

## Unveiling Venus — The ESA Venus Express Mission

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The Venus Express spacecraft was launched by a Soyuz-Fregat launcher from Baikonur, Kazakhstan, on November 2005. After a 5 months cruise phase, Venus orbit insertion will take place in April 2006, followed by a nominal operational phase of two Venus sidereal days (486 Earth days) and a possible extension of another two Venus days. The mission main objectives are to study the atmosphere, the plasma environment and some surface properties, both on a global scale and on a detailed level at regional scales. The orbit will be highly elliptical polar orbit. It is optimized for remote observations at a global level from high altitude, and detailed studies of the northern hemisphere from low altitude, both at varying solar angles. The payload is optimized for studies of the physics and chemistry of the atmosphere and the clouds and the related circulation at an unprecedented level. This talk will give an update on the status of Venus Express and will give some detailed insight in the first time a systematic study of the surface of Venus using the near-infrared atmospheric windows. While the flybys of Galileo and Cassini have shown that the principle of using atmospheric windows to study surface variations is sound, VIRTIS on Venus Express will for the first time do a systematic surveyor of a large percentage of the surface of Venus. This dataset will be highly complementary to the existing data from surface investigation using radar and from the in-situ measurements at the landing sites. An integration of these datasets will significantly improve our understanding of the evolution of the surface of Venus.