^{143}Ba β^- decay 1988Fa03

History

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

Parent: ^{143}Ba: E=0.0; J$^\pi$=5/2$^-$; $T_{1/2}$=14.5 s *3*; Q(β^-)=4234 *10*; %β^- decay=100.0

Measured: γ (1988Fa03,1985Ra20,1984So18,1979Sc11,1979Bo26,1978Pa01), $\gamma\gamma$ (1988Fa03,1979Sc11,1978Pa01), ce (1988Fa03,1985Ra20,1979Sc11), γ(t) (1979Sc11), $\beta\gamma$ (1981De25,1979Ke02,1978Pa01), $\gamma\gamma(\theta)$ (1988Fa03).

Level scheme is that of 1988Fa03.

1985Ra20 report that in β^- decay of ^{143}Ba from ^{143}Cs+^{143}Ba source and from ^{143}Ba source the ratio R=Iγ(^{143}Cs+^{143}Ba)/Iγ(^{143}Ba) is different for γ's from different levels of ^{143}La. Assuming R=1.0 for γ from 211 level, authors find R=1.00 *5* for γ from 291.6 level, R=1.28 *5* for 925 level, R=1.36 *8* for 1010 level and R=1.46 *7* for 1408 level. This may mean that in ^{143}Ba there exist two β^- decaying isomeric states with similar $T_{1/2}$. Both of them may be produced directly in fission, but only the lower spin isomer (J^π=5/2$^-$) may be produced in the β^- decay of 3/2$^+$ ^{143}Cs.

1997Gr09: measured Iβ using total absorption γ-ray spectrometer (TAGS) . The following pseudo-levels (with their Iβ) were introduced: 1860 (0.55%), 2090 (1.22%), 2150 (1.40%), 2600 (0.88%), 2700 (0.64%), 2800 (0.30%), 2900 (0.32%), 3000 (0.23%), 3100 (0.18%), 3200 (0.21%), 3300 (0.13%), 3400 (0.19%), 3500 (0.10%), 3600 (0.02%), 3700 (0.01%), 3800 (0.01%), 3900 (0.01%), 4000 (0.004%).

^{143}La Levels

E(level)	J$^\pi$†	$T_{1/2}$	Comments
0.0	(7/2)$^+$	14.2 min *1*	%β^-=100 $T_{1/2}$: weighted average of 14.14 min *16* (1981Ya06), 14.23 min *14* (1977Bj01), 14.0 min *1* (1961Fr06).
29.811 *12*	(3/2)$^+$		
208.347 *15*	3/2$^+$,5/2$^+$		
211.482 *7*	(5/2)$^+$	0.69 ns *7*	
291.276 *13*	(5/2)$^+$		
424.93 *4*			
461.99 *5*			
465.903 *13*	(5/2)$^+$		
642.899 *15*	+		
666.98 *4*			
699.33 *3*			
830.67 *3*			
883.90 *4*			
924.945 *16*	(5/2)$^-$		
956.22 *15*			
973.08 *4*			
1010.273 *11*	(5/2)$^-$		
1055.85 *10*			
1067.39 *3*			
1110.30 *5*			
1215.27 *10*			
1225.38 *9*			
1291.49 *7*			
1303.00 *7*			
1365.40 *23*			
1407.936 *12*	(5/2)$^-$		
1448.83? *17*			
1497.89 *8*			
1503.26 *18*			
1559.36 *16*			
1565.19 *10*			
1568.75 *10*			
1633.5 *4*			

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^{143}Ba β^- decay 1988Fa03 (continued)

^{143}La Levels (continued)

E(level)	E(level)	J$^\pi$†	E(level)	J$^\pi$†	E(level)
1757.80? *10*	2194.5 *5*		2307.03 *15*		2379.2 *3*
1762.71 *18*	2223.6 *3*		2326.96 *8*		2533.10 *4*
1958.1 *3*	2291.94 *8*	(3/2)$^-$	2347.25 *7*	(5/2)$^-$	
1983.1 *4*	2295.6 *3*		2371.38 *22*		

† From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-†‡	Log *ft*	Comments
(1701 *10*)	2533.10	1.54	5.4	av Eβ=648 *18* Iβ^-: 1.0 *1* from intensity imbalance.
(1855 *10*)	2379.2	0.12	6.7	av Eβ=716 *18* Iβ^-: 0.08 *1* from intensity imbalance.
(1863 *10*)	2371.38	0.38	6.2	av Eβ=720 *18* Iβ^-: 0.25 *5* from intensity imbalance.
(1887 *10*)	2347.25	3.45	5.3	av Eβ=731 *18* Iβ^-: 2.2 *3* from intensity imbalance.
(1907 *10*)	2326.96	2.49	5.4	av Eβ=740 *18* Iβ^-: 1.7 *2* from intensity imbalance.
(1927 *10*)	2307.03	0.95	5.9	av Eβ=748 *18* Iβ^-: 0.62 *8* from intensity imbalance.
(1938 *10*)	2295.6	0.20	6.6	av Eβ=754 *18* Iβ^-: 0.13 *2* from intensity imbalance.
(1942 *10*)	2291.94	3.74	5.3	av Eβ=755 *18* Iβ^-: 2.4 *3* from intensity imbalance.
(2010 *10*)	2223.6	0.46	6.3	av Eβ=786 *18* Iβ^-: 0.42 *6* from intensity imbalance.
(2040# *10*)	2194.5			Iβ^-: 0.04 *1* from intensity imbalance.
(2251 *10*)	1983.1	0.77	6.2	av Eβ=894 *19* Iβ^-: 0.11 *2* from intensity imbalance.
(2276 *10*)	1958.1	0.77	6.2	av Eβ=906 *19* Iβ^-: 0.15 *2* from intensity imbalance.
(2471 *10*)	1762.71	0.61	6.5	av Eβ=994 *19* Iβ^-: 0.18 *2* from intensity imbalance.
(2476 *10*)	1757.80?	0.61	6.5	av Eβ=997 *19* Iβ^-: 0.23 *3* from intensity imbalance.
(2601 *10*)	1633.5	0.13	7.3	av Eβ=1054 *19* Iβ^-: 0.20 *3* from intensity imbalance.
(2665 *10*)	1568.75	0.13	7.3	av Eβ=1083 *19* Iβ^-: 0.25 *4* from intensity imbalance.
(2669 *10*)	1565.19	0.13	7.3	av Eβ=1085 *19* Iβ^-: 0.34 *5* from intensity imbalance.
(2675 *10*)	1559.36	0.13	7.3	av Eβ=1088 *19*
(2731# *10*)	1503.26			Iβ^-: 2.0 *3* from intensity imbalance.
(2736# *10*)	1497.89			Iβ^-: 0.26 *4* from intensity imbalance.
(2785# *10*)	1448.83?			Iβ^-: 0.28 *6* from intensity imbalance.
(2826 *10*)	1407.936	15.3	5.3	av Eβ=1157 *19* Iβ^-: 14.6 *17* from intensity imbalance.
(2869# *10*)	1365.40			Iβ^-: 0.20 *3* from intensity imbalance.
(2931# *10*)	1303.00			Iβ^-: 0.39 *6* from intensity imbalance.

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^{143}Ba β^- decay 1988Fa03 (continued)

β^- radiations (continued)

E(decay)	E(level)	Iβ^- [†‡]	Log *ft*	Comments
(2943 *10*)	1291.49	3.04	6.1	av Eβ=1211 *19* Iβ^-: 2.9 *4* from intensity imbalance.
(3009[#] *10*)	1225.38			Iβ^-: 0.32 *5* from intensity imbalance.
(3019[#] *10*)	1215.27			Iβ^-: 0.15 *3* from intensity imbalance.
(3124[#] *10*)	1110.30			Iβ^-: 0.12 *4* from intensity imbalance.
(3167 *10*)	1067.39	3.07	6.2	av Eβ=1314 *19* Iβ^-: 3.6 *5* from intensity imbalance.
(3178[#] *10*)	1055.85			Iβ^-: 0.25 *4* from intensity imbalance.
3240 *50*	1010.273	39.07	5.2	av Eβ=1341 *19* E(decay): from $\beta\gamma$ (1981De25). Iβ^-: 43 *5* from intensity imbalance.
(3261[#] *10*)	973.08			Iβ^-: 0.14 *5* from intensity imbalance.
(3309 *10*)	924.945	10.46	5.8	av Eβ=1381 *19* Iβ^-: 9.5 *11* from intensity imbalance.
(3403 *10*)	830.67	1.76	6.6	av Eβ=1424 *19* Iβ^-: 1.1 *2* from intensity imbalance.
(3535 *10*)	699.33	0.30	7.4	av Eβ=1485 *19* Iβ^-: 0.8 *1* from intensity imbalance.
(3567 *10*)	666.98	0.30	7.5	av Eβ=1500 *19* Iβ^-: 0.47 *7* from intensity imbalance.
(3591 *10*)	642.899	0.30	7.5	av Eβ=1512 *19* Iβ^-: 1.6 *2* from intensity imbalance.
(3768 *10*)	465.903	0.33	7.5	av Eβ=1594 *19* Iβ^-: 1.5 *2* from intensity imbalance.
(3772 *10*)	461.99	0.33	7.5	av Eβ=1596 *19* Iβ^-: 0.32 *5* from intensity imbalance.
(3809 *10*)	424.93	0.55	7.3	av Eβ=1613 *19* Iβ^-: 0.20 *4* from intensity imbalance.
(4023 *10*)	211.482	0.88	7.2	av Eβ=1713 *19*
(4026 *10*)	208.347	1.27	7.1	av Eβ=1714 *19*
(4234 *10*)	0.0	<8.5	>6.3	av Eβ=1812 *19* Iβ^-: <8.5% *10* (1988Fa03). Iβ(0.0+29.81 level)=7 *4* (1997Gr09) TAGS.

[†] From TAGS measurement of 1997Gr09, unless given otherwise. There is 3.3% β^- feeding of the levels above 2533 level as per the TAGS results. Upper limit for β^- feeding to ^{143}La g.s. is 7.5% *10* (1988Fa03).

[‡] Absolute intensity per 100 decays.

[#] Existence of this branch is questionable.

γ(^{143}La)

Iγ normalization: From I(211γ)=24.9% *29* (1984So18).

α(K)exp were normalized to α(K)(E2) for 199.3γ in ^{144}Cs β^- decay (1985Ra20), α(L)exp(29.9γ) to α(K)(E2) for 117.1γ in ^{143}Cs β-decay (1979Sc11) and α(K)=0.11 for 211γ (1988Fa03).

E_γ [‡]	I_γ [‡#@]	E_i(level)	J^π_i	E_f	J^π_f	Mult.	α [†]	$I_{(\gamma+ce)}$ [@]	Comments
(3.1 *1*)		211.482	(5/2)$^+$	208.347	3/2$^+$,5/2$^+$			47 *12*	E_γ: from level energies. $I_{(\gamma+ce)}$: from Iγ of γ's feeding the 211 level seen in coincidence with the 178 and 208 γ's.
29.85 *5*	4 *1*	29.811	(3/2)$^+$	0.0	(7/2)$^+$	E2	243	1.23×10^3 *10*	ce(L)/(γ+ce)=0.781 *9*; ce(M)/(γ+ce)=0.174 *4*; ce(N+)/(γ+ce)=0.0415 *10* ce(N)/(γ+ce)=0.0365 *9*; ce(O)/(γ+ce)=0.00501 *12*; ce(P)/(γ+ce)=3.22×10^{-6} *7* Mult.: α(L)exp=215 *83* (renormalized by evaluator using α(K)(E2) for 117.1γ in ^{143}Cs β^- decay), L/M=5.7 *6* (1979Sc11), L/M=4.0 (1985Ra20). $I_{(\gamma+ce)}$: from ΣI(γ+ce) feeding 29.9 level. Value is lower limit since the 29.9 level could also be fed by β decay. Note that Iγ gives I(γ+ce)=990 *250*.
133.7 *1*	0.8 *2*	424.93		291.276	(5/2)$^+$			1.1 *3*	
174.6 *1*	5.3 *2*	465.903	(5/2)$^+$	291.276	(5/2)$^+$				
176.89 *2*	48.5 *5*	642.899	+	465.903	(5/2)$^+$	M1,E2	0.24 *3*		α(K)=0.195 *9*; α(L)=0.039 *15*; α(M)=0.008 *4*; α(N+..)=0.0021 *8* α(N)=0.0018 *7*; α(O)=0.00028 *9*; α(P)=1.34×10^{-5} *12* Mult.: α(K)exp=0.21 *3* (for 177γ+178γ) (1979Sc11), 0.242 *75* (1985Ra20), α(K)=0.1886 (M1), α(K)=0.204 (E2).
178.51 *2*	121 *1*	208.347	3/2$^+$,5/2$^+$	29.811	(3/2)$^+$	(M1)	0.213		α(K)=0.182 *3*; α(L)=0.0244 *4*; α(M)=0.00508 *8*; α(N+..)=0.001312 *19* α(N)=0.001116 *16*; α(O)=0.000182 *3*; α(P)=1.416×10^{-5} *20* Mult.: α(K)exp=0.17 *5*.
181.62 *3*	30.6 *3*	211.482	(5/2)$^+$	29.811	(3/2)$^+$	(M1)	0.203		B(M1)(W.u.)=0.000134 *14* α(K)=0.1739 *25*; α(L)=0.0233 *4*; α(M)=0.00484 *7*; α(N+..)=0.001250 *18* α(N)=0.001064 *15*; α(O)=0.0001731 *25*; α(P)=1.351×10^{-5} *19* Mult.: α(K)exp=0.19 *5* (1979Sc11), 0.131 *40* (1985Ra20).
208.35 *2*	43 *1*	208.347	3/2$^+$,5/2$^+$	0.0	(7/2)$^+$	M1,E2	0.147 *8*		α(K)=0.1197 *17*; α(L)=0.022 *6*; α(M)=0.0047 *14*; α(N+..)=0.0012 *4* α(N)=0.0010 *3*; α(O)=0.00016 *4*; α(P)=8.4×10^{-6} *9* E_γ: 207.071 *32* in 1979Sc11. Mult.: α(K)exp=0.163 *49*, α(K)=0.121 (M1), α(K)=0.120 (E2).

γ(^{143}La) (continued)

E_γ‡	I_γ‡#@	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α†	Comments
211.475 *7*	1000	211.482	(5/2)$^+$	0.0	(7/2)$^+$	M1+(E2)	+0.07 *3*	0.1343	B(M1)(W.u.)=0.0028 *3*; B(E2)(W.u.)=0.17 *15* α(K)=0.1149 *16*; α(L)=0.01539 *23*; α(M)=0.00320 *5*; α(N+..)=0.000826 *12* α(N)=0.000703 *11*; α(O)=0.0001143 *17*; α(P)=8.90×10^{-6} *13* E_γ: from 1979Bo19. I_γ: Iγ=24.9% *29* (1984So18). Mult.: α(K)exp=0.11 *1* (1979Sc11); α(K)exp=0.10 *3*, α(L)exp=0.013 *4*, α(M)exp=0.002 *1* (1985Ra20), α(L)exp=0.014 *3* (1988Fa03). α(L)exp suggests predominately M1. δ: from $\gamma\gamma(\theta)$ (1988Fa03).
217.7 *1*	3.9 *2*	642.899	+	424.93					
233.5 *1*	2.4 *2*	699.33		465.903	(5/2)$^+$				
250.4 *1*	2.7 *2*	461.99		211.482	(5/2)$^+$				
254.39 *2*	97 *1*	465.903	(5/2)$^+$	211.482	(5/2)$^+$	M1,E2		0.0808 *15*	α(K)=0.067 *4*; α(L)=0.0111 *19*; α(M)=0.0024 *5*; α(N+..)=0.00060 *10* α(N)=0.00051 *9*; α(O)=8.0×10^{-5} *11*; α(P)=4.8×10^{-6} *7* Mult.: α(K)exp=0.061 *6* (1988Fa03), 0.09 *2* (1979Sc11), α(K)=0.0710 (M1), α(K)=0.0639 (E2).
257.5 *1*	5.5 *2*	465.903	(5/2)$^+$	208.347	3/2$^+$,5/2$^+$				
261.47 *3*	67.0 *7*	291.276	(5/2)$^+$	29.811	(3/2)$^+$	M1,E2		0.0745 *19*	α(K)=0.062 *4*; α(L)=0.0102 *16*; α(M)=0.0021 *4*; α(N+..)=0.00054 *9* α(N)=0.00047 *8*; α(O)=7.3×10^{-5} *9*; α(P)=4.4×10^{-6} *7* Mult.: α(K)exp=0.047 *5* (1988Fa03), 0.041 *12* (1985Ra20), 0.09 *2* (1979Sc11) α(K)=0.0658 (M1), α(K)=0.0584 (E2).
281.34 *5*	11.2 *2*	924.945	(5/2)$^-$	642.899	+				
291.287 *20*	325 *3*	291.276	(5/2)$^+$	0.0	(7/2)$^+$	M1+E2	0.99	0.0544	α(K)=0.0453 *7*; α(L)=0.00718 *10*; α(M)=0.001511 *22*; α(N+..)=0.000384 *6* α(N)=0.000329 *5*; α(O)=5.18×10^{-5} *8*; α(P)=3.28×10^{-6} *5* Mult.: α(K)exp=0.039 *2*, K/L=4.9 *7* (1988Fa03); α(K)exp=0.038 *12* (1985Ra20); 0.053 *5* (1979Sc11); α(K)=0.0496 (M1), α(K)=0.0417 (E2). δ: from $\gamma\gamma(\theta)$ δ=0.995-0.975 (1988Fa03); from K/L δ>2. E_γ: from 1979Bo19.
297.61 *6*	15.9 *2*	1407.936	(5/2)$^-$	1110.30					
310.87 *6*	14.8 *3*	1010.273	(5/2)$^-$	699.33					
318.8 *1*	1.3 *2*	1291.49		973.08					
351.9 *1*	5.1 *4*	642.899	+	291.276	(5/2)$^+$				
356.5 *1*	1.9 *2*	1055.85		699.33					
364.81 *7*	13.5 *5*	830.67		465.903	(5/2)$^+$				
367.56 *3*	83.7 *8*	1010.273	(5/2)$^-$	642.899	+	E1		0.00714 *10*	α=0.00714 *10*; α(K)=0.00614 *9*; α(L)=0.000788 *11*;

γ(^{143}La) (continued)

E_γ‡	I_γ‡#@	E_i(level)	J^π_i	E_f	J^π_f	Mult.	α†	Comments
								α(M)=0.0001626 23; α(N+..)=4.17×10^{-5} 6 α(N)=3.56×10^{-5} 5; α(O)=5.74×10^{-6} 8; α(P)=4.27×10^{-7} 6 Mult.: α(K)exp=0.0077 23 (1988Fa03).
387.3 1	1.4 4	1497.89		1110.30				
397.676 8	58.5 6	1407.936	(5/2)$^-$	1010.273	(5/2)$^-$	M1,E2	0.023 3	α(K)=0.019 3; α(L)=0.00279 9; α(M)=0.000583 13; α(N+..)=0.000149 5 α(N)=0.000127 4; α(O)=2.03×10^{-5} 10; α(P)=1.4×10^{-6} 3 Mult.: α(K)exp=0.022 4 (1988Fa03). E_γ: from 1979Bo19.
408.11 5	16.0 4	699.33		291.276	(5/2)$^+$			
^{x}421.4 1	1.8 8							
424.85 5	19 1	424.93		0.0	(7/2)$^+$			
431.20 4	111 4	642.899	+	211.482	(5/2)$^+$	M1,E2	0.018 3	α(K)=0.0154 25; α(L)=0.00221 12; α(M)=0.000461 22; α(N+..)=0.000118 7 α(N)=0.000101 6; α(O)=1.61×10^{-5} 12; α(P)=1.14×10^{-6} 23 Mult.: α(K)exp=0.012 2, α(L)exp=0.0027 11 (1988Fa03) (for doublet) α(K)=0.018 (M1), α(K)=0.013 (E2). E_γ: 431.384 13 from 1979Bo19.
432.15 5	12.4 7	461.99		29.811	(3/2)$^+$			
434.75 7	10.2 6	1407.936	(5/2)$^-$	973.08				
435.99 3	72 3	465.903	(5/2)$^+$	29.811	(3/2)$^+$			
454.8 1	3.2 7	1565.19		1110.30				
459.05 8	11.9 7	924.945	(5/2)$^-$	465.903	(5/2)$^+$			
462.2 1	3.8 2	461.99		0.0	(7/2)$^+$			
465.87 3	56 1	465.903	(5/2)$^+$	0.0	(7/2)$^+$			
472.3 1	1.0 3	1303.00		830.67				
482.86 4	30.3 6	1407.936	(5/2)$^-$	924.945	(5/2)$^-$			
488.3 1	3.9 3	699.33		211.482	(5/2)$^+$			
490.9 3	0.6 2	699.33		208.347	3/2$^+$,5/2$^+$			
507.4 1	2.1 5	973.08		465.903	(5/2)$^+$			
525.1 1	3.1 5	1497.89		973.08				
544.41 4	48.7 6	1010.273	(5/2)$^-$	465.903	(5/2)$^+$			
548.0 2	6.1 2	973.08		424.93				
^{x}558.9 1	2.4 5							
572.4 1	4.3 7	1215.27		642.899	+			
577.17 4	38 1	1407.936	(5/2)$^-$	830.67				
595.5 1	4.1 3	1568.75		973.08				
601.5 1	17.8 6	1067.39		465.903	(5/2)$^+$			
603.8 1	7.9 3	1303.00		699.33				
^{x}608.2 3	0.9 3							
613.69 4	31.3 9	642.899	+	29.811	(3/2)$^+$			
619.23 4	34.8 9	830.67		211.482	(5/2)$^+$			
621.5 1	12.1 8	830.67		208.347	3/2$^+$,5/2$^+$			
633.70 3	40.7 5	924.945	(5/2)$^-$	291.276	(5/2)$^+$			
637.12 8	11.4 8	666.98		29.811	(3/2)$^+$			

From ENSDF

γ(^{143}La) (continued)

E_γ‡	I_γ‡#@	E_i(level)	J^π_i	E_f	J^π_f	Mult.	α†	Comments
642.77 *5*	43 *2*	642.899	+	0.0	(7/2)$^+$			
644.07 *9*	10.7 *6*	1110.30		465.903	(5/2)$^+$			
647.49 *9*	8.1 *3*	1757.80?		1110.30				
^{x}649.9 *2*	2.1 *8*							
659.9 *2*	6.1 *5*	1303.00		642.899	+			
667.00 *4*	33.7 *4*	666.98		0.0	(7/2)$^+$			
669.38 *4*	34.6 *4*	699.33		29.811	(3/2)$^+$			
681.6 *2*	10.4 *5*	973.08		291.276	(5/2)$^+$			
685.3 *2*	3.5 *2*	1568.75		883.90				
695.4 *2*	2.5 *3*	1762.71		1067.39				
699.4 *2*	5.6 *6*	699.33		0.0	(7/2)$^+$			
713.41 *6*	18.0 *9*	924.945	(5/2)$^-$	211.482	(5/2)$^+$			
718.97 *2*	175 *2*	1010.273	(5/2)$^-$	291.276	(5/2)$^+$			I_γ: Iγ=3.3% *3* (1984So18).
^{x}723.2 *2*	2.8 *9*							
732.8 *2*	4.6 *3*	2291.94	(3/2)$^-$	1559.36				
734.9 *2*	3.9 *2*	1565.19		830.67				
^{x}739.1 *2*	5.8 *7*							
741.6 *2*	7.3 *3*	1407.936	(5/2)$^-$	666.98				
744.7 *2*	7.3 *8*	956.22		211.482	(5/2)$^+$			
747.9 *2*	5.4 *7*	956.22		208.347	3/2$^+$,5/2$^+$			
759.5 *2*	5.8 *4*	1225.38		465.903	(5/2)$^+$			
764.8 *1*	64 *1*	1407.936	(5/2)$^-$	642.899	+			
^{x}782.91 *3*	3.7 *5*							
798.79 *2*	625 *13*	1010.273	(5/2)$^-$	211.482	(5/2)$^+$	E1	0.001244 *18*	α=0.001244 *18*; α(K)=0.001075 *15*; α(L)=0.0001340 *19*; α(M)=2.76$\times10^{-5}$ *4*; α(N+..)=7.11$\times10^{-6}$ α(N)=6.05$\times10^{-6}$ *9*; α(O)=9.84$\times10^{-7}$ *14*; α(P)=7.69$\times10^{-8}$ *11* I_γ: Iγ=15.1% *15* (1984So18). Mult.: α(K)exp=0.0009 *3* (1988Fa03).
800.7 *2*	33 *7*	830.67		29.811	(3/2)$^+$			
802.8 *2*	5 *1*	1010.273	(5/2)$^-$	208.347	3/2$^+$,5/2$^+$			
806.2 *2*	9 *2*	1448.83?		642.899	+			
819.3 *3*	5.5 *3*	1110.30		291.276	(5/2)$^+$			
827.0 *4*	7.6 *4*	1291.49		465.903	(5/2)$^+$			
830.4 *4*	4.7 *2*	830.67		0.0	(7/2)$^+$			
830.9 *4*	2.9 *2*	1497.89		666.98				
^{x}834.8 *4*	3.3 *3*							
840.5 *4*	2.2 *3*	1303.00		461.99				
848.2 *4*	3.7 *4*	1055.85		208.347	3/2$^+$,5/2$^+$			
854.01 *4*	74 *1*	883.90		29.811	(3/2)$^+$			
855.88 *6*	28.8 *9*	1067.39		211.482	(5/2)$^+$			
859.08 *4*	51 *3*	1067.39		208.347	3/2$^+$,5/2$^+$			
883.8 *5*	4 *2*	2291.94	(3/2)$^-$	1407.936	(5/2)$^-$			
884.11 *6*	15 *3*	883.90		0.0	(7/2)$^+$			

From ENSDF

γ(^{143}La) (continued)

E_γ ‡	I_γ ‡#@	E_i(level)	J^π_i	E_f	J^π_f	Mult.	α †	Comments
890.6 *4*	2.1 *5*	1958.1		1067.39				
895.18 *3*	164 *1*	924.945	$(5/2)^-$	29.811	$(3/2)^+$			
898.1 *3*	6.4 *3*	1565.19		666.98				
899.8 *5*	1.0 *3*	1365.40		465.903	$(5/2)^+$			
916.9 *3*	2.2 *6*	1559.36		642.899	$^+$			
925.04 *3*	200 *2*	924.945	$(5/2)^-$	0.0	$(7/2)^+$	E1	0.000931 *13*	α=0.000931 *13*; α(K)=0.000806 *12*; α(L)=9.98×10^{-5} *14*; α(M)=2.05×10^{-5} *3*; α(N+..)=5.30×10^{-6} *8* α(N)=4.51×10^{-6} *7*; α(O)=7.34×10^{-7} *11*; α(P)=5.78×10^{-8} *8* Mult.: ce(K)<ce(K)(799γ) (not observed in 1988Fa03). I_γ: Iγ=3.7% *4* (1984So18).
^{x}930.4 *5*	0.9 *2*							
941.8 *2*	2.0 *3*	1407.936	$(5/2)^-$	465.903	$(5/2)^+$			
^{x}952.8 *3*	1.6 *5*							
^{x}959.0 *3*	1.6 *5*							
973.07 *5*	27 *1*	973.08		0.0	$(7/2)^+$			
980.45 *2*	464 *5*	1010.273	$(5/2)^-$	29.811	$(3/2)^+$			
989.1 *3*	3.1 *5*	2291.94	$(3/2)^-$	1303.00				
999.7 *3*	6.3 *7*	1291.49		291.276	$(5/2)^+$			
1000.5 *4*	2.6 *4*	2291.94	$(3/2)^-$	1291.49				
1003.3 *4*	1.9 *7*	1215.27		211.482	$(5/2)^+$			
1010.29 *2*	383 *8*	1010.273	$(5/2)^-$	0.0	$(7/2)^+$			I_γ: Iγ=8.5% *9* (1984So18).
1013.9 *1*	11.4 *7*	1225.38		211.482	$(5/2)^+$			
1016.5 *4*	2.6 *2*	1225.38		208.347	$3/2^+,5/2^+$			
1033.2 *4*	4.0 *2*	1958.1		924.945	$(5/2)^-$			
1037.56 *7*	24.2 *6*	1067.39		29.811	$(3/2)^+$			
1055.4 *4*	4.4 *4*	1055.85		0.0	$(7/2)^+$			
1066.1 *5*	7.0 *3*	2291.94	$(3/2)^-$	1225.38				
1067.36 *5*	28.3 *3*	1067.39		0.0	$(7/2)^+$			
1080.2 *4*	4.1 *3*	1291.49		211.482	$(5/2)^+$			
1082.5 *4*	4.4 *3*	1291.49		208.347	$3/2^+,5/2^+$			
1091.3 *4*	1.7 *10*	1303.00		211.482	$(5/2)^+$			
1110.2 *1*	17.1 *2*	1110.30		0.0	$(7/2)^+$			
1116.65 *3*	78.5 *6*	1407.936	$(5/2)^-$	291.276	$(5/2)^+$			
1134.6 *5*	0.7 *2*	1559.36		424.93				
1153.9 *3*	6.2 *6*	1365.40		211.482	$(5/2)^+$			
1156.8 *5*	1.0 *2*	1365.40		208.347	$3/2^+,5/2^+$			
1171.7 *5*	3.0 *6*	1633.5		461.99				
1196.38 *6*	274 *3*	1407.936	$(5/2)^-$	211.482	$(5/2)^+$			
1206.7 *4*	3.1 *7*	1497.89		291.276	$(5/2)^+$			
1239.6 *4*	1.0 *4*	1448.83?		208.347	$3/2^+,5/2^+$			
1261.2 *2*	13.5 *3*	1291.49		29.811	$(3/2)^+$			
1268.1 *4*	1.5 *3*	1559.36		291.276	$(5/2)^+$			
1278.4 *4*	2.5 *2*	1568.75		291.276	$(5/2)^+$			

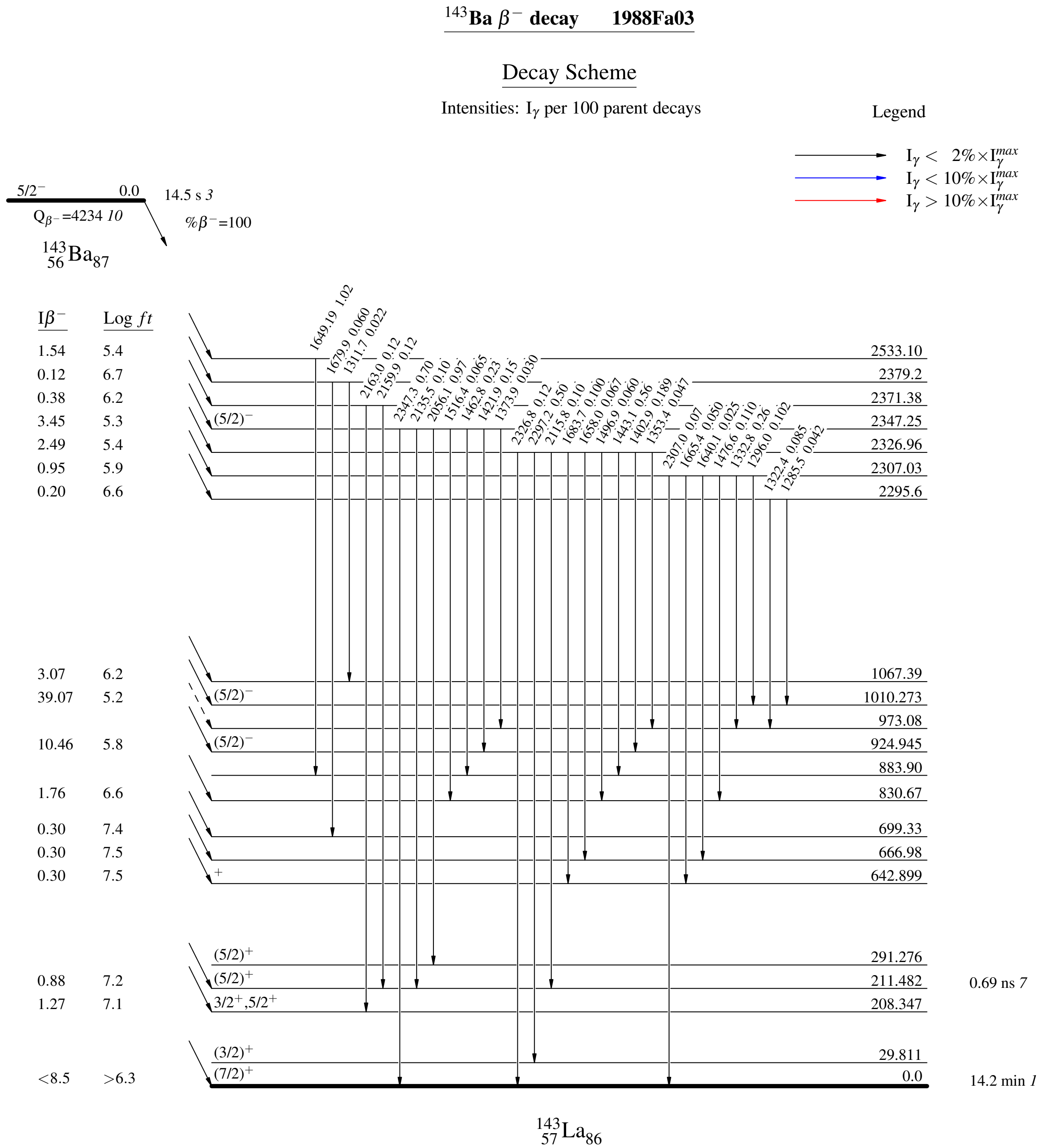
From ENSDF

γ(^{143}La) (continued)

E_γ [‡]	I_γ [‡#@]	E_i(level)	J^π_i	E_f	J^π_f
1285.5 4	1.7 2	2295.6		1010.273	$(5/2)^-$
1291.2 1	82 4	1291.49		0.0	$(7/2)^+$
1291.8 4	3.7 2	1503.26		211.482	$(5/2)^+$
1294.9 2	76 4	1503.26		208.347	$3/2^+,5/2^+$
1296.0 4	4.1 2	2307.03		1010.273	$(5/2)^-$
1300.6 5	1.0 3	1762.71		461.99	
1311.7 5	0.9 2	2379.2		1067.39	
1318.8 3	4.2 3	2291.94	$(3/2)^-$	973.08	
1322.4 4	3.4 2	2295.6		973.08	
1332.8 3	10.6 7	2307.03		973.08	
1333.1 4	1.2 1	1757.80?		424.93	
1340.5 4	3.7 3	1983.1		642.899	$^+$
1353.4 5	1.9 4	2326.96		973.08	
1365.3 4	16.9 3	2291.94	$(3/2)^-$	924.945	$(5/2)^-$
1373.9 4	1.2 2	2347.25	$(5/2)^-$	973.08	
1377.6 4	10.4 5	1407.936	$(5/2)^-$	29.811	$(3/2)^+$
1402.9 4	7.6 3	2326.96		924.945	$(5/2)^-$
1408.1 2	27 1	2291.94	$(3/2)^-$	883.90	
1421.9 2	6 1	2347.25	$(5/2)^-$	924.945	$(5/2)^-$
1424.8 5	0.8 2	1633.5		208.347	$3/2^+,5/2^+$
1443.1 2	22.3 3	2326.96		883.90	
1448.5 5	1.2 2	1448.83?		0.0	$(7/2)^+$
[x]1456.7 5	2.8 2				
1462.8 3	9.2 3	2347.25	$(5/2)^-$	883.90	
1476.6 3	4.4 3	2307.03		830.67	
[x]1484.6 5	1.0 2				
1496.9 5	2.4 2	2326.96		830.67	
1516.4 5	2.6 2	2347.25	$(5/2)^-$	830.67	
1527.5 5	1.6 2	2194.5		666.98	
1550.8 5	3.6 2	1762.71		211.482	$(5/2)^+$
1591.2 5	4.0 3	2291.94	$(3/2)^-$	699.33	
1604 1	4.1 2	1633.5		29.811	$(3/2)^+$
1625.2 5	4.2 3	2291.94	$(3/2)^-$	666.98	
1640.1 4	1.0 2	2307.03		666.98	
[x]1645.1 3	7 1				
1649.19 1	41 2	2533.10		883.90	
1658.0 4	2.7 2	2326.96		666.98	
1665.4 3	2.0 2	2307.03		642.899	$^+$
1679.9 3	2.4 2	2379.2		699.33	
1683.7 3	4.0 3	2326.96		642.899	$^+$
1691.4 5	0.5 2	1983.1		291.276	$(5/2)^+$
2000.7 1	15 1	2291.94	$(3/2)^-$	291.276	$(5/2)^+$
2016 2	12 1	2223.6		208.347	$3/2^+,5/2^+$
2056.1 1	39 2	2347.25	$(5/2)^-$	291.276	$(5/2)^+$
2115.8 3	4 1	2326.96		211.482	$(5/2)^+$
2135.5 3	4 1	2347.25	$(5/2)^-$	211.482	$(5/2)^+$
2159.9 3	5 1	2371.38		211.482	$(5/2)^+$
2163.0 3	5 1	2371.38		208.347	$3/2^+,5/2^+$
[x]2211.2 4	3 1				
2223.6 3	5 1	2223.6		0.0	$(7/2)^+$
[x]2258.8 6	2 1				
2262.4 3	5 1	2291.94	$(3/2)^-$	29.811	$(3/2)^+$
[x]2277.6 2	8 1				
2297.2 1	20 2	2326.96		29.811	$(3/2)^+$
2307.0 5	3 1	2307.03		0.0	$(7/2)^+$
2326.8 3	5 1	2326.96		0.0	$(7/2)^+$
2347.3 1	28 2	2347.25	$(5/2)^-$	0.0	$(7/2)^+$
[x]2386.9 2	9 1				
[x]2499.8 4	2.4 6				

† Additional information 1.
‡ From 1988Fa03, except where noted otherwise.
# For normalization of Iγ see also 1983Re11.
@ For absolute intensity per 100 decays, multiply by 0.0249 29.
x γ ray not placed in level scheme.

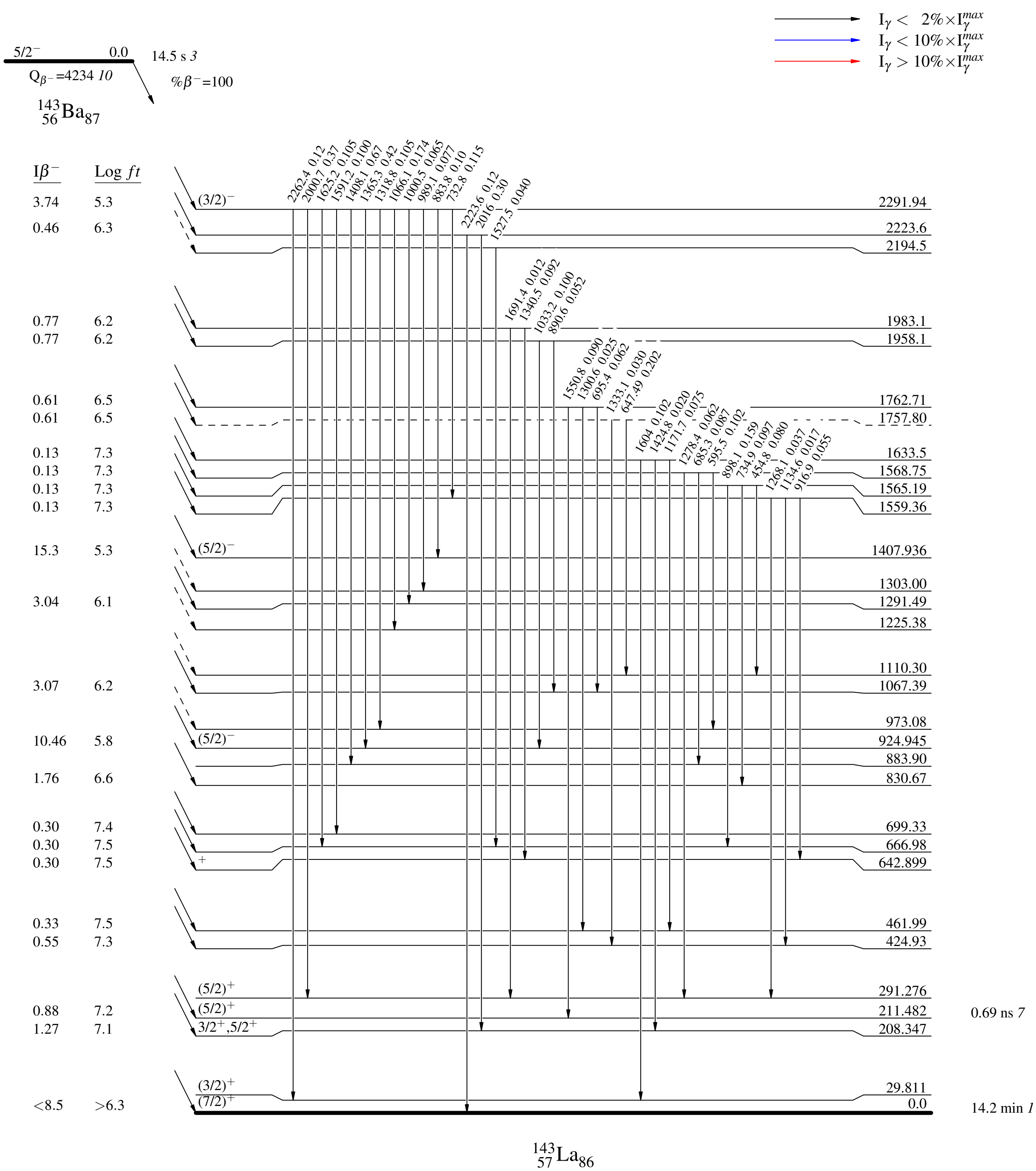
$^{143}_{57}$La$_{86}$-9


143Ba β− decay 1988Fa03
Decay Scheme
Intensities: Iγ per 100 parent decays
Legend
Iγ < 2%×Iγmax
Iγ < 10%×Iγmax
Iγ > 10%×Iγmax
5/2− 0.0 14.5 s 3
Qβ−=4234 10
%β−=100
143 56 Ba87
Iβ− Log ft
1.54 5.4 2533.10
0.12 6.7 2379.2
0.38 6.2 2371.38
3.45 5.3 (5/2)− 2347.25
2.49 5.4 2326.96
0.95 5.9 2307.03
0.20 6.6 2295.6
3.07 6.2 1067.39
39.07 5.2 (5/2)− 1010.273
973.08
10.46 5.8 (5/2)− 924.945
883.90
1.76 6.6 830.67
0.30 7.4 699.33
0.30 7.5 666.98
0.30 7.5 + 642.899
(5/2)+ 291.276
0.88 7.2 (5/2)+ 211.482 0.69 ns 7
1.27 7.1 3/2+,5/2+ 208.347
(3/2)+ 29.811
<8.5 >6.3 (7/2)+ 0.0 14.2 min 1
1649.19 1.02
1679.9 0.060
1311.7 0.022
2163.0 0.12
2159.9 0.12
2347.3 0.70
2135.5 0.10
2056.1 0.97
1516.4 0.065
1462.8 0.23
1421.9 0.15
1373.9 0.030
2326.8 0.12
2297.2 0.50
2115.8 0.10
1683.7 0.10
1658.0 0.100
1496.9 0.067
1443.1 0.060
1402.9 0.56
1353.4 0.189
0.047
2307.0 0.07
1665.4 0.050
1640.1 0.025
1476.6 0.110
1332.8 0.26
1296.0 0.102
1322.4 0.085
1285.5 0.042
143 57 La86

^{143}Ba β^- decay 1988Fa03

Decay Scheme (continued)

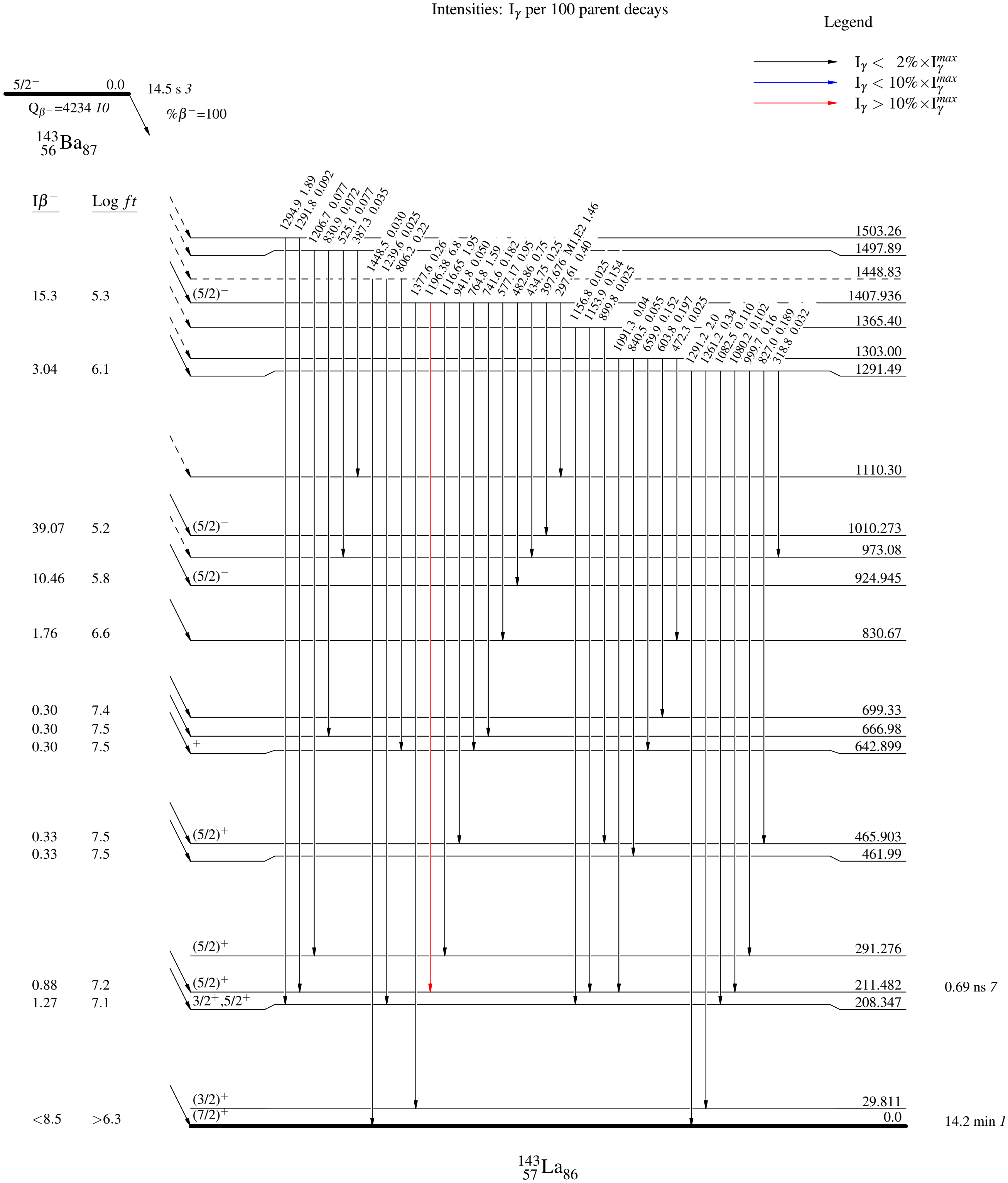
Intensities: I_γ per 100 parent decays



^{143}Ba β^- decay 1988Fa03

Decay Scheme (continued)

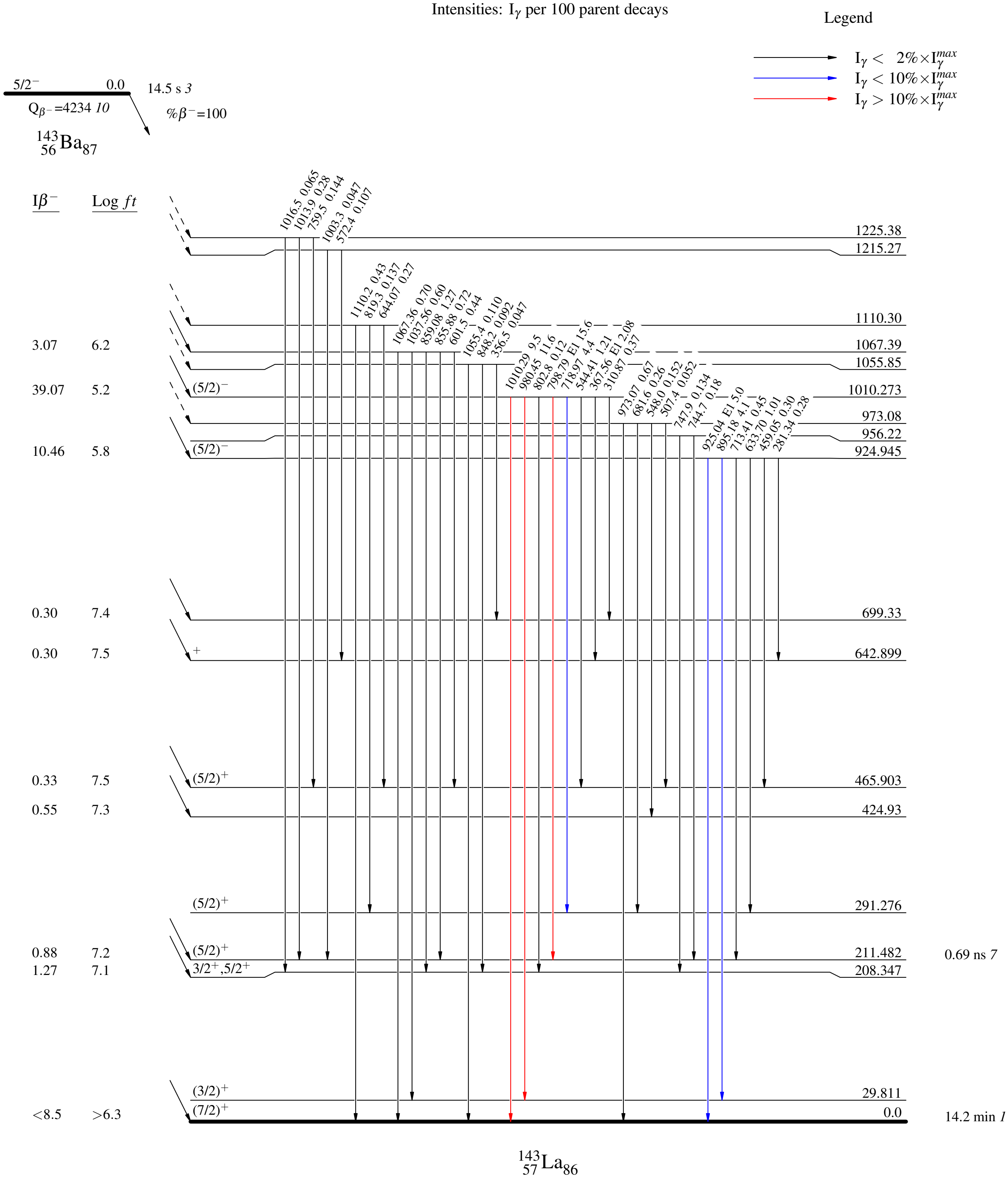
Intensities: I_γ per 100 parent decays



^{143}Ba β^- decay 1988Fa03

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays



^{143}Ba β^- decay 1988Fa03

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays