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Palladium-Silver Systematics of the Ordinary Chondrite Allegan (H5) and the Acapulcoite Dhofar 125.

Theis*, K.J., Schönbächler, M. *SEAES – Isotope Group, University of Manchester, Oxford Road, Manchester, M13 9PL, UK. karen.theis@manchester.ac.uk.

We present the Ag isotope compositions and Pd/Ag ratios of mineral separates and whole rock fractions from Allegan (H5 ordinary chondrite) and Dhofar 125 (acapulcoite). Samples were cleaned, crushed and separated according to grain size and magnetic properties before being digested, purified [1] and analysed on the Nu Plasma MC-ICPMS.

The $^{108}Pd/^{109}Ag$ ratios ranged between 1.6 and 276.2 whilst the Ag isotope compositions yielded $\varepsilon^{107}Ag$ values from -5.9 to +1.4, with Allegan showing the largest spread. The data do not display any correlation between these ratios indicating disturbed ^{107}Pd-^{107}Ag systematics. Based on the measured Pd/Ag ratios, the metal samples display Ag isotope compositions substantially lower than predicted from in-growth of radiogenic ^{107}Pd, while the silicate values are slightly higher. This is consistent with a re-setting event occurring at 25 and 60 Ma after CAI formation for Dhofar 125 and Allegan respectively, followed by stable isotope fractionation during transport of Ag from the metal to the silicates/sulphides.

[1] Schönbächler, M et al. (2007) IJMS 261, 183-191.

Cite abstract as:
Theis, K.J., Schönbächler, M. (2012) Palladium-Silver Systematics of the Ordinary Chondrite Allegan (H5) and the Acapulcoite Dhofar 125. Paneth Kolloquium, Nördlingen (Germany), abstract URL: http://www.paneth.eu/PanethKolloquium/2012/0160.pdf (abstract #0160).