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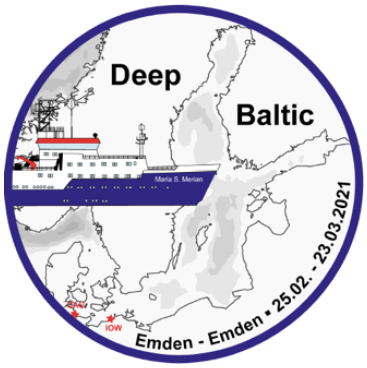

Short Cruise Report
R/V MARIA S. MERIAN
Cruise MSM99 (GPF 18-1_097)

Emden (Germany) - Emden (Germany)
25.02.2021 - 23.03.2021
Chief Scientist: Prof. Dr. Ralph Schneider
Captain: Ralf Schmidt

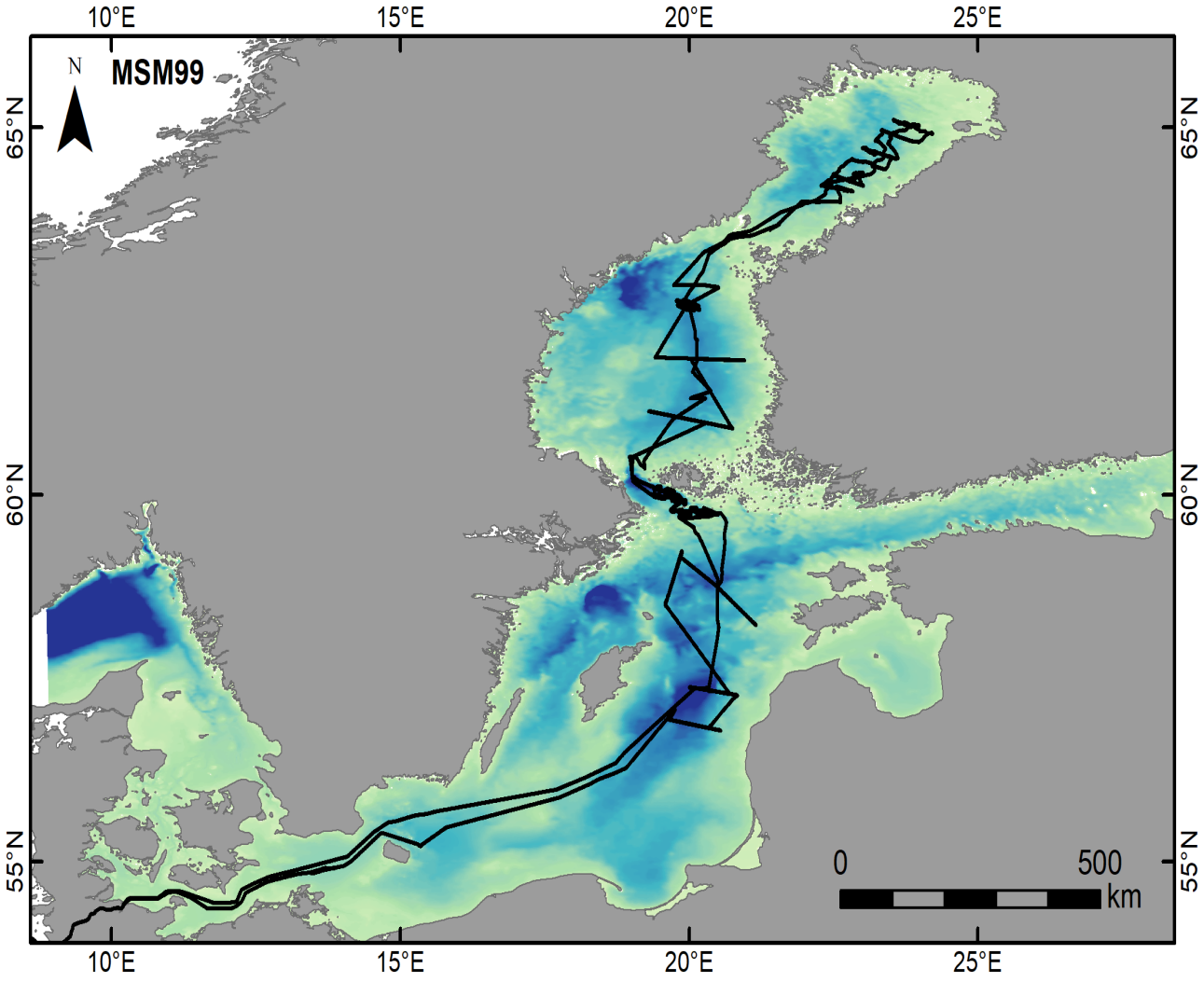

Figure 1: Cruise track of R/V MARIA S. MERIAN cruise MSM99 (GPF 18-1_097), "Baltic Deep Water Circulation"

Objectives

Cruise MSM99 into the central and northern Baltic Sea executed multibeam bathymetry and sediment echosounder surveys, as well as sampling of Holocene sediments, water column, and sea ice in the central and northern basins of the Baltic Sea. The main goals were to investigate the water column wintertime mixing underneath the winter sea-ice and how deeper water masses originating in the northern basins may ventilate also central basins at cold or warm climate conditions. Hydroacoustic surveys, sediment coring and hydrographic measurements, as well as winter sea-ice probing should fill important gaps in existing data sets. Together with numerical modeling the new data should improve our understanding about past and future variations in the ventilation of the deeper Baltic Sea by northern water masses, considering not only external climate forcing but also the effects of human-induced warming and further isostatic uplift. Next to the detailed study of the importance of wintertime deep mixing for oxygenation of northern and central basins, we wanted to investigate increasing erosion of early to mid-Holocene sediments in the western and northern regions that are transported into the deeper central basins. The response of deeper ventilation and overall ecosystem conditions to such an erosional activity, e.g., organic matter re-suspension and transport of contaminants, cannot be predicted with available data and models. Therefore, this new sampling and surveying campaign in the northern and central basins during maximum sea ice extent in February-March 2021 was therefore very important for a more quantitative assessment of Holocene water and sediment budgets as well as to account for the impact of future budget changes on the Baltic Sea ecosystem.

The water depths of the erosion basis seem to be linked to the individual sub-basin´s size, configuration and location. The reconstruction of the spatial linkage and the timing of erosional processes in greater detail was thus the first goal for this cruise. For this aim hydroacoustic profiling was performed on basin-wide transects and gravity cores were taken for visual description. Further MSM99 goals were dedicated to the physical (hydrographic) process leading to deep water formation which appears to be probably linked to winter-time climate cooling and possibly to sea-ice formation with massive brine formation which is still not well understood on temporal and spatial scales. To study the effect of sea-ice formation in the Bay of Bothnia, sea ice coring and brine sampling, as well as water column studies beneath the sea ice were conducted. Two hydrographic moorings for continuous water column measurements were deployed and will be recovered after one year. During former cruises MSM51 and 62, it became apparent, that the Western Gotland Basin is probably the best terminal destination of sufficiently strong southward directed inflows and thus the best area to study past changes in surface and subsurface water conditions from the North. However, this time the more northward located two Åland Deep sub-basins, critical for the water exchange between the central and northern Baltic Sea were sampled in greater detail based on new hydroacoustic surveying of these basins during MSM99. The investigation of the modern physical processes and the reconstruction at larger temporal and spatial scales then should lead to the overarching goal of post-cruise studies, that is to investigate recent and past ecosystem changes in an integrated palaeoceanographic proxy and modelling approach. The combination of state-of-the-art proxy reconstructions and advanced numerical simulations will elucidate cause-effect relationships of the changing Baltic Sea environment, disentangling effects of external forcing from internal feedbacks or drivers, and allow to extrapolate the rather point proxy investigations to the whole Baltic. The studies will close fundamental gaps in our knowledge related to Holocene changes in (i) the water budget as well as winter-time deep-water formation, (ii) the sediment budget relying on material fluxes, transport, and deposition, and (iii) the controlling factors comprising isostatic uplift and climate change.

Narrative

After all new crew members and researchers had spent several days in hotel quarantine and covid-19 tests turned out negative, cruise MSM99 started as planned on Thursday, February 25th, 2021, by departing from Emden Harbor. After loading of the scientific equipment and embarkment of all 18 scientific participants from Kiel, Warnemuende and Stettin, the expedition headed towards the first working area, the Arkona Basin, north of the Island of Ruegen. After three lockings in Emden Harbor, Brunsbüttel and Kiel Holtenau and a smooth passage through the Kiel Canal, we entered open water and set out towards Fehmarn on Friday, February 27th, 2021. After 9 hours of transit, station work started in the Arkona Deep. At two geology stations, selected already based on sediment echosounder and swath bathymetry surveys from expedition MSM62 in 2017, the CTD, multicorer and gravity corer were successfully deployed. With the conduction of a new survey profile, our work was completed in the Arkona Basin and we started the transit to the next working area, the Bornholm Basin. After a hydroacoustic survey at night, geological work continued with two successful multicorer stations on Saturday, February 27th. Again, during the following night, we conducted the 185 nm long transit towards the first east-west profile in the eastern Gotland Deep. The next day, February 28th, started with an CTD profile at the IOW mooring station GoNW-03, at which the recent upper boundary of more saline, but oxygen-free deeper water was found at 80 m water depth. Afterwards, a hydroacoustic survey along the eastern slope of the Gotland Deep was carried out, followed by sampling of Holocene sediments at four geological stations with multi- and gravity corer. From Monday, March 1st to Wednesday, March 3rd, we continued our work with a second similar east-west profile in the eastern Gotland Basin and afterwards went into the Northern Central Basin to conduct hydroacoustic surveys with the multi-beam echo sounder EM712 and the sediment echo sounder PARASOUND in order to determine suitable geological sampling stations. Here, the slope areas and sills between the deep basins were sampled with the multi- and gravity corer to estimate the extent and volume of the deep anoxic water body for the warm intervals during the last about 8000 years by the different water depths of the coring stations. On the other hand, hiatuses in these sediment cores gave information about depths, where oxygenated deeper waters from the northernmost Baltic Basins eroded older sediment layers. This erosional effect could be determined especially in the northern parts of the central basins between ca. 80 and 180 m water depth.

From Thursday, March 4th until Sunday, March 7th, we investigated the modern oxygen concentrations and temperature/salinity stratification in the northern Baltic, executing 9 CTD casts south of the Åland Deep and a N-S transect with 20 CTD stations up north to the ice edge in the Bothnian Sea. In between, the planned work area west of the Åland Islands was mapped and sediments sampled at four geological stations with additional CTD and microstructure probe casts. Finally, after a stormy winter night and freezing spray clouds which left MARIA S. MERIAN covered in ice, we passed the narrow strait Kvarken between Umeå and Vasaa, entering the first thin ice fields in the Bay of Bothnia in the evening of March 7th.

Monday, March 8th, we started sampling on and underneath the sea ice as planned and continued the work program until Saturday, March 13th. During day time, stable ice floes with a thickness of 30 to 50 cm were targeted to set up ice stations for drilling ice cores and sampling the water column with different probes directly from the ice. This included a small ADCP probe, a microstructure sensor and a hand-held CTD in order measure water column properties continuously for several hours. These measurements were performed at three daily stations on the ice, using small hand or electric winches from a sledge for downward and upward profiles down to depths of approximately 30 to 80 m. The collected ice cores will be used later for different laboratory analyses of, e.g. salt and nutrient content, biomarkers produced by sea ice algae, and microplastic contamination. In

addition, irradiance and reflectance measurements of sunlight were taken along systematic profiles at the stations on the ice to obtain better quantitative data by direct sensor measurements at a distance of about 1 m from the ice surface for darker and lighter areas. These will later be used to improve the calibration of large-scale satellite measurements. The daylight ice sampling was combined with east-west transects of CTD casts throughout the nights. As expected, we found proof for a stratification of a cold, oxygen-rich water mass under the sea ice in depths from 60 to 80 m which expands northwards along the slope of the west coast of Finland. In the evening of Saturday, March 13th, a final ice station was set up on a stable ice floe in the southern Bay of Bothnia, finished by the deployment of an ADCP mooring on the sea floor. This device will measure current dynamics for one year.

On Sunday, March 14th, we went back to the northern Bothnian Sea and executed three short hydroacoustic surveys along the deeper parts in Finish waters with three CTD and two geological sampling stations and a second hydrographic mooring deployment there. Afterwards, Monday, March 15th and Tuesday, March 16th, we continued our work program into the southern Bothnian Sea, executing two east-west hydroacoustic surveys with subsequent geological sampling at eleven stations. Then, the two Åland Deep sub-basins were surveyed with a second hydroacoustic profile pattern and the two sub-basins were completed with four CTD casts, two microstructure CTD transects and nine geological stations until Thursday, March 18th. The work in the Åland sub-basins was followed by a similar program with four geological stations and a CTD microstructure transect on a north-south profile in the eastern part of the Northern Central Basin until Friday night, March, 19th. In all basin settings, sediment coring took place on morphological ridges and in basins, retrieving Holocene sediment sequences covering the Littorina stadium of the Baltic Sea. We found evidence for missing sediments of warm climate phases on the sills and partly also in the basins, while in other parts, thicker sediment layers representing cold climate phases, were found. The latter was expected, invoking the uptake of material deposited on the sills during the warm phases before and afterwards being eroded and transported to the basins by stronger bottom currents during cold phases. Both, the existence of hiatuses and thicker deposits of older material in the basins argues for a larger winter sea ice extent and thus presumably stronger deep-water currents during the colder climate phases of the Holocene, when compared to the modern situation observed before in the Bay of Bothnia. Such a strengthening of deeper water circulation during cold climate phases can be traced from the northern Bothnian Sea well into the Åland Deep and probably even further into the Northern Central Basin.

The MSM99 work program ended Saturday afternoon, March 20th, back on the Eastern Gotland Basin Transect, with the execution of one CTD and two geological sampling stations. Then we went back, passing the Island of Rügen in the evening, and reached the Kiel Canal, Monday morning, March 22nd. Finally, cruise MSM99 ended at Emden port on Tuesday noon, March 23rd.

Acknowledgements

On behalf of all scientific crew members I would like to thank all the authorities and the German Research Fleet Coordination Centre at the Institute of Geology, University of Hamburg, involved in the planning and execution of the cruise, as well as the crew of R/V MARIA S. MERIAN and the shipping company BRIESE Research for their strong engagement and support, which has made cruise MSM99 a very successful scientific venture.

Participant List, MSM99

1.	Schneider, Ralph	*Chief Scientist*	CAU
2.	Brembach, Kerstin	Ice radiation measurements	CAU
3.	Ebert, Jasmin	Sediment sampling	CAU
4.	Heene, Toralf	CTD, moorings, oceanography	IOW
5.	Hentzsch, Barbara	Sedimentology	IOW
6.	Hinz, Anina-Kaja	Hydroacoustics	IOW
7.	Kolling, Henriette	Geochemistry	CAU
8.	Krzynowek, Zuzanna	Sediment sampling	US Poland
9.	Mohrholz, Volker	CTD, moorings, oceanography	IOW
10.	Moros, Matthias	Paleoceanography	IOW
11.	Neumann, Thomas	CTD, oceanography, modeling	IOW
12.	Papenmeier, Svenja	Hydroacoustics	IOW
13.	Plewe, Sascha	Geology, gear deployment	IOW
14.	Reuter, Runa	Sedimentology	IOW
15.	Schuffenhauer, Ingo	CTD	IOW
16.	Strehlau, Ronja	Sediment sampling	CAU
17.	Sulaiman, Hanif	Sedimentology	CAU
18.	Swieton, Jacub	Sediment sampling	US Poland

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Station List

MARIA S. MERIAN cruise MSM99 (GPF 18-1_097):

P70: PARASOUND / EM712: Multibeam / ADCP (start/end position),
CTD: Rosette water sampler with CTD, Microstructure sonde, Multicorer, Gravity corer,
Ice sampling with Spektrometer Arrays, handheld ice drill, microstructure sonde, CTD, and ADCP

Date/Time (UCT)	Station Number	Sounding / Gear	Lat	Lon	Depth (m)	Course (°)	Remark
26.02.21 15:40	MSM99_1-1	CTD	54° 51,090' N	013° 26,028' E	47,9	356	max depth/on ground
26.02.21 15:59	MSM99_1-2	Gravity Corer	54° 51,096' N	013° 25,978' E	48	222	max depth/on ground
26.02.21 16:36	MSM99_1-3	Gravity Corer	54° 51,096' N	013° 25,973' E	48	324	max depth/on ground
26.02.21 18:06	MSM99_2-1	Gravity Corer	54° 54,753' N	013° 41,387' E	49,3	98	max depth/on ground
26.02.21 19:03	MSM99_3-1	P70/EM712/ADCP	54° 54,868' N	013° 50,145' E	46,6	258	profile start
26.02.21 21:44	MSM99_3-1	P70/EM712/ADCP	54° 51,141' N	013° 27,822' E	46	253	profile end
27.02.21 06:05	MSM99_4-1	P70/EM712/ADCP	55° 13,475' N	015° 21,225' E	58,4	49	profile start
27.02.21 11:13	MSM99_4-1	P70/EM712/ADCP	55° 28,075' N	015° 47,702' E	89,4	47	profile end
27.02.21 11:58	MSM99_5-1	Multi Corer	55° 27,014' N	015° 45,753' E	89,9	210	max depth/on ground
27.02.21 12:52	MSM99_6-1	Multi Corer	55° 27,863' N	015° 47,294' E	89,5	198	max depth/on ground
27.02.21 13:06	MSM99_6-2	Multi Corer	55° 27,863' N	015° 47,294' E	89,5	14	max depth/on ground
27.02.21 13:38	MSM99_6-3	Multi Corer	55° 27,911' N	015° 47,437' E	89,5	278	max depth/on ground
28.02.21 04:22	MSM99_7-1	CTD	57° 04,392' N	019° 45,712' E	219,7	58	max depth/on ground
28.02.21 06:02	MSM99_8-1	P70/EM712/ADCP	56° 56,091' N	019° 39,143' E	157,9	103	profile start
28.02.21 12:10	MSM99_8-1	P70/EM712/ADCP	56° 47,270' N	020° 32,512' E	47,5	106	profile end
28.02.21 14:21	MSM99_9-1	Multi Corer	56° 53,436' N	019° 55,222' E	176,1	220	max depth/on ground
28.02.21 14:38	MSM99_9-2	Multi Corer	56° 53,432' N	019° 55,227' E	175,1	57	max depth/on ground
28.02.21 15:08	MSM99_9-3	Gravity Corer	56° 53,432' N	019° 55,227' E	176	320	max depth/on ground
28.02.21 15:55	MSM99_10-1	Multi Corer	56° 53,050' N	019° 57,543' E	172,5	231	max depth/on ground
28.02.21 16:02	MSM99_10-1	Multi Corer	56° 53,050' N	019° 57,543' E	173	285	max depth/on ground
28.02.21 16:48	MSM99_10-2	Gravity Corer	56° 53,051' N	019° 57,540' E	172,8	6	max depth/on ground
28.02.21 18:03	MSM99_11-1	Multi Corer	56° 51,249' N	020° 08,467' E	163,5	69	max depth/on ground
28.02.21 18:30	MSM99_11-2	Gravity Corer	56° 51,248' N	020° 08,466' E	163,5	238	max depth/on ground
28.02.21 19:03	MSM99_11-3	Gravity Corer	56° 51,248' N	020° 08,466' E	163,5	239	max depth/on ground
28.02.21 20:21	MSM99_12-1	Multi Corer	56° 49,386' N	020° 19,672' E	90,3	33	max depth/on ground
28.02.21 23:26	MSM99_13-1	P70/EM712	57° 16,238' N	020° 49,329' E	47,3	292	profile start
01.03.21 04:51	MSM99_13-1	P70/EM712	57° 22,622' N	020° 00,747' E	223,9	282	profile end
01.03.21 06:29	MSM99_14-1	CTD	57° 21,841' N	020° 20,271' E	224,7	134	max depth/on ground
01.03.21 07:54	MSM99_15-1	Multi Corer	57° 19,003' N	020° 28,286' E	157,3	170	max depth/on ground
01.03.21 08:22	MSM99_15-2	Gravity Corer	57° 19,003' N	020° 28,286' E	157,3	95	max depth/on ground
01.03.21 09:20	MSM99_16-1	Multi Corer	57° 18,648' N	020° 30,971' E	120,7	173	max depth/on ground
01.03.21 10:15	MSM99_17-1	Multi Corer	57° 18,312' N	020° 33,539' E	131	60	max depth/on ground
01.03.21 10:31	MSM99_17-2	Multi Corer	57° 18,312' N	020° 33,539' E	131,1	126	max depth/on ground
01.03.21 11:39	MSM99_17-3	Gravity Corer	57° 18,313' N	020° 33,538' E	131	156	max depth/on ground
01.03.21 12:41	MSM99_18-1	Multi Corer	57° 17,156' N	020° 42,439' E	78,5	126	max depth/on ground
01.03.21 13:15	MSM99_18-2	Gravity Corer	57° 17,156' N	020° 42,440' E	78,6	109	max depth/on ground
01.03.21 22:20	MSM99_19-1	P70/EM712	58° 29,989' N	019° 35,482' E	69,2	8	profile start
02.03.21 08:18	MSM99_19-1	P70/EM712	59° 12,938' N	019° 51,807' E	79,8	11	profile end
02.03.21 11:44	MSM99_20-1	Multi Corer	58° 36,862' N	019° 38,095' E	154,4	4	max depth/on ground
02.03.21 12:10	MSM99_20-2	Gravity Corer	58° 36,862' N	019° 38,094' E	154,2	52	max depth/on ground
02.03.21 13:43	MSM99_21-1	Multi Corer	58° 46,590' N	019° 41,766' E	125,2	360	max depth/on ground

02.03.21 14:03	MSM99_21-2	Multi Corer	58° 46,591' N	019° 41,766' E	124,9	359	max depth/on ground
02.03.21 15:02	MSM99_22-1	Multi Corer	58° 49,897' N	019° 42,996' E	190,6	208	max depth/on ground
02.03.21 15:36	MSM99_22-2	Multi Corer	58° 49,902' N	019° 42,992' E	190,1	66	max depth/on ground
02.03.21 16:08	MSM99_22-3	Multi Corer	58° 49,905' N	019° 42,982' E	189,8	201	max depth/on ground
02.03.21 17:18	MSM99_22-4	Gravity Corer	58° 49,901' N	019° 42,987' E	189,8	27	max depth/on ground
02.03.21 19:11	MSM99_23-1	Multi Corer	59° 03,115' N	019° 48,043' E	91,9	196	max depth/on ground
02.03.21 20:11	MSM99_24-1	Multi Corer	59° 09,415' N	019° 50,460' E	78,3	155	max depth/on ground
02.03.21 22:54	MSM99_25-1	P70/EM712	58° 45,304' N	020° 28,498' E	163,5	144	profile start
03.03.21 06:39	MSM99_25-1	P70/EM712	58° 13,451' N	021° 09,498' E	44,4	147	profile end
03.03.21 07:18	MSM99_26-1	Multi Corer	58° 15,433' N	021° 06,954' E	65,7	13	max depth/on ground
03.03.21 09:37	MSM99_27-1	Multi Corer	58° 34,241' N	020° 42,791' E	90,5	274	max depth/on ground
03.03.21 10:46	MSM99_28-1	Multi Corer	58° 39,452' N	020° 36,059' E	137,4	280	max depth/on ground
03.03.21 11:38	MSM99_29-1	Multi Corer	58° 40,270' N	020° 35,000' E	155,7	301	max depth/on ground
03.03.21 11:59	MSM99_29-2	Multi Corer	58° 40,272' N	020° 35,001' E	155,6	105	max depth/on ground
03.03.21 12:15	MSM99_29-3	Multi Corer	58° 40,274' N	020° 34,997' E	155,6	333	max depth/on ground
03.03.21 12:33	MSM99_29-4	Gravity Corer	58° 40,274' N	020° 34,989' E	155,4	3	max depth/on ground
03.03.21 13:34	MSM99_30-1	Multi Corer	58° 41,970' N	020° 32,799' E	175	291	max depth/on ground
03.03.21 14:03	MSM99_30-2	Multi Corer	58° 41,973' N	020° 32,797' E	175,1	97	max depth/on ground
03.03.21 14:44	MSM99_30-3	Gravity Corer	58° 41,973' N	020° 32,791' E	175,1	18	max depth/on ground
03.03.21 15:37	MSM99_31-1	Multi Corer	58° 42,754' N	020° 31,784' E	171,7	187	max depth/on ground
03.03.21 16:32	MSM99_32-1	Multi Corer	58° 44,757' N	020° 29,177' E	166,1	344	max depth/on ground
04.03.21 03:11	MSM99_33-1	CTD	59° 20,274' N	020° 37,208' E	71,4	7	max depth/on ground
04.03.21 04:26	MSM99_34-1	CTD	59° 28,859' N	020° 36,887' E	120,2	331	max depth/on ground
04.03.21 05:36	MSM99_35-1	CTD	59° 37,096' N	020° 38,869' E	101	92	max depth/on ground
04.03.21 06:22	MSM99_36-1	CTD	59° 40,466' N	020° 37,263' E	72,9	132	max depth/on ground
04.03.21 07:12	MSM99_37-1	CTD	59° 44,696' N	020° 33,257' E	59,1	237	max depth/on ground
04.03.21 08:11	MSM99_38-1	CTD	59° 44,003' N	020° 25,361' E	179,5	88	max depth/on ground
04.03.21 08:58	MSM99_39-1	CTD	59° 42,017' N	020° 19,927' E	33,5	251	max depth/on ground
04.03.21 10:15	MSM99_40-1	CTD	59° 40,470' N	019° 58,374' E	28,9	67	max depth/on ground
04.03.21 12:22	MSM99_41-1	CTD	59° 53,990' N	019° 52,097' E	218,1	20	max depth/on ground
04.03.21 13:07	MSM99_42-1	P70/EM712	59° 52,178' N	019° 55,967' E	182,2	335	profile start
05.03.21 07:13	MSM99_42-1	P70/EM712	60° 00,791' N	019° 23,472' E	115,5	191	profile end
05.03.21 08:35	MSM99_43-1	MS Profiler	59° 57,418' N	019° 37,991' E	110,5	47	in the water
05.03.21 10:26	MSM99_43-1	MS Profiler	59° 59,591' N	019° 38,933' E	229,6	8	on deck
05.03.21 11:35	MSM99_44-1	Multi Corer	59° 55,952' N	019° 52,145' E	196,3	96	max depth/on ground
05.03.21 11:59	MSM99_44-2	Gravity Corer	59° 55,954' N	019° 52,152' E	196,4	127	max depth/on ground
05.03.21 12:56	MSM99_45-1	Multi Corer	59° 59,068' N	019° 47,391' E	230,4	242	max depth/on ground
05.03.21 13:17	MSM99_45-2	Multi Corer	59° 59,073' N	019° 47,383' E	230,4	271	max depth/on ground
05.03.21 13:38	MSM99_45-3	Gravity Corer	59° 59,070' N	019° 47,379' E	230,1	271	max depth/on ground
05.03.21 15:06	MSM99_46-1	Multi Corer	60° 03,209' N	019° 33,246' E	234,9	105	max depth/on ground
05.03.21 15:29	MSM99_46-2	Gravity Corer	60° 03,209' N	019° 33,245' E	235,1	93	max depth/on ground
05.03.21 17:17	MSM99_47-1	Multi Corer	60° 04,728' N	019° 27,051' E	245,7	13	max depth/on ground
05.03.21 17:40	MSM99_47-2	Gravity Corer	60° 04,728' N	019° 27,044' E	244,9	237	max depth/on ground
05.03.21 21:22	MSM99_48-1	CTD	60° 30,588' N	018° 57,851' E	136,2	311	max depth/on ground
05.03.21 22:58	MSM99_49-1	CTD	60° 21,509' N	019° 14,031' E	45,5	181	max depth/on ground
06.03.21 02:58	MSM99_50-1	CTD	61° 01,184' N	019° 42,680' E	136,6	197	max depth/on ground

06.03.21 05:24	MSM99_51-1	CTD	61° 18,535' N	020° 17,102' E	126,9	52	max depth/on ground
06.03.21 06:36	MSM99_52-1	CTD	61° 18,549' N	020° 01,843' E	137,9	180	max depth/on ground
06.03.21 08:13	MSM99_53-1	CTD	61° 24,649' N	020° 22,944' E	135	259	max depth/on ground
06.03.21 10:29	MSM99_54-1	CTD	61° 40,186' N	020° 03,955' E	131,8	267	max depth/on ground
06.03.21 12:04	MSM99_55-1	CTD	61° 51,004' N	020° 08,977' E	115,2	202	max depth/on ground
06.03.21 14:09	MSM99_56-1	CTD	62° 06,560' N	020° 08,432' E	154,3	12	max depth/on ground
06.03.21 17:54	MSM99_57-1	CTD	62° 34,432' N	019° 59,978' E	94,8	148	max depth/on ground
06.03.21 19:39	MSM99_58-1	P70/EM712	62° 30,977' N	019° 57,651' E	117,8	311	profile start
07.03.21 08:39	MSM99_58-1	P70/EM712	62° 36,901' N	019° 54,153' E	123,5	310	profile end
07.03.21 15:46	MSM99_59-1	CTD	63° 31,150' N	021° 03,159' E	39,9	11	max depth/on ground
07.03.21 21:04	MSM99_60-1	CTD	63° 58,967' N	021° 56,485' E	81	136	max depth/on ground
07.03.21 21:47	MSM99_61-1	CTD	63° 59,052' N	021° 58,765' E	87,5	326	max depth/on ground
07.03.21 22:18	MSM99_62-1	CTD	63° 58,914' N	022° 02,099' E	80,5	278	max depth/on ground
07.03.21 22:46	MSM99_63-1	CTD	63° 58,851' N	022° 04,890' E	77,2	290	max depth/on ground
07.03.21 23:12	MSM99_64-1	CTD	63° 58,964' N	022° 07,437' E	73,4	335	max depth/on ground
07.03.21 23:46	MSM99_65-1	CTD	63° 58,857' N	022° 12,465' E	93	315	max depth/on ground
08.03.21 00:21	MSM99_66-1	CTD	63° 58,981' N	022° 17,143' E	78	216	max depth/on ground
08.03.21 01:06	MSM99_67-1	CTD	63° 59,031' N	022° 22,039' E	67,4	244	max depth/on ground
08.03.21 02:38	MSM99_68-1	CTD	63° 58,913' N	022° 26,585' E	31,8	135	max depth/on ground
08.03.21 03:29	MSM99_69-1	CTD	63° 59,090' N	022° 31,360' E	42,4	64	max depth/on ground
08.03.21 04:15	MSM99_70-1	CTD	63° 58,841' N	022° 36,622' E	43,6	91	max depth/on ground
08.03.21 07:54	MSM99_71-1	Ice-ADCP	64° 09,933' N	022° 32,802' E	82,1	284	recording start
08.03.21 15:25	MSM99_71-1	Ice-ADCP	64° 11,180' N	022° 32,472' E	85,8	14	recording end
08.03.21 08:14	MSM99_71-2	Hand Ice Drill	64° 09,946' N	022° 32,676' E	81,8	287	Start drilling
08.03.21 08:28	MSM99_71-2	Hand Ice Drill	64° 09,958' N	022° 32,593' E	81,8	289	End of drilling
08.03.21 08:26	MSM99_71-3	Ice-MSS	64° 09,957' N	022° 32,602' E	81,7	291	in the water
08.03.21 09:08	MSM99_71-3	Ice-MSS	64° 10,011' N	022° 32,391' E	78,9	311	on ice
08.03.21 08:28	MSM99_71-4	Hand Ice Drill	64° 09,959' N	022° 32,590' E	81,2	291	Start drilling
08.03.21 15:05	MSM99_71-4	Hand Ice Drill	64° 11,098' N	022° 32,429' E	86,1	16	End of drilling
08.03.21 09:14	MSM99_71-5	Spectro Array	64° 10,023' N	022° 32,364' E	78,8	315	profile start
08.03.21 09:51	MSM99_71-5	Spectro Array	64° 10,100' N	022° 32,241' E	78,4	336	profile end
08.03.21 09:45	MSM99_71-6	Ice-CTD	64° 10,085' N	022° 32,258' E	78,2	332	recording start
08.03.21 10:32	MSM99_71-6	Ice-CTD	64° 10,200' N	022° 32,165' E	81,2	351	recording end
08.03.21 10:04	MSM99_71-7	Hand Ice Drill	64° 10,129' N	022° 32,211' E	79,4	339	Start drilling
08.03.21 10:33	MSM99_71-7	Hand Ice Drill	64° 10,201' N	022° 32,165' E	80,9	350	End of drilling
08.03.21 11:24	MSM99_71-8	Spectro Array	64° 10,353' N	022° 32,119' E	81,3	355	profile start
08.03.21 12:20	MSM99_71-8	Spectro Array	64° 10,542' N	022° 32,115' E	84,3	5	profile end
08.03.21 11:46	MSM99_71-9	Ice-MSS	64° 10,425' N	022° 32,108' E	82,6	357	in the water
08.03.21 12:39	MSM99_71-9	Ice-MSS	64° 10,604' N	022° 32,134' E	84,6	10	on ice
08.03.21 12:21	MSM99_71-10	Spectro Array	64° 10,544' N	022° 32,116' E	84,6	6	profile start
08.03.21 12:35	MSM99_71-10	Spectro Array	64° 10,593' N	022° 32,130' E	84,7	9	profile end
08.03.21 12:36	MSM99_71-11	Spectro Array	64° 10,594' N	022° 32,130' E	84,7	7	profile start
08.03.21 12:45	MSM99_71-11	Spectro Array	64° 10,625' N	022° 32,142' E	86,1	9	profile end
08.03.21 12:47	MSM99_71-12	Ice-CTD	64° 10,633' N	022° 32,145' E	85,7	10	recording start
08.03.21 15:25	MSM99_71-12	Ice-CTD	64° 11,180' N	022° 32,473' E	85,7	13	recording end
08.03.21 14:19	MSM99_71-13	Spectro Array	64° 10,934' N	022° 32,313' E	85	16	profile start

08.03.21 14:59	MSM99_71-13	Spectro Array	64° 11,075' N	022° 32,414' E	85,7	15	profile end
08.03.21 18:00	MSM99_72-1	CTD	64° 07,475' N	022° 50,397' E	35	13	max depth/on ground
08.03.21 18:27	MSM99_73-1	CTD	64° 07,633' N	022° 48,128' E	30,9	33	in the water
08.03.21 19:32	MSM99_74-1	CTD	64° 08,263' N	022° 45,576' E	33,8	45	max depth/on ground
08.03.21 19:58	MSM99_75-1	CTD	64° 08,385' N	022° 42,515' E	41,5	333	max depth/on ground
08.03.21 20:31	MSM99_76-1	CTD	64° 09,085' N	022° 40,619' E	57	149	max depth/on ground
08.03.21 21:00	MSM99_77-1	CTD	64° 09,296' N	022° 37,990' E	79,7	346	max depth/on ground
08.03.21 21:30	MSM99_78-1	CTD	64° 09,544' N	022° 35,622' E	91,8	100	max depth/on ground
08.03.21 22:02	MSM99_79-1	CTD	64° 10,036' N	022° 32,954' E	82,7	357	max depth/on ground
08.03.21 22:39	MSM99_80-1	CTD	64° 10,508' N	022° 29,823' E	96,1	333	max depth/on ground
08.03.21 23:40	MSM99_81-1	CTD	64° 11,018' N	022° 26,773' E	105,8	327	max depth/on ground
09.03.21 00:21	MSM99_82-1	CTD	64° 11,478' N	022° 23,740' E	101,9	321	max depth/on ground
09.03.21 00:53	MSM99_83-1	CTD	64° 11,729' N	022° 21,641' E	82,9	315	max depth/on ground
09.03.21 01:47	MSM99_84-1	CTD	64° 12,094' N	022° 19,442' E	91,5	310	max depth/on ground
09.03.21 02:17	MSM99_85-1	CTD	64° 12,324' N	022° 17,368' E	99,7	76	max depth/on ground
09.03.21 08:53	MSM99_86-2	Hand Ice Drill	64° 22,562' N	023° 00,191' E	70,1	290	Start drilling
09.03.21 15:08	MSM99_86-2	Handh Ice Drill	64° 22,558' N	022° 56,826' E	89,1	256	End of drilling
09.03.21 08:55	MSM99_86-3	Ice-ADCP	64° 22,566' N	023° 00,172' E	70,4	290	recording start
09.03.21 15:46	MSM99_86-3	Ice-ADCP	64° 22,519' N	022° 56,510' E	91,3	254	recording end
09.03.21 09:17	MSM99_86-4	Spectro Array	64° 22,600' N	022° 59,968' E	70,6	291	profile start
09.03.21 10:27	MSM99_86-4	Spectro Array	64° 22,685' N	022° 59,359' E	70,2	285	profile end
09.03.21 09:33	MSM99_86-5	Ice-MSS	64° 22,625' N	022° 59,828' E	70,3	291	in the water
09.03.21 15:46	MSM99_86-5	Ice-MSS	64° 22,519' N	022° 56,510' E	91,3	254	on ice
09.03.21 10:15	MSM99_86-6	Hand Ice Drill	64° 22,675' N	022° 59,455' E	70,1	285	Start drilling
09.03.21 10:45	MSM99_86-6	Hand Ice Drill	64° 22,700' N	022° 59,206' E	70,2	281	End of drilling
09.03.21 10:27	MSM99_86-7	Spectro Array	64° 22,685' N	022° 59,357' E	70,2	284	profile start
09.03.21 10:45	MSM99_86-7	Spectro Array	64° 22,700' N	022° 59,203' E	70,4	281	profile end
09.03.21 11:28	MSM99_86-8	Spectro Array	64° 22,724' N	022° 58,828' E	69,5	276	profile start
09.03.21 12:01	MSM99_86-8	Spectrometer Array	64° 22,730' N	022° 58,553' E	64,3	271	profile end
09.03.21 11:47	MSM99_86-9	Hand Ice Drill	64° 22,730' N	022° 58,666' E	66,1	274	Start drilling
09.03.21 12:20	MSM99_86-9	Hand Ice Drill	64° 22,728' N	022° 58,392' E	65,7	264	End of drilling
09.03.21 12:01	MSM99_86-10	Spectro Array	64° 22,730' N	022° 58,549' E	64,2	271	profile start
09.03.21 12:20	MSM99_86-10	Spectro Array	64° 22,728' N	022° 58,388' E	66,4	263	profile end
09.03.21 12:27	MSM99_86-11	Spectro Array	64° 22,724' N	022° 58,324' E	65,3	259	profile start
09.03.21 12:37	MSM99_86-11	Spectro Array	64° 22,718' N	022° 58,235' E	67,5	259	profile end
09.03.21 13:09	MSM99_86-12	Spectro Array	64° 22,688' N	022° 57,949' E	77,7	253	profile start
09.03.21 13:47	MSM99_86-12	SpectroArray	64° 22,647' N	022° 57,584' E	76,6	255	profile end
09.03.21 19:12	MSM99_87-1	CTD	64° 12,379' N	023° 01,016' E	49,6	46	max depth/on ground
09.03.21 21:09	MSM99_88-1	CTD	64° 12,761' N	022° 58,932' E	60,3	306	max depth/on ground
09.03.21 21:37	MSM99_89-1	CTD	64° 13,403' N	022° 56,582' E	52,8	213	max depth/on ground
09.03.21 22:12	MSM99_90-1	CTD	64° 14,032' N	022° 54,631' E	48,9	269	max depth/on ground
09.03.21 23:16	MSM99_92-1	CTD	64° 15,221' N	022° 50,762' E	66,6	45	max depth/on ground
10.03.21 00:15	MSM99_93-1	CTD	64° 15,776' N	022° 49,222' E	67,1	360	max depth/on ground
10.03.21 00:38	MSM99_94-1	CTD	64° 16,258' N	022° 46,837' E	60,1	36	in the water
10.03.21 01:21	MSM99_95-1	CTD	64° 16,898' N	022° 44,476' E	68,4	19	max depth/on ground
10.03.21 01:51	MSM99_96-1	CTD	64° 17,339' N	022° 42,588' E	68,9	22	max depth/on ground

10.03.21 02:19	MSM99_97-1	CTD	64° 17,886' N	022° 40,526' E	60,2	31	in the water
10.03.21 02:54	MSM99_98-1	CTD	64° 18,446' N	022° 38,676' E	64	22	max depth/on ground
10.03.21 03:12	MSM99_99-1	CTD	64° 19,058' N	022° 36,434' E	69,6	31	in the water
10.03.21 03:52	MSM99_100-1	CTD	64° 19,812' N	022° 34,266' E	80,4	91	max depth/on ground
10.03.21 04:14	MSM99_101-1	CTD	64° 20,336' N	022° 32,049' E	85,6	38	in the water
10.03.21 15:05	MSM99_102-1	CTD	64° 57,772' N	023° 20,050' E	75,5	11	max depth/on ground
10.03.21 15:32	MSM99_103-1	CTD	64° 57,200' N	023° 21,789' E	111,1	11	in the water
10.03.21 16:01	MSM99_104-1	CTD	64° 56,502' N	023° 23,828' E	94,3	11	in the water
10.03.21 16:46	MSM99_105-1	CTD	64° 55,788' N	023° 26,535' E	115	37	max depth/on ground
10.03.21 17:36	MSM99_106-1	CTD	64° 55,044' N	023° 28,215' E	103,8	12	max depth/on ground
10.03.21 18:07	MSM99_107-1	CTD	64° 54,564' N	023° 30,643' E	116,7	43	max depth/on ground
10.03.21 18:40	MSM99_108-1	CTD	64° 53,931' N	023° 32,601' E	97,7	17	max depth/on ground
10.03.21 19:08	MSM99_109-1	CTD	64° 53,029' N	023° 35,651' E	128,3	15	in the water
10.03.21 19:52	MSM99_110-1	CTD	64° 52,207' N	023° 38,404' E	97,2	341	max depth/on ground
10.03.21 20:23	MSM99_111-1	CTD	64° 51,350' N	023° 41,192' E	116,3	15	in the water
10.03.21 21:21	MSM99_112-1	CTD	64° 50,477' N	023° 44,853' E	116,7	11	in the water
10.03.21 22:05	MSM99_113-1	CTD	64° 49,525' N	023° 48,232' E	99,7	3	max depth/on ground
10.03.21 23:12	MSM99_114-1	CTD	64° 48,502' N	023° 52,426' E	54,8	19	in the water
11.03.21 00:33	MSM99_115-1	CTD	64° 47,953' N	023° 56,986' E	87	20	in the water
11.03.21 02:27	MSM99_116-1	CTD	64° 54,429' N	024° 12,770' E	23,8	14	max depth/on ground
11.03.21 02:58	MSM99_117-1	CTD	64° 54,864' N	024° 07,722' E	16,7	13	in the water
11.03.21 11:16	MSM99_118-1	Hand Ice Drill	65° 01,627' N	023° 55,150' E	26,6	355	Start drilling
11.03.21 12:10	MSM99_118-1	Hand Ice Drill	65° 02,051' N	023° 55,071' E	24,4	356	End of drilling
11.03.21 12:16	MSM99_118-2	Ice-CTD	65° 02,091' N	023° 55,065' E	26	358	recording start
11.03.21 12:20	MSM99_118-2	Ice-CTD	65° 02,130' N	023° 55,062' E	27,6	358	recording end
11.03.21 12:32	MSM99_118-3	Spectro Array	65° 02,211' N	023° 55,036' E	32,9	357	profile start
11.03.21 12:33	MSM99_118-3	Spectro Array	65° 02,221' N	023° 55,035' E	32,8	358	profile end
11.03.21 14:44	MSM99_119-1	Spectro Array	65° 03,114' N	023° 38,242' E	57,3	344	profile start
11.03.21 14:55	MSM99_119-1	Spectro Array	65° 03,195' N	023° 38,187' E	57	344	profile end
11.03.21 15:00	MSM99_119-2	Handh Ice Drill	65° 03,232' N	023° 38,161' E	56,4	344	Start drilling
11.03.21 15:46	MSM99_119-2	Hand Ice Drill	65° 03,578' N	023° 37,943' E	58,6	345	End of drilling
11.03.21 15:49	MSM99_119-3	Ice-CTD	65° 03,600' N	023° 37,929' E	58,3	345	recording start
11.03.21 15:54	MSM99_119-3	Ice-CTD	65° 03,637' N	023° 37,906' E	57,5	346	recording end
11.03.21 17:22	MSM99_120-1	CTD	65° 06,263' N	023° 32,311' E	75,1	349	max depth/on ground
11.03.21 18:24	MSM99_121-1	CTD	65° 04,535' N	023° 36,011' E	61,2	346	in the water
11.03.21 19:03	MSM99_122-1	CTD	65° 03,529' N	023° 39,611' E	58	345	in the water
11.03.21 20:07	MSM99_123-1	CTD	65° 02,554' N	023° 43,036' E	49,6	339	in the water
11.03.21 21:21	MSM99_124-1	CTD	65° 01,316' N	023° 46,547' E	73,1	349	max depth/on ground
11.03.21 22:42	MSM99_125-1	CTD	65° 00,027' N	023° 50,069' E	32,6	339	in the water
12.03.21 04:07	MSM99_126-1	CTD	64° 33,739' N	023° 37,174' E	50,2	5	max depth/on ground
12.03.21 04:35	MSM99_127-1	CTD	64° 34,735' N	023° 33,019' E	51	329	max depth/on ground
12.03.21 05:03	MSM99_128-1	CTD	64° 35,676' N	023° 28,747' E	65,5	358	max depth/on ground
12.03.21 10:06	MSM99_129-1	CTD	64° 43,112' N	022° 59,649' E	83,2	293	in the water
12.03.21 10:53	MSM99_130-1	CTD	64° 41,961' N	023° 04,126' E	76,2	262	max depth/on ground
12.03.21 11:36	MSM99_131-1	CTD	64° 40,990' N	023° 08,309' E	84,1	132	max depth/on ground
12.03.21 14:48	MSM99_132-1	CTD	64° 39,854' N	023° 12,112' E	72,9	265	max depth/on ground

12.03.21 15:13	MSM99_133-1	Hand Ice Drill	64° 40,370' N	023° 11,839' E	79	247	Start drilling
12.03.21 15:38	MSM99_133-1	Hand Ice Drill	64° 40,369' N	023° 11,835' E	79,3	255	End of drilling
12.03.21 16:30	MSM99_134-1	CTD	64° 38,846' N	023° 15,948' E	83,6	83	max depth/on ground
12.03.21 20:39	MSM99_135-1	CTD	64° 38,060' N	023° 19,701' E	81,7	170	max depth/on ground
12.03.21 21:46	MSM99_136-1	CTD	64° 36,536' N	023° 24,295' E	76,7	283	in the water
12.03.21 23:28	MSM99_137-1	CTD	64° 25,447' N	023° 23,605' E	38,1	78	max depth/on ground
12.03.21 23:57	MSM99_138-1	CTD	64° 26,009' N	023° 21,372' E	35,7	339	max depth/on ground
13.03.21 00:32	MSM99_139-1	CTD	64° 27,021' N	023° 16,803' E	55,3	261	in the water
13.03.21 01:08	MSM99_140-1	CTD	64° 28,085' N	023° 12,088' E	62	171	in the water
13.03.21 08:06	MSM99_141-1	Spectro Array	64° 28,131' N	023° 10,658' E	63	192	profile start
13.03.21 08:30	MSM99_141-1	Spectro Array	64° 28,131' N	023° 10,658' E	63	153	profile end
13.03.21 08:20	MSM99_141-2	Ice-ADCP	64° 28,131' N	023° 10,658' E	63,1	202	recording start
13.03.21 12:43	MSM99_141-2	Ice-ADCP	64° 28,116' N	023° 10,579' E	62,3	234	recording end
13.03.21 08:21	MSM99_141-3	Hand Ice Drill	64° 28,131' N	023° 10,658' E	63,1	214	Start drilling
13.03.21 12:48	MSM99_141-3	Hand Ice Drill	64° 28,116' N	023° 10,576' E	62,1	233	End of drilling
13.03.21 08:30	MSM99_141-4	Spectro Array	64° 28,131' N	023° 10,658' E	63	153	profile start
13.03.21 08:53	MSM99_141-4	Spectro Array	64° 28,132' N	023° 10,659' E	59,8	151	profile end
13.03.21 08:51	MSM99_141-5	Ice-MSS	64° 28,132' N	023° 10,659' E	63,6	65	in the water
13.03.21 12:43	MSM99_141-5	Ice-MSS	64° 28,116' N	023° 10,579' E	62,3	242	on ice
13.03.21 08:53	MSM99_141-6	Spectro Array	64° 28,132' N	023° 10,659' E	59,8	149	profile start
13.03.21 09:13	MSM99_141-6	Spectro Array	64° 28,132' N	023° 10,659' E	63,2	83	profile end
13.03.21 09:13	MSM99_141-7	Spectro Array	64° 28,132' N	023° 10,659' E	62,8	109	profile start
13.03.21 09:48	MSM99_141-7	Spectro Array	64° 28,132' N	023° 10,658' E	62,8	125	profile end
13.03.21 09:14	MSM99_141-8	Hand Ice Drill	64° 28,132' N	023° 10,659' E	62,7	37	Start drilling
13.03.21 10:25	MSM99_141-8	Hand Ice Drill	64° 28,131' N	023° 10,656' E	62,6	275	End of drilling
13.03.21 09:45	MSM99_141-9	Hand Ice Drill	64° 28,132' N	023° 10,658' E	62,9	145	Start drilling
13.03.21 10:22	MSM99_141-9	Hand Ice Drill	64° 28,131' N	023° 10,657' E	62,5	353	End of drilling
13.03.21 09:48	MSM99_141-10	Spectro Array	64° 28,132' N	023° 10,658' E	62,6	357	profile start
13.03.21 10:07	MSM99_141-10	Spectro Array	64° 28,131' N	023° 10,657' E	62,9	55	profile end
13.03.21 10:07	MSM99_141-11	Spectro Array	64° 28,131' N	023° 10,657' E	62,8	340	profile start
13.03.21 10:25	MSM99_141-11	Spectro Array	64° 28,131' N	023° 10,656' E	62,8	236	profile end
13.03.21 10:25	MSM99_141-12	Spectro Array	64° 28,131' N	023° 10,656' E	61,5	166	profile start
13.03.21 10:37	MSM99_141-12	Spectro Array	64° 28,130' N	023° 10,655' E	62,6	255	profile end
13.03.21 10:55	MSM99_141-13	Spectro Array	64° 28,129' N	023° 10,651' E	62,5	229	profile start
13.03.21 11:12	MSM99_141-13	Spectro Array	64° 28,128' N	023° 10,646' E	62,8	220	profile end
13.03.21 11:13	MSM99_141-14	Spectro Array	64° 28,128' N	023° 10,646' E	62,9	232	profile start
13.03.21 11:31	MSM99_141-14	Spectro Array	64° 28,127' N	023° 10,637' E	62,8	249	profile end
13.03.21 11:32	MSM99_141-15	Spectro Array	64° 28,127' N	023° 10,636' E	62,5	238	profile start
13.03.21 11:52	MSM99_141-15	Spectro Array	64° 28,124' N	023° 10,621' E	62,6	247	profile end
13.03.21 16:05	MSM99_142-1	Mooring	64° 14,465' N	022° 23,611' E	117,5	218	launch start
13.03.21 16:46	MSM99_142-1	Mooring	64° 14,317' N	022° 23,299' E	113,9	210	launch end
13.03.21 16:52	MSM99_143-1	CTD	64° 14,317' N	022° 23,299' E	113,9	191	in the water
13.03.21 20:35	MSM99_144-1	CTD	63° 50,503' N	021° 34,903' E	72,4	156	max depth/on ground
14.03.21 00:37	MSM99_145-1	CTD	63° 17,950' N	020° 15,590' E	110,4	302	max depth/on ground
14.03.21 03:08	MSM99_146-1	P70/EM712	62° 51,015' N	019° 44,174' E	113,6	90	profile start
14.03.21 05:52	MSM99_146-1	P70/EM712	62° 51,239' N	020° 13,809' E	56	90	profile end

14.03.21 06:38	MSM99_147-1	P70/EM712	62° 49,038' N	020° 30,644' E	52,8	236	profile start
14.03.21 10:49	MSM99_147-1	P70/EM712	62° 34,727' N	019° 57,334' E	108,4	227	profile end
14.03.21 11:14	MSM99_148-1	P70/EM712	62° 35,732' N	019° 56,629' E	127,4	125	profile start
14.03.21 12:46	MSM99_148-1	P70/EM712	62° 35,332' N	019° 59,001' E	201,9	69	profile end
14.03.21 13:14	MSM99_149-1	Gravity Corer	62° 35,300' N	019° 57,790' E	159,8	82	max depth/on ground
14.03.21 13:59	MSM99_150-1	Multi Corer	62° 35,186' N	019° 58,162' E	221,9	119	max depth/on ground
14.03.21 14:27	MSM99_150-2	Multi Corer	62° 35,172' N	019° 58,168' E	222,7	190	max depth/on ground
14.03.21 14:48	MSM99_150-3	Gravity Corer	62° 35,176' N	019° 58,171' E	224,2	151	max depth/on ground
14.03.21 15:16	MSM99_150-4	Gravity Corer	62° 35,184' N	019° 58,188' E	225,1	291	max depth/on ground
14.03.21 15:46	MSM99_151-1	Mooring	62° 35,236' N	019° 58,408' E	209,3	205	launch start
14.03.21 16:23	MSM99_151-1	Mooring	62° 35,180' N	019° 58,079' E	221,4	248	launch end
14.03.21 16:44	MSM99_151-2	CTD	62° 35,111' N	019° 57,800' E	153,9	249	max depth/on ground
14.03.21 20:30	MSM99_152-1	P70/EM712	61° 51,928' N	019° 25,221' E	72	97	profile start
15.03.21 05:15	MSM99_152-1	P70/EM712	61° 49,518' N	020° 57,139' E	50,7	94	profile end
15.03.21 07:14	MSM99_153-1	Multi Corer	61° 50,152' N	020° 33,033' E	79,2	172	max depth/on ground
15.03.21 07:52	MSM99_154-1	Multi Corer	61° 50,215' N	020° 30,559' E	91,8	83	max depth/on ground
15.03.21 08:23	MSM99_155-1	Multi Corer	61° 50,220' N	020° 30,237' E	93,1	106	max depth/on ground
15.03.21 08:43	MSM99_155-2	Gravity Corer	61° 50,220' N	020° 30,237' E	93,1	218	max depth/on ground
15.03.21 09:11	MSM99_154-2	Gravity Corer	61° 50,214' N	020° 30,560' E	92,1	58	max depth/on ground
15.03.21 09:45	MSM99_154-3	Gravity Corer	61° 50,214' N	020° 30,561' E	91,9	64	max depth/on ground
15.03.21 11:15	MSM99_156-1	Multi Corer	61° 50,680' N	020° 12,675' E	137,4	291	max depth/on ground
15.03.21 11:32	MSM99_156-2	Gravity Corer	61° 50,680' N	020° 12,676' E	138,7	268	max depth/on ground
15.03.21 12:09	MSM99_156-3	Gravity Corer	61° 50,682' N	020° 12,670' E	138,4	233	max depth/on ground
15.03.21 13:07	MSM99_156-4	Gravity Corer	61° 50,687' N	020° 12,661' E	137,2	5	max depth/on ground
15.03.21 14:05	MSM99_157-1	Multi Corer	61° 50,720' N	020° 10,940' E	151,2	158	max depth/on ground
15.03.21 14:21	MSM99_157-2	Gravity Corer	61° 50,720' N	020° 10,940' E	151,1	207	max depth/on ground
15.03.21 15:25	MSM99_158-1	Multi Corer	61° 50,967' N	020° 01,629' E	109,4	90	max depth/on ground
15.03.21 15:40	MSM99_158-2	Gravity Corer	61° 50,966' N	020° 01,617' E	109,3	15	max depth/on ground
15.03.21 21:13	MSM99_159-1	P70/EM712	60° 54,095' N	020° 44,915' E	43,7	290	profile start
16.03.21 06:08	MSM99_159-1	P70/EM712	61° 08,046' N	019° 18,269' E	67,5	287	profile end
16.03.21 07:30	MSM99_160-1	Multi Corer	61° 05,185' N	019° 36,053' E	122,5	353	max depth/on ground
16.03.21 07:47	MSM99_160-2	Gravity Corer	61° 05,185' N	019° 36,053' E	122,5	11	max depth/on ground
16.03.21 08:41	MSM99_161-1	Multi Corer	61° 04,442' N	019° 40,677' E	137,8	313	max depth/on ground
16.03.21 09:18	MSM99_161-2	Gravity Corer	61° 04,443' N	019° 40,678' E	130,8	143	max depth/on ground
16.03.21 09:48	MSM99_161-3	Gravity Corer	61° 04,443' N	019° 40,678' E	130,9	21	max depth/on ground
16.03.21 11:47	MSM99_161-4	Gravity Corer	61° 04,439' N	019° 40,677' E	130,8	270	max depth/on ground
16.03.21 13:13	MSM99_162-1	Multi Corer	61° 02,444' N	019° 53,126' E	110,5	314	max depth/on ground
16.03.21 13:27	MSM99_162-2	Gravity Corer	61° 02,449' N	019° 53,120' E	110,5	31	max depth/on ground
16.03.21 15:01	MSM99_163-1	Multi Corer	60° 59,186' N	020° 13,318' E	98,1	174	max depth/on ground
16.03.21 15:15	MSM99_163-2	Gravity Corer	60° 59,186' N	020° 13,318' E	98,2	260	max depth/on ground
16.03.21 15:59	MSM99_164-1	Multi Corer	60° 58,447' N	020° 17,880' E	89,4	132	max depth/on ground
16.03.21 16:16	MSM99_164-2	Gravity Corer	60° 58,444' N	020° 17,886' E	90	43	max depth/on ground
16.03.21 23:49	MSM99_165-1	CTD	59° 56,290' N	019° 34,601' E	79,2	176	max depth/on ground
17.03.21 00:01	MSM99_165-2	MS Profiler	59° 56,442' N	019° 34,643' E	79,1	1	in the water
17.03.21 08:29	MSM99_165-2	MS Profiler	60° 04,910' N	019° 37,369' E	113,8	11	on deck
17.03.21 09:06	MSM99_166-1	Gravity Corer	60° 03,213' N	019° 33,249' E	235,5	168	max depth/on ground

17.03.21 10:36	MSM99_167-1	Multi Corer	60° 00,067' N	019° 35,728' E	222,6	21	max depth/on ground
17.03.21 11:28	MSM99_167-2	Gravity Corer	60° 00,070' N	019° 35,733' E	222,1	115	max depth/on ground
17.03.21 12:18	MSM99_167-3	Gravity Corer	60° 00,063' N	019° 35,735' E	222,8	177	max depth/on ground
17.03.21 13:51	MSM99_168-1	Multi Corer	59° 54,181' N	019° 50,048' E	204,1	16	max depth/on ground
17.03.21 14:12	MSM99_168-2	Gravity Corer	59° 54,181' N	019° 50,048' E	205,4	314	max depth/on ground
17.03.21 17:58	MSM99_170-1	CTD	59° 47,557' N	019° 53,131' E	185	63	max depth/on ground
17.03.21 18:36	MSM99_171-1	P70/EM712	59° 47,573' N	019° 53,136' E	185,4	176	profile start
18.03.21 03:40	MSM99_171-1	P70/EM712	59° 45,885' N	019° 51,130' E	153	260	profile end
18.03.21 04:36	MSM99_172-1	MS Profiler	59° 42,671' N	020° 01,772' E	137,8	357	in the water
18.03.21 10:55	MSM99_172-1	MS Profiler	59° 48,980' N	020° 01,502' E	104,9	358	on deck
18.03.21 11:38	MSM99_173-1	CTD	59° 46,486' N	020° 01,631' E	193,4	128	max depth/on ground
18.03.21 13:16	MSM99_174-1	Multi Corer	59° 44,584' N	020° 24,836' E	147,4	272	max depth/on ground
18.03.21 13:32	MSM99_174-2	Gravity Corer	59° 44,587' N	020° 24,831' E	140,5	301	max depth/on ground
18.03.21 14:08	MSM99_175-1	Multi Corer	59° 44,742' N	020° 24,309' E	162,3	73	max depth/on ground
18.03.21 15:09	MSM99_176-1	Multi Corer	59° 46,656' N	020° 11,540' E	180,7	175	max depth/on ground
18.03.21 15:27	MSM99_176-2	Gravity Corer	59° 46,656' N	020° 11,540' E	180,6	241	max depth/on ground
18.03.21 16:01	MSM99_176-3	Gravity Corer	59° 46,656' N	020° 11,541' E	180,7	316	max depth/on ground
18.03.21 17:18	MSM99_177-1	Multi Corer	59° 46,653' N	020° 04,404' E	189,1	160	max depth/on ground
18.03.21 18:16	MSM99_178-1	Gravity Corer	59° 46,653' N	020° 11,540' E	180,6	290	max depth/on ground
18.03.21 22:33	MSM99_179-1	CTD	59° 22,199' N	020° 12,730' E	55,4	147	max depth/on ground
18.03.21 23:02	MSM99_180-1	P70/EM712	59° 21,861' N	020° 12,999' E	56,6	162	profile start
19.03.21 05:02	MSM99_180-1	P70/EM712	58° 51,406' N	020° 29,569' E	155,7	165	profile end
19.03.21 05:29	MSM99_181-1	MS Profiler	58° 51,411' N	020° 29,542' E	161,5	348	in the water
19.03.21 10:00	MSM99_181-1	MS Profiler	58° 55,739' N	020° 27,147' E	154,2	331	on deck
19.03.21 10:39	MSM99_182-1	Multi Corer	58° 53,248' N	020° 28,563' E	203,2	300	max depth/on ground
19.03.21 10:58	MSM99_182-2	Multi Corer	58° 53,249' N	020° 28,562' E	203,2	218	max depth/on ground
19.03.21 11:37	MSM99_182-3	Gravity Corer	58° 53,244' N	020° 28,557' E	202,3	46	max depth/on ground
19.03.21 12:14	MSM99_182-4	Gravity Corer	58° 53,239' N	020° 28,554' E	202,6	160	max depth/on ground
19.03.21 13:37	MSM99_183-1	Multi Corer	58° 54,901' N	020° 27,668' E	148,6	190	max depth/on ground
19.03.21 14:00	MSM99_183-2	Gravity Corer	58° 54,905' N	020° 27,672' E	148,9	85	max depth/on ground
19.03.21 15:51	MSM99_184-1	Multi Corer	59° 08,357' N	020° 20,357' E	114,4	254	max depth/on ground
19.03.21 16:16	MSM99_185-1	Gravity Corer	59° 08,364' N	020° 20,347' E	114,4	253	max depth/on ground
19.03.21 16:59	MSM99_186-1	Multi Corer	59° 10,871' N	020° 18,977' E	81,2	88	max depth/on ground
19.03.21 17:11	MSM99_186-2	Gravity Corer	59° 10,873' N	020° 18,979' E	80,4	108	max depth/on ground
20.03.21 05:14	MSM99_187-1	CTD	57° 22,326' N	020° 20,615' E	225	10	max depth/on ground
20.03.21 05:38	MSM99_187-2	CTD	57° 22,326' N	020° 20,615' E	224,9	310	max depth/on ground
20.03.21 07:27	MSM99_188-1	Multi Corer	57° 20,971' N	020° 13,154' E	244,9	70	max depth/on ground
20.03.21 07:53	MSM99_188-2	Multi Corer	57° 20,971' N	020° 13,155' E	237,7	231	max depth/on ground
20.03.21 08:41	MSM99_188-3	Gravity Corer	57° 20,971' N	020° 13,156' E	237,9	345	max depth/on ground
20.03.21 09:10	MSM99_188-4	Gravity Corer	57° 20,972' N	020° 13,158' E	237,7	3	max depth/on ground
20.03.21 11:02	MSM99_189-1	Gravity Corer	57° 21,902' N	020° 06,174' E	236,3	139	max depth/on ground