

Mini-RF

Hybrid polarity radars to look for ice deposits near the lunar poles

- Chandrayaan-1, launch March 2008
 - S-band SAR 75 m/pix regional mapping 80°-~88°
 - Scatterometry to cover polar gap at ~500 m/pix
- LRO, launch October 2008
 - S & X bands, 75 m/pix and 15 m/pix resolutions
 - Targeted acquisition, 20 SAR strips
 - Continuous burst mode permits topography generation using interferometry and SAR stereo techniques

Lander Mission Options

- **Measurements**

- Lighting conditions
- H and other volatile content in regolith
- Chemistry / mineralogy of regolith
- Physical properties of regolith
- Surface Morphology
- Levitated dust
- Radiation shielding properties of regolith
- Surface charging phenomena
- Chemical reactivity & toxicology

- **Instruments / Mechanisms**

- Mast-mounted imager
- Volatile analysis (e.g., GCMS)
 - Sample acquisition
 - Drill or scoop on arm
- Neutron spectrometer
- XRD/XRF
 - Arm deployment
- Geotech implements
 - Arm or drill deployment / exchange
- Langmuir probe
- Microscopic imaging
- Miniature chemical lab