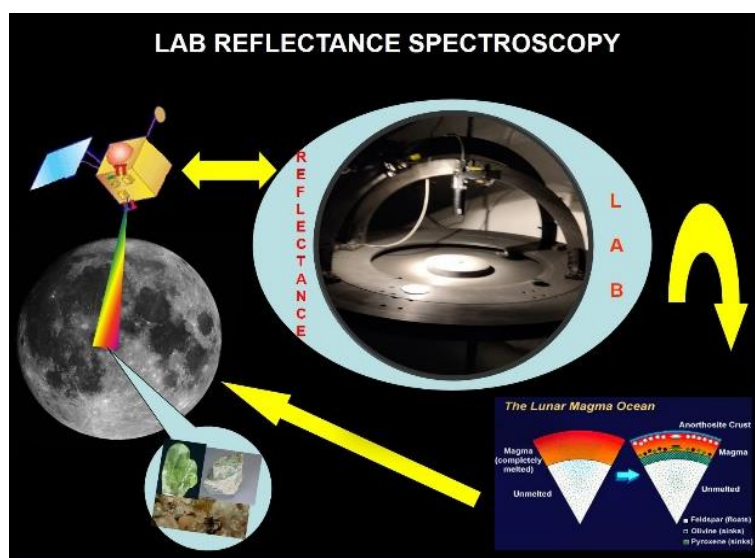


Planetary Remote Sensing Laboratory

Physical Research Laboratory, Thaltej Campus, Ahmedabad

Have you ever wondered why leaves appear green? The fundamental lies in how light interacts with it. This simple phenomenon lays the basis of an incredibly powerful tool *Reflectance Spectroscopy*, which is widely used for finding out the composition of distant and inaccessible planetary targets such as the Moon, Mars & Asteroids, from a distance. Various ongoing & recently concluded missions such as Chandrayaan-2 (2019), Chandrayaan-1 (2008), Dawn (2007), Mars Reconnaissance Orbiter (2005), and Rosetta (2004) carry either one or a suite of reflectance spectrometers. Thus, a wealth of data exists and significantly more will be available in the near future from upcoming planetary missions of ISRO and other space agencies.



Interpretation of these remotely acquired spectral reflectance data is a complicated task due to lack of ground truth and numerous parameters that influence reflectance values such as Grain size, Viewing geometry, Mineral Mixtures, Space Weathering & Environmental composition. Thus, it is imperative to carry out intensive laboratory spectral reflectance studies of planetary samples and analogues under simulated conditions and model their scattering behaviour to aid in analysing the Remote Sensing data from Planetary Missions.

At the Planetary Remote Sensing Laboratory, Thaltej campus, PRL we carry out:

- Reflectance Spectroscopy of meteorites, returned planetary samples and their terrestrial analogues in the UVVISNIR spectral range (350-2500 nm) under simulated conditions
- Analysis of existing Planetary Remote Sensing datasets from missions of ISRO and other space agencies to understand the various planetary processes such as impact cratering, volcanism, tectonism, space weathering etc.