^{243}Am(d,t) 1976Gr19,1976KaZL

History

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

E(d)=12.1 MeV (1976Gr19).
Q(d,t)=−111 *15* (1976Gr19).
FWHM=8 keV.
$J^\pi(^{243}Am)=5/2^-$.

^{242}Am Levels

E(level)[†]	J$^\pi$[b]	Comments
0[c]	1$^-$	
50[c]	3$^-$[‡]	
50[d]	5$^-$[‡]	
76[c]	2$^-$	
99	(6$^-$)[‡]	
114[d]	6$^-$	
148[c]	4$^-$ & 5$^-$[@]	
171	(7$^-$)[‡]	
190[d]	7$^-$	
244[e]	3$^-$	
263[c]	(6$^-$ & 7$^-$)	J$^\pi$: 1976Gr19 assign J^π=(6$^-$) only; 1976KaZL propose that the level is a doublet, consisting of the 6$^-$ and 7$^-$ members of the same band.
290[e]	4$^-$[&]	
290[f]	2$^-$[&]	
327[f]	3$^-$	
344[e]	(5$^-$)	
373[f]	(4$^-$)	
409[e]	(6$^-$)	
432[f]	(5$^-$)	
486[e]	(7$^-$)	
500[f]	(6$^-$)	
581[f]	(7$^-$)[#]	
581?[e]	(8$^-$)[#]	
608		
626		
658		
677[f]	(8$^-$)	J$^\pi$: J^π and configuration assigned by 1976KaZL.
697		
796[f]	(9$^-$)	J$^\pi$: Tentative J^π and configuration assigned by 1976KaZL.
821		
833		
846		
873[g]	(2$^-$)	
899[j]	(3$^-$)	
915		
936		
975[h]	(3$^+$)	
995		

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^{243}Am(d,t) 1976Gr19,1976KaZL (continued)

^{242}Am Levels (continued)

E(level)[†]	Jπ[b]	Comments
1011[i]	(2+)[a]	
1011?[h]	(4+)[a]	
1029		
1049[i]	(3+)	
1065[h]	(5+)	
1073		
1088		
1097[i]	(4+)	
1118		
1140		
1151[h]	(6+)	E(level),Jπ: Reported only by 1976KaZL. They assign $J^\pi=(6^+)$ with configuration (π 5/2[523]+ν 1/2[501]).
1162		
1171		Jπ: $J^\pi=(5^+)$ of a $K^\pi=5^+$ band is tentatively proposed by 1976KaZL.
1187		
1192		E(level),Jπ: Reported only by 1976KaZL and tentatively assigned as the $J^\pi=(1^+)$ member of a $K^\pi=0^+$ band.
1199		
1210		Jπ: $J^\pi=(2^+)$ of a $K^\pi=0^+$ band is tentatively proposed by 1976KaZL.
1227		E(level),Jπ: 1976KaZL report a doublet at 1230 with tentative assignments as the (6^+) member of a $K^\pi=5^+$ band and the (3^+) member of a $K^\pi=0^+$ band. They do not report the 1227 level.
1243		
1262		Jπ: $J^\pi=(4^+)$ of a $K^\pi=0^+$ band is tentatively proposed by 1976KaZL.
1287		Jπ: $J^\pi=(7^+)$ of a $K^\pi=5^+$ band is tentatively proposed by 1976KaZL.
1300		
1310?		E(level),Jπ: Reported only by 1976KaZL and tentatively assigned as the $J^\pi=(5^+)$ member of a $K^\pi=0^+$ band.
1325		
1343		
1362		
1380		
1406		
1417		
1443		
1455		
1467		
1482		
1507		
1519		
1562		

[†] From 1976Gr19, except where noted otherwise. For the unpublished (d,t) data of 1976KaZL see 1977El08.

[‡] The peak at 50 keV is interpreted by both authors as a doublet consisting of the 3^- member of the $K^\pi=0^-$ band and the 5^- member of the $K^\pi=5^-$ band.

[#] 1976KaZL propose that the 581-keV level may be a doublet, and tentatively assign the possible second component as the 8^- member of the $K^\pi=3^-$ band.

[@] The peak at 148 keV is interpreted by both authors as a doublet consisting of the 4^- and 5^- members of the $K^\pi=0^-$ band.

[&] The peak at 290 keV is interpreted by both authors as a doublet consisting of the 4^- member of the $K^\pi=3^-$ band and the 2^- member of the $K^\pi=2^-$ band.

[a] The peak at 1011 is assigned by 1976Gr19 as a doublet consisting of the 2^+ member of the $K^\pi=2^+$ band and the 4^+ member of the $K^\pi=3^+$ band. 1976KaZL assign just the 2^+ member of the $K^\pi=2^+$ band to this peak. They assign the 4^+ member of the $K^\pi=3^+$ band to the 1029 level.

[b] Assignments made by 1976Gr19 and 1976KaZL are in good agreement. The differences are noted. The assignments are based on

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^{243}Am(d,t) 1976Gr19,1976KaZL (continued)

^{242}Am Levels (continued)

comparison of experimental and theoretical cross-sections, and on rotational-band parameters.

[c] Band(A): $K^{\pi}=0^{-}$ (π 5/2[523]-ν 5/2[622]).
[d] Band(B): $K^{\pi}=5^{-}$ (π 5/2[523]+ν 5/2[622]).
[e] Band(C): $K^{\pi}=3^{-}$ (π 5/2[523]+ν 1/2[631]).
[f] Band(D): $K^{\pi}=2^{-}$ (π 5/2[523]-ν 1/2[631]).
[g] Band(E): $K^{\pi}=2^{-}$ (π 5/2[523]-ν 1/2[620]).
[h] Band(F): $K^{\pi}=3^{+}$ (π 5/2[523]+ν 1/2[501]).
[i] Band(G): $K^{\pi}=2^{+}$ (π 5/2[523]-ν 1/2[501]).
[j] Band(H): $K^{\pi}=3^{-}$ (π 5/2[523]+ν 1/2[620]).

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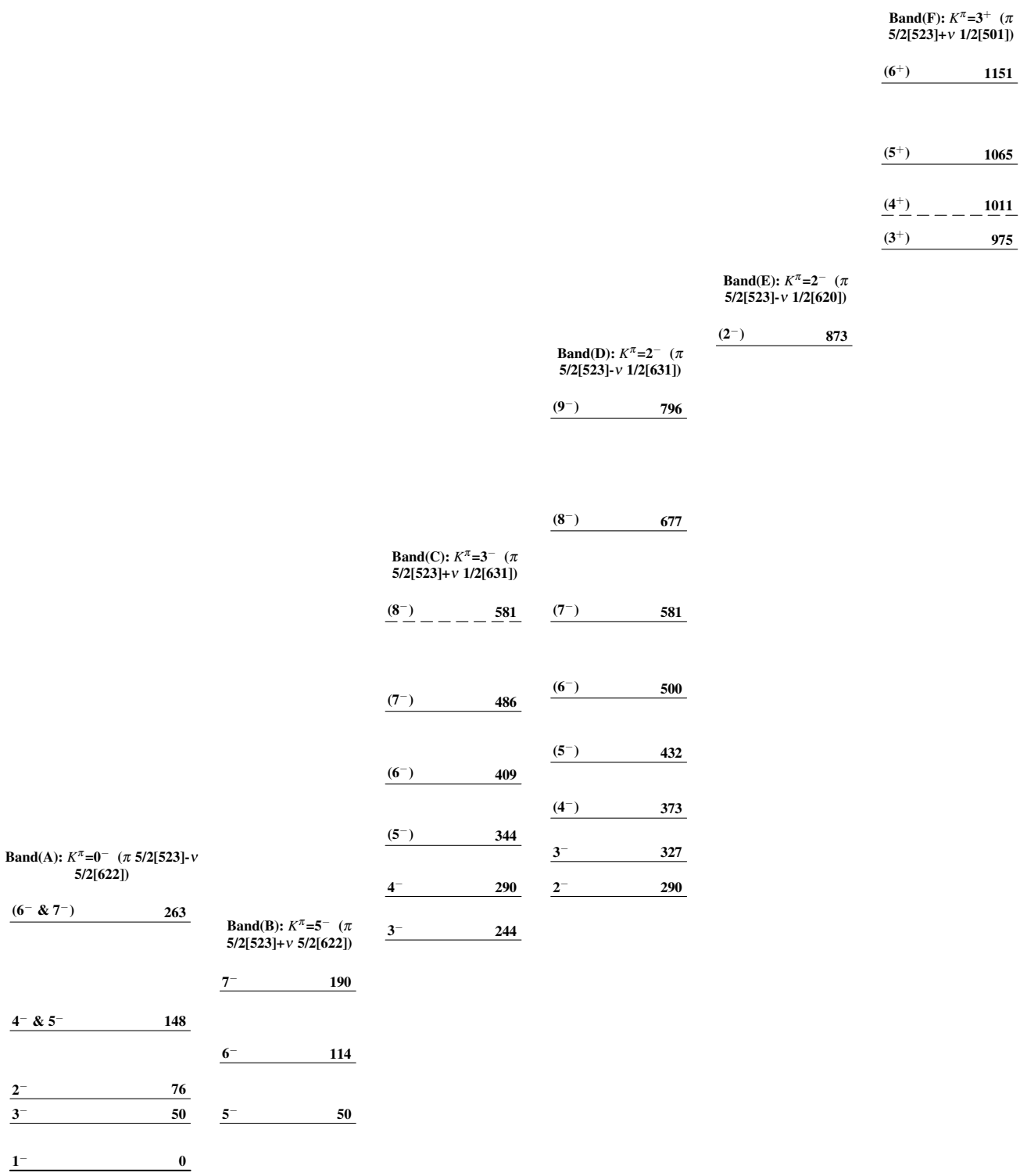

$^{242}_{95}Am_{147}$

^{243}Am(d,t) 1976Gr19,1976KaZL (continued)

Band(G): $K^{\pi}=2^{+}$ (π 5/2[523]-ν 1/2[501])

(4^{+}) 1097

(3^{+}) 1049

(2^{+}) 1011

Band(H): $K^{\pi}=3^{-}$ (π 5/2[523]+ν 1/2[620])

(3^{-}) 899

$^{242}_{95}Am_{147}$