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# Short Cruise Report
# RV SONNE, cruise SO287

## Las Palmas, Spain – Guayaquil, Ecuador
## 11.12.2021 – 11.01.2022
## Chief Scientist: Birgit Quack
## Captain: Tilo Birnbaum

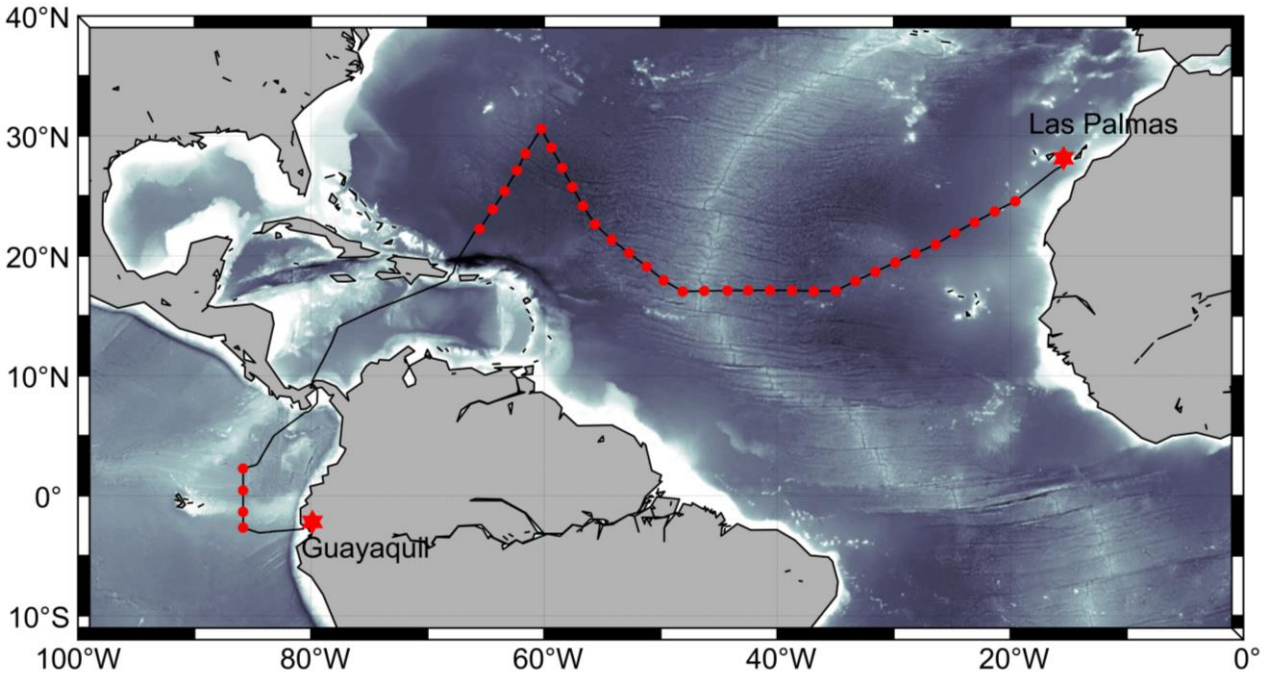


Fig. 1: Cruise track (black line) and stations (red dots) of RV SONNE cruise SO287.

## Objectives

The RV SONNE cruise SO287 from Las Palmas, Spain (departure: 11.12.2021) to Guayaquil, Ecuador (arrival: 11.01.2022) is directly related to the international collaborative project CONNECT of GEOMAR in cooperation with Hereon and the University of Bremen, supported by the German Federal Ministry of Education and Research (BMBF) between October 15 2021 and January 15 2024. The research expedition was conducted to decipher the coupling of biogeochemical and ecological processes and their influence on atmospheric chemistry along the transport pathway of water from the upwelling zones off Africa into the Sargasso Sea and further to the Caribbean and the equatorial Pacific. Nutrient-rich water rises from the deep and promotes the growth of plant and animal microorganisms, and fish at the ocean surface off West Africa. The North Equatorial Current water carries the water from the upwelling, which contains large amounts of organic material across the Atlantic to the Caribbean, supporting bacterial activity along the way. But how the nutritious remnants of algae and other substances are processed on their long journey, biochemically transformed, decomposed into nutrients and respired to carbon dioxide, has so far only been partially investigated.

Air, seawater and particles were sampled in order to provide new details about the large cycles of carbon and nitrogen, but also of many other elements such as oxygen, iodine, bromine and sulfur. Inorganic and organic bromine and iodine compounds are generally emitted naturally from the ocean into the atmosphere, promote cloud formation and affect climate, and some even reach the stratosphere where they contribute to ozone depletion. We measured how much of these compounds are released from the ocean, and at what locations and how they are transformed in the ocean and in the atmosphere. Sargassum algae, which have become a nuisance on beaches in the western and eastern Atlantic, support life and contribute to carbon cycling in the middle of the Atlantic, the Sargasso Sea and in the Caribbean, while their contribution to halogen cycling and marine bromine and iodine emissions was previously unknown. We investigated the influence of various natural parameters such as temperature and solar radiation on the biogeochemical transformation processes in order to understand the influence of climate change on these processes in incubation experiments with seawater and algae. We investigated how anthropogenic signals such as shipping traffic influence the nitrogen and sulphur cycle in the ocean, as well as the impact of nitrogen oxides from ship exhaust and sulphurous, acidic and dirty water from purification systems on organisms and biochemical processes. Plastic debris was sampled from the surface waters to investigate its contribution to global biogeochemical transformation processes. The working hypotheses of the research program were:

- Bioavailability of dissolved organic carbon in surface waters decreases along the productivity gradient and transport pathway from the Eastern to the Western Tropical North Atlantic.
- Nutrient gradients from East to West constrain the microbial utilization of organic matter- contributing to an accumulation of C-rich organic matter due to a) limited mineralization and b) enhanced exudation- also leading to gel-like particles accumulation in the western tropical North Atlantic and Sargasso Sea.
- Tropospheric and stratospheric ozone are strongly impacted by biogeochemical and ecological processes occurring around and in the NA gyre system related to marine iodine and bromine cycles.
- The long-range transport of natural and anthropogenic organic matter in water and of gases and aerosols in the air impact carbon-export, biogeochemical cycles in the water column, and the release of gases and particles from the ocean significantly.

The data and samples obtained specifically target carbon, nutrient and halogen cycling, the composition of phytoplankton, bacteria, the transport and sequestration of macro algae and the air-sea exchange processes of climate relevant gases and aerosols. The influence of ecological and transport processes, as well as anthropogenic impacts on the North Atlantic gyre system, specifically in the Sargasso Sea and the influence of ship emissions throughout the Atlantic towards the west and into the Pacific will be investigated with the data.

## Narrative

With SO287-CONNECT, the research vessel SONNE set sail again for one of its most important areas of operation - the Pacific Ocean - after a long forced break due to the outbreak of the Corona pandemic, during which the vessel operated in the Atlantic Ocean and Mediterranean Sea, only. Short-term visa and permissions, collaborative activities and mutual agreed rapid decisions between many actors enabled the successful conduct of SO287-CONNECT. The scientific team arrived to Las Palmas on the 8$^{th}$ and 9$^{th}$ of December. After embarkation on the 10$^{th}$, an international team of 39 scientists from 11 different nations together with the 30 crewmembers of the research vessel SONNE set sail on the 11$^{th}$ of December 2021 to cross the Atlantic Ocean over Christmas. We took thousands of samples, made as many measurements and obtained millions of data points with continuous instrumentation in order to understand how marine biogeochemical processes during the transport from Africa across the Atlantic to the Sargasso Sea and all the way to the Caribbean are linked to climate change and other anthropogenic influences, such as ship traffic and plastic pollution. All arriving personnel were at least vaccinated twice against Covid-19. As all our PCR tests were negative, we were allowed to embark on the voyage and wore masks for a week until we were absolutely sure that no Corona virus made it on board. We enjoyed the luxury of the virus free expedition, which gave us the opportunity to explore very fundamental questions in detail.

After the departure from Las Palmas on the 11$^{th}$ of December 2021, the underway program of SO287-CONNECT started immediately after 12nm with continuous underway measurements of temperature (T), salinity (S), and fluorescence. As soon as the equipment was set up, we started with the measurements of carbon cycle parameters (Dissolved and particulate organic carbon, nitrogen, phosphorus, carbohydrates, amino acids, gel-particles, lipids, cell abundance of bacteria, pico- and nano plankton, viruses, bacterial biomass production, fluorescence, primary production, enzyme activity), community characterization with 16S rRNA, 18S rRNA-sampling, phytoplankton fixation, chlorophyll and other pigments and flow cytometry from depth profiles. Trace gases ($N_2O$, $CH_4$, NO, halocarbons, DMS, oxygen) as well as nutrients, nitrate isotopes, iodide, iodate, total iodine, and ozone were sampled from the surface waters. Continuously $NO_x$, $SO_2$, CO, black carbon concentrations, and $NO_2$, HCHO and $SO_2$ integrated columns, as well as the ozone deposition velocity, water vapor and aerosol depth were measured in the atmosphere. The structure of the atmosphere was determined during 40 radiosonde and 7 ozone sonde launches, determining temperature, humidity, pressure, position and ozone up to 30 km height. Air samples were taken every 6 hours in stainless steel canisters, whereas aerosols were sampled on filters for 24 hours. The sunlight intensity as well as other optical properties such as photosynthetic active radiation (PAR), surface reflectance, the absorption coefficient of CDOM and particles (spectrally) were measured. The intensity and direction of ocean currents was measured with acoustic methods (ADCP 38 and 75 kHz) and the backscattered acoustic signal from marine organisms was determined with the echosounder EK60 (18, 38, 120, 200 kHz). Finally, plastic debris was sampled from the surface water regularly with a Neuston catamaran.

The regular routine of the expedition started on December 12 with the first station at noon soon after we reached international waters. We carried out 32 stations in the Atlantic, of which we carried out one around noon and one in the middle of the night in order to have a regular station distance during transit and also to be able to distinguish the light-dependent processes in the seawater. At noon, the ships' CTD was deployed down to 1000 m and an additional optical biological CTD from the project partner Hereon, equipped with a FastOcean ADP (Adapted Plus Dark) for photosynthetic parameters down to 100 m. Right at the beginning of the cruise, a sampling pump for in-situ sampling fell dry, burned out, and has since been unable to be used, putting strain on the water budget. As the water demand for sampling was very high, we included another cast down to 200 m of the ships CTD on every station. The working boat of RV SONNE was deployed to collect water from the sea surface microlayer with a Garret screen where the wind

and wave situation made it possible. This was not the case in the first week of operation as the swell from northerly storms was too high. But on every noon station the sea surface microlayer was at least sampled from the ships deck, which was not possible during two stormy occasions. The Neuston Catamaran was deployed at every noon station, and several times during transit in the exclusive economic zones of the Caribbean islands along the ships route. Additionally, sun observations and special turns of RV SONNE to avoid air-and aerosol sample contamination were included on stations, which also allowed the start of the radiosondes at noon and at night. Four ozone sondes were started in the Atlantic after every third day. On our night stations across the Mid-Atlantic Ridge at the end of the first week of the cruise, the ocean floor was mapped before deployment of the CTD down to the bottom. The first Sargassum patches were encountered on 23rd of December (second week) on our way to the northern most station and the first samples of different morphotypes of this floating algae were collected from the boat and incubation work started. Besides the ongoing research program, we celebrated Christmas on December 24 and 25 with good food, singing, poems, presents and charades organized by the 11 nationalities on board. The last stations in the Atlantic worked again smoothly and on December 29, we entered the first of six different exclusive economic zones (EEZ) in the Caribbean, starting with Puerto Rico.

In the Caribbean EEZs of Puerto Rico (29.12.), the Dominican Republic (29.-31.12.), Haiti (31.12.), Jamaica (31.12.-01.01.22), Columbia (01.-02.01.), Panama (02.-06.01.) and the Pacific side of Columbia (06.01.), the three-hourly-underway-sampling of trace gases and nutrients continued, as well as the acoustic identification of currents and organisms. Additionally, the Neuston Catamaran was deployed for the collection of plastic debris. As occasionally massive patches of Sargassum were encountered, the collection of the algae, stemming from the equatorial regions of the western Atlantic, was possible with the Catamaran and incubations continued. We could underline the international character of the cruise and short relaxations to the round-the-clock work on the expedition by toasting to the New Year for five times, starting with the Asian participants at 12 o’clock noon –ships time- on December 31 2021.

During the cruise through the Caribbean Sea the incubations in the five incubators placed on the stern to perform nitrogen, halogen, sulfur, and volatile organic compound cycling incubation experiments where intensified. Turnover rate and trace gas production measurements were performed, while the influence of natural factors such as light and temperature and of anthropogenic stressors such as sulfuric waste water on the marine biogeochemical processes was investigated to understand potential coupling and feedback mechanisms between these processes. The incubations of Sargassum, sampled in the Sargasso Sea and the Caribbean, continued to identify its contribution to halogen cycles and the marine carbon budget. The data acquisition of the continuous measurements and regular sampling intervals were interrupted in the Panama Canal from January 33 2022, 10 am to January 5 2022, 2 am UTC. After passing through the Panama Canal, which was an impressive experience for all on board RV SONNE and doing four stations in the international waters of the tropical Pacific at 85.5 W, where we crossed the equator on January 7 2022 at 17:07 local time (22:07 UTC). We reached our destination port (the Ecuadorian city of Guayaquil) well protected from the navy after the pilot station on January 10, 2022 in the afternoon, where PCR-testing and container packing was due again.

## Acknowledgements

Our sincere thanks goes to many people who supported the success of SO287-CONNECT in many ways. The expedition was created on short-notice and needed rapid actions, flexibility and indomitable endurance of all involved to make the cruise possible and successful under these exceptional COVID-19 conditions. Captain Tilo Birnbaum and his crew are honored for their everlasting support during the cruise and some last-minute rescues, which helped to avoid failures and delays. Marcel Deeke, who represented the generous and reliable shipping company Briese on board, is memorized for his outstanding support to enable the stay of our Senegalese researcher for the entire cruise. Special thanks to the German Research Fleet Coordination Centre at the Universität Hamburg (LDF) for their general support and especially for their tireless and persistent efforts in successfully obtaining all seven diplomatic clearances from the Ministries of Foreign Affairs of Spain, Puerto Rico, the Dominican Republic, Haiti, Jamaica, Columbia and Panama to conduct research in the economic exclusive zones of these countries. A great thank you to the employees in the German consulates of these countries, including Washington, who were involved in the Puerto Rico notification and to the German Ministry of Foreign Affairs. A great thank you also to the authorities in the respective countries who were involved in issuing the permissions. The German Federal Ministry of Education and Research (BMBF), the Review Panel German Research Vessels (GPF) and the 'Projektträger Jülich' at the Jülich Research Centre GmbH (PtJ) put a lot of effort in reviewing and promoting the different proposals for SO287-CONNECT. A special thanks also to the administrative and technical personnel of GEOMAR, who reacted rapidly on many different requests, related to funding, purchase of equipment, traveling, legislation and logistics. Thanks to GEOMAR for supporting the immediate necessities and over hours for the technical personnel on board via the ships fond. Appreciation and recognition also to the young scientific crew on board, of whom a quarter have been on a research vessel for the first time, while they worked very hard to achieve the goals of the expedition. While logistical problems were solved frequently from many involved, e.g .LPL Projects + Logistics GmbH, our special thanks goes to Eric Achterberg and his crew of SO289, who delayed their departure and packed hundreds of kilos of frozen samples, which then luckily reached the storage rooms in our home labs, where they are now waiting for analysis.

**Participant list**

| | | | | |
|---|---|---|---|---|
| 1 | Quack | Birgit, PhD | Chief scientist/Halocarbons | GEOMAR |
| 2 | Auganæs | Sigrid Marie | Masterstudent/Ozone sonding | University of Oslo |
| 3 | Boehme | Wanja | Masterstudent/Microphytoplankton, 16S | GEOMAR |
| 4 | Boesch | Tim, PhD | Scientist/Atmospheric pollution from | Universität Bremen, |
| 5 | Brockmann | Inga | Student/ DMS, DMSP, DMSO, | GEOMAR |
| 6 | Brown | Lucy | PhD-student/Ozone uptake coefficients | University of York, GB |
| 7 | Burmester | Henning | Ing/Optical instrumentation | Hereon |
| 8 | da Costa dos | Jesus | Scientist/CTD/ ADCP-ocean currents | ARDITI |
| 9 | de Góis | Cláudio | Scientist/CTD/ SSH-Eddies | ARDITI |
| 10 | Devresse | Quentin | PhD-student/Microbial respiration | GEOMAR |
| 11 | Diogoul | Ndague, | Scientist/Echsounding of the water | IRD-Senegal |
| 12 | Feil | Hendrik | Student/ GC/MS of halocarbons | GEOMAR |
| 13 | Golde | Sandra | Tech/ Bacterial production, Enzyme | GEOMAR |
| 14 | Hepach | Helmke, | Scientist/ FastOcean APD, Lipids, | GEOMAR |
| 15 | Heymann | Kerstin | Tech/Pigments | Hereon |
| 16 | Hieronymi | Martin, PhD | Scientist/Surface reflectance | Hereon |
| 17 | Ingeniero | Riel | PhD-student/NO-production | GEOMAR |
| 18<br>19 | Karnatz | Josefine | Masterstudent/ Halocarbons and carbon from Sargassum | GEOMAR |
| 19 | Kluever | Tania | Tech/Primary production, Enzyme rates | GEOMAR |
| 20 | Latsch | Miriam | Scientist/Atmospheric pollution | Universität Bremen |
| 21 | Loades | David | Scientist/Ozone air-sea flux, deposition | University of York, GB |
| 22 | Mickenbecker | Julia | Student/ GC/MS of halocarbons | GEOMAR |
| 23 | Mueller | Tobias | Masterstudent/TEP, CSP | GEOMAR |
| 24 | Offin | Alice | PhD-student/ Iodine from ocean and Sargassum | University of Leicester, GB |
| 25 | Potin | Philippe, | Scientist/ Sargassum incubations | CNRS |
| 26 | Qelaj | Kastriot | Tech/nutrients | GEOMAR |
| 27 | Roa | Jon | Tech/UVP, DOC + TDN, DAA, DC, DOP | GEOMAR |
| 28 | Rosa | Alexandra | Scientist/CTD | ARDITI |
| 29 | Röttgers | Rüdiger, | Scientist/Absorptionspectroscopy | Hereon |
| 30 | Röttgers | Sünje | High-School student/Aerosol and air | GEOMAR |
| 31 | Röttgers | Lucie | Student/ Aerosol and air sampling | GEOMAR |
| 32 | Schartau | Markus, PhD | Scientist/ Bio. part. silica, (POC, PN) | GEOMAR |
| 33 | Scheidemann | Lindsay | PhD-student/ Plastic marine debris, | GEOMAR |
| 34 | Schulz | Gesa | PhD-student/ Nitrous oxide and | Hereon |
| 35 | Sulaiman | Hanif | Student/ $15NO_3^-$, $15N_2O$, $CH_4$, $N_2O$ | GEOMAR |
| 36 | Weddell | Katherine | PhD-student/ POM, fatty acids | University of York, GB |
| 37 | Wunderlich | Greta | Student/ DMS, DMSP, DMSO, ship | GEOMAR |
| 38 | Xu | Peihang, PhD | Scientist/ Microbial Community, carbon fixation, flow cytometry | University of Southern Denmark |
| 39 | Zehender | Isabella | Student/ Dissolved oxygen | GEOMAR |

- ARDITI: Regional Agency for the Development of Research, Technology and Innovation of Madeira, Funchal, Portugal
- CNRS: Centre national de la recherche scientifique, Station Biologique de Roscoff, France
- GEOMAR - Helmholtz-Centre for Ocean Research Kiel, Germany
- Hereon: Helmholtz-Zentrum Hereon, Geesthacht, Germany
- IRD: Institut de recherche pour le développement – Senegal, Dakar, Senegal

## Stationlist

- Hereon-CTD: A 12-position water sampler frame with eight 9L-sampling bottles, a CTD (equipped with oxygen, chlorophyll fluorescence and turbidity sensors), several backscatter sensor (2x Eco-VSF and a HydroScat-6), an AC-S attenuation-absorption meter, a LISST-VSF scattering meter and a PAR irradiance sensor
- CTD: A 24 bottle rosette-sampler, with CTD, SBE-911, and sensors for temperature, pressure, conductivity, salinity, density, turbidity, dissolved oxygen, colored dissolved organic matter (CDOM), fluorescence ECO-AFL (chlorophyll-a), fluorescence wet star and irradiance\PAR
- Radiosonde: GRAW-DFM-17 Radiosonde, Sensors: temperature, humidity, pressure, wind
- Ozone sonde: EnSCi-ECC-2Z-V7 Ozonesonde
- ISP: Insitu pump
- Garretscreen: Collection of sea surface microlayer from stern
- Catamaran: Surface deployment for 20 min, collecting neuston from sea surface
- WBAT (attached to CTD): Wide band scientific echo sounder, SIMRAD-EK80
- Zodiak: The ships working boat was used to deploy the Garretscreen from the sea surface.

| Activity No. | Station on position | Date | Gear | Time (UTC) | Latitude | Longitude | Ocean Depth [m] | Deployment Depth [m] |
|---|---|---|---|---|---|---|---|---|
| SO287_1-1 | 1 | 12.12.2021 | Hereon-CTD | 12:47 | 24° 33,25' N | 019° 34,17' W | | 70 |
| SO287_1-2 | 1 | 12.12.2021 | CTD | 09:33 | 24° 33,21' N | 019° 34,19' W | | 200 |
| SO287_1-3 | 1 | 12.12.2021 | CTD | 10:48 | 24° 33,25' N | 019° 34,17' W | 3352 | 200 |
| SO287_1-4 | 1 | 12.12.2021 | Hereon-CTD | 12:47 | 24° 33,25' N | 019° 34,17' W | 3352 | 80 |
| SO287_1-5 | 1 | 12.12.2021 | Radio sonde | 12:59 | 24° 33,25' N | 019° 34,16' W | 3352 | |
| SO287_1-6 | 1 | 12.12.2021 | Garretscreen | 13:00 | 24° 33,25' N | 019° 34,16' W | 3353 | |
| SO287_1-7 | 1 | 12.12.2021 | CTD (WBAT) | 13:33 | 24° 33,25' N | 019° 34,17' W | 3355 | 1000 |
| SO287_1-8 | 1 | 12.12.2021 | ISP | 14:53 | 24° 33,24' N | 019° 34,16' W | 3352 | 104 |
| SO287_1-9 | 1 | 12.12.2021 | Catamaran | 16:04 | 24° 33,24' N | 019° 34,16' W | 3353 | |
| SO287_2-1 | 2 | 13.12.2021 | CTD | 00:30 | 23° 41,68' N | 021° 20,31' W | 4411 | 200 |
| SO287_2-2 | 2 | 13.12.2021 | CTD | 01:08 | 23° 41,66' N | 021° 20,30' W | 4411 | 4350 |
| SO287_2-3 | 2 | 13.12.2021 | Radio sonde | 01:36 | 23° 41,65' N | 021° 20,30' W | 4410 | |
| SO287_3-1 | 3 | 13.12.2021 | Garretscreen | 12:48 | 22° 47,71' N | 023° 04,35' W | 4870 | |
| SO287_3-2 | 3 | 13.12.2021 | Radio sonde | 12:52 | 22° 47,72' N | 023° 04,35' W | 4870 | |
| SO287_3-3 | 3 | 13.12.2021 | Hereon-CTD | 13:00 | 22° 47,72' N | 023° 04,35' W | 4870 | 100 |
| SO287_3-4 | 3 | 13.12.2021 | CTD (WBAT) | 13:40 | 22° 47,72' N | 023° 04,35' W | 4870 | 200 |
| SO287_3-5 | 3 | 13.12.2021 | CTD (WBAT) | 14:12 | 22° 47,72' N | 023° 04,35' W | 4870 | 1000 |
| SO287_3-6 | 3 | 13.12.2021 | Catamaran | 15:50 | 22° 47,71' N | 023° 04,34' W | 4871 | |
| SO287_4-1 | 4 | 14.12.2021 | CTD | 00:10 | 21° 54,47' N | 024° 45,58' W | 5102 | 200 |
| SO287_4-2 | 4 | 14.12.2021 | CTD | 00:37 | 21° 54,48' N | 024° 45,59' W | 5100 | 5050 |
| SO287_4-3 | 4 | 14.12.2021 | Radio sonde | 00:51 | 21° 54,48' N | 024° 45,59' W | 5100 | |
| SO287_5-1 | 5 | 14.12.2021 | CTD (WBAT) | 12:24 | 20° 57,31' N | 026° 23,90' W | 5049 | 200 |
| SO287_5-2 | 5 | 14.12.2021 | Garretscreen | 12:28 | 20° 57,31' N | 026° 23,90' W | 5300 | |
| SO287_5-3 | 5 | 14.12.2021 | Hereon-CTD | 13:00 | 20° 57,32' N | 026° 23,91' W | 5299 | 100 |
| SO287_5-4 | 5 | 14.12.2021 | Radio sonde | 13:34 | 20° 57,32' N | 026° 23,90' W | 5301 | |
| SO287_5-5 | 5 | 14.12.2021 | CTD (WBAT) | 13:40 | 20° 57,31' N | 026° 23,91' W | 5048 | 1000 |
| SO287_5-6 | 5 | 14.12.2021 | Catamaran | 14:59 | 20° 57,32' N | 026° 23,91' W | 5299 | |
| SO287_6-1 | 6 | 14.12.2021 | CTD | 23:38 | 20° 11,98' N | 028° 07,99' W | 4954 | 200 |
| SO287_6-2 | 6 | 15.12.2021 | CTD | 00:12 | 20° 12,00' N | 028° 07,98' W | 4955 | 4900 |
| SO287_6-3 | 6 | 15.12.2021 | Radio sonde | 00:37 | 20° 12,01' N | 028° 07,98' W | 4955 | |
| SO287_7-1 | 7 | 15.12.2021 | Sun observ. | 11:21 | 19° 26,72' N | 029° 52,20' W | 5071 | |
| SO287_7-2 | 7 | 15.12.2021 | CTD (WBAT) | 11:42 | 19° 26,70' N | 029° 52,20' W | 4773 | 200 |
| SO287_7-3 | 7 | 15.12.2021 | Garretscreen | 11:43 | 19° 26,70' N | 029° 52,20' W | 4784 | |
| SO287_7-4 | 7 | 15.12.2021 | CTD (WBAT) | 12:22 | 19° 26,71' N | 029° 52,21' W | 4783 | 1000 |
| SO287_7-5 | 7 | 15.12.2021 | Ozone sonde | 13:08 | 19° 26,70' N | 029° 52,20' W | 4789 | |
| SO287_7-6 | 7 | 15.12.2021 | Hereon-CTD | 13:44 | 19° 26,71' N | 029° 52,21' W | 4777 | 100 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SO287_7-7 | 7 | 15.12.2021 | Catamaran | 14:26 | 19° 26,71' N | 029° 52,20' W | 4786 | |
| SO287_8-1 | 8 | 15.12.2021 | CTD | 22:52 | 18° 39,95' N | 031° 34,92' W | 4860 | 200 |
| SO287_8-2 | 8 | 15.12.2021 | CTD | 23:29 | 18° 40,01' N | 031° 34,85' W | 4876 | |
| SO287_8-3 | 8 | 15.12.2021 | Radio sonde | 23:46 | 18° 39,99' N | 031° 34,84' W | 4870 | |
| SO287_9-1 | 9 | 16.12.2021 | Sun observ. | 10:48 | 17° 53,69' N | 033° 16,96' W | 4987 | |
| SO287_9-2 | 9 | 16.12.2021 | Zodiac | 11:16 | 17° 53,65' N | 033° 16,98' W | 4976 | |
| SO287_9-3 | 9 | 16.12.2021 | CTD (WBAT) | 11:22 | 17° 53,66' N | 033° 17,00' W | 4981 | 200 |
| SO287_9-4 | 9 | 16.12.2021 | CTD (WBAT) | 12:01 | 17° 53,66' N | 033° 17,02' W | 4983 | 1000 |
| SO287_9-5 | 9 | 16.12.2021 | Radio sonde | 13:03 | 17° 53,67' N | 033° 17,02' W | 5303 | |
| SO287_9-6 | 9 | 16.12.2021 | Zodiac | 13:29 | 17° 53,67' N | 033° 17,02' W | 4989 | |
| SO287_9-7 | 9 | 16.12.2021 | Hereon-CTD | 13:38 | 17° 53,67' N | 033° 17,02' W | 4994 | 100 |
| SO287_9-8 | 9 | 16.12.2021 | Catamaran | 14:29 | 17° 53,67' N | 033° 17,01' W | 4998 | |
| SO287_9-9 | 9 | 16.12.2021 | Sun observ. | 15:00 | 17° 54,15' N | 033° 15,86' W | 5081 | |
| SO287_10-1 | 10 | 17.12.2021 | CTD | 00:13 | 17° 05,43' N | 034° 57,93' W | 5429 | |
| SO287_10-2 | 10 | 17.12.2021 | CTD | 00:45 | 17° 05,44' N | 034° 57,94' W | 5181 | 5100 |
| SO287_10-3 | 10 | 17.12.2021 | Radio sonde | 01:10 | 17° 05,43' N | 034° 57,93' W | 5179 | |
| SO287_11-1 | 11 | 17.12.2021 | Sun observ. | 13:02 | 17° 03,62' N | 036° 51,38' W | 4760 | |
| SO287_11-2 | 11 | 17.12.2021 | CTD (WBAT) | 13:25 | 17° 03,49' N | 036° 51,81' W | 5035 | 200 |
| SO287_11-3 | 11 | 17.12.2021 | Garretscreen | 13:26 | 17° 03,49' N | 036° 51,81' W | 5040 | |
| SO287_11-4 | 11 | 17.12.2021 | Hereon-CTD | 13:55 | 17° 03,49' N | 036° 51,81' W | 5053 | 100 |
| SO287_11-5 | 11 | 17.12.2021 | Radio sonde | 14:32 | 17° 03,49' N | 036° 51,81' W | 5046 | |
| SO287_11-6 | 11 | 17.12.2021 | CTD (WBAT) | 14:36 | 17° 03,49' N | 036° 51,81' W | 5045 | 1000 |
| SO287_11-7 | 11 | 17.12.2021 | Catamaran | 15:59 | 17° 03,49' N | 036° 51,80' W | 5047 | |
| SO287_12-1 | 12 | 18.12.2021 | CTD | 01:18 | 17° 06,69' N | 038° 43,95' W | 5190 | 200 |
| SO287_12-2 | 12 | 18.12.2021 | CTD | 01:46 | 17° 06,70' N | 038° 43,95' W | 5188 | 5000 |
| SO287_12-3 | 12 | 18.12.2021 | Radio sonde | 02:10 | 17° 06,68' N | 038° 43,95' W | 5185 | |
| SO287_13-1 | 13 | 18.12.2021 | Sun observ. | 14:06 | 17° 07,73' N | 040° 36,84' W | 5032 | |
| SO287_13-2 | 13 | 18.12.2021 | Garretscreen | 14:28 | 17° 07,75' N | 040° 37,25' W | 5222 | |
| SO287_13-3 | 13 | 18.12.2021 | Hereon-CTD | 14:30 | 17° 07,75' N | 040° 37,24' W | 4953 | 100 |
| SO287_13-4 | 13 | 18.12.2021 | Ozone sonde | 14:42 | 17° 07,74' N | 040° 37,24' W | 4946 | |
| SO287_13-5 | 13 | 18.12.2021 | CTD (WBAT) | 15:05 | 17° 07,76' N | 040° 37,24' W | 4952 | 200 |
| SO287_13-6 | 13 | 18.12.2021 | CTD (WBAT) | 15:35 | 17° 07,74' N | 040° 37,24' W | 4952 | 1000 |
| SO287_13-7 | 13 | 18.12.2021 | Catamaran | 17:24 | 17° 07,76' N | 040° 37,19' W | 4971 | |
| SO287_14-1 | 14 | 19.12.2021 | CTD | 02:35 | 17° 06,76' N | 042° 30,14' W | 5555 | 200 |
| SO287_14-2 | 14 | 19.12.2021 | CTD | 03:01 | 17° 06,77' N | 042° 30,15' W | 5562 | 5530 |
| SO287_14-3 | 14 | 19.12.2021 | Radio sonde | 03:24 | 17° 06,77' N | 042° 30,14' W | 5558 | |
| SO287_15-1 | 15 | 19.12.2021 | Hereon-CTD | 14:53 | 17° 05,84' N | 044° 16,04' W | 4113 | 100 |
| SO287_15-2 | 15 | 19.12.2021 | Radio sonde | 15:18 | 17° 05,82' N | 044° 16,03' W | 4118 | |
| SO287_15-3 | 15 | 19.12.2021 | CTD (WBAT) | 15:33 | 17° 05,83' N | 044° 16,03' W | 4117 | 200 |
| SO287_15-4 | 15 | 19.12.2021 | Garretscreen | 15:51 | 17° 05,83' N | 044° 16,04' W | 4119 | |
| SO287_15-5 | 15 | 19.12.2021 | CTD (WBAT) | 16:01 | 17° 05,83' N | 044° 16,04' W | 4105 | 1000 |
| SO287_15-6 | 15 | 19.12.2021 | Catamaran | 17:55 | 17° 05,85' N | 044° 15,99' W | 4133 | |
| SO287_16-1 | 16 | 20.12.2021 | CTD | 03:33 | 17° 04,51' N | 046° 15,86' W | 4122 | 200 |
| SO287_16-2 | 16 | 20.12.2021 | CTD | 03:59 | 17° 04,52' N | 046° 15,86' W | 3283 | 3248 |
| SO287_16-3 | 16 | 20.12.2021 | Radio sonde | 04:20 | 17° 04,52' N | 046° 15,86' W | 3283 | |
| SO287_17-1 | 17 | 20.12.2021 | Sun observ. | 14:29 | 17° 01,89' N | 048° 06,53' W | 3284 | |
| SO287_17-2 | 17 | 20.12.2021 | CTD (WBAT) | 14:46 | 17° 01,82' N | 048° 06,87' W | 3997 | 200 |
| SO287_17-3 | 17 | 20.12.2021 | Hereon-CTD | 15:37 | 17° 01,82' N | 048° 06,86' W | 4064 | 100 |
| SO287_17-4 | 17 | 20.12.2021 | Radio sonde | 15:57 | 17° 01,83' N | 048° 06,86' W | 4058 | |
| SO287_17-5 | 17 | 20.12.2021 | CTD (WBAT) | 16:19 | 17° 01,83' N | 048° 06,88' W | 4073 | 1000 |
| SO287_17-6 | 17 | 20.12.2021 | Garretscreen | 16:37 | 17° 01,83' N | 048° 06,86' W | 4066 | |
| SO287_17-7 | 17 | 20.12.2021 | Catamaran | 17:46 | 17° 01,84' N | 048° 06,87' W | 4053 | |
| SO287_18-1 | 18 | 21.12.2021 | CTD | 02:43 | 17° 57,14' N | 049° 44,99' W | 4062 | 200 |
| SO287_18-2 | 18 | 21.12.2021 | CTD | 03:09 | 17° 57,14' N | 049° 44,99' W | 4591 | 4400 |
| SO287_18-3 | 18 | 21.12.2021 | Radio sonde | 03:27 | 17° 57,13' N | 049° 44,98' W | 4599 | |
| SO287_19-1 | 18 | 21.12.2021 | Sun observ. | 14:07 | 19° 05,73' N | 051° 11,73' W | 4576 | |
| SO287_19-2 | 19 | 21.12.2021 | CTD (WBAT) | 14:29 | 19° 06,09' N | 051° 12,28' W | 4287 | 200 |
| SO287_19-3 | 19 | 21.12.2021 | Garretscreen | 14:39 | 19° 06,09' N | 051° 12,31' W | 4251 | |

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| SO287_19-4 | 19 | 21.12.2021 | Hereon-CTD | 15:02 | 19° 06,10' N | 051° 12,31' W | 4266 | 100 |
| SO287_19-5 | 19 | 21.12.2021 | Ozone sonde | 15:33 | 19° 06,10' N | 051° 12,31' W | 4304 | |
| SO287_19-6 | 19 | 21.12.2021 | CTD (WBAT) | 15:44 | 19° 06,09' N | 051° 12,31' W | 4312 | 1000 |
| SO287_19-7 | 19 | 21.12.2021 | Catamaran | 17:10 | 19° 06,10' N | 051° 12,30' W | 4319 | |
| SO287_20-1 | 20 | 22.12.2021 | CTD | 01:46 | 20° 13,91' N | 052° 42,75' W | 4348 | 200 |
| SO287_20-2 | 20 | 22.12.2021 | CTD | 02:23 | 20° 13,92' N | 052° 42,70' W | 4943 | 4800 |
| SO287_20-3 | 20 | 22.12.2021 | Radio sonde | 02:44 | 20° 13,92' N | 052° 42,70' W | 4986 | |
| SO287_21-1 | 21 | 22.12.2021 | Sun observ. | 13:28 | 21° 20,82' N | 054° 12,60' W | 4996 | |
| SO287_21-2 | 21 | 22.12.2021 | Zodiac | 13:28 | 21° 20,82' N | 054° 12,60' W | 5035 | |
| SO287_21-3 | 21 | 22.12.2021 | CTD (WBAT) | 13:50 | 21° 20,98' N | 054° 12,76' W | 5047 | 200 |
| SO287_21-4 | 21 | 22.12.2021 | Heron-CTD | 14:22 | 21° 20,98' N | 054° 12,76' W | 5057 | 100 |
| SO287_21-5 | 21 | 22.12.2021 | Radio sonde | 14:52 | 21° 20,98' N | 054° 12,76' W | 5069 | |
| SO287_21-6 | 21 | 22.12.2021 | CTD (WBAT) | 15:05 | 21° 20,97' N | 054° 12,76' W | 5060 | 1000 |
| SO287_21-7 | 21 | 22.12.2021 | Catamaran | 16:51 | 21° 20,87' N | 054° 12,60' W | 5061 | |
| SO287_22-1 | 22 | 23.12.2021 | CTD | 01:30 | 22° 37,69' N | 055° 38,39' W | 5048 | 200 |
| SO287_22-2 | 22 | 23.12.2021 | CTD | 02:02 | 22° 37,69' N | 055° 38,39' W | 6238 | 5910 |
| SO287_22-3 | 22 | 23.12.2021 | Radio sonde | 02:18 | 22° 37,69' N | 055° 38,39' W | 6008 | |
| SO287_23-1 | 23 | 23.12.2021 | Sun observ. | 15:00 | 24° 09,10' N | 056° 40,12' W | | |
| SO287_23-2 | 23 | 23.12.2021 | Zodiac | 15:08 | 24° 09,13' N | 056° 40,16' W | 5757 | |
| SO287_23-3 | 23 | 23.12.2021 | CTD (WBAT) | 15:25 | 24° 09,13' N | 056° 40,15' W | 5776 | 200 |
| SO287_23-4 | 23 | 23.12.2021 | Hereon-CTD | 15:47 | 24° 09,13' N | 056° 40,14' W | 5765 | 100 |
| SO287_23-5 | 23 | 23.12.2021 | Radio sonde | 16:03 | 24° 09,13' N | 056° 40,14' W | 5753 | |
| SO287_23-6 | 23 | 23.12.2021 | CTD (WBAT) | 16:27 | 24° 09,13' N | 056° 40,14' W | 5768 | |
| SO287_23-7 | 23 | 23.12.2021 | Catamaran | 18:07 | 24° 09,11' N | 056° 40,13' W | 5763 | |
| SO287_24-1 | 24 | 24.12.2021 | CTD | 02:30 | 25° 44,37' N | 057° 34,73' W | 6307 | 200 |
| SO287_24-2 | 24 | 24.12.2021 | CTD | 02:54 | 25° 44,36' N | 057° 34,72' W | 6300 | |
| SO287_24-3 | 24 | 24.12.2021 | Radio sonde | 03:32 | 25° 44,36' N | 057° 34,73' W | 6300 | 5950 |
| SO287_25-1 | 25 | 24.12.2021 | Sun observ. | 14:45 | 27° 20,10' N | 058° 27,23' W | 6479 | |
| SO287_25-2 | 25 | 24.12.2021 | CTD (WBAT) | 15:06 | 27° 20,19' N | 058° 27,19' W | 6484 | 200 |
| SO287_25-3 | 25 | 24.12.2021 | Garretscreen | 15:13 | 27° 20,19' N | 058° 27,20' W | 6487 | |
| SO287_25-4 | 25 | 24.12.2021 | Hereon-CTD | 15:30 | 27° 20,20' N | 058° 27,20' W | 6485 | 100 |
| SO287_25-5 | 25 | 24.12.2021 | CTD (WBAT) | 16:09 | 27° 20,20' N | 058° 27,19' W | 6484 | 1000 |
| SO287_25-6 | 25 | 24.12.2021 | Radio sonde | 16:11 | 27° 20,20' N | 058° 27,19' W | 6485 | |
| SO287_25-7 | 25 | 24.12.2021 | Catamaran | 17:43 | 27° 20,20' N | 058° 27,22' W | 6488 | |
| SO287_26-1 | 26 | 25.12.2021 | CTD | 02:39 | 29° 01,44' N | 059° 23,02' W | 6483 | 200 |
| SO287_26-2 | 26 | 25.12.2021 | CTD | 03:01 | 29° 01,51' N | 059° 23,06' W | 6493 | 5450 |
| SO287_26-3 | 26 | 25.12.2021 | Radio sonde | 03:27 | 29° 01,51' N | 059° 23,06' W | 5531 | |
| SO287_27-1 | 27 | 25.12.2021 | Sun observ. | 15:06 | 30° 34,80' N | 060° 15,39' W | 5536 | |
| SO287_27-2 | 27 | 25.12.2021 | CTD (WBAT) | 15:26 | 30° 35,03' N | 060° 15,51' W | 5549 | 200 |
| SO287_27-3 | 27 | 25.12.2021 | Garretscreen | 15:43 | 30° 35,03' N | 060° 15,51' W | 5538 | |
| SO287_27-4 | 27 | 25.12.2021 | Hereon-CTD | 15:49 | 30° 35,04' N | 060° 15,51' W | 5492 | 100 |
| SO287_27-5 | 27 | 25.12.2021 | CTD (WBAT) | 16:30 | 30° 35,03' N | 060° 15,50' W | 5506 | 1000 |
| SO287_27-6 | 27 | 25.12.2021 | Ozone sonde | 16:44 | 30° 35,03' N | 060° 15,51' W | 5518 | |
| SO287_27-7 | 27 | 25.12.2021 | Catamaran | 17:59 | 30° 35,03' N | 060° 15,50' W | 5513 | |
| SO287_28-1 | 28 | 26.12.2021 | CTD | 12:40 | 28° 31,12' N | 061° 36,38' W | 5512 | 200 |
| SO287_28-2 | 28 | 26.12.2021 | CTD | 13:28 | 28° 31,12' N | 061° 36,37' W | 5482 | 1000 |
| SO287_28-3 | 28 | 26.12.2021 | Garretscreen | 13:38 | 28° 31,12' N | 061° 36,39' W | 5371 | |
| SO287_28-4 | 28 | 26.12.2021 | Hereon-CTD | 15:09 | 28° 31,13' N | 061° 36,38' W | 5372 | 100 |
| SO287_28-5 | 28 | 26.12.2021 | Radio sonde | 15:13 | 28° 31,13' N | 061° 36,38' W | 5382 | |
| SO287_28-6 | 28 | 26.12.2021 | Catamaran | 15:47 | 28° 31,12' N | 061° 36,38' W | 5371 | |
| SO287_29-1 | 29 | 27.12.2021 | CTD | 00:00 | 27° 06,85' N | 062° 20,77' W | 5371 | 200 |
| SO287_29-2 | 29 | 27.12.2021 | CTD | 00:39 | 27° 06,86' N | 062° 20,77' W | 5368 | 5750 |
| SO287_29-3 | 29 | 27.12.2021 | Radio sonde | 00:55 | 27° 06,85' N | 062° 20,78' W | 6090 | |
| SO287_30-1 | 30 | 27.12.2021 | Sun observ. | 14:48 | 25° 23,30' N | 063° 23,08' W | 5836 | |
| SO287_30-2 | 30 | 27.12.2021 | CTD (WBAT) | 15:02 | 25° 23,30' N | 063° 23,08' W | 5836 | 200 |
| SO287_30-3 | 30 | 27.12.2021 | Garretscreen | 15:10 | 25° 23,30' N | 063° 23,08' W | 5714 | |
| SO287_30-4 | 30 | 27.12.2021 | Hereon-CTD | 15:27 | 25° 23,31' N | 063° 23,08' W | 5718 | 100 |
| SO287_30-5 | 30 | 27.12.2021 | Radio sonde | 15:50 | 25° 23,31' N | 063° 23,08' W | 5738 | |

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| SO287_30-6 | 30 | 27.12.2021 | CTD (WBAT) | 16:06 | 25° 23,31' N | 063° 23,09' W | 5718 | 1000 |
| SO287_30-7 | 30 | 27.12.2021 | Catamaran | 17:35 | 25° 23,30' N | 063° 23,08' W | 5714 | |
| SO287_31-1 | 31 | 28.12.2021 | CTD | 02:28 | 23° 52,37' N | 064° 24,28' W | 5713 | 200 |
| SO287_31-2 | 31 | 28.12.2021 | CTD | 02:52 | 23° 52,37' N | 064° 24,28' W | 5717 | 5370 |
| SO287_31-3 | 31 | 28.12.2021 | Radio sonde | 03:13 | 23° 52,37' N | 064° 24,27' W | 5844 | |
| SO287_32-1 | 32 | 28.12.2021 | Sun observ. | 15:00 | 22° 14,60' N | 065° 32,42' W | 5465 | |
| SO287_32-2 | 32 | 28.12.2021 | Zodiac | 15:07 | 22° 14,60' N | 065° 32,40' W | 5445 | |
| SO287_32-3 | 32 | 28.12.2021 | CTD (WBAT) | 15:12 | 22° 14,60' N | 065° 32,40' W | 5811 | 200 |
| SO287_32-4 | 32 | 28.12.2021 | Hereon-CTD | 15:45 | 22° 14,60' N | 065° 32,40' W | 5814 | 100 |
| SO287_32-5 | 32 | 28.12.2021 | CTD (WBAT) | 16:26 | 22° 14,60' N | 065° 32,40' W | 5811 | 1000 |
| SO287_32-6 | 32 | 28.12.2021 | Radio sonde | 16:48 | 22° 14,60' N | 065° 32,34' W | 6064 | |
| SO287_32-7 | 32 | 28.12.2021 | Catamaran | 17:51 | 22° 14,61' N | 065° 32,40' W | 6067 | |
| SO287_33-1 | transit | 29.12.2021 | Catamaran | 12:00 | 18° 47,01' N | 067° 44,63' W | | |
| SO287_34-1 | transit | 29.12.2021 | Catamaran | 17:14 | 17° 53,95' N | 068° 21,62' W | | |
| SO287_35-1 | transit | 29.12.2021 | Catamaran | 19:26 | 17° 51,78' N | 068° 28,38' W | | |
| SO287_36-1 | transit | 30.12.2021 | Catamaran | 12:00 | 16° 58,33' N | 070° 44,58' W | | |
| SO287_37-1 | transit | 30.12.2021 | Catamaran | 19:29 | 16° 38,86' N | 071° 32,17' W | | |
| SO287_37-2 | transit | 30.12.2021 | Catamaran | 19:45 | 16° 38,93' N | 071° 31,78' W | | |
| SO287_38-1 | transit | 31.12.2021 | Radio sonde | 04:03 | 16° 16,78' N | 072° 27,33' W | | |
| SO287_39-1 | transit | 31.12.2021 | Catamaran | 11:59 | 15° 54,34' N | 073° 27,49' W | | |
| SO287_40-1 | transit | 31.12.2021 | Ozone sonde | 16:59 | 15° 39,76' N | 074° 05,92' W | | |
| SO287_41-1 | transit | 31.12.2021 | Catamaran | 19:27 | 15° 32,81' N | 074° 23,07' W | | |
| SO287_42-1 | transit | 01.01.2022 | Radio sonde | 00:23 | 15° 17,47' N | 074° 58,48' W | | |
| SO287_43-1 | transit | 01.01.2022 | Catamaran | 13:57 | 14° 28,29' N | 076° 47,77' W | | |
| SO287_44-1 | transit | 01.01.2022 | Radio sonde | 17:55 | 14° 13,87' N | 077° 20,09' W | | |
| SO287_45-1 | transit | 01.01.2022 | Catamaran | 20:24 | 14° 05,35' N | 077° 39,14' W | | |
| SO287_46-1 | transit | 02.01.2022 | Radio sonde | 05:12 | 12° 58,04' N | 078° 07,53' W | | |
| SO287_47-1 | transit | 02.01.2022 | Catamaran | 12:58 | 12° 00,22' N | 078° 36,40' W | | |
| SO287_48-1 | transit | 02.01.2022 | Ozone sonde | 17:55 | 11° 24,96' N | 078° 54,92' W | | |
| SO287_49-1 | transit | 02.01.2022 | Catamaran | 20:19 | 11° 10,99' N | 079° 01,68' W | | |
| SO287_50-1 | transit | 05.01.2022 | Catamaran | 13:00 | 06° 34,25' N | 081° 00,94' W | | |
| SO287_51-1 | transit | 05.01.2022 | Radio sonde | 18:01 | 06° 01,86' N | 081° 46,43' W | | |
| SO287_52-1 | transit | 05.01.2022 | Catamaran | 20:25 | 05° 46,53' N | 082° 07,63' W | | |
| SO287_53-1 | transit | 06.01.2022 | Radio sonde | 05:15 | 04° 45,88' N | 083° 20,09' W | | |
| SO287_54-1 | transit | 06.01.2022 | Catamaran | 12:57 | 03° 34,93' N | 084° 03,06' W | | |
| SO287_55-1 | transit | 06.01.2022 | Radio sonde | 17:59 | 02° 52,12' N | 084° 28,90' W | | |
| SO287_56-1 | transit | 06.01.2022 | Catamaran | 20:22 | 02° 33,60' N | 084° 44,85' W | 2989 | |
| SO287_57-1 | 33 | 07.01.2022 | Hereon-CTD | 02:35 | 02° 15,80' N | 085° 49,89' W | 2907 | 100 |
| SO287_57-2 | 33 | 07.01.2022 | CTD | 02:59 | 02° 15,83' N | 085° 49,97' W | 2901 | 400 |
| SO287_57-3 | 33 | 07.01.2022 | CTD | 03:54 | 02° 15,84' N | 085° 49,99' W | 2904 | 2850 |
| SO287_57-4 | 33 | 07.01.2022 | Radio sonde | 04:24 | 02° 15,84' N | 085° 49,99' W | 2905 | |
| SO287_58-1 | 34 | 07.01.2022 | Sun observ. | 15:37 | 00° 27,20' N | 085° 49,96' W | 2795 | |
| SO287_58-2 | 34 | 07.01.2022 | CTD (WBAT) | 15:58 | 00° 27,21' N | 085° 49,97' W | 2802 | 200 |
| SO287_58-3 | 34 | 07.01.2022 | Garretscreen | 16:58 | 00° 27,21' N | 085° 49,97' W | 2804 | |
| SO287_58-4 | 34 | 07.01.2022 | Heron-CTD | 17:29 | 00° 27,21' N | 085° 49,97' W | 2807 | 100 |
| SO287_58-5 | 34 | 07.01.2022 | Ozone sonde | 17:31 | 00° 27,20' N | 085° 49,97' W | 2802 | |
| SO287_58-6 | 34 | 07.01.2022 | CTD (WBAT) | 18:07 | 00° 27,21' N | 085° 49,98' W | 2803 | 1000 |
| SO287_58-7 | 34 | 07.01.2022 | Catamaran | 19:41 | 00° 27,19' N | 085° 49,99' W | 2800 | |
| SO287_59-1 | 35 | 08.01.2022 | Hereon-CTD | 04:00 | 01° 20,38' S | 085° 50,00' W | 2458 | 100 |
| SO287_59-2 | 35 | 08.01.2022 | CTD | 04:20 | 01° 20,38' S | 085° 49,99' W | 2456 | 400 |
| SO287_59-3 | 35 | 08.01.2022 | CTD | 04:57 | 01° 20,38' S | 085° 50,00' W | 2456 | 2400 |
| SO287_59-4 | 35 | 08.01.2022 | Radio sonde | 05:41 | 01° 20,38' S | 085° 49,99' W | 2460 | |
| SO287_60-1 | 36 | 08.01.2022 | CTD (WBAT) | 16:14 | 02° 39,99' S | 085° 49,90' W | 3156 | 200 |
| SO287_60-2 | 36 | 08.01.2022 | Zodiac | 16:59 | 02° 39,99' S | 085° 49,90' W | 3153 | |
| SO287_60-3 | 36 | 08.01.2022 | Radio sonde | 17:13 | 02° 39,99' S | 085° 49,89' W | 3155 | |
| SO287_60-4 | 36 | 08.01.2022 | Hereon-CTD | 17:31 | 02° 39,98' S | 085° 49,89' W | 3156 | 100 |
| SO287_60-5 | 36 | 08.01.2022 | CTD (WBAT) | 18:03 | 02° 39,98' S | 085° 49,90' W | 3157 | 1000 |
| SO287_60-6 | 36 | 08.01.2022 | Catamaran | 19:42 | 02° 39,99' S | 085° 49,90' W | 3154 | |