

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 111,717 (2010)	1-Dec-2009

$Q(\beta^-) = -1.55 \times 10^3$ 3; S(n)=7890 17; S(p)=4077 6; $Q(\alpha) = -1256$ 7 [2012Wa38](#)

Note: Current evaluation has used the following Q record -1550 30 7891 174074 5 -1251 7 [2003Au03,2009AuZZ](#).

 ^{116}Sb LevelsCross Reference (XREF) Flags

A	$^{115}\text{Sn}(\alpha, \text{He}, \text{d})$	E	$^{115}\text{In}(\alpha, 3n\gamma)$
B	$^{116}\text{Sn}(p, n\gamma)$	F	$^{113}\text{In}(\alpha, n\gamma)$
C	^{116}Te ε decay	G	$^{113}\text{In}(\alpha, n\gamma)$: high spin
D	$^{113}\text{Cd}(\alpha, \text{Li}, 4n\gamma)$		

E(level)	J^π	$T_{1/2}$	XREF	Comments
0.0	3^+	15.8 min 8	ABCDEFG	$\% \varepsilon + \% \beta^+ = 100$ $\mu = 2.715$ 9 (1989Ra17,2005St24) $T_{1/2}$: weighted average of 15.5 min 10 (1953St42), 16.2 min 12 (1967Ha27). Other: 14 min (1954At34). J^π : atomic beam (1974Ek01). Positive parity deduced from $\log ft = 4.7$ to $\pi = +$. $\mu = +2.47$ 9 (1989Ra17,2005St24,1993Di06) Additional information 1 . J^π : E2 to 3^+ ; allowed ε transition from $J^\pi = 0^+$. $T_{1/2}$: from 1993Di06 ; other: 200 ns > (1976Ka19), $T_{1/2} > 500$ ns (1973ChYA). Additional information 2 . J^π : L($^3\text{He}, \text{d}$)=2, M1 γ to 3^+ , $\gamma(\theta)$ rules out J=3; configuration= $((\pi \text{ d}_{5/2})(\nu \text{ s}_{1/2}))$.
93.99 5	1^+	194 ns 4	BC F	$\% \varepsilon + \% \beta^+ = 100$ Additional information 3 . $T_{1/2}$: weighted average of 64 min 4 (1961Fi05), 60.42 min 24 (1967Ha27), 53.6 min 21 (1972Pa13). Others: 60 min (1949Te11), 60 min (1954At34). J^π : atomic beam (1974Ek01), $\log ft = 4.9$ to $\pi = -$. E(level): from Q(60-M ^{116}Sb)=5090 40 (1960Je03) and Q(15.8 m ^{116}sb)=4707 5 (1995Au04). If one uses Q(60-M)=5113 14 (from ε/β^+ of 1964Bo21) one gets E(8^-)=406 15.
103.0 1	2^+	<1.† ns	ABC F	J^π : M1, E2 to 3^+ , E2 to 2^+ , $\gamma(\theta)$ and Hauser-Feshbach analysis.
383 40	8^-	60.3 min 6	DEFG	J^π : E1 γ to 3^+ and 2^+ , $\gamma(\theta)$ and Hauser-Feshbach analysis.
410.848 19	4^+	<1.† ns	B F	J^π : M1, E2 γ to 3^+ and 2^+ , $\gamma(\theta)$ and Hauser-Feshbach analysis.
455.175 19	3^-	2.1† ns 3	B F	J^π : γ 's to 4^+ and 3^+ , Hauser-Feshbach analysis. Excit in (p, 2n γ).
466.071 18	3^+	<1.† ns	BC F	J^π : E1 γ to 3^+ and 1^+ .
503.09 4	$5^{(+)}$	<1.† ns	B F	J^π : M1, (E2) γ to 3^+ , $\gamma(\theta)$ and Hauser-Feshbach analysis.
518.120 21	2^-	<1.† ns	B F	J^π : M1, E2 γ to 1^+ and 2^+ , (M1, E2) to 3^+ , $\gamma(\theta)$ for 457 γ .
546.34 6	4^+	<1.† ns	B F	J^π : M1, E2 γ to 3^+ and 2^+ , (M1, E2) to 1^+ , $\gamma(\theta)$ and Hauser-Feshbach.
550.948 17	2^+	<1.† ns	ABC F	J^π : E1 γ to 3^+ M1 γ to 3^- , $\gamma(\theta)$ and Hauser-Feshbach analysis.
574.56 3	2^+	<1.† ns	BC F	XREF: A(662)
612.81 3	4^-	<1.† ns	B F	J^π : (M1, E2) γ to 3^+ and 2^+ , Hauser-Feshbach analysis L($^3\text{He}, \text{d}$)=2+4; configuration= $((\pi \text{ g}_{7/2})(\nu \text{ s}_{1/2}))$.
654.32 5	3^+	<1.† ns	AB F	J^π : stretched E2 γ to 8^- , excit in ($\alpha, n\gamma$).
681.68 15	6^-		D F	J^π : $\log ft = 5.6$ from 0^+ , configuration= $((\pi \text{ d}_{3/2})(\nu \text{ s}_{1/2}))$.
731.721 22	1^+	<1.† ns	ABC	J^π : M1, E2 γ to 3^+ , $\gamma(\theta)$ and Hauser-Feshbach analysis.
735.42 3	4^+		B F	M1 γ to 8^- , E1 γ from 7^+ .
809.18 14	7^-		DEF	

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Adopted Levels, Gammas (continued) ^{116}Sb Levels (continued)

E(level)	J $^{\pi}$	T $_{1/2}$	XREF	Comments
815.10 3	3 $^{+}$		AB F	J $^{\pi}$: E2,(M1) γ to 2 $^{+}$, Hauser-Feshbach analysis, $\gamma(\theta)$.
820.89 4	5 $^{-}$	<1. ns	B F	J $^{\pi}$: M1,E2 γ to 4 $^{-}$, Hauser-Feshbach analysis, $\gamma(\theta)$.
841.12 5	(6 $^{+}$)	<1. $\dagger$ ns	B F	J $^{\pi}$: M1,(E2) γ to 5 $^{(+)}$, Hauser-Feshbach analysis, $\gamma(\theta)$.
881.6 4	3 $^{+}$		AB F	J $^{\pi}$: M1,E2 γ to 3 $^{+}$, L($^3\text{He,d}$)=4, $\gamma(\theta)$ and Hauser-Feshbach analysis; configuration=((π g $_{7/2}$)(ν s $_{1/2}$)).
917.820 25	1 $^{+}$		ABCD F	J $^{\pi}$: L($^3\text{He,d}$)=0; configuration=((π s $_{1/2}$)(ν s $_{1/2}$)). Strong branching to 3 $^{+}$, Hauser-Feshbach analysis.
948.28 4	4 $^{+}$		AB F	J $^{\pi}$: L($^3\text{He,d}$)(4); configuration=((π g $_{7/2}$)(ν s $_{1/2}$)), M1,E2 γ to 3 $^{+}$, $\gamma(\theta)$ and Hauser-Feshbach analysis.
998.02 21	(3 $^{-}$,4 $^{-}$)		B F	J $^{\pi}$: (M1,E2) γ to 2 $^{-}$, Hauser-Feshbach analysis.
1032 5	0 $^{+}$,1 $^{+}$		A	J $^{\pi}$: L=0 in ($^3\text{He,d}$).
1037.7 5	(4 $^{+}$,5 $^{+}$)		F	J $^{\pi}$: (M1,E2) γ to 2 $^{-}$, M1,E2 γ to 5 $^{(+)}$.
1045.37 3	(4 $^{-}$)		B F	J $^{\pi}$: M1,(E2) γ to 3 $^{-}$, (M1) γ to 5 $^{-}$, $\gamma(\theta)$ for 590 γ .
1065.31 5	(5 $^{+}$)		B F	J $^{\pi}$: M1 γ to 6 $^{(+)}$, (M1,E2) γ to 4 $^{+}$.
1076.76 5	(5,3) $^{+}$		B F	J $^{\pi}$: M1,E2 γ to 4 $^{+}$, $\gamma(\theta)$.
1087.52 5	4 $^{+}$,3 $^{+}$,2 $^{+}$		B F	J $^{\pi}$: M1 γ to 3 $^{+}$, $\gamma(\theta)$.
1096.07 11	(2,3,4)		B F	J $^{\pi}$: γ to 3 $^{+}$.
1122.3 10	1 $^{+}$ to 5 $^{+}$		F	J $^{\pi}$: E2,(M1) γ to 3 $^{+}$.
1127.42 11	(2)		B	J $^{\pi}$: γ to 1 $^{+}$, $\gamma(\theta)$.
1135.50 18	9 $^{-}$		DEF	J $^{\pi}$: M1 γ to 8 $^{-}$, M2 γ from 11 $^{+}$. T $_{1/2}$: 7.1 ns measured for 752.6 γ by 1985BeZH and assigned to a 3731 level. The 752.6 γ has been reassigned to the 1135 level.
1138.84 7	4 $^{+}$		B F	J $^{\pi}$: E2,(M1) γ to 3 $^{+}$, $\gamma(\theta)$ for the 1138 γ .
1155.31 15	(6,7) $^{-}$		EF	J $^{\pi}$: M1,E2 γ to 6 $^{-}$.
1158.42 12	1 $^{+}$		ABC	J $^{\pi}$: log ft=5.5 from 0 $^{+}$, γ to 2 $^{+}$; configuration=((π d $_{3/2}$)(ν s $_{1/2}$)).
1158.79 $^{\#}$ 15	7 $^{+}$	10.6 ns 7	DEFG	μ = +4.69 10 (1992Io01); Q=+1.7 4 (1992Io01) Configuration=((π g $_{7/2}$) $^{-1}$ (ν d $_{5/2}$)) T $_{1/2}$: weighted av: 11.9 ns 6 (1992Io01), 10.3 ns 3 (1982Du11). Other: 12.6 ns (1985BeZH). J $^{\pi}$: E1 γ to 8 $^{-}$, E1 γ from 7 $^{-}$.
1164.09 13			F	
1200.0 10			F	
1208.2 7	(4 $^{-}$,5 $^{-}$)		F	
1212.1 5	(4,3) $^{+}$		F	
1223.31 8	3,2		B F	J $^{\pi}$: γ 's to 1 $^{+}$ and 2 $^{-}$, $\gamma(\theta)$.
1226.12 8			F	
1267.82 15	(6,7) $^{-}$		F	J $^{\pi}$: M1,E2 γ to 7 $^{-}$.
1289.1 3	6 $^{-}$		DEF	J $^{\pi}$: M1 γ to 7 $^{-}$, $\Delta J=2$ for the γ to 8 $^{-}$.
1307.39 25	(6,7,8) $^{-}$		EF	J $^{\pi}$: M1,E2 γ to 7 $^{-}$.
1312.3 10	($^{-}$)		F	J $^{\pi}$: (M1,E2) γ to 5 $^{-}$.
1336.58 10	2,3		B F	J $^{\pi}$: γ 's to 2 $^{+}$, $\gamma(\theta)$.
1351.38 ‡ 14	7 $^{-}$	1.0 ns	DEFG	T $_{1/2}$: from 1985BeZH in (α ,3n γ). J $^{\pi}$: E1 γ to 7 $^{+}$, M1 γ from 8 $^{-}$, excit in (α ,n γ). J $^{\pi}$: γ to 2 $^{-}$, $\gamma(\theta)$.
1385.82 11	1,2,3		B F	J $^{\pi}$: M1,E2 γ to (5) $^{+}$.
1386.72 11	(4,5,6) $^{+}$		F	J $^{\pi}$: γ to 3 $^{-}$, $\gamma(\theta)$.
1407.88 11	(3,4)		B F	J $^{\pi}$: γ to 3 $^{-}$, $\gamma(\theta)$.
1425.55 9	(1,2,3)		B	J $^{\pi}$: γ 's to 2 $^{-}$ and 2 $^{+}$.
1436.2 10			F	
1451.15 ‡ 16	8 $^{-}$		DEFG	J $^{\pi}$: M1 γ to 7 $^{-}$, M1 γ from 9 $^{-}$.
1473.05 15	(5 to 9) $^{-}$		F	J $^{\pi}$: E2 γ to 5 $^{-}$.
1481.08 11	(1 to 4)		B	J $^{\pi}$: γ to 3 $^{-}$.
1483.31 11	(2 to 5) $^{-}$		B F	J $^{\pi}$: M1,E2 γ to 4 $^{-}$.
1505.00 7	(6,7,8) $^{-}$		E	J $^{\pi}$: M1,E2 to 5 $^{-}$.
1570 $^{\#}$ 1	(8 $^{+}$)		D F	

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Adopted Levels, Gammas (continued) ^{116}Sb Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF	Comments
1626.03 @ 16	(8 ⁺)		FG	Configuration=((π g _{7/2}) ⁻¹ (ν D _{7/2})) J^π : (M1) γ to 7 ⁺ , E1 γ to 7 ⁺ .
1658.15 16			F	
1666.4 ‡ 4	9 ⁻		DEFG	J^π : M1 γ to 8 ⁻ , M1 γ from 10 ⁻ .
1684.99 17			F	
1703.78 18			F	
1782.11 18	11 ⁺	4.0 ns I	DEF	$T_{1/2}$: from 1982Va07 in (α ,3n γ). Other: 4.0 ns 2 (^7Li ,4n γ) (1982Du11). J^π : stretched E3 γ to 8 ⁻ , excit in (α ,n γ).
1885 5			D	
1949 @ 1	(9 ⁺)		G	J^π : M1,E2 γ to 8 ⁺ .
1961 # 6	(9 ⁺)		D G	
1983.6 ‡ 4	10 ⁻		DE G	J^π : M1 γ to 9 ⁻ , member of the negative band.
2314 @ 1	(10 ⁺)		G	J^π : member of band.
2335.9 ‡ 4	11 ⁻		DE G	J^π : M1 γ to 10 ⁻ , member of the negative band.
2365 # 1	(10 ⁺)		G	
2384.3 5			D	
2688 @	(11 ⁺)		G	
2718.3 ‡ 4	12 ⁻		DE G	J^π : Δ' J=1 band, M1 γ to 11 ⁻ .
2788 # 1	(11 ⁺)		G	
2966.2 3	13 ⁺		DE	J^π : E2 γ to 11 ⁺ , member of the positive band.
3005.2 5			DE	
3129.0 ‡ 5	13 ⁻		DE	J^π : Δ' J=1 band.
3207.0 4	14 ⁺	1.3 ns	DE	J^π : M1 γ to 13 ⁺ , member of the positive band. $T_{1/2}$: from 1985BeZH in (α ,3n γ).
3433.3 4	15 ⁺		DE	J^π : M1 γ to 14 ⁺ , member of the positive band.
3572.9 ‡ 5	14 ⁻		DE	J^π : Δ' J=1 band.
3940.3 5			D	
4030.7 4			DE	
4245.6 5			D	

† From $\gamma(t)$ with pulsed protons in (p,n γ) (1976Ka19). Authors state that $T_{1/2} < 1$ or 2 ns.

‡ Band(A): negative parity Band with $\Delta J=1$ based on 7⁻.

Band(B): Positive parity Band with $\Delta J=1$ based on 7⁺.

@ Band(C): Positive parity Band with $\Delta J=1$ based on (8⁺).

 $\gamma(^{116}\text{Sb})$

$E_i(\text{level})$	J^π_i	E_γ ‡	I_γ	E_f	J^π_f	Mult. ‡	α #	Comments
93.99	1 ⁺	93.88 3	100	0.0	3 ⁺	E2	2.06	B(E2)(W.u.)=3.78 9
103.0	2 ⁺	103.01 2	100	0.0	3 ⁺	M1	0.575	B(M1)(W.u.)>0.013
410.848	4 ⁺	307.79 3	23 4	103.0	2 ⁺	E2		B(E2)(W.u.)>1.1
		410.91 3	100 4	0.0	3 ⁺	M1,E2		
455.175	3 ⁻	352.16 2	100 4	103.0	2 ⁺	E1		B(E1)(W.u.)=2.5×10 ⁻⁶ 4
		455.19 7	22 2	0.0	3 ⁺	E1		B(E1)(W.u.)=2.6×10 ⁻⁷ 5
466.071	3 ⁺	363.06 2	100 6	103.0	2 ⁺	M1,E2		
		466.11 5	12 3	0.0	3 ⁺	M1,E2		
503.09	5 ⁽⁺⁾	92.23 4	100	410.848	4 ⁺			
		503.2 1	4 3	0.0	3 ⁺			
518.120	2 ⁻	424.20 3	100 4	93.99	1 ⁺	E1		B(E1)(W.u.)>3.0×10 ⁻⁶

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Adopted Levels, Gammas (continued)

$\gamma(^{116}\text{Sb})$ (continued)								Comments
$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	I_γ	E_f	J_f^π	Mult. ‡	$\delta^\dagger$	
518.120	2 ⁻	518.04 3	25 4	0.0	3 ⁺	E1		B(E1)(W.u.)>4.1×10 ⁻⁷
546.34	4 ⁺	546.33 6	100	0.0	3 ⁺	M1,(E2)		
550.948	2 ⁺	447.83 6	18 2	103.0	2 ⁺	M1,E2		
		457.01 2	35 4	93.99	1 ⁺	M1,E2		
		550.83 7	100 5	0.0	3 ⁺	(M1,E2)		
574.56	2 ⁺	108.47 3	13 2	466.071	3 ⁺			
		471.62 6	10 1	103.0	2 ⁺	M1,E2		
		480.6 5	100 5	93.99	1 ⁺	(M1,E2)		
		574.5 1	10 1	0.0	3 ⁺	M1,E2		
612.81	4 ⁻	157.60 3	100	455.175	3 ⁻	M1		B(M1)(W.u.)>0.0052 B(E1)(W.u.)>9.1×10 ⁻⁸
		612.89 5	8.0 5	0.0	3 ⁺	E1		
654.32	3 ⁺	551.4 2	100 10	103.0	2 ⁺	(M1,E2)		
		654.33 5	14 2	0.0	3 ⁺	(M1,E2)		
681.68	6 ⁻	298.7 3	100	383	8 ⁻	E2		
731.721	1 ⁺	157.14 9	14 2	574.56	2 ⁺			
		180.83 3	7 1	550.948	2 ⁺	M1,E2		
		628.66 3	100 10	103.0	2 ⁺			
		637.9 2	24 3	93.99	1 ⁺	M1,E2		
735.42	4 ⁺	735.42 3	100	0.0	3 ⁺	M1,E2		
809.18	7 ⁻	426.1 2	100	383	8 ⁻	M1+(E2)	<0.10	
815.10	3 ⁺	404.27 3	54 4	410.848	4 ⁺			
		712.07 4	100	103.0	2 ⁺	E2,(M1)		
		815.3 2	41 8	0.0	3 ⁺			
820.89	5 ⁻	208.09 2	100	612.81	4 ⁻	M1,E2		
		365.5 1	42	455.175	3 ⁻			
841.12	(6 ⁺)	338.01 1	100	503.09	5 ⁽⁺⁾	M1,(E2)		
917.820	1 ⁺	366.87 2	100 10	550.948	2 ⁺			
		824.0 5	79 8	93.99	1 ⁺			
		917.82 8	100 10	0.0	3 ⁺			
948.28	4 ⁺	293.95 9	80 20	654.32	3 ⁺	M1,E2		
		401.9 2	55 10	546.34	4 ⁺			
		537.43 5	45 15	410.848	4 ⁺			
		948.28 6	100	0.0	3 ⁺	E2,(M1)		
998.02	(3 ⁻ ,4 ⁻)	479.9 2	100	518.120	2 ⁻	(M1,E2)		
1037.7	(4 ⁺ ,5 ⁺)	302.4	10 7	735.42	4 ⁺			
		491.4	10 4	546.34	4 ⁺	(M1,E2)		
		534.5	10 2	503.09	5 ⁽⁺⁾	M1,E2		
		626.8	10	410.848	4 ⁺			
1045.37	(4 ⁻)	432.51 4	50 5	612.81	4 ⁻			
		590.22 3	100	455.175	3 ⁻	M1,(E2)		
1065.31	(5 ⁺)	224.14 2	100	841.12	(6 ⁺)	M1		
		562.27 2	72 5	503.09	5 ⁽⁺⁾	M1,E2		
1076.76	(5,3) ⁺	341.34 3	100	735.42	4 ⁺	M1,E2		
1087.52	4 ⁺ ,3 ⁺ ,2 ⁺	621.47 5	100	466.071	3 ⁺	M1		
		1087.4 1	95 10	0.0	3 ⁺			
1096.07	(2,3,4)	630.0 1	100	466.071	3 ⁺			
1122.3	1 ⁺ to 5 ⁺	1122.3 10	100	0.0	3 ⁺	E2,(M1)		
1127.42	(2)	395.7 1	100	731.721	1 ⁺			
1135.50	9 ⁻	752.5 2	100	383	8 ⁻	M1+E2	-0.32 10	
1138.84	4 ⁺	484.6 1	28 6	654.32	3 ⁺			
		672.6 2	13 3	466.071	3 ⁺			
		1138.8 1	100	0.0	3 ⁺	E2,(M1)		
1155.31	(6,7) ⁻	346.1 2	22 5	809.18	7 ⁻			
		473.63 3	100	681.68	6 ⁻	M1,E2		
1158.42	1 ⁺	583.8 2	14	574.56	2 ⁺			

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Adopted Levels, Gammas (continued)

$\gamma(^{116}\text{Sb})$ (continued)									
$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	I_γ	E_f	J_f^π	Mult. ‡	$\delta^\dagger$	$\alpha^\#$	Comments
1158.42	1 ⁺	1055.3 2	100	103.0	2 ⁺				
		1064.6 2	35	93.99	1 ⁺				
1158.79	7 ⁺	349.7 3	73 3	809.18	7 ⁻	E1+M2	-0.42 13		B(E1)(W.u.)=2.3×10 ⁻⁷ 3; B(M2)(W.u.)=1.5 8 I $_\gamma$: from (α ,n γ), (p,2n γ). I $_\gamma$ =40 10 relative to I $_\gamma$ (775)=100 13 in (^7Li ,4n γ). B(E1)(W.u.)=3.3×10 ⁻⁸ 3
		775.8 2	100 4	383	8 ⁻	E1			
1164.09		482.3 1	100	681.68	6 ⁻				
1200.0		379.1 1	100	820.89	5 ⁻				
1208.2	(4 ⁻ ,5 ⁻)	387.18 5		820.89	5 ⁻				
		595.5 3		612.81	4 ⁻	M1,E2			
1212.1	(4,3) ⁺	476.59 5	100	735.42	4 ⁺	M1,E2			
		665.8 1	48 8	546.34	4 ⁺				
		801.2 2	45 10	410.848	4 ⁺				
		1212.1 1	70 12	0.0	3 ⁺	(M1,E2)			
1223.31	3,2	705.2 1	100	518.120	2 ⁻				
		1129.3 1	39 4	93.99	1 ⁺				
1226.12		571.80 6	100	654.32	3 ⁺				
1267.82	(6,7) ⁻	458.64 6	100	809.18	7 ⁻	M1,E2			
		586.0 4	26 10	681.68	6 ⁻				
1289.1	6 ⁻	479.9 3	100 10	809.18	7 ⁻				
		906.1 4	33 3	383	8 ⁻				
1307.39	(6,7,8) ⁻	498.2 2	100	809.18	7 ⁻	M1,E2			
1312.3	(⁻)	491.45	100	820.89	5 ⁻	(M1,E2)			
1336.58	2,3	762.0 1	100	574.56	2 ⁺				
		785.7 2	100	550.948	2 ⁺				
1351.38	7 ⁻	192.6 2	35 4	1158.79	7 ⁺	E1+M2	-0.46 15		B(E1)(W.u.)=6.1×10 ⁻⁶ 7; B(M2)(W.u.)=1.6×10 ² 9
		542.3 4	22 3	809.18	7 ⁻				
		669.7 1	30 3	681.68	6 ⁻				
		968.4 3	100	383	8 ⁻	M1(+E2)	<0.10		B(M1)(W.u.)>1.3×10 ⁻⁵ ; B(E2)(W.u.)<0.00010
1385.82	1,2,3	867.7 1	100	518.120	2 ⁻				
1386.72	(4,5,6) ⁺	321.41	100	1065.31	(5) ⁺	M1,E2			
1407.88	(3,4)	952.7 1	100	455.175	3 ⁻				
1425.55	(1,2,3)	874.7 1	100	550.948	2 ⁺				
		907.0 2	13 3	518.120	2 ⁻				
1436.2		823.4 1	100	612.81	4 ⁻				
1451.15	8 ⁻	99.8 1	100 10	1351.38	7 ⁻	M1,(E2)		1.1 6	
		641.6 3	12 4	809.18	7 ⁻				
		1068 6	8 4	383	8 ⁻				
1473.05	(5 to 9) ⁻	663.86 5	100	809.18	7 ⁻	E2			
1481.08	(1 to 4)	1025.9 1	100	455.175	3 ⁻				
1483.31	(2 to 5) ⁻	870.5 1	100	612.81	4 ⁻	M1,E2			
1505.00	(6,7,8) ⁻	684.11 6	100	820.89	5 ⁻	M1,(E2)			
1570	(8 ⁺)	411 1	100	1158.79	7 ⁺				
1626.03	(8 ⁺)	274.5 5	33 6	1351.38	7 ⁻				
		467.24 5	100	1158.79	7 ⁺	(M1)			
1658.15		976.47 7	100	681.68	6 ⁻				
1666.4	9 ⁻	215 1	100 8	1451.15	8 ⁻	M1(+E2)	-0.07 7		
		1283.6 4	8 2	383	8 ⁻				
1684.99		875.8 1	100	809.18	7 ⁻				
1703.78		1022.1 1	100	681.68	6 ⁻				
1782.11	11 ⁺	646.6 3	15 2	1135.50	9 ⁻	M2			B(M2)(W.u.)=0.38 6

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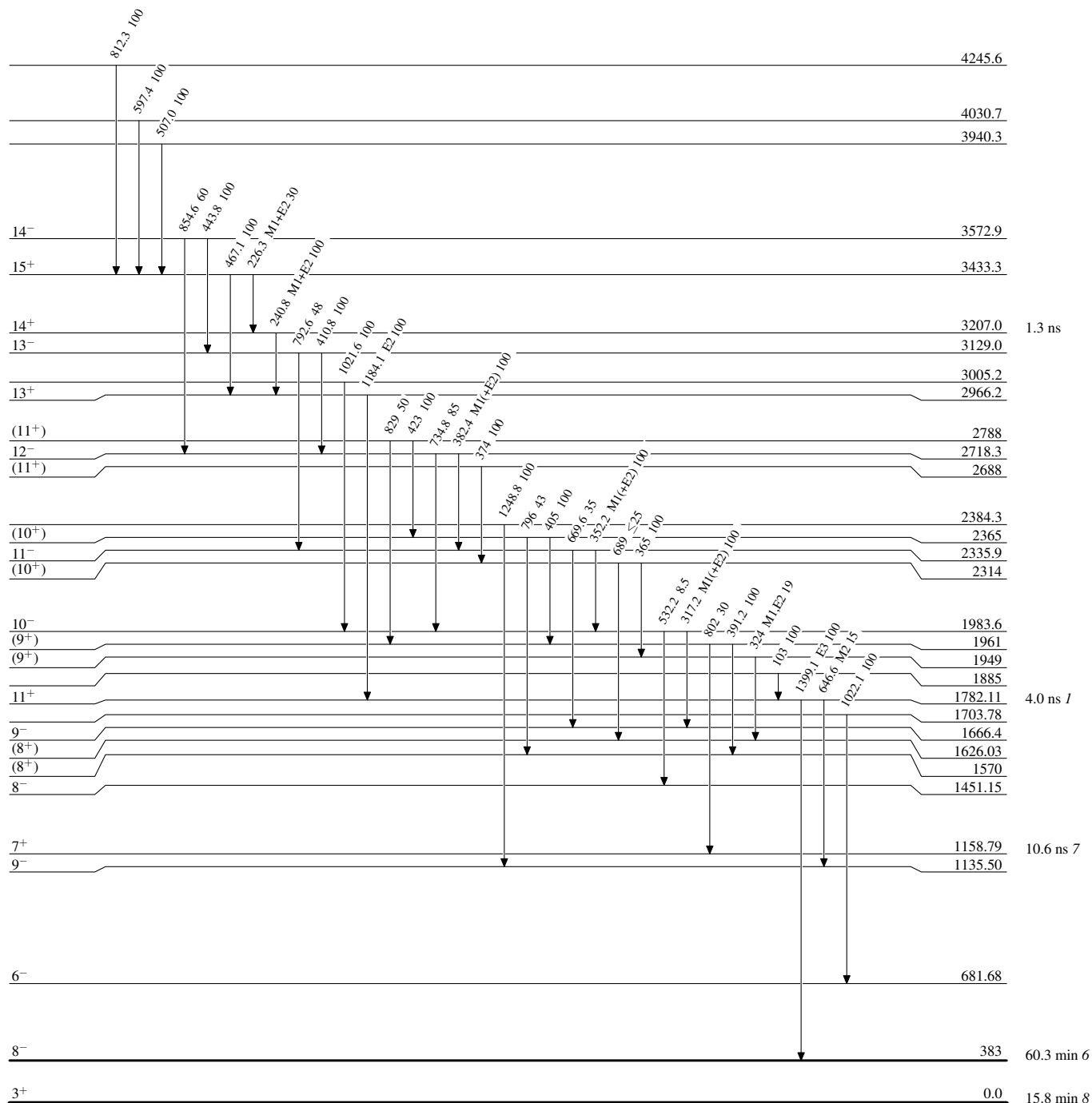
Adopted Levels, Gammas (continued)

$\gamma(^{116}\text{Sb})$ (continued)								
$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	I_γ	E_f	J_f^π	Mult. ‡	$\delta^\dagger$	Comments
1782.11	11 ⁺	1399.1 2	100	383	8 ⁻	E3		B(E3)(W.u.)=31.5 10
1885		103 5	100	1782.11	11 ⁺			
1949	(9 ⁺)	324 1	19 2	1626.03	(8 ⁺)	M1,E2		
1961	(9 ⁺)	391.2 6	100	1570	(8 ⁺)			
		802 1	30	1158.79	7 ⁺			
1983.6	10 ⁻	317.2 2	100	1666.4	9 ⁻	M1(+E2)	+0.05 7	
		532.2 5	8.5 10	1451.15	8 ⁻			
2314	(10 ⁺)	365	100	1949	(9 ⁺)			
		689	≤25	1626.03	(8 ⁺)			
2335.9	11 ⁻	352.2 3	100	1983.6	10 ⁻	M1(+E2)	<0.10	
		669.6 3	35 10	1666.4	9 ⁻			
2365	(10 ⁺)	405 1	100 23	1961	(9 ⁺)			
		796 1	43 10	1570	(8 ⁺)			
2384.3		1248.8 4	100	1135.50	9 ⁻			
2688	(11 ⁺)	374 1	100	2314	(10 ⁺)			
2718.3	12 ⁻	382.4 3	100 10	2335.9	11 ⁻	M1(+E2)	-0.05 10	
		734.8 3	85 10	1983.6	10 ⁻			
2788	(11 ⁺)	423 1	100 25	2365	(10 ⁺)			
		829 1	50 20	1961	(9 ⁺)			
2966.2	13 ⁺	1184.1 2	100	1782.11	11 ⁺	E2		
3005.2		1021.6 3	100	1983.6	10 ⁻			
3129.0	13 ⁻	410.8 4	100 10	2718.3	12 ⁻			
		792.6 7	48 4	2335.9	11 ⁻			
3207.0	14 ⁺	240.8 2	100	2966.2	13 ⁺	M1+E2	+0.57 17	B(M1)(W.u.)=0.00092 14; B(E2)(W.u.)=3.9 18
3433.3	15 ⁺	226.3 2	30 3	3207.0	14 ⁺	M1+E2	-0.57 20	
		467.1 2	100 10	2966.2	13 ⁺			
3572.9	14 ⁻	443.8 5	100 10	3129.0	13 ⁻			
		854.6 4	60 10	2718.3	12 ⁻			
3940.3		507.0 4	100	3433.3	15 ⁺			
4030.7		597.4 2	100	3433.3	15 ⁺			
4245.6		812.3 3	100	3433.3	15 ⁺			

[†] From 1982Dul1 in ($^7\text{Li},4n\gamma$).[‡] From (p,n γ), (α ,n γ).[#] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with "Frozen Orbitals" approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

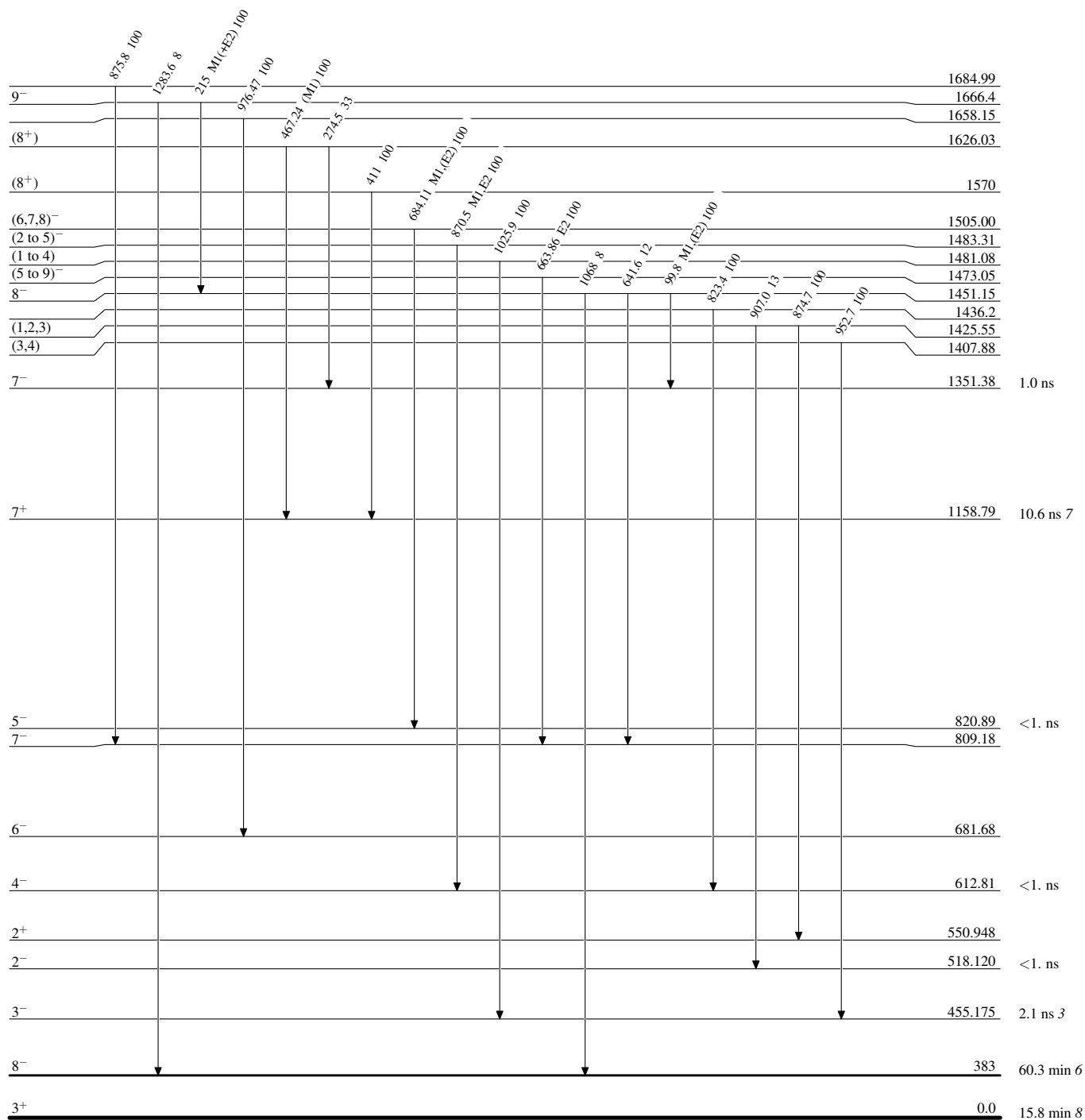
Adopted Levels, GammasLevel Scheme

Intensities: Relative photon branching from each level



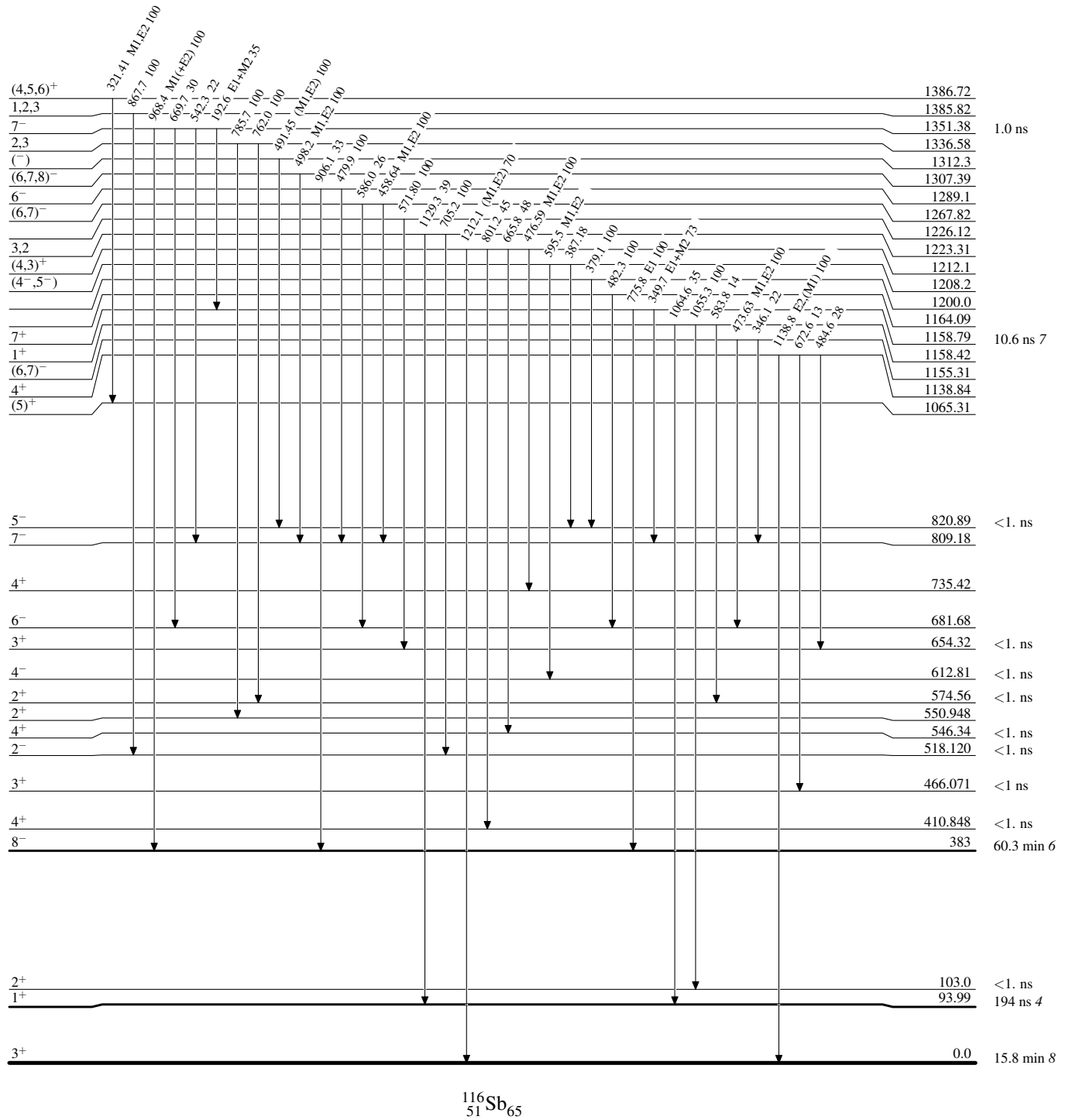
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level

 $^{116}_{51}\text{Sb}_{65}$

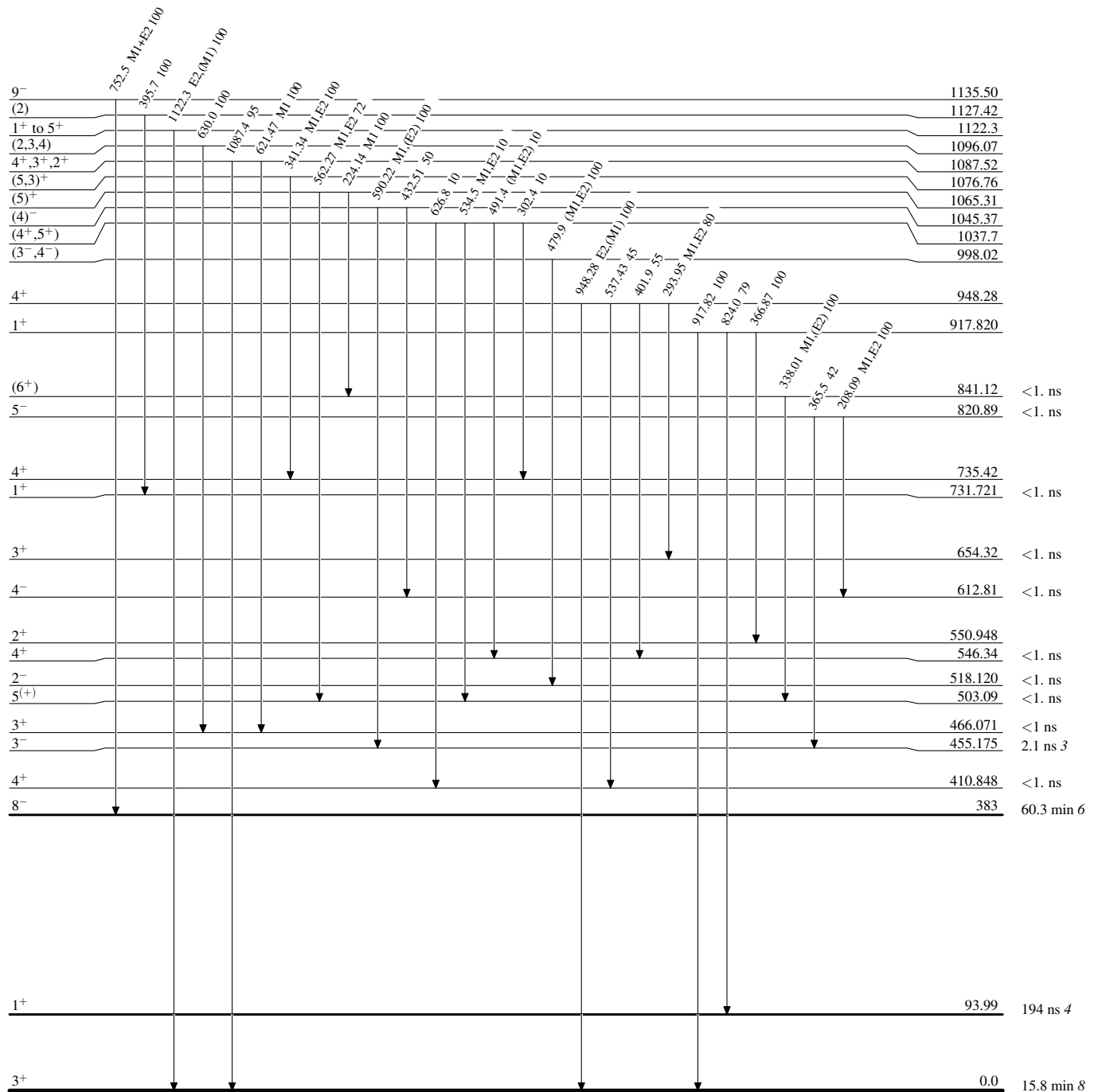
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



Adopted Levels, GammasLevel Scheme (continued)

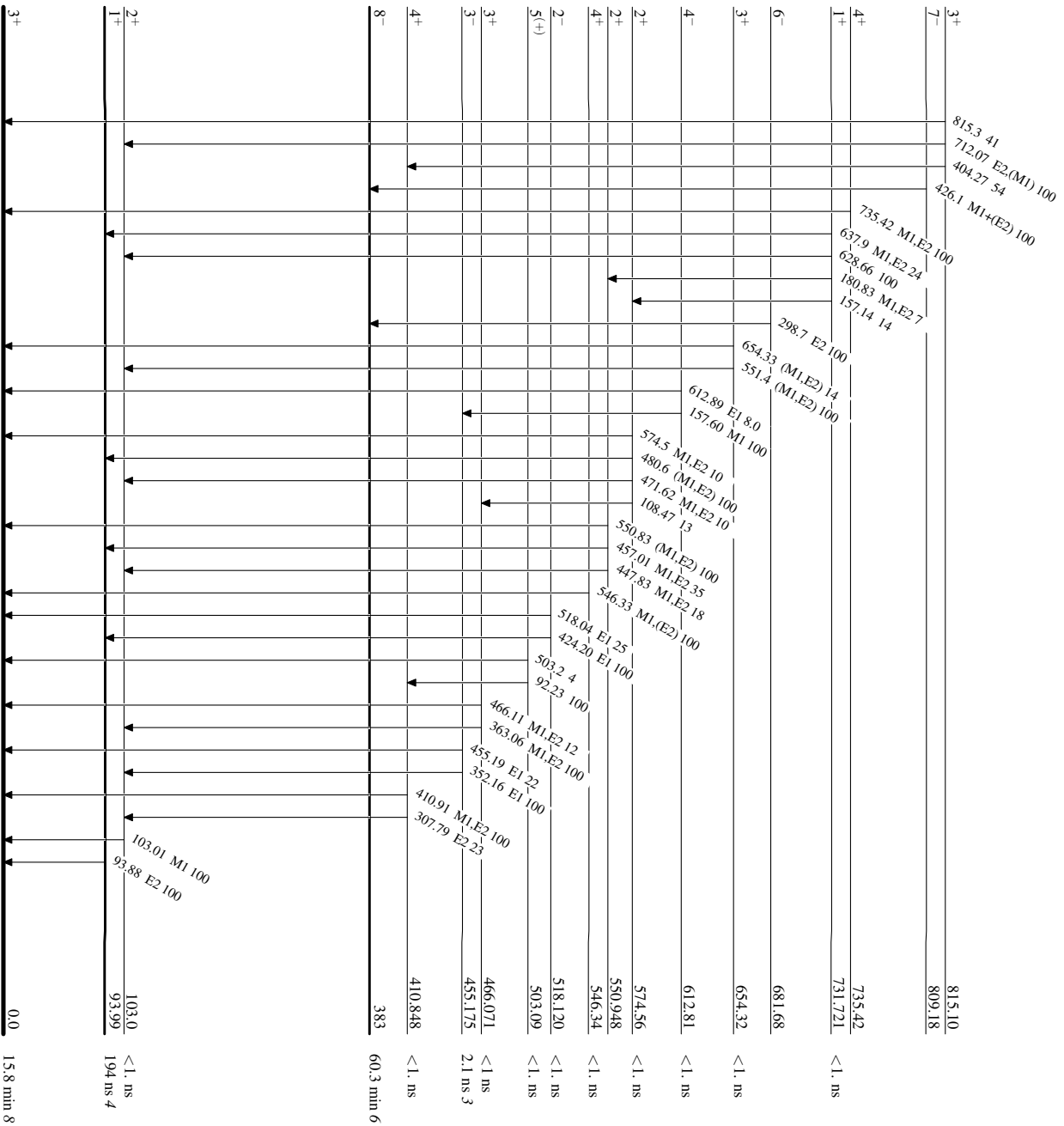
Intensities: Relative photon branching from each level

 $^{116}_{51}\text{Sb}_{65}$

Adopted Levels, Gammas

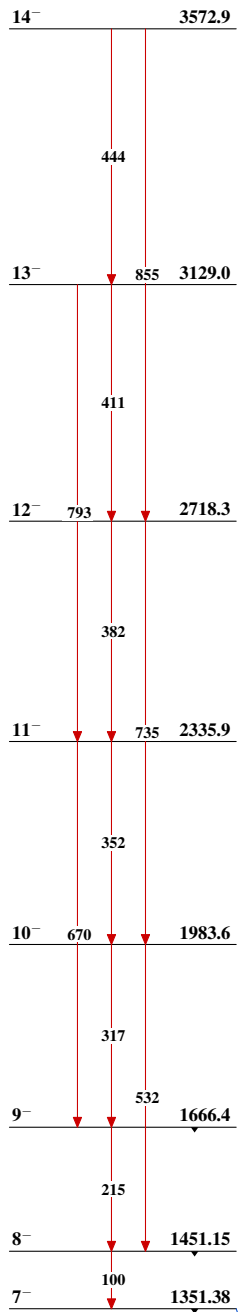
Level Scheme (continued)

Intensities: Relative photon branching from each level

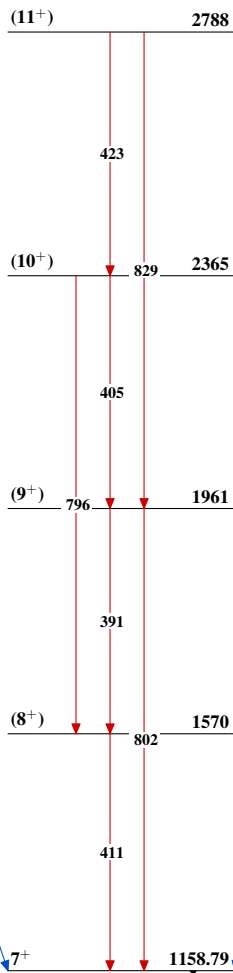


Adopted Levels, Gammas

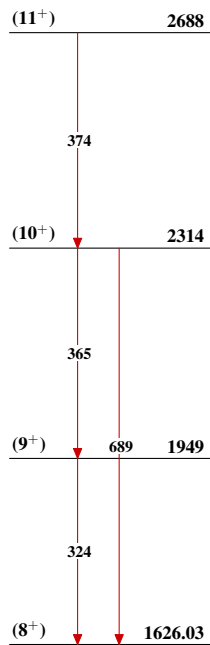
Band(A): Negative parity Band with
 $\Delta J=1$ based on 7^-



Band(B): Positive parity Band with
 $\Delta J=1$ based on 7^+



Band(C): Positive parity Band with $\Delta J=1$ based on
 (8^+)

 $^{116}_{51}\text{Sb}_{65}$