

Tuesday, July 28, 2015
ISOTOPIC, CHEMICAL, AND EXPERIMENTAL STUDIES OF LUNAR SAMPLES
 10:15 a.m. Sibley Auditorium

Chairs: Jisun Park
Joshua Snape

- 10:15 a.m. Martinez M. H. * Thiemens M. H.
[Oxygen Isotopic Composition of Water in Selected Lunar Samples](#) [#5152]
 We present here results of analyses of the oxygen isotopic composition of water extracted from lunar samples (10049, 10057, 10060, 12021, 12039, 14163, 14305, 79035) and a discussion of their implications on the potential source(s) of lunar water.
- 10:30 a.m. Hidaka H. * Yoneda S.
[Systematic Isotopic Variations of Strontium, Barium, and REE of Surficial Lunar Soils](#) [#5101]
 Systematic isotopic analyses of Sr, Ba, Ce, Nd, Sm, and Gd were performed on the chemical separates of lunar soils collected from very surficial layers on the Moon. We found significant isotopic excess of ^{84}Sr , ^{130}Ba , ^{132}Ba , ^{136}Ce and ^{144}Sm .
- 10:45 a.m. Thompson M. S. * Zega T. J.
[Simulation of Micrometeorite Impacts Through In Situ Dynamic Heating of Lunar Soils](#) [#5389]
 We performed heating experiments of lunar soils inside a transmission electron microscope to simulate a micrometeorite impact, relevant for space weathering processes. We observed microchemical and microstructural changes in soil grains as a result.
- 11:00 a.m. Crow C. A. * Crowther S. A. Gilmour J. D. Busemann H. Moser D. E. McKeegan K. D.
[U-Xe Degassing Ages of Terrestrial and Lunar Impact Zircons](#) [#5226]
 We present U-Xe degassing ages for individual zircons from Apollo 14 samples and the terrestrial impact structure at Vrederfort, South Africa. Preliminary results suggest the degassing ages are consistent with or younger than their ^{207}Pb - ^{206}Pb ages.
- 11:15 a.m. Han J. * Lee J. I. Park C. Lee M. J. Kim T. Yi K. Kwon S.-T.
[Petrography, Geochemistry, and Age of a Granophyre Clast in the Lunar Meteorite DEW 12007](#) [#5170]
 Lunar meteorite DEW 12007 contains a granophyre clast (C3). Its petrography, mineralogy, and zircon age data will be presented and its possible origin will be discussed.
- 11:30 a.m. Nagaoka H. * Karouji Y. Fagan T. J. Ebihara M. Takeda H. Hasebe N.
[Variations in KREEP-Enrichment of NWA 773 Clan Olivine Gabbros and Breccias Based on Whole-Rock Compositions](#) [#5185]
 We present whole rock analyses of various NWA 773 clan breccias and olivine cumulate gabbro lithologies to infer their origins.
- 11:45 a.m. Snape J. F. * Nemchin A. A. Bellucci J. J. Whitehouse M. J. Tartèse R. Barnes J. J. Anand M. Crawford I. A. Joy K. H.
[New Pb-Isotopic Constraints on the Age of the Moon](#) [#5236]
 We present new Pb isotope data for a range of lunar basalts and discuss the implications of these data for the timing of the Moon formation and the early magmatic evolution of the lunar interior.