

ANT XXIII/5 Weekly Report No. 4 (Punta Arenas - Cape Town)  
1 May - 7 May 2006

After sailing around a giant storm low we arrived on May 2nd at our new research area, the Discovery Seamounts. These are a combination of submarine volcanoes and ridges rising more than 4000 m above the surrounding sea floor. Although the Discovery volcanoes most likely formed as little islands, the highest elevations today are around 400 m below water depth.

We started with the geophysical program, a seismic project to investigate the deeper structure of the oceanic crust. We are using very sensitive Oceanbottom-Seismometers deployed on the sea floor. The instruments will record two different types of seismic signals. At first, seismic signals generated by airguns towed by the RV Polarstern will be measured. Post-cruise analysis will allow us to determine the crustal thickness beneath the Discovery mountain range. The second task is to record global earthquakes. Some of the Oceanbottom-Seismometers are specifically equipped to record these very low frequency signals. However, we will only be able to report next week whether we have been able to detect some earthquakes with the seafloor stations. On Thursday, May 4th the geophysical program was finished and the petrologists started sampling the Discovery seamounts and volcanoes.

With perfect timing another low-pressure system arrived in our research area on Thursday morning. Within half a day a calm ocean was transformed into a stormy sea with wind speed as high as 70 km/h and the waves increasing to 9 m high. Such sea conditions make safe dredging operations impossible. Consequently the dredge program was terminated until Friday 15:00 when the storm had passed through our working area. However, the sea remained rough until the weekend slowing down our work significantly. On Sunday morning the wind increased again to gale force 9, urging us to once again interrupt our dredging program. We have made little progress this week with our flight program due to either strong winds or bad visibility. Since the weather calmed down significantly on Sunday afternoon we have started to recover the Oceanbottom-Seismometers. We hope that the weather remains reasonable for the next week. Some sunshine is really needed.

With kind regards on behalf of all cruise participants,

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