^{157}Tm ε decay 1977Ag01,1983Be17

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 132, 1 (2016)	4-Dec-2015

Parent: ^{157}Tm: E=0; J$^{\pi}$=1/2^{+}; $T_{1/2}$=3.63 min *9*; Q(ε)=4650 *30*; %ε+%β^{+} decay=100.0

Data and decay scheme are from 1977Ag01 with additions from 1983Be17. Other measurements of γ data are 1974Pu03 and 1976La03. For these studies, the ^{157}Tm was produced by the Er(p,xn) reaction and p spallation of Ta, and chemical or isotope separation has been used.

This decay scheme should be considered tentative, especially in regard to all the spin and parity assignments and $I_{\varepsilon+\beta+}$ values. In this regard, it is interesting to note that the third strongest γ is not placed in the scheme.

Additional information 1.

Experimental methods:

1969Ek01: Measured J of ^{157}Er by atomic-beam, magnetic-resonance method.

1974Pu03: produced by Er(p,xn) reactions with isotope separation Measured γ decay to determine ^{157}Tm half-life.

1975LaZU, 1975ZuZY: laboratory report and abstract, see 1976La03.

1976AgZU: lab report; no data; refers to 1974Pu03.

1976AgZX: conference report, see 1976Ag01.

1976La03: produced by spallation of Ta target with 660 MeV p with isotope or chemical separation. Measured γ singles with Ge detectors. ^{157}Tm half-life determined from decay of x-ray intensity. 13 γ's reported.

1976PoZV: preprint, see 1976La03.

1977Ag01: produced by Er(p,xn) reaction followed by isotope separation. Measured γ singles and $\gamma\gamma$ coincidences with Ge detectors. ce measured with Si(Li) detector. The γ and ce data were normalized by means of transitions from the decay of the ^{157}Er and ^{157}Ho daughters, but the values used are not given.

1979Al33: abstract; reports $T_{1/2}$ of 10-keV level.

1983Be17: produced by Er(p,xn) reaction with E_p=200 MeV and followed by isotope separation. ce-ce and ce-γ delayed coincidences used to measure level lifetimes. ce measured in magnetic spectrometer and all γ's above 500 keV in plastic scintillator. ce measured for γ's as low as 10 keV.

1984Ek01: measured J of ^{157}Tm by atomic-beam, magnetic-resonance method.

1991AlZY: abstract; measured Q(ε) from total absorption γ-ray spectrometer, TAGS, data.

1993Al03: measured $T_{1/2}$(Tm) and Q(ε) from total absorption γ-ray spectrometer data.

1994Po26: measured Q(ε) from $E_{\beta+}$ with Ge detector.

1995Ve05: measured Q(ε) from $E_{\beta+}$ with Ge detector.

Based on an assumption of no ε+β+ feeding of the levels at 0, 10, and 36, a γ-intensity normalization factor of ≈ 0.093 was deduced. Then, the ε+β+ feeding intensities were computed from γ transition intensity balances. Since this normalization factor is only an upper limit, the ε+β+ feeding, and the associated log *ft* values are given only in the following table and the uncertainties should not be taken seriously:

E(level)	%I(ε+β^{+})	log *ft*	%I(β^{+})	av Eβ
0.00	≡0			1647
10.30	≡0			1642
36.17	≡0			1630
110.38	17 *4*	5.9 *1*	10	1596
206.10	2.7 *9*	6.7 *1*	1.6	1551
241.53	14 *2*	5.9 *1*	8	1535
357.90	8.9 *11*	6.1 *1*	4.9	1482
360.60	3.8 *7*	6.5 *1*	2.1	1480
367.63	2.5 *15*	6.6 *3*	1.4	1477
381.01	8.2 *11*	6.1 *1*	4.5	1471
455.00	9.2 *3*	6.0 *1*	4.8	1437
559.23	7.1 *15*	6.1 *1*	3.6	1389
608.10	1.4 *2*	6.8 *1*	0.7	1367
685.41	5.8 *9*	6.1 *1*	2.7	1331
689.20	3.5 *5*	6.3 *1*	1.6	1329
753.06	10.6 *10*	5.8 *1*	4.8	1300
799.68	3.1 *5*	6.4 *1*	1.4	1279

^{157}Er Levels

E(level)†	Jπ‡#	$T_{1/2}$@	Comments
0	3/2⁻		Jπ: See ^{157}Er Adopted Levels.
10.30 *10*	−	6.8 ns *4*	Jπ: (1/2⁻,3/2⁻). $T_{1/2}$: other: 7 ns *1* (1979Al33).
36.17 *14*	(⁻)	1.3 ns *1*	Jπ: (1/2⁻,3/2⁻).
110.38 *5*	(1/2⁻,3/2⁻,5/2⁻)	130 ps *15*	Jπ: (1/2⁻,3/2⁻).
155.4? *3*	(9/2⁺)		E(level): Value assumes that the 155-keV γ populates the ground state rather than the level at 10 or 35 keV.
206.10 *12*	−		Jπ: (1/2⁻,3/2⁻,5/2⁻).
241.53 *8*	1/2⁻,3/2⁻,5/2⁻		Jπ: (1/2⁻,3/2⁻).
357.90 *6*	+		Jπ: (1/2⁺,3/2⁺,5/2⁺).
360.60 *8*	−		Jπ: (1/2⁻,3/2⁻,5/2⁻).
367.63 *16*	−		Jπ: (1/2⁻,3/2⁻,5/2⁻).
381.01 *5*	1/2⁺,3/2⁺,5/2⁺		Jπ: (3/2⁺,5/2⁺).
400.78 *16*			
455.00 *13*	1/2⁻,3/2⁻,5/2⁻		
559.23 *7*			
608.10? *8*			
685.41 *9*	1/2⁺,3/2⁺,5/2⁺		Jπ: (3/2⁺,5/2⁺)Assignment in Adopted Levels is (1/2⁺,3/2⁺,5/2⁺).
689.20 *9*	+		Jπ: Assignment in Adopted Levels is π=+.
753.06 *11*	+		Jπ: (3/2⁺,5/2⁺).
799.68 *14*	−		

† From least-squares fit to γ energies. The reduced-χ^2 value for this fit is 3.3 which implies, as noted for the γ energies, that the γ energy uncertainties are underestimated. The evaluator has increased the computed uncertainties in the level energies by a factor of 2.0 for the levels where the major discrepancies are, namely, 10, 36, 206, 241, 367, and 799 keV.

‡ Adopted values. The values based on γ multipolarities from this dataset are shown in comments (many of these J^{π} assignments have not been adopted).

\# The J^{π} are so poorly determined that the evaluator has not included any band assignments. The bandheads suggested by 1977Ag01: 0 keV, mixture of 3/2[521] and 3/2[532]; 10 keV, mixture of 3/2[532] and 3/2[521]; and 35 keV, 1/2[530]. It is suggested (1977Ag01) that the 205 level is also 3/2⁻ with a mixture of 3/2[521], 3/2[532] and 3/2,1/2[530]. It is conjectured that the 110 level is 5/2⁻ with mixtures of these configurations. Then, it is deduced that the parent is 7/2⁺[404] or 5/2⁺[402], but this conflicts with the measured spin of 1/2.

@ From 1983Be17 from ceγ(t) measurements with magnetic spectrometer.

γ(^{157}Er)

Iγ normalization: if one assumes that there is no ε+β+ feeding to the levels at 0, 10, and 36, the normalization factor required to give 100% feeding of the ground state is ≈ 0.093. Any ε+β+ feeding of these three levels would reduce this factor correspondingly. Assignment of any of the many unplaced γ′s as feeding the ground state would also reduce this factor.

The γγ coincidences in the decay scheme drawing are from 1977Ag01.

E_γ [†‡]	I_γ [†b]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [#]	α [a]	$I_{(\gamma+ce)}$ [b]	Comments
10.3[@]		10.30	−	0	3/2−			400[&]	Mult.: In discussion of lifetime, 1983Be17 assume this is an M1 transition.
25.5[@]		36.17	(−)	10.30	−			35[&]	Mult.: In discussion of lifetime, 1983Be17 assume this is an M1 transition.
35.8[@]	<0.3	36.17	(−)	0	3/2−			14[&]	Mult.: From the limit on I_γ (1977Ag01) and the $I_{\gamma+ce}$ value, which is a lower limit, the evaluator deduces α > 60. Since α(E1)=0.9, α(M1)=9.6, and α(E2)=267, one could assign mult=E2(+M1). In discussion of lifetime, 1983Be17 assume this is an M1 transition. A mixture with 75% M1 would satisfy both cases.
74.5[@]		110.38	(1/2−,3/2−,5/2−)	36.17	(−)			1[&]	
[x]94.10 *15*	1.5 *5*								
100.05 *5*	25.0 *20*	110.38	(1/2−,3/2−,5/2−)	10.30	−	M1	2.84		α(K)=2.38 *4*; α(L)=0.358 *5*; α(M)=0.0793 *12* α(N)=0.0185 *3*; α(O)=0.00267 *4*; α(P)=0.0001471 *21*
110.35 *10*	88 *10*	110.38	(1/2−,3/2−,5/2−)	0	3/2−	M1	2.15		α(K)=1.80 *3*; α(L)=0.270 *4*; α(M)=0.0598 *9* α(N)=0.01395 *20*; α(O)=0.00202 *3*; α(P)=0.0001110 *16*
116.3 *1*	9.0 *10*	357.90	+	241.53	1/2−,3/2−,5/2−				
131.20 *15*	40 *8*	241.53	1/2−,3/2−,5/2−	110.38	(1/2−,3/2−,5/2−)	M1(+E2)	1.20 *12*		α(K)=0.8 *3*; α(L)=0.29 *13*; α(M)=0.07 *4* α(N)=0.016 *8*; α(O)=0.0020 *8*; α(P)=4.5×10^{-5} *23*
139.35 *10*	2.3 *3*	381.01	1/2+,3/2+,5/2+	241.53	1/2−,3/2−,5/2−				
[x]141.40 *15*	0.9 *2*								
154.35 *10*	3.2 *5*	360.60	−	206.10	−				
155.4 *3*	1.2 *4*	155.4?	(9/2+)	0	3/2−	E3	5.47 *10*		α(K)=1.148 *18*; α(L)=3.28 *6*; α(M)=0.829 *15* α(N)=0.189 *4*; α(O)=0.0221 *4*; α(P)=6.81×10^{-5} *11*
[x]156.90 *5*	3.2 *5*								
159[c]	0.8	400.78		241.53	1/2−,3/2−,5/2−				E_γ,I_γ: From 1977Ag01 decay scheme, data are not in table.
169.80 *5*	18.5 *20*	206.10	−	36.17	(−)	M1,E2	0.54 *10*		α(K)=0.40 *14*; α(L)=0.11 *3*; α(M)=0.025 *8* α(N)=0.0058 *17*; α(O)=0.00075 *16*; α(P)=2.2×10^{-5} *11*
175.40 *15*	30 *5*	381.01	1/2+,3/2+,5/2+	206.10	−	E1	0.0733		α(K)=0.0615 *9*; α(L)=0.00922 *13*; α(M)=0.00204

From ENSDF

$^{157}_{68}$Er$_{89}$-3

γ(^{157}Er) (continued)

Eγ[†‡]	Iγ[†b]	Ei(level)	J^π_i	E_f	J^π_f	Mult.[#]	α[a]	Comments
								3 α(N)=0.000469 *7*; α(O)=6.46×10^{-5} *10*; α(P)=3.00×10^{-6} *5*
196.00 *5*	29 *5*	206.10	$^-$	10.30	$^-$	M1(+E2)	0.35 *8*	α(K)=0.26 *10*; α(L)=0.064 *11*; α(M)=0.015 *3* α(N)=0.0034 *7*; α(O)=0.00045 *6*; α(P)=1.5×10^{-5} *7*
201.30 *5*	1.1 *3*	559.23		357.90	$^+$			
^{x}222.5 *1*	1.3 *4*							
231.10 *5*	10.0 *20*	241.53	1/2$^-$,3/2$^-$,5/2$^-$	10.30	$^-$	M1(+E2)	0.21 *6*	α(K)=0.17 *6*; α(L)=0.036 *3*; α(M)=0.0083 *9* α(N)=0.00191 *18*; α(O)=0.000256 *6*; α(P)=1.0×10^{-5} *5*
234.2 *2*	5.4 *10*	689.20	$^+$	455.00	1/2$^-$,3/2$^-$,5/2$^-$			
241.55 *5*	68 *7*	241.53	1/2$^-$,3/2$^-$,5/2$^-$	0	3/2$^-$	M1	0.240	α(K)=0.201 *3*; α(L)=0.0298 *5*; α(M)=0.00660 *10* α(N)=0.001538 *22*; α(O)=0.000223 *4*; α(P)=1.233×10^{-5} *18*
247.50 *5*	30 *4*	357.90	$^+$	110.38	(1/2$^-$,3/2$^-$,5/2$^-$)	E1	0.0300	α(K)=0.0253 *4*; α(L)=0.00370 *6*; α(M)=0.000816 *12* α(N)=0.000188 *3*; α(O)=2.63×10^{-5} *4*; α(P)=1.282×10^{-6} *18*
250.20 *5*	12.5 *20*	608.10?		357.90	$^+$	M1,E2	0.17 *5*	α(K)=0.13 *5*; α(L)=0.0277 *8*; α(M)=0.0063 *4* α(N)=0.00146 *7*; α(O)=0.000197 *6*; α(P)=8.E−6 *4*
257.50[c] *20*	3.5 *10*	367.63	$^-$	110.38	(1/2$^-$,3/2$^-$,5/2$^-$)	M1,E2	0.16 *5*	α(K)=0.12 *5*; α(L)=0.0251 *4*; α(M)=0.00575 *23* α(N)=0.00133 *4*; α(O)=0.000180 *8*; α(P)=7.E−6 *4*
270.60 *5*	7.5 *15*	381.01	1/2$^+$,3/2$^+$,5/2$^+$	110.38	(1/2$^-$,3/2$^-$,5/2$^-$)	E1	0.0240	α(K)=0.0202 *3*; α(L)=0.00293 *5*; α(M)=0.000647 *9* α(N)=0.0001496 *21*; α(O)=2.10×10^{-5} *3*; α(P)=1.034×10^{-6} *15*
290.40 *15*	4.7 *10*	400.78		110.38	(1/2$^-$,3/2$^-$,5/2$^-$)			
304.2 *2*	7.2 *20*	685.41	1/2$^+$,3/2$^+$,5/2$^+$	381.01	1/2$^+$,3/2$^+$,5/2$^+$			
308.0 *2*	20 *4*	689.20	$^+$	381.01	1/2$^+$,3/2$^+$,5/2$^+$	E2,M1	0.09 *3*	α(K)=0.08 *3*; α(L)=0.0142 *12*; α(M)=0.00322 *19* α(N)=0.00074 *5*; α(O)=0.000102 *13*; α(P)=4.4×10^{-6} *20*
317.75 *10*	6.0 *10*	559.23		241.53	1/2$^-$,3/2$^-$,5/2$^-$			
321.6 *2*	6.5 *10*	689.20	$^+$	367.63	$^-$			
331.75 *10*	9.0 *10*	367.63	$^-$	36.17	($^-$)	M1	0.1019	α(K)=0.0858 *12*; α(L)=0.01257 *18*; α(M)=0.00278 *4* α(N)=0.000649 *10*; α(O)=9.41×10^{-5} *14*; α(P)=5.23×10^{-6} *8*
347.65 *10*	25 *5*	357.90	$^+$	10.30	$^-$			
^{x}348.40 *15*	90 *15*							
357.00 *15*	72 *10*	367.63	$^-$	10.30	$^-$			
357.8 *2*	46 *9*	357.90	$^+$	0	3/2$^-$			
360.65 *15*	40 *7*	360.60	$^-$	0	3/2$^-$	M1,E2	0.061 *21*	α(K)=0.050 *20*; α(L)=0.0087 *14*; α(M)=0.0020 *3* α(N)=0.00046 *7*; α(O)=6.4×10^{-5} *12*; α(P)=2.9×10^{-6} *13*
367.4 *2*	45 *6*	367.63	$^-$	0	3/2$^-$	M1,E2	0.058 *20*	α(K)=0.047 *19*; α(L)=0.0083 *13*; α(M)=0.0019 *3* α(N)=0.00043 *7*; α(O)=6.0×10^{-5} *12*; α(P)=2.8×10^{-6} *13*
370.7 *1*	54 *8*	381.01	1/2$^+$,3/2$^+$,5/2$^+$	10.30	$^-$	E1	0.01110	α(K)=0.00939 *14*; α(L)=0.001337 *19*; α(M)=0.000295 *5* α(N)=6.82×10^{-5} *10*; α(O)=9.64×10^{-6} *14*; α(P)=4.93×10^{-7} *7*
381.0 *1*	20.0 *20*	381.01	1/2$^+$,3/2$^+$,5/2$^+$	0	3/2$^-$	E1	0.01040	α(K)=0.00880 *13*; α(L)=0.001251 *18*; α(M)=0.000276 *4* α(N)=6.38×10^{-5} *9*; α(O)=9.03×10^{-6} *13*; α(P)=4.63×10^{-7} *7*
385.5 *1*	95 *10*	753.06	$^+$	367.63	$^-$	E1	0.01012	α(K)=0.00856 *12*; α(L)=0.001217 *17*; α(M)=0.000268 *4* α(N)=6.20×10^{-5} *9*; α(O)=8.78×10^{-6} *13*; α(P)=4.51×10^{-7} *7*
^{x}387.30 *15*	20 *3*					M1,E2		

γ(^{157}Er) (continued)

E_γ [†‡]	I_γ [†b]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	α [a]	Comments
[x]406.40 *15*	4.5 *10*							
[x]412.05 *10*	1.2 *3*							
[x]421.8 *3*	0.8 *3*							
[x]433.0 *2*	2.4 *4*							
438.95 *10*	5.3 *10*	799.68	$^-$	360.60	$^-$			
443.7 *3*	3.5 *10*	685.41	$1/2^+,3/2^+,5/2^+$	241.53	$1/2^-,3/2^-,5/2^-$			
447.70 *10*	4 *1*	689.20	$^+$	241.53	$1/2^-,3/2^-,5/2^-$			E_γ: The authors′ uncertainty of 0.01 keV is assumed to be a misprint and is given here as 0.10 keV.
449.05 *20*	14 *3*	559.23		110.38	$(1/2^-,3/2^-,5/2^-)$	M1,E2	0.034 *13*	α(K)=0.028 *11*; α(L)=0.0046 *10*; α(M)=0.00104 *21* α(N)=0.00024 *5*; α(O)=3.4×10^{-5} *9*; α(P)=1.6×10^{-6} *7* Mult.: This multipolarity and that for the 549-keV γ are not both consistent with the final state J^π values.
455.00 *15*	100 *3*	455.00	$1/2^-,3/2^-,5/2^-$	0	$3/2^-$	M1	0.0445	α(K)=0.0375 *6*; α(L)=0.00544 *8*; α(M)=0.001203 *17* α(N)=0.000281 *4*; α(O)=4.07×10^{-5} *6*; α(P)=2.27×10^{-6} *4*
[x]474.35 *20*	14 *3*							
479.70 *35*	2.0 *5*	685.41	$1/2^+,3/2^+,5/2^+$	206.10	$^-$			
[x]484.65 *20*	27 *4*					E2		
[x]488.45 *20*	1.2 *4*							
[x]496.50 *25*	10 *3*					E1		
[x]525.00 *15*	43 *6*					M1		
[x]535.35 *15*	36 *6*					M1,E2		
549.1 *3*	55 *15*	559.23		10.30	$^-$	E1	0.00455	α(K)=0.00386 *6*; α(L)=0.000538 *8*; α(M)=0.0001182 *17* α(N)=2.74×10^{-5} *4*; α(O)=3.91×10^{-6} *6*; α(P)=2.08×10^{-7} *3*
[x]555.6 *3*	34 *10*					M1,E2		
557.85 *10*	5.7 *10*	799.68	$^-$	241.53	$1/2^-,3/2^-,5/2^-$	M1,E2	0.019 *7*	α(K)=0.016 *7*; α(L)=0.0025 *7*; α(M)=0.00057 *14* α(N)=0.00013 *4*; α(O)=1.9×10^{-5} *6*; α(P)=1.0×10^{-6} *4*
[x]570.10 *15*	2.6 *8*							
[x]573.1 *1*	10.0 *10*							
575.05 *10*	26 *7*	685.41	$1/2^+,3/2^+,5/2^+$	110.38	$(1/2^-,3/2^-,5/2^-)$	E1	0.00412	α(K)=0.00350 *5*; α(L)=0.000486 *7*; α(M)=0.0001067 *15* α(N)=2.48×10^{-5} *4*; α(O)=3.54×10^{-6} *5*; α(P)=1.89×10^{-7} *3*
[x]580.95 *25*	10 *3*							
[x]587.60 *15*	1.0 *4*							
593.8 *1*	1.2 *4*	799.68	$^-$	206.10	$^-$			
[x]595.9 *1*	4.8 *10*							
[x]617.6 *10*	1.0 *5*							
[x]622.90 *15*	2.4 *10*							
[x]630.2 *2*	1.8 *8*							
[x]639.0 *1*	7.0 *15*							
642.50 *25*	4.7 *10*	753.06	$^+$	110.38	$(1/2^-,3/2^-,5/2^-)$			
[x]655.0 *3*	2.0 *10*							
[x]682.2 *3*	3.5 *7*							
685.5 *2*	24 *6*	685.41	$1/2^+,3/2^+,5/2^+$	0	$3/2^-$			
689.4 *2*	11 *3*	799.68	$^-$	110.38	$(1/2^-,3/2^-,5/2^-)$			

$^{157}_{68}$Er$_{89}$-5

^{157}Tm ε decay 1977Ag01,1983Be17 (continued)

$\gamma(^{157}Er)$ (continued)

E_γ †‡	I_γ †b	E_i(level)	J^π_i	E_f	J^π_f
^{x}702.8 *4*	2.2 *6*				
^{x}714.0 *4*	3.0 *8*				
^{x}718.1 *3*	1.5 *5*				
^{x}732.9 *5*	1.6 *6*				
^{x}735.6 *3*	1.5 *5*				
742.6 *2*	13 *3*	753.06	+	10.30	−
^{x}748.7 *3*	13 *3*				
^{x}754.8 *3*	7.6 *2*				
764.3 *2*	10 *3*	799.68	−	36.17	(−)
^{x}771.8 *3*	3.7 *10*				
^{x}787.6 *3*	14 *3*				
^{x}790.3 *3*	8.0 *10*				
^{x}800.3 *3*	11 *3*				
^{x}811.2 *3*	3.3 *7*				
^{x}816.5 *4*	4.0 *8*				
^{x}819.7 *5*	1.0 *5*				
^{x}822.5 *5*	3.5 *7*				
^{x}827.6 *5*	2.7 *10*				
^{x}864.5 *6*	2.5 *5*				
^{x}867.4 *5*	5.5 *10*				
^{x}876.1 *5*	1.8 *10*				
^{x}892.0 *4*	4.0 *10*				
^{x}902.6 *5*	2.5 *7*				
^{x}923.4 *3*	14 *3*				
^{x}945.5 *8*	8.7 *20*				
^{x}956.4 *3*	10 *3*				
^{x}972.8 *4*	5.7 *10*				
^{x}977.7 *3*	5.5 *15*				
^{x}1007.8 *5*	3.3 *10*				
^{x}1013.0 *4*	4.6 *10*				
^{x}1019.0 *4*	4.8 *10*				
^{x}1025.6 *3*	2.5 *10*				
^{x}1032.5 *4*	5.8 *10*				

E_γ †‡	I_γ †b	E_i(level)
^{x}1035.5 *4*	8.0 *15*	
^{x}1042.6 *6*	2.7 *8*	
^{x}1053.7 *5*	5.5 *20*	
^{x}1060.4 *5*	5.0 *15*	
^{x}1064.8 *5*	5.5 *25*	
^{x}1076.3 *4*	4.5 *15*	
^{x}1082.2 *4*	6.3 *20*	
^{x}1088.2 *5*	5.0 *15*	
^{x}1096.2 *5*	5.5 *15*	
^{x}1098.4 *6*	5.0 *15*	
^{x}1107.0 *5*	1.4 *10*	
^{x}1111.0 *10*	2.8 *10*	
^{x}1117.4 *5*	8.0 *20*	
^{x}1150.8 *5*	3.7 *13*	
^{x}1218.8 *4*	5.8 *15*	
^{x}1221.5 *4*	8.5 *20*	
^{x}1243.1 *6*	6.0 *20*	
^{x}1249.2 *8*	2.5 *15*	
^{x}1256.0 *5*	4.6 *15*	
^{x}1262.4 *5*	15 *4*	
^{x}1287.0 *5*	4.6 *10*	
^{x}1295.6 *6*	2.5 *10*	
^{x}1304.9 *5*	6.1 *15*	
^{x}1336.1 *6*	5.0 *20*	
^{x}1342.4 *5*	6.3 *20*	
^{x}1350.2 *6*	3.4 *20*	
^{x}1370.3 *10*	4.5 *25*	
^{x}1416.4 *6*	5.5 *25*	
^{x}1433.4 *6*	6.5 *25*	
^{x}1438.5 *6*	5.0 *15*	
^{x}1453.2 *5*	4.0 *10*	
^{x}1461.1 *5*	8 *3*	
^{x}1579.0 *6*	2.3 *13*	

† From 1977Ag01, unless noted as from 1983Be17. Others: 1974Pu03 (8 γ's reported) and 1976La03 (14 γ's).

‡ The authors (1977Ag01) do not report the values and the uncertainties in a consistent form, so the evaluator has had to add trailing zeros to many values. This often adds an error of ≈ 0.05 keV.

Assigned originally by author (1977Ag01) from α_K(exp) values which are based on I_γ and I_{ce} data normalized to give the theoretical α_K value for an E1 transition of 326.6 keV in ^{157}Tb. Some assignments of the authors have been made more explicit by the evaluator.

@ Reported in ce spectrum (1983Be17) only.

$^{157}_{68}Er_{89}$-6

γ(^{157}Er) (continued)

[&] Values assigned by evaluator to cause intensity balances for the levels at 10 and 35 keV with no ε feeding. The ratio $I_{\gamma+ce}$(25)/$I_{\gamma+ce}$(36) was determined to approximate the BM1W values of 1983Be17. Any ε feeding would increase these $I_{\gamma+ce}$ values, and at the same time reduce the normalization factor for the I_γ values.

[a] Additional information 2.

[b] For absolute intensity per 100 decays, multiply by 0.093.

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

[x] γ ray not placed in level scheme.

^{157}Tm ε decay 1977Ag01,1983Be17