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

Chondrules

Murray J. Boesenberg J. S. Ebel D. S.
Unambiguous Voids in Allende Chondrules and Refractory Inclusions **[#1999]**
Void space can be caused by thin section preparation. Three-dimensional tomographic analysis, prior to sectioning, shows that several very different types of voids are abundant in Allende meteorite inclusions. Formation models are proposed for each type.

Nettles J. W. Le L. Lofgren G. E. McSween H. Y. Jr.
Dynamic Crystallization Experiments on LEW97008: Experimental Reproduction of Chondroid Textures **[#1823]**
Samples of LEW97008 were heated to modest temperatures (1250°–1450°C) to document the effects of low degrees of partial melting on chondrule textures. The results look very much like porphyritic chondrule textures.

Jabeen I. Hiyagon H.
Oxygen Isotopes in Isolated and Chondrule Olivines of Murchison **[#1551]**
We performed *in situ* O-isotope analyses of isolated olivine grains and chondrule olivines from Murchison. Mg-rich isolated grains are O-isotopically different from Mg-rich chondrule olivines and Fe-rich olivine grains, suggesting a separate origin.

Hertz J. Ebel D. S. Weisberg M. K.
Tomographic Study of Shapes and Metal Abundances of Renazzo Chondrules **[#1959]**
Analysis of 3-dimensional tomographic data for three Renazzo chondrules shows that 2-D thin section methods are inadequate to quantify "convolution index", grain sizes and distributions, or modal metal abundance, but 3-D methods are more promising.

Mullane E. Russell S. S. Gounelle M. Mason T. F. D.
Iron Isotope Composition of Allende and Chainpur Chondrules: Effects of Equilibration and Thermal History **[#1027]**
Petrologic and Fe-isotopic study of Allende & Chainpur chondrules indicate that percursor material, melting history and equilibration may play a crucial role in determining their Fe-isotope composition.

Ciesla F. J. Hood L. L.
The Frequency of Compound Chondrules and Implications for Chondrule Formation **[#1405]**
We have derived formulae for calculating the probability of identifying a compound chondrule through thin-section studies. We reinterpret previous studies and suggest that 5% of all chondrules are compounds.

Zieg M. J. Lofgren G. E.
Crystal Size Distributions from Porphyritic Olivine Chondrules: Insights into Formation Conditions **[#1384]**
We have used crystal size distributions to quantify and compare the textures of natural chondrules and experimental analogs. These comparisons provide evidence for a partial melting origin for many porphyritic olivine chondrules.

Miura H. Nakamoto T.
A Shock-Wave Heating Model for Chondrule Formation: Mechanism to Determine Minimum Size of Chondrules **[#1348]**
We report that chondrules formed through the shock-wave heating model have minimum size below which most chondrules vanish due to the evaporation. Our computational experiments indicate that this minimum size is about 1–10 microns.

Nakamoto T. Kita N. T. Tachibana S.

Heating Energy Input Rate for Chondrule Forming Region and Its Evolution **[#1323]**

A heating energy input rate decreasing exponentially with time may reproduce the age of chondrules in LL chondrites, which is estimated to distribute from 1 m.y. to 3 m.y. after CAI formation with a peak around at 2 m.y.

Rotenberg E. Amelin Y.

Age Variations Among Ordinary Chondrites: U-Pb Chronology of Chondrules **[#1902]**

We have continued our project of U-Pb dating of chondrules from ordinary chondrites. Some chondrules yield very precise dates, and the method continues to show promise for better understanding the thermal history of the chondrites.