^{27}Na

Klapisch et al. discovered ^{27}Na in 1968 in "Isotopic distribution of sodium fragments emitted in high-energy nuclear reactions. Identification of ^{27}Na and possible existence of heavier Na isotopes" (1968Kl11). ^{100}Mo, tantalum, iridium, and uranium targets were bombarded with 10.5 GeV protons from the CERN proton synchrotron and ^{27}Na was extracted by surface ionization and identified with a Nier-type separator. "We have found peaks at masses 27, 28, and 29. To the extent that we specifically ionize sodium, this would indicate the existence of three new isotopes of sodium. However, despite their smaller ionization probability, we have to take into account the possibility that Al isotopes produced in the reaction could also be ionized. Thus we see at once that mass 27 cannot be due to Al because the cross section for the production of ^{27}Al would be some 30 times greater than that for ^{23}Na, and this is completely ruled out on the basis of nuclear-reaction systematics."

Adapted from reference (2012Th10)

1968Kl11 R. Klapisch, C. Philippe, J. Suchorzewska, C. Detraz, and R. Bernas, Phys. Rev. Lett. **20**, 740 (1968).

2012Th10 M. Thoennessen, At. Data Nucl. Data Tables **98**, 933 (2012).

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