

⁶⁸Zn(¹⁸O,p2n γ) 1999Do13

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 125, 201 (2015)	31-Dec-2014

E=56 MeV. Measured E γ , I γ , $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO) using Pitt-FSU array consisting of eight Compton-suppressed HPGe detectors.

⁸³Rb Levels

E(level) [†]	J π [‡]	Comments
0.0	5/2 ⁻	
42.1#@	9/2 ⁺	
794.00@ 10	13/2 ⁺	
1037.71 10	11/2 ⁺	
1890.02@ 14	17/2 ⁺	
1943.31 16	15/2 ⁺	
2318.3 3	(17/2 ⁺)	
2860.21@ 17	21/2 ⁺	
3196.9 5	19/2 ⁻	J π : assigned as (19/2) in 1999Do13.
3330.69 23	21/2 ⁺	
3727.62 19	23/2 ⁺	
3992.93@ 21	25/2 ⁺	
4164.3 4	23/2 ⁻	J π : assigned as J π =(23/2 ⁺) in 1999Do13.
4436.2 4	25/2 ⁺	
4461.1 4	(25/2 ⁺)	
4963.3 3	(27/2 ⁺)	
5216.9 5	(27/2 ⁺)	
5316.1@ 4	29/2 ⁺	
5668.2 5	(29/2 ⁺)	
6669.1 9		J π : assigned as (31/2 ⁺) in 1999Do13.
6913.1@ 9	(33/2 ⁺)	
8834.1@ 22	(37/2 ⁺)	

[†] From a least-squares fit to E γ , by evaluator.

[‡] From the Adopted Levels. Differences with assignments proposed by 1999Do13 are noted in the comments.

Energy held fixed in least-squares fit.

@ Band(A): Yrast sequence.

$\gamma(^{83}\text{Rb})$

Expected R(DCO) values when Q transitions are used as gating transitions are 0.5 for stretched dipole transitions, 1.0 for stretched Q transitions, and between 0.3 and 1.9 for mixed $\Delta J=1$ transitions. All values are deduced from gates on the Q 752 γ and Q 1096 γ .

E γ	I γ [†]	E _i (level)	J π _i [‡]	E _f	J π _f [‡]	Mult. [‡]	Comments
(42.33 15)		42.1	9/2 ⁺	0.0	5/2 ⁻		E γ : from the Adopted Levels.
244 1	<1	6913.1	(33/2 ⁺)	6669.1			
265.3 1	4 1	3992.93	25/2 ⁺	3727.62	23/2 ⁺	D	Mult.: R(DCO)=0.55 7.
271.8 4	\approx 1	4436.2	25/2 ⁺	4164.3	23/2 ⁻		
352.7 2	2 1	5316.1	29/2 ⁺	4963.3	(27/2 ⁺)		
397.0 2	2 1	3727.62	23/2 ⁺	3330.69	21/2 ⁺		
428 1	2 1	2318.3	(17/2 ⁺)	1890.02	17/2 ⁺		

Continued on next page (footnotes at end of table)

$^{68}\text{Zn}(^{18}\text{O},\text{p}2\text{n}\gamma)$ 1999Do13 (continued) $\gamma(^{83}\text{Rb})$ (continued)

E_γ	I_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. ‡	Comments
451.3 3	2 1	5668.2	(29/2 ⁺)	5216.9	(27/2 ⁺)		
470.7 3	2 1	3330.69	21/2 ⁺	2860.21	21/2 ⁺		
502.5 6	2 1	4963.3	(27/2 ⁺)	4461.1	(25/2 ⁺)		
708.6 3	8 1	4436.2	25/2 ⁺	3727.62	23/2 ⁺	D	Mult.: R(DCO)=0.45 6.
733.5 3	3 1	4461.1	(25/2 ⁺)	3727.62	23/2 ⁺	D	Mult.: R(DCO)=0.48 11.
751.9 1	100 5	794.00	13/2 ⁺	42.1	9/2 ⁺	Q	Mult.: R(DCO)=1.04 6.
780.7 3	3 1	5216.9	(27/2 ⁺)	4436.2	25/2 ⁺		
867.4 1	18 2	3727.62	23/2 ⁺	2860.21	21/2 ⁺	D	Mult.: R(DCO)=0.61 6.
879 [#] 1	2 1	3196.9	19/2 ⁻	2318.3	(17/2 ⁺)		
905.6 2	5 2	1943.31	15/2 ⁺	1037.71	11/2 ⁺		
970.2 1	50 5	2860.21	21/2 ⁺	1890.02	17/2 ⁺	Q	Mult.: R(DCO)=0.94 5 for 970.2+970.3.
970.3 3	6 3	4963.3	(27/2 ⁺)	3992.93	25/2 ⁺		Mult.: R(DCO)=0.94 5 for 970.2+970.3.
995.6 1	20 4	1037.71	11/2 ⁺	42.1	9/2 ⁺		
1096.0 1	63 4	1890.02	17/2 ⁺	794.00	13/2 ⁺	Q	Mult.: R(DCO)=0.91 6.
1132.7 2	16 2	3992.93	25/2 ⁺	2860.21	21/2 ⁺	Q	Mult.: R(DCO)=0.97 9.
1149.3 2	13 2	1943.31	15/2 ⁺	794.00	13/2 ⁺	D	Mult.: R(DCO)=0.54 6.
1232 1	2 1	5668.2	(29/2 ⁺)	4436.2	25/2 ⁺		
1303.9 5	≈1	4164.3	23/2 ⁻	2860.21	21/2 ⁺		
1306.8 5	4 1	3196.9	19/2 ⁻	1890.02	17/2 ⁺		
1323.2 4	7 1	5316.1	29/2 ⁺	3992.93	25/2 ⁺	Q	Mult.: R(DCO)=1.1 2.
1353 [#] 1	<1	6669.1		5316.1	29/2 ⁺		
1440.5 4	8 1	3330.69	21/2 ⁺	1890.02	17/2 ⁺	(Q)	Mult.: R(DCO)=0.87 14.
1524.4 3	6 1	2318.3	(17/2 ⁺)	794.00	13/2 ⁺		
1597 1	4 1	6913.1	(33/2 ⁺)	5316.1	29/2 ⁺		
1706 2	2 1	6669.1		4963.3	(27/2 ⁺)		
1921 2	≈1	8834.1	(37/2 ⁺)	6913.1	(33/2 ⁺)		

† Relative intensity normalized to $I_\gamma(752\gamma)=100$.

‡ From R(DCO) analysis.

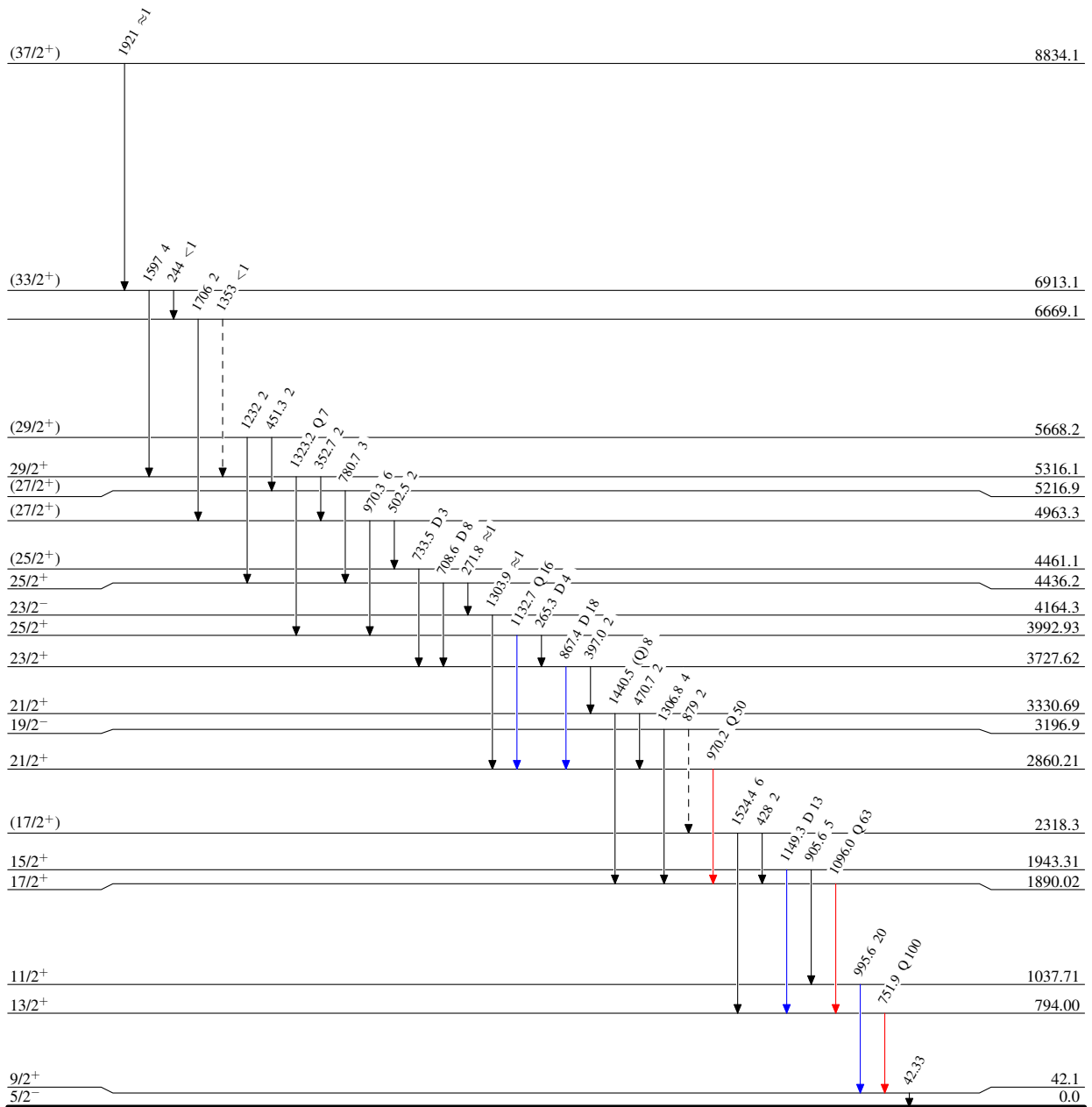
$^\#$ Placement of transition in the level scheme is uncertain.

$^{68}\text{Zn}(^{18}\text{O},\text{p}2\text{n}\gamma)$ 1999Do13

Legend

Level Scheme
Intensities: Relative I_γ

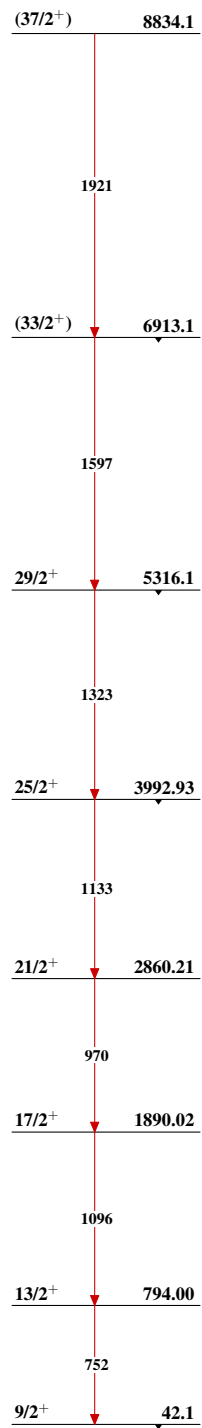
- ▶ $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- - -▶ γ Decay (Uncertain)



$^{83}_{37}\text{Rb}_{46}$

${}^{68}\text{Zn}({}^{18}\text{O},\text{p}2\text{n}\gamma)$ 1999Do13

Band(A): Yrast sequence

 ${}^{83}_{37}\text{Rb}_{46}$