

## <sup>139</sup>Nd

Stover reported the observation of <sup>139</sup>Nd at the University of California at Berkeley in the 1951 paper, “New Neutron-Deficient Radioactive Isotopes of the Light Rare-Earth Region” (1951St03). Praseodymium oxide was bombarded with 40 and 50 MeV protons from the Berkeley 184-in. cyclotron. Activities were measured with end-on type Geiger-Müller counters following chemical separation. “Protons of energies 40 and 50 Mev gave a 22-min. activity, a 5.50-hr one, and the 3.3-day Nd<sup>140</sup>... The 5.50-hr Nd was shown to be the grandparent of the 140-day Ce<sup>139</sup> and thus is Nd<sup>139</sup>.” The 5.5 h half-life corresponds to an isomeric state and the 22(2) m activity is close to the half-life of the ground state (29.7(5) m), however, Stover tentatively assigned this half-life to <sup>138</sup>Nd. The ground state was correctly identified sixteen years later by Lange et al. (1967La19).

Adapted from reference (2012Gr02)

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