## $^{26}$Mg($^{16}$O,2p$\gamma$),$^{27}$Al($^{18}$O,p$\alpha\gamma$) 1977Eg01,1975Wa23

| Type | Author | History Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Jun Chen | NDS 140, 1 (2017) | 30-Sep-2015 |

1977Eg01: $^{26}$Mg($^{16}$O,2p$\gamma$) E=34 MV $^{16}$O beams of 40-200 nA were produced from the Utrecht EN tandem accelerator. Targets were about 400 $\mu$g/cm$^2$ $^{26}$Mg (99.42 enriched) on 30 $\mu$m Au backings. $\gamma$ rays were detected with a large volume Ge(Li)-NaI(Tl) Compton-suppression spectrometer (CSS) and large Ge(Li) detectors. Measured E$\gamma$, I$\gamma$, $\gamma\gamma$-coin, $\gamma(\theta)$, $\gamma$(lin pol). Deduced levels, J, $\pi$, $\gamma$-ray multipolarities. Comparison with shell-model calculations.

1975Wa23: $^{27}$Al($^{18}$O,p$\alpha\gamma$) E=35 MeV. Measured recoil distance. Deduced lifetime for the 4$^+$ level at E=2893 keV using the Recoil Distance Method (RDM).

### $^{40}$Ar Levels

| E(level) | J$^\pi$[†] | T$_{1/2}$ | Comments |
|---|---|---|---|
| 0 | 0$^+$ | | |
| 1461 | 2$^+$ | | |
| 2893 | 4$^+$ | 2.9 ps *14* | T$_{1/2}$: from 1975Wa23 by RDM. |
| 3465 | 6$^+$ | | |

[†] From Adopted Levels.

### $\gamma$($^{40}$Ar)

| E$_\gamma$[†#] | I$_\gamma$[†] | E$_i$(level) | J$_i^\pi$ | E$_f$ | J$_f^\pi$ | Mult.[‡] | Comments |
|---|---|---|---|---|---|---|---|
| 572 | 41 *2* | 3465 | 6$^+$ | 2893 | 4$^+$ | E2 | A$_2$=+0.40 *3*, A$_4$=−0.10 *3*, POL=+0.40 *20* (1977Eg01). |
| 1432 | 70 *2* | 2893 | 4$^+$ | 1461 | 2$^+$ | E2 | A$_2$=+0.290 *20*, A$_4$=−0.13 *3*, POL=+0.40 *11* (1977Eg01). |
| 1461 | 108 *2* | 1461 | 2$^+$ | 0 | 0$^+$ | E2 | A$_2$=+0.230 *20*, A$_4$=−0.100 *20*, POL=+0.30 *11* (1977Eg01). |

[†] From 1977Eg01.
[‡] Deduced from measured $\gamma(\theta)$ and $\gamma$(pol lin) in 1977Eg01.
[#] From E$\gamma$.

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Level Scheme

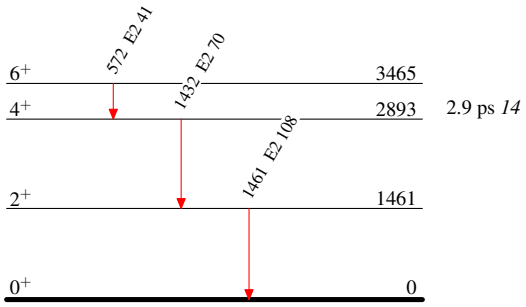
Intensities: Relative $I_\gamma$

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$




$^{40}_{18}Ar_{22}$