

$^{93}\text{Nb}(^{19}\text{F},\text{p}3\text{n}\gamma)$ **1998Ch35**

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Jean Blachot	ENSDF	1-Jul-2008

E=86 MeV. Measured E_γ , I_γ , $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO) using four Compton suppressed HPGe detectors, a HP Ge CLOVER detector and a 14 element NaI multiplicity filter.

 ^{108}In Levels

E(level)	J^π	E(level)	J^π	E(level)	J^π	E(level)	J^π
0		2514 [#]	10 ⁻	3379 [#]	14 ⁻	4878 [†]	(17 ⁻)
957	(8 ⁺)	2620	(10 ⁺)	3424 [@]	(12 ⁺)	5127 ^{&}	16 ⁺
1119 [‡]	8 ⁻	2660 [#]	11 ⁻	3837 [@]	(13 ⁺)	5154 [#]	17 ⁻
1332 [‡]	9 ⁻	2695 [†]	(11 ⁻)	3908 [#]	15 ⁻	5601 ^{&}	17 ⁺
1396	(8 ⁺)	2813 [#]	12 ⁻	4050 [†]	(15 ⁻)	5782 [†]	(19 ⁻)
1633	(9 ⁺)	2879 [@]	(10 ⁺)	4327 ^{&}	13 ⁺	5889 [#]	18 ⁻
1707	(9 ⁺)	3005 [‡]	12 ⁻	4348 [@]	(14 ⁺)	6166 ^{&}	18 ⁺
1860 [‡]	10 ⁻	3044 [#]	13 ⁻	4463	(14 ⁺)	6709 ^{&}	19 ⁺
1861	10 ⁻	3063	(11 ⁺)	4514 ^{&}	14 ⁺	6711 [†]	(21 ⁻)
2364 [#]	9 ⁻	3102 [@]	(11 ⁺)	4569 [#]	16 ⁻	7713 [†]	(23 ⁻)
2464 [‡]	11 ⁻	3273 [†]	(13 ⁻)	4770 ^{&}	15 ⁺		

[†] Band(A): $\Delta J=2$, band, based on 11⁻.

[‡] Band(B): $\Delta J=1$, band, based on 8⁻.

[#] Band(C): $\Delta J=1$, band, based on 9⁻.

[@] Band(D): $\Delta J=1$, band, based on 10⁺.

[&] Band(E): $\Delta J=1$, band, based on 13⁺.

 $\gamma(^{108}\text{In})$

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
146	2660	11 ⁻	2514	10 ⁻	565	6166	18 ⁺	5601	17 ⁺
150	2514	10 ⁻	2364	9 ⁻	578	3273	(13 ⁻)	2695	(11 ⁻)
153	2813	12 ⁻	2660	11 ⁻	585	5154	17 ⁻	4569	16 ⁻
187	4514	14 ⁺	4327	13 ⁺	604	2464	11 ⁻	1860	10 ⁻
213	1332	9 ⁻	1119	8 ⁻	626	4463	(14 ⁺)	3837	(13 ⁺)
223	3102	(11 ⁺)	2879	(10 ⁺)	657	2364	9 ⁻	1707	(9 ⁺)
231	3044	13 ⁻	2813	12 ⁻	661	4569	16 ⁻	3908	15 ⁻
237	1633	(9 ⁺)	1396	(8 ⁺)	735	5889	18 ⁻	5154	17 ⁻
256	4770	15 ⁺	4514	14 ⁺	750	1707	(9 ⁺)	957	(8 ⁺)
322	3424	(12 ⁺)	3102	(11 ⁺)	777	4050	(15 ⁻)	3273	(13 ⁻)
335	3379	14 ⁻	3044	13 ⁻	828	4878	(17 ⁻)	4050	(15 ⁻)
349	2813	12 ⁻	2464	11 ⁻	834	2695	(11 ⁻)	1861	10 ⁻
357	5127	16 ⁺	4770	15 ⁺	904	5782	(19 ⁻)	4878	(17 ⁻)
413	3837	(13 ⁺)	3424	(12 ⁺)	929	6711	(21 ⁻)	5782	(19 ⁻)
443	3063	(11 ⁺)	2620	(10 ⁺)	957	957	(8 ⁺)	0	
474	5601	17 ⁺	5127	16 ⁺	987	2620	(10 ⁺)	1633	(9 ⁺)
511	4348	(14 ⁺)	3837	(13 ⁺)	1002	7713	(23 ⁻)	6711	(21 ⁻)
528	1860	10 ⁻	1332	9 ⁻	1027	2660	11 ⁻	1633	(9 ⁺)
529	3908	15 ⁻	3379	14 ⁻	1119	1119	8 ⁻	0	
541	3005	12 ⁻	2464	11 ⁻	1132	2464	11 ⁻	1332	9 ⁻
543	6709	19 ⁺	6166	18 ⁺	1145	3005	12 ⁻	1860	10 ⁻

Continued on next page (footnotes at end of table)

 $^{93}\text{Nb}(^{19}\text{F},\text{p}3\text{n}\gamma)$ **1998Ch35** (continued)

 $\gamma(^{108}\text{In})$ (continued)

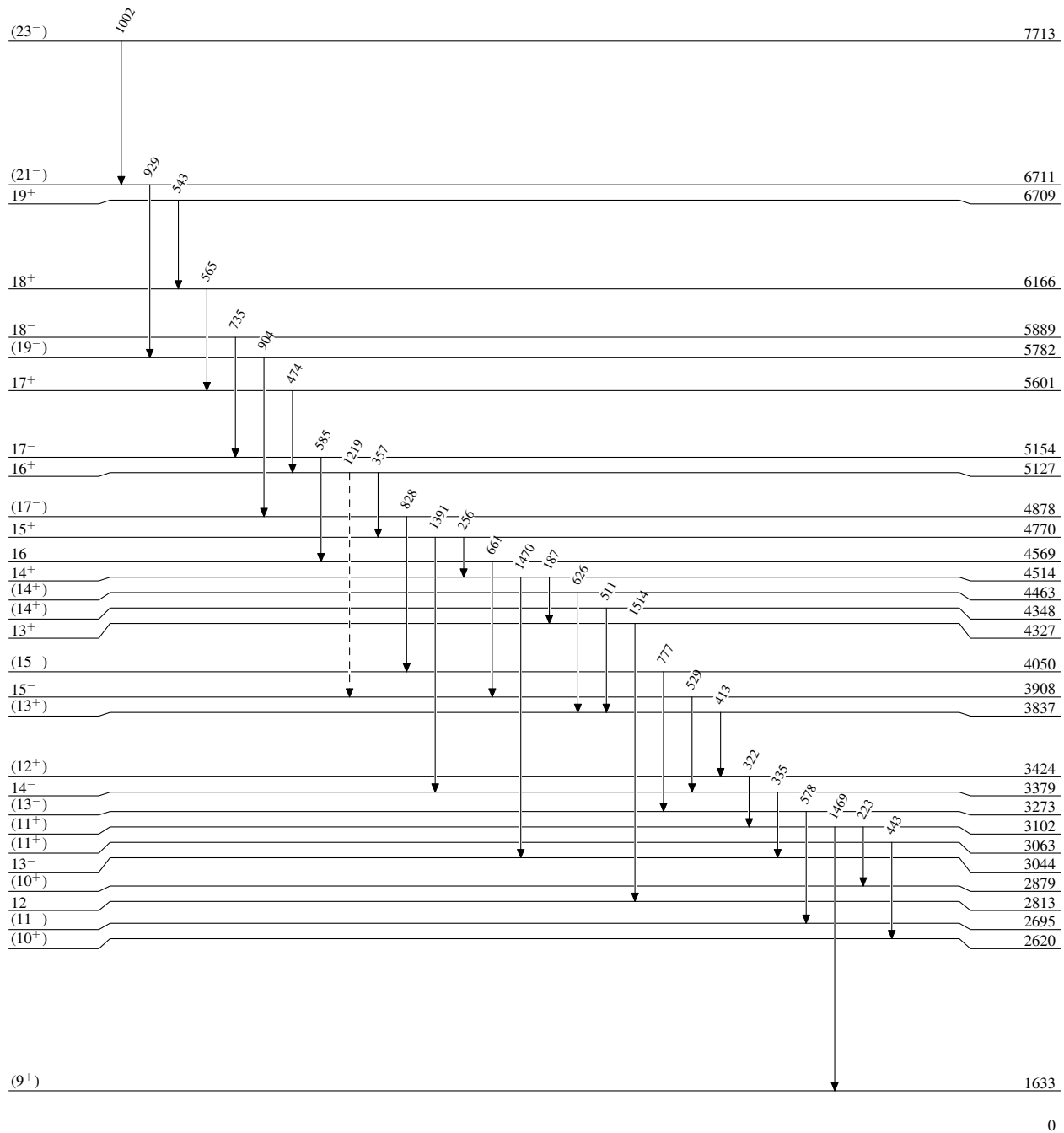
E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
1182	2514	10^-	1332	9^-	1395	2514	10^-	1119	8^-
1219 [†]	5127	16^+	3908	15^-	1396	1396	(8^+)	0	
1245	2364	9^-	1119	8^-	1469	3102	(11^+)	1633	(9^+)
1246	2879	(10^+)	1633	(9^+)	1470	4514	14^+	3044	13^-
1329	2660	11^-	1332	9^-	1514	4327	13^+	2813	12^-
1391	4770	15^+	3379	14^-	1861	1861	10^-	0	

[†] Placement of transition in the level scheme is uncertain.

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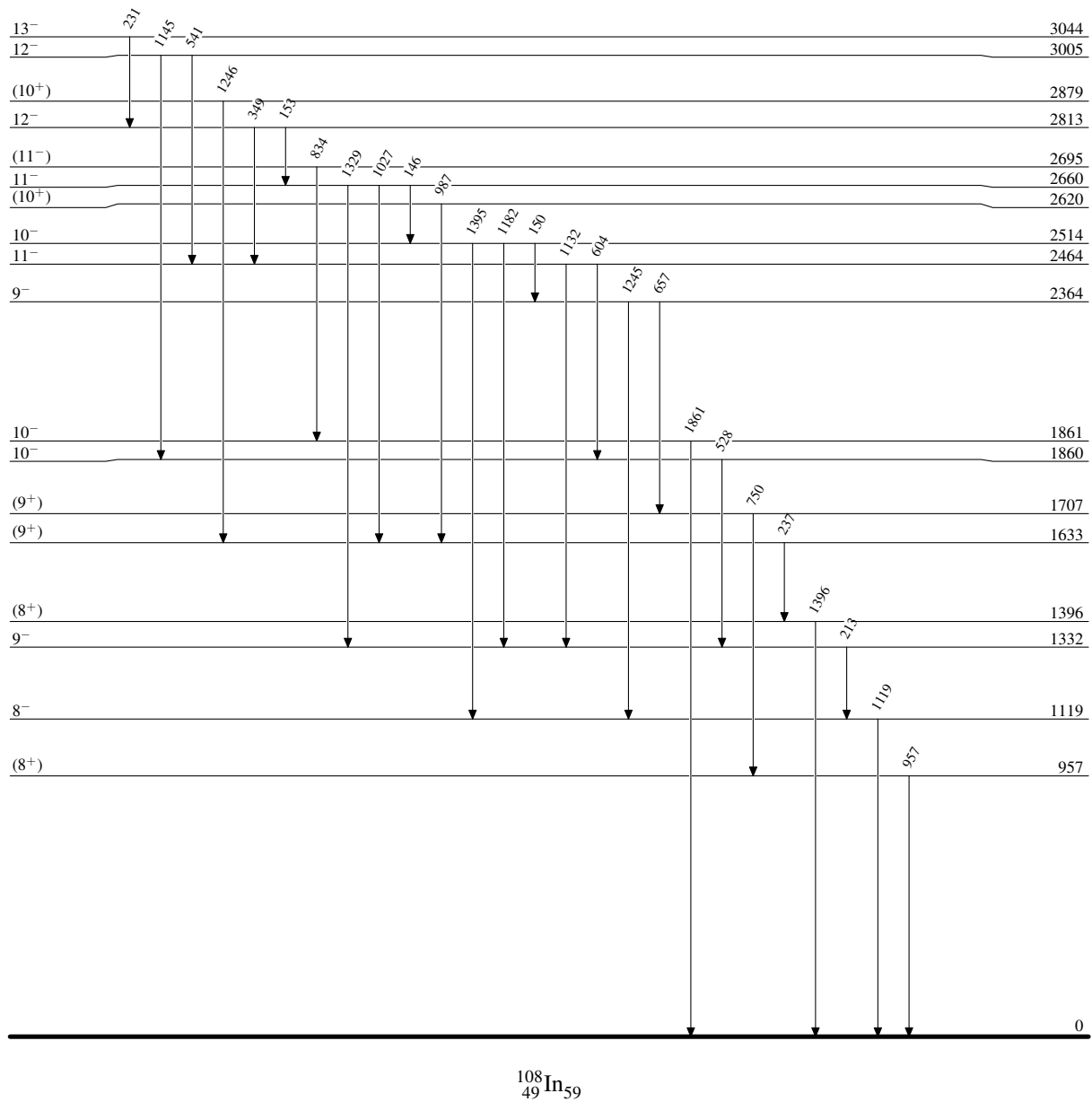
Legend

Level Scheme

-----► γ Decay (Uncertain)

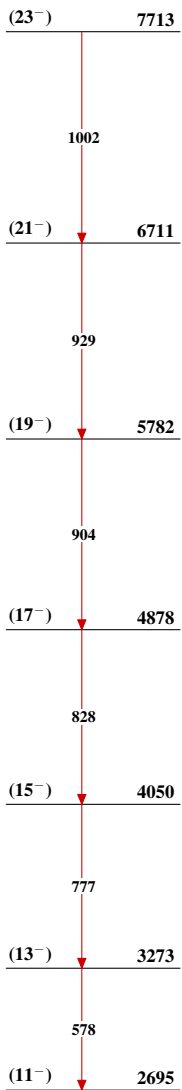
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Level Scheme (continued)

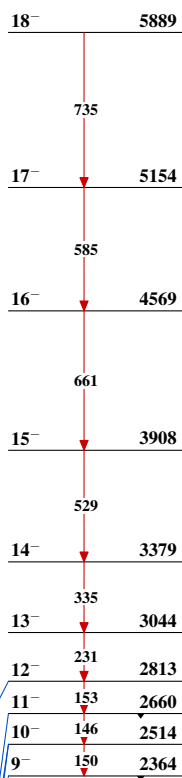


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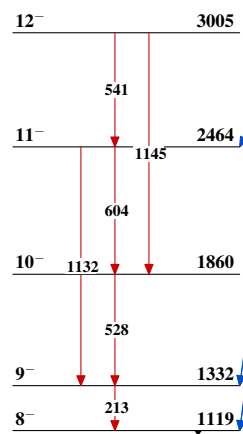
Band(A): $\Delta J=2$, band,
based on 11^-



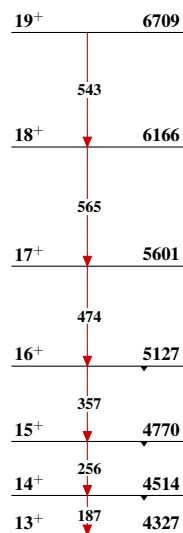
Band(C): $\Delta J=1$, band,
based on 9^-



Band(B): $\Delta J=1$, band, based on 8^-



Band(E): $\Delta J=1$, band,
based on 13^+



Band(D): $\Delta J=1$, band,
based on 10^+

