On the morning of April 7, the seismic survey between the islands of Nisyros, Kos, and Yali concluded. A demanding workday lay ahead for the geology team. A total of five gravity coring stations were conducted. The aim of the sediment sampling was to collect deposits



from eruptions of the surrounding volcanoes. An initial inspection made us optimistic that we would be able to reconstruct the activity of these volcanoes more accurately in the future.

After the final station in the afternoon, we began a roughly five-hour transit to the working area around Santorini. For most of this transit and until the early afternoon of April 8, we towed a magnetometer. Since cooled magma in the subsurface exhibits different magnetic signatures compared to the surrounding rock, such measurements help us identify magma chambers underground.

In the afternoon, we commenced the final seismic survey program. The measurements northeast of Santorini are of particular interest, as earthquakes have been notably concentrated in that area since the beginning of the year. The subsequent data analysis onshore will hopefully allow us to determine whether the earthquakes have altered the subsurface topography.



Maria S. Merian in Santorini caldera. Foto: C. Hübscher

On April 9, we shifted our working area to the Christiana Basin southwest of Santorini. There, we searched for the so-called Archaeos Caldera. Previous studies indicate that a supervolcano erupted there over 700,000 years ago, ejecting approximately 90 km³ of ash and pumice into the atmosphere. The collapsed magma chamber is likely overlain by younger eruptions from Santorini and is not discernible in bathymetric images. However, we hope to identify the caldera later in our data.

With the same objective, the magnetometer was deployed again from the morning of April 10. At 1 p.m., the device was retrieved on deck, and the Maria S. Merian re-entered the Santorini caldera to capture photogrammetric images of the inner caldera wall from onboard.

At 4:30 p.m. local time on April 10, the scientific work program of Expedition MSM135 concluded, and the transit westward to Málaga began. The route initially led south of the Peloponnese, through the Strait of Messina on April 12, and past southern Sardinia on April 13. The process of dismantling and packing the equipment installed on deck and in the laboratories commenced. Additionally, several terabytes of data had to be duplicated and secured.

All expedition participants are in good health and send their greetings home.

Christian Hübscher Chief Scientist MSM135