Space Studies of the Earth-Moon System, Planets, and Small Bodies of the Solar System (B) Lunar Science and Exploration (B3.1) Consider as poster only.

POLARIMETRIC ANALYSIS OF REINER GAMMA SWIRL USING DANURI'S POLCAM DATA

Minsup Jeong, msjeong@kasi.re.kr

Korea Astronomy and Space Science Institute, Daejeon, Korea

Young-Jun Choi, yjchoi@kasi.re.kr

Korea Astronomy and Space Science Institute, Daejeon, Korea

Sungsoo Kim, sungsoo.kim@khu.ac.kr

Kyung Hee University, Yongin, Korea

Kilho Baek, kilho.baek@gmail.com

Kyung Hee University, Yongin, Korea

Bongkon Moon, bkmoon@kasi.re.kr

Korea Astronomy and Space Science Institute, Daejeon, Korea

Dukhang Lee, 7grace7@kasi.re.kr

Korea Astronomy and Space Science Institute (KASI), Daejeon, Korea

Chae Kyung Sim, cksim@kasi.re.kr

[Korea Astronomy and Space Science Institute (KASI)], [Korea National University of Science and Technology (UST)], Daejeon, Korea

Kyungin Kang, kikang@kaist.ac.kr

Korea Advanced Institute of Science and Technology, Daejeon, Korea

Bonju Koo, jbbond9@kaist.ac.kr

[Korean Institute of Mineral and Geosciences (KIGAM)], [Private Individual], Daejeon, Korea

The Wide-Angle Polarimetric Camera (PolCam) aboard South Korea's first lunar orbiter, Danuri, has undertaken a detailed investigation of the Reiner Gamma Swirl, a prominent lunar albedo anomaly. Lunar swirls, characterized by their distinct albedo without corresponding topographical or mineralogical distinctions, are associated with magnetic fields, yet their formation mechanisms, time scales of formation, and magnetic relationships remain not well understood. Polarimetric properties of these features are not established. This study utilizes PolCam's polarimetric data to analyze the Stokes parameters, degree of polarization, and grain size of the Reiner Gamma Swirl. PolCam, designed to generate global maps of lunar polarization and titanium distribution, operates at a spatial resolution of approximately 68 m/pixel, covering phase angles from 0 to 135 degrees. The study aims to elucidate the nature of the Reiner Gamma Swirl, contributing to the broader understanding of lunar swirls. By focusing on the polarimetric analysis, this work seeks to advance knowledge of the swirls' formation, their association with lunar magnetic fields, and surface properties.