

Nasa finds vast water ice deposits at Moon's north pole raising prospect of manned base

By [Daily Mail Reporter](#)

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Nasa has discovered vast quantities of water on the Moon, rekindling dreams of a manned lunar base.

Radar instruments revealed that craters near the Moon's north pole are packed with at least 600million tons of ice.

The frozen deposits were found inside 40 small craters by a Nasa radar instrument onboard India's Chandrayaan-1 spacecraft.



The Moon as captured by International Space Station astronauts. A Nasa radar instrument found evidence of huge water ice deposits at its north pole

Five months ago, the space agency detected substantial water reservoirs at the Moon's south pole.

Together, they could lead to the creation of a permanent lunar base, using water buried in the rocks to drink and to generate hydrogen rocket fuel.

'After analyzing the data, our science team determined a strong indication of water ice, a finding which will give future missions a new target to further explore and exploit,' said Jason Crusan, programme executive for the Nasa radar.

Water ice is essential to a manned Moon base, because drinking water is incredibly heavy and requires huge amounts of fuel to launch it into space.

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The Nasa radar instrument, known as a Mini-SAR, has captured many of the permanently shadowed regions that exist at both poles of the Moons.

These dark areas are extremely cold and scientists had believed that volatile material, including water ice, could be present in large quantities there.

'The emerging picture from the multiple measurements and resulting data of the instruments on lunar missions indicates that water creation, migration, deposition and retention are occurring on the moon,' said Paul Spudis from the Lunar and Planetary Institute in Houston.

'The new discoveries show the moon is an even more interesting and attractive scientific, exploration and operational destination than people had previously thought.'

The Mini-SAR's findings are being published in the journal Geophysical Research Letters.

The results are consistent with recent findings of other Nasa instruments and add to the growing scientific understanding of the multiple forms of water found on the Moon.

The agency's Moon Mineralogy Mapper discovered water molecules in the Moon's polar regions, while water vapor was detected by NASA's Lunar Crater Observation and Sensing Satellite, or LCROSS.

Read more: <http://www.dailymail.co.uk/sciencetech/article-1254849/Ice-Moons-north-pole-bringing-manned-base-closer.html#ixzz0hkD4aLgL>