

²⁷O

Kondo et al. reported the discovery of ²⁷O in the 2023 paper “First Observation of ²⁸O” (2023Ko15). A primary ⁴⁸Ca beam accelerated to 345 MeV/A by the RI Beam Factory at RIKEN was used to produce a secondary 235 MeV/A ²⁹F beam which then impinged on a 151 mm liquid hydrogen target. Charged reaction fragments were separated and identified with the SAMURAI spectrometer and coincident neutrons were measured with the large-area segmented plastic scintillator walls NeuLAND and NEBULA. In addition, the reaction vertex was determined by the MINOS Time Projection Chamber. “In the case of ²⁷O, a decay energy of $E_{0123} = 1.09 \pm 0.04(\text{stat}) \pm 0.02(\text{syst})$ MeV was found.”

The instability of ²⁷O had been demonstrated in 1997 by Tarasov et al. (1997Ta22).

Adapted from reference (2024Th02)

- 1997Ta22 O. Tarasov, R. Allatt, J. C. Angelique, R. Anne *et al.*, Phys. Lett. B **409**, 64 (1997).
2023Ko15 Y. Kondo, N. L. Achouri, H. Al Falou, L. Atar *et al.*, Nature **620**, 965 (2023).
2024Th02 M. Thoennessen, Int. J. Mod. Phys. E **33**, 2430001 (2024).

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