

+

#0038

+

**Ruthenium isotope composition of Archean spherule layers from Barberton.**

Fischer-Gödde\*, M., Mohr-Westheide, T., Messling, N., Elfers, B.-M., Reimold, W.U., Münker, C., \*Institut für Geologie und Mineralogie, University of Cologne, Zùlpicher Str. 49b, 50674 Köln, mfisch48@uni-koeln.de.

Archean spherule layers from the Barberton Greenstone Belt are among the oldest known remnants of large impact events onto Earth. The spherule layers contain highly elevated concentrations of platinum group elements (PGE) [1], which were previously used for deducing the composition of the meteoritic component contained in the spherule layers [2]. Here, we apply a new method based on mass-independent ruthenium (Ru) isotope compositions to more precisely constrain the meteoritic component in the Barberton spherule layers. This method builds on the nucleosynthetic isotope variability observed among different groups of meteorites [3]. Three different spherule layer samples from the BARB5 and CT3 drill cores exhibit uniform Ru isotope compositions, thus indicating a common origin of the extraterrestrial component in these layers. Moreover, our data constrain that the projectile probably had an ordinary or CI chondrite-like, or a IVA iron meteorite-like composition.

[1] Mohr-Westheide, T. et al. (2015) *Geology* 43, 299–302. [2] Ozdemir, S. et al. (2019) *MAPS* 54, 2203–2216. [3] Fischer-Gödde, M. et al. (2015) *GCA* 168, 151–171.

+

+

Cite abstract as:

Fischer-Gödde, M. (2021) Ruthenium isotope composition of Archean spherule layers from Barberton. Paneth Kolloquium, Online (Germany), abstract URL: <https://paneth.eu/PanethKolloquium/2021/0038.pdf> (abstract #0038).