

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 109,1383 (2008)	1-Mar-2008

$Q(\beta^-) = -1.012 \times 10^4$ 7; S(n)=12251 9; S(p)=589 7; $Q(\alpha)=1551$ 10 [2012Wa38](#)

Note: Current evaluation has used the following Q record -10110 syst 12400 syst 520 syst 1520 syst [2003Au03](#).

 ^{107}Sb LevelsCross Reference (XREF) Flags

A ^{111}I α decay
B $^{58}\text{Ni} (^{58}\text{Ni}, 2\alpha\gamma)$

E(level) [†]	J π [‡]	T _{1/2}	XREF	Comments
0.0	(5/2 ⁺)	4.0 s 2	AB	$\% \varepsilon + \% \beta^+ = 100$ T _{1/2} : weighted average from 4.0 s 2 (2002Re14) and 4.6 s 8 (1997Sh13). J π : from Shell Model.
768.62 [@] 16	(7/2 ⁺)		B	
1058.28 [#] 15	(9/2 ⁺)		B	
1388.97 ^{&} 15	(9/2 ⁺)		B	
1605.37 ^b 21	(11/2 ⁻)		B	
1790.45 [@] 17	(11/2 ⁺)		B	
1872.42 21			B	
1900.06 [#] 18	(13/2 ⁺)		B	
2163.87 ^{&} 19	(13/2 ⁺)		B	
2239.54 [@] 20	(15/2 ⁺)		B	
2535.40 ^{&} 23	(17/2 ⁺)		B	
2621.29 ^b 23	(15/2 ⁻)		B	
2745.65 [#] 22	(17/2 ⁺)		B	
2878.6 3			B	
3306.73 [#] 23			B	
3377.68 [@] 24	(19/2 ⁺)		B	
3482.4 3			B	
3487.11 ^b 24	(19/2 ⁻)		B	
3551.21 25			B	
3661.5 ^{&} 3	(21/2 ⁺)		B	
3732.6 4			B	
3779.38 ^b 23	(21/2 ⁻)		B	
3936.6 3			B	
4100.3 ^b 3	(23/2 ⁻)		B	
4215.5 [@] 3			B	
4234.7 ^{&} 4			B	
4306.6 3			B	
4442.7 3			B	
4607.7 ^a 3	(25/2 ⁻)		B	
4889.4 ^{&} 4			B	
5089.8 3			B	
5131.1 3			B	
5208.1 ^b 4	(27/2 ⁻)		B	
5674.4 ^a 4	(29/2 ⁻)		B	

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Adopted Levels, Gammas (continued) ^{107}Sb Levels (continued)

E(level) [†]	J π [‡]	XREF	Comments
5768.9 4		B	
5967.6 ^b 4	(31/2 ⁻)	B	
6097.7 4		B	
6379.6 ^a 4	(33/2 ⁻)	B	
6437.9 4		B	
7269.1 ^b 6	(35/2 ⁻)	B	
7540.8 ^a 5	(37/2 ⁻)	B	
7900.6 ^b 6		B	
8407.4 ^a 5	(41/2 ⁻)	B	
9863.5 ^a 7		B	
0.0+x		B	Additional information 1.
572.0+x 5		B	
815.6+x 8		B	
2041.4+x ^c 7	$\geq 37/2$	B	
3167.7+x ^c 7	$\geq 41/2$	B	
4446.1+x ^c 8	$\geq 45/2$	B	
5882.6+x ^c 9	$\geq 49/2$	B	
7434.8+x ^c 10	$\geq 53/2$	B	
9228.2+x ^c 13	$\geq 57/2$	B	
11491.2+x ^c 16	$\geq 61/2$	B	
14217.2+x ^c 19	$\geq 65/2$	B	
0.0+y		B	Additional information 2.
328.5+y ^d 7	$\geq 17/2$	B	
573.1+y 3		B	
720.8+y ^d 7	$\geq 19/2$	B	
1089.3+y ^d 5	$\geq 21/2$	B	
1459.8+y ^d 6	$\geq 23/2$	B	
1851.0+y ^d 7	$\geq 25/2$	B	
2281.8+y ^d 7	$\geq 27/2$	B	
2748.1+y ^d 9	$\geq 29/2$	B	
3194.2+y ^d 9	$\geq 31/2$	B	
3284.9+y 11	$\geq 31/2$	B	
3668.9+y ^d 10	$\geq 33/2$	B	

[†] From least-squares fit to E γ 's (by evaluator).[‡] From γ 's mult derived from DCO measurement and band consideration.# Band(A): γ sequence based on 5/2⁺.@ Band(B): γ sequence based on 7/2⁺.& Band(C): γ sequence based on 9/2⁺.^a Band(D): γ sequence based on 25/2⁻.^b Band(E): γ sequence based on 11/2⁻.^c Band(F): $\Delta J=2$, Decoupled band. Configuration= $\pi[h_{11/2}(g_{9/2}^{-2})(g_{7/2}d_{5/2}^2) \nu[(g_{7/2}d_{5/2})^4(h_{11/2}^2)]$.^d Band(G): $\Delta J=1$ Band, $\pi g_{9/2}^{-1}\pi(g_{7/2}d_{5/2})^2$.

Adopted Levels, Gammas (continued)

$\gamma(^{107}\text{Sb})$						
E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]
(47 1)		3779.38	(21/2 ⁻)	3732.6		
(76.6 8)		2239.54	(15/2 ⁺)	2163.87	(13/2 ⁺)	M1+E2
109.9 2	<2.	1900.06	(13/2 ⁺)	1790.45	(11/2 ⁺)	M1+E2
227.1 2	48	4442.7		4215.5		
228.2 3	<13	3779.38	(21/2 ⁻)	3551.21		
257.4 2	100	2878.6		2621.29	(15/2 ⁻)	
289.8 2	5.0 3	1058.28	(9/2 ⁺)	768.62	(7/2 ⁺)	M1+E2
291.4 2	100 7	2163.87	(13/2 ⁺)	1872.42		
292.1 2	33 3	3779.38	(21/2 ⁻)	3487.11	(19/2 ⁻)	M1+E2
293.3 2	33 3	5967.6	(31/2 ⁻)	5674.4	(29/2 ⁻)	
294.6 2	<2.	1900.06	(13/2 ⁺)	1605.37	(11/2 ⁻)	E1
295.9 2	100	2535.40	(17/2 ⁺)	2239.54	(15/2 ⁺)	M1+E2
297.1 2	<13	3779.38	(21/2 ⁻)	3482.4		
320.9 2	100 7	4100.3	(23/2 ⁻)	3779.38	(21/2 ⁻)	M1+E2
330.9 2	46 4	1388.97	(9/2 ⁺)	1058.28	(9/2 ⁺)	M1+E2
339.6 2	100 6	2239.54	(15/2 ⁺)	1900.06	(13/2 ⁺)	M1+E2
368.5 4	100	1089.3+y	$\geq 21/2$	720.8+y	$\geq 19/2$	M1+E2
370.5 3	100	1459.8+y	$\geq 23/2$	1089.3+y	$\geq 21/2$	M1+E2
373.2 2	<27	2163.87	(13/2 ⁺)	1790.45	(11/2 ⁺)	M1+E2
384.4 5	90 20	3668.9+y	$\geq 33/2$	3284.9+y	$\geq 31/2$	M1+E2
391.2 2	100	1851.0+y	$\geq 25/2$	1459.8+y	$\geq 23/2$	M1+E2
392.3 3	100	720.8+y	$\geq 19/2$	328.5+y	$\geq 17/2$	M1+E2
401.4 2	<43	1790.45	(11/2 ⁺)	1388.97	(9/2 ⁺)	M1+E2
401.9 2	100 7	3779.38	(21/2 ⁻)	3377.68	(19/2 ⁺)	E1
430.8 3	100 7	2281.8+y	$\geq 27/2$	1851.0+y	$\geq 25/2$	M1+E2
438.8 2	33.7 20	4100.3	(23/2 ⁻)	3661.5	(21/2 ⁺)	E1
446.0 4	100 18	3194.2+y	$\geq 31/2$	2748.1+y	$\geq 29/2$	M1+E2
448.9 2	4.8 4	2239.54	(15/2 ⁺)	1790.45	(11/2 ⁺)	E2
466.4 5	100	2748.1+y	$\geq 29/2$	2281.8+y	$\geq 27/2$	M1+E2
472.8 2	87 13	3779.38	(21/2 ⁻)	3306.73		
474.7 4	100 25	3668.9+y	$\geq 33/2$	3194.2+y	$\geq 31/2$	M1+E2
483.4 2	100	1872.42		1388.97	(9/2 ⁺)	
506.0 2	100 6	2745.65	(17/2 ⁺)	2239.54	(15/2 ⁺)	M1+E2
506.0 2	43 5	4442.7		3936.6		
507.5 2	100	4607.7	(25/2 ⁻)	4100.3	(23/2 ⁻)	M1+E2
516.2 4	<17	1089.3+y	$\geq 21/2$	573.1+y		
523.3 2	93 9	5131.1		4607.7	(25/2 ⁻)	
537.1 5	100	3284.9+y	$\geq 31/2$	2748.1+y	$\geq 29/2$	
547.0 2	100	1605.37	(11/2 ⁻)	1058.28	(9/2 ⁺)	E1
560.9 2	76 6	3306.73		2745.65	(17/2 ⁺)	
572.0 5	100	572.0+x		0.0+x		
573.1 3	100	573.1+y		0.0+y		
573.2 2	100	4234.7		3661.5	(21/2 ⁺)	
620.2 2	<16	1388.97	(9/2 ⁺)	768.62	(7/2 ⁺)	M1+E2
629.8 3	100	3936.6		3306.73		
631.5 2	100	7900.6		7269.1	(35/2 ⁻)	
637.8 2	100	5768.9		5131.1		
646.9 2	100 9	5089.8		4442.7		
654.7 2	100	4889.4		4234.7		
664.5 4	<47	4215.5		3551.21		
669.0 2	100	6437.9		5768.9		
688.4 2	100 7	5131.1		4442.7		
705.2 2	100	6379.6	(33/2 ⁻)	5674.4	(29/2 ⁻)	E2
721.1 2	100 8	2621.29	(15/2 ⁻)	1900.06	(13/2 ⁺)	E1
741.4 2	100 8	3487.11	(19/2 ⁻)	2745.65	(17/2 ⁺)	E1
755.6 2	100	4306.6		3551.21		

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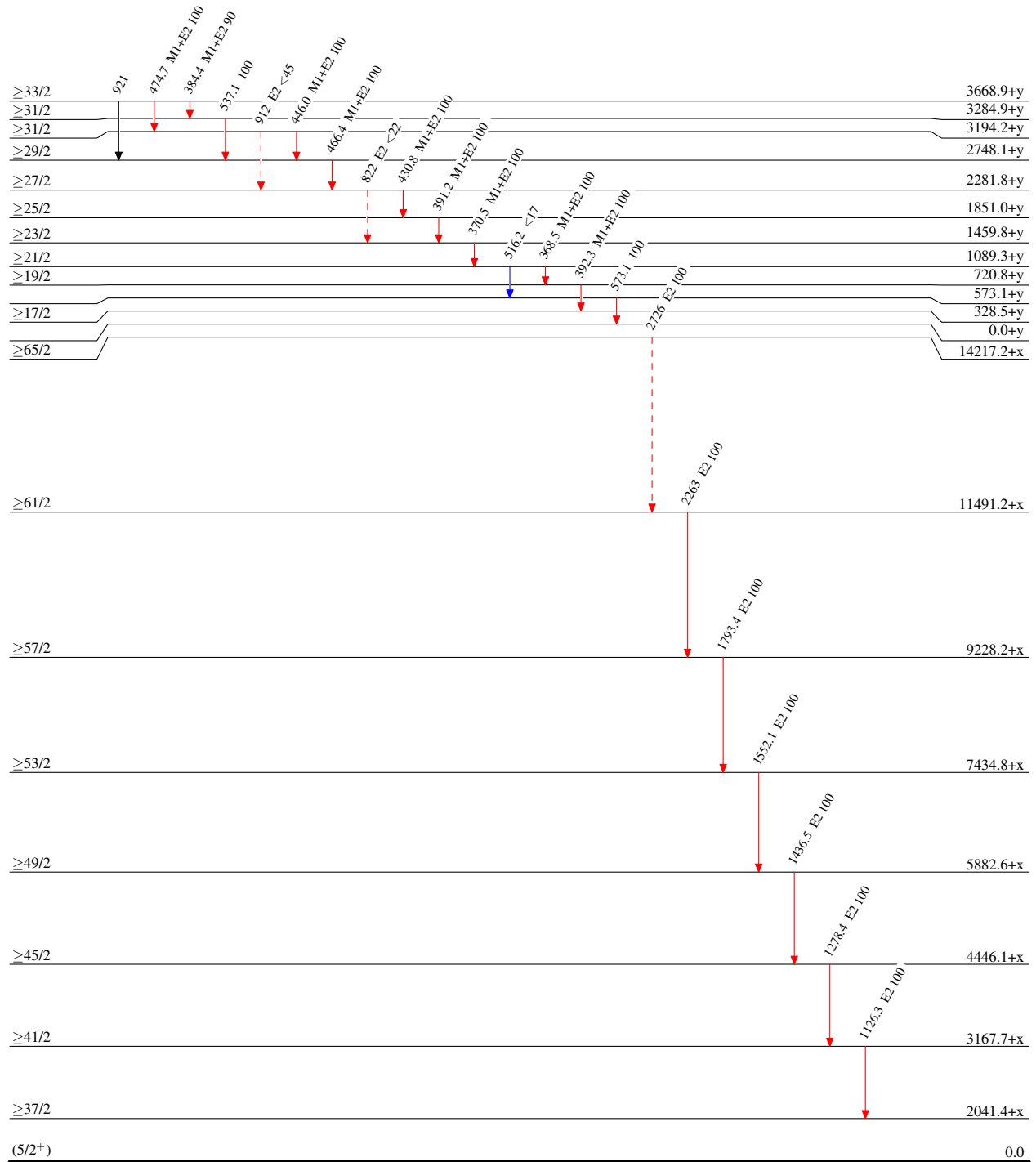
Adopted Levels, Gammas (continued) $\gamma(^{107}\text{Sb})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]
759.4 2	100 8	5967.6	(31/2 ⁻)	5208.1	(27/2 ⁻)	E2
768.5 3	100	768.62	(7/2 ⁺)	0.0	(5/2 ⁺)	M1+E2
771.5 2	100 7	3306.73		2535.40	(17/2 ⁺)	
775.2 2	73 7	2163.87	(13/2 ⁺)	1388.97	(9/2 ⁺)	E2
781.1 3	57 13	4442.7		3661.5	(21/2 ⁺)	
783.8 3	<21	5089.8		4306.6		
805.8 2	100	3551.21		2745.65	(17/2 ⁺)	
822 [‡]	<22	2281.8+y	$\geq 27/2$	1459.8+y	$\geq 23/2$	E2
837.7 2	100 12	4215.5		3377.68	(19/2 ⁺)	
841.7 2	100 6	1900.06	(13/2 ⁺)	1058.28	(9/2 ⁺)	E2
842.4 2	28 4	3377.68	(19/2 ⁺)	2535.40	(17/2 ⁺)	M1+E2
845.7 2	89 6	2745.65	(17/2 ⁺)	1900.06	(13/2 ⁺)	E2
854.2 3	26 3	3732.6		2878.6		
865.7 2	65 6	3487.11	(19/2 ⁻)	2621.29	(15/2 ⁻)	E2
866.6 2	100	8407.4	(41/2 ⁻)	7540.8	(37/2 ⁻)	E2
891.4 2	100	4442.7		3551.21		
912 [‡]	<45	3194.2+y	$\geq 31/2$	2281.8+y	$\geq 27/2$	E2
921		3668.9+y	$\geq 33/2$	2748.1+y	$\geq 29/2$	
947.4 5	100	3482.4		2535.40	(17/2 ⁺)	
1007.9 2	100	6097.7		5089.8		
1016.0 4	66 6	2621.29	(15/2 ⁻)	1605.37	(11/2 ⁻)	E2
1021.8 2	100 11	1790.45	(11/2 ⁺)	768.62	(7/2 ⁺)	E2
1058.2 2	100	1058.28	(9/2 ⁺)	0.0	(5/2 ⁺)	E2
1066.7 2	100	5674.4	(29/2 ⁻)	4607.7	(25/2 ⁻)	E2
1067.4 3	69 7	3306.73		2239.54	(15/2 ⁺)	
1107.7 2	100	5208.1	(27/2 ⁻)	4100.3	(23/2 ⁻)	E2
1111.0 4	100 9	3732.6		2621.29	(15/2 ⁻)	
1126.0 2	100	3661.5	(21/2 ⁺)	2535.40	(17/2 ⁺)	E2
1126.3 3	100	3167.7+x	$\geq 41/2$	2041.4+x	$\geq 37/2$	E2
1138.1 2	100 7	3377.68	(19/2 ⁺)	2239.54	(15/2 ⁺)	E2
1161.2 2	100	7540.8	(37/2 ⁻)	6379.6	(33/2 ⁻)	E2
1225.8 4	100 11	2041.4+x	$\geq 37/2$	815.6+x		
1243.7 2	22.7 20	3779.38	(21/2 ⁻)	2535.40	(17/2 ⁺)	M2
1278.4 3	100	4446.1+x	$\geq 45/2$	3167.7+x	$\geq 41/2$	E2
1301.5 4	100	7269.1	(35/2 ⁻)	5967.6	(31/2 ⁻)	E2
1389.1 2	100 7	1388.97	(9/2 ⁺)	0.0	(5/2 ⁺)	E2
1436.5 4	100	5882.6+x	$\geq 49/2$	4446.1+x	$\geq 45/2$	E2
1456.1 4	100	9863.5		8407.4	(41/2 ⁻)	
1469.4 4	<53	2041.4+x	$\geq 37/2$	572.0+x		
1552.1 4	100	7434.8+x	$\geq 53/2$	5882.6+x	$\geq 49/2$	E2
1793.4 8	100	9228.2+x	$\geq 57/2$	7434.8+x	$\geq 53/2$	E2
2263 1	100	11491.2+x	$\geq 61/2$	9228.2+x	$\geq 57/2$	E2
2726 [‡]	100	14217.2+x	$\geq 65/2$	11491.2+x	$\geq 61/2$	E2

[†] From DCO, most of the Q are stretched Q and could be E2.[‡] Placement of transition in the level scheme is uncertain.

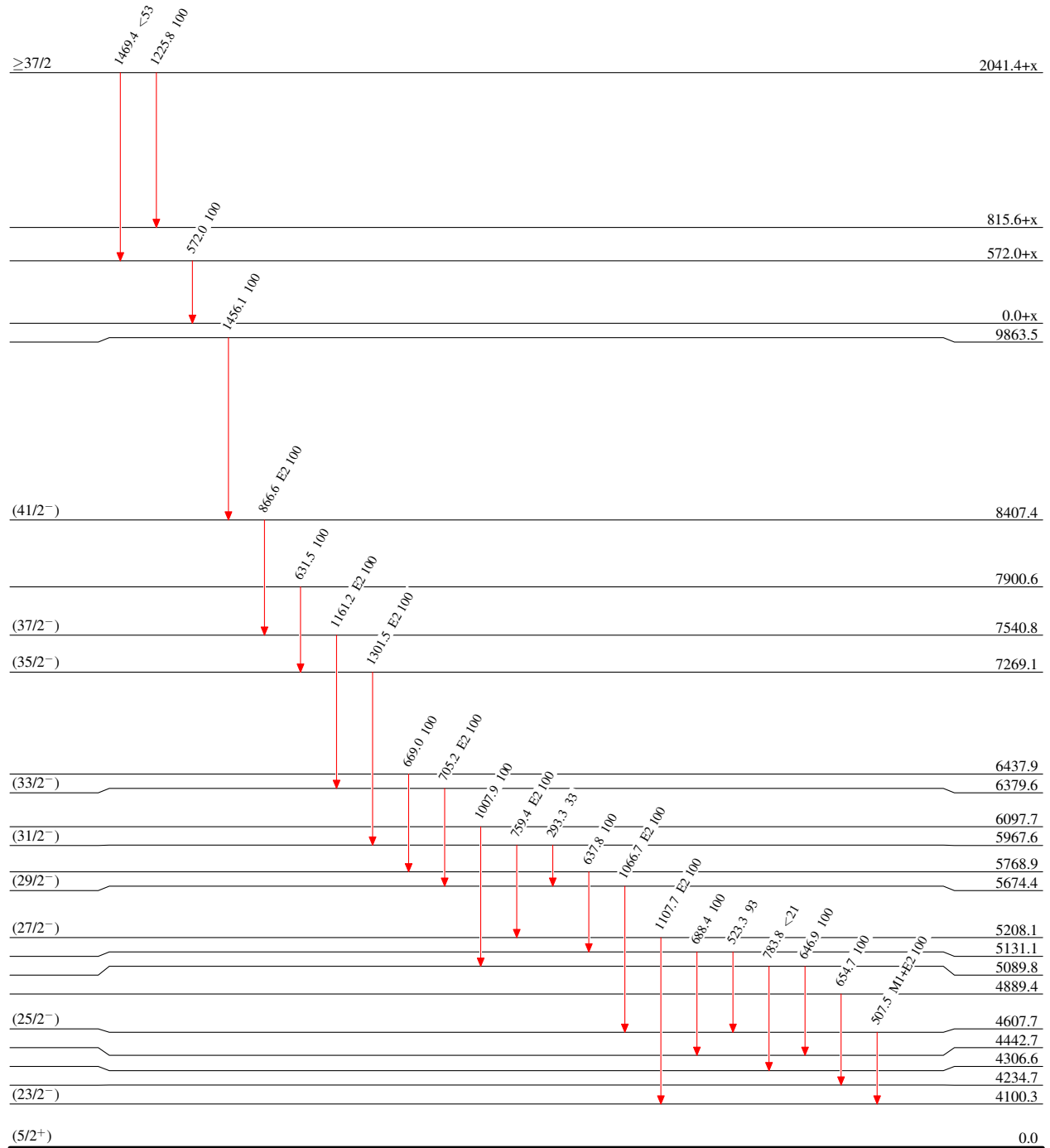
Adopted Levels, Gammas**Legend****Level Scheme**Intensities: Relative I_γ

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\max}$
 $\cdots\cdots\cdots\longrightarrow$ γ Decay (Uncertain)



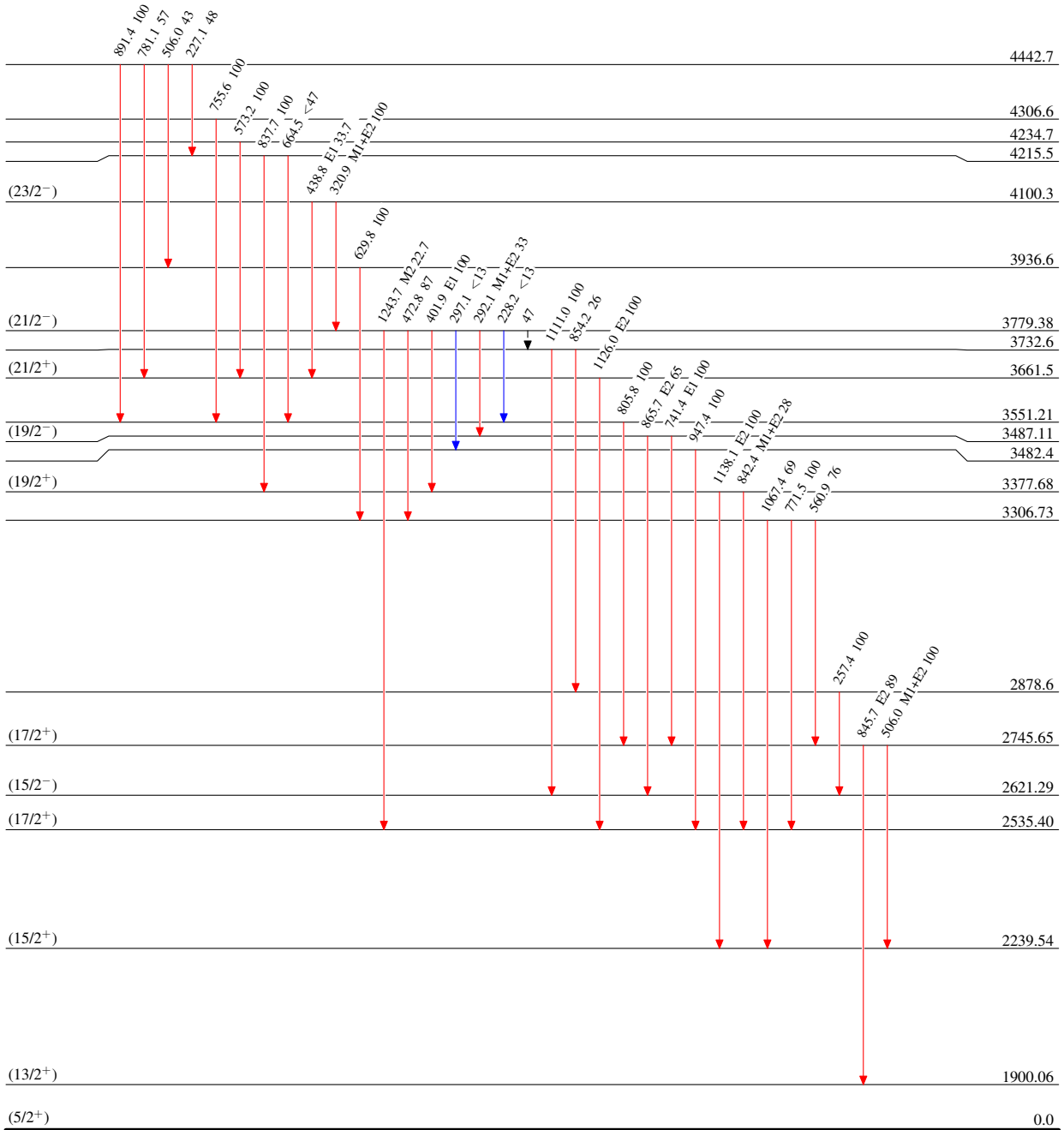
Adopted Levels, Gammas**Level Scheme (continued)**Intensities: Relative I_γ **Legend**

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\max}$



Adopted Levels, Gammas**Legend****Level Scheme (continued)**Intensities: Relative I_γ

- $I_\gamma < 2\% \times I_\gamma^{\max}$
 —→ $I_\gamma < 10\% \times I_\gamma^{\max}$
 —→ $I_\gamma > 10\% \times I_\gamma^{\max}$
 - - - - -→ γ Decay (Uncertain)

 $^{107}_{51}\text{Sb}_{56}$

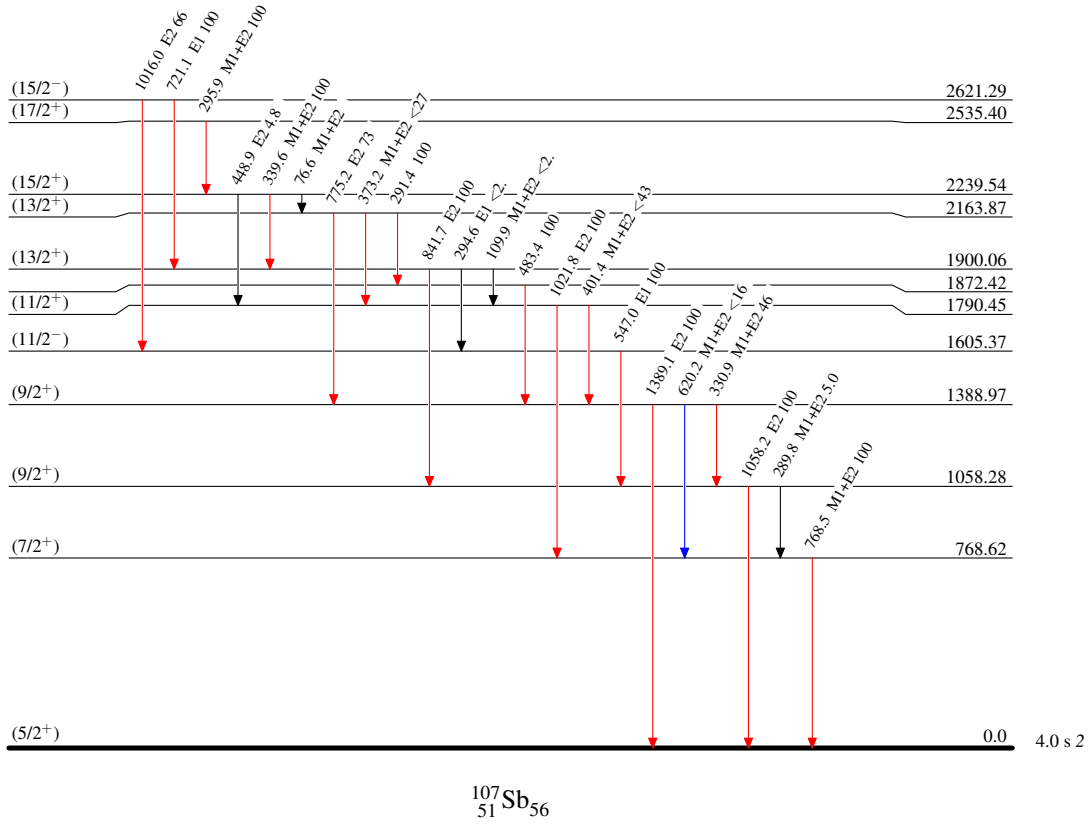
4.0 s 2

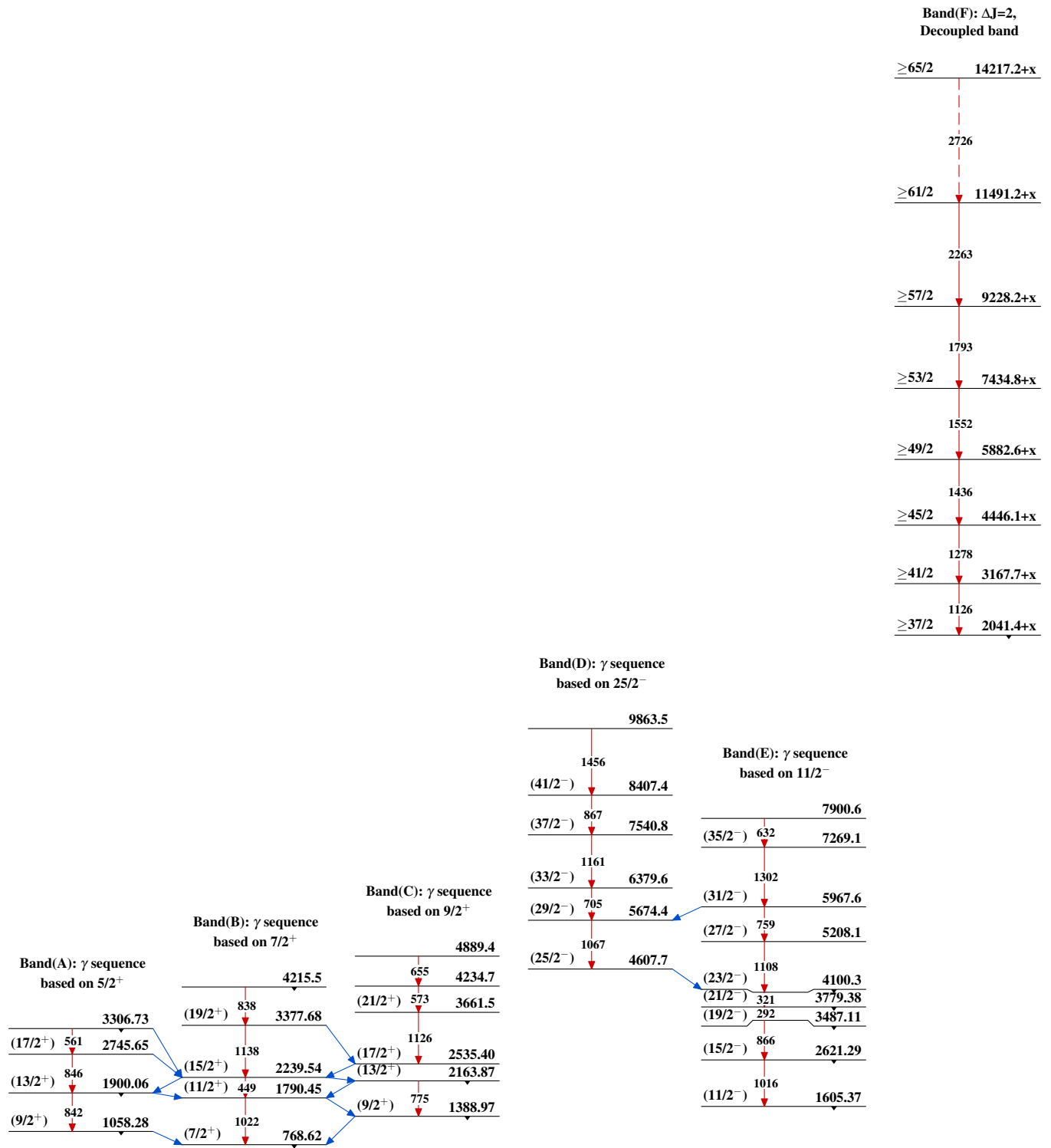
Adopted Levels, Gammas

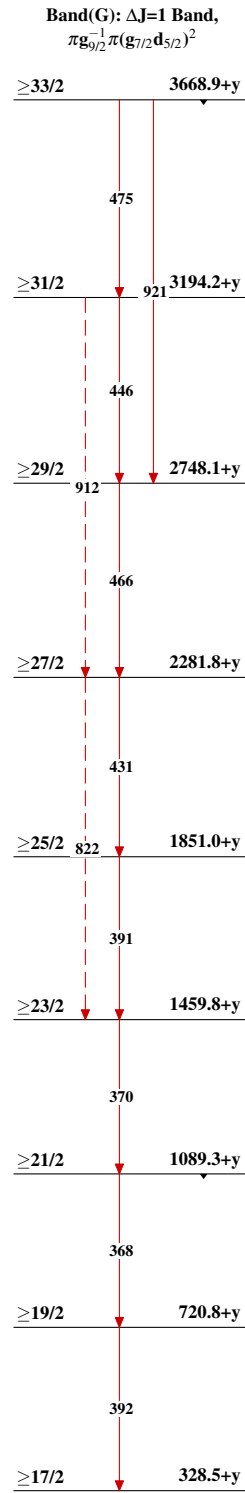
Legend

Level Scheme (continued)Intensities: Relative I_γ

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\max}$
 $\longrightarrow$ γ Decay (Uncertain)



Adopted Levels, Gammas

Adopted Levels, Gammas (continued) $^{107}_{51}\text{Sb}_{56}$