^{52}Cr(^{28}Si,2pnγ) 1987Gr27

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	30-Sep-2020

1987Gr27: E=98 MeV. Measured γ, $\gamma\gamma$, $\gamma(\theta)$. Natural chromium target (84% ^{52}Cr). ^{55}Mn(^{28}Si,αpnγ) E=108 MeV was also used in this study but the data reported are from ^{52}Cr(^{28}Si,2pnγ) E=98 MeV.

^{77}Kr Levels

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0&	5/2+	1002.5& *11*	13/2+	3770.3[a] *15*	23/2+	6707.3& *18*	33/2+
66.45 *10*	3/2− @	1659.2[a] *12*	15/2+	4152.3& *15*	25/2+	7643.3[a] *20*	(35/2+)
150.2[a] *8*	7/2+	1917.3& *13*	17/2+	4813.3[a] *16*	27/2+	8214.3& *21*	(37/2+)
278.8& *8*	9/2+	2707.3[a] *13*	19/2+	5375.3& *17*	29/2+	9351?#[a] *2*	(39/2+)
784.7[a] *10*	11/2+	2989.3& *14*	21/2+	6084.3[a] *17*	31/2+	9814#& *2*	(41/2+)

† From least-squares fit to Eγ data.
‡ From 1987Gr27 based on $\gamma(\theta)$ data, multipolarity assignments, and band associations. The assignments are essentially the same in Adopted Levels, except for the difference in parentheses for some of the cases.
# Level is not supported in a more recent and high-statistics high-spin study (1997Sy01) where levels up to 55/2 are populated. For this reason the evaluator has omitted this level in the Adopted dataset. Moreover, 1990Jo07, from the same group as 1987Gr27, also did not report this level.
@ From the Adopted Levels.
& Band(A): π=+,α=+1/2. Q(transition)=1.1 to 2.9 implies β_2=0.20 to 0.36 for the two signature partners.
a Band(a): π=+,α=−1/2.

γ(^{77}Kr)

Eγ	Iγ	Ei(level)	Jiπ	Ef	Jfπ	Mult.†	δ†	Comments
129		278.8	9/2+	150.2	7/2+			
150		150.2	7/2+	0.0	5/2+			
218	22 *2*	1002.5	13/2+	784.7	11/2+	D(+Q)	−0.03 *5*	A2=−0.29 *3*; A4=+0.01 *3*
258	4 *1*	1917.3	17/2+	1659.2	15/2+	D+Q	−0.09 *7*	A2=−0.42 *4*; A4=+0.05 *5*
279		278.8	9/2+	0.0	5/2+	Q		A2=+0.31 *3*; A4=−0.08 *3*
282	6 *1*	2989.3	21/2+	2707.3	19/2+			
382	6 *1*	4152.3	25/2+	3770.3	23/2+	D(+Q)	−0.07 *7*	A2=−0.35 *4*; A4=−0.04 *5*
506	42 *4*	784.7	11/2+	278.8	9/2+	D+Q	−0.35 *6*	A2=−0.63 *3*; A4=+0.03 *3*
562	7 *1*	5375.3	29/2+	4813.3	27/2+	D(+Q)	0.00 *7*	A2=−0.27 *4*; A4=+0.03 *4*
623	12 *1*	6707.3	33/2+	6084.3	31/2+			
634	14 *2*	784.7	11/2+	150.2	7/2+			
657	26 *3*	1659.2	15/2+	1002.5	13/2+	D+Q	−0.21 *5*	A2=−0.59 *3*; A4=+0.06 *3*
661	14 *2*	4813.3	27/2+	4152.3	25/2+	D+Q	−0.09 *5*	A2=−0.47 *4*; A4=+0.08 *4* Iγ: intensity seems too strong by a factor of ≈4 as compared to that in other studies. δ: not included in Adopted Gammas due to discrepant Iγ in this study.
709	19 *2*	6084.3	31/2+	5375.3	29/2+			
724	100	1002.5	13/2+	278.8	9/2+	(Q)		A2=+0.30 *3*; A4=+0.01 *3*
781	19 *2*	3770.3	23/2+	2989.3	21/2+	D+Q	−0.25 *6*	A2=−0.71 *3*; A4=+0.06 *4*
790	14 *2*	2707.3	19/2+	1917.3	17/2+	D+Q	−0.32 *6*	A2=−0.83 *4*; A4=+0.18 *5*
874	28 *3*	1659.2	15/2+	784.7	11/2+			
915	88 *9*	1917.3	17/2+	1002.5	13/2+	Q		A2=+0.22 *1*; A4=−0.05 *3*

Continued on next page (footnotes at end of table)

^{52}Cr(^{28}Si,2pnγ) 1987Gr27 (continued)

$\gamma(^{77}Kr)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	Comments
1043	7 *1*	4813.3	$27/2^+$	3770.3	$23/2^+$		
1048	24 *3*	2707.3	$19/2^+$	1659.2	$15/2^+$		
1063	12 *1*	3770.3	$23/2^+$	2707.3	$19/2^+$		
1072	59 *6*	2989.3	$21/2^+$	1917.3	$17/2^+$	Q	A_2=+0.39 *3*; A_4=−0.06 *3*
1163	31 *3*	4152.3	$25/2^+$	2989.3	$21/2^+$		
1223	12 *1*	5375.3	$29/2^+$	4152.3	$25/2^+$		
1271	16 *2*	6084.3	$31/2^+$	4813.3	$27/2^+$		
1332	11 *1*	6707.3	$33/2^+$	5375.3	$29/2^+$		
1507	16 *2*	8214.3	$(37/2^+)$	6707.3	$33/2^+$		
1559	8 *1*	7643.3	$(35/2^+)$	6084.3	$31/2^+$		
1600	8	9814	$(41/2^+)$	8214.3	$(37/2^+)$		
1708[‡]	6	9351?	$(39/2^+)$	7643.3	$(35/2^+)$		

[†] From $\gamma(\theta)$.

[‡] Placement of transition in the level scheme is uncertain.

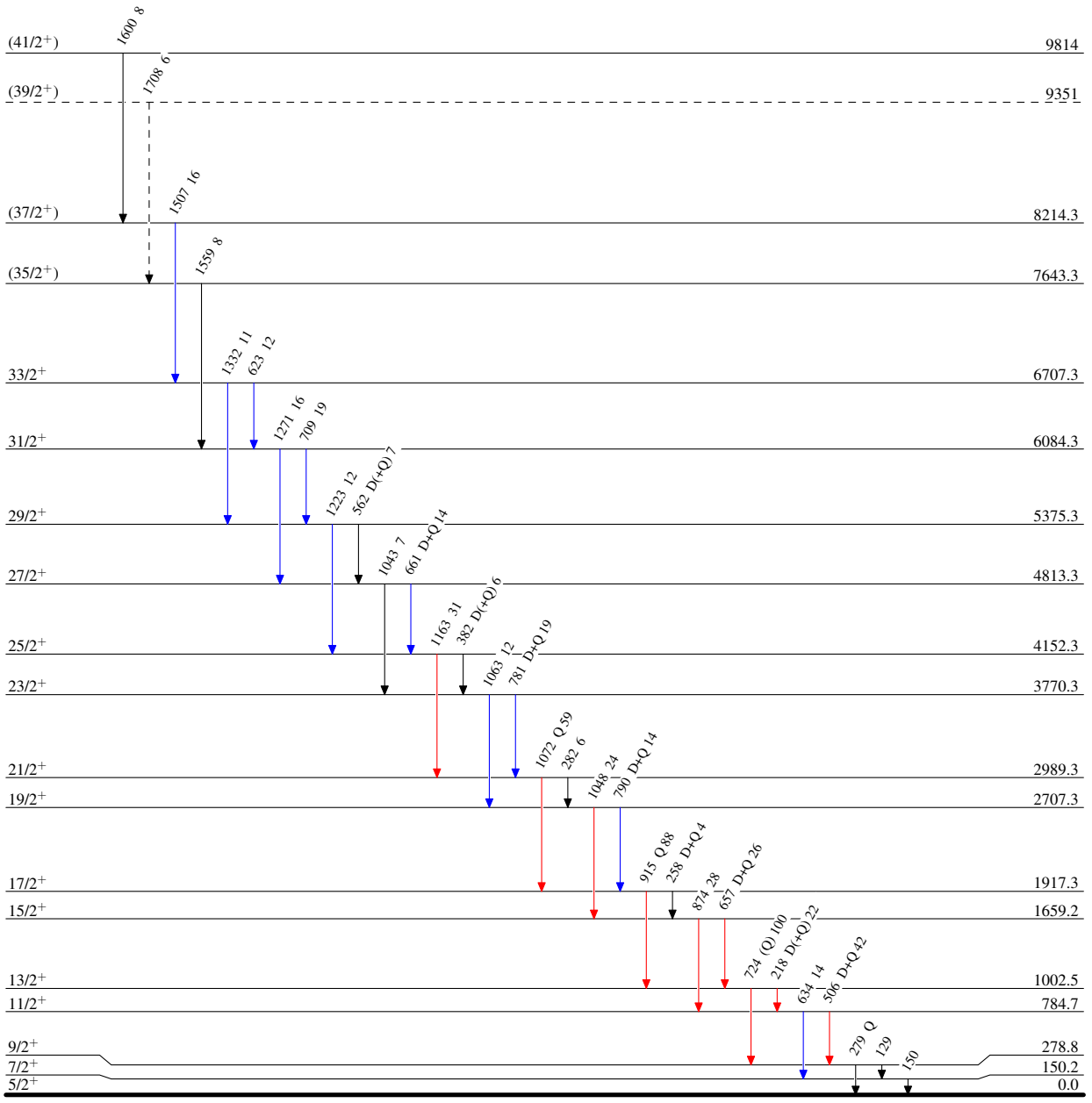
^{52}Cr(^{28}Si,2pnγ) 1987Gr27

Level Scheme

Intensities: Relative I_γ

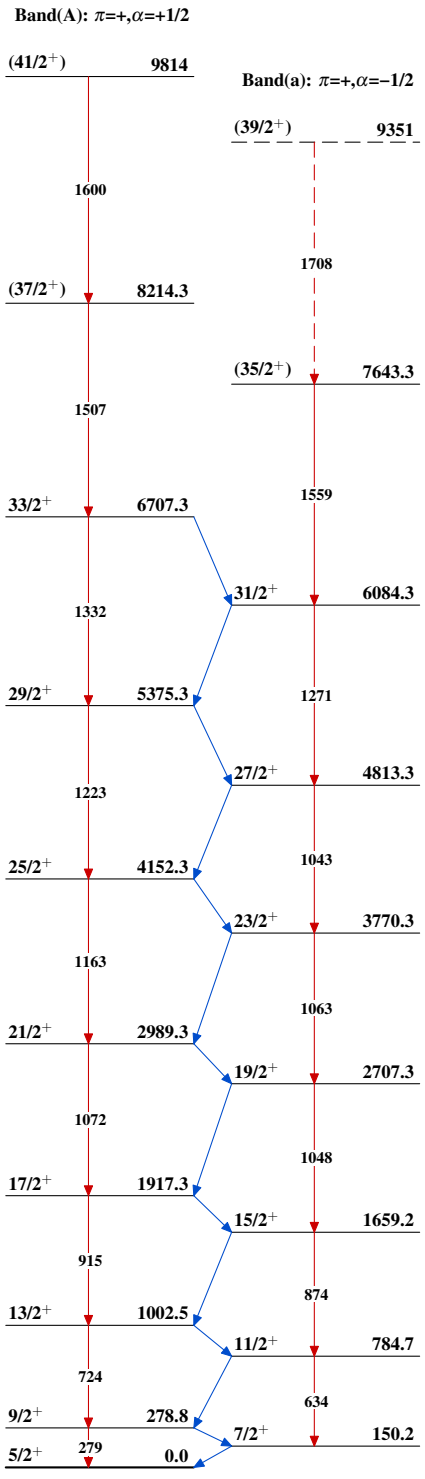
Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{77}_{36}Kr_{41}$

^{52}Cr(^{28}Si,2pnγ) 1987Gr27



$^{77}_{36}Kr_{41}$