Adopted Levels, Gammas

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

$Q(\beta^-)$=5197 9; $S(n)$=5295 6; $S(p)$=9169 10; $Q(\alpha)$=−2830 19 2017Wa10
$S(2n)$=1.179×10^4 6; $S(2p)$=2.064×10^4 10 2017Wa10
Additional information 1.
Additional information 2.

^{156}Pm Levels

Cross Reference (XREF) Flags

A	^{156}Nd β^- decay
B	^{156}Pm IT decay (<5 s)
C	^{252}Cf SF decay

E(level)	J^{π}	$T_{1/2}$	XREF	Comments
0†	4$^{(+)}$	26.70 s 10	ABC	%β^-=100 J^{π}: Based on assumption that the evaluator's proposed conf (from general considerations, the most plausible one) is correct. J=4 is consistent with the observed β^- decay of ^{156}Pm to ^{156}Sm levels with J^{π}=3, 5$^-$ and 6$^+$ (1990He11). Based on these latter data, 1990He11 proposed π=−, with conf=π5/2[413]+ν3/2[521]. The evaluator has not adopted this conf, based on the expectation that it is unlikely to form the g.s. for this nuclide. Assuming π=−, 2007Sh05 (^{156}Nd β^- decay) assign conf=π5/2[532]+ν3/2[651]. A discussion of various available configurations for ^{156}Pm, together with the role of log ft values in their assignment, is given by 2011So05. The π=+ assignment is shown as questionable, since the apparent existence of a β^- transition to a 6$^+$ state in ^{156}Sm presents some problems for it. (This situation is discussed by 2011So05.). $T_{1/2}$: From 1987Gr12, γ(t). Others: 28.2 s 11 (1986Ma12), γ(t); and 29 s 2 (1986Ok01) γ(t). Other reports presenting the data of 1987Gr12 are 1986GrZX and 1988GrZY.
85.6†	(5$^+$)		C	
150.3‡ 1	1$^{(+)}$	<5 s	AB	%IT≈98; %α≈2 J^{π}: M3 transition to the 4$^{(+)}$ g.s. $T_{1/2}$: From ce(K)(t) for the 150.3 γ (2007Sh05, IT decay).
168.7 1			A	
189.2†	(6$^+$)		C	
313.9†	(7$^+$)		C	
358.4 2			A	
453.3†	(8$^+$)		C	
618.7†	(9$^+$)		C	

† Band(A): Assumed K=4 (g.s.) band. α=8.51 keV; β=+3.2 eV. Probable conf is π5/2[532]+ν3/2[521].

‡ Band(B): K^{π}=1$^{(+)}$ bandhead. Probable conf is π5/2[532]-ν3/2[521]. Note that this ordering of this conf and that of the g.s. is consistent with the expectations of the Gallagher-Moszkowski rules (1958Ga27).

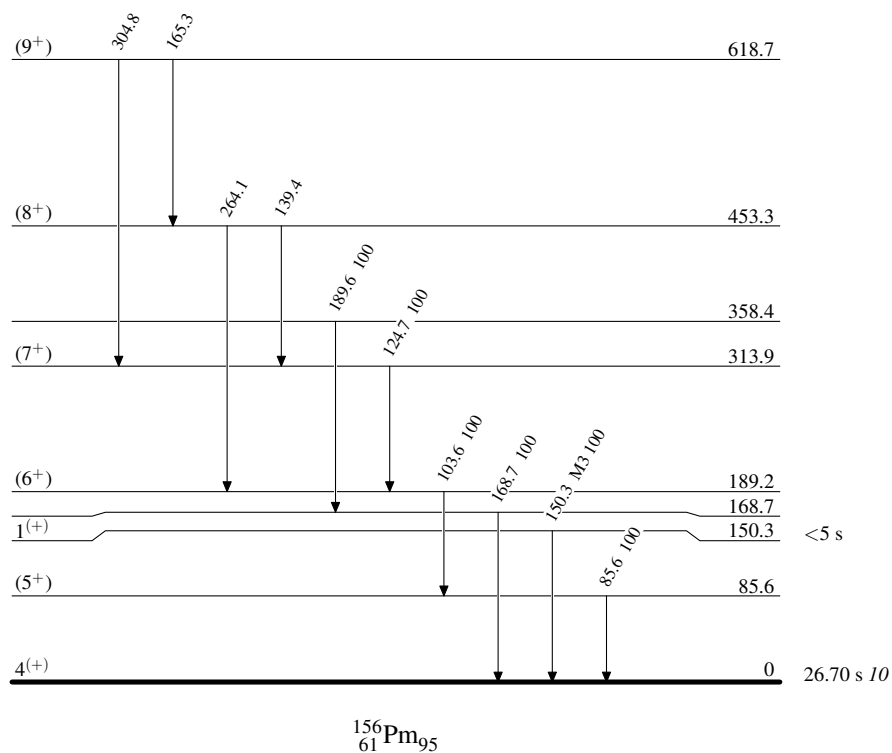**Adopted Levels, Gammas (continued)**

$\gamma(^{156}$Pm$)$

A number of γ's are reported in ^{156}Nd β^- decay but are not placed in the level scheme. For a listing of these, see the ^{156}Nd β^- Decay data set.

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	$\alpha^\dagger$	Comments
85.6	(5^+)	85.6	100	0	$4^{(+)}$			
150.3	$1^{(+)}$	150.3 *1*	100	0	$4^{(+)}$	M3	20.5	B(M3)(W.u.)>0.41
168.7		168.7 *1*	100	0	$4^{(+)}$			
189.2	(6^+)	103.6	100	85.6	(5^+)			
313.9	(7^+)	124.7	100	189.2	(6^+)			
358.4		189.6 *1*	100	168.7				
453.3	(8^+)	139.4		313.9	(7^+)			
		264.1		189.2	(6^+)			
618.7	(9^+)	165.3		453.3	(8^+)			
		304.8		313.9	(7^+)			

† 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.
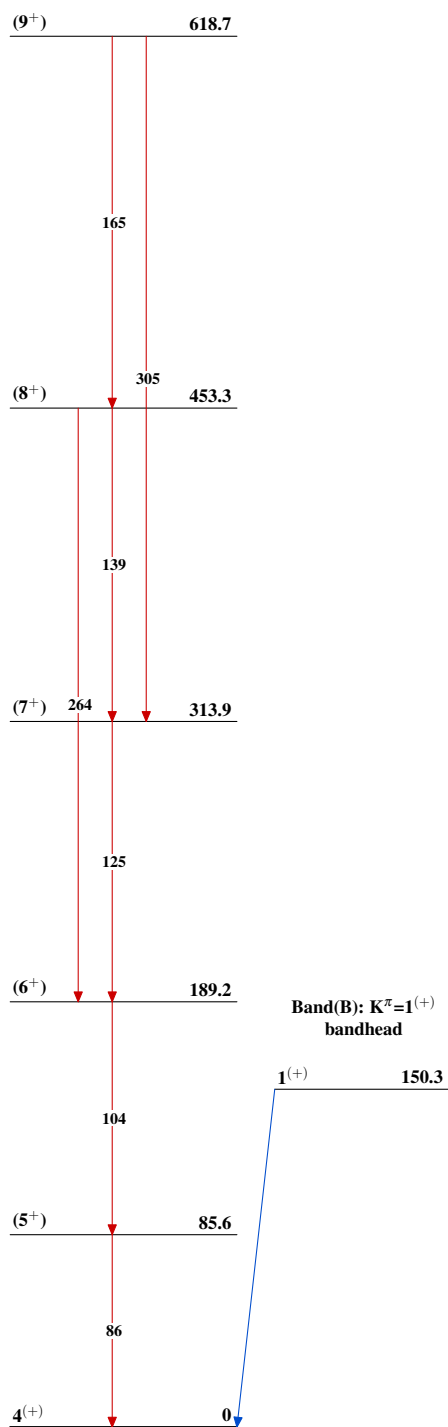
Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

$^{156}_{61}$Pm$_{95}$

Adopted Levels, Gammas

Band(A): Assumed K=4 (g.s.) band

(9^+) 618.7

165

305

(8^+) 453.3

139

(7^+) 264   313.9

125

(6^+) 189.2

**Band(B): K$^\pi$=1$^{(+)}$
bandhead**

$1^{(+)}$ 150.3

104

(5^+) 85.6

86

$4^{(+)}$ 0

$^{156}_{61}$Pm$_{95}$