

SPACE EXPLORATION SYMPOSIUM (A3)  
Small Bodies Missions and Technologies (4)

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COSAC PREPARES FOR IN SITU ANALYSIS OF COMETARY MATTER FROM COMET  
67P/CHURYUMOV-GERASIMENKO**Abstract**

The Comet Rendezvous mission Rosetta is set for a rendezvous with Comet 67P/Churyumov-Gerasimenko in summer 2014 after a 10-year journey. The mission goal is to study the origin of comets, the relationship between cometary and interstellar material and its implications for the origin of the solar system. In November 2014 the lander Philae will be deployed onto the comet nucleus and will study cometary nucleus material in situ for the first time, examining its composition and structure with a set of 10 science instruments. Onboard Philae is the Cometary Sampling and Composition experiment (COSAC) that will perform molecular and chiral analysis and will measure volatile organic and inorganic compounds in the nucleus material. Data from the COSAC instrument are expected to provide important insights into the

early history of our solar system and contribute to the inventory of small bodies that have seeded the early Earth through impact. We report on the calibration of the COSAC instrument, laboratory measurements on cometary analog material as well as the preparation for COSAC operations on the comet nucleus.