

MSM146

BAFFINGAS



3. Wochenbericht

31.08. – 06.09.2026

After we discovered the first gas bubble emissions on the shelf off Disko Bay at the end of last week, we completed sampling at this site on Monday, 31 August 2026. Highly satisfied with the data and samples from this seep area, we moved on to the next working area. This area lies at the southern entrance to Disko Bay and is known as “Egedesminde Dyb”. In this deep channel, the seafloor reaches water depths of up to 1000 m. Sediment core analyses during previous cruises had shown gas enrichments at shallow sediment depths, so we wanted to investigate whether gas emissions into the water column also occur there. In addition, satellite data indicate that oil may be seeping from the seafloor in this area. During the night from Monday to Tuesday, we first mapped the area using the hydroacoustic systems of the R/V MARIA S. MERIAN. Things now also became exciting because the highest concentration of icebergs in Disko Bay was expected here, and at first it was unclear whether, and with which strategy, we would be able to map and sample in this area at all. However, the R/V MARIA S. MERIAN and her crew are very well equipped for these conditions, and it soon became clear that, although some icebergs occasionally crossed the planned route, they did not restrict the mapping or station work. We were therefore able to enjoy the breathtaking scenery and still continue our work as planned.



Fig. 1: Icebergs are now accompanying us in Disko Bay. (Photo: Sophie ten Hietbrink).



Fig. 2: The multicorer returns to deck with new sediment cores. (Photo: Miriam Römer).

On Tuesday, 1 September 2026, we were able to plan the station work based on the new map and collected sediment cores with the multicorer and gravity corer at a site in 866 m water depth. Although we could not detect any active gas emissions here, the sediment echo sounder showed indications of free gas in the subsurface. And indeed, we quickly noticed that the gravity core was very gas-rich, and onboard analyses confirmed elevated methane concentrations already at shallow sediment depths.

On Wednesday, 2 September 2026, we mapped an area in the southeastern part of Disko Bay where numerous pockmarks and indications of groundwater discharge had been described. However, water samples, sediment cores, and a short dive with the ROV MARUM-SQUID into one of these pockmark structures did not provide evidence for active groundwater discharge. One possible interpretation is that this pockmark was inactive at the time of our investigations, since it is known that such structures can be highly variable in their activity over time. Since we also could not detect any indication of hydrocarbon seepage in this area, we decided to move to one of our most promising areas, the “Vaigat Strait”, the northern arm of Disko Bay. This is where most of the icebergs are concentrated, and navigating the ship is already somewhat more challenging here. Fortunately, it is still possible, and so we first mapped across the entire Vaigat. And at the northern exit of the strait, we were successful again. On Thursday evening, 3 September 2026, we discovered several gas bubble emissions, which we continued to map in more detail throughout the night. On Friday, we carried out the first sampling directly at the site. Most of the gas bubble emissions appear to be less intense, but a few are stronger and reach almost to the sea surface. We are now focusing on these emissions because we hope that the gas bubbles here are associated with oil. Oil seeps are also known from the coast on land in this area, and one important goal of our cruise is to investigate and sample not only pure methane emissions but also oil seeps at the seafloor.

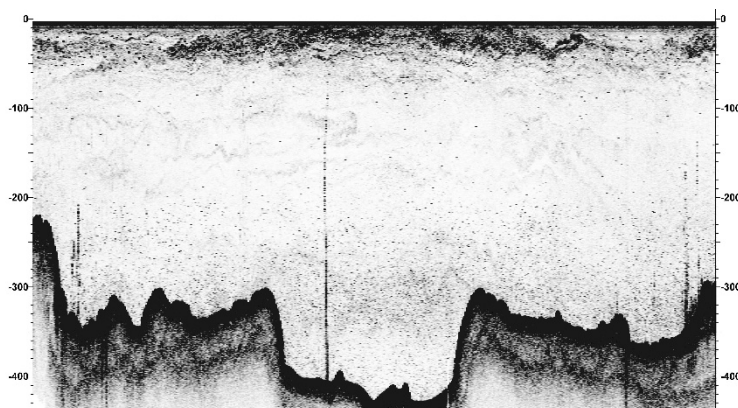


Fig. 3: Profile from the Parasound echo sounder. Above the seafloor, between approximately 300 and 400 m water depth, several gas flares are visible in the water column. The black line in the center of the image shows a gas bubble emission at about 400 m water depth, reaching nearly to the sea surface.

In the water body directly above a particularly intense gas emission, we measured clearly elevated methane concentrations. Some gas emissions are located in areas where we were able to collect sediment cores, and these also show clear signs of high gas content. In some places, the sediment appears moussy, which gives us hope that we may still be able to discover gas hydrates. On Saturday, 5 September 2026, we therefore wanted to explore the seafloor with the ROV as quickly as possible, but unfortunately the weather did not cooperate this time. Both yesterday and today, we have had wind forces between Beaufort 8 and 10, and the icebergs are drifting past us at speeds of more than one knot, so we still have to wait before carrying out the ROV dives. However, better weather is expected again tomorrow, and in the coming days we plan to investigate and sample the gas bubbles and perhaps also the eagerly awaited oil seeps. Despite the strong winds, we were still able to deploy the CTD, multicorer, and gravity corer and to continue intensive mapping of the gas emission area.

On behalf of all participants, we send our warmest greetings from aboard the R/V MARIA S. MERIAN!

Miriam Römer