

Table 15.21 from (1976AJ04): Resonances in  $^{12}\text{C} + {}^3\text{He}$ 

| $E({}^3\text{He})$<br>(MeV $\pm$ keV) | Resonant for   | $\Gamma_{\text{c.m.}}$<br>(keV) | $J^\pi$                           | $E_x$<br>(MeV) | Refs.                |
|---------------------------------------|--|---------------------------------|-----------------------------------|----------------|----------------------|
| 1.21                                  | $p_0, p_2$   |                                 | $(\frac{5}{2})^-$                 | 13.04          | (1957BR18)           |
| 1.3                                   | $p_0 \rightarrow p_3$  |                                 |                                   | 13.1           | (1957BR18)           |
| 2.15                                  | $n, p_0$   |                                 | $(> \frac{5}{2})$                 | 13.79          | (1957BR18)           |
| $2.45 \pm 40^{\text{a}}$              | $n_0, p_0 \rightarrow p_3$                                   | $160 \pm 20$                    | $(\frac{1}{2}^-, \frac{3}{2}^-)$  | 14.03          | A                    |
| $2.75 \pm 40^{\text{a}}$              | $n_0, p_1, p_2, {}^3\text{He}, \alpha_0$                     | $340 \pm 30$                    | $\frac{1}{2}^+$                   | 14.27          | A, (1971JA01)        |
| (2.87)                                | $p_0, p_2$   | 240                             |                                   | (14.37)        | (1973SC1U)           |
| $2.990 \pm 10^{\text{a}}$             | $n_0, p_0, p_1, p_2, p_4, p_5, p_8, {}^3\text{He}, \alpha_0$ | $100 \pm 10$                    | $\frac{3}{2}^+, \frac{5}{2}^+$    | 14.465         | A, (1971JA01)        |
| $3.28 \pm 40^{\text{a}}$              | $p_0, (p_1, p_2)$  | $180 \pm 40$                    |                                   | 14.70          | (1964KU05)           |
| $3.60 \pm 40$                         | $p_0, p_1, p_2$  | $400 \pm 25$                    |                                   | 14.95          | (1958JO20, 1964KU05) |
| $4.20 \pm 10$                         | $p_5, p_6, \alpha_0$   | $65 \pm 15$                     |                                   | 15.43          | (1964KU05)           |
| $4.37 \pm 40$                         | $p_0, p_1, p_2, p_4, p_7, p_8, \alpha_0$                     | $80 \pm 25$                     |                                   | 15.57          | A <sup>d</sup>       |
| $4.65 \pm 50$                         | $n_0$  |                                 |                                   | 15.79          | A                    |
| $4.78 \pm 50$                         | ${}^3\text{He}, \alpha_0$                                    | 350                             | $\frac{1}{2}^-, \frac{3}{2}^-$    | 15.90          | (1969WE03)           |
| $4.97 \pm 20$                         | $\alpha_0$   |                                 |                                   | 16.05          | (1969WE08)           |
| $5.03 \pm 20$                         | $n_0, {}^3\text{He}, \alpha_0$                               |                                 |                                   | 16.10          | A, (1969WE08)        |
| $5.15 \pm 20$                         | $n_0, {}^3\text{He}, \alpha_0$                               |                                 |                                   | 16.19          | A, (1969WE08)        |
| $5.45 \pm 50$                         | ${}^3\text{He}, \alpha_0$                                    | 170                             | $\frac{1}{2}^+$                   | 16.43          | (1969WE03)           |
| $5.85 \pm 50$                         | $n_0, {}^3\text{He}$   |                                 |                                   | 16.75          | (1964OS01, 1966SC12) |
| $6.80 \pm 50$                         | $n_0, {}^3\text{He}, \alpha_0$                               | 600                             | $\frac{1}{2}^-, \frac{3}{2}^-$    | 17.51          | (1964OS01, 1969WE03) |
| $7.40 \pm 50$                         | ${}^3\text{He}$  | 200                             | $\frac{1}{2}^-, \frac{3}{2}^-$    | 17.99          | (1969WE03)           |
| $7.70 \pm 50$                         | $n_0, p_0$   |                                 |                                   | 18.23          | (1964OS01, 1973SO04) |
| $8.70 \pm 50$                         | $n_0$  |                                 |                                   | 19.03          | (1964OS01)           |
| $9.80 \pm 50$                         | $n_0$  |                                 |                                   | 19.91          | (1964OS01)           |
| (10.5)                                | $p_0$  |                                 |                                   | (20.5)         | (1973SO04)           |
| (17.0) <sup>b</sup>                   | ${}^3\text{He}$  | $\approx 600$                   | $(\frac{13}{2}^-)$                | (26.0)         | (1968FO06, 1972MC01) |
| (20.0) <sup>c</sup>                   | ${}^3\text{He}$  | $\approx 2500$                  | $(\frac{9}{2}^-, \frac{11}{2}^-)$ | (28.0)         | (1972MC01)           |
| (21.5)                                | ${}^3\text{He}$ to $^{12}\text{C}^*(15.1)$                   | $\approx 2500$                  |                                   | (29.0)         | (1970SI16)           |

A: See references listed in Table 15.21 (1970AJ04) for this state.

<sup>a</sup> See also (1973SC1U).

<sup>b</sup>  $\Gamma_p = 0.06$  MeV (1972MC01).

<sup>c</sup>  $\Gamma_p \geq 0.1$  MeV (1972MC01).

<sup>d</sup> Omit (1969WE03).