Astrobotic to Develop Lunar Data Products and Services

Accurate lunar surface data are key to lowering program costs, accelerating schedules and reducing risk as humankind prepares to return to the Moon. Officials within space agencies, aerospace contractors and companies with lunar interests will need a wide variety of surface "truth data" to achieve their organization's objectives. Licensing such data products from commercial entities may offer a quick path to satisfying these data needs at reduced cost and without risk. Astrobotic Technology Inc. intends to collect these data sets starting in 2010 through a series of robotic missions to those areas on the Moon of high interest. Astrobotic's missions will be self-financed and executed to populate an integrated lunar library of company-collected data and those of other open sources. Our data products will range from raw collections to highly processed information solutions that meet our customers' needs.

Customer consultations are under way

Astrobotic will select the goals for each mission through extensive consultation with our customers. Over time, the missions will build a unique data library about the lunar environment and the performance of components and materials in that environment. The company invites the various customer communities to provide input on which data sets have the highest priority, the most appropriate instruments to collect them, and how each primary data group should be supplemented with metadata about its collection and context. The company also solicits advice on whether any deadlines exist for the collection of specific data groups; for example, a certain number of years before the launch of a mission that needs precursor data to improve engineering decisions.

In addition to data licensing, Astrobotic will deliver payloads, perform on-the-Moon services and generate interactive, high-definition media content for television, the Web, science centers and theme parks. These parallel revenue streams to defray mission costs are one reason that licensing data from Astrobotic will be very cost-effective for customers.

Equatorial mission to be followed by polar rovers

Our initial mission is the Tranquility Trek™ expedition planned for May 2010 to the historic Apollo 11 site. As it collects information to build the lunar data library, the company's rover aims to win the Google Lunar X Prize, a $20 million reward for the first commercial robotic Moon expedition that beams high-definition television to Earth on a 500-meter traverse. It also will demonstrate precision landing at designated destination, within meters of the intended coordinates. Subsequent missions will explore the Moon's poles, where national space programs aim to exploit the polar regions' resources.

Space agencies planning major lunar initiatives will be able to utilize the Astrobotic data library to reduce the risks and uncertainties associated with their large projects. Landers and surface infrastructure can be designed in the coming decade based on in-situ

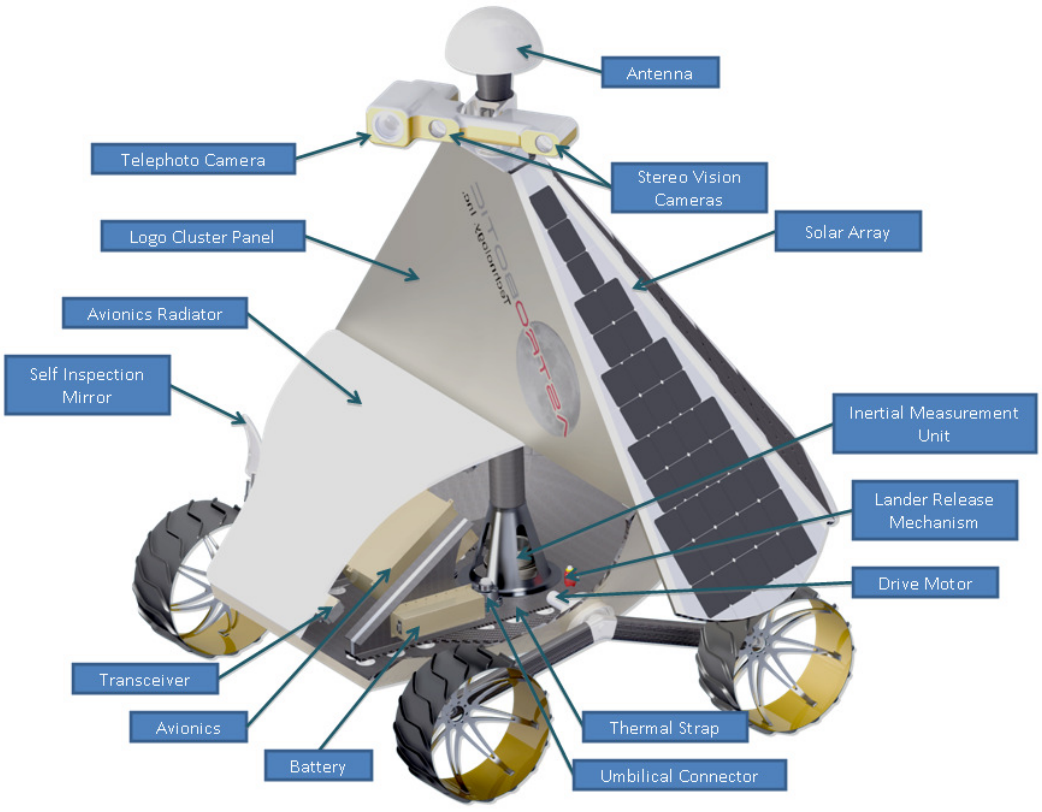
measurements of topography, dust conditions, soil mechanics, micrometeorite impact rates, illumination patterns, Earth-views for communications, and the like. Key materials and components for future projects can be delivered to the Moon by Astrobotic to characterize their performance in the actual lunar environment, rather than in simulations. Aerospace suppliers, for example, will be able to use Astrobotic missions to give their equipment "lunar heritage" – a tremendous advantage when competing for major lunar contracts.

Mission List

The company selected Apollo 11 as the initial destination both for its high public interest and for the ability to see how materials left there have weathered from radiation and micrometeorite bombardment. This will be key information for design of future outposts.

The first rover will be equipped with stereo HD cameras and a telephoto HD camera as its primary data-gathering instruments. During the descent, the cameras will capture how the lander's rocket motor plume disturbs the lunar regolith. The rover will image the landing platform after it dismounts to document its post-landing condition.

During the expedition, the cameras will be able to observe the rover's wheels as they interact with the regolith, as well as how dust accumulates on the robot's solar cells and radiator panels. The composite structure will be seeded with thermocouples for monitoring



Astrobotic Technology's initial Moon rover has a 60 kg mass, 120w solar array and chain-driven four-wheel drive. Not shown are several dozen thermocouples and strain gauges.

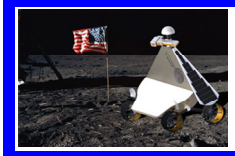
various locations' status as the rover passes through the temperature extreme of the lunar day.

At Apollo 11, many objects and materials will be imaged from a respectful distance by the telephoto camera. This will document the degradation caused by 41 years of solar and cosmic radiation, as well as any damage caused by micrometeorites. Boot prints will be imaged as "time stamps" for analysis of micrometeorite impact rates. Any micro-craters in the boot prints will necessarily have been made sometime in the past four decades.

As shown in the below table, current planning has missions two and three directed to the poles because NASA and other agencies plan to establish permanent outposts there. The South Pole and North Pole scouts will compile detailed terrain maps and collect data requested by the customer communities.

Astrobotic's anticipated fourth mission is a stationary seismic installation in support of the proposed International Lunar Network (ILN), a series of up to 16 nodes that various nations or commercial entities might install to collect key data on the Moon's surface and subsurface characteristics.

The fifth mission in the initial slate of projects intends to confirm the presence of water ice

Mission		Data Generated
	**Tranquility Trek** Win X Prize, visit Apollo 11 Q2 - 2010	Prove precision landing technology "Weathering" of Apollo 11 site materials Rate of micrometeorite impacts, descent plume dust
	**South Pole Scout** Shackleton Crater Rim Q3 - 2011	Survey landing pad and habitat locations Ground truth on illumination patterns Characterize soil and dust; Survive the night
	**North Pole Scout** TBD Crater Rim Q1 - 2012	Survey landing pad and habitat locations Ground truth on illumination patterns Characterize soil and dust; Survive the night
	**Moon Quake 1** Shackleton Crater Rim Q3 - 2012	Collect seismic and weather data Prove multi-year ability to function Laser communication test; Constant TV view of Earth
	**Ice Surveyor** Shackleton Crater Floor Q2 - 2013	Confirm water and other volatiles exist Determine variability of ice concentration (By location and by depth)
	**Moon Dozer** Shackleton Crater Q3 - 2013	Demo building methods & gather soil mechanics data Dig trenches to lay cables and expose stratification of soil layers for science

in the deep polar craters. Because ice would provide life support needs and valuable propellant for spacecraft returning to Earth, data about it will be exceedingly valuable. Descending into a permanently dark crater is an engineering challenge that Astrobotic intends to approach after gaining on-the-Moon operating experience.

The sixth mission will demonstrate construction methods and gather information on soil mechanics so that the power and machine sizes for future construction can be more accurately estimated.

Media and Sponsorship

Exploration of the lunar frontier will be live on TV and the Web as the experience unfolds. Astrobotic rovers will carry stereo HD video cameras for immersive 3D experiences, along with vibration sensors to supply a sound track. Live HD video from space will be unusual; Mars rovers have not transmitted any video due to the enormous distances between the planets. A fortunate few corporate marketers will be able to exploit Astrobotic's expeditions with high-impact promotions and brand-building that rewards their customers with exciting roles in these lunar adventures. Media and sponsorship revenues will help pay the costs of Astrobotic missions, making data licenses and payload deliveries more affordable for space agencies, companies and academics.

The future today

Astrobotic is committed to providing timely and accurate data products and services needed for the successful return to the Moon and developing the lunar economy. We welcome direct contact from our customers regarding their requirements, priorities and concerns now so that they will be armed with the right information to make their plans a reality.

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