^{40}Ca(^{40}Ca,αpnγ) 2003Ol02,1996Ru03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Ameenah R. Farhan	NDS 107, 1923 (2006)	30-Apr-2006

2003Ol02: E=164 MeV. Measured Eγ, Iγ, γγ, γγ(θ)(DCO) using GAMMASPHERE array with 101 HPGe detectors. The MICROBALL array was used to detect charged particles.
1996Ru03: E=128 MeV. Measured γ, γγ, (particle)(γ) coin, recoil-γ coin using EUROGAM array with 45 Ge detectors.
All data are from 2003Ol02.

^{74}Rb Levels

E(level)	Jπ†	E(level)	Jπ†	E(level)	Jπ†	E(level)	Jπ†
0‡	0^+	1806#	$6^{(+)}$	5216&	$15^{(+)}$	11411&	$23^{(+)}$
478‡	2^+	2241@	8^+	5360@	(14^+)	11701?@	(22^+)
1006#	$3^{(+)}$	2313&	$9^{(+)}$	6517&	$17^{(+)}$	13376&	$25^{(+)}$
1053‡	4^+	2972?		6686@	(16^+)	15699&	(27^+)
1225#	$4^{(+)}$	3126@	(10^+)	8006&	$19^{(+)}$	18478&	(29^+)
1489#	$5^{(+)}$	3137&	$11^{(+)}$	8193@	(18^+)	21612&	(31^+)
1546@	6^+	4091&	$13^{(+)}$	9654&	$21^{(+)}$		
1793&	$7^{(+)}$	4177@	(12^+)	9881@	(20^+)		

† As proposed by 2003Ol02, based on γγ(θ)(DCO) for selected γ rays, and band associations. The assignments are consistent with those in 'Adopted Levels', except that all are placed in parentheses there due to lack of strong supporting arguments.
‡ Band(A): T=1 band, g.s. band.
# Band(B): T=0 band, π3/2[312]ν3/2[312], $K^\pi=3^+$.
@ Band(C): T=0 band, based on 6^+, $\pi g_{9/2}\otimes\nu g_{9/2}$.
& Band(D): T=0 band, based on $7^{(+)}$, $\pi g_{9/2}\otimes\nu g_{9/2}$.

γ(^{74}Rb)

Eγ†	Ei(level)	J_i^π	Ef	J_f^π	Mult.&	Comments
219#	1225	$4^{(+)}$	1006	$3^{(+)}$	D	DCO=0.46 *3*
265#	1489	$5^{(+)}$	1225	$4^{(+)}$	D	DCO=0.49 *9*
304‡	1793	$7^{(+)}$	1489	$5^{(+)}$	Q	DCO=1.11 *9*
478‡	478	2^+	0	0^+		
483‡	1489	$5^{(+)}$	1006	$3^{(+)}$	Q	DCO=1.81 *17*
493#	1546	6^+	1053	4^+	Q	DCO=1.4 *4*
520‡	2313	$9^{(+)}$	1793	$7^{(+)}$		
528‡	1006	$3^{(+)}$	478	2^+	D	DCO=0.54 *3*
575‡	1053	4^+	478	2^+	Q	DCO=0.95 *5*
581#	1806	$6^{(+)}$	1225	$4^{(+)}$	Q	DCO=1.15 *6*
695#	2241	8^+	1546	6^+	Q	DCO=1.45 *15*
731@*a*	2972?		2241	8^+		
824‡	3137	$11^{(+)}$	2313	$9^{(+)}$		
885@	3126	(10^+)	2241	8^+		
954‡	4091	$13^{(+)}$	3137	$11^{(+)}$		
1051@	4177	(12^+)	3126	(10^+)		
1125‡	5216	$15^{(+)}$	4091	$13^{(+)}$	Q	DCO=1.21 *8*

Continued on next page (footnotes at end of table)

^{40}Ca(^{40}Ca,αpnγ) 2003Ol02,1996Ru03 (continued)

γ(^{74}Rb) (continued)

E_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	E_γ[†]	E_i(level)	J_i^π	E_f	J_f^π
1183[@]	5360	(14$^+$)	4177	(12$^+$)	1757[‡]	11411	23$^{(+)}$	9654	21$^{(+)}$
1301[‡]	6517	17$^{(+)}$	5216	15$^{(+)}$	1820[@a]	11701?	(22$^+$)	9881	(20$^+$)
1326[@]	6686	(16$^+$)	5360	(14$^+$)	1965[#]	13376	25$^{(+)}$	11411	23$^{(+)}$
1489[‡]	8006	19$^{(+)}$	6517	17$^{(+)}$	2323[@]	15699	(27$^+$)	13376	25$^{(+)}$
1507[@]	8193	(18$^+$)	6686	(16$^+$)	2779[@]	18478	(29$^+$)	15699	(27$^+$)
1648[‡]	9654	21$^{(+)}$	8006	19$^{(+)}$	3134[@]	21612	(31$^+$)	18478	(29$^+$)
1688[@]	9881	(20$^+$)	8193	(18$^+$)					

[†] From 2003Ol02.
[‡] Strong intensity γ ray.
[#] Medium intensity γ ray.
[@] Weak γ ray.
[&] From $\gamma\gamma(\theta)$(DCO). Mult=Q indicates ΔJ=2, mult=D indicates ΔJ=1 transition.
[a] Placement of transition in the level scheme is uncertain.

Legend

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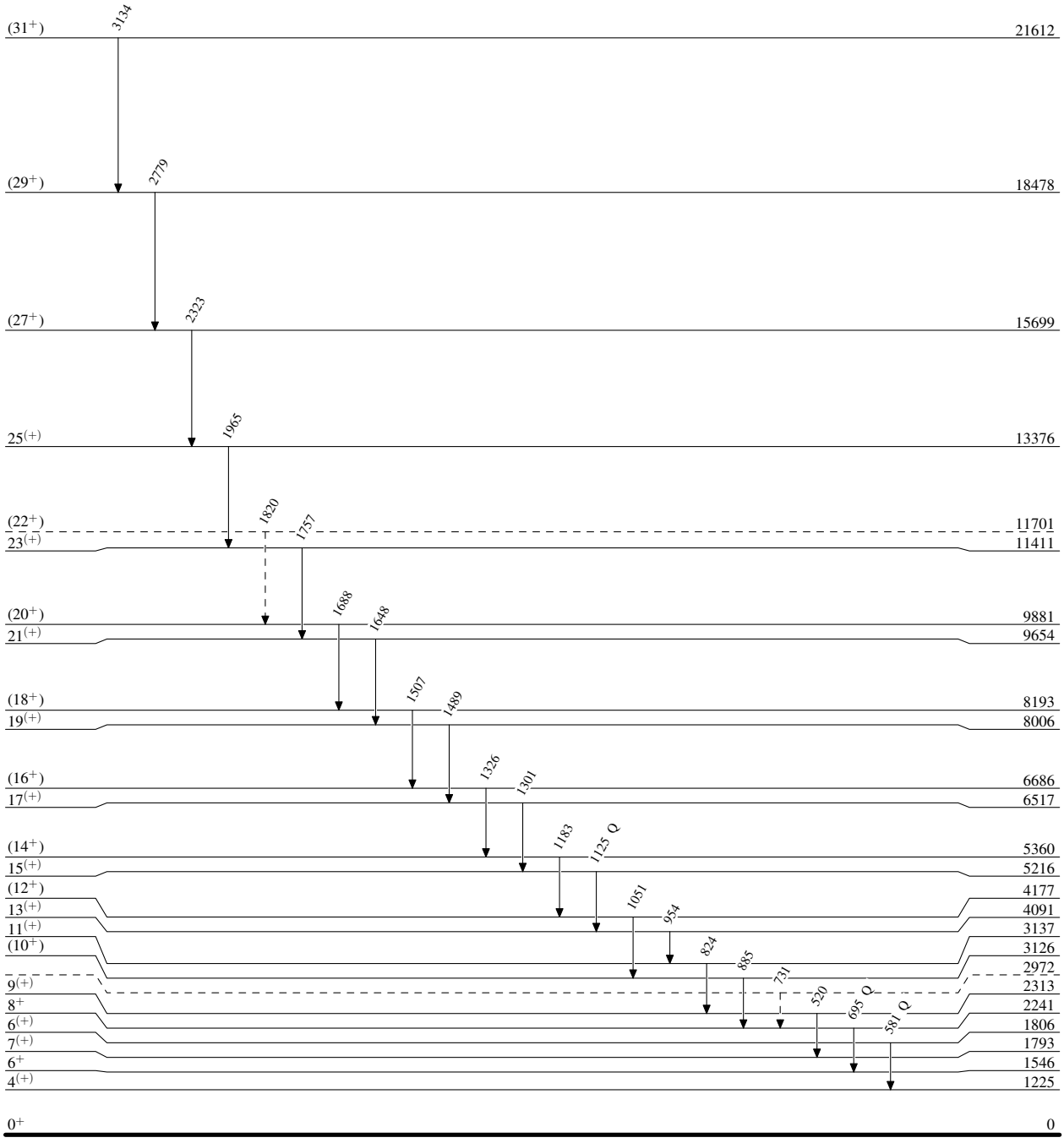
Level Scheme

γ Decay (Uncertain)



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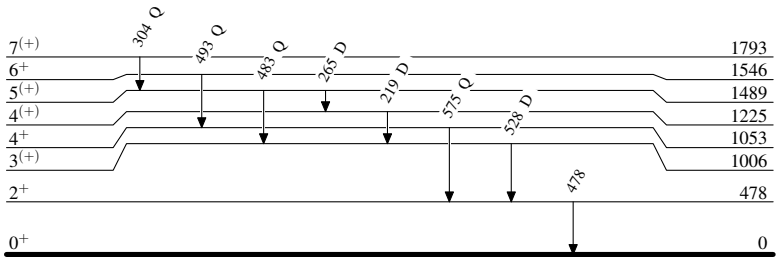
Level Scheme (continued)



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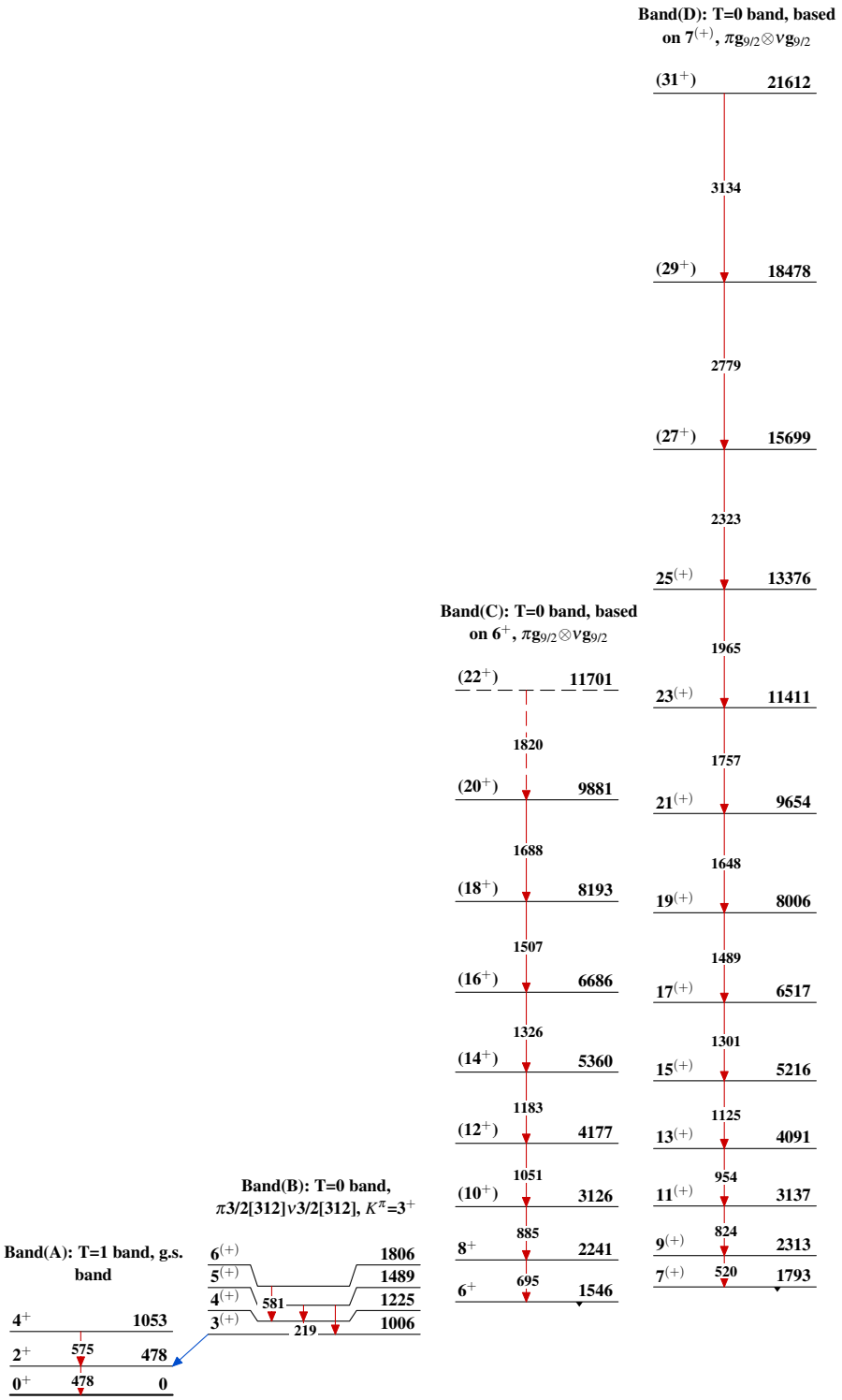

$^{74}_{37}Rb_{37}$