

**Tuesday, March 2, 2010**  
**GROUND TRUTH GALORE: TERRESTRIAL IMPACT CRATERS**  
**8:30 a.m. Waterway Ballroom 5**

**Chairs:** Axel Wittmann  
 Horton Newsom

- 8:30 a.m. Ormö J. \* Sturkell E. Lepinette A.  
[\*Geological and Numerical Evidence for a Crater Bound Sedimentary Impact Breccia Lining the Basement Crater at the Lockne Impact Structure\*](#) [#1420]  
 Drill core data combined with numerical simulation show that some more plastic parts of the 80 m sediments that covered the basement at the 7.5 km diameter marine-target Lockne impact remained inside the crater cavity before onset of water resurge.
- 8:45 a.m. Bron K. A. \*  
[\*Tookoonooka Impact Sedimentation: Evidence for Resurge Cyclicity within the Crater Fill\*](#) [#2034]  
 The buried Tookoonooka complex impact structure in Australia has been interpreted as being the product of a marine impact event. Evidence of a marine impact resurge sequence capped with post-impact debris flow deposits in the crater fill is presented.
- 9:00 a.m. Watson J. S. Gilmour I. \* Jolley D. W. Kelley S. P. Gilmour M. A. Gurov E. P.  
[\*Molecular Parameters of Post Impact Cooling in the Boltysk Impact Structure\*](#) [#2296]  
 Molecular parameters of thermal maturity combined with palynology and carbon isotope stratigraphy indicates post impact thermal processes in the Boltysk crater were short-lived.
- 9:15 a.m. King D. T. Jr. \* Ormo J. Harris R. S. Petruny L. W. Markin J. K.  
[\*New Core-Hole Drilling at Wetumpka Impact structure, Alabama — Preliminary Results\*](#) [#1424]  
 We present preliminary interpretations from each of the four new core holes drilled during 2009 into the marine-target, Late Cretaceous, Wetumpka impact structure, Alabama.
- 9:30 a.m. Kalleson E. \* Dypvik H. Riis F.  
[\*The Ritland Impact Structure, Western Norway\*](#) [#1326]  
 The Ritland impact structure is 2.5 km in diameter and 350 m deep. Based on the geological setting, an age between 500 and 600 Ma is proposed for the impact. Impactites include brecciated basement and minor amounts of a melt-rich unit.
- 9:45 a.m. Biren M. B. \* Spray J. G.  
[\*Shock Veins in the Central Uplift of the Manicouagan Impact Structure\*](#) [#2314]  
 We report our investigations of target rocks located in the central uplift of the Manicouagan impact structure of Quebec. Thin white veins there appear to be shock derived features similar to shock veins observed in lunar and martian meteorites.
- 10:00 a.m. O'Connell-Cooper C. D. \* Spray J. G.  
[\*Geochemistry of the Manicouagan Impact Melt Sheet\*](#) [#1755]  
 Acquisition in 2006 by the University of New Brunswick's Planetary and Space Science Centre (PASSC) of ~18 km of core has shed new light on the extent and nature of the Manicouagan impact structure, Quebec.
- 10:15 a.m. Ukstins Peate I. \* Kloberdanz C. Peate D. W. Chung Wan L. Cabrol N. Grin E. Piatek J. Chong G.  
[\*Non-Modal Melting of Target Rocks to Produce Impactite at Monturaqui Crater, Chile\*](#) [#2089]  
 Monturaqui (Chile) is a small young impact with five melt rock compositions: (1) bulk melt of plag. + quartz, (2) bulk melt of ignimbrite target rock, and (3) multi-component melts with iron-rich impactor, non-modal biotite melt, and target rock.

- 10:30 a.m. Osinski G. R. \* Sukara R. Grieve R. A. F.  
["Suevites" of the Popigai Impact Structure, Russia: \(Mis\)understood? \[#2171\]](#)  
 "Suevites" are a poorly understood product of meteorite impacts. Here, we present new data on "suevites" from the Popigai structure. These impactites do not conform to the original definition of suevite (cf. "suevites" at the Ries and Rochechouart structures).
- 10:45 a.m. Poelchau M. H. \* Kenkmann T.  
[Feather Features: Microstructural Deformation in the Low-Shock Pressure Regime \[#1987\]](#)  
 Feather features, a recently discovered planar microstructure in shocked quartz, are analyzed in natural and experimentally shocked samples. They are proposed as a diagnostic low-shock pressure indicator.
- 11:00 a.m. Buchner E. \* Schmieder M. Schwarz W. H. Trieloff M. Jourdan F. Wartho J.-A. van Soest M. C. Hodges K. V. Pösges G.  
[A New Look at the Ries-Steinheim Event \[#2151\]](#)  
<sup>40</sup>Ar/<sup>39</sup>Ar dating of monomineralic K-feldspar melt yielded an age of ~14.4 Ma for the Ries crater, S Germany. Isotopic dating of newly recovered impact melt lithologies from the nearby Steinheim Basin is attempted.
- 11:15 a.m. Jourdan F. \* Moynier F. Koeberl C.  
[First <sup>40</sup>Ar/<sup>39</sup>Ar Age of the Lonar Crater: A ~0.65 Ma Impact Event? \[#1661\]](#)  
 We obtained a statistically robust global <sup>40</sup>Ar/<sup>39</sup>Ar isochron age at 656 ± 81 ka (MSWD = 1.29; P = 0.12), dating the Lonar impact event. This age is based on the combination of five isochrons and strongly contrasts with a previous age estimate of ~52 ka.
- 11:30 a.m. Wartho J.-A. \* van Soest M. C. Cooper F. J. Hodges K. V. Spray J. G. Schmieder M. Buchner E. Bezys R. K. Reimold W. U.  
[Updated \(U-Th\)/He Zircon Ages for the Lake Saint Martin Impact Structure \(Manitoba, Canada\) and Implications for the Late Triassic Multiple Impact Theory \[#1930\]](#)  
 New (U-Th)/He zircon ages from a Lake Saint Martin impact melt sample yield a Late Triassic age of 213.3 ± 3.0 Ma (2σ), which suggests that the Lake Saint Martin impact structure may be a candidate for the hypothesized ~214 Ma multiple impact chain.