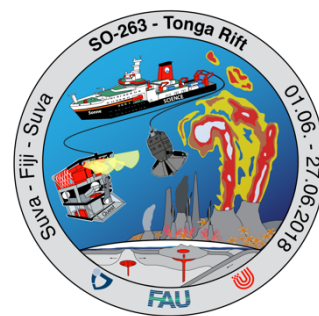


1.Weekly report RV Sonne SO263

Expedition TONGARIFT

01.06. to 03.06.2018



In the morning of June 1st at nine o'clock RV Sonne left the port of Suva, Fiji and headed east. The aim of the cruise is the study of submarine volcanoes of the northern Tonga island arc and NE Lau back-arc basin. Here, the Pacific Plate is subducting at about 20 cm/year below the Australian Plate causing the generation of melts in the mantle at depths up to 100 kilometres that are then forming the island arc volcanoes. The subduction of the Pacific Plate causes extension in the upper plate and to melting so that numerous volcanoes exist in the back-arc that will also be studied during the cruise. Many of the volcanoes of the Tonga island arc and in the back-arc are hydrothermally active, i.e. they emit fluids with up to 300°C but also massively degas volcanic sulphur and carbon dioxide. The venting of the fluids and gases forms the basis of life for chemosynthetic organisms. The vents and the faunas will be sampled during the cruise in order to study the element transport from the Earth's interior into the ocean and the associated biological processes. For the different scientific aims a group 35 geoscientists and biologists from Germany, Canada, the USA, and Tonga are on board of RV Sonne.

After two days of steaming in rainy weather to Tonga we now had a sunny and dry day and relatively calm seas. June 3rd is used to test the ROV winch and later in the evening and during night we will begin with the station work using the CTD and TV grab. All on board are well and look forward to the sampling.

Best wishes from the crew and the scientists,

Karsten Haase