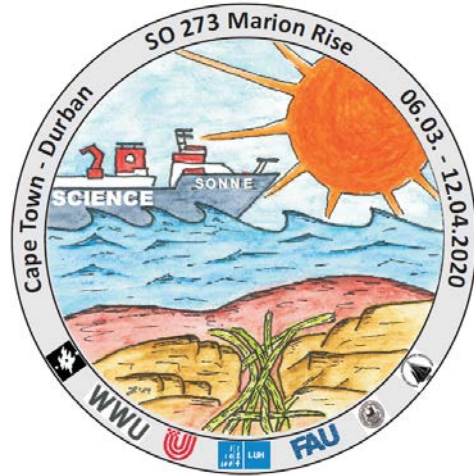


Expedition SO273 – MARION RISE

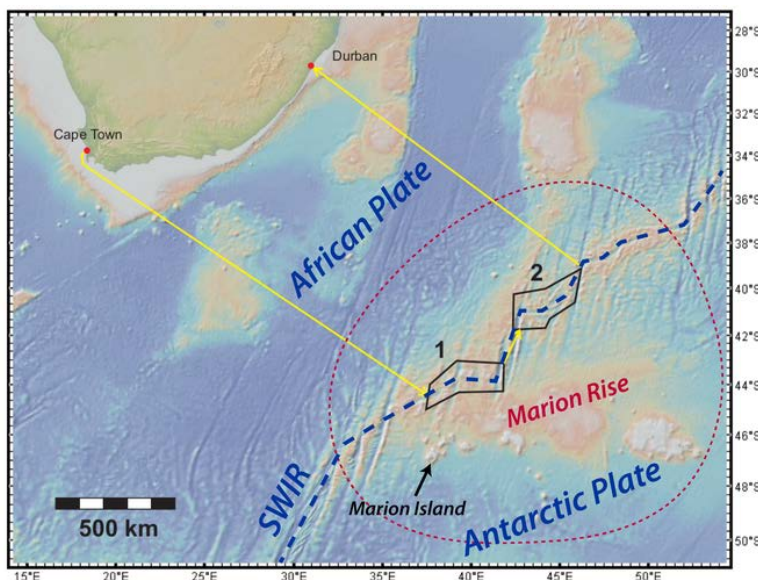
Cape Town - Durban

Weekly Report No. 1

4. – 8. März 2020



Cruise SO273 focusses on the geophysical, petrological, geochemical and structural investigations at the ultra slow-spreading Southwest Indian Ridge near the Marion Rise in the Southern Indian Ocean. Here, we plan to perform large-scale mappings (bathymetry via hydroacoustic mapping, geomagnetics und gravimetry) in two working areas in combination with hard rock sampling using ROV "Quest" from MARUM, Bremen, and by dredging. Moreover, the deploying of CTDs casts will help to detect and identify hydrothermal vents. The research will be performed in international cooperation with colleagues from the US and China. Leg 1 of the MARION project was performed in 2019 by our American partners with RV Thompson cruise TN365, covering the Northern area. Cruise SO273, which is Leg 2 of the Marion Project, will focus on both areas.



Map and locations of the working areas Southeastern of South Africa. Here, the African and the Antarctic plate are moving away from each other forming the Southwest Indian Ridge (SWIR). Of special interest is the elevated area referred to as "Marion Rise".

The scientific party is composed of students and scientists from the Universities Hannover, Bremen, Muenster, Berlin (FU), Erlangen, Helsinki and Modena. The US scientists are based at the Woods Hole Oceanographic Institution (WHOI) und at the Universities of Wyoming und Florida State. Die working group from China had to cancel their participation due to the Corona-Virus- Crisis.

After arrival of RV SONNE at 3.3.2020 in Cape Town, the removal of the equipment of the previous cruise was delayed with the consequence that the transportation of our five containers with equipment to the ship was also delayed. The 34 members of the scientific party from SO273 embarked RV SONNE at the 5.3. One day later the Container arrived, and were placed on deck. The ROV

“Quest” was installed, and its Launch and Recovery System (LARS) system was fixed at the A-Frame. At the 7.3., with one day delay, RV SONNE set sail at 8:53 (UTC) during sunny weather and calm seas, and about half an hour later, the open sea was reached. The scientific party and crew member enjoyed abundant seal and whale company during the way out of Durban.



RV SONNE in the port of Cape Town, ready to set sail. In the back: Table Mountain. Foto: Christoph Beier

south-westerly wind of force 7 Bft and a corresponding swell. After leaving the 50-mile zone of South Africa we started our multibeam program to map the transit. All are well and healthy, looking forward to start with the challenging scientific program of the next weeks.

Our first working area near Marion island Marion in the “roaring 40’s” will be reached in the night from Tuesday to Wednesday. The transit is used for setting up the labs, installing equipment, discussing the workflow and establishing description templates to be used for the descriptions of the various rock we expect to sample. After one day of transit the first drill was performed, while the weather was becoming slightly rougher with

Southern Indian Ocean, 8. March 2020, 36° 57.7' S / 21° 49.5' E

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<https://www.geo.uni-hannover.de/de/expedition-marion/>