^{58}Co

In 1941, ^{58}Co was correctly identified for the first time in the article "Radioactive Isotopes of Cobalt" by Livingood and Seaborg (1941Li01). Most likely the identification was based on experiments at the Radiation Laboratory of the University of California at Berkeley, although Livingood moved to Harvard University in 1939 where the construction of a similar cyclotron was completed at the end of the year. ^{58}Co was produced in several light-particle induced reactions, for example, ^{55}Mn(α,n)^{58}Co. "The recent mass spectrographic investigation of the cobalt isotopes by Mitchell, Brown, and Fowler (1941Mi09), showing that Co^{59} is the only stable isotope of cobalt, taken together with our recently acquired transmutation data, now makes it possible for us to make isotopic assignments for all the cobalt radioactivities with almost complete certainty." The measured half-life was 72 d. The similarity of the half-lives for ^{56}Co and ^{58}Co as well as the incorrectly reported existence of ^{57}Co (1936Sa02) resulted in incorrect mass assignments (1940Li01, 1940Se07) or made the assignments not possible. Livingood et al. had reported a complex of longer periods of 100−200 d (1937Li02). In a subsequent paper, Livingood and Seaborg determined two half-lives of 80 d and 180 d (1938Li09). Half-lives of 1 month and 270 d (Perrier et al. (1938Pe01)) and 58 d and 265 d (Barresi and Cacciapuoti (1939Ba12)) had also been published.

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