^{139}La(α,4nγ):delayed 1988Ar07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain	NDS 138, 1 (2016)	15-Oct-2016

E=47 MeV.
Decay scheme observed for 708γ delayed gate. All data are from (α,4nγ), except as noted.

^{139}Pr Levels

E(level)	J$^\pi$ †	E(level)	J$^\pi$ †	E(level)	J$^\pi$ †
0.0	5/2$^+$	2187.51 *12*	(19/2,15/2)$^-$	3265.94 *15*	(25/2,21/2,17/2)
113.94 *5*	7/2$^+$	2278.00 *14*	(19/2,15/2)$^-$	3627.48 *16*	(25/2,21/2,17/2)
822.00 *8*	11/2$^-$	2367.15 *13*	(21/2,17/2)$^-$	3697.86 *14*	(25/2,21/2,17/2)
1523.08 *11*	13/2$^-$	2761.14 *14*	(19/2,15/2)	4100.60 *16*	
1722.20 *10*	15/2$^-$	2821.25 *13*	(21/2,17/2)$^+$	4536.60 *19*	
1941.53 *11*	17/2$^-$	3021.52 *14*	(23/2,19/2)$^+$	4862.60 *22*	

† As proposed in 1988Ar07 based on $\gamma(\theta)$ data for prompt γ rays.

γ(^{139}Pr)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
113.94 *5*		113.94	7/2$^+$	0.0	5/2$^+$
179.64 *5*	23 *2*	2367.15	(21/2,17/2)$^-$	2187.51	(19/2,15/2)$^-$
199.1 *1*	5 *1*	1722.20	15/2$^-$	1523.08	13/2$^-$
200.3 *1*	19 *2*	3021.52	(23/2,19/2)$^+$	2821.25	(21/2,17/2)$^+$
219.32 *5*	80 *7*	1941.53	17/2$^-$	1722.20	15/2$^-$
244.5 *1*	6 *1*	3265.94	(25/2,21/2,17/2)	3021.52	(23/2,19/2)$^+$
245.95 *5*	45 *4*	2187.51	(19/2,15/2)$^-$	1941.53	17/2$^-$
326.0 *1*	5 *1*	4862.60		4536.60	
336.51 *10*	31 *3*	2278.00	(19/2,15/2)$^-$	1941.53	17/2$^-$
402.8 *1*	12 *1*	4100.60		3697.86	(25/2,21/2,17/2)
436.0 *1*	15 *1*	4536.60		4100.60	
444.6 *1*	8 *1*	3265.94	(25/2,21/2,17/2)	2821.25	(21/2,17/2)$^+$
543.3 *1*	21 *2*	2821.25	(21/2,17/2)$^+$	2278.00	(19/2,15/2)$^-$
605.9 *1*	17 *2*	3627.48	(25/2,21/2,17/2)	3021.52	(23/2,19/2)$^+$
701.12 *10*	14 *1*	1523.08	13/2$^-$	822.00	11/2$^-$
819.7 *1*	26 *2*	2761.14	(19/2,15/2)	1941.53	17/2$^-$
900.16 *8*	100 *8*	1722.20	15/2$^-$	822.00	11/2$^-$
1330.7 *1*	24 *2*	3697.86	(25/2,21/2,17/2)	2367.15	(21/2,17/2)$^-$

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Level Scheme

Intensities: Relative I_γ

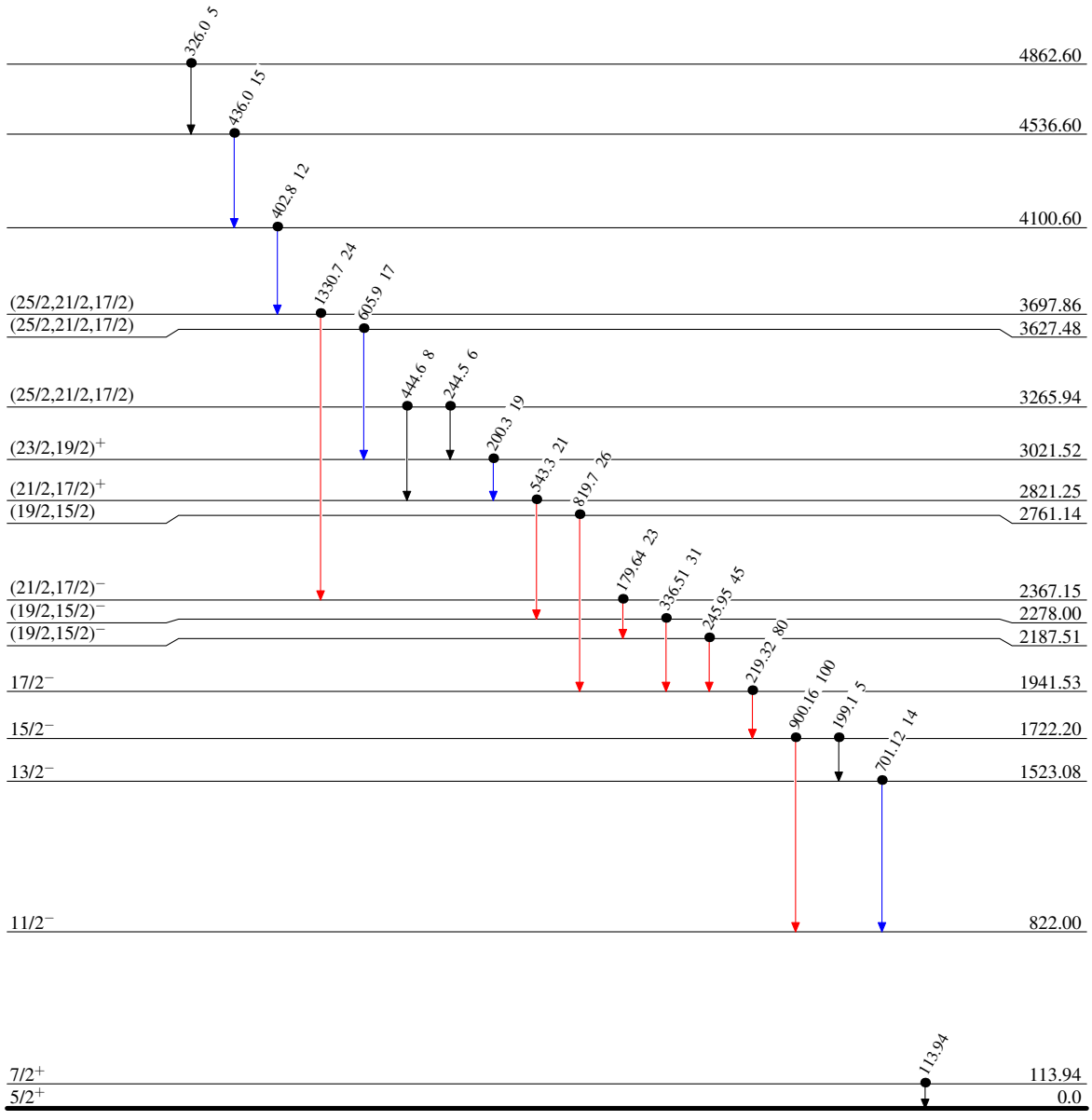
Legend

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

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

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

Coincidence



$^{139}_{59}Pr_{80}$