Table 12.11 from (1980AJ01): Resonances in ^{11}B(p, γ)^{12}C and ^{11}B(p, α)^{8}Be

Peak no.	E_p (MeV)	$\Gamma_{c.m.}$ (keV)	$\sigma(\gamma_0)$ (μb)	$\sigma(\gamma_1)$ (μb)	$\sigma(\alpha_0)$ (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)	$J^\pi; T$	Refs. †
1	0.163 [a]	$5.2^{+0.5}_{-0.3}$	5.5	152	res.	res.	(0.65)	(21.0± 3.3) [b]	0.290± 0.045	(6.3± 0.5)	0.0217± 0.0018	16.1067± 0.5 keV	$2^+; 1$	(1974AN19, 1979DA03)
2	0.675	300	non-res.	48 [f]	non-res.	600 [f]	< 0.4	8.0	< 0.27	150	150	16.58	$2^-; 1$	(1965SE06)
3	1.388 [l]	1150	[27] [c]	3	3.3	≈ 180	44	5	10	140	1000	17.23	$1^-; 1$	(1965SE06, 1963SY01)
4	1.98	100	non-res.	non-res.	9.0	(25)	< 0.5	< 0.5	4.6	11.4	76	17.77	$0^+; 1$	(1965SE06, 1963SY01)
5	2.37	600 ± 100		0.77 [h]								18.13	$(1^+; 0)$	(1972SU08)
6	2.62	310	weak?	res.	32.4 ± 4.8	270 ± 40	< 1.5	3.2	65	177	68	18.36	$(3^-; 1)$	(1965SE06, 1963SY01)
7	2.66	43	non-res.	non-res.	non-res.	non-res.	< 0.5	< 0.5	< 1	< 5	33	18.39	0^-	(1965SE06)
8	3.01	100	non-res.	non-res.	3.4						< 10	18.71	n.π. [g]; (1)	(1965SE06)
9	3.12	100	weak	[20] [c]	non- res.	non-res.	(0.4)	2.0	< 0.2	< 1.5	97	18.81	$2^+; 1$	(1965SE06, 1975BO1H)
10	3.5	1100	[20] [c]	res.	5.2	res.	25	10	50	200	300	19.2	$(1^-; 1)$	(1965SE06, 1975BO1H)
11	3.75	(1100) [o]	non-res.	res.	7.4 ± 1.1	300 ± 40	< 3	3	20	450	450	19.39	$(2^+; 0)$	(1965SE06, 1963SY01, 1975BO1H)
12	4.93	180	non-res.	res.	res. [p]	170 ± 40						20.47		(1963SY01, 1964AL20, 1975BO1H)
13	5.11	275	non-res.	[35] [c]	6.0 ± 0.9	non-res.						20.64	$(3^-; 1)$	(1963SY01, 1964AL20)
14	5.85	300			res.							(21.32)		(1975BO1H)
15	6.0		res.	non-res.	res.							21.5		(1964AL20, 1975BO1H)
16	6.7	500	res.	[35] [c]	res.							22.1		(1964AL20, 1975BO1H)
17	7.27 [m]	3200	120	non-res.	[q]	res.	≥ 2500 [e]					22.6	$(1^-; 1)$	(1964AL20)
18	8.3		res.	res.	res.							23.6		(1964AL20)
19	10.3	≈ 6500	[60] [c]	83								25.4	[i]	(1964AL20, 1972GL01)
20	11.76 [j]		non-res.	45 [d]	res.							26.73	(1^-) [k]	(1964AL20, 1977SN01)
21	12.5 [n]	≈ 700	21 [d]	non-res.								27.4		(1967FE04, 1977SN01)
22	13.0	≈ 6000			res.							27.9		(1977SN01)
23	13.09		19 [d]	38 [d]								27.94		(1964AL20, 1967FE04)
24	13.8 [n]	≈ 2500	non-res.	25 [d]								28.6		(1967FE04, 1977SN01)
25	14.3 [j]		16 [d]	non-res.								29.0		(1967FE04, 1977SN01)
26	14.8	broad	res.									29.5		(1969KE02, 1977SN01)

† See also other references in Table 12.12 (1975AJ02).

[a] $E_{\rm res}$(c.m.) $= 149.8 \pm 0.2$ keV, $\Gamma_{\rm c.m.} = 5.2^{+0.5}_{-0.3}$ keV (1979DA03).

[b] 97% of the value of Γ_γ reported by (1974AN19) [21.7 ± 3.3 eV] to take into account the branching ratios; see however, Table 12.8.

[c] Estimated from graph (1964AL20).

[d] $4\pi \times \sigma$ (90°).

[e] Assuming a single resonance (1961GO13).

[f] (1953BE61, 1953HU29).

[g] n.π. = natural parity.

[h] Resonance in yield of 15.1 MeV γ-rays; $(2J+1)\Gamma_\gamma \geq 2.8 \pm 0.6$ eV (1972SU08).

[i] See text (1972GL01).

[j] Resonant in γ_2 (1977SN01).

[k] See (1970KO27).

[l] (1975KR1E) suggest 2^- for ^{12}C*(17.23).

[m] (1977OH1A): $J^\pi = (3^-)$. See also (1974KA1J, 1977FU09).

[n] Resonant in γ_3 (1977SN01).

[o] $\Gamma = 780$ keV (1975BO1H: prelim.).

[p] (1975BO1H).

[q] (1975BO1H; prelim.) report resonances in α_0 at $E_{\rm p} = 7.0$, 7.2 and 7.5 MeV, the latter with $\Gamma = 0.2$ MeV.