

Table 18.4 from (1972AJ02): Resonances in $^{14}\text{C}(\alpha, \gamma)^{18}\text{O}$, $^{14}\text{C}(\alpha, n)^{17}\text{O}$ and $^{14}\text{C}(\alpha, \alpha)^{14}\text{C}$

| E_α (MeV \pm keV) | Γ_{lab} (keV) | Particles out ^a | $^{18}\text{O}^*$ (MeV) | J^π | Refs. |
|-------------------------------|--------------------------------|-------------------------------|----------------------------|------------------------------------|--|
| 1.140 \pm 2 | | γ | 7.114 | 4 ⁺ | (1959GO74, 1966LE1B, 1967LE02) |
| 1.790 \pm 2 | < 3 | γ | 7.620 | 1 ⁻ | (1958PH37, 1959GO74, 1966LE1B, 1967LE02) |
| 2.330 \pm 2 | < 3 | γ, α_0 | 8.039 | 1 ⁻ | (1958PH37, 1958WE29, 1966LE1B, 1967LE02) |
| 2.440 \pm 12 | | γ | 8.125 | 5 ⁻ | (1966LE1B, 1967LE02) |
| 2.554 \pm 4 | 1.3 \pm 1 | γ, n, α_0 | 8.214 | 2 ⁺ | (1956SA06, 1958WE29, 1966BA03) |
| 2.643 \pm 3 | 10 \pm 1 | n, α_0 | 8.283 | 3 ⁻ | (1956SA06, 1958WE29, 1966BA03) |
| 2.800 \pm 7 | 10 \pm 7 | n | 8.405 | | (1956SA06, 1966BA03) |
| 3.330 \pm 12 | 90 \pm 15 | n, α_0 | 8.817 | | (1956SA06, 1958WE29, 1966BA03) |
| 3.508 \pm 4 | 55 \pm 3 | n, α_0 | 8.955 ^g | | (1956SA06, 1958WE29, 1966BA03) |
| 4.030 \pm 15 | 35 \pm 20 | n, (α_0) | 9.361 | | (1966BA03, 1970MO13) |
| 4.07 \pm 40 | \approx 150 | n, (α_0) | 9.39 | | (1966BA03, 1970MO13) |
| 4.17 \pm 40 | \approx 70 | n, (α_0) | 9.47 | | (1966BA03, 1970MO13) |
| 4.434 \pm 10 | 80 \pm 40 | n, (α_0) | 9.675 | | (1966BA03, 1970MO13) |
| 4.70 \pm 40 | \approx 200 | n, (α_0) | 9.88 | | (1966BA03, 1970MO13) |
| 5.004 \pm 10 | 21 \pm 5 | n, α_0 | 10.119 | 3 ⁻ | (1966BA03, 1970MO13) |
| 5.23 ^f | b | n, α_0 | 10.29 | 4 ⁺ | (1970MO13) |
| 5.34 | b | n, α_0 | 10.38 | 3 ⁻ | (1970MO13) |
| 5.60 | c | n, α_0 | 10.58 | | (1970MO13) |
| 5.90 | d | n, α_0 | 10.82 | | (1970MO13) |
| 6.02 | d | n, α_0 | 10.91 | | (1970MO13) |
| 6.13 | d | n, α_0 | 10.99 | | (1970MO13) |
| 6.30 | c | n, α_0 | 11.13 | | (1970MO13) |
| 6.64 | b | n, α_0 | 11.39 | (2 ⁺) | (1970MO13) |
| 6.67 | b | n, α_0 | 11.41 | (4 ⁺) | (1970MO13) |
| 6.93 | b | n, α_0 | 11.62 | 5 ⁻ | (1970MO13) |
| 7.03 | b | n, α_0 | 11.69 | 6 ⁺ | (1970MO13) |
| 7.19 | d | n, α_0 | 11.82 | (3 ⁻) | (1970MO13) |
| 7.47 | d | n, α_0 | 12.04 | (2 ⁺) | (1970MO13) |
| 7.75 | e | n, α_0 | 12.25 | (0 ⁺ , 1 ⁻) | (1970MO13) |
| 7.85 | b | n, α_0 | 12.33 | 5 ⁻ | (1970MO13) |
| 8.06 | b | n, α_0 | 12.49 | 4 ⁺ | (1970MO13) |
| 8.10 | b | n, α_0 | 12.53 | 6 ⁺ | (1970MO13) |

^a For the first four states, see also [Table 18.2](#).

^b Γ_α , large; Γ_n , large.

^c Γ_α , small; Γ_n , small.

^d Γ_α , small; Γ_n , large.

^e Γ_α , large; Γ_n , small.

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

^g Two states with $E_x = 9.0$ to 9.2 MeV and $J^\pi = (2^+, 3^-)$ or $(4^+, 3^-)$ are reported by [\(1958WE29\)](#).