

Researchers tapped again for NASA moon mission, set to explore mysterious domes

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A team of researchers from the University of Central Florida will be exploring an unknown and mysterious region of the moon.

Two UCF [planetary scientists](#), Kerri Donaldson Hanna and Adrienne Dove, have been asked to lead a \$35 million mission which would land a spacecraft over the Gruithuisen Domes—an unexplored part of the moon that has left NASA scientists scratching their heads, according to a NASA press release.

The domes, which are found on the western part of the moon, appear to be the result of a rare form of volcanic eruption, according to NASA. What's mysterious about the domes is that such geological structures on Earth require oceans of liquid water and plate tectonics to form. Without such ingredients, NASA scientists are left baffled as to how the structures came to be.

Donaldson Hanna and Dove's work is part of NASA's plan to use more commercial companies to take payloads to the moon through its Commercial Lunar Payload Service program (CLPS), which is headquartered in the Johnson Space Center in Houston. The CLPS program is born from NASA's Artemis lunar exploration plans and efforts to get humans back on the moon.

UCF's involvement will take place through NASA's Payloads and Research Investigations on the Surface of the Moon (PRISM) program, in which a spacecraft will launch in 2026 carrying a [robotic rover](#) to study the domes' chemical composition and how dust interacts with the spacecraft and a rover, according to UCF.

Over the course of a lunar day—equivalent to 10 Earth days—the Lunar Vulkan Imaging and Spectroscopy Explorer (Lunar-VISE) will investigate the summit of one of the domes believed to be made from a sticky magma rich in silica, similar to granite, which would be a potential resource for future colonization.

"There's potentially a treasure trove of knowledge waiting to be

discovered which will not only help us inform future robotic and human exploration of the moon, but may also help us better understand the history of our own planet as well as other planets in the solar system," said Donaldson Hanna, the principal investigator.

Donaldson Hanna is putting in long hours studying the moon since she is also part of NASA's Lunar Trailblazer mission and the Lunar Reconnaissance Orbiter's Diviner Lunar Radiometer experiment. The former mission's focus is to scan and produce high-resolution maps of water on the moon. The mission could launch by 2025, or earlier, Donaldson Hanna said.

UCF will share room on the 2026 launch with another project that would investigate the effects of the [moon's](#) low gravity and radiation environment on yeast—which is used to study biological changes brought on by [space travel](#). The Lunar Explorer Instrument for space biology Applications (LEIA) science suite is a small CubeSat and will be led by Andrew Settles of NASA's Ames Research Center in Silicon Valley.

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