Table 13.17 from (1991AJ01): Resonances in ^{12}C(p, γ)^{13}N [a]

E_p (MeV±keV)	$\Gamma_{c.m.}$ (keV)	Γ_{γ_0} (eV)	^{13}N* (MeV)	Res. in yield of	J^π
0.4568 ± 0.5	31.7 ± 0.8	0.50 ± 0.04 [g]	2.3649 ± 0.0006	γ_0	$\frac{1}{2}^+$
1.689 ± 2 [b]	62 ± 4 [f]	0.64	3.502	γ_0	$\frac{3}{2}^-$
9.01 ± 150	≈ 280		10.25	γ_0	$(\frac{1}{2}^+)$
10.62 ± 120	200 ± 50	≈ 4.2 [h]	11.74	γ_0	$\frac{3}{2}^+$
12.5 ± 200	6500	≥ 1100	13.5	γ_0	$\frac{3}{2}^+$
13.12 ± 90	160 ± 20	3.7 ± 1.0 [i]	14.04	γ_0	$\frac{3}{2}^+$
14.2	[see Table 13.6]		15.0	γ_0, γ_{2+3}	$\frac{3}{2}^-; T = \frac{3}{2}$
14.5 ± 200 [c]	350 ± 140	≥ 0.5	15.3	γ_1	$(\frac{3}{2}^+)$
16.9			17.5	γ_0	
20 [d]			20	γ_1, γ_{2+3}	
20.5 [e]	≈ 3700		20.8	γ_0	
23			23	γ_0	
24.5			24.5	γ_{2+3}	
32.5	broad		31.9	γ_0, γ_{2+3}	

[a] For references and other comments see Tables 13.21 in (1981AJ01) and 13.17 in (1986AJ01).

[b] (1989KI21) [see for additional comments]. See also (1984PO13, 1987PO09). *Please note*: The earlier work [see, e.g., 1974RO29] led to $E_p = 1699 \pm 2$ keV. It would be useful to confirm the new value of (1989KI21). I am indebted to Prof. Robert Zurmuhle for a very helpful discussion.

[c] This peak may be due to an unresolved doublet.

[d] Giant resonance for γ_1.

[e] Main dipole strength is concentrated in this peak.

[f] (1985BR06) have studied this resonance with polarized protons and analyzed the results with R-matrix theory: the E2/M1 mixing ratio is -0.102 ± 0.003 and the total width (lab.) is calculated to be 62 keV. An extranuclear direct capture background appears to be necessary to explain the data. (1989KI25) suggest 65.6 ± 1.8 keV but it is not clear whether that value is Γ_{lab} or $\Gamma_{c.m.}$.

[g] See the discussion in (1985BA75).

[h] A value of 0.30 ± 0.05 is assumed for Γ_{p_0}/Γ: see Table 13.18.

[i] A value of 126 keV is taken for Γ_{p_0}.