

Variation of Cloud Opacity on Night-side Disk of Venus

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Night-side hemisphere of Venus exhibits dark and bright regions as a result of spatially inhomogeneous cloud opacity which is illuminated by infrared radiation from deeper atmosphere. The 2- μm camera (IR2) onboard Akatsuki, Japan's Venus Climate Orbiter, is equipped with three narrow-band filters (1.735, 2.26, and 2.32 μm) to image Venus night-side disk in well-known transparency windows of CO₂ atmosphere (Allen and Crawford 1984). We analyzed Akatsuki/IR2 images to study spatial variations of cloud opacity over the night-side disk of Venus. The images are firstly corrected for the point spread function (PSF) by deconvolution. Then, obtained "true" radiance is inverted to cloud opacity by referring to the radiative transfer computations. We discuss spatial and temporal variations of cloud opacity as well as the implication to the atmospheric dynamics.

Keywords: Venus night-side disk, Near-infrared windows, Cloud opacity