^{101}Sr β^- decay 1988Pe11,1983Wo10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	ENSDF	1-Jul-2006

Parent: ^{101}Sr: E=0.0; J$^\pi$=(5/2$^-$); $T_{1/2}$=118 ms *3*; Q(β^-)=9505 *80*; %β^- decay=100.0
Activity: on-line mass separation (TRISTAN).
Measured: γ, $\gamma\gamma$, γ(t).

^{101}Y Levels

E(level)[‡]	J$^\pi$[†]	$T_{1/2}$	E(level)[‡]	J$^\pi$[†]	E(level)[‡]	J$^\pi$[†]
0.0[#]	(5/2$^+$)	500 ms *50*	1012.97[&] *13*	(9/2$^-$)	1517.96 *16*	(5/2$^+$)
128.31[#] *4*	(7/2$^+$)		1027.31[a] *9*	(5/2$^-$)	1685.35 *7*	(3/2$^+$)
291.66[#] *5*	(9/2$^+$)		1124.85 *8*	(5/2$^+$)	1762.33 *8*	(5/2$^+$)
494.29[#] *11*	(11/2$^+$)		1191.38 *7*		1871.91 *21*	
510.75[@] *5*	(3/2$^-$)		1211.30 *7*	(3/2$^+$)	2259.3 *3*	
590.45[@] *5*	(5/2$^-$)		1217.31[b] *19*	(1/2$^+$)	2660.95 *20*	(5/2$^+$)
666.61[&] *7*	(5/2$^-$)		1233.77 *10*	(3/2$^+$)	2675.11 *17*	
714.44[@] *6*	(7/2$^-$)		1258.79 *18*	(7/2$^+$)	2680.1 *5*	
822.48[&] *10*	(7/2$^-$)		1297.59 *8*	(5/2$^+$)	2693.66 *20*	(5/2$^+$)
872.87[@] *11*	(9/2$^-$)		1410.82 *16*	(7/2$^+$)	2695.93 *18*	
890.64[a] *10*	(1/2$^-$)		1418.21 *20*	(5/2$^+$)		
996.82[a] *9*	(3/2$^-$)		1479.06 *12*			

[†] As given by 1988Pe11 from log *ft* values and assuming only M1, E1 or E2 γ decays. They also use model considerations.
[‡] From a least-squares fit to the γ data.
[#] Band(A): 5/2[422] band. α=18.3 keV.
[@] Band(B): 3/2[301] band. α=16.0 keV.
[&] Band(C): 5/2[303] band. α=22.3 keV. The bandhead was previously assigned to 590 level (1983Wo10) because of contamination problem (511).
[a] Band(D): 1/2[301] band. α=20.8.
[b] Band(E): 1/2[431] band. Only the bandhead is tentatively assigned.

β^- radiations

E(decay)	E(level)	Iβ^-[†‡]	Log *ft*	Comments
(6.81×10^3 *8*)	2693.66	8.9 *24*	4.93 *13*	av Eβ=3170 *44*
(6.84×10^3 *8*)	2660.95	5.2 *14*	5.17 *13*	av Eβ=3186 *44*
(7.74×10^3 *8*)	1762.33	4.1 *11*	5.51 *12*	av Eβ=3619 *44*
(7.82×10^3 *8*)	1685.35	9 *3*	5.17 *12*	av Eβ=3656 *44*
(8.03×10^3 *8*)	1479.06	1.1 *11*	6.2 *5*	av Eβ=3755 *44*
(8.29×10^3 *8*)	1211.30	1.1 *11*	6.2 *5*	av Eβ=3884 *44*
(8.31×10^3 *8*)	1191.38	1.2 *12*	6.2 *5*	av Eβ=3893 *44*
(8.38×10^3 *8*)	1124.85	13 *4*	5.16 *14*	av Eβ=3925 *44*
(8.48×10^3 *8*)	1027.31	1.2 *12*	6.2 *5*	av Eβ=3972 *44*
(8.68×10^3 *8*)	822.48	1 *1*	6.3 *5*	av Eβ=4071 *44*
(8.79×10^3 *8*)	714.44	1.9 *19*	6.1 *5*	av Eβ=4122 *44*
(8.84×10^3 *8*)	666.61	2 *2*	6.1 *5*	av Eβ=4145 *44*
(8.91×10^3 *8*)	590.45	3.5 *23*	6.0 *5*	av Eβ=4182 *44*

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^{101}Sr β^- decay 1988Pe11,1983Wo10 (continued)

β^- radiations (continued)

E(decay)	E(level)	Iβ^- †‡	Log *ft*	Comments
(9.51×10^3 *8*)	0.0	36 *20*	4.98 *22*	av Eβ=4465 *44* Iβ^-: 1995Lh04 has deduced Iβ=−20 *29* which suggests only a weak β branch.

† Due to the large Q value and the incompleteness of the decay scheme, only branches >1% are included.
‡ Absolute intensity per 100 decays.

γ(^{101}Y)

Iγ normalization: Authors give only Iβ(g.s.)=35% 17 based on Iγ(128γ)/Iγ(192γ) in ^{101}Mo β^- decay taken as 19.6% 4. The evaluator adopts 18.21% 21 which leads to Iγ(128γ)=17% 5.

E$_\gamma$ †	I$_\gamma$ †‡	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Mult.	δ	α #	Comments
79.70 *5*	82 *4*	590.45	(5/2$^-$)	510.75	(3/2$^-$)	[M1+E2]	<1.8	1.1 *8*	α(K)=0.9 *7*; α(L)=0.17 *14*; α(M)=0.029 *24*; α(N+..)=0.004 *3* α(N)=0.004 *3*; α(O)=0.00014 *9* Mult.: from an intensity balance at the 510 level, from: $\Delta\pi$=no.
123.97 *7*	66 *5*	714.44	(7/2$^-$)	590.45	(5/2$^-$)	[M1+E2]		0.29 *20*	
128.34 *5*	1000 *50*	128.31	(7/2$^+$)	0.0	(5/2$^+$)	[M1+E2]		0.26 *17*	
155.99@ *6*	38@ *4*	666.61	(5/2$^-$)	510.75	(3/2$^-$)	[M1+E2]		0.13 *8*	
155.99@ *6*	5.8@ *19*	822.48	(7/2$^-$)	666.61	(5/2$^-$)	[M1+E2]		0.13 *8*	
158.43 *9*	18.2 *18*	872.87	(9/2$^-$)	714.44	(7/2$^-$)	[M1+E2]		0.13 *8*	α(K)=0.11 *7*; α(L)=0.014 *10*; α(M)=0.0025 *16*; α(N+..)=0.00034 *21* α(N)=0.00032 *20*; α(O)=1.7×10^{-5} *10*
163.35 *5*	191 *10*	291.66	(9/2$^+$)	128.31	(7/2$^+$)	[M1+E2]		0.11 *7*	α(K)=0.10 *6*; α(L)=0.013 *9*; α(M)=0.0022 *14*; α(N+..)=0.00030 *19* α(N)=0.00029 *18*; α(O)=1.6×10^{-5} *9*
202.63 *11*	18.2 *21*	494.29	(11/2$^+$)	291.66	(9/2$^+$)				
203.92 *20*	5.6 *10*	714.44	(7/2$^-$)	510.75	(3/2$^-$)				
231.89 *6*	9.5 *15*	822.48	(7/2$^-$)	590.45	(5/2$^-$)				
282.73 *19*	5.0 *10*	872.87	(9/2$^-$)	590.45	(5/2$^-$)				
291.72 *9*	33 *2*	291.66	(9/2$^+$)	0.0	(5/2$^+$)				
298.52 *12*	9.1 *21*	1012.97	(9/2$^-$)	714.44	(7/2$^-$)				
312.87 *10*	15.8 *15*	1027.31	(5/2$^-$)	714.44	(7/2$^-$)				
351.68 *8*	39 *3*	1762.33	(5/2$^+$)	1410.82	(7/2$^+$)				
360.57 *19*	7.5 *16*	1027.31	(5/2$^-$)	666.61	(5/2$^-$)				
365.97 *24*	5.7 *13*	494.29	(11/2$^+$)	128.31	(7/2$^+$)				
379.89 *8*	56 *3*	890.64	(1/2$^-$)	510.75	(3/2$^-$)				
387.77 *8*	73 *4*	1685.35	(3/2$^+$)	1297.59	(5/2$^+$)				
406.37 *12*	18.0 *21*	996.82	(3/2$^-$)	590.45	(5/2$^-$)				
422.84 *9*	31.8 *24*	714.44	(7/2$^-$)	291.66	(9/2$^+$)				
436.98 *9*	32.2 *23*	1027.31	(5/2$^-$)	590.45	(5/2$^-$)				
451.58 *7*	10.4 *15*	1685.35	(3/2$^+$)	1233.77	(3/2$^+$)				
462.14 *8*	145 *8*	590.45	(5/2$^-$)	128.31	(7/2$^+$)				

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^{101}Sr β^- decay 1988Pe11,1983Wo10 (continued)

$\gamma(^{101}Y)$ (continued)

E_γ †	I_γ †‡	E_i(level)	J^π_i	E_f	J^π_f
464.77 *10*	39 *3*	1762.33	(5/2+)	1297.59	(5/2+)
474.07 *7*	209 *11*	1685.35	(3/2+)	1211.30	(3/2+)
485.85 *10*	28.7 *24*	996.82	(3/2−)	510.75	(3/2−)
510.73 *8*	470 *30*	510.75	(3/2−)	0.0	(5/2+)
516.36 *20*	10.3 *21*	1027.31	(5/2−)	510.75	(3/2−)
538.39 *10*	10.1 *14*	666.61	(5/2−)	128.31	(7/2+)
551.01 *8*	71 *4*	1762.33	(5/2+)	1211.30	(3/2+)
574.1 *3*	9 *3*	1871.91		1297.59	(5/2+)
586.13 *15*	14.6 *21*	714.44	(7/2−)	128.31	(7/2+)
590.40 *8*	180 *10*	590.45	(5/2−)	0.0	(5/2+)
666.60 *8*	144 *8*	666.61	(5/2−)	0.0	(5/2+)
681.03 *14*	13.1 *22*	1191.38		510.75	(3/2−)
688.50 *10*	16 *5*	1685.35	(3/2+)	996.82	(3/2−)
694.33 *12*	24.4 *25*	822.48	(7/2−)	128.31	(7/2+)
700.51 *24*	12.9 *23*	1211.30	(3/2+)	510.75	(3/2−)
706.55 *18*	13.8 *22*	1217.31	(1/2+)	510.75	(3/2−)
714.25 *11*	31 *3*	714.44	(7/2−)	0.0	(5/2+)
744.09 *17*	4.0 *16*	872.87	(9/2−)	128.31	(7/2+)
795.1 *4*	8.6 *24*	1685.35	(3/2+)	890.64	(1/2−)
812.59 *20*	17 *3*	1479.06		666.61	(5/2−)
822.39 *17*	20 *3*	822.48	(7/2−)	0.0	(5/2+)
833.24 *18*	23 *3*	1124.85	(5/2+)	291.66	(9/2+)
884.8 *5*	5.4 *16*	1012.97	(9/2−)	128.31	(7/2+)
888.58 *14*	37 *3*	1479.06		590.45	(5/2−)
967.1 *3*	13 *4*	1258.79	(7/2+)	291.66	(9/2+)
968.0 *3*	7.0 *23*	1479.06		510.75	(3/2−)
996.53 *10*	209 *11*	1124.85	(5/2+)	128.31	(7/2+)
1005.4 *4*	9 *3*	1297.59	(5/2+)	291.66	(9/2+)
1010.55 *18*	13.4 *24*	2695.93		1685.35	(3/2+)
1062.9 *3*	28 *8*	1191.38		128.31	(7/2+)
1094.97 *20*	29 *4*	1685.35	(3/2+)	590.45	(5/2−)
1119.39 *21*	25 *4*	1410.82	(7/2+)	291.66	(9/2+)
1124.82 *11*	605 *30*	1124.85	(5/2+)	0.0	(5/2+)
1130.49 *21*	23 *4*	1258.79	(7/2+)	128.31	(7/2+)
1169.57 *16*	97 *11*	1297.59	(5/2+)	128.31	(7/2+)
1174.44 *13*	64 *5*	1685.35	(3/2+)	510.75	(3/2−)
1191.37 *7*	23.4 *15*	1191.38		0.0	(5/2+)
1205.1 *6*	8.4 *19*	1871.91		666.61	(5/2−)
1211.28 *11*	339 *18*	1211.30	(3/2+)	0.0	(5/2+)
1233.45 *14*	32 *4*	1233.77	(3/2+)	0.0	(5/2+)
1251.31 *12*	19 *3*	1762.33	(5/2+)	510.75	(3/2−)
1282.69 *18*	43 *5*	1410.82	(7/2+)	128.31	(7/2+)
1289.92 *22*	12.0 *23*	1418.21	(5/2+)	128.31	(7/2+)
1297.61 *13*	86 *16*	1297.59	(5/2+)	0.0	(5/2+)
1389.48 *22*	14 *3*	1517.96	(5/2+)	128.31	(7/2+)
1396.0 *5*	29 *10*	2693.66	(5/2+)	1297.59	(5/2+)
1411.1 *3*	7.6 *16*	1410.82	(7/2+)	0.0	(5/2+)
1418.1 *4*	4.1 *9*	1418.21	(5/2+)	0.0	(5/2+)
1434.66 *12*	21 *4*	2693.66	(5/2+)	1258.79	(7/2+)
1463.81 *20*	8.8 *19*	2675.11		1211.30	(3/2+)
1518.12 *23*	8.7 *14*	1517.96	(5/2+)	0.0	(5/2+)
1535.5 *4*	15 *4*	2660.95	(5/2+)	1124.85	(5/2+)
1568.39 *17*	78 *6*	2693.66	(5/2+)	1124.85	(5/2+)
1580.5 *3*	5.2 *12*	1871.91		291.66	(9/2+)
1634.00 *19*	50 *4*	1762.33	(5/2+)	128.31	(7/2+)
1668.8 *3*	25 *4*	2259.3		590.45	(5/2−)

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$^{101}Sr\ \beta^-$ decay 1988Pe11,1983Wo10 (continued)

$\gamma(^{101}Y)$ (continued)

E_γ †	I_γ †‡	E_i(level)	J_i^π	E_f	J_f^π
1685.32 *16*	133 *9*	1685.35	$(3/2^+)$	0.0	$(5/2^+)$
1762.1 *4*	13 *3*	1762.33	$(5/2^+)$	0.0	$(5/2^+)$
1994.4 *10*	15 *4*	2660.95	$(5/2^+)$	666.61	$(5/2^-)$
2008.4 *3*	11.6 *17*	2675.11		666.61	$(5/2^-)$
2028.1 *3*	14 *3*	2693.66	$(5/2^+)$	666.61	$(5/2^-)$
2102.8 *9*	20 *9*	2693.66	$(5/2^+)$	590.45	$(5/2^-)$
2105.6 *5*	38 *9*	2695.93		590.45	$(5/2^-)$
2369.1 *9*	11 *5*	2660.95	$(5/2^+)$	291.66	$(9/2^+)$
2387.7 *12*	38 *8*	2680.1		291.66	$(9/2^+)$
2401.8 *4*	6.0 *10*	2693.66	$(5/2^+)$	291.66	$(9/2^+)$
2532.7 *3*	94 *8*	2660.95	$(5/2^+)$	128.31	$(7/2^+)$
2551.9 *5*	8.5 *20*	2680.1		128.31	$(7/2^+)$
2565.4 *3*	91 *8*	2693.66	$(5/2^+)$	128.31	$(7/2^+)$
2660.9 *3*	154 *11*	2660.95	$(5/2^+)$	0.0	$(5/2^+)$
2675.4 *6*	6.1 *17*	2675.11		0.0	$(5/2^+)$
2693.8 *3*	237 *13*	2693.66	$(5/2^+)$	0.0	$(5/2^+)$

† From 1988Pe11, more complete data than 1983Wo10 (same group).

‡ For absolute intensity per 100 decays, multiply by 0.017 *5*.

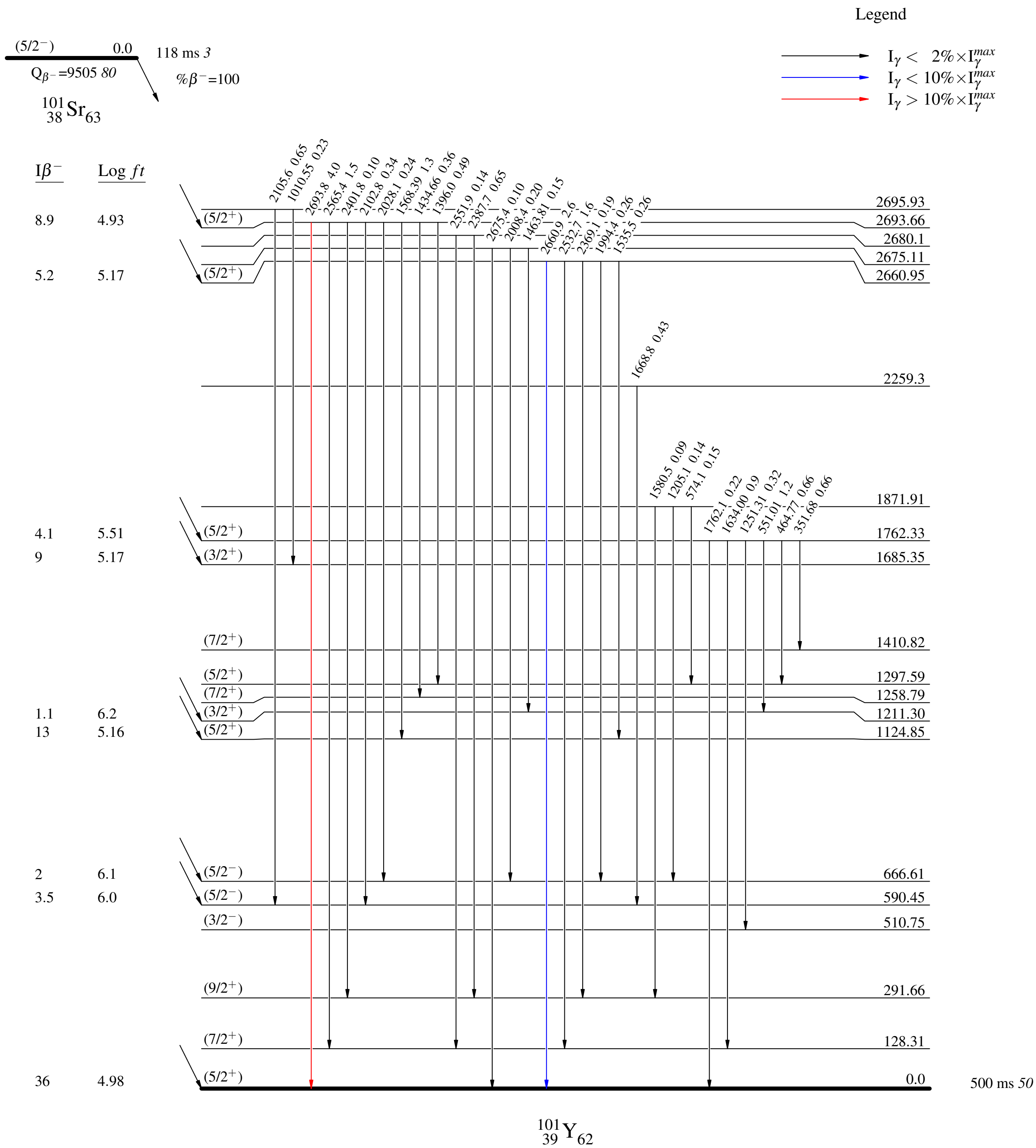
Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

@ Multiply placed with intensity suitably divided.

^{101}Sr β^- decay 1988Pe11,1983Wo10

Decay Scheme

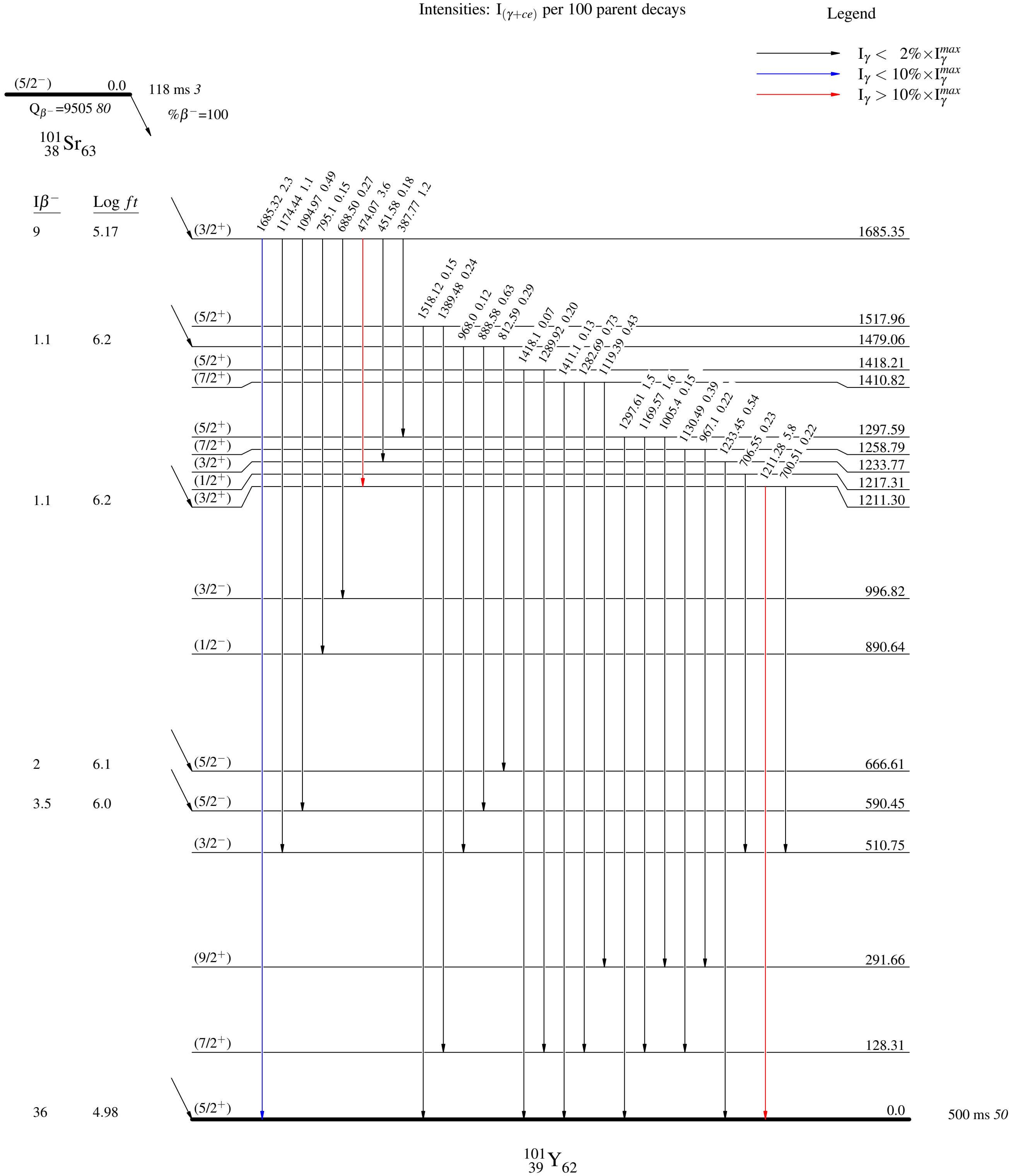
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



^{101}Sr β^- decay 1988Pe11,1983Wo10

Decay Scheme (continued)

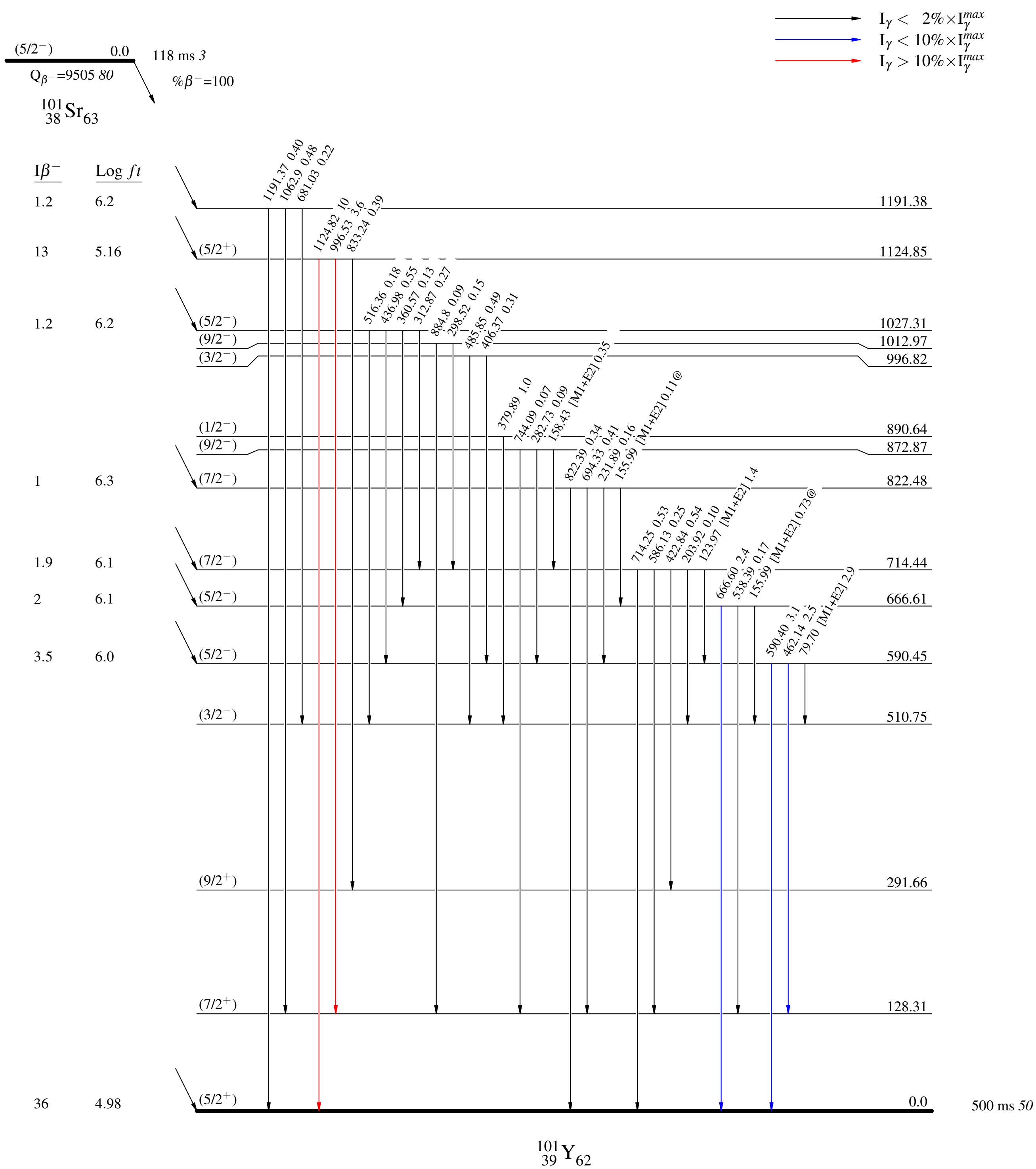
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



^{101}Sr β^- decay 1988Pe11,1983Wo10

Decay Scheme (continued)

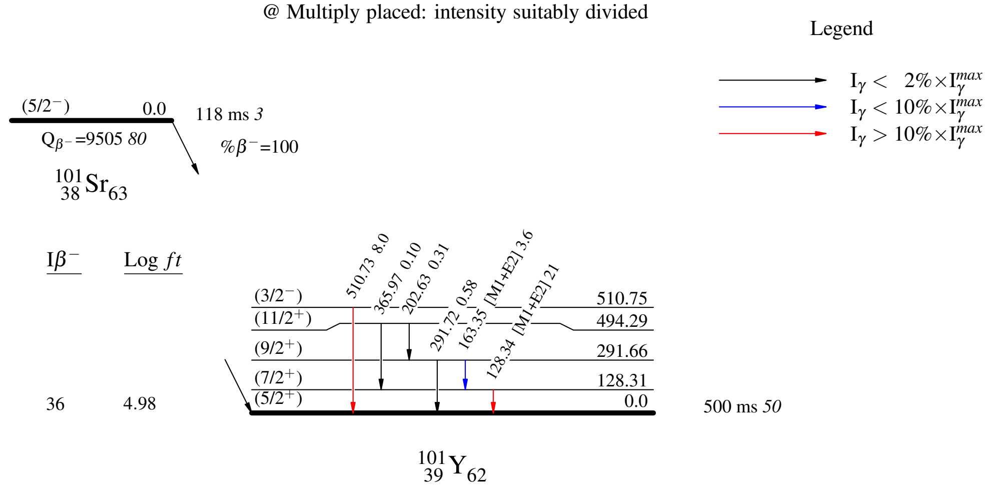
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
@ Multiply placed: intensity suitably divided



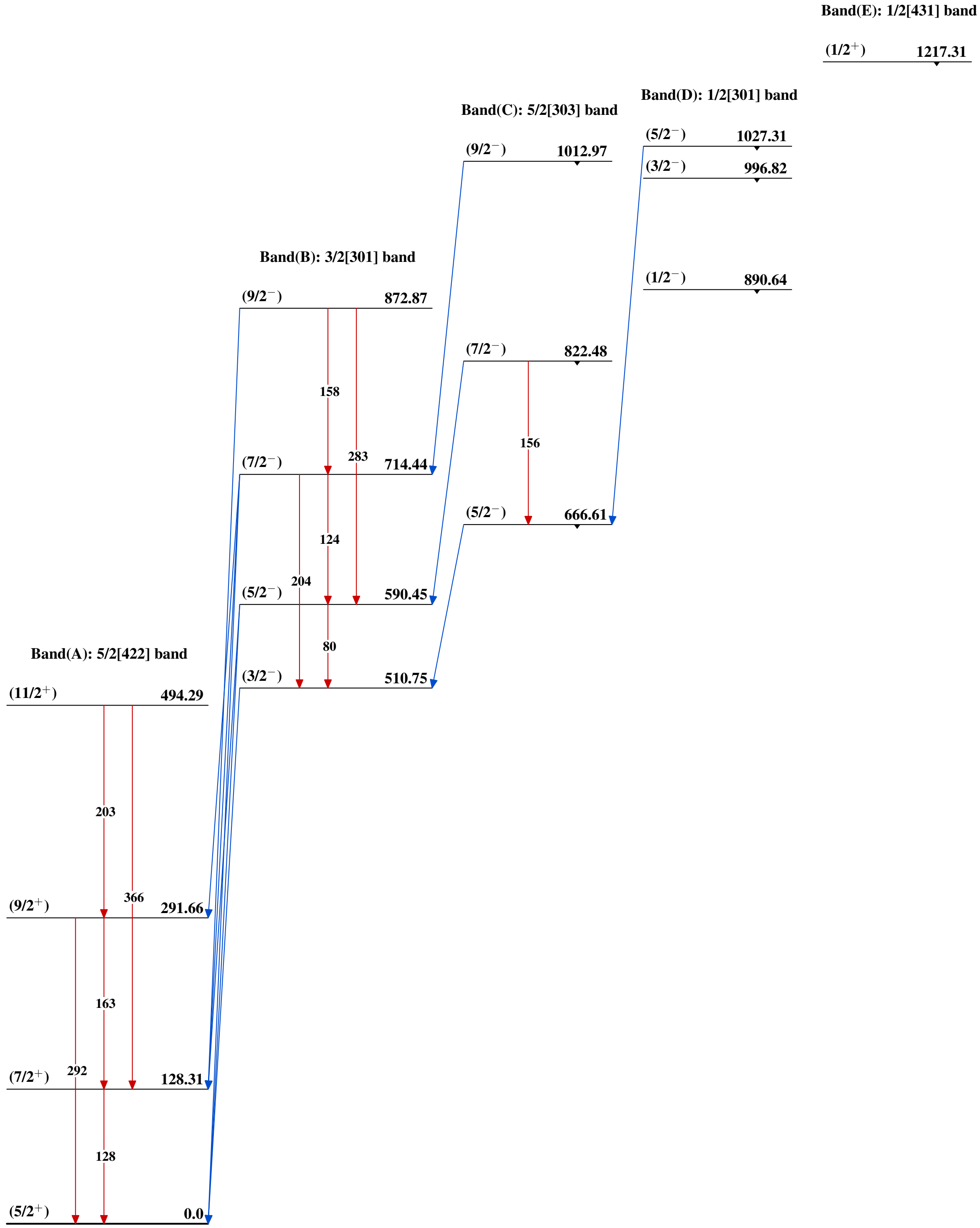
^{101}Sr β^- decay 1988Pe11,1983Wo10

Decay Scheme (continued)

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



$^{101}Sr\ \beta^-$ decay 1988Pe11,1983Wo10



$^{101}_{39}Y_{62}$