^{58}Ni(^{32}S,αnγ) 2002Ma11

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 116, 1 (2014)	31-Dec-2013

2002Ma11 (also 2001Ma51): E=105 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta\rightarrow$, using GASP array with 40 Compton-suppressed HPGe detectors, a BGO inner ball, and the ISIS silicon ball with 40 ΔE-E telescopes.

^{85}Mo Levels

E(level)‡	J$^\pi$†	E(level)‡	J$^\pi$†	E(level)‡	J$^\pi$†	E(level)‡	J$^\pi$†
0+x#b	(5/2$^-$)	1030.1+x[a] 3	(11/2$^-$)	2808.9+y& 6	(21/2$^+$)	4197.3+x 6	
0+y@&	(9/2$^+$)	1528.8+x[b] 4	(13/2$^-$)	2947.5+x[a] 5	(19/2$^-$)	4530.4+y& 7	(29/2$^+$)
306.70+x[a] 24	(7/2$^-$)	1707.1+y& 5	(17/2$^+$)	3332.3+x 5		5599.6+y& 8	(33/2$^+$)
667.20+x[b] 24	(9/2$^-$)	1925.6+x[a] 4	(15/2$^-$)	3651.3+y& 6	(25/2$^+$)		
754.8+y& 3	(13/2$^+$)	2541.7+x[b] 5	(17/2$^-$)	4026.9+x[a] 6	(23/2$^-$)		

† Assignments are from 2002Ma11 and are based on the systematic behavior of the band structures of known N=43 isotopes.
‡ From least-squares fit to Eγ data, assuming Δ(Eγ)=0.3 keV for each γ ray.
# x ≈30-40 (from systematics).
@ y ≈150 (from systematics).
& Band(A): ν5/2[422], α=+1/2. Backbend at $\hbar\omega$≈0.50 MeV due to the alignment of $\pi g_{9/2}$ pair.
a Band(B): ν5/2[303], α=−1/2. Backbend at $\hbar\omega$≈0.5 MeV due to the alignment of $\pi g_{9/2}$ pair.
b Band(b): ν5/2[303], α=+1/2.

γ(^{85}Mo)

2002Ma11 reported angular distribution ratios (ADO) for two transitions at angles of 90° and 36° (or 144°), where ratio of 1.2 is expected for ΔJ=2, Q and 0.7 for ΔJ=1, dipole transitions.

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.
306.7	66 7	306.70+x	(7/2$^-$)	0+x	(5/2$^-$)	(D+Q)†
360.5	11 4	667.20+x	(9/2$^-$)	306.70+x	(7/2$^-$)	
362.9	11 3	1030.1+x	(11/2$^-$)	667.20+x	(9/2$^-$)	
384.8	18 4	3332.3+x		2947.5+x	(19/2$^-$)	
667.2	34 6	667.20+x	(9/2$^-$)	0+x	(5/2$^-$)	
723.4	69 8	1030.1+x	(11/2$^-$)	306.70+x	(7/2$^-$)	
754.8	100 9	754.8+y	(13/2$^+$)	0+y	(9/2$^+$)	(Q)‡
790.6	22 6	3332.3+x		2541.7+x	(17/2$^-$)	
842.4	44 5	3651.3+y	(25/2$^+$)	2808.9+y	(21/2$^+$)	
861.6	27 8	1528.8+x	(13/2$^-$)	667.20+x	(9/2$^-$)	
865.0	12 5	4197.3+x		3332.3+x		
879.1	37 4	4530.4+y	(29/2$^+$)	3651.3+y	(25/2$^+$)	
895.5	51 5	1925.6+x	(15/2$^-$)	1030.1+x	(11/2$^-$)	
952.3	85 8	1707.1+y	(17/2$^+$)	754.8+y	(13/2$^+$)	
1012.9	23 8	2541.7+x	(17/2$^-$)	1528.8+x	(13/2$^-$)	
1021.9	35 6	2947.5+x	(19/2$^-$)	1925.6+x	(15/2$^-$)	
1069.2	16 3	5599.6+y	(33/2$^+$)	4530.4+y	(29/2$^+$)	
1079.4	19 4	4026.9+x	(23/2$^-$)	2947.5+x	(19/2$^-$)	
1101.8	75 8	2808.9+y	(21/2$^+$)	1707.1+y	(17/2$^+$)	

Continued on next page (footnotes at end of table)

^{58}Ni(^{32}S,αnγ) 2002Ma11 (continued)

$\gamma(^{85}Mo)$ (continued)

† ΔJ=1, D+Q (possibly M1+E2) transition from ADO ratio=1.21 20.
‡ ΔJ=2, Q (possibly E2) transition from ADO ratio=1.12 18.

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Level Scheme

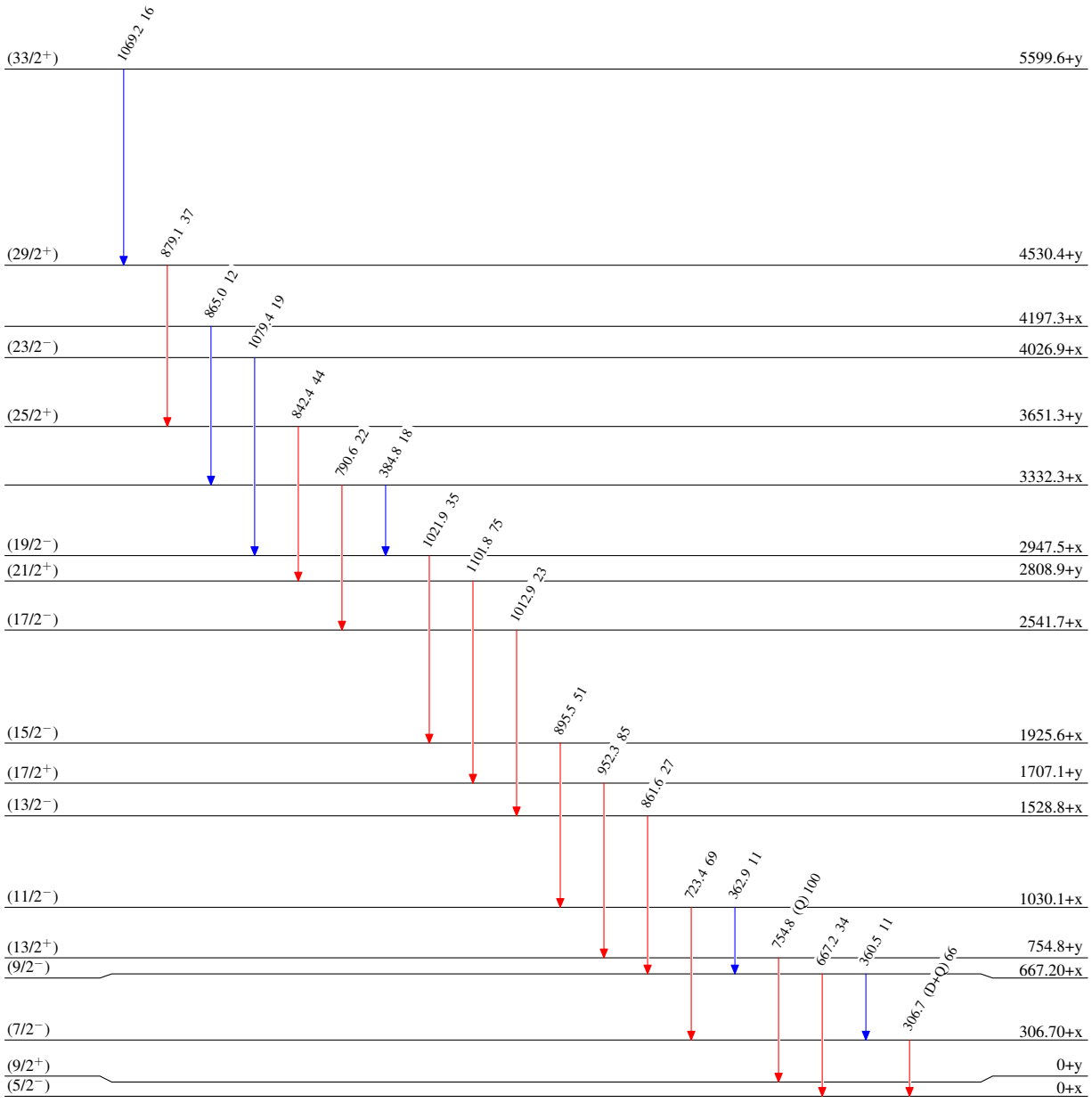
Intensities: Relative I_γ

Legend

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

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

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



$^{85}_{42}Mo_{43}$

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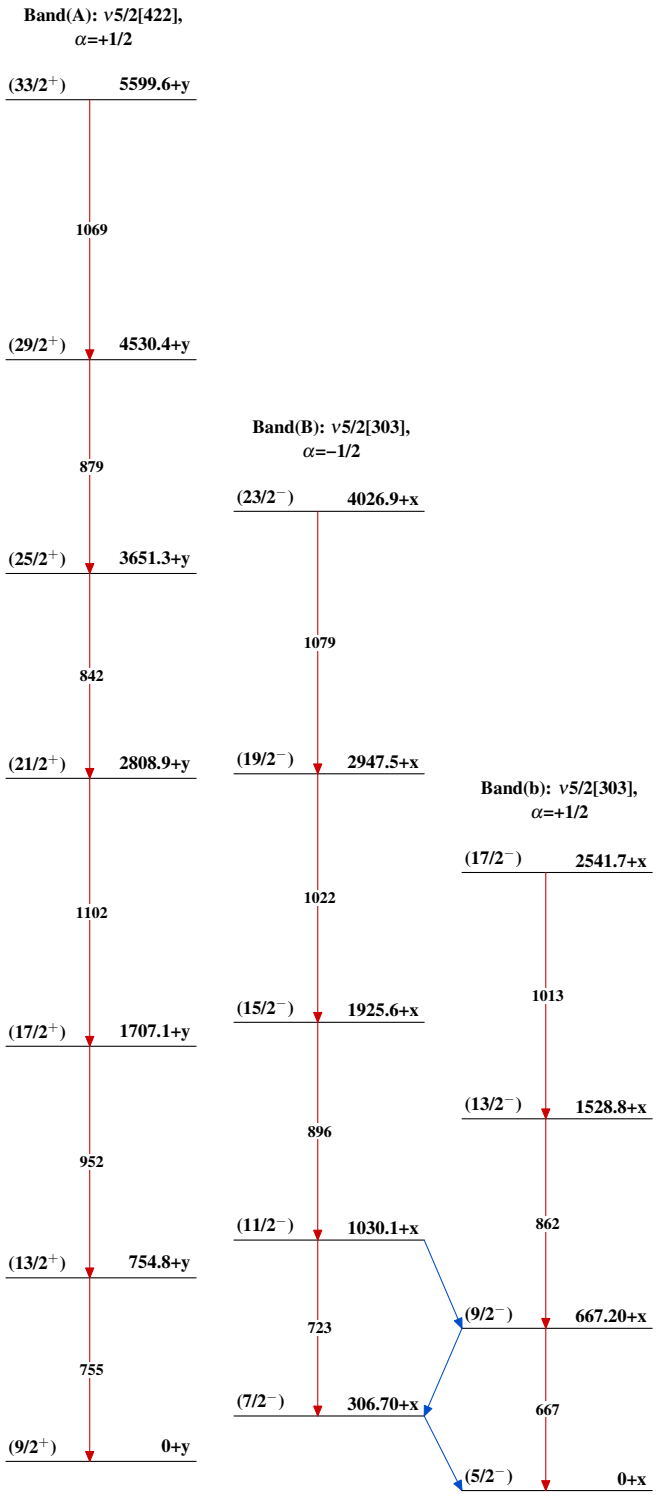

$^{85}_{42}Mo_{43}$