

Table 12.11 from (1990AJ01): Resonances ^a in ¹¹B(p, γ)¹²C and ¹¹B(p, α)⁸Be

Peak number	E_p (MeV)	$\Gamma_{c.m.}$ (keV)	$\sigma(\gamma_0)$ (μ b)	$\sigma(\gamma_1)$ (μ b)	$\sigma(\alpha_0)$ (mb)	$\sigma(\alpha_1)$ (mb)	Γ_{γ_0} (eV)	Γ_{γ_1} (eV)	Γ_{α_0} (keV)	Γ_{α_1} (keV)	Γ_p (keV)	¹² C* (MeV)	$J^\pi; T$
1	0.162 ^b	5.3 \pm 0.2	5.5	152	res.	res.	0.58 ^c	12.6 \pm 1.8 ^c	0.290 \pm 0.045	(6.3 \pm 0.5)	0.0217 \pm 0.0018	16.1058 \pm 0.0007	2 ⁺ ; 1
2	0.675	300	non-res.	48	non-res.	600	< 0.4	8.0	< 0.27	150	150	16.576	2 ⁻ ; 1
3	1.388	1150	[27] ^d	3	3.3	\approx 180	44	5	10	140	1000	17.230	1 ⁻ ; 1
4	2.00 ^e	96 \pm 5	non-res.	non-res.	9.0	(25)			4.6	11.4	76	17.79	0 ⁺ ; 1
5	2.37	600 \pm 1000		0.77 ^f								18.13	(1 ⁺ ; 0)
6	2.64 ^g	\approx 400	weak?	res.	32.4 \pm 4.8	270 \pm 40	\approx 2 \times 10 ⁻³	3.2	65	177	68	18.38	3 ⁻ ; 1
7	2.66	43	non-res.	non-res.	non-res.	non-res.	< 0.5	< 0.5	< 1	< 5	33	18.39	0 ⁻
8	3.01	100	non-res.	non-res.	3.4						< 10	18.71	n. π . ^j ; (1)
9	3.12	100	weak	[20] ^d	non-res.	non-res.	(0.4)	2.0	< 0.2	< 1.5	97	18.81	2 ⁺ ; 1
10	3.5	1100	[20] ^d	res.	5.2	res.	25	10	50	200	300	19.2	(1 ⁻ ; 1)
11	3.75	(1100)	non-res.	res.	7.4 \pm 1.1	300 \pm 40	< 3	3	20	450	450	19.39	(2 ⁺ ; 0)
12	4.93	180	non-res.	res.	res.	170 \pm 40						20.47	
13	5.11	275	non-res.	[35] ^d	6.0 \pm 0.9	non-res.						20.64	(3 ⁻ ; 1)
14	5.85	300			res.							(21.31)	
15	6.0		res.	non-res.	res.							21.5	
16	6.7	500	res.	[35] ^d	res.							22.1	
17	7.25	3200	120	non-res.		res.	\geq 2500 ⁱ					22.6	(1 ⁻ ; 1)
18	8.3		res.		res.							23.6	
19	10.3	\approx 6500	[60] ^d	83								25.4	
20	11.76 ^k		non-res.	45 ^h	res.							26.72	(1 ⁻)
21	12.5 ^l	\approx 700	21 ^h	non-res.								27.4	
22	13.0	\approx 6000			res.							27.9	
23	13.09		19 ^h	38 ^h								27.94	
24	13.8 ^l	\approx 2500	non-res.	25 ^h								28.6	
25	14.3 ^k		16 ^h	non-res.								29.0	
26	14.8	broad	res.									29.5	

^a For references see (1975AJ02, 1980AJ01). See also (1985KI16; theor.).

^b $E_{res. (c.m.)} = 148.6 \pm 0.4$ keV. This is the mean of the two values quoted in reaction 17.

^c See Table 12.7.

^d Estimated.

^e Decays via ¹²C*(12.71) [$J^\pi; T = 1^+; 0$]: $\Gamma_\gamma = 3.7 \pm 1.5$ eV.

^f Decays via ¹²C*(15.11) [$1^+; 1$]: $(2J + 1) \Gamma_\gamma \geq 2.8 \pm 0.6$ eV.

^g Γ_γ to ¹²C*(9.6) = 5.7 \pm 2.3 eV, consistent with $J^\pi = 3^-; T = 1$.

^h $4\pi \times \sigma(90^\circ)$.

ⁱ Assuming a single resonance.

^j Natural parity.

^k Resonant in γ_2 .

^l Resonant in γ_3 .