



The variation of Venus cloud investigated from SOIR onboard Venus Express

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The Venus cloud consists of a main cloud deck at 47 – 70 km, with thinner hazes above and below. The upper haze on Venus lies above the main cloud surrounding the planet, ranging from the cloud top (70 km) up to as high as 90 km.

The Solar Occultation in the InfraRed (SOIR) instrument onboard Venus Express (ESA) was designed to measure the Venusian atmospheric transmission at high altitudes (65 – 220 km) in the infrared wavelength range (2.2 – 4.3 μm) with a high spectral resolution. In Takagi et al. (2019), the optical properties of Venus's haze layer above 90 km have been investigated using SOIR observations. Vertical and latitudinal profiles of the extinction coefficient, optical thickness, and mixing ratio of aerosols are retrieved.

A new cloud model was constructed based on the results of Takagi et al. (2019). In this presentation, I will show the results of a radiative transfer calculation (in the near-infrared region) that incorporates a new cloud model and discuss the meteorological changes that contribute to cloud variation. Furthermore, I will introduce Venus observation plan using the 1.6 m Pirka telescope and Multi-Spectral Imager (MSI) [Watanabe et al., 2012] mounted on the Cassegrain focus of the telescope at the Nayoro Observatory of Hokkaido University.