

$^{241}\text{Am}(n,\gamma)$ E=th:primary γ 's 1988Sa18

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin, C. D. Nesaraja		NDS 186, 261 (2022)	31-Dec-2021

S(n)=5537.64 10 is adopted from the mass adjustment of 2021Wa16. S(n)=5537.7 1 was obtained by 1988Sa18.

 ^{242}Am Levels

E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]
0.0	1 ⁻	400.1 4	1 ⁻	670.0 7		823.2 3	
52.3 8	3 ⁻	417.8 3	(4) ⁺	682.3 3	3 ⁻	851.9 3	
75.1 3	2 ⁻	428.6 4		689.3 5		864.5 7	
149.7 4	4 ⁻	463.6 3	3 ⁻ , 4 ⁻	700.2 5		873.0 3	2 ⁻
197.5 7		502.7 3	1 ⁺ , 2 ⁺	715.3 3		883.8 4	
231.1 7	1 ⁺	528.3 6	3 ⁺	721.3 3		896.6 3	
244.0 2	3 ⁻	583.4 10		724.4 3		906.3 6	(3) ⁻
270.0 2	3 ⁺	612.0 3	2 ⁻	734.8 5		919.5 4	
283.3 2		620.3 4	1 ⁻ , 2 ⁻	744.7 5		930.4 3	
291.7 6	2 ⁻	629.6 3	2 ⁻ , 3 ⁻ , 4 ⁻	759.4 4		934.6 4	
306.8 4		640.2 3		766.9 3		968.7 3	
327.5 3	3 ⁻	644.3 5		779.6 3		974.9 5	(3) ⁺
363.5 2	2 ⁺ , 3 ⁺	651.3 5		795.7 4		978.3 3	
370.2 3	1 ⁻ , 2 ⁻	660.6 4		802.4 4		(5537.64 10)	2 ⁻ , 3 ⁻
376.9 3	3 ⁺	664.1 5		818.1 3			

[†] From primary E_γ data of 1988Sa18 with S(n)=5537.6 1.

[‡] From Adopted Levels.

 $\gamma(^{242}\text{Am})$

E _γ [†]	I _γ ^{‡a}	E _i (level)	J _i ^π	E _f	J _f ^π
4559.3 3	22.5 20	(5537.64)	2 ⁻ , 3 ⁻	978.3	
4562.7 5	5.0 11	(5537.64)	2 ⁻ , 3 ⁻	974.9	(3) ⁺
4568.9 3	11.1 9	(5537.64)	2 ⁻ , 3 ⁻	968.7	
4603.0 4	5.0 9	(5537.64)	2 ⁻ , 3 ⁻	934.6	
4607.2 3	18.1 11	(5537.64)	2 ⁻ , 3 ⁻	930.4	
4618.1 4	3.2 7	(5537.64)	2 ⁻ , 3 ⁻	919.5	
4631.3 ^{#b} 6	1.9 7	(5537.64)	2 ⁻ , 3 ⁻	906.3	(3) ⁻
4641.0 3	5.8 7	(5537.64)	2 ⁻ , 3 ⁻	896.6	
4653.8 4	4.9 10	(5537.64)	2 ⁻ , 3 ⁻	883.8	
4664.6 3	22.5 15	(5537.64)	2 ⁻ , 3 ⁻	873.0	2 ⁻
4673.1 7	2.0 8	(5537.64)	2 ⁻ , 3 ⁻	864.5	
4685.7 3	16.3 12	(5537.64)	2 ⁻ , 3 ⁻	851.9	
4714.4 3	24.1 16	(5537.64)	2 ⁻ , 3 ⁻	823.2	
4719.5 3	29.7 17	(5537.64)	2 ⁻ , 3 ⁻	818.1	
4735.2 ^{#@b} 4	20.4 39	(5537.64)	2 ⁻ , 3 ⁻	802.4	
4741.9 4	6.1 10	(5537.64)	2 ⁻ , 3 ⁻	795.7	
4757.9 3	19.2 14	(5537.64)	2 ⁻ , 3 ⁻	779.6	
4770.6 3	18.0 13	(5537.64)	2 ⁻ , 3 ⁻	766.9	
4778.1 4	4.1 9	(5537.64)	2 ⁻ , 3 ⁻	759.4	
4792.8 5	10.3 11	(5537.64)	2 ⁻ , 3 ⁻	744.7	
4802.7 5	2.6 8	(5537.64)	2 ⁻ , 3 ⁻	734.8	
4813.1 ^{&} 3	11.1 19	(5537.64)	2 ⁻ , 3 ⁻	724.4	
4816.2 ^{&} 3	19.0 18	(5537.64)	2 ⁻ , 3 ⁻	721.3	

Continued on next page (footnotes at end of table)

$^{241}\text{Am}(n,\gamma)$ E=th:primary γ 's **1988Sa18** (continued) $\gamma(^{242}\text{Am})$ (continued)

E_γ^\dagger	$I_\gamma^\ddagger a$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ^\dagger	$I_\gamma^\ddagger a$	$E_i(\text{level})$	J_i^π	E_f	J_f^π
4822.2 3	28.4 21	(5537.64)	2 ⁻ ,3 ⁻	715.3		5119.7 3	33.5 21	(5537.64)	2 ⁻ ,3 ⁻	417.8	(4) ⁺
4837.3 5	2.8 9	(5537.64)	2 ⁻ ,3 ⁻	700.2		5137.4 @ 4	14.6 20	(5537.64)	2 ⁻ ,3 ⁻	400.1	1 ⁻
4848.2 @ 5	2.5 7	(5537.64)	2 ⁻ ,3 ⁻	689.3		5160.6 3	42.3 26	(5537.64)	2 ⁻ ,3 ⁻	376.9	3 ⁺
4855.2 3	20.5 13	(5537.64)	2 ⁻ ,3 ⁻	682.3	3 ⁻	5167.3 3	14.4 12	(5537.64)	2 ⁻ ,3 ⁻	370.2	1 ⁻ ,2 ⁻
4867.5 7	1.9 7	(5537.64)	2 ⁻ ,3 ⁻	670.0		5174.0 2	92.0 54	(5537.64)	2 ⁻ ,3 ⁻	363.5	2 ⁺ ,3 ⁺
4873.4 & 5	3.7 10	(5537.64)	2 ⁻ ,3 ⁻	664.1		5210.0 3	9.1 9	(5537.64)	2 ⁻ ,3 ⁻	327.5	3 ⁻
4876.9 & 4	6.6 14	(5537.64)	2 ⁻ ,3 ⁻	660.6		5230.7 4	4.0 6	(5537.64)	2 ⁻ ,3 ⁻	306.8	
4886.2 5	2.3 7	(5537.64)	2 ⁻ ,3 ⁻	651.3		5245.8 3	2.8 10	(5537.64)	2 ⁻ ,3 ⁻	291.7	2 ⁻
4893.2 5	3.2 9	(5537.64)	2 ⁻ ,3 ⁻	644.3		5254.2 2	18.1 13	(5537.64)	2 ⁻ ,3 ⁻	283.3	
4897.3 3	9.1 9	(5537.64)	2 ⁻ ,3 ⁻	640.2		5267.5 2	36.2 23	(5537.64)	2 ⁻ ,3 ⁻	270.0	3 ⁺
4907.9 3	6.3 8	(5537.64)	2 ⁻ ,3 ⁻	629.6	2 ⁻ ,3 ⁻ ,4 ⁻	5293.5 2	7.1 7	(5537.64)	2 ⁻ ,3 ⁻	244.0	3 ⁻
4917.2 4	3.3 7	(5537.64)	2 ⁻ ,3 ⁻	620.3	1 ⁻ ,2 ⁻	5306.4 @ 7	2.1 5	(5537.64)	2 ⁻ ,3 ⁻	231.1	1 ⁺
4925.5 3	7.6 8	(5537.64)	2 ⁻ ,3 ⁻	612.0	2 ⁻	5340.0 7	1.5 5	(5537.64)	2 ⁻ ,3 ⁻	197.5	
4954.1 10	1.6 7	(5537.64)	2 ⁻ ,3 ⁻	583.4		5387.8 4	3.2 6	(5537.64)	2 ⁻ ,3 ⁻	149.7	4 ⁻
5009.2 6	2.0 6	(5537.64)	2 ⁻ ,3 ⁻	528.3	3 ⁺	5462.4 3	2.5 10	(5537.64)	2 ⁻ ,3 ⁻	75.1	2 ⁻
5034.8 3	12.5 9	(5537.64)	2 ⁻ ,3 ⁻	502.7	1 ⁺ ,2 ⁺	5485.2 8	3.0 10	(5537.64)	2 ⁻ ,3 ⁻	52.3	3 ⁻
5073.9 3	23.8 16	(5537.64)	2 ⁻ ,3 ⁻	463.6	3 ⁻ ,4 ⁻	5537.7 4	4.3 7	(5537.64)	2 ⁻ ,3 ⁻	0.0	1 ⁻
5108.9 4	4.7 8	(5537.64)	2 ⁻ ,3 ⁻	428.6							

[†] Measurements of **1988Sa18** (pair spectrometer). Other measurements: **1977GaZQ**.

[‡] Photon intensity per 10×10^5 neutron captures, measured by **1988Sa18**. The uncertainties on I_γ 's are statistical only, and absolute errors can be obtained by combining them with an estimated 50% calibration error, which is mainly due to the uncertainty in the effective amount of ^{28}Al contributing in the $^{27}\text{Al}(n,\gamma)$ (**1988Sa18**). Other measurements: **1977GaZQ**.

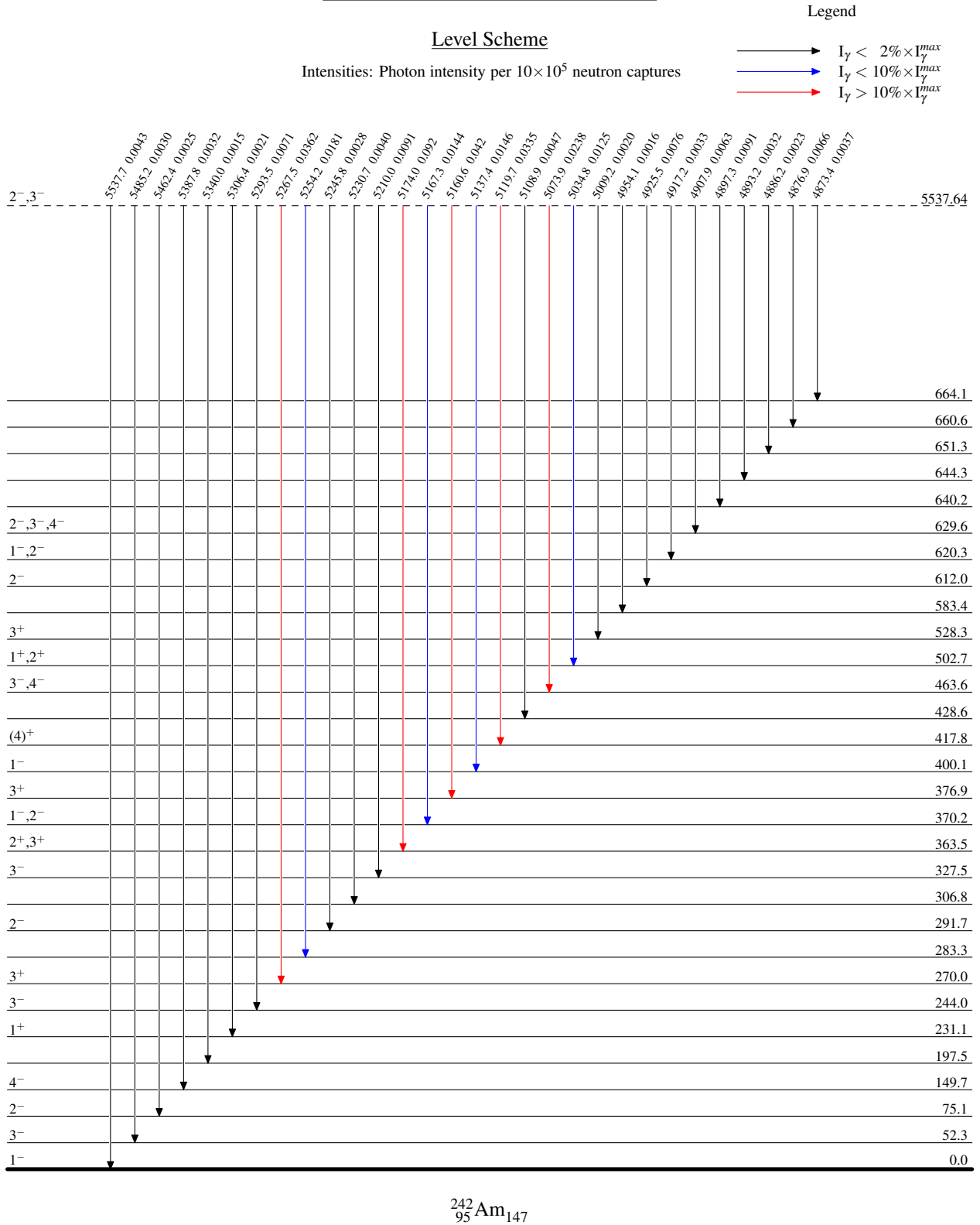
Doubtful (weak) peak (**1988Sa18**).

@ Masked by an ^{28}Al line (**1988Sa18**).

& Group of unresolved lines (**1988Sa18**).

^a For intensity per 100 neutron captures, multiply by 0.001.

^b Placement of transition in the level scheme is uncertain.

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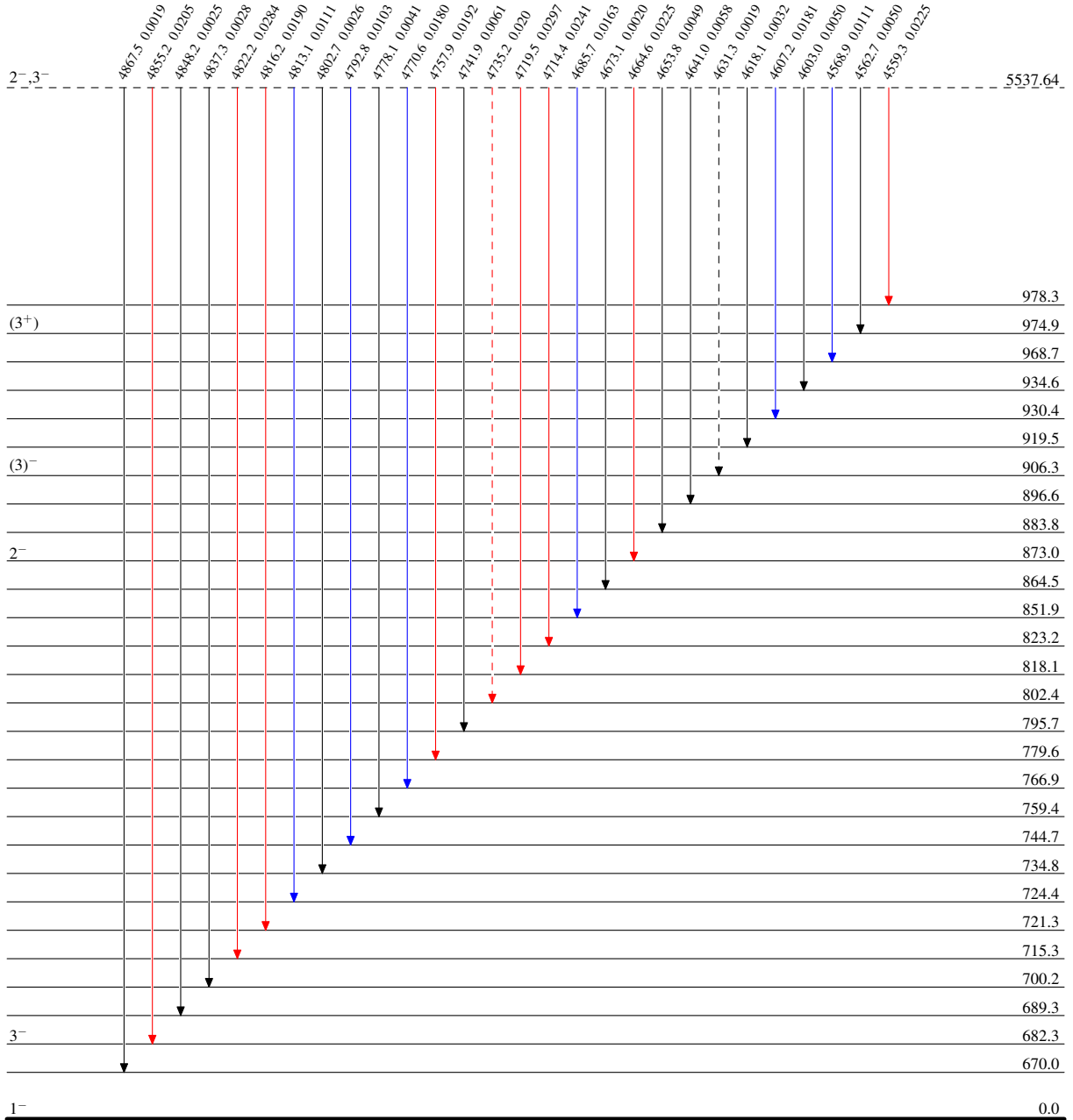
$^{241}\text{Am}(n,\gamma)$ E=th:primary γ 's 1988Sa18

Legend

Level Scheme (continued)

Intensities: Photon intensity per 10×10^5 neutron captures

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- - - - -→ γ Decay (Uncertain)



$^{242}_{95}\text{Am}_{147}$