

Coulomb excitation 1970Ho16,1969Sh12,1972WaYZ

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

Others: 1971DaZM, 1968An20, 1968Ke09, 1967Af03, 1962Ri09, 1960Ad01, 1959Al04.

1970Ho16: $^{51}\text{V}(^{32}\text{S}, ^{32}\text{S}'\gamma)$, E=60 MeV, measured $\sigma(E\gamma)$.

1969Sh12: $^{51}\text{V}(\alpha, \alpha'\gamma)$, E $\approx$ 3.5 MeV, measured $T_{1/2}$.

1972WaYZ: $^{51}\text{V}(^{16}\text{O}, ^{16}\text{O}'\gamma)$, E=21-30 MeV; $^{51}\text{V}(^{35}\text{Cl}, ^{35}\text{Cl}'\gamma)$, E=60-79 MeV; measured DSA, deduced $T_{1/2}$.

 ^{51}V Levels

B(E2) from 1970Ho16 are renormalized to 0.0132 *I4* for the 320 level.

E(level)	$J^\pi^\dagger$	$T_{1/2}$	Comments
0	$7/2^-$		
320	$5/2^-$	0.19 ‡ ns 4	B(E2) $\uparrow$ =0.0132 <i>I4</i> B(E2) $\uparrow$: From weighted average of 0.0135 <i>I4</i> (1971DaZM), 0.013 2 (1962Ri09), 0.0130 26 (1960Go08), 0.012 3 (1960Ad01). Other: 0.0092 <i>I9</i> (1967Af03). g factor=+1.54 <i>I3</i> (1968Ke09). μ =+3.3 3 (1968Ke09).
930	$3/2^-$	8.3 ps 6	B(E2) $\uparrow$ =0.0042 3 B(E2) $\uparrow$: From weighted average of 0.0044 5 (1971DaZM), 0.0043 3 (1970Ho16), 0.0031 6 (1967Af03), 0.0043 9 (1960Go08).
1610	$11/2^-$	0.55 ps 4	$T_{1/2}$: from adopted B(E2) and branching (0.860 <i>I0</i>). B(E2) $\uparrow$ =0.0136 8 B(E2) $\uparrow$: From weighted average of 0.010 2 (1967Af03), 0.013 3 (1968An20), 0.012 6 (1968Ke09), 0.0136 8 (1972WaYZ), 0.0141 <i>I4</i> (1970Ho16), and 0.0150 <i>I5</i> (1971DaZM). $T_{1/2}$: from B(E2)=0.0136 8 one gets 0.58 ps 3. Weighted average of 0.35 ps 8 in (p,p' γ), 0.49 ps 7 from Doppler-broadened lineshape analysis in Coul. ex., 0.566 ps 25 from B(E2) in Coul. ex., and 0.68 ps <i>I2</i> from B(E2) in (e,e').
1810	$9/2^-$	0.57 ps +16-11	B(E2) $\uparrow$ =0.0046 <i>I0</i> (1970Ho16) $T_{1/2}$: from B(E2) and adopted branching (0.749 <i>I3</i>) and δ (-3.8 +6-8).

† Based on Coulomb-excitation, lifetime, and angular-correlation measurements.

‡ From pulsed-beam technique (1969Sh12).

 $\gamma(^{51}\text{V})$

All data from 1970Ho16, except as noted.

$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π	Mult.	δ	Comments
320	$5/2^-$	320	100	0	$7/2^-$	M1+E2	+0.52 7	δ : from $\gamma(\theta)$ (1962Ri09). From B(E2)(320 level)=0.0132 and adopted $T_{1/2}$ =184 ps 6 one gets δ =0.49 3.
930	$3/2^-$	610	14.7 <i>I4</i>	320	$5/2^-$			
		930	85.3 <i>I4</i>	0	$7/2^-$			
1610	$11/2^-$	1610	100	0	$7/2^-$			
1810	$9/2^-$	1490	25 <i>I3</i>	320	$5/2^-$			
		1810	75 <i>I3</i>	0	$7/2^-$			

† % photon branching from each level.

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Level Scheme

Intensities: % photon branching from each level

