

Abstract Submitted
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Discovery of Isotopes¹ A. NYSTROM, Concordia College/NSCL, A. PARKER, Marietta College/NSCL, M. THOENNESSEN, NSCL/MSU — To date, no comprehensive study has been undertaken regarding the initial detection and identification of isotopes. At NSCL, a project has been initiated to catalog and report the initial observation of every isotope. The conditions characterizing the successful discovery of an isotope include a clear and unambiguous mass and element identification through decay curves, mass spectroscopy, γ -ray spectra, and/or relationships to other isotopes, as well as the publication of such findings in an adjudicated journal. Prior to this work, research on the discovery of isotopes for approximately sixty-five different elements had already been performed within the bounds of this project⁴. Here we present the documentation for nine new elements: rubidium, strontium, yttrium, zirconium, niobium, molybdenum, technetium, ruthenium, and rhodium. 31 rubidium, 35 strontium, 34 yttrium, 35 zirconium, 34 niobium, 35 molybdenum, 33 technetium, 38 ruthenium, and 38 rhodium isotopes have been discovered so far. The year and author of each initial publication are discussed, along with the location and methods of production and identification. A summary and overview of all ~ 2000 isotopes documented so far as a function of discovery year, method and place will also be presented.

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Ashley Parker
Marietta College

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