

REE investigation of Mocs chondrite using inductively coupled plasma mass spectrometry methods

CLAUDIU TĂNĂSELIA^{1,2*}, ERIKA LEVEI²,
MARA CÂMPEANU¹ AND CONSTANTIN BALICA¹

¹Department of Geology, Faculty of Biology and Geology, Babeş-Bolyai University, 1 Kogălniceanu, 400084 Cluj-Napoca, Romania (constantin.balica@ubbcluj.ro)

²INCDO-INOE 2000 Research Institute for Analytical Instrumentation ICIA, 67 Donath, 400293 Cluj-Napoca, Romania (*correspondence: claudiu.tanaselia@icia.ro)

Two spectrometric methods were used for rare earth elements concentration assessment of Mocs meteorite: a quadrupole and a high-resolution, sector field inductively coupled mass spectrometer, both in single detector configuration. Mocs meteorite REE composition data was determined using these methods, but also a comparison of the two instruments was performed. Allende meteorite reference material was used for method validation, together with a multi-element standard solution for calibration purposes. Samples were mineralized following a custom protocol derived from the literature [1]: the sample was finely grounded, then treated in a multi-step procedure. A mix of hydrofluoric acid, nitric acid and perchloric acid was used to mineralize the sample, that was finally dissolved in nitric acid and diluted accordingly, before being measured directly by ICP-MS instruments. Mocs samples were available from Museum of Mineralogy, Babeş-Bolyai University Cluj-Napoca and Allende meteorite reference sample (split 7, position 17) was provided by Smithsonian Institution [2].

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[1] JA. Barrat, B. Zanda, F. Moynier, C. Bollinger, C. Liorzou, et al. (2012) *Geochemistry of CI chondrites: Major and trace elements, and Cu and Zn Isotopes*. *Geochimica et Cosmochimica Acta*, **83**, 79-92. [2] E. Jarosewich, RS. Clarke, JN. Barrows (1987); *The Allende Meteorite Reference Sample*, *Smithsonian Contributions to the Earth Sciences*; **27**.