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Venus Atmospheric Circulation from VMC Images

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The Venus Monitoring Camera on Venus Express has been returning images of Venus in four filters since April 2006 on almost every orbit. These images portray the southern hemisphere of Venus at spatial resolutions ranging from $\sim$ 50 km per pixel to better than $\sim$ 10 km per pixel depending on when the planet was imaged from orbit. Images covering a substantial portion of the planet and separated by $\sim$ 45 min to one hour have been mapped into rectilinear projection to enable use of digital tracking technique for the measurement of cloud motions on an orbit by orbit basis. The aggregate results are in good agreement with visual tracking results as well as from the previous missions and show evidence of temporal variations, large scale waves and solar thermal tides.

A vortex organization is evident in the data consistently, with the core region centered over the pole. The images show variability in structure of the ultraviolet signature of the “S” shaped feature seen in the VIRTIS data on the capture orbit.