

Table 15.2 from (1981AJ01): Proton groups from ${}^9\text{Be}({}^7\text{Li}, \text{p}){}^{15}\text{C}$ and ${}^{14}\text{C}(\text{d}, \text{p}){}^{15}\text{C}$

(1974GA33) ^a			(1973GO28, 1975GO31) ^b		
E_x (keV)	$\Gamma_{\text{c.m.}}$ (keV)	J^π ^d	E_x (keV)	$\Gamma_{\text{c.m.}}$ (keV)	J^π ^h
g.s.	bound		g.s.	bound	$\frac{1}{2}^+$ j
$\equiv 740$ ^c	bound		744.1 ± 2 ⁿ	bound	$\frac{5}{2}^+$ k
3100 ± 30	< 40	$(\frac{1}{2}^-)$ ^e	3105.3 ± 5	≈ 42	$(\frac{1}{2}^-)$
4223 ± 15	< 15	$(\frac{5}{2}^-)$	4221.1 ± 3	< 14	$(\frac{7}{2}^+, \frac{5}{2}^-)$
(4550 ± 30)			f		
5833 ± 20		1	f		
5858 ± 20		1	f		
6370 ± 15	< 20	$(\frac{5}{2})$	g	< 14 ^g	$(\frac{7}{2}, \frac{9}{2})^+$
6436 ± 20			6428.1 ± 7	≈ 50	$(\frac{3}{2}, \frac{5}{2}, \frac{7}{2})$
6461 ± 20			g	< 14 ^g	$(\frac{9}{2}^-, \frac{11}{2})$
6542 ± 15	< 20	$(\frac{3}{2})$	6539.8 ± 5	< 14	$(\frac{9}{2}^-, \frac{11}{2})$
6639 ± 15	20 ± 10	$(\frac{3}{2})$			
6847 ± 15	< 20	$(\frac{11}{2}, \frac{13}{2})$	6844.9 ± 5	< 14	$(\frac{13}{2}, \frac{11}{2})^+$
6894 ± 15	< 20	$(\frac{7}{2}, \frac{9}{2})$	6882.4 ± 5		$((\frac{9}{2}^-, \frac{11}{2}^+, \frac{13}{2}^+))$
7100 ± 15	< 15	$(\frac{3}{2})$	7097.2 ± 6		
7354 ± 15	20 ± 10	$(\frac{9}{2}, \frac{11}{2})$	7351.3 ± 6		
7414 ± 20					
7750 ± 30 ⁱ			7.81 ± 10 ^m		
8010 ± 30					
8130 ± 30 ⁱ			8.10 ± 10 ^m		
8491 ± 15	40 ± 15	$(\frac{9}{2}, \frac{11}{2}, \frac{13}{2})$	8.46 ± 10 ^m		
8559 ± 15	40 ± 15	$(\frac{7}{2} \rightarrow \frac{13}{2})$			
9000 ± 30					
(9730 ± 30)					
9789 ± 20	20 ± 15	$(\frac{9}{2} \rightarrow \frac{15}{2})$			
10248 ± 20	20 ± 15	$(\frac{5}{2}, \frac{7}{2}, \frac{9}{2})$			
11015 ± 25					
11123 ± 20	30 ± 20	$(\frac{11}{2} \rightarrow \frac{19}{2})$			
(11680 ± 30)					
11825 ± 20	70 ± 30	$(\frac{13}{2} \rightarrow \frac{31}{2})$			

- ^a ${}^9\text{Be}({}^7\text{Li}, \text{p})$: $E({}^7\text{Li}) = 20$ MeV. E_x based on 740 keV for first excited state.
- ^b ${}^{14}\text{C}(\text{d}, \text{p})$: $E_d = 12 - 14$ MeV.
- ^c $E_x = 739 \pm 1$ keV (1975HA42): from E_γ ; $\tau_m = 3.77 \pm 0.11$ nsec (1968ME08).
- ^d Suggested J^π assignments based on angular distributions (and $2J_f + 1$ dependence) and l_{max} from Γ_n : see (1974GA33).
- ^e $\theta_n^2 = 0.0075 \pm 0.0015$ (1974GA33).
- ^f Not observed.
- ^g Observed in the later work of (1975GO31) but E_x not redetermined.
- ^h Analysis of the two bound states is done using DWUCK. For the unbound states DOXY was used. For values of $\Gamma_n/\Gamma_{\text{s.p.}}$ under various assumptions see (1975GO31).
- ⁱ Broad or unresolved states.
- ^j $S = 0.88$ (1975GO31).
- ^k $S = 0.69$ or 0.55 (1975GO31). See also (1976AJ04). $g = -0.77 \pm 0.06$ (1975HA42).
- ^l Sum of the J for these two states is 2 [based on $(2J_f + 1)$ dependence of cross section] (1974GA33).
- ^m Observed by (1975CE04): $E_d = 27$ MeV who also report proton groups to ${}^{15}\text{C}^*(0, 0.74, 4.22, 6.43, 6.88, 7.35)$.
- ⁿ $\tau_m = 3.73 \pm 0.23$ nsec (1962LO02).