^{166}Tm ε decay 1989Ad11

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 1103 (2008)	1-Mar-2008

Parent: ^{166}Tm: E=0.0; $J^\pi=2^+$; $T_{1/2}$=7.70 h *3*; Q(ε)=3038 *12*; %ε+%β^+ decay=100.0

Data are from 1989Ad11, unless otherwise noted. Other measurements: 1995KrZX (and 1996KrZW), 1993AdZY, 1993BaZS, 1980Pe15, 1979Ad06, 1974Ar28, 1961Ha23, 1961Gr33, 1966Zy01, 1973De22, 1970Re16, 1967Bu14, 1968Mi13, 1959Ba12, 1959Bo57, 1959Br17, 1960Ja08, 1960Wi12, 1961Bo15, 1962Gr29, 1964Pr02, 1969Ar23.

^{166}Er Levels

E(level)†	J^π‡	E(level)†	J^π‡	E(level)†	J^π‡	E(level)†	J^π‡
0.0	0^+	1830.42 *4*	1^-	2172.757 *20*	3^+	2464.52 *10*	1^+
80.581 *11*	2^+	1865.17 *5*		2212.97 *12*		2475.40 *4*	$(1,2^+)$
264.985 *13*	4^+	1894.364 *23*	$2^+,3^+,4^+$	2215.972 *16*	$2^-,3^-$	2542.88 *5*	
545.444 *16*	6^+	1917.767 *13*	3^-	2243.099 *23*	3^-	2586.07 *12*	$(3,4)^+$
785.917 *11*	2^+	1938.273 *15*	$(3)^+$	2260.66 *3*	$2^{(+)},3$	2600.64 *4*	1^+
859.399 *12*	3^+	1969.71 *17*	(2,3,4)	2264.31 *6*	$(1,2^+)$	2613.50 *17*	
956.240 *12*	4^+	1978.432 *16*	$(4)^+$	2273.01 *3*	3^-	2619.6 *6*	(2^+)
1075.281 *12*	5^+	1985.644 *16*	3^-	2282.68 *5*	$2^{(+)},3$	2624.8 *3*	(1,2)
1458.164 *14*	$(2)^-$	2001.874 *16*	$(3)^-$	2290.997 *25*	$(3)^+$	2628.5 *3*	(1,2)
1513.760 *14*	3^-	2021.359 *16*	$(2,3)^-$	2328.69 *9*	(1,2)	2632.66 *17*	$(3,4)^+$
1528.404 *14*	2^+	2022.62 *12*	(4^+)	2352.91 *8*	$2^{(+)},3$	2671.98 *17*	
1572.206 *14*	$(4)^-$	2046.88 *4*	$2^+,3^+$	2377.77 *5*	1^+	2679.05 *18*	1^+
1596.263 *17*	$(4)^-$	2076.305 *22*	(3^-)	2382.27 *4*	$(3)^+$	2729.094 *20*	$(3,4)^+$
1662.32 *6*	1^-	2101.6 *3*	(4^+)	2393.14 *3*	$2^+,3^+$	2783.69 *19*	1^+
1678.77 *3*	$(4)^+$	2117.8 *8*	$(2^+,3,4^+)$	2413.68 *8*	(2,3,4)	2797.5 *4*	(1,2)
1703.057 *20*	$(2,3,4)^+$	2132.951 *12*	3^+	2435.11 *10*	$(3,4)^+$	2811.99 *11*	1
1813.2 *3*	$1^{(+)}$	2160.121 *14*	3^+	2444.16 *24*		2858.17 *18*	(1,2)

† From least-squares fit to Eγ, omitting the 646.8γ from the 2160 level and all three placements for the 1216.173γ because these transitions have Eγ values that deviate from the expected value by At least 5σ.

‡ From Adopted Levels.

ε,β^+ radiations

E(decay)	E(level)	Iε†‡	Log *ft*	I($\varepsilon+\beta^+$)‡	Comments
(180 *12*)	2858.17	0.0031 *4*	8.28 *10*	0.0031 *4*	εK=0.724 *13*; εL=0.209 *10*; εM+=0.067 *4*
(226 *12*)	2811.99	<0.025	>7.6	<0.025	εK=0.756 *7*; εL=0.186 *5*; εM+=0.0588 *18*
(241 *12*)	2797.5	0.0035 *5*	8.55 *9*	0.0035 *5*	εK=0.762 *6*; εL=0.181 *4*; εM+=0.0570 *15*
(254 *12*)	2783.69	0.0121 *17*	8.07 *8*	0.0121 *17*	εK=0.768 *5*; εL=0.177 *4*; εM+=0.0555 *13*
(309 *12*)	2729.094	0.358 *25*	6.81 *5*	0.358 *25*	εK=0.783 *3*; εL=0.1654 *21*; εM+=0.0514 *8*
(359 *12*)	2679.05	0.070 *8*	7.67 *6*	0.070 *8*	εK=0.7924 *20*; εL=0.1586 *15*; εM+=0.0489 *6*
(366 *12*)	2671.98	0.0075 *10*	8.66 *7*	0.0075 *10*	εK=0.7935 *19*; εL=0.1579 *14*; εM+=0.0487 *5*
(405 *12*)	2632.66	0.019 *6*	8.35 *14*	0.019 *6*	εK=0.7986 *15*; εL=0.1541 *11*; εM+=0.0473 *4*
(410 *12*)	2628.5	0.0056 *8*	8.90 *7*	0.0056 *8*	εK=0.7991 *14*; εL=0.1537 *11*; εM+=0.0472 *4*
(413 *12*)	2624.8	0.0057 *7*	8.90 *6*	0.0057 *7*	εK=0.7995 *14*; εL=0.1534 *10*; εM+=0.0471 *4*
(418 *12*)	2619.6	0.008 *3*	8.76 *17*	0.008 *3*	εK=0.8001 *14*; εL=0.1530 *10*; εM+=0.0469 *4*
(425 *12*)	2613.50	0.0051 *6*	8.97 *6*	0.0051 *6*	εK=0.8007 *13*; εL=0.1526 *10*; εM+=0.0467 *4*
(437 *12*)	2600.64	0.12 *6*	7.63 *22*	0.12 *6*	εK=0.8020 *12*; εL=0.1516 *9*; εM+=0.0464 *4*
(452 *12*)	2586.07	0.023 *14*	8.4 *3*	0.023 *14*	εK=0.8033 *11*; εL=0.1506 *9*; εM+=0.0460 *3*
(495 *12*)	2542.88	0.077 *9*	7.94 *6*	0.077 *9*	εK=0.8068 *9*; εL=0.1481 *7*; εM+=0.04513 *24*
(563 *12*)	2475.40	0.082 *7*	8.04 *5*	0.082 *7*	εK=0.8110 *7*; εL=0.1449 *5*; εM+=0.04402 *18*
(573 *12*)	2464.52	0.037 *3*	8.40 *4*	0.037 *3*	εK=0.8116 *7*; εL=0.1445 *5*; εM+=0.04387 *17*

Continued on next page (footnotes at end of table)

^{166}Tm ε decay 1989Ad11 (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	Iβ^+ ‡	Iε†‡	Log *ft*	I(ε+β^+)‡	Comments
(594 *12*)	2444.16		0.024 *5*	8.62 *10*	0.024 *5*	εK=0.8126 *6*; εL=0.1438 *5*; εM+=0.04360 *16*
(603 *12*)	2435.11		0.090 *14*	8.06 *7*	0.090 *14*	εK=0.8131 *6*; εL=0.1435 *5*; εM+=0.04349 *15*
(624 *12*)	2413.68		0.058 *8*	8.29 *7*	0.058 *8*	εK=0.8140 *6*; εL=0.1428 *4*; εM+=0.04324 *14*
(645 *12*)	2393.14		0.250 *19*	7.68 *4*	0.250 *19*	εK=0.8149 *5*; εL=0.1421 *4*; εM+=0.04301 *13*
(656 *12*)	2382.27		0.138 *11*	7.96 *4*	0.138 *11*	εK=0.8153 *5*; εL=0.1418 *4*; εM+=0.04290 *13*
(660 *12*)	2377.77		0.195 *12*	7.81 *4*	0.195 *12*	εK=0.8155 *5*; εL=0.1417 *4*; εM+=0.04286 *13*
(685 *12*)	2352.91		0.025 *4*	8.74 *8*	0.025 *4*	εK=0.8164 *5*; εL=0.1410 *4*; εM+=0.04262 *12*
(709 *12*)	2328.69		0.0066 *7*	9.35 *5*	0.0066 *7*	εK=0.8172 *4*; εL=0.1404 *3*; εM+=0.04240 *11*
(747 *12*)	2290.997		1.36 *11*	7.08 *4*	1.36 *11*	εK=0.8183 *4*; εL=0.1396 *3*; εM+=0.04210 *10*
(755 *12*)	2282.68		0.086 *7*	8.29 *4*	0.086 *7*	εK=0.8186 *4*; εL=0.1394 *3*; εM+=0.04204 *9*
(765 *12*)	2273.01		0.46 *3*	7.58 *4*	0.46 *3*	εK=0.8188 *4*; εL=0.13920 *25*; εM+=0.04197 *9*
(774 *12*)	2264.31		0.0296 *23*	8.78 *4*	0.0296 *23*	εK=0.8191 *4*; εL=0.13902 *24*; εM+=0.04191 *9*
(777 *12*)	2260.66		0.188 *13*	7.98 *4*	0.188 *13*	εK=0.8192 *4*; εL=0.13895 *24*; εM+=0.04188 *9*
(795 *12*)	2243.099		0.324 *24*	7.76 *4*	0.324 *24*	εK=0.8196 *3*; εL=0.13862 *23*; εM+=0.04176 *8*
(822 *12*)	2215.972		3.48 *21*	6.76 *3*	3.48 *21*	εK=0.8203 *3*; εL=0.13813 *21*; εM+=0.04159 *8*
(825 *12*)	2212.97		0.054 *12*	8.58 *10*	0.054 *12*	εK=0.8203 *3*; εL=0.13808 *21*; εM+=0.04157 *8*
(865 *12*)	2172.757		2.35 *18*	6.98 *4*	2.35 *18*	εK=0.8212 *3*; εL=0.13742 *19*; εM+=0.04134 *7*
(878 *12*)	2160.121		16.2 *11*	6.16 *4*	16.2 *11*	εK=0.8215 *3*; εL=0.13723 *19*; εM+=0.04127 *7*
(905 *12*)	2132.951		59 *4*	5.62 *4*	59 *4*	εK=0.8220 *3*; εL=0.13684 *18*; εM+=0.04113 *6*
(920 *12*)	2117.8		0.067 *13*	8.58 *9*	0.067 *13*	εK=0.8223 *3*; εL=0.13663 *17*; εM+=0.04106 *6*
(936 *12*)	2101.6		0.024 *3*	9.05 *6*	0.024 *3*	εK=0.8226 *3*; εL=0.13641 *16*; εM+=0.04098 *6*
(962 *12*)	2076.305		0.222 *15*	8.10 *4*	0.222 *15*	εK=0.8230 *2*; εL=0.13609 *15*; εM+=0.04087 *6*
(991 *12*)	2046.88		0.147 *10*	8.31 *4*	0.147 *10*	εK=0.8235 *2*; εL=0.13574 *14*; εM+=0.04074 *5*
(1015 *12*)	2022.62		0.061 *7*	8.71 *6*	0.061 *7*	εK=0.8239 *2*; εL=0.1355 *2*; εM+=0.04064 *5*
(1017 *12*)	2021.359		2.56 *16*	7.09 *3*	2.56 *16*	εK=0.8239 *2*; εL=0.1355 *2*; εM+=0.04064 *5*
(1036 *12*)	2001.874		0.53 *14*	7.79 *12*	0.53 *14*	εK=0.8242 *2*; εL=0.1352 *2*; εM+=0.04056 *5*
(1068 *12*)	1969.71		0.059 *11*	8.78 *9*	0.059 *11*	εK=0.8246 *2*; εL=0.1349 *2*; εM+=0.04045 *5*
(1100 *12*)	1938.273		0.99 *8*	7.58 *4*	0.99 *8*	εK=0.8250 *2*; εL=0.1346 *2*; εM+=0.04034 *4*
(1144 *12*)	1894.364		≤0.027	≥9.2	≤0.027	εK=0.8256 *2*; εL=0.1342 *1*; εM+=0.04020 *4*
(1173 *12*)	1865.17		0.093 *8*	8.66 *4*	0.093 *8*	εK=0.8259 *2*; εL=0.1340 *1*; εM+=0.04012 *4*
(1208 *12*)	1830.42		0.016 *5*	9.45 *14*	0.016 *5*	εK=0.8262 *2*; εL=0.1337 *1*; εM+=0.04002 *4*
(1225 *12*)	1813.2		0.059 *9*	8.90 *7*	0.059 *9*	εK=0.8264 *2*; εL=0.13358 *9*; εM+=0.03997 *4*
(1335 *12*)	1703.057		0.375 *25*	8.17 *3*	0.375 *25*	εK=0.8272; εL=0.13280 *8*; εM+=0.03970 *3*
(1359 *12*)	1678.77		0.012 *6*	9.69 *22*	0.012 *6*	εK=0.8273; εL=0.13264 *8*; εM+=0.03965 *3*
(1376 *12*)	1662.32		0.045 *13*	9.12 *13*	0.045 *13*	εK=0.8274; εL=0.13253 *8*; εM+=0.03961 *3*
(1442 *12*)	1596.263		0.040 *11*	10.09[1u] *12*	0.040 *11*	εK=0.8164 *2*; εL=0.14089 *16*; εM+=0.04262 *6*
(1466 *12*)	1572.206		0.052 *19*	10.00[1u] *16*	0.052 *19*	εK=0.8167 *2*; εL=0.14059 *15*; εM+=0.04251 *6*
(1510 *12*)	1528.404	0.00191 *24*	1.03 *7*	7.85 *3*	1.03 *7*	av Eβ=234.8 *54*; εK=0.8272; εL=0.13165 *9*; εM+=0.03931 *3*
(1524 *12*)	1513.760	0.00025 *19*	0.12 *9*	8.8 *4*	0.12 *9*	av Eβ=241.3 *54*; εK=0.8271 *1*; εL=0.13155 *9*; εM+=0.03927 *3*
(1580 *12*)	1458.164	0.0014 *6*	0.45 *18*	8.25 *18*	0.45 *18*	av Eβ=265.7 *53*; εK=0.8265 *2*; εL=0.13116 *9*; εM+=0.03914 *3*
(2179 *12*)	859.399	0.05 *3*	1.1 *6*	8.16 *24*	1.1 *6*	av Eβ=529.0 *54*; εK=0.7952 *13*; εL=0.12403 *22*; εM+=0.03692 *7*
(2252 *12*)	785.917	0.075 *22*	1.3 *4*	8.09 *13*	1.4 *4*	av Eβ=561.5 *53*; εK=0.7874 *14*; εL=0.12263 *25*; εM+=0.03649 *8*
(2957 *12*)	80.581	1.0 *10*	4 *4*	7.9 *5*	5 *5*	av Eβ=874.9 *54*; εK=0.669 *3*; εL=0.1030 *4*; εM+=0.03061 *13* E(decay): Eβ+=1940 *20* (1961Gr33); =1928 *20* (1961Zy02); =1936 *20* (1963Pr13).

† From intensity balance, unless otherwise noted.

‡ Absolute intensity per 100 decays.

γ(^{166}Er)

Iγ normalization: The basis of the intensity normalization is that ε+β$^+$ feeding to the ground state of ^{166}Er is not expected (ΔJ=2, Δπ=No), so Σ (I(γ+ce) to g.s.)=100%.

γγ-coin: 1960Wi12, 1961Bo15, 1966Zy01, 1968Mi13, 1979Ad06.

x-rays: (1980VyZZ) (Iγ relative to Iγ(778.8γ)=100)

Energy	Iγ	Identification
48.221	142.5 28	$K\alpha_2$ x ray
49.128	252.0 40	$K\alpha_1$ x ray
55.6	80.2 15	$K\beta_1'$ x ray
57.1	21.0 4	$K\beta_2'$ x ray

1973De22 report, for equilibrium source (^{166}Yb+^{166}Tm+^{166}Er):
I(Tm K x ray):I(82.3γ, ^{166}Tm):I(Er K x ray):I(80.6γ, ^{166}Er):I(785.9γ, ^{166}Er)=
868 21:100:805 32:90.2 9:73 4.

E_γ [†]	I_γ [†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [‡]	α [d]	Comments
73.45 2	≤0.5	859.399	3^+	785.917	2^+	M1	6.92	α(K)=5.80 9; α(L)=0.876 13; α(M)=0.194 3; α(N+..)=0.0522 8 α(N)=0.0453 7; α(O)=0.00655 10; α(P)=0.000360 5 Mult.: from L1:L2:L3=10 3:70 7:50 5. E_γ,I_γ: from 1979Ad06.
80.585 15	60.4 32	80.581	2^+	0.0	0^+	E2	6.78	α(K)=1.671 24; α(L)=3.91 6; α(M)=0.953 14; α(N+..)=0.241 4 α(N)=0.215 3; α(O)=0.0251 4; α(P)=7.29×10^{-5} 11 %I(80.6γ)=11.5 3 assuming adopted normalization. Mult.: from L1:L2:L3=2270 115:26700 1400:27500 1400 and α(K)exp=2.2 6; (K:L:M=0.40 4:1:0.32 3 (1966Zy01)).
84.11 2	0.19 5	2001.874	$(3)^-$	1917.767	3^-	M1	4.68	α(K)=3.92 6; α(L)=0.591 9; α(M)=0.1311 19; α(N+..)=0.0352 5 α(N)=0.0306 5; α(O)=0.00442 7; α(P)=0.000243 4 Mult.: from L1:L2:L3=110 11:10 1:2.5. α(K)exp=21 9 is not consistent with M1; probably Iγ or Ice contained a typographical error. E_γ,I_γ: from 1979Ad06; not reported In 1989Ad11.
86.84		1917.767	3^-	1830.42	1^-	E2	5.05	α(K)=1.458 21; α(L)=2.75 4; α(M)=0.671 10; α(N+..)=0.1694 24 α(N)=0.1516 22; α(O)=0.01770 25; α(P)=6.18×10^{-5} 9 E_γ: from 1993BaZS. Mult.: from L2/L3≈1 (1993BaZS).
96.85 5	0.065 3	956.240	4^+	859.399	3^+	E2	3.32	α(K)=1.157 17; α(L)=1.658 24; α(M)=0.403 6; α(N+..)=0.1019 15 α(N)=0.0912 13; α(O)=0.01069 16; α(P)=4.82×10^{-5} 7 Mult.: from L1:L2:L3=3.1 4:19 2:17 2 and α(K)exp=2.3 10.
112.7 [g]		2273.01	3^-	2160.121	3^+			E_γ: from 1993BaZS. Mult.: M1+E2 from L1/L2=0.25, L2/L3=1.3 (1993BaZS). However, level scheme requires E1. consequently, placement is shown As uncertain here and transition is omitted from Adopted Gammas.

$^{166}_{68}$Er$_{98}$-3

γ(^{166}Er) (continued)

E_γ[†]	I_γ[†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ	α[d]	Comments
114.09		1572.206	(4)$^-$	1458.164	(2)$^-$	E2		1.80	α(K)=0.778 *11*; α(L)=0.783 *11*; α(M)=0.190 *3*; α(N+..)=0.0481 *7* α(N)=0.0430 *6*; α(O)=0.00508 *8*; α(P)=3.26×10^{-5} *5* E_γ: from 1993BaZS. Mult.: from L1/L2≈1 (1993BaZS).
118.18 *3*	0.16 *5*	2290.997	(3)$^+$	2172.757	3$^+$	[M1]		1.765	α(K)=1.481 *21*; α(L)=0.222 *4*; α(M)=0.0492 *7*; α(N+..)=0.01321 *19* α(N)=0.01147 *16*; α(O)=0.001657 *24*; α(P)=9.13×10^{-5} *13*
(119.041 *3*)	0.0173 *5*	1075.281	5$^+$	956.240	4$^+$	(M1+E2)	+1.94 *+23−21*	1.579 *24*	α(K)=0.86 *4*; α(L)=0.556 *19*; α(M)=0.134 *5*; α(N+..)=0.0341 *12* α(N)=0.0304 *11*; α(O)=0.00366 *12*; α(P)=4.2×10^{-5} *3* E_γ,Mult.,δ: from Adopted Gammas. I_γ: from I(810γ) and adopted branching.
130.90 *20*	2.70 *25*	2132.951	3$^+$	2001.874	(3)$^-$	E1		0.1590	α(K)=0.1328 *20*; α(L)=0.0205 *3*; α(M)=0.00453 *7*; α(N+..)=0.001188 *18* α(N)=0.001040 *16*; α(O)=0.0001414 *21*; α(P)=6.22×10^{-6} *9* Mult.: from L1:L2:L3=14 *2*:2.8 *3*:3.0 *3* and α(K)exp=0.20 *4*.
139.64 *4*	0.066 *4*	2215.972	2$^-$,3$^-$	2076.305	(3$^-$)				
143.2 *6*	0.013 *5*	2729.094	(3,4)$^+$	2586.07	(3,4)$^+$				
147.301 *20*	1.79 *7*	2132.951	3$^+$	1985.644	3$^-$	E1		0.1162	α(K)=0.0973 *14*; α(L)=0.01482 *21*; α(M)=0.00328 *5*; α(N+..)=0.000861 *12* α(N)=0.000753 *11*; α(O)=0.0001029 *15*; α(P)=4.63×10^{-6} *7* Mult.: from L1:L2:L3=2.5 *3*:0.5 *1*:0.6 *1* and α(K)exp=0.083 *20*.
154.508 *25*	1.08 *9*	2132.951	3$^+$	1978.432	(4)$^+$	M1+E2	0.75 *25*	0.75 *4*	α(K)=0.57 *6*; α(L)=0.140 *17*; α(M)=0.032 *5*; α(N+..)=0.0085 *11* α(N)=0.0074 *10*; α(O)=0.00098 *10*; α(P)=3.3×10^{-5} *5* Mult.: from L1:L2:L3=14 *2*:2.7 *3*:1.4 *2* and α(K)exp=0.54 *11*. δ: from Adopted Gammas.
158.269 *25*	0.186 *9*	2160.121	3$^+$	2001.874	(3)$^-$	E1		0.0961	α(K)=0.0805 *12*; α(L)=0.01218 *17*; α(M)=0.00269 *4*; α(N+..)=0.000708 *10* α(N)=0.000619 *9*; α(O)=8.49×10^{-5} *12*; α(P)=3.87×10^{-6} *6* Mult.: from α(K)exp=0.13 *6*.
[x]163.21 *10*	0.030 *4*								
166.26[e] *20*	0.020[e] *8*	2212.97		2046.88	2$^+$,3$^+$				
166.26[e] *20*	0.020[e] *8*	2382.27	(3)$^+$	2215.972	2$^-$,3$^-$				
170.325 *16*	0.390 *20*	956.240	4$^+$	785.917	2$^+$	E2		0.433	α(K)=0.258 *4*; α(L)=0.1347 *19*; α(M)=0.0323 *5*;

$^{166}_{68}$Er$_{98}$-4

γ(^{166}Er) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	δ	α [d]	Comments
									α(N+..)=0.00824 12 α(N)=0.00734 11; α(O)=0.000893 13; α(P)=1.169×10^{-5} 17 Mult.: from L1:L2:L3=2.5 3:6.7 7:5.9 6 and α(K)exp=0.30 11.
184.405 25	85.0 18	264.985	4$^+$	80.581	2$^+$	E2		0.331	α(K)=0.205 3; α(L)=0.0964 14; α(M)=0.0230 4; α(N+..)=0.00590 9 α(N)=0.00524 8; α(O)=0.000642 9; α(P)=9.48×10^{-6} 14 Mult.: from L1:L2:L3=330 20:580 30:500 25 and α(K)exp=0.19 8.; (K:L:M=2.1 1:1:0.36 2 (1966Zy01)). δ: δ(E2/M3)=+0.09 10 (1985DaZV).
194.678 [f@] 15	≈4.0 [f]	2132.951	3$^+$	1938.273	(3)$^+$	M1		0.433	α(K)=0.364 5; α(L)=0.0541 8; α(M)=0.01199 17; α(N+..)=0.00322 5 α(N)=0.00280 4; α(O)=0.000404 6; α(P)=2.24×10^{-5} 4 Mult.: from L1:L2:L3=43 5:3.7 4:0.55 10 and α(K)exp=0.37 8.
194.678 [f@]	≈0.35 [f]	2215.972	2$^-$,3$^-$	2021.359	(2,3)$^-$	M1		0.433	α(K)=0.364 5; α(L)=0.0541 8; α(M)=0.01199 17; α(N+..)=0.00322 5 α(N)=0.00280 4; α(O)=0.000404 6; α(P)=2.24×10^{-5} 4
215.185 14	27.7 9	2132.951	3$^+$	1917.767	3$^-$	E1+M2	−0.09 +7−6	0.056 23	α(K)=0.047 18; α(L)=0.008 4; α(M)=0.0017 9; α(N+..)=0.00045 24 α(N)=0.00039 21; α(O)=5.E−5 3; α(P)=2.7×10^{-6} 15 I_γ: from 1989Ad11; Eγ=215.185 185 14, Iγ=28.0 9 for doublet. Mult.: from L1:L2:L3=22 3:3.7 4:4.2 5 and α(K)exp=0.034 7. δ: from 1985DaZV. other δ: −0.04 8 from γ(θ,H,t) (1995KrZX).
215.88 3	0.290 13	1075.281	5$^+$	859.399	3$^+$	[E2]		0.196	α(K)=0.1298 19; α(L)=0.0506 7; α(M)=0.01201 17; α(N+..)=0.00308 5 α(N)=0.00274 4; α(O)=0.000340 5; α(P)=6.23×10^{-6} 9 I_γ: from 1989Ad11; Eγ=215.185 185 14, Iγ=28.0 9 for doublet.
225.9 5	0.007 3	2273.01	3$^-$	2046.88	2$^+$,3$^+$				
^{x}228.21 7	0.121 4					M1+E2		0.22 6	α(K)=0.17 7; α(L)=0.038 3; α(M)=0.0087 10; α(N+..)=0.00227 20 α(N)=0.00199 20; α(O)=0.000267 8; α(P)=1.0×10^{-5} 5 Mult.: from α(K)exp=0.39 10.
238.581 20	0.187 5	2132.951	3$^+$	1894.364	2$^+$,3$^+$,4$^+$	M1		0.248	α(K)=0.208 3; α(L)=0.0308 5; α(M)=0.00683 10; α(N+..)=0.00184 3 α(N)=0.001592 23; α(O)=0.000230 4; α(P)=1.276×10^{-5} 18 Mult.: from α(K)exp=0.31 9.

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γ(^{166}Er) (continued)

E_γ[†]	I_γ[†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ	α[d]	Comments
255.44 *6*	0.028 *3*	1917.767	3⁻	1662.32	1⁻				
257.36 *10*	0.017 *5*	2243.099	3⁻	1985.644	3⁻				
^{x}277.73 *20*	0.030 *10*					(M1)		0.1641	α(K)=0.1380 *20*; α(L)=0.0203 *3*; α(M)=0.00450 *7*; α(N+..)=0.001210 *18* α(N)=0.001050 *15*; α(O)=0.0001521 *22*; α(P)=8.44×10^{-6} *12* Mult.: from α(K)exp=0.16 *15*.
280.461 *20*	1.47 *3*	545.444	6⁺	264.985	4⁺	E2		0.0849	α(K)=0.0611 *9*; α(L)=0.0183 *3*; α(M)=0.00430 *6*; α(N+..)=0.001112 *16* α(N)=0.000984 *14*; α(O)=0.0001255 *18*; α(P)=3.11×10^{-6} *5* Mult.: from L1:L2:L3=3.1 *4*:3.3 *4*:2.3 *3* and α(K)exp=0.08 *3*.
287.1 *3*	0.006 *2*	2273.01	3⁻	1985.644	3⁻				
^{x}293.40 *8*	0.051 *8*					(E2)		0.0739	α(K)=0.0538 *8*; α(L)=0.01550 *22*; α(M)=0.00363 *5*; α(N+..)=0.000940 *14* α(N)=0.000831 *12*; α(O)=0.0001065 *15*; α(P)=2.76×10^{-6} *4* Mult.: from α(K)exp=0.16 *8*.
298.207 *20*	0.95 *2*	2215.972	2⁻,3⁻	1917.767	3⁻	M1		0.1355	α(K)=0.1140 *16*; α(L)=0.01676 *24*; α(M)=0.00371 *6*; α(N+..)=0.000998 *14* α(N)=0.000866 *13*; α(O)=0.0001254 *18*; α(P)=6.96×10^{-6} *10* Mult.: from α(K)exp=0.12 *3*.
312.58 *20*	0.006 *3*	2290.997	(3)⁺	1978.432	(4)⁺				
^{x}319.883 *18*	0.233 *7*					M1		0.1123	α(K)=0.0945 *14*; α(L)=0.01387 *20*; α(M)=0.00307 *5*; α(N+..)=0.000826 *12* α(N)=0.000716 *10*; α(O)=0.0001038 *15*; α(P)=5.76×10^{-6} *8* Mult.: from α(K)exp=0.19 *6*.
345.569 *15*	2.43 *6*	1917.767	3⁻	1572.206	(4)⁻	M1+E2	−0.57 *+21−25*	0.080 *8*	α(K)=0.067 *7*; α(L)=0.0106 *5*; α(M)=0.00237 *9*; α(N+..)=0.00063 *3* α(N)=0.000552 *21*; α(O)=7.8×10^{-5} *4*; α(P)=4.0×10^{-6} *5* Mult.: from L1:L2=6.7 *7*:1.0 *1* and α(K)exp=0.10 *2*. δ: from A_2=+0.22 *6*, A_4=−0.07 *15* for 215γ-345γ(θ) (1993AdZY). Other δ: 0.75 *25* from ce data.
^{x}372.40 *4*	0.062 *4*								
385.54 *4*	0.076 *3*	2215.972	2⁻,3⁻	1830.42	1⁻	E2		0.0331	α(K)=0.0255 *4*; α(L)=0.00594 *9*; α(M)=0.001372 *20*; α(N+..)=0.000358 *5* α(N)=0.000315 *5*; α(O)=4.16×10^{-5} *6*; α(P)=1.367×10^{-6} *20* Mult.: from α(K)exp=0.042 *5*.
389.38 *3*	0.254 *7*	1985.644	3⁻	1596.263	(4)⁻	M1		0.0668	α(K)=0.0563 *8*; α(L)=0.00820 *12*; α(M)=0.00182 *3*; α(N+..)=0.000488 *7* α(N)=0.000423 *6*; α(O)=6.14×10^{-5} *9*; α(P)=3.42×10^{-6} *5* Mult.: from α(K)exp=0.059 *23*.
404.004 *13*	4.12 *10*	1917.767	3⁻	1513.760	3⁻	M1+E2	−0.34 *+17−19*	0.057 *4*	α(K)=0.048 *4*; α(L)=0.0072 *3*; α(M)=0.00160 *6*; α(N+..)=0.000429 *17* α(N)=0.000372 *15*; α(O)=5.36×10^{-5} *25*; α(P)=2.91×10^{-6} *23*

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γ(^{166}Er) (continued)

E_γ[†]	I_γ[†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ	α[d]	Comments
									Mult.: from L1:L2=7 *1*:0.8 *3* and α(K)exp=0.053 *12*. δ: from A_2=+0.05 *8*, A_4=+0.08 *15* for 215γ-404γ(θ) (1993AdZY).
410.797 *16*	0.490 *10*	956.240	4$^+$	545.444	6$^+$	E2		0.0278	α(K)=0.0216 *3*; α(L)=0.00481 *7*; α(M)=0.001109 *16*; α(N+..)=0.000290 *4* α(N)=0.000255 *4*; α(O)=3.39×10^{-5} *5*; α(P)=1.167×10^{-6} *17* Additional information 3. Iγ(411γ):Iγ(691γ)=0.0233 *5*:1.85 (2006Ku03). Mult.: from α(K)exp=0.019 *10*.
413.430 *18*	0.320 *10*	1985.644	3$^-$	1572.206	(4)$^-$	E2		0.0273	α(K)=0.0212 *3*; α(L)=0.00472 *7*; α(M)=0.001086 *16*; α(N+..)=0.000284 *4* α(N)=0.000250 *4*; α(O)=3.32×10^{-5} *5*; α(P)=1.149×10^{-6} *16* Mult.: from α(K)exp=0.047 *18*.
429.885 *20*	0.410 *10*	2132.951	3$^+$	1703.057	(2,3,4)$^+$	M1		0.0516	α(K)=0.0435 *6*; α(L)=0.00632 *9*; α(M)=0.001397 *20*; α(N+..)=0.000376 *6* α(N)=0.000326 *5*; α(O)=4.72×10^{-5} *7*; α(P)=2.64×10^{-6} *4* Mult.: from α(K)exp=0.055 *21*.
454.20 *3*	0.172 *20*	2132.951	3$^+$	1678.77	(4)$^+$	(E2)		0.0211	α(K)=0.01664 *24*; α(L)=0.00349 *5*; α(M)=0.000801 *12*; α(N+..)=0.000210 *3* α(N)=0.000184 *3*; α(O)=2.47×10^{-5} *4*; α(P)=9.12×10^{-7} *13* Mult.: E1,E2 from α(K)exp=0.009 *5*; Δπ=No from level scheme.
459.600 *15*	13.26 *26*	1917.767	3$^-$	1458.164	(2)$^-$	M1+E2	−0.16 *4*	0.0428 *7*	α(K)=0.0361 *6*; α(L)=0.00525 *8*; α(M)=0.001162 *18*; α(N+..)=0.000312 *5* α(N)=0.000271 *4*; α(O)=3.93×10^{-5} *6*; α(P)=2.18×10^{-6} *4* Mult.: from Adopted Gammas. M1 from L1:L2:L3=14 *2*:1.0 *2*:0.3 and α(K)exp=0.043 *9*. δ: from Adopted Gammas. δ=−0.17 *3* from A_2=−0.28 *3*, A_4=+0.01 *7* for 215γ-460γ(θ) and δ=−0.21 *9* from A_2=−0.17 *5*, A_4=+0.06 *9* for 460γ-672γ(θ) (1993AdZY). Additional information 10.
464.5 *3*	0.030 *8*	1978.432	(4)$^+$	1513.760	3$^-$				
471.871 *23*	0.558 *13*	1985.644	3$^-$	1513.760	3$^-$	M1		0.0405	α(K)=0.0342 *5*; α(L)=0.00495 *7*; α(M)=0.001094 *16*; α(N+..)=0.000294 *5* α(N)=0.000255 *4*; α(O)=3.70×10^{-5} *6*; α(P)=2.07×10^{-6} *3* Mult.: from α(K)exp=0.034 *10*.
475.36 *25*	0.055 *10*	2413.68	(2,3,4)	1938.273	(3)$^+$				
^{x}477.24 *20*	0.028 *7*								
481.33 *10*	0.089 *7*	2160.121	3$^+$	1678.77	(4)$^+$				
488.19 *8*	0.18 *4*	2001.874	(3)$^-$	1513.760	3$^-$				
496.935 *16*	0.990 *20*	1572.206	(4)$^-$	1075.281	5$^+$	E1		0.00566	α(K)=0.00480 *7*; α(L)=0.000672 *10*; α(M)=0.0001479 *21*; α(N+..)=3.94×10^{-5} *6* α(N)=3.43×10^{-5} *5*; α(O)=4.88×10^{-6} *7*; α(P)=2.57×10^{-7} *4* Mult.: from α(K)exp=0.0072 *35*.

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γ(^{166}Er) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [‡]	δ	α [d]	Comments
520.92 *4*	0.32 *4*	1596.263	(4)$^-$	1075.281	5$^+$				E_γ: from deconvolution of a doublet (1989Ad11). I_γ: see comment on 521γ from 786 level.
520.99 *4*	0.998 *23*	785.917	2$^+$	264.985	4$^+$	E2		0.01481	α(K)=0.01184 *17*; α(L)=0.00230 *4*; α(M)=0.000525 *8*; α(N+..)=0.0001382 *20* α(N)=0.0001211 *17*; α(O)=1.644×10^{-5} *23*; α(P)=6.58×10^{-7} *10* Additional information 1. L1:L2=0.4 *2*:0.15 and α(K)exp=0.012 *5* for the doublet. I_γ,E_γ: Iγ is from Iγ(521γ from 786 level)/Iγ(705γ)=0.0172 *4* (2006Ku03) and I(705γ). Eγ=520.945 *15*, Iγ=1.32 *3* for doublet In 1989Ad11, so Iγ(521γ from 1596 level)=0.32 *4*. note, however, that the resulting 521γ branch from the 1596 level is somewhat smaller than the value adopted from β^- decay (1.20×10^3 y). 1989Ad11 estimated Eγ=520.99 *4*, Iγ=0.89 *9* and Eγ=520.92 *4*, Iγ=0.42 *7* for the respective components of the doublet they observed.
527.58 *10*	0.154 *5*	1985.644	3$^-$	1458.164	(2)$^-$				
529.835 *20*	0.947 *20*	1075.281	5$^+$	545.444	6$^+$	E2		0.01419	α(K)=0.01136 *16*; α(L)=0.00219 *3*; α(M)=0.000499 *7*; α(N+..)=0.0001314 *19* α(N)=0.0001151 *17*; α(O)=1.566×10^{-5} *22*; α(P)=6.32×10^{-7} *9* Mult.: from α(K)exp=0.012 *6*.
536.67 *3*	0.671 *18*	2132.951	3$^+$	1596.263	(4)$^-$	E1		0.00478	α(K)=0.00406 *6*; α(L)=0.000566 *8*; α(M)=0.0001244 *18*; α(N+..)=3.32×10^{-5} *5* α(N)=2.88×10^{-5} *4*; α(O)=4.12×10^{-6} *6*; α(P)=2.18×10^{-7} *3* Mult.: from α(K)exp=0.0038 *20*.
543.69 *3*	0.387 *11*	2001.874	(3)$^-$	1458.164	(2)$^-$	E2,M1		0.021 *8*	α(K)=0.017 *7*; α(L)=0.0027 *7*; α(M)=0.00061 *15*; α(N+..)=0.00016 *4* α(N)=0.00014 *4*; α(O)=2.0×10^{-5} *6*; α(P)=1.0×10^{-6} *5* Mult.: from α(K)exp=0.025 *14*.
^{x}547.04 *25*	0.028 *7*								
557.514 *18*	1.54 *3*	1513.760	3$^-$	956.240	4$^+$	E1		0.00440	α(K)=0.00374 *6*; α(L)=0.000520 *8*; α(M)=0.0001143 *16*; α(N+..)=3.05×10^{-5} *5* α(N)=2.65×10^{-5} *4*; α(O)=3.79×10^{-6} *6*; α(P)=2.01×10^{-7} *3* Mult.: from α(K)exp=0.004 *2*.
560.77 *3*	0.363 *12*	2132.951	3$^+$	1572.206	(4)$^-$				Additional information 14.
563.21 *3*	0.318 *10*	2021.359	(2,3)$^-$	1458.164	(2)$^-$	E2,M1		0.019 *7*	α(K)=0.016 *6*; α(L)=0.0025 *7*; α(M)=0.00055 *14*; α(N+..)=0.00015 *4* α(N)=0.00013 *4*; α(O)=1.8×10^{-5} *6*; α(P)=9.E−7 *4* Mult.: from α(K)exp=0.015 *8*.
572.2		1528.404	2$^+$	956.240	4$^+$				E_γ: from 1993BaZS.
587.90 *16*	0.27 *5*	2160.121	3$^+$	1572.206	(4)$^-$				
594.409 *15*	18.3 *4*	859.399	3$^+$	264.985	4$^+$	E2+M1	−12 *2*	0.0111 *7*	α(K)=0.0090 *6*; α(L)=0.00161 *7*; α(M)=0.000365 *14*; α(N+..)=9.7×10^{-5} *4* α(N)=8.4×10^{-5} *4*; α(O)=1.16×10^{-5} *5*; α(P)=5.1×10^{-7} *4* Mult.: from L1:L2:L3=4.5 *5*:1.3 *2*:0.8 *1* and α(K)exp=0.0076 *20*.

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γ(^{166}Er) (continued)

Eγ[†]	Iγ[†c]	E$_i$(level)	J^π_i	E$_f$	J^π_f	Mult.[‡]	δ	α[d]	Comments
									δ: from γ(θ,H,t) (1995KrZX). other δ: >+31 from γγ(θ) (1980Bu26); +5.5 *+74−22* (1985DaZV); −1.3 *+3−5* from 594γ-184γ(θ) (1993AdZY), however, evaluator cannot reproduce this value using the authors′ stated A_2 and A_4 coefficients.
598.764 *19*	11.13 *23*	1458.164	(2)$^-$	859.399	3$^+$	E1(+M2)	−0.02 *6*	0.0038 *4*	α(K)=0.0032 *3*; α(L)=0.00045 *5*; α(M)=9.8×10^{-5} *12*; α(N+..)=2.6×10^{-5} *3* α(N)=2.3×10^{-5} *3*; α(O)=3.3×10^{-6} *4*; α(P)=1.75×10^{-7} *21* Mult.,δ: from Adopted Gammas. E1 from L1:L2:L3=1.2 *2*:0.2 and α(K)exp=0.0042 *13*.
604.553 *15*	1.047 *23*	2132.951	3$^+$	1528.404	2$^+$	E2		0.01025	α(K)=0.00832 *12*; α(L)=0.001506 *21*; α(M)=0.000341 *5*; α(N+..)=9.01×10^{-5} *13* α(N)=7.88×10^{-5} *11*; α(O)=1.083×10^{-5} *16*; α(P)=4.67×10^{-7} *7* Mult.: from α(K)exp=0.0086 *18*.
610.8[e] *3*	0.015[e] *6*	2273.01	3$^-$	1662.32	1$^-$				
610.8[e] *3*	0.015[e] *6*	2783.69	1$^+$	2172.757	3$^+$				
615.963 *15*	0.763 *17*	1572.206	(4)$^-$	956.240	4$^+$	(E1(+M2))			Mult.: from Adopted Gammas.
619.49[e] *25*	0.015[e] *6*	2132.951	3$^+$	1513.760	3$^-$				
619.49[e] *25*	0.015[e] *6*	2215.972	2$^-$,3$^-$	1596.263	(4)$^-$				
631.62 *10*	0.380 *10*	2160.121	3$^+$	1528.404	2$^+$	(E2)		0.00924	α(K)=0.00752 *11*; α(L)=0.001336 *19*; α(M)=0.000302 *5*; α(N+..)=7.98×10^{-5} *12* α(N)=6.98×10^{-5} *10*; α(O)=9.63×10^{-6} *14*; α(P)=4.23×10^{-7} *6* Mult.: from α(K)exp=0.009 *5*.
640.04 *3*	0.263 *8*	1596.263	(4)$^-$	956.240	4$^+$				
643.90 *10*	0.120 *6*	2215.972	2$^-$,3$^-$	1572.206	(4)$^-$				
646.75[f&a] *4*	≈0.04[f]	2160.121	3$^+$	1513.760	3$^-$				
646.75[f&] *4*	≈0.08[f]	2243.099	3$^-$	1596.263	(4)$^-$				
654.358 *16*	1.97 *4*	1513.760	3$^-$	859.399	3$^+$	E1		0.00314	α(K)=0.00267 *4*; α(L)=0.000368 *6*; α(M)=8.08×10^{-5} *12*; α(N+..)=2.16×10^{-5} *3* α(N)=1.87×10^{-5} *3*; α(O)=2.69×10^{-6} *4*; α(P)=1.446×10^{-7} *21* Mult.: from α(K)exp=0.0046 *25*.
659.04 *20*	0.029 *6*	2172.757	3$^+$	1513.760	3$^-$				
672.242 *20*	32.4 *7*	1458.164	(2)$^-$	785.917	2$^+$	E1		0.00297	α(K)=0.00253 *4*; α(L)=0.000348 *5*; α(M)=7.63×10^{-5} *11*; α(N+..)=2.04×10^{-5} *3* α(N)=1.771×10^{-5} *25*; α(O)=2.54×10^{-6} *4*; α(P)=1.370×10^{-7} *20* δ: <−0.01 from γγ(θ) (1980Bu26); +0.16 *4* from 672γ-785γ(θ) (1993AdZY). Mult.: from L1:L2:L3=1.9 *2*:0.2 *1*:0.2 *1* and α(K)exp=0.0026 *9*.
674.788 *22*	13.6 *3*	2132.951	3$^+$	1458.164	(2)$^-$	E1		0.00295	α(K)=0.00251 *4*; α(L)=0.000345 *5*; α(M)=7.57×10^{-5} *11*;

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γ(^{166}Er) (continued)

E_γ[†]	I_γ[†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ	α[d]	Comments
									α(N+..)=2.02×10^{-5} *3* α(N)=1.757×10^{-5} *25*; α(O)=2.52×10^{-6} *4*; α(P)=1.359×10^{-7} *19* Mult.: from α(K)exp=0.002 *1*.
691.250 *17*	39.1 *8*	956.240	4$^+$	264.985	4$^+$	E2+M1	−3.3 *+12−30*	0.00802 *20*	α(K)=0.00660 *17*; α(L)=0.001106 *23*; α(M)=0.000248 *5*; α(N+..)=6.59×10^{-5} *14* α(N)=5.75×10^{-5} *12*; α(O)=8.03×10^{-6} *18*; α(P)=3.76×10^{-7} *11* Additional information 4. δ: from Adopted Gammas. δ from ε decay: −3.7 *5* from $\gamma\gamma(\theta)$ (1980Bu26); −8.5<δ<+7.0 (1985DaZV), −13 *9* from 691γ-184$\gamma(\theta)$ (1993AdZY), +5.5 *+28−14* from $\gamma(\theta$,H,t) (1995KrZX). Mult.: from L1:L2:L3=5.6 *6*:0.5 *2*:0.5 *2* and α(K)exp=0.0068 *16*.
702.28 *10*	2.71 *7*	2215.972	2$^-$,3$^-$	1513.760	3$^-$	M1		0.01475	α(K)=0.01247 *18*; α(L)=0.001782 *25*; α(M)=0.000393 *6*; α(N+..)=0.0001058 *15* α(N)=9.17×10^{-5} *13*; α(O)=1.332×10^{-5} *19*; α(P)=7.49×10^{-7} *11* Mult.: from α(K)exp=0.014 *4*.
705.333 *20*	58.0 *12*	785.917	2$^+$	80.581	2$^+$	M1+E2	−5 *+3−14*	0.00716 *13*	α(K)=0.00588 *11*; α(L)=0.000999 *16*; α(M)=0.000225 *4*; α(N+..)=5.96×10^{-5} *10* α(N)=5.20×10^{-5} *9*; α(O)=7.24×10^{-6} *12*; α(P)=3.32×10^{-7} *7* δ: from $\gamma\gamma(\theta)$ (1987Kr12). Other: −22 *+13−7* (1980Bu26), −7 *+23−3* from $\gamma(\theta$,H,t) (1995KrZX). Mult.: from L1:L2:L3=7.0 *7*:0.7 *1*:0.7 *1* and α(K)exp=0.0067 *14*.
712.817 *22*	2.19 *4*	1572.206	(4)$^-$	859.399	3$^+$	E1		0.00264	α(K)=0.00224 *4*; α(L)=0.000308 *5*; α(M)=6.75×10^{-5} *10*; α(N+..)=1.80×10^{-5} *3* α(N)=1.568×10^{-5} *22*; α(O)=2.25×10^{-6} *4*; α(P)=1.219×10^{-7} *17* Mult.: from α(K)exp=0.0032 *17*.
727.858 *20*	2.09 *10*	1513.760	3$^-$	785.917	2$^+$	E1		0.00253	α(K)=0.00215 *3*; α(L)=0.000295 *5*; α(M)=6.47×10^{-5} *9*; α(N+..)=1.729×10^{-5} *25* α(N)=1.502×10^{-5} *21*; α(O)=2.16×10^{-6} *3*; α(P)=1.170×10^{-7} *17* Mult.: from α(K)exp=0.0013 *5*. Additional information 5.
729.38 *3*	0.45 *4*	2243.099	3$^-$	1513.760	3$^-$	M1		0.01342	α(K)=0.01135 *16*; α(L)=0.001619 *23*; α(M)=0.000357 *5*; α(N+..)=9.61×10^{-5} *14* α(N)=8.33×10^{-5} *12*; α(O)=1.210×10^{-5} *17*; α(P)=6.81×10^{-7} *10* Mult.: from α(K)exp=0.023 *13*.
736.832 *22*	0.721 *24*	1596.263	(4)$^-$	859.399	3$^+$				
742.59 *10*	0.138 *12*	1528.404	2$^+$	785.917	2$^+$				

From ENSDF

$^{166}_{68}$Er$_{98}$-10

^{166}Tm ε decay 1989Ad11 (continued)

γ(^{166}Er) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [‡]	δ	α [d]	Comments
743.8 *5*	0.037 *13*	2729.094	(3,4)$^+$	1985.644	3$^-$				
757.798 *17*	12.33 *25*	2215.972	2$^-$,3$^-$	1458.164	(2)$^-$	M1		0.01220	α(K)=0.01032 *15*; α(L)=0.001471 *21*; α(M)=0.000324 *5*; α(N+..)=8.73×10^{-5} *13* α(N)=7.57×10^{-5} *11*; α(O)=1.099×10^{-5} *16*; α(P)=6.19×10^{-7} *9* Mult.: from α(K)exp=0.011 *3*. δ: 0.03 +*18*−*14* if J$^\pi$=2$^-$ or +0.31 *9* if J$^\pi$=3$^-$ (1985DaZV).
778.814 *15*	100.0 *20*	859.399	3$^+$	80.581	2$^+$	E2+M1	−20 +*2*−*4*	0.00580	α(K)=0.00479 *7*; α(L)=0.000784 *11*; α(M)=0.0001758 *25*; α(N+..)=4.67×10^{-5} *7* α(N)=4.07×10^{-5} *6*; α(O)=5.71×10^{-6} *8*; α(P)=2.72×10^{-7} *4* Additional information 2. δ: from Adopted Gammas. data from ε decay: +8.4 *7* from γγ(θ) (1980Bu26); +15 +*26*−*6* (1985DaZV), +10 +*130*−*5* from 598γ-778γ(θ) (1993AdZY), −6.2 +*10*−*8* from γ(θ,H,t) (1995KrZX); reason for discrepant results is not known. Mult.: from L1:L2:L3=11 *1*:2.2 *3*:1.0 *2* (α(K)=4.79×10^{-3} (E2 theory)).
785.904 *15*	52.5 *6*	785.917	2$^+$	0.0	0$^+$	E2		0.00561	α(K)=0.00463 *7*; α(L)=0.000759 *11*; α(M)=0.0001701 *24*; α(N+..)=4.52×10^{-5} *7* α(N)=3.94×10^{-5} *6*; α(O)=5.52×10^{-6} *8*; α(P)=2.63×10^{-7} *4* I_γ: from Iγ(786γ)/Iγ(705γ)=0.906 *10* (2006Ku03) and I(705γ); In excellent agreement with Iγ=52.4 *11* from 1989Ad11. Mult.: from L1:L2:L3=3.3 *10*:1.3 *4*:0.5 *2* and α(K)exp=0.0046 *3*.
797.02 *20*	0.023 *5*	2393.14	2$^+$,3$^+$	1596.263	(4)$^-$				
^{x}799.74 *20*	0.023 *5*								
810.290 *16*	5.78 *13*	1075.281	5$^+$	264.985	4$^+$	E2+M1	−21.2 +*18*−*21*	0.00526	α(K)=0.00436 *7*; α(L)=0.000706 *10*; α(M)=0.0001580 *23*; α(N+..)=4.20×10^{-5} *6* α(N)=3.66×10^{-5} *6*; α(O)=5.14×10^{-6} *8*; α(P)=2.47×10^{-7} *4* Mult.: from Adopted Gammas; E2 from L1:L2=1.0 *2*:0.2 *1* and α(K)exp=0.006 *2*. δ: from Adopted Gammas; <−17 from γγ(θ) (1980Bu26). +0.39 +*19*−*17* from 810γ-184γ(θ) (1993AdZY); however, evaluator obtains −0.35 +*9*−*11* and −3.8 +*11*−*21* (first solution preferred) using authors′ stated A_2 and A_4.
814.82 *20*	0.062 *12*	2273.01	3$^-$	1458.164	(2)$^-$				
824.52[e] *11*	0.026[e] *7*	2282.68	2$^{(+)}$,3	1458.164	(2)$^-$				
824.52[e] *11*	0.026[e] *7*	2352.91	2$^{(+)}$,3	1528.404	2$^+$				
832.88 *7*	0.051 *4*	2290.997	(3)$^+$	1458.164	(2)$^-$				
^{x}858.62 *9*	0.042 *7*								
868.47 *12*	0.052 *9*	2382.27	(3)$^+$	1513.760	3$^-$				

$\gamma(^{166}$Er) (continued)

E_γ[†]	I_γ[†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	α[d]	Comments
875.650 *15*	21.5 *4*	956.240	4⁺	80.581	2⁺	E2	0.00444	α(K)=0.00369 *6*; α(L)=0.000584 *9*; α(M)=0.0001305 *19*; α(N+..)=3.47×10⁻⁵ *5* α(N)=3.03×10⁻⁵ *5*; α(O)=4.27×10⁻⁶ *6*; α(P)=2.10×10⁻⁷ *3* Iγ(875γ):Iγ(691γ)=1.026 *16*:1.85 (2006Ku03). Mult.: from L1:L2:L3=2.0 *2*:0.4 *1*:0.2 and α(K)exp=0.0035 *4*. δ: δ(E2/M3)=−0.07 *9* (1985DaZV).
899.80 *18*	0.020 *4*	2413.68	(2,3,4)	1513.760	3⁻			
903.01 *13*	0.029 *5*	1978.432	(4)⁺	1075.281	5⁺			
924.21 *11*	0.063 *9*	2382.27	(3)⁺	1458.164	(2)⁻			
946.57 *8*	0.038 *5*	2542.88		1596.263	(4)⁻			
982.00 *15*	0.051 *9*	1938.273	(3)⁺	956.240	4⁺			
ˣ985.53 *15*	0.052 *9*							
ˣ1004.99 *20*	0.028 *8*							
1017.29 *6*	0.077 *5*	2475.40	(1,2⁺)	1458.164	(2)⁻			
1022.175 *23*	0.294 *11*	1978.432	(4)⁺	956.240	4⁺			
1034.79 *13*	0.029 *5*	1894.364	2⁺,3⁺,4⁺	859.399	3⁺			
1045.648 *20*	0.901 *20*	2001.874	(3)⁻	956.240	4⁺	E1	1.26×10⁻³	α(K)=0.001075 *15*; α(L)=0.0001447 *21*; α(M)=3.17×10⁻⁵ *5*; α(N+..)=8.49×10⁻⁶ *12* α(N)=7.36×10⁻⁶ *11*; α(O)=1.063×10⁻⁶ *15*; α(P)=5.90×10⁻⁸ *9* Mult.: from α(K)exp=0.0018 *9*.
1057.67 *4*	3.66 *12*	2132.951	3⁺	1075.281	5⁺	E2	0.00300	α(K)=0.00251 *4*; α(L)=0.000379 *6*; α(M)=8.43×10⁻⁵ *12*; α(N+..)=2.25×10⁻⁵ *4* α(N)=1.96×10⁻⁵ *3*; α(O)=2.78×10⁻⁶ *4*; α(P)=1.430×10⁻⁷ *20* Mult.: from α(K)exp=0.0024 *3*.
1078.876 *22*	2.51 *5*	1938.273	(3)⁺	859.399	3⁺	M1	0.00513	α(K)=0.00435 *6*; α(L)=0.000612 *9*; α(M)=0.0001349 *19*; α(N+..)=3.63×10⁻⁵ *5* α(N)=3.15×10⁻⁵ *5*; α(O)=4.57×10⁻⁶ *7*; α(P)=2.59×10⁻⁷ *4* Mult.: from α(K)exp=0.0059 *20*. Additional information 12.
1084.826 *17*	1.92 *4*	2160.121	3⁺	1075.281	5⁺	E2	0.00285	α(K)=0.00239 *4*; α(L)=0.000359 *5*; α(M)=7.96×10⁻⁵ *12*; α(N+..)=2.13×10⁻⁵ *3* α(N)=1.85×10⁻⁵ *3*; α(O)=2.63×10⁻⁶ *4*; α(P)=1.360×10⁻⁷ *19* Mult.: from α(K)exp=0.0024 *2*.
1090.70 *6*	0.113 *6*	2046.88	2⁺,3⁺	956.240	4⁺			
1097.46 *5*	0.302 *9*	2172.757	3⁺	1075.281	5⁺	E2	0.00278	α(K)=0.00233 *4*; α(L)=0.000350 *5*; α(M)=7.76×10⁻⁵ *11*; α(N+..)=2.07×10⁻⁵ *3* α(N)=1.80×10⁻⁵ *3*; α(O)=2.57×10⁻⁶ *4*; α(P)=1.329×10⁻⁷ *19* Mult.: from α(K)exp=0.0035 *19*.
1119.50[f#]	≈0.68[f]	1978.432	(4)⁺	859.399	3⁺			
1119.5[f#]	≈0.67[f]	2076.305	(3⁻)	956.240	4⁺			
ˣ1126.807 *25*	0.380 *11*					M1+E2	0.0036 *10*	α(K)=0.0031 *9*; α(L)=0.00044 *11*; α(M)=9.7×10⁻⁵ *24*; α(N+..)=2.7×10⁻⁵ *7*

$^{166}_{68}$Er$_{98}$-12

γ(^{166}Er) (continued)

E_γ[†]	I_γ[†c]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ	α[d]	Comments
									α(N)=2.3×10^{-5} *6*; α(O)=3.3×10^{-6} *9*; α(P)=1.8×10^{-7} *6*; α(IPF)=7.8×10^{-7} *8* Mult.: α(K)exp=0.0032 *8* (1993BaZS).
1131.872 *25*	1.28 *3*	1917.767	3$^-$	785.917	2$^+$	E1		1.09×10^{-3}	α(K)=0.000931 *13*; α(L)=0.0001249 *18*; α(M)=2.73×10^{-5} *4*; α(N+..)=1.183×10^{-5} *17* α(N)=6.35×10^{-6} *9*; α(O)=9.18×10^{-7} *13*; α(P)=5.11×10^{-8} *8*; α(IPF)=4.50×10^{-6} *7* Mult.: from α(K)exp=0.0013 *7*.
1142.45[e] *3*	0.578[e] *13*	2001.874	(3)$^-$	859.399	3$^+$				Mult.: α(K)exp≈0.0010, mult=E1 for doublet (1993BaZS).
1142.45[e] *3*	0.578[e] *13*	2600.64	1$^+$	1458.164	(2)$^-$				Mult.: α(K)exp≈0.0010, mult=E1 for doublet (1993BaZS).
1152.350 *16*	8.20 *21*	1938.273	(3)$^+$	785.917	2$^+$	M1		0.00438	α(K)=0.00371 *6*; α(L)=0.000521 *8*; α(M)=0.0001148 *16*; α(N+..)=3.28×10^{-5} *5* α(N)=2.68×10^{-5} *4*; α(O)=3.89×10^{-6} *6*; α(P)=2.21×10^{-7} *3*; α(IPF)=1.94×10^{-6} *3* Mult.: from α(K)exp=0.0040 *14* (1979Ad06,1989Ad11) and 0.0033 *5* (1993BaZS). Additional information 13.
1161.955 *16*	3.78 *9*	2021.359	(2,3)$^-$	859.399	3$^+$	E1		1.05×10^{-3}	α(K)=0.000888 *13*; α(L)=0.0001190 *17*; α(M)=2.60×10^{-5} *4*; α(N+..)=1.721×10^{-5} *25* α(N)=6.05×10^{-6} *9*; α(O)=8.75×10^{-7} *13*; α(P)=4.88×10^{-8} *7*; α(IPF)=1.024×10^{-5} *15* Mult.: from α(K)exp=0.0012 *6*.
1176.704 *16*	50.5 *10*	2132.951	3$^+$	956.240	4$^+$	M1+E2	+0.20 *4*	0.00410 *7*	α(K)=0.00347 *6*; α(L)=0.000488 *8*; α(M)=0.0001074 *17*; α(N+..)=3.26×10^{-5} *5* α(N)=2.51×10^{-5} *4*; α(O)=3.64×10^{-6} *6*; α(P)=2.06×10^{-7} *4*; α(IPF)=3.70×10^{-6} *6* Mult.: from α(K)exp=0.0032 *2*. Additional information 15. δ: weighted average of +0.24 *4* from 1177γ-876γ(θ) (1993AdZY), +0.11 *7* from 1177γ-876γ(θ) (1993AdZY) and +0.16 *11* (1985DaZV).
1187.49 *4*	0.560 *14*	2046.88	2$^+$,3$^+$	859.399	3$^+$	M1(+E2)		0.0032 *9*	α(K)=0.0027 *8*; α(L)=0.00039 *10*; α(M)=8.6×10^{-5} *21*; α(N+..)=2.7×10^{-5} *6* α(N)=2.0×10^{-5} *5*; α(O)=2.9×10^{-6} *8*; α(P)=1.6×10^{-7} *5*; α(IPF)=4.4×10^{-6} *5* Mult.: from α(K)exp=0.0030 *7* (1993BaZS).
1192.516 *16*	0.880 *20*	1978.432	(4)$^+$	785.917	2$^+$	E2		0.00236	α(K)=0.00198 *3*; α(L)=0.000292 *4*; α(M)=6.48×10^{-5} *9*; α(N+..)=2.17×10^{-5} *3* α(N)=1.505×10^{-5} *21*; α(O)=2.15×10^{-6} *3*;

$^{166}_{68}$Er$_{98}$-13

γ(^{166}Er) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	δ	α [d]	Comments
									α(P)=1.130×10^{-7} *16*; α(IPF)=4.41×10^{-6} *7* Mult.: from α(K)exp=0.0015 *8* (1979Ad06) and 0.0020 *6* (1993BaZS).
1200.66 *3*	1.66 *5*	2729.094	(3,4)$^+$	1528.404	2$^+$	E2,M1		0.0032 *9*	α(K)=0.0027 *7*; α(L)=0.00038 *10*; α(M)=8.4×10^{-5} *20*; α(N+..)=2.8×10^{-5} *6* α(N)=2.0×10^{-5} *5*; α(O)=2.8×10^{-6} *7*; α(P)=1.6×10^{-7} *5*; α(IPF)=5.7×10^{-6} *6* Mult.: from α(K)exp=4.3×10^{-3} *22*.
1203.873 *20*	5.49 *11*	2160.121	3$^+$	956.240	4$^+$	M1+E2		0.0031 *9*	α(K)=0.0026 *7*; α(L)=0.00038 *10*; α(M)=8.3×10^{-5} *20*; α(N+..)=2.8×10^{-5} *6* α(N)=1.9×10^{-5} *5*; α(O)=2.8×10^{-6} *7*; α(P)=1.5×10^{-7} *5*; α(IPF)=6.1×10^{-6} *6* Mult.: from α(K)exp=0.0026 *4*.
1216.173 [fa] *17*	2.5 [f] *5*	2001.874	(3)$^-$	785.917	2$^+$				I_γ: from ce-γ coin data (1989Ad11); Iγ=3.72 *8* for doublet.
1216.173 [fag] *17*	[f]	2076.305	(3$^-$)	859.399	3$^+$				I_γ: Iγ must be small. Placement is uncertain.
1216.173 [fa] *17*	1.2 [f] *5*	2172.757	3$^+$	956.240	4$^+$				I_γ: from ce-γ coin data (1989Ad11); Iγ=3.72 *8* for doublet.
1235.433 *16*	9.8 *2*	2021.359	(2,3)$^-$	785.917	2$^+$	E1(+M2)	+0.04 *+9−6*	0.00098 *12*	α(K)=0.00081 *10*; α(L)=0.000108 *16*; α(M)=2.4×10^{-5} *4*; α(N+..)=4.35×10^{-5} *8* α(N)=5.5×10^{-6} *8*; α(O)=8.0×10^{-7} *12*; α(P)=4.4×10^{-8} *7*; α(IPF)=3.71×10^{-5} *8* Mult.: from Adopted Gammas. E1 from α(K)exp=0.8×10^{-3} *4* (1979Ad06), 0.00092 *20* (1993BaZS). δ: from Adopted Gammas. other δ: +0.1 *2* (1985DaZV), +0.05 *10* from γ(θ,H,t) (1995KrZX).
1242.2 *3*	0.035 *7*	2101.6	(4$^+$)	859.399	3$^+$				
1248.78 *3*	1.175 *25*	1513.760	3$^-$	264.985	4$^+$	E1+M2	+0.13 *3*	0.008	α(K)=0.004 *4*; α(L)=0.0006 *5*; α(M)=0.00013 *11*; α(N+..)=5.8×10^{-5} *10* α(N)=3.E−5 *3*; α(O)=4.E−6 *4*; α(P)=2.5×10^{-7} *21*; α(IPF)=2.3×10^{-5} *20* Mult.,δ: from Adopted Gammas; E1(+M2) from α(K)exp=0.0011 *4* (1993BaZS). Additional information 6.
1256.7 *3*	0.047 *20*	2212.97		956.240	4$^+$				
1263.412 *16*	4.77 *10*	1528.404	2$^+$	264.985	4$^+$	E2		0.00212	α(K)=0.001772 *25*; α(L)=0.000259 *4*; α(M)=5.72×10^{-5} *8*; α(N+..)=2.85×10^{-5} *4* α(N)=1.331×10^{-5} *19*; α(O)=1.91×10^{-6} *3*; α(P)=1.010×10^{-7} *15*; α(IPF)=1.315×10^{-5} *19* Mult.: from Adopted Gammas; consistent with α(K)exp=0.0030 *12* (1979Ad06) and 0.0021 *4*

$^{166}_{68}$Er$_{98}$-14

γ(^{166}Er) (continued)

E_γ†	I_γ†c	E_i(level)	J^π_i	E_f	J^π_f	Mult.‡	δ	αd	Comments
									(1993BaZS). Additional information 7.
1273.540 *16*	78.6 *16*	2132.951	3+	859.399	3+	M1+E2	−0.11 *8*	0.00344 *6*	α(K)=0.00290 *5*; α(L)=0.000407 *7*; α(M)=8.96×10−5 *15*; α(N+..)=4.18×10−5 *7* α(N)=2.09×10−5 *4*; α(O)=3.04×10−6 *5*; α(P)=1.73×10−7 *3*; α(IPF)=1.77×10−5 *3* Mult.: from α(K)exp=0.0029 *2*. δ: −0.11 *8* (1985DaZV); however, δ=+0.30 *6* from 1273γ-778γ(θ) (1993AdZY). Additional information 16.
1287.1 *3*	0.023 *6*	2243.099	3−	956.240	4+				
1290.368 *22*	0.416 *11*	2076.305	(3−)	785.917	2+				
1300.725 *16*	7.05 *14*	2160.121	3+	859.399	3+	M1		0.00330	α(K)=0.00278 *4*; α(L)=0.000388 *6*; α(M)=8.55×10−5 *12*; α(N+..)=4.61×10−5 *7* α(N)=1.99×10−5 *3*; α(O)=2.90×10−6 *4*; α(P)=1.648×10−7 *23*; α(IPF)=2.31×10−5 *4* Mult.: from α(K)exp=0.0028 *3*. Additional information 19.
1307.17 *15*	0.023 *6*	1572.206	(4)−	264.985	4+				
1313.37 *3*	1.13 *3*	2172.757	3+	859.399	3+	M1,E2		0.0026 *7*	α(K)=0.0022 *6*; α(L)=0.00031 *7*; α(M)=6.8×10−5 *16*; α(N+..)=4.2×10−5 *7* α(N)=1.6×10−5 *4*; α(O)=2.3×10−6 *6*; α(P)=1.3×10−7 *4*; α(IPF)=2.37×10−5 *23* Mult.: from α(K)exp=0.0014 *7*. Additional information 22.
1315.6 *8*	0.090 *9*	2101.6	(4+)	785.917	2+				
1334.74 *21*	0.042 *7*	2290.997	(3)+	956.240	4+	M1(+E2)		0.0025 *6*	α(K)=0.0021 *5*; α(L)=0.00030 *7*; α(M)=6.6×10−5 *15*; α(N+..)=4.6×10−5 *7* α(N)=1.5×10−5 *4*; α(O)=2.2×10−6 *6*; α(P)=1.2×10−7 *4*; α(IPF)=2.8×10−5 *3* Mult.: from α(K)exp≈0.0048 *8* (1993BaZS).
1347.035 *18*	5.79 *12*	2132.951	3+	785.917	2+	M1		0.00304	α(K)=0.00255 *4*; α(L)=0.000357 *5*; α(M)=7.86×10−5 *11*; α(N+..)=5.56×10−5 *8* α(N)=1.83×10−5 *3*; α(O)=2.67×10−6 *4*; α(P)=1.516×10−7 *22*; α(IPF)=3.45×10−5 *5* Mult.: from α(K)exp=0.0024 *3*. Additional information 17.
1353.27 *25*	0.050 *15*	2212.97		859.399	3+				
1356.62 *4*	0.09 *6*	2215.972	2−,3−	859.399	3+				Mult.: α(K)exp= 0.008 *6* (1993BaZS).
1374.194 *25*	29.6 *7*	2160.121	3+	785.917	2+	M1+E2	−0.11 *4*	0.00290 *5*	α(K)=0.00242 *4*; α(L)=0.000339 *5*; α(M)=7.46×10−5 *11*; α(N+..)=6.24×10−5 *9*

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γ(^{166}Er) (continued)

E_γ[†]	I_γ[†c]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ	α[d]	Comments
									α(N)=1.74×10^{-5} *3*; α(O)=2.53×10^{-6} *4*; α(P)=1.438×10^{-7} *21*; α(IPF)=4.23×10^{-5} *6* Mult.: from α(K)exp=0.0023 *2*. δ: weighted average of −0.18 *7* (1985DaZV) and −0.09 *4* from 1374γ-785γ(θ) (1993AdZY). others: +0.01 *14* from 1374γ-705γ(θ) (1993AdZY), −0.34 *+17−12* from γ(θ,H,t) (1995KrZX). Additional information 20.
1378.6 *10*	0.040 *20*	1458.164	(2)$^-$	80.581	2$^+$				
1383.5 *3*	0.06 *3*	2243.099	3$^-$	859.399	3$^+$				
[x]1388.47 *5*	0.22 *3*								
1396.8 *4*	0.015 *8*	2352.91	2$^{(+)}$,3	956.240	4$^+$				
1401.16 *4*	0.39 *3*	2260.66	2$^{(+)}$,3	859.399	3$^+$				
[x]1406.6 *3*	0.023 *8*								
1413.81 *4*	0.310 *15*	1678.77	(4)$^+$	264.985	4$^+$	M1(+E2+E0)	+0.35 *30*	0.062 *21*	α(K)=0.00218 *17*; α(L)=0.000306 *22*; α(M)=6.7×10^{-5} *5*; α(N+..)=7.2×10^{-5} *4* α(N)=1.57×10^{-5} *11*; α(O)=2.28×10^{-6} *17*; α(P)=1.29×10^{-7} *11*; α(IPF)=5.43×10^{-5} *20* Mult.: from α(K)exp=0.0048 *16* (1993BaZS). α: approximate value from α(K)exp x 1.3.
1427.06 *20*	0.14 *4*	2212.97		785.917	2$^+$				
1430.2 *3*	0.86 *20*	2215.972	2$^-$,3$^-$	785.917	2$^+$				
1431.6 *3*	1.8 *3*	2290.997	(3)$^+$	859.399	3$^+$				Additional information 27.
1433.1 *3*	2.3 *4*	1513.760	3$^-$	80.581	2$^+$	E1+M2	+0.054 *+19−27*	8.70×10^{-4}	α(K)=0.000615 *9*; α(L)=8.18×10^{-5} *12*; α(M)=1.79×10^{-5} *3*; α(N+..)=0.0001553 *22* α(N)=4.16×10^{-6} *6*; α(O)=6.03×10^{-7} *9*; α(P)=3.39×10^{-8} *5*; α(IPF)=0.0001505 *22* Mult.,δ: from Adopted Gammas; E1 from α(K)exp=0.0009 *3* (1993BaZS).
1437.3 *3*	0.30 *4*	2393.14	2$^+$,3$^+$	956.240	4$^+$				
1447.820 *25*	3.39 *8*	1528.404	2$^+$	80.581	2$^+$	M1+E2+E0	+0.5 *3*	0.0021 *5*	α(K)=0.0018 *4*; α(L)=0.00025 *6*; α(M)=5.5×10^{-5} *12*; α(N+..)=7.6×10^{-5} *9* α(N)=1.3×10^{-5} *3*; α(O)=1.8×10^{-6} *4*; α(P)=1.03×10^{-7} *25*; α(IPF)=6.1×10^{-5} *6* Mult.: from α(K)exp=0.0038 *9* (1993BaZS). δ: from Adopted Gammas. Additional information 8.
1457.17[b] *5*	0.35 *5*	2243.099	3$^-$	785.917	2$^+$				
1474.84 *4*	0.593 *16*	2260.66	2$^{(+)}$,3	785.917	2$^+$	M1,E2		0.0021 *5*	α(K)=0.0017 *4*; α(L)=0.00024 *5*; α(M)=5.2×10^{-5} *11*; α(N+..)=8.5×10^{-5} *10*

γ(^{166}Er) (continued)

E_γ †	I_γ †c	E_i(level)	J^π_i	E_f	J^π_f	Mult. ‡	δ	α d	Comments
									α(N)=1.2×10^{-5} *3*; α(O)=1.8×10^{-6} *4*; α(P)=9.9×10^{-8} *24*; α(IPF)=7.1×10^{-5} *7* Mult.: from α(K)exp=1.8×10^{-3} *10*.
1487.01 *15*	0.046 *8*	2273.01	3$^-$	785.917	2$^+$				
1493.43 *16*	0.081 *12*	2352.91	2$^{(+)}$,3	859.399	3$^+$				
^{x}1495.57 *18*	0.074 *12*								
1505.00 *4*	4.37 *10*	2290.997	(3)$^+$	785.917	2$^+$	M1(+E2)	−0.2 *+2−3*	0.00237 *14*	α(K)=0.00194 *12*; α(L)=0.000270 *16*; α(M)=5.9×10^{-5} *4*; α(N+..)=0.000105 *4* α(N)=1.39×10^{-5} *8*; α(O)=2.02×10^{-6} *12*; α(P)=1.15×10^{-7} *8*; α(IPF)=8.9×10^{-5} *3* Mult.: from α(K)exp=0.0024 *10*. δ: from 1985DaZV. Additional information 28.
1518.8 *9*	0.026 *6*	2377.77	1$^+$	859.399	3$^+$				
1522.85 *4*	0.552 *21*	2382.27	(3)$^+$	859.399	3$^+$	M1(+E2)		0.0019 *4*	α(K)=0.0016 *4*; α(L)=0.00022 *5*; α(M)=4.9×10^{-5} *10*; α(N+..)=0.000101 *12* α(N)=1.14×10^{-5} *23*; α(O)=1.6×10^{-6} *4*; α(P)=9.2×10^{-8} *22*; α(IPF)=8.8×10^{-5} *9* Mult.: from α(K)exp=2.4×10^{-3} *9*.
1528.38 *4*	0.207 *17*	1528.404	2$^+$	0.0	0$^+$	E2		1.54×10^{-3}	α(K)=0.001235 *18*; α(L)=0.0001753 *25*; α(M)=3.86×10^{-5} *6*; α(N+..)=9.19×10^{-5} *13* α(N)=8.99×10^{-6} *13*; α(O)=1.295×10^{-6} *19*; α(P)=7.03×10^{-8} *10*; α(IPF)=8.15×10^{-5} *12* Mult.: from α(K)exp>0.0013.
1533.80 *19*	0.024 *6*	2393.14	2$^+$,3$^+$	859.399	3$^+$				
1554.33 *20*	0.030 *15*	2413.68	(2,3,4)	859.399	3$^+$				
^{x}1562.05 *9*	0.068 *12*								
1575.65 *26*	0.14 *3*	2435.11	(3,4)$^+$	859.399	3$^+$				
^{x}1577.5 *3*	0.051 *20*								
1581.8 *8*	0.15 *6*	1662.32	1$^-$	80.581	2$^+$	E1(+M2)	−0.027 *27*	8.69×10^{-4} *15*	α(K)=0.000523 *11*; α(L)=6.94×10^{-5} *15*; α(M)=1.52×10^{-5} *4*; α(N+..)=0.000261 *4* α(N)=3.53×10^{-6} *8*; α(O)=5.11×10^{-7} *11*; α(P)=2.89×10^{-8} *7*; α(IPF)=0.000257 *4* Mult.,δ: from Adopted Gammas.
1586.68 *8*	0.143 *24*	2542.88		956.240	4$^+$				
1591.77 *6*	0.812 *18*	2377.77	1$^+$	785.917	2$^+$	E2,M1		0.0018 *4*	α(K)=0.0014 *3*; α(L)=0.00020 *4*; α(M)=4.4×10^{-5} *9*; α(N+..)=0.000128 *14* α(N)=1.03×10^{-5} *20*; α(O)=1.5×10^{-6} *3*; α(P)=8.4×10^{-8} *19*; α(IPF)=0.000116 *12* Mult.: from α(K)exp=0.0026 *14*.
1596.7 *5*	0.045 *20*	2382.27	(3)$^+$	785.917	2$^+$				
1607.18 *3*	0.79 *4*	2393.14	2$^+$,3$^+$	785.917	2$^+$	E2,M1		0.0018 *4*	α(K)=0.0014 *3*; α(L)=0.00020 *4*; α(M)=4.3×10^{-5} *9*;

$^{166}_{68}$Er$_{98}$-17

γ(^{166}Er) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [‡]	α [d]	Comments
								α(N+..)=0.000134 *15* α(N)=1.01×10^{-5} *20*; α(O)=1.5×10^{-6} *3*; α(P)=8.2×10^{-8} *18*; α(IPF)=0.000122 *13* Mult.: from α(K)exp=2.0×10^{-3} *11*.
1615.88 *7*	0.153 *11*	2475.40	(1,2$^+$)	859.399	3$^+$			
1622.45 *3*	2.39 *6*	1703.057	(2,3,4)$^+$	80.581	2$^+$	E2,M1	0.0018 *4*	α(K)=0.0014 *3*; α(L)=0.00019 *4*; α(M)=4.2×10^{-5} *8*; α(N+..)=0.000140 *16* α(N)=9.9×10^{-6} *19*; α(O)=1.4×10^{-6} *3*; α(P)=8.0×10^{-8} *18*; α(IPF)=0.000129 *13* Mult.: from α(K)exp=0.0021 *11*. Additional information 9.
1627.8 *3*	0.16 *3*	2413.68	(2,3,4)	785.917	2$^+$			if this is the same transition As the 1630γ In (n,n′γ), mult=D+Q, δ=+15 *+31−5*.
1629.4 [e] *3*	0.15 [e] *3*	1894.364	2$^+$,3$^+$,4$^+$	264.985	4$^+$			
1629.4 [e] *3*	0.15 [e] *3*	2586.07	(3,4)$^+$	956.240	4$^+$			
^{x}1641.10 [b] *20*	0.127 *15*							
1649.19 *10*	0.33 *6*	2435.11	(3,4)$^+$	785.917	2$^+$			
1652.76 *3*	5.60 *15*	1917.767	3$^-$	264.985	4$^+$	E1	8.75×10^{-4}	α(K)=0.000484 *7*; α(L)=6.40×10^{-5} *9*; α(M)=1.399×10^{-5} *20*; α(N+..)=0.000313 *5* α(N)=3.26×10^{-6} *5*; α(O)=4.72×10^{-7} *7*; α(P)=2.67×10^{-8} *4*; α(IPF)=0.000310 *5* δ: <−0.03 from γγ(θ) (1980Bu26); −0.05 *8* from A_2=−0.10 *7*, A_4=−0.06 *16* for 1653γ-184γ(θ) (1993AdZY). Mult.: from α(K)exp=0.0005 *2*. Additional information 11.
1658.4 *3*	0.097 *20*	2444.16		785.917	2$^+$			
1662.33 *20*	0.120 *15*	1662.32	1$^-$	0.0	0$^+$	E1	8.77×10^{-4}	Mult.: from Adopted Gammas.
1673.5 *4*	0.078 *20*	1938.273	(3)$^+$	264.985	4$^+$			
1683.3 *3*	0.08 *3*	2542.88		859.399	3$^+$			
^{x}1688.6 *4*	0.041 *15*							
1690.2 *4*	0.043 *15*	2475.40	(1,2$^+$)	785.917	2$^+$			
^{x}1703.0 *5*	0.055 *22*							
1704.7 *3*	0.17 *4*	1969.71	(2,3,4)	264.985	4$^+$			
^{x}1707.7 *5*	0.032 *12*							
^{x}1714.2 *5*	0.025 *10*							
1720.87 *20*	0.26 *3*	1985.644	3$^-$	264.985	4$^+$	(E1)	8.89×10^{-4}	α(K)=0.000453 *7*; α(L)=5.98×10^{-5} *9*; α(M)=1.307×10^{-5} *19*; α(N+..)=0.000363 *5* α(N)=3.04×10^{-6} *5*; α(O)=4.41×10^{-7} *7*; α(P)=2.50×10^{-8} *4*; α(IPF)=0.000360 *5* Mult.: E1,E2 from α(K)exp=0.6×10^{-3} *4*.
1726.3 *5*	0.021 *8*	2586.07	(3,4)$^+$	859.399	3$^+$			
^{x}1730.5 *5*	0.12 *4*							
1731.9 *5*	0.12 *4*	1813.2	1$^{(+)}$	80.581	2$^+$	(M1+E2)		Mult.: from Adopted Gammas.

γ(^{166}Er) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	δ	α [d]	Comments
1737.09 *20*	0.41 *2*	2001.874	(3)$^-$	264.985	4$^+$	(E1)		8.93×10^{-4}	α(K)=0.000446 *7*; α(L)=5.89×10^{-5} *9*; α(M)=1.287×10^{-5} *18*; α(N+..)=0.000375 *6* α(N)=2.99×10^{-6} *5*; α(O)=4.34×10^{-7} *6*; α(P)=2.46×10^{-8} *4*; α(IPF)=0.000372 *6* Mult.: E1,E2 from α(K)exp=0.7×10^{-3} *4*.
1749.78 *7*	0.113 *8*	1830.42	1$^-$	80.581	2$^+$	(E1(+M2))		0.0023 *15*	Mult.: from Adopted Gammas.
[x]1755.5 *5*	0.033 *6*								
1758.06 *20*	0.101 *9*	2022.62	(4$^+$)	264.985	4$^+$				
1781.40 *15*	0.110 *12*	2046.88	2$^+$,3$^+$	264.985	4$^+$				
1784.58 *4*	0.489 *25*	1865.17		80.581	2$^+$				
1810.6 *5*	0.10 *3*	2076.305	(3$^-$)	264.985	4$^+$				
1813.4[e] *3*	0.37[e] *5*	1813.2	1$^{(+)}$	0.0	0$^+$	(M1)			Mult.: from Adopted Gammas.
1813.4[e] *3*	0.37[e] *5*	1894.364	2$^+$,3$^+$,4$^+$	80.581	2$^+$				
[x]1824.10 *20*	0.51 *10*								
1830.9 *5*	0.050 *20*	1830.42	1$^-$	0.0	0$^+$	(E1)		9.20×10^{-4}	Mult.: from Adopted Gammas.
1837.17 *3*	3.95 *9*	1917.767	3$^-$	80.581	2$^+$	E1		9.22×10^{-4}	α(K)=0.000407 *6*; α(L)=5.37×10^{-5} *8*; α(M)=1.172×10^{-5} *17*; α(N+..)=0.000449 *7* α(N)=2.73×10^{-6} *4*; α(O)=3.96×10^{-7} *6*; α(P)=2.25×10^{-8} *4*; α(IPF)=0.000446 *7* Mult.: from α(K)exp=5.3×10^{-4} *25*.
1846.6 *3*	0.08 *3*	2632.66	(3,4)$^+$	785.917	2$^+$				
1853.1 *10*	0.25 *6*	2117.8	(2$^+$,3,4$^+$)	264.985	4$^+$				
1857.62 *17*	0.10 *3*	1938.273	(3)$^+$	80.581	2$^+$				
1867.94 *3*	21.4 *5*	2132.951	3$^+$	264.985	4$^+$	M1+E2	+3.49 *+10−3*	1.26×10^{-3}	α(K)=0.000878 *13*; α(L)=0.0001218 *18*; α(M)=2.68×10^{-5} *4*; α(N+..)=0.000232 *4* α(N)=6.24×10^{-6} *9*; α(O)=9.02×10^{-7} *13*; α(P)=5.01×10^{-8} *7*; α(IPF)=0.000225 *4* δ: from γγ(θ) (1980Bu26). Others: 3.7 *+57−18* (1987Kr12). +4.3 *+10−7* from 1868γ-184γ(θ) (1993AdZY), +3.6 *+24−12* from γ(θ,H,t) (1995KrZX). Mult.: from α(K)exp=0.81×10^{-3} *9*.
[x]1883.18 *11*	0.127 *22*								
1889.12 *20*	0.14 *3*	1969.71	(2,3,4)	80.581	2$^+$				
1895.12 *3*	6.4 *20*	2160.121	3$^+$	264.985	4$^+$	M1+E2	+2.63 *4*	1.27×10^{-3}	α(K)=0.000870 *13*; α(L)=0.0001206 *17*; α(M)=2.65×10^{-5} *4*; α(N+..)=0.000248 *4* α(N)=6.17×10^{-6} *9*; α(O)=8.94×10^{-7} *13*; α(P)=4.98×10^{-8} *7*; α(IPF)=0.000240 *4* δ: from γγ(θ) (1980Bu26) based on %E2=87.4 and %M1=12.6 *3*. other: +2.3 *+6−4* from 1895γ-184γ(θ) (1993AdZY). Mult.: from α(K)exp=0.76×10^{-3} *10*.

$^{166}_{68}Er_{98}$-19

γ(^{166}Er) (continued)

E_γ[†]	I_γ[†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ	α[d]	Comments
1905.43 *23*	0.23 *6*	1985.644	3^-	80.581	2^+				
1907.71 *6*	1.82 *8*	2172.757	3^+	264.985	4^+	E2,M1		0.00141 *21*	α(K)=0.00098 *16*; α(L)=0.000135 *22*; α(M)=3.0×10^{-5} *5*; α(N+..)=0.00027 *3* α(N)=6.9×10^{-6} *11*; α(O)=1.00×10^{-6} *17*; α(P)=5.7×10^{-8} *10*; α(IPF)=0.00027 *3* Mult.: from α(K)exp=0.0015 *6*.
1921.40 *15*	0.36 *3*	2001.874	$(3)^-$	80.581	2^+				
[x]1922.4 *4*	0.06 *3*								
[x]1929.1 *3*	0.024 *6*								
1941.78 *15*	0.22 *3*	2022.62	(4^+)	80.581	2^+				
1943.6 *15*	0.06 *4*	2729.094	$(3,4)^+$	785.917	2^+				
1948.2[g] *3*	0.071 *8*	2212.97		264.985	4^+				
[x]1966.52 *4*	0.234 *23*					M1,M2			E_γ: close to, but inconsistent with, Eγ expected for a 2047 to 81 transition. Mult.: from α(K)exp=0.0023 *15*.
[x]1976.38 *20*	0.29 *3*								
1978.12 *20*	0.43 *3*	2243.099	3^-	264.985	4^+	E1		9.71×10^{-4}	α(K)=0.000361 *5*; α(L)=4.75×10^{-5} *7*; α(M)=1.038×10^{-5} *15*; α(N+..)=0.000552 *8* α(N)=2.41×10^{-6} *4*; α(O)=3.51×10^{-7} *5*; α(P)=1.99×10^{-8} *3*; α(IPF)=0.000549 *8* Mult.: E1,E2 from α(K)exp=1.0×10^{-3} *6*. Additional information 24.
[x]1986.53 *5*	0.194 *10*					M1,E2		0.00136 *19*	α(K)=0.00090 *14*; α(L)=0.000124 *19*; α(M)=2.7×10^{-5} *4*; α(N+..)=0.00031 *4* α(N)=6.3×10^{-6} *10*; α(O)=9.2×10^{-7} *15*; α(P)=5.2×10^{-8} *9*; α(IPF)=0.00031 *4* Mult.: from α(K)exp=0.0011 *6*.
1996.10 *15*	0.041 *5*	2076.305	(3^-)	80.581	2^+				
[x]2003.4 *3*	0.071 *14*								
2008.00 *4*	1.21 *3*	2273.01	3^-	264.985	4^+	E1		9.82×10^{-4}	α(K)=0.000353 *5*; α(L)=4.64×10^{-5} *7*; α(M)=1.012×10^{-5} *15*; α(N+..)=0.000573 *8* α(N)=2.36×10^{-6} *4*; α(O)=3.42×10^{-7} *5*; α(P)=1.95×10^{-8} *3*; α(IPF)=0.000571 *8* Mult.: from α(K)exp=0.44×10^{-3} *25*. Additional information 25.
2017.67 *7*	0.200 *20*	2282.68	$2^{(+)}$,3	264.985	4^+				
[x]2022.03 *20*	0.09 *3*								
2026.06[e] *11*	0.120[e] *20*	2290.997	$(3)^+$	264.985	4^+				
2026.06[e] *11*	0.120[e] *20*	2811.99	1	785.917	2^+				
2036.8 *12*	0.100 *20*	2117.8	$(2^+,3,4^+)$	80.581	2^+				
2052.36 *3*	91.0 *18*	2132.951	3^+	80.581	2^+	M1+E2	+7.0 *5*	1.16×10^{-3}	α(K)=0.000723 *11*; α(L)=9.96×10^{-5} *14*; α(M)=2.19×10^{-5} *3*; α(N+..)=0.000314 *5*

$^{166}_{68}$Er$_{98}$-20

γ(^{166}Er) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	δ	α [d]	Comments
									α(N)=5.09×10^{-6} *8*; α(O)=7.37×10^{-7} *11*; α(P)=4.12×10^{-8} *6*; α(IPF)=0.000308 *5* δ: from γγ(θ) (1980Bu26). Others: +9 *+19−4* (1985DaZV), +6.0 *+76−24* from γ(θ,H,t) (1995KrZX). Additional information 18. Mult.: from α(K)exp=0.77×10^{-3} *8*.
2079.53 *3*	33.3 *7*	2160.121	3$^+$	80.581	2$^+$	M1+E2	+5.2 *+15−5*	1.16×10^{-3}	α(K)=0.000709 *11*; α(L)=9.76×10^{-5} *15*; α(M)=2.14×10^{-5} *4*; α(N+..)=0.000328 *5* α(N)=4.99×10^{-6} *8*; α(O)=7.23×10^{-7} *11*; α(P)=4.04×10^{-8} *6*; α(IPF)=0.000322 *5* Mult.: from α(K)exp=0.72×10^{-3} *7*. δ: from γγ(θ) (1980Bu26). Others: +10+∞−6 (1985DaZV), +10 +∞−6 from γ(θ,H,t) (1995KrZX). Additional information 21.
2092.13 *3*	8.26 *18*	2172.757	3$^+$	80.581	2$^+$	M1+E2	+3.7 *+19−7*	1.16×10^{-3} *2*	α(K)=0.000709 *13*; α(L)=9.74×10^{-5} *18*; α(M)=2.14×10^{-5} *4*; α(N+..)=0.000336 *6* α(N)=4.98×10^{-6} *10*; α(O)=7.22×10^{-7} *14*; α(P)=4.04×10^{-8} *8*; α(IPF)=0.000331 *6* Mult.: from α(K)exp=0.99×10^{-3} *44*. δ: from γγ(θ) (1980Bu26). Additional information 23.
^{x}2100.2 *6*	0.032 *9*								
2128.19 *5*	0.088 *6*	2393.14	2$^+$,3$^+$	264.985	4$^+$				
2135.36 *4*	0.192 *8*	2215.972	2$^-$,3$^-$	80.581	2$^+$				
2148.6 *3*	0.012 *3*	2413.68	(2,3,4)	264.985	4$^+$				I_γ: there is a discrepancy. Iγ=0.12 *3* in table 1 but 0.01 in table 2 of 1989Ad11.
2162.54 *5*	0.278 *11*	2243.099	3$^-$	80.581	2$^+$	E1		1.04×10^{-3}	α(K)=0.000313 *5*; α(L)=4.11×10^{-5} *6*; α(M)=8.98×10^{-6} *13*; α(N+..)=0.000680 *10* α(N)=2.09×10^{-6} *3*; α(O)=3.04×10^{-7} *5*; α(P)=1.730×10^{-8} *25*; α(IPF)=0.000678 *10* Mult.: from α(K)exp=0.29×10^{-3} *17*.
^{x}2176.61 *6*	0.184 *8*					M1,E2		0.00128 *16*	α(K)=0.00074 *10*; α(L)=0.000102 *14*; α(M)=2.2×10^{-5} *3*; α(N+..)=0.00041 *5* α(N)=5.2×10^{-6} *7*; α(O)=7.6×10^{-7} *11*; α(P)=4.3×10^{-8} *7*; α(IPF)=0.00041 *5* Mult.: from α(K)exp=0.0015 *9*.
2183.68 *7*	0.117 *7*	2264.31	(1,2$^+$)	80.581	2$^+$	Q(+D)			Mult.: from Adopted Gammas.
2192.43 *4*	1.09 *3*	2273.01	3$^-$	80.581	2$^+$	E1		1.06×10^{-3}	α(K)=0.000307 *5*; α(L)=4.02×10^{-5} *6*; α(M)=8.78×10^{-6} *13*; α(N+..)=0.000700 *10* α(N)=2.04×10^{-6} *3*; α(O)=2.97×10^{-7} *5*;

$^{166}_{68}$Er$_{98}$-21

γ(^{166}Er) (continued)

E_γ†	I_γ†c	E_i(level)	J^π_i	E_f	J^π_f	Mult.‡	αd	Comments
								α(P)=1.693×10^{-8} 24; α(IPF)=0.000698 10 Mult.: from α(K)exp=0.40×10^{-3} 23. Additional information 26.
2202.09 6	0.238 10	2282.68	2$^{(+)}$,3	80.581	2$^+$	E1,E2		Mult.: from α(K)exp=0.68×10^{-3} 37.
2210.49 6	0.323 12	2290.997	(3)$^+$	80.581	2$^+$			
2247.90 20	0.0118 19	2328.69	(1,2)	80.581	2$^+$			
^{x}2254.5 3	0.007 3							
^{x}2257.0 3	0.0096 25							
2264.34 8	0.038 3	2264.31	(1,2$^+$)	0.0	0$^+$			
2272.33 15	0.0228 23	2352.91	2$^{(+)}$,3	80.581	2$^+$			
2277.88 8	0.056 2	2542.88		264.985	4$^+$			
^{x}2284.6 3	0.0087 19							
2297.26 10	0.079 4	2377.77	1$^+$	80.581	2$^+$	E2,M1	0.00125 14	α(K)=0.00066 8; α(L)=9.1×10^{-5} 11; α(M)=1.99×10^{-5} 24; α(N+..)=0.00048 5 α(N)=4.6×10^{-6} 6; α(O)=6.8×10^{-7} 9; α(P)=3.8×10^{-8} 5; α(IPF)=0.00047 5 Mult.: from α(K)exp=0.0014 8.
^{x}2302.85 8	0.112 10					E2,M1	0.00125 14	α(K)=0.00066 8; α(L)=9.0×10^{-5} 11; α(M)=1.98×10^{-5} 24; α(N+..)=0.00048 5 α(N)=4.6×10^{-6} 6; α(O)=6.7×10^{-7} 9; α(P)=3.8×10^{-8} 5; α(IPF)=0.00047 5 Mult.: from α(K)exp=0.9×10^{-3} 6.
^{x}2309.3 3	0.0145 17							
2312.57 9	0.082 4	2393.14	2$^+$,3$^+$	80.581	2$^+$	M1	1.38×10^{-3}	α(K)=0.000726 11; α(L)=9.98×10^{-5} 14; α(M)=2.19×10^{-5} 3; α(N+..)=0.000532 8 α(N)=5.12×10^{-6} 8; α(O)=7.46×10^{-7} 11; α(P)=4.27×10^{-8} 6; α(IPF)=0.000526 8 Mult.: from α(K)exp=1.5×10^{-3} 9.
2321.18 18	0.0122 18	2586.07	(3,4)$^+$	264.985	4$^+$			
2328.72 10	0.0225 21	2328.69	(1,2)	0.0	0$^+$			
2333.11 10	0.0247 25	2413.68	(2,3,4)	80.581	2$^+$			
^{x}2352.7 10	0.006 3							
2354.6 10	0.009 4	2619.6	(2$^+$)	264.985	4$^+$			
2363.3 4	0.0186 22	2444.16		80.581	2$^+$			
^{x}2366.6 4	0.0163 24							
2377.84 8	0.100 10	2377.77	1$^+$	0.0	0$^+$	M1	1.37×10^{-3}	α(K)=0.000682 10; α(L)=9.36×10^{-5} 14; α(M)=2.06×10^{-5} 3; α(N+..)=0.000570 8 α(N)=4.80×10^{-6} 7; α(O)=6.99×10^{-7} 10; α(P)=4.00×10^{-8} 6; α(IPF)=0.000564 8 Mult.: from α(K)exp=0.0010 6.
2383.91 10	0.066 6	2464.52	1$^+$	80.581	2$^+$	E2,M1	0.00124 13	α(K)=0.00061 7; α(L)=8.4×10^{-5} 10; α(M)=1.84×10^{-5} 21; α(N+..)=0.00052 6

From ENSDF

$^{166}_{68}$Er$_{98}$-22

γ(^{166}Er) (continued)

E_γ †	I_γ †c	E_i(level)	J^π_i	E_f	J^π_f	Mult.‡	α d	Comments
								α(N)=4.3×10^{-6} *5*; α(O)=6.2×10^{-7} *8*; α(P)=3.5×10^{-8} *5*; α(IPF)=0.00052 *6* Mult.: from α(K)exp=6.5×10^{-4} *40*.
2394.81 *8*	0.155 *7*	2475.40	(1,2$^+$)	80.581	2$^+$	E2,M1	0.00124 *13*	α(K)=0.00061 *7*; α(L)=8.3×10^{-5} *9*; α(M)=1.82×10^{-5} *21*; α(N+..)=0.00053 *6* α(N)=4.3×10^{-6} *5*; α(O)=6.2×10^{-7} *7*; α(P)=3.5×10^{-8} *5*; α(IPF)=0.00052 *6* Mult.: from α(K)exp=0.8×10^{-3} *4*.
^{x}2398.7 *4*	0.014 *4*							
^{x}2403.05 *25*	0.0096 *22*							
^{x}2413.0 *5*	0.007 *3*							
^{x}2423.95 *10*	0.128 *4*					E2,M1	0.00123 *13*	α(K)=0.00059 *6*; α(L)=8.1×10^{-5} *9*; α(M)=1.78×10^{-5} *20*; α(N+..)=0.00054 *6* α(N)=4.1×10^{-6} *5*; α(O)=6.0×10^{-7} *7*; α(P)=3.4×10^{-8} *4*; α(IPF)=0.00054 *6* Mult.: from α(K)exp=0.8×10^{-3} *4*.
^{x}2435.8 *5*	0.019 *3*							
^{x}2438.6 *10*	0.0110 *25*							
^{x}2441.3 *8*	0.016 *3*							
2444.0 *10*	0.0086 *25*	2444.16		0.0	0$^+$			
^{x}2458.51 *20*	0.023 *5*							
2462.5 *5*	0.085 *8*	2542.88		80.581	2$^+$			
2464.7 *5*	0.126 *10*	2464.52	1$^+$	0.0	0$^+$	M1	1.35×10^{-3}	α(K)=0.000628 *9*; α(L)=8.62×10^{-5} *12*; α(M)=1.89×10^{-5} *3*; α(N+..)=0.000619 *9* α(N)=4.42×10^{-6} *7*; α(O)=6.44×10^{-7} *9*; α(P)=3.69×10^{-8} *6*; α(IPF)=0.000614 *9* Mult.: E2,M1 from α(K)exp=9×10^{-4} *5*; ΔJ=1 from Adopted Gammas.
^{x}2490.4 *7*	0.0040 *9*							
^{x}2494.42 *20*	0.0247 *15*							
2505.58 *20*	0.0224 *18*	2586.07	(3,4)$^+$	80.581	2$^+$			
2520.20 *10*	0.110 *7*	2600.64	1$^+$	80.581	2$^+$			
^{x}2524.6 *5*	0.0086 *20*							
2532.3 *3*	0.0077 *13*	2613.50		80.581	2$^+$			
^{x}2536.7 *10*	0.014 *3*							
2538.8 *10*	0.0145 *26*	2619.6	(2$^+$)	80.581	2$^+$			
2544.3 *3*	0.0146 *25*	2624.8	(1,2)	80.581	2$^+$			
2547.1 *10*	0.008 *3*	2628.5	(1,2)	80.581	2$^+$			
2552.12 *20*	0.0210 *16*	2632.66	(3,4)$^+$	80.581	2$^+$			
^{x}2560.1 *5*	0.029 *4*							
^{x}2562.8 *3*	0.084 *4*					E2,M1	0.00123 *12*	α(K)=0.00053 *5*; α(L)=7.2×10^{-5} *7*; α(M)=1.58×10^{-5} *16*; α(N+..)=0.00061 *7* α(N)=3.7×10^{-6} *4*; α(O)=5.4×10^{-7} *6*; α(P)=3.1×10^{-8} *4*; α(IPF)=0.00061 *7* Mult.: from α(K)exp=1.2×10^{-3} *6*.

$^{166}_{68}$Er$_{98}$-23

γ(^{166}Er) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	α [d]	Comments
2591.4 *3*	0.013 *4*	2671.98		80.581	2$^+$			
2598.2 *4*	0.125 *25*	2679.05	1$^+$	80.581	2$^+$			
2600.76 *20*	0.225 *25*	2600.64	1$^+$	0.0	0$^+$	M1	1.34×10^{-3}	α(K)=0.000557 *8*; α(L)=7.63×10^{-5} *11*; α(M)=1.675×10^{-5} *24*; α(N+..)=0.000694 *10* α(N)=3.91×10^{-6} *6*; α(O)=5.69×10^{-7} *8*; α(P)=3.26×10^{-8} *5*; α(IPF)=0.000690 *10* Mult.: E2,M1 from α(K)exp=0.7×10^{-3} *4*; D from Adopted Gammas.
2613.75 *20*	0.0188 *18*	2613.50		0.0	0$^+$			
2619.7 *8*	0.021 *14*	2619.6	(2$^+$)	0.0	0$^+$			
^{x}2620.8 *6*	0.042 *4*							
2624.4 *7*	0.0150 *15*	2624.8	(1,2)	0.0	0$^+$			
2628.5 *3*	0.0215 *21*	2628.5	(1,2)	0.0	0$^+$			
2648.50 *2*	0.092 *6*	2729.094	(3,4)$^+$	80.581	2$^+$	E2,M1	0.00123 *12*	α(K)=0.00049 *4*; α(L)=6.7×10^{-5} *6*; α(M)=1.48×10^{-5} *13*; α(N+..)=0.00066 *7* α(N)=3.4×10^{-6} *3*; α(O)=5.0×10^{-7} *5*; α(P)=2.9×10^{-8} *3*; α(IPF)=0.00065 *7* Mult.: from α(K)exp=0.9×10^{-3} *5*.
2671.95 *20*	0.0262 *19*	2671.98		0.0	0$^+$			
2679.09 *20*	0.241 *18*	2679.05	1$^+$	0.0	0$^+$	M1	1.34×10^{-3}	α(K)=0.000521 *8*; α(L)=7.13×10^{-5} *10*; α(M)=1.566×10^{-5} *22*; α(N+..)=0.000737 *11* α(N)=3.65×10^{-6} *6*; α(O)=5.32×10^{-7} *8*; α(P)=3.05×10^{-8} *5*; α(IPF)=0.000733 *11* Mult.: E2,M1 from α(K)exp=0.7×10^{-3} *4*; D from Adopted Gammas. Additional information 29.
^{x}2682.5 *7*	0.030 *3*							
2703.1 *4*	0.0202 *25*	2783.69	1$^+$	80.581	2$^+$			
2716.8 *4*	0.0139 *16*	2797.5	(1,2)	80.581	2$^+$			
^{x}2720.2 *4*	0.0102 *20*							
2728.9 *10*	0.0065 *20*	2729.094	(3,4)$^+$	0.0	0$^+$			
2732.0 *10*	0.0060 *20*	2811.99	1	80.581	2$^+$			
^{x}2740.26 *20*	0.0440 *25*							
^{x}2753.05 *20*	0.0140 *25*							
2777.56 *18*	0.0126 *11*	2858.17	(1,2)	80.581	2$^+$			
2783.8 *3*	0.0351 *19*	2783.69	1$^+$	0.0	0$^+$	M1		Mult.: E2,M1 from α(K)exp=0.7×10^{-3} *4*; D from Adopted Gammas.
^{x}2795.7 *7*	0.0057 *20*							
2798.2 *10*	0.0043 *18*	2797.5	(1,2)	0.0	0$^+$			
^{x}2801.3 *7*	0.0042 *15*							
^{x}2808.5 *10*	0.0034 *12*							
2811.7 *10*	0.0041 *12*	2811.99	1	0.0	0$^+$	D		Mult.: from Adopted Gammas.
2858.1 *10*	0.0035 *15*	2858.17	(1,2)	0.0	0$^+$			
^{x}2861.4 *10*	0.0043 *15*							

γ(^{166}Er) (continued)

[†] From 1989Ad11, except As noted.

[‡] Deduced from α(K)exp=Ce(K)/Iγ normalized to α(K)(778.90γ)=4.79$\times10^{-3}$ (E2 theory), Ce(K) from 1979Ad06, Iγ from 1989Ad11, except As noted.

[#] Measured Eγ=1119.50 *4* (Iγ=1.35 *5*) is doublet, Iγ divided by 1989Ad11. α(K)exp=0.00089 *22* for doublet (1993BaZS).

[@] Measured Eγ=194.678 *15* (Iγ=4.34 *13*) is doublet, Iγ divided by 1989Ad11.

[&] Measured Eγ=646.75 *4* (Iγ=0.117 *6*) is doublet, Iγ divided by 1989Ad11.

[a] Eγ deviates by At least 5σ from value expected for this placement. datum excluded from least-squares fit.

[b] if the unplaced 1641γ in ε decay corresponds to the 1641γ deexciting a 1722 level in (n,n$'\gamma$), then one should also see a 1456.6γ in ε decay. From Iγ(1456.6γ)/Iγ(1641.2γ)=0.78 *16* In (n,n$'\gamma$) and I(1641γ)=0.127 *15* In ε decay, one expects Iγ(1456γ)=0.099 *24* for a possible 1456.6 *10* transition In ε decay. This could have been masked by the 1457.17γ, with Iγ=0.35 *5*. However, if present, Iγ(1457γ) from the 2243.1 level in ε decay should then be decreased to 0.25 *6*.

[c] For absolute intensity per 100 decays, multiply by 0.191 *11*.

[d] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[e] Multiply placed with undivided intensity.

[f] Multiply placed with intensity suitably divided.

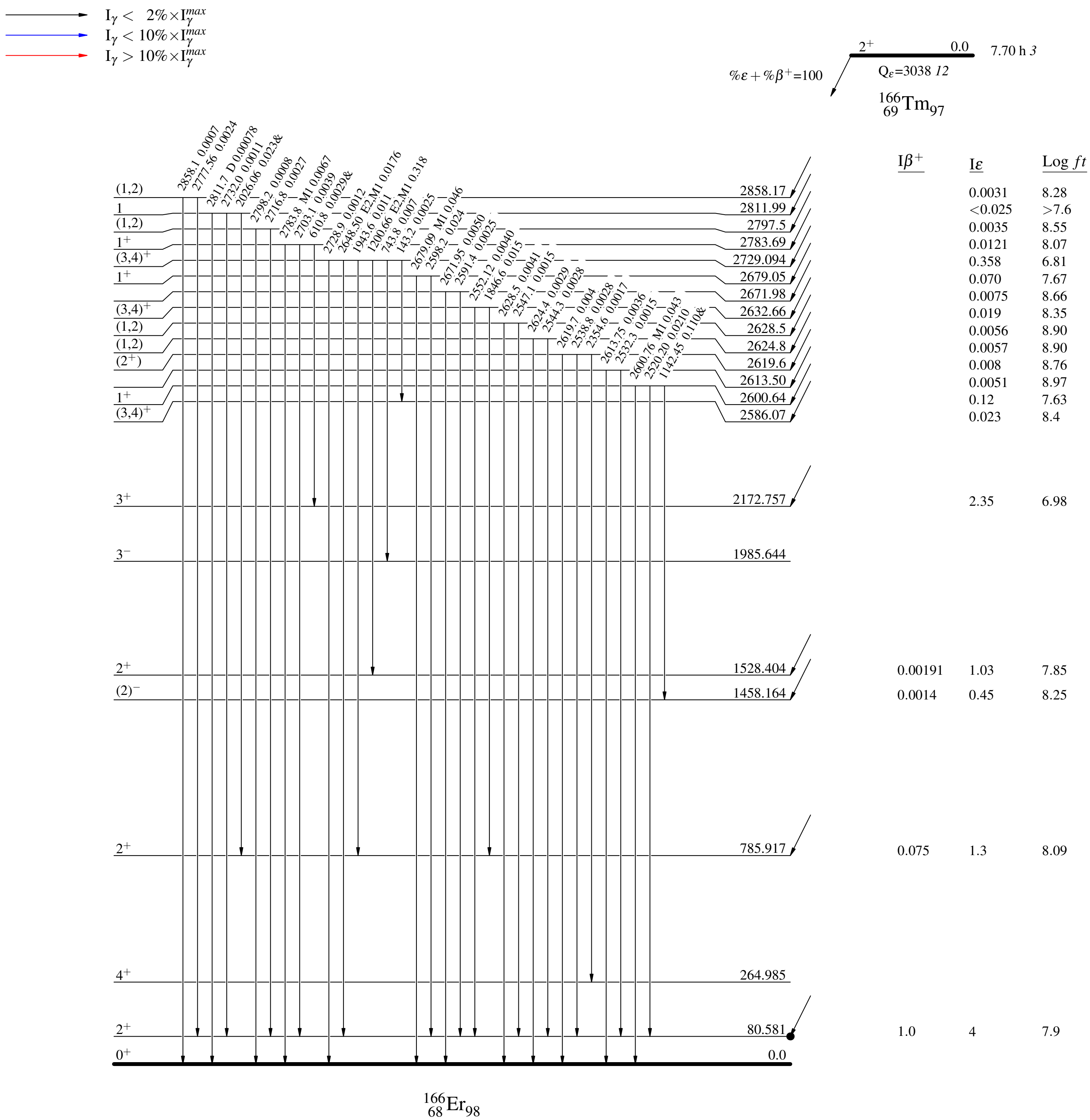
[g] Placement of transition in the level scheme is uncertain.

[x] γ ray not placed in level scheme.

^{166}Tm ε decay 1989Ad11

Decay Scheme

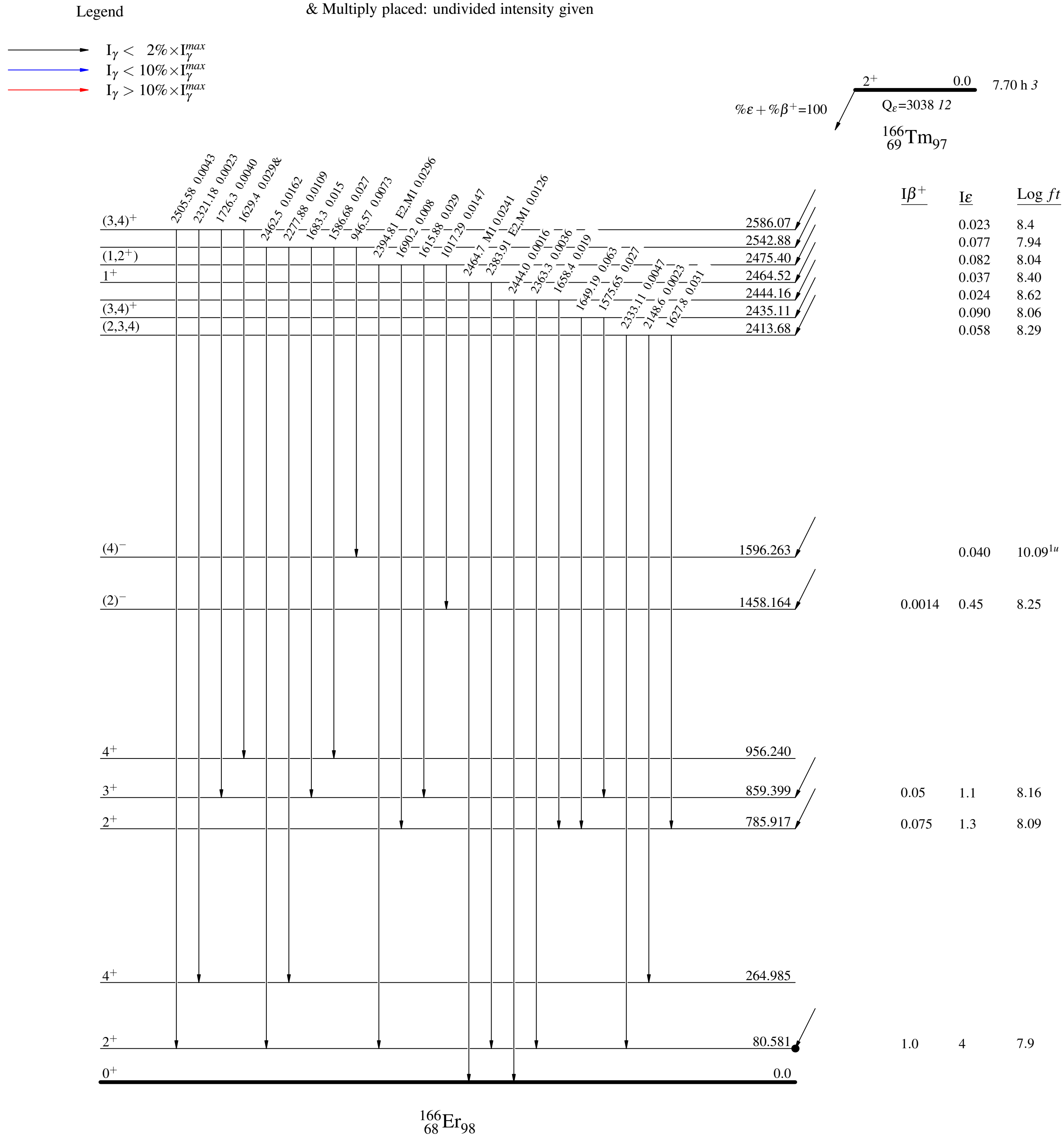
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given



^{166}Tm ε decay 1989Ad11

Decay Scheme (continued)

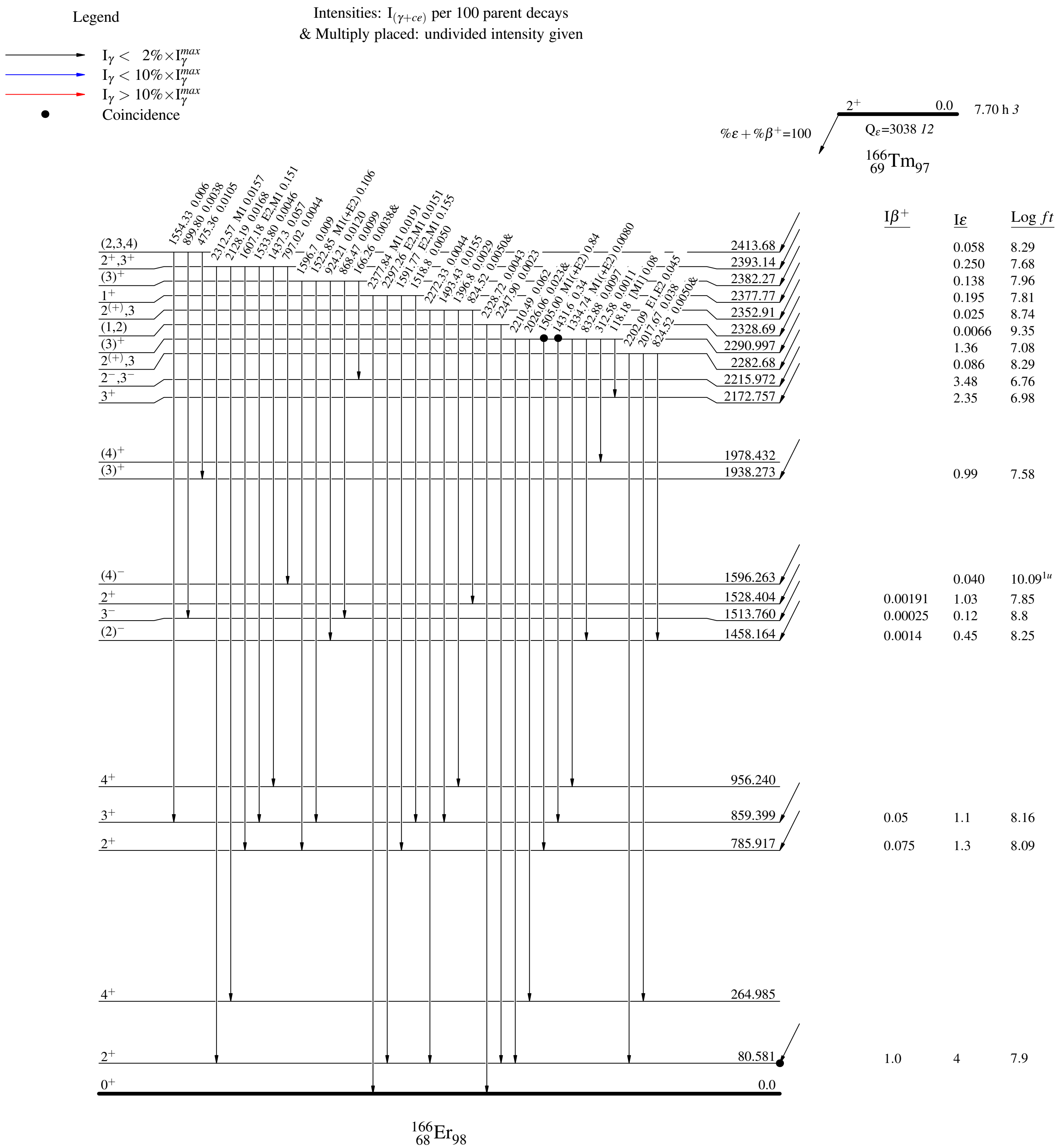
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given



^{166}Tm ε decay 1989Ad11

Decay Scheme (continued)

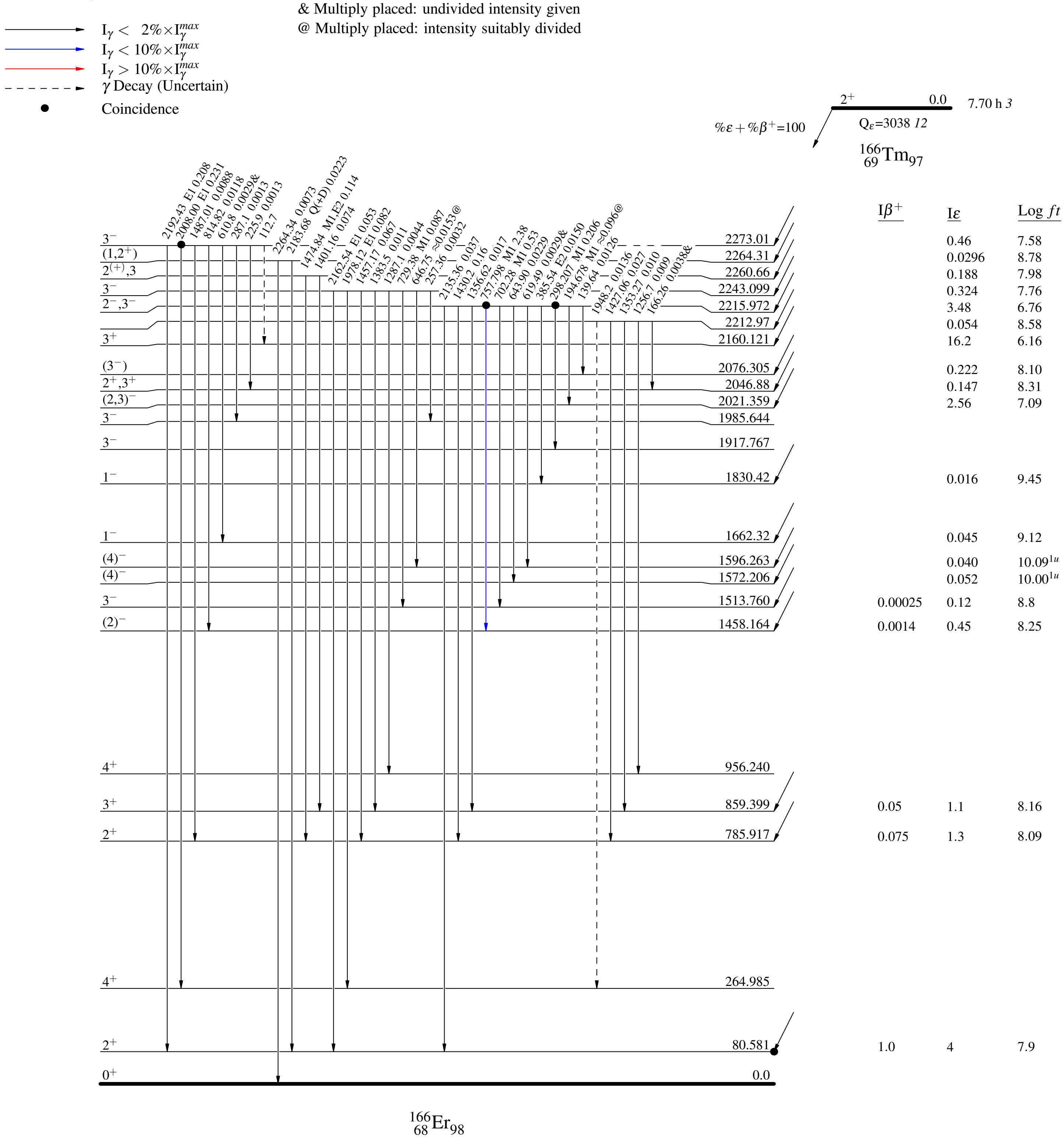
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given



^{166}Tm ε decay 1989Ad11

Decay Scheme (continued)

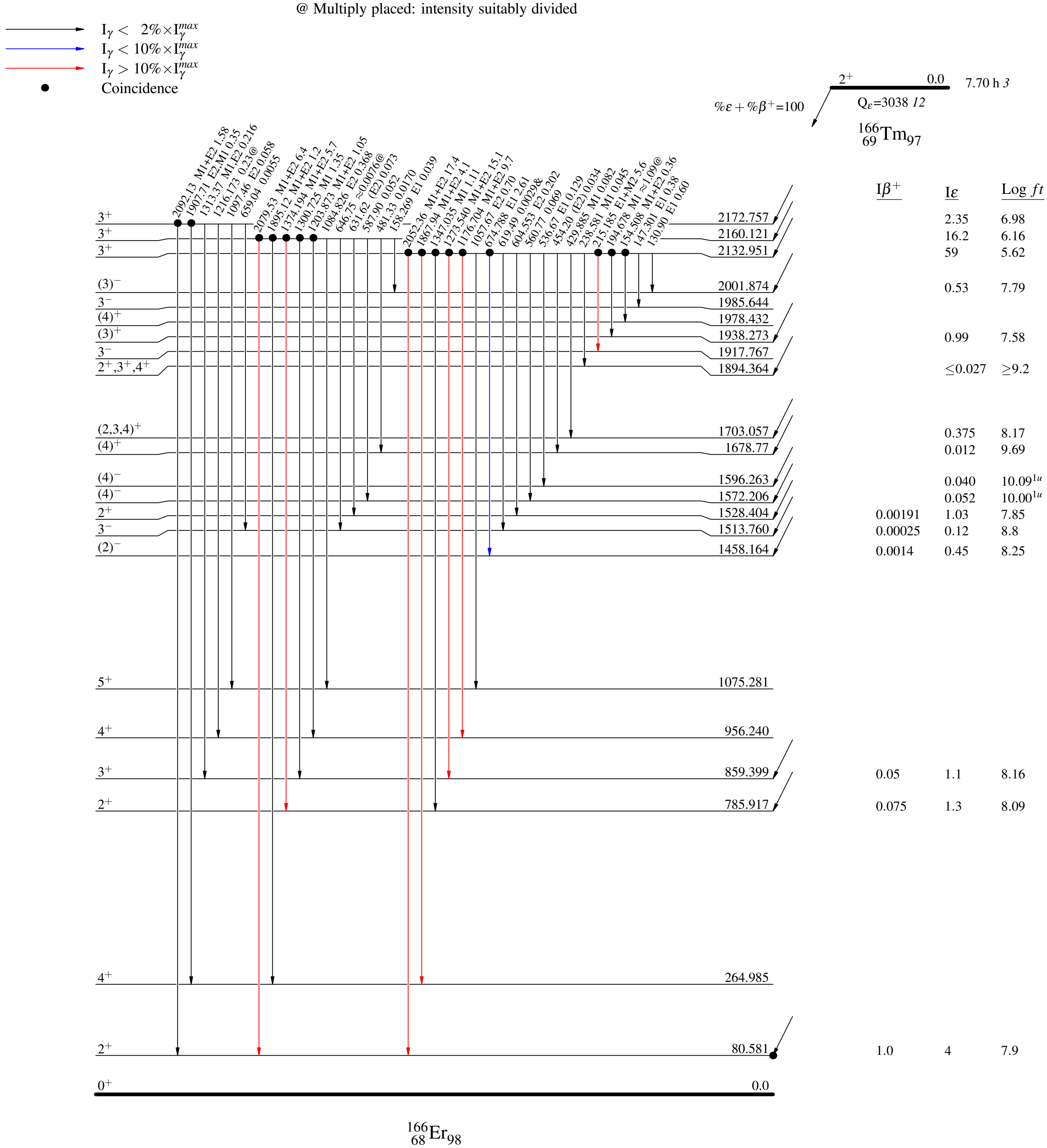
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{166}Tm ε decay 1989Ad11

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



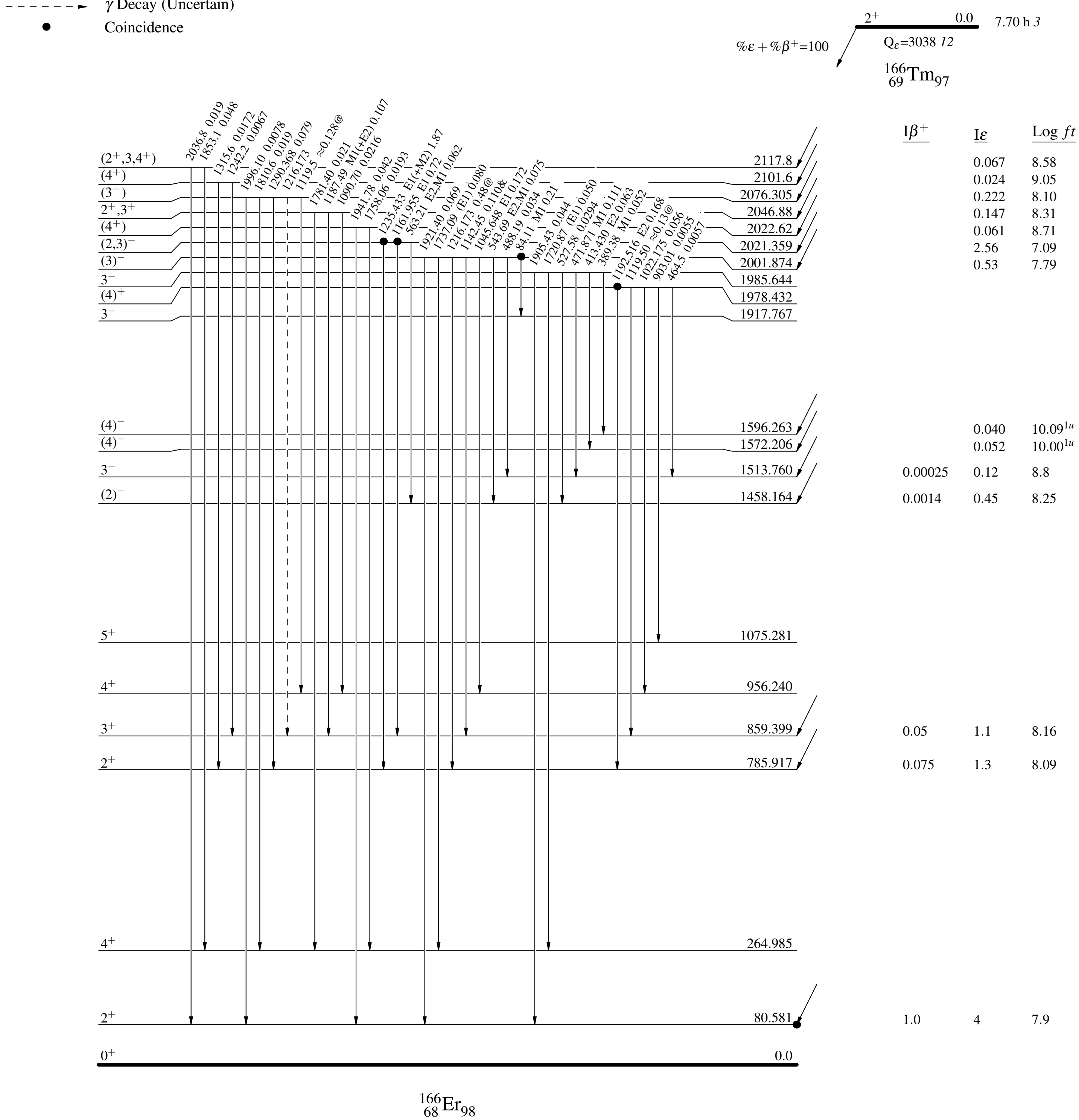
^{166}Tm ε decay 1989Ad11

Decay Scheme (continued)

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)
- Coincidence

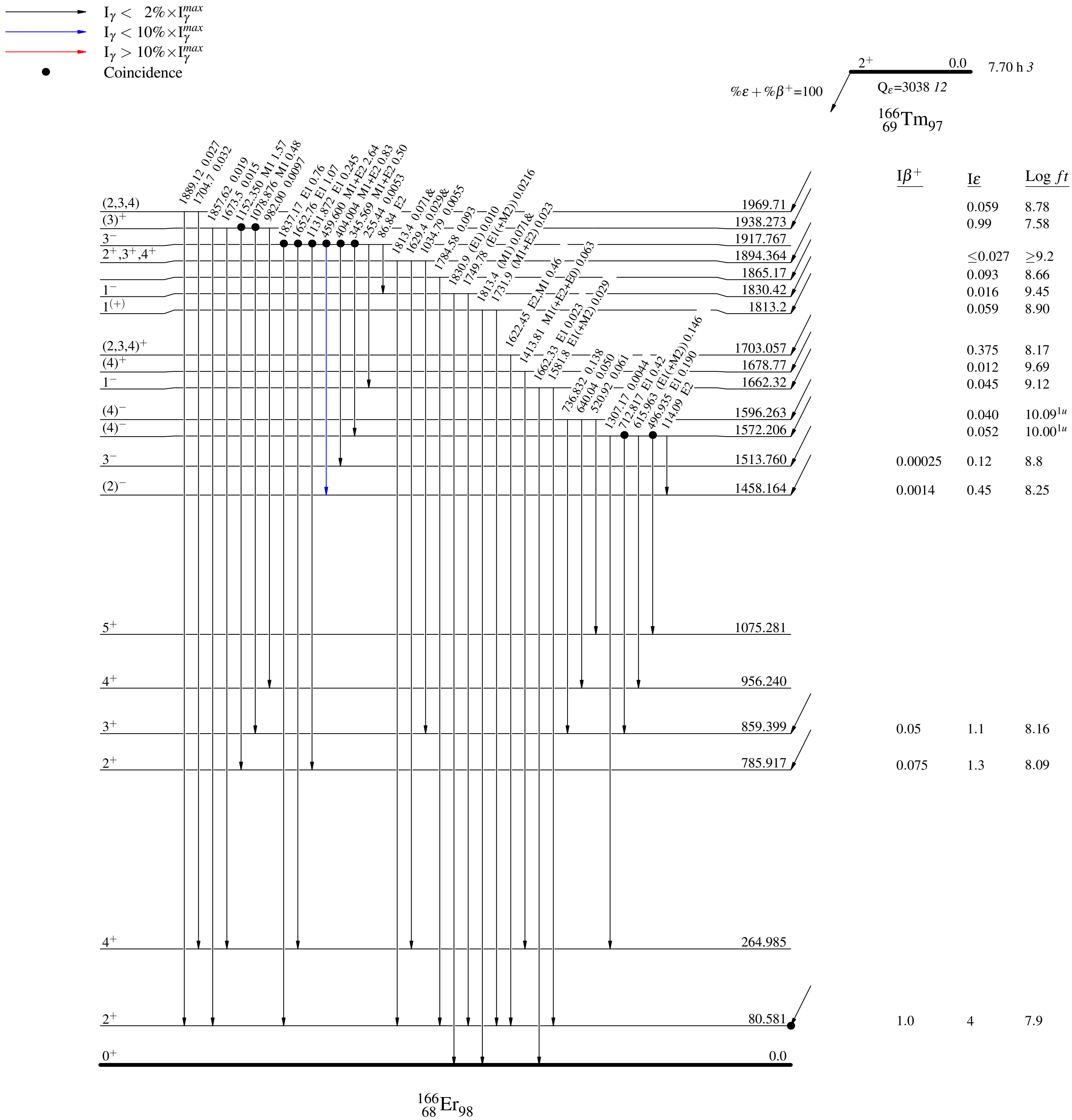
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{166}Tm ε decay 1989Ad11

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{166}Tm ε decay 1989Ad11

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided