(HI,xnγ)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 157 (2012)	31-Dec-2010

Additional information 1.

Data set based largely on the study by 2002Su03, with supplementary information from 2001Li13, 2003Ju02 and 2005Pi21.

2005Pi21 extend data on the members of the α=+1/2 branch of the ν5/2[642] up to the (85/2$^+$) state. This information is consistent with the data of 2001Li13, who reported information on this band up to the 61/2$^+$ state, although the level energies differ systematically, varying from≈1 keV for the 9/2$^+$ level to≈8 keV at 61/2$^+$. The data of 2003Ju02 extend to an excitation energy of 4539 keV and deal with all of the previously reported bands. They are generally consistent with those of 2002Su03, but include some new γ's. Where these two data sets differ significantly, this is indicated.

2002Su03: ^{150}Nd(^{13}C,4nγ), E(^{13}C)=65 MeV. Measured Eγ, Iγ, $\gamma\gamma$, (particle)γ coin, $\gamma\gamma(\theta)$(ADO), using an array of 12 Compton-suppressed HPGe detectors and a Si-ball particle filter of 20 detector segments. Deduce B(E1)/B(E2) and B(M1)/B(E2) ratios and band crossings.

2001Li13: ^{160}Gd(^{37}Cl,Xγ), deep-inelastic reaction. E(^{37}Cl)=234 MeV. Enriched (98.2% in ^{160}Gd) target. Measured Eγ, $\gamma\gamma$, using the Euroball IV array. Report members of the α=+1/2 ν5/2[642] band up to the 61/2$^+$ level. The evaluator regards this information as being superseded by the more extensive data of 2005Pi21.

2003Ju02: ^{158}Gd(^{7}Li,t3nγ), incomplete fusion reaction. E(^{7}Li)=56 MeV. Measured Eγ, Iγ, $\gamma\gamma$ using the GASP array, consisting of 40 Compton-suppressed Ge detectors and an 80-element BGO inner ball in conjunction with the ISIS detector, consisting of 40 Si ΔE-E particle telescopes. Deduce B(E1)/B(E2) and B(M1)/B(E2) ratios and related signature dependence, and a band crossing within the ν11/2[505] band.

2005Pi21: ^{130}Te(^{36}S,α3nγ), E(^{36}S)=170 MeV. Measure Eγ, Iγ, $\gamma\gamma$ using the Euroball III array consisting of 14 seven-element Cluster detectors, 26 four-element Clover detectors, and 30 single-crystal Ge detectors, (all Compton-suppressed). Report members of the α=+1/2 branch of the ν5/2[642] band up to the (85$^+$) state.

^{159}Dy Levels

E(level)[†]	J$^\pi$[‡]
0.0[#]	3/2$^-$
56.626[@] *8*	5/2$^-$
136.45[#] *13*	7/2$^-$
177.61[&] *13*	5/2$^+$
208.99[a] *13*	7/2$^+$
235.75[@] *21*	9/2$^-$
239.42[&] *13*	9/2$^+$
327.63[a] *22*	11/2$^+$
352.68[b] *21*	11/2$^-$
360.88[#] *22*	11/2$^-$
365.2[&] *4*	13/2$^+$
497.19[@] *24*	13/2$^-$
516.2[c] *4*	13/2$^-$
543.0[a] *3*	15/2$^+$
575.6[&] *3*	17/2$^+$
666.7[#] *3*	15/2$^-$
699.5[b] *3*	15/2$^-$
831.6[@] *3*	17/2$^-$
860.0[a] *3*	19/2$^+$
878.6[&] *3*	21/2$^+$
903.3[c] *4*	17/2$^-$
1041.3[#] *3*	19/2$^-$

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(HI,xnγ) (continued)

^{159}Dy Levels (continued)

E(level)[†]	J^{π}[‡]	Comments
1124.6[b] 4	19/2−	
1227.5[@] 3	21/2−	
1272.4[&] 4	25/2+	
1273.6[a] 4	23/2+	
1363.8[c] 4	21/2−	
1470.4[#] 3	23/2−	
1617.8[b] 4	23/2−	
1672.3[@] 4	25/2−	
1749.7[&] 4	29/2+	
1774.8[a] 4	27/2+	
1885.2[c] 5	25/2−	
1940.5[#] 4	27/2−	
2157.6[@] 4	29/2−	
2164.6[b] 5	27/2−	
2302.5[&] 5	33/2+	
2353.9[a] 5	31/2+	
2445.3[#] 4	31/2−	
2452.7[c] 5	29/2−	
2681.8[@] 5	33/2−	
2746.6[b] 5	31/2−	From 2003Ju02. 2002Su03 do not report this level.
2922.0[&] 6	37/2+	
2985.5[#] 5	35/2−	
3001.7[a] 7	35/2+	
3043.7[c] 5	33/2−	From 2003Ju02. 2002Su03 do not report this level.
3250.5[@] 7	37/2−	
3342.3[b] 5	35/2−	From 2003Ju02. 2002Su03 do not report this level.
3567.9[#] 6	39/2−	
3599.5[&] 6	41/2+	
3709.0[a] 7	39/2+	
3869.0[@] 4	41/2−	
4201.1[#] 6	43/2−	
4326.5[&] 7	45/2+	
4466.5[a] 8	43/2+	
4540.0[@] 10	45/2−	
4889.1[#] 6	47/2−	
5095.3[&] 7	49/2+	
5263.4[@] 1	49/2−	
5280.3[a] 8	47/2+	
5631.9[#] 7	51/2−	
5898.9[&] 7	53/2+	
6038.0[@] 12	53/2−	
6426.4[#] 7	55/2−	
6742.1[&] 7	57/2+	
6861.1[@] 12	57/2−	
7623.3[&] 8	61/2+	Level shown as questionable by 2001Li13, but confirmed by 2002Su03 and 2005Pi21.
8546[&]	65/2+	

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(HI,xnγ) (continued)

^{159}Dy Levels (continued)

E(level)[†]	J^{π}[‡]
9514[&]	69/2+
10533[&]	73/2+
11603[&]	77/2+
12727[&]	81/2+
13897?[&]	(85/2+)

[†] From least-squares fit to γ energies, with energies from ^{159}Dy Adopted γ radiations included for six cases where they are not given by the authors or there are other problems.
[‡] From the adopted values. For the high-spin states, those values are from this source data set.
[#] Band(A): K^{π}=3/2−, ν3/2[521] band, α=−1/2. Band crossing by a pair of AB neutrons occurs near an angular frequency of 0.26 MeV.
[@] Band(a): K^{π}=3/2−, ν3/2[521] band, α=+1/2. Band crossing by a pair of AB neutrons occurs near an angular frequency of 0.26 MeV.
[&] Band(B): K^{π}=5/2+, ν5/2[642] band, α=+1/2.
[a] Band(b): K^{π}=5/2+, ν5/2[642] band, α=−1/2.
[b] Band(C): K^{π}=11/2−, ν11/2[505] band, α=−1/2.
[c] Band(c): K^{π}=11/2−, ν11/2[505] band, α=+1/2.

γ(^{159}Dy)

2002Su03 define an intensity ratio, R(ADO), where R(ADO)=(I(G_1 at 32°,G_2))/(I(G_1 at 90°,G_2), where the G_2 gate is from all other detectors. They state that their ADO ratios are 1.5 for stretched quadrupole transitions and 0.7 for stretched dipole transitions.

E_{γ}[†]	I_{γ}[#]	E_i(level)	J^{π}_i	E_f	J^{π}_f	Comments
30.427[‡] 13		239.42	9/2+	208.99	7/2+	
31.378[‡] 8		208.99	7/2+	177.61	5/2+	E_{γ}: 2003Ju02 report Eγ=33.5, but this leads to a poor energy fit.
(32.8)		575.6	17/2+	543.0	15/2+	
(37.6)		365.2	13/2+	327.63	11/2+	
56.626[‡] 8		56.626	5/2−	0.0	3/2−	
62.0[‡]		239.42	9/2+	177.61	5/2+	E_{γ}: 2003Ju02 report Eγ=64.4, but this leads to a poor energy fit.
72.546[‡] 4		208.99	7/2+	136.45	7/2−	
79.8 2	4.2 6	136.45	7/2−	56.626	5/2−	
88.1 2	5.7 5	327.63	11/2+	239.42	9/2+	
99.6 5	7.6 29	235.75	9/2−	136.45	7/2−	I_{γ}: From 2003Ju02. From the γ-branching data of 2002Su03, Iγ=1.7 6 is computed, but this disagrees with the data from ε decay.
102.8 2	3.7 3	239.42	9/2+	136.45	7/2−	
113.3[‡] 2		352.68	11/2−	239.42	9/2+	
116.9[‡] 2		352.68	11/2−	235.75	9/2−	
119.2 5	2.5 3	327.63	11/2+	208.99	7/2+	I_{γ}: From 2003Ju02. From the γ-branching data of 2002Su03, Iγ=0.9 1 is computed.
120.8 5	36 3	177.61	5/2+	56.626	5/2−	
125.3 5	12.6 24	360.88	11/2−	235.75	9/2−	I_{γ}: From 2003Ju02. From the γ-branching data of 2002Su03, Iγ=7.9 6 is computed.
125.7 5	24 2	365.2	13/2+	239.42	9/2+	
135.7 5	4.0 3	497.19	13/2−	360.88	11/2−	

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(HI,xnγ) (continued)

γ(^{159}Dy) (continued)

Eγ[†]	Iγ[#]	Ei(level)	J_i^π	E_f	J_f^π	Mult.[@]	Comments
137.2 *5*	3.9 *5*	136.45	7/2−	0.0	3/2−		
152.3 *2*		208.99	7/2+	56.626	5/2−		
162.1 *5*		516.2	13/2−	352.68	11/2−	D	Mult.: R(ADO)=0.5 *2*.
164.9 *5*	2.4 *2*	831.6	17/2−	666.7	15/2−		Iγ: From the γ-branching data of 2003Ju02, Iγ=3.7 *7* is computed.
169.5 *2*	5.4 *10*	666.7	15/2−	497.19	13/2−		Iγ: From 2003Ju02. From the γ-branching data of 2002Su03, Iγ=2.7 *3* is computed.
177.6 *5*	8.0 *7*	177.61	5/2+	0.0	3/2−		
177.7 *5*	23 *3*	543.0	15/2+	365.2	13/2+		Iγ: From 2003Ju02. From the γ-branching data of 2002Su03, Iγ=8.5 *7* is computed.
179.1 *5*	3.6 *13*	235.75	9/2−	56.626	5/2−		
182.9 *2*	10.0 *12*	699.5	15/2−	516.2	13/2−		
186.2 *2*	4.0 *3*	1227.5	21/2−	1041.3	19/2−		
202.2 *5*	1.2 *3*	1672.3	25/2−	1470.4	23/2−		Iγ: 2003Ju02 report this γ but do not list an Iγ value for it.
203.0 *5*	8.2 *7*	903.3	17/2−	699.5	15/2−		
209.6 *5*	3.9 *8*	1041.3	19/2−	831.6	17/2−	D	Iγ: From 2003Ju02. From the γ-branching data of 2002Su03, Iγ=2.0 *4* is computed. Mult.: R(ADO)=0.5 *2*.
210.3 *5*	60 *4*	575.6	17/2+	365.2	13/2+		
215.2 *5*	24 *2*	543.0	15/2+	327.63	11/2+		
217.9 *5*	8.0 *6*	2157.6	29/2−	1940.5	27/2−		Eγ: γ not reported by 2003Ju02.
221.1 *2*	9.8 *8*	1124.6	19/2−	903.3	17/2−	D	Mult.: R(ADO)=0.8 *3*.
224.4 *2*	16 *2*	360.88	11/2−	136.45	7/2−		
236.5 *5*	2.0 *3*	2681.8	33/2−	2445.3	31/2−		Eγ: γ not reported by 2003Ju02.
238.8 *5*	10.1 *9*	1363.8	21/2−	1124.6	19/2−	D	Mult.: R(ADO)=0.8 *2*.
242.9 *2*	2.8 *3*	1470.4	23/2−	1227.5	21/2−		
254.1 *2*	5.4 *6*	1617.8	23/2−	1363.8	21/2−		
261.5 *2*	6.0 *5*	497.19	13/2−	235.75	9/2−		
267.3 *5*	2.3 *3*	1940.5	27/2−	1672.3	25/2−		
268.3 *5*	4.1 *5*	1885.2	25/2−	1617.8	23/2−		
279.5 *2*	3.5 *4*	2164.6	27/2−	1885.2	25/2−		Iγ: From the γ-branching data of 2003Ju02, Iγ=2.5 *6* is computed. Mult.: R(ADO)=1.0 *3*.
284.4 *2*	7.4 *10*	860.0	19/2+	575.6	17/2+	D	Iγ: From 2003Ju02. From the γ-branching data of 2002Su03, Iγ=4.6 *5* is computed. Mult.: R(ADO)=0.40 *11*.
287.7 *5*	1.5 *4*	2445.3	31/2−	2157.6	29/2−		Mult.: R(ADO)=1.0 *4*.
288.0 *5*	2.8 *3*	2452.7	29/2−	2164.6	27/2−		
288.6 *1*	0.82 *4*	831.6	17/2−	543.0	15/2+	[E1]	Eγ: From 2003Ju02. γ not reported by 2002Su03. Iγ: Computed from the γ-branching data of 2003Ju02, adjusted to the intensity scale of 2002Su03.
293.9 *1*		2746.6	31/2−	2452.7	29/2−		Eγ: From 2003Ju02. 2002Su03 do not report this γ.
297.1 *1*		3043.7	33/2−	2746.6	31/2−		Eγ: From 2003Ju02. 2002Su03 do not report this γ.
298.6 *1*		3342.3	35/2−	3043.7	33/2−		Eγ: From 2003Ju02. Computed from the level-energy difference. The authors report Eγ=303.2, but this leads to a poor energy fit. 2002Su03 do not report this γ.
303.0 *1*	96 *7*	878.6	21/2+	575.6	17/2+		
306.4 *5*	14.8 *13*	666.7	15/2−	360.88	11/2−		Mult.: R(ADO)=2.5 *5*.
317.0 *2*	28 *2*	860.0	19/2+	543.0	15/2+		
327.9 *1*		2681.8	33/2−	2353.9	31/2+	[E1]	Iγ: 2003Ju02 report this γ but do not list an Iγ value for it.
334.4 *2*	12.0 *10*	831.6	17/2−	497.19	13/2−	[E2]	
347.0 *2*	3.7 *9*	699.5	15/2−	352.68	11/2−		Iγ: From the γ-branching data of 2003Ju02, Iγ=1.4 *3* is computed.
367.5 *1*	2.6 *4*	1227.5	21/2−	860.0	19/2+	[E1]	Eγ: From 2003Ju02. γ not reported by 2002Su03. Iγ: Computed from the γ-branching data of 2003Ju02, adjusted to the intensity scale of 2002Su03.

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(HI,xnγ) (continued)

γ(^{159}Dy) (continued)

E_γ[†]	I_γ[#]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[@]	Comments
374.6 *2*	11.2 *10*	1041.3	19/2⁻	666.7	15/2⁻	E2	Mult.: R(ADO)=1.7 *5*.
382.8 *1*	1.9 *6*	2157.6	29/2⁻	1774.8	27/2⁺	[E1]	E_γ: From 2003Ju02. γ not reported by 2002Su03. I_γ: Computed from the γ-branching data of 2003Ju02, adjusted to the intensity scale of 2002Su03.
387.3 *2*	2.2 *4*	903.3	17/2⁻	516.2	13/2⁻		I_γ: From 2003Ju02. From the γ-branching data of 2002Su03, Iγ=6.6 *8* is computed.
393.7 *5*	100 *7*	1272.4	25/2⁺	878.6	21/2⁺	E2	Mult.: R(ADO)=1.6 *2*.
394.0 *5*	6.7 *8*	1273.6	23/2⁺	878.6	21/2⁺		
395.9 *5*	22 *2*	1227.5	21/2⁻	831.6	17/2⁻	E2	Mult.: R(ADO)=1.3 *2*.
398.7 *1*	2.7 *6*	1672.3	25/2⁻	1273.6	23/2⁺	[E1]	E_γ: From 2003Ju02. γ not reported by 2002Su03. I_γ: Computed from the γ-branching data of 2003Ju02, adjusted to the intensity scale of 2002Su03.
413.6 *2*	24 *2*	1273.6	23/2⁺	860.0	19/2⁺		
425.1 *5*	5.4 *8*	1124.6	19/2⁻	699.5	15/2⁻		Mult.: R(ADO)=3.0 *9*.
428.7 *5*	10.8 *9*	1470.4	23/2⁻	1041.3	19/2⁻	E2	Mult.: R(ADO)=1.5 *3*.
444.9 *2*	20 *2*	1672.3	25/2⁻	1227.5	21/2⁻	E2	Mult.: R(ADO)=1.3 *2*.
460.6 *2*	9.6 *10*	1363.8	21/2⁻	903.3	17/2⁻		
465.7 *1*	1.2 *5*	1041.3	19/2⁻	575.6	17/2⁺	[E1]	E_γ: From 2003Ju02. γ not reported by 2002Su03. I_γ: Computed from the γ-branching data of 2003Ju02, adjusted to the intensity scale of 2002Su03.
470.2 *2*	10.8 *10*	1940.5	27/2⁻	1470.4	23/2⁻	E2	I_γ: From the γ-branching data of 2003Ju02, Iγ=21 *5* is computed. Mult.: R(ADO)=1.9 *5*.
477.4 *2*	88 *6*	1749.7	29/2⁺	1272.4	25/2⁺	E2	Mult.: R(ADO)=1.6 *2*.
485.3 *2*	24 *2*	2157.6	29/2⁻	1672.3	25/2⁻	E2	Mult.: R(ADO)=2.1 *4*.
493.1 *2*	6.4 *8*	1617.8	23/2⁻	1124.6	19/2⁻		Mult.: R(ADO)=1.8 *6*.
501.2 *5*	24 *2*	1774.8	27/2⁺	1273.6	23/2⁺		
504.8 *5*	14.0 *12*	2445.3	31/2⁻	1940.5	27/2⁻	E2	Mult.: R(ADO)=1.4 *4*.
521.8 *5*	7.6 *9*	1885.2	25/2⁻	1363.8	21/2⁻	E2	Mult.: R(ADO)=1.8 *5*.
524.2 *5*	28 *2*	2681.8	33/2⁻	2157.6	29/2⁻	E2	Mult.: R(ADO)=1.4 *2*.
540.2 *2*	15.6 *12*	2985.5	35/2⁻	2445.3	31/2⁻	E2	Mult.: R(ADO)=2.2 *7*.
546.6 *2*	5.7 *7*	2164.6	27/2⁻	1617.8	23/2⁻	E2	Mult.: R(ADO)=2.1 *10*.
552.7 *2*	57 *4*	2302.5	33/2⁺	1749.7	29/2⁺	E2	Mult.: R(ADO)=1.8 *2*.
562.6 *2*	4.0 *5*	4889.1	47/2⁻	4326.5	45/2⁺	[E1]	
567.8 *5*	9.4 *9*	2452.7	29/2⁻	1885.2	25/2⁻		
568.7 *5*	24 *2*	3250.5	37/2⁻	2681.8	33/2⁻	E2	Mult.: R(ADO)=1.6 *3*.
579.0 *5*	21 *2*	2353.9	31/2⁺	1774.8	27/2⁺	E2	Mult.: R(ADO)=2.0 *5*.
582.0 *1*	8.3 *10*	2746.6	31/2⁻	2164.6	27/2⁻		E_γ: From 2003Ju02. 2002Su03 do not report this γ. I_γ: Value from 2003Ju02. It is based on their intensity scale, which differs from that of 2002Su03, the one used here, and thus is not directly comparable to the other listed Iγ values.
582.6 *5*	15.2 *13*	3567.9	39/2⁻	2985.5	35/2⁻	E2	Mult.: R(ADO)=1.4 *3*.
591.1 *1*	6.0 *8*	3043.7	33/2⁻	2452.7	29/2⁻		E_γ: From 2003Ju02. 2002Su03 do not report this γ. I_γ: Value from 2003Ju02. It is based on their intensity scale, which differs from that of 2002Su03, the one used here, and thus is not directly comparable to the other listed Iγ values.
592.0 *2*	4.0 *4*	1470.4	23/2⁻	878.6	21/2⁺	[E1]	Mult.: R(ADO)=0.9 *3*.
595.7 *1*		3342.3	35/2⁻	2746.6	31/2⁻		E_γ: From 2003Ju02. 2002Su03 do not report this γ.
601.4 *2*	9.4 *8*	4201.1	43/2⁻	3599.5	41/2⁺	[E1]	E_γ: γ not reported by 2003Ju02.
618.5 *5*	18 *2*	3869.0	41/2⁻	3250.5	37/2⁻	E2	Mult.: R(ADO)=1.6 *4*.
619.3 *5*	48 *3*	2922.0	37/2⁺	2302.5	33/2⁺	E2	Mult.: R(ADO)=1.41 *14*.
633.4 *2*	12.0 *11*	4201.1	43/2⁻	3567.9	39/2⁻	E2	Mult.: R(ADO)=1.6 *6*.
647.0 *5*	6.0 *5*	3567.9	39/2⁻	2922.0	37/2⁺	[E1]	Mult.: R(ADO)=0.8 *3*.
647.8 *5*	12.0 *10*	3001.7	35/2⁺	2353.9	31/2⁺		
669.1 *5*	6.7 *7*	1940.5	27/2⁻	1272.4	25/2⁺	[E1]	Mult.: R(ADO)=0.6 *2*.
671.0 *5*	12.0 *9*	4540.0	45/2⁻	3869.0	41/2⁻	E2	Mult.: R(ADO)=1.4 *2*.

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(HI,xnγ) (continued)

γ(^{159}Dy) (continued)

E_γ[†]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	Comments
677.4 *2*	25 *2*	3599.5	41/2+	2922.0	37/2+	E2	Mult.: R(ADO)=1.5 *2*.
682.7 *5*	6.3 *6*	2985.5	35/2−	2302.5	33/2+	[E1]	Mult.: R(ADO)=0.8 *4*.
688.0 *2*	10.0 *7*	4889.1	47/2−	4201.1	43/2−	E2	Mult.: R(ADO)=2.3 *6*.
695.7 *2*	6.4 *6*	2445.3	31/2−	1749.7	29/2+	[E1]	Mult.: R(ADO)=0.2 *2*.
707.3 *2*	8.9 *8*	3709.0	39/2+	3001.7	35/2+		Mult.: R(ADO)=2.8 *14*.
723.4 *5*	6.5 *5*	5263.4	49/2−	4540.0	45/2−	E2	Mult.: R(ADO)=1.4 *2*.
727.0 *5*	16.1 *12*	4326.5	45/2+	3599.5	41/2+	E2	Mult.: R(ADO)=1.6 *2*.
742.8 *2*	4.8 *4*	5631.9	51/2−	4889.1	47/2−		
757.5 *2*	3.8 *5*	4466.5	43/2+	3709.0	39/2+		
768.8 *2*	9.0 *7*	5095.3	49/2+	4326.5	45/2+	E2	Mult.: R(ADO)=1.5 *2*.
774.6 *2*	5.6 *4*	6038.0	53/2−	5263.4	49/2−		Mult.: R(ADO)=1.0 *2*.
794.5 *2*	4.0 *4*	6426.4	55/2−	5631.9	51/2−		
803.6 *2*	5.6 *5*	5898.9	53/2+	5095.3	49/2+	E2	Mult.: R(ADO)=1.8 *4*.
813.8 *2*	2.0 *3*	5280.3	47/2+	4466.5	43/2+		
823.1 *2*	3.2 *3*	6861.1	57/2−	6038.0	53/2−		
843.2 *2*	5.5 *5*	6742.1	57/2+	5898.9	53/2+		
881.2 *2*	2.0 *2*	7623.3	61/2+	6742.1	57/2+		
923		8546	65/2+	7623.3	61/2+		
968		9514	69/2+	8546	65/2+		
1019		10533	73/2+	9514	69/2+		
1070		11603	77/2+	10533	73/2+		
1124		12727	81/2+	11603	77/2+		
1170[&]		13897?	(85/2+)	12727	81/2+		

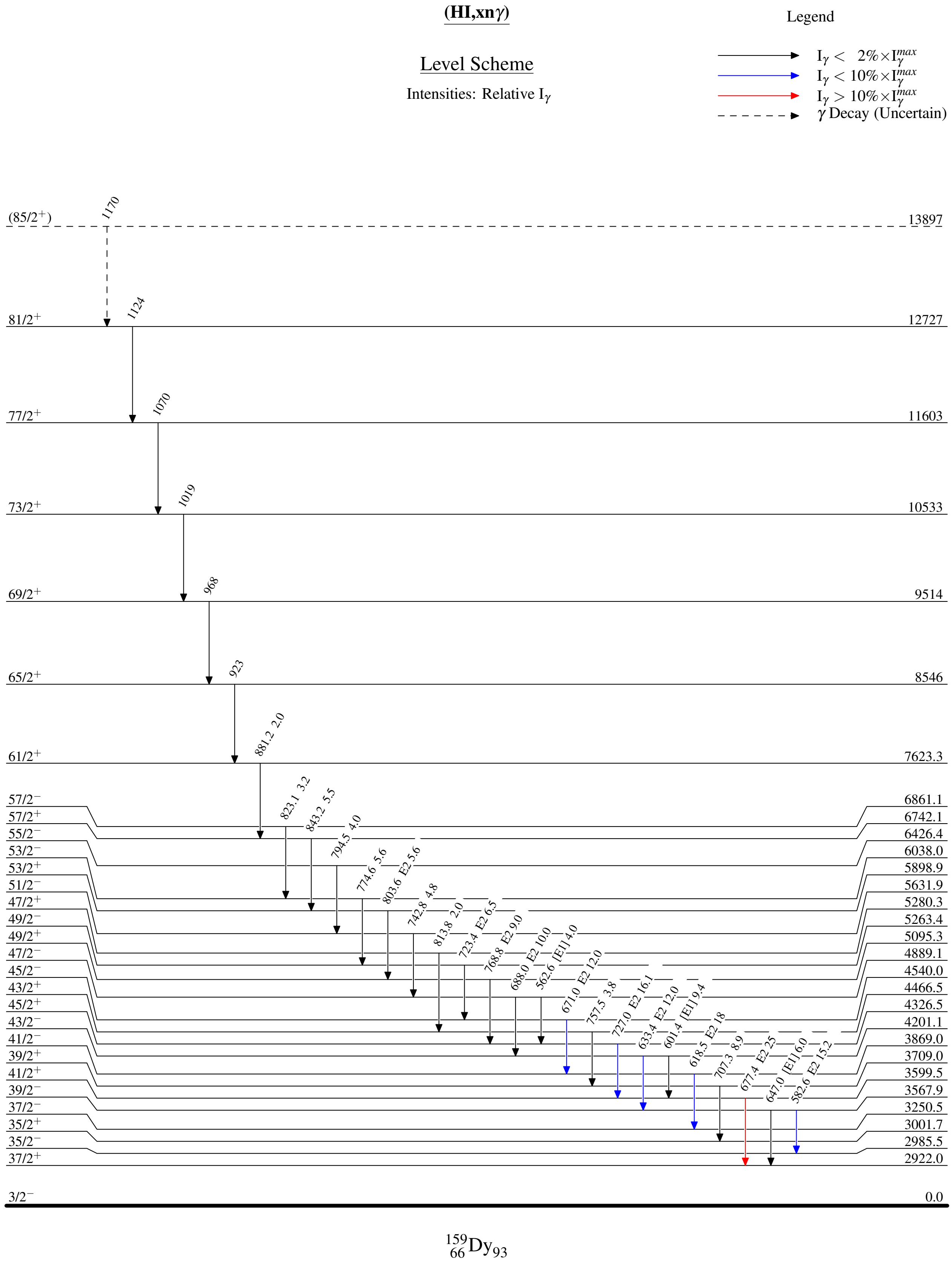
[†] 2002Su03 state that the “Uncertainties in γ-ray energies vary from 0.1 to 1.0 keV depending on the extent to which peaks are overlapping”. Based on this comment, the evaluator has assigned the uncertainties as follows: 0.5 keV for γ′s separated by less than 3 keV below 300 keV and less than 5 keV above 300, and 0.2 keV for all larger separations.

[‡] Value from the Adopted Gammas. See the comment on the level energies.

[#] Unless noted otherwise, data are from 2002Su03. For several levels, the γ-branching reported by 2003Ju02 differs from those listed here. In these instances, the Iγ value for the weaker transition deduced from the γ-branching of 2003Ju02 is given as a comment to give an indication of the difference.

[@] 2002Su03 and 2003Ju02 do not give γ multipolarities, although they can be deduced from their decay schemes. From their analysis, they seem to take quadrupole transitions to be E2 and dipole transitions to be E1 or M1, depending on whether they connect bands of opposite or of the same parity, respectively.

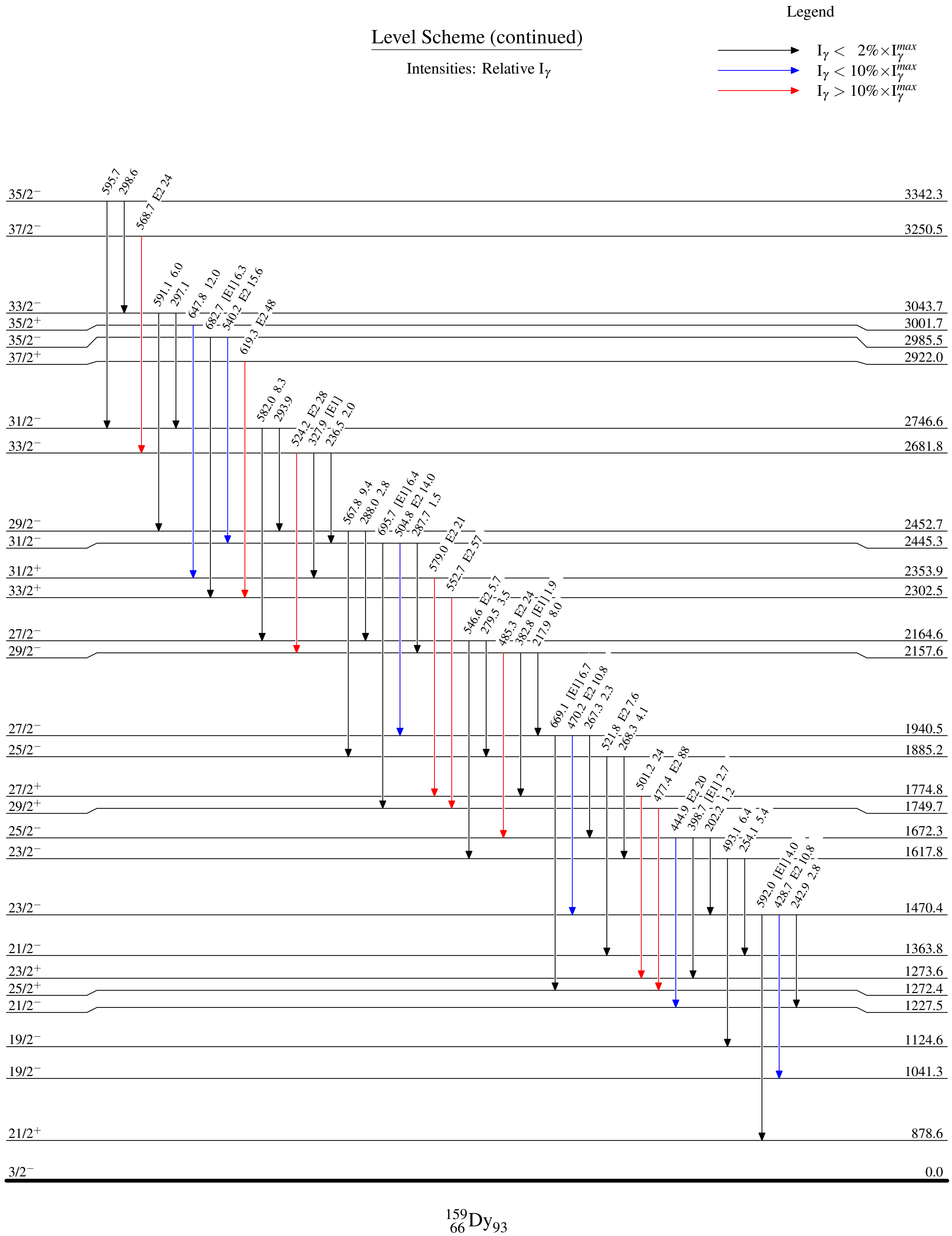
[&] Placement of transition in the level scheme is uncertain.


(HI,xnγ)
Level Scheme
Intensities: Relative Iγ
Legend
Iγ < 2%×Iγmax
Iγ < 10%×Iγmax
Iγ > 10%×Iγmax
γ Decay (Uncertain)
(85/2+) 13897
1170
81/2+ 12727
1124
77/2+ 11603
1070
73/2+ 10533
1019
69/2+ 9514
968
65/2+ 8546
923
61/2+ 7623.3
881.2 2.0
57/2− 6861.1
57/2+ 6742.1
55/2− 6426.4
53/2− 6038.0
53/2+ 5898.9
51/2− 5631.9
47/2+ 5280.3
49/2− 5263.4
49/2+ 5095.3
47/2− 4889.1
45/2− 4540.0
43/2+ 4466.5
45/2+ 4326.5
43/2− 4201.1
41/2− 3869.0
39/2+ 3709.0
41/2+ 3599.5
39/2− 3567.9
37/2− 3250.5
35/2+ 3001.7
35/2− 2985.5
37/2+ 2922.0
3/2− 0.0
823.1 3.2
843.2 5.5
794.5 4.0
774.6 5.6
803.6 E2 5.6
742.8 4.8
813.8 2.0
723.4 E2 6.5
768.8 E2 9.0
688.0 E2 10.0
562.6 [E1] 4.0
671.0 E2 12.0
757.5 3.8
727.0 E2 16.1
633.4 E2 12.0
601.4 [E1] 9.4
618.5 E2 18
707.3 8.9
677.4 E2 25
647.0 [E1] 6.0
582.6 E2 15.2
$^{159}_{66}Dy_{93}$

(HI,xnγ)

Level Scheme (continued)

Intensities: Relative I_γ



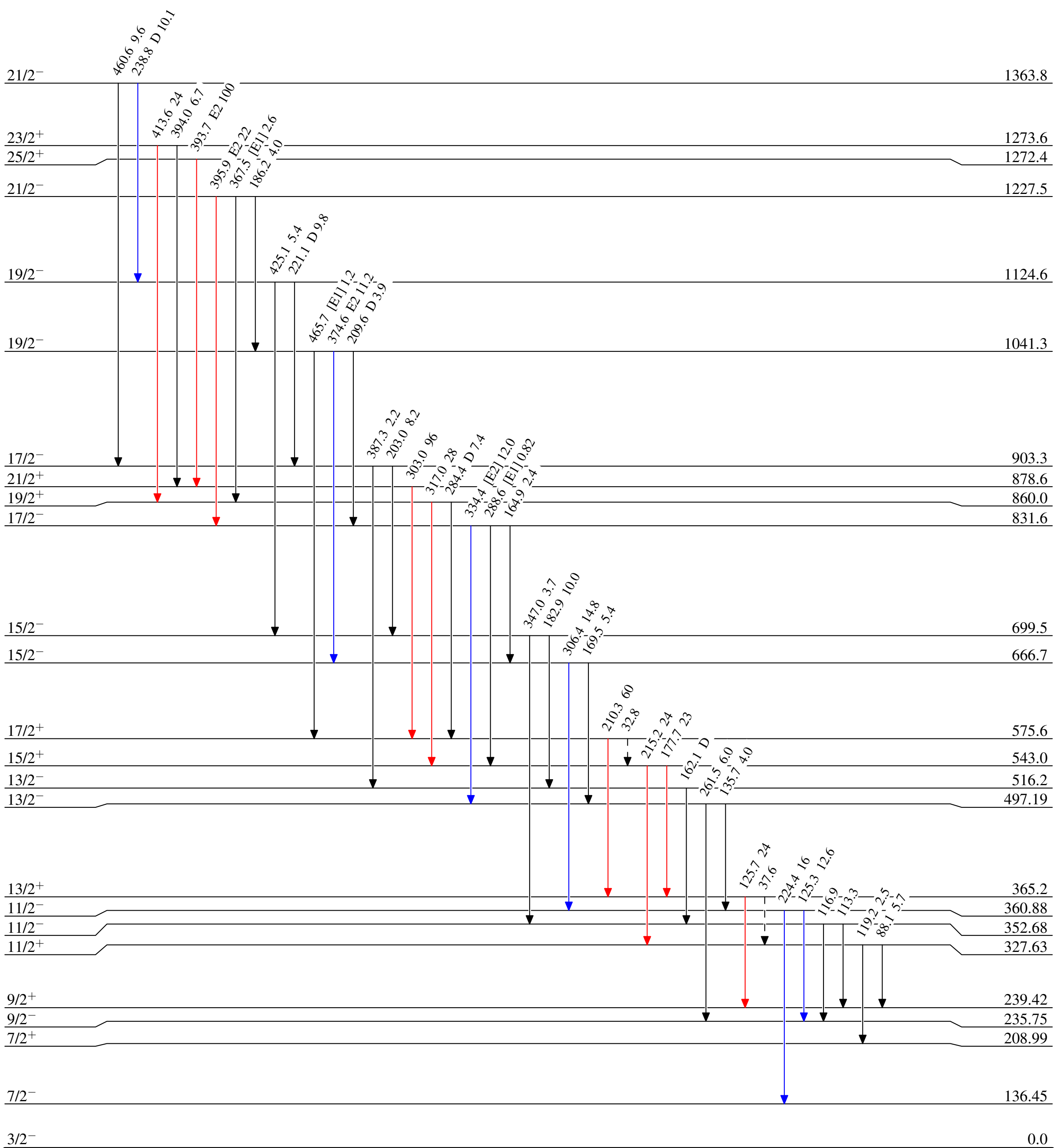
(HI,xnγ)

Level Scheme (continued)

Intensities: Relative I_γ

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)



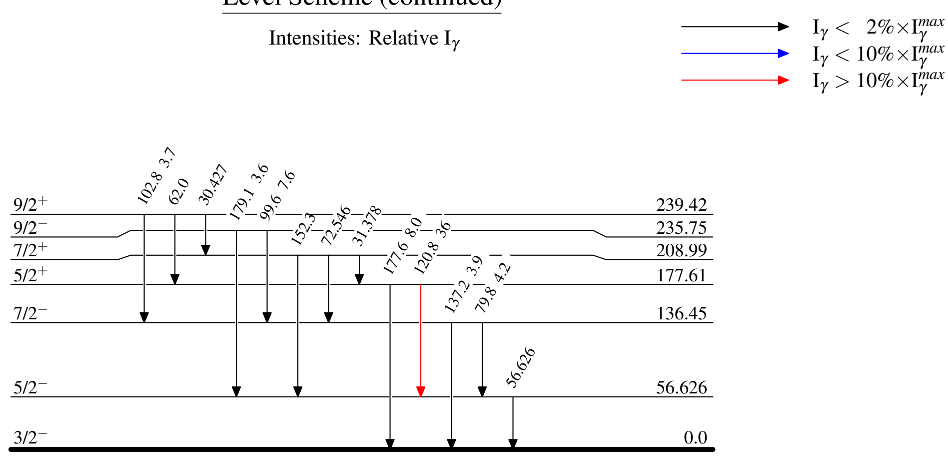
$^{159}_{66}Dy_{93}$

(HI,xnγ)

Level Scheme (continued)

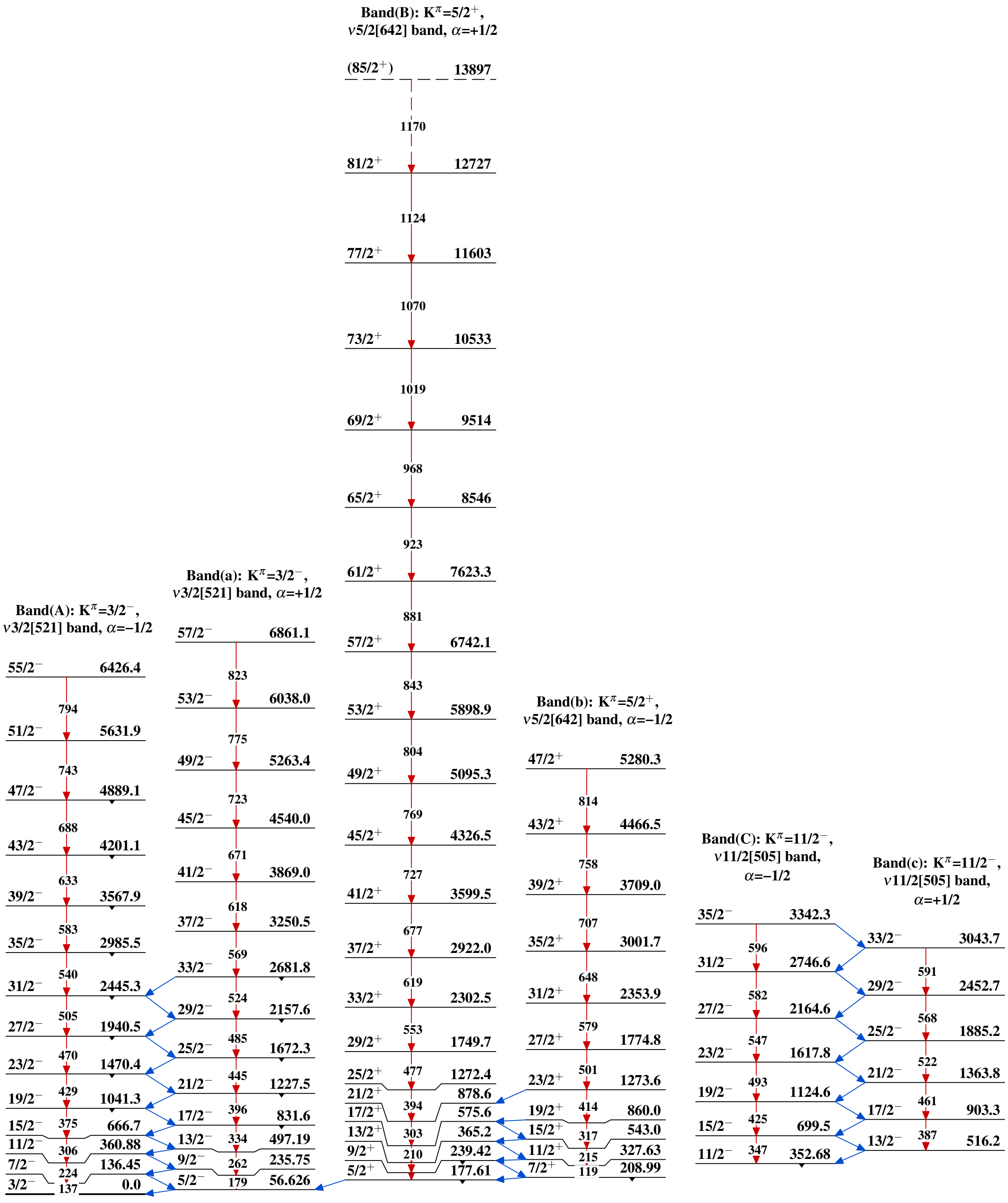
Intensities: Relative I_γ

Legend



$^{159}_{66}Dy_{93}$

(HI,xnγ)



$^{159}_{66}Dy_{93}$