^{41}K(α,pγ),(α,p) 1973Mc16

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 190,1 (2023)	20-Jun-2023

(α,pγ):

1973Mc16: E=9 MeV alpha beam was produced from a model CN Van de Graaff. Targets was KI. γ rays were detected with a Ge(Li) detector. Measured Eγ, pγ-coin, Doppler-shift attenuation. Deduced level, $T_{1/2}$.

1974Br04: E=14 MeV alpha beam was produced from the Stony Brook tandem Van Graaff accelerator. Target was ^{41}K evaporated onto Au backing. γ rays were detected with a 45-cm^3 Ge(Li) detector. Measured Eγ, recoil-distance. Deduced $T_{1/2}$ for the level of 3285 keV.

(α,p):

1955Sc82: E=8.22 MeV alpha beam was produced from the Yale cyclotron. Target of KI evaporated on Au or Ta backing. Proton detected in argon filled proportional counters. Measured σ(E$_p$). Deduced levels.

1991Sc07: E=4.5-9 MeV. Measured proton yields. Deduced σ(E).

All data from 1973Mc16, unless otherwise noted.

^{44}Ca Levels

E(level)	J$^\pi$[†]	$T_{1/2}$[‡]	Comments
0	0$^+$		
1157	2$^+$	3.5 ps *7*	
1883	0$^+$	13.9 ps *42*	
2283	4$^+$	1.9 ps *7*	
2657	2$^+$	<21 fs	
3044	4$^+$	4.6 ps *+13−10*	
3285	6$^+$	13.3 ps *12*	$T_{1/2}$: weighted average of 13.6 ps *12* from RDM in 1974Br04 and 11.7 ps *28* from DSAM in 1973Mc16.
3303	2$^+$	35 fs *18*	
3359	(2$^+$,3,4$^+$)	<28 fs	

[†] From the Adopted Levels.

[‡] From 1973Mc16 by DSAM, unless otherwise noted.

γ(^{44}Ca)

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
726	1883	0$^+$	1157	2$^+$	
764	3044	4$^+$	2283	4$^+$	
1002	3285	6$^+$	2283	4$^+$	
1074	3359	(2$^+$,3,4$^+$)	2283	4$^+$	Iγ(1074)/Iγ(2201)=88/12 (1973Mc16).
1127	2283	4$^+$	1157	2$^+$	
1157	1157	2$^+$	0	0$^+$	
1501	2657	2$^+$	1157	2$^+$	
1890	3044	4$^+$	1157	2$^+$	
2144	3303	2$^+$	1157	2$^+$	
2201	3359	(2$^+$,3,4$^+$)	1157	2$^+$	
2656	2657	2$^+$	0	0$^+$	
3303	3303	2$^+$	0	0$^+$	

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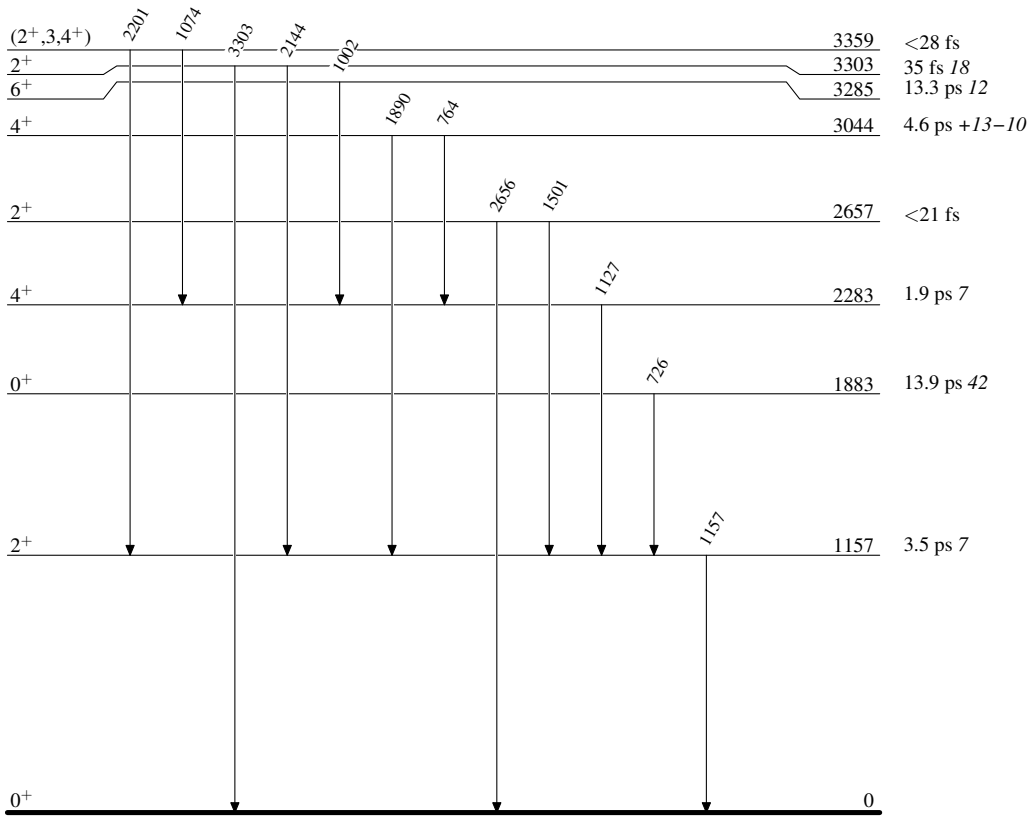
Level Scheme



$^{44}_{20}Ca_{24}$