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

Tadashi Mukai[1]; Munetaka Ueno[2]; Takeshi Imamura[3]

[1] Earth and Planetary System Sciences, Kobe Univ; [2] Dept. of Earth Sci. and Astron., Univ. of Tokyo; [3] ISAS/JAXA

NASA Mars Telecommunications Orbiter (MTO) is one of series satellites to explore Mars, and will be launched in 2009. The primary goal of MTO is to test communications technologies for future missions to Mars as well as to provide high rate data relaying for the planned sites on Mars.

The Mars Imaging Camera (MIC-II) for the 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. MIC will take advantage of the long lifetime(11 years) and very high data return rates planned for MTO in order to provide continuous monitoring of the planet in three colors(blue, green and red), of the scattered light from dust around the planet. A polarization observation in one color is optionally planned. MIC will be proposed to NASA in conjunction with a US-provided atmospheric thermal infrared sounder, to provide a comprehensive investigation of long-term changes of the Martian environment.