163 Gd β^- decay (68 s) 1982Ge07

History

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Parent: 163 Gd: E=0.0; $J^{\pi}=(5/2^-,7/2^+)$; $T_{1/2}=68 \text{ s } 3$; $Q(\beta^-)=3170 \ 70$; $\%\beta^-$ decay=100.0

 $^{163}\text{Gd-J}^{\pi}, T_{1/2}, Q(\beta^{-})$: From the ^{163}Gd Adopted Levels.

Additional information 1. 1982Ge07: 163 Gd formed by 252 Cf SF decay and separated by chemistry. Measured E γ , I γ . Tentative decay scheme is proposed (evaluators) based on first few levels in (t,α) .

¹⁶³Tb Levels

E(level)	$J^{\pi \ddagger}$	
0.0	3/2+	
54 [†]	5/2+	
128 [†] 5	$(7/2)^+$	
342 2	$(7/2)^{-}$	
373.37 15	$(5/2)^+$	

[†] From (t,α) .

$\gamma(^{163}\text{Tb})$

Iy normalization: from $I_{\gamma}(287\gamma) = 25\%$ 3 (1982Ge07). The value by 1982Ge07 is based on time dependence of $I_{\gamma}(287\gamma)/I_{\gamma}(^{163}\text{Tb})$ 351 γ) and I γ (163Tb 351 γ)= 26% 3.

E_{γ}	Ι _γ @	E_i (level)	J_i^{π}	E_f	\mathbf{J}_f^{π}
214.0 [†] & 2	46 3	342	$(7/2)^{-}$	128	$(7/2)^+$
287.79 [†] & 8	100	342	$(7/2)^{-}$	54	5/2+
373.37 [#] & <i>15</i>	25 2	373.37	$(5/2)^+$	0.0	$3/2^{+}$
x396.4 3	12 <i>3</i>				
^x 575.1 2	11.3 8				
^x 632.9 7	18 <i>3</i>				
^x 1167.7 3	20 2				
x1234.4 3	10 2				
^x 1311.6 3	13 <i>3</i>				
^x 1562.1 3	36 <i>3</i>				
^x 1684.5 [‡] 3	32 [‡] 3				

[†] Tentative placement (evaluators) based on a level at 344 in (t,α) .

[‡] From Adopted Levels.

[‡] This γ ray may have a contribution from an impurity (evaluators) since decay time of 181 s 9 (1982Ge07) is larger by a factor of ≈ 3 from weighted average $T_{1/2}$ =68 s 3 deduced from ten other γ rays.

[#] Tentative placement (1992Ga15) based on a level at 373 in (t,α) .

[®] For absolute intensity per 100 decays, multiply by 0.25 3.

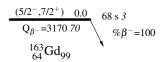
[&]amp; Placement of transition in the level scheme is uncertain.

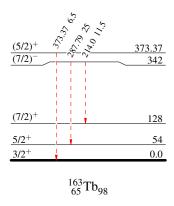
 $^{^{}x}$ γ ray not placed in level scheme.

$^{163}{\rm Gd}~\beta^-~{ m decay}~(68~{ m s})~~1982{ m Ge}07$

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays





Legend

