

NASA Prepares for Performing New Science on the Moon

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This image released by NASA in 2003 shows a partial moon that was photographed by an Expedition 7 crewmember from the International Space Station.

NASA has selected proposals for future lunar science activities and established two new programs that will enhance research made possible by the Vision for Space Exploration.

The proposals and programs are part of an effort by NASA to develop new opportunities to conduct important science investigations during the planned renewal of human exploration of the moon.

In a highly competitive selection, NASA chose seven proposals from more than 70 submissions under the Lunar Surface Science Opportunities (LSSO) Program. These newly funded efforts in the space science

community will complement two new programs established in the Science Mission Directorate's Planetary Sciences Division at NASA Headquarters in Washington: the Lunar Advanced Science and Exploration Research (LASER) Program and the Lunar Reconnaissance Orbiter (LRO) Participating Scientist Program.

The seven selected proposals will result in advanced development for simple, autonomous instrument packages deployed on the lunar surface by astronauts. Such "suitcase science" packages could open up a wide variety of research applications regarding the moon and the lunar environment.

Some of the funded efforts will help scientists understand the lunar dust that creates problems for astronauts on the moon. Other studies will provide a better understanding of the moon's interior, look for natural resources on the lunar surface and use lasers to provide precise information about the position of the moon and its features.

"The proposals we received show that the scientific community is excited about the opportunity to capitalize on the nation's planned lunar outpost. The moon has much to teach us about itself, the history of our solar system, and even the history of the sun. In the future, more and more scientists will be able to participate in lunar research as we focus attention on Earth's fascinating satellite," said Alan Stern, associate administrator for NASA's Science Mission Directorate.

Selected proposals are:

-- Jet Propulsion Laboratory, Pasadena, Calif., William Banerdt, Principal Investigator (PI) "Autonomous Lunar Geophysical Experiment Package"

-- Jet Propulsion Laboratory, Pasadena, Calif., Slava Turyshev (PI)

"Lunar Laser Transponder and Retroreflector Science"

-- Goddard Space Flight Center, Greenbelt, Md., Daniel Glavin (PI)

"Volatile Analysis by Pyrolysis of Regolith on the Moon using Mass Spectrometry"

-- Goddard Space Flight Center, Patrick Taylor (PI) "Seismology and Heat flow instrument package for Lunar Science and Hazards"

-- Southwest Research Institute, Boulder, Colo., Donald Hassler (PI) "Lunar Radiation Environment and Regolith Shielding Experiment"

-- U.S. Army Engineer Research and Development Center, Fort Wainwright, Ark., Jerome Johnson (PI) "Lunar Suitcase Science: A Lunar Regolith Characterization Kit"

-- Ball Aerospace and Technologies Corp., Boulder, Colo., Christian Grund (PI) "Autonomous Lunar Dust Observer"

Under the planned LASER program, proposals will be solicited for investigations to increase knowledge of the moon while also providing necessary information for humans to live and work there. Studies may include simulations and laboratory work to better understand the lunar environment and its hazards, such as dust and radiation. The program also will support analysis of existing lunar data, including the Apollo and robotic mission data archives, and work to understand the origin and evolution of the moon.

In the upcoming LRO Participating Scientist Program, NASA will select researchers to perform detailed investigations using instruments aboard the LRO spacecraft during its first years in lunar orbit. Proposals for both programs are due Sept. 7, 2007.

LRO is NASA's next orbital mission to the moon. Launch is planned in late 2008. It will orbit the moon for at least one year, providing data to accelerate opportunities for future science missions and human exploration.

Source: NASA

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