

Abstract Submitted
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The Astrophysical $^{187}\text{Re}/^{187}\text{Os}$ Ratio: Measurement of the $^{187}\text{Re}(n,2n)^{186m}\text{Re}$ Destruction Cross Section ERIC POOSER, North Georgia College and State University, A. HUTCHESON, H. KARWOWSKI, J. KELLEY, E. KWAN, C. HUIBREGTSE, A. TONCHEV, W. TORNOW, TUNL, F. KONDEV, S. SHU, Argonne National Laboratory — We have continued a program to measure (n,2n) reaction cross sections on ^{187}Re with an emphasis on population of the ^{186m}Re isomer with half-life 2×10^5 y. We produced 12 MeV quasi-monoenergetic neutrons with the TUNL Tandem Van de Graaf accelerator and a deuterium gas cell, and we measured the $^{187}\text{Re}(n,b)Y$ cross sections using activation techniques. While various reaction channels were populated in the activation, our emphasis is on the (n,2n) reaction channels, where ^{186}Re is populated. Of specific interest is the population of ^{186m}Re , which has an extremely long lifetime, which complicates the measurement intended. This data is intended to reduce uncertainties in the $^{187}\text{Re}/^{187}\text{Os}$ cosmochronometer.

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