

$^{176}\text{Yb}(^{31}\text{P},\text{X}\gamma)$ 2003La23

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal and F. G. Kondev		NDS 113, 1315 (2012)	1-Aug-2011

The ^{31}P beam was accelerated at 152 MeV by the VIVITRON accelerator at IReS. A 1.5 mg/cm^2 ^{176}Yb target with a 15 mg/cm^2 Au backing was used. γ -rays were detected using EUROBALL4 array consisting of 30 HPGe detectors, 26 Clover detectors and 15 Cluster detectors in anti-Compton shields. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$.

 ^{110}Pd Levels

E(level) [†]	J^π [‡]	Comments
0.0 [#]	0 ⁺	
373.80 [#] 19	2 ⁺	
813.60 [@] 25	2 ⁺	
920.9 [#] 3	4 ⁺	
1212.0 [@] 3	(3 ⁺)	
1398.0 [@] 4	(4 ⁺)	
1574.1 [#] 4	6 ⁺	
1759.2 [@] 5	(5 ⁺)	
1900.0 4		
1987.0 [@] 5	(6 ⁺)	
2261.0 6		
2295.7 ^a 4	(5 ⁻)	J^π : 1374.6 γ to 4 ⁺ and the band assignment.
2296.3 [#] 6	(8 ⁺)	
2614.8 5		
2650.5 [@] 6	(8 ⁺)	
2662.6 6		
2745.6 ^{&} 5	(7 ⁻)	J^π : 1171.5 γ to 6 ⁺ and the band assignment.
2784.6 ^a 5	(7 ⁻)	
2790.6 5		
2805.0 5		
2845.4 7		
2923.9 7		
2991.8 5	(8 ⁻)	
3070.3 [#] 6	(10 ⁺)	
3195.9 6	(10 ⁺)	
3246.2 ^a 5	(9 ⁻)	
3265.8 7		
3327.0 ^{&} 7	(9 ⁻)	
3624.3 7	(10 ⁻)	
3718.2 [#] 7	(12 ⁺)	
4031.2 ^{&} 8	(11 ⁻)	
4484.2 [#] 8	(14 ⁺)	

[†] From least-squares fit to $E\gamma$'s.

[‡] From 2003La23, based on the observed band structure and systematics.

[#] Band(A): g.s. band.

[@] Band(B): γ band.

[&] Band(C): 7⁻ band. The decoupled quasiparticle band. Configurations: $\nu h_{11/2} \otimes \nu g_{7/2}$ and $\nu h_{11/2} \otimes \nu d_{5/2}$.

^a Band(D): 5⁻ band. The decoupled quasiparticle band. Configurations: $\nu h_{11/2} \otimes \nu g_{7/2}$ and $\nu h_{11/2} \otimes \nu d_{5/2}$.

$^{176}\text{Yb}(^{31}\text{P},\text{X}\gamma)$ **2003La23** (continued) $\gamma(^{110}\text{Pd})$

E_γ^\dagger	I_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
207.2 4	5 1	2991.8	(8 ⁻)	2784.6	(7 ⁻)	
246.1 5	3 1	2991.8	(8 ⁻)	2745.6	(7 ⁻)	
254.5 6	<1	3246.2	(9 ⁻)	2991.8	(8 ⁻)	
291.1 5	2 1	1212.0	(3 ⁺)	920.9	4 ⁺	
373.8 2		373.80	2 ⁺	0.0	0 ⁺	
398.4 3	16 1	1212.0	(3 ⁺)	813.60	2 ⁺	
439.8 3	38 1	813.60	2 ⁺	373.80	2 ⁺	
450.0 6	<1	2745.6	(7 ⁻)	2295.7	(5 ⁻)	
461.6 5	2 1	3246.2	(9 ⁻)	2784.6	(7 ⁻)	
477.1 5	7 1	1398.0	(4 ⁺)	920.9	4 ⁺	
488.9 3	7 1	2784.6	(7 ⁻)	2295.7	(5 ⁻)	
500.5 4	5 1	3246.2	(9 ⁻)	2745.6	(7 ⁻)	
502.0 5	2.5 10	1900.0		1398.0	(4 ⁺)	
522.3 4	4 1	3718.2	(12 ⁺)	3195.9	(10 ⁺)	
547.1 3	140 10	920.9	4 ⁺	373.80	2 ⁺	
547.2 3	19 2	1759.2	(5 ⁺)	1212.0	(3 ⁺)	
581.4 5	2 1	3327.0	(9 ⁻)	2745.6	(7 ⁻)	
584.4 3	19 1	1398.0	(4 ⁺)	813.60	2 ⁺	
589.0 3	11 1	1987.0	(6 ⁺)	1398.0	(4 ⁺)	
632.5 4	4 1	3624.3	(10 ⁻)	2991.8	(8 ⁻)	
647.9 3	11 1	3718.2	(12 ⁺)	3070.3	(10 ⁺)	
651.0 5	2.5 10	3265.8		2614.8		
653.2 2	100	1574.1	6 ⁺	920.9	4 ⁺	
663.5 3	9 1	2650.5	(8 ⁺)	1987.0	(6 ⁺)	
688.0 3	20 1	1900.0		1212.0	(3 ⁺)	
704.2 3	4 1	4031.2	(11 ⁻)	3327.0	(9 ⁻)	
714.8 3	6 1	2614.8		1900.0		
721.5 5	5 1	2295.7	(5 ⁻)	1574.1	6 ⁺	
722.2 4	52 2	2296.3	(8 ⁺)	1574.1	6 ⁺	
762.6 4	6 1	2662.6		1900.0		
766.0 4	7 1	4484.2	(14 ⁺)	3718.2	(12 ⁺)	
774.0 3	22 1	3070.3	(10 ⁺)	2296.3	(8 ⁺)	
813.6 4	8 2	813.60	2 ⁺	0.0	0 ⁺	
838.2 4	25 1	1212.0	(3 ⁺)	373.80	2 ⁺	
890.6 5	≈1	2790.6		1900.0		
899.6 3	10 1	3195.9	(10 ⁺)	2296.3	(8 ⁺)	
905.0 5	6 1	2805.0		1900.0		
979.1 4	3 1	1900.0		920.9	4 ⁺	
1049.0 5	<1	2261.0		1212.0	(3 ⁺)	
1171.5 3	13 1	2745.6	(7 ⁻)	1574.1	6 ⁺	
1210.7 5	2 1	2784.6	(7 ⁻)	1574.1	6 ⁺	
1216.5 5	<1	2790.6		1574.1	6 ⁺	
1230.9 5	5 1	2805.0		1574.1	6 ⁺	
1271.3 6	2 1	2845.4		1574.1	6 ⁺	
1349.8 6	3 1	2923.9		1574.1	6 ⁺	
1374.7 5	15 1	2295.7	(5 ⁻)	920.9	4 ⁺	

E_γ: ΔE_γ=0.2 keV by evaluator.

† From 2003La23, unless otherwise stated.

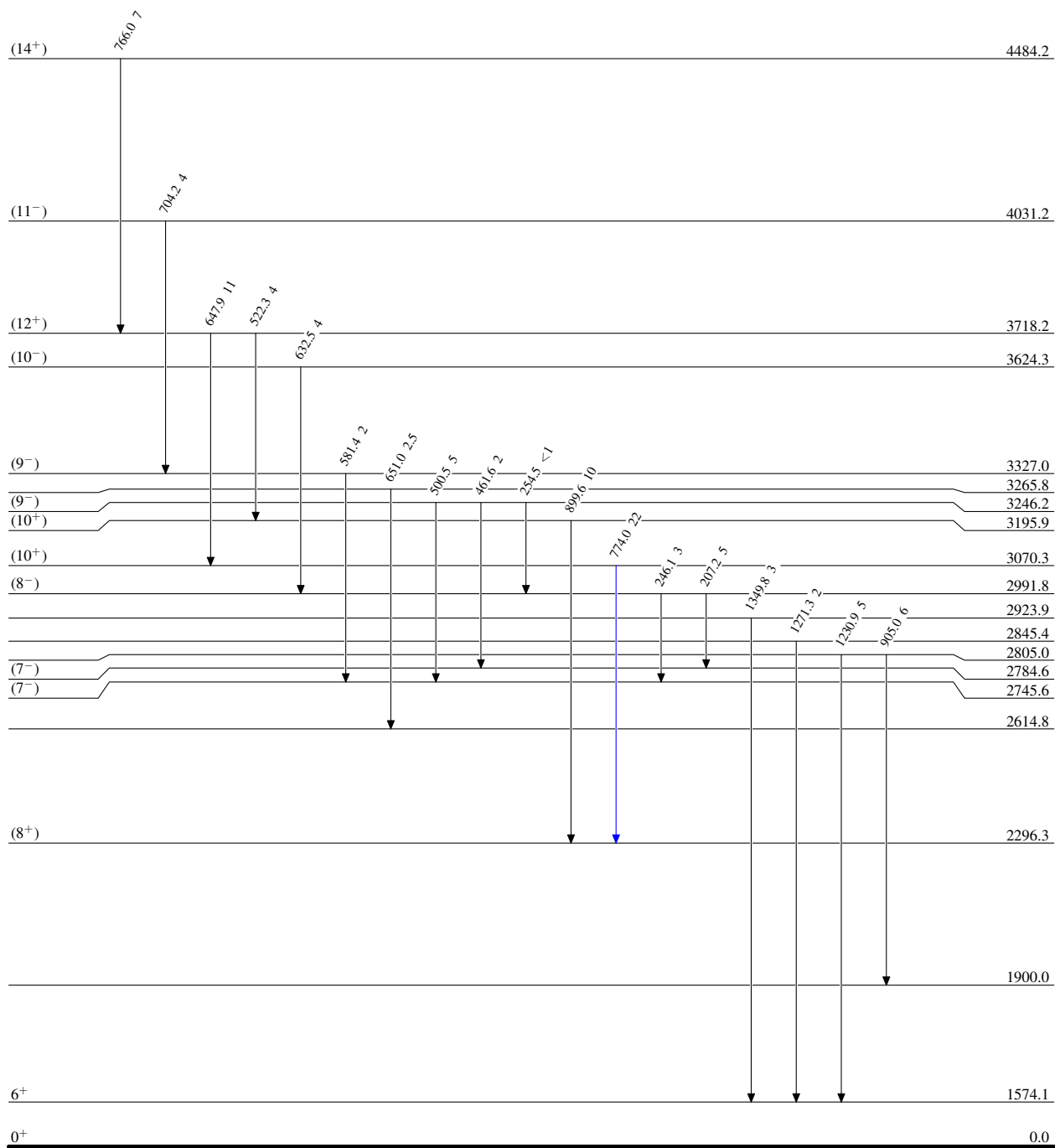
$^{176}\text{Yb}(^{31}\text{P,X}\gamma)$ 2003La23

Level Scheme

Intensities: Relative I_γ

Legend

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

 $^{110}_{46}\text{Pd}_{64}$

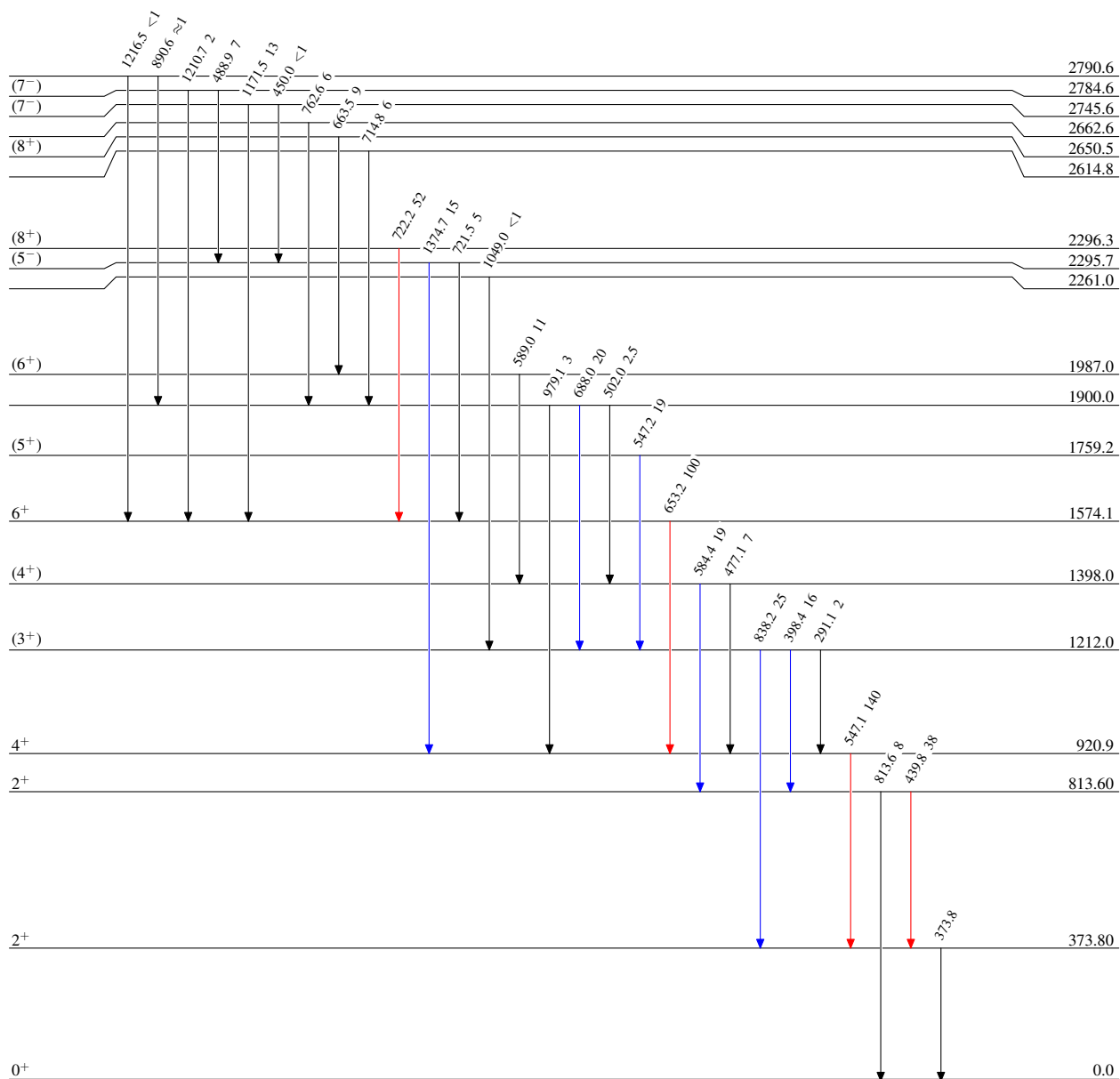
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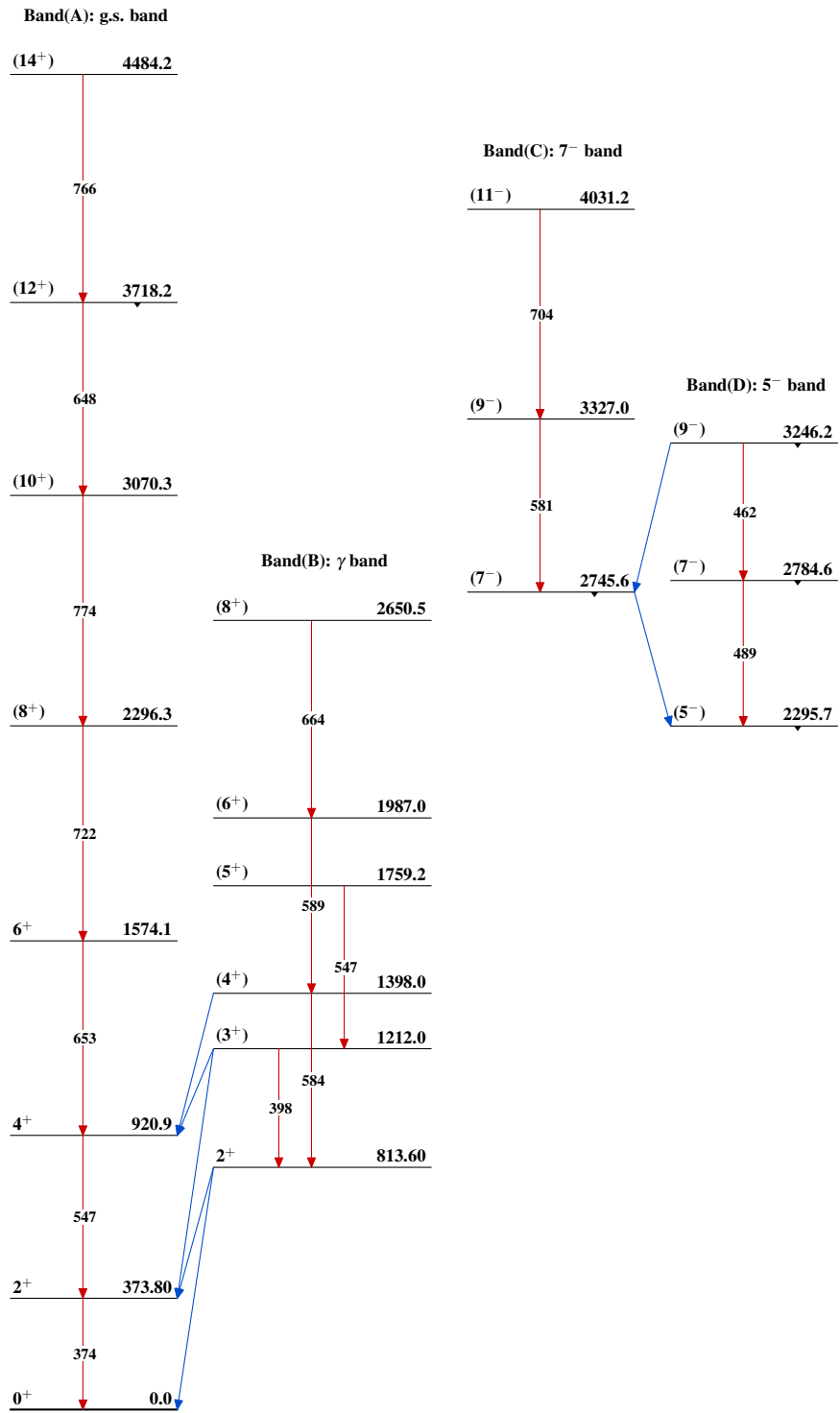
Level Scheme (continued)

Intensities: Relative I_γ

Legend

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

 $^{110}_{46}\text{Pd}_{64}$

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