Wednesday, August 20, 2008
SYMPOSIUM:
STRUCTURAL GEOLOGY OF IMPACT CRATERS: FROM MACRO TO MICRO
2:00 p.m. Hippo Room

Chairs: **Thomas Kenkmann**
Gareth Collins

2:00 p.m. Kenkmann T. * Poelchau M. H. **[KEYNOTE]**
The Structural Inventory of Oblique Impact Craters **[#3057]**
The bilateral symmetric stacking of imbricate thrusts in the central uplifts of some complex craters accommodates shortening in thrust direction. It reflects a migration of the uplifting crater floor down range and is a tool to infer impact vectors.

2:30 p.m. Elbeshausen D. * Wünnemann K.
Complex Crater Formation Driven by Oblique Meteorite Impacts **[#3078]**
Several 3D-hydrocode simulations were performed to study the formation of complex craters driven by oblique impacts. We focus on the temporal evolution of the crater shape, especially the central peak, and the origin of crater asymmetries caused by the impact angle.

2:45 p.m. Lana C. *
Structural Evolution of an Asymmetric Central Uplift; Effects of Target Heterogeneities or Oblique Impact? **[#3045]**
The Araguainha central uplift is a prominent asymmetric feature in central Brazil. In this study, I investigate the structural evolution of this asymmetric feature and make inferences of a possible oblique impact, with a northerly downrange direction.

3:00 p.m. Milam K. A. * Deane B.
Deformation/Modification Sequence in Target Rocks of Complex Craters <20 km Diameter: Implications for Impact Crater Identification **[#3096]**
Deformation fabrics occur in predictable cross-cutting relationships in floors and central uplifts of complex craters. The resulting petrogenetic sequence may provide another method for confirming additional complex craters on Earth and other planets.

3:15 p.m. Poelchau M. H. * Kenkmann T. Kring D. A.
Structural Aspects of Meteor Crater and Their Effect on Cratering **[#3073]**
Bedding and GPS data were collected in the rim of Meteor Crater, Arizona. Based on field observations, a model was developed describing the formation of "thrust wedges". A second model is presented that the effect of joint sets on the crater shape.

3:30 p.m. Kearsley A. T. * Burchell M. J. Abell R. Cole M. J.
Use of X-Ray Computer Tomographic Imagery in Location of Target Fractures and Projectile Fragments Around Laboratory Hypervelocity Impact Craters **[#3050]**
The three dimensional shape of fractures with embedded projectile fragments can be interpreted from high resolution X-ray CT reconstructions of polymer targets impacted by steel and copper projectiles in laboratory hypervelocity impact experiments.

3:45 p.m. BREAK

4:15 p.m. Morrow J. R. * Koeberl C. Reimold W. U.
Microscopic Shock-Alteration Features in Shatter Cones from the Santa Fe Impact Structure, New Mexico, USA **[#3037]**
Microscopic shock-alteration features, including planar microstructures in quartz and probable melt veneers, are documented near the surface of shatter cones from the Santa Fe impact structure, New Mexico, USA.

4:30 p.m. Ferrière L. * Koeberl C. Reimold W. U. Libowitzky E. Greshake A.
Ballen Quartz and Cristobalite in Impact Breccias: Types, Occurrence, and Possible Origin **[#3011]**
Ballen silica occurs in 28 impact structures. Five types of alpha-cristobalite and alpha-quartz ballen have been described and coesite have been characterized for the first time within alpha-cristobalite ballen from the Bosumtwi crater.

4:45 p.m. Machado R. A. * Lana C. Filho C. R. S. Stevens G.
Optical and Scanning Electron Microprobe Study of Shock Veins from the Araguainha Central Uplift, Central Brazil; Evidence for Selective Melting of Rock Forming Minerals and Immiscible Phases in the Impact Melts **[#3062]**
In this study we present result of a detailed optical and scanning elctron microprobe analysis of shock veins from the Araguainha impact structure. The results are used to discuss the generation and crystallization of impact melts.

5:00 p.m. Gerasimov M. V. * Dikov Yu. P. Yakovlev O. I.
Impact-Induced Vaporization of Magnesiosilicates: Domination of Enstatitic Cluster **[#3027]**
Experiments on impact-induced vaporization of magnesiosilicates shows that formation of chemical composition and structure of condensates is driven by volatilization of “enstatite” clusters.