^{117}Sb IT decay (355 μs) 1987Io01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	ENSDF	1-Mar-2009

Parent: ^{117}Sb: E=3130.82 *17*; $J^{\pi}=(25/2)^+$; $T_{1/2}$=355 μs *17*; %IT decay=100.0

1990Ko42: (α,2nγ)E(α)=26, 27 MeV γ, $\gamma\gamma$, γ(t).

1987Io01: (α,2nγ)E(α)=27 MeV γ, $\gamma\gamma$, $\gamma(\theta)$, $\gamma(\theta$,H,t).

1975Fr10, 1970He13: (α,2nγ) E(α)=21-27 MeV, $\gamma\gamma$-coin, $\gamma(\theta)$, γ(t) , Ice/Iγ.

1978Su05: (α,2nγ)E(α)=22 MeV, γ(t), ce(t).

α: Additional information 1.

^{117}Sb Levels

E(level)	J^{π}	$T_{1/2}$[†]	Comments
0.0	$5/2^+$		
527.26 *8*	$7/2^+$		
1160.04 *9*	$9/2^+$		
1310.51 *10*	$(9/2)^+$		
1322.91 *8*	$11/2^-$	3.8 ns *2*	
1534.60 *12*	$11/2^+$		
1871.55 *13*	$13/2^+$		
2237.55 *14*	$15/2^+$		
2323.07 *12*	$(15/2)^-$		
2412.76 *12*	$15/2^-$		E(level): given only by 1987Io01.
2525.32 *13*	$(17/2)^-$		
2624.76 *14*	$17/2^+$		
2780.12 *14*	$(19/2)^-$	0.50 ns *15*	
2875.32 *12*	$(19/2)^-$	<0.2 ns	
3072.72 *14*	$(21/2)^-$	<0.1 ns	
3130.76 *19*	$(25/2)^+$	355 μs *17*	$T_{1/2}$: weighted average: 340 μs *20* (1970He13), 390 μs *30* (1972Me15).

[†] From (α,2nγ), except for 3131 level.

$\gamma(^{117}Sb)$

E_γ[†]	I_γ[†‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α	$I_{(\gamma+ce)}$[‡]	Comments
(12)		1322.91	11/2$^-$	1310.51	(9/2)$^+$			45.2	45 *2*	ce(L)/(γ+ce)=0.83 E_γ: not seen, required by decay scheme. Eγ from E(level) difference.
58.1 *1*	6 *1*	3130.76	(25/2)$^+$	3072.72	(21/2)$^-$	M2		49.8		α(K)exp=57 *6* α(K)=38.4 *6*; α(L)=9.07 *15*; α(M)=1.90 *3*; α(N)=0.364 *6*; α(O)=0.0335 *6*; α(N+..)=0.397 *7* B(M2)(W.u.)=0.107 *6*
162.8 *2*	20 *3*	1322.91	11/2$^-$	1160.04	9/2$^+$	E1		0.0478		α(K)=0.0414 *6*; α(L)=0.00517 *8*; α(M)=0.001015 *15*; α(N)=0.000194 *3*; α(O)=1.84×10^{-5} *3* α(N+..)=0.000212 *3* B(E1)(W.u.)=1.12×10^{-6} *19*
197.4 *1*	243 *18*	3072.72	(21/2)$^-$	2875.32	(19/2)$^-$	M1		0.0943		α(K)exp=0.082 *4* α(K)=0.0815 *12*; α(L)=0.01032 *15*; α(M)=0.00204 *3*; α(N)=0.000394 *6*; α(O)=3.90×10^{-5} *6* α(N+..)=0.000433 *6* B(M1)(W.u.)>0.023
202.2 *1*	136 *11*	2525.32	(17/2)$^-$	2323.07	(15/2)$^-$	M1		0.0884		α(K)exp=0.076 *3* α(K)=0.0764 *11*; α(L)=0.00967 *14*; α(M)=0.00191 *3*; α(N)=0.000369 *6*; α(O)=3.65×10^{-5} *6* α(N+..)=0.000406 *6*
250.5 *2*	52 *5*	2875.32	(19/2)$^-$	2624.76	17/2$^+$	E1		0.01456		α(K)exp=0.0106 *18* α(K)=0.01264 *18*; α(L)=0.001554 *22*; α(M)=0.000305 *5*; α(N)=5.85×10^{-5} *9*; α(O)=5.65×10^{-6} *8* α(N+..)=6.42×10^{-5} *9* B(E1)(W.u.)>1.7×10^{-5}
254.6 *2*		2780.12	(19/2)$^-$	2525.32	(17/2)$^-$	(M1)		0.0479		α(K)exp=0.0371 *14* α(K)=0.0415 *6*; α(L)=0.00521 *8*; α(M)=0.001030 *15*; α(N)=0.000199 *3*; α(O)=1.97×10^{-5} *3* α(N+..)=0.000219 *3* I_γ: masked by contaminant.
292.6 *1*	30 *3*	3072.72	(21/2)$^-$	2780.12	(19/2)$^-$	M1,E2		0.037 *4*		α(K)exp=0.0394 *15* α(K)=0.0312 *24*; α(L)=0.0045 *9*; α(M)=0.00089 *18*; α(N)=0.00017 *4*; α(O)=1.58×10^{-5} *22* α(N+..)=0.00019 *4*
336.9 *1*	47 *2*	1871.55	13/2$^+$	1534.60	11/2$^+$	M1+E2	0.19 *6*	0.0233		α(K)exp=0.0208 *10* α(K)=0.0201 *3*; α(L)=0.00253 *4*; α(M)=0.000500 *8*; α(N)=9.64×10^{-5} *15*; α(O)=9.53×10^{-6} *14* α(N+..)=0.0001060 *17*
350.0 *1*	90 *8*	2875.32	(19/2)$^-$	2525.32	(17/2)$^-$	M1+E2	0.17 *4*	0.0211		α(K)exp=0.0207 *13* α(K)=0.0183 *3*; α(L)=0.00228 *4*; α(M)=0.000451 *7*; α(N)=8.71×10^{-5} *13*; α(O)=8.62×10^{-6} *13*

$^{117}_{51}Sb_{66}$-2

^{117}Sb IT decay (355 μs) 1987Io01 (continued)

γ(^{117}Sb) (continued)

E_γ †	I_γ †‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α	Comments
								α(N+..)=9.57×10^{-5} *14* B(E2)(W.u.)>0.079; B(M1)(W.u.)>0.00080
366.0 *1*	36 *2*	2237.55	15/2$^+$	1871.55	13/2$^+$	M1,E2	0.0192 *5*	α(K)exp=0.0182 *8* α(K)=0.0164 *3*; α(L)=0.00224 *23*; α(M)=0.00045 *5*; α(N)=8.5×10^{-5} *8*; α(O)=8.1×10^{-6} *5* α(N+..)=9.3×10^{-5} *9*
374.5 *1*	48 *5*	1534.60	11/2$^+$	1160.04	9/2$^+$	M1,E2	0.0180 *4*	α(K)exp=0.0157 *6* α(K)=0.01542 *23*; α(L)=0.00209 *19*; α(M)=0.00042 *4*; α(N)=8.0×10^{-5} *7*; α(O)=7.6×10^{-6} *4* α(N+..)=8.7×10^{-5} *8*
387.2 *1*	41 *3*	2624.76	17/2$^+$	2237.55	15/2$^+$	M1,E2	0.0164 *3*	α(K)exp=0.0143 *6* α(K)=0.01405 *21*; α(L)=0.00190 *15*; α(M)=0.00038 *4*; α(N)=7.2×10^{-5} *6*; α(O)=6.9×10^{-6} *3* α(N+..)=7.9×10^{-5} *6*
457.1 *1*	33 *4*	2780.12	(19/2)$^-$	2323.07	(15/2)$^-$	E2	0.01005	α(K)exp=0.0094 *10* α(K)=0.00856 *12*; α(L)=0.001201 *17*; α(M)=0.000239 *4*; α(N)=4.55×10^{-5} *7*; α(O)=4.25×10^{-6} *6* α(N+..)=4.97×10^{-5} *7* B(E2)(W.u.)=1.7 *6*
462.4 *2*	17 *1*	2875.32	(19/2)$^-$	2412.76	15/2$^-$			α(K)exp=0.013 *3* E_γ: this was placed by 1987Io01.
527.3 *1*	100 *3*	527.26	7/2$^+$	0.0	5/2$^+$	M1	0.00759 *11*	α(K)=0.00659 *10*; α(L)=0.000808 *12*; α(M)=0.0001593 *23*; α(N)=3.08×10^{-5} *5* α(O)=3.06×10^{-6} *5*; α(N+..)=3.39×10^{-5}
552.3 *1*	114 *8*	2875.32	(19/2)$^-$	2323.07	(15/2)$^-$	E2	0.00589 *9*	α(K)=0.00504 *7*; α(L)=0.000680 *10*; α(M)=0.0001350 *19*; α(N)=2.58×10^{-5} *4*; α(O)=2.45×10^{-6} *4* α(N+..)=2.82×10^{-5} *4* B(E2)(W.u.)>0.67
702.9 *2*	8 *1*	2237.55	15/2$^+$	1534.60	11/2$^+$	(E2)	0.00313 *5*	α(K)=0.00269 *4*; α(L)=0.000349 *5*; α(M)=6.91×10^{-5} *10*; α(N)=1.325×10^{-5} *19* α(O)=1.278×10^{-6} *18*; α(N+..)=1.453×10^{-5} *21*
711.7 *2*	8 *1*	1871.55	13/2$^+$	1160.04	9/2$^+$	(E2)	0.00303 *5*	α(K)=0.00261 *4*; α(L)=0.000338 *5*; α(M)=6.69×10^{-5} *10*; α(N)=1.283×10^{-5} *18* α(O)=1.238×10^{-6} *18*; α(N+..)=1.407×10^{-5} *20*
753.2 *1*	15 *1*	2624.76	17/2$^+$	1871.55	13/2$^+$	(E2)	0.00264 *4*	α(K)exp=0.0029 *9* α(K)=0.00227 *4*; α(L)=0.000292 *4*; α(M)=5.77×10^{-5} *8*; α(N)=1.108×10^{-5} *16*; α(O)=1.072×10^{-6} *15* α(N+..)=1.215×10^{-5} *17*
795.7 *1*	79 *4*	1322.91	11/2$^-$	527.26	7/2$^+$	M2	0.00759 *11*	α(K)exp=0.0065 *4* α(K)=0.00655 *10*; α(L)=0.000839 *12*; α(M)=0.0001663 *24*; α(N)=3.21×10^{-5} *5* α(O)=3.18×10^{-6} *5*; α(N+..)=3.53×10^{-5} B(M2)(W.u.)=0.275 *25*
1000.2 *1*	295 *20*	2323.07	(15/2)$^-$	1322.91	11/2$^-$	E2	0.001364 *20*	α(K)exp=0.00118 *13*

$^{117}_{51}Sb_{66}$-3

^{117}Sb IT decay (355 μs) 1987Io01 (continued)

$\gamma(^{117}Sb)$ (continued)

E_γ [†]	I_γ [†‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α	Comments
								α=0.001364 *20*; α(K)=0.001182 *17*; α(L)=0.0001468 *21*; α(M)=2.89×10^{-5} *4* α(N)=5.57×10^{-6} *8*; α(O)=5.46×10^{-7} *8*; α(N+..)=6.12×10^{-6}
1089.8 *1*	23 *2*	2412.76	15/2$^-$	1322.91	11/2$^-$	(E2)	0.001132 *16*	α(K)exp=0.00097 *21* α=0.001132 *16*; α(K)=0.000982 *14*; α(L)=0.0001209 *17*; α(M)=2.38×10^{-5} *4* α(N)=4.59×10^{-6} *7*; α(O)=4.52×10^{-7} *7*; α(N+..)=5.04×10^{-6}
1160.0 *1*	86 *9*	1160.04	9/2$^+$	0.0	5/2$^+$	E2	0.000994 *14*	α(K)exp=0.00095 *9* α=0.000994 *14*; α(K)=0.000860 *12*; α(L)=0.0001054 *15*; α(M)=2.08×10^{-5} *3* α(N)=4.00×10^{-6} *6*; α(O)=3.94×10^{-7} *6*; α(N+..)=7.31×10^{-6}
1310.5 *1*	36 *5*	1310.51	(9/2)$^+$	0.0	5/2$^+$	E2	0.000795 *12*	α(K)exp=0.00077 *33* α=0.000795 *12*; α(K)=0.000669 *10*; α(L)=8.12×10^{-5} *12*; α(M)=1.598×10^{-5} *23* α(N)=3.08×10^{-6} *5*; α(O)=3.05×10^{-7} *5*; α(N+..)=2.83×10^{-5}
1322.9 *1*	162 *14*	1322.91	11/2$^-$	0.0	5/2$^+$	E3	0.001460 *21*	α(K)exp=0.00116 *18* α=0.001460 *21*; α(K)=0.001252 *18*; α(L)=0.0001606 *23*; α(M)=3.18×10^{-5} *5* α(N)=6.12×10^{-6} *9*; α(O)=5.97×10^{-7} *9*; α(N+..)=1.535×10^{-5} B(E3)(W.u.)=29 *4*

[†] From 1987Io01, α(K)exp are from 1975Fr10.
[‡] For absolute intensity per 100 decays, multiply by 0.260 *12*.

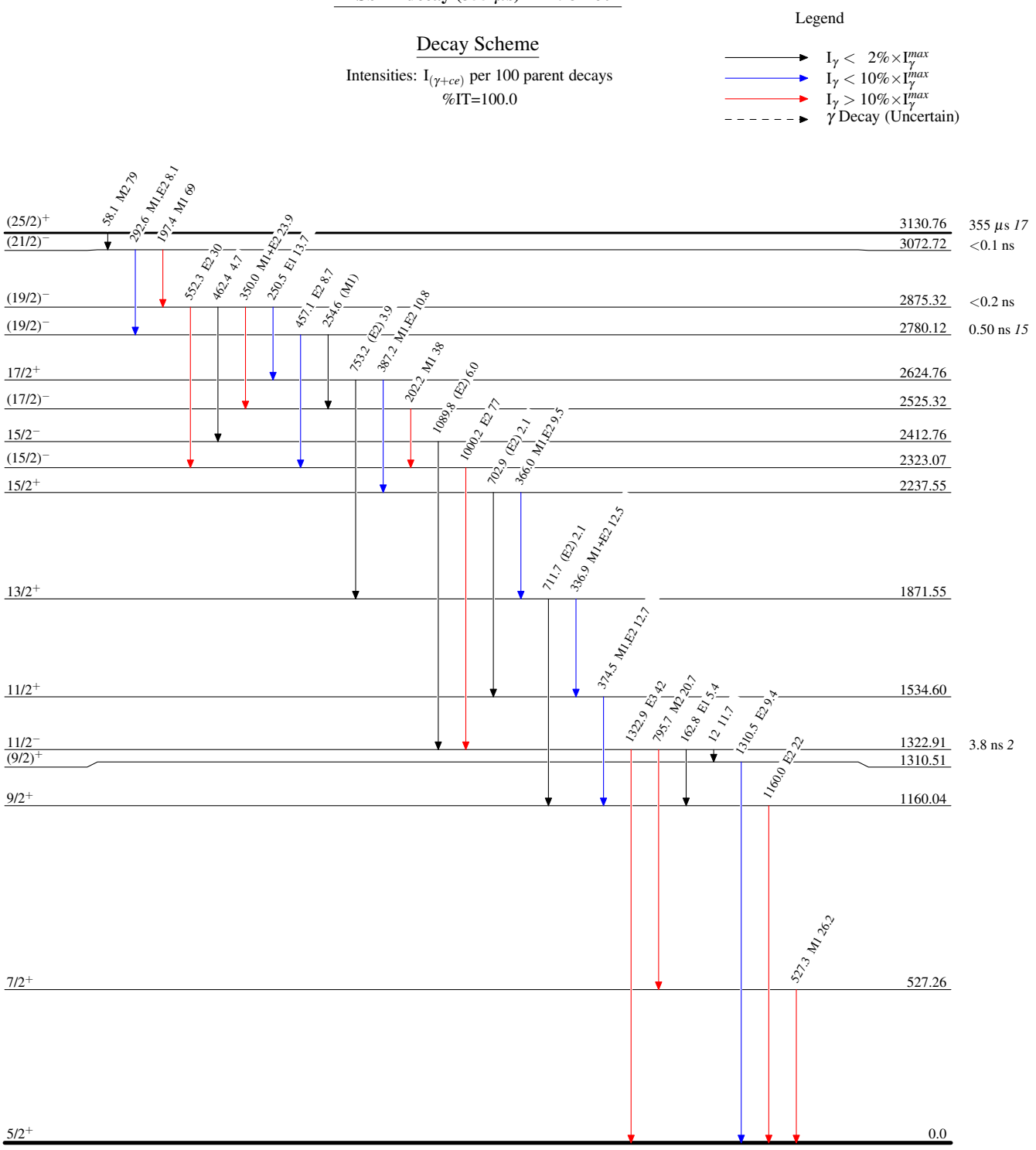
$^{117}_{51}Sb_{66}$-4

^{117}Sb IT decay (355 μs) 1987Io01

Decay Scheme

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

%IT=100.0



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