

PLANETARY SCIENCE

The group is engaged in a diversity of research areas in the field of planetary science. The group has made an attempt to conduct a global survey of morphological diversity of central peaks of lunar impact craters. More than 200 craters have been studied and the survey has made a strong case for better models to understand the formation of central peaks. The team also made systematic topographical surveys of lunar poles to ascertain the role of elevation differences in volatile accumulation and long-term preservation. The study has demonstrated that spatial differences in volatile distribution on the poles is strongly affected by topographic shields of permanently shadowed regions (PSRs).

In another direction, in order to understand the context of Mg-Spinel exposures in the South Pole Aitken (SPA) basin and link to its origin the group used integrated spectral and high-resolution imaging datasets. This study has provided critical insights into the origin of Mg-Spinel in terms of its timing and potential mode of formation. Further, the study has also led to the identification of Mg-Spinel in association with pyroxene, a previously unreported assemblage.