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Moon water raises hope of further lunar exploration: NASA scientist

The recent discovery of water on the moon has raised hopes of one day establishing a permanent lunar base, a NASA scientist will tell delegates at a keynote address at the *Australian Earth Sciences Convention* in Canberra tomorrow.

Dr Jennifer Heldmann, a planetary scientist at the National Aeronautics and Space Administration (NASA), said the significant discovery of water and other compounds last October by the Lunar CRater Observation and Sensing Satellite (LCROSS) represented potential resources that could sustain future lunar exploration.

"Water could be a valuable resource to enable future human or robotic exploration of the moon," she said. "The LCROSS mission has shown that water ice existed within a permanently shadowed crater near the lunar South Pole; a finding which had caused scientists to re-evaluate their most fundamental understanding of our nearest celestial neighbour."

Heldmann went on to say that if the water discovered is billions of years old, the polar cold traps could hold a key to the history and evolution of the solar system, much as an ice core sample taken on Earth reveals ancient data.

"The idea that the moon is a dry, desolate place no longer holds true," she said. "We are revealing secrets the moon has been holding for billions of years."

Heldmann said the frozen water was found following a dramatic experiment that deliberately sent a spacecraft crashing into the moon's surface. The Centaur rocket slammed into the permanently shadowed Cabeus crater near the moon's southern pole.

The LCROSS spacecraft detected water present in samples taken from the plume of material that billowed up from the bottom of the crater after impact. The material had not seen sunlight in billions of years. She said the LCROSS team continues to analyse the spacecraft data to determine the various species that were isolated in the lunar cold traps.

About Jennifer Heldmann - Heldmann is a planetary scientist at NASA's Ames Research Center, Moffett Field, Calif., working on the Lunar CRater Observation and Sensing Satellite (LCROSS) project, an important precursor mission to return humans to the moon. Her interest in all things 'space' was apparent at an early age – setting up her own shuttle "cockpit" and re-enacting the mission from lift-off to landing after seeing the movie "Space Camp" when she was 10 years old! Heldmann attended U.S. Space Camp as a high school student and was so awestruck by the experience that she was ready to commit to a profession in a space-related field. Heldmann has co-authored many papers and received numerous awards, including a NASA Superior Achievement Award. Today, Heldmann said she enjoys "studying the world and universe because there are so many mysteries to unravel. It helps us understand our context in the grand scheme of the cosmos."

Issued on behalf of the Geological Society of Australia by Connection Communications. For further information or to arrange an interview with Dr Jennifer Heldmann please call Maria Padua on 0419 200 935.