

+

#0097

+

**Nucleosynthetic isotope anomalies in meteorites:
evidence from siderophile elements.**

Fischer-Gödde*, M., Kruijer, T.S., Burkhardt, C., Kleine, T., *Institut für Planetologie, WWU Münster, Wilhelm-Klemm-Str. 10, 48149 Münster, Germany. m.fischer-godde@uni-muenster.de.

We obtained Ru isotope data for a comprehensive set of iron meteorites and chondrites, combined with Pt isotope data for some of the irons. Whereas all meteorites (except the IAB irons) exhibit nucleosynthetic Ru isotope anomalies, which are correlated with those in Mo, all the iron meteorites investigated so far show no evidence for resolvable nucleosynthetic Pt isotope anomalies. It thus appears that 'heavy' siderophile elements (Os, W, Pt) are isotopically uniform among bulk meteorites, whereas 'lighter' siderophile elements (Mo, Ru) exhibit nucleosynthetic isotope heterogeneities. Either these two groups of elements reside in different carriers—because they were synthesized in different stellar environments— or the level of isotopic heterogeneity was determined by the volatility of these elements. While Mo and Ru have similar condensation temperatures, they are more refractory than Pt but less refractory than Os and W. We propose that Pd isotopes can distinguish between these two possibilities, because in terms of its mass Pd should show correlated anomalies with Mo and Ru, while in terms of its volatility it should not.

+

+

Cite abstract as:

Fischer-Gödde, M., Kruijer, T.S., Burkhardt, C., Kleine, T. (2013) Nucleosynthetic isotope anomalies in meteorites: evidence from siderophile elements. Paneth Kolloquium, Nördlingen (Germany), abstract URL: <http://www.paneth.eu/PanethKolloquium/2013/0097.pdf> (abstract #0097).