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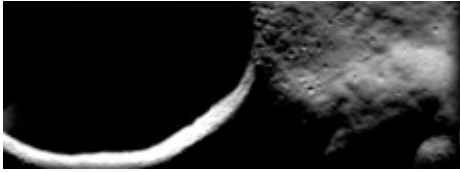
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[Disappointing News: No Icy Patches in the Lunar Craters](#)

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Researchers have gotten a close look at a lunar crater that was thought to hold “skating rinks” of ice, and have reached the disappointing conclusion that the crater does not have visible patches of water ice after all. New images from the Japanese lunar orbiter, Kaguya, reveal no traces of ice in the Shackleton crater, a cold and shadowy place near the [moon](#)’s south



pole. Ice would be vital for future colonies on the Moon, providing drinking water for astronauts and hydrogen fuel for their vehicles [[New Scientist](#)].

Researchers had high hopes for the Shackleton crater because it never receives direct sunlight. The theory was that if comets have landed there (and, given the craters' ages, the odds are that several will have), some of the ice carried by such dirty celestial snowballs might be preserved in the permanent shadow cast by the craters' walls [[The Economist](#)]. Then NASA's 1998 Lunar Prospector detected an excess of hydrogen at the moon's poles, which researchers thought indicated the presence of water ice.

The Kaguya's findings, published in [Science](#) [subscription required], don't squelch all hopes for water ice on the moon, but they do demonstrate that there aren't any easily accessible patches. The craft's Terrain Camera, which can discern features as small as 10 meters, was able to image Shackleton's floor because sunlight scattered from the crater's inner wall, near the rim, illuminates the floor. Ice would show up as bright, highly reflective patches, and the images show no such features [[Science News](#)].

There's still a possibility that ice could be buried beneath the surface (as it is at the [Martian](#) pole), or that tiny ice crystals are mixed in with soil. The [Indian](#) lunar orbiter Chandrayaan 1 that launched earlier this week will study the problem with a spectroscope, analyzing the elements present on the moon. NASA's Lunar Reconnaissance Orbiter, due to launch next year, is expected to send several probes crashing into the polar region in order to scan the resulting plumes of debris for water vapour. If it was there, that would be pretty conclusive [[The Economist](#)].

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Image: ESA

October 24th, 2008 Tags: [comets](#), [India](#), [moon](#), [NASA](#)
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2 Responses to “Disappointing News: No Icy Patches in the Lunar Craters”

1. *Eric* Says:

[October 24th, 2008 at 10:08 am](#)

I think the idea of crashing probes into the moon or a planet is horrible. It's invasive, destructive, and makes it into a landfill for our trash. The proper thing to do would be to land a rover on the surface and scoop up the soil or drill down a few feet. Honestly, if there is a chance of water in any form, then there is a chance of there being microscopic life as well. If this crater is the only place that water is on the moon, we could in fact be destroying the only place that any microbes could survive.

2. *Damian* Says:

[October 24th, 2008 at 10:36 am](#)

Your sentiments are noble, Eric, but small meteors around the size of these impact probes hit these

cratered areas all the time (hence, craters). If there is life on the moon, it must be able to tough out both the constant impacts and the punishing radiation that bombard the moon every hour of every day (over billions of years). I don't see how us sending down a football or laundry-basket sized impactor is going to cause an extinction event to creatures that hardy.

If you're worried about us making the moon "a landfill for our trash", then I would point out that even a gentle lander with a drill is eventually going to break down and become a piece of trash on the moon. An impactor would vaporize, and thus would not leave any trash at all.

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80beats is written primarily by Eliza Strickland, who darts through each day's science news faster than the ruby-throated hummingbird that beats its wings 80 times per second. Recently, Nina Bai has been contributing as well.

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