^{198}Pt(^{9}Be,α3nγ) 1999Go21

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 192,1 (2023)	1-Aug-2023

1999Go21: ^{200}Hg populated in ^{198}Pt(^{9}Be,α3nγ) reaction. Beam: ^{9}Be at E=60 MeV; Target: 18 mg/cm^2 thick ^{198}Pt; Detectors: 8π spectrometer consisting of 20 Ge BGO Compton-shielded detectors, inner ball of 71 BGO scintillation detectors; Measured $\gamma\gamma$, Eγ, Iγ, $\gamma\gamma(\theta)$(DCO); Deduced: level scheme, J^π.

Other: 2021Su02, where ^{200}Hg was populated in ^{197}Au(^{207}Pb,xγ) reaction. E(^{209}Bi)=1450 MeV and E(^{207}Pb)=1430 MeV beams from ATLAS-ANL facility. ^{197}Au target was 50 mg/cm^2 thick in both the experiments. Gammasphere array with 100 Compton-suppressed HPGe detectors. Measured half-life of the 3215 level by $\gamma\gamma(\Delta t)$ centroid-shift method.

^{200}Hg Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	Comments
0.0[#]	0$^+$		
368.0[#] *3*	2$^+$		
947.3[#] *5*	4$^+$		
1706.7[#] *5*	6$^+$		
1851.7[&] *5*	5$^-$		
1962.5[&] *6*	7$^-$		
2049.0[@] *6*	6$^-$		
2135.2[@] *6*	8$^-$		
2143.6[&] *6*	9$^-$		
2298.6 *6*	(8)		
2522.5[@] *6*	10$^-$		
2596.9 *6*	(9)		
2641.4[&] *7*	11$^-$		
2680.0[#] *6*	8$^+$		
3120.7[a] *6*	10$^+$		
3122.8[@] *7*	12$^-$		
3215.0[a] *7*	12$^+$	1.0 ns *3*	T$_{1/2}$: from 397γ-498$\gamma(\Delta t)$ centroid-shift method in 2021Su02.
3397.9[&] *7*	13$^-$		
3611.6[a] *7*	14$^+$		
3672.8 *8*	14$^+$		
3872.7 *7*	(14$^+$)		
4025.1[@] *9*	14$^-$		
4094.4 *8*	(15)		
4195.8[a] *8*	16$^+$		
4296.4 *8*	16$^+$		
4443.7[&] *8*	15$^-$		
4540.9 *8*	16$^+$		
4918.9[a] *8*	18$^+$		
4928.0 *9*	(17)		
5181.4 *8*	18$^+$		
5259.8[&] *8*	(17$^-$)		
5344.0 *8*	18$^+$		
5568.1[&] *8*	(19$^-$)		
5915.6[a] *9*	20$^+$		
6162.0[&] *9*	(21$^-$)		

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^{198}Pt(^{9}Be,α3nγ) 1999Go21 (continued)

^{200}Hg Levels (continued)

† From least-squares fit to Eγ's.
‡ From 1999Go21, based on γ ray multipolarities.
# Band(A): Oblate-deformed, ground-state band.
@ Band(B): $\nu(p^{-1}_{3/2},i^{-1}_{13/2})$ band (σ=0).
& Band(C): $\nu(p^{-1}_{3/2},i^{-1}_{13/2})$ band (σ=1) at low spin and configuration=$\nu(p^{-1}_{3/2},i^{-3}_{13/2})$ at high spin.
a Band(D): $\nu(i^{-2}_{13/2})$ band.

γ(^{200}Hg)

E_γ †	I_γ †	E_i(level)	J^π_i	E_f	J^π_f	Mult. ‡	Comments
86.4 *5*		2135.2	8^-	2049.0	6^-	[E2]	
94.2 *5*	9 *4*	3215.0	12^+	3120.7	10^+	(E2)	Mult.: From total α deduced using intensity balance in 1999Go21, but the value was not reported by the authors.
110.7 *3*	17.0 *14*	1962.5	7^-	1851.7	5^-	E2	Mult.: DCO=0.88 *19*.
172.7 *3*	55 *4*	2135.2	8^-	1962.5	7^-	M1	Mult.: DCO=0.75 *9*.
181.0 *3*	230 *9*	2143.6	9^-	1962.5	7^-	E2	Mult.: DCO=1.03 *10*.
197.4 *5*	7.1 *11*	2049.0	6^-	1851.7	5^-	M1	Mult.: DCO=0.77 *12*.
221.7 *5*	1.0 *4*	4094.4	(15)	3872.7	(14^+)		Mult.: DCO=0.69 *28*.
224.0 *5*	2.6 *8*	5568.1	(19^-)	5344.0	18^+	(E1)	Mult.: DCO=0.62 *10*.
246.4 *5*	0.6 *3*	6162.0	(21^-)	5915.6	20^+	(E1)	Mult.: DCO=0.48 *32*.
255.8 *3*	700 *24*	1962.5	7^-	1706.7	6^+	E1	Mult.: DCO=0.64 *6*.
261.1 *3*	18.5 *22*	3872.7	(14^+)	3611.6	14^+	(M1)	Mult.: DCO=1.03 *10*.
308.3 *5*	4.0 *10*	5568.1	(19^-)	5259.8	(17^-)	E2	Mult.: DCO=1.00 *14*.
336.1 *3*	15.0 *24*	2298.6	(8)	1962.5	7^-		Mult.: DCO=0.63 *7*.
342.3 *3*	63 *5*	2049.0	6^-	1706.7	6^+	E1	Mult.: DCO=1.04 *11*.
345.1 *5*	1.8 *5*	4540.9	16^+	4195.8	16^+	M1	Mult.: DCO=0.71 *34*.
368.0 *3*	1000	368.0	2^+	0.0	0^+	E2	Mult.: DCO=0.99 *8*.
378.9 *3*	14.2 *13*	2522.5	10^-	2143.6	9^-	M1	Mult.: DCO=0.96 *27*.
386.8 *5*	0.4 *2*	5568.1	(19^-)	5181.4	18^+	(E1)	Mult.: DCO=0.52 *20*.
387.3 *3*	84 *8*	2522.5	10^-	2135.2	8^-	E2	Mult.: DCO=0.96 *11*.
396.5 *3*	135 *8*	3611.6	14^+	3215.0	12^+	E2	Mult.: DCO=0.97 *11*.
423.7 *5*	2.9 *6*	4296.4	16^+	3872.7	(14^+)		Mult.: DCO=0.84 *14*.
446.4 *5*	0.8 *4*	4540.9	16^+	4094.4	(15)		Mult.: DCO=0.92 *19*.
457.8 *3*	11.0 *17*	3672.8	14^+	3215.0	12^+	E2	Mult.: DCO=1.06 *22*.
461.7 *3*	24 *2*	2596.9	(9)	2135.2	8^-		Mult.: DCO=0.65 *10*.
474.8 *5*	3.4 *7*	3872.7	(14^+)	3397.9	13^-	(E1)	Mult.: DCO=0.82 *21*.
482.9 *5*	5.5 *8*	4094.4	(15)	3611.6	14^+		Mult.: DCO=0.72 *14*.
497.8 *3*	305 *12*	2641.4	11^-	2143.6	9^-	E2	Mult.: DCO=1.06 *9*.
523.8 *3*	11.3 *10*	3120.7	10^+	2596.9	(9)	D	Mult.: DCO=0.61 *8*.
573.5 *3*	202 *10*	3215.0	12^+	2641.4	11^-	E1	Mult.: DCO=0.61 *6*.
579.3 *3*	1005 *30*	947.3	4^+	368.0	2^+	E2	Mult.: DCO=1.06 *11*.
584.2 *3*	37 *3*	4195.8	16^+	3611.6	14^+	E2	Mult.: DCO=1.08 *9*.
593.9 *5*	1.2 *5*	6162.0	(21^-)	5568.1	(19^-)	E2	Mult.: DCO=0.86 *17*.
600.3 *3*	39 *3*	3122.8	12^-	2522.5	10^-	E2	Mult.: DCO=1.05 *10*.
622.6 *5*	3.0 *6*	4918.9	18^+	4296.4	16^+	E2	
631.6 *5*	5.0 *9*	4928.0	(17)	4296.4	16^+		Mult.: DCO=0.60 *12*.
649.1 *5*	0.8 *3*	5568.1	(19^-)	4918.9	18^+	(E1)	Mult.: DCO=0.52 *9*.
684.9 *3*	19 *3*	4296.4	16^+	3611.6	14^+	E2	Mult.: DCO=0.91 *14*.
716.8 *5*	3.1 *10*	2680.0	8^+	1962.5	7^-	[E1]	
718.7 *5*	8.8 *15*	5259.8	(17^-)	4540.9	16^+	(E1)	Mult.: DCO=0.67 *9*.
723.0 *3*	11.9 *10*	4918.9	18^+	4195.8	16^+	E2	Mult.: DCO=1.06 *13*.
756.6 *3*	44 *6*	3397.9	13^-	2641.4	11^-	E2	Mult.: DCO=1.05 *15*.
759.5 *3*	785 *24*	1706.7	6^+	947.3	4^+	E2	Mult.: DCO=0.99 *8*.
803.1 *5*	4.9 *9*	5344.0	18^+	4540.9	16^+	E2	Mult.: DCO=1.10 *23*.
816.4 *5*	1.1 *5*	5259.8	(17^-)	4443.7	15^-	(E2)	

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^{198}Pt(^{9}Be,α3nγ) 1999Go21 (continued)

$\gamma(^{200}Hg)$ (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
885.0 *5*	2.7 *6*	5181.4	18^+	4296.4	16^+	E2	Mult.: DCO=1.18 *19*.
902.3 *5*	9.4 *16*	4025.1	14^-	3122.8	12^-	E2	Mult.: DCO=0.83 *15*.
904.2 *3*	150 *6*	1851.7	5^-	947.3	4^+	E1	Mult.: DCO=0.68 *6*.
929.2 *3*	13.7 *19*	4540.9	16^+	3611.6	14^+	E2	Mult.: DCO=0.93 *14*.
973.6 *3*	16.9 *24*	2680.0	8^+	1706.7	6^+	E2	Mult.: DCO=1.06 *13*.
977.1 *3*	49 *4*	3120.7	10^+	2143.6	9^-	E1	Mult.: DCO=0.64 *9*.
985.7 *5*	2.5 *5*	5181.4	18^+	4195.8	16^+	E2	Mult.: DCO=0.73 *18*.
996.7 *5*	2.0 *3*	5915.6	20^+	4918.9	18^+	E2	Mult.: DCO=0.93 *19*.
1045.9 *3*	10.9 *22*	4443.7	15^-	3397.9	13^-	E2	Mult.: DCO=0.94 *17*.

[†] From 1999Go21. $\Delta E\gamma$ estimated by the evaluator as 0.3 keV for $I\gamma \geq 10$ and 0.5 keV for $I\gamma < 10$.
[‡] From $\gamma\gamma(\theta)$(DCO) and the apparent band structures in 1999Go21, unless otherwise stated.

^{198}Pt(^{9}Be,α3nγ) 1999Go21

Level Scheme

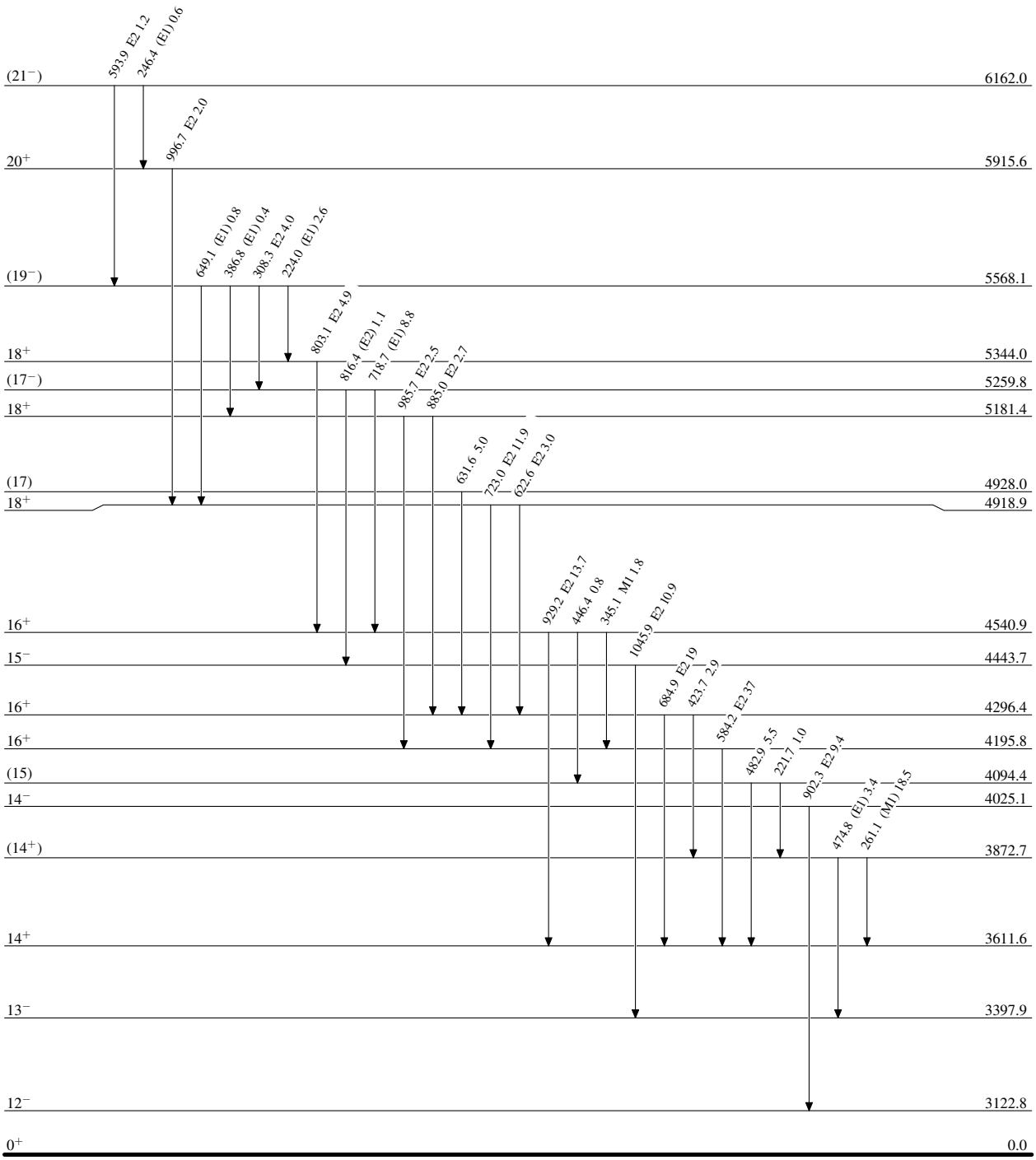
Intensities: Relative I_γ

Legend

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

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

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



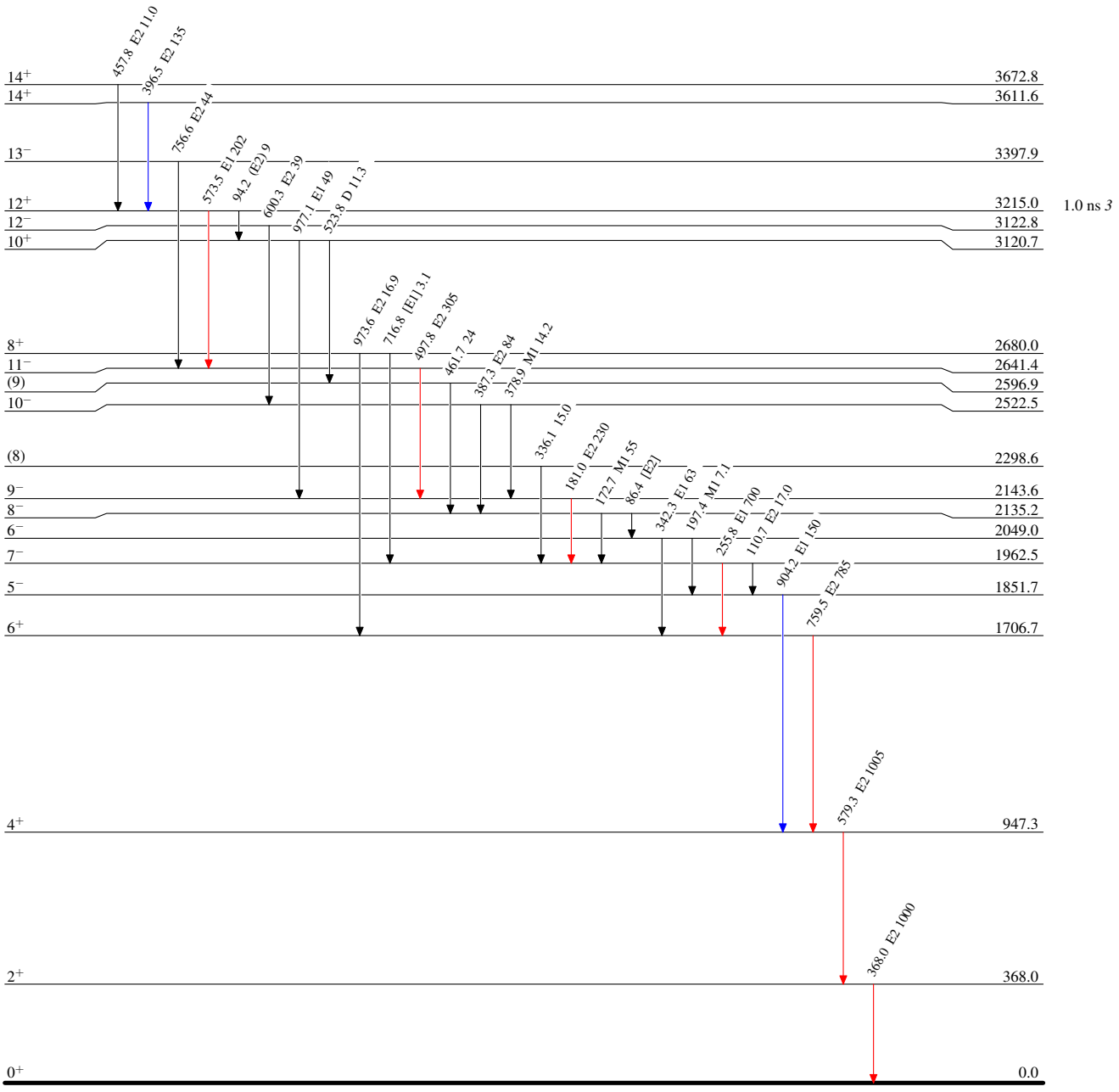
$^{200}_{80}Hg_{120}$

^{198}Pt(^{9}Be,α3nγ) 1999Go21

Level Scheme (continued)

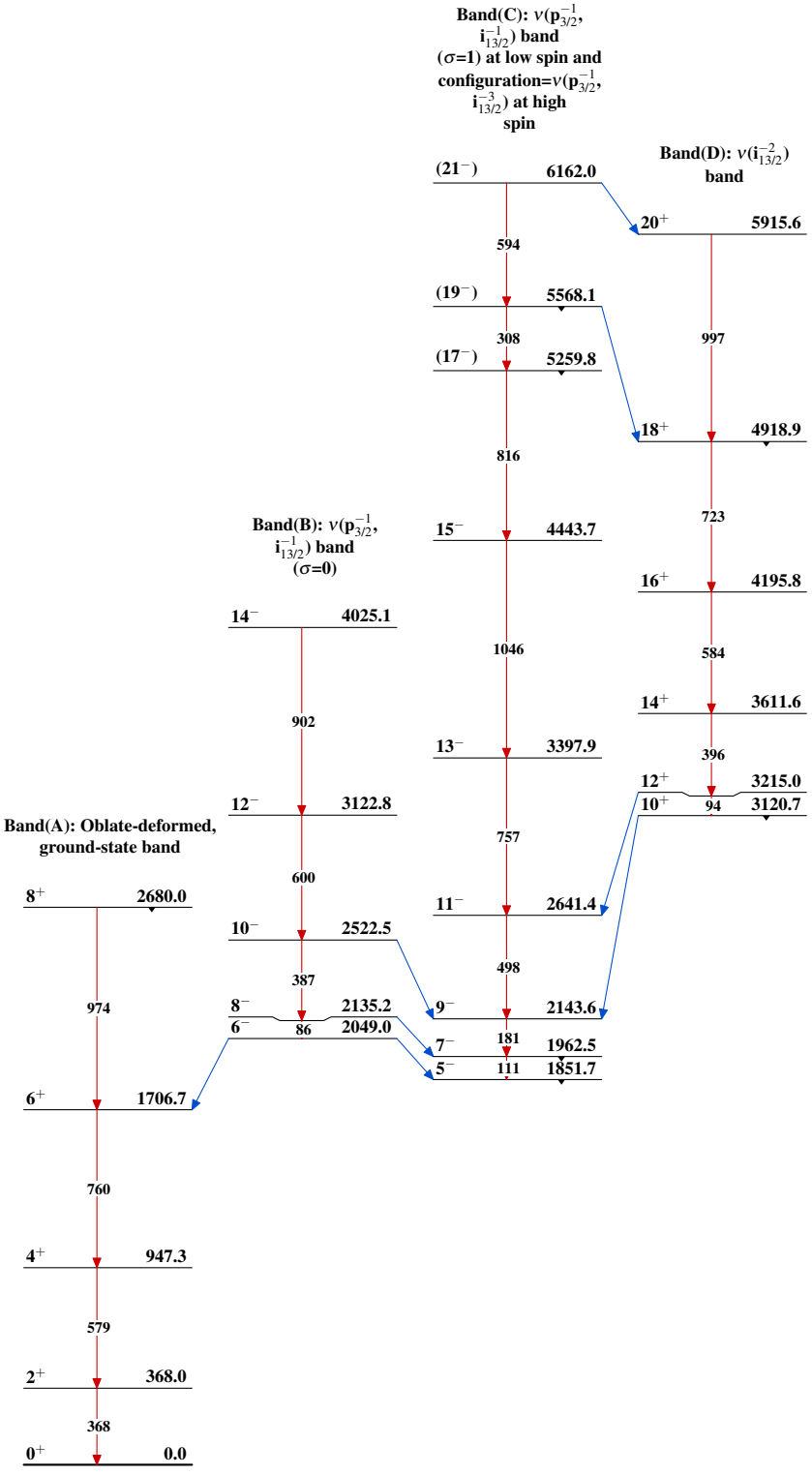
Intensities: Relative I_γ

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{200}_{80}Hg_{120}$

^{198}Pt(^{9}Be,α3nγ) 1999Go21



$^{200}_{80}Hg_{120}$