Geophysical Research Abstracts, Vol. 9, 10425, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-10425

SIR-2 on Chandrayaan-1

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Chandrayaan-1, the first Indian interplanetary satellite, to be launched early in 2008, will orbit the Moon in a 2-year long science mission with a payload of 11 well-integrated instruments, to provide global chemical and mineralogical maps at high spectral and spatial resolution. Among the payload are three spectrometers covering 0.4 to $3\mathrm{g}\mu$m, expected to provide information on the distribution of the major minerals of the lunar crust. Among them is the SIR-2 compact grating, near-infrared spectrometer, which covers the wave-length range between 0.9 and 2.4 μm, with a spectral resolution of Delta lambda $_{pixel}$ = 6 nm. The SIR-2 NIR data, combined with the hyperspectral data from the HySI instrument on Chandrayaan-1, will provide, for the first time, a full spectral coverage of the olivine and large part of the pyroxen bands from orbit, thus allowing one to extract from the data the necessary input parameters for the mineralogical mixing models. We present the SIR-2 design and discuss the potential science.