^{40}Ca(^{24}Mg,pnγ),(^{28}Si,αpnγ) 1998Vi06,1998De14

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alan L. Nichols, Balraj Singh, Jagdish K. Tuli	NDS 113, 973 (2012)	15-Apr-2012

1998Vi06 (also 1999Vi06,2000Wa13): ^{40}Ca(^{24}Mg,pnγ) E=65 MeV and ^{40}Ca(^{28}Si,αpnγ) E=88 MeV. Measured Eγ, Iγ, $\gamma\gamma$, (particle)γ coin, nγ coin, $\gamma\gamma(\theta)$(DCO), and lifetimes. Detectors for (^{28}Si,αpnγ) experiment: PEX array of four seven-element Compton-suppressed Ge clusters, 31-element Si inner ball and 15 liquid scintillators as neutron detectors. Detectors for (^{24}Mg,pnγ) experiment: AYEBALL array of 18 Compton-suppressed Ge detectors and fragment mass analyzer for A and Z determination.
1998De14: ^{40}Ca(^{32}S,2αpnγ) E=140 MeV. Measured Eγ, $\gamma\gamma$ by means of GASP array and ISIS Si ball for channel identification; γ rays reported at 246, 376, 571, 946, 1108, 1180, 1241 and 2355 keV.
Level scheme is proposed by 1998Vi06 only.
All data are from 1998Vi06.

^{62}Ga Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	Comments
0	(0$^+$)		
571.2[#] *3*	(1$^+$)		
817.5[#] *4*	(3$^+$)	3.2 ns *11*	T$_{1/2}$: recoil-distance Doppler-shift method.
1193.9[#] *5*	(5$^+$)		
1438.9 *5*	(4)		
2372.4 *6*	(6)		
2435.2[#] *6*	(7$^+$)		
3921.7? *7*			
4791.5[#] *7*			
5737.8[#] *8*			
6846.1[#] *9*			

[†] From least-squares fit to Eγ data, assuming uncertainty of 0.3 keV for each γ ray.
[‡] As proposed in 1998Vi06 based on DCO ratios for selected transitions and band structure.
[#] Band(A): ΔJ=2 band. Probable configuration=$\pi(f_{5/2}g_{9/2})$.

$\gamma(^{62}Ga)$

Except for the 621γ, all other γ rays are reported by 1998De14.

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	Comments
246.3	213 *20*	817.5	(3$^+$)	571.2	(1$^+$)	E2	DCO=0.98 *10* (ΔJ=2, Q gate), DCO=1.52 *11* (ΔJ=1, dipole gate). Mult.: DCO and RUL.
376.4	180 *20*	1193.9	(5$^+$)	817.5	(3$^+$)	Q	DCO=1.87 *33* (ΔJ=1, dipole gate).
571.2	225 *20*	571.2	(1$^+$)	0	(0$^+$)	D	DCO=0.66 *8* (ΔJ=2, Q gate).
621.4	10 *5*	1438.9	(4)	817.5	(3$^+$)		
946.3[†‡]	58 *10*	5737.8		4791.5			
1108.3[†‡]	21 *3*	6846.1		5737.8			
1178.5	12 *3*	2372.4	(6)	1193.9	(5$^+$)		
1241.3	136 *10*	2435.2	(7$^+$)	1193.9	(5$^+$)	Q	DCO=1.06 *15* (ΔJ=2, Q gate), DCO=1.24 *33* (ΔJ=1, dipole gate).
[x]1486.5	<10						E$_\gamma$: probably 3922, (8$^+$) to 2435, (7$^+$).

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^{40}Ca(^{24}Mg,pnγ),(^{28}Si,αpnγ) 1998Vi06,1998De14 (continued)

γ(^{62}Ga) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Comments
1486.5‡	<10	3921.7?		2435.2	(7$^+$)	Placement by the evaluators based on results from the study of 2004Ru03.
2356.3†‡	61 *8*	4791.5		2435.2	(7$^+$)	

† Tentative assignment.
‡ Placement of transition in the level scheme is uncertain.
^{x} γ ray not placed in level scheme.

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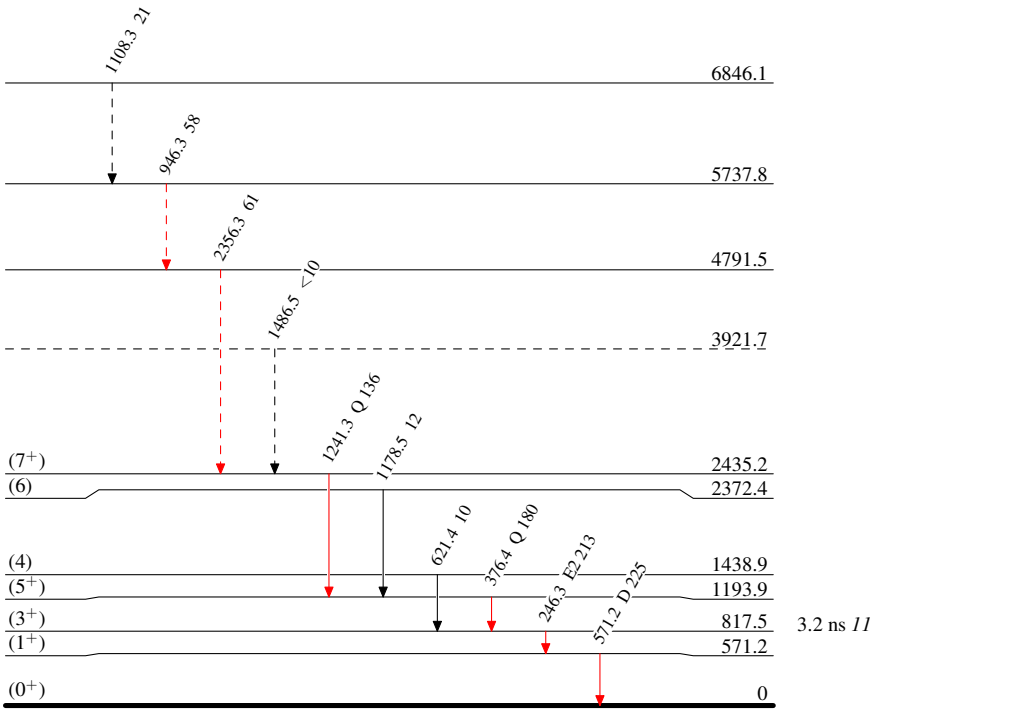
Level Scheme

Intensities: Relative I_γ



$^{62}_{31}Ga_{31}$

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$^{62}_{31}Ga_{31}$