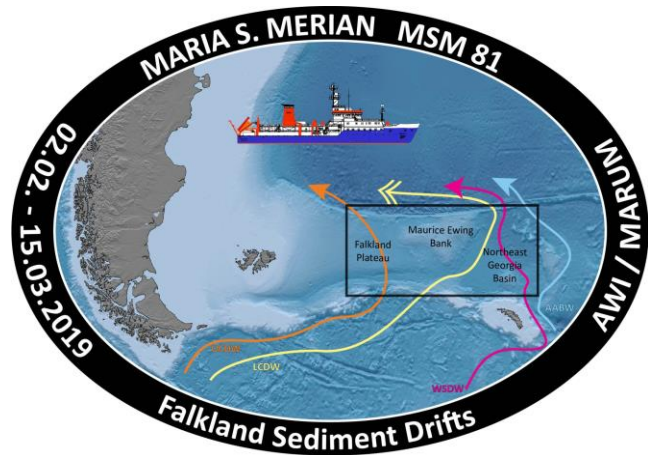
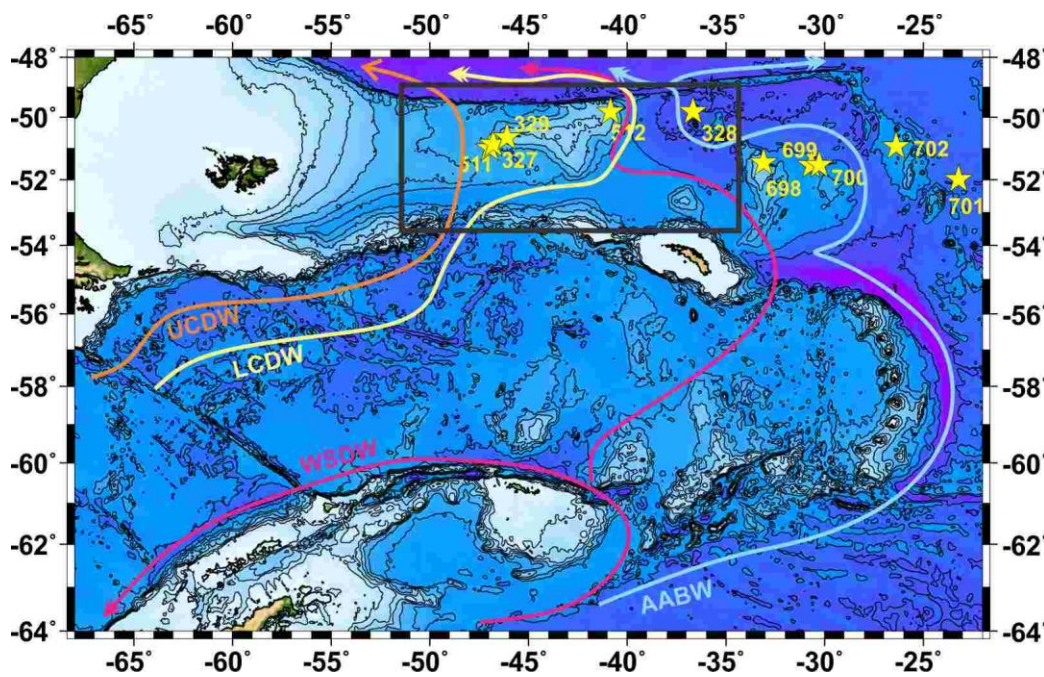


**Expedition MSM 81  
Valparaiso - Montevideo**

**Weekly report No 2  
11 February – 17 February 2019**



Leavin Magellan Strait eight days ago we still had not reached our working area. It took another three days to arrive on the central Falkland Plateau (black box in figure). Why have we come this long way? What is so interesting in this area?



The Falkland Plateau is a structure with a long history. Until about 130 million years ago the northern flank of the plateau was stuck to southern Africa. With the opening of the South Atlantic the Falkland

Plateau was separated from Africa. The southern flank of the plateau was connected to Antarctica. The opening of Drake Passage between South America and the Antarctic Peninsula and the opening of the Scotia Sea at about 31 million years ago have allowed an exchange of water masses (coloured arrows in figure) between the southern Pacific and the South Atlantic. This also allows an exchange of heat and energy between the oceans which has been very important for the global climate. Those water masses have not only flowed through Drake Passage but also across and around the plateau. This way they have eroded, transported and deposited sediments and formed specific structures, so called sediment drifts. Those sediment

drifts form an archive of the water mass activity, their pathways and intensities, which have been modified, e.g., during glacial periods.

We are here to image sediment drifts using seismic reflection profiling. We will then analyse their structure and hope to learn more about the chronological development of the oceanic circulation in this area in relation to climate modifications and tectonic movements.

Thursday evening we arrived in our working area. First of all we deployed a sound velocity profiler. This data is needed for the conversion of the multibeam soundings from traveltime to depth. Wednesday morning we finally deployed streamer and seismic sources. Since then we have recorded seismic data. Only Albatrosses keep us company.

A first glance at the seismic data shows very interesting structures. More about this once we have had a chance to take a closer look.



(Photo: T. Eggers)

In spite of the rough weather participants are cheerful and send home greetings.

Southwestern Atlantic, February 17th 2019, 50° 32.706' S / 49° 10.837' W

Gabriele Uenzelmann-Neben

<https://www.awi.de/en/science/geosciences/geophysics/research-focus/gateways-of-the-southern-ocean.html> under *Effect of opening of Drake Passage on circulation in the South Atlantic*, scroll to *Variations in pathways and intensities of deep and bottom water*

<https://www.awi.de/forschung/geowissenschaften/geophysik/expeditionen.html>