^{156}Gd(^{32}S,4nγ): E=163 MeV 1995Sf01

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111,275 (2010)	1-Oct-2009

1995Sf01: E=163 MeV; GASP spectrometer array (40 Compton-suppressed HPGe detectors, inner ball of 80 BGO detectors for multiplicity filter); measured Eγ, $\gamma\gamma$ coin, $T_{1/2}$ from DSAM, DCO ratios.

^{184}Hg Levels

E(level)[†]	J$^{\pi}$[‡]	Comments
0[&]	0$^+$	
367.1[&]	2$^+$	
534.9[a]	2$^+$	
654.3[a]	4$^+$	
994.4[a]	6$^+$	
1087.1[&]	4$^+$	
1300.4	5$^+$	J$^{\pi}$: (3,4$^+$) assigned In Adopted Levels.
1413.5[a]	8$^+$	
1414.3[b]	5	
1549.2[&]	6$^+$	
1804.4[b]	7	
1818.2	6$^+$	J$^{\pi}$=(5,6$^+$) In Adopted Levels.
1848.3[@]	5	
1903.2[a]	10	
1969.2[&]	8$^+$	E(level),J$^{\pi}$: not ADOPTED.
2064.4[c]	6	
2073.9[#]	7	E=1654, J=(5) in Adopted Levels.
2122.2[@]	7	
2258.5[b]	9	
2293.6[#]	8	E=1873, J=(7) in Adopted Levels.
2376.5[c]	8	
2451.8[@]	9	
2455.2[a]	12$^+$	
2479.2[&]	10$^+$	E(level),J$^{\pi}$: not ADOPTED.
2592.6[#]	10	E=2171, J=(9) in Adopted Levels.
2756.7[c]	10	
2769.4[b]	11	
2852.5[@]	11	
3001.6[#]	12	E=2579, J=(11) in Adopted Levels.
3035.2[&]	12$^+$	E(level),J$^{\pi}$: not ADOPTED.
3059.2[a]	14$^+$	
3187.5[c]	12	
3298.5[@]	13	
3332.4[b]	13	
3450.6[#]	14	not ADOPTED.
3637.2[&]	14$^+$	E(level),J$^{\pi}$: not ADOPTED.
3638.5[c]	14	
3705.2[a]	16$^+$	
3707.5[@]	15	
3937.6[#]	16	not ADOPTED.

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^{156}Gd(^{32}S,4nγ): E=163 MeV 1995Sf01 (continued)

^{184}Hg Levels (continued)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	Comments
3938.4[b]	15		
4129.5[c]	16		
4169.5[@]	17		
4380.2[a]	18$^+$	0.187 ps *21*	$T_{1/2}$: from DSAM (1995Sf01).
4460[#]	18		not ADOPTED.
4567.4[b]	17		
4677.5[c]	18		
4702.5[@]	19		
5014[#]	20		not ADOPTED.
5068[a]	20$^+$		
5202.4[b]	19		
5267.5[c]	20		
5301[@]	21		
5621[#]	22		not ADOPTED.
5775[a]	22$^+$		
5886[c]	22		
5956[@]	23		
6519[a]	24$^+$		
6657[@]	25		

[†] From least-squares fit to Eγ, assigning equal weight to all data.
[‡] Authors′ values, based on unenumerated DCO measurements, deduced band structure and comparison with bands known In ^{182}Hg and ^{186}Hg.
[#] Band(A): band based on J=7, 2074 level. Of the eleven transitions deexciting levels In this proposed band, all but the 1299γ are confirmed In (^{32}S,4nγ): E=156, 160 MeV. However, No band member proposed by 1995Sf01 has the same J or E As In Adopted Levels. There, the 880γ feeds the 994 (6$^+$) not the 1413 (8$^+$) and the 660γ feeds the 994 (6$^+$) not the 1414 (5) resulting In adopted energies that are≈220 keV lower than here. Additionally, the ΔJ=2 cascade transitions shown here do not all belong to the same signature partner.
[@] Band(B): α=1 band based on J=5, 1848 level.
[&] Band(C): K$^\pi$=0$^+$ g.s. band. J=8-14 members proposed In 1995Sf01 are not adopted because a different structure is indicated In an extensive, independent study (1995De30).
[a] Band(D): K$^\pi$=0$^+$ band.
[b] Band(E): α=1 band based on J=5, 1414 level.
[c] Band(F): α=0 band based on J=6, 2065 level.

γ(^{184}Hg)

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
220	2293.6	8	2073.9	7	In Adopted Levels, Gammas, this is a J=(7) to (5) out-of-band transition.
274	2122.2	7	1848.3	5	
287	654.3	4$^+$	367.1	2$^+$	
299	2592.6	10	2293.6	8	J=(9) to (7) transition In Adopted Levels.
304	2122.2	7	1818.2	6$^+$	
312	2376.5	8	2064.4	6	
330	2451.8	9	2122.2	7	
340	994.4	6$^+$	654.3	4$^+$	

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^{156}Gd(^{32}S,4nγ): E=163 MeV 1995Sf01 (continued)

$\gamma(^{184}Hg)$ (continued)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
367	367.1	2^+	0	0^+	
380	2756.7	10	2376.5	8	
390	1804.4	7	1414.3	5	
401	2852.5	11	2451.8	9	
409	3001.6	12	2592.6	10	J=(11) to (9) transition In Adopted Levels.
409	3707.5	15	3298.5	13	
418	3187.5	12	2769.4	11	
419	1413.5	8^+	994.4	6^+	
420	1969.2	8^+	1549.2	6^+	
431	3187.5	12	2756.7	10	
446	3298.5	13	2852.5	11	
449	3450.6	14	3001.6	12	J=(12) to (10) transition In Adopted Levels.
451	3638.5	14	3187.5	12	
454	2258.5	9	1804.4	7	
462	1549.2	6^+	1087.1	4^+	
462	4169.5	17	3707.5	15	
487	3937.6	16	3450.6	14	J=(13) to (11) transition In Adopted Levels.
490	1903.2	10	1413.5	8^+	
491	4129.5	16	3638.5	14	
498	2756.7	10	2258.5	9	
510	2479.2	10^+	1969.2	8^+	
511	2769.4	11	2258.5	9	
518	1818.2	6^+	1300.4	5^+	
522	4460	18	3937.6	16	J=(14) to (12) transition In Adopted Levels.
533	4702.5	19	4169.5	17	
535	534.9	2^+	0	0^+	
548	1848.3	5	1300.4	5^+	
548	4677.5	18	4129.5	16	
549	2451.8	9	1903.2	10	
552	1087.1	4^+	534.9	2^+	
552	2455.2	12^+	1903.2	10	
554	5014	20	4460	18	J=(15) to (13) transition In Adopted Levels.
556	3035.2	12^+	2479.2	10^+	J=10 to 8 g.s. band transition In Adopted Levels.
563	3332.4	13	2769.4	11	
572	2376.5	8	1804.4	7	
573	2122.2	7	1549.2	6^+	
590	5267.5	20	4677.5	18	
598	5301	21	4702.5	19	
602	3637.2	14^+	3035.2	12^+	
604	3059.2	14^+	2455.2	12^+	
606	3938.4	15	3332.4	13	
607	5621	22	5014	20	J=(17) to (15) transition In Adopted Levels.
618	5886	22	5267.5	20	
629	4567.4	17	3938.4	15	
635	5202.4	19	4567.4	17	
646	1300.4	5^+	654.3	4^+	
646	3705.2	16^+	3059.2	14^+	
650	2064.4	6	1414.3	5	
655	5956	23	5301	21	
660	2073.9	7	1414.3	5	feeds 6^+ 994 In Adopted Levels.
675	4380.2	18^+	3705.2	16^+	
688	5068	20^+	4380.2	18^+	
701	6657	25	5956	23	
707	5775	22^+	5068	20^+	
709	2122.2	7	1413.5	8^+	
720	1087.1	4^+	367.1	2^+	

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^{156}Gd(^{32}S,4nγ): E=163 MeV 1995Sf01 (continued)

$\gamma(^{184}Hg)$ (continued)

E_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Comments
731	1818.2	6^+	1087.1	4^+	
744	6519	24^+	5775	22^+	
760	1414.3	5	654.3	4^+	
761	1848.3	5	1087.1	4^+	
766	1300.4	5^+	534.9	2^+	
810	1804.4	7	994.4	6^+	
845	2258.5	9	1413.5	8^+	
854	2756.7	10	1903.2	10	
866	2769.4	11	1903.2	10	
880	2293.6	8	1413.5	8^+	feeds 6^+ 994 In Adopted Levels.
949	2852.5	11	1903.2	10	
963	2376.5	8	1413.5	8^+	
1038	2451.8	9	1413.5	8^+	
1194	1848.3	5	654.3	4^+	
1299	2293.6	8	994.4	6^+	reported by 1995Sf01 alone; not ADOPTED.

[†] Uncertainties unstated by authors.

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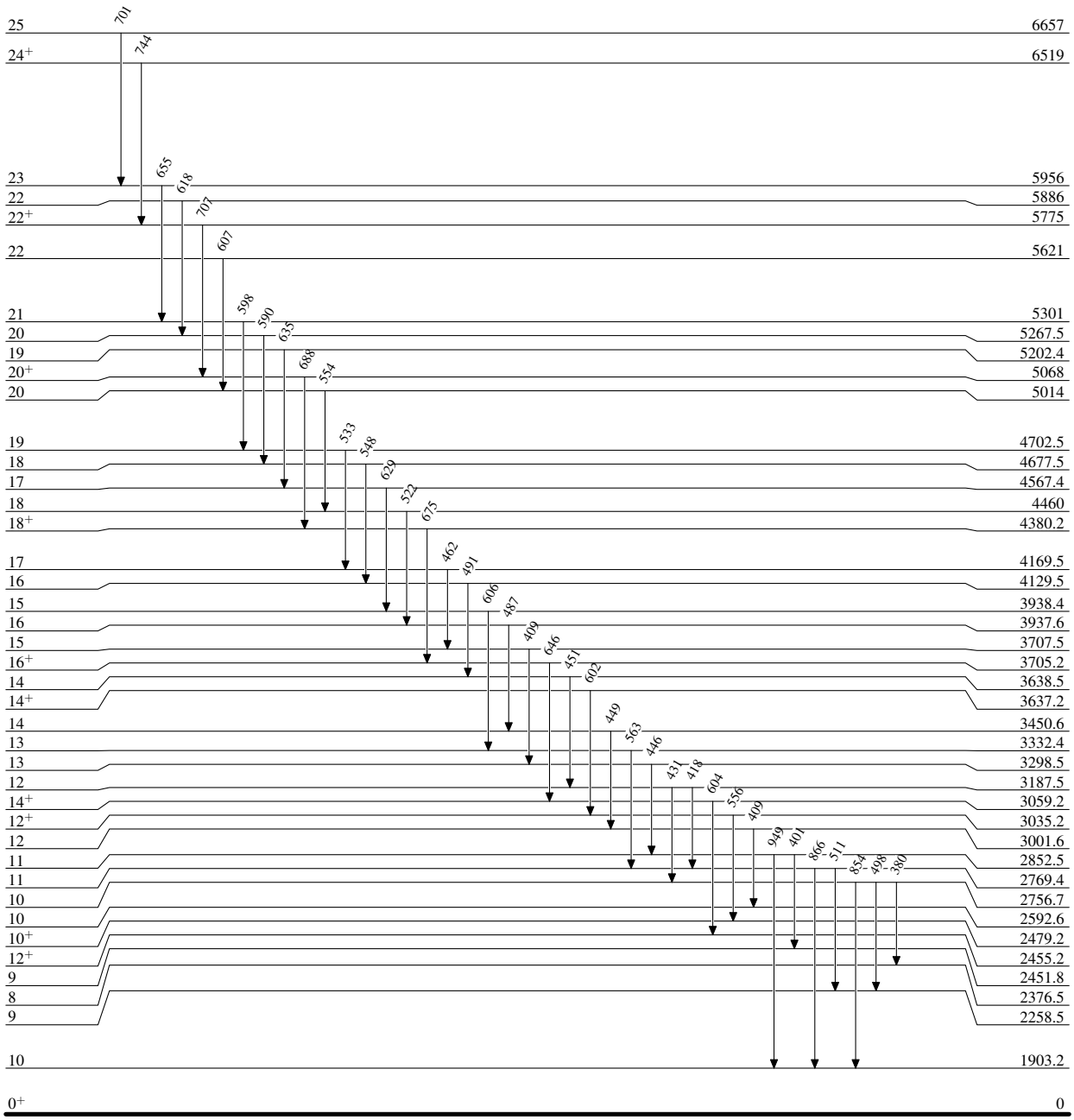
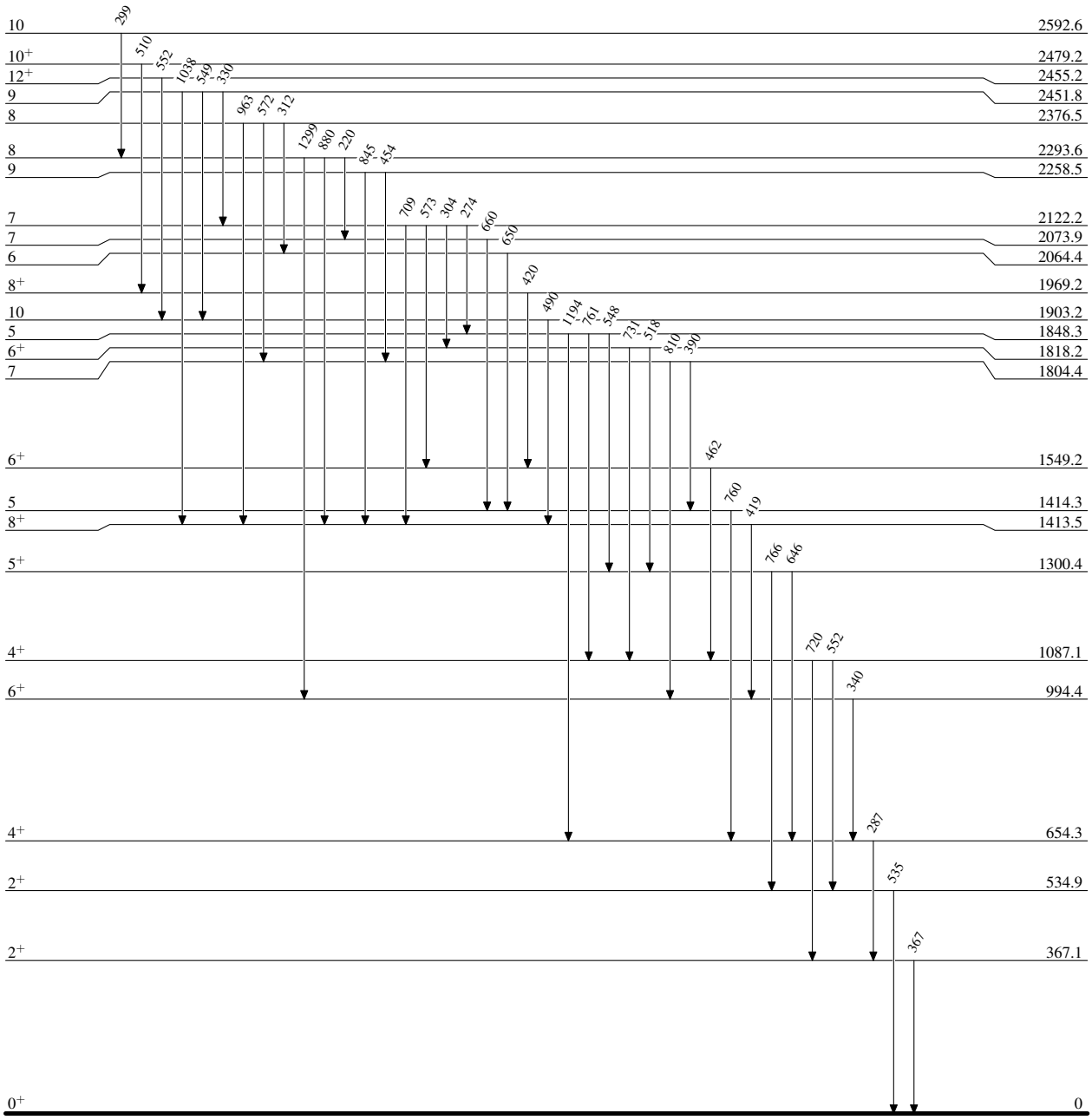
Level Scheme



$^{184}_{80}Hg_{104}$

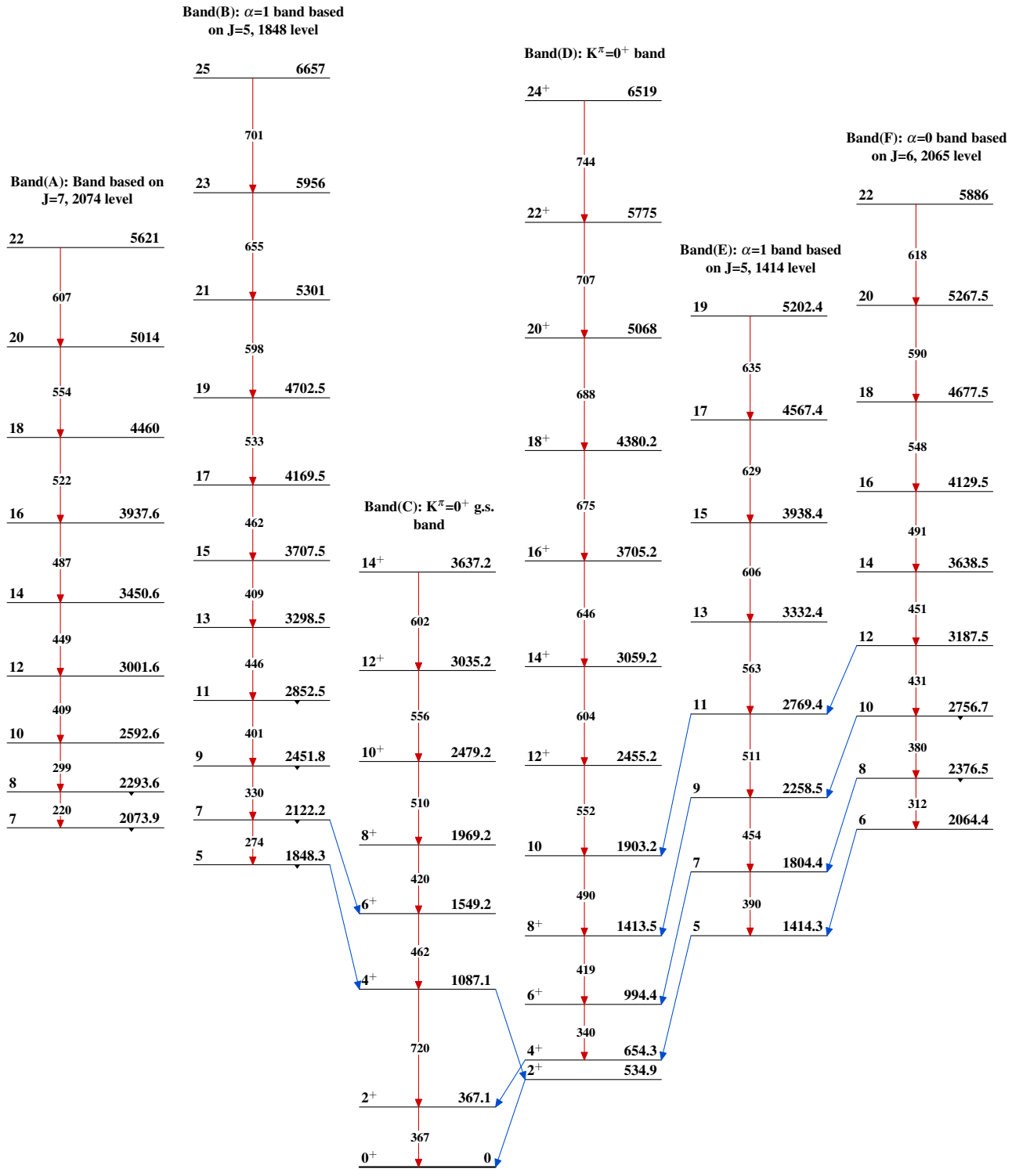
^{156}Gd(^{32}S,4nγ): E=163 MeV 1995Sf01

Level Scheme (continued)



$^{184}_{80}Hg_{104}$

$^{156}Gd(^{32}S,4n\gamma)$: E=163 MeV 1995Sf01



$^{184}_{80}Hg_{104}$