

Table 19.10 from (1983AJ01): Levels of  $^{19}\text{F}$  from  $^{15}\text{N}(\alpha, p)$  and  $^{15}\text{N}(\alpha, \alpha)$  <sup>a</sup>

| $E_\alpha$ (MeV $\pm$ keV) | $\Gamma_{\text{lab}}$ (keV) | $J^\pi$                        | $E_x$ (MeV $\pm$ keV) |
|----------------------------|-----------------------------|--------------------------------|-----------------------|
| 1.878 $\pm$ 10             | 4                           | $\frac{3}{2}^+$                | 5.496                 |
| 2.614 $\pm$ 10             | 1.5                         | $\frac{5}{2}^+$                | 6.077                 |
| 2.635 $\pm$ 10             | 5                           | $\frac{5}{2}^-$                | 6.094                 |
| 2.833 $\pm$ 10             | 10                          | $\frac{1}{2}^+$                | 6.250                 |
| 2.883 $\pm$ 10             | 3                           | $\frac{5}{2}^+$                | 6.289                 |
| 2.944 $\pm$ 10             | 3                           | $\frac{7}{2}^+$                | 6.338                 |
| 3.060 $\pm$ 10             | 360                         | $\frac{1}{2}^-$                | 6.429 $\pm$ 8         |
| 3.194 $\pm$ 10             | 5                           | $\frac{1}{2}^+$                | 6.535                 |
| 3.229 $\pm$ 10             | 2                           | $\frac{5}{2}^+$                | 6.563                 |
| 3.525 $\pm$ 10             | 3                           | $\frac{3}{2}^-$                | 6.796                 |
| 3.587 $\pm$ 10             | 1.5                         | $(\frac{5}{2}, \frac{3}{2})^+$ | 6.845                 |
| 3.648 $\pm$ 10             | 35                          | $\frac{5}{2}^-$                | 6.893                 |
| 3.705 $\pm$ 10             | 3                           | $(\frac{9}{2}, \frac{7}{2})^-$ | 6.938                 |
| 3.770 $\pm$ 10             | 64                          | $\frac{1}{2}^-$                | 6.989 $\pm$ 8         |
| 3.930 $\pm$ 10             | 40                          | $\frac{7}{2}^+$                | 7.116 $\pm$ 8         |
| 4.127 <sup>c</sup>         | $\lesssim 8$                |                                | 7.271                 |
| 4.23                       | $\lesssim 82$               | $\frac{7}{2}^+$                | 7.35                  |
| 4.49                       | $\lesssim 110$              | $\frac{7}{2}^+$                | 7.56                  |
| 4.53                       | $\lesssim 50$               | $\frac{5}{2}^+$                | 7.59                  |
| 4.710                      | $\lesssim 40$               | $\frac{1}{2}^-$                | 7.731                 |
| 4.780                      | $\lesssim 8$                |                                | 7.787                 |
| 4.93                       | $\lesssim 260$              |                                | 7.90                  |
| (5.005)                    | ( $\lesssim 8$ )            |                                | (7.964)               |
| (5.018)                    | ( $\lesssim 5$ )            |                                | (7.974)               |
| 5.116                      | $\lesssim 8$                |                                | 8.052                 |
| 5.203                      | $\lesssim 8$                |                                | 8.120                 |
| 5.232                      | $\lesssim 6$                |                                | 8.143                 |
| 5.25                       | $\lesssim 65$               |                                | 8.16                  |
| 5.284                      | $\lesssim 10$               |                                | 8.184                 |
| 5.481                      | $\lesssim 10$               |                                | 9.340                 |
| 7.877 <sup>d</sup>         | $< 1$                       | $\frac{1}{2}^+$                | 10.231 $\pm$ 4        |

Table 19.10 from (1983AJ01): Levels of  $^{19}\text{F}$  from  $^{15}\text{N}(\alpha, p)$  and  $^{15}\text{N}(\alpha, \alpha)$  <sup>a</sup> (continued)

| $E_\alpha$ (MeV $\pm$ keV) | $\Gamma_{\text{lab}}$ (keV) | $J^\pi$         | $E_x$ (MeV $\pm$ keV) |
|----------------------------|-----------------------------|-----------------|-----------------------|
| 7.977 <sup>d</sup>         |                             | $\frac{3}{2}^+$ | 10.308 $\pm$ 4        |
| 8.179 <sup>d</sup>         | 13.8 $\pm$ 1.5              |                 | 10.469 $\pm$ 4        |
| 8.205 <sup>d</sup>         | 6.0 $\pm$ 1.0               |                 | 10.488 $\pm$ 4        |
| 8.220                      | 5.4 $\pm$ 1.0               | $\frac{3}{2}^+$ | 10.501 $\pm$ 4        |
| 8.245                      | 18 $\pm$ 2                  |                 | 10.521 $\pm$ 4        |
| 8.277                      | 2.5 $\pm$ 1                 |                 | 10.546 $\pm$ 4        |
| 8.287 <sup>d</sup>         | 5.0 $\pm$ 1.5               | $\frac{3}{2}^+$ | 10.554 $\pm$ 4        |
| 8.307 <sup>d</sup>         | 3.7 $\pm$ 1                 |                 | 10.560 $\pm$ 4        |

<sup>a</sup> For references see [Table 19.9 in \(1978AJ03\)](#).

<sup>b</sup> Resonances below  $E_\alpha = 5.5$  MeV are observed in  $(\alpha, \alpha_0)$ ; resonances above that energy are observed in  $(\alpha, p\gamma)$  and  $(\alpha, \alpha'\gamma)$  [\(1978SY01\)](#).

<sup>c</sup> I am indebted to Prof. C. Rolfs for his comments on the resonances with  $4 < E_\alpha < 5.5$  MeV.

<sup>d</sup> Value recalculated by reviewer from  $E_x$ .