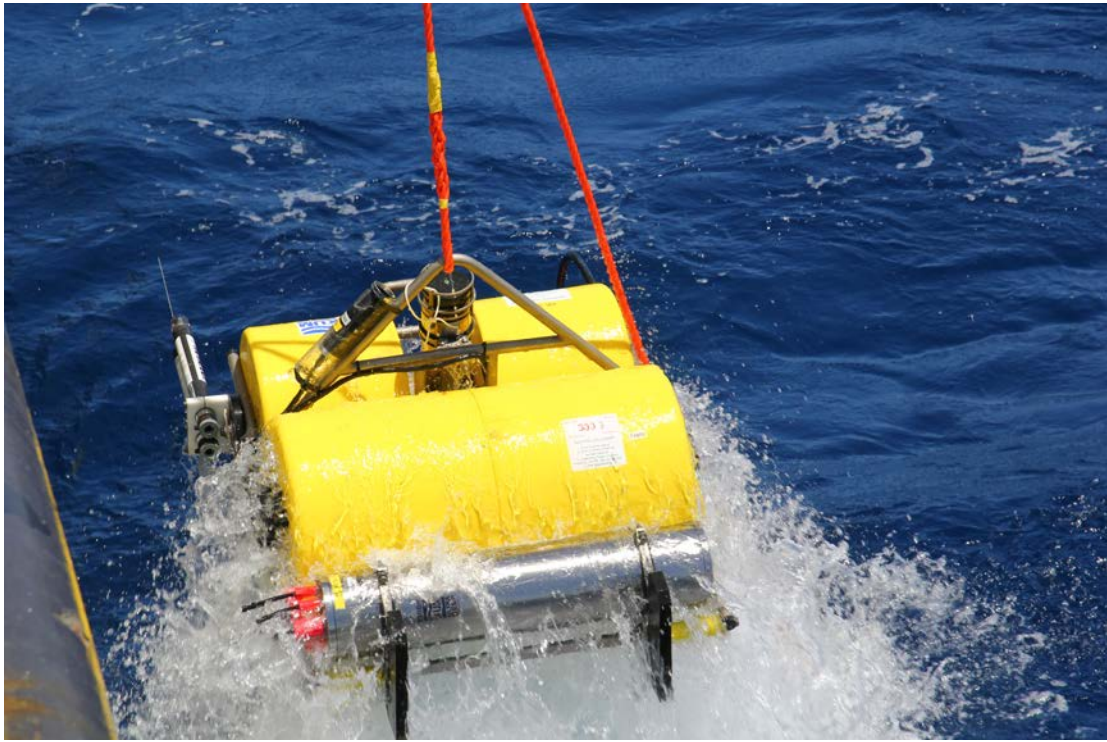




The beginning of the third week of cruise leg 258/2 was still fully dedicated to the seismic refraction measurements. After two days of continuous profiling along the 81st meridian we arrived at the southern end of the profile in the morning of July 24 at 2° 26' N. At first the crew recovered the towed magnetometer, followed by the airgun clusters. As soon as all equipment was taken onboard, we headed towards the southernmost ocean-bottom seismometer (OBS) position to start recovery of all instruments. Recovery starts with sending a unique acoustic code that is recognized by the release unit of the OBS. The hook of the releaser opens, and the OBS gets free from the anchor weight. After approximately one and a half hour the instruments surface and start to send radio signals and additionally a flashing light to help recovery during the night-time. Since the weather and sea state was not bad, the instrument could also be spotted optically because of the flag attached. With only a few exceptions, recovery of the instruments went very well and fast. So we approached towards the south coast of Sri Lanka within two days. Closer towards the coast, the recovery position of the instruments became more and more shifted towards the east. The eastern currents are the reason for that. The currents cause some drifting of the OBS while sinking to seafloor, but it occurs a lot more during the ascent after release from the seafloor.



*Ongoing seismic survey at 81° E longitude.
(Photograph: Konrad Behnke)*



*Ocean-bottom seismometer on the hook.
(Photograph: Konrad Behnke)*

In the evening of July 26, during the recovery of the last OBS close to the coast of Sri Lanka, we were again accompanied by pygmy blue whales. Sometimes they came really close to the vessel.



*Pygmy blue whale close to RV SONNE.
(Photograph: Emma Hayes)*

The northernmost OBS station is, however, not yet the northernmost end of the seismic refraction profile. To image the continent-ocean transition by seismic waves we also have to install seismic stations on land. A reconnaissance field trip was already carried out in 2016 along roads and tracks close to the 81st meridian. At the beginning of July 2017, just before we left Colombo, colleagues from the Helmholtz Centre Potsdam Deutsches Geoforschungszentrum and the Geological Survey and Mines Bureau Colombo installed 15 land seismic stations. The instruments record all tremors over a period of a month, and hopefully also our seismic waves generated by the airguns. After our return to Colombo the land seismic stations will be dismantled and the data will be retrieved.



*The harbour of Tangalla at the southern coast of Sri Lanka .
(Photograph: Wilfried Jokat)*

The remaining days of the week we continued the magnetic survey. During the measurements we crossed again twice the equator. There was only a short break due to technical test with one of the sensors but we still map the magnetic field frozen in to seafloor beneath us. Especially in the northern part of the study area, a dense coverage with measurements is important, since the deviations from the normal field are only weak and difficult to identify.

In the second half of the week, there was also enough time to inspect the recorded data. Most of the OBS recording shows good signals from the airgun shots that will allow modelling the structure of the Earth's crust.



*Heading along the 81° E longitude profile northward.
(Photograph: Wilfried Jokat)*



*Deployment of a land seismic station in southern Sri Lanka.
(Photograph: Christian Haberland)*

The warm evenings were used for relaxed get-togethers on deck or at the conference room. Conrad Kopsch reported about his journey down the lower part of the Lena river. Even if the presentation was in German, also our non-German-speaking participants got to know with this amazing Siberian river and its delta at the rim of the Arctic Ocean. A documentation about the life of fishermen and families along the Lena river and the crew of the vessel "Magdeburg" was a good finish to the day. At another occasion, Tabea Altenbernd explained why and how we study the continental margin of Sri Lanka by seismic means.

Yesterday, we celebrated the end of the week with the "Bergfest", since we spent already half of our time at sea. The first half of our expedition onboard RV SONNE was very successful. This is due to the good cooperation of the crew and the scientific party, but also because of the good food and hospitality from the cooks and stewards. At this stage of the expedition we also want to thank all people at home in Germany and in Sri Lanka for their work and support. Only that gave us the opportunity to start our expedition to the Indian Ocean.

With best regards from the Indian Ocean

Wolfram Geissler and the SO258/2 Science Party