$^{24}\textbf{Mg}(^{28}\textbf{Si},\alpha\textbf{n}\gamma),^{28}\textbf{Si}(^{28}\textbf{Si},2\alpha\textbf{n}\gamma)$ **1998Be69,2002To05**

	Type	Author	History Citation	Literature Cutoff Date
	Full Evaluation	T. W. Burrows	NDS 108, 923 (2007)	20-Feb-2007

1998Be69,1999Be23: $^{24}\text{Mg}(^{28}\text{Si},\alpha\text{n}\gamma)$, E=87 MeV. Measured E$\gamma$, $\gamma\gamma$, particle-$\gamma\gamma$ coin, $\gamma\gamma(\theta)$(DCO) using pex array of four euroball cluster detectors. particles detected using a 31-silicon wafer array for protons and α's, and a 15-element array of liquid scintillator detectors for neutrons.

2002To05: $^{28}\text{Si}(^{28}\text{Si},2\alpha\text{n}\gamma)$ E=110 MeV. Measured lifetimes by Doppler-shift attenuation method using euroball III array using only cluster and clover Ge detectors. Charge particles detected with ISIS silicon ball (40 ΔE/E telescopes) and neutrons with the Neutron Wall (50 large volume liquid scintillator detectors).

All data from 1998Be69, except As noted. The level scheme is consistent with that of 1994Ca04 In $^{10}\text{B}(^{40}\text{Ca},\text{p2n}\gamma)$ up through the 5903 keV, 23/2$^-$ state. The present work showed No evidence for the 1823γ assigned As 27/2$-\rightarrow$23/2$^-$ by 1994Ca04.

^{47}Cr Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[#]
0[@]	3/2$^-$	
98.0	5/2$^-$	
172.0[@]	7/2$^-$	
1329.0[@]	11/2$^-$	
2650.0[@]	15/2$^-$	0.583 ps 83
4136.1[@]	19/2$^-$	0.305 ps 42
5902.1[@]	23/2$^-$	<0.444 ps
7376.1	25/2^{-}[&]	
7908.1[@]	27/2$^-$	
10019[@]	31/2$^-$	

[†] From least-squares fit to Eγ assuming ΔE$_\gamma$=1 keV.

[‡] Assignments from 1998Be69 based on their high-statistics spectrum and comparison with the corresponding spectrum and level scheme for ^{47}V.

[#] From DSAM (2002To05).

[@] Band(A): K^π=7/2$^-$ band, α=−1/2.

[&] Assigned As mirror of the 7397 keV, 25/2$^-$ state In ^{47}V.
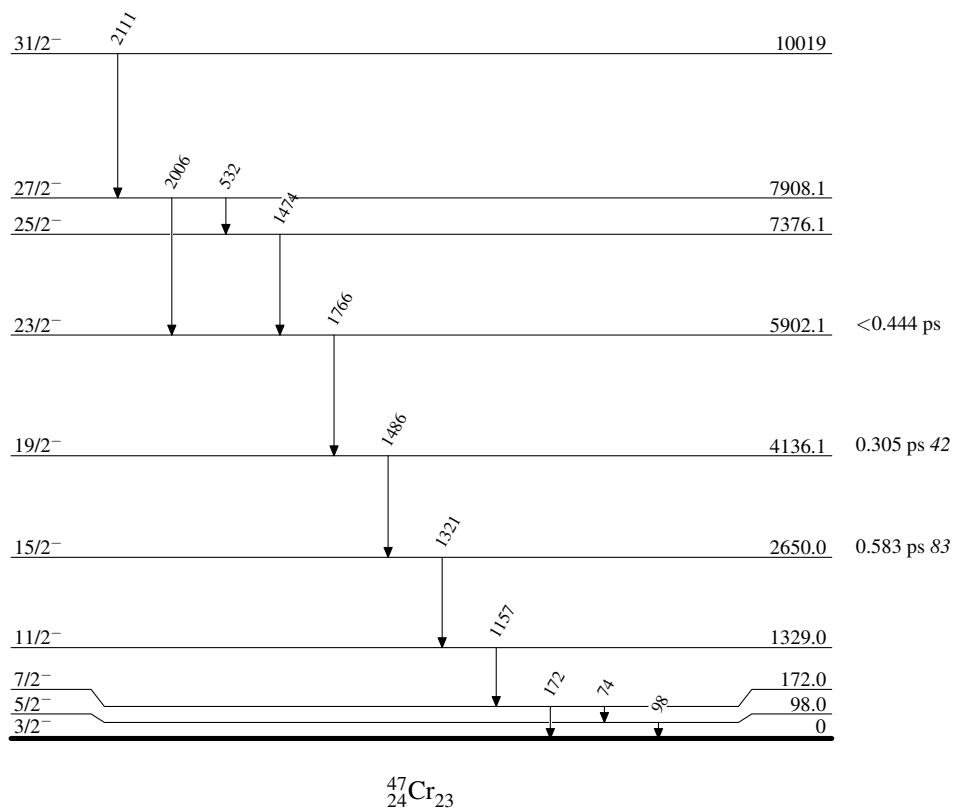
$\gamma(^{47}$Cr$)$

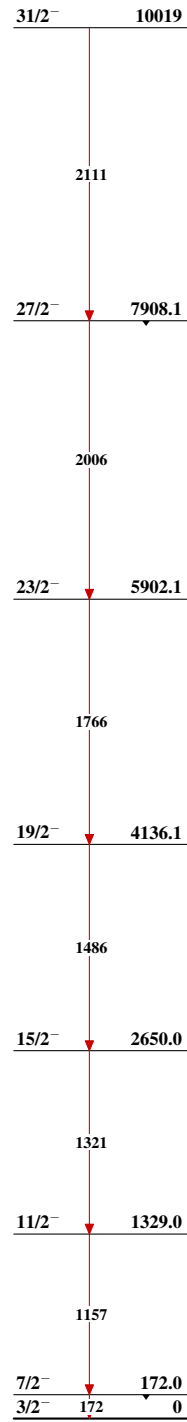| E$_\gamma$	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$	E$_\gamma$	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$
74	172.0	7/2$^-$	98.0	5/2$^-$	1474[†]	7376.1	25/2$^-$	5902.1	23/2$^-$
98	98.0	5/2$^-$	0	3/2$^-$	1486[†‡]	4136.1	19/2$^-$	2650.0	15/2$^-$
172	172.0	7/2$^-$	0	3/2$^-$	1766[†]	5902.1	23/2$^-$	4136.1	19/2$^-$
532	7908.1	27/2$^-$	7376.1	25/2$^-$	2006	7908.1	27/2$^-$	5902.1	23/2$^-$
1157[†]	1329.0	11/2$^-$	172.0	7/2$^-$	2111	10019	31/2$^-$	7908.1	27/2$^-$
1321[†]	2650.0	15/2$^-$	1329.0	11/2$^-$					

[†] Strong γ-ray As shown In figure 2 of 1998Be69 and figure 1 of 2002To05.

[‡] Mean of 1487 (1998Be69) and 1485 (2002To05).

^{24}**Mg(^{28}Si,αnγ),^{28}Si(^{28}Si,2αnγ)**   **1998Be69,2002To05**

Level Scheme

$^{47}_{24}Cr_{23}$

^{24}Mg(^{28}Si,αnγ),^{28}Si(^{28}Si,2αnγ)   1998Be69,2002To05

Band(A): K^{π}=7/2^{-} **band,**
α=−1/2

31/2^{-}		10019
	2111	
27/2^{-}		7908.1
	2006	
23/2^{-}		5902.1
	1766	
19/2^{-}		4136.1
	1486	
15/2^{-}		2650.0
	1321	
11/2^{-}		1329.0
	1157	
7/2^{-}		172.0
3/2^{-}	172	0

$^{47}_{24}$Cr$_{23}$