

## The Clouds of Venus – an overview of Venus Express results

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### Abstract

Venus is completely enveloped by clouds. The main cloud layers stretch from altitudes of 48 – 75 km, with additional tenuous hazes found at altitudes 30 – 100 km. Clouds play a crucial role in governing atmospheric circulation, chemistry and climate on all planets, but particularly so on Venus due to the optical thickness of the atmosphere. The European Space Agency's Venus Express (VEx) satellite has carried out a wealth of observations of Venus clouds since its arrival at Venus in April 2006. Many VEx observations are relevant to cloud science – from imagers and spectrometers to solar, stellar and radio occultation – each covering different altitude ranges, spectral ranges and atmospheric constituents.

We have formed an International Team at the International Space Science Institute to bring together scientists from each of the relevant Venus Express investigation teams as well as from previous missions, as well as those developing computational and analytical models of clouds and hazes. The aims of the project are (1) to perform intercomparisons of cloud parameters measured using different

techniques, (1) to create self-consistent reference cloud/haze models which capture not only a mean cloud structure but also its main modes of variability; and (2) to bring together modelers and observers, to reach an understanding of clouds and hazes on Venus which matches all observables and is physically consistent.

This talk will present an overview of Venus Express cloud observations of all different types, and discuss progress towards a new reference cloud model to be submitted to an update of the Venus International Reference Atmosphere.

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