

^{252}Cf SF decay 2006Lu12

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

Parent: ^{252}Cf : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=2.645$ y 8; %SF decay=3.086 8

2006Lu12: Source: ^{252}Cf ; Detectors: Gammasphere array consisting of 102 Compton-suppressed Ge detectors; Measured: E_γ , I_γ , $\gamma\gamma\gamma$; Deduced: Level scheme. Assignment to ^{110}Tc is based on the coincidence relationships and relative intensities with those of the complementary fission partner Cs isotopes ($^{137,138,139}\text{Cs}$).

 ^{110}Tc Levels

E(level) [†]	J^π	$T_{1/2}$	Comments
0.0	(2,3 ⁺)	0.900 s 13	E(level): Listed as 0.0(+x) in Figure 2 of 2006Lu12. $J^\pi, T_{1/2}$: From Adopted Levels.
53.5 5			
152.4 7			
184.8 [#] 7			
240.5 9			
256.9 9			
266.7 [#] 9			
366.0 [#] 10			
478.9 [‡] 9			
512.2 [#] 12			
605.2 [‡] 10			
783.4 [‡] 10			
962.3 [‡] 10			
1271.2 [‡] 10			
1430.4 [‡] 11			
1917.8 [‡] 11			
2046.5 [‡] 11			
2699.5 [‡] 12			
2792.4 [‡] 12			
3677.3 [‡] 13			

[†] From a least-square fit to E_γ .

[‡] Band(A): band 1.

[#] Band(B): band 2.

 $\gamma(^{110}\text{Tc})$

E_γ [†]	I_γ [†]	$E_i(\text{level})$	E_f	J_f^π	Comments
53.5 5		53.5	0.0	(2,3 ⁺)	
81.9 5		266.7	184.8		
88.1 5		240.5	152.4		
98.9 5		152.4	53.5		
99.3 5		366.0	266.7		
104.5 5		256.9	152.4		
126.3 5	100	605.2	478.9		
128.8 5	2.4	2046.5	1917.8		
131.3 5		184.8	53.5		
146.2 5		512.2	366.0		Initial level at 366.0 keV in Table I of 2006Lu12 seems to be a misprint.

Continued on next page (footnotes at end of table)

^{252}Cf SF decay 2006Lu12 (continued) $\gamma(^{110}\text{Tc})$ (continued)

E_γ †	I_γ †	$E_i(\text{level})$	E_f	Comments
159.3 5	5.1	1430.4	1271.2	
178.3 5	57.8	783.4	605.2	
178.9 5	25.5	962.3	783.4	
222.0 5	89.6	478.9	256.9	
238.4 5	32.1	478.9	240.5	
304.5 5	19.9	783.4	478.9	
309.0 5	11.6	1271.2	962.3	
357.1 5	32.2	962.3	605.2	
468.1 5	24.9	1430.4	962.3	
487.3 5	3.3	1917.8	1430.4	
487.7 5	15.0	1271.2	783.4	
616.1 5	14.5	2046.5	1430.4	
646.6 5	7.1	1917.8	1271.2	
653.0 ‡		2699.5	2046.5	E_γ : 650.3 keV listed in Table I of 2006Lu12 seems to be a misprint.
745.8 5	3.7	2792.4	2046.5	
781.7 5	1.9	2699.5	1917.8	
884.9 5	0.5	3677.3	2792.4	

† From 2006Lu12. $\Delta E_\gamma=0.5$ keV were estimated by the evaluators.

‡ Placement of transition in the level scheme is uncertain.

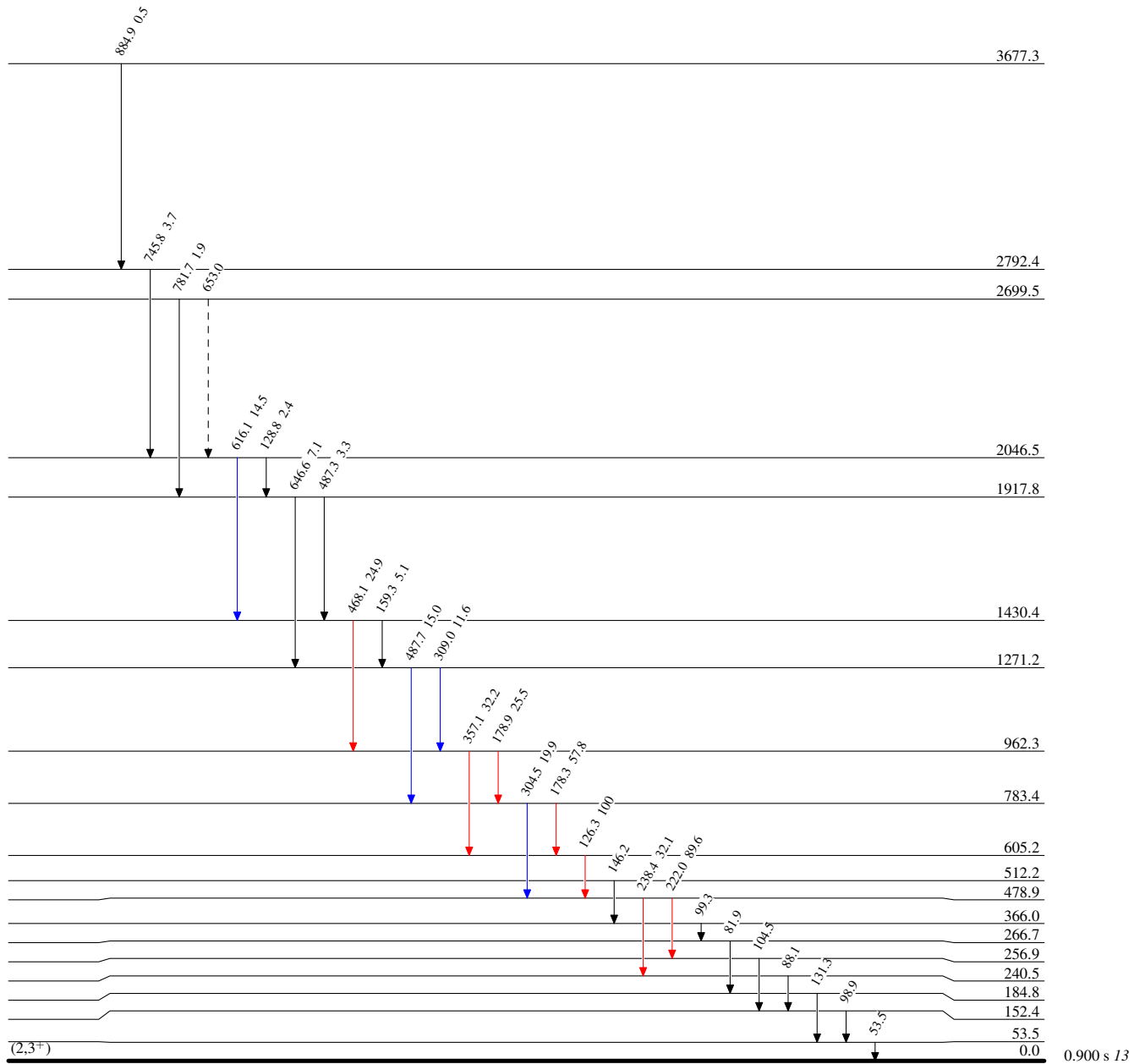
^{252}Cf SF decay 2006Lu12

Legend

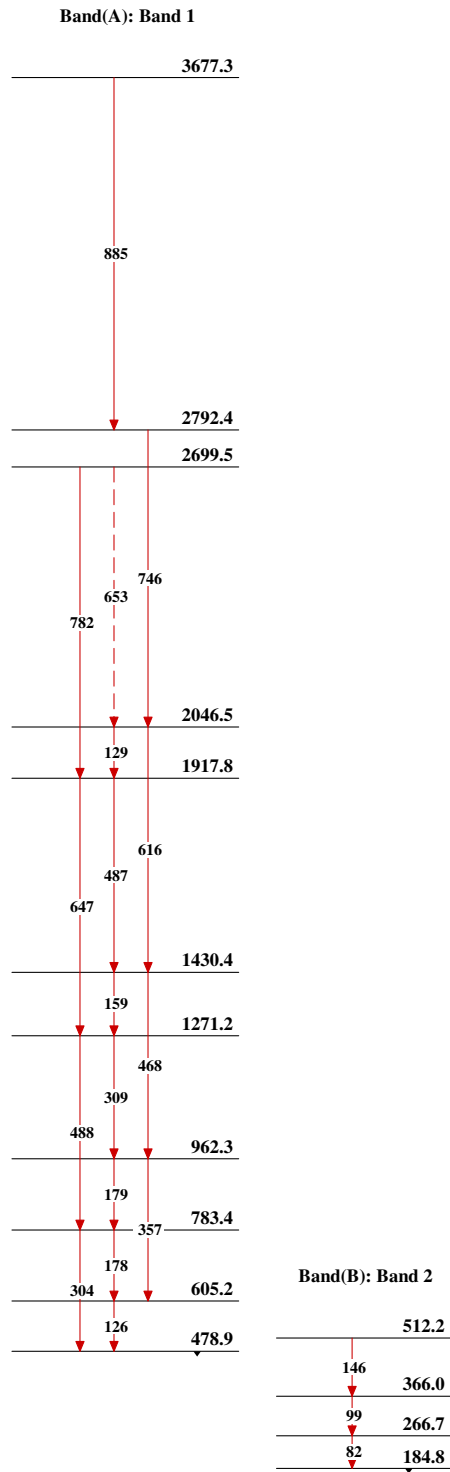
Level Scheme

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)



$^{110}_{43}\text{Tc}_{67}$

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