

Volcanism in and around crater Tsiolkovskiy: Integrated Morphological and Mineralogical Assessment

Deepak Dhingra

Department of Earth Sciences, Indian Institute of Technology Kanpur, UP 208016
(E-mail: ddhingra@iitk.ac.in)

We report a complex but intriguing geologic setting of volcanic deposits in and around crater Tsiolkovskiy on the lunar far side. Spatially separated basaltic units, with identical spectral characteristics occur in the Tsiolkovskiy region indicating potentially common origin. However, these basaltic units also occur at different elevations posing a challenge in explaining the emplacement process of the volcanic deposits. We are exploring several possibilities to understand the geologic setting of these interesting basaltic deposits that includes an assessment of the sources and nature of the post emplacement modifications in this region. Tsiolkovskiy represents one of the few centers of volcanic activity on the lunar far side and is therefore key in understanding the framework of magmatic activity and evolutionary history of this region.