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The Rosetta Science Archive: Status and Plans for Completing and Enhancing the Archive Content

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On 30 September 2016, Rosetta completed its incredible mission by landing on comet 67P/Churyumov-Gerasimenko. Although this marked an end to the spacecraft's operations, intensive work is ongoing with the instrument teams updating their science data in response to recent scientific reviews and delivering them to ESA's Planetary Science Archive (PSA). In addition, ESA is working with the instrument teams to produce new and enhanced data products and to improve documentation, aiming to provide the best long-term archive possible for the Rosetta mission.

The majority of teams have now completed their nominal science data deliveries from the comet phase, and were able to deliver samples of new/improved data from their enhanced archiving activities for the recent review. The aim is to to complete any updates requested and deliver final products by the end of March in preparation for another scientific review in May. This final review will assess the complete Rosetta data holdings, and closely review the updated outputs from the enhanced archiving activities.

With the resources from the operational mission now finished, ESA has established a number of activities with the Rosetta instrument teams to allow them to continue working on enhancing their archive content. The updates are focused on key aspects of an instrument's calibration or the production of higher level data / information, and are therefore specific to each instrument. Several of these activities have already been running in 2017/2018, and some extended activities are now being kicked off. The full 'archive enhancement' process will run until December 2019, when the post operations activities will end.

As part of these activities, most instrument teams have provided a Science User Guide for their data, and many have updated their calibrations to deliver higher level and/or derived products. For example, the VIRTIS team will update both their spectral and geometrical calibrations, and aim to deliver mapping products to the final archive. Similarly, OSIRIS have started producing data with improved calibrations, and new geo-referenced derived data. They also now deliver data additionally in FITS and JPG formats. The Rosetta Plasma Consortium instruments will complete cross-calibrations and a number of activities individual to each instrument. The MIDAS team have produced a dust particle catalog from the comet coma. GIADA are producing dust environment maps with omni-directional products. COSIMA recently delivered laboratory data to help understand their inflight measurements. An activity is also ongoing to produce data set(s) containing supporting ground-based observations of the comet.

In addition to these activities, the Rosetta ESA archiving team aim to produce calibrated data sets for the NAVCAM instrument, and will include the latest shape models from the comet in the final Rosetta archive. Work is also underway to incorporate the radiation monitor data (SREM) into the archive as well as to provide a centralized solution to the problem of geometry on the comet.

This presentation will outline the current status of the Rosetta archive, and highlight some of the 'enhanced archiving' activities underway.