



Preliminary Interpretation of Surface Observations with VIRTIS on Venus Express

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Through narrow spectral regions at 1.02, 1.10 and 1.18 μm thermal emission from the surface of Venus escapes into space, carrying with it information about its source.

Since orbit insertion in April 2006 VIRTIS on Venus Express is mapping this radiation using nightside observation of Venus. While the atmospheric windows show little CO_2 absorption, the radiance from the surface is still affected by scattering in the clouds. This effect varies based on the optical thickness of the clouds.

We present a data processing pipeline for the VIRTIS-M data which corrects for various atmospheric effects, incl. limb darkening, scattered sunlight, etc and provides a 'declouding' algorithm that retrieves surface information from VIRTIS multispectral infrared images. Using this pipeline we have mapped the southern hemisphere of Venus and will present a preliminary interpretation of the results.

This interpretation includes correlation with Magellan radar altimetry and microwave emissivity as well as a search for systematic variation of surface emissivity with morphological features such as tesserae, coronae or plains. An upper limit of transient temperature anomalies observed in the areas covered by VIRTIS during several consecutive orbits will be given.