(HI,xnγ) 1990Mo07,1991Ju03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	K. Kitao	NDS 75,99 (1995)	1-Feb-1993

1990Mo07, 1988Mo28: ^{92}Mo(^{29}Si,n2pγ) E=110 MeV; 90% enriched target; γ, γγ coin, γ(θ). 1988Mo18 is an earlier publication by the authors of 1990Mo07.

1984Ke06: ^{106}Pd+^{16}O, ^{108}Cd+^{12}C, ^{110}Cd+^{12}C; enriched target (≈95%); measured excitation function, γ(θ), γγ coin.

1984Ba36: ^{112}Sn(^{12}C,4n2pg) E=112 MeV, measured sum γ spectra; deduced relative values of the moment of inertia of a possible band based on 1h11/2 state.

1980KaZT: ^{107}Ag(^{14}N,3nγ) E=60 MeV; measured $T_{1/2}$.

1991Ju03: ^{92}Mo(^{32}S,α2pγ) E=145 MeV; 98% enriched target, nordball detector array; γγ coin.

1985JaZY: ^{94}Mo(^{27}Al,p2n) E=114 MeV; γ, γγ coin, γ(θ).

Other: 1977BeYM.

The level scheme up to 6003 keV is that proposed by 1990Mo07. That above 6934 keV is from 1991Ju03. Both 6815 and 7675 levels are those proposed by 1985JaZY as members of the negative parity band, but not confirmed by 1990Mo07. Different levels with energies greater than 2817.4 keV had been proposed by 1984Ke06.

^{118}Xe Levels

E(level)[†]	Jπ[‡]	$T_{1/2}$[d]	Comments
0.0[#]	0+	3.8 min *9*	
337.7[#] *3*	2+	45 ps *2*	$T_{1/2}$: other: 48 ps *3* (1977BeYM).
810.8[#] *4*	4+	7.48 ps *12*	$T_{1/2}$: other: 12 ps *3* (1977BeYM).
928.3[@] *5*	2+		
1366.9[&] *5*	(3+)		
1397.7[#] *5*	6+	3.2 ps *8*	$T_{1/2}$: other:<3.5 ps (1977BeYM).
1441.6[@] *4*	4+		
1922.9[&] *5*	(5+)		
1996.2[a] *5*	5−		
1998.1[@] *5*	6+		
2074.6[#] *5*	8+	2.8 ps *10*	
2419.8[a] *5*	7−		
2541.2 *5*	(5,6+)		
2560.6[&] *5*	(7+)		
2625.7[@] *6*	(8+)		
2817.5[#] *5*	10+	<1.2 ps	
2920.3[a] *5*	9−		
2998.2 *6*			
3207.2 *6*	(9−)		
3240.6[&] *7*	(9)		
3256.2[@] *6*	(10+)		
3261.9 *6*			
3453.2 *6*			
3536.2 *6*			
3542.9[a] *6*	11−		
3593.3[#] *6*	12+		
3722.2 *6*			
3848.2[@] *6*	(12+)		
4041.2 *8*			
4173.9? *7*			
4262.5[a] *7*	(13−)		

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(HI,xnγ) 1990Mo07,1991Ju03 (continued)

^{118}Xe Levels (continued)

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
4369.1# 7	14+	5156.9# 8	(16+)	6935.3# 10	(20+)b	11554.8# 14	(28+)b
4386.2 8		5355.8@ 8		7672.1?a 16	(21−)c	12816.3# 15	(30+)b
4540.5@ 7	(14+)	5926.1a 8	(17−)c	7958.3# 11	(22+)b	14088.2# 16	(32+)b
4911.0? 8		6003.9# 9	(18+)b	9073.0# 12	(24+)b	15400.2# 17	(34+)b
5059.1a 7	(15−)c	6812.1?a 13	(19−)c	10271.3# 13	(26+)b		

† Energy values from a least-squares fit to E(γ's).
‡ Proposed by authors based on γ(θ) and Iγ(150°)/Iγ(80°) values (1990Mo07), unless otherwise noted.
# Yrast band.
@ Quasi-γ band, even-spin.
& Quasi-γ band, odd-spin.
a Negative-parity band.
b Tentatively assigned by 1991Ju03 from γγ coin an assumed stretched E2 γ-cascades to (16+).
c Tentatively assigned by 1985JaZY from γγ coin and incomplete results of γ(θ).
d From recoil-distance method in ^{107}Ag(^{14}N,3nγ) (1980KaZT).

γ(^{118}Xe)

Eγ†	Iγ†b	Ei(level)	Jiπ	Ef	Jfπ	Mult.c	Comments
191.3 3	<1	3453.2		3261.9			
246.0 5	6 1	3453.2		3207.2	(9−)		
254.9 3	<1	3848.2	(12+)	3593.3	12+		
269.0 3	9.0 12	3722.2		3453.2			
274.3 3	<1	3536.2		3261.9			
286.9‡ 3	15.0 14	3207.2	(9−)	2920.3	9−	Q	
319.0 5	4.0 8	4041.2		3722.2			
337.7 3	100 3	337.7	2+	0.0	0+	Q	
345.0 5	3.0 8	4386.2		4041.2			
423.6 3	1.0 5	2419.8	7−	1996.2	5−		
438.6‡ 3	<10.0	1366.9	(3+)	928.3	2+		Iγ: from value of 10.0 12 for a composite peak of 438.6γ+438.7γ.
438.7‡ 3	<10.0	3256.2	(10+)	2817.5	10+		Iγ: from value of 10.0 12 for a composite peak of 438.6γ+438.7γ.
457.0 3	1.5 6	2998.2		2541.2	(5,6+)		
473.1 3	97 3	810.8	4+	337.7	2+	Q	
500.5 3	9.0 12	2920.3	9−	2419.8	7−	Q	
513.3‡# 5		1441.6	4+	928.3	2+		
515.0 5	8.0 11	3722.2		3207.2	(9−)		
538.0# 5		3536.2		2998.2			
545.0# 5		2541.2	(5,6+)	1996.2	5−		
556.0 5	<7	1922.9	(5+)	1366.9	(3+)		Iγ: from value of 7 1 for a composite peak of 556.0γ+556.5γ.
556.5 5	<7	1998.1	6+	1441.6	4+		Iγ: from value of 7 1 for a composite peak of 556.0γ+556.5γ.
586.9 3	84 3	1397.7	6+	810.8	4+	Q	
590.6 5	<11.0	928.3	2+	337.7	2+		Iγ: from value of 11.0 18 for a composite peak of 590.6γ+592.0γ.

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(HI,xnγ) 1990Mo07,1991Ju03 (continued)

γ(^{118}Xe) (continued)

E_γ[†]	I_γ[†b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	Comments
592.0 *5*	<11.0	3848.2	(12$^+$)	3256.2	(10$^+$)		I_γ: from value of 11.0 *18* for a composite peak of 590.6γ+592.0γ.
600.4[‡] *3*	4.0 *9*	1998.1	6$^+$	1397.7	6$^+$	Q	
622.6[‡] *3*	15.0 *14*	3542.9	11$^-$	2920.3	9$^-$	Q	
627.6 *5*	6 *1*	2625.7	(8$^+$)	1998.1	6$^+$		
630.6 *5*	<16.0	3256.2	(10$^+$)	2625.7	(8$^+$)		I_γ: from value of 16.0 *15* for a composite peak of 630.8γ+630.6γ.
630.8 *5*	<16.0	1441.6	4$^+$	810.8	4$^+$		I_γ: from value of 16.0 *15* for a composite peak of 630.8γ+630.6γ.
637.7[d] *3*	<8.0[d]	2560.6	(7$^+$)	1922.9	(5$^+$)		
637.7[d] *3*	<8.0[d]	4173.9?		3536.2			
664.0 *5*	5.0 *9*	4386.2		3722.2			
676.9 *3*	56 *2*	2074.6	8$^+$	1397.7	6$^+$	Q	
680.0[#] *5*		3240.6	(9)	2560.6	(7$^+$)		
692.3 *3*	3.0 *8*	4540.5	(14$^+$)	3848.2	(12$^+$)	(Q)	
719.6 *3*	7.0 *11*	4262.5	(13$^-$)	3542.9	11$^-$	Q	
725.4 *5*	1.0 *5*	3542.9	11$^-$	2817.5	10$^+$		
737.1[‡] *3*	2.0 *7*	4911.0?		4173.9?			
742.9 *2*	24.0 *17*	2817.5	10$^+$	2074.6	8$^+$	Q	
[x]765[@]							
775.8[d] *3*	<13[d]	3593.3	12$^+$	2817.5	10$^+$	(Q)	
775.8[d] *3*	<13[d]	4369.1	14$^+$	3593.3	12$^+$	(Q)	
787.8 *3*	3.0 *8*	5156.9	(16$^+$)	4369.1	14$^+$	Q	
796.6 *3*	4.0 *9*	5059.1	(15$^-$)	4262.5	(13$^-$)		
[x]812[@]							
815.3 *3*	1.0 *5*	5355.8		4540.5	(14$^+$)		
845.7 *5*	19.5 *22*	2920.3	9$^-$	2074.6	8$^+$	E1	I_γ: from I(845.7γ+847.0γ)=21.0 *16* and I(847.0γ)<3.0. Mult.: from γ(θ) and value of Iγ(150°)/Iγ(80°) for the composite peak of 845.7γ and 847.0γ. These values are considered on the basis of intensities of both γ′s to be mainly due to the 845.7γ.
847.0 *4*	<3.0	6003.9	(18$^+$)	5156.9	(16$^+$)		I_γ: assumed from intensity of 787.8γ from the 5157 level.
860[a]		7672.1?	(21$^-$)	6812.1?	(19$^-$)		
867.0 *3*	2.0 *7*	5926.1	(17$^-$)	5059.1	(15$^-$)		
886[a]		6812.1?	(19$^-$)	5926.1	(17$^-$)		
923.8[e] *3*	2.0 *7*	2998.2		2074.6	8$^+$		
928.1[#e] *3*		928.3	2$^+$	0.0	0$^+$		
931.4[&] *5*		6935.3	(20$^+$)	6003.9	(18$^+$)		
1022.1 *3*	14.0 *14*	2419.8	7$^-$	1397.7	6$^+$	D	
1023.0[&] *5*		7958.3	(22$^+$)	6935.3	(20$^+$)		
1029.2 *5*	1.0 *5*	1366.9	(3$^+$)	337.7	2$^+$		
1103.9 *3*	1.0 *5*	1441.6	4$^+$	337.7	2$^+$		
1112.1 *5*	1.0 *5*	1922.9	(5$^+$)	810.8	4$^+$		
1114.7[&] *5*		9073.0	(24$^+$)	7958.3	(22$^+$)		
1132.6 *3*	3.0 *8*	3207.2	(9$^-$)	2074.6	8$^+$	D	
1143.5 *3*	3.0 *8*	2541.2	(5,6$^+$)	1397.7	6$^+$	(D)	
1162.9 *3*	<1	2560.6	(7$^+$)	1397.7	6$^+$		
1185.4 *5*	4.0 *9*	1996.2	5$^-$	810.8	4$^+$	D	
1187.3 *5*	<1	3261.9		2074.6	8$^+$		
1198.2[&] *5*		10271.3	(26$^+$)	9073.0	(24$^+$)		
1261.5[&] *5*		12816.3	(30$^+$)	11554.8	(28$^+$)		

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(HI,xnγ) 1990Mo07,1991Ju03 (continued)

$\gamma(^{118}Xe)$ (continued)

E_γ [†]	E_i(level)	J_i^π	E_f	J_f^π
1271.9[&] *5*	14088.2	(32^+)	12816.3	(30^+)
1283.5[&] *5*	11554.8	(28^+)	10271.3	(26^+)
1312.0[&] *5*	15400.2	(34^+)	14088.2	(32^+)

† From 1990Mo07, unless otherwise noted.
‡ Contained impurities from other reactions (1990Mo07).
# No intensity was given by authors.
@ From 1984Ke06.
& From 1991Ju03. Uncertainty of 0.5 keV assigned by evaluator. No intensity was given by authors.
a From 1985JaZY. No intensity was given by authors.
b Uncertainty given by evaluator based on the note in 1990Mo07.
c From A_2 and A_4, and value of $I\gamma(150°)/I\gamma(80°)$.
d Multiply placed with undivided intensity.
e Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

(HI,xnγ) 1990Mo07,1991Ju03

Level Scheme

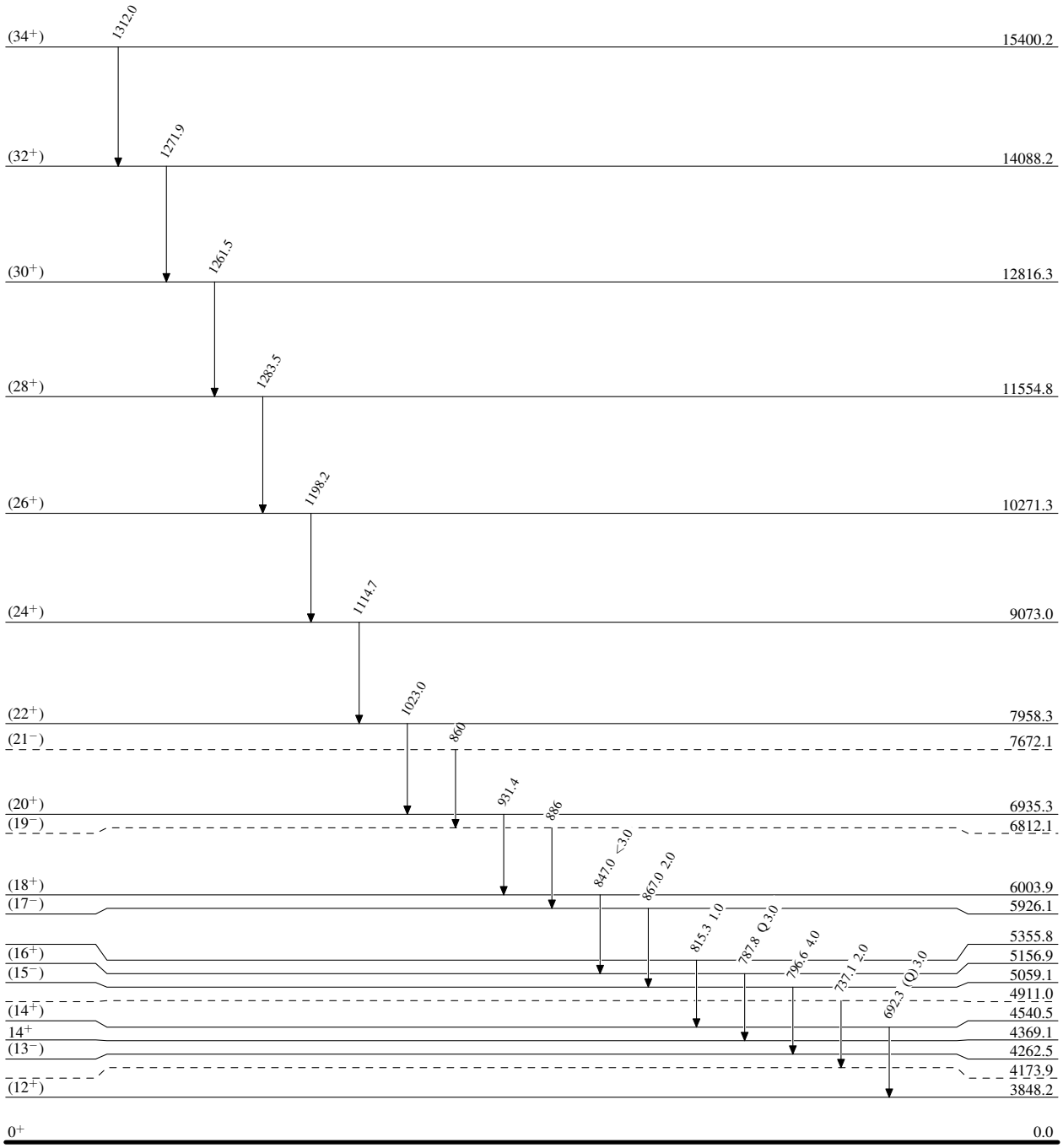
Intensities: Relative I_γ

Legend

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

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

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

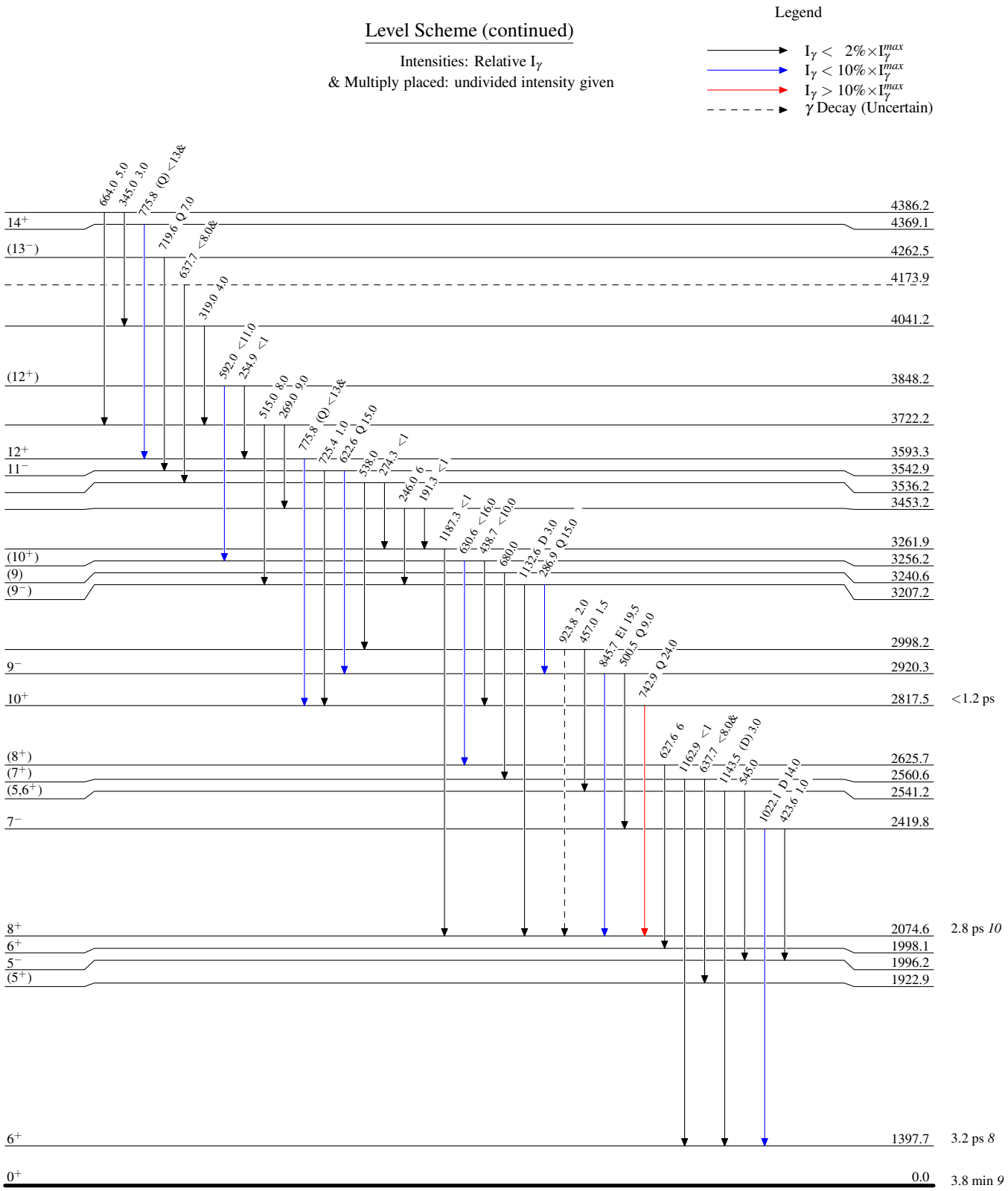


$^{118}_{54}Xe_{64}$

(HI,xnγ) 1990Mo07,1991Ju03

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

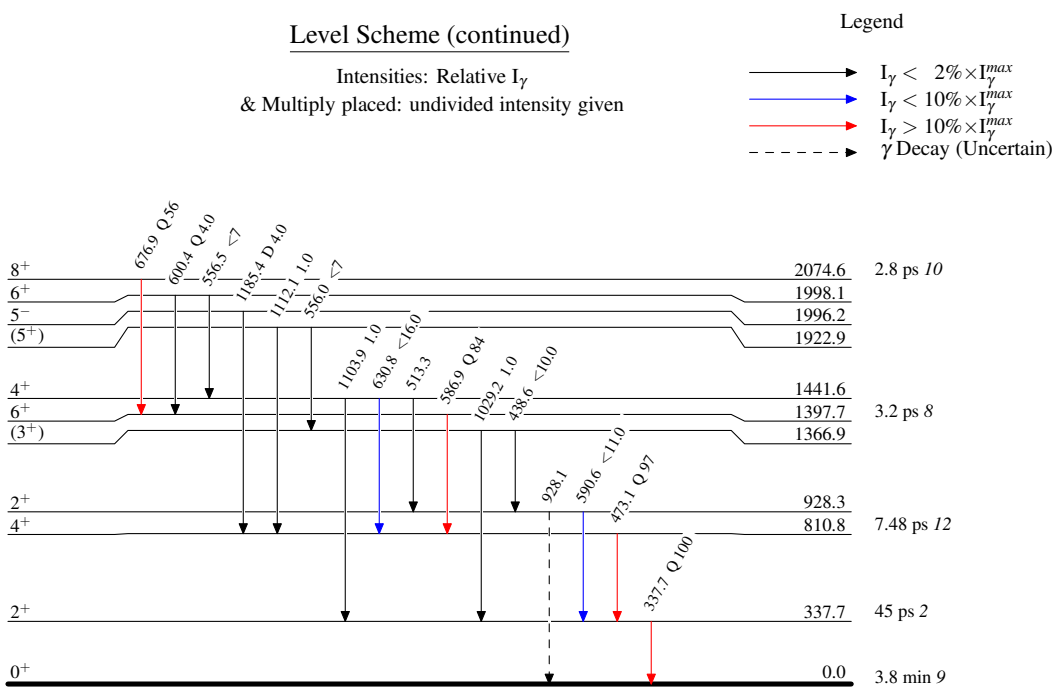


$^{118}_{54}Xe_{64}$

(HI,xnγ) 1990Mo07,1991Ju03

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given



$^{118}_{54}Xe_{64}$