

Extra Feature Story

NASA Probes a Step Toward Moon Base, June 23, 2009

The National Aeronautic and Space Administration launched a pair of lunar probes June 18 from Cape Canaveral, Fla., as the first part of a plan to build a base on the surface of the moon by 2020.

The two probes, called LRO for Lunar Reconnaissance Orbiter and LCROSS for Lunar Crater Observation and Sensing Satellite, will help scientists learn new information about the surface of the moon.

LRO and LCROSS have two different purposes, but both will help NASA figure out where to build a moon base. The mission also comes at a time of change for NASA, which is retiring old spacecraft and preparing for new rounds of manned space missions.

Spacecraft will help plans for humans to live on the moon

Both lunar probes have sophisticated equipment that will survey the surface of the moon and measure radiation levels.

The LRO craft will orbit the moon and take high resolution images of the surface that will be more detailed than any available moon images.

The LCROSS craft will perform a more dramatic mission: It will launch part of its rocket booster into a crater on one of the poles of the moon.

If there is water in the craters, the impact will eject ice particles and other material out into space for the LCROSS to collect and analyze.

The presence of water could help astronauts survive on the moon and save money on transporting water from the earth.

The Moon holds clues to understanding the solar system

While building a lunar base could help humans learn lessons about how to live on other planets, studying the moon also allows scientists to understand the history of the solar system.

Space exploration expert and author Andrew Chaikin said that by studying impact craters and substances on the moon, scientists can look back in time in a way that is not possible by studying the earth.

"The moon is truly the rare bookroom of the cosmic library," Chaikin said. "It allows us to look back at the earliest history of the solar system in a way that we can't do on the earth because that history has been erased by geologic activity and wind and weather."

By studying the surface of the moon, scientists have posited that impacts from comets were important in establishing the building blocks of life on earth by depositing water and organic molecules on the planet.

NASA has uncertain future

The plan to send Americans to the moon and build a base there by 2020 in preparation for a manned mission to Mars was introduced by President George W. Bush in 2004.

With the end of the space shuttle program in 2010, the next decade will be a period of drastic change for the agency that was the first to send a man to the moon in 1969.

President Barack Obama created the Augustine Commission to examine the plans for future manned missions. NASA engineers are in a debate about the best way to send humans back to the moon, and the commission will also examine the costs of the moon program, which has a \$150 billion price tag.

Norman Augustine, the former head of the aerospace company Lockheed Martin, is in charge of the study.

"I think this is going to be a very tough job, because people really care about space. It's something that people get emotionally attached to," he told the NewsHour. "And people have different opinions, and they hold them strongly, and we're getting a lot of advice, which we welcome. Unfortunately, most of it's conflicting and contradictory. So wish us well; we'll need some good luck here."

-- Written by Quinn Bowman for NewsHour Extra

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