

$^9\text{Be}(^{38}\text{Si},^{35}\text{Mg}\gamma)$ 2011Ga15

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

2011Ga15: E=83 MeV/nucleon ^{38}Si beam produced by fragmentation of 140 MeV/nucleon ^{48}Ca primary beam delivered by the Coupled Cyclotron Facility of the National Superconducting Cyclotron Laboratory (NSCL) onto a 752 mg/cm² ^9Be fragmentation target. Isotope of interest selected in the A1900 fragment separator and detected in the focal plane of the S800 spectrograph. A 32-fold segmented high-purity germanium detector array (SeGA) for detecting γ -ray. Measured E_γ . Deduced levels. Compared with shell model calculations.

 ^{35}Mg Levels

In Adopted Levels, all the three transitions are assigned to different levels, feeding the same level at 0+x, which may be the g.s. or a low-lying excited state.

E(level) [†]	J^π [‡]	Comments
0	(5/2 ⁻)	E(level), J^π : 3/2 ⁻ state at 30 keV predicted by shell model calculations.
0+x		
0+y		
49+y 11		
446+x 5		
670+y 8		

[†] From E_γ values. A low-lying excited state below 80 keV could not have been detected with the threshold setting of the SeGA array.

[‡] From a Monte-Carlo Shell-Model calculations using the SDPF-M effective interaction, predicting eight excited states below 1.2 MeV.

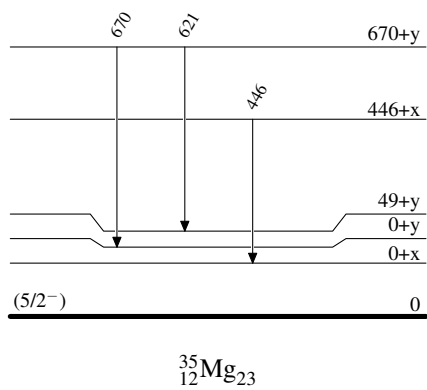
 $\gamma(^{35}\text{Mg})$

E_γ	$E_i(\text{level})$	E_f	Comments
446 5	446+x	0+x	E_γ : strong γ transition, could be a transition to the ground state or the low-lying excited state from any of the predicted excited states at 350 keV with $J^\pi=7/2^-$; 360 keV with $J^\pi=3/2^+$, 400 keV with $J^\pi=1/2^-$, or 560 keV with $J^\pi=7/2^-$.
621 [†] 7	670+y	49+y	In 2017Mo26 , a transition of 616 keV 8, considered to be the same as 621 gamma here, is assigned to a separate level.
670 [†] 8	670+y	0+y	

[†] Another possible placement for these two transitions is that they are from different initial levels to the same final level. Note that 49 keV 11 energy difference corresponds to the energy spacing of the 3/2⁻ and 5/2⁻ doublet near the ground state.

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Level Scheme



$^{35}_{12}\text{Mg}_{23}$