

$^{40}\text{Ca}(\text{p},\alpha)$  1995Ma36

Type	Author	History	Citation	Literature Cutoff Date
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1995Ma36: E=18 MeV, measured single  $\alpha$  and  $\alpha$ -HI coin spectra, HI= $^{37}\text{K}, ^{36}\text{Ar}$  At different angles; deduced  $\Gamma_{\gamma}/\Gamma_{\text{p}}$  ratios.

1980Fa05: E=42.5 MeV, measured  $\sigma(\theta)$  for g.s. and 1370 level; deduced L.

1980Ro01: E=42.5 MeV, measured  $\sigma(\theta)$ ; deduced L,  $\sigma/\sigma(\text{DWBA})$ .

1979Ta10: E=22.0 MeV measured cross-sections  $\sigma(\theta)$ , and analyzing powers  $A_y(\theta)$ ; deduced L,J for g.s. and 2750 level.

1971Li34: E=15.75 MeV, measured angular correlations of sequentially measured protons from  $^{37}\text{K}$  states feeding  $^{36}\text{Ar}$  g.s. In coin with  $\alpha$  particles emitted At  $180^\circ$  (collinear geometry).

1971Ra22: E=13.0 MeV, used annular Si surface-barrier detector At  $180^\circ$ ; measured  $\mu$  and t1/2 of  $7/2^-$ , 1380 level.

1967Go18: E=12.6 MeV, used Si surface-barrier detector At several angles; deduced levels.

Others: 1977Co24, E=23.4-37.2, measured  $\alpha$  spectra and deduced  $\alpha$ -preformation coefficients; 1966Mc13: E=11.0 MeV, measured Q value.

 $^{37}\text{K}$  Levels

E(level) <sup>†</sup>	$J^{\pi}$ <sup>‡</sup>	$T_{1/2}$	L	Comments
0	$3/2^+$ #&		$2^{\#@a}$	
1370	$1/2^+$		$0^@a$	E(level): from 1980Fa05 and 1980Ro01; also 1368+1380 doublet from 1967Go18.
1380	$7/2^-$	10.5 ns 5		$J^{\pi}$ : used by 1971Ra22 (from other REFS.). $T_{1/2}$ : from 1971Ra22.
2169				E(level): from 1971Li34 and 1967Go18.
2278	$(7/2)^+$ &		$4^a$	E(level): from 1971Li34 and 1967Go18; other: 2280 (1980Ro01); also observed by 1995Ma36 (citing E(level) of 1998En04).
2750	$5/2^+$ #&b		$2^{\#a}$	E(level): from 1980Ro01, 1971Li34, and 1967Go18; also observed by 1995Ma36 (citing E(level) of 1998En04).
2967 2				$\Gamma_{\gamma}/\Gamma_{\text{p}}=0.52$ 23 (1995Ma36). E(level): other: 2970 (1971Li34).
3083	$(5/2)^b$			$J^{\pi}$ : $(9/2^-)$ assumed by 1995Ma36 from analog of 3185 In $^{37}\text{Ar}$ . $\Gamma_{\gamma}/\Gamma_{\text{p}}>9$ (1995Ma36).
3240 2	$(5/2)^+$ &		$2^a$	E(level): from 1971Li34; also observed by 1995Ma36 (citing E(level) of 1998En04). $\Gamma_{\gamma}/\Gamma_{\text{p}}=0.41$ 14 (1995Ma36).
3272 2	b			E(level): weighted average of 3240 2 (1995Ma36) and 3246 8 (1980Ro01). $\Gamma_{\gamma}/\Gamma_{\text{p}}>8$ (1995Ma36).
3315 2				$J^{\pi}$ : $(7/2^-)$ assumed by 1995Ma36 from analog of 3527 In $^{37}\text{Ar}$ . $\Gamma_{\gamma}/\Gamma_{\text{p}}<0.11$ (1995Ma36).
4018 5				$\Gamma_{\gamma}/\Gamma_{\text{p}}<0.05$ (1995Ma36).
4278 5				$\Gamma_{\gamma}/\Gamma_{\text{p}}>3$ (1995Ma36).
4419 6				$\Gamma_{\gamma}/\Gamma_{\text{p}}<0.1$ (1995Ma36).
4498 6				$\Gamma_{\gamma}/\Gamma_{\text{p}}<0.1$ (1995Ma36).
4692 9	$(7/2)^+$ &		$4^a$	$\Gamma_{\gamma}/\Gamma_{\text{p}}<0.2$ (1995Ma36). E(level): from 1980Ro01.
4740 6				$\Gamma_{\gamma}/\Gamma_{\text{p}}<0.2$ (1995Ma36).
5690				E(level): from 1980Ro01.
6050				E(level): from 1980Ro01.
7000				E(level): from 1980Ro01.
7320				E(level): from 1980Ro01.
7836 14	$(11/2)^+$ &		$6^a$	E(level): from 1980Ro01.

<sup>†</sup> From 1995Ma36, except when noted otherwise.

<sup>‡</sup> From measured L values, unless otherwise mentioned ( $J=L\pm 1/2$ ,  $\pi=(-1)^L$ ). The values adopted here can Be different from those In Adopted Levels, Gammas dataset.

Continued on next page (footnotes at end of table)

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 ${}^{40}\text{Ca}(\text{p},\alpha)$  **1995Ma36 (continued)**

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 ${}^{37}\text{K}$  Levels (continued)

# From [1979Ta10](#) from  $\sigma(\theta)$  and  $\text{Ay}(\theta)$ .

@ From [1980Fa05](#) from  $\sigma(\theta)$ .

& From [1980Ro01](#) based on measured L values and shell model calculations.

<sup>a</sup> From [1980Ro01](#) from  $\sigma(\theta)$ .

<sup>b</sup> From [1971Li34](#) from angular correlations In collinear geometry (uniquely defined and depending on the J value).