

Methane observations of Mars, interpretation and further work

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The detection of methane on Mars has been reported by several teams, in some cases tentatively, using both space and ground-based measurements. Krasnopolsky et al. (Icarus 172, 537, 2004) reported a mean CH₄ mixing ratio of 10 ppb, from ground-based near-IR measurements. Using PFS aboard Mars Express, Formisano et al. (Science 306, 1756, 2004) announced possible variations over the disk with a maximum mixing ratio of 35 ppb. From high-resolution imaging spectroscopy, Mumma et al. (BAAS 36, 1127, 2004) reported the detection of localized hot spots with maxima as high as 250 ppb. These hot spots however were not confirmed by further PFS observations (Encrenaz, AGU, December 2005), which might imply a temporal evolution of these features. This talk will review recent observations devoted to the search for methane, and will discuss possible interpretation and further work.