

Thursday, March 21, 2013

[R720]

**POSTER SESSION: TERRESTRIAL IMPACTS: FEATURES AT ALL SCALES****6:00 p.m. Town Center Exhibit Area**

Platz T. Michael G. G. Hartmann O. Kenkmann T. *POSTER LOCATION #223*  
[Earth's Expected Impact Crater Record on Regional and Global Scales](#) [#2838]

We present a method to calculate expected impact-crater populations on Earth. This may enhance the search for new terrestrial impact sites.

Pickersgill A. E. Osinski G. R. *POSTER LOCATION #224*  
[Planar Deformation Features in Quartz at the Newly Discovered Prince Albert Impact Structure, Northwest Territories, Canada](#) [#2602]

We present here the first report of PDFs in quartz from the newly discovered Prince Albert impact structure, confirming its hypervelocity impact origin.

Reed J. P. Maslowski M. L. Stromback T. J.  
 Beatty W. L. Kairies Beatty C. L. et al. *POSTER LOCATION #225*  
[Using Microstratigraphy and Stromatolite Clastic Behavior to Characterize the Emplacement of the Sudbury Impact Layer in Ontario and Minnesota](#) [#2709]

A closer look at the Sudbury Impact Layer—stromatolite dynamics during ejecta emplacement and the transition from ejecta-absent to ejecta-bearing layers.

Nuhn A. M. Osinski G. R. Tornabene L. L. *POSTER LOCATION #226*  
[Remote Sensing Study of the Slate Islands Impact Structure, Canada](#) [#2389]

We will present the compilation and analysis of a geodatabase of the Slate Islands Impact Structure, Canada, that will augment field studies this summer.

Newman J. D. Herd C. D. K. *POSTER LOCATION #227*  
[Whitecourt Meteorite Impact Crater: Distribution, Texture, and Mineralogy of Meteorites and the Discovery of Carbon Spherules Possibly Associated with the Impact Event](#) [#2316]

Whitecourt has a typical IIIAB composition with distorted textures, and porous carbon spherules discovered at the crater site may relate to the impact event.

Anders D. Osinski G. R. Grieve R. A. F. *POSTER LOCATION #228*  
[Planar Deformation Features from the Onaping Formation of the Sudbury Impact Structure, Canada](#) [#1651]

Investigations of PDFs within the Onaping Intrusion suggest pressures of 20 to 25 GPa and preheated (630°C) or ambient temperatures during their formation.

Schmieder M. Jourdan F. Tohver E. Mayers C. Frew A. et al. *POSTER LOCATION #229*  
[The Age of the Lake Saint Martin Impact Structure \(Manitoba, Canada\)](#) [#2001]

Ar-Ar dating of K-feldspar melt particles yielded a new precise age of  $227.4 \pm 0.8$  Ma ( $2\sigma$ ) for the  $\geq 40$  km Lake St. Martin impact structure, Manitoba, Canada.

Slowinski C. M. Navis M. M. Kairies Beatty C. L.  
 Beatty W. L. Anderson J. L. B. et al. *POSTER LOCATION #230*  
[Rock Elm Crater, Pierce County, WI: Stratigraphy of a Recently Exposed Proposed Central Peak Outcrop and Characterization of Soils](#) [#2700]

New studies at the Rock Elm crater — stratigraphy of a potential new central peak outcrop and a comparison of soils developed within and outside the crater.

Cavosie A. J. Roig C. I. McDougal D. J. Ushikubo T. Spicuzza M. J. et al. *POSTER LOCATION #231*  
[The Sedimentary Record of a Small, Deeply Eroded Impact Structure: A Search for Detrital Shocked Minerals and Extraterrestrial Chromites in Sediments Eroded from the Ordovician Rock Elm Impact Structure \(USA\)](#) [#2028]

Shocked minerals eroded from impact structures survive in sediments. We report detrital shocked quartz in modern alluvium at the Rock Elm impact structure.

Roig C. I. Cavosie A. J. McDougal D. J. Cordua W. S. Mattson C. **POSTER LOCATION #232**  
[Detrital Shocked Quartz in Modern Sediments Eroded from the Rock Elm Impact Structure, Wisconsin, USA](#) [#2685]  
 A search was made for detrital shocked quartz in the Rock Elm impact structure (USA) in a modern fluvial system, confirming its presence in modern alluvium.

Hagerty J. J. McHone J. F. Gaither T. A. **POSTER LOCATION #233**  
[The Flynn Creek Crater Drill Core Collection at the USGS in Flagstaff, Arizona](#) [#2122]  
 The USGS in Flagstaff, AZ, maintains a collection of drill cores from Flynn Creek crater. The cores are being inventoried for use by the scientific community.

Hagerty J. J. Gaither T. A. **POSTER LOCATION #234**  
[The USGS Meteor Crater Sample Collection: Results and Insights](#) [#2128]  
 We present information on additions to the USGS Meteor Crater Sample Collection and discoveries that have resulted from microbeam and bulk rock analyses.

Burrer B. Zolensky M. E. Povenmire H. **POSTER LOCATION #235**  
[A Unique Bicolored Bediasite from Brazos, County, Texas](#) [#1406]  
 A uniquely bicolored bediasite tektite specimen has been found and examined by electron microprobe analysis, resulting in an interesting variation of oxide quantities.

Huber M. S. King D. T. Jr. Petruny L. W. Koeberl C. **POSTER LOCATION #236**  
[Revisiting Kilmichael \(Mississippi\), A Possible Impact Structure](#) [#2250]  
 The Kilmichael, Mississippi, structure has been proposed as a meteorite impact site. This study examines drill cores from the site to evaluate this hypothesis.

Tabares Rodenas P. King D. T. Jr. Ormö J. Petruny L. W. Marzen L. J. **POSTER LOCATION #237**  
[Reconstruction of the Western Rim of the Wetumpka Impact Structure: Clues to the Excavation Process in a Foliated Metasedimentary Target](#) [#2383]  
 Structural measurements reveal a significant fold structure produced by impact excavation within the western rim of the Wetumpka impact structure.

Aldoroty R. J. Bigolski J. N. Ebel D. S. Landman N. H. **POSTER LOCATION #238**  
[Absence of Shocked Quartz at Cretaceous/Paleogene \(K/Pg\) Sites In the New Jersey Coastal Plain](#) [#1703]  
 Biostratigraphic and geochemical signatures are discordant at the K/Pg boundary in Monmouth County, NJ. Impact-shocked quartz would resolve this controversy.

Moore J. R. Sharma M. **POSTER LOCATION #239**  
[The K-Pg Impactor was Likely a High Velocity Comet](#) [#2431]  
 Examining the geophysical and geochemical constraints on the nature of the K-Pg impactor indicates that it is likely (>95%) a high-velocity comet.

Ohno S. Sakaiya T. Kadono T. Kurosawa K. Yabuta H. et al. **POSTER LOCATION #240**  
[Direct Gas Analysis Experiment of Impact-Vaporized Carbonaceous Chondrites](#) [#2746]  
 Laser gun impact experiments and direct gas analysis were conducted to investigate the sulfur chemistry in carbonaceous chondritic impact vapor clouds.

Parkos D. Kulakhmetov M. Johnson B. Melosh H. J. Alexeenko A. **POSTER LOCATION #241**  
[Chemosynthesis and Transport of Pollutants from Impact Ejecta Reentry](#) [#2988]  
 A new method for calculation of pollutants produced from Chicxulub impact ejecta reentry was devised, using nonequilibrium chemistry and atmospheric transport.

King D. T. Jr. Petruny L. W. **POSTER LOCATION #242**  
[Accretionary Lapilli at the Cretaceous-Paleogene \(KT\) Boundary, Village of Armenia, Belize](#) [#2747]  
 Accretionary lapilli up to 2 cm in diameter occur within an impactoclastic bed at the KT boundary in the village of Armenia, Belize.

Hoffmann V. H. Funaki M. Cornec J. H. Kaliwoda M. Hochleitner R. **POSTER LOCATION #243**  
[Magnetic Properties and Micro Raman Spectroscopy of a Central American Tektite from Belize](#) [#2528]  
 The magnetic signature of the Belize tektite differs from that of the Australasian tektites, which would support the hypothesis of separate (parallel) impacts.

Malkova K. Kletetschka G. West A. Bunch T. E. Witke J. **POSTER LOCATION #244**  
[Soil Composition Inside the Possible Crater in Bolivia, Iturrealde: Material Implying Impact Event of Low Density Meteorite](#) [#1705]  
 Iturrealde may have formed under natural circumstances unrelated to an impact. However, there is the presence of millions of clusters of glass beads in sediment.

Crósta A. P. Vasconcelos M. A. R. **POSTER LOCATION #245**  
[Update on the Current Knowledge of the Brazilian Impact Craters](#) [#1318]  
 We present an update on the current knowledge of the Brazilian impact craters, including confirmed ones and also some of the potential impact structures.

Uchôa E. B. Vasconcelos M. A. R. Crósta A. P. **POSTER LOCATION #246**  
[Santa Marta Crater: Macroscopic and Petrographic Evidences of a New Confirmed Impact Structure in Northeastern Brazil](#) [#1316]  
 Our analysis succeeded in identifying the first macro/micro evidences of the impact origin of Santa Marta, confirming it as the seventh Brazilian impact structure.

Vasconcelos M. A. R. Crósta A. P. Leite E. P. **POSTER LOCATION #247**  
[Gravity Signature of the Santa Marta Crater, a New Confirmed Impact Structure in Brazil](#) [#1314]  
 Santa Marta is a new confirmed impact structure ~10–12 km located in Brazilian territory, which presents a low-gravity signature over the central elevation.

Alwmark C. Holm S. Ormö J. Sturkell E. **POSTER LOCATION #248**  
[Shocked Quartz in the Målingen Structure — Evidence for a Small Twin Crater to the Lockne Impact Structure](#) [#2100]  
 Here we show that shocked quartz grains are present in the lower parts of the Målingen structure in central Sweden, thus proving that it is impact derived.

Zhu M. H. Wunnemann K. **POSTER LOCATION #249**  
[Modeling of Meteorite Impact-Induced Secondary Mass Wasting — Case Study by Means of the Bunte Breccia Ejecta Blanket at Ries Crater, Germany](#) [#1921]  
 We propose a numerical modeling to calculate the contribution of secondary mass wasting to the total volume and thickness of ejecta blankets at impact craters.

Gurov E. P. Shekhunova S. B. Permyakov V. V. **POSTER LOCATION #250**  
[Accessory Minerals from Impact Melt Rocks of the Boltysk Structure, Ukraine. Native Metals and Alloys](#) [#1217]  
 A short description of native metals (gold, silver, copper, platinum) and alloys from impact melt rocks of the Boltysk crater (Ukraine) is presented.

Pittarello L. Koeberl C. **POSTER LOCATION #251**  
[A Cathodoluminescence Study of Impact Melts and Rocks from El'gygytyn: A Method to Distinguish Impact and Volcanic Melts?](#) [#1459]  
 Optical and SEM-CL investigation on shocked and unshocked volcanic rocks and glasses from the El'gygytyn impact structure (Russia).

Raschke U. Zaag P. T. Reimold W. U. Schmitt R. T. **POSTER LOCATION #252**  
[A New Geological Map of the El'gygytyn Impact Structure, NE Russia](#) [#1172]  
 A new geological map of the El'gygytyn impact structure (NE Russia) based on the results from the 2011 German-Russian expedition.

Ray D. Misra S. Arif M. **POSTER LOCATION #253**  
[Contrasting Aerodynamic Morphology and Geochemistry of Impact Spherules from Lonar Crater, India: Some Insights into Their Cooling History](#) [#1031]

The morphochemical differences between the Lonar impact sub-mm and mm-sized spherules suggest different modes of their formation from the impact plume.

Komatsu G. Kumar P. S. Goto K. Sekine Y. Giri C. et al. **POSTER LOCATION #254**  
[The Drainage Systems Developing on the Hydrologically Active Impact Crater, Lonar, India](#) [#1270]

Lonar Crater in India exhibits various drainage systems, occurring as groundwater emergence, inner wall degradation features, and channels incised on the ejecta.

Misra S. Arif M. Newsom H. E. Ray D. **POSTER LOCATION #255**  
[Hydrothermal Alteration of Lonar Crater Basalts, India-Impact Related?](#) [#1030]

The geochemistry of Lonar basalts suggest they are generated due to impact-induced hydrothermal alteration processes.

Jaret S. J. Glotch T. D. Wright S. P. **POSTER LOCATION #256**  
[Micro-FTIR and Micro-Raman Spectroscopy of a Shocked Basalt from the Lonar Crater, India](#) [#2881]

Shock deformation in labradorite was analyzed with optical, micro-FTIR, and micro-Raman techniques.

Misra S. Panda D. Ray D. Newsom H. E. Dube A. et al. **POSTER LOCATION #257**  
[Geochemistry of Glassy Rocks from Ramgarh Structure, India](#) [#1020]

We report the occurrence of Fe-, Co-, Ni-enriched particles within the glassy rocks from Ramgarh structure, India, which could be the impactor components.

Purohit V. Sisodia M. S. **POSTER LOCATION #258**  
[Universal-Stage Measurements of Planar Deformation Features in Shocked Quartz Grains Recovered from Ramgarh Structure](#) [#1151]

The study of planar cleavages in shocked quartz grains from Ramgarh Structure using the universal stage proves them to be PDFs, thereby proving Ramgarh, India, to be an impact crater.

Sahoui R. Belhai D. Jambon A. **POSTER LOCATION #259**  
[Impact-Generated Carbonate Melts from the Talemzane Structure \(Algeria\)](#) [#1184]

The Talemzane circular depression appears in the Earth Impact Database. Samples from the impact-melt-bearing breccias show evidence for the melting of limestone.

Xie Z. Zuo S. Dong Y. **POSTER LOCATION #260**  
[The Progress of Airburst Impact Origin Hypothesis of Taihu Lake Basin in Southeast of China in Around 7000 Years Ago](#) [#1338]

We discuss the airburst impact origin hypothesis of Taihu lake basin ~7000 years ago, based on unique siderite concretions and deformed features in quartz.

Artemieva N. **POSTER LOCATION #261**  
[Numerical Modeling of the Australasian Strewn Field](#) [#1410]

Modeling results show that the AAT strewn field may be produced by a moderate-sized impact into the oceanic shelf. The crater was destroyed immediately by water resurge.

Enos M. Krull Davatzes A. E. Thompson Stiegler M. **POSTER LOCATION #262**  
[XRF Analysis of Impact Spherules from Dales Gorge Member, Hamersley Group of Western Australia](#) [#1643]

We present XRF analyses of impact spherules and adjacent sediments from the Hamersley in W. Australia.

Fry C. Samson C. Butler S. McCausland P. J. A. Herd R. K. **POSTER LOCATION #263**  
[3D Laser Imaging of Tektites](#) [#2597]

3-D laser imaging has been used previously to model tektites. These models can be used to find density and to calculate the inertia and rotation period.

Costa B. Klingelhöfer G. Alves E. *POSTER LOCATION #264*  
[Backscattering Mössbauer Studies on Tektites from Different Stream Fields](#) [#3096]  
Tektites are natural glasses originated from fused material spilled during a meteorite impact.

Tucker J. M. Mukhopadhyay S. *POSTER LOCATION #265*  
[Evidence for Multiple Giant Impacts and Magma Oceans from Mantle Noble Gases](#) [#2990]  
Measurement of high He/Ne ratios in MORBs requires multiple giant impact-induced atmosphere ejection and magma ocean outgassing episodes on the accreting Earth.

Kambhu D. Simonson B. M. *POSTER LOCATION #266*  
[Spatial Variation of Maximum Spherule Sizes in Distal Ejecta Layers Around the Archean-Proterozoic Boundary](#) [#1427]  
Comparisons of spherule sizes in three layers correlated from Western Australia to South Africa help constrain projectile size estimates and Archean paleogeography.

Nabelek L. Kletetschka G. Kadlec J. West A. Bunch T. E. et al. *POSTER LOCATION #267*  
[Magnetism of Microspheres from the Proposed Younger Dryas Impact Event 12,900 Years Ago](#) [#1707]  
No excess magnetization of the Younger Dryas microspheres refutes the hypothesis that these microspheres could have formed during lightning discharges.

Kuzmicheva M. Yu. Losseva T. V. *POSTER LOCATION #268*  
[Transient Magnetic Fields Generated by Post-Impact Plumes](#) [#2765]  
A role of impact ejecta and plume in providing magnetic crust anomalies is discussed. Geomagnetic disturbances occur while plume moves across the geomagnetic field.

Miura Y. *POSTER LOCATION #269*  
[Significant Roles of Light \(H<sub>2</sub>O, OH\)-Bearing Phases by Three Phase-State Changes: Macro to Nano-Phases on Planets, Satellites and Asteroids](#) [#3098]  
H<sub>2</sub>O phase can be discussed in the phase diagram in quick and huge reaction process. Ocean water can be obtained mainly in global planetary impact.

Miura Y. *POSTER LOCATION #270*  
[New Concept of Planetary Surfaces by Impact Growth Process with Remnants of Phase Changes](#) [#1654]  
New concept of planetary surfaces is proposed by impact growth through three material states with impacts on wider hard rock and smaller soft rocks.