^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03

History

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

The level scheme is given as constructed by 1988Sa18 with modifications introduced by 2007Sa03. 1988Sa18 placed only 118 out of the observed 246 transitions, and the least-squares adjustment yields a large χ^2 of 6.6. 2007Sa03 place an additional 83 transitions, add several new levels, and delete some previously proposed levels. The resulting least-squares adjustment yields a χ^2 of 1.3. The changes made by 2007Sa03 are noted.

^{242}Am Levels

E(level)[†]	J$^\pi$[#]	T$_{1/2}$[a]	Comments
0.0[b]	1$^-$	16.01 h *2*	
44.093[b] *3*	0$^-$		
48.603[c] *9*	5$^-$	141 y *2*	
52.714[b] *7*	3$^-$		
75.820[b] *3*	2$^-$		
99.285[‡] *9*	0$^+$,1$^+$,2$^+$[&]		J$^\pi$: 2007Sa03 assign 1$^+$,2$^+$.
149.707[b] *7*	4$^-$		
168.387[‡] *9*	1$^-$,2$^-$,3$^-$[&]		J$^\pi$: 2007Sa03 assign 2$^-$.
200.581[‡] *9*	3$^-$,4$^-$[&]		J$^\pi$: 2007Sa03 assign 3$^-$.
230.527[d] *3*	1$^+$		
244.381[e] *8*	3$^-$		
269.854[d] *10*	3$^+$		
274.330[f] *5*	1$^-$		
289.028[e] *13*	4$^-$		
292.831[g] *8*	2$^-$		
296.401[f] *8*	2$^-$		
311.832[‡] *10*	1$^+$,2$^+$[&]		J$^\pi$: 2007Sa03 assign 1$^+$.
327.884[g] *9*	3$^-$		
330.740[f] *8*	3$^-$		
330.837[‡] *9*	2$^-$,3$^-$[&]		J$^\pi$: 2007Sa03 assign 3$^-$.
341.593[d] *14*	0$^+$		
342.805[‡] *10*	2$^-$,3$^-$[&]		J$^\pi$: 2007Sa03 assign 2$^-$.
355.715[i] *10*	2$^+$		J$^\pi$: 2007Sa03 assign (2$^+$).
363.434[‡] *11*	2$^+$,3$^+$[&]		J$^\pi$: 2007Sa03 assign 1$^+$,2$^+$.
364.658[d] *11*	2$^+$		
369.207[‡] *17*	1$^-$,2$^-$[&]		J$^\pi$: 2007Sa03 assign 1$^-$.
372.490[f] *9*	4$^-$		
373.686[g] *9*	4$^-$		
376.947[i] *8*	3$^+$		
388.112[h] *9*	3$^+$		
397.147[‡] *10*	2$^-$,3$^-$,4$^-$[&]		J$^\pi$: 2007Sa03 assign 2$^-$,3$^-$.
400.521[j] *9*	1$^-$		J$^\pi$: 2007Sa03 assign (1)$^-$.
405.880[‡] *9*	2$^-$,3,4[&]		J$^\pi$: 2007Sa03 assign 2$^+$,3$^+$,4$^+$.
405.933[i] *9*	4$^+$		J$^\pi$: 2007Sa03 assign (4)$^+$.
417.746[d] *15*	(4)$^+$		
418.084[h] *11*	4$^+$		J$^\pi$: 2007Sa03 assign (4)$^+$.
419.085[j] *9*	2$^-$		

Continued on next page (footnotes at end of table)

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

^{242}Am Levels (continued)

E(level)[†]	J$^{\pi}$[#]	Comments
420.651[‡] *13*	2$^+$,3$^+$,4$^+$[&]	
442.385[i] *8*	5$^+$	J$^{\pi}$: 2007Sa03 assign (5$^+$).
446.702[j] *10*	3$^-$	
455.688[‡] *14*	1$^-$,2$^-$,3$^-$[&]	J$^{\pi}$: 2007Sa03 assign 2$^-$,3$^-$.
457.090[h] *11*	5$^+$	J$^{\pi}$: 2007Sa03 assign (5)$^+$.
464.362 *9*	3$^-$,4$^-$[&]	J$^{\pi}$: 2007Sa03 assign 4$^-$.
483.640[j] *11*	4$^-$	J$^{\pi}$: 2007Sa03 assign (4$^-$).
495.721[‡] *11*	3$^+$[&]	
501.569[‡] *13*	(3)$^-$[&]	J$^{\pi}$: 2007Sa03 assign 3$^-$.
502.04[‡] *3*	1$^+$,2$^+$[&]	J$^{\pi}$: 2007Sa03 assign 0$^+$,1$^+$; however, this is probably the same level as the 502.8 fed by a primary transition thus ruling out 0$^+$.
506.648[‡] *16*	2$^+$[&]	
506.964[‡] *13*	(3)$^+$[&]	J$^{\pi}$: 2007Sa03 assign 3$^+$.
528.545[‡] *21*	3$^+$[&]	J$^{\pi}$: 2007Sa03 assign 3$^+$,4$^+$.
533.815[‡] *12*	2$^-$[&]	
544.756[‡] *12*	2$^-$,3$^-$[&]	J$^{\pi}$: 2007Sa03 assign 3$^-$.
559.790[‡] *13*	2$^-$[&]	
568.215 *9*	4$^-$[&]	
574.089[‡] *11*	(2,3,4)$^-$[&]	
596.425[‡] *10*	2$^-$,3$^-$,4$^-$[&]	
603.889[‡] *12*	(3,4)$^+$[&]	J$^{\pi}$: 2007Sa03 assign 3$^+$,4$^+$.
612.758 *12*	2$^-$[&]	
621.527[‡] *14*	1$^-$,2$^-$[&]	
628.523[‡@] *12*	3$^-$,4$^-$,5$^-$[&]	
630.291[‡@] *15*	2$^-$,3$^-$,4$^-$[&]	
672.248[‡] *10*	(2,3,4)$^-$[&]	J$^{\pi}$: 2007Sa03 assign 2$^-$,3$^-$.
675.482[‡] *12*	(2,3,4)$^+$[&]	J$^{\pi}$: 2007Sa03 assign 2$^+$,3$^+$,4$^+$.
681.894[‡] *12*	3$^-$[&]	J$^{\pi}$: 2007Sa03 assign 3$^-$,4$^-$,5$^-$.
689.4 *5*		
704.030[‡] *14*	1$^-$,2$^-$,3$^-$[&]	J$^{\pi}$: 2007Sa03 assign 1$^-$.
710.389[‡] *11*	1$^-$,2$^-$,3$^-$[&]	J$^{\pi}$: 2007Sa03 assign 2$^-$,3$^-$,4$^-$.
712.442[‡] *13*	2$^-$,3$^-$,4$^-$[&]	J$^{\pi}$: 2007Sa03 assign 4$^-$.
731.225[‡] *14*	3$^+$,4$^+$,5$^+$[&]	
873.996[k] *12*	2$^-$	
902.494[l] *11*	(3)$^-$	J$^{\pi}$: 2007Sa03 assign 3$^-$.
906.499[k] *19*	(3)$^-$	J$^{\pi}$: 2007Sa03 assign (3$^-$).
949.660[k] *14*	(4$^-$)	
1002.618[k] *23*	(5$^-$)	
1161.97[‡] *3*	1$^-$,2$^-$,3$^-$,4$^-$[&]	J$^{\pi}$: 2007Sa03 assign 3$^-$.

[†] Values are as given by 2007Sa03 from their least-squares adjustment based on the Eγ data of 1988Sa18.

[‡] New level introduced by 2007Sa03.

[#] Except where noted as being from Adopted Levels, the J^{π} and band assignments are from 1988Sa18 based on previously known bands from the (d,p), (d,t) work of 1976Gr19, population by primary capture gammas in (n,γ), decay patterns, multipolarities of

Continued on next page (footnotes at end of table)

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

^{242}Am Levels (continued)

γ transitions, intensity balances at all levels, and rotational band parameters. Additional J^{π} values have been assigned by 2007Sa03, but the arguments are not given. These assignments are given in comments.

@ The 628.523 and/or the 630.291 level probably corresponds to the 629.7 *3* level fed by a primary transition.

& From Adopted Levels.

[a] From Adopted Levels.

[b] Seq.(J): $K^{\pi}=0^{-}$ (π 5/5[523]-ν 5/2[622]).

[c] Band(A): $K^{\pi}=5^{-}$ (π 5/2[523]+ν 5/2[622]).

[d] Seq.(K): $K^{\pi}=0^{+}$ (π 5/2[642]-ν 5/2[622]).

[e] Band(B): $K^{\pi}=3^{-}$ (π 5/2[523]+ν 1/2[631]).

[f] Band(C): $K^{\pi}=1^{-}$ (π 5/2[523]-ν 7/2[624]).

[g] Band(D): $K^{\pi}=2^{-}$ (π 5/2[523]-ν 1/2[631]).

[h] Band(E): $K^{\pi}=3^{+}$ (π 5/2[642]+ν 1/2[631]).

[i] Band(F): $K^{\pi}=2^{+}$ (π 5/2[642]-ν 1/2[631]).

[j] Band(G): $K^{\pi}=1^{-}$ (π 3/2[521]-ν 5/2[622])+(π 3/2[521]-ν 1/2[631])+ (π 5/2[523]-ν 1/2[631]).

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

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

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

$\gamma(^{242}Am)$

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
23.12[c] 7	0.2[c]	364.658	2^+	341.593	0^+	E2[c]			Mult.: M2:M3=90 *5*:100 *2*. α(M3)exp=1537 *384*.
25.12#[c] 5	0.1[c] *CA*	621.527	1^-,2^-	596.425	2^-,3^-,4^-	[cb]			Mult.: E2 given by 1988Sa18. Mult.: M1:M2:M3=0.8 *7*:100 *2*:14.6 *18*.
26.92[d#] 6		528.545	3^+	501.569	$(3)^-$	[b]			Mult.: M1:M2:M3=26.7 *8*:100 *3*:23.5 *33*.
27.82[c] 6	322[c] *CA*	355.715	2^+	327.884	3^-	E1+M2[ca]	0.0049[a] *+9−8*	4.58 *31*	α(L)=3.36 *22*; α(M)=0.90 *7* α(N)=0.244 *19*; α(O)=0.057 *5*; α(P)=0.0080 *8*; α(Q)=0.00024 *4* Mult.: E1 given by 1988Sa18. Mult.: M1:M2=100 *13*:79 *3*. α(M1)exp=0.24 *7*.
28.937[d] *25*		405.880	2^-,3,4	376.947	3^+	[b]			E_γ: Also placed from the 446.702 level by 2007Sa03. Placement from the 405.933 by 1988Sa18 has been reassigned by 2007Sa03. Mult.: M1:M2:M3=15.2 *9*:100 *2*:8.4 *4*.
28.937[d] *25*		446.702	3^-	417.746	$(4)^+$				E_γ: Also placed from the 405.880 level by 2007Sa03. Placement from the 405.933 by 1988Sa18 has been reassigned by 2007Sa03. Mult.: M1:M2:M3=15.2 *9*:100 *2*:8.4 *4*.
29.351# *19*	30 *CA*	574.089	$(2,3,4)^-$	544.756	2^-,3^-	[b]			Mult.: M1 given by 1988Sa18. Mult.: M1:M2:M3=15.2 *9*:100 *2*:8.4 *4*. The M3 line is contaminated.
29.94[d] 6		418.084	4^+	388.112	3^+	[b]			Mult.: M1:M2:M3=16 *4*:100 *9*:<7.1.
30.973[e] *1*	≤281[e]	342.805	2^-,3^-	311.832	1^+,2^+				I_γ: Iγ=247 *34* for this doubly placed transition. E_γ: Also placed by 2007Sa03 from the 419.085 level. Placed only from the 419.085 level by 1988Sa18.
30.973[e] *1*	≤281[e]	419.085	2^-	388.112	3^+				E_γ: Also placed by 2007Sa03 from the 342.805 level. Placed only from the 419.085 level by 1988Sa18. I_γ: Iγ=247 *34* for this doubly placed transition.
31.306[c#] *36*	[c]	400.521	1^-	369.207	1^-,2^-	[c]			Mult.,δ: M1+M2 with δ=3.0 given by 1988Sa18. Evaluators could not deduce similar multi and δ from the conversion ratios. Mult.: M1:M2:M3=0.9 *13*:100 *2*:18.8 *8*. I_γ: Authors' (1998Sa18) value ≈ 0.2 was based on Ice(M123) and α(M123)exp with δ=3.
32.195[e] *2*	≤189[e]	200.581	3^-,4^-	168.387	1^-,2^-,3^-				E_γ: Also placed from the 405.880 level by 2007Sa03. Placed from the 405.933 level by 1988Sa18 and reassigned by 2007Sa03. I_γ: Iγ=163 *26* for this doubly placed transition. Mult.: The conversion electrons l0.ie in a complex region (1988Sa18).
32.195[e] *2*	≤189[e]	405.880	2^-,3,4	373.686	4^-				E_γ: Also placed from the 200.581 level by

$^{242}_{95}Am_{147}$-4

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
									2007Sa03. Placement from the 405.933 by 1988Sa18 has been reassigned by 2007Sa03. I_γ: Iγ=163 *26* for this doubly placed transition. Mult.: The conversion electrons lie in a complex region (1988Sa18).
32.526[ec] *21*	<1.0[ec]	420.651	$2^+,3^+,4^+$	388.112	3^+	M1+E2[c]	0.33 *5*	5.2×10^2 *10*	α(L)=3.8×10^2 *7*; α(M)=103 *21* α(N)=28 *6*; α(O)=6.8 *13*; α(P)=1.14 *21*; α(Q)=0.0250 *5* I_γ: Iγ<≈1.0. E_γ: Also placed from the 906.499 level by 2007Sa03. Placed only from the 906.499 level by 1988Sa18. Mult.: M1:M2:M3=78 *6*:100 *4*:29 *5*. α(M2)exp=40 *10*.
32.526[ec] *21*	<1.0[ec]	906.499	$(3)^-$	873.996	2^-	M1+E2[c]	0.33 *5*	5.2×10^2 *10*	α(L)=3.8×10^2 *7*; α(M)=103 *21* α(N)=28 *6*; α(O)=6.8 *13*; α(P)=1.14 *21*; α(Q)=0.0250 *5* E_γ: Also placed from the 420.651 level by 2007Sa03. Placed only from the 906.499 level by 1988Sa18. I_γ: Iγ<≈1.0. Mult.: M1:M2:M3=78 *6*:100 *4*:29 *5*. α(M2)exp=40 *10*.
33.443 *2*	151 *27*	405.933	4^+	372.490	4^-	E1		2.375 *33*	α(L)=1.766 *25*; α(M)=0.455 *6* α(N)=0.1218 *17*; α(O)=0.0280 *4*; α(P)=0.00390 *5*; α(Q)=9.81×10^{-5} *14* Mult.: M1:M2=100 *12*:50 *20*. α(M1)exp=0.097 *21*.
33.713[#] *2*	186 *26*	397.147	$2^-,3^-,4^-$	363.434	$2^+,3^+$				
33.80[c#] *5*	0.6[c] *CA*	630.291	$2^-,3^-,4^-$	596.425	$2^-,3^-,4^-$	*cb*			Mult.: E2 given by 1988Sa18 is inconsistent with the subshell ratios. Mult.: M1:M2:M3=0.29 *11*:4.69 *10*:100 *2*.
34.441[cf] *13*	0.8[c] *CA*	330.837	$2^-,3^-$	296.401	2^-	M1+E2[ca]	0.042[a] *29*	147 *9*	α(L)=110 *7*; α(M)=27.0 *18* α(N)=7.4 *5*; α(O)=1.86 *12*; α(P)=0.353 *19*; α(Q)=0.02203 *31* Mult.: M1 given by 1988Sa18. E_γ: Tentatively placed from the 330.740 level by 1988Sa18. Reassigned to the 330.837 level by 2007Sa03. Mult.: M1:M2=100 *43*:16 *6*.
35.049[d] *11*		327.884	3^-	292.831	2^-				Mult.: M1:M2:M3=100 *3*:82 *6*:49 *4*.
[x]35.546 *3*	107 *22*					(M1+E2)	0.51 *7*	6.1×10^2 *10*	α(L)=4.4×10^2 *8*; α(M)=121 *21* α(N)=33 *6*; α(O)=8.0 *14*; α(P)=1.30 *22*; α(Q)=0.0180 *5* Mult.: M1:M2:M3=4.4 *3*:100 *2*:0.14 *4*. α(M2)exp=53 *11*.

$^{242}_{95}Am_{147}$-5

^{241}Am(n,γ) E=th:secondary γ′s 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
35.84[d] *8*		400.521	1^-	364.658	2^+				Mult.: M1:M2:M3=100 *2*:6.4 *8*:0.60 *4*.
36.453 *3*	86 *17*	442.385	5^+	405.933	4^+	M1(+E2)	0.5 *7*	5×10^2 *8*	α(L)=4×10^2 *6*; α(M)=1.1×10^2 *16*

$^{242}_{95}Am_{147}$-6

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
									α(N)=3.E1 4; α(O)=7 *11*; α(P)=1.1 *16*; α(Q)=0.017 *4* Mult.: (M1) given by 1988Sa18.
37.910 *5*	90 *21*	330.740	3⁻	292.831	2⁻	M1+E2	0.129 *+14−15*	134 *6*	Mult.: L3:M1:M3=7.8 *5*:100 *7*:0.38 *18*. α(M1)exp=17 *4*. α(L)=100 *5*; α(M)=25.2 *13* α(N)=6.9 *4*; α(O)=1.72 *9*; α(P)=0.315 *13*; α(Q)=0.01645 *23*
38.005[#] *5*	54 *18*	330.837	2⁻,3⁻	292.831	2⁻	M1+E2	0.116 *+20−24*	128 *8*	Mult.: L3:M1:M2:M3=100 *2*:0.63 *29*:1.2 *3*:13.9 *10*. α(L3)exp=10.1 *21*. α(L)=96 *6*; α(M)=24.0 *17* α(N)=6.6 *5*; α(O)=1.64 *11*; α(P)=0.302 *17*; α(Q)=0.01635 *23*
38.145[d#] *10*		710.389	1⁻,2⁻,3⁻	672.248	(2,3,4)⁻	*b*			Mult.: M1(+E2) given by 1988Sa18. Mult.: M1:M2:M3=47.9 *29*:7.9 *22*:100 *7*. α(M3)exp=2.3 *8*. Mult.: M1:M3=48.6 *34*:100 *6*.
38.996[c] *9*	≈3.8[c]	457.090	5⁺	418.084	4⁺	*c*			Mult.: M1+E2 with δ=0.5 given by 1988Sa18. The author's relative I(ce) and α data for the subshells, as given in Table 4 of 1987SaZG are not consistent.
39.42[c] *6*	0.1[c] *CA*	269.854	3⁺	230.527	1⁺	(E2)[c]		1470 *23*	α(L)=1067 *17*; α(M)=299 *5* α(N)=82.5 *13*; α(O)=19.65 *31*; α(P)=3.08 *5*; α(Q)=0.00631 *10* Mult.: L3:M2:M3=100 *4*:98 *7*:14 *3*.
41.71[e] *5*	≤22[e]	330.740	3⁻	289.028	4⁻	M1+E2	0.199 *+10−11*	120 *4*	α(L)=89.1 *32*; α(M)=22.9 *9* α(N)=6.29 *25*; α(O)=1.55 *6*; α(P)=0.277 *9*; α(Q)=0.01223 *18* E_γ: Also placed from the 372.490 level by 2007Sa03. Placed only from the 330.740 level by 1988Sa18. I_γ: Iγ=20 *2* for this doubly placed transition. Mult.: L1:L2:L3:M1=705 *5*:3.73 *22*:100 *2*:0.99 *12*. α(L3)exp=14.2 *14*.
41.71[e] *5*	≤22[e]	372.490	4⁻	330.740	3⁻	M1+E2	0.199 *+10−11*	120 *4*	α(L)=89.1 *32*; α(M)=22.9 *9* α(N)=6.29 *25*; α(O)=1.55 *6*; α(P)=0.277 *9*; α(Q)=0.01223 *18* E_γ: Also placed from the 330.740 level by 2007Sa03. Placed only from the 330.740 level by 1988Sa18. I_γ: Iγ=20 *2* for this doubly placed transition. Mult.: L1:L2:L3:M1=705 *5*:3.73 *22*:100 *2*:0.99 *12*. α(L3)exp=14.2 *14*.
41.997[c#] *34*	5.0[c] *CA*	311.832	1⁺,2⁺	269.854	3⁺	E2[c]		1081 *16*	α(L)=784 *11*; α(M)=219.6 *32* α(N)=60.7 *9*; α(O)=14.45 *21*; α(P)=2.264 *33*; α(Q)=0.00479 *7* Mult.: M1:M2:M3=3.5 *3*:100 *2*:98 *3*.

$^{242}_{95}Am_{147}$-7

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ‡	I_γ@	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
x43.023 *6*	36 *15*					(M1+E2)	0.45 *+13−14*	2.2×10^2 *7*	α(L)=1.6×10^2 *5*; α(M)=44 *15* α(N)=12 *4*; α(O)=2.9 *10*; α(P)=0.49 *15*; α(Q)=0.0102 *6* E_γ: Placed from the 373.686 level by 1988Sa18. Assignment removed by 2007Sa03. Mult.: M2:M3=100 *3*:27.9 *20*. α(M2)exp=18 *8*.
43.17*ec* *5*	<15*ec*	544.756	2$^-$,3$^-$	501.569	(3)$^-$	*cb*			E_γ: Also placed from the 949.660 level by 2007Sa03. Placed only from the 949.660 level by 1988Sa18. I_γ: Iγ<≈15 for this doubly placed transition. Mult.,δ: M1+E2 with δ=0.23 given by 1988Sa18. Mult.: L1:L2:M1:M2:M3=100 *2*:28.1 *14*:26.0 *8*:14.2 *20*:6.1 *11*.
43.17*ec* *5*	<15*ec*	949.660	(4$^-$)	906.499	(3)$^-$	*cb*			E_γ: Also placed from the 544.756 by 2007Sa03. Placed only from the 949.660 level by 1988Sa18. I_γ: Iγ<≈15 for this doubly placed transition. Mult.,δ: M1+E2 with δ=0.23 given by 1988Sa18. Mult.: L1:L2:M1:M2:M3=100 *2*:28.1 *14*:26.0 *8*:14.2 *20*:6.1 *11*.
43.728*c#* *23*	6.0*c* *CA*	420.651	2$^+$,3$^+$,4$^+$	376.947	3$^+$	*cb*			Mult.: M1 given by 1988Sa18 is inconsistent with the subshell ratios. Mult.: L2:L3:M1=100 *3*:1.4 *21*:27 *6*.
44.092 *3*	113 *16*	44.093	0$^-$	0.0	1$^-$	M1		68.5 *10*	α(L)=51.5 *7*; α(M)=12.58 *18* α(N)=3.44 *5*; α(O)=0.866 *12*; α(P)=0.1658 *23*; α(Q)=0.01062 *15* Mult.: L1:L2:L3:M1:M2:M3=100 *2*:17.5 *4*:7.60 *15*:18.8 *6*: 3.30 *23*:0.286 *26*. α(L1)exp=49 *7*.
x44.557*c* *25*	≈6.4*c*					M1+E2*c*	0.40 *+6−7*	169 *30*	α(L)=124 *21*; α(M)=33 *6* α(N)=9.2 *17*; α(O)=2.2 *4*; α(P)=0.37 *6*; α(Q)=0.00939 *29* δ: 0.39 given by 1988Sa18. E_γ: Placed from the 289.028 level by 1988Sa18. Assignment removed by 2007Sa03. Mult.: L1:L2:L3:M1:M2:M3=99 *3*:100 *6*:63.2 *25*:70 *5*:44 *3*: 14.2 *4*. α(L2)exp=47 *12*.
45.91*ec#* *6*	≤9.3*ec*	373.686	4$^-$	327.884	3$^-$	M1+E2*ca*	0.141*a* *+9−10*	73.3 *20*	α(L)=54.7 *15*; α(M)=13.7 *4* α(N)=3.76 *11*; α(O)=0.937 *26*; α(P)=0.173 *4*; α(Q)=0.00931 *14* δ: 0.14 given by 1988Sa18. E_γ: Also placed from the 501.569 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ≈9.3 for this doubly placed transition. Mult.: L2:L3=100 *15*:41 *4*. α(L3)exp=4.7 *6*.

$^{242}_{95}Am_{147}$-8

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ‡	I_γ@	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
45.91[ec#] 6	≤9.3[ec]	501.569	(3)$^-$	455.688	1$^-$,2$^-$,3$^-$	M1+E2[ca]	0.141[a] +9–10	73.3 20	α(L)=54.7 15; α(M)=13.7 4 α(N)=3.76 11; α(O)=0.937 26; α(P)=0.173 4; α(Q)=0.00931 14 E_γ: Also placed from the 373.686 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ≈9.3 for this doubly placed transition. δ: 0.14 given by 1988Sa18. Mult.: L2:L3=100 15:41 4. α(L3)exp=4.7 6.
46.128[d] 33		376.947	3$^+$	330.837	2$^-$,3$^-$				E_γ: Also placed from the 446.702 level by 2007Sa03. Placed only from the 446.702 level by 1988Sa18. Mult.: L1:L2:L3=14.8 9:100 2:0.49 19.
46.128[d] 33		446.702	3$^-$	400.521	1$^-$				E_γ: Also placed from the 376.947 level by 2007Sa03. Placed only from the 446.702 level by 1988Sa18. Mult.: L1:L2:L3=14.8 9:100 2:0.49 19.
46.42[d#d#] 5		342.805	2$^-$,3$^-$	296.401	2$^-$	M1+E2[b]	0.0606 +34–31		α(K)=0.1548 22; α(L)=0.648 9; α(M)=0.1809 25 α(N)=0.0500 7; α(O)=0.01199 17; α(P)=0.001964 28; α(Q)=1.512×10^{-5} 21 α(L)=45.8 7; α(M)=11.26 17 α(N)=3.08 5; α(O)=0.774 12; α(P)=0.1470 22; α(Q)=0.00911 13 E_γ: Also placed from the 502.04 level by 2007Sa03. Unplaced by 1988Sa18. Evaluators consider the placement at 502.04-keV level questionable as the deduced multi needs Δπ=no in the 502.04-keV to 455.688-keV level. Mult.,δ: M1+E2 with δ=0.0606 $^{34-31}$ deduced by evaluators but is inconsistent with placement in level scheme. Mult.: M2:M3=100 2:18.1 11. E_γ: Also placed from the 502.04 level by 2007Sa03. Unplaced by 1988Sa18. Mult.: M2:M3=100 2:18.1 11.
46.598[c] 16	0.55[c] CA	419.085	2$^-$	372.490	4$^-$	[cb]			Mult.: (E2)given by 1988Sa18. Mult.: L1:L2:L3:M2:M3=100 6:60 3:50.6 10:8.0 7:37.3 26.
48.514 30	2.0 1	292.831	2$^-$	244.381	3$^-$	[b]			Mult.: L1:L2:M1:M2:M3=100 2:21.8 5:18.7 8:4.7 16:10.1 8.
(48.63 5)		48.603	5$^-$	0.0	1$^-$	E4		7.01×10^5 11	α(L)=3.31×10^5 5; α(M)=2.65×10^5 4

$^{242}_{95}Am_{147}$-9

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
									α(N)=8.40×10^4 *13*; α(O)=1.908×10^4 *30*; α(P)=1891 *30*; α(Q)=2.86 *4* E_γ: Not seen in (n,γ); however, the 48.60 level is fed from higher levels. Eγ is from adopted gammas.
49.03[d] *5*		376.947	3$^+$	327.884	3$^-$				Mult.: L1:L2:L3:M3=<35:100 *4*:9 *5*:8.7 *8*.
50.27[c] *4*	0.1[c] *CA*	405.933	4$^+$	355.715	2$^+$	(E2)[c]		452 *7*	α(L)=328 *5*; α(M)=91.9 *13* α(N)=25.4 *4*; α(O)=6.05 *9*; α(P)=0.951 *14*; α(Q)=0.002197 *32* Mult.: L2:L3:M2:M3=93 *11*:100 *46*:39.5 *8*:37.6 *26*.
51.619# *35*	2 *1*	363.434	2$^+$,3$^+$	311.832	1$^+$,2$^+$	M1+E2	0.455 *+31−32*	104 *7*	α(L)=76 *5*; α(M)=20.4 *15* α(N)=5.6 *4*; α(O)=1.37 *10*; α(P)=0.230 *15*; α(Q)=0.00587 *12* Mult.: L1:L3:M1:M3=100 *17*:13.7 *10*:8.6 *16*:53.1 *27*. α(M3)exp=6.2 *7*.
52.05[c] *7*	1.0[c] *CA*	296.401	2$^-$	244.381	3$^-$	M1(+E2)[c]	0.7 *9*	1.5×10^2 *13*	α(L)=1.1×10^2 *10*; α(M)=31 *27* α(N)=8 *8*; α(O)=2.0 *18*; α(P)=0.33 *27*; α(Q)=0.0050 *18* Mult.: M1 given by 1988Sa18.
52.770 *36*	32 *11*	52.714	3$^-$	0.0	1$^-$	E2		358 *5*	Mult.: L1:L2=100 *4*:9.9 *2*. α(L1)exp=21 *9*. α(L)=259 *4*; α(M)=72.7 *10* α(N)=20.11 *29*; α(O)=4.79 *7*; α(P)=0.754 *11*; α(Q)=0.001783 *26* Mult.: L1:L2:L3:M1:M2:M3=5.39 *16*:100 *2*:79.6 *16*:0.66 *11*: 20.2 *10*:15.3 *3*. α(L2)exp=175 *58*.
53.00[e] *5*	≤96[e]	612.758	2$^-$	559.790	2$^-$	M1+E2[a]	0.06[a] *+3−2*	41.0 *15*	α(L)=30.8 *11*; α(M)=7.55 *30* α(N)=2.07 *8*; α(O)=0.519 *20*; α(P)=0.0988 *32*; α(Q)=0.00616 *9* E_γ: Also placed from the 1002.618 level by 2007Sa03. Placed only from the 1002.618 level by 1988Sa18. I_γ: Iγ=81 *15* for this doubly placed transition. Mult.: M1 given by 1988Sa18. Mult.: L1:L2:M1:M2=100 *2*:14.3 *18*:24.4 *12*:2.4 *12* α(L1)exp=31 *6*.
53.00[e] *5*	≤96[e]	1002.618	(5$^-$)	949.660	(4$^-$)	M1+E2[a]	0.06[a] *+3−2*	41.0 *15*	α(L)=30.8 *11*; α(M)=7.55 *30* α(N)=2.07 *8*; α(O)=0.519 *20*; α(P)=0.0988 *32*; α(Q)=0.00616 *9* E_γ: Also placed from the 612.758 level by 2007Sa03. Placed only from the 1002.618 level by 1988Sa18. I_γ: Iγ=81 *15* for this doubly placed transition. Mult.: M1 given by 1988Sa18. Mult.: L1:L2:M1:M2=100 *2*:14.3 *18*:24.4 *12*:2.4 *12* α(L1)exp=31 *6*.
56.421[d] *18*		330.740	3$^-$	274.330	1$^-$	[b]			Mult.: L2:M2:M3=85 *7*:100 *11*:84 *9*.
56.577# *38*	13 *5*	330.837	2$^-$,3$^-$	274.330	1$^-$	E2		256 *4*	α(L)=185.3 *27*; α(M)=52.0 *7*

$^{242}_{95}Am_{147}$-10

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
									α(N)=14.38 *21*; α(O)=3.43 *5*; α(P)=0.540 *8*; α(Q)=0.001324 *19* Mult.: L2:L3:M2=1.77 *13*:1.04 *3*:0.207 *17*. α(L2)exp=136 *17*.
57.236# *28*	55 *5*	420.651	$2^+,3^+,4^+$	363.434	$2^+,3^+$	M1+E2	2.4 *+14−6*	211 *19*	α(L)=153 *13*; α(M)=43 *4* α(N)=11.8 *11*; α(O)=2.82 *25*; α(P)=0.45 *4*; α(Q)=0.00180 *32* Mult.: E2(+M1) given by 1988Sa18. Mult.: L1:L2:M2:M3=2.51 *20*:100 *2*:16.7 *7*:1.01 *3*. α(L2)exp=82 *8*.
x59.249c *37*	7.9c *CA*					E2c		204.8 *29*	α(L)=148.4 *21*; α(M)=41.7 *6* α(N)=11.52 *16*; α(O)=2.75 *4*; α(P)=0.433 *6*; α(Q)=0.001088 *16* Mult.: L1:L2:L3=2.3 *3*:100 *2*:74.6 *15*.
x61.79 *6*	620 *9*					E1		0.478 *7*	α(L)=0.358 *5*; α(M)=0.0893 *13* α(N)=0.02403 *34*; α(O)=0.00571 *8*; α(P)=0.000897 *13*; α(Q)=2.85×10^{-5} *4* Mult.: L1:L2:L3:M2:M3=100 *3*:11.1 *8*:7.2 *3*:1.35 *19*:1.27 *14*. α(L1)exp=1.68 *17*.
62.876 *15*	130 *12*	355.715	2^+	292.831	2^-	(E1+M2)	0.076 *+6−7*	4.7 *7*	α(L)=3.4 *5*; α(M)=0.96 *15* α(N)=0.27 *4*; α(O)=0.067 *11*; α(P)=0.0120 *19*; α(Q)=0.00062 *10* Mult.: (E1) given by 1988Sa18. Mult.: L2:L3:M2=100 *3*:39 *4*:35 *4*. α(L2)exp=0.29 *3*.
64.54d *3*		483.640	4^-	419.085	2^-				Mult.: L1:L2:L3:M3=100 *2*:34.4 *17*:7.1 *27*:5.4 *7*.
65.408 *28*	25 *8*	442.385	5^+	376.947	3^+				Mult.: M1+E2 with δ=0.434 *29-30* deduced by the evalutors but is inconsistent with placement in the level scheme.
65.557 *3*	103 *11*	483.640	4^-	418.084	4^+	E1+M2	0.028 *+3−4*	0.89 *13*	Mult.: L1:L2:L3:M1:M3=11.1 *6*:58.7 *24*:100 *5*:2.29 *19*:4.6 *4*. α(L3)exp=6.2 *7*. α(L)=0.65 *9*; α(M)=0.175 *26* α(N)=0.049 *7*; α(O)=0.0119 *19*; α(P)=0.00203 *33*; α(Q)=9.2×10^{-5} *18* Mult.: (E1) given by 1988Sa18. Mult.: L1:L3:M2=100 *4*:3155:30 *3*. α(L1)exp=0.35 *6*.
x65.793 *25*	840 *76*					E1		0.405 *6*	α(L)=0.304 *4*; α(M)=0.0756 *11* α(N)=0.02036 *29*; α(O)=0.00485 *7*; α(P)=0.000770 *11*; α(Q)=2.501×10^{-5} *35* Mult.: L1:L2:L3:M1:M2=73 *6*:100 *33*:67 *34*:33.3 *14*:32.9 *10*. α(M1)exp=0.036 *4*.
x67.439 *4*	395 *8*					(M1+E2)	0.031 *5*	19.79 *28*	α(L)=14.86 *21*; α(M)=3.63 *5* α(N)=0.993 *14*; α(O)=0.2501 *35*; α(P)=0.0478 *7*; α(Q)=0.00304 *4* Mult.: L1:L3:M1:M2:M3=100 *25*:10.4 *10*:9.2 *11*:11.3 *18*:6.8 *4*. α(L3)exp=0.102 *10*.

$^{242}_{95}Am_{147}$-11

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ‡	I_γ@	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
68.701 *3*	175 *12*	442.385	5^+	373.686	4^-				
68.997 *17*	32 *9*	457.090	5^+	388.112	3^+	*b*			Mult.: L1:L2:L3:M1:M2=52.5 *16*:13 *5*:100 *3*:23.5 *14*: 40.5 *25*. α(L3)exp=304 *10*.
69.101# *8*	30 *11*	168.387	$1^-,2^-,3^-$	99.285	$0^+,1^+,2^+$	(E1+M2)	0.043 *+9−11*	1.3 *4*	α(L)=0.91 *30*; α(M)=0.25 *9* α(N)=0.070 *24*; α(O)=0.017 *6*; α(P)=0.0030 *11*; α(Q)=1.5×10^{-4} *6* Mult.: (E1) assigned by 1988Sa18. Mult.: L1:L2=100 *7*:86 *16*. α(L1)exp=0.55 *20*.
69.253# *11*	32 *12*	397.147	$2^-,3^-,4^-$	327.884	3^-	M1+E2	0.41 *+9−10*	30 *4*	α(L)=21.8 *32*; α(M)=5.7 *9* α(N)=1.57 *26*; α(O)=0.38 *6*; α(P)=0.067 *9*; α(Q)=0.00249 *13* Mult.: L1:L2:M1=75 *14*:100 *11*:34 *2*. α(L3)exp=4.2 *16*.
69.448# *11*	34 *11*	533.815	2^-	464.362	$3^-,4^-$	M1+E2	0.33 *+9−10*	26 *4*	α(L)=19.1 *29*; α(M)=4.9 *8* α(N)=1.35 *23*; α(O)=0.33 *5*; α(P)=0.059 *8*; α(Q)=0.00257 *12* Mult.: L1:L3:M2:M3=6.1 *20*:100 *8*:23.6 *19*:9.9 *12*. α(M2)exp=1.4 *5*.
69.781 *6*	46 *15*	400.521	1^-	330.740	3^-	(E2)		93.6 *13*	α(L)=67.8 *10*; α(M)=19.07 *27* α(N)=5.27 *7*; α(O)=1.258 *18*; α(P)=0.1990 *28*; α(Q)=0.000548 *8* Mult.: L1:L2:L3:M3=1.7 *7*:73 *4*:100 *9*:4.2 *5*. α(L2)exp=14 *5*.
71.593# *7*	81 *11*	675.482	$(2,3,4)^+$	603.889	$(3,4)^+$	M1+E2	0.141 *+10−11*	17.84 *31*	α(L)=13.36 *23*; α(M)=3.30 *6* α(N)=0.905 *17*; α(O)=0.227 *4*; α(P)=0.0426 *7*; α(Q)=0.00252 *4* Mult.: L2:L3:M1=28.8 *35*:77.4 *16*:100 *14*. α(L3)exp=0.54 *7*.
72.806[c] *30*	1.1[c] *CA*	369.207	$1^-,2^-$	296.401	2^-	(E2)[c]		76.5 *11*	α(L)=55.4 *8*; α(M)=15.59 *22* α(N)=4.31 *6*; α(O)=1.028 *15*; α(P)=0.1628 *23*; α(Q)=0.000461 *6* E_γ: Placed from the 400.521 level by 1988Sa18. Reassigned to the 369.207 level by 2007Sa03. Mult.: L2:L3:M3=100 *9*:43 *5*:39 *3*.
73.864[c] *11*	2.0[c] *CA*	149.707	4^-	75.820	2^-	E2[c]		71.5 *10*	α(L)=51.8 *7*; α(M)=14.55 *20* α(N)=4.02 *6*; α(O)=0.960 *13*; α(P)=0.1521 *21*; α(Q)=0.000434 *6* Mult.: L2:L3:M3=100 *3*:66.4 *20*:85 *10*. The M3 line is contaminated.
74.248[c] *23*	5.3[c] *CA*	446.702	3^-	372.490	4^-	*cb*			Mult.: M1 given by 1988Sa18 is inconsistent with the subshell ratios.
75.664 *7*	101 *18*	949.660	(4^-)	873.996	2^-	(E2)		63.7 *9*	Mult.: L1:L2:M1=13.2 *12*:100 *4*:1.63 *13*. α(L)=46.2 *6*; α(M)=12.98 *18*

$^{242}_{95}Am_{147}$-12

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
									α(N)=3.59 *5*; α(O)=0.857 *12*; α(P)=0.1358 *19*; α(Q)=0.000394 *6* Mult.: L2:L3:M3=98 *3*:30 *3*:100 *11*. α(M3)exp=0.44 *9*.
75.823[e] *4*	≤554[e]	75.820	2⁻	0.0	1⁻	M1		13.99 *20*	α(L)=10.51 *15*; α(M)=2.57 *4* α(N)=0.702 *10*; α(O)=0.1768 *25*; α(P)=0.0338 *5*; α(Q)=0.002162 *30* E_γ: Also placed from the 672.248 level by 2007Sa03. Placed only from the 75.823 level by 1988Sa18. I_γ: Iγ=543 *11* for this doubly placed transition. Mult.: L1:L2:L3:M1:M2:M3=100 *2*:11.2 *14*:0.42 *5*:21.0 *4*: 2.65 *11*:0.244 *17*. α(L1)exp=11.7 *4*.
75.823[e#] *4*	554[e] *11*	672.248	(2,3,4)⁻	596.425	2⁻,3⁻,4⁻	M1		13.99 *20*	α(L)=10.51 *15*; α(M)=2.57 *4* α(N)=0.702 *10*; α(O)=0.1768 *25*; α(P)=0.0338 *5*; α(Q)=0.002162 *30* I_γ: Iγ=543 *11* for this doubly placed transition. E_γ: Also placed from the 75.820 level by 2007Sa03. Placed only from the 75.820 level by 1988Sa18. Mult.: L1:L2:L3:M1:M2:M3=100 *2*:11.2 *14*:0.42 *5*:21.0 *4*: 2.65 *11*:0.244 *17*. α(L1)exp=11.7 *4*.
76.092 *14*	62 *18*	372.490	4⁻	296.401	2⁻	(E2)		62.1 *9*	α(L)=45.0 *6*; α(M)=12.64 *18* α(N)=3.50 *5*; α(O)=0.834 *12*; α(P)=0.1322 *19*; α(Q)=0.000385 *5* Mult.: L1:L2:L3:M2=100 *3*:39.9 *8*:41.1 *17*:26.8 *19*. α(L1)exp=1.8 *6*.
76.258 *13*	47 *21*	464.362	3⁻,4⁻	388.112	3⁺	E1+M2	0.113 *+23−29*	4.2 *18*	α(L)=3.1 *13*; α(M)=0.9 *4* α(N)=0.24 *10*; α(O)=0.061 *25*; α(P)=0.011 *5*; α(Q)=5.8×10^{-4} *25* Mult.: α(L1)exp=2.1 *9*.
76.668[#] *22*	32 *15*	495.721	3⁺	419.085	2⁻	*b*			Mult.: L1:M1=100 *2*:8.4 *11*. α(L1)exp=23 *11*.
77.988[e] *23*	≤44[e]	405.880	2⁻,3,4	327.884	3⁻				E_γ: Also placed from the 681.894 level by 2007Sa03. Placement from the 405.933 by 1988Sa18 has been reassigned by 2007Sa03. I_γ: Iγ=31 *13* for this doubly placed transition.
77.988[e] *23*	≤44[e]	681.894	3⁻	603.889	(3,4)⁺				E_γ: Also placed from the 405.880 level by 2007Sa03. Placement from the 405.933 by 1988Sa18 has been removed by 2007Sa03. I_γ: Iγ=31 *13* for this doubly placed transition.
78.945[#] *19*	54 *17*	612.758	2⁻	533.815	2⁻	E2		52.1 *7*	α(L)=37.8 *5*; α(M)=10.62 *15* α(N)=2.94 *4*; α(O)=0.701 *10*; α(P)=0.1112 *16*; α(Q)=0.000332 *5* Mult.: L1:L2:L3:M2:M3=7.40 *22*:1.49 *21*:2.30 *21*:100 *2*:48.3 *10*. α(M2)exp=17 *6*.
80.400[#] *33*	51 *12*	544.756	2⁻,3⁻	464.362	3⁻,4⁻	M1		11.80 *17*	α(L)=8.86 *12*; α(M)=2.163 *30*

$^{242}_{95}Am_{147}$-13

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
									α(N)=0.592 *8*; α(O)=0.1490 *21*; α(P)=0.0285 *4*; α(Q)=0.001821 *26* Mult.: L1:L2:L3:M2:M3=100 *2*:11.9 *7*:9.5 *6*:99.6 *20*:3.5 *4*. α(L1)exp=9.0 *21*. The M1 conversion line shows multiple structure (1988Sa18).
80.905 *19*	40 *12*	373.686	4⁻	292.831	2⁻	E2		46.4 *7*	α(L)=33.6 *5*; α(M)=9.46 *13* α(N)=2.62 *4*; α(O)=0.624 *9*; α(P)=0.0991 *14*; α(Q)=0.000300 *4* Mult.: L1:L2:L3:M1:M2=83 *9*:47 *9*:57 *7*:100 *9*:23 *6*. α(M1)exp=0.40 *13*.
81.312[#] *15*	83 *12*	311.832	1⁺,2⁺	230.527	1⁺	M1+E2	0.78 *9*	24.2 *19*	α(L)=17.8 *14*; α(M)=4.8 *4* α(N)=1.32 *11*; α(O)=0.320 *26*; α(P)=0.054 *4*; α(Q)=0.00121 *8* Mult.: L1:L2:M1:M2:M3=46 *3*:11.6 *14*:3.2 *7*:100 *2*:61 *5*. α(M2)exp=1.41 *20*.
81.864[#] *32*	34 *18*	710.389	1⁻,2⁻,3⁻	628.523	3⁻,4⁻,5⁻	M1		11.19 *16*	α(L)=8.41 *12*; α(M)=2.053 *29* α(N)=0.561 *8*; α(O)=0.1414 *20*; α(P)=0.0270 *4*; α(Q)=0.001728 *24* Mult.: M1+E2 with δ=0.40 *10* given by 1988Sa18. Mult.: L2:M1:M2:M3=5.0 *22*:100 *7*:302 *9*:42 *6*. α(M1)exp=1.8 *10*. The M2 conversion line is contaminated.
82.484[e] *17*	≤83[e]	501.569	(3)⁻	419.085	2⁻	M1+E2	4.6 *15*	41.0 *16*	α(L)=29.7 *12*; α(M)=8.33 *35* α(N)=2.30 *10*; α(O)=0.550 *23*; α(P)=0.0876 *34*; α(Q)=0.00034 *7* δ: 0.44 *17* given by 1988Sa18 is not consistent with the conversion electron data. E_γ: Also placed from the 704.030 level by 2007Sa03. Unplaced by 1988Sa18. Mult.: L1:L3:M1:M2:M3=100 *2*:41 *5*:41 *8*:94 *8*:86 *9*. α(L1)exp=1.1 *3*. I_γ: Iγ≠67 *16* for this doubly placed transition.
82.484[e#] *17*	≤83[e]	704.030	1⁻,2⁻,3⁻	621.527	1⁻,2⁻	M1+E2	4.6 *15*		α(L)=29.7 *12*; α(M)=8.33 *35* α(N)=2.30 *10*; α(O)=0.550 *23*; α(P)=0.0876 *34*; α(Q)=0.00034 *7* E_γ: Also placed from the 501.569 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=67 *16* for this doubly placed transition. δ: 0.44 *17* given by 1988Sa18 is inconsistent with the conversion electron data. Mult.: L1:L3:M1:M2:M3=100 *2*:41 *5*:41 *8*:94 *8*:86 *9*. α(L1)exp=1.1 *3*.
[x]83.203 *22*	53 *18*					(M1+E2)	1.0 *5*	26 *9*	α(L)=19 *6*; α(M)=5.1 *19* α(N)=1.4 *5*; α(O)=0.34 *12*; α(P)=0.056 *18*; α(Q)=1.0×10^{-3} *4* Mult.: L1:L2:L3:M1:M2:M3=27.5 *22*:42 *4*:40 *5*:100 *8*:20 *4*: 39 *5*. α(M1)exp=0.97 *34*.

$^{242}_{95}Am_{147}$-14

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ‡	I_γ@	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
83.399 *17*	67 *13*	457.090	5^+	373.686	4^-				
83.926# *12*	83 *16*	712.442	$2^-,3^-,4^-$	628.523	$3^-,4^-,5^-$	M1+E2	1.3 *+4−3*	28 *4*	α(L)=20.7 *26*; α(M)=5.7 *8* α(N)=1.58 *22*; α(O)=0.38 *5*; α(P)=0.062 *8*; α(Q)=0.00076 *17* Mult.: L2:L3:M1=41 *7*:88 *12*:100 *10*. α(M1)exp=0.78 *17*.
84.124 *20*	323 *10*	376.947	3^+	292.831	2^-	(E1+M2)	0.113 *6*	2.80 *28*	α(L)=2.02 *20*; α(M)=0.57 *6* α(N)=0.159 *16*; α(O)=0.040 *4*; α(P)=0.0071 *7*; α(Q)=0.00038 *4* Mult.: E1 given by 1988Sa18. Mult.: L1:L2:L3:M1:M2=14.8 *13*:24 *3*:100 *9*:42 *5*:13.7 *18*. α(L3)exp=0.45 *4*.
84.601 *20*	65 *20*	568.215	4^-	483.640	4^-				
86.173# *31*	87 *32*	528.545	3^+	442.385	5^+				Mult.: L1:L2:M1:M3=20.0 *24*:100 *6*:11.8 *24*:48 *4*. α(L2)exp=0.52 *20*. 1988Sa18 assign mult=(M1+E2); however, placement in the level scheme requires ΔJ=2.
86.316e *30*	≤124e	330.740	3^-	244.381	3^-				E_γ: Also placed from the 506.964 level by 2007Sa03. Placed only from the 330.740 level by 1988Sa18. I_γ: Iγ=91 *33* for this doubly placed transition.
86.316e# *30*	≤124e	506.964	$(3)^+$	420.651	$2^+,3^+,4^+$				E_γ: Also placed from the 330.740 level by 2007Sa03. Placed only from the 330.740 level by 1988Sa18. I_γ: Iγ=91 *33* for this doubly placed transition.
x86.487 *11*	70 *20*					E1		0.1983 *28*	α(L)=0.1487 *21*; α(M)=0.0368 *5* α(N)=0.00993 *14*; α(O)=0.002387 *33*; α(P)=0.000393 *6*; α(Q)=1.404×10^{-5} *20* Mult.: L1:L2:M3=39.4 *24*:21.2 *17*:100 *17*. α(M3)exp=0.094 *32*.
87.592# *29*	55 *35*	506.648	2^+	419.085	2^-	E1+M2	0.096 *+18−21*	1.8 *6*	α(L)=1.3 *5*; α(M)=0.36 *13* α(N)=0.10 *4*; α(O)=0.025 *9*; α(P)=0.0045 *17*; α(Q)=2.4×10^{-4} *9* Mult.: L1:M1=100 *8*:44 *4*. α(L1)exp=0.88 *32*.
87.726# *31*	54 *22*	621.527	$1^-,2^-$	533.815	2^-	M1+E2	0.34 *+8−9*	11.5 *11*	α(L)=8.5 *8*; α(M)=2.17 *22* α(N)=0.60 *6*; α(O)=0.148 *15*; α(P)=0.0269 *22*; α(Q)=0.00129 *6* Mult.: L1:L2:L3=60 *7*:39 *5*:100 *11*:66.2 *27*:35.7 *25*. α(L3)exp=0.96 *40*.
88.322# *31*	44 *19*	419.085	2^-	330.740	3^-	*b*			Mult.: M1+E2 with δ=0.23 *5* given by 1988Sa18 are inconsistent with the subshell conversion

$^{242}_{95}Am_{147}$-15

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
									intensity ratios.
88.44[c] *5*	≈7.0[c]	289.028	4^-	200.581	$3^-,4^-$	M1+E2[c]	1.17 *+17−12*	21.4 *14*	Mult.: L2:L3:M1:M2:M3=4.3 *6*:100 *2*:1.39 *9*:1.07 *13*:0.59 *6*. α(L3)exp=30 *13*. α(L)=15.6 *10*; α(M)=4.29 *30* α(N)=1.18 *8*; α(O)=0.285 *20*; α(P)=0.0469 *29*; α(Q)=0.00070 *8* E_γ: Also placed from the 419.085 level by 2007Sa03. Placed only from the 289.028 level by 1988Sa18. The evaluators have not placed this gamma at the 419-keV level as there is a 88.322γ assigned to the to that level. Mult.: Deduced by evalutors using the L1/L2 intensity ratio. M1+E2 with δ=1.2 given by 1988Sa18.
88.869# *19*	102 *36*	710.389	$1^-,2^-,3^-$	621.527	$1^-,2^-$	M1+E2	0.30 *+10−12*	10.6 *12*	Mult.: L1:L2:M1=36 *5*:100 *14*:32.6 *20*. α(L)=7.9 *8*; α(M)=1.99 *25* α(N)=0.54 *7*; α(O)=0.135 *16*; α(P)=0.0248 *24*; α(Q)=0.00127 *7* Mult.: L1:L2:M2:M3=73 *8*:62 *5*:100 *6*:35 *3*. α(M2)exp=0.47 *17*.
89.070# *20*	112 *32*	544.756	$2^-,3^-$	455.688	$1^-,2^-,3^-$	M1+E2	0.26 *+8−11*	10.1 *9*	α(L)=7.5 *6*; α(M)=1.89 *18* α(N)=0.52 *5*; α(O)=0.129 *12*; α(P)=0.0238 *18*; α(Q)=0.00128 *5* Mult.: L2:L3:M2=100 *13*:35.2 *14*:9.5 *18*. α(L2)exp=1.5 *5*.
89.216# *20*	125 *20*	506.964	$(3)^+$	417.746	$(4)^+$	M1+E2	0.58 *8*	13.9 *11*	α(L)=10.2 *8*; α(M)=2.70 *23* α(N)=0.74 *6*; α(O)=0.182 *15*; α(P)=0.0315 *22*; α(Q)=0.00106 *6* Mult.: L1:L2:L3:M1:M3=21 *3*:79 *8*:100 *2*:17.7 *11*:0.9 *4*. α(L3)exp=2.1 *4*.
[x]89.510 *3*	1050 *11*					E1+M2	0.016 *+6−10*	0.22 *4*	α(L)=0.165 *26*; α(M)=0.042 *7* α(N)=0.0114 *20*; α(O)=0.0028 *5*; α(P)=0.00046 *9*; α(Q)=1.9×10^{-5} *5* Mult.: E1 given by 1988Sa18. Mult.: L1:L2:L3=100 *9*:30.2 *33*:11.0 *21*:5.4 *6*. α(L3)exp=0.042 *5*. The L1 and M3 lines showed multiple structure and the L2 line was masked by another strong conversion line (1988Sa18).
89.799# *24*	80 *26*	495.721	3^+	405.933	4^+	M1+E2	1.5 *+9−4*	22.3 *32*	α(L)=16.2 *23*; α(M)=4.5 *7* α(N)=1.24 *19*; α(O)=0.30 *4*; α(P)=0.048 *6*; α(Q)=5.4×10^{-4} *18* Mult.: M1(+E2) given by 1988Sa18. Mult.: L1:L3:M1:M2:M3=100 *13*:9.1 *7*:47 *5*:17.8 *7*:2.8 *8*. α(L1)exp=2.1 *8*.
90.178 *22*	87 *24*	418.084	4^+	327.884	3^-	E1+M2	0.175 *+25−29*	4.7 *13*	α(L)=3.4 *10*; α(M)=0.95 *27*

$^{242}_{95}Am_{147}$-16

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult. &	δ &	α †	Comments
									α(N)=0.27 *8*; α(O)=0.067 *19*; α(P)=0.0120 *35*; α(Q)=6.5×10^{-4} *19*
90.985 *4*	118 *11*	446.702	3$^-$	355.715	2$^+$	E1		0.1738 *24*	Mult.: α(L1)exp=2.4 *7*. α(L)=0.1304 *18*; α(M)=0.0322 *5* α(N)=0.00870 *12*; α(O)=0.002095 *29*; α(P)=0.000347 *5*; α(Q)=1.260×10^{-5} *18*
91.229 *24*	55 *17*	419.085	2$^-$	327.884	3$^-$	M1+E2	0.43 *9*	11.0 *10*	Mult.: L1:M1=100 *23*:15.8 *13*. α(L)=8.2 *7*; α(M)=2.10 *22* α(N)=0.58 *6*; α(O)=0.142 *14*; α(P)=0.0255 *21*; α(Q)=0.00109 *6*
92.568# *26*	101 *32*	168.387	1$^-$,2$^-$,3$^-$	75.820	2$^-$	M1+E2		16 *8*	Mult.: L2:L3:M1:M2:M3=20.4 *17*:100 *13*:7.1 *19*:15.3 *14*: 47.0 *24*. α(L3)exp=1.2 *4*. α(L)=12 *6*; α(M)=3.2 *18* α(N)=0.9 *5*; α(O)=0.22 *12*; α(P)=0.036 *17*; α(Q)=7.E−4 *5* Mult.: M1+E2 given by 1988Sa18. Evaluators are unable to deduce the δ.
94.671 *6*	113 *11*	244.381	3$^-$	149.707	4$^-$	M1+E2	0.71 *11*	12.3 *11*	Mult.: L1:L2:L3:M2=2.00 *22*:100 *2*:7.1 *4*:0.34 *8*. α(L2)exp=13 *4*. α(L)=9.1 *8*; α(M)=2.41 *23* α(N)=0.66 *6*; α(O)=0.162 *15*; α(P)=0.0277 *21*; α(Q)=0.00081 *7* δ: 0.47 *12* given by 1988Sa18. Mult.: L1:L2:L3:M1:M2:M3=100 *2*:77.4 *16*:67.5 *20*:7.2 *5*: 22.7 *9*:159 *3*. α(L1)exp=3.4 *3*. The M3 line is contaminated.
94.804 *5*	108 *12*	364.658	2$^+$	269.854	3$^+$	M1+E2	1.25 *+17−14*	16.3 *9*	α(L)=11.9 *6*; α(M)=3.26 *19* α(N)=0.90 *5*; α(O)=0.217 *12*; α(P)=0.0357 *18*; α(Q)=0.00054 *6* Mult.: L1:L2:M1:M3=78 *8*:58 *3*:100 *4*:29 *7*. α(M1)exp=0.55 *6*.
94.874e# *22*	≤99e	369.207	1$^-$,2$^-$	274.330	1$^-$	M1+E2	1.4 *+4−3*	17.0 *17*	α(L)=12.4 *12*; α(M)=3.4 *4* α(N)=0.94 *10*; α(O)=0.227 *24*; α(P)=0.0372 *34*; α(Q)=0.00049 *11* E_γ: Also placed from the 596.425 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=79 *20* for this doubly placed transition. Mult.: L1:L3:M1:M3=100 *7*:20.6 *37*:39.4 *16*:11.2 *26*. α(L1)exp=2.0 *5*.
94.874e# *22*	≤99e	596.425	2$^-$,3$^-$,4$^-$	501.569	(3)$^-$	M1+E2	1.4 *+4−3*	17.0 *17*	α(L)=12.4 *12*; α(M)=3.4 *4* α(N)=0.94 *10*; α(O)=0.227 *24*; α(P)=0.0372 *34*; α(Q)=0.00049 *11* E_γ: Also placed from the 369.207 level by 2007Sa03. Unplaced by 1988Sa18.

$^{242}_{95}Am_{147}$-17

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
95.44[c] *6*	190[c] *CA*	388.112	3^+	292.831	2^-	E1[c]		0.1534 *22*	I_γ: Iγ=79 *20* for this doubly placed transition. Mult.: L1:L3:M1:M3=100 *7*:20.6 *37*:39.4 *16*:11.2 *26*. α(L1)exp=2.0 *5*. α(L)=0.1152 *16*; α(M)=0.0284 *4* α(N)=0.00768 *11*; α(O)=0.001852 *26*; α(P)=0.000308 *4*; α(Q)=1.138×10^{-5} *16*
96.115 *16*	129	1002.618	(5^-)	906.499	$(3)^-$	(E2)		20.67 *29*	Mult.: L1:L3:M1:M3=8050 *17*:2.7 *4*:100 *2*:0.58 *20*. α(L)=14.97 *21*; α(M)=4.21 *6* α(N)=1.165 *16*; α(O)=0.278 *4*; α(P)=0.0444 *6*; α(Q)=0.0001534 *21*
96.433[#] *27*	76 *27*	630.291	$2^-,3^-,4^-$	533.815	2^-	E2		20.36 *29*	Mult.: L2:L3:M1=100 *2*:3.91 *20*:45.6 *9*. α(L2)exp=7.3 *15*. α(L)=14.75 *21*; α(M)=4.15 *6* α(N)=1.147 *16*; α(O)=0.274 *4*; α(P)=0.0437 *6*; α(Q)=0.0001515 *21*
96.994 *2*	208 *8*	149.707	4^-	52.714	3^-	M1		6.84 *10*	Mult.: L1:L2:L3:M1=10.6 *14*:100 *2*:10.3 *11*:2.7 *6*. α(L2)exp=8.4 *30*. α(L)=5.14 *7*; α(M)=1.254 *18* α(N)=0.343 *5*; α(O)=0.0864 *12*; α(P)=0.01652 *23*; α(Q)=0.001055 *15*
98.161[#] *5*	98 *11*	672.248	$(2,3,4)^-$	574.089	$(2,3,4)^-$	M1		6.61 *9*	Mult.: L1:L2:L3:M1:M2=100 *2*:10.1 *6*:2.14 *28*:23.3 *7*:2.7 *3*. α(L1)exp=4.52 *23*. α(L)=4.96 *7*; α(M)=1.211 *17* α(N)=0.331 *5*; α(O)=0.0834 *12*; α(P)=0.01596 *22*; α(Q)=0.001019 *14* Mult.: (M1+E2) given by 1988Sa18.
99.269[c] *15*	510[c] *CA*	99.285	$0^+,1^+,2^+$	0.0	1^-	E1[c]		0.1386 *19*	Mult.: L1:L2:M1:M2:M3=36 *7*:31 *4*:100 *3*:34.6 *11*:17.7 *21*. α(M1)exp=1.22 *14*. α(L)=0.1040 *15*; α(M)=0.0257 *4* α(N)=0.00693 *10*; α(O)=0.001673 *23*; α(P)=0.000280 *4*; α(Q)=1.046×10^{-5} *15* E_γ: Placed from the 388.112 level by 1988Sa18. Reassigned to the 99.285 level by 2007Sa03. Mult.: L1:M1:M2=100 *8*:38 *4*:16 *4*.
[x]100.35 *5*	21 *5*					M1+E2	0.5 *4*	8.3 *27*	I_γ: The γ was masked by a plutonium x-ray (1988Sa18). α(L)=6.2 *19*; α(M)=1.6 *6* α(N)=0.44 *16*; α(O)=0.11 *4*; α(P)=0.019 *5*; α(Q)=7.9×10^{-4} *20* Mult.: M1 assigned by 1988Sa18.
102.698 *8*	84 *15*	731.225	$3^+,4^+,5^+$	628.523	$3^-,4^-,5^-$	E1+M2	0.122 *+13−15*	1.40 *29*	Mult.: L1:L2:M1:M2:M3=100 *6*:14.6 *27*:50.1 *10*:25.8 *28*:480 *10*. α(L1)exp=3.4 *9*. The M3 line is contaminated. α(L)=1.02 *21*; α(M)=0.28 *6*

$^{242}_{95}Am_{147}$-18

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
									α(N)=0.079 *17*; α(O)=0.020 *4*; α(P)=0.0036 *8*; α(Q)=0.00019 *4* Mult.: (E1) given by 1988Sa18. Mult.: L2:L3:M1:M2:M3=30 *6*:100 *8*:81 *9*:40 *5*:205 *8*. α(L3)exp=0.20 *4*. The M3 line is contaminated. E_γ: Not shown in the level scheme of 1988Sa18, but listed in their Table II as connecting the 372.490 and 269.854 levels. 2007Sa03 reassign this transition to the 731.225 level.
106.100[e#] *25*	≤374[e]	506.648	2^+	400.521	1^-	E1+M2	0.167 *+20−22*		α(L)=1.6 *4*; α(M)=0.44 *10* α(N)=0.122 *29*; α(O)=0.031 *7*; α(P)=0.0055 *13*; α(Q)=0.00030 *7* E_γ: Also placed from the 612.758 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=325 *49* for this doubly placed transition. Mult.: (E1) given by 1988Sa18. Mult.: L1:L2:L3:M2=39.1 *24*:100 *6*:172 *4*:23.3 *23*. α(L2)exp=0.15 *3*. The L3 and M2 lines are contaminated.
106.100[e#] *25*	≤374[e]	612.758	2^-	506.648	2^+	E1+M2	0.167 *+20−22*	2.2 *5*	α(L)=1.6 *4*; α(M)=0.44 *10* α(N)=0.122 *29*; α(O)=0.031 *7*; α(P)=0.0055 *13*; α(Q)=0.00030 *7* E_γ: Also placed from the 506.648 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=325 *49* for this doubly placed transition. Mult.: (E1) given by 1988Sa18. Mult.: L1:L2:L3:M2=39.1 *24*:100 *6*:172 *4*:23.3 *23*. α(L2)exp=0.15 *3*. The L3 and M2 lines are contaminated.
111.100 *18*	86 *12*	341.593	0^+	230.527	1^+	(M1)[a]	[a]	4.62 *6*	α(L)=3.47 *5*; α(M)=0.847 *12* α(N)=0.2315 *32*; α(O)=0.0583 *8*; α(P)=0.01115 *16*; α(Q)=0.000711 *10* Mult.: L1:M1=100 *15*:25 *3*. α(L1)exp=2.4 *5*.
111.27 *5*	802 *72*	355.715	2^+	244.381	3^-	E1+M2	0.045 *4*	0.228 *23*	α(L)=0.168 *17*; α(M)=0.044 *5* α(N)=0.0122 *13*; α(O)=0.00302 *33*; α(P)=0.00053 *6*; α(Q)=2.61×10^{-5} *33* Mult.: E1 given by 1988Sa18. Mult.: L1:L2:L3:M1=100 *2*:27.4 *14*:9.9 *10*:45 *9*. α(L1)exp=0.102 *10*.
113.122[#] *34*	95 *12*	559.790	2^-	446.702	3^-	M1+E2	0.95 *+17−15*	6.9 *5*	α(L)=5.07 *32*; α(M)=1.36 *10* α(N)=0.375 *28*; α(O)=0.091 *6*; α(P)=0.0155 *9*; α(Q)=0.00039 *5* Mult.: L1:L2:L3:M1:M2:M3=100 *2*:11.1 *26*:11.7 *13*:19.8 *6*:1.4 *7*. α(L1)exp=1.65 *22*.
113.699[#] *11*	149 *10*	681.894	3^-	568.215	4^-	M1		4.32 *6*	α(L)=3.25 *5*; α(M)=0.792 *11* α(N)=0.2166 *30*; α(O)=0.0545 *8*; α(P)=0.01043 *15*; α(Q)=0.000665 *9* Mult.: L1:L2:L3:M1:M2:M3=100 *2*:4.0 *7*:18.6 *4*:2.9 *3*:0.16 *17*. α(L1)exp=2.88 *20*.
122.031[#] *7*	134 *16*	495.721	3^+	373.686	4^-	E1+M2	0.017 *+6−12*	0.094 *11*	α(L)=0.070 *8*; α(M)=0.0175 *22*

$^{242}_{95}Am_{147}$-19

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
									α(N)=0.0047 *6*; α(O)=0.00116 *16*; α(P)=0.000199 *29*; α(Q)=8.5×10^{-6} *16* Mult.: E1 given by 1988Sa18. Mult.: α(L1)exp=0.037 *6*.
124.755[#] *22*	187 *30*	200.581	3$^-$,4$^-$	75.820	2$^-$				
124.947[#] *21*	121 *29*	455.688	1$^-$,2$^-$,3$^-$	330.740	3$^-$	*b*			Mult.: (M1) given by 1988Sa18 is inconsistent with the subshell ratios. Mult.: L2:M1=20.5 *4*:100 *2*. α(M1)exp=1.4 *4*.
125.832 *4*	1194 *12*	568.215	4$^-$	442.385	5$^+$	E1			Mult.: L1:L2:L3:M1:M2:M3=100 *2*:82 *3*:44 *3*:23.1 *16*: 22.8 *14*:16.4 *14*. α(L1)exp=0.0291 *9*.
129.056 *29*	62 *21*	418.084	4$^+$	289.028	4$^-$	E1+M2	1.2 *+9−4*	46 *17*	α(K)=26 *10*; α(L)=14 *5*; α(M)=4.0 *15* α(N)=1.1 *4*; α(O)=0.28 *11*; α(P)=0.051 *19*; α(Q)=0.0029 *11* Mult.: L1:L2=100 *3*:2.2 *6*. α(L1)exp=11 *4*.
[x]131.85 *8*	113 *18*					(M1+E2)	0.83 *10*	9.8 *5*	α(K)=6.2 *6*; α(L)=2.68 *9*; α(M)=0.707 *30* α(N)=0.195 *8*; α(O)=0.0476 *19*; α(P)=0.00830 *25*; α(Q)=0.000277 *23* Mult.: L1:L3:M1:M3=75 *7*:54 *6*:33 *5*:100 *13*. α(M3)exp=0.144 *20*.
132.565 *4*	889 *9*	376.947	3$^+$	244.381	3$^-$	E1+M2	0.0104 *+24−32*	0.277 *6*	α(K)=0.208 *4*; α(L)=0.0518 *14*; α(M)=0.0128 *4* α(N)=0.00347 *11*; α(O)=0.000845 *26*; α(P)=0.000146 *5*; α(Q)=6.08×10^{-6} *26* Mult.: E1 given by 1988Sa18. Mult.: L1:L2:L3:M1=100 *3*:56 *6*:50 *4*:32 *4*. α(L1)exp=0.0271 *8*.
133.293[#] *28*	74 *23*	533.815	2$^-$	400.521	1$^-$	M1+E2	2.3 *+11−5*	6.0 *6*	α(K)=1.7 *8*; α(L)=3.12 *11*; α(M)=0.87 *4* α(N)=0.239 *10*; α(O)=0.0575 *23*; α(P)=0.00943 *30*; α(Q)=1.07×10^{-4} *30* Mult.: L1:M1:M3=100 *3*:54 *7*:30 *5*. α(L1)exp=0.41*13*.
133.595 *28*	77 *18*	464.362	3$^-$,4$^-$	330.740	3$^-$				
134.20 *7*	68 *20*	364.658	2$^+$	230.527	1$^+$	M1(+E2)	0.13 *14*	12.4 *4*	α(K)=9.7 *5*; α(L)=2.03 *7*; α(M)=0.498 *22* α(N)=0.136 *6*; α(O)=0.0343 *14*; α(P)=0.00653 *19*; α(Q)=0.000406 *20* Mult.: M1+E2 given by 1988Sa18. Mult.: L1:L2:L3:M1=35 *4*:100 *19*:93 *7*:28 *6*. α(L2)exp=0.26 *9*.
134.86[#] *4*	159 *35*	731.225	3$^+$,4$^+$,5$^+$	596.425	2$^-$,3$^-$,4$^-$				The ce lines are multiplets or lie in a complex region (1988Sa18).
136.299[#] *23*	35 *13*	710.389	1$^-$,2$^-$,3$^-$	574.089	(2,3,4)$^-$	M1(+E2)	0.14 *16*	11.8 *5*	α(K)=9.2 *6*; α(L)=1.95 *7*; α(M)=0.477 *25* α(N)=0.131 *7*; α(O)=0.0328 *16*; α(P)=0.00625 *20*; α(Q)=0.000388 *23* Mult.: α(L2)exp=0.25 *10*.

$^{242}_{95}Am_{147}$-20

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
137.159# *27*	45 *9*	681.894	3^-	544.756	2^-,3^-	M1+E2	5.27 *14*	4.47 *6*	α(K)=0.491 *18*; α(L)=2.89 *4*; α(M)=0.809 *11* α(N)=0.2237 *31*; α(O)=0.0536 *8*; α(P)=0.00867 *12*; α(Q)=5.52×10^{-5} *10* Mult.: α(L1)exp=0.19 *4*.
138.352# *12*	79 *8*	712.442	2^-,3^-,4^-	574.089	$(2,3,4)^-$	M1+E2	1.5 *+5−3*	6.3 *8*	α(K)=2.9 *10*; α(L)=2.51 *11*; α(M)=0.69 *4* α(N)=0.189 *11*; α(O)=0.0457 *24*; α(P)=0.00766 *29*; α(Q)=0.00015 *4* Mult.: E2 given by 1988Sa18. Mult.: L1:L2=10.9 *19*:100 *2*. α(L2)exp=1.25 *14*.
140.714# *16*	64 *10*	559.790	2^-	419.085	2^-				
142.306# *25*	87 *10*	506.964	$(3)^+$	364.658	2^+	M1+E2	1.30 *+15−13*	6.2 *4*	α(K)=3.2 *4*; α(L)=2.19 *5*; α(M)=0.591 *16* α(N)=0.163 *5*; α(O)=0.0396 *10*; α(P)=0.00671 *14*; α(Q)=0.000154 *16* δ: 1.1 *3* given by 1988Sa18. Mult.: K:M1=100 *5*:7.9 *3*. α(K)exp= 3.2 *4*.
143.789 *28*	50 *12*	388.112	3^+	244.381	3^-	E1+M2	0.185 *+20−30*	2.0 *5*	α(K)=1.20 *30*; α(L)=0.56 *15*; α(M)=0.15 *4* α(N)=0.042 *12*; α(O)=0.0106 *29*; α(P)=0.0019 *5*; α(Q)=1.08×10^{-4} *30* Mult.: K:L1:L2:M1=100 *6*:13.8 *9*:3.0 *14*:1.7 *10*. α(K)exp=1.2 *3*.
144.254e# *17*	≤89e	544.756	2^-,3^-	400.521	1^-	b			Eγ: Also placed from the 704.030 level by 2007Sa03. Unplaced by 1988Sa18. Iγ: Iγ=79 *10* for this doubly placed transition. Mult.: L1:L2=100 *9*:73 *10*.
144.254e# *17*	≤89e	704.030	1^-,2^-,3^-	559.790	2^-	b			Eγ: Also placed from the 544.756 level by 2007Sa03. Unplaced by 1988Sa18. Iγ: Iγ=79 *10* for this doubly placed transition. Mult.: L1:L2=100 *9*:73 *10*.
144.890 *29*	98 *16*	628.523	3^-,4^-,5^-	483.640	4^-	M1+E2	0.32 *4*	9.45 *20*	α(K)=7.20 *20*; α(L)=1.680 *28*; α(M)=0.417 *8* α(N)=0.1143 *22*; α(O)=0.0286 *5*; α(P)=0.00535 *8*; α(Q)=0.000303 *8* Eγ: Placed from the 419.085 level by 1988Sa18. Placement reassigned to the 628.523 level by 2007Sa03. Mult.: L1:L2:L3=75 *6*:36 *8*:100 *11*. α(L3)exp=0.077 *16*.
x145.502 *36*	73 *9*					M1+E2	1.93 *+32−24*	4.69 *33*	α(K)=1.8 *4*; α(L)=2.11 *4*; α(M)=0.579 *14* α(N)=0.160 *4*; α(O)=0.0385 *9*; α(P)=0.00640 *12*; α(Q)=9.7×10^{-5} *14* Mult.: K:L1:L3:M1=100 *12*:4.5 *9*:13.8 *19*:3.2 *5*. α(K)exp=1.8 3.
147.870e *22*	<86e	200.581	3^-,4^-	52.714	3^-	E2+M1	1.26 *+16−14*	5.6 *4*	α(K)=3.0 *4*; α(L)=1.87 *4*; α(M)=0.503 *14* α(N)=0.139 *4*; α(O)=0.0337 *9*; α(P)=0.00574 *11*; α(Q)=0.000141 *16*

$^{242}_{95}Am_{147}$-21

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
									Mult.: α(K)exp=3.0 *4*. δ: 1.22 *+31−22* given by 1988Sa18. E_γ: Also placed from the 417.746 level by 2007Sa03. Placed only from the 417.746 level as tentative by 1988Sa18.
147.870[e] *22*	<86[e]	417.746	(4)$^+$	269.854	3$^+$	E2+M1	1.26 *+16−14*	5.6 *4*	I_γ: Iγ=77 *9* for this doubly placed transition. α(K)=3.0 *4*; α(L)=1.87 *4*; α(M)=0.503 *14* α(N)=0.139 *4*; α(O)=0.0337 *9*; α(P)=0.00574 *11*; α(Q)=0.000141 *16*
									E_γ: Also placed from the 200.581 level by 2007Sa03. 1988Sa18 place the transition tentatively from the 417.746 level. I_γ: Iγ=77 *9* for this doubly placed transition. δ: 1.22 *+31−22* given by 1988Sa18. Mult.: α(K)exp=3.0 *4*.
[x]148.39 *4*	38 *11*					(M1+E2)	1.7 *5*	4.7 *10*	α(K)=2.0 *11*; α(L)=1.91 *9*; α(M)=0.523 *33* α(N)=0.144 *9*; α(O)=0.0349 *20*; α(P)=0.00583 *22*; α(Q)=1.0×10^{-4} *4* E_γ: Placed from the 612.758 level by 1988Sa18 but removed from this placement by 2007Sa03. Mult.: L1:L3:M1:M3=3.1 *6*:100 *2*:1.9 *6*:2.6 *4*. α(L3)exp=0.51 *16*.
149.713[#] *11*	91 *9*	596.425	2$^-$,3$^-$,4$^-$	446.702	3$^-$	M1+E2[a]	0.20[a] *5*	8.94 *18*	α(K)=6.95 *17*; α(L)=1.492 *23*; α(M)=0.367 *6* α(N)=0.1003 *18*; α(O)=0.0252 *4*; α(P)=0.00478 *7*; α(Q)=0.000291 *7* Mult.: M1 given by 1988Sa18.
150.10 *5*	131 *22*	568.215	4$^-$	418.084	4$^+$	E1+M2	0.427 *15*	7.2 *4*	Mult.: K:L2=100 *2*:3.0 *3*. α(K)exp=7.1 *7*. α(K)=4.34 *26*; α(L)=2.06 *12*; α(M)=0.560 *34* α(N)=0.157 *9*; α(O)=0.0393 *24*; α(P)=0.0072 *4*; α(Q)=0.000409 *25* Mult.: K:L2:L3=100 *5*:9.3 *12*:10.1 *8*. α(K)exp=4.34 *24*.
151.27[#] *4*	103 *19*	506.964	(3)$^+$	355.715	2$^+$				
154.708 *2*	3595 *29*	230.527	1$^+$	75.820	2$^-$	E1		0.1892 *26*	α(K)=0.1447 *20*; α(L)=0.0334 *5*; α(M)=0.00820 *11* α(N)=0.002220 *31*; α(O)=0.000542 *8*; α(P)=9.42×10^{-5} *13*; α(Q)=4.03×10^{-6} *6* Mult.: L1:L2:L3:M1:M3=76.3 *15*:53.0 *11*:24.8 *8*:36 *7*:100 *29*. α(L1)exp=0.0185 *4*.
159.283[e#] *24*	≤216[e]	455.688	1$^-$,2$^-$,3$^-$	296.401	2$^-$				Mult.: M1 given by 1988Sa18 is inconsistent with conversion coefficient data. E_γ: Also placed from the 559.790 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=206 *10* for this doubly placed transition.

$^{242}_{95}Am_{147}$-22

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
									Mult.: K:L2:M1:M2=100 *2*:1.45 *5*:0.58 *3*:0.15 *3*. α(K)exp=7.3 *4*.
159.283[e#] *24*	≤216[e]	559.790	2^-	400.521	1^-				E_γ: Also placed from the 455.688 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=206 *10* for this doubly placed transition. Mult.: M1 given by 1988Sa18 is inconsistent with conversion coefficient data. Mult.: K:L2:M1:M2=100 *2*:1.45 *5*:0.58 *3*:0.15 *3*. α(K)exp=7.3 *4*.
160.34[#] *5*	43 *15*	502.04	$1^+,2^+$	341.593	0^+				Mult.: K:L3:M1:M3=100 *23*:17 *4*:27.3 *19*:22 *4*. α(K)exp=0.70 *3*.
[x]160.50 *5*	17 *5*					M1+E2	2.6 *21*	3 *4*	α(K)=1 *4*; α(L)=1.42 *16*; α(M)=0.39 *8* α(N)=0.108 *21*; α(O)=0.026 *4*; α(P)=0.00431 *34*; α(Q)=5.E−5 *15* δ: 4.4 *+13−8* given by 1988Sa18. Mult.: K:L1:L2:M1:M2=60 *7*:23 *23*:100 *54*:19 *2*:13 *3*. α(L2)exp=0.8 *5*.
161.459 *18*	120 *18*	405.880	$2^-,3,4$	244.381	3^-				E_γ: Placed by 2007Sa03. Placed from the 405.933 level by 1988Sa18 and reassigned by 2007Sa03.
163.93[#] *5*	45 *15*	528.545	3^+	364.658	2^+	M1+E2	1.2 *+5−3*	4.1 *8*	α(K)=2.4 *8*; α(L)=1.245 *33*; α(M)=0.332 *15* α(N)=0.091 *4*; α(O)=0.0223 *9*; α(P)=0.00385 *7*; α(Q)=1.10×10^{-4} *32* δ: 1.0 *+4−3* given by 1988Sa18. Mult.: K:L3:M2=100 *7*:2.4 *5*:5.3 *7*. α(K)exp=2.5 *9*.
165.08[#] *4*	50 *15*	528.545	3^+	363.434	$2^+,3^+$	M1+E2	1.6 *+5−3*	3.4 *5*	α(K)=1.7 *5*; α(L)=1.234 *24*; α(M)=0.334 *10* α(N)=0.0922 *27*; α(O)=0.0223 *6*; α(P)=0.00378 *6*; α(Q)=8.1×10^{-5} *20* δ: 0.61 *6* given by 1988Sa18. Mult.: α(K)exp=1.7 *5*.
165.79[#] *6*	53 *12*	621.527	$1^-,2^-$	455.688	$1^-,2^-,3^-$	M1+E2	0.67 *+29−27*	5.3 *9*	α(K)=3.8 *9*; α(L)=1.149 *31*; α(M)=0.294 *15* α(N)=0.081 *4*; α(O)=0.0200 *9*; α(P)=0.00361 *7*; α(Q)=0.000163 *35* δ: 0.82 *18*. Mult.: K:L1:L2:L3:M1:M2=100 *2*:16 *3*:12 *3*:0.9 *3*: 5.0 *8*: 10.4 *12*: α(K)exp=3.8 *9*. The M2 line is contaminated.
[x]167.30 *7*	110 *21*								
168.125 *30*	21 *5*	457.090	5^+	289.028	4^-	E1		0.1561 *22*	α(K)=0.1200 *17*; α(L)=0.0271 *4*; α(M)=0.00665 *9* α(N)=0.001801 *25*; α(O)=0.000440 *6*; α(P)=7.70×10^{-5} *11*; α(Q)=3.37×10^{-6} *5* Mult.: K:L1=100 *15*:68 *6*. α(K)exp=0.10 *3*.
168.519 *8*	153 *18*	675.482	$(2,3,4)^+$	506.964	$(3)^+$	M1+E2[b]		4.2 *24*	α(K)=2.7 *25*; α(L)=1.11 *6*; α(M)=0.29 *4*

$^{242}_{95}Am_{147}$-23

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
									α(N)=0.080 *10*; α(O)=0.0197 *21*; α(P)=0.00345 *9*; α(Q)=1.2×10^{-4} *10* E_γ: Placed from the 244.381 level by 1988Sa18 but reassigned to the 675.482 level by 2007Sa03. Mult.: M1+E2 given by 1988Sa18. Mult.: K:L1:L2:L3:M1:M2=100 *9*:65.5 *13*:56 *16*:18.6 *6*: 4.3 *5*: α(K)exp=1.02 *28*.
[x]168.75 *9*	115 *30*					(M1+E2)	0.77 *+34−28*	4.8 *9*	α(K)=3.3 *9*; α(L)=1.090 *26*; α(M)=0.281 *13* α(N)=0.077 *4*; α(O)=0.0191 *8*; α(P)=0.00342 *6*; α(Q)=0.000143 *34* Mult.: α(K)exp=3.3 *9*.
171.951[#] *25*	59 *9*	372.490	4$^-$	200.581	3$^-$,4$^-$	(M1)		6.20 *9*	α(K)=4.88 *7*; α(L)=0.992 *14*; α(M)=0.2420 *34* α(N)=0.0661 *9*; α(O)=0.01665 *23*; α(P)=0.00319 *4*; α(Q)=0.0002026 *28* Mult.: K:L1:M=100 *5*:4.9 *12*:2.9 *7*. α(K)exp=5.2 *9*.
173.60 *16*	36 *23*	418.084	4$^+$	244.381	3$^-$	E1+M2	0.15 *+5−9*	0.7 *5*	α(K)=0.48 *31*; α(L)=0.19 *14*; α(M)=0.05 *4* α(N)=0.014 *10*; α(O)=0.0035 *26*; α(P)=6.E−4 *5*; α(Q)=3.6×10^{-5} *27* Mult.: α(K)exp=0.46 *29*.
175.314 *34*	60 *13*	464.362	3$^-$,4$^-$	289.028	4$^-$	M1+E2	1.62 *+33−24*	2.73 *30*	α(K)=1.40 *31*; α(L)=0.972 *14*; α(M)=0.263 *5* α(N)=0.0724 *14*; α(O)=0.01756 *30*; α(P)=0.00299 *4*; α(Q)=6.7×10^{-5} *12* δ: 1.4 *3* given by 1988Sa18. Mult.: K:L2:M1=100 *6*:1.8 *7*:7.3 *8*. α(K)exp=1.4 *3*.
[x]176.194 *29*	68 *12*					M1+E2	1.16 *+12−11*	3.33 *22*	α(K)=2.04 *22*; α(L)=0.947 *13*; α(M)=0.251 *4* α(N)=0.0691 *12*; α(O)=0.01687 *26*; α(P)=0.00294 *4*; α(Q)=9.2×10^{-5} *8* Mult.: K:L1:L2=100 *11*:1.1 *4*:4.7 *4*.α(K)exp=2.04 *21*.
176.97[#] *5*	43 *12*	574.089	(2,3,4)$^-$	397.147	2$^-$,3$^-$,4$^-$	M1+E2	0.46 *+19−23*	5.0 *5*	α(K)=3.7 *5*; α(L)=0.920 *13*; α(M)=0.230 *6* α(N)=0.0631 *18*; α(O)=0.01572 *35*; α(P)=0.00292 *4*; α(Q)=0.000157 *21* Mult.: L1:L2=79 *6*:100 *7*. α(L2)exp=0.19 *6*. The K line is contaminated.
[x]177.50 *7*	104 *22*					M1+E2	2.2 *+4−3*	2.18 *20*	α(K)=0.91 *20*; α(L)=0.928 *13*; α(M)=0.254 *4* α(N)=0.0701 *11*; α(O)=0.01694 *26*; α(P)=0.00284 *4*; α(Q)=4.8×10^{-5} *8* δ: 2.3 *+7−4* given by 1988Sa18. Mult.: α(K)exp=0.93 *20*.
178.11 *7*	65 *11*	327.884	3$^-$	149.707	4$^-$	M1+E2	2.7 *+4−3*	1.94 *12*	α(K)=0.68 *12*; α(L)=0.916 *13*; α(M)=0.252 *4* α(N)=0.0697 *10*; α(O)=0.01680 *24*; α(P)=0.00279 *4*; α(Q)=3.9×10^{-5} *5* Mult.: K:L1:L3:M1=100 *2*:10.7 *10*:22 *4*:85 *6*. α(K)exp=0.68 *12*.

$^{242}_{95}Am_{147}$-24

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult. &	δ &	α †	Comments
x181.67 *10*	76 *24*								Additional information 1.
x182.84 *7*	33 *15*					E2		1.295 *18*	α(K)=0.1647 *23*; α(L)=0.820 *12*; α(M)=0.2293 *32* α(N)=0.0634 *9*; α(O)=0.01520 *21*; α(P)=0.002482 *35*; α(Q)=1.771×10^{-5} *25* Mult.: K:L2:L3:M1=36 *7*:100 *11*:8.3 *21*:48 *10* α(L2)exp=0.63 *29*.
183.48# *5*	78 *15*	630.291	2$^-$,3$^-$,4$^-$	446.702	3$^-$	M1+E2 b		3.2 *19*	α(K)=2.1 *20*; α(L)=0.816 *14*; α(M)=0.214 *13* α(N)=0.059 *4*; α(O)=0.0144 *6*; α(P)=0.00255 *11*; α(Q)=9.E−5 *8* Mult.: M1+E2 given by 1988Sa18. Mult.: α(M2)=0.38 *8*.
x185.14 *18*	112 *66*								Mult.: K:M1:M2=100 *3*:2.3 *15*:5.3 *21*. α(K)exp=0.27 *16*.
185.786# *25*	102 *21*	603.889	(3,4)$^+$	418.084	4$^+$	M1+E2 a	5.6 a *+24−11*	1.33 *6*	α(K)=0.28 *6*; α(L)=0.766 *11*; α(M)=0.2133 *30* α(N)=0.0589 *8*; α(O)=0.01415 *20*; α(P)=0.002325 *33*; α(Q)=2.14×10^{-5} *24* Mult.: K:L1:L2:M2=100 *8*:16.7 *37*:23.8 *24*:86 *7*.α(K)exp=0.28 *6*.
186.127# *34*	196 *74*	603.889	(3,4)$^+$	417.746	(4)$^+$	M1+E2	2.44 *27*	1.75 *12*	α(K)=0.70 *12*; α(L)=0.764 *11*; α(M)=0.2095 *30* α(N)=0.0578 *8*; α(O)=0.01396 *20*; α(P)=0.002334 *34*; α(Q)=3.8×10^{-5} *5* Mult.: L1:M1:M2:M3=100 *3*:84 *7*:40 *5*:6.2 *16*. α(L1)exp=0.15 *6*.
186.433 *2*	3277 *31*	230.527	1$^+$	44.093	0$^-$	E1		0.1230 *17*	α(K)=0.0951 *13*; α(L)=0.02100 *29*; α(M)=0.00514 *7* α(N)=0.001392 *19*; α(O)=0.000341 *5*; α(P)=6.01×10^{-5} *8*; α(Q)=2.70×10^{-6} *4* Mult.: K:L1:L2:M1:M2:M3=86 *11*:100 *2*:60.3 *24*:28 *4*:22 *3*: 9.4 *17*. α(L1)exp=0.0126 *3*.
191.234 *33*	1.72×10^3 *16*	568.215	4$^-$	376.947	3$^+$	E1 a	a	0.1161 *16*	α(K)=0.0898 *13*; α(L)=0.01973 *28*; α(M)=0.00482 *7* α(N)=0.001308 *18*; α(O)=0.000321 *4*; α(P)=5.65×10^{-5} *8*; α(Q)=2.56×10^{-6} *4* Mult.: K:L1:L2=100 *13*:10.6 *12*:5.2 *17*. α(K)exp=0.099 *17*.
191.667 *5*	606 *7*	244.381	3$^-$	52.714	3$^-$	M1		4.57 *6*	α(K)=3.60 *5*; α(L)=0.729 *10*; α(M)=0.1778 *25* α(N)=0.0486 *7*; α(O)=0.01223 *17*; α(P)=0.002340 *33*; α(Q)=0.0001487 *21* Mult.: K:L1:L2:M1:M2=100 *2*:17.2 *4*:3.33 *20*:3.52 *7*:0.63 *3*. α(K)exp=4.14 *9*.
192.108e# *6*	≤277 e	873.996	2$^-$	681.894	3$^-$	M1+E2	4.1 *+13−7*	1.26 *8*	α(K)=0.35 *8*; α(L)=0.666 *9*; α(M)=0.1846 *26* α(N)=0.0510 *7*; α(O)=0.01226 *17*; α(P)=0.002027 *29*; α(Q)=2.28×10^{-5} *31* E_γ: Also placed from the 902.494 level by 2007Sa03.

$^{242}_{95}Am_{147}$-25

^{241}Am(n,γ) E=th:secondary γ′s 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
									Unplaced by 1988Sa18. I_γ: Iγ=266 *11* for this doubly placed transition. Mult.: K:M1=100 *23*:17.0 *9*. α(K)exp=0.35 *8*.
192.108e# *6*	≤277e	902.494	(3)$^-$	710.389	1$^-$,2$^-$,3$^-$	M1+E2	4.1 *+13−7*	1.26 *8*	α(K)=0.35 *8*; α(L)=0.666 *9*; α(M)=0.1846 *26* α(N)=0.0510 *7*; α(O)=0.01226 *17*; α(P)=0.002027 *29*; α(Q)=2.28×10^{-5} *31* E_γ: Also placed from the 873.996 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=266 *11* for this doubly placed transition. Mult.: K:M1=100 *23*:17.0 *9*. α(K)exp=0.35 *8*.
193.128# *31*	88 *15*	342.805	2$^-$,3$^-$	149.707	4$^-$	E2		1.047 *15*	α(K)=0.1548 *22*; α(L)=0.648 *9*; α(M)=0.1809 *25* α(N)=0.0500 *7*; α(O)=0.01199 *17*; α(P)=0.001964 *28*; α(Q)=1.512×10^{-5} *21* Mult.: α(K)exp=0.16 *3*.
193.677 *23*	161 *48*	612.758	2$^-$	419.085	2$^-$	E2		1.036 *15*	α(K)=0.1542 *22*; α(L)=0.640 *9*; α(M)=0.1787 *25* α(N)=0.0494 *7*; α(O)=0.01185 *17*; α(P)=0.001941 *27*; α(Q)=1.500×10^{-5} *21* Mult.: K:L1:L2=100 *11*:14.2 *26*:63 *7*. α(K)exp=0.17 *6*.
194.510 *5*	946 *9*	464.362	3$^-$,4$^-$	269.854	3$^+$	E1+M2	0.292 *+11−12*	1.53 *11*	α(K)=1.00 *7*; α(L)=0.390 *28*; α(M)=0.104 *8* α(N)=0.0290 *21*; α(O)=0.0073 *5*; α(P)=0.00135 *10*; α(Q)=7.7×10^{-5} *6* Mult.: E1 given by 1988Sa18.
195.778 *6*	629 *6*	244.381	3$^-$	48.603	5$^-$	E2		0.994 *14*	Mult.: L1:L2:L3=38 *4*:100 *7*:7.6 *17*. α(L2)exp=0.047 *3*. α(K)=0.1522 *21*; α(L)=0.611 *9*; α(M)=0.1706 *24* α(N)=0.0472 *7*; α(O)=0.01131 *16*; α(P)=0.001854 *26*; α(Q)=1.455×10^{-5} *20*
198.498 *12*	236 *9*	274.330	1$^-$	75.820	2$^-$	M1+E2	0.73 *6*	3.03 *13*	Mult.: L1:L2:L3:M1:M2:M3=17.0 *12*:100 *2*:48.8 *10*:7.3 *9*: 40.9 *8*:26.5 *8*. α(L2)exp=0.352 *7*. α(K)=2.18 *12*; α(L)=0.631 *9*; α(M)=0.1609 *23* α(N)=0.0442 *6*; α(O)=0.01093 *15*; α(P)=0.001990 *31*; α(Q)=9.3×10^{-5} *5* δ: 0.90 *+23−18* given by 1988Sa18. Mult.: L1:L2:L3:M1:M2=100 *2*:13.9 *6*:26.0 *21*:26.2 *5*:6.2 *7*. α(L1)exp=0.397 *20*.
199.291# *20*	95 *14*	596.425	2$^-$,3$^-$,4$^-$	397.147	2$^-$,3$^-$,4$^-$	M1		4.09 *6*	α(K)=3.22 *5*; α(L)=0.653 *9*; α(M)=0.1592 *22* α(N)=0.0435 *6*; α(O)=0.01095 *15*; α(P)=0.002095 *29*; α(Q)=0.0001331 *19* Mult.: K:L1:M1=100 *2*:2.86 *12*:7.15 *14*.α(K)exp=4.8 *7*.
201.98# *7*	53 *17*	544.756	2$^-$,3$^-$	342.805	2$^-$,3$^-$	M1+E2	1.9 *+8−4*	1.55 *30*	α(K)=0.79 *29*; α(L)=0.555 *12*; α(M)=0.1501 *21* α(N)=0.0414 *6*; α(O)=0.01004 *15*; α(P)=0.00171 *4*; α(Q)=3.8×10^{-5} *11* δ: 2.0 *+10−5* given by 1988Sa18.

$^{242}_{95}Am_{147}$-26

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
									Mult.: K:L2:L3:M3=100 *3*:27 *17*:37 *6*:8.9 *17*. α(K)exp=0.78 *27*.
202.421 *e# 39*	≤86 *e*	704.030	1⁻,2⁻,3⁻	501.569	(3)⁻	E2		0.876 *12*	α(K)=0.1458 *20*; α(L)=0.530 *7*; α(M)=0.1478 *21* α(N)=0.0409 *6*; α(O)=0.00981 *14*; α(P)=0.001610 *23*; α(Q)=1.324×10⁻⁵ *19* E_γ: Also placed from the 906.499 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=69 *17* for this doubly placed transition. Mult.: K:L1:L3=66 *10*:16 *4*:100 *12*. α(L3)exp=0.23 *6*.
202.421 *e# 39*	≤86 *e*	906.499	(3)⁻	704.030	1⁻,2⁻,3⁻	E2		0.876 *12*	α(K)=0.1458 *20*; α(L)=0.530 *7*; α(M)=0.1478 *21* α(N)=0.0409 *6*; α(O)=0.00981 *14*; α(P)=0.001610 *23*; α(Q)=1.324×10⁻⁵ *19* E_γ: Also placed from the 704.030 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=69 *17* for this doubly placed transition. Mult.: K:L1:L3=66 *10*:16 *4*:100 *12*. α(L3)exp=0.23 *6*.
*x*202.85 *10*	62 *12*					(M1+E2)		2.4 *15*	α(K)=1.6 *15*; α(L)=0.57 *5*; α(M)=0.1489 *32* α(N)=0.0409 *7*; α(O)=0.0101 *4*; α(P)=0.00179 *20*; α(Q)=7.E−5 *6* Mult.: α(K)=1.04 *23*.
212.536 *e# 14*	≤180 *e*	311.832	1⁺,2⁺	99.285	0⁺,1⁺,2⁺	(M1+E2)	2.54 *+11−10*	1.090 *30*	α(K)=0.479 *25*; α(L)=0.446 *6*; α(M)=0.1218 *17* α(N)=0.0336 *5*; α(O)=0.00813 *11*; α(P)=0.001370 *20*; α(Q)=2.49×10⁻⁵ *10* E_γ: Also placed from the 501.569 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=171 *9* for this doubly placed transition. Mult.: K:L1=100 *2*:8.6 *21*. α(K)exp=0.480 *24*.
212.536 *e# 14*	≤180 *e*	501.569	(3)⁻	289.028	4⁻	(M1+E2)	2.54 *+11−10*	1.090 *30*	α(K)=0.479 *25*; α(L)=0.446 *6*; α(M)=0.1218 *17* α(N)=0.0336 *5*; α(O)=0.00813 *11*; α(P)=0.001370 *20*; α(Q)=2.49×10⁻⁵ *10* E_γ: Also placed from the 311.832 level by 2007Sa03. Unplaced by 1988Sa18. I_γ: Iγ=171 *9* for this doubly placed transition. Mult.: K:L1=100 *2*:8.6 *21*. α(K)exp=0.480 *24*.
213.37 *8*	239 *86*	289.028	4⁻	75.820	2⁻	E2		0.720 *10*	α(K)=0.1356 *19*; α(L)=0.424 *6*; α(M)=0.1181 *17* α(N)=0.0326 *5*; α(O)=0.00784 *11*; α(P)=0.001290 *18*; α(Q)=1.145×10⁻⁵ *16* Mult.: K:L1:L3:M1=100 *5*:72 *9*:78 *13*:91 *3*.α(K)exp=0.094 *35*.
*x*214.79 *8*	44 *17*					M1(+E2)	0.6 *6*	2.6 *9*	α(K)=2.0 *8*; α(L)=0.50 *4*; α(M)=0.125 *5* α(N)=0.0343 *12*; α(O)=0.0085 *4*; α(P)=0.00158 *14*; α(Q)=8.2×10⁻⁵ *31*

$^{242}_{95}Am_{147}$-27

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
									Mult.: K:L1:M1=100 *5*:35.8 *15*:6.5 *5*. α(K)exp=2.0 *8*.
									Mult.: M1 given by 1988Sa18.
217.043 *28*	111 *10*	292.831	2⁻	75.820	2⁻	M1+E2	1.01 *14*	1.93 *19*	α(K)=1.32 *18*; α(L)=0.453 *11*; α(M)=0.1174 *20* α(N)=0.0323 *5*; α(O)=0.00794 *15*; α(P)=0.00142 *4*; α(Q)=5.7×10^{-5} *7*
									Mult.: The data are illegible in the copy available to the evaluators.
x218.43 *4*	71 *11*					M1		3.16 *4*	α(K)=2.492 *35*; α(L)=0.504 *7*; α(M)=0.1228 *17* α(N)=0.0336 *5*; α(O)=0.00845 *12*; α(P)=0.001617 *23*; α(Q)=0.0001027 *14*
									Mult.: K:L1:L2:M1=63 *8*:100 *5*:36.5 *22*:7.5 *17*. α(L1)exp=0.47 *8*.
									Mult.: M1+E2 given by 1988Sa18.
220.600 *24*	131 *8*	296.401	2⁻	75.820	2⁻	M1		3.08 *4*	α(K)=2.424 *34*; α(L)=0.490 *7*; α(M)=0.1195 *17* α(N)=0.0327 *5*; α(O)=0.00822 *12*; α(P)=0.001572 *22*; α(Q)=9.99×10^{-5} *14*
									Mult.: K:L1:L2:M1=100 *2*:18.4 *4*:2.75 *143*.99 *12*. α(K)exp=2.59 *16*.
222.75 *9*	49 *18*	372.490	4⁻	149.707	4⁻	*b*			Mult.: M1+E2 given by 1988Sa18.
									Mult.: K:L1:L2=43.7 *13*:34 *4*:100 *2*. α(L2)exp=1.2 *4*.
x224.90 *8*	54 *17*					*b*			Mult.: (M1+E2) given by 1988Sa18.
									Mult.: K:L3=11.5 *14*:100 *2*. α(L3)exp=2.4 *8*.
x225.41 *5*	41 *16*					(M1+E2)	3.73 *20*	0.744 *20*	α(K)=0.270 *16*; α(L)=0.345 *5*; α(M)=0.0950 *13* α(N)=0.0262 *4*; α(O)=0.00632 *9*; α(P)=0.001058 *15*; α(Q)=1.55×10^{-5} *6*
									δ: 3.4 *+10−6* given by 1988Sa18.
									Mult.: K:L1:L2=100 *10*:30 *4*:34 *5*. α(K)exp=0.27 *11*.
230.242[e] *7*	≤397[e]	274.330	1⁻	44.093	0⁻	M1[a]	*a*	2.73 *4*	α(K)=2.150 *30*; α(L)=0.435 *6*; α(M)=0.1059 *15* α(N)=0.0289 *4*; α(O)=0.00729 *10*; α(P)=0.001394 *20*; α(Q)=8.85×10^{-5} *12*
									E_γ: Also placed by 2007Sa03 from the 902.494 level. Placed only from the 274.330 level by 1988Sa18.
									I_γ: Iγ=389 *8* for this doubly placed transition.
									Mult.: M1 given by 1988Sa18.
									Mult.: K:L1:L2:M1:M2=100 *2*:18.7 *4*:2.86 *9*:4.51 *9*:0.73 *9*. α(K)exp=1.83 *6*.
230.242[e] *7*	≤397[e]	902.494	(3)⁻	672.248	(2,3,4)⁻	M1[a]	*a*	2.73 *4*	α(K)=2.150 *30*; α(L)=0.435 *6*; α(M)=0.1059 *15* α(N)=0.0289 *4*; α(O)=0.00729 *10*; α(P)=0.001394 *20*; α(Q)=8.85×10^{-5} *12*
									E_γ: Also placed from the 274.330 level by 2007Sa03. Placed only from the 274.330 level by 1988Sa18.
									I_γ: Iγ=389 *8* for this doubly placed transition.
									Mult.: M1 given by 1988Sa18.
									Mult.: K:L1:L2:M1:M2=100 *2*:18.7 *4*:2.86 *9*:4.51 *9*:0.73 *9*. α(K)=1.83 *6*.

$^{242}_{95}Am_{147}$-28

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
236.789# *30*	94 *9*	506.648	2^+	269.854	3^+	M1+E2	0.48 *+14−16*	2.14 *19*	α(K)=1.64 *18*; α(L)=0.378 *13*; α(M)=0.0938 *24* α(N)=0.0257 *6*; α(O)=0.00642 *18*; α(P)=0.00120 *5*; α(Q)=6.8×10^{-5} *7* Mult.: M1 given by 1988Sa18. Mult.: K:L1:L2:M1=100 *2*:21.3 *9*:2.7 *3*:5.9 *4*. α(K)exp=1.64 *17*.
240.115 *14*	109 *10*	292.831	2^-	52.714	3^-	M1+E2	1.03 *+11−10*	1.42 *10*	α(K)=0.99 *9*; α(L)=0.321 *8*; α(M)=0.0827 *16* α(N)=0.0227 *4*; α(O)=0.00561 *12*; α(P)=0.001009 *27*; α(Q)=4.2×10^{-5} *4* δ: 0.94 *+17−14* given by 1988Sa18. Mult.: K:L1:M1=100 *2*:19.2 *10*:5.9 *6*. α(K)exp=0.99 *9*.
240.443 *32*	130 *17*	289.028	4^-	48.603	5^-	M1+E2	1.33 *13*	1.17 *10*	α(K)=0.76 *9*; α(L)=0.304 *7*; α(M)=0.0796 *16* α(N)=0.0219 *4*; α(O)=0.00537 *11*; α(P)=0.000949 *25*; α(Q)=3.36×10^{-5} *34* δ: 1.4 *3* given by 1988Sa18. Mult.: α(K)exp=0.76 *11*.
243.690e *11*	≤141e	296.401	2^-	52.714	3^-	M1+E2	0.71 *6*	1.70 *8*	α(K)=1.26 *7*; α(L)=0.328 *7*; α(M)=0.0827 *14* α(N)=0.0227 *4*; α(O)=0.00564 *10*; α(P)=0.001040 *22*; α(Q)=5.28×10^{-5} *27* E_γ: Also placed from the 873.996 level by 2007Sa03. Placed only from the 296.401 level by 1988Sa18. I_γ: Iγ=134 *7* for this doubly placed transition. δ: 0.55 *24* given by 1988Sa18. Mult.: K:L1:L2:L3:M1:M2=100 *2*:21.3 *4*:4.4 *4*:1.30 *24*:5.67 *23*: 2.6 *3*. α(K)exp=1.26 *6*.
243.690e *11*	≤141e	873.996	2^-	630.291	2^-,3^-,4^-	M1+E2	0.71 *6*	1.70 *8*	α(K)=1.26 *7*; α(L)=0.328 *7*; α(M)=0.0827 *14* α(N)=0.0227 *4*; α(O)=0.00564 *10*; α(P)=0.001040 *22*; α(Q)=5.28×10^{-5} *27* E_γ: Also placed from the 296.401 level by 2007Sa03. Placed only from the 296.401 level by 1988Sa18. δ: 0.55 *24* given by 1988Sa18. Mult.: K:L1:L2:L3:M1:M2=100 *2*:21.3 *4*:4.4 *4*:1.30 *24*:5.67 *23*: 2.6 *3*. α(K)exp=1.26 *6*. I_γ: Iγ=134 *7* for this doubly placed transition.
252.049 *15*	117 *21*	327.884	3^-	75.820	2^-	M1+E2	3.73 *10*	0.513 *9*	α(K)=0.210 *6*; α(L)=0.2212 *31*; α(M)=0.0605 *9* α(N)=0.01671 *23*; α(O)=0.00404 *6*; α(P)=0.000681 *10*; α(Q)=1.147×10^{-5} *27* Mult.: K:L1:L2:L3:M1=100 *10*:39.5 *20*:17.7 *21*:27.0 *16*:10.5 *16*. α(K)exp=0.21 *4*.
254.840e *16*	≤131e	628.523	3^-,4^-,5^-	373.686	4^-	M1+E2	0.70 *+10−9*	1.50 *10*	α(K)=1.12 *9*; α(L)=0.286 *9*; α(M)=0.0720 *17* α(N)=0.0197 *5*; α(O)=0.00491 *13*; α(P)=0.000908 *29*; α(Q)=4.7×10^{-5} *4*

$^{242}_{95}Am_{147}$-29

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult. &	δ &	α †	Comments
									δ: 0.62 *15* given by 1988Sa18. E_γ: Also placed from the 675.482 by 2007Sa03. Placement from the 330.740 level by 1988Sa18 has been removed by 2007Sa03. I_γ: Iγ=121 *10* for this doubly placed transition. Mult.: K:L1:L2:L3:M1:M2=100 *2*:23.7 *5*:3.9 *4*:4.2 *4*:8.3 *8*: 4.1 *8*. α(K)exp=1.12 *9*.
254.840 e *16*	≤131 e	675.482	(2,3,4)$^+$	420.651	2$^+$,3$^+$,4$^+$	M1+E2	0.70 *+10−9*	1.50 *10*	α(K)=1.12 *9*; α(L)=0.286 *9*; α(M)=0.0720 *17* α(N)=0.0197 *5*; α(O)=0.00491 *13*; α(P)=0.000908 *29*; α(Q)=4.7×10^{-5} *4* E_γ: Also placed from the 628.523 by 2007Sa03. Placement from the 330.740 level by 1988Sa18 has been removed by 2007Sa03. I_γ: Iγ=121 *10* for this doubly placed transition. δ: 0.62 *15* given by 1988Sa18. Mult.: K:L1:L2:L3:M1:M2=100 *2*:23.7 *5*:3.9 *4*:4.2 *4*:8.3 *8*: 4.1 *8*. α(K)exp=1.12 *9*.
255.467 # *38*	98 *22*	1161.97	1$^-$,2$^-$,3$^-$,4$^-$	906.499	(3)$^-$	E2 b		0.380 *5*	α(K)=0.1028 *14*; α(L)=0.2016 *28*; α(M)=0.0558 *8* α(N)=0.01542 *22*; α(O)=0.00371 *5*; α(P)=0.000618 *9*; α(Q)=7.11×10^{-6} *10* Mult.: E2 given by 1988Sa18. Mult.: K:L1:L3=100 *31*:42 *6*:35 *5*.
256.007 # *33*	111 *21*	628.523	3$^-$,4$^-$,5$^-$	372.490	4$^-$	M1+E2	1.42 *+31−22*	0.92 *13*	α(K)=0.60 *12*; α(L)=0.241 *11*; α(M)=0.0631 *21* α(N)=0.0173 *6*; α(O)=0.00425 *15*; α(P)=0.00075 *4*; α(Q)=2.6×10^{-5} *5* Mult.: (M1+E2) given by 1988Sa18. Mult.: α(K)exp=0.60 *12*.
271.54 # *4*	100 *14*	502.04	1$^+$,2$^+$	230.527	1$^+$	M1+E2	0.54 *19*	1.40 *17*	α(K)=1.07 *15*; α(L)=0.248 *15*; α(M)=0.0615 *29* α(N)=0.0168 *8*; α(O)=0.00421 *21*; α(P)=0.00079 *5*; α(Q)=4.4×10^{-5} *6* Mult.: M1(+E2) given by 1988Sa18. Mult.: K:L1=100 *2*:43.8 *18*. α(K)exp=1.07 *15*.
274.331 *6*	986 *10*	274.330	1$^-$	0.0	1$^-$	M1		1.674 *23*	α(K)=1.320 *18*; α(L)=0.266 *4*; α(M)=0.0648 *9* α(N)=0.01771 *25*; α(O)=0.00446 *6*; α(P)=0.000852 *12*; α(Q)=5.41×10^{-5} *8* Mult.: K:L1:L2=100 *2*:21.5 *5*:3.7 *6*. α(K)exp=1.120 *23*.
275.087 *16*	159 *10*	672.248	(2,3,4)$^-$	397.147	2$^-$,3$^-$,4$^-$	M1		1.661 *23*	α(K)=1.310 *18*; α(L)=0.264 *4*; α(M)=0.0643 *9* α(N)=0.01757 *25*; α(O)=0.00442 *6*; α(P)=0.000846 *12*; α(Q)=5.37×10^{-5} *8* Mult.: M1+E2 given by 1988Sa18. E_γ: Placement from the 327.884 by 1988Sa18 has been reassigned by 2007Sa03. Mult.: K:L1:L2=100 *29*:52 *4*:5.7 *9*. α(L1)exp=0.29 *3*.
278.000 *18*	172 *12*	330.740	3$^-$	52.714	3$^-$				Mult.: K:L2=100 *2*:15 *6*. α(K)exp=0.050 *5*.

$^{242}_{95}Am_{147}$-30

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ‡	I_γ@	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
									Mult.: E1+M2 with δ=0.054 *+12−15* is deduced by the evaluators but not consistent with Δπ.
278.319# *16*	199 *12*	675.482	(2,3,4)$^+$	397.147	2$^-$,3$^-$,4$^-$	(E1)		0.0499 *7*	α(K)=0.0393 *5*; α(L)=0.00804 *11*; α(M)=0.001956 *27* α(N)=0.000531 *7*; α(O)=0.0001310 *18*; α(P)=2.362×10^{-5} *33*; α(Q)=1.170×10^{-6} *16* Mult.: K:L1:L2:L3:M1=100 *7*:37 *7*:34 *6*:88 *15*:62 *11*. α(K)exp=0.032 *3*.
293.34# *6*	123 *11*	712.442	2$^-$,3$^-$,4$^-$	419.085	2$^-$	E2		0.2413 *34*	α(K)=0.0815 *11*; α(L)=0.1165 *16*; α(M)=0.0321 *4* α(N)=0.00885 *12*; α(O)=0.002134 *30*; α(P)=0.000358 *5*; α(Q)=5.04×10^{-6} *7* Mult.: K:L3=100 *32*:47 *8*. α(K)exp=0.071 *24*.
295.960# *14*	223 *9*	464.362	3$^-$,4$^-$	168.387	1$^-$,2$^-$,3$^-$	*b*			Mult.: E2 given by 1988Sa18 is inconsistent with the subshell ratios. Mult.: L1:L2:L3=7.9 *14*:100 *3*:9.1 *17*. α(L2)exp=0.227 *11*.
296.412 *25*	203 *16*	296.401	2$^-$	0.0	1$^-$	M1+E2	0.89 *+10−9*	0.86 *6*	α(K)=0.63 *5*; α(L)=0.169 *6*; α(M)=0.0427 *13* α(N)=0.01172 *35*; α(O)=0.00291 *9*; α(P)=0.000535 *20*; α(Q)=2.65×10^{-5} *21* Mult.: K:M1:M2:M3=100 *2*:1.4 *5*:5.1 *3*:0.8 *3*. α(K)exp=0.63 *5*.
296.732 *34*	115 *13*	372.490	4$^-$	75.820	2$^-$	*b*			Mult.: (E2) given by 1988Sa18. Mult.: K:L1:L2:L3=17.5 *12*:100 *3*:19.3 *25*:6.7 *14*. α(L1)exp=0.44 *5*.
296.996 *25* x302.766 *25*	153 *21* 129 *9*	446.702	3$^-$	149.707	4$^-$	M1+E2	1.48 *+25−19*	0.55 *7*	α(K)=0.37 *6*; α(L)=0.134 *7*; α(M)=0.0349 *14* α(N)=0.0096 *4*; α(O)=0.00236 *10*; α(P)=0.000421 *22*; α(Q)=1.61×10^{-5} *23* δ: 1.2 *+3−2* given by 1988Sa18. Mult.: L1:L2:M1=100 *13*:17 *6*:33 *5*. α(L1)exp=0.068 *10*.
313.20# *7*	87 *20*	731.225	3$^+$,4$^+$,5$^+$	418.084	4$^+$	M1+E2	2.2 *+8−4*	0.36 *7*	α(K)=0.22 *6*; α(L)=0.106 *7*; α(M)=0.0282 *15* α(N)=0.0078 *4*; α(O)=0.00190 *11*; α(P)=0.000332 *23*; α(Q)=1.00×10^{-5} *24* Mult.: K:L1=100 *11*:14.2 *23*. α(K)exp=0.22 *6*.
314.33# *7*	105 *17*	873.996	2$^-$	559.790	2$^-$	E2		0.1946 *27*	α(K)=0.0723 *10*; α(L)=0.0892 *13*; α(M)=0.02447 *34* α(N)=0.00675 *9*; α(O)=0.001631 *23*; α(P)=0.000275 *4*; α(Q)=4.26×10^{-6} *6* Mult.: E2(+M1) given by 1988Sa18.
314.71 *7*	86 *20*	464.362	3$^-$,4$^-$	149.707	4$^-$	M1+E2	2.5 *+9−5*	0.32 *6*	Mult.: K:L1:=100 *15*:80 *5*. α(K)=0.079 *18*. α(K)=0.19 *5*; α(L)=0.102 *6*; α(M)=0.0271 *13* α(N)=0.00746 *35*; α(O)=0.00182 *9*; α(P)=0.000316 *20*; α(Q)=8.8×10^{-6} *20* Mult.: K:L1:L2:L3:M1=100 *12*:6.8 *28*:18.6 *32*:35 *9*:20 *3*. α(K)exp=0.19 *5*.

$^{242}_{95}Am_{147}$-31

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
316.377 *25*	140 *14*	612.758	2^-	296.401	2^-	M1+E2	4.77 *11*	0.230 *4*	α(K)=0.1060 *22*; α(L)=0.0909 *13*; α(M)=0.02469 *35* α(N)=0.00681 *10*; α(O)=0.001650 *23*; α(P)=0.000281 *4*; α(Q)=5.55×10^{-6} *10* Mult.: K:L1:L2=100 *13*:51 *5*:33 *4*. α(K)exp=0.106 *18*.
319.75 *6*	86 *18*	372.490	4^-	52.714	3^-	M1+E2[a]	1.14[a] *+26−18*	0.58 *9*	α(K)=0.42 *8*; α(L)=0.123 *9*; α(M)=0.0313 *19* α(N)=0.0086 *5*; α(O)=0.00213 *14*; α(P)=0.000388 *29*; α(Q)=1.77×10^{-5} *30* Mult.: K:L1:L2=100 *5*:27 *13*:9.0 *14*. α(K)exp=0.39 *9*.
319.91 *6*	80 *20*	612.758	2^-	292.831	2^-	M1+E2	2.3 *+10−5*	0.33 *7*	α(K)=0.20 *6*; α(L)=0.098 *7*; α(M)=0.0259 *15* α(N)=0.0071 *4*; α(O)=0.00174 *11*; α(P)=0.000305 *23*; α(Q)=9.0×10^{-6} *24* Mult.: K:L1:L2=100 *17*:43 *8*:31 *4*. α(K)exp=0.20 *6*.
324.84 *6*	147 *29*	400.521	1^-	75.820	2^-	M1+E2	1.17 *+30−22*	0.54 *9*	α(K)=0.39 *8*; α(L)=0.116 *9*; α(M)=0.0295 *20* α(N)=0.0081 *6*; α(O)=0.00201 *15*; α(P)=0.000365 *31*; α(Q)=1.65×10^{-5} *32* δ: 1.22 *+31−22* given by 1988Sa18.
328.409# *19*	151 *11*	902.494	$(3)^-$	574.089	$(2,3,4)^-$	M1		1.017 *14*	Mult.: K:L1:M1=100 *2*:5.1 *16*:4.6 *9*. α(K)exp=0.39 *8*. α(K)=0.803 *11*; α(L)=0.1613 *23*; α(M)=0.0393 *5* α(N)=0.01073 *15*; α(O)=0.00270 *4*; α(P)=0.000517 *7*; α(Q)=3.28×10^{-5} *5*
334.061 *32*	81 *18*	603.889	$(3,4)^+$	269.854	3^+	M1+E2[a]	0.70[a] *+16−1*	0.70 *8*	Mult.: K:L1:L2=100 *2*:4.6 *11*:1.8 *7*. α(K)exp=0.82 *7*. α(K)=0.54 *7*; α(L)=0.127 *8*; α(M)=0.0315 *18* α(N)=0.0086 *5*; α(O)=0.00215 *13*; α(P)=0.000403 *27*; α(Q)=2.22×10^{-5} *27* E_γ: Placed by 1988Sa18 from the 483.640 level. Placement reassigned to the 603.889 level by 2007Sa03. Mult.: (M1) given by 1988Sa18.
341.528 *22*	123 *14*	341.593	0^+	0.0	1^-				Mult.: L1:L2=100 *15*:27 *4*. α(L1)exp=0.091 *24*. The ce lines are multiplets or lie in a complex region (1988Sa18).
x341.99 *6*	125 *24*					E2		0.1513 *21*	α(K)=0.0624 *9*; α(L)=0.0649 *9*; α(M)=0.01772 *25* α(N)=0.00489 *7*; α(O)=0.001183 *17*; α(P)=0.0002008 *28*; α(Q)=3.50×10^{-6} *5* Mult.: L1:L2:L3=6.0 *21*:12.6 *12*:100 *2*. α(L3)exp=0.32 *6*.
x343.948 *32*	157 *47*					E1+M2	0.06 *4*	0.041 *17*	α(K)=0.032 *12*; α(L)=0.007 *4*; α(M)=0.0017 *9* α(N)=4.8×10^{-4} *26*; α(O)=1.2×10^{-4} *7*; α(P)=2.2×10^{-5} *12*; α(Q)=1.2×10^{-6} *7* Mult.: E1,E2 given by 1988Sa18.
x350.29 *14*	100 *35*					E1		0.0305 *4*	Mult.: K:L1:L2:L3=100 *13*:31 *9*:84 *965 30*. α(K)exp=0.031 *10*. α(K)=0.02418 *34*; α(L)=0.00477 *7*; α(M)=0.001157 *16* α(N)=0.000314 *4*; α(O)=7.78×10^{-5} *11*;

$^{242}_{95}Am_{147}$-32

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
									α(P)=1.418×10^{-5} *20*; α(Q)=7.39×10^{-7} *10* Mult.: α(K)exp=0.022 *9*.
[x]352.396 *16*	291 *12*								
[x]356.84 *11*	144 *37*					E1+M2	0.0878 *5*	0.0474 *7*	α(K)=0.0360 *5*; α(L)=0.00847 *13*; α(M)=0.002118 *32* α(N)=0.000580 *9*; α(O)=0.0001448 *22*; α(P)=2.68×10^{-5} *4*; α(Q)=1.497×10^{-6} *23* Mult.: E1,E2 given by 1988Sa18. Mult.: α(K)exp=0.036 *10*.
[x]361.357 *11*	97 *9*					E2		0.1292 *18*	α(K)=0.0567 *8*; α(L)=0.0530 *7*; α(M)=0.01442 *20* α(N)=0.00398 *6*; α(O)=0.000963 *13*; α(P)=0.0001642 *23*; α(Q)=3.08×10^{-6} *4* Mult.: K:L1:L2=100 *8*:75 *12*:54 *15*. α(K)exp=0.058 *7*. The L1 line is contaminated.
366.351 *33*	97 *18*	419.085	2$^-$	52.714	3$^-$	M1		0.753 *11*	α(K)=0.595 *8*; α(L)=0.1192 *17*; α(M)=0.0290 *4* α(N)=0.00793 *11*; α(O)=0.001996 *28*; α(P)=0.000382 *5*; α(Q)=2.420×10^{-5} *34* Mult.: K:L1:L2:M1=100 *3*:61.8 *13*:2.3 *9*:4.1 *7*. α(K)exp=0.63 *12*.
368.24 *6*	96 *22*	612.758	2$^-$	244.381	3$^-$	M1+E2		0.43 *31*	α(K)=0.32 *27*; α(L)=0.084 *34*; α(M)=0.021 *8* α(N)=0.0058 *21*; α(O)=0.0014 *5*; α(P)=2.6×10^{-4} *11*; α(Q)=1.3×10^{-5} *10*
[x]368.88 *7*	95 *23*					M1+E2[a]	2.4[a] *+12−5*	0.21 *5*	α(K)=0.13 *4*; α(L)=0.059 *5*; α(M)=0.0156 *12* α(N)=0.00429 *32*; α(O)=0.00105 *8*; α(P)=0.000185 *17*; α(Q)=6.0×10^{-6} *16* δ: 3.0 *+10−5* given by 1988Sa18. Mult.: K:L1=100 *8*:13 *4*. α(K)exp=0.13 *4*.
376.155[#] *32*	180 *45*	704.030	1$^-$,2$^-$,3$^-$	327.884	3$^-$	M1+E2	3.9 *+10−6*	0.152 *13*	α(K)=0.084 *11*; α(L)=0.0498 *16*; α(M)=0.0133 *4* α(N)=0.00367 *10*; α(O)=0.000894 *26*; α(P)=0.000155 *5*; α(Q)=4.0×10^{-6} *4* Mult.: E2 given by 1988Sa18. Mult.: K:L2=100 *9*:31 *4*. α(K)exp=0.084 *23*.
382.234 *30*	179 *18*	612.758	2$^-$	230.527	1$^+$	E1+M2	0.05 *4*	0.030 *10*	α(K)=0.024 *7*; α(L)=0.0049 *22*; α(M)=0.0012 *6* α(N)=3.3×10^{-4} *16*; α(O)=8.E−5 *4*; α(P)=1.5×10^{-5} *8*; α(Q)=8.E−7 *4* Mult.: α(K)exp=0.023 *6*. Mult.: The authors assign mult=E1, E2, but α(K) agrees much better with E1, and the placement in the level scheme requires a change of parity.
384.531[#] *27*	148 *15*	712.442	2$^-$,3$^-$,4$^-$	327.884	3$^-$				
390.92[#] *4*	126 *16*	621.527	1$^-$,2$^-$	230.527	1$^+$				
[x]397.955 *25*	235 *45*					M1+E2[a]	1.10[a] *+21−17*	0.33 *4*	α(K)=0.24 *4*; α(L)=0.063 *5*; α(M)=0.0160 *11*

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

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

E_γ ‡	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α†	Comments
									α(N)=0.00439 *30*; α(O)=0.00109 *8*; α(P)=0.000201 *16*; α(Q)=1.01×10^{-5} *14* δ: 1.2 *+3−2* given by 1988Sa18. Mult.: K:L2=100 *5*:5.3 *15*. α(K)exp=0.22 *4*.
x433.95 *7*	75 *18*					E1+M2	0.15 *+4−5*	0.048 *16*	α(K)=0.036 *12*; α(L)=0.0087 *34*; α(M)=0.0022 *9* α(N)=6.0×10^{-4} *24*; α(O)=1.5×10^{-4} *6*; α(P)=2.8×10^{-5} *11*; α(Q)=1.6×10^{-6} *7* Mult.: E1,E2 given by 1988Sa18. Mult.: α(K)exp=0.036 *11*.
435.038 *22*	324 *14*	483.640	4$^-$	48.603	5$^-$				
450.69# *6*	102 *21*	906.499	(3)$^-$	455.688	1$^-$,2$^-$,3$^-$	M1+E2	0.86 *+35−27*	0.28 *6*	α(K)=0.21 *5*; α(L)=0.049 *7*; α(M)=0.0122 *17* α(N)=0.0033 *5*; α(O)=0.00084 *12*; α(P)=0.000157 *24*; α(Q)=8.7×10^{-6} *20* δ: 0.8 *2* given by 1988Sa18. Mult.: K:L1:L2=100 *11*:26.7 *19*:10.1 *17*. α(K)exp=0.21 *5*.
451.60# *13*	79 *21*	1161.97	1$^-$,2$^-$,3$^-$,4$^-$	710.389	1$^-$,2$^-$,3$^-$	E2		0.07133 *99*	α(K)=0.0382 *5*; α(L)=0.02427 *34*; α(M)=0.00651 *9* α(N)=0.001792 *25*; α(O)=0.000436 *6*; α(P)=7.57×10^{-5} *11*; α(Q)=1.875×10^{-6} *26* Mult.: 100 *12*:63 *11*:97 *12*. α(K)exp=0.044 *13*.
x453.740 *34*	97 *21*					M1		0.420 *6*	α(K)=0.332 *5*; α(L)=0.0663 *9*; α(M)=0.01612 *23* α(N)=0.00440 *6*; α(O)=0.001108 *16*; α(P)=0.0002120 *30*; α(Q)=1.344×10^{-5} *19* Mult.: K:L1:L2=100 *2*:21.3 *9*:8.0 *19*. α(K)exp=0.38 *4*.
x455.707 *19*	318 *22*					E1+M2	0.044 *21*	0.0200 *25*	α(K)=0.0158 *18*; α(L)=0.0031 *5*; α(M)=0.00076 *13* α(N)=0.00021 *4*; α(O)=5.2×10^{-5} *9*; α(P)=9.6×10^{-6} *17*; α(Q)=5.3×10^{-7} *10* Mult.: E1 given by 1988Sa18. Mult.: α(K)exp=0.0158 *18*.
x456.26 *9*	260 *49*					E1+M2	0.069 *31*	0.023 *6*	α(K)=0.018 *4*; α(L)=0.0037 *11*; α(M)=9.2×10^{-4} *29* α(N)=2.5×10^{-4} *8*; α(O)=6.3×10^{-5} *20*; α(P)=1.2×10^{-5} *4*; α(Q)=6.6×10^{-7} *23* Mult.: E1 given by 1988Sa18. Mult.: α(K)exp=0.018 *4*.
585.21 *16*	203 *63*	873.996	2$^-$	289.028	4$^-$				
x586.72 *16*	170 *61*					E2		0.0385 *5*	α(K)=0.02419 *34*; α(L)=0.01058 *15*; α(M)=0.00278 *4* α(N)=0.000764 *11*; α(O)=0.0001870 *26*; α(P)=3.32×10^{-5} *5*; α(Q)=1.084×10^{-6} *15* Mult.: K:L2=100 *19*:46 *11*. α(K)exp=0.022 *9*.
x588.857 *26*	313 *19*					E1+M2	0.031 *28*	0.0114 *13*	α(K)=0.0091 *9*; α(L)=0.00170 *24*; α(M)=0.00041 *6* α(N)=0.000112 *17*; α(O)=2.8×10^{-5} *4*; α(P)=5.2×10^{-6} *8*; α(Q)=3.0×10^{-7} *5*

$^{242}_{95}Am_{147}$-34

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)

γ(^{242}Am) (continued)

E_γ[‡]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[†]	Comments
[x]595.57 *13*	169 *61*					E2		0.0373 *5*	Mult.: E1 given by 1988Sa18. Mult.: α(K)exp=0.0091 *14*. α(K)=0.02357 *33*; α(L)=0.01012 *14*; α(M)=0.00265 *4* α(N)=0.000729 *10*; α(O)=0.0001787 *25*; α(P)=3.17×10^{-5} *4*; α(Q)=1.051×10^{-6} *15*
599.55[#] *12*	171 *61*	873.996	2$^-$	274.330	1$^-$	M1+E2	2.84 *34*	0.055 *5*	Mult.: K:L1:L2=100 *16*:42 *11*:21 *8*. α(K)exp=0.029 *12*. α(K)=0.038 *4*; α(L)=0.0122 *6*; α(M)=0.00315 *14* α(N)=0.00086 *4*; α(O)=0.000213 *10*; α(P)=3.86×10^{-5} *20*; α(Q)=1.62×10^{-6} *15*
[x]609.28 *19*	111 *21*								Mult.: K:L1=100 *8*:28 *5*. α(K)exp=0.038 *14*. E_γ: Placed from the 902.494 level by 1988Sa18. Placement removed by 2007Sa03.
617.207[#] *40*	101 *10*	1161.97	1$^-$,2$^-$,3$^-$,4$^-$	544.756	2$^-$,3$^-$	M1		0.1829 *26*	α(K)=0.1448 *20*; α(L)=0.0287 *4*; α(M)=0.00697 *10* α(N)=0.001905 *27*; α(O)=0.000479 *7*; α(P)=9.17×10^{-5} *13*; α(Q)=5.82×10^{-6} *8* Mult.: K:L1=100 *8*:24.7 *22*. α(K)exp=0.154 *20*.
629.64 *8*	4.4×10^2 *15*	873.996	2$^-$	244.381	3$^-$				
658.11 *6*	408 *65*	902.494	(3)$^-$	244.381	3$^-$				
[x]691.92 *10*	252 *38*					E1+M2	0.10 *4*	0.0112 *29*	α(K)=0.0088 *22*; α(L)=0.0018 *5*; α(M)=4.3×10^{-4} *14* α(N)=1.2×10^{-4} *4*; α(O)=2.9×10^{-5} *9*; α(P)=5.5×10^{-6} *18*; α(Q)=3.3×10^{-7} *11* Mult.: E1 given by 1988Sa18. Mult.: α(K)exp=0.0089 *25*.

† Additional information 2.
‡ From 1988Sa18. Earlier measurements: 1977GaZQ, 1980GaZP.
# Placed in the level scheme by 2007Sa03. Unplaced by 1988Sa18.
@ Relative photon intensity from 1988Sa18. Others: 1977GaZQ, 1980GaZP.
& Based on ce data given in 1987SaZG. Electron intensities were normalized by 1988Sa18 to the photon intensities by adjusting the experimental conversions coefficients to theoretical values for transitions whose multipolarities were determined from shell and subshell ratios. 1987SaZG give both relative ce intensities and conversion coefficients. The evaluators have listed the relative intensities, which have much smaller uncertainties, and also, for scale, the conversion coefficient for the strongest subshell. The δ was deduced by the evaluators using the BrIccMixing code. Except as noted, the inclusion of subshell conversion intensity ratios produced a large reduced chi-square, hence only conversion coefficents were used by the evalutors to determine δ. Multi and δ from 1988Sa18 are given in comments when multis deduced by the evaluators give a bett agreement with the ce data.
[a] Deduced by evaluators using the BrIccMixing code based on the subshell conversion intensity ratios and conversion coefficent data.
[b] Evaluators unable to deduce multi due to the large reduced chi-square from fit to the ce data using the BrIccMixing code.
[c] Seen only in the ce spectrum. The energy is from E(ce), the multipolarity is from the I(ce) intensity ratios, and the photon intensity is from the I(ce) and the corresponding α subshell values. For mixed mults, 1988Sa18 have adopted mixing ratios that give the best overall agreement among the Iγ values computed for

$^{242}_{95}Am_{147}$-35

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

each subshell.
[d] Seen only in the ce spectrum.
[e] Multiply placed with undivided intensity.
[f] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

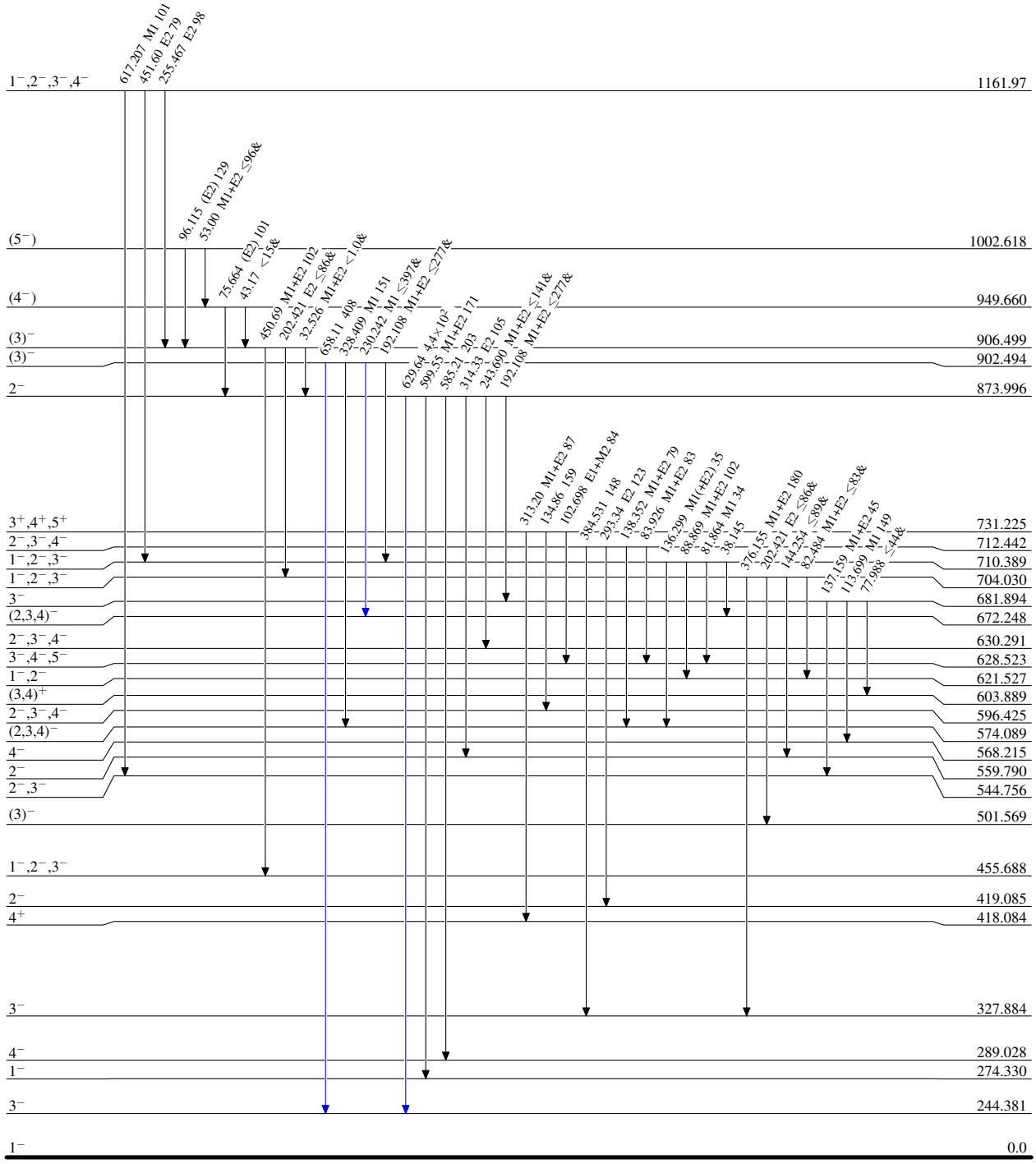
$^{242}_{95}Am_{147}$-36

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03

Level Scheme

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



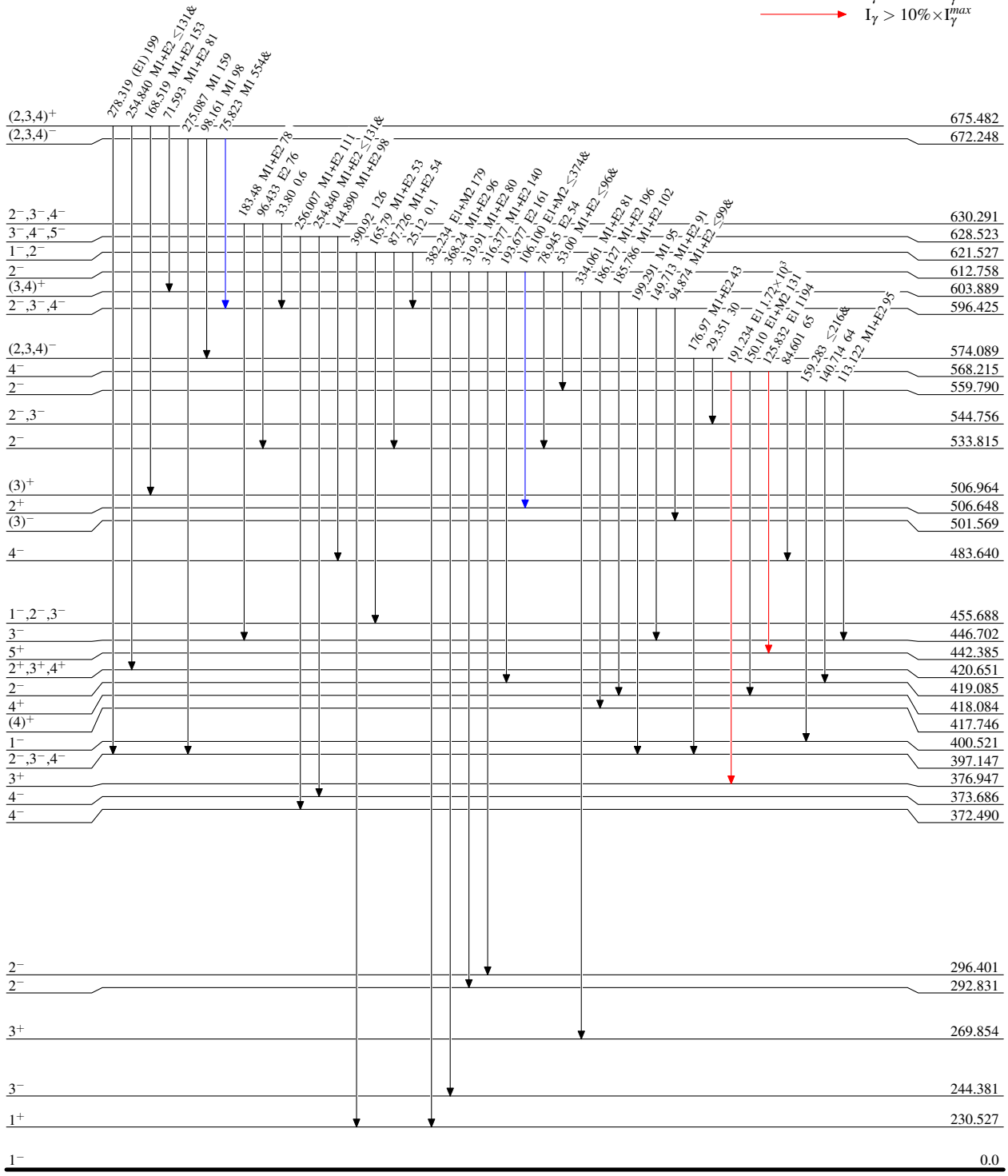
$^{242}_{95}Am_{147}$

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



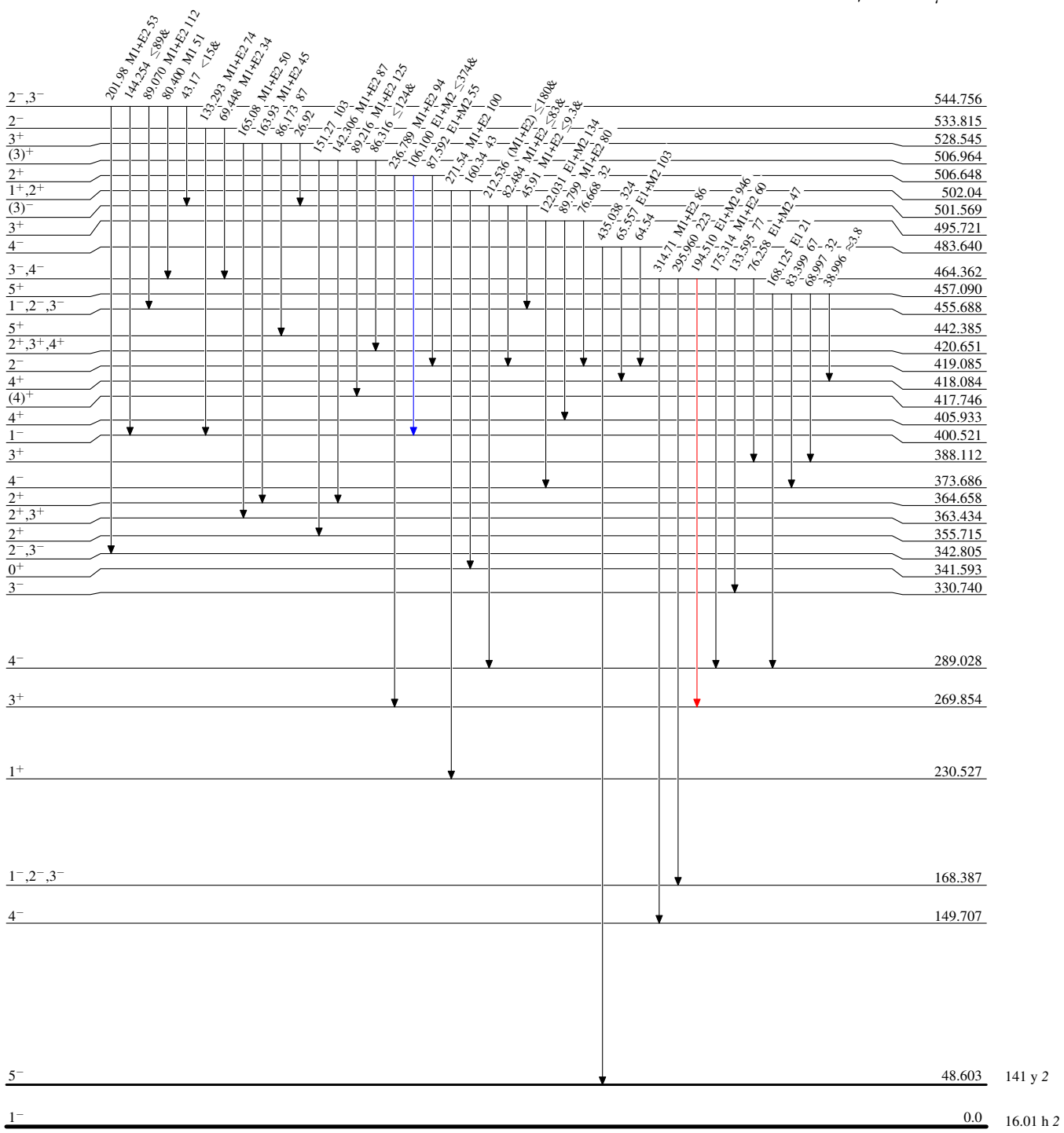
$^{242}_{95}Am_{147}$

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



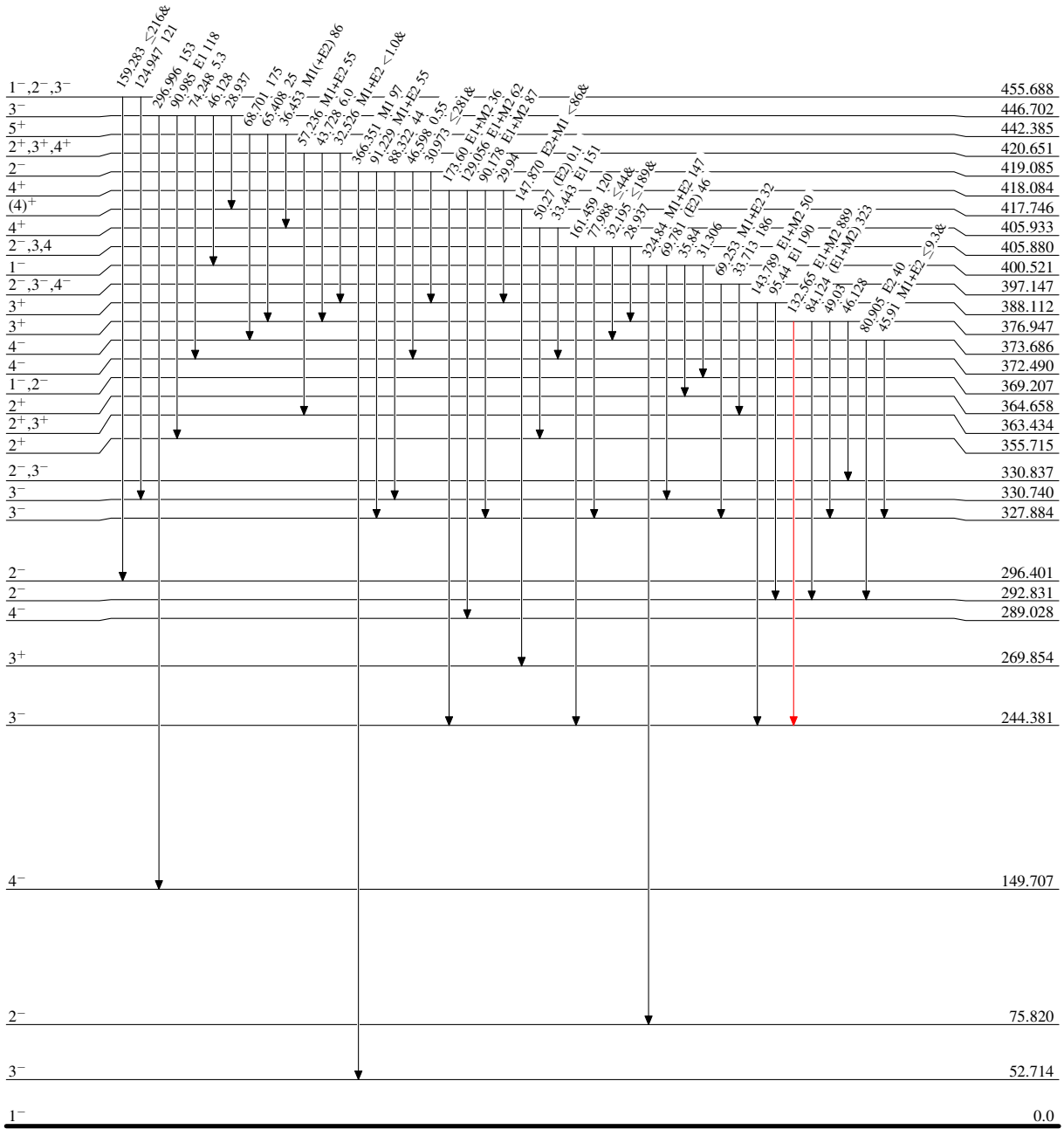
$^{242}_{95}Am_{147}$

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

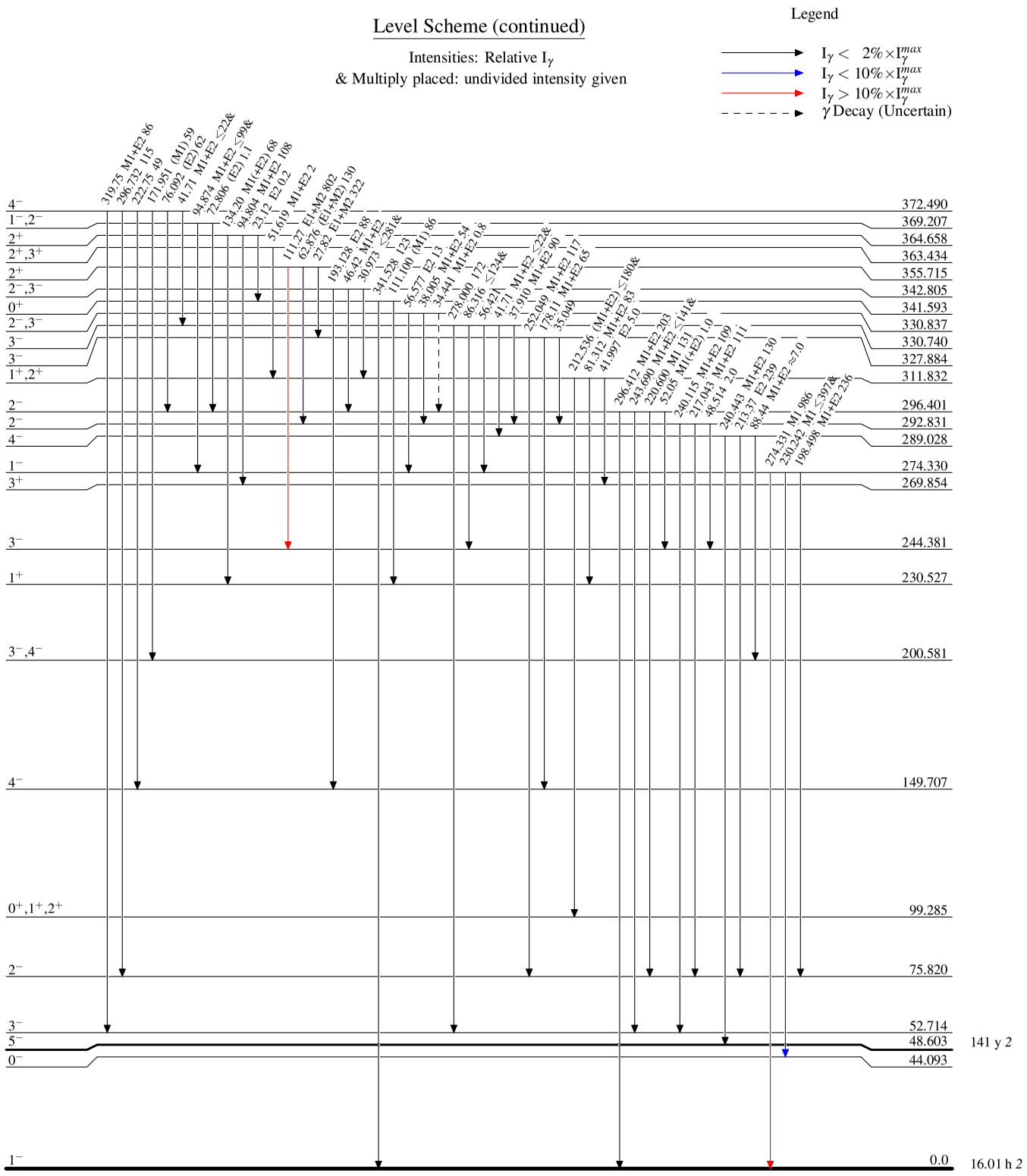


$^{242}_{95}Am_{147}$

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given



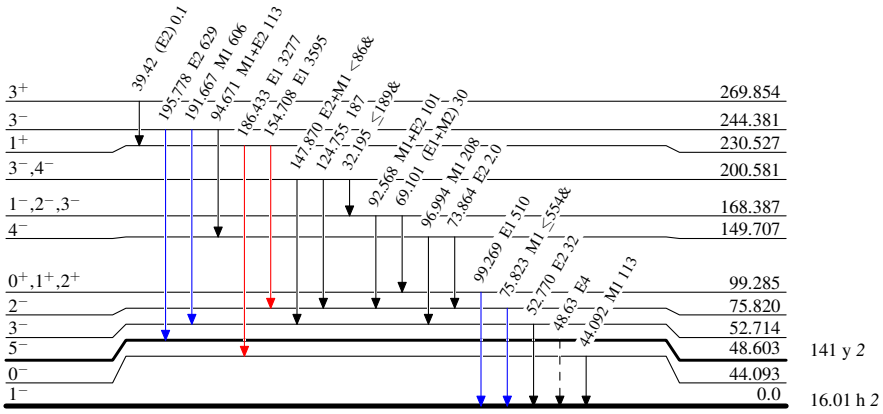
$^{242}_{95}Am_{147}$

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03

Level Scheme (continued)

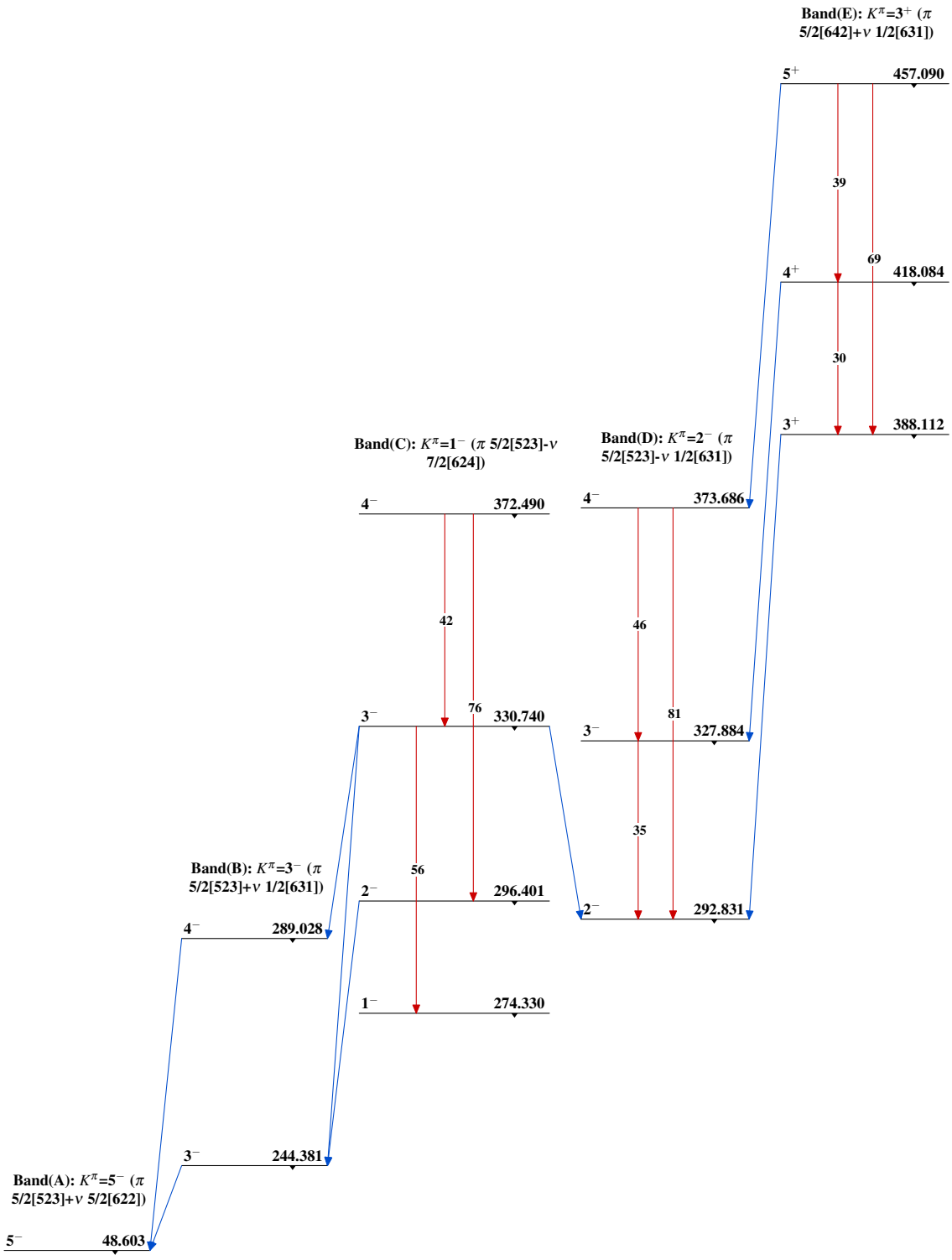
Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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)



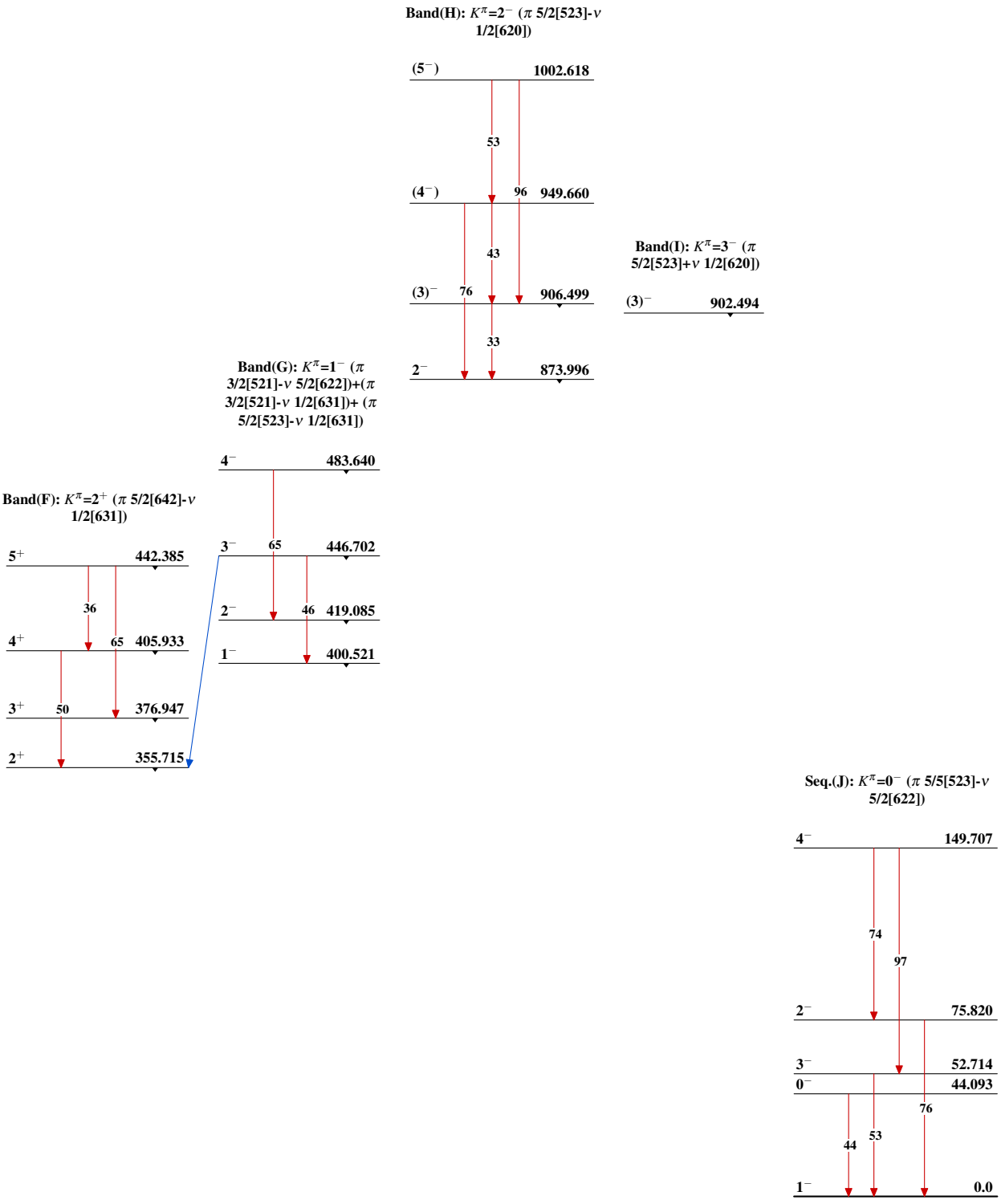
$^{242}_{95}Am_{147}$

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03



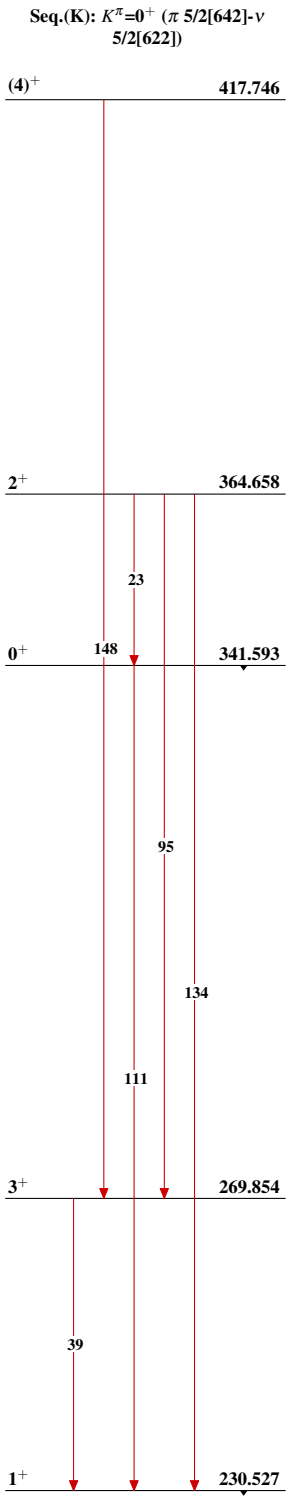
$^{242}_{95}Am_{147}$

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)



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

^{241}Am(n,γ) E=th:secondary γ's 1988Sa18,2007Sa03 (continued)



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