^{150}Sm(d,3nγ) 1977Le07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 185, 2 (2022)	23-Aug-2022

1977Le07: E(d)=18-25 MeV beams from the ANU Cyclo-Graaff. Main data at 23 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$.

^{149}Eu Levels

E(level)[†]	J$^\pi$[‡]	Comments
0.0	$5/2^+$	
149.71 *15*	$7/2^+$	
496.41 *18*	$11/2^-$	
534.60 *15*	$7/2^+$	
665.9 *4*	$(9/2)^+$	J$^\pi$: from the Adopted Levels. J^π=(5/2),$7/2^+$ in 1977Le07.
749.0 *3*	$(7/2^-)$	
794.9 *3*	$9/2^-$	
799.8 *3*	$9/2^+$	
910.8 *3*	$(11/2^+)$	
994.6 *3*	$15/2^-$	
1610.1 *4*	$19/2^-$	
2328.7? *4*	$23/2^-$	This level (proposed J^π=$23/2^-$ by 1977Le07) is considered suspect (evaluators) since no such level is seen in recent (HI,xnγ)
2570.1 *6*		E(level): 2576.84 in the Adopted Levels.
2745? *1*		E(level): 2752.10 in the Adopted Levels.

[†] From least squares fit to Eγ data.
[‡] As given in 1977Le07, based on literature assignments up to $11/2^+$, and from the present work for the three high-spin negative-parity states. Exceptions are noted.

$\gamma(^{149}$Eu)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[†]	Comments
149.70 *15*	100	149.71	$7/2^+$	0.0	$5/2^+$	D	A_2=−0.032 *12*; A_4=−0.007 *16*
175[‡]		2745?		2570.1			Obscured by a line from ^{153}Eu.
[x]182.7	3.2 *4*						
241.4 *4*	1.3 *3*	2570.1		2328.7?	$23/2^-$		
245.3 *4*	3.7 *12*	910.8	$(11/2^+)$	665.9	$(9/2)^+$		
265.2 *2*	4.9 *5*	799.8	$9/2^+$	534.60	$7/2^+$	D	A_2=−0.35 *16*
298.50 *15*	11.3 *7*	794.9	$9/2^-$	496.41	$11/2^-$	D	A_2=−0.27 *9*
346.70 *15*	79.2 *8*	496.41	$11/2^-$	149.71	$7/2^+$		
[x]422.7 *4*							
496.4 *3*	5.8 *10*	496.41	$11/2^-$	0.0	$5/2^+$	E3	Mult.: from the Adopted Gammas.
498.20 *25*	63.5 *25*	994.6	$15/2^-$	496.41	$11/2^-$	(Q)	A_2=+0.21 *4*
516.6 *4*	20 *3*	665.9	$(9/2)^+$	149.71	$7/2^+$		
534.60 *15*	29.5 *16*	534.60	$7/2^+$	0.0	$5/2^+$		
[x]558.0 *4*	3.2 *10*						
[x]563.8 *3*	8.8 *13*						
[x]585.2 *4*	6.6 *15*						
615.50 *15*	23.4 *16*	1610.1	$19/2^-$	994.6	$15/2^-$	(Q)	A_2=+0.35 *4*
666.4	10.6 *18*	665.9	$(9/2)^+$	0.0	$5/2^+$		Unresolved doublet.
[x]680.7 *3*	9.5 *18*						
718.6[‡] *2*	15.7 *23*	2328.7?	$23/2^-$	1610.1	$19/2^-$	(Q)	A_2=+0.28 *6*
[x]726.2 *4*	8.5 *26*						
[x]737.5 *4*	5.4 *14*						

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^{150}Sm(d,3nγ) 1977Le07 (continued)

$\gamma(^{149}Eu)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	Comments
749.00 *25*	11.0 *16*	749.0	$(7/2^-)$	0.0	$5/2^+$	D	A_2 is negative.
760.90 *25*	15.9 *16*	910.8	$(11/2^+)$	149.71	$7/2^+$	(Q)	A_2=+0.27 *9*

[†] From $\gamma(\theta)$, unless otherwise stated.
[‡] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

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Level Scheme

Intensities: Relative I_γ

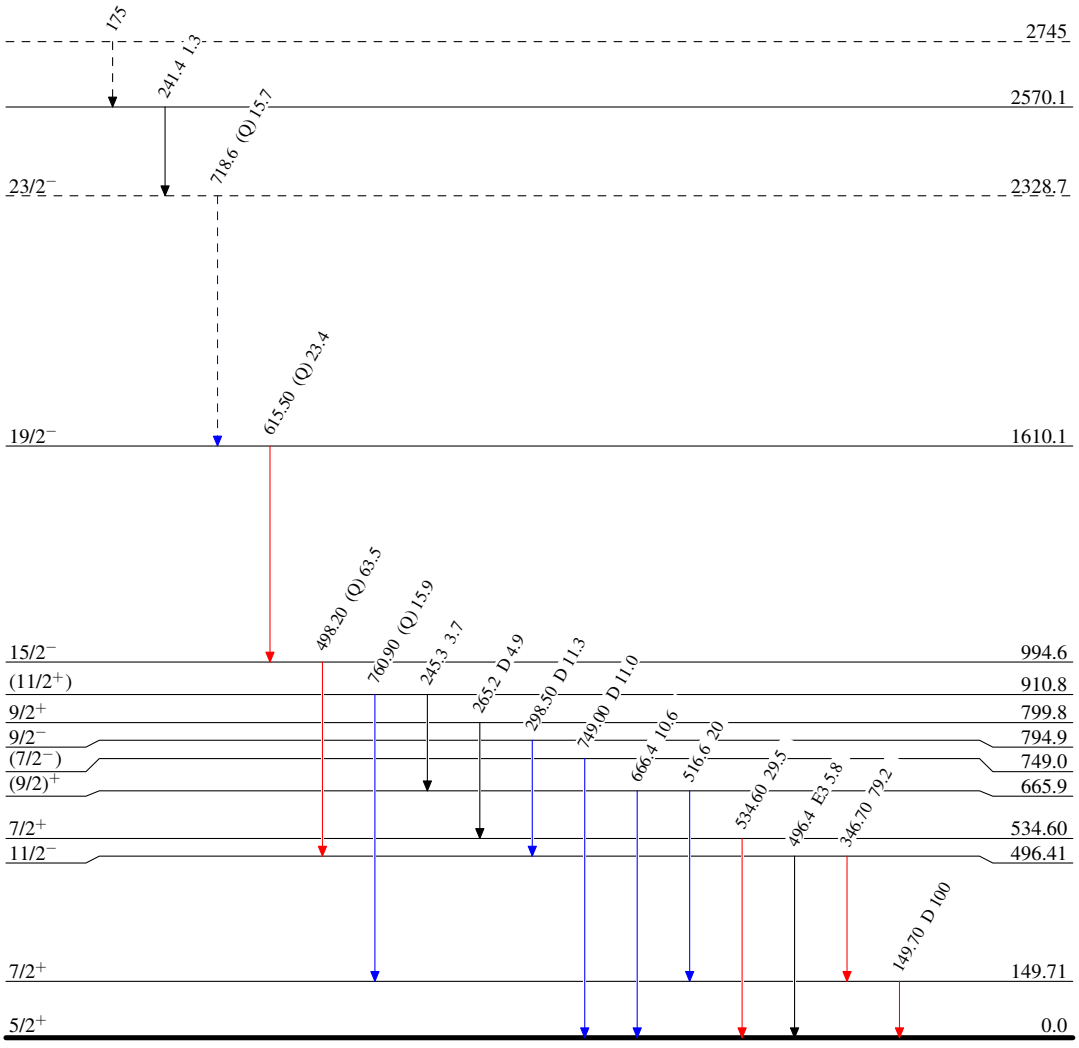
Legend

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

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

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

γ Decay (Uncertain)



$^{149}_{63}Eu_{86}$