

2024 KARI Space Exploration and Science Seminar Series – No.08

Exploring the Geology of the Moon with Artemis III

November 7, 2024

Presentation Summary

During the Artemis III mission, two crew members will spend ~6.5 days exploring the surface near the Moon's South Pole. The Artemis III Geology Team is helping to develop the planetary science goals for the mission and plans for how two astronauts will collect samples and perform geologic field. The Artemis III crew will collect rocks from the ancient highlands and search for rare rock fragments that originated deep within the Moon to test models of how the Moon and other planets formed and evolved, sample impact-melted rocks to reveal how collisions shaped the history of the Earth–Moon system, and collect vacuum sealed samples to determine the composition of volatiles that may be present near the Moon's south pole. This presentation will describe the science objectives that will guide the Artemis III crew, sampling priorities and landing site characteristics that best support the science goals, how real-time science operations will be supported during the mission, and our path toward maximizing the science of the Artemis III mission.

About the Speaker

Dr. Brett Denevi is a planetary geologist at the Johns Hopkins University Applied Physics Laboratory. She is the Principal Investigator for the Artemis III Geology Team, and is a member of the science teams for cameras on two lunar orbiters (the Lunar Reconnaissance Orbiter Camera on LRO and ShadowCam on the Korean Pathfinder Lunar Orbiter), as well as two upcoming robotic landers (Lunar Vertex and Lunar-VISE). Previously, Denevi was the Deputy Instrument Scientist for the Mercury Dual Imaging System on the MESSENGER mission and a Participating Scientist on the Dawn mission to asteroid Vesta. Denevi served as the Vice Chair for the Panel on Mercury and the Moon and as a member of the Steering Group for the most recent Planetary Science and Astrobiology Decadal Survey, and as the Science Chair for the Lunar Exploration and Analysis Group. She is the recipient of a NASA Early Career Fellowship, the NASA/SSERVI Coradini Mid-Career Award, eight NASA Group Achievement Awards, and asteroid 9026 Denevi was named in her honor.