

**Thursday, March 26, 2009**  
**IMPACTS II: CRATERS AND EJECTA**  
**8:30 a.m. Waterway Ballroom 6**

**Chairs: Peter Schulte**  
**Tamara Goldin**

- 8:30 a.m. van Soest M. C. \* Wartho J.-A. Monteleone B. D. Hodges K. V. Koeberl C. Schmieder M. Buchner E. Spray J. G. Bezys R. K. Reimold W. U.  
[\(U-Th\)/He Dating of Single Zircon and Apatite Crystals — A New Tool for Dating Terrestrial Impact Structures](#) [#2041]  
 The low temperature (U-Th)/He technique has been utilized to date individual crystals from the Manicouagan, Lake Saint Martin, and Bosumtwi impact structures. New (U-Th)/He zircon ages are in agreement with ages obtained via other dating methods.
- 8:45 a.m. Sapers H. M. \* Osinski G. R. Banerjee N.  
[Re-Evaluating the Rochechouart Impactites: Petrographic Classification, Hydrothermal Alteration and Evidence for Carbonate Bearing Target Rocks](#) [#1284]  
 A systematic classification of the Rochechouart impacts is proposed. Evidence for post-impact hydrothermal alteration was observed. A carbonate clast within the lithic impact breccia suggests the existence of carbonate in the pre-impact target rocks.
- 9:00 a.m. Mohr-Westheide T. \* Reimold W. U.  
[Chemical Analysis of Small-Scale Pseudotachylitic Breccia in Archean Gneiss of the Vredefort Dome, South Africa](#) [#1528]  
 Results of a new microchemical investigation of small-scale pseudotachylitic breccias from the Archean gneiss of the Vredefort dome are reported. Limited mixing and for small veinlets local melt formation are observed.
- 9:15 a.m. McDonald I. Koeberl C. \* Gurov E.  
[A Meteoritic Component in Melt Rocks from the Boltysk Impact Structure, Ukraine: First Assessment](#) [#1252]  
 A chondritic component has been detected in impact melt rocks from the Boltysk impact structure, Ukraine.
- 9:30 a.m. Schmieder M. \* Jourdan F. Hietala S. Moilanen J. Öhman T. Buchner E.  
[A High-Precision Late Mesoproterozoic <sup>40</sup>Ar/<sup>39</sup>Ar Age for the Keuruselkä Impact Structure \(Finland\)](#) [#1028]  
 The Kirkkoranta pseudotachylitic breccia dike is the first finding of impact-related melt lithologies known from the deeply eroded Keuruselkä impact structure, Finland. <sup>40</sup>Ar/<sup>39</sup>Ar dating yielded a late Mesoproterozoic (Stenian) age of the rock.
- 9:45 a.m. Kofman R. S. \* Herd C. D. K. Walton E. L. Froese D. G.  
[The Late Holocene Whitecourt Meteorite Impact Crater: A Low-Energy Hypervelocity Event](#) [#1942]  
 The Whitecourt Meteorite Impact Crater resulted from the low-energy hypervelocity impact of an iron meteoroid. The crater is 36 m in diameter with meteorites scattered up to 70 m from the rim. The crater and ejecta blanket are all well-preserved.
- 10:00 a.m. Kenkmann T. \* Reimold W. U. Khirfan M. Salameh E. Konsul K. Lehmann T. Khoury H.  
[The Impact Crater Jebel Waqf as Suwwan in Jordan: Effects of Target Heterogeneity and Impact Obliquity on Central Uplift Formation](#) [#1592]  
 We present results of a field campaign to the first large impact crater of the Middle East, which has recently been discovered. A superb exposure of the central uplift allows block sizes to be measured and the impact direction to be derived.

- 10:15 a.m. Herrick R. R. \* Schenk P. M.  
[Surveys of Elliptical Crater Populations on the Saturnian Satellites and Mercury](#) [#2352]  
Planetary impacts at the lowest impact angles form elliptical craters. The angle at which this occurs can be inferred from a planet's cratering record. Here we compare five saturnian moons and Mercury to previous work for the Moon, Mars, and Venus.
- 10:30 a.m. Schmitz B. \* Heck P. R. Alwmark C. Kita N. T. Peucker-Ehrenbrink B. Ushikubo T. Valley J. W.  
[Determining the Impactor of the Ordovician Lockne Crater: Oxygen Isotopes in Chromite Versus Sedimentary PGE Signatures](#) [#1161]  
Oxygen isotopic results for chromite from the Lockne Crater and new PGE results show that the claims by Tagle and Schmitt (2008, LPSC abstr. #1418) that the Lockne Crater was caused by a nonmagmatic iron meteorite lacks substance entirely.
- 10:45 a.m. Schulte P. \* Deutsch A. Salge T.  
[A Dual-Layer Chicxulub Ejecta Sequence with Shocked Carbonates from the Cretaceous-Tertiary \(K/T\) Boundary, ODP Leg 207, Western Atlantic](#) [#1859]  
An up to 2-cm-thick Chicxulub ejecta deposit marks the Cretaceous-Tertiary boundary in ODP Leg 207 (Western Atlantic). High-resolution analysis reveals the presence of spherules as well as shocked tectosilicates and carbonate clasts.
- 11:00 a.m. Goldin T. J. \* Melosh H. J.  
[Planet Earth Set to Broil: Thermal Radiation from Chicxulub Ejecta Reentry](#) [#2342]  
We model the thermal radiation transfer due to the atmospheric reentry of hypervelocity Chicxulub impact ejecta. Self-shielding of downward radiation by the spherules limits the magnitude and duration of the thermal pulse at the Earth's surface.
- 11:15 a.m. Ferrière L. \* Robin E.  
[Composition and Origin of Ni-rich Spinel from the Cretaceous-Tertiary Boundary](#) [#1812]  
The main objective of our study is to characterize, at the nanometric scale, the internal microstructure of Ni-rich spinel from the K/T boundary, to better understand and constrain their formation conditions.
- 11:30 a.m. Harris R. S. \* Schultz P. H.  
[Microscopic Fragments of an Angrite-like Asteroid in 5.28 Ma Impact Melt Breccias from Bahía Blanca, Argentina](#) [#2453]  
Meteoritic fragments preserved in a 5.28 Ma impact melt are mineralogically similar to angrites. We report the details and implications of their petrology and geochemistry.