

Table 18.12 from (1995TI07):
Resonances in $^{14}\text{C}(\alpha, \gamma)^{18}\text{O}$, $^{14}\text{C}(\alpha, n)^{17}\text{O}$ and $^{14}\text{C}(\alpha, \alpha)^{14}\text{C}$ ^a

E_α (MeV \pm keV)	Γ_{lab} (keV)	Particles out	$E_x(^{18}\text{O})$ (MeV)	J^π
1.140 \pm 2 ^b		γ	7.114	4 ⁺
1.790 \pm 2 ^b	< 3	γ	7.619 ^h	1 ⁻
2.10 ^b		γ	7.86	5 ⁻
2.330 \pm 2 ^b	< 3	γ, α_0	8.039 ^{b, h}	1 ⁻
2.440 \pm 2 ^b		γ	8.125	5 ⁻
2.554 \pm 4 ^b	1.3 \pm 1	γ, n, α_0	8.213	2 ⁺
2.643 \pm 3 ^b	10 \pm 1	γ, n, α_0	8.282	3 ⁻
2.800 \pm 7	10 \pm 7	n	8.404	
3.330 \pm 12	90 \pm 15	n, α_0	8.817	
3.508 \pm 4	55 \pm 3	n, α_0	8.955	
4.030 \pm 15	35 \pm 20	n, (α_0)	9.361	
4.07 \pm 40	\approx 150	n, (α_0)	9.39	
4.17 \pm 40	\approx 70	n, (α_0)	9.47	
4.434 \pm 10	80 \pm 40	n, (α_0)	9.675	
4.70 \pm 40	\approx 200	n, (α_0)	9.88	
5.004 \pm 10	21 \pm 5	n, α_0	10.118	3 ⁻
5.23 ^c	d	n, α_0	10.29	4 ⁺
5.34	d	n, α_0	10.38	3 ⁻
5.60	e	n, α_0	10.58	
5.90	f	n, α_0	10.82	
6.02	f	n, α_0	10.91	
6.13	f	n, α_0	10.99	
6.30	e	n, α_0	11.13	
6.64	d	n, α_0	11.39	(2 ⁺)
6.67	d	n, α_0	11.41	(4 ⁺)
6.93	d	n, α_0	11.62	5 ⁻
7.03	d	n, α_0	11.69	6 ⁺
7.19	f	n, α_0	11.82	(3 ⁻)
7.47	f	n, α_0	12.04	(2 ⁺)
7.75	g	n, α_0	12.25	(0 ⁺ , 1 ⁻)
7.85	d	n, α_0	12.33	5 ⁻
8.06	d	n, α_0	12.50	4 ⁺
8.10	d	n, α_0	12.53	6 ⁺

^a See also [Table 18.10](#). For references see [Table 18.5 in \(1978AJ03\)](#).

^b [\(1987GA15\)](#): $\Gamma_\gamma = 0.095 \pm 0.020, 0.41 \pm 0.08, 0.043 \pm 0.009, 1.07 \pm 0.22, 0.27 \pm 0.05, 0.41 \pm 0.09,$ and 0.49 ± 0.13 eV, respectively for $^{18}\text{O}^*(7.11, 7.62, 7.86, 8.04, 8.13, 8.21, 8.28 \text{ MeV})$.

^c $\pm 10 - 20$ keV for this and all higher resonances (G.E. Mitchell, private communication).

^d Γ_α , large; Γ_n , large.

^e Γ_α , small; Γ_n , small.

^f Γ_α , small; Γ_n , large.

^g Γ_α , large; Γ_n , small.

^h Recent $^{14}\text{C}(\alpha, \gamma)$ measurements for these two 1^- states by [\(1993HA17\)](#) gave $E_x = 7.6159 \pm 0.0007$ and 8.0378 ± 0.0007 keV.