

## Ground-based observation of Venus and the survey of CO mixing ratio under the cloud

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Venus is covered by the dense CO<sub>2</sub> atmosphere, and at the height in 50-70km, there are cloud layers of H<sub>2</sub>SO<sub>4</sub> particles. To study the chemical and the dynamics of the lower Venusian atmosphere, we can use the information from the 'window's of Near IR. Our group observed the night side of Venus through these NIR windows in Okayama Astrophysical Observatory(OAO) on December.2-11.2002. The topics of our observation were 2 dimensional mapping of Spectroscopy data and the research of time variation of each day's data set. The wavelength resolution is 500. The spatial resolution is around 500-1000km(maximun:360km) at Venus surface.

In this study, we show the data of K-band(2.30um) and discuss variation of CO existence in longitude and latitude.

Inside of K-band window, there is a strong absorption of CO(2.32um). After removing the effect of cloud thickness, we can observe the CO distribution of the whole night side. We found that there is less CO in the equatorial zone, and there should be a large scale transportation like meridional circulation. Discussing the mechanism of CO transportation is very important to make a full disclosure of the dynamics of Venusian atmosphere.