Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 124, 1 (2015)	30-Nov-2014

Q(β^-)=−1315 *15*; S(n)=9512 *24*; S(p)=5469 *14*; Q(α)=−5520 *14* 2012Wa38
S(2n)=21532 *15*, S(2p)=14102 *14* (2012Wa38).
^{86}Y first identified by 1951Hy24 and 1951Ca46. Later work by 1962Ki04 and 1972Em01. A 49-min isomer was identified by 1961Ha17.

^{86}Y Levels

Cross Reference (XREF) Flags

A	^{86}Zr ε decay (16.5 h)	E	^{76}Ge(^{14}N,4nγ),^{86}Sr(d,2nγ)
B	^{86}Y IT decay (47.4 min)	F	^{85}Rb(α,3nγ)
C	^{52}Cr(^{37}Cl,2pnγ)	G	^{86}Sr(^{3}He,t)
D	^{76}Ge(^{14}N,4nγ),^{73}Ge(^{16}O,p2n)		

E(level)	J$^\pi$†	T$_{1/2}$	XREF	Comments
0.0	4$^-$	14.74 h *2*	ABCDEFG	%ε+%β^+=100 μ<0.6 (1988Be46,2014StZZ) μ: static nuclear orientation (1988Be46). RMS charge radius <r^2>$^{1/2}$=4.2513 fm *23* (2013An02), based on measured value in 2007Ch07. J$^\pi$: β spectrum to 2$^+$ level in ^{86}Sr has 2-yes shape; log *ft*=6.3 to 3$^-$. T$_{1/2}$: from 1972Em01. Others: 15 h *1* (1962Ki04), 14.6 h *2* (1951Hy24), 14.6 h (1951Ca46).
208.04 *7*	(5)$^-$	70 ns *7*	BCDEFg	μ=−0.415 *15* (2010Ru07,2000Io02,2014StZZ) J$^\pi$: E2(+M1) γ to 4$^-$. Probable member of the ($\pi 2p_{1/2}$)($\nu 1g_{9/2}$) multiplet. T$_{1/2}$: from $\gamma\gamma$(t) (2010Ru07). μ: TDPAD method (2010Ru07).
218.21‡ *9*	(8$^+$)	47.4 min *4*	ABCDE g	%IT=99.31 *4*; %ε+%β^+=0.69 *4* μ=4.8 *3* (1988Be46,2014StZZ) μ: static nuclear orientation (1988Be46). J$^\pi$: (E3) γ to (5)$^-$. T$_{1/2}$: from decay curve for 218γ. Value adopted here is from weighted average of 47.2 min *4* (2010Ru07), 48 min *2* (1972Si11), 48 min *1* (1962Ki04), 49.0 min *15* (1961Ha17). %IT: from IT decay.
242.80 *10*	2$^-$	28.6 ns *21*	A D	μ=−1.06 *6* (1968Tr11,2014StZZ) μ: differential perturbed angular correlation (1968Tr11). J$^\pi$: E1 γ from 1$^+$. E2 γ to 4$^-$. T$_{1/2}$: weighted average of 29 ns *4* (2010Ru07, $\gamma\gamma$(t) in in-beam γ-ray study) and 28.5 ns *21* ($\gamma\gamma$(t) in ^{86}Zr ε decay, 1968Tr11).
271.90 *13*	1$^+$	<10 ns	A G	XREF: G(252). J$^\pi$: log *ft*=4.8 from 0$^+$. T$_{1/2}$: (x ray)γ(t) in ^{86}Zr ε decay (1966Hy01).
302.18 *9*	(6$^+$)	127 ns *4*	CDEFG	μ=+3.78 *12* (2010Ru07,2000Io02,2014StZZ) XREF: G(292). μ: from TDPAD in ^{86}Sr(p,n) and ^{85}Rb(^{3}He,2n) (2000Io02), reanalysis in 2010Ru07 to give g=+0.63 *2*, instead of −0.083 *3* in 2000Io02. J$^\pi$: (E1) transition to (5)$^-$; L(^{3}He,t)=6 for a 292 *20* group. T$_{1/2}$: γ(t) (2010Ru07). Other: 125 ns *6* (2000Io02, same group as 2010Ru07).
303.13 *11*	(7$^+$)		CD	J$^\pi$: ΔJ=1, dipole transition to (8$^+$).
353 *20*	(3$^+$,4$^+$)		G	J$^\pi$: L(^{3}He,t)=4.

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Adopted Levels, Gammas (continued)

^{86}Y Levels (continued)

E(level)	J^{π}†	$T_{1/2}$	XREF	Comments
465 *20*	$(5^+,6^+)$&(≤2)		G	J^{π}: L(^{3}He,t)=6+(≤2) for a doublet.
469.44 *21*			D	
475.98 *22*			D	
536 *20*	$(3^+,4^+)$		G	J^{π}: L(^{3}He,t)=4.
620.68 *22*			D	
643 *20*			G	
662.11 *11*			CD	
671 *20*	$(4^-,5^-)$		G	J^{π}: L(^{3}He,t)=5.
741.98 *22*	(4 to 7)		D G	J^{π}: L(^{3}He,t)=5+7 for a doublet at 741 keV.
850.33 *11*			CD	
883.90 *13*	1^+		A	J^{π}: log *ft*=5.2 from 0^+.
886.20# *12*	(9^+)		CDE G	J^{π}: ΔJ=1, dipole γ to (8^+). In (^{3}He,t), possibly a doublet with L=(3+10) giving $J^{\pi}=(2^-,3^-)$ for one of the levels and (9^+) for the other.
900.35 *11*			CD	
978 *20*	$(1^+,2^+)$		G	J^{π}: L(^{3}He,t)=2.
1058 *20*	$(1^+,2^+)$		G	J^{π}: L(^{3}He,t)=2.
1078.8 *3*			F	J^{π}: γ to $(5)^-$.
1156 *20*	$(4^-,5^-)$		G	J^{π}: L(^{3}He,t)=5.
1202.65 *12*	(7^-)		CD	J^{π}: ΔJ=2, Q transition to $(5)^-$.
1221 *20*	$(4^-,5^-)$		G	J^{π}: L(^{3}He,t)=5.
1277 *20*			G	
1316.9 *3*			D	
1325.33‡ *11*	(10^+)	<0.5 ns	CDE	J^{π}: ΔJ=2, (E2) γ to (8^+); excitation function. $T_{1/2}$: From recoil-distance method in (^{14}N,4nγ) (1984Bu26).
1346 *20*			G	J^{π}: L(^{3}He,t)=4+7 for a doublet suggests $J^{\pi}=(3^+,4^+)$ for one component and $(6^-,7,8^+)$ for the other.
1393 *20*	(0,1,2)		G	J^{π}: possibly≤2 from σ(θ) in (^{3}He,t).
1408.47 *14*	(9^+)		CD	J^{π}: ΔJ=2, Q γ to (7^+).
1455 *20*			G	
1493.95 *14*	(8^-)		CD	J^{π}: ΔJ=1, D transitions to (7^+), ΔJ=1, D γ from $9^{(-)}$.
1855.07 *23*			CD	
1954.85 *18*			CD	
1987.33# *13*	$11^{(+)}$		CD	J^{π}: ΔJ=2, Q γ to $9^{(+)}$; ΔJ=1, D+Q γ to (10^+).
2042.31 *11*	$9^{(-)}$		CD	J^{π}: ΔJ=2, Q γ to $7^{(-)}$; ΔJ=1, D(+Q) γ to (8^+).
2258.72 *11*	$10^{(-)}$		CDE	J^{π}: ΔJ=1, D(+Q) gammas to (10^+) and $9^{(-)}$.
2351.34 *12*	$11^{(-)}$		CD	J^{π}: ΔJ=1, D(+Q) gammas to $10^{(-)}$ and (10^+).
2521.40‡ *14*	(12^+)	<0.5 ns	CDE	J^{π}: ΔJ=2, (E2) γ to (10^+). $T_{1/2}$: from recoil-distance method in (^{14}N,4nγ) (1984Bu26).
2757.58@ *14*	$11^{(-)}$		CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ); ΔJ=1(+2) γ to (10^+).
2913.13 *14*	(12^-)		CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ).
3090.22& *13*	$12^{(-)}$		CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D+Q gammas to $11^{(-)}$; D+Q γ to (12^-).
3182.51 *18*	(12^+)		C	J^{π}: ΔJ=2, Q transition to (10^+).
3189.31# *15*	$13^{(+)}$		CDE	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=2, Q γ to $11^{(+)}$; ΔJ=1, D γ to (12^+).
3301.73 *16*	(13^-)		CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ).
3454.02@ *15*	(13^-)		CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D γ to $12^{(-)}$.
3654.81 *16*	(13^+)		C	J^{π}: ΔJ=1, D transition to (12^+).
3877.71‡ *16*	$14^{(+)}$		CDE	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D γ to $13^{(+)}$; ΔJ=2, Q γ to $12^{(+)}$.
4010.43& *17*	(14^-)		CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D+Q γ to (13^-).

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Adopted Levels, Gammas (continued)

^{86}Y Levels (continued)

E(level)	J^{π}†	XREF	Comments
4073.03 *19*	(14⁻)	CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D+Q γ to (13⁻).
4191.91# *17*	(15⁺)	CDE	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D+Q γ to $14^{(+)}$.
4398.62 *21*	(14⁺)	C	J^{π}: ΔJ=1, D γ to $13^{(+)}$; ΔJ=2, Q γ to (12⁺).
4465.93 *17*	(14⁻)	C	J^{π}: ΔJ=1, D γ to (13⁻); ΔJ=2, Q γ to $12^{(-)}$.
4526.22 *17*	(14⁺)	C	J^{π}: ΔJ=1, D γ to (13⁺) and ΔJ=2, Q γ to (12⁺).
4709.83@ *18*	(15⁻)	C	J^{π}: ΔJ=1, D γ to (14⁻) and band structure in ^{52}Cr(^{37}Cl,2pnγ).
4884.72 *21*	(15⁺)	C	J^{π}: ΔJ=1, D γ to (14⁺); ΔJ=2, Q transition to $13^{(+)}$.
4961.23 *17*	(15⁻)	CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D(+Q) γ to (14⁻), ΔJ=2, Q γ to (13⁻).
4976.92 *21*		C	
5094.62 *17*	(15⁺)	C	J^{π}: ΔJ=1, D γ to (14⁺), ΔJ=2, Q γ to $13^{(+)}$.
5362.62 *19*	(15⁺)	C	J^{π}: ΔJ=1, D γ to (14⁺).
5429.74& *17*	(16⁻)	CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D+Q γ to (15⁻); ΔJ=2, Q γ to (14⁻).
5662.4 *3*	(15⁺)	C	J^{π}: ΔJ=1, D γ to $14^{(+)}$.
5728.02 *25*		C	
5777.03‡ *18*	(16⁺)	C	J^{π}: ΔJ=1, D γ to (15⁺) and the band structure in ^{52}Cr(^{37}Cl,2pnγ).
5992.6# *4*	(17⁺)	C	J^{π}: ΔJ=2, Q γ to (15⁺).
6009.65 *19*		C	
6087.0@ *3*	(17⁻)	C	J^{π}: ΔJ=1, D γ to (16⁻); ΔJ=2, Q γ to (15⁻).
6188.42 *25*		C	
6222.73 *20*	(17⁺)	C	J^{π}: ΔJ=1, D γ to (16⁺).
6394.73 *20*	(17⁺)	C	J^{π}: ΔJ=1, D γ to (16⁺).
6411.75 *18*	(17⁻)	CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=2, Q γ to (15⁻).
6778.65& *19*	(18⁻)	CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D(+Q) γ to (17⁻).
6868.33‡ *21*	(18⁺)	C	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ΔJ=1, D γ to (17⁺).
7081.7 *3*		C	
7215.75@ *21*	(19⁻)	CD	J^{π}: band structure in ^{52}Cr(^{37}Cl,2pnγ) and ^{76}Ge(^{14}N,4nγ) ΔJ=1, D+Q γ to (18⁻).
7611.53# *23*	(19⁺)	C	J^{π}: ΔJ=1, D γ to (18⁺).
7689.84 *22*	(19⁺)	C	J^{π}: ΔJ=1, D γ to (18⁺).
8003.35& *23*	(20⁻)	C	J^{π}: ΔJ=1, D γ to (19⁻).
8091.3 *10*		C	
8443.65@ *25*	(21⁻)	C	J^{π}: ΔJ=1, D γ to (20⁻).
8474.44‡ *25*	(20⁺)	C	J^{π}: ΔJ=1, D γ to (19⁺).
9358.2 *3*	(20⁺)	C	J^{π}: ΔJ=(1), (D) transition to (19⁺).
9443.8 *5*		C	
9468.9# *3*	(21⁺)	C	J^{π}: ΔJ=1, D γ to (20⁺).
10610.0@ *4*	(23⁻)	C	J^{π}: ΔJ=2, Q γ to (21⁻).
10736.5?‡ *4*	(22⁺)	C	J^{π}: ΔJ=(2), (Q) transition to (20⁺).
10995.9 *5*	(22⁺)	C	J^{π}: ΔJ=2, Q transition to (20⁺).
11230.3?# *4*	(23⁺)	C	J^{π}: ΔJ=1, D transition to (22⁺).
11781.1?‡ *4*	(24⁺)	C	J^{π}: ΔJ=1, D transition to (23⁺).
12414.6?# *4*	(25⁺)	C	J^{π}: ΔJ=1, D transition to (24⁺).

† Assignments from L(^{3}He,t) are based on a general rule that unnatural parity states have $\sigma(\theta)$ distributions similar to those of the next higher-spin natural parity state.
‡ Band(A): Band based on $8^{(+)}$,α=0.
# Band(a): Band based on $9^{(+)}$,α=1.

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Adopted Levels, Gammas (continued)

^{86}Y Levels (continued)

@ Band(B): Band based on $11^{(-)}$,α=1.
& Band(b): Band based on $12^{(-)}$,α=0.

Adopted Levels, Gammas (continued)

$\gamma(^{86}Y)$

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ	α[#]	Comments
208.04	(5)$^-$	208.06 *7*	100	0.0	4$^-$	E2(+M1)	1.5 *+11−5*	0.059 *10*	α(K)=0.051 *8*; α(L)=0.0065 *12*; α(M)=0.00112 *19* α(N)=0.000145 *25*; α(O)=8.4×10^{-6} *13* B(M1)(W.u.)=(1.0×10^{-5} *+11−10*); B(E2)(W.u.)=(0.6 *3*) Mult.,δ: from α(K)exp in ^{86}Y IT decay.
218.21	(8$^+$)	10.22 *8*	100	208.04	(5)$^-$	(E3)		2.24×10^6 *12*	α(L)=1.84×10^6 *10*; α(M)=3.59×10^5 *19* α(N)=3.87×10^4 *20*; α(O)=5.8 *4* B(E3)(W.u.)=0.037 *3* Mult.: from measured α(L) ratio and $T_{1/2}$ in ^{86}Y IT decay.
242.80	2$^-$	242.80 *10*	100	0.0	4$^-$	E2		0.0427	α(K)=0.0371 *6*; α(L)=0.00467 *7*; α(M)=0.000799 *12* α(N)=0.0001040 *15*; α(O)=6.07×10^{-6} *9* B(E2)(W.u.)=1.00 *8* Mult.: from α(K)exp in ^{86}Zr ε decay.
271.90	1$^+$	29.1 *1*	100	242.80	2$^-$	E1		3.70 *7*	α(K)=3.22 *6*; α(L)=0.403 *7*; α(M)=0.0677 *12* α(N)=0.00853 *15*; α(O)=0.000438 *8* B(E1)(W.u.)>0.00029 Mult.: from α(K)exp in ^{86}Zr ε decay.
302.18	(6$^+$)	84.0 *1*	17 *8*	218.21	(8$^+$)	[E2]		2.01	α(K)=1.640 *24*; α(L)=0.309 *5*; α(M)=0.0533 *8* α(N)=0.00653 *10*; α(O)=0.000238 *4* B(E2)(W.u.)=4.9 *25*
		94.11 *7*	100 *17*	208.04	(5)$^-$	(E1)		0.1285	α(K)=0.1133 *16*; α(L)=0.01271 *18*; α(M)=0.00215 *3* α(N)=0.000283 *4*; α(O)=1.78×10^{-5} *3* B(E1)(W.u.)=2.0×10^{-6} *6* Mult.: from α(exp)=0.14 *2* based on the relative intensities of the 94 keV and 208 keV gammas (2010Ru07,2000Io02) and the 94$\gamma(\theta)$ (1984Da06).
303.13	(7$^+$)	85.00 *7*	100	218.21	(8$^+$)	D			
469.44		261.4 *2*	100	208.04	(5)$^-$				
475.98		173.8 *2*	100	302.18	(6$^+$)				
620.68		318.5 *2*	100	302.18	(6$^+$)				
662.11		359.82 *16*	100 *25*	302.18	(6$^+$)				
		662.00 *17*	44 *17*	0.0	4$^-$				
741.98	(4 to 7)	439.8 *2*	100	302.18	(6$^+$)				
850.33		642.30 *9*	100	208.04	(5)$^-$				
883.90	1$^+$	612.00 *10*	100	271.90	1$^+$				
		641.10 *10*		242.80	2$^-$				
886.20	(9$^+$)	668.00 *9*	100	218.21	(8$^+$)	D			
900.35		238.20 *7*	100 *16*	662.11					
		597.9 *2*	40 *22*	303.13	(7$^+$)				
		692.20 *14*	78 *16*	208.04	(5)$^-$				
1078.8		870.8 *3*	100	208.04	(5)$^-$				
1202.65	(7$^-$)	994.70 *14*	100	208.04	(5)$^-$	Q			

γ(86Y) (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ	α#	Comments
1316.9		574.9 *2*	100	741.98	(4 to 7)				
1325.33	(10^+)	439.1 *3*	1.7 *7*	886.20	(9^+)				
		1107.09 *8*	100 *8*	218.21	(8^+)	(E2)		4.96×10^{-4}	B(E2)(W.u.)>0.030 α(K)=0.000438 *7*; α(L)=4.80×10^{-5} *7*; α(M)=8.19×10^{-6} *12* α(N)=1.100×10^{-6} *16*; α(O)=7.63×10^{-8} *11*; α(IPF)=8.27×10^{-7} *12*
1408.47	(9^+)	1105.30 *18*	100 *13*	303.13	(7^+)	Q			
		1190.3 *3*	37 *6*	218.21	(8^+)	D			
1493.95	(8^-)	1190.76 *24*	100 *15*	303.13	(7^+)	D			
		1275.8 *3*	56 *18*	218.21	(8^+)	D			
1855.07		1004.9 *3*	100	850.33					
1954.85		1054.8 *3*	100	900.35					
1987.33	$11^{(+)}$	662.00 *9*	100 *15*	1325.33	(10^+)	D+Q	−0.05 *2*		
		1101.1 *3*	17.8 *13*	886.20	(9^+)	Q			
2042.31	$9^{(-)}$	187.4 *3*	8.8 *25*	1855.07		(D)			
		548.36 *12*	25 *3*	1493.95	(8^-)	D			
		633.78 *16*	49 *6*	1408.47	(9^+)	D(+Q)	−0.1 *2*		
		839.70 *9*	37 *3*	1202.65	(7^-)	Q			
		1824.02 *10*	100 *11*	218.21	(8^+)	D(+Q)	0.00 *2*		
2258.72	$10^{(-)}$	216.40 *7*	100 *8*	2042.31	$9^{(-)}$	D(+Q)	+0.01 *2*		
		303.96 *17*	5.9 *8*	1954.85					
		850.30 *20*	29 *3*	1408.47	(9^+)	D(+Q)	+0.03 *3*		
		933.38 *16*	53 *8*	1325.33	(10^+)	D(+Q)	0.0 *2*		
		1372.60 *21*	17.5 *19*	886.20	(9^+)	D(+Q)	−0.02 *3*		
2351.34	$11^{(-)}$	92.65 *7*	100 *11*	2258.72	$10^{(-)}$	D(+Q)	0.00 *2*		
		364.00 *20*	35 *6*	1987.33	$11^{(+)}$	D			
		1025.95 *15*	31 *4*	1325.33	(10^+)	D(+Q)	+0.01 *1*		
2521.40	(12^+)	1196.04 *10*	100	1325.33	(10^+)	(E2)		4.25×10^{-4}	α(K)=0.000370 *6*; α(L)=4.04×10^{-5} *6*; α(M)=6.89×10^{-6} *10* α(N)=9.27×10^{-7} *13*; α(O)=6.45×10^{-8} *9*; α(IPF)=7.44×10^{-6} *11* B(E2)(W.u.)>0.020
2757.58	$11^{(-)}$	1432.2 *1*	100	1325.33	(10^+)	D(+Q)	−0.02 *3*		
2913.13	(12^-)	561.8 *1*	100	2351.34	$11^{(-)}$	D			
3090.22	$12^{(-)}$	177.1 *1*	4.1 *9*	2913.13	(12^-)	D+Q	−0.3 *2*		
		332.6 *1*	33.6 *23*	2757.58	$11^{(-)}$	D+Q	−0.08 *3*		
		738.9 *1*	100 *9*	2351.34	$11^{(-)}$	D+Q	−0.10 *2*		
3182.51	(12^+)	661.1@ *3*	42 *31*	2521.40	(12^+)				
		1195.2@ *8*	<36	1987.33	$11^{(+)}$				
		1857.2 *3*	100 *28*	1325.33	(10^+)	Q			
3189.31	$13^{(+)}$	667.9 *1*	100 *8*	2521.40	(12^+)	D			
		1202.0 *2*	19.6 *23*	1987.33	$11^{(+)}$	Q			
3301.73	(13^-)	388.6 *1*	100	2913.13	(12^-)	D			
3454.02	(13^-)	363.8 *1*	100 *8*	3090.22	$12^{(-)}$	D			
		540.9 *1*	18.3 *17*	2913.13	(12^-)	D+Q	−0.13 *4*		

$^{86}_{39}Y_{47}$-6

$\gamma(^{86}Y)$ (continued)

E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.‡	δ
3654.81	(13^+)	465.5 2	20 3	3189.31	$13^{(+)}$		
		472.3 1	39 4	3182.51	(12^+)		
		1133.4 1	100 11	2521.40	(12^+)	D	
		1667.5 7	12 4	1987.33	$11^{(+)}$		
3877.71	$14^{(+)}$	222.9 1	28 4	3654.81	(13^+)	D	
		688.4 1	100 9	3189.31	$13^{(+)}$	D+Q	−0.11 3
		1356.3 2	57 5	2521.40	(12^+)	Q	
4010.43	(14^-)	556.4 1	100	3454.02	(13^-)	D+Q	−0.15 2
4073.03	(14^-)	771.3 1	100	3301.73	(13^-)	D+Q	−0.09 5
4191.91	(15^+)	314.2 1	100 9	3877.71	$14^{(+)}$	D+Q	−0.09 2
		1002.6 1	38 14	3189.31	$13^{(+)}$		
4398.62	(14^+)	1209.3 2	100 15	3189.31	$13^{(+)}$	D	
		1877.2 4	67 13	2521.40	(12^+)	Q	
4465.93	(14^-)	1164.2 2	94 13	3301.73	(13^-)	D	
		1375.7 2	100 16	3090.22	$12^{(-)}$	Q	
4526.22	(14^+)	871.4 1	100 30	3654.81	(13^+)	D	
		1336.9 4	34 7	3189.31	$13^{(+)}$		
		2004.8 3	53 9	2521.40	(12^+)	Q	
4709.83	(15^-)	699.4 1	100	4010.43	(14^-)	D	
4884.72	(15^+)	486.1 1	100 14	4398.62	(14^+)	D	
		692.8 5	35 14	4191.91	(15^+)		
		1695.4 3	95 16	3189.31	$13^{(+)}$	Q	
4961.23	(15^-)	495.3 1	81 8	4465.93	(14^-)	D	
		888.2 3	39 8	4073.03	(14^-)		
		950.8 1	100 14	4010.43	(14^-)	D(+Q)	−0.04 3
		1507.2 4	44 11	3454.02	(13^-)	Q	
4976.92		1787.6 3	100 30	3189.31	$13^{(+)}$		
		2455.5 8	50 25	2521.40	(12^+)		
5094.62	(15^+)	568.4 1	86 10	4526.22	(14^+)	D	
		902.7 2	100 19	4191.91	(15^+)	D	
		1216.9 3	52 10	3877.71	$14^{(+)}$		
		1905.3 3	60 10	3189.31	$13^{(+)}$	Q	
5362.62	(15^+)	385.7 1	84 8	4976.92		D	
		836.4 2	100 16	4526.22	(14^+)	D	
5429.74	(16^-)	468.5 1	100 10	4961.23	(15^-)	D+Q	−0.10 3
		719.9 1	89 10	4709.83	(15^-)	D	
		1419.3 1	84 8	4010.43	(14^-)	Q	
5662.4	(15^+)	1784.7 4	100	3877.71	$14^{(+)}$	D	
5728.02		843.3 2	100 21	4884.72	(15^+)		
		1329.4 6	42 13	4398.62	(14^+)		
5777.03	(16^+)	414.4 1	46 4	5362.62	(15^+)	D	
		682.4 1	100 10	5094.62	(15^+)	D	

$^{86}_{39}Y_{47}$-7

Adopted Levels, Gammas (continued)

$\gamma(^{86}Y)$ (continued)

E_i(level)	J^{π}_i	E_{γ}†	I_{γ}†	E_f	J^{π}_f	Mult.‡	δ
5777.03	(16+)	1585.1 4	17 3	4191.91	(15+)	D	
		1899.3 6	13 3	3877.71	14(+)		
5992.6	(17+)	1800.7 3	100	4191.91	(15+)	Q	
6009.65		1543.7 2	100	4465.93	(14−)		
6087.0	(17−)	657.3 3	100 34	5429.74	(16−)	D	
		1377.2 5	57 20	4709.83	(15−)	Q	
6188.42		460.4 1	94 12	5728.02			
		1303.7 3	100 18	4884.72	(15+)		
6222.73	(17+)	445.7 1	100 8	5777.03	(16+)	D	
		560.3 2	13 3	5662.4	(15+)		
6394.73	(17+)	617.7 1	100	5777.03	(16+)	D	
6411.75	(17−)	402.1 1	40 5	6009.65			
		982.0 1	98 9	5429.74	(16−)	D	
		1450.5 1	100 14	4961.23	(15−)	Q	
		1702.0 9	19 5	4709.83	(15−)		
6778.65	(18−)	366.9 1	100 8	6411.75	(17−)	D(+Q)	+0.02 2
		1348.9 1	63 6	5429.74	(16−)	Q	
6868.33	(18+)	473.6 2	16 3	6394.73	(17+)		
		645.6 1	100 10	6222.73	(17+)	D	
7081.7		859.0 2	100	6222.73	(17+)	D	
7215.75	(19−)	437.1 1	100 6	6778.65	(18−)	D+Q	−0.16 4
		1128.7 3	13 2	6087.0	(17−)		
7611.53	(19+)	529.8 3	16 4	7081.7			
		743.2 1	100 13	6868.33	(18+)	D	
7689.84	(19+)	821.5 1	100 13	6868.33	(18+)	D	
		1501.4 3	64 10	6188.42			
		1697.2 8	13 5	5992.6	(17+)		
8003.35	(20−)	787.6 1	100	7215.75	(19−)	D	
8091.3		2098.6 9	100	5992.6	(17+)		
8443.65	(21−)	440.3 1	100 7	8003.35	(20−)	D	
8474.44	(20+)	784.6 7	16 7	7689.84	(19+)		
		862.9 1	100 12	7611.53	(19+)	D	
9358.2	(20+)	1668.3 3	100 15	7689.84	(19+)	(D)	
		1746.6 3	21 6	7611.53	(19+)		
9443.8		2228.0 4	100	7215.75	(19−)		
9468.9	(21+)	994.5 1	100	8474.44	(20+)	D	
10610.0	(23−)	2166.3 3	100	8443.65	(21−)	Q	
10736.5?	(22+)	2262.0 2	100	8474.44	(20+)	(Q)	
10995.9	(22+)	1637.7 3	100	9358.2	(20+)	Q	
11230.3?	(23+)	493.8 1	100	10736.5?	(22+)	D	
11781.1?	(24+)	550.8 1	100	11230.3?	(23+)	D	
12414.6?	(25+)	633.5 2	100	11781.1?	(24+)	D	

$^{86}_{39}Y_{47}$-8

$\gamma(^{86}Y)$ (continued)

† Weighted averages from the available datasets.

‡ From $\gamma(\theta)$ in $^{76}Ge(^{14}N,4n\gamma)$ and $^{52}Cr(^{37}Cl,2pn\gamma)$ and RUL, except when noted otherwise.

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.

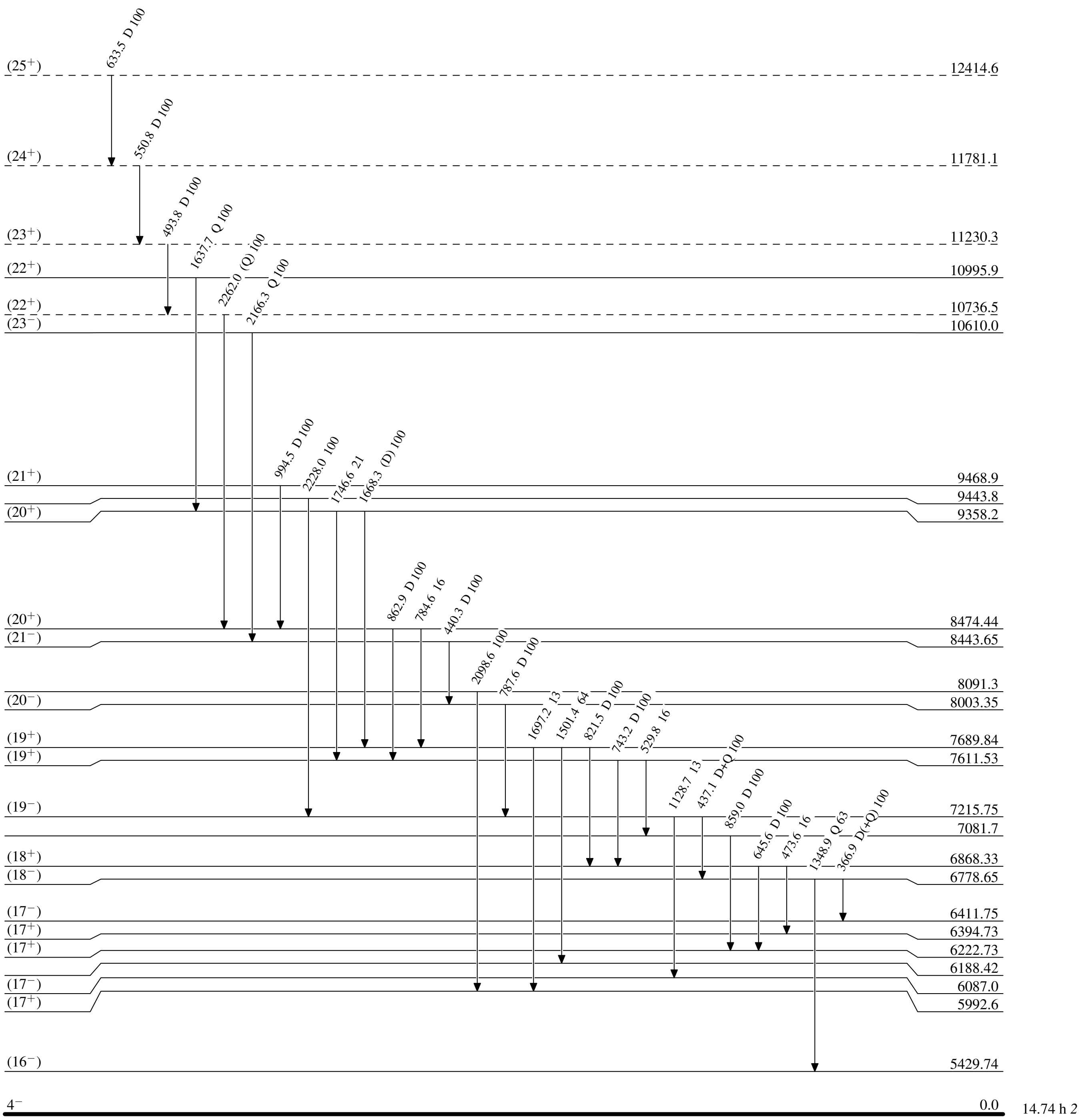
@ Placement of transition in the level scheme is uncertain.

$^{86}_{39}Y_{47}$-9

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

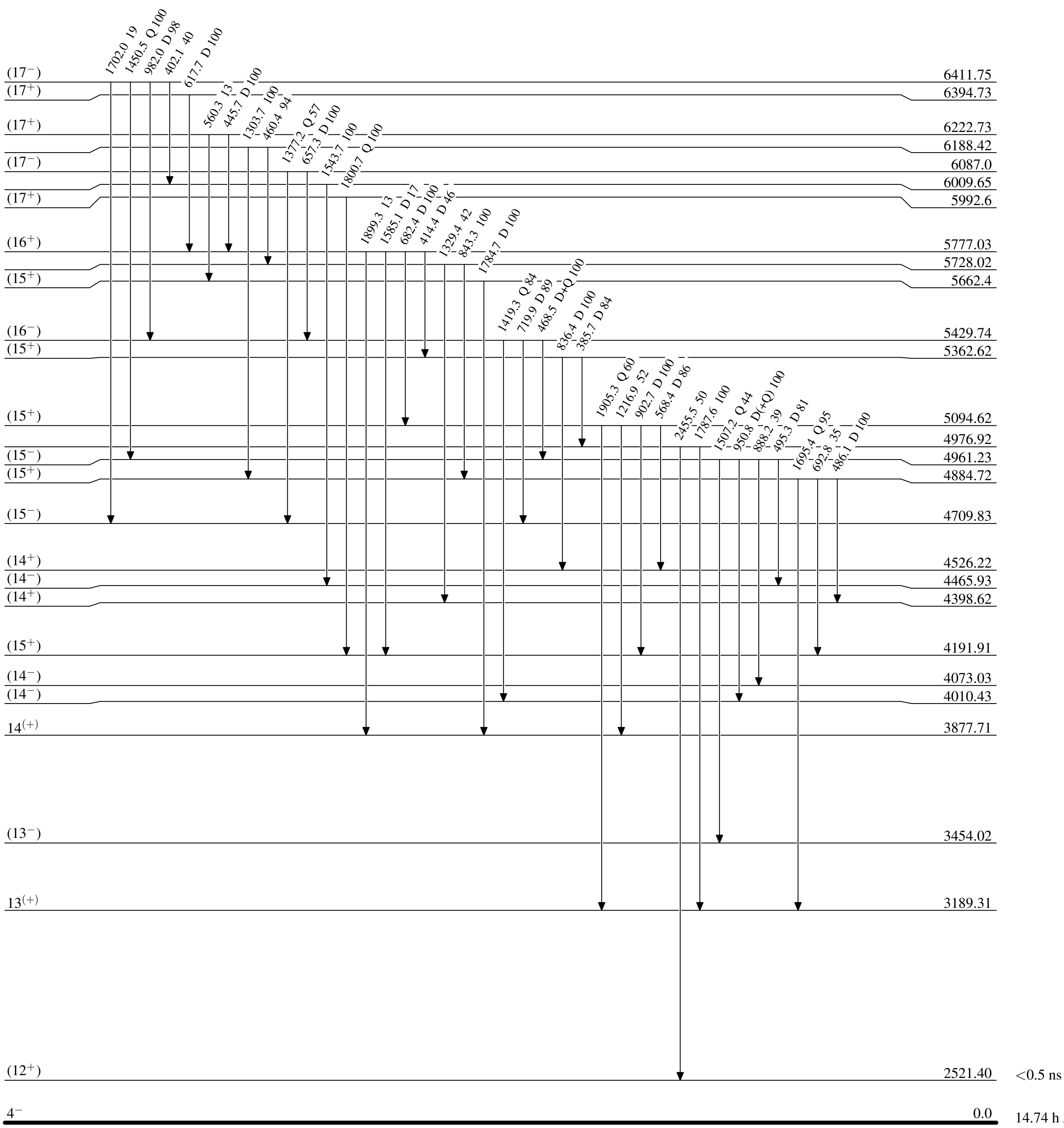


$^{86}_{39}Y_{47}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

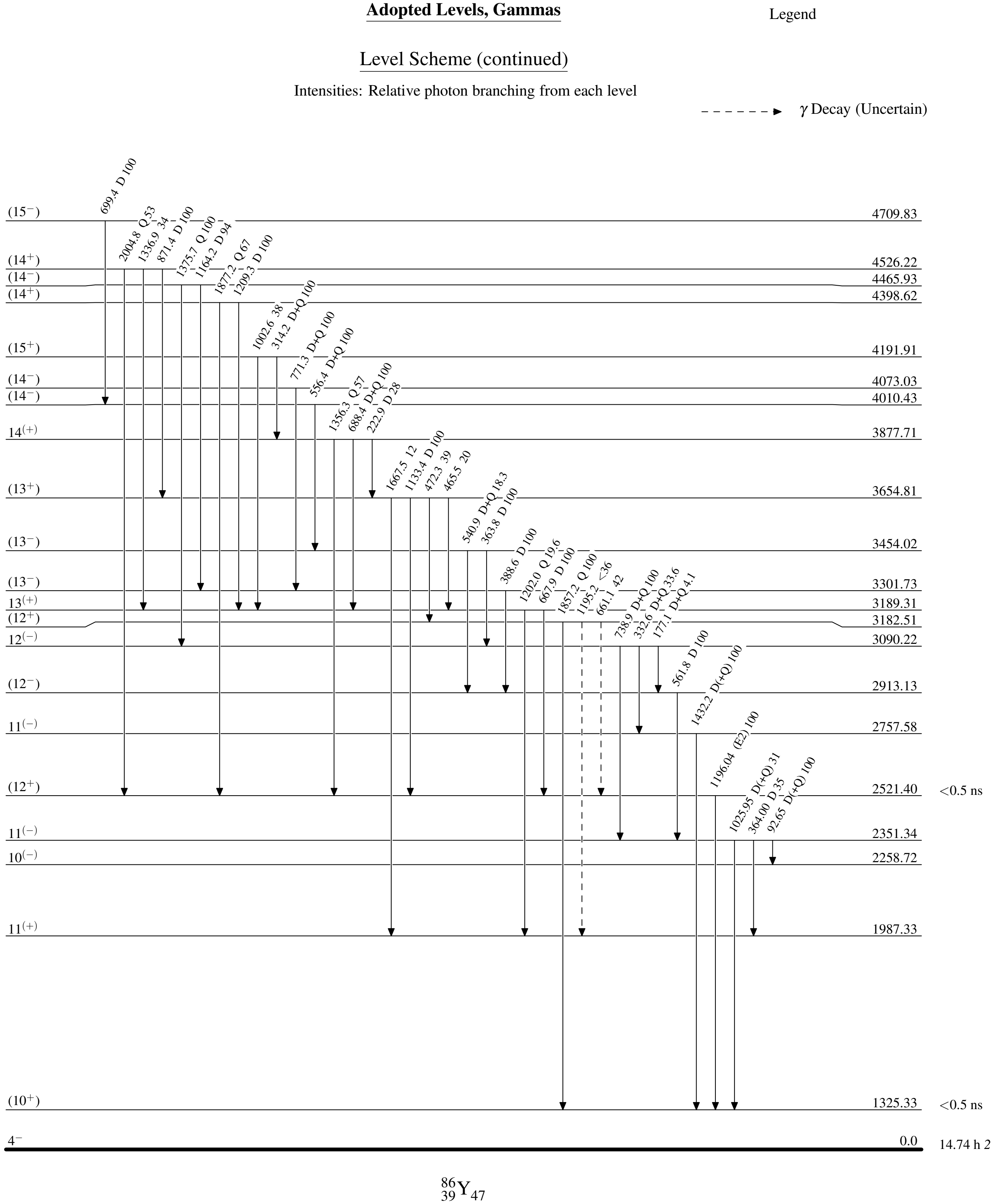


$^{86}_{39}Y_{47}$

Adopted Levels, Gammas

Level Scheme (continued)

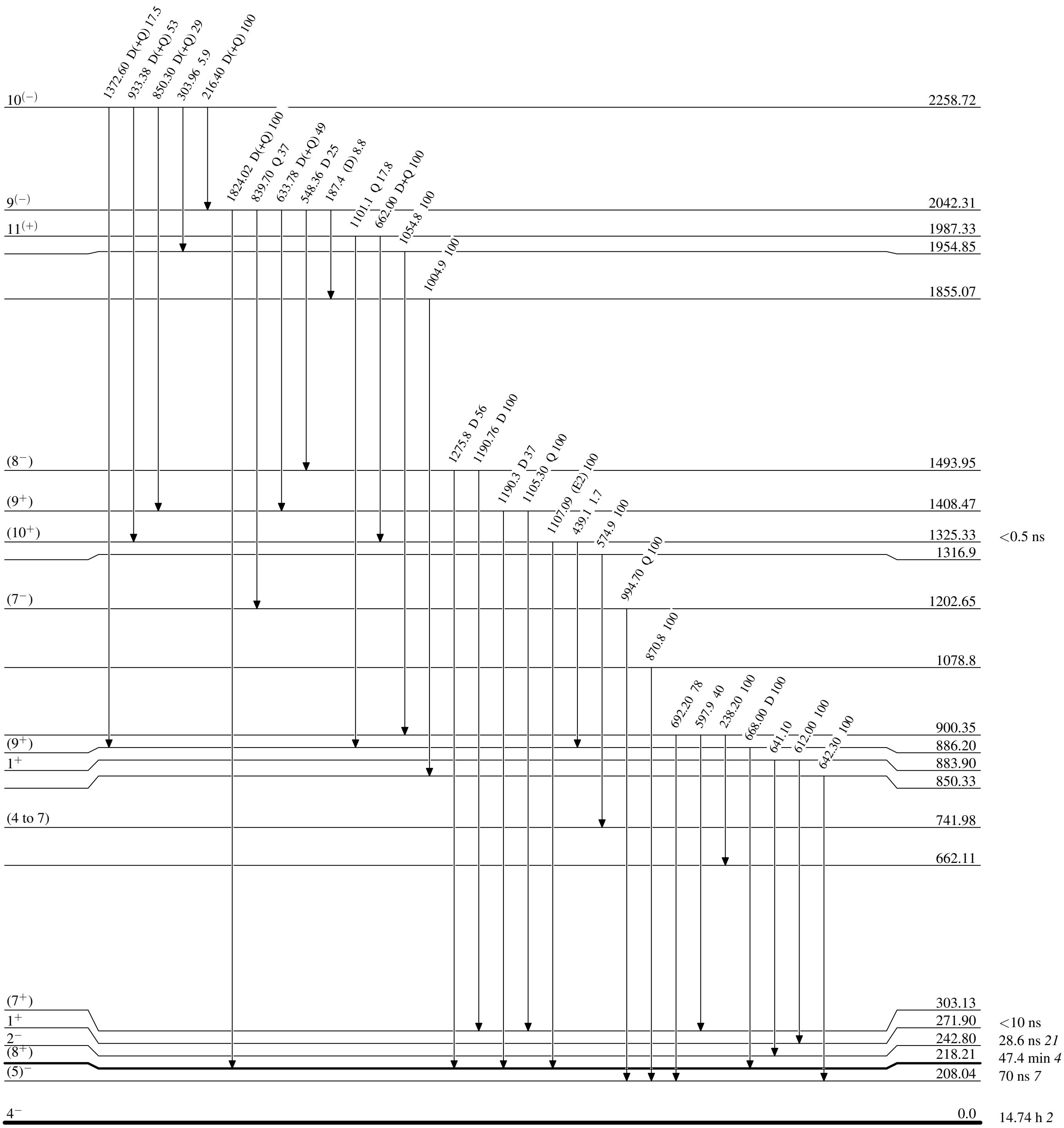
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

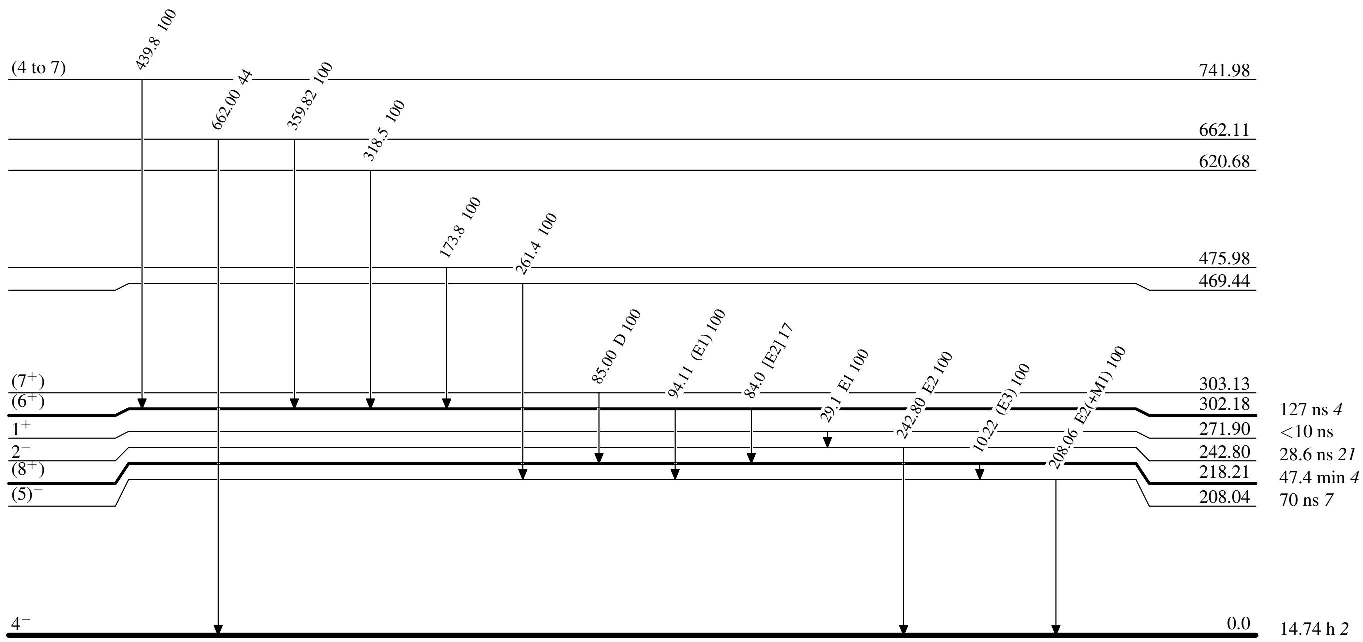


$^{86}_{39}Y_{47}$

Adopted Levels, Gammas

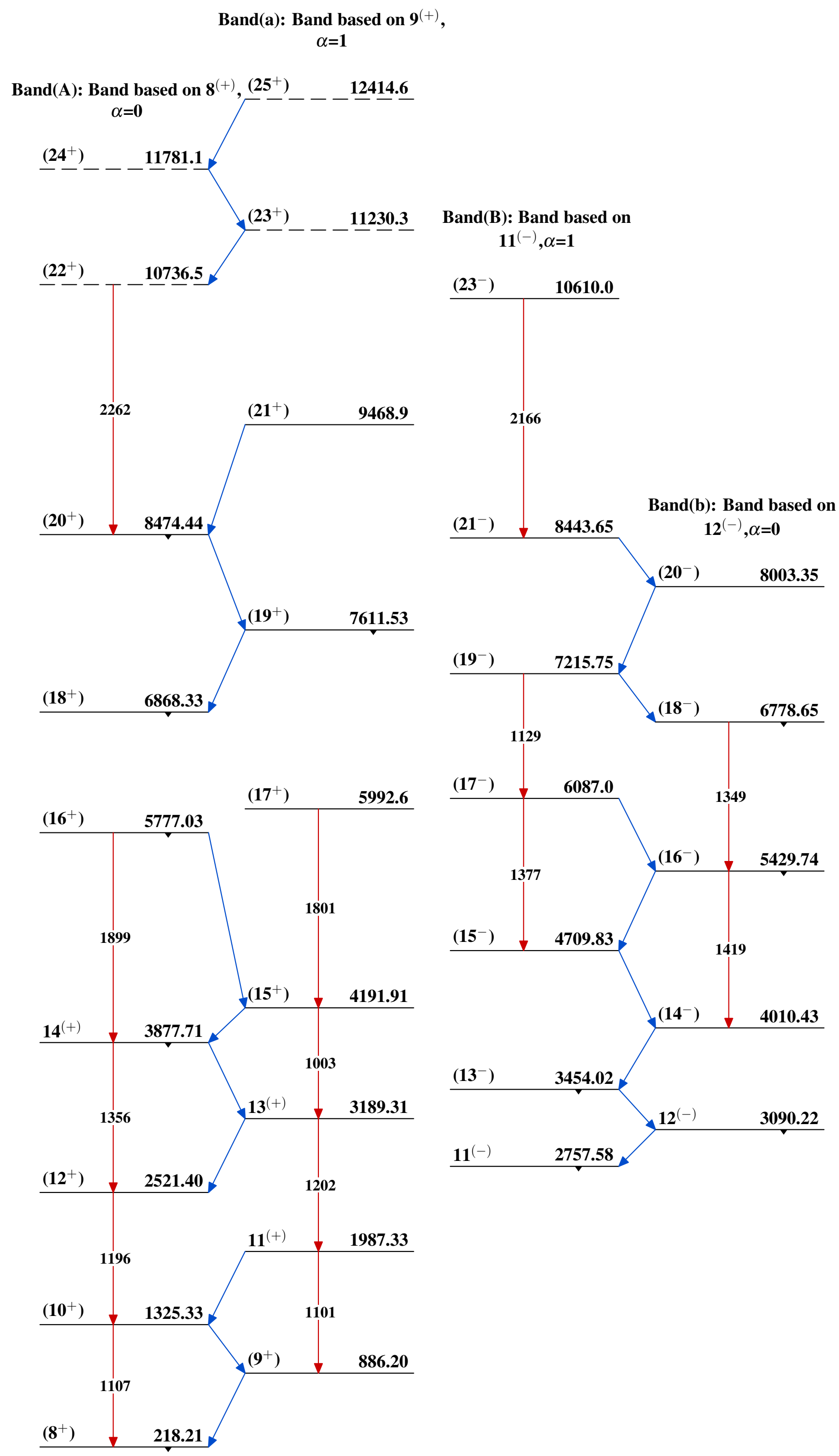
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{86}_{39}Y_{47}$

Adopted Levels, Gammas



$^{86}_{39}Y_{47}$