Coulomb excitation **1976Wa06,1970Sa09,1979Ri13**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 107, 791 (2006)	15-Sep-2005

1976Wa06: (x,x′) x=^{86}Kr, E=365 MeV; x=^{136}Xe, E=593 MeV. Measured Eγ and Iγ at θ=45° in coincidence with scattered ^{86}Kr projectiles at θ=100°−150°, and with ^{136}Xe projectiles at θ=80°−100°. Detector: Ge(Li). Measured level half-life (Doppler broadening).

1970Sa09: (x,x′) x=α, E=7-10 MeV; x=^{16}O, E=25-52 MeV. Measured γ-ray singles spectrum, and in coincidence with scattered projectiles. Detector: Ge(Li). Deduced B(E2) values. Target:>94% enriched ^{176}Yb.

1979Ri13: (x,x′) x=^{16}O, E=58-62 MeV. Measured Eγ at θ=55° in coincidence with scattered projectiles at≈162°. Measured γ-ray angular distributions for θ=33° to 90°. Target: 96% enriched ^{176}Yb.

Others: 1975Wo08, 1965Yo04, 1964De07, 1963Gr04, 1961Go19, 1960El07.

^{176}Yb Levels

E(level)	J^π[†]	$T_{1/2}$	Comments
0.0	0^+		
82.130 *20*	2^+	1.72 ns *5*	B(E2)↑=5.45 *7* B(E2)↑: Weighted average: 5.41 *8* (1975Wo08), 5.35 *43* (1970Sa09), 5.28 *40* (1963Gr04), 5.78 *20* (1960El07). $T_{1/2}$: from B(E2) and adopted Eγ properties. g factor=+0.30 *2* (1966Ti01), 0.38 *2* (1967Ec02).
271.67 *25*	4^+	0.11 ns *1*	$T_{1/2}$: from B(E2)=2.85 *20* (1970Sa09) and α(189γ)=0.323. B(E4)=0.078 *74* deduced from E4 matrix element of 0.28 *+11−20* reported by 1975Wo08.
564.8 *4*	6^+	14 ps *1*	$T_{1/2}$: weighted average of 15.7 ps *7* (from B(E2)=2.23 *10* (1970Sa09) and α(293γ)=0.0801) and 12.8 ps *7* (Doppler broadening measurement (1976Wa06)).
954.5 *6*	8^+	3.5 ps *5*	$T_{1/2}$: weighted average of 4.0 ps *6* (from B(E2)=2.00 *31* (1970Sa09) and adopted properties for 389γ) and 3.1 ps *5* (Doppler broadening measurement (1976Wa06)).
1261.2 *4*	2^+	0.76 ps *7*	$T_{1/2}$: from B(E2)=0.051 *4* (weighted average of 0.0503 *43* (1979Ri13) and 0.060 *15* (1965Yo04)) and adopted properties for 1262γ and 1178γ.
1431.6 *13*	10^+	1.2[‡] ps *1*	
1436	$(4)^+$		E(level): level reported by 1979Ri13.
1985.2 *20*	12^+	0.59[‡] ps *6*	
2602 *3*	14^+	0.38[‡] ps *7*	
3270 *5*	$(16)^+$		
3979 *6*	$(18)^+$		

[†] Based on rotational structure and on the comparison of experimental level half-lives with values predicted by the rotational model (1976Wa06).

[‡] Doppler broadening measurement (1976Wa06).

γ(^{176}Yb)

E_γ	Iγ (^{136}Xe)[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	Comments
82.13 *2*		82.130	2^+	0.0	0^+	E2	E_γ: from 1958Ch36.
189.56[‡] *25*		271.67	4^+	82.130	2^+	E2	
293.10[†] *21*	100	564.8	6^+	271.67	4^+	E2	
389.7[†] *5*	90	954.5	8^+	564.8	6^+	E2	
477.1[#] *11*	69	1431.6	10^+	954.5	8^+	E2	
553.6[#] *15*	70	1985.2	12^+	1431.6	10^+	E2	
617[#] *2*	35	2602	14^+	1985.2	12^+	E2	

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Coulomb excitation **1976Wa06,1970Sa09,1979Ri13 (continued)**

$\gamma(^{176}Yb)$ (continued)

E_γ	$I\gamma$ (^{136}Xe)[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]
668[#] *3*	15	3270	$(16)^+$	2602	14^+	E2
709[#] *4*		3979	$(18)^+$	3270	$(16)^+$	E2
1164[#]		1436	$(4)^+$	271.67	4^+	
1178.9[‡] *4*		1261.2	2^+	82.130	2^+	
1261.4[‡] *5*		1261.2	2^+	0.0	0^+	E2
1354[#]		1436	$(4)^+$	82.130	2^+	

† Weighted average from 1976Wa06 and 1970Sa09.
‡ From 1970Sa09.
# Deduced by evaluator from level energy differences of 1979Ri13.
@ From 1976Wa06.
& From $\gamma(\theta)$ of deexciting γ in coincidence with backscattered beam ions (1979Ri13).

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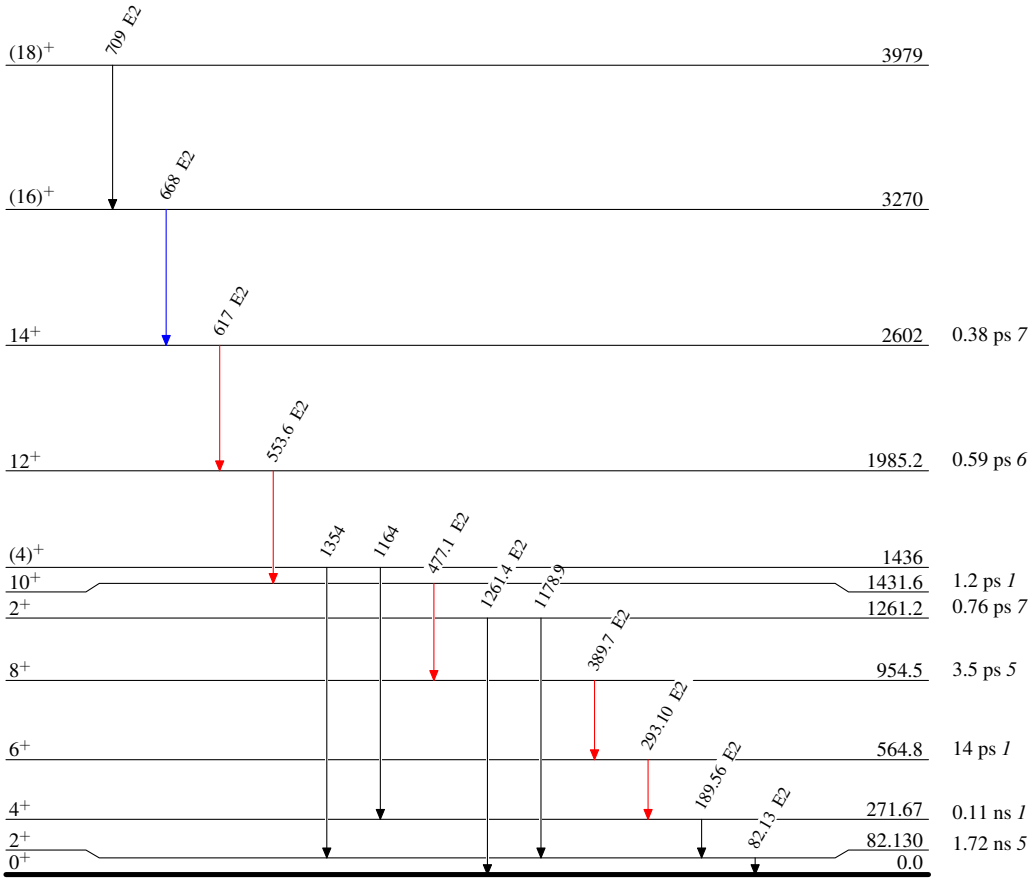
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

Level Scheme

Intensities: Relative Iγ using ^{136}Xe projectiles (1976Wa06)



$^{176}_{70}Yb_{106}$