

$^{36}\text{Ar}(\alpha, n\gamma)$  1974Ke09

Type	Author	History Citation	Literature Cutoff Date
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1974Ke09: E=15.8 and 17.0 MeV beams were produced from the Tandem Van de Graaff accelerator at TUNL. Target was argon gas enriched to 99.9% in  $^{36}\text{Ar}$ . Neutrons were detected with a liquid scintillator and  $\gamma$  rays were detected with a Ge(Li) detector. Measured  $E_\gamma$ ,  $I_\gamma$ ,  $n\gamma$ -coin, Doppler-shift attenuation (DSA). Deduced levels, half-lives.

All data are from 1974Ke09, unless otherwise noted.

 $^{39}\text{Ca}$  Levels

E(level) <sup>†</sup>	$J^\pi$ <sup>#</sup>	$T_{1/2}$ <sup>‡</sup>
0	$3/2^+$	
2467.1 10	$1/2^+$	
2795.9 7	$7/2^-$	62 ps 17
3024.1 9	$3/2^-$	<7.6 ps
3639.7 8	$(9/2^-)$	17 ps 10
3822.8 12	$(1/2, 3/2, 5/2)$	
3870.0 9		<3.5 ps
3890.4 12	$(11/2^-)$	<26 ps
3935.7 7	$(3/2^-)$	<3.5 ps
3951.2 12	$(3/2^-)$	21 ps 17

<sup>†</sup> From a least-squares fit to  $\gamma$ -ray energies.

<sup>‡</sup> From DSAM in 1974Ke09.

<sup>#</sup> From Adopted Levels.

 $\gamma(^{39}\text{Ca})$ 

$E_i(\text{level})$	$J_i^\pi$	$E_\gamma$	$I_\gamma$	$E_f$	$J_f^\pi$
2467.1	$1/2^+$	2467.0 10	100	0	$3/2^+$
2795.9	$7/2^-$	2795.9 7	100	0	$3/2^+$
3024.1	$3/2^-$	3023.6 10	100	0	$3/2^+$
3639.7	$(9/2^-)$	844.0 10	75 10	2795.9	$7/2^-$
		3639.3 10	25 10	0	$3/2^+$
3822.8	$(1/2, 3/2, 5/2)$	798.0 15		3024.1	$3/2^-$
		3823.4 15		0	$3/2^+$
3870.0		3869.8 9		0	$3/2^+$
3890.4	$(11/2^-)$	1094.5 10		2795.9	$7/2^-$
3935.7	$(3/2^-)$	3935.5 7		0	$3/2^+$
3951.2	$(3/2^-)$	1155.3 10		2795.9	$7/2^-$

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## Level Scheme

Intensities: % photon branching from each level

