

Table 16.18 from (1993TI07): Resonances in $^{13}\text{C} + ^3\text{He}$ ^a

E (^3He) (MeV \pm keV)	$\Gamma_{\text{c.m.}}$ (keV)	Outgoing particles	$^{16}\text{O}^*$ (MeV)	$J^\pi; T$
1.55	≈ 80	n_0, n_3	24.05	
1.55 ± 100	450	γ_0	24.1	
2.0	≈ 250	n_0	24.4	
2.6 ± 100		$\alpha\gamma_{15.1}$	24.9	($T = 1$)
2.87 ± 50	600	γ_0	25.12	1^-
≈ 3.1		α_0, α_2	≈ 25.3	
≈ 3.5	≈ 300	α_0	≈ 25.6	(3^-)
≈ 4	≈ 300	$\alpha_0, \alpha_1, \alpha_2$	≈ 26	(3^-)
4.0 ± 100	^b	$\gamma_0, \gamma_{1+2}, \alpha\gamma_{15.1}$	26.0	$1^-; (1)$
4.6 ± 100 ^c	720 ± 160 ^c	γ_2, p_0	26.5	$2^+, 4^+$
5.2 ± 100	^b	$\alpha\gamma_{15.1}$	27.0	($T = 1$)
5.6 ± 100	≈ 600	$\gamma_0, \gamma_{1+2}, \alpha\gamma_{15.1}, ^8\text{Be}$	27.3	(1^-)
≈ 5.8	≈ 2500	γ_{3+4}	27.5	
6.0 ± 100	≈ 500	$p_0, p_{1+2}, ^3\text{He}, \alpha_1, \alpha_2$	27.7	($3^-; 0$)
≈ 6		γ_0	28	
6.5 ± 100	^b	$\alpha\gamma_{15.1}$	28.1	($T = 1$)
6.8 ± 100		$\alpha_0, \alpha_1, \alpha_2$	28.3	($T = 0$)
7.1 ± 200		γ_{1+2}	28.6	
7.5 ± 100	^b	$\alpha\gamma_{15.1}$	28.9	($T = 1$)
8.6 ± 100	^b	$\alpha\gamma_{15.1}$	29.8	($T = 1$)
9.4 ± 100	^b	$\alpha\gamma_{15.1}$	30.4	($T = 1$)
10.1 ± 100	^b	$\alpha\gamma_{15.1}$	31.0	($T = 1$)

^a For references see [Tables 16.15 in \(1971AJ02\)](#), [16.13 in \(1977AJ02\)](#), and [16.15 in \(1982AJ01\)](#).

^b Lab widths 0.5 – 1 MeV.

^c Based on $\Gamma_{\text{c.m.}} = 530 \pm 80$ keV [from $^{15}\text{N}(p, \gamma)$, see [Table 16.22](#)], $\Gamma_{p_0} = 150 \pm 45$ keV [$J^\pi = 2^+$], 110 ± 35 keV [4^+]; $\Gamma_{p_0}/\Gamma = 0.29 \pm 0.10$ [2^+], 0.21 ± 0.07 [4^+]; $\Gamma_{\gamma_2} = 740 \pm 240$ eV [2^+], 410 ± 140 eV [4^+]. See [\(1977CH16\)](#), [1978CH19](#), [1986AJ04](#)).