

The Mars Science and Telecommunications Orbiter

Daniel Winterhalter, Daniel McCleese, and Tom Komarek

Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California, USA

The new Mars Science and Telecommunications Orbiter (MSTO) is a major infrastructure component planned for the next decade of Mars exploration. MSTO is now in the pre-phase-A planning stage, on track for NASA approval and for launch in 2011 or 2013. It is to provide a combination of science and telecommunications capabilities over nearly a full solar cycle (≈ 11 years). The science emphasis of the mission is to study the atmosphere of Mars: its present state and inventory, escape mechanisms, and its evolution. The telecom aspect is to support present and future assets on the surface and in orbit.

MSTO will be a Mars Reconnaissance Orbiter (MRO)-class spacecraft, a very capable system with flexible orbital geometries that provides access for both in situ and remote sensing instrumentation over an extended time period (i.e., an 11-year solar cycle). This paper will present the aspects of the mission, and hopes to engender discussion and suggestions as to the potential for international collaboration offered by MSTO.