#0030

Fractionation of Siderophile Volatile Elements during core formation

Loroch, D.*, Hackler, S., Rohrbach, A., Klemme, S.
WWU Münster, Institut für Mineralogie, Corrensstr. 24, 48149 Münster, Germany. d.loroch@uni-muenster.de.

If we take the chondritic composition as the initial solar nebular element abundances, the Earth lacks ~ 85% of K and up to 98% of other volatiles. This large difference in compositions led to an intense discussion about how and when the volatile elements where delivered to the Earth, and it is still ongoing.
To investigate physicochemical conditions of core formation, siderophile refractory elements were studied intensely via metal-slicate experiments. However one potentially very important group of elements has received considerably less attention in this context, the siderophile but volatile elements (SVEs). SVEs perhaps provide important information regarding the timing of volatile delivery to Earth. This study will produce new metal-silicate partitioning data for a wide range siderophile volatile elements (SVE: S, Se, Te, Tl, Ag, As, Au, Cd, Bi, Pb, Sn, Cu, Ge, Zn, In and Ga) with a focus on the P, T and fO2 dependencies. The initial hypothesis that we are aiming to test uses the accretion of major portions of volatile elements while the core formation was still active.

Cite abstract as:
Loroch, D., Hackler, S., Rohrbach, A., Klemme, S. (2017) Fractionation of Siderophile Volatile Elements during core formation. Paneth Kolloquium, Nördlingen (Germany), abstract URL: http://www.paneth.eu/PanethKolloquium/2017/0030.pdf (abstract #0030).