0.000231 *4*; α(M)=5.02×10^{-5} *7*; α(N+..)=1.334×10^{-5} *19* α(N)=1.156×10^{-5} *17*; α(O)=1.683×10^{-6} *24*; α(P)=9.54×10^{-8} *14*
11602.1		1061		10541.1	(32+)			
		1345		10257.2				
11788.7	(31−)	1083.4 *1*		10705.3	(29−)	Q@		
11793.0		191		11602.1				
11859.0		257		11602.1				
		1064		10795.1	(33+)			
11892.9	(28+)	647.5 *1*	100 *14*	11245.4	(26+)			

$^{152}_{66}$Dy$_{86}$-14

$\gamma(^{152}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[†]	Comments
11892.9	(28+)	2713[a] *4*		9180?	(26+ to 30+)			I_γ: intensity is same or higher than that of the 4011γ.
		2895 *4*	≈0.8	8996.2	29+			
		3044[a] *4*	≈0.8	8848.8	28+			
		4011 *2*	2.2 *5*	7881.9	27−	D		I_γ: from Iγ(4011)/Iγ(647)=0.9/40.
11963.2	(35−)	388.6 *3*		11574.6	(34−)	M1	0.0570	α(K)=0.0482 *7*; α(L)=0.00688 *10*; α(M)=0.001508 *22*; α(N+..)=0.000403 *6* α(N)=0.000349 *5*; α(O)=5.12×10^{-5} *8*; α(P)=2.96×10^{-6} *5* B(M1)(W.u.)≤0.45
		520		11442.9				
12071.9	(30−)	1039.2 *1*		11032.7	(28−)	Q[@]		
12178.9		320		11859.0				
		386		11793.0				
		970		11209.0				
12325.1	(36−)	362		11963.2	(35−)			
		750		11574.6	(34−)			
12428.7		248[a]		12178.9				
		854		11574.6	(34−)			
		1033		11395.4				
		1220		11209.0				
12585.6	(30+)	692.7 *1*		11892.9	(28+)	[E2]	0.00680	α(K)=0.00562 *8*; α(L)=0.000925 *13*; α(M)=0.000206 *3*; α(N+..)=5.42×10^{-5} *8* α(N)=4.72×10^{-5} *7*; α(O)=6.67×10^{-6} *10*; α(P)=3.21×10^{-7} *5* B(E2)(W.u.)=2440
12604.3	34+	1092.4 *1*		11511.9	32+	E2	0.00254	α(K)=0.00214 *3*; α(L)=0.000313 *5*; α(M)=6.86×10^{-5} *10*; α(N+..)=1.82×10^{-5} *3* α(N)=1.581×10^{-5} *23*; α(O)=2.28×10^{-6} *4*; α(P)=1.235×10^{-7} *18* B(E2)(W.u.)=134 *+19−15* Mult.: ΔJ=2. RUL rules out M2.
12716.9		288		12428.7				
		538		12178.9				
		754		11963.2	(35−)			
12938.2	(33−)	1149.5 *1*		11788.7	(31−)	Q[@]		
12946.2		518[a]		12428.7				
		983		11963.2	(35−)			
13048.9		1086		11963.2	(35−)			
13117.1		792		12325.1	(36−)			
13169.0	(32−)	1097.1 *1*		12071.9	(30−)	Q[@]		
13253.4		1858		11395.4				
13323.7	(32+)	738.1 *1*		12585.6	(30+)	[E2]	0.00588	α(K)=0.00487 *7*; α(L)=0.000786 *11*; α(M)=0.0001743 *25*; α(N+..)=4.60×10^{-5} *7* α(N)=4.00×10^{-5} *6*; α(O)=5.68×10^{-6} *8*; α(P)=2.79×10^{-7} *4* B(E2)(W.u.)=2420
13396.7		348		13048.9				
		1071		12325.1	(36−)			

$^{152}_{66}Dy_{86}$-15

γ(^{152}Dy) (continued)

E_i(level)	J^π_i	E_γ‡	E_f	J^π_f	Mult.#	α†	$I_{(\gamma+ce)}$	Comments
13396.7		1218	12178.9					
13493.1		1168	12325.1	(36⁻)				
13517.1		1192	12325.1	(36⁻)				
13687.1		1362	12325.1	(36⁻)				
13721.9		1005	12716.9					
13762.7	36⁺	1158.4 *1*	12604.3	34⁺	E2	0.00226		α(K)=0.00190 *3*; α(L)=0.000275 *4*; α(M)=6.03×10^{-5} *9*; α(N+..)=1.80×10^{-5} *3* α(N)=1.391×10^{-5} *20*; α(O)=2.01×10^{-6} *3*; α(P)=1.100×10^{-7} *16*; α(IPF)=2.00×10^{-6} *3* B(E2)(W.u.)=160 *+40−27* Mult.: ΔJ=2. RUL rules out M2.
14107.7	(34⁺)	784.0 *1*	13323.7	(32⁺)	[E2]	0.00513		α(K)=0.00427 *6*; α(L)=0.000675 *10*; α(M)=0.0001495 *21*; α(N+..)=3.95×10^{-5} *6* α(N)=3.44×10^{-5} *5*; α(O)=4.89×10^{-6} *7*; α(P)=2.45×10^{-7} *4* B(E2)(W.u.)=2470
14154.1	(35⁻)	1215.9 *1*	12938.2	(33⁻)	Q@			
14237.4	(31⁻)	1645[a]	12585.6	(30⁺)				
14325.3	(34⁻)	1156.3 *1*	13169.0	(32⁻)	Q@			
14484.9		763	13721.9					
14663.2		976	13687.1					
14741.9		1020	13721.9					
14937.6	(36⁺)	829.9 *1*	14107.7	(34⁺)	[E2]	0.00453		α(K)=0.00377 *6*; α(L)=0.000588 *9*; α(M)=0.0001299 *19*; α(N+..)=3.44×10^{-5} *5* α(N)=2.99×10^{-5} *5*; α(O)=4.27×10^{-6} *6*; α(P)=2.17×10^{-7} *3* B(E2)(W.u.)=2470
14984.0	38⁺	1221.3 *1*	13762.7	36⁺	E2	0.00204		α(K)=0.001716 *24*; α(L)=0.000246 *4*; α(M)=5.38×10^{-5} *8*; α(N+..)=2.21×10^{-5} *3* α(N)=1.242×10^{-5} *18*; α(O)=1.80×10^{-6} *3*; α(P)=9.91×10^{-8} *14*; α(IPF)=7.74×10^{-6} *11* B(E2)(W.u.)=56 *6* Mult.: ΔJ=2. RUL rules out M2.
14998.9	(33⁻)	761.5 *2*	14237.4	(31⁻)			100 *30*	
		1676	13323.7	(32⁺)			22 *8*	
15435.6	(37⁻)	1281.5 *1*	14154.1	(35⁻)	Q@			
15543.0	(36⁻)	1217.7 *1*	14325.3	(34⁻)	Q@			
15803.4	(35⁻)	804.5 *2*	14998.9	(33⁻)			100 *12*	
		1696	14107.7	(34⁺)			12 *4*	
15814.1	(38⁺)	876.4 *1*	14937.6	(36⁺)	[E2]	0.00402		α(K)=0.00336 *5*; α(L)=0.000516 *8*; α(M)=0.0001138 *16*; α(N+..)=3.01×10^{-5} *5* α(N)=2.62×10^{-5} *4*; α(O)=3.75×10^{-6} *6*; α(P)=1.94×10^{-7} *3* B(E2)(W.u.)=2430
16267.0	40⁺	1283.0 *1*	14984.0	38⁺	E2	0.00186		α(K)=0.001559 *22*; α(L)=0.000222 *4*; α(M)=4.85×10^{-5} *7*; α(N+..)=2.95×10^{-5} *5* α(N)=1.119×10^{-5} *16*; α(O)=1.625×10^{-6} *23*; α(P)=9.01×10^{-8} *13*; α(IPF)=1.660×10^{-5} *24* B(E2)(W.u.)=54 *+15−10* Mult.: ΔJ=2. RUL rules out M2.
16397.0		1912	14484.9					
16653.0	(37⁻)	849.7 *2*	15803.4	(35⁻)			100 *11*	
		1715	14937.6	(36⁺)			11 *3*	

$\gamma(^{152}$Dy) (continued)

E_i(level)	J^π_i	E_γ[‡]	E_f	J^π_f	Mult.[#]	α[†]	$I_{(\gamma+ce)}$	Comments
16737.3	(40+)	923.2 *1*	15814.1	(38+)	[E2]	0.00360		α(K)=0.00301 *5*; α(L)=0.000457 *7*; α(M)=0.0001006 *14*; α(N+..)=2.67×10−5 *4* α(N)=2.32×10−5 *4*; α(O)=3.33×10−6 *5*; α(P)=1.738×10−7 *25* B(E2)(W.u.)=2460
16778.9	(39−)	1343.3 *1*	15435.6	(37−)				
16824.4	(38−)	1281.4 *1*	15543.0	(36−)	Q[@]			
17539.0		1142	16397.0					
17547.9	(39−)	894.9 *2*	16653.0	(37−)			100 *11*	
		1734	15814.1	(38+)			8 *3*	
17608.6	(42+)	1341.6 *1*	16267.0	40+	[E2]	1.72×10−3		α(K)=0.001430 *20*; α(L)=0.000202 *3*; α(M)=4.42×10−5 *7*; α(N+..)=3.97×10−5 *6* α(N)=1.019×10−5 *15*; α(O)=1.482×10−6 *21*; α(P)=8.26×10−8 *12*; α(IPF)=2.79×10−5 *4* B(E2)(W.u.)>128
17707.5	(42+)	970.2 *1*	16737.3	(40+)	[E2]	0.00324		α(K)=0.00272 *4*; α(L)=0.000407 *6*; α(M)=8.97×10−5 *13*; α(N+..)=2.38×10−5 *4* α(N)=2.07×10−5 *3*; α(O)=2.97×10−6 *5*; α(P)=1.569×10−7 *22* B(E2)(W.u.)=2480
18172.1	(40−)	1347.6 *2*	16824.4	(38−)				
18179.2	(41−)	1400.3 *2*	16778.9	(39−)				
18489.0	(41−)	941.2 *2*	17547.9	(39−)			100 *5*	
		1751	16737.3	(40+)			8 *3*	
18724.9	(44+)	1017.4 *1*	17707.5	(42+)	[E2]	0.00294		α(K)=0.00247 *4*; α(L)=0.000366 *6*; α(M)=8.04×10−5 *12*; α(N+..)=2.13×10−5 *3* α(N)=1.85×10−5 *3*; α(O)=2.67×10−6 *4*; α(P)=1.425×10−7 *20* B(E2)(W.u.)=2440
19008.4	(44+)	1399.8 *1*	17608.6	(42+)	[E2]	1.60×10−3		α(K)=0.001319 *19*; α(L)=0.000185 *3*; α(M)=4.05×10−5 *6*; α(N+..)=5.33×10−5 *8* α(N)=9.33×10−6 *13*; α(O)=1.359×10−6 *19*; α(P)=7.62×10−8 *11*; α(IPF)=4.25×10−5 *6* B(E2)(W.u.)>104
19475.1	(43−)	986.1 *2*	18489.0	(41−)			100 *15*	
		1767	17707.5	(42+)			6 *2*	
19590.2	(42−)	1418.1 *7*	18172.1	(40−)				
19789.8	(46+)	1064.9 *1*	18724.9	(44+)	[E2]	0.00267		α(K)=0.00225 *4*; α(L)=0.000331 *5*; α(M)=7.26×10−5 *11*; α(N+..)=1.93×10−5 *3* α(N)=1.673×10−5 *24*; α(O)=2.42×10−6 *4*; α(P)=1.300×10−7 *19* B(E2)(W.u.)=2440
20467.4	(46+)	1458.9 *1*	19008.4	(44+)	[E2]	1.50×10−3		B(E2)(W.u.)>84 α(K)=0.001219 *17*; α(L)=0.0001702 *24*; α(M)=3.72×10−5 *6*; α(N+..)=6.98×10−5 *10* α(N)=8.58×10−6 *12*; α(O)=1.250×10−6 *18*; α(P)=7.05×10−8 *10*; α(IPF)=5.99×10−5 *9*

$^{152}_{66}Dy_{86}$-17

$\gamma(^{152}Dy)$ (continued)

E_i(level)	J^π_i	E_γ‡	E_f	J^π_f	Mult.#	α†	$I_{(\gamma+ce)}$	Comments
20506.5	(45−)	1031.3 *2*	19475.1	(43−)			100 *7*	
		1781	18724.9	(44+)			2 *1*	
20902.5	(48+)	1112.7 *1*	19789.8	(46+)	[E2]	0.00245		α(K)=0.00206 *3*; α(L)=0.000300 *5*; α(M)=6.59×10^{-5} *10*; α(N+..)=1.79×10^{-5} *3* α(N)=1.518×10^{-5} *22*; α(O)=2.20×10^{-6} *3*; α(P)=1.191×10^{-7} *17*; α(IPF)=4.49×10^{-7} *7* B(E2)(W.u.)=2450
21077.8	(44−)	1487.6 *3*	19590.2	(42−)				
21583.8	(47−)	1077.3 *2*	20506.5	(45−)			100 *7*	
		1795	19789.8	(46+)			3 *1*	
22063.0	(50+)	1160.5 *1*	20902.5	(48+)	[E2]	0.00225		α(K)=0.00190 *3*; α(L)=0.000274 *4*; α(M)=6.01×10^{-5} *9*; α(N+..)=1.81×10^{-5} *3* α(N)=1.386×10^{-5} *20*; α(O)=2.01×10^{-6} *3*; α(P)=1.096×10^{-7} *16*; α(IPF)=2.12×10^{-6} *3* B(E2)(W.u.)=2420
22706.5	(49−)	1122.7 *2*	21583.8	(47−)				
23271.6	(52+)	1208.6 *1*	22063.0	(50+)	[E2]	0.00208		α(K)=0.001751 *25*; α(L)=0.000251 *4*; α(M)=5.51×10^{-5} *8*; α(N+..)=2.09×10^{-5} *3* α(N)=1.270×10^{-5} *18*; α(O)=1.84×10^{-6} *3*; α(P)=1.012×10^{-7} *15*; α(IPF)=6.25×10^{-6} *9* B(E2)(W.u.)=2520
23873.6	(51−)	1167.1 *2*	22706.5	(49−)				
24528.2	(54+)	1256.6 *1*	23271.6	(52+)	[E2]	0.00193		α(K)=0.001623 *23*; α(L)=0.000231 *4*; α(M)=5.07×10^{-5} *7*; α(N+..)=2.60×10^{-5} *4* α(N)=1.169×10^{-5} *17*; α(O)=1.697×10^{-6} *24*; α(P)=9.38×10^{-8} *14*; α(IPF)=1.252×10^{-5} *18* B(E2)(W.u.)=2490
25085.2	(53−)	1211.6 *2*	23873.6	(51−)				
25833.0	(56+)	1304.8 *1*	24528.2	(54+)	[E2]	0.00180		α(K)=0.001509 *22*; α(L)=0.000214 *3*; α(M)=4.68×10^{-5} *7*; α(N+..)=3.28×10^{-5} *5* α(N)=1.080×10^{-5} *16*; α(O)=1.569×10^{-6} *22*; α(P)=8.72×10^{-8} *13*; α(IPF)=2.04×10^{-5} *3* B(E2)(W.u.)=2580
26341.9	(55−)	1256.7 *2*	25085.2	(53−)				
27185.9	(58+)	1352.9 *1*	25833.0	(56+)	[E2]	1.69×10^{-3}		α(K)=0.001407 *20*; α(L)=0.000199 *3*; α(M)=4.34×10^{-5} *6*; α(N+..)=4.21×10^{-5} *6* α(N)=1.001×10^{-5} *14*; α(O)=1.457×10^{-6} *21*; α(P)=8.13×10^{-8} *12*; α(IPF)=3.05×10^{-5} *5* B(E2)(W.u.)=2590
27641.8	(58−)	1299.9 *2*	26341.9	(55−)				
28587.2	(60+)	1401.3 *1*	27185.9	(58+)	[E2]	1.59×10^{-3}		α(K)=0.001316 *19*; α(L)=0.000185 *3*; α(M)=4.04×10^{-5} *6*; α(N+..)=5.37×10^{-5} *8* α(N)=9.31×10^{-6} *13*; α(O)=1.356×10^{-6} *19*; α(P)=7.60×10^{-8} *11*;

$^{152}_{66}Dy_{86}$-18

$\gamma(^{152}Dy)$ (continued)

E_i(level)	J^π_i	E_γ‡	E_f	J^π_f	Mult.#	α†	Comments
							α(IPF)=4.30×10^{-5} *6* B(E2)(W.u.)=2410
28986.1	(59^-)	1344.3 *2*	27641.8	(58^-)			
30036.8	(62^+)	1449.6 *2*	28587.2	(60^+)	[E2]	1.51×10^{-3}	α(K)=0.001234 *18*; α(L)=0.0001724 *25*; α(M)=3.77×10^{-5} *6*; α(N+..)=6.71×10^{-5} *10* α(N)=8.69×10^{-6} *13*; α(O)=1.267×10^{-6} *18*; α(P)=7.13×10^{-8} *10*; α(IPF)=5.70×10^{-5} *8* B(E2)(W.u.)=2660
30374.5	(61^-)	1388.4 *5*	28986.1	(59^-)			
31534.6	(64^+)	1497.8 *3*	30036.8	(62^+)			
31808.0	(63^-)	1433.5 *10*	30374.5	(61^-)			
33080.2	(66^+)	1545.6 *5*	31534.6	(64^+)			
33286.1	(65^-)	1478	31808.0	(63^-)			
34660.2	(68^+)	1580	33080.2	(66^+)			
825.9+x	(36)	825.9 *10*	x	(34)			
1681.3+x	(38)	855.4 *2*	825.9+x	(36)			
2576.5+x	(40)	895.2 *2*	1681.3+x	(38)			
3508.7+x	(42)	932.2 *2*	2576.5+x	(40)			
4478.6+x	(44)	969.9 *5*	3508.7+x	(42)			
5487.1+x	(46)	1008.5 *5*	4478.6+x	(44)			
6536.3+x	(48)	1049.2 *2*	5487.1+x	(46)			
7628.9+x	(50)	1092.6 *2*	6536.3+x	(48)			
8766.5+x	(52)	1137.6 *2*	7628.9+x	(50)			
9949.9+x	(54)	1183.4 *2*	8766.5+x	(52)			
11180.5+x	(56)	1230.6 *2*	9949.9+x	(54)			
12458.2+x	(58)	1277.7 *2*	11180.5+x	(56)			
13785.7+x	(60)	1327.4 *5*	12458.2+x	(58)			
15162.8+x	(62)	1377.1 *10*	13785.7+x	(60)			
16586.4+x	(64)	1423.6 *10*	15162.8+x	(62)			
18063.5+x	(66)	1477.1 *10*	16586.4+x	(64)			
793.00+y	(38)	793.0 *2*	y	(36)			
1632.7+y	(40)	839.7 *2*	793.00+y	(38)			
2523.9+y	(42)	891.2 *2*	1632.7+y	(40)			
3468.7+y	(44)	944.8 *2*	2523.9+y	(42)			
4466.9+y	(46)	998.2 *2*	3468.7+y	(44)			
5519.3+y	(48)	1052.4 *2*	4466.9+y	(46)			
6624.2+y	(50)	1104.9 *2*	5519.3+y	(48)			
7781.1+y	(52)	1156.9 *2*	6624.2+y	(50)			
8989.0+y	(54)	1207.9 *2*	7781.1+y	(52)			
10249.4+y	(56)	1260.4 *2*	8989.0+y	(54)			
11563.2+y	(58)	1313.8 *2*	10249.4+y	(56)			
12931.9+y	(60)	1368.6 *2*	11563.2+y	(58)			
14357.7+y	(62)	1425.8 *2*	12931.9+y	(60)			
15840.4+y	(64)	1482.7 *2*	14357.7+y	(62)			
17384.5+y	(66)	1544.1 *2*	15840.4+y	(64)			
18989.2+y	(68)	1604.7 *2*	17384.5+y	(66)			

$^{152}_{66}Dy_{86}$-19

Adopted Levels, Gammas (continued)

$\gamma(^{152}Dy)$ (continued)

E_i(level)	J_i^π	E_γ‡	E_f	J_f^π	E_i(level)	J_i^π	E_γ‡	E_f	J_f^π
669.6+z	(29⁻)	669.6 *5*	z	(27⁻)	642.1+u	(28⁻)	642.1 *5*	u	(26⁻)
1390.6+z	(31⁻)	721.0 *2*	669.6+z	(29⁻)	1337.0+u	(30⁻)	694.9 *4*	642.1+u	(28⁻)
2163.4+z	(33⁻)	772.8 *2*	1390.6+z	(31⁻)	2084.0+u	(32⁻)	747.0 *2*	1337.0+u	(30⁻)
2988.4+z	(35⁻)	825.0 *2*	2163.4+z	(33⁻)	2882.8+u	(34⁻)	798.8 *2*	2084.0+u	(32⁻)
3865.2+z	(37⁻)	876.8 *2*	2988.4+z	(35⁻)	3733.9+u	(36⁻)	851.1 *2*	2882.8+u	(34⁻)
4794.2+z	(39⁻)	929.0 *2*	3865.2+z	(37⁻)	4635.2+u	(38⁻)	901.3 *2*	3733.9+u	(36⁻)
5772.9+z	(41⁻)	978.7 *2*	4794.2+z	(39⁻)	5589.0+u	(40⁻)	953.8 *2*	4635.2+u	(38⁻)
6802.7+z	(43⁻)	1029.8 *2*	5772.9+z	(41⁻)	6594.1+u	(42⁻)	1005.1 *5*	5589.0+u	(40⁻)
7883.5+z	(45⁻)	1080.8 *2*	6802.7+z	(43⁻)	7649.1+u	(44⁻)	1055.0 *2*	6594.1+u	(42⁻)
9014.1+z	(47⁻)	1130.6 *2*	7883.5+z	(45⁻)	8754.1+u	(46⁻)	1105.0 *2*	7649.1+u	(44⁻)
10194.4+z	(49⁻)	1180.3 *2*	9014.1+z	(47⁻)	9909.9+u	(48⁻)	1155.8 *5*	8754.1+u	(46⁻)
11422.4+z	(51⁻)	1228.0 *3*	10194.4+z	(49⁻)	11115.7+u	(50⁻)	1205.8 *2*	9909.9+u	(48⁻)
12703.4+z	(53⁻)	1281.0 *5*	11422.4+z	(51⁻)	12369.5+u	(52⁻)	1253.8 *3*	11115.7+u	(50⁻)
14031.2+z	(55⁻)	1327.7 *5*	12703.4+z	(53⁻)	13673.7+u	(54⁻)	1304.2 *5*	12369.5+u	(52⁻)
15407.1+z	(57⁻)	1375.9 *10*	14031.2+z	(55⁻)					

† Additional information 7.

‡ Values for levels up to 4016 are weighted averages of all individual measurements from 50-S ε decay and Gd(α,xnγ),(HI,xnγ), except where from 162-S ε decay S noted. for higher levels, all data are from the in-beam studies.

From α(K)exp in 50-S and 162-S Ho ε decays, and from α(K)exp, $\gamma(\theta)$, DCO, and lin pol in Gd(α,xnγ),(HI,xnγ).

@ ΔJ=2 transition.

& ΔJ=1 transition.

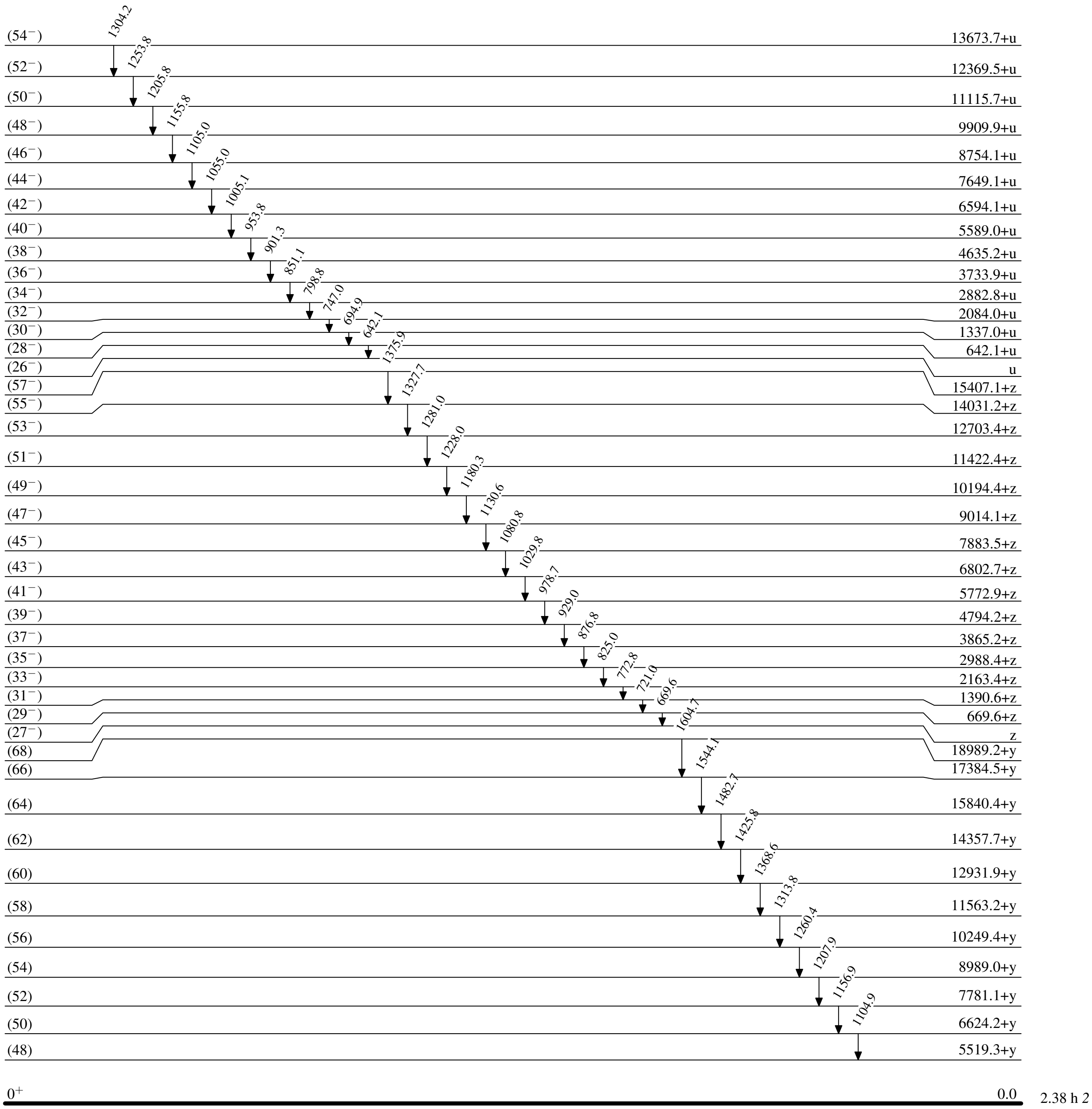
a Placement of transition in the level scheme is uncertain.

$^{152}_{66}Dy_{86}$-20

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

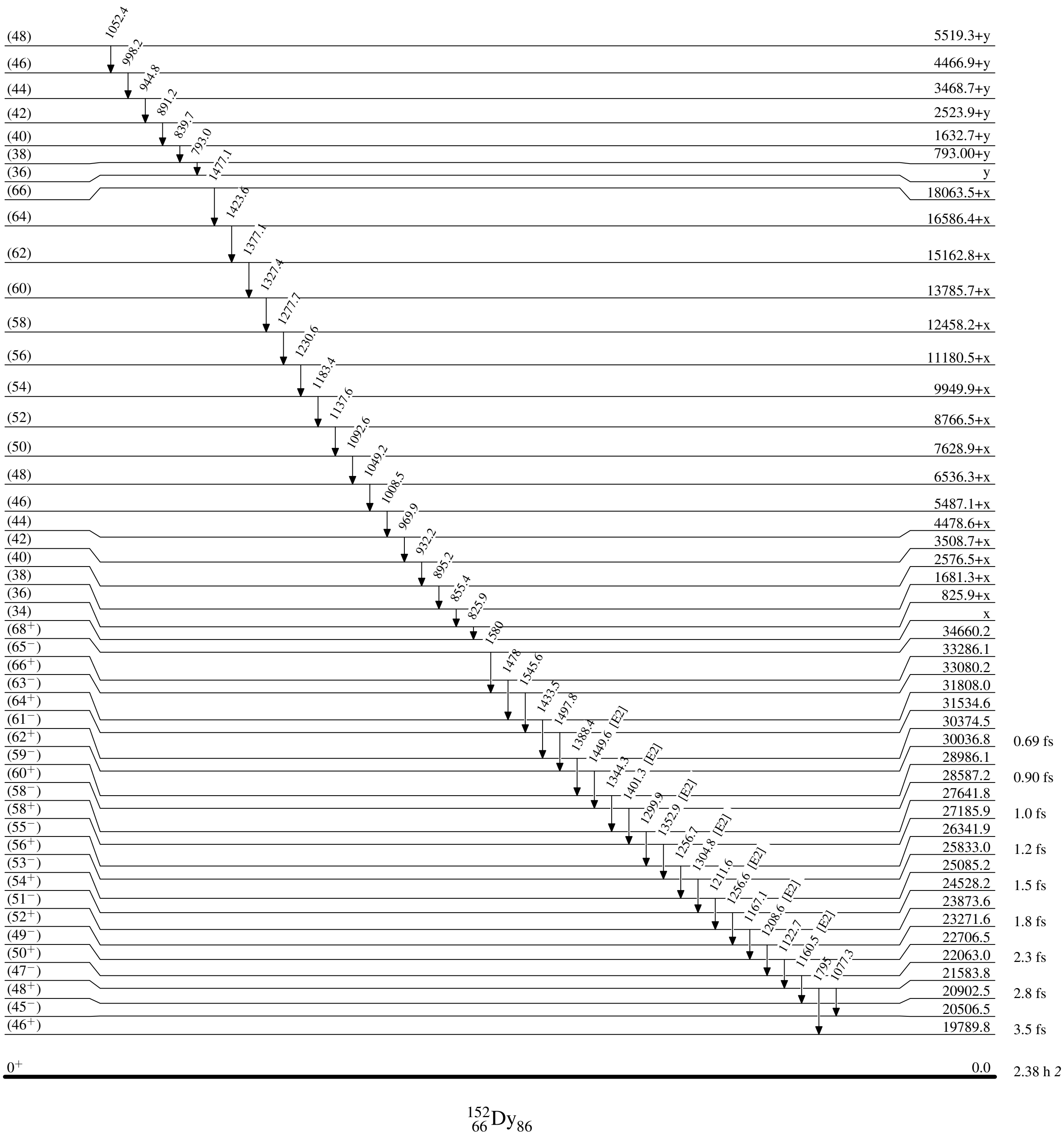


$^{152}_{66}Dy_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

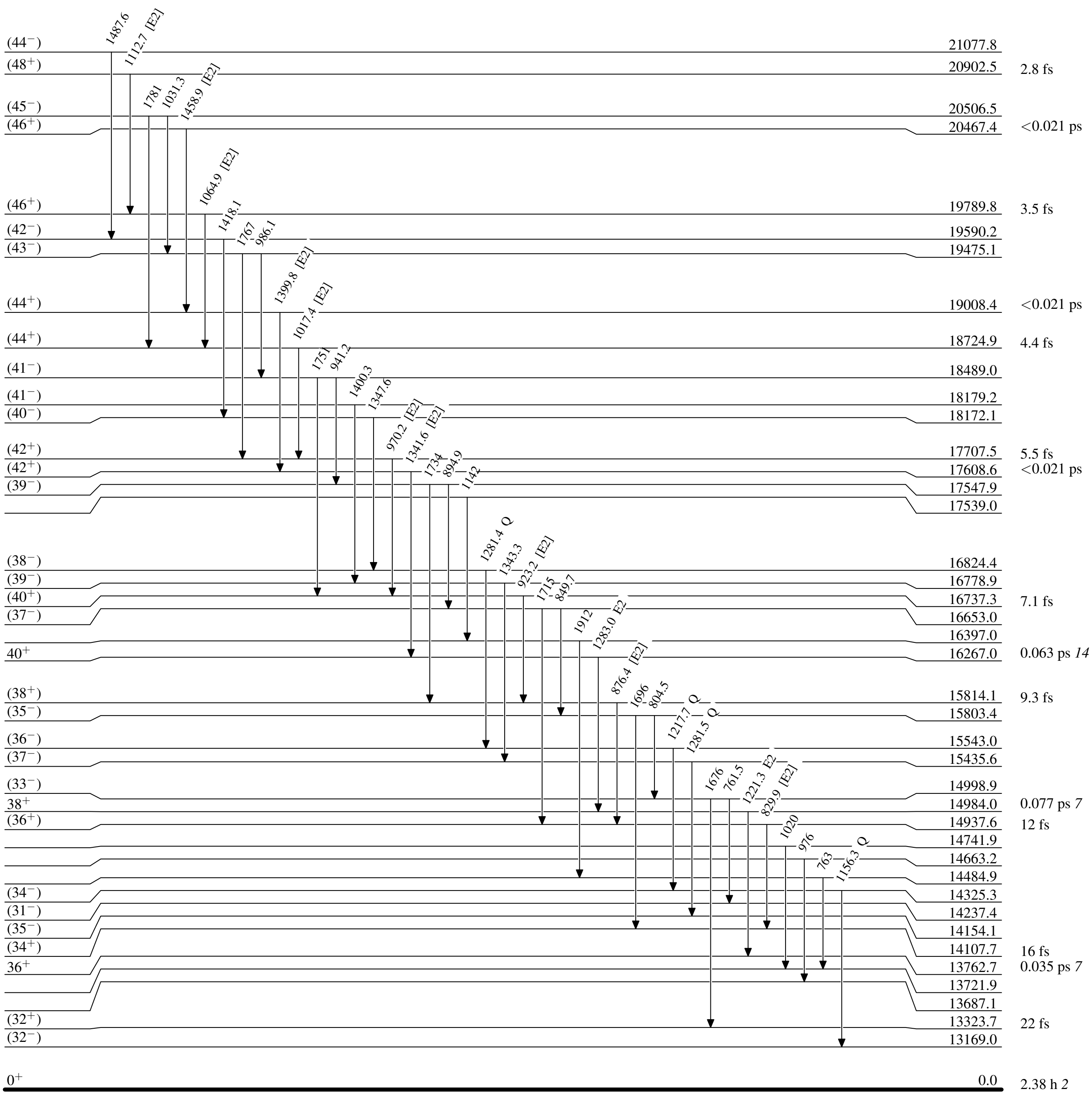
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

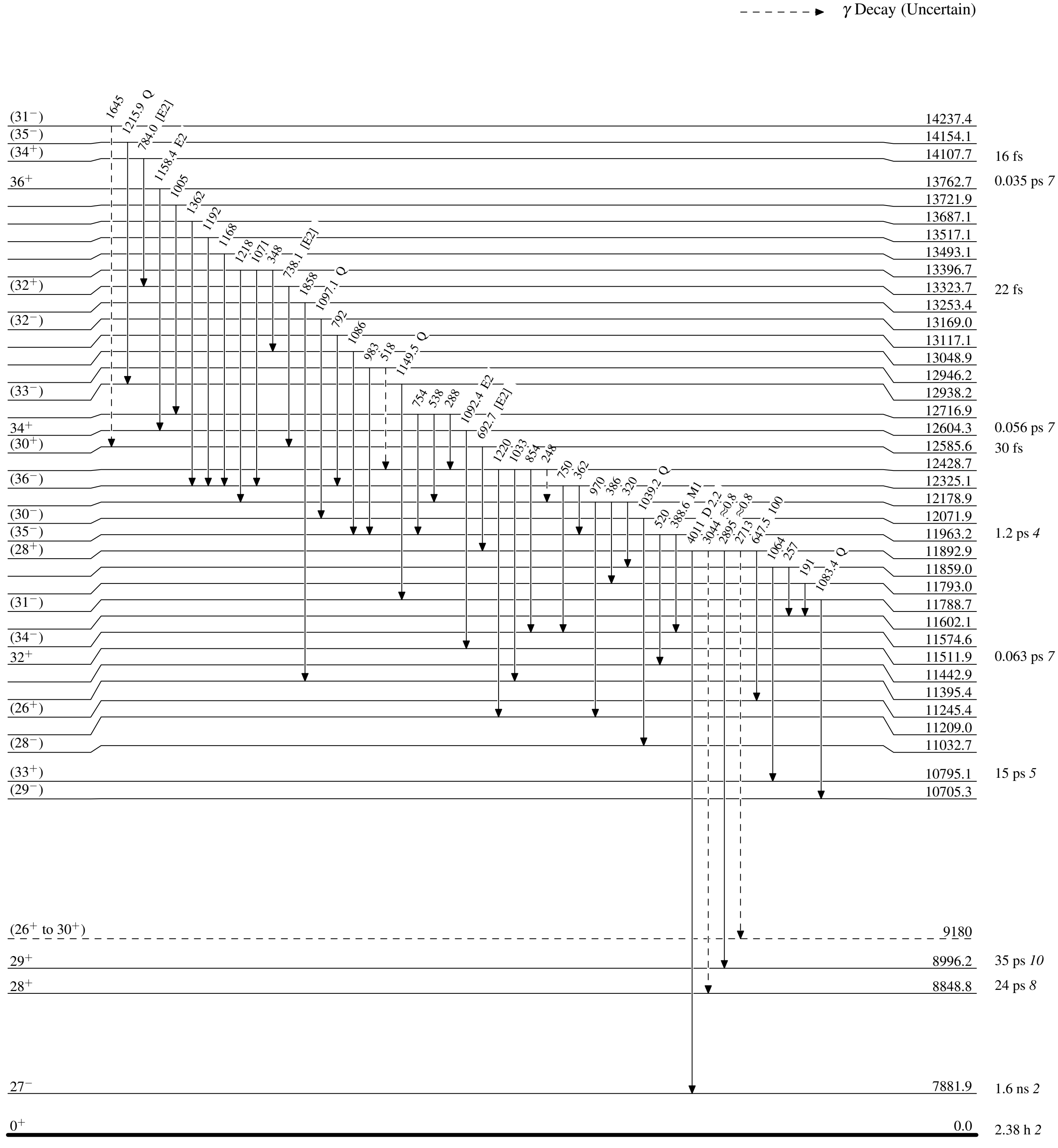


$^{152}_{66}Dy_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

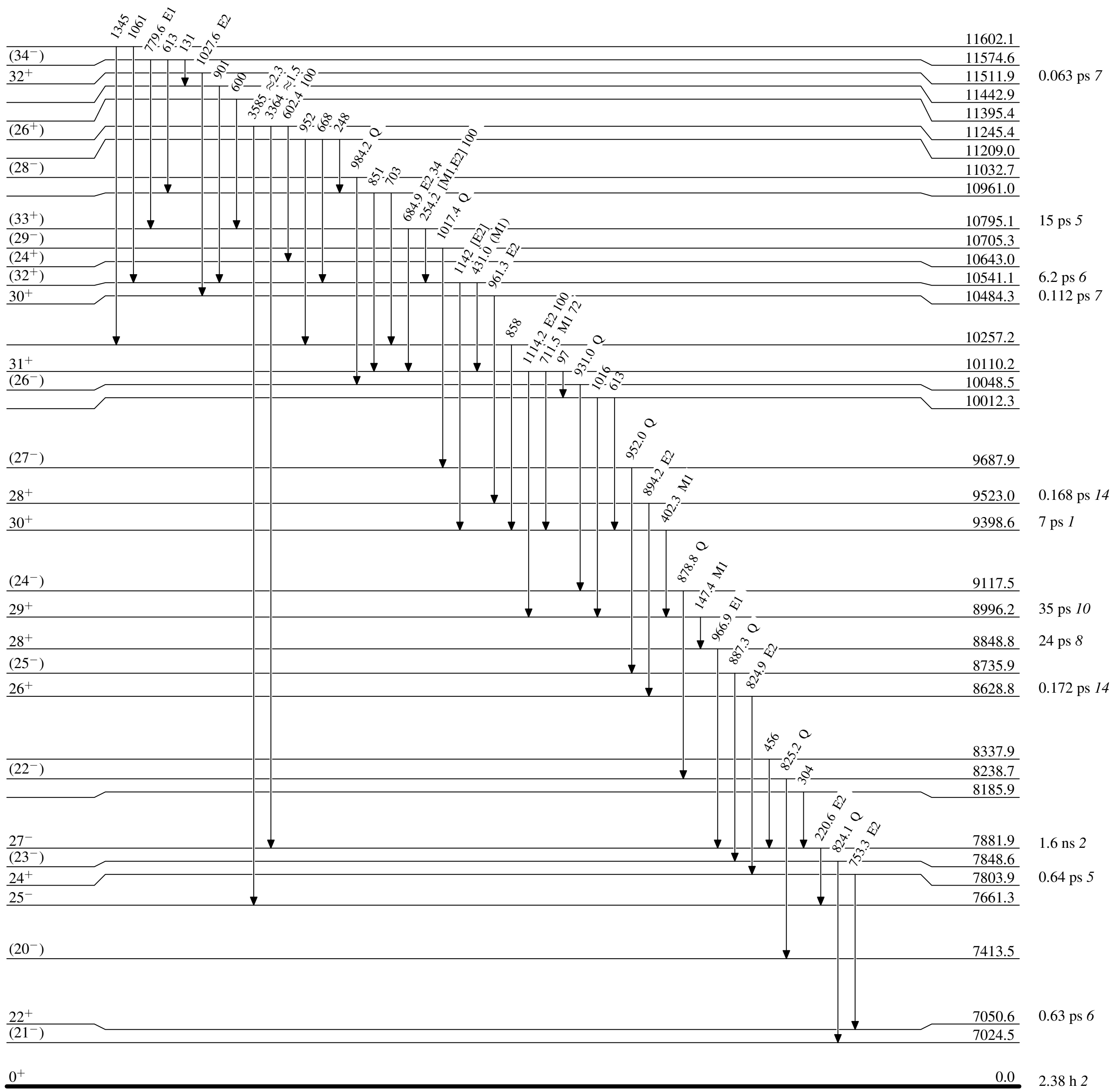


$^{152}_{66}Dy_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

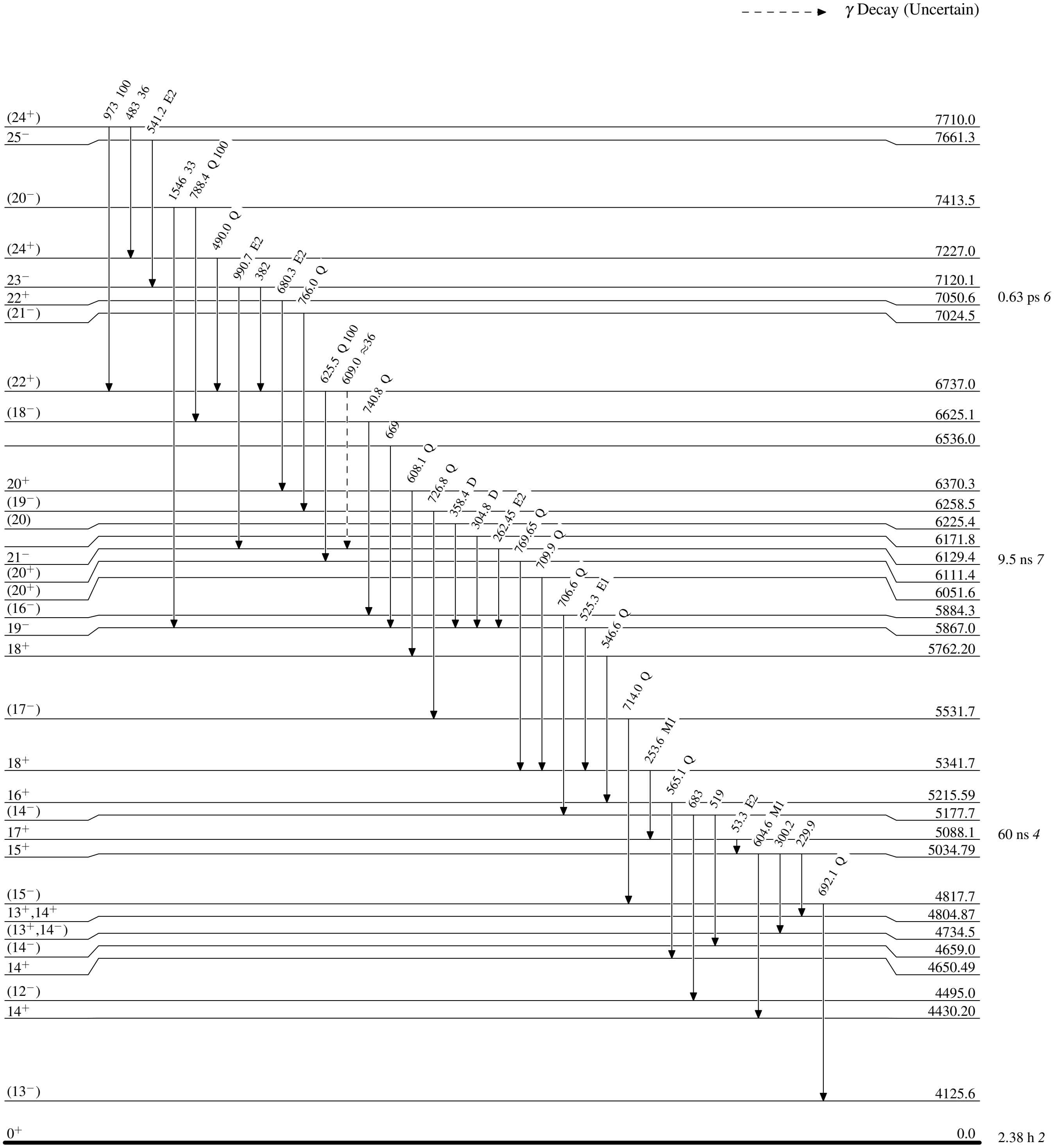


$^{152}_{66}Dy_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

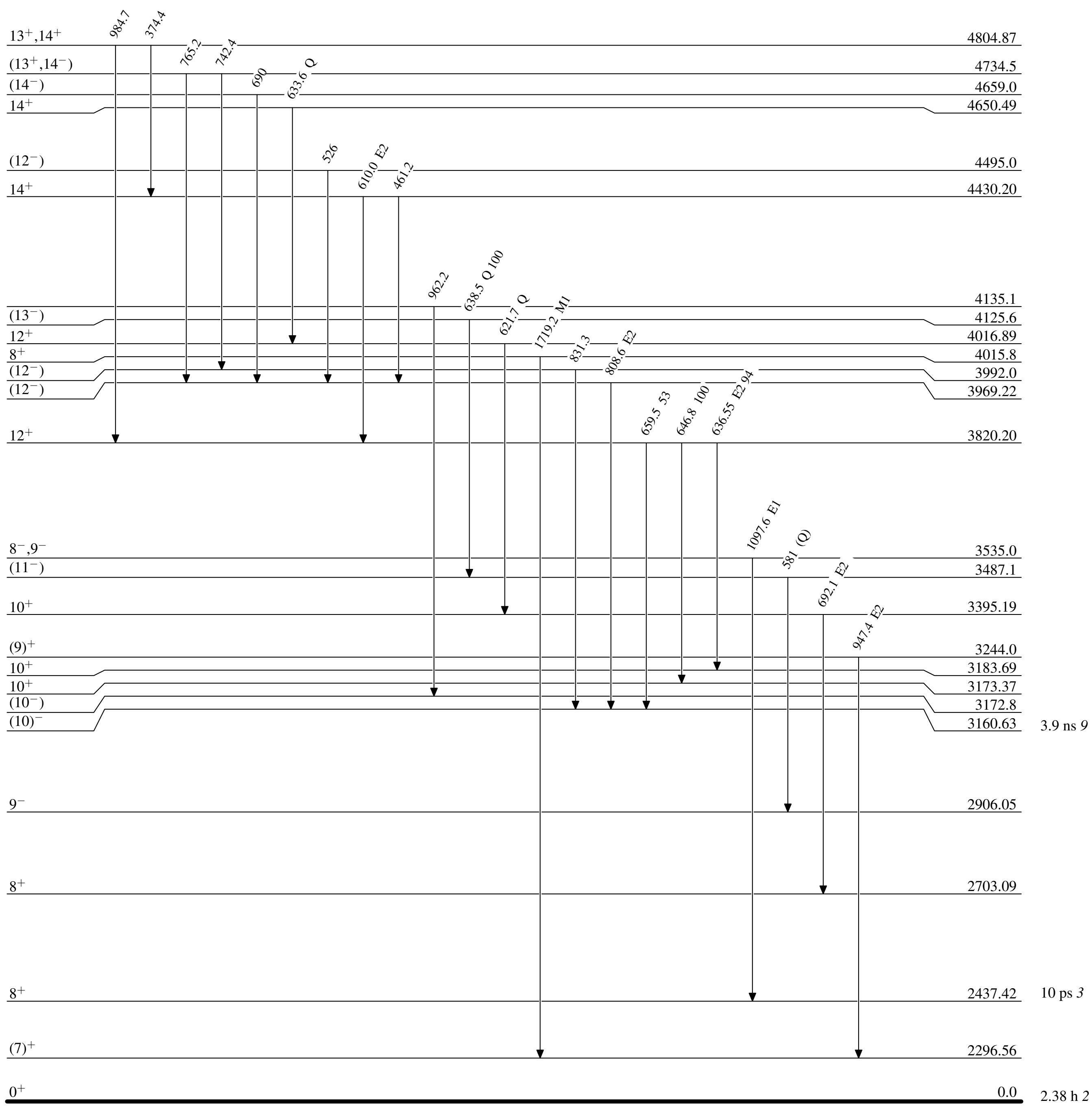


$^{152}_{66}Dy_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

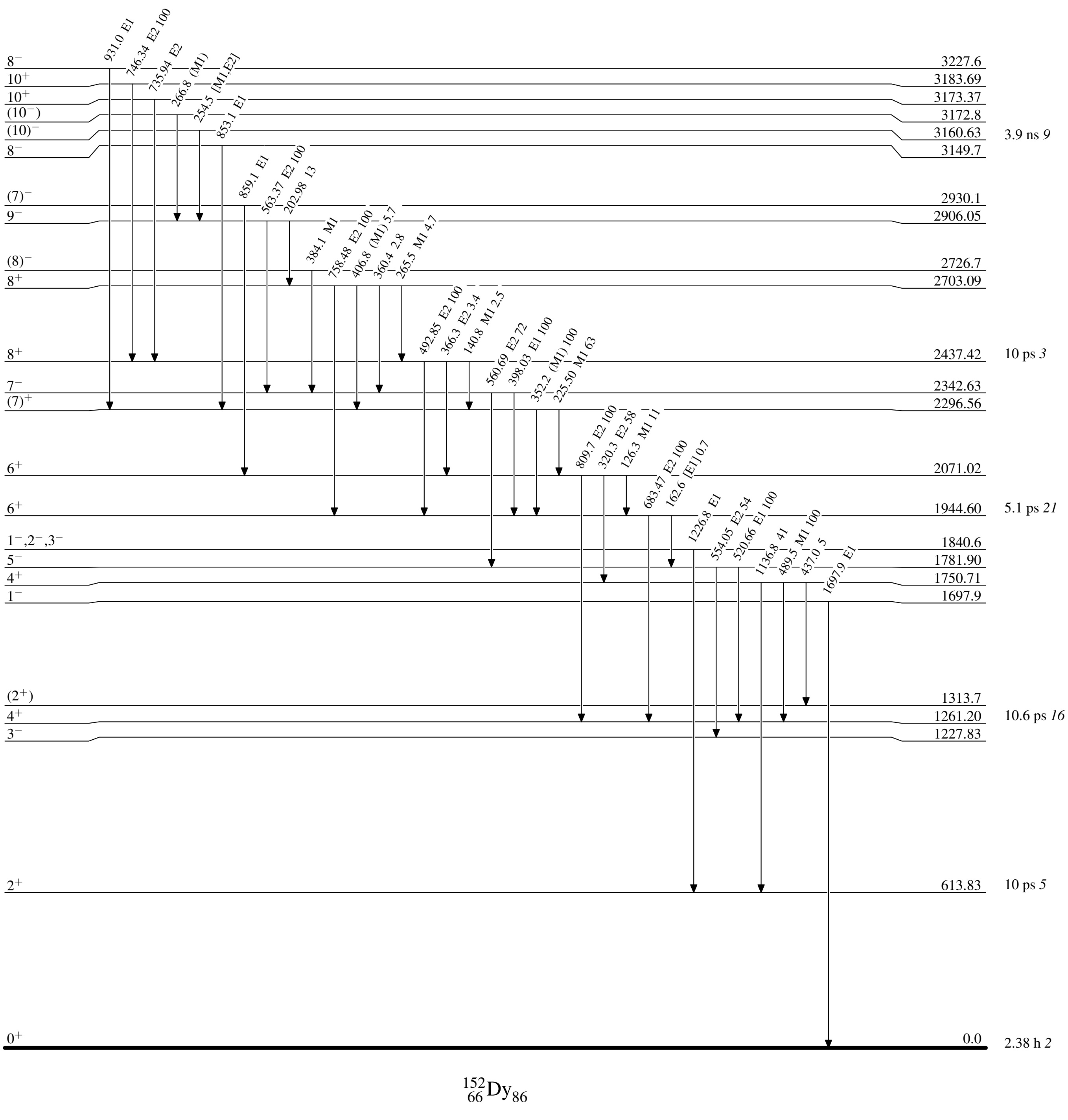


$^{152}_{66}Dy_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

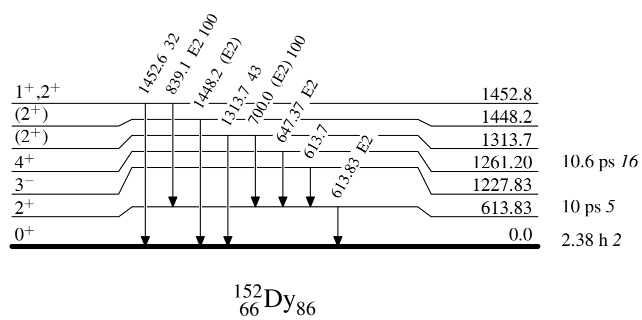


$^{152}_{66}Dy_{86}$

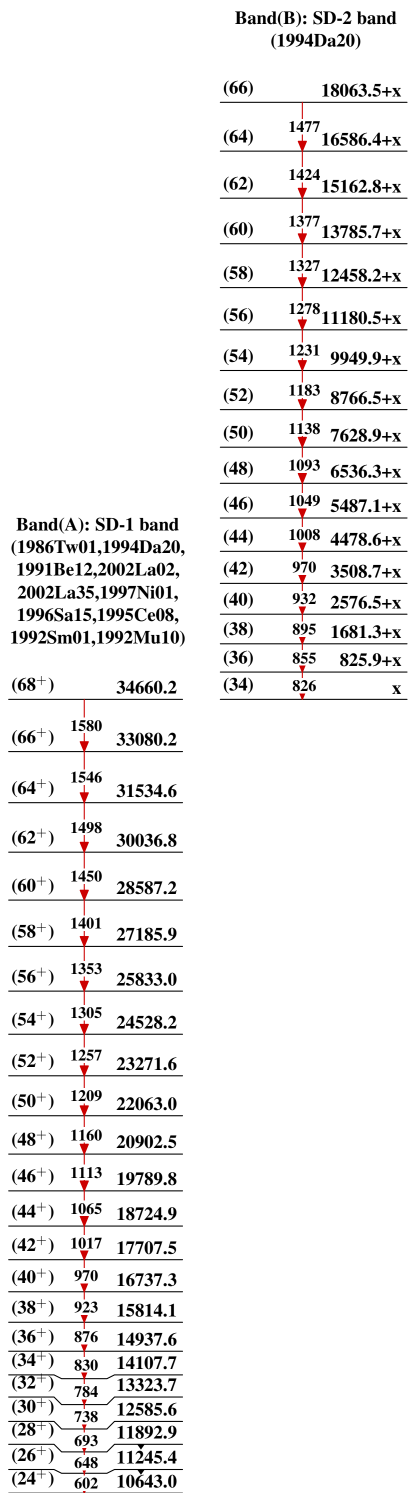
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

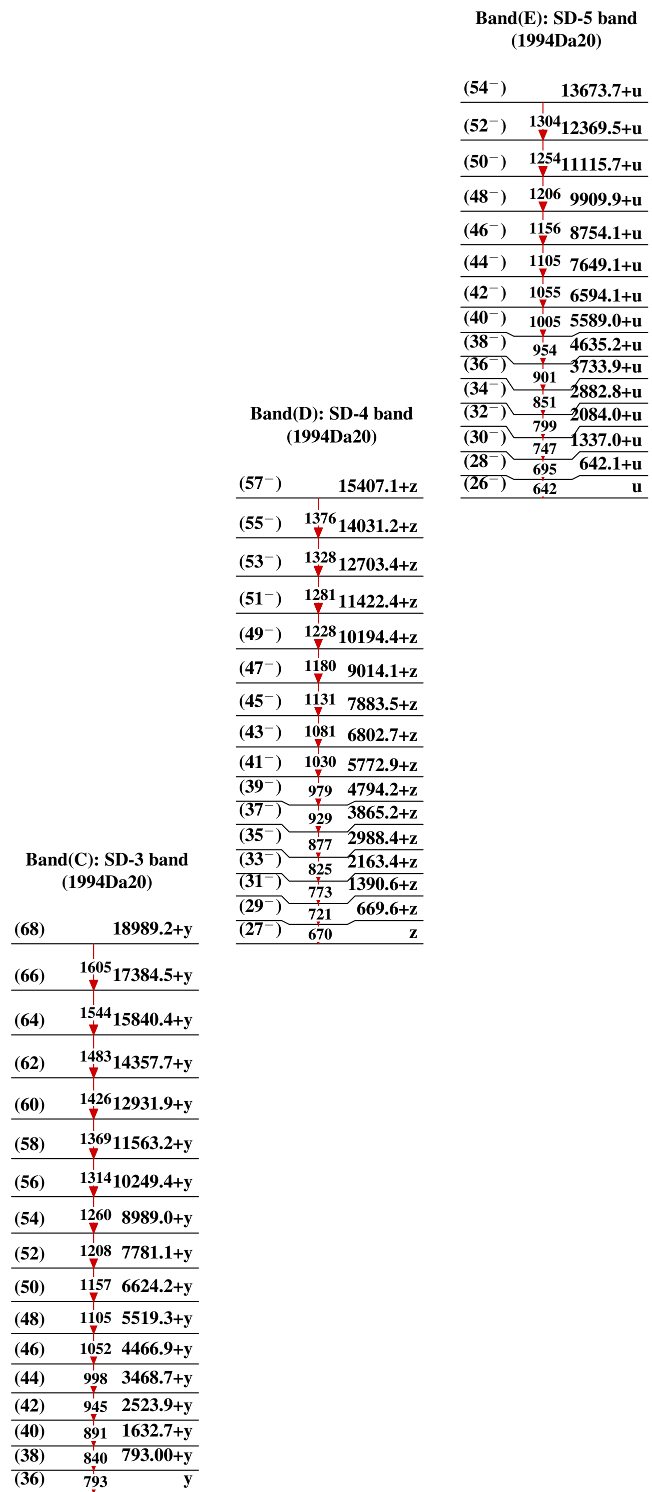


Adopted Levels, Gammas



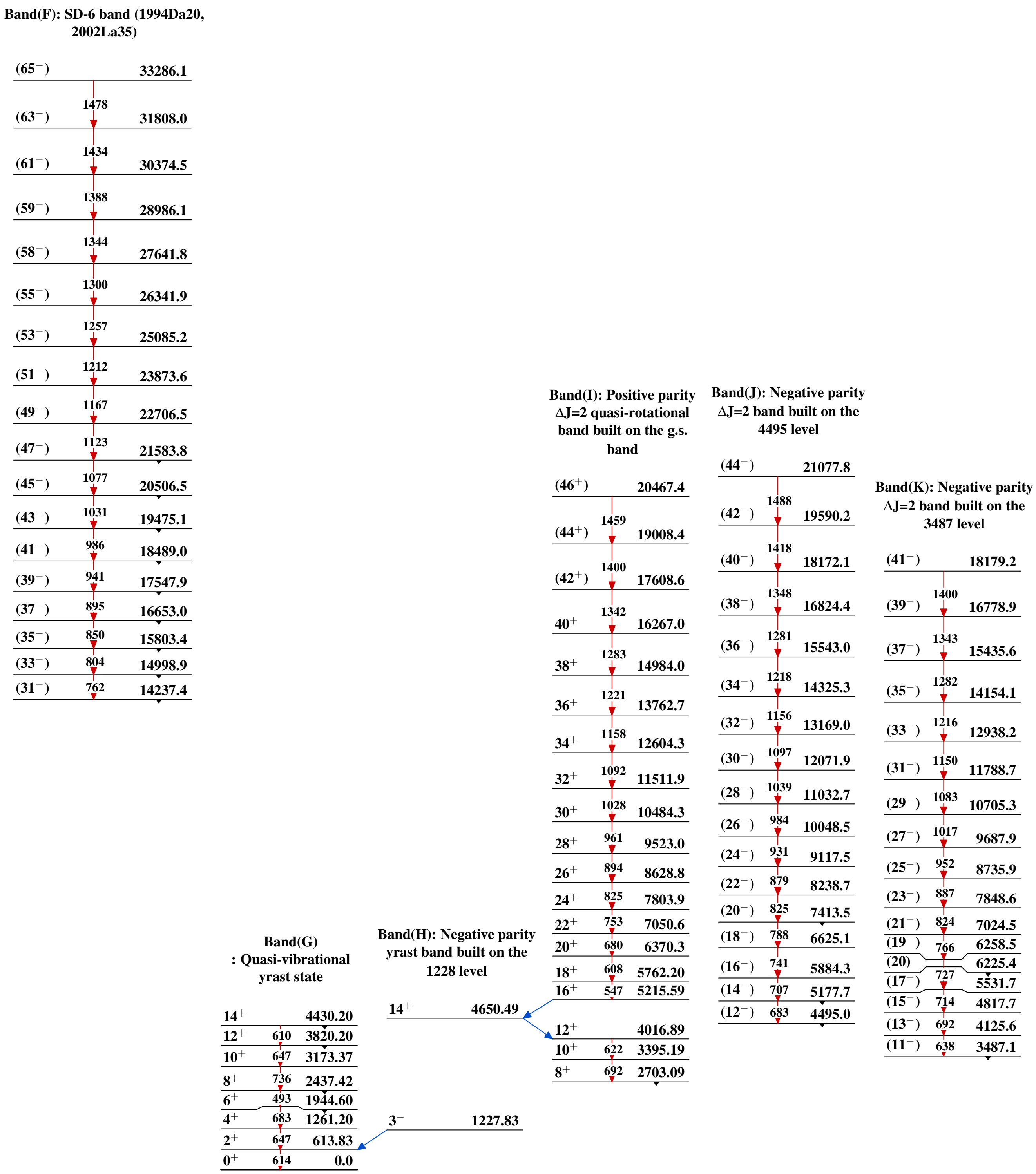
$^{152}_{66}Dy_{86}$

Adopted Levels, Gammas (continued)



$^{152}_{66}Dy_{86}$

Adopted Levels, Gammas (continued)



$^{152}_{66}Dy_{86}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Update	Balraj Singh	ENSDF	31-Dec-2009

Q(β^-)=−5755 *10*; S(n)=9322 *8*; S(p)=6370 *8*; Q(α)=2945 *5* 2017Wa10
S(2n)=16419 *8*; S(2p)=10265 *8* 2017Wa10
Additional information 1.
Additional information 2.
Theory and model discussions that may be of interest include: level energies and B(E2) − 1975ZoZS, 1976Ra04, 1978De02, 1989Gu07, 1989Hs02; wave functions − 1972Ar36; moments − 1986Be09, 1988Ki08.

^{154}Dy Levels

Using the recoil-distance technique in combination with large transient magnetic fields, 1993Bi09 measured g-factors of excited states up to high spins. The measurement was sensitive only to states populated ≈ 13.5 ps after the reaction. The reported values were normalized to g=0.36 *4* (a theoretical value) for the 2^+ member of the ground state band. Relative to this value, the g-factors for the respective states (labeled by the J^π value or range) are as follows: 0.39 *6*, 4^+; 0.35 *9*, 6^+ through 8^+; 0.19 *13*, 10^+ through 14^+; 0.11 *14*, 16^+ through 20^+; 0.28 *13*, 22^+ through 30^+; 0.44 *11*, 32^+ through 36^+; 0.23 *10*, 9^- through 15^-; 0.32 *13*, 17^- through 21^-; and 0.16 *8*, 27^- through 35^-. From the data of 1984Ha39 and the evaluation of 1989Ra16, the reported average g-factor for levels with a mean J of 26 is 0.39 *5*.
Configurations for the SD bands are from 2009Ij01 based on assignments proposed in the theoretical interpretations by 1998Af02. These are labeled with respect to intruder configuration of $\pi6^4\nu7^2$ for the yrast SD band in ^{152}Dy, N=86.
Additional information 3.

Cross Reference (XREF) Flags

A	^{122}Sn(^{36}S,4nγ)	D	^{156}Dy(p,t)
B	^{154}Ho ε decay (11.76 min)	E	^{165}Ho(π^-,11nγ)
C	^{154}Ho ε decay (3.10 min)	F	^{122}Sn(^{36}S,4nγ):SD

E(level)[†]	J^{π}[#]	$T_{1/2}$[a]	XREF	Comments
0.0[h]	0^+	3.0×10^6 y *15*	ABCDE	%α=100 $\Delta<r^2>(^{152}Dy-^{154}Dy)$=0.285 *25* fm^2 and $\Delta<r^2>(^{154}Dy-^{156}Dy)$=0.37 *3* (1987Au06). Other: 0.297 *94* and 0.39 *14*, respectively, experimental values from compilation of 1995Ne12. See also 1996La03. From an evaluation of data on nuclear rms charge radii, 2004An14 report $<r^2>^{1/2}$=5.13 fm *23*. $T_{1/2}$: From evaluation of 1985HoZN and based on 1.5×10^6 y *9* (revision of value from 1961Ma18) and 4×10^6 y (revision of value from 1971Go08). Others: 2.9×10^6 y *15* (1965Ma51) and 10×10^6 y *4* (1967Go32). Calculated $T_{1/2}=1.2\times10^6$ y (1991Bu05).
334.34[h] *3*	2^+	27.5 ps *20*	ABCDE	J^π: From E2 γ to 0^+ level.
660.55[b] *8*	0^+		B D	J^π: From L=0 in (p,t) and E0 γ to 0^+ level.
746.78[h] *8*	4^+	6.9 ps *5*	ABCDE	J^π: From E2 γ to 2^+ level and band structure.
905.08[b] *7*	2^+		ABCD	The γ branching is from the ^{154}Ho ε decay. IT is very different from that observed in the heavy-ion study. J^π: From E0 component in γ to 2^+ level.
1027.04[r] *7*	2^+		B D	J^π: From M1 γ to 3^+ level, γ to 0^+, and band structure.
1057.88[s] *16*	0^+		B D	J^π: From L=0 in (p,t) and E0 transitions to 0^+ levels.
1207.72[j] *10*	3^-		B D	J^π: From E1 γ to 2^+ level and γ to 4^+.
1223.70[h] *8*	6^+	2.4 ps *4*	A CDE	J^π: From E2 γ to 4^+ and band structure.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{154}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$[a]	XREF	Comments
1251.52[b] *13*	4^+		ABCD	The γ branching is from the ^{154}Ho ε decay. IT is very different from that observed in the heavy-ion study. J^{π}: From E0 component in γ to 4^+ level.
1334.19[r] *8*	3^+		BC	J^{π}: From γ's to 2^+ and 4^+ levels and expected band structure.
1390.27[s] *10*	2^+		B D	J^{π}: From E0 components in γ's to 2^+ levels.
1420.27[j] *16*	1^-		B	J^{π}: From γ's to 0^+ and 2^+ levels and band structure.
1442.28[r] *14*	4^+		B D	J^{π}: From M1 γ to 4^+ level, γ's to 2^+, and band structure.
1507.49[t] *9*	2^+		B D	J^{π}: From γ's to 0^+ and 2^+ levels and band structure.
1545.78[j] *22*	5^-		BCD	J^{π}: From γ to 4^+ level and band structure.
1634.95[u] *21*	2^-		B	J^{π}: From γ to 2^+ level and band structure.
1658.36[b] *12*	6^+		A C	J^{π}: From E0 component in γ to 6^+ level.
1739.60[r] *15*	5^+		C	J^{π}: From γ's to (3^+), 4^+, and 6^+ levels.
1747.21[h] *9*	8^+	1.5 ps *3*	A C E	J^{π}: From log *ft* of 6.1 for ε decay from 8^+ parent and E2 γ to 6^+ level.
1781.7[t] *4*	(3^+)		B	J^{π}: From γ's to 2^+ levels and band structure.
1818.89[u] *20*	(4^-)		BC	J^{π}: From γ's to 3^- and 4^+ levels and band structure.
1832.6 *3*			B D	XREF: D(1835).
1844.6 *3*			B	
1877.1 *4*			B D	
1885.19[r] *19*	$(6)^+$		C	J^{π}: From M1,E2 γ to 6^+, γ to 4^+, and band structure.
1903.60[u] *24*	(3^-)		B D	J^{π}: From γ's to 2^+ and 4^+ levels and band structure. Population in (p,t) indicates natural parity.
1958.1 *5*			B	
1964.26[j] *10*	7^-		A C	J^{π}: From γ to 6^+ level, log *ft* of 6.3 for ε decay from 8^+ parent, and band structure.
1990.8 *3*			B	
2038			D	
2148.2 *5*			B	
2162.94[b] *21*	8^+		A C	J^{π}: From γ to 6^+ level and band structure.
2168.5 *4*			B	
2177.9 *3*			B	
2183.01[r] *16*	7^+		C	J^{π}: From E2 γ to 5^+ level and band structure.
2183.7 *4*			B	E(level): See the comment in the ^{154}Ho ε decay (11.76 min) data set regarding problems with this level.
2192.0 *3*	(7,8)		C	J^{π}: From γ to 6^+ level and log *ft* of 6.5 for ε decay from 8^+ parent.
2249.3 *4*			B	
2271.78 *24*			B	
2304.11[h] *10*	10^+	1.1 ps *3*	A E	J^{π}: From E2 γ to 8^+ and band structure.
2344.7 *6*			B	
2421.01[j] *10*	9^-		A	J^{π}: From dipole γ to 8^+ level and band structure.
2472.40[v] *11*	7^+		C	J^{π}: E0 component in γ to 7^+; M1 γ's to 6^+ and 8^+. allowed-unhindered (log *ft*=4.9) ε transition from 3.10-min, 8^+, isomer in ^{154}Ho establishes configurations for both levels.
2567.0[p] *7*	7^-		A	
2664.5[i] *8*	8^-		A	
2757.8[b] *9*	10^+		A	
2866.2[q] *6*	8^-		A	
2882.01[j] *10*	11^-	4.5 ps *+2−3*	A	
2892.61[h] *10*	12^+	0.94 ps *19*	A	
3011.91[p] *16*	9^-		A	
3048.1[i] *7*	10^-		A	
3158.91[q] *18*	10^-		A	
3289.0[b] *9*	12^+		A	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{154}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$[a]	XREF
3314.31[p] 17	11^-		A
3390.11[j] 10	13^-	1.7 ps	A
3483.8[i] 12	12^-		A
3503.91[q] 18	12^-		A
3508.71[h] 11	14^+	0.55 ps 10	A
3679.42[c] 13	14^+		A
3719.91[p] 18	13^-		A
3964.01[q] 19	14^-		A
3982.21[j] 11	15^-	3.0 ps	A
4005.9[i] 16	14^-		A
4090.33[c] 12	16^+	1.3 ps 5	A
4172.76[h] 13	16^+		A
4230.41[p] 19	15^-		A
4518.91[q] 10	16^-		A
4587.6[i] 19	16^-		A
4636.86[c] 13	18^+	0.76 ps 17	A
4641.82[j] 12	17^-	1.3 ps +10−6	A
4826.31[p] 19	17^-		A
4868.54[h] 15	18^+		A
5151.31[q] 20	18^-		A
5205.9[i] 21	18^-		A
5249.29[c] 13	20^+	0.62 ps 9	A
5338.42[j] 12	19^-		A
5488.91[p] 20	19^-		A
5563.96[h] 17	20^+		A
5840.91[q] 20	20^-		A
5866.5[i] 24	20^-		A
5934.41[c] 14	22^+	0.38 ps	A
6035.39[j] 13	21^-		A
6181.4[o] 5	21^-		A
6201.02[p] 20	21^-		A
6285.24[h] 17	22^+		A
6560[i] 3	22^-		A
6573.3[q] 3	22^-		A
6690.23[c] 14	24^+	0.2 ps	A
6753.89[j] 14	23^-		A
6804.9[o] 5	23^-		A
6952.3[p] 3	23^-		A
7045.16[h] 17	24^+		A
7288[i] 3	24^-		A
7342.8[q] 4	24^-		A
7375.28[g] 18	24^+		A
7513.26[c] 15	26^+	0.2 ps +4−2	A
7518.89[j] 15	25^-		A
7741.0[p] 5	25^-		A
7772.0[o] 5	25^-		A
7856.13[h] 17	26^+		A
8061[i] 3	26^-		A
8139.06[g] 15	26^+		A
8151.3[q] 5	26^-		A
8280.3[o] 5	27^-		A
8334.89[j] 15	27^-		A
8400.38[c] 15	28^+	0.15 ps	A
8570.0[p] 5	27^-		A
8723.10[h] 17	28^+		A
8885[i] 3	28^-		A
8916.50[g] 15	28^+		A
9001.6[q] 5	28^-		A
9118.7[l] 11	(28^-)		A
9188.1[j] 6	29^-		A
9217.10[o] 16	29^-		A
9349.63[c] 15	30^+		A
9444.8[p] 5	29^-		A
9566.95[e] 17	30^+		A
9646.14[h] 18	30^+		A
9668.16[g] 17	30^+		A
9765[i] 4	30^-		A
9893.6[l] 15	(30^-)		A
9898.2[q] 9	30^-		A
10107.1[j] 6	31^-		A
10155.80[o] 17	31^-		A
10358.67[c] 17	32^+		A
10367.4[p] 12	31^-		A
10384.24[e] 16	32^+		A
10434.1[l] 18	(32^-)		A
10445.79[g] 17	32^+		A
10629.19[h] 20	32^+		A
10704[i] 4	32^-		A
10846.7[q] 14	32^-		A
11073.1[j] 6	33^-		A
11082.2[m] 8	33^-		A
11120.21[e] 16	34^+		A
11147.30[o] 19	33^-		A
11318.82[g] 16	34^+		A
11340.4[p] 15	33^-		A
11431.67[c] 19	34^+		A
11605.5[n] 8	34^-		A
11665.79[h] 20	34^+		A
11704[i] 4	34^-		A
11758.5[l] 21	(34^-)		A
11829.5[m] 8	35^-		A
11849.8[q] 17	34^-		A
11916.1[k] 13	35^-		A
11925.25[e] 17	36^+		A
12063.01[o] 20	(35^-)		A
12095.1[j] 6	35^-		A
12306.8[n] 8	36^-		A
12409.47[g] 16	36^+		A
12540.4[m] 8	37^-		A
12557.08[c] 20	36^+		A

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{154}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$[a]	XREF
12762.30[h] *21*	36^{+}		A
12765[i] *4*	36^{-}		A
13039.1[n] *10*	38^{-}		A
13088.2[o] *11*	(37^{-})		A
13088.6[d] *11*	37^{+}		A
13166.0[j] *6*	37^{-}		A
13257.4[g] *8*	38^{+}	0.8 ps *3*	A
13311.2[m] *8*	39^{-}		A
13402.4[k] *13*	39^{-}		A
13558.2[n] *11*	40^{-}		A
13744.38[c] *21*	38^{+}		A
13888[i] *4*	38^{-}		A
13909.23[h] *22*	38^{+}		A
14024.6[‡m] *11*	41^{-}		A
14135.2[g] *8*	40^{+}	0.8 ps *3*	A
14294.5[j] *6*	39^{-}		A
14375.2[k] *13*	41^{-}		A
14423.6[d] *13*	39^{+}		A
14468.6[f] *13*	39^{+}		A
14590.2[‡n] *13*	42^{-}		A
14885.5[g] *8*	42^{+}	1.1 ps *3*	A
14980.79[c] *22*	40^{+}		A
15074[i] *4*	40^{-}		A
15118.45[h] *22*	40^{+}		A
15484.0[j] *6*	41^{-}		A
15504.9[d] *13*	(41^{+})		A
15661.5[k] *15*	(43^{-})		A
16011.3[g] *13*	44^{+}	0.16 ps *6*	A
16088.7[d] *13*	43^{+}		A
16271.86[c] *22*	42^{+}		A
16322[i] *4*	42^{-}		A
16359.7[f] *13*	(43^{+})		A
16373.45[h] *23*	42^{+}		A
16735.2[j] *6*	43^{-}		A
16737.5[k] *18*	(45^{-})		A
17186.8[d] *16*	45^{+}		A
17293.7[f] *16*	(45^{+})		A
17322.4[g] *16*	46^{+}	0.08 ps *3*	A
17608.57[c] *22*	44^{+}		A
17628[i] *5*	44^{-}		A
18053.7[j] *6*	45^{-}		A
18485.3[d] *19*	47^{+}		A
18732.4[‡g] *19*	48^{+}	<0.11 ps	A
18914.7[f] *19*	47^{+}		A
18963.2[c] *11*	46^{+}		A
19445.1[j] *12*	47^{-}		A
20904.1[j] *16*	49^{-}		A
22435.5[j] *19*	51^{-}		A

E(level)[†]	J^{π}[#]	XREF
x[w]	J≈(24)[@&]	F
701.7+x[w] *2*	J+2	F
1450.7+x[w] *3*	J+4	F
2245.1+x[w] *4*	J+6	F
3085.7+x[w] *4*	J+8	F
3973.1+x[w] *5*	J+10	F
4907.8+x[w] *5*	J+12	F
5888.9+x[w] *6*	J+14	F
6917.7+x[w] *6*	J+16	F
7993.2+x[w] *6*	J+18	F
9116.7+x[w] *7*	J+20	F
10288.0+x[w] *7*	J+22	F
11506.6+x[w] *7*	J+24	F
12772.6+x[w] *8*	J+26	F
14086.7+x[w] *8*	J+28	F
15448.6+x[w] *8*	J+30	F
16858.3+x[w] *8*	J+32	F
18314.9+x[w] *9*	J+34	F
19819.2+x[w] *9*	J+36	F
y[x]	J1	F
794.9+y?[x] *9*	J1+2	F
1634.8+y[x] *10*	J1+4	F
2520.1+y[x] *10*	J1+6	F
3451.1+y[x] *10*	J1+8	F
4428.2+y[x] *10*	J1+10	F
5451.2+y[x] *10*	J1+12	F
6519.6+y[x] *11*	J1+14	F
7632.6+y[x] *12*	J1+16	F
8789.9+y[x] *13*	J1+18	F
9991.7+y[x] *13*	J1+20	F
11237.8+y[x] *13*	J1+22	F
12527.9+y[x] *13*	J1+24	F
13861.7+y[x] *14*	J1+26	F
15239.0+y[x] *15*	J1+28	F
16659.7+y[x] *15*	J1+30	F
18123.3+y[x] *16*	J1+32	F
19629.1+y[x] *16*	J1+34	F
z[y]	J2≈(33)[&]	F
780.5+z[y] *6*	J2+2	F
1607.7+z[y] *10*	J2+4	F
2479.7+z[y] *12*	J2+6	F
3392.1+z[y] *13*	J2+8	F
4349.5+z[y] *14*	J2+10	F
5351.6+z[y] *14*	J2+12	F
6399.0+z[y] *15*	J2+14	F
7492.4+z[y] *15*	J2+16	F
8632.5+z[y] *15*	J2+18	F
9819.6+z[y] *15*	J2+20	F

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{154}Dy Levels (continued)

E(level)[†]	J^{π}[#]	XREF
11052.1+z[y] *16*	J2+22	F
12332.2+z[y] *16*	J2+24	F
13659.4+z[y] *16*	J2+26	F
15033.1+z[y] *17*	J2+28	F
16453.2+z[y] *17*	J2+30	F
17919.3+z[y] *17*	J2+32	F
19431.5+z[y] *19*	J2+34	F
u[z]	J3	F
721.1+u[z] *7*	J3+2	F
1490.1+u[z] *10*	J3+4	F
2307.1+u[z] *11*	J3+6	F
3172.5+u[z] *12*	J3+8	F
4086.8+u[z] *14*	J3+10	F
5050.1+u[z] *14*	J3+12	F
6061.8+u[z] *14*	J3+14	F
7120.8+u[z] *15*	J3+16	F
8226.3+u[z] *15*	J3+18	F
9377.2+u[z] *15*	J3+20	F
10573.6+u[z] *15*	J3+22	F
11815.4+u[z] *15*	J3+24	F
13102.4+u[z] *15*	J3+26	F
14434.5+u[z] *16*	J3+28	F
15811.3+u[z] *16*	J3+30	F
17232.4+u[z] *17*	J3+32	F
18696.8+u[z] *18*	J3+34	F
20204.0+u[z] *20*	J3+36	F
v[1]	J4≈(31)[&]	F
738.6+v[1] *8*	J4+2	F
1522.6+v[1] *12*	J4+4	F
2352.5+v[1] *14*	J4+6	F
3229.0+v[1] *15*	J4+8	F
4152.5+v[1] *17*	J4+10	F
5122.8+v[1] *18*	J4+12	F
6140.2+v[1] *19*	J4+14	F
7204.4+v[1] *20*	J4+16	F
8315.0+v[1] *21*	J4+18	F
9471.9+v[1] *21*	J4+20	F
10675.0+v[1] *23*	J4+22	F
11923.6+v[1] *23*	J4+24	F
13218.0+v[1] *23*	J4+26	F
14559.2+v[1] *24*	J4+28	F
15946+v[1] *3*	J4+30	F
17380+v[1] *3*	J4+32	F
18859+v[1] *3*	J4+34	F
20385+v[1] *3*	J4+34	F
w[2]	J5≈(36)[&]	F
855.2+w?[2] *10*	J5+2	F
1756.4+w?[2] *15*	J5+4	F
2704.1+w[2] *15*	J5+6	F
3698.4+w[2] *16*	J5+8	F
4739.3+w[2] *17*	J5+10	F
5826.2+w[2] *18*	J5+12	F
6959.5+w[2] *18*	J5+14	F
8138.9+w[2] *19*	J5+16	F
9364.4+w[2] *20*	J5+18	F
10636.2+w[2] *20*	J5+20	F
11954.2+w[2] *21*	J5+22	F
13318.5+w[2] *23*	J5+24	F
14728.7+w[2] *24*	J5+26	F
16185+w[2] *3*	J5+28	F

† From a least-squares fit to γ energies in this data set. This computation assigns an uncertainty of 1 keV to those γ energies that do not have input uncertainties. The uncertainties in the level energies within the SD band are relative to the lowest level in this band. Seven E_{γ} values out of 327 differ by 3σ or more from the calculated ones.

‡ Maximally-aligned state; proposed termination of this level sequence.

\# Above 2600 keV all levels are from ^{122}Sn(^{36}S,4nγ) and ^{122}Sn(^{36}S,4nγ): SD, so the J^{π} are from the γ multipolarities and the reported band structure. Therefore, level-specific J^{π} arguments are not given in this energy region.

@ In their listing of data on superdeformed bands, 1999Ha56 estimate J=28 for this level. In a subsequent compilation, however, 2002Si26 do not suggest a J^{π} value for IT.

& As proposed by 2009Ij01 from assigned configurations and effective alignments.

a All values for excited levels are from ^{122}Sn(^{36}S,4nγ) (1985AzZY and 1988Ma28).

b Band(A): First excited $K^{\pi}=0^{+}$ band. Proposed to be a quasi-beta band (1980Zo02).

c Band(B): S, or 'Super', band. Denoted as $(\pi=+,\alpha=0)_1$ by 2002Ma10. Band starts at 14^{+} and crosses the gs band at $J^{\pi}=14^{+}$. It loses its yrast status above the 32^{+} level.

d Band(b): $(\pi=+,\alpha=1)_1$ band. Band starts at 37^{+}.

e Band(C): $(\pi=+,\alpha=0)_2$ band. Band starts at 30^{+}.

f Band(c): $(\pi=+,\alpha=1)_2$ band. Band starts at 39^{+}.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{154}Dy Levels (continued)

[g] Band(D): (π=+,α=0)$_3$ band. Band starts at 24$^+$.
[h] Band(E): Ground-state band. Denoted as (π=+,α=0)$_4$ by 2002Ma10.
[i] Band(F): (π=−,α=0)$_1$ band. Band starts at 8$^-$.
[j] Band(f): (π=−,α=1)$_1$ band. Band as observed in ^{122}Sn(^{36}S,4nγ) starts at 7$^-$. Evaluators assume that the 1$^-$ through 5$^-$ states assigned as an "octupole-based, odd-spin band" in ^{154}Ho ε decay (11.76 min) are associated with this band.
[k] Band(G): (π=−,α=1)$_3$ band. Band starts at 35$^-$.
[l] Band(g): (π=−,α=0)$_3$ band. Band starts at (28$^-$).
[m] Band(H): (π=−,α=1)$_2$ band. Band starts at 33$^-$.
[n] Band(h): (π=−,α=0)$_2$ band. Band starts at 34$^-$.
[o] Band(I): (π=−,α=1)$_5$ band. Band starts at 21$^-$.
[p] Band(J): (π=−,α=1)$_4$ band. Band starts at 7$^-$.
[q] Band(j): (π=−,α=0)$_4$ band. Band starts at 8$^-$.
[r] Band(K): First excited K$^\pi$=2$^+$ band. Proposed by 1980Zo02 to be a quasi-gamma band.
[s] Band(L): Second excited K$^\pi$=0$^+$ band.
[t] Band(M): K^π=2$^+$ band.
[u] Band(N): Negative-parity band. Octupole-related level sequence.
[v] Band(O): 7$^+$ bandhead. Probable configuration: (ν 3/2[532])+(ν 11/2[505]).
[w] Band(P): SD-1 band (2009Ij01,1995Ni03). Proposed configuration: (π6)^4(ν7)^2⊗(ν5/2[402])^2. Earlier in 1995Ni03, ν9/2[514])^2 orbital was proposed Q$_t$=15.9 *+31−21*. $\beta_2 \approx$ 0.57 (1996Fi08). Percent feeding=0.70 *10*, relative to that of the g.s. band.
[x] Band(Q): SD-2 band (2009Ij01). Percent feeding=0.30 *10*, relative to that of the g.s. band.
[y] Band(R): SD-3 band (2009Ij01). Band crossing at $\hbar\omega\approx$0.45 MeV Proposed configuration: (π6)^4(ν7)^2⊗(ν3/2[761])⊗ν3/2[521]). Percent feeding=0.11 *5*, relative to that of the g.s. band.
[z] Band(S): SD-4 band (2009Ij01). Percent feeding=0.07 *4*, relative to that of the g.s. band.
[1] Band(T): SD-5 band (2009Ij01), α=1. Band crossing at $\hbar\omega\approx$0.55 MeV. Proposed configuration: (π6)^4(ν7)^2⊗(ν5/2[402])⊗ν3/2[761]). Percent feeding=0.05 *3*, relative to that of the g.s. band. SD-5 and SD-6 bands are interpreted as signature partners.
[2] Band(t): SD-6 band (2009Ij01), α=0 Proposed configuration: (π6)^4(ν7)^2⊗(ν5/2[402])⊗ν3/2[761]). Percent feeding=0.03 *2*, relative to that of the g.s. band. SD-5 and SD-6 bands are interpreted as signature partners.

$\gamma(^{154}Dy)$

E_i(level)	J^π_i	E_γ†	I_γ‡	E_f	J^π_f	Mult.	α@	$I_{(\gamma+ce)}$	Comments
334.34	2^+	334.30 3	100	0.0	0^+	E2	0.0466		B(E2)(W.u.)=96 7
660.55	0^+	326.1 1	100	334.34	2^+				
		660.8 2		0.0	0^+	E0		9.5 5	
746.78	4^+	412.4 1	100	334.34	2^+	E2	0.0255		B(E2)(W.u.)=137 10
905.08	2^+	244.3 3	3.8 11	660.55	0^+				
		570.6 1	100 5	334.34	2^+	E0+E2,M1	0.025 3		
		905.3 1	19.7 18	0.0	0^+				I_γ: Note that $I\gamma(905.3\gamma)/I\gamma(244.2\gamma)$=2.0 from the heavy-ion data.
1027.04	2^+	366.2 3	20.2 25	660.55	0^+				
		692.6 1	95 5	334.34	2^+	M1	0.01306		
		1027.2 1	100 5	0.0	0^+				
1057.88	0^+	152.7 3	100 17	905.08	2^+				
		397.3 2		660.55	0^+	E0		244 15	
		723.6 5	34 17	334.34	2^+				
		1058.4 6		0.0	0^+	E0		5.8 17	
1207.72	3^-	461.0 2	6.9 14	746.78	4^+				
		873.3 1	100 5	334.34	2^+	E1	1.61×10^{-3}		
1223.70	6^+	476.90 4	100	746.78	4^+	E2	0.01716		B(E2)(W.u.)=1.9×10^2 4
1251.52	4^+	346.6 2	67 7	905.08	2^+	E2	0.0418		
		504.9 3	100 10	746.78	4^+	E0+E2,M1	0.094 15		I_γ: Note that $I\gamma(504.3\gamma)/I\gamma(346.6\gamma)$=0.20 from the heavy-ion data.
1334.19	3^+	429.0 2	14 3	905.08	2^+				
		587.5 1	24 3	746.78	4^+				I_γ: From ^{154}Ho ε decay (11.76 min). Other: 52 8 from ^{154}Ho ε decay (3.10 min).
		999.8 1	100 5	334.34	2^+				
1390.27	2^+	182.0 4	48 9	1207.72	3^-				
		363.4 4	26 12	1027.04	2^+				
		485.3 3	41 6	905.08	2^+	E0+E2,M1	0.20 5		
		642.8 4	34 16	746.78	4^+				
		729.8 1	100 12	660.55	0^+				
		1055.8 3	69 12	334.34	2^+	E0+E2,M1	0.018 8		
		1390.0 4	36 8	0.0	0^+				
1420.27	1^-	515.2 4	20 8	905.08	2^+				
		1085.9 2	75 8	334.34	2^+				
		1420.3 3	100 10	0.0	0^+				
1442.28	4^+	415.8 4	34 8	1027.04	2^+				
		695.3 2	100 14	746.78	4^+	M1(+E2)	0.010 3		
		1108.0 2	54 7	334.34	2^+				
1507.49	2^+	480.0 4	14 5	1027.04	2^+				
		602.9 4	19 5	905.08	2^+				
		846.7 2	53 5	660.55	0^+				
		1173.2 1	100 11	334.34	2^+				
		1507.6 4	47 9	0.0	0^+				

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$\gamma(^{154}Dy)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ‡	E_f	J^π_f	Mult.	α@	Comments
1545.78	5^-	799.0 *2*	100	746.78	4^+			
1634.95	2^-	1300.6 *2*	100	334.34	2^+			
1658.36	6^+	406.9 *1*	100 *7*	1251.52	4^+	E2	0.0264	
		434.7 *2*	13.4 *15*	1223.70	6^+	E2+E0+(M1)	0.27 *3*	I_γ: From ^{154}Tb ε decay (3.25 min). Other: 105 *19*, from 1974Ba07, and 20, from 2002MaZM, both in (^{122}Sn(^{36}S,4nγ)).
1739.60	5^+	405.8 *4*	58 *9*	1334.19	3^+			
		515.6 *3*	38 *6*	1223.70	6^+			
		992.9 *3*	100 *9*	746.78	4^+			
1747.21	8^+	523.50 *4*	100	1223.70	6^+	E2	0.01346	B(E2)(W.u.)=1.9×10^2 *4*
1781.7	(3^+)	755.1 *5*	100 *20*	1027.04	2^+			
		1447.1 *4*	91 *20*	334.34	2^+			
1818.89	(4^-)	610.6 *5*	35 *16*	1207.72	3^-			
		1072.2 *2*	100 *20*	746.78	4^+			
1832.6		1498.3 *3*	100	334.34	2^+			
1844.6		1510.3 *3*	100	334.34	2^+			
1877.1		1542.7 *5*	100 *13*	334.34	2^+			
		1877.1 *6*	52 *13*	0.0	0^+			
1885.19	$(6)^+$	661.5 *3*	100 *26*	1223.70	6^+	M1,E2	0.011 *4*	
		1138.5 *3*	53 *11*	746.78	4^+			
1903.60	(3^-)	569 *1*	100 *5*	1334.19	3^+			
		876.6 *3*	5.4 *8*	1027.04	2^+			
		1156.8 *4*	6.1 *15*	746.78	4^+			
1958.1		1623.7 *5*	100	334.34	2^+			
1964.26	7^-	740.60 *7*	100	1223.70	6^+			
1990.8		1656.5 *3*	100	334.34	2^+			
2148.2		1813.8 *5*	100	334.34	2^+			
2162.94	8^+	504.7 *4*	100	1658.36	6^+			
2168.5		1834.1 *4*	100	334.34	2^+			
2177.9		1431.0 *3*	100 *19*	746.78	4^+			
		1843.8 *5*	90 *19*	334.34	2^+			
2183.01	7^+	443.4 *2*	100 *7*	1739.60	5^+	E2	0.0209	
		959.1 *3*	47 *5*	1223.70	6^+			
2183.7		1849.3 *4*	100 *13*	334.34	2^+			
2192.0	(7,8)	968.3 *3*	100	1223.70	6^+			
2249.3		1502.5 *4*	100	746.78	4^+			
2271.78		1244.6 *3*	55 *14*	1027.04	2^+			
		1611.2 *5*	51 *21*	660.55	0^+			
		1937.8 *5*	100 *21*	334.34	2^+			
2304.11	10^+	556.90 *4*	100	1747.21	8^+	E2	0.01151	B(E2)(W.u.)=1.9×10^2 *6*
2344.7		2010.3 *6*	100	334.34	2^+			
2421.01	9^-	456.70 *4*	20 *4*	1964.26	7^-			
		673.80 *5*	100	1747.21	8^+	D		
2472.40	7^+	280.4	7.4 *11*	2192.0	(7,8)			

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$\gamma(^{154}Dy)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ‡	E_f	J^π_f	Mult.	α@	Comments
2472.40	7^+	289.3 *2*	27.5 *21*	2183.01	7^+	E0+M1,E2	0.23 *3*	
		309.5 *2*	21.7 *16*	2162.94	8^+	M1	0.1039	
		587.3 *3*	3.7 *21*	1885.19	$(6)^+$			
		725.1 *1*	70 *4*	1747.21	8^+	M1+E2	0.009 *3*	
		732.8 *2*	17.5 *16*	1739.60	5^+			
		814.1 *1*	79 *5*	1658.36	6^+	M1+E2	0.0067 *21*	
		1250.1 *7*	100 *5*	1223.70	6^+	M1	0.00312	
2567.0	7^-	819.8	100	1747.21	8^+			
2664.5	8^-	917.3	100	1747.21	8^+			
2757.8	10^+	594.7	100	2162.94	8^+			
2866.2	8^-	299.2	67	2567.0	7^-			
		901.9	100 *17*	1964.26	7^-			
2882.01	11^-	461.00 *6*	83	2421.01	9^-	E2	0.0188	B(E2)(W.u.)=55 *+4−2*
		577.90 *5*	100	2304.11	10^+	D		
2892.61	12^+	588.50 *5*	100	2304.11	10^+	E2	0.01004	B(E2)(W.u.)=1.7×10^2 *4*
3011.91	9^-	145.7	100	2866.2	8^-			
		444.9	4	2567.0	7^-			
		590.90 *13*	50	2421.01	9^-			
		1264.7	40	1747.21	8^+			
3048.1	10^-	383.6	100 *15*	2664.5	8^-			
		627.1	100 *10*	2421.01	9^-			
		744.0	25	2304.11	10^+			
3158.91	10^-	147.0	100	3011.91	9^-			
		292.7	20 *3*	2866.2	8^-			
3289.0	12^+	531.0	100	2757.8	10^+			
3314.31	11^-	155.40 *5*	100	3158.91	10^-			
		302.40 *7*	100	3011.91	9^-			
		432.3	40	2882.01	11^-			
		893.3	20	2421.01	9^-			
		1010.2	60	2304.11	10^+			
3390.11	13^-	497.50 *6*	17.6 *12*	2892.61	12^+	D		
		508.10 *4*	100 *3*	2882.01	11^-	E2	0.01453	B(E2)(W.u.)=1.5×10^2
3483.8	12^-	435.7	100	3048.1	10^-			
3503.91	12^-	189.60 *4*	100	3314.31	11^-			
		345.00 *6*	100	3158.91	10^-			
3508.71	14^+	616.10 *4*	100	2892.61	12^+	E2	0.00897	B(E2)(W.u.)=2.3×10^2 *5*
3679.42	14^+	390.3	85	3289.0	12^+			
		786.80 *9*	100	2892.61	12^+			
3719.91	13^-	216.00 *4*	100	3503.91	12^-			
		405.60 *9*	100	3314.31	11^-			
3964.01	14^-	244.10 *7*	100	3719.91	13^-			
		460.10 *12*	100	3503.91	12^-			
3982.21	15^-	473.50 *7*	15.6 *13*	3508.71	14^+	D		

γ(^{154}Dy) (continued)

E_i(level)	J^π_i	E_γ †	I_γ ‡	E_f	J^π_f	Mult.	α @	Comments
3982.21	15⁻	592.10 *4*	100 *4*	3390.11	13⁻	E2	0.00989	B(E2)(W.u.)=4.5×10¹
4005.9	14⁻	522.1	100	3483.8	12⁻			
4090.33	16⁺	410.90 *10*	14	3679.42	14⁺			
		581.60 *5*	100 *4*	3508.71	14⁺	E2	0.01033	B(E2)(W.u.)=1.2×10² *5*
4172.76	16⁺	664.10 *8*	100	3508.71	14⁺	E2		
4230.41	15⁻	266.40 *4*	100	3964.01	14⁻			
		510.50 *12*	100	3719.91	13⁻			
4518.91	16⁻	288.50 *5*	100	4230.41	15⁻			
		554.90 *10*	100	3964.01	14⁻			
4587.6	16⁻	581.7	100	4005.9	14⁻			
4636.86	18⁺	546.50 *5*	100	4090.33	16⁺	E2	0.01207	B(E2)(W.u.)=3.1×10² *7*
4641.82	17⁻	659.60 *4*	100	3982.21	15⁻	E2	0.00763	B(E2)(W.u.)=7.E+1 *+4−6*
4826.31	17⁻	307.40 *5*	100	4518.91	16⁻			
		595.90 *6*	100	4230.41	15⁻			
4868.54	18⁺	695.90 *12*	100 *10*	4172.76	16⁺			
		778.40 *22*	54	4090.33	16⁺			
5151.31	18⁻	325.00 *5*	100	4826.31	17⁻			
		632.40 *12*	100	4518.91	16⁻			
5205.9	18⁻	618.3	100	4587.6	16⁻			
5249.29	20⁺	612.40 *4*	100	4636.86	18⁺	E2	0.00911	B(E2)(W.u.)=2.1×10² *4*
5338.42	19⁻	696.60 *4*	100	4641.82	17⁻	E2		
5488.91	19⁻	337.60 *5*	100	5151.31	18⁻			
		662.60 *7*	100	4826.31	17⁻			
5563.96	20⁺	695.60 *12*	100	4868.54	18⁺			
5840.91	20⁻	351.90 *7*	100	5488.91	19⁻			
		689.50 *8*	100	5151.31	18⁻			
5866.5	20⁻	660.6	100	5205.9	18⁻			
5934.41	22⁺	685.10 *4*	100	5249.29	20⁺	E2	0.00698	B(E2)(W.u.)=2.0×10²
6035.39	21⁻	696.97 *5*	100	5338.42	19⁻	E2		
6181.4	21⁻	843.0	100	5338.42	19⁻			
6201.02	21⁻	360.20 *4*	100	5840.91	20⁻			
		712.10 *6*	100	5488.91	19⁻			
6285.24	22⁺	721.32 *6*	100	5563.96	20⁺			
6560	22⁻	693.0	100	5866.5	20⁻			
6573.3	22⁻	372.30 *17*	100	6201.02	21⁻			
		732.5 *4*	100	5840.91	20⁻			
6690.23	24⁺	755.80 *4*	100	5934.41	22⁺	E2	0.00557	B(E2)(W.u.)=2.3×10²
6753.89	23⁻	718.50 *4*	100	6035.39	21⁻	E2		
6804.9	23⁻	623.50 *5*	100	6181.4	21⁻			
		769.5	40	6035.39	21⁻			
6952.3	23⁻	379.00 *19*	100	6573.3	22⁻			
		751.3 *12*	100	6201.02	21⁻			
7045.16	24⁺	760.00 *8*	100	6285.24	22⁺			

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$\gamma(^{154}Dy)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ‡	E_f	J^π_f	Mult.	α@	Comments
7288	24⁻	728.6	100	6560	22⁻			
7342.8	24⁻	390.50 *15*	100	6952.3	23⁻			
		769.5 *3*	100	6573.3	22⁻			
7375.28	24⁺	685.10 *12*	100	6690.23	24⁺			
7513.26	26⁺	823.00 *4*	100	6690.23	24⁺	E2	0.00461	B(E2)(W.u.)=1.5×10^2 *+16−15*
7518.89	25⁻	765.00 *4*	100	6753.89	23⁻	E2		
7741.0	25⁻	398.2	100	7342.8	24⁻			
		788.7	100	6952.3	23⁻			
7772.0	25⁻	967.10 *7*	100	6804.9	23⁻			
7856.13	26⁺	811.00 *5*	100	7045.16	24⁺			
8061	26⁻	772.6	100	7288	24⁻			
8139.06	26⁺	626.01 *6*	100	7513.26	26⁺			
		763.89 *18*	33	7375.28	24⁺			
8151.3	26⁻	410.30 *18*	100	7741.0	25⁻			
		808.5 *3*	100	7342.8	24⁻			
8280.3	27⁻	508.30 *5*	100	7772.0	25⁻			
		761.4	70	7518.89	25⁻			
8334.89	27⁻	816.00 *4*	100	7518.89	25⁻	E2		
8400.38	28⁺	887.00 *4*	100	7513.26	26⁺	E2	0.00392	B(E2)(W.u.)=1.4×10^2
8570.0	27⁻	418.70 *19*	100	8151.3	26⁻			
		829.0 *7*	100	7741.0	25⁻			
8723.10	28⁺	867.00 *5*	100	7856.13	26⁺			
8885	28⁻	823.8	100	8061	26⁻			
8916.50	28⁺	516.00 *5*	100	8400.38	28⁺			
		778.20 *11*	50	8139.06	26⁺			
9001.6	28⁻	431.60 *21*	100	8570.0	27⁻			
		850.3 *4*	100	8151.3	26⁻			
9118.7	(28⁻)	838.4	100	8280.3	27⁻			
9188.1	29⁻	853.3	100	8334.89	27⁻	(E2)		
		907.8	1.9	8280.3	27⁻			
9217.10	29⁻	882.20 *4*	100 *6*	8334.89	27⁻	E2		
		936.8	29	8280.3	27⁻			
9349.63	30⁺	949.20 *4*	100	8400.38	28⁺	E2		
9444.8	29⁻	443.20 *15*	100	9001.6	28⁻			
		874.8 *9*	100	8570.0	27⁻			
9566.95	30⁺	650.50 *8*	100	8916.50	28⁺			
9646.14	30⁺	923.04 *7*	100	8723.10	28⁺			
9668.16	30⁺	751.80 *12*	100	8916.50	28⁺			
		945.09 *5*	100	8723.10	28⁺			
9765	30⁻	880.3	100	8885	28⁻			
9893.6	(30⁻)	774.9	100	9118.7	(28⁻)			
9898.2	30⁻	453.4	100	9444.8	29⁻			
		896.6	100	9001.6	28⁻			

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Adopted Levels, Gammas (continued)

$\gamma(^{154}Dy)$ (continued)

E_i(level)	J^π_i	E_γ †	I_γ ‡	E_f	J^π_f	Mult.
10107.1	31^-	890.0	11	9217.10	29^-	
		919.00 *5*	100	9188.1	29^-	
10155.80	31^-	938.70 *6*	100	9217.10	29^-	E2
10358.67	32^+	1008.82 *9*	100	9349.63	30^+	E2
10367.4	31^-	922.6	100	9444.8	29^-	
10384.24	32^+	716.1	5.0	9668.16	30^+	
		817.40 *12*	25	9566.95	30^+	
		1034.60 *4*	100	9349.63	30^+	E2
10434.1	(32^-)	540.5	100	9893.6	(30^-)	
10445.79	32^+	777.80 *9*	100	9668.16	30^+	
10629.19	32^+	983.04 *7*	100	9646.14	30^+	
10704	32^-	938.9	100	9765	30^-	
10846.7	32^-	948.5	100	9898.2	30^-	
11073.1	33^-	966.00 *7*	100	10107.1	31^-	
11082.2	33^-	926.4	5.0	10155.80	31^-	
		975.1	100	10107.1	31^-	E2
11120.21	34^+	735.80 *6*	100	10384.24	32^+	E2
		760.90 *16*	33	10358.67	32^+	
11147.30	33^-	991.50 *8*	100 *3*	10155.80	31^-	E2
11318.82	34^+	873.20 *9*	33	10445.79	32^+	
		934.90 *8*	100	10384.24	32^+	
		958.7	100	10358.67	32^+	
11340.4	33^-	973.0	100	10367.4	31^-	
11431.67	34^+	1073.00 *8*	100	10358.67	32^+	
11605.5	34^-	523.30 *15*	100	11082.2	33^-	
11665.79	34^+	1036.60 *6*	100	10629.19	32^+	
11704	34^-	999.9	100	10704	32^-	
11758.5	(34^-)	1324.4	100	10434.1	(32^-)	
11829.5	35^-	224.00 *4*	16.7 *17*	11605.5	34^-	(D)
		747.30 *8*	100 *8*	11082.2	33^-	(E2)
11849.8	34^-	1003.1	100	10846.7	32^-	
11916.1	35^-	833.9	100	11082.2	33^-	
11925.25	36^+	605.90 *19*	27	11318.82	34^+	
		805.00 *6*	100	11120.21	34^+	E2
12063.01	(35^-)	915.70 *6*	100	11147.30	33^-	
12095.1	35^-	1022.00 *5*	100	11073.1	33^-	
12306.8	36^-	477.30 *9*	100	11829.5	35^-	
		701.3	33	11605.5	34^-	
12409.47	36^+	484.10 *7*	100	11925.25	36^+	
		1090.96 *6*	25	11318.82	34^+	
		1289.10 *5*	50	11120.21	34^+	
12540.4	37^-	233.60 *4*	100	12306.8	36^-	
		710.90 *7*	100	11829.5	35^-	E2

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Adopted Levels, Gammas (continued)

γ(^{154}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$†	I$_\gamma$‡	E$_f$	J$^\pi_f$	Mult.	Comments
12557.08	36$^+$	1125.40 *6*	100	11431.67	34$^+$		
12762.30	36$^+$	1096.50 *6*	100	11665.79	34$^+$		
12765	36$^-$	1060.9	100	11704	34$^-$		
13039.1	38$^-$	498.7	100	12540.4	37$^-$		
		732.3	30	12306.8	36$^-$		
13088.2	(37$^-$)	1025.2	100	12063.01	(35$^-$)		
13088.6	37$^+$	1163.3	100	11925.25	36$^+$		
13166.0	37$^-$	1070.88 *5*	100	12095.1	35$^-$		
13257.4	38$^+$	847.9	27	12409.47	36$^+$		
		1332.1	100	11925.25	36$^+$	E2	B(E2)(W.u.)=2.7 *11*
13311.2	39$^-$	272.1	60	13039.1	38$^-$		
		770.80 *9*	100	12540.4	37$^-$	E2	
13402.4	39$^-$	862.0	100	12540.4	37$^-$		
13558.2	40$^-$	247.0	100	13311.2	39$^-$		
		519.1	100	13039.1	38$^-$		
13744.38	38$^+$	1187.30 *6*	100	12557.08	36$^+$		
13888	38$^-$	1123.6	100	12765	36$^-$		
13909.23	38$^+$	1146.93 *5*	100	12762.30	36$^+$		
14024.6	41$^-$	466.4	100	13558.2	40$^-$		
		713.4	80	13311.2	39$^-$		
14135.2	40$^+$	877.84 *11*	100	13257.4	38$^+$	E2	B(E2)(W.u.)=28 *11*
14294.5	39$^-$	1128.50 *4*	100	13166.0	37$^-$		
14375.2	41$^-$	1064.0	100	13311.2	39$^-$		
14423.6	39$^+$	1166.2	100	13257.4	38$^+$		
14468.6	39$^+$	1211.3	100	13257.4	38$^+$		
14590.2	42$^-$	565.6	100	14024.6	41$^-$		
		1032.0	20	13558.2	40$^-$		
14885.5	42$^+$	750.25 *17*	100	14135.2	40$^+$	E2	B(E2)(W.u.)=44 *12*
14980.79	40$^+$	1236.40 *5*	100	13744.38	38$^+$		
15074	40$^-$	1185.7	100	13888	38$^-$		
15118.45	40$^+$	1209.21 *5*	100	13909.23	38$^+$		
15484.0	41$^-$	1189.50 *5*	100	14294.5	39$^-$		
15504.9	(41$^+$)	1369.7	100	14135.2	40$^+$		
15661.5	(43$^-$)	1636.9	100	14024.6	41$^-$		
16011.3	44$^+$	1125.8	100	14885.5	42$^+$	E2	B(E2)(W.u.)=40 *15*
16088.7	43$^+$	1203.2	100	14885.5	42$^+$		
16271.86	42$^+$	1291.07 *5*	100	14980.79	40$^+$		
16322	42$^-$	1247.9	100	15074	40$^-$		
16359.7	(43$^+$)	1474.2	100	14885.5	42$^+$		
16373.45	42$^+$	1255.00 *5*	100	15118.45	40$^+$		
16735.2	43$^-$	1251.17 *4*	100	15484.0	41$^-$		
16737.5	(45$^-$)	1076.0	100	15661.5	(43$^-$)		
17186.8	45$^+$	1175.5	100	16011.3	44$^+$		

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γ(^{154}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.	Comments
17293.7	(45$^+$)	1282.4	100	16011.3	44$^+$		
17322.4	46$^+$	1311.1	100 *5*	16011.3	44$^+$	[E2]	B(E2)(W.u.)=37 *14*
17608.57	44$^+$	1336.70 *4*	100	16271.86	42$^+$		
17628	44$^-$	1306.5	100	16322	42$^-$		
18053.7	45$^-$	1318.50 *5*	100	16735.2	43$^-$		
18485.3	47$^+$	1298.5	100	17186.8	45$^+$		
18732.4	48$^+$	1410.0	100	17322.4	46$^+$	[E2]	B(E2)(W.u.)>19
18914.7	47$^+$	1592.3	100	17322.4	46$^+$		
18963.2	46$^+$	1354.6	100	17608.57	44$^+$		
19445.1	47$^-$	1391.4	100	18053.7	45$^-$		
20904.1	49$^-$	1459.0	100	19445.1	47$^-$		
22435.5	51$^-$	1531.4	100	20904.1	49$^-$		
701.7+x	J+2	701.7 *2*	0.20[#] *3*	x	J≈(24)		
1450.7+x	J+4	749.0 *2*	0.27[#] *4*	701.7+x	J+2		
2245.1+x	J+6	794.4 *2*	0.39[#] *4*	1450.7+x	J+4		
3085.7+x	J+8	840.6 *2*	0.59[#] *11*	2245.1+x	J+6		
3973.1+x	J+10	887.4 *2*	0.70[#] *11*	3085.7+x	J+8		
4907.8+x	J+12	934.7 *2*	0.68[#] *12*	3973.1+x	J+10		
5888.9+x	J+14	981.1 *2*	0.50[#] *12*	4907.8+x	J+12		
6917.7+x	J+16	1028.8 *2*	0.52[#] *12*	5888.9+x	J+14		
7993.2+x	J+18	1075.5 *2*	0.49[#] *12*	6917.7+x	J+16		
9116.7+x	J+20	1123.5 *2*	0.42[#] *12*	7993.2+x	J+18		
10288.0+x	J+22	1171.3 *2*	0.35[#] *12*	9116.7+x	J+20		
11506.6+x	J+24	1218.6 *2*	0.30[#] *12*	10288.0+x	J+22		
12772.6+x	J+26	1266.0 *2*	0.30[#] *11*	11506.6+x	J+24		
14086.7+x	J+28	1314.0 *2*	0.25[#] *10*	12772.6+x	J+26		
15448.6+x	J+30	1361.9 *2*	0.22[#] *10*	14086.7+x	J+28		
16858.3+x	J+32	1409.7 *2*	0.30[#] *10*	15448.6+x	J+30		
18314.9+x	J+34	1456.6 *3*	0.11[#] *8*	16858.3+x	J+32		
19819.2+x	J+36	1504.3 *2*	<0.1[#]	18314.9+x	J+34		Eγ=1503.7 *7* (1995Ni03).
794.9+y?	J1+2	794.9[&] *9*	<0.1[#]	y	J1		
1634.8+y	J1+4	839.9 *2*	0.20[#] *2*	794.9+y?	J1+2		
2520.1+y	J1+6	885.3 *2*	0.27[#] *3*	1634.8+y	J1+4		
3451.1+y	J1+8	931.0 *2*	0.25[#] *4*	2520.1+y	J1+6		
4428.2+y	J1+10	977.1 *2*	0.30[#] *4*	3451.1+y	J1+8		
5451.2+y	J1+12	1023.0 *2*	0.30[#] *4*	4428.2+y	J1+10		
6519.6+y	J1+14	1068.4 *4*	0.24[#] *4*	5451.2+y	J1+12		

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Adopted Levels, Gammas (continued)

$\gamma(^{154}Dy)$ (continued)

E_i(level)	J_i^π	E_γ†	I_γ‡	E_f	J_f^π
7632.6+y	J1+16	1113.0 *4*	0.21# *4*	6519.6+y	J1+14
8789.9+y	J1+18	1157.3 *4*	0.20# *4*	7632.6+y	J1+16
9991.7+y	J1+20	1201.8 *2*	0.21# *4*	8789.9+y	J1+18
11237.8+y	J1+22	1246.1 *3*	0.19# *4*	9991.7+y	J1+20
12527.9+y	J1+24	1290.1 *3*	0.18# *4*	11237.8+y	J1+22
13861.7+y	J1+26	1333.7 *4*	0.10# *4*	12527.9+y	J1+24
15239.0+y	J1+28	1377.3 *4*	0.09# *4*	13861.7+y	J1+26
16659.7+y	J1+30	1420.7 *4*	0.04# *3*	15239.0+y	J1+28
18123.3+y	J1+32	1463.6 *4*	<0.1#	16659.7+y	J1+30
19629.1+y	J1+34	1505.8 *4*	<0.1#	18123.3+y	J1+32
780.5+z	J2+2	780.5 *6*	<0.02#	z	J2≈(33)
1607.7+z	J2+4	827.2 *8*	0.030# *7*	780.5+z	J2+2
2479.7+z	J2+6	872.0 *6*	0.040# *9*	1607.7+z	J2+4
3392.1+z	J2+8	912.4 *5*	0.065# *9*	2479.7+z	J2+6
4349.5+z	J2+10	957.4 *5*	0.090# *9*	3392.1+z	J2+8
5351.6+z	J2+12	1002.1 *3*	0.090# *14*	4349.5+z	J2+10
6399.0+z	J2+14	1047.4 *3*	0.070# *14*	5351.6+z	J2+12
7492.4+z	J2+16	1093.4 *3*	0.100# *14*	6399.0+z	J2+14
8632.5+z	J2+18	1140.1 *2*	0.110# *14*	7492.4+z	J2+16
9819.6+z	J2+20	1187.1 *3*	0.100# *14*	8632.5+z	J2+18
11052.1+z	J2+22	1232.5 *3*	0.060# *14*	9819.6+z	J2+20
12332.2+z	J2+24	1280.1 *3*	0.060# *14*	11052.1+z	J2+22
13659.4+z	J2+26	1327.1 *3*	0.055# *9*	12332.2+z	J2+24
15033.1+z	J2+28	1373.7 *4*	0.045# *9*	13659.4+z	J2+26
16453.2+z	J2+30	1420.1 *3*	0.040# *9*	15033.1+z	J2+28
17919.3+z	J2+32	1466.1 *3*	0.030# *4*	16453.2+z	J2+30
19431.5+z	J2+34	1512.2 *7*	<0.02#	17919.3+z	J2+32
721.1+u	J3+2	721.1 *7*	0.015# *4*	u	J3
1490.1+u	J3+4	769.0 *6*	0.020# *7*	721.1+u	J3+2
2307.1+u	J3+6	817.0 *6*	0.028# *11*	1490.1+u	J3+4
3172.5+u	J3+8	865.4 *4*	0.040# *11*	2307.1+u	J3+6
4086.8+u	J3+10	914.3 *6*	0.055# *11*	3172.5+u	J3+8
5050.1+u	J3+12	963.3 *4*	0.080# *11*	4086.8+u	J3+10
6061.8+u	J3+14	1011.7 *3*	0.080# *11*	5050.1+u	J3+12
7120.8+u	J3+16	1059.0 *3*	0.075# *11*	6061.8+u	J3+14

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$\gamma(^{154}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f
8226.3+u	J3+18	1105.5 *2*	0.075[#] *11*	7120.8+u	J3+16
9377.2+u	J3+20	1150.9 *2*	0.072[#] *11*	8226.3+u	J3+18
10573.6+u	J3+22	1196.4 *2*	0.070[#] *11*	9377.2+u	J3+20
11815.4+u	J3+24	1241.8 *2*	0.045[#] *11*	10573.6+u	J3+22
13102.4+u	J3+26	1287.0 *2*	0.042[#] *6*	11815.4+u	J3+24
14434.5+u	J3+28	1332.0 *3*	0.030[#] *6*	13102.4+u	J3+26
15811.3+u	J3+30	1376.8 *3*	0.030[#] *6*	14434.5+u	J3+28
17232.4+u	J3+32	1421.1 *4*	0.025[#] *6*	15811.3+u	J3+30
18696.8+u	J3+34	1464.4 *7*	0.025[#] *6*	17232.4+u	J3+32
20204.0+u	J3+36	1507.2 *8*	0.010[#] *6*	18696.8+u	J3+34
738.6+v	J4+2	738.6 *8*	0.012[#] *3*	v	J4≈(31)
1522.6+v	J4+4	784.0 *8*	0.013[#] *3*	738.6+v	J4+2
2352.5+v	J4+6	829.9 *8*	0.019[#] *3*	1522.6+v	J4+4
3229.0+v	J4+8	876.5 *6*	0.028[#] *7*	2352.5+v	J4+6
4152.5+v	J4+10	923.5 *6*	0.035[#] *7*	3229.0+v	J4+8
5122.8+v	J4+12	970.3 *6*	0.035[#] *9*	4152.5+v	J4+10
6140.2+v	J4+14	1017.4 *8*	0.045[#] *9*	5122.8+v	J4+12
7204.4+v	J4+16	1064.2 *6*	0.045[#] *9*	6140.2+v	J4+14
8315.0+v	J4+18	1110.6 *4*	0.055[#] *9*	7204.4+v	J4+16
9471.9+v	J4+20	1156.9 *5*	0.055[#] *9*	8315.0+v	J4+18
10675.0+v	J4+22	1203.1 *7*	0.040[#] *9*	9471.9+v	J4+20
11923.6+v	J4+24	1248.6 *5*	0.045[#] *9*	10675.0+v	J4+22
13218.0+v	J4+26	1294.4 *4*	0.055[#] *9*	11923.6+v	J4+24
14559.2+v	J4+28	1341.1 *7*	0.045[#] *9*	13218.0+v	J4+26
15946+v	J4+30	1387.3 *8*	0.032[#] *9*	14559.2+v	J4+28
17380+v	J4+32	1433.5 *6*	0.032[#] *8*	15946+v	J4+30
18859+v	J4+34	1479.4 *5*	0.030[#] *6*	17380+v	J4+32
20385+v	J4+34	1525.2 *8*	0.020[#] *4*	18859+v	J4+34
855.2+w?	J5+2	855.2[&] *10*	<0.01[#]	w	J5≈(36)
1756.4+w?	J5+4	901.2[&] *10*	<0.01[#]	855.2+w?	J5+2
2704.1+w	J5+6	947.7 *5*	0.020[#] *2*	1756.4+w?	J5+4
3698.4+w	J5+8	994.3 *5*	0.023[#] *4*	2704.1+w	J5+6
4739.3+w	J5+10	1040.9 *5*	0.023[#] *4*	3698.4+w	J5+8
5826.2+w	J5+12	1086.9 *5*	0.035[#] *4*	4739.3+w	J5+10
6959.5+w	J5+14	1133.3 *5*	0.027[#] *4*	5826.2+w	J5+12

$^{154}_{66}Dy_{88}$-16

Adopted Levels, Gammas (continued)

$\gamma(^{154}Dy)$ (continued)

E_i(level)	J^π_i	E_γ †	I_γ ‡	E_f	J^π_f	E_i(level)	J^π_i	E_γ †	I_γ ‡	E_f	J^π_f
8138.9+w	J5+16	1179.4 *5*	0.027# *4*	6959.5+w	J5+14	13318.5+w	J5+24	1364.2 *8*	0.015# *3*	11954.2+w	J5+22
9364.4+w	J5+18	1225.5 *5*	0.020# *4*	8138.9+w	J5+16	14728.7+w	J5+26	1410.2 *8*	0.013# *2*	13318.5+w	J5+24
10636.2+w	J5+20	1271.8 *5*	0.020# *4*	9364.4+w	J5+18	16185+w	J5+28	1456.0 *8*		14728.7+w	J5+26
11954.2+w	J5+22	1318.0 *6*	0.018# *3*	10636.2+w	J5+20						

† From evaluator′s average of the various available values.

‡ Relative photon branching ratios, except for transitions in SD bands, which are relative intensities within each band, as well relative to the g.s. band population.

Intensity is relative to the population of the g.s. band in ^{122}Sn(^{36}S,4nγ) reaction at E=165 MeV (2009Ij01).

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

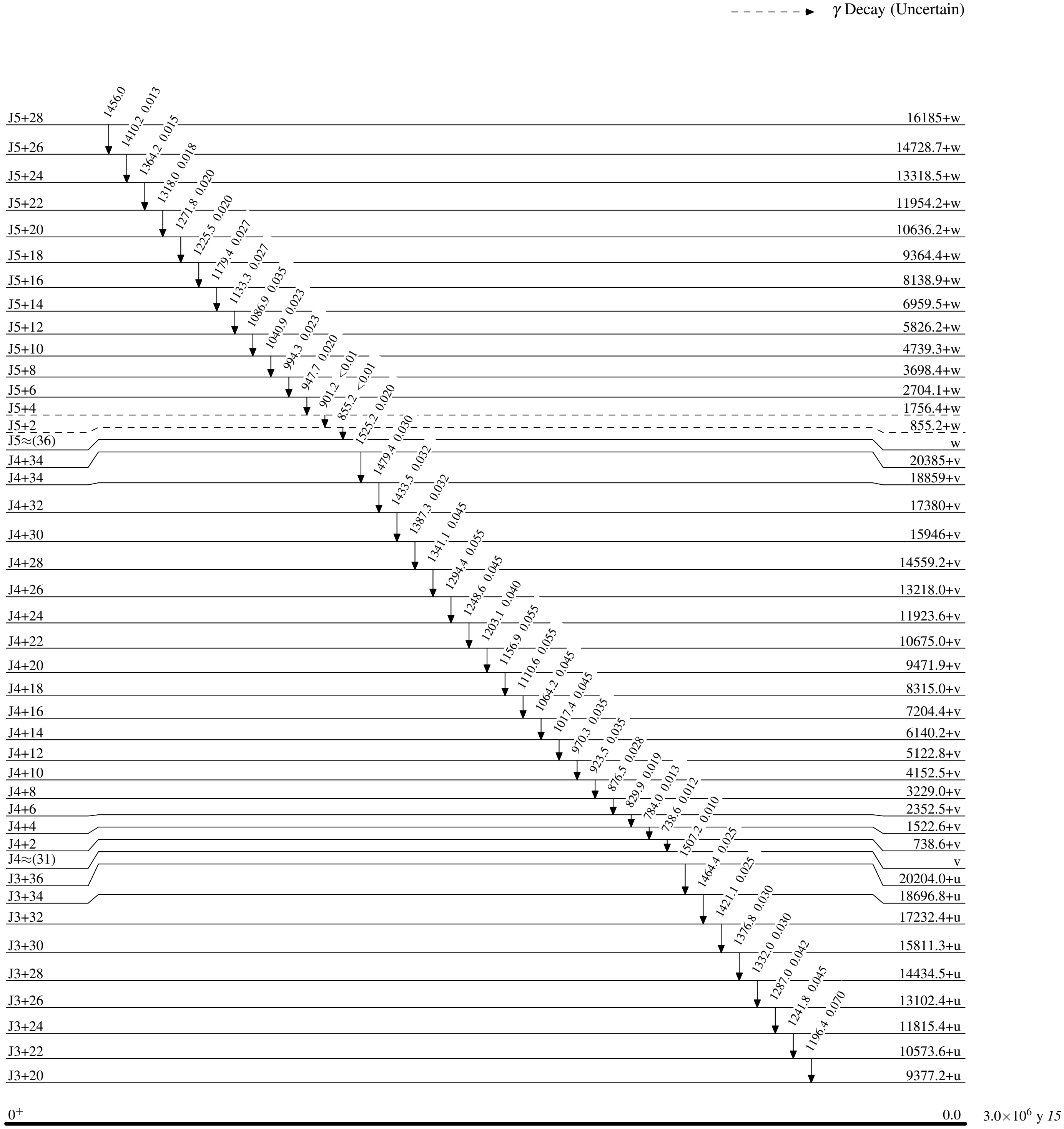
& Placement of transition in the level scheme is uncertain.

$^{154}_{66}Dy_{88}$-17

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

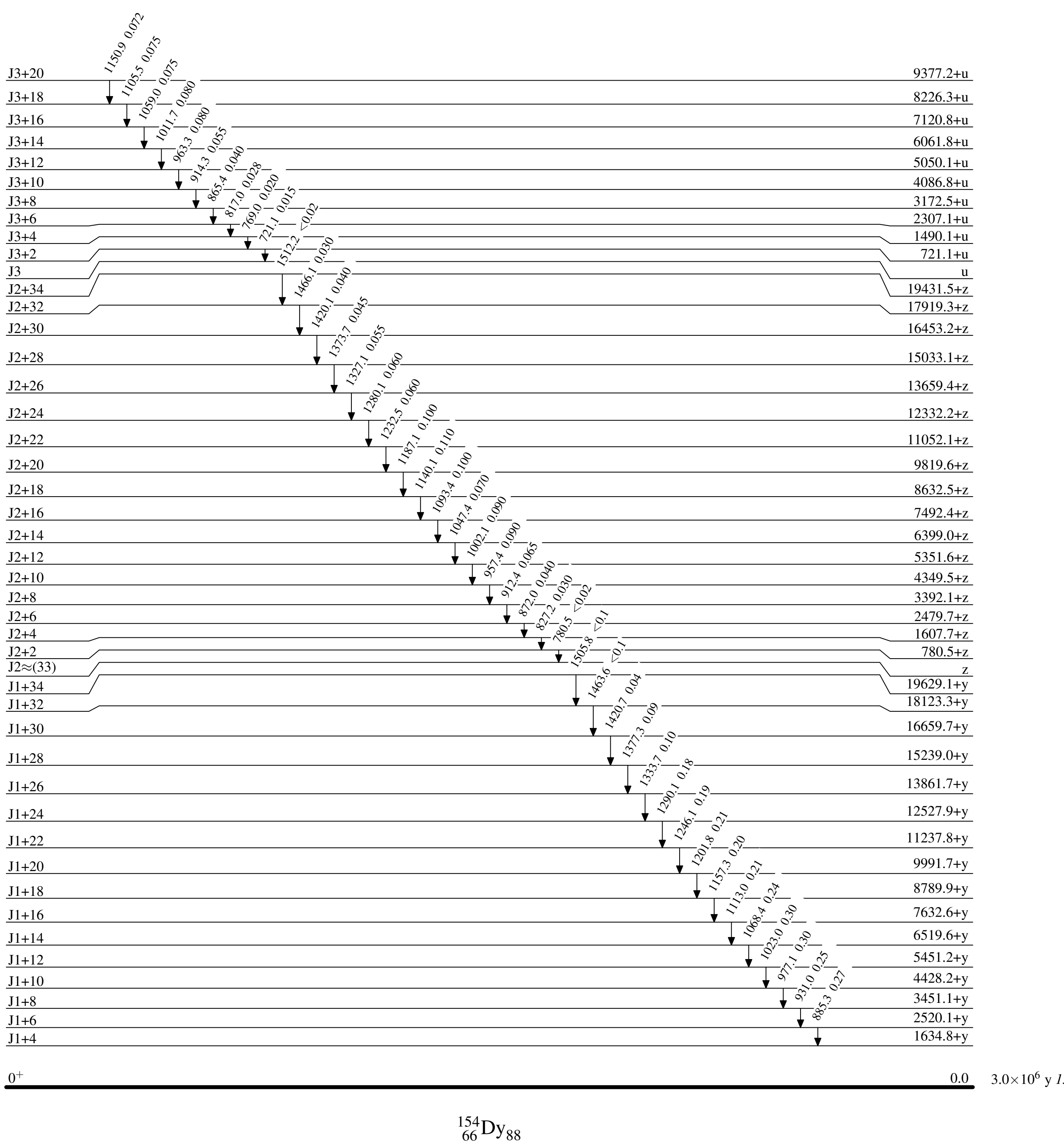


$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

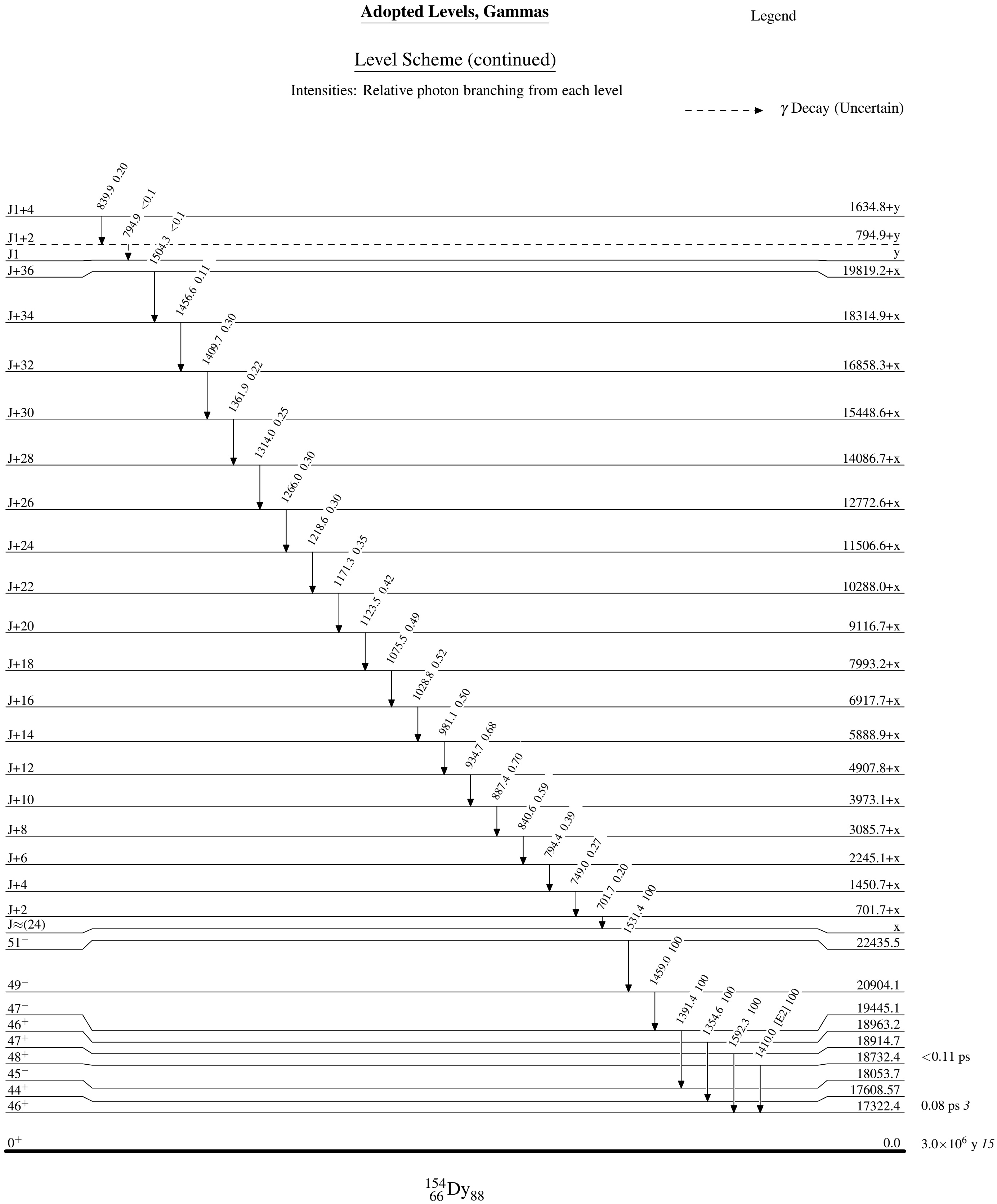
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

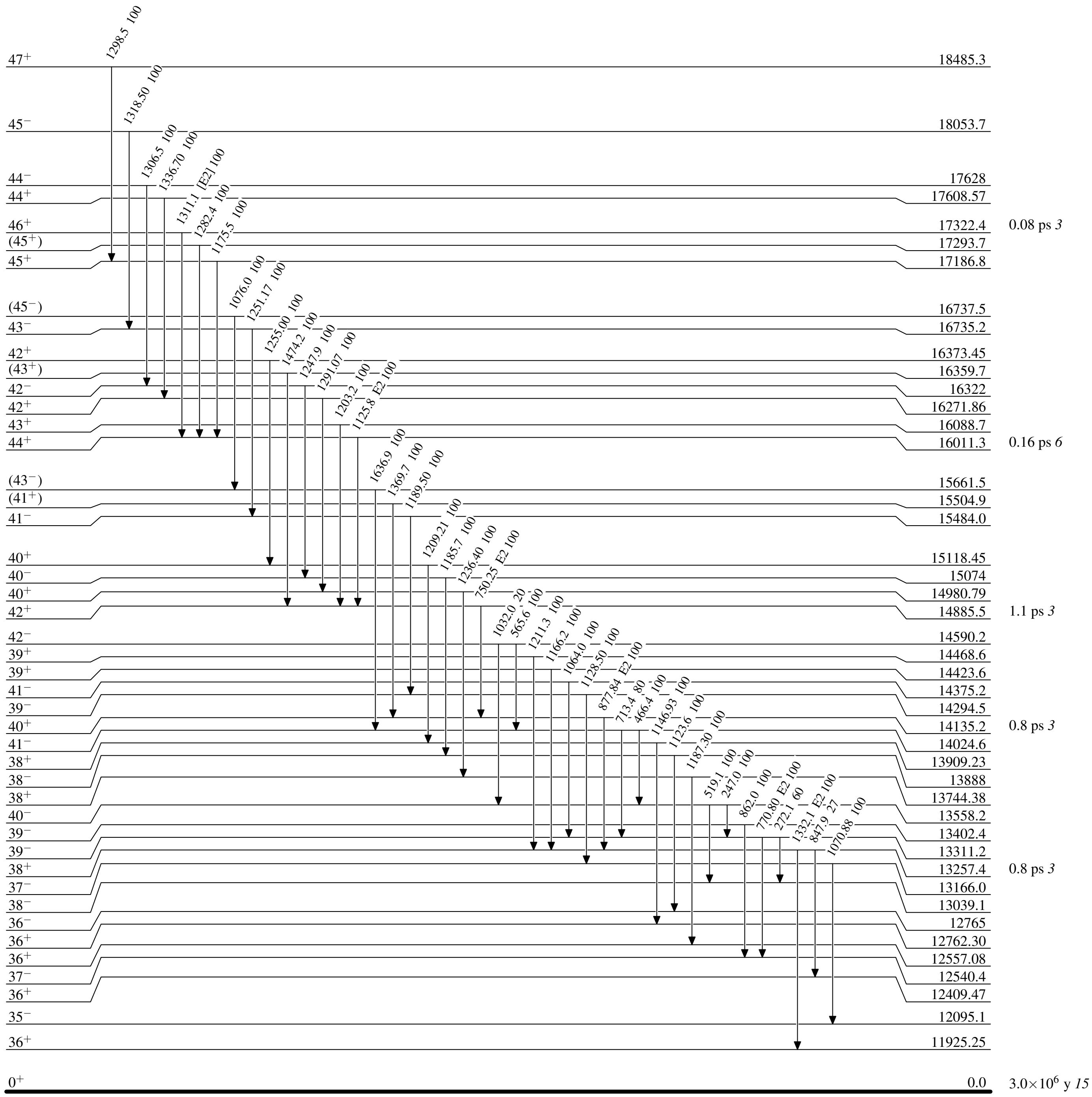
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

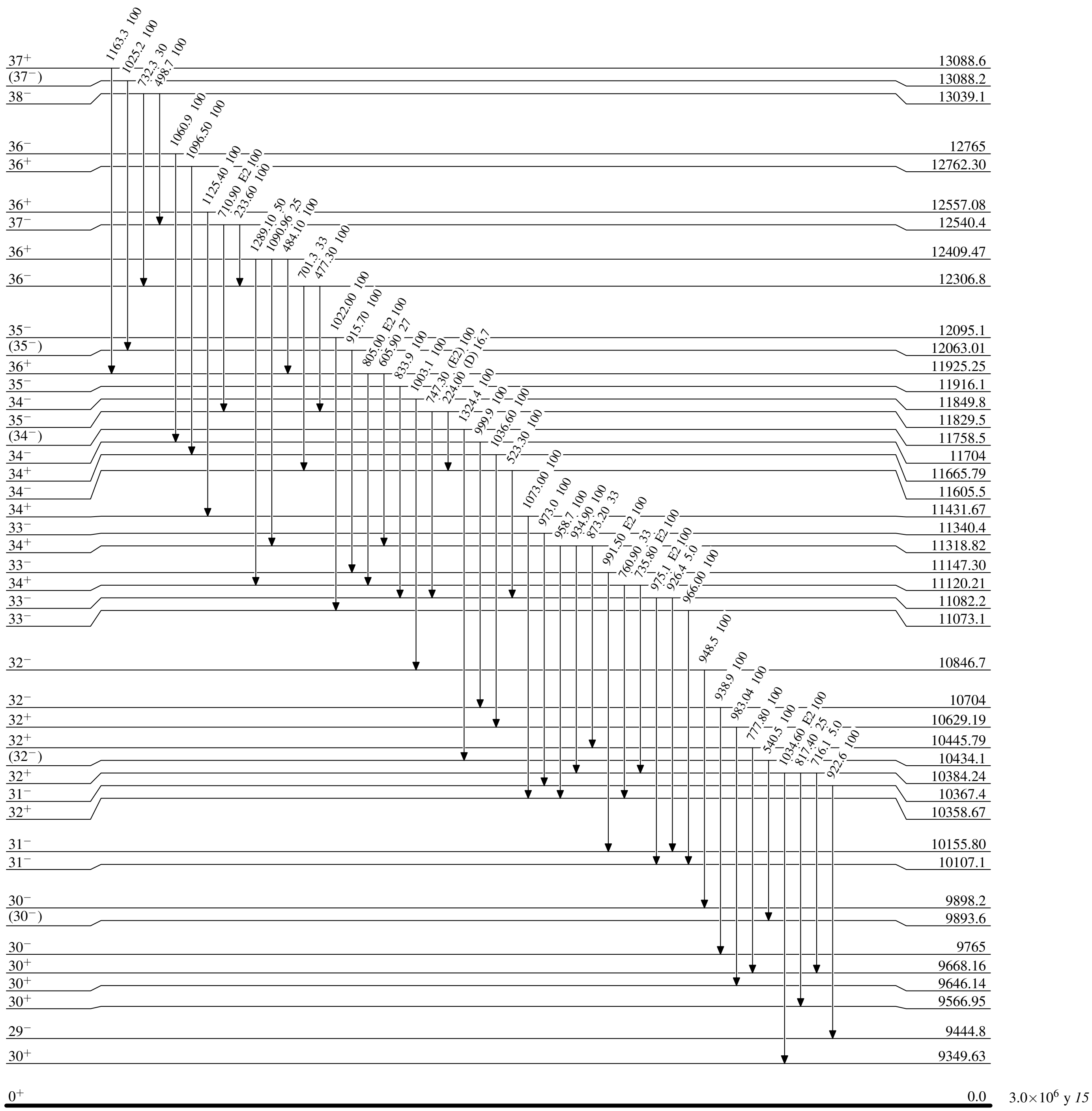


$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

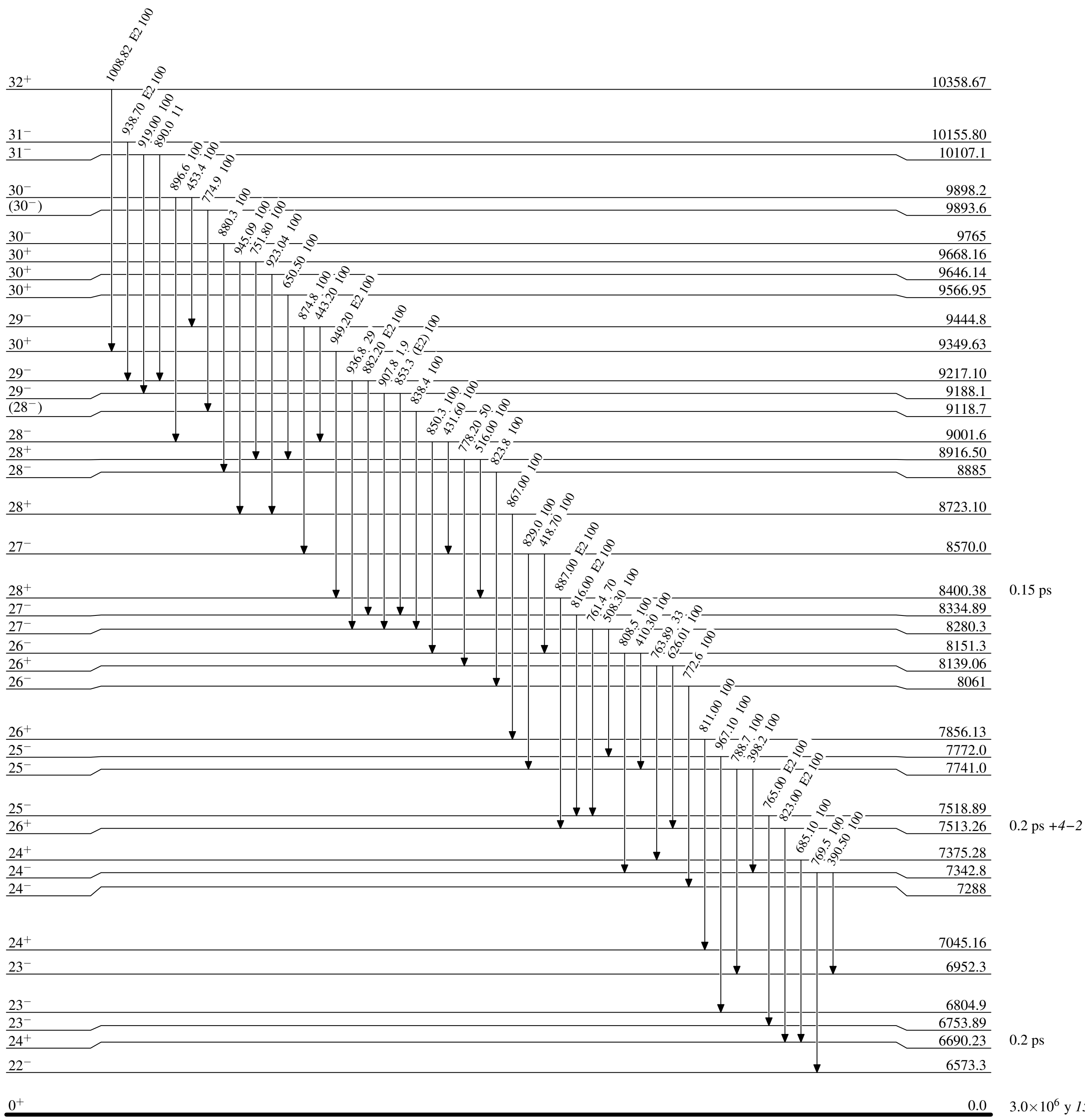


$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

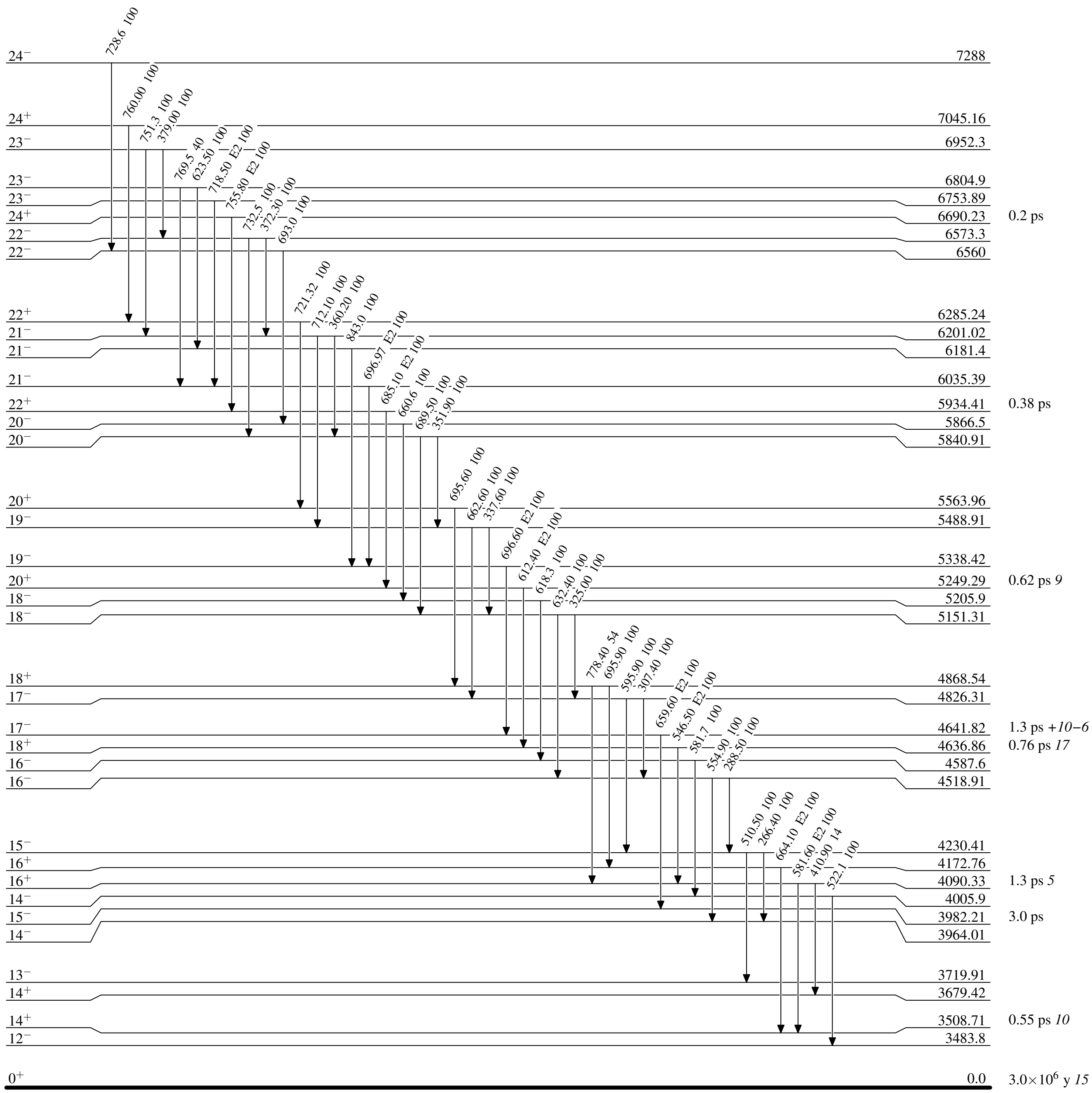


$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

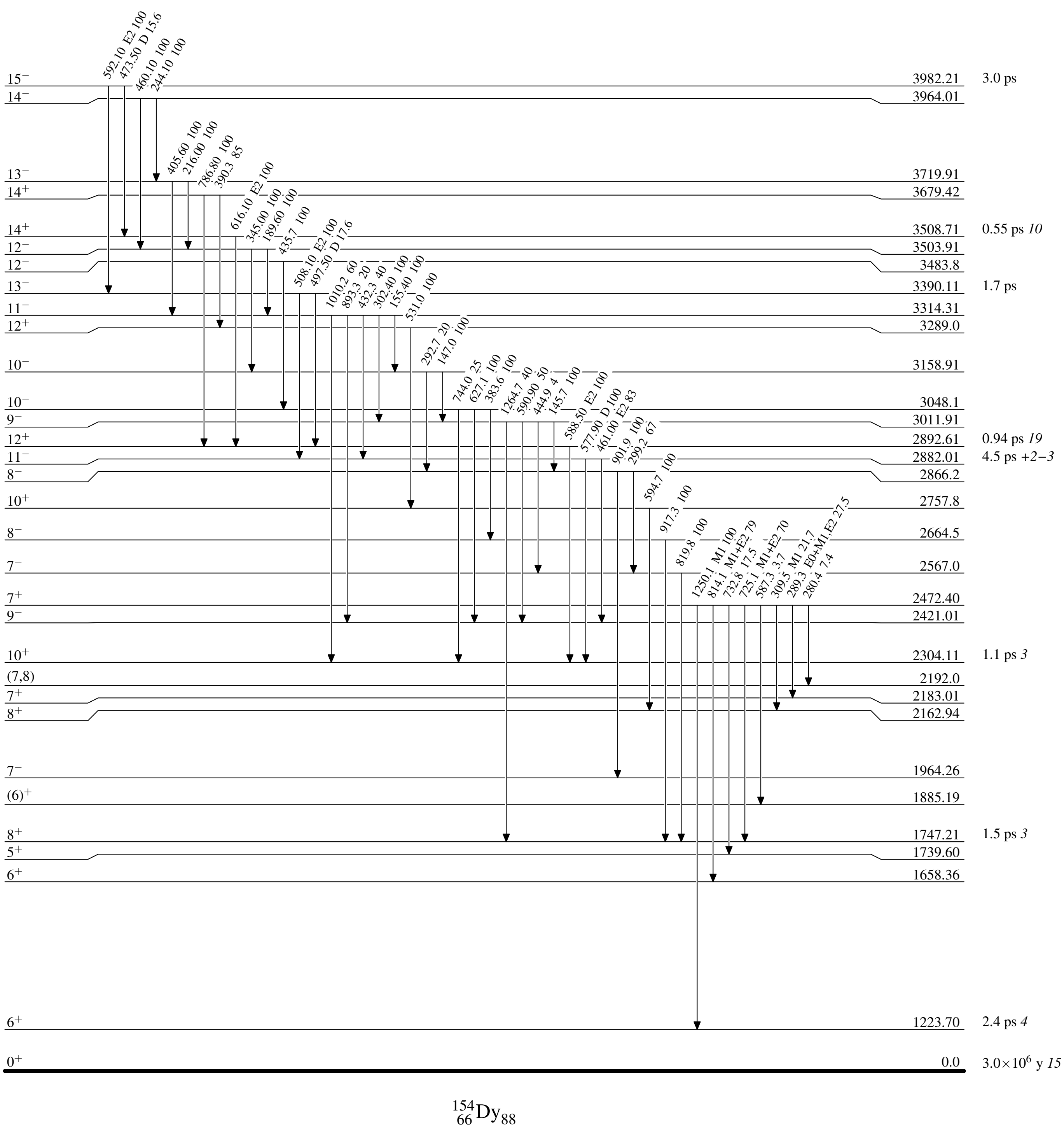


$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

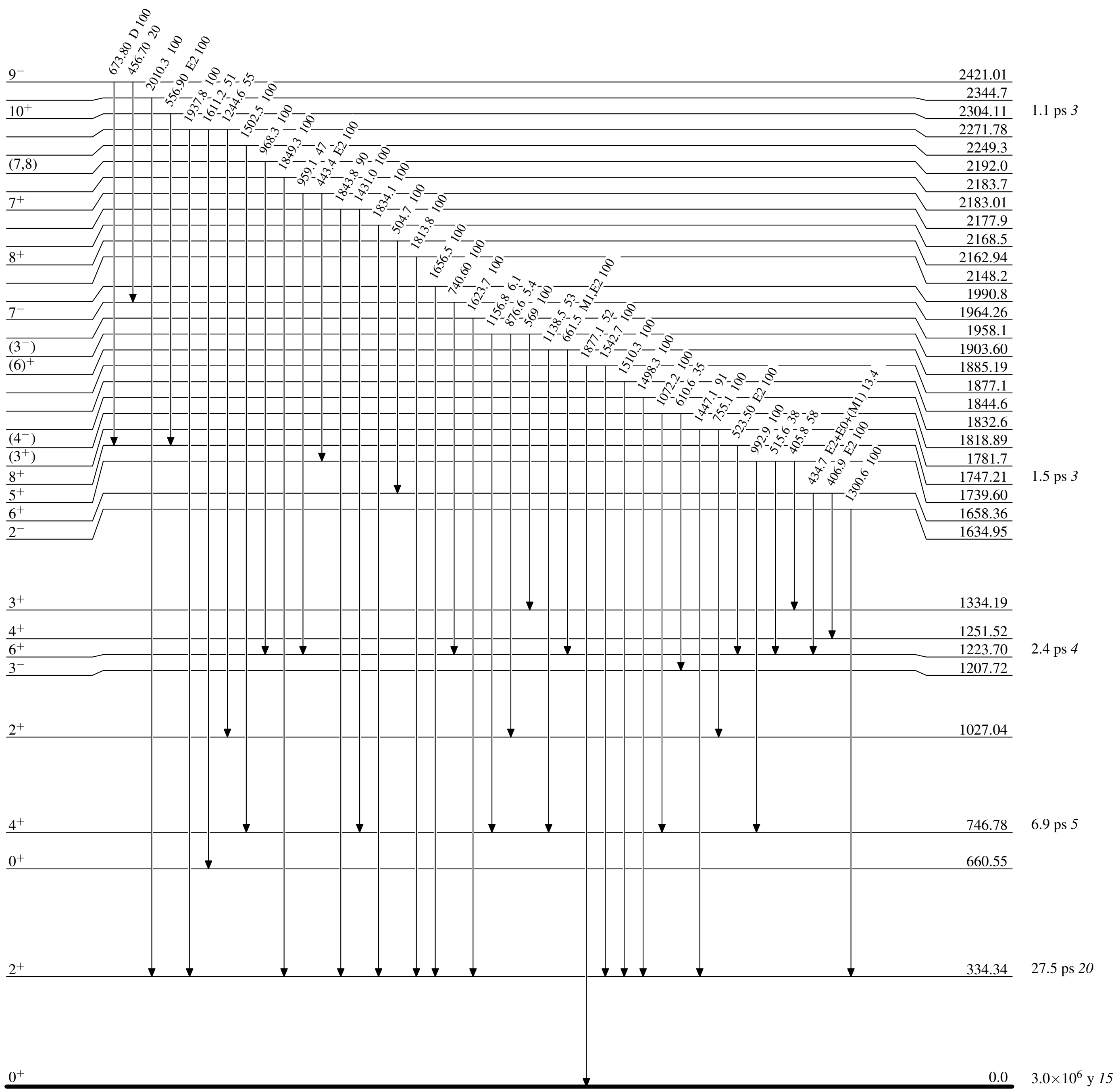
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intentsities: Relative photon branching from each level

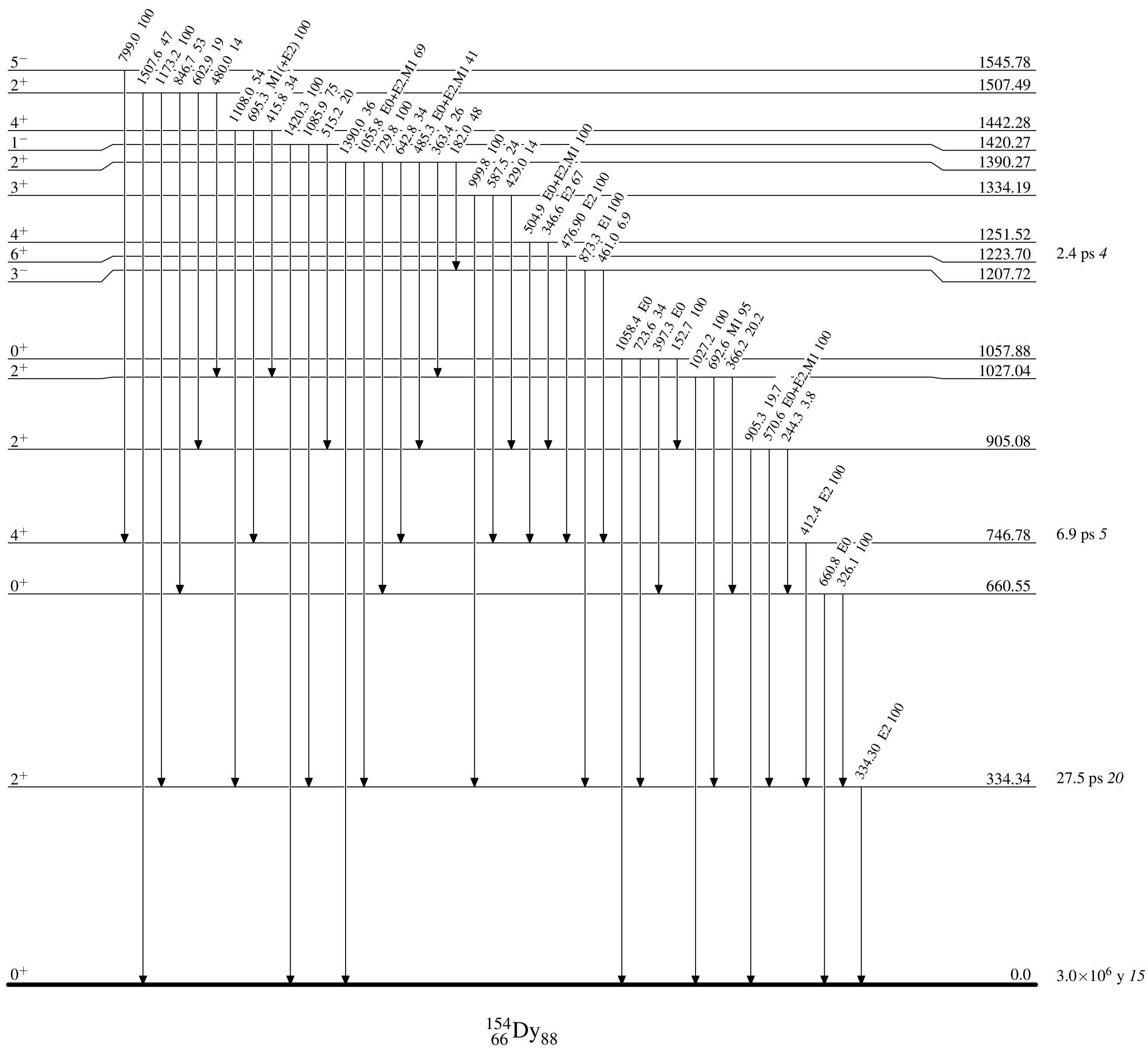


$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas

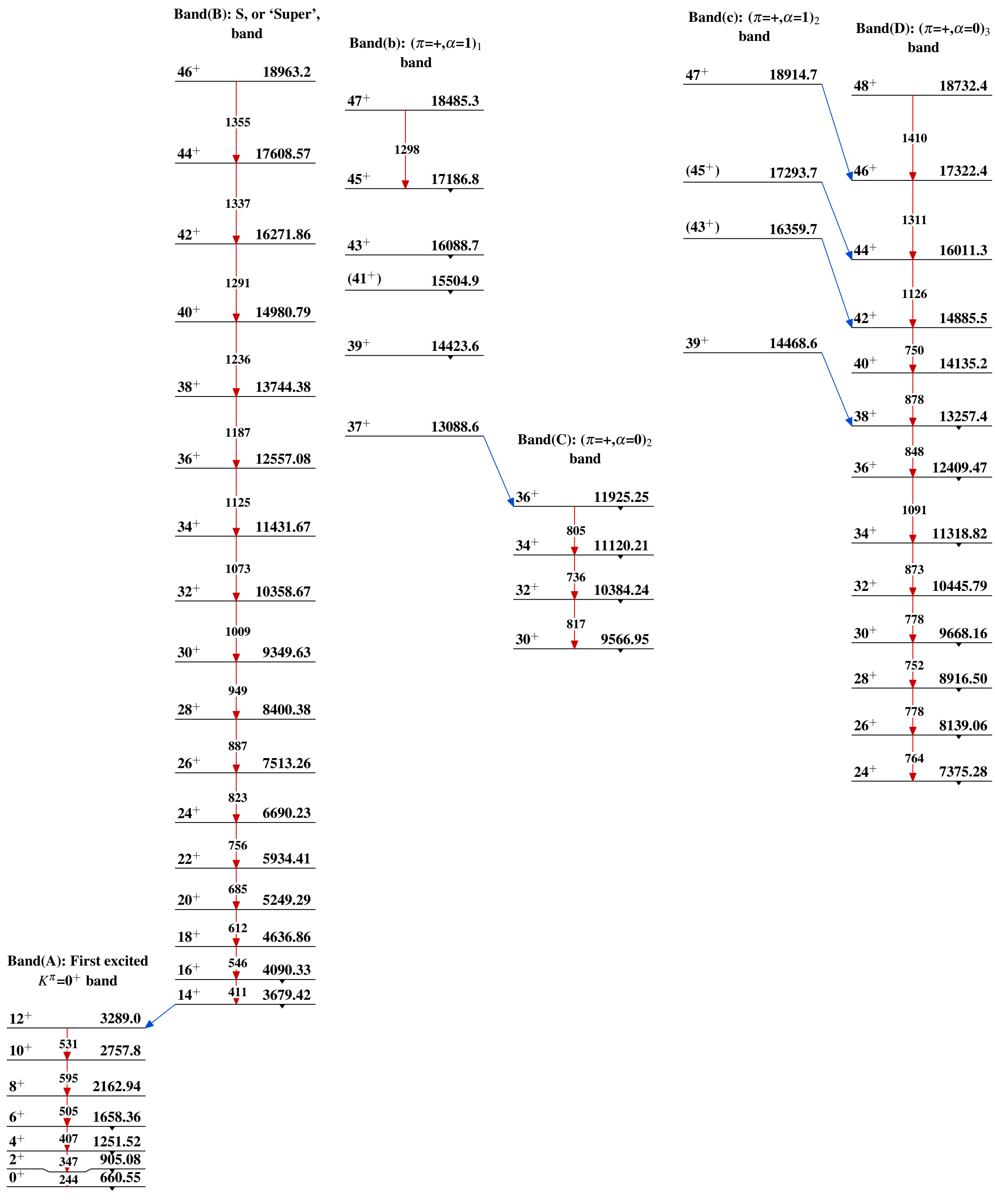
Level Scheme (continued)

Intensities: Relative photon branching from each level



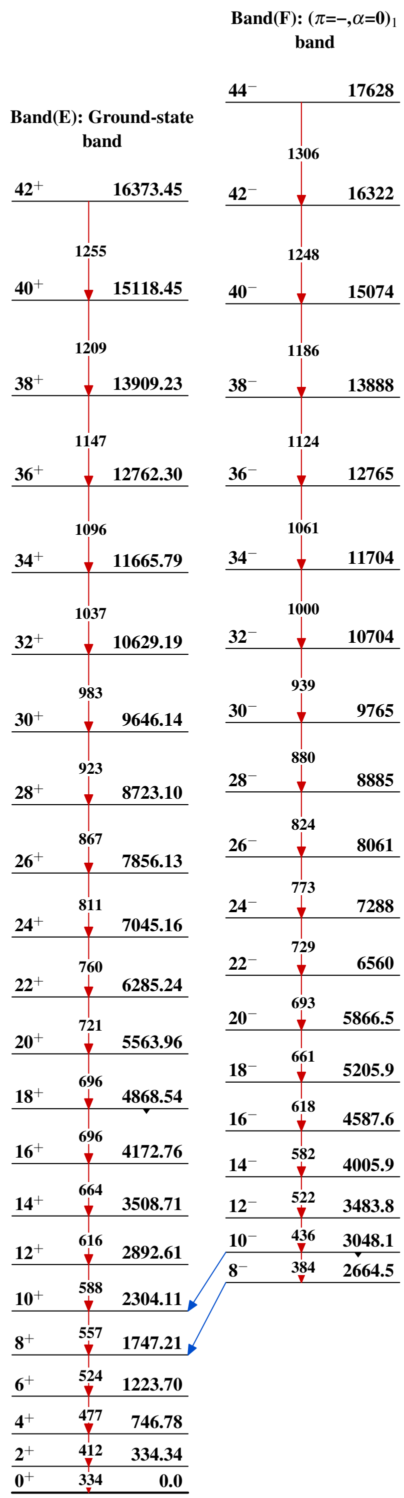
$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas



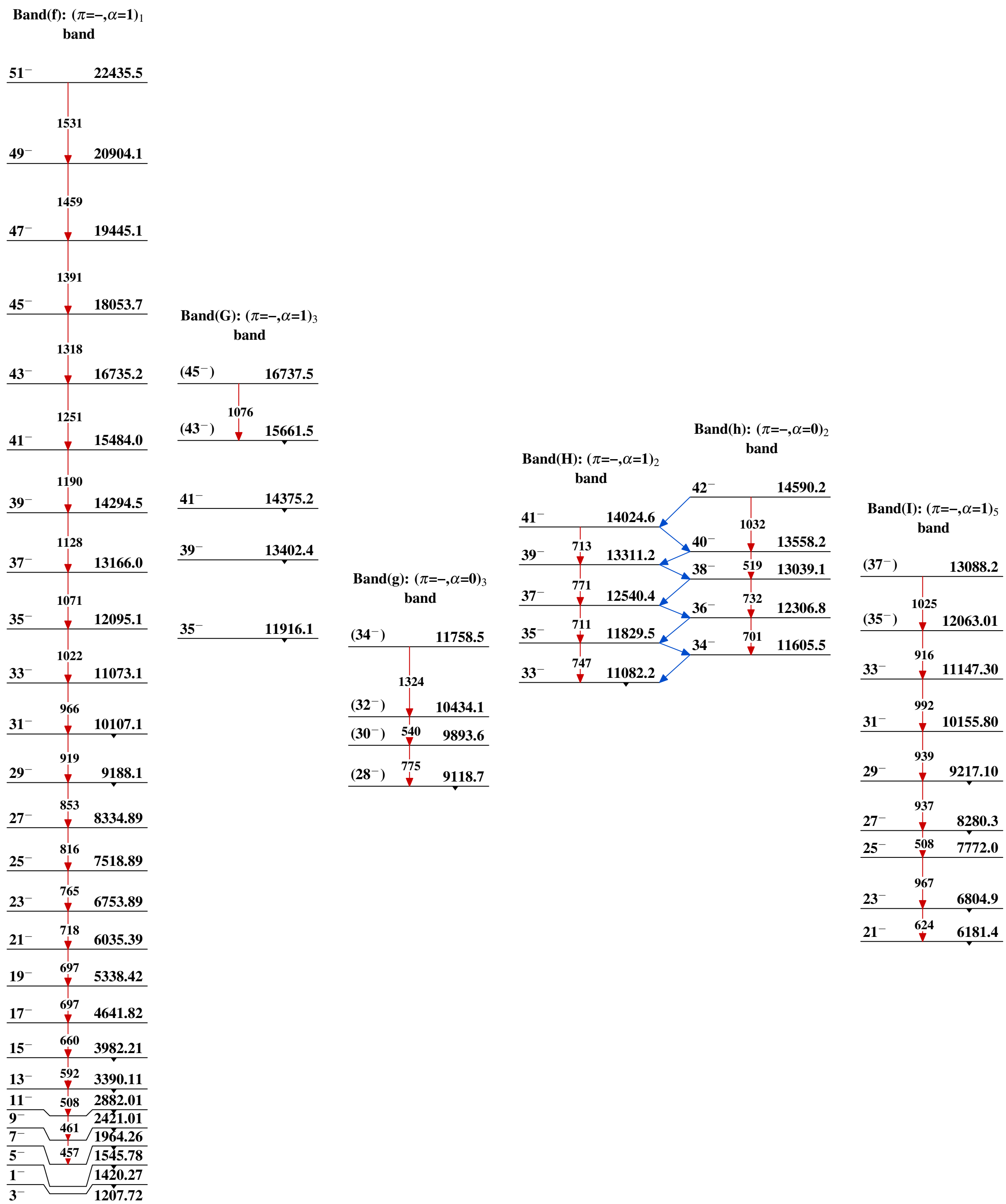
$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas (continued)



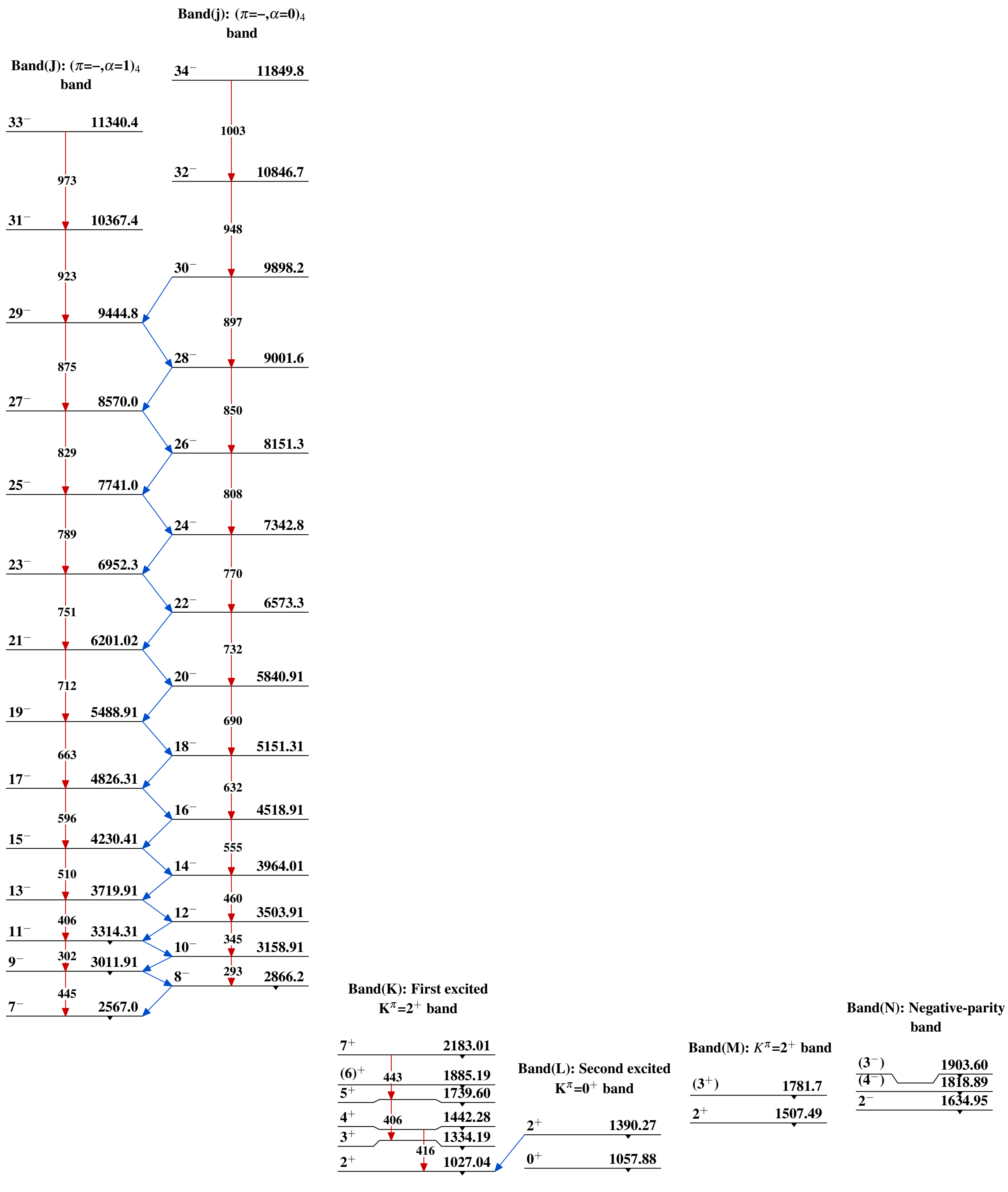
$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas (continued)



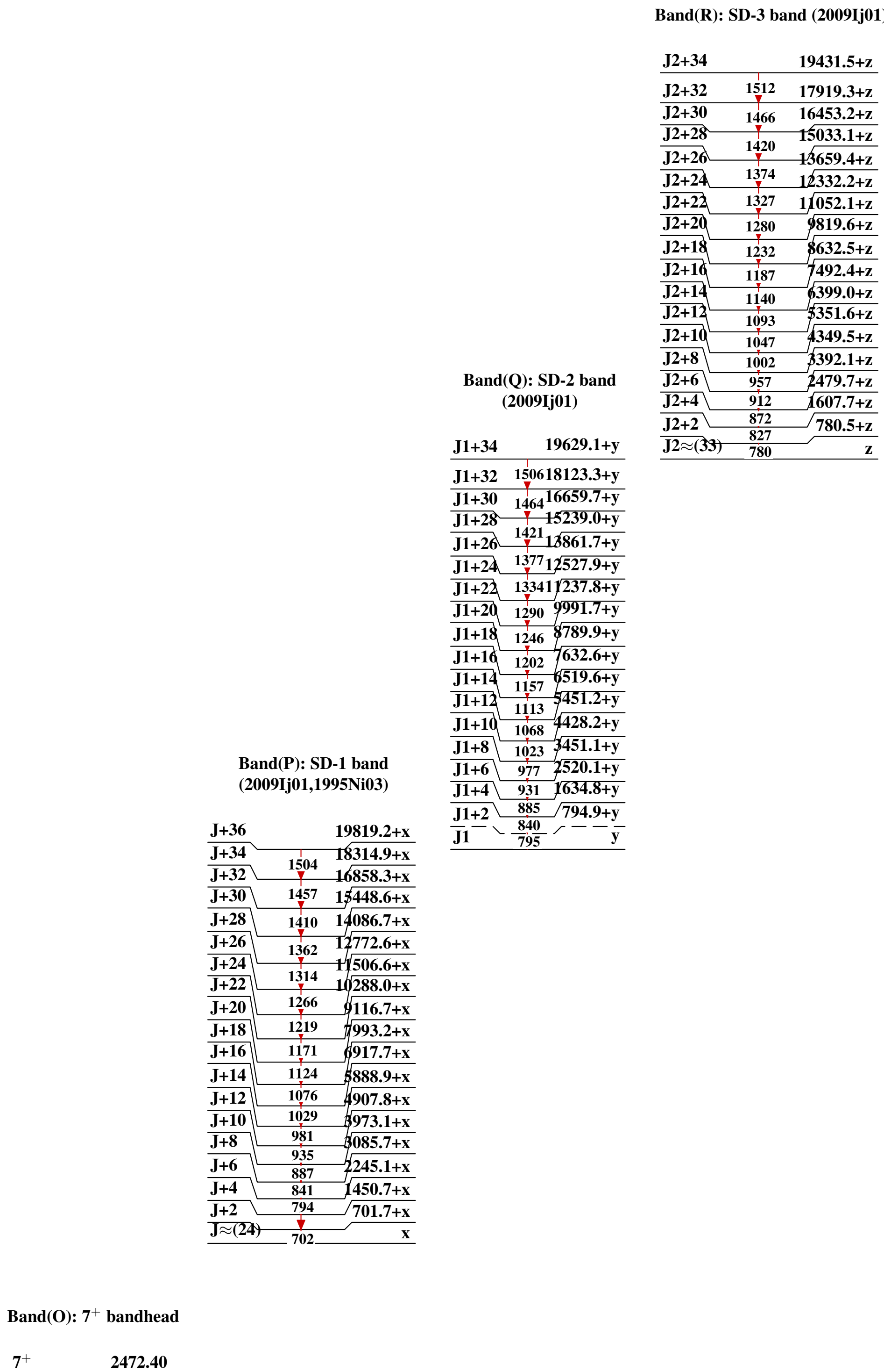
$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas (continued)

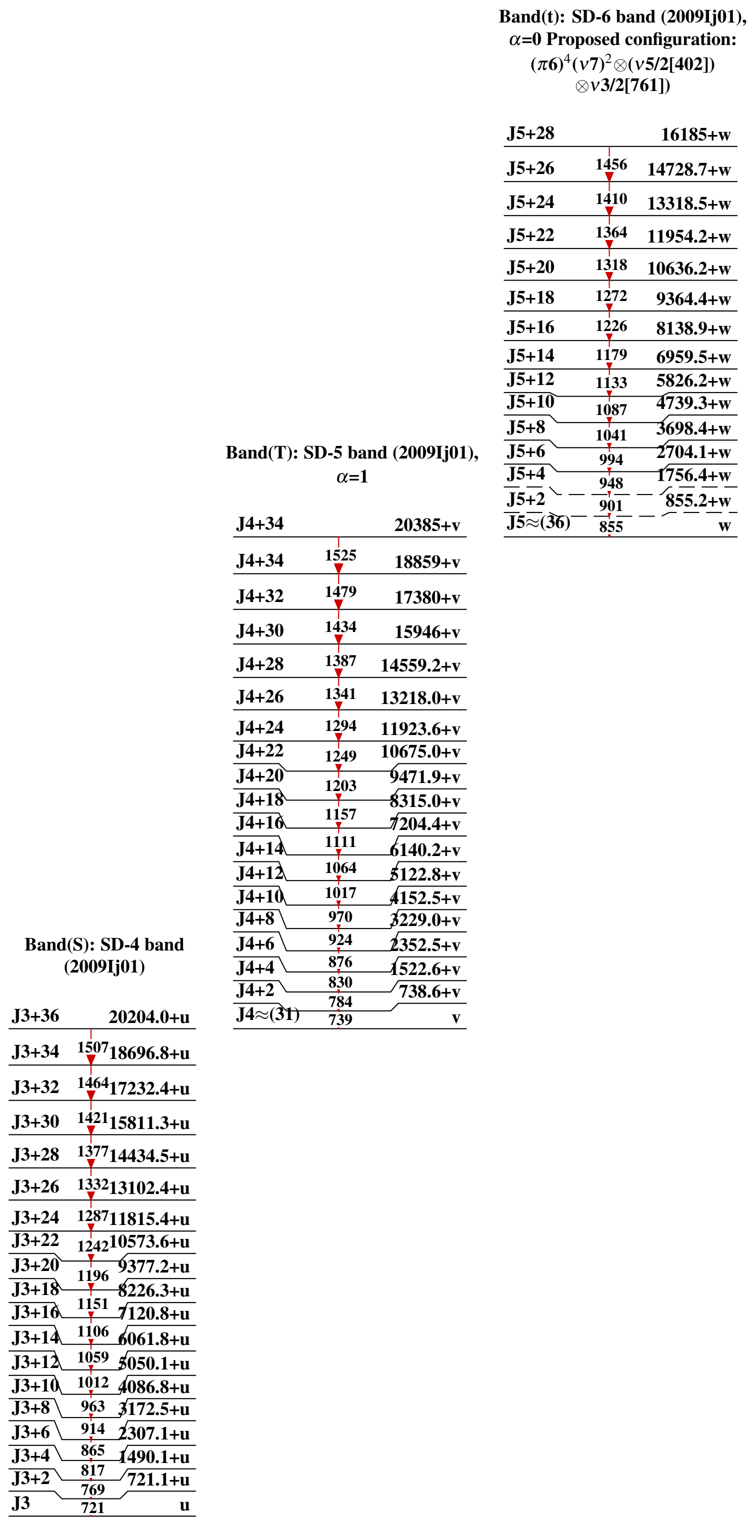


$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



$^{154}_{66}Dy_{88}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 2537 (2012)	1-Mar-2012

Q(β^-)=-5.05×10^3 *6*; S(n)=9445 *10*; S(p)=6568 *10*; Q(α)=1753.0 *3* 2017Wa10
S(2n)=16278 *10*; S(2p)=11400.95 *10* 2017Wa10
Additional information 1.
Additional information 2.
Data are from the following studies: ^{156}Ho $\varepsilon+\beta^+$ decay; ^{159}Tb(p,4nγ) and ^{156}Gd(α,4nγ) studies; (HI,xnγ) studies; ^{158}Dy(p,t) reaction; ^{156}Dy(d,d′) reaction; ^{165}Ho(π^-,9nγ) study; and Coul. ex.
Model discussions and calculations of level energies, configurations, B(E2), or degree of deformation: 1975Bi13, 1978Pe01, 1980De34, 1980Di15, 1983He20, 1986BeZG, 1989Gu07, 1990Ha22, and 1991Bo05.

^{156}Dy Levels

Average g-factors given in the evaluation 1989Ra17 are: +0.11 *4* and +0.12 *3* for an average J of 19; +0.14 *6* for an average J of 21; and +0.20 *3*, +0.21 *7*, and +0.21 *3* for an average J of 23. These values are based on the data of 1984Ha39 and 1985Ta02. See also the compilation by 2005St24.
The customary expression for the energies of the low-spin members of the rotational bands does not provide a good description of these energy spacings. Thus, at most only an A value is given here (in order to provide insight into how the effective moment of inertia differs for the various bands). It is computed from the energies of the first two band members, unless noted otherwise.
For the definition of the quasiparticle band-labeling convention for the various high-spin bands, see the (HI,xnγ) Data Set.

Cross Reference (XREF) Flags

A	(HI,xnγ)	E	^{158}Dy(p,t)
B	^{156}Ho ε decay (56 min)	F	^{156}Dy(d,d′)
C	^{156}Ho ε decay (7.6 min)	G	^{165}Ho(π^-,9nγ)
D	^{159}Tb(p,4nγ),^{156}Gd(α,4nγ),	H	Coulomb excitation

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[#]	XREF	Comments
0[@]	0$^+$	stable	ABCDEFGH	$T_{1/2}$: 2011Be18 report an experimental lower limit for the half-life of the α transition to the first 2$^+$ state in ^{152}Gd of 3.8$\times10^{16}$ y. The model calculation of 1988Al13 gives $T_{1/2}(\alpha)=4.3\times10^{24}$ y. Authors quote a measured limit of >1.0$\times10^{15}$ y. From systematics of α decay using a radius parameter extrapolated from ^{150,152,154}Dy, one deduces $T_{1/2}(\alpha)=2.2\times10^{24}$ y. 2011Be18 report measured lower limits for the half-lives of $\varepsilon\varepsilon$ and $\varepsilon\beta^+$ transitions, both 0ν and 2ν, to a number of levels in ^{156}Gd. These range from $\approx1.8\times10^{14}$ y to $\approx7.1\times10^{16}$ y. 2002Hi09 calculate 2ν double ε decay for several deformed nuclei. For ^{156}Dy, they compute $T_{1/2}=2.74\times10^{22}$ y, 8.31$\times10^{24}$ y, and 1.08$\times10^{25}$ y, respectively, for 2ν ε decay to the g.s., the first excited 0$^+$ state, and the second excited 0$^+$ state of ^{156}Gd. These values are also given in 1999Ce12, which involves some of the same authors. More recent calculations of various aspects of the “double-beta-decay” process are given by 2009Ra26, 2010Ra06, 2011Kr07 and 2011El05. These are discussed in the ^{156}Gd data set. 2002Hi09 calculate 2ν ε decay for several deformed nuclei. For ^{156}Dy, they report calculated upper limits for $T_{1/2}$ values for the 2ν ε decay to the g.s., the first and second excited 0$^+$ levels in ^{156}Gd. The change in the mean square charge radius has been determined from optical isotope shift data. From 1987NeZW Δ<r^2>(156-154)$\approx$0.38 fm^2 and Δ<r^2>(158-156)$\approx$0.20 fm^2 (values read from plot by evaluator). From 1990Wa25, Δ<r^2>(158-156)=0.199 fm^2 *10*. For the nuclear parameter, λ (which $\approx$ Δ<r^2>), 1982Cl04 report λ(158-156)=0.215 fm^2 *12*. The compilation of 1987Au06 quotes values of λ(156-154)=0.37 fm^2 *3* and λ(158-156)=0.194 fm^2 *17*.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{156}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	XREF	Comments
				From an evaluation of data on nuclear rms charge radii, 2004An14 report $<r^2>^{1/2}$=5.16 fm *25*.
137.77[@] *8*	2^+	0.823 ns *7*	ABCDEFGH	μ=+0.78 *8* J^{π}: E2 γ to 0^+ gs; L=2 in (p,t). $T_{1/2}$: Computed from B(E2)↑=3.72 *3* (1977Ro27) in Coul. ex. Others: 0.82 ns *5* (1966Ab02) and 0.90 ns *8* (1970Mo39), from ^{156}Ho ε decay; and 0.74 ns *4* (2006Mo22), from (HI,xnγ). μ: From the evaluation by 1989Ra17. See also the compilation by 2005St24.
404.19[@] *10*	4^+	31.6 ps *3*	ABCDEFG	J^{π}: E2 γ to 2^+ and expected band structure.
675.60[&] *14*	0^+		AB DEF	J^{π}: E0 transition to 0^+ gs; L=0 in (p,t).
770.44[@] *11*	6^+	6.3 ps *3*	ABCDEFG	J^{π}: E2 γ to 4^+, L=6 in (p,t) and expected band structure.
828.64[&] *11*	2^+		AB DEF H	B(E2)↑=0.008 *5* B(E2)↑: From Coul. ex. (1982Ro07). J^{π}: E0 component in γ to 2^+, L=2 in (p,t).
890.50[a] *9*	2^+	1.56 ps *12*	AB DEF H	The γ decay of this level is quite different from what is expected (and observed) for γ vibrations in other nuclides. This, together with an apparent E0 component in the transition to the 2^+ member of the g.s. band, suggests that this state may be more than simply a γ vibration. J^{π}: E2 γ to 0^+, L=2 in (p,t). $T_{1/2}$: Computed from B(E2)↑=0.180 *11* (1982Ro07) in Coul. ex. and the adopted γ branching.
1022.08[a] *10*	3^+		AB D	J^{π}: E2 γ's to 2^+ and 4^+ levels and expected band structure.
1088.28[&] *11*	4^+	4.5 ps *12*	AB DEF	J^{π}: From E0 component in γ to 4^+ level and L=4 in (p,t).
1168.47[a] *11*	4^+		AB DEF	J^{π}: E2 γ's to 2^+ levels, E0 or M1 γ to 4^+, L=(4) in (p,t), and expected band structure.
1215.61[@] *20*	8^+	2.26 ps *6*	ABCDE G	J^{π}: E2 γ to 6^+ and expected band structure.
1293.2[b] *3*	1^-		D	J^{π}: Assumed E1 γ to 2^+ level. Bandhead of odd-spin octupole band.
1335.56[a] *13*	5^+		AB D	J^{π}: E2 γ's to 3^+ and 6^+ levels and expected band structure.
1368.36[b] *12*	3^-		B DEF H	B(E3)↑=0.22 *7* J^{π}: E1 γ's to 2^+ and 4^+ levels. B(E3)↑: From Coul. ex. (1982Ro07).
1377.80?	(0^+)		B	2003KaZP report this level but give no other information about it. 2008VaZU, with many of the same authors, also list it but also provide no information other than what is given here.
1382.31 *16*	2^+		B E	XREF: E(1385). J^{π}: γ's to 0^+, 2^+, and 3^+ levels. Presumed M1 γ to 2^+ gives $J^{\pi}=2^+$. Evaluator associates this level with the 1385 level in (p,t), which was assigned $J^{\pi}=(3^-)$ based on L=(3).
1407 *5*	(3^-)		EF	B(E3)↑=0.009 J^{π}: From L=(3) in (p,t); and (d,d′) reaction data. B(E3)↑: From Coul. ex. (1982Ro07).
1437.28[&] *17*	6^+	3.56 ps *24*	AB D	J^{π}: E0 component in γ to 6^+ member of the gs band and expected band structure.
1447.38 *20*	(2^+)		D	J^{π}: γ to 2^+. Proposed in (p,4nγ) as a member of the "Super" band.
1476.10 *15*	$(3)^-$		B E	XREF: E(1483). J^{π}: E1 γ to 2^+ indicates π=−. L=(3) in (p,t) suggests $J^{\pi}=(3^-)$.
1514.94 *20*	2^+		B E	XREF: E(1520). J^{π}: γ's to 0^+ and 4^+ levels; L=2 in (p,t). Assigned as a "β-γ" vibrational bandhead by 1977Ko04 from (p,t).
1525.17[a] *19*	6^+		AB D f	XREF: f(1523). J^{π}: Possible E0 component in γ to 6^+ level; expected band structure.
1526.28[b] *15*	5^-		B D f	XREF: f(1523).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{156}Dy Levels (continued)

E(level)[†]	J^π[‡]	$T_{1/2}$[#]	XREF	Comments
				J^π: E1 γ's to 4^+ and 6^+ levels, but both γ's are multiply placed. Expected band structure.
1609.33 *16*	$(3)^-$		B EF	J^π: E1 γ to 4^+ indicates J=3,4,5 and π=−. Population in (d,d′) indicates natural parity. Assignment requires γ to g.s. to be E3. In (p,t), L=(0) which implies J^π=(0^+).
1624.64 *18*			B	
1627.42 *16*	$(4)^+$		B DE	XREF: E(1635). J^π: E2 γ's to 3^+ and 4^+ levels indicates π=+. L=(4) in (p,t). Proposed in (p,4nγ) as a member of the "Super" band. However, 1977Ko04, (p,t), suggest that it is the bandhead of a K^π=4^+ band.
1677.15 *15*	4^+		B	J^π: γ's to 2^+ and 6^+ levels.
1679.9 *8*			B	
1725.02[@] *8*	10^+	1.06 ps *10*	A CD G	J^π: E2 γ to 8^+ level and expected band structure.
1728.79[a] *12*	7^+		AB D	J^π: E2 γ's to 5^+ and 6^+ levels and expected band structure.
1772.4 *10*	(3^-)		B E	XREF: E(1778). J^π: From L=(3) in (p,t).
1794.55 *19*	4^+		B EF	XREF: E(1798)F(1794). J^π: From L=4 in (p,t).
1809.97[b] *10*	7^-		AB D	J^π: E1 γ to 6^+ level and expected band structure.
1840.07 *13*	$(4)^+$		B E	XREF: E(1844). J^π: M1 γ to 3^+ level indicates J^π=2^+,3^+,4^+. M1+E2 γ to 4^+ rules out 2^+. Probable excitation in (p,t) indicates natural parity. Note that L=(5) in (p,t).
1857.84 *14*			B	
1858.64[&] *11*	8^+	2.09 ps *10*	A D	J^π: E0 component in γ to 8^+ member of the gs band, and expected band structure.
1878.6 *4*	$(2)^+$		B E	XREF: E(1874). J^π: E2 to 2^+, possible M1 to 2^+ and γ's to 4^+ indicate π=+ and J=2,3,4. L=(2) in (p,t) suggests J=2.
1884 *5*	(5^-)		E	J^π: From L=(5) in (p,t).
1898.64[c] *10*	6^-		AB D	J^π: Feeding by stretched quadrupole (i.e. E2) transition from negative-parity level indicates π=−. J=6 from proposed band assignment. Assigned as $(6,7)^+$ in (p,4nγ).
1930.1 *5*	(3^-)		B EF	XREF: E(1934)F(1927). J^π: L=(3) in (p,t).
1933.60 *18*	$^+$		B	J^π: E2 to 3^+ indicates π=+. Thus, this is not likely to be the (3^-) level at 1927 in (d,d′) and at 1934 in (p,t).
1942.9 *4*	$^+$		B	J^π: E2 γ to 4^+ indicates π=+.
1949.99 *22*	(3^-)		B EF	XREF: E(1956)F(1948). J^π: From L=(3) in (p,t).
1958.64[a] *11*	8^+		A D	J^π: E0 component in γ to 8^+ level, and expected band structure.
2002.9 *3*	4^+		B E	XREF: E(2009?). J^π: L=4 in (p,t).
2032 *5*	2^+		E	J^π: From L=2 in (p,t).
2052 *5*	(3^-)		E	J^π: L=(3) in (p,t). If J^π is indeed 3^-, then this level is not the same as the 2058 level in ^{156}Ho ε decay, since this latter level has a decay γ to a 5^+ level.
2058.49 *20*			B	
2071			F	
2085.14 *23*			B	
2089.81 *22*	2^+		B F	XREF: F(2086). J^π: γ's to 0^+ and 4^+ levels.
2094 *5*	(5^-)		E	J^π: From L=(5) in (p,t).
2103.38 *25*	(4^+)		B E	J^π: γ's to 3^+ and 5^+ levels indicate J^π=3^+,4,5^+. If the 2103 level in (p,t) is the same as the 2103 level in ε decay, then the implied natural parity gives 4^+.
2135			F	
2146 *5*	(5^-)		E	J^π: From L=(5) in (p,t).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{156}Dy Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$[#]	XREF	Comments
2164.3 *5*			B	
2176	(3$^-$)		EF	XREF: E(2174)F(2179). J$^{\pi}$: L=(3) in (p,t).
2183.7 *5*			B	
2186.58[b] *14*	9$^-$		A D F	J$^{\pi}$: From E1 γ to 8$^+$ level and expected band structure.
2191.62[a] *26*	9$^+$		A D	J$^{\pi}$: E2 γ's to 7$^+$ and 10$^+$ levels and expected band structure.
2193.6 *3*	4$^+$		B E	J$^{\pi}$: From L=4 in (p,t).
2199.68 *19*			B	
2207.4 *4*			B	
2220.4 *4*			B E	
2228.9 *5*			B	
2230.9 *4*			B	
2244.64 *14*	(3$^-$)		B	J$^{\pi}$: Assumes that mult=E1 for the 1076 γ. Then, γ's to 2$^+$ and 4$^+$ levels require J$^{\pi}$=3$^-$ uniquely.
2250 *5*	2$^+$		E	J$^{\pi}$: L=2 in (p,t). Level assumed to be distinct from the 2244 level.
2261.62[c] *11*	8$^-$		A D	J$^{\pi}$: Feeding by stretched quadrupole (i.e., E2) transition from negative-parity level indicates π=−. J=8 from proposed band assignment. Assigned as 8$^+$ in (p,4nγ).
2264.3 *5*			B	
2270.0 *4*			B	
2285.88[@] *10*	12$^+$	0.62 ps *7*	A D G	J$^{\pi}$: E2 γ to 10$^+$ and expected band structure.
2293.4 *4*			B	
2300.1 *4*			B	
2307.44 *12*	4$^+$		B	J$^{\pi}$: γ's to 2$^+$ and 6$^+$ levels.
2315.59[&] *12*	10$^+$	1.55 ps *10*	A D	J$^{\pi}$: E0 component in γ to 10$^+$ level.
2323.58 *13*			B	
2331.7 *3*			B	
2342.68 *23*			B	
2345.1[f] *2*	8$^-$		A	J$^{\pi}$: γ's to 7$^+$ and 8$^+$, and proposed band structure.
2372.1 *3*			B	
2385.7 *3*			B	
2408.45 *14*	2$^+$,3,4$^+$		B	J$^{\pi}$: γ's to 2$^+$ and 4$^+$ levels.
2408.5[e] *3*	9$^-$		A	J$^{\pi}$: E1 γ to 8$^+$ and proposed band structure.
2419.1 *6*			B	
2433.84 *16*			B	
2439.16 *17*			B	
2445.17 *21*	3$^+$,4$^+$		B	J$^{\pi}$: γ's to 2$^+$ and 5$^+$ levels.
2448.03[a] *16*	10$^+$		A D	J$^{\pi}$: E2 γ to 8$^+$ and expected band structure.
2489.5 *5*			B	
2491.90 *18*			B	
2517.0 *4*			B	
2571.7 *5*			B	
2580.1[f]	10$^-$		A	J$^{\pi}$: (E1) γ to 10$^+$, E2 γ to 8$^-$, and expected band structure.
2592.7[g]	9$^-$		A	J$^{\pi}$: (E1) γ to 8$^+$ and expected band structure.
2594.3 *3*			B	
2636.55[b] *18*	11$^-$		A D	J$^{\pi}$: E1 γ to 10$^+$ and expected band structure.
2642.50 *22*			B	
2653.3 *6*			B	
2701.5[h] *2*	10$^-$		A D	J$^{\pi}$: From E2 γ to 8$^-$ level and expected band structure. Negative parity for this level and its associated band members is proposed by 1988Ri09, in (HI,xnγ), based on cranked shell-model and signature-splitting considerations. (Level assigned as 10$^+$ in (p,xnγ) (1977De28).).
2706.87[i] *13*	12$^+$	4.53 ps *10*	A D	J$^{\pi}$: E2 γ's to 10$^+$ levels and expected band structure.
2707.8[c]	10$^-$		A	J$^{\pi}$: From proposed band structure in (HI,xnγ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{156}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	XREF	Comments
2709.4[e]	11^-		A	J^{π}: E2 γ to 9^-, E1 γ to 10^+, and expected band structure.
2712.37[a] *14*	11^+		A D	J^{π}: E2 γ to 9^+, γ to 12^+, and expected band structure.
2757.8 *5*			B	
2787.4[o]	8^+		C	From log *ft*≈4.5 in ^{156}Ho ε decay (7.6 min), conf = ν5/2[523]+ν11/2[505]. J^{π}: γ's to 6^+ and 10^+ levels.
2788.1 *9*			B	
2810.4 *7*			B	
2818.35 *12*	$4^+,5^-$		B	J^{π}: γ's to 3^- and 6^+ levels.
2823.38 *15*			B	
2833.7 *4*			B	
2847.5[g]	11^-		A	J^{π}: E2,M1 γ to 10^-, E2 γ to 9^-, and expected band structure.
2887.82[@] *13*	14^+	0.56 ps *6*	A D	J^{π}: E2 γ to 12^+, and expected band structure.
2895.0 *4*			B	
2941.9[f]	12^-		A	J^{π}: γ to 10^-, and expected band structure.
2981.5 *13*			B	
2997.23?[a] *18*	12^+		D	J^{π}: E2 γ to 10^+, and expected band structure.
3021.2[h]	12^-		A	J^{π}: E2 γ's to 10^- and 11^- levels and expected band structure.
3065.88[i] *23*	14^+	7.49 ps *21*	A D	J^{π}: E2 γ to 12^+, γ to 14^+, and expected band structure.
3103.6[e]	13^-		A	J^{π}: E2 γ's to 11^- levels, E1 γ to 12^+, and expected band structure.
3154.2[b]	13^-		A D	J^{π}: E1 γ to 12^+, and expected band structure.
3186.8[c]	12^-		A	J^{π}: From proposed band structure in (HI,xnγ).
3221.2[g]	13^-		A	J^{π}: E2 γ to 11^-, and expected band structure.
3273.5[a]	(13^+)		A	J^{π}: γ to 11^+, and expected band structure.
3411.6[f]	14^-		A	J^{π}: E2 γ to 12^-, and expected band structure.
3444.9[h]	14^-		A	J^{π}: E2 γ to 12^-, and expected band structure.
3498.8[i] *3*	16^+	1.39 ps *8*	A D	J^{π}: E2 γ's to 14^+ levels, and expected band structure.
3523.3[@] *2*	16^+	0.32 ps *6*	A D	J^{π}: E2 γ to 14^+, and expected band structure.
3596.4[e]	15^-		A	J^{π}: E2 γ to 13^-, and expected band structure.
3678.0[c]	14^-		A	J^{π}: From proposed band structure in (HI,xnγ).
3689.9[g]	15^-		A	J^{π}: E2 γ to 13^-, and expected band structure.
3719.6[b]	$15^{(-)}$		A	
3861.2?[a]	(15^+)		A	
3954.0[h]	16^-		A	
3961.5[f]	16^-		A	
4025.8[i]	18^+	0.92 ps *5*	A D	
4157.8[e]	17^-		A	
4178.1[@]	18^+	0.24 ps *6*	A D	
4210.4[c]	16^-		A	
4236.2[g]	17^-		A	
4331.1[b]	(17^-)		A	
4533.9[h]	18^-		A	
4562.4[f]	18^-		A	
4635.6[i] *6*	20^+	0.49 ps *4*	A D	
4771.2[e]	19^-		A	
4779.2[c]	18^-		A	
4845.9[g]	19^-		A	
4859.0[@]	20^+	0.24 ps *6*	A D	
4978.8[b]	(19^-)		A	
5170.8[h]	20^-		A	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{156}Dy Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[#]	XREF
5199.9[f]	20^-		A
5320.2[i]	22^+	0.31 ps *3*	A D
5381.9[c]	20^-		A
5428.2[e]	21^-		A
5507.3[g]	21^-		A
5573.0[@]	22^+	0.21 ps *3*	A
5855.3[h]	22^-		A
5873.4[f]	22^-		A
6036.3[c]	22^-		A
6070.1[i]	24^+	0.177 ps *18*	A
6129.3[e]	23^-		A
6213.8[g]	23^-		A
6328.7[@]	24^+	0.155 ps *30*	A
6582.5[h]	24^-		A
6589.7[f]	24^-		A
6753.7[c]	24^-		A
6876.8[e]	25^-		A
6877.9[i]	26^+	0.123 ps *19*	A
6963.9[g]	25^-		A
7130.3[@]	26^+		A
7349.6[f]	26^-		A
7358.7[h]	26^-		A
7533.4[c]	26^-		A
7672.6[e]	27^-		A
7738.8[i]	28^+	0.091 ps *14*	A
7760.3[g]	27^-		A
7920.5[d]	27^-		A
7978.5[@]	28^+		A
8164.5[f]	28^-		A
8179.7[h]	28^-		A
8364[c]	28^-		A
8517.0[e]	29^-		A
8605.8[g]	29^-		A
8650.8[i]	30^+	0.074 ps *8*	A
8762[d]	29^-		A
8875.9[@]	30^+		A
9031.9[f]	30^-		A
9051.5[h]	30^-		A
9234[c]	30^-		A
9407.4[e]	31^-		A
9502.2[g]	31^-		A
9611.3[i]	32^+	0.06 ps *1*	A
9653[d]	31^-		A
9692[k]	(31^+)		A
9825.2[@]	32^+		A
9952.3[f]	32^-		A
9973.5[h]	32^-		A
10063[j]	32^+		A
10141[c]	32^-		A
10340.6[e]	33^-		A
10449.3[g]	33^-		A
10592[d]	33^-		A
10618.0[i]	34^+	0.06 ps *1*	A
10629[k]	(33^+)		A
10713[l]	(34^+)		A
10828.1[@]	34^+		A
10925.0[f]	34^-		A
10944.6[h]	34^-		A
10975[j]	34^+		A
11092[c]	34^-		A
11313.4[e]	35^-		A
11443.5[g]	35^-		A
11585[d]	35^-		A
11614[k]	(35^+)		A
11670.6[i]	36^+	0.04 ps *1*	A
11735[l]	(36^+)		A
11886.7[@]	36^+		A
11946.2[f]	36^-		A
11957.3[h]	36^-		A
11986[j]	36^+		A
12089[c]	36^-		A
12326.8[e]	37^-		A
12462[g]	37^-		A
12626[d]	37^-		A
12628[k]	(37^+)		A
12769.3[i]	38^+	0.14 ps *4*	A
12818[l]	(38^+)		A
12959[h]	38^-		A
12976[@]	38^+		A
13014.0[f]	38^-		A
13051[j]	38^+		A
13140[c]	38^-		A
13386.8[e]	39^-		A
13470[g]	39^-		A
13686[k]	(39^+)		A
13711[d]	39^-		A
13885.1[i]	40^+	0.05 ps *+8−3*	A
13941[l]	(40^+)		A
13973[h]	40^-		A
14021.9[@]	40^+		A
14113.9[f]	40^-		A
14210[j]	40^+		A
14254[c]	(40^-)		A
14496.1[e]	41^-		A
14532[g]	41^-		A
14797[d]	(41^-)		A

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Adopted Levels, Gammas (continued)

^{156}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	E(level)[†]	J^{π}[‡]	XREF	E(level)[†]	J^{π}[‡]	XREF
14800[k]	(41^+)	A	17012[n]	(45^-)	A	19963[@]	50^+	A
14994.8[i]	42^+	A	17236[k]	(45^+)	A	20002[k]	(49^+)	A
15061[h]	42^-	A	17348[i]	46^+	A	20009[f]	52^-	A
15152[l]	(42^+)	A	17388[f]	46^-	A	20241?[h]	(50^-)	A
15190[@]	42^+	A	17434[@]	46^+	A	20332.2[e]	51^-	A
15229[m]	42^+	A	17482[h]	46^-	A	20858[j]	(50^+)	A
15232[f]	42^-	A	17832[l]	(46^+)	A	20874[l]	(50^+)	A
15411[c]	(42^-)	A	17908?[c]	(46^-)	A	21332[@]	52^+	A
15447[j]	(42^+)	A	18015.7[e]	47^-	A	21422[i]	(52^+)	A
15635.6[e]	43^-	A	18036[j]	(46^+)	A	21512[k]	(51^+)	A
15679[g]	43^-	A	18152[g]	47^-	A	21763[e]	53^-	A
15841[n]	43^-	A	18303[n]	(47^-)	A	22369?[j]	(52^+)	A
15950[d]	(43^-)	A	18472[f]	48^-	A	22576?[l]	(52^+)	A
15975[k]	(43^+)	A	18600[k]	(47^+)	A	22799[@]	54^+	A
16171.2[i]	44^+	A	18615[i]	48^+	A	22998[i]	(54^+)	A
16210[h]	44^-	A	18616[f]	50^-	A	23244?[k]	(53^+)	A
16289[@]	44^+	A	18651[@]	48^+	A	24382?[l]	(54^+)	A
16350[f]	44^-	A	18813[h]	48^-	A	24430[@]	(56^+)	A
16448[l]	(44^+)	A	19090.2[e]	49^-	A	24716?[i]	(56^+)	A
16474[m]	(44^+)	A	19298[l]	(48^+)	A	26224[@]	(58^+)	A
16625[c]	(44^-)	A	19408[j]	(48^+)	A	26640?[i]	(58^+)	A
16717[j]	(44^+)	A	19488[g]	49^-	A	28122?[@]	(60^+)	A
16833.3[e]	45^-	A	19652?[n]	(49^-)	A	30241?[@]	(62^+)	A
16869[g]	45^-	A	19953[i]	50^+	A			

† From values given in individual reactions or decays, primarily from ^{156}Ho ε decay and (HI,xnγ) and ^{159}Tb(p,4nγ) studies.

‡ Arguments are given explicitly for each level below 3.7 MeV. Above this energy, all values are from (HI,xnγ) alone and are based on the considerations mentioned in that data set. These values are generally those proposed by the authors of those studies. The light-ion-induced in-beam studies are for convenience frequently referred to simply as (p,4nγ), although they may include (α,4nγ) data as well.

Unless noted otherwise, the $T_{1/2}$ values are from the (HI,xnγ) data set.

@ Band(A): $K^{\pi}=0^+$ g.s. band. α=23.0.

& Band(B): First excited $K^{\pi}=0^+$ band. α=25.5. Because of the small value of B(E2)↑, this band is not, at least predominantly, a β vibration. For a discussion of this and related points regarding excited 0^+ bands in strongly deformed nuclei, see 2001Ga02. Microscopic calculations of the 0^+ excitations in the even-mass Dy isotopes from α=156 to 166 are described and discussed by 2002Ge10.

a Band(C): $K^{\pi}=2^+$ γ-vibrational band. α=19.8. α-value computed from the energies of the 2^+ and 4^+ states. For a discussion of the odd-even staggering in the γ-vibrational bands of a number of heavy deformed nuclei, see 2000Mi18. The decay of the bandhead is quite different from that observed for γ vibrations in most other nuclides, and the ΔJ=0 transitions from some of the excited band members to members of the g.s. band seem to have E0 components, suggesting that a γ-vibrational assignment may not be entirely appropriate. Mixing with the near-lying 828 level may be significant.

b Band(D): Aligned odd-spin octupole band. α=7.55. α-value computed from the energies of the 1^- and 3^- states.

c Band(E): Unfavored, even-spin octupole band. α=12.1. α-value computed from the energies of the 6^- and 8^- states.

d Band(e): Negative-parity band, α=1. Band proposed by 1998Ko49 in (HI,xnγ).

e Band(F): Odd-spin, negative-parity band. Configuration assigned as AE, changing to AEBC at the higher spins (1988Ri09). (For the definition of the quasiparticle band-labeling convention for this and the other high-spin bands, see the (HI,xnγ) data set).

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Adopted Levels, Gammas (continued)

^{156}Dy Levels (continued)

[f] Band(f): Even-spin, negative-parity band. Configuration assigned as AF, changing to AFBC at the higher spins (1988Ri09).
[g] Band(g): Odd-spin, negative-parity band. Configuration assigned as AX, changing to AXBC at the higher spins (1988Ri09).
[h] Band(G): Even-spin, negative-parity band. Configuration assigned as AY, changing to AYBC at the higher spins (1988Ri09).
[i] Band(H): Positive-parity band, α=0. Configuration assigned as AB at the lower spins (J<22) (1988Ri09). This band crosses the g.s. band around $J^{\pi}=16^{+}$ and the first excited 0^{+} band between J=10 and 12. A crossing with the two-proton- quasiparticle band with configuration A_pB_p also occurs within this band at higher spins.
[j] Band(I): Positive-parity band, α=0. Band proposed by 1998Ko49 in (HI,xnγ).
[k] Band(J): Positive-parity band, α=1 branch. Band proposed by 1998Ko49 in (HI,xnγ).
[l] Band(j): Positive-parity band, α=0 branch. Band proposed by 1998Ko49 in (HI,xnγ).
[m] Band(K): Positive-parity band, α=0. Band proposed by 1998Ko49 in (HI,xnγ).
[n] Band(L): Negative-parity band, α=0. Band proposed by 1998Ko49 in (HI,xnγ).
[o] Band(M): Bandhead of a $K^{\pi}=8^{+}$ band. configuration=ν5/2[523]+ν11/2[505].

$\gamma(^{156}Dy)$

Measurements of continuum γ's: 1982Lu03, 1988HoZQ.

The unplaced γ's are not given here, see ^{156}Ho ε decay and ^{159}Tb(p,4nγ).

Calculations of the reduced γ transition probabilities, e.g., B(E2)(W.u.), assume that essentially all of the decays from the level are given. This assumption may be unrealistic for the high-energy levels observed in the (HI,xnγ) studies. The presence of other decay modes would reduce the calculated transition probabilities.

In this data set, unless noted otherwise, mention of the ^{156}Ho ε decay refers to the 56-min g.s. decay. Reference to the isomeric (7.6 min) decay is specifically indicated.

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[b]	$I_{(\gamma+ce)}$[a]	Comments
137.77	2+	137.80 *10*	100	0	0+	E2	0.849		B(E2)(W.u.)=150.0 *17* Mult.: Based on α(K)exp=0.46 (1966La11) and 0.45 (1976Gr20); K/L=1.8 *5* (1960Gr24), 1.42 (1961Ba32), and 1.69 (1966La11); L1/L2=0.41 (1966GrZX) and 0.37 *2* (1987BaYQ); L1/L3=0.41 (1966GrZX) and 0.40 *2* (1987BaYQ), all from ^{156}Ho ε decay. Also from $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
404.19	4+	266.38 *10*	100	137.77	2+	E2	0.0933		B(E2)(W.u.)=244.8 *24* Additional information 3. Mult.: Based on α(K)exp=0.064 (1966La11), 0.075 (1976Gr20), and 0.069 *3* (1977De28); K/L=3.0 *4* (1960Gr24), 2.0 (1961Ba32), 3.6 (1966GrZX), and 3.21 (1966La11), together with L subshell ratios (1960Gr24,1966GrZX,1987BaYQ), all from ^{156}Ho ε decay. Also from $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
675.60	0+	537.8 *2*	100	137.77	2+	E2	0.01257		Mult.: Based on α(K)exp=0.013 in ^{156}Ho ε decay (1976Gr20) and 0.014 *4* in (p,4nγ) (1977De28).
		675.8 *3*		0	0+	E0		4	I_γ: Measured Iγ<9 (1976Gr20, ε decay), but γ is an E0. Mult.: Based on observation of ce and lack of observation of γ in ^{156}Ho ε decay (1976Gr20).
770.44	6+	366.22 *12*	100	404.19	4+	E2	0.0356		B(E2)(W.u.)=264 *13* Mult.: From ^{156}Ho ε decay: α(K)exp=0.023 (1966La11) and 0.030 (1976Gr20); K/L=5.1 *8* (1960Gr24), 2.8 (1961Ba32), 4.4 (1966GrZX) and 4.0 (1966La11); L subshell ratios (1960Gr24,1966GrZX); α(K)exp= 0.0287 16 (1977De28), (p,4nγ). Also $\gamma(\theta)$ from (HI,xnγ) (1988Ri09).
828.64	2+	152.8	<0.7	675.60	0+	[E2]	0.591		I_γ: From ^{156}Ho ε decay. Value from (α,4nγ) is 36 *7*.
		424.5 *2*	10.8 *5*	404.19	4+	E2	0.0235		I_γ: From ^{156}Ho ε decay. Value from (α,4nγ) is 89, but includes a ^{157}Dy impurity. Mult.: Based on α(K)exp=0.019 (1976Gr20), ^{156}Ho ε decay, and 0.029 *3* (1977De28), (p,4nγ).
		690.86 *13*	100 *5*	137.77	2+	E0+E2	0.031		Mult.: From α(K)exp=0.036 (1976Gr20), ^{156}Ho ε decay, and 0.024 *4* (1977De28), (p,4nγ). α: Computed from α(K)exp=0.026 and α/α(K).
		828.7	<4	0	0+	[E2]	0.00454		I_γ: From ^{156}Ho ε decay. From (α,4nγ), Iγ=16 *18*.

$^{156}_{66}Dy_{90}$-9

Adopted Levels, Gammas (continued)

$\gamma(^{156}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[@]	α[b]	$I_{(\gamma+ce)}$[a]	Comments
890.50	2^+	61.7	<1.0	828.64	2^+	[M1,E2]	14 *5*	14	
		486.4 *3*	8.5 *10*	404.19	4^+	[E2]	0.01629		B(E2)(W.u.)=12.6 *19*
		752.67 *15*	56 *5*	137.77	2^+	E2+E0(+M1)	0.0085		B(E2)(W.u.)=9.4 *12* ρ^2(E0)×10^3=8 *5*. Value computed by the evaluator assuming no M1 component in the 752 transition. E0 components in the ΔJ=0 transitions between γ-vibrational states and members of the g.s. band are not expected, suggesting that the make-up of this band is more than simply a γ vibration. B(E2)(W.u.): Calculated assuming a pure E2 mult. Mult.: From α(K)exp=0.0065 (1976Gr20), ^{156}Ho ε decay and 0.0075 *13* (1977De28), from (p,4nγ). If α(K)exp is assumed to result from a M1,E2 admixture only, one computes δ^2=0.82, which seems unreasonably large for a transition between a γ band and a gs band. α: Computed from α(K)exp=0.0072 and α/α(K), assuming no M1 component. Additional information 4.
		890.44 *12*	100 *15*	0	0^+	E2	0.00389		B(E2)(W.u.)=7.2 *8* Mult.: From α(K)exp=0.0029 (1976Gr20), ^{156}Ho ε decay.
1022.08	3^+	131.7	<0.5	890.50	2^+	[M1,E2]	1.04 *5*	6.	I_γ: From ^{156}Ho ε decay. From I(ce) and α for [M1,E2], Iγ=7.2; in (α,4nγ) value is 57% of Iγ(618), but also 65% of Iγ(884).
		617.88 *12*	22 *2*	404.19	4^+	E2	0.00891		I_γ: From ^{156}Ho ε decay; value from (α,4nγ) is 115. Mult.: From α(K)exp=0.0075 (1976Gr20), ^{156}Ho ε decay.
		884.30 *10*	100 *7*	137.77	2^+	E2	0.00394		Mult.: From α(K)exp=0.0031 (1976Gr20), ^{156}Ho ε decay, and 0.0033 *4* (1977De28), (p,4nγ).
1088.28	4^+	259.59 *15*	11.0 *10*	828.64	2^+				I_γ: Value from (α,4nγ) is 57, but this value includes ^{157}Dy impurity. From (p,4nγ) Iγ=11.3.
		317.9 *2*	2.0 *3*	770.44	6^+	E2	0.0541		B(E2)(W.u.)=12 *4* I_γ: From ^{156}Ho ε decay. Mult.: Based on α(K)exp=0.045 (1976Gr20), from ^{156}Ho ε decay.
		684.10 *10*	100 *7*	404.19	4^+	E2+E0	0.035		B(E2)(W.u.)=13 *4* B(E2)(W.u.): Calculated assuming a pure E2 mult. Mult.: From α(K)exp=0.043 (1976Gr20), ^{156}Ho ε decay and 0.0324 *19* (1977De28), (p,4nγ). α: Computed from α(K)exp=0.030 and α/α(K). Additional information 5.
		950.5 *2*	9.0 *15*	137.77	2^+	E2	0.00338		B(E2)(W.u.)=0.23 *8* I_γ: From ^{156}Ho ε decay. Mult.: From α(K)exp=0.0028 (1976Gr20), ^{156}Ho ε decay.
1168.47	4^+	80.2	<3	1088.28	4^+			7	E_γ: From ce data (1976Gr20), ^{156}Ho ε decay. I_γ: From 2002Ca49, ^{156}Ho ε decay.
		146.4	<3	1022.08	3^+	[M1,E2]	0.75 *7*	2	E_γ: From ce data in ^{156}Ho ε decay (1976Gr20). I_γ: From 2002Ca49, ^{156}Ho ε decay. Value from (α,4nγ) is 515.

$^{156}_{66}Dy_{90}$-10

$\gamma(^{156}$Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[b]	$I_{(\gamma+ce)}$[a]	Comments
1168.47	4^+	277.96 *18*	7.9 *8*	890.50	2^+	E2	0.0816		E_γ: From ^{156}Ho ε decay. Value from (p,4nγ) is 279.22 *21*. I_γ: From ^{156}Ho ε decay. Value from (p,4nγ) is ≤415. Mult.: From α(K)exp=0.062 (1976Gr20), ^{156}Ho ε decay.
		397.9 *2*	2.3 *6*	770.44	6^+	[E2]	0.0281		I_γ: Value from (α,4nγ) is 370.
		764.12 *13*	100 *6*	404.19	4^+	E0+E2,M1	0.0095		Mult.: Based on α(K)exp=0.0072 (1976Gr20), ^{156}Ho ε decay. Value from (p,4nγ) is 0.0082 *12* (1977De28). α: Computed from α(K)exp=0.0080 and α/α(K).
		1030.7 *2*	86 *4*	137.77	2^+	E2	0.00286		Mult.: Based on α(K)exp=0.0024 (1976Gr20), ^{156}Ho ε decay. and 0.0023 *4* (1977De28), (p,4nγ).
1215.61	8^+	445.23 *17*	100	770.44	6^+	E2	0.0206		B(E2)(W.u.)=281 *8* Mult.: From α(K)exp=0.0165 *17* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
1293.2	1^-	1154.4 *3*	100	137.77	2^+	E1			Mult.: From $\gamma(\theta)$ in (p,4nγ) (1976El13), mult=D. From assigned configuration, mult=E1 is expected.
1335.56	5^+	167.0	<4	1168.47	4^+	[M1,E2]	0.50 *7*	14	E_γ: From ce data (1976Gr20), ^{156}Ho ε decay. I_γ: From 2002Ca49, ^{156}Ho ε decay.
		313.4 *2*	9.2 *7*	1022.08	3^+	E2	0.0565		I_γ: From ^{156}Ho ε decay; value from (α,4nγ) is ≤73. Mult.: From α(K)exp=0.044 (1976Gr20), ^{156}Ho ε decay, and $\gamma(\theta)$ (1988Ri09), (HI,xnγ).
		565.07 *17*	16.0 *8*	770.44	6^+	E2(+M1)	0.016 *6*		I_γ: From ^{156}Ho ε decay. Mult.: From α(K)exp=0.012 (1976Gr20), ^{156}Ho ε decay, and 0.0090 *22* (1977De28), (p,4nγ).
		931.35 *16*	100 *6*	404.19	4^+	E2	0.00353		Mult.: From: α(K)exp=0.0029 (1976Gr20), ^{156}Ho ε decay; 0.0034 *5* (1977De28), (p,4nγ); and $\gamma(\theta)$ (1988Ri09), (HI,xnγ).
1368.36	3^-	964.36 *18*	29 *2*	404.19	4^+	E1	0.00134		Mult.: From α(K)exp=0.0012 (1976Gr20), ^{156}Ho ε decay.
		1230.72 *14*	100 *10*	137.77	2^+	E1	8.92×10^{-4}		Mult.: From α(K)exp=0.00071 (1976Gr20), ^{156}Ho ε decay, and 0.00072 *14* (1977De28), (p,4nγ).
1382.31	2^+	360.7[e] *12*	39 *14*	1022.08	3^+				
		491.6 *3*	82 *21*	890.50	2^+				
		553.7 *2*	100 *11*	828.64	2^+	M1	0.0229		α(K)=0.020; α(L)=0.003 Mult.: Assigned to a 554.03 γ by 1976Gr20, previously placed from a 3071.7 level. If this association is correct, then $J^\pi=2^+$ uniquely for the 1382.3 level.
		706.74 *16*	50 *7*	675.60	0^+				
1437.28	6^+	348.96 *14*	73 *4*	1088.28	4^+	E2	0.0410		B(E2)(W.u.)=209 *21* Mult.: From α(K)exp=0.041 (1976Gr20), ^{156}Ho ε decay, and $\gamma(\theta)$ (1988Ri09), (HI,xnγ).
		666.88 *15*	100 *5*	770.44	6^+	E0+E2	0.048		B(E2)(W.u.)=11.2 *11* B(E2)(W.u.): Calculated assuming a pure E2 mult. Mult.: From α(K)exp=0.058 (1976Gr20), ^{156}Ho ε decay, and 0.0344 *21* (1977De28), (p,4nγ). α: Computed from α(K)exp=0.040 and α/α(K).

$^{156}_{66}$Dy$_{90}$-11

$\gamma(^{156}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[b]	Comments
1437.28	6^+	1033.2 3	34 7	404.19	4^+	E2[&]	0.00284	B(E2)(W.u.)=0.43 10 I_γ: From ^{156}Ho ε decay. 2006Mo22 report $I\gamma$=14 4.
1447.38	(2^+)	1310.9 8	100	137.77	2^+			
1476.10	$(3)^-$	585.6 2	32 6	890.50	2^+	E1		Mult.: From ce data in ^{156}Ho ε decay. (See the comment there.).
		1338.31 17	100 10	137.77	2^+			
1514.94	2^+	624.4 3	21 9	890.50	2^+			
		839.3 2	37 4	675.60	0^+			
		1111.2 6	100 25	404.19	4^+			
1525.17	6^+	190	<13	1335.56	5^+			
		356.5[c] 3	30 3	1168.47	4^+			
		437[c]	<7	1088.28	4^+			
		754.9[c] 2	100 6	770.44	6^+			Mult.: Suggested to be E0+E2 from α(K)exp=0.0120 22 (1977De28), (p,4nγ). However, uncertainty in split of the intensity between the two placements casts doubt on this. Note also that an E0 component in a ΔJ=0 transition between a member of a γ-vibrational band and a member of a g.s. band is not expected. However, such a component is apparently observed in the deexcitation of the 2^+ bandhead, suggesting that this band may be more than simply a γ band.
		1121[c]	<149	404.19	4^+	E2[&]		
1526.28	5^-	357[c]	<3	1168.47	4^+			
		437.6[ce] 6	1.0 7	1088.28	4^+			
		755[c]	<7	770.44	6^+			I_γ: From ^{156}Ho ε decay; value from (α,4nγ) is 75, but it is doubly placed. Mult.: Assigned E1 in ^{156}Ho ε decay and in (p,4nγ), but γ may be a doublet.
		1121.8[c] 2	100 10	404.19	4^+			I_γ: From ^{156}Ho ε decay. Mult.: Assigned E1 in ^{156}Ho ε decay and in (p,4nγ), but γ may be a doublet.
1609.33	$(3)^-$	1205.2 2	51 4	404.19	4^+	E1		Mult.: From α(K)exp=0.00062 in ^{156}Ho ε decay (1976Gr20).
		1471.5 2	100 12	137.77	2^+			
		1609.1 6	5.6 12	0	0^+	[E3]		
1624.64		456.2 8	9 3	1168.47	4^+			
		796.03 15	100 6	828.64	2^+			
		1486.4 7	55 16	137.77	2^+			
1627.42	$(4)^+$	458.9 4	3.6 11	1168.47	4^+			
		605.3 3	6.4 13	1022.08	3^+	E2	0.00937	Mult.: From α(K)exp=0.0085 (1976Gr20), ^{156}Ho ε decay.
		1223.36 18	100 7	404.19	4^+	E2,M1	0.0027 7	Mult.: From α(K)exp=0.0022 18 in (p,4nγ) (1977De28).
1677.15	4^+	588.88 14	100 3	1088.28	4^+			
		654.9 4	63 17	1022.08	3^+			
		786.1[e] 5	19 6	890.50	2^+			
		848.2 5	23 10	828.64	2^+			
		907.2 4	29 4	770.44	6^+	E2	0.00373	Mult.: From α(K)exp=0.0034 (1976Gr20), ^{156}Ho ε decay.
		1272.8 3	62 15	404.19	4^+			
1679.9		851.0[e] 12	9 5	828.64	2^+			
		1542.1 8	100 20	137.77	2^+			
1725.02	10^+	509.35 6	100	1215.61	8^+	E2	0.01444	B(E2)(W.u.)=3.1×10^2 3

$\gamma(^{156}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[b]	Comments
								Mult.: From α(K)exp=0.0112 *11* in (p,4nγ) (1977De28), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
1728.79	7^+	393.57 *19*	52 *8*	1335.56	5^+	(E2)	0.0290	I_γ: In ^{148}Nd(^{12}C,4nγ), this γ is reported to be≈2.2 times as strong as the other γ (958.4 keV) deexciting this level (1988Ri09). Mult.: From α(K)exp=0.0028 *4* in (p,4nγ) (1977De28), but line is mixed, and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
		958.40 *18*	100 *10*	770.44	6^+	E2	0.00333	Mult.: From α(K)exp=0.0030 *8* in (p,4nγ) (1977De28) and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
1772.4	(3^-)	1634.6 *10*	100	137.77	2^+			
1794.55	4^+	1024.6 *6*	6 *2*	770.44	6^+			
		1390.33 *17*	100 *6*	404.19	4^+			
1809.97	7^-	593.29 *26*	14 *4*	1215.61	8^+			
		1039.88 *25*	100 *15*	770.44	6^+	E1		Mult.: From α(K)exp=0.0006 *5* in (p,4nγ) (1977De28) and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
1840.07	$(4)^+$	671.2 *2*	25 *6*	1168.47	4^+	M1+E2	0.011 *4*	α(K)=0.009 *3*; α(L)=0.001
		818.1 *2*	37 *8*	1022.08	3^+	M1		
		949.60 *16*	100 *7*	890.50	2^+			
		1011.7 *2*	14 *4*	828.64	2^+			
		1435.7 *5*	66 *13*	404.19	4^+			
1857.84		688.9[e] *5*	6 *4*	1168.47	4^+			
		1087.40 *16*	24.8 *16*	770.44	6^+			
		1453.65 *15*	100 *12*	404.19	4^+			
1858.64	8^+	421.25 *13*	100[#] *4*	1437.28	6^+	E2	0.0240	B(E2)(W.u.)=310 *24* Mult.: From α(K)exp=0.020 *4* in (p,4nγ) (1977De28) and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
		642.48 *40*	21[#] *3*	1215.61	8^+	E2+E0	0.049	B(E2)(W.u.)=8.0 *10* B(E2)(W.u.): Calculated assuming a pure E2 mult. I_γ: From (α,4nγ), value is 65 *10*. Mult.: From α(K)exp=0.041 *6* in (α,4nγ) (1977De28) and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09). α: Computed from α(K)exp=0.041 and α/α(K). Additional information 6.
		1089.3 *2*	7.6[#] *17*	770.44	6^+	E2[&]	0.00255	B(E2)(W.u.)=0.20 *5* I_γ: From ^{148}Nd(^{12}C,4nγ), Iγ=8 *2*.
1878.6	$(2)^+$	988.7[e] *5*	25 *5*	890.50	2^+	E2	0.00312	Mult.: From α(K)exp=0.0031 in ^{156}Ho ε decay (1976Gr20).
		1049.6[e] *15*	21 *9*	828.64	2^+	M1	0.00472	Mult.: From α(K)exp=0.0050 in ^{156}Ho ε decay (1976Gr20).
		1474.2 *4*	100 *25*	404.19	4^+			
		1741.5 *7*	64 *16*	137.77	2^+			
1898.64	6^-	271.10 *21*	≤18	1627.42	$(4)^+$			E_γ: From (p,4nγ). I_γ: From 2002Ca49, ^{156}Ho ε decay. From (p,4nγ), Iγ≤88.
		562.6 *5*	13 *6*	1335.56	5^+			E_γ,I_γ: From ^{156}Ho ε decay.
		1128.2 *4*	100 *6*	770.44	6^+			E_γ: From (p,4nγ).

$^{156}_{66}Dy_{90}$-13

$\gamma(^{156}$Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[@]	α[b]	Comments
								I_γ: From 2002Ca49, ^{156}Ho ε decay. From (p,4nγ), Iγ=100 *25*. Mult.: Assigned as M1 from α(K)exp=0.0040 *14* in (p,4nγ), E2 from α(K)exp=0.0024 in ^{156}Ho ε decay, and (E1) from $\gamma(\theta)$.
1930.1	(3⁻)	1526.1 *6*	100 *25*	404.19	4⁺			
		1791.9 *9*	78 *28*	137.77	2⁺			
1933.60	+	845.3 *3*	7.2 *13*	1088.28	4⁺			
		911.5 *6*	10 *3*	1022.08	3⁺	E2	0.00370	Mult.: From α(K)exp=0.0025 for a 912.54 γ in ^{156}Ho ε decay (1976Gr20).
		1529.4 *2*	100 *9*	404.19	4⁺			
1942.9	+	854.6 *3*	100 *15*	1088.28	4⁺	E2	0.00425	Mult.: From α(K)exp=0.0048 for an 855.65 γ in ^{156}Ho ε decay (1976Gr20).
		1172.5[e] *16*	59 *19*	770.44	6⁺			
		1538.0[e] *12*	121 *38*	404.19	4⁺			
1949.99	(3⁻)	1545.8 *2*	100 *6*	404.19	4⁺			
1958.64	8⁺	432.64[d] *18*	100[d] *9*	1525.17	6⁺	E2	0.0223	Mult.: From α(K)exp=0.019 *3* (1977De28), in (p,4nγ). γ is doubly placed.
		520.1[d] *3*	14[d] *9*	1437.28	6⁺			
		741.7 *4*	15 *7*	1215.61	8⁺	E2+E0	0.011	Mult.: From α(K)exp=0.009 *4* (1977De28), (p,4nγ). α: Computed from α(K)exp=0.009 and α/α(K). Additional information 7.
		1186.7 *7*		770.44	6⁺			
2002.9	4⁺	914.6 *3*	56 *20*	1088.28	4⁺			
		1174.5 *8*	88 *32*	828.64	2⁺			
		1598.7 *5*	100 *28*	404.19	4⁺			
2058.49		722.3 *7*	41 *13*	1335.56	5⁺			
		890.2 *4*	84 *31*	1168.47	4⁺			
		970.4[e] *18*	19 *13*	1088.28	4⁺			
		1036.4 *2*	100 *19*	1022.08	3⁺			
2085.14		1314.7 *2*	100	770.44	6⁺			
2089.81	2⁺	921.2 *3*	60 *14*	1168.47	4⁺	[E2]	0.00361	Mult.: From α(K)exp=0.005 in ^{156}Ho ε decay (1976Gr20), mult=M1. J^π assignments require E2.
		1001.7 *3*	100 *14*	1088.28	4⁺	[E2]	0.00303	Mult.: From α(K)exp=0.0007 in ^{156}Ho ε decay (1976Gr20), mult=E1, but placement requires E2.
		1952.3 *9*	56 *23*	137.77	2⁺			
		2089.1 *10*	72 *30*	0	0⁺	[E2]		
2103.38	(4⁺)	767.8 *4*	25 *6*	1335.56	5⁺			
		935.0 *4*	30 *9*	1168.47	4⁺			
		1081.2 *4*	100 *8*	1022.08	3⁺			
2164.3		1393.9[e] *7*	29 *12*	770.44	6⁺			
		1760.1 *4*	100 *29*	404.19	4⁺			
2183.7		1095.9[e] *5*	48 *29*	1088.28	4⁺			
		1293.0[e] *5*	67 *38*	890.50	2⁺			
		1355.1 *4*	100 *23*	828.64	2⁺			
2186.58	9⁻	970.69 *22*	100	1215.61	8⁺	E1	0.00132	Mult.: From α(K)exp=0.0008 *8* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).

$^{156}_{66}$Dy$_{90}$-14

$\gamma(^{156}$Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[@]	α[b]	Comments
2191.62	9^+	233.41 *18*	66 *16*	1958.64	8^+			
		332.6[e] *4*	91 *22*	1858.64	8^+			
		462.16 *21*	100 *19*	1728.79	7^+	E2	0.0187	Mult.: From α(K)exp=0.015 *4* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
		467.57 *25*	91 *19*	1725.02	10^+	E2	0.0181	Mult.: From α(K)exp=0.018 *5* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
		975.8[d] *3*	122[d] *25*	1215.61	8^+	(E2)	0.00320	I_γ: From ^{148}Nd(^{12}C,4nγ), Iγ(975.2γ)/Iγ(462.4γ)=0.76. Mult.: From α(K)exp=0.025 *11* in (p,4nγ) (1977De28), but γ is doubly placed. E2,M1 from $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
2193.6	4^+	858.0 *3*	100 *15*	1335.56	5^+	M1	0.00770	Mult.: From α(K)exp=0.0079 in ^{156}Ho ε decay (1976Gr20).
		1423.3 *6*	47 *18*	770.44	6^+			
2199.68		723.5 *4*	33 *10*	1476.10	$(3)^-$			
		863.3 *10*	24 *10*	1335.56	5^+			
		1031.8 *8*	26 *7*	1168.47	4^+			
		1177.6 *2*	69 *12*	1022.08	3^+	E2	0.00219	Mult.: From α(K)exp=0.0016 in ^{156}Ho ε decay (1976Gr20).
		1795.6 *5*	100 *36*	404.19	4^+			
2207.4		871.6 *5*	82 *23*	1335.56	5^+			
		1185.6 *5*	100 *18*	1022.08	3^+			
2220.4		1450.0 *3*	100 *27*	770.44	6^+			
2228.9		1824.7 *5*	100 *14*	404.19	4^+			
2230.9		1460.5 *3*	100 *18*	770.44	6^+			
2244.64	(3^-)	620.1 *8*	7 *2*	1624.64				
		1076.2 *5*	28 *5*	1168.47	4^+	E1	0.00109	Mult.: From α(K)exp=0.00094 in ^{156}Ho ε decay (1976Gr20).
		1156.4 *3*	21 *5*	1088.28	4^+			
		1222.8 *3*	25 *5*	1022.08	3^+			
		1354.1 *2*	27 *3*	890.50	2^+			
		1415.9 *2*	100 *6*	828.64	2^+			
		1840.5[e] *8*	15 *6*	404.19	4^+			
2261.62	8^-	362.83 *9*	80 *12*	1898.64	6^-	E2	0.0366	I_γ: From Iγ(362γ)/Iγ(1046γ) in ^{148}Nd(^{12}C,4nγ). From (p,4nγ), this ratio is 80 *13*. Mult.: From $\gamma(\theta)$ in (HI,xnγ) (1988Ri09). Assigned E1 or E2 from α(K)exp=0.006 *4* in (p,4nγ).
		451.7 *2*	<15	1809.97	7^-			E_γ: From (HI,xnγ). I_γ: From ^{148}Nd(^{12}C,4nγ).
		1046.3 *4*	100 *19*	1215.61	8^+	[E1]	0.00115	Mult.: From α(K)exp=0.0031 *12* (1977De28), (p,4nγ), mult=E2,M1. Other: assigned as (E1) from $\gamma(\theta)$ in (HI,xnγ) (1988Ri09). Placement requires E1.
2264.3		1094.8[e] *10*	19 *6*	1168.47	4^+			
		1241.2[e] *6*	19 *7*	1022.08	3^+			
		1860.1 *5*	100 *16*	404.19	4^+			
2270.0		1499.6 *3*	100 *15*	770.44	6^+			
2285.88	12^+	560.75 *10*	100	1725.02	10^+	E2	0.01131	B(E2)(W.u.)=3.3×10^2 *4* Mult.: From α(K)exp=0.0104 *16* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).

$^{156}_{66}$Dy$_{90}$-15

Adopted Levels, Gammas (continued)

γ(^{156}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$[†]	I$_\gamma$[‡]	E$_f$	J$^\pi_f$	Mult.[@]	α[b]	Comments
2293.4		1523.0 *3*	100 *16*	770.44	6$^+$			
		1888.8[e] *15*	71 *26*	404.19	4$^+$			
2300.1		1278.0 *3*	100 *27*	1022.08	3$^+$			
2307.44	4$^+$	680.6 *5*	<11	1627.42	(4)$^+$	E2+M1	0.010 *4*	Mult.: From α(K)exp=0.0084 (1976Gr20), ^{156}Ho ε decay.
		939.2 *1*	18 *7*	1368.36	3$^-$			
		1139.0 *6*	35 *10*	1168.47	4$^+$			
		1218.8 *9*	42 *10*	1088.28	4$^+$			
		1285.4 *4*	20 *8*	1022.08	3$^+$			
		1416.8 *2*	100 *11*	890.50	2$^+$	[E2]	0.00157	
		1478.7 *2*	30 *3*	828.64	2$^+$	[E2]	0.00147	
		1536.0 *4*	53 *9*	770.44	6$^+$	[E2]	0.00139	
		1902.5 *5*	46 *11*	404.19	4$^+$			
		2169.8 *6*	34 *4*	137.77	2$^+$	[E2]		
2315.59	10$^+$	456.86 *12*	100[#] *4*	1858.64	8$^+$	E2	0.0192	B(E2)(W.u.)=3.0×10^2 *3* Mult.: From α(K)exp=0.020 *4* (1977De28), (p,4nγ), and γ(θ) in (HI,xnγ) (1988Ri09).
		591.6 *5*	11[#] *2*	1725.02	10$^+$	E2+E0	0.060	B(E2)(W.u.)=8.9 *18* B(E2)(W.u.): Calculated assuming a pure E2 mult. I$_\gamma$: From ^{148}Nd(^{12}C,4nγ), Iγ=7 *1*. From (p,4nγ), Iγ=21 *4*. Mult.: From α(K)exp=0.051 *10* (1977De28), (p,4nγ), and E2,M1 from γ(θ) in (HI,xnγ) (1988Ri09). α: Computed from α(K)exp=0.051 and α/α(K). Additional information 8.
		1100.3	11[#] *2*	1215.61	8$^+$	E2[&]	0.00250	B(E2)(W.u.)=0.40 *8* I$_\gamma$: From ^{148}Nd(^{12}C,4nγ), Iγ=7 *1*. γ not reported in (p,4nγ).
2323.58		955.4 *4*	7.4 *16*	1368.36	3$^-$			
		1155.3 *2*	49 *3*	1168.47	4$^+$			
		1235.3 *2*	17 *3*	1088.28	4$^+$			
		1301.5 *4*	100 *5*	1022.08	3$^+$			
		1432.8 *2*	39 *4*	890.50	2$^+$			
		1494.5 *5*	11 *3*	828.64	2$^+$			
		1919.8 *4*	24 *5*	404.19	4$^+$			
		2185.6 *6*	12 *4*	137.77	2$^+$			
2331.7		996.1 *4*	37 *14*	1335.56	5$^+$			
		1163.1[e] *6*	27 *14*	1168.47	4$^+$			
		1309.7 *4*	100 *22*	1022.08	3$^+$			
2342.68		1174.2 *2*	100 *17*	1168.47	4$^+$			
2345.1	8$^-$	616.5 *1*		1728.79	7$^+$			
		1128.1 *2*		1215.61	8$^+$			
2372.1		1967.9 *3*	35 *9*	404.19	4$^+$			
		2234.2 *4*	100 *23*	137.77	2$^+$			
2385.7		1050.0 *5*	44 *12*	1335.56	5$^+$			

From ENSDF

$^{156}_{66}$Dy$_{90}$-16

γ(^{156}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[@]	α[b]
2385.7		1217.2 *3*	100 *28*	1168.47	4^+		
		1363.4[e] *7*	32 *12*	1022.08	3^+		
2408.45	2^+,3,4^+	304.6[e] *7*	11 *3*	2103.38	(4^+)		
		1040.0 *7*	13 *5*	1368.36	3^-		
		1241.3[e] *12*	16 *7*	1168.47	4^+		
		1320.3 *15*	14 *6*	1088.28	4^+		
		1386.3 *2*	76 *7*	1022.08	3^+		
		1518.7 *3*	28 *8*	890.50	2^+		
		1580.3 *4*	13 *3*	828.64	2^+		
		2003.7[e] *7*	39 *11*	404.19	4^+		
		2271.0 *2*	100 *15*	137.77	2^+		
2408.5	9^-	1192.3 *3*	100	1215.61	8^+	E1[&]	
2419.1		1648.1[e] *7*	45 *14*	770.44	6^+		
		2014.9 *6*	100 *24*	404.19	4^+		
2433.84		908.0[e] *10*	9 *3*	1526.28	5^-		
		1345.6 *3*	9 *2*	1088.28	4^+		
		1663.3 *2*	24 *5*	770.44	6^+		
		2029.70 *18*	100 *7*	404.19	4^+		
2439.16		1351.3[e] *6*	6 *2*	1088.28	4^+		
		1668.7 *2*	19 *4*	770.44	6^+		
		2035.0 *2*	100 *12*	404.19	4^+		
2445.17	3^+,4^+	818.7[e] *4*	28 *7*	1627.42	$(4)^+$		
		820.9[e] *6*	12 *3*	1624.64			
		1110.7 *7*	43 *9*	1335.56	5^+		
		1423.0 *2*	100 *13*	1022.08	3^+		
		2307.4 *8*	40 *16*	137.77	2^+		
2448.03	10^+	490.63 *18*	100	1958.64	8^+	E2[&]	0.01502
2489.5		1154.4[e] *5*	29 *12*	1335.56	5^+		
		1467.1 *8*	20 *10*	1022.08	3^+		
		2085.4 *5*	100 *20*	404.19	4^+		
2491.90		1323.2 *4*	19 *6*	1168.47	4^+		
		1469.9 *5*	21 *7*	1022.08	3^+		
		2088.2 *6*	41 *17*	404.19	4^+		
		2354.1 *2*	100 *9*	137.77	2^+		
2517.0		907	<50	1609.33	$(3)^-$		
		1148	60 *25*	1368.36	3^-		
		1348.9 *5*	95 *25*	1168.47	4^+		
		1493.8 *10*	100 *25*	1022.08	3^+		
		1626.8[e] *6*	80 *30*	890.50	2^+		
		1688.2[e] *15*	32 *25*	828.64	2^+		
		1841.9 *9*	<17	675.60	0^+		
2571.7		944.3 *4*	65 *13*	1627.42	$(4)^+$		

$^{156}_{66}Dy_{90}$-17

Adopted Levels, Gammas (continued)

$\gamma(^{156}$Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[@]	α[b]	Comments
2571.7		2168.9[e] *7*	100 *35*	404.19	4^+			
2580.1	10^-	235.0 *2*	52 *14*	2345.1	8^-	E2[&]	0.1392	I_γ: From ^{148}Nd(^{12}C,4nγ).
		388.6 *2*		2191.62	9^+			
		855.4 *2*	100 *10*	1725.02	10^+	(E1)[&]	0.00168	I_γ: From ^{148}Nd(^{12}C,4nγ).
2592.7	9^-	1376.6 *3*	100	1215.61	8^+	(E1)[&]	8.18×10^{-4}	
2594.3		1259.1 *7*	95 *40*	1335.56	5^+			
		1425.9 *4*	100 *25*	1168.47	4^+			
		1572.0 *5*	62 *25*	1022.08	3^+			
2636.55	11^-	449.5 *2*		2186.58	9^-			
		911.8 *4*		1725.02	10^+	E1	0.00149	Mult.: From α(K)exp=0.016 *10* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
2642.50		2238.3 *2*	100 *17*	404.19	4^+			
2653.3		1824.7 *6*	63 *16*	828.64	2^+			
		2249[e] *2*	100 *47*	404.19	4^+			
2701.5	10^-	385.1[e] *7*	51 *15*	2315.59	10^+			
		439.96 *8*	≤256	2261.62	8^-	E2	0.0213	I_γ: From ^{148}Nd(^{12}C,4nγ), Iγ(439γ)/Iγ(975γ)=450. Mult.: From $\gamma(\theta)$ in (HI,xnγ) (1988Ri09); E2,M1 from α(K)exp=0.029 *16* in (p,4nγ) (1977De28).
		515.2 *2*		2186.58	9^-			
		977.1[d] *3*	100[d] *21*	1725.02	10^+	(E1)	0.00130	E_γ: From (HI,xnγ). In (p,4nγ), Eγ=975.8 *3*, but γ there is doubly placed. Mult.: From α(K)exp=0.0025 *11* in (p,4nγ), mult=(E2), but γ there is doubly placed (1977De28).
2706.87	12^+	390.9 *1*	100[#] *4*	2315.59	10^+	E2	0.0296	B(E2)(W.u.)=148 *9* E_γ: From 1988Ri09, (HI,xnγ). γ is doublet in (p,4nγ). Mult.: From $\gamma(\theta)$ in (HI,xnγ) (1988Ri09) and α(K)exp(391.14+393.39)=0.028 *4* in (p,4nγ) (1977De28).
		421.0 *4*	61[#] *4*	2285.88	12^+			
		982.2 *2*	21[#] *4*	1725.02	10^+	E2	0.00316	B(E2)(W.u.)=0.31 *6* I_γ: From (p,4nγ) (1977De28), Iγ=43 *8*. From ^{148}Nd(^{12}C,4nγ), Iγ=38 *4*. Mult.: From $\gamma(\theta)$ in (HI,xnγ) (1988Ri09). M1,E2 from α(K)exp=0.0046 *22* in (p,4nγ) (1977De28).
2707.8	10^-	446.1 *1*	100	2261.62	8^-			
2709.4	11^-	300.9 *1*		2408.5	9^-	E2[&]	0.0639	
		983.5 *5*		1725.02	10^+	E1[&]	0.00129	
2712.37	11^+	426.67 *20*	46 *11*	2285.88	12^+			
		520.1[d] *3*	58[d] *14*	2191.62	9^+	E2	0.01369	Mult.: From α(K)exp=0.010 *3* in (p,4nγ) (1977De28) and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
		988.3 *4*	100 *4*	1725.02	10^+			
2757.8		1735.7 *5*	100 *28*	1022.08	3^+			
2787.4	8^+	1062.5	12 *3*	1725.02	10^+			
		1572.4	100 *6*	1215.61	8^+			

$\gamma(^{156}Dy)$ (continued)

E_i(level)	J^π_i	E_γ [†]	I_γ [‡]	E_f	J^π_f	Mult. [@]	α [b]	Comments
2787.4	8^+	2016.7	33 *4*	770.44	6^+			
2788.1		1572.5 *8*	100 *25*	1215.61	8^+			
2810.4		2039.9[e] *10*	29 *11*	770.44	6^+			
		2406.2 *7*	100 *29*	404.19	4^+			
2818.35	$4^+,5^-$	884.3 *8*	7 *3*	1933.60	$^+$			
		919.7 *15*	8 *3*	1898.64	6^-			
		960.6 *3*	43 *4*	1857.84		E1		
		1191.1 *5*	27 *4*	1627.42	$(4)^+$			
		1292.3 *3*	54 *7*	1526.28	5^-			
		1293.4 *15*	17 *3*	1525.17	6^+			
		1380.9 *2*	41 *4*	1437.28	6^+			
		1450.0[e] *8*	9 *4*	1368.36	3^-			
		1482.7 *2*	19 *3*	1335.56	5^+			
		1649.7 *2*	86 *7*	1168.47	4^+			
		1730.1 *2*	36 *4*	1088.28	4^+			
		1796	<8	1022.08	3^+			
		1990	<4	828.64	2^+			
		2048.0 *2*	12 *4*	770.44	6^+			
		2414.2 *2*	100 *11*	404.19	4^+			
2823.38		965.3 *8*	3.0 *15*	1857.84				
		1297.3 *2*	10 *2*	1526.28	5^-			
		1654.0[e] *11*	4.2 *18*	1168.47	4^+			
		1932	<3	890.50	2^+			
		1994	<2	828.64	2^+			
		2052.8 *2*	21 *3*	770.44	6^+			
		2419.2 *2*	100 *9*	404.19	4^+			
2833.7		2063.2 *4*	37 *6*	770.44	6^+			
		2429.5 *7*	100 *14*	404.19	4^+			
2847.5	11^-	146.1 *1*	84 *4*	2701.5	10^-	E2,M1[&]	0.75 *7*	
		254.8 *1*	100 *8*	2592.7	9^-	E2[&]	0.1074	
		1122.0 *5*	<35	1725.02	10^+			
2887.82	14^+	601.83 *13*	100	2285.88	12^+	E2	0.00950	B(E2)(W.u.)=2.5×10^2 *3* Mult.: From α(K)exp=0.0085 *8* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
2895.0		1872.9 *4*	100 *24*	1022.08	3^+			
		2004.2[e] *9*	48 *19*	890.50	2^+			
		2490.7 *6*	100 *33*	404.19	4^+			
2941.9	12^-	361.7 *1*	100	2580.1	10^-			
2981.5		2577.3 *13*	100 *21*	404.19	4^+			
2997.23?	12^+	549.32 *25*	100	2448.03	10^+	E2	0.01191	Mult.: From α(K)exp=0.0087 *24* in (p,4nγ) (1977De28).
3021.2	12^-	173.7 *1*	100 *5*	2847.5	11^-	E2,M1[&]	0.44 *7*	
		319.6 *1*	89 *5*	2701.5	10^-	E2[&]	0.0532	

$^{156}_{66}Dy_{90}$-19

$\gamma(^{156}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[@]	α[b]	Comments
3065.88	14+	178.7 5		2887.82	14+			
		359.09 15	100[#] 4	2706.87	12+	E2	0.0377	B(E2)(W.u.)=231 15 Mult.: From α(K)exp=0.026 5 (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
		780.0 2	6[#] 2	2285.88	12+			
3103.6	13−	393.9 2	82 9	2709.4	11−	E2[&]	0.0289	I_γ: From ^{148}Nd(^{12}C,4nγ).
		467.5 2	100 23	2636.55	11−	E2[&]	0.0181	I_γ: From ^{148}Nd(^{12}C,4nγ).
		818.0 2	96 18	2285.88	12+	E1[&]	0.00183	I_γ: From ^{148}Nd(^{12}C,4nγ).
3154.2	13−	518.0 2		2636.55	11−			
		867.6 4		2285.88	12+	E1	0.00163	Mult.: From α(K)exp=0.0012 11 (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
3186.8	12−	479.0 1	100	2707.8	10−			
3221.2	13−	200.0 1	80 3	3021.2	12−			
		373.8 1	100 6	2847.5	11−	E2[&]	0.0336	
3273.5	(13+)	562.3 3	100	2712.37	11+			
3411.6	14−	469.7 1	100	2941.9	12−	E2[&]	0.0179	
3444.9	14−	223.8 1	60 3	3221.2	13−	E2,M1		
		423.6 1	100 8	3021.2	12−	E2[&]	0.0236	
3498.8	16+	432.64[d] 18	55[d] 4	3065.88	14+	E2[&]	0.0224	B(E2)(W.u.)=188 19 I_γ: From ^{148}Nd(^{12}C,4nγ). In (p,4nγ), Iγ=116, but γ is doubly placed. Mult.: From α(K)exp=0.019 3 in (p,4nγ) (1977De28), mult=(E2), but γ is doubly placed.
		611.30 25	100 4	2887.82	14+	E2[&]	0.00915	B(E2)(W.u.)=61 5 I_γ: From ^{148}Nd(^{12}C,4nγ). Mult.: From α(K)exp=0.0082 25 in (p,4nγ) (1977De28), mult=E2, but γ is doubly placed.
3523.3	16+	635.5 1	100	2887.82	14+	E2	0.00833	B(E2)(W.u.)=3.4×10^2 7 E_γ: From 1988Ri09, (HI,xnγ). From (p,4nγ), 1977De28 report Eγ=638.50 21. Mult.: From $\gamma(\theta)$ in (HI,xnγ) (1988Ri09) and α(K)exp=0.0066 11 for the 635γ in (p,4nγ) (1977De28).
3596.4	15−	492.8 1	100	3103.6	13−	E2[&]	0.01574	
3678.0	14−	491.2 2	100	3186.8	12−			
3689.9	15−	244.9 1	100 12	3444.9	14−	E2,M1[&]		I_γ: From ^{148}Nd(^{12}C,4nγ).
		468.7 1	36 5	3221.2	13−	E2[&]	0.0180	I_γ: From ^{148}Nd(^{12}C,4nγ).
3719.6	15(−)	565.4 2		3154.2	13−			
		832.4 4		2887.82	14+	(D)[&]	0.00178	
3861.2?	(15+)	587.4[e] 2		3273.5	(13+)			
3954.0	16−	264.2 1		3689.9	15−			
		509.1 1		3444.9	14−			
3961.5	16−	549.9 1	100	3411.6	14−	E2[&]	0.01188	

γ(^{156}Dy) (continued)

E_i(level)	J^π_i	E_γ [†]	I_γ [‡]	E_f	J^π_f	Mult. [@]	α [b]	Comments
4025.8	18$^+$	527.1 *1*	100	3498.8	16$^+$	E2	0.01322	B(E2)(W.u.)=299 *17* Mult.: From α(K)exp=0.014 *4* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
4157.8	17$^-$	561.4 *1*	100	3596.4	15$^-$	E2 [&]	0.01128	
4178.1	18$^+$	654.89 *26*	100	3523.3	16$^+$	E2	0.00776	B(E2)(W.u.)=3.9×10^2 *10* Mult.: From α(K)exp=0.055 *13* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
4210.4	16$^-$	532.4 *2*	100	3678.0	14$^-$	E2 [&]		
4236.2	17$^-$	281.8 *2*	44 *3*	3954.0	16$^-$	E2,M1		
		546.4 *1*	100 *5*	3689.9	15$^-$	E2 [&]	0.01207	
4331.1	(17$^-$)	611.3 *2*		3719.6	15$^{(-)}$			
4533.9	18$^-$	297.7 *1*	42 *12*	4236.2	17$^-$	E2,M1		
		579.9 *1*	100 *4*	3954.0	16$^-$	E2 [&]	0.01041	
4562.4	18$^-$	600.9 *1*	100	3961.5	16$^-$			
4635.6	20$^+$	609.8 *1*	100	4025.8	18$^+$	E2 [&]	0.00920	B(E2)(W.u.)=272 *23*
4771.2	19$^-$	613.3 *2*	100	4157.8	17$^-$	E2 [&]	0.00907	
4779.2	18$^-$	568.8 *2*	100	4210.4	16$^-$	E2 [&]	0.01092	
4845.9	19$^-$	312.2 *2*		4533.9	18$^-$			
		609.6 *1*		4236.2	17$^-$	E2 [&]	0.00921	
4859.0	20$^+$	680.8 *1*	100	4178.1	18$^+$	E2	0.00708	B(E2)(W.u.)=3.2×10^2 *8* Mult.: From α(K)exp=0.0050 *26* (1977De28), (p,4nγ), and $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).
4978.8	(19$^-$)	647.7 *6*		4331.1	(17$^-$)			
5170.8	20$^-$	324.7 *1*		4845.9	19$^-$	E2,M1		
		637.0 *1*		4533.9	18$^-$	E2 [&]	0.00828	
5199.9	20$^-$	637.4 *1*	100	4562.4	18$^-$	E2 [&]	0.00827	
5320.2	22$^+$	684.6 *1*	100	4635.6	20$^+$	E2 [&]	0.00699	B(E2)(W.u.)=242 *24*
5381.9	20$^-$	602.7 *2*	100	4779.2	18$^-$			
5428.2	21$^-$	657.0 *1*	100	4771.2	19$^-$	E2 [&]	0.00770	
5507.3	21$^-$	336.4 *1*	30 *4*	5170.8	20$^-$			
		661.5 *1*	100 *4*	4845.9	19$^-$	E2 [&]	0.00757	
5573.0	22$^+$	714.0 *1*	100	4859.0	20$^+$	E2 [&]	0.00634	B(E2)(W.u.)=2.9×10^2 *5*
5855.3	22$^-$	347.9 *1*		5507.3	21$^-$			
		684.6 *1*		5170.8	20$^-$			
5873.4	22$^-$	673.5 *1*	100	5199.9	20$^-$	E2 [&]	0.00726	
6036.3	22$^-$	654.4 *1*	100	5381.9	20$^-$			
6070.1	24$^+$	749.9 *1*	100	5320.2	22$^+$	E2 [&]	0.00567	B(E2)(W.u.)=2.7×10^2 *3*
6129.3	23$^-$	701.1 *1*	100	5428.2	21$^-$	E2 [&]	0.00661	
6213.8	23$^-$	358.6 *3*		5855.3	22$^-$			

From ENSDF

$^{156}_{66}$Dy$_{90}$-21

Adopted Levels, Gammas (continued)

$\gamma(^{156}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[@]	α[b]	Comments
6213.8	23⁻	706.5 1		5507.3	21⁻	E2[&]	0.00650	
6328.7	24⁺	755.7 1	100	5573.0	22⁺	E2[&]	0.00557	B(E2)(W.u.)=3.0×10² 6
6582.5	24⁻	727.2 1	100	5855.3	22⁻			
6589.7	24⁻	716.3 1	100	5873.4	22⁻			
6753.7	24⁻	717.4 2	100	6036.3	22⁻			
6876.8	25⁻	747.5 1	100	6129.3	23⁻	E2[&]	0.00571	
6877.9	26⁺	807.8 1	100	6070.1	24⁺	E2[&]	0.00480	B(E2)(W.u.)=2.7×10² 5
6963.9	25⁻	750.1 1	100	6213.8	23⁻	E2[&]	0.00567	
7130.3	26⁺	801.6	100	6328.7	24⁺	E2[&]	0.00488	
7349.6	26⁻	760.0 2	78 7	6589.7	24⁻			
		766.9 2	100 11	6582.5	24⁻			
7358.7	26⁻	394 1		6963.9	25⁻			
		768.7 2		6589.7	24⁻			
		776.7 3		6582.5	24⁻	E2[&]	0.00524	
7533.4	26⁻	779.7 3	100	6753.7	24⁻			
7672.6	27⁻	795.8 1	100	6876.8	25⁻	E2[&]	0.00496	
7738.8	28⁺	860.9 1	100	6877.9	26⁺	E2[&]	0.00418	B(E2)(W.u.)=2.6×10² 4
7760.3	27⁻	402		7358.7	26⁻			
		796.4 1		6963.9	25⁻	E2[&]	0.00496	
7978.5	28⁺	848.2 1	100	7130.3	26⁺	E2[&]	0.00432	
8164.5	28⁻	814.9 1	100	7349.6	26⁻	E2[&]	0.00471	
8179.7	28⁻	420		7760.3	27⁻			
		821.0 1		7358.7	26⁻	E2[&]	0.00463	
8364	28⁻	831	100	7533.4	26⁻			
8517.0	29⁻	844.4 1	100	7672.6	27⁻	E2[&]	0.00436	
8605.8	29⁻	426		8179.7	28⁻			
		845.6 2		7760.3	27⁻	E2[&]	0.00434	
8650.8	30⁺	912.0 1	100	7738.8	28⁺	E2[&]	0.00369	B(E2)(W.u.)=2.4×10² 3
8762	29⁻	842	100	7920.5	27⁻			
8875.9	30⁺	897.4 1	100	7978.5	28⁺	E2[&]	0.00382	
9031.9	30⁻	867.5 1	100	8164.5	28⁻	E2[&]	0.00411	
9051.5	30⁻	446[e]		8605.8	29⁻			
		871.7 2		8179.7	28⁻	E2[&]	0.00407	
9234	30⁻	870	100	8364	28⁻			
9407.4	31⁻	890.4 1	100	8517.0	29⁻	E2[&]	0.00389	
9502.2	31⁻	451		9051.5	30⁻			
		896.5 2		8605.8	29⁻	E2[&]	0.00383	
9611.3	32⁺	960.5 1	100	8650.8	30⁺	E2[&]	0.00331	B(E2)(W.u.)=2.3×10² 4

Adopted Levels, Gammas (continued)

$\gamma(^{156}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[@]	α[b]	Comments
9653	31^-	891	100	8762	29^-			
9692	(31^+)	1041[e]	100	8650.8	30^+			
9825.2	32^+	949.3 *2*	100	8875.9	30^+	E2[&]	0.00339	
9952.3	32^-	920.3 *2*	100	9031.9	30^-	E2[&]	0.00362	
9973.5	32^-	472[e]		9502.2	31^-			
		921.9 *2*		9051.5	30^-	E2[&]	0.00361	
10063	32^+	1187		8875.9	30^+			
10141	32^-	907	100	9234	30^-			
10340.6	33^-	933.2 *1*	100	9407.4	31^-	E2[&]	0.00352	
10449.3	33^-	475		9973.5	32^-			
		947.2 *2*		9502.2	31^-	E2[&]	0.00341	
10592	33^-	939		9653	31^-			
		1185		9407.4	31^-			
10618.0	34^+	1006.7 *1*	100	9611.3	32^+	E2[&]	0.00300	B(E2)(W.u.)=1.8×10^2 *3*
10629	(33^+)	937	100	9692	(31^+)			
10828.1	34^+	1003.1 *5*	100	9825.2	32^+	E2[&]	0.00302	
10925.0	34^-	972.7 *3*	100	9952.3	32^-	E2[&]	0.00322	
10944.6	34^-	496[e]		10449.3	33^-			
		970.9 *4*		9973.5	32^-	E2[&]	0.00324	
10975	34^+	912		10063	32^+			
		1150		9825.2	32^+			
11092	34^-	951	100	10141	32^-			
11313.4	35^-	972.8 *1*	100	10340.6	33^-	E2[&]	0.00322	
11443.5	35^-	499		10944.6	34^-			
		994.3 *2*		10449.3	33^-	E2[&]	0.00308	
11585	35^-	992		10592	33^-			
		1244		10340.6	33^-			
11614	(35^+)	985	100	10629	(33^+)			
11670.6	36^+	1052.6 *2*	100	10618.0	34^+	E2[&]	0.00274	B(E2)(W.u.)=2.2×10^2 *6*
11735	(36^+)	1022[e]	100	10713	(34^+)			
11886.7	36^+	1058.6 *4*	100	10828.1	34^+	E2[&]	0.00271	
11946.2	36^-	1021.2 *4*	100	10925.0	34^-	E2[&]	0.00291	
11957.3	36^-	514[e]		11443.5	35^-			
		1012.6		10944.6	34^-	E2[&]	0.00297	
11986	36^+	1010		10975	34^+			
		1158		10828.1	34^+			
12089	36^-	997	100	11092	34^-			
12326.8	37^-	1013.3 *2*	100	11313.4	35^-	E2[&]	0.00296	
12462	37^-	504[e]		11957.3	36^-			

From ENSDF

$\gamma(^{156}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[@]	α[b]	Comments
12462	37⁻	1019		11443.5	35⁻			
12626	37⁻	1042		11585	35⁻			
		1313		11313.4	35⁻			
12628	(37⁺)	1014	100	11614	(35⁺)			
12769.3	38⁺	1098.7 *2*	100	11670.6	36⁺	E2[&]	0.00251	B(E2)(W.u.)=50 *15*
12818	(38⁺)	1083[e]		11735	(36⁺)			
		1147[e]		11670.6	36⁺			
12959	38⁻	497[e]		12462	37⁻			
		1002		11957.3	36⁻			
		1013		11946.2	36⁻			
12976	38⁺	1089	100	11886.7	36⁺			
13014.0	38⁻	1057		11957.3	36⁻			
		1067.8 *4*		11946.2	36⁻			
13051	38⁺	1065		11986	36⁺			
		1165		11886.7	36⁺			
13140	38⁻	1051	100	12089	36⁻			
13386.8	39⁻	1060.0 *3*	100	12326.8	37⁻	E2[&]	0.00270	
13470	39⁻	511[e]		12959	38⁻			
		1008		12462	37⁻			
13686	(39⁺)	1058	100	12628	(37⁺)			
13711	39⁻	1084		12626	37⁻			
		1384		12326.8	37⁻			
13885.1	40⁺	1115.8 *2*	100	12769.3	38⁺	E2[&]	0.00243	B(E2)(W.u.)=1.3×10^2 *+20−8*
13941	(40⁺)	1123	100	12818	(38⁺)			
		1172[e]		12769.3	38⁺			
13973	40⁻	503[e]		13470	39⁻			
		1014		12959	38⁻			
14021.9	40⁺	1046		12976	38⁺			
		1252.6 *3*		12769.3	38⁺			
14113.9	40⁻	1100.2	100	13014.0	38⁻			
14210	40⁺	1159		13051	38⁺			
		1234		12976	38⁺			
14254	(40⁻)	1114	100	13140	38⁻			
14496.1	41⁻	1109.2 *3*	100	13386.8	39⁻	E2[&]		
14532	41⁻	559[e]		13973	40⁻			
		1062[e]		13470	39⁻			
		1145		13386.8	39⁻			
14797	(41⁻)	1086		13711	39⁻			
		1410		13386.8	39⁻			
14800	(41⁺)	1114	100	13686	(39⁺)			
14994.8	42⁺	973		14021.9	40⁺			
		1109.6		13885.1	40⁺			

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Adopted Levels, Gammas (continued)

$\gamma(^{156}Dy)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ‡	E_f	J^π_f	Mult.@	Comments
15061	42^-	529		14532	41^-		
		1088		13973	40^-		
15152	(42^+)	1211	100	13941	(40^+)		
15190	42^+	1168		14021.9	40^+		
		1304		13885.1	40^+		
15229	42^+	1207		14021.9	40^+		
		1344		13885.1	40^+		
15232	42^-	1118	100	14113.9	40^-		
15411	(42^-)	1157	100	14254	(40^-)		
15447	(42^+)	1237	100	14210	40^+		
15635.6	43^-	1138.8	100	14496.1	41^-		Additional information 9.
15679	43^-	1148		14532	41^-		
		1183		14496.1	41^-		
15841	43^-	1345	100	14496.1	41^-		
15950	(43^-)	1154[e]		14797	(41^-)		
		1454		14496.1	41^-		
15975	(43^+)	1175	100	14800	(41^+)		
16171.2	44^+	983[e]		15190	42^+		
		1176.4 *3*		14994.8	42^+	E2[&]	
16210	44^-	1149	100	15061	42^-		
16289	44^+	1060		15229	42^+		
		1099		15190	42^+		
16350	44^-	1119	100	15232	42^-		
16448	(44^+)	1296	100	15152	(42^+)		
16474	(44^+)	1245	100	15229	42^+		
16625	(44^-)	1214	100	15411	(42^-)		
16717	(44^+)	1270	100	15447	(42^+)		
16833.3	45^-	1196.8	100	15635.6	43^-		
16869	45^-	1190		15679	43^-		
		1233		15635.6	43^-		
17012	(45^-)	1171	100	15841	43^-		
17236	(45^+)	1261	100	15975	(43^+)		
17348	46^+	1177	100	16171.2	44^+		
17388	46^-	1038		16350	44^-		
		1177		16210	44^-		
17434	46^+	1145	100	16289	44^+		
17482	46^-	1132		16350	44^-		
		1272		16210	44^-		
17832	(46^+)	1384	100	16448	(44^+)		
17908?	(46^-)	1283[e]	100	16625	(44^-)		
18015.7	47^-	1148		16869	45^-		
		1181.7		16833.3	45^-		
18036	(46^+)	1319	100	16717	(44^+)		

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Adopted Levels, Gammas (continued)

γ(^{156}Dy) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π
18152	47^-	1284		16869	45^-	20332.2	51^-	1242.0	100	19090.2	49^-
		1319		16833.3	45^-	20858	(50^+)	1450	100	19408	(48^+)
18303	(47^-)	1291	100	17012	(45^-)	20874	(50^+)	1576	100	19298	(48^+)
18472	48^-	1084	100	17388	46^-	21332	52^+	1369	100	19963	50^+
18600	(47^+)	1364	100	17236	(45^+)	21422	(52^+)	1469	100	19953	50^+
18615	48^+	1267	100	17348	46^+	21512	(51^+)	1510	100	20002	(49^+)
18616	50^-	1228	100	17388	46^-	21763	53^-	1431	100	20332.2	51^-
18651	48^+	1217	100	17434	46^+	22369?	(52^+)	1511[e]	100	20858	(50^+)
18813	48^-	1331	100	17482	46^-	22576?	(52^+)	1702[e]	100	20874	(50^+)
19090.2	49^-	1074.5	100	18015.7	47^-	22799	54^+	1467	100	21332	52^+
19298	(48^+)	1466	100	17832	(46^+)	22998	(54^+)	1576	100	21422	(52^+)
19408	(48^+)	1372	100	18036	(46^+)	23244?	(53^+)	1732[e]	100	21512	(51^+)
19488	49^-	1336	100	18152	47^-	24382?	(54^+)	1806[e]	100	22576?	(52^+)
19652?	(49^-)	1349[e]	100	18303	(47^-)	24430	(56^+)	1631	100	22799	54^+
19953	50^+	1338	100	18615	48^+	24716?	(56^+)	1718[e]	100	22998	(54^+)
19963	50^+	1312	100	18651	48^+	26224	(58^+)	1794	100	24430	(56^+)
20002	(49^+)	1402	100	18600	(47^+)	26640?	(58^+)	1924[e]	100	24716?	(56^+)
20009	52^-	1393	100	18616	50^-	28122?	(60^+)	1898[e]	100	26224	(58^+)
20241?	(50^-)	1428[e]	100	18813	48^-	30241?	(62^+)	2119[e]	100	28122?	(60^+)

† Generally from ^{156}Ho ε decay where such data exist. The values from ^{156}Ho ε decay and the (p,4nγ),(α,4nγ) reactions often differ well outside their uncertainties.

‡ From the ^{156}Ho ε decays where such data exist. Otherwise, the values are from the (α,4nγ) and (HI,xnγ) reactions. 2006Mo22, in (HI,xnγ), report Iγ values for the γ transitions from the 4^+ through 18^+ members of the first excited positive-parity band, including the 4^+ through 10^+ members of the first excited $K^\pi=0^+$ band and the 12^+ through 18^+ members of the aligned two-neutron-quasiparticle band (AB) above the band crossing. Where adopted, these are pointed out. The significant differences between the experiments, of which there are many between the ^{156}Ho ε decay (56 min) and the other studies, are noted.

From 2006Mo22, (HI,xnγ).

@ From ce data from the ^{156}Ho ε decay (56 min) (1976Gr20), the (p,4nγ) (α,4nγ) studies (1977De28), and the $\gamma(\theta)$ measurements in the (HI,xnγ) study (1988Ri09). In the ^{156}Ho ε decay data, where a reasonable association of a γ from 2002Ca49 (where ce data are not measured) can be made with one from 1976Gr20, the evaluator has assigned the multipolarity from 1976Gr20 to that γ. In the (HI,xnγ) data, stretched quadrupole transitions are taken to be E2 rather than M2. For levels seen only in (HI,xnγ) for which no comments are shown regarding the multipolarities, it is to be noted that they are from $\gamma(\theta)$ data and that M1/E2 is chosen over E1/M2 primarily on the basis of parity considerations. In the (p,4nγ) and (α,4nγ) studies, the normalization of the electron and γ intensities was done using α(K)exp=0.0165±0.0017 for the 445.36-keV E2 transition (1977De28). In the ^{156}Ho ε decay, this normalization was presumably done using the established (1976Gr20) E2 multipolarities of the 137.8-, 266.5-, and 366.4-keV transitions.

& From $\gamma(\theta)$ in (HI,xnγ) (1988Ri09).

[a] From ce data from ^{156}Ho ε decay (56-min) (1976Gr20).

[b] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

$^{156}_{66}$Dy$_{90}$-26

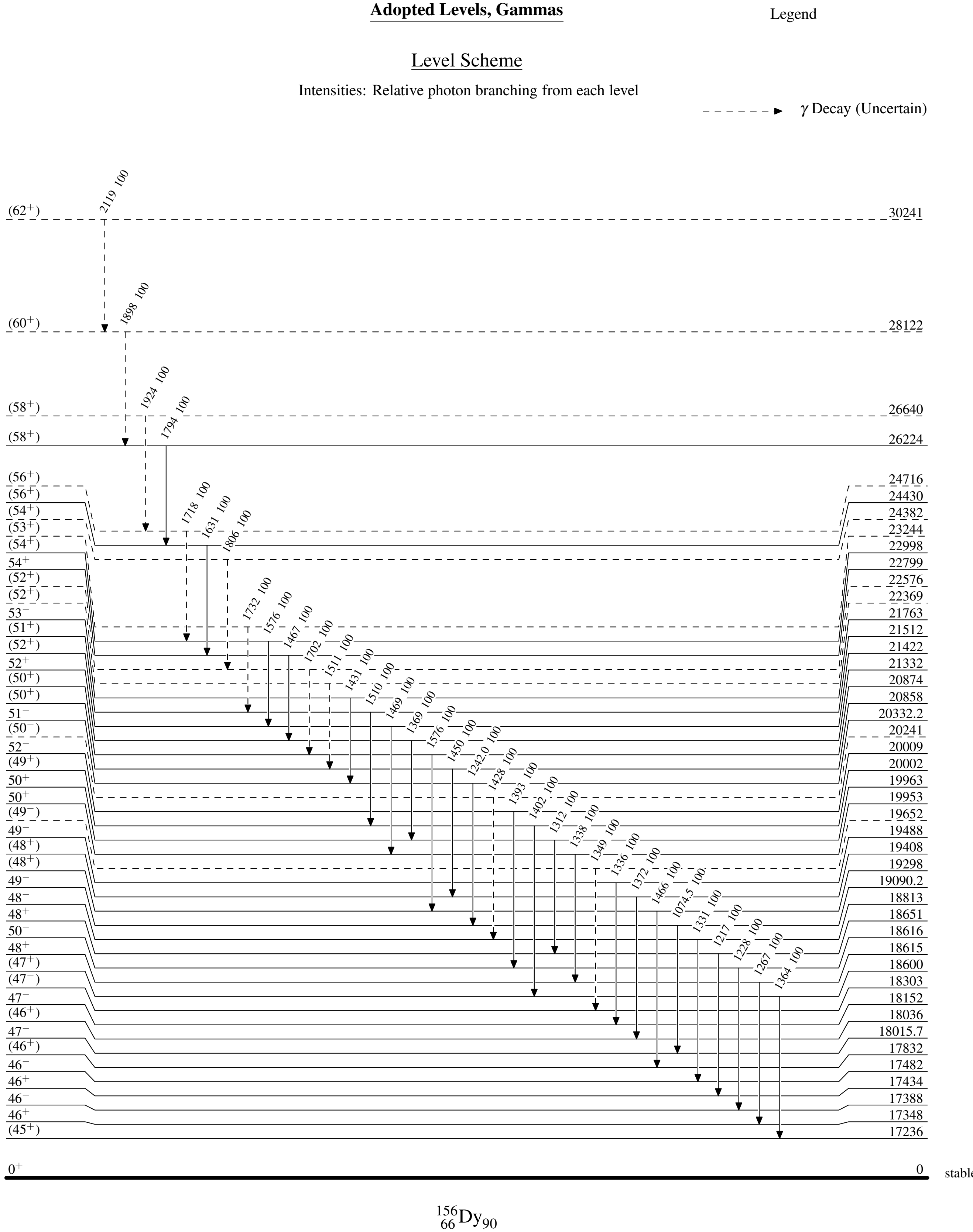
$\gamma(^{156}Dy)$ (continued)

[c] Multiply placed.
[d] Multiply placed with undivided intensity.
[e] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

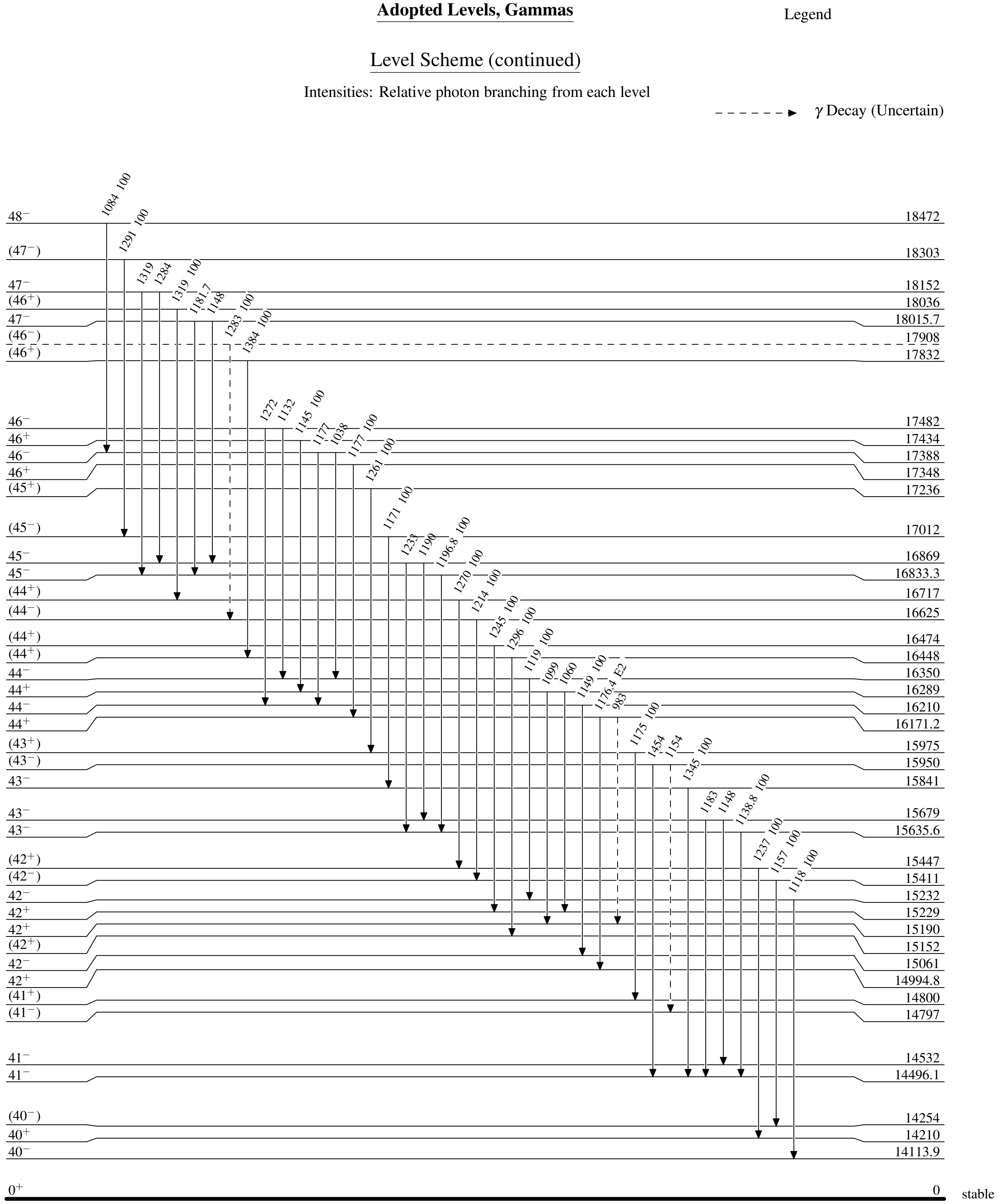
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

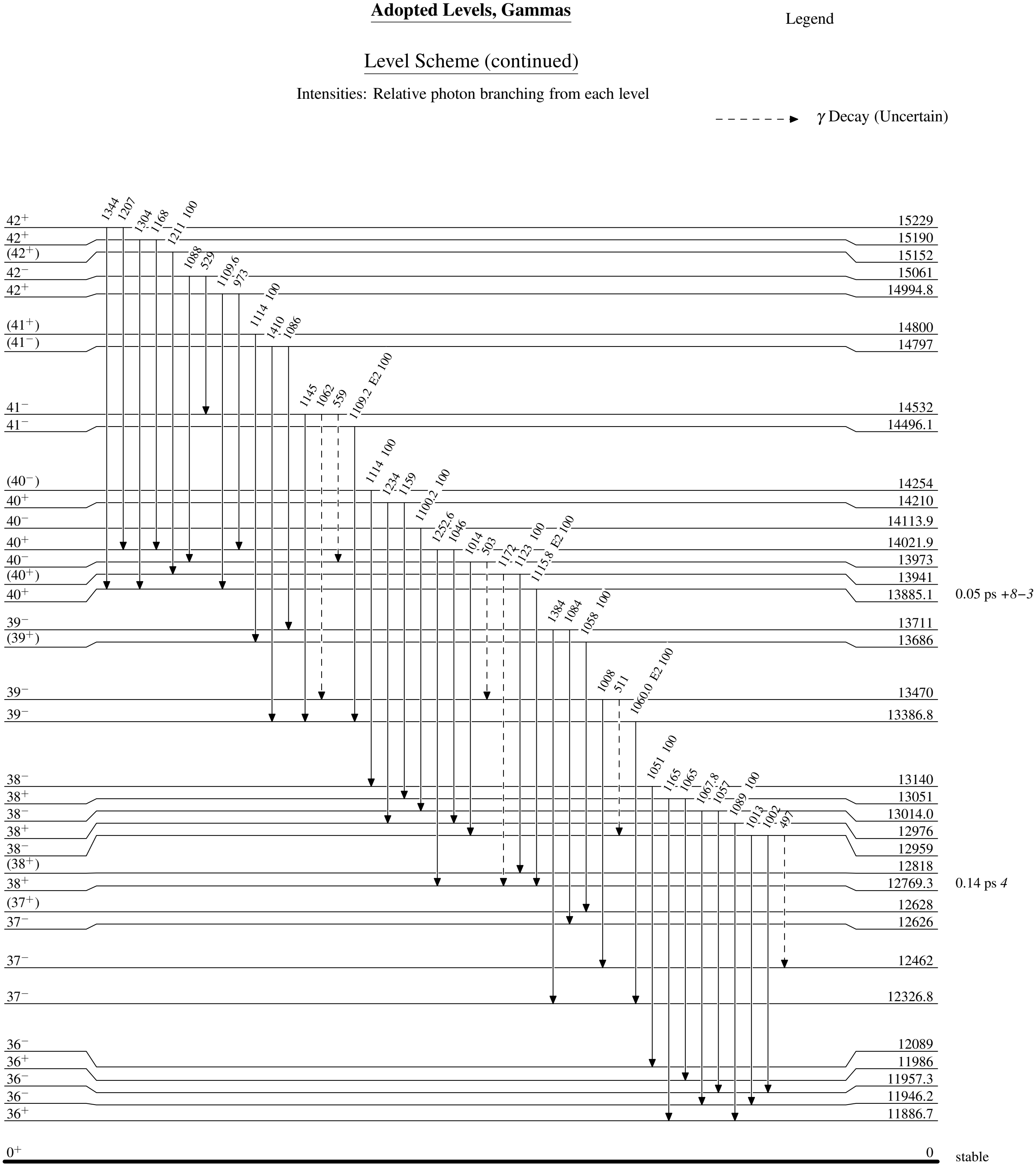


$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



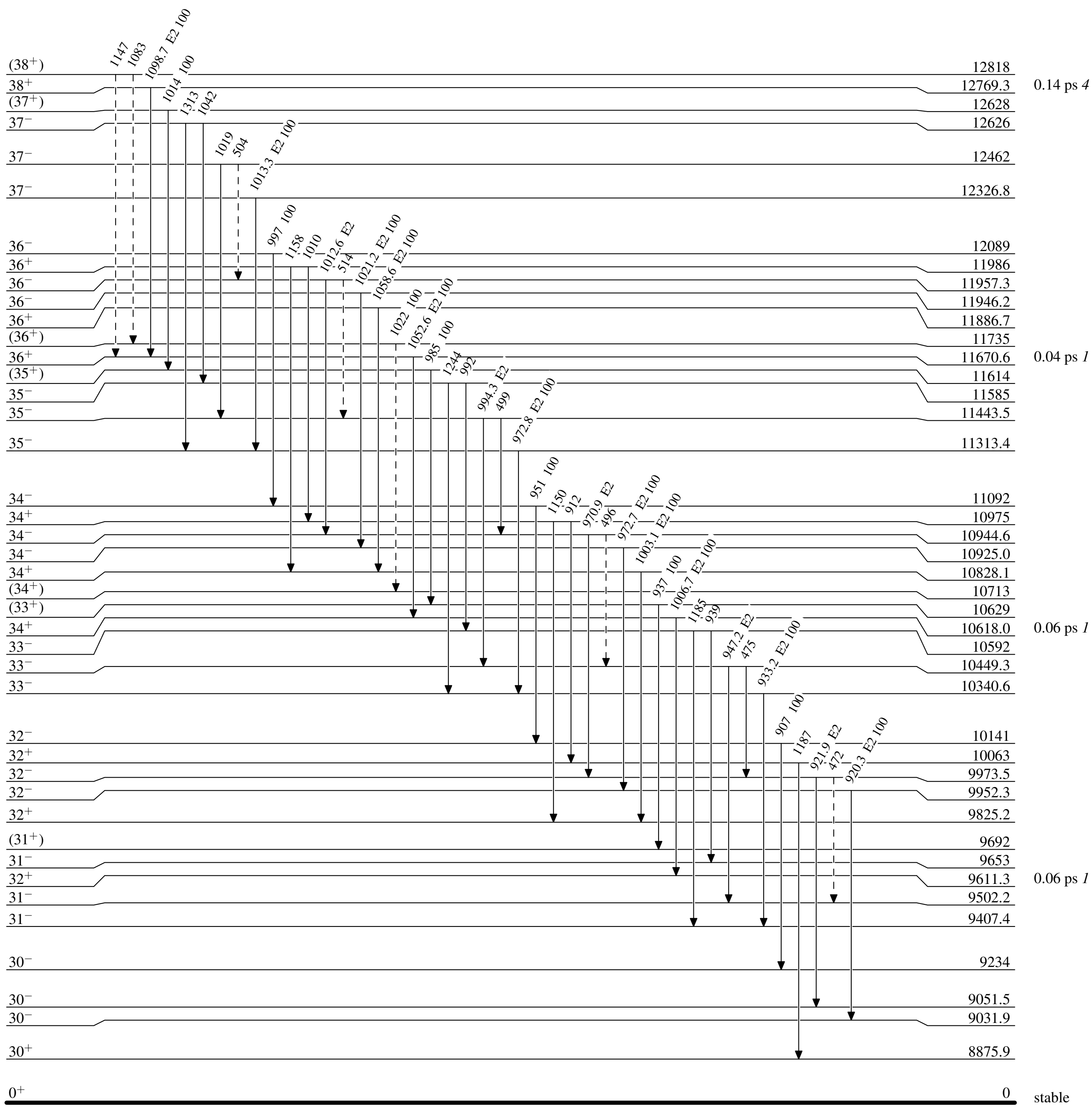
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend

γ Decay (Uncertain)



$^{156}_{66}Dy_{90}$

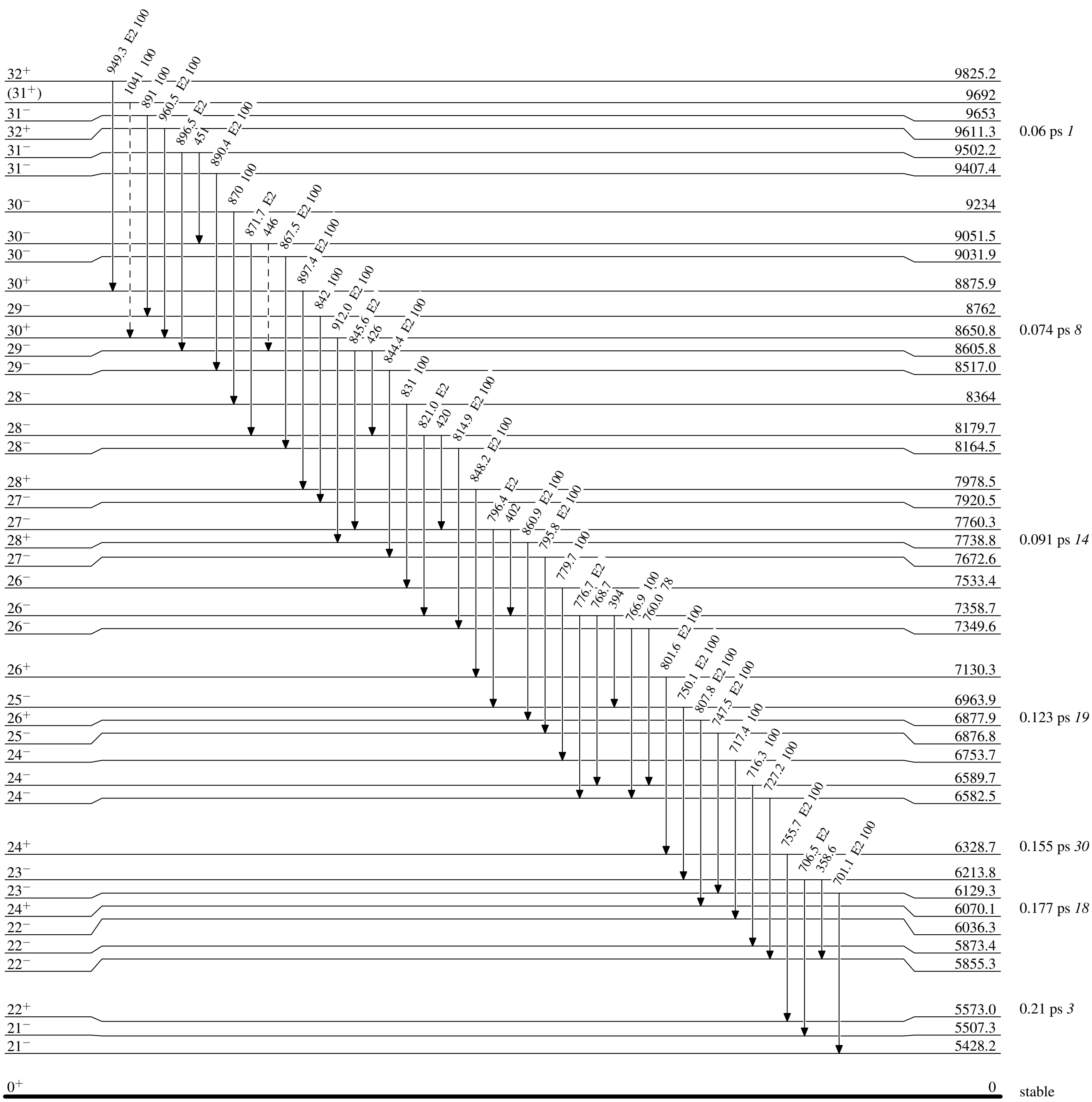
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend

γ Decay (Uncertain)

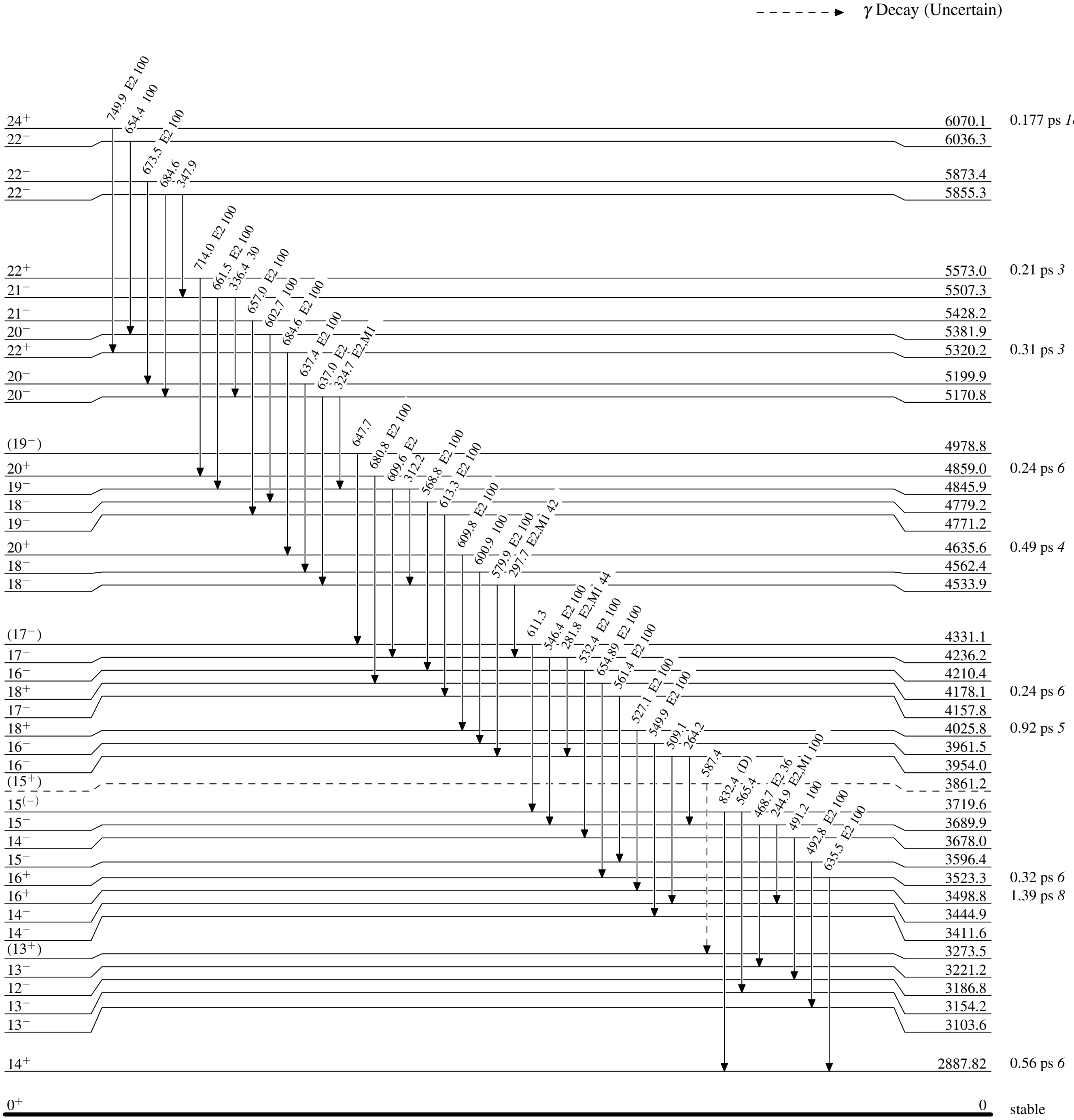


$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{156}_{66}Dy_{90}$

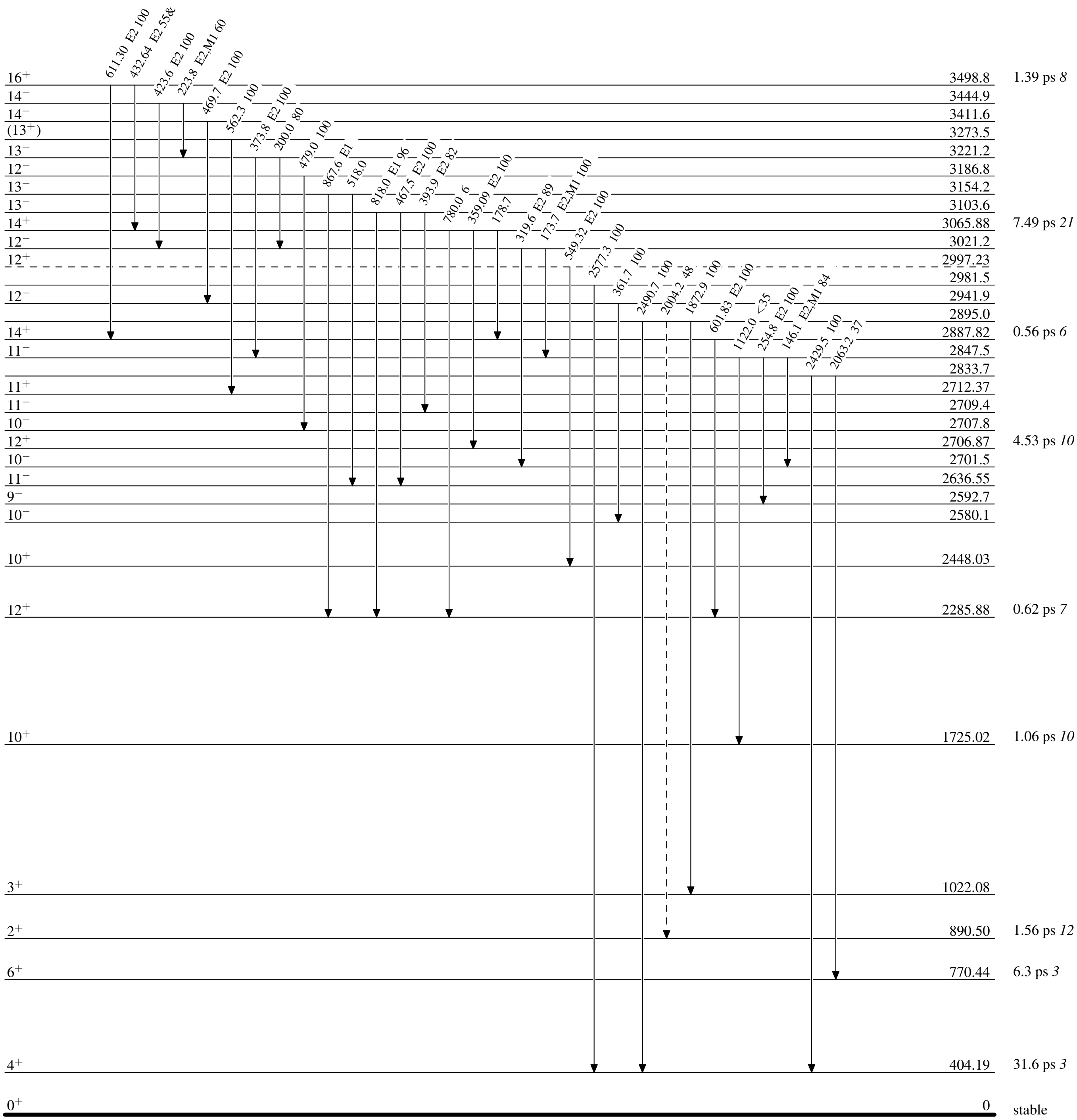
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

Legend

γ Decay (Uncertain)

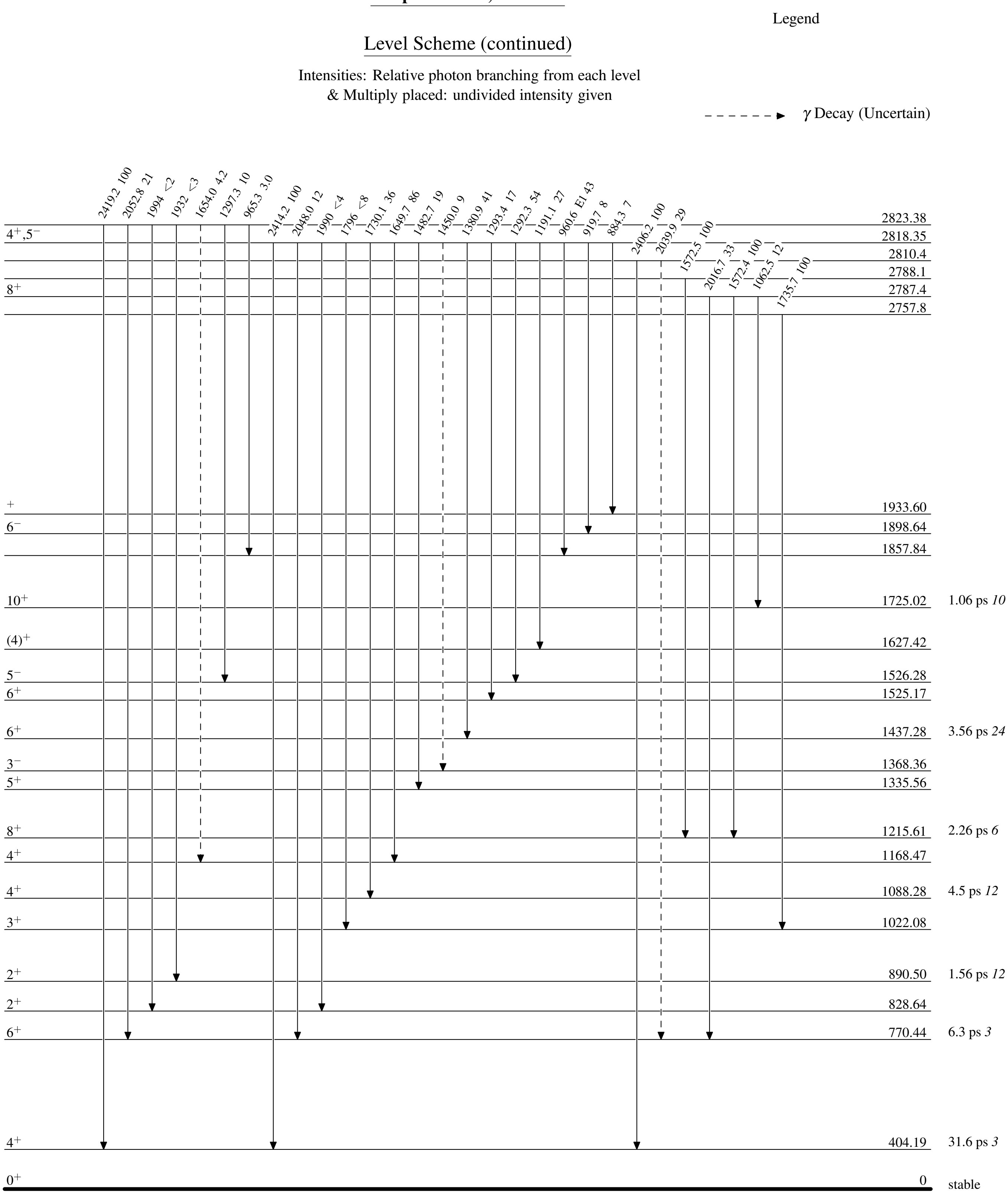


$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

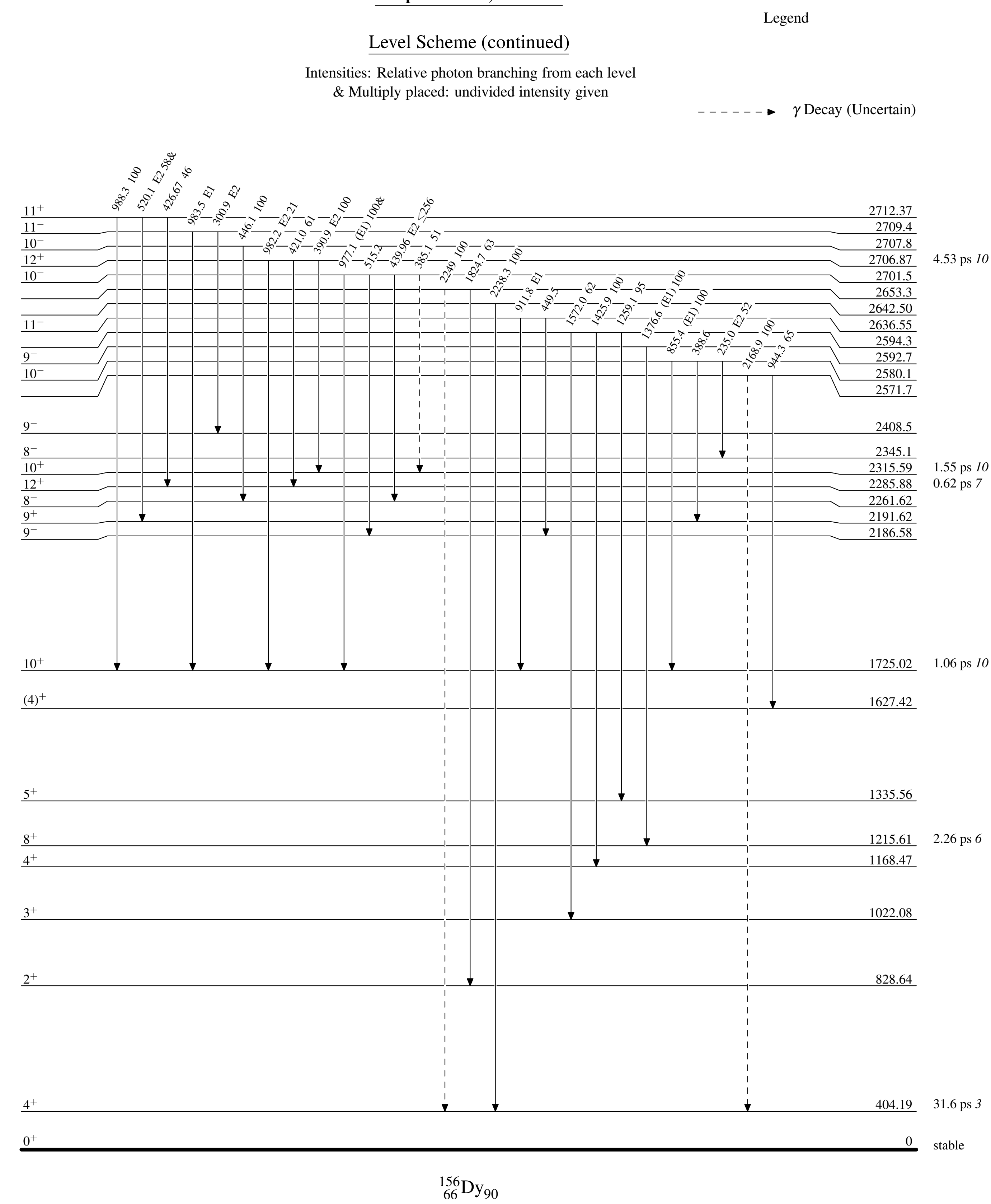


$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



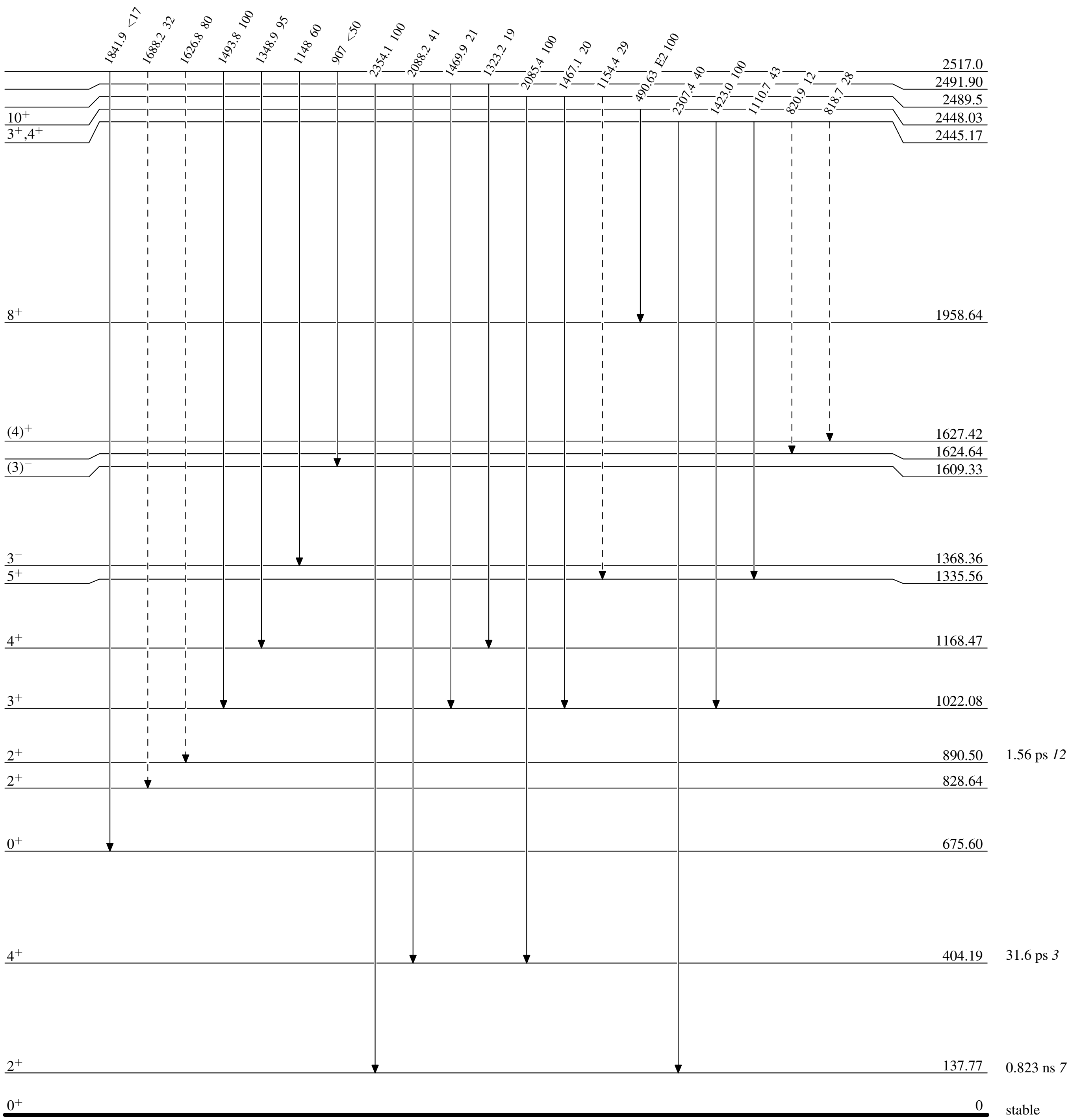
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

Legend

γ Decay (Uncertain)



$^{156}_{66}Dy_{90}$

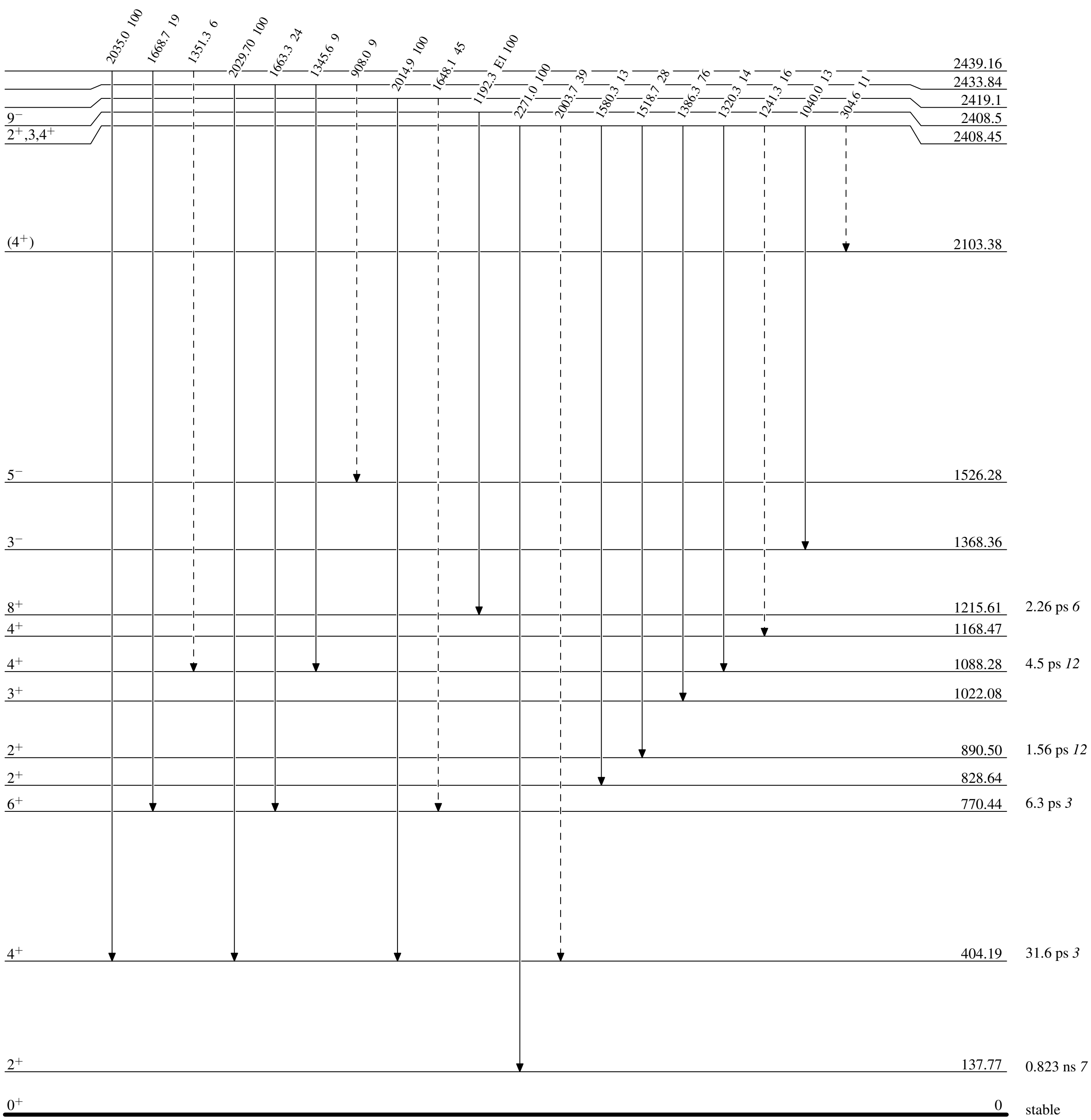
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

γ Decay (Uncertain)

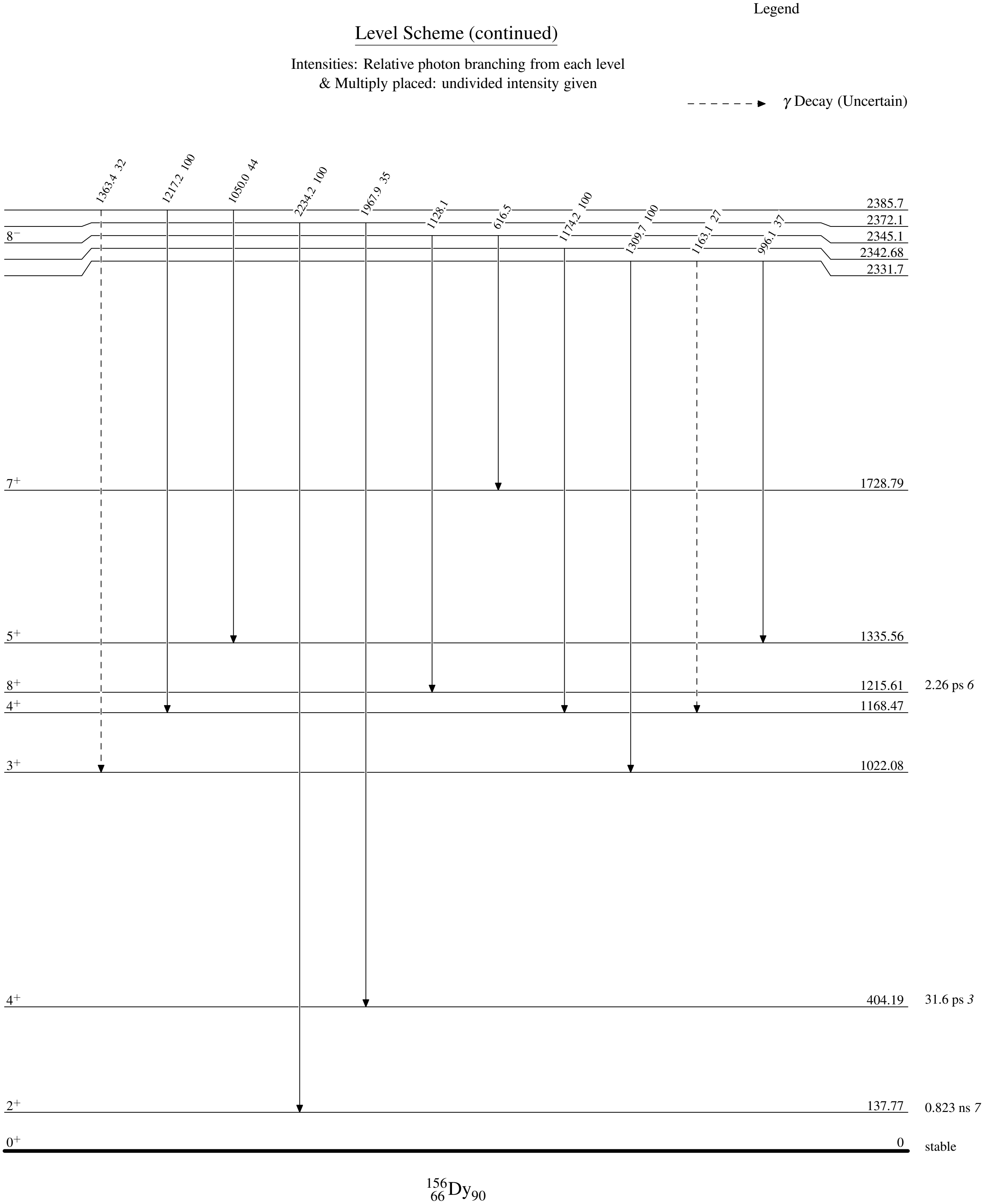


$^{156}_{66}Dy_{90}$

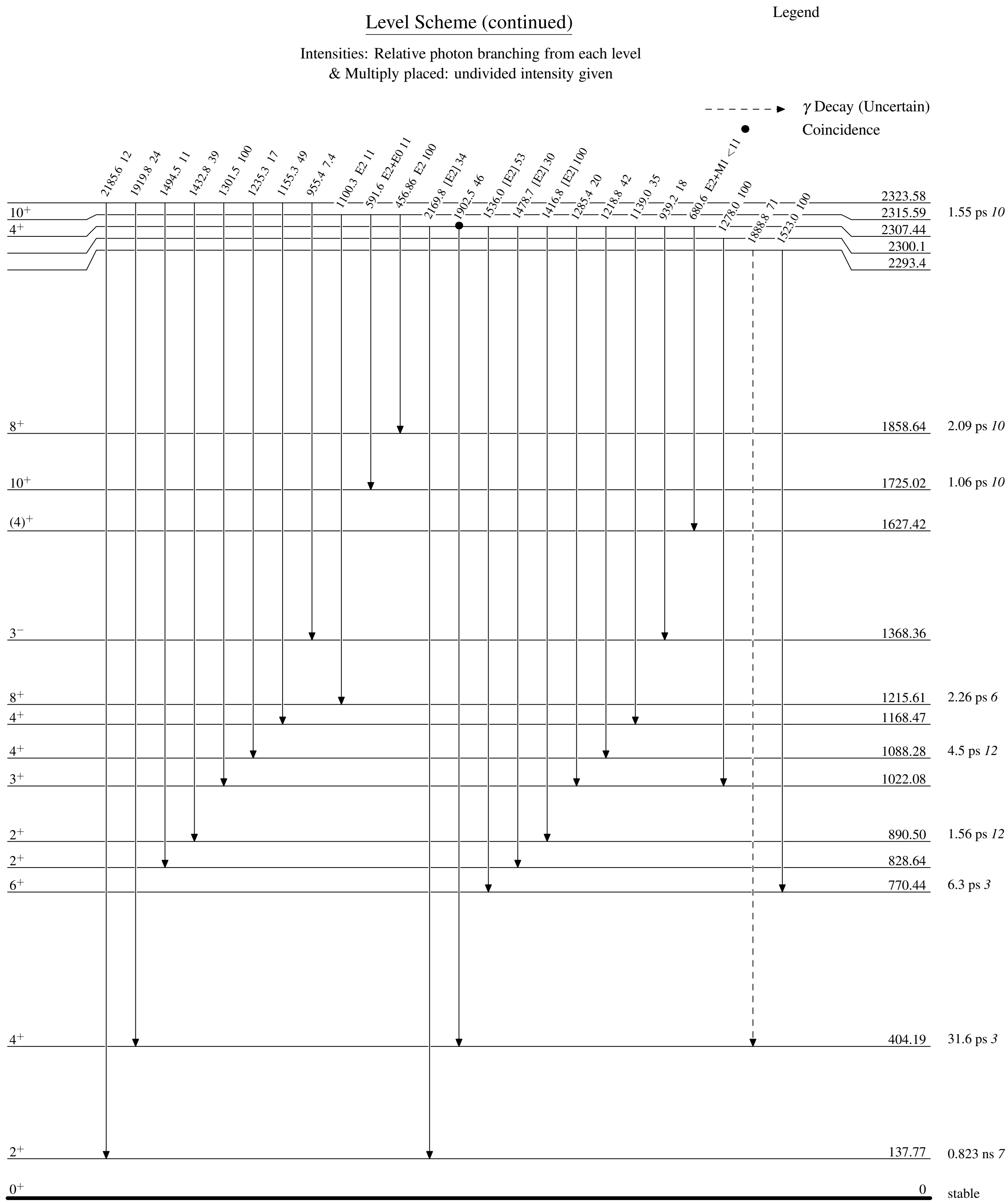
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, Gammas



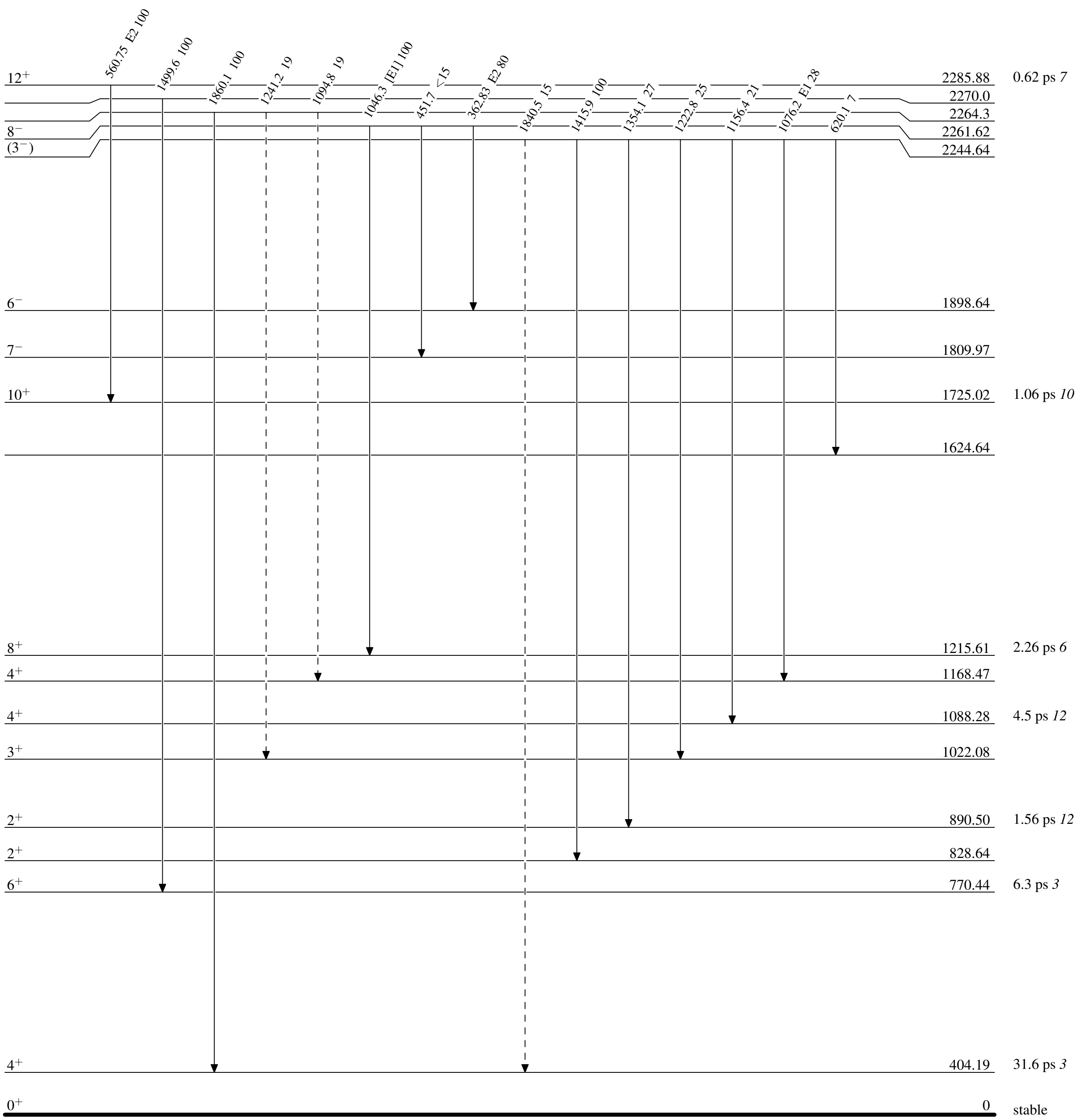
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

γ Decay (Uncertain)

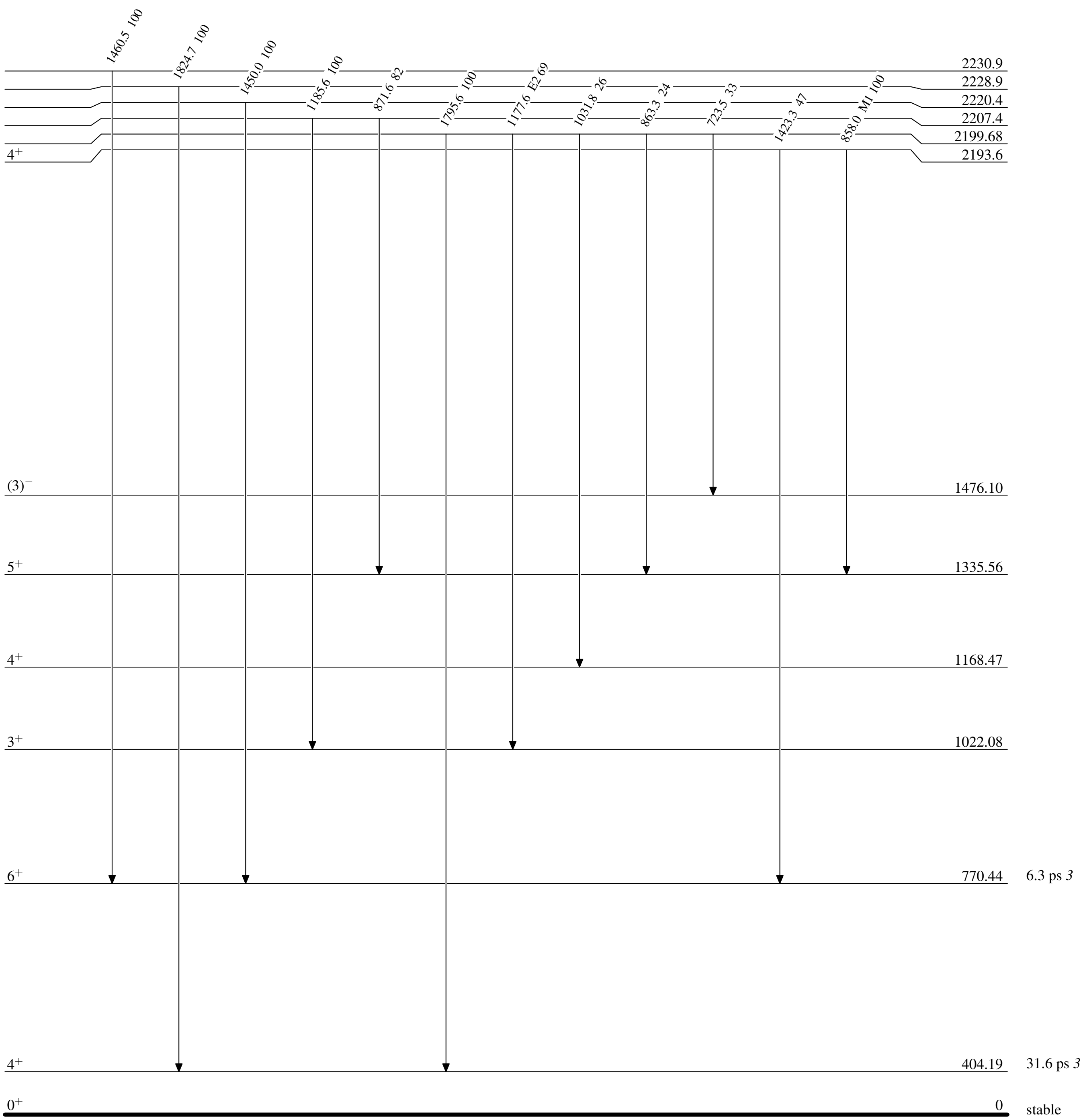


$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

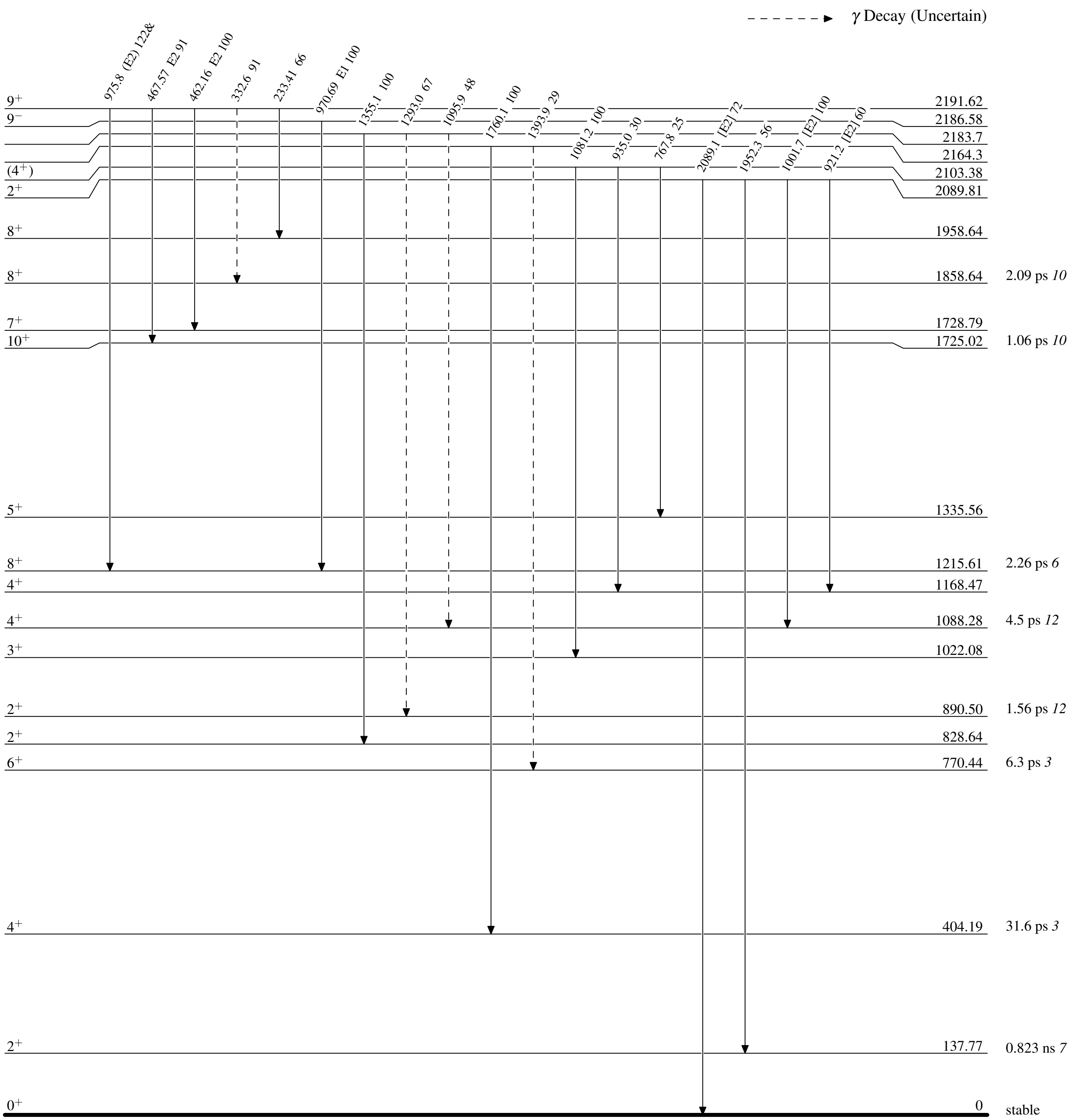


$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

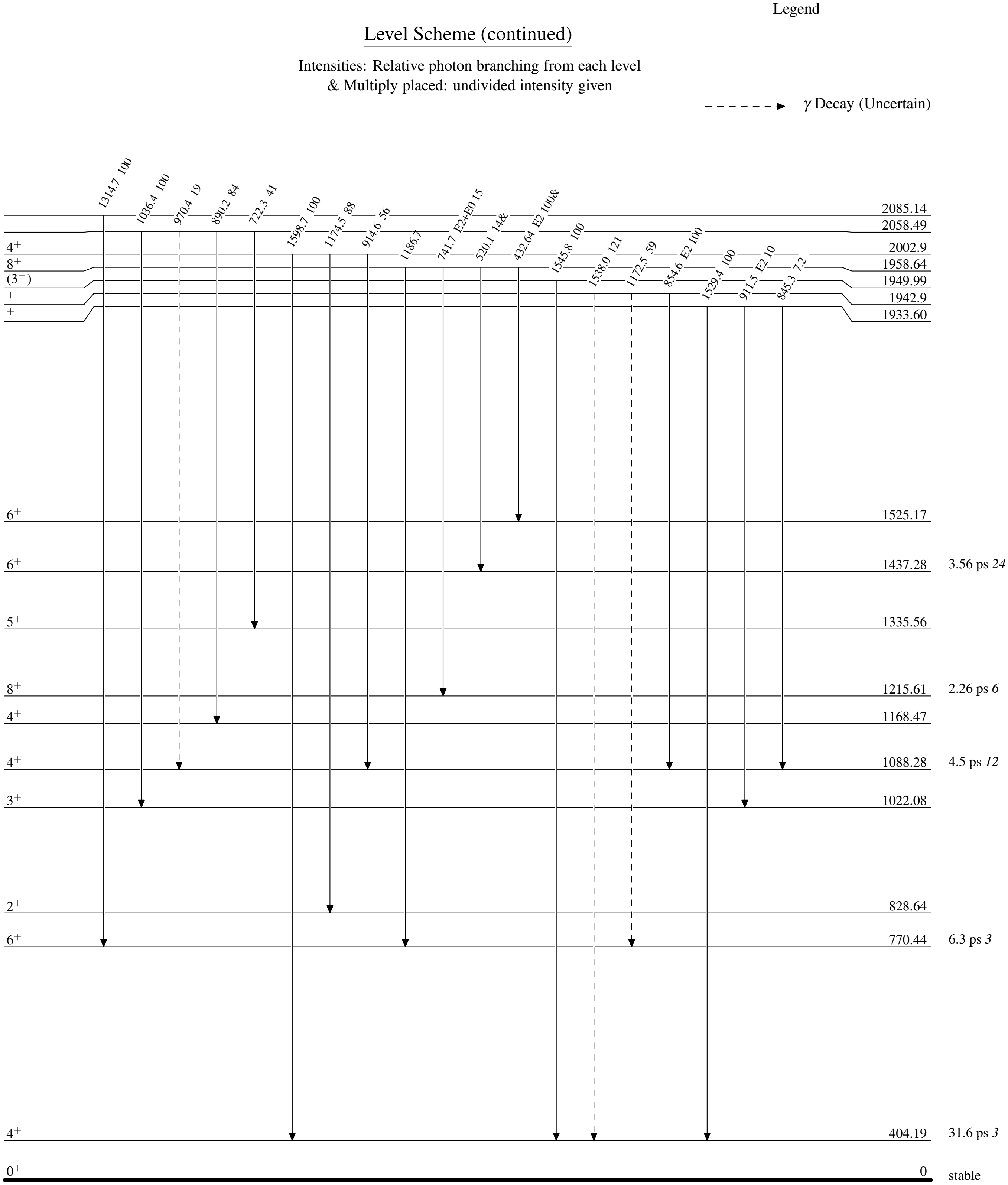


$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

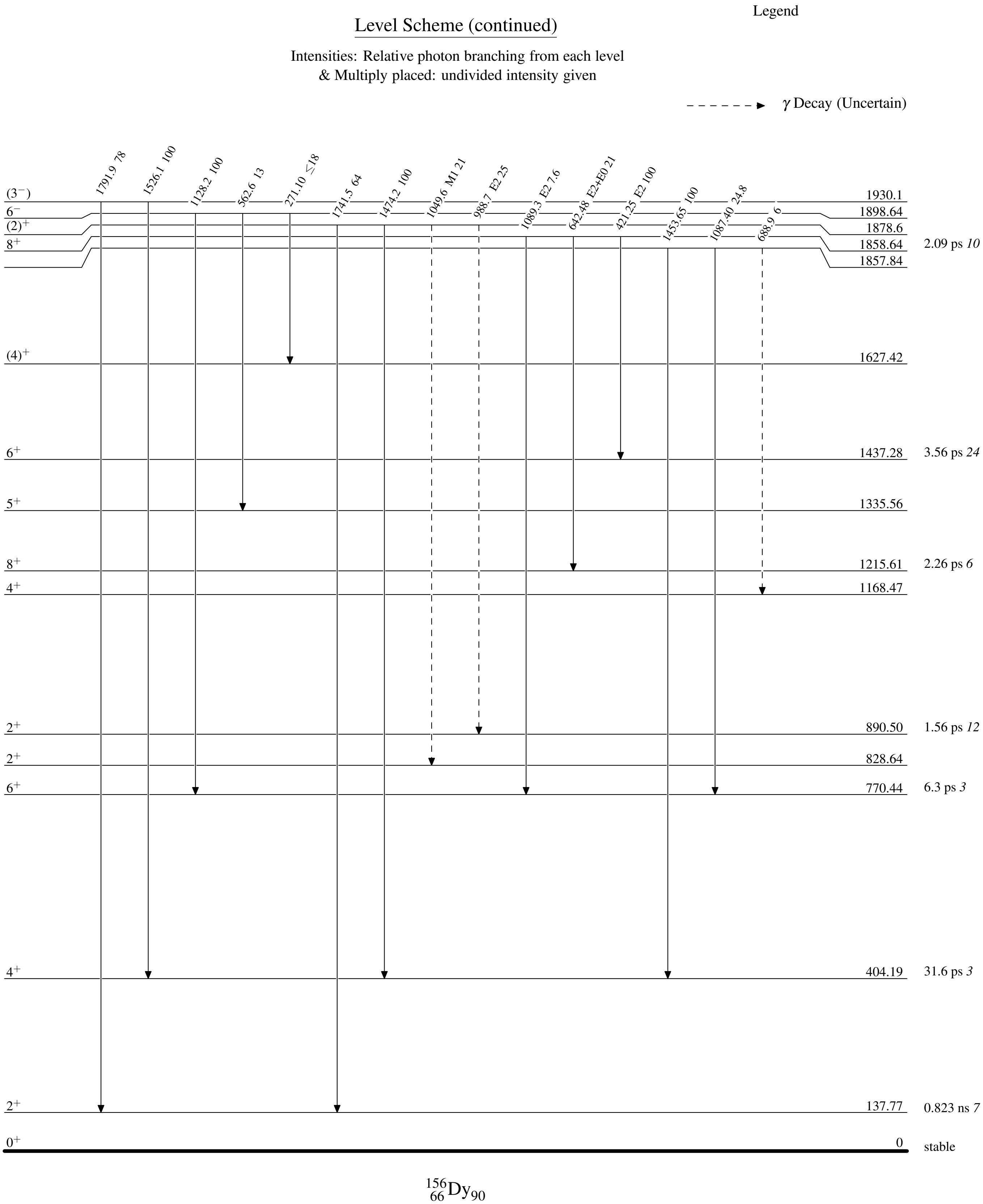


$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



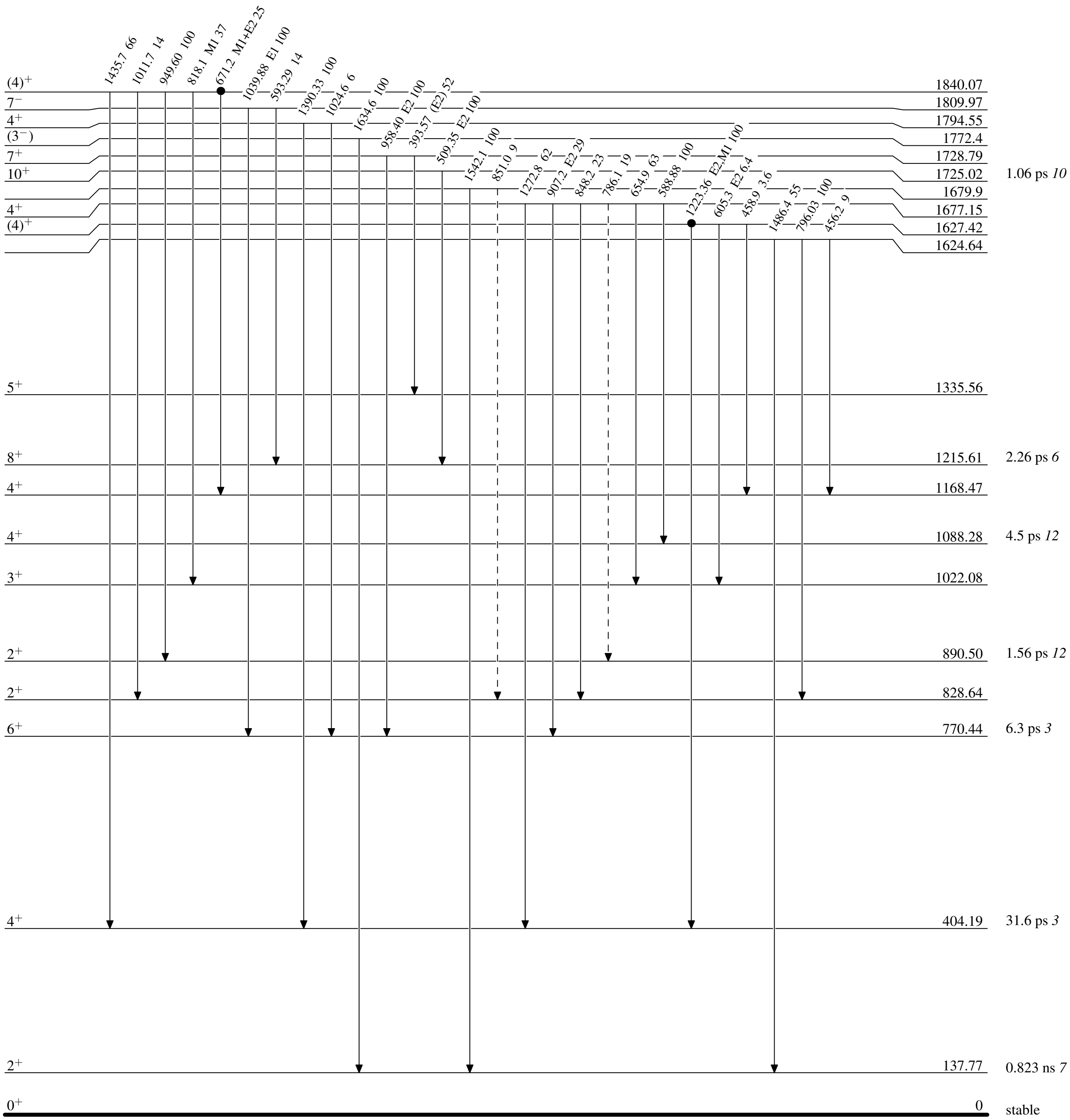
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

Legend

γ Decay (Uncertain)
Coincidence

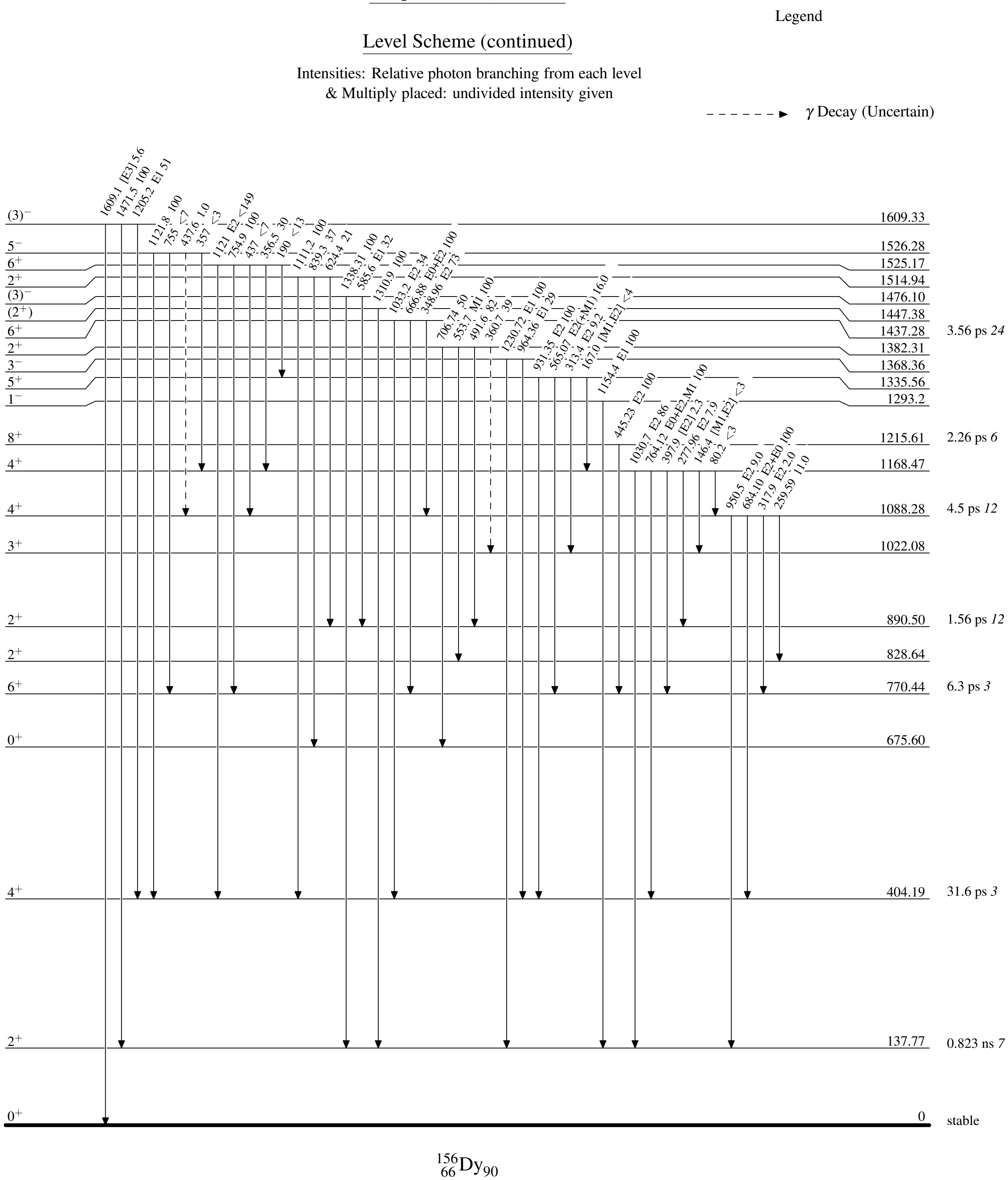


$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

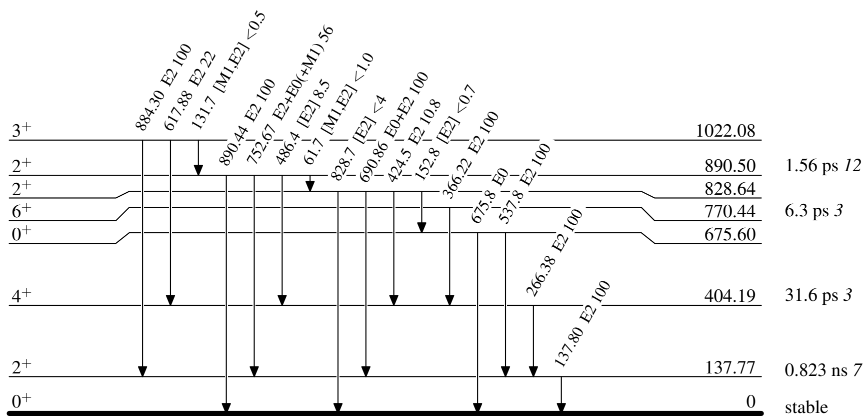
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, Gammas

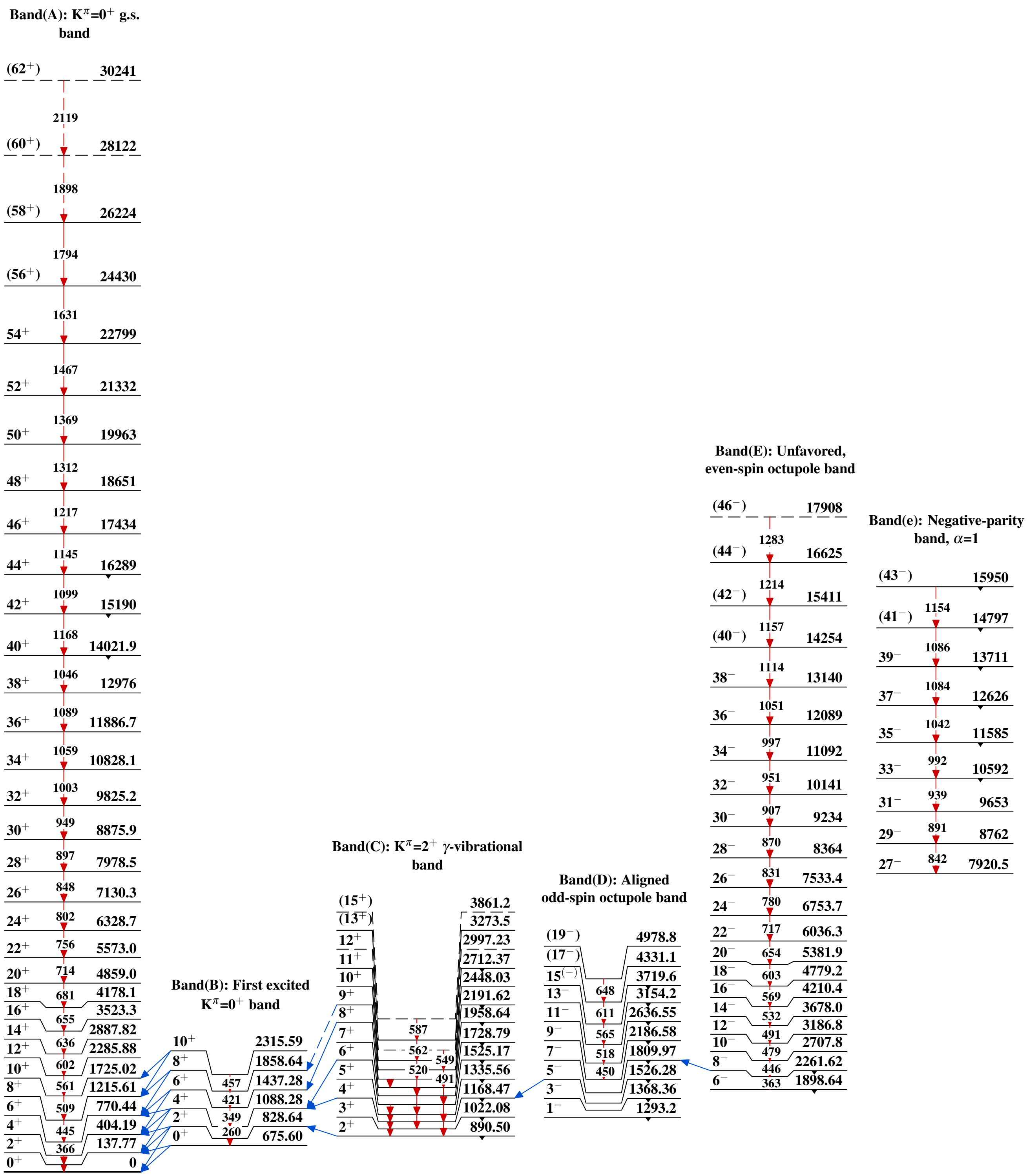
Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



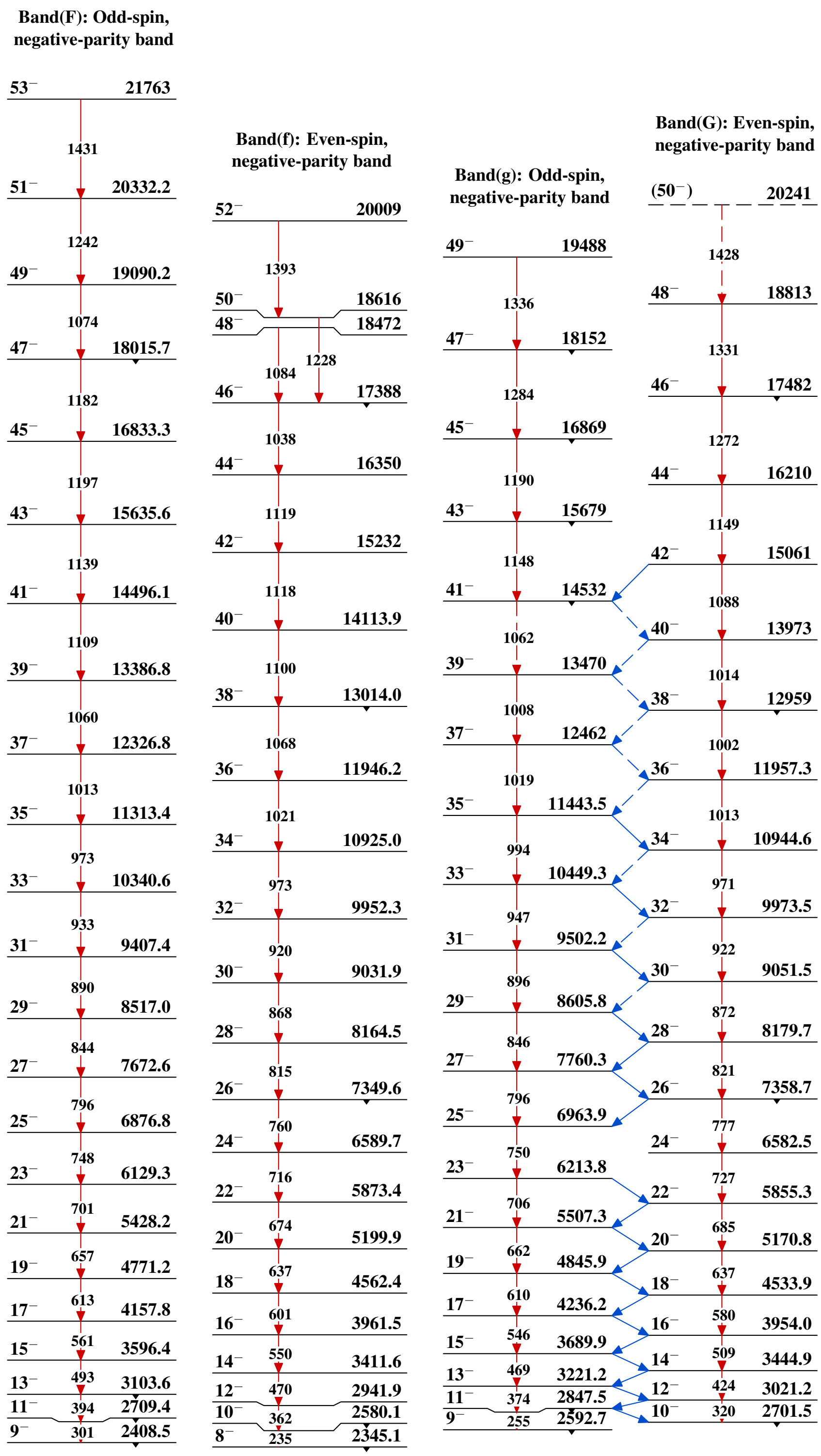
$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas



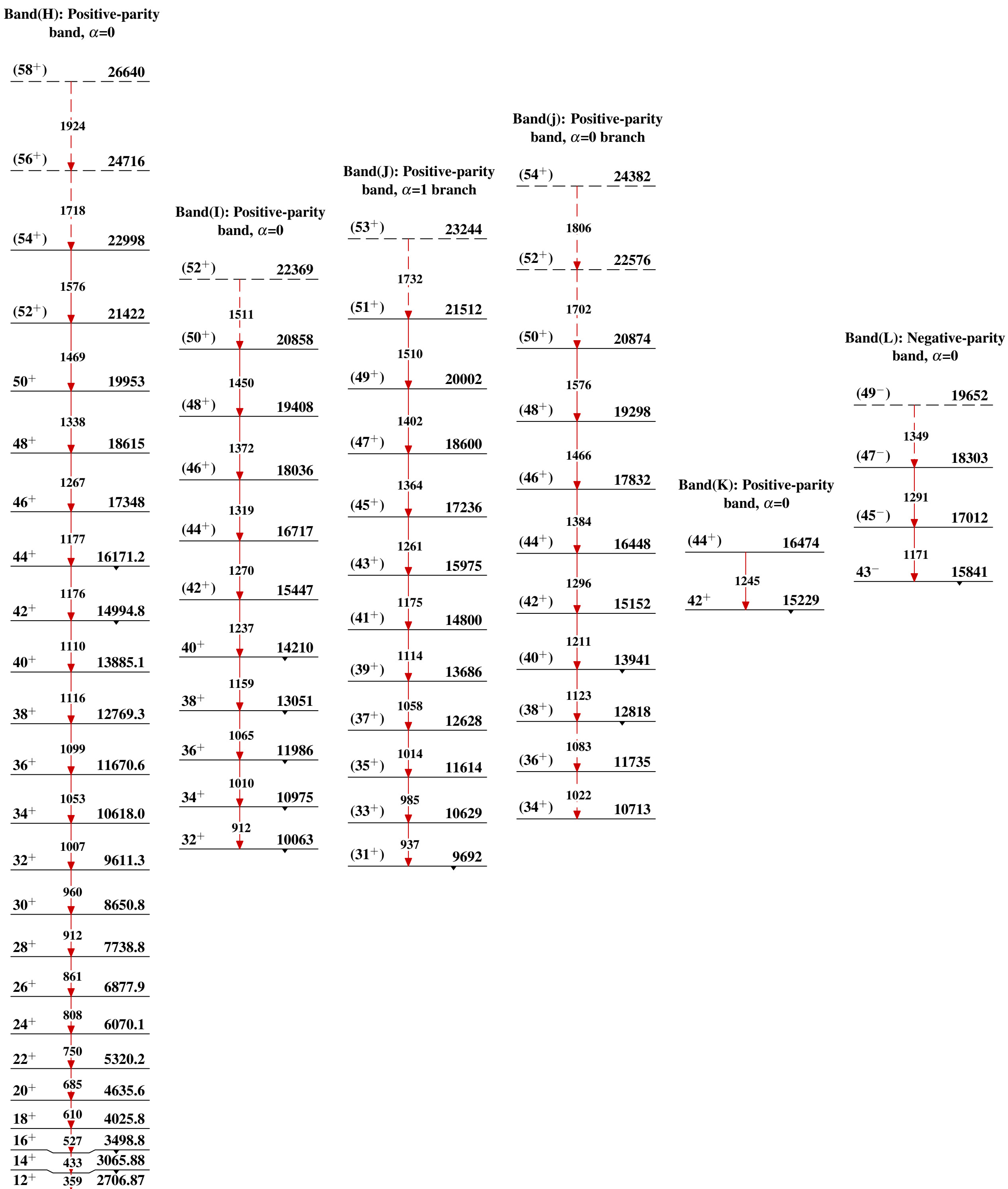
$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas (continued)



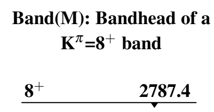
$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas (continued)



$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas (continued)



$^{156}_{66}Dy_{90}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 141, 1 (2017)	1-Feb-2017

Q(β^-)=−4.22×10^3 *3*; S(n)=9054 *5*; S(p)=6932.9 *25*; Q(α)=873.7 *24* 2017Wa10
S(2n)=16021.0 *5*; S(2p)=12450.4 *25* 2017Wa10
Additional information 1.
Additional information 2 (1990So04); and configurations (1965Be40, 1986So09, and 1990So04).

^{158}Dy Levels

Additional information 3.

Cross Reference (XREF) Flags

A	^{158}Tb β^- decay	F	^{156}Dy(t,p)	K	^{160}Dy(p,t)
B	^{158}Ho ε decay (11.3 min+28 min)	G	^{158}Dy(d,d′)	L	^{165}Ho(π^-,7nγ)
C	^{158}Ho ε decay (21.3 min)	H	Coulomb excitation	M	(HI,xnγ)
D	^{130}Te(^{36}S,α4nγ)	I	^{159}Tb(p,2nγ),(d,3nγ)		
E	^{150}Nd(^{12}C,4nγ)	J	^{159}Tb(^{6}Li,α3nγ)		

E(level)[†]	J$^\pi$	T$_{1/2}$[‡]	XREF	Comments
0.0[b]	0$^+$	stable	ABCDEFGHIJKLM	Evaluated RMS charge radius: <r^2>$^{1/2}$=5.1815 fm *3023* (2013An02) δ<r^2>(156-158)=0.215 fm^2 *12* and δ<r^2>(158-160)=0.150 fm^2 *12* (1982Cl04); others: 1970Va21 and 1978Ho09.
98.9180[b] *10*	2$^+$	1.66 ns *3*	ABCDEFGHIJKLM	μ=+0.72 *5* (2014StZZ) J$^\pi$: From E2 γ to 0$^+$ level. T$_{1/2}$: Weighted average of 1.63 ns *8* (1970Mo39) from ^{158}Ho ε decay; 1.76 ns *10* (1968Sc04) and 1.64 ns *8* (1966Fu03) from ^{158}Tb β-decay; and 1.66 ns *4* calculated from B(E2)↑=4.67 *4* (1977Ro27). Other: 1.7 ns *1* (1966Ab02) from ^{158}Ho ε decay. μ: Measured by Integral Perturbed Angular Correlation (1993Al09, and adopted by 2014StZZ compilation).
317.139[b] *4*	4$^+$	72 ps *4*	ABCDEFGHIJKLM	μ=+1.36 *8* (2014StZZ) J$^\pi$: From E2 γ to 2$^+$ level and expected band structure. T$_{1/2}$: Weighted average of 75 ps *8* microwave (1968Be29) and 71 ps *5* recoil-distance (1981Em01). μ: From g-factor=+0.340 *20* measured by Perturbed Angular Correlation (1993Al09); others (also quoted in 2014StZZ compilation): +1.33 *10* (from g-factor +0.333 *25* (1997Al04 by same authors as 1993Al09); +1.4 *2* (from g-factors +0.35 *6* (1983Se09) and +0.36 *6* (1973Ka25)).
637.712[b] *25*	6$^+$	9.1 ps *10*	BCDE G I LM	μ=+1.42 *13* (2014StZZ) J$^\pi$: From E2 γ to 4$^+$ level and expected band structure. μ: From g-factor=+0.236 *22* measured by Perturbed Angular Correlation (1997Al04); others: +1.2 *2* (from g-factor +0.21 *4* (1993Al09 by same authors as 1997Al04)).
946.32[i] *3*	2$^+$	0.85 ps *11*	B FGHI K	J$^\pi$: From E2 γ to 2$^+$ level and γ′s to 0$^+$ and 4$^+$. T$_{1/2}$: Calculated from B(E2)=0.149 *8*.
990.73[h] *12*	0$^+$		B FG I K	J$^\pi$: L=0 in ^{160}Dy(p,t), L=0 in ^{156}Dy(t,p), and E0 γ to 0$^+$ level.
1043.88[b] *7*	8$^+$	2.9 ps *6*	BCDE HI LM	μ=+2.5 *7* (2014StZZ) μ: Measured by Perturbed Angular Correlation (1997Al04); g-factors:

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{158}Dy Levels (continued)

E(level)[†]	J^{π}	$T_{1/2}$[‡]	XREF	Comments
				+0.31 *9* (1997Al04), +0.21 *11* (1993Al09 by same authors as 1997Al04), +0.41 *13* (1983Se09), 0.36 *6* (1973Ka25). J^{π}: From E2 γ to 6^+ level and expected band structure.
1044.594[i] *21*	3^+		BC I	J^{π}: From expected band structure and E2 γ to 4^+ level.
1085.55[h] *5*	2^+	0.53 ps *10*	B GHI	J^{π}: From E2 γ to 0^+ level. $T_{1/2}$: Calculated from B(E2)=0.053 *8*.
1163.75[i] *3*	4^+		B FG I	J^{π}: From E2 γ's to 2^+ and 4^+ levels and γ to 6^+.
1269[j]	0^+		F	J^{π}: From L=0 in ^{156}Dy(t,p).
1280.01[h] *5*	4^+		B G I	J^{π}: From γ's to 2^+ and 6^+ levels.
1314.78[i] *3*	5^+		B E I M	J^{π}: From E2 γ's to 4^+ and 6^+ levels and expected band structure.
1362[j]	(2^+)		F	J^{π}: From assumed band structure.
1371.73 *5*	$(1,2,3)^-$		B	J^{π}: From E2 γ from 1^- level and γ to 2^+. $T_{1/2}$: Reported as ≈ 1 ns in 1980RoZM in (α,2nγ).
1397.17 *4*	3^-		B FGH	B(E3)↑=0.23 *5* J^{π}: From E1 γ to 2^+ level and L=3 in (d,d′).
1441.75 *5*	1^-		B G	J^{π}: From E1 γ to 0^+ level.
1476.9 *8*			C	
1486.28[i] *9*	6^+		B I	J^{π}: From E2 γ to 4^+ level and expected band structure.
1501.14 *9*			B	
1513.54 *6*	$2^+,3,4^+$		B G	J^{π}: From γ's to 2^+ and 4^+ levels.
1518.45 *8*	$3^-,4^-$		B F	J^{π}: From E1 γ to 4^+ level and γ to 3^+.
1520.0[b] *4*	10^+	1.41 ps *19*	CDE I LM	J^{π}: From E2 γ to 8^+ level and expected band structure.
1528.07 *7*	5^-		B G	J^{π}: From E1 γ to 4^+ level and γ to 6^+.
1547.32[h] *7*	6^+		B G I	XREF: I(1552). J^{π}: From E2 γ to 4^+ level and expected band structure.
1559	0^+		F	J^{π}: From L=0 in ^{156}Dy(t,p).
1607.99 *9*	$(2)^+$	>0.18 ps	B H	J^{π}: From Coulomb excitation and γ's to 0^+ and 2^+ levels. $T_{1/2}$: Calculated from BE2 < 0.023.
1618.54 *15*	$3^-,4^-,5^-$		B	J^{π}: From E1 γ to 4^+ level.
1634.54 *16*			B	
1671.64 *15*	$2^+,3,4^+$		B	J^{π}: From γ's to 2^+ and 4^+ levels.
1675.84[i] *20*	7^+		B I M	J^{π}: From expected band structure and γ to 6^+ level.
1710.31 *16*	$(^+)$		B G K	1713 found as 0^+ candidate by 2008VaZU. J^{π}: (E2) γ to 2^+.
1743	0^+		F	J^{π}: From L=0 in ^{156}Dy(t,p).
1762.5[e] *6*	(6^-)		E	J^{π}: ΔJ=1 γ to 5^+; π=(−) from no γ to 4^+.
1818.83 *10*			B G	XREF: G(1821).
1828			F	
1840.15 *14*	$2^+,3,4^+$		B G	XREF: G(1838). J^{π}: From γ's to 2^+ and 4^+ levels.
1851.96[k] *6*	2^+		B	J^{π}: From M1 γ to 2^+, γ to 0^+, and assumed band structure.
1892.8[i] *7*	(8^+)		I	J^{π}: From γ's to 6^+ and 8^+ levels and expected band structure. Assigned to both the $K^{\pi}=0^+$ β-vibrational band and $K^{\pi}=2^+$ γ-vibrational band.
1895.16[l] *3*	4^+	<0.11 ns	B	J^{π}: From E2 γ to 2^+; log *ft*=5.1 from 5^+ ^{158}Ho ground state. $T_{1/2}$: From Xγ(t) (1973Ch28).
1920.43 *8*	$3^+,4^+,5^+$		B FG	XREF: G(1924). J^{π}: From M1 γ to 4^+ level.
1940.75[k] *4*	3^+		B	J^{π}: From M1 γ to 4^+ level, E2 γ to 2^+, and expected band structure.
1975.75 *10*	$1^+,2^+$		B G	J^{π}: From M1 γ to 2^+ level and γ to 0^+.
2000	0^+		F	J^{π}: From L=0 in ^{156}Dy(t,p).
2021.93[l] *6*	5^+		BC	J^{π}: From M1 γ component to 5^+ level, E2 γ to 3^+, and expected band structure.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{158}Dy Levels (continued)

E(level)[†]	J^π	$T_{1/2}$[‡]	XREF	Comments
2034			G	
2048			G	
2048.8[b] *7*	12^+	0.85 ps *16*	DE HI LM	J^π: From E2 γ to 10^+ level and expected band structure.
2055.43[k] *4*	4^+		B	J^π: From M1 γ's to 4^+ and 5^+ levels and γ to 2^+.
2096.6[e] *6*	(8^-)		C Efg	XREF: f(2102)g(2101). J^π: Based on DCO ratios of in-band 334γ and inter-band 1053γ in (^{12}C,4nγ) (2003Ha45; values not given).
2107.68 *4*	4^+		B fg	XREF: f(2102)g(2101). J^π: From M1 γ's to 2^+ and 4^+ levels and $\gamma\gamma(\theta)$. J^π: Assigned on the basis of $\gamma\gamma(\theta)$ as 4^+ by 1993Al09 with configuration ((ν,5/2[523])+(ν,3/2[521])) and ((ν,11/2[505])-(ν,3/2[521])).
2153.62[l] *11*	6^+		B G	J^π: From expected band structure and E2 γ to 5^+.
2208.7 *7*			C Ef	XREF: f(2208).
2211.10[k] *7*	(5^+)		B f	XREF: f(2208). J^π: From expected band structure and γ's to 4^+ levels.
2231.5[c] *7*	(8^-)		E	J^π: Based on DCO ratios of inter-band 469γ and 1188γ in (^{12}C,4nγ) (2003Ha45; values not given); band π=(−) given at 2476 band level.
2260			F	
2318			F	
2351			F	
2361.7[g] *7*	(8^-)		C E	J^π: (6^-,7,8^-) from γ's to (6^-) and (8^-); (8^-) more likely for (^{12}C,4nγ) reaction.
2382.46 *5*	4^+		B	J^π: From M1 γ to 4^+ level, γ to 2^+, and γ to 5^-.
2388.82[k] *13*	(6^+)		B	J^π: From expected band structure and γ's to 4^+ and 6^+ levels.
2409.57 *7*	$2^-,3^-,4^-$		B	J^π: From E1 γ to 3^+ level.
2409.70 *4*	4^+		B	J^π: From γ's to 2^+ and 6^+ levels and E2 γ to 4^+.
2436.52 *6*	$3^+,4^+$		B	J^π: From M1 γ to 4^+ level and γ's to 2^+.
2452.8[d] *9*	(11^-)		DE	J^π: D γ to 10^+ and π=(−) based on band configuration in (^{12}C,4nγ) (2003Ha45).
2467.8[f] *10*	(9^-)[#]		E	
2476.7[c] *7*	(10^-)		DE M	J^π: Q,(E2) γ to (8^-) and band structure.
2512.1[e] *12*	(10^-)		E	J^π: Based on band assignment and DCO ratio measurements in (^{12}C,4nγ) (2003Ha45; values not given).
2518.69 *13*	4^+		B	J^π: From γ's to 2^+ and 6^+ levels and M1 γ to 4^+.
2528.1[l] *6*	(8^+)		C	J^π: From γ's to 8^+ and 10^+ levels, J is 8, 9, or 10. From model calculations of decay γ's, 1997Ka49 assign this level as the 8^+ level of the $K^\pi = 4^+$ band.
2538.55 *11*	$3^+,4^+$		B	J^π: From M1 γ to 4^+ level and γ's to 2^+.
2600.7[g] *10*	(10^-)[#]		E	
2605.95 *11*	1^-		B	J^π: From E1 γ to 0^+ level.
2612.2[b] *7*	14^+	0.73 ps *15*	DE H LM	J^π: From expected band structure and E2 γ to 12^+ level.
2644.53 *7*	$(^+)$		B	J^π: (E2) γ to 2^+.
2672.33 *11*	4^+		B	J^π: From γ's to 2^+ and 6^+ levels.
2758.8[f] *12*	(11^-)[#]		E	
2807.4[c] *9*	(12^-)[@]		DE M	
2886.9[d] *9*	(13^-)		DE M	J^π: D γ to 12^+ and π=(−) based on band configuration in (^{12}C,4nγ) (2003Ha45).
2940.4[g] *12*	(12^-)[#]		E	
2985.2[e] *16*			E	
2989.33 *9*	2^+		B	J^π: From γ's to 0^+ and 4^+ levels.
3144.4[f] *13*	(13^-)[#]		E	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{158}Dy Levels (continued)

E(level)[†]	Jπ	T1/2[‡]	XREF	Comments
3190.3[b] *8*	16+	0.63 ps *9*	DE H LM	Jπ: From expected band structure and E2 γ to 14+ level.
3217.4[c] *10*	(14−)[@]		DE M	
3237.2 *6*	(6+)		C	Jπ: From γ's to 4+ and 8+ levels.
3368.9[g] *14*	(14−)[#]		E	
3369.0[d] *10*	(15−)		DE M	Jπ: D γ to 14+ and π=(−) based on band configuration in (^{12}C,4nγ) (2003Ha45).
3530.61 *18*	4+		B	Jπ: From M1 γ to 3+ level and γ to 6+.
3547.77 *12*	(3−)		B	Jπ: From γ's to 1−, and (5−) levels.
3582.33 *22*	2+		B	Jπ: From γ's to 0+ and 4+ levels.
3612.9[f] *15*	(15−)[#]		E	
3699.9[c] *14*	(16−)[@]		DE M	
3781.3[b] *8*	18+	0.55 ps *8*	DE H LM	Jπ: From expected band structure and E2 γ to 16+ level.
3877.0[g] *15*	(16−)[#]		E	
3903.7[d] *11*	(17−)		DE M	Jπ: D γ to 16+ and π=(−) based on band configuration in (^{12}C,4nγ) (2003Ha45).
4157.6[f] *16*	(17−)[#]		E	
4243.3[c] *18*	(18−)[@]		DE M	
4407.1[b] *9*	20+	0.40 ps *8*	DE LM	Jπ: From expected band structure and E2 γ to 18+ level.
4455.7[g] *17*	(18−)[#]		E	
4490.9[d] *15*	(19−)[&]		E M	
4768.9[f] *17*	(19−)[#]		E	
4839.1[c] *20*	(20−)[@]		DE M	
5085.2[b] *9*	22+	0.33 ps *9*	DE M	Jπ: From expected band structure and (E2) γ to 20 level.
5097.6[g] *18*	(20−)[#]		E	
5127.7[d] *18*	(21−)[&]		DE M	
5439.3[f] *18*	(21−)[#]		E	
5483.7[c] *23*	(22−)[@]		DE M	
5794.2[g] *19*	(22−)[#]		E	
5811.3[d] *21*	(23−)[&]		DE M	
5819.9[b] *14*	(24+)[a]	0.28 ps *10*	DE M	
6160.9[f] *21*	(23−)[#]		E	
6178.4[c] *25*	(24−)[@]		DE M	
6519.2[g] *22*	(24−)[#]		E	
6542.8[d] *23*	(25−)[&]		DE M	
6612.5[b] *17*	(26+)[a]	0.17 ps *10*	DE M	
6924[c] *3*	(26−)[@]		DE M	
7322.8[d] *25*	(27−)[&]		D	
7456.2[b] *20*	(28+)[a]		DE M	
7720[c] *3*	(28−)[@]		DE	
8150[d] *3*	(29−)		D	
8354.2[b] *22*	(30+)[a]		D	
8565[c] *3*	(30−)[@]		DE	
9023[d] *3*	(31−)		D	
9299.2[b] *25*	(32+)[a]		D	
9458[c] *4*	(32−)		D	
9944[d] *3*	(33−)		D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{158}Dy Levels (continued)

E(level)[†]	J$^{\pi}$	XREF	E(level)[†]	J$^{\pi}$	XREF	E(level)[†]	J$^{\pi}$	XREF
10294[b] 3	(34^{+})[a]	D	11933[d] 4	(37^{-})	D	13544[b] 4	(40^{+})[a]	D
10398[c] 4	(34^{-})	D	12416[b] 3	(38^{+})[a]	D	14135[d] 4	(41^{-})	D
10913[d] 4	(35^{-})	D	12435[c] 4	(38^{-})	D	14718[b] 4	(42^{+})[a]	D
11331[b] 3	(36^{+})[a]	D	13004[d] 4	(39^{-})	D	15330?[d]	(43^{-})	D
11391[c] 4	(36^{-})	D	13534[c] 4	(40^{-})	D	15940?[b]	(44^{+})[a]	D

[†] From least-squares fit to E_{γ} values or from reactions. for E_{γ}'s with no given uncertainty ΔE_{γ}=1 was assigned in the fit by evaluator. χ^2 norm = 1.56 greater than χ^2 critical = 1.29.

[‡] From ^{26}Mg(^{136}Xe,4nγ) by recoil-distance method (1981Em01), unless otherwise noted.

[#] Based on (8^{-}) of 2361 bandhead and the two-quasiparticle strong coupled band structure with strong inter-band M1 transitions up to high spin states and two E2 cascades (with no signature splitting). γ-ray multipolarities by DCO ratio method were measured (values not given). Measurement and theoretical interpretation are from 2003Ha45 in (^{12}C,4nγ) dataset.

[@] Based on (8^{-}) of 2231 bandhead and two-quasiparticle band structure. γ-ray multipolarities by DCO ratio method were measured (values not given). Measurement and theoretical interpretation are from 2003Ha45 in (^{12}C,4nγ) dataset.

[&] Based on (11^{-}) of 2452 bandhead and two-quasiparticle band structure. γ-ray multipolarities by DCO ratio method were measured (values not given). Measurement and theoretical interpretation are from 2003Ha45 in (^{12}C,4nγ) dataset.

[a] For g.s. band up to J$^{\pi}$=22^{+} firm J$^{\pi}$ assignments based on measured E2 character of transitions; starting at J$^{\pi}$=(24^{+}) tentative J$^{\pi}$ assignments based on the assignment of transitions to the band structure. Also, for levels in the ground-state band with average J of 14, the average g-factor=+0.04 *11* as given in 2014StZZ compilation and based on data of 1983Se09. This average is for levels with J^{π}=10^{+} to 16^{+}, which are beyond the backbend.

[b] Band(A): K$^{\pi}$=0^{+} ground-state band. α=16.75, B=−0.045.

[c] Band(B): ν5/2[642]$\otimes\nu$3/2[521], α=0.

[d] Band(C): ν5/2[642]$\otimes\nu$3/2[521], α=1.

[e] Band(D): (6^{-}) band.

[f] Band(E): ν5/2[642]$\otimes\nu$11/2[505], α=1.

[g] Band(F): ν5/2[642]$\otimes\nu$11/2[505], α=0.

[h] Band(G): K$^{\pi}$=0^{+} β-vibrational band. α=16.43, B=−0.098. Terminology and assignment can be reconsidered in view of critique addressed by 2001Ga02 (same observation can also be applied to this band in in the particular datasets).

[i] Band(H): K$^{\pi}$=2^{+} γ-vibrational band. α=16.85, B=−0.064, A_4=−0.0070.

[j] Band(I): K$^{\pi}$=0^{+} band. α=15.5.

[k] Band(J): K$^{\pi}$=2^{+} band. α=14.63, B=0.0028, A_4=−0.0061. Discussed as two phonon $\beta\gamma$-vibrational band (1992Gu07).

[l] Band(K): K$^{\pi}$=4^{+} band. α=16.57, B=−0.078. Configuration of ((ν,5/2(523))+(ν,3/2(521))) suggested by 1964Py04 and confirmed by fast ε decay (log *ft*=5.1) from ^{158}Ho ground state which has configuration of ((π,7/2(523))+(ν,3/2(521))) which is an allowed-unhindered transition. Also discussed as two phonon $\gamma\gamma$-vibrational band (1992Gu07).

Adopted Levels, Gammas (continued)

$\gamma(^{158}Dy)$

E_i(level)	J_i^π	E_γ‡	I_γ‡	E_f	J_f^π	Mult.#	α†	$I_{(\gamma+ce)}$	Comments
98.9180	2^+	98.918 *1*	100	0.0	0^+	E2	2.82		α(K)=1.153 *17*; α(L)=1.285 *18*; α(M)=0.308 *5*; α(N+..)=0.0774 *11* α(N)=0.0690 *10*; α(O)=0.00829 *12*; α(P)=4.78×10^{-5} *7* B(E2)(W.u.)=186 *4*
317.139	4^+	218.221 *4*	100	98.9180	2^+	E2	0.1771		B(E2)(W.u.)=266 *15* α(K)=0.1225 *18*; α(L)=0.0422 *6*; α(M)=0.00986 *14*; α(N+..)=0.00252 *4* α(N)=0.00223 *4*; α(O)=0.000284 *4*; α(P)=5.97×10^{-6} *9* E_γ: Values are discrepant, 218.20 *1* from ^{158}Ho ε decay (11.3 m + 28 m), 218.221 *4* from ^{158}Tb β- decay, 218.32 *2* from ^{159}Tb(p,2nγ) reaction, and 218.35 *6* from ^{165}Ho(π-,7nγ).
637.712	6^+	320.53 *3*	100	317.139	4^+	E2	0.0528		B(E2)(W.u.)=3.4×10^2 *4* α(K)=0.0400 *6*; α(L)=0.00989 *14*; α(M)=0.00227 *4*; α(N+..)=0.000586 *9* α(N)=0.000516 *8*; α(O)=6.83×10^{-5} *10*; α(P)=2.11×10^{-6} *3* E_γ: Values are discrepant, 320.51 *3* from ^{158}Ho ε decay (11 m + 27 m), 320.62 *4* from ^{159}Tb(p,2nγ) reaction, and 320.47 *7* from ^{165}Ho(π-,7nγ).
946.32	2^+	629.2 *2*	2.5 *8*	317.139	4^+	[E2]	0.00853 *12*		B(E2)(W.u.)=2.1 *8* α=0.00853 *12*; α(K)=0.00700 *10*; α(L)=0.001194 *17*; α(M)=0.000266 *4*; α(N+..)=7.01×10^{-5} *10* α(N)=6.11×10^{-5} *9*; α(O)=8.58×10^{-6} *12*; α(P)=3.98×10^{-7} *6*
		847.27 *11*	100 *10*	98.9180	2^+	E2	0.00433 *6*		B(E2)(W.u.)=19 *4* α=0.00433 *6*; α(K)=0.00361 *5*; α(L)=0.000559 *8*; α(M)=0.0001235 *18*; α(N+..)=3.27×10^{-5} *5* α(N)=2.84×10^{-5} *4*; α(O)=4.06×10^{-6} *6*; α(P)=2.08×10^{-7} *3*
		946.14 *17*	53 *7*	0.0	0^+	(E2)	0.00342 *5*		B(E2)(W.u.)=5.9 *12* α=0.00342 *5*; α(K)=0.00286 *4*; α(L)=0.000431 *6*; α(M)=9.50×10^{-5} *14*; α(N+..)=2.52×10^{-5} *4* α(N)=2.19×10^{-5} *3*; α(O)=3.14×10^{-6} *5*; α(P)=1.652×10^{-7} *24*
990.73	0^+	891.65@ *15*	100@	98.9180	2^+	[E2]	0.00387 *6*		α=0.00387 *6*; α(K)=0.00324 *5*; α(L)=0.000495 *7*; α(M)=0.0001093 *16*; α(N+..)=2.89×10^{-5} *4* α(N)=2.51×10^{-5} *4*; α(O)=3.60×10^{-6} *5*; α(P)=1.87×10^{-7} *3*
		991.0 *2*		0.0	0^+	E0		1.0	$I_{(\gamma+ce)}$: calculated by 1978An11 from I_{ce}(K) of 1974Al30.
1043.88	8^+	406.12 *7*	100	637.712	6^+	E2	0.0266		B(E2)(W.u.)=3.4×10^2 *7* α(K)=0.0209 *3*; α(L)=0.00441 *7*; α(M)=0.001001 *14*; α(N+..)=0.000261 *4* α(N)=0.000228 *4*; α(O)=3.09×10^{-5} *5*; α(P)=1.142×10^{-6} *16*
1044.594	3^+	98.19 *9*	0.52 *25*	946.32	2^+				
		727.41 *4*	18.9 *7*	317.139	4^+	E2	0.00608 *9*		α=0.00608 *9*; α(K)=0.00503 *7*; α(L)=0.000815 *12*; α(M)=0.000181 *3*; α(N+..)=4.78×10^{-5} *7* α(N)=4.16×10^{-6} *6*; α(O)=5.89×10^{-6} *9*; α(P)=2.88×10^{-7} *4*

Adopted Levels, Gammas (continued)

γ(^{158}Dy) (continued)

E$_i$(level)	J$_i^\pi$	E$_\gamma$‡	I$_\gamma$‡	E$_f$	J$_f^\pi$	Mult.#	α†	Comments
1044.594	3$^+$	945.61 *4*	100 *11*	98.9180	2$^+$	(E2)	0.00342 *5*	α=0.00342 *5*; α(K)=0.00287 *4*; α(L)=0.000432 *6*; α(M)=9.52×10^{-5} *14*; α(N+..)=2.52×10^{-5} *4* α(N)=2.19×10^{-5} *3*; α(O)=3.15×10^{-6} *5*; α(P)=1.654×10^{-7} *24*
1085.55	2$^+$	95.05& *1*	81 *9*	990.73	0$^+$	[E2]	3.28	α(K)=1.271 *18*; α(L)=1.544 *22*; α(M)=0.370 *6*; α(N+..)=0.0930 *13* α(N)=0.0830 *12*; α(O)=0.00995 *14*; α(P)=5.25×10^{-5} *8* I$_\gamma$: From one ^{158}Ho ε decay reference and appears to be much too large by a factor of 100 since the corresponding BE2W=3.4E+5.
		768.39 *7*	97 *8*	317.139	4$^+$	[E2]	0.00537 *8*	B(E2)(W.u.)=12 *3* α=0.00537 *8*; α(K)=0.00446 *7*; α(L)=0.000710 *10*; α(M)=0.0001573 *22*; α(N+..)=4.16×10^{-5} *6* α(N)=3.62×10^{-5} *5*; α(O)=5.14×10^{-6} *8*; α(P)=2.56×10^{-7} *4*
		986.56 *21*	100 *9*	98.9180	2$^+$	(E2+E0)	0.017 *4*	B(E2)(W.u.)=3.5 *8* α: Calculated from α_K(exp)=0.014 *4* (1978An11) and α/α_K(E2)=1.20. ρ^2(E0) = 0.027 *12* from 1999Wo07.
		1085.53 *7*	96 *8*	0.0	0$^+$	E2	0.00257 *4*	B(E2)(W.u.)=2.1 *5* α=0.00257 *4*; α(K)=0.00217 *3*; α(L)=0.000317 *5*; α(M)=6.96×10^{-5} *10*; α(N+..)=1.85×10^{-5} *3* α(N)=1.603×10^{-5} *23*; α(O)=2.32×10^{-6} *4*; α(P)=1.251×10^{-7} *18*
1163.75	4$^+$	119.4 *1*	3.2 *3*	1044.594	3$^+$			
		217.4 *10*		946.32	2$^+$			
		526.3 *3*	1.3 *6*	637.712	6$^+$			
		846.54 *9*	100 *14*	317.139	4$^+$	E2	0.00433 *6*	α=0.00433 *6*; α(K)=0.00362 *5*; α(L)=0.000560 *8*; α(M)=0.0001238 *18*; α(N+..)=3.28×10^{-5} *5* α(N)=2.85×10^{-5} *4*; α(O)=4.07×10^{-6} *6*; α(P)=2.08×10^{-7} *3*
		1064.70 *15*	37.6 *14*	98.9180	2$^+$	E2	0.00267 *4*	α=0.00267 *4*; α(K)=0.00225 *4*; α(L)=0.000331 *5*; α(M)=7.26×10^{-5} *11*; α(N+..)=1.93×10^{-5} *3* α(N)=1.674×10^{-5} *24*; α(O)=2.42×10^{-6} *4*; α(P)=1.300×10^{-7} *19* I$_\gamma$: From ^{158}Ho ε decay (11.3 m+28 m); other: 20.3 from ^{159}Tb(p,2nγ).
1280.01	4$^+$	642.63 *16*	25 *7*	637.712	6$^+$	E2	0.00811 *12*	α=0.00811 *12*; α(K)=0.00667 *10*; α(L)=0.001128 *16*; α(M)=0.000251 *4*; α(N+..)=6.62×10^{-5} *10* α(N)=5.77×10^{-5} *8*; α(O)=8.11×10^{-6} *12*; α(P)=3.80×10^{-7} *6*
		962.81 *7*	32 *4*	317.139	4$^+$	(E2+E0)	0.046 *10*	α: Calculated from α_K(exp)=0.038 *10* (1978An11) and α/α_K(E2)=1.20.
		1181.0 *3*	100 *9*	98.9180	2$^+$	E2	0.00217 *3*	α=0.00217 *3*; α(K)=0.00183 *3*; α(L)=0.000264 *4*; α(M)=5.79×10^{-5} *9*; α(N+..)=1.89×10^{-5} *3* α(N)=1.334×10^{-5} *19*; α(O)=1.93×10^{-6} *3*; α(P)=1.059×10^{-7} *15*; α(IPF)=3.55×10^{-6} *6*
1314.78	5$^+$	150.97 *4*	5.1 *10*	1163.75	4$^+$			
		270.22 *7*	4.4 *9*	1044.594	3$^+$			
		676.97 *4*	23 *4*	637.712	6$^+$	E2	0.00717 *10*	α=0.00717 *10*; α(K)=0.00592 *9*; α(L)=0.000982 *14*; α(M)=0.000218 *3*; α(N+..)=5.76×10^{-5} *8* α(N)=5.02×10^{-5} *7*; α(O)=7.08×10^{-6} *10*; α(P)=3.38×10^{-7} *5*

$^{158}_{66}$Dy$_{92}$-7

γ(^{158}Dy) (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
1314.78	5+	997.58 *11*	100 *3*	317.139	4+	E2	0.00306 *5*	α=0.00306 *5*; α(K)=0.00257 *4*; α(L)=0.000382 *6*; α(M)=8.41×10^{-5} *12*; α(N+..)=2.23×10^{-5} *4* α(N)=1.94×10^{-5} *3*; α(O)=2.79×10^{-6} *4*; α(P)=1.483×10^{-7} *21*
1371.73	(1,2,3)−	327.0 *10*	<183	1044.594	3+			
		425.36 *8*	100 *17*	946.32	2+			
		1272.79@ *6*	145@ *7*	98.9180	2+			
1397.17	3−	1080.10 *7*	31 *3*	317.139	4+			Mult.: Possible E2 assignment not in agreement with J^π's.
		1298.23 *5*	100 *5*	98.9180	2+	E1	0.000847 *12*	α=0.000847 *12*; α(K)=0.000667 *10*; α(L)=8.76×10^{-5} *13*; α(M)=1.90×10^{-5} *3*; α(N+..)=7.39×10^{-5} *11* α(N)=4.38×10^{-6} *7*; α(O)=6.42×10^{-7} *9*; α(P)=3.73×10^{-8} *6*; α(IPF)=6.89×10^{-5} *10*
1441.75	1−	1342.81 *6*	85 *9*	98.9180	2+	E1	0.000828 *12*	α=0.000828 *12*; α(K)=0.000629 *9*; α(L)=8.25×10^{-5} *12*; α(M)=1.79×10^{-5} *3*; α(N+..)=9.88×10^{-5} *14* α(N)=4.12×10^{-6} *6*; α(O)=6.05×10^{-7} *9*; α(P)=3.52×10^{-8} *5*; α(IPF)=9.40×10^{-5} *14*
		1441.73 *6*	100 *9*	0.0	0+	E1	0.000809 *12*	α=0.000809 *12*; α(K)=0.000557 *8*; α(L)=7.28×10^{-5} *11*; α(M)=1.577×10^{-5} *22*; α(N+..)=0.0001638 α(N)=3.64×10^{-6} *5*; α(O)=5.34×10^{-7} *8*; α(P)=3.12×10^{-8} *5*; α(IPF)=0.0001596 *23*
1476.9		838.9	100	637.712	6+			
1486.28	6+	846.9& *10*		637.712	6+			E_γ: Only 846 γ placed from 6+ level in (p,2nγ) where it also has three other placements and only 1169 γ placed from 6+ level in ^{158}Ho ε decay (11.3 m+28 m) where an 846 γ is placed from another level.
		1169.14 *9*		317.139	4+	E2	0.00222 *4*	α=0.00222 *4*; α(K)=0.00187 *3*; α(L)=0.000270 *4*; α(M)=5.91×10^{-5} *9*; α(N+..)=1.84×10^{-5} *3* α(N)=1.363×10^{-5} *19*; α(O)=1.97×10^{-6} *3*; α(P)=1.080×10^{-7} *16*; α(IPF)=2.66×10^{-6} *4*
1501.14		1402.22 *9*	100	98.9180	2+			
1513.54	2+,3,4+	1196.40 *9*	42 *7*	317.139	4+			
		1414.62 *7*	100 *10*	98.9180	2+			
1518.45	3−,4−	473.9 *1*	37 *5*	1044.594	3+			
		1201.32 *13*	100 *10*	317.139	4+	E1	0.000917 *13*	α=0.000917 *13*; α(K)=0.000765 *11*; α(L)=0.0001007 *15*; α(M)=2.18×10^{-5} *3*; α(N+..)=2.99×10^{-5} α(N)=5.04×10^{-6} *7*; α(O)=7.38×10^{-7} *11*; α(P)=4.28×10^{-8} *6*; α(IPF)=2.41×10^{-5} *4*
1520.0	10+	476.0 *4*	100	1043.88	8+	E2	0.01724	B(E2)(W.u.)=3.2×10^2 *5* α(K)=0.01381 *20*; α(L)=0.00267 *4*; α(M)=0.000602 *9*; α(N+..)=0.0001574 *23* α(N)=0.0001377 *20*; α(O)=1.89×10^{-5} *3*; α(P)=7.69×10^{-7} *11* E_γ: Values are discrepant; 475.4 *3* from (p,2nγ) reaction, 476.0 *3* from (HI,xnγ), and 476.89 *21* from (π-,7nγ).
1528.07	5−	213.6 *2*	66 *18*	1314.78	5+			

$^{158}_{66}$Dy$_{92}$-8

$\gamma(^{158}$Dy) (continued)

E_i(level)	J^π_i	E_γ ‡	I_γ ‡	E_f	J^π_f	Mult. #	α †	Comments
1528.07	5^-	890.6 *4*	30 *6*	637.712	6^+			
		1210.87 *7*	100 *4*	317.139	4^+	E1	0.000909 *13*	α=0.000909 *13*; α(K)=0.000754 *11*; α(L)=9.93×10^{-5} *14*; α(M)=2.15×10^{-5} *3*; α(N+..)=3.37×10^{-5} *5* α(N)=4.97×10^{-6} *7*; α(O)=7.27×10^{-7} *11*; α(P)=4.22×10^{-8} *6*; α(IPF)=2.80×10^{-5} *4*
1547.32	6^+	1230.11 *7*	100	317.139	4^+	E2	0.00201 *3*	α=0.00201 *3*; α(K)=0.001692 *24*; α(L)=0.000242 *4*; α(M)=5.30×10^{-5} *8*; α(N+..)=2.30×10^{-5} *4* α(N)=1.223×10^{-5} *18*; α(O)=1.774×10^{-6} *25*; α(P)=9.78×10^{-8} *14*; α(IPF)=8.85×10^{-6} *13*
1607.99	$(2)^+$	1509.04 *9*	100 *11*	98.9180	2^+	[M1,E2]	0.0018 *4*	α=0.0018 *4*; α(K)=0.0014 *3*; α(L)=0.00020 *4*; α(M)=4.3×10^{-5} *8*; α(N+..)=9.4×10^{-5} *9* α(N)=9.9×10^{-6} *19*; α(O)=1.4×10^{-6} *3*; α(P)=8.4×10^{-8} *18*; α(IPF)=8.3×10^{-5} *7*
		1608.3 *3*	26 *8*	0.0	0^+	[E2]	0.001306 *19*	α=0.001306 *19*; α(K)=0.001015 *15*; α(L)=0.0001402 *20*; α(M)=3.06×10^{-5} *5*; α(N+..)=0.000120 α(N)=7.06×10^{-6} *10*; α(O)=1.031×10^{-6} *15*; α(P)=5.87×10^{-8} *9*; α(IPF)=0.0001121 *16* B(E2)(W.u.)<1.2
1618.54	$3^-,4^-,5^-$	1301.3 *2*	100	317.139	4^+	E1	0.000846 *12*	α=0.000846 *12*; α(K)=0.000664 *10*; α(L)=8.72×10^{-5} *13*; α(M)=1.89×10^{-5} *3*; α(N+..)=7.55×10^{-5} *11* α(N)=4.36×10^{-6} *7*; α(O)=6.39×10^{-7} *9*; α(P)=3.72×10^{-8} *6*; α(IPF)=7.05×10^{-5} *10*
1634.54		1317.4 *2*	100	317.139	4^+			
1671.64	$2^+,3,4^+$	508.2 *2*	100 *33*	1163.75	4^+			
		1572.40 *20*	87 *20*	98.9180	2^+			
1675.84	7^+	1038.12 *19*	100	637.712	6^+			
1710.31	$(^+)$	624.4 *3*	100	1085.55	2^+	(E2)	0.00869 *13*	α=0.00869 *13*; α(K)=0.00713 *10*; α(L)=0.001219 *18*; α(M)=0.000272 *4*; α(N+..)=7.16×10^{-5} *10* α(N)=6.24×10^{-5} *9*; α(O)=8.76×10^{-6} *13*; α(P)=4.05×10^{-7} *6*
		1611.53 *19*	71 *13*	98.9180	2^+			
1762.5	(6^-)	447.7		1314.78	5^+	D		Mult.: From DCO ratio in (^{12}C,4nγ) (2003Ha45).
		1124.6		637.712	6^+			
1818.83		538.8 *1*	64 *9*	1280.01	4^+			
		1501.5 *4*	100 *16*	317.139	4^+			
1840.15	$2^+,3,4^+$	560.1 *2*	31 *13*	1280.01	4^+			
		893.8 *2*	78 *16*	946.32	2^+			
		1523.4 *5*	100 *40*	317.139	4^+			
1851.96	2^+	766.40 *7*	60 *11*	1085.55	2^+			
		807.13 *9*	100 *20*	1044.594	3^+			
		1753.47 *12*	58 *15*	98.9180	2^+	M1	0.001615 *23*	α=0.001615 *23*; α(K)=0.001203 *17*; α(L)=0.0001634 *23*; α(M)=3.56×10^{-5} *5*; α(N+..)=0.000213 α(N)=8.23×10^{-6} *12*; α(O)=1.214×10^{-6} *17*; α(P)=7.19×10^{-8} *10*; α(IPF)=0.000203 *3*

$^{158}_{66}$Dy$_{92}$-9

$\gamma(^{158}Dy)$ (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
1851.96	2^+	1851.94 *19*	49 *7*	0.0	0^+			
1892.8	(8^+)	846.9 *10*		1043.88	8^+			
		1257		637.712	6^+			
1895.16	4^+	580.23 *13*	1.7 *3*	1314.78	5^+	[M1,E2]	0.015 *5*	α(K)=0.013 *5*; α(L)=0.0020 *5*; α(M)=0.00043 *10*; α(N+..)=0.00011 *3* α(N)=0.000100 *24*; α(O)=1.4×10^{-5} *4*; α(P)=8.E−7 *3*
		615.9 *7*	1.0 *3*	1280.01	4^+	[M1,E2]	0.013 *5*	α(K)=0.011 *4*; α(L)=0.0017 *5*; α(M)=0.00037 *9*; α(N+..)=9.8×10^{-5} *24* α(N)=8.5×10^{-5} *21*; α(O)=1.2×10^{-5} *4*; α(P)=6.6×10^{-7} *25*
		731.42 *5*	16.8 *4*	1163.75	4^+	E2	0.00600 *9*	α=0.00600 *9*; α(K)=0.00497 *7*; α(L)=0.000804 *12*; α(M)=0.0001784 *25*; α(N+..)=4.71×10^{-5} *7* α(N)=4.10×10^{-5} *6*; α(O)=5.81×10^{-6} *9*; α(P)=2.85×10^{-7} *4* B(E2)(W.u.)>0.039
		850.50 *4*	61.7 *17*	1044.594	3^+	E2	0.00429 *6*	α=0.00429 *6*; α(K)=0.00358 *5*; α(L)=0.000554 *8*; α(M)=0.0001224 *18*; α(N+..)=3.24×10^{-5} *5* α(N)=2.82×10^{-5} *4*; α(O)=4.03×10^{-6} *6*; α(P)=2.06×10^{-7} *3* B(E2)(W.u.)>0.068
		948.78 *5*	100 *3*	946.32	2^+	E2	0.00340 *5*	α=0.00340 *5*; α(K)=0.00285 *4*; α(L)=0.000429 *6*; α(M)=9.44×10^{-5} *14*; α(N+..)=2.50×10^{-5} *4* α(N)=2.17×10^{-5} *3*; α(O)=3.12×10^{-6} *5*; α(P)=1.643×10^{-7} *23* B(E2)(W.u.)>0.063
		1578.10 *5*	24.2 *14*	317.139	4^+	E2	0.001338 *19*	α=0.001338 *19*; α(K)=0.001052 *15*; α(L)=0.0001455 *21*; α(M)=3.17×10^{-5} *5*; α(N+..)=0.000109 α(N)=7.33×10^{-6} *11*; α(O)=1.070×10^{-6} *15*; α(P)=6.08×10^{-8} *9*; α(IPF)=0.0001006 *14* B(E2)(W.u.)>0.0012
		1796.2 *2*	2.4 *3*	98.9180	2^+	[E2]	0.001163 *17*	α=0.001163 *17*; α(K)=0.000827 *12*; α(L)=0.0001129 *16*; α(M)=2.46×10^{-5} *4*; α(N+..)=0.000198 α(N)=5.68×10^{-6} *8*; α(O)=8.31×10^{-7} *12*; α(P)=4.78×10^{-8} *7*; α(IPF)=0.000191 *3* B(E2)(W.u.)>6.3×10^{-5}
1920.43	$3^+,4^+,5^+$	301.8@ *2*	23@ *9*	1618.54	$3^-,4^-,5^-$			
		1603.81 *20*	100 *16*	317.139	4^+	M1	0.00187 *3*	α=0.00187 *3*; α(K)=0.001478 *21*; α(L)=0.000201 *3*; α(M)=4.39×10^{-5} *7*; α(N+..)=0.0001416 *20* α(N)=1.015×10^{-5} *15*; α(O)=1.496×10^{-6} *21*; α(P)=8.85×10^{-8} *13*; α(IPF)=0.0001298 *19*
1940.75	3^+	543.87 *19*	1.8 *6*	1397.17	3^-			
		660.75 *7*	6.1 *10*	1280.01	4^+	E2	0.00759 *11*	α=0.00759 *11*; α(K)=0.00625 *9*; α(L)=0.001047 *15*; α(M)=0.000233 *4*; α(N+..)=6.14×10^{-5} *9* α(N)=5.35×10^{-5} *8*; α(O)=7.54×10^{-6} *11*; α(P)=3.57×10^{-7} *5*
		776.91 *8*	11.2 *14*	1163.75	4^+	M1	0.00983 *14*	α=0.00983 *14*; α(K)=0.00834 *12*; α(L)=0.001164 *17*;

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Adopted Levels, Gammas (continued)

γ(^{158}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$‡	I$_\gamma$‡	E$_f$	J$^\pi_f$	Mult.#	α†	Comments
								α(M)=0.000254 *4*; α(N+..)=6.80×10^{-5} *10* α(N)=5.88×10^{-5} *9*; α(O)=8.65×10^{-6} *13*; α(P)=5.06×10^{-7} *7*
1940.75	3$^+$	896.08 *6*	31.3 *12*	1044.594	3$^+$	E2	0.00383 *6*	α=0.00383 *6*; α(K)=0.00321 *5*; α(L)=0.000490 *7*; α(M)=0.0001080 *16*; α(N+..)=2.86×10^{-5} *4* α(N)=2.49×10^{-5} *4*; α(O)=3.56×10^{-6} *5*; α(P)=1.85×10^{-7} *3*
		994.47 *6*	100 *3*	946.32	2$^+$	E2	0.00308 *5*	α=0.00308 *5*; α(K)=0.00259 *4*; α(L)=0.000385 *6*; α(M)=8.47×10^{-5} *12*; α(N+..)=2.25×10^{-5} *4* α(N)=1.95×10^{-5} *3*; α(O)=2.81×10^{-6} *4*; α(P)=1.492×10^{-7} *21*
		1623.78 *8*	72 *3*	317.139	4$^+$	E2	0.001291 *18*	α=0.001291 *18*; α(K)=0.000997 *14*; α(L)=0.0001376 *20*; α(M)=3.00×10^{-5} *5*; α(N+..)=0.000126 α(N)=6.93×10^{-6} *10*; α(O)=1.012×10^{-6} *15*; α(P)=5.76×10^{-8} *8*; α(IPF)=0.0001181 *17*
		1841.95 *19*	5.2 *12*	98.9180	2$^+$			
1975.75	1$^+$,2$^+$	533.9 *6*	8 *3*	1441.75	1$^-$			
		1876.67 *17*	100 *5*	98.9180	2$^+$	M1	0.001476 *21*	α=0.001476 *21*; α(K)=0.001029 *15*; α(L)=0.0001396 *20*; α(M)=3.04×10^{-5} *5*; α(N+..)=0.000277 α(N)=7.03×10^{-6} *10*; α(O)=1.037×10^{-6} *15*; α(P)=6.14×10^{-8} *9*; α(IPF)=0.000268 *4*
		1976.01 *17*	14 *4*	0.0	0$^+$			
2021.93	5$^+$	707.03 *16*	24 *4*	1314.78	5$^+$	M1+E2	0.009 *3*	α=0.009 *3*; α(K)=0.008 *3*; α(L)=0.0012 *3*; α(M)=0.00026 *7*; α(N+..)=6.9×10^{-5} *18* α(N)=6.0×10^{-5} *15*; α(O)=8.6×10^{-6} *24*; α(P)=4.7×10^{-7} *17*
		858.20 *7*	82 *4*	1163.75	4$^+$	E2	0.00421 *6*	α=0.00421 *6*; α(K)=0.00351 *5*; α(L)=0.000542 *8*; α(M)=0.0001197 *17*; α(N+..)=3.17×10^{-5} *5* α(N)=2.76×10^{-5} *4*; α(O)=3.94×10^{-6} *6*; α(P)=2.02×10^{-7} *3*
		977.34 *7*	100 *5*	1044.594	3$^+$	E2	0.00319 *5*	α=0.00319 *5*; α(K)=0.00268 *4*; α(L)=0.000401 *6*; α(M)=8.82×10^{-5} *13*; α(N+..)=2.34×10^{-5} *4* α(N)=2.03×10^{-5} *3*; α(O)=2.92×10^{-6} *4*; α(P)=1.546×10^{-7} *22*
2048.8	12$^+$	528.7 *6*	100	1520.0	10$^+$	E2	0.01312	B(E2)(W.u.)=3.1×10^{2} *6* α(K)=0.01062 *16*; α(L)=0.00195 *3*; α(M)=0.000438 *7*; α(N+..)=0.0001147 *17* α(N)=0.0001003 *15*; α(O)=1.389×10^{-5} *20*; α(P)=5.97×10^{-7} *9* E$_\gamma$: Values are discrepant; 528.1 *3* from (p,2nγ) reaction and 529.3 *3* from (HI,xnγ).
2055.43	4$^+$	740.54 *7*	61 *8*	1314.78	5$^+$	M1+E2	0.008 *3*	α=0.008 *3*; α(K)=0.0071 *23*; α(L)=0.0010 *3*; α(M)=0.00023 *6*; α(N+..)=6.1×10^{-5} *16* α(N)=5.3×10^{-5} *14*; α(O)=7.7×10^{-6} *21*; α(P)=4.2×10^{-7} *15*
		775.6 *2*	40 *8*	1280.01	4$^+$			
		891.65@ *15*	183@ *10*	1163.75	4$^+$	M1+E2	0.0054 *16*	α=0.0054 *16*; α(K)=0.0046 *14*; α(L)=0.00066 *17*; α(M)=0.00014 *4*; α(N+..)=3.9×10^{-5} *10* α(N)=3.3×10^{-5} *9*; α(O)=4.9×10^{-6} *13*; α(P)=2.7×10^{-7} *9*
		1010.76 *11*	92 *9*	1044.594	3$^+$			

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$\gamma(^{158}Dy)$ (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
2055.43	4^+	1109.18 *7*	49 *8*	946.32	2^+			
		1417.72 *7*	60 *7*	637.712	6^+			
		1738.50 *20*	100 *13*	317.139	4^+	M1	0.001635 *23*	α=0.001635 *23*; α(K)=0.001227 *18*; α(L)=0.0001667 *24*; α(M)=3.63×10^{-5} *5*; α(N+..)=0.000205 α(N)=8.40×10^{-6} *12*; α(O)=1.238×10^{-6} *18*; α(P)=7.33×10^{-8} *11*; α(IPF)=0.000196 *3*
		1956.57 *19*	74 *8*	98.9180	2^+			Mult.: Assignment is M1, but that is inconsistent with J^π's.
2096.6	(8^-)	333.8		1762.5	(6^-)			
		1052.8		1043.88	8^+			
2107.68	4^+	792.35 *9*	1.2 *5*	1314.78	5^+	E2	0.00501 *7*	α=0.00501 *7*; α(K)=0.00417 *6*; α(L)=0.000658 *10*; α(M)=0.0001456 *21*; α(N+..)=3.85×10^{-5} *6* α(N)=3.35×10^{-5} *5*; α(O)=4.77×10^{-6} *7*; α(P)=2.40×10^{-7} *4*
		944.2 *1*	9.4 *13*	1163.75	4^+			
		1063.06 *9*	10.7 *7*	1044.594	3^+			
		1161.39 *14*	13.3 *6*	946.32	2^+	E2	0.00225 *4*	α=0.00225 *4*; α(K)=0.00189 *3*; α(L)=0.000274 *4*; α(M)=6.00×10^{-5} *9*; α(N+..)=1.81×10^{-5} *3* α(N)=1.383×10^{-5} *20*; α(O)=2.00×10^{-6} *3*; α(P)=1.094×10^{-7} *16*; α(IPF)=2.17×10^{-6} *4*
		1790.62 *5*	100 *4*	317.139	4^+	M1	0.001568 *22*	α=0.001568 *22*; α(K)=0.001146 *16*; α(L)=0.0001556 *22*; α(M)=3.39×10^{-5} *5*; α(N+..)=0.000232 α(N)=7.84×10^{-6} *11*; α(O)=1.156×10^{-6} *17*; α(P)=6.85×10^{-8} *10*; α(IPF)=0.000223 *4* Mult.: δ(E2/M1) < 0.16 (1993Al09).
		2008.91 *18*	7.5 *6*	98.9180	2^+			Mult.: Assigned M1, but $J^\pi=4^+$ assignment of 1993Al09 requires E2.
2153.62	6^+	838.47 *24*	100 *7*	1314.78	5^+	E2	0.00443 *7*	α=0.00443 *7*; α(K)=0.00369 *6*; α(L)=0.000573 *8*; α(M)=0.0001267 *18*; α(N+..)=3.35×10^{-5} *5* α(N)=2.91×10^{-5} *4*; α(O)=4.16×10^{-6} *6*; α(P)=2.12×10^{-7} *3*
		989.94 *11*	85 *5*	1163.75	4^+			
2208.7		187.0	100	2021.93	5^+			
		731.5	59	1476.9				
2211.10	(5^+)	1047.34 *7*	100 *6*	1163.75	4^+			
		1894.00 *20*	24 *5*	317.139	4^+			
2231.5	(8^-)	469		1762.5	(6^-)			
		1187.6		1043.88	8^+			
2361.7	(8^-)	152.8		2208.7				
		265.0		2096.6	(8^-)			
		599.3		1762.5	(6^-)			
2382.46	4^+	442.10 *14*	5.9 *19*	1940.75	3^+			
		462.08 *7*	23.8 *25*	1920.43	$3^+,4^+,5^+$	E2	0.0187	α(K)=0.01490 *21*; α(L)=0.00292 *4*; α(M)=0.000661 *10*; α(N+..)=0.0001725 *25* α(N)=0.0001510 *22*; α(O)=2.07×10^{-5} *3*; α(P)=8.27×10^{-7} *12*
		487.11 *17*	5.0 *19*	1895.16	4^+	M1	0.0318	α(K)=0.0269 *4*; α(L)=0.00381 *6*; α(M)=0.000834 *12*;

From ENSDF

γ(^{158}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$[‡]	I$_\gamma$[‡]	E$_f$	J$^\pi_f$	Mult.[#]	α[†]	Comments
								α(N+..)=0.000223 4 α(N)=0.000193 3; α(O)=2.83$\times10^{-5}$ 4; α(P)=1.644$\times10^{-6}$ 23
2382.46	4$^+$	854.4 2	15.5 28	1528.07	5$^-$			
		1337.75 8	23.8 25	1044.594	3$^+$	E2	0.001725 25	α=0.001725 25; α(K)=0.001438 21; α(L)=0.000203 3; α(M)=4.44$\times10^{-5}$ 7; α(N+..)=3.89$\times10^{-5}$ 6 α(N)=1.025$\times10^{-5}$ 15; α(O)=1.491$\times10^{-6}$ 21; α(P)=8.31$\times10^{-8}$ 12; α(IPF)=2.71$\times10^{-5}$ 4
		1436.06 10	18.0 25	946.32	2$^+$			
		2065.37 19	100 6	317.139	4$^+$	M1+E2	0.00121 14	α=0.00121 14; α(K)=0.00073 10; α(L)=9.9$\times10^{-5}$ 13; α(M)=2.2$\times10^{-5}$ 3; α(N+..)=0.00035 3 α(N)=5.0$\times10^{-6}$ 7; α(O)=7.3$\times10^{-7}$ 10; α(P)=4.3$\times10^{-8}$ 7; α(IPF)=0.00034 3
		2282.6 5	2.5 19	98.9180	2$^+$			
2388.82	(6$^+$)	570.0 1	28 13	1818.83				
		1751.1 5	54 30	637.712	6$^+$			
		2071.6 3	100 17	317.139	4$^+$			
2409.57	2$^-$,3$^-$,4$^-$	301.8[@] 2	11[@] 4	2107.68	4$^+$			
		514.4[@] 1	94[@] 3	1895.16	4$^+$			
		1012.6[@] 4	36[@] 3	1397.17	3$^-$			
		1245.94[@] 13	27[@] 7	1163.75	4$^+$			
		1364.87 12	100 9	1044.594	3$^+$	E1	0.000821 12	α=0.000821 12; α(K)=0.000611 9; α(L)=8.01$\times10^{-5}$ 12; α(M)=1.736$\times10^{-5}$ 25; α(N+..)=0.0001125 α(N)=4.01$\times10^{-6}$ 6; α(O)=5.87$\times10^{-7}$ 9; α(P)=3.43$\times10^{-8}$ 5; α(IPF)=0.0001078 16
		2092.4[@] 3	116[@] 15	317.139	4$^+$			
		2310.73[@] 24	84[@] 7	98.9180	2$^+$			
2409.70	4$^+$	514.4[@] 1	33.6[@] 9	1895.16	4$^+$			
		1012.6[@] 4	12.8[@] 12	1397.17	3$^-$			
		1094.99 11	15.2 3	1314.78	5$^+$	E2	0.00253 4	α=0.00253 4; α(K)=0.00213 3; α(L)=0.000311 5; α(M)=6.82$\times10^{-5}$ 10; α(N+..)=1.81$\times10^{-5}$ 3 α(N)=1.573$\times10^{-5}$ 22; α(O)=2.27$\times10^{-6}$ 4; α(P)=1.230$\times10^{-7}$ 18
		1245.94[@] 13	9.8[@] 24	1163.75	4$^+$			
		1463.39 4	100 3	946.32	2$^+$	(E2)	0.001489 21	α=0.001489 21; α(K)=0.001212 17; α(L)=0.0001692 24; α(M)=3.69$\times10^{-5}$ 6; α(N+..)=7.11$\times10^{-5}$ α(N)=8.53$\times10^{-6}$ 12; α(O)=1.243$\times10^{-6}$ 18; α(P)=7.00$\times10^{-8}$ 10; α(IPF)=6.13$\times10^{-5}$ 9
		1772.3 5	5.4 27	637.712	6$^+$			
		2092.4[@] 3	41[@] 5	317.139	4$^+$			
		2310.73[@] 24	30.1[@] 27	98.9180	2$^+$			
2436.52	3$^+$,4$^+$	917.7 3	9.4 26	1518.45	3$^-$,4$^-$			

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γ(^{158}Dy) (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
2436.52	$3^+,4^+$	1272.79@ *6*	112@ *5*	1163.75	4^+			
		1392.42@ *16*	15@ *4*	1043.88	8^+			Mult.: Assigned E2, but γ is a doublet.
		1489.8 *3*	8 *4*	946.32	2^+			
		2119.50 *16*	100 *6*	317.139	4^+	M1	0.001319 *19*	α=0.001319 *19*; α(K)=0.000780 *11*; α(L)=0.0001054 *15*; α(M)=2.29×10^{-5} *4*; α(N+..)=0.000410 α(N)=5.31×10^{-6} *8*; α(O)=7.83×10^{-7} *11*; α(P)=4.65×10^{-8} *7*; α(IPF)=0.000404 *6*
		2338.5 *4*	10 *3*	98.9180	2^+	(E2)	0.001045 *15*	α=0.001045 *15*; α(K)=0.000513 *8*; α(L)=6.86×10^{-5} *10*; α(M)=1.490×10^{-5} *21*; α(N+..)=0.000449 α(N)=3.44×10^{-6} *5*; α(O)=5.06×10^{-7} *7*; α(P)=2.96×10^{-8} *5*; α(IPF)=0.000445 *7*
2452.8	(11^-)	932.9		1520.0	10^+	D		Mult.: Pure D γ based on DCO in (^{12}C,4nγ) (2003Ha45; values not given).
2467.8	(9^-)	106.2		2361.7	(8^-)			
2476.7	(10^-)	245.1		2231.5	(8^-)			
		379.9		2096.6	(8^-)	Q		Mult.: Q,(E2) γ from DCO ratio in (^{12}C,4nγ) (2003Ha45).
		957.2		1520.0	10^+			
2512.1	(10^-)	415.5		2096.6	(8^-)			
2518.69	4^+	1238.3 *3*	3.4 *19*	1280.01	4^+			
		1432.6 *4*	10.1 *17*	1085.55	2^+			
		1880.77 *23*	14.5 *17*	637.712	6^+			
		2201.95 *19*	100 *5*	317.139	4^+	M1	0.001290 *18*	α=0.001290 *18*; α(K)=0.000716 *10*; α(L)=9.66×10^{-5} *14*; α(M)=2.10×10^{-5} *3*; α(N+..)=0.000456 *7* α(N)=4.86×10^{-6} *7*; α(O)=7.18×10^{-7} *10*; α(P)=4.26×10^{-8} *6*; α(IPF)=0.000450 *7*
2528.1	(8^+)	166.4	84	2361.7	(8^-)			
		1007		1520.0	10^+			
		1484.1	100	1043.88	8^+			
2538.55	$3^+,4^+$	1166.5 *2*	8.8 *15*	1371.73	$(1,2,3)^-$			
		1374.90 *24*	4.9 *18*	1163.75	4^+			
		1452.8 *5*	2.9 *18*	1085.55	2^+			
		1494.1 *4*	3.5 *22*	1044.594	3^+			
		1592.5 *8*	3.7 *15*	946.32	2^+			
		2221.65 *19*	100 *6*	317.139	4^+	M1	0.001284 *18*	α=0.001284 *18*; α(K)=0.000702 *10*; α(L)=9.47×10^{-5} *14*; α(M)=2.06×10^{-5} *3*; α(N+..)=0.000467 *7* α(N)=4.77×10^{-6} *7*; α(O)=7.03×10^{-7} *10*; α(P)=4.18×10^{-8} *6*; α(IPF)=0.000462 *7*
		2439.2 *5*	1.7 *13*	98.9180	2^+			
2600.7	(10^-)	132.9		2467.8	(9^-)			
		239		2361.7	(8^-)			
2605.95	1^-	630.23 *9*	20 *6*	1975.75	$1^+,2^+$	E1	0.00311 *5*	α=0.00311 *5*; α(K)=0.00265 *4*; α(L)=0.000360 *5*; α(M)=7.83×10^{-5} *11*; α(N+..)=2.08×10^{-5} *3* α(N)=1.80×10^{-5} *3*; α(O)=2.62×10^{-6} *4*; α(P)=1.462×10^{-7} *21*

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$\gamma(^{158}Dy)$ (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
2605.95	1^-	1234.09 *22*	9.3 *14*	1371.73	$(1,2,3)^-$	E2	0.00200 *3*	α=0.00200 *3*; α(K)=0.001681 *24*; α(L)=0.000240 *4*; α(M)=5.27×10^{-5} *8*; α(N+..)=2.34×10^{-5} *4* α(N)=1.214×10^{-5} *17*; α(O)=1.762×10^{-6} *25*; α(P)=9.72×10^{-8} *14*; α(IPF)=9.38×10^{-6} *14*
		2507.1 *4*	16.3 *20*	98.9180	2^+			
		2605.85 *23*	100 *4*	0.0	0^+	E1	0.001214 *17*	α=0.001214 *17*; α(K)=0.000215 *3*; α(L)=2.76×10^{-5} *4*; α(M)=5.97×10^{-6} *9*; α(N+..)=0.000966 *14* α(N)=1.379×10^{-6} *20*; α(O)=2.03×10^{-7} *3*; α(P)=1.205×10^{-8} *17*; α(IPF)=0.000964 *14*
2612.2	14^+	563.4 *3*	100	2048.8	12^+	E2	0.01118	B(E2)(W.u.)=2.7×10^2 *6* α(K)=0.00910 *13*; α(L)=0.001623 *23*; α(M)=0.000364 *6*; α(N+..)=9.54×10^{-5} *14* α(N)=8.33×10^{-5} *12*; α(O)=1.160×10^{-5} *17*; α(P)=5.14×10^{-7} *8*
2644.53	$(^+)$	1272.79@ *6*	78@ *4*	1371.73	$(1,2,3)^-$			
		1698.12 *13*	25 *5*	946.32	2^+			
		2545.90 *23*	100 *5*	98.9180	2^+	(E2)	0.001058 *15*	α=0.001058 *15*; α(K)=0.000441 *7*; α(L)=5.86×10^{-5} *9*; α(M)=1.273×10^{-5} *18*; α(N+..)=0.000546 *8* α(N)=2.94×10^{-6} *5*; α(O)=4.33×10^{-7} *6*; α(P)=2.54×10^{-8} *4*; α(IPF)=0.000543 *8*
2672.33	4^+	1124.55 *19*	73 *20*	1547.32	6^+			
		1392.42@ *16*	77@ *23*	1280.01	4^+			Mult.: Assigned E2, but γ is doublet.
		2034.85 *25*	100 *20*	637.712	6^+			
		2355.6 *4*	43 *18*	317.139	4^+			
		2573.6 *3*	45 *14*	98.9180	2^+			
2758.8	(11^-)	157.9		2600.7	(10^-)			
		291.0		2467.8	(9^-)			
2807.4	(12^-)	330.9		2476.7	(10^-)			
		758.5		2048.8	12^+			
2886.9	(13^-)	434.2		2452.8	(11^-)			
		837.8		2048.8	12^+	D		Mult.: Pure D γ based on DCO in (^{12}C,4nγ) (2003Ha45; values not given).
2940.4	(12^-)	181.4		2758.8	(11^-)			
		340.0		2600.7	(10^-)			
2985.2		473.1		2512.1	(10^-)			
2989.33	2^+	933.93 *9*	94 *22*	2055.43	4^+			Mult.: Assigned M1+E2, but J^π's require E2.
		1708.9 *3*	91 *25*	1280.01	4^+			
		1998.6 *5*	47 *22*	990.73	0^+			
		2672.3 *3*	100 *19*	317.139	4^+			
3144.4	(13^-)	203.9		2940.4	(12^-)			
		385.5		2758.8	(11^-)			
3190.3	16^+	578.1 *3*	100	2612.2	14^+	E2	0.01049	B(E2)(W.u.)=2.7×10^2 *4* α(K)=0.00855 *12*; α(L)=0.001509 *22*; α(M)=0.000338 *5*;

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$\gamma(^{158}Dy)$ (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
								α(N+..)=8.87×10^{-5} *13* α(N)=7.74×10^{-5} *11*; α(O)=1.080×10^{-5} *16*; α(P)=4.84×10^{-7} *7*
3217.4	(14$^-$)	410.2		2807.4	(12$^-$)			
		605		2612.2	14$^+$			
3237.2	(6$^+$)	708		2528.1	(8$^+$)			
		2194		1043.88	8$^+$			
		2600		637.712	6$^+$			
		2920		317.139	4$^+$			
3368.9	(14$^-$)	224.4		3144.4	(13$^-$)			
		428.6		2940.4	(12$^-$)			
3369.0	(15$^-$)	481.9		2886.9	(13$^-$)			
		756.8		2612.2	14$^+$	D		Mult.: Pure D γ based on DCO in (^{12}C,4nγ) (2003Ha45; values not given).
3530.61	4$^+$	1711.4 *3*	100 *23*	1818.83				
		2367.7 *8*	29 *20*	1163.75	4$^+$			
		2486.19 *24*	80 *17*	1044.594	3$^+$	M1	0.001250 *18*	α=0.001250 *18*; α(K)=0.000546 *8*; α(L)=7.34×10^{-5} *11*; α(M)=1.596×10^{-5} *23*; α(N+..)=0.000615 α(N)=3.69×10^{-6} *6*; α(O)=5.45×10^{-7} *8*; α(P)=3.24×10^{-8} *5*; α(IPF)=0.000611 *9*
		2892.6 *6*	17 *11*	637.712	6$^+$			
3547.77	(3$^-$)	1138.0 *3*	24 *7*	2409.70	4$^+$			E_γ: γ feeds the 2409.55 level and/or the 2409.60 level.
		1913.23 *21*	20 *8*	1634.54				
		2019.2 *4*	24 *8*	1528.07	5$^-$			
		2029.73 *22*	100 *10*	1518.45	3$^-$,4$^-$	M1+E2	0.00122 *15*	α=0.00122 *15*; α(K)=0.00076 *10*; α(L)=0.000103 *14*; α(M)=2.2×10^{-5} *3*; α(N+..)=0.00033 *3* α(N)=5.2×10^{-6} *7*; α(O)=7.6×10^{-7} *11*; α(P)=4.5×10^{-8} *7*; α(IPF)=0.00033 *3*
		2105.83 *19*	28 *7*	1441.75	1$^-$			
3582.33	2$^+$	1043.8 *8*	100 *15*	2538.55	3$^+$,4$^+$	M1	0.00479 *7*	α=0.00479 *7*; α(K)=0.00407 *6*; α(L)=0.000562 *8*; α(M)=0.0001226 *18*; α(N+..)=3.28×10^{-5} *5* α(N)=2.84×10^{-5} *4*; α(O)=4.18×10^{-6} *6*; α(P)=2.45×10^{-7} *4*
		1687.1 *4*	28 *15*	1895.16	4$^+$			
		2418.5 *3*	46 *15*	1163.75	4$^+$			
		3582.8 *7*	11 *4*	0.0	0$^+$			
3612.9	(15$^-$)	244.0		3368.9	(14$^-$)			
		468.6		3144.4	(13$^-$)			
3699.9	(16$^-$)	482.5	100	3217.4	(14$^-$)			
3781.3	18$^+$	591.0 *3*	100	3190.3	16$^+$	E2	0.00993 *14*	B(E2)(W.u.)=2.8×10^2 *4* α=0.00993 *14*; α(K)=0.00811 *12*; α(L)=0.001418 *20*; α(M)=0.000317 *5*; α(N+..)=8.33×10^{-5} *12* α(N)=7.27×10^{-5} *11*; α(O)=1.016×10^{-5} *15*; α(P)=4.60×10^{-7} *7*
3877.0	(16$^-$)	264.4		3612.9	(15$^-$)			
		507.9		3368.9	(14$^-$)			
3903.7	(17$^-$)	534.7		3369.0	(15$^-$)			
		713.4		3190.3	16$^+$	D		Mult.: Pure D γ based on DCO in (^{12}C,4nγ) (2003Ha45; values not given).

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γ(^{158}Dy) (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.#	α†	Comments
4157.6	(17⁻)	280.8		3877.0	(16⁻)			
		544.5		3612.9	(15⁻)			
4243.3	(18⁻)	543.4	100	3699.9	(16⁻)			
4407.1	20⁺	625.8 *3*	100	3781.3	18⁺	E2	0.00864 *13*	B(E2)(W.u.)=2.9×10^2 *6* α=0.00864 *13*; α(K)=0.00709 *10*; α(L)=0.001212 *17*; α(M)=0.000270 *4*; α(N+..)=7.11×10^{-5} *10* α(N)=6.20×10^{-5} *9*; α(O)=8.70×10^{-6} *13*; α(P)=4.03×10^{-7} *6*
4455.7	(18⁻)	298.1		4157.6	(17⁻)			
		578.8		3877.0	(16⁻)			
4490.9	(19⁻)	587.2		3903.7	(17⁻)			
4768.9	(19⁻)	313.3		4455.7	(18⁻)			
		611.3		4157.6	(17⁻)			
4839.1	(20⁻)	595.8		4243.3	(18⁻)			
5085.2	22⁺	678.1 *3*	100	4407.1	20⁺	(E2)	0.00715 *10*	α=0.00715 *10*; α(K)=0.00589 *9*; α(L)=0.000978 *14*; α(M)=0.000217 *3*; α(N+..)=5.73×10^{-5} *8* α(N)=4.99×10^{-5} *7*; α(O)=7.05×10^{-6} *10*; α(P)=3.37×10^{-7} *5* B(E2)(W.u.)=2.4×10^2 *7*
5097.6	(20⁻)	328.6		4768.9	(19⁻)			
		641.8		4455.7	(18⁻)			
5127.7	(21⁻)	636.8	100	4490.9	(19⁻)			
5439.3	(21⁻)	341.4		5097.6	(20⁻)			
		670.5		4768.9	(19⁻)			
5483.7	(22⁻)	644.6	100	4839.1	(20⁻)			
5794.2	(22⁻)	354.9		5439.3	(21⁻)			
		696.7		5097.6	(20⁻)			
5811.3	(23⁻)	683.6	100	5127.7	(21⁻)			
5819.9	(24⁺)	734.7	100	5085.2	22⁺	[E2]	0.00594 *9*	α=0.00594 *9*; α(K)=0.00492 *7*; α(L)=0.000795 *12*; α(M)=0.0001763 *25*; α(N+..)=4.66×10^{-5} *7* α(N)=4.05×10^{-5} *6*; α(O)=5.75×10^{-6} *8*; α(P)=2.82×10^{-7} *4* B(E2)(W.u.)=1.9×10^2 *7*
6160.9	(23⁻)	721.6		5439.3	(21⁻)			
6178.4	(24⁻)	694.7	100	5483.7	(22⁻)			
6519.2	(24⁻)	725.0		5794.2	(22⁻)			
6542.8	(25⁻)	731.5	100	5811.3	(23⁻)			
6612.5	(26⁺)	792.6	100	5819.9	(24⁺)	[E2]	0.00501 *7*	B(E2)(W.u.)=2.1×10^2 *13* α=0.00501 *7*; α(K)=0.00417 *6*; α(L)=0.000657 *10*; α(M)=0.0001455 *21*; α(N+..)=3.85×10^{-5} *6* α(N)=3.35×10^{-5} *5*; α(O)=4.77×10^{-6} *7*; α(P)=2.39×10^{-7} *4*
6924	(26⁻)	745.7	100	6178.4	(24⁻)			
7322.8	(27⁻)	780		6542.8	(25⁻)			
7456.2	(28⁺)	843.7	100	6612.5	(26⁺)			
7720	(28⁻)	796.1		6924	(26⁻)			

$^{158}_{66}$Dy$_{92}$-17

$\gamma(^{158}Dy)$ (continued)

E_i(level)	J_i^π	E_γ‡	E_f	J_f^π	Comments
8150	(29^-)	827	7322.8	(27^-)	
8354.2	(30^+)	898	7456.2	(28^+)	
8565	(30^-)	845	7720	(28^-)	E_γ: From 2005Pi21 in ($^{36}S,\alpha4n\gamma$); a different 838γ was assigned at the (30^-) level of this band by 2003Ha45 in ($^{12}C,4n\gamma$).
9023	(31^-)	873	8150	(29^-)	
9299.2	(32^+)	945	8354.2	(30^+)	
9458	(32^-)	893	8565	(30^-)	
9944	(33^-)	921	9023	(31^-)	
10294	(34^+)	995	9299.2	(32^+)	
10398	(34^-)	940	9458	(32^-)	
10913	(35^-)	969	9944	(33^-)	
11331	(36^+)	1037	10294	(34^+)	
11391	(36^-)	993	10398	(34^-)	
11933	(37^-)	1020	10913	(35^-)	
12416	(38^+)	1085	11331	(36^+)	
12435	(38^-)	1044	11391	(36^-)	
13004	(39^-)	1071	11933	(37^-)	
13534	(40^-)	1099	12435	(38^-)	
13544	(40^+)	1128	12416	(38^+)	
14135	(41^-)	1131	13004	(39^-)	
14718	(42^+)	1174	13544	(40^+)	
15330?	(43^-)	1196&	14135	(41^-)	
15940?	(44^+)	1222&	14718	(42^+)	

† Additional information 4.

‡ From the respective dataset for γ's observed uniquely in a single dataset. Most data are from ^{158}Ho ε decay (11.3 min+28 min) for the decays, and from ^{150}Nd($^{12}C,4n\gamma$) and (HI,xnγ) for the high spin levels. Less precise E_γ values (with no decimal) are from ^{130}Te($^{36}S,\alpha4n\gamma$).

From α_K(exp) for many γ's from ^{158}Ho ε decay (11 m+27 m) (1978An11,1975Ru02,1974Al30,1968Ab14); others: ^{158}Tb β- decay for α_L(exp)(98) (1965sc11), in-beam studies for K/L for 218 and 320 γ's (1963Ha39,1966Gr04), and in-beam $\gamma(\theta)$ for 11 γ's (1972Jo02,1972Th02).

@ Multiply placed with undivided intensity.

& Placement of transition in the level scheme is uncertain.

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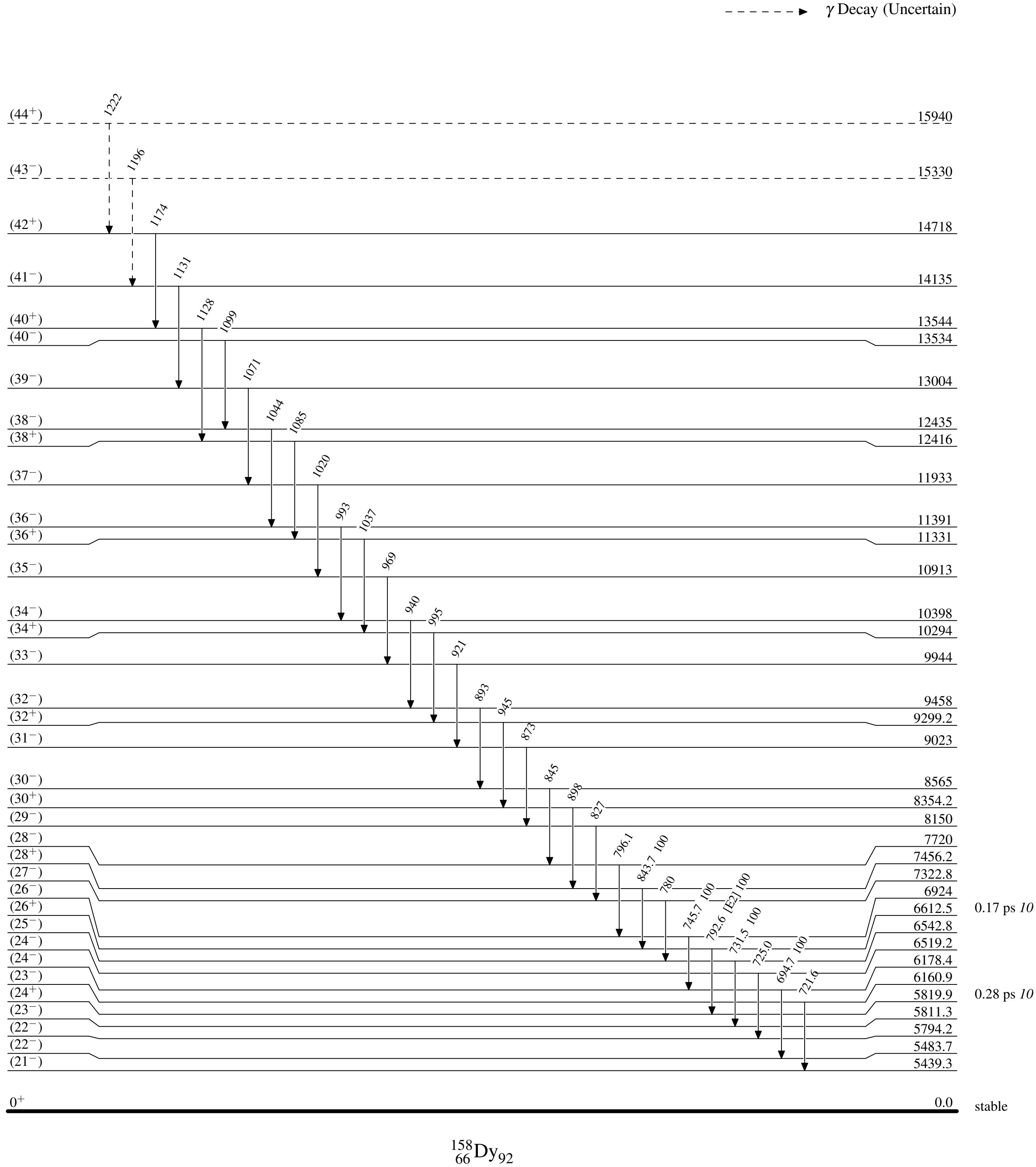
Adopted Levels, Gammas

Level Scheme

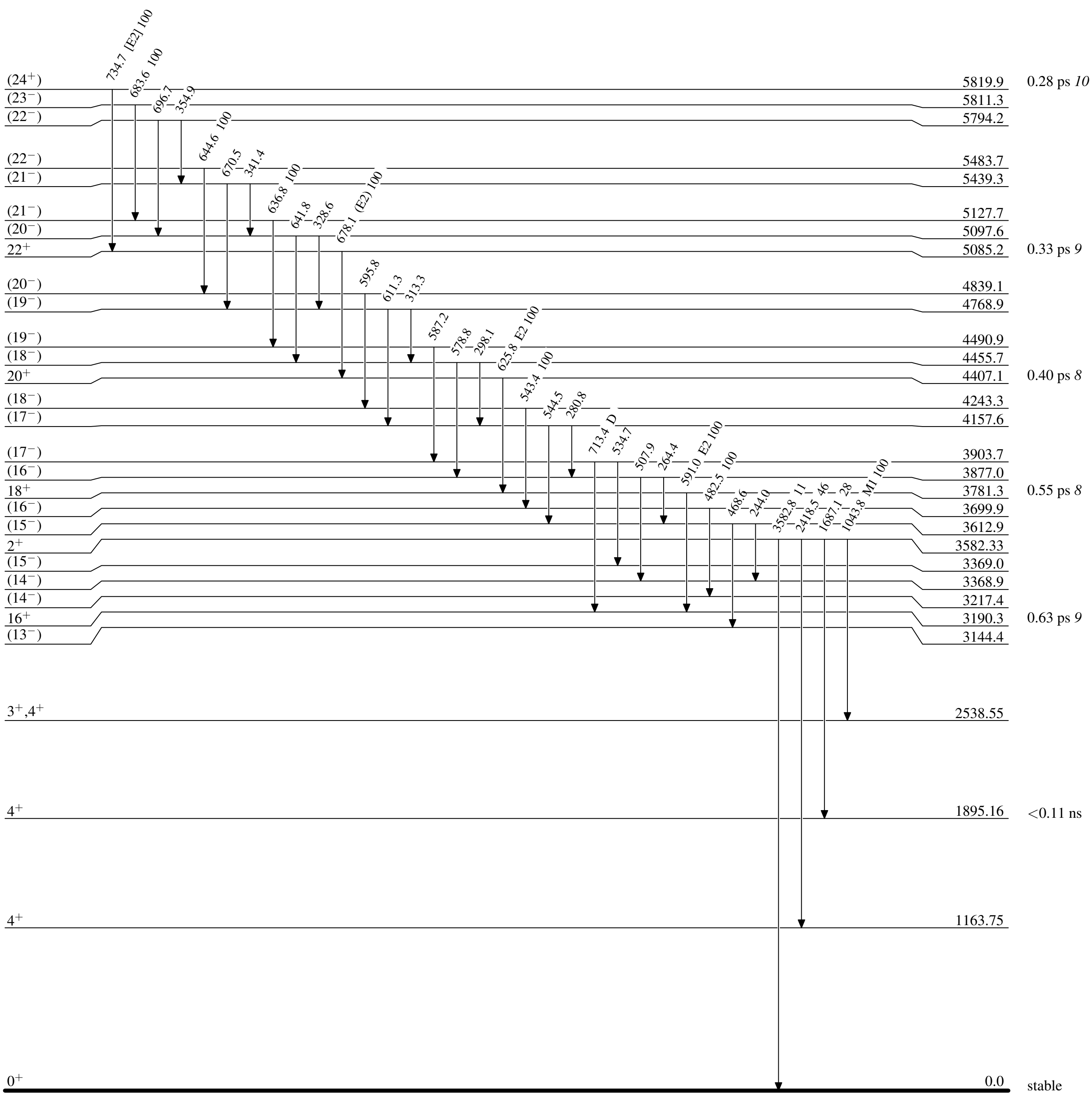
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

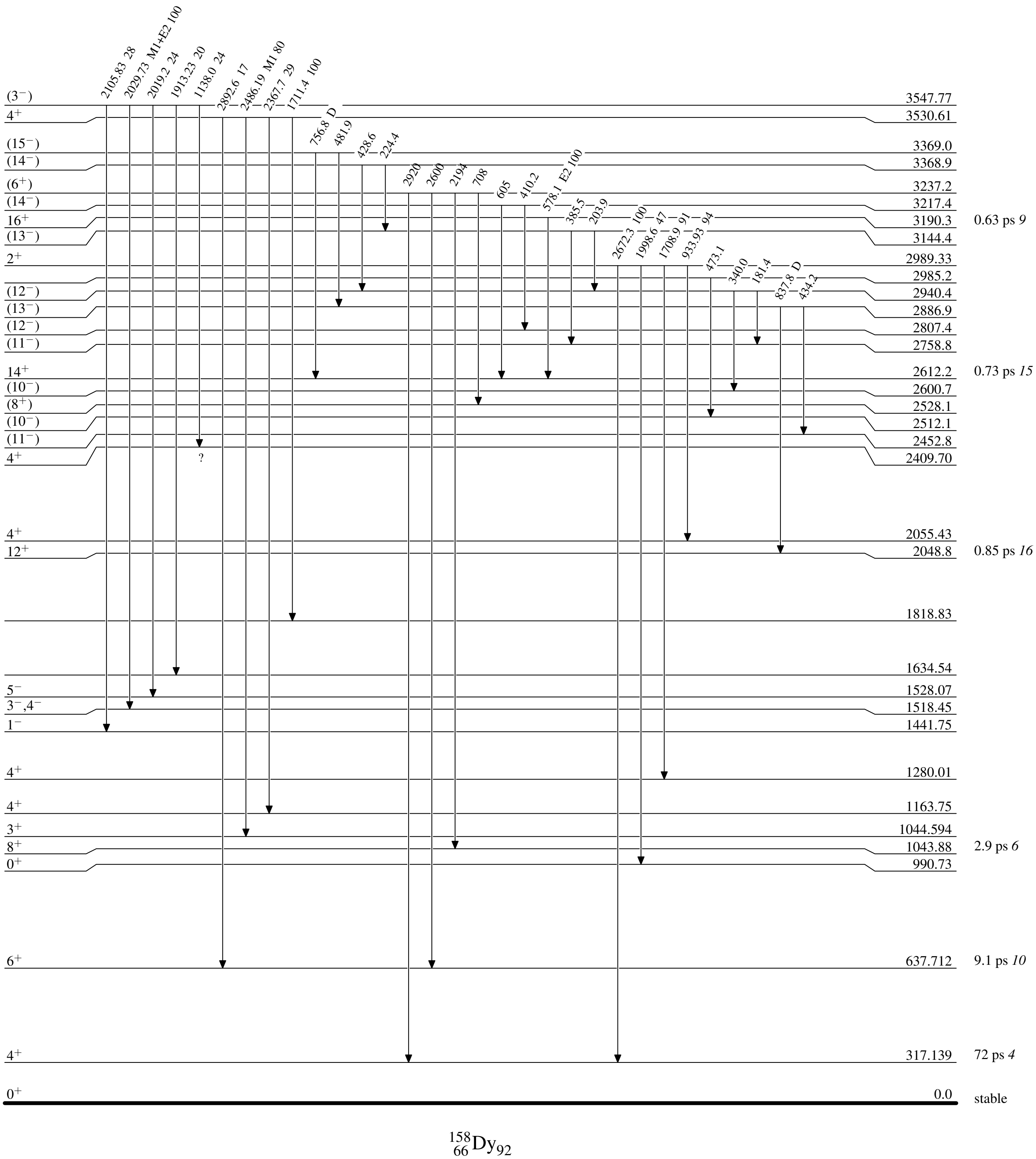


$^{158}_{66}Dy_{92}$

Adopted Levels, Gammas

Level Scheme (continued)

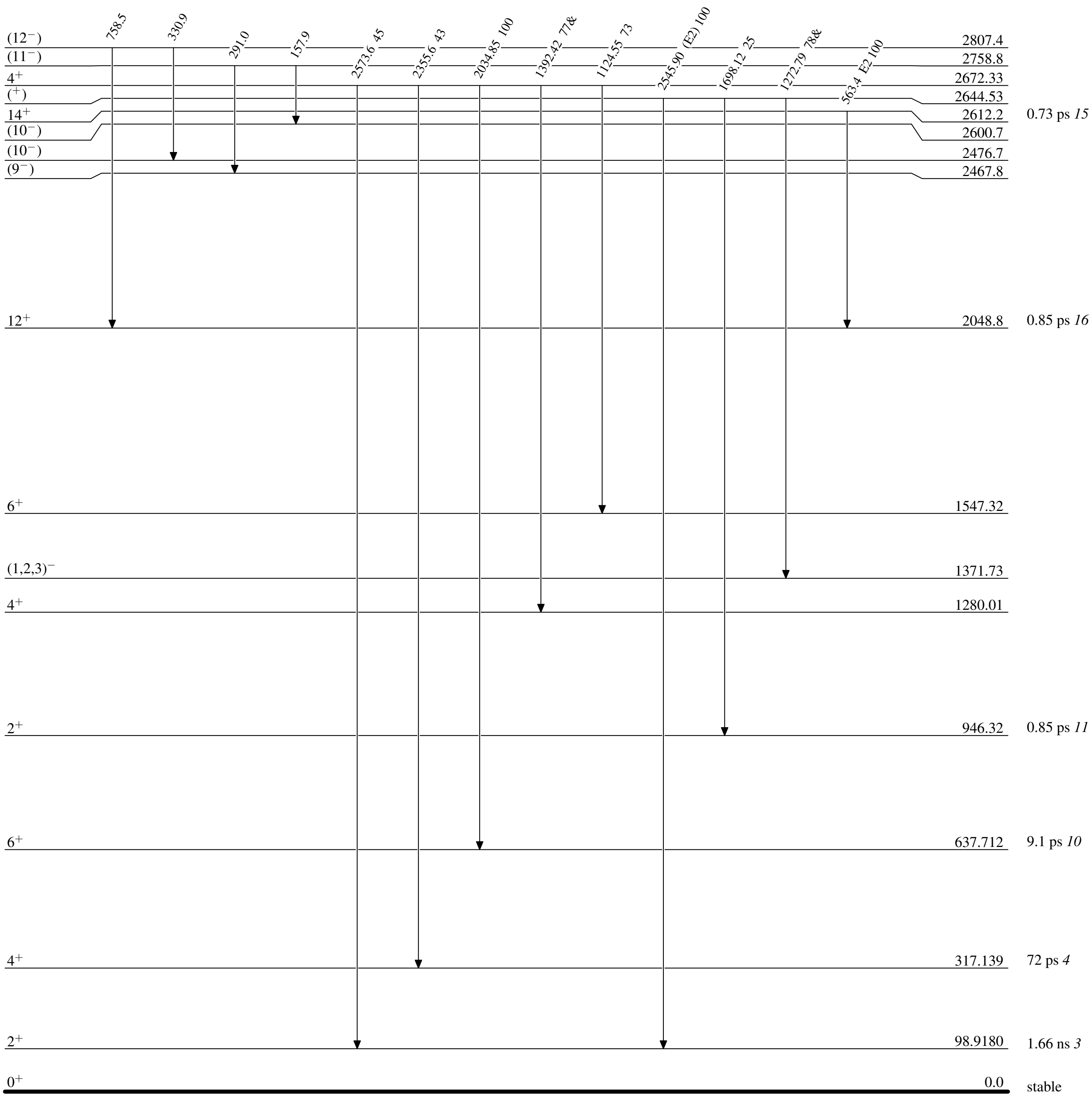
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

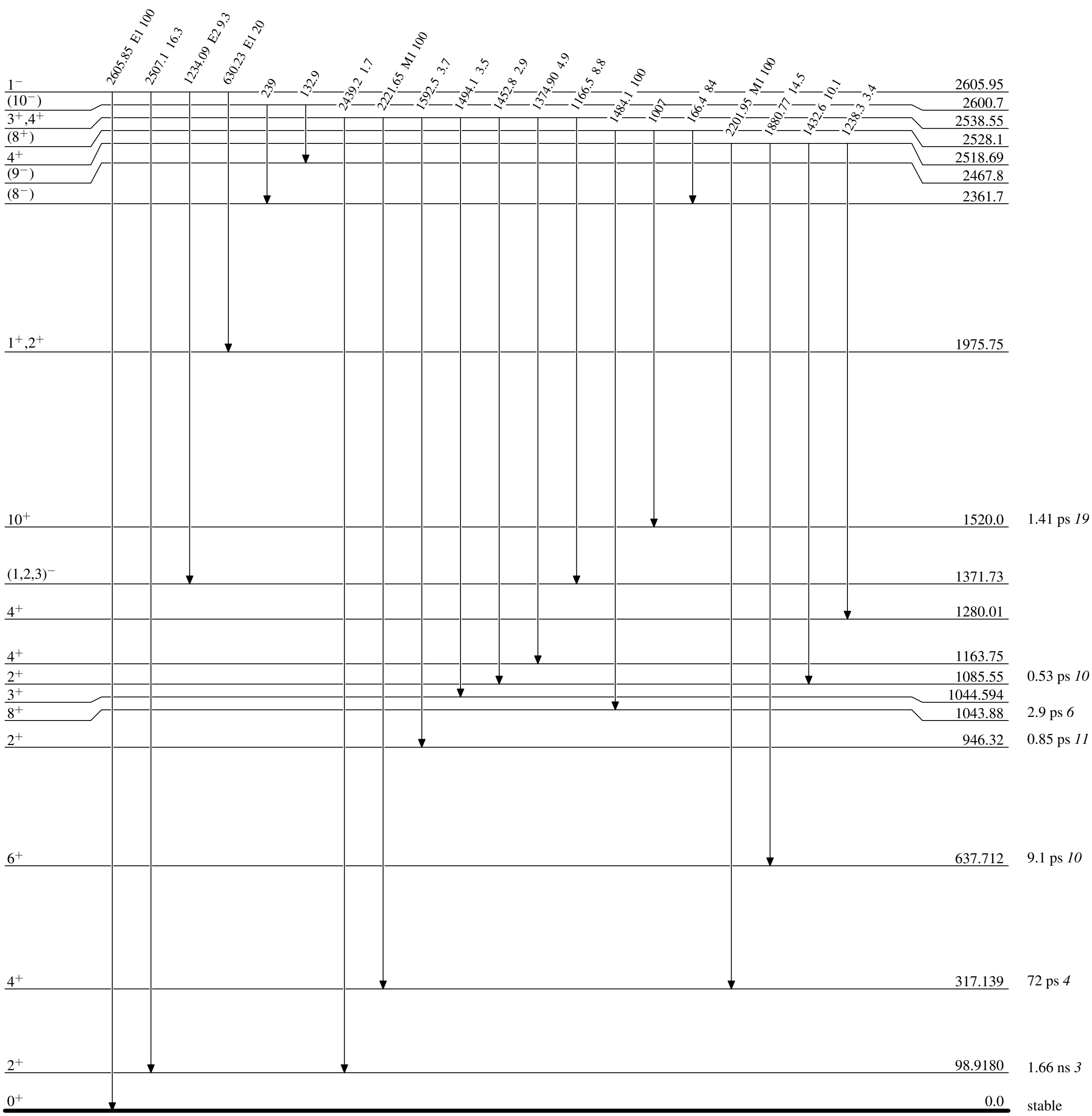


$^{158}_{66}Dy_{92}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

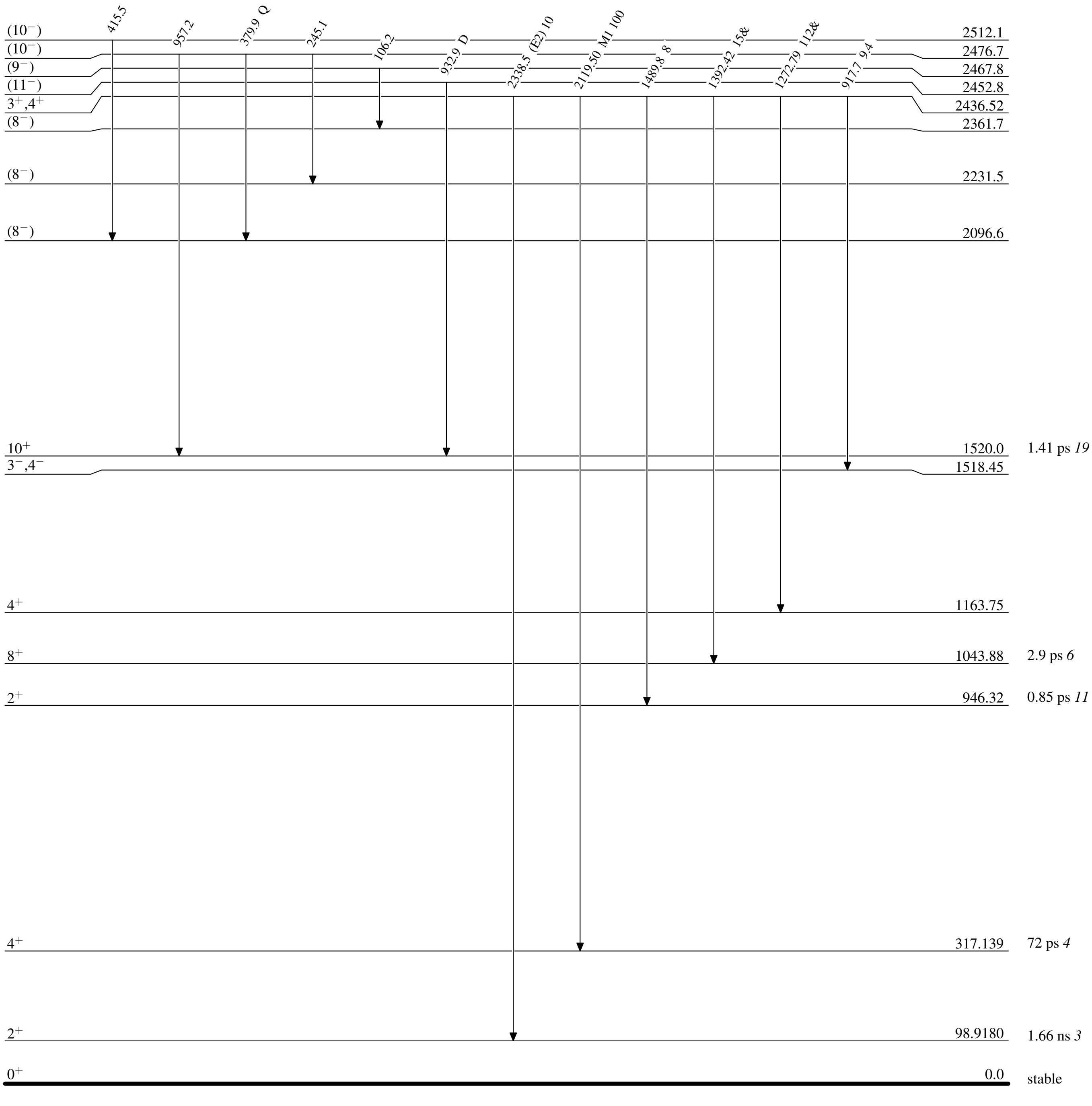


$^{158}_{66}Dy_{92}$

Adopted Levels, Gammas

Level Scheme (continued)

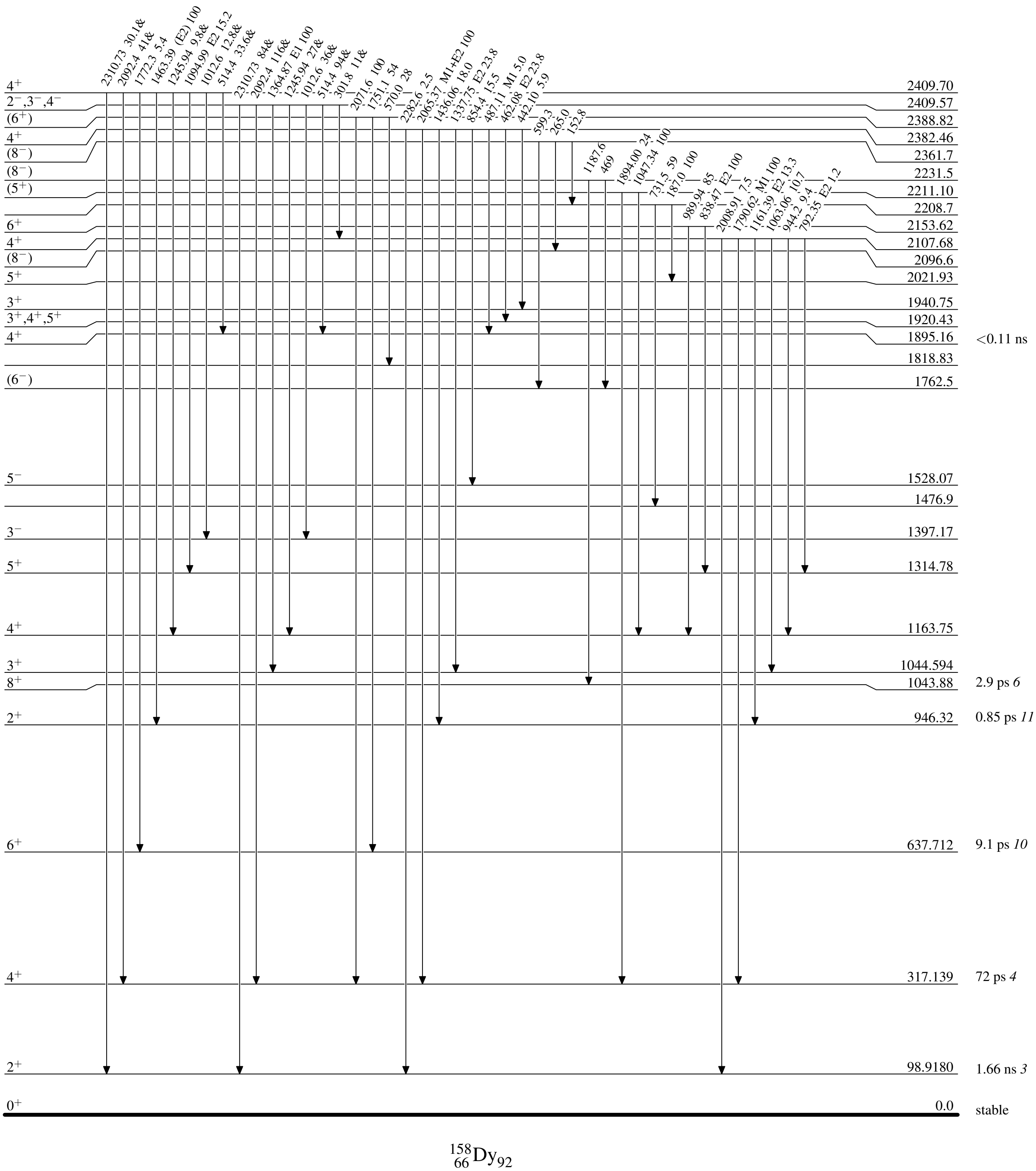
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, Gammas

Level Scheme (continued)

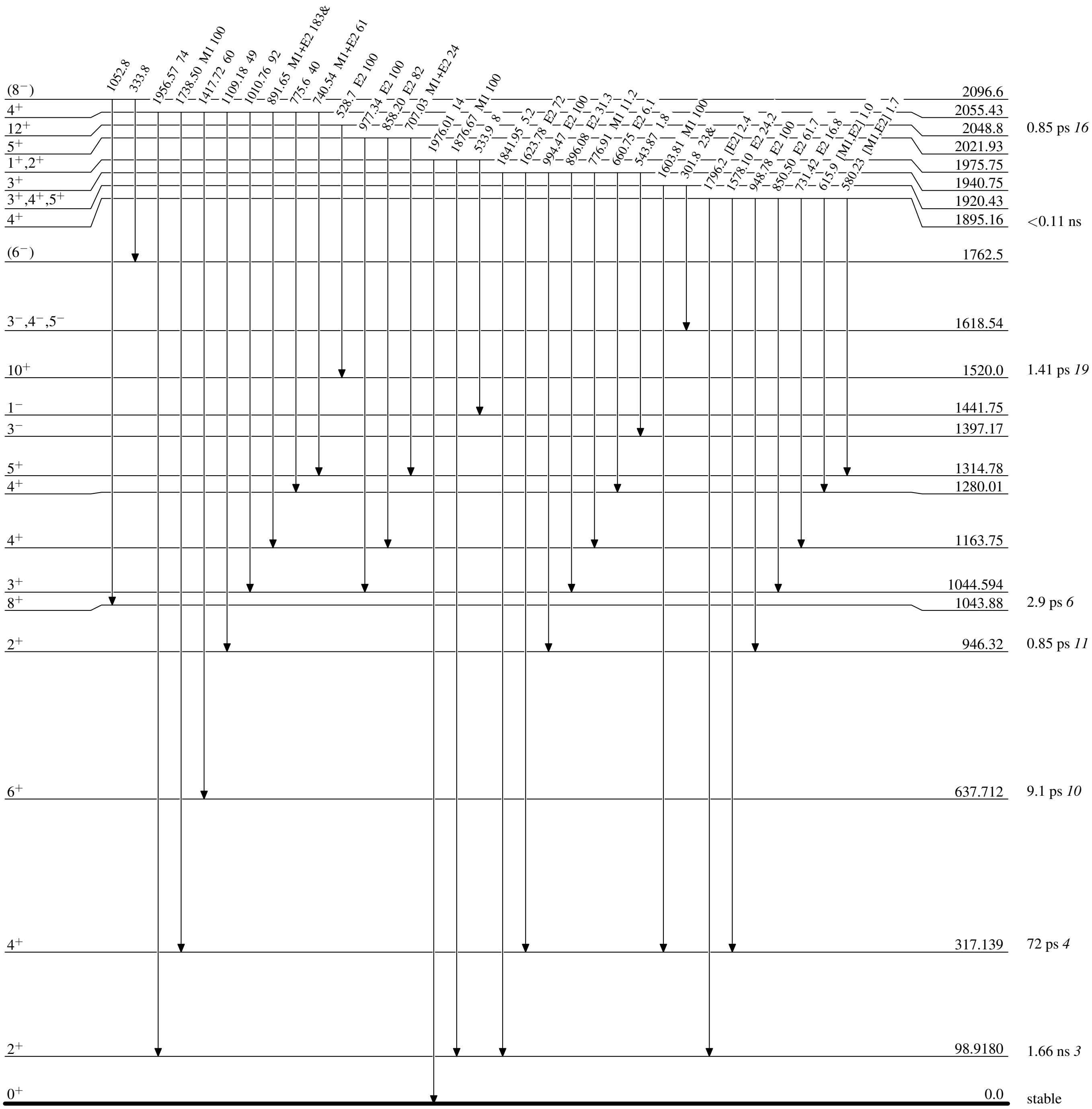
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

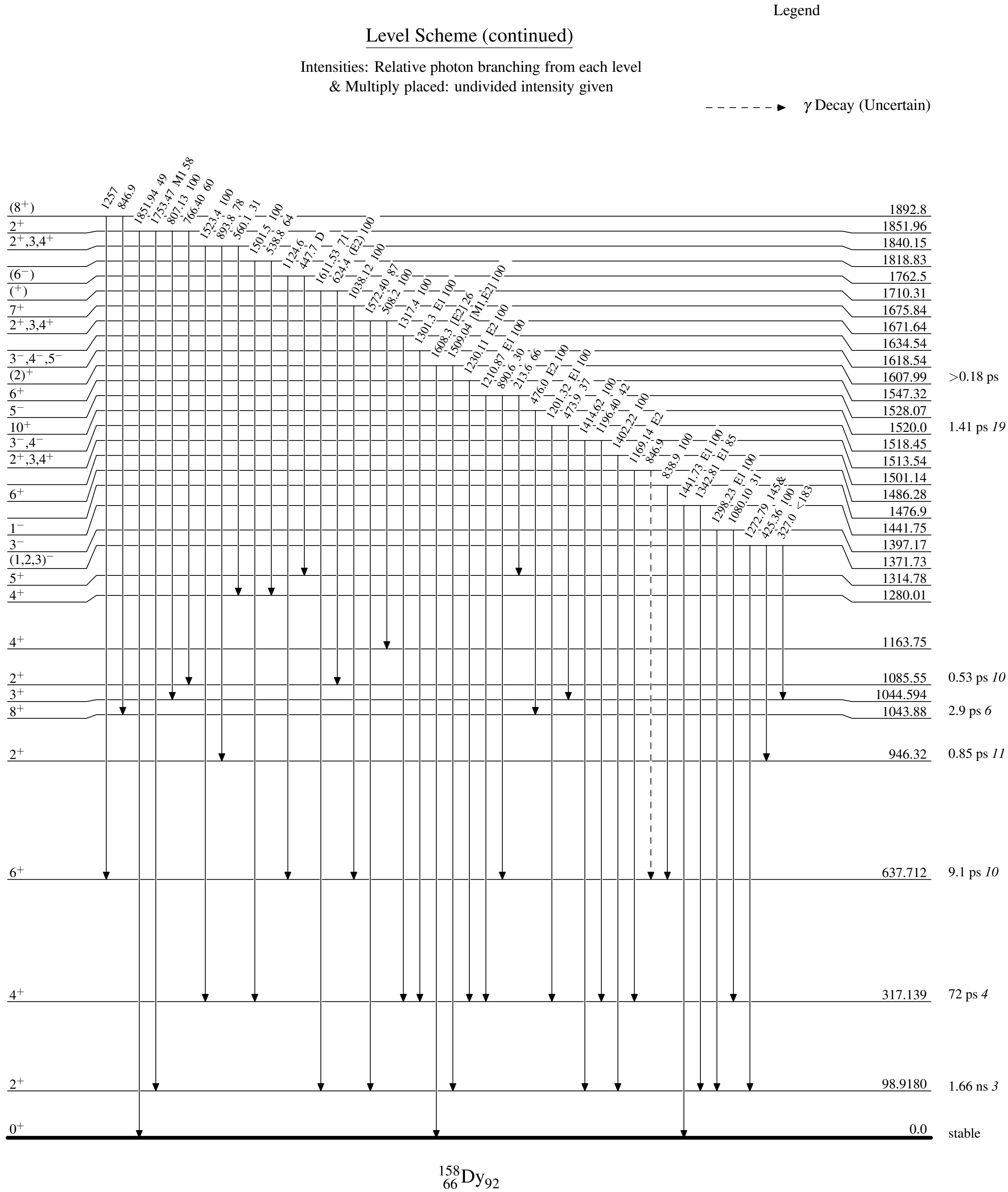


$^{158}_{66}Dy_{92}$

Adopted Levels, Gammas

Level Scheme (continued)

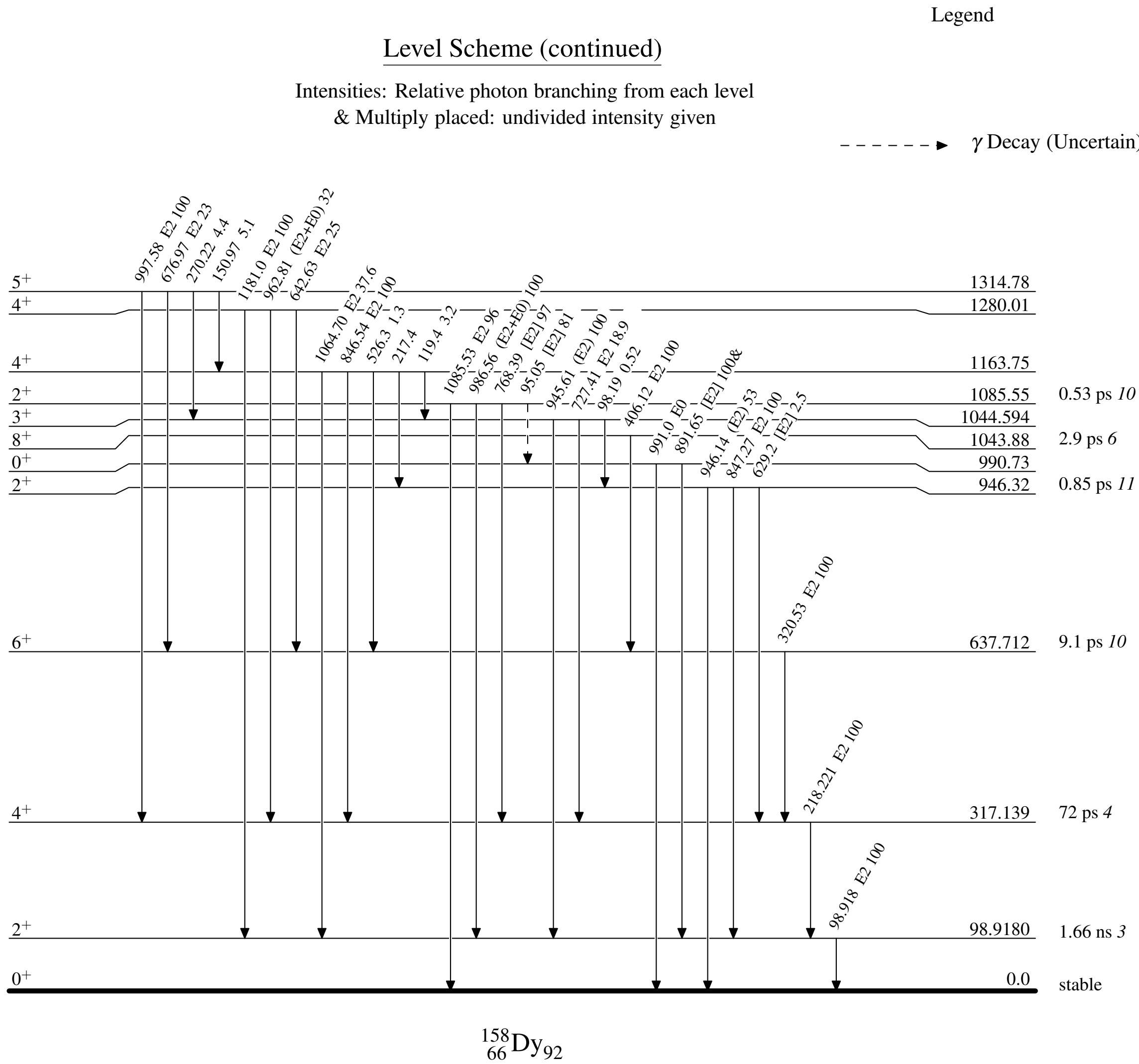
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



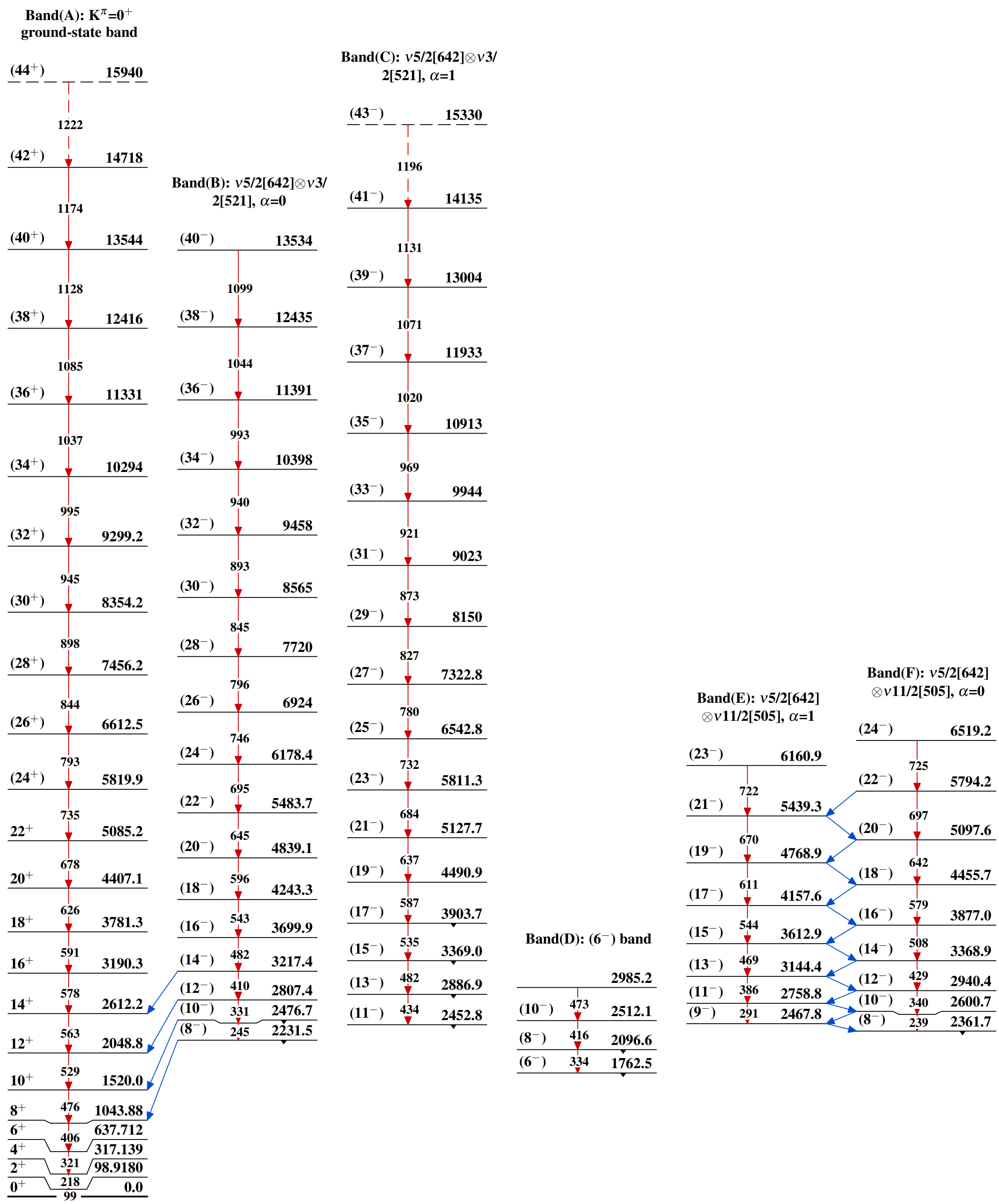
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

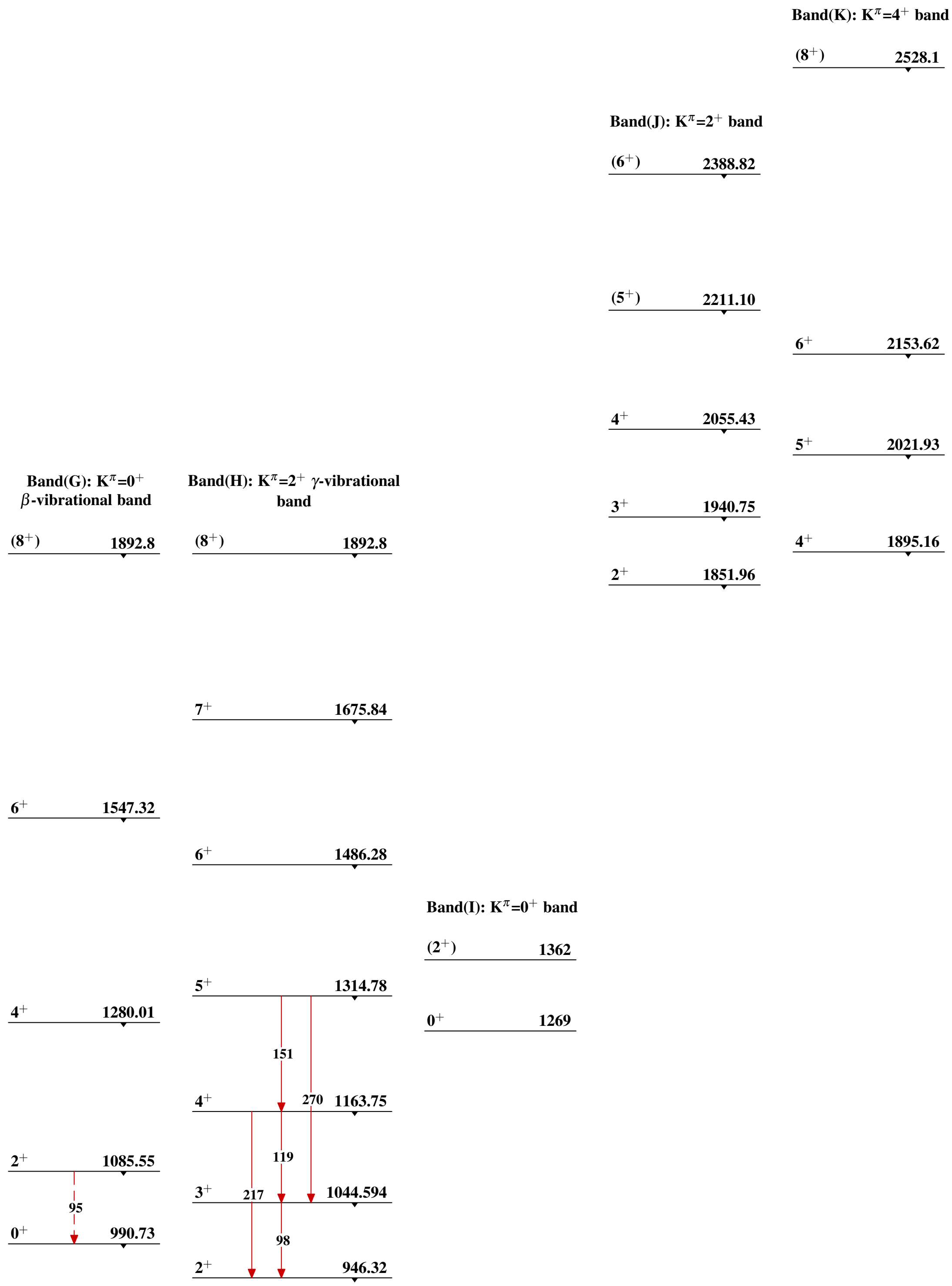


Adopted Levels, Gammas



$^{158}_{66}Dy_{92}$

Adopted Levels, Gammas (continued)



$^{158}_{66}Dy_{92}$

Adopted Levels, Gammas

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

Q(β^-)=−3290 *15*; S(n)=8576.5 *14*; S(p)=7428.8 *11*; Q(α)=438.0 *10* 2021Wa16
S(2n)=15407.9 *23*, S(2p)=13560.4 *10* (2021Wa16).

^{160}Dy Levels

Cross Reference (XREF) Flags

A	^{160}Tb β^- decay	F	^{160}Gd(^{37}Cl,xnγ)	K	^{161}Dy(^{3}He,α)
B	^{160}Ho ε decay (25.6 min+5.02 h)	G	^{160}Dy(γ,γ')	L	^{162}Dy(p,t)
C	^{158}Gd(α,2nγ),^{160}Gd(α,4nγ),	H	^{160}Dy(p,p′)	M	Coulomb excitation
D	^{158}Gd(^{7}Li,p4nγ)	I	^{160}Dy(d,d′)		
E	^{158}Dy(t,p)	J	^{161}Dy(d,tγ)		

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	XREF	Comments
0.0[#]	0^+	stable	ABCDEFGHIJ LM	Possible α decay: $T_{1/2}\geq8.5\times10^{15}$ y (2011Be18). From optical isotope-shift measurements, 1990Wa25 report the values (in fm^2) for the nuclear parameter, $\lambda(\approx\Delta<r^2>)$: λ(^{160}Dy-^{158}Dy)=0.127 *7*; λ(^{162}Dy-^{160}Dy)=0.129 *8*; and λ(^{161}Dy-^{160}Dy)=0.0345 *21*. In a recent compilation of such data, 1987Au06 give the following values, respectively, for these quantities: 0.132 *12*; 0.134 *12*; and 0.036 *4*. From combined x-ray and optical-shift information, 1974Bo60 give (in fm^2) λ(^{160}Dy-^{158}Dy)=0.126 *11* and λ(^{162}Dy-^{160}Dy)=0.134 *11*. In an evaluation of nuclear rms charge radii, 2013An02 report $<r^2>^{1/2}$=5.20 fm *31*.
86.7877[#] *3*	2^+	2.02 ns *1*	ABCDEFGHIJKLM	μ=+0.728 *18*; Q=1.8 *4* μ: weighted average of the values +0.74 *2* (1973Ka25) and +0.70 *3* (1984Si07) from 2014StZZ compilation (both measured by time-dependent perturbed angular correlation (TDPAC)). Q: from 2016St14 compilation (TDPAC). J$^\pi$: E2 transition to g.s. $T_{1/2}$: from ^{160}Tb β^- decay. This is essentially the same as that given by 2001Ra27. Other: 2.26 ns *16*, from B(E2) in Coul. ex.
283.8219[#] *11*	4^+	104 ps *4*	ABCDEF HIJKLM	μ=+1.41 *8* μ: Computed by the evaluator from g=+0.353 *19*, a weighted average of: g=+0.350 *20*, from 1996Al02, as discussed in the ^{160}Tb β^- Decay data set; and +0.359 *30*, from 1997Al04 (α,2nγ) (both references by integral perturbed angular correlation (IPAC)). 2014StZZ list μ=+1.40 *8* (1996Al02) and +1.60 *12* (1997Al04). J$^\pi$: E2 transition to 2^+ state. Member of g.s. rotational band. $T_{1/2}$: weighted average of: 103 ps *5*, from ^{160}Tb β^- decay; and 110 ps *11*, from B(E2)(2+→4^+), in Coul. ex.
581.066[#] *17*	6^+	18.6 ps *10*	ABCDEF HIJKLM	μ=+2.11 *10* J$^\pi$: E2 transition to 4^+ level. Member of g.s. rotational band. μ: Computed from g=+0.352 *17*, 1999Br43 (Coul. ex., TF). Other: +1.13 *12*, from g=+0.188 *20* (1997Al04, IPAC in (α,2nγ)) (after correction of their reported value, +0.242 *20*, for the different $T_{1/2}$ value used here). 2014StZZ list μ=+2.11 *10* (1999Br43) and +1.45 *12* (1997Al04, without correction). $T_{1/2}$: from B(E2)(4+→6^+) in Coul. ex.
681.3? *7*	(0^+)		B	E(level): level reported in 2009Ad04 (ε decay) from the observation of a K-shell electron line corresponding to transition energy of 681.3 keV.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{160}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
703.0?	(0^+)		B	E(level): from 2010BoZZ (ε decay) 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).
966.1687[@] *13*	2^+	1.31 ps *9*	ABCDEFGHIJ LM	μ=+0.80 *5* J^{π}: E2 transition to g.s. μ: From g=0.401 *27* from 1999Br43 (Coul. ex., TF). μ=+0.65 *5*, from g=+0.324 *25*, computed by the evaluator from g=+0.317 *13* as reported by 1995Al22 (IPAC, after correction for the different $T_{1/2}$ value adopted here). See "^{160}Dy Levels from ^{160}Tb β^- Decay" for a discussion. 2014StZZ also report +0.80 *5* (1999Br43), together with +0.63 *2* (1995Al22) and +0.34 *9* (1969Si01, 1975Kh03) for μ. $T_{1/2}$: from B(E2) and adopted branching.
966.83[#] *5*	8^+	3.8 ps *3*	BCD F K M	μ=+2.48 *18* J^{π}: E2 transition to 6^+ level. Coulomb-excited; member of g.s. band. μ: From g=+0.310 *22*, 1999Br43, (Coul. ex., TF), computed by the evaluator from their reported value, g=0.343 *22*, after correction for the different $T_{1/2}$ value used here. Other μ values (also listed by 2014StZZ): 2.4 *8*, from g=+0.301 *95* (1997Al04, IPAC from (α,2nγ)); +2.7 *2* (1999Br43). $T_{1/2}$: from Doppler-broadened line shape and B(E2)(6+→8^+), both in Coul. ex.
1049.1018[&] *17*	3^+		ABC J M	J^{π}: E2+M1 transitions to 2^+ and 4^+ levels.
1155.841[@] *8*	4^+		ABCDEF HIJ M	J^{π}: E2 and E2+M1 transitions to the 2^+ and 4^+ members, respectively, of the g.s. band. Energy considerations suggest this is a member of the γ-vibrational band.
1264.7472[a] *16*	2^-	≤10 ps	ABC J	J^{π}: E1 transitions to 2^+ and 3^+ levels, but not to 4^+. γγ(θ) results consistent with J=2. $T_{1/2}$: from 1972Ab09, β^- decay.
1279.942[e] *23*	0^+		B L	XREF: L(1275). J^{π}: E0 transition to g.s.
1285.604[d] *12*	1^-		ABC JK M	J^{π}: E1 transition to g.s. Head of K^{π}=1^- band.
1286.713[b] *13*	3^-	0.22 ps *6*	ABC E HIJ M	B(E3)↑=0.171 *10* J^{π}: E1 transitions to 2^+ and 4^+ levels. $T_{1/2}$: from Doppler-broadened line shape in Coul. ex. (1981Mc06). B(E3)↑: from Coul. ex.
1288.665[&] *11*	5^+		ABCD	J^{π}: E2 transitions to the 4^+ and 6^+ members of the g.s. band and the 3^+ member of the γ-vibrational band. Energy considerations and this decay pattern suggest this is the 5^+ member of the γ-vibrational band.
1349.758[e] *17*	2^+	1.20 ps *11*	B E G I LM	B(E2)↑=0.0184 *15* XREF: L(1339). $T_{1/2}$: from B(E2) in Coul. ex. J^{π}: E2 transition to g.s.
1358.670[c] *4*	2^-	2.70 ns *14*	ABC H JK	J^{π}: E1 γ to 2^+ and 3^+ levels indicate J^{π}=2^-,3^-. E1 γ from 1^+ rules out 3^-. $T_{1/2}$: from β^- decay (1972Ab09). Note that the B(E1)(W.u.) values from this $T_{1/2}$ value are considerably smaller than one might expect from the decay of a state with this proposed J^{π} and configuration assignment.
1386.458[a] *12*	4^-		ABCD J	XREF: J(1381). J^{π}: E1 components in transitions to 3^+ and 4^+ levels. Energy agrees well with expected position of 4^- member of K^{π}=2^- octupole band.

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Adopted Levels, Gammas (continued)

^{160}Dy Levels (continued)

E(level)[†]	J^π[‡]	$T_{1/2}$	XREF	Comments
1398.964[d] *12*	3⁻		ABC E JK M	B(E3)↑=0.064 J^π: E1 γ's to 2⁺ and 4⁺ levels. B(E3)↑: from Coul. ex.
1408.47[b] *4*	5⁻		BCD IJ M	J^π: E1 to 4⁺ indicates J^π=3⁻,4⁻,5⁻. γ to 6⁺ rules out 3⁻ and 4⁻.
1427.89[#] *7*	10⁺	1.56 ps *7*	CD F M	μ=+3.1 *3* J^π: decays only via E2 to 8⁺ member of the g.s. band. Coulomb excited. Member of g.s. band. $T_{1/2}$: Doppler-broadened line shape in Coulomb excitation (1977Ke06). Other: 1.20 ps *12*, from B(E2). μ: From g=+0.306 *31*, 1999Br43 (Coul. ex., by TF); same μ value is also listed by 2014StZZ compilation.
1438.554[@] *23*	6⁺		BCD M	J^π: E2 γ's to 4⁺ members of the g.s. and γ-vibrational bands and an E2+M1 γ to the 6⁺ member of the g.s. band. Energy consistent with expected position of the 6⁺ member of the γ-vibrational band. Population in Coul. ex. indicates collective character.
1456.752[f] *20*	0⁺		B E	J^π: L=0 in (t,p).
1489.500[n] *22*	1⁻	6.8 fs *8*	B G	J^π: E1 transition to 0⁺. $T_{1/2}$: from (γ,γ').
1518.419[f] *14*	2⁺		B E	XREF: E(1513). J^π: γ's to 0⁺ and 4⁺ levels.
1522.33[e] *3*	4⁺		B	J^π: γ's to 2⁺ and 6⁺ levels.
1535.150[c] *12*	4⁻		ABC JK	J^π: E1 γ's to 3⁺ and 5⁺ levels.
1556.59 *10*	1⁺,2⁺		A	J^π: transitions to g.s. and first 2⁺ level require J=1 or J^π=2⁺. log *ft*=11.66 from 3⁻ rules out 1⁻.
1586.744[d] *21*	5⁻		B I	XREF: I(1578). J^π: E1 to 4⁺, γ from 3⁻, levels and member of octupole-vibrational band.
1594.42[a] *7*	6⁻		BCD	J^π: E1 to 5⁺, γ from 8⁻, levels.
1603.78 *5*	4⁺		B	J^π: E1 γ from 5⁻, γ to 2⁺, levels.
1606.84 *6*	6⁺		B	J^π: E2 γ to 4⁺ and (E2) γ to 8⁺.
1607.86[f] *6*	4⁺		B K	J^π: E2 γ to 4⁺, γ's to 2⁺ and 5⁺ members of the γ band. Value based on comparison of shape of the angular distribution in (^{3}He,α) with that of transitions to known levels. Band assignment is that proposed in (^{3}He,α) and ^{160}Ho ε decay.
1613.98[b] *4*	7⁻		BCDe	XREF: C(1614.2)e(1617). J^π: E1 transition to the 6⁺ member of the g.s. band. Energy consistent with the expected 7⁻ member of the K^π=2⁻ band.
1617.27[&] *4*	7⁺		BCDe	XREF: e(1617). J^π: E2+M1 transitions to 6⁺ and 8⁺ levels.
1643.27[n] *4*	3⁻		B I M	B(E3)↑=0.065 *10* J^π: Coulomb excited via an E3 transition (1981Mc06). Possibly the 3⁻ member of a K^π=0⁻ (octupole) band. B(E3)↑: from Coul ex.
1650.874 *24*	4⁻,5⁻		B e i K	XREF: e(1657)i(1656). J^π: E1 γ's to 4⁺ and 5⁺ levels. See, also, the J^π comment for the 1651.95 level.
1651.95 *22*	4⁺,5,6⁺		B e i K	XREF: e(1657)i(1656). J^π: γ's to 4⁺ and 6⁺ levels. Possible excitation in (d,d′) may indicate natural parity. 1981Ji01 assign this level as the J^π=5⁻ member of the K^π=1⁻ octupole band, while 1987Gr37 assign this state as the bandhead of a K^π=5⁻ band with configuration=(ν 5/2[642] + ν 5/2[523]).
1653.66 *4*			B e i	XREF: e(1657)i(1656).

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Adopted Levels, Gammas (continued)

^{160}Dy Levels (continued)

E(level)[†]	Jπ[‡]	T1/2	XREF	Comments
1654.99 *3*	2+,3+,4+		B e i	XREF: e(1657)i(1656). Jπ: E1 γ to 3−.
1676.1 *10*			C	
1694.360[g] *11*	4+	180 ps *35*	BCD	Jπ: E2 transitions to 2+ and 5+ levels establish π=+ and J=3 or 4. The allowed-unhindered (au) ε transition (log *ft*=4.69, see 1996Re22) from the ^{160}Ho g.s. (Jπ=5+) uniquely establishes the assigned two-quasineutron configuration (and, hence, Jπ=4+) for this state. T1/2: from ^{160}Ho ε decay.
1708.14[j] *4*	0+		B E	Jπ: L=0 in (t,p).
1720.36[f] *20*	6+		BC K	XREF: C(1726.9)K(1723). Jπ: L=6 in (^{3}He,α). The strength of this peak, together with the relative cross sections to other ^{160}Dy levels, suggests that this is the 6+ member of the S band.
1756.918 *21*	2+		B E	Jπ: E1 γ's to 1− and 3− levels.
1784.688[h] *22*	4−		B K	XREF: K(1785). Jπ: E1 to 4+ level indicates π=−. (d,t) population pattern for the proposed band members is consistent with the indicated Kπ=4− configuration.
1787.79[c] *7*	6−		BCD	XREF: C(?). E(level): this level was proposed to deexcite via 252.2 and 498.6 γ's by 1987Ri08, (α,2nγ). No 192.6 and 233 γ's were reported by 1987Ri08. γ data are from ^{160}Ho ε decay. Jπ: E1 transition from 5+ level indicates π=−. E2 γ to 4− and expected band structure.
1800.35[@] *6*	8+		BCD	XREF: B(1801.16)C(1801.6). Jπ: E2 transitions to the 6+ members of the g.s. and γ-vibrational bands and E2(+M1) transition to the 8+ member of the g.s. band. Level energy is that expected for the 8+ member of the γ band.
1802.224[g] *12*	5+		BCD	Jπ: M1 component in transitions to 4+ and from 6+ levels requires Jπ=5+. Level energy suggests that it is the 5+ member of the Kπ=4+ band.
1804.669[i] *14*	1+		B	Jπ: M1 transition to the g.s. Head of a Kπ=1+ band.
1860.18[h] *6*	5−		BC JK	XREF: C(1861.6). Jπ: E1 transitions to 4+ and 6+ levels.
1869.513[i] *21*	2+		B E I	XREF: E(1875)I(1875). Jπ: E2 transitions to 0+ and 4+ levels.
1882.31[a] *7*	8−		BCD	XREF: B(1882.62).
1898.23[d] *16*	7−		D	
1900.87[b] *8*	9−		BCD	Jπ: (E1) transition to 8+ member of the g.s. band. Level energy consistent with that expected for the 9− member of the Kπ=2− band.
1903.204[i] *20*	3+		B I	Jπ: E1 transition from 2−, E2 transitions to 2+ and 4+ levels.
1929.176[g] *19*	6+		BCD	Jπ: E2 transition to 4+ state indicates π=+. Level-energy considerations, together with the occurrence of transitions to the 4+ and 5+ members of the 4+ band at 1694, indicate that this is the 6+ member of this band.
1932			E	
1950.17[#] *9*	12+	0.89 ps *4*	CD F M	μ=+3.6 *7* XREF: C(1951.5)F(1952). Jπ: decays only via an E2 transition to the 10+ member of the g.s. band. Coulomb excited. Member of the g.s. band. T1/2: from Doppler-broadened line shape in Coulomb excitation

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Adopted Levels, Gammas (continued)

^{160}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
			(1977Ke06). Other: 0.54 ps *24*, from B(E2). μ: From g=+0.302 *60*, 1999Br43 (Coul. ex., by TF); same value is also listed by 2014StZZ compilation.
1952.31[o] *3*	0^+	B	J^{π}: E0 transition to g.s.
1954.4[h] *5*	$(6)^-$	BC JK	XREF: C(1958)J(1958)K(1948). J^{π}: π=−, from L=5 in (^{3}He,α). Transition to the 5^+ member of the γ band. From considerations of rotational-band structure, this level is assigned as the 6^- member of the indicated $K^{\pi}=4^-$ band.
1978.2[f] *10*	$(8)^+$	C K	XREF: K(1974). J^{π}: E2 transition to 6^+ member of g.s. band indicates π=+. The strength of this L=6 transition and the relative cross sections of the (^{3}He,α) transitions to other ^{160}Dy levels suggest that this is the 8^+ member of the S band.
2009.531 *19*	$1^-,2^-$	B	J^{π}: E1 γ to 2^+ indicates $J^{\pi}=1^-,2^-,3^-$. γ to g.s. rules out 3^-.
2012.85[o] *21*	2^+	B	J^{π}: γ's to 0^+ and 4^+ levels.
2021.64[&] *8*	9^+	BCD	XREF: C(2022.7)D(2020.6). J^{π}: E2 transitions to 7^+ member of the γ band and 8^+ member of the g.s. band. These decay modes and the level energy are consistent with the assignment of this level as the 9^+ member of the γ band.
2043.7?[h]	(7^-)	C	J^{π}: from (α,2nγ), (1987Ri08) based on the interpretation of an otherwise unplaced γ as a crossover transition to the 5^- member of this band.
2046		E	
2049.50 *6*	$2^+,3$	B	J^{π}: γ's to 2^+ and 4^+ levels suggest $J^{\pi}=2^+,3,4^+$. γ from 2^- makes J=4 less likely.
2068.08 *3*	1^-	B	J^{π}: E1 transition to g.s.
2074.09[g] *11*	7^+	BCD K	J^{π}: γ's to 5^+ and 8^- levels and expected band structure. 1981Ji01, in (^{3}He,α), report L=5 transfer to this level and interpret it as the bandhead of a $K^{\pi}=3^-$ band.
2077.36 *3*	3^-	B	J^{π}: γ's to 1^- and 5^- levels. Possible $K^{\pi}=3^-$ bandhead.
2084.809 *21*	$1^+,2^+$	B	J^{π}: M1,E2 transition to 0^+.
2088.85 *3*	$1^-,2^-,3^-$	B	J^{π}: E1 γ to 2^+.
2090.88 *4*	$2^-,3^-$	B	J^{π}: E1 γ to 2^+, γ's to 2^+ and 3^+ levels.
2096.889[k] *14*	4^+	B J	J^{π}: γ's to 2^+ and 6^+ levels.
2112.42[c] *13*	8^-	BCD	XREF: C(2113.3). J^{π}: from γ's to 6^- and 9^+ levels and expected band structure.
2113.69 *10*		B	
2126.37 *4*	3^-	B I K	XREF: I(2129). J^{π}: E2 γ from 1^-, γ's to 2^+ and 4^+ levels.
2130.579 *23*	3^-	B	J^{π}: E1 γ to 2^+, γ to 4^+.
2138.20 *3*	2^+	B i	XREF: i(2143). J^{π}: E2 γ to 0^+.
2140.15 *3*	(3)	B i	XREF: i(2143). J^{π}: γ's to 2^+ and 4^+ levels. Level fed by γ's from 2^- and 5^- levels. Mult(1091.1γ)=(E1) and mult(1856.38γ)=(E2,M1), proposed by 2002Ad34 in ε decay give opposite parities for this state.
2141.67 *15*	$2^+,3,4^+$	B i	XREF: i(2143). J^{π}: γ's to 2^+ and 4^+ levels.
2143.73 *7*	4^-	B	J^{π}: E1 γ to 5^+ and γ to 3^+ levels.
2144.56? *5*		B	
2149.84 *13*	1,2	B	J^{π}: γ's to 0^+ and 2^+ levels.
2155.33 *20*		B	
2165.41 *10*		B J	XREF: J(2163).
2175.3 *10*		C	
2187.00 *6*	$4^+,5^+,6^+$	B i k	XREF: i(2190)k(2188). J^{π}: E2 γ to 6^+ indicates positive parity. γ's to 4^+ and 6^+ levels.
2191.03 *7*		B i k	XREF: i(2190)k(2188).
2194.43[k] *3*	5^+	B	J^{π}: γ to 3^+, E1 γ from 6^-.

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Adopted Levels, Gammas (continued)

^{160}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
2200.82 *4*	$2^+,3,4^+$		B	J^{π}: γ's to 2^+ and 4^+.
2208.36[i] *7*	4^+		B	J^{π}: E2 γ to 2^+. Fed by γ from 6^+.
2208.79 *6*	$(2)^-$		B	J^{π}: γ to 2^+ is sole mode of decay. Level is fed via an E1 from a positive-parity state, indicating π=−.
2214			E	
2221.48[@] *8*	10^+		CD	XREF: C(2223.1).
2230.52 *8*	2^+		B	J^{π}: γ's to 0^+ and 4^+ levels.
2241.95[a] *8*	10^-		CD	XREF: C(2243.2).
2244.93 *4*	$2^+,3,4^+$		B	J^{π}: γ's to 2^+ and 4^+.
2255.67 *6*	$1^+,2^+$		B	J^{π}: E2,M1 γ to 2^+ gives π=+. γ's to 0^+ and 2^+.
2263.99[d] *11*	9^-		D	
2264.23[b] *10*	11^-		CD F	XREF: C(2264.9)F(2265). J^{π}: γ's to 9^- and 10^+ levels; and level-spacing considerations.
2265.0[f] *10*	(10^+)		C	J^{π}: γ to 8^+ and possible γ to 10^+ members, respectively, of the g.s. band. Together with rotational-band considerations, this suggests that this level is the 10^+ member of the indicated band.
2266.98 *4*	3^-		B	J^{π}: E1 transitions to 2^+ and 4^+ levels.
2271.246 *23*	2^-		B	J^{π}: E1 transitions to 2^+ levels indicate $J^{\pi}=1^-,2^-,3^-$. Absence of transitions to 3^+ and 1^+ suggests J^{π} is probably not 1^- or 3^-.
2279.06 *10*			B	
2287.8[l] *6*	8^-		C K	XREF: K(2279). J^{π}: E1 transition to 7^+ and γ's to 8^+ levels indicate π=− and J=7 or 8. Strong L=5 transition in (^{3}He,α) consistent with assigned configuration, indicating J=8.
2297.48 *4*	2^+		B E J	XREF: E(2296)J(2294). J^{π}: E2 γ to 2^+, γ to 0^+. Excitation in (t,p) indicates natural parity.
2309.90 *11*	$2^+,3,4^+$		B	J^{π}: γ's to 2^+ and 4^+. γ to 2^- rules out 4^-.
2321			J	
2323.08 *3*	$1^+,2^+$		B	J^{π}: E2 γ to 3^+, γ to 0^+.
2325.24 *9*	$1^+,2^+$		B	J^{π}: E2,M1 γ to 0^+.
2327.70 *4*	2^+		B	J^{π}: γ's to 0^+ and 4^+ levels. E2 γ to 2^+.
2347			J	
2354.625 *17*	2^+		B	J^{π}: E1 γ to 2^- level indicates π=+. γ's to 0^+ and 4^+.
2359			I	
2367.46 *3*	$2^+,3^+,4^+$		B J	J^{π}: E2 γ to 2^+ indicates π=+. γ's to 2^+ and 4^+ levels.
2372.305 *24*	6^-		B K	J^{π}: E1 γ from 5^+ indicates $J^{\pi}=4^-,5^-,6^-$. γ to 7^+ rules out $4^-,5^-$.
2374.50 *5*			B	
2380			J	
2383.69 *3*	6^-		B	J^{π}: E1 γ from 5^+ indicates $J^{\pi}=4^-,5^-,6^-$. γ to 7^+ rules out $4^-,5^-$.
2386.88 *3*	$2^+,3^+$		B	J^{π}: E1 γ to 2^- indicates $J^{\pi}=1^+,2^+,3^+$. γ's to 3^- levels rule out 1^+.
2393.54 *6*	$2,3^-$		B	J^{π}: γ's to 1^- and 4^+ levels.
2396.92 *21*	1,2		B	J^{π}: γ's to 0^+ and 2^+ levels.
2405			J	
2444			K	
2450.25 *5*	1^-		B	J^{π}: M1 γ from 2^-, E1 γ to 0^+.
2469.51 *3*	3^-		B	J^{π}: E1 γ to 4^+ indicates π=−. γ's to 2^+ and 4^+.
2474.97 *10*	$2^+,3,4^+$		B	J^{π}: γ's to 2^+ and 4^+ levels.
2485.64[&] *10*	11^+		CD	XREF: C(2486.9). J^{π}: E2 transition to 9^+ member of the γ band and E2+M1 to 10^+ member of the g.s. band. Together with rotational-band spacings, these support the assignment of this level as the 11^+ member of the γ-vibrational band.
2503.80 *9*	$1^+,2^+$		B	J^{π}: M1 γ to 2^+ and γ to (0^+).
2513.36[#] *12*	14^+	0.62 ps *+7−14*	CD F M	XREF: D(2513.0)F(2516).

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Adopted Levels, Gammas (continued)

^{160}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
			J^{π}: E2 transition to 12^+ member of the g.s. band. Population in Coulomb excitation indicates that this is the 14^+ member of the g.s. band. $T_{1/2}$: from Doppler-broadened line shape following Coulomb excitation (1977Ke06).
2514.57 *16*		K	
2520.17[c] *15*	10^-	CD	XREF: C(2521.5).
2523.8 *7*	3^+	J	The large (d,t) strength to the 2524 level indicates the presence of the ν $1/2^+[400]$ Nilsson orbital. Hence this level contains a significant component of the two-quasineutron state having configuration=(ν $5/2^+[642]$ + ν $1/2^+[400]$). J^{π}: gammas to the 2^+ and 4^+ members of the g.s. band. The indicated configuration has $K^{\pi}=3^+$. Hence this level should have $J^{\pi}=3^+$.
2553.5 *3*		B	
2556.72 *5*	$3^-,4^-,5^-$	B	J^{π}: E1 γ to 4^+ level.
2560.02 *9*	$2^+,3,4^+$	B	J^{π}: γ's to 2^+ and 4^+ levels.
2572.4 *3*	$3^+,4^+,5^+$	B	J^{π}: M1 γ to 4^+.
2574.37 *20*	$1^-,2^-,3^-$	B	J^{π}: M1,E2 γ to 1^- level.
2577 *15*	3^+ to 9^+	K	J^{π}: L=6 pickup from an i13/2-related initial state (the ν $5/2^+[642]$ Nilsson orbital) in (^{3}He,α).
2593.64[f] *14*	12^+	D	
2602.67 *4*	$1^-,2^-$	B	J^{π}: E2 γ to 3^- level indicates $\pi=-$. γ's to 0^+ and 3^- levels.
2605.77 *8*	$2^+,3^+,4^+$	B	J^{π}: E2,M1 γ to 4^+ level indicates $\pi=+$. γ's to 2^+ and 4^+ levels.
2610.01 *10*	2^+	B	J^{π}: E2 γ to 3^+ level indicates $\pi=+$. γ's to 0^+ and 4^+ levels.
2630.24 *5*	$(1,2)^+$	B	J^{π}: E1 γ's to 1^- and (2^-) levels.
2630.705 *11*	1^-	B	J^{π}: E1 γ's to 0^+ and 2^+ levels.
2634.73 *11*		B	
2645.88 *22*	3^-	B	J^{π}: E1 γ's to 2^+ and 4^+ levels.
2647.30 *24*	$(3)^-$	B	J^{π}: E1 γ to 2^+ indicates $\pi=-$. γ's to 2^+ and 4^+ levels suggest J=3.
2661.511 *13*	2^-	B	J^{π}: E1 γ's to 1^+ and 3^+ levels.
2665.78 *5*	$2^+,3^+,4^+$	B	J^{π}: γ with $\Delta\pi$=no to 4^+ indicates $\pi=+$. γ's to 2^+ and 4^+.
2666.30[a] *11*	12^-	CD	XREF: C(2668.0).
2674.716 *20*	1^-	B	J^{π}: E1 transition to g.s. ($J^{\pi}=0^+$).
2681.822[i] *23*	5^+	B	J^{π}: E1 transitions to 5^- and 6^- levels indicate $\pi=+$. γ's to 4^- and 6^- indicate J=5.
2696.30[d] *16*	11^-	D	
2696.41 *3*	$2^-,3^-$	B	J^{π}: E2 transitions to 2^- and 3^- levels indicate $\pi=-$. γ's to 2^+ and 3^+ levels indicate $J^{\pi}=2^-,3^-$.
2697.31[b] *11*	13^-	CD F	XREF: C(2698.3)F(2698). J^{π}: in-band transition to 11^- of 2^- octupole-vibrational band.
2697.821 *18*	2^+	B	J^{π}: γ's to 0^+ and 4^+ levels indicate J=2. E2 γ to 2^+ gives $\pi=+$.
2701.044[m] *15*	1^-	B	J^{π}: E1 γ to 0^+.
2704.215 *21*	$2^-,3^-$	B	J^{π}: E1 to 2^+ indicates $J^{\pi}=1^-,2^-,3^-$. γ to 3^+ rules out 1^-. 2002Ad34 report $J^{\pi}=2^-$.
2707.77[@] *9*	12^+	D	
2717.225 *21*	2^+	B	J^{π}: γ's to 0^+ and 4^+ levels.
2719.02 *5*	2^-	B	J^{π}: E1 γ to 2^+ indicates $J^{\pi}=1^-,2^-,3^-$. γ's to 1^+ and 3^+ rule out 3^- and 1^-.
2720.57[m] *4*	3^-	B	J^{π}: E1 γ's to 3^+ and 4^+ levels indicate $J^{\pi}=3^-,4^-$. γ to 2^+ rules out 4^-.
2727.21 *10*	(4)	B	L: γ to 6^+ level and possible γ to 2^+.
2729.824 *24*	2^-	B	J^{π}: E1 transition to 2^+ level indicates $J^{\pi}=1^-,2^-,3^-$. γ's to 1^+ and 4^- rule out 3^- and 1^-.
2734.718 *25*	1^-	B	J^{π}: E1 transition to 0^+ level.
2755.04 *20*		B	
2756.3 *3*		B	
2757.13 *9*		B	
2760.46 *7*	$1^+,2^+$	B	J^{π}: E2,M1 1410.7 γ to 2^+ indicates $\pi=+$. γ's to 0^+ and 2^+ levels.
2763.05 *5*		B	
2767.70 *5*	1^-	B	J^{π}: E1 transition to 2^+ level indicates $\pi=-$. γ's to 0^+ and 2^+ levels.

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Adopted Levels, Gammas (continued)

^{160}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
2772.10 *20*			B	
2777.62 *4*	$2^+,3^+,4^+$		B	J^{π}: E2,M1 to 4^+ indicates π=+. γ's to 2^+ and 4^+ levels.
2822.23 *20*	1^+	3.1 fs *4*	B G	J^{π}: excited in (γ,γ') via an M1 transition from the g.s. $T_{1/2}$: from (γ,γ').
2833.85 *17*	2,3,4		B	J^{π}: γ's to 2^+ and 4^+ levels.
2851.73 *3*	1^-		B	J^{π}: E1 γ to 2^+ indicates π=−. γ's to 0^+ and 2^+ levels.
2853.69 *12*			B	
2858.17 *11*			B	
2861.162 *25*	1^+		B G	XREF: G(2864). J^{π}: M1+E2 transition to 2^+ level indicates π=+. Excited in (γ,γ') via a dipole transition.
2877.094 *21*	1^-		B G	J^{π}: E1 transition to g.s. Excited in (γ,γ') via a dipole transition.
2879.46 *10*	2		B	J^{π}: γ's to 0^+ and 4^+ levels.
2885.58 *4*			B	
2896.28 *4*	2^+		B	J^{π}: E2,M1 γ to g.s. indicates π=+. γ's to 0^+ and 4^+ levels.
2904.36 *8*	2,3,4		B	J^{π}: γ's to 2^+ and 4^+ levels.
2931.76 *5*			B	
2941.96 *8*	4,5,6		B	J^{π}: γ to 4^+ level.
2958.55 *5*			B	
2969.03 *17*	1,2		B	J^{π}: γ's to 0^+ and 2^- levels.
2969.90 *6*			B	
2977.55 *6*			B	
2984.84[c] *18*	12^-		D	
2988.76[&] *12*	13^+		D	
2994.69 *8*	2,3,4		B	J^{π}: γ's to 2^+ and 4^+ levels.
3004.33 *10*	1,2		B	J^{π}: γ's to 0^+ and 2^+ levels.
3007.46[f] *13*	14^+		D	
3024.52 *17*	1,2		B	J^{π}: γ's to 0^+ and 2^+ levels.
3033.7 *3*			B	
3060.44 *14*			B	
3061.82 *5*	1^+		B G	J^{π}: E1 to 2^- indicates π=+. Excitation in (γ,γ') then indicates $J^{\pi}=1^+$ as does mult=(M1) for the 3061 γ. 1775 γ to 3^- may disfavor 1^+. 2002Ad34, ε decay, suggest $J^{\pi}=(1,2^+)$.
3081.4 *4*			B	J^{π}: 2002Ad34, ε decay, suggest J^{π}=(4,5,6).
3089.49[#] *12*	16^+		CD F	XREF: C(3091.9)F(3093).
3098.82[i] *9*	6^+		B	J^{π}: E2 γ's to 7^+, 8^+ levels require π=+. γ's to 4^+ and 8^+ levels indicate J=6. In their table 1, 2002Ad34 show $J^{\pi}=7^-$ for this level, but elsewhere $J^{\pi}=6^+$ is shown. 7^- is probably a misprint.
3111.1 *11*			C	E(level): from energy sum based on placement of 596.5 γ. 1987Ri08 give E(level)=3113 and do not show it in their level scheme.
3148.50[a] *15*	14^-		CD	XREF: C(3149.6).
3188.20[d] *19*	13^-		D	
3192.87[b] *13*	15^-		D F	XREF: F(3195).
3220.16[@] *12*	14^+		D	
3452.1?			C	
3452.7 *10*			C	
3508.22[&] *13*	15^+		D	
3510.64[c] *21*	14^-		D	
3526.56[f] *15*	16^+		D	
3669.65[#] *14*	18^+		CD F	XREF: C(3672.4)F(3674). J^{π}: E2 transition to 16^+ member of the g.s. band. This, and energy-spacing considerations, indicates that this is the 18^+ member of the g.s. band.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{160}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
3681.31[a] *18*	16^-	D	
3730.6[d] *3*	15^-	D	
3744.53[b] *13*	17^-	D F	XREF: F(3747).
3767.63[@] *14*	16^+	D	
4044.15[&] *14*	17^+	D	
4078.3[c] *3*	16^-	D	
4160.82[f] *16*	18^+	D	
4257.01[a] *21*	18^-	D	
4278.39[#] *15*	20^+	D F	XREF: F(4283).
4317.0[d] *4*	17^-	D	
4348.04[b] *17*	19^-	D F	XREF: F(4350).
4349.95[@] *15*	18^+	D	
4618.29[&] *15*	19^+	D	
4872.61[a] *23*	20^-	D	
4875.09[f] *16*	20^+	D	
4935.60[#] *18*	22^+	D F	XREF: F(4940).
4936.8[d] *4*	19^-	D	
4975.00[@] *18*	20^+	D	
5001.54[b] *20*	21^-	D	
5241.09[&] *17*	21^+	D	
5528.2[a] *3*	22^-	D	
5602.1[@] *11*	22^+	D	
5647.30[#] *21*	24^+	D F	XREF: F(5652).
5705.2[b] *3*	23^-	D	
5916.5[&] *3*	23^+	D	
6219.8[a] *4*	24^-	D	
6412.5[#] *3*	26^+	D F	XREF: F(6419).
6458.0[b] *4*	25^-	D	
6642.7[&] *4*	25^+	D	
6966.3[a] *5*	26^-	D	
7230.3[#] *4*	28^+	D F	XREF: F(7237).

[†] Listed values were calculated from a least-squares fit of the γ-ray energies. Where no uncertainties are given for the Eγ values, a value of 1 keV was assumed in this calculation. In these situations, no value is given for the uncertainty in the corresponding level energy. Normalized χ^2=2.7 > critical χ^2=1.1.

[‡] For those levels populated only in the heavy ion-induced reactions, the listed values are based on the usual considerations of expected rotational-band structure as employed in these studies. In these cases, specific arguments for the J^{π} values are not listed.

[#] Band(A): Ground-state band. A=14.58 keV, B=−19.5 eV (from 0^+, 2^+, and 4^+ levels). For J≤16, α=−0.0015 *16*, where (g)/(g(g.s.))=1+αJ^2 (1989Ra17).

[@] Band(B): γ-vibrational band, signature=0 branch. A=14.00 keV, B=−22.7 eV, and A_4=−1.93 eV (from 2^+ through 5^+ levels).

[&] Band(b): γ-vibrational band, signature=1 branch. See the comment for the signature=0 branch.

[a] Band(C): $K^{\pi}=2^-$ octupole-vibrational band, signature=0 branch. The energy spacings within this band are affected by strong Coriolis mixing, which makes the listing of rotational-band parameters of little use. The dominant two-quasiparticle component in this band has (π 7/2[523] − π 3/2[411]) for the configuration assignment.

[b] Band(c): 2^- octupole-vibrational band, signature=1 branch. See the comment for the signature=0 branch.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{160}Dy Levels (continued)

[c] Band(D): $K^\pi=1^-$ octupole-vibrational band, signature=0 branch. The energy spacings within this band are affected by strong Coriolis mixing, which makes the listing of rotational-band parameters of little use. The two-quasiparticle state with configuration=(ν 5/2[642] − ν 3/2[521]) is the major component in the makeup of this band.

[d] Band(d): $K^\pi=1^-$ octupole-vibrational band, signature=1 branch. See the comment for the signature=0 branch.

[e] Band(E): First excited $K^\pi=0^+$ band. A=11.4 keV, B=+35 eV (from 0^+, 2^+, and 4^+ levels).

[f] Band(F): S, or ‘Super’, band, second excited $K^\pi=0^+$ band. The energy spacings within this band are somewhat irregular, making the quoting of band parameters for the band problematic. See 2003AdZY for a discussion of the energy spacings within this band.

[g] Band(G): $K^\pi=4^+$ band. Configuration=(ν 5/2[523] + ν 3/2[521]) A=10.96 keV, B=−9.4 eV (from 4^+, 5^+, and 6^+ levels).

[h] Band(H): $K^\pi=4^-$ band. Configuration=(ν 5/2[642] + ν 3/2[521]) A=7.30 keV, B=+13.7 eV (from 4^-, 5^-, and 6^- levels).

[i] Band(I): $K^\pi=1^+$ band. Configuration=(ν 5/2[523] − ν 3/2[521]) from the energies of the 1^+ through the 4^+ members of this band, one computes A=5.64 keV, B=+0.633 keV and A_2=−3.39 keV. These parameters seem unreasonable and, also, lead to poor estimates of the energies of the remaining band members. This may suggest that some of the band members are misassigned or that this band is strongly mixed with other bands.

[j] Band(J): bandhead of the third excited $K^\pi=0^+$ band.

[k] Band(K): Second $K^\pi=4^+$ band. Possible Configuration=(π 5/2[413] + π 3/2[411]) A=9.75 keV.

[l] Band(L): $K^\pi=8^-$ bandhead. Possible Configuration=(ν 5/2[642] + ν 11/2[505]).

[m] Band(M): proposed (1987Gr37) two-phonon quadrupole (β)-octupole state.

[n] Band(N): Possible $K^\pi=0^-$ (octupole?) band. A=15.4 keV (from 1^- and 3^- levels). The dominant two-quasiparticle component most likely has configuration=(ν 5/2[642] − ν 5/2[523]).

[o] Band(O): Fourth excited $K^\pi=0^+$ band. A=10.09 keV (from 0^+ and 2^+ levels).

γ(^{160}Dy)

For E0 transitions the following quantities (relative to a E2 transition decaying the same level as the E0) are listed in the table (according to 2005Ki02 evaluation): q^2_K(E0/E2)=I(ce(K))(E0)/I(ce(K))(E2); X(E0/E2)=B(E0)/B(E2).

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	$I_{(\gamma+ce)}$	Comments
86.7877	2+	86.7877[‡] 3	100	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 B(E2)(W.u.)=195.8 25
283.8219	4+	197.0341[‡] 10	100	86.7877	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 B(E2)(W.u.)=285 11
581.066	6+	297.24 8	100	283.8219	4+	E2		0.0664		B(E2)(W.u.)=238 +14−12 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 E_γ: from Coul. ex.
681.3?	(0+)	594.5[e]	100	86.7877	2+	[E2]		0.00979		α(K)=0.00800 12; α(L)=0.001395 20; α(M)=0.000312 5 α(N)=7.15×10^{-5} 10; α(O)=1.000×10^{-5} 14; α(P)=4.54×10^{-7} 7 I_γ: estimate from 2009Ad04 (ε decay).
		681.3[e]		0.0	0+	(E0)			9.0	E_γ,Mult.: K-shell conversion electrons observed by 2009Ad04 (ε decay), with no observed γ ray that could produce the K-shell conversion electrons. $I_{(\gamma+ce)}$: calculated by evaluator based on measured I(ce(K)) and ratio of electronic factors Ω_K(E0)\\Ω(E0)=0.875. X(E0/E2) > 0.3 (2009Ad04, ε decay); the E2 transition is 1193.2γ.
703.0?	(0+)	616.2[e]		86.7877	2+	[E2]		0.00897		α(K)=0.00735 11; α(L)=0.001264 18; α(M)=0.000282 4 α(N)=6.47×10^{-5} 9; α(O)=9.07×10^{-6} 13; α(P)=4.18×10^{-7} 6 γ transition postulated by 2010BoZZ (ε decay, unobserved member of doublet).
		703.0[e]		0.0	0+	(E0)				Mult.: from K-shell electron peak corroborated with no intensities at the corresponding Eγ (2010BoZZ, ε decay).
966.1687	2+	682.31[‡] 4	1.98[‡] 3	283.8219	4+	E2		0.00704		B(E2)(W.u.)=0.602 +46−40 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 δ: 1989Ma39 report δ(M3/E2)=+0.004 17 for this transition. From RUL, one expects δ(M3/E2)<0.001.
		879.378[‡] 2	100.0[‡] 2	86.7877	2+	E2+M1	−16.6[‡] 5	0.00400		B(M1)(W.u.)=4.80×10^{-5} +48−41; B(E2)(W.u.)=8.5 6 α(K)=0.00335 5; α(L)=0.000513 8; α(M)=0.0001132 16

From ENSDF

$^{160}_{66}$Dy$_{94}$-11

Adopted Levels, Gammas (continued)

γ(^{160}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[#b]	α[a]	Comments
									α(N)=2.61×10^{-5} *4*; α(O)=3.73×10^{-6} *6*; α(P)=1.93×10^{-7} *3* δ: from ^{160}Ho ε decay, δ=−13 *+3−5*.
966.1687	2$^+$	966.166[‡] *2*	83.4[‡] *4*	0.0	0$^+$	E2		0.00327	B(E2)(W.u.)=4.46 *+33−29* α(K)=0.00274 *4*; α(L)=0.000411 *6*; α(M)=9.05×10^{-5} *13* α(N)=2.09×10^{-5} *3*; α(O)=3.00×10^{-6} *5*; α(P)=1.583×10^{-7} *23*
966.83	8$^+$	385.68 *10*	100	581.066	6$^+$	E2		0.0307	B(E2)(W.u.)=328 *+28−25* 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* E_γ: from Coul. ex. (1974Sa03). Mult.: from (α,2nγ).
1049.1018	3$^+$	82.96 *5*	<0.018	966.1687	2$^+$	M1+E2	0.65[@]	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_γ: from Iγ(82.9γ)/Iγ(962γ) in ^{160}Ho ε decay, and Iγ(962γ).
		765.28[‡] *4*	21.81[‡] *12*	283.8219	4$^+$	E2+M1	−13.8[‡] *9*	0.00544	α(K)=0.00452 *7*; α(L)=0.000720 *10*; α(M)=0.0001595 *23* α(N)=3.67×10^{-5} *6*; α(O)=5.21×10^{-6} *8*; α(P)=2.60×10^{-7} *4* δ: from ^{160}Ho ε decay, δ=−13 *+4−10*.
		962.311[‡] *3*	100.0[‡] *9*	86.7877	2$^+$	E2+M1	−13.8[‡] *3*	0.00331	α(K)=0.00278 *4*; α(L)=0.000416 *6*; α(M)=9.17×10^{-5} *13* α(N)=2.11×10^{-5} *3*; α(O)=3.04×10^{-6} *5*; α(P)=1.603×10^{-7} *23* δ: from ^{160}Ho ε decay, δ=−12.8 *+23−36*.
1155.841	4$^+$	106.86[&] *2*	0.028 *14*	1049.1018	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*
		189.66 *3*	0.54 *7*	966.1687	2$^+$	E2		0.282	α(K)=0.186 *3*; α(L)=0.0745 *11*; α(M)=0.01751 *25* α(N)=0.00395 *6*; α(O)=0.000497 *7*; α(P)=8.75×10^{-6} *13*
		574.73[d] *5*	1.1[d] *3*	581.066	6$^+$	E2		0.01064	α(K)=0.00867 *13*; α(L)=0.001534 *22*; α(M)=0.000343 *5* α(N)=7.87×10^{-5} *11*; α(O)=1.098×10^{-5} *16*; α(P)=4.91×10^{-7} *7*
		872.02 *2*	100 *3*	283.8219	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* δ: from 1989Ma39, ^{160}Tb β^- decay, δ=−0.95 *+8−11*. These authors state that this value may be wrong, since the transition is very weak and is probably affected by the near-lying strong 879 γ.

$^{160}_{66}$Dy$_{94}$-12

γ(^{160}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	$I_{(\gamma+ce)}$	Comments
1155.841	4+	1069.04[d] *3*	45.6[d] *11*	86.7877	2+	E2		0.00265		α(K)=0.00223 *4*; α(L)=0.000328 *5*; α(M)=7.20×10^{-5} *10* α(N)=1.659×10^{-5} *24*; α(O)=2.39×10^{-6} *4*; α(P)=1.290×10^{-7} *18* Mult.,δ: see comment on δ for this transition in the ^{160}Ho ε Decay (25.6 m+5.02 h) data set.
1264.7472	2−	215.6452[‡] *11*	15.38[‡] *6*	1049.1018	3+	E1		0.0399		α(K)=0.0337 *5*; α(L)=0.00486 *7*; α(M)=0.001063 *15* α(N)=0.000243 *4*; α(O)=3.44×10^{-5} *5*; α(P)=1.721×10^{-6} *24* Mult.,δ: see comment on δ for this transition in the ^{160}Tb β^- decay data set.
		298.5783[‡] *17*	100.0[‡] *7*	966.1687	2+	E1		0.01740		α(K)=0.01475 *21*; α(L)=0.00208 *3*; α(M)=0.000455 *7* α(N)=0.0001044 *15*; α(O)=1.489×10^{-5} *21*; α(P)=7.77×10^{-7} *11* δ: 1989Ma39 report δ(M2/E1)=+0.0188 *24* for this transition. This leads to B(M2)(W.u.)≥6.6, which exceeds RUL of 1. From ^{160}Ho ε decay, 1998Kr21 report δ(M2/E1)=−0.04 *+30−24*.
		1177.954[‡] *3*	56.9[‡] *2*	86.7877	2+	E1+M2	−0.0207 *23*	9.44×10^{-4}		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)=1.557×10^{-5} *22*
1279.942	0+	1193.17 *3*	100 *4*	86.7877	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*
		1280.0 *3*		0.0	0+	E0			0.44 *8*	X(E0/E2): 0.27 *10* (2005Ki02 evaluation), 0.3 (2009Ad04, ε decay); q^2_K(E0/E2): 2.2 *8* (2005Ki02 evaluation), 2.1 *6* (2009Ad04, ε decay); the E2 transition is 1193.2γ.
1285.604	1−	1198.84[d] *4*	80[d] *3*	86.7877	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*
		1285.60 *2*	100 *2*	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*

$^{160}_{66}$Dy$_{94}$-13

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[#b]	α[a]	Comments
									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*
1286.713	3^-	130.87 *2*	0.031 *9*	1155.841	4^+	[E1]		0.1502	B(E1)(W.u.)=1.00×10^{-4} *+49−34* α(K)=0.1260 *18*; α(L)=0.0189 *3*; α(M)=0.00414 *6* α(N)=0.000944 *14*; α(O)=0.0001306 *19*; α(P)=6.04×10^{-6} *9* I_γ: from Iγ(130γ)/Iγ(1002γ) in ε decay and Iγ(130γ).
		237.65 *9*	0.25[‡] *9*	1049.1018	3^+	E1		0.0311	B(E1)(W.u.)=1.3×10^{-4} *+8−5* 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*
		320.50[d] *7*	0.31[d] *18*	966.1687	2^+	(E1)		0.01460	B(E1)(W.u.)=7×10^{-5} *+5−3* 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: from Iγ(320γ)/Iγ(1002γ) in ^{160}Ho ε decay and Iγ(320γ).
		1002.90[‡] *5*	43.6[‡] *3*	283.8219	4^+	E1+M2	−0.013[‡] *9*	1.24×10^{-3}	α(K)=0.001063 *16*; α(L)=0.0001411 *21*; α(M)=3.06×10^{-5} *5* α(N)=7.06×10^{-6} *11*; α(O)=1.032×10^{-6} *15*; α(P)=5.93×10^{-8} *9* B(E1)(W.u.)=0.00031 *+12−7*; B(M2)(W.u.)=0.24 *+52−18*
		1199.89 *4*	100.0 *5*	86.7877	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* B(E1)(W.u.)=0.00042 *+16−9*; B(M2)(W.u.)=0.09 *+9−5*
1288.665	5^+	239.57 *8*	2.38 *10*	1049.1018	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*
		707.60 *2*	24.3 *5*	581.066	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*
		1004.86[d] *2*	100[d] *3*	283.8219	4^+	E2+M1	−13[@] *+3−7*	0.00303	α(K)=0.00254 *4*; α(L)=0.000378 *6*; α(M)=8.30×10^{-5} *12* α(N)=1.91×10^{-5} *3*; α(O)=2.76×10^{-6} *4*; α(P)=1.468×10^{-7} *22* δ: from ^{160}Ho ε decay, 1994SlZZ report δ=+7.1 *+8−10*.
1349.758	2^+	69.82 *5*	2.2 *11*	1279.942	0^+	[E2]		10.85	α(K)=2.31 *4*; α(L)=6.57 *10*; α(M)=1.579 *23*

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
									α(N)=0.353 *5*; α(O)=0.0418 *6*; α(P)=0.0001044 *15* B(E2)(W.u.)=4.2×10^4 *+19−18* BE2W=4.2E+4 *+19−18* exceeds recommended upper limit of 1000. I_γ: from Iγ(69.8γ)/Iγ(1066γ) in ^{160}Ho ε decay and Iγ(1066γ).
1349.758	2$^+$	1066.0 *1*	72 *5*	283.8219	4$^+$	E2		0.00267	B(E2)(W.u.)=1.64 *+21−18* α(K)=0.00225 *4*; α(L)=0.000330 *5*; α(M)=7.24×10^{-5} *11* α(N)=1.669×10^{-5} *24*; α(O)=2.41×10^{-6} *4*; α(P)=1.297×10^{-7} *19* I_γ: from Coul. ex.
		1262.83[d] *6*	100[d] *7*	86.7877	2$^+$	E0+E2+M1	−1.5 *+7−20*		α(exp)=0.017 *6* B(M1)(W.u.)=0.0010 *+10−7*; B(E2)(W.u.)=0.68 *+22−31* α(K)=0.0019 *3*; α(L)=0.00027 *4*; α(M)=5.9×10^{-5} *9* α(N)=1.35×10^{-5} *20*; α(O)=2.0×10^{-6} *3*; α(P)=1.12×10^{-7} *19*; α(IPF)=1.41×10^{-5} *7* α: calculated by evaluator in ε decay dataset. I_γ: from Coul. ex. δ: from Coul. ex. Listed value is δ(E2/M1). From ^{160}Ho ε decay, 1994SlZZ report δ(E2/M1)=−1.0 +∞−4. X(E0/E2)=0.29 *6* (2008VaZU, ε decay).
		1349.76 *10*	93 *6*	0.0	0$^+$	E2		1.70×10^{-3}	B(E2)(W.u.)=0.65 *+8−7* 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_γ: average of 86 *9* (ε decay) and 97 *7* (Coul. ex.). B(E2)(W.u.): from measured B(E2)↑.
1358.670	2$^-$	71.96 *6*	0.24 *12*	1286.713	3$^-$	(M1)		6.18	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* B(M1)(W.u.)=3.9×10^{-5} *+20−17* I_γ: from Iγ(71γ)/Iγ(93.9γ) in ^{160}Ho ε decay and Iγ(93.9γ).
		73.00 *6*	<0.20	1285.604	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* B(E2)(W.u.)<3.01 I_γ: from Iγ(73γ)/Iγ(93.9γ) in ^{160}Ho ε decay and Iγ(93.9γ).
		93.919[‡] *6*	0.760[‡] *24*	1264.7472	2$^-$	E2		3.43	α(K)=1.307 *19*; α(L)=1.632 *23*; α(M)=0.391 *6*

$^{160}_{66}$Dy$_{94}$-15

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
									α(N)=0.0877 *13*; α(O)=0.01051 *15*; α(P)=5.40×10^{-5} *8* B(E2)(W.u.)=3.10 *19*
1358.670	2^-	309.561[‡] *15*	11.59[‡] *5*	1049.1018	3^+	E1+M2	−0.013[‡] *7*	0.01598 *25*	B(E1)(W.u.)=2.44×10^{-7} *13*; B(M2)(W.u.)=0.0020 *+28−14* α(K)=0.01354 *21*; α(L)=0.00191 *3*; α(M)=0.000418 *7* α(N)=9.58×10^{-5} *16*; α(O)=1.369×10^{-5} *22*; α(P)=7.17×10^{-7} *12*
		392.514[‡] *26*	17.95[‡] *12*	966.1687	2^+	E1+M2	+0.018[‡] *6*	0.00902 *14*	B(E1)(W.u.)=1.85×10^{-7} *10*; B(M2)(W.u.)=0.0018 *+14−10* α(K)=0.00766 *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*
		1074.85 *4*	0.006 *2*	283.8219	4^+	M2		0.01097	B(M2)(W.u.)=1.19×10^{-5} *39* α(K)=0.00923 *13*; α(L)=0.001363 *19*; α(M)=0.000300 *5* α(N)=6.95×10^{-5} *10*; α(O)=1.019×10^{-5} *15*; α(P)=5.86×10^{-7} *9*
		1271.873[‡] *5*	100.0[‡] *3*	86.7877	2^+	E1+M2	+0.0166[‡] *25*	8.65×10^{-4}	α(K)=0.000693 *10*; α(L)=9.11×10^{-5} *13*; α(M)=1.97×10^{-5} *3* α(N)=4.56×10^{-6} *7*; α(O)=6.67×10^{-7} *10*; α(P)=3.88×10^{-8} *6*; α(IPF)=5.58×10^{-5} *8* B(E1)(W.u.)=3.04×10^{-8} *16*; B(M2)(W.u.)=2.4×10^{-5} *+8−7*
1386.458	4^-	99.8 *3*	7.7 *6*	1286.713	3^-	(E2)		2.73 *5*	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*
		121.7 *1*	0.8 *3*	1264.7472	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*
		230.628[‡] *13*	15.1 *22*	1155.841	4^+	(E1)		0.0335	α(K)=0.0284 *4*; α(L)=0.00407 *6*; α(M)=0.000890 *13* α(N)=0.000204 *3*; α(O)=2.88×10^{-5} *4*; α(P)=1.457×10^{-6} *21*
		337.36 *2*	58 *3*	1049.1018	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*
		1102.60 *4*	100 *4*	283.8219	4^+	E1+M2	+0.0049[‡] *12*	1.04×10^{-3}	α(K)=0.000892 *13*; α(L)=0.0001179 *17*;

$^{160}_{66}Dy_{94}$-16

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
									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*
1386.458	4$^-$	1299.3[‡] *3*	0.94[‡] *9*	86.7877	2$^+$				
1398.964	3$^-$	243.15 *10*	0.31 *3*	1155.841	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*
		349.86 *3*	0.50 *3*	1049.1018	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*
		432.80 *4*	0.8[‡] *3*	966.1687	2$^+$				
		1115.16 *3*	57 *1*	283.8219	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* δ: from Coul. ex.
		1312.16 *2*	100 *2*	86.7877	2$^+$	E1+M2	−0.015 *3*	8.42×10^{-4}	α(K)=0.000656 *10*; α(L)=8.61×10^{-5} *12*; α(M)=1.87×10^{-5} *3* α(N)=4.31×10^{-6} *6*; α(O)=6.31×10^{-7} *9*; α(P)=3.67×10^{-8} *6*; α(IPF)=7.63×10^{-5} *11* δ: from Coul. ex. From ^{160}Ho ε decay, δ=+0.07 *5*.
1408.47	5$^-$	827.4 *3*	27 *2*	581.066	6$^+$				
		1124.68[d] *4*	100[d] *19*	283.8219	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*
1427.89	10$^+$	461.88 *13*	100	966.83	8$^+$	E2		0.0187	B(E2)(W.u.)=329 *15* α(K)=0.01492 *21*; α(L)=0.00293 *5*; α(M)=0.000661 *10* α(N)=0.0001512 *22*; α(O)=2.07×10^{-5} *3*; α(P)=8.28×10^{-7} *12* E_γ: from Coul. ex. Mult.: from (α,2nγ).
1438.554	6$^+$	282.84 *9*	7.3 *7*	1155.841	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*
		857.6 *2*	100 *26*	581.066	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*

From ENSDF

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	$I_{(\gamma+ce)}$	Comments
1438.554	6+	1154.68 *9*	34 *4*	283.8219	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*
1456.752	0+	490.62[d] *4*	4[d] *1*	966.1687	2+	[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*
		1369.90[d] *4*	100[d] *8*	86.7877	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*
		1456.7[e]		0.0	0+	[E0]				presumably conversion electrons from this transition were observed by 2008VaZU (ε decay) who also reports X(E0/E2) < 0.0022.
1489.500	1−	224.4[d] *3*	0.08[d] *4*	1264.7472	2−	E2,M1		0.20 *5*		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*
		1402.7 *2*	100 *10*	86.7877	2+	E1		8.14×10^{-4}		B(E1)(W.u.)=0.0078 *+11−9* 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*
		1489.51 *3*	56 *2*	0.0	0+	E1		8.07×10^{-4}		B(E1)(W.u.)=0.0037 *+6−4* 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* Additional information 1.
1518.419	2+	119.43 *7*	0.8 *3*	1398.964	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*
		231.7 *1*	3.1 *6*	1286.713	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*
		232.84 *13*	2.8 *5*	1285.604	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*
		552.36 *8*	3.2 *5*	966.1687	2+	[M1,E2]		0.0174 *57*		α(K)=0.0145 *50*; α(L)=0.0022 *6*; α(M)=0.00049 *11* α(N)=0.00011 *3*; α(O)=1.64×10^{-5} *42*; α(P)=8.6×10^{-7} *33*
		1234.60 *3*	64.2 *15*	283.8219	4+	E2		0.00200		α(K)=0.001680 *24*; α(L)=0.000240 *4*; α(M)=5.26×10^{-5} *8*

$^{160}_{66}Dy_{94}$-18

Adopted Levels, Gammas (continued)

γ(^{160}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$^\pi_f$	Mult.[†]	δ[#b]	α[a]	Comments
									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*
1518.419	2$^+$	1431.66[d] *3*	100[d] *12*	86.7877	2$^+$	E2+M1	+2.9[@] *+21−10*	0.00162 *9*	α(K)=0.00133 *8*; α(L)=0.000186 *10*; α(M)=4.06×10^{-5} *22* α(N)=9.4×10^{-6} *5*; α(O)=1.37×10^{-6} *8*; α(P)=7.8×10^{-8} *5*; α(IPF)=5.26×10^{-5} *12*
		1518.41[d] *3*	19[d] *4*	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*
1522.33	4$^+$	556.23 *4*	15 *4*	966.1687	2$^+$	[E2]		0.01154	α(K)=0.00938 *14*; α(L)=0.001683 *24*; α(M)=0.000377 *6* α(N)=8.64×10^{-5} *13*; α(O)=1.203×10^{-5} *17*; α(P)=5.30×10^{-7} *8*
		941.3 *1*	29 *12*	581.066	6$^+$	E2		0.00345	α(K)=0.00290 *4*; α(L)=0.000437 *7*; α(M)=9.62×10^{-5} *14* α(N)=2.21×10^{-5} *4*; α(O)=3.18×10^{-6} *5*; α(P)=1.669×10^{-7} *24*
		1238.6 *2*	82 *12*	283.8219	4$^+$				
		1435.6 *1*	100 *24*	86.7877	2$^+$				
1535.150	4$^-$	136.16 *4*	0.54 *25*	1398.964	3$^-$	[M1,E2]		0.94 *6*	α(K)=0.66 *18*; α(L)=0.214 *92*; α(M)=0.050 *23* α(N)=0.0113 *51*; α(O)=0.00146 *55*; α(P)=3.7×10^{-5} *16* I$_\gamma$: from ^{160}Ho ε decay.
		148.71 *4*	13 *3*	1386.458	4$^-$	E2		0.650	α(K)=0.380 *6*; α(L)=0.208 *3*; α(M)=0.0493 *7* α(N)=0.01110 *16*; α(O)=0.001369 *20*; α(P)=1.688×10^{-5} *24* I$_\gamma$: from ^{160}Ho ε decay.
		176.49 *3*	8.2 *25*	1358.670	2$^-$	E2		0.360	α(K)=0.230 *4*; α(L)=0.1005 *14*; α(M)=0.0237 *4* α(N)=0.00534 *8*; α(O)=0.000667 *10*; α(P)=1.065×10^{-5} *15* I$_\gamma$: from ^{160}Ho ε decay. Mult.: from (α,2nγ).
		246.489[‡] *16*	19.6[‡] *9*	1288.665	5$^+$	E1		0.0283	α(K)=0.0239 *4*; α(L)=0.00342 *5*; α(M)=0.000747 *11* α(N)=0.0001711 *24*; α(O)=2.43×10^{-5} *4*; α(P)=1.237×10^{-6} *18*
		248.41 *3*	3 *2*	1286.713	3$^-$	E2		0.1164	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* I$_\gamma$: from ^{160}Ho ε decay.

$^{160}_{66}$Dy$_{94}$-19

γ(^{160}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
1535.150	4^-	379.41[‡] *8*	13.4[‡] *6*	1155.841	4^+				
		486.06[‡] *5*	79.8[‡] *14*	1049.1018	3^+	E1+M2	+0.04[‡] *3*	0.0056 *4*	α(K)=0.0048 *3*; α(L)=0.00066 *5*; α(M)=0.000144 *10* α(N)=3.32×10^{-5} *24*; α(O)=4.8×10^{-6} *4*; α(P)=2.63×10^{-7} *19*
		1251.28 *4*	100 *7*	283.8219	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*
1556.59	$1^+,2^+$	1468.6 *8*	88 *25*	86.7877	2^+	(E2)		1.48×10^{-3}	α(K)=0.001204 *17*; α(L)=0.0001680 *24*; α(M)=3.67×10^{-5} *6* α(N)=8.47×10^{-6} *12*; α(O)=1.234×10^{-6} *18*; α(P)=6.96×10^{-8} *10*; α(IPF)=6.29×10^{-5} *10*
		1556.6 *1*	100 *13*	0.0	0^+				
1586.744	5^-	298.15[d] *7*	100[d] *20*	1288.665	5^+	(E1)		0.01747	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*
		431.15[d] *25*	6[d] *2*	1155.841	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*
		1302.84[d] *3*	40[d] *10*	283.8219	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*
1594.42	6^-	207.9 *2*	8.0 *12*	1386.458	4^-	E2		0.208	α(K)=0.1414 *21*; α(L)=0.0513 *8*; α(M)=0.01200 *18* α(N)=0.00271 *4*; α(O)=0.000344 *5*; α(P)=6.81×10^{-6} *10* I_γ: from Iγ(207.9γ)/Iγ(1013γ) in (α,2nγ) and Iγ(1013γ). γ not reported in ^{160}Ho ε decay. Mult.: from (α,2nγ).
		306.2 *4*	77 *34*	1288.665	5^+	E1+M2	−0.20 *10*	0.033 *19*	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* Mult.,δ: from (α,2nγ). Mult=E1 is reported in ^{160}Ho ε decay.
		1013.22 *15*	100 *30*	581.066	6^+	E1(+M2)	−0.2 *7*	0.0017 *48*	α(K)=0.0014 *40*; α(L)=1.9×10^{-4} *60*; α(M)=4.E−5 *14* α(N)=1.0×10^{-5} *31*; α(O)=1.4×10^{-6} *45*; α(P)=8.E−8 *26* Mult.,δ: from (α,2nγ).

$^{160}_{66}$Dy$_{94}$-20

Adopted Levels, Gammas (continued)

γ(^{160}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
1603.78	4+	315.33[d] 21	11[d] 7	1288.665	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
		448.05[d] 9	67[d] 33	1155.841	4+	E2		0.0203	α(K)=0.01614 23; α(L)=0.00322 5; α(M)=0.000728 11 α(N)=0.0001664 24; α(O)=2.27×10^{-5} 4; α(P)=8.93×10^{-7} 13
		554.59 7	78 9	1049.1018	3+	E2,M1		0.0172 56	α(K)=0.0144 50; α(L)=0.0022 6; α(M)=0.00049 11 α(N)=0.00011 3; α(O)=1.62×10^{-5} 41; α(P)=8.6×10^{-7} 33
		637.8 4	100 33	966.1687	2+				
		1319.95[d] 25	67[d] 33	283.8219	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
1606.84	6+	640.1 1	6 3	966.83	8+	(E2)		0.00819	α(K)=0.00673 10; α(L)=0.001140 16; α(M)=0.000254 4 α(N)=5.83×10^{-5} 9; α(O)=8.20×10^{-6} 12; α(P)=3.83×10^{-7} 6
		1025.76 7	44 4	581.066	6+				
		1322.86 23	100 12	283.8219	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
1607.86	4+	85.5 1	<20	1522.33	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
		319.19 9	31 15	1288.665	5+	(E2)		0.0535	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
		452.0 3	33 12	1155.841	4+	E2		0.0198	α(K)=0.01577 23; α(L)=0.00313 5; α(M)=0.000708 10 α(N)=0.0001618 23; α(O)=2.21×10^{-5} 4; α(P)=8.74×10^{-7} 13
		558.8 2	65 9	1049.1018	3+	[M1,E2]		0.0169 55	α(K)=0.0141 49; α(L)=0.0022 5; α(M)=0.00048 11 α(N)=0.00011 3; α(O)=1.59×10^{-5} 41; α(P)=8.4×10^{-7} 32
		641.7 1	100 5	966.1687	2+	(E2)		0.00814	α(K)=0.00669 10; α(L)=0.001132 16; α(M)=0.000252 4 α(N)=5.79×10^{-5} 9; α(O)=8.14×10^{-6} 12; α(P)=3.81×10^{-7} 6
1613.98	7−	647.3 2	9 5	966.83	8+				From ^{160}Ho ε decay.
		1032.84[d] 7	100[d] 27	581.066	6+	E1+M2	>0.0	0.0067 55	α(K)=0.0056 47; α(L)=8.3×10^{-4} 70; α(M)=1.8×10^{-4} 16 α(N)=4.2×10^{-5} 36; α(O)=6.2×10^{-6} 52; α(P)=3.5×10^{-7} 30 Mult.,δ: from (α,2nγ).
1617.27	7+	328.6 1	47 9	1288.665	5+	E2		0.0490	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,xnγ).
		650.5 1	13 2	966.83	8+	E2+M1	5 8	0.0082 71	α(K)=0.0067 63; α(L)=0.00112 70; α(M)=2.5×10^{-4} 15 α(N)=5.7×10^{-5} 35; α(O)=8.1×10^{-6} 55; α(P)=3.9×10^{-7} 41 Mult.,δ: from (α,2nγ).
		1036.22 5	100 9	581.066	6+	E2+M1	7.2 10	0.00287 5	α(K)=0.00241 4; α(L)=0.000355 6; α(M)=7.81×10^{-5} 12 α(N)=1.80×10^{-5} 3; α(O)=2.60×10^{-6} 4; α(P)=1.394×10^{-7} 21 Mult.,δ: from (α,2nγ).
1643.27	3−	486	100	1155.841	4+				E_γ: from Coul. ex. γ not reported in ^{160}Ho ε decay.

$^{160}_{66}$Dy$_{94}$-21

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	$I_{(\gamma+ce)}$	Comments
										I_γ: value relative to $I\gamma$=100 for the 486 γ. This scale is different from that of the two highest-energy γ's.
1643.27	3^-	593	16	1049.1018	3^+					E_γ: from Coul. ex. γ not reported in ^{160}Ho ε decay. I_γ: value relative to $I\gamma$=100 for the 486 γ. This scale is different from that of the two highest-energy γ's.
		676	48	966.1687	2^+					E_γ: from Coul. ex. γ not reported in ^{160}Ho ε decay. I_γ: value relative to $I\gamma$=100 for the 486 γ. This scale is different from that of the two highest-energy γ's.
		1359.5 *2*	96 *14*	283.8219	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*
		1556.48 *6*	100 *5*	86.7877	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*
1650.874	$4^-,5^-$	362.20 *12*	10 *1*	1288.665	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*
		495.03 *3*	100 *5*	1155.841	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*
1651.95	$4^+,5,6^+$	1070.8 *3*	46 *6*	581.066	6^+					
		1368.2 *3*	100 *20*	283.8219	4^+					
1653.66		1369.90[d] *4*	100[d]	283.8219	4^+					
1654.99	$2^+,3^+,4^+$	368.26 *4*	23.0 *17*	1286.713	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*
		606.0 *3*	5 *3*	1049.1018	3^+					
		1371.31[d] *7*	100[d] *17*	283.8219	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*
		1568.3 *4*	5.8 *13*	86.7877	2^+					
1676.1		1095.0	100	581.066	6^+					

$^{160}_{66}Dy_{94}$-22

γ(^{160}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	$I_{(\gamma+ce)}$	Comments
1694.360	4^+	308.2 *3*	0.02 *1*	1386.458	4^-	E1		0.01609		B(E1)(W.u.)=5.2×10^{-9} *+32−24* 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*
		405.70 *2*	1.24 *3*	1288.665	5^+	E2		0.0266		B(E2)(W.u.)=0.041 *+10−7* 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*
		538.54 *2*	13.8 *3*	1155.841	4^+	E2+M1	+11.8[@] *+44−20*	0.01261 *19*		B(M1)(W.u.)=4.6×10^{-7} *+24−22*; B(E2)(W.u.)=0.111 *+26−18* α(K)=0.01023 *15*; α(L)=0.00186 *3*; α(M)=0.000416 *6* α(N)=9.53×10^{-5} *14*; α(O)=1.324×10^{-5} *19*; α(P)=5.77×10^{-7} *9*
		645.24 *3*	49.9 *13*	1049.1018	3^+	E2+M1	−4.38[@] *22*	0.00841 *13*		α(K)=0.00693 *11*; α(L)=0.001152 *17*; α(M)=0.000256 *4* α(N)=5.89×10^{-5} *9*; α(O)=8.31×10^{-6} *12*; α(P)=3.98×10^{-7} *6* B(M1)(W.u.)=6.8×10^{-6} *+18−12*; B(E2)(W.u.)=0.155 *+38−26*
		728.17 *2*	100 *2*	966.1687	2^+	E2		0.00606		B(E2)(W.u.)=0.179 *+43−29* 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*
		1410.5 *3*	0.495 *24*	283.8219	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*
		1607.6 *3*	0.036 *12*	86.7877	2^+	[E2]				B(E2)(W.u.)=1.2×10^{-6} *5*
1708.14	0^+	1621.36 *5*	100 *3*	86.7877	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*
		1708.2		0.0	0^+	(E0)			0.30 *1*	X(E0/E2)=0.6 (2009Ad04, ε decay); q^2_K(E0/E2)=2.8 *9* (2009Ad04, ε decay); the E2 transition is 1621.4γ.
1720.36	6^+	564.48 *25*	100	1155.841	4^+	[E2]		0.01112		α(K)=0.00905 *13*; α(L)=0.001614 *23*; α(M)=0.000362 *5*

$^{160}_{66}Dy_{94}$-23

γ(^{160}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[#b]	α[a]	Comments
									α(N)=8.28×10^{-5} *12*; α(O)=1.154×10^{-5} *17*; α(P)=5.12×10^{-7} *8*
1756.918	2$^+$	234.81[d&] *6*	3[d] *1*	1522.33	4$^+$	(E2)		0.1395	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*
		267.45 *10*	2.2 *3*	1489.500	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*
		357.92 *11*	3.6 *7*	1398.964	3$^-$	E1		0.01116	α(K)=0.00947 *14*; α(L)=0.001325 *19*; α(M)=0.000289 *4* α(N)=6.64×10^{-5} *10*; α(O)=9.52×10^{-6} *14*; α(P)=5.06×10^{-7} *7*
		470.0 *2*	12 *1*	1286.713	3$^-$	E1		0.00590	α(K)=0.00502 *7*; α(L)=0.000692 *10*; α(M)=0.0001507 *22* α(N)=3.47×10^{-5} *5*; α(O)=5.00×10^{-6} *7*; α(P)=2.73×10^{-7} *4*
		471.0[d] *3*	7.1[d] *10*	1285.604	1$^-$	E1		0.00587	α(K)=0.00500 *7*; α(L)=0.000689 *10*; α(M)=0.0001500 *22* α(N)=3.45×10^{-5} *5*; α(O)=4.98×10^{-6} *7*; α(P)=2.72×10^{-7} *4*
		1473.06 *3*	100 *2*	283.8219	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*
		1670.14 *13*	47 *7*	86.7877	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*
1784.688	4$^-$	90.33 *2*	100 *2*	1694.360	4$^+$	E1		0.405	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*
		628.95 *17*	6 *2*	1155.841	4$^+$				
		735.69 *25*	11 *3*	1049.1018	3$^+$				
		1500.7 *4*	3.7 *12*	283.8219	4$^+$				
1787.79	6$^-$	137.0 *2*	40 *20*	1650.874	4$^-$,5$^-$	[M1,E2]		0.92 *6*	α(K)=0.65 *18*; α(L)=0.209 *89*; α(M)=0.049 *23* α(N)=0.0110 *49*; α(O)=0.00142 *53*; α(P)=3.6×10^{-5} *16*
		193.4 *2*	40 *20*	1594.42	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*
		201.2 *2*	60 *20*	1586.744	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*
		252.8 *3*	40 *20*	1535.150	4$^-$	E2		0.1101	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* Mult.: from (α,xnγ).
		499.3 *3*	100 *40*	1288.665	5$^+$				
		1206.7 *1*	40 *20*	581.066	6$^+$				
1800.35	8$^+$	362.0 *1*	25 *4*	1438.554	6$^+$	E2		0.0369	α(K)=0.0285 *4*; α(L)=0.00647 *9*; α(M)=0.001477 *21* α(N)=0.000337 *5*; α(O)=4.51×10^{-5} *7*; α(P)=1.535×10^{-6} *22* Mult.: from (α,2nγ).
		834.0 *1*	100 *4*	966.83	8$^+$	E2(+M1)	>1.5	0.0051 *6*	α(K)=0.0042 *5*; α(L)=0.00064 *7*; α(M)=0.000141 *14* α(N)=3.3×10^{-5} *3*; α(O)=4.7×10^{-6} *5*; α(P)=2.5×10^{-7} *4* Mult.,δ: from (α,2nγ).

From ENSDF

$^{160}_{66}$Dy$_{94}$-24

γ(^{160}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[#b]	α[a]	$I_{(\gamma+ce)}$	Comments
1800.35	8+	1219.6 *2*	32 *4*	581.066	6+	E2		0.00204		α(K)=0.001721 *24*; α(L)=0.000247 *4*; α(M)=5.40×10^{-5} *8* α(N)=1.245×10^{-5} *18*; α(O)=1.81×10^{-6} *3*; α(P)=9.94×10^{-8} *14*; α(IPF)=7.53×10^{-6} *11* Mult.: from (α,2nγ).
1802.224	5+	107.87 *2*	6.63 *11*	1694.360	4+	M1+E2	0.40	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*
		279.76[c] *15*	0.20[c] *3*	1522.33	4+	E2		0.0800		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*
		363.66 *3*	4.20 *12*	1438.554	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*
		513.51 *4*	44 *2*	1288.665	5+	E2		0.01414		α(K)=0.01141 *16*; α(L)=0.00212 *3*; α(M)=0.000478 *7* α(N)=0.0001093 *16*; α(O)=1.511×10^{-5} *22*; α(P)=6.40×10^{-7} *9*
		646.40 *8*	96 *13*	1155.841	4+	E2		0.00800		α(K)=0.00658 *10*; α(L)=0.001110 *16*; α(M)=0.000247 *4* α(N)=5.68×10^{-5} *8*; α(O)=7.99×10^{-6} *12*; α(P)=3.75×10^{-7} *6*
		753.11 *2*	100 *2*	1049.1018	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*
		1221.21 *5*	1.5 *2*	581.066	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*
		1518.41[d] *3*	2.4[d] *2*	283.8219	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*
1804.669	1+	315.33[d] *21*	0.4[d] *3*	1489.500	1−	[E1]		0.01520		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*
		445.99[d] *6*	11.3[d] *5*	1358.670	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*
		519.12 *3*	41.8 *10*	1285.604	1−	E1		0.00473		α(K)=0.00402 *6*; α(L)=0.000551 *8*; α(M)=0.0001200 *17*

$^{160}_{66}$Dy$_{94}$-25

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
									α(N)=2.76×10^{-5} 4; α(O)=3.99×10^{-6} 6; α(P)=2.20×10^{-7} 3
1804.669	1^+	539.92 15	26 4	1264.7472	2^-	E1		0.00433	α(K)=0.00369 6; α(L)=0.000505 7; α(M)=0.0001099 16 α(N)=2.53×10^{-5} 4; α(O)=3.66×10^{-6} 6; α(P)=2.02×10^{-7} 3
		838.57 4	7.8 5	966.1687	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
		1717.92 3	100 3	86.7877	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
		1804.68 4	46.6 13	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
1860.18	5^-	256.40 14	22 5	1603.78	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
		324.98[d] 20	14[d] 6	1535.150	4^-	[M1,E2]		0.071 21	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
		1279.2 1	43 7	581.066	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 Mult.: from (α,2nγ).
		1576.30 8	100 5	283.8219	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_γ: from ^{160}Ho ε decay. From (α,2nγ), Iγ(1576γ)/Iγ(1279γ)=0.56.
1869.513	2^+	379.8 3	6.4 18	1489.500	1^-				
		471.0[d] 3	6[d] 3	1398.964	3^-	[E1]		0.00587	α(K)=0.00500 7; α(L)=0.000689 10; α(M)=0.0001500 22 α(N)=3.45×10^{-5} 5; α(O)=4.98×10^{-6} 7; α(P)=2.72×10^{-7} 4
		510.8 1	12 3	1358.670	2^-				

$^{160}_{66}\mathrm{Dy}_{94}$-26

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
1869.513	2^+	582.70 *16*	24 *4*	1286.713	3^-	E1		0.00367	α(K)=0.00313 *5*; α(L)=0.000426 *6*; α(M)=9.28×10^{-5} *13* α(N)=2.14×10^{-5} *3*; α(O)=3.10×10^{-6} *5*; α(P)=1.720×10^{-7} *24*
		584.04[d] *17*	5.8[d] *23*	1285.604	1^-				
		605.0 *3*	4.0 *8*	1264.7472	2^-				
		820.39 *8*	5.6 *5*	1049.1018	3^+				
		1585.63[d] *17*	8.8[d] *18*	283.8219	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*
		1782.73 *4*	100 *4*	86.7877	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*
		1869.55 *6*	41.5 *18*	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*
1882.31	8^-	265.3 *2*	<19	1617.27	7^+	E1(+M2)	1.5 *15*	0.50 *48*	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* E_γ: from ^{160}Ho ε decay. From an in-beam study, 2002Ju08 report Eγ=268.5. I_γ,Mult.: from (α,2nγ).
		287.8 *1*	100 *4*	1594.42	6^-	E2		0.0733	α(K)=0.0545 *8*; α(L)=0.01460 *21*; α(M)=0.00337 *5* α(N)=0.000765 *11*; α(O)=0.0001002 *14*; α(P)=2.81×10^{-6} *4* Mult.: from (α,2nγ).
		915.6 *1*	73 *4*	966.83	8^+	E1(+M2)	−1 *4*	0.0091 *71*	α(K)=0.0077 *60*; α(L)=0.00115 *91*; α(M)=2.5×10^{-4} *20* α(N)=5.8×10^{-5} *47*; α(O)=8.6×10^{-6} *68*; α(P)=4.9×10^{-7} *39* Mult.,δ: from (α,2nγ).
1898.23	7^-	1316.7 *2*	100	581.066	6^+				
1900.87	9^-	286.9 *2*	<19	1613.98	7^-				E_γ,I_γ: from 2002Ju08 (^{7}Li,p4nγ).
		934.1 *1*	100 *4*	966.83	8^+	(E1+M2)	0.8 *8*	0.0071 *57*	α(K)=0.0060 *48*; α(L)=8.8×10^{-4} *72*; α(M)=1.9×10^{-4} *16* α(N)=4.5×10^{-5} *37*; α(O)=6.6×10^{-6} *54*; α(P)=3.8×10^{-7} *31* E_γ,Mult.: from 2002Ju08 (^{7}Li,p4nγ).
1903.204	3^+	504.15[d] *20*	6.2[d] *18*	1398.964	3^-	(E1)		0.00504	α(K)=0.00429 *6*; α(L)=0.000589 *9*; α(M)=0.0001283 *18* α(N)=2.95×10^{-5} *5*; α(O)=4.26×10^{-6} *6*; α(P)=2.34×10^{-7} *4*
		516.86 *11*	15.9 *17*	1386.458	4^-				

$^{160}_{66}Dy_{94}$-27

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	$I_{(\gamma+ce)}$	Comments
1903.204	3^+	544.59 *8*	35.6 *21*	1358.670	2^-	E1		0.00425		α(K)=0.00362 *5*; α(L)=0.000495 *7*; α(M)=0.0001078 *15* α(N)=2.48×10^{-5} *4*; α(O)=3.59×10^{-6} *5*; α(P)=1.98×10^{-7} *3*
		1619.36 *8*	66 *4*	283.8219	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*
		1816.39 *3*	100 *3*	86.7877	2^+	E2		1.15×10^{-3}		α(K)=0.000810 *12*; α(L)=0.0001105 *16*; α(M)=2.41×10^{-5} *4* 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*
1929.176	6^+	126.94 *2*	24.2 *9*	1802.224	5^+	M1+E2	0.37	1.203		α(K)=0.970 *14*; α(L)=0.182 *3*; α(M)=0.0409 *6* α(N)=0.00937 *14*; α(O)=0.001306 *19*; α(P)=5.90×10^{-5} *9*
		234.81[d] *6*	10[d] *4*	1694.360	4^+	(E2)		0.1395		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*
		311.90 *6*	10.1 *8*	1617.27	7^+	E2,(M1)		0.080 *23*		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*
		315.33[d] *21*	0.6[d] *6*	1613.98	7^-	[E1]		0.01520		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*
		334.77 *19*	5.2 *16*	1594.42	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*
		490.62[d] *4*	56[d] *11*	1438.554	6^+	E2,M1		0.0236 *77*		α(K)=0.0196 *68*; α(L)=0.0031 *7*; α(M)=0.00068 *14* α(N)=0.00016 *4*; α(O)=2.3×10^{-5} *6*; α(P)=1.16×10^{-6} *45*
		640.61 *6*	100 *22*	1288.665	5^+	(E2)		0.00817		α(K)=0.00671 *10*; α(L)=0.001137 *16*; α(M)=0.000254 *4* α(N)=5.82×10^{-5} *9*; α(O)=8.18×10^{-6} *12*; α(P)=3.83×10^{-7} *6*
		773.37 *8*	63.9 *27*	1155.841	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_γ: from ^{160}Ho ε decay. In (α,2nγ), Iγ(773γ)/Iγ(640γ)>2.

$^{160}_{66}$Dy$_{94}$-28

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[a]	$I_{(\gamma+ce)}$	Comments
1929.176	6^+	1348.09[d] *10*	17[d] *4*	581.066	6^+				
1950.17	12^+	522.6[&] *1*	100	1427.89	10^+	E2	0.01352		B(E2)(W.u.)=313 *14* α(K)=0.01093 *16*; α(L)=0.00202 *3*; α(M)=0.000453 *7* α(N)=0.0001038 *15*; α(O)=1.436×10^{-5} *21*; α(P)=6.14×10^{-7} *9* Mult.: from (α,2nγ).
1952.31	0^+	244.1		1708.14	0^+	(E0)		0.44 *2*	q_K^2(E0/E2): 4.8 *19* (2009Ad04, ε decay); the E2 transition is 1865.6γ.
		495.6		1456.752	0^+	(E0)		0.74 *4*	q_K^2(E0/E2): 8 *3* (2009Ad04, ε decay); the E2 transition is 1865.6γ.
		666.7[d] *3*	5[d] *3*	1285.604	1^-				
		672.3		1279.942	0^+	(E0)		0.61 *3*	q_K^2(E0/E2): 6.3 *24* (for I(ce(K)) mean value of 0.002 (2009Ad04) and 0.0043 (2006Bo37)); the E2 transition is 1865.6γ.
		986.15[d] *11*	33[d] *8*	966.1687	2^+				
		1271.0		681.3?	(0^+)	(E0)		0.44 *2*	q_K^2(E0/E2): 4.8 *19* (2009Ad04, ε decay); the E2 transition is 1865.6γ.
		1865.56 *4*	100 *5*	86.7877	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*
		1952.6 *4*		0.0	0^+	E0		0.28 *4*	X(E0/E2): 0.6 *3* (2005Ki02 evaluation), 0.9 (2009Ad04, ε decay); q_K^2(E0/E2): 2.1 *8* (2005Ki02 evaluation), 3.0 *13* (2009Ad04, ε decay); the E2 transition is 1865.6γ.
1954.4	$(6)^-$	665.7 *5*	100	1288.665	5^+				
1978.2	$(8)^+$	1011.1[e]		966.83	8^+				
		1397.1		581.066	6^+	E2	1.60×10^{-3}		α(K)=0.001323 *19*; α(L)=0.000186 *3*; α(M)=4.06×10^{-5} *6* α(N)=9.37×10^{-6} *14*; α(O)=1.364×10^{-6} *20*; α(P)=7.65×10^{-8} *11*; α(IPF)=4.18×10^{-5} *6*
2009.531	$1^-,2^-$	355.74 *10*	1.6 *8*	1653.66					
		1922.71 *4*	100 *3*	86.7877	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*
		2009.6[d] *3*	1.5[d] *5*	0.0	0^+				
2012.85	2^+	1729.3 *5*	74 *13*	283.8219	4^+				
		1926.0 *3*	100 *19*	86.7877	2^+				
		2013.3 *5*	21 *9*	0.0	0^+				
2021.64	9^+	120.8 *2*	5 *5*	1900.87	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: from Iγ(120.8γ)/Iγ(404.7γ) in ε decay and Iγ(404.7γ).
		139.3 *2*	14 *10*	1882.31	8^-	[E1]	0.1271		α(K)=0.1067 *16*; α(L)=0.01593 *24*; α(M)=0.00349 *5* α(N)=0.000795 *12*; α(O)=0.0001103 *16*; α(P)=5.16×10^{-6} *8* I_γ: from Iγ(139.3γ)/Iγ(404.7γ) in ε decay and Iγ(404.7γ).

γ(^{160}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$^\pi_f$	Mult.[†]	δ[#b]	α[a]	Comments
2021.64	9$^+$	220.8 *2*	19 *10*	1800.35	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$\times10^{-6}$ *39* I$_\gamma$: from Iγ(220.8γ)/Iγ(404.7γ) in ε decay and Iγ(404.7γ).
		404.7 *4*	48 *3*	1617.27	7$^+$	E2		0.0268	α(K)=0.0211 *3*; α(L)=0.00446 *7*; α(M)=0.001013 *15* α(N)=0.000231 *4*; α(O)=3.13$\times10^{-5}$ *5*; α(P)=1.153$\times10^{-6}$ *17* I$_\gamma$: from the in-beam study of 2002Ju08. Mult.: from (α,2nγ).
		1055.2[&] *1*	100 *7*	966.83	8$^+$	E2+M1	7.0 *12*	0.00276 *5*	α(K)=0.00233 *4*; α(L)=0.000341 *6*; α(M)=7.50$\times10^{-5}$ *12* α(N)=1.73$\times10^{-5}$ *3*; α(O)=2.50$\times10^{-6}$ *4*; α(P)=1.345$\times10^{-7}$ *21* I$_\gamma$: from the in-beam study of 2002Ju08. From ^{160}Ho ε decay, Iγ(1055γ)/Iγ(404γ)=0.2. Mult.,δ: from (α,2nγ).
2049.50	2$^+$,3	1000.2 *4*	58 *19*	1049.1018	3$^+$				
		1765.6 *3*	100 *50*	283.8219	4$^+$				
		1962.7 *5*	33 *14*	86.7877	2$^+$				
2068.08	1$^-$	549.63 *9*	1.7 *5*	1518.419	2$^+$				
		669.1[ce] *2*	1.7[c] *7*	1398.964	3$^-$				
		803.48 *22*	2.1 *4*	1264.7472	2$^-$				
		1981.28 *15*	62 *7*	86.7877	2$^+$				
		2068.07 *4*	100 *3*	0.0	0$^+$	E1		9.76$\times10^{-4}$	α(K)=0.000307 *5*; α(L)=3.98$\times10^{-5}$ *6*; α(M)=8.61$\times10^{-6}$ *12* α(N)=1.99$\times10^{-6}$ *3*; α(O)=2.92$\times10^{-7}$ *4*; α(P)=1.727$\times10^{-8}$ *25*; α(IPF)=0.000618 *9*
2074.09	7$^+$	145.0 *2*	50 *25*	1929.176	6$^+$	[M1,E2]		0.77 *7*	α(K)=0.55 *15*; α(L)=0.167 *65*; α(M)=0.039 *17* α(N)=0.0088 *36*; α(O)=0.00114 *39*; α(P)=3.1$\times10^{-5}$ *13*
		191.5 *2*	75 *25*	1882.31	8$^-$	[E1]		0.0545	α(K)=0.0460 *7*; α(L)=0.00669 *10*; α(M)=0.001462 *21* α(N)=0.000334 *5*; α(O)=4.70$\times10^{-5}$ *7*; α(P)=2.31$\times10^{-6}$ *4*
		272.0 *2*	55 *33*	1802.224	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$\times10^{-6}$ *5*
		635.6 *2*	100 *50*	1438.554	6$^+$				
2077.36	3$^-$	320.50[d] *7*	7[d] *3*	1756.918	2$^+$	(E1)		0.01460	α(K)=0.01238 *18*; α(L)=0.001743 *25*; α(M)=0.000380 *6* α(N)=8.73$\times10^{-5}$ *13*; α(O)=1.248$\times10^{-5}$ *18*; α(P)=6.56$\times10^{-7}$ *10*
		382.8 *2*	41 *11*	1694.360	4$^+$				
		490.62[d] *4*	67[d] *33*	1586.744	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$\times10^{-5}$ *25*; α(P)=7.15$\times10^{-7}$ *10*
		541.9[d] *3*	20[d] *7*	1535.150	4$^-$	[E2,M1]		0.0183 *60*	α(K)=0.0152 *53*; α(L)=0.0024 *6*; α(M)=0.00052 *12* α(N)=0.00012 *3*; α(O)=1.7$\times10^{-5}$ *5*; α(P)=9.1$\times10^{-7}$ *35*
		669.1[ce] *2*	31[c] *13*	1408.47	5$^-$				

γ(^{160}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$^\pi_f$	Mult.[†]	δ[#b]	α[a]	Comments
2077.36	3⁻	678.30[d] *16*	7[d] *3*	1398.964	3⁻				
		718.70 *9*	54 *13*	1358.670	2⁻				
		790.7 *3*	33 *13*	1286.713	3⁻				
		791.8 *3*	20 *7*	1285.604	1⁻				
		812.6 *2*	20 *13*	1264.7472	2⁻				
		921.50[d] *16*	100[d] *20*	1155.841	4⁺				
		1028.26[d] *5*	53[d] *20*	1049.1018	3⁺				
		1111.11[d] *18*	93[d] *27*	966.1687	2⁺				
2084.809	1⁺,2⁺	431.15[de] *25*	1.5[d] *7*	1653.66					
		595.32[d] *10*	3.6[d] *14*	1489.500	1⁻				
		1998.04 *4*	65 *3*	86.7877	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*
		2084.79 *4*	100 *4*	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*
2088.85	1⁻,2⁻,3⁻	2002.01 *4*	100	86.7877	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*
2090.88	2⁻,3⁻	1041.94 *20*	21 *3*	1049.1018	3⁺				
		1124.68[d] *4*	100[d] *11*	966.1687	2⁺				
		2004.1 *3*	71 *9*	86.7877	2⁺				
2096.889	4⁺	340.4 *3*	0.47 *18*	1756.918	2⁺	[E2]		0.0441	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*
		402.44 *14*	1.1 *2*	1694.360	4⁺	[M1,E2]		0.040 *13*	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*
		445.99[d] *6*	3.8[d] *3*	1650.874	4⁻,5⁻	[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*
		658.7 *3*	1.2 *2*	1438.554	6⁺				
		688.37[d] *9*	0.16[d] *8*	1408.47	5⁻				
		698.1 *4*	0.9 *5*	1398.964	3⁻				
		710.5 *3*	1.3 *5*	1386.458	4⁻				
		808.22 *4*	4.56 *23*	1288.665	5⁺				

From ENSDF

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
2096.889	4^+	810.10 *12*	0.97 *19*	1286.713	3^-				
		941.1 *1*	30 *3*	1155.841	4^+	E2+M1	+9[@] *+13−3*	0.00349 *7*	α(K)=0.00292 *6*; α(L)=0.000440 *8*; α(M)=9.70×10^{-5} *17* α(N)=2.23×10^{-5} *4*; α(O)=3.21×10^{-6} *6*; α(P)=1.69×10^{-7} *4*
		1047.76 *3*	72 *1*	1049.1018	3^+	E2+M1	−2.81[@] *+24−26*	0.00299 *6*	α(K)=0.00252 *5*; α(L)=0.000367 *7*; α(M)=8.05×10^{-5} *15* α(N)=1.86×10^{-5} *4*; α(O)=2.69×10^{-6} *5*; α(P)=1.47×10^{-7} *3*
		1130.71 *2*	100 *3*	966.1687	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*
		1813.1 *2*	0.8 *3*	283.8219	4^+				
		2009.6[d] *3*	0.47[d] *16*	86.7877	2^+				
2112.42	8^-	90.8 *2*	100 *30*	2021.64	9^+				
		324.98[d] *20*	40[d] *20*	1787.79	6^-				
		495.4	50 *20*	1617.27	7^+				
		498.4 *3*	60 *30*	1613.98	7^-				
2113.69		329.0 *1*	100 *17*	1784.688	4^-				
		1532.6 *3*	12 *4*	581.066	6^+				
2126.37	3^-	776.8[d] *4*	6[d] *3*	1349.758	2^+				
		840.62 *24*	22 *5*	1285.604	1^-				
		970.9 *3*	40 *4*	1155.841	4^+				
		1077.25 *6*	100 *11*	1049.1018	3^+				
		1160.2 *3*	92 *14*	966.1687	2^+				
		1842.9 *2*	13 *2*	283.8219	4^+				
		2039.7 *2*	10 *2*	86.7877	2^+				
2130.579	3^-	477.2 *3*	7 *3*	1653.66					
		479.5 *3*	7 *3*	1650.874	$4^-,5^-$	[E2]		0.01691	α(K)=0.01356 *20*; α(L)=0.00261 *4*; α(M)=0.000589 *9* α(N)=0.0001346 *19*; α(O)=1.85×10^{-5} *3*; α(P)=7.56×10^{-7} *11*
		487.0 *3*	13 *4*	1643.27	3^-	[M1,E2]		0.0240 *78*	α(K)=0.0200 *70*; α(L)=0.0032 *7*; α(M)=0.00070 *14* α(N)=0.00016 *4*; α(O)=2.3×10^{-5} *6*; α(P)=1.19×10^{-6} *46*
		595.32[d] *10*	13[d] *4*	1535.150	4^-	[M1,E2]		0.0144 *47*	α(K)=0.0121 *41*; α(L)=0.0018 *5*; α(M)=0.00040 *10* α(N)=9.3×10^{-5} *22*; α(O)=1.34×10^{-5} *35*; α(P)=7.2×10^{-7} *27*
		641.1 *1*	28 *7*	1489.500	1^-	(E2)		0.00816	α(K)=0.00670 *10*; α(L)=0.001135 *16*; α(M)=0.000253 *4* α(N)=5.81×10^{-5} *9*; α(O)=8.16×10^{-6} *12*; α(P)=3.82×10^{-7} *6*
		772.02 *20*	22 *4*	1358.670	2^-				

$^{160}_{66}$Dy$_{94}$-32

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
2130.579	3^-	843.95 7	56 7	1286.713	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
		865.82 6	32.8 29	1264.7472	2^-			
		1081.50 13	22 6	1049.1018	3^+	E1	1.08×10^{-3}	α(K)=0.000924 13; α(L)=0.0001222 18; α(M)=2.65×10^{-5} 4 α(N)=6.11×10^{-6} 9; α(O)=8.94×10^{-7} 13; α(P)=5.16×10^{-8} 8
		1164.35 4	100 4	966.1687	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
		1846.9[d] 2	6[d] 3	283.8219	4^+			
		2043.87[d] 5	46[d] 7	86.7877	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
2138.20	2^+	443.91 16	11 3	1694.360	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
		484.62 9	6 2	1653.66				
		851.3 2	11 5	1286.713	3^-			
		982.33[d] 17	4[d] 2	1155.841	4^+			
		1171.97[d] 6	33[d] 8	966.1687	2^+			
		2051.42 5	100 3	86.7877	2^+	E2,M1	0.00121 15	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
		2138.2 2	24 12	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
2140.15	(3)	984.65[d] 20	8[d] 4	1155.841	4^+			
		1091.1 3	72 10	1049.1018	3^+			
		1173.95[d] 5	100[d] 20	966.1687	2^+			
		1856.38 5	46 4	283.8219	4^+			
2141.67	2^+,3,4^+	1857.9 2	65 11	283.8219	4^+			
		2054.8 2	100 17	86.7877	2^+			
2143.73	4^-	449.5 3	13 4	1694.360	4^+			
		855.0 2	46 14	1288.665	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
		987.91[d] 11	100[d] 14	1155.841	4^+			
		1094.6 1	46 11	1049.1018	3^+			
2144.56?		2057.76[e] 5	100	86.7877	2^+			
2149.84	1,2	2063.1 4	100 45	86.7877	2^+			
		2149.82 13	33 9	0.0	0^+			
2155.33		1871.5 2	100	283.8219	4^+			
2165.41		1116.3 1	100	1049.1018	3^+			
2175.3		1208.5	100	966.83	8^+			

From ENSDF

$^{160}_{66}Dy_{94}$-33

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
2187.00	$4^+,5^+,6^+$	580.2 *1*	9.5 *18*	1606.84	6^+			
		748.4 *1*	50 *14*	1438.554	6^+			
		1606.0 *3*	100 *18*	581.066	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*
		1903.17 *9*	24 *2*	283.8219	4^+			
2191.03		1907.20 *7*	100	283.8219	4^+			
2194.43	5^+	406.7 *3*	19 *4*	1787.79	6^-	E1	0.00824	α(K)=0.00700 *10*; α(L)=0.000972 *14*; α(M)=0.000212 *3* α(N)=4.87×10^{-5} *7*; α(O)=7.01×10^{-6} *10*; α(P)=3.77×10^{-7} *6*
		755.6 *3*	4 *1*	1438.554	6^+			
		905.76 *16*	78 *6*	1288.665	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*
		1038.59 *4*	100 *7*	1155.841	4^+	E2	0.00281	α(K)=0.00237 *4*; α(L)=0.000349 *5*; α(M)=7.68×10^{-5} *11* α(N)=1.769×10^{-5} *25*; α(O)=2.55×10^{-6} *4*; α(P)=1.367×10^{-7} *20*
		1145.33 *4*	81 *3*	1049.1018	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*
		1910.58 *6*	11.8 *13*	283.8219	4^+			
2200.82	$2^+,3,4^+$	1916.95 *13*	100 *12*	283.8219	4^+			
		2114.02 *4*	97 *13*	86.7877	2^+			
2208.36	4^+	1052.63 *8*	45 *5*	1155.841	4^+			
		1159.1 *3*	90 *17*	1049.1018	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*
		1241.9 *3*	100 *10*	966.1687	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*
2208.79	$(2)^-$	2122.0 *1*	100	86.7877	2^+			
2221.48	10^+	421.6[&] *1*	90 *10*	1800.35	8^+	E2	0.0239	α(K)=0.0189 *3*; α(L)=0.00391 *6*; α(M)=0.000886 *13* α(N)=0.000202 *3*; α(O)=2.75×10^{-5} *4*; α(P)=1.039×10^{-6} *15* Mult.: from (α,2nγ).
		793.8 *1*	100 *10*	1427.89	10^+	E2+M1	0.0072 *22*	α(K)=0.0060 *19*; α(L)=8.8×10^{-4} *23*; α(M)=0.00019 *5* α(N)=4.5×10^{-5} *12*; α(O)=6.5×10^{-6} *18*; α(P)=3.6×10^{-7} *12*
		1251.1[&] *2*	<50	966.83	8^+			E_γ: see the comment on this γ in the (^{7}Li,p4nγ) data set.
2230.52	2^+	1946.3 *3*	14 *3*	283.8219	4^+			
		2143.8 *2*	42 *9*	86.7877	2^+			
		2230.52 *8*	100 *9*	0.0	0^+			
2241.95	10^-	220	9 *4*	2021.64	9^+	[E1]	0.0379	α(K)=0.0320 *5*; α(L)=0.00461 *7*; α(M)=0.001008 *15* α(N)=0.000231 *4*; α(O)=3.26×10^{-5} *5*; α(P)=1.638×10^{-6} *23* E_γ: from 1987Ri08, (α,2nγ). See the comments on the 181 γ for the proposed γ deexcitation of the even-spin members of the $K^\pi=2^-$ to the γ-vibrational band.

γ(^{160}Dy) (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.†	δ#b	α[a]	Comments
									I_γ: computed from I(γ+ce)(220γ)/I(γ+ce)(360.0γ) from (α,2nγ) and Iγ(359.8γ). Note that if there is a significant M2 admixture in this γ, α will be somewhat larger and the deduced Iγ will be smaller. α: computed assuming mult=E1.
2241.95	10⁻	341.2 *2*	<11	1900.87	9⁻				
		359.8 *1*	100 *5*	1882.31	8⁻				
		813.9 *1*	14 *2*	1427.89	10⁺				
2244.93	2⁺,3,4⁺	1960.9 *3*	68 *14*	283.8219	4⁺				
		2158.28 *15*	100 *18*	86.7877	2⁺				
2255.67	1⁺,2⁺	737.5 *5*	13 *4*	1518.419	2⁺				
		2168.87 *6*	100 *17*	86.7877	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*
		2255.2 *5*	10 *5*	0.0	0⁺				
2263.99	9⁻	365.3 *2*	<71	1898.23	7⁻				
		1297.1[&] *2*	100 *14*	966.83	8⁺				
2264.23	11⁻	363.4 *1*	17 *2*	1900.87	9⁻				E_γ,I_γ: from 2002Ju08, (^{7}Li,p4nγ).
		836.3 *1*	100 *5*	1427.89	10⁺				
2265.0	(10⁺)	836.3[e] *1*	50 *8*	1427.89	10⁺				I_γ: computed from the I(γ+ce) value of 1987Ri08, (α,2nγ).
		1298.2	100 *15*	966.83	8⁺				I_γ: computed from the I(γ+ce) value of 1987Ri08 in (α,2nγ).
2266.98	3⁻	1983.15 *4*	100 *3*	283.8219	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*
		2180.2 *2*	91 *6*	86.7877	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*
2271.246	2⁻	781.86 *10*	7.9 *6*	1489.500	1⁻				
		912.58[d] *22*	2.7[d] *9*	1358.670	2⁻				
		921.50[d] *16*	3.6[d] *12*	1349.758	2⁺				
		984.65[d] *20*	0.9[d] *3*	1286.713	3⁻				
		1006.4 *3*	3 *1*	1264.7472	2⁻				
		1305.18[d] *5*	15[d] *3*	966.1687	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*

From ENSDF

$^{160}_{66}Dy_{94}$-35

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
2271.246	2⁻	2184.43 *4*	100 *3*	86.7877	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* δ: from ^{160}Ho ε decay.
2279.06		1995.22 *10*	100	283.8219	4⁺				
2287.8	8⁻	486.0	27 *4*	1802.224	5⁺				I_γ: the listed value is the undivided intensity from the in-beam studies. It is not possible at present to provide an accurate split of this intensity between the two proposed placements (see the comment on the 486 γ in the “in-beam” data set.).
		670.2	100 *15*	1617.27	7⁺	E1		0.00274	α(K)=0.00233 *4*; α(L)=0.000316 *5*; α(M)=6.86×10⁻⁵ *10* α(N)=1.581×10⁻⁵ *23*; α(O)=2.30×10⁻⁶ *4*; α(P)=1.289×10⁻⁷ *18*
		1321	60 *9*	966.83	8⁺				
2297.48	2⁺	171.1 *2*	4.8 *7*	2126.37	3⁻	[E1]		0.0734	α(K)=0.0619 *9*; α(L)=0.00907 *13*; α(M)=0.00198 *3* α(N)=0.000453 *7*; α(O)=6.34×10⁻⁵ *9*; α(P)=3.07×10⁻⁶ *5*
		212.8 *1*	2.0 *5*	2084.809	1⁺,2⁺	[M1,E2]		0.24 *5*	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*
		394.5 *4*	7 *4*	1903.204	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*
		1010.8 *2*	5.9 *12*	1286.713	3⁻				
		1032.84[d] *7*	4[d] *1*	1264.7472	2⁻				
		1248.26 *5*	20 *2*	1049.1018	3⁺				
		1331.21 *14*	100 *12*	966.1687	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*
		2210.8 *2*	7 *1*	86.7877	2⁺				
		2297.6 *4*	4.3 *15*	0.0	0⁺				
2309.90	2⁺,3,4⁺	791.5 *2*	100 *25*	1518.419	2⁺				
		951.3 *3*	19 *2*	1358.670	2⁻				
		1260.82 *20*	40 *8*	1049.1018	3⁺				
		2026.0 *2*	13 *2*	283.8219	4⁺				
		2223.1 *3*	22 *3*	86.7877	2⁺				
2323.08	1⁺,2⁺	370.7 *3*	4 *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*

Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[a]	Comments
2323.08	$1^+,2^+$	1058.25 *4*	59 *3*	1264.7472	2^-			
		1274.25 *12*	100 *6*	1049.1018	3^+	E2	0.00188	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} *23*; α(P)=9.13×10^{-8} *13*; α(IPF)=1.520×10^{-5} *22*
		1357.01 *5*	86 *6*	966.1687	2^+	(E2)	1.68×10^{-3}	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*
		2236.21 *8*	70 *10*	86.7877	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*
2325.24	$1^+,2^+$	2325.22 *9*	100	0.0	0^+	E2,M1	0.00115 *11*	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*
2327.70	2^+	1361.7 *5*	32 *19*	966.1687	2^+			
		2043.87[d] *5*	44[d] *13*	283.8219	4^+			
		2240.89 *7*	100 *9*	86.7877	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*
		2327.4 *4*	25 *8*	0.0	0^+			
2354.625	2^+	955.62 *6*	20 *4*	1398.964	3^-			
		995.9 *3*	11 *4*	1358.670	2^-			
		1004.86[d] *2*	13[d] *6*	1349.758	2^+			
		1067.9 *1*	44 *5*	1286.713	3^-			
		1069.04[d] *3*	25[d] *6*	1285.604	1^-			
		1089.63 *15*	100 *8*	1264.7472	2^-	E1	1.07×10^{-3}	α(K)=0.000911 *13*; α(L)=0.0001205 *17*; α(M)=2.61×10^{-5} *4* α(N)=6.03×10^{-6} *9*; α(O)=8.82×10^{-7} *13*; α(P)=5.09×10^{-8} *8*
		1198.84[d] *4*	38[d] *13*	1155.841	4^+			
		1388.0[d] *4*	6[d] *3*	966.1687	2^+			
		2267.73 *8*	31.8 *15*	86.7877	2^+	E0+M1+E2		α(exp)=0.0028 *12* α: calculated by evaluator in ε decay.
		2354.54 *7*	29 *3*	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* Mult.: 2002Ad34 report mult=M1,E2. Placement requires E2.
2367.46	$2^+,3^+,4^+$	122.53[d] *2*	8[d] *2*	2244.93	$2^+,3,4^+$	(M1)	1.340	α(K)=1.128 *16*; α(L)=0.1656 *24*; α(M)=0.0364 *5*

From ENSDF

$^{160}_{66}Dy_{94}$-37

γ(^{160}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
								α(N)=0.00841 *12*; α(O)=0.001231 *18*; α(P)=7.03×10^{-5} *10*
2367.46	2$^+$,3$^+$,4$^+$	270.65 *5*	3.7 *3*	2096.889	4$^+$			
		673.09 *7*	30 *3*	1694.360	4$^+$			
		1211.71 *6*	32 *2*	1155.841	4$^+$			
		1318.21[d] *5*	56[d] *11*	1049.1018	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*
		1401.2 *1*	100 *33*	966.1687	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*
2372.305	6$^-$	570.21 *13*	19 *2*	1802.224	5$^+$			
		755.1 *3*	5 *3*	1617.27	7$^+$			
		758.31[d] *3*	15[d] *5*	1613.98	7$^-$			
		933.8 *1*	20 *5*	1438.554	6$^+$			
		963.9 *1*	100 *25*	1408.47	5$^-$			
		986.15[d] *11*	5[d] *3*	1386.458	4$^-$			
		1083.70 *5*	90 *13*	1288.665	5$^+$	E1	1.08×10^{-3}	α(K)=0.000921 *13*; α(L)=0.0001217 *17*; α(M)=2.64×10^{-5} *4* α(N)=6.09×10^{-6} *9*; α(O)=8.91×10^{-7} *13*; α(P)=5.14×10^{-8} *8*
2374.50		975.40[d] *9*	33[d] *16*	1398.964	3$^-$			
		2090.71 *5*	100 *8*	283.8219	4$^+$			
2383.69	6$^-$	454.7 *3*	3 *2*	1929.176	6$^+$			
		766.4 *1*	9 *2*	1617.27	7$^+$			
		776.8[d] *4*	1.3[d] *6*	1606.84	6$^+$			
		975.40[d] *9*	6.2[d] *12*	1408.47	5$^-$			
		1095.01[d] *3*	100[d] *19*	1288.665	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*
2386.88	2$^+$,3$^+$	987.91[d] *11*	8[d] *3*	1398.964	3$^-$			
		1028.26[d] *5*	10[d] *5*	1358.670	2$^-$			
		1100.14 *8*	24 *5*	1286.713	3$^-$			
		1122.10 *4*	100 *3*	1264.7472	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*
		2299.8 *4*	4.3 *12*	86.7877	2$^+$			
2393.54	2,3$^-$	994.76 *13*	100 *13*	1398.964	3$^-$			
		1106.5 *3*	38 *13*	1286.713	3$^-$			
		1107.6 *3*	40 *13*	1285.604	1$^-$			
		1128.7 *1*	20 *5*	1264.7472	2$^-$			
		1344.4 *1*	25 *13*	1049.1018	3$^+$			
		2109.80 *13*	16 *5*	283.8219	4$^+$			
		2307.0 *3*	13 *3*	86.7877	2$^+$			

$^{160}_{66}$Dy$_{94}$-38

γ(^{160}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
2396.92	1,2	2310.1 *5*	100 *25*	86.7877	2+				
		2396.90 *22*	92 *21*	0.0	0+				
2450.25	1−	580.83 *20*	11 *4*	1869.513	2+				
		2363.1[d] *4*	50[d] *13*	86.7877	2+				
		2450.25 *6*	100 *25*	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*
2469.51	3−	372.47[&] *4*	100 *2*	2096.889	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*
		600.2 *1*	15 *6*	1869.513	2+				
		665.3[d] *5*	30[d] *9*	1804.669	1+	[M2]		0.0409	α(K)=0.0340 *5*; α(L)=0.00535 *8*; α(M)=0.001187 *17* α(N)=0.000275 *4*; α(O)=4.01×10−5 *6*; α(P)=2.26×10−6 *4*
		814.57 *5*	87 *3*	1654.99	2+,3+,4+				
		816.04 *7*	62 *3*	1653.66					
		934.4[d] *3*	12[d] *6*	1535.150	4−				
		1111.11[d] *18*	39[d] *12*	1358.670	2−				
2474.97	2+,3,4+	2191.17 *10*	100 *12*	283.8219	4+				
		2387.90 *25*	49 *11*	86.7877	2+				
2485.64	11+	464.3 *1*	100 *5*	2021.64	9+	E2		0.0184	α(K)=0.01472 *21*; α(L)=0.00288 *4*; α(M)=0.000651 *10* α(N)=0.0001487 *21*; α(O)=2.04×10−5 *3*; α(P)=8.18×10−7 *12* Mult.: from 1987Ri08, (α,2nγ).
		534.7[&] *2*	<14	1950.17	12+				
		1058.1 *2*	51 *3*	1427.89	10+	E2+M1	>0.0	0.00367 *97*	α(K)=0.00311 *83*; α(L)=0.00044 *11*; α(M)=9.6×10−5 *23* α(N)=2.2×10−5 *6*; α(O)=3.2×10−6 *8*; α(P)=1.85×10−7 *53* Mult.: from 1987Ri08, (α,2nγ).
2503.80	1+,2+	634.2 *1*	52 *34*	1869.513	2+				
		2417.2 *2*	100 *9*	86.7877	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*
2513.36	14+	563.5 *3*	100	1950.17	12+	E2		0.01117	α(K)=0.00909 *13*; α(L)=0.001622 *23*; α(M)=0.000363 *6* α(N)=8.33×10−5 *12*; α(O)=1.160×10−5 *17*;

From ENSDF

$^{160}_{66}$Dy$_{94}$-39

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
								α(P)=5.14×10^{-7} *8* B(E2)(W.u.)=3.1×10^{2} *+8−3* E_γ,Mult.: from (α,2nγ).
2520.17	10$^-$	278.2 *2*	<100	2241.95	10$^-$			
		408.1 *2*	<100	2112.42	8$^-$	E2	0.0262	α(K)=0.0206 *3*; α(L)=0.00434 *7*; α(M)=0.000985 *14* α(N)=0.000225 *4*; α(O)=3.05×10^{-5} *5*; α(P)=1.128×10^{-6} *16* Mult.: from 1987Ri08 (α,2nγ).
2523.8	3$^+$	2240		283.8219	4$^+$			
		2437		86.7877	2$^+$			
2553.5		1504.4[d] *3*	100[d]	1049.1018	3$^+$			
2556.72	3$^-$,4$^-$,5$^-$	416.56 *6*	33.4 *23*	2140.15	(3)			
		459.9 *1*	100 *14*	2096.889	4$^+$	E1	0.00620	α(K)=0.00527 *8*; α(L)=0.000728 *11*; α(M)=0.0001585 *23* α(N)=3.65×10^{-5} *6*; α(O)=5.26×10^{-6} *8*; α(P)=2.86×10^{-7} *4*
		862.30 *12*	54 *6*	1694.360	4$^+$			
2560.02	2$^+$,3,4$^+$	2276.17 *10*	100 *4*	283.8219	4$^+$			
		2473.3[d] *2*	61[d] *15*	86.7877	2$^+$			
2572.4	3$^+$,4$^+$,5$^+$	2288.6 *3*	100	283.8219	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*
2574.37	1$^-$,2$^-$,3$^-$	506.29 *19*	100	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*
2593.64	12$^+$	645.6[&] *2*	<100	1950.17	12$^+$			E_γ: see the comment on this γ in the (^{7}Li,4pγ) data set.
		1164.1[&] *2*	100 *20*	1427.89	10$^+$			
2602.67	1$^-$,2$^-$	699.9[d] *4*	10[d] *5*	1903.204	3$^+$			
		797.82 *18*	21 *4*	1804.669	1$^+$			
		1316.04[d] *8*	48[d] *24*	1286.713	3$^-$			
		1337.8[d] *2*	95[d] *24*	1264.7472	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*
		1636.41 *9*	42 *2*	966.1687	2$^+$			
		2515.86 *5*	100 *10*	86.7877	2$^+$			
		2602.65 *6*	36 *3*	0.0	0$^+$			
2605.77	2$^+$,3$^+$,4$^+$	1639.1 *5*	20 *10*	966.1687	2$^+$			
		2321.94 *8*	100 *10*	283.8219	4$^+$	E2,M1	0.00115 *11*	α(K)=0.00058 *6*; α(L)=7.8×10^{-5} *9*; 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*
		2518.7[d] *9*	30[d] *10*	86.7877	2$^+$			
2610.01	2$^+$	740.7 *3*	55 *12*	1869.513	2$^+$			
		805.15[de] *12*	46[d] *19*	1804.669	1$^+$			
		915.5[d] *4*	37[d] *19*	1694.360	4$^+$			

Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[a]	Comments
2610.01	2^+	1454.2[d] 3	56[d] 19	1155.841	4^+			
		1560.94 15	100 5	1049.1018	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
		1644.0 4	23 5	966.1687	2^+			
		2523.0 2	45 7	86.7877	2^+			
		2610.0[d] 3	46[d] 19	0.0	0^+			
2630.24	$(1,2)^+$	421.50 8	100 9	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
		1140.71 5	67 18	1489.500	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
2630.705	1^-	333.16 10	2.52 25	2297.48	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
		359.46 15	0.95 13	2271.246	2^-	M1,E2	0.054 17	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
		492.50 4	11.2 7	2138.20	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
		504.15[d] 20	0.8[d] 3	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
		541.9[d] 3	3.7[d] 3	2088.85	$1^-,2^-,3^-$	E2,M1	0.0183 60	α(K)=0.0152 53; α(L)=0.0024 6; α(M)=0.00052 12 α(N)=0.00012 3; α(O)=1.7×10^{-5} 5; α(P)=9.1×10^{-7} 35
		545.94 4	24.7 15	2084.809	$1^+,2^+$	E1	0.00423	α(K)=0.00360 5; α(L)=0.000493 7; α(M)=0.0001072 15 α(N)=2.47×10^{-5} 4; α(O)=3.57×10^{-6} 5; α(P)=1.97×10^{-7} 3
		562.59 15	1.52 18	2068.08	1^-	[M1,E2]	0.0166 54	α(K)=0.0139 48; α(L)=0.0021 5; α(M)=0.00047 11 α(N)=0.000108 25; α(O)=1.56×10^{-5} 40; α(P)=8.3×10^{-7} 31
		621.24 5	11.3 2	2009.531	$1^-,2^-$	E2	0.00880	α(K)=0.00721 10; α(L)=0.001236 18; α(M)=0.000276 4 α(N)=6.33×10^{-5} 9; α(O)=8.88×10^{-6} 13; α(P)=4.10×10^{-7} 6
		678.30[d] 16	0.7[d] 4	1952.31	0^+			
		761.23 6	28.0 23	1869.513	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
		826.11[&] 2	99 3	1804.669	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
		873.88 7	42.3 25	1756.918	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
		922.5 4	1.7 5	1708.14	0^+			
		1112.33 10	18.3 17	1518.419	2^+	E1	1.03×10^{-3}	α(K)=0.000878 13; α(L)=0.0001160 17; α(M)=2.51×10^{-5} 4

Adopted Levels, Gammas (continued)

γ(^{160}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
									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
2630.705	1$^-$	1141.3 1	1.5 3	1489.500	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
		1173.95[d] 5	27[d] 5	1456.752	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
		1271.89[d&] 2	48[d] 8	1358.670	2$^-$				
		1280.93 3	14.3 5	1349.758	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
		1345.08[d] 4	22[d] 2	1285.604	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
		1350.8 1	2.8 5	1279.942	0$^+$				
		1366.06 5	10.2 8	1264.7472	2$^-$				
		1664.55 3	32.0 13	966.1687	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
		2543.95 5	100 5	86.7877	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
		2630.6[d] 3	25[d] 5	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
2634.73		504.15[d] 20	19[d] 8	2130.579	3$^-$				
		1276.0[d] 3	19[d] 8	1358.670	2$^-$				
		1585.63[d] 17	100[d] 15	1049.1018	3$^+$				
		1668.3[d] 3	62[d] 12	966.1687	2$^+$				
		2548.2 3	27 3	86.7877	2$^+$				
2645.88	3$^-$	2362.0 3	40 13	283.8219	4$^+$	E1		1.11×10^{-3}	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
		2559.1 3	100 13	86.7877	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
2647.30	(3)$^-$	2363.1[d] 4	14[d] 7	283.8219	4$^+$				
		2560.7 3	100 13	86.7877	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

$^{160}_{66}Dy_{94}$-42

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
								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*
2661.511	2⁻	211.20[d] *16*	0.5[d] *3*	2450.25	1⁻	M1	0.292	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*
		390.33 *6*	6.3 *6*	2271.246	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*
		521.50 *7*	6.2 *9*	2140.15	(3)			
		572.63 *4*	15 *1*	2088.85	1⁻,2⁻,3⁻	E2,M1	0.0159 *52*	α(K)=0.0133 *46*; α(L)=0.0020 *5*; α(M)=0.00045 *11* α(N)=0.000103 *24*; α(O)=1.49×10^{-5} *38*; α(P)=7.9×10^{-7} *30*
		576.58 *13*	19 *2*	2084.809	1⁺,2⁺	E1	0.00376	α(K)=0.00320 *5*; α(L)=0.000436 *7*; α(M)=9.50×10^{-5} *14* α(N)=2.19×10^{-5} *3*; α(O)=3.17×10^{-6} *5*; α(P)=1.758×10^{-7} *25*
		584.04[d] *17*	4[d] *2*	2077.36	3⁻	[M1,E2]	0.0151 *49*	α(K)=0.0127 *44*; α(L)=0.0019 *5*; α(M)=0.00043 *10* α(N)=9.8×10^{-5} *23*; α(O)=1.41×10^{-5} *37*; α(P)=7.5×10^{-7} *28*
		593.48 *15*	2.2 *5*	2068.08	1⁻	[M1,E2]	0.0145 *47*	α(K)=0.0122 *42*; α(L)=0.0018 *5*; α(M)=0.00041 *10* α(N)=9.4×10^{-5} *23*; α(O)=1.36×10^{-5} *35*; α(P)=7.2×10^{-7} *27*
		651.9 *1*	2.5 *4*	2009.531	1⁻,2⁻			
		758.31[d] *3*	100[d] *6*	1903.204	3⁺	E1	0.00213	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*
		792.0 *2*	12 *2*	1869.513	2⁺			
		856.8 *2*	78 *21*	1804.669	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*
		904.6 *1*	35 *3*	1756.918	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*
		1018.26 *5*	14.9 *6*	1643.27	3⁻			
		1126.6 *3*	2.2 *5*	1535.150	4⁻			
		1143.04 *9*	4.0 *5*	1518.419	2⁺			
		1171.97[d] *6*	40[d] *3*	1489.500	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*
		1262.83[d&] *6*	33[d] *12*	1398.964	3⁻			
		1302.84[d] *3*	37[d] *8*	1358.670	2⁻			
		1374.7 *2*	28 *3*	1286.713	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*
		1375.9[d] *2*	49[d] *4*	1285.604	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*
		1396.71 *4*	43.6 *16*	1264.7472	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*

$^{160}_{66}Dy_{94}$-43

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
2661.511	2^-	1612.35[d] *3*	43[d] *3*	1049.1018	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*
		1695.30 *6*	21.5 *8*	966.1687	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*
		2574.68 *5*	56.3 *25*	86.7877	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*
2665.78	$2^+,3^+,4^+$	1062.0 *3*	27 *10*	1603.78	4^+				
		1510.2 *3*	23 *10*	1155.841	4^+				
		1616.7[c] *2*	25[c] *2*	1049.1018	3^+				
		1699.55 *6*	26 *2*	966.1687	2^+				
		2382.02 *9*	100 *7*	283.8219	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*
		2578.9 *3*	7.7 *17*	86.7877	2^+				
2666.30	12^-	181	236 *15*	2485.64	11^+	[E1]		0.0633	α(K)=0.0533 *8*; α(L)=0.00779 *11*; α(M)=0.001702 *24* α(N)=0.000389 *6*; α(O)=5.46×10^{-5} *8*; α(P)=2.67×10^{-6} *4* E_γ: from 1987Ri08, (α,2nγ). These authors report a sequence of γ's from the even-spin members of the $K^\pi=2^-$ band to ΔJ=−1 members of the γ-vibrational band. 2002Ju08 (^{7}Li,p4nγ) do not mention such a category of transitions in their level-scheme table (Table 1). Iγ computed from I(γ+ce)(181γ)/I(γ+ce)(424.5γ) from (α,2nγ) and Iγ(424.4γ). Note that if there is a significant M2 admixture in this γ, α will be somewhat larger and the deduced Iγ will be smaller. α: computed assuming mult=E1.
		424.4 *1*	100 *4*	2241.95	10^-	E2		0.0235	α(K)=0.0186 *3*; α(L)=0.00382 *6*; α(M)=0.000867 *13* α(N)=0.000198 *3*; α(O)=2.69×10^{-5} *4*; α(P)=1.022×10^{-6} *15* Mult.: from (α,2nγ).
		715.6 *2*	<11	1950.17	12^+				
2674.716	1^-	224.4[d] *3*	0.029[d] *15*	2450.25	1^-	E2,M1		0.20 *5*	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*

$^{160}_{66}$Dy$_{94}$-44

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	δ[#b]	α[a]	Comments
2674.716	1^-	665.3[d] *5*	3.7[d] *4*	2009.531	$1^-,2^-$	M1,E2		0.0110 *35*	α(K)=0.0092 *31*; α(L)=0.00137 *35*; α(M)=0.00030 *8* α(N)=7.0×10^{-5} *18*; α(O)=1.01×10^{-5} *27*; α(P)=5.5×10^{-7} *20*
		722.41 *7*	2.27 *30*	1952.31	0^+				
		805.15[d] *12*	0.8[d] *3*	1869.513	2^+				
		870.0 *1*	2.2 *8*	1804.669	1^+				
		917.80 *9*	1.52 *16*	1756.918	2^+				
		966.5 *1*	2.7 *7*	1708.14	0^+				
		1156.32 *9*	11.5 *10*	1518.419	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*
		1185.20 *15*	17.3 *10*	1489.500	1^-				
		1218.05 *5*	6.7 *4*	1456.752	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*
		1276.0[d] *3*	0.4[d] *1*	1398.964	3^-				
		1316.04[d] *8*	5.5[d] *14*	1358.670	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*
		1324.94 *23*	15.8 *21*	1349.758	2^+				
		1388.0[d] *4*	0.7[d] *3*	1286.713	3^-				
		1389.02 *5*	12.9 *8*	1285.604	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*
		1394.9[d] *2*	0.5[d] *3*	1279.942	0^+				
		1409.9 *3*	4.7 *7*	1264.7472	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*
		2587.93 *5*	13.3 *7*	86.7877	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*
		2674.71[d] *5*	100[d] *5*	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*
2681.822	5^+	298.15[d] *7*	100[d] *18*	2383.69	6^-	E1		0.01747	α(K)=0.01480 *21*; α(L)=0.00209 *3*; α(M)=0.000457 *7*

From ENSDF

$^{160}_{66}$Dy$_{94}$-45

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
								α(N)=0.0001048 *15*; α(O)=1.495×10^{-5} *21*; α(P)=7.80×10^{-7} *11*
2681.822	5^+	309.54[d] *2*	53[d] *12*	2372.305	6^-	E1	0.01591	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*
		1030.95 *4*	28.2 *11*	1650.874	$4^-,5^-$	(E1)	1.18×10^{-3}	α(K)=0.001009 *15*; α(L)=0.0001337 *19*; α(M)=2.90×10^{-5} *4* α(N)=6.69×10^{-6} *10*; α(O)=9.78×10^{-7} *14*; α(P)=5.63×10^{-8} *8*
		1087.48 *15*	6.5 *12*	1594.42	6^-			
		1095.01[d] *3*	12[d] *3*	1586.744	5^-			
		1295.42 *20*	3.5 *12*	1386.458	4^-			
		1393.0 *4*	1.9 *4*	1288.665	5^+			
2696.30	11^-	432.4 *2*	<100	2263.99	9^-			
		1268.3 *2*	<100	1427.89	10^+			
2696.41	$2^-,3^-$	425.2 *2*	4 *1*	2271.246	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*
		611.53 *8*	18.4 *16*	2084.809	$1^+,2^+$	(E1)	0.00332	α(K)=0.00283 *4*; α(L)=0.000384 *6*; α(M)=8.35×10^{-5} *12* α(N)=1.92×10^{-5} *3*; α(O)=2.79×10^{-6} *4*; α(P)=1.555×10^{-7} *22*
		1297.66[d] *18*	10[d] *5*	1398.964	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*
		1337.8[d] *2*	80[d] *20*	1358.670	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*
		1409.7 *1*	20 *5*	1286.713	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*
		1431.66[d] *3*	100[d] *20*	1264.7472	2^-			
		1647.2 *2*	6.7 *7*	1049.1018	3^+			
		2610.0[d] *3*	10[d] *5*	86.7877	2^+			
2697.31	13^-	433.0[&] *1*	47 *2*	2264.23	11^-			
		747.3 *1*	100 *4*	1950.17	12^+			
2697.821	2^+	426.5 *2*	4.6 *11*	2271.246	2^-			
		488.7 *3*	6.0 *23*	2208.79	$(2)^-$			
		559.5 *3*	8.4 *9*	2138.20	2^+	[M1,E2]	0.0168 *55*	α(K)=0.0141 *49*; α(L)=0.0022 *5*; α(M)=0.00048 *11* α(N)=0.00011 *3*; α(O)=1.58×10^{-5} *40*; α(P)=8.4×10^{-7} *32*
		567.36 *10*	14.5 *29*	2130.579	3^-			
		607.00 *9*	19.9 *20*	2090.88	$2^-,3^-$			
		629.7 *1*	9 *3*	2068.08	1^-			
		688.37[d] *9*	32[d] *1*	2009.531	$1^-,2^-$			
		745.73 *9*	16.7 *29*	1952.31	0^+			
		828.13[d] *15*	16[d] *3*	1869.513	2^+			
		940.9 *1*	57 *11*	1756.918	2^+	E2	0.00346	α(K)=0.00290 *4*; α(L)=0.000437 *7*; α(M)=9.63×10^{-5} *14* α(N)=2.22×10^{-5} *4*; α(O)=3.18×10^{-6} *5*; α(P)=1.671×10^{-7} *24*

$^{160}_{66}Dy_{94}$-46

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
2697.821	2+	989.75 5	89 3	1708.14	0+			
		1208.28 12	37 2	1489.500	1−			
		1339.2 2	61 6	1358.670	2−			
		1348.09[d] 10	10[d] 2	1349.758	2+			
		1412.0 3	20 8	1285.604	1−			
		1417.5[d] 3	18[d] 5	1279.942	0+			
		1433.28[&] 6	100 7	1264.7472	2−			
		1731.62 4	57 2	966.1687	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
		2414.2 2	7.1 10	283.8219	4+			
		2611.0 3	23 6	86.7877	2+			
		2697.78 5	33.1 18	0.0	0+			
2701.044	1−	574.73[d] 5	4.1[d] 10	2126.37	3−	E2	0.01064	α(K)=0.00867 13; α(L)=0.001534 22; α(M)=0.000343 5 α(N)=7.87×10^{-5} 11; α(O)=1.098×10^{-5} 16; α(P)=4.91×10^{-7} 7
		616.18 10	2.1 3	2084.809	1+,2+			
		623.69 24	1.2 4	2077.36	3−			
		632.9[c] 6	0.8[c] 6	2068.08	1−			
		691.49 2	12.0 3	2009.531	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
		748.8 1	9.2 6	1952.31	0+			
		831.53 4	3.67 26	1869.513	2+			
		944.3 4	1.4 4	1756.918	2+			
		992.71 11	3.8 5	1708.14	0+			
		1182.68 3	33.7 8	1518.419	2+	E1	9.36×10^{-4}	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
		1244.22 4	21.6 8	1456.752	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
		1341.5 4	4.1 12	1358.670	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
		1351.24 10	11.2 8	1349.758	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 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
		1415.46 4	19.8 6	1285.604	1−	E2,M1	0.0020 4	α(K)=0.0016 4; α(L)=0.00023 5; α(M)=4.9×10^{-5} 10 α(N)=1.14×10^{-5} 23; α(O)=1.7×10^{-6} 4; α(P)=9.7×10^{-8} 22; α(IPF)=5.1×10^{-5} 4
		1421.13 6	10.8 6	1279.942	0+	E1	8.11×10^{-4}	α(K)=0.000570 8; α(L)=7.47×10^{-5} 11; α(M)=1.617×10^{-5} 23 α(N)=3.73×10^{-6} 6; α(O)=5.47×10^{-7} 8; α(P)=3.20×10^{-8} 5; α(IPF)=0.0001455 21

$^{160}_{66}$Dy$_{94}$-47

γ(^{160}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[#b]	α[a]	Comments
2701.044	1^-	1436.2 *1*	14.4 *8*	1264.7472	2^-	E2,M1		0.0019 *4*	α(K)=0.0016 *4*; α(L)=0.00022 *5*; α(M)=4.8×10^{-5} *10* α(N)=1.10×10^{-5} *22*; α(O)=1.6×10^{-6} *4*; α(P)=9.4×10^{-8} *21*; α(IPF)=5.7×10^{-5} *5*
		1735.0 *5*	0.37 *16*	966.1687	2^+				
		2614.25 *5*	100 *4*	86.7877	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*; α(P)=1.20×10^{-8} *13*; α(IPF)=0.000969 *20*
		2701.04 *5*	3.51 *16*	0.0	0^+				
2704.215	$2^-,3^-$	433.00 *7*	20.5 *13*	2271.246	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*
		577.79 *13*	22 *3*	2126.37	3^-	[M1,E2]		0.0155 *51*	α(K)=0.0130 *45*; α(L)=0.0020 *5*; α(M)=0.00044 *10* α(N)=0.000101 *24*; α(O)=1.45×10^{-5} *38*; α(P)=7.7×10^{-7} *29*
		613.28 *6*	25.1 *17*	2090.88	$2^-,3^-$				
		619.4 *2*	8 *3*	2084.809	$1^+,2^+$				
		636.3 *3*	15 *5*	2068.08	1^-				
		654.71 *5*	15.3 *21*	2049.50	$2^+,3$				
		800.9 *1*	5.8 *20*	1903.204	3^+				
		1214.45 *23*	8.2 *18*	1489.500	1^-				
		1305.18[d] *5*	30[d] *10*	1398.964	3^-				
		1345.08[de] *4*	20[d] *5*	1358.670	2^-				
		1417.5[d] *3*	19[d] *4*	1286.713	3^-				
		1439.50[d] *4*	100[d] *2*	1264.7472	2^-	E2,M1		0.0019 *4*	α(K)=0.0016 *4*; α(L)=0.00022 *5*; α(M)=4.7×10^{-5} *10* α(N)=1.10×10^{-5} *22*; α(O)=1.6×10^{-6} *4*; α(P)=9.3×10^{-8} *21*; α(IPF)=5.8×10^{-5} *5*
		1655.15 *4*	69 *3*	1049.1018	3^+				
		1737.9 *2*	3.5 *5*	966.1687	2^+				
		2617.56 *16*	55 *5*	86.7877	2^+	E1		1.22×10^{-3}	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*
2707.77	12^+	486.1 *1*	83 *17*	2221.48	10^+				
		757.5 *1*	100 *17*	1950.17	12^+				
		1280.2 *2*	100 *17*	1427.89	10^+				
2717.225	2^+	632.9[c] *6*	4[c] *3*	2084.809	$1^+,2^+$				

$^{160}_{66}$Dy$_{94}$-48

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
2717.225	2^+	847.7 2	6 2	1869.513	2^+			
		912.58[d] 22	9[d] 3	1804.669	1^+			
		1318.21[d] 5	44[d] 11	1398.964	3^-			
		1431.66[d] 3	100[d] 22	1285.604	1^-			
		1437.5 3	14 4	1279.942	0^+			
		1452.37 7	26.0 21	1264.7472	2^-			
		1668.3[d] 3	18[d] 4	1049.1018	3^+			
		1750.8 2	8.6 7	966.1687	2^+			
		2433.33 6	56 4	283.8219	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 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
		2630.6[d] 3	44[d] 11	86.7877	2^+			
		2717.20 5	28.4 12	0.0	0^+			
2719.02	2^-	448.05[d&] 9	1.6[d] 4	2271.246	2^-	(E2)	0.0203	α(K)=0.01614 23; α(L)=0.00322 5; α(M)=0.000728 11 α(N)=0.0001664 24; α(O)=2.27×10^{-5} 4; α(P)=8.93×10^{-7} 13
		914.15 24	36 7	1804.669	1^+			
		962.0 1	11 2	1756.918	2^+			
		1075.3 4	1.0 5	1643.27	3^-			
		1229.52 25	1.4 1	1489.500	1^-			
		1319.95[d] 25	4[d] 1	1398.964	3^-			
		1360.2 2	9 2	1358.670	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
		1454.2[d] 3	2[d] 1	1264.7472	2^-			
		1669.8 1	3.3 7	1049.1018	3^+			
		2632.15 15	100 9	86.7877	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
2720.57	3^-	453.7 3	10 6	2266.98	3^-	[M1,E2]	0.0289 93	α(K)=0.0239 84; α(L)=0.0038 8; α(M)=0.00085 16 α(N)=0.00020 4; α(O)=2.8×10^{-5} 7; α(P)=1.42×10^{-6} 56
		935.91 6	100 6	1784.688	4^-	E2,M1	0.0049 14	α(K)=0.0041 12; α(L)=0.00059 15; α(M)=0.00013 4 α(N)=3.0×10^{-5} 8; α(O)=4.3×10^{-6} 12; α(P)=2.44×10^{-7} 76
		1202.15 12	42 6	1518.419	2^+			
		1321.5 3	40 6	1398.964	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
		1671.9[d] 5	29[d] 13	1049.1018	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
		1754.32 6	24.0 15	966.1687	2^+			

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[a]	Comments
2720.57	3^-	2436.80 *8*	48 *6*	283.8219	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*
2727.21	(4)	1760.9[e] *4*	13 *4*	966.1687	2^+			
		2146.6 *6*	15 *5*	581.066	6^+			
		2443.35 *10*	100 *12*	283.8219	4^+			
2729.824	2^-	279.76[c] *15*	5.5[c] *9*	2450.25	1^-	(E2)	0.0800	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*
		458.5 *1*	4 *1*	2271.246	2^-	[M1,E2]	0.0281 *91*	α(K)=0.0233 *81*; α(L)=0.0037 *8*; α(M)=0.00083 *15* α(N)=0.00019 *4*; α(O)=2.7×10^{-5} *6*; α(P)=1.38×10^{-6} *54*
		860.3 *3*	6.3 *27*	1869.513	2^+			
		924.9[d] *3*	9[d] *3*	1804.669	1^+			
		1240.36 *20*	82 *6*	1489.500	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*
		1330.4 *5*	27 *16*	1398.964	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*
		1343.5 *3*	30 *9*	1386.458	4^-			
		1371.31[d] *7*	30[d] *7*	1358.670	2^-			
		1379.8 *3*	12 *4*	1349.758	2^+			
		1443.1 *1*	22 *6*	1286.713	3^-	E2,M1	0.0019 *4*	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)=9.3×10^{-8} *21*; α(IPF)=6.0×10^{-5} *5*
		1444.1 *1*	75 *15*	1285.604	1^-	E2,M1	0.0019 *4*	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*
		1465.05 *3*	89 *2*	1264.7472	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*
		2643.06 *10*	100 *6*	86.7877	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*
2734.718	1^-	666.7[d] *3*	3.3[d] *8*	2068.08	1^-			
		1216.37 *7*	17.8 *11*	1518.419	2^+	E1	9.04×10^{-4}	α(K)=0.000748 *11*; α(L)=9.85×10^{-5} *14*; 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*
		1245.8 *6*	1.9 *8*	1489.500	1^-			
		1278.1 *2*	12.9 *9*	1456.752	0^+			
		1336.1 *4*	2.6 *11*	1398.964	3^-			
		1375.9[d] *2*	15[d] *4*	1358.670	2^-			

From ENSDF

$^{160}_{66}Dy_{94}$-50

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

E_i(level)	J^π_i	E_γ [†]	I_γ [†]	E_f	J^π_f	Mult. [†]	δ [#b]	α [a]	Comments
2734.718	1^-	1449.06 *4*	15.1 *6*	1285.604	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*
		1470.0 *2*	3.3 *11*	1264.7472	2^-				
		1768.2 *4*	0.59 *19*	966.1687	2^+				
		2647.91 [d] *5*	100 [d] *8*	86.7877	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*
		2734.72 *5*	34.1 *11*	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*
2755.04		2471.2 *2*	100	283.8219	4^+				
2756.3		2669.5 *3*	100	86.7877	2^+				
2757.13		626.57 *10*	100 *15*	2130.579	3^-				
		1707.6 *4*	20 *8*	1049.1018	3^+				
		2473.3 [d] *2*	59 [d] *20*	283.8219	4^+				
2760.46	1^+,2^+	1401.8 *1*	40 *10*	1358.670	2^-				
		1410.7 *1*	100 *20*	1349.758	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*
		1480.4 [d] *2*	40 [d] *10*	1279.942	0^+				
2763.05		2479.14 *6*	100	283.8219	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*
2767.70	1^-	699.9 [d] *4*	16 [d] *6*	2068.08	1^-				
		1368.7 *3*	60 *20*	1398.964	3^-				
		1409.0 *3*	100 *20*	1358.670	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*
		2680.88 *5*	94 *4*	86.7877	2^+	E1		1.25×10^{-3}	α(K)=0.000205 *3*; α(L)=2.64×10^{-5} *4*; 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*
		2767.8 *2*	12.2 *24*	0.0	0^+				
2772.10		2488.26 *20*	100	283.8219	4^+				

$^{160}_{66}Dy_{94}$-51

Adopted Levels, Gammas (continued)

γ(^{160}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
2777.62	2+,3+,4+	1020.63 *13*	29 *5*	1756.918	2+			
		1134.2 *5*	7.6 *32*	1643.27	3−			
		1259.10 *7*	44 *3*	1518.419	2+			
		1427.82 *9*	100 *6*	1349.758	2+			
		2493.87 *6*	84 *4*	283.8219	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*
2822.23	1+	2735.4	59 *5*	86.7877	2+	[M1]	1.26×10^{-3}	α(K)=0.000442 *7*; α(L)=5.92×10^{-5} *9*; α(M)=1.288×10^{-5} *18* α(N)=2.98×10^{-6} *5*; α(O)=4.40×10^{-7} *7*; α(P)=2.62×10^{-8} *4*; α(IPF)=0.000746 *11* B(M1)(W.u.)=0.129 *+20−16* E_γ: from level-energy difference. 2002Ad34, ε decay, report a strong 2734.72 γ but place all of it from a 2734.7 level. This γ might obscure a γ of the expected intensity from this 2822 level or a small portion of it may in fact correspond to the 2822→86 transition. I_γ: from (γ,γ').
		2822.2 *2*	100	0.0	0+	M1	1.27×10^{-3}	B(M1)(W.u.)=0.198 *+31−23* α(K)=0.000412 *6*; α(L)=5.53×10^{-5} *8*; α(M)=1.201×10^{-5} *17* α(N)=2.78×10^{-6} *4*; α(O)=4.10×10^{-7} *6*; α(P)=2.44×10^{-8} *4*; α(IPF)=0.000792 *11* E_γ: from 2002Ad34, ε decay. Mult.: from (γ,γ').
2833.85	2,3,4	2550.1 *3*	96 *41*	283.8219	4+			
		2747.0 *2*	100 *8*	86.7877	2+			
2851.73	1−	154.04[&] *4*	7 *1*	2697.821	2+	E1	0.0971	α(K)=0.0817 *12*; α(L)=0.01208 *17*; α(M)=0.00264 *4* α(N)=0.000603 *9*; α(O)=8.41×10^{-5} *12*; α(P)=4.00×10^{-6} *6*
		642.9 *1*	3 *1*	2208.79	(2)−	(E2)	0.00810	α(K)=0.00666 *10*; α(L)=0.001126 *16*; α(M)=0.000251 *4* α(N)=5.76×10^{-5} *8*; α(O)=8.10×10^{-6} *12*; α(P)=3.79×10^{-7} *6*
		784.0 *5*	5 *2*	2068.08	1−			
		982.33[d] *17*	2[d] *1*	1869.513	2+			
		1333.5 *4*	24 *9*	1518.419	2+			
		1362.5 *4*	7 *3*	1489.500	1−			
		1394.9[d] *2*	12[d] *6*	1456.752	0+			
		1493.3 *3*	9.4 *10*	1358.670	2−			
		1565.9 *1*	21 *7*	1285.604	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*
		1586.90 *17*	53 *6*	1264.7472	2−	E2	1.33×10^{-3}	α(K)=0.001041 *15*; α(L)=0.0001439 *21*; α(M)=3.14×10^{-5} *5* 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*
		2764.81 *5*	100 *8*	86.7877	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*

$^{160}_{66}Dy_{94}$-52

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
								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*
2851.73	1$^-$	2851.55 *8*	30.0 *19*	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*
2853.69		2272.8 *5*	10 *2*	581.066	6$^+$			
		2569.83 *12*	100 *7*	283.8219	4$^+$			
2858.17		298.15[d] *7*	100[d] *25*	2560.02	2$^+$,3,4$^+$	E1	0.01747	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*
		1891.5 *5*	7 *3*	966.1687	2$^+$			
		2771.6 *5*	4 *2*	86.7877	2$^+$			
2861.162	1$^+$	163.35 *2*	100 *5*	2697.821	2$^+$	M1+E2	0.53 *7*	α(K)=0.40 *11*; α(L)=0.106 *33*; α(M)=0.0245 *84* α(N)=0.0056 *19*; α(O)=7.3×10^{-4} *19*; α(P)=2.22×10^{-5} *91*
		410.9 *1*	10 *5*	2450.25	1$^-$			
		1502.6 *3*	84 *10*	1358.670	2$^-$			
		1511.6 *3*	31 *16*	1349.758	2$^+$			
		1581.2 *3*	26 *6*	1279.942	0$^+$			
		1811.6 *2*	16 *4*	1049.1018	3$^+$			
		2774.3 *2*	20 *5*	86.7877	2$^+$			I_γ: from 2002Ad34. From (γ,γ'), Iγ(2774γ)/Iγ(2861γ)=0.52 *5*.
		2861.03 *9*	44 *3*	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*
2877.094	1$^-$	924.9[d] *3*	20[d] *10*	1952.31	0$^+$			
		1518.41[d] *3*	25[d] *10*	1358.670	2$^-$			
		1526.9 *4*	10 *5*	1349.758	2$^+$			
		1612.35[d] *3*	100[d] *30*	1264.7472	2$^-$			
		2790.4 *2*	12.5 *15*	86.7877	2$^+$			
		2876.98 *10*	8.5 *10*	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* α(N)=1.185×10^{-6} *17*; α(O)=1.744×10^{-7} *25*; α(P)=1.038×10^{-8} *15*; α(IPF)=0.001118 *16* Mult.: from ^{160}Ho ε decay.
2879.46	2	375.57 *18*	37 *10*	2503.80	1$^+$,2$^+$			
		1423.0 *6*	49 *25*	1456.752	0$^+$			
		1480.4[d] *2*	1.0×10^2[d] *4*	1398.964	3$^-$			
		1599.5 *3*	41 *11*	1279.942	0$^+$			
		1723.9 *4*	63 *10*	1155.841	4$^+$			
		1830.6 *4*	62 *25*	1049.1018	3$^+$			
		2595.6 *2*	100 *10*	283.8219	4$^+$			
		2793.1 *5*	10 *2*	86.7877	2$^+$			
2885.58		122.53[d] *2*	15[d] *5*	2763.05		(M1)	1.340	
		211.20[d] *16*	4[d] *4*	2674.716	1$^-$	M1	0.292	

$^{160}_{66}Dy_{94}$-53

Adopted Levels, Gammas (continued)

γ(^{160}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$ [†]	I$_\gamma$ [†]	E$_f$	J$^\pi_f$	Mult. [†]	α [a]	Comments
2885.58		1836.49 *6*	59 *20*	1049.1018	3$^+$			
		1919.38 *15*	100 *5*	966.1687	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*
2896.28	2$^+$	828.13[d] *15*	42[d] *9*	2068.08	1$^-$			
		1407.1 *2*	40 *5*	1489.500	1$^-$			
		1439.50[d] *4*	100[d] *12*	1456.752	0$^+$			
		1546.51 *15*	19 *2*	1349.758	2$^+$			
		1616.7[c] *2*	17[c] *1*	1279.942	0$^+$			
		1846.9[d] *2*	12[d] *5*	1049.1018	3$^+$			
		1930.0 *2*	60 *7*	966.1687	2$^+$			
		2612.5 *3*	5 *3*	283.8219	4$^+$			
		2809.2 *2*	7.9 *14*	86.7877	2$^+$			
		2896.7 *2*	16 *1*	0.0	0$^+$	E2	0.00120 *9*	α(K)=0.000370 *20*; α(L)=4.9×10^{-5} *3*; α(M)=1.07×10^{-5} *7* α(N)=2.47×10^{-6} *16*; α(O)=3.65×10^{-7} *23*; α(P)=2.16×10^{-8} *15*; α(IPF)=0.00077 *7*
2904.36	2,3,4	1937.7 *5*	32 *10*	966.1687	2$^+$			
		2620.4 *4*	35 *9*	283.8219	4$^+$			
		2817.56 *8*	100 *10*	86.7877	2$^+$			
2931.76		2647.91[d] *5*	100[d]	283.8219	4$^+$			
2941.96	4,5,6	2658.11 *8*	100	283.8219	4$^+$			
2958.55		1572.1 *3*	18 *2*	1386.458	4$^-$			
		1671.9[d] *5*	17[d] *7*	1286.713	3$^-$			
		1693.75 *25*	33 *10*	1264.7472	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*
		2674.71[d] *5*	100[d] *10*	283.8219	4$^+$			
2969.03	1,2	1683.28[c] *25*	100[c] *50*	1285.604	1$^-$			
		1704.3 *4*	64 *28*	1264.7472	2$^-$			
		2882.5 *3*	12 *3*	86.7877	2$^+$			
		2968.5 *7*	11 *5*	0.0	0$^+$			
2969.90		1583.3 *6*	4×10^1 *3*	1386.458	4$^-$			
		1683.28[c] *25*	24[c] *12*	1286.713	3$^-$			
		1813.9 *1*	9×10^1 *5*	1155.841	4$^+$			
		2686.14 *8*	100 *5*	283.8219	4$^+$			
2977.55		1928.4 *7*	8×10^1 *4*	1049.1018	3$^+$			
		2693.70 *6*	100 *15*	283.8219	4$^+$			
2984.84	12$^-$	318.2 *2*	<100	2666.30	12$^-$			
		465.0 *2*	<100	2520.17	10$^-$			
2988.76	13$^+$	475 *1*	<23	2513.36	14$^+$			
		503.3 *1*	100 *5*	2485.64	11$^+$			

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[†]	α[a]	Comments
2988.76	13^+	1038.8 2	50 5	1950.17	12^+			
2994.69	2,3,4	1476.25 8	100 11	1518.419	2^+			
		2711.0 2	23 1	283.8219	4^+			
		2907.7 3	3.9 7	86.7877	2^+			
3004.33	1,2	2917.5 1	86 29	86.7877	2^+			
		3004.6 4	100 29	0.0	0^+			
3007.46	14^+	414.3 2	<38	2593.64	12^+			
		493.7[&] 1	100 8	2513.36	14^+			
		1056.5[&] 2	100 8	1950.17	12^+			
3024.52	1,2	2937.9 3	55 6	86.7877	2^+			
		3024.4 2	100 8	0.0	0^+			
3033.7		2749.9 3	100	283.8219	4^+			
3060.44		946.75 9	100	2113.69				
3061.82	1^+	327.3 3	22 15	2734.718	1^-	[E1]	0.01387	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
		400.25 6	100 7	2661.511	2^-	E1	0.00855	α(K)=0.00726 11; α(L)=0.001010 15; α(M)=0.000220 3 α(N)=5.06×10^{-5} 7; α(O)=7.28×10^{-6} 11; α(P)=3.91×10^{-7} 6
		431.15[d] 25	15[d] 7	2630.705	1^-			
		984.65[de] 20	15[d] 7	2077.36	3^-			
		1049.6 5	81 15	2012.85	2^+			
		1775.14 9	36 5	1286.713	3^-			
		1797.6 4	19 9	1264.7472	2^-			
		2975.2 2	14 1	86.7877	2^+	(M1)	1.30×10^{-3}	α(K)=0.000368 6; α(L)=4.92×10^{-5} 7; α(M)=1.069×10^{-5} 15 α(N)=2.47×10^{-6} 4; α(O)=3.65×10^{-7} 6; α(P)=2.17×10^{-8} 3; α(IPF)=0.000871 13 Mult.: from (γ,γ').
		3061.3 7	1.6 7	0.0	0^+	(M1)	1.32×10^{-3}	α(K)=0.000345 5; α(L)=4.62×10^{-5} 7; α(M)=1.004×10^{-5} 14 α(N)=2.32×10^{-6} 4; α(O)=3.43×10^{-7} 5; α(P)=2.04×10^{-8} 3; α(IPF)=0.000914 13 Mult.: from (γ,γ').
3081.4		2797.6 4	100	283.8219	4^+			
3089.49	16^+	576.5[&] 1	100	2513.36	14^+	E2	0.01056	α(K)=0.00861 12; α(L)=0.001521 22; α(M)=0.000340 5 α(N)=7.80×10^{-5} 11; α(O)=1.088×10^{-5} 16; α(P)=4.87×10^{-7} 7 E_γ: from (^{7}Li,p4nγ). Mult.: from (α,2nγ).
3098.82	6^+	890.6 1	15 6	2208.36	4^+			
		1297.66[d&] 18	15[d] 6	1800.35	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
		1378.4 3	24 9	1720.36	6^+			
		1481.9 2	100 9	1617.27	7^+	E2	1.46×10^{-3}	α(K)=0.001184 17; α(L)=0.0001650 24; α(M)=3.60×10^{-5} 5

γ(^{160}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[a]	Comments
								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*
3098.82	6$^+$	1504.4[d] *3*	12[d] *6*	1594.42	6$^-$			
		2132.1 *3*	15 *3*	966.83	8$^+$			
		2518.7[d] *9*	21[d] *6*	581.066	6$^+$			
3111.1		596.5	100	2513.36	14$^+$			
3148.50	14$^-$	482.2 *1*	100	2666.30	12$^-$			Mult.,δ: (D+Q), δ<30 from (α,2nγ). The proposed placement in the level scheme required mult=E2, which is inconsistent with the reported δ value.
3188.20	13$^-$	491.9 *1*	100	2696.30	11$^-$			
3192.87	15$^-$	495.4 *1*	100 *5*	2697.31	13$^-$			
		678.3 *1*	38 *2*	2513.36	14$^+$			
3220.16	14$^+$	512.2 *1*	100 *14*	2707.77	12$^+$			
		706.6 *2*	<71	2513.36	14$^+$			
		1270.6[&] *2*	<71	1950.17	12$^+$			
3452.1?		340.6[e]	100	3111.1				identified by 1987Ri08 as connecting levels at 3454 and 3113. (This latter level has been revised to 3111.5 in this evaluation.) The placement of this γ and, hence, the existence of the 3452 level are uncertain.
3452.7		363.2	100	3089.49	16$^+$			
3508.22	15$^+$	519.7 *1*	100 *4*	2988.76	13$^+$			
		994.6 *2*	<22	2513.36	14$^+$			
3510.64	14$^-$	525.8 *1*	100	2984.84	12$^-$			
3526.56	16$^+$	437.4 *2*	<50	3089.49	16$^+$			
		517.2[&] *2*	<50	3007.46	14$^+$			E_γ: see the comment on this γ in the (^{7}Li,p4nγ) data set.
		1014.5[&] *2*	100 *10*	2513.36	14$^+$			E_γ: see the comment on this γ in the (^{7}Li,p4nγ) data set.
3669.65	18$^+$	580.5[&] *1*	100	3089.49	16$^+$	E2	0.01038	α(K)=0.00847 *12*; α(L)=0.001491 *21*; α(M)=0.000334 *5* α(N)=7.65×10^{-5} *11*; α(O)=1.068×10^{-5} *15*; α(P)=4.79×10^{-7} *7* E_γ: from (^{7}Li,p4nγ).
3681.31	16$^-$	532.8 *1*	100	3148.50	14$^-$			
3730.6	15$^-$	542.4 *2*	100	3188.20	13$^-$			
3744.53	17$^-$	551.5 *1*	100 *7*	3192.87	15$^-$			
		655.2 *1*	17 *3*	3089.49	16$^+$			
3767.63	16$^+$	547.1 *2*	<100	3220.16	14$^+$			
		679.0[&] *2*	<100	3089.49	16$^+$			
		1253.7 *2*	<100	2513.36	14$^+$			
4044.15	17$^+$	536.1 *1*	100 *9*	3508.22	15$^+$			
		953.8[&] *2*	<45	3089.49	16$^+$			
4078.3	16$^-$	567.7 *2*	100	3510.64	14$^-$			
4160.82	18$^+$	490.6 *2*	<100	3669.65	18$^+$			
		634.0 *2*	<100	3526.56	16$^+$			
		1071.7 *2*	<100	3089.49	16$^+$			
4257.01	18$^-$	575.7 *1*	100	3681.31	16$^-$			

$^{160}_{66}$Dy$_{94}$-56

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

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f
4278.39	20^+	608.6 *1*	100	3669.65	18^+
4317.0	17^-	586.4 *2*	100	3730.6	15^-
4348.04	19^-	603.5 *1*	100	3744.53	17^-
4349.95	18^+	582.3 *1*	100 *11*	3767.63	16^+
		680.6 *2*	<56	3669.65	18^+
		1259.2[&] *2*	<56	3089.49	16^+
4618.29	19^+	574.1 *1*	100 *8*	4044.15	17^+
		949.6[&] *2*	<42	3669.65	18^+
4872.61	20^-	615.6 *1*	100	4257.01	18^-
4875.09	20^+	596.7 *1*	100 *14*	4278.39	20^+
		713.8 *2*	<71	4160.82	18^+
		1205.9 *2*	<71	3669.65	18^+
4935.60	22^+	657.2 *1*	100	4278.39	20^+
4936.8	19^-	619.8 *2*	100	4317.0	17^-
4975.00	20^+	624.0[&] *2*	100	4349.95	18^+
		696.8 *2*	100	4278.39	20^+

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f
4975.00	20^+	1306.2[&] *2*	100	3669.65	18^+
5001.54	21^-	653.5 *1*	100	4348.04	19^-
5241.09	21^+	623.0 *1*	100 *17*	4618.29	19^+
		961.9[&] *2*	<83	4278.39	20^+
5528.2	22^-	655.6 *2*	100	4872.61	20^-
5602.1	22^+	727 *1*	100	4875.09	20^+
5647.30	24^+	711.7 *1*	100	4935.60	22^+
5705.2	23^-	703.7 *2*	100	5001.54	21^-
5916.5	23^+	675.4 *2*	100	5241.09	21^+
6219.8	24^-	691.6 *2*	100	5528.2	22^-
6412.5	26^+	765.2 *2*	100	5647.30	24^+
6458.0	25^-	752.8 *2*	100	5705.2	23^-
6642.7	25^+	726.2 *2*	100	5916.5	23^+
6966.3	26^-	746.5 *2*	100	6219.8	24^-
7230.3	28^+	817.8 *2*	100	6412.5	26^+

† From ^{160}Ho ε decay, except where noted otherwise. If only one data set presents data on these properties, it is to be assumed that this information is derived from that source.

‡ From ^{160}Tb β^- decay.

\# Values are generally from the ^{160}Tb β^- decay or the ^{160}Ho ε decay. If only one data set presents data on these values, it is to be assumed that this information is derived from that source.

@ From ^{160}Ho ε decay.

& Eγ differs by 3σ or more than value calculated from ΔE(lev).

a Additional information 2.

b Additional information 3.

c Multiply placed with undivided intensity.

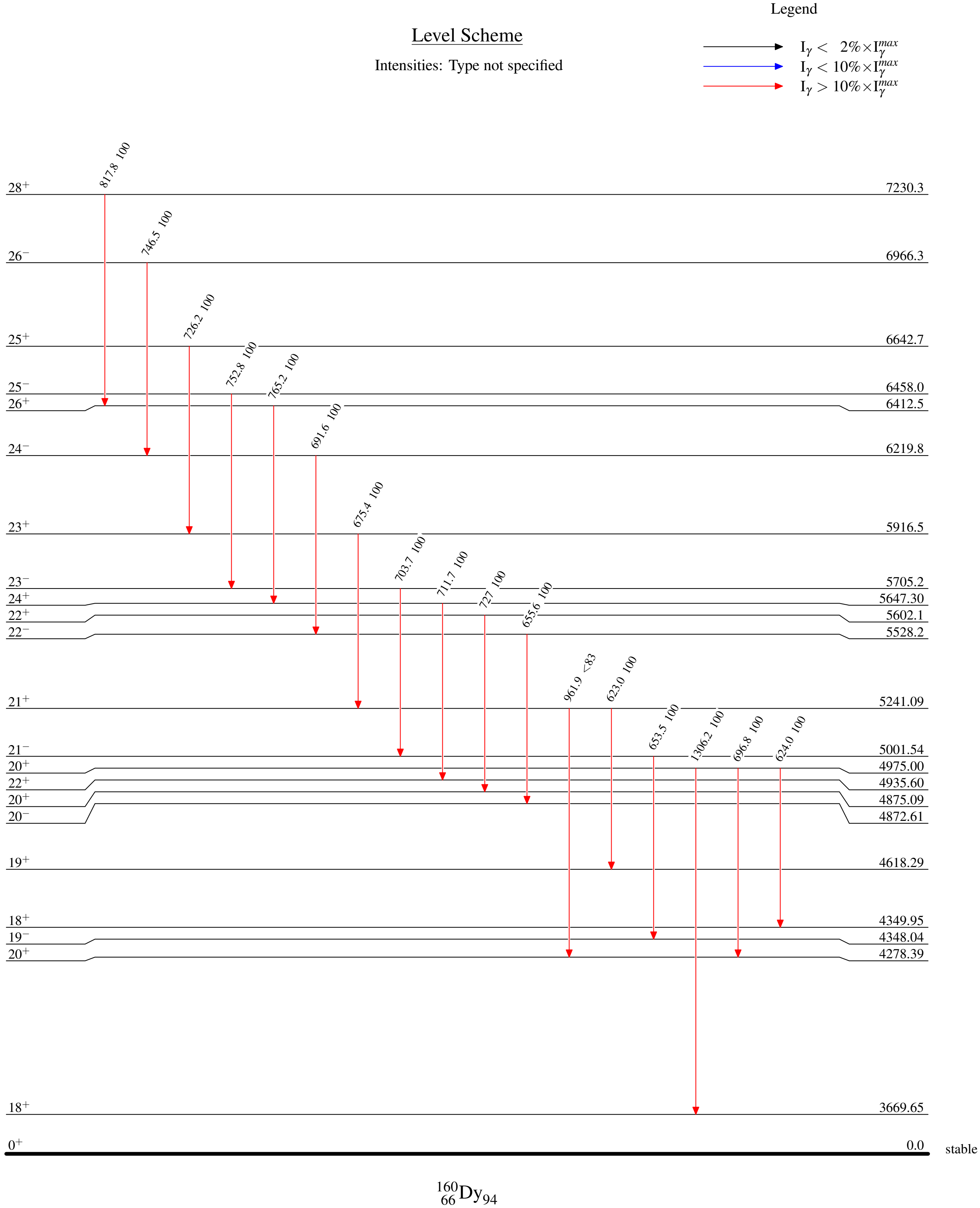
d Multiply placed with intensity suitably divided.

e Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

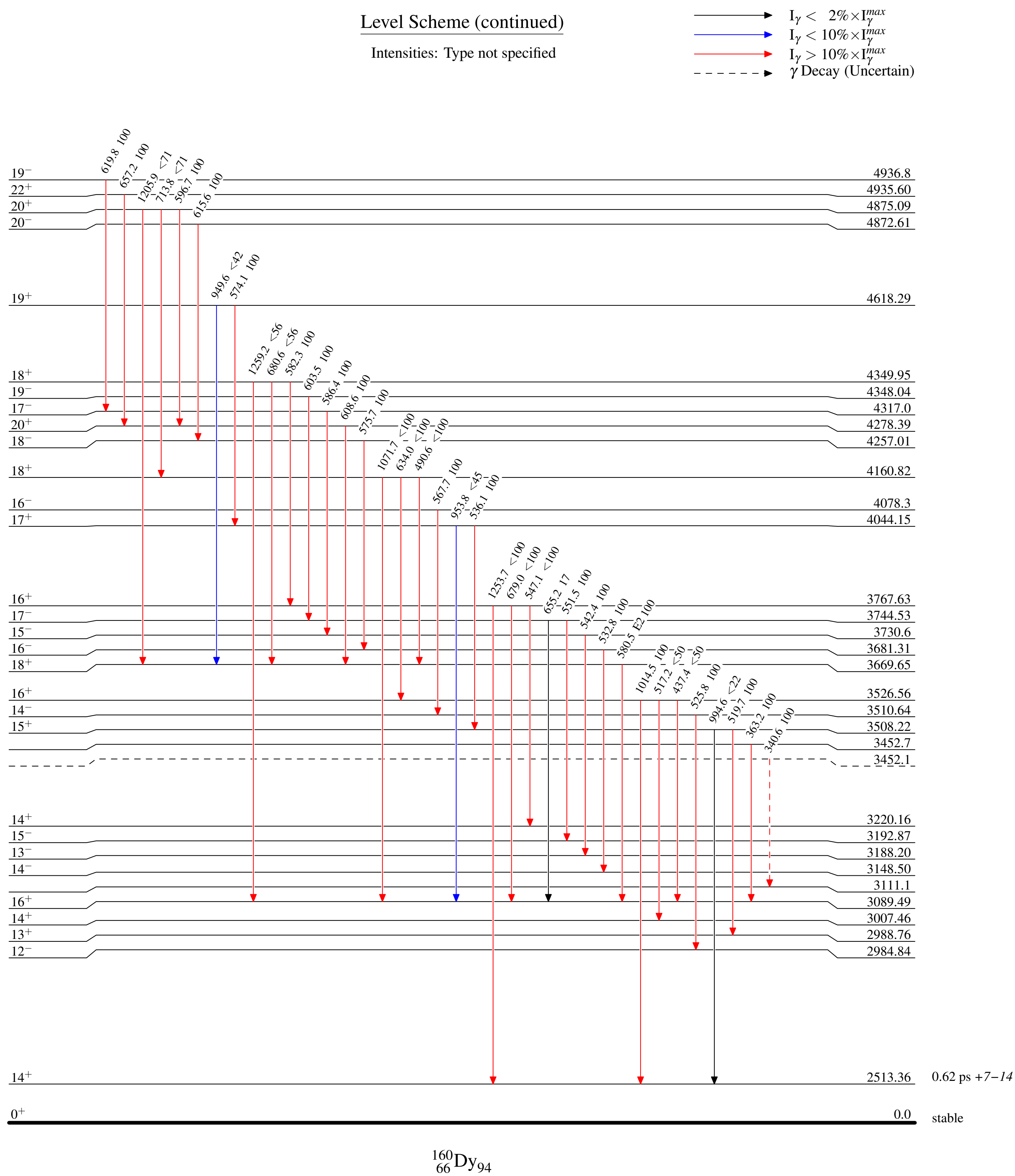
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

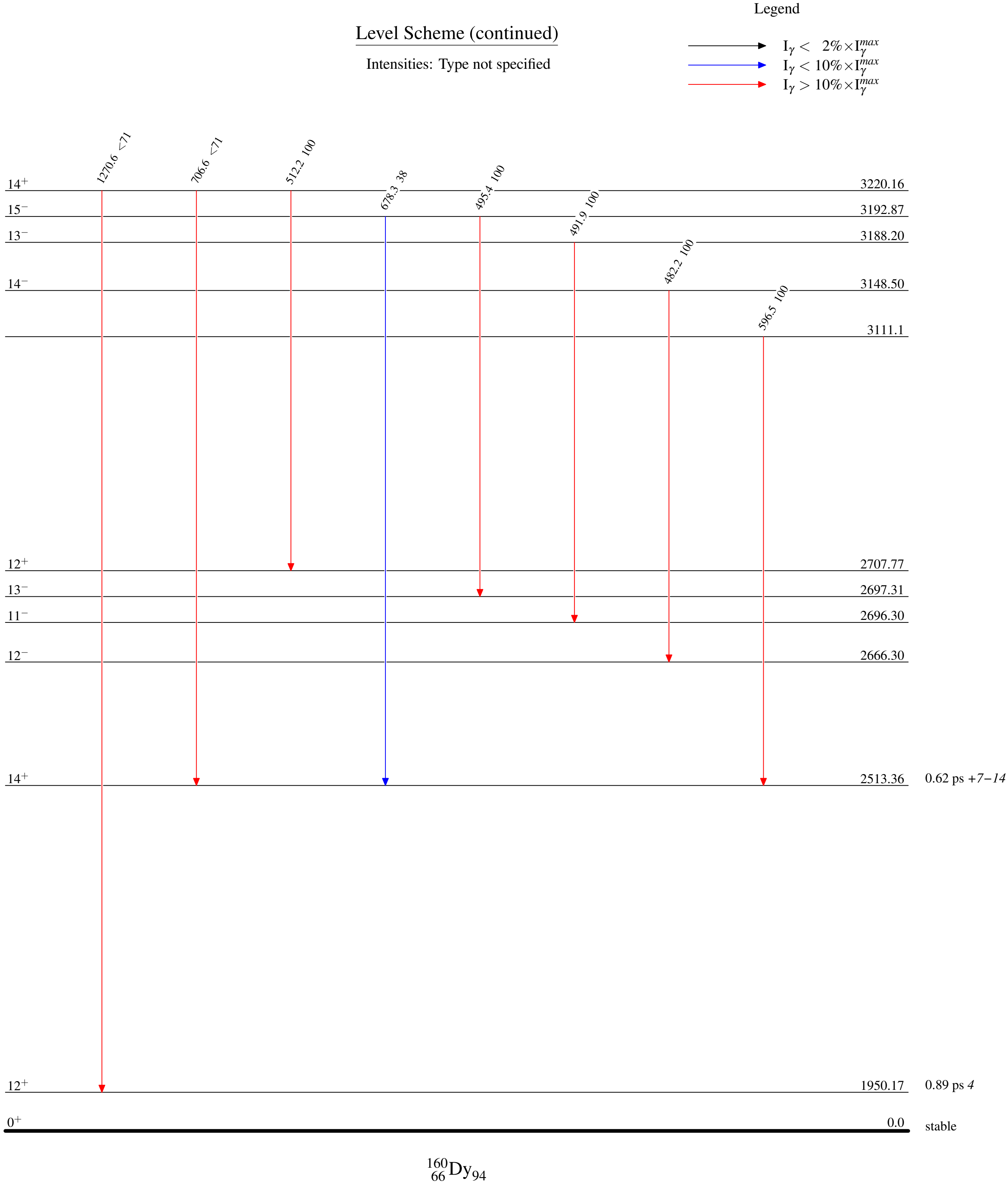
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

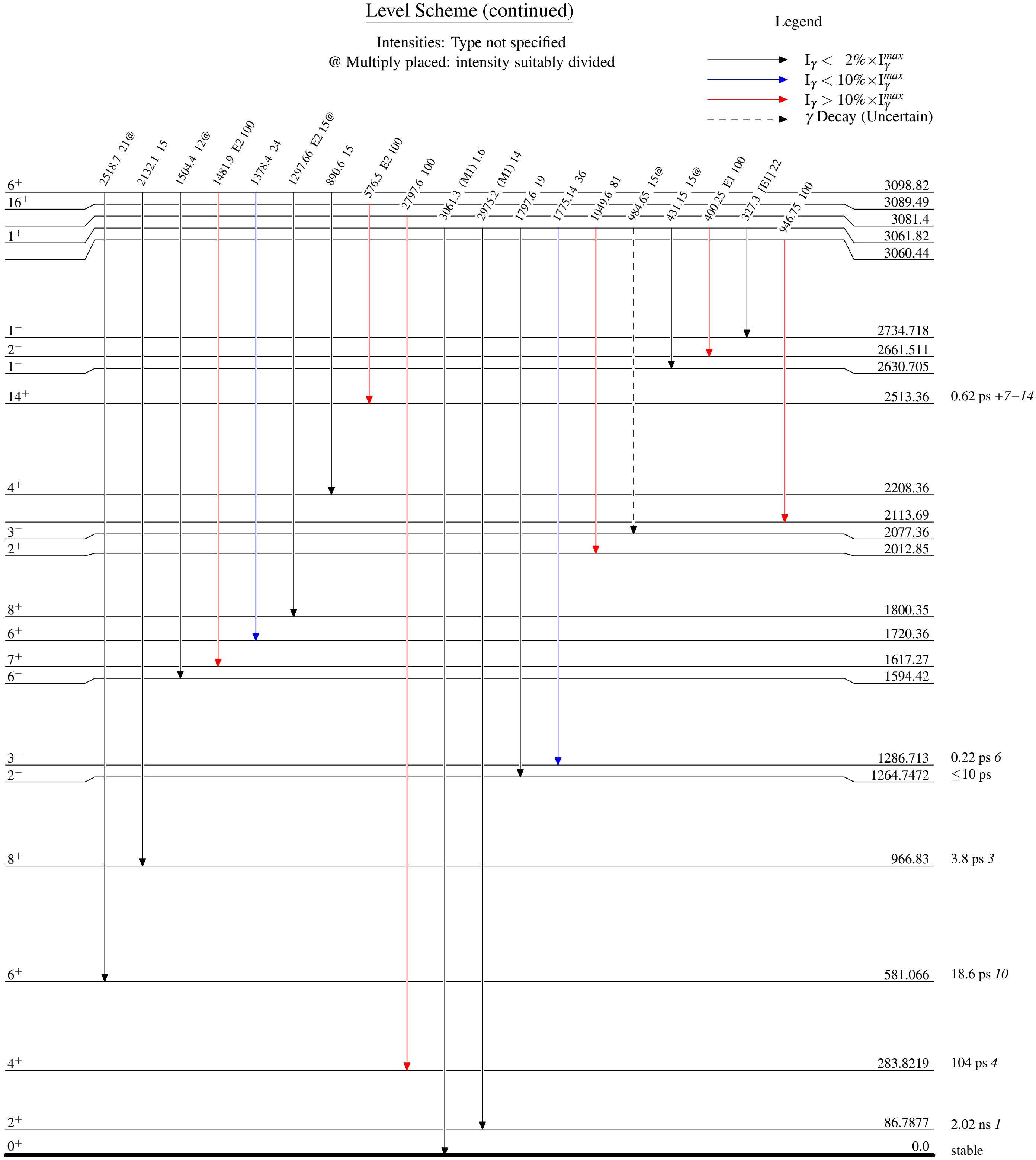


Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

@ Multiply placed: intensity suitably divided

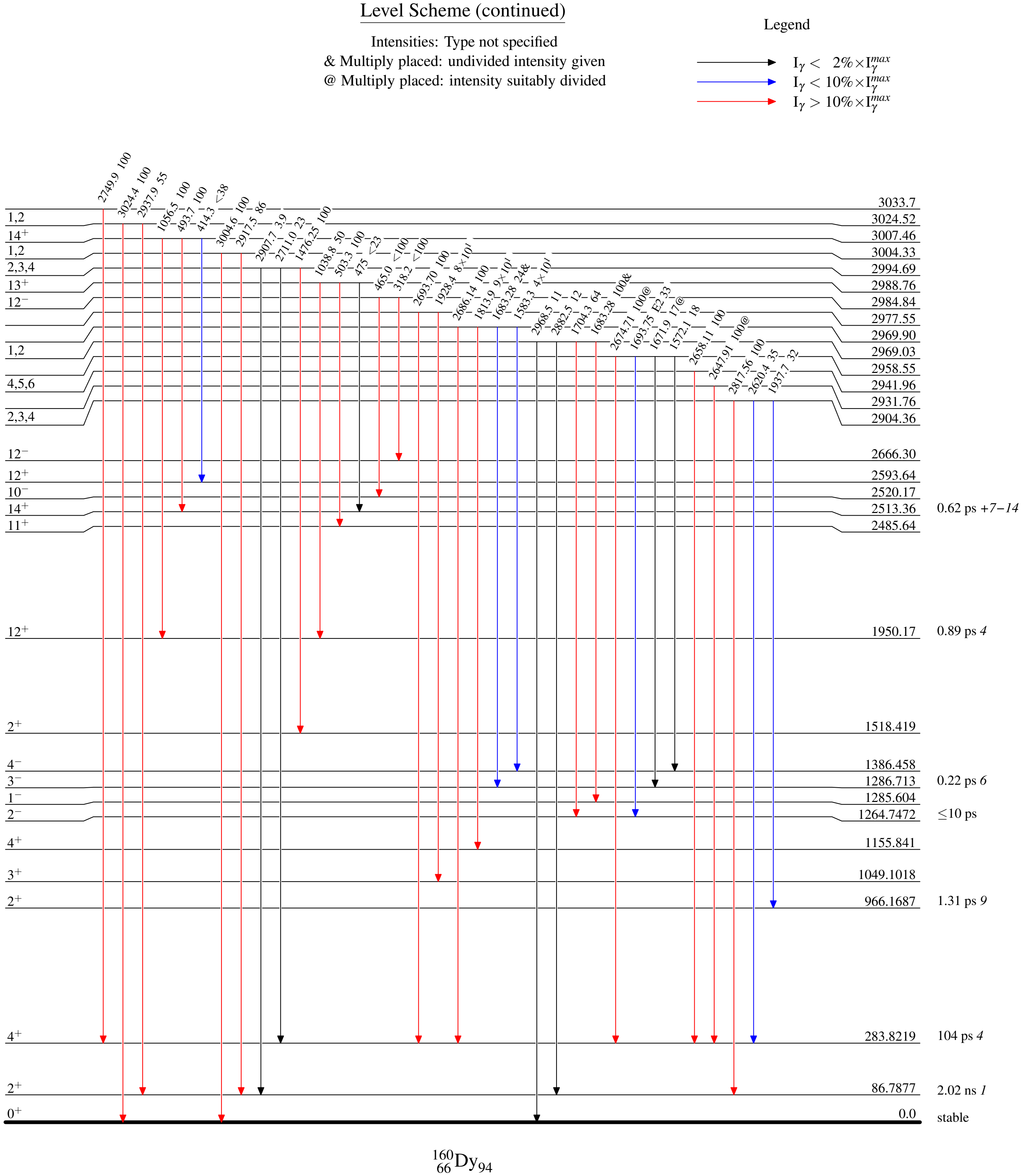


$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas

Level Scheme (continued)

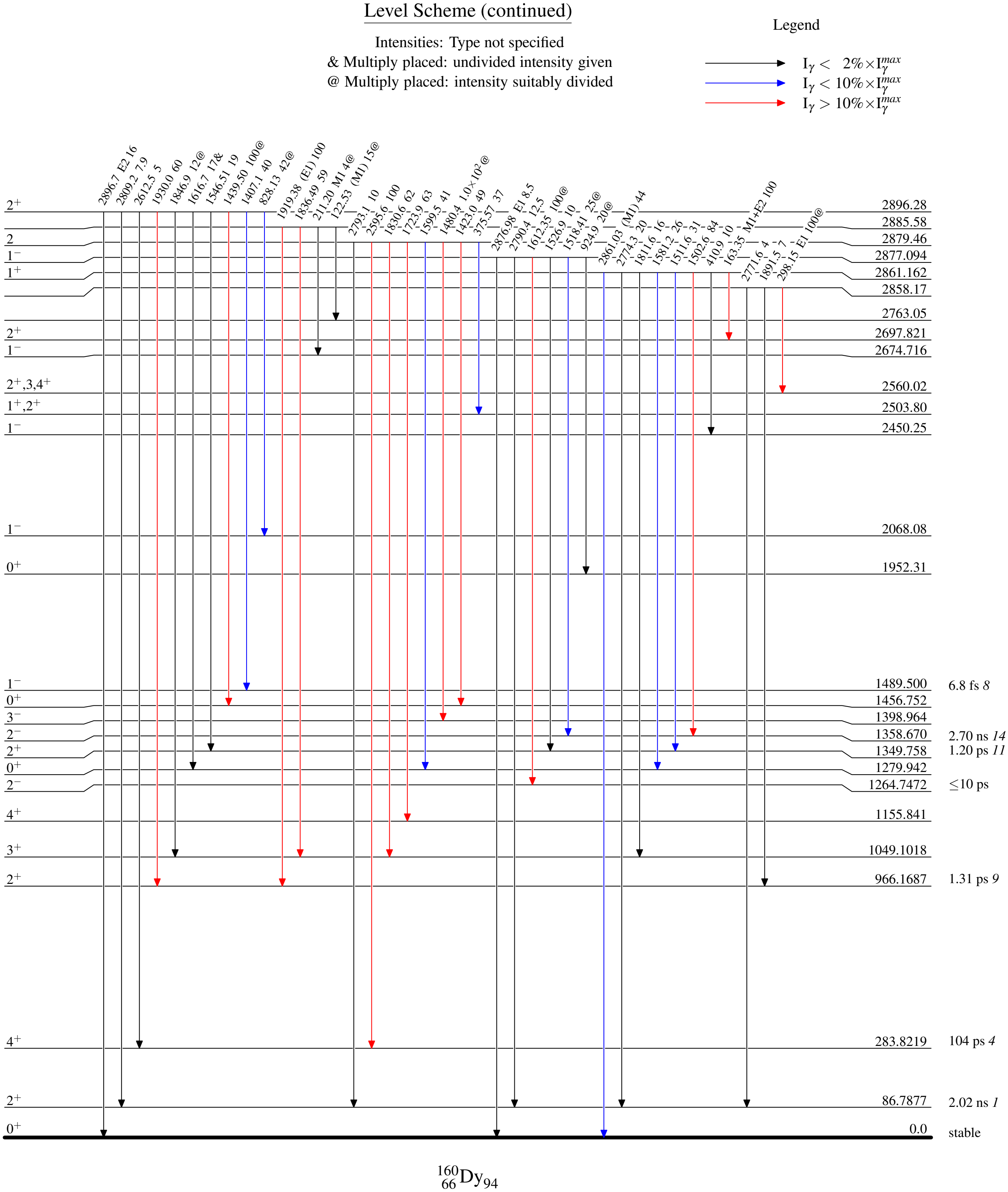
Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



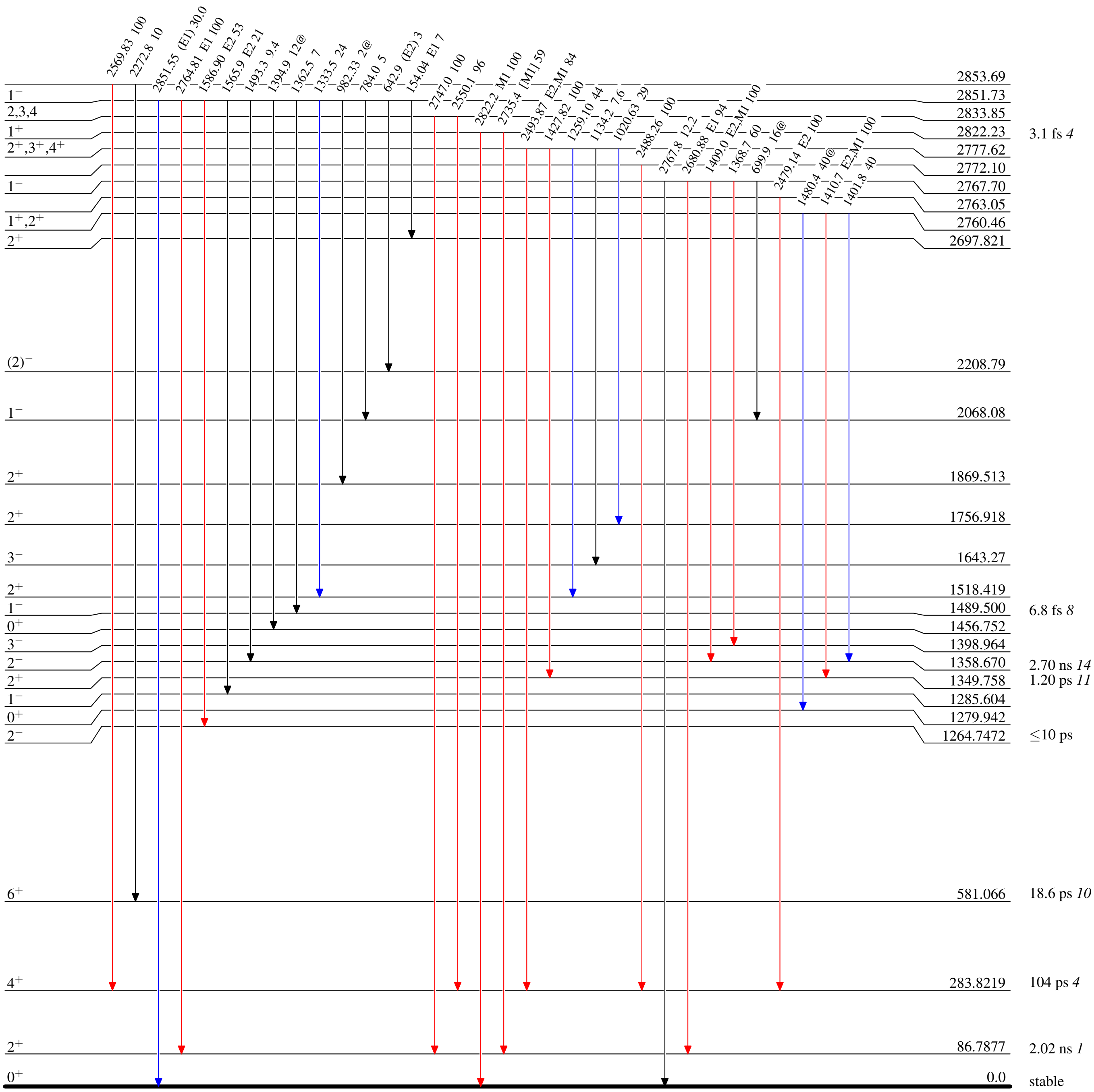
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

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

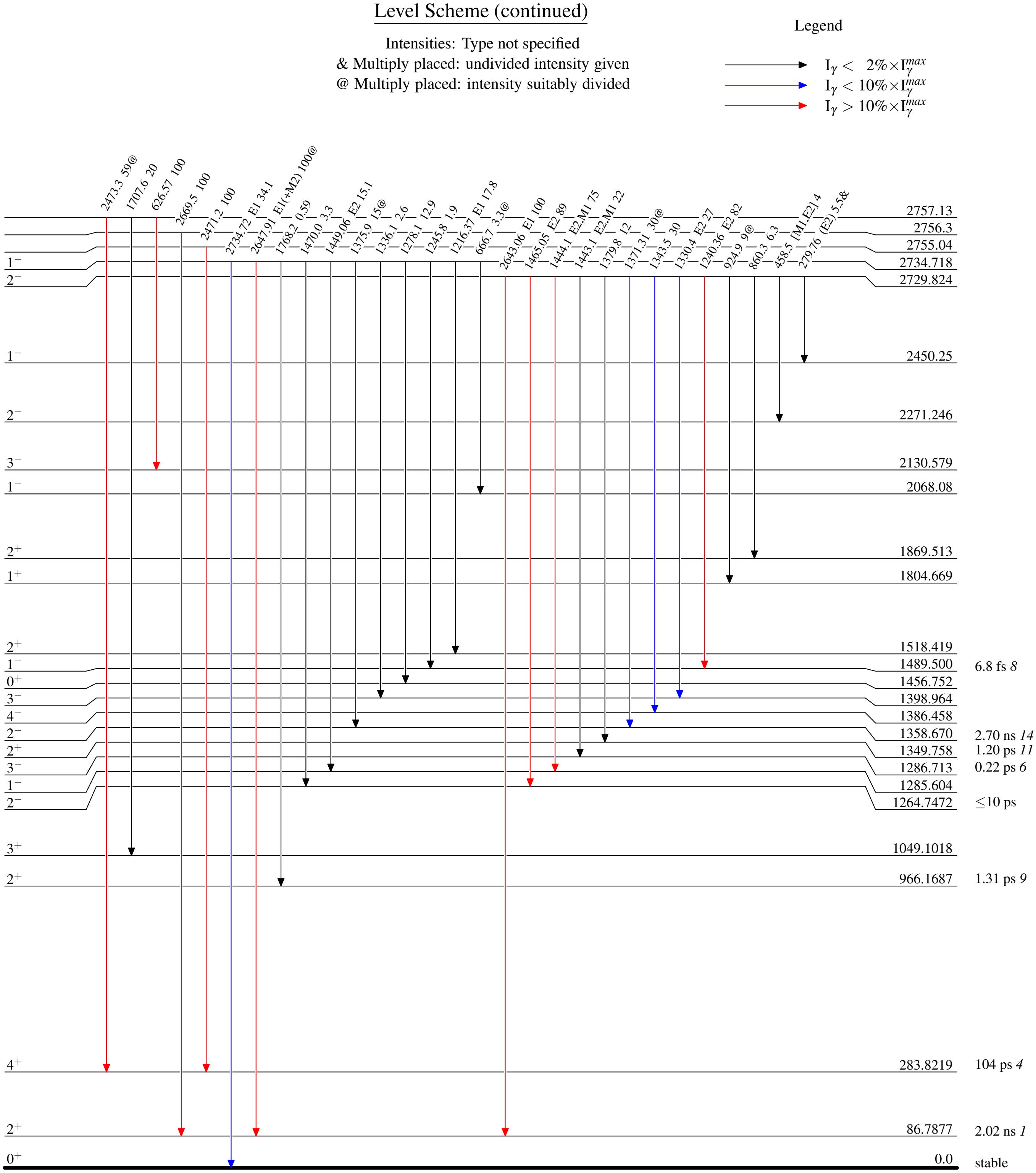


$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

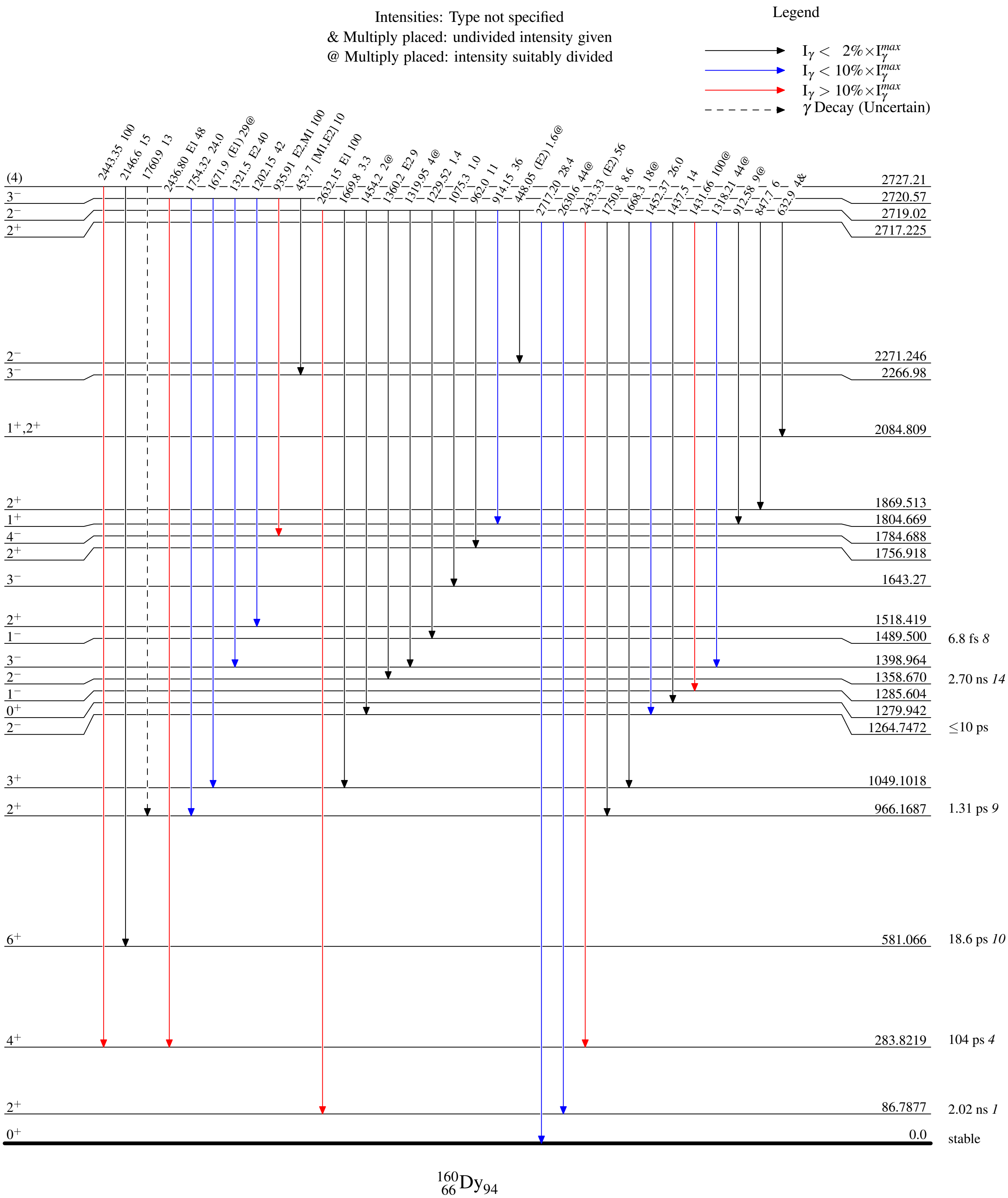


$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas

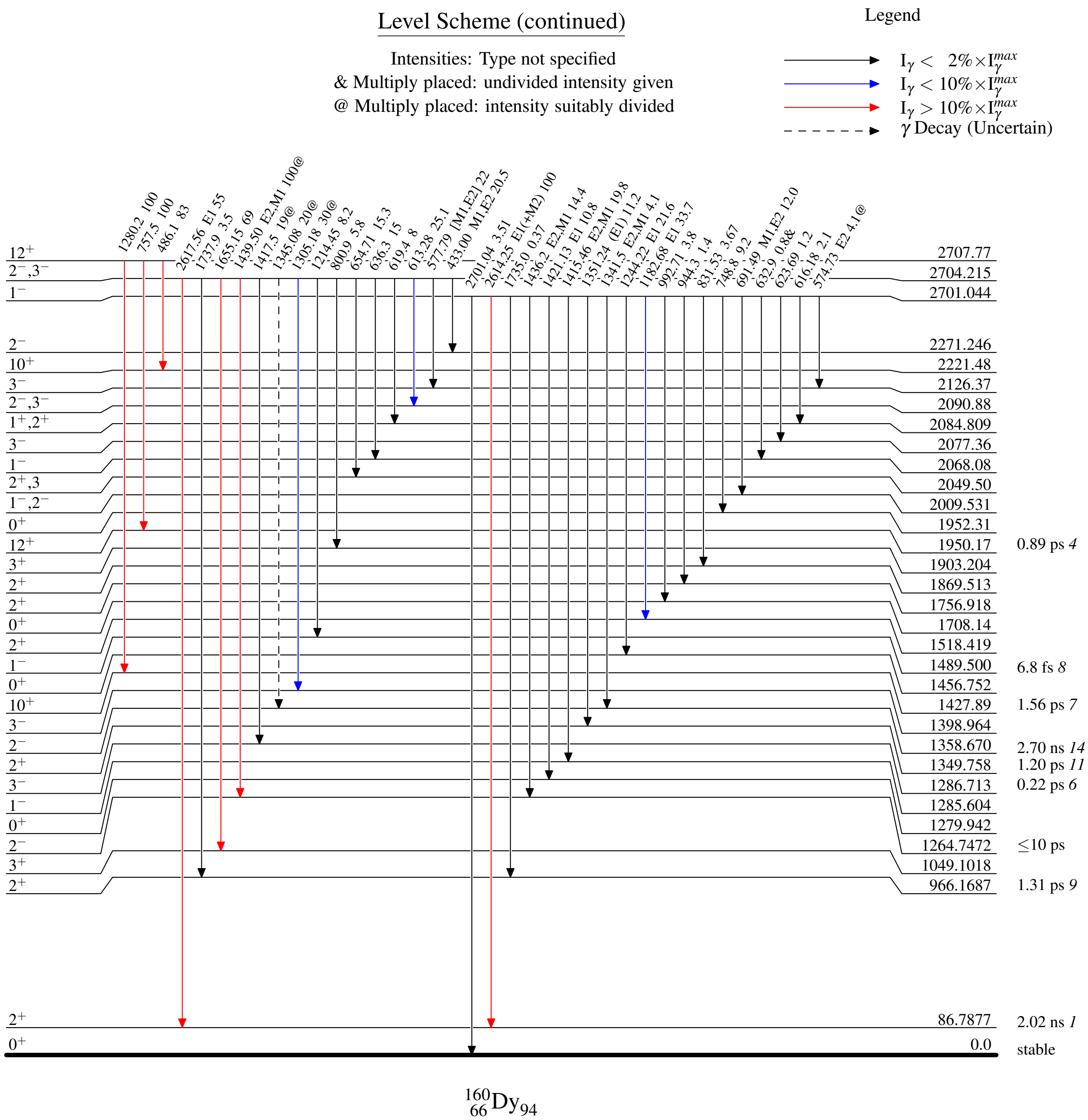
Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)



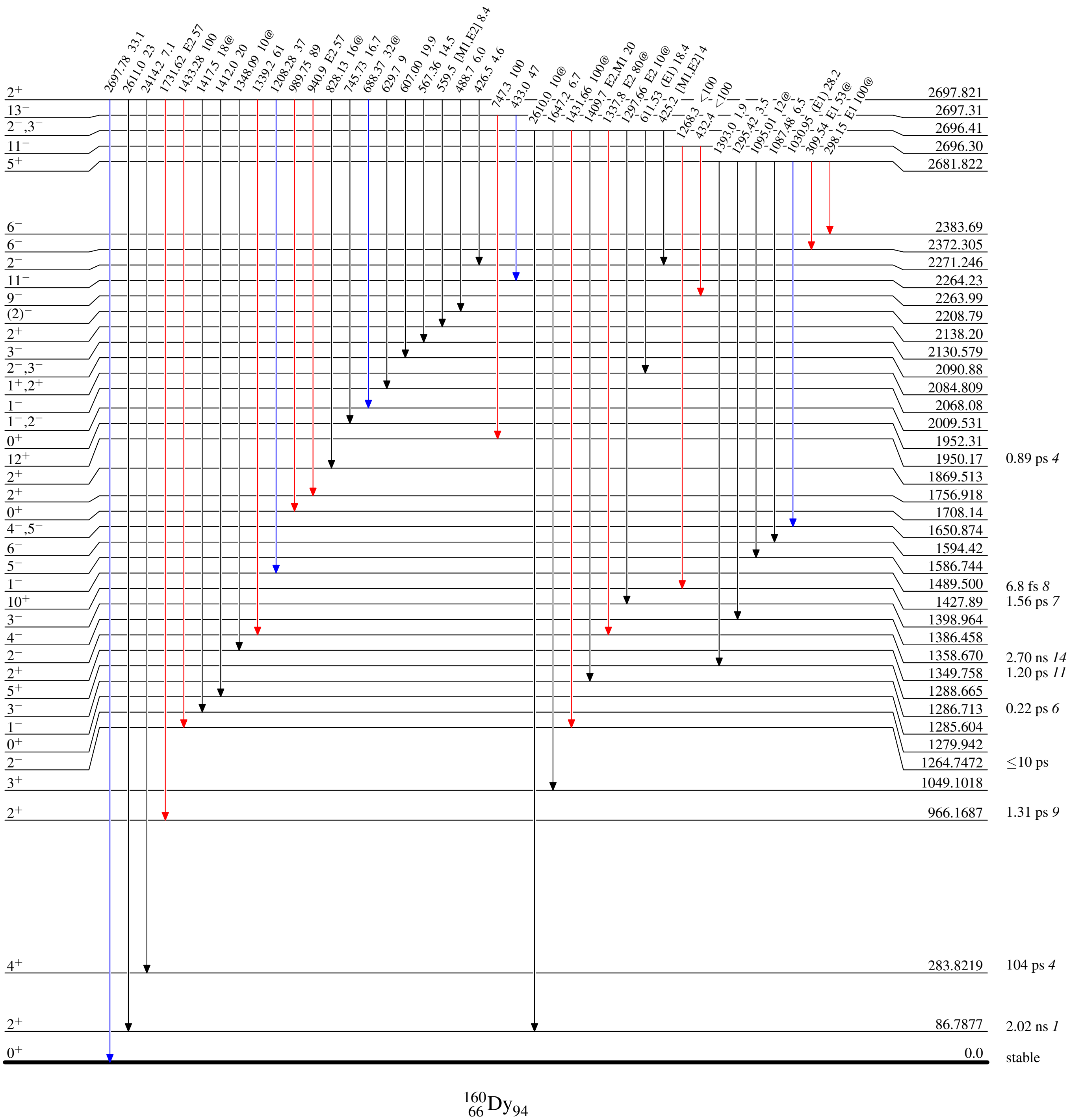
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

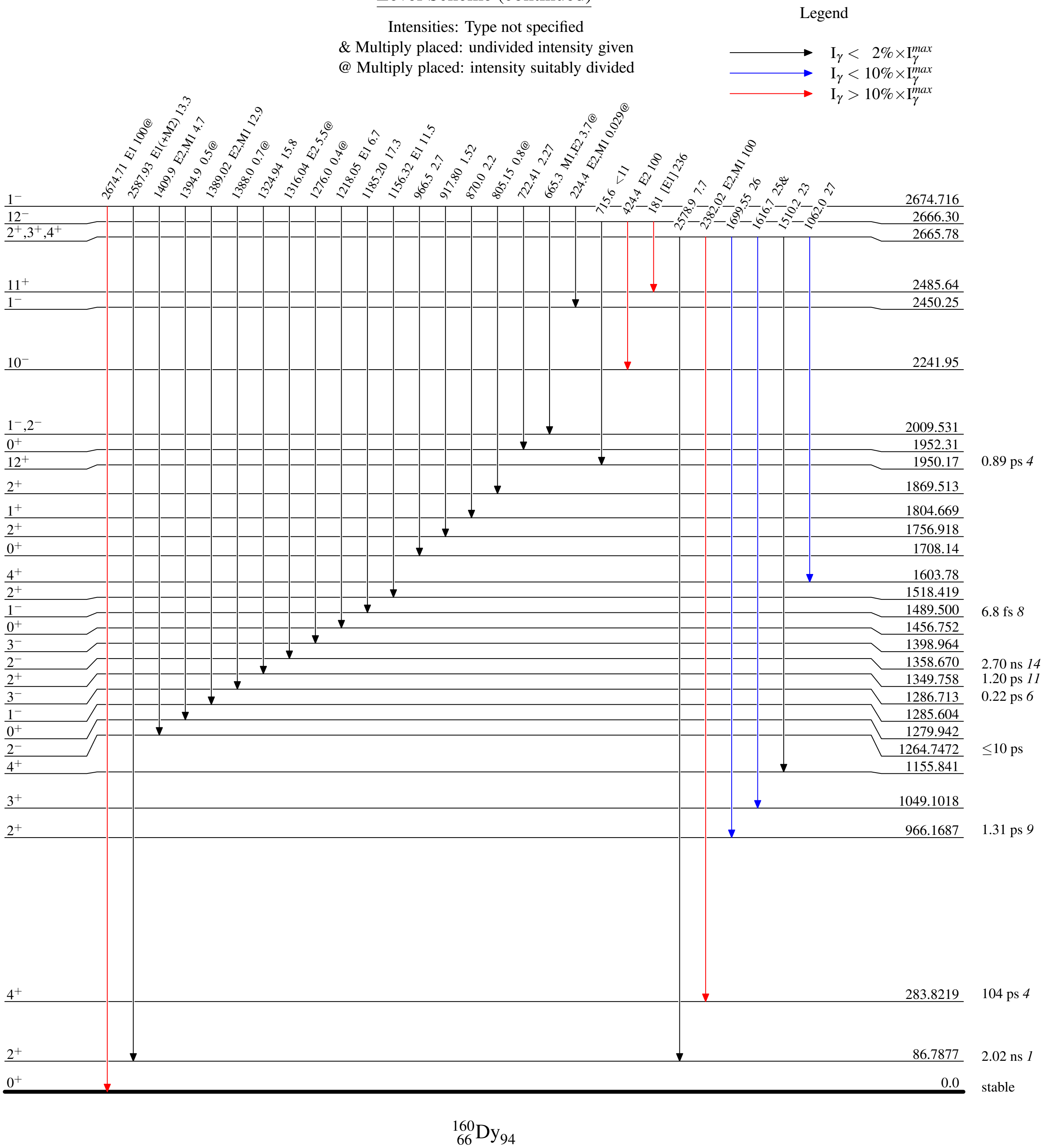
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



Adopted Levels, Gammas

Level Scheme (continued)

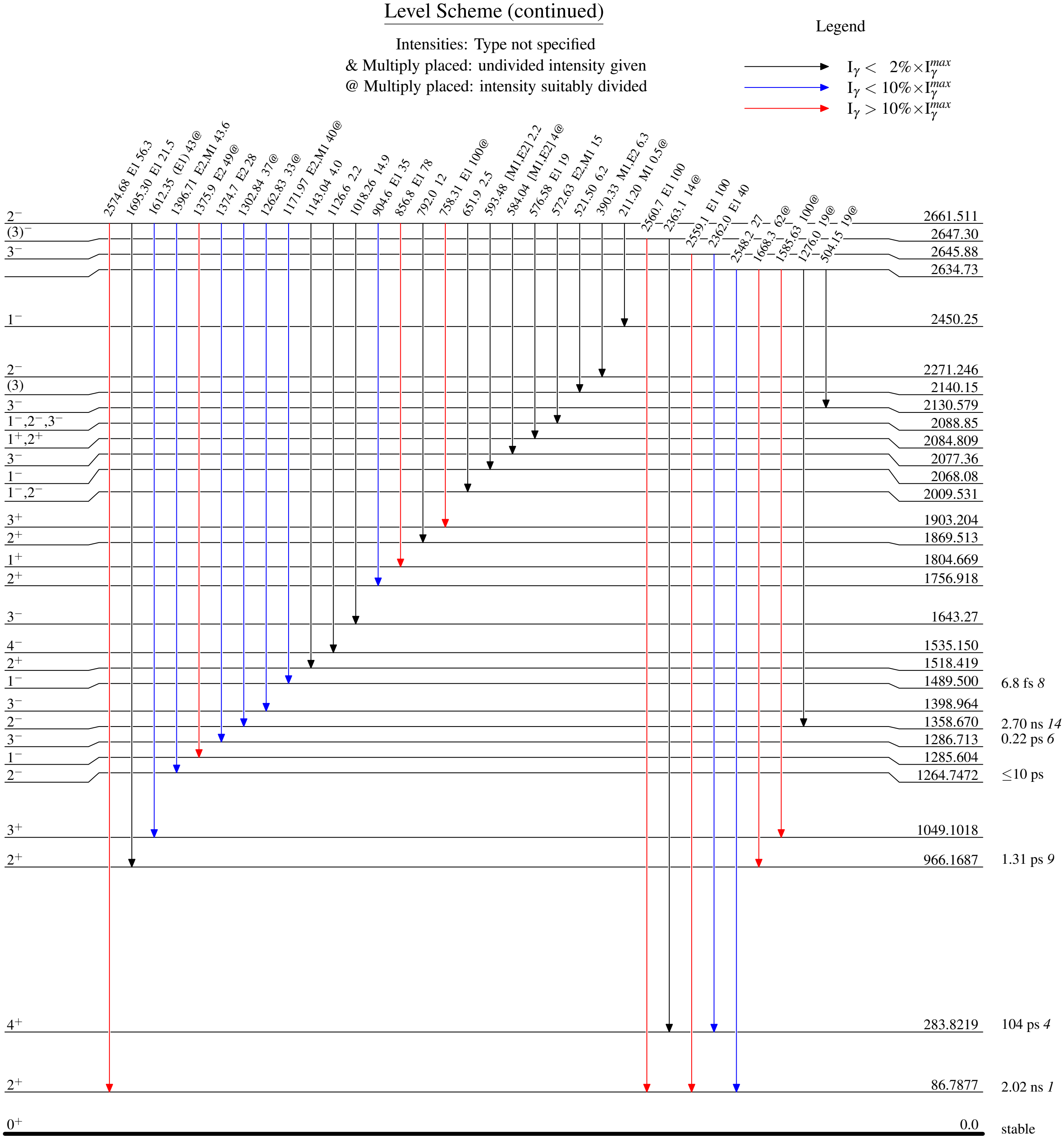
Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

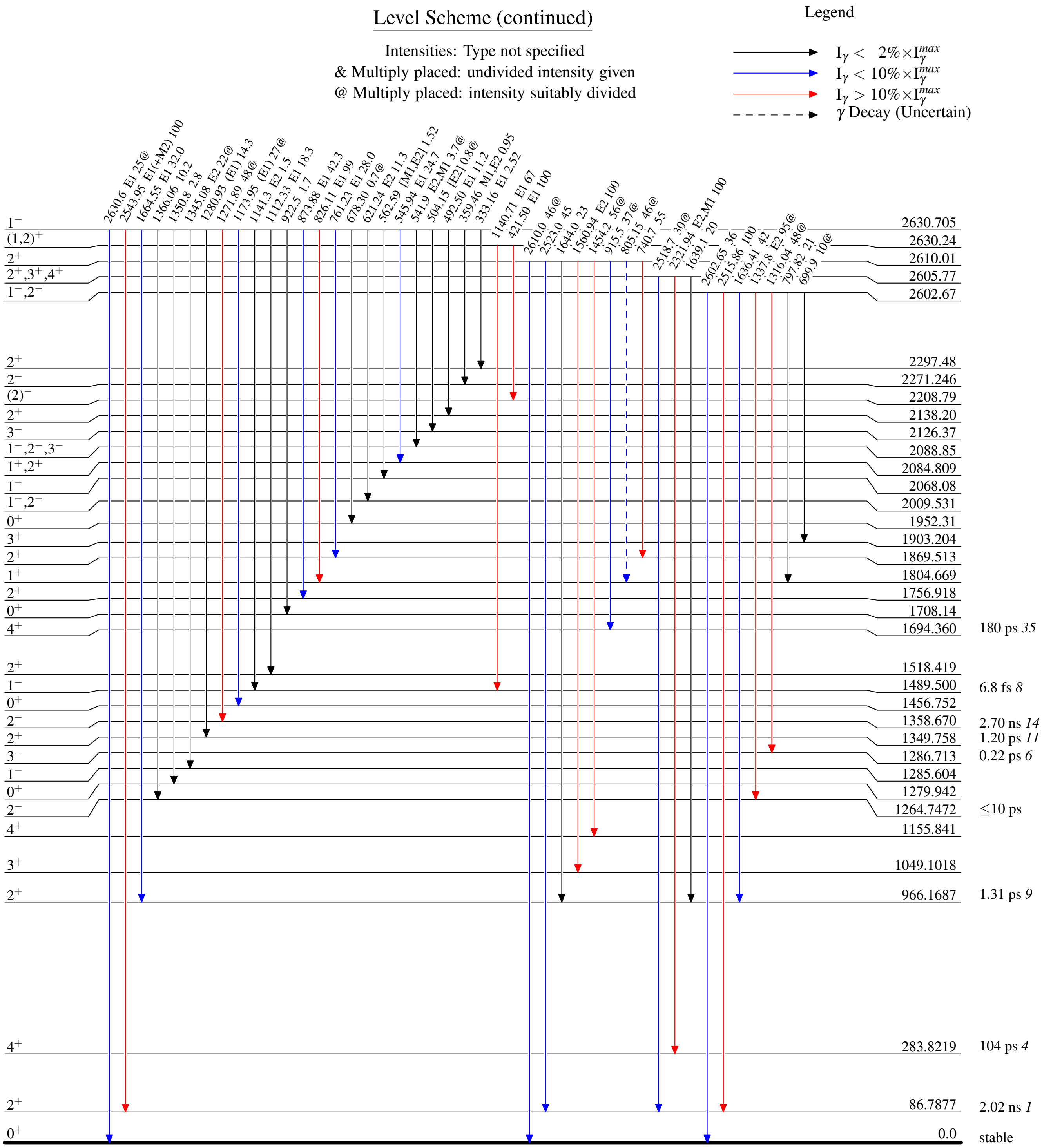


$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{160}_{66}Dy_{94}$

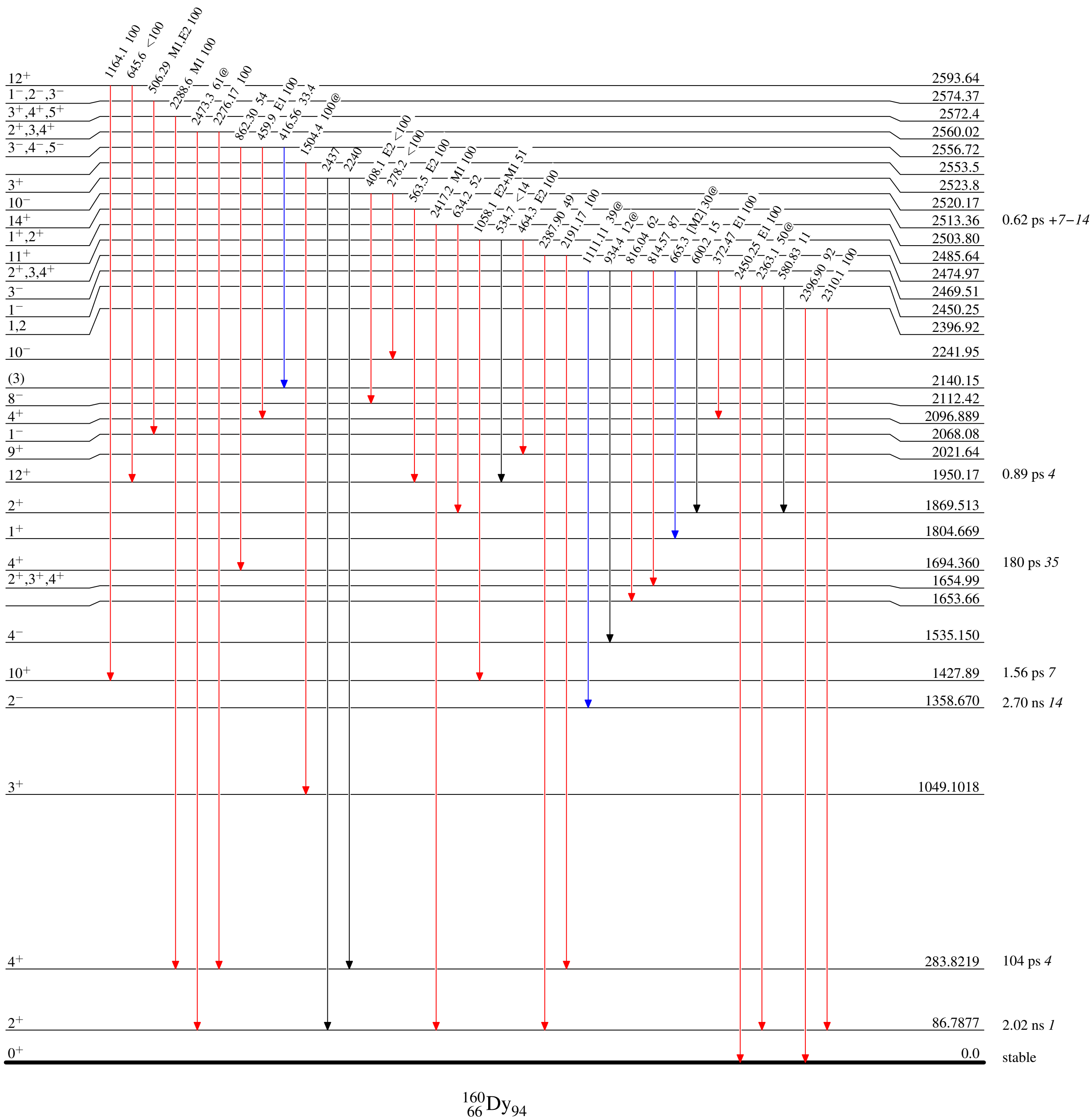
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

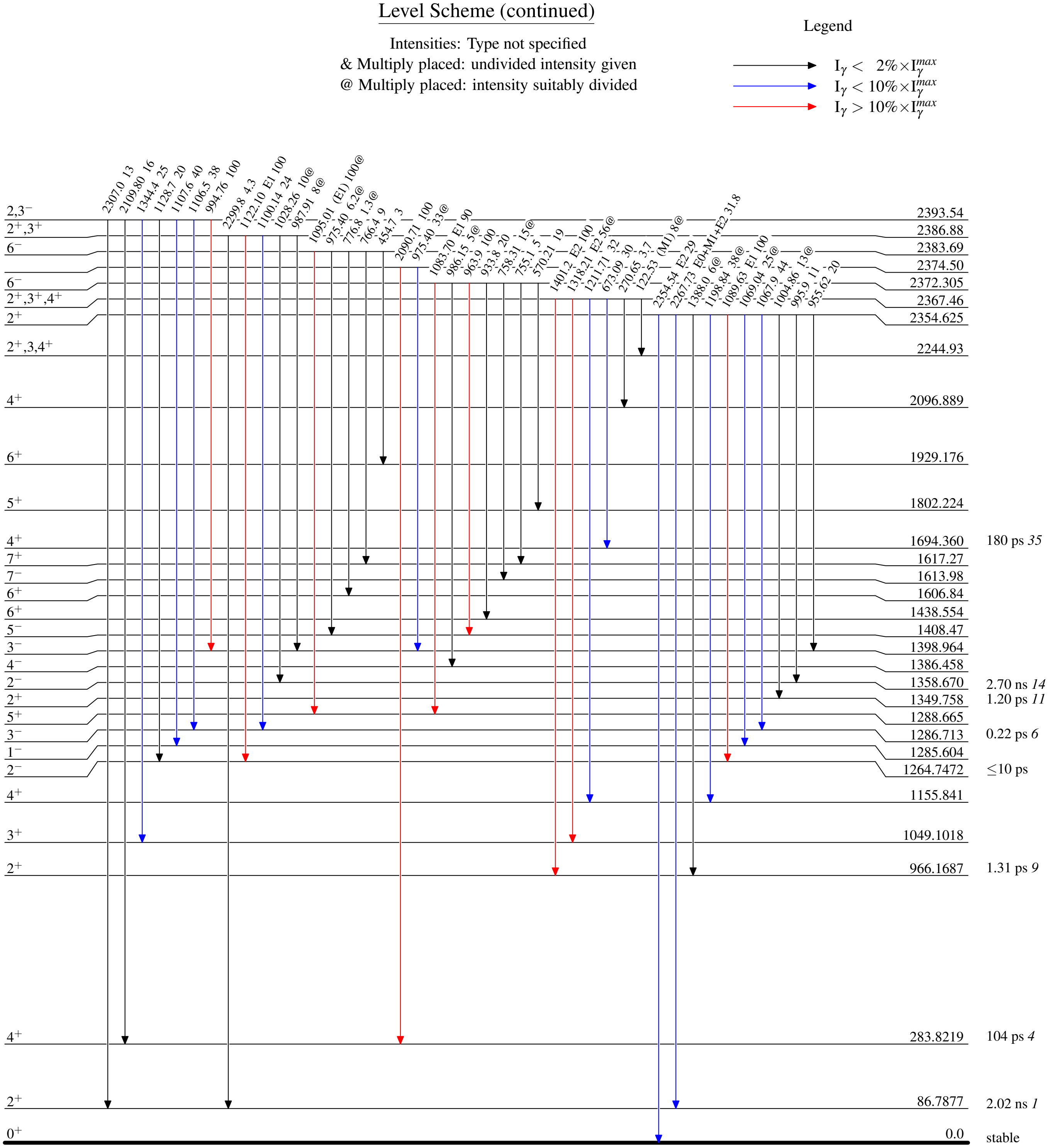
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{160}_{66}Dy_{94}$

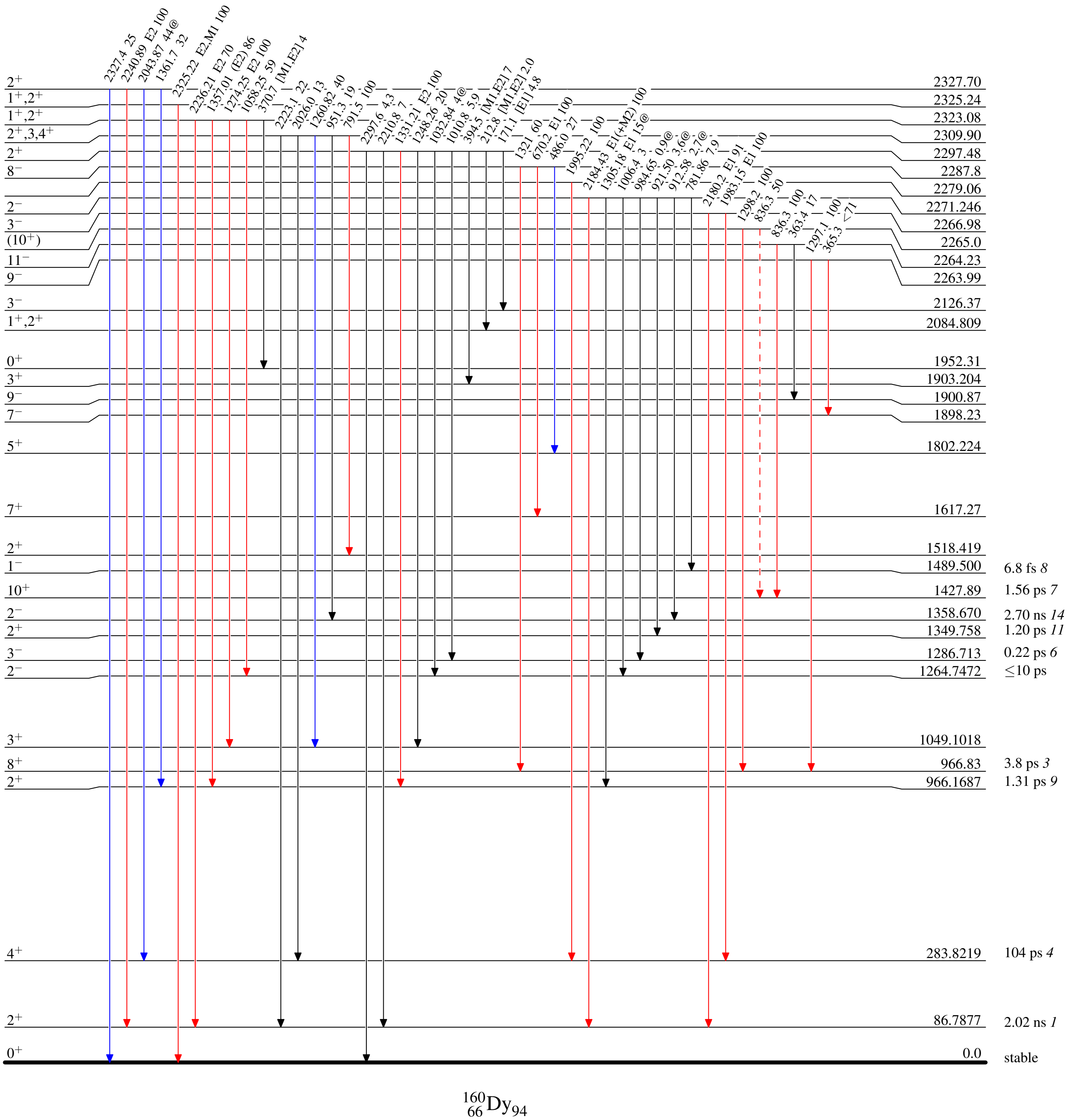
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

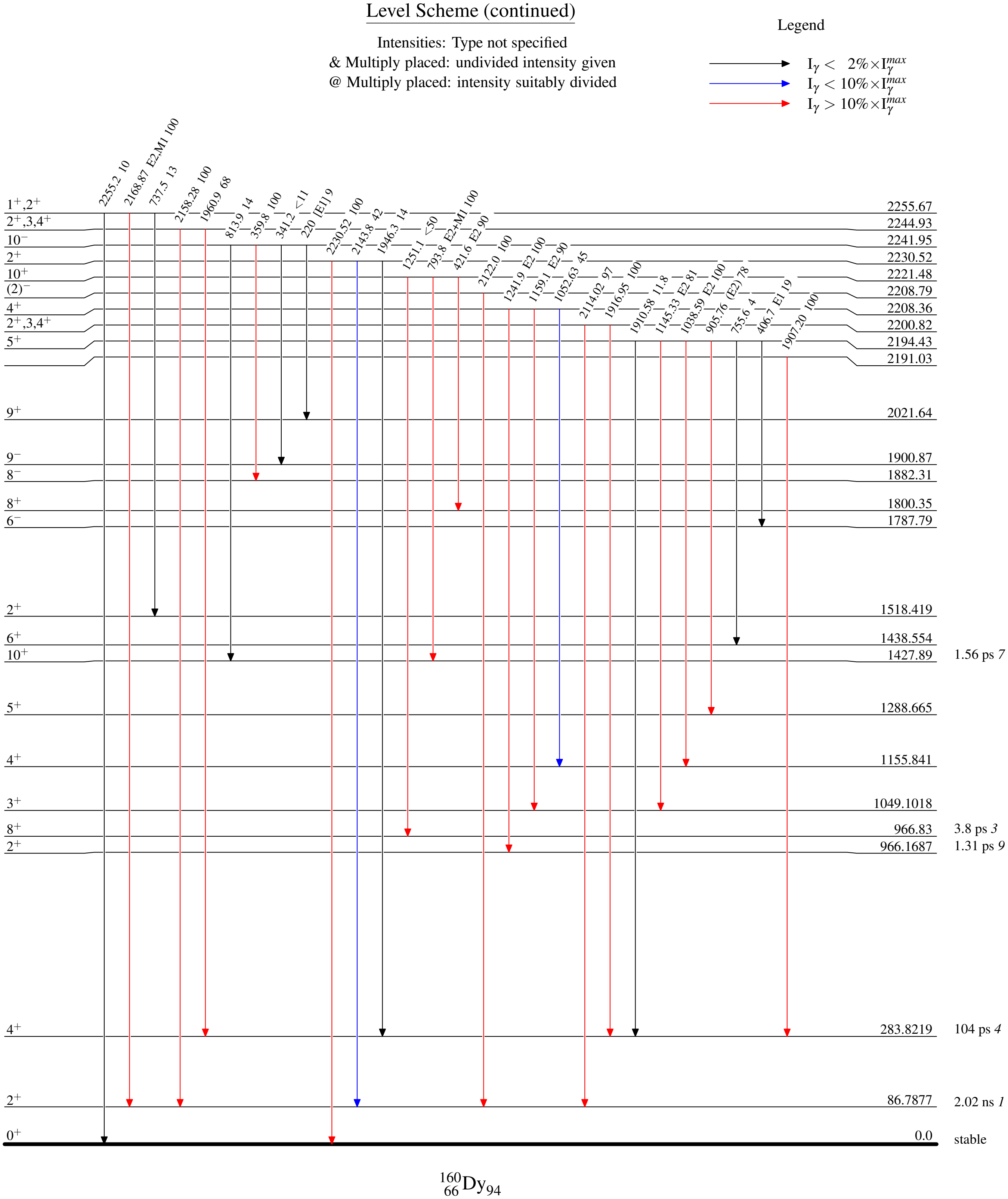
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



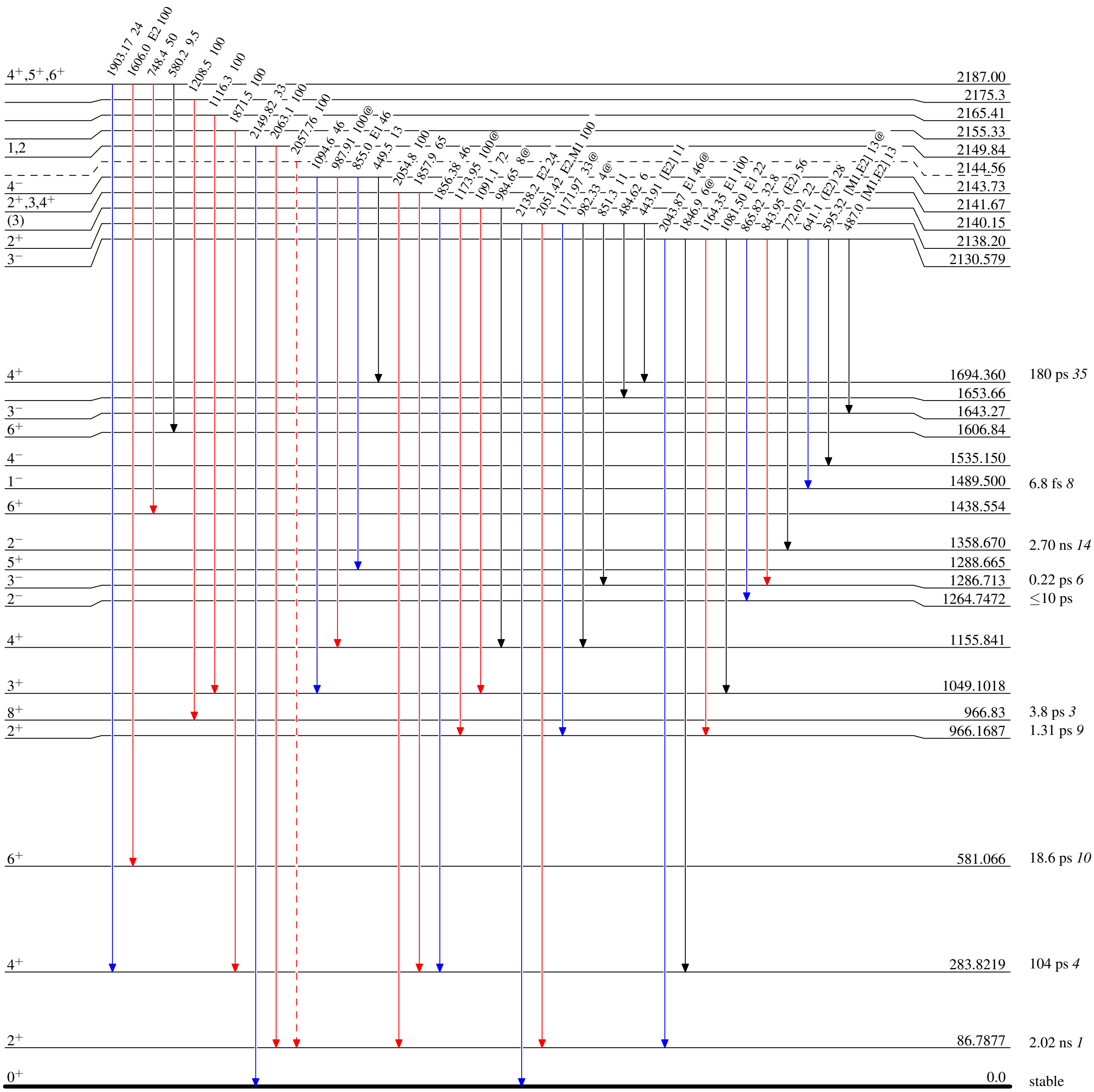
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& 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)



$^{160}_{66}Dy_{94}$

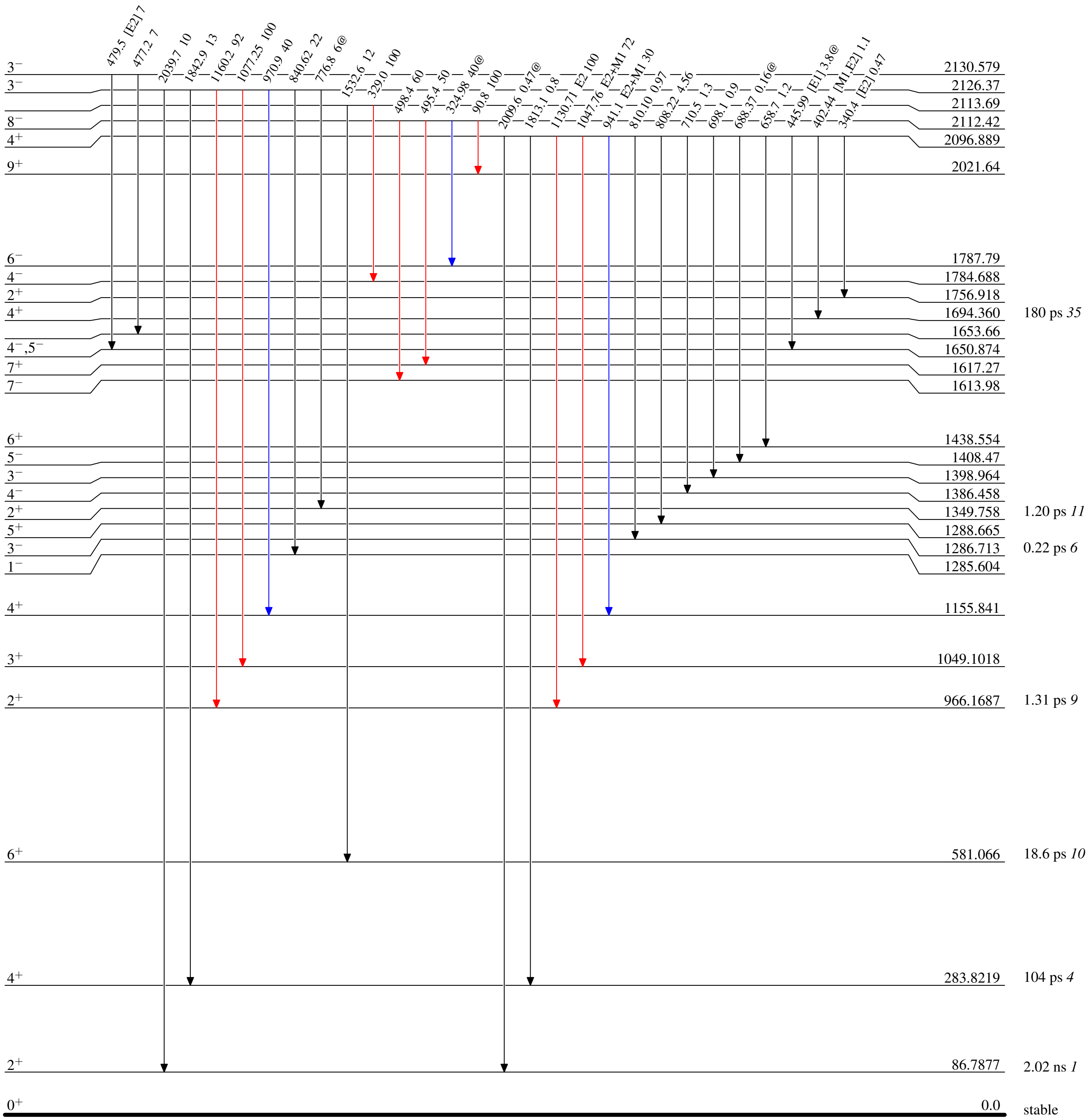
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

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



$^{160}_{66}Dy_{94}$

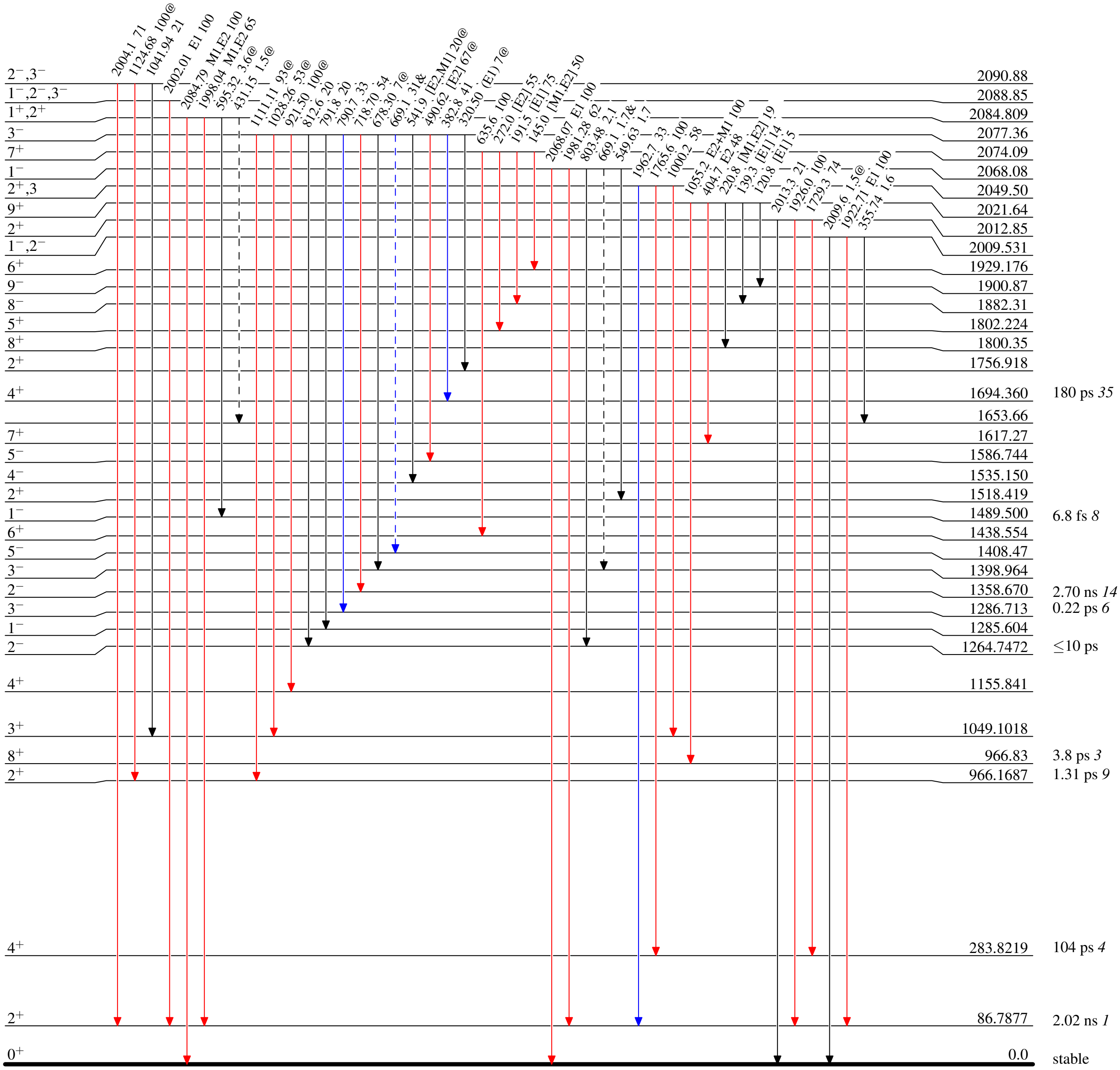
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& 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)



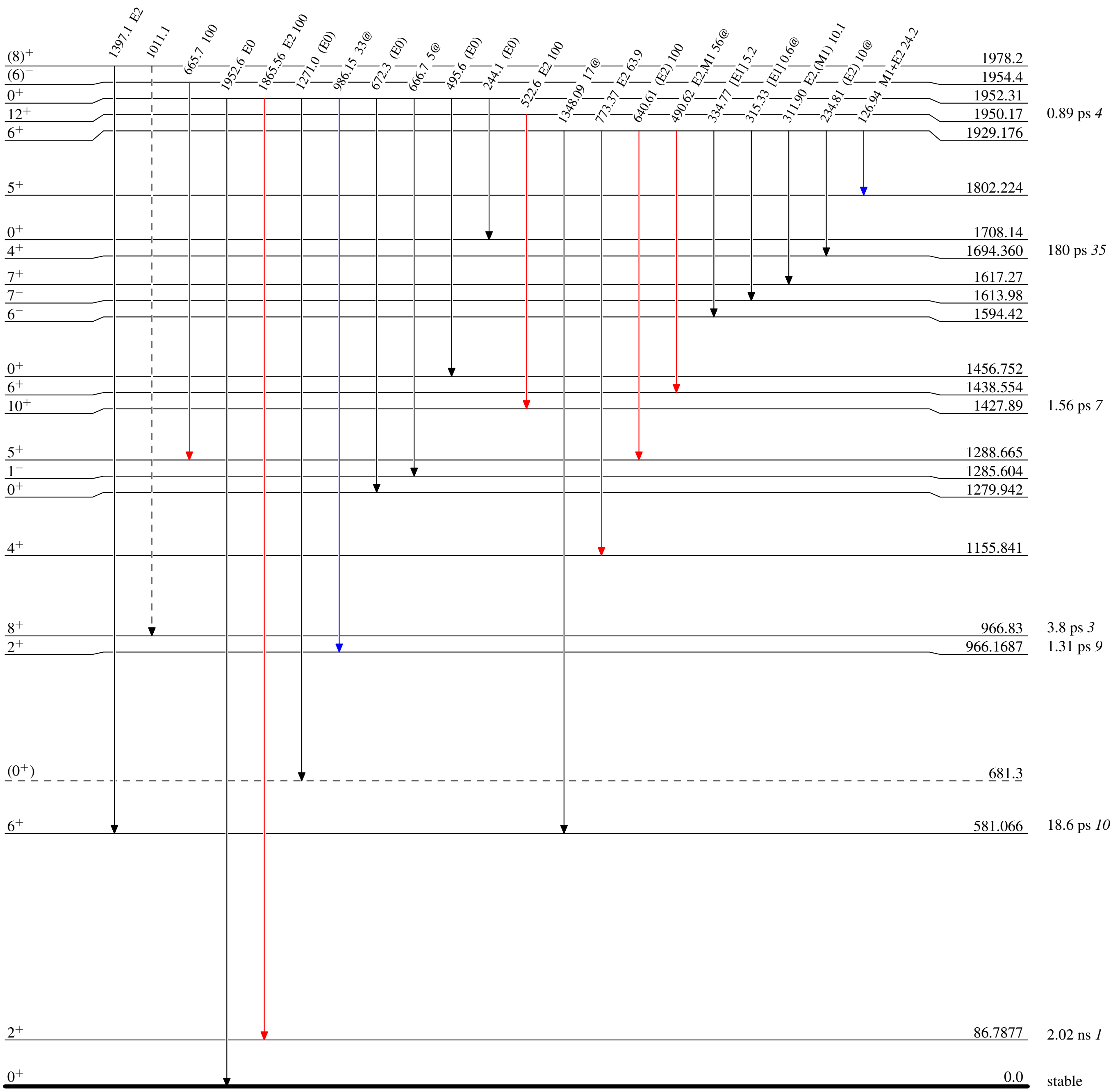
$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& 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)

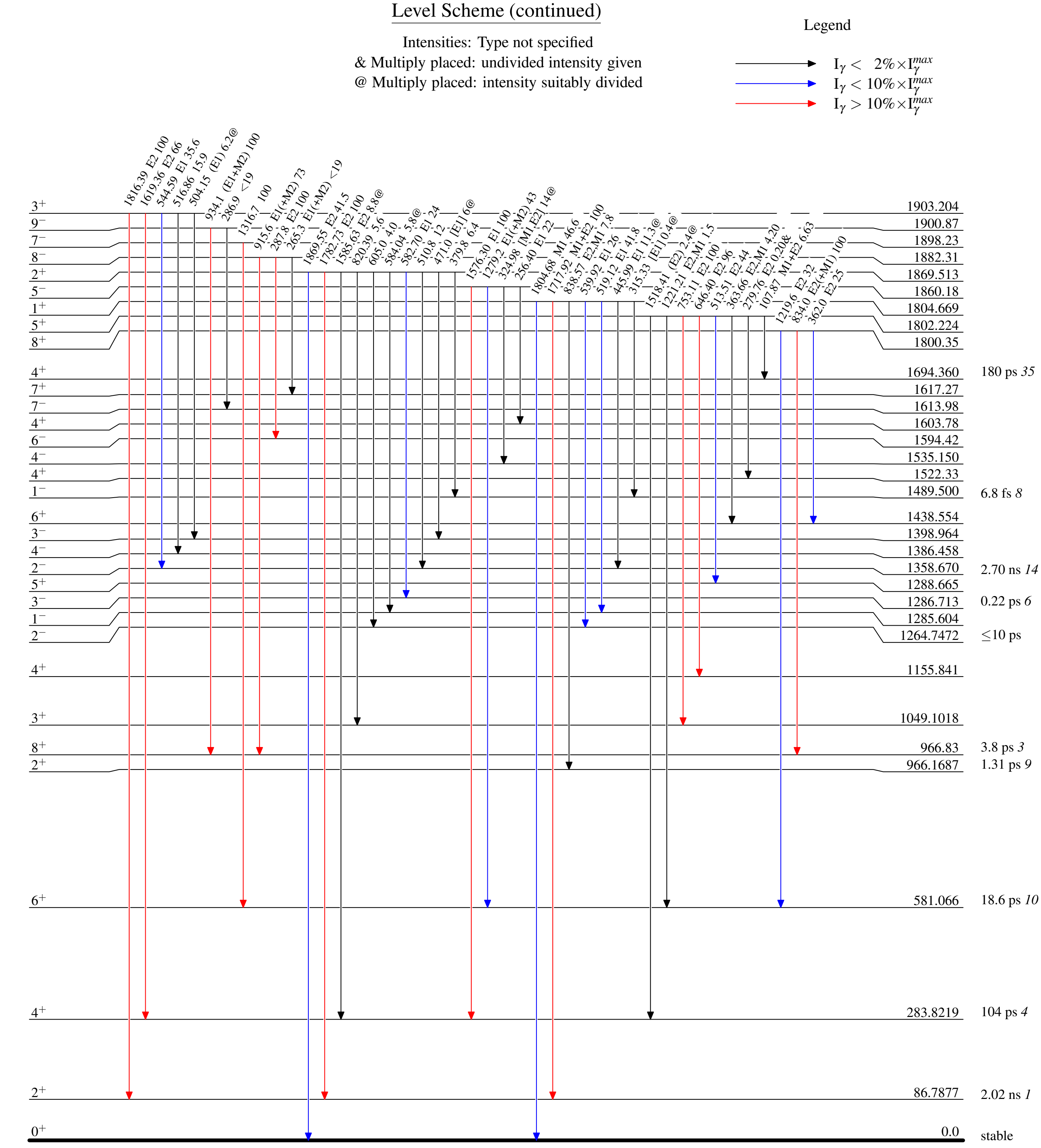


$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

& Multiply placed: undivided intensity given

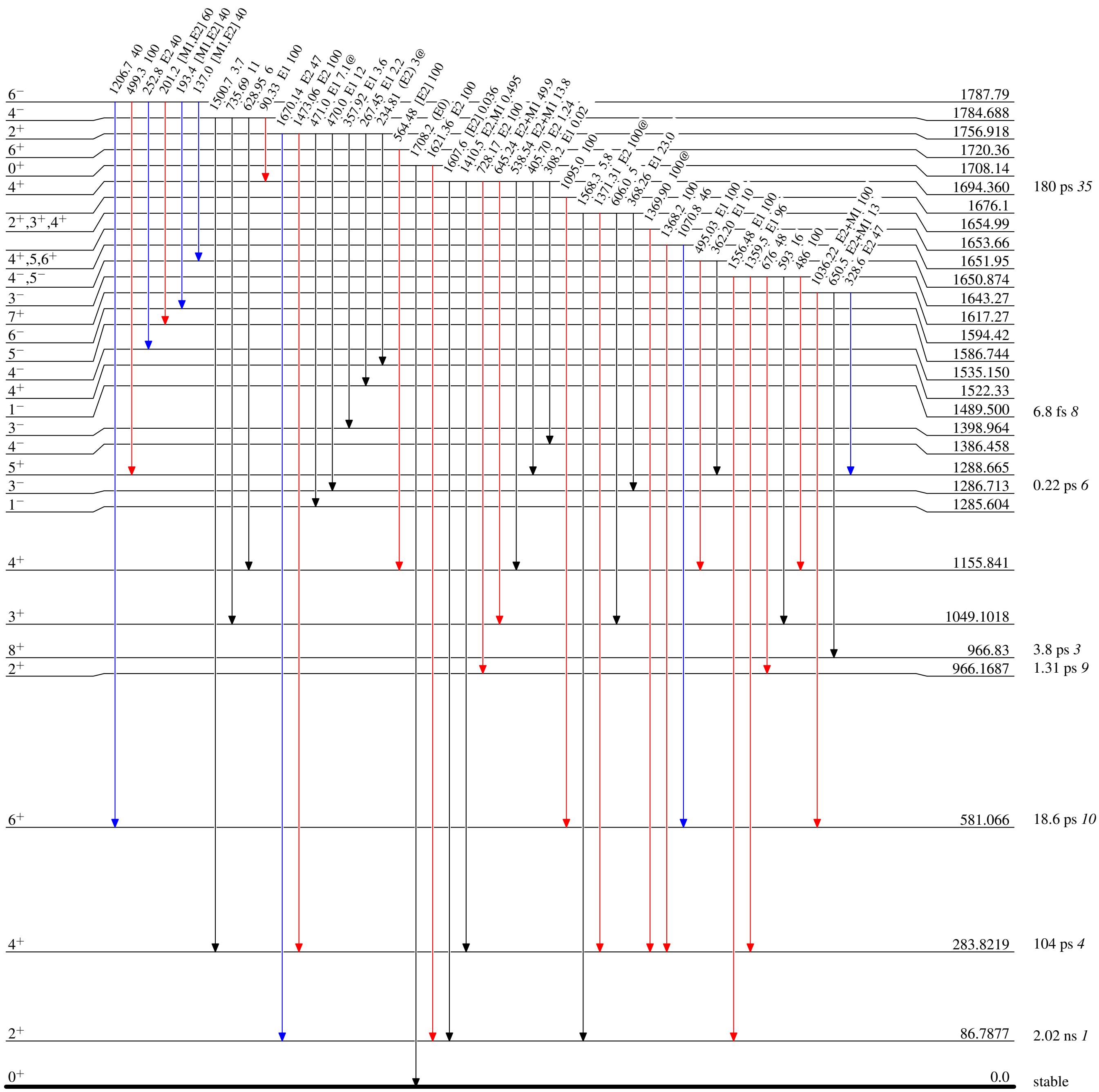
@ Multiply placed: intensity suitably divided

Legend

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

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

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

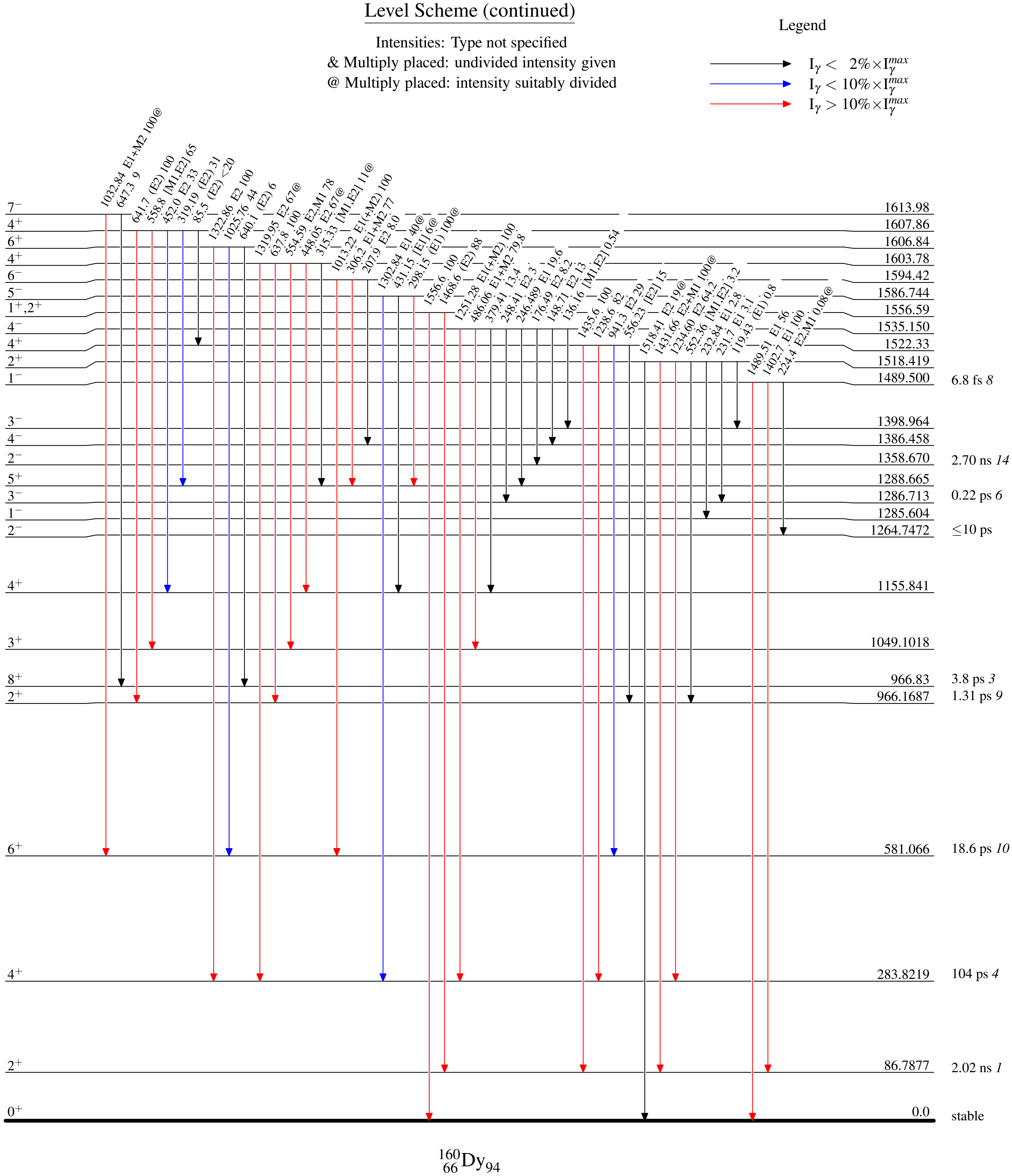


$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



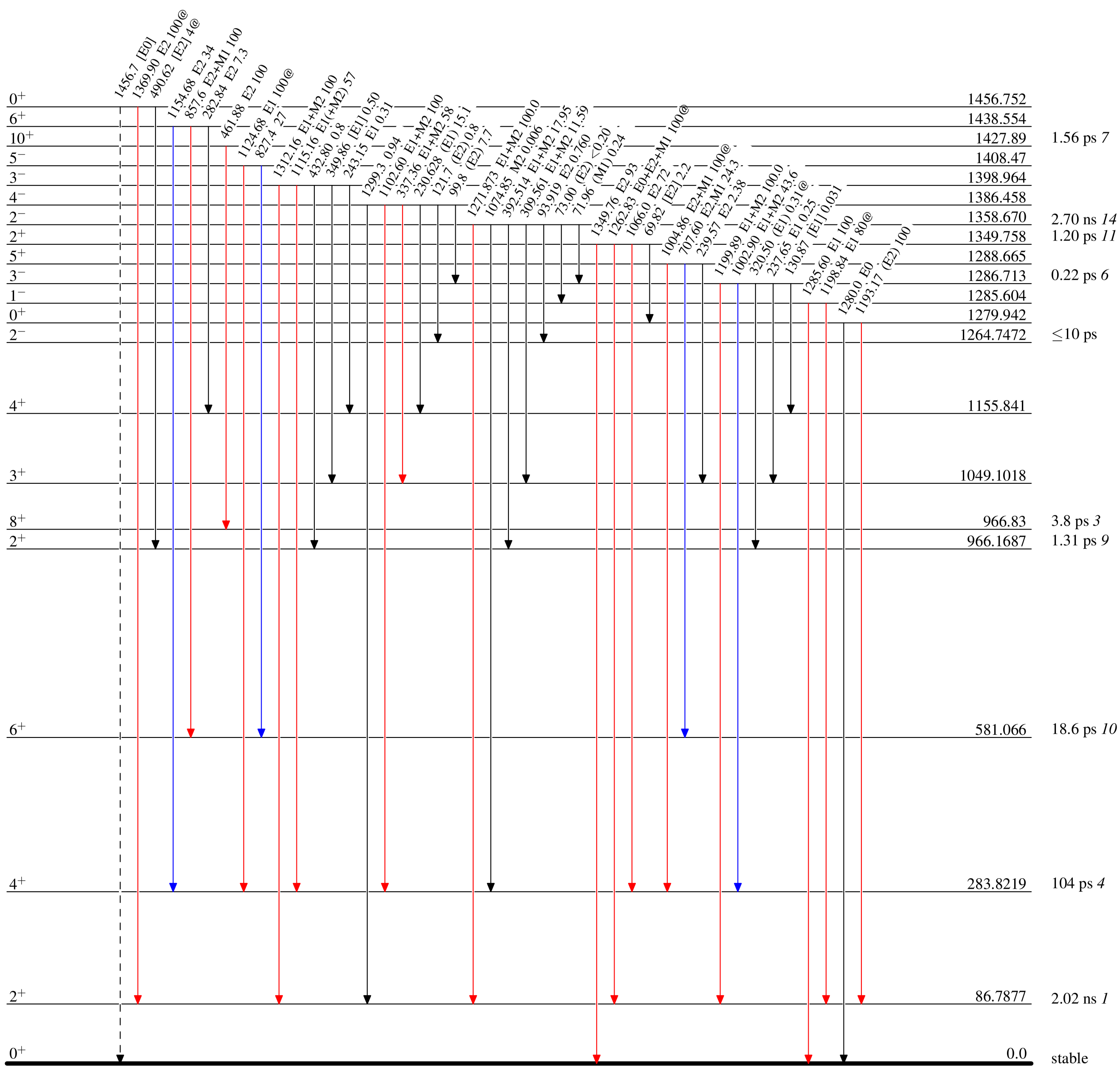
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& 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)



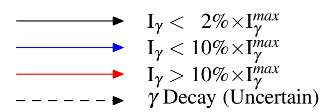
$^{160}_{66}Dy_{94}$

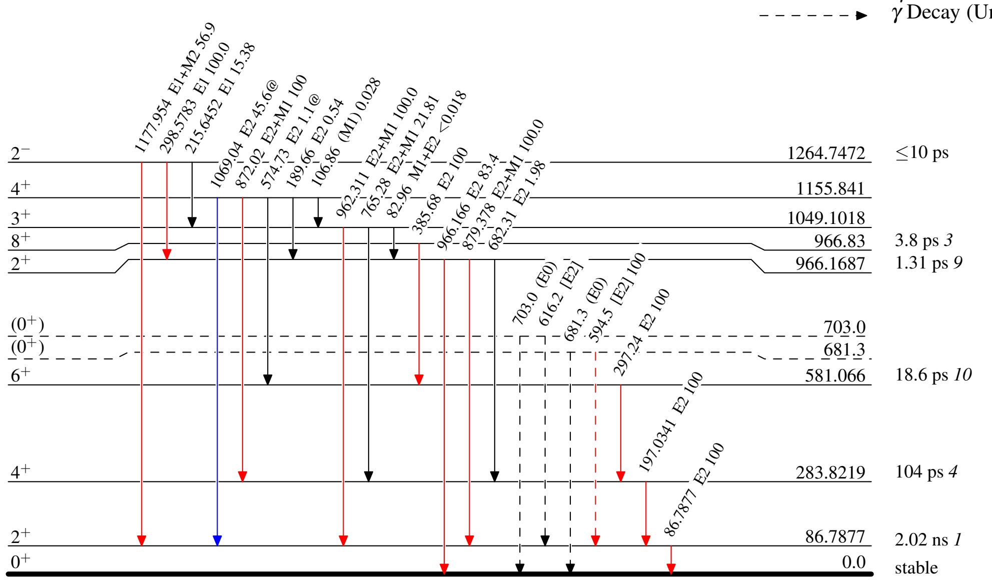
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

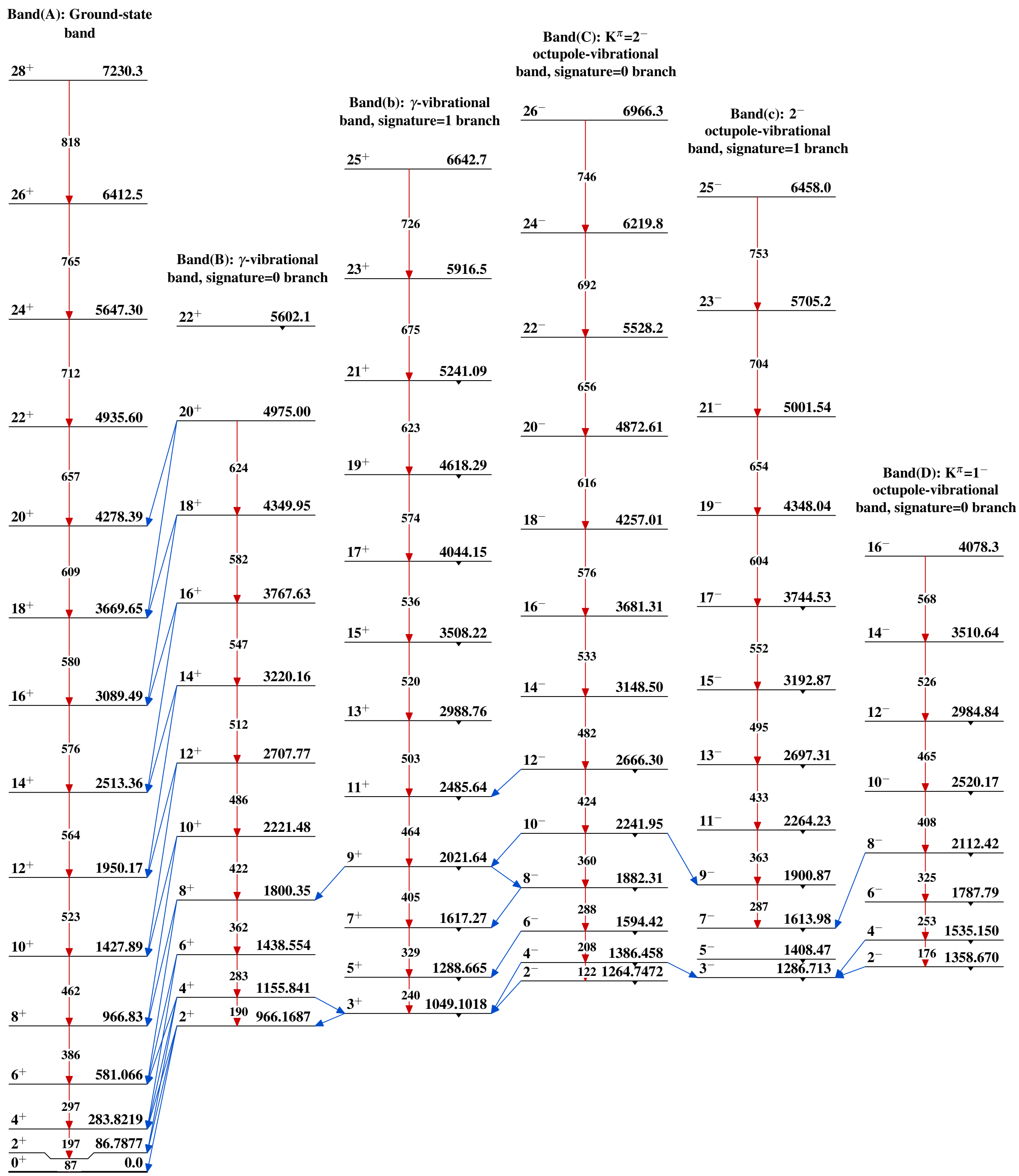
Legend





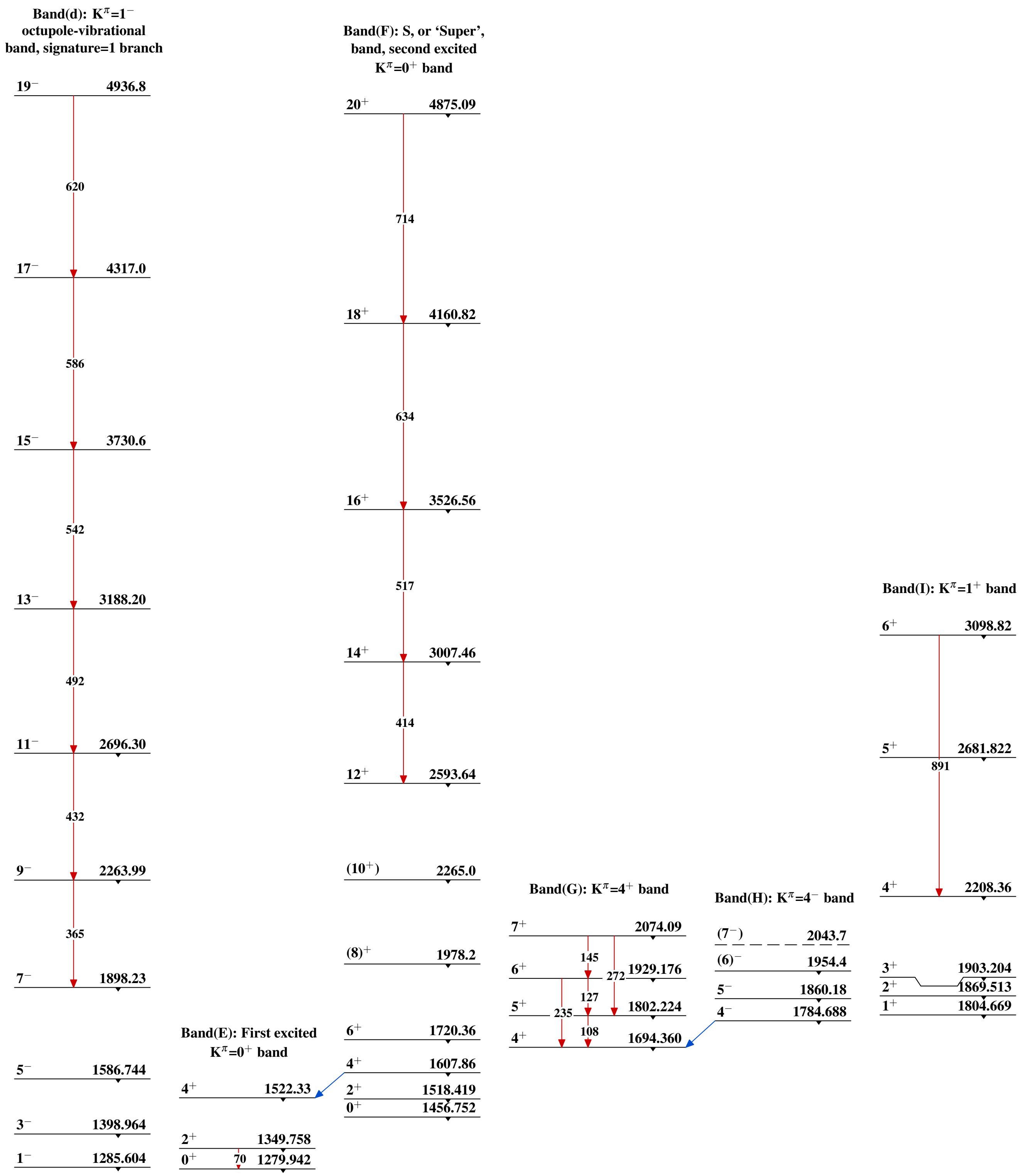
$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas



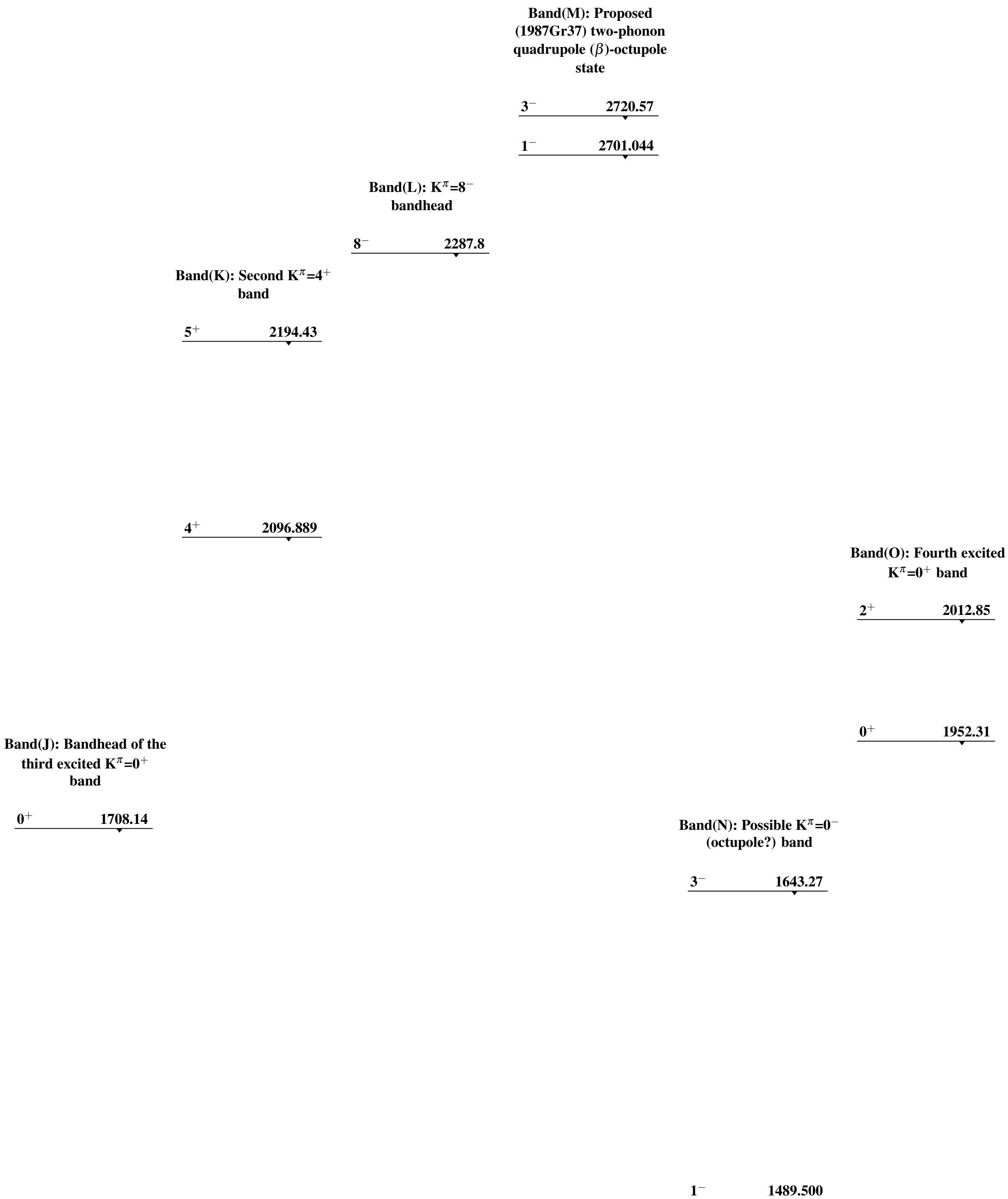
$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas (continued)



$^{160}_{66}Dy_{94}$

Adopted Levels, Gammas (continued)



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

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 195,1 (2024)	19-Sep-2023

Q(β^-)=−2141 *3*; S(n)=8196.99 *6*; S(p)=8008.4 *12*; Q(α)=83.9 *10* 2021Wa16
S(2n)=14651.38 *10*, S(2p)=14817.1 *11* (2021Wa16).
Additional information 1.

^{162}Dy Levels

Based on data from ^{162}Tb β^- decay, ^{162}Ho ε decay (15 min and 67 min), ^{161}Dy(n,γ), ^{162}Dy(n,n′γ), ^{160}Gd(α,2nγ), Coul. ex., ^{162}Dy(d,d′), ^{163}Dy(d,t), ^{161}Dy(d,p), ^{164}Dy(p,t), ^{160}Dy(t,p), ^{162}Dy(γ,γ′), muonic atoms, ^{166}Er(d,^{6}Li), ^{161}Dy(α,^{3}He), ^{163}Dy(^{3}He,α), ^{163}Dy(^{3}He,$\alpha\gamma$), ^{161}Dy(^{61}Ni,^{60}Niγ), ^{118}Sn(^{162}Dy,^{162}Dy′γ), ^{160}Gd(^{7}Li,p4nγ), and ^{160}Gd(^{37}Cl,Xγ).

A number of levels above 1.9 MeV have been proposed from (n,n′γ) but are not listed here. For a discussion, see the (n,n′γ) data set. Several levels seen only in (p,t) and (^{3}He,α) are not listed here. See those data sets for this information.

Calculation of isomer shift: 1973Me08.

Measured Coulomb displacement energies: 1983Ja03.

The following theory or model articles may be of interest:

Discussions of wavefunctions:

γ-vibrational state and bands − 1965Be40, 1988Ja12; octupole states and bands − 1972Ne02, 1988Ba17; 0$^+$ states − 1973Ab06, 1975Bi13, 1981Bi14; 3$^-$ at 1770 and 2$^-$ at 1866 − 1972Ne21; 4$^+$ at 1536, 1$^+$ at 1745, 3$^-$ at 1770, and 2$^-$ at 1866 − 1973We10; 5$^-$ at 1485 − 1980Ku15; 4$^+$ at 1535 − 1986Ne06; 1$^+$ states from 2.5 to 3.5 MeV − 1989Su15; low-K bands − 1988Ch26.

1996So19 and 1997So26 report the results of quasiparticle- phonon model (QPM) calculations of the microscopic make-up of the configurations of the nonrotational states in a number of doubly even nuclides, including ^{162}Dy. These results for ^{162}Dy are generally accepted here.

Discussions of other items:

Calculated energies of bandheads for γ, β, and octupole bands − 1965So04; energies and B(E3) for octupole states − 1970Ne02; B(E2) ratios − 1972We05; level energies in five bands − 1974Be69; δ^2 from IBA model − 1981Wa28, 1987Li11; Δ and B(E2) values − 1993Mi18; B(E1), B(E2), B(E3) for three levels − 1993So20.

Cross Reference (XREF) Flags

A	^{162}Tb β^- decay	J	^{163}Dy(^{3}He,$\alpha\gamma$)	S	^{164}Dy(p,t)
B	^{162}Ho ε decay (15.0 min)	K	^{161}Dy(^{61}Ni,^{60}Niγ)	T	^{166}Er(d,^{6}Li)
C	^{162}Ho ε decay (67.0 min)	L	muonic atom: pionic atom	U	^{161}Dy(α,^{3}He)
D	^{162}Er 2ε decay	M	Coulomb excitation	V	^{163}Dy(^{3}He,α)
E	^{161}Dy(n,γ) E=th	N	^{162}Dy(γ,γ′)	W	^{160}Gd(^{7}Li,p4nγ)
F	^{161}Dy(n,γ) E=2 keV	O	^{160}Dy(t,p)	X	^{118}Sn(^{162}Dy,^{162}Dy′γ)
G	^{161}Dy(n,γ) E=24 keV	P	^{161}Dy(d,p)	Y	^{160}Gd(^{37}Cl,Xγ)
H	^{162}Dy(n,n′γ)	Q	^{162}Dy(d,d′)	Z	^{160}Gd(^{9}Be,α3nγ)
I	^{160}Gd(α,2nγ)	R	^{163}Dy(d,t)		

E(level)[†]	J$^{\pi}$[#]	$T_{1/2}$	XREF	Comments
0.0[&]	0$^+$	stable	ABC EFGHIJKLMNOPQRSTUVWXYZ	Δ<r^2> data are available: for ^{160}Dy-^{162}Dy, Δ<r^2>≈0.13 fm^2 (1985Ne09, read from plot by evaluator) and λ=0.129 *8* fm^2 (1990Wa25) where Δ<r^2>≈λ. For ^{162}Dy-^{164}Dy, Δ<r^2> ≈0.12 fm^2 (1985Ne09) and λ=0.119 fm^2. See also 1970Va21 and 1978Ho09. Other isotope shift data: 1968De36, 1973Le16, and 1982Cl04. In an evaluation of nuclear rms charge radii, 2013An02 report <r^2>$^{1/2}$=5.2074 fm *172*.
80.661[&] *3*	2$^+$	2.19 ns *2*	ABC EFGHIJKLMNOPQRSTUVWXYZ	μ=+0.686 *28*

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
				J^{π}: from E2 γ to 0^+ level. $T_{1/2}$: weighted average of: 2.25 ns *7* (1963Li04), from ^{162}Ho ε decay (67 min); and 2.19 ns *3* (1967Ku07) and 2.17 ns *4*, both from Coul. ex. Others: 3.05 ns *20* (1973Ch28) from ^{162}Ho (67 min) decay and 2.22 ns (1959Bi10) and 2.0 ns *2* (1967As03) both from Coul. ex. For comparison, the evaluation of 1987Ra01 gives 2.19 ns *3*, which is based on the B(E2) as well as the direct half-life measurements. μ: from the compilation of 2014StZZ and based on g=0.343 *14* (1970Be36). Others: g=0.362 *24* (1967Ku07) and 0.37 *4* (1967He15). The compilation by 2005St24 lists μ=+0.69 *3*.
265.664[&] *3*	4^+	0.132 ns *5*	ABC EFGHIJKLM OPQRSTUVWXYZ	μ=+1.14 *12*; B(E4)↑=0.07 *5* J^{π}: from E2 γ to 2^+ level and expected gs band structure. $T_{1/2}$: weighted average of 0.132 ns *8* (1963Li04) from ^{162}Ho (67 min) decay and 0.132 ns *6* (1978Hu03) from Coul. ex. $T_{1/2}$: from B(E2)($2^+\rightarrow4^+$)=2.68 *13* (Coul. ex.), the computed half-life is 0.134 ns *7*. μ: computed by the evaluator from g=+0.285 *31*, from IPAC in (α,2nγ) (1997Al04). This value is also listed in the compilation by 2014StZZ. B(E4)↑: From Coul. ex.
548.520[&] *3*	6^+	18.4 ps *10*	C E HIJKLM OPQRSTUVWXYZ	μ=+2.18 *11* J^{π}: from E2 γ to 4^+ level and expected gs band structure. $T_{1/2}$: from Coul. ex. (1978Hu03). $T_{1/2}$: from B(E2)($4^+\rightarrow6^+$)=2.10 *15* (Coul. ex.), the computed half-life is 19.9 ps *15*. μ: computed by the evaluator from g=+0.364 *18* in Coul. ex. (1999Br43). Other: +1.68 *18*, from g=+0.28 *3*, from IPAC in (α,2nγ) (1997Al04). The compilation by 2014StZZ lists μ=+2.18 *11*, together with +1.8 *2*.
888.161[a] *3*	2^+	1.97 ps *9*	ABC EFGHIJ M OPQRS WX Z	μ=0.92 *6* J^{π}: from E2 γ to 0^+ level. Excited in Coul. ex. $T_{1/2}$: computed from B(E2)↑=0.122 *5* (Coul. ex.) and the adopted γ branching. Other: 0.74 ps<$T_{1/2}$<3.24 ps (2017Ap01, (n,γ) E=th). μ: computed by the evaluator from g=0.46 *3*, from 1999Br43 (Coul. ex.). This value is also given in the compilation by 2014StZZ.
921.28[&] *5*	8^+	4.2 ps *2*	HIJKLM P R UVWXYZ	μ=+3.05 *16* J^{π}: from population in Coul. ex., γ to 6^+ level, and expected gs band structure. $T_{1/2}$: weighted average of 4.1 ps *3* (1977Ke06), 4.6 ps *3* (1978Hu03), and 4.1 ps *2* (1979Gu15) all from Coul. ex. $T_{1/2}$: from B(E2)(6+$\rightarrow8^+$)=1.96 *16* (Coul. ex.), the computed half-life is 5.1 ps *4*. μ: computed by the evaluator from g=+0.381 *20* in Coul. ex. (1999Br43). Other: +3.4 *10*, from g=+0.45 *12*, from IPAC in (α,2nγ) (1997Al04). The compilation by 2014StZZ lists μ=+3.05 *16* as well as +3.4 *10*.
962.940[b] *3*	3^+		A C EFGHIJK M P WX Z	J^{π}: from γ to $K^{\pi}=2^+$ bandhead, γ to 4^+ level, and expected band structure. $T_{1/2}$: 0.25 ps<$T_{1/2}$<2.83 ps (2017Ap01, (n,γ) E=th).

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
1060.991[a] 3	4^+		BC EFGHI K M OPQ X Z	J^{π}: from γ's to 2^+ and 6^+ levels, M1 component in the γ to 4^+ level. $T_{1/2}$: 0.491 ps<$T_{1/2}$<2.20 ps (2017Ap01, (n,γ) E=th).
1148.232[d] 3	2^-	0.21 ns 4	A C EFGHI P R X Z	J^{π}: E1 γ's to 2^+ and 3^+ levels indicate 2^- or 3^-. log *ft*=4.95 from the 1^- gs of ^{162}Tb rules out 3^-. This allowed-unhindered β^- transition involves the (ν 5/2[523]) and (π 7/2[523]) orbitals. It thus establishes the two-quasiparticle state with configuration=(π 7/2[523])-(π 3/2[411]) as at least a large part of the configuration of this 2^- band. This supports the interpretation of this level as being the bandhead of a $K^{\pi}=2^-$ octupole vibration, since this two-quasiparticle state is expected to be the dominant component of the 2^- octupole vibration in ^{162}Dy (1996So19). $T_{1/2}$: from ^{162}Tb β^- decay (1968Se02).
1182.763[b] 3	5^+		C E HI K P WX Z	J^{π}: M1 component in γ to 6^+ level and E2 γ to 3^+ level.
1210.089[c] 3	3^-		A C EFGHI M OPQRS WX Z	B(E3)↑=0.104 7 J^{π}: from E1 γ's to 2^+ and 4^+ levels. B(E3)↑: from Coul. ex.
1275.772[f] 4	1^-	20 fs 4	AB EFGHIJ N PQR W	XREF: Q(1279). J^{π}: from E1 γ's to 0^+ and 2^+ levels. $T_{1/2}$: from (γ,γ'). See the comment there about the reliability of this value. Other: <0.15 ps (2017Ap01, (n,γ) E=th).
1297.006[d] 3	4^-		C EFGHI K P R WX Z	J^{π}: from E1 to 3^+ level and γ to 5^+ level.
1324.465[a] 3	6^+		C E HI K M PQ WX Z	XREF: Q(1329). J^{π}: from γ's to 4^+ and 6^+ levels, authors' interpretation of (d,d') angular distribution data, and expected band structure.
1357.928[f] 3	3^-	<0.15 ps	A EFGHIJ M OPQR UV	B(E3)↑=0.033 11 XREF: M(1357.4)U(1363)V(1364). J^{π}: from E1 γ to 4^+ level and γ to 2^+ level. $T_{1/2}$: from 2017Ap01 ((n,γ) E=th). B(E3)↑: from Coul. ex.
1375.08[&] 7	10^+	1.57 ps 10	IJKLM WXY	μ=+3.6 4 J^{π}: from population in Coul. ex., γ to 8^+ level, and expected gs band structure. $T_{1/2}$: from Coul. ex. (1977Ke06). Other: 1.5 ps 1 (1979Gu15) from Coul. ex. $T_{1/2}$: from B(E2)($8^+\rightarrow10^+$)=2.65 21 (Coul. ex.), the computed half-life is 1.34 ps 11. μ: From 1999Br43 (Coul. ex.). This value is also listed in the compilation by 2014StZZ.
1390.513[c] 3	5^-		C E HI M PQR VW Z	XREF: V(1397)Z(1387.5). J^{π}: from E1 γ to 4^+ level, γ to 6^+ level, and interpretation of (d,d') reaction data.
1400.26[g] 6	0^+		B E H OP RS	XREF: O(1397)S(1398.9). J^{π}: from E0 deexcitation to 0^+ ground state and L=0 in (t,p) and (p,t).
1453.468[g] 5	2^+		AB EFGHI M P R V	XREF: V(1461). J^{π}: from M1 γ to 2^+, E2 γ to 4^+ and expected band structure.

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	Jπ[#]	$T_{1/2}$	XREF	Comments
1485.671[h] *3*	5⁻	1.92 ns *11*	C E HI P R UVW Z	XREF: V(1493). Jπ: E1 γ's to 4⁺ and 6⁺ levels. log *ft*=4.77 from 6⁻ in ^{162}Ho (67.0 min) ε decay establishes configuration assignments for both states. $T_{1/2}$: weighted average of 1.91 ns *19* (1969Ho17) and 1.93 ns *13* (1973Ch28), from ^{162}Ho (67.0 min) ε decay. Other: <2.02 ps (2017Ap01, (n,γ) E=th).
1490.39[b] *6*	7⁺		HI K WX Z	Jπ: from γ's to 5⁺, 6⁺, and 8⁺ levels and expected band structure.
1518.426[f] *4*	5⁻	<0.13 ps	E HI PQR UV	XREF: Q(1527)V(1529). Jπ: from E1 γ's to 4⁺ and 6⁺ levels. Assigned as 4⁺ in (d,d′). $T_{1/2}$: from 2017Ap01 ((n,γ) E=th).
1530.127[‡d] *6*	6⁻		C HI K WX Z	XREF: K(1527.5). Jπ: from γ's to 4⁻ and 5⁺ levels and expected band structure.
1535.664[j] *3*	4⁺		EF HI OP R X Z	XREF: O(1533). Jπ: from M1 component in γ to 3⁺ level, γ's to 2⁺ and 6⁺ levels, and expected band structure. $T_{1/2}$: 0.10 ps<$T_{1/2}$<3.6 ps (2017Ap01, (n,γ) E=th).
1570.912[k] *3*	3⁻		EFGH P r	XREF: P(1572.0)r(1574.78). Jπ: from resonance-averaged n-capture and γ's to 1⁻ and 5⁻ levels.
1574.293[g] *4*	4⁺		EFGHI O qr U	XREF: F(1575.6)G(1575.6)q(1577)r(1574.78)U(1578). Jπ: from resonance-averaged n-capture and γ's to 2⁺ and 6⁺ levels. In (d,d′), level is assigned 3⁻. $T_{1/2}$: 0.75 ps<$T_{1/2}$<2.1 ps (2017Ap01, (n,γ) E=th).
1575.623[i] *11*	6⁻		C E I Pq VW Z	XREF: q(1577)V(1581). Jπ: log *ft*=5.82 from 6⁻ in ^{162}Ho (67.0 min) ε decay indicates π=− and J=5, 6, 7. γ to 4⁻ rules out J=7. Expected band structure.
1634.415[j] *3*	5⁺		E HI R VWX Z	XREF: V(1644). Jπ: from γ's to 3⁺ and 6⁺ levels and expected band structure.
1637.196[l] *4*	1⁻		EFGH p	XREF: p(1637.40). Jπ: from resonance-averaged n-capture, E1 γ to 2⁺ and proposed band structure.
1637.92[‡c] *8*	7⁻		HI K p W Z	XREF: p(1637.40). Jπ: E1 γ to 6⁺ level and expected band structure.
1666.27[‡m] *20*	0⁺		H S	Jπ: from L=0 in (p,t).
1669.085[k] *3*	4⁻		EFGH P R	Jπ: M1 components in transitions to 3⁻ and 5⁻ levels.
1670.505[a] *19*	8⁺		I K WX	XREF: K(1670.2). Jπ: from γ's to 6⁺ and 8⁺ levels and expected band structure.
1683.35[h] *8*	7⁻		I P R UVW Z	XREF: V(1691). Jπ: from E1 γ to 6⁺ level, γ to 8⁺, and expected band structure.
1691.340[l] *4*	2⁻		A EFGHI P S	XREF: S(1700). Jπ: E2 γ to 4⁻ and M1 component in γ to 1⁻ levels. Other: L=2 in (p,t) implies 2⁺.
1728.318[m] *4*	2⁺		EFGH Q S	XREF: Q(1723)S(1732). Jπ: from resonance-averaged n-capture and γ to 1⁻

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	Jπ[#]	$T_{1/2}$	XREF	Comments
				level. Other: (d,d′) data give J^π not 2^+, so level might be a doublet. $T_{1/2}$: 0.17 ps<$T_{1/2}$<0.7 ps (2017Ap01, (n,γ) E=th).
1738.999[l] 4	3^-		EFGH PQ	XREF: Q(1737). J^π: from resonance-averaged n-capture and γ′s to 1^- and 5^- levels.
1745.716[n] 7	1^+		AB DEFGHI O QR	J^π: from resonance-averaged n-capture, M1 component in γ to 2^+ level and expected band structure.
1751.881[j] 3	6^+		E I qR WX Z	XREF: q(1755). J^π: from γ′s to 4^+, 5^+, and 6^+ levels and expected band structure.
1754.82[‡f] 20	$(7)^-$		I K Pq VW	XREF: K(1759.)q(1755)V(1765). J^π: E1 γ to 6^+ and expected band structure.
1766.608[o] 3	3^-		EFGH p r U	XREF: p(1766.81)r(1766.81)U(1759). J^π: from resonance-averaged n-capture and γ′s to 2^+ and 5^- levels.
1767.37[g] 17	6^+		I W	J^π: E2 γ to 8^+, γ to 6^+ and expected band structure.
1782.68[‡n] 9	2^+	@	AB FGHI QR	XREF: Q(1777). Listed γ branching is from (n,n′γ), except where noted otherwise. J^π: from γ′s to 0^+ and 4^+ levels and expected band structure.
1807.56[i] 6	8^-		I P VW Z	XREF: V(1816). J^π: γ′s to 6^-, 7^- and 7^+ levels and expected band structure.
1826.753[o] 4	4^-		EF H P U	XREF: U(1828). J^π: from resonance-averaged n-capture, γ′s to 3^+ and 6^- levels, and expected band structure.
1833.25[‡k] 19	(5^-)		H P R	XREF: H(1837.09). E(level): from (d,p) and (d,t). J^π: from expected band structure.
1840.486[n] 4	3^+		EFGH R V	XREF: V(1843). J^π: from resonance-averaged n-capture, γ′s to 2^+, 4^+, and 4^- levels, and expected band structure.
1845.53[d] 7	8^-		I K WX Z	J^π: γ′s to 6^- and 7^+ levels and expected band structure.
1851.811[l] 4	4^-		EFGH P	J^π: from resonance-averaged n-capture. E1 γ to 5^+ and E2 γ to 2^- levels.
1862.677[p] 3	4^-		E	J^π: E1 γ to 5^+ and E2 to 2^- levels. $T_{1/2}$: 1.10 ps<$T_{1/2}$<1.98 ps (2017Ap01, (n,γ) E=th).
1863.83[‡q] 6	2^-		FGH PQ	Member of a possible doublet. 1995Be02 assign a number of γ′s deexciting this level. 2006Ap01, however, state that this level is not populated in the (n,γ) reaction with thermal neutrons. The listed γ branching is from (n,n′γ). J^π: from resonance-averaged n-capture.
1878.05[b] 7	9^+		I K WX	J^π: E2 γ to 7^+ and expected band structure.
1886.82[‡m] 9	4^+		EFGH	The listed γ branching is from 2002Go15, in (n,n′γ). For a discussion of the problems associated with this γ branching, see the comments on this level in the ^{161}Dy(n,γ) E=th data set. J^π: from resonance-averaged n-capture and E2 γ to 2^+ level.
1887.67[j] 5	7^+		I R WX Z	γ-decay properties are from (α,2nγ). J^π: M1 component in γ to 6^+, E2 γ to 5^+, and expected band structure.
1895.42[‡] 5	2^+		FGH P	Listed γ branching is from (n,n′γ). J^π: from resonance-averaged n-capture and γ′s to 1^- and 4^+

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
				levels.
1901.10[&] *8*	12^+	0.81 ps *8*	IJKLM WXY	XREF: M(1903.1). J^{π}: from E2 γ to 10^+ level and expected gs band structure. $T_{1/2}$: weighted average of 0.93 ps *6* (1977Ke06) and 0.76 ps *4* (1979Gu15) from Coul. ex. $T_{1/2}$: from B(E2)(10+→12^+)=2.1 *3* (Coul. ex.), the computed half-life is 0.75 ps *11*.
1904.13[‡] *11*			PQR	Assigned as the 4^+ member of the $K^{\pi}=1^+$ band at 1745 keV by 1995Be02 from (n,γ). However, the fact that this level is populated differently in (d,p) and (d,t) from the lower-spin members of this band suggests that it is not a member. In a subsequent (n,γ) study, 2006Ap01 do not confirm the population in (n,γ) of a level at this energy. They propose that the $J^{\pi}=4^+$ band member is at 1954 keV. E(level): value from 1995Be02 ((d,p) and (d,t)).
1910.430[q] *6*	3^-		EFGH P	J^{π}: from E1 γ's to 2^+ and 4^+ levels and resonance-averaged n-capture. $T_{1/2}$: 0.17 ps<$T_{1/2}$<0.21 ps (2017Ap01, (n,γ) E=th).
1913.68[‡o] *7*	5^-		R	J^{π}: from population in (d,t) and expected band structure.
1939.65[h] *9*	9^-		I R W Z	γ-decay properties are from (α,2nγ). J^{π}: E1 γ to 8^+, γ to 10^+, and expected band structure.
1951.391 *6*	3^+,4^+		EFGH P	E(level): 1995Be02 (in (n,γ)) report γ's depopulating this level to levels with J^{π} ranging from 0^+ and 1^- to 4^+ and 6^-, which suggests more than one level here. Resonance-averaged n capture also suggests the presence of a doublet of levels at this energy. The γ branching from the level listed here is that reported by 2006Ap01, which is adopted, differs from that given by 1995Be02. J^{π}: E1 γ to 4^- and M1 γ to 3^+. Level assigned as the 4^+ member of the $K^{\pi}=1^+$ band by 2006Ap01. However, 1995Be02 place that 4^+ state at 1904.13 keV, an assignment that is not adopted here.
1959.36[c] *8*	9^-		I K R VW Z	XREF: V(1955). J^{π}: E1 γ to 8^+, γ to 10^+, and expected band structure.
1963.598[l] *3*	5^-		E	J^{π}: from E2 γ to 3^-, E1 γ to 4^+ and γ to 6^+ levels.
1974.10[‡q] *10*	4^-		FGH P	XREF: F(1973.2)G(1973.2). J^{π}: from resonance-averaged n-capture and γ's to 3^+ and 4^+ levels.
1982.46[‡] *14*	2^+		A FGH N P R	J^{π}: from γ's to 0^+ and 4^+ levels.
1985.88[g] *21*	8^+		I K P U WX	XREF: K(1989.)U(1990).
1999.33 *13*	2^+		A EFGH PQR	J^{π}: resonance-averaged n-capture data give 2^+,3^+,(4^+). γ's to 0^+ and 3^- levels rule out 3^+ and 4^+.
2000.7[o] *10*			R	
2009.796 *5*			E H R	J^{π}: assigned by 1995Be02, in (n,γ), as the 5^+ member of the $K^{\pi}=1^+$ band at 1745 keV. This seems to Be based, in part, on the identification by 1995Be02 of the 1904 level as the 4^+ band member. However, this assignment is not adopted. γ to a 3^- level suggests $J^{\pi}=5^+$ is incorrect.
2040.97[j] *7*	8^+		I X Z	γ-decay properties are from (α,2nγ).

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	J$^{\pi}$[#]	$T_{1/2}$	XREF	Comments
				J$^{\pi}$: M1 component in γ to 7$^+$, E2 γ to 8$^+$, and expected band structure.
2041.45 *20*			R	
2047 *3*			Q	
2053.541[q] *13*	5$^-$		E H P	J$^{\pi}$: from γ's to 4$^+$ and 6$^+$ levels and expected band structure.
2065.79 *21*			R	
2071.95 *9*	(4)		E H P R	J$^{\pi}$: from 1995Be02, (n,γ). γ's to 2$^+$ and 6$^+$ levels imply J^{π}=4$^+$. Note, however, that this level is not populated in resonance-averaged n capture, where all the J=4 levels should Be populated via primary γ transitions.
2079[n]	(6$^+$)		V	J$^{\pi}$: from (^{3}He,α), where L=5,6.
2080.03 *5*	(2,3)		EFGH PQR U	XREF: Q(2076)U(2085). J$^{\pi}$: γ's to 0$^+$ and 4$^+$ levels imply 2$^+$, while resonance-averaged n-capture gives 2$^-$,3$^-$.
2087.49[a] *7*	10$^+$		I K R WX	J$^{\pi}$: γ's to 8$^+$ and 10$^+$ levels and expected band structure.
2100.66[f] *14*	9$^-$		I W	γ-decay properties are from (α,2nγ). J$^{\pi}$: E1 γ to 8$^+$, γ to 10$^+$, and expected band structure.
2102.8 *4*	3$^-$		OPQR	J$^{\pi}$: from ang. dist. in (d,d′) (1973St07).
2103.48 *7*	(2$^+$)		EFG R	XREF: R(2108.5). J$^{\pi}$: resonance averaged n-capture gives 2$^+$,3$^+$,(4$^+$). γ's to 0$^+$ and 3$^+$ levels.
2110.70[i] *8*	10$^-$		I W	J$^{\pi}$: γ's to 8$^-$ and 9$^-$ levels and expected band structure.
2112.6 *1*			P RS	
2120.717 *9*	(4$^-$)		EFG P R	J$^{\pi}$: from resonance-averaged n-capture.
2125.212[r] *8*	0$^+$		E O S	XREF: S(2126.5). J$^{\pi}$: from L=0 in (t,p).
2128.6 *4*	1$^-$		A FGH p r	XREF: p(2128.64)r(2128.64). J$^{\pi}$: Resonance-averaged n-capture gives 1$^-$ or 4$^-$. ^{162}Tb β^- decay gives 1 or 2.
2129.497 *19*	(2$^+$)		E H p rS	XREF: p(2128.64)r(2128.64). J$^{\pi}$: from L=2 in (p,t), which implies several γ's to 4$^-$ levels are M2.
2138.5 *3*			R V	
2148.681 *4*	(2)		EFG	J$^{\pi}$: from resonance-averaged n-capture.
2163.3 *5*	1,2,3		A P R	J$^{\pi}$: from γ's to 2$^+$ and 2$^-$ levels.
2174.61 *24*			R	
2181.0[s]	4$^+$		X	
2185.22 *17*			P	
2187.9[e] *10*	8$^+$	8.3 μs *3*	I Z	$T_{1/2}$: from $\gamma\gamma$(t) (2011Sw02). Proposed configuration=ν11/2[505]$\otimes\nu$5/2[523], K^{π}=8$^+$, in 2011Sw02 (^{160}Gd(^{9}Be,α3nγ)). J$^{\pi}$: (7$^-$,8$^+$) from γ's to 6$^+$ and 9$^-$ respectively; (8$^+$) from proposed configuration.
2189.71[r] *18*	(2$^+$)		E H P	XREF: H(2192.0). J$^{\pi}$: from γ's to 0$^+$ and 3$^+$ levels and expected band structure.
2199.2 *3*			R	
2203[t]	(8$^+$)		V	J$^{\pi}$: from (^{3}He,α), where L=5,6.
2207.5 *3*			R	
2211.59[j] *8*	9$^+$		I WX	γ branching and properties are from (α,2nγ). J$^{\pi}$: M1 components in γ's to 8$^+$ and 9$^+$ levels, E2 γ to 7$^+$, and expected band structure.
2215.6 *6*			H P	

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
2230.75 *21*			P R	
2234.18[d] *9*	10^-		I WX	J^{π}: γ's to 8^- and 9^+ levels and expected band structure.
2239.4 *4*			E H P	
2245.6 *3*			P R	
2262.30[g] *11*	10^+		I R U WX	J^{π}: M1 γ to 10^+ and expected band structure.
2269.5 *3*			PQR	
2276 *4*			E	
2280.5 *3*			P	
2280.88[h] *12*	11^-		I W	J^{π}: γ to 10^+ and expected band structure.
2283[u]	(5^+)		V	J^{π}: from (^{3}He,α), where L=5,6.
2291.4 *3*			H P R	
2292			U	
2292.4[s] *7*	5^+		X	E(level): the evaluator has chosen not to identify this level with those listed at 2291.4 and/or 2292, since the other members of this proposed $K^{\pi}=4^+$ band are not observed in either of the reactions in which these levels are reported.
2299.09 *23*			E R	
2311.3 *3*			H R	
2314.1 *5*			e H P R	XREF: e(2315).
2318.2 *8*	(3^-)		e PQ	XREF: e(2315). J^{π}: from 1968Gr08, (d,d′).
2324.85 *21*			H P R	
2330.95[c] *8*	11^-		I K W	J^{π}: γ to 10^+ level and expected band structure.
2337.35[b] *8*	11^+		I K WX	J^{π}: γ's to 9^+ and 10^+ levels and expected band structure.
2338.7 *5*			E H P	
2344.4 *3*			H P	
2348.8 *3*			E P R	
2351			H U	
2355.7 *3*			H P	
2362.94 *20*			H P R	
2368.9[e] *13*	(9^+)		Z	J^{π}: γ to (8^+) and band assignment.
2369.1 *8*			H P	
2371.3 *3*	1^-,2,3		A E	J^{π}: from γ's to 2^-, 2^+, and 3^- levels.
2374[u]	(6^+)		V	J^{π}: from (^{3}He,α), where L=5,6.
2375.6 *3*			P R u	XREF: u(2381).
2381.4 *5*			H R u	XREF: u(2381).
2386.3 *6*			H P	
2394.85 *15*	1^+	11.1[@] fs *7*	H N	B(M1)↑=0.52 *3* J^{π}: from M1 excitation in (γ,γ'). $T_{1/2}$: Other: $T_{1/2}$=8 fs *4* from (n,n′γ). B(M1)↑: from (γ,γ').
2398.27[j] *22*	10^+		I X	J^{π}: γ to 8^+, possible γ to 9^+, and expected band structure.
2403.4 *3*			H R	
2413.1 *4*			E R	
2421.0[s]	6^+		X	
2427.9 *6*			P U	
2437.1 *4*			E H P R	
2451.8 *5*			P	
2455			Uv	XREF: v(2458).
2457 *5*			E	
2459.0 *3*			H P R v	XREF: v(2458).
2469.7 *7*			R	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
2480.2 *5*			H P	
2482.34[i] *9*	12⁻		I W	J^{π}: γ's to 10⁻ and 11⁻ levels and expected band structure.
2483.7 *8*			R	
2488.3 *4*			E H P	
2491.65[&] *9*	14⁺	0.45 ps *5*	I K M WXY	XREF: M(2495). $T_{1/2}$: from 1979Gu15, Coul. ex. J^{π}: from expected band structure. Populated in Coul. ex.
2494.4 *9*	0⁺		RS	XREF: S(2496.7). J^{π}: from L=0 in (p,t). The evaluator has assumed that these two levels are the same.
2503.83[f] *12*	11⁻		I W	XREF: I(2504.15). J^{π}: γ's to 10⁺ and 12⁺ levels and expected band structure.
2506[v]	(7⁺)		UV	J^{π}: from (α,^{3}He), where L=5,6.
2510.3 *10*			e H P	XREF: e(2516).
2513.6 *6*			e P R	XREF: e(2516).
2520.4 *7*	1⁻	7.5[@] fs *6*	e H N P	B(E1)↑=5.0×10⁻⁵ *4* XREF: e(2516)N(2520). J^{π}: from E1 excitation in (γ,γ'). B(E1)↑: from ^{162}Dy(γ,γ').
2524.1 *4*			H P R	
2529.4 *6*			H P U	
2534.86[g] *9*	12⁺		I WX	XREF: I(2535.21). J^{π}: γ's to 10⁺ and 12⁺ levels and expected band structure.
2537.4 *7*	1	98[@] fs *21*	H N P R	J^{π}: from dipole excitation in (γ,γ').
2551.3 *11*			H R	
2554.3 *6*			H P	XREF: P(2553.7).
2562[u]	(7⁺)		V	J^{π}: from (^{3}He,α), where L=5,6.
2565.2 *11*			E R	
2567.9[e] *13*	(10⁺)		Z	J^{π}: γ's to (8⁺) and (9⁺) and band assignment. Magnitude of g_K-g_R=0.24 *4* (2011Sw02, ^{160}Gd(^{9}Be,α3nγ)).
2569.4 *7*	1⁺	39[@] fs *4*	H N P	B(M1)↑=0.13 *1* J^{π}: from M1 excitation in (γ,γ'). B(M1)↑: from (γ,γ').
2579.6 *11*	(2⁺)		RS	J^{π}: from L=2 in (p,t), assuming that level seen in the two reactions is the same.
2584.0 *4*			E P	
2601.32[j] *12*	11⁺		I WX	J^{π}: γ to 9⁺ level and expected band structure.
2614.8 *4*			P	
2617.3 *5*			R	
2622.78[a] *9*	12⁺		I WX	J^{π}: γ's to 10⁺ and 12⁺ levels and expected band structure.
2623[w]	(6⁺)		U	J^{π}: from (α,^{3}He), where L=6.
2630.6 *3*			R	
2641.6 *3*			E H R	
2647			U	
2648 *5*			E	
2663.0 *8*	0⁺		E H RS	J^{π}: from L=0 in (p,t).
2670.65[d] *12*	12⁻		I WX	J^{π}: γ's to 10⁻ and 11⁺ levels and expected band structure.
2680.6 *9*			R	

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
2682.59[h] *10*	13⁻		I W	J^{π}: γ's to 11⁻ and 12⁺ levels and expected band structure.
2688.5 *11*			E R	
2695.9 *16*	(10⁺)		Z	J^{π}: γ to (9⁺), (10⁺) assigned by 2011Sw02 (^{160}Gd(^{9}Be,α3nγ)).
2697			U	
2704			V	
2708.9 *12*			H R	
2718.2 *10*			E R	
2726			U	
2730.6 *9*			R	
2742.2 *11*			E R	
2750.8 *9*			H R	
2755[v]	(8⁺)		U	J^{π}: from (^{3}He,α), where L=6.
2768.7 *8*			E R	
2777.99[c] *11*	13⁻		I W	J^{π}: γ's to 11⁻ and 12⁺ levels and expected band structure.
2779.8 *9*			E H R	XREF: E(2773).
2784.9[e] *14*	(11⁺)		Z	J^{π}: γ's to (9⁺) and (10⁺) and band assignment. Magnitude of g_K-g_R=0.27 *+8−6* (2011Sw02, ^{160}Gd(^{9}Be,α3nγ)).
2785			U	
2788.8 *9*			H R	
≈2800			S	E(level): L=5+7 in (p,t) suggests that this is a doublet.
2802.7 *6*	0⁺		E H RS	XREF: E(2796). J^{π}: from L=0 in (p,t).
2812			U	
2815	1	39[@] fs *13*	N	J^{π}: from dipole excitation in (γ,γ').
2817[j]	12⁺		X	
2818.2 *8*			E R	
2847[w]	(7⁺)		UV	J^{π}: from (α,^{3}He), where L=6.
2848.4 *8*			E R	
2859.63[b] *10*	13⁺		I WX	J^{π}: γ's to 11⁺ and 12⁺ levels and expected band structure.
2861.5 *7*			R	
2880.0 *7*			R	
2900.0 *3*	1⁺	2.05[@] fs *13*	H N R U	B(M1)↑=1.63 *10* XREF: H(2902.1). B(M1)↑: from (γ,γ'). J^{π}: from M1 excitation in (γ,γ'). $T_{1/2}$: other: <4 fs from (n,n'γ).
2909.4 *7*	1	22[@] fs *7*	H N R	XREF: H(2909.7). J^{π}: from dipole excitation in (γ,γ').
2919.55[i] *13*	14⁻		W	
2929.4 *7*	1⁻	20.0[@] fs *21*	H N R	B(E1)↑=1.7×10^{-5} *2* J^{π}: from E1 excitation in (γ,γ'). B(E1)↑: from (γ,γ').
2930[v]	(9⁺)		U	
2934.55[g] *10*	14⁺		I WX	J^{π}: γ's to 12⁺ and 14⁺ levels and expected band structure.
2940.4 *7*			R	
2950 *5*			E	
2959.8 *7*			R	

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
2963.94[f] *13*	13^-		I W	J^{π}: γ's to 10^+, 11^- and 12^+ levels and expected band structure.
2965	1^+	33[@] fs *5*	N	B(M1)↑=0.10 *1* J^{π}: from M1 excitation in (γ,γ'). B(M1)↑: from (γ,γ').
2971.8 *6*			R	
2989.2 *7*			H R	
2997 *5*			E	
3012.3 *6*			H R	
3019 *5*			E	
3029.3 *6*			E R	
3040.3 *6*			R	
3052.82[j] *15*	13^+		W	
3061.2 *3*	1^+	3.9[@] fs *4*	H N R	B(M1)↑=0.86 *8* J^{π}: from M1 excitation in (γ,γ'). $T_{1/2}$: other: 6 fs *3* from (n,n'γ).
3070.8 *6*			H R	
3085.8 *6*			R	
3105.9 *9*			R	
3115.7 *7*			R	
3123.25[d] *16*	14^-		W	
3127 *7*			R	
3138.55[&] *12*	16^+		I M WXY	XREF: M(3144).
3139.5 *7*			R	
3145.63[h] *10*	15^-		I W	J^{π}: γ's to 13^- and 14^+ and expected band structure.
3145.64[a] *10*	14^+		I WX	J^{π}: γ's to 12^+ levels and expected band structure.
3151.9 *5*			R	
3171.4 *6*			R	
3187.8 *5*			R	
3241 *5*			E	
3269[j]	14^+		X	
3293.21[c] *11*	15^-		I W	J^{π}: γ to 14^+ and expected band structure.
3303			V	
3373.94[g] *12*	16^+		WX	
3415.95[i] *16*	16^-		W	
3434.04[b] *11*	15^+		WX	
3474.84[f] *17*	15^-		W	
3564.22[j] *18*	15^+		W	
3577	1		N	J^{π}: from dipole excitation in (γ,γ').
3627.26[d] *19*	16^-		W	
3666.92[h] *15*	17^-		W	
3734.23[a] *14*	16^+		WX	
3830.93[&] *14*	18^+		I M WXY	XREF: I(3832.3)M(3837). J^{π}: from γ to 16^+ level and expected band structure.
3835[j]	16^+		X	
3874.28[c] *13*	17^-		W	
3878.37[g] *13*	18^+		WX	
3966.65[i] *19*	18^-		W	
4037.24[f] *20*	17^-		W	
4039.64[b] *15*	17^+		WX	

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

E(level)[†]	J$^{\pi}$[#]	XREF	Comments
4195.56[d] *21*	18$^-$	W	
4243.52[h] *18*	19$^-$	W	
4342.53[a] *18*	18$^+$	WX	
4434.60[g] *14*	20$^+$	WX	
4516.28[c] *16*	19$^-$	W	
4568.76[i] *22*	20$^-$	W	
4577.73[&] *17*	20$^+$	WXY	XREF: Y(4572).
4650.55[f] *22*	19$^-$	W	
4873.42[h] *21*	21$^-$	W	
5061.80[g] *18*	22$^+$	W	
5221.06[i] *24*	22$^-$	W	
5352.0[&] *3*	22$^+$	WX	
5554.13[h] *23*	23$^-$	W	
5747.20[g] *20*	24$^+$	W	
5920.9[i] *3*	24$^-$	W	
6153.2[&] *4*	24$^+$	WX	
6488.7[g] *3*	26$^+$	W	
7276.0[g] *4*	28$^+$	W	

[†] Calculated from a least-squares fit to the listed γ energies. In this fit, 141 Eγ values out of 508 differ by more than 3σ from the calculated values. Other values are from the relevant reaction data.

[‡] Level reported by 1995Be02 in (n,γ), but not confirmed by 2006Ap01 (whose data extend only to levels below 2 MeV). See the relevant comment in the ^{162}Dy(n,γ) E=th data set.

[#] For levels seen only in the heavy-ion-induced reactions, the values are obtained based on considerations commonly used in such studies. Explicit arguments are given for the other cases.

[@] From (γ,γ') and, to the extent that level may decay via unreported γ's, values are upper limits.

[&] Band(A): K$^{\pi}$=0$^+$ ground-state band. A=13.51 keV, B=−11 eV, computed from the energies of the 0$^+$ through 4$^+$ band members.

[a] Band(B): γ-vibrational band, signature=0 branch. A=12.56 keV, B=−11 eV, A_4=−0.672 eV. Values computed from the energies of the 2$^+$ through the 5$^+$ band members.

[b] Band(b): γ-vibrational band, signature=1 branch. See the comments on the signature=0 branch.

[c] Band(C): K$^{\pi}$=2$^-$ octupole-vibrational band, signature=1 branch. Dominant configuration=(π 7/2[523])-(π 3/2[411]). A=10.57 keV, B=−7.5 eV, A_4=+7.87 eV, computed from the energies of the 2$^-$ through 5$^-$ band members.

[d] Band(c): K$^{\pi}$=2$^-$ octupole-vibrational band, signature=0 branch. See the comments on the signature=1 branch.

[e] Band(D): K^{π}=8$^+$ band based on 8.3 μs isomer.

[f] Band(E): K$^{\pi}$=0$^-$ octupole-vibrational band. Configuration=(ν 5/2[642])-(ν 5/2[523]) is the largest component in the make-up of this band. A=7.82 keV, B=+27 eV, computed from the energies of the 1$^-$, 3$^-$ and 5$^-$ band members. Note that they do not give a good description of the energies of the higher-spin band members.

[g] Band(F): K$^{\pi}$=0$^+$ band, S, or 'Super', band. A=8.94 keV, B=−12 eV, computed from the energies of the 0$^+$ through 4$^+$ band members. These values do not give a good description of the energies of the higher-spin states. This band intersects the g.s. band at spin 18.

[h] Band(G): K$^{\pi}$=5$^-$ band, signature=1 branch. Dominant configuration=(ν 5/2[642])+(ν 5/2[523]). A=7.44 keV, B=+4.7 eV, computed from the energies of the 5$^-$ through 7$^-$ band members.

[i] Band(g): K$^{\pi}$=5$^-$ band, signature=0 branch. See the comments on the signature=1 branch.

[j] Band(H): K$^{\pi}$=4$^+$ band, probable hexadecapole vibration. Dominant conf=(ν 3/2[521])+(ν 5/2[523]). A=9.90 keV, B=−2.9 eV, computed from the energies of the 4$^+$ through 6$^+$ band members. From (^{162}Dy,^{162}Dy$'\gamma$), 2001Wu05 infer that the two-phonon γ-vibrational phonon contributes ≈11% to the make-up of this band.

[k] Band(I): K$^{\pi}$=3$^-$ octupole-vibrational band. Configuration=(ν 5/2[642])+(ν 1/2[521]) contributes ≈50% to the make-up of this

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Adopted Levels, Gammas (continued)

^{162}Dy Levels (continued)

band. A=12.39 keV, computed from the energies of the 3^- and 4^- band members. The energy of the 5^- band member is not well predicted by this value.

[l] Band(J): $K^\pi=1^-$ octupole-vibrational band. Configuration=(ν 5/2[642])-(ν 3/2[521]) is the largest component in the make-up of this band.

[m] Band(K): $K^\pi=0^+$ band. A=10.05 keV, B=+49 eV, computed from the energies of the 0^+ through 4^+ band members. The relatively large, positive, value of B suggests that these parameters will not provide a good description of the energies of the higher-spin states.

[n] Band(L): $K^\pi=1^+$ band. Dominant configuration=(ν 5/2[523])-(ν3/2[521]).

[o] Band(M): Second excited $K^\pi=3^-$ band. Configuration=(ν 5/2[642])+(ν 1/2[521]) is a large part of the make-up of this band. From the energies of the 3^- through 5^- band members, one computes A=6.98 and B=+54 eV. These seem unusual, suggesting some problems in the assignment of the band members.

[p] Band(N): bandhead of a $K^\pi=4^-$ band.

[q] Band(O): Second excited $K^\pi=2^-$ band. Dominant configuration=(ν 5/2[642])-(ν 1/2[521]). A=7.54 keV, B=+16 eV, A_4=+788 meV, computed from the energies of the 2^- through 5^- band members.

[r] Band(P): $K^\pi=0^+$ band.

[s] Band(Q): Second excited $K^\pi=4^+$ band. From (^{162}Dy,^{162}Dy$'\gamma$), 2001Wu05 infer that the two-phonon γ-vibrational phonon contributes ≈25% to the make-up of this band. A=11.15 keV, computed from the energies of the 4^+ and 5^+ band members.

[t] Band(R): $K^\pi=8^+$ bandhead. Configuration=(ν 5/2[523])+(ν 11/2[505]).

[u] Band(S): member of a $K^\pi=3^+$ band. Configuration=(ν 11/2[505])-(ν 5/2[523]).

[v] Band(T): $K^\pi=6^+$ band member. Configuration=(ν 5/2[642])+(ν 7/2[633]).

[w] Band(U): $K^\pi=1^+$ band member. Configuration=(ν 7/2[633])-(ν 5/2[642]).

$\gamma(^{162}Dy)$

Based on data from ^{162}Tb β^- decay, ^{162}Ho ε decay (15 min and 67 min), ^{161}Dy(n,γ), ^{162}Dy(n,n′γ), ^{160}Gd(α,2nγ), Coul. ex., ^{162}Dy(γ,γ'), ^{118}Sn(^{162}Dy,^{162}Dy′γ), ^{160}Gd(^{7}Li,p4nγ), and ^{160}Gd(^{37}Cl,Xγ).

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
80.661	2+	80.659 *7*	100	0.0	0+	E2		6.14	B(E2)(W.u.)=202.1 *31* α(K)=1.82 *3*; α(L)=3.32 *5*; α(M)=0.797 *12* α(N)=0.1784 *25*; α(O)=0.0212 *3*; α(P)=7.66×10^{-5} *11* B(E2)(W.u.) calculated directly from the adopted B(E2)↑. Mult.: all data agree with pure E2 assignment, namely, K/L=0.54 (1961Jo10), L1/L2/L3=0.11/0.98/1.00 (1961Ha23), and α(K)exp=2.1 (evaluator′s combination of Iγ from 1971Wo09 and Ice from 1961Jo10). All data are from ^{162}Ho ε decays. Additional information 2.
265.664	4+	185.002 *1*	100	80.661	2+	E2		0.307	B(E2)(W.u.)=289 *11* α(K)=0.200 *3*; α(L)=0.0826 *12*; α(M)=0.0194 *3* α(N)=0.00438 *7*; α(O)=0.000550 *8*; α(P)=9.37×10^{-6} *14* Mult.: the data agree reasonably well with pure E2, namely, K/L=2.3 *5*, 2.2, and 2.1 (1967Ba34,1961Jo10,1961Ha23), L1/L2/L3=0.38/1.15/1.00 (1961Ha23), and α(K)exp=0.19 *3* (1967Ba34) (evaluator′s combination of Iγ from 1971Wo09 and Ice from 1961Jo10). Data are from ^{161}Dy(n,γ) for 1967Ba34 and otherwise from ^{162}Ho ε decays. Additional information 3.
548.520	6+	282.859 *2*	100	265.664	4+	E2		0.0773	B(E2)(W.u.)=302 *16* α(K)=0.0572 *8*; α(L)=0.01557 *22*; α(M)=0.00359 *5* α(N)=0.000816 *12*; α(O)=0.0001067 *15*; α(P)=2.95×10^{-6} *5* Mult.,δ: the data agree with a pure E2 assignment, namely, α(K)exp=0.066 (evaluator′s combination of Iγ from 1971Wo09 and Ice from 1961Jo10), and K/L=3.7 (1961Jo10). Data are from ^{162}Ho ε decays. Additional information 4.
888.161	2+	622.494 *3*	2.08 *8*	265.664	4+	E2		0.00875	B(E2)(W.u.)=0.628 *+41−39* α(K)=0.00718 *10*; α(L)=0.001229 *18*; α(M)=0.000274 *4* α(N)=6.29×10^{-5} *9*; α(O)=8.83×10^{-6} *13*; α(P)=4.08×10^{-7} *6* I$_\gamma$: weighted average of: 2.08 *7* (^{162}Tb β^- decay); and and 1.93 *7* (n,γ). Other: 1.4 *1* (n,n′γ).
		807.501 *2*	100 *3*	80.661	2+	E2+M1	+57 *+∞−33*	0.00481	B(M1)(W.u.)=3.4×10^{-6} *+19−10*; B(E2)(W.u.)=8.23 *41* α(K)=0.00400 *6*; α(L)=0.000628 *9*; α(M)=0.0001390 *20* α(N)=3.20×10^{-5} *5*; α(O)=4.56×10^{-6} *7*; α(P)=2.30×10^{-7} *4* Mult.,δ: from (n,n′γ). From α(K)exp=0.0041 *1* or 0.0043, γ is E2 with δ>5.4 or >1.7, respectively [2006Ap01, from (n,γ), or 1982Fi15, from

Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ [†‡#]	I_γ	E_f	J^π_f	Mult. [&]	δ [&b]	α [a]	Comments
									(α,2nγ)]. From $\gamma(\theta)$ and $\gamma\gamma(\theta)$, δ>+41.1 or <−8.3 [1980Hu06, from (n,γ)], δ>29 (1972Do01 from Coul. ex.), and δ<−2.9 or >+11.4 [1977Ho11 from (n,n′γ)]. Additional information 5 (1980Hu06).
888.161	2+	888.157 *3*	91 *2*	0.0	0+	E2		0.00391	B(E2)(W.u.)=4.65 *+24−22* α(K)=0.00327 *5*; α(L)=0.000500 *7*; α(M)=0.0001103 *16* α(N)=2.54×10^{-5} *4*; α(O)=3.64×10^{-6} *5*; α(P)=1.88×10^{-7} *3* B(E2)(W.u.) is computed from B(E2)↑=0.122 *5*, in Coul. ex. I_γ: weighted average of: 90 *4*, from ^{162}Tb β^- decay; 90 *6*, from (n,n′γ); and 92 *3*, from (n,γ). Other: 126 *9*, from ^{162}Ho ε decay (67.0 min).
921.28	8+	372.50 *18*	100	548.520	6+	[E2]		0.0339	B(E2)(W.u.)=346 *17* α(K)=0.0264 *4*; α(L)=0.00587 *9*; α(M)=0.001339 *19* α(N)=0.000305 *5*; α(O)=4.10×10^{-5} *6*; α(P)=1.425×10^{-6} *20* E_γ: average of: 372.20 *9* (from (n,n′γ)); 372.56 *15* (from muonic atom); and 372.75 *8* (from Coul. ex.).
962.940	3+	697.277 *2*	19.5 *5*	265.664	4+	E2(+M1)	>45	0.00670	α(K)=0.00553 *8*; α(L)=0.000909 *13*; α(M)=0.000202 *3* α(N)=4.64×10^{-5} *7*; α(O)=6.56×10^{-6} *10*; α(P)=3.17×10^{-7} *5* I_γ: weighted average of: 20.3 *11* (n,n′γ); 19.2 *6* (^{162}Tb β^- decay); 17 *3* (^{162}Ho ε decay (67.0 min)); and 19.8 *11* (n,γ). Mult.,δ: δ is from (n,n′γ). From α(K)exp=0.0056 *2* in (n,γ), 2006Ap01 report δ>4.5. From $\gamma\gamma(\theta)$ in (n,γ), δ>+11.7 or <−10.4 (1980Hu06). Additional information 6. δ: 2006Ap01 report δ>4.5.
		882.276 *3*	100.0 *15*	80.661	2+	E2+M1	+41 *+34−13*	0.00397	α(K)=0.00332 *5*; α(L)=0.000508 *8*; α(M)=0.0001121 *16* α(N)=2.58×10^{-5} *4*; α(O)=3.69×10^{-6} *6*; α(P)=1.91×10^{-7} *3* Mult.,δ: from (n,n′γ). From α(K)exp=0.0041 *6* or 0.0032 *1*, γ is E2 with δ>1.1 or >12, respectively, [1982Fi15 from (α,2nγ) or 2006Ap01 from (n,γ)]. From $\gamma\gamma(\theta)$ in (n,γ), δ=+2.6 *+53−16* (1980Hu06). Additional information 7.
1060.991	4+	98.054 *3*	0.08 *1*	962.940	3+	M1		2.53	α(K)=2.13 *3*; α(L)=0.314 *5*; α(M)=0.0690 *10* α(N)=0.01595 *23*; α(O)=0.00233 *4*; α(P)=0.0001330 *19*
		172.835 *3*	0.71 *3*	888.161	2+	E2		0.387	α(K)=0.245 *4*; α(L)=0.1097 *16*; α(M)=0.0259 *4* α(N)=0.00583 *9*; α(O)=0.000728 *11*; α(P)=1.127×10^{-5} *16*
		512.464 *5*	1.58 *6*	548.520	6+	E2		0.01422	α(K)=0.01147 *16*; α(L)=0.00214 *3*; α(M)=0.000481 *7* α(N)=0.0001100 *16*; α(O)=1.520×10^{-5} *22*; α(P)=6.43×10^{-7} *9*
		795.327 *3*	100 *4*	265.664	4+	E2+M1	+12 *+18−4*	0.00500 *8*	α(K)=0.00416 *7*; α(L)=0.000655 *10*; α(M)=0.0001449 *22* α(N)=3.33×10^{-5} *5*; α(O)=4.75×10^{-6} *8*; α(P)=2.39×10^{-7} *4* Mult.,δ: from (n,n′γ). From α(K)exp=0.0043 *2* and 0.0033 *5*, γ is

$^{162}_{66}Dy_{96}$-15

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ [†‡#]	I_γ	E_f	J^π_f	Mult. [&]	δ [&b]	α [a]	$I_{(\gamma+ce)}$	Comments
										E2 with %M1<10 [2006Ap01, (n,γ), and 1982Fi15, (α,2nγ)]. From $\gamma(\theta)$ and $\gamma\gamma(\theta)$, δ=−5.3 *+2−126* [1980Hu06 from (n,γ)], δ=−2.4 *+8−47* (1972Do01 from Coul. ex.). From the results of 1967Ba34, 1972Do01 and 1980Hu06, −7.1<δ<−4.0. Additional information 8.
1060.991	4^+	980.335 *6*	57 *2*	80.661	2^+	E2		0.00317		α(K)=0.00266 *4*; α(L)=0.000398 *6*; α(M)=8.75×10^{-5} *13* α(N)=2.02×10^{-5} *3*; α(O)=2.90×10^{-6} *4*; α(P)=1.536×10^{-7} *22* I_γ: weighted average of: 59 *3*, from (n,γ); and 53 *4*, from (n,n′γ). From ^{162}Ho ε decay (67.0 min), Iγ=84 *7*. Mult.: from (n,γ) (2006Ap01), α(K)exp=0.0027 *1*, which is interpreted as E2+<7%M1, supporting the assignment.
1148.232	2^-	185.292 *1*	20.0 *8*	962.940	3^+	E1		0.0595		B(E1)(W.u.)=2.7×10^{-5} *+7−5* α(K)=0.0501 *7*; α(L)=0.00731 *11*; α(M)=0.001598 *23* α(N)=0.000365 *6*; α(O)=5.13×10^{-5} *8*; α(P)=2.51×10^{-6} *4* I_γ: weighted average of: 18.0 *14*, from ^{162}Tb β^- decay; and 20.7 *9*, from (n,γ). δ: from $\gamma\gamma(\theta)$ in (n,γ), δ=−0.03 *16* (1980Hu06), which is compatible with pure E1.
		260.067 *8*	100 *5*	888.161	2^+	E1		0.0246		B(E1)(W.u.)=5.0×10^{-5} *+12−8* α(K)=0.0209 *3*; α(L)=0.00297 *5*; α(M)=0.000649 *9* α(N)=0.0001488 *21*; α(O)=2.11×10^{-5} *3*; α(P)=1.085×10^{-6} *16* δ: from $\gamma(\theta)$ in (α,2nγ), smaller δ=−0.15 *+30−10* (1982Fi15) and from $\gamma\gamma(\theta)$ in (n,γ), δ=−0.04<δ<+0.06 (1980Hu06). From ^{162}Dy(n,n′γ), δ(M2/E1)=+0.04 *+16−11*. Additional information 9.
		1067.55 *10*	0.70 *2*	80.661	2^+	[E1]		1.11×10^{-3}		α(K)=0.000946 *14*; α(L)=0.0001252 *18*; α(M)=2.72×10^{-5} *4* α(N)=6.26×10^{-6} *9*; α(O)=9.16×10^{-7} *13*; α(P)=5.28×10^{-8} *8* B(E1)(W.u.)=5.0×10^{-9} *+13−8* γ not reported by 2006Ap01 (n,γ).
1182.763	5^+	121.774 *2*	0.17 *1*	1060.991	4^+	E2(+M1)	>1.7	1.325 *20*		α(K)=0.73 *7*; α(L)=0.46 *5*; α(M)=0.109 *11* α(N)=0.0245 *24*; α(O)=0.0030 *3*; α(P)=3.4×10^{-5} *6* δ: from α(K)exp in (n,γ) (2006Ap01). δ^2=1.4 *+8−4* from Iγ and Alaga-rule considerations [1978Ge03 in (n,γ)].

$^{162}_{66}Dy_{96}$-16

Adopted Levels, Gammas (continued)

γ(^{162}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$ [†‡#]	I$_\gamma$	E$_f$	J$^\pi_f$	Mult. [&]	δ [&b]	α [a]	Comments
1182.763	5$^+$	219.823 *1*	2.47 *12*	962.940	3$^+$	E2		0.1729	α(K)=0.1199 *17*; α(L)=0.0410 *6*; α(M)=0.00958 *14* α(N)=0.00217 *3*; α(O)=0.000276 *4*; α(P)=5.85×10^{-6} *9* I$_\gamma$: from 2006Ap01, (n,γ). From ^{162}Ho ε decay (67.0 m), Iγ=5.6 *28*.
		634.246 *2*	19.0 *6*	548.520	6$^+$	E2+M1	−7 *+2−20*	0.00853 *19*	α(K)=0.00701 *17*; α(L)=0.001184 *22*; α(M)=0.000264 *5* α(N)=6.06×10^{-5} *11*; α(O)=8.52×10^{-6} *17*; α(P)=4.00×10^{-7} *10* I$_\gamma$: from 2006Ap01, (n,γ). From ^{162}Ho ε decay (67.0 min), Iγ=18.6 *10*. Other: 28 *2*, from (n,n′γ). Mult.,δ: from (n,n′γ). From γγ(θ) in (n,γ), δ=+3.9 *+41−15* (1980Hu06). Additional information 10.
		917.092 *2*	100 *6*	265.664	4$^+$	E2+M1	+50 *+50−2*	0.00365	α(K)=0.00306 *5*; α(L)=0.000464 *7*; α(M)=0.0001022 *15* α(N)=2.35×10^{-5} *4*; α(O)=3.38×10^{-6} *5*; α(P)=1.762×10^{-7} *25* Mult.,δ: from (n,n′γ). From γ(θ) and γγ(θ), δ<−62.7 or >+4.8 and δ<−2.7 or >+14.3, (1980Hu06,1977Ho11). So, δ<−62 or >+14. From (α,2nγ) (1982Fi15), α(K)exp=0.0039 *6*, which gives δ=1.5 *+15−5*. Additional information 11.
1210.089	3$^-$	149.100 *2*	4.4 *1*	1060.991	4$^+$	E1		0.1059	α(K)=0.0891 *13*; α(L)=0.01321 *19*; α(M)=0.00289 *4* α(N)=0.000660 *10*; α(O)=9.18×10^{-5} *13*; α(P)=4.35×10^{-6} *6*
		247.1479 *9*	14.4 *3*	962.940	3$^+$	E1		0.0281	α(K)=0.0237 *4*; α(L)=0.00339 *5*; α(M)=0.000741 *11* α(N)=0.0001699 *24*; α(O)=2.41×10^{-5} *4*; α(P)=1.229×10^{-6} *18* I$_\gamma$: from 2006Ap01 (n,γ). Others: 9.0 *15*, from (n,n′γ); and 10 *2*, from ^{162}Ho ε decay (67.0 min).
		321.928 [c] *2*	21 [c] *1*	888.161	2$^+$	E1		0.01444	α(K)=0.01225 *18*; α(L)=0.001724 *25*; α(M)=0.000376 *6* α(N)=8.64×10^{-5} *12*; α(O)=1.234×10^{-5} *18*; α(P)=6.49×10^{-7} *9* I$_\gamma$: weighted average of 20.4 *12*, from (n,n′γ), and 25 *3*, from ^{162}Ho ε decay (67.0 min). From (n,γ), Iγ=21.5 *5*, but γ has two placements there. I$_\gamma$: from Iγ(321.9γ)/Iγ(1129.3γ) in ^{162}Ho ε decay (67.0 min) and Iγ(1129.6γ), Iγ=30 *4*. Thus, most, if not all, of the intensity in this peak is associated with this placement.
		944.424 *5*	60 *2*	265.664	4$^+$	E1+M2	−0.10 *+3−5*	0.00153 *18*	α(K)=0.00130 *15*; α(L)=0.000176 *22*; α(M)=3.8×10^{-5} *5* α(N)=8.8×10^{-6} *12*; α(O)=1.29×10^{-6} *17*; α(P)=7.4×10^{-8} *10* I$_\gamma$: weighted average of: 59 *3*, from (n,n′γ); 59 *3*, from ^{162}Ho ε decay (67.0 min); and 62 *3*, from (n,γ). Other: 86 *18*, from ^{162}Tb β$^-$ decay. δ: from (n,n′γ). From γγ(θ) in (n,γ), δ(M2/E1)=−0.19 *+14−15* (1980Hu06).
		1129.419 *6*	100 *3*	80.661	2$^+$	E1+M2	+0.05 *+5−3*	0.00102 *7*	α(K)=0.00087 *6*; α(L)=0.000115 *9*; α(M)=2.50×10^{-5} *18*

Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J_i^π	E_γ [†‡#]	I_γ	E_f	J_f^π	Mult. [&]	α [a]	Comments
								α(N)=5.8×10^{-6} *5*; α(O)=8.5×10^{-7} *7*; α(P)=4.9×10^{-8} *4*; α(IPF)=4.51×10^{-6} *7* δ: from (n,n′γ).
1275.772	1$^-$	1195.092 *7*	100 *8*	80.661	2$^+$	E1	9.23×10^{-4}	B(E1)(W.u.)=0.0038 *+10−7* α(K)=0.000772 *11*; α(L)=0.0001017 *15*; α(M)=2.20×10^{-5} *3* α(N)=5.09×10^{-6} *8*; α(O)=7.45×10^{-7} *11*; α(P)=4.32×10^{-8} *6*; α(IPF)=2.17×10^{-5} *3* Mult.,δ: from (n,γ) (1967Ba34), α(K)exp=0.0007 *3*, which is interpreted as E1 with δ(M2/E1)<0.17.
		1275.810 *18*	73.4 *19*	0.0	0$^+$	E1	8.61×10^{-4}	B(E1)(W.u.)=0.0023 *+6−4* α(K)=0.000688 *10*; α(L)=9.04×10^{-5} *13*; α(M)=1.96×10^{-5} *3* α(N)=4.52×10^{-6} *7*; α(O)=6.62×10^{-7} *10*; α(P)=3.85×10^{-8} *6*; α(IPF)=5.77×10^{-5} *8* B(E1)(W.u.) is computed from B(E1)↑=1.47×10^{-4} *25* in (γ,γ'). I$_\gamma$: from 2006Ap01, (n,γ). From ^{162}Tb β^- decay, where coincidence data were used to get the singlet value, Iγ=52 *14*. Mult.: from (n,γ) (2006Ap01) and (α,2nγ) (1982Fi15), α(K)exp=0.00063 *2* and 0.0003 *1*.
1297.006	4$^-$	86.918 *1*	0.42 *3*	1210.089	3$^-$	[M1,E2]	4.1 *6*	α(K)=2.29 *73*; α(L)=1.39 *95*; α(M)=0.33 *24* α(N)=0.074 *52*; α(O)=0.0092 *59*; α(P)=1.26×10^{-4} *62*
		114.245 *5*	5.9 *4*	1182.763	5$^+$	E1	0.216	α(K)=0.181 *3*; α(L)=0.0276 *4*; α(M)=0.00604 *9* α(N)=0.001375 *20*; α(O)=0.000189 *3*; α(P)=8.51×10^{-6} *12*
		236.008 *4*	23.5 *11*	1060.991	4$^+$	E1	0.0316	α(K)=0.0267 *4*; α(L)=0.00383 *6*; α(M)=0.000837 *12* α(N)=0.000192 *3*; α(O)=2.72×10^{-5} *4*; α(P)=1.377×10^{-6} *20* I$_\gamma$: from 2006Ap01 (n,γ). From (n,n′γ), Iγ=23.6 *15*. From (n,γ), 1967Ba34 report Iγ=22 *4*, while 1995Be02 report Iγ=13.8 *23*.
		334.063 *1*	100 *4*	962.940	3$^+$	E1	0.01319	α(K)=0.01119 *16*; α(L)=0.001572 *22*; α(M)=0.000343 *5* α(N)=7.87×10^{-5} *11*; α(O)=1.127×10^{-5} *16*; α(P)=5.95×10^{-7} *9* Mult.,δ: from α(K)exp=0.0076 *27*, γ is E1 [1967Ba34 from (n,γ)]. From $\gamma(\theta)$, the smaller δ(M2/E1)=+0.02 *6* [1982Fi15 from (α,2nγ)], which agrees. From (n,n′γ), 2002Go15 report both δ(M2/E1)=−0.01 *3* and +0.01 *4*. Additional information 12.
		1031.36 *3*	2.8 *1*	265.664	4$^+$			
1324.465	6$^+$	141.73	1.0 *2*	1182.763	5$^+$	[M1,E2]	0.83 *6*	α(K)=0.59 *16*; α(L)=0.183 *74*; α(M)=0.042 *19* α(N)=0.0096 *41*; α(O)=0.00125 *44*; α(P)=3.3×10^{-5} *14* I$_\gamma$: from Iγ(141)/Iγ(263)=0.086 *13* in (n,γ) (1978Ge03). γ not reported by 2006Ap01. Mult.,δ: from Iγ(141)/Iγ(263) in (n,γ) and Alaga-rule considerations, 1978Ge03 deduce δ=0.67 *8*. Additional information 13.

Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ [†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
1324.465	6^+	263.472 *1*	11.2 *2*	1060.991	4^+	E2		0.0966	α(K)=0.0703 *10*; α(L)=0.0203 *3*; α(M)=0.00470 *7* α(N)=0.001067 *15*; α(O)=0.0001385 *20*; α(P)=3.57×10^{-6} *5*
		775.941 *3*	100 *6*	548.520	6^+	E2(+M1)	>2.3	0.0056 *4*	α(K)=0.0047 *4*; α(L)=0.00073 *4*; α(M)=0.000162 *9* α(N)=3.72×10^{-5} *20*; α(O)=5.3×10^{-6} *3*; α(P)=2.71×10^{-7} *21* Mult.,δ: from (α,2nγ) (1982Fi15), α(K)exp=0.0035 *5*, which gives primarily E2. From $\gamma\gamma(\theta)$ in (n,γ) (1980Hu06), δ<−2.3 or > +17.9. Additional information 14.
		1058.779 *12*	57.5 *18*	265.664	4^+	E2		0.00271	α(K)=0.00228 *4*; α(L)=0.000335 *5*; α(M)=7.35×10^{-5} *11* α(N)=1.695×10^{-5} *24*; α(O)=2.45×10^{-6} *4*; α(P)=1.315×10^{-7} *19* I_γ: weighted average of: 53 *4*, in (n,n′γ); 59 *2*, in (n,γ); and 50 *9*, in ^{162}Ho ε decay (67.0 min). From Iγ(776γ)/Iγ(1059γ) in (^{7}Li,p4nγ), Iγ=45 *5*. From (^{61}Ni,^{60}Niγ), Iγ=68 *8*. Mult.,δ: placement requires E2 but, from (α,2nγ), α(K)exp=0.0037 *5*, which gives M1 with δ<1.0.
1357.928	3^-	1092.256 *6*	72 *5*	265.664	4^+	E1		1.06×10^{-3}	α(K)=0.000907 *13*; α(L)=0.0001200 *17*; α(M)=2.60×10^{-5} *4* α(N)=6.00×10^{-6} *9*; α(O)=8.78×10^{-7} *13*; α(P)=5.07×10^{-8} *7* I_γ: from (n,γ). From ^{162}Tb β^- decay, Iγ=46 *14*. Mult.,δ: measurements are compatible with pure E1. From α(K)exp=0.0011 *5*, γ is E1 with δ<0.27 [1967Ba34 from (n,γ)]. From $\gamma\gamma(\theta)$ and $\gamma(\theta)$, δ=−0.08 *12* and δ=−0.2 *+5−6* [1980Hu06 from (n,γ) and 1977Ho11 from (n,n′γ)]. 2002Go15, in (n,n′γ), report δ=−0.07 *4*.
		1277.271 *11*	100.0 *19*	80.661	2^+	E1		8.60×10^{-4}	α(K)=0.000686 *10*; α(L)=9.02×10^{-5} *13*; α(M)=1.95×10^{-5} *3* α(N)=4.51×10^{-6} *7*; α(O)=6.61×10^{-7} *10*; α(P)=3.84×10^{-8} *6*; α(IPF)=5.84×10^{-5} *9* I_γ: value from (n,γ). γ is a doublet in most studies. Mult.: from (n,γ) (1967Ba34) and (α,2nγ) (1982Fi15), α(K)exp=0.00056 *28* and 0.0003 *1*, which gives E1 with δ<0.17, but in both cases γ has two placements.
1375.08	10^+	453.85 *9*	100	921.28	8^+	[E2]		0.0196	B(E2)(W.u.)=350 *+24−21* α(K)=0.01561 *22*; α(L)=0.00309 *5*; α(M)=0.000699 *10* α(N)=0.0001597 *23*; α(O)=2.19×10^{-5} *3*; α(P)=8.65×10^{-7} *13*
1390.513	5^-	180.41	0.14	1210.089	3^-				
		329.524 *2*	4.13 *9*	1060.991	4^+	[E1]		0.01364	α(K)=0.01157 *17*; α(L)=0.001626 *23*; α(M)=0.000355 *5* α(N)=8.15×10^{-5} *12*; α(O)=1.165×10^{-5} *17*; α(P)=6.14×10^{-7} *9* I_γ: from (n,γ).
		841.990 *4*	37.1 *11*	548.520	6^+	E1		1.73×10^{-3}	α(K)=0.001479 *21*; α(L)=0.000198 *3*; α(M)=4.30×10^{-5} *6* α(N)=9.90×10^{-6} *14*; α(O)=1.444×10^{-6} *21*; α(P)=8.22×10^{-8} *12*

$^{162}_{66}Dy_{96}$-19

Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	$I_{(\gamma+ce)}$	Comments
										I_γ: weighted average of: 36.0 *14*, from ^{162}Ho ε decay (67.0 min); and 38.2 *15*, from (n,γ). Other: 60 *5*, from (n,n′γ). From $\gamma\gamma(\theta)$ in (n,γ), δ=0.04 *+38−30* (1980Hu06) if J(1390)=5.
1390.513	5^-	1124.839 *10*	100 *3*	265.664	4^+	E1		1.01×10^{-3}		α(K)=0.000860 *12*; α(L)=0.0001136 *16*; α(M)=2.46×10^{-5} *4* α(N)=5.68×10^{-6} *8*; α(O)=8.32×10^{-7} *12*; α(P)=4.81×10^{-8} *7*; α(IPF)=3.93×10^{-6} *6* Mult.,δ: from α(K)exp=0.0008 *2* in (α,2nγ), mult=E1. From $\gamma\gamma(\theta)$ in (n,γ), $-0.94<\delta<-0.09$ if J=5 (1980Hu06). In (n,n′γ), δ=+0.05 *5*. Additional information 15.
1400.26	0^+	512.0 *2*	8 *4*	888.161	2^+	[E2]		0.01425		α(K)=0.01150 *17*; α(L)=0.00214 *3*; α(M)=0.000482 *7* α(N)=0.0001103 *16*; α(O)=1.524×10^{-5} *22*; α(P)=6.45×10^{-7} *9*
		1319.60 *6*	100	80.661	2^+	E2		1.77×10^{-3}		α(K)=0.001476 *21*; α(L)=0.000209 *3*; α(M)=4.57×10^{-5} *7* α(N)=1.055×10^{-5} *15*; α(O)=1.533×10^{-6} *22*; α(P)=8.53×10^{-8} *12*; α(IPF)=2.32×10^{-5} *4*
		1400.3 *3*		0.0	0^+	E0			0.052 *4*	
1453.468	2^+	177.699 *7*	0.94 *11*	1275.772	1^-	[E1]		0.0664		α(K)=0.0560 *8*; α(L)=0.00818 *12*; α(M)=0.00179 *3* α(N)=0.000409 *6*; α(O)=5.73×10^{-5} *8*; α(P)=2.79×10^{-6} *4*
		392.485 *10*	1.0 *1*	1060.991	4^+	E2		0.0292		α(K)=0.0229 *4*; α(L)=0.00493 *7*; α(M)=0.001122 *16* α(N)=0.000256 *4*; α(O)=3.45×10^{-5} *5*; α(P)=1.246×10^{-6} *18* Mult.: from ^{162}Ho ε decay (evaluator′s combination of 1961Ha23 and 1971Wo09), α(K)exp=0.022, which gives primarily E2.
		490.510 *8*	3.3 *2*	962.940	3^+	E2(+M1)	≥4.1	0.0164 *5*		α(K)=0.0132 *5*; α(L)=0.00247 *5*; α(M)=0.000556 *11* α(N)=0.000127 *3*; α(O)=1.76×10^{-5} *4*; α(P)=7.4×10^{-7} *3*
		565.316 *12*	2.0 *3*	888.161	2^+	[M1,E2]		0.0164 *54*		α(K)=0.0137 *47*; α(L)=0.0021 *5*; α(M)=0.00046 *11* α(N)=0.000107 *25*; α(O)=1.54×10^{-5} *40*; α(P)=8.2×10^{-7} *31*
		1187.777 *12*	70 *5*	265.664	4^+	E2		0.00215		α(K)=0.00181 *3*; α(L)=0.000261 *4*; α(M)=5.71×10^{-5} *8*

Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
									α(N)=1.318×10^{-5} *19*; α(O)=1.91×10^{-6} *3*; α(P)=1.047×10^{-7} *15*; α(IPF)=4.14×10^{-6} *6* I_γ: from (n,γ). Others: 60.7 *18*, from ^{162}Ho ε decay (15.0 min); 72.0 *4*, from (n,n′γ); and 84 *16*, from ^{162}Tb β^- decay.
1453.468	2$^+$	1372.790 *21*	100 *4*	80.661	2$^+$	M1+E2(+E0)	+0.40 *15*	0.00241 *9*	α(K)=0.00202 *8*; α(L)=0.000277 *10*; α(M)=6.04×10^{-5} *22* α(N)=1.40×10^{-5} *5*; α(O)=2.06×10^{-6} *8*; α(P)=1.21×10^{-7} *5*; α(IPF)=4.03×10^{-5} *8* Mult.: 2002Go15 report mult=M1+E2. From α(K)exp=0.00230 in (n,γ), 2006Ap01 give mult=M1. However, a ΔK=0 transition such as this is expected to have an E0 contribution. δ: from 2002Go15 (n,n′γ). α: value computed using the listed mult and δ. No contribution from a possible E0 contribution is included.
		1453.77 *21*	3.4 *14*	0.0	0$^+$	[E2]		1.50×10^{-3}	α(K)=0.001227 *18*; α(L)=0.0001715 *24*; α(M)=3.74×10^{-5} *6* α(N)=8.64×10^{-6} *13*; α(O)=1.259×10^{-6} *18*; α(P)=7.09×10^{-8} *10*; α(IPF)=5.83×10^{-5} *9* E_γ: from ^{162}Ho (67.0 min) ε decay. γ not reported by 2006Ap01 in (n,γ). I_γ: from Iγ(1453.7γ)/Iγ(1372.7γ) in ^{162}Ho (67.0 min) ε decay and Iγ(1372.7γ).
1485.671	5$^-$	95.158 *1*	2.0 *2*	1390.513	5$^-$	[M1,E2]		3.0 *3*	α(K)=1.80 *53*; α(L)=0.94 *60*; α(M)=0.22 *15* α(N)=0.050 *33*; α(O)=0.0062 *37*; α(P)=9.9×10^{-5} *47* E_γ: from (n,γ). I_γ: from ^{162}Ho ε decay (67.0 min). Other: 1.7 *1*, from (n,γ).
		161.209 *5*	0.29 *2*	1324.465	6$^+$	[E1]		0.0860	B(E1)(W.u.)=5.02×10^{-8} *47* α(K)=0.0724 *11*; α(L)=0.01067 *15*; α(M)=0.00233 *4* α(N)=0.000533 *8*; α(O)=7.44×10^{-5} *11*; α(P)=3.57×10^{-6} *5* E_γ: from (n,γ). I_γ: from ^{162}Ho ε decay (67.0 min). Other: 0.52 *8*, from (n,γ).
		188.663 *3*	3.8 *5*	1297.006	4$^-$	M1+E2	0.89 *19*	0.350 *14*	B(M1)(W.u.)=2.2×10^{-5} *+6−5*; B(E2)(W.u.)=0.24 *+6−7* α(K)=0.271 *18*; α(L)=0.061 *4*; α(M)=0.0139 *9* α(N)=0.00317 *19*; α(O)=0.000428 *18*; α(P)=1.56×10^{-5}

γ(^{162}Dy) (continued)

E_i(level)	E_γ [†‡#]	I_γ	E_f	J^π_f	Mult. [&]	α [a]	Comments
							14 E_γ: from (n,γ). I_γ: from ^{162}Ho ε decay (67.0 min). Other: 0.94 *8*, from (n,γ). Mult.: from ^{162}Ho ε decay (67.0 min) (evaluator's combination of 1961Ha23 and 1971Wo09), α(K)exp=0.35, which gives M1. δ: from α(K)exp in (n,γ) (2006Ap01).
1485.671	275.582 *4*	3.05 *8*	1210.089	3⁻	E2	0.0839	B(E2)(W.u.)=0.0661 *43* α(K)=0.0617 *9*; α(L)=0.01715 *24*; α(M)=0.00397 *6* α(N)=0.000900 *13*; α(O)=0.0001173 *17*; α(P)=3.16$\times10^{-6}$ *5* E_γ: from (n,γ). E_γ,I_γ: from ^{162}Ho ε decay (67.0 min). From (n,γ), Iγ=3.05 *18*.
	302.909[c] *2*	1.26[c] *3*	1182.763	5⁺	E1	0.01679	B(E1)(W.u.)=3.30$\times10^{-8}$ *21* α(K)=0.01423 *20*; α(L)=0.00201 *3*; α(M)=0.000439 *7* α(N)=0.0001007 *14*; α(O)=1.437$\times10^{-5}$ *21*; α(P)=7.51$\times10^{-7}$ *11* E_γ: from (n,γ). I_γ: from ^{162}Ho ε decay (67.0 min). Other: 1.42 *6*, from (n,γ). Mult.: from ^{162}Ho ε decay (67.0 min) (evaluator's combination of 1961Ha23 and 1971Wo09), α(K)exp=0.025, which gives primarily E1.
	424.676 *4*	1.51 *8*	1060.991	4⁺	[E1]	0.00745	B(E1)(W.u.)=1.44$\times10^{-8}$ *12* α(K)=0.00633 *9*; α(L)=0.000877 *13*; α(M)=0.000191 *3* α(N)=4.40$\times10^{-5}$ *7*; α(O)=6.33$\times10^{-6}$ *9*; α(P)=3.42$\times10^{-7}$ *5* E_γ: from (n,γ). I_γ: from ^{162}Ho ε decay (67.0 min). Other: 1.80 *7*, from (n,γ).
	937.144 *7*	43.7 *8*	548.520	6⁺	E1	1.41$\times10^{-3}$	B(E1)(W.u.)=3.85$\times10^{-8}$ *+26−23* α(K)=0.001205 *17*; α(L)=0.0001604 *23*; α(M)=3.48$\times10^{-5}$ *5* α(N)=8.03$\times10^{-6}$ *12*; α(O)=1.172$\times10^{-6}$ *17*; α(P)=6.72$\times10^{-8}$ *10* E_γ: from (n,γ). I_γ: weighted average of: 40 *3*, from (n,n′γ); 44.0 *9*, from ^{162}Ho ε decay (67.0 min); and 45 *3*, from (n,γ). Mult.: from ^{162}Ho ε decay (67.0 min) (evaluator's combination of 1961Jo10 and 1971Wo09) and (α,2nγ) (1982Fi15), α(K)exp=0.016 and 0.0014 *4*, respectively, which give E1. Additional information 16.
	1219.98 *3*	100 *3*	265.664	4⁺	E1	9.01$\times10^{-4}$	B(E1)(W.u.)=4.00$\times10^{-8}$ *+25−23* α(K)=0.000744 *11*; α(L)=9.79$\times10^{-5}$ *14*; α(M)=2.12$\times10^{-5}$ *3* α(N)=4.90$\times10^{-6}$ *7*; α(O)=7.17$\times10^{-7}$ *10*; α(P)=4.16$\times10^{-8}$ *6*; α(IPF)=3.19$\times10^{-5}$ *5* E_γ: from (n,γ). Mult.,δ: from (n,γ) (1967Ba34) and ^{162}Ho ε decay (67.0 min) (evaluator's combination of 1961Jo10 and 1971Wo09), α(K)exp=0.0006 *3* and 0.009,

$^{162}_{66}$Dy$_{96}$-22

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
									interpretation of the former is E1 with δ<0.17 and from $\gamma\gamma(\theta)$ in (n,γ), δ=−0.31 +*23*−*40* (1980Hu06). Adopted $\delta\leq$0.18.
1490.39	7⁺	307.7 *2*	25 *3*	1182.763	5⁺	[E2]		0.0597	α(K)=0.0450 *7*; α(L)=0.01145 *17*; α(M)=0.00263 *4* α(N)=0.000598 *9*; α(O)=7.89×10⁻⁵ *12*; α(P)=2.35×10⁻⁶ *4* I_γ: from (α,2nγ). Other: 16 *2* from (^{7}Li,p4nγ); and 30, from Iγ(307γ)/Iγ(941γ) in (^{162}Dy,^{162}Dy′γ).
		569.3 *1*	16 *2*	921.28	8⁺	[M1,E2]		0.0161 *53*	α(K)=0.0135 *47*; α(L)=0.0021 *5*; α(M)=0.00046 *11* α(N)=0.000105 *25*; α(O)=1.51×10⁻⁵ *39*; α(P)=8.0×10⁻⁷ *30* I_γ: from (α,2nγ). Other: 19 *2*, from Iγ(569γ)/Iγ(941γ) in (^{162}Dy,^{162}Dy′γ).
		941.9 *1*	100 *4*	548.520	6⁺	E2(+M1)	>1.2	0.0040 *6*	α(K)=0.0034 *5*; α(L)=0.00049 *6*; α(M)=0.000109 *13* α(N)=2.5×10⁻⁵ *3*; α(O)=3.6×10⁻⁶ *5*; α(P)=2.0×10⁻⁷ *3* Mult.,δ: from 1982Fi15, (α,2nγ).
1518.426	5⁻	160.489 *4*	0.62 *4*	1357.928	3⁻	[E2]		0.499	α(K)=0.304 *5*; α(L)=0.1500 *21*; α(M)=0.0355 *5* α(N)=0.00799 *12*; α(O)=0.000991 *14*; α(P)=1.376×10⁻⁵ *20*
		457.49 *4*	0.15 *4*	1060.991	4⁺	[E1]		0.00628	α(K)=0.00534 *8*; α(L)=0.000737 *11*; α(M)=0.0001605 *23* α(N)=3.69×10⁻⁵ *6*; α(O)=5.32×10⁻⁶ *8*; α(P)=2.90×10⁻⁷ *4*
		969.908 *6*	41.9 *15*	548.520	6⁺	E1		1.32×10⁻³	α(K)=0.001130 *16*; α(L)=0.0001501 *21*; α(M)=3.26×10⁻⁵ *5* α(N)=7.51×10⁻⁶ *11*; α(O)=1.097×10⁻⁶ *16*; α(P)=6.30×10⁻⁸ *9* I_γ: from 2006Ap01 (n,γ). From (α,2nγ), 2006Ap01 report Iγ=110 *45*. δ: from $\gamma\gamma(\theta)$ in (n,γ), δ=0.24 +*39*−*21* (1980Hu06), if J(1518)=5. Additional information 17.
		1252.74 *3*	100 *8*	265.664	4⁺	E1		8.76×10⁻⁴	α(K)=0.000710 *10*; α(L)=9.34×10⁻⁵ *13*; α(M)=2.02×10⁻⁵ *3* α(N)=4.67×10⁻⁶ *7*; α(O)=6.84×10⁻⁷ *10*; α(P)=3.97×10⁻⁸ *6*; α(IPF)=4.68×10⁻⁵ *7* Mult.,δ: from (α,2nγ) (1982Fi15), α(K)exp=0.0003 *1*, which gives E1.
1530.127	6⁻	139.607 *5*		1390.513	5⁻				
		233.6 *1*	16 *5*	1297.006	4⁻	[E2]		0.1419	α(K)=0.1002 *14*; α(L)=0.0323 *5*; α(M)=0.00752 *11* α(N)=0.001701 *24*; α(O)=0.000218 *3*; α(P)=4.95×10⁻⁶ *7* E_γ: placed here only in (α,2nγ) and (n,n′γ). I_γ: from (n,n′γ).
		347.52[c] *10*	<100[c]	1182.763	5⁺	[E1]		0.01198	α(K)=0.01017 *15*; α(L)=0.001425 *20*; α(M)=0.000311 *5* α(N)=7.14×10⁻⁵ *10*; α(O)=1.023×10⁻⁵ *15*; α(P)=5.42×10⁻⁷ *8* I_γ: from (n,n′γ), where γ is doubly placed. Additional information 18.

From ENSDF

$^{162}_{66}Dy_{96}$-23

γ(^{162}Dy) (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
1535.664	4+	238.673 6	0.12 2	1297.006	4−	[E1]		0.0307	α(K)=0.0260 4; α(L)=0.00372 6; α(M)=0.000813 12 α(N)=0.000186 3; α(O)=2.64×10^{-5} 4; α(P)=1.339×10^{-6} 19
		352.897 6	0.90 16	1182.763	5+	E2(+M1)	>1.3	0.046 7	α(K)=0.036 6; α(L)=0.0074 4; α(M)=0.00168 7 α(N)=0.000383 17; α(O)=5.2×10^{-5} 4; α(P)=2.0×10^{-6} 4
		474.676 4	9.0 6	1060.991	4+	M1+E2	1.64 13	0.0219 7	α(K)=0.0179 6; α(L)=0.00307 7; α(M)=0.000685 14 α(N)=0.000157 4; α(O)=2.21×10^{-5} 5; α(P)=1.04×10^{-6} 4
		572.724 1	43.5 18	962.940	3+	E2(+M1)	>2.8	0.0113 6	α(K)=0.0093 6; α(L)=0.00160 6; α(M)=0.000358 13 α(N)=8.2×10^{-5} 3; α(O)=1.15×10^{-5} 5; α(P)=5.3×10^{-7} 4
		647.502 2	100 2	888.161	2+	E2		0.00797	B(E2)(W.u.)=1.15 35 α(K)=0.00655 10; α(L)=0.001105 16; α(M)=0.000246 4 α(N)=5.65×10^{-5} 8; α(O)=7.95×10^{-6} 12; α(P)=3.73×10^{-7} 6 B(E2)(W.u.) value is that reported by 2001Wu05, from (^{162}Dy,^{162}Dy′γ).
		987.15 22	1.0 4	548.520	6+	(E2)		0.00313	α(K)=0.00263 4; α(L)=0.000392 6; α(M)=8.62×10^{-5} 12 α(N)=1.98×10^{-5} 3; α(O)=2.86×10^{-6} 4; α(P)=1.515×10^{-7} 22
1570.912	3−	212.983 1	59 1	1357.928	3−	M1+E2	0.47 7	0.269 6	α(K)=0.221 6; α(L)=0.0371 8; α(M)=0.00826 19 α(N)=0.00190 4; α(O)=0.000270 5; α(P)=1.34×10^{-5} 5
		295.141 1	100 2	1275.772	1−	(E2)		0.0678	α(K)=0.0506 7; α(L)=0.01331 19; α(M)=0.00307 5 α(N)=0.000697 10; α(O)=9.15×10^{-5} 13; α(P)=2.63×10^{-6} 4
		360.824 3	2.5 1	1210.089	3−	M1(+E2)	<0.64	0.065 5	α(K)=0.054 5; α(L)=0.0081 3; α(M)=0.00179 6 α(N)=0.000412 14; α(O)=6.0×10^{-5} 3; α(P)=3.3×10^{-6} 3
		422.692 9	3.5 4	1148.232	2−	E2		0.0238	α(K)=0.0188 3; α(L)=0.00387 6; α(M)=0.000878 13 α(N)=0.000200 3; α(O)=2.73×10^{-5} 4; α(P)=1.033×10^{-6} 15
		682.77 8	0.6 3	888.161	2+	[E1]		0.00263	α(K)=0.00225 4; α(L)=0.000304 5; α(M)=6.60×10^{-5} 10 α(N)=1.521×10^{-5} 22; α(O)=2.21×10^{-6} 3; α(P)=1.242×10^{-7} 18
1574.293	4+	120.819 6	0.21 4	1453.468	2+	[E2]		1.357	α(K)=0.683 10; α(L)=0.519 8; α(M)=0.1237 18 α(N)=0.0278 4; α(O)=0.00338 5; α(P)=2.90×10^{-5} 4
		216.365 13	0.25 3	1357.928	3−	[E1]		0.0396	α(K)=0.0334 5; α(L)=0.00482 7; α(M)=0.001054 15 α(N)=0.000241 4; α(O)=3.41×10^{-5} 5; α(P)=1.707×10^{-6} 24
		277.285 12	0.20 3	1297.006	4−	[E1]		0.0210	α(K)=0.01774 25; α(L)=0.00252 4; α(M)=0.000550 8 α(N)=0.0001261 18; α(O)=1.80×10^{-5} 3; α(P)=9.28×10^{-7} 13
		364.212 8	0.48 3	1210.089	3−	[E1]		0.01070	α(K)=0.00908 13; α(L)=0.001270 18; α(M)=0.000277 4 α(N)=6.36×10^{-5} 9; α(O)=9.12×10^{-6} 13; α(P)=4.86×10^{-7} 7
		391.541 14	0.92 8	1182.763	5+	[M1,E2]		0.043 14	α(K)=0.035 13; α(L)=0.0059 9; α(M)=0.00130 18 α(N)=0.00030 5; α(O)=4.3×10^{-5} 8; α(P)=2.08×10^{-6} 83
		513.314 8	2.1 1	1060.991	4+	[M1,E2]		0.0210 69	α(K)=0.0175 61; α(L)=0.0027 6; α(M)=0.00060 13 α(N)=0.00014 3; α(O)=2.0×10^{-5} 5; α(P)=1.04×10^{-6} 40
		611.23 5	0.50 8	962.940	3+	[M1,E2]		0.0135 44	α(K)=0.0113 39; α(L)=0.0017 5; α(M)=0.00038 9 α(N)=8.7×10^{-5} 21; α(O)=1.25×10^{-5} 33; α(P)=6.7×10^{-7} 25

$^{162}_{66}$Dy$_{96}$-24

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[†‡#]	I_γ	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
1574.293	4^+	686.15 *6*	1.2 *3*	888.161	2^+	[E2]		0.00695	α(K)=0.00574 *8*; α(L)=0.000948 *14*; α(M)=0.000211 *3* α(N)=4.84×10^{-5} *7*; α(O)=6.84×10^{-6} *10*; α(P)=3.28×10^{-7} *5*
		1025.753 *14*	20.8 *8*	548.520	6^+	E2		0.00289	α(K)=0.00243 *4*; α(L)=0.000359 *5*; α(M)=7.90×10^{-5} *11* α(N)=1.82×10^{-5} *3*; α(O)=2.62×10^{-6} *4*; α(P)=1.401×10^{-7} *20*
		1308.627 *15*	100 *8*	265.664	4^+	M1(+E2)	+0.04 *+8−10*	0.00282 *5*	α(K)=0.00238 *4*; α(L)=0.000326 *5*; α(M)=7.10×10^{-5} *11* α(N)=1.643×10^{-5} *24*; α(O)=2.42×10^{-6} *4*; α(P)=1.426×10^{-7} *22*; α(IPF)=2.44×10^{-5} *4*
1575.623	6^-	89.98 *10*	102 *3*	1485.671	5^-	M1+E2	0.53 *3*	3.42 *6*	α(K)=2.45 *5*; α(L)=0.75 *4*; α(M)=0.174 *8* α(N)=0.0394 *18*; α(O)=0.00514 *21*; α(P)=0.000146 *3* E_γ,I_γ: from ^{162}Ho ε decay (67.0 min). Additional information 19.
		251.10 *8*	11 *3*	1324.465	6^+	[E1]		0.0270	α(K)=0.0228 *4*; α(L)=0.00326 *5*; α(M)=0.000711 *10* α(N)=0.0001630 *23*; α(O)=2.31×10^{-5} *4*; α(P)=1.182×10^{-6} *17*
		278.49[c] *12*	≤53[c]	1297.006	4^-				E_γ,I_γ: from ^{162}Ho ε decay (67.0 min).
		392.86 *4*	100 *3*	1182.763	5^+	[E1]		0.00894	α(K)=0.00759 *11*; α(L)=0.001056 *15*; α(M)=0.000230 *4* α(N)=5.29×10^{-5} *8*; α(O)=7.61×10^{-6} *11*; α(P)=4.08×10^{-7} *6* E_γ: from ^{162}Ho ε decay (67.0 min). Additional information 20.
		1026.93 *20*	27 *3*	548.520	6^+				E_γ,I_γ: from ^{162}Ho ε decay (67.0 min).
		1310.05 *10*	46 *3*	265.664	4^+				E_γ,I_γ: from ^{162}Ho ε decay (67.0 min).
1634.415	5^+	98.753 *1*	17 *1*	1535.664	4^+	M1+E2	0.50 *4*	2.55	α(K)=1.90 *4*; α(L)=0.51 *3*; α(M)=0.116 *7* α(N)=0.0264 *15*; α(O)=0.00350 *17*; α(P)=0.000114 *3*
		309.952 *5*	1.6 *2*	1324.465	6^+	[M1,E2]		0.081 *23*	α(K)=0.066 *22*; α(L)=0.0119 *8*; α(M)=0.00266 *11* α(N)=0.00061 *3*; α(O)=8.5×10^{-5} *9*; α(P)=3.8×10^{-6} *16*
		337.406 *9*	0.45 *9*	1297.006	4^-	[E1]		0.01288	α(K)=0.01092 *16*; α(L)=0.001533 *22*; α(M)=0.000334 *5* α(N)=7.68×10^{-5} *11*; α(O)=1.099×10^{-5} *16*; α(P)=5.81×10^{-7} *9*
		451.649 *2*	20 *2*	1182.763	5^+	E2(+M1)	>1.8	0.0221 *23*	α(K)=0.0178 *20*; α(L)=0.00332 *19*; α(M)=0.00075 *4* α(N)=0.000171 *9*; α(O)=2.36×10^{-5} *15*; α(P)=1.01×10^{-6} *14*
		573.422 *2*	77.7 *21*	1060.991	4^+	E2(+M1)	>2.2	0.0116 *9*	α(K)=0.0095 *8*; α(L)=0.00163 *9*; α(M)=0.000363 *18* α(N)=8.3×10^{-5} *5*; α(O)=1.17×10^{-5} *7*; α(P)=5.4×10^{-7} *6*
		671.475 *2*	100 *3*	962.940	3^+	E2		0.00731	α(K)=0.00603 *9*; α(L)=0.001003 *14*; α(M)=0.000223 *4* α(N)=5.13×10^{-5} *8*; α(O)=7.23×10^{-6} *11*; α(P)=3.44×10^{-7} *5*
1637.196	1^-	279.266 *14*	1.2 *3*	1357.928	3^-	[E2]		0.0805	α(K)=0.0594 *9*; α(L)=0.01633 *23*; α(M)=0.00377 *6* α(N)=0.000856 *12*; α(O)=0.0001118 *16*; α(P)=3.05×10^{-6} *5*
		361.419 *2*	6.4 *8*	1275.772	1^-	[M1,E2]		0.053 *16*	α(K)=0.043 *15*; α(L)=0.0074 *10*; α(M)=0.00166 *18* α(N)=0.00038 *5*; α(O)=5.4×10^{-5} *9*; α(P)=2.6×10^{-6} *11*
		427.110 *2*	14.7 *8*	1210.089	3^-	E2		0.0231	α(K)=0.0183 *3*; α(L)=0.00375 *6*; α(M)=0.000849 *12* α(N)=0.000194 *3*; α(O)=2.64×10^{-5} *4*; α(P)=1.006×10^{-6} *14*
		488.963 *5*	15.4 *12*	1148.232	2^-	E2+M1		0.0238 *77*	α(K)=0.0198 *69*; α(L)=0.0031 *7*; α(M)=0.00069 *14* α(N)=0.00016 *4*; α(O)=2.3×10^{-5} *6*; α(P)=1.17×10^{-6} *46*

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[†‡#]	I_γ	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	$I_{(\gamma+ce)}$	Comments
1637.196	1^-	1556.50 *7*	100 *14*	80.661	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*
		1637.32 *22*	24 *2*	0.0	0^+					I_γ: from (n,n′γ). γ not reported in (n,γ).
1637.92	7^-	716.3 *1*	35 *5*	921.28	8^+					E_γ,I_γ: from (α,2nγ).
		1088.6 *2*	100 *10*	548.520	6^+	E1		1.07×10^{-3}		α(K)=0.000913 *13*; α(L)=0.0001207 *17*; α(M)=2.62×10^{-5} *4* α(N)=6.04×10^{-6} *9*; α(O)=8.83×10^{-7} *13*; α(P)=5.10×10^{-8} *8* Mult.: from 1982Fi15 (α,2nγ), α(K)exp=0.0004 *1*, which gives mult=E1. Additional information 21.
1666.27	0^+	1585.6[c] *2*	[c]	80.661	2^+					I_γ: γ is doubly placed in (n,n′γ).
1669.085	4^-	98.175 *6*	0.17 *6*	1570.912	3^-	[M1,E2]		2.71 *20*		α(K)=1.65 *48*; α(L)=0.82 *51*; α(M)=0.19 *13* α(N)=0.044 *28*; α(O)=0.0055 *32*; α(P)=9.1×10^{-5} *42*
		150.653 *5*	15.3 *4*	1518.426	5^-	M1+E2	0.92 *9*	0.689 *12*		α(K)=0.509 *16*; α(L)=0.140 *6*; α(M)=0.0323 *14* α(N)=0.0073 *4*; α(O)=0.00096 *4*; α(P)=2.87×10^{-5} *13*
		278.572 *1*	10.4 *2*	1390.513	5^-	M1(+E2)	<0.39	0.134 *5*		α(K)=0.113 *4*; α(L)=0.01676 *24*; α(M)=0.00369 *6* α(N)=0.000852 *12*; α(O)=0.0001240 *19*; α(P)=6.9×10^{-6} *3*
		311.157 *1*	100 *5*	1357.928	3^-	M1		0.1024		α(K)=0.0865 *13*; α(L)=0.01245 *18*; α(M)=0.00273 *4* α(N)=0.000631 *9*; α(O)=9.26×10^{-5} *13*; α(P)=5.34×10^{-6} *8*
		372.074 *3*	4.6 *1*	1297.006	4^-	M1(+E2)	<0.48	0.061 *3*		α(K)=0.051 *3*; α(L)=0.00755 *21*; α(M)=0.00166 *4* α(N)=0.000383 *10*; α(O)=5.59×10^{-5} *18*; α(P)=3.14×10^{-6} *19*
		458.991[c] *2*	8.8[c] *11*	1210.089	3^-	M1		0.0370		α(K)=0.0313 *5*; α(L)=0.00445 *7*; α(M)=0.000974 *14* α(N)=0.000225 *4*; α(O)=3.31×10^{-5} *5*; α(P)=1.92×10^{-6} *3*
		486.322[c] *8*	1.7[c] *3*	1182.763	5^+	[E1]		0.00547		α(K)=0.00465 *7*; α(L)=0.000640 *9*; α(M)=0.0001393 *20* α(N)=3.21×10^{-5} *5*; α(O)=4.63×10^{-6} *7*; α(P)=2.53×10^{-7} *4*
		520.890 *18*	0.61 *11*	1148.232	2^-	[E2]		0.01363		α(K)=0.01102 *16*; α(L)=0.00204 *3*; α(M)=0.000458 *7* α(N)=0.0001048 *15*; α(O)=1.450×10^{-5} *21*; α(P)=6.19×10^{-7} *9*

$^{162}_{66}Dy_{96}$-26

γ(^{162}Dy) (continued)

E_i(level)	J_i^π	E_γ[†‡#]	I_γ	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
1669.085	4^-	1403.25 *11*	23 *8*	265.664	4^+	E1		8.13×10^{-4}	α(K)=0.000583 *9*; α(L)=7.63×10^{-5} *11*; α(M)=1.653×10^{-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)=0.0001333 *19*
1670.505	8^+	345.9 *1*	56 *4*	1324.465	6^+	E2		0.0421	α(K)=0.0324 *5*; α(L)=0.00757 *11*; α(M)=0.001731 *25* α(N)=0.000394 *6*; α(O)=5.25×10^{-5} *8*; α(P)=1.728×10^{-6} *25* I_γ: from (^{7}Li,p4nγ). Other: 58 *8*, from (α,2nγ).
		749.1 *1*	100 *4*	921.28	8^+	E2+M1	1.5 *6*	0.0072 *13*	α(K)=0.0061 *11*; α(L)=0.00092 *13*; α(M)=0.00020 *3* α(N)=4.7×10^{-5} *7*; α(O)=6.7×10^{-6} *10*; α(P)=3.6×10^{-7} *7* Mult.: from (α,2nγ), α(K)exp=0.0062 *9*, which gives δ=1.5 *+10−5*. Additional information 22.
		1121.9 *2*	52 *4*	548.520	6^+	E2		0.00241	α(K)=0.00203 *3*; α(L)=0.000295 *5*; α(M)=6.47×10^{-5} *9* α(N)=1.491×10^{-5} *21*; α(O)=2.16×10^{-6} *3*; α(P)=1.172×10^{-7} *17*; α(IPF)=6.30×10^{-7} *10* I_γ: from (^{7}Li,p4nγ). Other: 62 *12*, from (α,2nγ).
1683.35	7^-	107.7 *2*		1575.623	6^-				
		197.4 *2*	5	1485.671	5^-				
		762.1 *2*	31 *4*	921.28	8^+	[E1]		0.00211	α(K)=0.00180 *3*; α(L)=0.000242 *4*; α(M)=5.25×10^{-5} *8* α(N)=1.211×10^{-5} *17*; α(O)=1.762×10^{-6} *25*; α(P)=9.98×10^{-8} *14* E_γ: from (α,2nγ). I_γ: weighted average of: 32 *4* (^{7}Li,p4nγ); and 30 *5* (α,2nγ). Mult.,δ: from (α,2nγ), α(K)exp=0.0061 *9*, which gives E2+M1 with δ=1.4, or E1+M2 with δ=0.5. δ: from γ(θ) in (α,2nγ), smaller δ=+0.10 *8*.
		1134.7 *2*	100 *4*	548.520	6^+	E1		9.95×10^{-4}	α(K)=0.000847 *12*; α(L)=0.0001118 *16*; α(M)=2.42×10^{-5} *4* α(N)=5.59×10^{-6} *8*; α(O)=8.18×10^{-7} *12*; α(P)=4.74×10^{-8} *7*; α(IPF)=5.30×10^{-6} *8* E_γ: from (α,2nγ). Mult.: from (α,2nγ), α(K)exp=0.0007 *2*, which gives mult=E1. Additional information 23.
1691.340	2^-	394.333 *3*	12.1 *6*	1297.006	4^-	E2		0.0289	α(K)=0.0226 *4*; α(L)=0.00486 *7*; α(M)=0.001105 *16* α(N)=0.000252 *4*; α(O)=3.40×10^{-5} *5*; α(P)=1.231×10^{-6} *18*
		415.569 *3*	56 *4*	1275.772	1^-	M1+E2		0.036 *12*	α(K)=0.030 *11*; α(L)=0.0049 *9*; α(M)=0.00110 *17* α(N)=0.00025 *4*; α(O)=3.6×10^{-5} *7*; α(P)=1.78×10^{-6} *71*
		543.107 *3*	100 *4*	1148.232	2^-	M1+E2		0.0182 *59*	α(K)=0.0152 *53*; α(L)=0.0023 *6*; α(M)=0.00052 *12* α(N)=0.00012 *3*; α(O)=1.7×10^{-5} *5*; α(P)=9.0×10^{-7} *35*
		728.384[c] *15*	98[c] *10*	962.940	3^+	E1		0.00231	α(K)=0.00197 *3*; α(L)=0.000265 *4*; α(M)=5.77×10^{-5} *8* α(N)=1.329×10^{-5} *19*; α(O)=1.93×10^{-6} *3*; α(P)=1.091×10^{-7} *16*

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
1728.318	2^+	154.026 *4*	0.57 *7*	1574.293	4^+	[E2]		0.575	α(K)=0.343 *5*; α(L)=0.179 *3*; α(M)=0.0424 *6* α(N)=0.00954 *14*; α(O)=0.001179 *17*; α(P)=1.537×10^{-5} *22*
		370.389 *3*	3.5 *2*	1357.928	3^-	[E1]		0.01028	α(K)=0.00873 *13*; α(L)=0.001219 *17*; α(M)=0.000266 *4* α(N)=6.11×10^{-5} *9*; α(O)=8.76×10^{-6} *13*; α(P)=4.68×10^{-7} *7*
		452.535 *8*	3.2 *6*	1275.772	1^-	[E1]		0.00643	α(K)=0.00547 *8*; α(L)=0.000756 *11*; α(M)=0.0001646 *23* α(N)=3.79×10^{-5} *6*; α(O)=5.46×10^{-6} *8*; α(P)=2.97×10^{-7} *5*
		840.20 *6*	3.9 *15*	888.161	2^+	[M1,E2]		0.0063 *19*	α(K)=0.0053 *16*; α(L)=7.6×10^{-4} *20*; α(M)=0.00017 *5* α(N)=3.87×10^{-5} *97*; α(O)=5.6×10^{-6} *15*; α(P)=3.1×10^{-7} *11*
		1462.69[c] *8*	32[c] *6*	265.664	4^+	(E2)		1.49×10^{-3}	α(K)=0.001213 *17*; α(L)=0.0001694 *24*; α(M)=3.70×10^{-5} *6* α(N)=8.54×10^{-6} *12*; α(O)=1.244×10^{-6} *18*; α(P)=7.01×10^{-8} *10*; α(IPF)=6.11×10^{-5} *9*
		1647.62 *7*	100 *9*	80.661	2^+	M1(+E0,E2)		0.0015 *3*	α(K)=0.00118 *21*; α(L)=0.00016 *3*; α(M)=3.5×10^{-5} *6* α(N)=8.1×10^{-6} *14*; α(O)=1.19×10^{-6} *22*; α(P)=7.0×10^{-8} *14*; α(IPF)=0.000139 *12* Mult.: from α(K)exp=0.0018 *1* in (n,γ), 2006Ap01 give mult=M1. However, a ΔK=0 transition such as this is unlikely to Be pure M1. Some E0+E2 contribution is expected. From (n,n′γ), 2002Go15 report δ(E2/M1)=−0.20 *+15−18* or +4.3 *+57−18*.
		1728.58 *19*	54 *8*	0.0	0^+	[E2]		1.20×10^{-3}	α(K)=0.000888 *13*; α(L)=0.0001217 *17*; α(M)=2.65×10^{-5} *4* α(N)=6.12×10^{-6} *9*; α(O)=8.95×10^{-7} *13*; α(P)=5.13×10^{-8} *8*; α(IPF)=0.0001615 *23* E_γ: from (n,n′γ). γ not reported by 2006Ap01 in (n,γ). I_γ: from Iγ(1728.5γ)/Iγ(1647.6γ) in (n,n′γ) and Iγ(1647.6γ).
1738.999	3^-	168.093 *4*	2.5 *3*	1570.912	3^-	M1(+E2)	<0.73	0.528 *23*	α(K)=0.43 *4*; α(L)=0.077 *10*; α(M)=0.0173 *25* α(N)=0.0040 *6*; α(O)=0.00056 *6*; α(P)=2.6×10^{-5} *3*
		348.49 *3*	5.1 *13*	1390.513	5^-	(E2)		0.0412	α(K)=0.0317 *5*; α(L)=0.00737 *11*; α(M)=0.001686 *24* α(N)=0.000384 *6*; α(O)=5.12×10^{-5} *8*; α(P)=1.694×10^{-6} *24*
		381.069 *3*	4.4 *3*	1357.928	3^-	M1+E2	0.7 *4*	0.051 *7*	α(K)=0.042 *7*; α(L)=0.0067 *5*; α(M)=0.00147 *9* α(N)=0.000340 *22*; α(O)=4.9×10^{-5} *4*; α(P)=2.5×10^{-6} *5*
		441.988 *5*	5.0 *3*	1297.006	4^-	M1+E2	0.7 *4*	0.034 *5*	α(K)=0.029 *5*; α(L)=0.0044 *4*; α(M)=0.00097 *8* α(N)=0.000224 *19*; α(O)=3.2×10^{-5} *4*; α(P)=1.7×10^{-6} *3*
		463.224 *4*	13 *1*	1275.772	1^-	E2		0.0185	α(K)=0.01481 *21*; α(L)=0.00290 *4*; α(M)=0.000655 *10* α(N)=0.0001498 *21*; α(O)=2.05×10^{-5} *3*; α(P)=8.22×10^{-7} *12*
		528.901 *5*	100 *3*	1210.089	3^-	M1(+E2)	<0.045	0.0257	α(K)=0.0218 *3*; α(L)=0.00308 *5*; α(M)=0.000674 *10* α(N)=0.0001559 *22*; α(O)=2.29×10^{-5} *4*; α(P)=1.330×10^{-6} *19*
		590.767 *3*	50.7 *13*	1148.232	2^-	[M1,E2]		0.0147 *48*	α(K)=0.0123 *42*; α(L)=0.0019 *5*; α(M)=0.00041 *10* α(N)=9.5×10^{-5} *23*; α(O)=1.37×10^{-5} *36*; α(P)=7.3×10^{-7} *28*

$^{162}_{66}Dy_{96}$-28

γ(^{162}Dy) (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
1738.999	3⁻	678.009 *3*	83 *3*	1060.991	4⁺	E1		0.00267	α(K)=0.00228 *4*; α(L)=0.000308 *5*; α(M)=6.70×10^{-5} *10* α(N)=1.543×10^{-5} *22*; α(O)=2.24×10^{-6} *4*; α(P)=1.259×10^{-7} *18*
		1473.26 *5*	63 *7*	265.664	4⁺	E1		8.07×10^{-4}	α(K)=0.000536 *8*; α(L)=7.01×10^{-5} *10*; α(M)=1.519×10^{-5} *22* α(N)=3.51×10^{-6} *5*; α(O)=5.14×10^{-7} *8*; α(P)=3.01×10^{-8} *5*; α(IPF)=0.000182 *3*
1745.716	1⁺	292.241 *8*	1.7 *2*	1453.468	2⁺	[M1,E2]		0.096 *26*	α(K)=0.077 *26*; α(L)=0.0143 *5*; α(M)=0.00321 *6* α(N)=0.000735 *17*; α(O)=0.000102 *8*; α(P)=4.5×10^{-6} *18*
		597.43 *5*	3.8 *6*	1148.232	2⁻	[E1]		0.00348	α(K)=0.00297 *5*; α(L)=0.000404 *6*; α(M)=8.79×10^{-5} *13* α(N)=2.02×10^{-5} *3*; α(O)=2.93×10^{-6} *5*; α(P)=1.633×10^{-7} *23*
		857.562 *9*	100 *6*	888.161	2⁺	M1(+E2)	<0.29	0.00758 *18*	α(K)=0.00643 *15*; α(L)=0.000896 *19*; α(M)=0.000196 *5* α(N)=4.53×10^{-5} *10*; α(O)=6.66×10^{-6} *15*; α(P)=3.89×10^{-7} *10*
		1665.17 *11*	63 *15*	80.661	2⁺	M1,E2		0.00150 *25*	α(K)=0.00115 *21*; α(L)=0.00016 *3*; α(M)=3.4×10^{-5} *6* α(N)=7.9×10^{-6} *14*; α(O)=1.17×10^{-6} *21*; α(P)=6.8×10^{-8} *13*; α(IPF)=0.000147 *13*
1751.881	6⁺	117.467 *1*	65 *3*	1634.415	5⁺	E2(+M1)	>2.3	1.503	α(K)=0.78 *5*; α(L)=0.56 *4*; α(M)=0.133 *9* α(N)=0.0298 *18*; α(O)=0.00363 *20*; α(P)=3.5×10^{-5} *4*
		216.193[c] *13*	41.0[c] *14*	1535.664	4⁺	E2		0.183	α(K)=0.1259 *18*; α(L)=0.0438 *7*; α(M)=0.01024 *15* α(N)=0.00232 *4*; α(O)=0.000295 *5*; α(P)=6.12×10^{-6} *9*
		266.211	6.0 *6*	1485.671	5⁻				
		427.433 *5*	35 *3*	1324.465	6⁺	M1+E2	1.3 *3*	0.031 *3*	α(K)=0.025 *3*; α(L)=0.00434 *22*; α(M)=0.00097 *5* α(N)=0.000222 *11*; α(O)=3.13×10^{-5} *18*; α(P)=1.49×10^{-6} *17*
		569.129 *4*	100 *5*	1182.763	5⁺	E2(+M1)	>3.6	0.0113 *4*	α(K)=0.0092 *4*; α(L)=0.00161 *5*; α(M)=0.000360 *9* α(N)=8.27×10^{-5} *21*; α(O)=1.16×10^{-5} *4*; α(P)=5.24×10^{-7} *23*
		691.0 *1*	75 *5*	1060.991	4⁺				E_γ: from 2006Ap01 (α,2nγ). 2006Ap01, in (n,γ), do not report this γ. This γ is also not reported in (^{7}Li,p4nγ). I_γ: from 2006Ap01, (α,2nγ). From (^{162}Dy,^{162}Dy′γ), 2001Wu05 report Iγ(691)/Iγ(569)=63 *27*.
1754.82	(7)⁻	1206.3 *2*	100 *9*	548.520	6⁺	E1		9.13×10^{-4}	α(K)=0.000759 *11*; α(L)=0.0001000 *14*;

$^{162}_{66}$Dy$_{96}$-29

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
									α(M)=2.17×10^{-5} *3* α(N)=5.00×10^{-6} *7*; α(O)=7.32×10^{-7} *11*; α(P)=4.25×10^{-8} *6*; α(IPF)=2.61×10^{-5} *4* E_γ: from (^{7}Li,p4nγ). Mult.: From (α,2nγ), α(K)exp≤0.0007, which gives mult=E1.
1766.608	3$^-$	230.943 *1*	4.8 *2*	1535.664	4$^+$	[E1]		0.0334	α(K)=0.0283 *4*; α(L)=0.00406 *6*; α(M)=0.000886 *13* α(N)=0.000203 *3*; α(O)=2.87×10^{-5} *4*; α(P)=1.452×10^{-6} *21*
		280.937 *2*	4.6 *1*	1485.671	5$^-$	E2		0.0790	α(K)=0.0584 *9*; α(L)=0.01597 *23*; α(M)=0.00369 *6* α(N)=0.000837 *12*; α(O)=0.0001094 *16*; α(P)=3.00×10^{-6} *5*
		408.678 *5*	2.1 *1*	1357.928	3$^-$	M1(+E2)	<1.0	0.044 *6*	α(K)=0.037 *6*; α(L)=0.0056 *5*; α(M)=0.00124 *9* α(N)=0.000285 *21*; α(O)=4.1×10^{-5} *4*; α(P)=2.2×10^{-6} *4*
		469.602 *3*	8.9 *6*	1297.006	4$^-$	M1+E2	0.58 *3*	0.0306 *6*	α(K)=0.0257 *5*; α(L)=0.00384 *6*; α(M)=0.000845 *14* α(N)=0.000195 *3*; α(O)=2.83×10^{-5} *5*; α(P)=1.55×10^{-6} *3*
		556.519 *2*	56 *4*	1210.089	3$^-$	M1+E2	0.52 *19*	0.0203 *14*	α(K)=0.0171 *13*; α(L)=0.00249 *13*; α(M)=0.00055 *3* α(N)=0.000126 *7*; α(O)=1.84×10^{-5} *11*; α(P)=1.03×10^{-6} *8*
		618.376 *3*	29 *1*	1148.232	2$^-$	M1+E2	2.06 *13*	0.01050 *23*	α(K)=0.00870 *20*; α(L)=0.00141 *3*; α(M)=0.000312 *6* α(N)=7.18×10^{-5} *14*; α(O)=1.020×10^{-5} *20*; α(P)=5.06×10^{-7} *13*
		705.614 *7*	44 *4*	1060.991	4$^+$	E1		0.00246	α(K)=0.00210 *3*; α(L)=0.000283 *4*; α(M)=6.16×10^{-5} *9* α(N)=1.419×10^{-5} *20*; α(O)=2.06×10^{-6} *3*; α(P)=1.162×10^{-7} *17*
		803.677 *8*	46 *2*	962.940	3$^+$	(E1)		0.00190	α(K)=0.001620 *23*; α(L)=0.000217 *3*; α(M)=4.72×10^{-5} *7* α(N)=1.087×10^{-5} *16*; α(O)=1.584×10^{-6} *23*; α(P)=9.00×10^{-8} *13*
		878.444 *6*	100 *3*	888.161	2$^+$	(E1)		1.60×10^{-3}	α(K)=0.001363 *19*; α(L)=0.000182 *3*; α(M)=3.95×10^{-5} *6* α(N)=9.11×10^{-6} *13*; α(O)=1.328×10^{-6} *19*; α(P)=7.59×10^{-8} *11*
1767.37	6$^+$	846.2 *2*	47 *7*	921.28	8$^+$	E2		0.00434	α(K)=0.00362 *5*; α(L)=0.000561 *8*; α(M)=0.0001239 *18* α(N)=2.85×10^{-5} *4*; α(O)=4.07×10^{-6} *6*; α(P)=2.08×10^{-7} *3*
		1218.6 *3*	100 *13*	548.520	6$^+$	E2+M1		0.0027 *7*	α(K)=0.0023 *6*; α(L)=0.00032 *7*; α(M)=6.9×10^{-5} *16* α(N)=1.6×10^{-5} *4*; α(O)=2.3×10^{-6} *6*; α(P)=1.34×10^{-7} *35*; α(IPF)=8.0×10^{-6} *6*
1782.68	2$^+$	819.76 *13*	74 *19*	962.940	3$^+$				
		894.39 *22*	64 *9*	888.161	2$^+$				
		1516.6 *3*	26 *7*	265.664	4$^+$				
		1702.08 *19*	100 *9*	80.661	2$^+$				
		1782.8[c] *2*	111[c] *5*	0.0	0$^+$				I_γ: from ^{162}Tb β^- decay. From ^{162}Ho ε decay (15.0 min), Iγ=87 *13*. From (n,n′γ), Iγ=113 *11*.
1807.56	8$^-$	124.1 *1*	81 *8*	1683.35	7$^-$				
		231.6 *1*	100 *11*	1575.623	6$^-$				

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
1807.56	8⁻	277.3 *2*	19 *3*	1530.127	6⁻				E_γ: from (α,2nγ). From (^{7}Li,p4nγ), Eγ=277.
		317.7 *1*	28 *3*	1490.39	7⁺				
1826.753	4⁻	192.344 *5*	2.1 *2*	1634.415	5⁺	[E1]		0.0539	α(K)=0.0455 *7*; α(L)=0.00661 *10*; α(M)=0.001445 *21* α(N)=0.000330 *5*; α(O)=4.64×10^{-5} *7*; α(P)=2.29×10^{-6} *4*
		251.139 *24*	1.7 *4*	1575.623	6⁻	[E2]		0.1124	α(K)=0.0809 *12*; α(L)=0.0244 *4*; α(M)=0.00566 *8* α(N)=0.001282 *18*; α(O)=0.0001657 *24*; α(P)=4.07×10^{-6} *6*
		291.07 *4*	0.32 *9*	1535.664	4⁺	[E1]		0.0185	α(K)=0.01571 *22*; α(L)=0.00222 *4*; α(M)=0.000486 *7* α(N)=0.0001114 *16*; α(O)=1.588×10^{-5} *23*; α(P)=8.26×10^{-7} *12*
		308.321 *6*	1.5 *2*	1518.426	5⁻	[M1,E2]		0.082 *23*	α(K)=0.067 *22*; α(L)=0.0121 *8*; α(M)=0.00270 *10* α(N)=0.00062 *3*; α(O)=8.7×10^{-5} *9*; α(P)=3.9×10^{-6} *16*
		341.081 *3*	2.5 *3*	1485.671	5⁻	E2(+M1)	>1.5	0.049 *6*	α(K)=0.039 *6*; α(L)=0.0082 *3*; α(M)=0.00187 *6* α(N)=0.000426 *14*; α(O)=5.8×10^{-5} *3*; α(P)=2.2×10^{-6} *4*
		436.241 *4*	4.8 *2*	1390.513	5⁻	M1		0.0422	α(K)=0.0357 *5*; α(L)=0.00508 *8*; α(M)=0.001112 *16* α(N)=0.000257 *4*; α(O)=3.78×10^{-5} *6*; α(P)=2.19×10^{-6} *3*
		529.749 *4*	30.6 *8*	1297.006	4⁻	M1+E2	0.47 *11*	0.0234 *10*	α(K)=0.0197 *9*; α(L)=0.00286 *9*; α(M)=0.000629 *19* α(N)=0.000145 *5*; α(O)=2.12×10^{-5} *7*; α(P)=1.19×10^{-6} *6*
		643.989 *2*	41 *2*	1182.763	5⁺	E1		0.00297	α(K)=0.00254 *4*; α(L)=0.000344 *5*; α(M)=7.47×10^{-5} *11* α(N)=1.721×10^{-5} *24*; α(O)=2.50×10^{-6} *4*; α(P)=1.398×10^{-7} *20*
		678.52 *3*	5.2 *5*	1148.232	2⁻	[E2]		0.00714	α(K)=0.00588 *9*; α(L)=0.000976 *14*; α(M)=0.000217 *3* α(N)=4.99×10^{-5} *7*; α(O)=7.04×10^{-6} *10*; α(P)=3.36×10^{-7} *5*
		765.756 *9*	26 *2*	1060.991	4⁺	[E1]		0.00209	α(K)=0.001782 *25*; α(L)=0.000239 *4*; α(M)=5.20×10^{-5} *8* α(N)=1.199×10^{-5} *17*; α(O)=1.745×10^{-6} *25*; α(P)=9.88×10^{-8} *14*
		863.808 *5*	100 *2*	962.940	3⁺	[E1]		1.65×10^{-3}	α(K)=0.001408 *20*; α(L)=0.000188 *3*; α(M)=4.08×10^{-5} *6* α(N)=9.41×10^{-6} *14*; α(O)=1.373×10^{-6} *20*; α(P)=7.83×10^{-8} *11*
1840.486	3⁺	269.575 *10*	1.2 *2*	1570.912	3⁻	[E1]		0.0225	α(K)=0.0190 *3*; α(L)=0.00271 *4*; α(M)=0.000591 *9* α(N)=0.0001356 *19*; α(O)=1.93×10^{-5} *3*; α(P)=9.94×10^{-7} *14*
		387.017 *21*	1.6 *5*	1453.468	2⁺	[M1,E2]		0.044 *14*	α(K)=0.036 *13*; α(L)=0.0061 *9*; α(M)=0.00135 *18* α(N)=0.00031 *5*; α(O)=4.4×10^{-5} *8*; α(P)=2.14×10^{-6} *85*
		543.477 *4*	24.2 *14*	1297.006	4⁻	[E1]		0.00427	α(K)=0.00364 *5*; α(L)=0.000498 *7*; α(M)=0.0001083 *16* α(N)=2.49×10^{-5} *4*; α(O)=3.61×10^{-6} *5*; α(P)=1.99×10^{-7} *3*
		630.398 *4*	40 *4*	1210.089	3⁻	E1		0.00311	α(K)=0.00265 *4*; α(L)=0.000360 *5*; α(M)=7.82×10^{-5} *11* α(N)=1.80×10^{-5} *3*; α(O)=2.61×10^{-6} *4*; α(P)=1.461×10^{-7} *21*
		779.494 *6*	70 *5*	1060.991	4⁺	M1(+E2)	<0.55	0.0092 *6*	α(K)=0.0078 *5*; α(L)=0.00110 *6*; α(M)=0.000240 *13* α(N)=5.6×10^{-5} *3*; α(O)=8.2×10^{-6} *5*; α(P)=4.7×10^{-7} *3*
		877.537 *14*	52.6 *18*	962.940	3⁺	M1		0.00729	α(K)=0.00619 *9*; α(L)=0.000860 *12*; α(M)=0.000188 *3* α(N)=4.34×10^{-5} *6*; α(O)=6.39×10^{-6} *9*; α(P)=3.74×10^{-7} *6*

$^{162}_{66}Dy_{96}$-31

Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[†‡#]	I_γ	E_f	J_f^π	Mult.[&]	δ[&b]	α[a]	Comments
1840.486	3^+	952.42 *9*	12 *4*	888.161	2^+	[M1,E2]		0.0047 *13*	α(K)=0.0040 *12*; α(L)=0.00056 *14*; α(M)=0.00012 *3* α(N)=2.9×10^{-5} *7*; α(O)=4.2×10^{-6} *11*; α(P)=2.35×10^{-7} *72*
		1574.66 *9*	86 *11*	265.664	4^+	(E2)		1.34×10^{-3}	α(K)=0.001056 *15*; α(L)=0.0001462 *21*; α(M)=3.19×10^{-5} *5* α(N)=7.36×10^{-6} *11*; α(O)=1.075×10^{-6} *15*; α(P)=6.10×10^{-8} *9*; α(IPF)=9.94×10^{-5} *14*
		1759.8 *5*	100 *26*	80.661	2^+	[M1,E2]		0.00140 *22*	α(K)=0.00103 *17*; α(L)=0.000140 *23*; α(M)=3.0×10^{-5} *5* α(N)=7.0×10^{-6} *12*; α(O)=1.03×10^{-6} *17*; α(P)=6.0×10^{-8} *11*; α(IPF)=0.000191 *16*
1845.53	8^-	315.4 *1*	57 *4*	1530.127	6^-				
		355.0 *1*	100 *4*	1490.39	7^+				
		925		921.28	8^+				E_γ: reported in $^{161}Dy(^{61}Ni,^{60}Ni\gamma)$ only.
1851.811	4^-	493.885 *2*	53 *2*	1357.928	3^-	M1(+E2)	<0.58	0.0288 *20*	α(K)=0.0243 *18*; α(L)=0.00352 *17*; α(M)=0.00077 *4* α(N)=0.000178 *9*; α(O)=2.60×10^{-5} *14*; α(P)=1.48×10^{-6} *12*
		554.802 *3*	82 *5*	1297.006	4^-	M1(+E2)	<0.20	0.0226	α(K)=0.0191 *4*; α(L)=0.00271 *5*; α(M)=0.000592 *10* α(N)=0.0001370 *22*; α(O)=2.01×10^{-5} *4*; α(P)=1.166×10^{-6} *21*
		641.715 *4*	35 *4*	1210.089	3^-	M1+E2	1.18 *16*	0.0113 *6*	α(K)=0.0095 *5*; α(L)=0.00145 *6*; α(M)=0.000319 *13* α(N)=7.3×10^{-5} *3*; α(O)=1.06×10^{-5} *5*; α(P)=5.6×10^{-7} *4*
		669.039 *12*	53 *4*	1182.763	5^+	E1		0.00275	α(K)=0.00234 *4*; α(L)=0.000317 *5*; α(M)=6.89×10^{-5} *10* α(N)=1.587×10^{-5} *23*; α(O)=2.31×10^{-6} *4*; α(P)=1.294×10^{-7} *19*
		703.582 *13*	14.6 *7*	1148.232	2^-	E2		0.00656	α(K)=0.00542 *8*; α(L)=0.000888 *13*; α(M)=0.000197 *3* α(N)=4.53×10^{-5} *7*; α(O)=6.41×10^{-6} *9*; α(P)=3.10×10^{-7} *5*
		1585.83 *25*	100 *30*	265.664	4^+	E1		8.17×10^{-4}	α(K)=0.000474 *7*; α(L)=6.18×10^{-5} *9*; α(M)=1.339×10^{-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)=0.000264 *4*
1862.677	4^-	228.263 *1*	10.4 *2*	1634.415	5^+	E1		0.0345	α(K)=0.0291 *4*; α(L)=0.00418 *6*; α(M)=0.000914 *13* α(N)=0.000209 *3*; α(O)=2.96×10^{-5} *5*; α(P)=1.495×10^{-6} *21*
		327.012 *1*	100 *15*	1535.664	4^+	E1		0.01390	α(K)=0.01178 *17*; α(L)=0.001658 *24*; α(M)=0.000362 *5* α(N)=8.30×10^{-5} *12*; α(O)=1.187×10^{-5} *17*; α(P)=6.26×10^{-7} *9*
		377.015 *5*	1.58 *7*	1485.671	5^-	[M1,E2]		0.047 *15*	α(K)=0.039 *14*; α(L)=0.0065 *10*; α(M)=0.00146 *18* α(N)=0.00034 *5*; α(O)=4.7×10^{-5} *8*; α(P)=2.29×10^{-6} *92*
		652.581 *3*	21.0 *6*	1210.089	3^-	E2		0.00782	α(K)=0.00643 *9*; α(L)=0.001082 *16*; α(M)=0.000241 *4* α(N)=5.53×10^{-5} *8*; α(O)=7.79×10^{-6} *11*; α(P)=3.67×10^{-7} *6*

$^{162}_{66}Dy_{96}$-32

γ(^{162}Dy) (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	α[a]	Comments
1862.677	4⁻	714.444 *5*	50 *7*	1148.232	2⁻	E2	0.00633	α(K)=0.00524 *8*; α(L)=0.000854 *12*; α(M)=0.000190 *3* α(N)=4.36×10^{-5} *6*; α(O)=6.17×10^{-6} *9*; α(P)=3.00×10^{-7} *5*
1863.83	2⁻	588.8 *5*	10 *4*	1275.772	1⁻			
		652.1 *3*	15 *3*	1210.089	3⁻			
		900.80 *19*	35 *4*	962.940	3⁺			
		975.64 *6*	100 *6*	888.161	2⁺			
		1782.8[c] *2*	48[c] *5*	80.661	2⁺			
1878.05	9⁺	387.5 *1*	75 *2*	1490.39	7⁺	E2	0.0303	α(K)=0.0237 *4*; α(L)=0.00515 *8*; α(M)=0.001171 *17* α(N)=0.000267 *4*; α(O)=3.60×10^{-5} *5*; α(P)=1.288×10^{-6} *18*
		502.9 *2*	12	1375.08	10⁺	E2(+M1)	0.0221 *72*	α(K)=0.0184 *64*; α(L)=0.0029 *7*; α(M)=0.00064 *13* α(N)=0.00015 *3*; α(O)=2.1×10^{-5} *5*; α(P)=1.09×10^{-6} *43* From (α,2nγ). γ not reported in the heavy-ion-induced reactions.
		956.9 *1*	100 *5*	921.28	8⁺	E2(+M1)	0.0046 *13*	α(K)=0.0039 *12*; α(L)=0.00056 *14*; α(M)=0.00012 *3* α(N)=2.8×10^{-5} *7*; α(O)=4.1×10^{-6} *11*; α(P)=2.32×10^{-7} *71* Mult.: from (α,2nγ), the 956+957 peak has α(K)exp=0.0053 (1982Fi15), which gives M1.
1886.82	4⁺	671.55[c] *10*	64[c] *5*	1210.089	3⁻			E_γ: poor energy fit, level-energy difference=676.8 keV. Note that γ is doubly placed. γ is not included in the least-squares fit to obtain the level energies.
		923.8 *3*	10 *2*	962.940	3⁺			
		1806.15 *9*	100 *6*	80.661	2⁺	E2	1.16×10^{-3}	α(K)=0.000819 *12*; α(L)=0.0001117 *16*; α(M)=2.43×10^{-5} *4* α(N)=5.62×10^{-6} *8*; α(O)=8.23×10^{-7} *12*; α(P)=4.73×10^{-8} *7*; α(IPF)=0.000196 *3*
1887.67	7⁺	135.9 *1*	81 *6*	1751.881	6⁺	E2+M1	0.95 *6*	α(K)=0.67 *18*; α(L)=0.216 *93*; α(M)=0.050 *23* α(N)=0.0114 *51*; α(O)=0.00147 *55*; α(P)=3.7×10^{-5} *16* E_γ: from (α,2nγ). γ not reported in (^{7}Li,p4nγ). δ: from $\gamma(\theta)$ in (α,2nγ), smaller δ=+0.05 *5* (1982Fi15).
		253.2 *1*	100 *6*	1634.415	5⁺	E2	0.1095	α(K)=0.0790 *12*; α(L)=0.0236 *4*; α(M)=0.00548 *8* α(N)=0.001242 *18*; α(O)=0.0001607 *23*; α(P)=3.98×10^{-6} *6*
		397.4 *3*	50 *6*	1490.39	7⁺	E2	0.0282	α(K)=0.0221 *4*; α(L)=0.00473 *7*; α(M)=0.001076 *16* α(N)=0.000245 *4*; α(O)=3.32×10^{-5} *5*; α(P)=1.207×10^{-6} *17*
		563.2 *1*	31 *6*	1324.465	6⁺	E2	0.01119	α(K)=0.00910 *13*; α(L)=0.001625 *23*; α(M)=0.000364 *5* α(N)=8.34×10^{-5} *12*; α(O)=1.161×10^{-5} *17*; α(P)=5.14×10^{-7} *8*
		704.9 *1*	25 *6*	1182.763	5⁺	E2	0.00653	α(K)=0.00540 *8*; α(L)=0.000884 *13*; α(M)=0.000196 *3* α(N)=4.51×10^{-5} *7*; α(O)=6.38×10^{-6} *9*; α(P)=3.09×10^{-7} *5*
1895.42	2⁺	258.17 *5*	123 *16*	1637.196	1⁻			
		747.24[c] *13*	42[c] *4*	1148.232	2⁻			
		834.2 *4*	12 *3*	1060.991	4⁺			
		1007.0 *4*	22 *3*	888.161	2⁺			
		1814.92[c] *9*	100[c] *7*	80.661	2⁺			I_γ: most of the intensity must Be associated with this placement.

From ENSDF

$^{162}_{66}Dy_{96}$-33

Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ [†‡#]	I_γ	E_f	J^π_f	Mult. [&]	δ [&b]	α [a]	Comments
1901.10	12^+	526.2 *1*	100	1375.08	10^+	E2		0.01328	B(E2)(W.u.)=326 *+36−30* α(K)=0.01075 *15*; α(L)=0.00198 *3*; α(M)=0.000444 *7* α(N)=0.0001017 *15*; α(O)=1.408×10^{-5} *20*; α(P)=6.04×10^{-7} *9*
1910.430	3^-	552.486 *21*	1.0 *1*	1357.928	3^-	[M1,E2]		0.0174 *57*	α(K)=0.0145 *50*; α(L)=0.0022 *6*; α(M)=0.00049 *11* α(N)=0.00011 *3*; α(O)=1.64×10^{-5} *42*; α(P)=8.6×10^{-7} *33*
		849.435[c] *7*	80[c] *2*	1060.991	4^+	E1		1.70×10^{-3}	α(K)=0.001454 *21*; α(L)=0.000194 *3*; α(M)=4.22×10^{-5} *6* α(N)=9.73×10^{-6} *14*; α(O)=1.419×10^{-6} *20*; α(P)=8.09×10^{-8} *12*
		947.484 *8*	100 *3*	962.940	3^+	E1		1.38×10^{-3}	α(K)=0.001181 *17*; α(L)=0.0001570 *22*; α(M)=3.41×10^{-5} *5* α(N)=7.86×10^{-6} *11*; α(O)=1.147×10^{-6} *16*; α(P)=6.58×10^{-8} *10*
		1022.278 *11*	93 *6*	888.161	2^+	E1		1.20×10^{-3}	α(K)=0.001025 *15*; α(L)=0.0001358 *19*; α(M)=2.95×10^{-5} *5* α(N)=6.80×10^{-6} *10*; α(O)=9.93×10^{-7} *14*; α(P)=5.72×10^{-8} *8*
1939.65	9^-	564.6 *2*	16 *4*	1375.08	10^+				
		1018.3 *1*	100 *12*	921.28	8^+	E1		1.21×10^{-3}	α(K)=0.001032 *15*; α(L)=0.0001368 *20*; α(M)=2.97×10^{-5} *5* α(N)=6.85×10^{-6} *10*; α(O)=1.001×10^{-6} *14*; α(P)=5.76×10^{-8} *8* Mult.: from (α,2nγ), α(K)exp=0.0004 *1*, which gives mult=E1.
1951.391	$3^+,4^+$	497.926 *12*	3.7 *6*	1453.468	2^+	[E2]		0.01532	α(K)=0.01233 *18*; α(L)=0.00233 *4*; α(M)=0.000524 *8* α(N)=0.0001200 *17*; α(O)=1.654×10^{-5} *24*; α(P)=6.90×10^{-7} *10*
		654.381 *5*	41 *2*	1297.006	4^-	E1		0.00288	α(K)=0.00245 *4*; α(L)=0.000332 *5*; α(M)=7.22×10^{-5} *11* α(N)=1.663×10^{-5} *24*; α(O)=2.41×10^{-6} *4*; α(P)=1.353×10^{-7} *19*
		741.313 *13*	29.6 *15*	1210.089	3^-	[E1]		0.00223	α(K)=0.00190 *3*; α(L)=0.000256 *4*; α(M)=5.56×10^{-5} *8* α(N)=1.281×10^{-5} *18*; α(O)=1.86×10^{-6} *3*; α(P)=1.054×10^{-7} *15*
		988.44 *4*	37 *4*	962.940	3^+	M1(+E2)	<0.87	0.0050 *5*	α(K)=0.0042 *5*; α(L)=0.00059 *6*; α(M)=0.000128 *12* α(N)=3.0×10^{-5} *3*; α(O)=4.4×10^{-6} *5*; α(P)=2.5×10^{-7} *3*
		1685.79 *14*	100 *20*	265.664	4^+	(E2)		1.24×10^{-3}	α(K)=0.000930 *13*; α(L)=0.0001278 *18*; α(M)=2.79×10^{-5} *4* α(N)=6.43×10^{-6} *9*; α(O)=9.40×10^{-7} *14*; α(P)=5.37×10^{-8} *8*; α(IPF)=0.0001433 *20*

γ(^{162}Dy) (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	δ[&b]	α[a]	Comments
1959.36	9⁻	322.2[e]		1637.92	7⁻				γ not reported in (α,2nγ).
		583.9 *1*	25 *3*	1375.08	10⁺				E_γ,I_γ: from (α,2nγ).
		1038.0 *1*	100 *13*	921.28	8⁺	E1		1.16×10^{-3}	α(K)=0.000996 *14*; α(L)=0.0001320 *19*; α(M)=2.86×10^{-5} *4* α(N)=6.60×10^{-6} *10*; α(O)=9.65×10^{-7} *14*; α(P)=5.56×10^{-8} *8* E_γ: from (α,2nγ). From 2002Ju08, (^{7}Li,p4nγ), Eγ=1037.8 *2*. Mult.: from (α,2nγ), α(K)exp≤0.0016, which gives mult=E1. Additional information 24.
1963.598	5⁻	211.711 *3*	27 *9*	1751.881	6⁺	(E1)		0.0419	α(K)=0.0354 *5*; α(L)=0.00511 *8*; α(M)=0.001117 *16* α(N)=0.000256 *4*; α(O)=3.61×10^{-5} *5*; α(P)=1.80×10^{-6} *3*
		329.184 *1*	141 *9*	1634.415	5⁺	E1		0.01368	α(K)=0.01160 *17*; α(L)=0.001630 *23*; α(M)=0.000356 *5* α(N)=8.17×10^{-5} *12*; α(O)=1.168×10^{-5} *17*; α(P)=6.16×10^{-7} *9*
		387.976 *12*	4.5 *5*	1575.623	6⁻	[M1,E2]		0.044 *14*	α(K)=0.036 *13*; α(L)=0.0060 *9*; α(M)=0.00134 *18* α(N)=0.00031 *5*; α(O)=4.4×10^{-5} *8*; α(P)=2.13×10^{-6} *85*
		427.932 *2*	86.8 *14*	1535.664	4⁺	E1		0.00732	α(K)=0.00622 *9*; α(L)=0.000861 *12*; α(M)=0.000188 *3* α(N)=4.32×10^{-5} *6*; α(O)=6.21×10^{-6} *9*; α(P)=3.36×10^{-7} *5*
		639.144 *11*	20 *3*	1324.465	6⁺	[E1]		0.00302	α(K)=0.00258 *4*; α(L)=0.000349 *5*; α(M)=7.59×10^{-5} *11* α(N)=1.749×10^{-5} *25*; α(O)=2.54×10^{-6} *4*; α(P)=1.420×10^{-7} *20*
		666.594 *7*	57.3 *23*	1297.006	4⁻	E2(+M1)	>2.3	0.0080 *6*	α(K)=0.0066 *5*; α(L)=0.00108 *6*; α(M)=0.000239 *12* α(N)=5.5×10^{-5} *3*; α(O)=7.8×10^{-6} *5*; α(P)=3.8×10^{-7} *4*
		753.500 *11*	82 *9*	1210.089	3⁻	E2		0.00561	α(K)=0.00465 *7*; α(L)=0.000746 *11*; α(M)=0.0001653 *24* α(N)=3.80×10^{-5} *6*; α(O)=5.40×10^{-6} *8*; α(P)=2.67×10^{-7} *4*
		780.77 *4*	27 *5*	1182.763	5⁺	[E1]		0.00201	α(K)=0.001715 *24*; α(L)=0.000230 *4*; α(M)=5.00×10^{-5} *7* α(N)=1.153×10^{-5} *17*; α(O)=1.678×10^{-6} *24*; α(P)=9.52×10^{-8} *14*
		902.610 *20*	68 *5*	1060.991	4⁺	[E1]		1.51×10^{-3}	α(K)=0.001294 *19*; α(L)=0.0001725 *25*; α(M)=3.74×10^{-5} *6* α(N)=8.64×10^{-6} *12*; α(O)=1.260×10^{-6} *18*; α(P)=7.21×10^{-8} *10*
		1415.30 *18*	100 *27*	548.520	6⁺	[E1]		8.12×10^{-4}	α(K)=0.000574 *8*; α(L)=7.52×10^{-5} *11*; α(M)=1.629×10^{-5} *23* α(N)=3.76×10^{-6} *6*; α(O)=5.51×10^{-7} *8*; α(P)=3.22×10^{-8} *5*; α(IPF)=0.0001415 *20*
1974.10	4⁻	678.05[c] *13*	82[c] *8*	1297.006	4⁻				
		911.86 *22*	61 *8*	1060.991	4⁺				
		1010.09 *19*	100 *10*	962.940	3⁺				
1982.46	2⁺	1716.4 *5*	16 *5*	265.664	4⁺				I_γ: from (n,n′γ).
		1902.1 *2*	100 *7*	80.661	2⁺				I_γ: from (n,n′γ). From β^- decay, Iγ(1902)/Iγ(1982)=1.03. From (n,γ), this ratio is 0.17, but Iγ(1902γ) is listed there as 2.7 *30*, so there may Be a misprint.
		1982.2 *2*	99 *7*	0.0	0⁺				I_γ: from (n,n′γ).
1985.88	8⁺	1064.6 *2*	100	921.28	8⁺	M1		0.00457	B(M1)(W.u.)=0.0058 α(K)=0.00388 *6*; α(L)=0.000536 *8*; α(M)=0.0001169 *17* α(N)=2.70×10^{-5} *4*; α(O)=3.98×10^{-6} *6*; α(P)=2.34×10^{-7} *4* B(M1)(W.u.) is that reported by 2001Wu05, in

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$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	α[a]	Comments
								(^{162}Dy,^{162}Dy′γ). Mult.: from (α,2nγ), α(K)exp=0.0050 9, which gives mult=M1. 2001Wu05 state that the M1 component dominates the ΔJ=0 transitions connecting the g.s. and S bands. A small E2 component, of course, is not ruled out.
1999.33	2^+	790.6 2	57 11	1210.089	3^-			
		1108.6[c] 3	62[c] 12	888.161	2^+			
		1918.4 2	100 9	80.661	2^+			
		1999.5[d] 5	23[d] 8	0.0	0^+			
2009.796		339.82	1.6	1670.505	8^+			
		372.597 3	27.0 5	1637.196	1^-	E2	0.0339	α(K)=0.0264 4; α(L)=0.00587 9; α(M)=0.001338 19 α(N)=0.000305 5; α(O)=4.10×10^{-5} 6; α(P)=1.424×10^{-6} 20
		477.50 10	33 3	1530.127	6^-			
		686.15[c] 6	4.6[c] 13	1324.465	6^+			
		713.0 6	100 5	1297.006	4^-			
		798.52	5.9	1210.089	3^-			
		826.77	6.8	1182.763	5^+			
		1462.69[c] 8	65[c] 11	548.520	6^+			
2040.97	8^+	153.4 1	100 30	1887.67	7^+	E2+M1	0.65 7	α(K)=0.47 13; α(L)=0.135 48; α(M)=0.031 12 α(N)=0.0071 27; α(O)=9.3×10^{-4} 28; α(P)=2.6×10^{-5} 11
		289.0 1	85 15	1751.881	6^+	E2	0.0724	α(K)=0.0538 8; α(L)=0.01438 21; α(M)=0.00332 5 α(N)=0.000753 11; α(O)=9.87×10^{-5} 14; α(P)=2.78×10^{-6} 4
		550.6 2	15	1490.39	7^+			
2053.541	5^-	302.880[c] 20	4.0[c] 13	1751.881	6^+			
		536.8 3	21 19	1518.426	5^-			
		663.41	4.0	1390.513	5^-			
		728.384[c] 15	89[c] 9	1324.465	6^+			
		994.0 4	75 13	1060.991	4^+			
		1505.2 7	10.4 6	548.520	6^+			
		1786.9 3	100 11	265.664	4^+			
2071.95	(4)	243.95	3.3	1826.753	4^-			
		747.7 1	124 15	1324.465	6^+			
		1108.85 18	64 9	962.940	3^+	M1	0.00414	α(K)=0.00352 5; α(L)=0.000485 7; α(M)=0.0001059 15 α(N)=2.45×10^{-5} 4; α(O)=3.61×10^{-6} 5; α(P)=2.12×10^{-7} 3; α(IPF)=4.52×10^{-7} 7
		1523.3 10	10 8	548.520	6^+			
		1989.9 3	100 12	80.661	2^+			
2080.03	(2,3)	216.193[c] 13	15.5[c] 5	1863.83	2^-			
		240.1 2	455 24	1840.486	3^+			
		1114.3 3	100 21	962.940	3^+			

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Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	α[a]	Comments
2080.03	(2,3)	1814.62[c] *7*	389[c] *32*	265.664	4+	E2	1.15×10^{-3}	α(K)=0.000812 *12*; α(L)=0.0001107 *16*; α(M)=2.41×10^{-5} *4* α(N)=5.57×10^{-6} *8*; α(O)=8.15×10^{-7} *12*; α(P)=4.69×10^{-8} *7*; α(IPF)=0.000199 *3* Most of the intensity of this γ is to be associated with the other placement.
		1999.5[d] *5*	342[d] *18*	80.661	2+			
		2079.8 *5*	55 *11*	0.0	0+			
2087.49	10+	417.0 *1*	100 *3*	1670.505	8+			
		712.5 *1*	57 *3*	1375.08	10+			
		1166.3 *2*	35 *3*	921.28	8+			
2100.66	9−	725.5 *2*	18 *5*	1375.08	10+			
		1179.6 *2*	100 *23*	921.28	8+	E1	9.39×10^{-4}	α(K)=0.000790 *11*; α(L)=0.0001041 *15*; α(M)=2.26×10^{-5} *4* α(N)=5.21×10^{-6} *8*; α(O)=7.62×10^{-7} *11*; α(P)=4.42×10^{-8} *7*; α(IPF)=1.612×10^{-5} *24* Mult.: from (α,2nγ), α(K)exp=0.0010 *3*, which gives mult=E1.
2103.48	(2+)	358.74	0.5	1745.716	1+			
		468.15 *31*	16 *4*	1634.415	5+			
		529.11 *7*	155 *17*	1574.293	4+			
		1142.3 *3*	100 *13*	962.940	3+			
		2024.9 *11*	43 *20*	80.661	2+			
		2104.5 *7*	17 *12*	0.0	0+			
2110.70	10−	151.6 *1*	32 *3*	1959.36	9−			
		171.0 *1*	21 *3*	1939.65	9−			I_γ: note: Iγ(171)/Iγ(303)=1.54 in (α,2nγ).
		303.2 *1*	100 *3*	1807.56	8−			
2120.717	(4−)	120.06	7.3 *13*	2000.7				
		486.322[c] *8*	3.0[c] *5*	1634.415	5+			
		584.05 *6*	100 *11*	1535.664	4+			
		601.41	0.93	1518.426	5−			
		1156.2 *2*	14 *6*	962.940	3+			
2125.212	0+	399.3[c] *4*	6[c] *3*	1728.318	2+			
		491.03[c] *10*	45[c] *4*	1634.415	5+			
		849.435[c] *7*	100[c] *10*	1275.772	1−			
		2046.6 *3*	59 *11*	80.661	2+			
2128.6	1−	980.4 *7*	9 *3*	1148.232	2−			
		2047.9 *4*	100 *3*	80.661	2+			
2129.497	(2+)	276.92	0.30	1851.811	4−			
		302.880[c] *20*	3.1[c] *10*	1826.753	4−			
		399.3[c] *4*	6[c] *3*	1728.318	2+			
		440.9 *3*	9 *3*	1691.340	2−			
		458.991[c] *2*	24[c] *3*	1670.505	8+			
		491.03[c] *10*	48[c] *4*	1637.92	7−			

From ENSDF

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Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	α[a]	Comments
2129.497	(2+)	769.0 *1*	100 *4*	1357.928	3−			
		2048.1 *3*	19 *4*	80.661	2+			
		2129.3 *20*	15 *4*	0.0	0+			
2148.681	(2)	321.928[c] *2*	[c]	1826.753	4−			I_γ: most of the intensity of this peak is associated with the other placement. See the comment in the (n,γ) data set.
		578.52	12	1570.912	3−			
		1088.56	88	1060.991	4+			
		1186.8 *6*	1.2×10^2 *5*	962.940	3+			
		1261.6 *4*	100 *21*	888.161	2+			
2163.3	1,2,3	1014.9 *6*	100 *11*	1148.232	2−			
		2082.8 *6*	54 *4*	80.661	2+			
2181.0	4+	1218.0	113 *24*	962.940	3+			
		1292.8	100	888.161	2+			B(E2)(W.u.)=2.8 *8* B(E2)(W.u.) is from 2001Wu05 (^{162}Dy,^{162}Dy′γ).
2187.9	8+	146.4 *1*	1.6 *2*	2040.97	8+	[M1]	0.810	α(K)=0.682 *10*; α(L)=0.0999 *15*; α(M)=0.0219 *3* α(N)=0.00507 *8*; α(O)=0.000743 *11*; α(P)=4.24×10^{-5} *6* B(M1)(W.u.)=7.3×10^{-9} *9*
		228.6 *1*	1.5 *3*	1959.36	9−	[E1]	0.0343	α(K)=0.0290 *4*; α(L)=0.00417 *6*; α(M)=0.000911 *13* α(N)=0.000209 *3*; α(O)=2.95×10^{-5} *5*; α(P)=1.489×10^{-6} *21* B(E1)(W.u.)=1.86×10^{-11} *37*
		248.0 *1*	0.4 *1*	1939.65	9−	[E1]	0.0278	α(K)=0.0235 *4*; α(L)=0.00336 *5*; α(M)=0.000735 *11* α(N)=0.0001684 *24*; α(O)=2.39×10^{-5} *4*; α(P)=1.219×10^{-6} *18* B(E1)(W.u.)=3.9×10^{-12} *10*
		300.3 *1*	4.0 *3*	1887.67	7+	[M1]	0.1126	α(K)=0.0951 *14*; α(L)=0.01370 *20*; α(M)=0.00300 *5* α(N)=0.000695 *10*; α(O)=0.0001019 *15*; α(P)=5.87×10^{-6} *9* B(M1)(W.u.)=2.11×10^{-9} *18*
		341.8 *1*	0.9 *2*	1845.53	8−	[E1]	0.01248	α(K)=0.01058 *15*; α(L)=0.001485 *21*; α(M)=0.000324 *5* α(N)=7.44×10^{-5} *11*; α(O)=1.065×10^{-5} *15*; α(P)=5.64×10^{-7} *8* B(E1)(W.u.)=3.3×10^{-12} *7*
		380.2 *1*	65 *2*	1807.56	8−	[E1]	0.00966	α(K)=0.00820 *12*; α(L)=0.001144 *16*; α(M)=0.000249 *4* α(N)=5.73×10^{-5} *8*; α(O)=8.23×10^{-6} *12*; α(P)=4.40×10^{-7} *7* B(E1)(W.u.)=1.75×10^{-10} *7*
		435.4 *1*	1.3 *2*	1751.881	6+	[E2]	0.0219	α(K)=0.01739 *25*; α(L)=0.00352 *5*; α(M)=0.000798 *12* α(N)=0.000182 *3*; α(O)=2.48×10^{-5} *4*; α(P)=9.59×10^{-7} *14* B(E2)(W.u.)=5.8×10^{-7} *9*
		504.3 *1*	100 *1*	1683.35	7−	[E1]	0.00504	α(K)=0.00429 *6*; α(L)=0.000589 *9*; α(M)=0.0001282 *18* α(N)=2.95×10^{-5} *5*; α(O)=4.26×10^{-6} *6*; α(P)=2.34×10^{-7} *4* B(E1)(W.u.)=1.153×10^{-10} *+47−43*
		550.3 *1*	6.2 *4*	1637.92	7−	[E1]	0.00416	α(K)=0.00354 *5*; α(L)=0.000484 *7*; α(M)=0.0001053 *15*

Adopted Levels, Gammas (continued)

γ(^{162}Dy) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$[†‡#]	I$_\gamma$	E$_f$	J$^\pi_f$	Mult.[&]	α[a]	Comments
								α(N)=2.42×10^{-5} *4*; α(O)=3.51×10^{-6} *5*; α(P)=1.94×10^{-7} *3* B(E1)(W.u.)=5.50×10^{-12} *+41−39*
2187.9	8$^+$	1266.5 *2*	0.6 *2*	921.28	8$^+$	[M1]	0.00303	α(K)=0.00257 *4*; α(L)=0.000352 *5*; α(M)=7.68×10^{-5} *11* α(N)=1.778×10^{-5} *25*; α(O)=2.62×10^{-6} *4*; α(P)=1.543×10^{-7} *22*; α(IPF)=1.618×10^{-5} *23* B(M1)(W.u.)=4.2×10^{-12} *+13−14*
		1639.2 *2*	1.0 *2*	548.520	6$^+$	[E2]	1.28×10^{-3}	α(K)=0.000980 *14*; α(L)=0.0001350 *19*; α(M)=2.94×10^{-5} *5* α(N)=6.80×10^{-6} *10*; α(O)=9.93×10^{-7} *14*; α(P)=5.66×10^{-8} *8*; α(IPF)=0.0001243 *18* B(E2)(W.u.)=5.9×10^{-10} *12*
2189.71	(2$^+$)	1226.4 *2*	66 *19*	962.940	3$^+$			
		2110.0 *4*	100 *16*	80.661	2$^+$			
		2190.8 *6*	22 *9*	0.0	0$^+$			
2211.59	9$^+$	170.7 *2*	63 *7*	2040.97	8$^+$	E2+M1	0.47 *7*	α(K)=0.349 *96*; α(L)=0.090 *26*; α(M)=0.0207 *66* α(N)=0.0047 *15*; α(O)=0.00062 *15*; α(P)=1.96×10^{-5} *80*
		323.9 *1*	100 *7*	1887.67	7$^+$	E2	0.0512	α(K)=0.0389 *6*; α(L)=0.00953 *14*; α(M)=0.00219 *3* α(N)=0.000497 *7*; α(O)=6.59×10^{-5} *10*; α(P)=2.05×10^{-6} *3*
		333.9 *2*	30 *4*	1878.05	9$^+$	E2+M1	0.066 *20*	α(K)=0.054 *18*; α(L)=0.0094 *9*; α(M)=0.00211 *16* α(N)=0.00048 *4*; α(O)=6.8×10^{-5} *9*; α(P)=3.2×10^{-6} *13*
		541.4 *2*	11	1670.505	8$^+$			
2234.18	10$^-$	356.2 *1*	62 *3*	1878.05	9$^+$			
		388.5 *1*	100 *3*	1845.53	8$^-$			
2262.30	10$^+$	276.6[e] *2*	<50	1985.88	8$^+$			
		887.3 *1*	100	1375.08	10$^+$	M1	0.00710	α(K)=0.00603 *9*; α(L)=0.000837 *12*; α(M)=0.000183 *3* α(N)=4.23×10^{-5} *6*; α(O)=6.22×10^{-6} *9*; α(P)=3.64×10^{-7} *6* Mult.: from (α,2nγ), α(K)exp=0.0082 *12*, which gives mult=M1.
		1340.9 *5*	≤77	921.28	8$^+$			from (α,2nγ). γ not reported in (^{7}Li,p4nγ).
2280.88	11$^-$	905.8 *1*	100	1375.08	10$^+$	E1	1.50×10^{-3}	α(K)=0.001286 *18*; α(L)=0.0001713 *24*; α(M)=3.72×10^{-5} *6* α(N)=8.58×10^{-6} *12*; α(O)=1.251×10^{-6} *18*; α(P)=7.16×10^{-8} *10* Mult.: from (α,2nγ), α(K)exp≤0.0013, which gives mult=E1.
2292.4	5$^+$	1231.4	2.2×10^2 *7*	1060.991	4$^+$			
		1329.4	100	962.940	3$^+$			
2314.1		2233.3 *5*	100 *16*	80.661	2$^+$			
		2315.1[c] *12*	97[c] *30*	0.0	0$^+$			
2330.95	11$^-$	370.9 *1*	53 *6*	1959.36	9$^-$			γ not reported in (α,2nγ).
		430.4 *2*	12	1901.10	12$^+$			I$_\gamma$: from Iγ(430.4γ)/Iγ(957.0γ) in (α,2nγ) and Iγ(955.8γ). γ not reported in the heavy-ion studies.
		955.8 *1*	100 *6*	1375.08	10$^+$			
2337.35	11$^+$	459.1 *1*	100 *4*	1878.05	9$^+$			
		962.3 *1*	46 *2*	1375.08	10$^+$			

$^{162}_{66}$Dy$_{96}$-39

Adopted Levels, Gammas (continued)

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[†‡#]	I_γ	E_f	J_f^π	Mult.[&]	α[a]	Comments
2368.9	(9^+)	181	100	2187.9	8^+			
2371.3	$1^-,2,3$	1161.1 *6*	52 *10*	1210.089	3^-			
		1223.0 *6*	100 *13*	1148.232	2^-			
		1483.3 *5*	35 *10*	888.161	2^+			
		2290.2 *10*	16 *3*	80.661	2^+			
2394.85	1^+	2314.1 *2*	51 *3*	80.661	2^+	[M1]	1.26×10^{-3}	B(M1)(W.u.)=0.0540 *+47−43* α(K)=0.000640 *9*; α(L)=8.63×10^{-5} *12*; α(M)=1.88×10^{-5} *3* α(N)=4.34×10^{-6} *6*; α(O)=6.41×10^{-7} *9*; α(P)=3.81×10^{-8} *6*; α(IPF)=0.000514 *8*
		2394.9 *2*	100 *5*	0.0	0^+	M1	1.25×10^{-3}	B(M1)(W.u.)=0.096 *+7−6* α(K)=0.000593 *9*; α(L)=7.98×10^{-5} *12*; α(M)=1.737×10^{-5} *25* α(N)=4.02×10^{-6} *6*; α(O)=5.93×10^{-7} *9*; α(P)=3.52×10^{-8} *5*; α(IPF)=0.000560 *8* B(M1)(W.u.) computed directly from B(M1)↑.
2398.27	10^+	186.6[e]		2211.59	9^+			Eγ and placement is from (α,2nγ).
		357.3 *2*	100	2040.97	8^+			E_γ: from (α,2nγ).
2421.0	6^+	1238.2	100	1182.763	5^+			
2482.34	12^-	151.0 *1*	11 *2*	2330.95	11^-			
		202.0 *1*	20 *2*	2280.88	11^-			
		371.9 *1*	100 *5*	2110.70	10^-			
2491.65	14^+	590.6 *1*	100	1901.10	12^+	[E2]	0.00995	B(E2)(W.u.)=330 *+42−33* α(K)=0.00812 *12*; α(L)=0.001421 *20*; α(M)=0.000318 *5* α(N)=7.29×10^{-5} *11*; α(O)=1.018×10^{-5} *15*; α(P)=4.61×10^{-7} *7*
2503.83	11^-	403.3 *2*	<33	2100.66	9^-			
		602.7 *2*	36 *7*	1901.10	12^+			E_γ,I_γ: from (α,2nγ). γ not reported in the heavy-ion studies.
		1129.0 *2*	100	1375.08	10^+	E1	1.00×10^{-3}	α(K)=0.000855 *12*; α(L)=0.0001128 *16*; α(M)=2.45×10^{-5} *4* α(N)=5.65×10^{-6} *8*; α(O)=8.26×10^{-7} *12*; α(P)=4.78×10^{-8} *7*; α(IPF)=4.47×10^{-6} *7* Mult.: from (α,2nγ), α(K)exp=0.0008 *2*, which is interpreted as E1, but peak is doublet including an E1 γ from the 1210 level.
2510.3		2429.6 *10*	100	80.661	2^+			
2520.4	1^-	2440	100	80.661	2^+	[E1]	1.14×10^{-3}	B(E1)(W.u.)=0.00113 *+11−9* α(K)=0.000237 *4*; α(L)=3.06×10^{-5} *5*; α(M)=6.61×10^{-6} *10* α(N)=1.528×10^{-6} *22*; α(O)=2.25×10^{-7} *4*; α(P)=1.333×10^{-8} *19*; α(IPF)=0.000863 *12*
		2520	84 *6*	0.0	0^+	E1	1.18×10^{-3}	B(E1)(W.u.)=8.6×10^{-4} *+8−7* α(K)=0.000226 *4*; α(L)=2.91×10^{-5} *4*; α(M)=6.29×10^{-6} *9* α(N)=1.452×10^{-6} *21*; α(O)=2.14×10^{-7} *3*; α(P)=1.269×10^{-8} *18*; α(IPF)=0.000912 *13* B(E1)(W.u.) computed directly from B(E1)↑.

Adopted Levels, Gammas (continued)

γ(^{162}Dy) (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	α[a]	Comments
2534.86	12^+	272.6[e] *2*	6.2 *11*	2262.30	10^+	[E2]	0.0868	B(E2)(W.u.)=2.4×10^2 *+3−4* α(K)=0.0637 *9*; α(L)=0.0179 *3*; α(M)=0.00413 *6* α(N)=0.000937 *14*; α(O)=0.0001221 *18*; α(P)=3.26×10^{-6} *5* I_γ: computed from Iγ(272γ)/Iγ(447γ) in (^{162}Dy,^{162}Dy$'\gamma$) and Iγ(447). 2002Ju08, (^{7}Li,p4nγ), report Iγ<15. B(E2)(W.u.) is from 2001Wu05 (^{162}Dy,^{162}Dy$'\gamma$).
		447.3 *1*	100 *3*	2087.49	10^+	[E2]	0.0204	B(E2)(W.u.)=3.2×10^2 *+1−11* α(K)=0.01621 *23*; α(L)=0.00324 *5*; α(M)=0.000732 *11* α(N)=0.0001672 *24*; α(O)=2.28×10^{-5} *4*; α(P)=8.97×10^{-7} *13* B(E2)(W.u.) is from 2001Wu05 (^{162}Dy,^{162}Dy$'\gamma$).
		633.6 *1*	74 *3*	1901.10	12^+			
		1160.1 *2*	29 *3*	1375.08	10^+			I_γ: from 2002Ju08, (^{7}Li,p4nγ). 2001Wu05, in (^{162}Dy,^{162}Dy$'\gamma$), report Iγ(1160γ)/Iγ(633γ)=1.36 *16*.
2537.4	1	2457	26 *13*	80.661	2^+			
		2537	100	0.0	0^+			
2554.3		2473.6 *6*	100 *13*	80.661	2^+			
		2554.5 *10*	47 *13*	0.0	0^+			
2567.9	(10^+)	199		2368.9	(9^+)			
		380		2187.9	8^+			
2569.4	1^+	2489	39 *8*	80.661	2^+	[M1]	1.25×10^{-3}	B(M1)(W.u.)=0.0102 *18* α(K)=0.000544 *8*; α(L)=7.32×10^{-5} *11*; α(M)=1.592×10^{-5} *23* α(N)=3.68×10^{-6} *6*; α(O)=5.43×10^{-7} *8*; α(P)=3.23×10^{-8} *5*; α(IPF)=0.000613 *9*
		2569	100	0.0	0^+	M1	1.25×10^{-3}	B(M1)(W.u.)=0.0239 *+32−25* α(K)=0.000507 *8*; α(L)=6.82×10^{-5} *10*; α(M)=1.482×10^{-5} *21* α(N)=3.43×10^{-6} *5*; α(O)=5.06×10^{-7} *7*; α(P)=3.01×10^{-8} *5*; α(IPF)=0.000657 *10* B(M1)(W.u.) computed directly from B(M1)↑.
2601.32	11^+	263.3 *2*	<83	2337.35	11^+			
		389.9 *1*	100 *17*	2211.59	9^+			
2622.78	12^+	360.8[@] *2*	8×10^1[@] *4*	2262.30	10^+	[E2]	0.0372	B(E2)(W.u.)=9×10^1 *+2−7* α(K)=0.0288 *4*; α(L)=0.00655 *10*; α(M)=0.001494 *22* α(N)=0.000340 *5*; α(O)=4.56×10^{-5} *7*; α(P)=1.548×10^{-6} *22* B(E2)(W.u.) is from 2001Wu05 (^{162}Dy,^{162}Dy$'\gamma$).
		535.5[@] *1*	6.6×10^2[@] *9*	2087.49	10^+	[E2]	0.01270	B(E2)(W.u.)=95 *+8−29* α(K)=0.01029 *15*; α(L)=0.00188 *3*; α(M)=0.000422 *6* α(N)=9.66×10^{-5} *14*; α(O)=1.339×10^{-5} *19*; α(P)=5.79×10^{-7} *9* B(E2)(W.u.) is from 2001Wu05 (^{162}Dy,^{162}Dy$'\gamma$).
		721.7[@] *1*	100[@]	1901.10	12^+			

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[†‡#]	I_γ	E_f	J_f^π	Mult.[&]	α[a]	Comments
2622.78	12^+	1247.9[@] 2	3.4×10^2[@] 5	1375.08	10^+			
2663.0	0^+	2663.0 8	100	0.0	0^+			
2670.65	12^-	333.6 2	19	2337.35	11^+			E_γ,I_γ: values from (α,2nγ). γ not reported in the heavy-ion studies.
		436.4 1	100	2234.18	10^-			
2682.59	13^-	402.0 1	42 3	2280.88	11^-			
		781.6 1	100 3	1901.10	12^+			
2695.9	(10^+)	327	100	2368.9	(9^+)			
2777.99	13^-	446.1 2	<25	2330.95	11^-			
		877.0 1	100 5	1901.10	12^+			
2784.9	(11^+)	217		2567.9	(10^+)			
		416		2368.9	(9^+)			
2802.7	0^+	2721.3 9	50 19	80.661	2^+			
		2803.2 8	100 19	0.0	0^+			
2815	1	2735	90 30	80.661	2^+			
		2815	100	0.0	0^+			
2817	12^+	419	100	2398.27	10^+			
2859.63	13^+	522.2 1	100 3	2337.35	11^+			
		958.5 1	32 3	1901.10	12^+			
2900.0	1^+	2819.0 4	46 2	80.661	2^+	[M1]	1.27×10^{-3}	B(M1)(W.u.)=0.152 11 α(K)=0.000413 6; α(L)=5.54×10^{-5} 8; α(M)=1.204×10^{-5} 17 α(N)=2.79×10^{-6} 4; α(O)=4.11×10^{-7} 6; α(P)=2.45×10^{-8} 4; α(IPF)=0.000790 11 I_γ: from (γ,γ'). Other: 56 25 from (n,n'γ).
		2900.3 4	100	0.0	0^+	M1	1.29×10^{-3}	B(M1)(W.u.)=0.302 19 α(K)=0.000389 6; α(L)=5.20×10^{-5} 8; α(M)=1.131×10^{-5} 16 α(N)=2.62×10^{-6} 4; α(O)=3.86×10^{-7} 6; α(P)=2.30×10^{-8} 4; α(IPF)=0.000832 12 B(M1)(W.u.) computed directly from B(M1)↑.
2909.4	1	2829	100 28	80.661	2^+			
		2909	56	0.0	0^+			
2919.55	14^-	237.0 2	<10	2682.59	13^-			
		437.2 1	100 4	2482.34	12^-			
2929.4	1^-	2849	56 8	80.661	2^+	[E1]	1.32×10^{-3}	B(E1)(W.u.)=1.76×10^{-4} +27−24 α(K)=0.000187 3; α(L)=2.41×10^{-5} 4; α(M)=5.20×10^{-6} 8 α(N)=1.202×10^{-6} 17; α(O)=1.771×10^{-7} 25; α(P)=1.053×10^{-8} 15; α(IPF)=0.001104 16
		2929	100	0.0	0^+	E1	1.35×10^{-3}	B(E1)(W.u.)=2.90×10^{-4} +38−31 α(K)=0.000180 3; α(L)=2.31×10^{-5} 4; α(M)=4.99×10^{-6} 7 α(N)=1.153×10^{-6} 17; α(O)=1.698×10^{-7} 24; α(P)=1.010×10^{-8} 15; α(IPF)=0.001143 16

γ(^{162}Dy) (continued)

E_i(level)	J_i^π	E_γ[†‡#]	I_γ	E_f	J_f^π	Mult.[&]	α[a]	Comments
2934.55	14$^+$	311.6 *2*	5.1 *8*	2622.78	12$^+$	[E2]	0.0575	B(E2)(W.u.)=53 *+65−19* α(K)=0.0434 *7*; α(L)=0.01094 *16*; α(M)=0.00251 *4* α(N)=0.000571 *9*; α(O)=7.54×10^{-5} *11*; α(P)=2.28×10^{-6} *4* I_γ: from 2001Wu05 (1620y,^{162}Dy′γ). 2002Ju08, (^{7}Li,p4nγ), report Iγ<13. B(E2)(W.u.) is from 2001Wu05 (^{162}Dy,^{162}Dy′γ).
		399.8 *1*	100 *3*	2534.86	12$^+$	[E2]	0.0278	B(E2)(W.u.)=3.1×10^2 *+8−11* α(K)=0.0218 *3*; α(L)=0.00464 *7*; α(M)=0.001055 *15* α(N)=0.000241 *4*; α(O)=3.25×10^{-5} *5*; α(P)=1.189×10^{-6} *17* B(E2)(W.u.) is from 2001Wu05 (^{162}Dy,^{162}Dy′γ).
		442.7 *1*	21 *3*	2491.65	14$^+$			
		1033.8 *2*	16 *3*	1901.10	12$^+$			
2963.94	13$^-$	460.2 *1*	100 *9*	2503.83	11$^-$			
		1062.6 *2*	100 *9*	1901.10	12$^+$			
		1588.6 *3*		1375.08	10$^+$			γ placed only by 2006Ap01 (α,2nγ).
2965	1$^+$	2885	42 *10*	80.661	2$^+$	[M1]	1.28×10^{-3}	B(M1)(W.u.)=0.0082 *+20−18* α(K)=0.000393 *6*; α(L)=5.26×10^{-5} *8*; α(M)=1.144×10^{-5} *16* α(N)=2.65×10^{-6} *4*; α(O)=3.91×10^{-7} *6*; α(P)=2.33×10^{-8} *4*; α(IPF)=0.000824 *12*
		2965	100	0.0	0$^+$	M1	1.30×10^{-3}	B(M1)(W.u.)=0.0180 *+37−25* α(K)=0.000370 *6*; α(L)=4.96×10^{-5} *7*; α(M)=1.077×10^{-5} *15* α(N)=2.49×10^{-6} *4*; α(O)=3.68×10^{-7} *6*; α(P)=2.19×10^{-8} *3*; α(IPF)=0.000866 *13* B(M1)(W.u.) computed directly from B(M1)↑.
3052.82	13$^+$	451.5 *1*	100	2601.32	11$^+$			
3061.2	1$^+$	2980.3 *4*	29 *8*	80.661	2$^+$	[M1]	1.30×10^{-3}	B(M1)(W.u.)=0.048 *+11−12* α(K)=0.000366 *6*; α(L)=4.90×10^{-5} *7*; α(M)=1.065×10^{-5} *15* α(N)=2.46×10^{-6} *4*; α(O)=3.64×10^{-7} *5*; α(P)=2.17×10^{-8} *3*; α(IPF)=0.000873 *13* I_γ: from (γ,γ′). Other: 41 *6* from (n,n′γ).
		3061.4 *4*	100	0.0	0$^+$	M1	1.32×10^{-3}	B(M1)(W.u.)=0.152 *+21−17* α(K)=0.000345 *5*; α(L)=4.62×10^{-5} *7*; α(M)=1.004×10^{-5} *14* α(N)=2.32×10^{-6} *4*; α(O)=3.43×10^{-7} *5*; α(P)=2.04×10^{-8} *3*; α(IPF)=0.000914 *13* B(M1)(W.u.) computed directly from B(M1)↑.
3123.25	14$^-$	452.6 *1*	100	2670.65	12$^-$			
3138.55	16$^+$	647.0 *1*	100	2491.65	14$^+$			
3145.63	15$^-$	463.2 *1*	100 *3*	2682.59	13$^-$			
		654.2 *1*	66 *3*	2491.65	14$^+$			
3145.64	14$^+$	523.2 *1*	82 *6*	2622.78	12$^+$	[E2]	0.01348	B(E2)(W.u.)=3.2×10^2 *6*

$^{162}_{66}$Dy$_{96}$-43

γ(^{162}Dy) (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Mult.[&]	α[a]	Comments
								α(K)=0.01090 *16*; α(L)=0.00201 *3*; α(M)=0.000452 *7* α(N)=0.0001034 *15*; α(O)=1.432×10^{-5} *20*; α(P)=6.12×10^{-7} *9* I_γ: from 2002Ju08, (^{7}Li,p4nγ). The value from 2001Wu05 in (^{162}Dy,^{162}Dy′γ) differs from this. B(E2)(W.u.) is from 2001Wu05 (^{162}Dy,^{162}Dy′γ).
3145.64	14$^+$	610.5 *1*	100 *6*	2534.86	12$^+$	[E2]	0.00917	B(E2)(W.u.)=63 *21* α(K)=0.00751 *11*; α(L)=0.001296 *19*; α(M)=0.000290 *4* α(N)=6.64×10^{-5} *10*; α(O)=9.30×10^{-6} *13*; α(P)=4.27×10^{-7} *6* I_γ: from 2002Ju08, (^{7}Li,p4nγ). The value from 2001Wu05 in (^{162}Dy,^{162}Dy′γ) differs from this. B(E2)(W.u.) is from 2001Wu05 (^{162}Dy,^{162}Dy′γ).
		1244.2 *2*	29 *6*	1901.10	12$^+$			I_γ: from 2002Ju08, (^{7}Li,p4nγ). The value from 2001Wu05 in (^{162}Dy,^{162}Dy′γ) differs from this.
3269	14$^+$	452	100	2817	12$^+$			
3293.21	15$^-$	515.1 *1*	46 *8*	2777.99	13$^-$			
		801.6 *1*	100 *8*	2491.65	14$^+$			
3373.94	16$^+$	439.4 *1*	100 *3*	2934.55	14$^+$			
		882.2 *2*	<13	2491.65	14$^+$			
3415.95	16$^-$	496.4 *1*	100	2919.55	14$^-$			
3434.04	15$^+$	574.3 *1*	100 *4*	2859.63	13$^+$			
		942.5 *1*	21 *4*	2491.65	14$^+$			
3474.84	15$^-$	510.9 *1*	100	2963.94	13$^-$			
3564.22	15$^+$	511.4 *1*	100	3052.82	13$^+$			
3627.26	16$^-$	504.0 *1*	100	3123.25	14$^-$			
3666.92	17$^-$	521.1 *1*	100	3145.63	15$^-$			
3734.23	16$^+$	588.6 *1*	100	3145.64	14$^+$			
3830.93	18$^+$	692.4 *1*	100	3138.55	16$^+$			
3835	16$^+$	566	100	3269	14$^+$			
3874.28	17$^-$	581.0 *1*	100 *10*	3293.21	15$^-$			
		735.8 *1*	60 *10*	3138.55	16$^+$			
3878.37	18$^+$	504.4 *1*	100 *4*	3373.94	16$^+$			
		739.8 *1*	67 *4*	3138.55	16$^+$			
3966.65	18$^-$	550.7 *1*	100	3415.95	16$^-$			
4037.24	17$^-$	562.4 *1*	100	3474.84	15$^-$			
4039.64	17$^+$	605.6 *1*	100	3434.04	15$^+$			
4195.56	18$^-$	568.3 *1*	100	3627.26	16$^-$			
4243.52	19$^-$	576.6 *1*	100	3666.92	17$^-$			
4342.53	18$^+$	608.3 *1*	100	3734.23	16$^+$			
4434.60	20$^+$	556.2 *1*	100 *6*	3878.37	18$^+$			
		603.7 *1*	88 *6*	3830.93	18$^+$			
4516.28	19$^-$	642.0 *1*	100	3874.28	17$^-$			
4568.76	20$^-$	602.1 *1*	100	3966.65	18$^-$			

$^{162}_{66}$Dy$_{96}$-44

$\gamma(^{162}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†‡#]	I_γ	E_f	J^π_f	Comments
4577.73	20^+	746.8 *1*	100	3830.93	18^+	E_γ: from 2002Ju08, (^{7}Li,p4nγ).
4650.55	19^-	613.3 *1*	100	4037.24	17^-	
4873.42	21^-	629.9 *1*	100	4243.52	19^-	
5061.80	22^+	627.2 *1*	100	4434.60	20^+	
5221.06	22^-	652.3 *1*	100	4568.76	20^-	
5352.0	22^+	774.3 *2*	<100	4577.73	20^+	
5554.13	23^-	680.7 *1*	100	4873.42	21^-	
5747.20	24^+	685.4 *1*	100	5061.80	22^+	
5920.9	24^-	699.8 *2*	<100	5221.06	22^-	
6153.2	24^+	801.2 *2*	<100	5352.0	22^+	
6488.7	26^+	741.5 *2*	<100	5747.20	24^+	
7276.0	28^+	787.3 *2*	<100	6488.7	26^+	

[†] Unplaced γ′s are not listed here, see: ^{162}Tb β^- decay; ^{162}Ho ε decay (15 min and 67 min); ^{161}Dy(n,γ) E=th; and ^{162}Dy(n,n′γ).

[‡] Values are from evaluator′s selection of the best value, or an average of a few values. Some values without uncertainties are quoted in table 5 of 1995Be02 from unpublished curved-crystal spectrometer data from ^{161}Dy(n,γ) E=th. Where Eγ values are measured in the curved-crystal-based (n,γ) study of 2006Ap01, these values are generally used.

[#] The primary γ′s from the capture state for thermal, 2-keV, and 24-keV neutron capture are not included here. See the three ^{161}Dy(n,γ) data sets for these data.

[@] The listed Eγ values are from 2002Ju08, (^{7}Li,p4nγ). The Iγ values are from 2001Wu05, (^{162}Dy,^{162}Dy′γ). They differ markedly from those of 2002Ju08, (^{7}Li,p4nγ).

[&] Assignments and values are based on the following: ce data from (n,γ) (1967Ba34,2006Ap01), (α,2nγ) (1982Fi15), and ^{162}Ho ε decay (1961Ha23, 1961Jo10); $\gamma(\theta)$ following (α,2nγ) (1982Fi15) and (n,n′γ) (1977Ho11); and $\gamma\gamma(\theta)$ following (n,γ) (1980Hu06) and Coulomb excitation (1972Do01).

[a] Additional information 25.

[b] If no value given it was assumed δ=1.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.

[c] Multiply placed with undivided intensity.

[d] Multiply placed with intensity suitably divided.

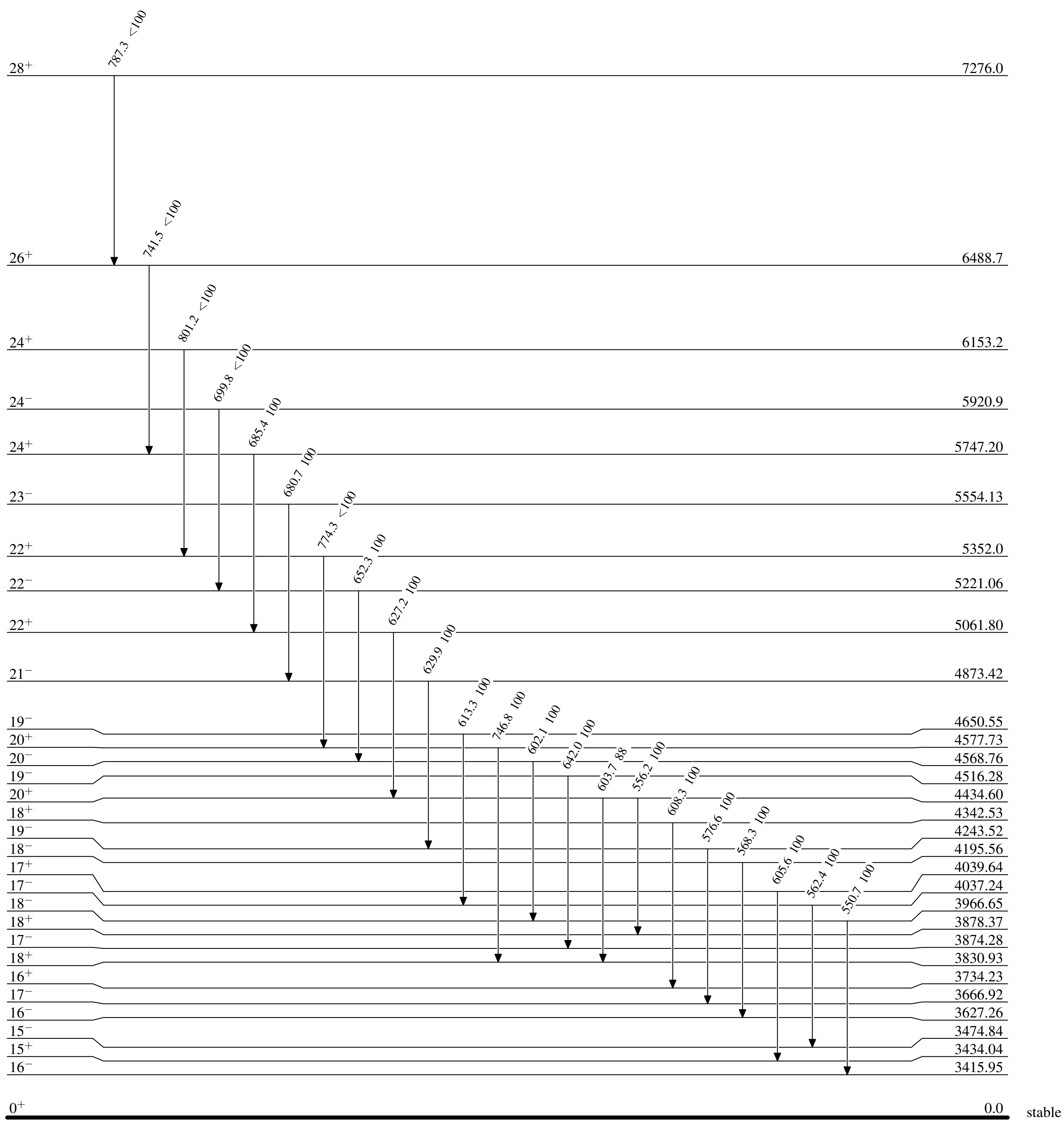
[e] Placement of transition in the level scheme is uncertain.

$^{162}_{66}Dy_{96}$-45

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

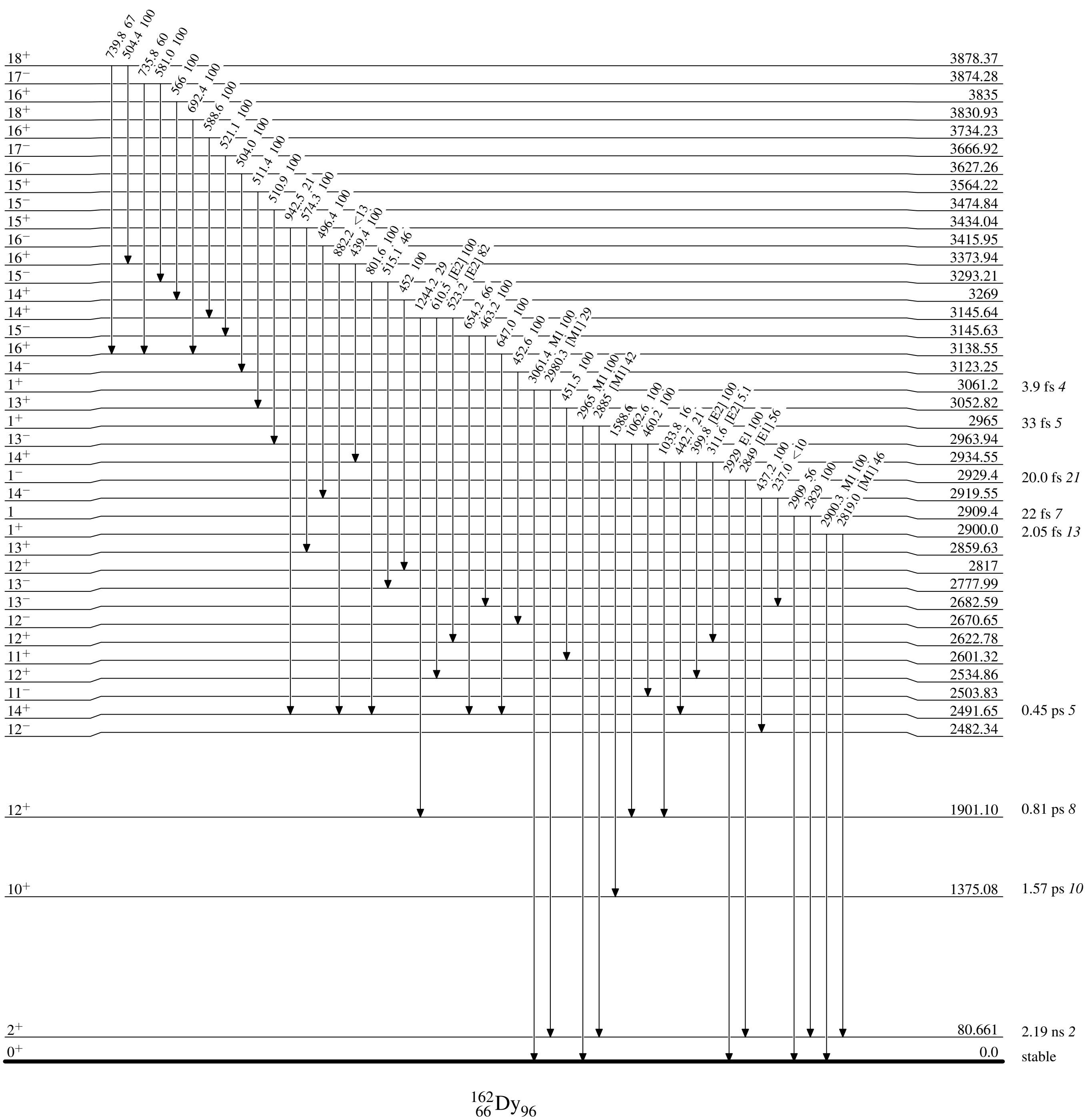


$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

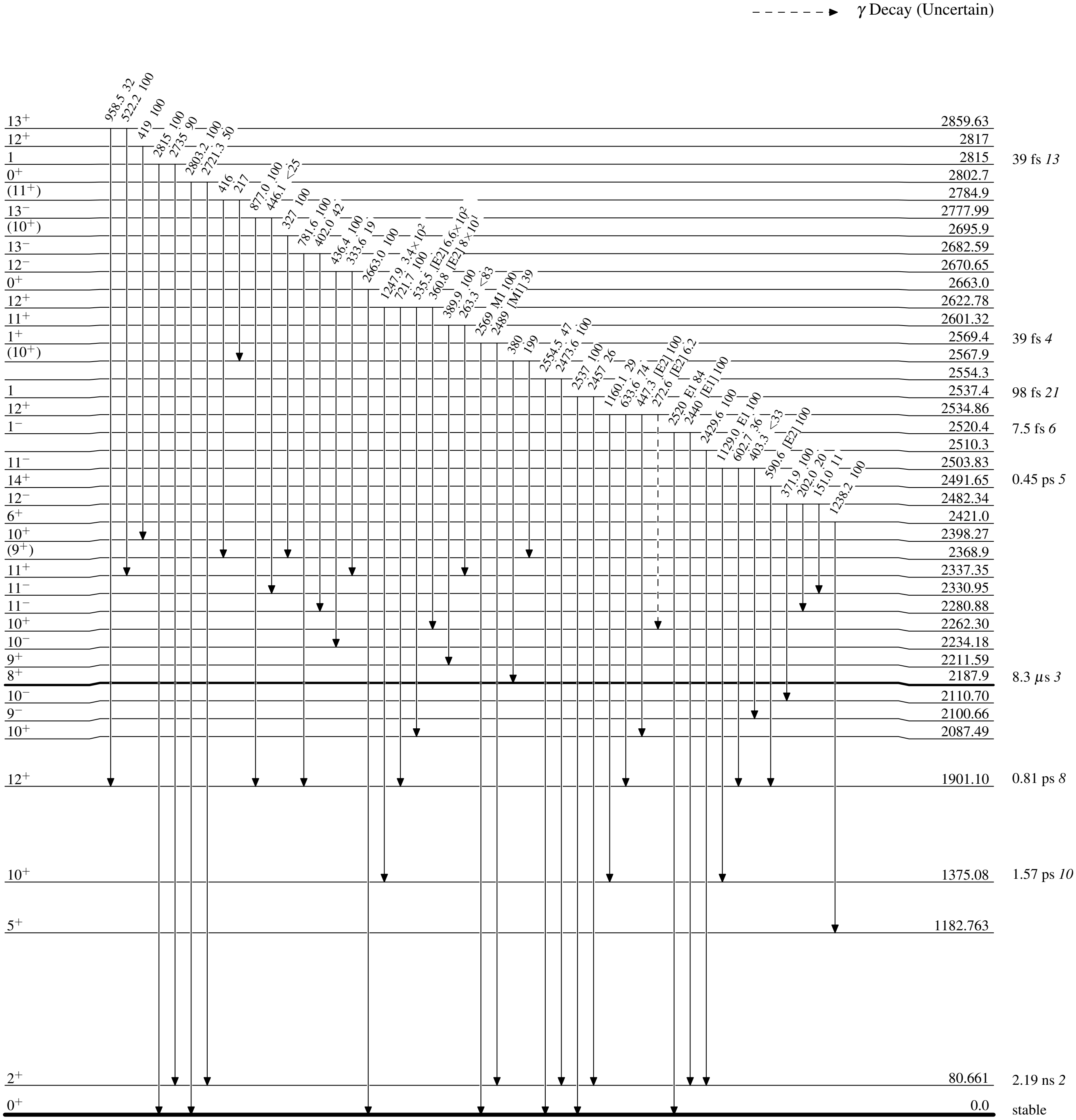


Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

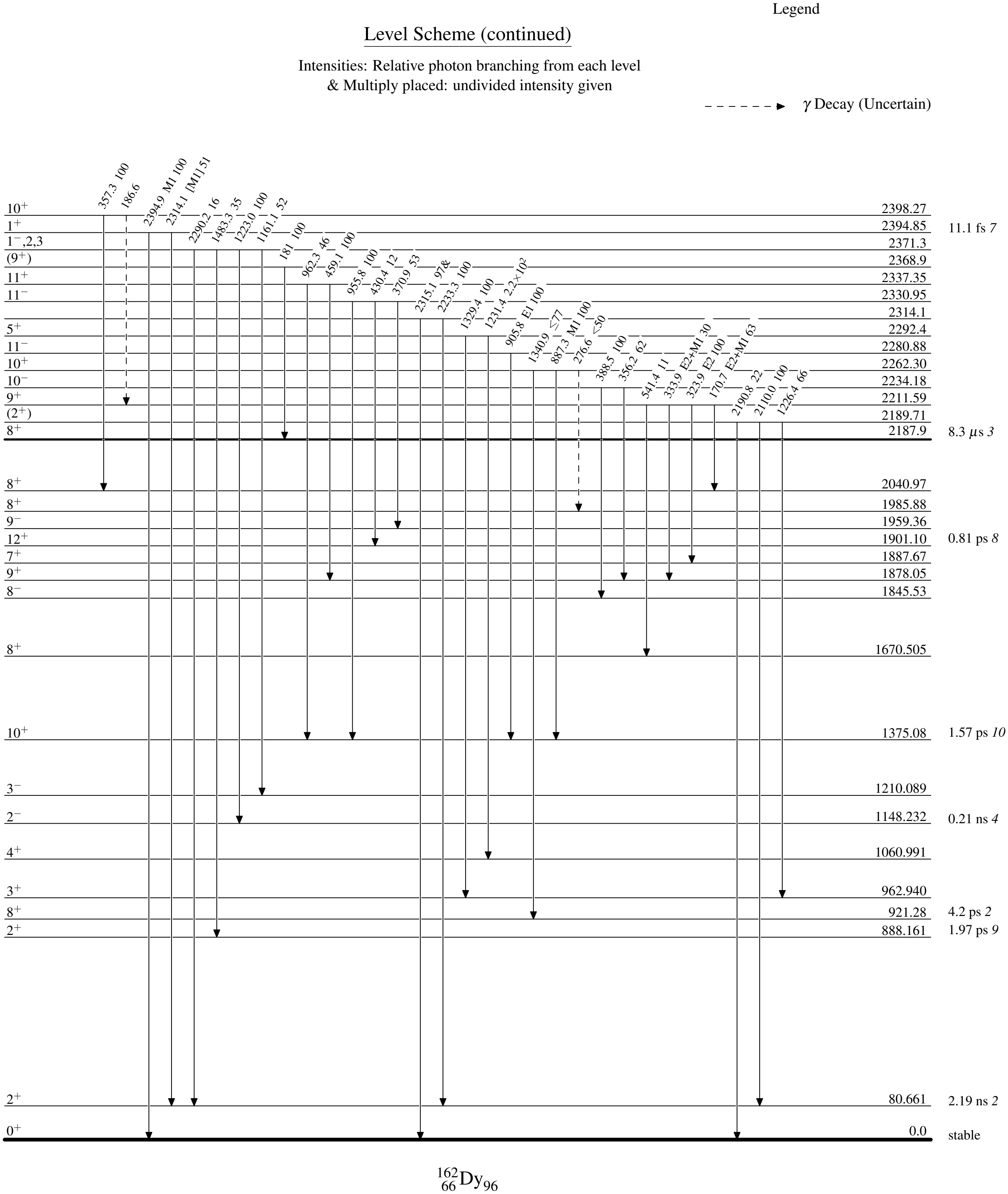


$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

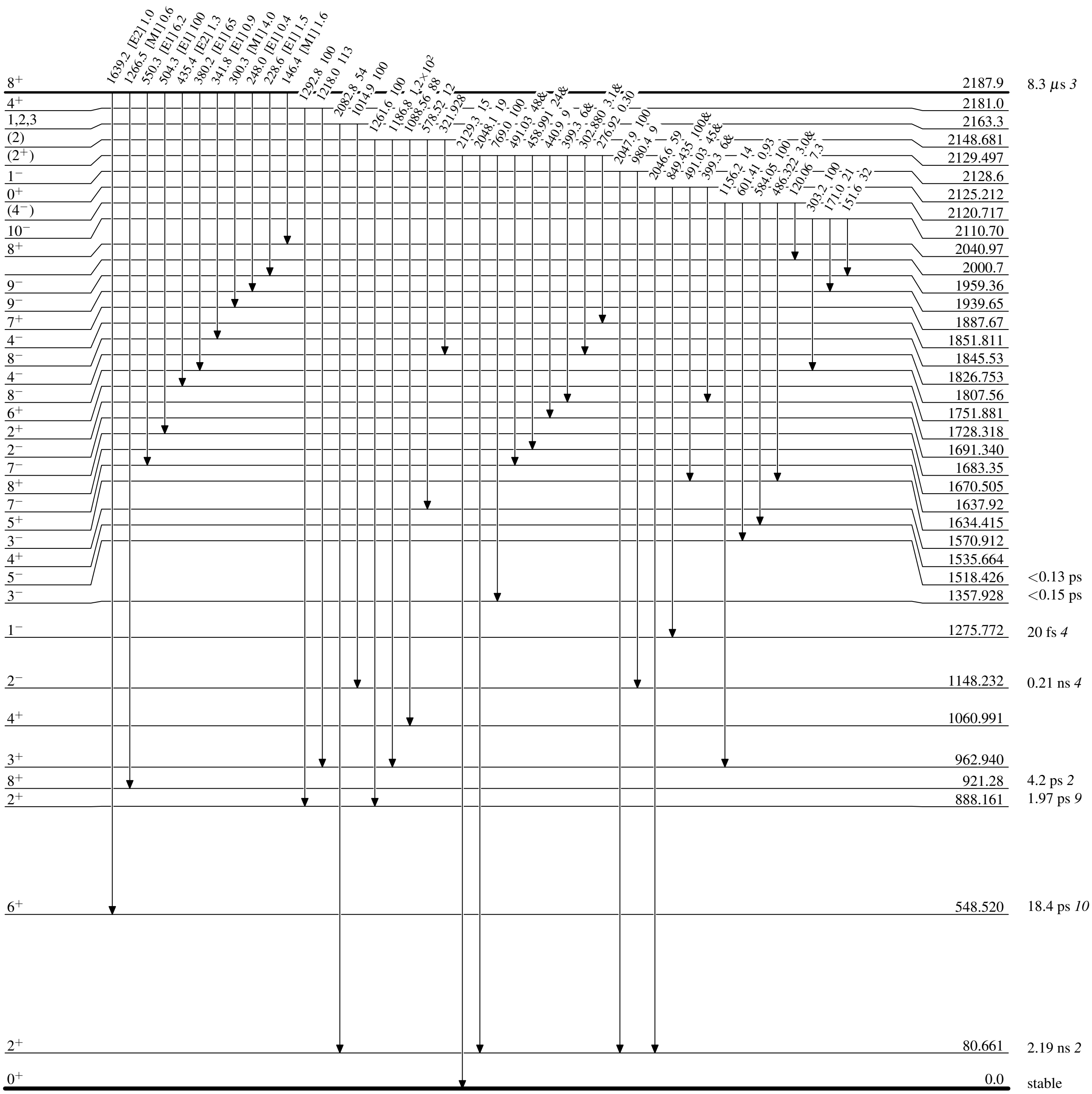


Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

& Multiply placed: undivided intensity given

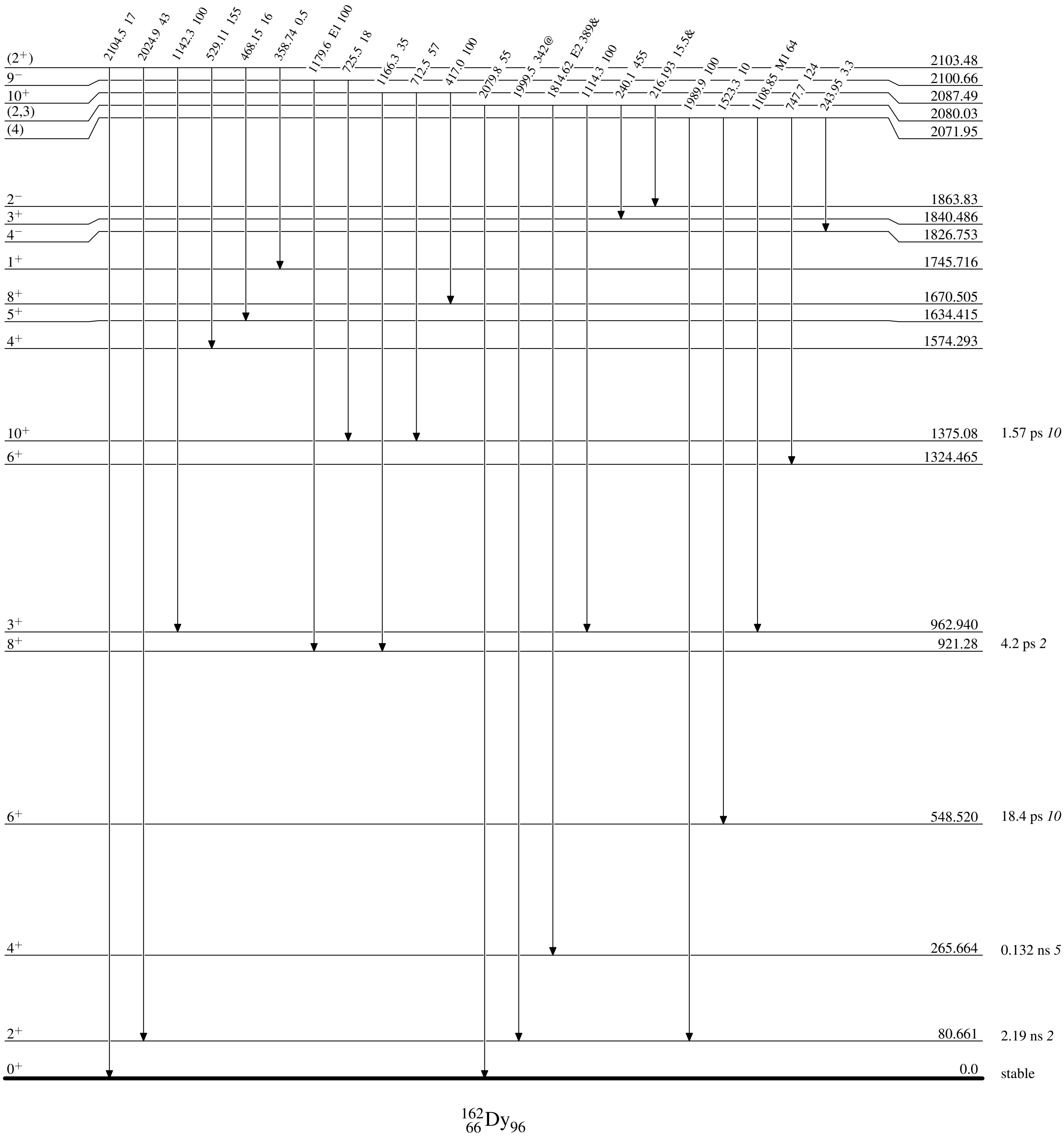


$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



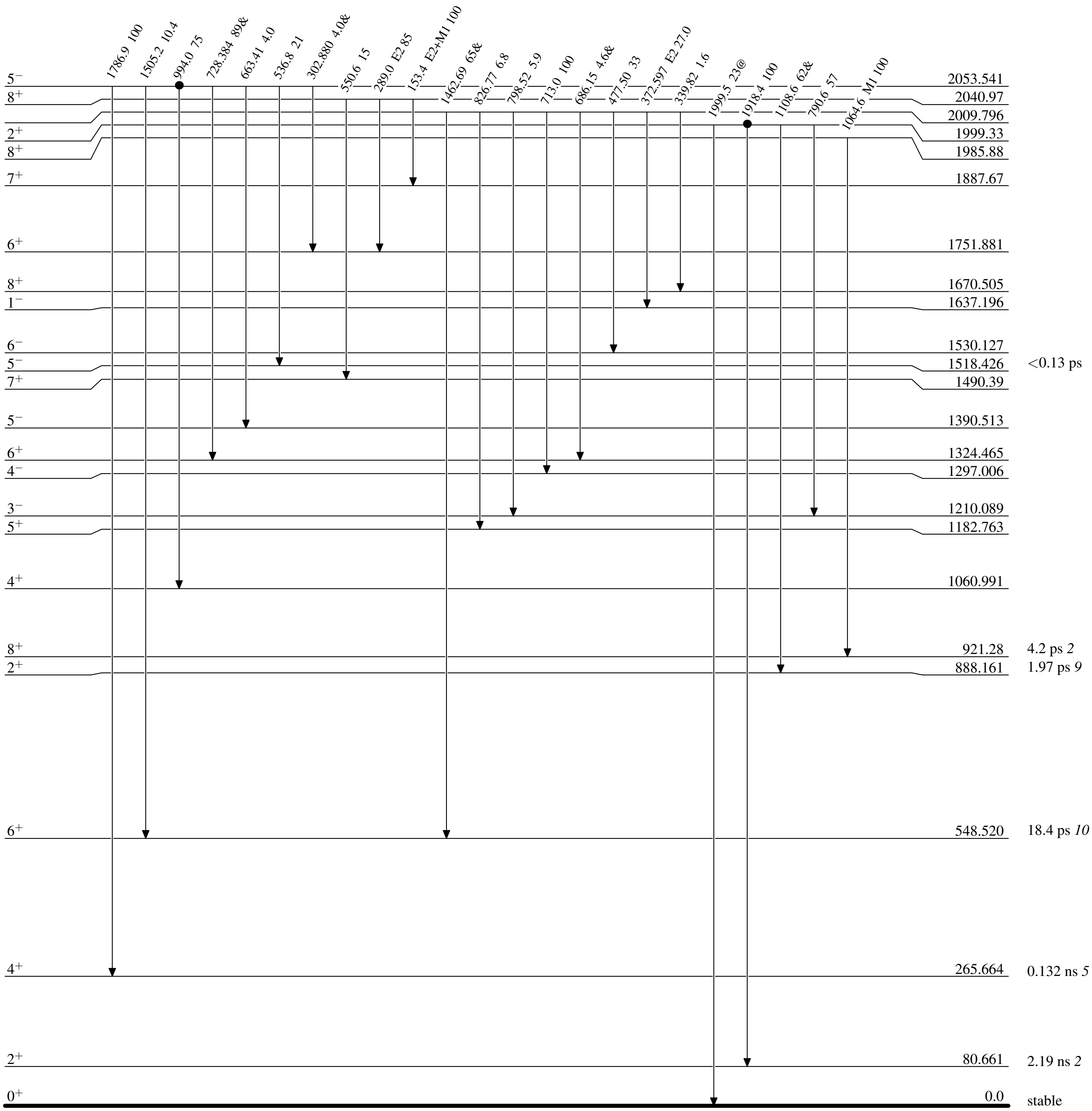
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

● Coincidence



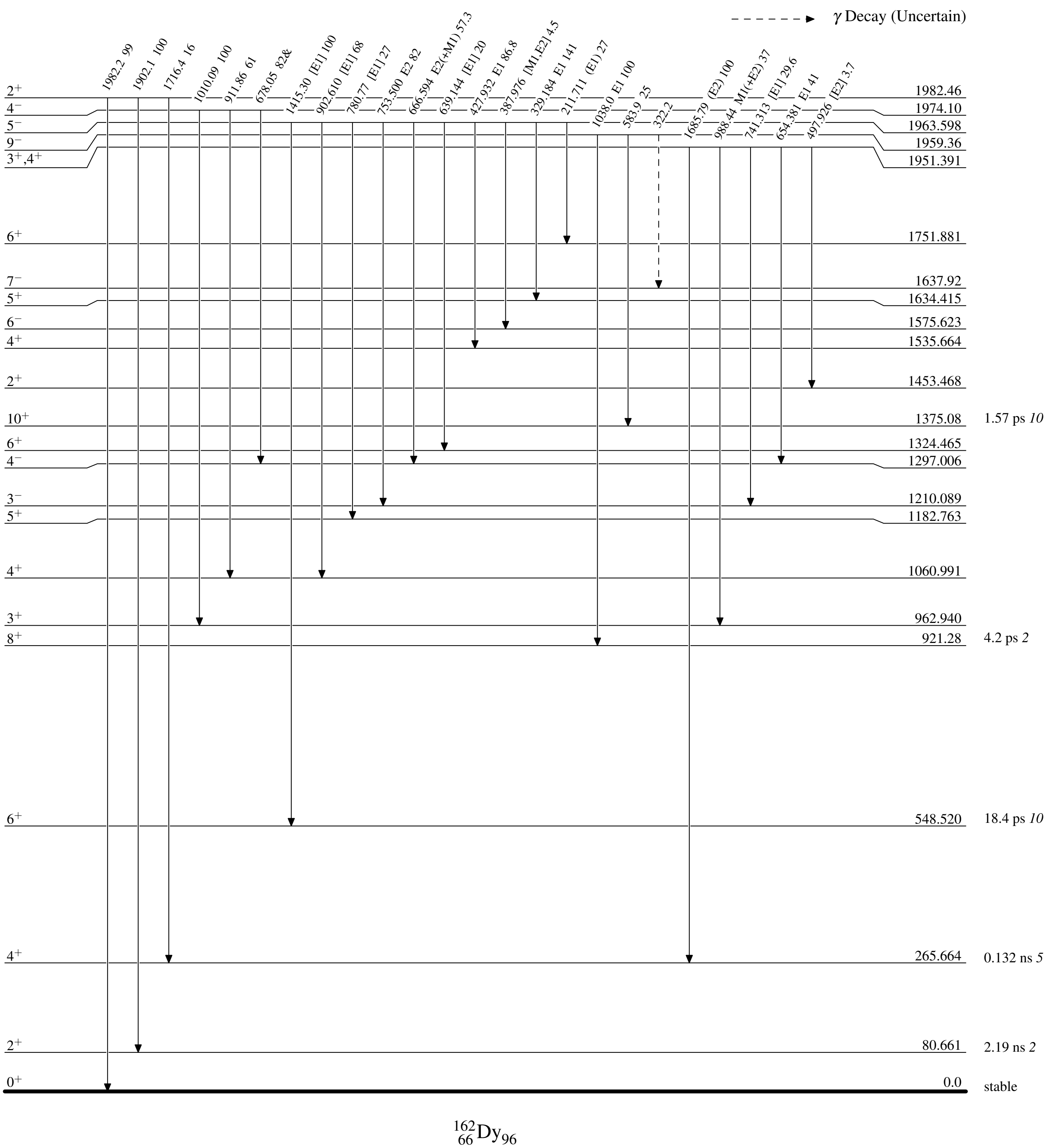
$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

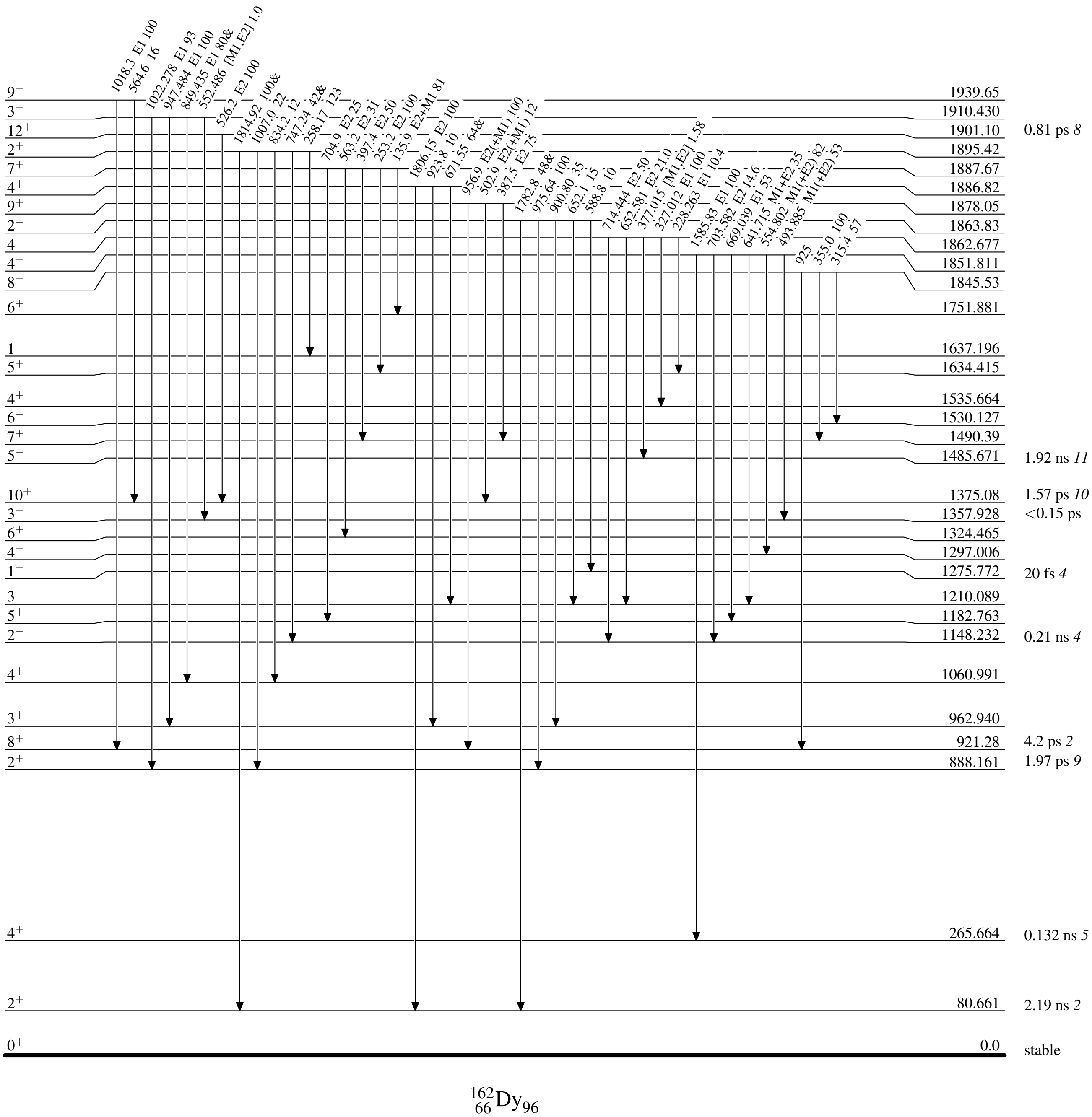
Legend



Adopted Levels, Gammas

Level Scheme (continued)

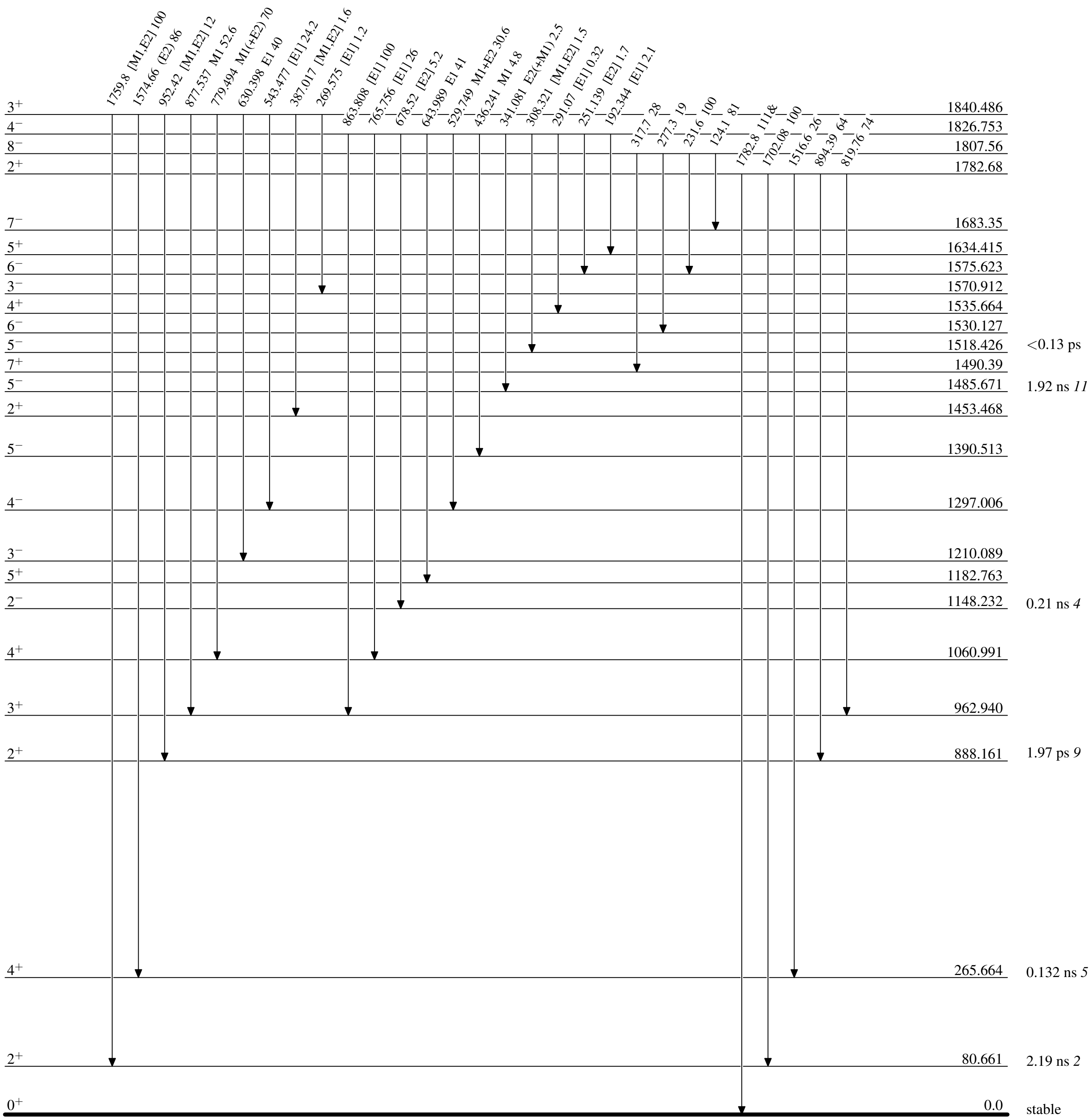
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

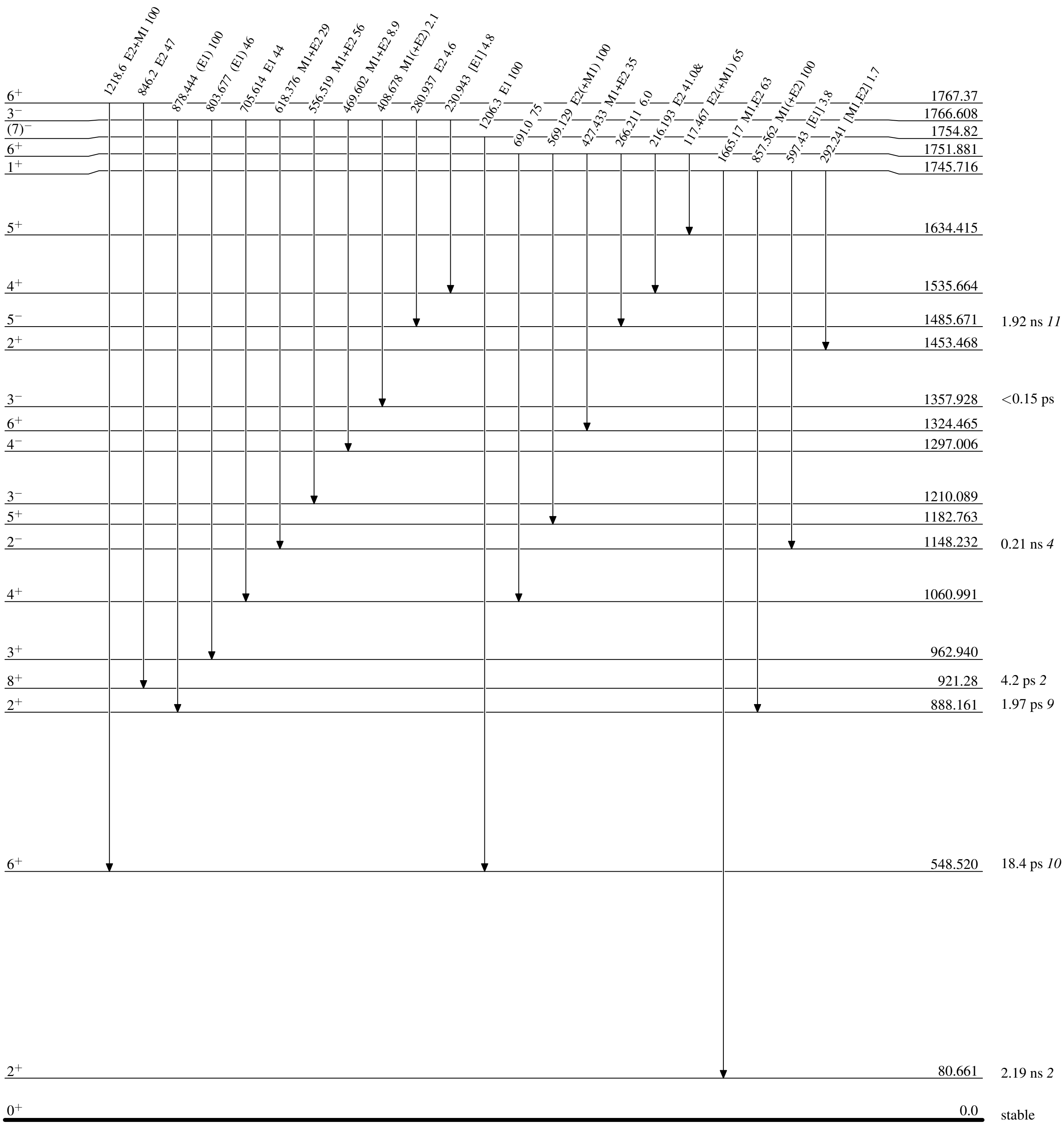


$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

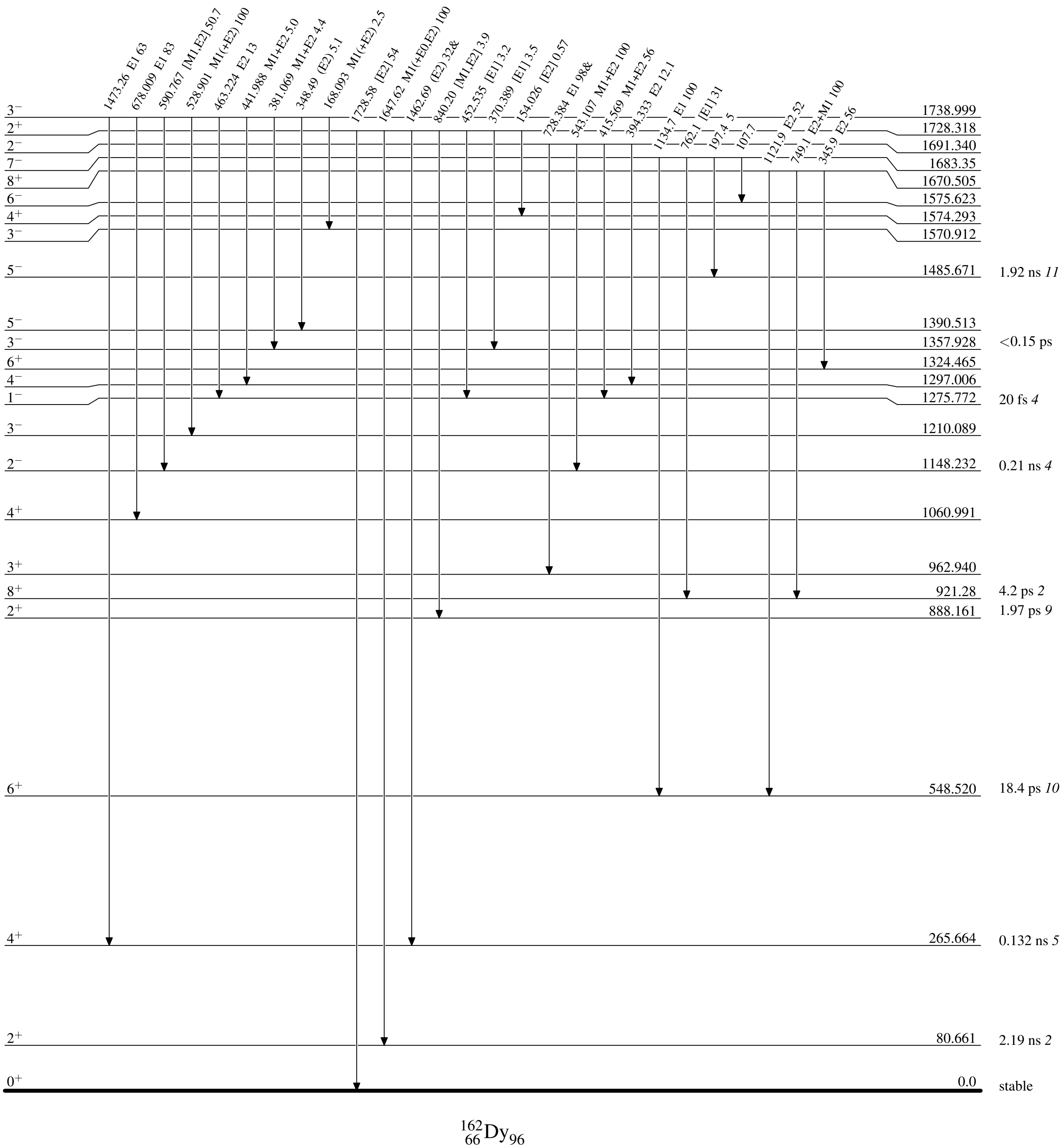


$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

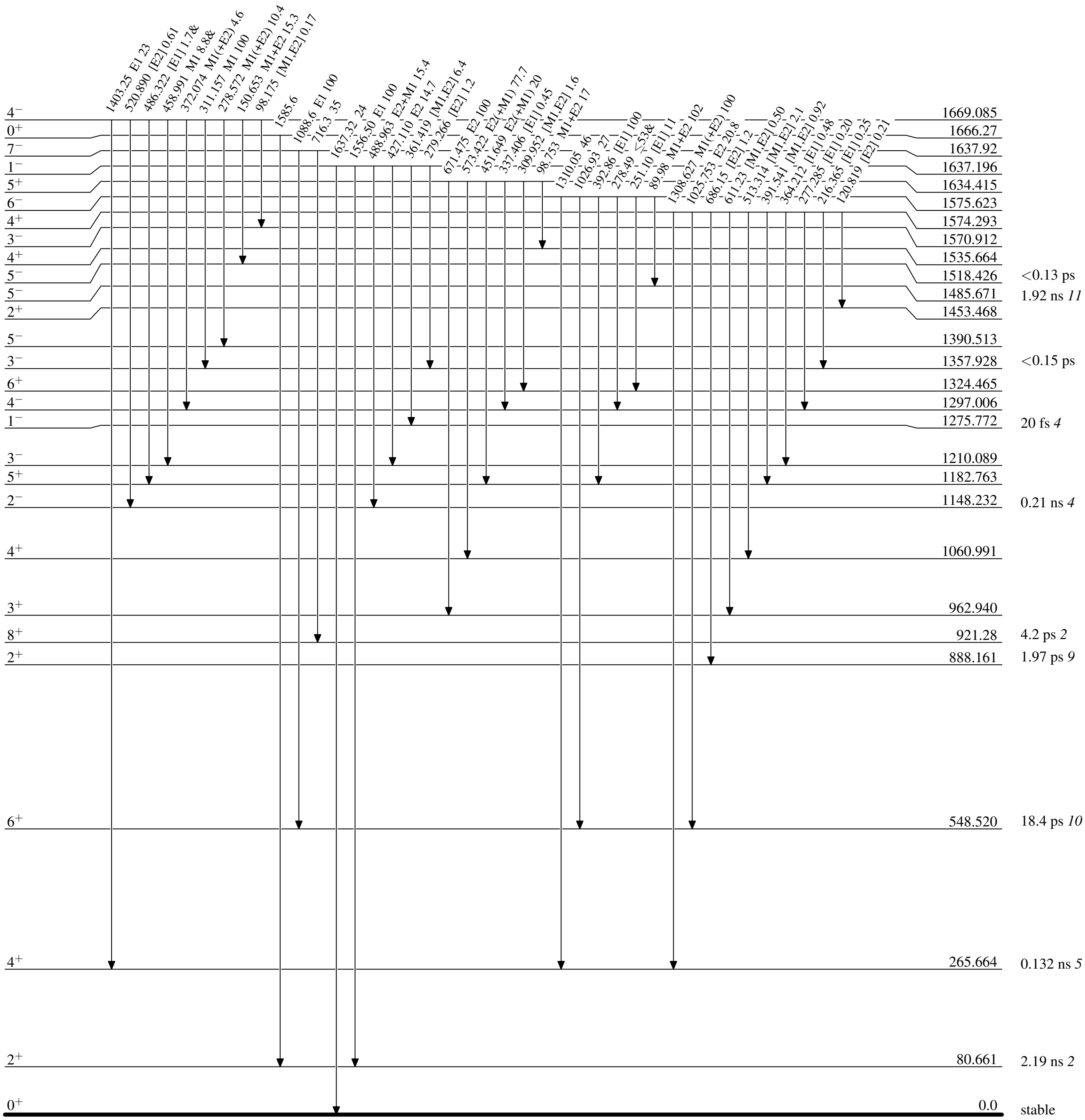
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

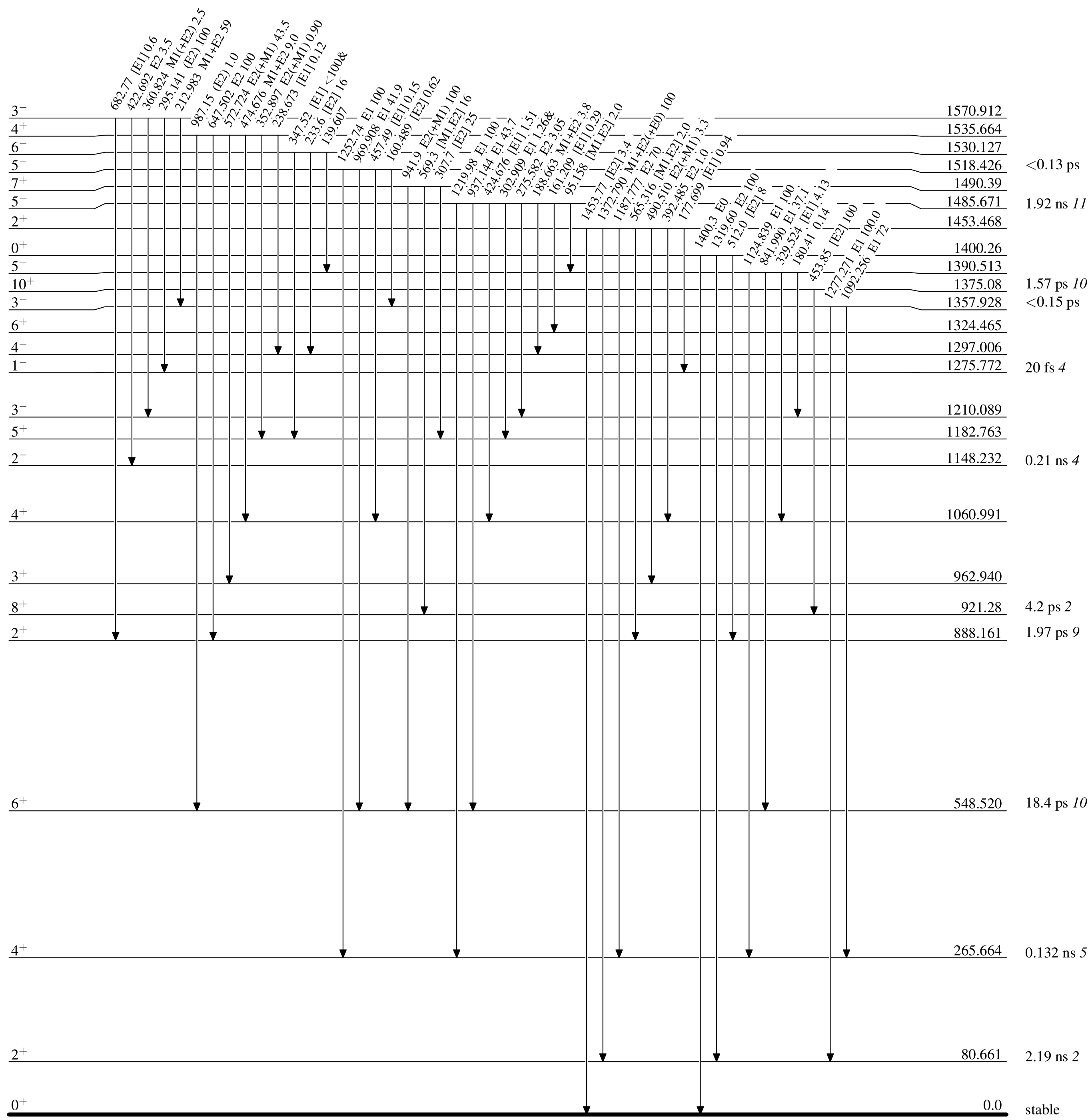


$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

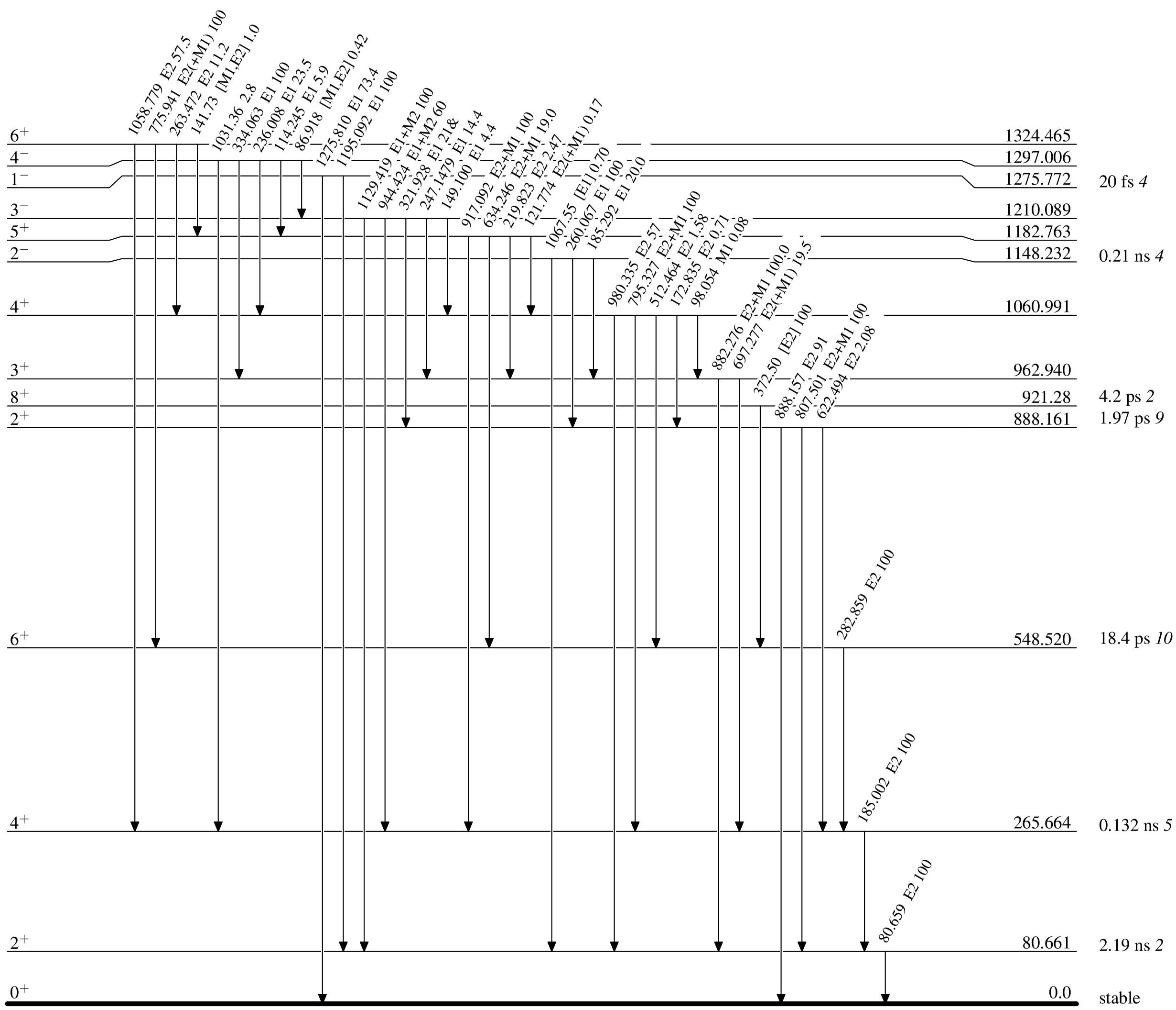


$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas

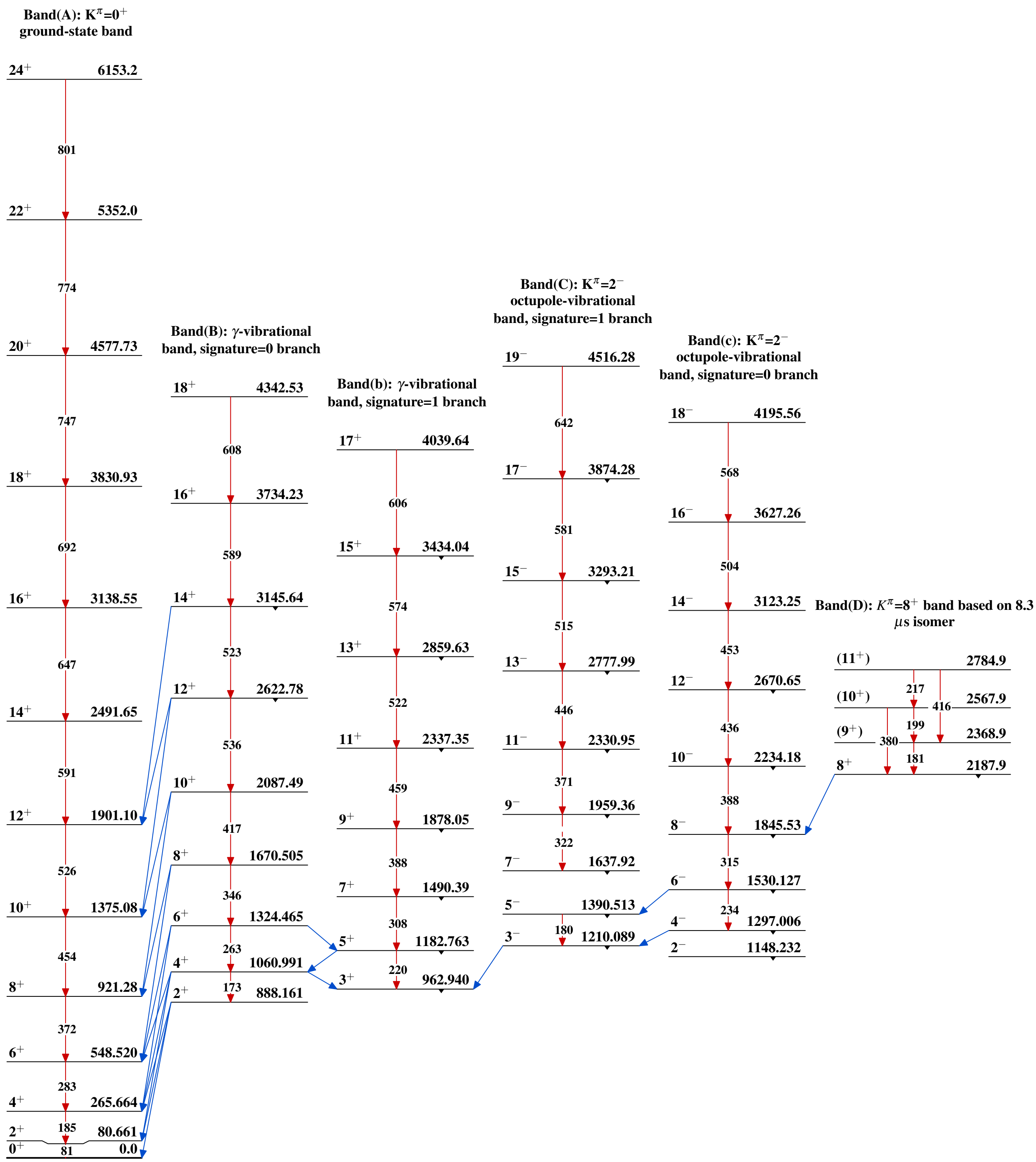
Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



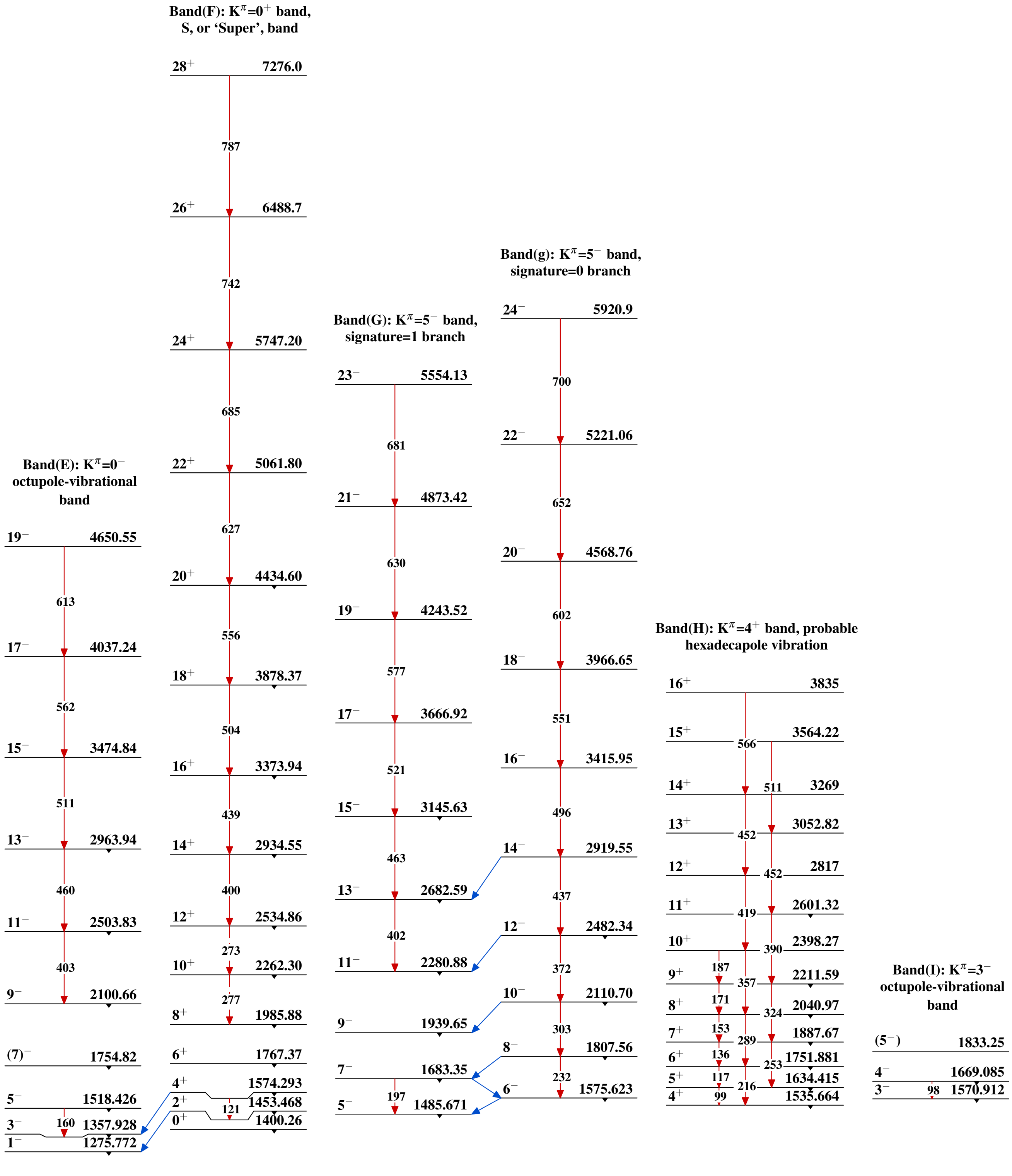
$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas



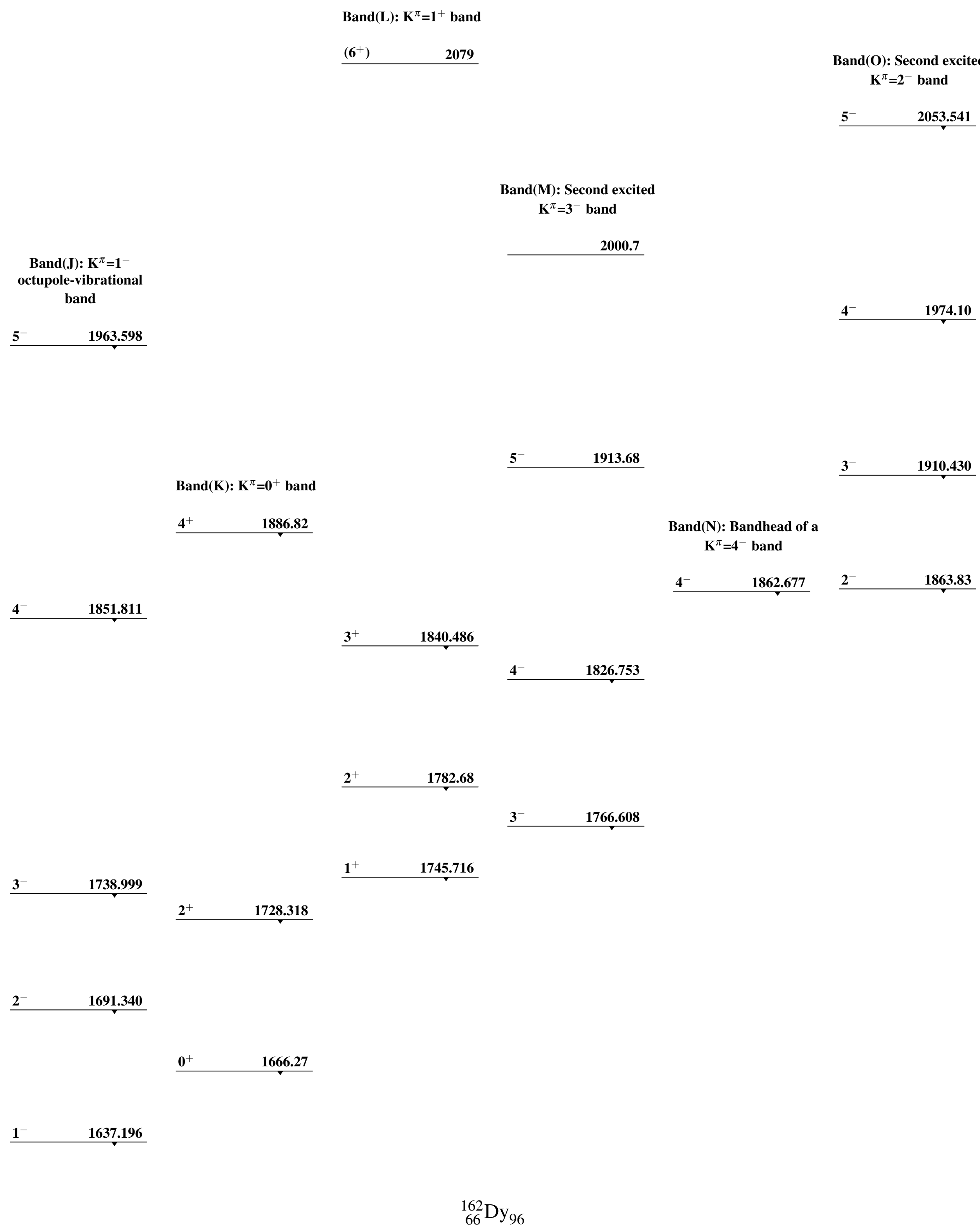
$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas (continued)

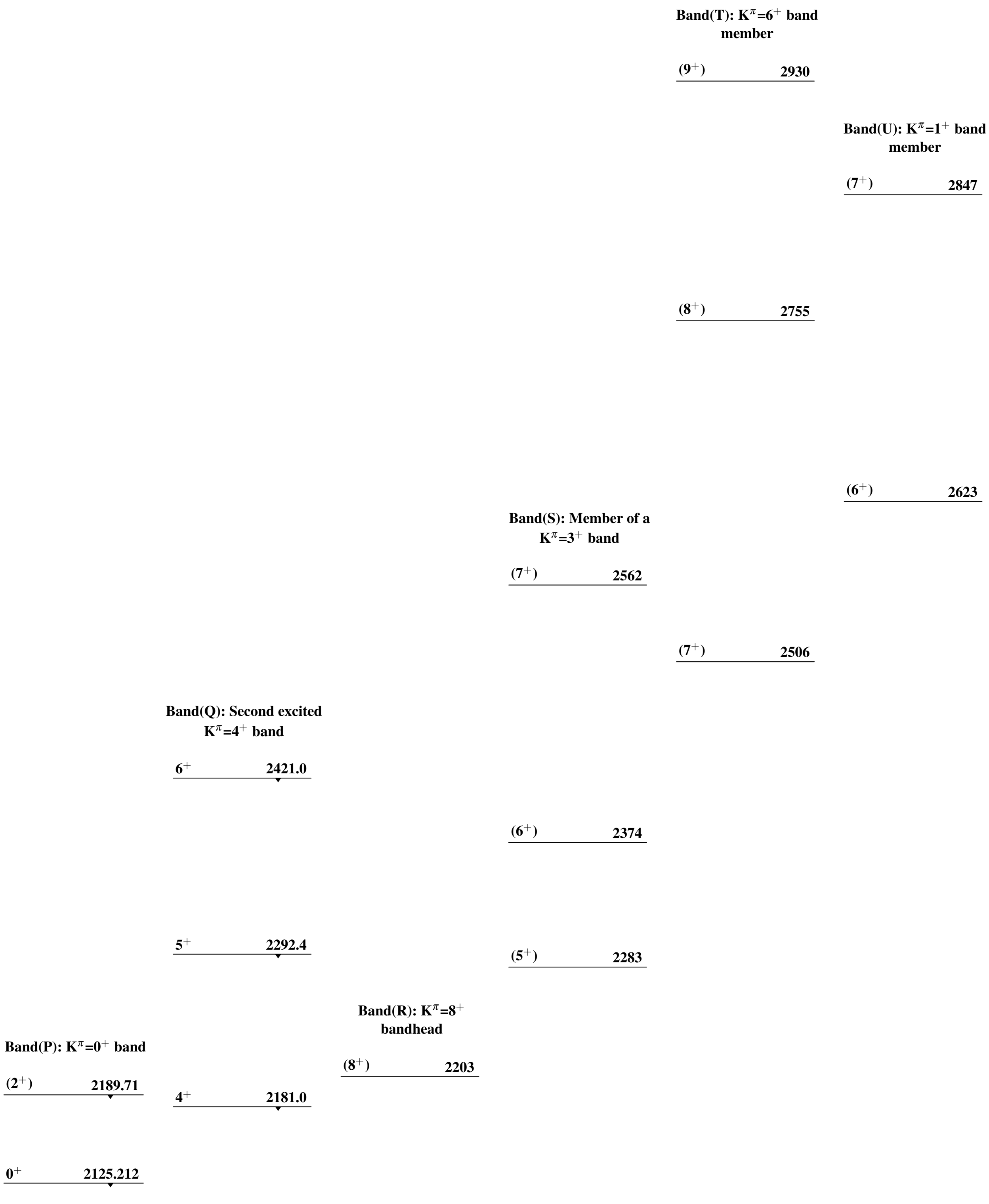


$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



$^{162}_{66}Dy_{96}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen#	NDS 147, 1 (2018)	30-Nov-2017

$Q(\beta^-)=-986.5$ *14*; S(n)=7658.11 *7*; S(p)=8661 *4*; $Q(\alpha)=-451.1$ *12* 2017Wa10
S(2n)=13929.12 *8*, S(2p)=16266 *4* (2017Wa10).
Identification of ^{164}Dy stable isotope by F.W. Aston, Nature 133, 327 (1934) by mass spectrographic method.
Isotope shift measurement for ground state: 1999An42.
Other reactions:
2012Ny01, 2010Ny01, 2010Go09: ^{164}Dy(^{3}He,^{3}He′),E=38 MeV: measured continuum γ spectra, particle spectra, and (particle)γ-coin; deduced level density, and radiative strength functions.
2015Ba20: ^{208}Pb(^{136}Xe,X),E=85 MeV: measured prompt and delayed γ and $\gamma\gamma$-coin spectra, deduced projectile-like fragment cumulative and independent production yields.
2010So03: ^{170}Er(^{82}Se,X),E=460 MeV: measured γ, particle, and (particle)γ-coin spectra, deduced yields of complementary beam-like and target-like fragments.
Mass measurements: 2011El08, 1972Ba08.
For theoretical nuclear structure calculations, consult NSR database, for about 300 references. About 20 of these are listed in the ENSDF dataset as document records.
Additional information 1.

^{164}Dy Levels

See ^{163}Dy(n,γ),(n,n):resonances dataset for 115 neutron-resonances in the range of E(n)=1.7 to 997 eV. The corresponding excitation energies in the range of 7658.112 to 7659.107 keV are not listed here.

Cross Reference (XREF) Flags

A	^{164}Tb β^- decay (3.0 min)	G	^{163}Dy(n,γ),(n,n):resonances	M	^{164}Dy(n,n′γ)
B	^{164}Ho ε decay (28.8 min)	H	^{163}Dy(n,γ) E=res	N	^{164}Dy(p,p′),(pol p,p′)
C	Muonic atom	I	^{163}Dy(d,p)	O	^{164}Dy(d,d′)
D	^{118}Sn(^{162}Dy,^{164}Dy)	J	^{163}Dy(d,pγ)	P	Coulomb excitation
E	^{162}Dy(t,p)	K	^{164}Dy(γ,γ′)	Q	^{165}Ho(t,α)
F	^{163}Dy(n,γ) E=th	L	^{164}Dy(e,e′)		

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0@	0+	stable	ABCDEF HIJKLMNOPQ	The rms charge radius ($<r^2>)^{1/2}$: 5.222 fm *11* (2013An02 evaluation). See also 2009An12 for trends in nuclear radii.
73.393@ *5*	2+	2.393 ns *29*	ABCDEF HIJK MNOPQ	μ=+0.684 *23* (1968Mu01,2014StZZ) Q=−2.08 *15* (1968Mu01,2016St14) μ,Q: Mossbauer effect (1968Mu01). Others: μ=+0.73 *3* (1970Be36), 1967Ku07. J$^\pi$: E2 γ to 0+. T$_{1/2}$: from 2016Pr01 evaluation, based on B(E2) measurements in Coulomb excitation: B(E2)=5.66 *6* (1974Wo01), 5.59 *12* (1974Sh12, earlier value of 5.55 *9* in 1973Gr05), 5.57 *5* (1972Er04), 5.64 *25* (1960El07), 6.1 *15* (1956Hu49, not included in the evaluation); measured mean lifetimes τ=3.460 ns *110* (1969Av01, (particle)γ(t) in Coulomb excitation); τ=3.444 ns *54* (1967Ku07) and τ=3.490 ns *90* (1959Bi10) from (pγ(t) in (p,p′γ). Other: B(E2)=5.48 *10* from muonic x-rays (1970Hi03).
242.234@ *7*	4+	201 ps *8*	A DEF HIJK MNOPQ	μ=+1.00 *12* (1997Al25,2014StZZ) μ: IPAC (1997Al25). Other: +1.48 *48* (1989Do12, transient-field

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{164}Dy Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
				technique). J^π: E2 γ to 2^+; M1+E2 673.743γ from 4^+. $T_{1/2}$: from B(E2) and recoil-distance Doppler-shift in Coulomb excitation. β_4=−0.023 *7* (1971Su01), from cross section of first 4^+ state in ^{162}Dy populated in ^{164}Dy(p,t).
501.330[@] *12*	6^+	27.2 ps *8*	A D F IJ MNOPQ	μ=+1.95 *10* (1999Br43,2014StZZ) μ: transient-field technique. Others:+1.62 *30* (1997Al25), +1.68 *48* (1983Se09). J^π: E2 γ to 4^+; no γ to 0^+ and 2^+. $T_{1/2}$: from B(E2) and recoil-distance Doppler-shift in Coulomb excitation.
761.815[&] *7*	2^+	4.6 ps *3*	AB EF HIJ MNOP	μ=+0.76 *5* (1999Br43,2014StZZ) μ: transient-field technique. Other:+0.62 *20* (1989Do12). J^π: E2 γ to 0^+. $T_{1/2}$: from B(E2) in Coulomb excitation.
828.215[&] *8*	3^+		A F HIJ LM P	B(M3)↑=0.3 *+1−2* (1987Bo49) J^π: M1+E2 γ to 4^+; E2(+M1) γ to 2^+; M3 excitation in (e,e′). B(M3) from (e,e′).
843.66[@] *5*	8^+	7.2 ps *3*	D I M PQ	μ=+2.48 *16* (1999Br43,2014StZZ) J^π: E2 γ to 6^+; band structure. $T_{1/2}$: from B(E2), recoil-distance Doppler-shift (RDDS), and Doppler-broadened line shapes in Coulomb excitation. μ: transient-field technique. Other: +2.2 *7* (1989Do12).
915.991[&] *8*	4^+		A EF HIJ MNOP	J^π: E2 γ to 2^+; γ to 6^+.
976.916[a] *9*	2^-		A F HIJ MN Q	J^π: E1 γ to 3^+, E1 γ to 2^+; $\gamma\gamma(\theta)$ from (n,γ) E=th rules out J=3.
1024.646[&] *9*	5^+		A F IJ M P	J^π: M1+E2 523.329γ to 6^+ and M1+E2 782.406γ to 4^+.
1039.309[a] *8*	3^-		A EF HIJ MNOPQ	B(E3)↑=0.088 *6* J^π: E1 277.488γ to 2^+ gives 1^-,2^-,3^-; 1^- and 2^- ruled out by 123.32γ to 4^+ since it would require an unreasonably large B(M2). B(E3)↑: from Coul. ex.
1122.774[a] *9*	4^-		A F H J M Q	J^π: 98.127γ E1 to 5^+, 206.78γ E1 to 4^+, 294.554γ D(+Q) to 3^+.
1153.568[&] *19*	6^+		A F IJ M OP	J^π: M1 131.3γ to 5^+, (E2+M1) 652.231γ to 6^+; band structure.
1166			O	
1225.162[a] *14*	5^-		A F H J MNOPQ	J^π: E1(+M2) 309.162γ to 4^+, E2 185.86γ to 3^- and 723.81γ to 6^+.
1261.28[@] *21*	10^+	2.29 ps *11*	D M P	μ=+3.1 *4* (1999Br43,2014StZZ) J^π: E2 γ to 8^+; band structure. $T_{1/2}$: from Doppler-broadened line shape in Coulomb excitation. μ: transient-field technique. Other:+3.5 *13* (1989Do12).
1301.91[&] *4*	7^+		M P	J^π: D+Q γ to 6^+; band structure.
1350.429[a] *24*	6^-		M Q	J^π: intensity pattern in (t,α).
1393.8 *3*	(2^+)		A OP	XREF: O(1397). E(level): the existence of this level is questioned by 2017Go07 in (n,n′γ). J^π: gammas to 0^+ and 4^+.
1470.26[&] *14*	8^+		M P	J^π: gammas to 8^+ and 6^+; band structure.
1495.92[a] *6*	7^-		M Q	J^π: intensity pattern in (t,α); band member.
1588.090[b] *14*	4^-		A F H J M Q	J^π: 611.168γ E2 to 2^-, 548.54γ (E2+M1) 3^-.
1607.7 *4*	(4^+)		A J M	XREF: M(?). E(level): the existence of this level is questioned by 2017Go07 in (n,n′γ). J^π: possible β feeding from (5^+); γ to 2^+.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{164}Dy Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
1654.7[&] *7*	9^+		P	J^π: 811.5γ (M1+E2) to 8^+; band structure.
1654.71 *3*	0^+		E M	J^π: L(t,p)=0; 1581.31$\gamma(\theta)$ is isotropic.
1674.945 *20*	1^-		Hi KLM O Q	B(E1)↑<0.025 (1989Gu17) XREF: O(1668). J^π: E1 excitation in (e,e′); $\gamma(\theta$,pol) in (γ,γ').
1686.566[b] *21*	5^-		A iJ M Q	J^π: E2 647.248γ to 3^-, 563.89γ (E2+M1) to 4^-.
1716.223 *24*	2^+	1.2 ps *+15−4*	EF Hi M	J^π: $(2,3)^+$ from ARC in (n,γ); 1716.25γ E2 to 0^+. $T_{1/2}$: from Doppler broadening of second order of reflection in a curved-crystal spectrometer in (n,γ) (1998Le03). Statistical assumptions of initial recoil velocity was used in the analysis. $T_{1/2}$=0.35-5.7 ps if extreme conditions were used for the initial recoil velocity.
1725.2 *4*			A M	E(level): the existence of this level is questioned by 2017Go07 in (n,n′γ).
1738.1 *6*	$(1^+,2^+)$		Hi M	XREF: H(1740). E(level): the existence of this level is questioned by 2017Go07 in (n,n′γ). J^π: γs to 0^+ and 3^+.
1745.9[@] *5*	12^+	1.18 ps *6*	D P	$T_{1/2}$: from Doppler-broadened line shape in Coulomb excitation. J^π: E2 γ to 10^+; band structure.
1758.165 *22*	3^-		H LM O	XREF: O(1753). J^π: (E1+M2) gammas to 2^+ and 4^+; (1^-), 2^-,3^-,4^- from ARC in (n,γ).
1770.2 *3*	$(4,5,3^+)$		A	J^π: γs to 5^+ and 4^-; possible γ to 4^+.
1779.6 *4*	0^+		E H M	J^π: L(t,p)=0.
1790.1? *11*			F	
1796.68 *3*	$(2)^+$		EF H M O	XREF: F(1798)O(1791). J^π: 2^+,3^+ from ARC in (n,γ); excited in (d,d′); γ to 0^+.
1804.24 *5*	$6^{(-)}$		F M	J^π: (E2) ΔJ=2 γ to 4^-; (M1+E2) γ to 5^-.
1809.571 *24*	1^-		H M Q	J^π: 1^-,(4^-) from ARC in (n,γ); gammas to 2^+ and 0^+.
1840.66 *3*	$1^{(-)}$		F H K M	J^π: 1^+, 2^-,(3^-) from ARC in (n,γ); (M1) γ to 0^+; (γ,γ') favors 1^-.
1846.33 *3*	2^-		Hi M	J^π: $(2,3,4)^-$ from ARC in (n,γ); J=2 from $\gamma(\theta)$ in (n,n′γ).
1852.87 *5*	4^+		F Hi M Q	XREF: H(1852.4). J^π: 4^+,$(1^+,2^+,3^+)$ from ARC in (n,γ); J=4 from $\gamma(\theta)$ in (n,n′γ).
1858.9[&] *6*	10^+		P	J^π: from band structure.
1883.55 *11*	(0^+)		M	J^π: 1810.15$\gamma(\theta)$ is isotropic.
1891.69 *4*	4^+		E H M O	XREF: H(1891.7)O(1886). J^π: 4^+, $(1^+,2^+,3^+)$ from ARC in (n,γ); J=4 from $\gamma(\theta)$ in (n,n′γ).
1909.52 *3*	3^-		e H M O	XREF: O(1906). J^π: 2^-,3^- from ARC in (n,γ); (E1(+M2)) γ to 4^+.
1914.21 *6*	(5^-)		M	J^π: (E1(+M2)) γ to 4^+ and γ to 6^+.
1921.22 *3*	2^+		eF H M	XREF: F(1921.5). J^π: $(2,3)^+$ from ARC in (n,γ); (E2) ΔJ=2 γ to 0^+.
1933.21 *6*	$(2,3)^+$		F Hi M	E(level),J^π: from ARC in (n,γ). This level is probably different from 1933.62 level due to very different spins implied from population mechanisms.
1933.63 *7*	$4^{(-)}$		A iJ M	J^π: probable allowed or first-forbidden decay from (5^+); (M1+E2) γ to 4^- and gamma to 3^+.
1940.82 *15*	(7^-)		M	J^π: (E2) γ to 5^- and γ to (6^-).
1949.78 *3*	3^-		H M	J^π: 1^+, 2^-,3^-,(4^-) from ARC in (n,γ); (M1+E2) γ to 2^- and gammas to 3^- and 4^-.
1953.0 *4*	(4^+)		A	J^π: γ to 2^+; possible β feeding from (5^+).

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Adopted Levels, Gammas (continued)

^{164}Dy Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
1978.411 *24*	(4$^-$)		M	J^π: proposed in (n,n′γ) based on population.
1978.81[c] *3*	(3$^+$)		f hI M	J^π: see comments for 1979.30 level; 2$^+$,3$^+$ from ARC in (n,γ); 3$^+$ proposed in (d,p).
1979.30 *4*	(2$^+$)		f h M	J^π: (2)$^+$ for one component in (n,γ) E=res from J^π=(2,3,4)$^+$ from ARC; and γ to 0$^+$. Other component is 2$^+$,3$^+$ from ARC in (n,γ).
1985.67 *6*	(2,3)$^-$		H M	J^π: from ARC in (n,γ).
1998[e] *4*	(5)$^-$		Q	J^π: intensity pattern in (t,α). E(level): this level seems different from 1998.2 level populated in β^- decay due to different J^π values implied from (t,α) and from decay modes in β^- decay.
1998.62 *5*	(4$^+$)		A J M	XREF: M(1996.1). J^π: γs to 2$^+$; possible β feeding from (5$^+$).
2015.2? *8*			M	E(level): the existence of this level is questioned by 2017Go07 in (n,n′γ).
2032 *4*			Q	
2041.66 *4*	(4$^-$)		M	J^π: proposed in (n,n′γ).
2049.13[d] *4*	(2)$^+$		e HI M O	XREF: I(2055)O(2046). J^π: 2$^+$,3$^+$,(4$^+$) from ARC in (n,γ); gammas to 2$^-$, 2$^+$, and 3$^+$; possible K^π=2$^+$ bandhead in (d,p).
2053.34 *9*	(3)$^+$		H M	J^π: 2$^+$,3$^+$,(4$^+$) from ARC in (n,γ); gammas to 4$^-$, and 4$^+$.
2053.61 *8*	1$^{(-)}$		e K M	J^π: 1$^{(-)}$ proposed in (γ,γ′); dipole γ to 0$^+$.
2076.4[&] *8*	11$^+$		P	J^π: ΔJ=2 to (9$^+$).
2078.04 *4*	(2,3)$^+$		E hI M	XREF: E(2074)I(2076). J^π: from ARC in (n,γ).
2078.48[c] *5*	(4)$^+$		E hI M	XREF: E(2074)I(2076). J^π: from ARC in (n,γ) and (d,p). E(level): possibly a doublet in (d,p).
2086 *4*			Q	
2099.96 *6*	3$^+$		h M	J^π: parity from ARC in (n,γ) E=res; J=3 from $\gamma(\theta)$ in (n,n′γ).
2102.01 *6*	4$^+$		h M	J^π: 1$^+$,2$^+$,3$^+$,4$^+$ from ARC in (n,γ); γ to 6$^+$.
2113.18 *8*	(2$^+$)		H M	J^π: 2$^+$,3$^+$,4$^+$,(1$^+$) from ARC in (n,γ); gammas to 0$^+$.
2118[e] *4*	(6$^-$)		Q	J^π: intensity pattern in (t,α).
2123.88[d] *5*	(3$^+$)		HI M	XREF: I(2127). J^π: 2$^+$,3$^+$,(4$^+$) from ARC in; (3$^+$) from (d,p).
2152.43 *6*	3$^+$		eF H M O	J^π: 2$^+$,3$^+$,(4$^+$) from ARC in (n,γ); J=3 from $\gamma(\theta)$ in (n,n′γ). (3$^-$) suggested in (d,d′).
2157.75 *15*	(4$^+$)		A e I	E(level): the existence of this level is questioned by 2017Go07 in (n,n′γ). J^π: gammas to 2$^+$ and 6$^+$.
2173.26 *6*	(4)$^+$	0.28 ps *+19−9*	A F M	E(level): 2017Go07 in (n,n′γ) suggests that there could be two different levels of close energy excited in ^{164}Tb β^- decay and in (n,γ) E=thermal and (n,n′γ) based on their observed deexcitations not in agreement with those in ^{164}Tb β^- decay. J^π: gammas to 2$^+$ and 4$^+$; E2 γ to 3$^+$; evidence of β feeding from (5$^+$). Implied [M2] γ to 2$^-$ is inconsistent. $T_{1/2}$: from Doppler broadening of second order of reflection in a curved-crystal spectrometer in (n,γ) (1997Co18). Statistical assumptions of initial recoil velocity was used in the analysis. $T_{1/2}$=0.076-0.53 ps if extreme conditions were used for the initial recoil velocity.
2194.82 *8*	(4$^+$)		A e HI M O Q	XREF: I(2190). J^π: gammas to 2$^+$ and 4$^+$; evidence of β feeding from (5$^+$). J^π=(5$^+$) assigned in (d,p) for a 2190 group.
2204.0? *11*			F	

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Adopted Levels, Gammas (continued)

^{164}Dy Levels (continued)

E(level)[†]	J^{π}	$T_{1/2}$	XREF	Comments
2205.78[d] 9	(4^+)		A e HI M O	XREF: I(2213). J^{π}: gammas to 2^+ and 4^+; evidence of strong β feeding from (5^+).
2230.42 9	(2^+)		M	J^{π}: proposed in (n,n′γ) based on high population; γ to 0^+.
2235	(3^-)		O	J^{π}: (E3) excitation in (d,d′).
2242.0? 11			F	
2247.7 5	(4^+)		A EF hI O Q	J^{π}: gammas to 2^+ and 4^+; evidence of β feeding from (5^+).
2248.14 8	(2^+)		F h M	J^{π}: γ to 0^+.
2254.6? 11			F	
2263 3			HI O q	XREF: q(2268).
2270.9? 3			F M	
2278			E O q	XREF: E(2277)q(2268).
2290.6[@] 7	14^+	0.67 ps 6	D P	$T_{1/2}$: from Doppler-broadened line shape in Coulomb excitation. J^{π}: E2 γ to 12^+.
2302.16 11	$(2^+,3)$		EF HI M O q	XREF: q(2311). J^{π}: proposed in (n,n′γ) based on population and deexcitation scheme.
2312.6? 3			A q	XREF: q(2311).
2314.2[&] 7	12^+		P	J^{π}: probable band member.
2330.01 10	1^-[‡]	0.065 eV 14	K M	Γ: from (γ,γ′).
2333[c] 6	(6^+)		I	J^{π}: from (d,p).
2349.2 10			F H	
2381 6			E I Q	
2396.37 20			H M	
2411.9 7	$1^{(-)}$[‡]		H K	J^{π}: from (γ,γ′).
2413[f] 3	(6^-)		I Q	J^{π}: intensity pattern in (t,α).
2429.11 14	$(1,2^+)$		H M	J^{π}: γ to 0^+.
2437.2 3	$(1,2^+)$		H M	J^{π}: γ to 0^+.
2442.76 15			F H M	
2459.3 22			F H Q	
2473.25 12	$(1,2^+)$		HI M	J^{π}: γ to 0^+.
2496 3			H Q	
2518 3			H	
2520.2? 11			F	
2531.37 16	1^+[‡]	11.8 fs 28	H KLMN	B(M1)↑=0.38 5 (1989Fr03) B(M1)↑: from (p,p′). Other: 0.43 10 (1995Jo20) in (n,n′γ). $T_{1/2}$: from DSAM in (n,n′γ) (1995Jo20). Other: Γ=0.035 eV 6 (γ,γ′).
2536.8? 11			F	
2539.02 13	1^+[‡]	12.5 fs 28	KLM	B(M1)↑=0.40 10 (1995Jo20) $T_{1/2}$: from DSAM in (n,n′γ) (1995Jo20). Other: Γ=0.028 eV 5 (γ,γ′).
2555[f] 3	(7^-)		H Q	J^{π}: intensity pattern in (t,α) gives (7^-); possible band member.
2570 3			H	
2577.87 15	1^+[‡]	9.0 fs 35	KLM	B(M1)↑=0.53 20 (1995Jo20) $T_{1/2}$: from DSAM in (n,n′γ) (1995Jo20).
2583.22 16	$(1,2^+)$		HI M	J^{π}: γ to 0^+.
2595 3			H	
2604 5			Q	
2630 6			Q	
2653.7 3	1^+		K MN	B(M1)↑=0.34 5 (1989Fr03) XREF: N(2666). J^{π}: M1 excitation in (p,p′).
2662.1 3	$(1,2^+)$		I M	J^{π}: γ to 0^+.

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Adopted Levels, Gammas (continued)

^{164}Dy Levels (continued)

E(level)†	J$^{\pi}$	T$_{1/2}$	XREF	Comments
2670.49 *24*	1^{-}‡	0.055 eV *14*	K M	Γ: from (γ,γ′).
2693# *6*	(3^{+})		Q	J$^{\pi}$: intensity pattern in (t,α).
2694.0 *3*	1^{+}‡	7.6 fs *21*	I K M	B(M1)↑=0.50 *10* (1995Jo20) T$_{1/2}$: from DSAM in (n,n′γ) (1995Jo20). Other: Γ=0.058 eV *8* (γ,γ′).
2711 *3*			HI	XREF: I(2693).
2722 *3*			I	
2731 *3*			H	
2738 *3*			H M	XREF: M(?).
2752.7 *5*	(4^{+})		A H	J$^{\pi}$: gammas to 2^{+} and 4^{+}; evidence of β feeding from (5^{+}).
2761 *4*			I	
2786 *3*			H	
2792 *3*			H	
2801# *3*	(4^{+})		HI Q	XREF: Q(2799). J$^{\pi}$: intensity pattern in (t,α).
2827.6 *10*			HI K	
2832.2?& *8*	(14^{+})		P	J$^{\pi}$: probable band member.
2862.0 *7*	$1^{(+)}$‡		I K	XREF: I(2856).
2887 *3*			HI	
2887.1@ *13*	(16^{+})		D P	J$^{\pi}$: probable g.s. band member.
2920# *3*	(5^{+})		HI Q	J$^{\pi}$: intensity pattern in (t,α).
2946 *3*			H	
2986.0 *7*	$1^{(-)}$‡		K	
2990.1 *7*	$1^{(+)}$‡		H K	
3001.5 *4*	(4^{+},5^{+})		A H	J$^{\pi}$: gammas to 4^{+} and 6^{+}; evidence of β feeding from (5^{+}).
3005.5 *5*	(4^{+},5,6^{+})		A	J$^{\pi}$: gammas to 4^{+} and 6^{+}.
3014.5 *4*	(4^{+},5)		A I	XREF: I(3018). J$^{\pi}$: gammas to 4^{+} and 6^{+}; primary γ from (2^{-},3^{-}); evidence of β feeding from (5^{+}).
3027.0 *10*			K	
3050 *4*			I	
3070.0 *10*			K	
3076# *3*	(6^{+})		H Q	XREF: Q(3080). J$^{\pi}$: intensity pattern in (t,α).
3111.2 *3*	1^{+}‡	6.9 fs *28*	H KLMn	B(M1)↑=1.5 *3* (1984Bo43) B(M1)↑: from (e,e′). Other: 0.43 *20* (1995Jo20) in (n,n′γ). T$_{1/2}$: from DSAM in (n,n′γ) (1995Jo20). Other: Γ=0.179 eV *22* (γ,γ′).
3126 *3*			H	
3147 *4*			I	
3159.1 *3*	1^{+}‡	6.2 fs *28*	KLMn	B(M1)↑=0.40 *20* (1995Jo20) T$_{1/2}$: from DSAM in (n,n′γ) (1995Jo20).
3173.6 *3*	1^{+}‡	13.9 fs *42*	KLMn	B(M1)↑=0.19 *7* (1995Jo20) T$_{1/2}$: from DSAM in (n,n′γ) (1995Jo20). Other: Γ=0.161 eV *21* (γ,γ′).
3185.0 *10*			K	
3191 *3*			I	
3211 *4*			I	
3228.0 *7*	$1^{(-)}$‡		K	
3231.0 *10*			K	
3239# *3*	(7^{+})		I Q	XREF: Q(3250). J$^{\pi}$: intensity pattern in (t,α).

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Adopted Levels, Gammas (continued)

^{164}Dy Levels (continued)

E(level)[†]	Jπ	XREF	Comments
3270.0 *7*	$1^{(-)}$[‡]	K	
3279.0 *7*	$1^{(+)}$[‡]	K	
3293.0 *10*		K	
3316.0 *7*	$1^{(+)}$[‡]	K	
3354 *8*		I Q	XREF: Q(3365).
3365.0 *7*	$1^{(+)}$[‡]	K	
3391 *5*		I	
3406.4[&]	(16^+)	P	
3414.0 *7*	$1^{(+)}$[‡]	K	
3429[#] *5*	(8^+)	I Q	XREF: Q(3437). Jπ: intensity pattern in (t,α).
3476 *9*		I Q	XREF: Q(3461).
3529.7[@] *16*	(18^+)	D P	Jπ: probable g.s. band member.
3603.0 *10*		K	
3621.0 *7*	1[‡]	K	
3667.0 *7*	1[‡]	K	
3695.0 *7*		K	
3704.0 *7*	$1^{(-)}$[‡]	K	
3718.0 *7*	1^+[‡]	K	
3754.0 *7*	$1^{(-)}$[‡]	K	
3765.0 *7*	$1^{(+)}$[‡]	K	
3785.0 *7*	$1^{(-)}$[‡]	K	
3836.0 *10*		K	
3853.0 *10*		K	
3868.0 *7*	$1^{(-)}$[‡]	K	
3877.0 *7*	1^-[‡]	K	
3914.0 *7*	$1^{(-)}$[‡]	K	
3987.0 *7*	$1^{(-)}$[‡]	K	
4037.8	(18^+)	P	Jπ: ΔJ=2 to (16^+).
4213.3[@] *19*	(20^+)	D P	Jπ: probable g.s. band member.
4600	1^+	N	B(M1)↑=0.27 *4* (1989Fr03) Jπ: M1 excitation in (p,p′).
4933.0[@] *22*	(22^+)	P	Jπ: probable g.s. band member.
(7657.93 *22*)	$2^-,3^-$	F	S(n)=7658.11 *7* (2017Wa10).
(7659.76 *9*)	$(2^-,3^-)$	H	E(level): 7660.11 *7* from S(n)(^{164}Dy)+E(n), where E(n)=2 keV. Jπ: dominant s-wave capture in $5/2^-$.
(7681.98 *11*)	$(1^+,2,3,4^+)$	H	E(level): 7682.11 *7* from S(n)(^{164}Dy)+E(n), where E(n)=24 keV. Jπ: s- or p-wave capture in $5/2^-$.

[†] From least-squares adjustment of Eγ values for levels populated in γ-ray studies. For others, weighted averages were taken when level energies were available from different reactions.

[‡] From (γ,γ′).

[#] This level has been associated with $K^\pi=1^+$ band in (t,α) (1993Fr04), but the corresponding $K^\pi=6^+$ band has not been reported, thus the interpretation of $K^\pi=1^+$ band is considered as tentative.

[@] Band(A): $K^\pi=0^+$, g.s. band.

[&] Band(B): $K^\pi=2^+$, γ band.

[a] Band(C): $K^\pi=2^-$ octupole band. From spectroscopic factors in (t,α), the bandhead contains 47% of

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Adopted Levels, Gammas (continued)

^{164}Dy Levels (continued)

configuration=π3/2[411]-π7/2[523].

[b] Band(D): K^{π}=(4^{-}) band (?). Tentative band assignment in (t,α) data, where it is suggested that configuration=π1/2[411]+π7/2[523] may contribute 20%.

[c] Band(E): K^{π}=(3^{+}),ν5/2[523]+ν1/2[521]. Band assignment from (d,p).

[d] Band(F): K^{π}=(2^{+}),ν5/2[523]-ν1/2[521]. Band assignment from (d,p).

[e] Band(G): K^{π}=(5^{-}) band. According to (t,α) data, configuration=π3/2[411]+π7/2[523] may contribute 42%.

[f] Band(H): K^{π}=(6^{-}) band. According to (t,α) data, some contribution from configuration=π5/2[413]+π7/2[523].

$\gamma(^{164}Dy)$

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	α[a]	Comments
73.393	2^+	73.392 *5*	100	0.0	0^+	E2		8.89	α(K)=2.15 *3*; α(L)=5.18 *8*; α(M)=1.245 *18* α(N)=0.279 *4*; α(O)=0.0331 *5*; α(P)=9.41×10^{-5} *14* B(E2)(W.u.)=211 *4* E_γ: from (n,γ) E=thermal. Other: 73.394 *13* from (n,n′γ). Mult.: from ce data in ^{164}Ho ε decay and (d,pγ).
242.234	4^+	168.838 *5*	100	73.393	2^+	E2		0.419	α(K)=0.262 *4*; α(L)=0.1210 *17*; α(M)=0.0286 *4* α(N)=0.00644 *9*; α(O)=0.000802 *12*; α(P)=1.200×10^{-5} *17* B(E2)(W.u.)=271 *11* E_γ: from (n,γ) E=thermal. Other: 168.837 *10* from (n,n′γ). Mult.: Q from $\gamma\gamma(\theta)$ in (n,γ) E=thermal; M2 is ruled out by RUL.
501.330	6^+	259.097 *11*	100	242.234	4^+	E2		0.1018	α(K)=0.0739 *11*; α(L)=0.0216 *3*; α(M)=0.00502 *7* α(N)=0.001137 *16*; α(O)=0.0001474 *21*; α(P)=3.74×10^{-6} *6* B(E2)(W.u.)=303 *9* E_γ: weighted average of 259.090 *15* from (n,γ) E=thermal and 259.101 *11* from (n,n′γ). Additional information 2.
761.815	2^+	519.59[b] *3*	1.75 *5*	242.234	4^+	[E2]		0.01373	B(E2)(W.u.)=0.54 *4* Additional information 3.
		688.422 *10*	100.0 *22*	73.393	2^+	E2+M1	−9.5 *+8−10*	0.00697	α(K)=0.00575 *9*; α(L)=0.000947 *14*; α(M)=0.000210 *3* α(N)=4.83×10^{-5} *7*; α(O)=6.83×10^{-6} *10*; α(P)=3.29×10^{-7} *5* B(E2)(W.u.)=7.4 *6*; B(M1)(W.u.)=8.1×10^{-5} *16* δ: from Coulomb excitation. Additional information 4.
		761.813 *10*	96.2 *21*	0.0	0^+	E2		0.00547	B(E2)(W.u.)=4.3 *3* Additional information 5.
828.215	3^+	585.985 *13*	17.7 *4*	242.234	4^+	M1+E2	+5.4 *+32−15*	0.0105 *4*	Additional information 6.
		754.817 *10*	100.0 *23*	73.393	2^+	E2(+M1)		0.0081 *25*	Mult.,δ: M1+E2 from ce data in (d,pγ), δ(E2/M1)=70 *+180−30* from $\gamma(\theta)$ in (n,n′γ). Additional information 7.
843.66	8^+	342.35 *5*	100	501.330	6^+	E2		0.0434	α(K)=0.0333 *5*; α(L)=0.00784 *11*; α(M)=0.00180 *3* α(N)=0.000409 *6*; α(O)=5.44×10^{-5} *8*; α(P)=1.775×10^{-6} *25* B(E2)(W.u.)=300 *13* Mult.: Q from $\gamma(\theta)$ in Coulomb excitation; M2 is ruled out by RUL.
915.991	4^+	154.18 *3*	0.62 *12*	761.815	2^+				E_γ: from (n,γ) E=th. Other: 154.24 *25* from (n,n′γ). Additional information 8.
		414.83 *20*	1.5 *5*	501.330	6^+				E_γ: weighted average of 415 *1* from ^{164}Tb β^- decay, 415.00 *50* from (n,γ) E=th, and 414.79 *20* from (n,n′γ). I_γ: weighted average of 1.4 *5* in (n,n′γ) and 2.3 *12* in ^{164}Tb β^- decay. Other: 62 *30* in (n,γ).
		673.743 *10*	100.0 *24*	242.234	4^+	M1+E2	+0.87 *+13−11*	0.0111 *5*	α(K)=0.0093 *5*; α(L)=0.00138 *5*; α(M)=0.000302 *11*

From ENSDF

$^{164}_{66}Dy_{98}$-9

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	α[a]	Comments
									α(N)=7.0×10^{-5} *3*; α(O)=1.01×10^{-5} *4*; α(P)=5.6×10^{-7} *3* Additional information 9.
915.991	4+	842.610 *11*	62.8 *15*	73.393	2+	E2		0.00438	Additional information 10. Mult.: from ce data in (d,pγ).
976.916	2−	148.697 *10*	15.6 *12*	828.215	3+	E1		0.1067	α(K)=0.0897 *13*; α(L)=0.01331 *19*; α(M)=0.00291 *4* α(N)=0.000664 *10*; α(O)=9.25×10^{-5} *13*; α(P)=4.37×10^{-6} *7* E_γ: weighted average of 148.696 *10* from (n,γ) E=th and 148.700 *19* from (n,n′γ). Additional information 11. I_γ: unweighted average of 18.5 *15* from ^{164}Tb β^- decay (3.0 m), 14.3 *23* from (n,γ) E=th, 13.1 *7* from (d,pγ), and 16.4 *6* from (n,n′γ).
		215.104 *10*	100 *3*	761.815	2+	E1		0.0402	Additional information 12. Mult.: E1 from ce data in (d,pγ), D(+Q) from $\gamma\gamma(\theta)$ in (n,γ) E=th and $\gamma(\theta)$ in (n,n′γ); δ(Q/D)=−0.03 *8* from $\gamma\gamma(\theta)$ may suggest small M2 admixture. δ: Other: −0.05 *5* from (n,n′γ).
		903.49 *18*	0.67 *12*	73.393	2+				E_γ: weighted average of 903.0 *5* from ^{164}Tb β^- decay and 903.55 *18* from (n,n′γ). I_γ: weighted average of 1.5 *5* from ^{164}Tb β^- decay and 0.65 *7* from (n,n′γ).
1024.646	5+	196.56 *13*	3.7 *6*	828.215	3+	[E2]		0.250	α(K)=0.1666 *24*; α(L)=0.0641 *10*; α(M)=0.01504 *22* α(N)=0.00340 *5*; α(O)=0.000429 *7*; α(P)=7.92×10^{-6} *12* E_γ: weighted average of 196.75 *15* from ^{164}Tb β^- decay and 196.47 *10* from (n,n′γ). I_γ: weighted average of 3.7 *19* from ^{164}Tb β^- decay and 3.7 *6* from (n,n′γ).
		523.329 *23*	13.9 *5*	501.330	6+	M1+E2		0.020 *7*	Additional information 13. I_γ: weighted average of 11.1 *19* from ^{164}Tb β^- decay, 14.0 *5* from (n,n′γ), and 14.7 *15* from Coulomb excitation.
		782.406 *11*	100.0 *22*	242.234	4+	E2+M1	−5.5 *+21−61*	0.00530 *23*	α(K)=0.00441 *20*; α(L)=0.000694 *25*; α(M)=0.000153 *6* α(N)=3.53×10^{-5} *13*; α(O)=5.03×10^{-6} *19*; α(P)=2.54×10^{-7} *13* δ: Others: −0.19 *6* in Coul. ex., +33 *+17−8* in (n,n′γ). Additional information 14.
1039.309	3−	123.32 *1*	15.9 *9*	915.991	4+				E_γ: from (n,γ) E=th. Others: 123.32 *6* in (n,n′γ), 123.22 *5* in ^{164}Tb β^- decay. I_γ: weighted average of 17.5 *18* from ^{164}Tb β^- decay, 12.7 *19* from (n,γ) E=th, and 16.1 *8* from (n,n′γ).
		211.102 *13*	60.5 *18*	828.215	3+	E1		0.042	E_γ: weighted average of 211.108 *15* from (n,γ) E=th and 211.097 *13* from (n,n′γ).

$^{164}_{66}Dy_{98}$-10

γ(^{164}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[&]	α[a]	Comments
									I_γ: weighted average of 73 *8* from ^{164}Tb β^- decay, 52 *8* from (n,γ) E=th, 56 *7* from (d,pγ), and 60.6 *17* from (n,n$'\gamma$).
									Mult.: (E1) from ce data in (d,pγ), D(+Q) from $\gamma\gamma(\theta)$ in (n,γ) E=th. δ(Q/D)=+0.29 *26* from $\gamma\gamma(\theta)$ may suggest small M2 admixture.
1039.309	3^-	277.488 *11*	100.0 *23*	761.815	2^+	E1		0.0209	Additional information 15.
		797.17 *7*	2.97 *17*	242.234	4^+				E_γ: weighted average of 796.7 *5* from ^{164}Tb β^- decay and 797.18 *7* from (n,n$'\gamma$).
									I_γ: from (n,n$'\gamma$). Other: 10 *4* in ^{164}Tb β^- decay.
		965.914 *16*	16.7 *5*	73.393	2^+	(E1(+M2))	+0.006 *+14−26*		Mult.,δ: from $\gamma(\theta)$ in (n,n$'\gamma$).
									Additional information 16.
1122.774	4^-	98.127 *6*	4.6 *8*	1024.646	5^+	E1		0.325	α(K)=0.271 *4*; α(L)=0.0422 *6*; α(M)=0.00924 *13*
									α(N)=0.00210 *3*; α(O)=0.000286 *4*; α(P)=1.246×10^{-5} *18*
									Additional information 17.
									I_γ: weighted average of 6.7 *10* in (n,n$'\gamma$), 3.9 *6* in (n,γ) E=th, and 4.5 *15* in ^{164}Tb β^-. Other: 44 *7* in (d,pγ) is discrepant.
		145.88 *2*	1.8 *3*	976.916	2^-				E_γ: weighted average of 145.88 *2* from (n,γ) E=th and 145.95 *20* from (n,n$'\gamma$).
									I_γ: weighted average of 1.5 *3* from (n,γ) E=th and 2.2 *4* from (n,n$'\gamma$).
		206.78 *2*	19.6 *8*	915.991	4^+	E1		0.0446	α(K)=0.0376 *6*; α(L)=0.00544 *8*; α(M)=0.001189 *17*
									α(N)=0.000272 *4*; α(O)=3.84×10^{-5} *6*; α(P)=1.91×10^{-6} *3*
									E_γ: weighted average of 206.80 *5* from ^{164}Tb β^- decay, 206.78 *2* from (n,γ) E=th, 207.1 *5* from (d,pγ), and 206.78 *3* from (n,n$'\gamma$).
									I_γ: weighted average of 19.3 *8* in (n,n$'\gamma$), 19 *4* in (n,γ) E=th, 23.6 *30* in ^{164}Tb β^- decay. Other: intensity is discrepant in (d,pγ), thus not included in averaging.
		294.554 *11*	100.0 *21*	828.215	3^+	E1			Additional information 18.
									Mult.: D+Q from $\gamma\gamma(\theta)$ in (n,γ) E=th and $\gamma(\theta)$ in (n,n$'\gamma$); polarity from level-parity change determined based on other experimental evidence. δ(Q/D)=+0.11 *+21−17* from $\gamma\gamma(\theta)$ may suggest small M2 admixture.
1153.568	6^+	131.3 *2*	48 *4*	1024.646	5^+	M1		1.101	α(K)=0.928 *14*; α(L)=0.1360 *20*; α(M)=0.0299 *5*
									α(N)=0.00691 *11*; α(O)=0.001011 *15*; α(P)=5.78×10^{-5} *9*
									E_γ: weighted average of 131.0 *5* from ^{164}Tb β^- decay and 131.4 *2* from (d,pγ). Not reported in Coul. Ex. and (n,n$'\gamma$). Poor fit, level-energy difference=128.94.
									I_γ: from (d,pγ). Other:≈100 in ^{164}Tb β^- decay.
		237.56 *10*	16.7 *16*	915.991	4^+				I_γ: from (n,n$'\gamma$). Other: 28 *5* from Coul. ex.
		652.231 *19*	100.0 *24*	501.330	6^+	(E2+M1)	−5.4 *+16−24*	0.0078	α(K)=0.00639 *9*; α(L)=0.001074 *16*; α(M)=0.000239 *4*

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J^π_i	E_γ †	I_γ †	E_f	J^π_f	Mult. ‡	δ &	α [a]	Comments
									α(N)=5.49×10^{-5} *8*; α(O)=7.73×10^{-6} *11*; α(P)=3.64×10^{-7} *6* Additional information 19. Mult.,δ: from (n,n′γ). Other: (E2) from (d,pγ).
1153.568	6$^+$	911.34 *3*	64.4 *16*	242.234	4$^+$				Additional information 20. I_γ: weighted average of 64.9 *20* in (n,n′γ) and 64.1 *16* in Coul. ex.
1225.162	5$^-$	185.86 *5*	7.0 *16*	1039.309	3$^-$	E2		0.302	α(K)=0.197 *3*; α(L)=0.0810 *12*; α(M)=0.0191 *3* α(N)=0.00430 *6*; α(O)=0.000540 *8*; α(P)=9.25×10^{-6} *13* E_γ: from (n,γ) E=th. Others: 185.93 *25* in (n,n′γ), 185.84 *20* in ^{164}Tb β^-. Additional information 21. I_γ: weighted average of 6.3 *14* in (n,n′γ), 7.5 *25* in (n,γ) E=th, and 18 *6* in ^{164}Tb β^- decay. Other: 32 *5* in (d,pγ) is discrepant.
		200.52 *3*	10.9 *11*	1024.646	5$^+$	[E1]		0.0483	α(K)=0.0408 *6*; α(L)=0.00591 *9*; α(M)=0.001291 *18* α(N)=0.000295 *5*; α(O)=4.16×10^{-5} *6*; α(P)=2.06×10^{-6} *3* E_γ: weighted average of 200.50 *15* from ^{164}Tb β^- decay, 200.52 *3* from (n,γ) E=th, and 200.53 *9* from (n,n′γ). I_γ: weighted average of 24 *12* from ^{164}Tb β^- decay, 13 *4* from (n,γ) E=th, and 10.6 *11* from (n,n′γ).
		309.162 *23*	100.0 *25*	915.991	4$^+$	E1			E_γ: weighted average of 309.08 *5* from ^{164}Tb β^- decay, 309.12 *3* from (n,γ) E=th, 309.4 *5* from (d,pγ), and 309.180 *15* from (n,n′γ). Mult.: E1 from ce data in (d,pγ), D(+Q) from $\gamma\gamma(\theta)$ in (n,γ) E=th. δ(Q/D)=+0.12 *20* from $\gamma\gamma(\theta)$ may suggest small M2 admixture.
		723.81 *8*	9.1 *6*	501.330	6$^+$				
		982.933 *20*	49.3 *16*	242.234	4$^+$				
1261.28	10$^+$	417.6 *2*	100	843.66	8$^+$	E2		0.0246	α(K)=0.0194 *3*; α(L)=0.00403 *6*; α(M)=0.000914 *13* α(N)=0.000209 *3*; α(O)=2.83×10^{-5} *4*; α(P)=1.065×10^{-6} *15* B(E2)(W.u.)=358 *18* E_γ: weighted average of 417.5 *3* from (n,n′γ) and 417.6 *2* from Coulomb excitation. Mult.: Q from $\gamma(\theta)$ in Coulomb excitation; M2 is ruled out by RUL.
1301.91	7$^+$	277.8	35 *5*	1024.646	5$^+$				E_γ,I_γ: from Coulomb excitation only.
		800.58 *3*	100 *3*	501.330	6$^+$	D+Q	−0.21 *+8−9*		Mult.,δ: from $\gamma(\theta)$ in Coulomb excitation.
1350.429	6$^-$	325.782 *22*	100	1024.646	5$^+$				
1393.8	(2$^+$)	478.0 #	30 #	915.991	4$^+$				
		567 # *1*	40 # *10*	828.215	3$^+$				
		633.0 # *5*	40 # *20*	761.815	2$^+$				
		1152 # *1*	86 # *10*	242.234	4$^+$				
		1320.1 # *15*	100 # *40*	73.393	2$^+$				
		1393.0 # *15*	40 # *10*	0.0	0$^+$				

$\gamma(^{164}\mathrm{Dy})$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	α[a]	Comments
1470.26	8^+	316.0 *3*	100 *2*	1153.568	6^+				I_γ: from Coul. ex. Other: 63 *17* in (n,n′γ).
		626.86 *16*	79 *10*	843.66	8^+	(M1+E2)	+1.18 *5*	0.01204 *25*	I_γ: from Coulex. Other: 100 *10* in (n,n′γ).
		968.4 *5*	60 *11*	501.330	6^+				I_γ: from Coul. ex. Other: 20 *8* in (n,n′γ).
1495.92	7^-	342.35 *5*	<100	1153.568	6^+				
		994.62 *24*	11.9 *17*	501.330	6^+				
1588.090	4^-	363[c]		1225.162	5^-				E_γ: seen in β^- decay only.
		465.30 *17*	4.6 *9*	1122.774	4^-			0.0184	α(K)= 0.0147; α(L)=0.00288 E_γ: weighted average of 465.05 *20* from ^{164}Tb β^- decay, 466.1 *5* from (d,pγ), and 465.37 *15* from (n,n′γ). I_γ: from ^{168}Tb β^- decay. Other: 67 *10* in (d,pγ).
		548.82 *3*	38.5 *17*	1039.309	3^-	(E2+M1)			Additional information 22. I_γ: weighted average of 42 *3* from ^{164}Tb β^- decay, 79 *16* from (d,pγ), and 38.1 *9* from (n,n′γ). Other: ≈ 100 in (n,γ) E=th. Mult.: from $\gamma(\theta)$ in (n,n′γ).
		611.168 *13*	100.0 *21*	976.916	2^-	E2		0.00916	Additional information 23.
		671.2[#] *5*	4.7[#] *11*	915.991	4^+				
1607.7	(4^+)	484.7[#] *5*	12[#] *3*	1122.774	4^-				
		569.0[c] *3*		1039.309	3^-				E_γ: from (d,pγ) only.
		583.5[#] *5*	18[#] *6*	1024.646	5^+				
		691[#c]		915.991	4^+				
		779[#c] *1*	38[#] *3*	828.215	3^+				
		845[#] *1*	100[#] *24*	761.815	2^+				
1654.7	9^+	352.4	85 *20*	1301.91	7^+				E_γ,I_γ: from Coulomb excitation.
		811.5	100 *5*	843.66	8^+	(M1+E2)		0.0068 *21*	E_γ,I_γ,Mult.: from Coulomb excitation.
1654.71	0^+	892.88 *8*	20.8 *15*	761.815	2^+				
		1581.31 *3*	100 *4*	73.393	2^+				
1674.945	1^-	1601.530 *25*	100 *4*	73.393	2^+	(E1)			Mult.: from $\gamma(\theta)$ in (n,n′γ). δ(E2/M1)=0.00 *8*.
		1674.959 *31*	69.2 *28*	0.0	0^+	E1			Mult.: from $\gamma(\theta)$ in (n,n′γ) and γ(lin pol) in (γ,γ′).
1686.566	5^-	461.28 *13*	16.9 *16*	1225.162	5^-				E_γ: weighted average of 461.26 *13* in (n,n′γ), 461.5 *5* in ^{164}Tb β^- decay.
		563.81 *3*	65.1 *21*	1122.774	4^-	(E2+M1)	+22 *+126−9*		Additional information 24. Mult.,δ: from $\gamma(\theta)$ in (n,n′γ).
		647.248 *25*	100.0 *21*	1039.309	3^-	E2		0.00798	Additional information 25.
		770.2[#] *10*	17[#] *4*	915.991	4^+				
1716.223	2^+	954.57 *24*	3.4 *6*	761.815	2^+				
		1473.88[b] *13*	<13	242.234	4^+				
		1642.815 *25*	100 *4*	73.393	2^+	M1+E2	+0.75 *50*		B(M1)(W.u.)=0.0022 *+26−16*; B(E2)(W.u.)=0.22 *+34−20* Mult.,δ: from $\gamma(\theta)$ in (n,n′γ) and RUL.

$^{164}_{66}\mathrm{Dy}_{98}$-13

Adopted Levels, Gammas (continued)

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[&]	α[a]	Comments
1716.223	2^+	1716.25 *11*	12.9 *7*	0.0	0^+	E2			B(E2)(W.u.)=0.062 *+31−34* Mult.: Q from $\gamma(\theta)$ in (n,n′γ), M2 ruled out by RUL.
1725.2		701.0[#] *5*	100[#] *23*	1024.646	5^+				
		810[b#] *1*	<320[#]	915.991	4^+				
		965[#c]		761.815	2^+				
		1485.2[b#c] *15*	<90[#]	242.234	4^+				
		1650.9 *11*	90 *23*	73.393	2^+				E_γ: weighted average of 1652.5 *15* from ^{164}Tb β^- decay and 1650.0 *11* from (n,n′γ). I_γ: from ^{164}Tb β^- decay.
1738.1	$(1^+,2^+)$	911.7 *8*	100 *17*	828.215	3^+				
		1664.2 *20*	45 *27*	73.393	2^+				
		1736.4[b] *8*	<220	0.0	0^+				
1745.9	12^+	484.5 *5*	100	1261.28	10^+	E2		0.01646	B(E2)(W.u.)=331 *17* δ: from $\gamma(\theta)$ in Coulomb excitation; M2 ruled out by RUL.
1758.165	3^-	1515.94 *3*	77 *3*	242.234	4^+	(E1+M2)	+0.06 *3*		Mult.,δ: from $\gamma(\theta)$ in (n,n′γ).
		1684.75 *3*	100 *4*	73.393	2^+	(E1+M2)	−0.10 *3*		Mult.,δ: from $\gamma(\theta)$ in (n,n′γ).
1770.2	$(4,5,3^+)$	647.3[#] *5*	100[#] *21*	1122.774	4^-				
		744.4[#] *5*	10[#] *3*	1024.646	5^+				
		856[#c] *1*	14[#] *3*	915.991	4^+				
1779.6	0^+	1017.8 *4*	<6.7	761.815	2^+				
		1705.75[c] *4*	100 *5*	73.393	2^+				
1796.68	$(2)^+$	880.79 *12*	6.8 *9*	915.991	4^+				
		1554.50 *7*	23.5 *12*	242.234	4^+				
		1723.26 *3*	100 *4*	73.393	2^+	(M1+E2)			Mult.,δ: δ(E2/M1)=−0.09 *4* or +3.0 *4* from $\gamma(\theta)$ in (n,n′γ).
		1796.64 *15*	11.5 *9*	0.0	0^+				
1804.24	$6^{(-)}$	453.8[b] *3*	<25	1350.429	6^-				
		579.14 *7*	87 *6*	1225.162	5^-	(M1+E2)			Mult.,δ: δ(E2/M1)<−12 from $\gamma(\theta)$ in (n,n′γ).
		681.43 *6*	100 *6*	1122.774	4^-	(E2)			Mult.: from $\gamma(\theta)$ in (n,n′γ).
1809.571	1^-	770.6 *6*	1.1 *6*	1039.309	3^-				
		1048.0 *5*	2.4 *6*	761.815	2^+				
		1736.167 *23*	100	73.393	2^+				
		1809.6 *4*	3.6 *7*	0.0	0^+				
1840.66	$1^{(-)}$	1767.20 *4*	88 *4*	73.393	2^+				
		1840.70 *4*	100 *5*	0.0	0^+	D			
1846.33	2^-	1772.93 *3*	100	73.393	2^+	(E1(+M2))	+0.01 *9*		Mult.,δ: from $\gamma(\theta)$ in (n,n′γ).
1852.87	4^+	1610.56 *8*	100 *4*	242.234	4^+	(M1+E2)	+0.40 *17*		Mult.,δ: from $\gamma(\theta)$ in (n,n′γ).
		1779.50 *6*	100 *7*	73.393	2^+				
1858.9	10^+	389.0	100 *2*	1470.26	8^+				E_γ,I_γ: from Coulomb excitation.
		597.4		1261.28	10^+				E_γ: from Coulomb excitation.

From ENSDF

$^{164}_{66}Dy_{98}$-14

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	Comments
1858.9	10^+	1015.3	16.3 *4*	843.66	8^+			E_γ,I_γ: from Coulomb excitation.
1883.55	(0^+)	1810.15 *11*	100	73.393	2^+			
1891.69	4^+	1649.45 *4*	100 *4*	242.234	4^+			
		1818.4 *4*	9.7 *14*	73.393	2^+			
1909.52	3^-	1667.26 *3*	100 *4*	242.234	4^+	(E1(+M2))	+0.01 *2*	Mult.,δ: from $\gamma(\theta)$ in (n,n$'\gamma$).
		1836.18[b] *6*	<34	73.393	2^+			
1914.21	(5^-)	1412.88 *15*	43 *6*	501.330	6^+			
		1671.97 *6*	100 *4*	242.234	4^+	(E1(+M2))	−0.01 *4*	Mult.,δ: from $\gamma(\theta)$ in (n,n$'\gamma$).
1921.22	2^+	1005.6 *5*	2.6 *9*	915.991	4^+			
		1160.0 *5*	2.8 *9*	761.815	2^+			
		1847.82 *3*	100 *5*	73.393	2^+	(M1+E2)		δ: −0.38 *4* or +17 *+29−5* in (n,n$'\gamma$).
		1921.09 *13*	17.7 *12*	0.0	0^+	(E2)		Mult.: from $\gamma(\theta)$ in (n,n$'\gamma$).
1933.21	$(2,3)^+$	1690.94[b] *10*		242.234	4^+			
		1859.81[b] *6*		73.393	2^+			
1933.63	$4^{(-)}$	345.55 *7*	100 *5*	1588.090	4^-	(M1+E2)	+0.87 *24*	E_γ: other: 344.8 *5* from ^{164}Tb β^- decay. I_γ: other: 100 *20* from ^{164}Tb β^- decay. Mult.,δ: from $\gamma(\theta)$ in (n,n$'\gamma$).
		707.7 *10*	6 *2*	1225.162	5^-			E_γ,I_γ: from ^{164}Tb β^- decay.
		810.4 *4*	12 *3*	1122.774	4^-			E_γ: other: 810 *1* in ^{164}Tb β^- decay. I_γ: from (n,n$'\gamma$). Other: <29 from ^{164}Tb β^- decay.
		1017.8 *4*	<14	915.991	4^+			E_γ: from (n,n$'\gamma$). Other: 1015.5 *10* from ^{164}Tb β^- decay. I_γ: from (n,n$'\gamma$). Other: <18 from ^{164}Tb β^- decay.
		1105.6 *5*	10 *3*	828.215	3^+			E_γ: from (n,n$'\gamma$). Other: 1104.3 *10* from ^{164}Tb β^- decay. I_γ: from (n,n$'\gamma$). Other: 22 *4* from ^{164}Tb β^- decay.
		1690.94[bc] *10*		242.234	4^+			
1940.82	(7^-)	590.4 *3*	71 *18*	1350.429	6^-			
		715.69 *18*	100 *14*	1225.162	5^-	(E2)		Mult.: from $\gamma(\theta)$ in (n,n$'\gamma$).
		787.1 *4*	38 *12*	1153.568	6^+			
1949.78	3^-	361.72[b] *10*	<30	1588.090	4^-			
		827.04 *9*	25.2 *18*	1122.774	4^-			
		910.52 *4*	100 *3*	1039.309	3^-			
		972.81 *4*	71 *3*	976.916	2^-	(M1+E2)	+0.09 *4*	Mult.,δ: from $\gamma(\theta)$ in (n,n$'\gamma$).
1953.0	(4^+)	559.42[#] *20*	60[#] *7*	1393.8	(2^+)			
		827.0[#c] *5*	56[#] *14*	1122.774	4^-			
		1034.6[b#] *10*	<43[#]	915.991	4^+			
		1123.4[#] *10*	100[#] *29*	828.215	3^+			
		1189.7[#] *10*	21[#] *7*	761.815	2^+			
		1878[#] *3*	21[#] *7*	73.393	2^+			
1978.411	(4^-)	1736.167[b] *23*	100	242.234	4^+			
1978.81	(3^+)	1062.60[b] *15*	<11	915.991	4^+			

$^{164}_{66}Dy_{98}$-15

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[&]	Comments
1978.81	(3+)	1150.59 *8*	24.6 *16*	828.215	3+			
		1217.00 *3*	100 *4*	761.815	2+	(M1+E2)	+0.35 *4*	Mult.,δ: from $\gamma(\theta)$ in (n,n′γ).
1979.30	(2+)	939.95 *17*	24.2 *27*	1039.309	3−			
		1002.35 *4*	22	976.916	2−			
		1905.98 *7*	100 *5*	73.393	2+			
		1979.0 *5*	59	0.0	0+			
1985.67	(2,3)−	863.2 *3*	7.4 *12*	1122.774	4−			
		946.34 *10*	24.6 *18*	1039.309	3−			
		1008.58 *13*	14.2 *13*	976.916	2−			
		1157.9 *7*	3.3 *12*	828.215	3+			
		1223.92 *10*	100 *9*	761.815	2+			
1998.62	(4+)	389.9[c] *2*		1607.7	(4+)			E_γ: from (d,pγ) only.
		410.53 *5*	100 *4*	1588.090	4−			
		875.8 *4*	7.4 *21*	1122.774	4−			
		1022.1 *4*	6.4 *19*	976.916	2−			
		1083.2 *5*	7.0 *19*	915.991	4+			
		1169.12[c] *24*	19.0 *26*	828.215	3+			E_γ: poor fit. Level-energy difference=1170.4 *3*. This γ was not used in the least-squares fit procedure.
		1925.0 *6*	9.1 *28*	73.393	2+			
2015.2?		1941.8[c] *8*		73.393	2+			
2041.66	(4−)	131.99 *25*	49 *11*	1909.52	3−			
		453.8[b] *3*	<18	1588.090	4−			
		1002.35 *4*	100	1039.309	3−			
2049.13	(2)+	1072.18 *13*	28.8 *24*	976.916	2−			
		1220.73 *16*	20.0 *18*	828.215	3+			
		1287.32 *4*	100 *4*	761.815	2+			
		1975.6 *4*	10.7 *18*	73.393	2+			
		2050[c] *1*		0.0	0+			
2053.34	(3)+	465.37 *15*	38	1588.090	4−			
		1225.11 *18*	100 *22*	828.215	3+			
		1291.40 *15*	38 *3*	761.815	2+			
		1811.5 *5*	11.8 *25*	242.234	4+			
		1979.91	50 *24*	73.393	2+			
2053.61	1(−)	1979.6 *5*	100	73.393	2+			
		2053.61 *8*	72 *4*	0.0	0+	D		
2076.4	11+	421.7		1654.7	9+			E_γ: from Coulomb excitation.
		815.1		1261.28	10+			E_γ: from Coulomb excitation.
2078.04	(2,3)+	319.8[b] *5*	<14	1758.165	3−			
		361.72[b] *10*	<47	1716.223	2+			
		1038.68 *13*	33.1 *29*	1039.309	3−			
		1101.14 *4*	100 *5*	976.916	2−			
		1316.0 *3*	15.2 *27*	761.815	2+			

$^{164}_{66}Dy_{98}$-16

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J^{π}_i	E_γ[†]	I_γ[†]	E_f	J^{π}_f	Mult.[‡]	Comments
2078.04	$(2,3)^+$	2004.4[b] *10*	<12	73.393	2^+		
2078.48	$(4)^+$	1054.1 *5*	11 *5*	1024.646	5^+		
		1162.48 *11*	86 *8*	915.991	4^+		
		1250.52 *13*	100 *8*	828.215	3^+		
		1836.18[b] *6*	<164	242.234	4^+		
		2004.4[b] *10*	<23	73.393	2^+		
2099.96	3^+	1075.0 *4*	16 *3*	1024.646	5^+		
		1184.00 *6*	100 *5*	915.991	4^+	(M1+E2)	δ: +0.33 *+13−10* or +4.9 *+38−19* in (n,n′γ).
		1271.43[b] *21*	<47	828.215	3^+		
		1338.4 *3*	21 *4*	761.815	2^+		
		1857.2 *3*	73 *5*	242.234	4^+		
2102.01	4^+	1062.60[b] *15*	<92	1039.309	3^-		
		1600.16 *23*	100 *13*	501.330	6^+		
		1859.81[b] *6*	<1030	242.234	4^+		
		2028.8[b] *4*	<64	73.393	2^+		
2113.18	(2^+)	458.4 *3*	22 *6*	1654.71	0^+		
		1196.84[c] *25*	34 *5*	915.991	4^+		
		1285.00 *10*	100 *6*	828.215	3^+		
		1351.28 *14*	57 *6*	761.815	2^+		
		2039.83 *23*	40 *5*	73.393	2^+		
		2113.2 *5*	19 *4*	0.0	0^+		
2123.88	(3^+)	366.0 *3*	14.7 *28*	1758.165	3^-		
		1881.7 *6*	5.0 *17*	242.234	4^+		
		2050.47 *5*	100 *5*	73.393	2^+		
2152.43	3^+	311.9 *4*	11 *4*	1840.66	$1^{(-)}$		
		1236.50 *14*	36 *3*	915.991	4^+		
		1390.50 *15*	<44	761.815	2^+		
		1910.17 *7*	100 *6*	242.234	4^+		
		2079.04 *15*	<55	73.393	2^+		
2157.75	(4^+)	159.45[#] *20*	44[#] *11*	1998.62	(4^+)		
		386.3[#] *5*	89[#] *22*	1770.2	$(4,5,3^+)$		
		934.0[#] *5*	49[#] *11*	1225.162	5^-		
		1034.6[b#] *10*	<67[#]	1122.774	4^-		
		1180.6[#] *5*	89[#] *45*	976.916	2^-		
		1330[b#] *2*	<56[#]	828.215	3^+		
		1395.0[b#] *15*	<44[#]	761.815	2^+		
		1656.7[#] *15*	100[#] *33*	501.330	6^+		
		1916[#] *2*	22[#] *11*	242.234	4^+		
		2084.0[b#] *15*	<44[#]	73.393	2^+		

$^{164}_{66}Dy_{98}$-17

Adopted Levels, Gammas (continued)

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	α[a]	$I_{(\gamma+ce)}$	Comments
2173.26	(4)$^+$	174.4[#] *3*	12[#] *6*	1998.62	(4$^+$)	[M1+E2]	0.44 *6*		
		319.8[b] *6*	<13	1852.87	4$^+$	[M1+E2]	0.074 *2*	1	
		1050[#] *1*	12[#] *6*	1122.774	4$^-$	[E1]			B(E1)(W.u.)=3.9×10^{-5} *+24−34*
		1135[#] *1*	17[#] *6*	1039.309	3$^-$	[E1]			B(E1)(W.u.)=4.4×10^{-5} *+22−34*
		1148.5[#] *5*	100[#] *17*	1024.646	5$^+$				
		1196.2[#] *5*	17[#] *6*	976.916	2$^-$				If J^π(2173)=4$^+$, this transition to 977, 2$^-$ level would be questionable from RUL, as deduced B(M2)(W.u.)=120 +60-100 is too large to be realistic.
		1257.6[#] *5*	12[#] *6*	915.991	4$^+$				I_γ: from ^{164}Tb β^- decay. Other: I(1258γ)/I(1411γ)=10.0 *25*/100 *8* in (n,n′γ).
		1345.24 *11*		828.215	3$^+$				E_γ: weighted average of 1345.29 *18* from (n,γ) E=th and 1345.22 *11* from (n,n′γ). Not observed in ^{164}Tb β^- decay. I_γ: I(1345γ)/I(1411γ)=54 *5*/100 *8* in (n,n′γ).
		1411.41 *9*	12 *6*	761.815	2$^+$	[E2]			B(E2)(W.u.)=0.38 *+23−33* E_γ: weighted average of 1411.0 *15* from ^{164}Tb β^- decay, 1411.30 *11* from (n,γ) E=th, and 1411.48 *9* from (n,n′γ). I_γ: from ^{164}Tb β^- decay. Intensity is discrepant in (n,γ) E=th and (n,n′γ).
		1930.88 *11*	17 *6*	242.234	4$^+$				E_γ: from (n,γ) E=th. Other: 1932 *3* from ^{164}Tb β^- decay. I_γ: from ^{164}Tb β^- decay.
		2100[b#]	<17[#]	73.393	2$^+$	[E2]			B(E2)(W.u.)<0.08
2194.82	(4$^+$)	37.7[#] *3*	9[#] *4*	2157.75	(4$^+$)				
		425[#] *1*	39[#] *9*	1770.2	(4,5,3$^+$)				
		508[#c] *1*	58[#]	1686.566	5$^-$				
		607[#c] *1*	37[#]	1588.090	4$^-$				
		802.0[#c] *5*	27[#] *9*	1393.8	(2$^+$)				
		969[#c] *1*	18[#]	1225.162	5$^-$				
		1155.2 *4*	46 *9*	1039.309	3$^-$				E_γ: weighted average of 1154.8 *10* from ^{164}Tb β^- decay and 1155.3 *4* from (n,n′γ). I_γ: from ^{164}Tb β^- decay. Other: 21 *4* in (n,n′γ) is discrepant.
		1169.4[#] *10*	49[#] *16*	1024.646	5$^+$				
		1217.2[#] *5*	40[#] *5*	976.916	2$^-$				
		1278.54 *18*	100 *18*	915.991	4$^+$				E_γ: weighted average of 1278.2 *5* from ^{164}Tb β^- decay and 1278.58 *18* from (n,n′γ). I_γ: from ^{164}Tb β^- decay. Other: 52 *5* is discrepant in (n,n′γ).
		1366.20 *23*	83 *22*	828.215	3$^+$				E_γ: weighted average of 1366.0 *5* from ^{164}Tb β^- decay and 1366.24 *23* from (n,n′γ). I_γ: from ^{164}Tb β^- decay. Other: 28 *5* is discrepant in (n,n′γ).
		1433.18 *10*	20	761.815	2$^+$				I_γ: from ^{164}Tb β^- decay. Other: 100 *7* is discrepant in (n,n′γ).

γ(^{164}Dy) (continued)

E_i(level)	J^π_i	E_γ †	I_γ †	E_f	J^π_f	Comments
2194.82	(4+)	1952.44 *20*	20 *5*	242.234	4+	I_γ: from ^{164}Tb β^- decay. Other: 58 *5* is discrepant in (n,n′γ).
		2121.4# *10*	15#	73.393	2+	
2205.78	(4+)	519.6b# *5*	<4.4#	1686.566	5−	
		617.76 *12*	100 *7*	1588.090	4−	E_γ: weighted average of 617.82 *20* from ^{164}Tb β^- decay and 617.74 *12* from (n,n′γ). I_γ: from ^{164}Tb β^- decay.
		810b#c *1*	<10#	1393.8	(2+)	
		1166.2# *10*	17# *4*	1039.309	3−	
		1180.6# *5*	7# *4*	1024.646	5+	
		1289.8 *3*	37 *5*	915.991	4+	E_γ: weighted average of 1289.8 *5* from ^{164}Tb β^- decay and 1289.8 *3* from (n,n′γ). I_γ: weighted average of 35 *5* from ^{164}Tb β^- decay and 42 *7* from (n,n′γ).
		1377.42 *17*	43 *7*	828.215	3+	E_γ: weighted average of 1377.5 *5* from ^{164}Tb β^- decay and 1377.41 *17* from (n,n′γ). I_γ: weighted average of 44 *7* from ^{164}Tb β^- decay and 41 *7* from (n,n′γ).
		1443.90 *21*	63 *9*	761.815	2+	E_γ: weighted average of 1443.9 *5* from ^{164}Tb β^- decay and 1443.90 *21* from (n,n′γ). I_γ: weighted average of 70 *7* from ^{164}Tb β^- decay and 51 *9* from (n,n′γ).
		1963.5# *15*	6.1# *9*	242.234	4+	
		2132.5 *6*	7 *3*	73.393	2+	E_γ: weighted average of 2132.0 *10* from ^{164}Tb β^- decay and 2132.7 *6* from (n,n′γ). I_γ: from ^{164}Tb β^- decay. Other: 31 *6* in (n,n′γ) is discrepant.
2230.42	(2+)	433.4 *3*	22 *5*	1796.68	(2)+	
		1402.2 *3*	28 *5*	828.215	3+	
		1468.66 *12*	100 *6*	761.815	2+	
		2230.40 *15*	92 *8*	0.0	0+	
2247.7	(4+)	1022.0# *10*	<90#	1225.162	5−	
		1125.0# *10*	67# *17*	1122.774	4−	
		1224# *1*	33# *17*	1024.646	5+	
		1270.6# *10*	100# *33*	976.916	2−	
		1330b# *2*	<83#	915.991	4+	
		1485.2b# *15*	<67#	761.815	2+	
		2174.5b# *10*	<84#	73.393	2+	
2248.14	(2+)	356.5 *4*	21 *7*	1891.69	4+	
		1208.6 *4*	19 *4*	1039.309	3−	
		1271.43b *21*	<67	976.916	2−	
		1486.26 *12*	98 *7*	761.815	2+	
		2174.68 *15*	100 *7*	73.393	2+	
		2248.17 *21*	64 *6*	0.0	0+	
2270.9?		1231.56c *8*	100 *6*	1039.309	3−	
		2028.8b *4*	<34	242.234	4+	
		2197.4 *5*	23 *5*	73.393	2+	

$^{164}_{66}Dy_{98}$-19

$\gamma(^{164}$Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[a]	Comments
2290.6	14^+	544.7 *5*	100	1745.9	12^+	E2	0.01222	B(E2)(W.u.)=326 *30* E_γ: from Coulomb excitation. Mult.: Q from $\gamma(\theta)$ in Coulomb excitation; M2 ruled out by RUL.
2302.16	$(2^+,3)$	1386.8 *5*	16 *4*	915.991	4^+			
		1473.88[b] *13*	<204	828.215	3^+			
		1540.2 *4*	23 *4*	761.815	2^+			
		2228.82 *20*	100 *12*	73.393	2^+			
2312.6?		626.0[#] *5*	100[#]	1686.566	5^-			
		724.5[#] *10*	<111[#]	1588.090	4^-			
		1288[#] *1*	37[#]	1024.646	5^+			
		1395.0[b#] *15*	<75[#]	915.991	4^+			
		1484.5[#] *5*	81[#]	828.215	3^+			
		2070.4[#] *5*	22[#]	242.234	4^+			
2314.2	12^+	455.6	100	1858.9	10^+			E_γ: from Coulomb excitation.
		568.0		1745.9	12^+			E_γ: from Coulomb excitation.
		1053.0		1261.28	10^+			E_γ: from Coulomb excitation.
2330.01	1^-	2256.68 *12*	100 *8*	73.393	2^+	[E1]		B(E1)(W.u.)=0.0017 *4*
		2329.83 *17*	64 *5*	0.0	0^+	E1		B(E1)(W.u.)=0.00099 *23* Mult.: from $\gamma(\theta$,pol) in (γ,γ').
2396.37		2322.98 *20*	100	73.393	2^+			
2411.9	$1^{(-)}$	2338.5[@]	249[@] *47*	73.393	2^+			
		2412[@]	100[@]	0.0	0^+			
2429.11	$(1,2^+)$	2355.72 *14*	100 *4*	73.393	2^+			
		2428.4 *7*	9.8 *24*	0.0	0^+			
2437.2	$(1,2^+)$	2363.6 *3*	100 *8*	73.393	2^+			
		2437.6 *5*	47 *6*	0.0	0^+			
2442.76		1680.8 *5*	20 *5*	761.815	2^+			
		2369.41 *15*	100 *6*	73.393	2^+			
2473.25	$(1,2^+)$	2399.88 *12*	100 *7*	73.393	2^+			
		2473.0 *3*	57 *6*	0.0	0^+			
2531.37	1^+	2457.6 *3*	32 *5*	73.393	2^+			If M1, B(M1)(W.u.)=0.030 *9*.
		2531.49 *18*	100 *7*	0.0	0^+	M1		B(M1)(W.u.)=0.087 *23* Mult.: from $\gamma(\theta$,pol) in (γ,γ').
2539.02	1^+	2465.7 *2*	22 *3*	73.393	2^+			If M1, B(M1)(W.u.)=0.021 *6*.
		2538.94 *17*	100 *9*	0.0	0^+	M1		B(M1)(W.u.)=0.088 *23* Mult.: from $\gamma(\theta$,pol) in (γ,γ').
2577.87	1^+	2504.5 *2*	36 *6*	73.393	2^+			If M1, B(M1)(W.u.)=0.041 *18*.
		2577.8 *2*	100 *9*	0.0	0^+	M1		B(M1)(W.u.)=0.10 *+6−3* Mult.: from $\gamma(\theta$,pol) in (γ,γ').
2583.22	$(1,2^+)$	1755.19[c] *11*	74 *6*	828.215	3^+			
		2509.77 *16*	100 *8*	73.393	2^+			

$^{164}_{66}$Dy$_{98}$-20

γ(^{164}Dy) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	Comments
2583.22	(1,2$^+$)	2584.3 *9*	16 *4*	0.0	0$^+$		
2653.7	1$^+$	1892.1 *4*	100 *16*	761.815	2$^+$		
		2580.1 *4*	59 *12*	73.393	2$^+$		
		2653.9 *10*	47 *8*	0.0	0$^+$		
2662.1	(1,2$^+$)	2662.11[bc] *25*	100	0.0	0$^+$		
2670.49	1$^-$	2597.0 *3*	100 *8*	73.393	2$^+$	[E1]	B(E1)(W.u.)=0.00095 *25*
		2670.6 *4*	63 *7*	0.0	0$^+$	E1	B(E1)(W.u.)=0.00055 *15* Mult.: from $\gamma(\theta$,pol) in (γ,γ').
2694.0	1$^+$	2620.5 *4*	47 *5*	73.393	2$^+$		If M1, B(M1)(W.u.)=0.051 *16*. I_γ: from (γ,γ').
		2694.1 *4*	100	0.0	0$^+$	M1	B(M1)(W.u.)=0.10 *3* I_γ: from (γ,γ'). Mult.: from $\gamma(\theta$,pol) in (γ,γ').
2738		2662.11[bc] *25*	100	73.393	2$^+$		
2752.7	(4$^+$)	2511.0[b#] *15*	<100[#]	242.234	4$^+$		
		2679.2[#] *5*	<3[#]	73.393	2$^+$		
2827.6		2828[@]	100[@]	0.0	0$^+$		
2832.2?	(14$^+$)	518[c]		2314.2	12$^+$		E_γ: from Coulomb excitation.
		542[c]		2290.6	14$^+$		E_γ: from Coulomb excitation.
		1086[c]		1745.9	12$^+$		E_γ: from Coulomb excitation.
2862.0	1$^{(+)}$	2788.5[@]	31[@] *5*	73.393	2$^+$		
		2862[@]	100[@]	0.0	0$^+$	(M1)	Mult.: from $\gamma(\theta$,pol) in (γ,γ').
2887.1	(16$^+$)	596.4	100	2290.6	14$^+$		E_γ: from (^{162}Dy,^{164}Dy).
2986.0	1$^{(-)}$	2912.5[@]	226[@] *40*	73.393	2$^+$		
		2986[@]	100[@]	0.0	0$^+$		
2990.1	1$^{(+)}$	2916.5[@]	70[@] *8*	73.393	2$^+$		
		2990[@]	100[@]	0.0	0$^+$		
3001.5	(4$^+$,5$^+$)	2084.0[b#] *15*	<110[#]	915.991	4$^+$		
		2174.5[b#] *15*	<138[#]	828.215	3$^+$		
		2500[#] *1*	33[#]	501.330	6$^+$		
		2759.2[#] *5*	100[#]	242.234	4$^+$		
3005.5	(4$^+$,5,6$^+$)	2504[#] *1*	67[#]	501.330	6$^+$		
		2763.3[#] *5*	100[#]	242.234	4$^+$		
3014.5	(4$^+$,5)	807.0[#] *15*	100[#] *30*	2205.78	(4$^+$)		
		856[#c] *1*	20[#] *5*	2157.75	(4$^+$)		
		1015.5[#] *10*	<45[#]	1998.62	(4$^+$)		
		1289.8[#] *5*	80[#] *30*	1725.2			
		1426.2[#] *5*	25[#] *5*	1588.090	4$^-$		

$^{164}_{66}$Dy$_{98}$-21

Adopted Levels, Gammas (continued)

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J^π_i	E_γ [†]	I_γ [†]	E_f	J^π_f	Mult. [‡]	Comments
3014.5	$(4^+,5)$	1889[#] *3*	10[#] *5*	1122.774	4^-		
		1990[#] *2*	<10[#]	1024.646	5^+		
		2100[b#]	<15[#]	915.991	4^+		
		2511.0[b#] *15*	<80[#]	501.330	6^+		
3027.0		3027		0.0	0^+		E_γ: from (γ,γ').
3070.0		3070		0.0	0^+		E_γ: from (γ,γ').
3111.2	1^+	3037.8 *4*	47 *5*	73.393	2^+		If M1, B(M1)(W.u.)=0.036 *16*. I_γ: from (γ,γ').
		3111.0 *4*	100	0.0	0^+	M1	B(M1)(W.u.)=0.07 *+5−2* I_γ: from (γ,γ'). Mult.: from $\gamma(\theta$,pol) in (γ,γ').
3159.1	1^+	3085.3 *4*	50 *5*	73.393	2^+		If M1, B(M1)(W.u.)=0.040 *+23−12*. I_γ: from (γ,γ').
		3159.4 *4*	100	0.0	0^+	M1	B(M1)(W.u.)=0.08 *+7−3* I_γ: from (γ,γ'). Mult.: from $\gamma(\theta$,pol) in (γ,γ').
3173.6	1^+	3100.1 *4*	39 *4*	73.393	2^+		If M1, B(M1)(W.u.)=0.015 *5*. I_γ: from (γ,γ').
		3173.6 *4*	100	0.0	0^+	M1	B(M1)(W.u.)=0.036 *11* I_γ: from (γ,γ'). Mult.: from $\gamma(\theta$,pol) in (γ,γ').
3185.0		3185		0.0	0^+		E_γ: from (γ,γ').
3228.0	$1^{(-)}$	3154.5[@]	186[@] *22*	73.393	2^+		
		3228[@]	100[@]	0.0	0^+	(E1)	Mult.: from $\gamma(\theta$,pol) in (γ,γ').
3231.0		3231[@]	100[@]	0.0	0^+		
3270.0	$1^{(-)}$	3196.5[@]	142[@] *19*	73.393	2^+		
		3270[@]	100[@]	0.0	0^+		
3279.0	$1^{(+)}$	3205.5[@]	45[@] *12*	73.393	2^+		
		3279[@]	100[@]	0.0	0^+		
3293.0		3293		0.0	0^+		E_γ: from (γ,γ').
3316.0	$1^{(+)}$	3242.5[@]	82[@] *12*	73.393	2^+		
		3316[@]	100[@]	0.0	0^+	(M1)	
3365.0	$1^{(+)}$	3291.5[@]	52[@] *46*	73.393	2^+		
		3365[@]	100[@]	0.0	0^+		
3406.4	(16^+)	576.1[c]		2832.2?	(14^+)		E_γ: from Coulomb excitation.
3414.0	$1^{(+)}$	3340.5[@]	55[@] *8*	73.393	2^+		
		3414[@]	100[@]	0.0	0^+		
3529.7	(18^+)	642.7	100	2887.1	(16^+)		E_γ,I_γ: from Coulomb excitation.
3603.0		3603		0.0	0^+		E_γ: from (γ,γ').

$^{164}_{66}Dy_{98}$-22

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	Comments
3621.0	1	3547.5[@]	188[@] *36*	73.393	2^+		
		3621[@]	100[@]	0.0	0^+		
3667.0	1	3593.5[@]	44[@] *10*	73.393	2^+		
		3667[@]	100[@]	0.0	0^+		
3695.0		3621.5[@]	44[@] *7*	73.393	2^+		
		3695[@]	100[@]	0.0	0^+		
3704.0	$1^{(-)}$	3630.5[@]	98[@] *20*	73.393	2^+		
		3704[@]	100[@]	0.0	0^+		
3718.0	1^+	3644.5[@]	27[@] *6*	73.393	2^+		
		3718[@]	100[@]	0.0	0^+	M1	Mult.: from $\gamma(\theta$,pol) in (γ,γ').
3754.0	$1^{(-)}$	3680.5[@]	137[@] *22*	73.393	2^+		
		3754[@]	100[@]	0.0	0^+		
3765.0	$1^{(+)}$	3691.5[@]	29[@] *8*	73.393	2^+		
		3765[@]	100[@]	0.0	0^+		
3785.0	$1^{(-)}$	3711.5[@]	168[@] *20*	73.393	2^+		
		3785[@]	100[@]	0.0	0^+	(E1)	Mult.: from $\gamma(\theta$,pol) in (γ,γ').
3836.0		3836[@]		0.0	0^+		
3853.0		3853[@]		0.0	0^+		
3868.0	$1^{(-)}$	3794.5[@]	184[@] *26*	73.393	2^+		
		3868[@]	100[@]	0.0	0^+		
3877.0	1^-	3803.5[@]	193[@] *27*	73.393	2^+		
		3877[@]	100[@]	0.0	0^+	E1	Mult.: from $\gamma(\theta$,pol) in (γ,γ').
3914.0	$1^{(-)}$	3840.5[@]	187[@] *43*	73.393	2^+		
		3914[@]	100[@]	0.0	0^+		
3987.0	$1^{(-)}$	3913.5[@]	173[@] *36*	73.393	2^+		
		3987[@]	100[@]	0.0	0^+		
4037.8	(18^+)	631.4[c]		3406.4	(16^+)		E_γ: from Coulomb excitation.
4213.3	(20^+)	683.6		3529.7	(18^+)		E_γ: from Coulomb excitation.
4933.0	(22^+)	719.7		4213.3	(20^+)		E_γ: from Coulomb excitation.
(7657.93)	$2^-,3^-$	5121.0		2536.8?			
		5127.2		2531.37	1^+		
		5137.6		2520.2?			
		5199 *3*	50	2459.3			
		5217.4		2442.76			
		5308.7		2349.2			
		5355.9	17	2302.16	$(2^+,3)$		
		5387.6		2270.9?			

$^{164}_{66}Dy_{98}$-23

Adopted Levels, Gammas (continued)

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Comments
(7657.93)	$2^-,3^-$	5403.2		2254.6?		
		5408.6	22	2248.14	(2^+)	
		5415.8		2242.0?		
		5453.8		2204.0?		
		5504.8		2152.43	3^+	
		5534.2		2123.88	(3^+)	
		5542.8		2113.18	(2^+)	
		5606.0		2053.34	$(3)^+$	
		5679.6	75	1978.81	(3^+)	
		5724.5	90	1933.21	$(2,3)^+$	
		5736.2	62	1921.22	2^+	
		5802.6		1852.87	4^+	
		5815.0	10	1840.66	$1^{(-)}$	
		5854.5[c]		1804.24	$6^{(-)}$	γ to $6^{(-)}$ from $2^-,3^-$ is unlikely, thus considered uncertain here.
		5861.8	100	1796.68	$(2)^+$	
		5867.7		1790.1?		
		5941.8	28	1716.223	2^+	
		6620 *4*	7.9	1039.309	3^-	
		6681.21	13	976.916	2^-	
		6830.09	56	828.215	3^+	
		6895.2	77	761.815	2^+	
		7415.80	39	242.234	4^+	
		7584 *3*	26	73.393	2^+	
(7659.76)	$(2^-,3^-)$	4534 *3*		3126		
		4546 *3*		3111.2	1^+	
		4584[c] *3*		3076	(6^+)	γ to (6^+) from $(2^-,3^-)$ is unlikely, thus considered uncertain here.
		4656 *3*		3001.5	$(4^+,5^+)$	
		4668 *3*		2990.1	$1^{(+)}$	
		4714 *3*		2946		
		4740 *3*		2920	(5^+)	
		4773 *3*		2887		
		4836 *3*		2827.6		
		4859 *3*		2801	(4^+)	
		4868 *3*		2792		
		4874 *3*		2786		
		4907 *3*		2752.7	(4^+)	
		4922 *3*		2738		
		4929 *3*		2731		
		4949 *3*		2711		
		5065 *3*		2595		
		5075 *3*		2583.22	$(1,2^+)$	
		5090 *3*		2570		
		5105[c] *3*		2555	(7^-)	γ to (7^-) from $(2^-,3^-)$ is unlikely, thus considered uncertain here.

$^{164}_{66}Dy_{98}$-24

γ(^{164}Dy) (continued)

E_i(level)	E_γ†	I_γ†	E_f	J^π_f	Comments
(7659.76)	5127 3		2531.37	1^+	
	5142 3		2518		
	5164 3		2496		
	5188 3		2473.25	$(1,2^+)$	
	5200 3	70	2459.3		
	5216 3	98	2442.76		
	5222 3	90	2437.2	$(1,2^+)$	
	5229 3	70	2429.11	$(1,2^+)$	
	5248 3	61	2411.9	$1^{(-)}$	
	5267 3	60	2396.37		
	5310 3	190	2349.2		
	5355 3	150	2302.16	$(2^+,3)$	
	5397 3	69	2263		
	5410 3	81	2247.7	(4^+)	
	5452 3	110	2205.78	(4^+)	
	5464 3	70	2194.82	(4^+)	
	5507.2 6	87 12	2152.43	3^+	
	5535.8 5	82 8	2123.88	(3^+)	
	5546.7 5	90 8	2113.18	(2^+)	
	5558.0 5	81 8	2102.01	4^+	
	5581.6 5	84 8	2078.48	$(4)^+$	
	5606.2 5	107 10	2053.34	$(3)^+$	
	5610.4 5	106 11	2049.13	$(2)^+$	
	5674.2 7	27 4	1985.67	$(2,3)^-$	
	5680.9 4	186 11	1978.81	(3^+)	
	5710.1 6	26 4	1949.78	3^-	
	5726.5 4	105 10	1933.21	$(2,3)^+$	
	5738.4 4	84 7	1921.22	2^+	
	5749.7 6	29 4	1909.52	3^-	
	5767.8 4	80 6	1891.69	4^+	
	5807.1 4	90 7	1852.87	4^+	
	5813.7 10	18 4	1846.33	2^-	
	5818.7 7	33 4	1840.66	$1^{(-)}$	
	5850.4 9	12 3	1809.571	1^-	
	5863.0 4	117 7	1796.68	$(2)^+$	
	5882[c] 3	76	1779.6	0^+	
	5901.6 6	21 3	1758.165	3^-	
	5920[c] 3	26	1738.1	$(1^+,2^+)$	
	5943.5 4	118 7	1716.223	2^+	
	5985.0 9	11 3	1674.945	1^-	
	6071.3 5	23 3	1588.090	4^-	
	6536.4 5	16 2	1122.774	4^-	
	6620.6 5	17 2	1039.309	3^-	

Adopted Levels, Gammas (continued)

$\gamma(^{164}Dy)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f
(7659.76)	$(2^-,3^-)$	6682.6 4	21 3	976.916	2^-
		6743.7 4	74 5	915.991	4^+
		6831.4 4	138 7	828.215	3^+
		6897.6 4	112 8	761.815	2^+
		7417.2 4	95 10	242.234	4^+
		7586.1 4	100 5	73.393	2^+
(7681.98)	$(1^+,2,3,4^+)$	5528.6 7	106 14	2152.43	3^+
		5559.1 6	95 13	2123.88	(3^+)
		5569.0 6	81 12	2113.18	(2^+)
		5581.5 12	54 18	2099.96	3^+
		5603.0 5	137 14	2078.48	$(4)^+$
		5628.5 9	123 31	2053.34	$(3)^+$
		5631.9 8	134 31	2049.13	$(2)^+$
		5696.3 6	80 9	1985.67	$(2,3)^-$
		5703.2 4	214 15	1978.81	(3^+)
		5733.0 8	50 9	1949.78	3^-
		5748.7 6	87 11	1933.21	$(2,3)^+$
		5761.1 6	79 9	1921.22	2^+
		5771.9 6	72 10	1909.52	3^-
(7681.98)	$(1^+,2,3,4^+)$	5790.5 7	52 7	1891.69	4^+
		5829.5 8	51 8	1852.87	4^+
		5835.8 9	61 9	1846.33	2^-
		5841.0 11	35 9	1840.66	$1^{(-)}$
		5871.7 9	27 7	1809.571	1^-
		5884.7 5	91 20	1796.68	$(2)^+$
		5923.7 9	77 19	1758.165	3^-
		5965.6 5	80 7	1716.223	2^+
		6007.5 7	34 6	1674.945	1^-
		6093.7 6	42 6	1588.090	4^-
		6455.8 7	24 4	1225.162	5^-
		6559.1 5	43 4	1122.774	4^-
		6642.9 5	71 6	1039.309	3^-
		6704.9 5	59 5	976.916	2^-
		6766.2 5	66 6	915.991	4^+
		6853.6 4	97 7	828.215	3^+
		6920.0 4	140 7	761.815	2^+
		7439.3 4	77 6	242.234	4^+
		7608.3 4	100 6	73.393	2^+

† From $(n,n'\gamma)$, unless otherwise noted.

‡ From ce data in $(d,p\gamma)$, unless otherwise noted. The assignments are also supported by $\gamma\gamma(\theta)$ in (n,γ) E=th and $\gamma(\theta)$ in $(n,n'\gamma)$ when available. Multipolarity of E1 or M1 for γ rays from levels populated in (γ,γ') are implied from $\gamma(\theta,pol)$ data.

From ^{164}Tb β^- decay.

@ From (γ,γ').

& From $\gamma\gamma(\theta)$ in (n,γ) E=th, unless otherwise noted.

[a] Additional information 26.

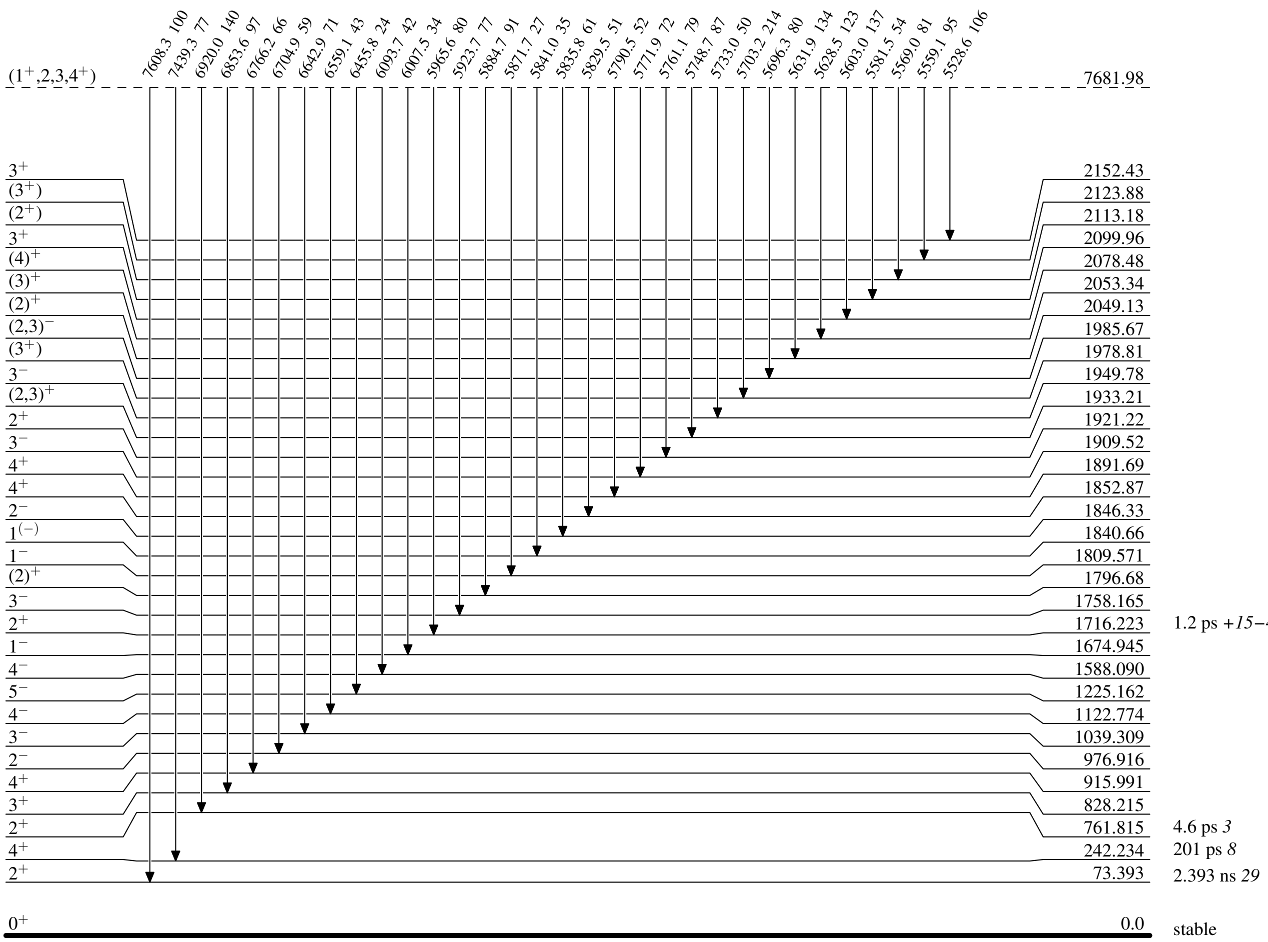
[b] Multiply placed.

[c] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

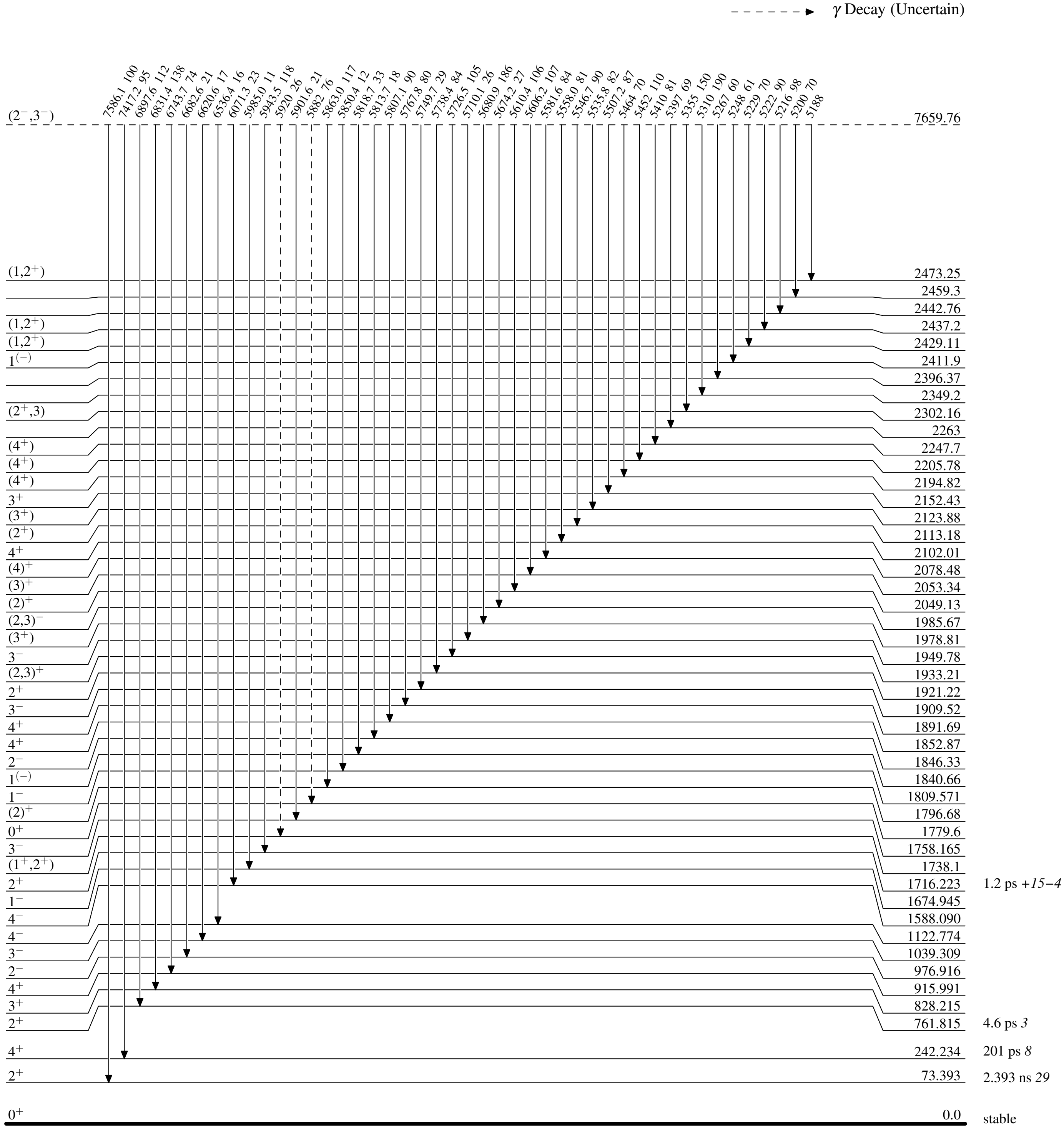


$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



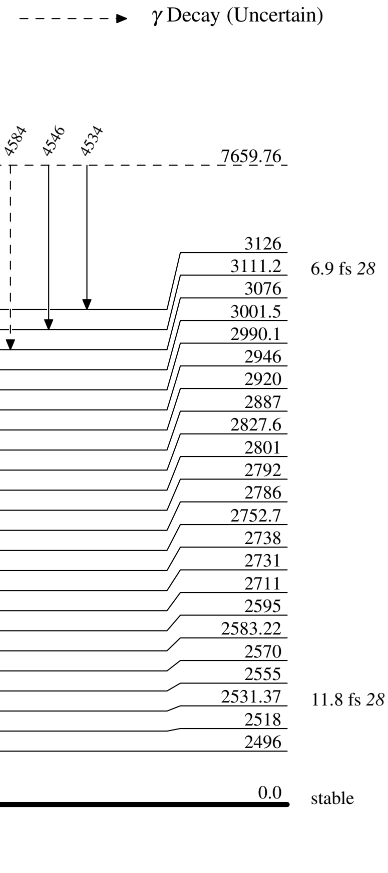
$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

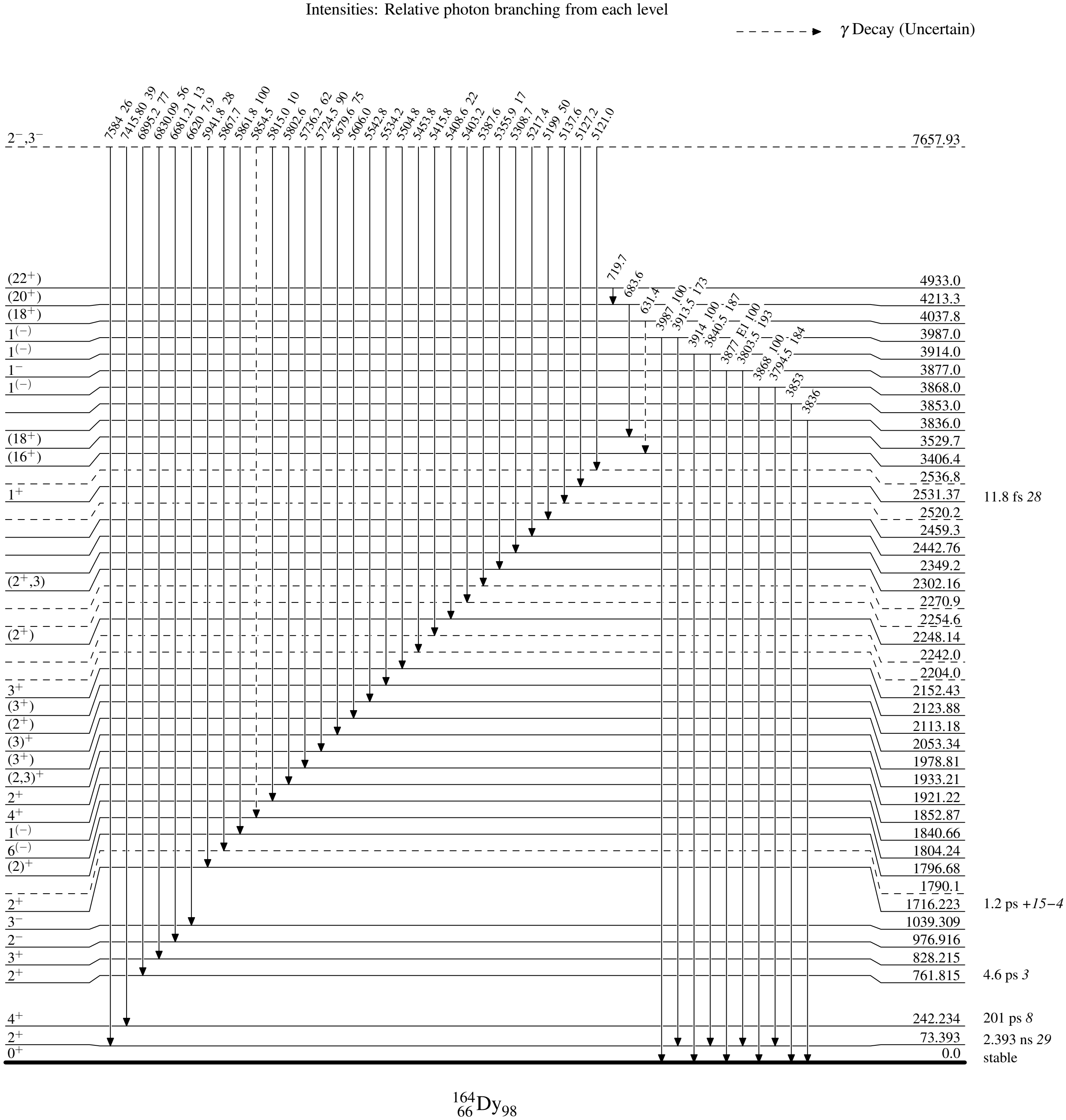
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

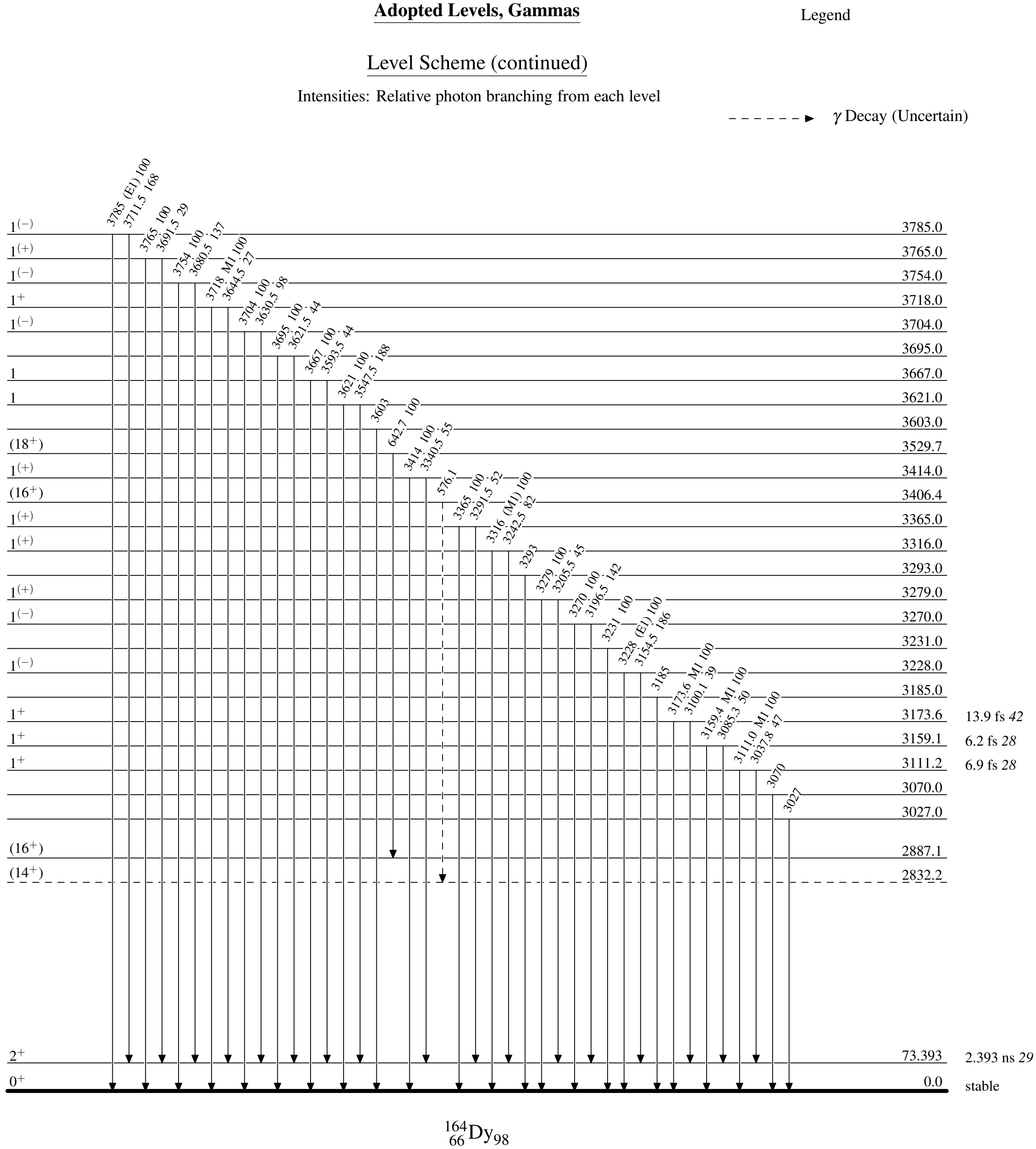
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

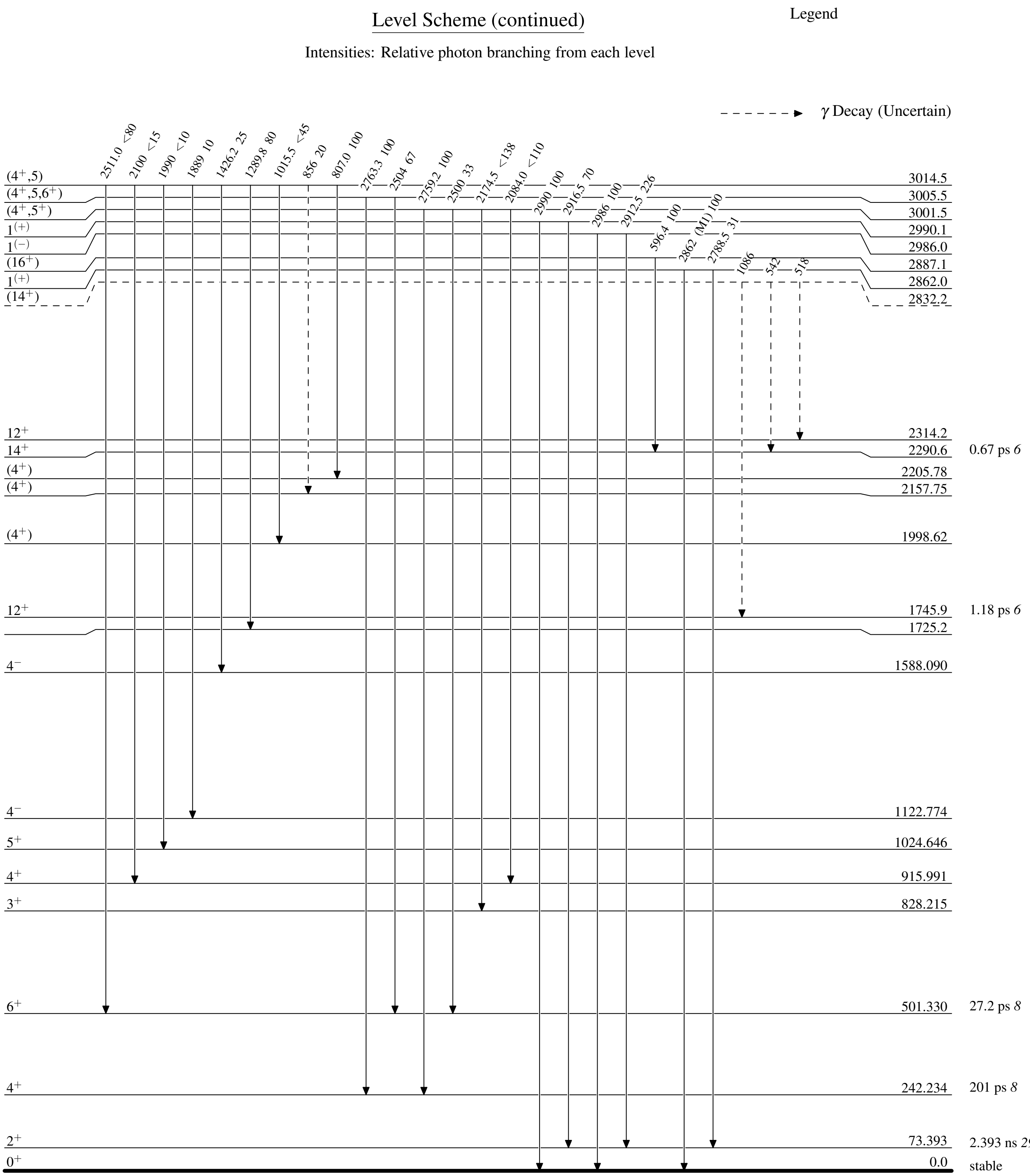
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

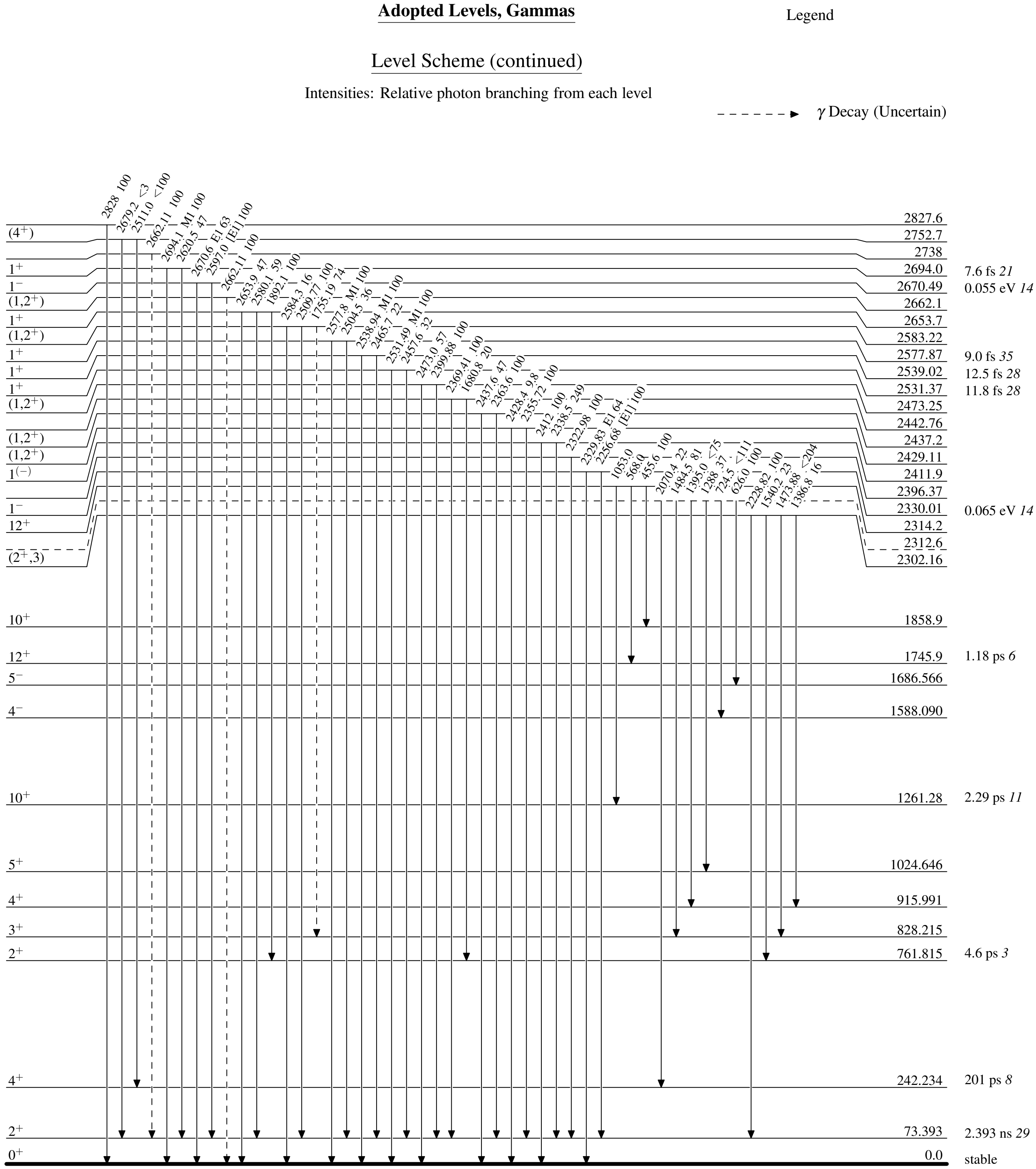


$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

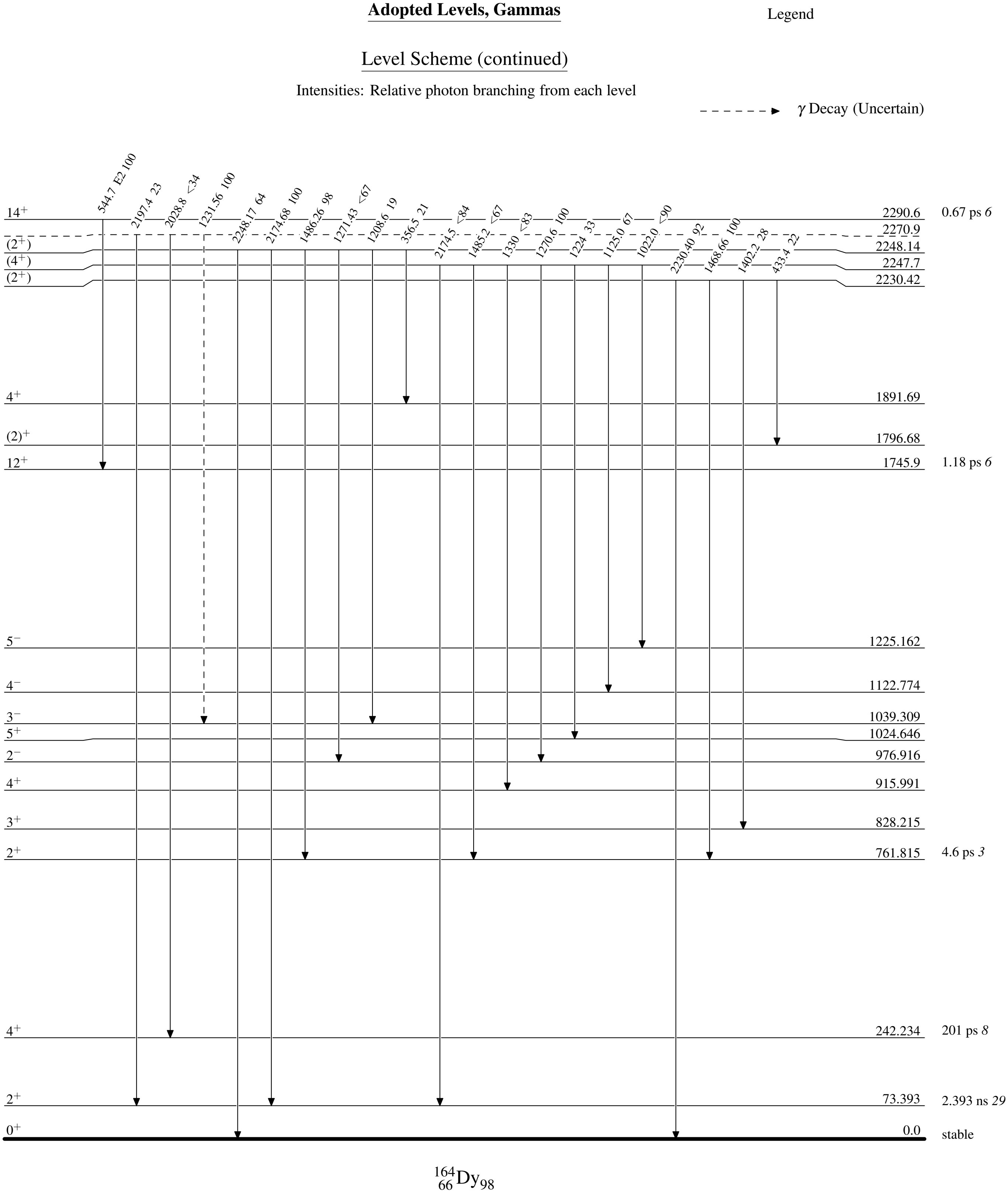


$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

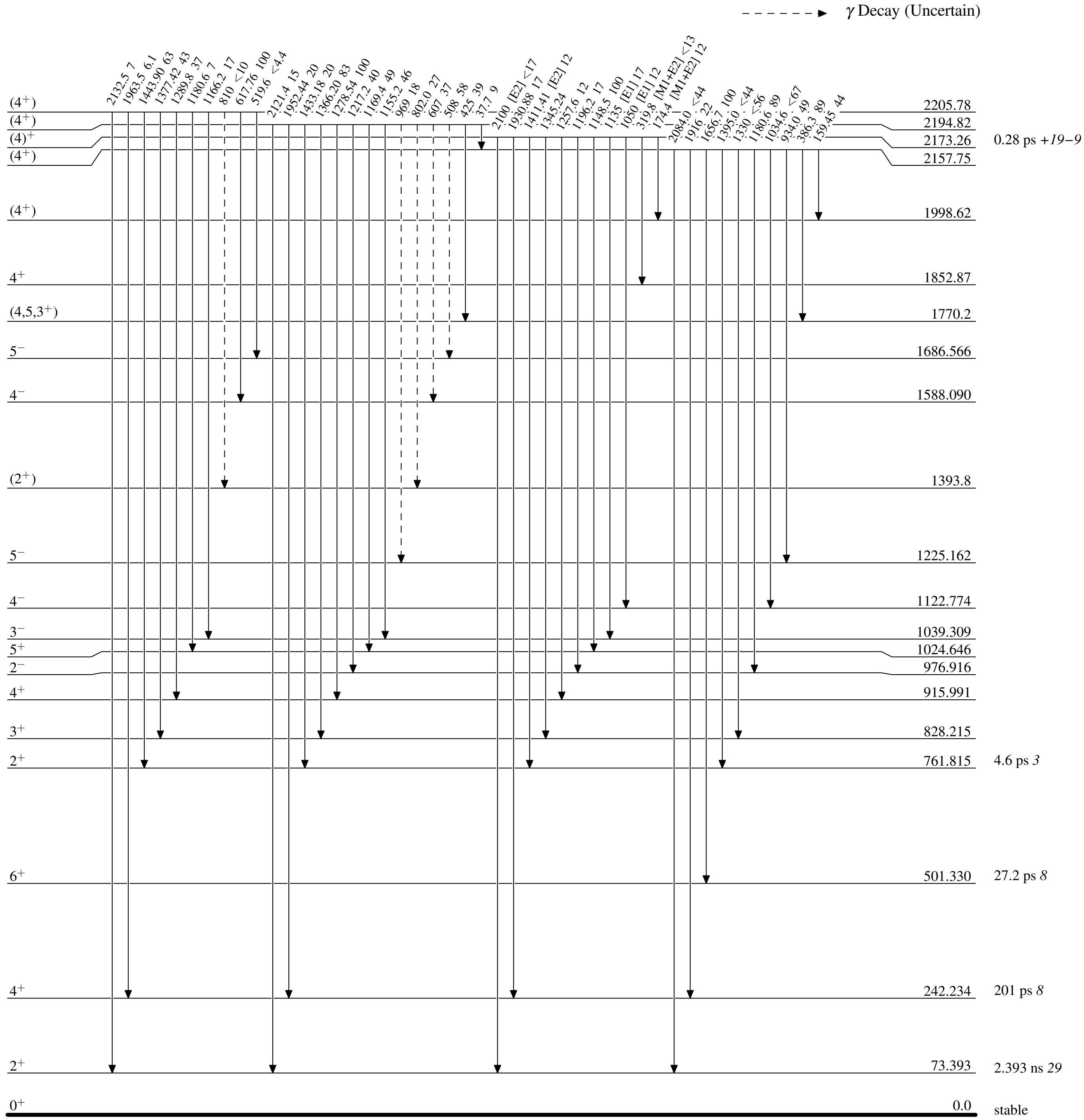
Intentities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



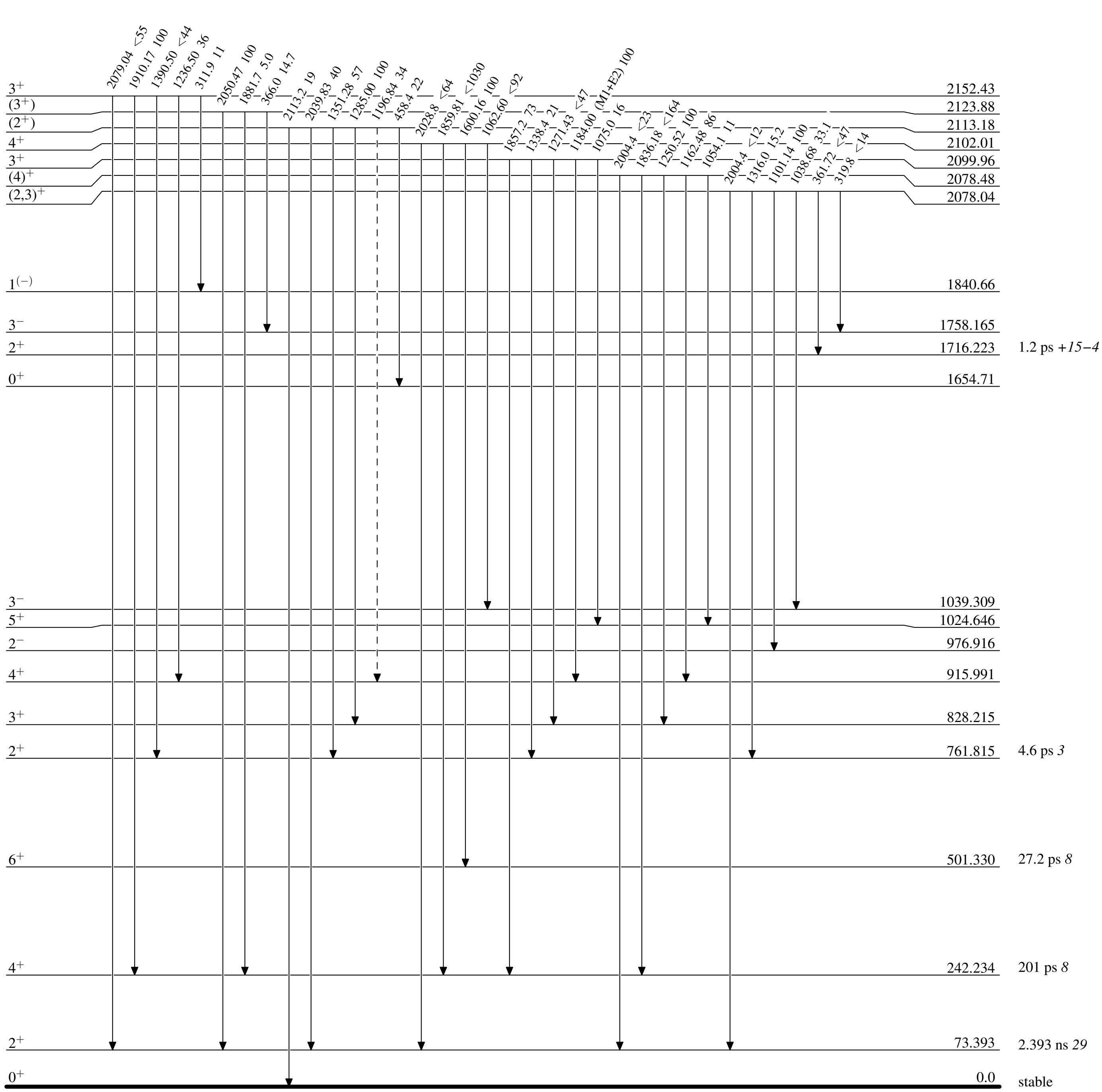
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend

γ Decay (Uncertain)



$^{164}_{66}Dy_{98}$

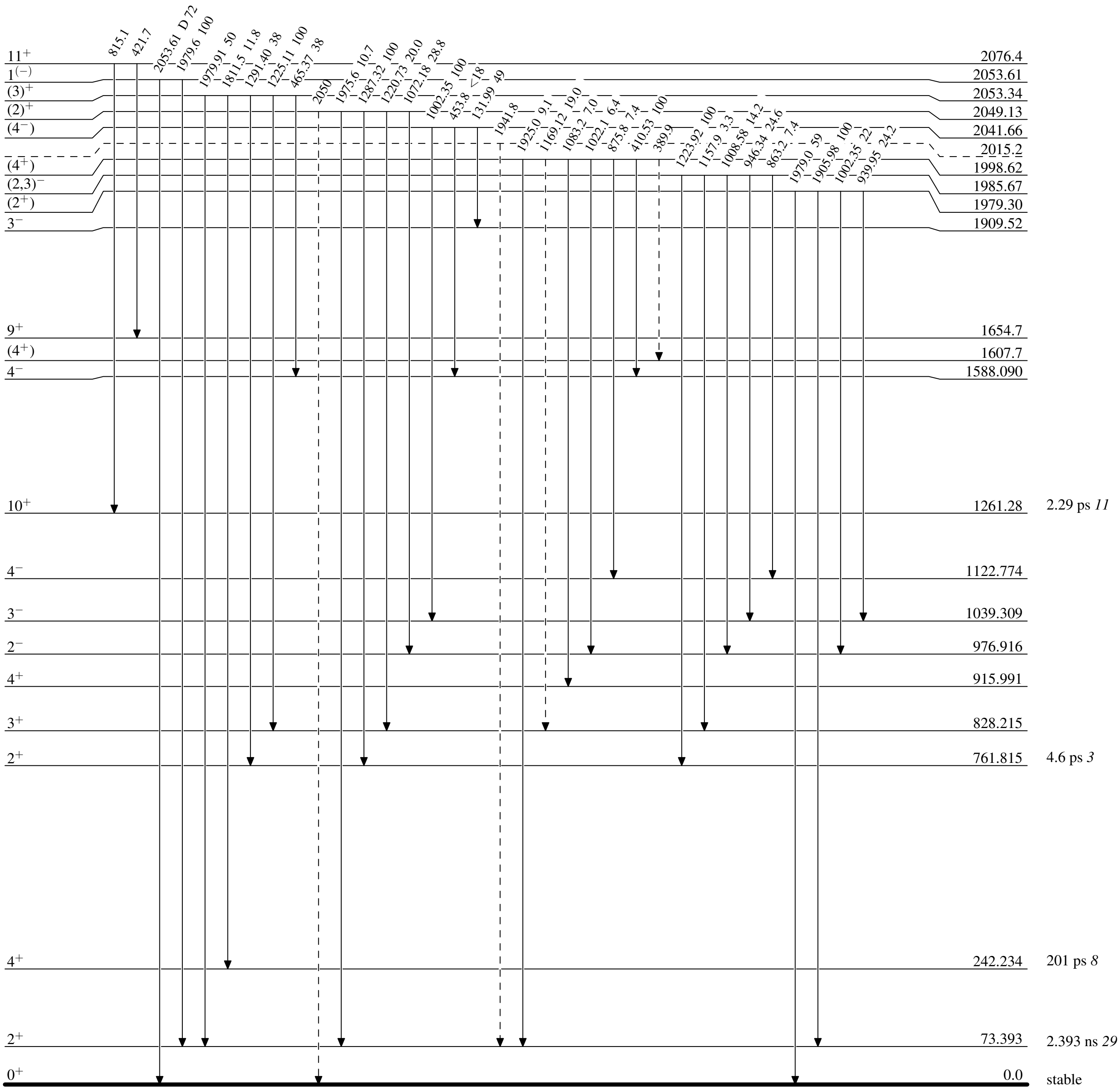
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend

γ Decay (Uncertain)

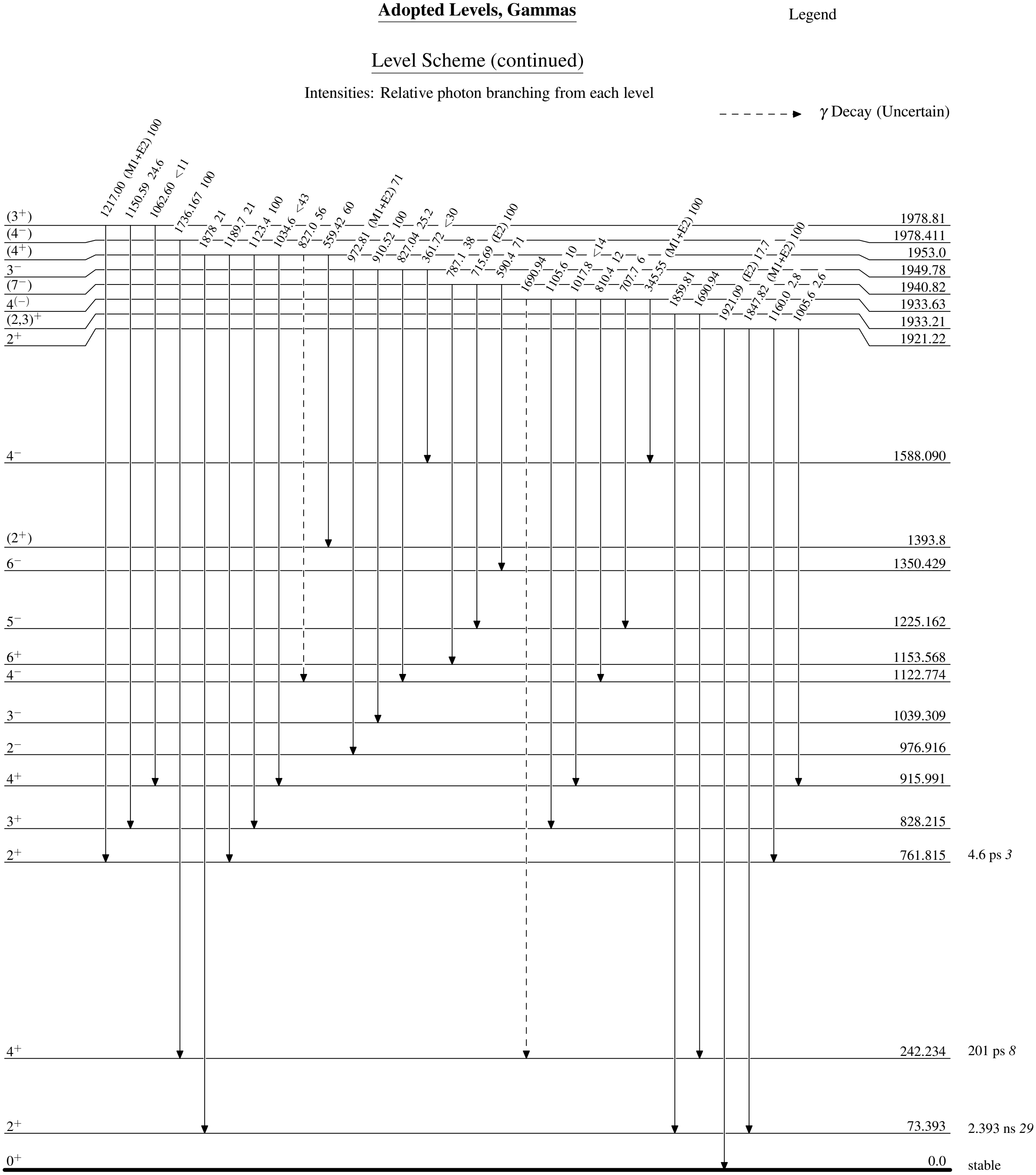


$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

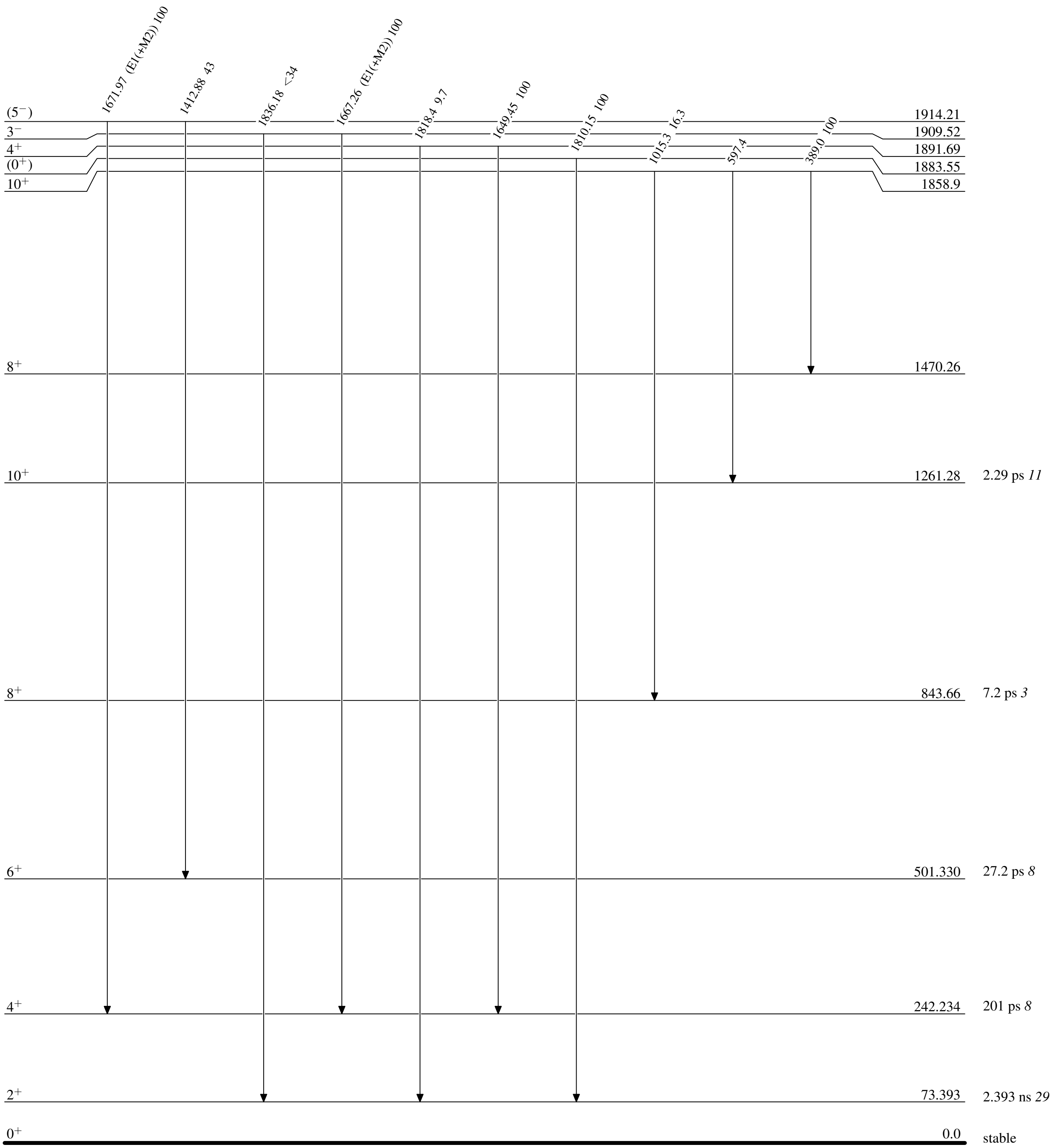


$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{164}_{66}Dy_{98}$

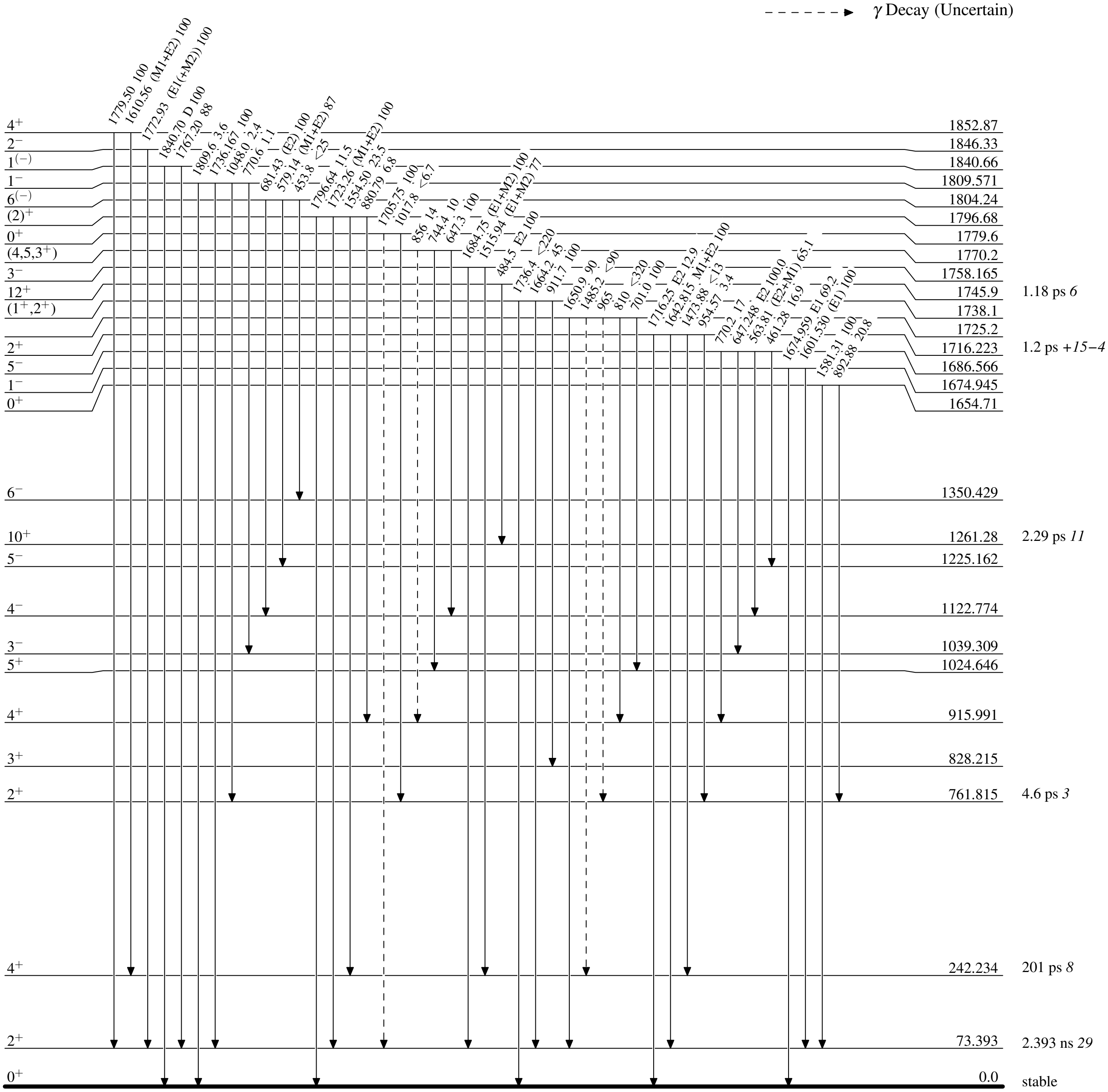
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



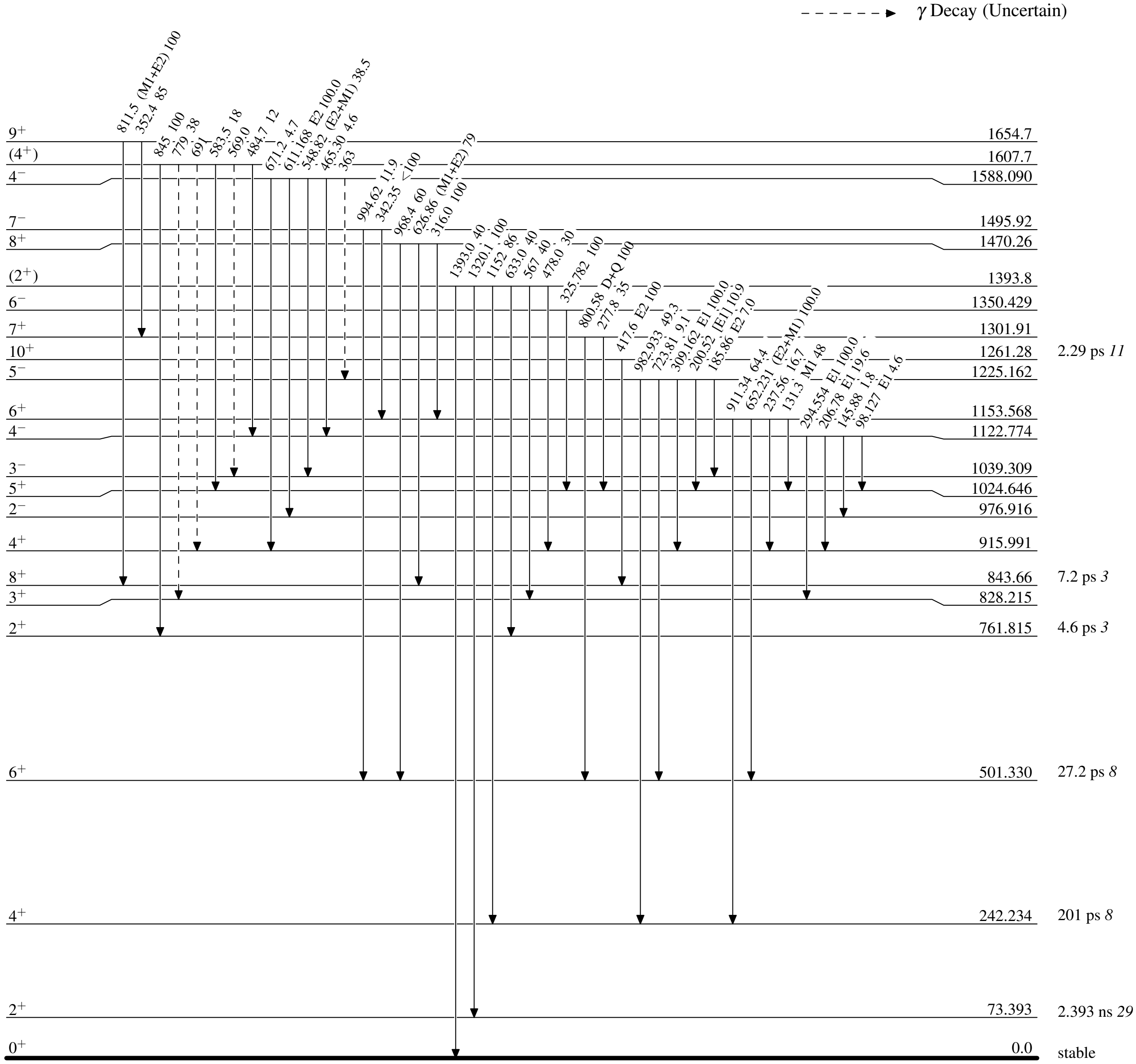
$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend

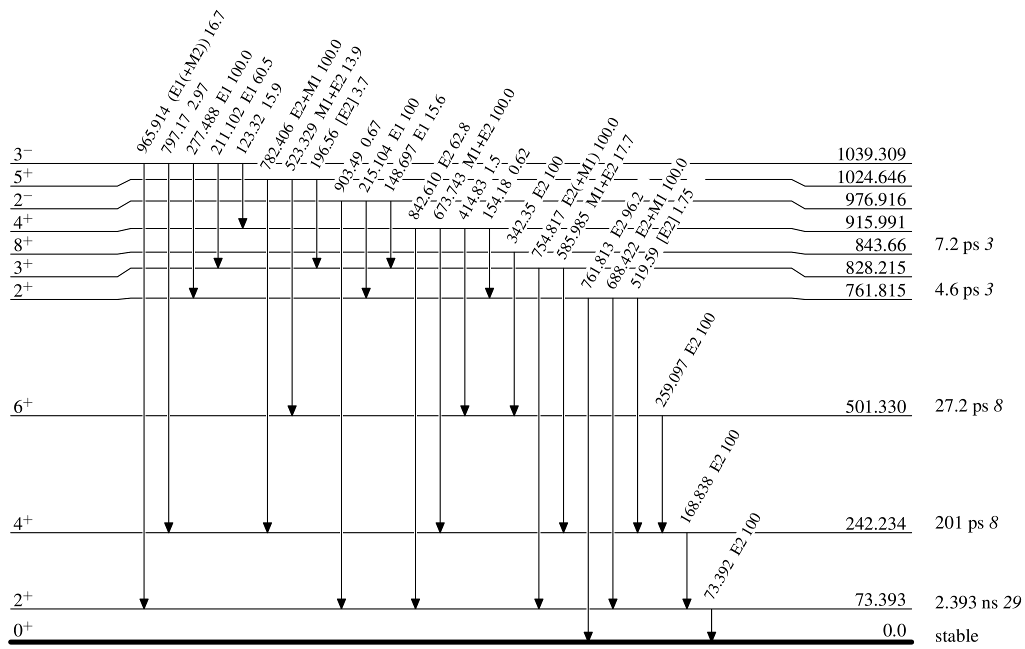


$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas

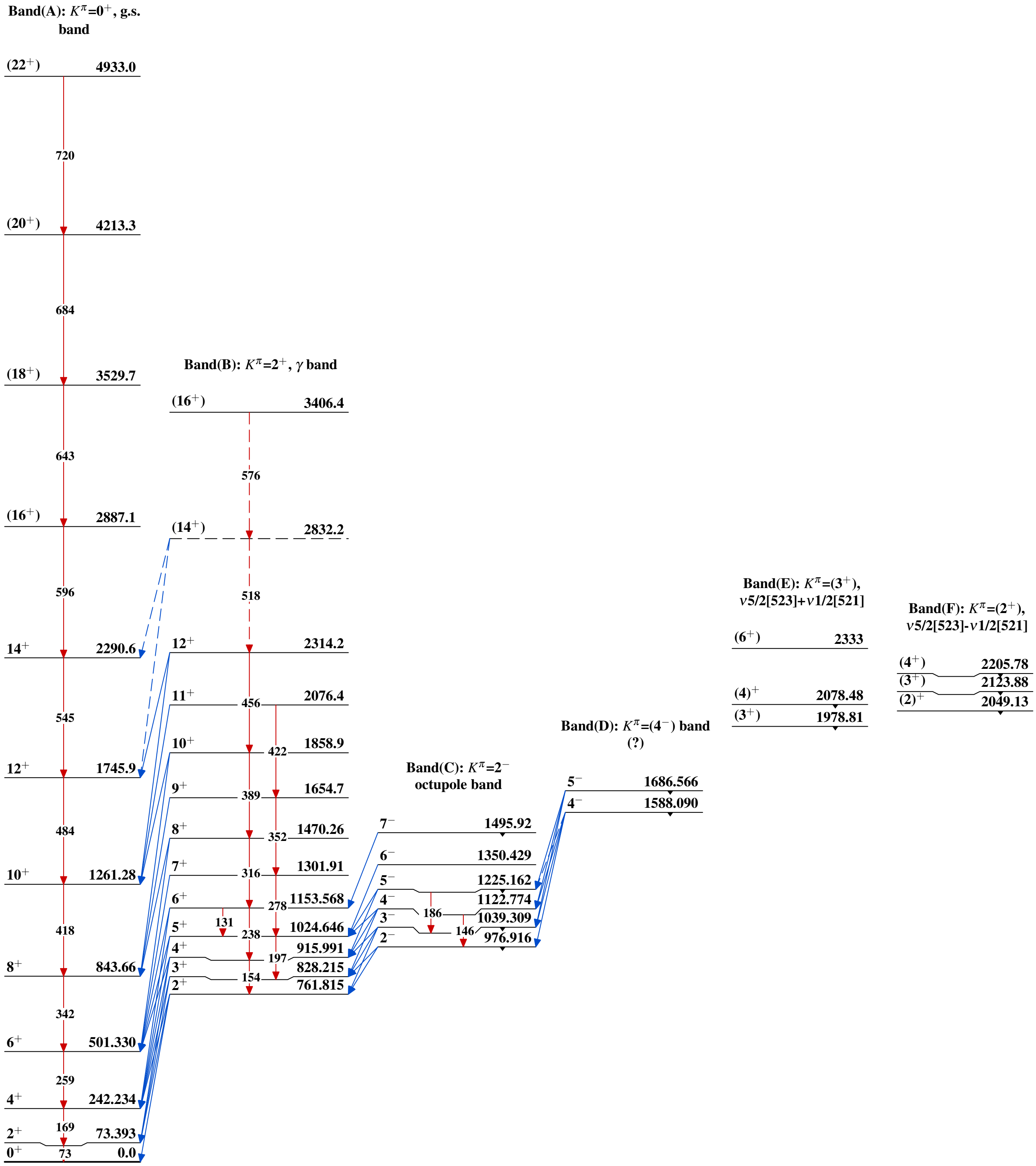
Level Scheme (continued)

Intensities: Relative photon branching from each level



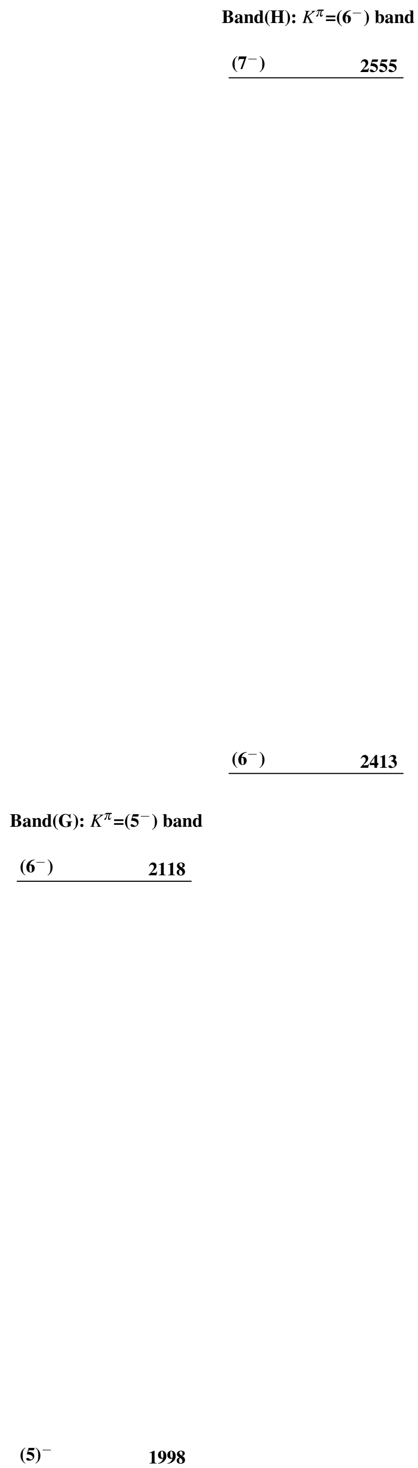
$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas



$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas (continued)



$^{164}_{66}Dy_{98}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109,1103 (2008)	1-Mar-2008

Q(β^-)=487.1 *10*; S(n)=7043.5 *4*; S(p)=9.31×10^3 *syst*; Q(α)=−729 *4* 2012Wa38
Note: Current evaluation has used the following Q record 486.8 10 *7043.5 4* 9220 syst-728 4 2003Au03.
Uncertainty in S(p) is 200 (2003Au03).

^{166}Dy Levels

Cross Reference (XREF) Flags

- A ^{165}Dy(n,γ) E=thermal
- B ^{164}Dy(t,p)
- C ^{118}Sn(^{164}Dy,^{116}Snγ)
- D ^{166}Tb β^- decay

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.	0$^+$	81.6 h *1*	ABCD	%β^-=100 J$^\pi$: g.s. of even-even nucleus; L(t,p)=0. T$_{1/2}$: weighted average from 81.8 h *2* (1962Gu03) and 81.46 h *20* (1963Ho15). Others: 80.2 h *5* (1960He09), 82 h (1950Bu30), 81 h (1949Ke22).
76.587[@] *1*	2$^+$[#]		ABCD	J$^\pi$: E2 77γ to 0$^+$ g.s..
253.5278[@] *14*	4$^+$[#]		ABCD	
526.9670[@] *25*	6$^+$[#]		A C	
857.163[&] *4*	(2)$^+$		AB D	J$^\pi$: M1(+E2) 781γ to 2$^+$ 77; band assignment.
892.0[@] *10*	8$^+$[#]		C	
928.729[&] *4*	(3)$^+$		A D	J$^\pi$: E2(+M1) γ to 2$^+$ 77 and to 4$^+$ 254; band assignment.
1023.434[&] *4*	(4)$^+$		AB	J$^\pi$: M1+E2 770γ to 4$^+$ 254; E2 947γ to 2$^+$ 77; band assignment.
1029.903[a] *4*	(2$^-$)		A D	J$^\pi$: γ to (3)$^+$ 929 and to (2)$^+$ 857 in γ band.
1095.210[a] *4*	(3$^-$)		AB D	
1141.266[&] *13*	(5$^+$)		A	
1149[b]	0$^+$		B	J$^\pi$: L(t,p)=0.
1180.854[a] *4*	(4$^-$)		A	
1189.387 *4*	(2$^+$,3,4$^-$)		A	J$^\pi$: 159γ to (2$^-$) 1030; 166γ to (4$^+$) 1023.
1208[b]	(2$^+$)		B	
1274			B	E(level): for contaminated line.
1334			B	E(level): for contaminated line.
1341.0[@] *15*	10$^+$[#]		C	
1351			B	E(level): for contaminated line.
1515			B	
1556			B	
1616			B	
1645			B	
1674			B	
1770			B	
1864			B	
1868.0[@] *18*	12$^+$[#]		C	
1891			B	
2029			B	
2048			B	
2069.7 *3*	(≤3$^-$)		D	J$^\pi$: log *ft*≈5.4 in β^- decay from (1$^-$,2$^-$) ^{166}Tb.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{166}Dy Levels (continued)

E(level)[†]	XREF	E(level)[†]	J^{π}[‡]	XREF
2120	B	2311		B
2183	B	2383		B
2252	B	2467.0[@] *20*	14+[#]	C
		3119.0?[@] *22*	(16+)[#]	C

[†] From least-squares fit to Eγ, assigning 1 keV uncertainty to Eγ data for which the authors did not state an uncertainty, except for levels observed only in (t,p) reaction.

[‡] Based on the systematics for band structures of the even Dy isotopes, unless otherwise noted.

[#] Established J^{π} for the g.s. and 76 level combined with known E2 multipolarity for the J=4 to J=2 *177*-keV transition and a regular sequence of level energies enable the assignment of definite J^{π} to g.s. band members with J≤14.

[@] Band(A): $K^{\pi}=0^+$ band (1998Wu04). A=12.80, B=−0.0063.

[&] Band(B): $K^{\pi}=2^+$ γ-vibrational band (1988Ka44). A=12.05, B=−0.0065.

[a] Band(C): $K^{\pi}=(2^-)$ band. A=11.13, B=−0.013. Possible octupole band analogous to that in ^{164}Dy.

[b] Band(D): $K^{\pi}=0^+$ band (1988Bu08). A=9.8 if B=0.

γ(^{166}Dy)

E_i(level)	J^{π}_i	E_γ[†]	I_γ[‡]	E_f	J^{π}_f	Mult.[#]	α[&]	Comments
76.587	2+	76.587 *1*	100	0.	0+	E2	7.51	
253.5278	4+	176.941 *1*	100	76.587	2+	E2	0.357	
526.9670	6+	273.439 *2*	100	253.5278	4+	E2	0.0859	
857.163	(2)+	780.571 *6*	88 *17*	76.587	2+	M1(+E2)	0.0074 *23*	
		857.156 *11*	100 *22*	0.	0+	[E2]	0.00422	
892.0	8+	365[@]		526.9670	6+			
928.729	(3)+	675.218 *9*	13.7 *27*	253.5278	4+	E2(+M1)	0.011 *4*	
		852.128 *8*	100 *19*	76.587	2+	E2(+M1)	0.0061 *18*	
1023.434	(4)+	769.907 *6*	100 *21*	253.5278	4+	M1+E2	0.0077 *24*	
		946.850 *15*	65 *13*	76.587	2+	E2	0.00341	
1029.903	(2−)	101.175 *1*	4.4 *8*	928.729	(3)+	[E1]	0.299	I_γ: from (n,γ) E=thermal. Other I(101γ):I(173γ)=13 *4*:100 *13* in β^- decay.
		172.738 *1*	100 *10*	857.163	(2)+	[E1]	0.0716	
1095.210	(3−)	166.479 *3*	73 *8*	928.729	(3)+	[E1]	0.0789	
		238.062 *4*	100 *10*	857.163	(2)+	[E1]	0.0309	
1141.266	(5+)	614.302 *26*	9.6 *17*	526.9670	6+			
		887.734 *15*	100 *21*	253.5278	4+			
1180.854	(4−)	85.644 *2*	1.6 *8*	1095.210	(3−)			
		157.421 *3*	12.3 *8*	1023.434	(4)+			
		252.124 *3*	100 *10*	928.729	(3)+			
1189.387	(2+,3,4−)	94.178 *1*	2.8 *18*	1095.210	(3−)			
		159.492 *4*	5.5 *9*	1029.903	(2−)			
		165.95 *1*	17.4 *18*	1023.434	(4)+			
		260.652 *2*	100 *9*	928.729	(3)+			
1341.0	10+	449[@]	100	892.0	8+			
1868.0	12+	527[@]	100	1341.0	10+			
2069.7	(≤3−)	1039.8 *3*	100	1029.903	(2−)			E_γ: from β^- decay.
2467.0	14+	599[@]	100	1868.0	12+			
3119.0?	(16+)	652[@a]	100	2467.0	14+			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{166}Dy)$ (continued)

† From $^{165}Dy(n,\gamma)$, E=thermal, except as noted.

‡ Relative photon intensity normalized to 100 for strongest γ deexciting each level; from $^{165}Dy(n,\gamma)$ E=thermal, except as noted. Branching from β^- decay is in good agreement with that from (n,γ).

From subshell ratios and/or α(K)exp in (n,γ) E=thermal.

@ From $^{118}Sn(^{164}Dy,^{116}Sn\gamma)$; uncertainty unstated by authors.

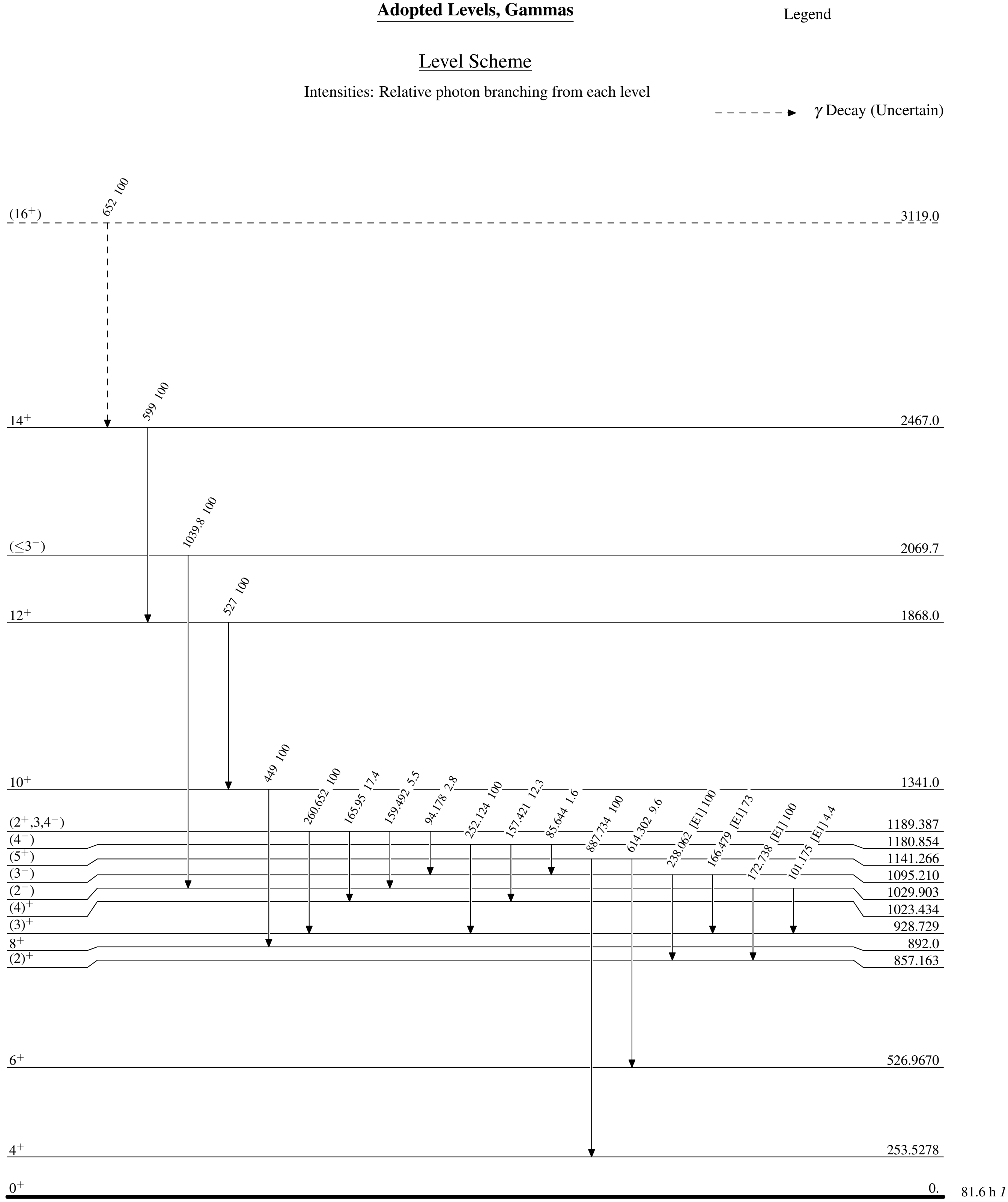
& Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[a] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

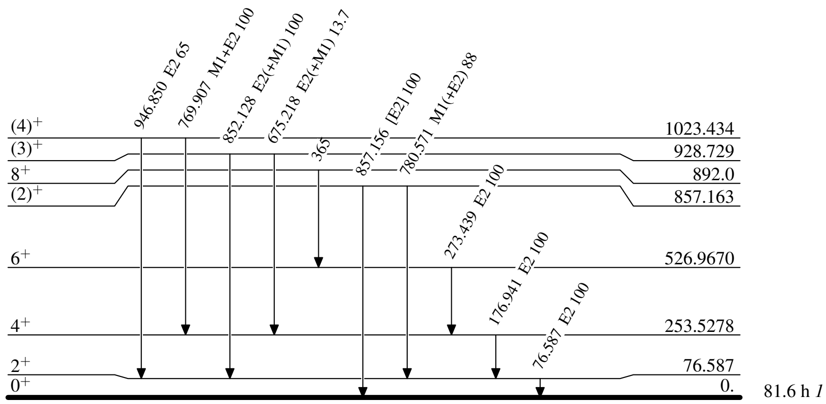


$^{166}_{66}Dy_{100}$

Adopted Levels, Gammas

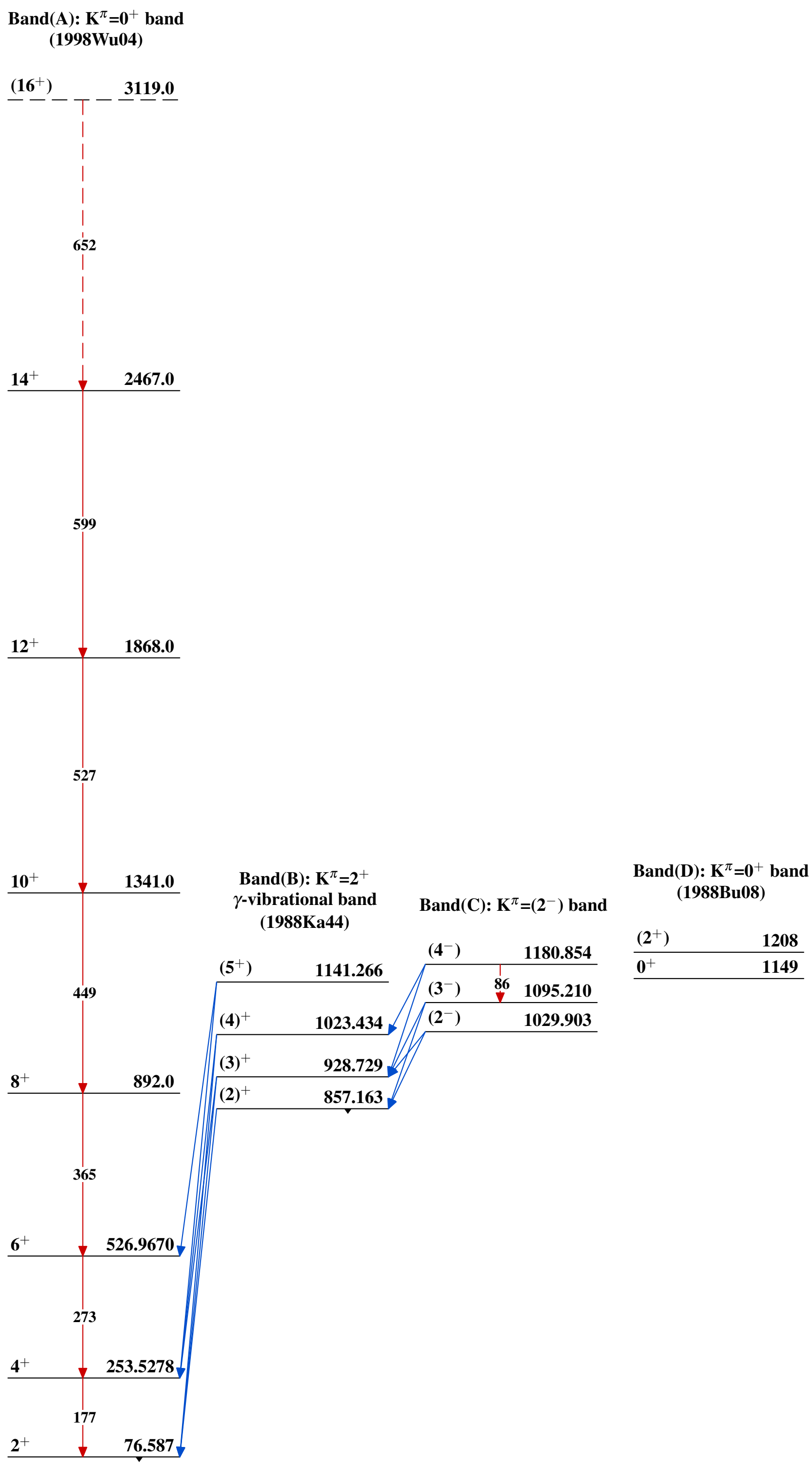
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{166}_{66}Dy_{100}$

Adopted Levels, Gammas



$^{166}_{66}Dy_{100}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. M. Baglin[1], E. A. Mccutchan[2], S. Basunia[1]	NDS 153, 1 (2018)	1-Oct-2018

Q(β^-)=2575 *SY*; S(n)=6140 *SY*; S(p)=10620 *SY*; Q(α)=−1560 *SY* 2017Wa10
ΔQ(β^-)=200; ΔS(n)=ΔS(p)=360; ΔQ(α)=280 (2017Wa10).
S(2n)=11246 (syst) *240*; S(2p)=19878 (syst) *450* (2017Wa10).
α: Additional information 1.

^{170}Dy Levels

Cross Reference (XREF) Flags

A ^{170}Tb β^- decay
B ^{170}Dy IT decay
C ^{170}Er(^{82}Se,^{82}Krγ)

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0‡	0+	55 s *8*	ABC	%β^-=100 T$_{1/2}$: from implant-β(t) in 2017Wu04.
71.47‡ *15*	(2+)		ABC	
237.33‡ *18*	(4+)		ABC	
494.7‡ *5*	(6+)		B	
861.35@ *21*	(2−)		AB	
925.2@ *3*	(3−)		A	
991.8 *4*	(2+)		A	
1116.5@ *4*	(5−)		B	
1147.13# *23*	(4+)		B	
1257.4# *3*	(5+)		B	
1389.1# *6*	(6+)		B	
1643.8 *3*	(6+)	990 ns *40*	B	T$_{1/2}$: from implant-γ(t) in ^{170}Dy IT decay.
2030.4 *4*	(2−)		A	

† From a least-squares fit to Eγ, by evaluators.
‡ Band(A): K$^\pi$=0+ g.s. band.
# Band(B): K$^\pi$=4+ vibrational band.
@ Band(C): K$^\pi$=2− band.

γ(^{170}Dy)

E$_i$(level)	J$^\pi_i$	E$_\gamma$†	I$_\gamma$†	E$_f$	J$^\pi_f$
71.47	(2+)	71.47 *15*	100	0.0	0+
237.33	(4+)	165.84 *11*	100	71.47	(2+)
494.7	(6+)	256.9 *29*	100	237.33	(4+)
861.35	(2−)	789.93 *15*	100	71.47	(2+)
925.2	(3−)	687.72‡ *33*	100‡ *30*	237.33	(4+)
		853.7‡ *5*	60‡ *30*	71.47	(2+)
991.8	(2+)	920.2‡ *4*	100‡ *40*	71.47	(2+)
991.8	(2+)	992.1‡ *7*	29‡ *22*	0.0	0+
1116.5	(5−)	621.8 *4*	100	494.7	(6+)
1147.13	(4+)	909.79 *18*	100 *17*	237.33	(4+)
		1075.68 *30*	10 *5*	71.47	(2+)
1257.4	(5+)	764 *4*	16 *6*	494.7	(6+)
		1020.5 *10*	100 *6*	237.33	(4+)
1389.1	(6+)	894.5 *5*	100	494.7	(6+)

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{170}Dy)$ (continued)

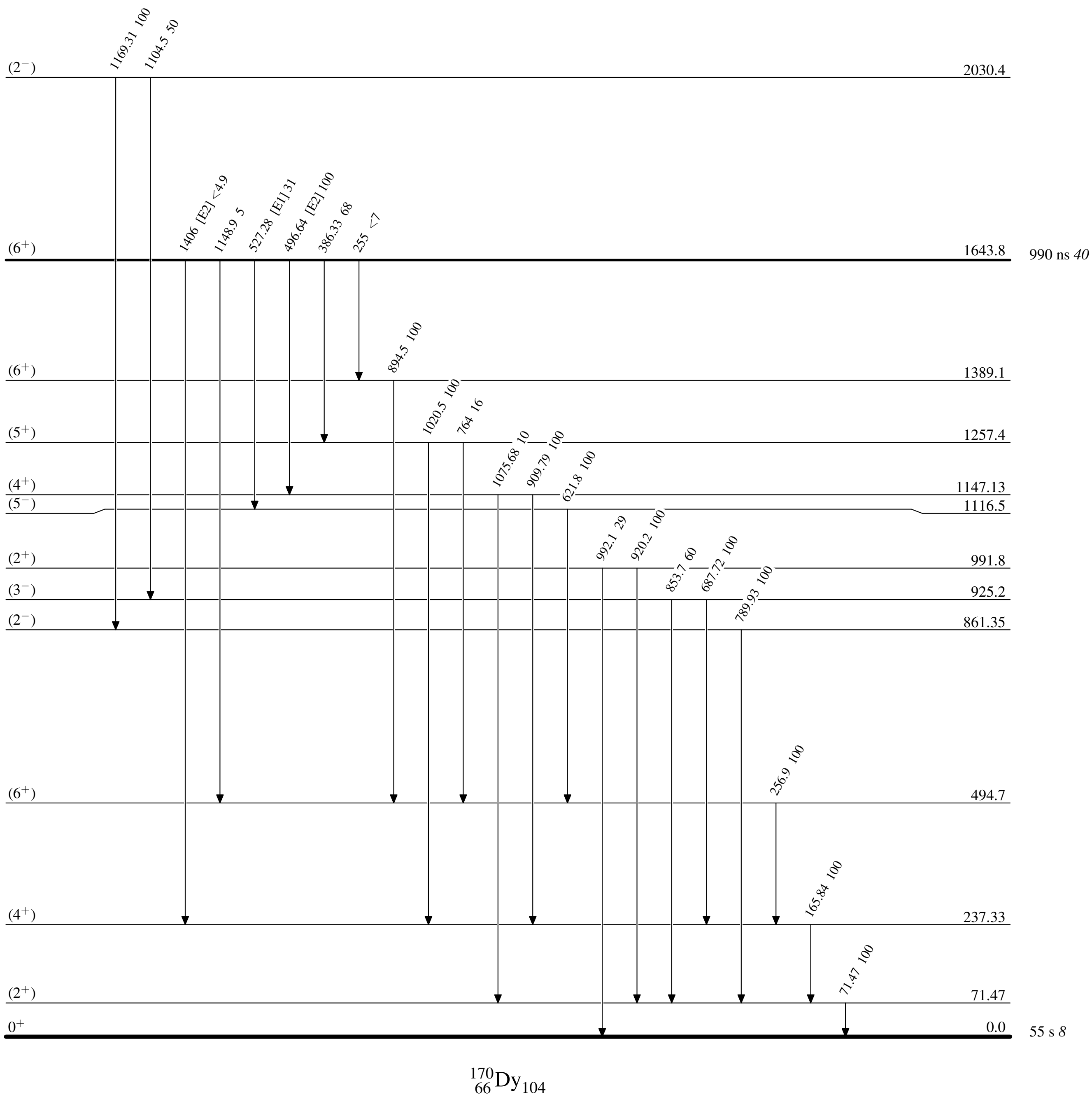
E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.	α	Comments
1643.8	(6^+)	255 *1*	<7	1389.1	(6^+)			
		386.33 *15*	68 *9*	1257.4	(5^+)			
		496.64 *14*	100 *11*	1147.13	(4^+)	[E2]	0.01542	α(K)=0.01241 *18*; α(L)=0.00235 *4*; α(M)=0.000528 *8*; α(N)=0.0001209 *17* α(O)=1.667×10^{-5} *24*; α(P)=6.94×10^{-7} *10* B(E2)(W.u.)=0.000161 *23*
		527.28 *22*	31 *7*	1116.5	(5^-)	[E1]	0.00457	α(K)=0.00389 *6*; α(L)=0.000532 *8*; α(M)=0.0001159 *17*; α(N)=2.67×10^{-5} *4*; α(O)=3.86×10^{-6} *6* α(P)=2.13×10^{-7} *3* B(E1)(W.u.)=2.2×10^{-10} *6*
		1148.9 *7*	5 *3*	494.7	(6^+)			
		1406 *1*	<4.9	237.33	(4^+)	[E2]	1.59×10^{-3}	α(K)=0.001307 *19*; α(L)=0.000183 *3*; α(M)=4.01×10^{-5} *6*; α(N)=9.25×10^{-6} *13* α(O)=1.347×10^{-6} *19*; α(P)=7.56×10^{-8} *11* B(E2)(W.u.)=2.2×10^{-8} *22*
2030.4	(2^-)	1104.5 *6*	50 *25*	925.2	(3^-)			
		1169.31 *35*	100 *30*	861.35	(2^-)			

† From ^{170}Dy IT decay, except where noted.
‡ From ^{170}Tb β^- decay.

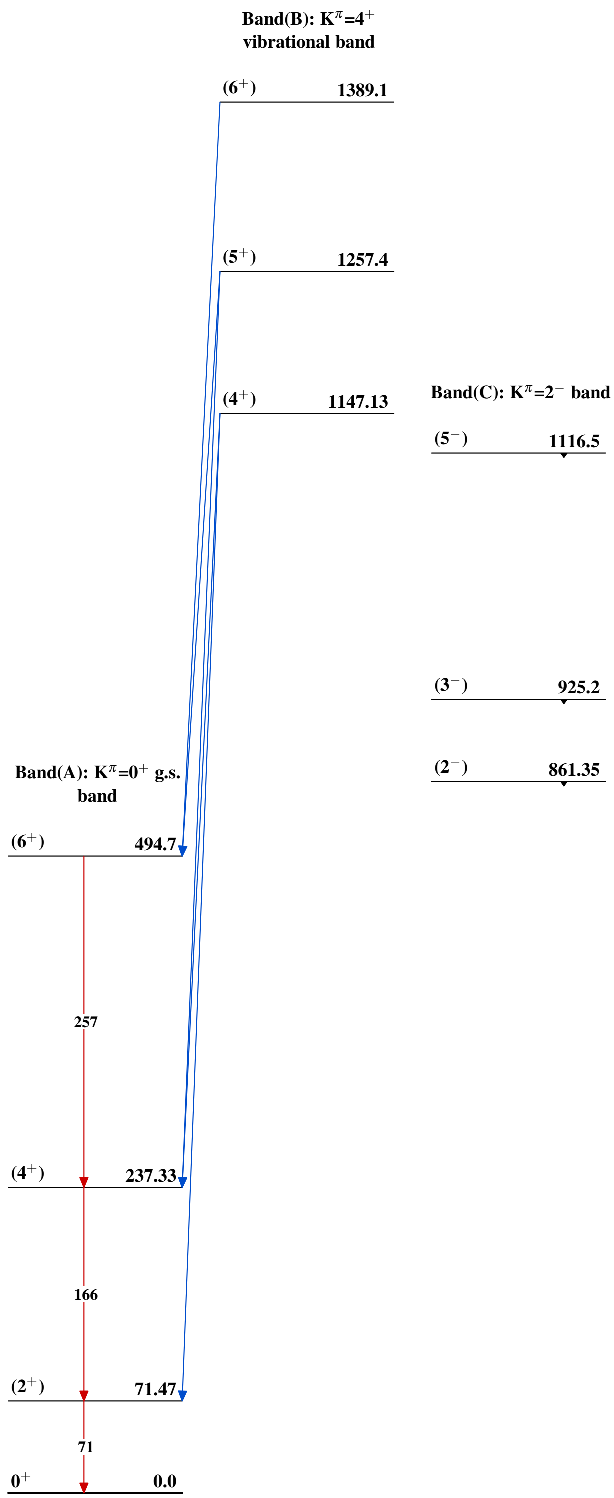
Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



Adopted Levels, Gammas



$^{170}_{66}Dy_{104}$