^{241}Cm ε decay 1974Po08

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 130, 183 (2015)	30-Sep-2015

Parent: ^{241}Cm: E=0.0; J$^{\pi}$=1/2^{+}; $T_{1/2}$=32.8 d *2*; Q(ε)=767.4 *12*; %ε decay=99.0 *1*

^{241}Cm-J$^{\pi}$: From Adopted Levels in ^{241}Cm.

^{241}Cm-$T_{1/2}$: From least squares decay analyses of the 471.8 keV γ.

^{241}Cm-Q(ε): From 2012Wa38.

1974Po08: ^{241}Cm source prepared by irradiating ^{239}Pu with 40 MeV α particles at the Argonne 60-in. cyclotron. Following decay and chemical separation, Cm was prepared for electron and γ spectroscopy in the Argonne electromagnetic isotope separator. γ-rays were measured with Ge(Li) detectors with FWHM=600 keV at the 100 keV γ-ray energy. Conversion electron lines were measured with the Argonne toroidal-filed spectrometer (FWHM=0.05 %). Measured $\gamma\gamma$-coincidence Ge(Li) diodes.

^{241}Am Levels

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$	Comments
0.0[#]	5/2^{-}	432.6 y *6*	$T_{1/2}$: From Adopted Levels.
41.176[#] *3*	7/2^{-}		
93.65[#] *10*	9/2^{-}		
205.883[@] *10*	5/2^{+}		
471.810[&] *9*	3/2^{-}		
504.448[&] *9*	5/2^{-}		
623.10[a] *4*	(1/2^{+})		
636.861[b] *10*	3/2^{-}		
652.089[b] *10*	(1/2)$^{-}$		
653.23[a] *4*	3/2^{+}		
670.24[c] *8*	3/2^{+}		

[†] From least-squares fit (by evaluator) to Eγ data.
[‡] From Adopted Levels.
[#] Band(A): 5/2[523].
[@] Band(B): 5/2[642].
[&] Band(C): 3/2[521].
[a] Band(D): 1/2[400]?
[b] Band(E): 1/2[530].
[c] Band(F): 3/2[651].

ε radiations

E(decay)	E(level)	Iε[†‡]	Log *ft*	Comments
(97.2 *12*)	670.24	0.68 *5*	7.74 *4*	εL=0.6512 *15*; εM+=0.3488 *15*
(114.2 *12*)	653.23	0.313 *25*	8.24 *4*	εL=0.6677 *10*; εM+=0.3323 *10*
(115.3 *12*)	652.089	27.0 *12*	6.318 *23*	εL=0.6686 *10*; εM+=0.3314 *10*
(130.5 *12*)	636.861	42.6 *21*	6.251 *25*	εK=0.009 *4*; εL=0.6729 *20*; εM+=0.3184 *20*
(144.3 *12*)	623.10	0.62 *5*	8.22 *4*	εK=0.078 *8*; εL=0.632 *5*; εM+=0.289 *3*
(263.0[#] *12*)	504.448	2.3 *21*	7.8[1u] *4*	εK=0.209 *3*; εL=0.5385 *19*; εM+=0.2522 *12*
(295.6 *12*)	471.810	26 *6*	7.62 *10*	εK=0.5782 *14*; εL=0.3022 *9*; εM+=0.1195 *5*

[†] Deduced from the requirement of an intensity balance at each level.

Continued on next page (footnotes at end of table)

^{241}Cm ε decay 1974Po08 (continued)

ε radiations (continued)

‡ For absolute intensity per 100 decays, multiply by 0.990.

Existence of this branch is questionable.

γ(^{241}Am)

Iγ normalization: Photon intensities per 100 ε decays are obtained from the requirement that ΣI(γ+ce)=100 for transitions feeding the g.s. band, namely, the g.s., 41, and 94 levels. With this normalization one gets Kα_2 x ray and Kα_1 x ray intensities of 22.4 *20* and 36 *4*, respectively, in good agreement with the measured values listed above, and thus consistent with the assumption of negligible ε feeding to the g.s.

The $\gamma\gamma$ coincidence relationships shown on the decay scheme drawing are from 1974Po08.

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X rays: 1974Po08

E(x ray)	I(x ray) (% per ε decay)	
102.024 *20*	23.2 *14*	Kα_2 x ray
106.465 *20*	36.8 *21*	Kα_1 x ray
119.255 *30*	4.5	Kβ_3 x ray
120.274 *30*	9.4	Kβ_1 x ray
123.750 *30*	3.8	Kβ_2 x ray+Kβ_4 x ray
124.816 *30*	1.1	K-O$_{23}$ x ray

E$_\gamma$[†]	I$_\gamma$[‡c]	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Mult.[#]	δ[#b]	α[a]	I$_{(\gamma+ce)}$[c]	Comments
15.228 *2*	0.0548 *25*	652.089	(1/2)$^-$	636.861	3/2$^-$	M1+E2	0.0302 *14*	437 *8*	24.0 *11*	ce(M)/(γ+ce)=0.736 *9* ce(N)/(γ+ce)=0.202 *5*; ce(O)/(γ+ce)=0.0505 *12*; ce(P)/(γ+ce)=0.00951 *22*; ce(Q)/(γ+ce)=0.000568 *13* α(M)=322 *6* α(N)=88.3 *15*; α(O)=22.1 *4*; α(P)=4.16 *7*; α(Q)=0.249 *4* I$_\gamma$: From I(γ+ce) and α. I$_{(\gamma+ce)}$: From Ice(M) and (1+α)/ce(M)=1.357. The authors Ice values sum to 24.8 *7*; however, the intensities of the N1, N2, O1 and higher components had to be calculated, and one notes that Ice(P1)/Ice(M1)= 0.030 *4* compared with the theoretical values of 0.0135 *3* and 0.0154 *3* for M1 and E2, respectively. Mult.: M1:M2:M3:N3:O2:P1=15.3 *7*:3.0 *3*:1.0 *1*:0.51 *15*:0.21 *6*:0.46 *5*.
29.02 *5*	0.030 *6*	652.089	(1/2)$^-$	623.10	(1/2$^+$)	[E1]		3.42		α(L)=2.54 *4*; α(M)=0.663 *10* α(N)=0.177 *3*; α(O)=0.0404 *6*; α(P)=0.00542 *8*; α(Q)=0.0001288 *19*
32.639 *3*	0.21 *3*	504.448	5/2$^-$	471.810	3/2$^-$	M1+E2	0.124 *4*	220 *5*	45.0 *13*	ce(L)/(γ+ce)=0.741 *12*; ce(M)/(γ+ce)=0.188 *6* ce(N)/(γ+ce)=0.0515 *16*; ce(O)/(γ+ce)=0.0128 *4*; ce(P)/(γ+ce)=0.00233 *7*; ce(Q)/(γ+ce)=0.000116 *3*

γ(^{241}Am) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#b]	α[a]	$I_{(\gamma+ce)}$[c]	Comments
										α(L)=163 *4*; α(M)=41.4 *10* α(N)=11.4 *3*; α(O)=2.82 *6*; α(P)=0.513 *11*; α(Q)=0.0257 *4* Mult.: L1:L2:L3:M1:M2:M3:M4:M5:N1:N2:N3:N4:N5:O1:O2:O3:P1:=24.7 *13*:7.9 *4*: 4.9 *2*:5.6 *3*:1.50 *18*:0.94 *14*:9: ≤0.04: ≤0.03:1.71 *8*:0.47 *4*:0.28 *4*: ≤0.08: ≤0.08:0.39 *2*:0.16 *2*:0.08 *2*:0.12 *2*. I_γ: The calculated value from I(γ+ce) and α is 0.204 *9*. $I_{(\gamma+ce)}$: From sum of Ice and Iγ.
41.176 *3*	0.017 *4*	41.176	7/2⁻	0.0	5/2⁻	M1+E2	0.486 *23*	295 *17*		α(L)=216 *13*; α(M)=59 *4* α(N)=16.2 *10*; α(O)=3.90 *23*; α(P)=0.64 *4*; α(Q)=0.01151 *20* Mult.: L1:L2:L3:M1:M2:=0.90 *19*:1.76 *16*:1.20 *6*:0.16 *5*:0.42 *5*. $I_{(\gamma+ce)}$: From the measured Iγ, and the deduced α one gets I(γ+ce)=5.0 *12* compared with a feeding of the 41 level of ΣI(γ+ce)=6.5 *3*.
132.413 *7*	3.9 *2*	636.861	3/2⁻	504.448	5/2⁻	M1+E2	0.061 *+13−17*	12.94	45.0 *16*	ce(K)/(γ+ce)=0.728 *7*; ce(L)/(γ+ce)=0.151 *3*; ce(M)/(γ+ce)=0.0368 *7* ce(N)/(γ+ce)=0.01005 *20*; ce(O)/(γ+ce)=0.00253 *5*; ce(P)/(γ+ce)=0.000483 *10*; ce(Q)/(γ+ce)=3.06×10^{-5} *6* α(K)=10.15 *15*; α(L)=2.10 *3*; α(M)=0.512 *8* α(N)=0.1401 *20*; α(O)=0.0353 *5*; α(P)=0.00674 *10*; α(Q)=0.000427 *6* Mult.: K:L1:L2:L3:M1:M2:N1:N2:N3:O1:O23:P1=33.0 *16*:7.7 *4*:1.00 *7*:0.056 *11*: 1.85 *8*:0.27 *9*:0.56 *3*:0.082 *22*: ≤0.02:0.153 *14*: ≤0.02:0.054 *22*. δ: From L3/L1 and L3/L2. All other ratios give only upper limits, the largest being 0.20. $I_{(\gamma+ce)}$,δ,α: The adopted I(γ+ce)=45.0 *16* is from the sum of Ice and Iγ. The δ value gives α=12.94 which, along with the measured Iγ value of 3.9 *2*, gives I(γ+ce)=54 *3*. The difference between these two values of I(γ+ce) lies with Ice(K). From K/L=4.84 *10* one expects Ice(K)=42.4 *21*, compared with the experimental value of 33.0 *16*. Expressed another way, α(K)exp is 22% *6* lower than the theoretical value. See the authors′ comment on this discrepancy. From an intensity balance at the 504 level, one gets an upper limit on I(γ+ce)(132γ) of 47.4 *13*. This I(γ+ce), along with Iγ, gives an upper limit on α of 11.2 *6*, corresponding to δ≥0.53 *10*, a value inconsistent with those from the ce ratios (excluding the K shell), all of which are <0.2. The smaller than expected Ice(K) leads to consistency with the intensity balance, but at the same time leads to an α anomaly that needs to be investigated.

γ(^{241}Am) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#b]	α[a]	$I_{(\gamma+ce)}$[c]	Comments
147.67 *3*	0.0132 *12*	652.089	(1/2)$^-$	504.448	5/2$^-$	[E2]		3.08		α(K)=0.185 *3*; α(L)=2.10 *3*; α(M)=0.589 *9* α(N)=0.1629 *23*; α(O)=0.0390 *6*; α(P)=0.00631 *9*; α(Q)=3.40×10^{-5} *5* I_γ: From Ice(L2)=0.0170 *15* and α(L2)=1.292 *19*. The authors give Ice(L2)=0.027 *10* and Ice(L3)≤0.011. The evaluator has used the L2/L3 theory value for E2 of 1.85 *4* to deduce Ice(L2)≤0.020 and thus Ice(L2)=0.017 to 0.020. The evaluator adopts Ice(L2)=0.0185 *15* which, in the evaluators′ units, becomes 0.0170 *15*. Mult.: K:L1:L2:L3= ≤0.33: ≤0.01:0.027 *10*: ≤0.011.
151.4[@] *4*	≈0.02	623.10	(1/2$^+$)	471.810	3/2$^-$	[E1]		0.199		α(K)=0.1519 *24*; α(L)=0.0353 *6*; α(M)=0.00866 *14* α(N)=0.00234 *4*; α(O)=0.000572 *9*; α(P)=9.92×10^{-5} *16*; α(Q)=4.22×10^{-6} *7*
164.8[@] *2*	0.44 *9*	205.883	5/2$^+$	41.176	7/2$^-$	[E1]		0.1635		α(K)=0.1255 *18*; α(L)=0.0285 *4*; α(M)=0.00699 *10* α(N)=0.00189 *3*; α(O)=0.000463 *7*; α(P)=8.08×10^{-5} *12*; α(Q)=3.52×10^{-6} *5*
165.049 *8*	3.0 *2*	636.861	3/2$^-$	471.810	3/2$^-$	M1+E2	0.21 *3*	6.75 *12*	20.2 *8*	ce(K)/(γ+ce)=0.678 *7*; ce(L)/(γ+ce)=0.145 *3*; ce(M)/(γ+ce)=0.0355 *8* ce(N)/(γ+ce)=0.00972 *20*; ce(O)/(γ+ce)=0.00244 *5*; ce(P)/(γ+ce)=0.000463 *10*; ce(Q)/(γ+ce)=2.83×10^{-5} *7* α(K)=5.26 *10*; α(L)=1.122 *16*; α(M)=0.276 *4* α(N)=0.0754 *11*; α(O)=0.0189 *3*; α(P)=0.00359 *5*; α(Q)=0.000219 *4* Mult.: K:L1:L2:L3:M1:M2:N1:N2:O1:P1=14.0 *7*:2.95 *15*:0.49 *3*:0.068 *19*:0.75 *6*: 0.14 *6*:0.20 *2*:0.044 *9*:0.07 *2*: ≤0.04. $I_{(\gamma+ce)}$,α: I(γ+ce) is from a sum of Ice and Iγ. δ gives α=6.75 *12*, which, along with Iγ, gives I(γ+ce)=23.2 *16*, compared with the experimental sum of 20.2 *7*. Similarly as for the 132γ, α(K)exp(165γ) is smaller than the theoretical value, in this case by 15% *7*. See the authors′ comment on this discrepancy.
180.277 *8*	0.48 *4*	652.089	(1/2)$^-$	471.810	3/2$^-$	M1(+E2)	<0.25	5.31 *14*		α(K)=4.15 *14*; α(L)=0.868 *13*; α(M)=0.212 *4* α(N)=0.0581 *9*; α(O)=0.01460 *21*; α(P)=0.00278 *4*; α(Q)=0.000172 *6* Mult.: K:L1:M1=2.09 *11*:0.42 *2*:0.104 *15*.
205.879 *13*	2.70 *15*	205.883	5/2$^+$	0.0	5/2$^-$	E1		0.0980		α(K)=0.0761 *11*; α(L)=0.01647 *23*; α(M)=0.00402 *6* α(N)=0.001091 *16*; α(O)=0.000268 *4*; α(P)=4.75×10^{-5} *7*; α(Q)=2.19×10^{-6} *3* Mult.: K:L1::L2=22 *2*:0.031 *5*:0.015 *5*.

$^{241}_{95}Am_{146}$-5

γ(^{241}Am) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#b]	α[a]	$I_{(\gamma+ce)}$[c]	Comments
265.922 *12*	0.40 *4*	471.810	3/2$^-$	205.883	5/2$^+$	[E1][&]		0.0552	2.6 *2*	ce(K)/(γ+ce)=0.0410 *6*; ce(L)/(γ+ce)=0.00847 *12*; ce(M)/(γ+ce)=0.00206 *3* ce(N)/(γ+ce)=0.000560 *8*; ce(O)/(γ+ce)=0.0001380 *20*; ce(P)/(γ+ce)=2.48$\times10^{-5}$ *4*; ce(Q)/(γ+ce)=1.217$\times10^{-6}$ *17* α(K)=0.0433 *6*; α(L)=0.00894 *13*; α(M)=0.00218 *3* α(N)=0.000590 *9*; α(O)=0.0001456 *21*; α(P)=2.62$\times10^{-5}$ *4*; α(Q)=1.284$\times10^{-6}$ *18* Mult.: K:L1:L2:L3:M1:M2=1.74 *18*:0.35 *3*:0.15 *3*: ≤0.02:0.12 *2*:0.023 *14*. $I_{(\gamma+ce)}$: From sum of Ice and Iγ.
298.57 *5*	0.08 *2*	504.448	5/2$^-$	205.883	5/2$^+$	[E1][&]		0.0429	0.14 *4*	ce(K)/(γ+ce)=0.0324 *5*; ce(L)/(γ+ce)=0.00655 *10*; ce(M)/(γ+ce)=0.001594 *23* ce(N)/(γ+ce)=0.000433 *6*; ce(O)/(γ+ce)=0.0001068 *15*; ce(P)/(γ+ce)=1.93$\times10^{-5}$ *3*; ce(Q)/(γ+ce)=9.73$\times10^{-7}$ *14* α(K)=0.0338 *5*; α(L)=0.00684 *10*; α(M)=0.001662 *24* α(N)=0.000451 *7*; α(O)=0.0001114 *16*; α(P)=2.02$\times10^{-5}$ *3*; α(Q)=1.015$\times10^{-6}$ *15* $I_{(\gamma+ce)}$: From sum of Ice and Iγ.
410.8 *1*	0.087 *9*	504.448	5/2$^-$	93.65	9/2$^-$	[E2]		0.0910		α(K)=0.0452 *7*; α(L)=0.0335 *5*; α(M)=0.00905 *13* α(N)=0.00249 *4*; α(O)=0.000606 *9*; α(P)=0.0001044 *15*; α(Q)=2.31$\times10^{-6}$ *4*
417.24 *4*	0.66 *4*	623.10	(1/2$^+$)	205.883	5/2$^+$	E2		0.0874		α(K)=0.0440 *7*; α(L)=0.0318 *5*; α(M)=0.00857 *12* α(N)=0.00236 *4*; α(O)=0.000573 *8*; α(P)=9.89$\times10^{-5}$ *14*; α(Q)=2.23$\times10^{-6}$ *4* Mult.: Ice(K)=0.040 *16*. α(K)exp=0.056 *23* gives mult=E2(+M1) with δ>3.1. The placement in the level scheme requires ΔJ=2.
430 *1*	≈0.04	636.861	3/2$^-$	205.883	5/2$^+$	[E1]		0.0200		α(K)=0.01598 *24*; α(L)=0.00306 *5*; α(M)=0.000739 *11* α(N)=0.000201 *3*; α(O)=4.99$\times10^{-5}$ *8*; α(P)=9.17$\times10^{-6}$ *14*; α(Q)=4.97$\times10^{-7}$ *8*
430.634 *20*	4.10 *20*	471.810	3/2$^-$	41.176	7/2$^-$	E2		0.0805		α(K)=0.0416 *6*; α(L)=0.0285 *4*; α(M)=0.00767 *11* α(N)=0.00211 *3*; α(O)=0.000514 *8*; α(P)=8.88$\times10^{-5}$ *13*; α(Q)=2.08$\times10^{-6}$ *3* Mult.: K:L1=0.208 *13*:0.034 *8*. α(K)exp=0.047 *4*.
447.35 *4*	0.120 *15*	653.23	3/2$^+$	205.883	5/2$^+$	M1+E2	<0.77	0.37 *7*		α(K)=0.29 *6*; α(L)=0.061 *9*; α(M)=0.0149 *19* α(N)=0.0041 *6*; α(O)=0.00102 *14*; α(P)=0.00019 *3*; α(Q)=1.17$\times10^{-5}$ *23* Mult.: α(K)exp=0.30 *8*.
463.273 *20*	1.24 *8*	504.448	5/2$^-$	41.176	7/2$^-$	M1+E2[&]		0.23 *17*	1.52 *13*	ce(K)/(γ+ce)=0.14 *10*; ce(L)/(γ+ce)=0.034 *17*; ce(M)/(γ+ce)=0.009 *4* ce(N)/(γ+ce)=0.0024 *11*; ce(O)/(γ+ce)=0.0006 *3*;

γ(^{241}Am) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#b]	α[a]	$I_{(\gamma+ce)}$[c]	Comments
										ce(P)/(γ+ce)=0.00011 *6*; ce(Q)/(γ+ce)=6.E−6 *5* α(K)=0.18 *14*; α(L)=0.042 *21*; α(M)=0.011 *5* α(N)=0.0029 *13*; α(O)=0.0007 *4*; α(P)=0.00013 *7*; α(Q)=7.E−6 *6* $I_{(\gamma+ce)}$: From sum of Ice and Iγ. Mult.: K:L1=0.242 *18*:0.035 *8*.
464.36[@] *8*	0.086 *14*	670.24	3/2$^+$	205.883	5/2$^+$	M1+E2	1.5 *+17−5*	0.17 *8*		α(K)=0.12 *6*; α(L)=0.034 *9*; α(M)=0.0088 *21* α(N)=0.0024 *6*; α(O)=0.00059 *15*; α(P)=0.00011 *3*; α(Q)=5.1×10^{-6} *24* Mult.: α(K)exp=0.12 *6*.
471.805 *20*	72 *3*	471.810	3/2$^-$	0.0	5/2$^-$	M1+E2[&]		0.22 *16*	87 *5*	ce(K)/(γ+ce)=0.14 *10*; ce(L)/(γ+ce)=0.033 *16*; ce(M)/(γ+ce)=0.008 *4* ce(N)/(γ+ce)=0.0023 *11*; ce(O)/(γ+ce)=0.0006 *3*; ce(P)/(γ+ce)=0.00010 *6*; ce(Q)/(γ+ce)=6.E−6 *5* α(K)=0.17 *14*; α(L)=0.040 *20*; α(M)=0.010 *5* α(N)=0.0028 *12*; α(O)=0.0007 *4*; α(P)=0.00013 *7*; α(Q)=7.E−6 *6* Mult.: K:L1:L2:L3:M1:M2:N1:N2:N3:O1=13.1 *4*:1.91 *9*:0.38 *2*: ≤0.08: 0.46 *3*:0.14 *3*:0.135 *12*: ≤0.005:0.052 *15*. $I_{(\gamma+ce)}$: From sum of Ice and Iγ.
504.45 *3*	0.60 *4*	504.448	5/2$^-$	0.0	5/2$^-$	M1+E2[&]		0.18 *13*	0.67 *4*	ce(K)/(γ+ce)=0.12 *9*; ce(L)/(γ+ce)=0.028 *14*; ce(M)/(γ+ce)=0.007 *4* ce(N)/(γ+ce)=0.0019 *9*; ce(O)/(γ+ce)=0.00048 *23*; ce(P)/(γ+ce)=9.E−5 *5*; ce(Q)/(γ+ce)=5.E−6 *4* α(K)=0.14 *11*; α(L)=0.033 *17*; α(M)=0.008 *4* α(N)=0.0023 *11*; α(O)=0.0006 *3*; α(P)=0.00011 *6*; α(Q)=6.E−6 *5* $I_{(\gamma+ce)}$: From sum of Ice and Iγ.
595.8 *3*	0.015 *3*	636.861	3/2$^-$	41.176	7/2$^-$	[E2]		0.0373		α(K)=0.0236 *4*; α(L)=0.01010 *15*; α(M)=0.00265 *4* α(N)=0.000728 *11*; α(O)=0.000178 *3*; α(P)=3.17×10^{-5} *5*; α(Q)=1.050×10^{-6} *15*
623.1 *3*	0.012 *3*	623.10	(1/2$^+$)	0.0	5/2$^-$	[M2]		0.433		α(K)=0.322 *5*; α(L)=0.0821 *12*; α(M)=0.0207 *3* α(N)=0.00571 *8*; α(O)=0.001435 *21*; α(P)=0.000272 *4*; α(Q)=1.650×10^{-5} *24*
636.88 *3*	1.55 *11*	636.861	3/2$^-$	0.0	5/2$^-$	M1+E2	0.59 *18*	0.133 *16*		α(K)=0.104 *13*; α(L)=0.0217 *21*; α(M)=0.0053 *5* α(N)=0.00145 *14*; α(O)=0.00036 *4*; α(P)=6.9×10^{-5} *7*; α(Q)=4.2×10^{-6} *5* δ: From α(K)exp. α(L1)exp gives δ=0.60 *46*. Mult.: K:L1=0.176 *18*:0.030 *8*.
652.1 *4*	0.04 *1*	652.089	(1/2)$^-$	0.0	5/2$^-$	[E2]		0.0306		α(K)=0.0201 *3*; α(L)=0.00777 *11*; α(M)=0.00202 *3* α(N)=0.000555 *8*; α(O)=0.0001364 *20*; α(P)=2.44×10^{-5} *4*; α(Q)=8.76×10^{-7} *13*

$\gamma(^{241}$Am) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[a]	Comments
653.2 *2*	0.15 *1*	653.23	3/2$^+$	0.0	5/2$^-$	[E1]	0.00898	α(K)=0.00724 *11*; α(L)=0.001313 *19*; α(M)=0.000316 *5* α(N)=8.57×10^{-5} *12*; α(O)=2.14×10^{-5} *3*; α(P)=3.99×10^{-6} *6*; α(Q)=2.32×10^{-7} *4*
670.2 *2*	0.58 *4*	670.24	3/2$^+$	0.0	5/2$^-$	[E1]	0.00856	α(K)=0.00691 *10*; α(L)=0.001250 *18*; α(M)=0.000300 *5* α(N)=8.16×10^{-5} *12*; α(O)=2.04×10^{-5} *3*; α(P)=3.80×10^{-6} *6*; α(Q)=2.22×10^{-7} *4*

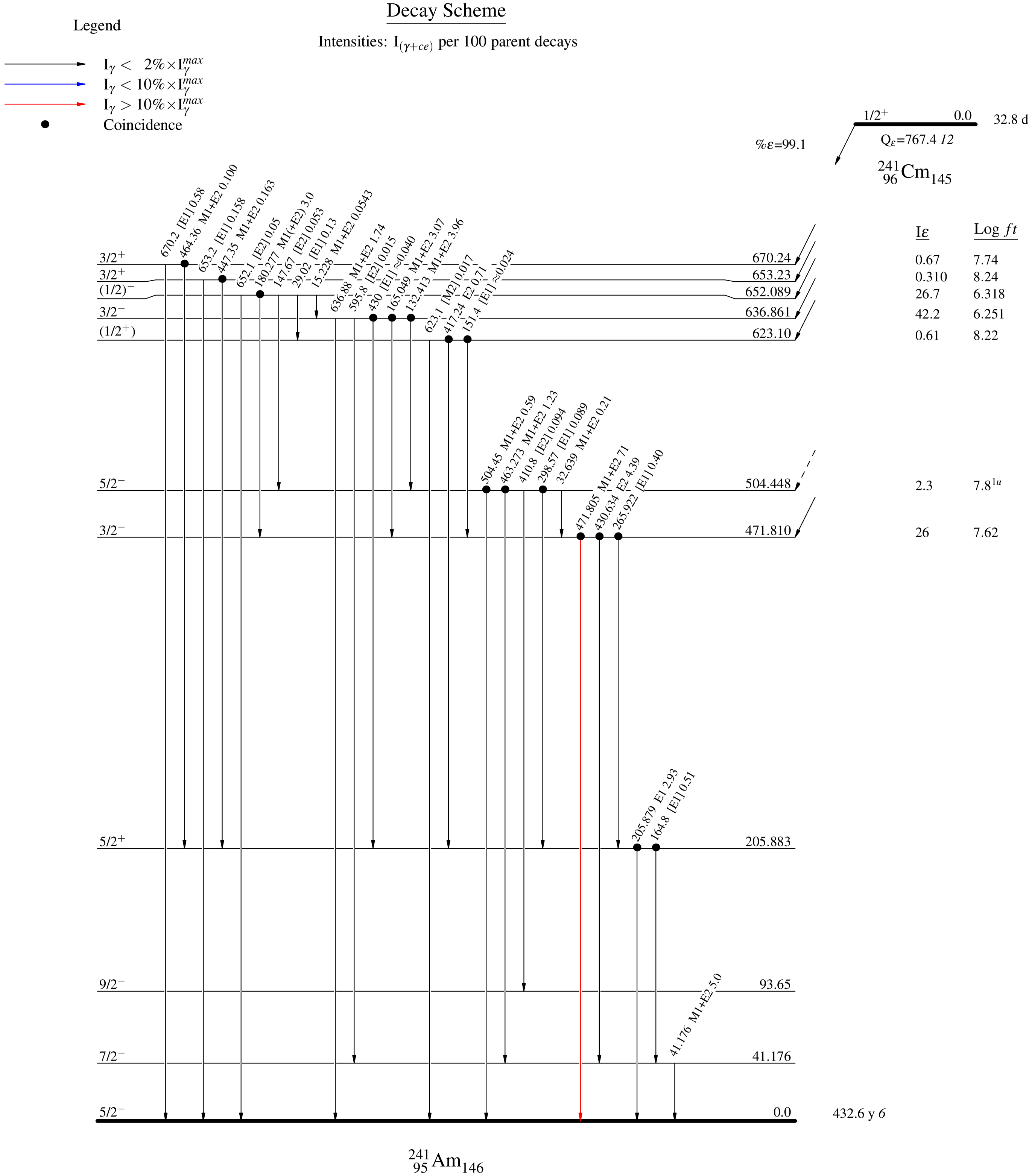
† From 1974Po08.
‡ From 1974Po08, except where calculated from ce data as noted.
\# From subshell ratios and α data of 1974Po08 as reanalyzed by the evaluator using the "frozen orbital hole" internal conversion coefficient calculations of 2008Ki07. The authors′ Ice data have been normalized to the Iγ data by requiring Iγ for the 132.4, 165.0, and 205.9 transitions to equal the Iγ calculated from the ce data. The 132.4 and 165.0 keV K lines were not used in the normalization due to apparent disparities in the α (see author′s explanation in 1974Po08. Multi-polarities and mixing ratios for these transitions have been deduced from subshell ratios. The ce data given below are the authors′ values from their Table II. In their analysis, these are intensities per 100 ε decays, as are the Iγ values from their Table I, adopted here. The evaluator′s reanalysis requires that the ce intensities be lowered by the factor 1/1.09 in order to remain as intensities per 100 decays. Where the ce data have been used to obtain α values, Iγ values, or summed to obtain total intensities, they have been lowered by this factor.
@ Transition observed only in $\gamma\gamma$ coincidence.
& Probable anomalous conversion. See 1974Po08 for discussion and for calculation of penetration effects.
a Additional information 1.
b If No value given it was assumed δ=1.00 for E2/M1.
c For absolute intensity per 100 decays, multiply by 0.990 *1*.

$^{241}_{95}$Am$_{146}$-8

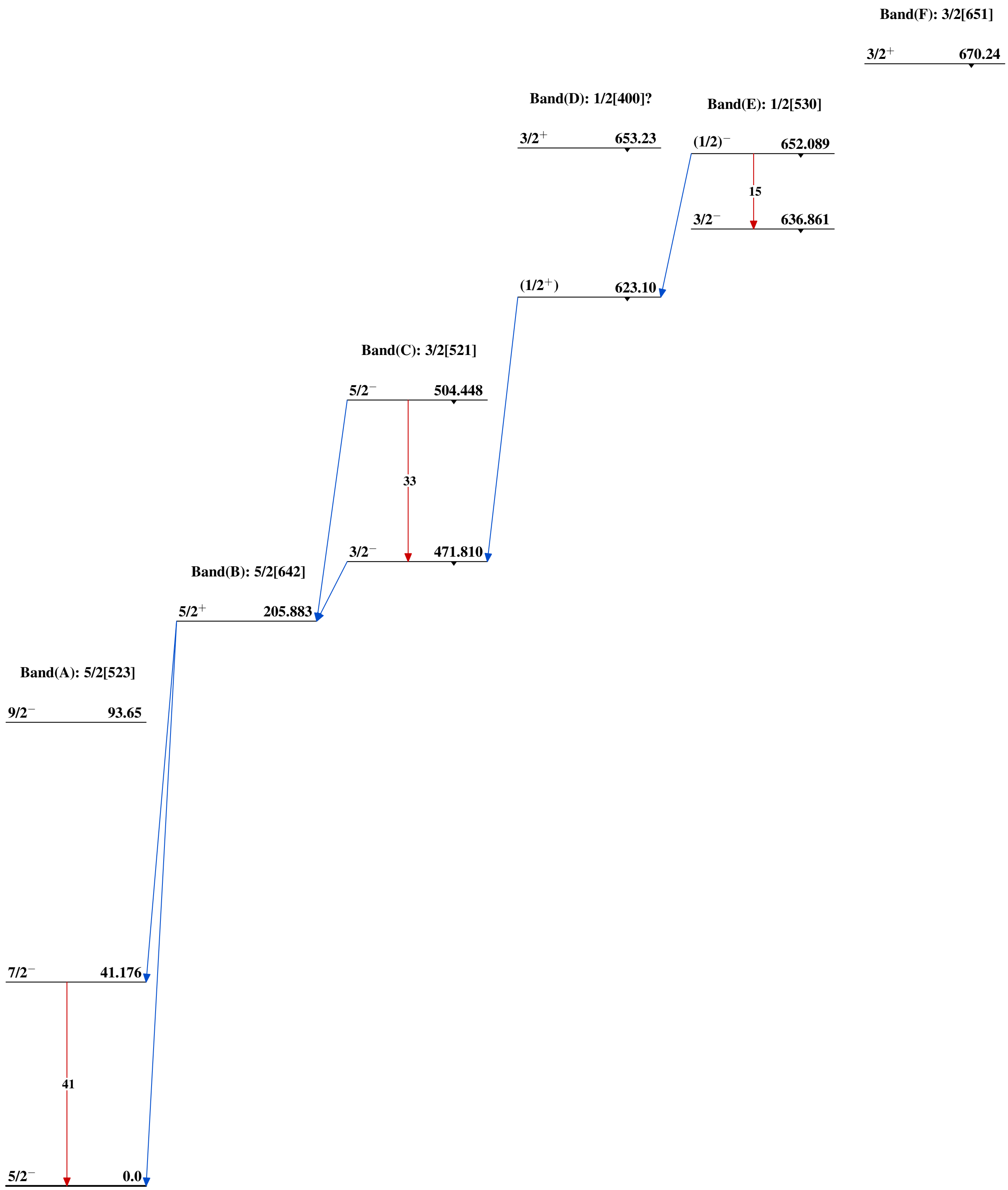
^{241}Cm ε decay 1974Po08

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



^{241}Cm ε decay 1974Po08



$^{241}_{95}Am_{146}$