Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 2537 (2012)	1-Mar-2012

Q(β^-)=−3569 *13*; S(n)=8280 *17*; S(p)=1914 *16*; Q(α)=4345 *7* 2017Wa10
Q(ε)=7.38×10^3 *3*; S(2n)=18550 *17*; S(2p)=6773 *16*; Q(εp)=1916 *23* 2017Wa10
Additional information 1.
Additional information 2.
An activity with $T_{1/2}$=19 s *3*, associated with a 4.46-MeV α and having a high spin, was reported by 1971To10. Subsequent studies have not confirmed this activity; and it is not included in this evaluation.

^{156}Tm Levels

Cross Reference (XREF) Flags

A ^{147}Sm(^{14}N,5nγ),^{144}Sm(^{19}F,2p5n)
B ^{156}Yb ε decay

E(level)	J$^\pi$	$T_{1/2}$	XREF	Comments
0	2$^-$	83.8 s *18*	B	%α=0.064 *10*; %ε+%β^+=99.936 *10* From an evaluation of data on nuclear rms charge radii, 2004An14 report <r^2>$^{1/2}$=5.102 fm *13*. J$^\pi$: E1 transition from 1$^+$, ε transitions to 3$^-$,3$^+$,4$^+$ levels in ^{156}Er. $T_{1/2}$: Weighted average of 82 s *5* (1980Zo02) from ε decay, 80 s *3* (1971To10) and 86 s *4* (1980AfZZ) from α decay, and 87 s *3* (average of 86 s *4* and 88 s *3* in 1981Ga36) from both ε and α decay. Other: 90 s *10* (1970ToZS) and 77 s *10* (1971ToZR, by the same authors as 1971To10); and 80 s *3* (1982To14). %α: From 1981Ga36. Other: 0.09% *4* from 1983Ml01 (and quoted by same authors as 0.09% *3* in 1982To14).
115.2 *2*	1$^+$		B	J$^\pi$: E1 γ to 2$^-$ indicates J$^\pi$=1$^+$,2$^+$,3$^+$. ε transition from ^{156}Yb (0$^+$) rules out 2$^+$,3$^+$.
317.5	1$^+$		B	J$^\pi$: M1 γ to 1$^+$ indicates J$^\pi$=0$^+$,1$^+$,2$^+$. ε transition from ^{156}Yb (0$^+$) rules out 0$^+$ and 2$^+$.
0+x			A	
203.6+x‡	(11$^-$)†	≈400 ns	A	$T_{1/2}$: Value shown on the level scheme of 1985Ko30, but further details regarding it are not given.
771.2+x‡	(13$^-$)†		A	
1366.0+x‡	(15$^-$)†		A	
1725.7+x‡	(16$^-$)†		A	
2056.6+x‡	(17$^-$)†		A	
2335.6+x‡	(18$^-$)†		A	
2535.0+x‡	(19$^-$)†		A	
3234+x‡	(21$^-$)†		A	
3407+x‡	(22$^-$)†		A	
3978+x‡	(23$^-$)†		A	
4773+x‡	(25$^-$)†		A	

† Proposed by 1995Su12. See the comment in the ^{147}Sm(^{14}N,5nγ),^{144}Sm(^{19}F,2p5n) data set.
‡ Band(A): Possible (π 7/2[523])(ν 1/2[660]) band. See the discussion in the ^{147}Sm(^{14}N,5nγ),^{144}Sm(^{19}F,2p5n) data set for the assumptions underlying this choice of configuration.

Adopted Levels, Gammas (continued)

$\gamma(^{156}Tm)$

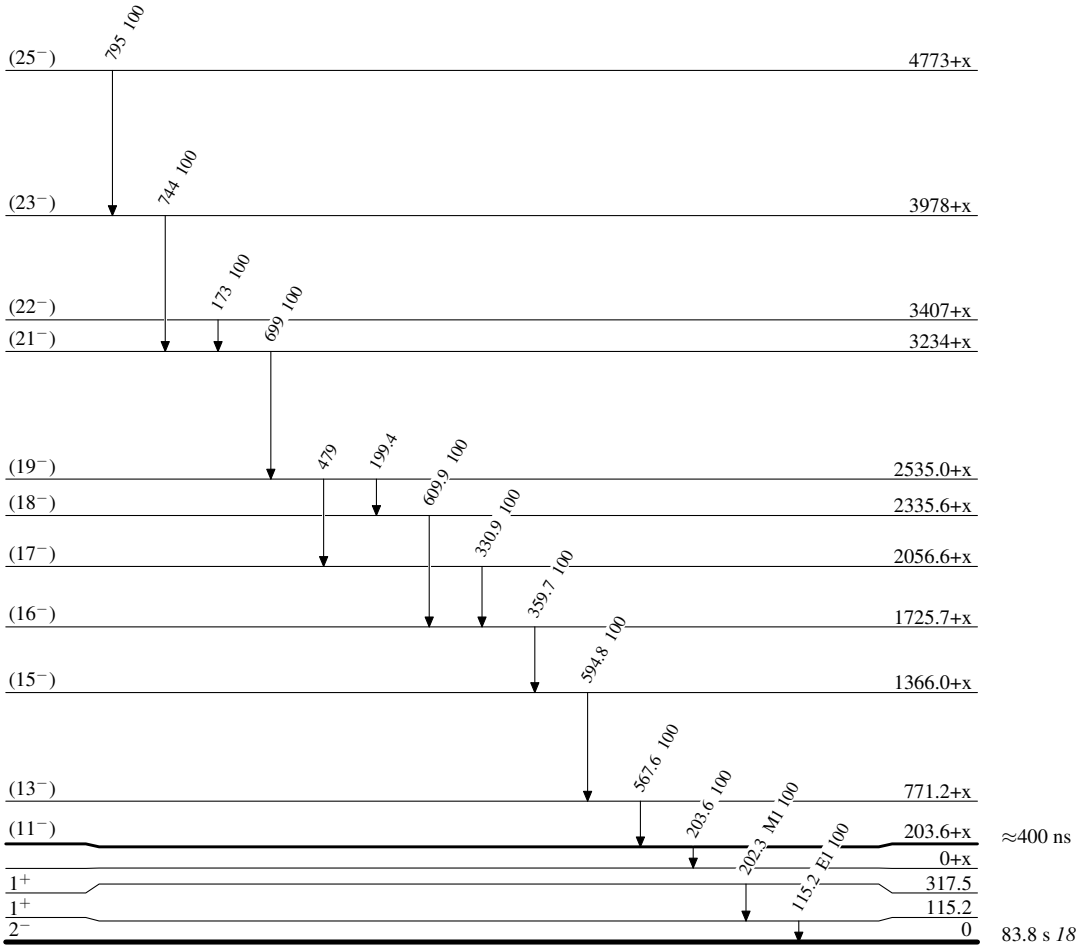
E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments
115.2	1^+	115.2 *2*	100	0	2^-	E1	0.231	Mult.: From the measured and calculated K x-ray intensities and lack of L x rays in the ^{156}Yb ε decay (1982To14).
317.5	1^+	202.3	100	115.2	1^+	M1	0.434	Mult.: From 1999KaZV. No basis given.
203.6+x	(11^-)	203.6	100	0+x				
771.2+x	(13^-)	567.6	100	203.6+x	(11^-)			
1366.0+x	(15^-)	594.8	100	771.2+x	(13^-)			
1725.7+x	(16^-)	359.7	100	1366.0+x	(15^-)			
2056.6+x	(17^-)	330.9	100	1725.7+x	(16^-)			
2335.6+x	(18^-)	609.9	100	1725.7+x	(16^-)			
2535.0+x	(19^-)	199.4		2335.6+x	(18^-)			
		479		2056.6+x	(17^-)			
3234+x	(21^-)	699	100	2535.0+x	(19^-)			
3407+x	(22^-)	173	100	3234+x	(21^-)			
3978+x	(23^-)	744	100	3234+x	(21^-)			
4773+x	(25^-)	795	100	3978+x	(23^-)			

† 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.

Adopted Levels, Gammas

Level Scheme

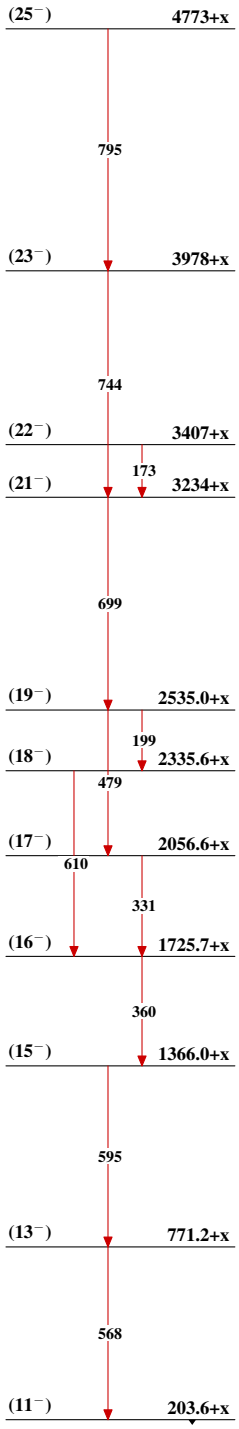
Intensities: Relative photon branching from each level



$^{156}_{69}Tm_{87}$

Adopted Levels, Gammas

Band(A): Possible (π 7/2[523])(ν 1/2[660]) band



$^{156}_{69}Tm_{87}$