

**Tuesday, March 11, 2008**  
**POSTER SESSION I: ORGANICS IN CHONDRITES**  
**6:30 p.m. Fitness Center**

Remusat L. Guan Y. Eiler J. M.

*NanoSIMS Mapping of Organic Matter in Orgueil and Tagish Lake Carbonaceous Chondrites: New Data on the Relationships with the Mineral Matrix* [#2477]

NanoSIMS imaging of organic matter in bulk carbonaceous chondrites improves the knowledge of the association between the organics and the minerals and of the relationships of the D-rich organic domains and the matrix material.

Thomen A. Robert F. Derenne S.

*Hydrogen Isotopic Exchange Rates Between Deuterium-rich Sources (UV Irradiated Molecular Hydrogen and Liquid Water) and an Organic Molecule: Implications for the Conditions of Formation of the Insoluble Organic Matter in the Early Solar System* [#2001]

The rate of deuterium exchange between the C-H bonds of the insoluble organic matter (IOM) and  $H_3^+$  confirm the interpretation according to which IOM could get its deuterium in the dense and UV irradiated protosolar disk.

Remusat L. Robert F. Meibom A. Mostefaoui S. Delpoux O. Binet L. Gourier D. Derenne S.

*Molecular Identification of the Carrier of the D-Anomaly in Insoluble Organic Matter of Orgueil Meteorite: Revising the Origin of the IOM?* [#1399]

By combining NanoSIMS measurements and pulsed EPR data, we have identified the organic radicals as the carrier of the D-isotopic anomaly in the insoluble organic matter of Orgueil chondrite. This is consistent with a solar origin of the D-signature.

Busemann H. Alexander C. M. O'D. Nittler L. R. Wieler R.

*Noble Gases in Insoluble Organic Matter in the Very Primitive Meteorites Bells, EET 92042 and GRO 95577* [#1777]

Noble gas carrier phase Q in several primitive meteorites is not attacked by Pyridine, in contrast to Orgueil, as reported previously. IOM in CR chondrites does not indicate high-temperature alteration in the nebula.

Rouzaud J.-N. Remusat L. Le Guillou C. Binet L. Derenne S. Robert F.

*Molecular Study of the Insoluble Organic Matter of Kainsaz CO<sub>3</sub> Carbonaceous Chondrite: Comparison with CI and CM IOM* [#1393]

The IOM of Kainsaz was studied by pyrolysis, EPR and HRTEM. All the observations are in good agreement. In contrast with CI and CM IOMs, a thermal stress is observed (experienced on the parent body and/or in the protosolar nebula prior to accretion).

Hilts R. W. Herd C. D. K.

*Soluble Organic Compounds in the Tagish Lake Meteorite* [#1737]

Results of soluble organic compound analysis from extracts of pristine samples of the Tagish Lake meteorite are presented. Our results demonstrate the importance of clean, cold curation and handling in order to preserve indigenous organic compounds.

Muirhead D. K. Parnell J. Sephton M. A.

*Raman Spectroscopy Applied to Meteorite Pyrolysates: A Study of the Murchison Carbonaceous Chondrite* [#1133]

Meteorite pyrolysates from the Murchison carbonaceous chondrite have been analysed using Raman spectroscopy to characterize the structural changes that occurred with respect to pyrolysis temperature.

Wilson T. L. Mittlefehldt D. W.

*Are Fullerenes Relevant to Cosmochemistry? A New Finding* [#1142]

A correlation between London dispersion energies and binding energies for endohedral carbon-cage fullerenes bearing noble gases, and Q-gas abundances, is shown to exist in cosmochemistry. Q-phase mass fractionation and fullerenes are discussed.

Quirico E. Montagnac G. Rouzaud J.-N. Reynard B.

*Carbon Thermometry Applied To Chondrites and Terrestrial Rocks: Effect of Organic Precursor* [#1261]

We evidence that carbon thermometers are precursor dependent and need internal calibration. We also report the first 244 nm excitation Raman measurements on kerogens.

Stern J. C. Doty J. H. III Glavin D. P. Dworkin J. P.

*A Method for the Determination of  $^{15}\text{N}$  of Nucleobases in the Murchison Meteorite* [#2524]

Here we present liquid chromatographic data showing the distribution of nucleobases in the Murchison meteorite and preliminary results of sensitivity tests using compound-specific isotopic ratios for molecular and  $^{15}\text{N}$  isotopic analysis.

Messenger S. Nakamura-Messenger K. Keller L. P.

*$^{15}\text{N}$ -rich Organic Globules in a Cluster IDP and the Bells CM2 Chondrite* [#2391]

We have identified  $^{15}\text{N}$ -rich submicrometer organic globules in the Bells CM2 chondrite and in cluster interplanetary dust particles. The size, structure, chemical, and isotopic compositions are similar to organic globules previously studied in the Tagish Lake meteorite.