Tuesday, March 11, 2008
SPECIAL SESSION: LUNAR SCIENCE: PAST, PRESENT AND FUTURE II
1:30 p.m. Crystal Ballroom A

Chairs: **C. R. Neal**
C. K. Shearer

1:30 p.m. Neal C. R. *
Future Lunar Science Opportunities — What's Left to be Done? **[#1190]**
This presentation highlights the lunar science questions that remain some 40+ years after Apollo.

1:45 p.m. Schmitt H. H. *
Lunar Science: The Future is Key to the Past **[#2342]**
Future geological field exploration, sampling, and geophysical measurements of the Moon constitute the key to verifying the major hypotheses that have been put forward based on exploration, samples and geophysical data gathered during Apollo and other missions.

2:00 p.m. Taylor G. J. *
Sampling Strategies for Lunar Sample Return Missions **[#1516]**
Lunar science will benefit from a mix of teleoperated rover missions with advanced instruments for *in situ* analysis, simple sample return missions, and sample return missions involving extensive field studies by humans or teleoperated rovers.

2:15 p.m. Sanders G. B. * Taylor G. J.
Science and In-Situ Resource Utilization — Benefits of Collaboration **[#2544]**
Scientists and engineers the world round have established not only "how" robots and humans can explore the Moon and beyond, but more importantly "why."

2:30 p.m. Spudis P. D. *
Lunar Polar Exploration: Questions, Issues and Missions **[#1359]**
The poles of the Moon contain clues to lunar processes and history that we do not understand. Exploration of these regions should both precede and coincide with human return to the Moon. This exploration offers critical knowledge for both science and resource utilization.

2:45 p.m. Elphic R. C. * Utz H. Allan M. Bualat M. Deans M. Fong T. Kobayashi L. Lee S. To V.
Preliminary Results of Hydrogen Prospecting with a Planetary Rover **[#2400]**
We have used the HYDRA miniature neutron spectrometer integrated onto a NASA Ames K10 rover to field test mobile robotic prospecting for hydrogen enhancements, as would be carried out in a future landed lunar polar robotic mission.

3:00 p.m. Stubbs T. J. * Farrell W. M. Halekas J. S. Collier M. R. Delory G. T.
Glenar D. A. Vondrak R. R.
A Heliophysical Monitoring Network for the Near-Surface Lunar Plasma and Radiation Environments **[#2467]**
Overview of the science requirements for a heliophysical network on the lunar surface to monitor the plasma and radiation environments.

3:15 p.m. Stern S. A. * Green J. L. Adams J. Durda D. D. Morgan T. H. Snook K.
Cheng A. Johnston G.
Some Thoughts on the Potential of a Possible Future Lunar Network **[#1143]**
NASA desires to undertake landed lunar missions and is architecting a conceptual global lunar network as a backbone of its envisioned robotic surface activities prior to the arrival of humans.

3:30 p.m. Johnson C. L. * Bulow R. Lognonne P.
The Scientific Rationale for a Future Lunar Seismic Netowrk **[#2288]**
We review the major scientific results from the Apollo seismic data set. We highlight outstanding questions and their implications for our understanding of lunar evolution. In our presentation we will discuss how future seismic networks might address these questions.

3:45 p.m. Banerdt W. B. * Lognonné P.
ALGEP: An Autonomous Lunar Geophysical Experiment Package **[#2228]**
ALGEP is a package of complementary geophysical instruments for exploring the interior of the Moon, designed to be a modern follow-on to ALSEP. It consists of a seismometer, magnetometer, heat flow probe, seismic sounder, and laser retroreflector.

4:00 p.m. Ratcliff J. T. * Williams J. G. Turyshev S. G.
Lunar Science from Laser Ranging — Present and Future **[#1849]**
The Lunar Laser Ranging (LLR) experiment has acquired 38 years of increasingly accurate ranges to four corner-cube retroreflector arrays on the Moon. We discuss present LLR capabilities, recent lunar science results, and future possibilities.

4:15 p.m. Kiefer W. S. * Huang S. Neal C. R. Wieczorek M. A.
The Thermal Structure and Evolution of the Moon: Apollo Heat Flow Results, Unresolved Questions, and Future Measurement Objectives **[#1683]**
The Moon's heat flow has been measured at two locations that are not geographically representative of most of the Moon. Future heat flow measurements by a global, long-lived lander network are an important lunar science objective.

4:30 p.m. Richmond N. C. Hood L. L. *
Understanding Lunar Magnetism: Present Status and Future Work Using Surface Magnetometers **[#2258]**
We summarize first the present state of our understanding of lunar magnetism and then discuss how future surface magnetometer measurements can help to resolve remaining fundamental issues.

4:45 p.m. Campbell D. B. * Campbell B. A. Carter L. M. Ghent R. R. Hawke B. R.
Earth-based Radar Studies of Possible Future Lunar Landing Sites **[#2210]**
We have carried out high resolution 13 cm and 70 cm radar studies of the Moon to support planning for future robotic and human landings, *in situ* resource utilization, and a number of lunar mapping and geologic investigations.