Thursday, March 26, 2009
POSTER SESSION II: IMPACTS I: MODELS AND EXPERIMENTS
6:30 p.m. Town Center Exhibit Area

Ivanov B. A.
Multiphase Equations of State for Planetary Impact Study — II **[#2283]**
First results of the construction of the ANEOS-base multiphase EOS of forsterite are presented. The new EOS promises more accurate impact melt calculations in high-velocity planetary impact modeling.

Carter R. T. Jandir P. S. Kress M. E.
Estimating the Drag Coefficients of Meteorites for All Mach Number Regimes **[#2059]**
Most models that describe the descent of meteorites use a constant drag coefficient. We present a numerical method to calculate drag coefficients as a function of Mach number.

Wünnemann K. Elbeshausen D. Collins G. S.
Structural Evidence for the Direction of Impact at Complex Craters: Insight from 3D Numerical Modeling **[#1593]**
We use 3D hydrocode modeling of impact crater formation to investigate the effect of the angle of incidence on structural asymmetries in the resulting crater morphology.

Kurta A. T. Wünnemann K. Kenkmann T.
Morphometry and Structure of Eroded Complex Impact Craters: A Parameter Study Using Hydrocode Modeling **[#1948]**
The crater diameter and the size of the central uplift and the ring syncline change with the amount of erosion a complex impact crater has undergone. We systematically analyse these quantities as a function of depth utilizing numerical simulations.

Elbeshausen D. Wünnemann K. Collins G. S.
Oblique Impacts in Frictional Targets — Implications for Crater Size and Scaling **[#1559]**
We conducted more than 200 3D-hydrocode simulations to reveal the effect of the impact angle on crater size and the role of friction in oblique impacts. We prove whether existing scaling laws can be extended to describe both the effect of obliquity and friction.

Ernst C. M. Barnouin-Jha O. S. Ramesh K. T. Swaminathan P. K. Kimberley J.
Strain Rate and Dynamic Fracturing in Planetary-Scale Impacts **[#2523]**
Using numerical simulations and new dynamic fragmentation models, we investigate what strain rates might be generated during large scale impacts and assess implications for fragmentation considering new dynamic fragmentation models.

Potter R. W. K. Collins G. S. Elbeshausen D. Wünnemann K.
The Effect of Asteroid Shape, Velocity and Target Material on Asteroid Survivability **[#1610]**
Numerical simulations of asteroid impacts show that a substantial fraction of the asteroid remains solid (does not melt or vaporize) if the impact is near escape velocity, into a deep water layer or if the impactor is significantly prolate.

Ormö J. Lepinette A. Lindström M. Sturkell E. Shuvalov V. Housen K. Holsapple K.
Dynamics of the Water Resurge at Marine-Target Impact Craters Analyzed with a Combination of Low-Velocity Impact Experiments and Numerical Simulation **[#1571]**
Projectile impact experiments complement numerical simulations when illustrating the processes involved in the formation and modification of marine-target craters.

Holsapple K. A. Housen K. R.
Deep Impact: An Outburst Triggered by an Impact? **[#1936]**
The Deep Impact ejecta apparently had more kinetic energy than the impactor. We suggest some possible reasons, and present the results of experiments that may give clues to the interpretation of the event.

Housen K. R.
Dynamic Strength Measurements on Granite and Basalt **[#1701]**
Dynamic strength measurements on granite and basalt are reported and compared with measurements of flaw size distributions.

Sugita S. Kurosawa K. Kadono T. Hironaka Y. Otani K. Shiroshita A. Ozaki N. Miyanishi K. Sekine Y. Nakamura K. Fukuzaki S. Sano T. Sakaiya T. Fujiwara T. Mochiyama T. Takarada S. Fujioka S. Shigemori K. Ohno S. Tachibana S. Matsui T.
In-Situ Spectroscopic Observation of Silicate Vaporization Due to >10 km/s Impacts Using a Laser-driven Launcher **[#2493]**
A high-power laser was used to accelerate heavy metal (Ta) flyers to 9 km/s, to shock heat and compress silicate samples to near critical conditions. High-speed spectroscopic observation reveals that diopside vaporizes around 4 GPa and 8000 K.

Stickle A. Schultz P. H. Crawford D. A.
The Role of Shear in Oblique Impacts **[#2357]**
Shear failure plays a significant role in hypervelocity impacts. Experimental results are compared to CTH models to determine regions of shear and extensional failure in a variety of targets.

Schultz P. H.
Uprange Plumes and Nature of the Comet 9P/Tempel 1 **[#2386]**
Hypervelocity impact experiments were performed for a variety of targets in order to assess conditions leading to reverse vapor plumes during early stages of crater formation with implications for deep impact.