<center>^{152}Ce β^- decay   **1995Ya21,1990Ta07**</center>

		History		
Type	Author	Citation	Literature Cutoff Date	
Full Evaluation	M. J. Martin	NDS 114, 1497 (2013)	31-Aug-2013	

Parent: ^{152}Ce: E=0; J^π=0$^+$; $T_{1/2}$=1.4 s *2*; Q(β^-)=4700 *SY*; %β^- decay=100.0

1990Ta07: ^{235}U(n,F), ion chem, ms.
1995Ya21: ^{235}U(n,F), ion chem, ms.

<center>^{152}Pr Levels</center>

From a least-squares fit to the Eγ data as given by 1995Ya21.

E(level)	J^π	$T_{1/2}$	Comments
0	(4$^+$)		
114.8 *2*	(3$^+$)	4.1 μs *1*	$T_{1/2}$: From β(115γ)(t) (1995Ya21). Other: 1.0 μs *3* (1990Ta07) also $\beta\gamma$(t).
212.5 *2*	(1$^+$)		$T_{1/2}$: (β)(97.7γ)(t) indicates a prompt coincidence.
296.7 *5*			
329.7 *5*			
658.8 *3*			
717.4 *4*			
751.7 *3*			
773.8 *3*			
786.2 *4*			
812.8 *3*			
844.1 *3*			
939.7 *2*			
975.4 *5*			
1414.8 *3*			

<center>γ(^{152}Pr)</center>

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[#]
70.3 *3*	11.2 *6*	844.1		773.8			
84.2 *4*	14.2 *7*	296.7		212.5	(1$^+$)		
97.7 *2*	62.2 *11*	212.5	(1$^+$)	114.8	(3$^+$)	E2[†]	2.30
114.8 *2*	100.0 *18*	114.8	(3$^+$)	0	(4$^+$)	M1(+E2)[†]	1.08 *22*
117.2 *4*	4.3 *6*	329.7		212.5	(1$^+$)		
316.6 *4*	14.8 *11*	975.4		658.8			
421.7 *3*	5.8 *8*	717.4		296.7			
439.5 *3*	4.9 *7*	1414.8		975.4			
443.9 *3*	2.8 *8*	773.8		329.7			
446.9 *3*	2.8 *7*	658.8		212.5	(1$^+$)		
454.7 *4*	2.9 *8*	751.7		296.7			
456.4 *3*	7.1 *11*	786.2		329.7			
503.9 *4*	2.3 *12*	717.4		212.5	(1$^+$)		
539.5 *4*	3.6 *12*	751.7		212.5	(1$^+$)		
561.6 *3*	2.5 *15*	773.8		212.5	(1$^+$)		
570.3 *4*	37.7 *22*	1414.8		844.1			
573.8 *3*	4.9 *5*	786.2		212.5	(1$^+$)		
602.2 *4*	2.7 *8*	1414.8		812.8			
658.2 *4*	10.0 *19*	658.8		0	(4$^+$)		
727.2 *1*	4.8 *18*	939.7		212.5	(1$^+$)		
751.6 *4*	7.1 *22*	751.7		0	(4$^+$)		
773.8 *3*	15.2 *33*	773.8		0	(4$^+$)		

^{152}Ce β^- **decay**   **1995Ya21,1990Ta07 (continued)**

$\gamma(^{152}$Pr) (continued)

E$_\gamma$[‡]	I$_\gamma$[‡]	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$
812.8 *3*	18.4 *22*	812.8		0	(4$^+$)
844.0 *3*	12.2 *28*	844.1		0	(4$^+$)

[†] I(K x ray)/Iγ(115γ)=1.4 *3* (1990Ta07) restricts mult to M1 or E2 for the 97.7 and 114.8γ's. T$_{1/2}$(114.8 level) also rules out mult=M2, E3 or higher for the 114.8γ. Furthermore, with the decay scheme as given, the intensity balance at the 115 level restricts the mults to mainly E2 for the 98γ and mainly M1 for the 115γ. From the evaluator's proposed J$^\pi$ assignments, the 98γ must be E2.

[‡] From 1995Ya21.

[#] 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.
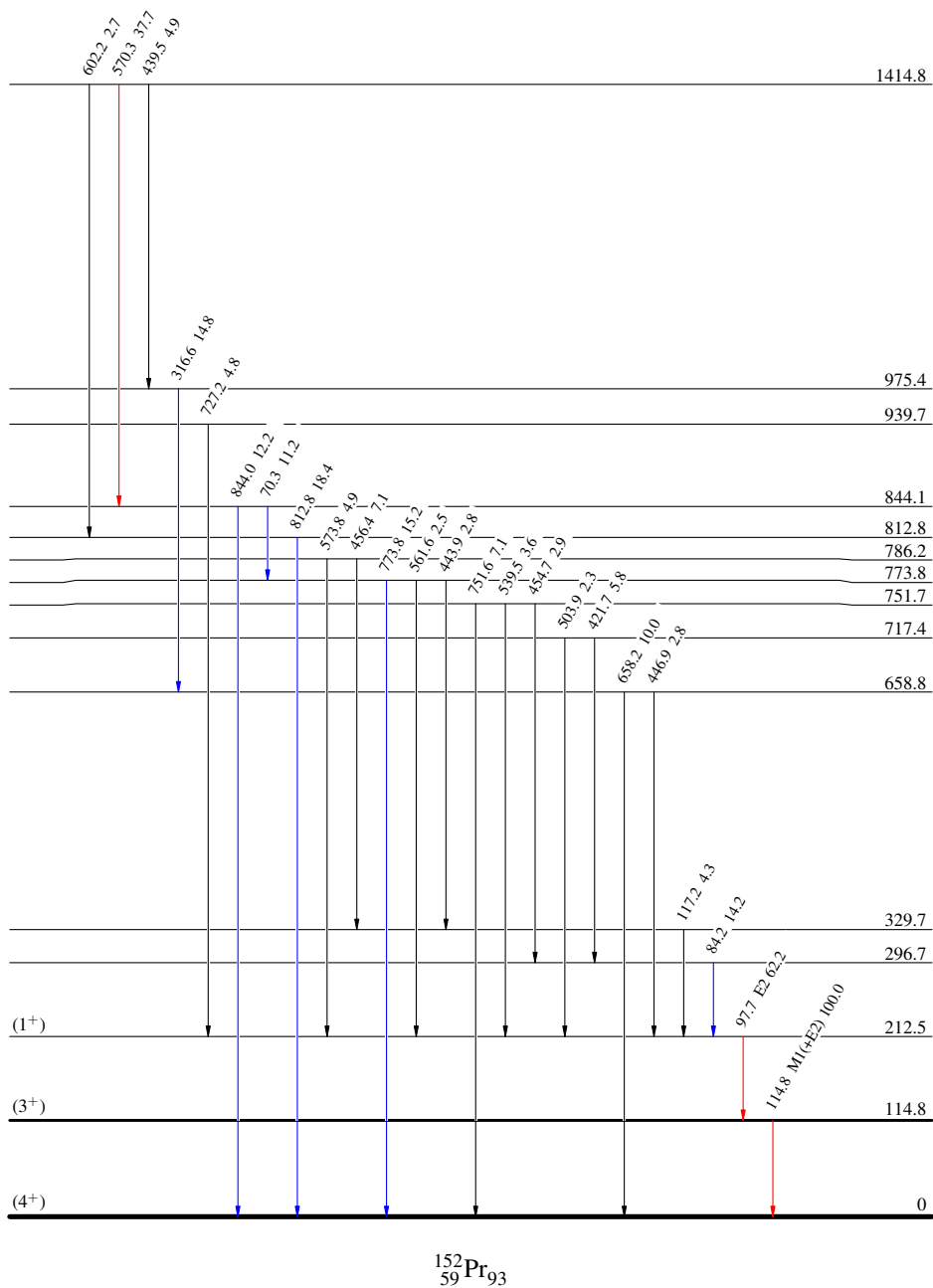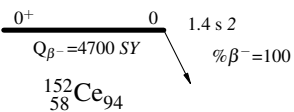
^{152}Ce β^- **decay**　　**1995Ya21,1990Ta07**

Decay Scheme

Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

$^{152}_{58}$Ce$_{94}$

0^+　　0　　1.4 s 2
Q_{β^-}=4700 SY　　%β^-=100

$^{152}_{59}$Pr$_{93}$