

MMX samples curation in Europe

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In 2024 the Martian Moons eXploration (MMX) mission from JAXA will be launched to the Martian Moons Phobos and Deimos to investigate their nature and improve our understanding about their formation. In 2029 samples from Phobos will be returned back to Earth as MMX is the latest JAXA's sample return mission. Samples returned to Earth by the MMX mission will be retrieved by JAXA and transferred to the JAXA ISAS Sample receiving laboratory for initial description, followed by initial proprietary analyses performed by the MMX Science Sub-Teams (SSTs), which will include a number of ESA-appointed MMX participating scientists from ESA Member States. The duration of these activities is determined by the MMX Sample Allocation Committee (SAC), and it is estimated to last approximately one year. It is planned that JAXA will thereafter transfer an allocation of samples to ESA for use by scientists and laboratories in the ESA Member States. Sample Curation Facilities (hereafter SCFs) at the German Aerospace Centre (DLR) and at the National Centre for Space Studies (CNES) will host and handle the MMX Samples provided to the ESA Science Program. After transfer to the SCFs the samples will be catalogued (if not done by JAXA) in preparation for an ESA Announcements of Opportunity (AOs) to allocate the Samples to scientists and laboratories in the ESA Member States.

In preparation to this major effort, we are working on the setup of an analytical and curation facility in Berlin, in cooperation between the DLR and the Museum für Naturkunde (MfN). Within the analytical facility it will be possible to carry out the basic characterization of the samples in controlled environmental conditions, for then being able to move on to more specialized facilities for more in depth examination. The curatorial expertise is being developed on the existing expertise from the Meteorite Collection based at the MfN and in collaboration with the JAXA curation facilities. Current curators, together with the younger generation are being trained and working on skillset exchange.