

Ground-based near-infrared(1.27um) observation of the Venus nightside from OAO

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In visible light H₂SO₄ cloud prevent our observation of Venusian lower atmosphere, but there are some windows in near-infrared light. The 1.31um window includes an O₂ IRA(0,0) 1.27um airglow feature in addition to a thermal emission from the lower atmosphere (altitudes 15km-30km). It is thought that the atomic oxygen generated in dayside upper atmosphere is transported to the nightside hemisphere and downwells to recombine at around 90km.

In this study, we examine the dynamics and chemistry of Venusian atmosphere by analyzing the data obtained from ground-based observation.

We executed ground-based near-infrared observations of Venusian atmosphere at Okayama Astrophysical Observatory(OAO) on December 2-11,2002. We obtained 2-dimensional spectroscopic information of the disk by imaging spectroscopy in the 1.3um window.

It is possible to evaluate the time variation of the latitude/longitude distribution of O₂ airglow. From absolute value of spectral intensity, we can discuss about excitation mechanism of the 1.27um airglow in the Venusian atmosphere.