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Thrilling discovery: Lots of water on moon

Philippine Daily Inquirer
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LOS ANGELES—SUDDENLY, THE moon looks exciting again. It has lots of water, scientists said Friday (Saturday in Manila)—a thrilling discovery that sent a ripple of hope for a future astronaut outpost in a place that has always seemed barren and inhospitable.

Experts have long suspected there was water on the moon. Confirmation came from data churned up by two [Nasa](#) spacecraft that intentionally slammed into a lunar crater last month.

“Indeed, yes, we found water. And we didn’t find just a little bit. We found a significant amount,” said Anthony Colaprete, the principal investigator for Nasa’s Lunar [Crater](#) Observation and Sensing Satellite, holding up a white water bucket for emphasis.

The lunar crash kicked up at least 95 liters (25 gallons) and that’s only what scientists could see from the plumes of the impact, Colaprete said.

Some space policy experts say that makes the moon attractive for exploration again. Having an abundance of water would make it easier to set up a base camp for astronauts, supplying drinking water and a key ingredient for [rocket](#) fuel.

Scientists also hope that the water, in the form of ice accumulated over billions of years, holds a record of the [solar](#) system’s history.

The satellite, known as Lcross (pronounced L-cross), crashed into a crater near the Moon’s south pole a month ago. The 9,000-kilometers-per-hour impact carved out a hole 20 to 30 meters wide and kicked up the liters of water in the forms of ice and vapor.

The water findings came through an analysis of the slight shifts in color after the impact, showing telltale signs of water molecules that had absorbed specific wavelengths of light. “We got good fits,” Colaprete said. “It was a unique fit.”

For more than a decade, planetary scientists have seen tantalizing hints of water ice at the bottom of these cold craters where the sun never shines. The Lcross mission, intended to look specifically for water, was made up of two pieces—an empty rocket stage to slam

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into the floor of Cabeus, a crater about 70 km wide and 3 km deep, and a small spacecraft to measure what was kicked up. In the event, the small craft also hit the surface.

New moon image

"It's very exciting, it is painting a new image of the moon," said Gregory Deloy, from the [University of California](#), hailing it as "an extraordinary discovery."

He theorized that "one of the possible source of water is a comet."

"We're unlocking the mysteries of our nearest neighbor and, by extension, the solar system," said Michael Wargo, chief lunar scientist at Nasa headquarters in Washington.

12 men on moon

Only 12 men, all Americans, have ever walked on the moon, and the last to set foot there were in 1972, at the end of the Apollo missions.

But Nasa's ambitious plans to put US astronauts back on the moon by 2020 to establish manned lunar bases for further exploration to [Mars](#) under the Constellation project are increasingly in doubt.

"This new and terrific result reassures us about lunar resources, but ... the challenges currently facing the human space flight program remain," Chris Chyba, a Princeton astrophysicist, said.

Nasa's budget is currently too small to pay for Constellation's Orion capsule, a more advanced and spacious version of the Apollo lunar module, as well as the Ares I and Ares V launchers needed to put the craft in orbit.

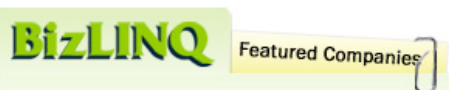
President George W. Bush had proposed a more than \$100-billion plan to return astronauts to the moon, then go on to Mars; a test flight of an early version of a new rocket was a success last month.

Existing budgets not enough

A key review panel appointed by President Barack Obama said existing budgets are not large enough to fund a return mission before 2020.

Astronaut Buzz Aldrin, who in 1969 made his historic Apollo 11 moonwalk with Neil Armstrong, was pleased to hear the latest discovery, but still believes the US should focus on colonizing Mars.

"People will overreact to this news and say, 'Let's have a water rush to the moon,'" Aldrin said. "It doesn't justify that." *AP, NYT and AFP*

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