(HI,xnγ) 2013Ma84,2000Ti01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	H. Iimura, J. Katakura, S. Ohya	NDS 180, 1 (2022)	1-Oct-2021

2013Ma84: ^{116}Sn(^{14}N,4nγ) E=77 MeV, γγ, DCO.
2000Ti01: ^{116}Sn(^{14}N,4nγ); E=68 MeV, γγ, γce.
1989Ny01: ^{111}Cd(^{19}F,4nγ); E(^{19}F)=90 MeV. ^{93}Nb(^{37}Cl,p3nγ); E(^{37}Cl)=155 MeV. γγ, γX, 4π BaF_2 counter. Iγ were not given. Others: 1986Qu01: ^{112}Sn(^{16}O,pnγ), E=72, 137 MeV. γγ, γX, γγ(t), γ(θ).

^{126}La Levels

E(level)[b]	J$^{\pi}$[c]	Comments
0.0+x‡	(7$^+$)	Additional information 1.
0.0+y&	(4$^-$)	Additional information 2.
70.56+x† *24*	(8$^+$)	
81.9+y& *8*	(5$^-$)	
147.1+y[a] *9*	(5$^-$)	
186.14+x‡ *24*	(9$^+$)	
210.0+y& *8*	(6$^-$)	
323.0+x† *3*	(10$^+$)	
388.8+y& *9*	(7$^-$)	
454.1+y[a] *9*	(7$^-$)	
553.6+x‡ *3*	(11$^+$)	
612.1+y& *9*	(8$^-$)	
764.5+x† *3*	(12$^+$)	
872.3+y& *10*	(9$^-$)	
932.4+y[a] *10*	(9$^-$)	
1081.7+x# *4*	(10$^+$)	
1094.6+x‡ *4*	(13$^+$)	
1180.8+y& *10*	(10$^-$)	
1318.6+x@ *4*	(11$^+$)	
1379.7+x† *4*	(14$^+$)	
1472.2+x# *3*	(12$^+$)	
1508.7+y& *12*	(11$^-$)	
1562.6+y[a] *12*	(11$^-$)	
1791.4+x‡ *4*	(15$^+$)	
1811.5+x@ *4*	(13$^+$)	
1884.5+y& *12*	(12$^-$)	
2040.8+x# *4*	(14$^+$)	
2149.7+x† *4*	(16$^+$)	
2272.2+y& *13*	(13$^-$)	
2316.6+y[a] *16*	(13$^-$)	
2407.8+x@ *4*	(15$^+$)	
2627.2+x‡ *4*	(17$^+$)	
2678.3+y& *14*	(14$^-$)	
2716.3+x# *4*	(16$^+$)	
3059.8+x† *5*	(18$^+$)	
3100.2+y& *17*		

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(HI,xnγ) 2013Ma84,2000Ti01 (continued)

^{126}La Levels (continued)

E(level)[b]	Jπ[c]	E(level)[b]	Jπ[c]	E(level)[b]	Jπ[c]
3120.3+x[@] 5	(17+)	3502.3+y[&] 18		4653.2+x[‡] 5	(21+)
3174.6+y?[a] 19		3585.3+x[‡] 5	(19+)	5245.9+x[†] 6	(22+)
3498.9+x[#] 5	(18+)	4094.1+x[†] 5	(20+)	5811.3+x?[‡] 12	
				6481.9+x?[†] 12	

† Band(A): band 1, Configuration=((π $h_{11/2}$)(ν $h_{11/2}$)), signature partner of band 2.
‡ Band(a): band 2, Configuration=((π $h_{11/2}$)(ν $h_{11/2}$)), signature partner of band 1.
# Band(B): band 3, Configuration=((π $h_{11/2}$)(ν $h_{11/2}$)), signature partner of band 4.
@ Band(b): band 4, Configuration=((π $h_{11/2}$)(ν $h_{11/2}$)), signature partner of band 3.
& Band(C): band 5, Configuration=((π $h_{11/2}$)(ν $d_{5/2}$)+(π $h_{11/2}$)(ν $g_{7/2}$)).
a Band(D): band 6.
b From a least-squares fit to Eγ's by evaluators, assuming ΔEγ=0.3 keV for 2013Ma84 and ΔEγ=1 keV for others.
c JPI of bands 1-4 are from 2013Ma34 based on band structure, DCO values and systematics. JPI of bands 5 and 6 are from 2000Ti01 based on band structure and cranked shell model calculation. For bands 1 and 2, 2000Ti01 suggested the spins lower by two units.

γ(^{126}La)

DCO(D+Q) ratios are for gates on ΔJ=1, D+Q transitions. DCO(Q) ratios are for gates on ΔJ=2, Q transitions.

Eγ[†]	Iγ[@]	Ei(level)	J^π_i	E_f	J^π_f	Mult.[&]	Comments
70.5		70.56+x	(8+)	0.0+x	(7+)	M1	
82[‡]		81.9+y	(5−)	0.0+y	(4−)	M1+E2	
115.5	32 3	186.14+x	(9+)	70.56+x	(8+)	M1	DCO(D+Q)=0.87 18
128[‡]		210.0+y	(6−)	81.9+y	(5−)	M1	
136.7	76 6	323.0+x	(10+)	186.14+x	(9+)	M1	DCO(D+Q)=0.92 22
147[‡]		147.1+y	(5−)	0.0+y	(4−)		
153.5	0.7 2	1472.2+x	(12+)	1318.6+x	(11+)	D+Q[a]	DCO(D+Q)=1.0 4
158[‡]		612.1+y	(8−)	454.1+y	(7−)		
179[‡]		388.8+y	(7−)	210.0+y	(6−)	M1,E2	
186.2	2.1 6	186.14+x	(9+)	0.0+x	(7+)	Q[a]	DCO(D+Q)=1.7 4
210[#]		210.0+y	(6−)	0.0+y	(4−)		
211.0	78 7	764.5+x	(12+)	553.6+x	(11+)	M1,E2	DCO(D+Q)=1.07 21
223[‡]		612.1+y	(8−)	388.8+y	(7−)	M1,E2	
229.3	3.1 11	2040.8+x	(14+)	1811.5+x	(13+)	D+Q[a]	DCO(D+Q)=1.1 5
230.7	100.0 23	553.6+x	(11+)	323.0+x	(10+)	M1,E2	DCO(D+Q)=1.03 21
237.0		1318.6+x	(11+)	1081.7+x	(10+)		
244[‡]		454.1+y	(7−)	210.0+y	(6−)		
248[‡]		1180.8+y	(10−)	932.4+y	(9−)		
252.5	17 4	323.0+x	(10+)	70.56+x	(8+)	Q[a]	DCO(D+Q)=1.7 5
260[‡]		872.3+y	(9−)	612.1+y	(8−)		
285.0	30 3	1379.7+x	(14+)	1094.6+x	(13+)	M1,E2	DCO(D+Q)=1.01 20
307[‡]		388.8+y	(7−)	81.9+y	(5−)		
307[‡]		454.1+y	(7−)	147.1+y	(5−)		
308.5	1.5 5	2716.3+x	(16+)	2407.8+x	(15+)		

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(HI,xnγ) 2013Ma84,2000Ti01 (continued)

γ(^{126}La) (continued)

E_γ[†]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	Comments
309[‡]		1180.8+y	(10$^-$)	872.3+y	(9$^-$)		
320[‡]		932.4+y	(9$^-$)	612.1+y	(8$^-$)		
328[‡]		1508.7+y	(11$^-$)	1180.8+y	(10$^-$)		
330.2	57 *5*	1094.6+x	(13$^+$)	764.5+x	(12$^+$)	M1,E2	DCO(D+Q)=0.92 *18*
339.4	4.8 *13*	1811.5+x	(13$^+$)	1472.2+x	(12$^+$)	D+Q[a]	DCO(D+Q)=1.1 *4*; DCO(Q)=0.55 *13*
358.2	8 *3*	2149.7+x	(16$^+$)	1791.4+x	(15$^+$)	D+Q[a]	DCO(D+Q)=1.05 *21*
367.0	3.5 *11*	2407.8+x	(15$^+$)	2040.8+x	(14$^+$)		
367.6	23.1 *21*	553.6+x	(11$^+$)	186.14+x	(9$^+$)	Q[a]	DCO(D+Q)=1.7 *4*
376[‡]		1884.5+y	(12$^-$)	1508.7+y	(11$^-$)		
382[‡]		1562.6+y	(11$^-$)	1180.8+y	(10$^-$)		
388[‡]		2272.2+y	(13$^-$)	1884.5+y	(12$^-$)		
390.5	2.1 *8*	1472.2+x	(12$^+$)	1081.7+x	(10$^+$)		
402[‡]		612.1+y	(8$^-$)	210.0+y	(6$^-$)		
406[#]		2678.3+y	(14$^-$)	2272.2+y	(13$^-$)		
411.7	30 *4*	1791.4+x	(15$^+$)	1379.7+x	(14$^+$)	D+Q[a]	DCO(D+Q)=0.96 *19*
432.5	2.1 *11*	3059.8+x	(18$^+$)	2627.2+x	(17$^+$)	D+Q[a]	DCO(D+Q)=1.08 *18*
441[‡]	53 *5*	764.5+x	(12$^+$)	323.0+x	(10$^+$)	Q[a]	DCO(D+Q)=1.7 *3* E_γ: 411.8 in 2013Ma84 is a typo. The authors′ placement requires Eγ=441.5.
477.5	11 *3*	2627.2+x	(17$^+$)	2149.7+x	(16$^+$)	D+Q[a]	DCO(D+Q)=0.95 *22*
478[‡]		932.4+y	(9$^-$)	454.1+y	(7$^-$)		
484[‡]		872.3+y	(9$^-$)	388.8+y	(7$^-$)		
493.0	4.3 *14*	1811.5+x	(13$^+$)	1318.6+x	(11$^+$)	Q[a]	DCO(D+Q)=1.8 *5*
509.0		4094.1+x	(20$^+$)	3585.3+x	(19$^+$)		
525.5	4.1 *12*	3585.3+x	(19$^+$)	3059.8+x	(18$^+$)	D+Q[a]	DCO(D+Q)=0.9 *3*
541.0	34 *7*	1094.6+x	(13$^+$)	553.6+x	(11$^+$)	Q[a]	DCO(D+Q)=1.6 *4*
559.0		4653.2+x	(21$^+$)	4094.1+x	(20$^+$)		
568.5	9 *3*	2040.8+x	(14$^+$)	1472.2+x	(12$^+$)	Q[a]	DCO(D+Q)=1.8 *6*; DCO(Q)=1.03 *19*
569[‡]		1180.8+y	(10$^-$)	612.1+y	(8$^-$)		
592.5		5245.9+x	(22$^+$)	4653.2+x	(21$^+$)		
596.5	5.7 *19*	2407.8+x	(15$^+$)	1811.5+x	(13$^+$)	Q[a]	DCO(D+Q)=1.8 *6*
615.2	67 *8*	1379.7+x	(14$^+$)	764.5+x	(12$^+$)	Q[a]	DCO(Q)=1.7 *4*
630[‡]		1562.6+y	(11$^-$)	932.4+y	(9$^-$)		
636[‡]		1508.7+y	(11$^-$)	872.3+y	(9$^-$)		
661.2	1.8 *7*	2040.8+x	(14$^+$)	1379.7+x	(14$^+$)	D+Q[a]	DCO(D+Q)=0.9 *4*
675.5	4.1 *14*	2716.3+x	(16$^+$)	2040.8+x	(14$^+$)		
696.8	51 *6*	1791.4+x	(15$^+$)	1094.6+x	(13$^+$)	Q[a]	DCO(D+Q)=1.7 *5*
704[‡]		1884.5+y	(12$^-$)	1180.8+y	(10$^-$)		
707.5	1.4 *4*	1472.2+x	(12$^+$)	764.5+x	(12$^+$)	D+Q[a]	DCO(D+Q)=0.98 *23*
712.5		3120.3+x	(17$^+$)	2407.8+x	(15$^+$)		
754[‡]		2316.6+y	(13$^-$)	1562.6+y	(11$^-$)		
763[‡]		2272.2+y	(13$^-$)	1508.7+y	(11$^-$)		
770.0	38 *5*	2149.7+x	(16$^+$)	1379.7+x	(14$^+$)	Q[a]	DCO(D+Q)=1.8 *6*
782.5	7.8 *25*	3498.9+x	(18$^+$)	2716.3+x	(16$^+$)	Q[a]	DCO(D+Q)=1.7 *6*
794[‡]		2678.3+y	(14$^-$)	1884.5+y	(12$^-$)		
824[#]		3502.3+y		2678.3+y	(14$^-$)		
828[#]		3100.2+y		2272.2+y	(13$^-$)		
836.0	28 *4*	2627.2+x	(17$^+$)	1791.4+x	(15$^+$)	Q[a]	DCO(D+Q)=1.7 *4*
858[#b]		3174.6+y?		2316.6+y	(13$^-$)		
895.6		1081.7+x	(10$^+$)	186.14+x	(9$^+$)		
910.0	24 *3*	3059.8+x	(18$^+$)	2149.7+x	(16$^+$)	Q[a]	DCO(D+Q)=1.6 *4*

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(HI,xnγ) 2013Ma84,2000Ti01 (continued)

$\gamma(^{126}La)$ (continued)

E_γ [†]	I_γ [@]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [&]	Comments
918.5	4.8 *16*	1472.2+x	(12^+)	553.6+x	(11^+)	D+Q[a]	DCO(D+Q)=1.04 *17*; DCO(Q)=0.56 *9*
925.0	1.6 *5*	2716.3+x	(16^+)	1791.4+x	(15^+)		
946.2	4.3 *15*	2040.8+x	(14^+)	1094.6+x	(13^+)	D+Q[a]	DCO(D+Q)=1.02 *19*; DCO(Q)=0.57 *8*
958.2	15 *4*	3585.3+x	(19^+)	2627.2+x	(17^+)	Q[a]	DCO(D+Q)=1.7 *4*
995.6	2.3 *8*	1318.6+x	(11^+)	323.0+x	(10^+)	D+Q[a]	DCO(D+Q)=1.07 *23*; DCO(Q)=0.63 *11*
1028.0		2407.8+x	(15^+)	1379.7+x	(14^+)		
1034.0	15 *5*	4094.1+x	(20^+)	3059.8+x	(18^+)	Q[a]	DCO(D+Q)=1.8 *4*
1047.0	3.5 *12*	1811.5+x	(13^+)	764.5+x	(12^+)	D+Q[a]	DCO(D+Q)=1.12 *25*
1068.0	5.8 *21*	4653.2+x	(21^+)	3585.3+x	(19^+)	Q[a]	DCO(D+Q)=1.6 *5*
1149.2	2.2 *7*	1472.2+x	(12^+)	323.0+x	(10^+)	Q[a]	DCO(D+Q)=1.7 *5*; DCO(Q)=0.98 *15*
1152.0	7.2 *25*	5245.9+x	(22^+)	4094.1+x	(20^+)	Q[a]	DCO(D+Q)=1.6 *4*
1158[#b]		5811.3+x?		4653.2+x	(21^+)		
1236[#b]		6481.9+x?		5245.9+x	(22^+)		
1258.0	2.3 *8*	1811.5+x	(13^+)	553.6+x	(11^+)	Q[a]	DCO(D+Q)=1.8 *4*
1276.3	3.1 *11*	2040.8+x	(14^+)	764.5+x	(12^+)	Q[a]	DCO(D+Q)=1.8 *4*; DCO(Q)=1.06 *16*

[†] From 2013Ma84 unless otherwise noted.
[‡] From 2000Ti01.
[#] From 1989Ny01.
[@] From 2013Ma84.
[&] From the plots of α(K)exp and K/L ratios unless otherwise noted. Numerical values are not listed (2000Ti01).
[a] From DCO (2013Ma84).
[b] Placement of transition in the level scheme is uncertain.

(HI,xnγ) 2013Ma84,2000Ti01

Level Scheme

Intensities: Relative I_γ

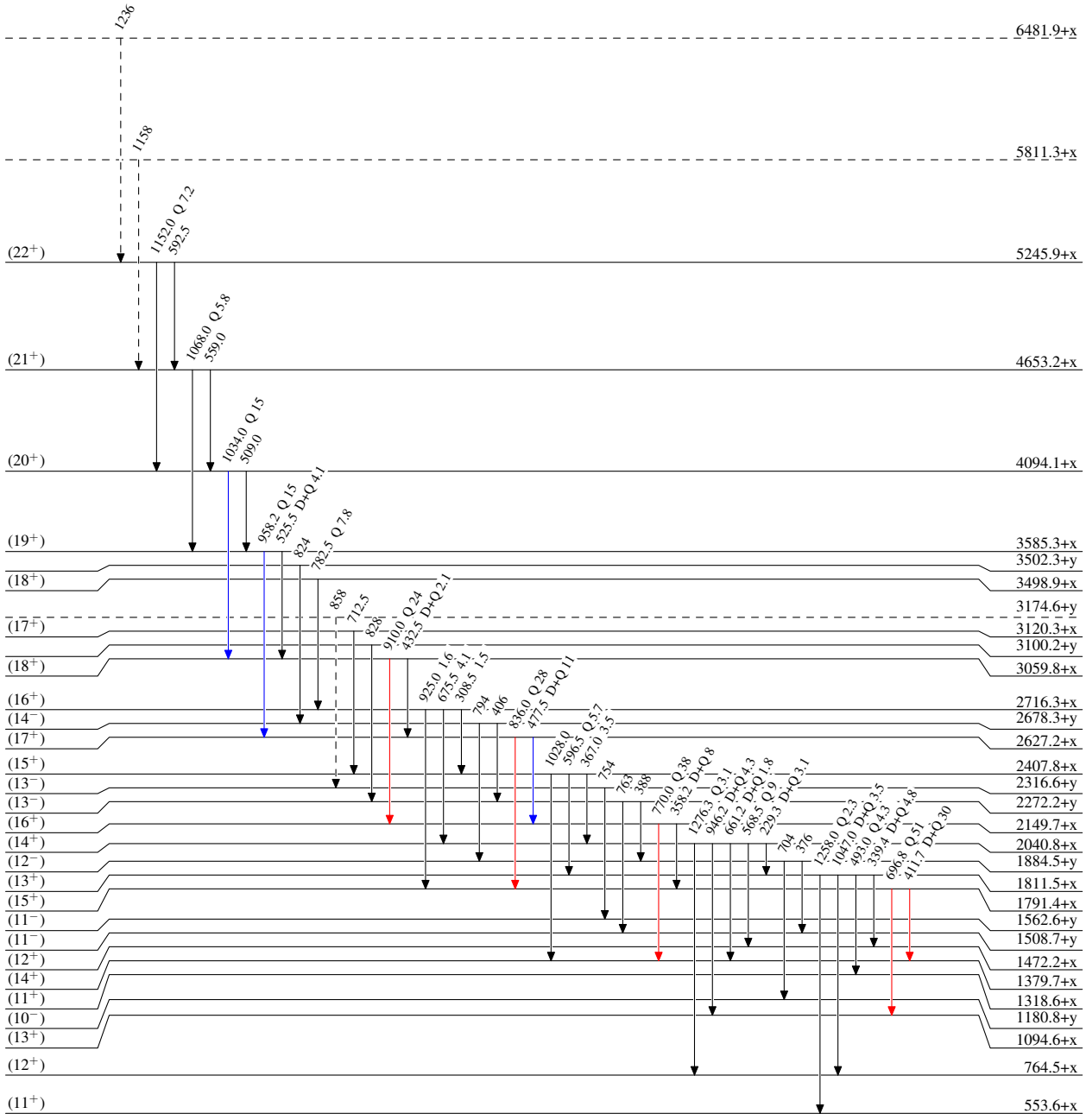
Legend

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

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

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

γ Decay (Uncertain)



$^{126}_{57}La_{69}$

(HI,xnγ) 2013Ma84,2000Ti01

Level Scheme (continued)

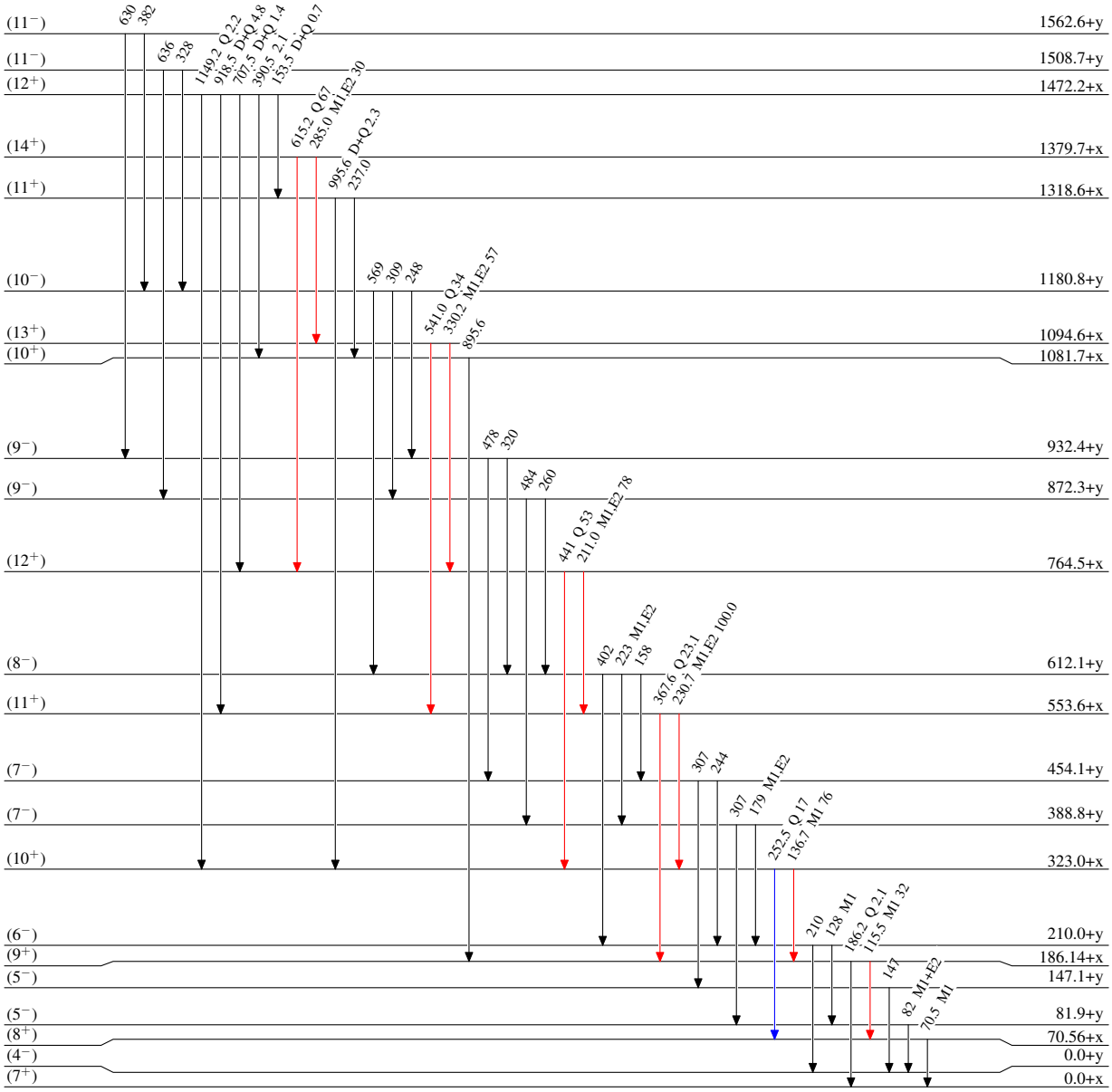
Intensities: Relative I_γ

Legend

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

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

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



$^{126}_{57}La_{69}$

(HI,xnγ) 2013Ma84,2000Ti01