^{36}S(^{14}C,α2nγ) 1986Wa19

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 190,1 (2023)	20-Jun-2023

1986Wa19: E=32 MeV ^{14}C beam was produced from the Brookhaven National Laboratory (BNL) tandem Van de Graaff facility. Target was 300 μg/cm^2 Ag_2S (81.1% ^{36}S). γ rays were detected with four Ge detectors. Measured Eγ, Iγ, $\gamma\gamma$-coin, $\gamma(\theta)$, Doppler-shift attenuation. Deduced levels, J, π, $T_{1/2}$, γ-ray branching ratios and mixing ratios. Comparisons with available data.

^{44}Ca Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[@]
0.0	0^+	
1157.047 *15*	2^+	
2283.16 *4*	4^+	
3044.39 *9*	4^+	
3285.03 *5*	6^+[#]	
3913.58 *9*	5^-	>2 ps
5087.66 *10*	(8^+)[#]	0.53 ps *14*

[†] From a least-squares fit to γ-ray energies.
[‡] From the Adopted Levels, unless otherwise noted.
[#] Proposed in 1986Wa19.
[@] From DSAM in 1986Wa19.

γ(^{44}Ca)

A_2 and A_4 values under comments are from $\gamma(\theta)$ in 1986Wa19.

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[#]	δ[#]	Comments
628.53 *9*	13.4 *14*	3913.58	5^-	3285.03	6^+	D+Q	−0.30 *14*	A_2=+0.22 *3*; A_4=−0.04 *5*
761.19 *20*	5.01 *25*	3044.39	4^+	2283.16	4^+	D+Q	−0.18 *8*	A_2=+0.25 *3*; A_4=+0.10 *5*
869.19[@]	<10	3913.58	5^-	3044.39	4^+			E$_\gamma$: unresolved with a more intense transition from ^{47}Sc (1986Wa19); quoted value is from level-energy difference. I$_\gamma$: from <9.3 *7* (1986Wa19).
1001.850[‡] *31*	59 *12*	3285.03	6^+	2283.16	4^+	Q(+O)	0.00 *8*	A_2=+0.35 *1*; A_4=−0.06 *1* E$_\gamma$,I$_\gamma$: unresolved with a more intense transition from ^{47}Sc (1986Wa19).
1126.092[‡] *40*	70.0 *14*	2283.16	4^+	1157.047	2^+	Q(+O)	0.00 *4*	A_2=+0.31 *1*; A_4=−0.07 *1*
1157.031[‡] *15*	100 *3*	1157.047	2^+	0.0	0^+	Q		A_2=+0.31 *1*; A_4=−0.05 *1*
1802.59 *8*	30 *3*	5087.66	(8^+)	3285.03	6^+	(E2)		A_2=+0.34 *4*; A_4=−0.05 *5* Mult.: (O(+Q)) with δ=+0.01 *6* from $\gamma(\theta)$ in 1986Wa19; M2, M3 ruled out by RUL.
1887.45 *20*	4.28 *21*	3044.39	4^+	1157.047	2^+	Q(+O)	−0.04 *22*	A_2=+0.32 *7*; A_4=−0.23 *7*

[†] From 1986Wa19, unless otherwise noted. Original intensity values have been re-normalized by the evaluators relative to Iγ=100 for 1157γ.
[‡] Quoted in 1986Wa19 as taken from 1978MeZK.
[#] From $\gamma(\theta)$ in 1986Wa19, unless otherwise noted.
[@] Placement of transition in the level scheme is uncertain.

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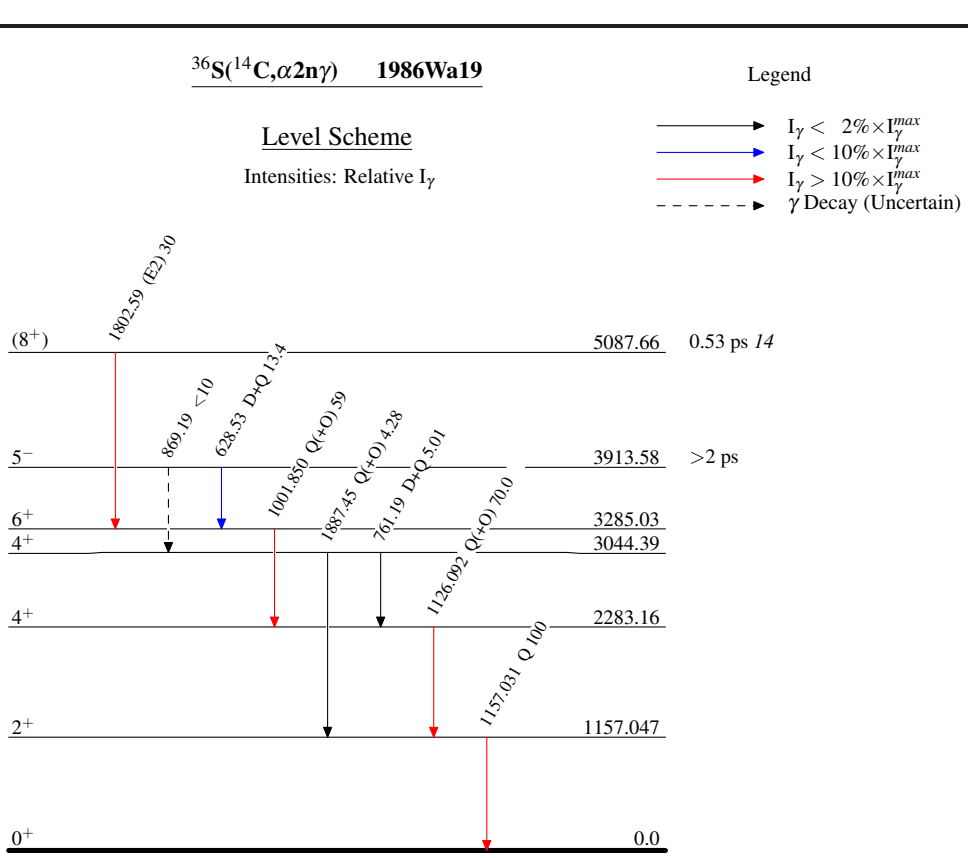
Level Scheme

Intensities: Relative I_γ



$^{44}_{20}Ca_{24}$