Wednesday, March 21, 2012
IMPACT EJECTA: PROCESSES AND PRODUCTS
8:30 a.m. Waterway Ballroom 5

Chairs: **Gordon Osinski**
Steven Goderis

8:30 a.m. Hermalyn B. * Schultz P. H. Heineck J. T.
Experimental Studies of the Ejecta Velocity Distribution from Oblique Impacts: Towards an Analytical Model **[#2022]**
A novel three-dimensional particle tracking technique enables temporal measurement of the early-to main-stage ejecta velocity distribution from experimental oblique impacts at the AVGR. A physically based scaling model incorporating obliquity is proposed.

8:45 a.m. Sommer F. D. * Reiser F. Dufresne A. Poelchau M. H. Kenkmann T. Deutsch A.
Ejection Behavior During Variation of Impact Energy and Target Water Saturation — The MEMIN Project **[#2035]**
Ejection behavior in experimental impacts into sandstone was analysed and specific characteristics were identified with changes in target pore space saturation, projectile velocity, and projectile mass.

9:00 a.m. Ong L. * Melosh H. J.
Nonlinear Shock Interactions Produce High-Velocity, Low-Pressure Spall **[#2031]**
We simulate the interactions of impact-induced nonlinear shock waves in the near-surface of the target. Shocks interact with the free surface to produce lightly-shocked ejecta with velocities 1.5 times the particle velocities in the shock front.

9:15 a.m. Barlow N. G. * Boyce J. M.
Distribution and Characteristics of Martian Low Aspect Ratio Layered Ejecta (LARLE) Craters **[#1253]**
We are conducting a global survey of the distribution and characteristics of an unusual crater morphology that we have termed low aspect ratio layered ejecta (LARLE) craters. LARLE craters appear to be related to pedestal craters.

9:30 a.m. Piatek J. L. * Nolan R. T. Tornabene L. L.
Thermophysical Properties of Layered Crater Ejecta Deposits on Mars **[#2098]**
The complex relationship between layered and ballistically emplaced ejecta deposits of fresh craters on Mars is examined using thermal inertia results from THEMIS images with analysis of visible morphology from HiRISE/CTX images.

9:45 a.m. Bandfield J. L. * Song E. Hayne P. O. Ghent R. R. Paige D. A.
Lunar "Cold Spots": A New Class of Thermophysically and Morphologically Distinct Craters **[#1487]**
A class of lunar craters are surrounded by a highly insulating regolith layer that can extend over 100 crater radii from the source. Visible images do not show this layer but display layered near-crater ejecta with fluidized flow morphologies.

10:00 a.m. Kalleson E. * Riis F. Setsaa R. Dypvik H.
Ejecta Distribution and Stratigraphy — Field Evidence from the Ritland Impact Structure **[#1351]**
An ejecta layer from the 2.7-km-diameter Cambrian, Ritland impact structure has been studied in the field. The layer consists of crystalline clasts ejected during impact, mixed with Cambrian dark clays.

10:15 a.m. Bierhaus E. B. * Dones L.
Cratering by Impact Ejecta, from Mercury to the Asteroids **[#2451]**
We estimate the relative importance of secondary cratering in the inner solar system. Notably, we find that Mercury should have the most secondary craters, perhaps the most in the solar system, and that the largest asteroids should also have secondaries.

10:30 a.m. Plescia J. B. *
Uncertainties in the <3 Ga Lunar Impact Cratering Chronology **[#1614]**
Self-cratering results in the use of crater counts on ejecta of dated craters of dubious value to constrain the impact flux as the number does not reflect a primary flux. This has implications for a martian flux as it is extrapolated from the Moon.

10:45 a.m. Zanetti M. * Jolliff B. van der Bogert C. H. Hiesinger H.
Equal-Area Radial Crater Counts at Large Copernican Impact Craters: Implications for Late-Stage Ejecta Emplacement **[#2131]**
The distribution of small impact craters in the continuous ejecta of Copernican craters using equal-area counts oriented radially to the rim show a trend of decreasing age with increasing distance, suggesting an influence of self-secondary cratering.

11:00 a.m. Johnson B. C. * Melosh H. J.
Distal Impact Ejecta: Melt Droplets, Impact Lapilli, and Tektites **[#1456]**
We describe the formation of melt droplets, impact lapilli, and tektites. We also make size estimates of these ejecta products that are consistent with observations and predict that non-global ejecta layers should be an aggregate of these particles.

11:15 a.m. Davatzes A. K. * Byerly G. R.
Insight into Archean Spherule Growth from Geochemistry and 3D Imaging **[#2093]**
MicroCT three-dimensional imaging of the spherules shows no unusual shapes or surface agglutination. Electron microprobe line scans show geochemical differences in layered spherules, indicating growth by collision while still partially molten.

11:30 a.m. Deutsch A. * Artemieva N.
Tracking down Traces of the Chicxulub Projectile in K-Pg Boundary Deposits **[#2087]**
Flat and unfractionated REE distribution patterns of impact spherules from K-Pg sites in northeast Mexico, Alabama, and ODP 207 substantiate the so far unknown but significant contribution of the Chicxulub bolide to these ejecta sites.