#0022

Impact craters made by iron projectiles

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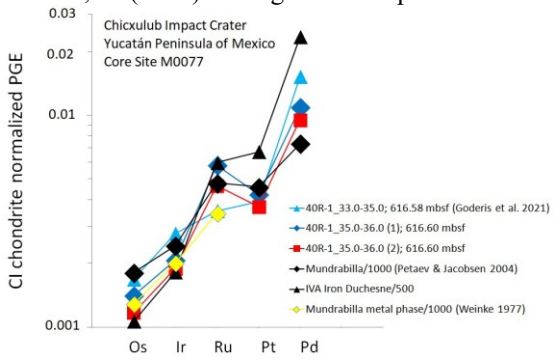
On Earth, there are ~13 impact craters with diameters of ~4 to 200 km and ages of ~37 to 600 Ma of which the projectiles are approximately known based on diagnostic element ratios of Ru, Ir, Rh, and Os. With the exception of Morokweng all of these large craters were formed by iron projectiles. The most famous crater (in terms of dinosaurs & mass extinction [e.g. 1]), most likely formed by an iron asteroid [2], is the ~200 km wide Chicxulub impact structure in the Gulf of Mexico. In the future, Ru and Ni isotopes could be reliable tools for more accurate identification of impactor types, in addition to diagnostic Ru/Rh and Ir/Rh mass ratios. [1] Goderis et al. (2021) doi/10.1126/sciadv.abe3647 [2] Schmidt, G. (2021) doi.org/10.5194/epsc2021-49



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