Monday, September 21, 2015
OPENING CEREMONY
8:45 a.m. Pathology and Anatomy Lecture Hall

08:45 Schiewer H. J. *
Rectorate Speech

08:50 Kenkmann T. *
Greetings and Announcements

08:55 Hiermaier S. *
Greetings

SHOCK WAVES AND THEIR MICRO- AND MESOSCALE EFFECTS
9:00 a.m. Pathology and Anatomy Lecture Hall

Chairs: **Alex Deutsch**
Ludovic Ferriere

09:00 Langenhorst F. *
Shock-Induced Phase Transformations and Their Nanoscale Record **[#1108]**
The contribution discusses polymorphic phase transformations in shocked minerals on the basis of microstructural observations.

09:30 White L. F. * Darling J. R. Moser D. Barker I. Bullen D.
The Potential Application of Baddeleyite (Monoclinic ZrO_2) as a Shock Indicator **[#1054]**
The shock response of baddeleyite in natural and experimental samples has been examined. Analysis of the ZrO_2 micro-structure suggests a series of phase shifts alter the atomic configuration in a unique way unachievable through endogenic processes.

09:45 Darling J. R. * Moser D. White L. F.
Dating Planetary Processes and Impact Events Using Accessory Minerals: Progress and Challenges **[#1081]**
We report on recent advances in understanding the micro- to nano-scale effects of shock metamorphism on U and Th bearing accessory mineral phases, particularly baddeleyite, and their linkage with isotopic disturbance in planetary materials.

10:00 Mansfeld U. * Langenhorst F. Ebert M. Harries D. Reimold W. U.
Tem Characterization of Stishovite in a Low-Pressure Shock Experiment on Porous Sandstone **[#1075]**
We present microscopic evidence for pure stishovite by rapid liquidus crystallization in a shock experiment on porous sandstone at 7.5 GPa, which is as low as the coincidence of the stability fields of coesite and stishovite.

10:15 Carl E.-R. * Danilewsky A. Liermann H.-P. Mansfeld U. Langenhorst F. Ehm L. Trullenque G. Kenkmann T.
The Behavior of SiO_2 Under Dynamic Compression and Decompression in a Diamond Anvil Cell **[#1032]**
We use in situ x-ray diffraction to study phase transitions of SiO_2 up to 66 GPa and room temperature at different loading rates. The experiments show that quartz transforms to stishovite. During loading, another high-pressure phase is also observed.

10:30 *Coffee Break*

10:45 Hamann C. * Hecht L. Deutsch A.
On the Shock Behavior of Calcite: Recent Results from MEMIN Experiments **[#1093]**
Hypervelocity impact and laser melting experiments, aiming at a better understanding of the shock behavior of calcite, suggest that both melting and decomposition of calcite can occur at P–T conditions commensurate with impact processes.

11:00 Kowitz A. * Schmitt R. T. Gueldemeister N. Reimold W. U.
Wuennemann K. Holzwarth A.
Revision of Existing Shock Classifications for Quartzose Rocks Using Low Shock Pressure Recovery Experiments (2.5–20 GPa) and Mesoscale Models **[#1026]**
In this project we investigate shock deformation experimentally generated in dry and water-saturated porous sandstone, and in dense quartzite, at pressures between 2.5 and 20 GPa — aiming at improving the existing shock classification schemes.

11:15 Durr N. * Sauer M.
Mesoscale Modeling of Quartzite and Sandstone Under Shock-Loading and Homogenization to Macroscale **[#1109]**
Quartzite and sandstone are investigated under shock loading at mesoscale. A material model is developed for constitutive quartz grains of those rocks. The influence of quartz shear stiffness and porosity on the macroscopic behavior is demonstrated.

11:30 Thompson L. M. *
Shock Attenuation Constraints at Manicouagan: Evidence from Plagioclase and Quartz in Proximity to Shatter Cones **[#1111]**
This work summarizes a Raman and FESEM investigation of quartz, oligoclase and labradorite in proximity to shatter cones at selected radial distances from Manicouagan's centre.

11:45 Fritz J. * Greshake A. Fernandes V. A.
Proposal of a Revised Shock Pressure Classification Scheme **[#1048]**
We propose a revised shock pressure classification scheme because high pressure phases such as ringwoodite (diagnostic for S6) occur in shocked meteorites that according to the destructive shock effects should be classified as S4 to S5 and not S6.

12:00 DISCUSSION