

$^9\text{Be}(^{36}\text{Si}, ^{35}\text{Al})$ **2014St18**

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	ENSDF	15-Dec-2017

One-proton knockout reaction.

2014St18: ^{36}Si secondary beam at 97.7 5 MeV/nucleon was produced in fragmentation of 140 MeV/nucleon ^{48}Ca primary beam with a ^9Be production target, followed by purification in A1900 fragment separator at NSCL-MSU facility. Secondary ^9Be target was 287 mg/cm² thick. Reaction residues were identified by an ionization chamber in the focal plane of S800 spectrograph; time-of-flight was measured by a plastic scintillator. Measured E_γ , I_γ , $\gamma\gamma$ -coin, $(^{35}\text{Al})\gamma$ -coin using GRETTINA array of Ge detectors. Deduced levels, J^π , L-transfer from parallel momentum distributions. Comparison with large-scale shell calculations.

 ^{35}Al Levels

$E(\text{level})^\dagger$	J^π	$L^\ddagger$	Comments
0	(5/2 ⁺)		Total knockout $\sigma=22$ mb 1. Partial knockout $\sigma=13$ mb 2. J^π : from shell-model prediction.
802 4			Partial knockout $\sigma=1.0$ mb 7.
1003 4			Partial knockout $\sigma=0.8$ mb 9.
1864 5			Partial knockout $\sigma=1.0$ mb 2.
1972 4	2		Partial knockout $\sigma=3.2$ mb 5.
2734 7			Partial knockout $\sigma=0.5$ mb 1.
3243 5	2		Partial knockout $\sigma=2.6$ mb 3.
4275? 9	2		Partial knockout $\sigma=0.5$ mb 1.

[†] From least-squares fit to E_γ data.

[‡] From parallel momentum distribution (**2014St18**) and Eikonal model analysis.

 $\gamma(^{35}\text{Al})$

E_γ	I_γ	$E_i(\text{level})$	E_f	J_f^π	E_γ	I_γ	$E_i(\text{level})$	E_f	J_f^π
802 4	10 1	802	0	(5/2 ⁺)	1932 6	2.5 3	2734	802	
859 4	3.6 3	1864	1003		1972 6	7.5 5	1972	0	(5/2 ⁺)
968 4	4.4 3	1972	1003		2237 6	7.8 6	3243	1003	
1003 4	19 1	1003	0	(5/2 ⁺)	2440 7	1.4 2	3243	802	
1064 4	0.8 2	1864	802		^x 3060 8	1.6 4			
1174 5	2.8 3	1972	802		3250 8	3.3 4	3243	0	(5/2 ⁺)
^x 1473 5	1.1 2				4275 9	3 1	4275?	0	(5/2 ⁺)

^x γ ray not placed in level scheme.

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Level Scheme

Intensities: Yield/100 ions

Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
- $I_\gamma < 10\% \times I_\gamma^{\max}$
- $I_\gamma > 10\% \times I_\gamma^{\max}$
- Coincidence

