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NASA ORBITER SPOTS WATER MOLECULES MOVING AROUND ON MOON, SAYS STUDY

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Scientists, using NASA's Lunar Reconnaissance Orbiter (LRO), have observed water molecules moving around the dayside of the moon, the U.S. space agency said, an advance that could help us learn about accessibility of water that can be used by humans in future lunar missions.

Measurements from the Lyman Alpha Mapping Project (LAMP) instrument aboard the LRO of the sparse layer of molecules temporarily stuck to the surface helped characterise lunar hydration changes over the course of a day, according to the study published in the journal *Geophysical Research Letters*.

Up until the last decade, scientists thought the Moon was arid, with any water existing mainly as pockets of ice in permanently shaded craters near the poles.

More recently, scientists have identified surface water in sparse populations of molecules bound to the lunar soil. The amount varies based on the time of day.

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These results aid in understanding the lunar water cycle and will ultimately help us learn about accessibility of water that can be used by humans in future missions to the Moon, said Amanda Hendrix, a senior scientist at the Planetary Science Institute.

Lunar water can potentially be used by humans to make fuel or to use for radiation shielding or thermal management; if these materials do not need to be launched from Earth, that makes these future missions more affordable, Hendrix said in a statement.

Water molecules remain tightly bound to the regolith until surface temperatures peak near lunar noon.

END