

Thursday, July 26, 2018
EXQUISITE INVESTIGATIONS OF SHOCK METAMORPHISM
9:00 a.m. Green Room

Chairs: Agnes Kontny
Ludovic Ferrière

- 9:00 a.m. Kontny A. * Reznik B.
[*Effect of Post-Shock Annealing on Magnetic Properties of Shocked Magnetite*](#) [#6285]
 This study focuses on the exploration of the chemical and magnetic stability of experimentally shocked magnetite after subsequent high-temperature treatment with special emphasis on the consequences of stress-induced microstructures.
- 9:15 a.m. Schmidt D. * Matthäus G. Nolte S. Pollok K. Langenhorst F.
[*Laser Simulated Hypervelocity Micrometeoroid Impacts: Orientation Dependent Shock Effects in Enstatite Single Crystals*](#) [#6119]
 Different deformation mechanisms and shock effects like microfractures, the formation of amorphous lamellae or the transformation to clinoenstatite are observed in enstatite single crystals depending on their orientation to the laser treatment.
- 9:30 a.m. Dutta A. * Bhattacharya A.
[*Semi-Quantitative Shock Calibrations of Assam Chondrite \(L5, S6\)*](#). [#6123]
 Shock calibrations of Assam chondrite.
- 9:45 a.m. Takenouchi A. * Mikouchi T. Kobayashi T. Sekine T. Yamaguchi A.
[*Pre-Heated Shock Recovery Experiments of Olivine-Phyric Basalt for Estimations of Planetary Shock Events*](#) [#6041]
 We performed pre-heated shock recovery experiments in order to correctly investigate relationships between shock pressures and corresponding shock features by filling a temperature gap between shock experiments and natural shock events.
- 10:00 a.m. Kenkmann T. * Winkler R. Poelchau M. H. Wirth R. Luther R. Schaefer F.
[*Impact-Induced Twinning in Calcite as Revealed by MEMIN Experiments with Marble*](#) [#6147]
 Twin density in shocked calcite exceeds 1000 twins per millimeter and changes the optical properties of the crystals. The relationship between micro-twin density and shear stress matches with calcite twin piezometers derived for tectonic deformation.
- 10:15 a.m. Čalogović M. * Marjanac T. El Kerni H. Chennaoui Aoudjehane H.
[*Shock Deformation of Calcite, a Possible Tool for Reconstruction of the Size of Deeply Eroded Impact Structure. Agoudal Impact Structure \(Morocco\) Case Study*](#) [#6267]
 Shock-induced deformations of calcite unit-cell decreases with increasing distance from the impact structure center, that allows for estimation of the structure size by analysis of diffractograms of a number of samples from a deeply eroded structure.
- 10:30 a.m. Shumilova T. G. * Zubov A. A. Isaenko S. I.
[*Discovery of Upper-Going Intrusive Complex of Ultrahigh Pressure Impact Melt Glasses in Kara Astrobleme*](#) [#6089]
 A novel impact-originated ultrahigh pressure high temperature (UHPHT) intrusive upper-going impact melt complex has been discovered at the Kara astrobleme. The found UHPHT complex is a basis for principle changes in giant astroblemes formation models.
- 10:45 a.m. Shumilova T. G. * Ulyashev V. V. Isaenko S. I.
[*A New Type of Impact Diamonds: Diamond Paramorphs After Wood Relics*](#) [#6090]
 We present after-organics diamond paramorphs after wood relics first time found and widely spread at the Kara astrobleme. The mechanism of their formation has been described. The after coal impact diamonds can be wide spread through the Earth crust.

- 11:00 a.m. Ferrière L. * Alwmark C. Holm-Alwmark S. Leroux H. Koeberl C.
[*Finding, Characterization, and Significance of Shocked Quartz Grains*](#) [#6274]
The finding of shocked quartz grains is often used as the “smoking gun” for the confirmation of a new impact structure or impact deposit, but a proper characterization, using a Universal stage or a transmission electron microscope, is mandatory.
- 11:15 a.m. Cox M. A. * Cavosie A. J. Miljković K. Bland P. A. Kenkmann T. Hoskins Z. N. P.
[*Characterization of Shock Deformation at the Spider Impact Structure, Western Australia*](#) [#6248]
Well-developed shatter cones / PDFs in quartz / Shock deformed accessory phases.
- 11:30 a.m. Kovaleva E. *
[*In Situ Granular Zircon from the Vredefort Impact Structure*](#) [#6247]
This is in situ EBSD study of granular zircon from the Vredefort impact structure, South Africa. Sample is a granite clast with pseudotachylite vein, enclosed in granophyre. Neoblasts have crystallographically-controlled relationship with each other.
- 11:45 a.m. Kenny G. G. * Schmieder M. Whitehouse M. J. Nemchin A. A. Morales L. F. G. Buchner E. Bellucci J. J. Snape J. F.
[*Accurate and Precise Dating of Impact Events by U-Pb Analysis of Shocked Zircon — A Case Study from the Lappajärvi Impact Structure*](#) [#6129]
Lappajärvi, Finland, becomes the first Phanerozoic impact structure on Earth to be accurately and precisely dated with U-Pb analysis of shocked zircon. A new chapter is beginning in the dating of terrestrial impact events.