



## **MESSENGER and Venus Express observations of the near-tail of Venus: Magnetic flux transport, current sheet structure, and flux rope formation**

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At 23:08 UT on 5 June 2007 the MESSENGER spacecraft reached its closest approach altitude (338 km) during its second flyby of Venus en route to its 2011 orbit insertion at Mercury. Whereas no measurements were collected during MESSENGER's first Venus flyby in October 2006, the Magnetometer (MAG) and the Energetic Particle and Plasma Spectrometer (EPPS) operated successfully throughout this second encounter. Venus provides the solar system's best example to date of a solar wind - ionosphere planetary interaction. We present MESSENGER observations of the near-tail of Venus with emphasis on determining the time scales for magnetic flux transport, the structure of the cross-tail current sheet at very low altitudes ( $\sim 300$  to 1000 km), and the nature and origin of a magnetic flux rope observed in the current sheet. The availability of the simultaneous Venus Express upstream measurements provides a unique opportunity to examine the influence of solar wind plasma and interplanetary magnetic field

conditions on this planet's solar wind interaction at solar minimum.