**Friday, March 19, 2004**

**EARLY SOLAR SYSTEM CHRONOLOGY**

8:30 a.m.  Salon C

**Chairs:**  M. Wadhwa  
D. A. Papanastassiou

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8:30 a.m.  Wadhwa M. *  Foley C. N.  Janney P. E.  Spivak-Birndorf L.

*Mg Isotopic Systematics in Eucrites: Implications for the $^{26}$Al-$^{26}$Mg Chronometer [#1843]*

We present high precision Mg isotopic analyses of several eucrites. Based on these results, and comparisons with Mn-Cr and Pb-Pb systematics in these meteorites, we present the implications for the viability of the $^{26}$Al-$^{26}$Mg system as a chronometer.

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8:45 a.m.  Ito M. *  Ganguly J.  Stimpfl M.

*Diffusion Kinetics of Cr in Olivine and $^{53}$Mn-$^{53}$Cr Thermo-Chronology of Early Solar System Objects [#1324]*

We have determined the Cr diffusivity in olivine as a function of temperature at controlled fO$_2$ condition, and applied these data to evaluate the thermochronology (closure temperature, age and cooling rate) of olivine in pallasite.

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9:00 a.m.  Kleine T.  Mezger K.  Palme H. *  Münker C.

*The W Isotope Composition of Eucrite Metals: Constraints on Timing and Cause of the Thermal Metamorphism of Eucrites [#1230]*

We present new W isotope data for eucrite metals that for the first time allow precise dating of the thermal metamorphism of eucrites.

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9:15 a.m.  Srinivasan G. *  Whitehouse M. J.  Weber I.  Yamaguchi A.

*U-Pb and Hf-W Chronometry of Zircons from Eucrite A881467 [#1709]*

Measurement of $^{182}$Hf abundance in zircons whose age has been determined using U-Pb system. This study presents the first result in which a mineral isochron for Hf-W is reported.

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9:30 a.m.  Huss G. R. *  Tachibana S.

*Clear Evidence for $^{60}$Fe in Silicate from a Semarkona Chondrule [#1811]*

A radiating-pyroxene chondrule from Semarkona shows clear excesses of $^{60}$Ni correlated with Fe/Ni, implying the presence of live $^{60}$Fe when it formed. An initial $^{60}$Fe/$^{54}$Fe ratio of $\sim 2.4 \times 10^{-7}$ implies ($^{60}$Fe/$^{54}$Fe)$_0$ for the solar system of $\sim 5 \times 10^{-7}$.

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9:45 a.m.  Moynier F. *  Télouk P.  Blichert-Toft J.  Albarède F.

*The Isotope Geochemistry of Nickel in Chondrites and Iron Meteorites [#1286]*

Ni in ordinary chondrites becomes isotopically heavier in the order LL, L, H. This trend reflects mass-dependent fractionation during vapourisation. No strong $^{60}$Ni anomaly is detected. Segregation of the Earth’s core started after the decay of $^{60}$Fe.

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10:00 a.m.  BREAK

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10:15 a.m.  Mostefaoui S. *  Lugmair G. W.  Hoppe P.

*In-Situ Evidence for Live Iron-60 in the Early Solar System: A Potential Heat Source for Planetary Differentiation from a Nearby Supernova Explosion [#1271]*

We report in-situ $^{60}$Ni-excesses in two minerals in Bishunpur. The inferred $^{60}$Fe abundance is the highest measured in a meteorite. It gives the first evidence for a supernova origin of $^{60}$Fe, which served as a heat source for planetary differentiation.
10:30 a.m. Chen J. H. * Papanastassiou D. A. Wasserburg G. J. Ngo H. H.  
**Endemic Mo Isotopic Anomalies in Iron and Carbonaceous Meteorites** [#1431]
Iron meteorites, carbonaceous meteorites and Ca-Al-rich inclusions show endemic isotope anomalies in molybdenum which correlate also with ruthenium effects.

10:45 a.m. Dauphas N. * Foley N. Wadhwa M. Davis A. M. Göpel C. Birck J.-L. Janney P. E. Gallino R.  
**Testing the Homogeneity of the Solar System for Iron (54, 56, 57, and 58) and Tungsten (182, 183, 184, and 186) Isotope Abundances** [#1498]
The solar nebula was homogenized at a planetary scale at the 0.2 and 0.5 level for $^{56}\text{Fe}$ and $^{58}\text{Fe}$, respectively. Preliminary results seem to indicate the presence of a s-process tungsten component in leaching experiments of primitive meteorites.

11:00 a.m. Chaussidon M. * Robert F. McKeegan K. D.  
**Li and B Isotopic Variations in Allende Type B1 CAI 3529-41: Traces of Incorporation of Short-lived $^7\text{Be}$ and $^{10}\text{Be}$** [#1568]
Allende CAI 3529-41 contains Li and B isotopic variations due to the in-situ decay of short-lived $^7\text{Be}$ and $^{10}\text{Be}$. Thus CAI precursors were irradiated by the early Sun and no presolar component is required to explain $^{10}\text{Be}$ in CAIs.

**The Origin of Short-lived Radionuclides and Early Solar System Irradiation** [#1829]
Using the irradiation model developed by Gounelle et al. (2001), we can reproduce the abundance of $^7\text{Be}$ measured by Chaussidon et al. (2004, this conference). We also provide a tentative explanation for the hibonite grains that show a decoupling between $^{26}\text{Al}$ and $^{10}\text{Be}$ (Marhas et al. 2002).

11:30 a.m. Papanastassiou D. A. * Chen J. H. Wasserburg G. J.  
**More on Ru Endemic Isotope Anomalies in Meteorites** [#1828]
We present evidence for well-defined and resolved endemic isotope anomalies in Ru, consistent with an s-process deficit. Primitive meteorites, CAIs, and planetary differentiates (irons) show these effects and evidence of preserved isotope heterogeneities.

11:45 a.m. Lin Y. Guan Y. * Leshin L. A. Ouyang Z. Wang D.  
**Evidence for Live $^{36}\text{Cl}$ in Ca-Al-rich Inclusions from the Ningqiang Carbonaceous Chondrite** [#2084]
From the observed $^{36}\text{S}$ excesses in sodalite in calcium-aluminum-rich inclusions, we report the first direct evidence of the presence of $^{36}\text{Cl}$ in primitive meteorites. The inferred ($^{36}\text{Cl}/^{35}\text{Cl}$) ratios range from $\sim5 \times 10^{-6}$ to $\sim1 \times 10^{-5}$. 