

SPACE EXPLORATION SYMPOSIUM (A3)  
Poster Session (P)

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## OVERVIEW OF INTERPLANETARY MISSIONS IN AIRBUS DEFENCE AND SPACE

**Abstract**

Since more than ten years, Mars Express, the first European planetary exploration mission, is orbiting around the Red Planet and provides the scientific community with world-class Mars scientific data. Since April 2006, the Venus Express spacecraft is orbiting around Venus, and provides continuously outstanding scientific observations of its violent atmosphere. The spacecraft is very similar to Mars Express, modified mainly to cope with the much hotter thermal environment at Venus. After more than ten years of interplanetary cruise, the comet chaser Rosetta has awoken in January 2014 from its long hibernation period, and is heading for its target comet Churyumov - Gerasimenko. At the time of the IAC, the spacecraft will have released its small lander Philae onto the comet's icy nucleus. Following this series of three interplanetary missions, the European Agency pursues the exploration of our solar system. The BepiColombo mission to Mercury is presently in phase C/D, aiming at a launch in 2016. Applying the missions' family approach implemented with Rosetta, Mars Express and Venus Express, ESA has undertaken the development phase of Solar Orbiter, a spacecraft to explore the sun and the heliosphere at short distances (0.3 AU), and hence borrowing key technologies from BepiColombo. The next ESA interplanetary mission from the Cosmic Vision programme is JUICE (Jupiter Icy Moon Explorer), presently under phase A/B1 study, and aiming at entering the development phase in 2015 for a launch in 2022. The paper proposed will provide the latest status on the missions either in-orbit or in development, and give a perspective for the new generation of interplanetary missions, implementing lessons learnt from previous and on-going developments.