

^{143}Pr

The first identification of ^{143}Pr was reported by Ballou and Burgus in 1951 in “Cerium and praseodymium activities of masses 141 and 143” (1951BaZZ) as part of the Manhattan Project as summarized in 1946 (1946PI01). Cerous nitrate samples were irradiated with fast and slow neutrons produced by deuteron irradiation of beryllium at the Chicago cyclotron. ^{143}Pr was identified following chemical separation: “A praseodymium extraction was also made on a neutron-irradiated cerium sample that had stood for 19 days. The decay curve of the praseodymium showed a half-life of about 14 days, as seen in curve B of [the figure]. It can consequently be said that the 33h Ce^{143} has as its daughter the 13.8d Pr, whose mass assignment, then, must necessarily be 143.” A 13.0(5) d half-life had been reported earlier without a mass assignment (1944Jo01).

The assignment was changed from the original compilation (2012Ma48) which credited a 1948 paper by Pool and Krisberg (1948Po01) with the discovery of ^{143}Pr . The 2016 update of the discovery project stated: “Many fission fragments were identified within the Manhattan Project and the detailed results were only published in 1951 as part of the National Nuclear Energy Series (1951CoZZ). However, a survey of the properties of the fission fragments had already been published in two simultaneous publications in the Journal of the American Chemical Society and Reviews of Modern Physics (1946PI01) quoting the still classified papers. Thus researchers at the time were aware of the results and credit for the discovery should be given to the initially classified work if it was included in the survey paper” (2016Th03).

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