^{71}Ga(γ,γ') 1973Ar04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 188,1 (2023)	17-Jan-2023

1973Ar04: Bremsstrahlung from electron beams provided from the 4-MeV Van de Graaff in the High Voltage Research Laboratory at MIT. γ rays were detected with a Ge(Li) detector. Deduced levels, resonance widths. Report partial radiation widths of 15 levels below 2.065 MeV.

^{71}Ga Levels

E(level)[†]	J$^\pi$[†]	$T_{1/2}$[‡]	gW(θ)Γ_0^2/Γ (meV)[@]	Comments
0.0	$3/2^-$			
390	$1/2^-$	>2.8 ps	<0.08	
487.4	$5/2^-$	>23 ps	<0.03	
511.6	$3/2^-$	>4.7 ps	<0.08	
910	$3/2^-$	0.67 ps *6*	0.57 *5*	
965	$5/2^-$	1.3 ps *2*	0.28 *5*	
1107	$7/2^-$			
1109	$1/2^-$	95 fs *12*	2.4 *3*	
1395	$7/2^-$	1.1 ps *3*	0.27 *6*	
1476	$5/2^-$	>0.6 ps	<0.08	
1494[#]	$9/2^+$		<0.08	
1498[#]	$9/2^-$		<0.08	
1631	$3/2^-$	>13 fs	<0.3	
1699	$1/2^+$	>0.25 ps	<0.3	
1720	$5/2^-$	0.16 ps *5*	0.70 *18*	
2064	$1/2^-$,$3/2^-$		1.8 *2*	$T_{1/2}$/(2J+1)=25.7 fs *45*.

[†] From the Adopted Levels. Energies are rounded values.
[‡] Deduced using $\Gamma_{\gamma 0}/\Gamma$ from Adopted Gammas and resonance-fluorescence data of 1973Ar04.
[#] Transition to the g.s. is either non-existent or very weak and uncertain. Level energy is rounded value from Adopted Levels.
[@] g=(2J+1)/(2J_0+1); where J is the level spin and J_0=3/2 the target spin; W(θ) is the angular distribution factor taken as 1.0 at θ=125°.

γ(^{71}Ga)

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
390	390	$1/2^-$	0.0	$3/2^-$	1395[‡] *1*	1395	$7/2^-$	0.0	$3/2^-$
487.4	487.4	$5/2^-$	0.0	$3/2^-$	1476	1476	$5/2^-$	0.0	$3/2^-$
511.6	511.6	$3/2^-$	0.0	$3/2^-$	1631	1631	$3/2^-$	0.0	$3/2^-$
910[‡] *1*	910	$3/2^-$	0.0	$3/2^-$	1699	1699	$1/2^+$	0.0	$3/2^-$
965[‡] *1*	965	$5/2^-$	0.0	$3/2^-$	1719[‡] *1*	1720	$5/2^-$	0.0	$3/2^-$
1107	1107	$7/2^-$	0.0	$3/2^-$	2064[‡] *1*	2064	$1/2^-$,$3/2^-$	0.0	$3/2^-$
1109[‡] *1*	1109	$1/2^-$	0.0	$3/2^-$					

[†] Rounded values from Adopted Gammas, unless otherwise stated.
[‡] From measurement of 1973Ar04.

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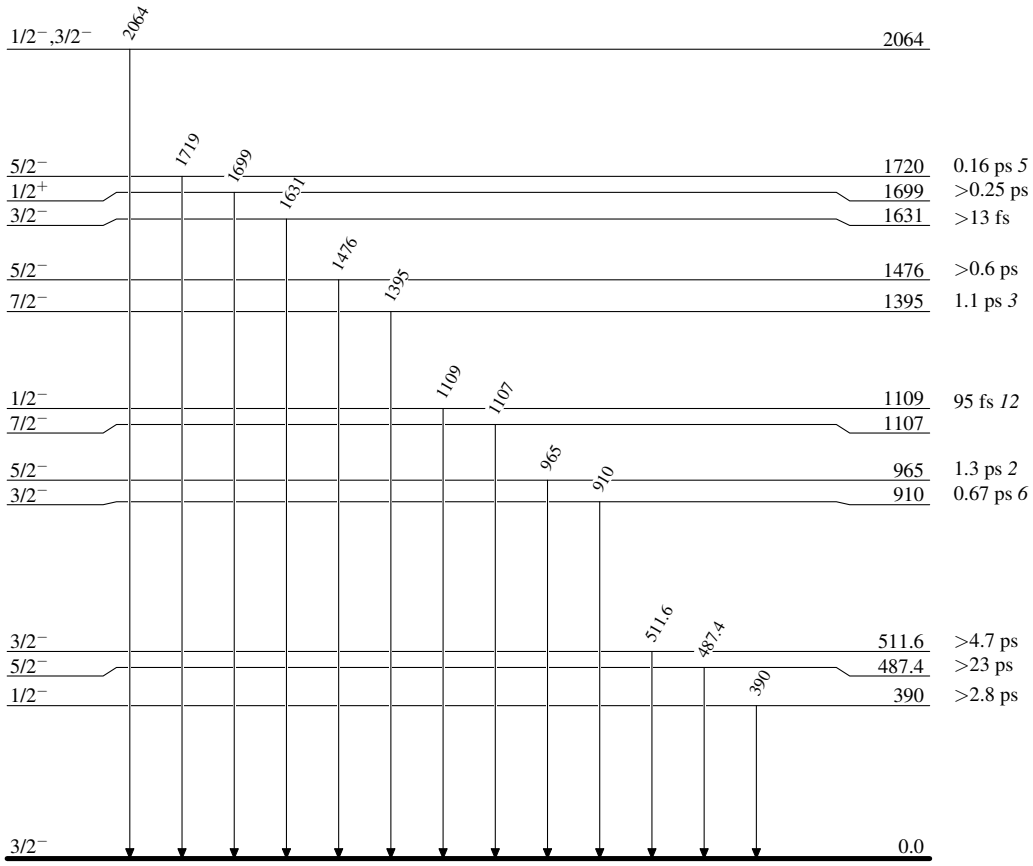
Level Scheme



$^{71}_{31}Ga_{40}$