

Table 10.8 from (1984AJ01): Levels of  $^{10}\text{B}$  from  $^6\text{Li}(\alpha, \gamma)^{10}\text{B}$  <sup>a</sup>

| $E_{\text{res}}$ (keV) | $E_x$ (MeV $\pm$ keV) | $J^\pi; T$               | $\Gamma_{\text{lab}}$ (keV)  | Decay to $E_f$ | Branch (%)     | $\omega\gamma$ (eV)              | $\Gamma_\gamma$ (eV)           |
|------------------------|-----------------------|--------------------------|------------------------------|----------------|----------------|----------------------------------|--------------------------------|
| 500 $\pm$ 25           | 4.761                 | 3 <sup>+</sup> ; 0       |                              | 0              | 0.5 $\pm$ 0.1  |                                  |                                |
|                        |                       |                          |                              | 0.72           | > 99           |                                  | 0.020 $\pm$ 0.004 <sup>c</sup> |
| 1085                   | 5.112                 | 2 <sup>-</sup> ; 0       | 1.63 $\pm$ 0.11 <sup>b</sup> | 0              | 64 $\pm$ 7     | 0.059 $\pm$ 0.012 <sup>d</sup>   |                                |
|                        |                       |                          |                              | 0.72           | 31 $\pm$ 7     | 0.028 $\pm$ 0.008                |                                |
|                        |                       |                          |                              | 1.74           | 5 $\pm$ 5      | 0.005 $\pm$ 0.005                |                                |
| 1175 <sup>e</sup>      | 5.166                 | 2 <sup>+</sup> ; 1       | < 0.5                        | 0              | 4.4 $\pm$ 0.4  | 0.018 $\pm$ 0.002                | 0.068 $\pm$ 0.007              |
|                        |                       |                          |                              | 0.72           | 22.4 $\pm$ 0.6 | 0.090 $\pm$ 0.008                | 0.33 $\pm$ 0.03                |
|                        |                       |                          |                              | 1.74           | 0.7 $\pm$ 0.2  | (2.8 $\pm$ 0.8) $\times 10^{-3}$ | 0.010 $\pm$ 0.003              |
|                        |                       |                          |                              | 2.15           | 64.8 $\pm$ 0.9 | 0.259 $\pm$ 0.024                | 0.942 $\pm$ 0.090              |
|                        |                       |                          |                              | 3.59           | 7.7 $\pm$ 0.3  | 0.031 $\pm$ 0.004                | 0.114 $\pm$ 0.015              |
| 1210 $\pm$ 35          | 5.187                 | 1 <sup>+</sup> ; 0       | 340 $\pm$ 50                 | 1.74           | $\approx$ 100  |                                  | 0.06 $\pm$ 0.03                |
| 2435 <sup>f</sup>      | 5.922                 | 2 <sup>+</sup>           | 10 $\pm$ 1                   | 0              | 82 $\pm$ 5     | 0.19 $\pm$ 0.04                  | 0.13 $\pm$ 0.03                |
|                        |                       |                          |                              | 0.72           | 18 $\pm$ 5     | 0.04 $\pm$ 0.01                  | 0.02 $\pm$ 0.01                |
|                        |                       |                          |                              | 1.74           |                | < 0.02                           |                                |
| 2605 <sup>f</sup>      | 6.024                 | 4 <sup>+</sup>           | 0.08 $\pm$ 0.05              | 0              | $\approx$ 100  | 0.34 $\pm$ 0.05                  | 0.11 $\pm$ 0.02                |
|                        |                       |                          |                              | 0.72           |                | < 0.02                           |                                |
| 4019 <sup>g</sup>      | 6.873 $\pm$ 5         | 1 <sup>-</sup> ; 0 + 1   | 200 $\pm$ 10                 | 0              | 6 $\pm$ 2      |                                  |                                |
|                        |                       |                          |                              | 0.72           | 21 $\pm$ 4     |                                  |                                |
|                        |                       |                          |                              | 1.74           | 59 $\pm$ 3     |                                  |                                |
|                        |                       |                          |                              | 2.15           | 14 $\pm$ 4     |                                  |                                |
| 4963 <sup>h</sup>      | 7.440 $\pm$ 20        | 2 <sup>(-)</sup> ; 0 + 1 | 150 $\pm$ 15                 | <sup>h</sup>   |                |                                  |                                |

<sup>a</sup> For earlier references see [Table 10.7 in \(1979AJ01\)](#).

<sup>b</sup> [\(1983NAZZ\)](#) and J. Napolitano, private communication.

<sup>c</sup>  $\Gamma_\gamma/\Gamma = (2.3 \pm 0.3) \times 10^{-3}$ ;  $\Gamma_\alpha = 8.4 \pm 1.8$  eV (E.K. Warburton and D.E. Alburger, private communication).

<sup>d</sup> Absolute error only.

<sup>e</sup> Branching ratios from [\(1979KE08\)](#);  $\omega_{\gamma_{c.m.}} = 0.40 \pm 0.04$  eV [\(1979SP01\)](#),  $0.43 \pm 0.07$  eV (prelim., J. Napolitano, private communication);  $\Gamma_\alpha/\Gamma = 0.16 \pm 0.04$  [\(1979SP01\)](#).

<sup>f</sup> Values of  $\omega_\gamma$  [\(1966FO05\)](#) have been multiplied by 0.6 to convert them to the c.m. system. I am indebted to Prof. F.C. Barker for pointing out this problem.

<sup>g</sup> Branching ratios calculated from  $0^\circ$  relative intensities;  $\Gamma_\alpha/\Gamma_p = 1.25 \pm 0.12$ .

<sup>h</sup> At  $0^\circ$  the branches to  $^{10}\text{B}^*(0, 0.72)$  are equally strong ( $(50 \pm 12)\%$ ).