

¹⁹¹Hf

Haak et al. discovered ¹⁹¹Hf in the 2023 paper “Production and discovery of neutron-rich isotopes by fragmentation of ¹⁹⁸Pt” ([2023Ha31](#)). The Coupled Cyclotron Facility at the NSCL on the campus of Michigan State University accelerated a ¹⁹⁸Pt beam to 85 MeV/u which then impinged on a 47 mg/cm² beryllium target. Fragmentation products were separated with a combination of the A1900 fragment separator and the S800 analysis beam line and identified in a PIN diode telescope. “During the course of the experiment and the measurement of production cross sections, three new isotopes, namely ¹⁸⁹Lu and ^{191,192}Hf, were discovered. [...] The measured cross sections of these nuclides were found to be 0.037(24), 0.13(5), and 0.061(44) nb, respectively.

Adapted from reference ([2024Th02](#))

[2023Ha31](#) K. Haak, O. B. Tarasov, P. Chowdhury, A. M. Rogers *et al.*, Phys. Rev. C **108**, 034608 (2023).

[2024Th02](#) M. Thoennessen, Int. J. Mod. Phys. E **33**, 2430001 (2024).

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