^{243}Am(n,γ)E=th:primary γ's 1984Vo07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 146, 387 (2017)	31-Aug-2017

1984Vo07: Thermal neutrons with a flux of 5.5 $\times 10^{14}$ n/cm^{2}s from the high-flux reactor at the Institut Laue-Langevin at Grenoble impinged a $^{243}AmO_2$ target that was encased in Al. Primary gamma rays were measured with the pair spectrometer. Energies were calibrated with C and Al(n,γ) lines which were present in the spectrum.

^{244}Am Levels

E(level)[†]	J$^\pi$[‡]	Comments
89.5 *16*	1^+	
99.2? *22*	2^+	
124.2 *16*	3^+	
149.8 *16*	4^+	
289.9 *16*	1^-	
297.5 *17*	3^-	
342.9 *18*	3^-	
349.8 *16*	3^+	
362.3 *16*	2^-	
369.1? *19*	(5^-)	
382.1? *19*	$(0)^+$	
415.5 *16*	2^+	
432.5 *16*		
446.6 *16*	$(3)^+$	
457.6 *16*	$(4)^+$	
479.2 *16*	$(2)^+$&$(4)^+$	E(level): The adopted energies of this doublet are: E($(2)^+$ state)=479.6 keV *16*; E($(4)^+$ state)=479.8 keV *16*.
485.3 *17*	2^-	
497.3? *16*	$(4)^+$	
537.5 *16*	3^-	
585.6 *16*	2^-	
610.0 *16*	$(5)^+$	
616.2 *16*	$(2)^+$	
671.2 *16*	$(2)^+$	
696.9 *16*	(4^+)	
712.1 *19*		
734.5 *16*	3^-	
772.6? *16*		
781.3 *16*	(4^-)&$(2)^-$	E(level): The adopted energies of this doublet are: E(4^- state)=781.4 *16*; E(2^- state)=781.7 keV *16*.
800.3 *16*	$(2)^-$	
810.2 *16*	$(3)^-$	
827.6 *19*	$(2)^-$	
833.8 *16*		
843.6 *16*	$(1,2,3)^+$	
860.0 *16*	(3^+)	
876.3 *16*	(2^+)	
882.2 *16*	$(1,2)^-$	
892.3 *16*		
900.0 *16*		
912.8 *16*		
931.8 *16*		
949.9 *16*		
998.2 *16*		
1014.4 *18*		
1029.1 *16*		
1045.0 *17*		

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^{243}Am(n,γ)E=th:primary γ's 1984Vo07 (continued)

^{244}Am Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	Comments
1051.0 *16*		
1061.8 *17*		
1069.9? *21*		
1149.9 *16*		
(5367.2 *16*)	(3)$^-$	E(level): Neutron capture state. E=S(n)=5367.2 keV *16*. J$^{\pi}$: from s-wave capture on the 5/2$^-$ target, J$^{\pi}$=2$^-$ or 3$^-$; from γ transitions to (4)$^+$ states, J$^{\pi}$ is probably not 2$^-$.

[†] The energies are from population of the primary transitions from the capture state in 1984Vo07. The level energies listed here have been deduced by the evaluator using S(n)=5367.2 *16* and Eγ with the recoil corrections applied. Original S(n) value reported by authors in 1984Vo07 was 5363 keV *3*.

[‡] From Adopted Levels.

γ(^{244}Am)

E$_{\gamma}$[†]	I$_{\gamma}$[‡]	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$
4217.3 *3*	1.65 *15*	(5367.2)	(3)$^-$	1149.9	
4297.3[#@] *14*	0.6 *4*	(5367.2)	(3)$^-$	1069.9?	
4305.4 *5*	0.55 *16*	(5367.2)	(3)$^-$	1061.8	
4316.2 *3*	1.19 *10*	(5367.2)	(3)$^-$	1051.0	
4322.2 *5*	0.60 *8*	(5367.2)	(3)$^-$	1045.0	
4338.1 *3*	2.39 *14*	(5367.2)	(3)$^-$	1029.1	
4352.8 *9*	0.30 *10*	(5367.2)	(3)$^-$	1014.4	
4369.0 *3*	3.06 *16*	(5367.2)	(3)$^-$	998.2	
4417.3 *3*	2.15 *13*	(5367.2)	(3)$^-$	949.9	
4435.4 *4*	0.94 *13*	(5367.2)	(3)$^-$	931.8	
4454.4 *3*	1.01 *8*	(5367.2)	(3)$^-$	912.8	
4467.2 *3*	2.32 *13*	(5367.2)	(3)$^-$	900.0	
4474.9 *3*	3.67 *20*	(5367.2)	(3)$^-$	892.3	
4485.0 *3*	0.73 *15*	(5367.2)	(3)$^-$	882.2	(1,2)$^-$
4490.9 *3*	2.18 *13*	(5367.2)	(3)$^-$	876.3	(2$^+$)
4507.2 *3*	1.65 *10*	(5367.2)	(3)$^-$	860.0	(3$^+$)
4523.6 *3*	3.17 *17*	(5367.2)	(3)$^-$	843.6	(1,2,3)$^+$
4533.4 *3*	1.23 *9*	(5367.2)	(3)$^-$	833.8	
4539.6 *10*	0.23 *6*	(5367.2)	(3)$^-$	827.6	(2)$^-$
4557.0 *3*	1.00 *6*	(5367.2)	(3)$^-$	810.2	(3)$^-$
4566.9 *3*	0.50 *10*	(5367.2)	(3)$^-$	800.3	(2)$^-$
4585.9 *3*	2.70 *14*	(5367.2)	(3)$^-$	781.3	(4$^-$)&(2)$^-$
4594.6[#@] *3*	0.15 *12*	(5367.2)	(3)$^-$	772.6?	
4632.7 *3*	1.15 *8*	(5367.2)	(3)$^-$	734.5	3$^-$
4655.1 *10*	0.50 *20*	(5367.2)	(3)$^-$	712.1	
4670.3 *3*	0.89 *10*	(5367.2)	(3)$^-$	696.9	(4$^+$)
4696.0 *4*	1.30 *20*	(5367.2)	(3)$^-$	671.2	(2)$^+$
4751.0 *3*	2.6 *3*	(5367.2)	(3)$^-$	616.2	(2)$^+$
4757.2 *3*	2.5 *3*	(5367.2)	(3)$^-$	610.0	(5)$^+$
4781.5 *3*	0.90 *15*	(5367.2)	(3)$^-$	585.6	2$^-$
4829.6 *3*	0.70 *5*	(5367.2)	(3)$^-$	537.5	3$^-$
4869.8[#@] *3*	0.10 *10*	(5367.2)	(3)$^-$	497.3?	(4)$^+$
4881.6 *6*	0.20 *4*	(5367.2)	(3)$^-$	485.3	2$^-$
4887.9 *4*	0.34 *5*	(5367.2)	(3)$^-$	479.2	(2)$^+$&(4)$^+$
4909.5 *3*	12.5 *6*	(5367.2)	(3)$^-$	457.6	(4)$^+$

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^{243}Am(n,γ)E=th:primary γ's 1984Vo07 (continued)

γ(^{244}Am) (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
4920.5 *3*	0.95 *7*	(5367.2)	$(3)^-$	446.6	$(3)^+$	5024.2 *8*	0.26 *9*	(5367.2)	$(3)^-$	342.9	3^-
4934.6 *3*	1.90 *11*	(5367.2)	$(3)^-$	432.5		5069.6 *6*	0.50 *20*	(5367.2)	$(3)^-$	297.5	3^-
4951.6 *3*	2.70 *20*	(5367.2)	$(3)^-$	415.5	2^+	5077.2 *3*	0.67 *4*	(5367.2)	$(3)^-$	289.9	1^-
4985.0#@ *10*	0.12 *12*	(5367.2)	$(3)^-$	382.1?	$(0)^+$	5217.3 *3*	0.31 *3*	(5367.2)	$(3)^-$	149.8	4^+
4998.0#@ *10*	0.20 *20*	(5367.2)	$(3)^-$	369.1?	(5^-)	5242.9 *3*	1.14 *14*	(5367.2)	$(3)^-$	124.2	3^+
5004.8 *3*	0.90 *20*	(5367.2)	$(3)^-$	362.3	2^-	5267.9#@ *15*	0.10 *10*	(5367.2)	$(3)^-$	99.2?	2^+
5017.3 *4*	0.51 *6*	(5367.2)	$(3)^-$	349.8	3^+	5277.6 *4*	0.18 *5*	(5367.2)	$(3)^-$	89.5	1^+

† Measured by 1984Vo07.
‡ Relative photon intensity. Uncertainties are statistical (1984Vo07).
# Questionable line (1984Vo07).
@ Placement of transition in the level scheme is uncertain.

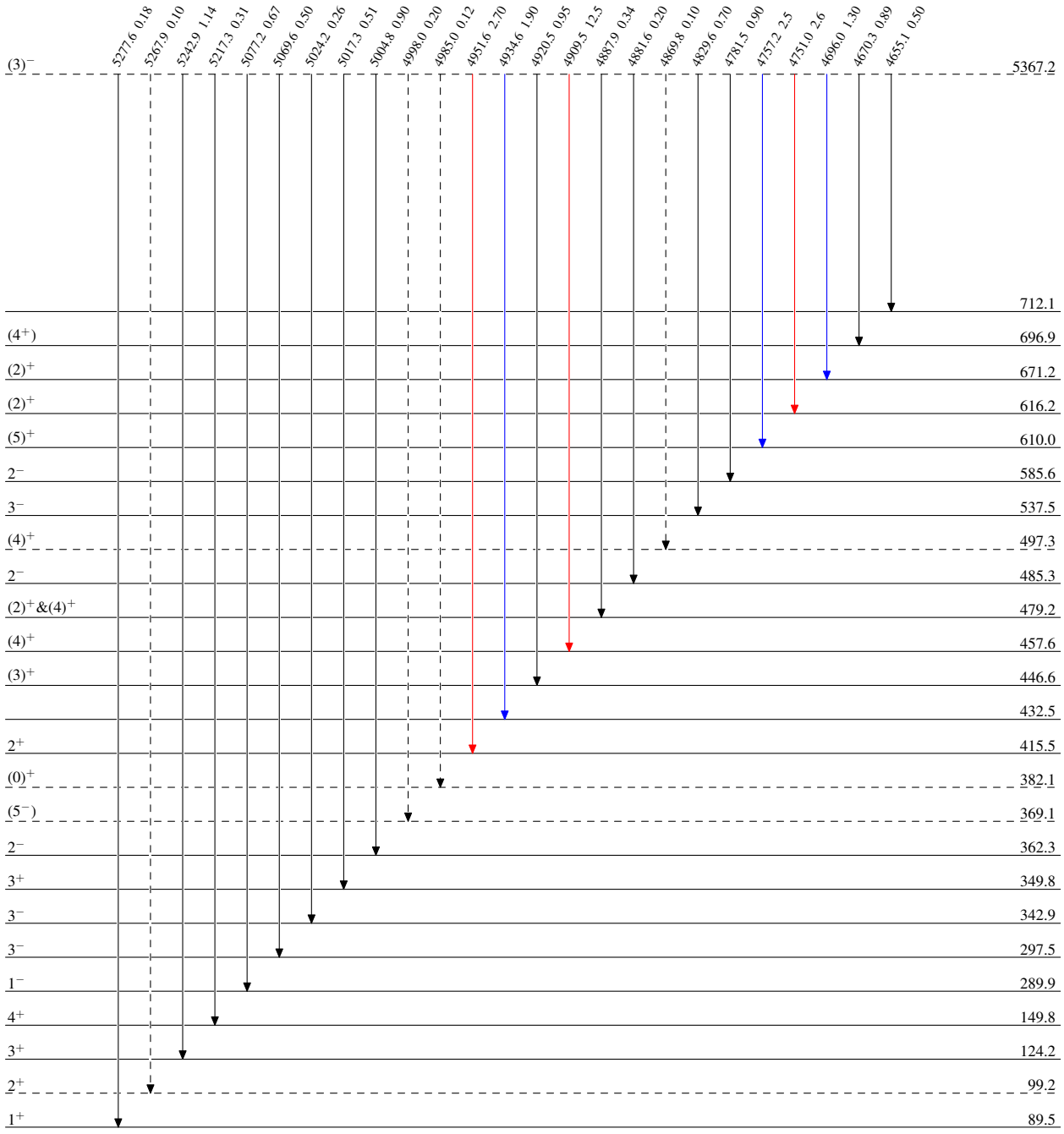
^{243}Am(n,γ)E=th:primary γ's 1984Vo07

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)



$^{244}_{95}Am_{149}$

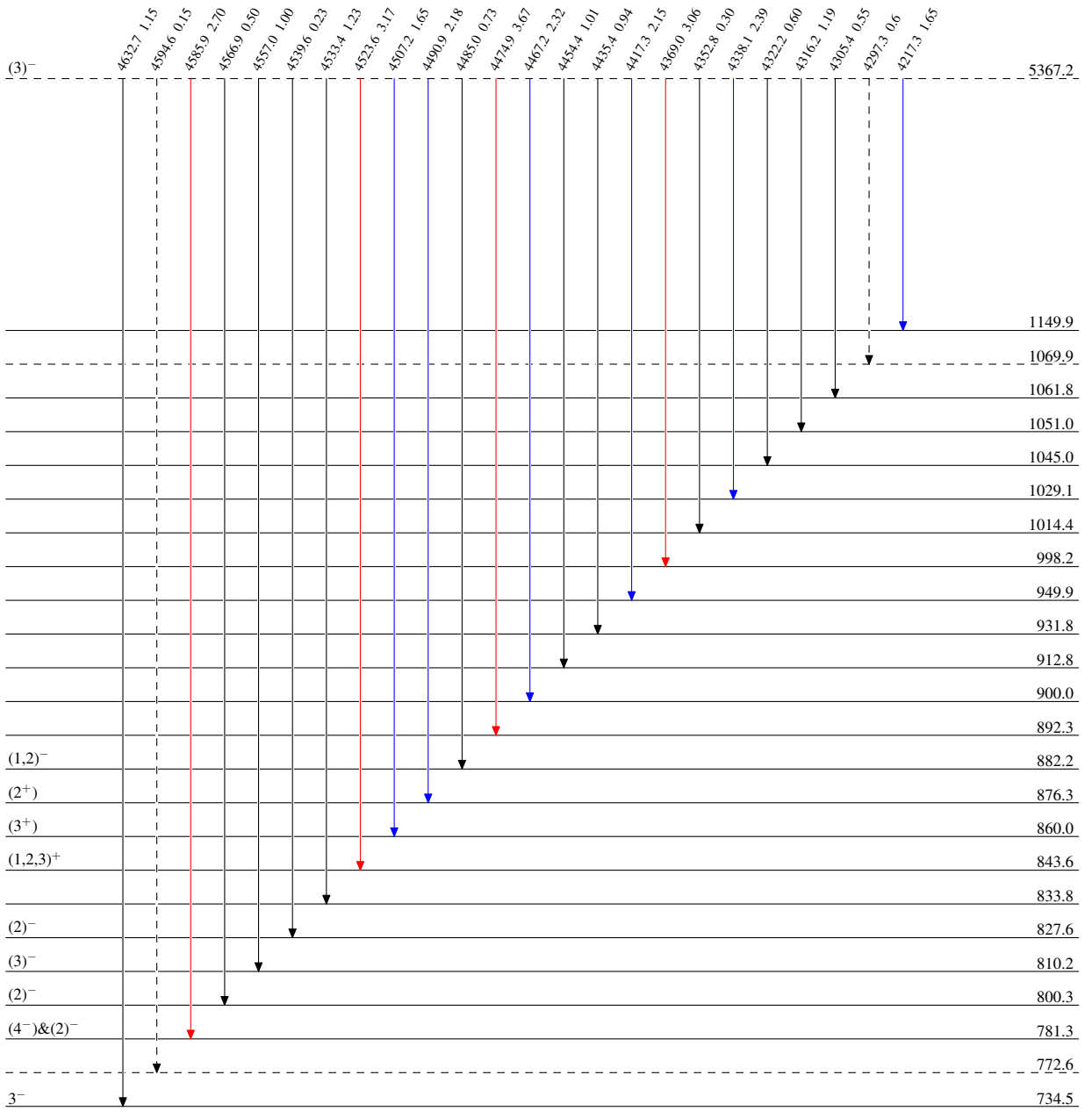
^{243}**Am(n,γ)E=th:primary γ's 1984Vo07**

Level Scheme (continued)

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)



$^{244}_{95}Am_{149}$