

²⁵²Cf SF decay 2007Di09

Type	History		
	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	ENSDF	1-Jul-2008

Parent: ²⁵²Cf: E=0.0; J^π=0⁺; T_{1/2}=2.645 y 8; %SF decay=?

Measured E_γ, γγ coin using GAMMASPHERE array of 102 Compton-shielded Ge detectors.

¹⁰⁸Mo Levels

E(level) [†]	J ^π	E(level) [†]	J ^π	E(level) [†]	J ^π	E(level) [†]	J ^π
0.0 [#]	0 ⁺	1508.3 [@] 4	6 ⁺	2524.8 [@] 6	9 ⁺	3343.1 ^{‡&} 7	(10 ⁺)
193.1 [#] 3	2 ⁺	1699.2 ^{&} 4	(5 ⁺)	2530.6 [#] 6	10 ⁺	3402.9 [#] 7	12 ⁺
564.0 [#] 4	4 ⁺	1753.3 [#] 5	8 ⁺	2556.0 ^a 5	(6 ⁻)	3666.2 ^b 6	
586.1 [@] 3	2 ⁺	1817.8 [@] 5	7 ⁺	2593.3 ^{&} 5	(8 ⁺)	3796.8 ^a 7	(8 ⁻)
783.1 [@] 4	3 ⁺	1957.1 ^{&} 4	(6 ⁺)	2883.1 ^{&} 6	(9 ⁺)	3834.4 [@] 8	12 ⁺
978.8 [@] 4	4 ⁺	2162.2 ^a 5	(5 ⁻)	2949.9 [@] 6	10 ⁺	4348.1 [#] 8	14 ⁺
1091.2 [#] 4	6 ⁺	2170.6 [@] 5	8 ⁺	2999.8 ^b 5			
1232.6 [@] 4	5 ⁺	2223.9 ^{&} 5	(7 ⁺)	3111.2 ^a 6	(7 ⁻)		
1422.4 ^{&} 4	(4 ⁺)	2450.6 ^b 5		3339.3 [@] 7	11 ⁺		

[†] From least-squares fit to E_γ, assuming an uncertainty of 0.4 keV for each γ ray.

[‡] According to e-mail reply of June 25, 2007 from the first author of 2007Di09, level energy should be 3343.1 instead of 3366.1 (as listed in figure 1 of 2007Di09).

[#] Band(A): g.s. band.

[@] Band(B): γ-vib. band.

[&] Band(C): Two-phonon γ-vib band.

^a Band(D): π7/2[413]⊗π3/2[312].

^b Band(E): γ cascade.

γ(¹⁰⁸Mo)

E _γ	E _i (level)	J _i ^π	E _f	J _f ^π	E _γ	E _i (level)	J _i ^π	E _f	J _f ^π
193.1	193.1	2 ⁺	0.0	0 ⁺	466.6	1699.2	(5 ⁺)	1232.6	5 ⁺
195.6	978.8	4 ⁺	783.1	3 ⁺	524.8	2223.9	(7 ⁺)	1699.2	(5 ⁺)
197.1	783.1	3 ⁺	586.1	2 ⁺	527.2	1091.2	6 ⁺	564.0	4 ⁺
219.1	783.1	3 ⁺	564.0	4 ⁺	529.5	1508.3	6 ⁺	978.8	4 ⁺
253.8	1232.6	5 ⁺	978.8	4 ⁺	534.5	1957.1	(6 ⁺)	1422.4	(4 ⁺)
257.9	1957.1	(6 ⁺)	1699.2	(5 ⁺)	549.2	2999.8		2450.6	
275.7	1508.3	6 ⁺	1232.6	5 ⁺	555.2	3111.2	(7 ⁻)	2556.0	(6 ⁻)
276.8	1699.2	(5 ⁺)	1422.4	(4 ⁺)	585.2	1817.8	7 ⁺	1232.6	5 ⁺
309.5	1817.8	7 ⁺	1508.3	6 ⁺	586.1	586.1	2 ⁺	0.0	0 ⁺
369.4	2593.3	(8 ⁺)	2223.9	(7 ⁺)	590.0	783.1	3 ⁺	193.1	2 ⁺
370.9	564.0	4 ⁺	193.1	2 ⁺	636.2	2593.3	(8 ⁺)	1957.1	(6 ⁺)
392.7	978.8	4 ⁺	586.1	2 ⁺	639.2	1422.4	(4 ⁺)	783.1	3 ⁺
393.0	586.1	2 ⁺	193.1	2 ⁺	659.2	2883.1	(9 ⁺)	2223.9	(7 ⁺)
393.8	2556.0	(6 ⁻)	2162.2	(5 ⁻)	662.1	1753.3	8 ⁺	1091.2	6 ⁺
414.8	978.8	4 ⁺	564.0	4 ⁺	662.3	2170.6	8 ⁺	1508.3	6 ⁺
417.1	1508.3	6 ⁺	1091.2	6 ⁺	666.4	3666.2		2999.8	
417.3	2170.6	8 ⁺	1753.3	8 ⁺	668.6	1232.6	5 ⁺	564.0	4 ⁺
443.6	1422.4	(4 ⁺)	978.8	4 ⁺	685.6	3796.8	(8 ⁻)	3111.2	(7 ⁻)
449.4	1232.6	5 ⁺	783.1	3 ⁺	707.0	2524.8	9 ⁺	1817.8	7 ⁺

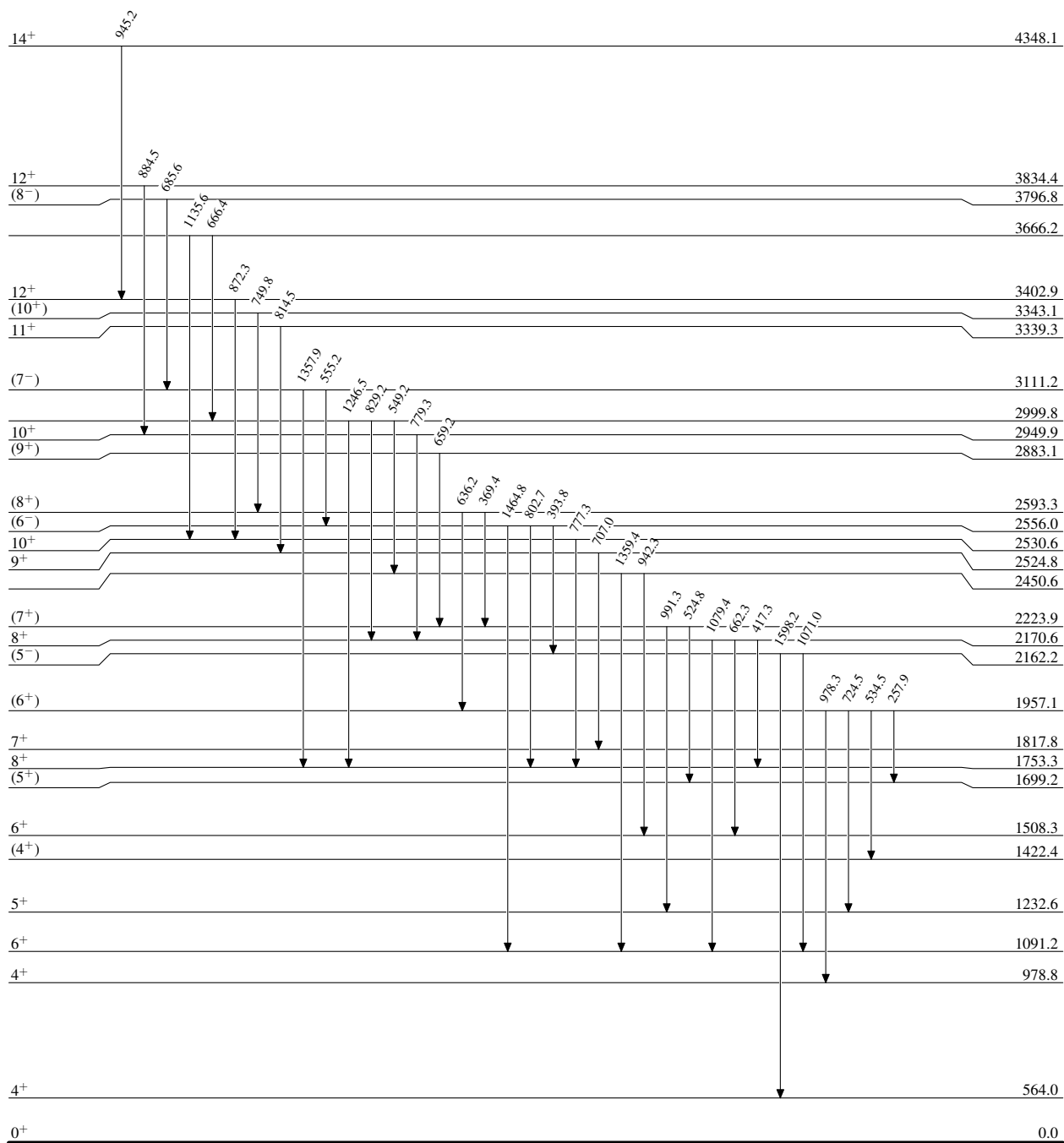
Continued on next page (footnotes at end of table)

^{252}Cf SF decay 2007Di09 (continued) $\gamma(^{108}\text{Mo})$ (continued)

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
720.5	1699.2	(5 ⁺)	978.8	4 ⁺	942.3	2450.6		1508.3	6 ⁺
724.5	1957.1	(6 ⁺)	1232.6	5 ⁺	944.3	1508.3	6 ⁺	564.0	4 ⁺
726.6	1817.8	7 ⁺	1091.2	6 ⁺	945.2	4348.1	14 ⁺	3402.9	12 ⁺
749.8	3343.1	(10 ⁺)	2593.3	(8 ⁺)	978.3	1957.1	(6 ⁺)	978.8	4 ⁺
777.3	2530.6	10 ⁺	1753.3	8 ⁺	991.3	2223.9	(7 ⁺)	1232.6	5 ⁺
779.3	2949.9	10 ⁺	2170.6	8 ⁺	1039.4	1232.6	5 ⁺	193.1	2 ⁺
785.7	978.8	4 ⁺	193.1	2 ⁺	1071.0	2162.2	(5 ⁻)	1091.2	6 ⁺
802.7	2556.0	(6 ⁻)	1753.3	8 ⁺	1079.4	2170.6	8 ⁺	1091.2	6 ⁺
814.5	3339.3	11 ⁺	2524.8	9 ⁺	1135.6	3666.2		2530.6	10 ⁺
829.2	2999.8		2170.6	8 ⁺	1246.5	2999.8		1753.3	8 ⁺
836.3	1422.4	(4 ⁺)	586.1	2 ⁺	1357.9	3111.2	(7 ⁻)	1753.3	8 ⁺
872.3	3402.9	12 ⁺	2530.6	10 ⁺	1359.4	2450.6		1091.2	6 ⁺
884.5	3834.4	12 ⁺	2949.9	10 ⁺	1464.8	2556.0	(6 ⁻)	1091.2	6 ⁺
916.2	1699.2	(5 ⁺)	783.1	3 ⁺	1598.2	2162.2	(5 ⁻)	564.0	4 ⁺

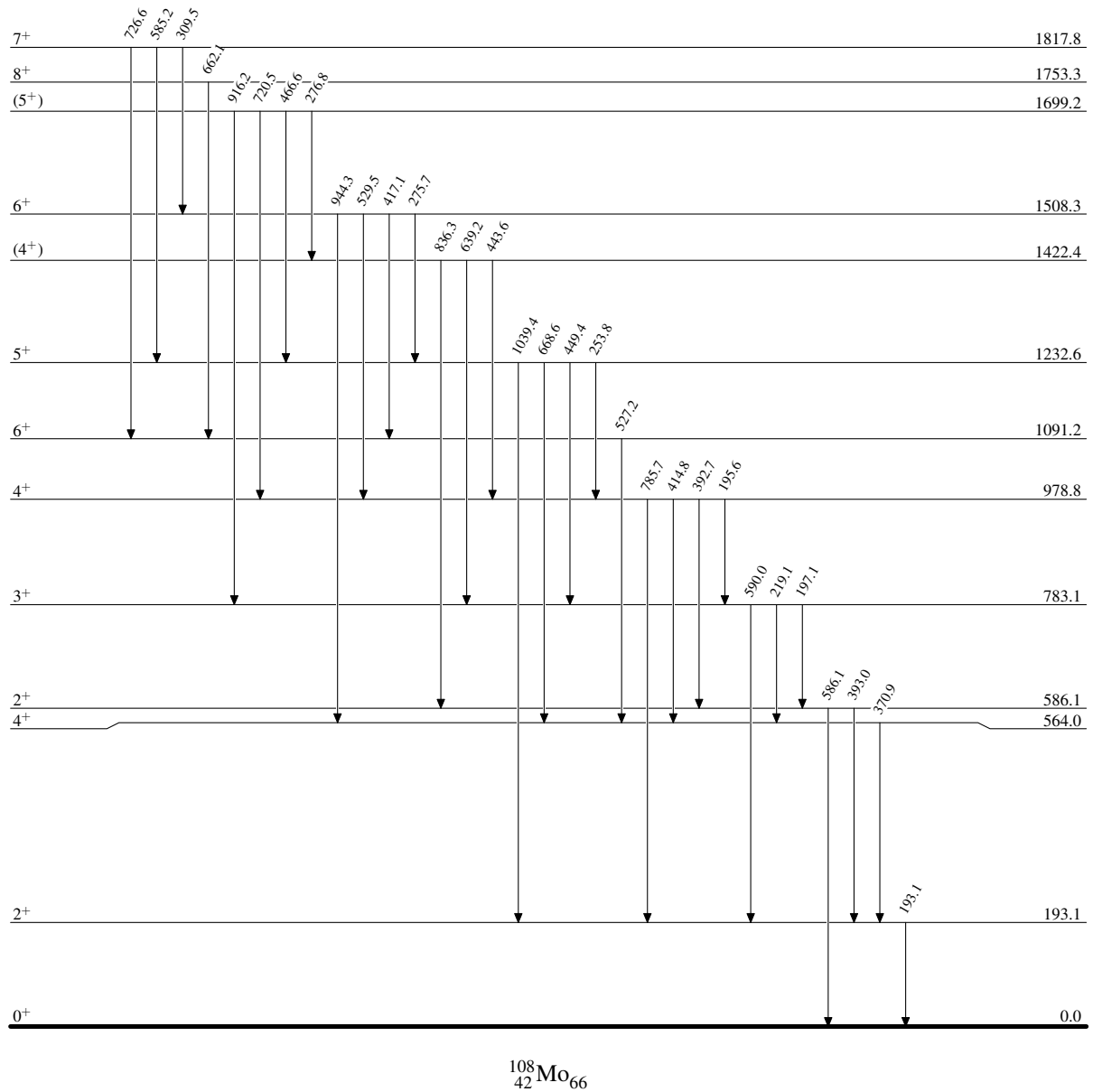
^{252}Cf SF decay 2007Di09

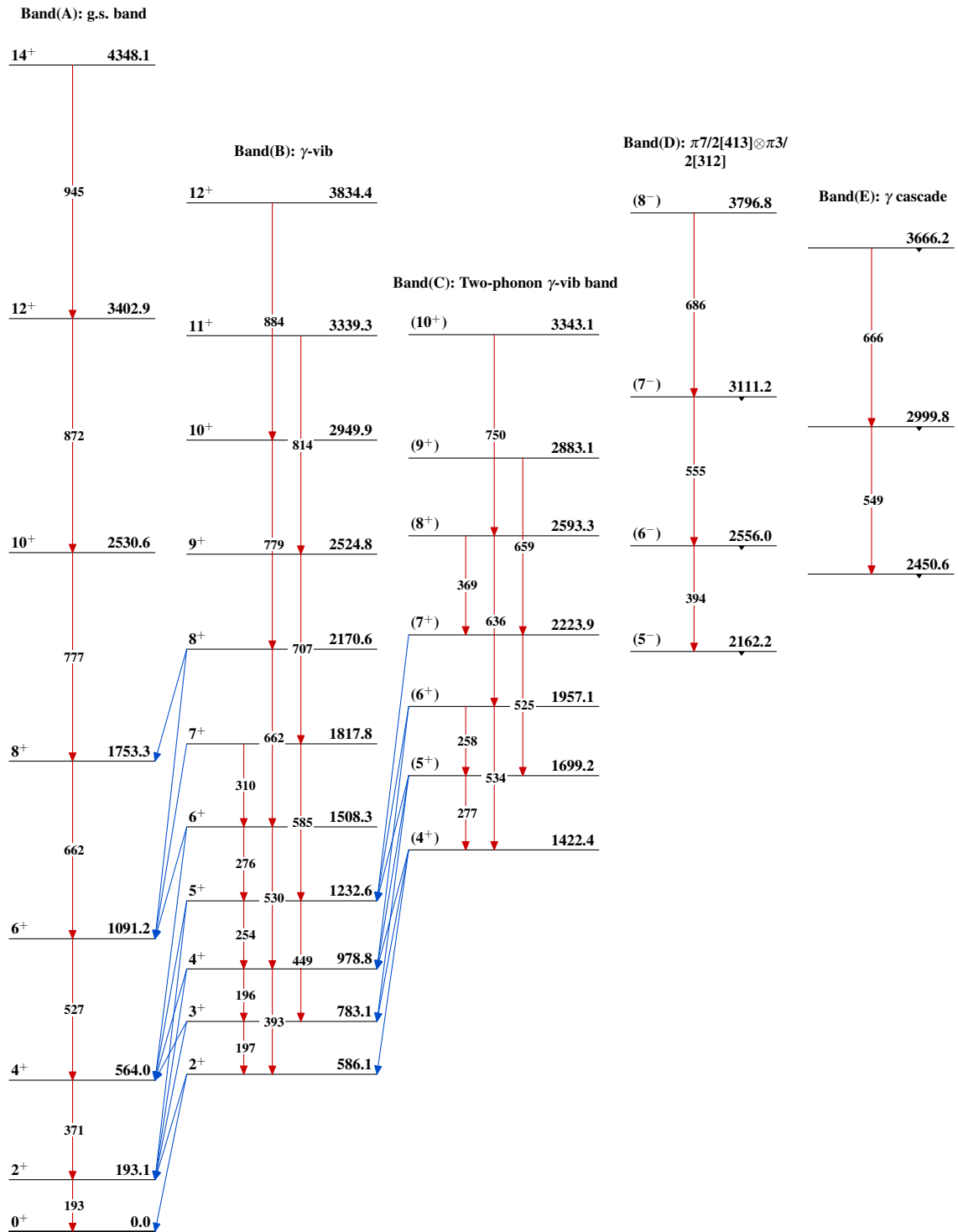
Level Scheme

 $^{108}_{42}\text{Mo}_{66}$

^{252}Cf SF decay 2007Di09

Level Scheme (continued)



^{252}Cf SF decay 2007Di09 $^{108}_{42}\text{Mo}_{66}$