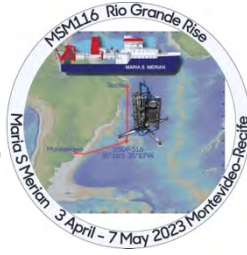


RV MARIA S. MERIAN

MSM116 "RIOGRANDERISE"
03.04. - 07.05.2023



1st Weekly Report
02. - 09.04.2023

Expedition MSM116 began with the departure of the research vessel MARIA S. MERIAN from Montevideo, Uruguay, shortly after noon on April 3. Our destination is the Rio Grande Rise, an aseismic elevated feature in the South Atlantic. On board are a total of 22 scientists from MARUM - Center for Marine Environmental Sciences at the University of Bremen, together with colleagues from Goethe-University Frankfurt, and from Brazil from the University of São Paulo and the Universidade Federal Fluminense.

The South Atlantic Rio Grande Ridge, with its extensive sedimentary deposits, is one of the research regions of the research field "RECORDER" in the Bremen Cluster of Excellence "The ocean floor – Earth's uncharted interface". Here, the focus is in carbonate-rich sediments with very good preservation of microfossils, a detailed proxy record, and good magneto- and biostratigraphy that allow to reconstruct the Earth's climate history using the Bremen seafloor drill rig "MeBo200". In particular, the planned stations correspond to the depth of the Antarctic Intermediate Water, a water mass that supplies several upwelling and high-productivity areas in the Atlantic with nutrients.



Fig. 1: Punta Carretas Lighthouse at the southern tip of Montevideo (Fotos: H. Pälke)

Our 10-member MeBo team had traveled to Montevideo in time to perform the complex installation of the MeBo system, shipped in 8 containers. The entire team then embarked on the morning of April 2. Interestingly, we learned that embarkation day was also the birthday of the ship's namesake, Maria Sibylla Merian (b. Apr. 2, 1647). She was a German entomologist, naturalist, and scientific illustrator who produced widely acclaimed folios, illustrations, and research in Germany, Suriname, and the Netherlands.



Fig. 2: Research Vessel MARIA S. MERIAN in the port of Montevideo. The MeBo200 is being tested prior to departure.
(Photos: H. Pälike)

After intensive work with setting up the labs and especially with setting up the MeBo200, we were able to leave Montevideo shortly after noon April 3rd in calm and sunny weather after a port basin test of the MeBo. The transit to the first station spanned 4 days, and we arrived near DSDP Site 516 on the night of Friday, 7/4/2023. After a CTD/Rosette, the MeBo team started preparing and working to deploy the instrument from 8am local time on Saturday. During the system test in 100m water depth, we were requested by a recent arrived Navy vessel to leave this working area. As a result, we are on our way to an alternate area on Easter Sunday.

Everyone on board is doing well, we are enjoying the excellent and varied food, and have been delighted to admire the great Easter decorations on the MARIA S. MERIAN. We would also like to thank the crew for the extremely pleasant and cooperative atmosphere on board and send our best regards to those at home.

In the name of the MSM116 team we greet you warmly

Heiko Pälike
(University of Bremen / MARUM)