Thursday, March 4, 2010
POSTER SESSION II: CHONDRITES
6:30 p.m. Town Center Exhibit Area

Lipman M. D. Strait M. M. Flynn G. J. Durda D. D.
New Information from Impact Disruption Experiments of Chondritic Meteorites [#2442]
Comparing measurement methods for dents and holes in disrupted meteorite samples.

Durda D. D. Movshovitz N. Richardson D. C. Asphaug E. Rawlings A. R. Vest C.
Large-Scale Experiments to Determine the Coefficient of Restitution for Meter-Scale Granite Spheres [#1896]
We present results from an extensive series of large-scale experiments to measure the coefficient of restitution for impacts between 1-m diameter granite spheres with collision speeds up to ~2 m/s.

Fagan T. J. Kataoka S. Yoshida A. Norose K.
Transition to Low Oxygen Fugacities in the Solar Nebula Recorded by EH3 Chondrite ALHA 81189 [#1534]
ALH A81189 may be the most primitive EH3 chondrite. However, variations in chondrule types suggest that it is not the metamorphic protolith of other EH3 chondrites. ALH A81189 formed at slightly higher oxygen fugacities than other EH3s.

Schepker T. J. Ruzicka A. M.
X-Ray Diffraction as a Tool for the Classification of Equilibrated Ordinary Chondrites [#2644]
XRD-determined d10 values can be used with confidence to discriminate between equilibrated ordinary chondrites of different groups, and to estimate olivine Fa contents, provided scan times are sufficiently long.

Duffy C. M. Bland P. A. Abel R. L. Twelker E.
Grain-size Analysis of CBa Gujba Using 3-D Computed Tomography Methods [#1800]
The origin of CBs is still a matter of debate. Three-dimensional graphical representations of particular phases (>1800 grains were analysed) enable grain size frequency distributions to be determined, which may assist in constraining an origin by condensation.

Riches A. J. V. Liu Y. Zhang A. Taylor L. A.
Description of Newly Identified CV3 Chondrites: Salient Textural and Mineralogical characteristics [#2561]
This abstract presents the preliminary results of two newly identified oxidized-CV3 chondrites.

Patzer A. Pack A.
Investigation of Refractory Lithophile Trace Elements in the Leoville CV3 Meteorite [#1590]
We will present comprehensive geochemical data of the reduced CV3 chondrite Leoville. In particular, we will investigate the inventory of refractory lithophile trace elements and deduce constraints on condensation processes and the formational history of the meteorite.

Hutson M. L. Ruzicka A. M.
Jungo 001, Jungo 002, Jungo 003, and Big Horn Mountains: Four New Chondrites from Nevada and Arizona Which Contain a Variety of Unusual Petrographic Features [#1878]
Four newly classified chondrites from Nevada and Arizona show one or more unusual petrographic features, including conjugate fractures, a complexly textured olivine-rich clast, silicate-bearing troilite, and bimodal weathering.

Troiano J. Rumble D. III DiRaimo A. G. Rivers M. S. Friedrich J. M.
Compositional Studies of Three Low-FeO Ordinary Chondrites [#1815]
We detail our efforts to investigate the oxygen isotopic and whole rock trace element abundances in the low-FeO ordinary chondrites Burnwell, LAP 04575, and EET 96031. Our data supports a common origin for most low-FeO and H chondrites.
We describe and classify a newly recovered L5/6 chondrite from North West Africa.

Meteorites fell in the area of Grimsby, Ontario on the early evening of Sept. 25, 2009. The bright fireball event was well recorded by a camera network, radar and infrasound and thus far 13 fragments of a fresh H5 chondrite have been recovered.

We present Doppler weather radar as a new method for locating meteorite falls. This locates meteorites within a few kilometers of the ground, provides some characterization in flight, and functions for new falls and archived events back to 1992.

Cosmogenic exposure age dating in the Miller Range indicate that the East Antarctic Ice sheet interior has few fluctuations in the past 2 m.y., which is significant for meteorite concentration.

Here we describe the current state of classification and curation of the Antarctic Meteorite Program at the Smithsonian Institution.

LAP 031047 is a highly porous ordinary chondrite with a very young Ar-Ar age, and oxygen isotopic, and bulk and silicate mineral composition intermediate between H- and L-chondrites: Shock-lithified debris of a distinct ordinary chondrite asteroid?

New INAA data show that R chondrites of all petrologic types are isochemical. R3 PRE 95411 contains numerous awaruite grains; R6 Y 980702 has a fine-grained granoblastic matrix; MET 01149 is reclassified as R3.

This unusual meteorite is a blend of two chondritic lithologies, neither of which resembles H, L, LL or carbonaceous chondrites.
Craig J. P. Sears D. W. G.

Natural and Induced Thermoluminescence Data for Twenty-five 10–15 µm Particles from the LL3.0 Ordinary Chondrite Semarkona: Implications for the Nature and History of Primitive Solar System Material [#1401]

We report on the NTL and ITL properties of 25-µm grains of the LL3.0 ordinary chondrite Semarkona. We have seen the radiation history for these particles are uniform but the thermal history varies for such small samples in close proximity to each other.

Abreu N. M. Nuth J. A. III

Laboratory-created Chondritic Matix: TEM Study of Nanophase Fe-Sulfides and Magnetite Embedded in Fe-rich Amorphous Silicates [#1128]

We produced materials resembling the matrices of type 3.0 chondrites by direct disequilibrium condensation from a gas. These experiments may also be relevant to the chemistry following the impacts of sulfide grains into aerogel.

Hezel D. C. Howard L. E.

First Topographic High-Resolution Data of Carbonaceous Chondrite Matrices Using FEG SEM [#1804]

High-resolution imaging reveals detailed structural and petrological information. Porous matrices such as in CV and CO chondrites might still contain primitive material, whereas dense matrices such as in CM, CR, CH and CB chondrites were altered.

Lehner S. W. Buseck P. B.

TEM Study of the Submicrometer-sized Fraction of Matrix in Sahara 97072 (EH3) and ALH 84170 (EH3) [#1880]

The submicrometer fraction of EH3 matrix contains areas of both amorphous and extremely fine-grained silica-rich material hosting submicron-sized clasts of minerals typical of the EH chondrites including schreibersite unassociated with Fe-Ni metal.

Scheffler F. Fritz J. Greshake A.

High-Pressure Phases of Chromite in L6-Chondrites and Martian Meteorites [#1204]

In a comparative study of chromites and their high-pressure polymorphs in L6-chondrites and chromite-bearing martian meteorites we studied their occurrence and discuss their formation history.