Tuesday, March 18, 2003
POSTER SESSION I
7:00 p.m. Fitness Center

Poking Holes: Terrestrial Impacts

King D. T. Jr. Petruny L. W. Pope K. O. Ocampo A. C.
The Albion Impactoclastic Breccia (Albion Diamictite Bed): Cumulative Grain-size Frequency Curves and Possible Modes of Emplacement **[#1995]**
Albion impactoclastic breccia (=Albion diamictite) is a very coarse, poorly sorted, and contains particles sized from <1 mm to over 9 m. Grain-size frequency analysis suggests a combination of two clast populations due to one of two possible factors.

Harris R. S.
Re-evaluating the Origin of an Upper Eocene Diamictite in the Coastal Plain of East-Central Georgia: An Impactoclastic Layer? **[#1965]**
An unusual diamictite in the Upper Eocene stratigraphy of the Georgia Coastal Plain previously has been interpreted as a volcaniclastic unit. An initial re-evaluation of its origin suggests that the layer could be related to a Late Eocene impact.

Krull A. E. Lowe D. R. Byerly G. R.
Compositional Grading in an Impact-produced Spherule Bed, Barberton Greenstone Belt, South Africa: A Key to Condensation History of Rock Vapor Clouds **[#1474]**
This study examines the vertical compositional variability in a single early Archean spherule bed in the Barberton Greenstone Belt, South Africa in order to better identify the process by which impact vapor clouds condense and spherules form and accumulate.

Glass B. P.
Australasian Microtektites in the South China Sea: Implications Regarding the Location and Size of the Source Crater **[#1092]**
The highest concentration of Australasian microtektites and the highest ratio of unmelted ejecta to microtektites has been found in at ODP Hole 1144A in the northern South China Sea. These, and other data, were used to reevaluate the location and size of the Australasian strewn field source crater.

Wrobel K. E. Schultz P. H.
The Effect of Rotation on the Deposition of Terrestrial Impact Ejecta **[#1190]**
The rotation of the Earth significantly modifies ejecta deposition. Results indicate the importance of incorporating the Coriolis force in predictions of locations and thicknesses of distal ejecta deposits.

Harvey R. P. Boyd H.
A Search for Impact Debris in the Pliocene Age Sirius Group, Transantarctic Mountains **[#1726]**
The Sirius Group of Pliocene rocks from Antarctica have a heritage of mixed geological processes that may have included impact events. We shall report the results of our ongoing search for impact materials in this rock.

Artemieva N. A. Bland P. A.
Crater Fields on Venus, Earth and Mars **[#1319]**
Numerical simulations of disrupted meteoroid motion through atmsophere allows to reproduce crater strewn fields on Venus and Earth, but not on Mars. The majority of multiple and irregular craters are created by iron projectiles, although this type of impactor accounts for <10% of the total flux.

Edwards W. N. Hildebrand A. R.
Locating Bolide Terminal Bursts Using Seismic Arrival Times: A Supracenter Location Program **[#1447]**
A program has been written to locate the geographic position of a fireball's terminal burst. Using atmospheric ray tracing that includes the anisotropic effect of winds; SUPRACENTER locates these explosive events in four dimensions (three spatial and time).

Cudnik B. M.
Some Recommendations for a Comprehensive Lunar Meteor Campaign **[#1242]**
In light of recent positive results in the search for lunar meteoritic phenomena, this paper briefly outlines a recommended campaign to pursue for a comprehensive, multi-wavelength study of lunar meteor impact phenomena. A few applications for potential findings are also described.

Abbott D. H. Glatz C. A. Burckle L. H. Nunes A. A. Puchtel I. S. Humayun M.
Multidisciplinary Methods of Finding and Verifying Abyssal Impact Craters: Results and Uncertainties **[#1858]**
We present evidence for the presence of two previously unknown abyssal impact craters, a prospective source crater for the late Pliocene Eltanin impact layer and the late Miocene Ewing impact layer.

Jurena D. J. French B. M. Gaffey M. J.
Gravity Transect Profile and PDF/PF Comparisons from the Bee Bluff Structure **[#2076]**
Support for an impact origin of this structure includes an anomaly profile similar to other impact structures. PDF orientations support this as well and also indicate a distinct separate source for PDFs outside the structure.

Rossi A. P. Baliva A. Piluso E.
New Evidences of an Impact Origin for Temimichat Crater, Mauritania **[#1882]**
Temimichat crater (Mautitania) was recently visited and sampled. Possibly impact-related pseudotachilite veins have been observed. Preliminary results are presented.

Al-Mishwat A. T.
Wadi Na'am Structure: A Possible Concealed Impact Feature from Central Southwest Saudi Arabia **[#1049]**
I report on the occurrence of a possible impact structure from central southwest Saudi Arabia. It is Precambrian in age and wholly concealed below lower Paleozoic sedimentary cover.

Macdonald F. A. Bunting J. A. Cina S. E.
Yarrabubba, Western Australia: A Large, Deeply Eroded, Ancient Impact Structure in the Yilgarn Craton **[#1116]**
Shock-metamorphic effects were discovered in deeply eroded Archean granites in Western Australia. Preliminary estimates indicate that the Yarrabubba impact structure is of a Paleoproterozoic age and at least 30 km in diameter.

Krochuk R. V. Sharpton V. L.
Morphology of the Terny Astrobleme Based on the Field Observation and Sample Analysis **[#1489]**
Here we present a new data collected during 2002 fieldwork on the Terny astrobleme in Ukraine. Preliminary result of the observations are morphological features of this eroded crater such as proposed location of the central uplift, isotopic age estimate.

Pilkington M. Hildebrand A. R.
Transient and Disruption Cavity Dimensions of Complex Terrestrial Impact Structures Derived from Magnetic Data **[#1745]**
Using published values of crater diameters (D) and values of collapsed disruption cavity diameter, D(CDC) derived from magnetic data for 19 complex terrestrial impact structures, we derive the relationship D(CDC) = 0.49 D.

Trepmann C. A. Spray J. G.
Shocked Quartz as an Indicator of the Loading and Relaxation Conditions During and After Hypervelocity Impact — Microstructural Evidence from Crystalline Target Rocks of the Charlevoix Impact Structure, Canada **[#1379]**
Shocked quartz from crystalline target rocks of the Charlevoix impact structure, Canada, has been investigated to yield information on the loading and relaxation conditions during and after hypervelocity impact.

Baratoux D. Melosh J. H.
Numerical Modeling of Shatter Cones Development in Impact Craters **[#1546]**
We present a new model for the formation of shatter cones in impact craters. Our model has been tested by means of numerical simulations. Our results are consistent with the observations of shatter cones in natural impact craters and explosions experiments.

Dressler B. O. Reimold W. U.
Impact Breccias in the Central Vredefort Dome — Revisited **[#1019]**
Vredefort Dome pseudotachylites have a random, Granophyre a radial orientation, independent from target rock structures. Pseudotachylites form through explosive transfer of thermal shock energy. Boulders similar to Sudbury Footwall Breccia occur.

Wieland F. Gibson R. L. Reimold W. U.
Impact-related Structures in the Central Uplift of the Vredefort Impact Structure, South Africa **[#1013]**
Results of detailed structural mapping in the collar of the Vredefort Dome are presented and have implications for the various stages of central uplift formation.

Tagle R. Stöffler D. Claeys P. Erzinger J.
A Non-magmatic Iron Meteorite as Impactor for the Rochechouart Crater **[#1835]**
PGE and siderophile elements composition of the Rochechouart impact melts is similar to that of non-magmatic iron meteorites. The contamination of the melt is a result from a combination of iron an silicate phases of this type of meteorite.

Öhman T. Badjukov D. D. Raitala J. Petrova T. L. Stehlik H.
Impactites of the Paasselkä and Suvasvesi South Craters, Finland **[#1571]**
The discovery of impactites in vicinities of the Paasselkä and Suvasvesi South craters provides definitive evidence of the impact origin of the two structures. Ni- and Co-containing pyrite was found in altered glass inclusions in Suvasvesi breccia.

Díaz-Martinez E. Ormö J.
An Alternative Hypothesis for the Origin of Ferroan Ringwoodite in the Pumice of El Gasco (Cáceres, Spain) **[#1318]**
El Gasco is the first location where ferroan ringwoodite (iron silicate spinel) is found on Earth. We propose an hypothesis to explain its origin, unrelated to impact shock metamorphism, and with implications for the study of high-pressure minerals.

Sheffer A. A. Melosh H. J. Jarnot B. M.
Reduction of Silicates at High Temperature: Fulgurites and Thermodynamic Modeling **[#1467]**
We present a new fulgurite with extremely reduced Fe-Si-Al metallic phases. Thermodynamic modeling of a simplified composition suggests that Al may be an important contributor to the reduction of silicates.