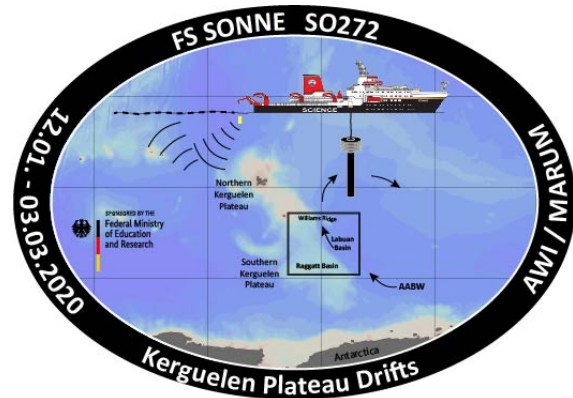


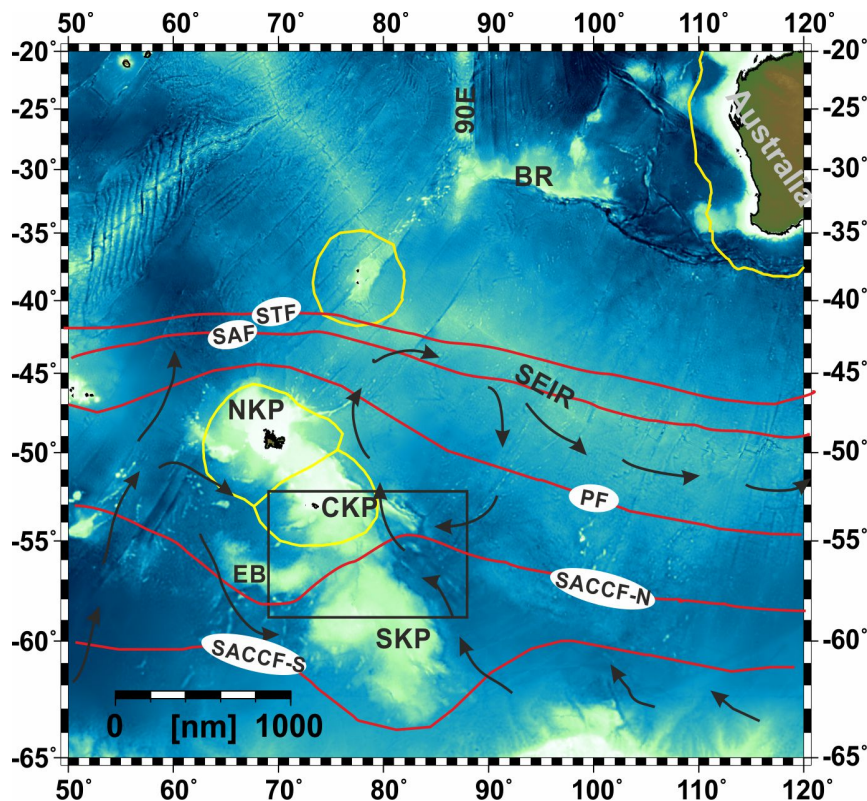
**Expedition So 272
Post Louis – Cape Town**

**Weekly report No 2
20. January – 26. January 2020**



We set sail about eight days ago. Today we will arrive in our working area (black box in map), although we reached the Kerguelen Plateau already on Friday. But why have we come this long way? What is so interesting in this area?

In the southern Indian Ocean quite close to Antarctica the Kerguelen Plateau forms a large topographic high at the seafloor. With a size of 1.2 million square kilometres it is about twice as large as France. The plateau formed when India separated from Antarctica about 50-110 million years ago. Huge amounts of magma protruded from the interior of the earth to the surface and formed the plateau. During this process greenhouse gases were also emitted and modified the global climate.



With its topography the plateau forms an obstacle for the circulation in this area; the Antarctic Circumpolar Current (red lines in map) is significantly deflected. The pathway off the Antarctic Bottomwater (black arrows in map) is also influenced; a branch is forced to flow northwards along the eastern flank of the plateau and thus transport cold, salty water to the North.

This way the currents and water masses 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. Additionally, we will sample the sediment at suitable locations to directly study the type and age of the sediment.

On our way south we have been hit by a couple of low pressure areas. Wind and wave height increased and we have been shaken a bit. The temperature also has dropped to 3°C. But we have received company when approaching the Kerguelen Plateau.



Petrels and albatrosses have joined us in our transit. Friday, when moving onto the plateau, we suddenly sighted a number of whales. They appeared to frequent the flank of the plateau, where the water is very rich in nutrients.

(Photo: E. Werner)

All participants are cheerful, await the start of the scientific programme and send home greetings.

Southern Indian Ocean, January 27 2020, 53° 14.2' S / 78° 26.78' E

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<https://www.awi.de/en/science/geosciences/geophysics/research-focus/gateways-of-the-southern-ocean.html> under *Southern Indian Ocean circulation is archived in Kerguelen Plateau structures*

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