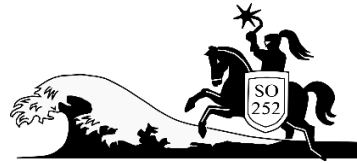


# SO252: Ritter Island

## 5. Weekly Report



This is the fifth weekly report of cruise SO252 "Ritter Island". We continued shooting seismic data for most of the week. Tuesday afternoon we finished the first run through the 3D cube and continued with infill lines to make sure that there are no gaps in the data set. This is important to ensure that the entire wave field can be migrated in three dimensions. In the early morning hours of Wednesday a thunderstorm developed. With Bft 9 the wind was quite strong and the vessel had to speed up in order to steer clear of Ritter Island. This caused damage to the data cable and we had to recover the system when the wind had abated to Bft 5 between 03:00 and 05:30. We continued with multi-beam and Parasound lines north of Ritter Island while we repaired the seismic system.

Starting at 08:30 we deployed the video system OFOS and conducted three dives. The first addressed the nature of the cone structures west of Ritter. As we had found a broken coral on its slope during the first OFOS deployment, we had to check if it was part of a bigger reef on top of the cone, which would have proven that the cone had been there before the landslide.

Unfortunately, we could not find such evidence. The second dive went down the head scarp of the Ritter Island collapse and onto the new crater. It is clear that recent erosional products from Ritter Island overprint most of the slope, but we could

also find steep outcrops of the pre-landslide Ritter Island edifice and very thick dike intrusions that are not visible in the bathymetric data. The third dive addressed the trim line of the Ritter Island Slide on the northern slope of Umboi Island showing signs of erosion, which quite likely resulted from the land slide. Video surveying continued until 21:00. At 23:00 we started further attempts to collect more heat flow data along two transect in the proximal area of the slide, but we did not manage to penetrate the hard ground. Thursday morning we redeployed the P-Cable system in torching heat. The system was up and running at 10:00. Unfortunately, the drone flight to check that everything was deployed properly, ended with the loss of the drone when it touched the A-frame during the landing. We continued shooting until Friday around noon when a big tree that was floating just below the surface got caught in the P-Cable system and we had to spend the entire afternoon trying to get rid of it. By 16:00 the system was up and running again. We continued shooting seismic data for the next two days without further interruptions, and we will be finished with the seismic program in two hours from now. For the last week remaining, we will collect sediment and rock samples.



*Figure 1: Birthday child Joel Edwards and Theresa Roth on seismic watch. Photograph: Olga Sanchez.*

On behalf of the cruise participants,

Christian Berndt (Chief scientist)