^{248}Cm SF decay 2001Fo02,1997Bh06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Alexander A. Rodionov And Yuri L. Khazov	NDS 109, 517 (2008)	22-Jan-2008

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

2001Fo02: Measured Eγ and γγ using GAMMASPHERE spectrometer comprised of 99 escape-suppressed large volume Ge detectors.

1997Bh06: Measured Eγ, γγ and γγ(θ) using EUROGAM II multi-detector array consisting of 124 Ge detector elements and four LEPS spectrometers.

The two studies are by the same group, the level scheme is given in more detail in 2001Fo02.

Multi-particle configurations for many levels are given by 2001Fo02 and 1997Bh06.

All data are from 2001Fo02, unless otherwise noted.

^{135}Te Levels

E(level)†	J^π‡	$T_{1/2}$	Comments
0#	(7/2⁻)		
1180.0# *10*	(11/2⁻)		
1505.0# *15*	(15/2⁻)		
1555.0# *16*	(19/2⁻)	0.511 μs *20*	$T_{1/2}$: from 'Adopted Levels'.
2017.0# *16*	(17/2⁻)		
2208.0 *17*	(19/2⁻)		Possible configuration=$\pi(g_{7/2}d_{5/2})\otimes\nu f_{7/2}$ (2001Fo02).
2641.0 *17*	(21/2⁻)		Probable configuration=$\pi g^2_{7/2}\otimes\nu h_{9/2}$ (1997Bh06).
3234.0 *17*	(25/2⁺)	<4 ns	$T_{1/2}$: from 2001Fo02, but no details available for this measurement. Probably estimated from γγ(t). Probable configuration=$\pi g_{7/2}\pi h_{11/2}\otimes\nu f_{7/2}$ (1997Bh06).
3471.0 *17*	(21/2⁺)		
4024.0 *16*	(19/2⁻)		
4062.0 *20*			
4342.0 *18*			
4394.0@ *17*	(21/2⁻)		Possibly a 5-quasiparticle state with configuration=$\pi g^2_{7/2}\otimes\nu(f^2_{7/2}h^{-1}_{11/2})$.
4591.0 *18*	(27/2⁺)		Probable configuration=$\pi g^2_{7/2}\otimes\nu i_{13/2}$ or $\pi g_{7/2}\otimes\pi h_{11/2}\otimes\nu h_{9/2}$ (1997Bh06).
4800.0@ *17*	(23/2⁻)		
5171.0@ *17*	(25/2⁻)		
5526.0@ *18*	(27/2⁻)		
5641.0 *18*	(31/2⁻)		Probable configuration=$\pi g^2_{7/2}\otimes\nu f^2_{7/2}\otimes\nu h^{-1}_{11/2}$ (1997Bh06).
5791.0@ *18*	(29/2⁻)		
6110.0@ *19*	(31/2⁻)		
6153.0 *19*			
6382.0 *21*			
6456.0 *22*			J^π: (33/2⁻) In 'Adopted Levels'.
6669.0 *22*			J^π: (35/2⁻) In 'Adopted Levels'.

† From least-squares fit to Eγ′s, assuming Δ(Eγ)=1 keV for each γ ray.

‡ As proposed by 2001Fo02 based on expected shell-model predictions. The assignments are the same in 'Adopted Levels', unless otherwise stated.

Member of configuration=$\pi g^2_{7/2}\otimes\nu f_{7/2}$ (1997Bh06,2001Fo02).

@ Band(A): band based on (21/2⁻).

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$\gamma(^{135}Te)$

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.
50	1555.0	(19/2$^-$)	1505.0	(15/2$^-$)	
249	4591.0	(27/2$^+$)	4342.0		
265	5791.0	(29/2$^-$)	5526.0	(27/2$^-$)	
319	6110.0	(31/2$^-$)	5791.0	(29/2$^-$)	
325	1505.0	(15/2$^-$)	1180.0	(11/2$^-$)	
346	6456.0		6110.0	(31/2$^-$)	
355	5526.0	(27/2$^-$)	5171.0	(25/2$^-$)	
370	4394.0	(21/2$^-$)	4024.0	(19/2$^-$)	
371	5171.0	(25/2$^-$)	4800.0	(23/2$^-$)	
406	4800.0	(23/2$^-$)	4394.0	(21/2$^-$)	
462	2017.0	(17/2$^-$)	1555.0	(19/2$^-$)	
469	6110.0	(31/2$^-$)	5641.0	(31/2$^-$)	
512	2017.0	(17/2$^-$)	1505.0	(15/2$^-$)	
512	6153.0		5641.0	(31/2$^-$)	
559	6669.0		6110.0	(31/2$^-$)	
591	4062.0		3471.0	(21/2$^+$)	
593	3234.0	(25/2$^+$)	2641.0	(21/2$^-$)	[M2]
620	5791.0	(29/2$^-$)	5171.0	(25/2$^-$)	
726	5526.0	(27/2$^-$)	4800.0	(23/2$^-$)	
741	6382.0		5641.0	(31/2$^-$)	
777	5171.0	(25/2$^-$)	4394.0	(21/2$^-$)	
829	5171.0	(25/2$^-$)	4342.0		
830	3471.0	(21/2$^+$)	2641.0	(21/2$^-$)	
923	4394.0	(21/2$^-$)	3471.0	(21/2$^+$)	
1026	3234.0	(25/2$^+$)	2208.0	(19/2$^-$)	[E3]
1050	5641.0	(31/2$^-$)	4591.0	(27/2$^+$)	
1086†	2641.0	(21/2$^-$)	1555.0	(19/2$^-$)	
1108	4342.0		3234.0	(25/2$^+$)	
1180	1180.0	(11/2$^-$)	0	(7/2$^-$)	
1263	3471.0	(21/2$^+$)	2208.0	(19/2$^-$)	
1329	4800.0	(23/2$^-$)	3471.0	(21/2$^+$)	
1357‡	4591.0	(27/2$^+$)	3234.0	(25/2$^+$)	
1562	6153.0		4591.0	(27/2$^+$)	
1679†	3234.0	(25/2$^+$)	1555.0	(19/2$^-$)	[E3]
1916‡	3471.0	(21/2$^+$)	1555.0	(19/2$^-$)	
1937	5171.0	(25/2$^-$)	3234.0	(25/2$^+$)	
2007	4024.0	(19/2$^-$)	2017.0	(17/2$^-$)	
2186	4394.0	(21/2$^-$)	2208.0	(19/2$^-$)	
2292	5526.0	(27/2$^-$)	3234.0	(25/2$^+$)	
2407‡	5641.0	(31/2$^-$)	3234.0	(25/2$^+$)	
2469‡	4024.0	(19/2$^-$)	1555.0	(19/2$^-$)	
2519	4024.0	(19/2$^-$)	1505.0	(15/2$^-$)	
2839	4394.0	(21/2$^-$)	1555.0	(19/2$^-$)	

† Strong γ ray.
‡ Medium intensity γ ray.

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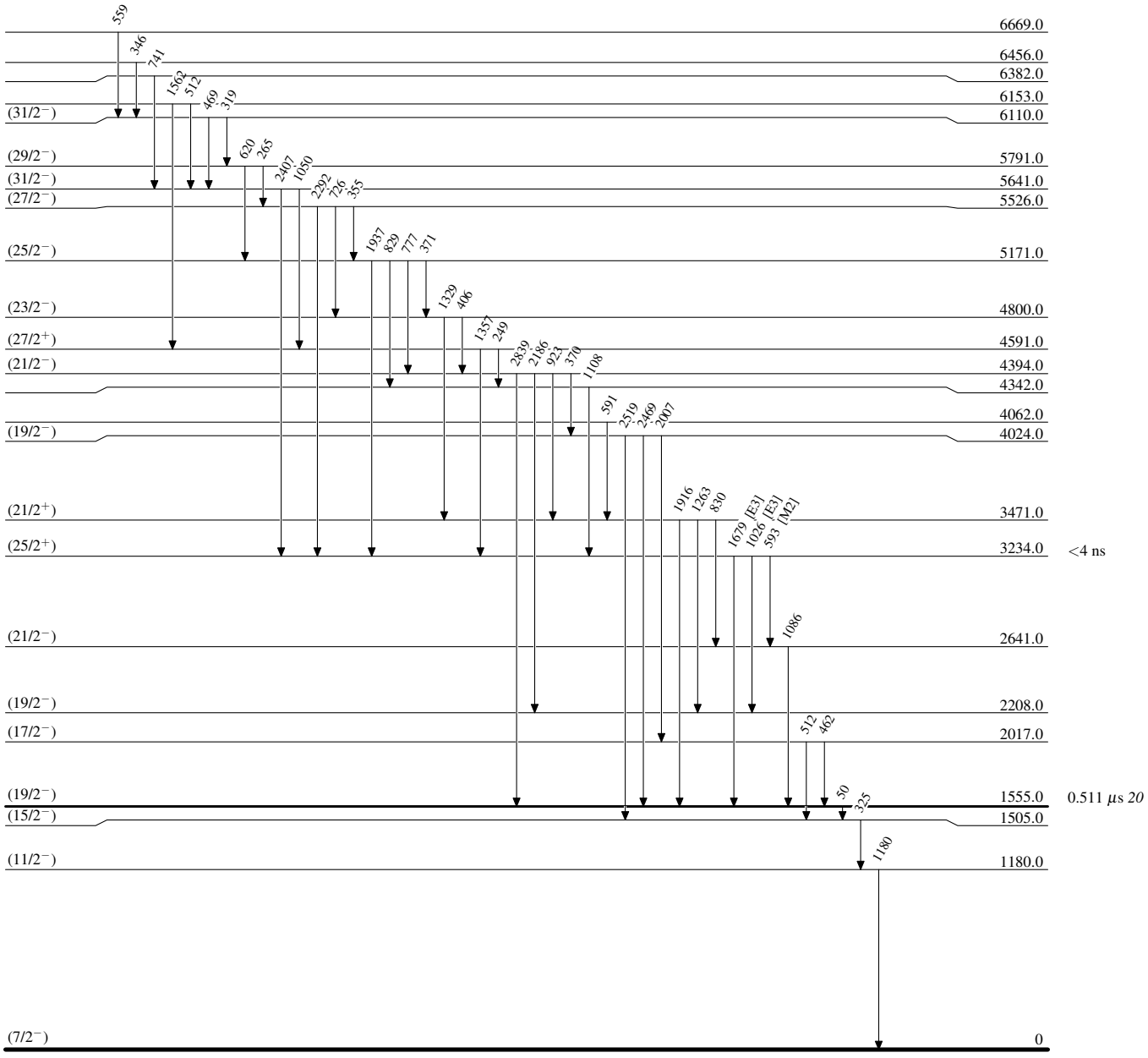
Level Scheme



$^{135}_{52}Te_{83}$

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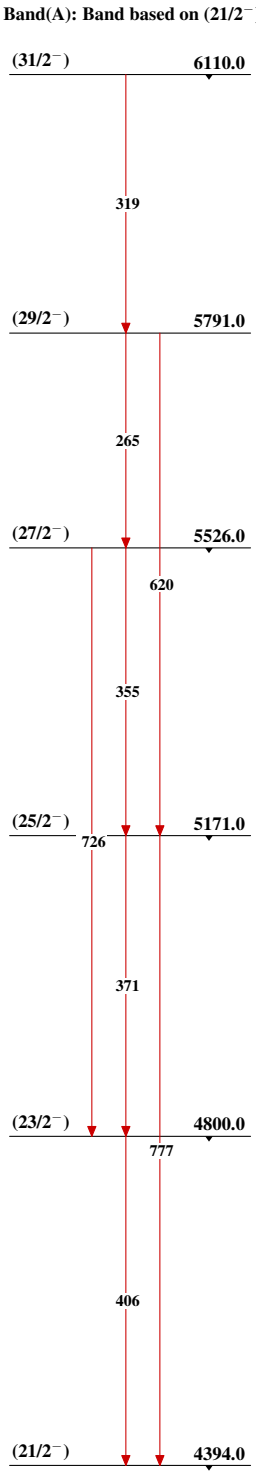

$^{135}_{52}Te_{83}$