

¹⁵⁹Tb(α,5nγ), ¹⁶⁰Dy(p,3nγ) 1976Ri09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 141, 1 (2017)	1-Feb-2017

E(α)=63 MeV, E(p)=43 MeV and measured E_γ, I_γ, γ(t), γγ delayed coincidences.

¹⁵⁸Ho Levels

The levels above 200 keV are assumed (1976Ri09) to be members of a rotational band based on the 6-, 227.8-keV level.

E(level)	J ^π †	T _{1/2}	Comments
0.0	5 ⁺		
67.3 1	2 ⁻		
156.9 1	(5 ⁻)	29 ns 3	J ^π : Authors' assignment, but they note that in some other even-mass Ho isotopes the isomer is 6 ⁻ . T _{1/2} : The observed half-life could be associated with this level or one slightly above it which decays via an unobserved low-energy transition.
227.8‡ 1	(6 ⁻)		
328.4‡ 2	(7 ⁻)		
443.5‡ 2	(8 ⁻)		
602.8‡ 2	(9 ⁻)		
768.9‡ 2	(10 ⁻)		
982.7‡ 3	(11 ⁻)		
1204.6‡ 3	(12 ⁻)		
1460.5‡ 3	(13 ⁻)		
1737.9‡ 3	(14 ⁻)		
2024.3‡ 4	(15 ⁻)		
2354.9‡ 4	(16 ⁻)		

† See ¹⁵⁸Ho Adopted Levels for configurations; these are also discussed by 1976Ri09.

‡ Band(A): K^π=(6⁻) band.

γ(¹⁵⁸Ho)

E _γ	I _γ	E _i (level)	J _i ^π	E _f	J _f ^π	Comments
67.3 1	9.5 8	67.3	2 ⁻	0.0	5 ⁺	
70.9 1	7.2 6	227.8	(6 ⁻)	156.9	(5 ⁻)	
100.6 2	18.5 19	328.4	(7 ⁻)	227.8	(6 ⁻)	
115.1 2	20.0 20	443.5	(8 ⁻)	328.4	(7 ⁻)	
156.9 1	100 9	156.9	(5 ⁻)	0.0	5 ⁺	
159.3 2	21.0 21	602.8	(9 ⁻)	443.5	(8 ⁻)	
166.1 1	25.0 26	768.9	(10 ⁻)	602.8	(9 ⁻)	I _γ : may include a transition in ¹⁵⁹ Ho.
171.5 3		328.4	(7 ⁻)	156.9	(5 ⁻)	I _γ : Weak.
213.8 2	15.5 16	982.7	(11 ⁻)	768.9	(10 ⁻)	I _γ : may include a transition in ¹⁵⁸ Dy.
215.7 2	16.3 17	443.5	(8 ⁻)	227.8	(6 ⁻)	
221.9 2	8.9 12	1204.6	(12 ⁻)	982.7	(11 ⁻)	
255.9 3	5.5 7	1460.5	(13 ⁻)	1204.6	(12 ⁻)	
274.4 3	7.7 8	602.8	(9 ⁻)	328.4	(7 ⁻)	
277.4 4	3.5 12	1737.9	(14 ⁻)	1460.5	(13 ⁻)	
286.4 4	3.5 12	2024.3	(15 ⁻)	1737.9	(14 ⁻)	
325.4 2	21.0 21	768.9	(10 ⁻)	443.5	(8 ⁻)	
379.9 2	16.3 18	982.7	(11 ⁻)	602.8	(9 ⁻)	

Continued on next page (footnotes at end of table)

 $^{159}\text{Tb}(\alpha,5n\gamma), ^{160}\text{Dy}(p,3n\gamma)$ **1976Ri09** (continued) $\gamma(^{158}\text{Ho})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π		
435.8	2	24.6	25	1204.6	(12 ⁻)	768.9	(10 ⁻)
477.8	2	10.7	13	1460.5	(13 ⁻)	982.7	(11 ⁻)
533.3	2	15.5	16	1737.9	(14 ⁻)	1204.6	(12 ⁻)
563.8	3	13.4	20	2024.3	(15 ⁻)	1460.5	(13 ⁻)
617.0 [†]	3	10.0	12	2354.9?	(16 ⁻)	1737.9	(14 ⁻)

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

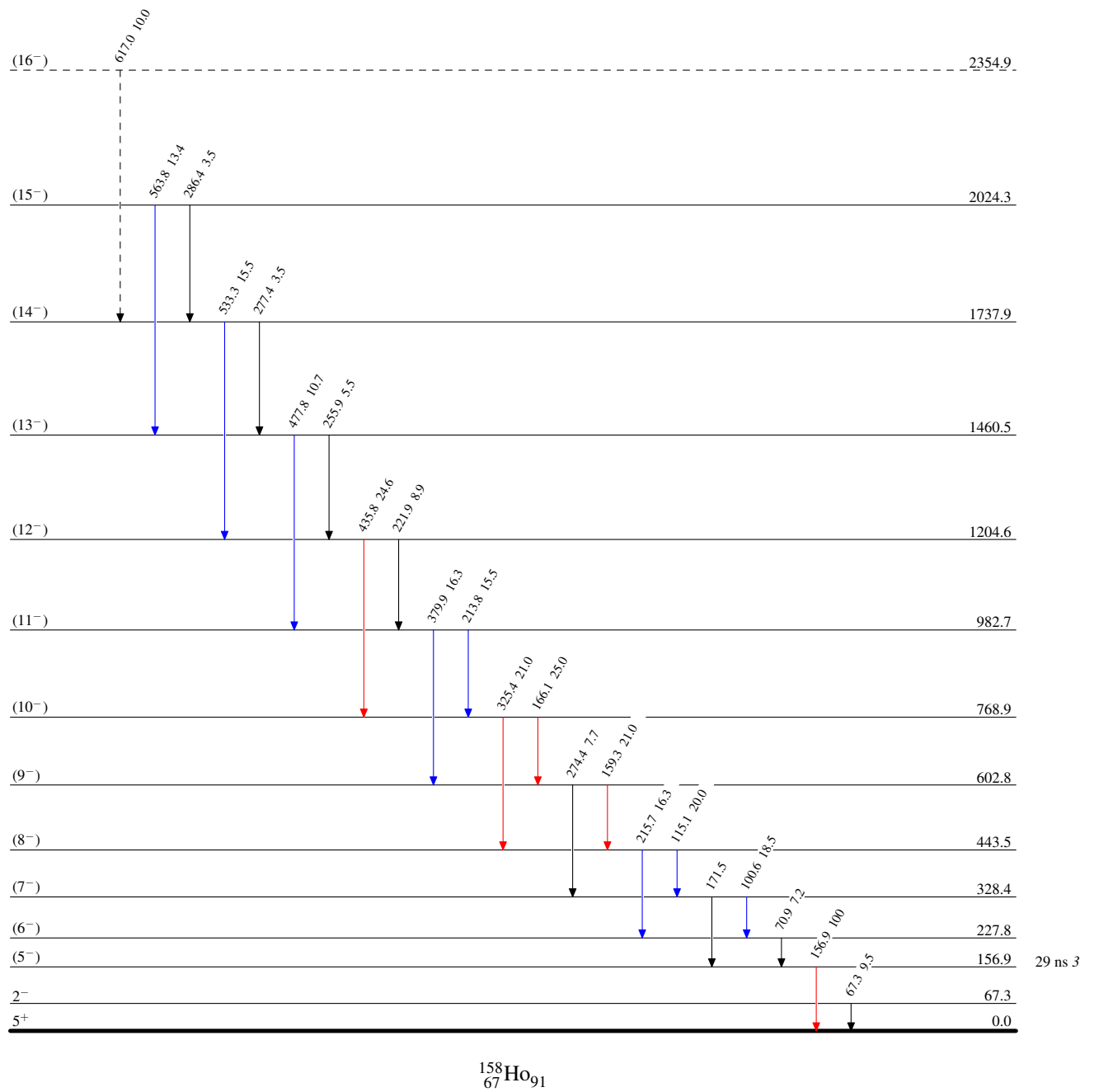
$^{159}\text{Tb}(\alpha,5n\gamma), ^{160}\text{Dy}(p,3n\gamma)$ 1976Ri09

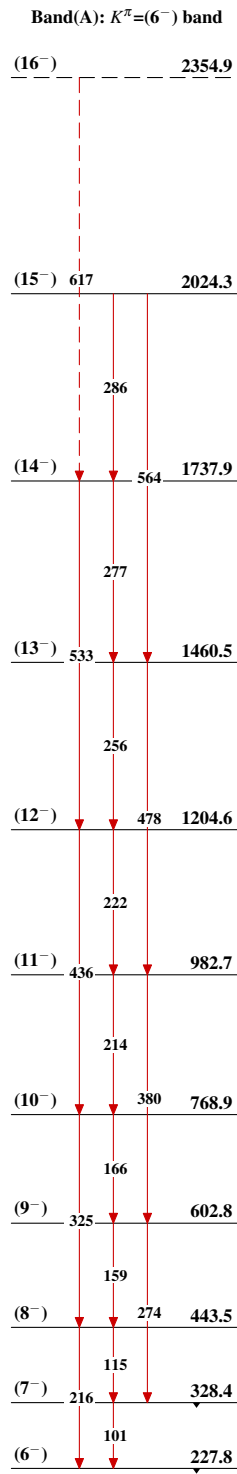
Legend

Level Scheme

Intensities: Relative I_γ

- \longrightarrow $I_\gamma < 2\% \times I_\gamma^{\max}$
- \longrightarrow $I_\gamma < 10\% \times I_\gamma^{\max}$
- \longrightarrow $I_\gamma > 10\% \times I_\gamma^{\max}$
- \longrightarrow γ Decay (Uncertain)



${}^{159}\text{Tb}(\alpha,5n\gamma), {}^{160}\text{Dy}(p,3n\gamma)$ 1976Ri09 ${}^{158}_{67}\text{Ho}_{91}$