

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal and F. G. Kondev		NDS 113,1315 (2012)	1-Aug-2011

$Q(\beta^-) = -5220$ 9; $S(n) = 9270$ 8; $S(p) = 2108$ 10; $Q(\alpha) = 733$ 14 [2012Wa38](#)

Note: Current evaluation has used the following Q record -5220 9 9270 8 2106 10729 13 [2011AuZZ](#).

 ^{110}Sb LevelsCross Reference (XREF) Flags

A $^{54}\text{Fe}(^{59}\text{Co}, 2\text{pn}), ^{56}\text{Fe}(^{58}\text{Ni}, 3\text{pn})$
 B ^{110}Te ε decay

E(level) [†]	J^π [‡]	$T_{1/2}$	XREF	Comments
0.0	(3 ⁺)	23.6 s 3	A	$\% \varepsilon + \% \beta^+ = 100$ $T_{1/2}$: Weighted average of 23.0 s 4 ($\gamma(t)$ in 1972Si28), 23 s 1 (1970SuZY), 23 s 1 (1974De34) and 24.0 s 3 ($\gamma(t)$ in 1976Ox01). Other: 21.3 s 15 ($\beta(t)$ in 1972Mi26). J^π : population of $J^\pi = 2^+$ and 4^+ states in ^{110}Sb $\varepsilon + \beta^+$ decay favor $J^\pi = 3^+$. However, 1997La13 proposed $J^\pi = 4^+$, based on the assigned 195 γ (from the (5 ⁺) level) as M1(+E2) and the γ -ray decay pattern where the 1153 keV isomeric level is assigned $J^\pi = 8^-$. configuration: Possible $\pi d_{5/2} \otimes \nu d_{5/2}$. The assignment is tentative.
194.7 7	(5 ⁺)		A	J^π : 195 γ to (3 ⁺).
340.5 8	(6 ⁺)		A	J^π : 146 γ M1(+E2) to (5 ⁺).
370.1 8			A	
629.5 10			A	
1136.2 7			A	
1152.9 10	(8 ⁻)	24 ns 1	A	J^π : 812 γ (M2) to (6 ⁺). Systematics of neighboring odd-odd Sb nuclei. $T_{1/2}$: From 812 $\gamma(t)$, 146 $\gamma(t)$, 195 $\gamma(t)$ and 1035 $\gamma(t)$ in 1997La13 . configuration: possible $\pi d_{5/2} \otimes \nu h_{11/2}$ configuration, suggested also for the heavier odd-odd Sb isotopes from the measured magnetic moments (1976Ke07).
1159.4 11			A	
1298.2 8			A	
1299.8 10			A	
1508.5 11			A	
1691.1 11			A	
1768.5 11	(9 ⁻)		A	J^π : From 616 γ to (8 ⁻); 401 γ from (10 ⁻).
1841.3 9			A	
1927.3 ^b 11	(8 ⁻)		A	J^π : 201 γ from (9 ⁻); observation of strongly coupled bands with a 200 γ from 9 ⁻ to 8 ⁻ in neighboring odd-odd Sb isotopes; band member.
2128.2 ^b 11	(9 ⁻)		A	J^π : 201 γ to (8 ⁻); band member.
2169.5 13	(10 ⁻)		A	J^π : 401 γ to (9 ⁻); 996 γ from (12 ⁻).
2188.1 12	(10 ⁻)		A	J^π : 1035 γ E2 to (8 ⁻).
2441.5 ^b 12	(10 ⁻)		A	J^π : 313 γ to (9 ⁻); 514 γ to (8 ⁻); band member.
2670.1 14	(11 ⁺)		A	J^π : 482 γ E1 to (10 ⁻).
2791.0 ^b 11	(11 ⁻)		A	J^π : 349 γ to (10 ⁻); 663 γ to (9 ⁻); band member.
3121.4 12	(12 ⁻)		A	J^π : 933 γ E2 to (10 ⁻).
3165.5 ^b 12	(12 ⁻)		A	J^π : 374 γ to (11 ⁻); 724 γ to (10 ⁻); band member.
3472.4 14	(13 ⁻)		A	J^π : 306 γ to (12 ⁻); 352 γ to (12 ⁻).
3563.0 ^b 13	(13 ⁻)		A	J^π : 398 γ to (12 ⁻); 772 γ to (11 ⁻); band member.
3711.9 14	(13 ⁺)		A	J^π : 590 γ E1 to (12 ⁻); 1042 γ E2 to (11 ⁺).
3828.0 13	(14 ⁻)		A	J^π : 265 γ to (13 ⁻); 663 γ to (12 ⁻).
3996.0 ^b 14	(14 ⁻)		A	J^π : 433 γ to (13 ⁻); 830 γ to (12 ⁻); band member.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{110}Sb Levels (continued)

E(level) [†]	J ^π [‡]	XREF	Comments
4389.3 15	(13 ⁺)	A	J ^π : 1719γ to (11 ⁺).
4471.5 ^b 15	(15 ⁻)	A	J ^π : 475γ to (14 ⁻); 909γ to (13 ⁻); band member.
4662.0 16	(15 ⁺)	A	J ^π : 950γ E2 to (13 ⁺).
4907.0 17		A	
4930.1 [@] 16	(15 ⁺)	A	J ^π : 1218γ E2 to (13 ⁺); band member (π=+ for the band suggested from 482- and 590-keV gammas assumed being E1).
5010.5 14	(15 ⁺)	A	J ^π : 621γ to (13 ⁺); 1183γ to (14 ⁻).
5023		A	
5681.2 [@] 15	(17 ⁺)	A	J ^π : 751γ E2 to (15 ⁺); band member.
6505.2 [@] 18	(19 ⁺)	A	J ^π : 824γ E2 to (17 ⁺); band member.
7418.2 [@] 21	(21 ⁺)	A	J ^π : 913γ E2 to (19 ⁺); band member.
8405.2 [@] 23	(23 ⁺)	A	J ^π : 987γ E2 to (21 ⁺); band member.
9472.2 [@] 25	(25 ⁺)	A	J ^π : 1067γ E2 to (23 ⁺); band member.
10627 [@] 3	(27 ⁺)	A	J ^π : 1155γ E2 to (25 ⁺); band member.
11878 [@] 3	(29 ⁺)	A	J ^π : 1251γ E2 to (27 ⁺); band member.
13233 [@] 3	(31 ⁺)	A	J ^π : 1355γ E2 to (29 ⁺); band member.
14705 [@] 4	(33 ⁺)	A	J ^π : 1472γ E2 to (31 ⁺); band member.
16319 [@] 4	(35 ⁺)	A	J ^π : 1614γ E2 to (33 ⁺); band member.
18103 [@] 4	(37 ⁺)	A	J ^π : 1784γ E2 to (35 ⁺); band member.
20084 [@] 4	(39 ⁺)	A	J ^π : 1981γ E2 to (37 ⁺); band member.
22301 [@] 4	(41 ⁺)	A	J ^π : 2217γ E2 to (39 ⁺); band member.
24786 [@] 4	(43 ⁺)	A	J ^π : 2485γ E2 to (41 ⁺); band member.
27548 [@]	(45 ⁺)	A	J ^π : 2762γ E2 to (43 ⁺); band member.
x+0.0 ^{&}	(19 ⁻) [#]	A	Additional information 1.
x+824.0 ^{&} 10	(21 ⁻)	A	J ^π : 824γ E2 to (19 ⁻); band member.
x+1754.0 ^{&} 15	(23 ⁻)	A	J ^π : 930γ E2 to (21 ⁻); band member.
x+2762.0 ^{&} 18	(25 ⁻)	A	J ^π : 1008γ E2 to (23 ⁻); band member.
x+3872.0 ^{&} 20	(27 ⁻)	A	J ^π : 1110γ E2 to (25 ⁻); band member.
x+5118.0 ^{&} 23	(29 ⁻)	A	J ^π : 1246γ E2 to (27 ⁻); band member.
x+6527.0 ^{&} 25	(31 ⁻)	A	J ^π : 1409γ E2 to (29 ⁻); band member.
x+8146 ^{&} 3	(33 ⁻)	A	J ^π : 1619γ E2 to (31 ⁻); band member.
x+10007 ^{&} 3	(35 ⁻)	A	J ^π : 1861γ E2 to (33 ⁻); band member.
x+12076 ^{&} 3	(37 ⁻)	A	J ^π : 2069γ E2 to (35 ⁻); band member.
y+0.0 ^a	(20 ⁻) [#]	A	Additional information 2.
y+882.0 ^a 10	(22 ⁻)	A	J ^π : 882γ E2 to (20 ⁻); band member.
y+1854.0 ^a 15	(24 ⁻)	A	J ^π : 972γ E2 to (22 ⁻); band member.
y+2924.0 ^a 18	(26 ⁻)	A	J ^π : 1070γ E2 to (24 ⁻); band member.
y+4141.0 ^a 20	(28 ⁻)	A	J ^π : 1217γ E2 to (26 ⁻); band member.
y+5513.0 ^a 23	(30 ⁻)	A	J ^π : 1372γ E2 to (28 ⁻); band member.
y+7076.0 ^a 25	(32 ⁻)	A	J ^π : 1563γ E2 to (30 ⁻); band member.
y+8824 ^a 3	(34 ⁻)	A	J ^π : 1748γ E2 to (32 ⁻); band member.
y+10756 ^a 3	(36 ⁻)	A	J ^π : 1932γ E2 to (34 ⁻); band member.
y+12880 ^a	(38 ⁻)	A	J ^π : 2124γ E2 to (36 ⁻); band member.

[†] From least-squares fit to Eγ's. ΔEγ=1 keV by the evaluators.[‡] Based on deduced γ-ray transition multiplicities using DCO ratios (1997La13), apparent band structures and systematics.[#] Discrete decays out of this band have not been established. However, feeding of preferentially negative parity, low-spin states has

Adopted Levels, Gammas (continued) ^{110}Sb Levels (continued)

been observed.

@ Band(A): band based on the 4930 keV level.

& Band(B): band based on the $J^\pi=(19^-)$ level.

^a Band(C): band based on the $J^\pi=(20^-)$ level.

^b Band(D): band based on the 1927 keV level.

$\gamma(^{110}\text{Sb})$								Comments
$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	I_γ	E_f	J_f^π	Mult. [#]	$\alpha^\ddagger$	
194.7	(5 ⁺)	195		0.0	(3 ⁺)			E_γ : Assigned M1+E2 in 1997La13 , where the authors stated that the measured DCO ratio was consistent with that for a stretch dipole transition with a small multiple mixing ratio.
340.5	(6 ⁺)	146		194.7	(5 ⁺)	M1(+E2)	0.32 11	$\alpha(\text{K})=0.26$ 8; $\alpha(\text{L})=0.05$ 3; $\alpha(\text{M})=0.010$ 6; $\alpha(\text{N}+..)=0.0021$ 11 $\alpha(\text{N})=0.0019$ 10; $\alpha(\text{O})=0.00016$ 8
370.1		370		0.0	(3 ⁺)			
629.5		435		194.7	(5 ⁺)			
1136.2		766		370.1				
		796		340.5	(6 ⁺)			
		942		194.7	(5 ⁺)			
		1136		0.0	(3 ⁺)			
1152.9	(8 ⁻)	812	100	340.5	(6 ⁺)	(M2)	0.00718 10	$\alpha(\text{K})=0.00620$ 9; $\alpha(\text{L})=0.000793$ 11; $\alpha(\text{M})=0.0001572$ 22; $\alpha(\text{N}+..)=3.34\times 10^{-5}$ 5 $\alpha(\text{N})=3.04\times 10^{-5}$ 5; $\alpha(\text{O})=3.01\times 10^{-6}$ 5 B(M2)(W.u.)=0.159 7 Mult.: From systematics and observed transition strength and L=2 from measured DCO.
1159.4		819		340.5	(6 ⁺)			
1298.2		928		370.1				
		958		340.5	(6 ⁺)			
		1103		194.7	(5 ⁺)			
1299.8		147		1152.9	(8 ⁻)			
		164		1136.2				
1508.5		1168		340.5	(6 ⁺)			
1691.1		538		1152.9	(8 ⁻)			
1768.5	(9 ⁻)	260		1508.5				
		616		1152.9	(8 ⁻)			
1841.3		150		1691.1				
		542		1299.8				
		543		1298.2				
		682		1159.4				
		688		1152.9	(8 ⁻)			
		1212		629.5				
1927.3	(8 ⁻)	86		1841.3				
		628		1299.8				
2128.2	(9 ⁻)	201		1927.3	(8 ⁻)			
		975		1152.9	(8 ⁻)			
2169.5	(10 ⁻)	401		1768.5	(9 ⁻)			
2188.1	(10 ⁻)	1035		1152.9	(8 ⁻)	E2	0.001265 18	$\alpha(\text{K})=0.001097$ 16; $\alpha(\text{L})=0.0001358$ 19; $\alpha(\text{M})=2.68\times 10^{-5}$ 4; $\alpha(\text{N}+..)=5.66\times 10^{-6}$ $\alpha(\text{N})=5.15\times 10^{-6}$ 8; $\alpha(\text{O})=5.06\times 10^{-7}$ 7
2441.5	(10 ⁻)	313		2128.2	(9 ⁻)			
		514		1927.3	(8 ⁻)			
2670.1	(11 ⁺)	482		2188.1	(10 ⁻)	E1	0.00274 4	$\alpha(\text{K})=0.00239$ 4; $\alpha(\text{L})=0.000288$ 4;

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{110}\text{Sb})$ (continued)							
$E_i(\text{level})$	J_i^π	$E_\gamma^{\ddagger}$	E_f	J_f^π	Mult. [#]	$\alpha^{\ddagger}$	Comments
							$\alpha(\text{M})=5.66\times 10^{-5}$ 8; $\alpha(\text{N}+..)=1.197\times 10^{-5}$ 17 $\alpha(\text{N})=1.090\times 10^{-5}$ 16; $\alpha(\text{O})=1.069\times 10^{-6}$ 15
2791.0	(11 ⁻)	349	2441.5	(10 ⁻)			
		663	2128.2	(9 ⁻)			
		1023	1768.5	(9 ⁻)			
3121.4	(12 ⁻)	331	2791.0	(11 ⁻)			
		933	2188.1	(10 ⁻)	E2	0.001594 23	$\alpha(\text{K})=0.001380$ 20; $\alpha(\text{L})=0.0001725$ 25; $\alpha(\text{M})=3.40\times 10^{-5}$ 5; $\alpha(\text{N}+..)=7.19\times 10^{-6}$ $\alpha(\text{N})=6.55\times 10^{-6}$ 10; $\alpha(\text{O})=6.40\times 10^{-7}$ 9
3165.5	(12 ⁻)	374	2791.0	(11 ⁻)			
		724	2441.5	(10 ⁻)			
		996	2169.5	(10 ⁻)			
3472.4	(13 ⁻)	306	3165.5	(12 ⁻)			
		352	3121.4	(12 ⁻)			
3563.0	(13 ⁻)	398	3165.5	(12 ⁻)			
		772	2791.0	(11 ⁻)			
3711.9	(13 ⁺)	590	3121.4	(12 ⁻)	E1	0.001722 25	$\alpha(\text{K})=0.001499$ 21; $\alpha(\text{L})=0.000180$ 3; $\alpha(\text{M})=3.53\times 10^{-5}$ 5; $\alpha(\text{N}+..)=7.48\times 10^{-6}$ 11 $\alpha(\text{N})=6.81\times 10^{-6}$ 10; $\alpha(\text{O})=6.71\times 10^{-7}$ 10
		1042	2670.1	(11 ⁺)	E2	0.001247 18	$\alpha(\text{K})=0.001081$ 16; $\alpha(\text{L})=0.0001337$ 19; $\alpha(\text{M})=2.64\times 10^{-5}$ 4; $\alpha(\text{N}+..)=5.57\times 10^{-6}$ $\alpha(\text{N})=5.08\times 10^{-6}$ 8; $\alpha(\text{O})=4.99\times 10^{-7}$ 7
3828.0	(14 ⁻)	265	3563.0	(13 ⁻)			
		663	3165.5	(12 ⁻)			
3996.0	(14 ⁻)	433	3563.0	(13 ⁻)			
		830	3165.5	(12 ⁻)			
4389.3	(13 ⁺)	1719	2670.1	(11 ⁺)			
4471.5	(15 ⁻)	475	3996.0	(14 ⁻)			
		909	3563.0	(13 ⁻)			
4662.0	(15 ⁺)	950	3711.9	(13 ⁺)	E2	0.001530 22	$\alpha(\text{K})=0.001325$ 19; $\alpha(\text{L})=0.0001654$ 24; $\alpha(\text{M})=3.26\times 10^{-5}$ 5; $\alpha(\text{N}+..)=6.89\times 10^{-6}$ $\alpha(\text{N})=6.28\times 10^{-6}$ 9; $\alpha(\text{O})=6.14\times 10^{-7}$ 9
4907.0		1079	3828.0	(14 ⁻)			
4930.1	(15 ⁺)	541 [@]	4389.3	(13 ⁺)			
		1218	3711.9	(13 ⁺)	E2	0.000904 13	$\alpha(\text{K})=0.000777$ 11; $\alpha(\text{L})=9.48\times 10^{-5}$ 14; $\alpha(\text{M})=1.87\times 10^{-5}$ 3; $\alpha(\text{N}+..)=1.311\times 10^{-5}$ 1 $\alpha(\text{N})=3.60\times 10^{-6}$ 5; $\alpha(\text{O})=3.55\times 10^{-7}$ 5; $\alpha(\text{IPF})=9.16\times 10^{-6}$ 13
5010.5	(15 ⁺)	621	4389.3	(13 ⁺)			
		1183	3828.0	(14 ⁻)			
5023		552 [@]	4471.5	(15 ⁻)			
		1027 [@]	3996.0	(14 ⁻)			
5681.2	(17 ⁺)	671	5010.5	(15 ⁺)			
		751	4930.1	(15 ⁺)	E2	0.00265 4	$\alpha(\text{K})=0.00229$ 4; $\alpha(\text{L})=0.000294$ 5; $\alpha(\text{M})=5.81\times 10^{-5}$ 9; $\alpha(\text{N}+..)=1.224\times 10^{-5}$ 18 $\alpha(\text{N})=1.116\times 10^{-5}$ 16; $\alpha(\text{O})=1.080\times 10^{-6}$ 16
		1019	4662.0	(15 ⁺)	E2	0.001309 19	$\alpha(\text{K})=0.001135$ 16; $\alpha(\text{L})=0.0001406$ 20; $\alpha(\text{M})=2.77\times 10^{-5}$ 4; $\alpha(\text{N}+..)=5.86\times 10^{-6}$ $\alpha(\text{N})=5.34\times 10^{-6}$ 8; $\alpha(\text{O})=5.24\times 10^{-7}$ 8
6505.2	(19 ⁺)	824	5681.2	(17 ⁺)	E2	0.00212 3	$\alpha(\text{K})=0.00184$ 3; $\alpha(\text{L})=0.000233$ 4; $\alpha(\text{M})=4.60\times 10^{-5}$ 7; $\alpha(\text{N}+..)=9.70\times 10^{-6}$ 14 $\alpha(\text{N})=8.84\times 10^{-6}$ 13; $\alpha(\text{O})=8.59\times 10^{-7}$ 12

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{110}\text{Sb})$ (continued)							Comments
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	E_f	J_f^π	Mult.#	$\alpha^\dagger$	
7418.2	(21 ⁺)	913	6505.2	(19 ⁺)	E2	0.001674 24	$\alpha(\text{K})=0.001449$ 21; $\alpha(\text{L})=0.000182$ 3; $\alpha(\text{M})=3.58\times 10^{-5}$ 5; $\alpha(\text{N}+..)=7.57\times 10^{-6}$ 11
8405.2	(23 ⁺)	987	7418.2	(21 ⁺)	E2	0.001405 20	$\alpha(\text{N})=6.89\times 10^{-6}$ 10; $\alpha(\text{O})=6.74\times 10^{-7}$ 10 $\alpha(\text{K})=0.001217$ 17; $\alpha(\text{L})=0.0001513$ 22; $\alpha(\text{M})=2.98\times 10^{-5}$ 5; $\alpha(\text{N}+..)=6.31\times 10^{-6}$
9472.2	(25 ⁺)	1067	8405.2	(23 ⁺)	E2	0.001184 17	$\alpha(\text{N})=5.75\times 10^{-6}$ 8; $\alpha(\text{O})=5.63\times 10^{-7}$ 8 $\alpha(\text{K})=0.001027$ 15; $\alpha(\text{L})=0.0001267$ 18; $\alpha(\text{M})=2.50\times 10^{-5}$ 4; $\alpha(\text{N}+..)=5.29\times 10^{-6}$
10627	(27 ⁺)	1155	9472.2	(25 ⁺)	E2	0.001003 14	$\alpha(\text{N})=4.81\times 10^{-6}$ 7; $\alpha(\text{O})=4.73\times 10^{-7}$ 7 $\alpha(\text{K})=0.000868$ 13; $\alpha(\text{L})=0.0001064$ 15; $\alpha(\text{M})=2.10\times 10^{-5}$ 3; $\alpha(\text{N}+..)=7.00\times 10^{-6}$
11878	(29 ⁺)	1251	10627	(27 ⁺)	E2	0.000861 12	$\alpha(\text{N})=4.04\times 10^{-6}$ 6; $\alpha(\text{O})=3.98\times 10^{-7}$ 6; $\alpha(\text{IPF})=2.57\times 10^{-6}$ 4 $\alpha(\text{K})=0.000736$ 11; $\alpha(\text{L})=8.96\times 10^{-5}$ 13; $\alpha(\text{M})=1.763\times 10^{-5}$ 25; $\alpha(\text{N}+..)=1.784\times 10^{-5}$
13233	(31 ⁺)	1355	11878	(29 ⁺)	E2	0.000755 11	$\alpha(\text{N})=3.40\times 10^{-6}$ 5; $\alpha(\text{O})=3.36\times 10^{-7}$ 5; $\alpha(\text{IPF})=1.411\times 10^{-5}$ 20 $\alpha(\text{K})=0.000626$ 9; $\alpha(\text{L})=7.57\times 10^{-5}$ 11; $\alpha(\text{M})=1.490\times 10^{-5}$ 21; $\alpha(\text{N}+..)=3.86\times 10^{-5}$ 6
14705	(33 ⁺)	1472	13233	(31 ⁺)	E2	0.000681 10	$\alpha(\text{N})=2.88\times 10^{-6}$ 4; $\alpha(\text{O})=2.85\times 10^{-7}$ 4; $\alpha(\text{IPF})=3.55\times 10^{-5}$ 5 $\alpha(\text{K})=0.000531$ 8; $\alpha(\text{L})=6.39\times 10^{-5}$ 9; $\alpha(\text{M})=1.258\times 10^{-5}$ 18; $\alpha(\text{N}+..)=7.36\times 10^{-5}$ 11
16319	(35 ⁺)	1614	14705	(33 ⁺)	E2	0.000634 9	$\alpha(\text{N})=2.43\times 10^{-6}$ 4; $\alpha(\text{O})=2.41\times 10^{-7}$ 4; $\alpha(\text{IPF})=7.10\times 10^{-5}$ 10 $\alpha(\text{K})=0.000444$ 7; $\alpha(\text{L})=5.32\times 10^{-5}$ 8; $\alpha(\text{M})=1.046\times 10^{-5}$ 15; $\alpha(\text{N}+..)=0.0001263$ 1
18103	(37 ⁺)	1784	16319	(35 ⁺)	E2	0.000620 9	$\alpha(\text{N})=2.02\times 10^{-6}$ 3; $\alpha(\text{O})=2.01\times 10^{-7}$ 3; $\alpha(\text{IPF})=0.0001240$ 18 $\alpha(\text{K})=0.000367$ 6; $\alpha(\text{L})=4.38\times 10^{-5}$ 7; $\alpha(\text{M})=8.60\times 10^{-6}$ 12; $\alpha(\text{N}+..)=0.000200$ 3
20084	(39 ⁺)	1981	18103	(37 ⁺)	E2	0.000637 9	$\alpha(\text{N})=1.662\times 10^{-6}$ 24; $\alpha(\text{O})=1.655\times 10^{-7}$ 24; $\alpha(\text{IPF})=0.000198$ 3 $\alpha(\text{K})=0.000303$ 5; $\alpha(\text{L})=3.59\times 10^{-5}$ 5; $\alpha(\text{M})=7.05\times 10^{-6}$ 10; $\alpha(\text{N}+..)=0.000291$ 4
22301	(41 ⁺)	2217	20084	(39 ⁺)	E2	0.000686 10	$\alpha(\text{N})=1.362\times 10^{-6}$ 19; $\alpha(\text{O})=1.358\times 10^{-7}$ 19; $\alpha(\text{IPF})=0.000290$ 4 $\alpha(\text{K})=0.000247$ 4; $\alpha(\text{L})=2.91\times 10^{-5}$ 4; $\alpha(\text{M})=5.72\times 10^{-6}$ 8; $\alpha(\text{N}+..)=0.000405$ 6
24786	(43 ⁺)	2485	22301	(41 ⁺)	E2	0.000763 11	$\alpha(\text{N})=1.106\times 10^{-6}$ 16; $\alpha(\text{O})=1.104\times 10^{-7}$ 16; $\alpha(\text{IPF})=0.000403$ 6 $\alpha(\text{K})=0.000202$ 3; $\alpha(\text{L})=2.37\times 10^{-5}$ 4; $\alpha(\text{M})=4.65\times 10^{-6}$ 7; $\alpha(\text{N}+..)=0.000533$ 8
27548	(45 ⁺)	2762 [@]	24786	(43 ⁺)	E2	0.000852 12	$\alpha(\text{N})=9.00\times 10^{-7}$ 13; $\alpha(\text{O})=9.00\times 10^{-8}$ 13; $\alpha(\text{IPF})=0.000532$ 8 $\alpha(\text{K})=0.0001677$ 24; $\alpha(\text{L})=1.97\times 10^{-5}$ 3; $\alpha(\text{M})=3.86\times 10^{-6}$ 6; $\alpha(\text{N}+..)=0.000661$ 1
x+824.0	(21 ⁻)	824	x+0.0	(19 ⁻)	E2	0.00212 3	$\alpha(\text{N})=7.46\times 10^{-7}$ 11; $\alpha(\text{O})=7.47\times 10^{-8}$ 11; $\alpha(\text{IPF})=0.000660$ 10 $\alpha(\text{K})=0.00184$ 3; $\alpha(\text{L})=0.000233$ 4; $\alpha(\text{M})=4.60\times 10^{-5}$ 7; $\alpha(\text{N}+..)=9.70\times 10^{-6}$ 14
							$\alpha(\text{N})=8.84\times 10^{-6}$ 13; $\alpha(\text{O})=8.59\times 10^{-7}$ 12

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{110}\text{Sb})$ (continued)							Comments
$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	E_f	J_f^π	Mult. [#]	$\alpha^\ddagger$	
x+1754.0	(23 ⁻)	930	x+824.0	(21 ⁻)	E2	0.001605 23	$\alpha(\text{K})=0.001390$ 20; $\alpha(\text{L})=0.0001738$ 25; $\alpha(\text{M})=3.43\times 10^{-5}$ 5; $\alpha(\text{N}+..)=7.25\times 10^{-6}$ $\alpha(\text{N})=6.60\times 10^{-6}$ 10; $\alpha(\text{O})=6.45\times 10^{-7}$ 9
x+2762.0	(25 ⁻)	1008	x+1754.0	(23 ⁻)	E2	0.001341 19	$\alpha(\text{K})=0.001162$ 17; $\alpha(\text{L})=0.0001442$ 21; $\alpha(\text{M})=2.84\times 10^{-5}$ 4; $\alpha(\text{N}+..)=6.01\times 10^{-6}$ $\alpha(\text{N})=5.47\times 10^{-6}$ 8; $\alpha(\text{O})=5.37\times 10^{-7}$ 8
x+3872.0	(27 ⁻)	1110	x+2762.0	(25 ⁻)	E2	0.001089 16	$\alpha(\text{K})=0.000944$ 14; $\alpha(\text{L})=0.0001161$ 17; $\alpha(\text{M})=2.29\times 10^{-5}$ 4; $\alpha(\text{N}+..)=5.50\times 10^{-6}$ $\alpha(\text{N})=4.41\times 10^{-6}$ 7; $\alpha(\text{O})=4.34\times 10^{-7}$ 6; $\alpha(\text{IPF})=6.61\times 10^{-7}$ 10
x+5118.0	(29 ⁻)	1246	x+3872.0	(27 ⁻)	E2	0.000867 13	$\alpha(\text{K})=0.000742$ 11; $\alpha(\text{L})=9.03\times 10^{-5}$ 13; $\alpha(\text{M})=1.779\times 10^{-5}$ 25; $\alpha(\text{N}+..)=1.708\times 10^{-5}$ $\alpha(\text{N})=3.43\times 10^{-6}$ 5; $\alpha(\text{O})=3.39\times 10^{-7}$ 5; $\alpha(\text{IPF})=1.331\times 10^{-5}$ 19
x+6527.0	(31 ⁻)	1409	x+5118.0	(29 ⁻)	E2	0.000716 10	$\alpha(\text{K})=0.000579$ 9; $\alpha(\text{L})=6.99\times 10^{-5}$ 10; $\alpha(\text{M})=1.375\times 10^{-5}$ 20; $\alpha(\text{N}+..)=5.37\times 10^{-5}$ 8 $\alpha(\text{N})=2.65\times 10^{-6}$ 4; $\alpha(\text{O})=2.63\times 10^{-7}$ 4; $\alpha(\text{IPF})=5.08\times 10^{-5}$ 8
x+8146	(33 ⁻)	1619	x+6527.0	(31 ⁻)	E2	0.000633 9	$\alpha(\text{K})=0.000442$ 7; $\alpha(\text{L})=5.29\times 10^{-5}$ 8; $\alpha(\text{M})=1.040\times 10^{-5}$ 15; $\alpha(\text{N}+..)=0.0001283$ 1 $\alpha(\text{N})=2.01\times 10^{-6}$ 3; $\alpha(\text{O})=2.00\times 10^{-7}$ 3; $\alpha(\text{IPF})=0.0001261$ 18
x+10007	(35 ⁻)	1861	x+8146	(33 ⁻)	E2	0.000623 9	$\alpha(\text{K})=0.000340$ 5; $\alpha(\text{L})=4.04\times 10^{-5}$ 6; $\alpha(\text{M})=7.94\times 10^{-6}$ 12; $\alpha(\text{N}+..)=0.000235$ 4 $\alpha(\text{N})=1.533\times 10^{-6}$ 22; $\alpha(\text{O})=1.527\times 10^{-7}$ 22; $\alpha(\text{IPF})=0.000233$ 4
x+12076	(37 ⁻)	2069	x+10007	(35 ⁻)	E2	0.000653 10	$\alpha(\text{K})=0.000280$ 4; $\alpha(\text{L})=3.31\times 10^{-5}$ 5; $\alpha(\text{M})=6.50\times 10^{-6}$ 9; $\alpha(\text{N}+..)=0.000334$ 5 $\alpha(\text{N})=1.256\times 10^{-6}$ 18; $\alpha(\text{O})=1.253\times 10^{-7}$ 18; $\alpha(\text{IPF})=0.000332$ 5
y+882.0	(22 ⁻)	882	y+0.0	(20 ⁻)	E2	0.00181 3	$\alpha(\text{K})=0.001568$ 22; $\alpha(\text{L})=0.000197$ 3; $\alpha(\text{M})=3.89\times 10^{-5}$ 6; $\alpha(\text{N}+..)=8.22\times 10^{-6}$ 12 $\alpha(\text{N})=7.49\times 10^{-6}$ 11; $\alpha(\text{O})=7.30\times 10^{-7}$ 11
y+1854.0	(24 ⁻)	972	y+882.0	(22 ⁻)	E2	0.001454 21	$\alpha(\text{K})=0.001259$ 18; $\alpha(\text{L})=0.0001568$ 22; $\alpha(\text{M})=3.09\times 10^{-5}$ 5; $\alpha(\text{N}+..)=6.54\times 10^{-6}$ $\alpha(\text{N})=5.95\times 10^{-6}$ 9; $\alpha(\text{O})=5.83\times 10^{-7}$ 9
y+2924.0	(26 ⁻)	1070	y+1854.0	(24 ⁻)	E2	0.001177 17	$\alpha(\text{K})=0.001021$ 15; $\alpha(\text{L})=0.0001260$ 18; $\alpha(\text{M})=2.48\times 10^{-5}$ 4; $\alpha(\text{N}+..)=5.25\times 10^{-6}$ $\alpha(\text{N})=4.78\times 10^{-6}$ 7; $\alpha(\text{O})=4.70\times 10^{-7}$ 7
y+4141.0	(28 ⁻)	1217	y+2924.0	(26 ⁻)	E2	0.000905 13	$\alpha(\text{K})=0.000779$ 11; $\alpha(\text{L})=9.50\times 10^{-5}$ 14; $\alpha(\text{M})=1.87\times 10^{-5}$ 3; $\alpha(\text{N}+..)=1.298\times 10^{-5}$ 1 $\alpha(\text{N})=3.61\times 10^{-6}$ 5; $\alpha(\text{O})=3.56\times 10^{-7}$ 5; $\alpha(\text{IPF})=9.02\times 10^{-6}$ 13
y+5513.0	(30 ⁻)	1372	y+4141.0	(28 ⁻)	E2	0.000742 11	$\alpha(\text{K})=0.000610$ 9; $\alpha(\text{L})=7.38\times 10^{-5}$ 11; $\alpha(\text{M})=1.452\times 10^{-5}$ 21; $\alpha(\text{N}+..)=4.31\times 10^{-5}$ 6 $\alpha(\text{N})=2.80\times 10^{-6}$ 4; $\alpha(\text{O})=2.78\times 10^{-7}$ 4; $\alpha(\text{IPF})=4.00\times 10^{-5}$ 6
y+7076.0	(32 ⁻)	1563	y+5513.0	(30 ⁻)	E2	0.000647 9	$\alpha(\text{K})=0.000473$ 7; $\alpha(\text{L})=5.67\times 10^{-5}$ 8; $\alpha(\text{M})=1.115\times 10^{-5}$ 16; $\alpha(\text{N}+..)=0.0001062$ 1 $\alpha(\text{N})=2.15\times 10^{-6}$ 3; $\alpha(\text{O})=2.14\times 10^{-7}$ 3; $\alpha(\text{IPF})=0.0001039$ 15

Continued on next page (footnotes at end of table)

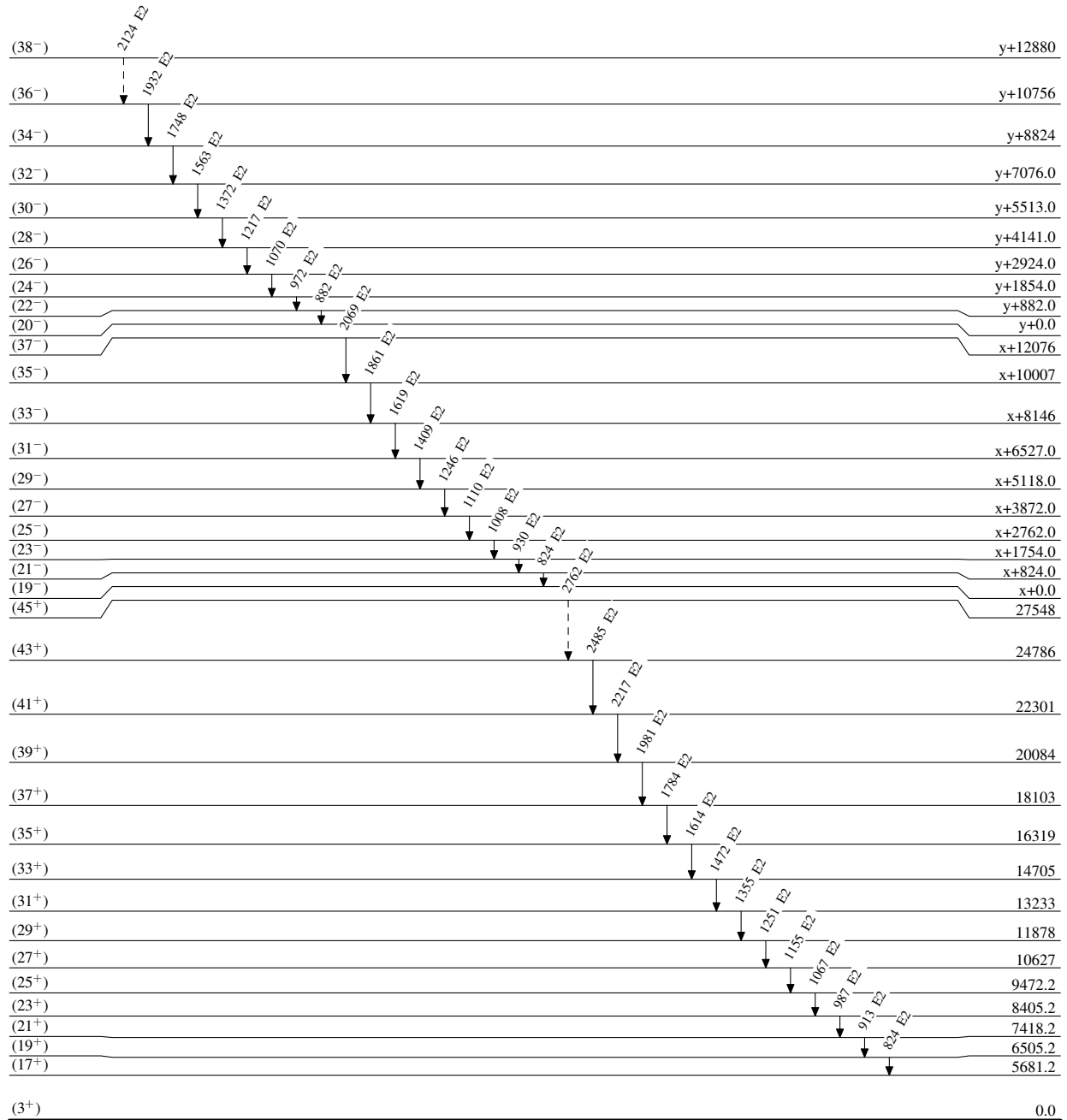
Adopted Levels, Gammas (continued)

$\gamma(^{110}\text{Sb})$ (continued)							Comments
$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	E_f	J_f^π	Mult. [#]	$\alpha^\dagger$	
y+8824	(34 ⁻)	1748	y+7076.0	(32 ⁻)	E2	0.000620 9	$\alpha(\text{K})=0.000382$ 6; $\alpha(\text{L})=4.55\times 10^{-5}$ 7; $\alpha(\text{M})=8.95\times 10^{-6}$ 13; $\alpha(\text{N}+..)=0.000184$ 3 $\alpha(\text{N})=1.729\times 10^{-6}$ 25; $\alpha(\text{O})=1.721\times 10^{-7}$ 24; $\alpha(\text{IPF})=0.000182$ 3
y+10756	(36 ⁻)	1932	y+8824	(34 ⁻)	E2	0.000630 9	$\alpha(\text{K})=0.000317$ 5; $\alpha(\text{L})=3.76\times 10^{-5}$ 6; $\alpha(\text{M})=7.39\times 10^{-6}$ 11; $\alpha(\text{N}+..)=0.000268$ 4 $\alpha(\text{N})=1.428\times 10^{-6}$ 20; $\alpha(\text{O})=1.423\times 10^{-7}$ 20; $\alpha(\text{IPF})=0.000266$ 4
y+12880	(38 ⁻)	2124 [@]	y+10756	(36 ⁻)	E2	0.000664 10	$\alpha(\text{K})=0.000267$ 4; $\alpha(\text{L})=3.15\times 10^{-5}$ 5; $\alpha(\text{M})=6.19\times 10^{-6}$ 9; $\alpha(\text{N}+..)=0.000360$ 5 $\alpha(\text{N})=1.197\times 10^{-6}$ 17; $\alpha(\text{O})=1.194\times 10^{-7}$ 17; $\alpha(\text{IPF})=0.000359$ 5

[†] Additional information 3.[‡] From $^{54}\text{Fe}(^{59}\text{Co},2\text{pn})$, $^{56}\text{Fe}(^{58}\text{Ni},3\text{pn})$ (1997La13).[#] From measured DCO ratios, obtained gating on intense stretched E2 transitions at band 1, but authors did not provide the numerical values. Stretched quadrupole transitions are assumed to be E2, stretched dipole transitions to be E1.[@] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Legend

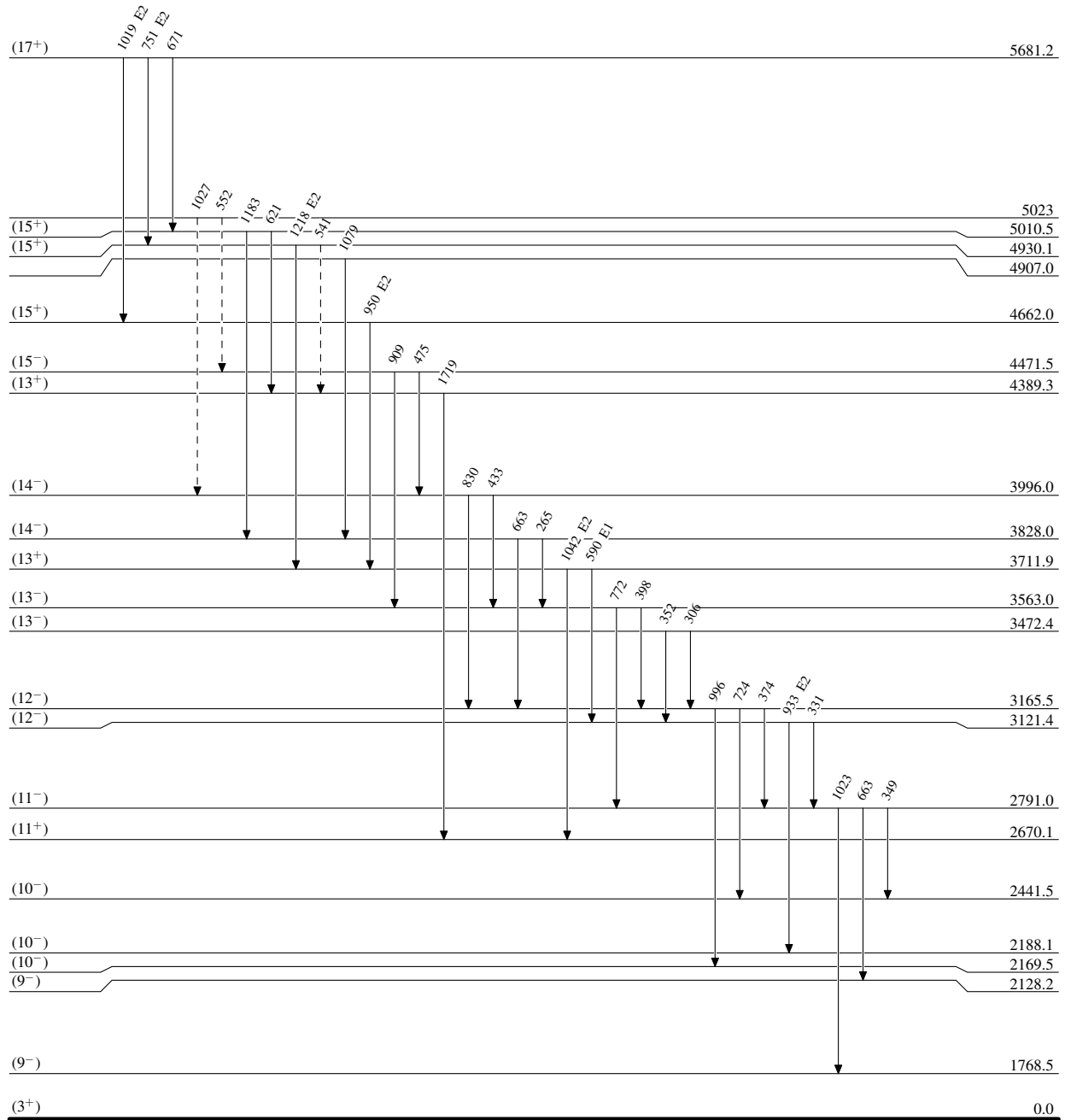
Level SchemeIntensities: Relative $I_{(\gamma+ce)}$ -----► γ Decay (Uncertain)

23.6 s 3

 $^{110}_{51}\text{Sb}_{59}$

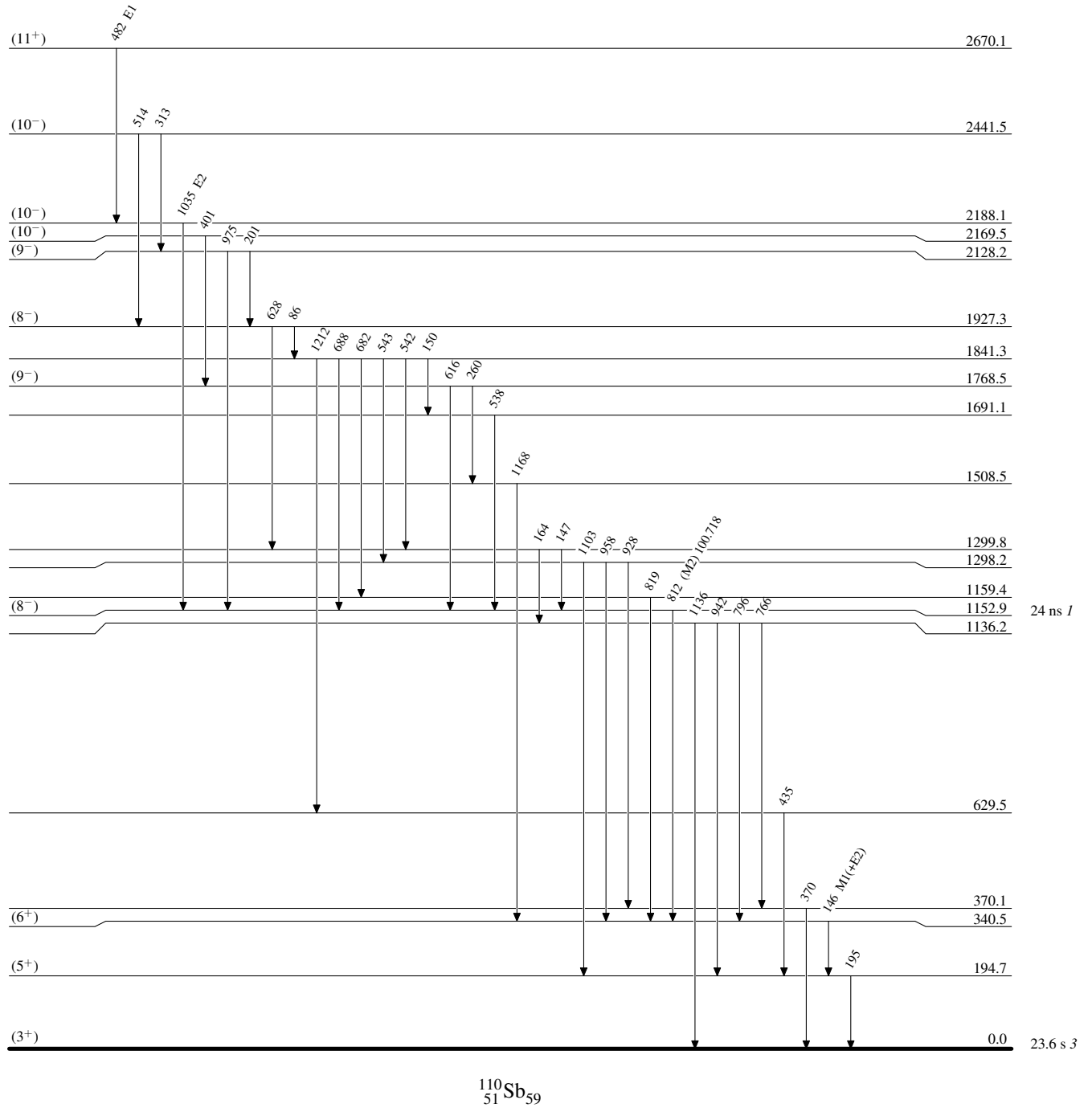
Adopted Levels, Gammas

Legend

Level Scheme (continued)Intensities: Relative $I_{(\gamma+ce)}$ -----► γ Decay (Uncertain)

23.6 s 3

 $^{110}_{51}\text{Sb}_{59}$

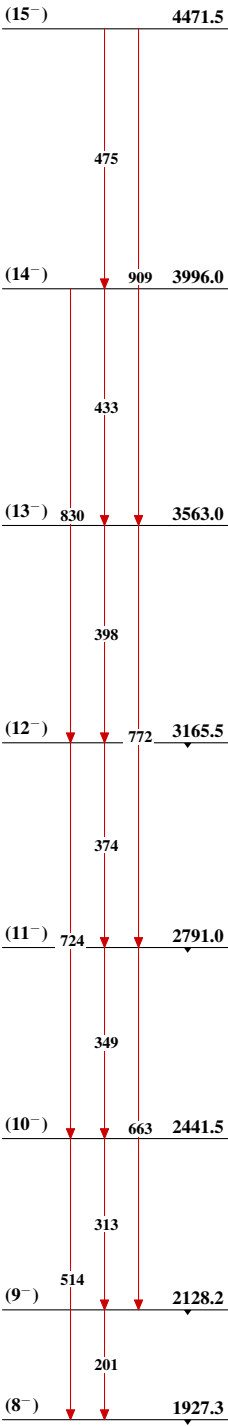
Adopted Levels, Gammas**Level Scheme (continued)**Intensities: Relative $I_{(\gamma+ce)}$ 

Adopted Levels, Gammas

			Band(C): Band based on the $J^\pi=(20^-)$ level		
			(38 ⁻)	y+12880	
			↓ 2124		
			(36 ⁻)	y+10756	
			↓ 1932		
			(34 ⁻)	y+8824	
			↓ 1748		
			(32 ⁻)	y+7076.0	
			↓ 1563		
			(30 ⁻)	y+5513.0	
			↓ 1372		
			(28 ⁻)	y+4141.0	
			↓ 1217		
			(26 ⁻)	y+2924.0	
			↓ 1070		
			(24 ⁻)	y+1854.0	
			↓ 972		
			(22 ⁻)	y+882.0	
			↓ 882		
			(20 ⁻)	y+0.0	
			Band(B): Band based on the $J^\pi=(19^-)$ level		
			(37 ⁻)	x+12076	
			↓ 2069		
			(35 ⁻)	x+10007	
			↓ 1861		
			(33 ⁻)	x+8146	
			↓ 1619		
			(31 ⁻)	x+6527.0	
			↓ 1409		
			(29 ⁻)	x+5118.0	
			↓ 1246		
			(27 ⁻)	x+3872.0	
			↓ 1110		
			(25 ⁻)	x+2762.0	
			↓ 1008		
			(23 ⁻)	x+1754.0	
			↓ 930		
			(21 ⁻)	x+824.0	
			↓ 824		
			(19 ⁻)	x+0.0	
			Band(A): Band based on the 4930 keV level		
(45 ⁺)	27548				
			↓ 2762		
(43 ⁺)	24786				
			↓ 2485		
(41 ⁺)	22301				
			↓ 2217		
(39 ⁺)	20084				
			↓ 1981		
(37 ⁺)	18103				
			↓ 1784		
(35 ⁺)	16319				
			↓ 1614		
(33 ⁺)	14705				
			↓ 1472		
(31 ⁺)	13233				
			↓ 1355		
(29 ⁺)	11878				
			↓ 1251		
(27 ⁺)	10627				
			↓ 1155		
(25 ⁺)	9472.2				
			↓ 1067		
(23 ⁺)	8405.2				
			↓ 987		
(21 ⁺)	7418.2				
			↓ 913		
(19 ⁺)	6505.2				
			↓ 824		
(17 ⁺)	5681.2				
			↓ 751		
(15 ⁺)	4930.1				

Adopted Levels, Gammas (continued)

Band(D): Band based on the 1927 keV level



$^{110}_{51}\text{Sb}_{59}$