



The fifth week was fully dedicated to the measurements of the Earth's magnetic field. After we had finished the second seismic profile at the end of last week we headed back to the magnetic grid. There we wanted to continue our measurements along the planned N-S profiles. So we deployed the towed magnetometer again. Contemporaneous the board-fixed fluxgate magnetometer of our colleague from the Japanese National Institute of Polar Research also recorded the variations of the magnetic field as all the previous times. To be able to run all along the remaining many profile kilometres we decided to go on full speed from now on.

Regarding Polar Research. In the freight that reached us from a previous expedition on board the Korean icebreaker Araon we found working clothes that we normally wear during our expedition in the high latitudes. We took the chance to test the polar suits worked while crossing the equator for the fifth time in the morning of August 8. So, we could document that indeed polar researchers went this time towards the tropical latitudes to study the breakup of India and Sri Lanka from Antarctica.



*Polar researcher at the equator.
(Photograph: Patrick Schröder)*

In the afternoon we then took the time to shoot the complete group photograph slightly south of the equator. The weather was perfect as the mood of the cruise participants. At this time all the measurements went well as planned. In the early morning, close to 3° S, we deployed again a mobile sound velocity probe to validate the calibration data of the hydro-acoustic systems.

Beside the necessary watches we took the time for data quality control and first processing. That was the base to plan the survey of the remaining days of this expedition. Thursday morning (10.8.) we finally decided that we would continue with magnetic measurements until the very end. Unfortunately, there was not enough time left to measure another seismic profile. Until Thursday next week all scientific equipment has to be dismantled, cleaned, checked and finally stored into the container. We used the last days to prepare the ocean-bottom seismometers and the air pulser for the transport and future expeditions.



*Group photograph.
(Photograph: Wolfgang Borchert)*

In the very early Saturday morning the watch keepers raised alarm. There was a problem with the towed magnetometer system. Cruise participant Conrad Kopsch and Matthias Grossmann, member of the Scientific-Technical Support team on board, tried to fix the system during all the day. Unfortunately, it was not possible to get the magnetometer back to run. We were frustrated, but such things always happen when you do not need them. Luckily, our Japanese colleague Masakazu Fujii also carries out measurements of the magnetic field along our entire cruise track from the beginning. The fluxgate magnetometer fixed at the radar deck is now the guarantee for the success of the remaining last week. Additionally, we also continue to acquire important data with the hydro-acoustic systems to map the seafloor and with the gravity meter to measure the gravity of the Earth.

In the following one and a half days we measured along the profile towards NW crossing all the positions where we had deployed ocean-bottom seismometers before. Using the reflected and refracted seismic signals recorded with the streamer and the ocean-bottom station, we are able to get an image of the sedimentary deposits and the structure of the Earth's crust.



*Fluxgate magnetometer fixed on the radar deck.
(Photograph: Masakazu Fujii)*



*Wind always accompanies us.
(Photograph: Menaka Goonewardena)*

The weather during the last week changed very often. Pretty sun shine during the group photo shooting interchanged with heavy rainfalls. Again we had wind from strength 5 to 7. Also the heights of the waves increased temporarily, mostly in the southern part of our survey area.

Yesterday morning we finally crossed the equator for the eighth and last time during our expedition. This last crossing and the fact that we had a successful expedition until now let us decide to have a barbeque for dinner. The rainy weather forced the cooks to prepare the sausages, meat and salads in the kitchen, but it was also very tasteful. Also we could say happy birthday to two of our cruise participants. On the Saturday, Masakazu Fujii celebrated his birthday. At midnight we started a small polonaise to congratulate our cruise participant Professor Sirinaga Nawaratne from University Peradeniya (Sri Lanka).



Group photograph with participants from Sri Lanka. To the left, our birthday celebrator, Professor Sirinaga Nawaratne.

(Photograph: Marc Hiller)

Despite the technical problems of the last week, all are well and looking forward to the last week at sea.

With best regards from the Indian Ocean

Wolfram Geissler and the SO258/2 Science Party