^{58}Ni(^{28}Si,2nγ),^{28}Si(^{58}Ni,2nγ) 2002Ma30,1991Ge01

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	B. Singh	NDS 110,2815 (2009)	30-Sep-2009

2002Ma30 (also 2004Ma32,1997Bu17): ^{58}Ni(^{28}Si,2nγ) E=90 MeV. Measured Eγ, $\gamma\gamma$ using GASP array consisting of 40 Compton-suppressed HPGe detectors and BGO inner ball, the ISIS Silicon ball with 40 ΔE-E telescopes, and the N-ring with six liquid scintillator neutron detectors replacing six of the 80 BGO elements. See also 1997Bu17 from the same group where the first two excited states were reported. See 2004Ma32 and 2002Jo05 for description of yrast band.

1991Ge01 (also 1995Ge07): ^{28}Si(^{58}Ni,2nγ) E=195 MeV, measured Eγ, γ(recoil) coin. One γ ray at 443.8 keV from first 2^+ state reported which, for the first time, was assigned to ^{84}Mo nuclide, deexciting the first 2^+ state.

All data are from 2002Ma30.

^{84}Mo Levels

E(level)	J^π †
0.0‡	0^+
443.9‡ *2*	2^+
1117.3‡ *6*	4^+
2006.4‡ *8*	6^+
3069.4‡ *10*	8^+
4276.4‡ *15*	10^+

† As proposed by 2002Ma30. In Adopted Levels dataset, J^π assignments for excited states are given in parentheses due to lack of strong supporting arguments.

‡ Band(A): Yrast band.

γ(^{84}Mo)

Eγ	E$_i$(level)	J_i^π	E$_f$	J_f^π	Comments
443.9 *2*	443.9	2^+	0.0	0^+	Mult.: quadrupole (E2) from observation of 58% *8* counts at 40°−163° angles and comparison to 59-61% counts for a known first 2^+ to 0^+ γ ray in ^{84}Zr (1991Ge01). But the assignment is not firm. Additional information 1.
673.4 *5*	1117.3	4^+	443.9	2^+	Additional information 2.
889.1 *6*	2006.4	6^+	1117.3	4^+	
1063.0 *6*	3069.4	8^+	2006.4	6^+	
1207 *1*	4276.4	10^+	3069.4	8^+	

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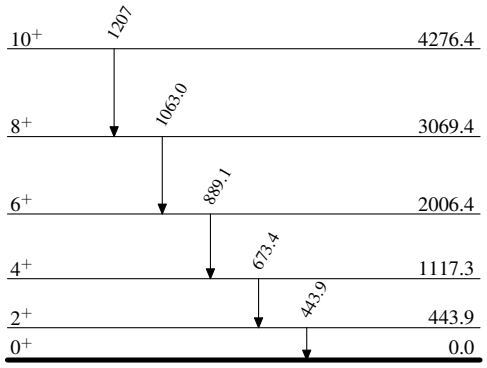
Level Scheme



$^{84}_{42}Mo_{42}$

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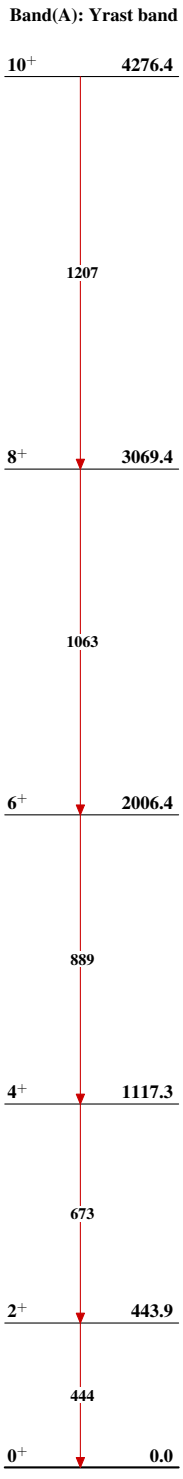

$^{84}_{42}Mo_{42}$