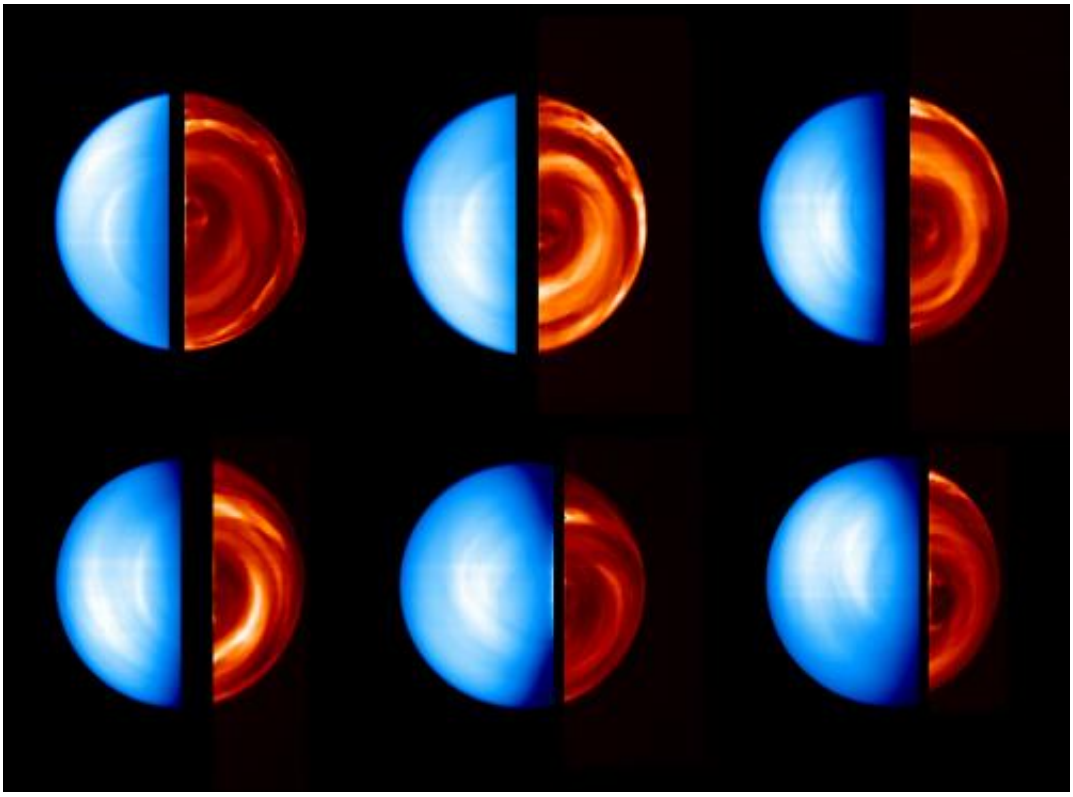
Views of Venus day and night side

May 19 2014



Credit: ESA/VIRTIS/INAF-IASF/Obs. de Paris-LESIA

This sequence of images was taken by the Ultraviolet/Visible/Near-Infrared spectrometer (VIRTIS) on board ESA's Venus Express spacecraft between 12 and 19 April 2006, during the first orbit (capture orbit) around the planet.

The images were obtained at six different time slots and different

distances from the planet (top left: 12 April, from 210 000 kilometres; top centre: 13 April, from 280 000 kilometres; top right: 14 April, from 315 000 kilometres; bottom left:16 April, from 315 000 kilometres; bottom centre: 17 April, from 270 000 kilometres; bottom right: 19 April, from 190 000 kilometres), while the spacecraft moved along a long ellipse around Venus.

Each image is the composite of the day side of Venus (left, in blue, taken in visible light at 380 nanometres) and the night side (right, in a red colour scheme, taken in infrared light at 1.7 microns).

The visible part shows solar radiation reflected by the atmosphere. The infrared part shows complex cloud structures, revealed by the thermal radiation coming up from different atmospheric depths. Venus Express can resolve these structures by use (for the first time from orbit) of the so so-called 'infrared windows' present in the atmosphere of Venus. In fact, if observed at certain wavelengths, it is possible to detect thermal radiation leaking from the deepest atmospheric layers, revealing what lies beneath the dense cloud curtain situated at about 60 kilometres altitude.

In the colour scheme of the presented infrared images, the brighter the colour, the more radiation comes up from the lower layers.

Provided by European Space Agency