(HI,xnγ) 1978Li21,1974Po10,1973GoZE

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Wang Jimin and Huang Xiaolong	NDS 144, 1 (2017)	1-Mar-2016

1973GoZE: ^{48}Ca(^{7}Li,4nγ) E=15-35 MeV. Measured Eγ, γγ coincidences, and γ(θ) with Ge(Li) detector. DSA method.
1974Po10: ^{48}Ca(^{6}Li,3nγ) E=26 MeV, ^{48}Ca(^{7}Li,4nγ) E=28 MeV. Measured Eγ with Ge(Li). RDM.
1978Li21: ^{48}Ca(^{10}B,α3nγ) E=25-50 MeV. Measured γ′s, γγ coincidences, γ-excitation functions, and γ(θ) with Ge(Li). DSA measurement.

^{51}V Levels

All data from 1978Li21, except as noted.

E(level)[†]	Jπ[‡]	$T_{1/2}$[@]	Comments
0[b]	7/2$^-$[#]		
320.0 *10*	5/2$^-$[#]		
929.0 *10*	3/2$^-$[#]		
1609.43[b] *20*	11/2$^-$[#]		
2699.96[b] *23*	15/2$^-$[#]	5.5[&] ps *4*	
3386.4[c] *3*	13/2$^-$[#]	>0.87 ps	
3874.3[c] *3*	15/2$^-$[#]	<0.15 ps	Iγ(488γ):Iγ(1174γ)=17 *1*:83 *1* (1978Li21).
4821.4[c] *3*	17/2$^-$	0.14 ps *4*	Iγ(947γ):Iγ(1434γ)=92 *1*:8 *1* (1978Li21).
5434.0[c] *3*	19/2$^-$	0.16 ps *5*	Iγ(613γ):Iγ(1560γ)=64 *1*:36 *1* (1978Li21).
6248.1[c] *3*	(21/2$^-$)	0.15 ps *10*	Iγ(814γ):Iγ(1427γ)=100:<3 (1978Li21).
7335.1[c] *5*	(23/2$^-$)	0.28 ps *+7−11*	Iγ(1087γ):Iγ(1901γ)=100:<10 (1978Li21).
8211.2?[c] *7*	(25/2$^-$)[a]		

[†] From level scheme and Eγ′s, using least-squares fit to data.
[‡] From γ(θ) and Γ_γ, except as noted. Assignments for the 6248- and 7335-keV states tentative since only dipole decays were observed. Confirmed suggestions of 1973GoZE.
[#] From Adopted Levels. Work of 1978Li21 is in good agreement and supports these assignments.
[@] From 1978Li21 by DSAM, except as noted.
[&] From RDM (1974Po10).
[a] Candidate for 25/2 state.
[b] Band(A): band-1. Members: 7/2$^-$ to 15/2$^-$.
[c] Band(B): band-2. Members: 13/2$^-$ to 25/2$^-$.

γ(^{51}V)

All data from 1978Li21, except as noted.

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	Comments
320.0	5/2$^-$	320[‡]		0	7/2$^-$		
929.0	3/2$^-$	929[‡]		0	7/2$^-$		
1609.43	11/2$^-$	1609.4 *2*	100	0	7/2$^-$	E2	γ(θ): A_2=+0.09 *1*; A_4=+0.02 *1*.
2699.96	15/2$^-$	1090.5 *1*	100	1609.43	11/2$^-$	E2	γ(θ): A_2=+0.18 *1*; A_4=+0.05 *1*.
3386.4	13/2$^-$	1777.0 *2*	100	1609.43	11/2$^-$	M1+E2	γ(θ): A_2=+0.13 *1*; A_4=+0.01 *1*.
3874.3	15/2$^-$	487.9 *1*	17 *1*	3386.4	13/2$^-$	M1+E2	γ(θ): A_2=−0.56 *2*; A_4=−0.06 *2*.

Continued on next page (footnotes at end of table)

(HI,xnγ) 1978Li21,1974Po10,1973GoZE (continued)

γ(^{51}V) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	Comments
3874.3	15/2$^-$	1174.2 *2*	83 *1*	2699.96	15/2$^-$	M1+E2	γ(θ): A_2=+0.25 *1*; A_4=0 *2*.
4821.4	17/2$^-$	947.1 *1*	92 *1*	3874.3	15/2$^-$	M1+E2	γ(θ): A_2=−0.90 *10*; A_4=+0.10 *30*.
		1434 *1*	8 *1*	3386.4	13/2$^-$	E2	
5434.0	19/2$^-$	612.6 *1*	64[#] *1*	4821.4	17/2$^-$	M1+E2	γ(θ): A_2=−0.51 *1*; A_4=+0.05 *1*.
		1559.8 *2*	36[#] *1*	3874.3	15/2$^-$	E2	γ(θ): A_2=+0.12 *5*; A_4=−0.22 *10*.
6248.1	(21/2$^-$)	814.1 *1*	100	5434.0	19/2$^-$	(M1+E2)	γ(θ): A_2=−0.80 *10*; A_4=−0.10 *10*.
		1427[@]	<3	4821.4	17/2$^-$		
7335.1	(23/2$^-$)	1087.0 *4*	100	6248.1	(21/2$^-$)	(M1+E2)	γ(θ): A_2=−0.51 *4*; A_4=+0.05 *10*.
		1901[@]	<10	5434.0	19/2$^-$		
8211.2?	(25/2$^-$)	876.1[@] *5*		7335.1	(23/2$^-$)		

[†] From γ(θ), Γ_γ and comparison to RUL.
[‡] From 1973GoZE.
[#] Branching ratios from 1973GoZE are discrepant. They report Iγ(613γ):Iγ(1560γ)=85:15.
[@] Placement of transition in the level scheme is uncertain.

Legend

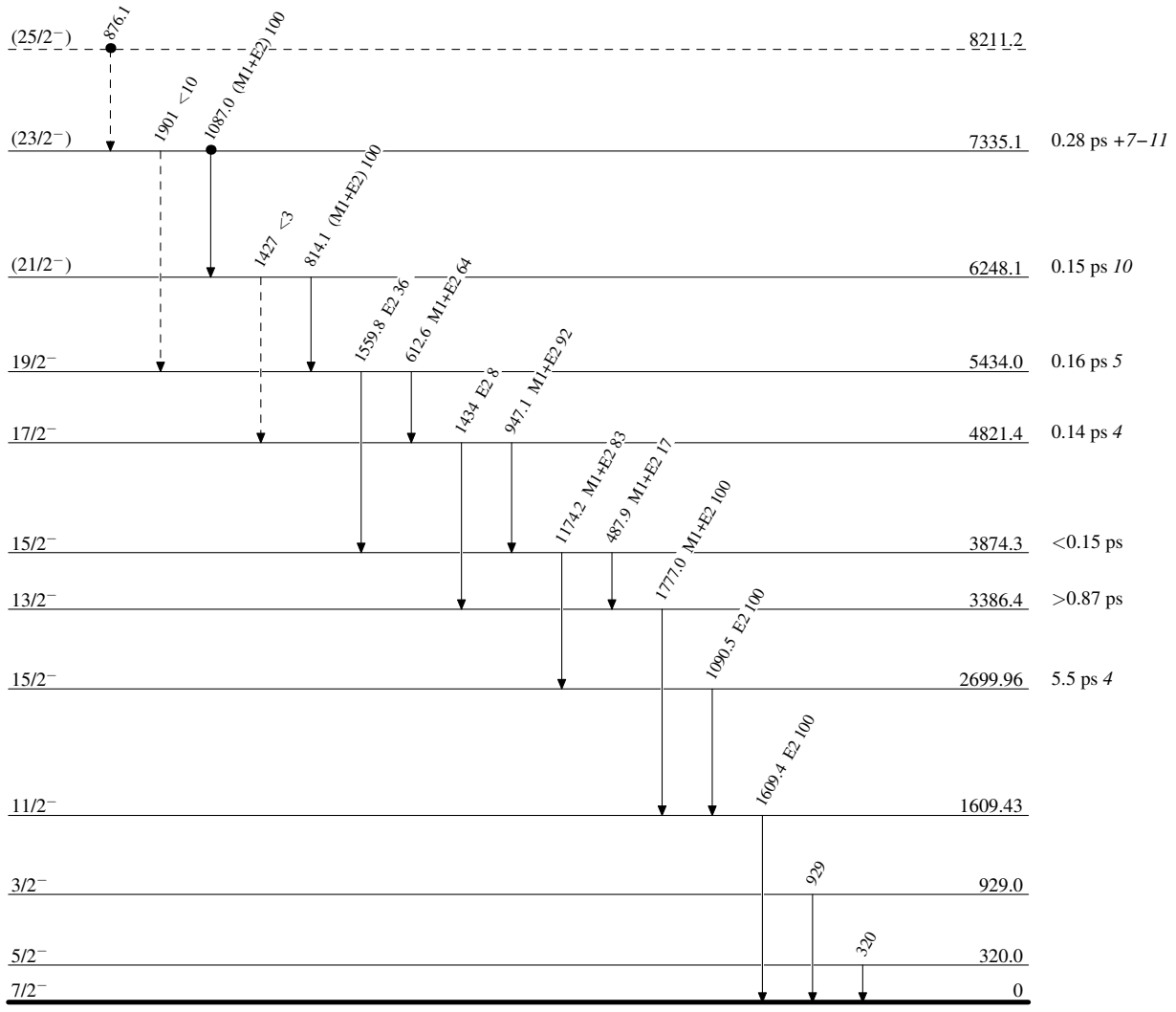
(HI,xnγ) 1978Li21,1974Po10,1973GoZE

Level Scheme

Intensities: % photon branching from each level

γ Decay (Uncertain)

Coincidence



$^{51}_{23}V_{28}$

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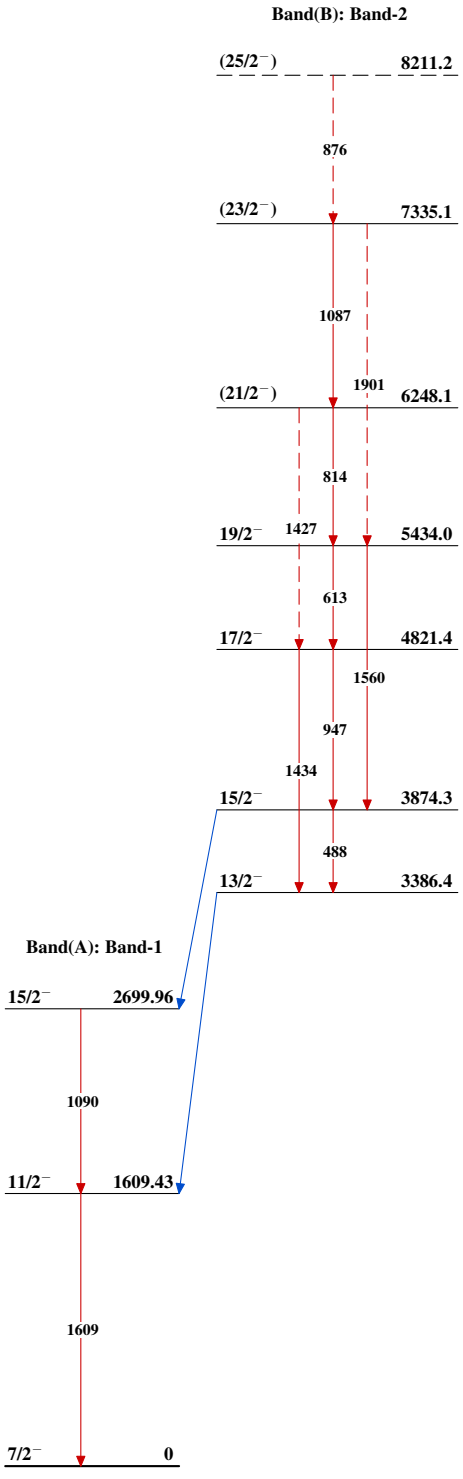

$^{51}_{23}V_{28}$