

$^{203}\text{Tl}(n,2n\gamma)$ 2007Fo06

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 196,342 (2024)	1-Sep-2023

2007Fo06: γ -rays were produced in the bombardment of a ^{203}Tl target by neutrons from the Los Alamos Neutron Science Center Weapons Neutron Research facility. E(n) from 0.6 to 250 MeV, pulsed beams with 775 μs repetition period and 1.8 μs width. GEANIE spectrometer was comprised of 11 Compton-suppressed LEPS, 9 Compton-suppressed HPGe and 6 unsuppressed HPGe detectors. Measured: $\gamma(t)$, excitation functions, E_γ . Other (same group): [2020Fo05](#).

^{202}Tl Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0.0	2^-	12.4706 d 55	$T_{1/2}$: From Adopted Levels.
186.3 4	(1^-)		
189.9 4	(0^-)		
312.4 5	$(1^-, 2^-)$		
348.3 5	(3^-)		
401.6 5	$(1^-, 2^-)$		
490.5 5	4^-		
511.3 5	$(1^-, 2^-)$		
701.8 7			
922.6 7			
950.2 7	7^+	591 μs 3	$T_{1/2}$: Weighted average of 592 μs 4 [459.7 $\gamma(t)$] and 589 μs 4 [490.5 $\gamma(t)$].
1048.7 7			
1079.2 7			
1099.0 9	$(6)^+$		
1105.5 7			
1340.1 8	8^+		
1357.7 7			
1383.5 7			
1552.1 9	$8^+, 9^+$		
1675.6 10	$8^+, 9^+$		
1968.4 10			
2044.8 10			

[†] From a least-squares fit to E_γ .

[‡] From [2007Fo06](#).

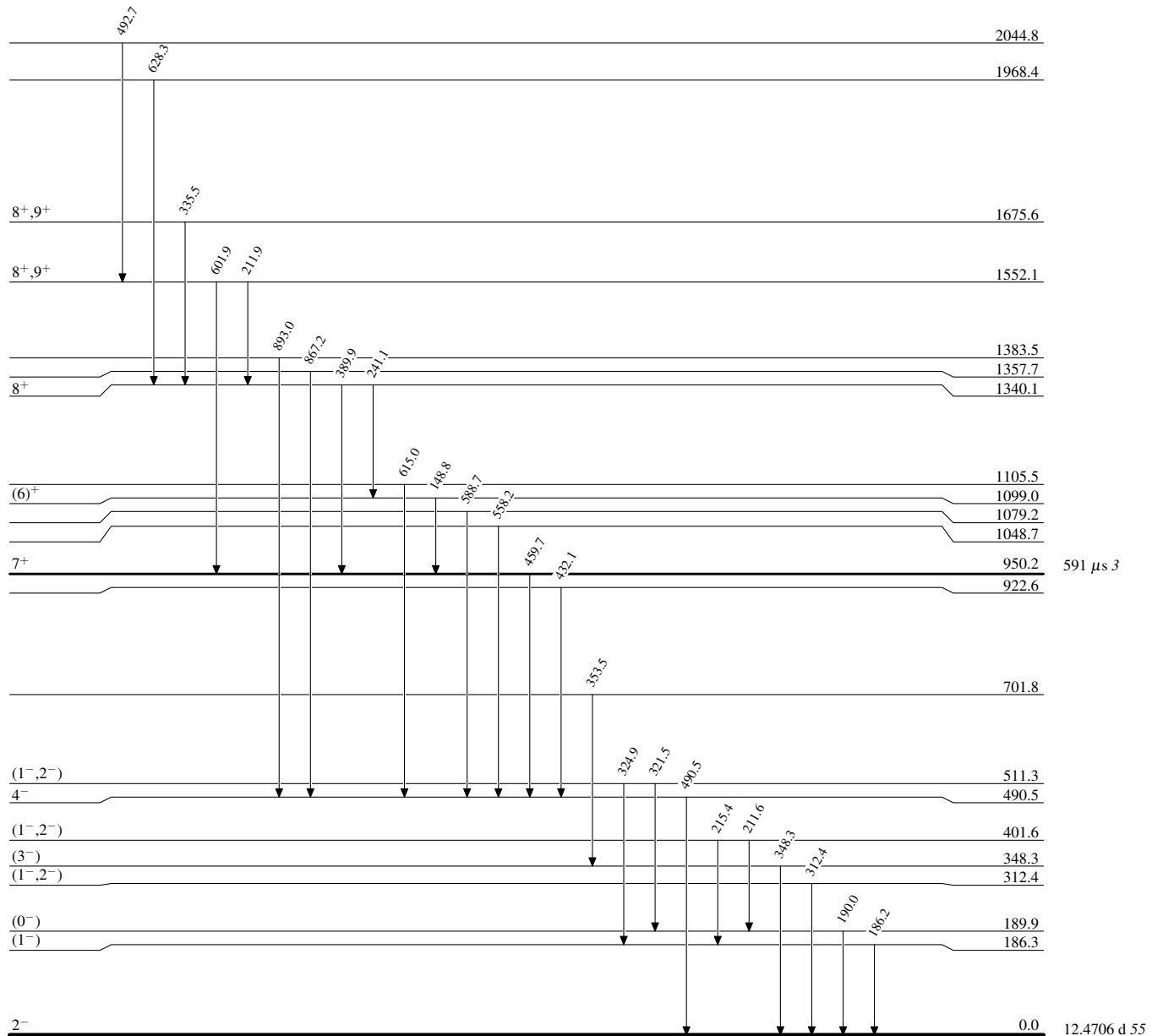
$\gamma(^{202}\text{Tl})$

E_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π
148.8 5	1099.0	$(6)^+$	950.2	7^+	389.9 5	1340.1	8^+	950.2	7^+
186.2 5	186.3	(1^-)	0.0	2^-	432.1 5	922.6		490.5	4^-
190.0 5	189.9	(0^-)	0.0	2^-	459.7 5	950.2	7^+	490.5	4^-
211.6 5	401.6	$(1^-, 2^-)$	189.9	(0^-)	490.5 5	490.5	4^-	0.0	2^-
211.9 5	1552.1	$8^+, 9^+$	1340.1	8^+	492.7 5	2044.8		1552.1	$8^+, 9^+$
215.4 5	401.6	$(1^-, 2^-)$	186.3	(1^-)	558.2 5	1048.7		490.5	4^-
241.1 5	1340.1	8^+	1099.0	$(6)^+$	588.7 5	1079.2		490.5	4^-
312.4 5	312.4	$(1^-, 2^-)$	0.0	2^-	601.9 5	1552.1	$8^+, 9^+$	950.2	7^+
321.5 5	511.3	$(1^-, 2^-)$	189.9	(0^-)	615.0 5	1105.5		490.5	4^-
324.9 5	511.3	$(1^-, 2^-)$	186.3	(1^-)	628.3 5	1968.4		1340.1	8^+
335.5 5	1675.6	$8^+, 9^+$	1340.1	8^+	867.2 5	1357.7		490.5	4^-
348.3 5	348.3	(3^-)	0.0	2^-	893.0 5	1383.5		490.5	4^-
353.5 5	701.8		348.3	(3^-)					

[†] From [2007Fo06](#). The authors state that the uncertainties range from 0.2 to 0.5 keV.

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Level Scheme



$^{202}_{81}\text{Tl}_{121}$