^{131}Xe(n,γ) E=14.1 eV   1971Ge05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, A. A. Rodionov and S. Sakharov, Balraj Singh	NDS 104, 497 (2005)	10-Feb-2005

1971Ge05: E=14.1 eV and E=th. Neutron diffraction monochromator, Na$_4$XeO$_6$ target. Measured Eγ, Iγ, $\gamma\gamma$ for 14.1 eV resonance.

1996Sk01: E=epithermal, measured tof and γ spectra, deduced parity non-conserving P-wave resonance At 3.2 eV In ^{131}Xe. The following secondary γ rays with Eγ(Iγ) are reported: 630.2(18.5), 667.5(100), 772.5(24.4), 1028.7(5.4) and 1317.6(13.2). These γ rays imply population of following levels: 668,2$^+$; 1298,2$^+$; 1440,4$^+$; 1985,2$^+$; 2469,3$^-$.

1996Sz02: measurement of analyzing power of P-wave 3.2 eV resonance In polarized neutron transmission experiment.

^{132}Xe Levels

E(level)†	J$^{\pi‡}$	Comments
0.0	0$^+$	
667.73 22	2$^+$	
1297.99 25	2$^+$	
1440.3 3	4$^+$	
1804.1 3	3$^+$	
1962.8 3	4$^+$	
1985.4 3	2$^+$	
2040.0 4	(5$^-$)	
2110.3 4	4$^+$	
2167.3? 5	5$^+$	
2168.8 4	(1,2$^+$)	
2187.0 3	2$^+$	
2350.7 5	5$^+$	
2394.4 4	4$^+$	
2424.7 5	3$^+$	
2469.1 3	(3$^-$)	
2555.4 3	(2$^+$,3)	
2588.7 5	(4$^+$)	
2714.3 4	(1,2$^+$)	
2754.7 7	(4$^+$)	
3180.7 6	(3$^-$)	
3243.2 4		
3699.7 7		
3792.2 5		
3875.5? 7		
3954.5 6		
4026.8? 6		
4094.3 4	(3$^-$,4$^+$)	
4188.7? 4		
(8936.2 4)	2$^+$	E(level): S(n)+E(n); S(n)=8936.59 22 (2003Au03), E(n)=14.1 eV. J$^{\pi}$: 2$^+$ (1981MuZQ).

† From least-squares fit to Eγ's.
‡ From Adopted Levels, except for capture state.

^{131}Xe(n,γ) E=14.1 eV   **1971Ge05** (continued)

$\gamma(^{132}$Xe)

E_γ†	I_γ†	E_i(level)	J_i^π	E_f	J_f^π
[x]46.5 *3*					
[x]65.8 *3*					
[x]68.2 *3*					
[x]78.8 *3*					
[x]186.7 *2*	0.2 *1*				
[x]313.0 *5*	0.2 *1*				
[x]344.4 *4*	0.2 *1*				
363.6 *5*	0.3 *2*	1804.1	3$^+$	1440.3	4$^+$
[x]403.3 *10*	0.3 *2*				
429.2 *4*	0.64 *15*	2469.1	(3$^-$)	2040.0	(5$^-$)
483.7 *5*	7.8 *7*	2469.1	(3$^-$)	1985.4	2$^+$
506.5[b] *5*	3.9[b] *5*	1804.1	3$^+$	1297.99	2$^+$
506.5[bc] *5*	<0.5[b]	2469.1	(3$^-$)	1962.8	4$^+$
522.7 *6*	2.9 *2*	1962.8	4$^+$	1440.3	4$^+$
[x]536.2[&] *4*	0.7 *2*				
546.4 *5*	0.2 *1*	2350.7	5$^+$	1804.1	3$^+$
570.1 *7*	2.8 *4*	2555.4	(2$^+$,3)	1985.4	2$^+$
600.2 *5*	6.8 *5*	2040.0	(5$^-$)	1440.3	4$^+$
[x]608.8 *6*	0.30 *5*				
621.0 *5*	0.87 *20*	2424.7	3$^+$	1804.1	3$^+$
630.2 *4*	18.5 *16*	1297.99	2$^+$	667.73	2$^+$
667.5 *3*	100	667.73	2$^+$	0.0	0$^+$
[x]707.9 *4*	0.3 *1*				
727.0 *4*	0.45 *12*	2167.3?	5$^+$	1440.3	4$^+$
772.5 *3*	24.4 *20*	1440.3	4$^+$	667.73	2$^+$
812.0 *4*	1.0 *2*	2110.3	4$^+$	1297.99	2$^+$
889.2 *6*	0.84 *10*	2187.0	2$^+$	1297.99	2$^+$
910.8[b] *7*	≈0.2[b]	2350.7	5$^+$	1440.3	4$^+$
910.8[b] *7*	≈0.2[b]	2714.3	(1,2$^+$)	1804.1	3$^+$
954.3 *3*	0.89 *10*	2394.4	4$^+$	1440.3	4$^+$
983.7 *9*	0.45 *20*	2424.7	3$^+$	1440.3	4$^+$
1028.7 *3*	5.4 *6*	2469.1	(3$^-$)	1440.3	4$^+$
1114.3 *5*	0.40 *5*	2555.4	(2$^+$,3)	1440.3	4$^+$
1120.9 *5*	0.60 *5*	3875.5?		2754.7	(4$^+$)
1136.1 *6*	2.4 *5*	1804.1	3$^+$	667.73	2$^+$
1141.0 *8*	0.4 *3*	3180.7	(3$^-$)	2040.0	(5$^-$)
[x]1154.0[‡] *4*	0.80 *15*				
1171.2 *4*	0.89 *15*	2469.1	(3$^-$)	1297.99	2$^+$
[x]1227.6 *10*	0.4 *2*				
[x]1236.2 *5*	0.35 *10*				
1236.2 *5*	0.35 *10*	3792.2		2555.4	(2$^+$,3)
1280.3 *3*	0.6 *1*	3243.2		1962.8	4$^+$
1290.8[#] *4*	≈0.3[#]	2588.7	(4$^+$)	1297.99	2$^+$
1295.1[#] *2*	≈0.34[#]	1962.8	4$^+$	667.73	2$^+$
1297.9[#] *4*	≈1.2[#]	1297.99	2$^+$	0.0	0$^+$
1317.6 *3*	13.2 *10*	1985.4	2$^+$	667.73	2$^+$
1398.8 *7*	0.24 *12*	3792.2		2394.4	4$^+$
1442.8 *4*	0.26 *10*	2110.3	4$^+$	667.73	2$^+$
1501.0 *4*	0.45 *10*	2168.8	(1,2$^+$)	667.73	2$^+$
1519.4 *3*	1.8 *3*	2187.0	2$^+$	667.73	2$^+$
1539.0 *5*	0.38 *10*	4094.3	(3$^-$,4$^+$)	2555.4	(2$^+$,3)
[x]1620.2 *4*	1.2 *2*				
1669.7 *11*	0.23 *8*	4094.3	(3$^-$,4$^+$)	2424.7	3$^+$

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^{131}**Xe(n,γ) E=14.1 eV**　　**1971Ge05 (continued)**

$\gamma(^{132}$Xe) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π
1719.7 *4*	1.2 *3*	4188.7?		2469.1	(3^-)
1739.8 *8*	0.10 *5*	3180.7	(3^-)	1440.3	4^+
1756.6 *8*	0.33 *10*	2424.7	3^+	667.73	2^+
1786.0 *8*	0.34 *10*	3954.5		2168.8	$(1,2^+)$
1801.1 *3*	4.4 *8*	2469.1	(3^-)	667.73	2^+
[x]1813.7 *5*	0.5 *3*				
1858.3 *7*	0.56 *10*	4026.8?		2168.8	$(1,2^+)$
1887.6 *3*	2.5 *4*	2555.4	$(2^+,3)$	667.73	2^+
1895.8 *7*	0.5 *1*	3699.7		1804.1	3^+
1920.3 *12*	0.3 *2*	2588.7	(4^+)	667.73	2^+
1926.0 *12*	0.5 *3*	4094.3	$(3^-,4^+)$	2168.8	$(1,2^+)$
1986.4[b] *9*	1.4[b] *2*	1985.4	2^+	0.0	0^+
1986.4[b] *9*	<0.2[b]	4026.8?		2040.0	(5^-)
[x]2027.0 *6*	1.3 *2*				
2055.2 *7*	0.6 *2*	4094.3	$(3^-,4^+)$	2040.0	(5^-)
2087.3 *8*	0.5 *3*	2754.7	(4^+)	667.73	2^+
2149.9[a] *8*	0.3[a] *1*	3954.5		1804.1	3^+
2149.9[a] *8*	0.3[a] *1*	4188.7?		2040.0	(5^-)
2169.8 *8*	0.5 *2*	2168.8	$(1,2^+)$	0.0	0^+
2188.9 *10*	0.3 *2*	2187.0	2^+	0.0	0^+
2384.2 *4*	0.2 *1*	4188.7?		1804.1	3^+
2577.0[ac] *10*	0.3[a] *2*	3243.2		667.73	2^+
2577.0[a] *10*	0.3[a] *2*	3875.5?		1297.99	2^+
[x]2592.5 *10*	0.5 *2*				
[x]2615.1 *6*	0.3 *2*				
[x]2698.0 *20*	0.2 *1*				
2714.3 *5*	0.7 *2*	2714.3	$(1,2^+)$	0.0	0^+
2795.4 *7*	0.4 *2*	4094.3	$(3^-,4^+)$	1297.99	2^+
[x]3456.7 *10*	0.3 *2*				
[x]3517.1 *7*	0.4 *2*				
[x]3585.7 *18*	0.2 *1*				
3699.2 *25*		3699.7		0.0	0^+
[x]3845.8 *15*	0.2 *1*				
[x]3948.4 *15*	0.5 *2*				
[x]4167.2 *25*	0.2 *1*				
[x]4210.5 *7*	0.4 *2*				
[x]4304.3[&] *10*	0.2 *1*				
[x]4347.3[&] *20*	0.2 *1*				
[x]4394.6[&] *10*	0.3 *1*				
[x]4415.6 *9*	0.5 *2*				
[x]4707.3[@] *20*	0.2 *1*				
[x]4733.9[@] *19*	0.3 *1*				
4745.6 *25*	0.09 *5*	(8936.2)	2^+	4188.7?	
[x]4765.3[@] *19*	0.4 *1*				
4842.3 *10*	0.7 *2*	(8936.2)	2^+	4094.3	$(3^-,4^+)$
[x]4892.0[&] *25*	≤0.2				
[x]4900.7[@] *10*	0.6 *3*				
4910.3 *20*	0.7 *3*	(8936.2)	2^+	4026.8?	
[x]4943.8[@] *18*	0.3 *1*				
4981.1 *17*	0.3 *1*	(8936.2)	2^+	3954.5	
[x]5032.4[&] *21*	0.3 *2*				
5060.7 *17*	0.8 *3*	(8936.2)	2^+	3875.5?	

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^{131}Xe(n,γ) E=14.1 eV   **1971Ge05** (continued)

γ(^{132}Xe) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f
^{x}5077.5$^@$ *16*	1.3 *2*				
5143.1 *15*	0.7 *2*	(8936.2)	2^+	3792.2	
5237.3 *15*	0.5 *2*	(8936.2)	2^+	3699.7	
5692.3 *12*	0.4 *2*	(8936.2)	2^+	3243.2	
5755.0 *10*	1.9 *2*	(8936.2)	2^+	3180.7	(3^-)
^{x}5885.7$^@$ *25*	0.4 *2*				
6223.0 *10*	0.23 *10*	(8936.2)	2^+	2714.3	$(1,2^+)$
6346.8 *25*	0.09 *6*	(8936.2)	2^+	2588.7	(4^+)
6380.5 *5*	2.8 *3*	(8936.2)	2^+	2555.4	$(2^+,3)$
6466.8 *5*	13.2 *8*	(8936.2)	2^+	2469.1	(3^-)
6750.1 *8*	0.13 *6*	(8936.2)	2^+	2187.0	2^+
6950.1 *23*	0.14 *5*	(8936.2)	2^+	1985.4	2^+
8268.5 *9*	1.0 *1*	(8936.2)	2^+	667.73	2^+
8934.2 *10*	0.02 *1*	(8936.2)	2^+	0.0	0^+

[†] From 1971Ge05, unless otherwise stated. It was assumed by 1971Ge05 that all γ rays above 4000 are primary transitions.
[‡] Doublet.
[#] Contaminated by 1293.6 γ ray from In(n,γ). Eγ from 1978Ne08, Iγ from adopted γ's.
[@] Observed by 1971Gr28 as primary γ ray in (n,γ) E=th.
[&] Uncertain γ ray.
[a] Multiply placed with undivided intensity.
[b] Multiply placed with intensity suitably divided.
[c] Placement of transition in the level scheme is uncertain.
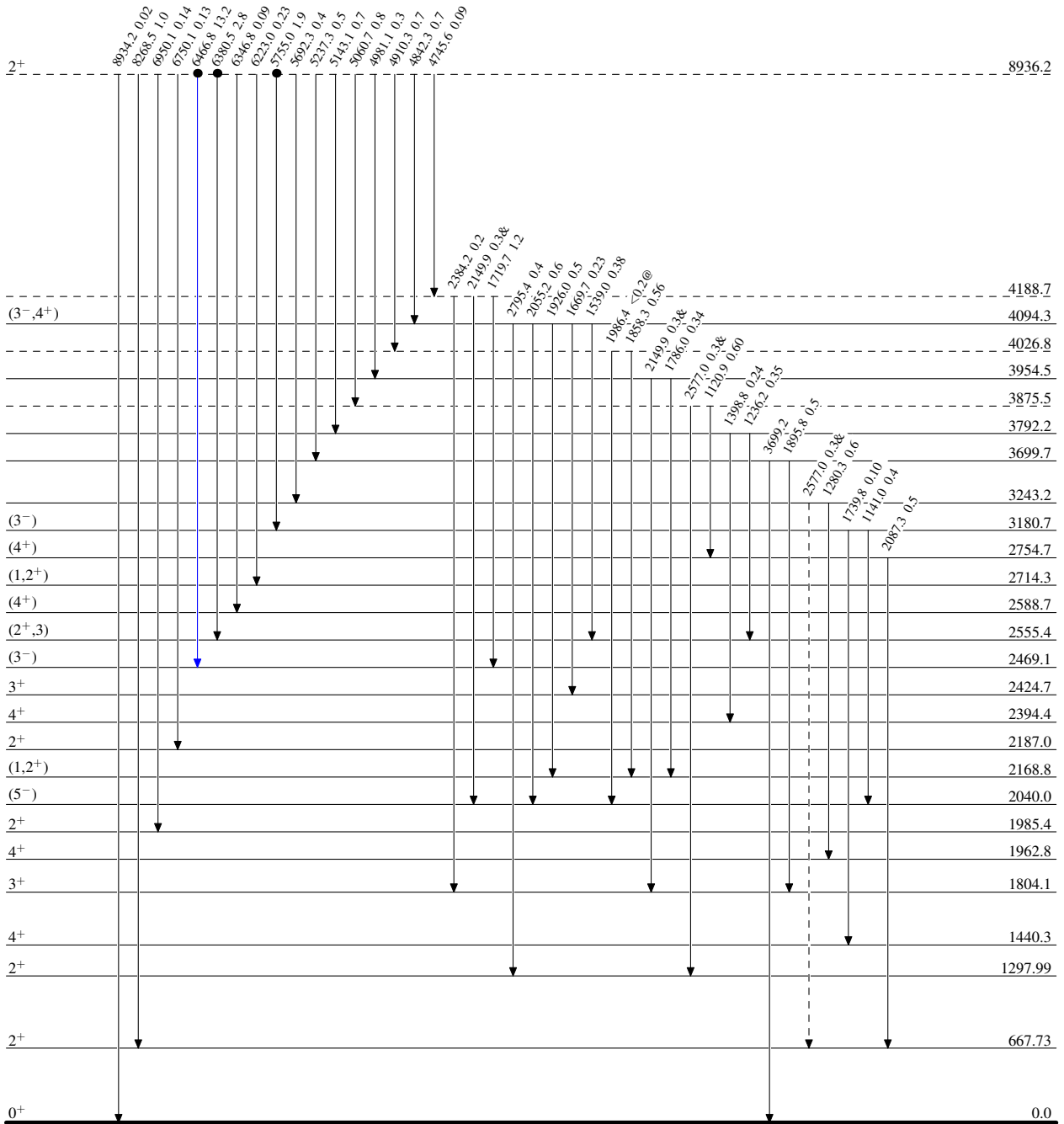[x] γ ray not placed in level scheme.

^{131}Xe(n,γ) E=14.1 eV   1971Ge05

Level Scheme

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

→ $I_\gamma < 2\% \times I_\gamma^{max}$
→ $I_\gamma < 10\% \times I_\gamma^{max}$
→ $I_\gamma > 10\% \times I_\gamma^{max}$
⇢ γ Decay (Uncertain)
● Coincidence

$^{132}_{54}$Xe$_{78}$
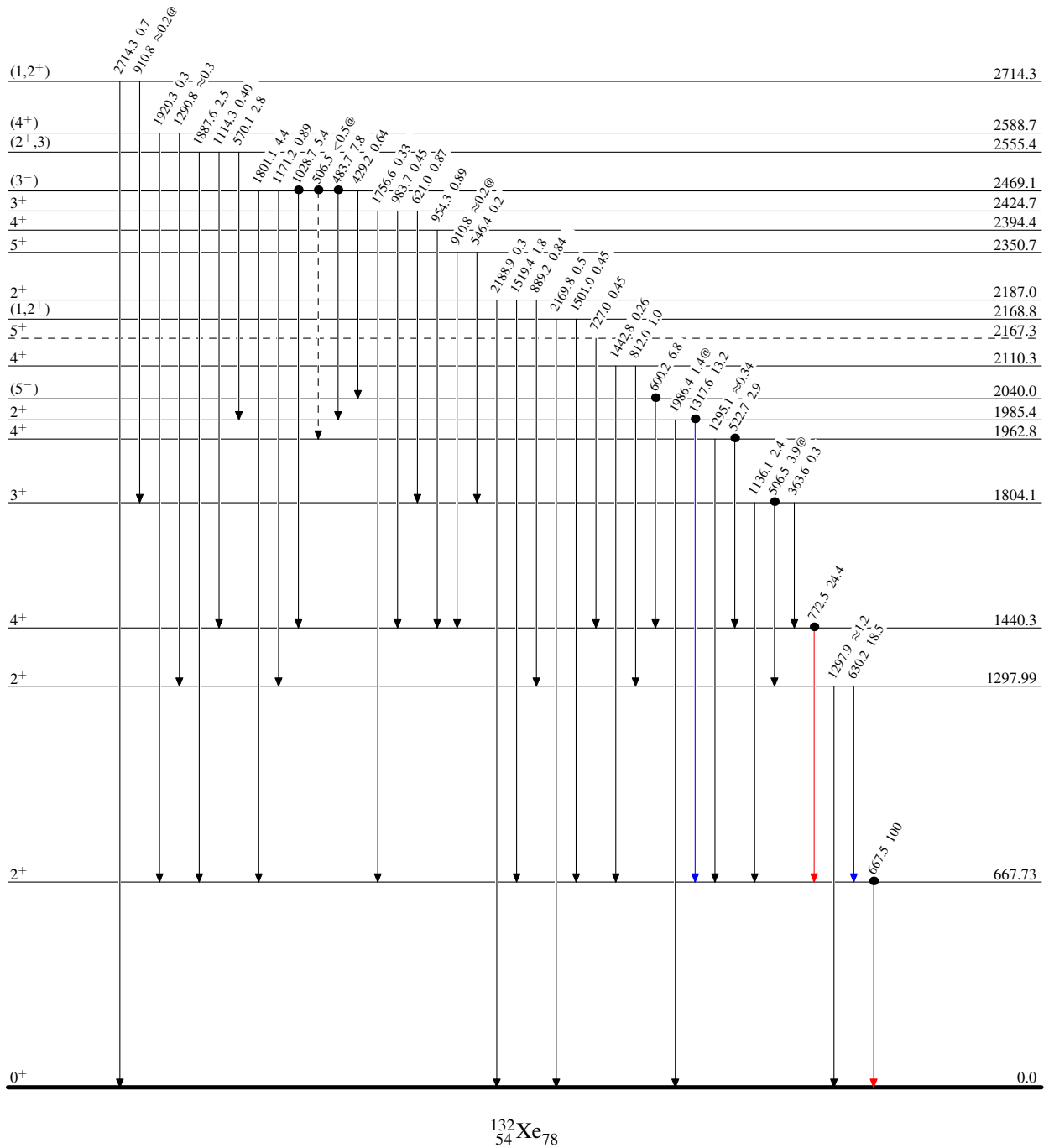
^{131}**Xe(n,γ) E=14.1 eV**   **1971Ge05**

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

→	$I_\gamma < 2\% \times I_\gamma^{max}$
→	$I_\gamma < 10\% \times I_\gamma^{max}$
→	$I_\gamma > 10\% \times I_\gamma^{max}$
⤏	γ Decay (Uncertain)
●	Coincidence

$^{132}_{54}$Xe$_{78}$