^{40}Ca(p,^{3}He)   1983Se18

	Type	Author	History Citation	Literature Cutoff Date
	Full Evaluation	Jun Chen	NDS 152, 1 (2018)	30-Sep-2017

1983Se18: E=35 MeV proton beam was produced from the KVI cyclotron at Strasbourg. Target was a 80 μg/cm^2 natural calcium layer on a 20 μg/cm^2 carbon backing. Reaction products were detected with a particle telescope of three surface-barrier detectors. Measured σ(E(^{3}He),θ). Deduced levels, J, π, L-transfers from DWBA analysis. Comparisons with shell-model calculations.

Others:

1979Ab08: E=42.5 MeV from the University of Manitoba sector-focused cyclotron. Measured σ(E(^{3}He),θ) with surface-barrier detectors. Deduced levels, L-transfers from DWBA analysis for first five states.

1956Mc96: E=22.4 MeV from the ORNL 86-inch cyclotron. Measured cross section.

All data are from 1983Se18, unless otherwise noted.

^{38}K Levels

E(level)	J$^{\pi\ddagger}$	L	S$^{\#}$	Comments
0†	3$^+$	2+4	1	S: for L=4, 0.014 7 for L=2.
130.4† 3	0$^+$	0	0.15 5	S: for T=1.
458.7† 2	1$^+$	0+2	0.12 5	S: for L=0; 0.43 10 for L=2.
1698.3† 6	1$^+$	0+2	0.16 4	S: for L=0; 0.06 5 for L=2.
2402.4† 8	2$^+$	2	0.22 3	S: for T=1.
2639 7	(4)$^-$	1+3	0.034 20	E(level),L: L=1+3 gives J=2$^-$; but (4)$^-$ assignment in Adopted Levels L=1+3 here is probably contributed partly by 2613, 3$^-$ level. Also (p,^{3}He) transfer process does not provide a strong argument for J$^\pi$ assignments. S: for L=1; 0.21 12 for L=3.
2872 4	2$^-$	3(+1)	0.75 15	S: for L=3; <0.02 for L=1.
3319 13	(1$^+$,2$^-$,3$^+$)	0+2,1+3	0.018 4	S: for L=0+2, S=0.018 4 for L=0, 0.340 9 for L=2. For L=1+3, S=0.015 12 for L=1, 0.30 9 for L=3.
3435 3	2$^+$	2	0.28 13	
3697 5	(2$^-$,3$^+$)	1+3,2+4		J$^\pi$: from L(p,^{3}He). J$^\pi$=(1$^+$,2,3$^+$) in Adopted Levels. S: for L=1+3, S=0.0033 9 for L=1, 0.021 4 for L=3. For L=2+4, S=0.043 15 for L=2, 0.48 18 for L=4. For pure L=4, S=0.49 7.
3977 9	1$^+$	0+2	0.11 4	S: for L=0; 0.24 8 for L=2.
4671 11	1$^+$,2$^+$	2(+0)	0.17 3	S: for L=2; 0.025 9 for L=0. For pure L=2, S=0.21 3.
5272 22	(1$^+$,2$^+$,3$^+$)	2(+0)	0.28 7	L: σ(θ) distribution inconsistent with L=6, J$^\pi$=7$^+$. S: for L=2; 0.031 20 for L=0. For pure L=2, S=0.23 3.

† From 1978En02 evaluation, used by 1983Se18 for calibration.

‡ From Adopted Levels, unless otherwise stated.

$^\#$ Relative two-nucleon spectroscopic factors. Values are relative to 180 12 for L=4 component in the ground state transition. T=0 assumed, except for 130 and 2402 levels for which T=1 is assumed.