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# Moon Probe Gets Finishing Touches

Irene Klotz, Discovery News

**May 12, 2008** -- A robotic probe designed to scout out a landing site for America's [return to the moon](#) is coming to life at a spacecraft factory in Greenbelt, Md.

The heart of the [Lunar Reconnaissance Orbiter](#), called LRO, is a high-resolution digital camera that can capture lunar features less than a meter in size. NASA wants the detailed view before selecting where to send its next generation of lunar explorers.

The last time a person set foot on the moon was in 1972.

The camera, built at Arizona State University, will be set into the spacecraft on Tuesday, said Skip Derra, a spokesman with the Tempe, Ariz.-based school. It arrived at NASA's [Goddard Space Flight Center](#) in Maryland on Friday.

The imager is the fifth of six instruments to be installed on LRO. Already aboard:

- an ultraviolet spectrograph to search for [surface ice](#) and frost in the polar regions;
- a cosmic ray detector to assess the radiation environment around the moon;
- a sensor to measure surface temperatures as cold as minus 406 Fahrenheit (minus 243 degrees C);
- lasers to produce three-dimensional maps on a scale of inches rather than feet or miles of the moon's rough surface;
- a hydrogen detector to scout for surface water ice;
- a mini-radar system, flying as a technology demonstration, to look for subsurface ice.

"You can begin to see what LRO will look like in all of its glory," said LRO deputy project manager Cathy Peddie.

The probe, slated to launch Nov. 24 aboard an unmanned Atlas 5 rocket from Cape Canaveral, Fla., is expected to spend between one and four years in lunar orbit collecting information. Finding usable sources of water, for example, will be critical in planning for an eventual base on the moon.

"It costs tens of thousands of dollars per pound to put materials into space," said Timothy McClanahan with NASA's Goddard center. "That makes ordinary water on the moon more precious than gold. To make lunar

exploration affordable, we need to use the resources of the moon as much as possible so we can avoid the cost of bringing them up from Earth."

LRO will be carrying a second spacecraft for an independent mission that will land in a crater near the moon's south pole to look for evidence of water ice. The crater is permanently shadowed and very cold, conditions that scientists believe may have allowed water ice, delivered by comets long ago, to accumulate over billions of years.

If water exists on the moon and it can be extracted, NASA could potentially convert it to liquid hydrogen and oxygen for rocket fuel and air for astronauts to breathe.

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