^{154}Gd(^{32}S,4nγ) 1995Bi02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 130, 21 (2015)	15-Jul-2015

1995Bi02 (also 1984Ma27 and thesis by 1986MaZV): E=160-165 MeV. Measured γ, $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO), Xγ using an array of 18 Compton- suppressed Ge detectors and a multiplicity filter of 54 NaI scintillation detectors.
Additional information 1.
DCO values are from 1986MaZV.

^{182}Hg Levels

E(level)[†]	J$^{\pi}$[‡]	Comments
0.0[#]	0$^+$	
351.8[#] *3*	2$^+$	
548.6[@] *4*	2$^+$	
613.2[@] *4*	4$^+$	
929.8?[#] *10*		E(level): level omitted in Adopted Levels, Gammas dataset.
946.3[@] *5*	6$^+$	
1297.7 *5*		
1360.3[@] *5*	8$^+$	
1385.3[a] *5*		
1477.8?[#] *15*		E(level): level omitted in Adopted Levels, Gammas dataset.
1534.3[c] *8*		
1572.7[b] *9*		
1764.4[a] *5*		
1769.6[&] *5*	(5)	
1824.4 *6*		
1847.7[@] *6*	10$^+$	
1946.2[c] *8*		
2008.8[&] *5*	(7)	
2013.9[b] *6*		
2211.5[a] *5*		
2315.6[b] *6*		
2324.5[&] *5*	(9)	
2400.8[@] *7*	12$^+$	
2412.8[c] *8*		
2687.7[b] *6*		
2714.5[&] *6*	(11)	
2722.6[a] *6*		
2930.6[c] *8*		
3012.1[@] *7*	14$^+$	
3112.3[b] *7*		
3166.4[&] *7*	(13)	
3290.6[a] *7*		
3489.8[c] *9*		
3574.1[b] *8*		
3648.5[&] *8*	(15)	
3675.2[@] *8*	16$^+$	
3910[a] *1*		
4071.5[b] *8*		

Continued on next page (footnotes at end of table)

^{154}Gd(^{32}S,4nγ) 1995Bi02 (continued)

^{182}Hg Levels (continued)

E(level)[†]	Jπ[‡]
4099[c] *1*	
4142.4[&] *8*	(17)
4382.8[@] *8*	18^+
4567?[a] *1*	
4621[b] *1*	
5112.6[@] *13*	(20^+)

[†] From least-squares fit to Eγ data, assuming 0.3 keV uncertainty for Eγ values quoted to tenth of a keV and 1 keV for others.
[‡] As proposed by 1995Bi02 based on their γγ(θ)(DCO) data for selected transitions and band assignments.
[#] Band(A): $K^\pi=0^+$, oblate.
[@] Band(B): $K^\pi=2^+$, prolate.
[&] Band(C): band based on (5).
[a] Band(D): γ cascade.
[b] Band(E): γ cascade.
[c] Band(F): γ cascade.

γ(^{182}Hg)

Eγ	Iγ	Ei(level)	J_i^π	Ef	J_f^π	Mult.[†]	Comments
184.4	2	2008.8	(7)	1824.4			
239.2	11	2008.8	(7)	1769.6	(5)		
261.4	78	613.2	4^+	351.8	2^+	Q	DCO=1.05 *12*
301.7	4	2315.6		2013.9			
315.7	14	2324.5	(9)	2008.8	(7)		
333.1	81	946.3	6^+	613.2	4^+	Q	DCO=1.03 *13*
351.8	100	351.8	2^+	0.0	0^+		
372.1	6	2687.7		2315.6			
379.1	6	1764.4		1385.3			
390.0	18	2714.5	(11)	2324.5	(9)		
411.9	5	1946.2		1534.3			
414.0	63	1360.3	8^+	946.3	6^+	Q	DCO=1.11 *16*
424.6	4	3112.3		2687.7			
441.2[‡]		2013.9		1572.7			
447.1	5	2211.5		1764.4			
451.9	15	3166.4	(13)	2714.5	(11)		
461.8	4	3574.1		3112.3			
466.6	8	2412.8		1946.2			
471.9	8	1769.6	(5)	1297.7			
482.1	8	3648.5	(15)	3166.4	(13)		
487.4	38	1847.7	10^+	1360.3	8^+	Q	DCO=1.17 *27*
493.9	4	4142.4	(17)	3648.5	(15)		
497.4	2	4071.5		3574.1			
511.1	6	2722.6		2211.5			
517.8	7	2930.6		2412.8			
526.7[‡]		1824.4		1297.7			
529.8[‡]		2930.6		2400.8	12^+		
548[‡#]		1477.8?		929.8?			Eγ: transition not listed in 2010Sc03. It is omitted in the Adopted Levels, Gammas dataset since 930 level is omitted.
548.6	5	548.6	2^+	0.0	0^+		

Continued on next page (footnotes at end of table)

^{154}Gd(^{32}S,4nγ) 1995Bi02 (continued)

$\gamma(^{182}Hg)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	Comments
549[‡]		4621		4071.5			
551.2	3	2315.6		1764.4			
553.1	29	2400.8	12^+	1847.7	10^+	(Q)	DCO=0.99 *19*
559.2	5	3489.8		2930.6			
565.1[‡]		2412.8		1847.7	10^+		
568.0	3	3290.6		2722.6			
578[‡#]		929.8?		351.8	2^+		E_γ: this transition is placed from 1125 level in 2010Sc03.
585.9[‡]		1946.2		1360.3	8^+		
588.0[‡]		1534.3		946.3	6^+		
609[‡]		4099		3489.8			
611.3	18	3012.1	14^+	2400.8	12^+		
619[‡]		3910		3290.6			
626.4[‡]		1572.7		946.3	6^+		
628.6[‡]		2013.9		1385.3			
657[‡#]		4567?		3910			
663.1	8	3675.2	16^+	3012.1	14^+		
684.5[‡]		1297.7		613.2	4^+		
707.6	3	4382.8	18^+	3675.2	16^+		
729.8[‡]		5112.6	(20^+)	4382.8	18^+		
749.1	6	1297.7		548.6	2^+		
772.1	9	1385.3		613.2	4^+		
818.1	6	1764.4		946.3	6^+		
840.0[‡]		2687.7		1847.7	10^+		
851.2	3	2211.5		1360.3	8^+		
866.8[‡]		2714.5	(11)	1847.7	10^+		
955.2[‡]		2315.6		1360.3	8^+		
964.2	4	2324.5	(9)	1360.3	8^+		
1062.5	3	2008.8	(7)	946.3	6^+		
1156.4	2	1769.6	(5)	613.2	4^+		

[†] from $\gamma\gamma(\theta)$ (DCO) data for selected transitions. The mult=Q most likely corresponds to $\Delta J=2$, E2.
[‡] Weak γ ray.
[#] Placement of transition in the level scheme is uncertain.

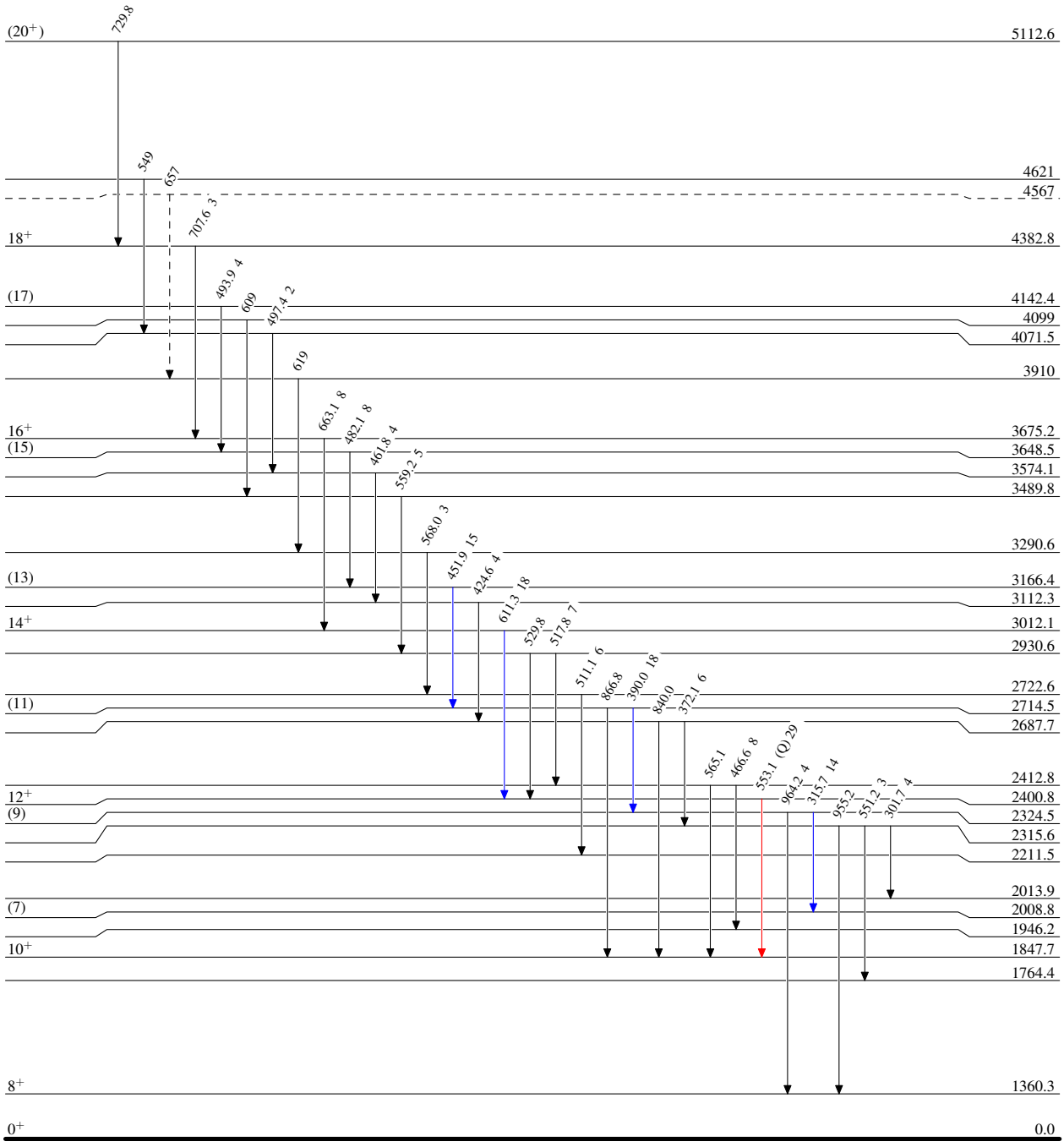
^{154}Gd(^{32}S,4nγ) 1995Bi02

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)



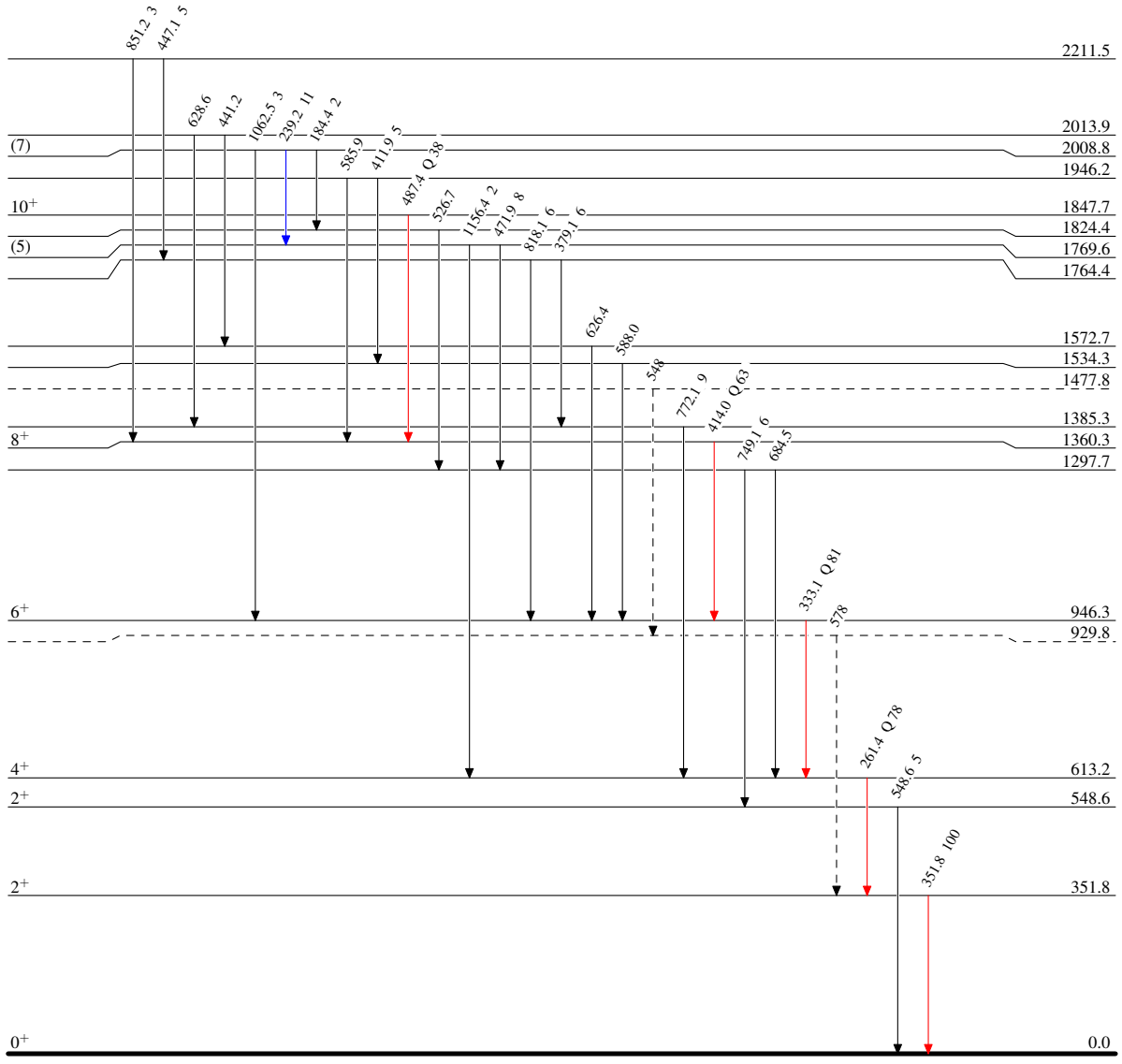
$^{182}_{80}Hg_{102}$

^{154}Gd(^{32}S,4nγ) 1995Bi02

Level Scheme (continued)

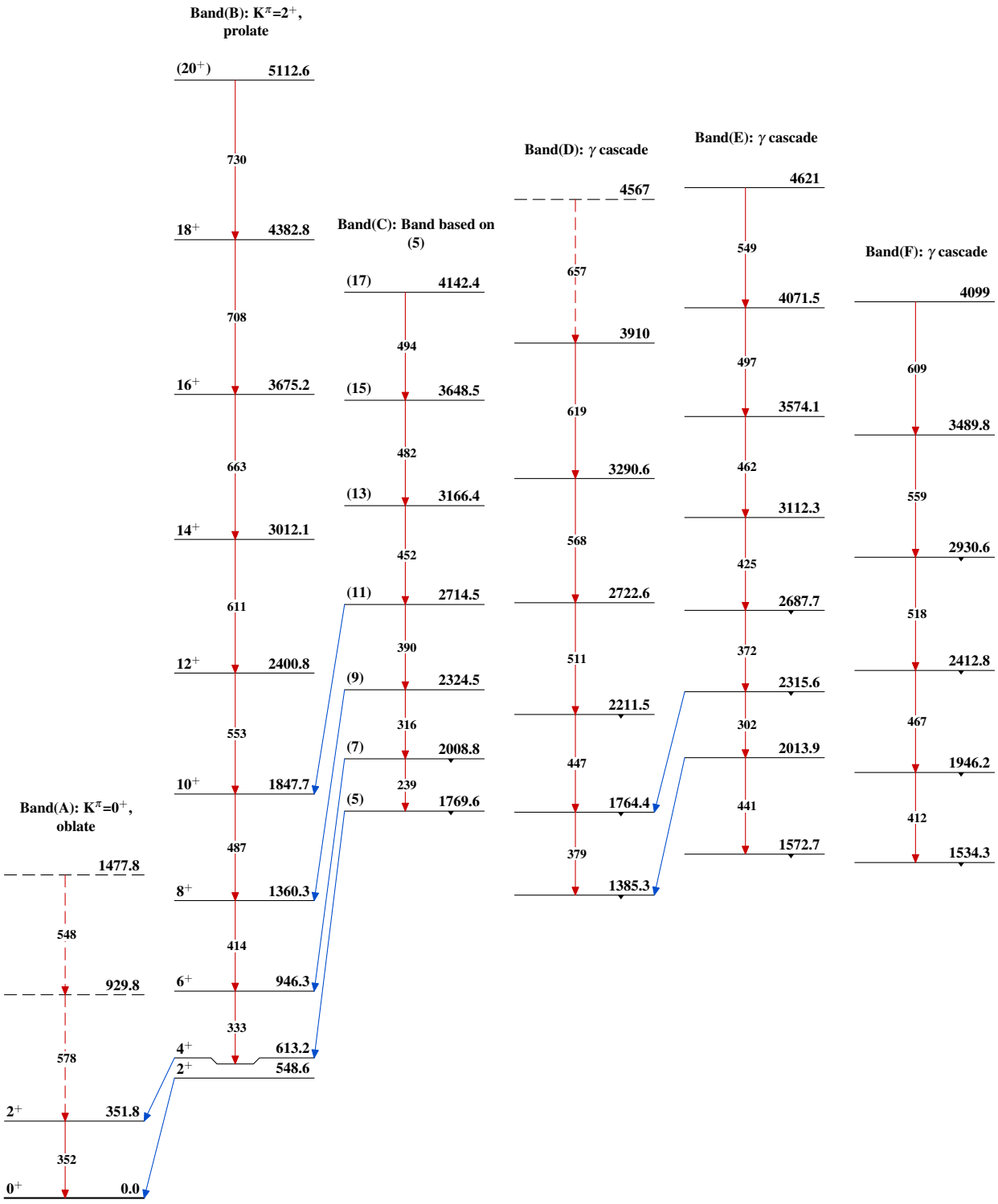
Intensities: Relative I_γ

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{182}_{80}Hg_{102}$

^{154}Gd(^{32}S,4nγ) 1995Bi02



$^{182}_{80}Hg_{102}$