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Camera on Danuri reveals shadowed region of moon

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The Korean-built Danuri lunar orbiter took pictures of a region of the moon that never sees sunlight, according to the Korea Aerospace Research Institute (KARI), Thursday.

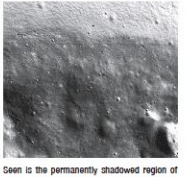
Arizona State University, which had manufactured the ShadowCam device installed in the Danuri, shared a photo on its website earlier this week. The camera had been provided by the U.S. university as well as NASA.

"The released photo shows a permanently shadowed region inside the Shackleton crater, which is about 20 kilometers wide and located at the moon's southern pole," KARI said.

The Danuri, also known as the Korean Pathfinder Lunar Orbiter (KPLO), is currently conducting scientific research activities, orbiting the moon since Dec. 28, 2022.

The Shackleton crater is one of the proposed landing sites for NASA's planned Artemis mission, which is sending astronauts to the lunar surface.

NASA has been using a lunar reconnaissance orbiter (LRO) to survey the region. KARI elaborated the ShadowCam is more than 200 times more sensitive to light than the camera mounted on the LRO, which was launched in 2009, so it is able to capture images of the permanently shadowed region of the moon that had not previously been photographed.



Seen is the permanently shadowed region of the moon, photographed by NASA's ShadowCam device mounted on the Korean lunar orbiter, Danuri, Thursday.

Courtesy of NASA, KARI, Arizona State University

Arizona State University said the image "shows the path of a 5-meter diameter boulder that rolled down the steeply sloping crater wall and came to rest on the floor."

The ShadowCam will continue to explore candidate sites for manned landings by observing these areas in the lunar polar regions where water ice is hoped to be found.

"As the KPLO mission progresses, ShadowCam will be imaging all of the moon's permanently shadowed regions with pixel scales better than 2 meters, searching for frost and ice, looking for any changes with time or season, assessing the geomorphology of this frigid terrain, and mapping out the terrain for future surface exploration by missions such as the NASA Volatiles Investigating Polar Exploration Rover, also known as VIPER," the university said.