



Study of the central part of Mare Moscoviense by combining near-infrared spectrometer, SIR-2 and Hyper Spectral Imager (HySI) data onboard Chandrayaan-1

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The impact basins on lunar surface act as a window into the lunar interior and allow investigations of the composition of lower crust and upper mantle. Mare Moscoviense is one of the oldest impact basins on the far side of the Moon. We report on our preliminary analysis conducted in the central region of Mare Moscoviense using the near-infrared spectrometer, SIR-2 data in combination with the Hyperspectral Imager (HySI) data from the Chandrayaan-1 mission.

SIR-2 is a compact, monolithic grating type point spectrometer which collected data with high spatial resolution (~ 200 m) and spectral resolution (6 nm) at wavelengths between 0.93 to $2.41 \mu\text{m}$. The Indian HySI instrument mapped the lunar surface in the spectral range of 0.42 to $0.96 \mu\text{m}$ in 64 contiguous bands with a spectral bandwidth ~ 20 nm and spatial resolution of 80 m.

We will explain the method of combining the response of SIR-2 and HySI to get a complete spectral coverage from 0.42- $2.40 \mu\text{m}$ with high spatial and spectral resolution. We compare average reflectance spectra for spatially, spectrally and compositionally varying areas with the published literature.