

$^{39}\text{K}(^3\text{He,p}\gamma)$  1971Kn04

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja, E. A. Mccutchan		NDS 133, 1 (2016)	30-Sep-2015

1971Kn04:  $E(^3\text{He})=12, 13$  MeV from the EN and MP tandem Van de Graaff accelerators at MPI Heidelberg and the FN tandem at Argonne National Laboratory. Detected gammas with Ge(Li) detector (FWHM  $\approx 6$  keV for 2 MeV  $\gamma$  rays and 9 keV for 4 MeV  $\gamma$  rays). Protons were detected with nuclear emulsions (FWHM  $\approx 20$  keV) (ANL) and with Si counters (MPI). Measured  $E_\gamma$ ,  $I_\gamma$ ,  $p(\gamma)$ -coin and  $I_p$  (given in Figure 12 as horizontal lines with length proportional to the yields).

$^{41}\text{Ca}$  Levels

E(level)	$J^\pi$ <sup>†</sup>	Comments
0	$7/2^-$	
1942	$3/2^-$	
2009	$3/2^+$	
2463 <sup>†</sup>	$3/2^-$	
2574	$5/2^-$	
2604	$5/2^+$	
2881	$7/2^+$	
2957 <sup>†</sup>		
3199		
3398	$1/2^+$	
3738		
4091		
4180		
4724 <sup>#</sup>		
4768		
4811		
4876		
4961		
5211?		
5284		
5412		
5470		
5716		
5813	$3/2^+$	E(level): Isobaric analog state (IAS).
5972?		
(6091 <sup>‡</sup> )		
6323		
(6488 <sup>‡</sup> )		

<sup>†</sup> From Adopted Levels.

<sup>‡</sup> Gamma decay modes were not seen in the  $\gamma$ -ray spectra, even though the level is populated strongly in  $^{39}\text{K}(^3\text{He,p})$ .

<sup>#</sup> There are two levels, one deexciting through 2715 $\gamma$  and the other through 4724 $\gamma$  (see Adopted Levels).

$\gamma(^{41}\text{Ca})$

$E_i(\text{level})$	$J_i^\pi$	$E_\gamma$ <sup>†</sup>	$I_\gamma$	$E_f$	$J_f^\pi$
1942	$3/2^-$	1942	100	0	$7/2^-$
2009	$3/2^+$	2009	100	0	$7/2^-$
2574	$5/2^-$	2574	100	0	$7/2^-$
2604	$5/2^+$	2604	100	0	$7/2^-$
2881	$7/2^+$	2881	100	0	$7/2^-$

${}^{39}\text{K}({}^3\text{He,p}\gamma)$  **1971Kn04** (continued) $\gamma({}^{41}\text{Ca})$  (continued)

$E_i(\text{level})$	$J_i^\pi$	$E_\gamma^\dagger$	$I_\gamma$	$E_f$	$J_f^\pi$	$E_i(\text{level})$	$J_i^\pi$	$E_\gamma^\dagger$	$I_\gamma$	$E_f$	$J_f^\pi$
3199		3199	100	0	$7/2^-$	5284		2085 $\ddagger$		3199	
3398	$1/2^+$	1389	100	2009	$3/2^+$			3275	100	2009	$3/2^+$
3738		1134	40	2604	$5/2^+$	5412		451 $\ddagger$		4961	
		1729	60	2009	$3/2^+$			2455 $\ddagger$		2957	
4091		1210 $\ddagger$		2881	$7/2^+$			2808	37	2604	$5/2^+$
		1487	8	2604	$5/2^+$			2949 $\ddagger$		2463	$3/2^-$
		2082	58	2009	$3/2^+$			3470	63	1942	$3/2^-$
		4091	34	0	$7/2^-$	5470		509 $\ddagger$		4961	
4180		1576	30	2604	$5/2^+$			5470	100	0	$7/2^-$
		2171	70	2009	$3/2^+$	5716		1536	20	4180	
4724		2715	90	2009	$3/2^+$			3707	55	2009	$3/2^+$
		4724	10	0	$7/2^-$			3774 $\ddagger$		1942	$3/2^-$
4768		2759	100	2009	$3/2^+$			5716	25	0	$7/2^-$
4811		1930 $\ddagger$		2881	$7/2^+$	5813	$3/2^+$	1722	55	4091	
		2802 $\ddagger$		2009	$3/2^+$			2075	20	3738	
		2869		1942	$3/2^-$			2415	25	3398	$1/2^+$
		4811		0	$7/2^-$			3804 $\ddagger$	<5	2009	$3/2^+$
4876		4876	100	0	$7/2^-$	5972?		2574 $\ddagger$	22	3398	$1/2^+$
4961		193 $\ddagger$		4768				3368 $\ddagger$	36	2604	$5/2^+$
		2080	35	2881	$7/2^+$			3398 $\ddagger$	21	2574	$5/2^-$
		4961	65	0	$7/2^-$			3963 $\ddagger$	21	2009	$3/2^+$
5211?		2607 $\ddagger$		2604	$5/2^+$	6323		4381	100	1942	$3/2^-$
		3269 $\ddagger$		1942	$3/2^-$						

$\dagger$  From level-energy differences.

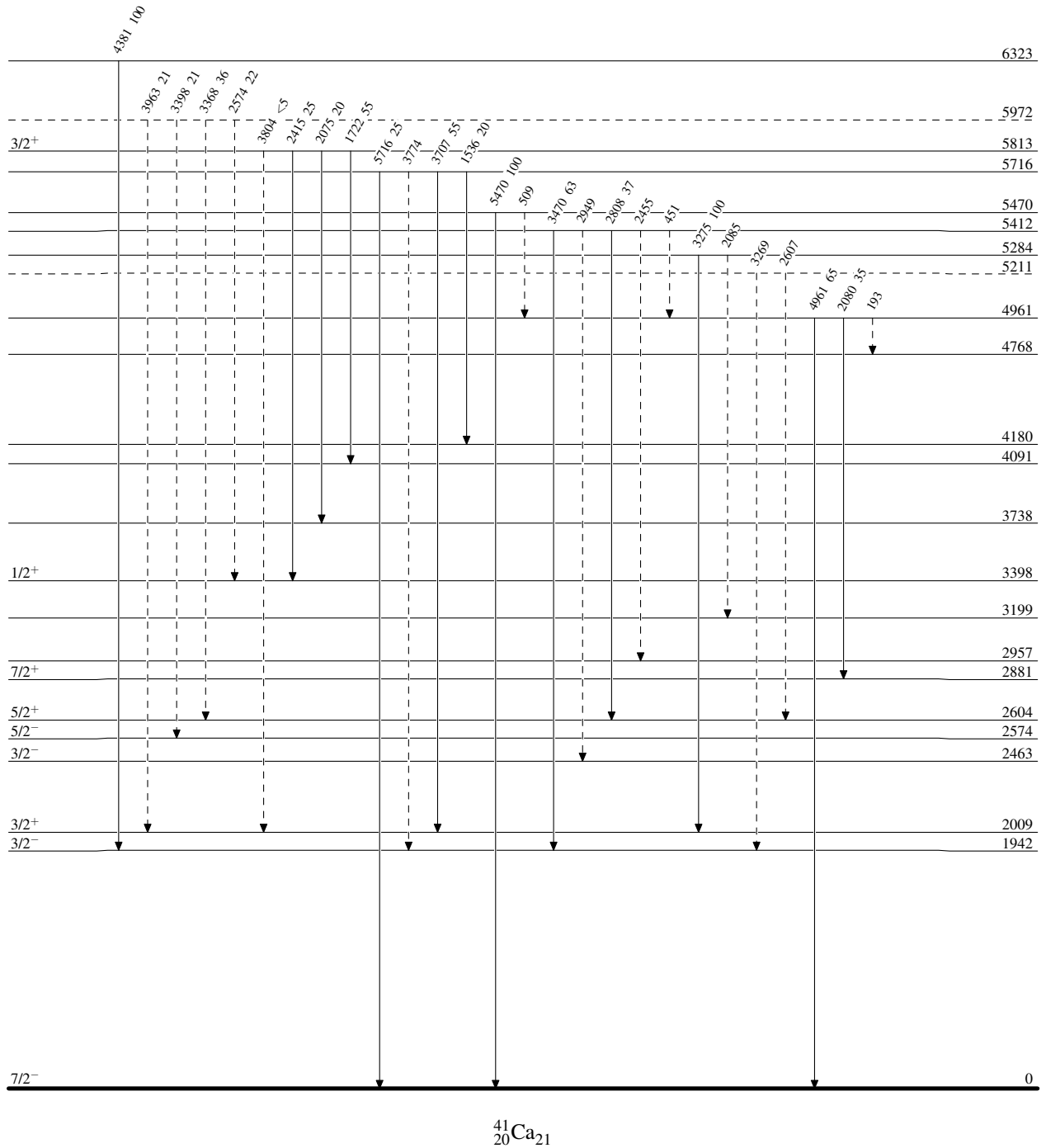
$\ddagger$  Placement of transition in the level scheme is uncertain.

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Legend

## Level Scheme

Intensities: % photon branching from each level

-----▶  $\gamma$  Decay (Uncertain) $^{41}_{20}\text{Ca}_{21}$

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Legend

## Level Scheme (continued)

Intensities: % photon branching from each level

-----►  $\gamma$  Decay (Uncertain)