

Table 19.15 from (1987AJ02): Resonances in $^{18}\text{O}(p, \gamma)^{19}\text{F}$ ^a

| E_p (keV) | Γ_{lab} (keV) | $\omega\gamma$ (eV) | J^π | E_x (MeV) |
|-------------------------------|-----------------------------|---|---|---------------------|
| 151 ± 2 | < 0.3 | $(1.1 \pm 0.1) \times 10^{-3}$ ^j | $\frac{1}{2}^+$ | 8.137 ^e |
| 216 ± 1 | < 1 | $> 0.8 \times 10^{-5}$ | | 8.199 |
| 274 ± 3 | < 1.5 | $(3.7 \pm 0.5) \times 10^{-5}$ | $< \frac{7}{2}$ | 8.254 |
| 334 ± 2 | < 1 | $(0.95 \pm 0.08) \times 10^{-3}$ | $\frac{5}{2}^+$ | 8.310 ^f |
| 622 ± 2 | < 0.5 | $(10 \pm 2) \times 10^{-3}$ | $\frac{5}{2}^+$ | 8.583 |
| 629.6 ± 0.3 | 2.0 ± 0.3 | 0.10 ± 0.02 | $\frac{3}{2}^-$ | 8.5904 ^g |
| ≈ 680 | 300 | | $\frac{3}{2}^-$ | 8.638 |
| 841 ± 2 | 48 ± 2 | 1.4 ± 0.2 | $\frac{1}{2}^+$ ^b $T = \frac{3}{2}$ | 8.791 ^h |
| 977 ± 2 | 10 ± 2 | $(1.5 \pm 0.2) \times 10^{-2}$ | $\frac{3}{2}$ | 8.919 |
| 1166.5 ± 0.4 | | 0.29 ± 0.03 ^j | $\frac{7}{2}^-$ | 9.0988 ⁱ |
| 1398 ± 2 | 3.6 ± 0.8 | 0.08 ± 0.01 | $\frac{3}{2}^+$ | 9.318 |
| 1630 ± 2 ^c | 7 ± 2 | 0.025 ± 0.005 | $\frac{5}{2}^+$ | 9.538 |
| 1660 ± 3 | 27 ± 3 | 0.041 ± 0.010 | $\frac{3}{2}^-$ | 9.566 |
| 1670 ± 4 | 70 ± 3 | 0.06 ± 0.01 | $\frac{3}{2}^-$ | 9.576 |
| 1684 ± 4 | 8 ± 2 | 0.025 ± 0.004 | $\frac{7}{2}$ | 9.589 |
| 1768 ± 1.4 | 3.8 ± 0.4 | 1.2 ± 0.2 | $\frac{3}{2}^+$ | 9.668 |
| 1928.4 ± 0.6 ^d | 0.3 ± 0.05 | 2.8 ± 0.7 | $\frac{5}{2}$ | 9.820 |
| 1986 ± 2 | < 1.5 | 0.13 ± 0.04 | $\frac{11}{2}^-$ | 9.875 |
| 1996 ± 4 | 26 ± 2 | 0.14 ± 0.05 | $\frac{1}{2}^+$ | 9.884 |
| 2263.0 ± 0.7 | 5.0 ± 1.0 | | $\frac{3}{2}^-$ | 10.137 |
| > 2300 ^d | | | | |

^a For references see [Tables 19.15 in \(1978AJ03\)](#) and [19.16 in \(1983AJ01\)](#). See also [Tables 19.7 and 19.14](#).

^b Supported by direct capture into this state with a $\sin^2 \theta$ distribution of the d.c. γ -rays and by interference patterns near the resonance.

^c Decays partly (see [Table 19.7](#)) via a state at 8015 ± 2 keV with $J^\pi = \frac{5}{2}^+$.

^d See [Table 19.15 in \(1978AJ03\)](#).

^e $\Gamma_p = 0.17$ eV, $\Gamma_\alpha = 220$ eV, $\Gamma_\gamma = 1.3$ eV.

^f $\Gamma_\gamma = 0.71 \pm 0.17$ eV, $\Gamma_p = 0.019 \pm 0.009$ eV, $\Gamma_\alpha = 46 \pm 19$ eV, $\Gamma_{\text{total}} = 47 \pm 19$ eV.

^g $\Gamma_\gamma = 0.85 \pm 0.17$ eV, $\Gamma_p = 224 \pm 43$ eV, $\Gamma_\alpha = 3410 \pm 1220$ eV.

^h The strength of the transition to $^{19}\text{F}^*(7.262)$ [see [Table 19.7](#)] limits J to $\frac{1}{2}$ or $\frac{3}{2}$ for that state.

ⁱ The angular distribution of the γ -ray from this state to $^{19}\text{F}^*(5.62)$ and branching ratio arguments lead to $J = \frac{5}{2}$ for that state.

^j ([1982BE29](#)).