

Monday, August 18, 2008
POSTER SESSION
3:45 p.m. Fisheagle Room

Baker T. Phillips M. E.

[Remote Sensing of the Morokweng Impact Structure, South Africa](#) [#3064]

Landsat Thematic Mapper/Enhanced Thematic Mapper data have been studied to look for arcuate, impact-related structures. Probable arcuate structures and arcuate drainage patterns were seen on the processed and enhanced imagery.

Andreoli M. A. G. Hart R. J. Cooper G. R. J. Webb S. J.

[The Morokweng Impact Crater, South Africa: A Complex, Multiring Structure with a ~130 km Radius External Ring and Asymmetric Radial Sectors](#) [#3048]

The poster summarizes the main features of the Morokweng Crater on the basis of up-to-date geophysical imagery and borehole data. The authors conclude that Morokweng is a multiring crater with a final rim of ~190 km and an external ring of ~260 km.

Mielke Ch. Riller U. Reimold W. U.

[Assessing Different Remote Sensing Techniques for Geological Mapping in Complex Impact Structures, an Example from the Central Rand Group in the Vredefort Impact Structure](#) [#3116]

Remote sensing is a powerful tool for mapping large-scale geological structures such as the Vredefort impact structure.

Asabi O. Phillips M. E.

[3D-GIS and Remote Sensing for Modelling the Size and Extents of the Gardnos Impact Structure, Norway](#) [#3065]

Integration of field survey data, 3D-GIS data, stereo air photos and satellite remote sensing was used to model and map the structure and morphology at Gardnos. Results appear to be in correlation with recent ground-based studies.

Phillips M. E. Townsend C. Bartels K.

[Remote Sensing and GIS Analyses for Determining Size, Morphology and Lithological Mapping of the Vredefort Impact Structure, South Africa](#) [#3061]

Satellite remote sensing data with 3D GIS data were used for three interrelated project analyses of the Vredefort structure, over the period 1999–2005. Many different and previously unrecognised features and lithologies were mapped.

Townsend C. L. Phillips M. E.

[Morphological Investigation of Vredefort Using Remote Sensing, GIS and 3D Modelling](#) [#3084]

An interactive, 3D Digital Elevation Model (DEM) was created of the Vredefort impact structure at a spatial resolution of 30 metres.

Wittmann A. Fernandes V. A. Renne P. R. Schmitt R. T. Reimold W. U. Hecht L. Povenmire H.

[Preliminary Age of Impact Melts from the Chesapeake Bay Impact Structure](#) [#3093]

First preliminary Ar-Ar ages for melt rocks of the Chesapeake Bay impact structures are between 44.8 and 48.1 Ma. The difference to the ages of ~35–36 Ma that were based on ejecta and biostratigraphic correlations may be due to inherited Ar.

Marcus R. A. Stewart S. T. Barranco J. A. Hernquist L. Sasselov D.

[SPH Simulations of Planetary-Scale Impacts](#) [#3075]

We discuss applications of a new smoothed particle hydrodynamics code designed for simulations of planetary-scale impacts.

Pugacheva S. G. Shevchenko V. V. Chikmachev V. I.
[Structure and Morphology of the Multiring Lunar Basins](#) [#3029]

The morphological features of the multiring lunar basins are considered. The common characteristics of the multiring basins were researched. The South Pole-Aitken Basin (SPA) represents a compositionally and topographically unique lunar formation.

Lambert P. Trumel H.
[Physical Modeling: Multi-Scale Approach and its Applicability to Large Meteorite Impacts](#) [#3035]

Shifting from phenomenological to physical modeling implies downscale characterization of mechanisms, transcoding into a mathematical form and upscaling. The aim is to show that such an approach developed in the defense community can be applied to large impact cratering.

de Niem D. Kührt E. Motschmann U.
[Condensate Composition from Asteroid Impacts](#) [#3054]

A model of formation of condensate from vaporizing asteroidal impacts is presented. Applications: 1) Spinels in the Chicxulub impact; 2) Chondrules in Bencubbin-like meteorites.

Milam K. A.
[Petrogenesis of Central Peak Formation on Mars](#) [#3089]

Deformation fabrics displaying similar to and displaying the same cross-cutting relationships as those identified in terrestrial complex craters have been identified on Mars using high-resolution imagery from the MOC and HiRISE imaging systems.

Stewart S. T. Senft L. E.
[Advances in Modeling Collisions on Icy Bodies](#) [#3085]

We present recent advances in the quality of the equation of state and constitutive models for H₂O and discuss the implications for collisional processes on icy bodies.

Giuli G. Eeckhout S. G. Pratesi G. Koeberl C. Cicconi M. R. Paris E.
[Variations in Fe Oxidation State Between Dark and Light Layers of Muong Nong-type Tektites](#) [#3047]

The Fe oxidation state along a profile across dark and light layers of a Australasian Muong Nong tektite sample has been studied by Fe K-edge XANES. The dark layer results to be slightly but reproducibly more oxidized respect to the light layers.

Vetvicka I. Frank J. Drtina J.
[Morphological Differences Between Irghizites and Splash-Form Glasses from Lonar Crater — Evidence of Different Conditions of Origin of Those Glasses](#) [#3088]

Most of splash-form glasses from Lonar have a dull rough surface, because after the impact they were flying in cloud of ash and dust, while irghizites are smooth and lustrous, because they were flying for some time out of the cloud of ash and dust.

Buchner E. Deinert N. J. Schmieder M.
[A Possible Upper Eocene-Oligocene Impact Spherule Layer in the North Alpine Foreland Basin, Upper Bavaria, Germany?](#) [#3104]

Layers of distal impact ejecta have been reported from various sites on Earth through geologic time.

Meyer C. Artemieva N. Stöffler D. Reimold W. U. Wünnemann K.
[Possible Mechanisms of Suevite Deposition in the Ries Crater, Germany: Analysis of Otting Drill Core](#) [#3066]

In this presented work we revisited the suevite problem of the Ries Crater, Germany, in an interdisciplinary study by combining geological and petrographic observations from Otting drill core with numerical models of crater and ejecta plume formation/deposition.

Schönian F. Stöffler D. Kenkmann T.

[*On the Distribution of Impact Melt and Basement Clasts in the Chicxulub Ejecta Blanket*](#) [#3100]

The distribution of melt particles and basement clasts within the Chicxulub ejecta blanket suggests that vapor plume material overrun the ejecta curtain, was deposited first and subsequently eroded and incorporated by the secondary ejecta flow.

King D. T. Jr. Petruny L. W. Harris R. S. Glidewell J. Johnson R. C.

[*Comparison of Marine-Crater Stratigraphy: Chesapeake Bay and Wetumpka*](#) [#3110]

Chesapeake Bay Crater, Virginia, is a late Eocene impact structure, which is completely buried beneath the Atlantic Coastal Plain.

Schmieder M. Buchner E.

[*Paleoenvironmental Charts for Terrestrial Impact Structures — A Simple Tool to Test Impact Ages and Marine/Continental Impact Conditions*](#) [#3028]

We present paleoenvironmental charts as a tool to refine poor and/or equivocal impact ages and to discriminate between marine and continental impact events on Earth.

Khirfan M. Kenkmann T. Salameh E. Omary Y. Reimold W. U.

[*Remote Sensing and Structural Analysis of Jabal Waqf As Suwwan Meteorite Impact*](#) [#3109]

A large meteorite impact structure has recently been discovered in the Middle East, in Jordan at Jabal Waqf As Suwwan.

Raiskila S. Elbra T. Öhman T. Pesonen L. J.

[*Petrophysical and Palaeomagnetic Studies of the Keurusselkä Impact Structure, Central Finland*](#) [#3056]

The sampling at Keurusselkä impact structure started in 2007. Samples were collected from shatter cone outcrops and along a profile. Petrophysical and palaeomagnetic measurements were measured at the Solid Earth Geophysics Laboratory in University of Helsinki.

Kenkmann T. Artemieva N. A. Wünnemann K. Poelchau H. Elbeshausen D. Nunez del Prado H.

[*The Remarkable Meteorite Impact Event on September 15, 2007, Carancas, Peru: What Did We Learn?*](#) [#3063]

The Carancas event showed that metre-sized stony meteorites can survive atmospheric passage under specific circumstances. We present results of a detailed crater survey, reconstruct crater formation, and derive conditions during atmospheric traverse.

Tegtmeier E. L. Newsom H. E. Elston W. E. McElvain T. H.

[*Breccias and Geological Setting of the Santa Fe, New Mexico USA Impact Structure*](#) [#3090]

Primary evidence for the new Santa Fe impact structure consists of spectacular shatter cones. In addition, breccia pods that form conspicuous walls in the region may have been emplaced from above into zones of subcrater dilation.

Adachi T. Kletetschka G.

[*A New Method of Testing the Heterogeneity of the Impact Origin, Shatter Cones of Newly Discovered Impact Site, Santa Fe, New Mexico, USA*](#) [#3092]

The magnetic signatures of the two shatter cones showed the heterogeneous orientations and intensity of natural remanent magnetizations that may attribute to the impact event.

Elbeshausen D. Wünnemann K.

[*Asymmetries in Complex Craters due to Oblique Meteorite Impacts?*](#) [#3080]

We conducted several 3D-hydrocode simulations to discover how an oblique impact affects complex crater formation. We focus on the evolution of central peaks and the quest for asymmetries in the target as possible indicators for the impact angle or direction.

Yokoyama E. Trindade R. I. F. Lana C. C. Marangoni Y. R. Tohver E.

[*Magnetic Fabrics of Araguainha Impact Structure \(Central Brazil\): Impact Products and Collapse History in the Central Peak-Ring*](#) [#3086]

Petrographic and AMS studies in impact-related materials inside the central peak ring allow recognition of four lithofacies that record different magnetic fabrics.

Ferrière L. Morrow J. R. Amgaa T. Koeberl C.

[Systematic Comparison of Universal Stage-indexed Planar Deformation Features in Quartz: Implications for Statistical Significance and Representation of Results](#) [#3010]

Universal stage analysis is a standard technique used for determining the crystallographic orientations of planar deformation features in quartz. The quality, precision, repeatability, and representativeness of the measurements have been tested.

Coney L. Reimold W. U. Hancox P. J. Mader D. Koeberl C. McDonald I. Struck U.

Vajda V. Kamo S. L.

[The Permian-Triassic Boundary, Karoo Basin, South Africa: Geochemical Insight into this Mass Extinction Event](#) [#3032]

The P-T mass extinction has been documented as the largest Phanerozoic mass extinction. Geochemical and mineralogical results from terrestrial sections in the Karoo Basin, South Africa will be presented.

Tredoux M.

[PGE Enrichment at the KTB: Is it a Sign of Cause or a Sign of Effect?](#) [#3074]

Investigation of the geochemistry of the KTB has brought to light data that are not easily reconciled with a primary fall-out layer. It is suggested that the Deccan traps provided a better source.

Elston W. E. *

[Proposed Bushveld Scenario: Impact, Mantle Upwelling, Meltdown, Collapse](#) [#3015]

The 2.06 Ga Bushveld impact triggered mantle upwelling and lithosphere melts, creating world's largest igneous complex. Its history is recorded in repeated overflows from a superheated meltpool, accumulated in an outer ring (pseudovolcanic Rooiberg Group).