^{252}Cf SF decay 2009Hw03

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 112, 1163 (2011)	15-Dec-2010

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

Other: 2010Si17 (see ^{248}Cm SF decay dataset).

^{252}Cf source with α decay intensity of 62 υCi sandwiched between Fe foils within a polyethylene ball; GAMMASPHERE array (101 Ge detectors); measured Eγ (E>33 keV), Iγ, 3-fold and higher γ coincidences, K x ray(Pm)-γ-γ coin (to identify Rb transitions).

^{93}Rb Levels

E(level)†	J^π‡	Comments
0.0#	5/2$^-$	J^π: from Adopted Levels.
733.40# *24*	(7/2$^-$)	J^π: from Adopted Levels; authors propose (9/2$^-$).
912.71 *24*	(7/2$^-$)	
1285.21@ *22*	(9/2$^+$)	
2031.6@ *4*	(13/2$^+$)	
2315.3 *4*		
2942.8@ *5*	(17/2$^+$)	
3235.0 *5*	(17/2$^+$)	J^π: from Adopted Levels.
3406.5 *6*		
3940.8@ *6*	(21/2$^+$)	
4086.9 *6*		

† From least-squares fit to Eγ.

‡ Authors′ suggested values, based on comparison of deduced level structure with that of the ^{92}Kr core and, for the π=+ states, with that for ^{89}Rb (which was supported by measured ADO ratios).

Band(A): (π $f_{5/2}$)⊗(^{92}Kr g.s. band) (2009Hw03). Assignment based on similarity between E(733 level) and E(2$^+$ 769 level) In ^{92}Kr assuming adopted J^π(g.s.).

@ Band(B): (π $g_{9/2}$)⊗(^{92}Kr g.s. band) (2009Hw03). α=+1/2 band. energies relative to the 1285 level are very similar to g.s. band energies for ^{90}Kr and ^{92}Kr, but differ from those of ^{92}Sr and ^{94}Sr.

γ(^{93}Rb)

E$_\gamma$†	I$_\gamma$†	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.‡	α#	Comments
171.5 *3*	2	3406.5		3235.0	(17/2$^+$)			
372.5 *3*	23	1285.21	(9/2$^+$)	912.71	(7/2$^-$)	D		
551.8 *3*	1	1285.21	(9/2$^+$)	733.40	(7/2$^-$)	D		
733.4 *3*	52	733.40	(7/2$^-$)	0.0	5/2$^-$			
746.4 *3*	16	2031.6	(13/2$^+$)	1285.21	(9/2$^+$)	Q		
911.2 *3*	6	2942.8	(17/2$^+$)	2031.6	(13/2$^+$)			
912.7 *3*	100	912.71	(7/2$^-$)	0.0	5/2$^-$			
998.0 *3*	5	3940.8	(21/2$^+$)	2942.8	(17/2$^+$)			
1144.1 *3*	1	4086.9		2942.8	(17/2$^+$)			
1203.4 *3*	3	3235.0	(17/2$^+$)	2031.6	(13/2$^+$)			
1285.2 *3*	10	1285.21	(9/2$^+$)	0.0	5/2$^-$	(M2)	0.000653 *10*	α=0.000653 *10*; α(K)=0.000575 *8*; α(L)=6.20×10^{-5} *9*; α(M)=1.024×10^{-5} *15*; α(N+..)=6.02×10^{-6} *9* α(N)=1.165×10^{-6} *17*; α(O)=5.09×10^{-8} *8*; α(IPF)=4.80×10^{-6} *7*
1402.6 *3*	4	2315.3		912.71	(7/2$^-$)			

Continued on next page (footnotes at end of table)

^{252}Cf SF decay 2009Hw03 (continued)

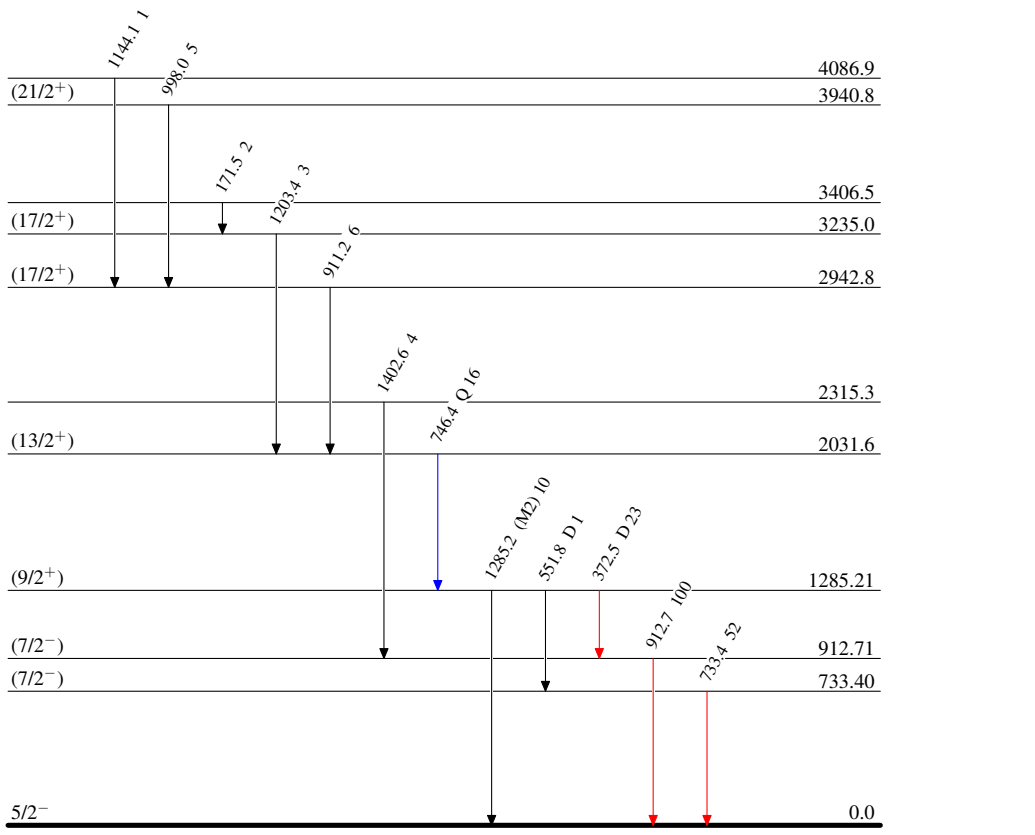
$\gamma(^{93}Rb)$ (continued)

† From 2009Hw03. Uncertainty In Iγ is unstated by authors.
‡ From Adopted Gammas.
# Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

^{252}Cf SF decay 2009Hw03

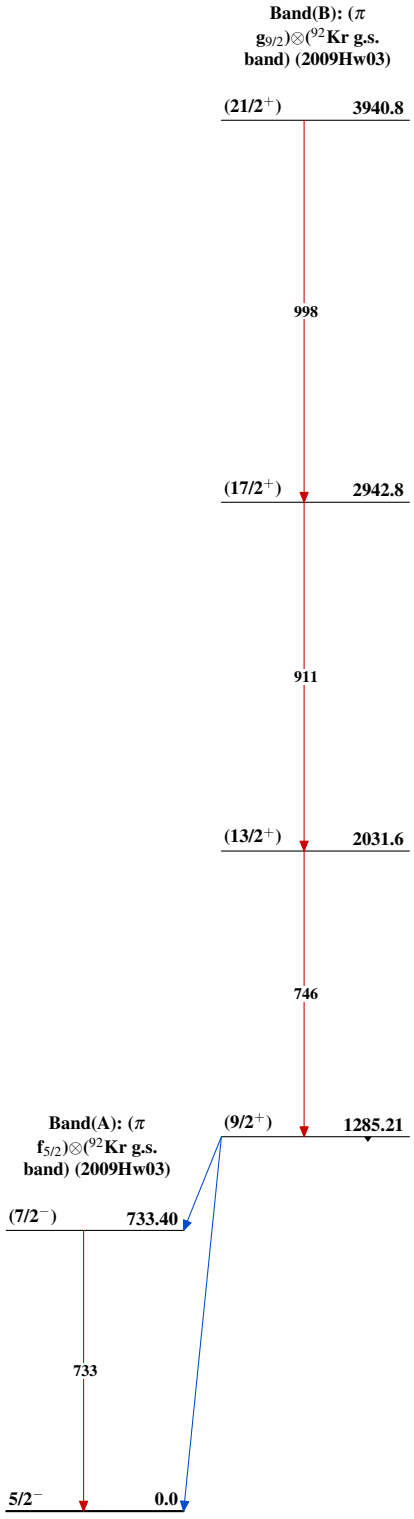
Level Scheme

Intensities: Relative I$_\gamma$



$^{93}_{37}Rb_{56}$

^{252}Cf SF decay 2009Hw03



$^{93}_{37}Rb_{56}$