



FS SONNE cruise SO299 DYNAMET

06.06. – 29.07.2023
Townsville (Australia) – Singapore

Weekly Report No. 1
06.-11.06.2023

At sea, 7°52'S 152°28'E

The aim of the SO299 expedition is to investigate the links between the plate tectonic development of a region and the formation of the mineral deposits. Our research area is the New Ireland Basin with the Tabar-Lihir-Tanga-Feni island chain, which is known for its special alkaline composition of the volcanic rocks as well as for an endowment in gold and copper-rich mineral systems. In general, this region is home to some of the youngest porphyry deposits in the world. Regionally, a change from copper-rich to gold-rich deposits can be observed in recent geological history, which is best explained by a change in the prevailing plate tectonic regime from subduction and collision to the formation of microplates.



RV SONNE at berth No. 10 in Townsville. Foto: P. Brandl.

On Tuesday, 6 June, RV SONNE left berth No. 10 in Townsville, a little later than planned, at ~18:00 local time to anchor off Magnetic Island. The reason for the delay and the anchoring was the late arrival of the observer for Papua New Guinea, who had to wait for his transit visa from the Australian authorities. On Wednesday midday, however, he was transferred to SONNE with the pilot boat. After the successful completion of the port test for the Remotely Operated Vehicle (ROV) Kiel 6000, we set off on the transit towards our first working area in the northern Solomon Sea. Preparations for the deployment of 18 Ocean Bottom Seismometers (OBS) and as many Ocean Bottom Magnetotelluric (OBMT) instruments have been in full swing since the first day in Townsville harbor and also at sea. The ROV is also being prepared for its first dive, which will take place shortly after the OBS and OBMT geophysical instruments are deployed. Unfortunately, we are still waiting for the formalisation of the already informally granted research permit for Papua New Guinea. We have therefore reduced our speed in the hope that we will have a valid research permit in writing by the time we reach the main working area south of Lihir Island on Tuesday.



Recovery of the ROV Kiel 6000 after the successful harbor test in Townsville. Foto: P. Brandl.

In addition to the 23 scientists and technicians from the GEOMAR Helmholtz Centre for Ocean Research Kiel, there are three participants from the Friedrich-Alexander University Erlangen-Nuremberg, two from the Federal Institute for Geosciences and Natural Resources in Hanover, two from the University of Ottawa in Canada, and one each from the universities of Helsinki (Finland), Toronto (Canada) and Curtin in Perth (Australia) on board. In addition, we have one observer each from the University of Papua New Guinea in Port Moresby and the company Odyssey Marine Exploration on board. The latter holds licenses for resource exploration in our working area.

All participants are well, and we are confident that we will soon be able to start our planned research activities.

The collaboration with the captain and crew of the SONNE is excellent.

On behalf of all participants, greetings from aboard the RV SONNE,

Philipp Brandl
Chief Scientist