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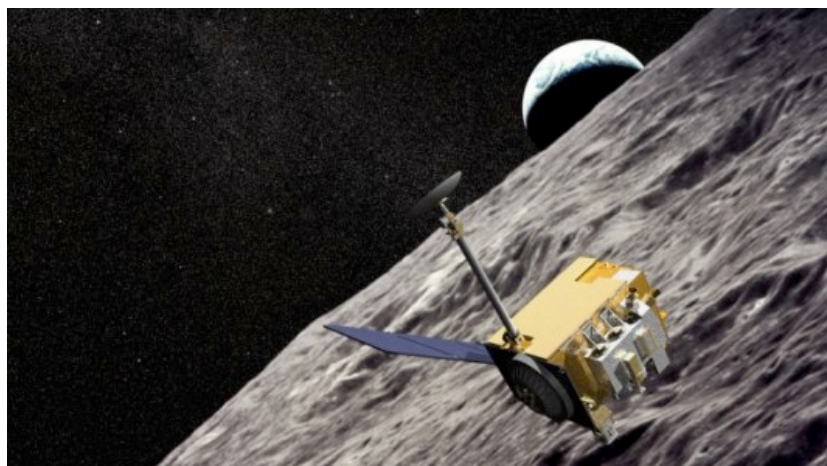
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SCIENCE AND EDUCATION

The search for ice on the moon heats up

By [Jeff Salton](#)

19:58 August 2, 2009 PDT



An artist's impression of the LRO spacecraft taking hi-res images of the moon's surface (Image: Chris Meaney/NASA)

[Image Gallery \(2 images\)](#)

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Special sensing technology developed by Raytheon for the US Navy's miniaturized radio frequency system is aboard NASA's [Lunar Reconnaissance Orbiter \(LRO\)](#), one of two spacecraft hoping to find photographic evidence that the polar regions of the moon contain ice. Until now, man hasn't been able to confirm if there is ice on the moon because it is thought to exist only in permanently dark patches, or poles, on the lunar landscape – which means we haven't been able to take detailed photos yet. NASA in particular is interested in determining the extent to which lunar ice exists, if at all, as the agency prepares for future manned exploration and possible habitation on the moon.

The two unmanned craft - NASA's LRO and the Indian-based [Chandrayaan-1](#) launched late last year - are intended to work together in space to deliver hi-res images for study back on Earth. The Chandrayaan-1 mission is conducting high-resolution remote sensing of the moon in visible, near infrared (NIR), low energy X-rays and high-energy X-ray regions. The mission, though, has been plagued with malfunctions.

[NASA's LRO](#) was launched recently on June 18 and is designed to take higher resolution images of the moon's surface, in particular the polar caps.

The LRO is using a system known as Mini-RF, which will take high-resolution radar imagery in dual S- and X-band modes of permanently shaded regions of the moon to attempt to detect ice in areas hidden from other instruments.

Under contract to the U.S. Navy, [Raytheon](#) provided the antenna, transmitter, analog receiver and software for the system.

"This is an important mission for our nation because it represents the first step in the next era of lunar exploration," said Bill Hart, vice president for Raytheon's Space Systems business. "The Mini-RF system will play a key role in determining how we will approach this next phase of the space age."

Raytheon has provided similar support under the same contract for the Chandrayaan-1 lunar orbiting mission. That spacecraft's miniaturized synthetic aperture radar (known as Mini-SAR) provided images between mid-February and mid-April. Data obtained during that period are currently being analyzed for evidence of ice on the lunar surface.

The Mini-RF technology of the Lunar Reconnaissance Orbiter differs slightly from what is flying aboard Chandrayaan-1. The LRO version features slightly higher resolution capabilities and will fly at a lower orbit than Chandrayaan-1.

Raytheon's work on the Mini-RF and Mini-SAR programs are part of the Department of Defense's operationally responsive space initiative. That initiative calls for the development of smaller, less-expensive satellites that can be deployed in tactically relevant time frames.

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To "search for water" by detonating a 2200-lb munition and blow a hole 5 kilometers in diameter into a fragile orb is an act of extreme Not-See barbarism. I have reasons to believe, based on my un-processing and re-photo-process of hundreds of NASA Apollo photos, that the Moon which NASA calls "theirs" is already inhabited, already under the control of another Sovereign Race. So, bombing is off the table, ethically.

 **Emily Elizabeth Windsor-Cragg** - August 4, 2009 @ 04:08 pm

It is just one NASA goof-up after another. Here is the same photo with details brought up in better photo processing. The NASA photo is skewed 20 degrees, its scale is altered vertical-to-horizontal, it is black and white with excessive contrast. Why does NASA NOT hire competent photographers? Because they do not want us to know what is Out There, that is why.
<http://www.holyconservancy.org/images/MOON/strip/0907pic88513.png>

 **Emily Elizabeth Windsor-Cragg** - August 4, 2009 @ 04:08 pm

Looks like *somebody* is off their meds!

 **Ed** - August 5, 2009 @ 12:08 pm

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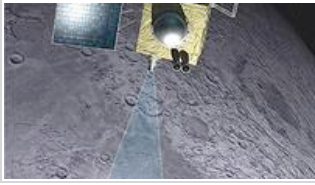
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