^{40}Ca(γ,pγ') 1974Br15

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 149, 1 (2018)	1-Jan-2018

1974Br15: bremsstrahlung with E=14-31 MeV was produced from the Ljubljana betatron facilities. Targets were natural calcium. Protons were detected with silicon surface-barrier detectors (FWHM=220-320 keV) and γ rays were detected with a 27-cm^3 Ge(Li) counter. Measured Eγ, $\gamma(\theta)$, σ(E$_p$,θ). Deduced levels, J, π, decay mode of giant-dipole resonance in ^{40}Ca.

Other:
1969Ul01: bremsstrahlung, E(max)=32 MeV; measured γ yields and thresholds. Resolution of gamma-ray spectra ≈1%.
1962Ch26: E(max)=35 MeV; measured γ yield.
All data are from 1974Br15, unless otherwise noted.

^{39}K Levels

E(level)	J$^\pi$[†]	Bremsstrahlung Yield[‡]	Comments
0	3/2$^+$		
2530	1/2$^+$	59 *4*	
2820	7/2$^-$	17 *2*	
3020	3/2$^-$	15[#] *2*	
3590	9/2$^-$	2.3 *10*	
3880	5/2$^-$	2.9[@] *7*	
3940	3/2$^+$	10.2[#] *15*	
4080	3/2$^-$	3.5 *7*	
4930	3/2$^+$	5.4 *8*	
5170			E(level): from 1969Ul01 only.
5270	5/2$^+$	6.5 *10*	
5310	3/2$^+$	3.8 *6*	
5620	5/2$^+$	8 *1*	
5830	1/2$^-$,3/2$^-$	2 *1*	
5960	(1/2$^-$,3/2$^-$)	1 *1*	
6350	5/2$^+$	7 *1*	

[†] From Adopted Levels.
[‡] Integrated over several angles.
[#] Contribution from ^{39}Ca peak from (γ,nγ') is negligible due to high reaction threshold.
[@] Combined yield for closely-spaced peaks in ^{39}K and ^{39}Ca, the latter contributed by (γ,nγ').

$\gamma(^{39}K)$

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
2530	2530	1/2$^+$	0	3/2$^+$	A$_2$=−0.04 *7*
2600	5620	5/2$^+$	3020	3/2$^-$	
2820	2820	7/2$^-$	0	3/2$^+$	A$_2$=−0.24 *14*
3020	3020	3/2$^-$	0	3/2$^+$	A$_2$=−0.21 *12*
3590	3590	9/2$^-$	0	3/2$^+$	
3880	3880	5/2$^-$	0	3/2$^+$	
3940	3940	3/2$^+$	0	3/2$^+$	A$_2$=−0.32 *17*
4080	4080	3/2$^-$	0	3/2$^+$	
4930	4930	3/2$^+$	0	3/2$^+$	A$_2$=+0.06 *18*
5270	5270	5/2$^+$	0	3/2$^+$	A$_2$=+0.23 *17*
5310	5310	3/2$^+$	0	3/2$^+$	
5620	5620	5/2$^+$	0	3/2$^+$	A$_2$=+0.19 *30*

Continued on next page (footnotes at end of table)

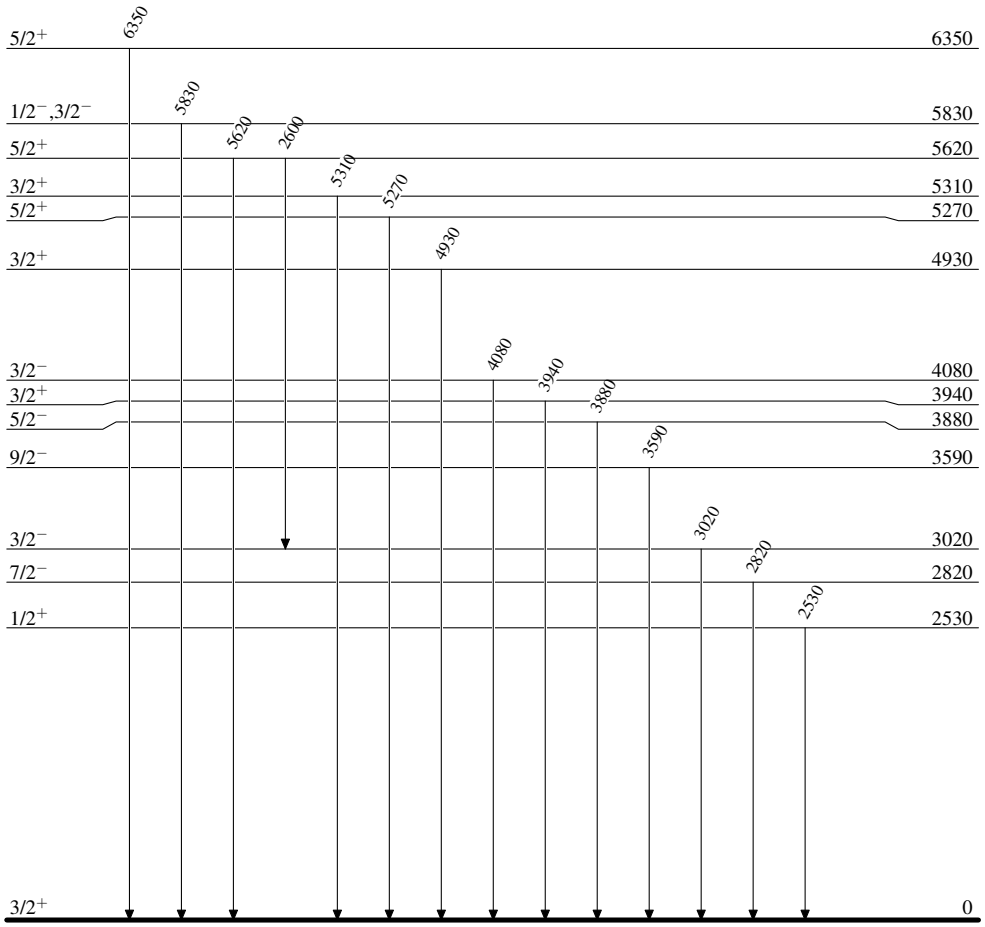
^{40}Ca(γ,pγ') 1974Br15 (continued)

$\gamma(^{39}K)$ (continued)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Comments
5830	5830	$1/2^-,3/2^-$	0	$3/2^+$	
6350	6350	$5/2^+$	0	$3/2^+$	A_2=+0.31 *15*

^{40}Ca(γ,pγ′) **1974Br15**

Level Scheme



$^{39}_{19}K_{20}$