Tuesday, March 20, 2012
POSTER SESSION I: ACHONDRITES: FROM CORE TO CRUST
6:00 p.m. Town Center Exhibit Area

McDermott K. H. Greenwood R. C. Franchi I. A. Anand M. Scott E. R. D.
The IIE Iron Meteorite Family Tree: A Study of the Petrography and Oxygen Isotopes of the Non-Magmatic Group **[#1799]**
Petrographic and isotopic analysis have shown three distinct relationships exist between the ordinary chondrites and IIE silicates, expanding our concept of the parent body and the thermal history it encountered.

Van Roosbroek N. Goderis S. Debaille V. Valley J. W. Claeys Ph.
Formation of the Mont Dieu IIE Non Magmatic Iron Meteorite, and Origin of its Silicate Inclusions **[#1773]**
Mont Dieu is an IIE nonmagmatic iron meteorite showing primitive features such as preserved chondrules and glass. SEM and geochemical analyses demonstrate that it most likely originated from an H-chondrite parent body impacted by a Fe-Ni projectile.

Winfield T. B. Goldstein J. I. Scott E. R. D.
Cooling Rate Estimates for IAB and IIICD Iron Meteorites **[#1307]**
The scanning electron microscope was used to measure the size of the high-Ni island phase in 10 members of groups IAB and IIICD iron meteorites. These size measurements were used to determine the relative cooling rates of these meteorites.

Dietderich J. E. Walker R. J.
Modeling Fractional Crystallization of Group IIAB Iron Meteorites **[#1195]**
This research examined the abundances of highly siderophile elements present in group IIAB iron meteorites. A model of fractional crystallization was developed to account for variations of concentrations for Re, Os, Ir, Ru, Pt, and Pd.

Worsham E. A. Walker R. J. Corrigan C. M. McCoy T. J.
The Tishomingo Iron Meteorite and a Possible Genetic Link to Group IVB Iron Meteorites — Evidence from Molybdenum Isotopes **[#2678]**
Using Mo isotopes to support or reject a genetic link between the ungrouped iron meteorite Tishomingo and the IVB iron meteorite group is explored. Implications of the possible relationship for the evolution of the IVB parent body are also outlined.

Campbell T. J. Humayun M.
Siderophile Element Abundances in the Ni-Rich Ataxites Gebel Kamil, Dumont and Tinnie **[#2833]**
New siderophile element abundances are reported for Gebel Kamil (ungrouped) and the IVB irons Tinnie and Dumont.

Fry C. Samson C. McCausland P. J. A. Herd R. K.
3D Laser Imaging of Iron Meteorites **[#2703]**
Seven fragments of four different iron meteorites have been imaged in 3D with a laser camera, to produce volumetrically accurate models. From this, iron meteorite density can be readily measured.

Arai T. Kasuga T. Otsuka K.
Mm-Cm Scale Chemical Heterogeneity of Partially-Molten Planetismals: Evidences from Meteorites and Meteors **[#2932]**
Studies of primitive achondrites and observation of meteors indicate mm-cm scale chemical heterogeneity induced by partial melting on planetismals.

Ness P. K. Miyamoto H.
Possible Under-Sampling of Meteorites Inferred from a New Database of Meteorite and Terrestrial Rock **[#1388]**
Whole classes of meteorites seem to have no asteroid counterpart and vice versa. To determine if any meteorites types could be undersampled, we compiled meteorite and terrestrial rock chemical abundances and compared statistical characteristics.

Hutchins K. I. Agee C. B.
Microprobe Analyses of Two Almahata Sitta Ureilites **[#2435]**
We have analyzed two of the Almahata Sitta meteorites. They are both ureilites. One is coarse grained and the other is fine grained. They are both dominated by olivine, with a very minor amount of pyroxene. They both have Fe metal that is low in Ni.

Wang K. Moynier F. Dauphas N. Barrat J. A. Craddock P. R. Sio K.
Iron Isotopic Compositions of Angrites and Stannern-Trend Eucrites **[#1146]**
We report high-resolution iron isotopic compositions of angrite, martian, and HED meteorites. Angrite and Stannern-trend eucrite has shown significant enrichment in heavy iron isotopes. The mechanism is discussed as an igneous process on parent bodies.

Warren P. H. Rubin A. E.
The Miller Range 090340 Dunite: Not a Uniquely Ferroan Ureilite, not even a Ureilite **[#2528]**
Mineralogical data show that MIL 090340, originally classed as a dunitic and uniquely ferroan ureilite, is more likely a brachinite, and certainly not a ureilite. Carbon is absent. Olivine Cr and Ca contents are vastly lower than the ureilite range.

Charon E. Aléon J. Rouzaud J. N.
Early History of Acapulco and Lodran Constrained by the Nanostructure and C, N Isotopic Composition of Their Carbons **[#2734]**
New results of structure and C, N isotopes of carbons on A-L meteorites allows us to defend an original history of A-L parent body benefiting of previous interpretations implying shock after the peak temperature and seeding by an exogenous carbons.

Sipiera P. P. Irving A. J. Kuehner S. M. Tanaka R.
Acapulcoite PCA 01026 and Other Meteorites Collected in a 2002 Expedition to Pecora Escarpment, Antarctica **[#1516]**
Specimens collected on a PSF-funded expedition to Antarctica contribute to the knowledge base of planetary materials.

Jambon A. Humayun M. Barrat J. A.
Northwest Africa 6693: A Unique Achondritic Cumulate **[#2099]**
Northwest Africa 6693 is an igneous cumulate. The high Ni content of metal suggests a high oxidation state on the parent body.

Ma C. Beckett J. R. Rossman G. R.
Discovery of Buseckite, (Fe,Zn,Mn)S, a New Mineral in Zakłodzie, an Ungrouped Enstatite-Rich Achondrite **[#1520]**
We report here new mineral buseckite (Fe,Zn,Mn)S with a wurtzite-type hexagonal structure, and consider the origin of this phase and implications through its formation and survival for the evolution of the Zakłodzie meteorite.