Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113,2391 (2012)	1-Sep-2012

Q(β^-)=−7.68×10^3 *4*; S(n)=1.16×10^4 *syst*; S(p)=1.74×10^3 *4*; Q(α)=2.07×10^3 *3* 2012Wa38
Note: Current evaluation has used the following Q record −7.68E+3 3 *1*.16×10^4 SY1740 402070 30 2011AuZZ.
ΔS(n)=300.
An 11/2$^-$ isomeric level at 413 keV proposed by 1973Co32 is not confirmed (1985Pi02). The proposed levels at 47 and 322 keV from the same authors have also not been adopted.

^{115}I Levels

Cross Reference (XREF) Flags

- A ^{115}Xe ε decay (18 s)
- B ^{106}Cd(^{12}C,p2nγ)
- C (HI,xnγ)
- D ^{115}I IT decay (144 μs)

E(level)‡	J$^\pi$†	T$_{1/2}$	XREF	Comments
0.0	(5/2$^+$)	1.3 min *2*	ABC	%ε+%β^+=100 T$_{1/2}$: from 1969Ha03, ^{115}I β^+ decay curve; ms 18-s ^{115}Xe parent source. J$^\pi$: from syst of J$^\pi$(g.s.) (1977Ek02,1979Au01,1979Ta01) in iodine isotopes.
56.7 *3*	(7/2$^+$)		BC	J$^\pi$: from syst of the first (7/2$^+$) in iodine isotopes.
564.7@ *3*	(9/2$^+$)	0.50 ns *10*	BC	T$_{1/2}$: from 1994Ko13 from delayed γ-r.f. coincidences in (^{12}C,p2nγ). J$^\pi$: E2 γ to (5/2$^+$) and syst.
633.6 *3*	(9/2$^+$)		BC	J$^\pi$: M1+E2 γ to (7/2$^+$) and syst.
731.8 *3*	(9/2$^+$)		BC	J$^\pi$: E2 γ to (5/2$^+$) and syst.
837.5# *3*	(11/2$^-$)	0.90 ns *20*	BC	J$^\pi$: (E1) γ to (9/2$^+$) and syst. T$_{1/2}$: from 1994Ko13 from delayed γ-r.f. coincidences in (^{12}C,p2nγ).
877.9@ *3*	(11/2$^+$)		BC	J$^\pi$: M1+E2 γ to (9/2$^+$) and syst.
1198.1@ *3*	(13/2$^+$)		BC	J$^\pi$: M1+E2 γ to (11/2$^+$) and syst.
1248.2# *3*	(15/2$^-$)		BC	J$^\pi$: stretched E2 and syst.
1540.7@ *3*	(15/2$^+$)		BC	J$^\pi$: M1+E2 γ to 13/2$^+$ and syst.
1765.2# *3*	(19/2$^-$)		BC	J$^\pi$: stretched E2 and syst.
1899.0@ *3*	(17/2$^+$)		BC	J$^\pi$: M1+E2 γ to (15/2$^+$) and syst.
2273.6@ *3*	(19/2$^+$)		BC	J$^\pi$: M1+E2 γ to (17/2$^+$) and syst.
2387.0# *3*	(23/2$^-$)		BC	J$^\pi$: stretched E2 and syst.
2659@ *1*	(21/2$^+$)		BC	J$^\pi$: (M1) γ to (19/2$^+$) and syst.
2917.1& *4*			C	
3053.3@ *4*	(23/2$^+$)		BC	J$^\pi$: syst.
3115.6# *3*	(27/2$^-$)		BC	J$^\pi$: stretched E2 and syst.
3406.4& *5*	(27/2$^-$)		C	
3447.7@ *11*	(25/2$^+$)		C	
3462 *1*	(25/2$^+$)		B	J$^\pi$: syst.
3840.0@ *5*	(27/2$^+$)		C	
3912.5# *3*	(31/2$^-$)		BC	J$^\pi$: stretched E2 and syst.
4052.8& *5*	(31/2$^-$)		C	
4244.8@ *11*	(29/2$^+$)		C	
4762.2# *6*	(35/2$^-$)		BC	J$^\pi$: stretched E2 and syst.

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Adopted Levels, Gammas (continued)

^{115}I Levels (continued)

E(level)‡	Jπ†	XREF	Comments
4798.9& 5	(35/2⁻)	C	
5083.1 6		C	
5619.5& 6	(39/2⁻)	C	
5656# 1	(39/2⁻)	BC	Jπ: (E2) and syst.
6484.4# 6	(43/2⁻)	C	
6543.1& 6	(43/2⁻)	C	
6671.6a 6	(43/2⁻)	C	
7516.6# 7	(47/2⁻)	C	
7728a	(47/2⁻)	C	
8228.8 7	(51/2⁻)	C	
8570.4 7		C	
8857a	(51/2⁻)	C	
8899#	(51/2⁻)	C	
9499	(55/2⁻)	C	
10069a	(55/2⁻)	C	
11388a	(59/2⁻)	C	
12852a	(63/2⁻)	C	
0.0+x		C	
1093+xb		C	
2250+xb		C	
3476+xb		C	
4787+xb		C	
6197+xb		C	
7704+xb		C	
9315+xb		C	
11043+xb		C	
12913+xb		C	
14932+xb		C	
17110+xb		C	
19449+xb		C	
0.0+y		C	
981+yc		C	
2011+yc		C	
3101+yc		C	
4247+yc		C	
5456+yc		C	
6756+yc		C	
8139+yc		C	
9604+yc		C	
11183+yc		C	
12888+yc		C	
14747+yc		C	
16772+yc		C	
18962+yc		C	
0.0+z		C	
923+zd		C	
1892+zd		C	
2909+zd		C	

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Adopted Levels, Gammas (continued)

^{115}I Levels (continued)

E(level)‡	XREF	E(level)‡	XREF	E(level)‡	XREF	E(level)‡	XREF
3990+z[d]	C	13590+z[d]	C	3642+v[e]	C	0.0+w	C
5126+z[d]	C	15350+z[d]	C	5044+v[e]	C	1395+w[f]	C
6327+z[d]	C	17275+z[d]	C	6544+v[e]	C	2912+w[f]	C
7610+z[d]	C	19391+z[d]	C	8183+v[e]	C	4592+w[f]	C
8975+z[d]	C	0.0+v	C	9993+v[e]	C	6471+w[f]	C
10426+z[d]	C	1146+v[e]	C	11990+v[e]	C	8570+w[f]	C
11959+z[d]	C	2350+v[e]	C	14178+v[e]	C		

† J^π without comments are based on rotational-band structure, on γ mult and decay patterns in (HI,xnγ).
‡ From least-squares fit to γ energies.
# Band(A): configuration (π $1h_{11/2}$) decoupled band. syst ΔJ=2 bands populated in odd-A ^{117}I-^{127}I. See 1977Go04 for excitation energies compared with ^{116}Te-^{126}Te g.s. bands.
@ Band(B): 9/2(404) Nilsson proton-hole band. syst ΔJ=1 bands populated in ^{117}I-^{127}I (see 1977Go04). Excitation energies and band spacing calculations agree with experiment at prolate deformation ≈0.2.
& Band(C): negative-parity band.
[a] Band(D): π=−band connected to the yrast band.
[b] Band(E): band 5, J≈35/2 for the lowest level.
[c] Band(F): band 6, J≈35/2 for the lowest level.
[d] Band(G): band 7, J≈35/2 for the lowest level.
[e] Band(H): band 8, J≈35/2 for the lowest level.
[f] Band(I): band 9, J≈35/2 for the lowest level.

γ(^{115}I)

E_i(level)	J_i^π	E_γ@	I_γ[a]	E_f	J_f^π	Mult.‡	δ†	Comments
56.7	(7/2$^+$)	56.7 *3*	100	0.0	(5/2$^+$)			
564.7	(9/2$^+$)	507.4 *3*	50 *3*	56.7	(7/2$^+$)			I_γ: Iγ=≈61 from (^{12}C,p2nγ).
		564.7 *3*	100 *3*	0.0	(5/2$^+$)	E2#		B(E2)(W.u.)=0.59 *12* Mult.: Stretched Q, not M2 from Rul.
633.6	(9/2$^+$)	576.9 *3*	100 *2*	56.7	(7/2$^+$)	M1+E2#	−1.2 *7*	
		633.5 *3*	23.7 *24*	0.0	(5/2$^+$)	Q		
731.8	(9/2$^+$)	731.8 *3*	100	0.0	(5/2$^+$)	E2#		
837.5	(11/2$^-$)	105.8 *3*	66.9 *9*	731.8	(9/2$^+$)	(E1)#		B(E1)(W.u.)=0.000108 *24*
		203.7 *3*	100 *2*	633.6	(9/2$^+$)	(E1)#		B(E1)(W.u.)=2.3×10^{-5} *5*
877.9	(11/2$^+$)	313.5 *3*	100	564.7	(9/2$^+$)	M1+E2#	+0.13 *4*	
1198.1	(13/2$^+$)	320.2 *3*	100 *6*	877.9	(11/2$^+$)	M1+E2#	+0.16 *5*	
		634.0 *2*	24 *4*	564.7	(9/2$^+$)	E2		
1248.2	(15/2$^-$)	410.7 *3*	100	837.5	(11/2$^-$)	E2#		
1540.7	(15/2$^+$)	342.6 *3*	100 *8*	1198.1	(13/2$^+$)	M1+E2#	≤0.08	
		663.3 *2*	46 *6*	877.9	(11/2$^+$)	(Q)		
1765.2	(19/2$^-$)	517.0 *3*	100	1248.2	(15/2$^-$)	E2#		
1899.0	(17/2$^+$)	357.9 *3*	100 *3*	1540.7	(15/2$^+$)	M1+E2#	≤0.02	I_γ: Iγ From (^{12}C,p2nγ).
		701.3 *3*	68 *4*	1198.1	(13/2$^+$)	E2#		I_γ: Iγ From (^{12}C,p2nγ).
2273.6	(19/2$^+$)	374.6 *3*	100 *10*	1899.0	(17/2$^+$)	M1+E2#	+0.07 *5*	
		732.9 *2*	92 *11*	1540.7	(15/2$^+$)	Q		
2387.0	(23/2$^-$)	621.8 *3*	100	1765.2	(19/2$^-$)	E2#		

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Adopted Levels, Gammas (continued)

γ(^{115}I) (continued)

E_i(level)	J_i^π	E_γ [@]	I_γ [a]	E_f	J_f^π	Mult. [‡]
2659	(21/2$^+$)	385.2 *3*	89 *9*	2273.6	(19/2$^+$)	(M1+E2)[#]
		759.9 *2*	100 *12*	1899.0	(17/2$^+$)	Q
2917.1		1152.1 *2*	100	1765.2	(19/2$^-$)	
3053.3	(23/2$^+$)	393.5 *3*	<245	2659	(21/2$^+$)	
		778.7 *2*	100 *11*	2273.6	(19/2$^+$)	
3115.6	(27/2$^-$)	728.6 *3*	100	2387.0	(23/2$^-$)	E2[#]
3406.4	(27/2$^-$)	1019.5 *2*	100	2387.0	(23/2$^-$)	(Q)
3447.7	(25/2$^+$)	395 *1*		3053.3	(23/2$^+$)	
		788[&] *1*		2659	(21/2$^+$)	
3462	(25/2$^+$)	409.8 *3*	100	3053.3	(23/2$^+$)	
3840.0	(27/2$^+$)	393[&] *1*		3447.7	(25/2$^+$)	
		788[&] *1*		3053.3	(23/2$^+$)	
3912.5	(31/2$^-$)	796.9 *3*	100	3115.6	(27/2$^-$)	E2[#]
4052.8	(31/2$^-$)	646.5 *2*	63 *15*	3406.4	(27/2$^-$)	
		937.0 *2*	100 *15*	3115.6	(27/2$^-$)	
4244.8	(29/2$^+$)	404 *1*	96 *15*	3840.0	(27/2$^+$)	
		797.1 *2*	100 *17*	3447.7	(25/2$^+$)	
4762.2	(35/2$^-$)	850.1 *3*	100	3912.5	(31/2$^-$)	E2[#]
4798.9	(35/2$^-$)	746.1 *2*	100	4052.8	(31/2$^-$)	Q
5083.1		1170.6 *2*	100	3912.5	(31/2$^-$)	
5619.5	(39/2$^-$)	820.6 *2*	100	4798.9	(35/2$^-$)	
5656	(39/2$^-$)	893.9 *3*	100	4762.2	(35/2$^-$)	E2[#]
6484.4	(43/2$^-$)	828.1 *2*	100	5656	(39/2$^-$)	E2
6543.1	(43/2$^-$)	923.6 *2*	100	5619.5	(39/2$^-$)	
6671.6	(43/2$^-$)	1015.3 *2*	100	5656	(39/2$^-$)	
7516.6	(47/2$^-$)	1032.2 *2*	100	6484.4	(43/2$^-$)	E2
7728	(47/2$^-$)	1057 *1*		6671.6	(43/2$^-$)	
		1245 *1*		6484.4	(43/2$^-$)	
8228.8	(51/2$^-$)	712.2 *2*	100	7516.6	(47/2$^-$)	(E2)
8570.4		1053.8 *2*	100	7516.6	(47/2$^-$)	
8857	(51/2$^-$)	1129 *1*		7728	(47/2$^-$)	
8899	(51/2$^-$)	1383 *1*		7516.6	(47/2$^-$)	
9499	(55/2$^-$)	1270 *1*		8228.8	(51/2$^-$)	
10069	(55/2$^-$)	1212 *1*		8857	(51/2$^-$)	
11388	(59/2$^-$)	1319 *1*		10069	(55/2$^-$)	
12852	(63/2$^-$)	1464 *1*		11388	(59/2$^-$)	
1093+x		1093 *1*		0.0+x		
2250+x		1157 *1*		1093+x		
3476+x		1226 *1*		2250+x		
4787+x		1311 *1*		3476+x		
6197+x		1410 *1*		4787+x		
7704+x		1507 *1*		6197+x		
9315+x		1611 *1*		7704+x		
11043+x		1728 *1*		9315+x		
12913+x		1870 *1*		11043+x		
14932+x		2019 *1*		12913+x		
17110+x		2178 *1*		14932+x		
19449+x		2339 *1*		17110+x		
981+y		981 *1*		0.0+y		
2011+y		1030 *1*		981+y		
3101+y		1090 *1*		2011+y		
4247+y		1146[&] *1*		3101+y		
5456+y		1209 *1*		4247+y		

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Adopted Levels, Gammas (continued)

$\gamma(^{115}I)$ (continued)

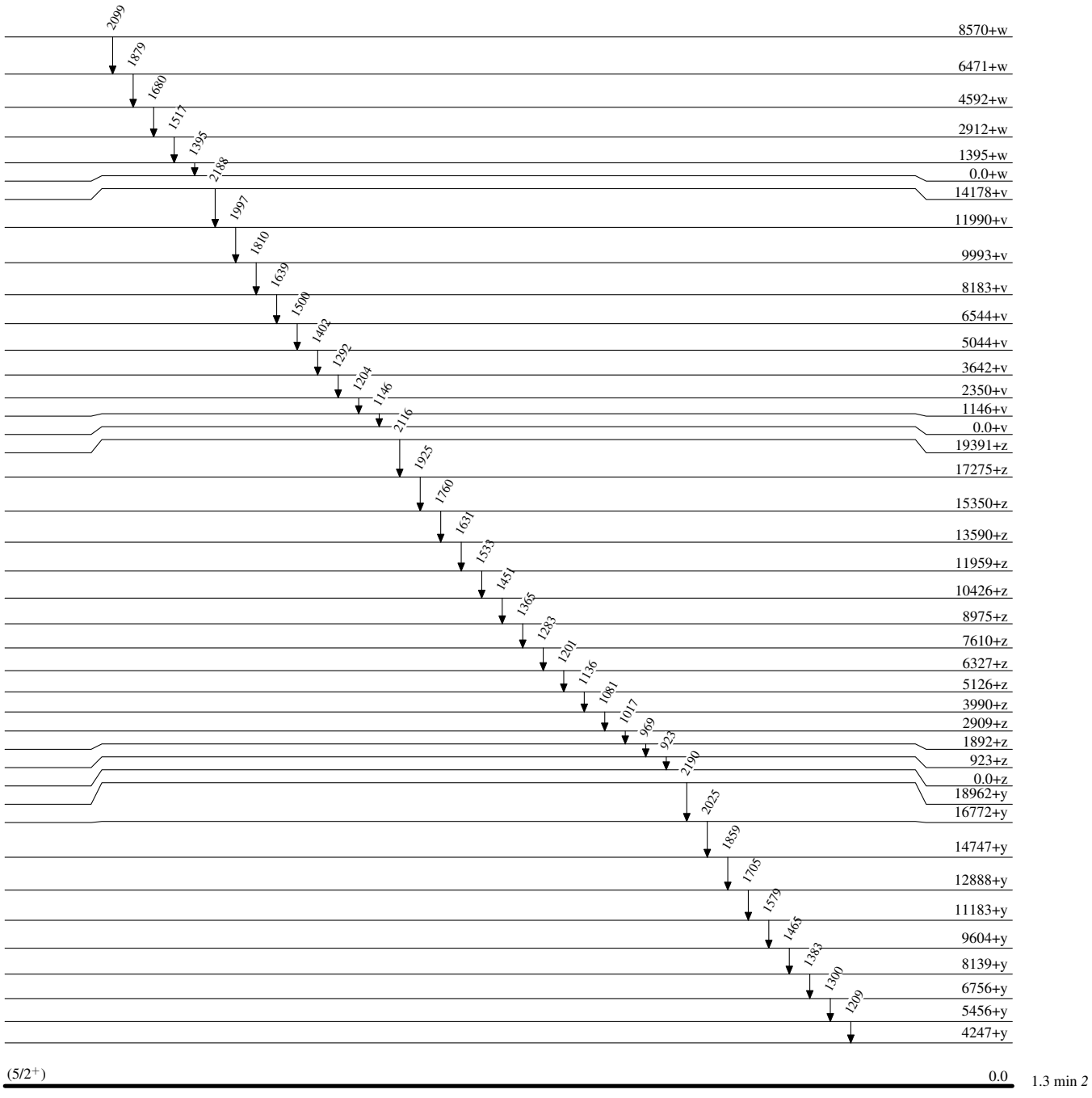
E_i(level)	E_γ[@]	E_f	E_i(level)	E_γ[@]	E_f	E_i(level)	E_γ[@]	E_f
6756+y	1300 *1*	5456+y	5126+z	1136 *1*	3990+z	3642+v	1292 *1*	2350+v
8139+y	1383 *1*	6756+y	6327+z	1201 *1*	5126+z	5044+v	1402 *1*	3642+v
9604+y	1465 *1*	8139+y	7610+z	1283 *1*	6327+z	6544+v	1500 *1*	5044+v
11183+y	1579 *1*	9604+y	8975+z	1365 *1*	7610+z	8183+v	1639 *1*	6544+v
12888+y	1705 *1*	11183+y	10426+z	1451 *1*	8975+z	9993+v	1810 *1*	8183+v
14747+y	1859 *1*	12888+y	11959+z	1533 *1*	10426+z	11990+v	1997 *1*	9993+v
16772+y	2025 *1*	14747+y	13590+z	1631 *1*	11959+z	14178+v	2188 *1*	11990+v
18962+y	2190 *1*	16772+y	15350+z	1760 *1*	13590+z	1395+w	1395 *1*	0.0+w
923+z	923 *1*	0.0+z	17275+z	1925 *1*	15350+z	2912+w	1517 *1*	1395+w
1892+z	969 *1*	923+z	19391+z	2116 *1*	17275+z	4592+w	1680 *1*	2912+w
2909+z	1017 *1*	1892+z	1146+v	1146[&] *1*	0.0+v	6471+w	1879 *1*	4592+w
3990+z	1081 *1*	2909+z	2350+v	1204 *1*	1146+v	8570+w	2099 *1*	6471+w

† From $\gamma(\theta)$ in ^{106}Cd(^{12}C,p2n).
‡ From (^{12}C,p2n) and DCO ratios in (HI,xnγ).
# Already seen in (^{12}C,p2n).
@ From ^{106}Cd(^{12}C,p2n) when seen by 1985Pi02 and 1992Pa08 and (HI,xnγ).
& Eγ is for doubly placed γ.
a Photon-branching ratios for each level.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

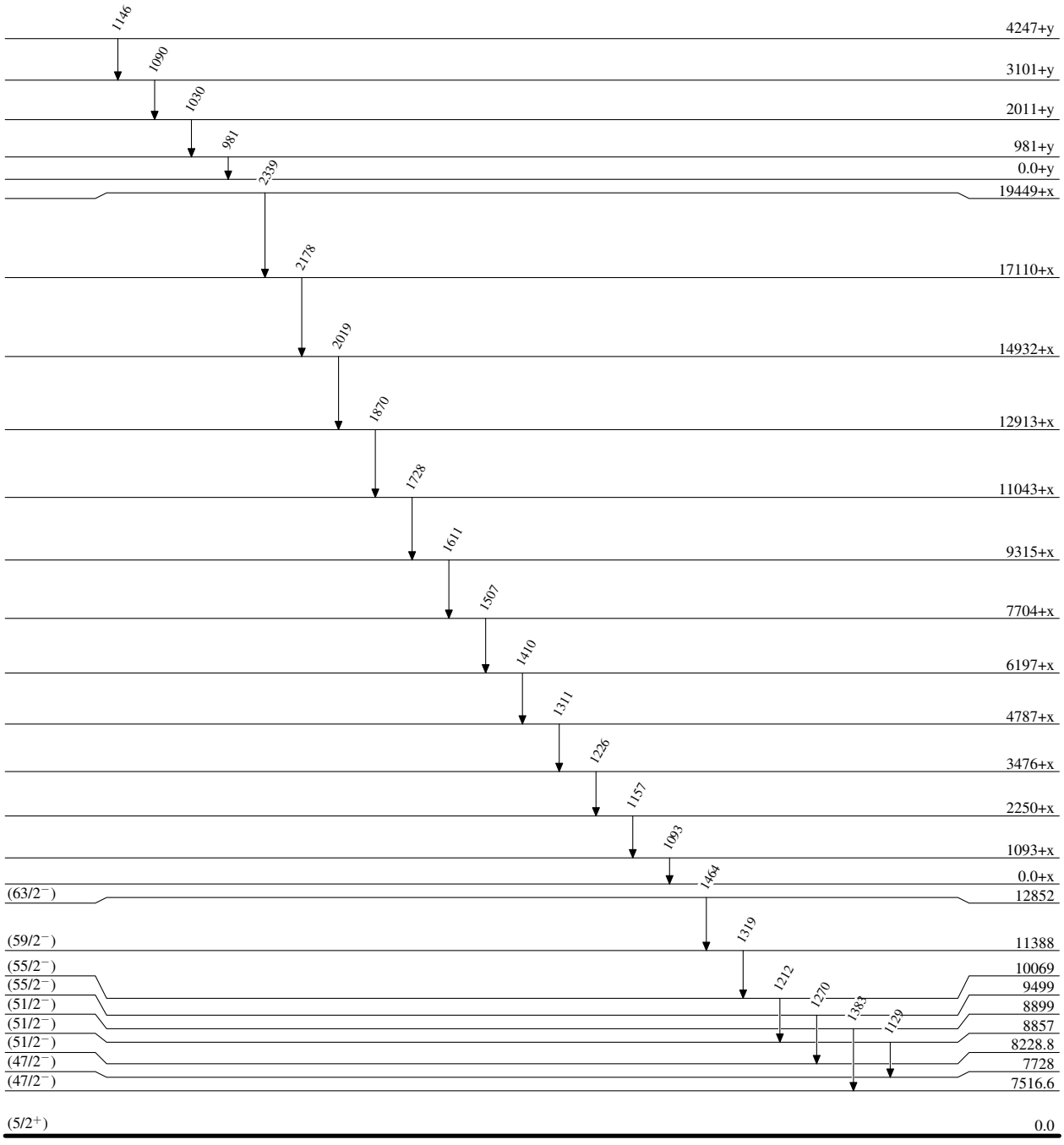


$^{115}_{53}I_{62}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



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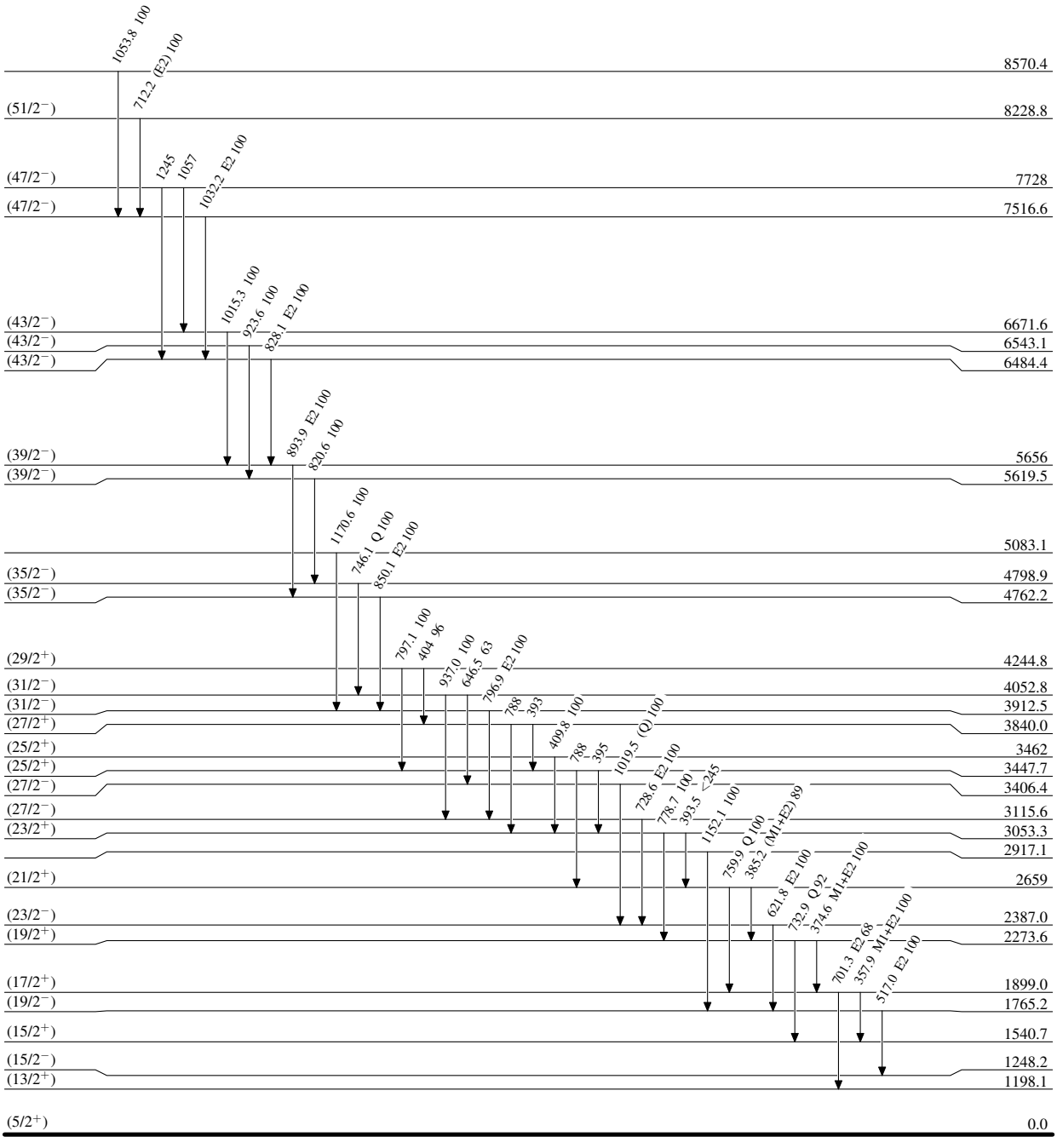
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

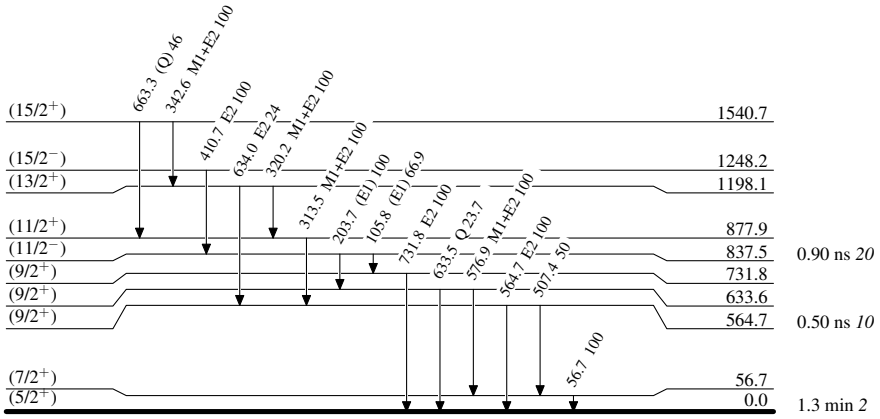


$^{115}_{53}I_{62}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



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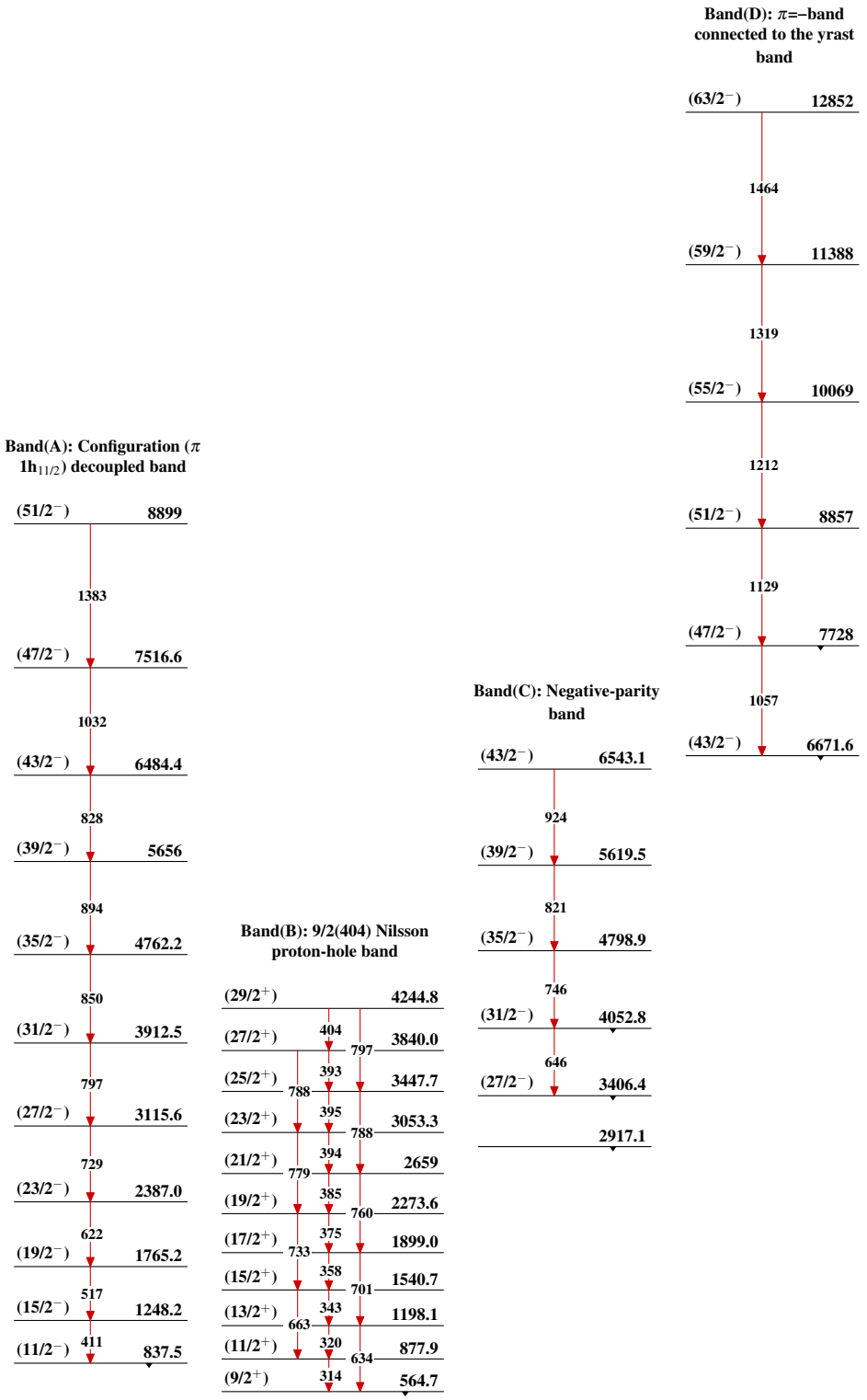
Adopted Levels, Gammas



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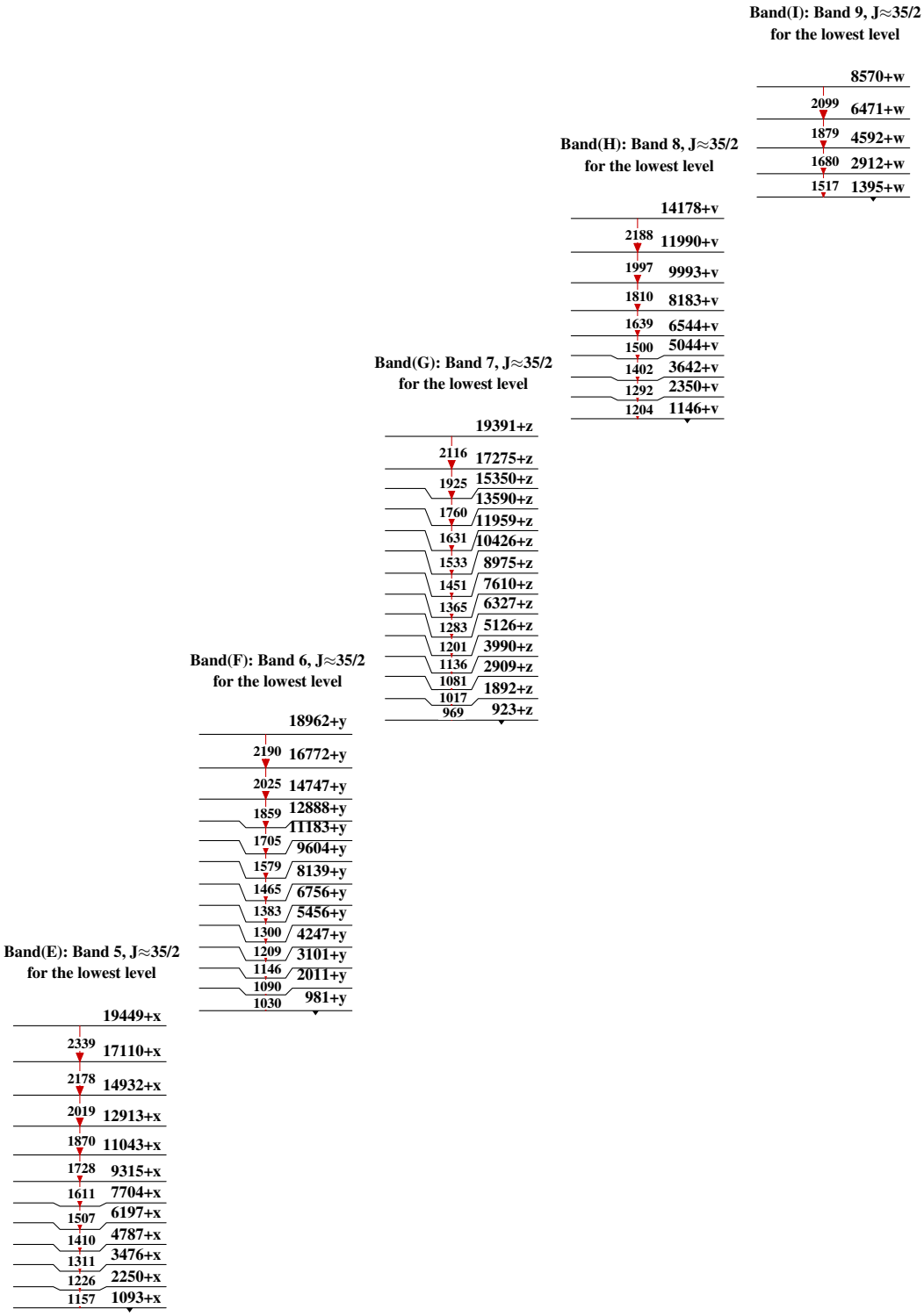
Adopted Levels, Gammas (continued)



$^{115}_{53}I_{62}$