^{248}Cm SF decay 2006Ur02,1997Bh06

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 152, 331 (2018)	1-Apr-2018

Parent: ^{248}Cm: E=0.0; $J^\pi=0^+$; $T_{1/2}=3.48\times10^5$ y *6*; %SF decay=?

2006Ur02,1997Bh06: Measured Eγ, Iγ, $\gamma\gamma$, (x-ray)$\gamma\gamma$ in coincidence with complementary Tc fragment using EUROGAM array consisting of 124 Ge detector elements and 4 LEPS spectrometers. 2006Ur02 is a re-analysis of data in 1997Bh06 with improved analysis techniques enabling studies at higher sensitivity levels and lower γ-ray energies.

1997Bh06 identified the yrast structure based on the (7^-) level and estimated that the (7^-) level is less than 60 keV above the (6^-) isomer. 2006Ur02 identified a new 42.6-keV transition de-exciting the (7^-) level and feeding the (6^-) isomer.

^{136}I Levels

E(level)[†]	J^π[‡]	Comments
0.0	(1^-)	
87.0	(2^-,1^-,0^-)	J^π: (2^-) assigned in 2006Ur02.
x	(6^-)	configuration: $\pi g^2_{7/2} d_{5/2} \nu f_{7/2}$ (2006Ur02).
x+42.6[#]	(7^-)	E(level): this level is associated with the 243.6-keV level in the Adopted Levels.
222.2		J^π: (3^-) assigned in 2006Ur02.
316.7		
x+1153.9[#]	(9^-)	
x+1414.4[#]	(11^-)	
x+1657.4	(12^-)	
x+2483.4		J^π: (12^-) proposed by 1997Bh06 based on shell model calculations.
x+2877.4		J^π: (12^+) proposed by 1997Bh06 based on shell model calculations.
x+2941.4		J^π: (13^+) proposed by 1997Bh06 based on shell model calculations.
x+3059		J^π: (14^+) proposed by 1997Bh06 based on shell model calculations.
x+3119		
x+4117		

[†] From least-squares fit to Eγ, by evaluator, except where noted.
[‡] From the Adopted Levels. Differences with J^π assignments from 2006Ur02 and 1997Bh06 are indicated in the comments.
[#] Proposed configuration of $\pi g^3_{7/2} \nu f_{7/2}$ (1997Bh06).

$\gamma(^{136}$I)

Eγ[†]	Iγ[†]	E$_i$(level)	J^π_i	E$_f$	J^π_f	Mult.[‡]	Comments
42.6	10 *3*	x+42.6	(7^-)	x	(6^-)	M1+E2	α(K)exp=7 *1*. α(K)exp: from intensity of iodine Kα x-ray, 42.6γ and 234γ in spectrum gated by 1111γ and 261γ.
87.0	66 *6*	87.0	(2^-,1^-,0^-)	0.0	(1^-)	(M1+E2)	α(K)exp=3.2 *8*. α(K): from comparison of Iγ(87γ) compared with the iodine Kα x-ray intensity in a spectrum double gated on the 135.2γ and the 69.0γ from ^{109}Tc. Mult.: assigned as M1+E2 in 2006Ur02 based on α(K)exp, however, theory gives α(K)=0.96 and 1.8 for M1 and E2 multipolarities, respectively. Thus, multipolarity assignment should be considered tentative.
94.5	27 *4*	316.7		222.2			
117[#]		x+3059		x+2941.4			
135.2	58 *5*	222.2		87.0	(2^-,1^-,0^-)		
182[#]		x+3059		x+2877.4			

Continued on next page (footnotes at end of table)

^{248}Cm SF decay 2006Ur02,1997Bh06 (continued)

$\gamma(^{136}I)$ (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π
242#		x+3119		x+2877.4		1111.3	100 *5*	x+1153.9	(9$^-$)	x+42.6	(7$^-$)
243.0	30 *2*	x+1657.4	(12$^-$)	x+1414.4	(11$^-$)	1284#		x+2941.4		x+1657.4	(12$^-$)
260.5	60 *4*	x+1414.4	(11$^-$)	x+1153.9	(9$^-$)	1402#		x+3059		x+1657.4	(12$^-$)
1058#		x+4117		x+3059		1463#		x+2877.4		x+1414.4	(11$^-$)
1069#		x+2483.4		x+1414.4	(11$^-$)	1644#		x+3059		x+1414.4	(11$^-$)

† From 2006Ur02, except where noted.
‡ From α(K)exp in 2006Ur02.
# From 1997Bh06.

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Level Scheme

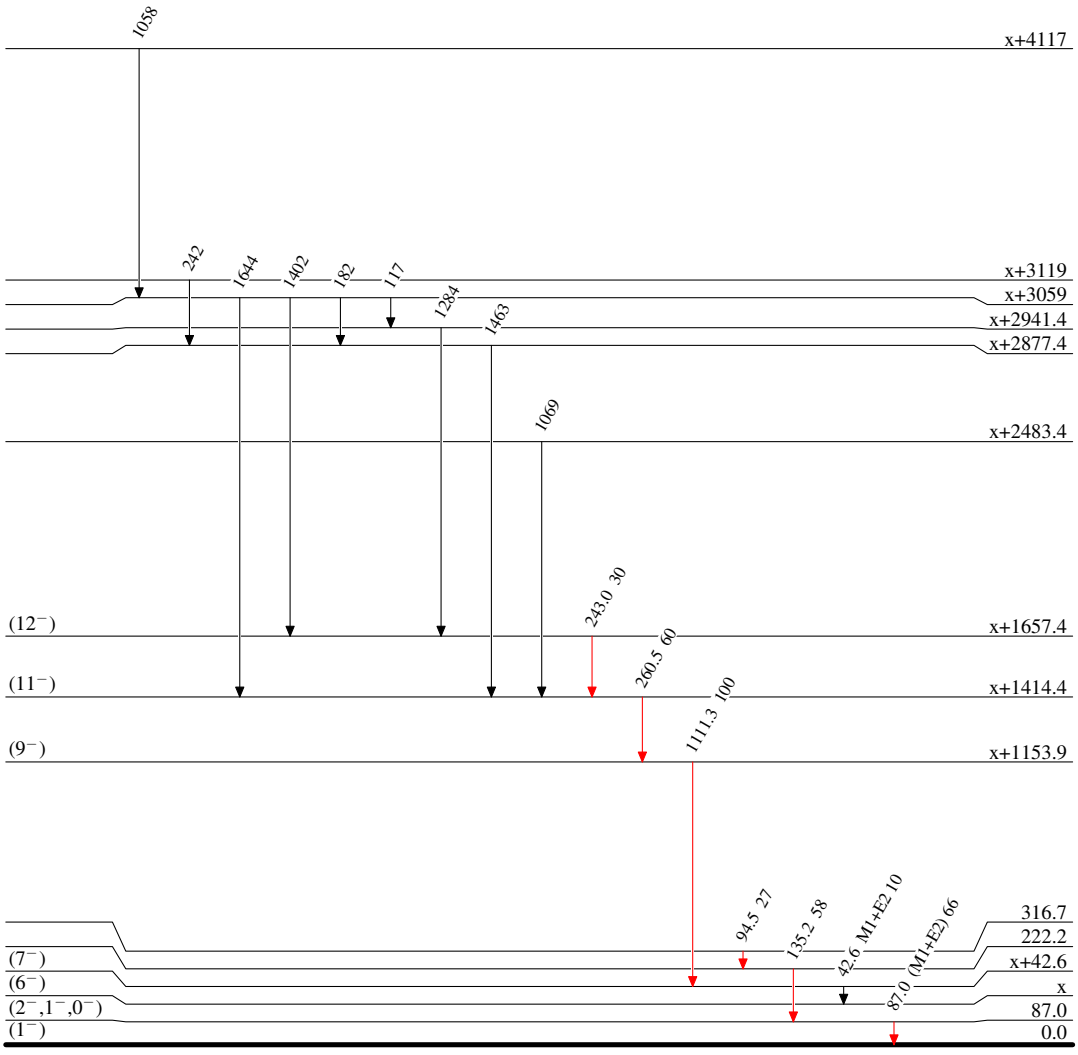
Intensities: Type not specified

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{136}_{53}I_{83}$