



March 15, 2010
(Revised November 30, 2010)

Request for Information Regarding Lunar Payloads and Investigations

Astrobotic Technology Inc. is soliciting expressions of interest and associated information regarding prospective payloads for Astrobotic™ missions to the surface of the moon. The call is open to companies, universities, governments and individuals. Responses are sought in four contexts:

1. Confirm and Characterize Water

Payloads and investigations are sought to detect and characterize a measureable amount of water, methane, ammonia or other volatile. Early destinations are outside permanent shadow regions.

Instruments may include tuned laser diodes, spectrometers, condensing cold plates, drills with in-hole sensors or sample removal mechanisms. Investigations can be self-contained, or can assume that Astrobotic™ robots will have removed overburden to expose the ice or ice/soil mixtures.

2. Produce Oxygen

Devices are sought to produce oxygen from regolith and compress it into a one-liter container at one Earth atmosphere pressure, as a proof-of-principle demonstration of lunar resource utilization. Investigations can be self-contained, or can assume that Astrobotic™ machines will deliver regolith.

3. Characterize Skylight Access to Lava Tubes

Instruments and analytical capabilities are sought to characterize a skylight opening to a suspected lava tube. Sensors could model geometry, appearance and temperature of the walls and floor from vantage points around the rim. Laser-Induced Breakdown Spectroscopy might determine elemental analysis and Raman techniques could determine molecular makeup. Investigations might characterize suspected hydrogen concentrations in the skylight bottoms.

4. Missions of Opportunity

Payloads are sought for investigations like dust toxicity, Moon-Earth communication, surface navigation, radiation and micrometeorite effects. Payloads also are sought for engineering investigations such as digging, drilling, thermal, power, avionic performance and device testing. Non-technical payloads are sought for participatory exploration, lunar art and media, and depositing cultural/personal artifacts. Mission interests are sought such as visiting historical sites, re-powering Lunar Roving Vehicles, exploring lava tubes, circumnavigating poles, deploying high school payloads, and filming landings/operations of future missions.

Background

Astrobotic Technology intends a series of lunar surface missions to carry payloads sought in this RFI. In addition to payloads, the first mission deploys an Astrobotic™ rover to claim the Google Lunar X Prize during the company's Tranquility Trek™ mission. Third-party payload totaling 110 kg (240 lbs) is available, mostly on the lander (approximately 20 kg on the rover). See the attached Payload Specification sheet for details.

This RFI is intended to identify customers for Astrobotic Technology as well as collaborators who will propose jointly with the company to space agencies, other funding sources and entrepreneurial enterprises. Carriage to the Moon can be purchased directly for \$700,000 per pound, plus a \$250,000 fee per payload for costs of integration and providing communications, power, thermal control and pointing services. Power, thermal control and comm on the lander is negotiable.

To win the Google Lunar X Prize, the Astrobotic™ rover must be the first nongovernment robot to transmit high-definition video from the moon after traveling 500 meters. Astrobotic can target landing sites to accommodate interests from poles to skylights to heritage destinations.

Process

Astrobotic seeks responses that describe payloads, investigations, missions or activities. Responses should include description of initiative, hardware, nonbinding estimates for payload dimensions, mass, power, data, thermal range, pointing or positioning requirements, and nonbinding estimates for the cost of the instruments and the professional labor required to carry out the investigation.

Submit responses electronically to David Gump, President, at david.gump@astrobotictech.com.

About Astrobotic Technology

Astrobotic Technology (www.astrobotictech.com) is a lunar services company. The company delivers payloads, licenses data, and performs on-the-surface services for space agencies, aerospace contractors, researchers, corporate marketers, individuals and media. Astrobotic is developing missions and executing commercial, federal and internal research. Joint with Carnegie Mellon University, Astrobotic intends to win Google's Lunar X Prize in 2013. David Gump is the firm's president, and Dr. William "Red" Whittaker is the firm's chairman.