Table 19.23 from (1978AJ03):
States of $^{19}$F and $^{19}$Ne from $^{20}$Ne(t, $\alpha$) and $^{20}$Ne($^3$He, $\alpha$)

<table>
<thead>
<tr>
<th>$E_X$ in $^{19}$F (MeV ± keV)</th>
<th>$l_p$ a</th>
<th>$J^\pi$</th>
<th>$C^2S$ a,b</th>
<th>$E_X$ in $^{19}$Ne (MeV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$(1961SI03)$</td>
<td>$(1974GA28)$ a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>$^3^+!$</td>
<td>0.12</td>
<td>0.20</td>
</tr>
<tr>
<td>0.11</td>
<td>1</td>
<td>$^1^+!$</td>
<td>1.7</td>
<td>1.8</td>
</tr>
<tr>
<td>0.20</td>
<td>2</td>
<td>$^5^+!$</td>
<td>1.6</td>
<td>0.95</td>
</tr>
<tr>
<td>1.46</td>
<td>1</td>
<td>$^3^2^+!$</td>
<td>0.30</td>
<td>0.21</td>
</tr>
<tr>
<td>1.55</td>
<td>2</td>
<td>$^3^2^+!$</td>
<td>0.31 c</td>
<td>0.70</td>
</tr>
<tr>
<td>$2.794 \pm 15$</td>
<td>2.78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$3.917 \pm 15$</td>
<td>3.91</td>
<td>$^3^3!$</td>
<td>$\leq 0.04$</td>
<td>$\leq 0.1$</td>
</tr>
<tr>
<td>4.00</td>
<td>4.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.032 ± 15</td>
<td>4.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.385 ± 15</td>
<td>4.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.563 ± 15</td>
<td>4.55 + 4.56</td>
<td>1</td>
<td>$^3^2^2^+!$</td>
<td>0.69</td>
</tr>
<tr>
<td>$(4.690 \pm 40)$</td>
<td>4.65 + 4.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.102 ± 15</td>
<td>5.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.343 ± 15</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5.481 ± 15</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5.539 ± 15</td>
<td></td>
<td></td>
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<tr>
<td>5.628 ± 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.937 ± 20</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6.092 ± 15</td>
<td>6.09</td>
<td>1</td>
<td>$^3^2^2!$</td>
<td>1.0</td>
</tr>
<tr>
<td>6.169 ± 30</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6.247 ± 25</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6.501 ± 25</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>6.79</td>
<td>1</td>
<td>$^3^2!$</td>
<td>0.96</td>
<td>1.5</td>
</tr>
</tbody>
</table>

a (1974GA28): $E_t = 20$ MeV. $E_X$ are nominal.

b Calculated using finite range and non-local corrections. The ($^3$He, $\alpha$) results are from (1970GA18). The absolute DWBA normalization factors were 4.6 for (t, $\alpha$) and 10.2 for ($^3$He, $\alpha$).

c Poor DWBA fit.