**Tuesday, March 13, 2007**
**POSTER SESSION I: ACHONDRITE HODGEPODGE**
**6:30 p.m. Fitness Center**

Dauphas N.
*Diffusion-driven Kinetic Isotope Fractionation of Fe and Ni in Iron Meteorites: A New Dimension to the Analysis of Cooling Rates* **[#1178]**
Iron meteorites show Fe and Ni isotopic fractionation between taenite and kamacite. This can be explained by diffusion-driven kinetic isotope fractionation during phase growth.

Irisawa K. Hirata T.
*Isotopic Compositions of Tungsten in Magmatic Iron Meteorites* **[#1498]**
We have measured the W isotopic compositions for magmatic iron meteorites. The W isotopes for Tlacotepec varied significantly due to nucleosynthesis by galactic cosmic-rays, while the corrected W isotopes were closer to the other irons.

Vogel N. Leya I.
*Comparison of Cosmogenic Noble Gases in Silicates and the Metal Phase of IAB Irons* **[#1688]**
We present a comparison of cosmogenic He, Ne, and Ar extracted from IAB silicates and metal groundmass. This will allow conclusions about cosmogenic production rates from IAB silicates shielded by metal and better constrain the CREAs of the IABs Landes and Ocotillo.

Ash R. D. Luong M. V. Walker R. J. McDonough W. F. McCoy T. J.
*Trace Element Fractionation in Kamacite and Taenite in IVA Irons* **[#2383]**
We have used laser ablation ICP-MS to measure trace element concentrations in kamacite and taenite. These analyses show that there is limited potential for fractionation between these phases and it is largely controlled by diffusion.

Yang J. Pham T. Goldstein J. I. Reynolds V. S. McCoy T. J.
*Exploring Babb's Mill Iron Meteorites* **[#1417]**
We studied the history of the Babb's Mill, Troost's Iron meteorite before and after landing on the Earth.

Price J. D. Cherniak D. J. Watson E. B.
*Diffusion of Au, Pd, Pt, and Ir in Fe-Ni Metal at Low Temperatures* **[#1623]**
Diffusion of Au, Pd, Ir, and Pt in Fe-Ni metal (5%, 10%, 20% Ni) has been measured for 585°–900°C yielding similar diffusivities for these four elements. Au and Pd are only slightly affected by changes in the Ni concentration.

Tomiyama T. Huss G. R. Nagashima K. Krot A. N.
*Ion Microprobe Analysis of $^{53}$Mn-$^{53}$Cr Systematics in Pallasite Olivines* **[#2007]**
We investigated $^{53}$Mn-$^{53}$Cr systematics of pallasite olivines using the Cameca ims-1280 ion microprobe.

Schulz T. Münker C. Mezger K. Palme H.
*The Tungsten Isotope Composition of Winonaites — Evidence for Late Stage Equilibration on the Winonaite Parent Body* **[#1760]**
Here we present data for the W isotope composition of winonaites, which are consistent with a late stage equilibration terminating at 4553.1 ± 2.7 Myr.

Bunch T. E. Irving A. J. Wittke J. H. Rumble D. III Aaronson A. A.
*Northwest Africa 2993: A Coarse-grained Lodran-like Achondrite with Affinities to Winonaites* **[#2211]**
A fresh coarse-grained achondrite has textural and mineralogical similarities to lodranites, but oxygen isotopes imply affinity to winonaites.

Amelin Y.
*The Ages of Angrites* **[#1669]**
New Pb-Pb ages of angrites are reported: Angra dos Reis - 4557.60 ± 0.15 Ma, Lewis Cliff 86010 — 4558.62 ± 0.18 Ma, D'Orbigny — 4564.48 ± 0.24 Ma, Sahara 99555 — 4564.41 ± 0.65 Ma.

Gellissen M. Palme H. Korotev R. L. Irving A. J.
*NWA 2999, A Unique Angrite with a Large Chondritic Component* **[#1612]**
NWA 2999 is classified as an angrite. Bulk chemical analyses show high Mg, Cr, Ni, Co, Ir, and Au, unlike any other angrite. This meteorite contains more than 50% of a meteoritic component, or of core-mantle material from the angrite parent body.

Ganguly J. Ito M. Zhang X. Y.
*Closure Temperatures of Mn-Cr and Pb-Pb Decay Systems in Pyroxenes: Implications for Ages of Cumulate Eucrite and Angrite* **[#1212]**
Diffusion study of Cr in enstatite and thermochronological analysis of Mn-Cr and Pb-Pb decay systems in pyroxenes yield high temperature cooling rates of a cumulate eucrite and an angrite, and constrain crustal thickness of the HED parent body, Vesta.

Barrat J. A. Yamaguchi A. Greenwood R. C. Bohn M. Cotten J. Benoit M. Franchi I. A.
*Could Stannern-trend Eucrites be Crustal-contaminated Melts?* **[#1558]**
In this paper, we show that the composition of Stannern trend eucrites can be satisfactorily explained by contamination of normal main group eucrites by a crustal partial melt.

Takeda M. Yamaguchi A. Nagao K. Ebihara M.
*Noble Gas and Bulk Chemistry Study of Three Eucrites, Juvinas, Stannern and Dhofar 007* **[#1550]**
We performed bulk chemical analysis and noble gas analyses for two noncumulate eucrites, Juvinas and Stannern, and an anomalous cumulate eucrite, Dhofar 007, and determined cosmic-ray exposure ages, $^{81}$Kr-Kr age and $^{244}$Pu-Xe age for these meteorites.

Seddiki A. Cottin J. Y. Moine B. N. Renac C. Bascou J. Remaci N. Bourot-Denise M.
*NWA4269: Anomalous Eucrite with High Metal Content from Algerian Sahara* **[#1049]**
NWA 4269 was found in south west Algeria. It is a monomict eucrite breccia that experienced sub-solidus annealing. NWA 4269 contains more than 2% metallic iron and can reach millimeter size. This achondrite also has an atypic $\Delta^{17}$O.

Levine J. Arazi A. Faestermann T. Fernández Niello J. O. Korschinek G. La Gamma A. M. G. Negri A. Rugel G. Steier P. Wallner A.
*Terrestrial Age Determination of an Achondrite from Río Cuarto, Argentina* **[#1362]**
Accelerator mass spectrometry of long-lived cosmogenic isotopes from an achondrite from Río Cuarto, Argentina shows that this meteorite has a terrestrial age of 445–495 ka. This age is surprisingly long for a meteorite from an area which receives abundant rainfall.

Chennaoui Aoudjehane H. Jambon A.
*Determination of Silica Polymorphs in Eucrites by Cathodoluminescence* **[#1714]**
We have identified quartz, cristobalite and tridymite in eucrites: Camel Donga, Juvinas and Ti Hedjerine (Sah 02501) by cathodoluminescence imaging and spectroscopy. The CL imaging shows the heterogeneity of silica in the same grain. In eucrites, the intensity of the shock is less than 0.1 GPa.

Shearer C. K. Burger P. V. Papike J. J.
*Petrogenetic Relationships Between Diogenites and Olivine Diogenites: Implications for Magmatism on the HED Parent Body* **[#1141]**
We report new trace element data from orthopyroxene and olivine from diogenites with varying amounts of olivine to elucidate the metamorphic reequilibration between the two minerals and the petrogenetic relationship among the diogenites.

Beck A. W. Viviano C. E. Cheung K. K. Taylor L. A.
*Geochemical Variations Among a Trio of Howardites: Do the Pieces Fit Together?* **[#1123]**
Analyses of three howardite meteorites reveal internal igneous processes and impact-induced alteration on Vesta. While tentatively paired, geochemical and petrographic analyses illuminate compositional and textural variations, allowing critical testing of their initial pairing.

Sugiura N. Yamaguchi A.
*Al-Mg and Mn-Cr Ages of Northwest Africa 011 Achondrite* **[#1431]**
Al-Mg and Mn-Cr ages of NWA 011 achondrite were determined. The absolute age was about 4563 Ma, which is nearly contemporaneous with the oldest eucrite and angrites.

Goodrich C. A. Harlow G. E. Mikouchi T.
*New Investigations of "Knorringite-Uvarovite Garnet" and "Cr-Eskola Pyroxene" in Ureilites LEW 88774 and NWA 766* **[#1434]**
We reinvestigate bands of unusual Cr-rich compositions, originally interpreted to be shock-produced knorringite-uvarovite garnet and Cr-Eskola pyroxene, in chromite-bearing ureilites LEW 88774 and NWA 766. Their petrogenesis remains unclear.

Herrin J. S. Mittlefehldt D. W. Downes H. Humayun M.
*Diverse Metals and Sulfides in Polymict Ureilites EET 83309 and EET 87720* **[#2404]**
Polymict ureilites contain a variety of metal and sulfide compositions of diverse origins. They offer insight into the final equilibrium conditions of disrupted portions of the UPB mantle and the diversity of materials locally available for regolith formation.

Wright A. Parnell J.
*Interpreting the Raman Signature of Ureilite Carbon* **[#1228]**
Raman data for five terrestrial analogues is shown alongside data for ureilite chips and for previously published data. The wide range of values and the generally poor fit to the proposed analogues confirms the complexity of ureilite carbon formation.

Flemming R. L. McCausland P. J. A. Izawa M. R. Jacques N.
*Reconnaisance Micro-XRD Studies of Meteorites: Rapid In Situ Mineral Identification and Textural Information* **[#2363]**
Micro X-ray diffraction is a versatile technique enabling non-destructive, rapid reconnaissance of meteorite mineralogy. 2D GADDS images yield mineral identification and additional textural information about crystal size, orientation and strain-related mosaicity.