

$^{26}\text{Mg}(^{18}\text{O},\text{n}\text{p}\gamma)$  1977Ek01

| Type            | Author                                 | History | Citation          | Literature Cutoff Date |
|-----------------|--|---------|-------------------|------------------------|
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1977Ek01 (also 1975Eg01): E=25, 34 MeV  $^{18}\text{O}$  beam was produced from the Utrecht EN tandem accelerator. Target of 180  $\mu\text{g}/\text{cm}^2$  enriched  $^{26}\text{Mg}$  (99.42%) evaporated on a 27  $\mu\text{m}$  Ni backing.  $\gamma$ -rays were detected with Compton-suppression Ge(Li) detectors of 25% efficiency and a three-crystal Ge(Li) Compton polarimeter. Measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma\gamma(\theta)$ ,  $\gamma(\text{lin pol})$ . Deduced levels,  $J^\pi$ , branching ratios,  $T_{1/2}$  by Recoil-distance method (RDM).

Other: 1975Wa04. See  $^{27}\text{Al}(^{18}\text{O},\text{n}2\text{p}\gamma)$  dataset.

$^{42}\text{K}$  Levels

| E(level) <sup>†</sup> | $J^\pi$ <sup>#</sup> | $T_{1/2}$ <sup>‡</sup> |
|-----------------------|----------------------|------------------------|
| 0.0                   | 2 <sup>-@</sup>      |                        |
| 106.780 20            | 3 <sup>-</sup>       | 284 ps 42              |
| 258.13 10             | 4 <sup>-</sup>       | 133 ps 9               |
| 638.45 12             | 3 <sup>-</sup>       | <1.4 ns                |
| 698.82 12             | 5 <sup>-</sup>       | 41 ps 8                |
| 1143.20 16            | 4 <sup>+</sup>       | <1.4 ns                |
| 1375.51 16            | 6 <sup>+</sup>       | 1.17 ns 8              |
| 1538.2 4              | (3,5)                | <3.5 ps                |
| 1947.2 3              | 7 <sup>+</sup>       | <1.1 ps                |

<sup>†</sup> From least-squares fit to  $E_\gamma$  data.

<sup>‡</sup> Recoil-distance method (1975Eg01).

<sup>#</sup> From  $\gamma(\theta)$  and  $\gamma(\text{lin pol})$  in 1977Ek01, unless otherwise noted.

<sup>@</sup> From Adopted Levels.

$\gamma(^{42}\text{K})$

$A_2$ ,  $A_4$  and Pol values are from 1977Ek01.

| $E_\gamma$             | $I_\gamma$ <sup>‡</sup> | $E_i(\text{level})$ | $J_i^\pi$      | $E_f$   | $J_f^\pi$      | Mult. <sup>#</sup> | $\delta$ <sup>#</sup> | Comments   |
|------------------------|-------------------------|---------------------|----------------|---------|----------------|--------------------|-----------------------|--|
| 106.78 <sup>†</sup> 2  | >110                    | 106.780             | 3 <sup>-</sup> | 0.0     | 2 <sup>-</sup> | D(+Q)              | +0.01 3               | $A_2=-0.153$ 18; $A_4=+0.022$ 18<br>$I_\gamma$ : sum of feeding intensities. |
| 151.33 <sup>†</sup> 12 | 100 3                   | 258.13              | 4 <sup>-</sup> | 106.780 | 3 <sup>-</sup> | M1(+E2)            | -0.008 16             | $A_2=-0.259$ 6<br>Pol=-0.30 11.  |
| 232.3 2                | 7.1 3                   | 1375.51             | 6 <sup>+</sup> | 1143.20 | 4 <sup>+</sup> | E2(+M3)            | -0.04 3               | $A_2=+0.34$ 5; $A_4=-0.16$ 5   |
| 380.3 2                | 4.2 2                   | 638.45              | 3 <sup>-</sup> | 258.13  | 4 <sup>-</sup> | (M1+E2)            |                       | $A_2=-0.35$ 16; $A_4=+0.29$ 17   |
| 395.0 3                | 7.5 13                  | 1538.2              | (3,5)          | 1143.20 | 4 <sup>+</sup> | D                  |                       | $A_2=-0.40$ 6  |
| 440.68 <sup>†</sup> 12 | 85 3                    | 698.82              | 5 <sup>-</sup> | 258.13  | 4 <sup>-</sup> | M1+E2              | +0.102 8              | $A_2=-0.080$ 8; $A_4=-0.016$ 9<br>Pol=-0.46 4.                               |
| 444.4 3                | 5.1 2                   | 1143.20             | 4 <sup>+</sup> | 698.82  | 5 <sup>-</sup> | D                  |                       | $A_2=-0.18$ 5  |
| 504.72 18              | 5.3 3                   | 1143.20             | 4 <sup>+</sup> | 638.45  | 3 <sup>-</sup> | D                  |                       | $A_2=-0.38$ 6  |
| 531.7 2                | 7.0 4                   | 638.45              | 3 <sup>-</sup> | 106.780 | 3 <sup>-</sup> |                    |                       | $A_2=+0.28$ 8.   |
| 571.7 2                | 37 4                    | 1947.2              | 7 <sup>+</sup> | 1375.51 | 6 <sup>+</sup> | M1+E2              | -0.035 19             | $A_2=-0.36$ 12<br>Pol=-0.36 6.   |
| 592.1 2                | 3.2 9                   | 698.82              | 5 <sup>-</sup> | 106.780 | 3 <sup>-</sup> |                    |                       | $I_\gamma$ : from $I_\gamma(592)/I_\gamma(441)=3.6$ 10/96.4 10.              |
| 638.4 2                | 7.0 5                   | 638.45              | 3 <sup>-</sup> | 0.0     | 2 <sup>-</sup> | D                  |                       | $A_2=-0.32$ 12; $A_4=-0.16$ 14   |
| 676.69 <sup>†</sup> 12 | 58.6 18                 | 1375.51             | 6 <sup>+</sup> | 698.82  | 5 <sup>-</sup> | E1+M2              | +0.025 11             | $A_2=-0.216$ 10; $A_4=-0.016$ 11<br>Pol=+0.39 4.                             |

Continued on next page (footnotes at end of table)

${}^{26}\text{Mg}({}^{18}\text{O},\text{np}\gamma)$  1977Ek01 (continued) $\gamma({}^{42}\text{K})$  (continued)

† From 1975Eg01, used as calibration line by 1977Ek01.

‡ For 34 MeV, unless otherwise stated.

# From  $\gamma(\theta)$  and  $\gamma(\text{lin pol})$  in 1977Ek01.

 ${}^{26}\text{Mg}({}^{18}\text{O},\text{np}\gamma)$  1977Ek01

## Level Scheme

Intensities: Relative  $I_\gamma$ 

Legend

