

Tuesday, March 18, 2003
POSTER SESSION I
7:00 p.m. Fitness Center

CCR: Carbonaceous Chondrite Revival

Ivanov A. Zolensky M. E.

The Kaidun Meteorite: Where Did It Come From? [#1236]

The presence of alkaline-enriched igneous lithologies within Kaidun suggests an origin on Phobos.

Hiroi T. Kanno A. Nakamura R. Abe M. Ishiguro M. Hasegawa S. Miyasaka S. Sekiguchi T.
 Terada H. Igarashi G.

The Tagish Lake Meteorite as a Possible Sample from a T or D Type Asteroid [#1425]

The Tagish Lake meteorite has a very similar Vis-NIR reflectance spectrum to the T or D asteroids. Especially, among those asteroids whose 3-micron bands are measured, 308 Polyxo has the best similarity to Tagish Lake, while a C asteroid 511 Davida may have similar hydrous minerals to Tagish Lake.

Boctor N. Z. Kurat G. Alexander C. M. O. D.

Sulfide-oxide Assemblage in Tagish Lake Carbonaceous Chondrite [#1705]

Oxide and sulfide minerals from Tagish Lake are precipitates from aqueous fluids. Sulfide precipitation continued after that of oxides. Both oxides and sulfides formed at oxygen and sulfur fugacities close to those of the iron-magnetite-pyrrhotite buffer.

Greshake A. Flynn G. J. Krot A. N. Keil K.

Chemical Composition of Fine-grained Rims in the Tagish Lake Carbonaceous Chondrite [#1559]

The major, minor and moderately volatile element compositions of chondrules, matrix and dust rims in Tagish Lake were determined. Significant differences in composition exclude formation of the rims by alteration of the enclosed chondrules.

Krot A. N. Petaev M. I. Yurimoto H.

Low-Ca Pyroxene in Amoeboid Olivine Aggregates in Primitive Carbonaceous Chondrites [#1441]

We report a discovery of low-Ca pyroxene in AOAs from CV, CR, CM, and ungrouped carbonaceous chondrites Adelaide and Acfer 094 that formed by reaction between ^{16}O -rich forsterite ($\delta^{17,18}\text{O} \sim -40\%$), and SiO gas that was depleted in ^{16}O ($\delta^{17,18}\text{O} \sim 0\%$).

Komatsu M. Miyamoto M. Mikouchi T. Kogure T. Krot A. N. Keil K.

Examination of High Temperature Annealing of Amoeboid Olivine Aggregates: Heating Experiments of Forsterite and Anorthite Mixtures [#1521]

Comparative studies of heating experiments with mineralogy of amoeboid olivine aggregates suggest that some Al-diopside in amoeboid olivine aggregates can be produced by a small degree of melting of forsterite and anorthite.

Zega T. J. Garvie L. A. J. Buseck P. R.

Electron Energy-Loss Spectroscopy (EELS) of Fe-bearing Sheet Silicates in cm Chondrites [#2089]

Electron energy-loss spectra indicate that a chrysotile-like phase in the matrices and fine-grained rims of CM chondrites contains Fe^{3+} .

Velbel M. A. Tonui E. K. Zolensky M. E.

Compositions of Partly Altered Olivine and Replacement Serpentine in the CM2 Chondrites QUE93005 and Nogoya: Implications for Scales of Elemental Redistribution During Aqueous Alteration [#1611]

Compositional relations between olivines and replacement serpentines in QUE93005 and Nogoya favor homogeneity of aqueous solutions on >cm-dm scales, and alteration after assembly of the meteoroid parent and major episodes of brecciation and mixing.

Ivanova M. A. Nazarov M. A. Clayton R. N. Mayeda T. K. Taylor L. A.

Sayh Al Uhaymir 085, CV3 Chondrite: Mineralogical Links with CK Chondrites [#1226]

The newly found meteorite SaU 085 appears to be a breccia consisting of major contributions of material from oxidized subgroups, some CK material, and minor material from the reduced subgroup of CV chondrites.

Menzies O. N. Bland P. A. Cressey G. Berry F. J.

An X-Ray Diffraction Study of Inclusions in Allende Using a Focussed X-Ray MicroSource [#1734]

We analysed samples of DI, CAI, and matrix from Allende using an XRD system that employs a high-brightness X-ray generator. With appropriate standards it will be possible to quantify mineral abundance in milligram samples of meteoritic material.

Plagge M. Sudek Ch. Ott U.

Selenium During Stepwise Dissolution of Allende — An Exploratory Study [#1217]

Abundance and isotopic composition of Se have been determined during stepwise dissolution of Allende. From preliminary results we conclude that there is no evidence for mass-independent isotopic effects larger than ~1‰.

Bullock E. S. Gounelle M. Grady M. M. Russell S. S.

Different Degrees of Aqueous Alteration in Sulphides Within the C11 Chondrites [#1542]

Sulphides in four different C11 chondrites were analysed, to evaluate their composition, texture and morphology. The results reinforce the view that C11 chondrites could be divided into two subgroups, based on their level of aqueous alteration.

Lerner N. R. Cooper G. W.

Imino Acids in the Murchison Meteorite: Evidence of Strecker Reactions [#2037]

Imino acids were identified in the Murchison meteorite. These compounds lend support to the theory that Strecker reactions created at least some of the observed meteoritic amino acids and hydroxy acids.

Remusat L. Derenne S. Robert F.

Conventional and TMAH Assisted Pyrolysis on the Insoluble Organic Matter of Orgueil and Murchison [#1230]

The pyrolysates obtained with and without TMAH from the insoluble organic matter of Orgueil and Murchison meteorites were compared. TMAH allowed to reveal ester linkages between the aromatic units of the macromolecular network.

Binet L. Gourier D. Derenne S. Robert F. Ciofini I.

New Extraterrestrial Signature of the Insoluble Organic Matter of the Orgueil, Murchison and Tagish Lake Meteorites as Revealed by Electron Paramagnetic Resonance [#1662]

Electron Paramagnetic Resonance (EPR) of the insoluble organic matter (IOM) of three chondrites revealed heterogeneously spread radicals including diradicaloids. These features not observed in terrestrial kerogens appear as an extraterrestrial signature of the chondritic IOM.

Dragoi D. Kulleck J. Kanik I. Beegle L. W.

Chiral Determination of Amino Acids Using X-Ray Diffraction of Thin Films [#1682]

The ability of X-Ray diffraction to identify organic molecules and determine their chirality. Differences in diffraction patterns which are dependent upon the Ph levels of solution when crystallization takes place will be explored.

Gardner K. Li J. Dworkin J. Cody G. D. Johnson N. Nuth J. A. III

A First Attempt to Simulate the Natural Formation of Meteoritic Organics [#1613]

Amorphous iron silicates are used as to convert CO, N₂ and H₂ to complex hydrocarbons on the surfaces of the grains at 675K, 775K and 875K. Samples of these grains are then either vacuum annealed at 875K and 975K or hydrated at 300K or 350K. The resultant organics are analyzed via pyrolysis GC-MS.