^{46}Ti(^{32}S,2pnγ) 1989Wi19,1987He01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 114, 841 (2013)	30-Jun-2013

1989Wi19: ^{46}Ti(^{32}S,2pnγ) E=97 MeV. Enriched target (81%). Measured γ, $\gamma\gamma$ using five Compton-suppressed HPGe detectors and a sum-energy and multiplicity spectrometer made up of 14 BGO scintillators.

1987He01: ^{46}Ti(^{32}S,2pnγ) E=85-150 MeV. Measured γ, $\gamma\gamma$, $\gamma(\theta)$ using two Ge(Li) detectors and a neutron multiplicity detector. Levels and gammas up to 1265 level are reported with main measurements at E(^{32}S)=90 MeV.

Additional information 1.

^{75}Kr Levels

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0#	5/2+	769.7@ 5	11/2+	1963.0# 7	17/2+	3620.2a 13	21/2−
178.8& 4	3/2−	904.1a 6	9/2−	2107.2& 7	15/2−	3823.2@ 10	23/2+
187.0@ 4	7/2+	1067.0# 6	13/2+	2560.2a 7	17/2−	4125.2& 14	(23/2−)
357.8a 4	5/2−	1264.0& 6	11/2−	2627.7@ 8	19/2+	4275.0# 11	25/2+
377.8# 4	9/2+	1593.2@ 6	15/2+	3047.8# 8	21/2+	5155.2& 17	(27/2−)
611.0& 5	7/2−	1644.6a 6	13/2−	3108.2& 10	19/2−	5556.0# 15	29/2+

† From least-squares fit to Eγ data. Uncertainty is assumed as 0.5 for Eγ given to a tenth of a keV and 1.0 for others.

‡ As listed in 1989Wi19 based on band assignments. The assignments are the same in Adopted Levels with the exception of some in parentheses.

Band(A): 5/2[422], α=+1/2.

@ Band(B): 5/2[422], α=−1/2.

& Band(C): 3/2[301], α=−1/2.

a Band(D): 3/2[301], α=+1/2.

γ(^{75}Kr)

A_2 and A_4 are from 1987He01.

Eγ†	Iγ†	Ei(level)	Jiπ	Ef	Jfπ	Mult.‡	δ‡	α#	Comments
178.8		178.8	3/2−	0.0	5/2+				Additional information 2.
179.0		357.8	5/2−	178.8	3/2−				Additional information 4.
187.1	100	187.0	7/2+	0.0	5/2+	M1+E2	−2.06 +7−23	0.0789 24	α(K)=0.0689 21; α(L)=0.0085 3; α(M)=0.00137 5; α(N)=0.000131 4 A_2=−0.58 5, A_4=+0.16 5. Additional information 3.
190.7	68 6	377.8	9/2+	187.0	7/2+	M1+E2	−2.40 +7−38	0.0764 24	α(K)=0.0667 21; α(L)=0.0082 3; α(M)=0.00132 5; α(N)=0.000126 4 A_2=−0.60 5, A_4=+0.18 5. Additional information 5.
253.1	65 5	611.0	7/2−	357.8	5/2−	M1+E2	−2.15 +12−22	0.0274 7	α(K)=0.0240 6; α(L)=0.00282 7; α(M)=0.000455 12; α(N)=4.43×10^{-5} 11 δ: quoted as −1.18 +11−23 by 1998Sk01

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^{46}Ti(^{32}S,2pnγ) 1989Wi19,1987He01 (continued)

γ(^{75}Kr) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]	α[#]	Comments
									from data of 1987He01. A_2=−0.69 *13*, A_4=+0.25 *13*. Additional information 7.
293.1	35 *3*	904.1	9/2−	611.0	7/2−				Additional information 11.
297.4	20 *2*	1067.0	13/2+	769.7	11/2+	M1+E2	−1.8 *+10−15*	0.015 *4*	α(K)=0.013 *4*; α(L)=0.0015 *4*; α(M)=0.00025 *7*; α(N)=2.4×10^{-5} *7* A_2=−1.2 *6*, A_4=+0.8 *6*. Additional information 13.
357.8	5[@]	357.8	5/2−	0.0	5/2+				
359.9	19 *3*	1264.0	11/2−	904.1	9/2−	M1+E2	−1.7 *+5−8*	0.0080 *7*	α=0.0080 *7*; α(K)=0.0071 *6*; α(L)=0.00080 *8*; α(M)=0.000129 *12*; α(N)=1.27×10^{-5} *12* A_2=−1.1 *4*, A_4=+0.7 *4*. Additional information 15.
370.0	7 *2*	1963.0	17/2+	1593.2	15/2+				
377.7	22 *3*	377.8	9/2+	0.0	5/2+				Additional information 6.
380.6	14 *2*	1644.6	13/2−	1264.0	11/2−				
392.0	37 *3*	769.7	11/2+	377.8	9/2+	M1+E2	−1.9 *+6−18*	0.0062 *5*	α=0.0062 *5*; α(K)=0.0055 *5*; α(L)=0.00062 *5*; α(M)=0.000100 *9*; α(N)=9.9×10^{-6} *8* A_2=−1.1 *5*, A_4=+0.6 *3*. Additional information 9.
419.9	5[@]	3047.8	21/2+	2627.7	19/2+				
432.2	26 *3*	611.0	7/2−	178.8	3/2−				Additional information 8.
452	3[@]	4275.0	25/2+	3823.2	23/2+				
452.9	9 *2*	2560.2	17/2−	2107.2	15/2−				
462.5	9 *2*	2107.2	15/2−	1644.6	13/2−				
526.1	22 *3*	1593.2	15/2+	1067.0	13/2+				
546.3	29 *3*	904.1	9/2−	357.8	5/2−				Additional information 12.
548	8[@]	3108.2	19/2−	2560.2	17/2−				
582.7	16 *2*	769.7	11/2+	187.0	7/2+				Additional information 10.
653.1	30[@]	1264.0	11/2−	611.0	7/2−				Additional information 16.
664.7	22 *3*	2627.7	19/2+	1963.0	17/2+				
689.1	39 *4*	1067.0	13/2+	377.8	9/2+				Additional information 14.
740.4	34[@]	1644.6	13/2−	904.1	9/2−				
775	6[@]	3823.2	23/2+	3047.8	21/2+				
823.6	22[@]	1593.2	15/2+	769.7	11/2+				
843.3	40[@]	2107.2	15/2−	1264.0	11/2−				
896.0	34 *5*	1963.0	17/2+	1067.0	13/2+				
915.6	26[@]	2560.2	17/2−	1644.6	13/2−				
1001	14 *3*	3108.2	19/2−	2107.2	15/2−				
1017	11[@]	4125.2	(23/2−)	3108.2	19/2−				

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^{46}Ti(^{32}S,2pnγ) 1989Wi19,1987He01 (continued)

γ(^{75}Kr) (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π
1030	11@	5155.2	(27/2$^-$)	4125.2	(23/2$^-$)	1196	19@	3823.2	23/2$^+$	2627.7	19/2$^+$
1034	17@	2627.7	19/2$^+$	1593.2	15/2$^+$	1227	22 *5*	4275.0	25/2$^+$	3047.8	21/2$^+$
1060	35 *6*	3620.2	21/2$^-$	2560.2	17/2$^-$	1281	13@	5556.0	29/2$^+$	4275.0	25/2$^+$
1085	28@	3047.8	21/2$^+$	1963.0	17/2$^+$						

† From 1989Wi19. See also 1987He01 for energy and intensity data for levels up to 1265.
‡ From $\gamma(\theta)$ data of 1987He01. Note that δ(exp) in table 2 of 1987He01 is δ(E2/M1)*0.7*Eγ(in MeV). Large δ indicates mult=M1+E2 from RUL.
# Additional information 17.
@ Estimated from $\gamma\gamma$ (1989Wi19).

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Level Scheme

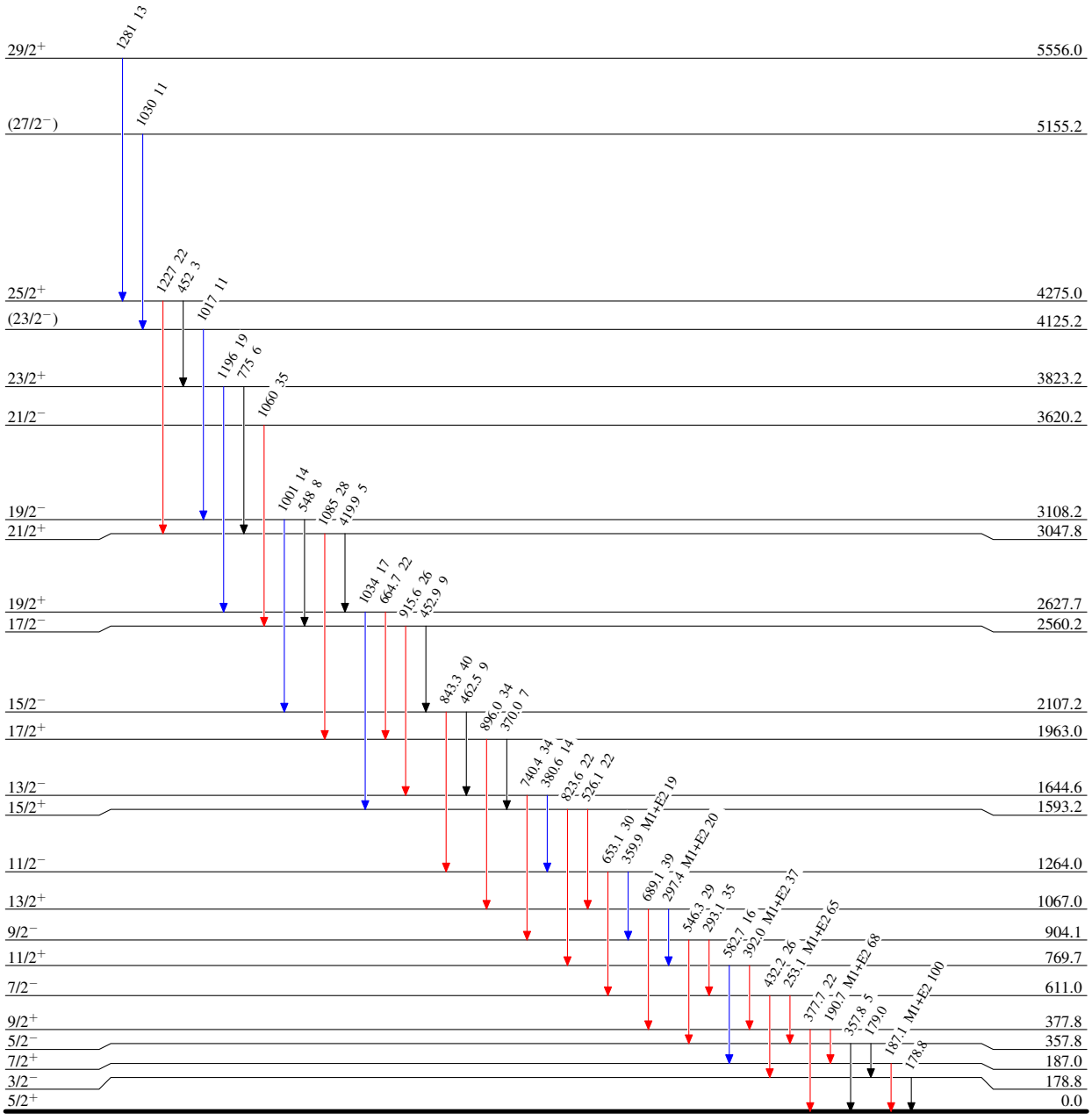
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{75}_{36}Kr_{39}$

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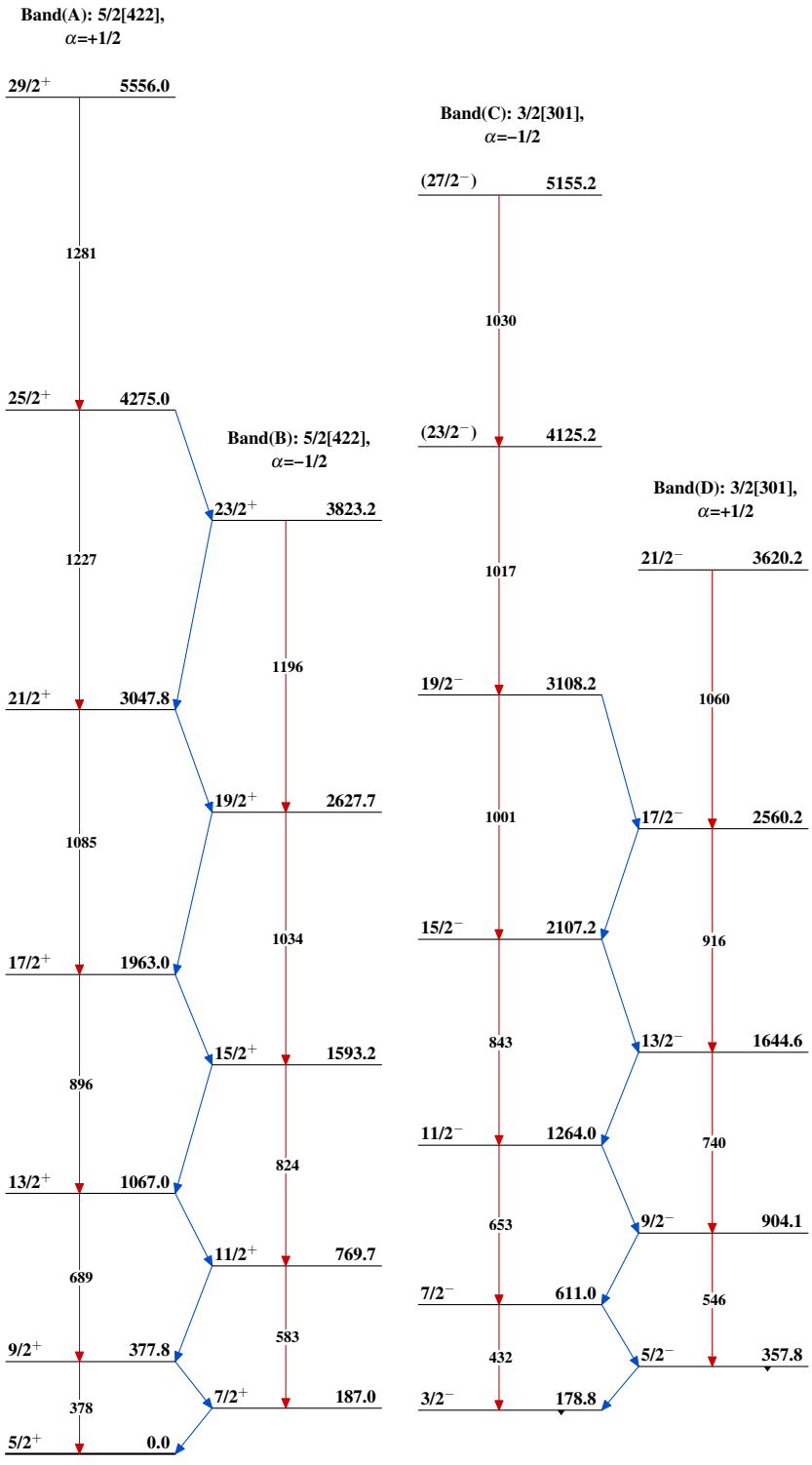

$^{75}_{36}Kr_{39}$