(HI,xnγ) 1991Al15,1990Ma14,1994La35

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong and Kang Mengxiao	NDS 133, 221 (2016)	1-Dec-2015

1994La35: ^{183}W(^{20}Ne,5nγ), E=115 MeV; measured Eγ, Iγ, γγ-coin, γ(t), γγ(θ).
1991Al15: ^{183}W(^{20}Ne,5nγ), E=115 MeV; measured Eγ, Iγ, γγ-coin and γ(t).
1990Ma14: ^{182}W(^{20}Ne,4nγ), E=101-111 MeV pulsed beam; Enriched targets: ^{182}W, self-supported 50 mg/cm^2 thick; Detectors: array of Ge detectors; measured Eγ, Iγ, γ(t), γ(θ), γγ(t), and I(ce); Deduced: $T_{1/2}$, level scheme.
1986Ma31: ^{182}W(^{20}Ne,4nγ), E=105-112 MeV; measured Eγ, Iγ, γγ coin, and γ(t).

^{198}Po Levels

All data are from 1990Ma14, except as noted. Some preliminary data of these authors are reported in 1986Ma31. The g factors are not corrected for Knight shift or for diamagnetic shielding.
E(B),J(C) From 1994La35.

E(level)[‡]	Jπ[#]	$T_{1/2}$[@]	Comments
0.0[†&b]	0+[†]		
604.94[&b] *10*	2+		
1039.13[ab] *14*	2+[b]		
1158.39[&b] *13*	4+		
1483.35[ab] *16*	4+[b]		
1717.56[&b] *16*	6+		
1808.41[b] *15*	5−		
1853.63[b] *18*	8+	29 ns *2*	g=+0.91 *3* from 1986Ma31 using time dependent perturbed angular distribution technique.
1874.95 *18*	(6+)		
2114.32[b] *17*	7−		
2287.60 *24*	8−		
2324.73[b] *18*	9−		
2344.6 *3*	(8+)		
2565.92[b] *20*	11−	200 ns *20*	g=+1.10 *5* from 1986Ma31 using time dependent perturbed angular distribution technique.
2620.50 *21*	(8+)		
2641.33 *22*	9−		
2691.86 *20*	10+		
2813.1 *3*	10−		
2900.43 *20*	11−		
2963.8 *4*			
3010.2 *4*	(10+)		
3174.5 *3*	(11−)		
3308.6 *4*	12−		
3465.3 *3*	13−		
3646.1 *3*	(13−)		
3801.9 *4*			
3868.4 *4*	14−		
4052.2 *5*			
4086.4 *4*	(15−)		
4322.1 *5*	(16−)		
4521.0 *4*			
4596.0 *5*			
2691.86+x *20*	12+	0.75 μs *5*	Additional information 1. g=−0.155 *3* from 1986Ma31 using time dependent perturbed angular distribution technique. $T_{1/2}$: Other: ≈750 ns (1994La35).

Continued on next page (footnotes at end of table)

(HI,xnγ) 1991Al15,1990Ma14,1994La35 (continued)

^{198}Po Levels (continued)

E(level)[‡]	Jπ[#]	Comments
		E(level): x is unknown energy of 12^+ to 10^+ transition.
3149.81+x? *18*		
3241.36+x *10*	14^+	
3444.4+x *3*		
3579.24+x *20*		
3782.95+x *14*	16^+	
3984.76+x *23*		
4010.62+x *18*	16^+	
4391.80+x *23*	17	
4407.65+x *25*	18^+	
4662.1+x *3*		
5113.2+x *4*		

[†] From Adopted Levels.
[‡] From level scheme and Eγ′s by using least-squares fit to Eγ.
[#] Based on deduced transition multipolarities using γ(θ) in 1990Ma14, except as noted.
[@] From γ(t) measurements in 1990Ma14.
[&] Band(A): quadrupole collective band. Members of the band: 0^+ to 6^+.
[a] Band(B): Oblate collective band. Members of the bands: 2^+ to 4^+. percent population <0.3 (1996Mc01).
[b] From 1991Al15.

γ(^{198}Po)

All data are from 1990Ma14, except as noted.

Eγ	Iγ[b]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[c]	α[d]	Comments
126.0 *2*	24 *3*	2691.86	10^+	2565.92	11^-	E1	0.256	Iγ(0°)/Iγ(90°)=0.7 *1*.
136.1[&] *2*	21 *3*	1853.63	8^+	1717.56	6^+	E2	2.01	Iγ(0°)/Iγ(90°)=1.3 *2*.
173.2[†] *2*	4.1[‡] *5*	2287.60	8^-	2114.32	7^-			
210.4[&] *1*	15 *1*	2324.73	9^-	2114.32	7^-	E2	0.395	Iγ(0°)/Iγ(90°)=1.25 *15*.
227.8[†] *3*	4[@] *1*	4010.62+x	16^+	3782.95+x	16^+			
239.3 *2*	5 *1*	2114.32	7^-	1874.95	(6^+)	E1	0.0532	Iγ(0°)/Iγ(90°)<1.
241.2[&] *2*	2.1 *3*	2565.92	11^-	2324.73	9^-	E2	0.250	I_γ: From Iγ(241.2γ)/Iγ(712.3γ)=0.075 *10* measured in coin with 126γ. Singles value is 3 *1*. Iγ(0°)/Iγ(90°)>1.
270.3[†] *2*	7[@] *1*	4662.1+x		4391.80+x	17			
273.9[†] *2*	2.0[‡] *8*	4596.0		4322.1	(16^-)			
305.9[&] *1*	18 *1*	2114.32	7^-	1808.41	5^-	E2	0.1189	Iγ(0°)/Iγ(90°)=1.28 *10*.
316.6[†] *2*	<1[‡]	2641.33	9^-	2324.73	9^-			
324.7[†] *2*	4[#] *1*	1483.35	4^+	1158.39	4^+			
324.7[†] *2*	4[#] *1*	1808.41	5^-	1483.35	4^+			
336.6[†] *2*	1.1[‡] *5*	3801.9		3465.3	13^-			
337.8[†] *2*	10[@] *2*	3579.24+x		3241.36+x	14^+			
367.1 *1*	17 *2*	2691.86	10^+	2324.73	9^-	E1	0.0199	Iγ(0°)/Iγ(90°)=0.95 *2*.
381.2[†] *2*	24[@] *3*	4391.80+x	17	4010.62+x	16^+			

Continued on next page (footnotes at end of table)

(HI,xnγ) 1991Al15,1990Ma14,1994La35 (continued)

γ(^{198}Po) (continued)

Eγ	Iγ[b]	Ei(level)	J^π_i	Ef	J^π_f	Mult.[c]	α[d]	Comments
391.5[†] 2	<1[‡]	1874.95	(6+)	1483.35	4+			
396.8[&] 3	4 2	2114.32	7−	1717.56	6+	E1	0.01676	Iγ(0°)/Iγ(90°)=0.73 15.
406.1[†] 3	2.0[‡] 7	4052.2		3646.1	(13−)			
429.7[†e] 3	[a]	3579.24+x		3149.81+x?				
431.2[†] 3	10[@] 2	4010.62+x	16+	3579.24+x				
434.2[†] 2	2.7[#] 6	1039.13	2+	604.94	2+			
434.6[†] 2	3.1[‡] 7	4521.0		4086.4	(15−)			
444.0[†] 2	4.2[#] 7	1483.35	4+	1039.13	2+			
453.7[†] 2	2.6[‡] 5	4322.1	(16−)	3868.4	14−			
457.8[†e] 2	[a]	3149.81+x?		2691.86+x	12+			
471.1[&] 1	18 1	2324.73	9−	1853.63	8+	E1	0.01162	Iγ(0°)/Iγ(90°)=0.80 7.
471.6[†] 3	1.3[‡] 5	3646.1	(13−)	3174.5	(11−)			
488.5[†] 3	2.2[‡] 6	2813.1	10−	2324.73	9−			
495.5[†] 2	5.4[‡] 6	3308.6	12−	2813.1	10−			
525.4[†] 2	4.2[‡] 6	2813.1	10−	2287.60	8−			
527.0[†] 2	2.8[‡] 6	2641.33	9−	2114.32	7−			
533.2[†] 2	2.5[‡] 6	3174.5	(11−)	2641.33	9−			
541.6[†] 1	100[@] 9	3782.95+x	16+	3241.36+x	14+			
549.5[†] 1		3241.36+x	14+	2691.86+x	12+			
553.5[&] 1	98 3	1158.39	4+	604.94	2+	E2	0.0253	Iγ(0°)/Iγ(90°)=1.41 5.
559.2[&] 1	72 5	1717.56	6+	1158.39	4+	E2	0.0247	Iγ(0°)/Iγ(90°)=1.33 7.
559.8[†] 2	4.1[‡] 6	3868.4	14−	3308.6	12−			
564.9[†] 2	6.6[‡] 6	3465.3	13−	2900.43	11−	E2	0.0242	Iγ(0°)/Iγ(90°)=1.15 15.
575.7[†] 1	9.3[‡] 8	2900.43	11−	2324.73	9−	(E2)	0.0231	Iγ(0°)/Iγ(90°)=1.1 3.
605.0[&] 1	100 3	604.94	2+	0.0	0+	E2	0.0207	Iγ(0°)/Iγ(90°)=1.37 5.
608.8[†] 3	9[@] 2	4391.80+x	17	3782.95+x	16+			
619.2[†] 3	1.7[‡] 5	2963.8		2344.6	(8+)			
621.1[†] 2	3.5[‡] 6	4086.4	(15−)	3465.3	13−			
624.7[†] 2	29[@] 3	4407.65+x	18+	3782.95+x	16+			
627.0[†] 2	4.7[‡] 5	2344.6	(8+)	1717.56	6+			
650.1[&] 1	20 1	1808.41	5−	1158.39	4+	E1	0.00606	Iγ(0°)/Iγ(90°)=0.75 10.
665.6[†] 3	1.4[‡] 5	3010.2	(10+)	2344.6	(8+)			
705.5[†] 3	13[@] 2	5113.2+x		4407.65+x	18+			
712.3[&] 1	28 1	2565.92	11−	1853.63	8+	E3	0.0396	Iγ(0°)/Iγ(90°)=1.51 6. Mult.: Estimated also from comparison of B(E3)(W.u.) (25) with the value for the $(\pi h_{9/2},i_{13/2})11^-$ to $(\pi h^2_{9/2})8^+$ E3-transition in ^{200}Po (13.5 12) (1986Ma31).
716.6 2	7 1	1874.95	(6+)	1158.39	4+	E2	0.01437	Iγ(0°)/Iγ(90°)=1.28 10.
743.4[†] 2	17[@] 2	3984.76+x		3241.36+x	14+			
745.7[†] 3	1.8[‡] 7	3646.1	(13−)	2900.43	11−			
752.5[†] 3	[a]	3444.4+x		2691.86+x	12+			
766.8 2	4 1	2620.50	(8+)	1853.63	8+	(E2)	0.01249	Iγ(0°)/Iγ(90°)=1.2 2.
769.3[†] 2	30[@] 3	4010.62+x	16+	3241.36+x	14+			
838.3 2	5 1	2691.86	10+	1853.63	8+	E2	0.01042	Iγ(0°)/Iγ(90°)=1.4 2.

Continued on next page (footnotes at end of table)

(HI,xnγ) 1991Al15,1990Ma14,1994La35 (continued)

γ(^{198}Po) (continued)

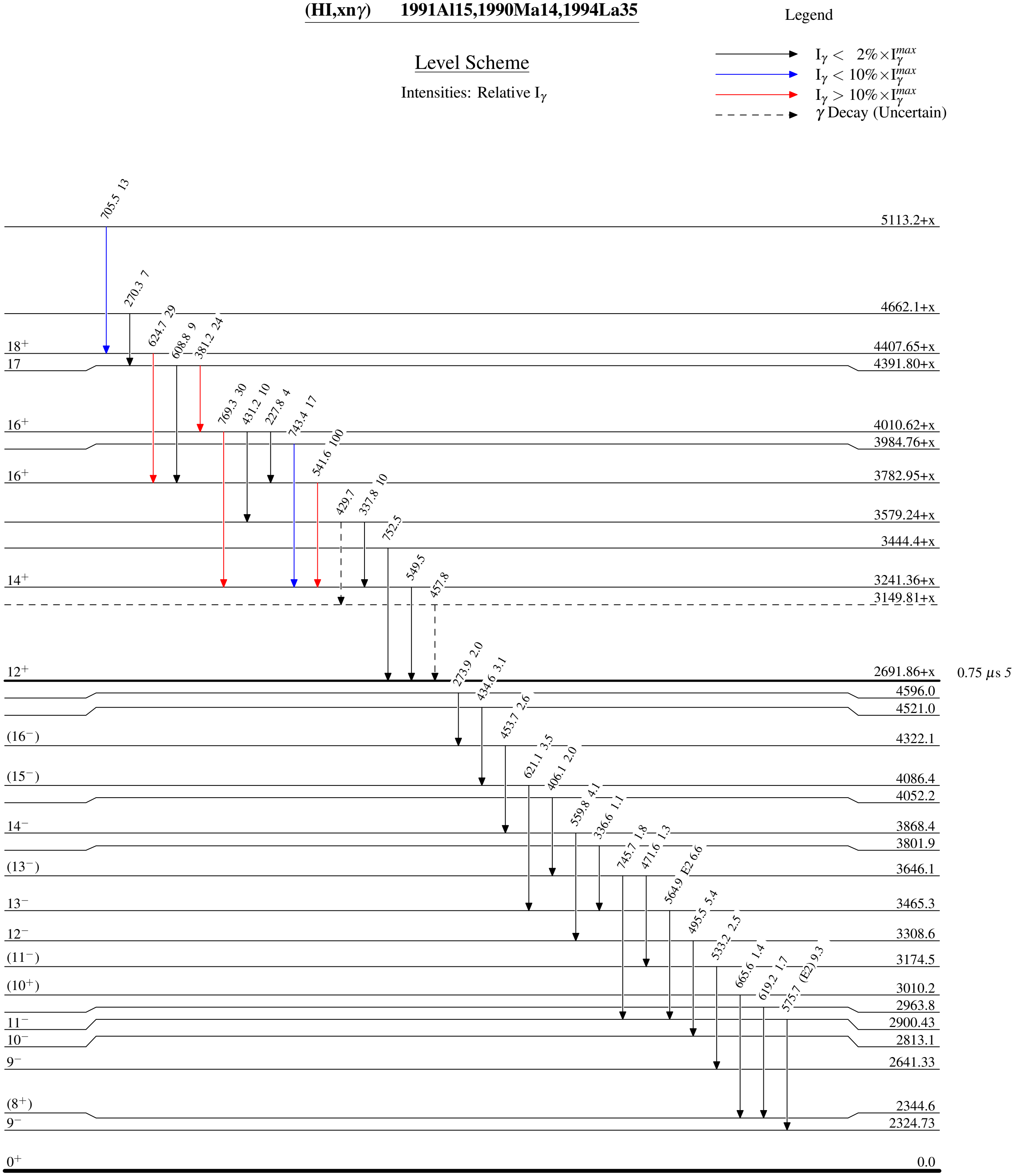
E_γ	I_γ[b]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[c]	α[d]	Comments
903.0 *2*	9 *1*	2620.50	(8^+)	1717.56	6^+	E2	0.00898	Iγ(0°)/Iγ(90°)=1.4 *2*.
1038.9[†] *2*	1.3[#] *6*	1039.13	2^+	0.0	0^+			

[†] From 1994La35.
[‡] From 1994La35. Intensities in coincidence with 553-keV from 4^+ to 2^+ transition.
[#] From 1994La35. Intensities derived from 306 and 444-keV gates.
[@] From 1994La35. Intensities in coincidence with 549-keV from 14^+ to 12^+ transition.
[&] Seen also by 1991Al15.
[a] Weak transition seen in other gates.
[b] Relative intensity normalized to Iγ(605γ)=100 measured at E(lab)=107 MeV in 1990Ma14, except as noted.
[c] Based on γ(θ) in 1990Ma14. For ΔJ=0 or 1 transition, Δπ=yes from level scheme requires E1 not M1; for ΔJ=2 transition, Δπ=no from level scheme requires E2; for ΔJ=3 transition, Δπ=yes from level scheme requires E3.
[d] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[e] Placement of transition in the level scheme is uncertain.

(HI,xnγ) 1991Al15,1990Ma14,1994La35

Level Scheme

Intensities: Relative I_γ

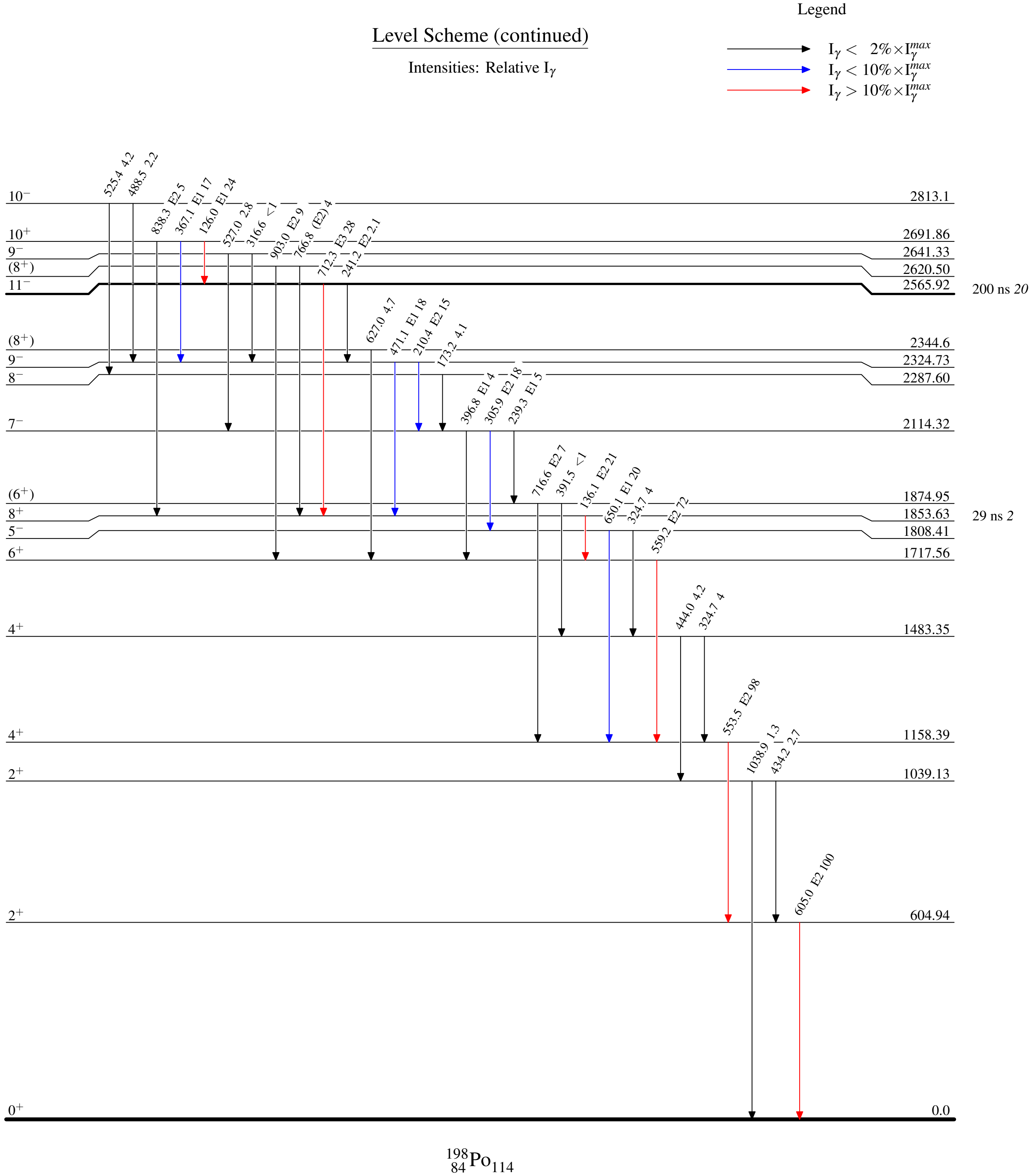


$^{198}_{84}Po_{114}$

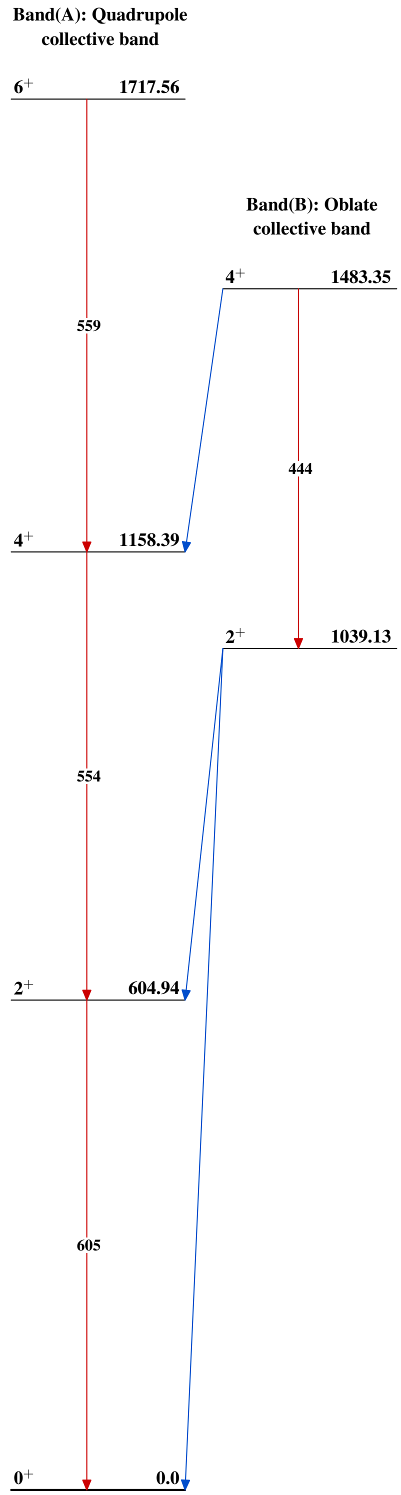
(HI,xnγ) 1991Al15,1990Ma14,1994La35

Level Scheme (continued)

Intensities: Relative I_γ



(HI,xnγ) 1991Al15,1990Ma14,1994La35



$^{198}_{84}Po_{114}$