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The Venus Express Mission

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The Venus Express spacecraft, presently in its final testing phase, will be launched from Baikonur, Kazakstan, on 26 October 2005. The mission main objectives are to study the atmosphere and the plasma environment and some properties of the surface of Venus both on a global level and on a detailed regional level. 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 orbit will be a highly elliptical polar orbit. It is optimised for remote observations at a global level from high altitude, and detailed studies of the northern hemisphere from low altitude, both at varying solar aspect angles. It will also allow for in-situ plasma measurements covering a large range of distances from the planet. The payload is selected for studies of the physics and chemistry of the atmosphere and the clouds and the related circulation at an unprecedented level. The interaction of the upper atmosphere with the solar wind will be investigated by dedicated instruments. With a time from the mission approval to the launch of just above three years this mission by far is the fastest scientific mission undertaken by ESA until now. This has been possible due to the re-build, with only minor modifications, of the Mars Express spacecraft, which in turn re-uses many of the Rosetta subsystems, and by using largely the same experienced teams from ESA and the industry. The scientific instruments are, in most cases, based on selected instruments from Mars Express and Rosetta. This talk will focus on the mission design and the key features of the spacecraft and its payload. A summary of the actual development status will be given.