

Fine vertical structure of Venus upper haze as revealed in Akatsuki/IR2 limb images.

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Akatsuki observes Venus from an elongated elliptical orbit (an orbital period is ~11 earth days). Since this orbit receives strong perturbation by the sun's gravitation, the peri-center distance from Venus fluctuates. On 30 October 2016, when the spacecraft is near the peri-center (~8200 km from the center of Venus), limb observations were carried out with onboard cameras. IR2 captured Venus limb images at 2.02-micron and detected a step-like intensity variation of the upper haze at the limb. The image indicates existence of approximately 6-pixel (or ~7 km) wide vertical structure at the planetary limb. By correcting for the IR2 point-spread function, we discuss the vertical aerosol structure (number density and scale height) in the upper atmosphere.

Keywords: Limb observation, Venus upper haze, Near infrared