



Present Status and Future of Venus Express and Results from Atmospheric Drag measurements

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Venus Express has now been in its 24 hour polar orbit around our neighbour planet for six years since arriving at Venus in April 2006. The spacecraft and its scientific instruments are in an excellent condition barring a few items that have reached their end of life. The fuel situation is good and it is expected that the supply will last until at least early 2015 and possibly longer. From the six active instruments on board well above 3 Tbit data has been down-linked to ground. The Venus Express team has prepared for several new types of observations during the last years, including aerodrag measurements that started in 2009, solar spectral scans that started in 2011 and airglow measurements on the dayside that will start in 2012. Original observation plans for 2011 included exciting and unique joint measurements with the Akatsuki mission, but due to the unfortunate failure during its orbit insertion plans had to be changed. The atmospheric drag measurements have been performed during seven dedicated campaigns, when, due to solar gravity perturbations of the orbit, the pericentre altitude has reached levels below 200km and as far down as 165km. These measurements have revealed a much less dense atmosphere at the polar latitudes than what existing models predict. In addition the density seems to vary up to a factor three in a semi periodic manner. The mechanism causing this variation is not yet understood but it is possible that waves propagating from the polar vortex far below have some influence.