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Indian Lunar Mission Chandrayaan-1

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Chardrayaan-1 is India's first mission to the Moon. It is devoted to simultaneous high-resolution mineralogical, elemental, and photo-geological mapping of the lunar surface in the visible, infrared, X-ray and low energy gamma ray wavelength regions. Chardrayaan-1 will be launched in 2007-2008 using an indigenous spacecraft and the Polar Satellite Launch Vehicle (PSLV) of the Indian Space Research Organisation (ISRO), and will be placed in a 100-km lunar polar orbit. It will have an operational life of 2 years. A truly international mission, it will carry experiments from Indian, Germany, Sweden, UK, Bulgaria, and USA, and involve participation from Japan, Switzerland, and a few other nations. Its complement of instruments include the Terrain Mapping stereo Camera (TMC), Hyper Spectral Imager (HYSI), Lunar Laser Ranging Instrument (LLRI), Low Energy (0.5-10 keV) X-ray spectrometer, Solar X-ray Monitor in the 2-10 keV energy range, High Energy (10-200 keV) X-ray/gamma-ray spectrometer (HEX), Miniature Synthetic Aperture Radar (Mini-SAR), Near-Infrared Spectrometer (SIR-2), Sub-KeV Atom Reflecting Analyzer (SARA), Solar Wind monitor (SWIM), Moon Mineral Mapper (MMM), and Radiation Dose Monitor (RADOM). Chandrayaan-1 mission will also carry an impactor called Moon Impactor Probe (MIP), which will be released from spacecraft to impact the Moon after the required lunar orbit of 100 km is achieved. The MIP carries a mass spectrometer, radar altimeter and a camera.