

## Research Vessel SONNE

SO279 (GPF 20-3\_089)

04.12.2020 – 05.01.2021, Emden – Emden

5<sup>th</sup> (and final) Weekly Report:

28 December 2020 – 05 January 2021



The first day of our final week started in the early morning of **27 December**. A brief period of calmer weather conditions allowed us to fit in one last station (Station 9). We completed this last full station without any complications in the afternoon of **28 Dec.**, and began the long transit toward home. RV SONNE transited along a stormy Iberian coast on **29., 30., and 31. Dec.** We celebrated the turn of the clock from 2020 to 2021 in the Bay of Biscay, together, with handshakes and hugs, acutely aware of our privileged situation in comparison with our families and colleagues at home under COVID-lockdowns.

We passed through the English Channel from **01. to 03. January**, taking advantage of calm seas to pack our equipment and begin cleaning the labs. We also used the time to make some final analyses of the microplastics collected in our catamaran trawl samples. These on-board measurements were made using a near-infrared hyperspectral camera mounted on a motorized stage (Fig. 1). While not as sensitive or definitive as some other laboratory methods, it was exciting to have rapid determination of the microplastic identity and size almost immediately after collecting the samples. Most of the microplastics we collected were polyethylene, with a small fraction of polypropylene. Both plastics are less dense than seawater and likely to be transported into the open ocean.

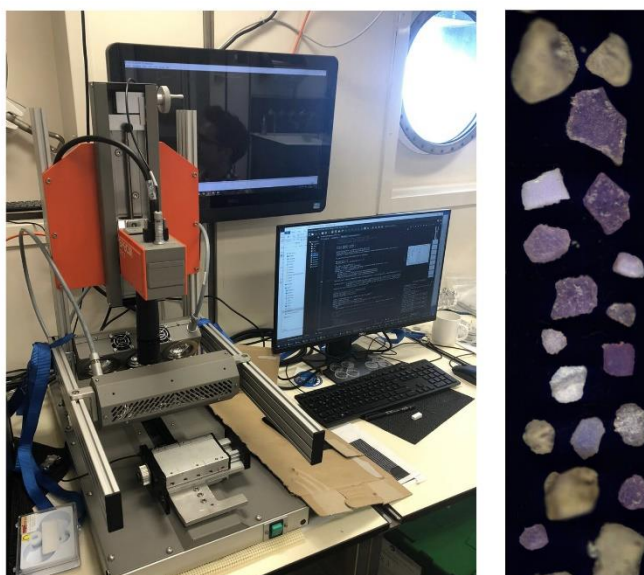


Figure 1. NIR hyperspectral scanning system, and a false-color scan of some large microplastic particles collected in the catamaran trawl. The width of the scan image is about 1 cm. (Photos © I. Schulz (L) and M. Kaandorp (R)).

More information about some of the scientific activities conducted on SO279 can be found on our blog: [oceanblogs.org/hotmic/](https://oceanblogs.org/hotmic/)



Figure 2. Birds-eye group photo on the bow of RV SONNE, in front of the bridge. (Photo: S. Meinecke)

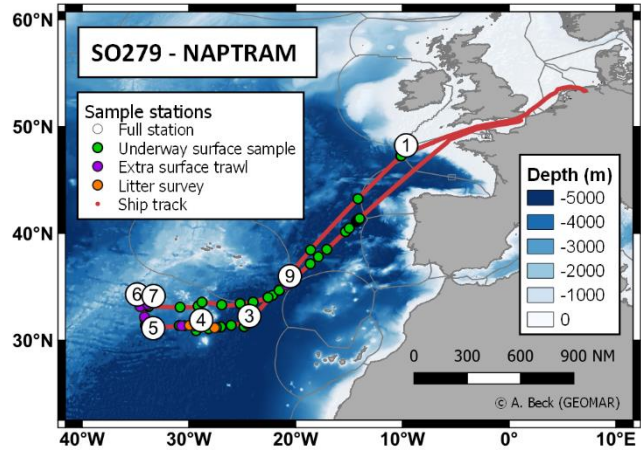


Figure 3. Map of shiptrack with full and partial stations sampled during SO279. (© A. Beck/GEOMAR)

Overall, SO279 was a resounding success, especially so considering the extremely challenging weather conditions expected in the North Atlantic Ocean this time of year. We're grateful to Captain Lutz Mallon and the crew of RV SONNE for their expertise and support throughout the past five weeks at sea. We also want to acknowledge the work and logistical support of the shipping company and German Research Fleet Coordination Centre; in these pandemic times, seagoing opportunities such as SO279 are rare and critical to the work and careers of students and young scientists. Researchers from throughout Germany and wider Europe will return home with, or eventually receive, a wealth of samples and data that were collected on SO279 (Table 1).

Table 1. Summary of the sampling activities completed during SO279.

Activity	Number
CTD casts	7
In situ pumps	34
Box cores	14
Multi net samples	9
Bongo net tows	36
Catamaran surface trawls	27
Underway water samples	420
Litter spotting transects	4
Hours of OFOS seafloor footage	25
Days of ADCP current profiles	17.5
Seafloor bathymetry mapped (nmi)	3437

With greetings one last time on behalf of the SO279 cruise participants,

Aaron Beck  
GEOMAR Helmholtz Centre for Ocean Research Kiel

FS SONNE, Sunday, 03 January 2021