

20th SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)  
Hitchhiking to the Moon and Beyond (8)

Author: Dr. Robert D. Richards  
International Space University (ISU), United States

MOON EXPRESS LUNAR MISSIONS OF OPPORTUNITY – ENABLING SCIENCE, EXPLORATION  
AND COMMERCE

**Abstract**

Moon Express Inc. is a privately funded lunar transportation and resource company created to establish new avenues for commercial space activities benefiting life on Earth. Commonly referred to as MoonEx, the company was founded by Dr. Bob Richards, Naveen Jain, and Dr. Barney Pell. Headquartered in the NASA Ames Research Park in Mountain View, CA, Moon Express combines Silicon Valley lean start-up principles with expertise in aerospace engineering and planetary sciences. Selected by Forbes as one of the 'Names You Should Know' in 2011, Moon Express plans to send a series of low-cost robotic missions to the Moon focused on opening up the resources of the Moon for the benefit of humanity, and has signed a partnership agreement with NASA for the development of its lunar lander system.

Moon Express was selected by NASA for its Innovative Lunar Demonstration Data (ILDD) program and officially entered the Google Lunar X PRIZE competition October 2010. Moon Express will send a series of robotic spacecraft to the Moon for ongoing exploration and commercial development focused on benefits to Earth. Our first missions will land in a southern hemisphere location where hazardous landing risks are minimized. The purpose of these missions is to reduce the risk of the lunar journey and determine proof of concept of a low-cost, routine lunar landing. Subsequent to our inaugural mission proving the safety and reliability of a lunar landing, our follow-on objective involves landing in the Lunar South Pole where favorable conditions exist for long duration missions as well as deposits of water and other valuable resources awaiting discovery. These missions will involve further perfecting the processes associated with landing on the lunar surface while exploring and evaluating the lunar surface for resources. The Moon Express "lunar railroad" will provide cost effective exploration and development of Earth's 'eighth continent'.

In the near future, Moon Express will be exploring the Moon for the potential of mining precious materials we need here on Earth, with the goal of returning lunar samples to Earth for science and commercial purposes. This paper will provide updates on company and mission status, plans and financing, while addressing mission concepts, technology readiness and ride-sharing requirements.