

Thursday, March 20, 2003
POSTER SESSION II
7:00 p.m. Fitness Center

Early Evolution of the Terrestrial Planets

Kareem K. M. Byerly G. R.

Petrology and Geochemistry of 3.3 Ga Komatiites — Weltevreden Formation, Barberton Greenstone Belt [#2071]

In this study, petrographic and geochemical data are presented on extremely fresh komatiites from the Weltevreden Formation, Barberton Greenstone Belt.

Thompson M. E. Kareem K. M. Xie X. Byerly G. R.

Fresh Melt Inclusions in 3.3 Ga Komatiitic Olivines from the Barberton Greenstone Belt, South Africa [#2112]

Fresh melt inclusions from 3.3 Ga Komatiitic Olivines represent trapped melts modified only by fractional crystallization of olivine and occasionally augite and preserve inter-element ratios of mobile elements that have been removed from the rock.

Schmidt G. Spettel B. Palme H.

Arsenic and Sb Abundances in the Earth Mantle [#1581]

Mantle derived peridotite xenoliths has been analyzed by INAA for As, Sb and REE. The rarely determined elements As and Sb in mantle rocks have been tried to use as geochemical tracers for understanding fluid-related processes postdating melt extraction processes.

Frank M. R. Fei Y. Watson H. C. Prakapenka V.

Density Measurements of Iron-Sulfur Compounds at High Pressures and Temperatures: Implications for the Cores of Terrestrial Planets [#1847]

We conducted experiments in the Fe-S system at elevated pressures and temperatures to evaluate the pressure-temperature-volume relations of Fe₃S. We provided new density data of Fe₃S that are applicable to density models of the Martian core.

Karner J. M. Papike J. J. Shearer C. K.

Comparative Planetary Mineralogy: Basaltic Plagioclase from Earth, Moon, Mars and 4 Vesta [#1028]

We explore the major and trace element chemistry of basaltic plagioclase from the Earth, Moon, Mars and 4 Vesta in a comparative planetary mineralogy context.

Jones J. H.

A Liquidus Geothermometer for SNC, Lunar, and Eucritic Magmas [#1130]

The liquidus of many planetary basalts can be adequately predicted using a single parameterization based on the MgO content of the liquid.

Ford R. Rushmer T. Benedix G. K. McCoy T. J.

Filling in the Gap: An Experimental Study on Early Differentiation Processes [#1713]

A comparison of experimental partial melting studies on an enstite chondrite (Indarch) and an ordinary chondrite (Kernouve) with focus fO_2 conditions.

Hustoft J. W. Kohlstedt D. L.

Melt Redistribution in Dynamic Systems: Applications to Core Formation [#1997]

Simple shear deformation of olivine + 5 vol% Fe-S resulted in the development of metallic melt-rich bands that could only have formed by porous flow through solid silicate. This suggests that segregation of metal from silicate by porous flow may be easier than previously thought.

Dauphas N.

The Origin of the Terrestrial Atmosphere: Early Fractionation and Cometary Accretion [#1813]

The terrestrial atmosphere may have had a dual origin, being a mixture between fractionated nebular gases and accreted cometary volatiles.

Busemann H. Eugster O. Baur H. Wieler R.

The Ingredients of the "Subsolar" Noble Gas Component [#1674]

On the basis of several experiments on separates of the EH5 chondrite St. Mark's, we will argue that the "subsolar" noble gas component is a mixture of solar-like, Q- and terrestrial noble gases.

Ozima M. Miura Y. N. Podosek F. A.

Parentless Radiogenic Noble Gases in Lunar Soils: Evidence for Planet Pollution of the Sun? [#1163]

Noble gases in lunar soils contain parentless radiogenic components such as ^{40}Ar , ^{129}Xe that have been assigned a lunar origin. However, planet pollution of the Sun may provide a reasonable explanation for the parentless radiogenic components.