Thursday, August 11, 2016
POSTER SESSION: ACHONDRITES, STONY IRONS AND IRONS:
EARLY PLANETARY PROCESSES AND EVOLUTION
5:30 p.m. Poster Area

Ward D. Bischoff A. Roszjar J. Berndt J. Whitehouse M. J.
Trace Element Abundances in Extraterrestrial Apatite and Merrillite [#6306]
The trace element abundances (Sc, Ti, V, Cr, Mn, Co, As, Rb, Sr, Y, Zr, Nb, Ba, Hf, Ta, Pb, Th, U, as well as the REE) of 133 apatite and 163 merrillite grains from 24 meteorites, covering 9 different classes were analyzed by LA-ICP-MS and SIMS.

Müller C. M. Mengel K. Thangjam G. S. Weckwerth G.
Mineralogical and Geochemical Analysis of the Howardite DaG 779 [#6155]
This study contains a mineralogical and geochemical analysis of the rare diogenite-rich howardite DaG 779, mainly based on the electron microprobe.

Mitchell J. T. Stephen N. R.
Revisiting NWA 3141, 8266 and 8594: Two Eucrites and a Howardite? [#6224]
SEM analysis was used to study the petrology of monomict eucrites Northwest Africa 3141, 8594 and 8266. The analysis carried out in this study supports the official classifications of NWA 3141 and 8594, but suggests NWA 8266 is a polymict breccia.

Mittlefehldt D. W. Peng Z. X. Mertzman S. A.
Compositions of Normal and Anomalous Eucrite-Type Mafic Achondrites [#6324]
Eucrite-type mafic achondrites include some with anomalous petrologic and/or isotopic characteristics compared to normal eucrites. We are examining the bulk compositions of several mafic achondrites to better understand asteroidal igneous evolution.

Moggi Cecchi V. Pratesi G. Caporali S. Franchi I. A. Greenwood R. C.
Northwest Africa 10639 and NWA 10640 Two New Monomict Eucrites from Sahara [#6431]
Petrographic and minerochemical features of two new monomict eucrites from Northwest Africa are presented.

Liao S. Y. Hsu W. B.
Early Intense Bombardment on Vesta as Recorded in the NWA 8009 Impact Melt Breccia [#6004]
We report petrology, mineralogy and U-Pb dating of zircon and Ca-phosphate of NWA 8009, one of the most intensely shocked eucrites, to better characterize its shock and thermal history and to further explore the igneous and impact history on Vesta.

Downes H. Beard A. D. Franchi I. A. Greenwood R. C.
Oxygen Isotopes and Origin of Opal in an Antarctic Ureilite [#6141]
Fragments of opal (SiO_2·nH_2O) in several internal chips of a single Antarctic polymict ureilite meteorite Elephant Moraine (EET) 83309 have been studied by NanoSIMS to determine their oxygen isotope compositions and hence constrain their origin.

Abdu Y. A. Gismelseed A. M. Shaddad M. H. Attaelmanan A. G.
Mössbauer Spectroscopic Investigation of the Metallic Phases in the Almahata Sitta Meteorite (Fragment #051) [#6559]
Mössbauer spectroscopy identify the phases in the metal particles of fragment#051 ureilite: kamacite, taenite, cohenite, schreibersite, and a Fe-oxide phase. Results discussed relate to the occurrence of these phases in ureilites and other meteorites.
A selection of seven Kris daggers from central Java was investigated by handheld XRF spectroscopy. The preliminary results support the assumption that the krisses possibly were made by an admixture of metal from the Prambanan iron meteorite.

Fragments of Dronino meteorite shower contain sulphide nodules which are surrounded by products of terrestrial weathering. Origin of these inclusions and oxidized layers around them inside fragments are of interest.

The Dronino meteorite fragments found in clay sand demonstrated heavily weathering. Several concretions formed in this place were also found. These weathering products were subject for the study using Mössbauer spectroscopy.

Thermomagnetic analysis (magnetic mineralogy) and Micro X-ray Fluorescence analysis (mapping) were made for collection of meteorites. As a result we have elements distribution on surface of meteorites and Fe-Ni presence in meteorites.

Based on cosmogenic noble gases an exposure age of 1710 ± 256 Ma has been derived for the Nyaung IIIAB iron meteorite. This is the highest exposure age so far observed for IIIAB irons.

Results of 60Co measurements all meteorites vary depending on their type and date of fall. The information about 60Co content in iron meteorites would be easily obtained by a standard non-destructive method which is gamma spectrometry.

In the present work we’ve studied visually different areas of the Cheder meteorite saw-cut fragment. The nature of the differences it was established research structure and the definition of the mechanical properties.

We have reported the results of a petrographically comparative study of two mesosiderites in Weiyuan and Dong Ujimqin Qi. The results show that they are significantly different, suggesting that they came from distinct magma sources and different thermal histories.

In the present work we investigated the metal structure in the fragment of Seymchan pallasite, PMG. Hardness and Young’s modulus were measured for tetrataenite and cloudy zone for the first time.
dos Santos E. Scorzelli R. B. Varela M. E.

Thermal History of São João Nepomuceno (IVA) Iron Meteorite Inferred from Ganguly’s Cooling Rate Model and Fe Mössbauer Spectroscopy Data

The intracrystalline Fe-Mg distribution in orthopyroxenes, as measured by means of $^{57}$Fe Mössbauer spectroscopy and associated to Ganguly’s cooling rate numerical method, are used to infer the thermal history of São João Nepomuceno (IVA) meteorite.

Grokhovsky V. I. Gladkovsky S. V.

Brittle Fracture Resistance of Chinga Ataxite at Different Mechanical Loading Conditions

In this study comparative results of Chinga meteorite material fracture resistance evaluation at different test temperatures and loading conditions using fracture mechanics approach as well as fractographic data analysis are presented.

Lyons R. J. Ciesla F. J. Bowling T. J. Davison T. M. Collins G. S.

The Effect of Early Impacts on Iron Meteorite Cooling Rates

Sizes and structures of iron meteorite parent bodies have been inferred by comparing metallographic cooling rates to thermal evolution models. We examine the effect that impacts would have on cooling rates of cores of differentiated planetesimals.

Karczemska A. Jakubowski T. Ouzillou M. Batory D. Abramczyk H. Brozek - Pluska B. Kopeč M. Kozanecki M. Wiosna - Salyga G.

Investigations of Carbon Phases in Canyon Diablo Meteorite

X-ray diffraction, Raman mapping and micro-spectrofluorimetric studies have been used in investigations of carbon in Canyon Diablo meteorite. Results show the presence of defected diamond and not well recognized carbon phases (unclear Raman peaks).