

$^{243}\text{Am}(\text{d,t})$ [1976Gr19,1976KaZL](#)

| Type | Author | History | 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.

 $J^\pi(^{243}\text{Am})=5/2^-$. ^{242}Am Levels

| E(level) [†] | J^π ^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^π : 1976Gr19 assign $J^\pi=(6^-)$ 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^π : J^π and configuration assigned by 1976KaZL . |
| 697 | | |
| 796 ^f | (9 ⁻) | J^π : Tentative J^π and configuration assigned by 1976KaZL . |
| 821 | | |
| 833 | | |
| 846 | | |
| 873 ^g | (2 ⁻) | |
| 899 ^j | (3 ⁻) | |
| 915 | | |
| 936 | | |
| 975 ^h | (3 ⁺) | |
| 995 | | |

Continued on next page (footnotes at end of table)

$^{243}\text{Am}(\text{d,t})$ [1976Gr19](#), [1976KaZL](#) (continued) ^{242}Am Levels (continued)

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

& The peak at 290 keV is interpreted by both authors as a doublet consisting of the 4⁻ member of the K^π=3⁻ band and the 2⁻ member of the K^π=2⁻ band.

^a The peak at 1011 is assigned by [1976Gr19](#) as a doublet consisting of the 2⁺ member of the K^π=2⁺ band and the 4⁺ member of the K^π=3⁺ band. [1976KaZL](#) assign just the 2⁺ member of the K^π=2⁺ band to this peak. They assign the 4⁺ member of the K^π=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

 $^{243}\text{Am}(\text{d,t})$ **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]).

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

| | | | |
|--|--|--|-------------|
| | | Band(F): $K^\pi=3^+$ (π 5/2[523]$+\nu$ 1/2[501]) | |
| | | <u>(6⁺)</u> | <u>1151</u> |
| | | <u>(5⁺)</u> | <u>1065</u> |
| | | <u>(4⁺)</u> | <u>1011</u> |
| | | <u>(3⁺)</u> | <u>975</u> |
| | | Band(E): $K^\pi=2^-$ (π 5/2[523]$-\nu$ 1/2[620]) | |
| | | <u>(2⁻)</u> | <u>873</u> |
| | | Band(D): $K^\pi=2^-$ (π 5/2[523]$-\nu$ 1/2[631]) | |
| | | <u>(9⁻)</u> | <u>796</u> |
| | | <u>(8⁻)</u> | <u>677</u> |
| | | Band(C): $K^\pi=3^-$ (π 5/2[523]$+\nu$ 1/2[631]) | |
| | | <u>(8⁻)</u> | <u>581</u> |
| | | <u>(7⁻)</u> | <u>581</u> |
| | | <u>(6⁻)</u> | <u>500</u> |
| | | <u>(5⁻)</u> | <u>432</u> |
| | | <u>(4⁻)</u> | <u>373</u> |
| | | <u>(3⁻)</u> | <u>327</u> |
| | | <u>(2⁻)</u> | <u>290</u> |
| | | <u>(1⁻)</u> | <u>244</u> |
| | | <u>(0⁻)</u> | <u>190</u> |
| | | <u>(-1⁻)</u> | <u>114</u> |
| | | <u>(-2⁻)</u> | <u>50</u> |
| | | <u>(-3⁻)</u> | <u>0</u> |
| | | <u>(-4⁻)</u> | <u>0</u> |
| | | <u>(-5⁻)</u> | <u>0</u> |
| | | <u>(-6⁻)</u> | <u>0</u> |
| | | <u>(-7⁻)</u> | <u>0</u> |
| | | <u>(-8⁻)</u> | <u>0</u> |
| | | <u>(-9⁻)</u> | <u>0</u> |
| | | <u>(-10⁻)</u> | <u>0</u> |
| | | <u>(-11⁻)</u> | <u>0</u> |
| | | <u>(-12⁻)</u> | <u>0</u> |
| | | <u>(-13⁻)</u> | <u>0</u> |
| | | <u>(-14⁻)</u> | <u>0</u> |
| | | <u>(-15⁻)</u> | <u>0</u> |
| | | <u>(-16⁻)</u> | <u>0</u> |
| | | <u>(-17⁻)</u> | <u>0</u> |
| | | <u>(-18⁻)</u> | <u>0</u> |
| | | <u>(-19⁻)</u> | <u>0</u> |
| | | <u>(-20⁻)</u> | <u>0</u> |
| | | <u>(-21⁻)</u> | <u>0</u> |
| | | <u>(-22⁻)</u> | <u>0</u> |
| | | <u>(-23⁻)</u> | <u>0</u> |
| | | <u>(-24⁻)</u> | <u>0</u> |
| | | <u>(-25⁻)</u> | <u>0</u> |
| | | <u>(-26⁻)</u> | <u>0</u> |
| | | <u>(-27⁻)</u> | <u>0</u> |
| | | <u>(-28⁻)</u> | <u>0</u> |
| | | <u>(-29⁻)</u> | <u>0</u> |
| | | <u>(-30⁻)</u> | <u>0</u> |
| | | <u>(-31⁻)</u> | <u>0</u> |
| | | <u>(-32⁻)</u> | <u>0</u> |
| | | <u>(-33⁻)</u> | <u>0</u> |
| | | <u>(-34⁻)</u> | <u>0</u> |
| | | <u>(-35⁻)</u> | <u>0</u> |
| | | <u>(-36⁻)</u> | <u>0</u> |
| | | <u>(-37⁻)</u> | <u>0</u> |
| | | <u>(-38⁻)</u> | <u>0</u> |
| | | <u>(-39⁻)</u> | <u>0</u> |
| | | <u>(-40⁻)</u> | <u>0</u> |
| | | <u>(-41⁻)</u> | <u>0</u> |
| | | <u>(-42⁻)</u> | <u>0</u> |
| | | <u>(-43⁻)</u> | <u>0</u> |
| | | <u>(-44⁻)</u> | <u>0</u> |
| | | <u>(-45⁻)</u> | <u>0</u> |
| | | <u>(-46⁻)</u> | <u>0</u> |
| | | <u>(-47⁻)</u> | <u>0</u> |
| | | <u>(-48⁻)</u> | <u>0</u> |
| | | <u>(-49⁻)</u> | <u>0</u> |
| | | <u>(-50⁻)</u> | <u>0</u> |
| | | <u>(-51⁻)</u> | <u>0</u> |
| | | <u>(-52⁻)</u> | <u>0</u> |
| | | <u>(-53⁻)</u> | <u>0</u> |
| | | <u>(-54⁻)</u> | <u>0</u> |
| | | <u>(-55⁻)</u> | <u>0</u> |
| | | <u>(-56⁻)</u> | <u>0</u> |
| | | <u>(-57⁻)</u> | <u>0</u> |
| | | <u>(-58⁻)</u> | <u>0</u> |
| | | <u>(-59⁻)</u> | <u>0</u> |
| | | <u>(-60⁻)</u> | <u>0</u> |
| | | <u>(-61⁻)</u> | <u>0</u> |
| | | <u>(-62⁻)</u> | <u>0</u> |
| | | <u>(-63⁻)</u> | <u>0</u> |
| | | <u>(-64⁻)</u> | <u>0</u> |
| | | <u>(-65⁻)</u> | <u>0</u> |
| | | <u>(-66⁻)</u> | <u>0</u> |
| | | <u>(-67⁻)</u> | <u>0</u> |
| | | <u>(-68⁻)</u> | <u>0</u> |
| | | <u>(-69⁻)</u> | <u>0</u> |
| | | <u>(-70⁻)</u> | <u>0</u> |
| | | <u>(-71⁻)</u> | <u>0</u> |
| | | <u>(-72⁻)</u> | <u>0</u> |
| | | <u>(-73⁻)</u> | <u>0</u> |
| | | <u>(-74⁻)</u> | <u>0</u> |
| | | <u>(-75⁻)</u> | <u>0</u> |
| | | <u>(-76⁻)</u> | <u>0</u> |
| | | <u>(-77⁻)</u> | <u>0</u> |
| | | <u>(-78⁻)</u> | <u>0</u> |
| | | <u>(-79⁻)</u> | <u>0</u> |
| | | <u>(-80⁻)</u> | <u>0</u> |
| | | <u>(-81⁻)</u> | <u>0</u> |
| | | <u>(-82⁻)</u> | <u>0</u> |
| | | <u>(-83⁻)</u> | <u>0</u> |
| | | <u>(-84⁻)</u> | <u>0</u> |
| | | <u>(-85⁻)</u> | <u>0</u> |
| | | <u>(-86⁻)</u> | <u>0</u> |
| | | <u>(-87⁻)</u> | <u>0</u> |
| | | <u>(-88⁻)</u> | <u>0</u> |
| | | <u>(-89⁻)</u> | <u>0</u> |
| | | <u>(-90⁻)</u> | <u>0</u> |
| | | <u>(-91⁻)</u> | <u>0</u> |
| | | <u>(-92⁻)</u> | <u>0</u> |
| | | <u>(-93⁻)</u> | <u>0</u> |
| | | <u>(-94⁻)</u> | <u>0</u> |
| | | <u>(-95⁻)</u> | <u>0</u> |
| | | <u>(-96⁻)</u> | <u>0</u> |
| | | <u>(-97⁻)</u> | <u>0</u> |
| | | <u>(-98⁻)</u> | <u>0</u> |
| | | <u>(-99⁻)</u> | <u>0</u> |
| | | <u>(-100⁻)</u> | <u>0</u> |
| | | <u>(-101⁻)</u> | <u>0</u> |
| | | <u>(-102⁻)</u> | <u>0</u> |
| | | <u>(-103⁻)</u> | <u>0</u> |
| | | <u>(-104⁻)</u> | <u>0</u> |
| | | <u>(-105⁻)</u> | <u>0</u> |
| | | <u>(-106⁻)</u> | <u>0</u> |
| | | <u>(-107⁻)</u> | <u>0</u> |
| | | <u>(-108⁻)</u> | <u>0</u> |
| | | <u>(-109⁻)</u> | <u>0</u> |
| | | <u>(-110⁻)</u> | <u>0</u> |
| | | <u>(-111⁻)</u> | <u>0</u> |
| | | <u>(-112⁻)</u> | <u>0</u> |
| | | <u>(-113⁻)</u> | <u>0</u> |
| | | <u>(-114⁻)</u> | <u>0</u> |
| | | <u>(-115⁻)</u> | <u>0</u> |
| | | <u>(-116⁻)</u> | <u>0</u> |
| | | <u>(-117⁻)</u> | <u>0</u> |
| | | <u>(-118⁻)</u> | <u>0</u> |
| | | <u>(-119⁻)</u> | <u>0</u> |
| | | <u>(-120⁻)</u> | <u>0</u> |
| | | <u>(-121⁻)</u> | <u>0</u> |
| | | <u>(-122⁻)</u> | <u>0</u> |
| | | <u>(-123⁻)</u> | <u>0</u> |
| | | <u>(-124⁻)</u> | <u>0</u> |
| | | <u>(-125⁻)</u> | <u>0</u> |
| | | <u>(-126⁻)</u> | <u>0</u> |
| | | <u>(-127⁻)</u> | <u>0</u> |
| | | <u>(-128⁻)</u> | <u>0</u> |
| | | <u>(-129⁻)</u> | <u>0</u> |
| | | <u>(-130⁻)</u> | <u>0</u> |
| | | <u>(-131⁻)</u> | <u>0</u> |
| | | <u>(-132⁻)</u> | <u>0</u> |
| | | <u>(-133⁻)</u> | <u>0</u> |
| | | <u>(-134⁻)</u> | <u>0</u> |
| | | <u>(-135⁻)</u> | <u>0</u> |
| | | <u>(-136⁻)</u> | <u>0</u> |
| | | <u>(-137⁻)</u> | <u>0</u> |
| | | <u>(-138⁻)</u> | <u>0</u> |
| | | <u>(-139⁻)</u> | <u>0</u> |
| | | <u>(-140⁻)</u> | <u>0</u> |
| | | <u>(-141⁻)</u> | <u>0</u> |
| | | <u>(-142⁻)</u> | <u>0</u> |
| | | <u>(-143⁻)</u> | <u>0</u> |
| | | <u>(-144⁻)</u> | <u>0</u> |
| | | <u>(-145⁻)</u> | <u>0</u> |
| | | <u>(-146⁻)</u> | <u>0</u> |
| | | <u>(-147⁻)</u> | <u>0</u> |
| | | <u>(-148⁻)</u> | <u>0</u> |
| | | <u>(-149⁻)</u> | <u>0</u> |
| | | <u>(-150⁻)</u> | <u>0</u> |
| | | <u>(-151⁻)</u> | <u>0</u> |
| | | <u>(-152⁻)</u> | <u>0</u> |
| | | <u>(-153⁻)</u> | <u>0</u> |
| | | <u>(-154⁻)</u> | <u>0</u> |
| | | <u>(-155⁻)</u> | <u>0</u> |
| | | <u>(-156⁻)</u> | <u>0</u> |
| | | <u>(-157⁻)</u> | <u>0</u> |
| | | <u>(-158⁻)</u> | <u>0</u> |
| | | <u>(-159⁻)</u> | <u>0</u> |
| | | <u>(-160⁻)</u> | <u>0</u> |
| | | <u>(-161⁻)</u> | <u>0</u> |
| | | <u>(-162⁻)</u> | <u>0</u> |
| | | <u>(-163⁻)</u> | <u>0</u> |
| | | <u>(-164⁻)</u> | <u>0</u> |
| | | <u>(-165⁻)</u> | <u>0</u> |
| | | <u>(-166⁻)</u> | <u>0</u> |
| | | <u>(-167⁻)</u> | <u>0</u> |
| | | <u>(-168⁻)</u> | <u>0</u> |
| | | <u>(-169⁻)</u> | <u>0</u> |
| | | <u>(-170⁻)</u> | <u>0</u> |
| | | <u>(-171⁻)</u> | <u>0</u> |
| | | <u>(-172⁻)</u> | <u>0</u> |
| | | <u>(-173⁻)</u> | <u>0</u> |
| | | <u>(-174⁻)</u> | <u>0</u> |
| | | <u>(-175⁻)</u> | <u>0</u> |
| | | <u>(-176⁻)</u> | <u>0</u> |
| | | <u>(-177⁻)</u> | <u>0</u> |
| | | <u>(-178⁻)</u> | <u>0</u> |
| | | <u>(-179⁻)</u> | <u>0</u> |
| | | <u>(-180⁻)</u> | <u>0</u> |
| | | <u>(-181⁻)</u> | <u>0</u> |
| | | <u>(-182⁻)</u> | <u>0</u> |
| | | <u>(-183⁻)</u> | <u>0</u> |
| | | <u>(-184⁻)</u> | <u>0</u> |
| | | <u>(-185⁻)</u> | <u>0</u> |
| | | <u>(-186⁻)</u> | <u>0</u> |
| | | <u>(-187⁻)</u> | <u>0</u> |
| | | <u>(-188⁻)</u> | <u>0</u> |
| | | <u>(-189⁻)</u> | <u>0</u> |
| | | <u>(-190⁻)</u> | <u>0</u> |
| | | <u>(-191⁻)</u> | <u>0</u> |
| | | <u>(-192⁻)</u> | <u>0</u> |
| | | <u>(-193⁻)</u> | <u>0</u> |
| | | <u>(-194⁻)</u> | <u>0</u> |
| | | <u>(-195⁻)</u> | <u>0</u> |
| | | <u>(-196⁻)</u> | <u>0</u> |
| | | <u>(-197⁻)</u> | <u>0</u> |
| | | <u>(-198⁻)</u> | <u>0</u> |
| | | <u>(-199⁻)</u> | <u>0</u> |
| | | <u>(-200⁻)</u> | <u>0</u> |

$^{243}\text{Am}(\text{d,t})$ **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] $+\nu$ 1/2[620])**

(3⁻) 899