^{140}Xe β^- decay 1971Sc13,1974Ad08,1981Ot02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 154, 1 (2018)	20-Nov-2018

Parent: ^{140}Xe: E=0.0; $J^\pi=0^+$; $T_{1/2}$=13.60 s *10*; Q(β^-)=4064 *9*; %β^- decay=100.0
^{140}Xe-E,J^π,$T_{1/2}$: From ^{140}Xe Adopted Levels.
^{140}Xe-Q(β^-): From 2017WA10.
^{140}Xe-Additional information 1.
Measured: γ, $\gamma\gamma$ (1981Ot02,1974Ad08,1971Sc13), $\gamma\gamma(\theta)$ (1975AlZV), ce (1981Ot02,1974Ad08), $\beta\gamma$ (1973Ad04); $\gamma\gamma$(t) (1975Mo03). Others: 1971Kr22, 1968Al06, 1967Bo46, 1992Na21.
Decay scheme is that of 1981Ot02.

^{140}Cs Levels

E(level)	J^π†	$T_{1/2}$‡	Comments
0.0	1$^-$	63.7 s *3*	%β^-=100 $T_{1/2}$: from Adopted Levels. %β^-: from Adopted Levels.
13.931 *21*	(2)$^-$	471 ns *51*	
64.756 *23*	(3)$^-$	3.7 ns *3*	
80.118 *23*	1$^-$,0$^-$	<2.7 ns	
103.098 *20*	(2)$^-$	7.3 ns *3*	
112.513 *21*	(2)$^-$	<2.3 ns	
118.447 *20*	(2,1)$^-$	<2.4 ns	
149.01 *9*	(3,4)	<2.7 ns	
212.06 *4*	2$^-$,1$^-$,0$^-$	<2.6 ns	
223.56 *14*			
232.09 *7*	(3)$^-$	<1.9 ns	
294.91 *7*	(1,0)$^-$		
345.06 *7*			
438.63 *6*	(2,1)$^-$		
514.82 *8*	(0,1)		
547.87 *6*	(1,2)		
622.03 *5*	(2)$^-$		
653.36 *7*	0$^{(-)}$,1$^{(-)}$		
774.13 *7*	(0$^-$,1$^-$,2$^-$)		
800.38 *11*	(1,2)		
903.01 *13*			
965.78 *9*	1$^{(-)}$		
982.50 *14*			
1081.77 *19*			
1137.07 *6*	0,1		
1159.71 *23*			
1169.5 *3*			
1193.6 *4*			
1289.20 *8*	0,1		
1427.58 *4*	1$^+$		
1989.56 *24*			
2286.05 *22*			
2324.31 *19*	1$^+$		

† Adopted values.
‡ From 1975Mo03.

^{140}Xe β^- decay 1971Sc13,1974Ad08,1981Ot02 (continued)

β^- radiations

E(decay)†	E(level)	Iβ^-‡#	Log *ft*	Comments
(1740 *9*)	2324.31	1.1 *2*	5.55 *8*	av Eβ=660.6 *40*
(1778 *9*)	2286.05	0.4 *1*	6.03 *11*	av Eβ=677.6 *40*
(2074 *9*)	1989.56	0.8 *2*	6.00 *11*	av Eβ=810.3 *41*
(2636 *9*)	1427.58	65 *7*	4.51 *5*	av Eβ=1066.6 *42* E(decay): 2630 *60* from $\beta\gamma$ (1973Ad04).
(2775 *9*)	1289.20	3.3 *5*	5.90 *7*	av Eβ=1130.3 *42*
(2870 *9*)	1193.6	0.4 *1*	6.87 *11*	av Eβ=1174.5 *42*
(2904 *9*)	1159.71	0.4 *1*	6.90 *11*	av Eβ=1190.2 *42*
(2927 *9*)	1137.07	4.4 *6*	5.87 *6*	av Eβ=1200.6 *42*
(2982 *9*)	1081.77	0.8 *1*	6.64 *6*	av Eβ=1226.2 *42*
(3098 *9*)	965.78	0.7 *2*	6.77 *13*	av Eβ=1280.0 *42*
(3264 *9*)	800.38	≈0.4	≈7.1	av Eβ=1356.9 *42*
(3411 *9*)	653.36	6.4 *9*	5.99 *7*	av Eβ=1425.4 *42*
(3549 *9*)	514.82	1.1 *2*	6.82 *8*	av Eβ=1490.0 *42*
(3984 *9*)	80.118	8.7 *16*	6.14 *8*	av Eβ=1693.4 *43*

† av Eβ=1520 *50* (1982Al01).
‡ Sum of Iβ^-=94% *7* (decay scheme almost complete).
\# Absolute intensity per 100 decays.

$\gamma(^{140}Cs)$

Iγ normalization: I(805γ)=20% *2* if Iβ(g.s.)=0 (1981Ot02).

E_γ[†]	I_γ[#c]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[b]	α[a]	$I_{(\gamma+ce)}$[c]	Comments
(9.42[‡] *3*)	<0.7[@]	112.513	(2)$^-$	103.098	(2)$^-$				25 *12*	I_γ: Iγ and I(γ+ce) from coin data (no mult and δ given).
13.93 *5*	4.4[@] *4*	13.931	(2)$^-$	0.0	1$^-$	M1		42.6 *8*		α(L)=34.0 *6*; α(M)=6.96 *13* α(N)=1.47 *3*; α(O)=0.203 *4*; α(P)=0.00986 *18* Mult.: α(L)exp<36 (1981Ot02), RUL.
38.33[‡] *3*	0.1[@] *1*	118.447	(2,1)$^-$	80.118	1$^-$,0$^-$	[M1,E2]		41 *27*		α(K)=10.5 *18*; α(L)=24 *23*; α(M)=5.2 *49* α(N)=1.05 *98*; α(O)=0.12 *11*; α(P)=0.00041 *8*
38.34[‡] *3*	0.9[@] *2*	103.098	(2)$^-$	64.756	(3)$^-$	M1(+E2)	<0.5	19.7 *54*		α(K)=11.9 *4*; α(L)=6.1 *45*; α(M)=1.32 *98* α(N)=0.27 *20*; α(O)=0.032 *22*; α(P)=0.000475 *18* Mult.,δ: from α(K)exp=12.0 *25* (1981Ot02).
45.89 *10*	0.08[@] *3*	149.01	(3,4)	103.098	(2)$^-$	[M1,E2]		21 *13*		α(K)=7.8 *5*; α(L)=10.2 *92*; α(M)=2.2 *21* α(N)=0.45 *41*; α(O)=0.051 *45*; α(P)=0.00026 *3*
47.75 *3*	0.24[@] *4*	112.513	(2)$^-$	64.756	(3)$^-$	[M1,E2]		18 *11*		α(K)=7.2 *7*; α(L)=8.4 *76*; α(M)=1.8 *17* α(N)=0.37 *34*; α(O)=0.042 *37*; α(P)=0.000239 *19*
50.82 *3*	8.3[@] *5*	64.756	(3)$^-$	13.931	(2)$^-$	M1		6.36		α(K)=5.44 *8*; α(L)=0.733 *11*; α(M)=0.1501 *22* α(N)=0.0317 *5*; α(O)=0.00440 *7*; α(P)=0.000215 *3* Mult.: α(K)exp=6.0 *11* (1981Ot02).
80.12 *3*	22.0[@] *15*	80.118	1$^-$,0$^-$	0.0	1$^-$	M1		1.699		α(K)=1.455 *21*; α(L)=0.194 *3*; α(M)=0.0398 *6* α(N)=0.00841 *12*; α(O)=0.001169 *17*; α(P)=5.72×10^{-5} *8* Mult.: α(K)exp=1.8 *5* (1981Ot02), α(K)exp=1.20 *19* (1974Ad08); 1981Ot02 quote K/L+M=0.30 *25*, which appears to be a misprint. E_γ: 80.109 *3* (1979Bo26).
84.5 *2*	0.11[@] *2*	149.01	(3,4)	64.756	(3)$^-$	[M1]		1.458		α(K)=1.248 *20*; α(L)=0.167 *3*; α(M)=0.0341 *6* α(N)=0.00722 *12*; α(O)=0.001003 *16*; α(P)=4.91×10^{-5} *8* I_γ: 1974Ad08 and 1971Sc13 give Iγ=1.1 *3*.
89.17 *3*	1.9[@] *1*	103.098	(2)$^-$	13.931	(2)$^-$	[M1]		1.249		α(K)=1.070 *15*; α(L)=0.1428 *20*; α(M)=0.0292 *5* α(N)=0.00618 *9*; α(O)=0.000859 *12*; α(P)=4.21×10^{-5} *6*
93.64 *5*	0.50[@] *6*	212.06	2$^-$,1$^-$,0$^-$	118.447	(2,1)$^-$	[M1]		1.086		α(K)=0.930 *14*; α(L)=0.1241 *18*; α(M)=0.0254 *4* α(N)=0.00537 *8*; α(O)=0.000746 *11*; α(P)=3.66×10^{-5} *6*
99.56 *10*	0.17[@] *5*	212.06	2$^-$,1$^-$,0$^-$	112.513	(2)$^-$	[M1]		0.912		α(K)=0.781 *12*; α(L)=0.1041 *15*; α(M)=0.0213 *3* α(N)=0.00450 *7*; α(O)=0.000626 *9*; α(P)=3.07×10^{-5} *5*
103.09 *3*	4.8[@] *8*	103.098	(2)$^-$	0.0	1$^-$	M1,E2		1.25 *43*		α(K)=0.90 *20*; α(L)=0.27 *18*; α(M)=0.059 *40* α(N)=0.0120 *80*; α(O)=0.00146 *89*; α(P)=2.93×10^{-5} *15* Mult.: α(K)exp(103.9γ+104.52γ)=0.66 *10*; K/L=3.2 *6*

$\gamma(^{140}Cs)$ (continued)

E_γ [†]	I_γ [#c]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [&]	δ [b]	α [a]	Comments
									(1981Ot02); α(K)exp(103.9γ+104.52γ)=0.87 12 (1974Ad08). E_γ: 103.080 4 (1979Bo26).
104.52 3	6.4[@] 8	118.447	$(2,1)^-$	13.931	$(2)^-$	M1,E2		1.19 41	α(K)=0.87 19; α(L)=0.26 17; α(M)=0.055 37 α(N)=0.0113 74; α(O)=0.00138 84; α(P)=2.81×10^{-5} 15 Mult.: α(K)exp(103.9γ+104.52γ)=0.66 10; K/L=3.2 6 (1981Ot02); α(K)exp(103.9γ+104.52γ)=0.87 12 (1974Ad08). E_γ: 104.398 3 (1979Bo26).
108.95 5	0.25[@] 12	212.06	$2^-,1^-,0^-$	103.098	$(2)^-$	[M1]		0.706	α(K)=0.605 9; α(L)=0.0805 12; α(M)=0.01648 24 α(N)=0.00348 5; α(O)=0.000484 7; α(P)=2.38×10^{-5} 4
112.53 3	18.5[@] 25	112.513	$(2)^-$	0.0	1^-	E2+M1	<0.9	0.77 14	α(K)=0.62 7; α(L)=0.126 53; α(M)=0.027 12 α(N)=0.0055 24; α(O)=7.0×10^{-4} 27; α(P)=2.22×10^{-5} 6 Mult.: α(K)exp=0.70 10; K/L=12.0 7 (1981Ot02); α(K)exp=0.74 9 (1974Ad08). δ: from M1(<45%E2) (1981Ot02); other: E2(≈40%M1) (1974Ad08). E_γ: 112.606 4 (1979Bo26).
118.44 3	22.4[@] 25	118.447	$(2,1)^-$	0.0	1^-	M1		0.557	α(K)=0.478 7; α(L)=0.0635 9; α(M)=0.01300 19 α(N)=0.00275 4; α(O)=0.000382 6; α(P)=1.88×10^{-5} 3 Mult.: α(K)exp=0.67 10; K/L=13 7 (1981Ot02); α(K)exp=0.50 6 (1974Ad08). E_γ: 118.310 3 (1979Bo26).
119.69 10	0.6 2	232.09	$(3)^-$	112.513	$(2)^-$	[M1]		0.541	α(K)=0.464 7; α(L)=0.0616 9; α(M)=0.01261 18 α(N)=0.00267 4; α(O)=0.000371 6; α(P)=1.82×10^{-5} 3
121.51 20	0.2 1	345.06		223.56					
128.7 3	0.19 4	232.09	$(3)^-$	103.098	$(2)^-$	[M1]		0.441	α(K)=0.378 6; α(L)=0.0502 8; α(M)=0.01027 16 α(N)=0.00217 4; α(O)=0.000302 5; α(P)=1.487×10^{-5} 23
133.0 3	0.31 5	345.06		212.06	$2^-,1^-,0^-$				
138.2 3	0.16 4	1427.58	1^+	1289.20	0,1				
147.3 3	0.14 4	212.06	$2^-,1^-,0^-$	64.756	$(3)^-$	[M1]		0.303	α(K)=0.260 4; α(L)=0.0343 6; α(M)=0.00703 11 α(N)=0.001486 23; α(O)=0.000207 4; α(P)=1.020×10^{-5} 16
158.7 2	0.54 7	223.56		64.756	$(3)^-$	[M1]		0.246	α(K)=0.211 3; α(L)=0.0279 4; α(M)=0.00571 9 α(N)=0.001207 18; α(O)=0.0001681 25; α(P)=8.29×10^{-6} 12
167.26 15	6.2[@] 6	232.09	$(3)^-$	64.756	$(3)^-$	M1+E2	≈1.7	≈0.283	α(K)≈0.221; α(L)≈0.0496; α(M)≈0.01049 α(N)≈0.00216; α(O)≈0.000270; α(P)≈7.18×10^{-6} Mult.: α(K)exp=0.17 3; K/L=3.2 6 (1981Ot02); a(K)exp=0.17 3 (1974Ad08). δ: E2(+≈25%M1) (1981Ot02). E_γ: 167.092 10 (1979Bo26; two γ′s with same energy and uncertainty, possible typographical error).
176.4 2	0.58 7	294.91	$(1,0)^-$	118.447	$(2,1)^-$	[M1]		0.184	α(K)=0.1580 23; α(L)=0.0208 3; α(M)=0.00426 7 α(N)=0.000900 13; α(O)=0.0001254 18; α(P)=6.20×10^{-6} 9

$^{140}_{55}Cs_{85}$-4

$\gamma(^{140}$Cs) (continued)

E_γ [†]	I_γ [#c]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [&]	δ [b]	α [a]	Comments
182.4 *2*	1.20 *12*	294.91	$(1,0)^-$	112.513	$(2)^-$	[M1]		0.1680	α(K)=0.1442 *21*; α(L)=0.0190 *3*; α(M)=0.00388 *6* α(N)=0.000821 *12*; α(O)=0.0001144 *17*; α(P)=5.65×10^{-6} *8*
196.2 *2*	1.10[@] *7*	345.06		149.01	(3,4)	(M1)		0.1378	α(K)=0.1183 *17*; α(L)=0.01554 *23*; α(M)=0.00318 *5* α(N)=0.000672 *10*; α(O)=9.37×10^{-5} *14*; α(P)=4.63×10^{-6} *7* Mult.: α(K)exp=0.10 *3* (1981Ot02).
198.1 *2*	2.80[@] *20*	212.06	$2^-,1^-,0^-$	13.931	$(2)^-$	[M1]		0.1342	α(K)=0.1152 *17*; α(L)=0.01513 *22*; α(M)=0.00310 *5* α(N)=0.000655 *10*; α(O)=9.12×10^{-5} *13*; α(P)=4.51×10^{-6} *7* Mult.: α(K)exp(198.1γ+196.2γ)=0.130 *25* (1974Ad08).
202.8 *2*	0.48 *6*	547.87	(1,2)	345.06					
212.00 *10*	11.5[@] *13*	212.06	$2^-,1^-,0^-$	0.0	1^-	M1+(E2)	<0.6	0.115 *4*	α(K)=0.0975 *21*; α(L)=0.0139 *14*; α(M)=0.0029 *3* α(N)=0.00060 *6*; α(O)=8.2×10^{-5} *7*; α(P)=3.72×10^{-6} *7* E_γ: 211.887 *20* (1979Bo26). Mult.: α(K)exp=0.14 *3*, K/L=3.8 *8* (1981Ot02); α(K)exp=0.134 *20* (1974Ad08). δ: M1(<29%E2) (1981Ot02).
214.8 *2*	1.55 *25*	294.91	$(1,0)^-$	80.118	$1^-,0^-$				
218.3 *3*	0.55 *12*	232.09	$(3)^-$	13.931	$(2)^-$				
220.0 *4*	0.30 *10*	514.82	(0,1)	294.91	$(1,0)^-$				
226.5[d] *4*	0.15[d] *6*	345.06		118.447	$(2,1)^-$				
226.5[d] *4*	0.15[d] *6*	438.63	$(2,1)^-$	212.06	$2^-,1^-,0^-$				
232.4 *2*	0.35 *8*	345.06		112.513	$(2)^-$				
242.0 *2*	0.72 *10*	345.06		103.098	$(2)^-$				
252.9 *3*	0.25 *6*	547.87	(1,2)	294.91	$(1,0)^-$				
276.99 *10*	2.8 *3*	622.03	$(2)^-$	345.06		(M1)		0.0548	α(K)=0.0471 *7*; α(L)=0.00613 *9*; α(M)=0.001252 *18* α(N)=0.000265 *4*; α(O)=3.69×10^{-5} *6*; α(P)=1.84×10^{-6} *3* Mult.: α(K)exp=0.062 *10* (1974Ad08).
281.00 *15*	6.9 *7*	294.91	$(1,0)^-$	13.931	$(2)^-$	(M1)		0.0528	α(K)=0.0454 *7*; α(L)=0.00590 *9*; α(M)=0.001205 *17* α(N)=0.000255 *4*; α(O)=3.56×10^{-5} *5*; α(P)=1.769×10^{-6} *25* E_γ: 281.126 *15* (1979Bo26). Mult.: α(K)exp=0.054 *13* (1974Ad08).
283.0 *5*	0.40 *20*	514.82	(0,1)	232.09	$(3)^-$				
290.57 *10*	2.20 *20*	1427.58	1^+	1137.07	0,1				
294.8 *4*	0.24 *10*	294.91	$(1,0)^-$	0.0	1^-				
320.1 *4*	0.37 *10*	438.63	$(2,1)^-$	118.447	$(2,1)^-$				
326.1 *3*	0.34 *10*	438.63	$(2,1)^-$	112.513	$(2)^-$				
331.0 *2*	1.70 *20*	345.06		13.931	$(2)^-$				
335.6 *2*	1.10 *20*	438.63	$(2,1)^-$	103.098	$(2)^-$				
344.1 *5*	0.28 *10*	965.78	$1^{(-)}$	622.03	$(2)^-$				
358.4 *2*	0.56 *10*	653.36	$0^{(-)},1^{(-)}$	294.91	$(1,0)^-$				
373.87 *10*	2.7 *3*	438.63	$(2,1)^-$	64.756	$(3)^-$				
389.97 *10*	7.3 *7*	622.03	$(2)^-$	232.09	$(3)^-$	(E2)		0.0193	α(K)=0.01607 *23*; α(L)=0.00256 *4*; α(M)=0.000531 *8*

γ(^{140}Cs) (continued)

E_γ[†]	I_γ[#c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	δ[b]	α[a]	Comments
									α(N)=0.0001106 *16*; α(O)=1.464×10^{-5} *21*; α(P)=5.64×10^{-7} *8* Mult.: α(K)exp=0.016 *3* (1974Ad08).
396.35 *10*	3.8 *4*	514.82	(0,1)	118.447	(2,1)$^-$				
410.2 *2*	0.97 *10*	622.03	(2)$^-$	212.06	2$^-$,1$^-$,0$^-$				
429.44 *10*	3.3 *3*	547.87	(1,2)	118.447	(2,1)$^-$				
435.5 *3*	1.05 *20*	547.87	(1,2)	112.513	(2)$^-$				
438.69 *10*	13.0 *13*	438.63	(2,1)$^-$	0.0	1$^-$	M1		0.01679	α(K)=0.01447 *21*; α(L)=0.00185 *3*; α(M)=0.000378 *6* α(N)=8.00×10^{-5} *12*; α(O)=1.118×10^{-5} *16*; α(P)=5.60×10^{-7} *8* Mult.: α(K)exp=0.0167 *25* (1974Ad08).
441.2 *3*	2.6 *7*	653.36	0$^{(-)}$,1$^{(-)}$	212.06	2$^-$,1$^-$,0$^-$				
445.12 *15*	3.5 *4*	1427.58	1$^+$	982.50					
455.1 *5*	0.3 *2*	800.38	(1,2)	345.06					
461.85 *10*	7.4 *6*	1427.58	1$^+$	965.78	1$^{(-)}$				
483.3 *2*	0.84 *15*	547.87	(1,2)	64.756	(3)$^-$				
503.4 *3*	0.87 *20*	622.03	(2)$^-$	118.447	(2,1)$^-$				
505.0 *4*	0.65 *20*	800.38	(1,2)	294.91	(1,0)$^-$				
509.6 *2*	4.2 *6*	622.03	(2)$^-$	112.513	(2)$^-$				
514.9 *2*	5.2 *5*	514.82	(0,1)	0.0	1$^-$				E_γ: 514.952 *45* (1979Bo26).
518.9 *2*	5.1 *5*	622.03	(2)$^-$	103.098	(2)$^-$				
524.5 *2*	2.3 *2*	1427.58	1$^+$	903.01					
547.84 *10*	5.7 *4*	547.87	(1,2)	0.0	1$^-$				
557.26 *10*	25 *2*	622.03	(2)$^-$	64.756	(3)$^-$	M1		0.00927	α(K)=0.00800 *12*; α(L)=0.001016 *15*; α(M)=0.000207 *3* α(N)=4.38×10^{-5} *7*; α(O)=6.13×10^{-6} *9*; α(P)=3.09×10^{-7} *5* E_γ: 557.15 *7* (1979Bo26). Mult.: α(K)exp=0.0082 *12* (1974Ad08).
561.6[d] *3*	1.45[d] *25*	774.13	(0$^-$,1$^-$,2$^-$)	212.06	2$^-$,1$^-$,0$^-$				
561.6[d] *3*	1.45[d] *25*	1989.56		1427.58	1$^+$				
568.1 *5*	0.50 *20*	800.38	(1,2)	232.09	(3)$^-$				
570.9 *7*	0.56 *25*	1193.6		622.03	(2)$^-$				
572.7 *5*	0.75 *25*	653.36	0$^{(-)}$,1$^{(-)}$	80.118	1$^-$,0$^-$				
588.2 *5*	0.20 *10*	800.38	(1,2)	212.06	2$^-$,1$^-$,0$^-$				
608.05 *10*	11.2 *12*	622.03	(2)$^-$	13.931	(2)$^-$				
621.98 *10*	40 *3*	622.03	(2)$^-$	0.0	1$^-$	M1+E2	≈1.2	≈0.00601	α(K)≈0.00515; α(L)≈0.000687; α(M)≈0.0001407 α(N)≈2.96×10^{-5}; α(O)≈4.09×10^{-6}; α(P)≈1.93×10^{-7} E_γ: 621.874 *27* (1979Bo26). Mult.: α(K)exp=0.0051 *8* (1974Ad08). δ: E2(≈40%M1) (1981Ot02).
627.3 *2*	4.9 *5*	1427.58	1$^+$	800.38	(1,2)				
639.18 *15*	6.6 *6*	653.36	0$^{(-)}$,1$^{(-)}$	13.931	(2)$^-$				
653.40[d] *10*	24[d]	653.36	0$^{(-)}$,1$^{(-)}$	0.0	1$^-$	(E2,M1)		0.0055 *9*	α(K)=0.0047 *8*; α(L)=0.00062 *7*; α(M)=0.000126 *14* α(N)=2.7×10^{-5} *3*; α(O)=3.7×10^{-6} *5*; α(P)=1.8×10^{-7} *4*

γ(^{140}Cs) (continued)

E_γ[†]	I_γ[#c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α[a]	Comments
								Mult.: α(K)exp=0.0024 *7*; α(K)exp is consistent with E1 for γ from 1427 keV level, and M1,E2 for γ from 653 keV level (1974Ad08).
653.40[d] *10*	24[d]	1427.58	1$^+$	774.13	(0$^-$,1$^-$,2$^-$)	(E1)	1.70×10^{-3}	α(K)=0.001476 *21*; α(L)=0.000182 *3*; α(M)=3.70×10^{-5} *6* α(N)=7.81×10^{-6} *11*; α(O)=1.085×10^{-6} *16*; α(P)=5.34×10^{-8} *8* Mult.: α(K)exp=0.0024 *7*; α(K)exp is consistent with E1 for γ from 1427 keV level, and M1,E2 for γ from 653 keV level (1974Ad08). I_γ: analysis of γ-γ coin (1981Ot02).
655.7 *3*	3.5 *9*	774.13	(0$^-$,1$^-$,2$^-$)	118.447	(2,1)$^-$			
671.6 *10*	1.5 *5*	965.78	1$^{(-)}$	294.91	(1,0)$^-$			
[x]686.2 *3*	0.88 *20*							
690.5 *10*	0.40 *20*	903.01		212.06	2$^-$,1$^-$,0$^-$			
696.9 *3*	0.90 *20*	800.38	(1,2)	103.098	(2)$^-$			
721.4 *4*	0.40 *15*	1159.71		438.63	(2,1)$^-$			
734.1 *3*	1.42 *25*	965.78	1$^{(-)}$	232.09	(3)$^-$			
736.2 *5*	1.05 *20*	800.38	(1,2)	64.756	(3)$^-$			
736.2 *5*	1.05 *20*	1081.77		345.06				
774.12[e] *10*	18[e] *3*	774.13	(0$^-$,1$^-$,2$^-$)	0.0	1$^-$			
774.12[e] *10*	2.7[e] *27*	1427.58	1$^+$	653.36	0$^{(-)}$,1$^{(-)}$			
786.9[d] *2*	2.05[d] *25*	800.38	(1,2)	13.931	(2)$^-$			
786.9[d] *2*	2.05[d] *25*	1081.77		294.91	(1,0)$^-$			
800.1 *4*	2.7 *10*	800.38	(1,2)	0.0	1$^-$			
805.52 *10*	100	1427.58	1$^+$	622.03	(2)$^-$	E1	1.10×10^{-3}	α(K)=0.000955 *14*; α(L)=0.0001171 *17*; α(M)=2.38×10^{-5} *4* α(N)=5.02×10^{-6} *7*; α(O)=6.99×10^{-7} *10*; α(P)=3.47×10^{-8} *5* I_γ: Iγ=20% *2* if Iβ(g.s.)=0 (1981Ot02). Mult.: α(K)exp=0.0011 *2* (1974Ad08).
820.9 *5*	0.22 *10*	1989.56		1169.5				
842.2 *2*	2.9 *3*	1137.07	0,1	294.91	(1,0)$^-$			
847.1 *3*	1.0 *3*	965.78	1$^{(-)}$	118.447	(2,1)$^-$			
850.4 *2*	2.1 *3*	1289.20	0,1	438.63	(2,1)$^-$			
[x]857.0 *4*	0.53 *12*							
862.4 *5*	0.81 *25*	965.78	1$^{(-)}$	103.098	(2)$^-$			
864.2 *5*	1.1 *3*	982.50		118.447	(2,1)$^-$			
879.75 *10*	13.7 *9*	1427.58	1$^+$	547.87	(1,2)			
889.1 *2*	1.93 *25*	903.01		13.931	(2)$^-$			
900.7 *5*	1.0 *3*	965.78	1$^{(-)}$	64.756	(3)$^-$			
902.9 *3*	2.0 *3*	903.01		0.0	1$^-$			
912.8 *2*	4.4 *4*	1427.58	1$^+$	514.82	(0,1)			
925.04 *15*	7.2 *6*	1137.07	0,1	212.06	2$^-$,1$^-$,0$^-$			
935.9 *3*	0.42 *10*	1159.71		223.56				
[x]945.5 *4*	0.41 *12*							
951.9 *2*	4.4 *4*	965.78	1$^{(-)}$	13.931	(2)$^-$			

γ(^{140}Cs) (continued)

E_γ †	I_γ #c	E_i(level)	J^π_i	E_f	J^π_f
963.6 5	0.7 3	1081.77		118.447	(2,1)$^-$
966.5 7	0.47 25	965.78	1$^{(-)}$	0.0	1$^-$
982.7 4	2.3 4	982.50		0.0	1$^-$
989.02 10	15.2 12	1427.58	1$^+$	438.63	(2,1)$^-$
^{x}999.8 5	0.52 25				
1018.5 2	1.44 25	1137.07	0,1	118.447	(2,1)$^-$
1024.7 2	1.28 25	1137.07	0,1	112.513	(2)$^-$
1077.6 10	0.8 4	1289.20	0,1	212.06	2$^-$,1$^-$,0$^-$
1079.8 5	1.4 5	1159.71		80.118	1$^-$,0$^-$
1086.7 5	1.3 5	1989.56		903.01	
1089.8 10	0.6 4	1169.5		80.118	1$^-$,0$^-$
1122.8 5	0.8 4	1137.07	0,1	13.931	(2)$^-$
1132.7 4	3.3 8	1427.58	1$^+$	294.91	(1,0)$^-$
1137.09 10	10.7 10	1137.07	0,1	0.0	1$^-$
^{x}1141.5 4	1.5 4				
1154.5 3	1.5 2	2324.31	1$^+$	1169.5	
1168.6 10	0.6 3	1169.5		0.0	1$^-$
1171.2 10	0.5 3	1289.20	0,1	118.447	(2,1)$^-$
1176.7 2	5.5 7	1289.20	0,1	112.513	(2)$^-$
1180.2 5	0.7 3	1193.6		13.931	(2)$^-$
1189.5 10	1.2 3	1989.56		800.38	(1,2)
1192.8 10	0.8 3	1193.6		0.0	1$^-$
1209.08 10	6.8 8	1289.20	0,1	80.118	1$^-$,0$^-$
1215.4 3	1.4 3	1427.58	1$^+$	212.06	2$^-$,1$^-$,0$^-$
1289.2 3	1.0 3	1289.20	0,1	0.0	1$^-$
1309.08 10	32 3	1427.58	1$^+$	118.447	(2,1)$^-$
1315.05 10	41 4	1427.58	1$^+$	112.513	(2)$^-$
1347.5 2	0.7 2	1427.58	1$^+$	80.118	1$^-$,0$^-$
1413.66 10	61 6	1427.58	1$^+$	13.931	(2)$^-$
1427.56 10	5.7 6	1427.58	1$^+$	0.0	1$^-$
^{x}1585.7 3	0.9 2				
^{x}1661.2 3	1.2 3				
1885.9 3	1.7 4	2324.31	1$^+$	438.63	(2,1)$^-$
2074.0 3	1.1 3	2286.05		212.06	2$^-$,1$^-$,0$^-$
2112.3 3	1.8 5	2324.31	1$^+$	212.06	2$^-$,1$^-$,0$^-$
2211.9 5	0.5 2	2324.31	1$^+$	112.513	(2)$^-$
2286.0 3	0.8 3	2286.05		0.0	1$^-$

† From 1971Sc13; the subset 13.93γ through 121.51γ from 1974Ad08 (same group and method); 9.42γ, 38.33γ, and 38.34γ from 1981Ot02 (who resolved the doublet, formerly known as (single) 38.33γ).

‡ from E(level) difference.

\# Iγ from 1974Ad08, except as noted.

@ From 1981Ot02.

& α(K)exp were normalized to α(K)(E2)=0.00508 for 602γ in ^{140}Ba.

a Additional information 2.

b If No value given it was assumed δ=1.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.

c For absolute intensity per 100 decays, multiply by 0.20 2.

d Multiply placed with undivided intensity.

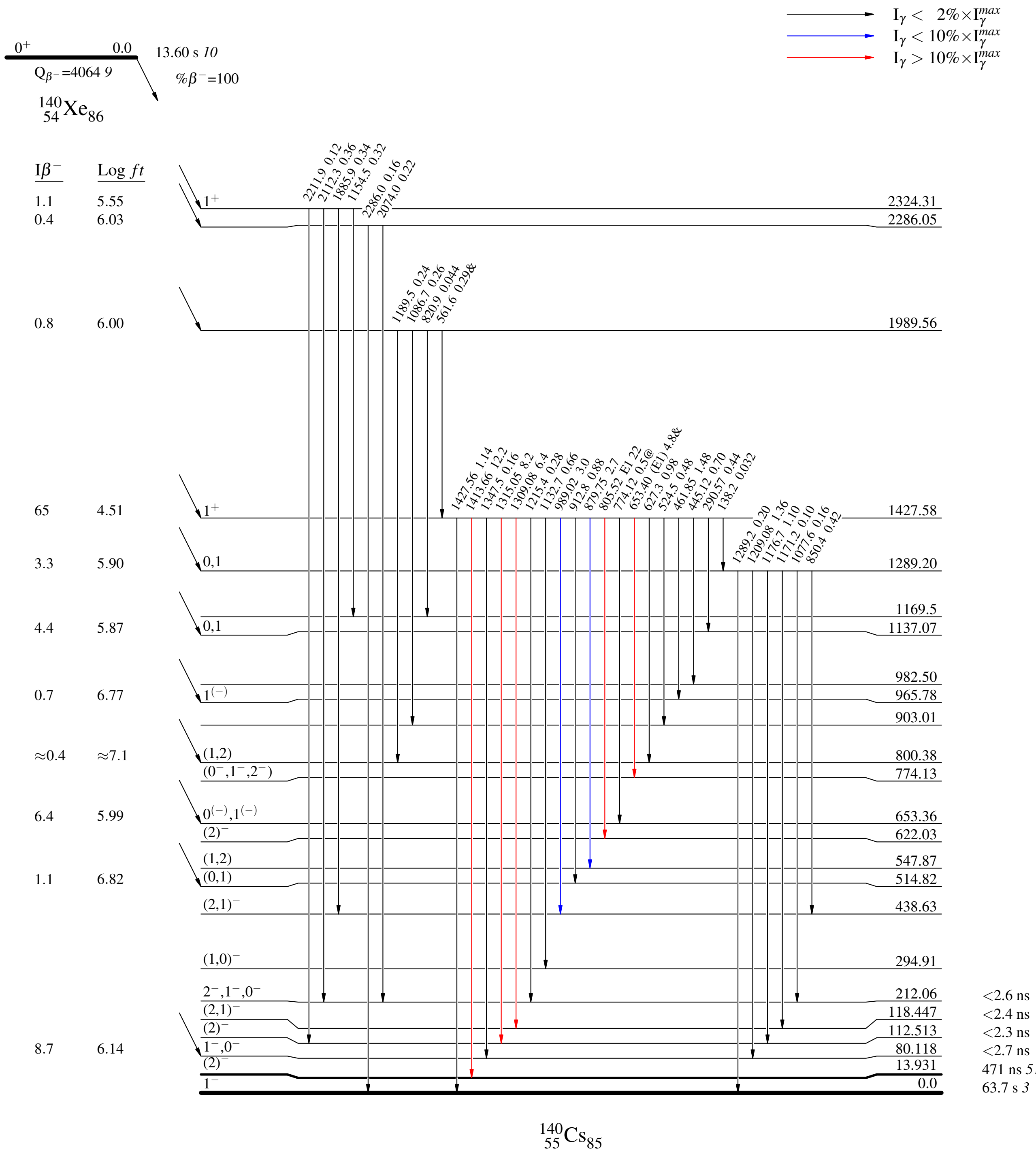
e Multiply placed with intensity suitably divided.

x γ ray not placed in level scheme.

^{140}Xe β^- decay 1971Sc13,1974Ad08,1981Ot02

Decay Scheme

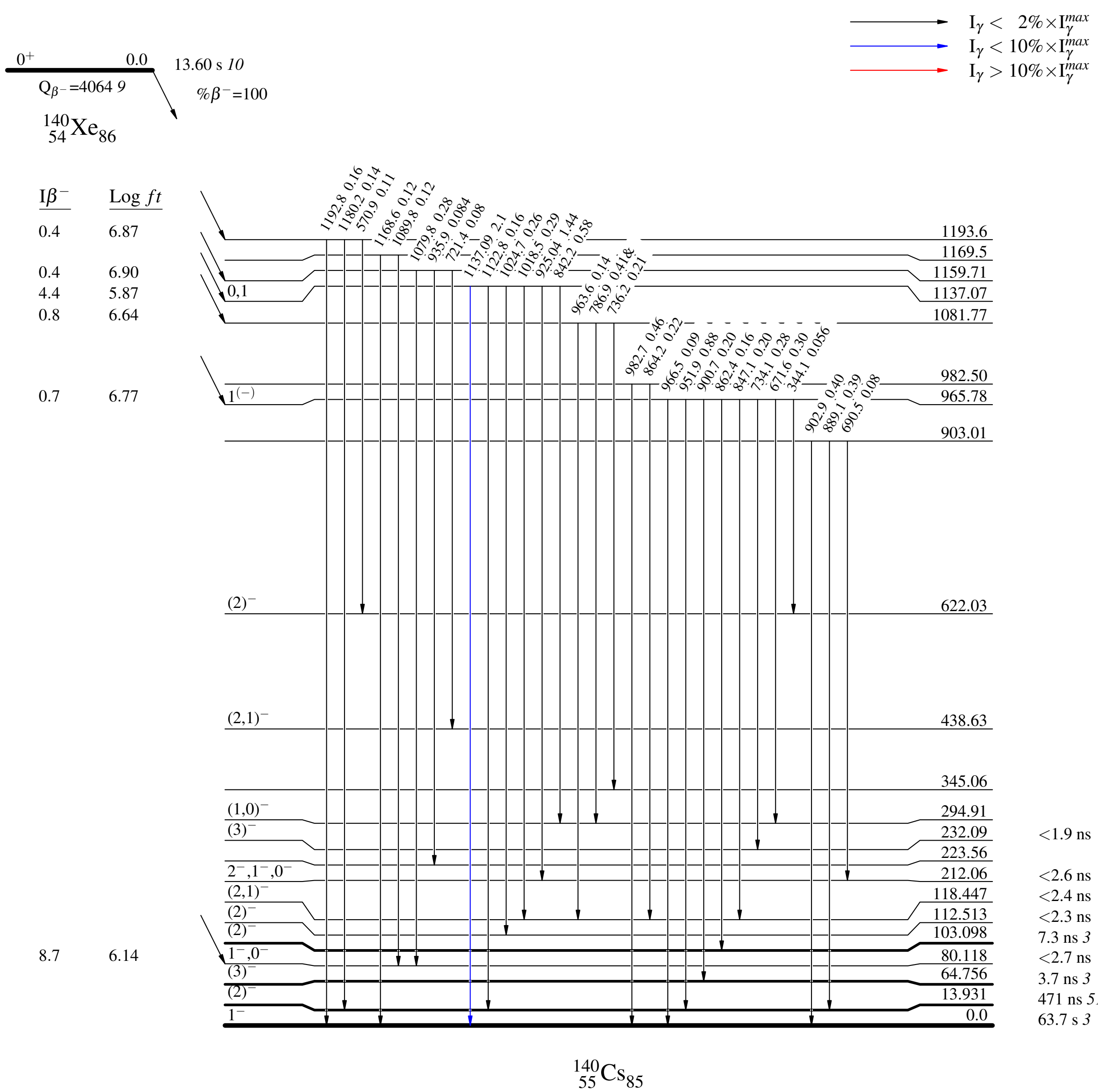
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{140}Xe β^- decay 1971Sc13,1974Ad08,1981Ot02

Decay Scheme (continued)

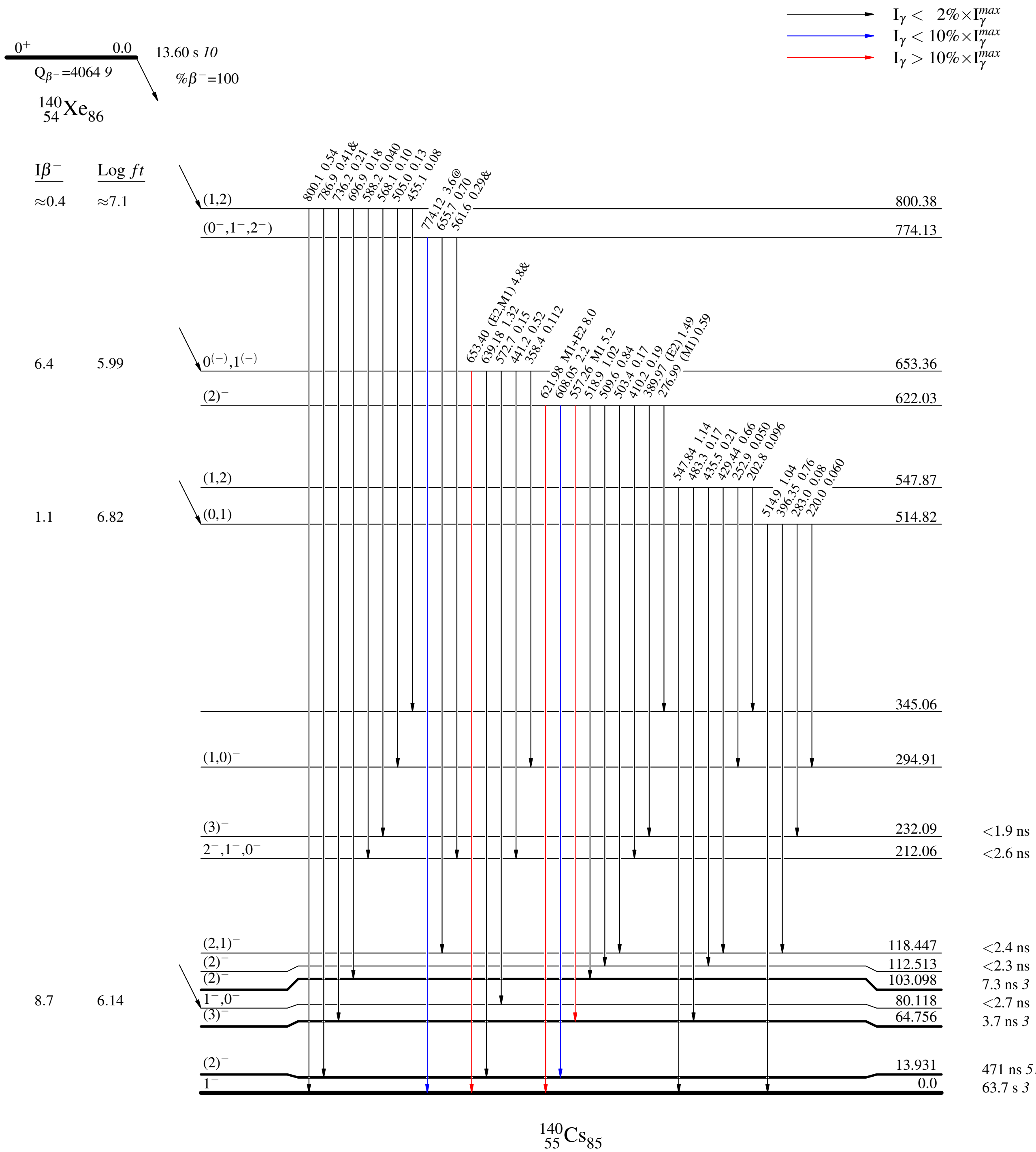
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{140}Xe β^- decay 1971Sc13,1974Ad08,1981Ot02

Decay Scheme (continued)

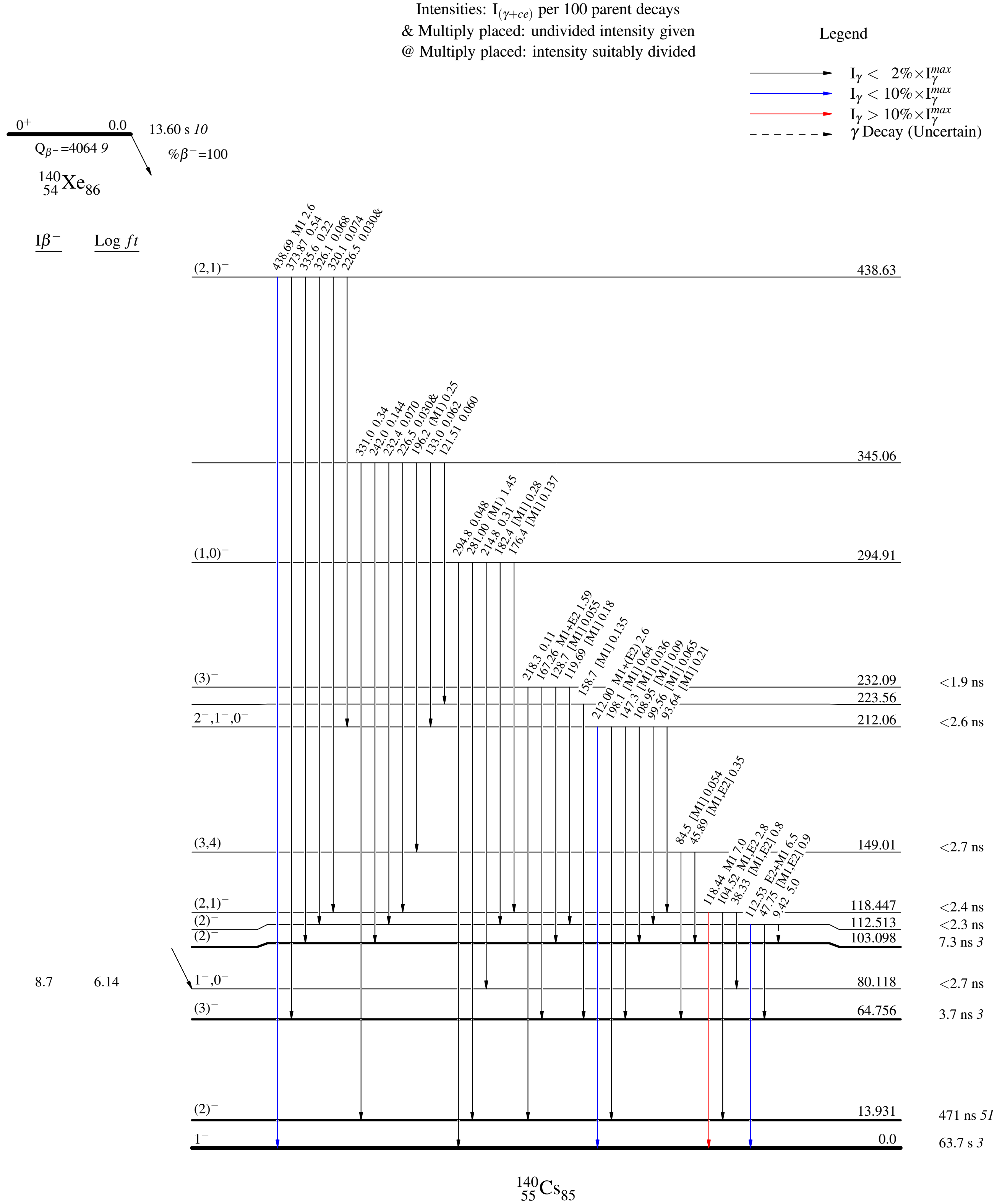
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{140}Xe β^- decay 1971Sc13,1974Ad08,1981Ot02

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{140}Xe β^- decay 1971Sc13,1974Ad08,1981Ot02

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided