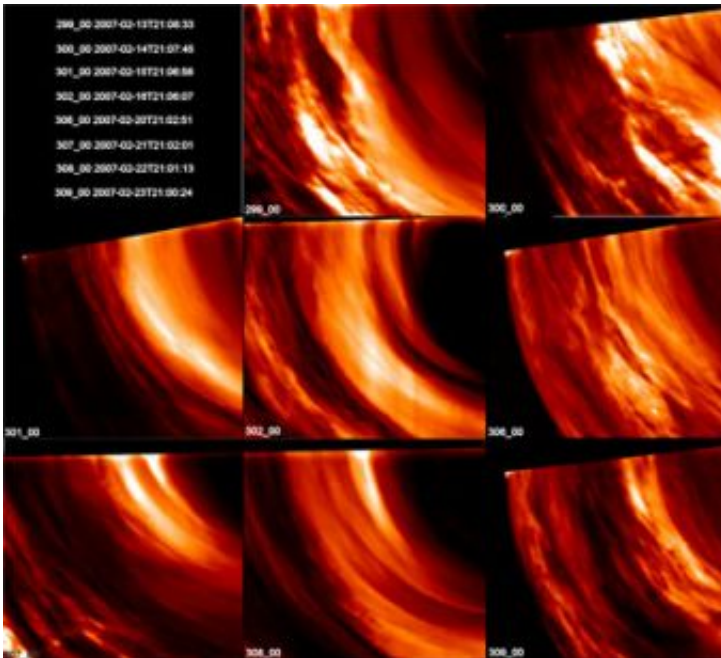


# 500 days at Venus, and the surprises keep coming

September 3 2007



These images were taken in eight orbits within 10 consecutive Earth days (between orbits 299 and 309) with VIRTIS, in February 2007. The chosen wavelength was approximately 2.3 micrometres. The images were all taken on the night side, in the evening sector. The quarter that is observed is that which is experiencing late evening, or pre-midnight hours. It should be taken into account that Venus rotates very slowly as compared to Earth (one venusian day is 243 Earth days). The distances from the spacecraft to the region observed span 50 000 to 65 000 km. The contrast seen results from deeper cloud layers, at an altitude of about 50 km. The south pole is just outside the image, in the upper right hand side. It seems that the mid latitudes form a sort of transition region with mostly laminar flow. Moving equatorward, there is more convective flow in the atmosphere, whereas the polar region or the 'black hole' in the upper right hand side is where the vortex dominates. The meteorology of the planet, also its

deep atmosphere, is highly variable. The images in the bottom row as well as the leftmost image in the middle row show laminar flow. The rest of the images show turbulent flow. Intense, bright colours show less cloudy areas, while darker, black areas, show more cloudy regions. This is because radiation coming from hotter regions below the clouds is blocked by thicker clouds. Credits: ESA/VIRTIS/ INAF-IASF/ Obs. de Paris-LESIA

Venus Express has now orbited Earth's twin for 500 Earth days, completing as many orbits. While the satellite maintains steady and excellent performance, the planet continues to surprise and amaze us.

In spite of experiencing a challenging environment, Venus Express is in an excellent condition. It receives four times the amount of solar radiation as compared to its sister spacecraft, Mars Express, but modifications to the spacecraft design have worked just as intended and operation has been very stable.

Many different activities transpire on board with each orbit: instruments are switched on and off, they change modes and targets and the spacecraft checks out and monitors its subsystems more or less continuously. The few anomalies that occurred were quickly resolved by vigilant spacecraft controllers.

An impressive amount of data - about 1 Terabits, or one million million bits - has been transmitted to Earth over the first 500 days.

Håkan Svedhem, Venus Express Project Scientist says, "The scientists analysing the data have a challenging but exciting task ahead." They will have to archive the data and extract the most important detail from this immense collection of images, spectra and profiles of temperature, pressure and chemical composition.

Some of the first detailed analyses are now being completed and will soon be published in acclaimed scientific journals. Among many other findings that have surprised scientists, Venus' atmosphere seems extremely fickle. Recent observations with the Visible and Near-Infrared Mapping Spectrometer (VIRTIS), the atmospheric structure changes quite rapidly, from day to day.

Source: ESA

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