Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 113,715 (2012)	31-May-2011

Q(β^-)=−1.01×10^4 *syst*; S(n)=1.01×10^4 *syst*; S(p)=2.9×10^3 *7*; Q(α)=3.04×10^3 *syst* 2012Wa38
Note: Current evaluation has used the following Q record −10149 syst 10381 syst 2898 syst 3038 syst 2011AuZZ.
Δ(Q(β^-))=401, Δ(S(n))=729, Δ(S(p))=701, Δ(Q(α))=196 (syst,2011AuZZ).
Q(β^-)=10040 syst, S(n)=10430 syst, S(p)=2550 syst, Q(α)=2780 syst (2003Au03).
ΔQ(β^-)=450, ΔS(n)=410, ΔS(p)=360, ΔQ(α)=280 (2003Au03).
Q(εp)=7502 *31* (syst,2011AuZZ).
Mass measurements: 2007HeZV, 2007Ra17, 2007RaZZ.
^{143}Dy identified by 1984Ni03 (also 1983Ni05) in ^{92}Mo(^{58}Ni,α2pn) E=292 MeV and in ^{92}Mo(^{56}Fe,αn) E=275 MeV. Measured X ray-proton coincidences to identify atomic number. Half-life deduced from timing of proton spectra in the range 2.0 to 6.4 MeV. Others: ^{40}Ca on ^{106}Cd, E=232 MeV (2006Xu03).

^{143}Dy Levels

Cross Reference (XREF) Flags

A ^{92}Mo(^{54}Fe,2pnγ)

E(level)	J$^\pi$‡	T$_{1/2}$	XREF	Comments
0	(1/2$^+$)	5.6 s *10*	A	%ε+%β^+=100; %εp=? T$_{1/2}$: From 2003Xu04. Other values: 4.1 s *3* (1984Ni03), 3.2 s *6* (1983Ni05). J$^\pi$: from systematics of N=77 nuclides (1997Au04).
66.70 *20*	(1/2$^+$)		A	
250.9 *4*	(3/2$^-$)		A	
310.7[&] *6*	(11/2$^-$)	3.0 s *3*	A	%ε+%β^+=100; %εp=? T$_{1/2}$: From 2003Xu04.
319.7			A	
405.7[†]		1.2 μs *3*	A	T$_{1/2}$: Other value: 3 μs *2*. Both from 2005Ri17.
433.3 *7*			A	
471.8 *5*	(7/2$^-$)		A	
693.6[d] *5*	(11/2$^-$)		A	
805.9[&] *6*	(15/2$^-$)		A	
845.5[c] *5*	(11/2$^-$)		A	
923.1 *6*			A	
1010.6 *6*	(13/2$^-$)		A	
1044.2[d] *5*	(15/2$^-$)		A	
1409.7[c] *5*	(15/2$^-$)		A	
1497.6 *6*			A	
1529.4[&] *6*	(19/2$^-$)		A	
1558.4[#] *6*	(17/2$^-$)		A	
1581.5[d] *6*	(19/2$^-$)		A	
1850.0[e] *7*	(19/2$^-$)		A	
1875.4 *6*	(17/2$^-$)		A	
1942.1[@] *6*	(19/2$^-$)		A	
2059.1 *6*	(19/2$^-$)		A	
2073.7[c] *6*	(19/2$^-$)		A	
2091.6[b] *6*	(13/2$^+$)		A	
2231.6[d] *6*	(23/2$^-$)		A	
2235.2[#] *6*	(21/2$^-$)		A	

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Adopted Levels, Gammas (continued)

^{143}Dy Levels (continued)

E(level)	Jπ‡	XREF	E(level)	Jπ‡	XREF	E(level)	Jπ‡	XREF
2312.3[e] 7	(23/2−)	A	3440.7[#] 7	(29/2−)	A	4820.9[e] 8	(31/2−)	A
2379.8 6	(23/2−)	A	3587.5[d] 7	(31/2−)	A	4860.0[#] 7	(37/2−)	A
2442.2[&] 6	(23/2−)	A	3651.4[e] 7	(29/2−)	A	5019.6[b] 7	(33/2+)	A
2556.1[@] 6	(23/2−)	A	3666.3 7	(29/2−)	A	5231.3[@] 7	(39/2−)	A
2579.0[b] 6	(17/2+)	A	3675.1[b] 7	(25/2+)	A	5294.6[a] 10	(37/2)	A
2589.9 7	(21/2−)	A	3676.5[@] 7	(31/2−)	A	5509.5[&] 7	(39/2−)	A
2760.6[c] 6	(23/2−)	A	3713.5[a] 9	(29/2)	A	5583.5[e] 8		A
2806.3[a] 8	(21/2)	A	3851.9[&] 7	(31/2−)	A	5793.1[b] 8	(37/2+)	A
2873.9[#] 6	(25/2−)	A	3908.9 7		A	5916.7[e] 8		A
2915.6[d] 6	(27/2−)	A	4040.4 7		A	6029.4[e] 10		A
3038.2[&] 6	(25/2−)	A	4060.2[#] 7	(33/2−)	A	6165.5 7		A
3103.8[b] 6	(21/2+)	A	4232.1[d] 8	(35/2−)	A	6278.9[&] 8	(43/2−)	A
3133.7[@] 6	(27/2−)	A	4312.3[b] 7	(29/2+)	A	6628.6[b] 8	(41/2+)	A
3163.0[a] 8	(25/2)	A	4376.5 9		A	7010.3[&] 8	(47/2−)	A
3175.8 7		A	4384.4[@] 7	(35/2−)	A	7527.1[b] 9	(45/2+)	A
3201.6? 6		A	4387.8 7		A	7903.4[&] 8	(51/2−)	A
3248.0[&] 7	(27/2−)	A	4436.2[a] 9	(33/2)	A	8497.5[b] 11	(49/2+)	A
3272.2 7		A	4466.1? 7		A			
3372.4[e] 7	(27/2−)	A	4655.5[&] 7	(35/2−)	A			

† Reported in 2005Ri17 only.

‡ As quoted by 2000Ol10. The assignments are based on $\gamma\gamma(\theta)$(DCO) data for selected transitions and expected band structures from model calculations. All the J^{π}'s are put in parentheses (evaluator) since the J^{π}'s of lower states and those of bandheads are not considered as firmly established.

[#] Band(A): Band based on (17/2−), α=+1/2. Above 27/2−, strong dipole (M1) transitions suggest possible magnetic-rotational character with configuration=$\pi h^2_{11/2}\nu h^{-1}_{11/2}$ (2000Ol10).

[@] Band(a): Band based on (17/2−), α=−1/2. See comments for its signature partner.

[&] Band(B): Yrast structure (irregular) based on $\nu h_{11/2}$. Probably a weakly deformed structure.

[a] Band(C): Band based on (21/2).

[b] Band(D): Band based on (13/2+). Possibly based on $\nu i_{13/2}$ orbital.

[c] Band(E): Band based on (11/2−).

[d] Band(F): Band based on (11/2−).

[e] Band(G): γ cascade based on (19/2−).

$\gamma(^{143}Dy)$

E_i(level)	J^{π}_i	E_γ	I_γ	E_f	J^{π}_f	Mult.
66.70	(1/2+)	66.7 2	100	0	(1/2+)	
250.9	(3/2−)	184.2 5	†	66.70	(1/2+)	
		250.9 5	†	0	(1/2+)	
405.7		86[#]		319.7		(E2)
		95[#]		310.7	(11/2−)	(E2)
433.3		122.1 5	100	310.7	(11/2−)	
471.8	(7/2−)	161.2 5	33 7	310.7	(11/2−)	
		220.9 2	100 19	250.9	(3/2−)	
693.6	(11/2−)	221.8 2	100	471.8	(7/2−)	
805.9	(15/2−)	495.0 2	100	310.7	(11/2−)	

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Adopted Levels, Gammas (continued)

γ(^{143}Dy) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
845.5	(11/2$^-$)	151.5 *5*	1[†] *1*	693.6	(11/2$^-$)
		373.6 *2*	100 *11*	471.8	(7/2$^-$)
923.1		612.4 *2*	100	310.7	(11/2$^-$)
1010.6	(13/2$^-$)	577.2 *2*	100 *14*	433.3	
		700.2 *2*	19 *6*	310.7	(11/2$^-$)
1044.2	(15/2$^-$)	198.7 *5*	1.9 *16*	845.5	(11/2$^-$)
		350.7 *2*	100 *5*	693.6	(11/2$^-$)
1409.7	(15/2$^-$)	366.2 *5*	4.4 *25*	1044.2	(15/2$^-$)
		564.1 *2*	100 *9*	845.5	(11/2$^-$)
1497.6		574.5 *2*	100	923.1	
1529.4	(19/2$^-$)	723.4 *2*	100	805.9	(15/2$^-$)
1558.4	(17/2$^-$)	(29.9[‡] *5*)	0.74[‡] *12*	1529.4	(19/2$^-$)
		635.3 *2*	17.1 *19*	923.1	
		752.5 *2*	100 *9*	805.9	(15/2$^-$)
1581.5	(19/2$^-$)	537.3 *2*	100	1044.2	(15/2$^-$)
1850.0	(19/2$^-$)	1044.1 *2*	100	805.9	(15/2$^-$)
1875.4	(17/2$^-$)	865.0 *2*	100 *17*	1010.6	(13/2$^-$)
		1069.4 *2*	41 *10*	805.9	(15/2$^-$)
1942.1	(19/2$^-$)	383.8 *2*	100 *11*	1558.4	(17/2$^-$)
		444.4 *2*	65 *5*	1497.6	
2059.1	(19/2$^-$)	183.8 *2*	31.7 *19*	1875.4	(17/2$^-$)
		501.1 *2*	35 *3*	1558.4	(17/2$^-$)
		529.5 *2*	100 *6*	1529.4	(19/2$^-$)
2073.7	(19/2$^-$)	663.9 *2*	100	1409.7	(15/2$^-$)
2091.6	(13/2$^+$)	682.8 *5*	100	1409.7	(15/2$^-$)
2231.6	(23/2$^-$)	650.1 *2*	100	1581.5	(19/2$^-$)
2235.2	(21/2$^-$)	293.3 *2*	37 *3*	1942.1	(19/2$^-$)
		676.4 *2*	100 *11*	1558.4	(17/2$^-$)
		706.2 *2*	84 *9*	1529.4	(19/2$^-$)
2312.3	(23/2$^-$)	462.3 *2*	100	1850.0	(19/2$^-$)
2379.8	(23/2$^-$)	850.0 *2*	100	1529.4	(19/2$^-$)
2442.2	(23/2$^-$)	383.5 *2*	100	2059.1	(19/2$^-$)
2556.1	(23/2$^-$)	321.2 *2*	52 *5*	2235.2	(21/2$^-$)
		613.9 *2*	100 *7*	1942.1	(19/2$^-$)
2579.0	(17/2$^+$)	487.5 *2*	47 *8*	2091.6	(13/2$^+$)
		504.5 *5*	9 *6*	2073.7	(19/2$^-$)
		1049.9 *5*	100 *22*	1529.4	(19/2$^-$)
2589.9	(21/2$^-$)	1060.1 *5*	100	1529.4	(19/2$^-$)
2760.6	(23/2$^-$)	686.9 *2*	100	2073.7	(19/2$^-$)
2806.3	(21/2)	1276.9 *5*	100	1529.4	(19/2$^-$)
2873.9	(25/2$^-$)	318.0 *2*	41 *3*	2556.1	(23/2$^-$)
		638.7 *2*	100 *7*	2235.2	(21/2$^-$)
2915.6	(27/2$^-$)	684.0 *2*	100	2231.6	(23/2$^-$)
3038.2	(25/2$^-$)	596.3 *2*	100 *4*	2442.2	(23/2$^-$)
		658.0 *2*	11.1 *13*	2379.8	(23/2$^-$)
3103.8	(21/2$^+$)	513.6 *5*	21 *5*	2589.9	(21/2$^-$)
		524.9 *2*	100 *12*	2579.0	(17/2$^+$)
3133.7	(27/2$^-$)	260.0 *2*	16.5 *11*	2873.9	(25/2$^-$)
		577.4 *2*	46 *3*	2556.1	(23/2$^-$)
		753.8 *2*	100 *7*	2379.8	(23/2$^-$)
3163.0	(25/2)	356.7 *2*	100	2806.3	(21/2)
3175.8		733.6 *2*	100	2442.2	(23/2$^-$)
3201.6?		327.7[@] *2*	40 *40*	2873.9	(25/2$^-$)
		645.4[@] *2*	100 *9*	2556.1	(23/2$^-$)

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Adopted Levels, Gammas (continued)

$\gamma(^{143}Dy)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
3201.6?		821.7[@] *2*	70 *11*	2379.8	(23/2$^-$)
3248.0	(27/2$^-$)	209.8 *2*	100	3038.2	(25/2$^-$)
3272.2		892.4 *2*	100	2379.8	(23/2$^-$)
3372.4	(27/2$^-$)	1060.1 *2*	100	2312.3	(23/2$^-$)
3440.7	(29/2$^-$)	307.0 *2*	100	3133.7	(27/2$^-$)
3587.5	(31/2$^-$)	671.9 *2*	100	2915.6	(27/2$^-$)
3651.4	(29/2$^-$)	279.0 *2*	100	3372.4	(27/2$^-$)
3666.3	(29/2$^-$)	418.4 *2*	100 *8*	3248.0	(27/2$^-$)
		628.2[@] *2*	52 *10*	3038.2	(25/2$^-$)
3675.1	(25/2$^+$)	571.3 *2*	100	3103.8	(21/2$^+$)
3676.5	(31/2$^-$)	236.0 *2*	70 *3*	3440.7	(29/2$^-$)
		542.8 *2*	100 *5*	3133.7	(27/2$^-$)
3713.5	(29/2)	550.5 *2*	100	3163.0	(25/2)
3851.9	(31/2$^-$)	185.7 *2*	18.3 *11*	3666.3	(29/2$^-$)
		603.7 *2*	100 *4*	3248.0	(27/2$^-$)
3908.9		468.2 *2*	100	3440.7	(29/2$^-$)
4040.4		864.6 *2*	100	3175.8	
4060.2	(33/2$^-$)	383.9 *2*	100 *7*	3676.5	(31/2$^-$)
		619.2 *2*	32 *3*	3440.7	(29/2$^-$)
4232.1	(35/2$^-$)	644.6 *5*	100	3587.5	(31/2$^-$)
4312.3	(29/2$^+$)	637.2 *2*	100	3675.1	(25/2$^+$)
4376.5		467.6 *5*	100	3908.9	
4384.4	(35/2$^-$)	324.2 *2*	68 *4*	4060.2	(33/2$^-$)
		707.9 *2*	100 *7*	3676.5	(31/2$^-$)
4387.8		535.9 *2*	100	3851.9	(31/2$^-$)
4436.2	(33/2)	722.7 *2*	100	3713.5	(29/2)
4466.1?		557.2[@] *2*	100	3908.9	
4655.5	(35/2$^-$)	803.6 *2*	100	3851.9	(31/2$^-$)
4820.9	(31/2$^-$)	1169.5 *2*	100	3651.4	(29/2$^-$)
4860.0	(37/2$^-$)	475.6 *2*	100 *8*	4384.4	(35/2$^-$)
		799.8 *2*	96 *12*	4060.2	(33/2$^-$)
5019.6	(33/2$^+$)	707.3 *2*	100	4312.3	(29/2$^+$)
5231.3	(39/2$^-$)	370.9 *2*	45 *5*	4860.0	(37/2$^-$)
		847.1 *2*	100 *12*	4384.4	(35/2$^-$)
5294.6	(37/2)	858.4 *5*	100	4436.2	(33/2)
5509.5	(39/2$^-$)	854.0 *2*	100	4655.5	(35/2$^-$)
5583.5		762.6 *2*	100	4820.9	(31/2$^-$)
5793.1	(37/2$^+$)	773.5 *2*	100	5019.6	(33/2$^+$)
5916.7		333.2 *2*	100	5583.5	
6029.4		112.7 *5*	100	5916.7	
6165.5		934.2 *2*	100	5231.3	(39/2$^-$)
6278.9	(43/2$^-$)	769.4 *2*	100	5509.5	(39/2$^-$)
6628.6	(41/2$^+$)	835.4 *2*	100	5793.1	(37/2$^+$)
7010.3	(47/2$^-$)	731.4 *2*	100	6278.9	(43/2$^-$)
7527.1	(45/2$^+$)	898.5 *5*	100	6628.6	(41/2$^+$)
7903.4	(51/2$^-$)	893.1 *2*	100	7010.3	(47/2$^-$)
8497.5	(49/2$^+$)	970.4 *5*	100	7527.1	(45/2$^+$)

† Very weak transitions.
‡ Inferred from $\gamma\gamma$.
# $I\gamma(95)/I\gamma(86)=1.47$ *39*. Reported in 2005Ri17 only.
@ Placement of transition in the level scheme is uncertain.

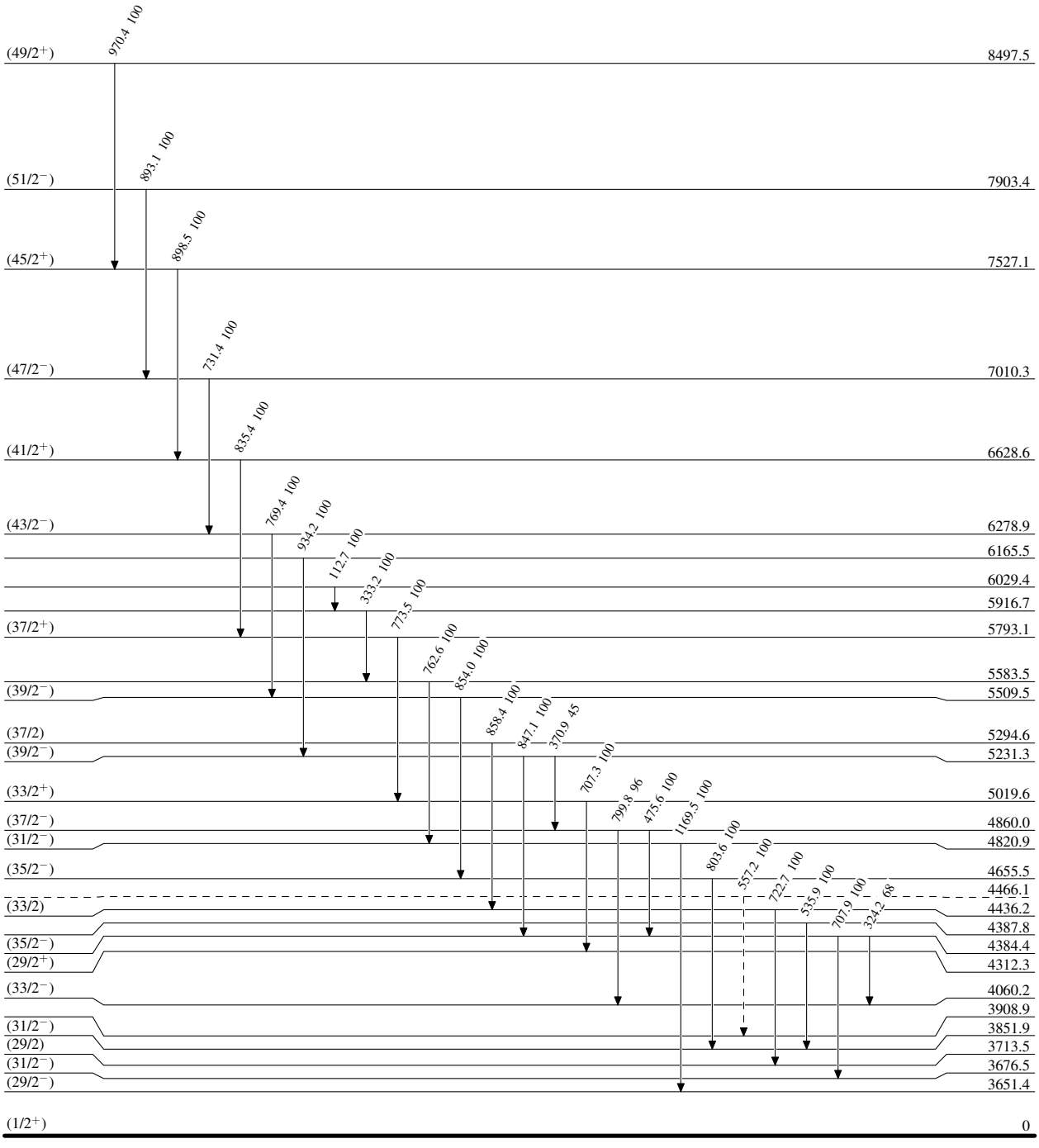
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{143}_{66}Dy_{77}$

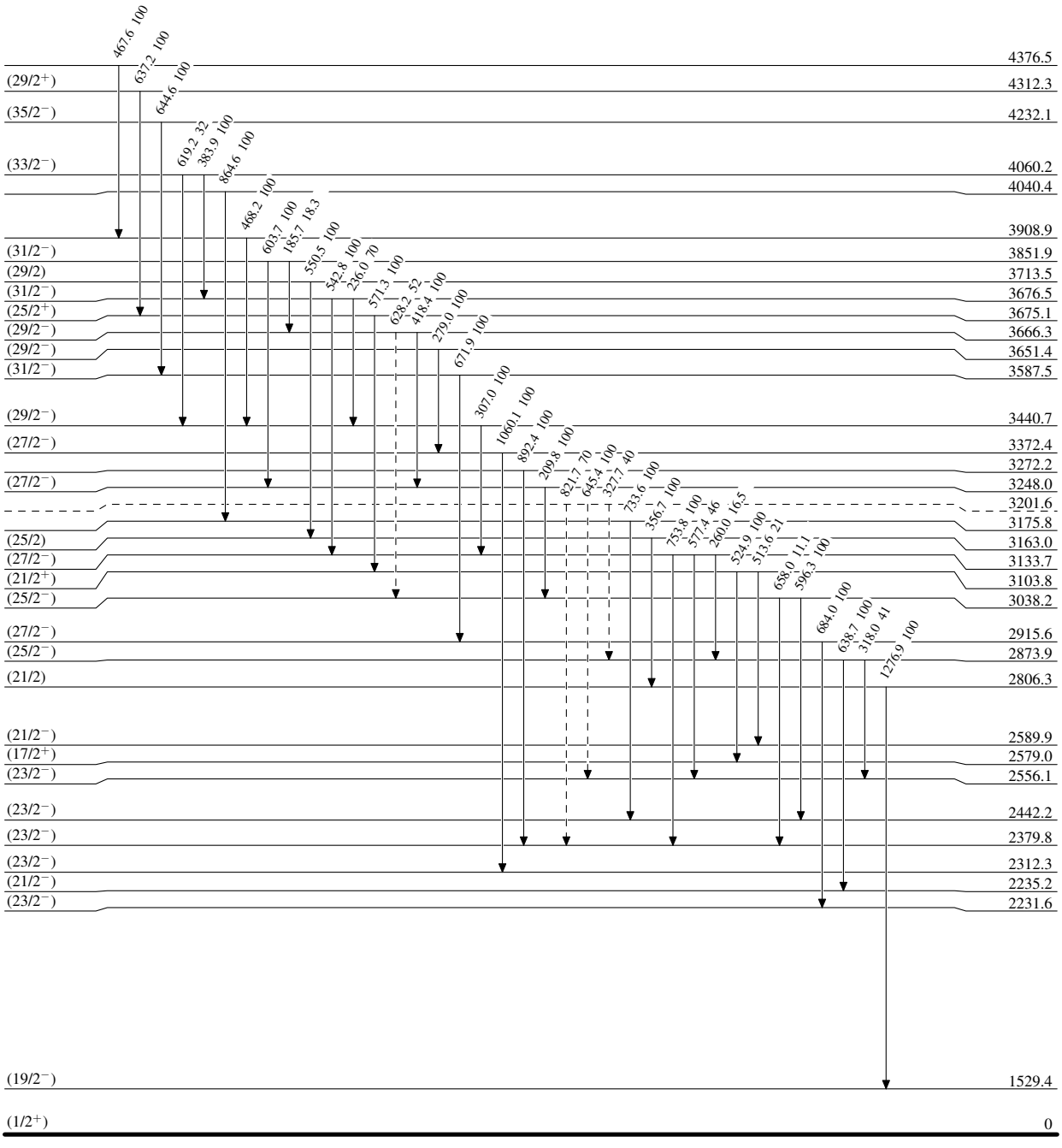
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{143}_{66}Dy_{77}$

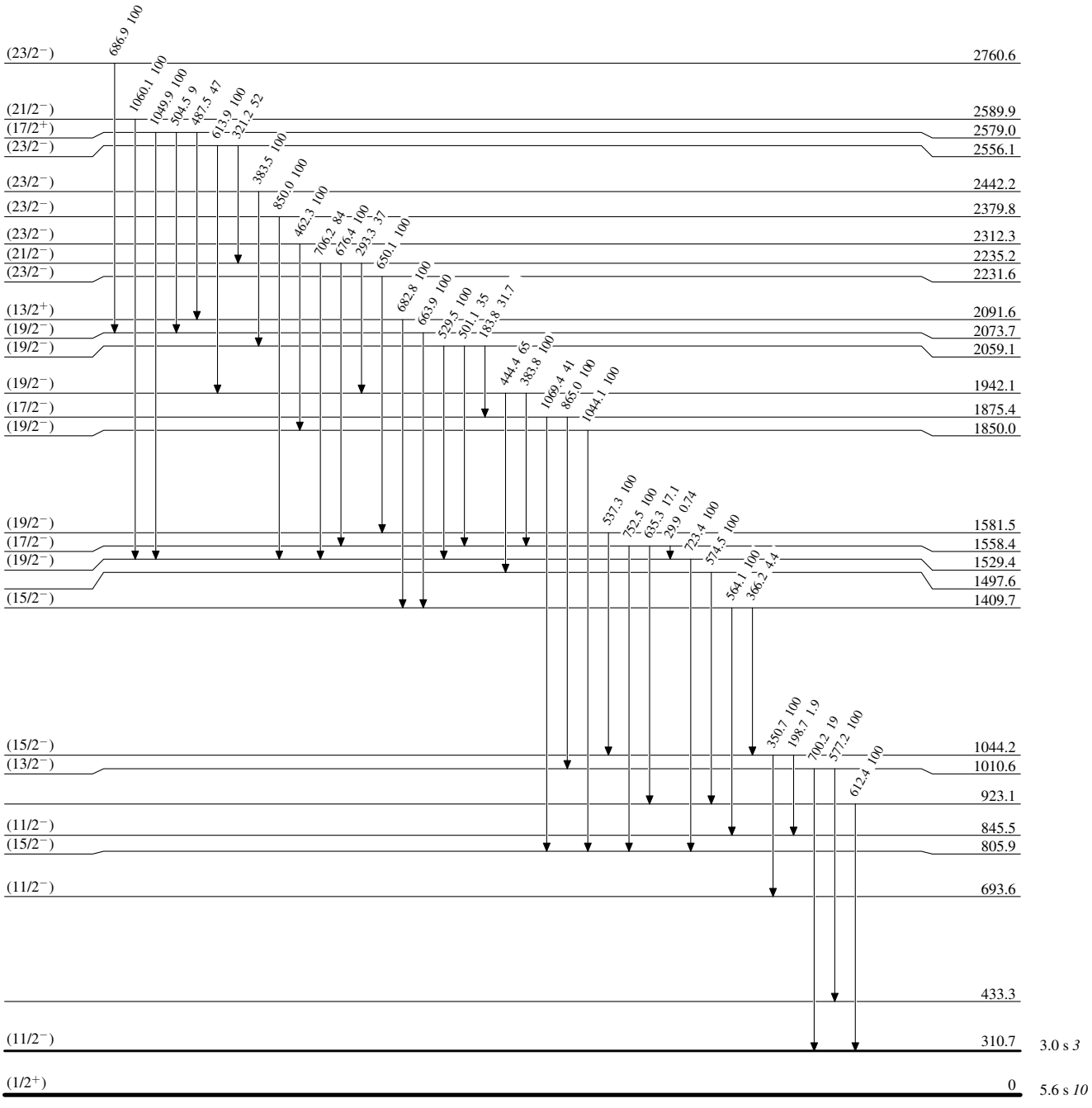
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)

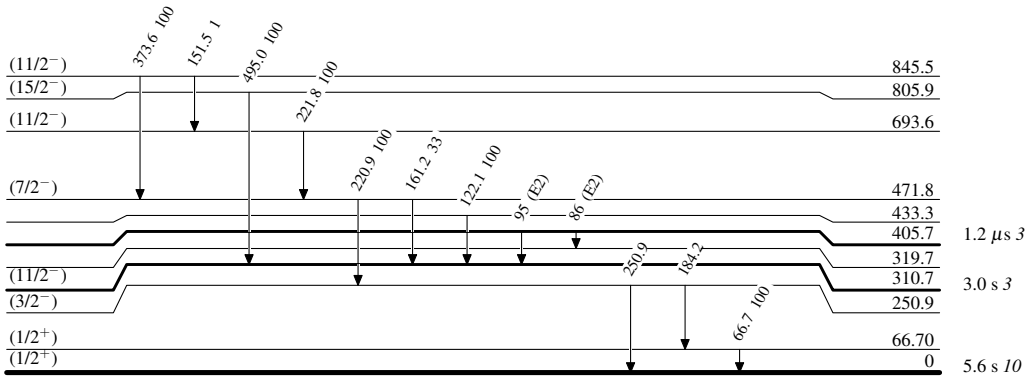


$^{143}_{66}Dy_{77}$

Adopted Levels, Gammas

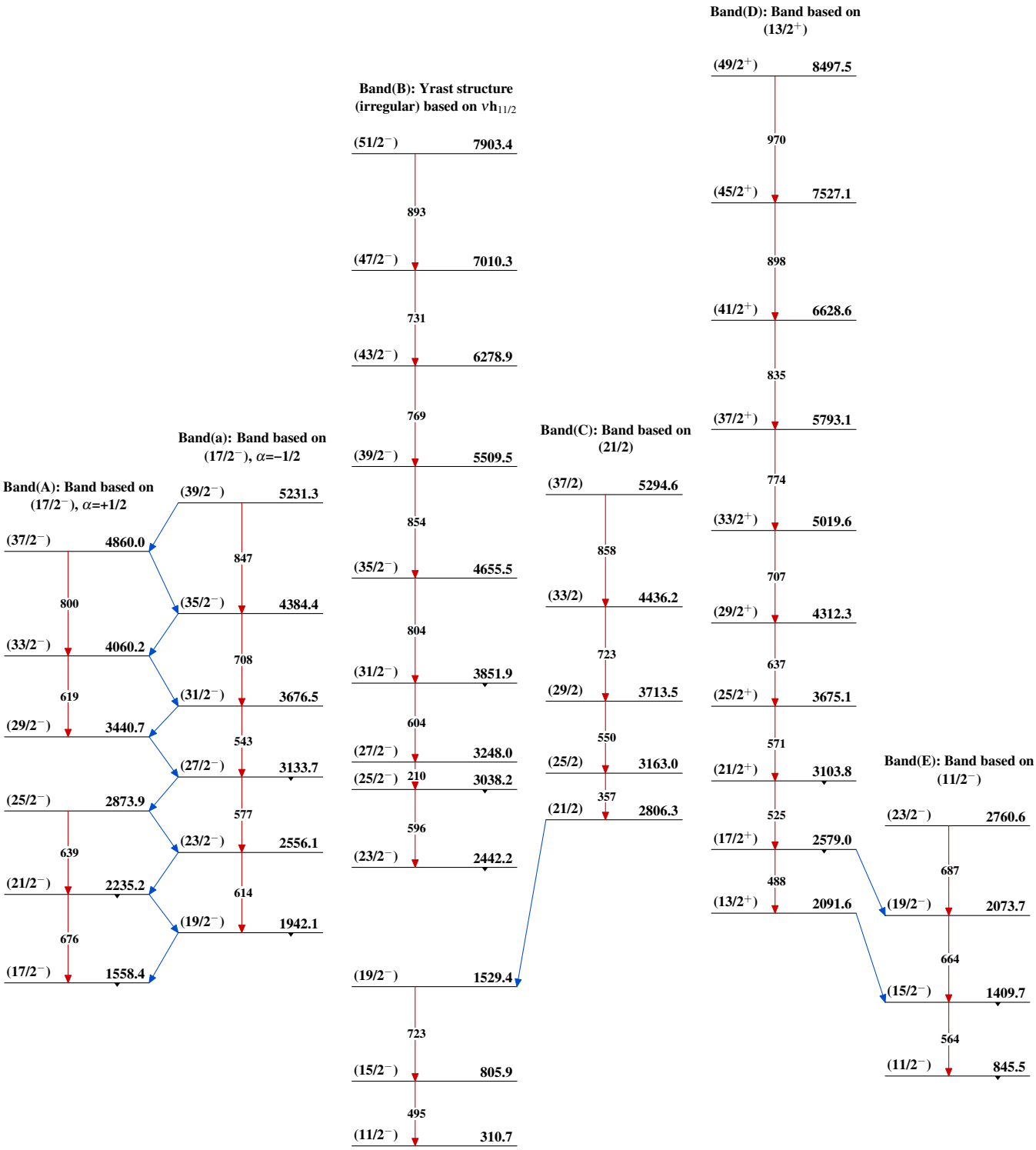
Level Scheme (continued)

Intensities: Relative photon branching from each level



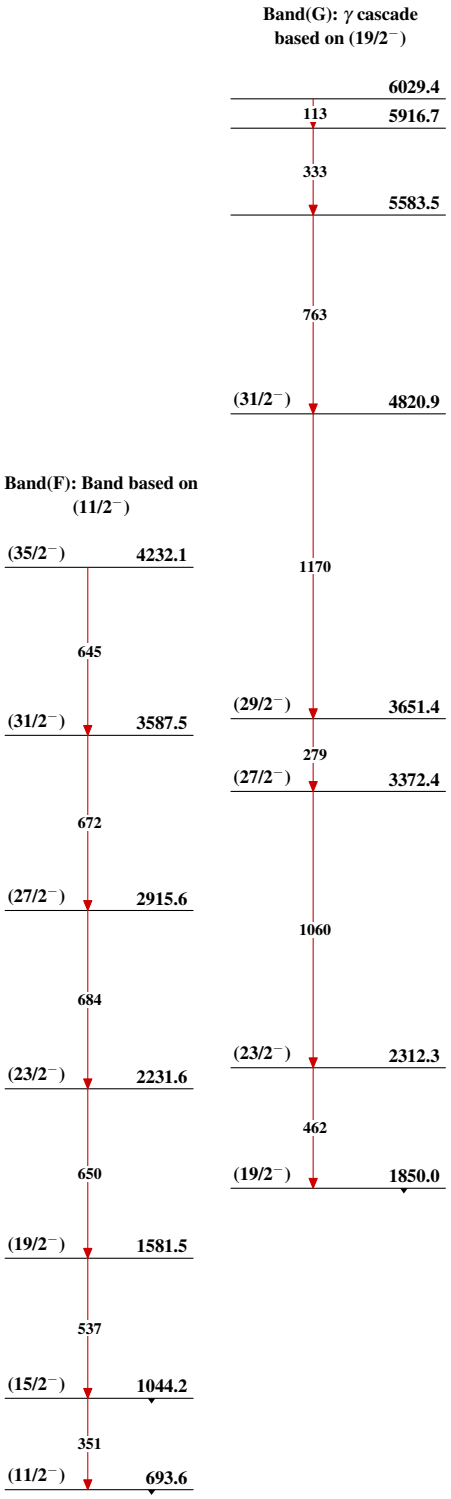
$^{143}_{66}Dy_{77}$

Adopted Levels, Gammas



$^{143}_{66}Dy_{77}$

Adopted Levels, Gammas (continued)



$^{143}_{66}Dy_{77}$