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Monitoring of time variation of the Martian environment by MTO/MIC-II

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The Mars Imaging Camera (MIC-II) for the Mars Telecommunications Orbiter (MTO) is specifically designed to investigate seasonal and annual variations within the Martian climate system, to study short-term changes in the Martian surface and ice caps, and to study the distribution and evolution of interplanetary dust in the vicinity of Mars. NASA MTO is one of series satellites to explore Mars, and will be launched in 2009. The primary goal of MTO is to evaluate communication technologies for future missions to Mars, as well as to provide high speed data relaying for the planned sites on Mars. MIC-II will take great advantage of the long lifetime (11 years), and very high data rates to provide continuous monitoring of the planet in three colors (blue, green and red), of the scattered light from the dust around the planet. A polarization measurement in one color (green) is under consideration for an optional function. The camera is designed to employ three CCDs, which is developed for PLANET-C/VCO mission, for the three bands to realize long lifetime without mechanical troubles. We present current studies on design of the instrument and the observational plan.
MIC-II will be proposed to NASA in conjunction with an atmospheric thermal infrared sounder which will be provided by US team, to provide a comprehensive investigation of long-term variation of the Martian environment.