

$^{127}\text{I}(^{29}\text{Si}, 5\text{n}\gamma)$ 1994Zh08

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 110, 1 (2009)	20-Nov-2008

1994Zh08: $^{127}\text{I}(^{29}\text{Si}, 5\text{n}\gamma)$ E=145 MeV. Measured γ , $\gamma\gamma$, $\gamma(\theta)$, $\gamma\gamma(t)$. Full details of this study are not available.

 ^{151}Ho Levels

E(level) [†]	J $\pi^{\ddagger}$	T _{1/2}	Comments
0.0 [#]	(11/2 ⁻)		
789.6 [#] 3	(15/2 ⁻)		
1387.3 [#] 5	(19/2 ⁻)		
1684.5 [#] 5	(23/2 ⁻)		
1791.1 [#] 5	(21/2 ⁻)		
2098.5 5	(25/2 ⁻)		Configuration=($\pi h_{11/2}^3$)($\nu f_{7/2}$)($\nu h_{9/2}$), seniority=3.
2227.3 6	(27/2 ⁻)		Configuration=($\pi h_{11/2}^3$)($\nu f_{7/2}$)($\nu h_{9/2}$), seniority=1.
2615.5 6	(27/2)		Configuration=($\pi h_{11/2}^3$)($^{150}\text{Gd } 3^-$)($\nu f_{7/2}^2$)($\nu f_{7/2}$)($\nu i_{13/2}$).
2851.6 [@] 6	(27/2 ⁻)		
2880.3 6	(29/2)		Configuration=($\pi h_{11/2}^3$)($^{150}\text{Gd } 3^-$)($\nu f_{7/2}^2$)($\nu f_{7/2}$)($\nu i_{13/2}$).
3144.5 6	(29/2)		
3155.6 6	(31/2)		Configuration=($\pi h_{11/2}^3$)($\nu f_{7/2}$)($\nu i_{13/2}$).
3314.6 6	(33/2)		
3522.9 6	(33/2)		
3624.1 [@] 6	(31/2 ⁻)		
3970.3 6	(35/2)		Configuration=($\pi h_{11/2}^2$)($\nu d_{3/2}$)($\nu f_{7/2}^2$).
4110.0 [@] 6	(35/2 ⁻)		
4356.0 [@] 7	(39/2 ⁻)		
4561.9 7	(39/2)		Configuration=($\pi h_{11/2}^2$)($\nu d_{3/2}$)($\nu f_{7/2}$)($\nu h_{9/2}$).
4811.6 8	(43/2 ⁻)	≈ 1 ns	Configuration=($\pi h_{11/2}^3$)($\nu f_{7/2}$)($\nu h_{9/2}$), seniority=3. T _{1/2} : from $\gamma(t)$ (1994Zh08).
5293.9 8	(41/2)		
5578.5 [?] 8	(43/2)		
5642.7 8	(45/2)		
5836.2 8	(45/2)		
5875.5 8	(47/2)		Configuration=($\pi h_{11/2}^3$)($\nu h_{9/2}$)($\nu i_{13/2}$).
6184.2 8	(49/2)		Configuration=($\pi h_{11/2}^3$)($\nu h_{9/2}$)($\nu i_{13/2}$).
6225.6 8			
6513.9 8			
6522.9 [?] 9			
6534.7 8			
6660.0 8			
6805.9 [?] 9			
6850.8 [?] 8			
6907.6 9			
7071.4 9			
7099.3 9			
7129.0 [?] 9			
7192.6 8			
7326.6 [?] 9			
7754.5 8			
8025.7 [?] 9			
8341.1 9	($\geq 57/2$)	9.2 ns 20	T _{1/2} : from $\gamma(t)$ (1994Zh08). Other: 14 ns 3 (1981Gi12). J π : from multiplicity=17 $\pm$ 2 and assuming that an average yrast transition removes 1.65 $\pm$ 0.16 units of angular momentum. J(isomer)=J(g.s.)+1.65*MULTIPLICITY=(67/2) $\pm$ 5.

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$^{127}\text{I}^{(29}\text{Si},5\text{n}\gamma)$ **1994Zh08 (continued)** ^{151}Ho Levels (continued)E(level)[†]

8651.9 9
 9053.7? 9
 9532.1? 10
 9958.9? 10

[†] From least-squares fit to $E\gamma$'s, 0.3 keV uncertainty assigned (by evaluator) to γ -ray energies.[‡] From 'Adopted Levels'.# Band(A): $\pi h^3_{11/2} \otimes \nu f^2_{7/2}$, multiplet of states with seniority=1.@ Band(B): $\pi h^3_{11/2} \otimes \nu f^2_{7/2}$, multiplet of states with seniority=3. $\gamma(^{151}\text{Ho})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]	$\alpha^{‡}$	Comments
(11)	3155.6	(31/2)	3144.5	(29/2)			
(21)	6534.7		6513.9				
39.3	5875.5	(47/2)	5836.2	(45/2)			
41.4	6225.6		6184.2	(49/2)			
106.6	1791.1	(21/2 ⁻)	1684.5	(23/2 ⁻)	(M1)	2.17	$\alpha(\text{K})=1.83$ 3; $\alpha(\text{L})=0.271$ 4; $\alpha(\text{M})=0.0599$ 9; $\alpha(\text{N}+..)=0.01604$ 23 $\alpha(\text{N})=0.01390$ 20; $\alpha(\text{O})=0.00202$ 3; $\alpha(\text{P})=0.0001133$ 16
125.3	6660.0		6534.7				
128.8	2227.3	(27/2 ⁻)	2098.5	(25/2 ⁻)	(M1)	1.268	$\alpha(\text{K})=1.066$ 15; $\alpha(\text{L})=0.1578$ 22; $\alpha(\text{M})=0.0348$ 5; $\alpha(\text{N}+..)=0.00933$ 13 $\alpha(\text{N})=0.00809$ 12; $\alpha(\text{O})=0.001177$ 17; $\alpha(\text{P})=6.60 \times 10^{-5}$ 10
146.1	6660.0		6513.9				
159.1	3314.6	(33/2)	3155.6	(31/2)			
208.3	3522.9	(33/2)	3314.6	(33/2)			
232.8	5875.5	(47/2)	5642.7	(45/2)			
246.0	4356.0	(39/2 ⁻)	4110.0	(35/2 ⁻)	(E2)	0.1241	$\alpha(\text{K})=0.0875$ 13; $\alpha(\text{L})=0.0282$ 4; $\alpha(\text{M})=0.00661$ 10; $\alpha(\text{N}+..)=0.001700$ 24 $\alpha(\text{N})=0.001504$ 21; $\alpha(\text{O})=0.000192$ 3; $\alpha(\text{P})=4.35 \times 10^{-6}$ 6
257.6	5836.2	(45/2)	5578.5?	(43/2)			
264.7	2880.3	(29/2)	2615.5	(27/2)	(M1)	0.1719	$\alpha(\text{K})=0.1448$ 21; $\alpha(\text{L})=0.0211$ 3; $\alpha(\text{M})=0.00466$ 7; $\alpha(\text{N}+..)=0.001248$ 18 $\alpha(\text{N})=0.001082$ 16; $\alpha(\text{O})=0.0001576$ 22; $\alpha(\text{P})=8.90 \times 10^{-6}$ 13
275.3	3155.6	(31/2)	2880.3	(29/2)	(E1)	0.0221	$\alpha(\text{K})=0.0187$ 3; $\alpha(\text{L})=0.00268$ 4; $\alpha(\text{M})=0.000589$ 9; $\alpha(\text{N}+..)=0.0001558$ 22 $\alpha(\text{N})=0.0001357$ 19; $\alpha(\text{O})=1.92 \times 10^{-5}$ 3; $\alpha(\text{P})=9.68 \times 10^{-7}$ 14
284.6	5578.5?	(43/2)	5293.9	(41/2)			
297.2	1684.5	(23/2 ⁻)	1387.3	(19/2 ⁻)	(E2)	0.0687	$\alpha(\text{K})=0.0508$ 8; $\alpha(\text{L})=0.01385$ 20; $\alpha(\text{M})=0.00322$ 5; $\alpha(\text{N}+..)=0.000831$ 12 $\alpha(\text{N})=0.000733$ 11; $\alpha(\text{O})=9.53 \times 10^{-5}$ 14; $\alpha(\text{P})=2.62 \times 10^{-6}$ 4
307.5	2098.5	(25/2 ⁻)	1791.1	(21/2 ⁻)			
308.7	6184.2	(49/2)	5875.5	(47/2)			
309.1	6534.7		6225.6				
310.8	8651.9		8341.1	($\geq 57/2$)			
329.7	6513.9		6184.2	(49/2)			
338.7	6522.9?		6184.2	(49/2)			
350.1	6225.6		5875.5	(47/2)			
367.3	3522.9	(33/2)	3155.6	(31/2)	(M1)	0.0717	$\alpha(\text{K})=0.0605$ 9; $\alpha(\text{L})=0.00875$ 13; $\alpha(\text{M})=0.00193$ 3; $\alpha(\text{N}+..)=0.000517$ 8 $\alpha(\text{N})=0.000448$ 7; $\alpha(\text{O})=6.53 \times 10^{-5}$ 10; $\alpha(\text{P})=3.70 \times 10^{-6}$ 6

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$^{127}\text{I}^{(29}\text{Si},5\text{n}\gamma)$ **1994Zh08 (continued)** $\gamma(^{151}\text{Ho})$ (continued)

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
403.8	1791.1	(21/2 ⁻)	1387.3	(19/2 ⁻)	723.4	6907.6		6184.2	(49/2)
414.1	2098.5	(25/2 ⁻)	1684.5	(23/2 ⁻)	772.6	3624.1	(31/2 ⁻)	2851.6?	(27/2 ⁻)
434.4	3314.6	(33/2)	2880.3	(29/2)	789.6	789.6	(15/2 ⁻)	0.0	(11/2 ⁻)
434.4	6660.0		6225.6		814.7	3970.3	(35/2)	3155.6	(31/2)
455.7	4811.6	(43/2 ⁻)	4356.0	(39/2 ⁻)	831.1	5642.7	(45/2)	4811.6	(43/2 ⁻)
478.4	9532.1?		9053.7?		887.2	7071.4		6184.2	(49/2)
485.9	4110.0	(35/2 ⁻)	3624.1	(31/2 ⁻)	917.2	3144.5	(29/2)	2227.3	(27/2 ⁻)
517.0	2615.5	(27/2)	2098.5	(25/2 ⁻)	937.8	5293.9	(41/2)	4356.0	(39/2 ⁻)
529.0	3144.5	(29/2)	2615.5	(27/2)	944.8	7129.0?		6184.2	(49/2)
540.1	3155.6	(31/2)	2615.5	(27/2)	954.3	8025.7?		7071.4	
542.8	2227.3	(27/2 ⁻)	1684.5	(23/2 ⁻)	1008.4	7192.6		6184.2	(49/2)
561.9	7754.5		7192.6		1014.6	6850.8?		5836.2	(45/2)
564.6	7099.3		6534.7		1024.6	5836.2	(45/2)	4811.6	(43/2 ⁻)
586.6	8341.1	($\geq 57/2$)	7754.5		1063.9	5875.5	(47/2)	4811.6	(43/2 ⁻)
587.2	4110.0	(35/2 ⁻)	3522.9	(33/2)	1071.8	6907.6		5836.2	(45/2)
591.6	4561.9	(39/2)	3970.3	(35/2)	1094.5	7754.5		6660.0	
597.7	1387.3	(19/2 ⁻)	789.6	(15/2 ⁻)	1142.4	7326.6?		6184.2	(49/2)
621.7	6805.9?		6184.2	(49/2)	1241.8	8341.1	($\geq 57/2$)	7099.3	
624.3	2851.6?	(27/2 ⁻)	2227.3	(27/2 ⁻)	1307.0	9958.9?		8651.9	
653.0	2880.3	(29/2)	2227.3	(27/2 ⁻)	1396.7	3624.1	(31/2 ⁻)	2227.3	(27/2 ⁻)
655.6	3970.3	(35/2)	3314.6	(33/2)	1528.9	7754.5		6225.6	
712.6	9053.7?		8341.1	($\geq 57/2$)	1570.3	7754.5		6184.2	(49/2)

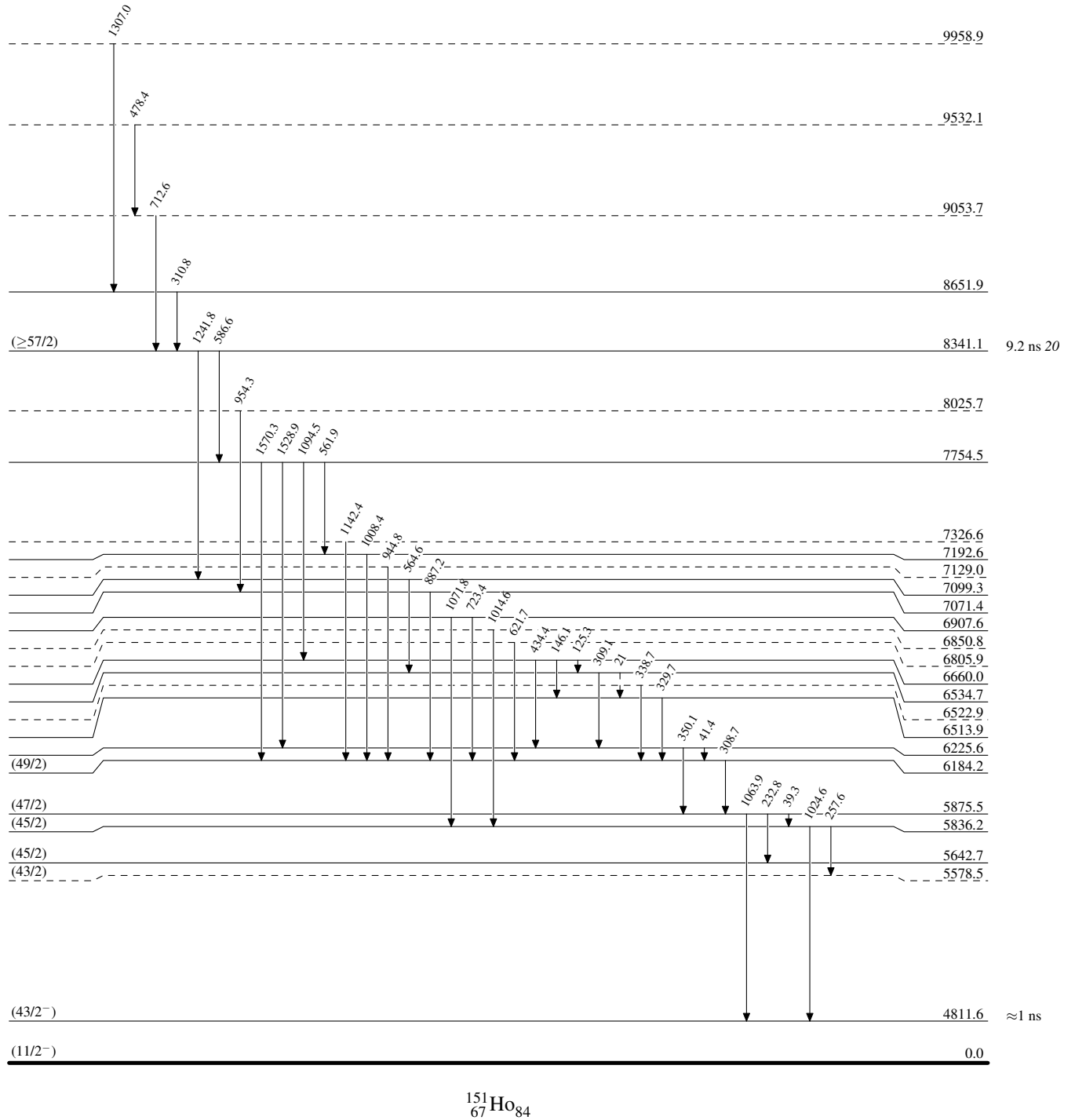
[†] Based on intensity-balance arguments, but the details are not available.

[‡] 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.

$^{127}\text{I}(^{29}\text{Si}, 5n\gamma)$ 1994Zh08

Legend

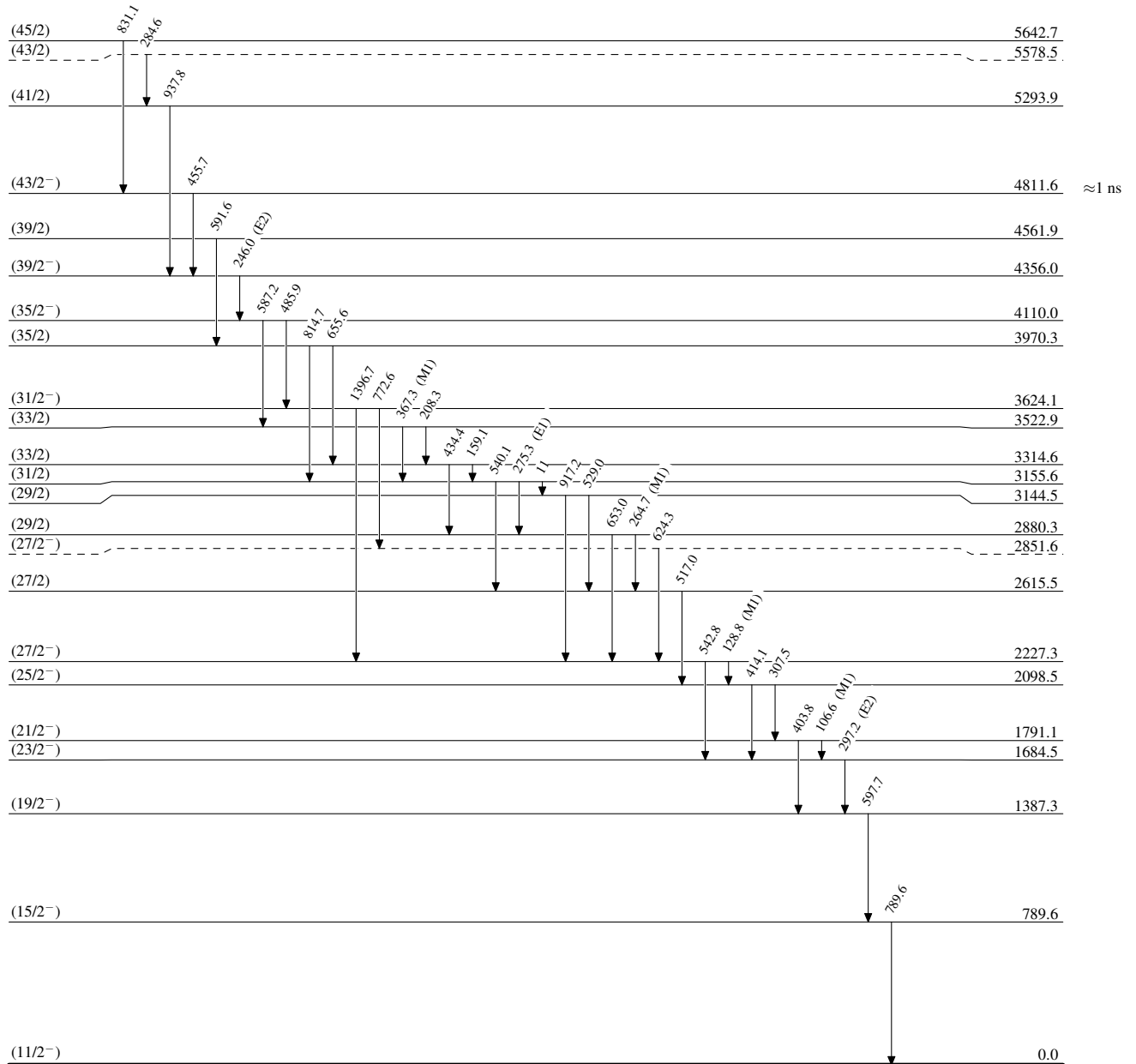
Level Scheme

-----► γ Decay (Uncertain)

$^{127}\text{I}^{(29}\text{Si},5\text{n}\gamma)$ 1994Zh08

Legend

Level Scheme (continued)

-----► γ Decay (Uncertain) $^{151}_{67}\text{Ho}_{84}$

$^{127}\text{I}(^{29}\text{Si}, 5\text{n}\gamma)$ 1994Zh08