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EXPLORING LUNAR VOLATILES AND MAGMATISM THROUGH CHANDRAYAAN-3'S SULFUR
DETECTION

Abstract

The Chandrayaan-3 Pragyan rover's LIBS instrument detected lunar sulfur, offering new insights into the Moon's formation. This study can reveal the extent of volatile loss during lunar accretion and details about the Moon's early composition. We analyze sulfur presence and characteristics using LIBS data, while the mission's cameras and laser ranging instrument will map its distribution and isotopic signatures. Understanding sulfur's behavior in lunar rocks, like lowering magma melting points and interacting with potential regolith water ice, provides insights into the Moon's internal processes and weathering. This research contributes to planetary science by unveiling details of the Moon's formation and volatile depletion history, elucidating sulfur's role in lunar magmatism and regolith development, and laying the groundwork for future lunar exploration. This study presents a transformative opportunity to understand the Moon's formation and evolution