<div align="center">

^{48}Ca(^{136}Xe,6nγ)   **1985Pe07**

</div>

Target: ^{48}Ca, E(^{136}Xe)=647 MeV pulsed beam. Measured Eγ and Iγ using coincidence techniques with an array of two Ge(Li) and ten NaI detectors. Determined delayed γ rays, $\gamma\gamma$(t).

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^{178}W Levels

</div>

E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$
0.0[#]	0$^+$	1665.9 17	(6$^+$)	2133.9[@] 23	(10$^-$)	
106.1[#] 10	2$^+$	1666.2[#] 22	10$^+$	2328.6[@] 23	(11$^-$)	
343.1[#] 15	4$^+$	1739.7[@] 20	(7$^-$)	3055.4 23		
694.7[#] 17	6$^+$	1828.1[@] 21	(8$^-$)	3237.2 25		
1142.4[#] 20	8$^+$	1965.3[@] 21	(9$^-$)	3528 3		$\approx$35 ns

[†] Deduced by evaluator from a least-squares fit to γ-ray energies.
[‡] From rotational band structure.
[#] K^{π}=0$^+$ g.s. rotational band.
[@] K^{π}=(7$^-$) band.

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γ(^{178}W)

</div>

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$	E$_\gamma$	I$_\gamma$	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$
73.8[‡]		1739.7	(7$^-$)	1665.9	(6$^+$)	351.6	73 2	694.7	6$^+$	343.1	4$^+$
88.6[‡]		1828.1	(8$^-$)	1739.7	(7$^-$)	363.3	35 2	2328.6	(11$^-$)	1965.3	(9$^-$)
106.1	28 4	106.1	2$^+$	0.0	0$^+$	447.7	33 1	1142.4	8$^+$	694.7	6$^+$
137.4	13 1	1965.3	(9$^-$)	1828.1	(8$^-$)	523.8	20 2	1666.2	10$^+$	1142.4	8$^+$
^{x}139.8[†]	7 1					^{x}650.5[†]	6 1				
^{x}164.1[†]	20 1					^{x}671.0[†]	12 1				
168.4	13 1	2133.9	(10$^-$)	1965.3	(9$^-$)	^{x}762.8[†]	5 1				
^{x}171.1[†]	5 1					^{x}777.8[†]	4 1				
181.8	62 2	3237.2		3055.4		921.3	10 1	3055.4		2133.9	(10$^-$)
^{x}183.7[†]	60 2					^{x}939.0[†]	7 1				
^{x}207.1[†]	43 2					^{x}962.5[†]	5 1				
225.4	11 1	1965.3	(9$^-$)	1739.7	(7$^-$)	971.1	26 1	1665.9	(6$^+$)	694.7	6$^+$
237.0	100 2	343.1	4$^+$	106.1	2$^+$	1090.3	13 1	3055.4		1965.3	(9$^-$)
^{x}241.3[†]	29 1					1322.8	29 1	1665.9	(6$^+$)	343.1	4$^+$
^{x}278.3[†]	29 1					^{x}1571.2[†]	2 1				
290.5	77 2	3528		3237.2							

[†] These γ rays decay with a T$_{1/2}$ of $\approx$60 ns, suggesting the existence of an isomeric state with that half-life.
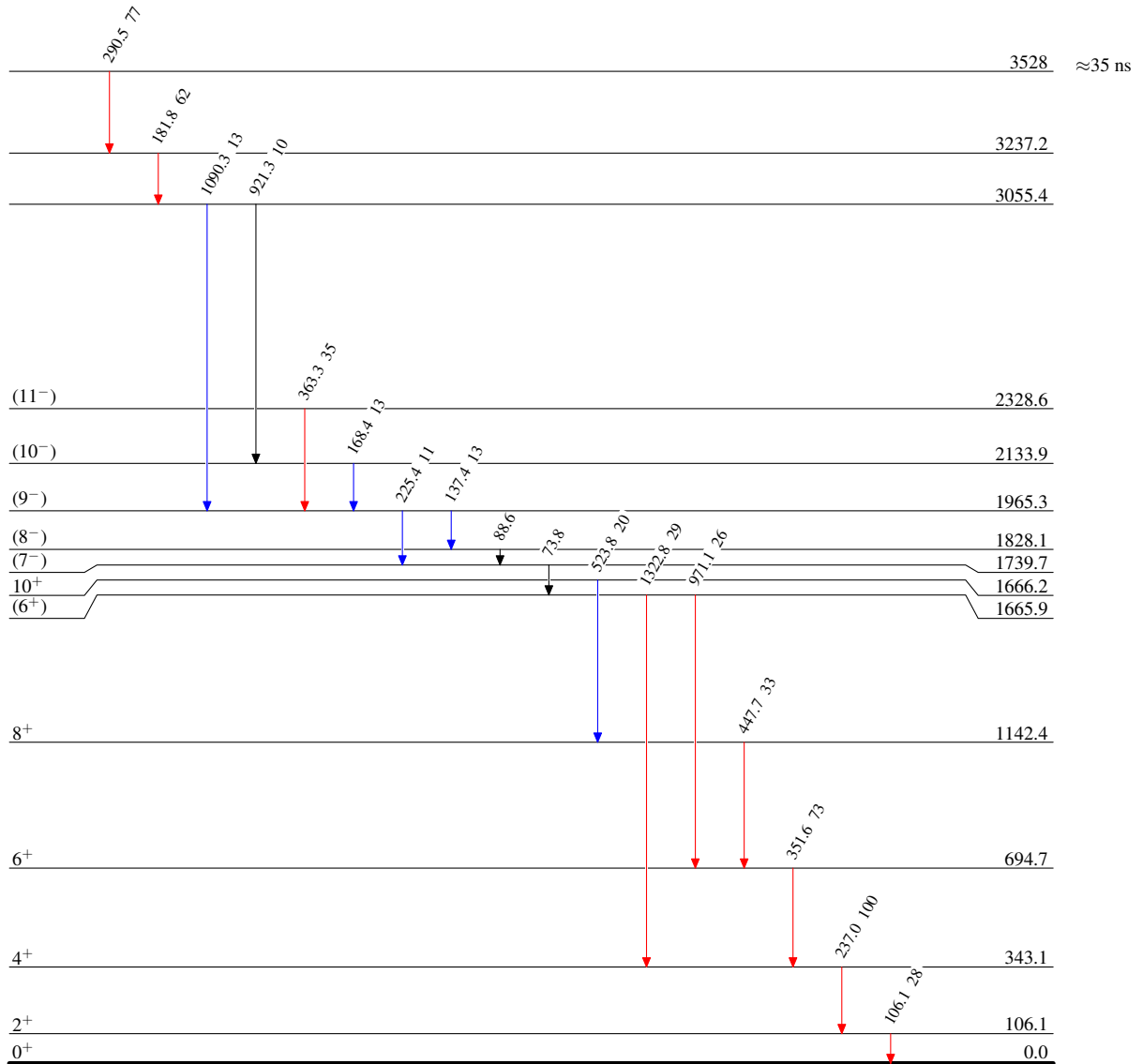[‡] From ^{177}Hf(α,3nγ).
[x] γ ray not placed in level scheme.

^{48}Ca(^{136}Xe,6nγ)   1985Pe07

Level Scheme

Intensities: Relative I$_\gamma$

Legend

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

290.5 77

3528 $\approx$35 ns

181.8 62

3237.2

1090.3 13
921.3 10

3055.4

363.3 35

(11$^-$)   2328.6

168.4 13

(10$^-$)   2133.9

225.4 11
137.4 13

(9$^-$)   1965.3

88.6
73.8
523.8 20
1322.8 29
971.1 26

(8$^-$)   1828.1
(7$^-$)   1739.7
10$^+$ 1666.2
(6$^+$)   1665.9

447.7 33

8$^+$ 1142.4

351.6 73

6$^+$ 694.7

237.0 100

4$^+$ 343.1

106.1 28

2$^+$ 106.1
0$^+$ 0.0

$^{178}_{74}W_{104}$