^{137}Ce

The discovery of ^{137}Ce was reported in 1948 by Chubbuck and Perlman in "Neutron Deficient Isotopes of Cerium and Lanthanum" (1948Ch03). 20 MeV deuterons from the 60-inch cyclotron and 40 MeV deuterons from the 184-inch cyclotron at Berkeley were used to produce ^{137}Ce in the reaction ^{139}La(d,4n). The lanthanum fraction was separated and β- and X-ray spectra were measured. The observation from the 20 MeV data: "A sample of the chemically separated cerium resolved into two components: 140-day ^{139}Ce and a 36-hour activity assigned below to ^{137}Ce." were confirmed with the 40 MeV data: "...and the most likely assignment for the 36-hour activity is ^{137}Ce". The 36 hr half-life assigned to ^{137}Ce, corresponds to the decay of the $11/2^-$ isomeric state at 254 keV. The ground state half-life of 8.7 h was measured seven years later by Brosi and Ketelle (1955Br05).

Adapted from reference (2009Gi07)

1948Ch03 J. B. Chubbuck and I. Perlman, Phys. Rev. **74**, 982 (1948).
1955Br05 A. R. Brosi and B. H. Ketelle, Phys. Rev. **100**, 169 (1955).
2009Gi07 J. Q. Ginepro, J. Snyder, and M. Thoennessen, At. Data Nucl. Data Tables **95**, 805 (2009).

Please cite this abstract as: "FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:10.11578/frib/2279152"