

$^{78}\text{Se}(^{32}\text{S,p}2\text{n}\alpha\gamma)$ 2006De15

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne	NDS 110, 2081 (2009)	1-Mar-2009

E=130 MeV. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$, lifetimes by DSA method using an array of 12 Compton suppressed Clover HPGe detectors.

 ^{103}Ag Levels

E(level) [†]	J^π [@]	$T_{1/2}$ ^{‡#}	Comments
0	7/2 ⁺		
28 ^a	9/2 ⁺		E(level): rounded-off energy from Adopted Levels, Gammas.
851.0 ^a 10	13/2 ⁺		
1822.0 ^a 15	17/2 ⁺		
2820.0 ^a 18	21/2 ⁺		
3439.0 ^{&} 23	21/2 ⁻		
3599.0 ^{&} 20	23/2 ⁻		
3936.3 ^{&} 21	25/2 ⁻		
4373.0 ^{&} 21	27/2 ⁻	0.312 ps +14-21	
4792.1 ^{&} 21	29/2 ⁻	0.256 ps 14	
5321.9 ^{&} 21	31/2 ⁻	0.250 ps 14	
5824.9 ^{&} 21	33/2 ⁻	0.201 ps 7	
6409.7 ^{&} 22	35/2 ⁻	0.187 ps +7-14	$T_{1/2}$: effective half-life.

[†] From least-squares fit to $E\gamma$'s by evaluator, assuming $\Delta(E\gamma)=1$ keV for $E\gamma$ quoted to nearest keV and 0.5 keV for others.

[‡] From DSA method (2006De15).

[#] For some levels the effective lifetime was obtained. This life time was obtained assuming 100% side-feeding into the top of the band via a cascade of transitions with the same moment of inertia as the in-band transitions. The highest γ ray for which a line shape was observed was then fitted and the extracted life time is called the effective lifetime. This was used as an input parameter to extract the lifetimes of the states lower in the cascade (see also 2005Si23).

[@] Taken from $^{76}\text{Ge}(^{35}\text{Cl},\alpha 4\text{n}\gamma)$ (2003Da07).

[&] Band(A): Magnetic dipole rotational band based on 21/2⁻. Configuration= $\pi g_{9/2} \otimes \nu h_{11/2} \otimes \nu(g_{7/2}/d_{5/2})$.

^a Band(B): $\pi g_{9/2}^{-1} \otimes (^{104}\text{Cd}$ core), $\alpha=+1/2$.

 $\gamma(^{103}\text{Ag})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
28	28	9/2 ⁺	0	7/2 ⁺	E_γ : rounded-off energy from Adopted Levels, Gammas.
160	3599.0	23/2 ⁻	3439.0	21/2 ⁻	
337	3936.3	25/2 ⁻	3599.0	23/2 ⁻	
419.0	4792.1	29/2 ⁻	4373.0	27/2 ⁻	
436.5	4373.0	27/2 ⁻	3936.3	25/2 ⁻	
502.5	5824.9	33/2 ⁻	5321.9	31/2 ⁻	
529.6	5321.9	31/2 ⁻	4792.1	29/2 ⁻	
584.5	6409.7	35/2 ⁻	5824.9	33/2 ⁻	
774.0	4373.0	27/2 ⁻	3599.0	23/2 ⁻	
779	3599.0	23/2 ⁻	2820.0	21/2 ⁺	
823	851.0	13/2 ⁺	28	9/2 ⁺	
856.0	4792.1	29/2 ⁻	3936.3	25/2 ⁻	
949.0	5321.9	31/2 ⁻	4373.0	27/2 ⁻	
971	1822.0	17/2 ⁺	851.0	13/2 ⁺	
998	2820.0	21/2 ⁺	1822.0	17/2 ⁺	

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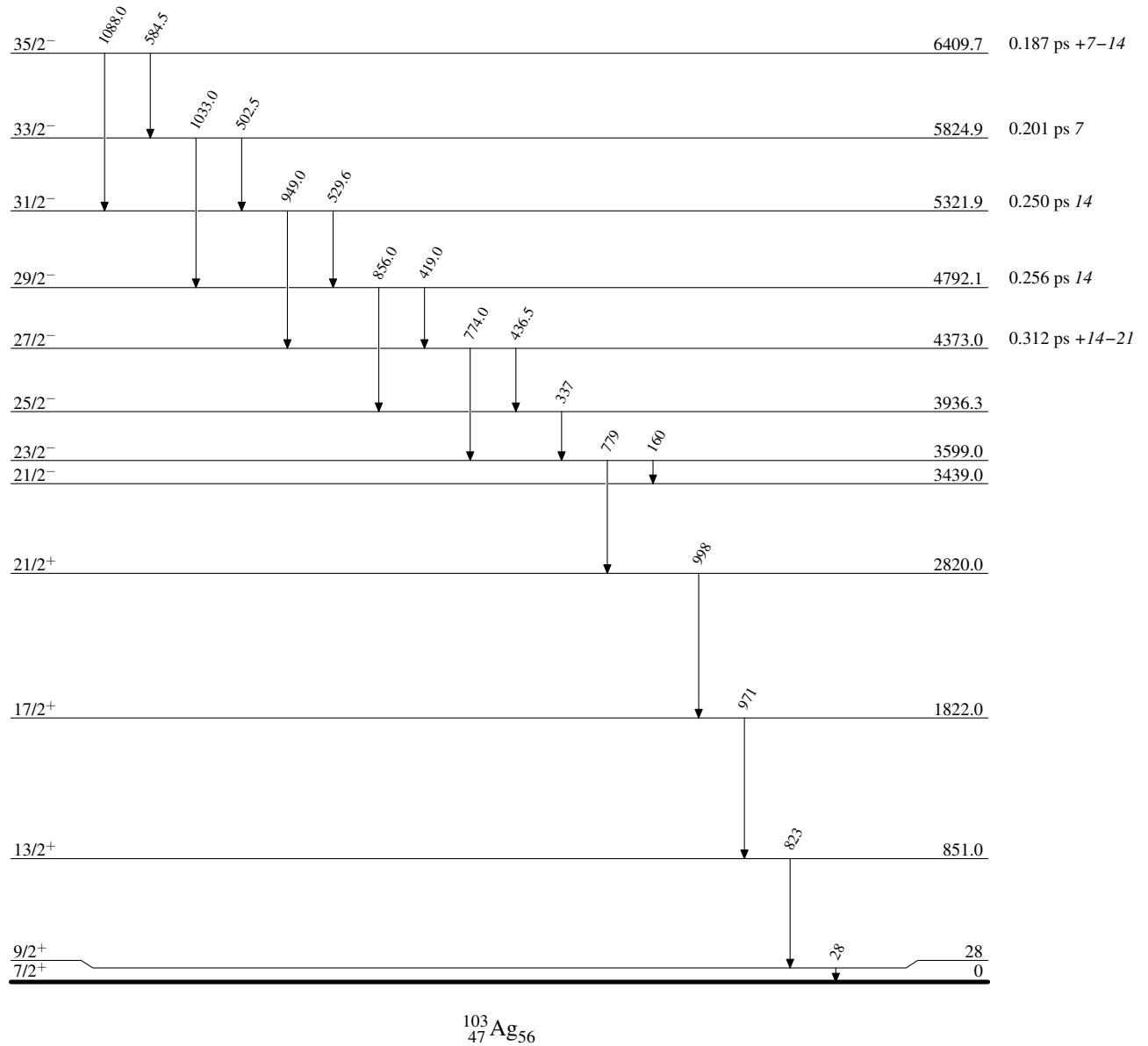
 $^{78}\text{Se}(^{32}\text{S,p}2\text{n}\alpha\gamma)$ **2006De15 (continued)**

 $\gamma(^{103}\text{Ag})$ (continued)

<u>E_γ</u>	<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>
1033.0	5824.9	33/2 ⁻	4792.1	29/2 ⁻
1088.0	6409.7	35/2 ⁻	5321.9	31/2 ⁻

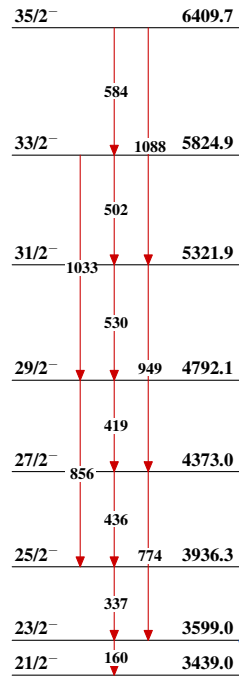
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Level Scheme



$^{78}\text{Se}(^{32}\text{S},\text{p}2\text{n}\alpha\gamma)$ 2006De15

Band(A): Magnetic dipole
rotational band based on $21/2^-$



Band(B): $\pi g_{9/2}^{-1} \otimes (^{104}\text{Cd core}), \alpha = +1/2$

