

Observations of Martian Clouds in the Polar Regions with THEMIS on board Mars Odyssey

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Many clouds and dust plumes have been observed in the Mars polar regions by the Mars Odyssey Thermal Imaging System (THEMIS) during the first mapping year. Some of the clouds have clear edges that do not appear to be limited or constrained by topography. Another type of clouds is formed in association with troughs. Wave-pattern clouds are commonly seen there as previous missions have shown. Dust plumes were captured near the southern permanent polar cap in summer. They have distinctive roll features indicating the mixing turbulence pattern in the boundary layer when a strong wind is active. The typical spacing of the rolls is about 650-700 m. We will present a map of cloud / plume types and their characteristics.