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## AKATSUKI return to Venus

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ISAS/JAXA launched the Japanese Venus Climate Orbiter AKATSUKI on 21st May, 2010 and it reached Venus on 7th December, 2010. The Venus Orbit Insertion (VOI) process, however, was unsuccessful due to the malfunction of one of the check valve upstream of the fuel line. Not enough He gas pressure was supplied to the fuel, and the oxidizer was too rich in the combustion chamber. Such condition caused some problem in the Orbit Maneuver Engine (OME) and the VOI was canceled 158sec after the OME was started. This caused AKATSUKI to be on the orbit around the sun again, not around Venus.

Even we were unsuccessful in the first VOI operation of AKATSUKI, AKATSUKI is flying in a very healthy condition. We will keep the spacecraft condition as best as we can, and are going to put it into the orbit around Venus in a several years. In this talk we will describe more detail of the orbit maneuver plan to Venus, and how to operate the spacecraft even having the malfunctioning check valve at the next VOI operation. Such operation is very critical, but ISAS will do its best to make AKATSUKI return to Venus. We never give up to achieve the scientific goal which we set when we proposed this mission in 2001.

Keywords: AKATSUKI, Venus, Exploration