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2050

Eurasian Basin Transect 2026 Cruise report

23 July – 10 September 2026, Longyearbyen – Longyearbyen, Cruise ID 2026007011



Polhavet Arctic Ocean 2050 Report Series, 5/2026

Eurasian Basin Transect 2026 Cruise Report

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The Eurasian Basin Transect (EBT) 2026 cruise (ID 2026007011) was conducted 23 July–10 September 2026. Its geographical coverage included the Nansen and Amundsen Basins, the adjacent Lomonosov Ridge and Southeastern Makarov Basin, including the full width of the Transpolar Drift current. Throughout the cruise, a comprehensive set of physical, chemical, and biological observations was collected from multiple components of the Arctic system, including the atmosphere, ocean, sea ice, and sea floor.

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Overview

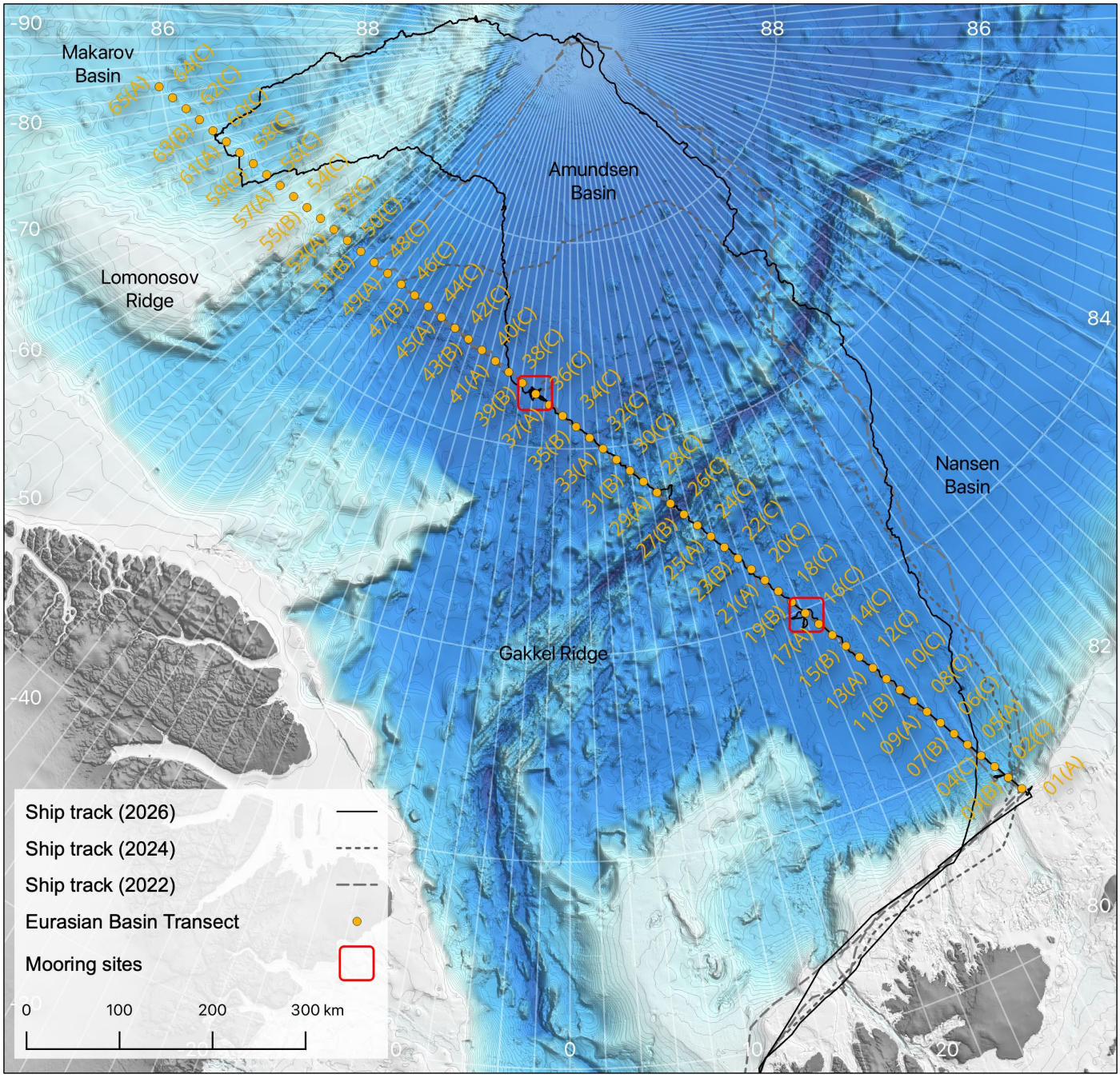


Figure 1. Repeated observation sites along the Eurasian Basin Transect (orange), scientific moorings (red) and ship tracks of the first three transect cruises that visited sites along the Transect (dashed, dotted and solid black lines). Background bathymetric and topographic data from IBCAO 4.

The Eurasian Basin Transect 2026 (EBT2026) was the third cruise (Table 1) to visit repeated observation sites along the Eurasian Basin Transect, which spans the Nansen and Amundsen basins (Figure 1). The Transect consists of 65 closely spaced observation sites along a great circle route extending 650 nautical miles north-west from the first site at 81° 30’ N, 031° 00’ E on an initial bearing of 150°.

The first Transect cruise in 2022 reached site 49 and a second cruise in 2024 reached site 47. These cruises observed the Nansen and Amundsen Basins in detail but did not capture full width of the Transpolar Drift current, which dominates surface layer in the adjacent Amundsen Basin. Observing the Transpolar Drift was an important goal for EBT2026, which reached station 61 and captured the full width of the current while also collecting data over Lomonosov Ridge and from the southwestern Makarov Basin.

Research themes included characterizing the physical and biogeochemical environment, the vertical transports of heat and nutrients, light availability, mapping species present and quantifying ongoing changes in the sea ice cover. Major activities included:

- **Repeated hydrographic and biogeochemical section** along the Eurasian Basin Transect with close station spacing suitable for investigating the structure of the Transpolar Drift, currents following features such as the shelf break North of Svalbard, the Gakkel and Lomonosov ridges and mixing between intermediate water masses over the Lomonosov Ridge. Niskin bottles on the CTD rosette collected water for measurement of 24 different parameters as well as for onboard experiments.

- **Recovery and redeployment of scientific moorings** at two sites in the Central Nansen and Amundsen Basins. Moorings at these sites have continuously collected year-round observations of sea ice draft, hydrography, currents sedimentation rates and recorded underwater sound for 4 years since 2022. The moorings were redeployed in 2026 with a planned recovery in 2028.

- **Acoustic surveys** of currents, fish, plankton, bathymetry and sub-bottom stratigraphy. Longer stops at observation sites allowed acoustic instruments to operate without disturbance from ice breaking noise and provided opportunities for complimentary work.

- **Phyto- and zooplankton nets**, macrozooplankton net tows, trawls and camera surveys.

- **Sea ice stations** were established at 25 locations to collect in-situ information about the sea ice and ice-associated ecosystem. Drifting platforms that will collect data year-round and transmit it via satellite, typically for several months, until the ice they are deployed on melts, or batteries are depleted were deployed at many of these stations.

- **Sediment sampling** in the Nansen, Amundsen and Marakov Basins, as well as on the Gakkel and Lomonosov ridges using a box corer.

EBT2026 began with a transit leg entering the ice close to 030° E and continuing towards the North Pole between 030°-060° E to exploit generally lighter ice conditions in the eastern Nansen Basin. After a brief stop to collect measurements at the North Pole, the RV *Kronprins Haakon* continued into the western hemisphere on the way to the west end of the Eurasian Basin Transect. Scientific work along the Transect was completed in a southeasterly direction with the vessel working towards the ice edge. Starting scientific work at the west end of the Transect allowed priority work at the west end to be completed earlier in the cruise.

Navigation from station 61 to station 57 was extremely challenging. The ice cover in this region was dominated by large floes, which RV *Kronprins Haakon* was unable to break though. Progress was only possible by navigating around the edges of these floes, which were typically long and narrow with the long axis orientated in a north-south direction. As a result, there were more navigable paths leading north-south, than east-west. Navigable paths between the large floes consisted of smaller floes and rubble which was tightly packed due to pressure in the ice pack. For several days the vessel made progress by repeated backing and ramming with very high fuel consumption while following an extremely indirect route. At station 57 it became apparent that fuel reserves were insufficient to complete the Transect using this approach. Strong, south-westerly winds likely increased pressure in the ice, but greatest impediment was the size and orientation of floes that the vessel was unable to break though.

A diversion from the cruise plan was required to avoid the most challenging conditions. The RV *Kronprins Haakon* diverted northeast, before rejoining the Transect at station 39. After rejoining the Transect at station 39 the vessel made progress in accordance with the cruise plan, completing all planned work as far as station 01(A) except for deployment of mooring *Marie-26* at the Amundsen Basin site which was lost after a line used in the deployment operation failed.



Figure 2. Anna Miettinen, Emelia Chamberlain and Rosalie McKay (UiT) returning to the vessel with samples at the North Pole. © Audun Tholfsen

*Table 1. List of cruises completing sections of the Eurasian Basin Transect (EBT) in summer. † Stations 40-54 were displaced from the Transect as the vessel diverted around difficult ice conditions. * Only the upper 1500 m of the water column was surveyed due to the short cruise duration.*

Cruise	Sailing date	Duration	Sites visited	Cruise report
2026007011	23 July 2026	49 days	01–61†	This report
2024007009	19 July 2024	24 days	02–47*	https://hdl.handle.net/11250/3145717
2022007010	19 July 2022	35 days	01–49	https://hdl.handle.net/11250/3013026
2021007010	24 August 2021	32 days	EBT not yet defined	https://doi.org/10.7557/nlrs.6413

Positions of sites along the Eurasian Basin Transect

*Table 2. Positions of repeated observation sites along the Eurasian Basin Transect. Sites are arranged in a repeating pattern A-C-B-C, to allow different activities to be repeated with various horizontal spacing. The most extensive surveys are conducted at A stations with less activity at B stations and less again at C stations. ** The Nansen and Amundsen Basin mooring sites are highlighted with asterisks.*

Site	Latitude	Longitude	Latitude	Longitude
1 (A)	81.500° N	31.000° E	81° 30.000'N	031° 00.000'E
2 (C)	81.658° N	30.602° E	81° 39.497'N	030° 36.147'E
3 (B)	81.816° N	30.190° E	81° 48.970'N	030° 11.379'E
4 (C)	81.974° N	29.761° E	81° 58.416'N	029° 45.645'E
5 (A)	82.131° N	29.315° E	82° 07.835'N	029° 18.889'E

6 (C)	82.287° N	28.851° E	82° 17.224'N	028° 51.054'E
7 (B)	82.443° N	28.368° E	82° 26.581'N	028° 22.074'E
8 (C)	82.598° N	27.865° E	82° 35.906'N	027° 51.883'E
9 (A)	82.753° N	27.340° E	82° 45.195'N	027° 20.407'E
10 (C)	82.907° N	26.793° E	82° 54.446'N	026° 47.567'E
11 (B)	83.061° N	26.221° E	83° 03.658'N	026° 13.279'E
12 (C)	83.214° N	25.624° E	83° 12.826'N	025° 37.451'E
13 (A)	83.366° N	25.000° E	83° 21.949'N	024° 59.984'E
14 (C)	83.517° N	24.346° E	83° 31.022'N	024° 20.773'E
15 (B)	83.667° N	23.662° E	83° 40.043'N	023° 39.703'E
16 (C)	83.817° N	22.944° E	83° 49.007'N	022° 56.650'E
**** 17 (A) ****	83.965° N	22.191° E	83° 57.911'N	022° 11.481'E
18 (C)	84.112° N	21.401° E	84° 06.749'N	021° 24.052'E
19 (B)	84.259° N	20.570° E	84° 15.517'N	020° 34.208'E
20 (C)	84.403° N	19.696° E	84° 24.210'N	019° 41.780'E
21 (A)	84.547° N	18.776° E	84° 32.820'N	018° 46.590'E
22 (C)	84.689° N	17.807° E	84° 41.343'N	017° 48.440'E
23 (B)	84.829° N	16.785° E	84° 49.770'N	016° 47.124'E
24 (C)	84.968° N	15.707° E	84° 58.093'N	015° 42.414'E
25 (A)	85.105° N	14.568° E	85° 06.303'N	014° 34.071'E
26 (C)	85.240° N	13.364° E	85° 14.392'N	013° 21.838'E
27 (B)	85.372° N	12.091° E	85° 22.347'N	012° 05.439'E
28 (C)	85.503° N	10.743° E	85° 30.158'N	010° 44.586'E
29 (A)	85.630° N	09.316° E	85° 37.812'N	009° 18.974'E
30 (C)	85.755° N	07.805° E	85° 45.294'N	007° 48.283'E
31 (B)	85.876° N	06.203° E	85° 52.589'N	006° 12.185'E
32 (C)	85.995° N	04.506° E	85° 59.679'N	004° 30.343'E
33 (A)	86.109° N	02.707° E	86° 06.547'N	002° 42.421'E
34 (C)	86.220° N	00.801° E	86° 13.171'N	000° 48.088'E
35 (B)	86.326° N	01.216° W	86° 19.531'N	001° 12.971'W
36 (C)	86.427° N	03.351° W	86° 25.601'N	003° 21.042'W
**** 37 (A) ****	86.523° N	05.606° W	86° 31.358'N	005° 36.367'W
38 (C)	86.613° N	07.985° W	86° 36.775'N	007° 59.127'W
39 (B)	86.697° N	10.490° W	86° 41.823'N	010° 29.420'W
40 (C)	86.775° N	13.121° W	86° 46.474'N	013° 07.243'W
41 (A)	86.845° N	15.874° W	86° 50.698'N	015° 52.462'W
42 (C)	86.908° N	18.747° W	86° 54.467'N	018° 44.797'W
43 (B)	86.963° N	21.730° W	86° 57.752'N	021° 43.801'W
44 (C)	87.009° N	24.814° W	87° 00.526'N	024° 48.849'W
45 (A)	87.046° N	27.986° W	87° 02.766'N	027° 59.133'W
46 (C)	87.074° N	31.228° W	87° 04.451'N	031° 13.671'W
47 (B)	87.093° N	34.522° W	87° 05.565'N	034° 31.332'W
48 (C)	87.102° N	37.848° W	87° 06.098'N	037° 50.864'W
49 (A)	87.101° N	41.182° W	87° 06.042'N	041° 10.944'W
50 (C)	87.090° N	44.504° W	87° 05.400'N	044° 30.225'W
51 (B)	87.070° N	47.790° W	87° 04.178'N	047° 47.392'W
52 (C)	87.040° N	51.020° W	87° 02.388'N	051° 01.215'W
53 (A)	87.001° N	54.176° W	87° 00.046'N	054° 10.586'W
54 (C)	86.953° N	57.243° W	86° 57.174'N	057° 14.556'W
55 (B)	86.897° N	60.206° W	86° 53.796'N	060° 12.352'W
56 (C)	86.832° N	63.056° W	86° 49.940'N	063° 03.381'W
57 (A)	86.761° N	65.787° W	86° 45.633'N	065° 47.230'W
58 (C)	86.682° N	68.394° W	86° 40.906'N	068° 23.646'W
59 (B)	86.596° N	70.875° W	86° 35.786'N	070° 52.523'W
60 (C)	86.505° N	73.231° W	86° 30.304'N	073° 13.878'W
61 (A)	86.408° N	75.464° W	86° 24.486'N	075° 27.827'W
62 (C)	86.306° N	77.576° W	86° 18.359'N	077° 34.562'W
63 (B)	86.199° N	79.572° W	86° 11.948'N	079° 34.337'W
64 (C)	86.088° N	81.457° W	86° 05.277'N	081° 27.443'W
65 (A)	85.973° N	83.237° W	85° 58.366'N	083° 14.200'W

Cruise Participants

Organisation

1	Paul A. Dodd (NPI)	Cruise Leader
2	Anette Wold (NPI)*+	Deputy Cruise Leader
3	Audun Tholfsen (NPI)**	Safety & Logistics
4	Elfrid Tørset	Medic

Physical and Biogeochemical Oceanography

5	Mats Granskog (NPI)+	Water sampling, BGC
6	Morven Muilwijk (NPI)+	Water sampling & microstructure & turbulence,
7	Håkon Sandven (UiB)	Water sampling & optical properties
8	Ahmed El-Habashi (US-ONR)	Seawater optical properties
9	Tobi Ehmen (UiB)	Water sampling & SF6, CFC measurements
10	Florian Heinze (UiB)	Water sampling & SF6
11	Tim Carlsen (UiB)	Water sampling & meteorological instruments

Sea Ice Physics

12	Polona Itkin (NPI)+	In-situ physical properties
13	Jon Estil Krågebakk (NTNU)	Advanced camera system + on ship meteorology
14	Ivan Savelyev (US-ONR)	Drone based hyperspectral melt pond surveys

Sea Ice Biology

15	Anna Miettinen (UiT)	Primary production, sampling in leads
16	Emelia Chamberlain (UiT)	Sea ice biodiversity (DNA/RNA)
17	Rosalie McKay (UiT)	Sea ice biogeochemistry
18	Patrícia Mrázek (UiT)	Sea ice biogeochemistry & production

Plankton and Fish

19	Sünnje Basedow (UiT)	Laser optical plankton counter (LOPC)
20	Khuong Dinh (UiO)	Zooplankton nets, multi-stress experiments
21	Vegard Stürzinger (NPI)+	Catch analysis, LSSS system, photography
22	Bergfrid Høgås Skjæveland (UNIS)+	Catch analysis, DNA

Water Column Biology

23	Anna Vader (UNIS)+	Water column eDNA
24	Katrine Åmdal Sundt (UiB)	Labelled bacterial production experiments
25	Natalie Summers (NTNU)	Chl-a, POC, PON

Sediment Coring

26	Arunima Sen(UNIS)+	Incubations and macrobenthos
27	Carla Mateo (UNIS)+	Sediment grain size, pigments, TOC/TON, meiobenthos
28	Ivan Cautain (UiT)	Paleo. sampling from box cores

Mooring Operations

29	Marius Bratrein (NPI)+	Mooring preparation, deployment, recovery
30	Hans Eric Altenskjær (NPI)+	Mooring preparation, deployment, recovery

** Chemical responsible person*
*** HMS responsible person*
+ Polar bear guards

Daily Activities

Table 3. List of daily activities completed during EBT2026. Dates are given as dd/mm/yy. Times (UTC) and positions of routine activities are extracted from the cruise logger system, times of vessel movements etc. are extracted from the cruise leader's notebook.

Date	Summary of Activities
22/07/26 (Wednesday)	1500: Planning session on board KPH with windfall films **1830: KPH berths alongside at Kulkaia** 1900: Welcome dinner for cruise participants
23/07/26 (Thursday) *Day 0* *49 days remaining*	0800: Begin loading scientific cargo, scientific participants board 0800: Survival suit training for participants 1100: Press conference on board 1300: Interviews and filming for 'The Future with Hannah Fry' with Windfall films 1900: Safety briefing for scientific participants **2000: KPH departs from Kulkaia and begins transit to sea ice edge**
24/07/26 (Friday) *Day 1* *48 days remaining*	*Transit to sea ice edge continues…* 1935: Harstad Trawl (01) at N 80° 36.042', E 017° 21.372
25/07/26 (Saturday) *Day 2* *47 days Remaining*	**0300: KPH arrives marginal ice zone (ca. 15% ice concentration)** 0645: Harstad Trawl (02) at N 81° 18.474', E 025° 59.988
26/07/26 (Sunday) *Day 3* *46 days Remaining*	0155: X-CTD (1) at N 83° 00.000', E 031° 41.000' 1129: X-CTD (2) at N 84° 00.000', E 032° 41.000' 1435: Harstad Trawl (03) at N 84 17.880', E 033° 11.826 1741: X-CTD (3) at N 84° 30.000', E 034° 24.000' 2251: X-CTD (4) at N 84° 59.983', E 036° 38.000'
27/07/26 (Monday) *Day 4* *45 days Remaining*	0314: X-CTD (5) at N 85° 29.083', E 040° 24.000' 0704: X-CTD (6) at N 86° 02.000', E 041° 24.000' 1118: X-CTD (7) at N 86° 30.010', E 041° 12.333' 1319: Primary CTD via moonpool (273) at N 86° 39.120', E 040° 13.506 **1328: Sea Ice Station (01) at N 86 39.120', E 040 13.512** 1852: Box Core (01) at N 86 39.192', E 040 13.662 1957: Box Core (02) at N 86 39.330', E 040 17.964 2208: Box Core (03) at N 86 39.984', E 040 28.398
28/07/26 (Tuesday) *Day 5* *44 days Remaining*	0112: Box Core (04) at N 86° 41.214', E 040° 50.538 0708: X-CTD (8) at N 87° 00.180', E 041° 46.000' 1508: X-CTD (9) at N 87° 29.130', E 036° 33.100' 2032: X-CTD (10) at N 87° 59.998', E 046° 53.833'
29/07/26 (Wednesday) *Day 6* *43 days Remaining*	0054: X-CTD (11) at N 88° 30.003', E 047° 08.300' 0509: X-CTD (12) at N 88° 59.000', E 042° 56.000' **0738: Sea Ice Station (02) at N 86° 41.214', E 040° 50.538** 0752: Primary CTD via moonpool (274) at N 89° 0.084', E 042° 34.362 1338: Primary CTD via moonpool (275) at N 88° 58.206', E 043° 57.444

30/07/26 (Thursday) *Day 7* *42 days* *Remaining*	0102: Multinet Mammoth at N 88° 58.206', E 043° 57.444 0518: Bongo net at N 88° 58.206', E 043° 57.444 0534: Bongo net at N 88° 58.206', E 043° 57.444 **0721: Sea Ice Station (03) at N 89° 55.688' E 064° 23.754'** 0950: Primary CTD via moonpool (276) at N 89° 54.402', E 063° 41.292 1855: Box Core (05) at N 89° 47.910', E 050° 57.678 2218: Primary CTD via moonpool (277) at N 89° 45.402', E 050° 33.078
31/07/26 (Friday) *Day 8* *41 days* *remaining*	0407: MIK net at N 89° 45.402', E 050° 33.078 0556: Auxiliary CTD overside (278) at N 89° 39.870', E 041° 32.124 0619: Optical Profiler at N 89° 39.870', E 041° 32.124 0642: Auxiliary CTD overside (279) at N 89° 39.582', E 040° 44.436 **1156 KPH passes the North Pole** *To the best of our knowledge EBT2026 was the 5th Norwegian expedition to reach the North Pole by ship and the 198th ship-based expedition of any nation* **1200: KPH begins transit to station 65(A) on Eurasian Basin Transect**
01/08/26 (Saturday) *Day 9* *40 days* *remaining*	0045: Primary CTD via moonpool (280) at N 89° 3.924', W 102° 30.696 0216: Box Core (06) at N 89° 4.284', W 101° 09.300 0429: Box Core (07) at N 89° 4.788', W 100° 04.620 0629: Box Core (08) at N 89° 5.148', W 100° 55.632 **0709: Sea Ice Station (04) at N 89° 5.148', W 100° 55.632**
02/08/26 (Sunday) *Day 10* *39 days* *Remaining*	0726: Phytoplankton net at N 89° 5.148', W 100° 55.632 0738: Phytoplankton net at N 89° 5.148', W 100° 55.632 0745: Phytoplankton net at N 89° 5.148', W 100° 55.632 **1841: Sea Ice Station (05) at N 88° 11.990' W 088° 18.052'**
03/08/26 (Monday) *Day 11* *38 days* *Remaining*	**0652: Sea Ice Station (06) at N 89° 5.148', W 100° 55.632** 0809: Phytoplankton net at N 89° 5.148', W 100° 55.632 **1812: Sea Ice Station (07) at N 89° 5.148', W 100° 55.632**
04/08/26 (Tuesday) *Day 12* *37 days* *Remaining*	**0651: Sea Ice Station (08) at N 89° 5.148', W 100° 55.632** **0725: KPH stopped by poor conditions for 22 hours (high ice pressure)** 0841: Multinet Mammoth at N 89° 5.148', W 100° 55.632 1149: Primary CTD via moonpool (281) at N 86° 56.724', W 080° 56.868 1439: Optical Profiler at N 86° 56.724', W 080° 56.868 1559: Auxiliary CTD overside (282) at N 86° 56.412', W 079° 14.004 1622: Bongo net at N 86° 56.412', W 079° 14.004 1637: Bongo net at N 86° 56.412', W 079° 14.004 1648: Bongo net at N 86° 56.412', W 079° 14.004 1648: Auxiliary CTD overside (283) at N 86° 56.364', W 079° 18.564 1712: MIK net at N 86° 56.364', W 079° 18.564 1759: MIK net at N 86° 56.364', W 079° 18.564 2035: Primary CTD via moonpool (284) at N 86° 55.560', W 078° 11.082 2355: Box Core (09) at N 86° 55.428', W 078° 31.968
05/08/26 (Wednesday) *Day 13*	0218: Box Core (10) at N 86° 55.404', W 078° 45.612 0600: Work at stations 62(C) to 65(A) cancelled due to heavy ice conditions **0600: KPH resumes transit but diverts to Eurasian Basin Transect station 61(A) to avoid difficult ice conditions.**

36 days Remaining	
06/08/26 (Thursday) *Day 14* *35 days Remaining*	**1345: KPH arrives on Eurasian Basin Transect at station 61(A)** 1357: Primary CTD via moonpool (285) at N 86° 25.296', W 075° 51.840 1622: Optical Profiler at N 86° 25.296', W 075° 51.840 1644: Auxiliary CTD overside (286) at N 86° 25.284', W 074° 4.296 1704: Optical Profiler at N 86° 25.284', W 074° 4.296 1728: Auxiliary CTD overside (287) at N 86° 25.278', W 074° 7.488 1747: Bongo net at N 86° 25.278', W 074° 7.488 1752: Bongo net at N 86° 25.278', W 074° 7.488 1807: Bongo net at N 86° 25.278', W 074° 7.488 1813: Auxiliary CTD overside (288) at N 86° 25.266', W 074° 10.752 1942: Multinet Mammoth at N 86° 25.266', W 074° 10.752 2153: MIK net at N 86° 25.266', W 074° 10.752 2247: MIK net at N 86° 25.266', W 074° 10.752
07/08/26 (Friday) *Day 15* *34 days Remaining*	0633: Primary CTD via moonpool (289) at N 86° 29.430', W 072° 7.020 **0925: Sea Ice Station (09) at N 86° 29.430', W 072° 7.020** 1110: Primary CTD via moonpool (290) at N 86° 28.776', W 071° 0.510
08/08/26 (Saturday) *Day 16* *33 days Remaining*	0652: Microstructure Profiler at N 86° 28.776', W 071° 0.510 0705: Microstructure Profiler at N 86° 28.776', W 071° 0.510 0712: Primary CTD via moonpool (291) at N 86° 36.396', W 070° 12.516 0918: Optical Profiler at N 86° 36.396', W 070° 12.516
09/08/26 (Sunday) *Day 17* *32 days Remaining*	1015: Primary CTD via moonpool (292) at N 86° 31.866', W 067° 40.824 **1335: Sea Ice Station (10) at N 86° 31.866', W 067° 40.824** **1900: KPH stopped by poor conditions for 11 hours (high ice pressure)** 2040: Primary CTD via moonpool (293) at N 86° 31.602', W 066° 28.752
10/08/26 (Monday) *Day 18* *31 days Remaining*	**0620: KPH begins transit to station 57(A)** *Transit towards more navigable ice conditions is prioritised over scientific work*
11/08/26 (Tuesday) *Day 19* *30 days Remaining*	1025: Auxiliary CTD overside (294) at N 86° 39.096', W 065° 51.150 1047: Optical Profiler at N 86° 39.096', W 065° 51.150 1131: Auxiliary CTD overside (295) at N 86° 39.108', W 065° 52.704 1153: Bongo net at N 86° 39.108', W 065° 52.704 1201: Bongo net at N 86° 39.108', W 065° 52.704 1213: Bongo net at N 86° 39.108', W 065° 52.704 **1243: Sea Ice Station (12) at N 86° 39.108', W 065° 52.704** 1356: Primary CTD via moonpool (296) at N 86° 39.210', W 065° 55.752 1620: Multinet Mammoth at N 86° 39.210', W 065° 55.752 1824: MIK net at N 86° 39.210', W 065° 55.752
12/08/26 (Wednesday) *Day 20*	0848: Primary CTD via moonpool (297) at N 86° 45.780', W 064° 8.436 *Bridge officers determine that there is insufficient fuel remaining to safely reach the ice edge via the planned transect at our current rate of fuel consumption. The transect is abandoned until the KPH can reach more navigable ice conditions.*

29 days Remaining	**KPH begins to follow easiest route towards more navigable ice conditions.** 1117: Optical Profiler at N 86° 45.780', W 064° 8.436
13/08/26 (Thursday) *Day 21* *28 days Remaining*	**0400: KPH stopped by poor conditions for 5 hrs (large ridges & poor visibility)** 0612: MIK net at N 86° 45.780', W 064° 8.436 0710: MIK net at N 86° 45.780', W 064° 8.436 1409: Primary CTD via moonpool (298) at N 87° 5.994', W 063° 55.896 1557: Box Core (11) at N 87° 5.790', W 062° 0.864 1719: Box Core (12) at N 87° 5.634', W 062° 3.864 1856: Box Core (13) at N 87° 5.448', W 062° 6.744
14/08/26 (Friday) *Day 22* *27 days Remaining*	0821: Optical Profiler at N 87° 5.448', W 062° 6.744' 0828: Primary CTD via moonpool (299) at N 87° 32.070', W 060° 26.202' 0847: Microstructure Profiler at N 87° 32.070', W 060° 26.202' **1055: Sea Ice Station (13) at N 87° 32.070', W 060° 26.202'** 1719: Primary CTD via moonpool (300) at N 87° 41.538', W 059° 27.360' 1744: Optical Profiler at N 87° 41.538', W 059° 27.360'
15/08/26 (Saturday) *Day 23* *26 days Remaining*	0101: Primary CTD via moonpool (301) at N 87° 50.166', W 057° 43.824' 0632: Primary CTD via moonpool (302) at N 88° 0.120', W 057° 27.258' 0835: Multinet Mammoth at N 88° 0.120', W 057° 27.258' 0840: Optical Profiler at N 88° 0.120', W 057° 27.258' 0905: Auxiliary CTD overside (303) at N 88° 0.084', W 057° 37.338' 0921: Bongo net at N 88° 0.084', W 057° 37.338' 0927: Bongo net at N 88° 0.084', W 057° 37.338' 0934: Bongo net at N 88° 0.084', W 057° 37.338' 0942: Auxiliary CTD overside (304) at N 88° 0.066', W 057° 39.348' 1016: MIK net at N 88° 0.066', W 057° 39.348' 1733: Primary CTD via moonpool (305) at N 88° 9.270', W 054° 36.012' **1750: Sea Ice Station (14) at N 88° 9.270', W 054° 36.012'**
16/08/26 (Sunday) *Day 24* *25 days Remaining*	0045: Optical Profiler at N 88° 9.270', W 054° 36.012' 0101: Primary CTD via moonpool (306) at N 88° 13.116', W 049° 46.404' 0743: Primary CTD via moonpool (307) at N 88° 12.432', W 044° 47.946' 1233: Optical Profiler at N 88 ° 12.432', W 044 ° 47.946' 1304: Auxiliary CTD overside (308) at N 88 ° 14.004', W 040 ° 41.226' 1315: Bongo net at N 88 ° 14.004', W 040 ° 41.226' 1332: Bongo net at N 88 ° 14.004', W 040 ° 41.226' 1342: Bongo net at N 88 ° 14.004', W 040 ° 41.226' 1355: Bongo net at N 88 ° 14.004', W 040 ° 41.226' 1355: Auxiliary CTD overside (309) at N 88 ° 13.992', W 040 ° 45.090' 1444: Primary CTD via moonpool (310) at N 88 ° 14.232', W 040 ° 44.586' **1444: Sea Ice Station (15) at N 88 ° 14.232', W 040 ° 44.586'** 1833: Multinet Mammoth at N 88 ° 14.232', W 040 ° 44.586' 2116: MIK net at N 88 ° 14.232', W 040 ° 44.586'
17/08/26 (Monday) *Day 25* *24 days Remaining*	0137: Primary CTD via moonpool (311) at N 88 ° 19.794', W 035 ° 59.298' 0449: Microstructure Profiler at N 88 ° 19.794', W 035 ° 59.298' 0509: Primary CTD via moonpool (312) at N 88 ° 23.784', W 029 ° 36.132' 0517: Optical Profiler at N 88 ° 23.784', W 029 ° 36.132' 0931: Primary CTD via moonpool (313) at N 88 ° 20.394', W 024 ° 58.068' 1418: Microstructure Profiler at N 88 ° 20.394', W 024 ° 58.068' 1438: Primary CTD via moonpool (314) at N 88 ° 11.676', W 021 ° 30.444' 1444: Optical Profiler at N 88 ° 11.676', W 021 ° 30.444' 1613: Auxiliary CTD overside (315) at N 88 ° 12.096', W 021 ° 38.094' 1625: Bongo net at N 88 ° 12.096', W 021 ° 38.094' 1644: Bongo net at N 88 ° 12.096', W 021 ° 38.094' 1651: Bongo net at N 88 ° 12.096', W 021 ° 38.094' 1700: Auxiliary CTD overside (316) at N 88 ° 12.312', W 021 ° 42.258' **1856: Sea Ice Station (16) at N 88 ° 12.312', W 021 ° 42.258'**

	1907: MIK net at N 88 ° 12.312', W 021 ° 42.258' 2007: Multinet Mammoth at N 88 ° 12.312', W 021 ° 42.258'
18/08/26 (Tuesday) *Day 26* *23 days* *Remaining*	0311: Primary CTD via moonpool (317) at N 88 ° 2.748', W 019 ° 17.334' 0605: Microstructure Profiler at N 88 ° 2.748', W 019 ° 17.334' 0634: Primary CTD via moonpool (318) at N 87 ° 53.586', W 017 ° 6.144' 0639: Optical Profiler at N 87 ° 53.586', W 017 ° 6.144' **0800: KPH reaches sufficiently navigable ice to steer back towards the Eurasian Basin Transect. A plan is agreed to rejoin the Transect at station 39** 1111: Primary CTD via moonpool (319) at N 87 ° 43.872', W 016 ° 24.222' **1117: Sea Ice Station (17) at N 87 ° 43.872', W 016 ° 24.222'** 1508: Multinet Mammoth at N 87 ° 43.872', W 016 ° 24.222' **1524: Sea Ice Station (18) at N 87 ° 43.872', W 016 ° 24.222'** 1858: MIK net at N 87 ° 43.872', W 016 ° 24.222' 2004: Primary CTD via moonpool (320) at N 87 ° 34.704', W 014 ° 7.398' 2018: Optical Profiler at N 87 ° 34.704', W 014 ° 7.398' 2048: Auxiliary CTD overside (321) at N 87 ° 34.728', W 014 ° 7.944' 2111: Auxiliary CTD overside (322) at N 87 ° 34.722', W 014 ° 8.196' 2132: Bongo net at N 87 ° 34.722', W 014 ° 8.196' 2147: Bongo net at N 87 ° 34.722', W 014 ° 8.196' 2153: Bongo net at N 87 ° 34.722', W 014 ° 8.196'
19/08/26 (Wednesday) *Day 27* *22 days* *Remaining*	0143: Primary CTD via moonpool (323) at N 87 ° 25.452', W 014 ° 52.518' 0511: Microstructure Profiler at N 87 ° 25.452', W 014 ° 52.518' 0529: Primary CTD via moonpool (324) at N 87 ° 15.570', W 013 ° 40.536' 0555: Optical Profiler at N 87 ° 15.570', W 013 ° 40.536' 0837: Primary CTD via moonpool (325) at N 87 ° 6.168', W 011 ° 1.224' **0845: Sea Ice Station (19) at N 87 ° 6.168', W 011 ° 1.224'** 1209: MIK net at N 87 ° 6.168', W 011 ° 1.224' **1228: Sea Ice Station (20) at N 86 ° 56.622', W 011 ° 0.972'** 1300: Multinet Mammoth at N 86 ° 56.622', W 011 ° 0.972' 1645: Optical Profiler at N 86 ° 56.622', W 011 ° 0.972' 1646: Primary CTD via moonpool (326) at N 86 ° 56.076', W 011 ° 20.340' 1707: Auxiliary CTD overside (327) at N 86 ° 56.040', W 011 ° 21.732' 1734: Auxiliary CTD overside (328) at N 86 ° 55.962', W 011 ° 23.622' 1753: Bongo net at N 86 ° 55.962', W 011 ° 23.622' 1807: Bongo net at N 86 ° 55.962', W 011 ° 23.622' 1818: Bongo net at N 86 ° 55.962', W 011 ° 23.622' 2236: Primary CTD via moonpool (329) at N 86 ° 46.884', W 010 ° 16.500'
20/08/26 (Thursday) *Day 28* *21 days* *Remaining*	0043: Microstructure Profiler at N 86 ° 46.884', W 010 ° 16.500' 0104: Primary CTD via moonpool (330) at N 86 ° 41.448', W 010 ° 44.748' 0127: Optical Profiler at N 86 ° 41.448', W 010 ° 44.748' 0402: Primary CTD via moonpool (331) at N 86 ° 36.576', W 007 ° 7.692' **1426: Recovery of mooring *Marie-24* begins** 1819: Primary CTD via moonpool (332) at N 86 ° 32.040', W 005 ° 34.074' 2234: Box Core (14) at N 86 ° 32.454', W 005 ° 51.678'
21/08/26 (Friday) *Day 29* *20 days* *Remaining*	0202: Box Core (15) at N 86 ° 32.472', W 004 ° 0.258' 0440: Box Core (16) at N 86 ° 32.838', W 004 ° 1.254' 0726: Box Core (17) at N 86 ° 33.642', W 004 ° 6.768' 1413: Primary CTD via moonpool (333) at N 86 ° 29.736', W 005 ° 4.494' 1413: Optical Profiler at N 86 ° 29.736', W 005 ° 4.494' 1447: Auxiliary CTD overside (334) at N 86 ° 29.784', W 005 ° 4.296' 1515: Auxiliary CTD overside (335) at N 86 ° 29.832', W 005 ° 4.068' 1535: Bongo net at N 86 ° 29.832', W 005 ° 4.068' 1610: Bongo net at N 86 ° 29.832', W 005 ° 4.068' 1620: Bongo net at N 86 ° 29.832', W 005 ° 4.068' 1628: Bongo net at N 86 ° 29.832', W 005 ° 4.068'

22/08/26 (Saturday) *Day 30* *19 days* *Remaining*	0220: Multinet Mammoth at N 86 ° 29.832', W 005 ° 4.068' **0834: Recovery of mooring *Amundsen-24* begins** 1149: Bongo net at N 86 ° 29.832', W 005 ° 4.068' 1211: Phytoplankton net at N 86 ° 29.832', W 005 ° 4.068' **1331: Sea Ice Station (21) begins at N 86 ° 33.024', W 005 ° 9.942'**
23/08/26 (Sunday) *Day 31* *18 days* *Remaining*	**Sea Ice Station (21) continues all day** 1431: Primary CTD via moonpool (336) at N 86 ° 29.820', W 006 ° 40.434'
24/08/26 (Monday) *Day 32* *17 days* *Remaining*	**0600: Sea ice station 21 ends** **1107: Deployment of mooring *Marie-26* begins** 1420: Mooring *Marie-26* is lost due to failed deployment line 1700: First grappling operation to salvage mooring *Marie-26* begins 2100: Second grappling operation to salvage mooring *Marie-26* begins **2350: Mooring *Marie-26* abandoned**
25/08/26 (Tuesday) *Day 33* *16 days* *Remaining*	0639: Phytoplankton net at N 86 ° 29.820', W 006 ° 40.434' 0652: Phytoplankton net at N 86 ° 29.820', W 006 ° 40.434' 0706: Phytoplankton net at N 86 ° 29.820', W 006 ° 40.434' 0716: MIK net at N 86 ° 29.820', W 006 ° 40.434' 0858: MIK net at N 86 ° 29.820', W 006 ° 40.434' 0947: MIK net at N 86 ° 29.820', W 006 ° 40.434' **2006: Deployment of mooring *Amundsen-26* begins**
26/08/26 (Wednesday) *Day 34* *15 days* *Remaining*	**0310: *Amundsen-26* deployed (with depth alignment problems)** 0718: Primary CTD via moonpool (337) at N 86 ° 25.590', W 003 ° 32.946' 1034: Phytoplankton net at N 86 ° 25.590', W 003 ° 32.946' 1041: Optical Profiler at N 86 ° 25.590', W 003 ° 32.946' 1105: Bongo net at N 86 ° 25.590', W 003 ° 32.946' **1157: Sea Ice Station (22) at N 86 ° 25.290', W 003 ° 53.298'** **1730: Recovery of mooring *Amunsdsen-26* (to address depth alignment problems) begins**
27/08/26 (Thursday) *Day 35* *14 days* *Remaining*	**0015: Mooring *Amundsen-26* deployed (with depth alignment corrected)** 0604: Microstructure Profiler at N 86 ° 25.290', W 003 ° 53.298' 0626: Primary CTD via moonpool (338) at N 86 ° 19.674', W 001 ° 48.102' 0638: Optical Profiler at N 86 ° 19.674', W 001 ° 48.102' 1016: Primary CTD via moonpool (339) at N 86 ° 12.894', E 000 ° 53.820' 1311: Microstructure Profiler at N 86 ° 12.894', E 000 ° 53.820' 1339: Optical Profiler at N 86 ° 12.894', E 000 ° 53.820' 1339: Primary CTD via moonpool (340) at N 86 ° 6.252', E 002 ° 57.840' 1402: Auxiliary CTD overside (341) at N 86 ° 6.156', E 003 ° 1.476' 1428: Auxiliary CTD overside (342) at N 86 ° 6.030', E 003 ° 5.556' 1441: Bongo net at N 86 ° 6.030', E 003 ° 5.556' 1458: Bongo net at N 86 ° 6.030', E 003 ° 5.556' 1509: Bongo net at N 86 ° 6.030', E 003 ° 5.556' 1516: Bongo net at N 86 ° 6.030', E 003 ° 5.556' 1524: Phytoplankton net at N 86 ° 6.030', E 003 ° 5.556' 1749: Multinet Mammoth at N 86 ° 6.030', E 003 ° 5.556' 2119: MIK net at N 86 ° 6.030', E 003 ° 5.556' 2328: Primary CTD via moonpool (343) at N 85 ° 59.382', E 004 ° 34.296'
28/08/26 (Friday) *Day 36*	0238: Optical Profiler at N 85 ° 59.382', E 004 ° 34.296' 0241: Primary CTD via moonpool (344) at N 85 ° 52.464', E 006 ° 19.686' 0617: Primary CTD via moonpool (345) at N 85 ° 45.072', E 007 ° 50.328' 0917: Optical Profiler at N 85 ° 45.072', E 007 ° 50.328'

13 days Remaining	0939: Auxiliary CTD overside (346) at N 85 ° 37.320', E 009 ° 20.820' 1007: Auxiliary CTD overside (347) at N 85 ° 37.182', E 009 ° 19.920' 1023: Bongo net at N 85 ° 37.182', E 009 ° 19.920' 1032: Bongo net at N 85 ° 37.182', E 009 ° 19.920' 1040: Bongo net at N 85 ° 37.182', E 009 ° 19.920' 1050: Phytoplankton net at N 85 ° 37.182', E 009 ° 19.920' 1220: Primary CTD via moonpool (348) at N 85 ° 36.834', E 009 ° 26.100' **1300: Sea ice station (23) begins** 1518: MIK net at N 85 ° 36.834', E 009 ° 26.100' 1612: Multinet Mammoth at N 85 ° 36.834', E 009 ° 26.100' **1900: Sea ice station (23) ends** 2112: Primary CTD via moonpool (349) at N 85 ° 30.018', E 010 ° 49.116' **22:50 KPH arrives at R. K. Perry Seamount** 2255: Primary CTD via moonpool (350) at N 85 ° 31.650', E 012 ° 23.556' (R. K. Perry S.)
29/08/26 (Saturday) *Day 37* *12 days Remaining*	0132: Box Core (18) at N 85 ° 32.256', E 012 ° 26.562' (R. K. Perry Seamount) 0300: Box Core (19) at N 85 ° 32.550', E 012 ° 34.224' (R. K. Perry Seamount) 0546: Box Core (20) at N 85 ° 32.676', E 012 ° 42.690' (R. K. Perry Seamount) 0959: Microstructure Profiler at N 85 ° 32.676', E 012 ° 42.690' 1028: Primary CTD via moonpool (351) at N 85 ° 22.656', E 011 ° 56.364' 1309: Primary CTD via moonpool (352) at N 85 ° 19.584', E 012 ° 30.180' 1832: Primary CTD via moonpool (353) at N 85 ° 14.178', E 013 ° 24.054' 2130: Microstructure Profiler at N 85 ° 14.178', E 013 ° 24.054' 2148: Optical Profiler at N 85 ° 14.178', E 013 ° 24.054' 2157: Primary CTD via moonpool (354) at N 85 ° 6.222', E 014 ° 34.044' 2225: Auxiliary CTD overside (355) at N 85 ° 6.102', E 014 ° 33.450' 2254: Auxiliary CTD overside (356) at N 85 ° 6.042', E 014 ° 32.616' 2315: Bongo net at N 85 ° 6.042', E 014 ° 32.616' 2341: Bongo net at N 85 ° 6.042', E 014 ° 32.616' 2355: Phytoplankton net at N 85 ° 6.042', E 014 ° 32.616'
30/08/26 (Sunday) *Day 38* *11 days Remaining*	0045: MIK net at N 85 ° 6.042', E 014 ° 32.616' 0138: Multinet Mammoth at N 85 ° 6.042', E 014 ° 32.616' 0631: Primary CTD via moonpool (357) at N 84 ° 57.804', E 015 ° 39.210' 0956: Microstructure Profiler at N 84 ° 57.804', E 015 ° 39.210' 1023: Primary CTD via moonpool (358) at N 84 ° 49.794', E 016 ° 47.478' 1044: Optical Profiler at N 84 ° 49.794', E 016 ° 47.478' 1356: Primary CTD via moonpool (359) at N 84 ° 41.244', E 017 ° 50.802' 1442: MIK net at N 84 ° 41.244', E 017 ° 50.802'
31/08/26 (Monday) *Day 39* *10 days Remaining*	0230: Primary CTD via moonpool (363) at N 84 ° 23.994', E 019 ° 42.990' 0416: Microstructure Profiler at N 84 ° 23.994', E 019 ° 42.990' 0439: Primary CTD via moonpool (364) at N 84 ° 15.324', E 020 ° 30.870' 0453: Optical Profiler at N 84 ° 15.324', E 020 ° 30.870' 0710: Primary CTD via moonpool (365) at N 84 ° 6.552', E 021 ° 25.140' 0926: Optical Profiler at N 84 ° 6.552', E 021 ° 25.140' 0940: Auxiliary CTD overside (366) at N 83 ° 58.188', E 022 ° 9.720' 1007: Auxiliary CTD overside (367) at N 83 ° 57.630', E 022 ° 8.340' 1109: Auxiliary CTD overside (368) at N 83 ° 57.210', E 022 ° 9.408' 1349: Multinet Mammoth at N 83 ° 57.210', E 022 ° 9.408' 1402: Optical Profiler at N 83 ° 57.210', E 022 ° 9.408' 1432: Bongo net at N 83 ° 57.210', E 022 ° 9.408' 1456: Bongo net at N 83 ° 57.210', E 022 ° 9.408' 1504: Bongo net at N 83 ° 57.210', E 022 ° 9.408' 1511: Bongo net at N 83 ° 57.210', E 022 ° 9.408' 1519: Phytoplankton net at N 83 ° 57.210', E 022 ° 9.408' 1717: MIK net at N 83 ° 57.210', E 022 ° 9.408' 1750: Auxiliary CTD overside (369) at N 83 ° 53.676', E 021 ° 48.516' 1909: MIK net at N 83 ° 53.676', E 021 ° 48.516'

	2014: Box Core (21) at N 83 ° 52.008', E 021 ° 42.150' 2316: Box Core (22) at N 83 ° 51.000', E 021 ° 32.946'
01/09/26 (Tuesday) *Day 40* *9 days* *Remaining*	0208: Box Core (23) at N 83 ° 50.382', E 021 ° 29.484' **0641: Recovery of mooring *Nansen-24* begins** 1510: Primary CTD via moonpool (370) at N 83 ° 56.514', E 022 ° 0.138'
02/09/26 (Wednesday) *Day 41* *8 days* *Remaining*	**0612: Sea Ice Station (24) at N 83 ° 55.890', E 021 ° 27.960' begins and continues all day**
03/09/26 (Thursday) *Day 42* *7 days* *Remaining*	0400: Primary CTD via moonpool (371) at N 83 ° 57.444', E 020 ° 55.398' **1119: Deployment of mooring *Nansen-26* begins** 2239: Primary CTD via moonpool (372) at N 83 ° 48.858', E 022 ° 58.074' **2017: Mooring *Nansen-26* deployed**
04/09/26 (Friday) *Day 43* *6 days* *Remaining*	0020: Microstructure Profiler at N 83 ° 48.858', E 022 ° 58.074' 0045: Primary CTD via moonpool (373) at N 83 ° 39.894', E 023 ° 41.280' 0050: Optical Profiler at N 83 ° 39.894', E 023 ° 41.280' 0321: Primary CTD via moonpool (374) at N 83 ° 30.840', E 024 ° 21.294' 0529: Microstructure Profiler at N 83 ° 30.840', E 024 ° 21.294' 0550: Primary CTD via moonpool (375) at N 83 ° 21.972', E 025 ° 1.428' 0556: Optical Profiler at N 83 ° 21.972', E 025 ° 1.428' 0621: Auxiliary CTD overside (376) at N 83 ° 21.966', E 025 ° 1.500' 0650: Auxiliary CTD overside (377) at N 83 ° 21.966', E 025 ° 1.500' 0710: Bongo net at N 83 ° 21.966', E 025 ° 1.500' 0720: Bongo net at N 83 ° 21.966', E 025 ° 1.500' 0730: Bongo net at N 83 ° 21.966', E 025 ° 1.500' 0743: Bongo net at N 83 ° 21.966', E 025 ° 1.500' 0802: Phytoplankton net at N 83 ° 21.966', E 025 ° 1.500' 0919: MIK net at N 83 ° 21.966', E 025 ° 1.500' 1051: Multinet Mammoth at N 83 ° 21.966', E 025 ° 1.500' 1433: Box Core (24) at N 83 ° 21.948', E 024 ° 49.812' 1729: Box Core (25) at N 83 ° 21.948', E 024 ° 49.812' 1952: Box Core (26) at N 83 ° 21.948', E 024 ° 49.812' 2216: Box Core (27) at N 83 ° 21.954', E 024 ° 49.908'
05/09/26 (Saturday) *Day 44* *5 days* *Remaining*	0232: Primary CTD via moonpool (378) at N 83 ° 12.792', E 025 ° 38.622' 0435: Microstructure Profiler at N 83 ° 12.792', E 025 ° 38.622' 0457: Primary CTD via moonpool (379) at N 83 ° 3.384', E 026 ° 14.406' 0505: Optical Profiler at N 83 ° 3.384', E 026 ° 14.406' 0723: Primary CTD via moonpool (380) at N 82 ° 54.366', E 026 ° 48.066' 0812: MIK net at N 82 ° 54.366', E 026 ° 48.066' 0945: Harstad Trawl (04) at N 82 ° 53.934', E 026 ° 34.836' 1212: Microstructure Profiler at N 82 ° 53.934', E 026 ° 34.836' **1302: Sea Ice Station (26) at N 82 ° 45.072', E 027 ° 19.092'** 1325: Primary CTD via moonpool (381) at N 82 ° 45.090', E 027 ° 19.050' 1724: MIK net at N 82 ° 45.090', E 027 ° 19.050' 1828: Multinet Mammoth at N 82 ° 45.090', E 027 ° 19.050' 1846: Optical Profiler at N 82 ° 45.090', E 027 ° 19.050' 1909: Auxiliary CTD overside (382) at N 82 ° 44.712', E 027 ° 21.066' 1937: Auxiliary CTD overside (383) at N 82 ° 44.586', E 027 ° 21.798'

	2000: Bongo net at N 82 ° 44.586', E 027 ° 21.798' 2015: Bongo net at N 82 ° 44.586', E 027 ° 21.798' 2024: Bongo net at N 82 ° 44.586', E 027 ° 21.798' 2031: Phytoplankton net at N 82 ° 44.586', E 027 ° 21.798' 2309: Primary CTD via moonpool (384) at N 82 ° 35.802', E 027 ° 52.440'
06/08/26 (Sunday) *Day 45* *4 days* *Remaining*	0149: Microstructure Profiler at N 82 ° 35.802', E 027 ° 52.440' 0212: Primary CTD via moonpool (385) at N 82 ° 26.688', E 028 ° 21.936' 0223: Optical Profiler at N 82 ° 26.688', E 028 ° 21.936' 0517: Primary CTD via moonpool (386) at N 82 ° 17.208', E 028 ° 51.882' 0718: Microstructure Profiler at N 82 ° 17.208', E 028 ° 51.882' 0740: Primary CTD via moonpool (387) at N 82 ° 7.620', E 029 ° 19.824' 0748: Optical Profiler at N 82 ° 7.620', E 029 ° 19.824' 0813: Auxiliary CTD overside (388) at N 82 ° 7.320', E 029 ° 20.328' 0825: Optical Profiler at N 82 ° 7.320', E 029 ° 20.328' 0839: Auxiliary CTD overside (389) at N 82 ° 7.146', E 029 ° 20.196' 0855: Bongo net at N 82 ° 7.146', E 029 ° 20.196' 0913: Bongo net at N 82 ° 7.146', E 029 ° 20.196' 0927: Bongo net at N 82 ° 7.146', E 029 ° 20.196' 0952: Bongo net at N 82 ° 7.146', E 029 ° 20.196' 1039: MIK net at N 82 ° 7.146', E 029 ° 20.196'
07/09/26 (Monday) *Day 46* *3 days* *Remaining*	0010: Primary CTD via moonpool (397) at N 81 ° 48.966', E 030 ° 13.836' 0020: Optical Profiler at N 81 ° 48.966', E 030 ° 13.836' 0048: Auxiliary CTD overside (398) at N 81 ° 49.194', E 030 ° 14.724' 0200: Primary CTD via moonpool (399) at N 81 ° 46.422', E 030 ° 18.666' 0315: Primary CTD via moonpool (400) at N 81 ° 44.088', E 030 ° 24.912' 0427: Primary CTD via moonpool (401) at N 81 ° 41.766', E 030 ° 30.606' 0543: Primary CTD via moonpool (402) at N 81 ° 39.480', E 030 ° 36.180' 0715: Harstad Trawl(05) at N 81 ° 42.096', E 030 ° 20.178' 0924: Harstad Trawl(06) at N 81 ° 43.836', E 029 ° 58.818' 1217: Primary CTD via moonpool (403) at N 81 ° 36.846', E 030 ° 42.876' 1319: Primary CTD via moonpool (404) at N 81 ° 34.680', E 030 ° 48.540' 1423: Primary CTD via moonpool (405) at N 81 ° 32.352', E 030 ° 54.828' 1525: Microstructure Profiler at N 81 ° 32.352', E 030 ° 54.828' 1548: Primary CTD via moonpool (406) at N 81 ° 29.898', E 031 ° 0.732' 1625: Optical Profiler at N 81 ° 29.898', E 031 ° 0.732' 1642: Multinet Mammoth at N 81 ° 29.898', E 031 ° 0.732' 1658: Auxiliary CTD overside (407) at N 81 ° 30.000', E 031 ° 0.000' 1725: Auxiliary CTD overside (408) at N 81 ° 30.000', E 031 ° 0.000' 1741: MIK net at N 81 ° 30.000', E 031 ° 0.000' 1759: Bongo net at N 81 ° 30.000', E 031 ° 0.000' 1819: Bongo net at N 81 ° 30.000', E 031 ° 0.000' 1834: Bongo net at N 81 ° 30.000', E 031 ° 0.000' 1843: Bongo net at N 81 ° 30.000', E 031 ° 0.000' 1858: Phytoplankton net at N 81 ° 30.000', E 031 ° 0.000' 1934: Primary CTD via moonpool (409) at N 81 ° 27.636', E 031 ° 5.562' 2131: Primary CTD via moonpool (410) at N 81 ° 25.338', E 031 ° 11.520' 2240: Harstad Trawl (07) at N 81 ° 27.732', E 031 ° 33.894'
08/09/26 (Tuesday) *Day 47* *2 days* *Remaining*	0012: Primary CTD via moonpool (411) at N 81 ° 22.938', E 031 ° 16.926' **0050: KPH begins transit to Longyearbyen, transit to Longyearbyen continues all day**

09/09/26 (Wednesday) *Day 48* *1 day* *Remaining*	**Transit to Longyearbyen continues all day**
10/09/26 (Thursday) *Day 49* *0 days* *Remaining*	**0800: KPH arrives Kulkaia** 1030: Scientific participants not involved in unloading operations disembark 1630: Scientific participants involved in unloading operations disembark **1800: KPH departs Kulkaia for Bykaia**

Underway Measurements

Vessel-mounted automatic weather station

Contact person: Tim Carlsen (tim.carlsen@geo.uio.no)
Responsible persons on board: Tim Carlsen, Asgeir Steinsland (instrument technician), Fredrik Frigstad (instrument technician)

Routine meteorological observations were conducted by means of the VAISALA 430 automatic weather station (AWS). The measured parameters were logged continuously every 3 minutes and include air pressure, air temperature, sea water temperature, dew point, relative humidity, wind speed and direction, wind gusts, and solar radiation. The AWS is installed on Deck 9 next to a Vaisala CL31 ceilometer.



Figure 3. Photos of setup of AWS and ceilometer on Deck 9 (Observation Deck). © Tim Carlsen

Radiosondes

Contact person: Tim Carlsen (tim.carlsen@geo.uio.no)
Responsible persons on board: Knut Ivar Hansen (crew), Isak Johansen (crew), Tim Carlsen

Routine radiosonde launches twice daily at the main synoptic hours 00 and 12 UTC provided vertical profiles of temperature, pressure, relative humidity, and wind from the surface to about 30km altitude (varies from balloon to balloon). These measurements (1) characterise the meteorological situation throughout the cruise, (2) will provide constraints for the cloud microphysical retrievals from remote sensing, and (3) will help to set up and validate planned numerical model simulations for the cruise period.

All-sky camera

Contact person: Tim Carlsen (tim.carlsen@geo.uio.no)
Responsible persons on board: Tim Carlsen

To characterise the cloud scene and weather conditions, continuous all-sky images (5-min interval) were captured with an ASI-16 All Sky Imager (CMS Schreder, EKO Instruments), Figure 4. The camera is equipped with a fish-eye lens (180° field of view). In addition to providing a qualitative overview of the meteorological conditions throughout the cruise, the all-sky images can be used quantitatively to estimate cloud coverage, cloud type (e.g. low versus high clouds), cloud base height, and cloud motion vectors (using consecutive images).

Auxiliary sensors provided temperature and relative humidity, and a peripheral pyranometer measured downwelling solar irradiance. Preliminary tests indicate good agreement between the pyranometer measurements and comparable observations from the CNR4 net radiometer (Kipp & Zonen).

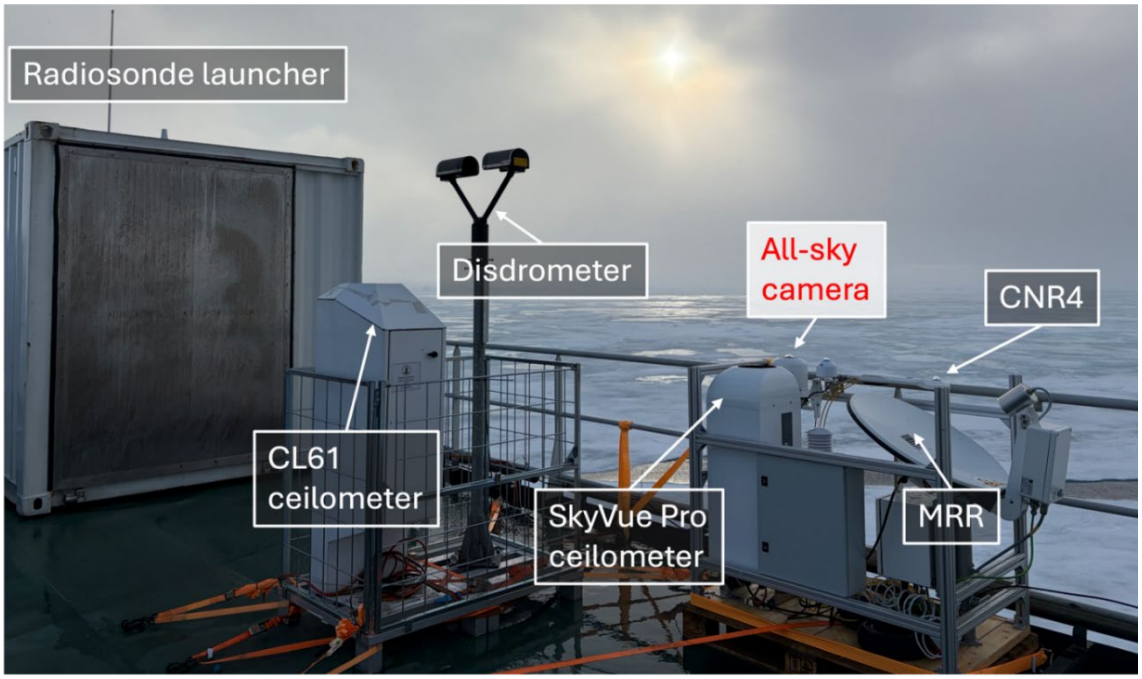


Figure 4. Setup of the atmospheric suite of instruments on Deck 6 (port side), with the ASI-16 all-sky camera highlighted in red. © Tim Carlsen

The all-sky camera and pyranometer were operational from 28 July to 9 September 2026. The temperature/ relative humidity sensor failed on 31 July 2026 and was not operational for the remainder of the cruise. Figure 5 shows example images from the all-sky camera for three different times on 4 September 2026, illustrating the variability in sky conditions during that day.

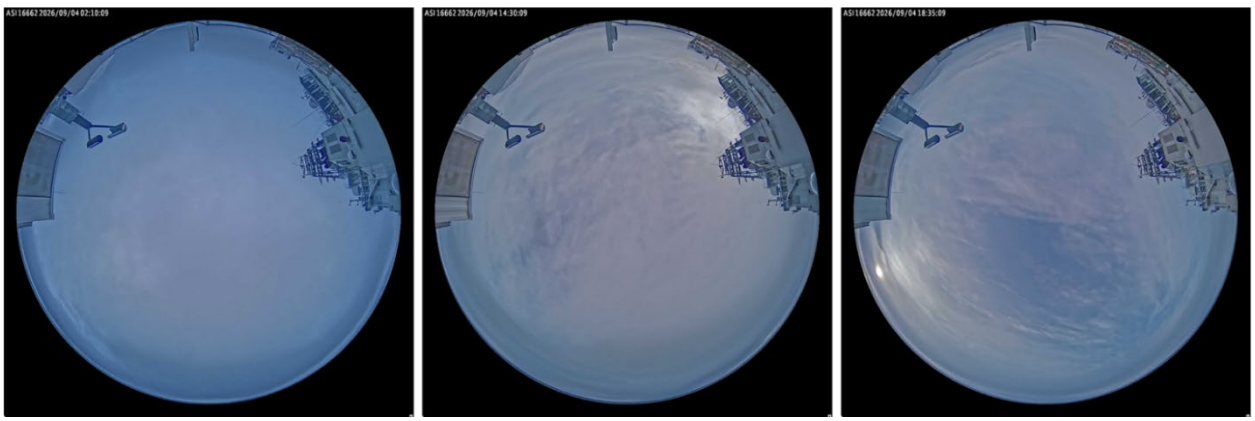


Figure 5. Example images from the all-sky camera showing the cloud conditions at 00:10 UTC (left), 12:30 UTC (centre), and 16:35 UTC (right) on 4 September 2026.

Ceilometer

Contact person for Campbell Scientific instrument: Tim Carlsen (UiO, harald.sodemann@uib.no)
Contact person for Vaisala instrument: Harald Sodemann (UiB, harald.sodemann@uib.no)
Responsible persons on board: Tim Carlsen

We operated a SkyVue Pro ceilometer (Campbell Scientific; responsible: University of Oslo) and a CL61 ceilometer (Vaisala; responsible: University of Bergen), Figure 6. Both instruments measured profiles of total attenuated backscatter and linear depolarisation ratio from the surface up to about 10 km (SkyVue Pro) and 15 km (CL61) altitude, with a vertical resolution of 5 m. This active remote sensing allows detection of aerosol and cloud layers and provides cloud base height and cloud layer thickness. The depolarization measurements enable the retrieval of cloud phase (liquid versus ice). The two ceilometers have different vertical sensitivities and show improved signal-to-noise ratios below about 6-8 km, depending on atmospheric conditions. Both instruments will primarily be used in synergy with the micro rain radar for microphysical cloud and precipitation retrievals.

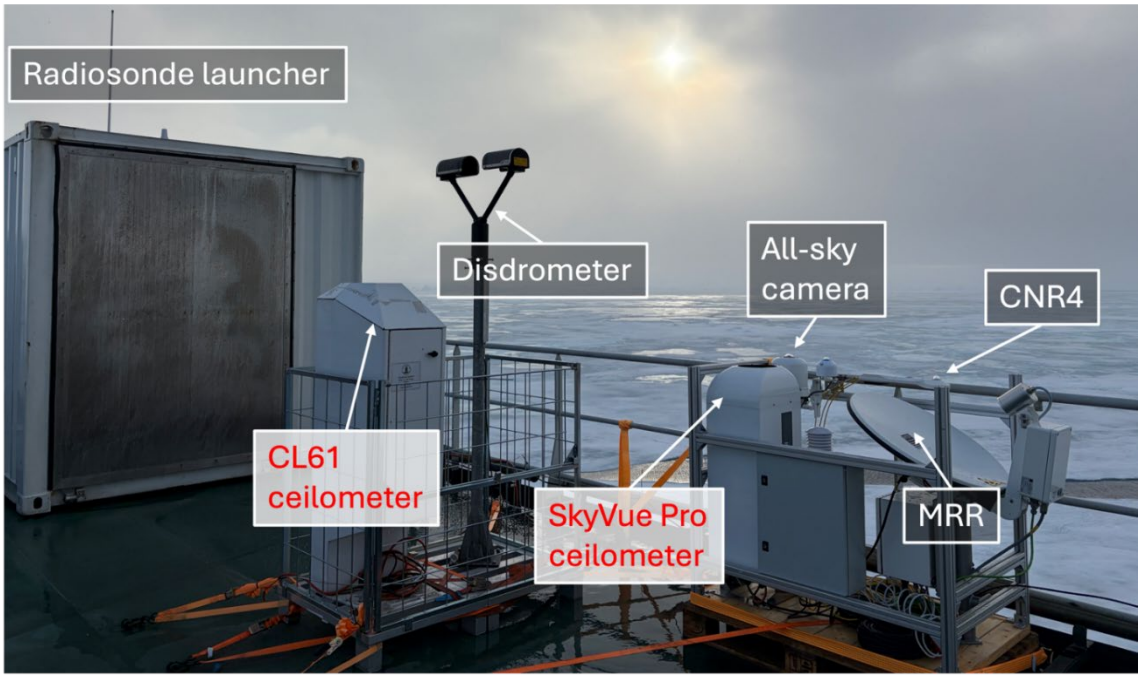


Figure 6. Setup of the atmospheric suite of instruments on Deck 6 (port side), with the SkyVue Pro and CL61 ceilometers highlighted in red. © Tim Carlsen

The ceilometers measured continuously from 29 July to 9 September 2026 (SkyVue Pro) and 23 July to 9 September 2026 (CL61), respectively. Preliminary tests indicate a good agreement between the two different ceilometers. Figure 7 shows example data from the SkyVue Pro ceilometer of the total attenuated backscatter (in sr^{-1} m^{-1}) and linear depolarization ratio (unitless) for 4 September 2026.

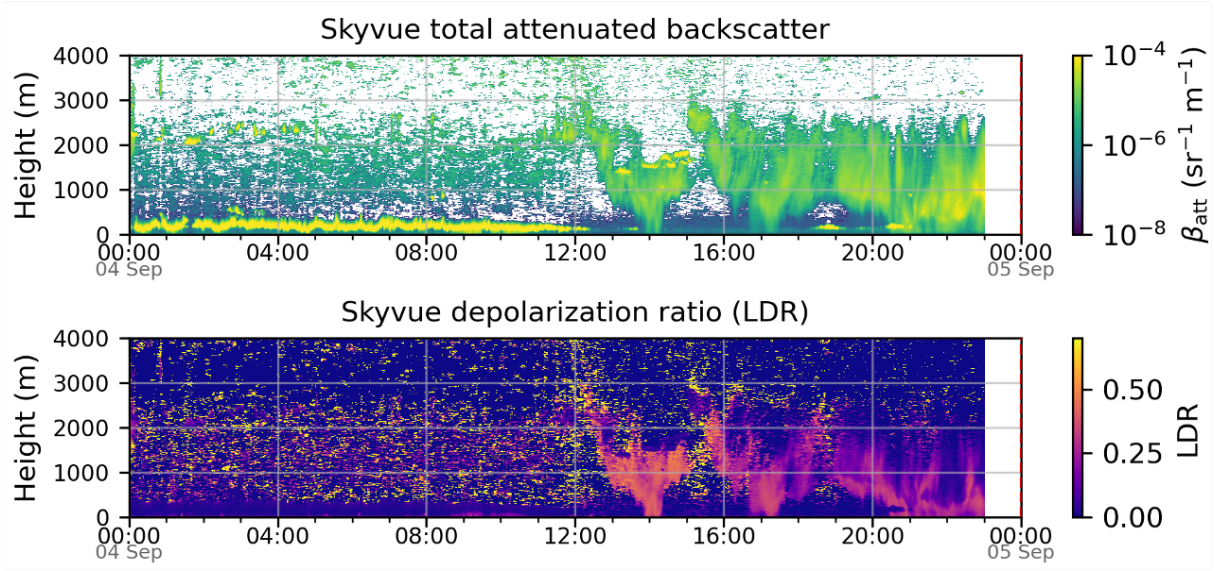


Figure 7. Exemplary ceilometer data from the SkyVue Pro for 4 September 2026 showing total attenuated backscatter (top panel) and linear depolarization ratio (bottom panel).

Micro rain radar

Contact person: Robert O. David (r.o.david@geo.uio.no)
Responsible persons on board: Tim Carlsen (tim.carlsen@geo.uio.no)

Vertical profiles of radar reflectivity, Doppler velocity, spectral width, and Doppler spectra were measured with the MRR-PRO micro rain radar (METEK; Figure 8). From these measurements we can, amongst other quantities, retrieve droplet size distributions, rain rates and vertical profiles of liquid water content. The MRR operates at 24 GHz (K band) and is thus primarily sensitive to larger precipitation particles. In combination with the ceilometer measurements, the MRR data will be used for synergistic cloud-phase retrievals. The Doppler information helps to identify phase changes in precipitation (melting layers); a dedicated melting-layer identification is included in the dataset. All parameters are logged every 10 s, with vertical profiles from the surface to 3200 m height at a vertical resolution of 25 m. The MRR was mounted on the University of Oslo's *Skypallet* (see Fig. 2.5.1), in close collocation to the other remote sensing instruments.

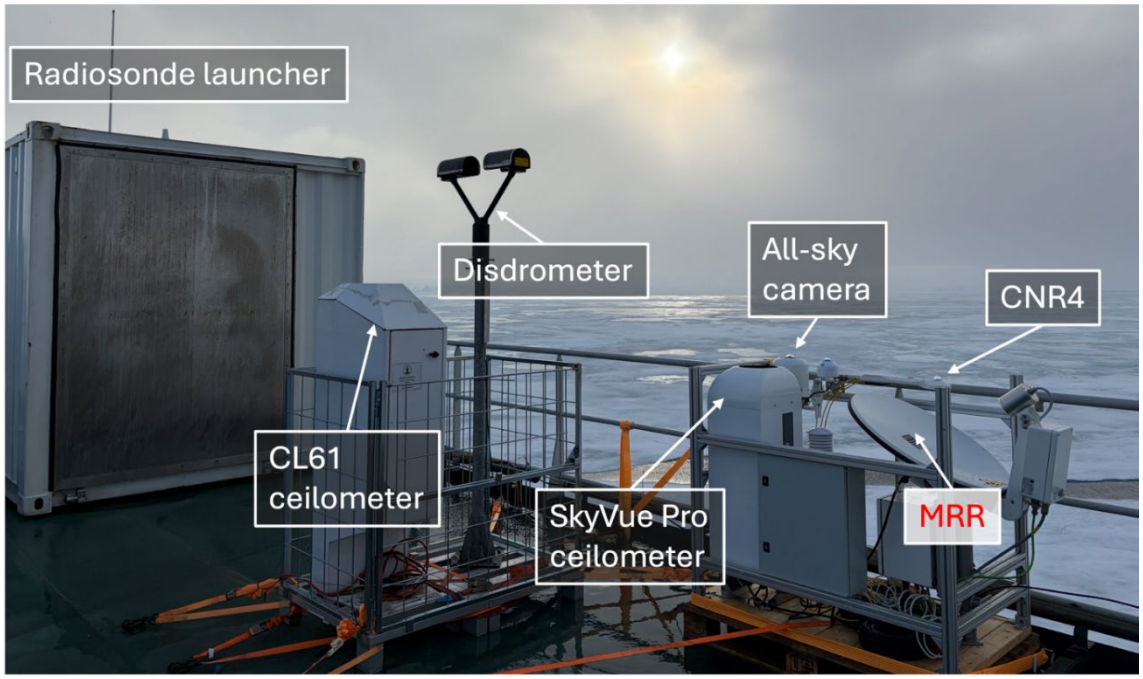


Figure 8. Setup of the atmospheric suite of instruments on Deck 6 (port side), with the MRR highlighted in red. © Tim Carlsen

The MRR measured continuously from 27 July to 9 September 2026, with only occasional manual snow removal from the radar dish (the dish heater was not operational due to a faulty plug). Preliminary tests indicate little to no impact of the snow removal on data quality. Figure 9 shows example data of the equivalent radar reflectivity factor (in dBZ) and Doppler velocity (in m/s) for 4 September 2026.

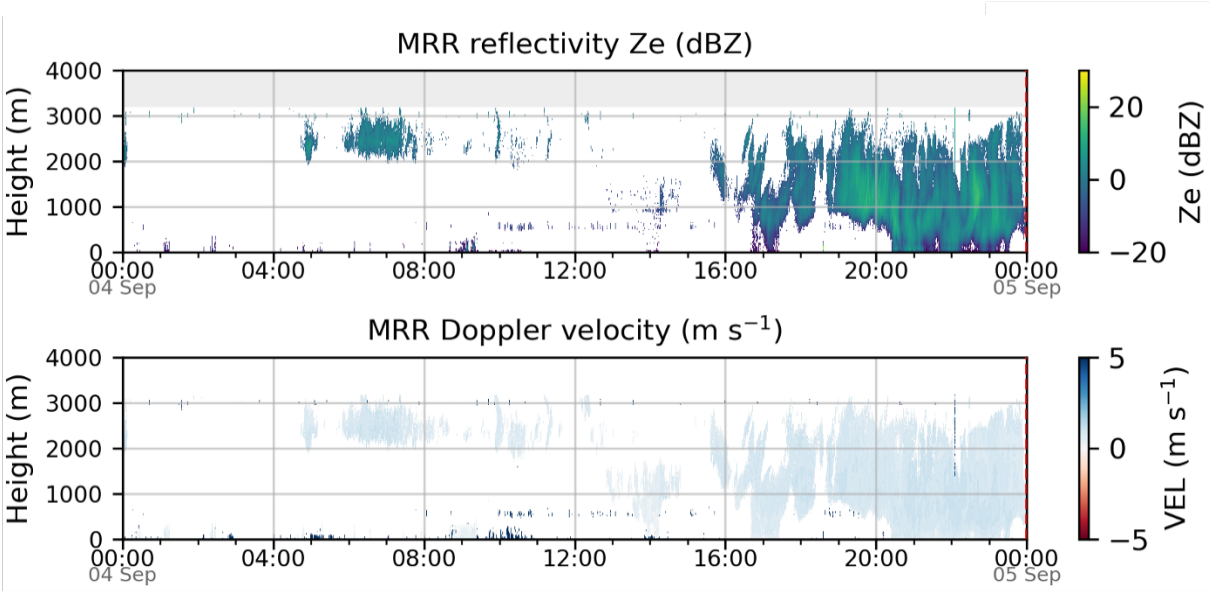


Figure 9. Exemplary MRR data for 4 September 2026 showing equivalent reflectivity factor (top panel) and Doppler velocity (bottom panel).

Disdrometer

Contact person: Harald Sodemann (harald.sodemann@uib.no)
Responsible persons on board: Tim Carlsen (tim.carlsen@geo.uio.no)

A laser disdrometer (OTT Parsivel2; Figure 10) provided measurements of the size and fall speed of precipitation particles in 32 size and velocity bins. From these particle size and velocity distributions, the type, amount, intensity, and kinetic energy of the precipitation can be derived. The disdrometer data are used to connect cloud microphysical processes to surface precipitation estimates and to complement the remote sensing observations from the MRR and ceilometers.

The disdrometer measured continuously from 29 July to 9 September 2026, with occasional data gaps due to interrupted serial communication between the instrument and the logging laptop. The unstable USB connection was monitored regularly, and the Parsivel2 disdrometer was re-started as soon as an interruption was detected. Figure 11 shows example data of the rain rate (in mm h^{-1}), accumulated precipitation (mm since the start of measurements), number of particles (#), and estimated radar reflectivity (dBZ) for 6 August 2026.

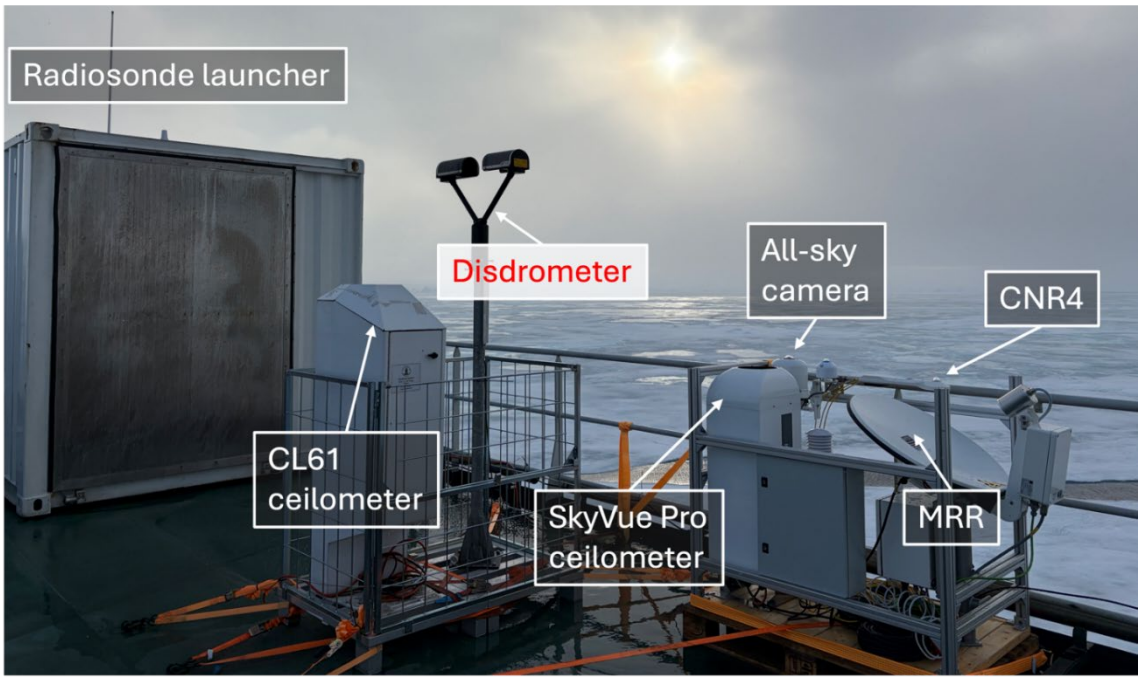


Figure 10. Setup of the atmospheric suite of instruments on Deck 6 (port side), with the Parsivel2 disdrometer highlighted in red. © Tim Carlsen

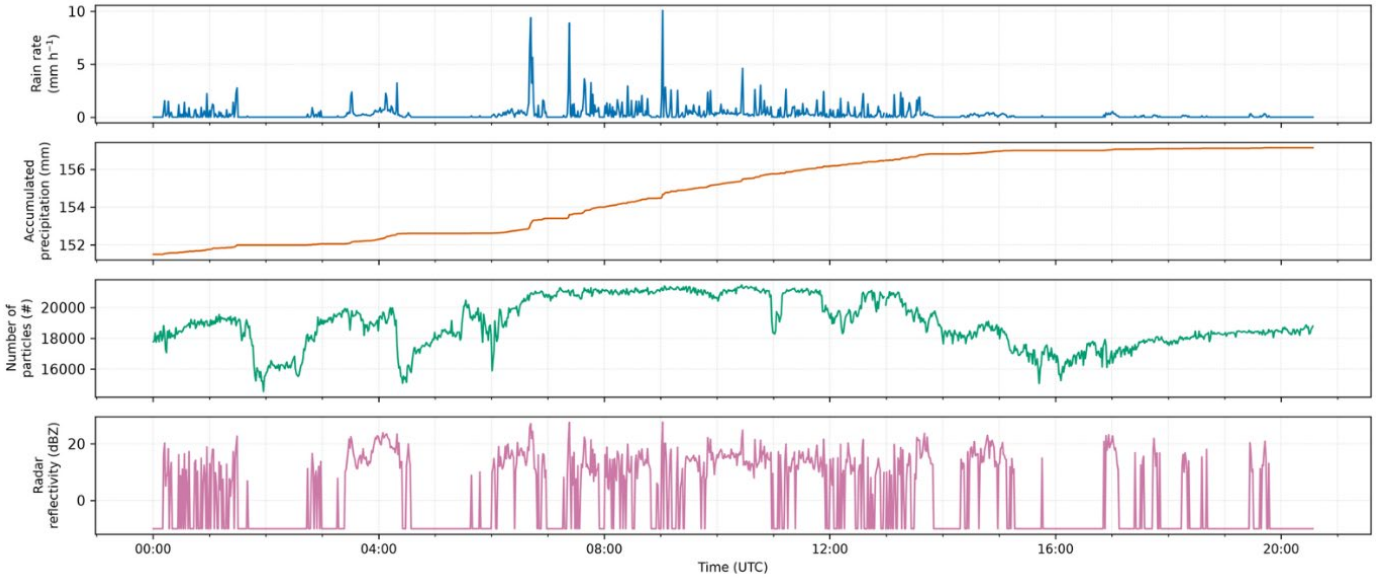


Figure 11. Exemplary Parsivel2 disdrometer data for 6 August 2026 showing rain rate (top panel), accumulated precipitation since the start of measurements (second panel), number of registered particles (third panel), and estimated radar reflectivity (bottom panel).

Broadband radiometers

Contact person: Tim Carlsen (tim.carlsen@geo.uio.no)
Responsible persons on board: Tim Carlsen

Downwelling and upwelling solar (300-2800 nm) and terrestrial (4.5-42 µm) broadband irradiance were measured with a CNR4 net radiometer (Kipp & Zonen). The radiometer consists of a pair of pyranometers and pyrgeometers, as well as integrated temperature sensors used to correct the terrestrial radiation measurements for the temperature of the instrument housing. A ventilation unit provides airflow over the domes and windows to minimize dew formation, while an integrated heater reduces frost buildup. The broadband radiometer data are used to characterize the radiative effect of clouds and to link these effects to cloud microphysical properties.

Preliminary tests indicate good agreement between the CNR4 pyranometer measurements (solar irradiance) and comparable observations from the peripheral pyranometer of the ASI-16 all-sky camera.

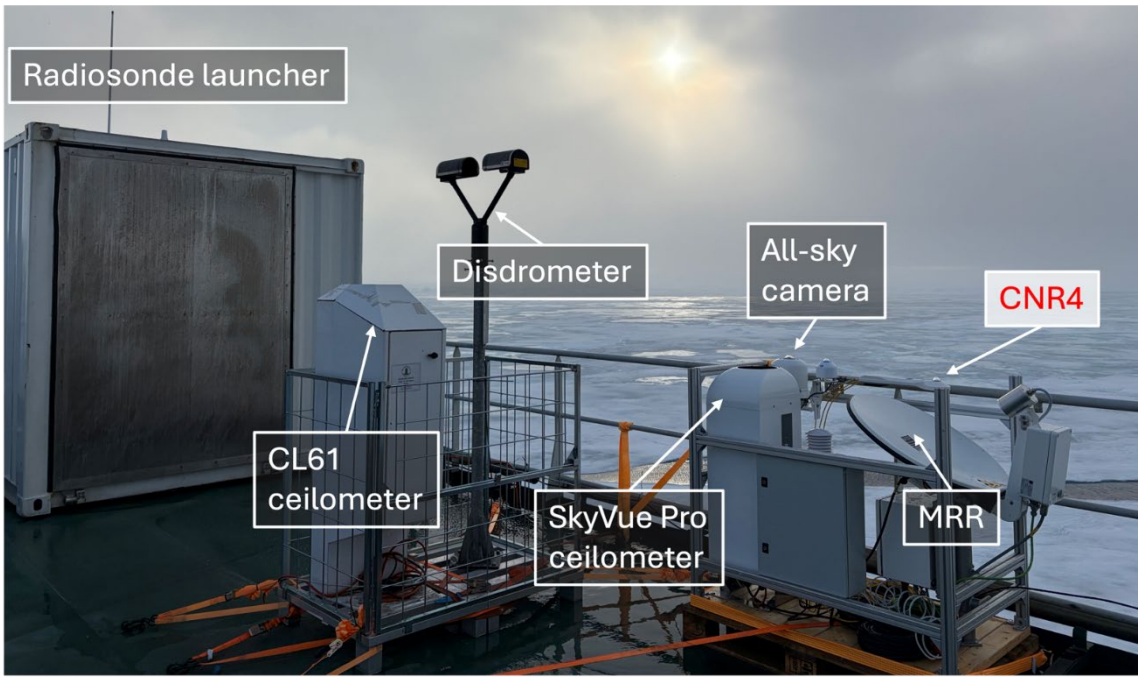


Figure 12. Setup of the atmospheric suite of instruments on Deck 6 (port side), with the CNR4 net radiometer highlighted in red. © Tim Carlsen

The CNR4 net radiometer measured continuously from 31 July to 9 September 2026. Manual cleaning of the radiometer domes was performed regularly, about once to twice per day. Figure 13 shows example data of the solar and terrestrial downward irradiance (in W m^{-2}) for 4 September 2026.

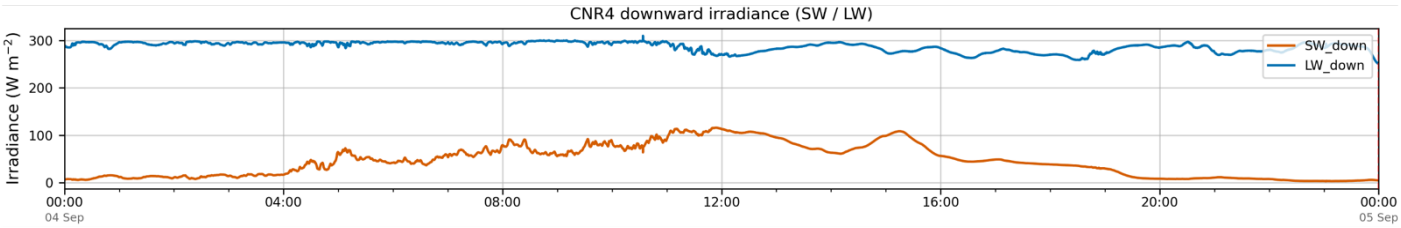


Figure 13. Example data from the CNR4 net radiometer for 4 September 2026 showing solar (SW_down, orange) and terrestrial (LW_down, blue) downward irradiance.

Aerosol and ice-nucleating particle sampling in air

Contact person: Robert O. David (r.o.david@geo.uio.no)
Responsible persons on board: Tim Carlsen (tim.carlsen@geo.uio.no)

Size-resolved aerosol particle number concentrations in air were measured with an optical particle counter (MetOne-GT-526S-OPC). The OPC records the number of particles per litre of air exceeding fixed size thresholds in six bins (i.e. 0.3, 0.5, 1, 2, 3, and 5 µm). In coordination with the OPC measurements, a liquid impinger (Coriolis-µ, Bertin) was used to collect aerosol particles in ultra-pure water for offline analysis of ice-nucleating particle (INP) concentrations. The offline INP analysis will be carried out at the University of Oslo using the DRoplet Ice Nuclei Counter Oslo (DRINCO), which employs a drop-freezing technique. All measurements were performed on the helicopter deck (Deck 6), positioned upwind of the ship's smokestack (see Figure 14).

Depending on the weather conditions, freezing of the collection water could occur. This was minimized by partially submerging the collection cone in a water bath at approximately room temperature. Sampling durations typically ranged from 10 to 40 minutes with a pump rate of 200 L/min, corresponding to sampled air volumes of about 2-8 m^3. Regular background samples (cone swirls) were taken throughout the campaign (14 in total).

This setup enables us to characterise the near-surface background aerosol concentration (also relevant for numerical model initialization) and to provide context for the INP observations. The INP concentrations will be used to link the aerosol measurements to cloud microphysical retrievals from the remote sensing instrumentation.



Figure 14. Setup of manual aerosol and INP sampling on the helicopter deck (Deck 6) with the OPC and Coriolis liquid impinger. © Tim Carlsen

Manual sampling of aerosol particle number concentrations and INP concentrations was conducted once daily from 31 July 2026 to 9 September 2026. On 27 August 2026, three consecutive samples with different air volumes (2, 4, and 8 m^3) were collected to investigate the sensitivity of the inferred INP concentrations to sampled volume. Whenever possible, the air sampling was collocated with surface water sampling during CTD casts to relate INP concentrations in surface water and air. The locations of the 42 INP and aerosol samples along the cruise track are shown in Fig. 2.8.2 (left panel). One additional INP sample is planned before the end of the cruise. Figure 15 (right panel) shows an example cumulative size distribution from the OPC for 4 September 2026.

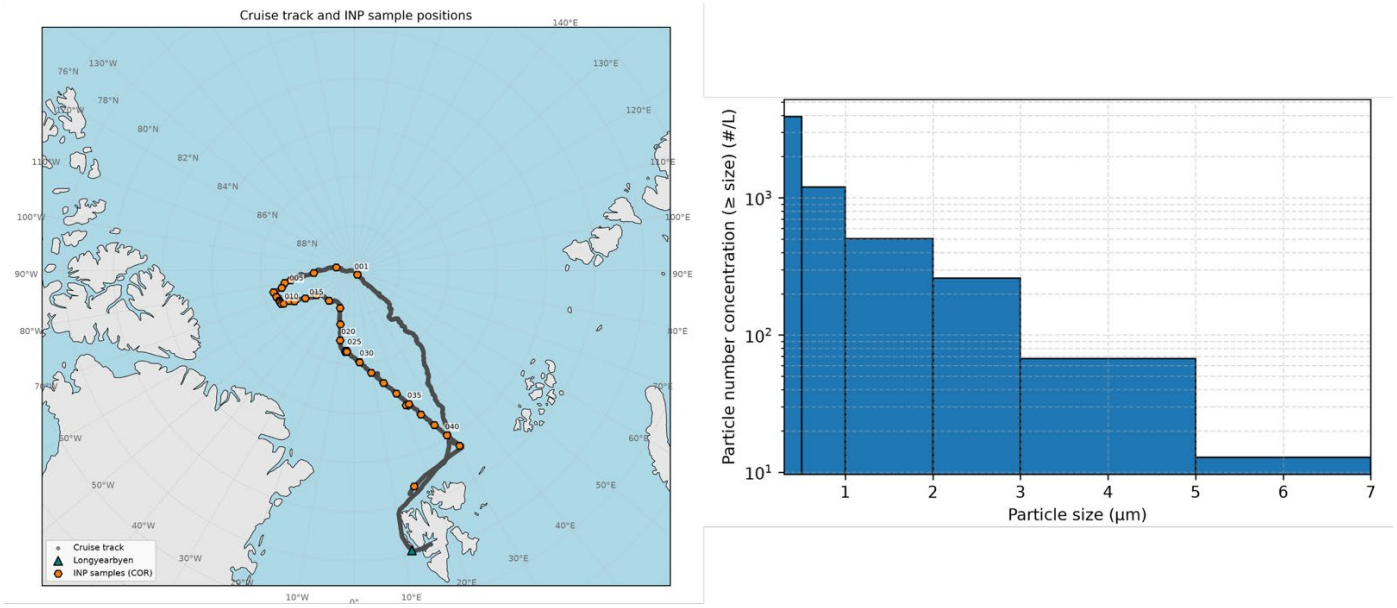


Figure 15. Positions of aerosol and INP samples (orange hexagons) along the cruise track (dark grey) with sample ID (left panel), and example OPC cumulative size distribution during EBT-2026.COR038 on 4 September 2026 (right panel).

Sea ice observations from the vessel

Contact person: Polona Itkin (polona.itkin@npolar.no)
Responsible person on board: Polona Itkin

Sea ice conditions were observed several times each day from deck 9, typically between 8000 and 2000 and at least as the ice regime changed. Observations were recorded following the ASSIST protocol (see https://cryo.met.no/en/icewatch). No observations were made when ship was on a station.

Sea ice parameters, including sea ice concentration, types, thickness, floe sizes, snow cover, ridges, melt ponds, etc, were recorded along with the visibility and sediment and algae concentration. All of the observations were collected by the same observer. In total 84 observations were made during the cruise. The first observations were made on 24 July 2026 and the last one on 7 September 2026. A forward-looking camera recorded images showing the region in front of the vessel every minute and screen dumps of the vessels x-band radar were stored every minute. These data can be used in combination with the visual ice observations. As the ship deliberately seeks the easiest path through the ice, avoiding larger and thicker floes, observations made from the vessel are not always representative of the wider region.

Sea ice thickness observations by ship-borne electromagnetics and lidar

Contact person: Polona Itkin (polona.itkin@npolar.no)
Responsible person on board: Polona Itkin

Sea ice thickness was measured underway by electromagnetic induction. A Geonics EM31 instrument was suspended from a horizontal mast extending from the starboard side of the vessel on deck 5 (via a hatch). The elevation of the mast above the sea water was approximately 6 m and the instrument was lowered on a rope to be at about 4 m elevation above the waterline. EM31 is a single frequency EM instrument that generates a primary EM field and then measures the strength of the secondary EM filed generated in sea water. This secondary EM field strength, measured in mS can be correlated to distance to sea water. Next to the EM31 antenna, we also deployed a lidar that measured the distance to the sea ice surface. The difference between both distances yields sea ice thickness. The calibration of EM31 to achieve the conversion to distance was done by hoisting and lowering the instrument over ice with a known thickness and open water.

During the challenging conditions with heavy ice, the instrument crashed with a pressure ridge surface twice. During the first collision, no large damage was sustained, and the instrument was redeployed. During the second collision a part of the antenna (transmitter antenna) was lost, and the instrument could not be redeployed. Instead, the system was replaced by a lightweight solution with an alternative instrument, GEM-2 (Geophex Ltd). The instrument is more sensitive to the nearby metals and has a shorter antenna. It was therefore deployed on ropes without a boom and without lidar. The data transfer was enabled via Bluetooth connection and the system was running on an internal battery. The advantage of this light-weight system was that it could be retrieved and deployed by a single person. It was operated only during daytime and while the ship was navigating through the ice (retrieved during long stations). GEM-2 is a multi-frequency instrument, and this dataset will be used to investigate how well it operates in this configuration and if parameters in addition to sea ice thickness can be retrieved (for example: sea ice porosity and freshwater layers at the surface).

X-band radar

Contact person: Polona Itkin (polona.itkin@npolar.no)
Responsible person on board: Polona Itkin

RV *Kronprins Haakon* is equipped with an X-band navigational radar (Sea Hawk SHN X9) used on for navigating through sea ice. A radar image is displayed on a monitor on the bridge. Screenshots of the radar are stored every minute, but no raw data has been stored previously. To store raw data for research purposes an additional digitising unit (dspnor ScanStreamer) was installed on the vessel before the cruise (2026-06-01) by Sea Hawk. This digitising unit provides data as UDP datagrams on an isolated LAN network. A Linux laptop installed on the bridge and connected to the isolated network stored the data stream. Several processes on this machine read and store the data, first on the internal drive, then on an external SSD drive. To reduce the recorded data volume only 4.8 s of data per minute is stored. The data was logged from 25 July until 8 September. In total 2.2 TB of data was stored.

Polarimetric Stereo Camera

Contact person: Ekaterina Kim (ekaterina.kim@ntnu.no)
Responsible persons on board: Jon Estil Krågebakk

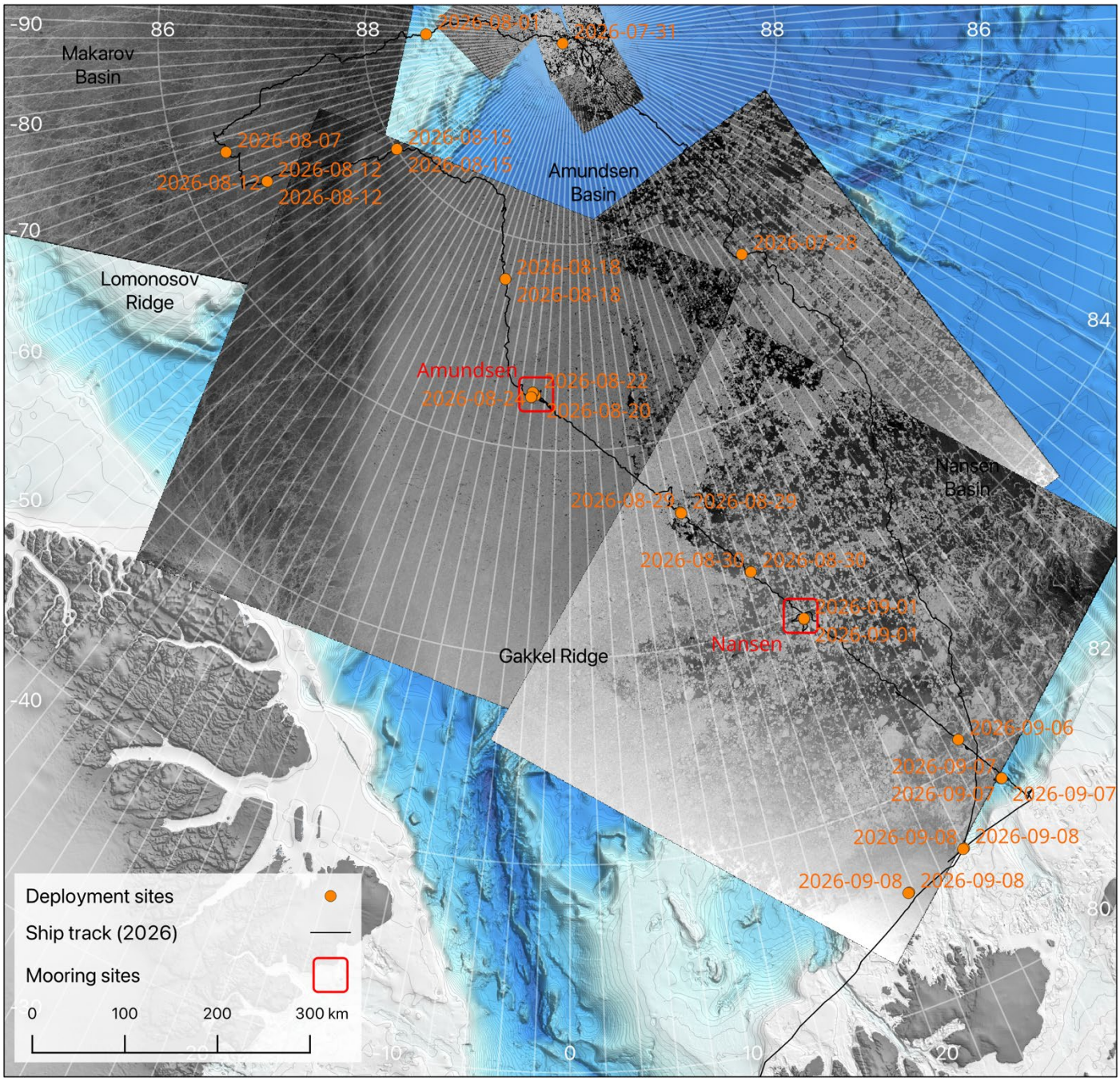


Figure 16. An overview of the shiptrack, and where the SFI Auto Ship's Lightweight Polarimetric Stereo Camera Sensor Rig was deployed in orange with mosaic of Radarsat II ScanSAR wide and high latitude (HL) scenes acquired at the following times (anti-clockwise, from bottom left): 01-Aug-2026 09:30 (Wide), 02-Aug-2026 03:59 (HL) 05-Aug-2026 22:39 (HL) 05-Aug-2026 20:59 (HL), 06-Aug-2026 18:48 (Wide), 17-Aug-2026 13:25 (Wide) and 02-Sep-2026 13:57 (Wide). All scenes are HH polarisation. Background bathymetric and topographic data from IBCAO 4 Map & mosaic: Paul A. Dodd.

The SFI Auto Ship's Lightweight Polarimetric Stereo Camera Sensor Rig was deployed at several ice stations and at the helideck (Deck 6 Bow and Port Bow) taking multiple 2-5 minutes interval in-situ measurements. An overview of where these measurements have been taken, can be seen in Figure 16. All the footage on the helideck was taken when the rig was rigidly attached to the ship. Using the log files (see folder structure below) one can track the sensors rig's trajectory through space where the GNSS and IMU have dropped packets.

The sensor rig captures raw image files for both the left and the right camera spaced one meter apart on the horizontal axis. The cameras are both Lucid TRI050S1-QC cameras set to capture at 12-bit colour depth. These cameras contain a Sony IMX264 CMOS sensor chip with the following pixel map (see Figure 17).

These raw files have been placed in folder:

{root}/Polarimetric Stereo Camera/datasets/tracked polarimetric stereo camera images/

and can be parsed to RGB color images at the four different polarization angles 0, 45, 90, 135, using the parser script in the following location:

{root}/Polarimetric Stereo Camera/src/srig_parser/lucid_parser.py

From these four RGB-intensity images additional channels such as the partial stokes vector (S1-S3) and the Angle and Degree of Linear Polarized Light (AoLP and DoLP) channels can be extracted. For more information and documentation of the SFI Auto Ship's Lightweight Sensor Rig, see https://iopscience.iop.org/article/10.1088/1742-6596/2867/1/012025.

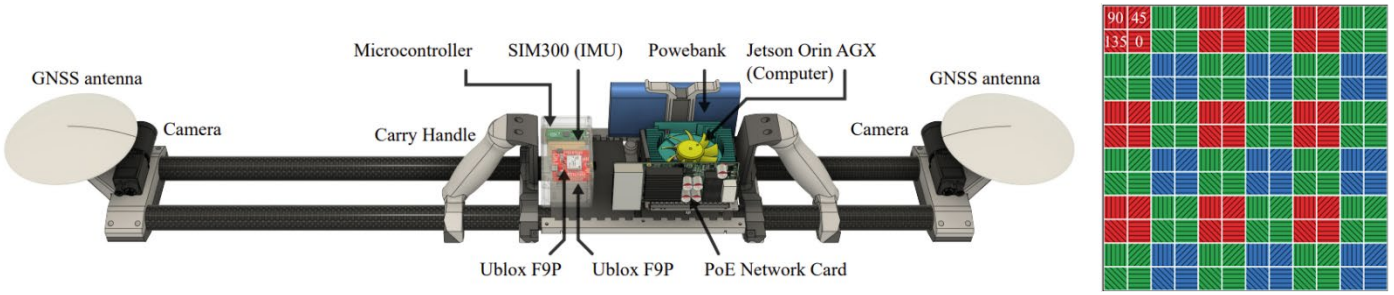


Figure 17. Left: CAD Illustration of the sensor rig. Right: CMOS chip pixel map and raw format pixel map.

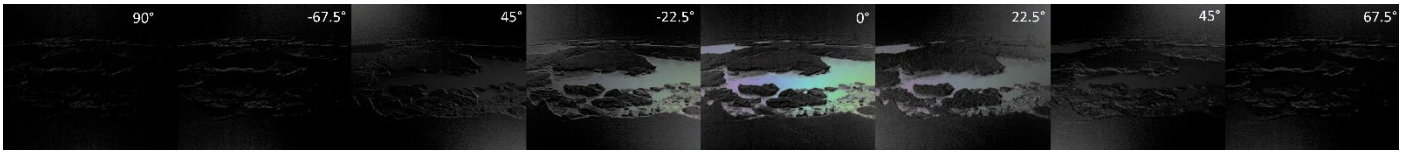


Figure 18. Masked Polarization Angles: Gaussian 2D masked multiplied by Hue, Saturation and Value representation of DoLP and AoLP channels. This figure was made using the parser scripts and example projects that can be found in the appended data folder.

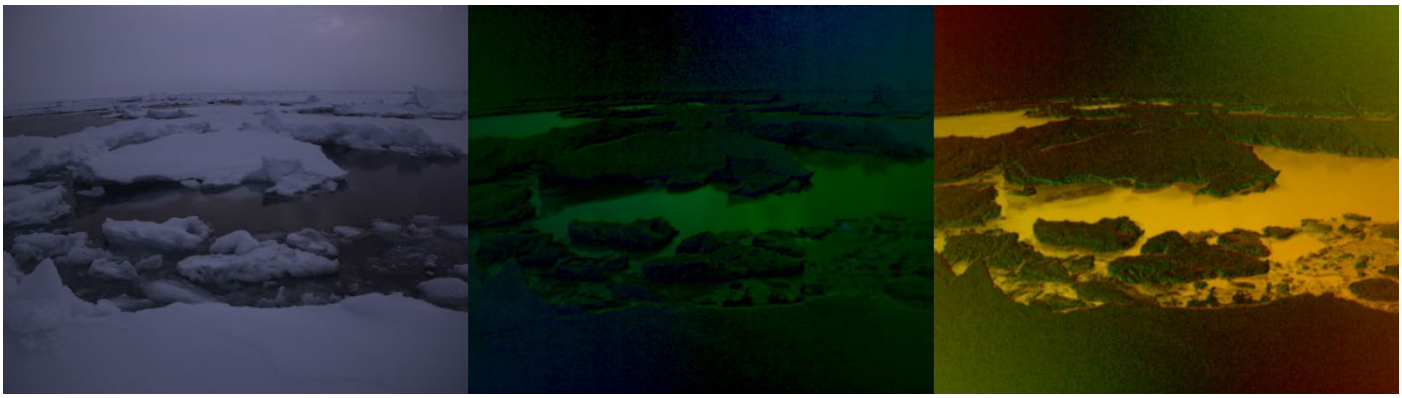


Figure 19. Left: Color (S1): The color channels of the image. First component of the Stokes vector. Center: Green Blue S2 & S3: The second and third components of the Stokes vector are presented through the green and blue channels of an RGB-image. Right: Red Green AoLP & DoLP: The DoLP · sin(AoLP), DoLP · cos(AoLP) represented through the red and green channels of an RGB-image. This figure was made using the parser scripts and example projects that can be found in the appended data folder. © Jon Estil Krågebakk

{*root*}/Polarimetric Stereo Camera/

/datasets/

/log/ - This is where the 6DoF movement and thruster data of the ship is logged [partially complete]

/log2/ - This is where course data of the ship is logged

/tracked polarimetric stereo camera images/ - This is where all the .raw data from the srig is located

/examples/

/log_visualization (w. blender-addon)/ - What the names imply. Used to make the overview figure

/polarimetric_compositing/ - What the names imply. Used to make the polarimetric figures

/FF KPH Hull-Geometry-3D/ - Contains 3D models of the ship both detailed and low poly optimized for simulation

/src/

/video_logger/ - A python project containing a custom AI model to read videos and log detected -100, 100 numbers

/udp_logger/ - A python script that listens to the ships UDP ports and logs the 6DoF- and weather-data

/fetch_instrument_data/ - A python script that fetches the position data from RV KPH data-logger

/srig_parser/ - A python script that converts the raw data files to standard image formats

/database/ - The SQL-script used to create the data-base files

Figure 20. Screen dump showing structure of appended data folders.

Marine mammal and bird observations

Contact person: Heidi Ahonen (heidi.ahonen@npolar.no)
Responsible persons on board: Vegard Stürzinger (Vegard.sturzinger@npolar.no)

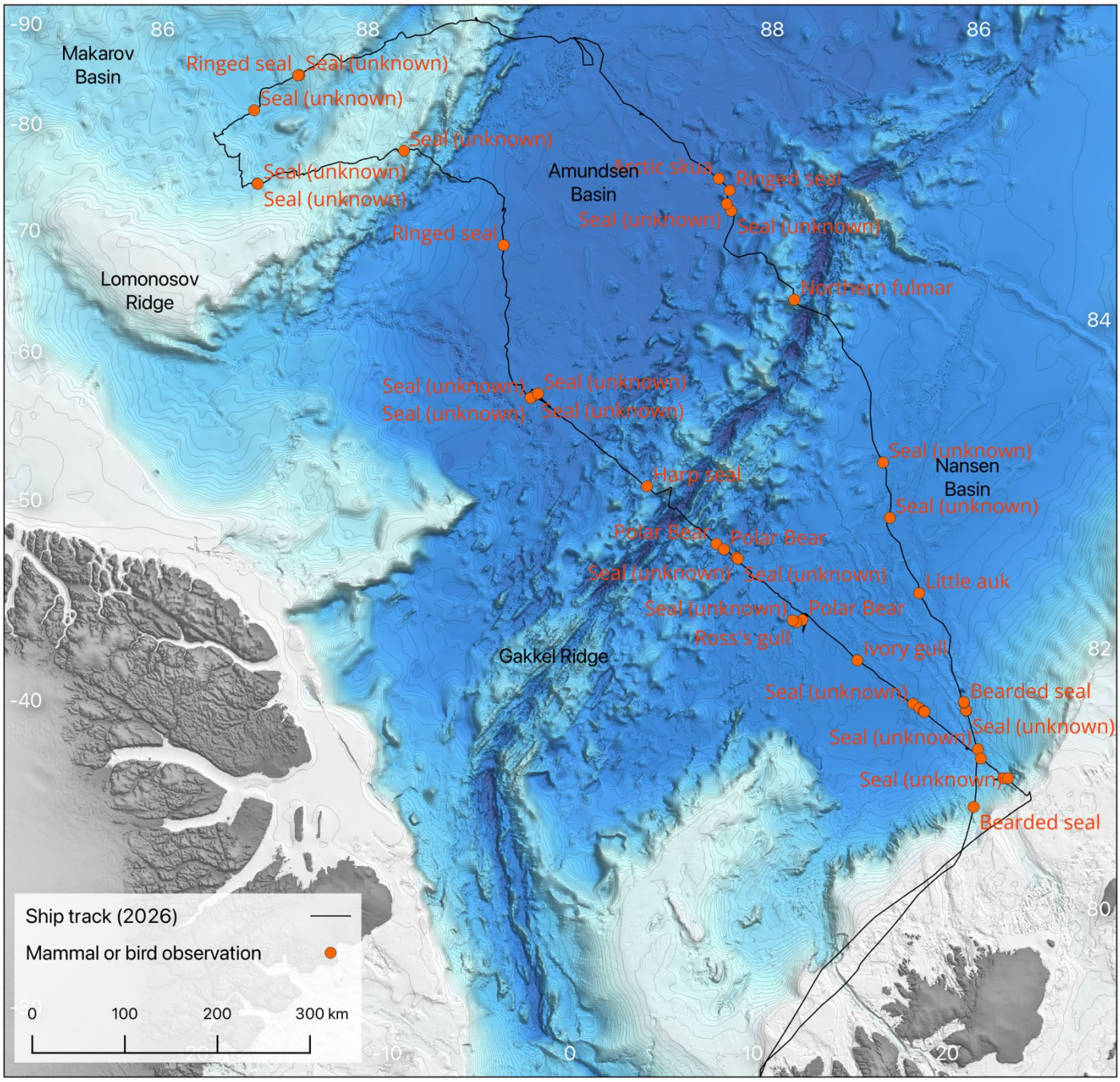


Figure 21. Marine Mammals and birds observed during Eurasian Basin Transect cruise (orange), and ship track (black). Background bathymetric and topographic data from IBCAO 4. Map: Paul A. Dodd

Marine mammal and seabird observations were collected using a web application hosted on the ship's local Wi-Fi network aboard RV *Kronprins Haakon*, running on a Raspberry Pi 5 with a 256 GB M.2 SSD. The application, built in Python using the FastAPI framework, allowed scientists and crew to log observations from any Wi-Fi-connected smartphone or computer throughout the cruise. When an observer selected the deck from which the observation was made (Figure 21) the ship's coordinates, time and heading were recorded automatically. The observer was then prompted to enter the distance and relative bearing to the animal , take a photograph (when using a smartphone), and record the animal type, species, number of individuals and sea ice concentration, before signing off the record with their initials (Figure 22).

Observations were stored locally on the Raspberry Pi and automatically backed up by script to a separate computer for data security. The application was developed by Vegard Stürzinger to replace traditional paper-based observation sheets.

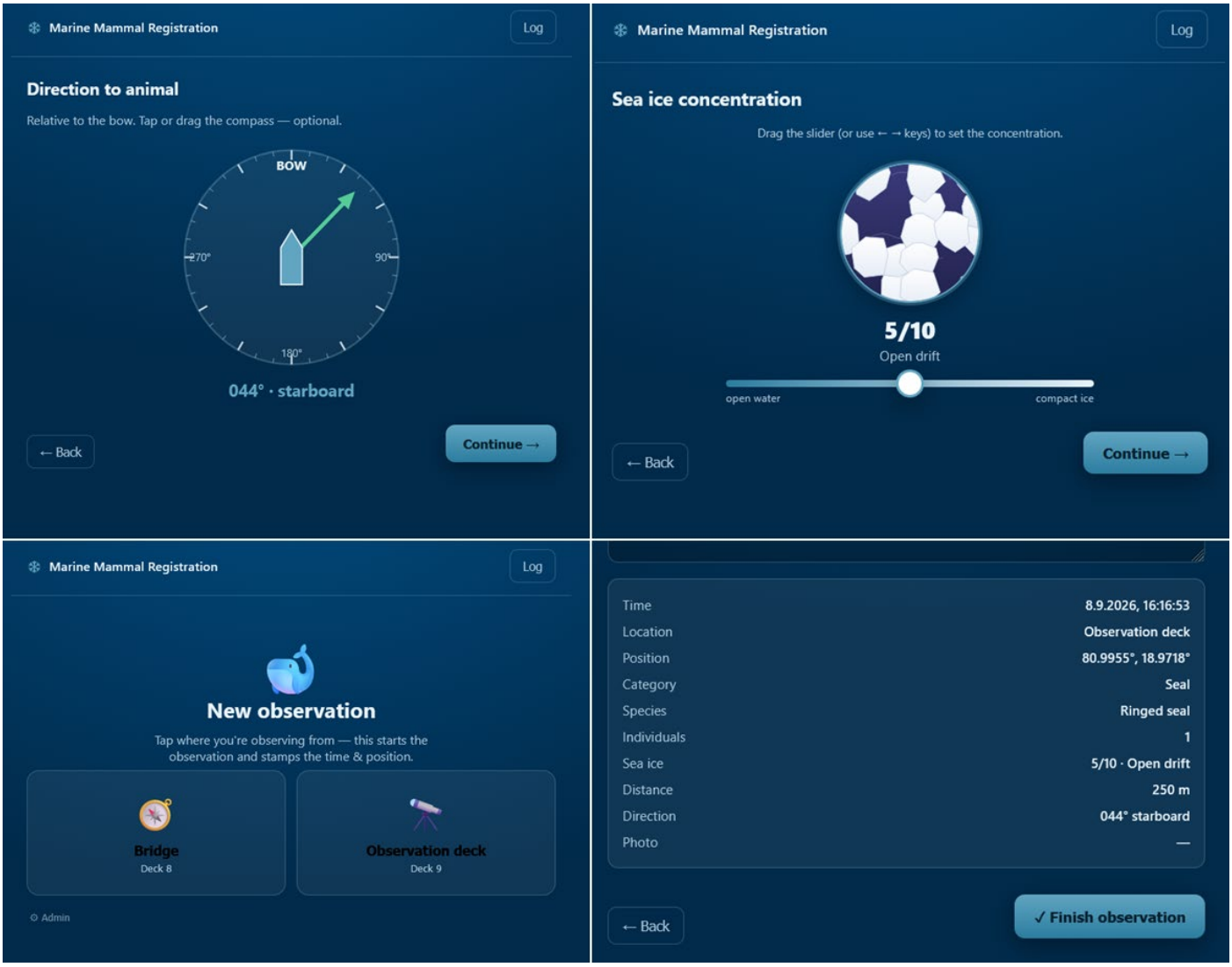


Figure 22. Stages of registration with the most interactive pages.

Thermosalinograph

Contact person: Morven Muilwijk (Morven.Muilwijk@npolar.no)
Responsible persons on board: Morven Muilwijk

The ship's underway thermosalinograph was equipped with a conductivity sensor (S/N 3429) and a temperature sensor (S/N 3429), which began logging data upon departure from Longyearbyen. The sensors were last calibrated on 5 March 2024. In its default configuration, the system drew seawater from an intake located 4 m below sea level on the vessel's hull. When this configuration was active, temperature was also recorded by a remote temperature sensor (S/N 0967), last calibrated on 13 October 2022. During operations in ice-covered waters, the intake is prone to clogging. The thermosalinograph was therefore stopped after reaching the ice edge and while navigating in ice-covered waters. A fluorometer (S/N WSCHL-1511), last calibrated on 26 December 2019, was installed within the thermosalinograph housing and operated whenever the thermosalinograph was active.

Underway Irradiance and all-sky polarization imaging

Contact: Ahmed El-Habashi (US-ONR)
Responsible persons on board: Ahmed El-Habashi, and Ivan B. Savelyev

Atmospheric and Downwelling Correction, Irradiance Data Collection

To account for changing illumination conditions during algorithm development, downwelling hyperspectral irradiance data were collected across the 350–1000 nm spectral range using two complementary approaches. Stationary, sporadic irradiance measurements were acquired directly at study sites near the melt ponds using an ASD spectroradiometer configured with a cosine corrector. Simultaneously, continuous hyperspectral irradiance measurements were recorded from a fixed position on the vessel's bow using a Satlantic HyperOCR radiometer spanning the same 350–1000 nm window. Integrating this dual-sensor data stream ensures accurate sky-radiance and sun-angle corrections for both localized in-pond models and upscaled drone and satellite imagery overflights.

Sky Illumination Dynamics, Linear Polarization Imaging

To capture the complex anisotropy of the sky light field during mooring stations, a sky linear polarization camera was installed directly adjacent to the HyperOCR radiometer on the ship's bow. This camera dynamically tracked sky illumination conditions by measuring the linear polarization state of incident light at four distinct orientation angles: 0°, 45°, 90°, and 135°. Characterizing this polarization distribution is critical for our retrieval framework; it provides the precise sky radiance mapping needed to quantify and remove surface glint, sky reflection, and diffuse polarization artifacts from the water-leaving signal. Isolating these atmospheric factors significantly minimizes optical contamination, improving the overall accuracy and signal-to-noise ratio of the reflectance data used to train our depth retrieval models.



Figure 23. Underway irradiance and all-sky polarization imaging systems mounted on the bow. © Ahmed El-Habashi

Table 4. Summary of Irradiance data collections from sea ice stations

ICE STATION #	YEAR	MM	DD	LATITUDE	LONGITUDE	COLLECTION IRRADIANCE	COLLECTION CAMERA	COMMENTS
3	2026	07	30	89.9267	63.9619	Y	Y	Camera drive needs fix -not recognized (NC)
10	2026	08	07	86.4798	-72.1566	N	N	Disconnected
12	2026	08	11	86.6529	-65.0972	N	N	Disconnected
15	2026	08	16	88.2372	-40.256	Y	N	Disconnected
20	2026	08	19	86.9437	-11.9838	Y	Y	NC
21	2026	08	22	86.5504	-5.8343	Y	Y	NC
	2026	08	23				Y	
23	2026	08	28	85.614	9.4338	Y	Y	
24	2026	09	01	83.9315	21.466	Y	Y	
	2026	09	02				Y	

Underway Irradiance and all-sky polarization imaging

Contact: Ahmed El-Habashi (US-ONR)
Collected by: Ahmed El-Habashi, and Ivan B. Savelyev

To isolate atmospheric attenuation and perform highly accurate atmospheric corrections for our upscaled drone and satellite data, direct solar irradiance was quantified using a handheld Solar Light Model 540 Microtops II® Sun photometer. The Microtops II is a lightweight, portable, 5-channel multi-spectral instrument configured to measure direct solar radiation at selected narrow-band wavelengths. By capturing direct solar irradiance information across these five optical channels, the instrument provides precise, dependable measurements of Aerosol Optical Thickness (AOT) and the precipitable column water vapor. During our campaign, atmospheric conditions were predominantly overcast, which inherently restricts standard sun photometer operations due to cloud-cover interference. To overcome this challenge, we targeted narrow clearing windows, opportunistically collecting high-quality data entries during brief periods when the solar disk was completely unobstructed by clouds. Tracking these specific atmospheric properties at the field site is vital for our bathymetric retrieval framework. Changes in aerosol loading and column water vapor introduce varying degrees of scattering and absorption into the downwelling light field, directly altering the spectral signatures recorded by our aerial sensors. Integrating these clear-sky Sun photometer data points allows us to parameterize and remove localized atmospheric noise from our radiative transfer models, ensuring high-fidelity cross-validation between ground truth, airborne hypercubes, and spaceborne observation platforms.

Table 5. Summary of aerosol data collections (Only when Sun was observed; Ice Station number if coincided). Latitude and longitude will be retrieved when data is processed.

ICE STATION #	YEAR	MM	DD	LATITUDE	LONGITUDE	COLLECTION	COMMENTS
-	2026	07	-	-	-	Y	Clear Sun
-	2026	08	-	-	-	Y	Clear Sun
-	2026	08	-	-	-	Y	Clear Sun with haze
-	2026	08	03	-	-	Y	Clear Sun -few clouds toward end
-	2026	08	20	-	-	Y	Clear Sun
-	2026	08	25	-	-	Y	Clear Sun
-	2026	08	26	-	-	Y	Clear Sun but behind haze
23	2026	08	28	85.614	9.4338	Y	Clear Sun -Ice station 23

Shipboard CTD Measurements

Contact person: Paul A. Dodd (paul.dodd@npolar.no)
Responsible persons on board: Paul A. Dodd, Mats Granskog, Morven Muilwijk

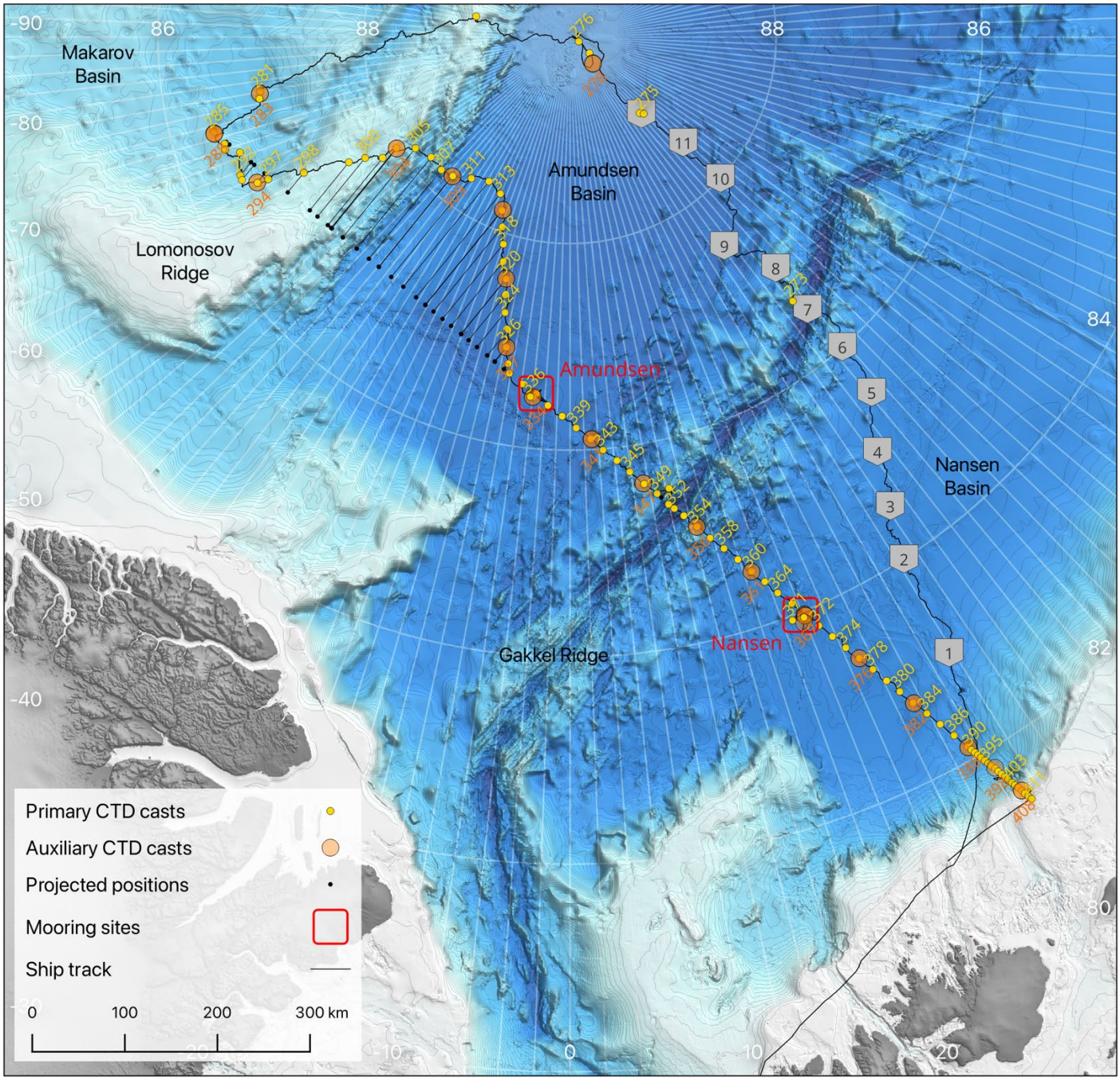


Figure 24. CTD profile locations. Yellow points & cast numbers indicate profiles collected though the moon using the primary CTD package. Orange points & cast numbers indicate profiles collected over the side using the auxiliary CTD package. Black points indicate the positions of displaced stations when projected onto the Eurasian Basin Transect. ***Projected positions are listed in Table 8****. Grey arrows and black numbers indicate expendable CTD deployments. Background bathymetric and topographic data from IBCAO 4. Map: Paul A. Dodd.*

General Approach

Profiles were collected along the Eurasian Basin Transect, an array of 65 repeated observation sites defined along a great circle starting at N 81° 30', E 031° 00' and extending 650 nm north-west along an initial bearing of 150° from this reference point. Full depth (A), intermediate (B) and shallow (C) stations were completed in a repeating A-C-B-C pattern to provide a close horizontal spacing at the surface and wider spacing at depth.

Challenging ice conditions necessitated a diversion from the Transect between casts 297 and 327. Profiles in this region are significantly displaced from the Eurasian Basin Transect (Figure 24).

Additional CTD profiles were collected at the North Pole, at box coring sites and at the southeast end of the transect, where three additional profiles were taken between each of the Eurasian Basin Transect sites over the slope and shelf break north of Svalbard to increase the horizontal station spacing to 2.5 nm to capture the detailed structure of the Atlantic water inflow.

During the outbound transit to the North Pole, expendable CTD probes were deployed at 82°N and thereafter as the vessel crossed whole and half degrees of latitude between 83° and 89° N while following the easiest path through the ice to the North Pole.

Two shipboard CTD systems were used during the cruise. A primary 24-bottle CTD was lowered through the moon pool at every station. At (A) stations an auxiliary 12-bottle CTD was also lowered over the side of the vessel to capture the upper 10 m which was missed by the primary CTD, which emerged from the lower moonpool aperture at a depth of 8 m. Note that the upper 8 m of profiles taken through the moonpool describes water trapped in the moon pool and the and the next 2 m are disturbed by the ship's hull. As the upper 10 m of profiles collected through the moonpool do not describe the natural environment these sections are removed during initial processing, however they remain in raw data files.

The main and auxiliary CTDs were both SBE911+ units. To avoid problems with icing the T, S and O_2 ducts were not flushed with freshwater between stations; an extended surface soak was specified to account for this. At the beginning of casts, the CTD was lowered to 20 dbar and allowed to soak for 3 minutes after the pump started. After the soak was complete and sensors stabilised the CTD was brought to the surface (or when through moonpool to 10 m) and then lowered to the desired depth. Data acquisition was initiated before deployment with the CTD on deck and allowed to run until the CTD was back on deck at the end of the cast.

Niskin bottles were closed using the bottle fire command within the Sea-Bird acquisition software so that a .bl file was created for each deployment when bottles were fired. NMEA time and position information was fed to the acquisition computer and added to each scan line of the data files. Cast starting times were automatically added to the header of all data files.

The first cast completed during EBT2026 is number 366. The vessel operators assign the numbers to CTD casts. The first cast each year has the number 1 and each subsequent cast is numbered sequentially. A single running number is used, regardless of whether the primary or auxiliary package was deployed.

A paper log sheet was completed at each CTD station to capture essential metadata such as the serial numbers of water samples taken from each Niskin bottle. Information from these log sheets is included in the published CTD data files. Scanned images of the paper log sheets are included as Appendix 2 at the end of this report and may be used to verify the data entered.

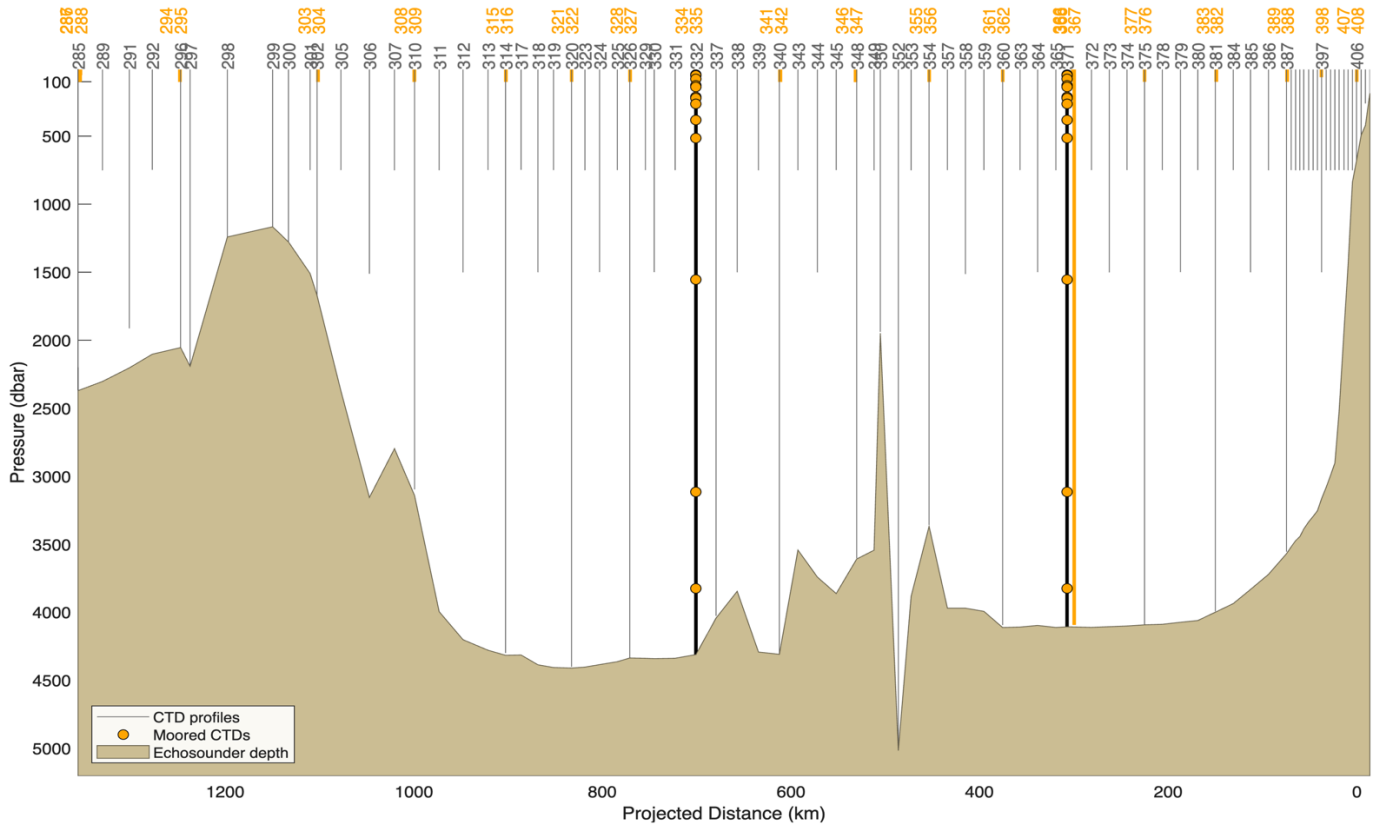


Figure 25. Vertical extent of CTD profiles along the Eurasian Basin Transect. Grey lines and profile numbers indicate profiles collected through the moonpool using the main CTD. Orange lines and numbers indicate profiles collected over the side using the auxiliary CTD (generally to 100 dbar). Cast numbers are omitted for closely spaced casts over the slope north of Svalbard due to space constraints. The positions of moored CTD sensors recovered during EBT2026 are shown as orange circles.

Configuration of primary CTD package

Table 6. Main CTD package configuration. Initials NP/KH after the serial numbers indicate whether the Polar Institute (NP) or the vessel (KH) provided the sensor. The underwater unit deployed was 09-1344 (KH).

Channel	Sensor	Serial Number	Last Calibration
Frequency 1	SBE03 Temperature 1	5299(NP) (all casts)	03-Dec-2025
Frequency 2	SBE04 Conductivity 1	2056(NP) (Cast 273 only) 4980(KH) (Cast 273-end)	2056: 04-Nov-2025 4980: 08-May-2025
Frequency 3	SBE09 Pressure	141603(KH)	11-Dec-2017
Frequency 4	SBE03 Temperature 2	5258(NP)	06-Nov-2025
Frequency 5	SBE04 Conductivity 2	2063 (Cast 272-340) 1282 (Cast 343-end)	2063: 04-Nov-2025 1282: 22-May-2025
A/D Voltage 0	SBE43 Oxygen 1	3527(KH)	03-Dec-2025
A/D Voltage 1	Altimeter	73084(KH)	24-Dec-2017
A/D Voltage 2	WET Labs Chl. A	FLRTD-6506(KH)	18-Sep-2020
A/D Voltage 3	SBE43 Oxygen 2	1259(NP)	18-Nov-2023
A/D Voltage 4	WET Labs CDOM	FLCDRDT1930(NP)	No calibration applied Dark output 0. Scale factor 1. Analogue range set to 1
A/D Voltage 5	PAR Biospherical/Licor	70736(KH)	29-Oct-2018

A/D Voltage 6	Benthic Camera System	Prototype-1(NP)	n/a
A/D Voltage 7	Free	n/a	n/a
Surface PAR Voltage	SPAR Biospherical/Licor	20568(KH)	No calibration applied. Factor 1 Ratio multiplier 0

Configuration of auxiliary CTD package

Table 7. Auxiliary CTD package configuration. Initials NP/HI after the serial numbers indicate whether the Polar Institute (NP) or the vessel (KH) provided the sensor.

Channel	Sensor	Serial Number	Last Calibration
Frequency 1	SBE03 Temperature 1	4771(NP)	06-Jun-2025
Frequency 2	SBE04 Conductivity 1	3234(NP)	12- Jun-2025
Frequency 3	SBE09 Pressure	0792(NP)	29-Sep-2023
Frequency 4	SBE03 Temperature 2	4052(NP)	06-Jun-2025
Frequency 5	SBE04 Conductivity 2	3447(NP)	12-Jun-2025
A/D Voltage 0	PAR Biospeherical/Licor	70257(NP)	13-Aug-2024
A/D Voltage 1	Free	n/a	n/a
A/D Voltage 2	Transmissometer	CST-1306DR(NP)	20-July-2022
A/D Voltage 3	Free	-	-
A/D Voltage 4	SBE43 Oxygen 1	3649(KH)	02-May-2025
A/D Voltage 5	WET Labs Chl. A	1547(NP)	01-Apr-2016 Analogue range set to 1
A/D Voltage 6	Altimeter	73084(NP)	24- Dec-2017
A/D Voltage 7	Free	-	-

Temperature and salinity along the Eurasian Basin Transect

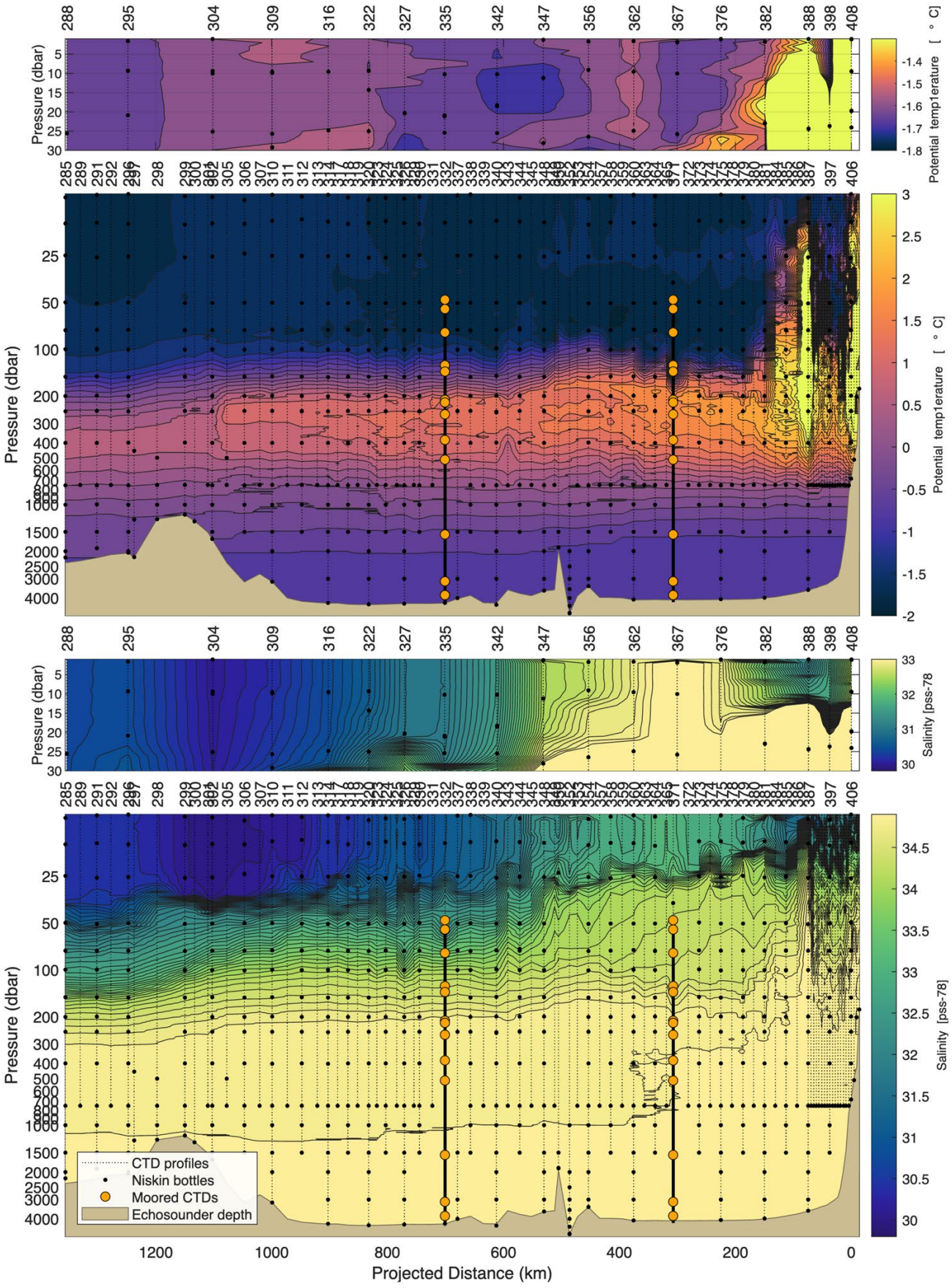


Figure 26. Temperature and salinity measurements along the main section from the main CTD (large panels) and auxiliary CTD (small panels). Cast numbers are indicated above profiles but omitted for closely spaced casts over the slope north of Svalbard due to space constraints. Black dots indicate Niskin bottle closing depths. The positions of moored CTD sensors recovered during EBT2026 are shown as orange circles.

Table 8. Summary of CTD casts. Projected positions are given for casts close to the Eurasian Basin Transect, for casts far away from the Eurasian Basin Transect, where a projected position has no meaning, the location is described in the projected position columns.

Cast	Rosette	Real Longitude	Real Latitude	Projected Longitude (or site)	Projected Latitude (or site)
273	24	40.225	86.652	Gakkel box core	Gakkel box core
274	24	42.578	89.001	Gakkel box core	Gakkel box core
275	24	43.958	88.97	North Pole	North Pole
276	24	63.696	89.906	North Pole	North Pole
277	24	50.528	89.756	North Pole	North Pole
278	12	41.415	89.664	North Pole	North Pole
279	12	40.724	89.659	North Pole	North Pole
280	24	-102.47	89.066	Lmnsv. Box core	Lmnsv. Box core
281	24	-80.052	86.945	Makarov Basin	Makarov Basin
282	12	-79.765	86.94	Makarov Basin	Makarov Basin
283	12	-79.689	86.939	Makarov Basin	Makarov Basin
284	24	-78.805	86.926	Makarov Basin	Makarov Basin
285	24	-75.134	86.421	-75.146	86.423
286	12	-74.927	86.421	-75.011	86.429
287	12	-74.874	86.421	-74.976	86.43
288	12	-74.821	86.421	-74.942	86.432
289	24	-72.881	86.49	-73.101	86.51
290	24	-71.996	86.48	-72.558	86.532
291	24	-70.791	86.606	-70.738	86.601
292	24	-67.321	86.531	-68.64	86.674
293	24	-66.523	86.527	-68.025	86.694
294	12	-65.147	86.651	-66.027	86.754
295	12	-65.121	86.652	-66.004	86.754
296	24	-65.07	86.653	-65.95	86.756
297	24	-64.859	86.763	-65.021	86.782
298	24	-63.068	87.1	-61.253	86.874
299	24	-60.563	87.534	-56.428	86.967
300	24	-59.544	87.692	-54.682	86.994
301	24	-57.269	87.836	-52.248	87.026
302	24	-57.546	88.002	-51.454	87.035
303	12	-57.377	88.001	-51.35	87.036
304	12	-57.343	88.001	-51.33	87.036
305	24	-54.398	88.154	-48.686	87.062
306	24	-49.23	88.219	-45.316	87.086
307	24	-44.199	88.207	-42.289	87.098
308	12	-40.312	88.233	-39.88	87.102
309	12	-40.248	88.233	-39.841	87.102
310	24	-40.242	88.237	-39.835	87.102
311	24	-35.01	88.33	-36.789	87.1
312	24	-29.396	88.396	-33.815	87.09
313	24	-24.035	88.34	-30.674	87.07
314	24	-21.491	88.195	-28.465	87.051
315	12	-21.363	88.202	-28.432	87.051
316	12	-21.295	88.205	-28.414	87.05
317	24	-19.706	88.046	-26.512	87.03
318	24	-17.895	87.893	-24.396	87.003
319	24	-16.596	87.731	-22.446	86.974
320	24	-14.876	87.578	-20.2	86.936

321	12	-14.867	87.579	-20.197	86.936
322	12	-14.863	87.579	-20.193	86.936
323	24	-14.124	87.424	-18.551	86.904
324	24	-13.316	87.259	-16.759	86.865
325	24	-11.978	87.103	-14.616	86.814
326	24	-11.66	86.934	-13.129	86.775
327	12	-11.636	86.934	-13.107	86.774
328	12	-11.605	86.933	-13.074	86.773
329	24	-10.725	86.781	-11.289	86.722
330	24	-10.253	86.691	-10.262	86.69
331	24	-7.8712	86.609	-7.8769	86.609
332	24	-5.4305	86.534	-5.5703	86.521
333	24	-5.9252	86.496	-5.6244	86.523
334	12	-5.9288	86.496	-5.6345	86.524
335	12	-5.9323	86.497	-5.6432	86.524
336	24	-6.3252	86.497	-5.9171	86.535
337	24	-3.4493	86.426	-3.4136	86.429
338	24	-1.197	86.328	-1.2225	86.326
339	24	0.89917	86.215	0.8931	86.214
340	24	2.9657	86.104	2.8867	86.098
341	12	3.0285	86.103	2.9322	86.095
342	12	3.0955	86.1	2.9836	86.092
343	24	4.5748	85.989	4.5792	85.99
344	24	6.3297	85.874	6.2809	85.871
345	24	7.8408	85.751	7.8482	85.751
346	12	9.3462	85.622	9.3831	85.624
347	12	9.3318	85.62	9.3909	85.624
348	24	9.4348	85.614	9.474	85.616
349	24	10.82	85.5	10.789	85.498
350	24	12.393	85.528	11.251	85.455
351	24	11.939	85.377	12	85.381
352	24	12.503	85.326	12.528	85.328
353	24	13.402	85.236	13.4	85.236
354	24	14.567	85.104	14.575	85.104
355	12	14.557	85.102	14.582	85.103
356	12	14.544	85.101	14.583	85.103
357	24	15.656	84.963	15.717	84.967
358	24	16.791	84.83	16.784	84.83
359	24	17.848	84.687	17.827	84.686
360	24	18.803	84.537	18.828	84.539
361	12	18.794	84.536	18.834	84.538
362	12	18.779	84.534	18.839	84.537
363	24	19.718	84.4	19.718	84.4
364	24	20.534	84.255	20.575	84.258
365	24	21.418	84.109	21.42	84.109
366	12	22.16	83.969	22.167	83.97
367	12	22.139	83.96	22.197	83.964
368	12	22.156	83.953	22.23	83.958
369	12	21.808	83.894	22.383	83.928
370	24	22.001	83.942	22.24	83.956
371	24	20.922	83.957	21.92	84.016
372	24	22.968	83.814	22.959	83.814

373	24	23.688	83.665	23.676	83.664
374	24	24.355	83.514	24.359	83.514
375	24	25.023	83.366	25.003	83.365
376	12	25.025	83.366	25.003	83.365
377	12	25.025	83.366	25.003	83.365
378	24	25.644	83.213	25.629	83.212
379	24	26.242	83.056	26.24	83.056
380	24	26.8	82.906	26.798	82.906
381	24	27.317	82.751	27.341	82.753
382	12	27.351	82.745	27.365	82.746
383	12	27.363	82.743	27.373	82.744
384	24	27.875	82.597	27.871	82.596
385	24	28.366	82.445	28.363	82.445
386	24	28.866	82.287	28.854	82.286
387	24	29.331	82.127	29.327	82.126
388	12	29.339	82.122	29.34	82.122
389	12	29.336	82.119	29.347	82.12
390	24	29.451	82.085	29.446	82.085
391	24	29.562	82.046	29.558	82.046
392	24	29.664	82.008	29.664	82.008
392	24	29.664	82.008	29.664	82.008
393	24	29.758	81.974	29.761	81.974
394	24	29.883	81.93	29.883	81.929
395	24	29.995	81.89	29.991	81.89
396	24	30.097	81.852	30.095	81.852
397	24	30.231	81.816	30.195	81.814
398	12	30.245	81.82	30.188	81.817
399	24	30.312	81.774	30.304	81.773
400	24	30.416	81.735	30.406	81.734
401	24	30.511	81.696	30.506	81.696
402	24	30.603	81.658	30.603	81.658
403	24	30.715	81.614	30.715	81.614
404	24	30.808	81.578	30.807	81.578
405	24	30.915	81.539	30.904	81.539
406	24	31.012	81.498	31.005	81.498
407	12	31	81.5	31	81.5
408	12	31	81.5	31	81.5
409	24	31.093	81.46	31.096	81.461
410	24	31.192	81.422	31.19	81.422
411	24	31.282	81.382	31.285	81.382

Validation of salinity profiles

Water samples for laboratory salinity measurement were collected at all sampling depths and analysed on broad using Guildline Portasal portable salinometer (see section: Niskin Bottle Samples, Salinity (SAL)).

Two conductivity sensors failed during the cruise. S/N 2056 was fitted to the primary rosette before the first cast. During that cast this sensor displayed a large offset compared with the secondary sensor and was replaced immediately with S/N 4980, which was used as the primary sensor on the primary CTD package for the remainder of the cruise. Measurements derived from S/N 2056 were removed from the data set during processing.

S/N 2063 was fitted to the primary rosette before the first cast and performed well until cast 339, when derived salinity measurements it showed a 0.3 PSU offset relative to the primary, during cast 340 this offset had grew to more than 2 PSU. This sensor was replaced with S/N 1282 after cast 340, which was used as the secondary sensor on the primary CTD package for the remainder of the cruise. Measurements derived from S/N 1282 at stations 339 and 340 were removed from the data set during processing.

Comparison of laboratory salinity measurements and CTD-salinity measurements for S/N 4980, S/N 2056 and S/N 2063, revealed offsets of +0.003, +0.003 and +0.002 practical salinity units (Figure 27). These offsets fall within the expected precision of the 911+ CTD system and Guildline Portasal salinometer.

Validation of the primary and secondary sensors on the auxiliary CTD is limited by the shallow depth range at which that system was operated and the small number of samples collected for laboratory salinity analysis. Steep gradients in the upper 50 m mean that there is a significant disparity between the properties of the water measured by sensors on the auxiliary CTD and the properties of the water trapped in Niskin bottles. Moreover, the very small number of samples collected (n = 7) prevents calculating robust statistics.

The consistently good performance of S/N 4980 makes the primary sensor pair the preferred source of salinity profiles from the primary package. Although the secondary sensors pair is preferred for the first cast. These two sensors are used to provide salinity profiles from the primary CTD package in the published core dataset. It is not possible to suggest a preferred sensor pair for the auxiliary CTD package due to the sallow depth of operation and limited availability of samples for validation. The primary sensor pair is used to provide salinity profiles from the auxiliary CTD package in the published core dataset.

Validation of dissolved oxygen profiles

Water samples for laboratory oxygen measurement were collected throughout the cruise see (section: Niskin Bottle Samples. Dissolved oxygen (WIN)). Comparison of laboratory (Winkler) dissolved oxygen measurements and CTD dissolved oxygen measurements revealed mean offsets of -3.761 and -12.303 for the primary and secondary sensor groups of the primary CTD system (Figure 28), these offsets fall within the expected precision of SBE43 dissolved oxygen sensors. It was not possible to analyse enough laboratory oxygen samples onboard to track sensor drift though time, but this can be evaluated by comparing oxygen values measured in deep water masses (not shown). The primary oxygen sensor appeared to drift by ca. 8 umoll-1 during the cruise, while the secondary sensor appeared to drift by ca. 6 umoll-1 during the duration of the cruise. These drift values are typical for SBE43 oxygen sensors. However, the slightly smaller drift makes the secondary sensor the preferred source of dissolved oxygen profiles. The secondary sensor pair is used to provide dissolved oxygen profiles in the published core dataset. No attempt was made to validate the single dissolved oxygen sensors on the auxiliary CTD system due to the shallow range of operation.

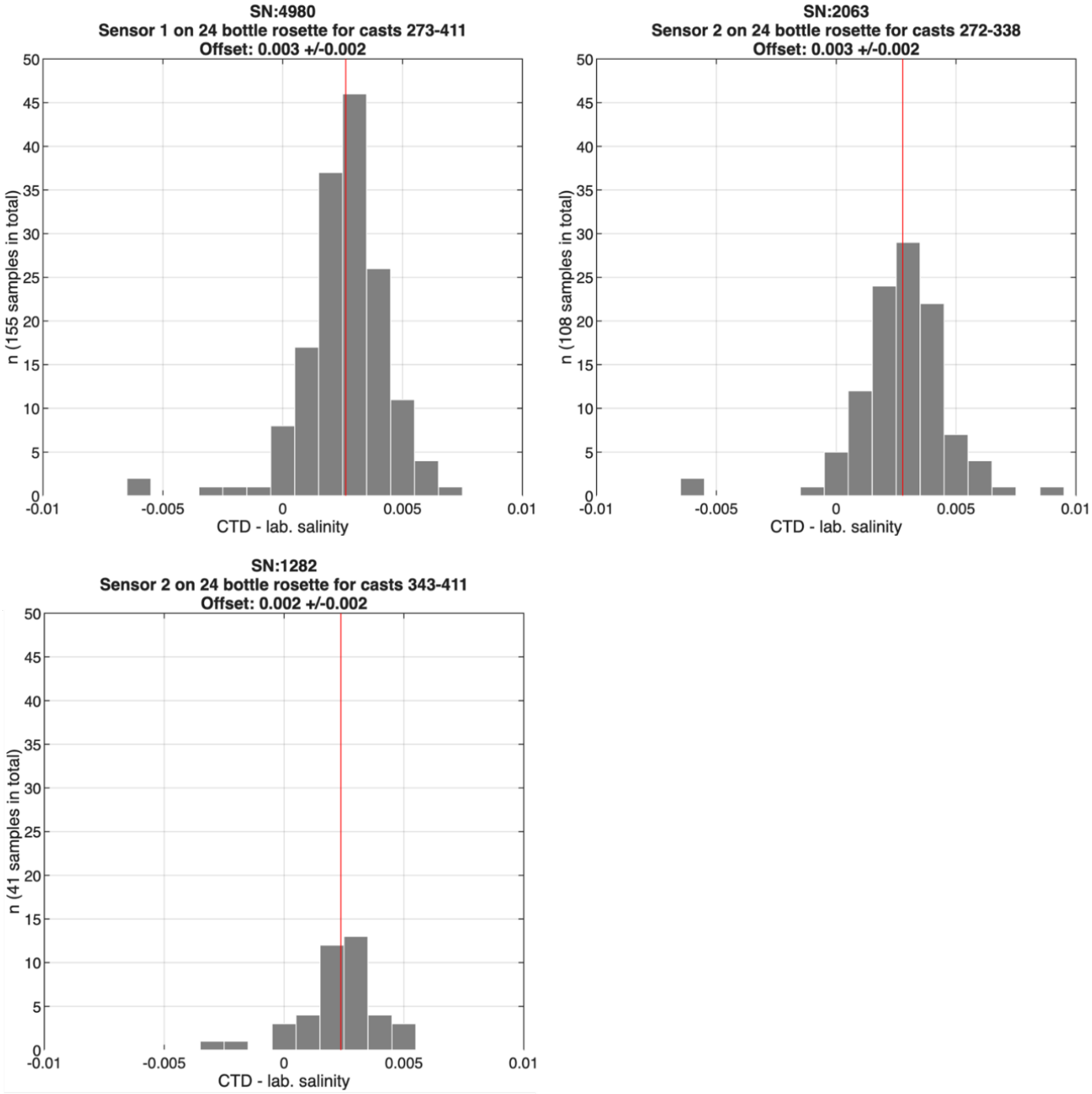


Figure 27. Histograms showing the difference between CTD sensor and laboratory salinity measurements. Only samples deeper than 400 m are considered for salinity validation of the main CTD, due to step salinity gradients close to the surface, but all samples are included for the auxiliary CTD, which was only once deployed deeper than 100 m.

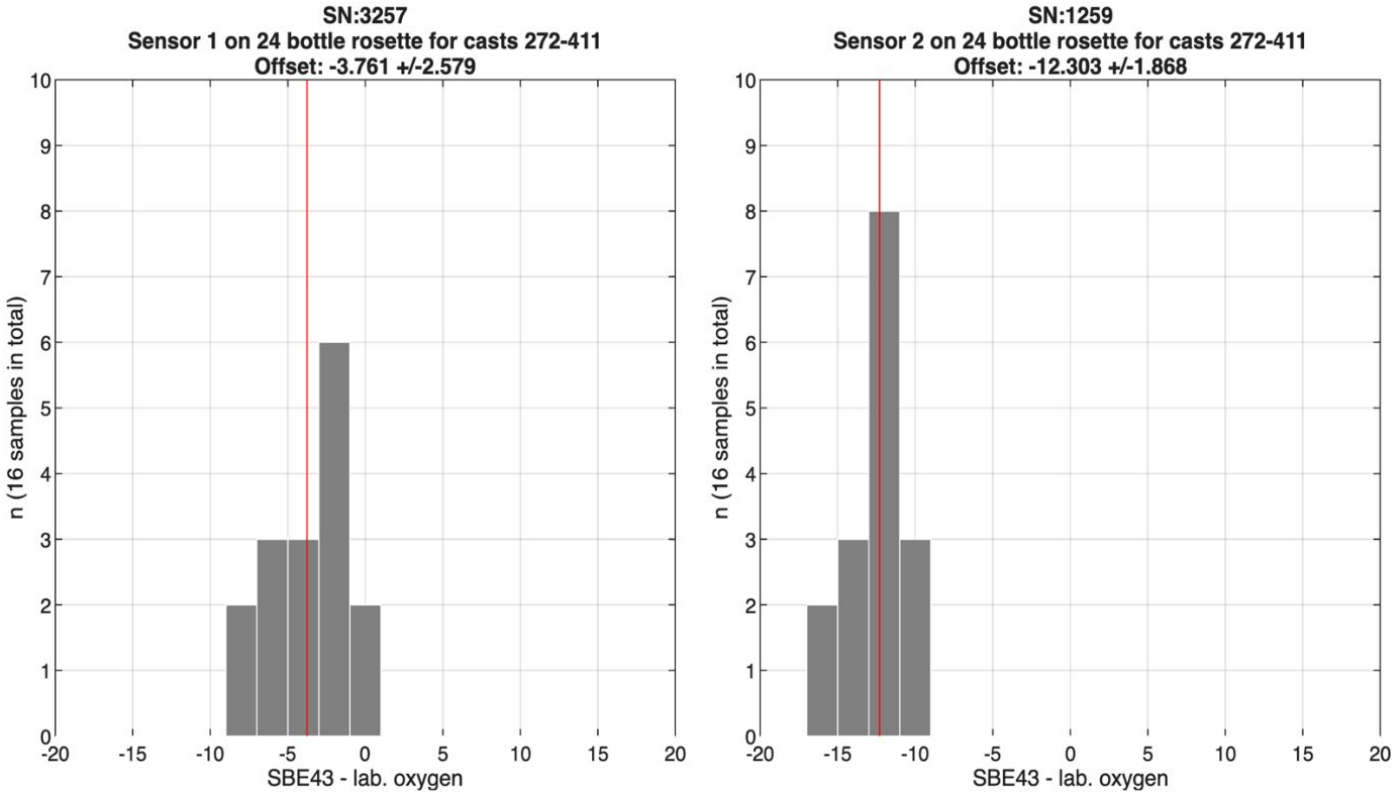


Figure 28. Histograms showing the difference between CTD sensor and laboratory dissolved oxygen measurements. Only samples deeper than 400 m are considered for salinity validation of the main CTD, due to step salinity gradients close to the surface.

Comparison of Laboratory and In-Situ chlorophyll-A measurements

Water samples for laboratory Chlorophyll-A measurement were collected throughout the cruise see (section Niskin Sampled, Chlorophyll-A (CHL)). The laboratory Chlorophyll-A fluorometer and Chlorophyll-A fluorometers mounted on the CTD packages measure different parameters, so a 1:1 agreement is not expected. The CTD-mounted fluorometers measure the concentration of in-vivo chlorophyll in organisms present in the water column, while the laboratory fluorometer measures the volume of chlorophyll that can be extracted from organisms filtered out of a water sample of known volume (see Figure 29).

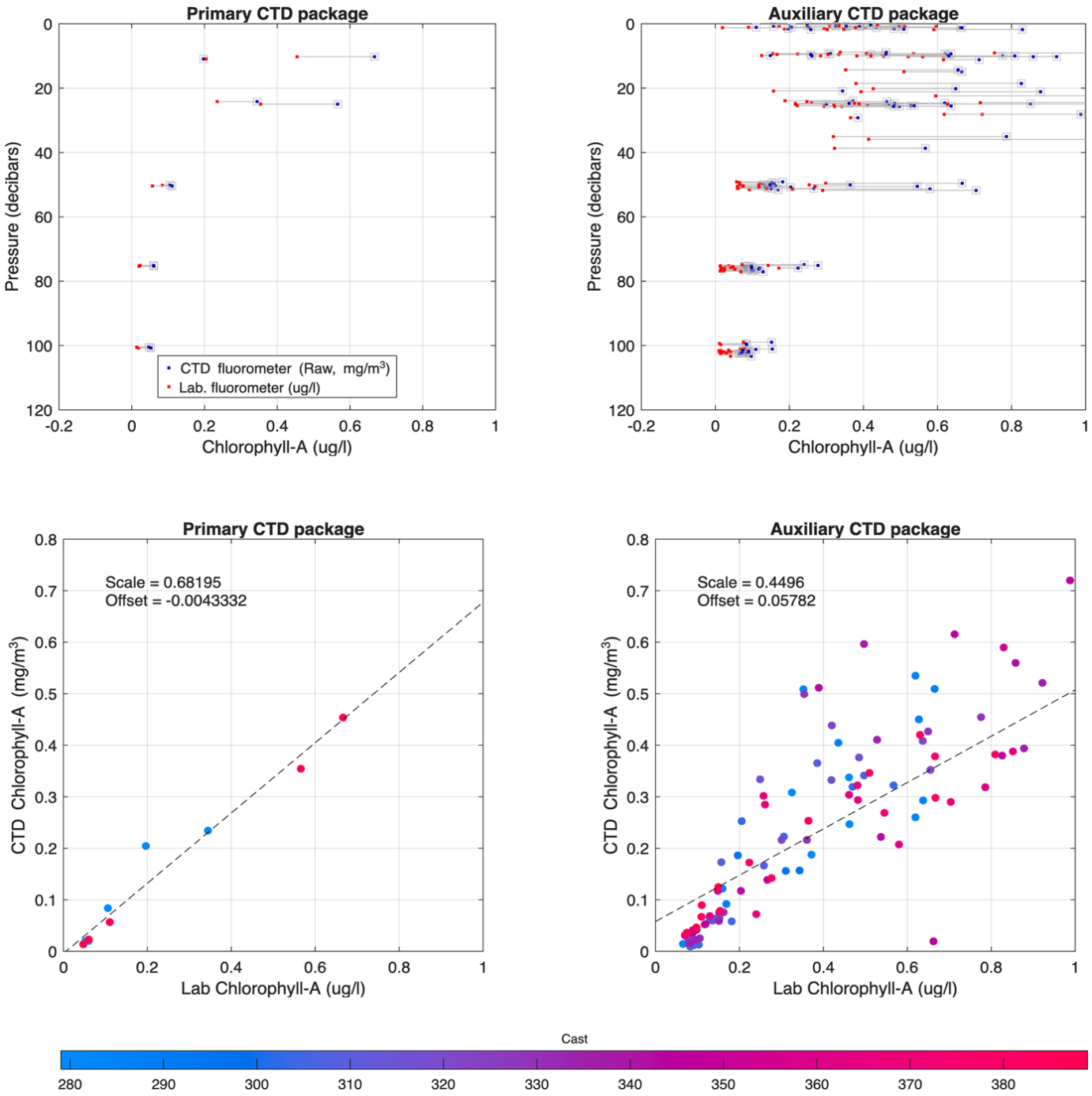


Figure 29. Comparison of chlorophyll-a concentrations determined by laboratory and CTD-mounted fluorometers. Upper panels show profiles of points for which both laboratory and CTD mounted chlorophyll-a concentration measurements are available. Lower panels show the relationship between concentrations estimated by the two approaches.

X-CTD measurements

Contact person: Morven Muilwijk (Morven.Muilwijk@npolar.no)
Responsible persons on board: Morven Muilwijk, Tobi Ehmen & Paul A. Dodd

Twelve X-CTD 1000 (Expendable Conductivity–Temperature–Depth; Lockheed Martin, USA) probes were used to obtain a hydrographic section along approximately 30°E during our northbound transit to the North Pole station (Figure 24). The probes were launched from the stern of the vessel while it sailed slowly (1–2 knots) through leads between ice floes. Deployments were carried out at 1° latitude intervals from 83°N to 84°N and at 0.5° latitude intervals north of 84°N. The probes measured conductivity and temperature as they descended through the water column at a known fall rate, allowing depth to be inferred. Each probe had a maximum operating depth of 1000 m.

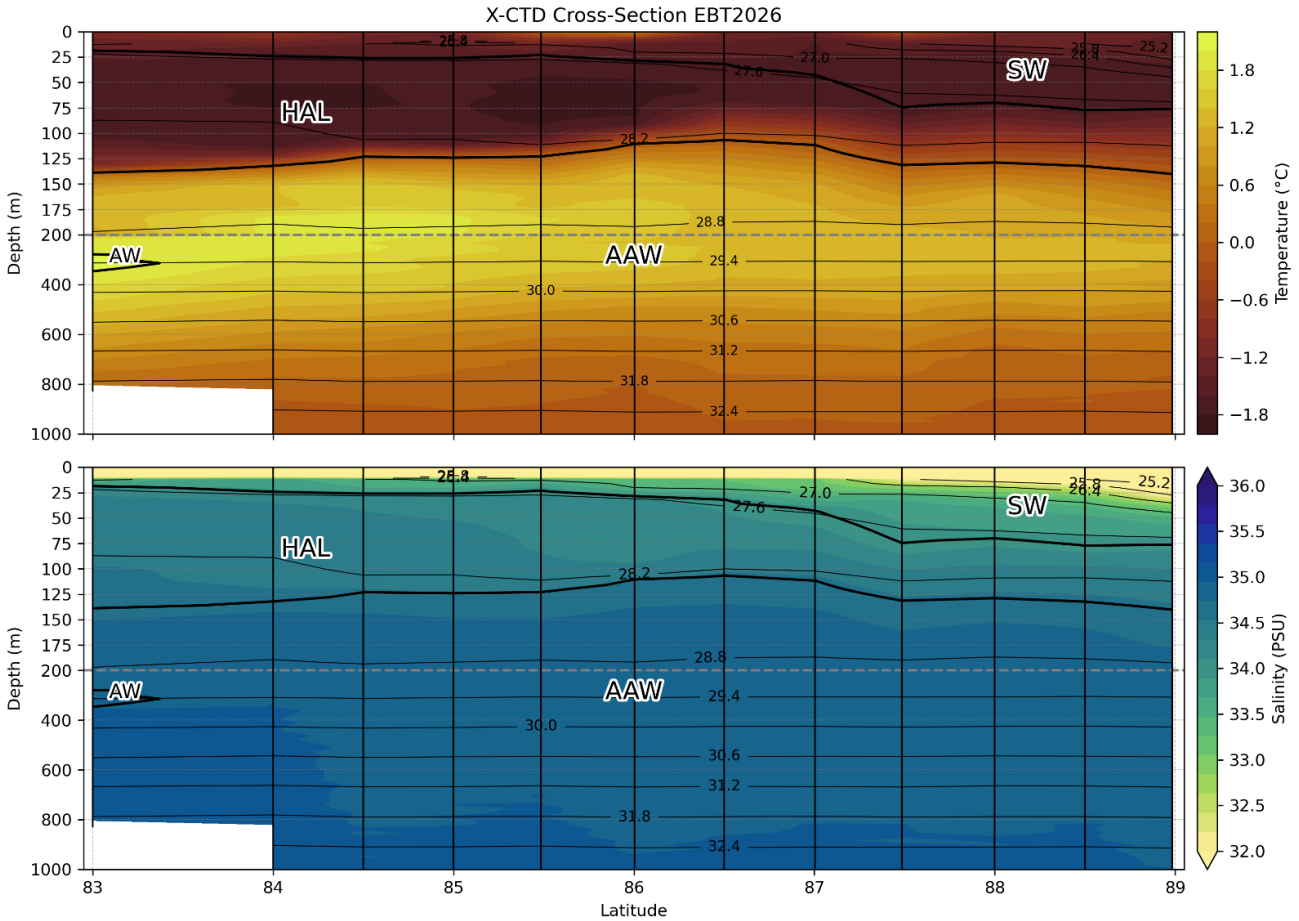


Figure 30. Temperature and salinity sections from X-CTD profiles collected during the northbound transit of the EBT2026 expedition. Thin solid isolines show density anomaly.

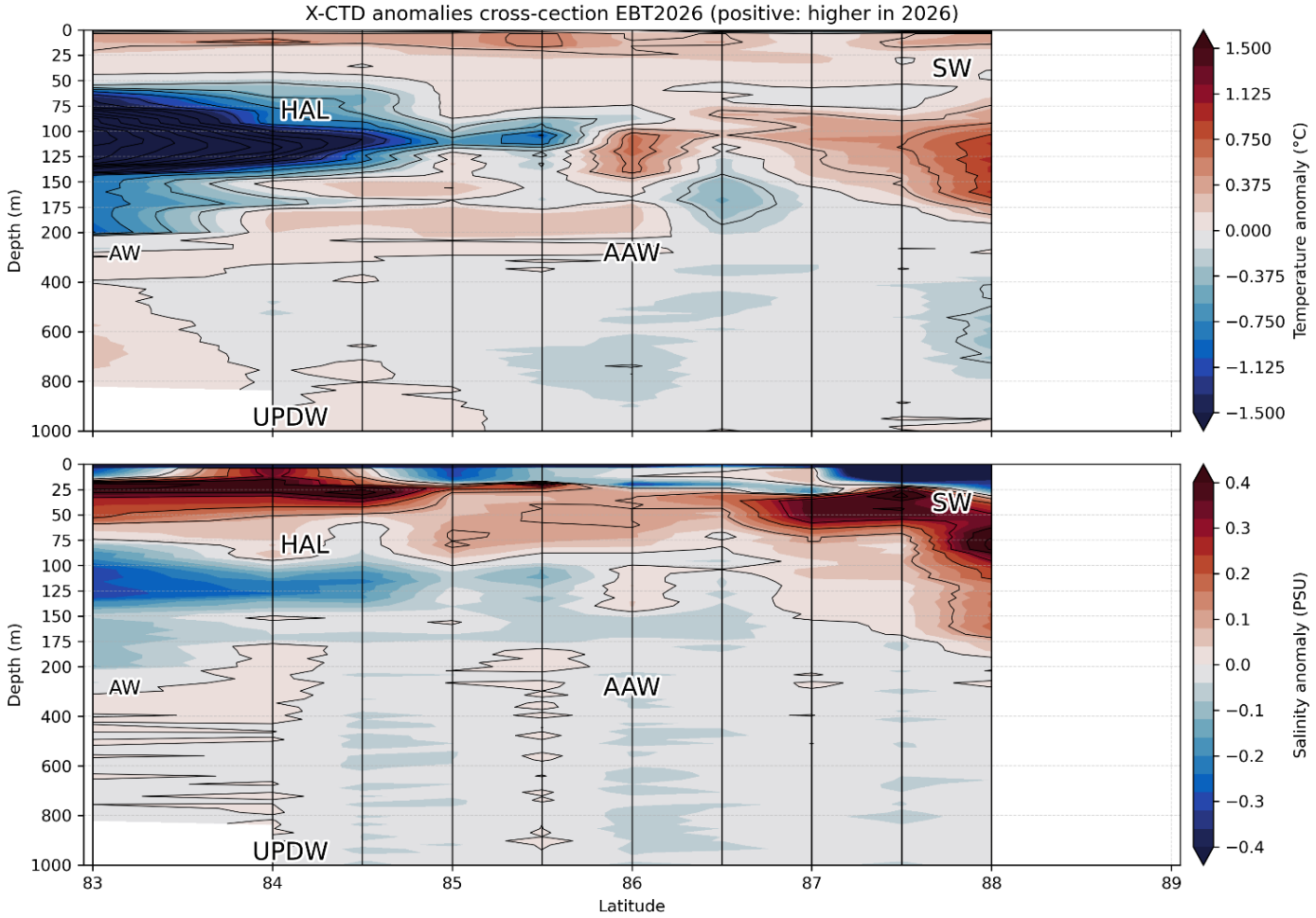


Figure 31. Temperature and salinity anomalies relative to the corresponding 2024 X-CTD transect.

Table 9. List of X-CTD deployments

s/no	Date/Time (UTC)					Lat	Lon	Depth	Filename (*.edf)
	yyyy	mm	dd	hh	mm				
1N26041892	2026	7	26	1	55	83.000	31.683	826	1N26041892
1N26041883	2026	7	26	11	29	84.000	32.683	1000	1N26041883
1N26041891	2026	7	26	17	41	84.500	34.400	1000	1N26041891
1N26041886	2026	7	26	22	51	85.000	36.633	1000	1N26041886
1N26041890	2026	7	27	3	14	85.485	40.400	1000	1N26041890
1N26041887	2026	7	27	7	4	86.003	41.400	1000	1N26041887
1N26041889	2026	7	27	11	18	86.500	41.206	1000	1N26041889
1N26041885	2026	7	28	7	8	87.003	41.767	1000	1N26041885
1N26041884	2026	7	28	15	8	87.486	36.552	1000	1N26041884
1N26041888	2026	7	28	20	32	88.000	46.897	1000	1N26041888
1N26041882	2026	7	29	0	54	88.500	47.138	1000	1N26041888
1N26041881	2026	7	29	5	9	88.983	42.933	1000	1N26041881

Lowered acoustic Doppler current profiler (LADCP)

Contact person: Paul Dodd (Paul.Dodd@npolar.no)
Responsible persons on board: Morven Muilwijk & Paul Dodd

Two Lowered Acoustic Doppler Current Profilers (LADCPs; RD Instruments) were mounted on the large 24-bottle CTD rosette to obtain vertical profiles of horizontal currents. The ADCPs are 6000 m-rated, 300 kHz Sentinel Workhorses. The units received power from an external battery canister with a housing identical to that of the instruments. All three units were mounted on the rosette in a balanced configuration to minimize tilt. Both ADCPs have the LADCP option installed and were configured to operate in master–slave mode to ensure synchronization. The master ADCP pointed downward (S/N 24474), while the slave ADCP pointed upward (S/N 24472). The compass of each instrument was last calibrated in Tromsø in 2025, with each instrument in its respective orientation. The resulting compass errors were less than 4°. As the batteries are housed in an external canister, the compass calibrations are expected to remain valid. LADCP data were collected during all CTD casts. The vertical bin size and pulse length were both set to 8 m for each ADCP. Single-ping data were recorded in beam coordinates, with the blanking distance set to zero.

Under Water Vision Profiler (plankton camera)

Contact person: Sünnje Basedow (sunnje.basedow@uit.no)
Responsible persons on board: Sünnje Basedow

The UVP6 (SN 000317HF) is a camera-based imaging sensor that takes pictures of plankton and particles in the size range of approx. 80 µm to ca 3 mm, with larger plankton captured occasionally. It was deployed on the 24-bottle CTD taking vertical profiles (image capture 25 Hz) and on few occasions under the ice). The UVP6 was mounted at the bottom of the 24-bottle CTD (Figure 32), and data were recorded on the downcasts only to get as undisturbed images as possible. The UVP6 operates by sending out red-light flashes and these were disturbing the fluorescence and cDOM measurements on the first casts, so those sensors were moved to the opposite side of the rosette frame and positioned outside on the bottom ring of the rosette frame. Data were sampled from 92 deployments (Table 10). The pressure sensor is off compared to the CTD pressure sensor and needs to be recalibrated later.

Data were processed on board using the UVPapp and were uploaded to Ecopart and Ecotaxa. The data presented in Figure 33 need to be controlled for duplicates and are preliminary. Final sorting of particles and plankton into taxa was started on board, ca. 20% of the entire data set is completed. Data are published on Ecotaxa, project name UVP6_SN000317HF_2026_ArcticOcean.

Preliminary data show highest densities of particles and zooplankton on the ridges of the Arctic basins (Figure 33). Aggregates were more common in the Nansen basin and on the southern edge of it, calanoid copepods were dominating in the Makarov and Amundsen basin.

*Table 10. Summary of UVP6 deployments from the CTD. * Battery charging issues, no full depth deployments data were recorded.*

CTD station	Date (yyyymmdd)	Start Time (UTC)	Latitude (N)	Longitude (E)	Bottom depth (m)	Sampling depth (pressure)	Filename
273	20260727	13:25	86.65	40.23	1779	1836	ebs2026_0273
275	20260729	13:45	88.97	43.96	4358	1020	ebs2026_0275
277	20260730	22:51	89.76	50.55	4268	4074	ebs2026_277
280	20260801	0:51	89.07	-102.49	1082	1082	ebt2026_0280
281	20260804	12:02	86.95	-80.05	2766	2875	ebt2026_0281
284	20260804	20:44	86.93	-78.81	2603	2761	ebt2026_0284
285	20260806	14:46	86.42	-75.13	2163	2201	ebs2026_0285
290	20260807	14:45	86.48	-72.00	2052	2110	ebs2026_0290
291	20260808	7:24	86.61	-70.79	1884	1942	ebt2026_0291
292	20260809	10:13	86.53	-67.33	2054	763	ebt2026_0292
293	20260809	20:38	86.53	-66.52	2092	2153	ebt2026_0293
296	20260811	13:56	86.65	-65.07	2033	2091	ebt2026_0296
297	20260812	8:48	86.76	-64.86	2140	2207	ebt2026_0297
298	20260813	14:09	87.10	-63.07	1226	1261	ebt2026_0298
299	20260814	8:28	87.53	-60.56	1135	1186	ebt2026_0299
300	20260814	17:44	87.69	-59.54	1268	1308	ebt2026_0300
301	20260815	1:01	87.84	-57.27	1484	763	ebt2026_0301
305	20260815	17:33	88.15	-54.40	2337	763	ebt2026_0305
306	20260816	1:01	88.22	-49.23	3099	1539	ebt2026_0306
307	20260816	7:43	88.21	-44.20	2758	763	ebt2026_0307
310	20260816	14:44	88.24	-40.26	3156	3121	ebt2026_0310
311	20260817	1:37	88.33	-35.01	3925	763	ebt2026_0311
312	20260817	5:09	88.40	-29.40	4116	1528	ebt2026_0312
313	20260817	9:29	88.34	-24.03	4196	763	ebt2026_0313
314	20260817	14:36	88.19	-21.49	4188	4383	ebt2026_0314
317	20260818	3:12	88.05	-19.71	4267	761	ebt2026_0317
318	20260818	6:35	87.89	-17.90	4302	1527	ebt2026_0318
319	20260818	11:12	87.73	-16.60	4323	763	ets2026_0319
320	20260818	20:05	87.58	-14.88	4329	4461	ebt2026_0320
323	20260819	1:43	87.42	-14.12	4311	764	ebt2026_0323
324	20260819	5:33	87.26	-13.32	4309	1527	ebt2026_0324
325	20260819	8:38	87.10	-11.98	4242	763	ebt2026_0325
326	20260819	16:46	86.93	-11.66	4366	4430	ebt2026_0326
329	20260819	22:36	86.78	-10.73	4276	763	ebt2026_0329
330	20260820	1:04	86.69	-10.25	4265	1527	ebt2026_0330
331	20260820	4:02	86.61	-7.87	4252	763	ebt2026_0331
332	20260820	18:22	86.53	-5.02	4230	4373	ebt2026_0332
333	20260821	14:13	86.50	-5.93	4213	4375	ebt2026_0333
337	20260826	7:20	86.43	-3.45	3984	4099	ebt2026_0337
338	20260827	6:26	86.33	-1.20	3776	1528	ebt2026_0338
339	20260827	10:16	86.21	0.90	4248	764	ebt2026_0339
340	20260827	13:40	86.10	2.97	4170	4463	ebt2026_0340
343	20260827	23:31	85.99	4.57	4170	764	ebt2026_0343
344	20260828	2:43	85.87	6.33	3676	1527	ebt2026_0344
345	20260828	6:18	85.75	7.84	3744	763	ebt2026_0345
348	20260828	12:19	85.61	9.43	3537	3664	ebt2026_0348
349	20260828	21:12	85.50	10.82	3481	763	ebt2026_0349

350	20260828	22:56	85.53	12.39	1954	1969	ebt2026_0350
351	20260829	10:29	85.38	11.94	3428	1528	ebt2026_0351
352	20260829	13:09	85.33	12.50	4958	5095	ebt2026_0352
353	20260829	18:33	85.24	13.40	3813	764	ebt2026_0353
354	20260829	21:57	85.10	14.57	3304	3415	ebt2026_0354
357	20260830	6:33	84.96	15.66	3864	763	ebt2026_0357
358	20260830	10:25	84.83	16.79	3868	1535	ebt2026_0358
359	20260830	13:57	84.69	17.85	3907	763	ebt2026_0359
360	20260830	17:23	84.54	18.80	3990	4159	ebt2026_0360
363	20260831	2:31	84.40	19.72	4010	579*	ebt2026_0363
364	20260831	4:40	84.26	20.53	4021	182*	ebt2026_364
365	20260831	7:11	84.11	21.42	4020	33*	ebt2026_0365
370	20260901	15:12	83.94	22.00	4044	4175	ebt2026_0370
372	20260903	22:39	83.81	22.97	4023	763	ebt2026_0372
373	20260904	0:45	83.66	23.69	4022	1528	ebt2026_0373
374	20260904	3:21	83.51	24.35	4018	763	ebt2026_0374
375	20260904	05:50	83.37	25.02	4017	4157	ebt2026_0375
378	20290905	02:33	83.21	25.64	4006	763	ebt2026_0379
379	20290905	04:58	83.06	26.24	3998	1528	ebt2026_0379
380	20290905	07:24	82.91	26.80	3976	763	ebt2026_0380
381	20290905	13:26	82.75	27.32	3920	4064	ebt2026_0381
384	20290905	23:09	82.60	27.87	3858	763	ebt2026_0384
385	20290906	2:12	82.44	28.37	3757	1528	ebt2026_0385
386	20290906	5:17	82.29	28.86	3651	763	ebt2026_0386
387	20290906	7:40	82.13	29.33	3501	3614	ebt2026_0386
390	20290906	15:30	82.09	29.45	3453	763	ebt2026_0390
391	20290906	16:44	82.05	29.56	3408	763	ebt2026_0391
392	20290906	17:48	82.01	29.66	3380	763	ebt2026_0392
393	20290906	19:08	81.97	29.76	3326	763	ebt2026_0393
394	20290906	20:22	81.93	29.88	3273	763	ebt2026_0394
395	20290906	21:25	81.89	30.00	3230	763	ebt2026_0395
396	20290906	22:35	81.85	30.10	3194	763	ebt2026_0396
397	20290907	0:10	81.82	30.23	3131	763	ebt2026_0397
399	20290907	2:00	81.77	30.31	3048	763	ebt2026_0399
400	20290907	3:15	81.73	30.42	2959	763	ebt2026_0400
401	20290907	4:27	81.70	30.51	2959	763	ebt2026_0401
402	20290907	5:43	81.66	30.60	2894	763	ebt2026_0402
403	20290907	12:17	81.61	30.71	2821	763	ebt2026_0403
404	20290907	13:19	81.58	30.81	1429	763	ebt2026_0404
405	20290907	14:23	81.54	30.91	822	764	ebt2026_0405
406	20290907	15:48	81.50	31.01	668	692	ebt2026_0406
409	20290907	19:34	81.46	31.09	487	504	ebt2026_0409
410	20290907	21:31	81.42	31.19	415	204	ebt2026_0410
411	20290908	0:12	81.38	31.28	179	183	ebt2026_0411



Figure 32. UVP6 mounted on the rosette. © Sünnje Basedow

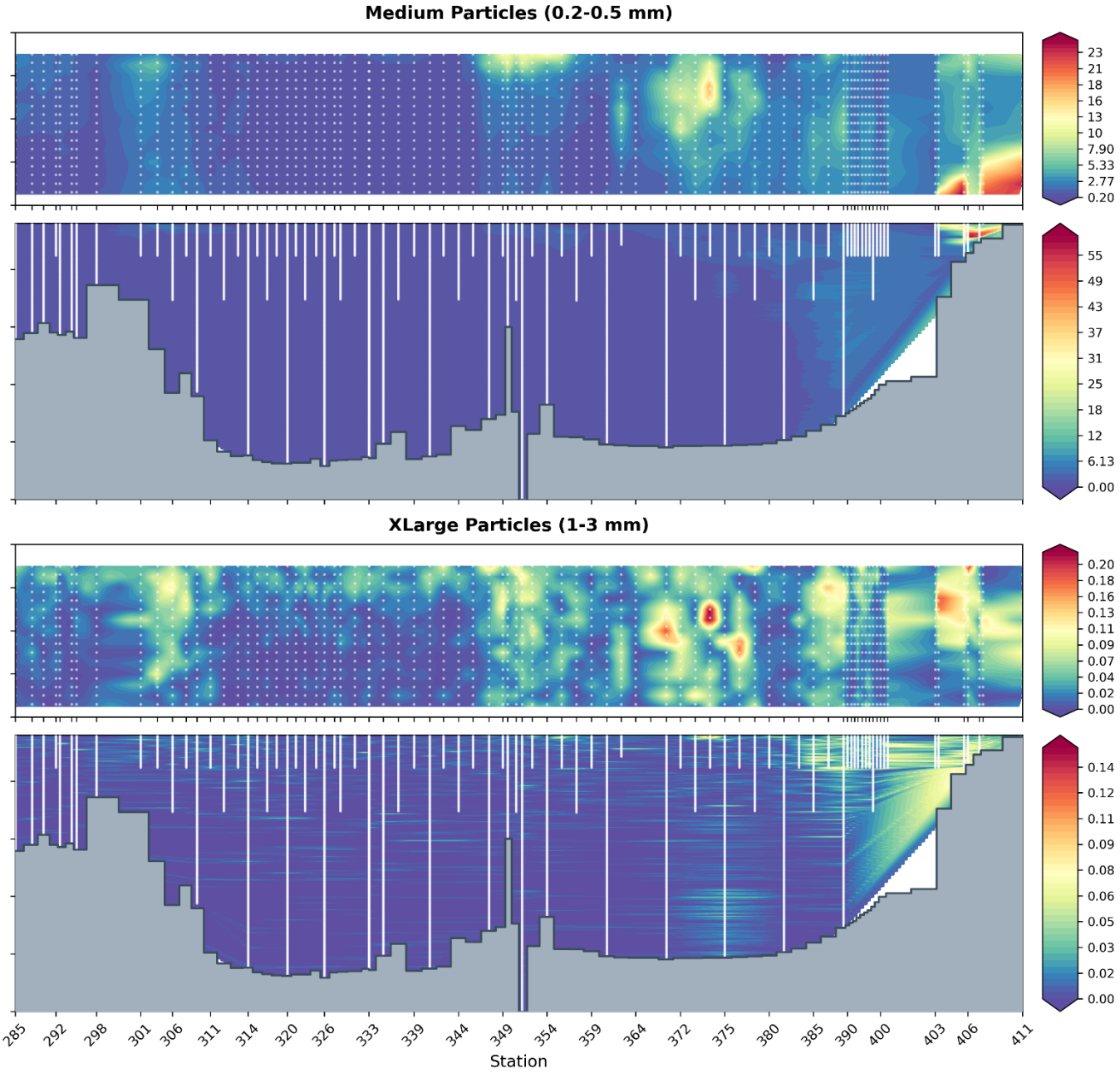


Figure 33. Zooplankton and particle distributions across the transect. Ticks on the y-axis are drawn at 1000 m intervals. Preliminary data.

Integrated Benthic Camera System

Contact person: Paul A. Dodd (Paul.Dodd@npolar.no)
Responsible Person on board: Paul A. Dodd

Overview

A 1080p HD IP camera optimised for low-light operation, a 10 000 lumen underwater light and two lasers (to provide scale information) rated for use down to 6000 m, were deployed from the CTD for the purpose of carrying out benthic camera surveys at the bottom of CTD casts. Electronics in an underwater control box connected to an auxiliary port on the Seabird underwater unit allowed the camera to communicate with surface equipment via a fibre optic core and provided power and a control interface for the light and lasers.

Surveys had a typical duration of 30 minutes and typically observed a few 100 m of the seabed at each location (Table 11) with the camera at 1-1.5 m above the seabed.

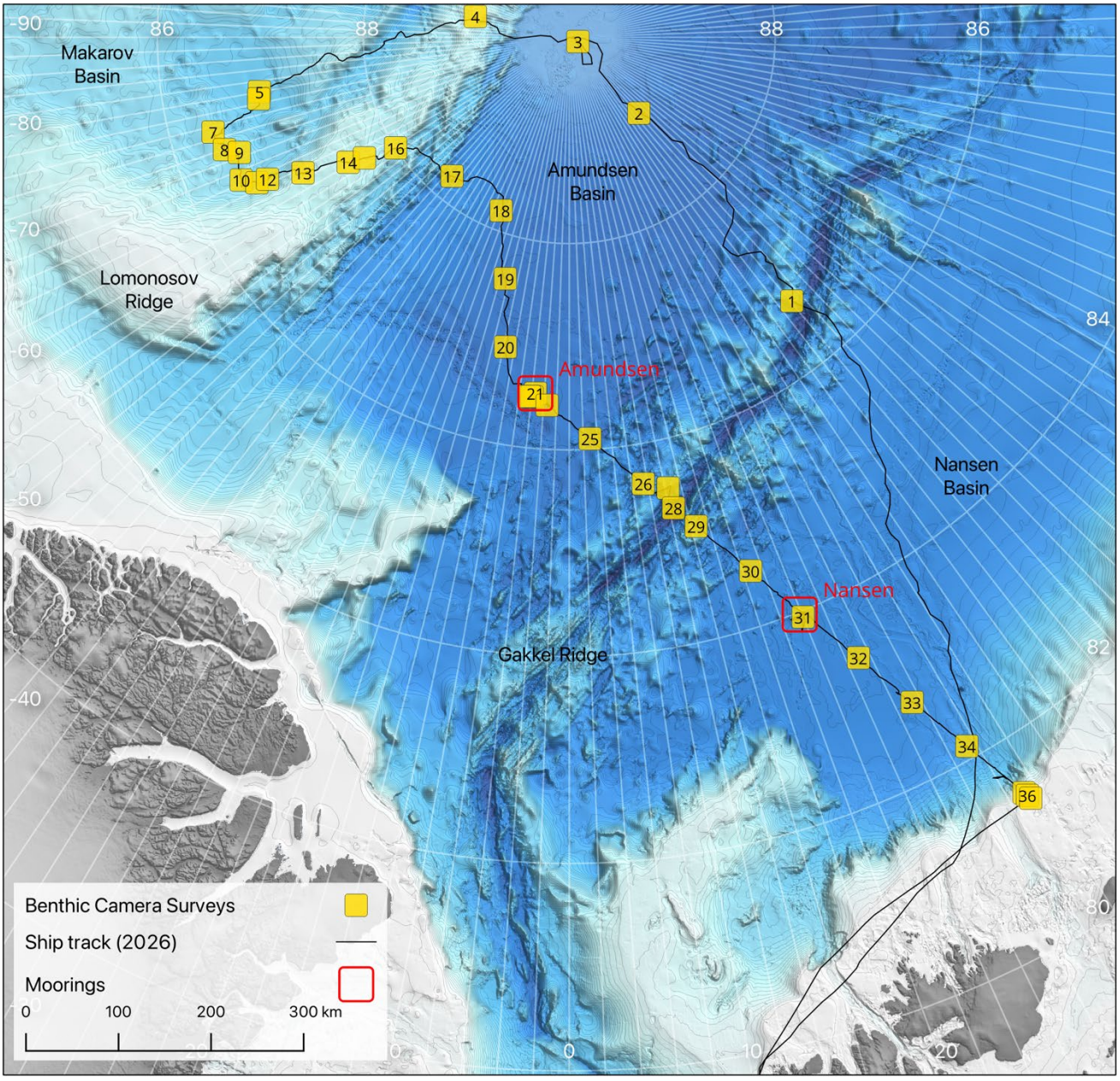


Figure 34.Location of benthic surveys with the integrated camera system. Background bathymetric and topographic data from IBCAO 4.

*Table 11. Summary of benthic camera system deployments. Survey distance is estimated from the straight-line distance between the ship position when the first frame was acquired and when the last frame was acquired. * Vessel maintained position during survey.*

Site (#)	Cast (#)	Duration (minutes)	Latitude (start)	Longitude (start)	Depth (start)	Approx length (m)
1	273	49	86.65183333	40.225	1812	220
2	274	43	89.00133333	42.57783333	4440	640
3	276	31	89.9065	63.69616667	4330	725
4	280	30	89.0655	-102.473	1077	459
5	281	41	86.94533333	-80.05216667	2832	273
6	284	23	86.92583333	-78.805	2728	245
7	285	37	86.4215	-75.13433333	2207	100
8	290	32	86.4795	-71.9955	2080	334
9	291	32	86.6065	-70.791	1911	384
10	293	31	86.52666667	-66.52283333	2129	318
11	296	36	86.6535	-65.07016667	2056	111
12	297	30	86.76283333	-64.85883333	2195	68
13	298	33	87.09983333	-63.06833333	1248	180
14	299	30	87.53433333	-60.5635	1175	108
15	300	15	87.69233333	-59.5435	1293	40
16	302	30	88.00166667	-57.54583333	1675	117
17	310	13	88.23716667	-40.24166667	3145	54
18	314	35	88.19466667	-21.49066667	4297	351
19	320	30	87.57833333	-14.87633333	4401	50
20	326	44	86.9345	-11.65966667	4356	403
21	332	30	86.53383333	-5.4305	4300	269
22	333	33	86.4955	-5.925166667	4304	158
23	336	44	86.49683333	-6.325166667	4305	296
24	337	22	86.42633333	-3.449333333	4016	201
25	340	39	86.104	2.965666667	4398	818
26	348	26	85.61383333	9.434833333	3594	171
27	350	39	85.5275	12.39283333	1936	236
28	352	49	85.32633333	12.50316667	5001	513
29	354	30	85.10366667	14.56733333	3357	58
30	360	35	84.5375	18.80316667	4093	331
31	370	31	83.94183333	22.001	4102	277
32	375	44	83.366	25.0235	4088	503
33	381	33	82.7515	27.31716667	3994	84
34	387	31	82.12666667	29.33083333	3554	311
35	409	29	81.4605	31.09266667	517	371
36	411	23	81.38233333	31.28216667	189	1*
Totals	**-**	**19 h 42 mins**	**-**	**-**	**-**	**9640 m**

System Components

Component	Model and serial
Camera	Deepsea Power and Light HDMSC-4070-IP-TI-C-R-256-M-SUDBH8M/S-08E021 SN 40-006-00552
Light	Deepsea Power and Light LSL-2000-DW400-FLD-AL-S-B-RS2-M-SUMCBH5M/S-05L004 SN 12-049-08461
Lasers	Deepsea Power and Light DUAL-MICSL-R-D-DF55W02/S-02P003 SN 374-T SN 375-T *Note: SN 375-T appeared defective during bench testing before the cruise. The beam was not in column and produced a spot of ca. 3 cm diameter at ca. 2 m distance.*
Control Box	Version 1, Paul A. Dodd, Norwegian Polar Institute

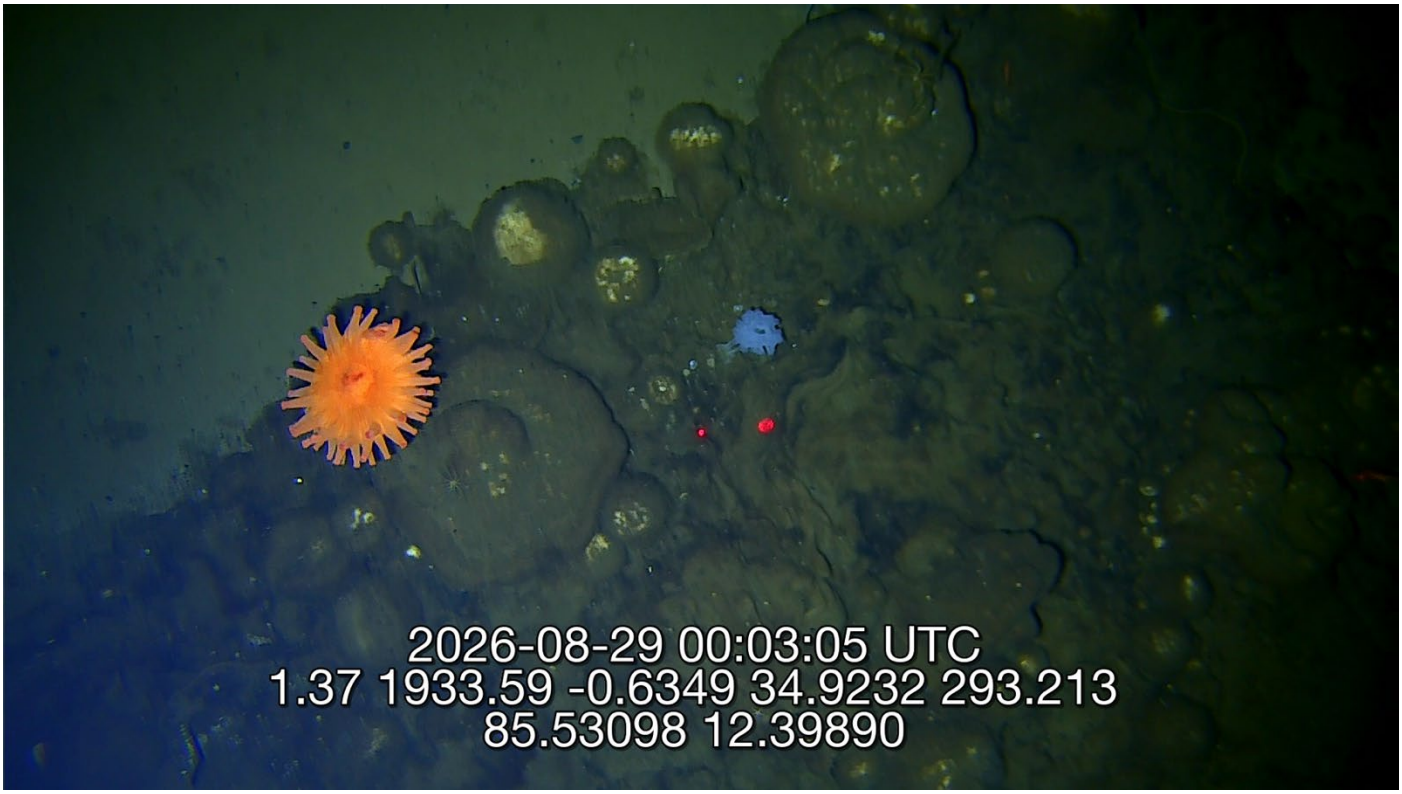


Figure 35. Example frame from video captured during CTD cast 348 over the R. K. Perry Seamount with the CTD package 1.37 m above the seabed at a depth of 1933 m. The red dots are the laser beams with 10 cm separation. © Paul A. Dodd

Mounting Arrangement

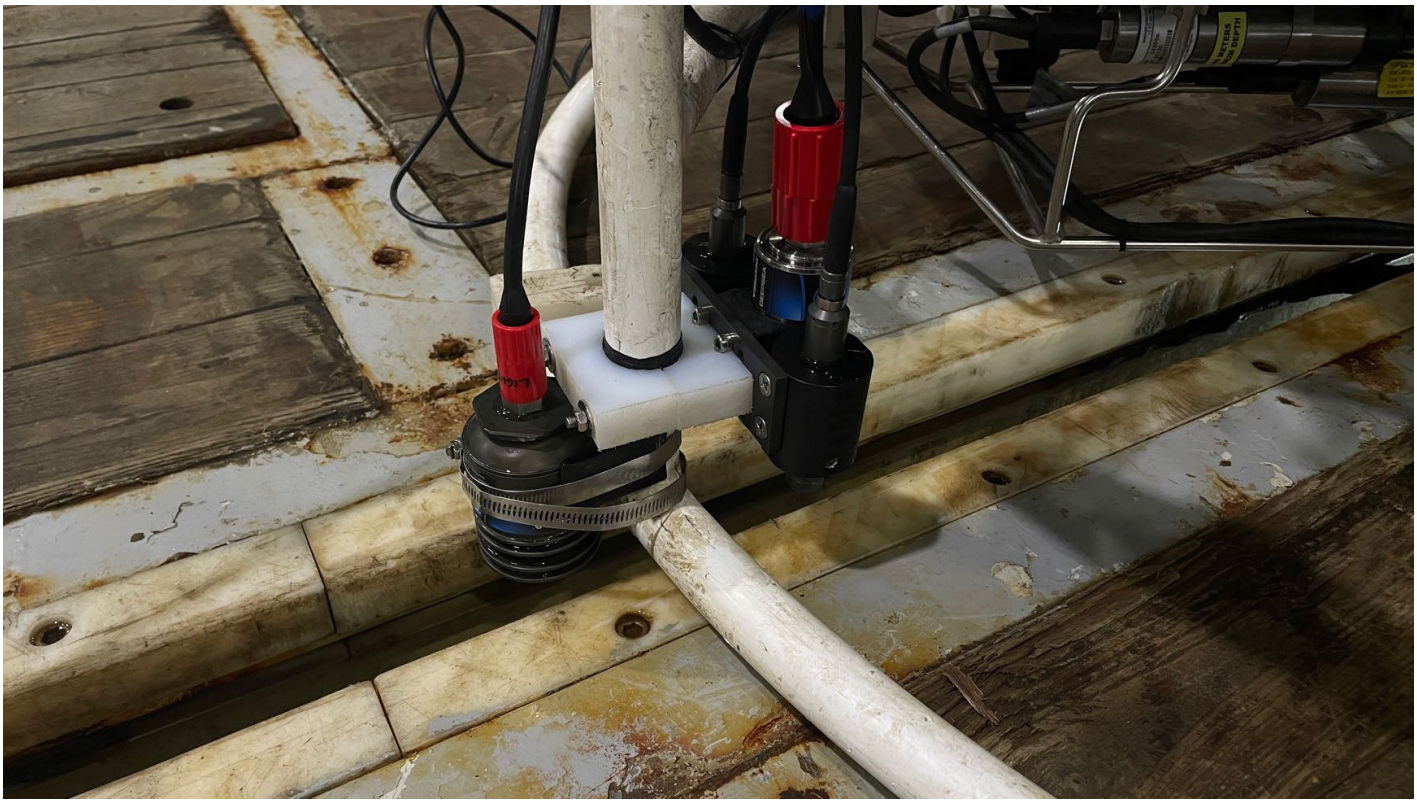


Figure 36.Camera, light and lasers mounted to the CTD rosette frame. © Paul A. Dodd



Figure 37. Control box mounted to the CTD rosette frame. © Paul A. Dodd

The camera and lasers were mounted to a plate provided by Deepsea Power and light. The plate includes adjustment screws to align the two lasers (a nominal distance of 100 mm apart) and plate ensures good alignment between the lasers and the camera. The camera/laser plate was attached to a vertical 38 mm tube on the CTD rosette frame using an NPI-made HDPE mount. The Deepsea mounting plate is tapped for ¼" standard pitch while the camera mount is tapped for M6.

The light was attached to the opposite side of the same 38 mm vertical tube. The light is mounted below the camera to avoid any possible shadowing using a hose clamp and cast rubber mounts. For the first cast (273) the camera was mounted on another vertical tube approx. 120 degrees away from the camera (the rosette has 6 main vertical tubes), but the field of view was only partially illuminated. With a single light, placement adjacent to the camera seemed to produce the best results. There was an air gap of 2-3 cm between the light and the deck when the CTD is on deck.

The control box was mounted to a vertical 38 mm tube of the CTD with the GISMA connector pointing down and the MCPH connectors pointing up, using cast mounts. This arrangement was chosen as one MCBH plug must be frequently removed to charge the camera and should remain as dry as possible. A single bottle (22) was temporarily removed while the CTD was on deck to improve access to the control box for charging. The niskin bottle was reattached before each cast.

Laser Configuration

Scale-indicating lasers were aligned a distance of 10 cm apart (Figure 38)



Figure 38. Deck test showing measured distance between lasers. Note that the camera is optimised for underwater use and does not perform well in air. © Hans Erik Alterskjær

Light Configuration

The light was operated at full power and set to a colour temperature of 5000 K. During station 0284, the light began to intermittently drop out, starting at 15:53, the light turns off and stays off at 20:52. This was due low battery in the control box. The system was fully charged before station 281, when the light was operated for 41:22 (mm:ss). The system was not charged before deployment at station 284. These results provide a real-world battery lifetime of 57 minutes and 15 seconds in water at -0.3°C.

Camera Configuration

Camera configuration is summarised in the Table 12 . During the first station (273) exposure was set to 'Auto - outdoor' as this seemed produce fair results. During station 0284 and later exposure was specified manually. Exposure times of 1/50 and 1/100 typically produced, good results at 1-1.5 m over the bottom, but needed active adjustment.

Video & CTD Data Recording

The video stream from the camera was recorded on a laptop. Time (UTC), ship position, CTD package pressure(depth), distance to seabed (from altimeter on CTD package), water temperature, salinity and dissolved oxygen concentration were streamed from SeaSave over UDP and logged as a subtitle track, for optional display on the video recordings during playback. Additional parameters may be extracted from CTD processed data files using the pressure and/or time information.

Video Stream Stability

Minor video stream instability (lag, dropped frames) was noted during CTD cast 333. This affects the videos recoded between from 21-23 August 2026 (during casts 333 to 336). Stream instability degrades the quality of videos recorded and is also a serious impediment to operations as the winch driver needs a stable video feed to maintain a safe distance over the seabed.

The cause of the video stream instability was initially suspected to be some kind of physical connection problem with the fibre optic link between the underwater control box and surface equipment. This was investigated by using a ping-logger app (PingPlotter for MacOS) to repeatedly ping the IP camera and a microcontroller in the underwater control unit and log the latency and packet loss. The logger revealed that during video dropouts there was almost total loss of packets sent to the camera, while packets sent to the microcontroller continued to be received without problems (Figure 39). The continued reception of packets by the microcontroller ruled out a physical connection problem between surface equipment and the underwater control box.

Between stations 335 and 336 two network routers equipped with SFP sockets were used to stream various video formats between laptops in the operations room and the CTD hanger via the fibre optic sea cable used by the camera system. No instability was encountered streaming either the HD video format used by the camera or 4K video at 30 FPS. This test showed that fibre optic link and underwater control box can support much higher volumes of network traffic than required for a stable 1080p stream.

The cause of stream instability was eventually traced to the processor in the camera itself being overloaded by certain combinations of video output settings. Demanding real-time video processing options (such as wide dynamic digital noise reduction), were found to reliably induce instability in the video feed. After this behaviour was identified, demanding processing options were avoided and the system performed without glitches until cast 409.

During cast 409 the surface media converter lost connection to the underwater network switch. The fault was traced to a failed SFP in the surface media converter, which had been powered continually since the start of the cruise (never turned off). The SFP was replaced with a compatible unit of a different brand and the link was immediately restored, but some stream instability persisted. As the cruise ended after just one further deployment, the cause of the problem could not be conclusively determined. It is possible that the SFPs from different manufacturers do not provide as stable as link as a matched pair.

Table 12. Camera configuration. Note that changing the parameters underlined in bold affects the stability of the camera. In particular, specifying the output mode W-DNR reliably overloads the processor in the camera and causes the feed to freeze and the control panel to become unresponsive after a few tens of seconds. Setting a bit rate above 15Mbit causes minor instability. Both effects seem to be related to camera processing power and not the network connection.

IRIS Mode: ALC **EXPOSURE** Brightness: 1 Anti Saturation: OFF Shutter: AUTO Mode: Outdoor Slow Shutter: OFF AGC Max: 45 dB AGC Min: 0 dB AE SPEED:10 **BACKLIGHT** Mode: OFF **HLC** Level: 10 Color: BLK **BLC** BLC Mode: Customize BLC OSD ON: Off	**COLOR:** AWB: Manual Color Gain: 2 C Temp: 5000K R Gain: 10 B Gain: 10 **PICTURE:** Gamma: Auto Auto Day: 0.55 Auto Night: 0.45 Sharpness: 8 Mirror: off Flip: off ACE: off Defog: off **OUTPUT SET** Mode**: <u>DNR 30fps</u>** Level: Middle Frequency: 50Hz	**VIDEO INFORMATION** Max Resolution: 1920x1080 Max FPS: 30 Output Mode: **<u>30 FPS DNR</u>** RTSP Port: 554 HTTP & ONVIF Port: 80 Authenticate Streaming: off Select Recording: H.264 MAIN Time Stamp Display: off Select Audio: Internal Microphone H.265 Main H.264 profiles: Main H.264 Resolution: 1920x1080 H.264 Quality: 30 [10-51] H.264 GOP(IDR): 30 [1-240] H.2664 FPS: 30 FPS Bitrate Control: CBR [VBR/CBR/CVBR] H.264 Main Bitrate: **<u>15Mbit</u>** H.264 Sub H.264 profiles: Baseline H.264 Resolution: 640x480 H.264 Quality: 30 [10-51] H.264 GOP(IDR): 30 [1-240] H.2664 FPS: 30 FPS Bitrate Control: CBR [VBR/CBR/CVBR] H.264 Sub Bitrate: 2Mbit

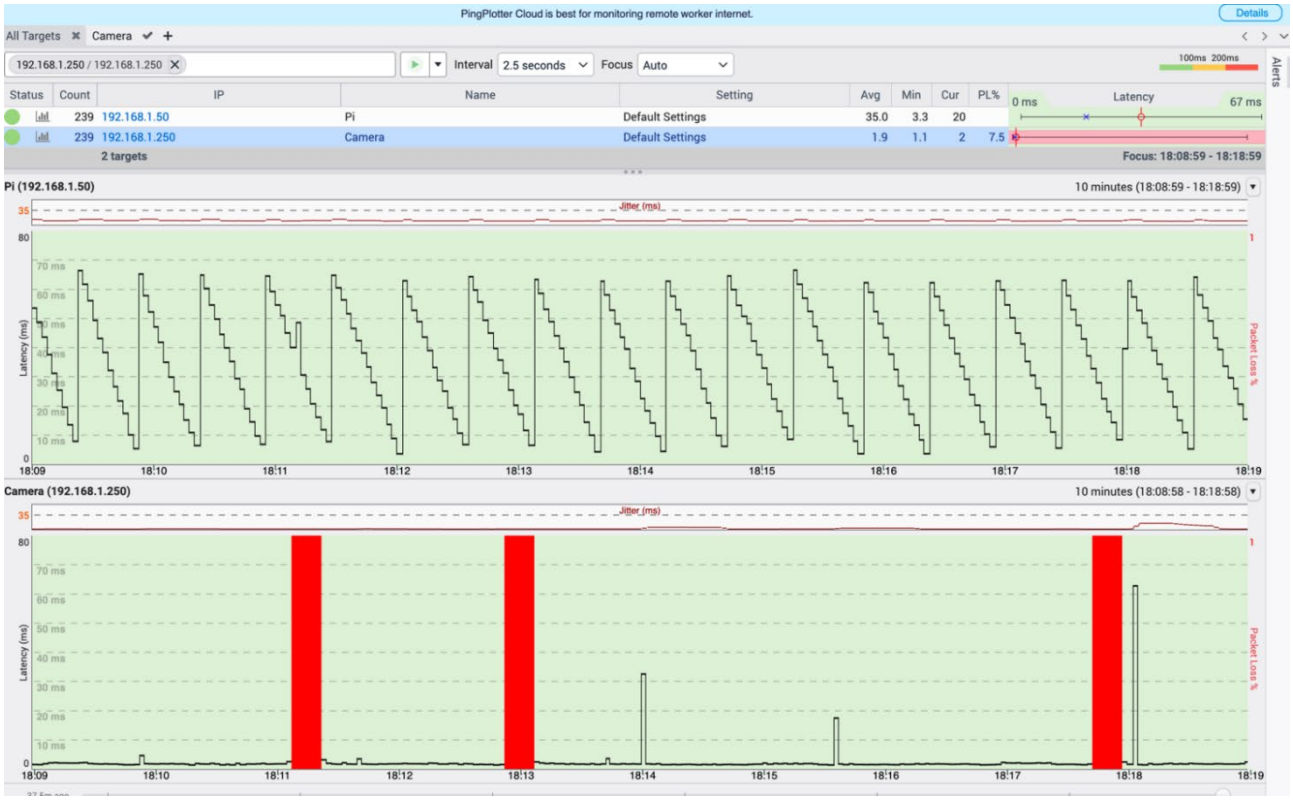


Figure 39. Results of ping logger survey

Microstructure and Turbulence (VMP) Measurements

Contact: Morven Muilwijk (Morven.Muilwijk@npolar.no)
Collected by: Morven Muilwijk

Microstructure profiling during the cruise was performed using a loosely tethered, free-fall vertical microstructure profiler (VMP-250, SN-573; Rockland Scientific, Canada). The instrument was equipped with a nose-mounted conductivity-temperature sensor, two piezoceramic shear probes aligned orthogonally to each other, and two fast-response FP07 thermistor probes for micro-temperature measurements. The VMP-250 has internal batteries and memory but was deployed using the NPI MSS data-transfer cable (Sea & Sun Technology), an almost neutrally buoyant cable connected to the VMP-250 using a Yale grip. During EBT2026, two profiling setups were used:

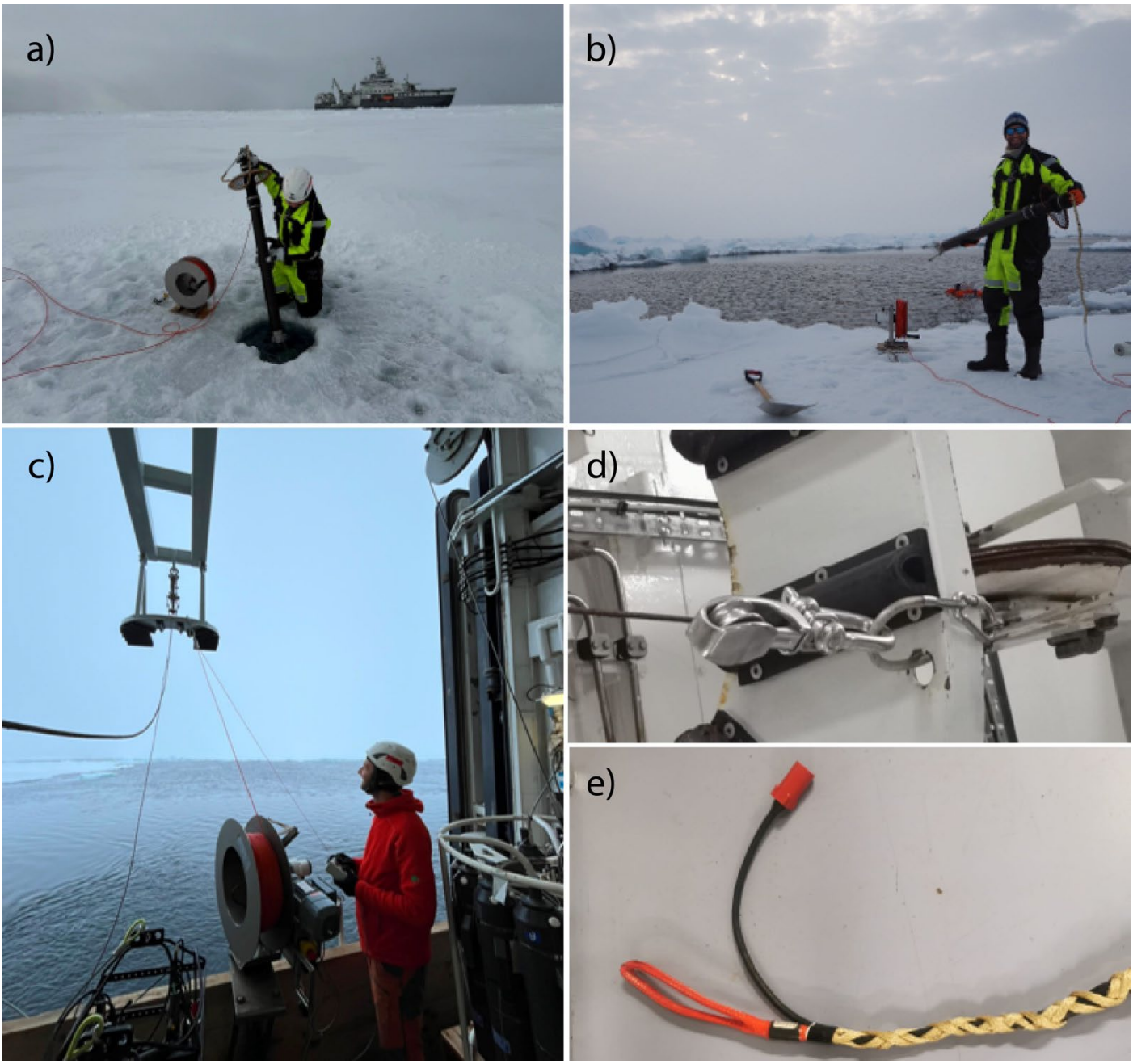


Figure 40. Overview of VMP profiling setups used during EBT2026. (a) Profiling through an auger hole in the sea ice (photo: Tobi Ehmen); (b) profiling from the edge of an ice floe into a natural lead (photo: Ivan Coutain); (c) profiling from the ship (photo: Håkon Sandven); (d) running block used to guide the data-transfer cable during ship-based profiling; and (e) Yale grip used to connect the data-transfer cable to the VMP. © Morven Muilwijk

Profiling during ice stations

The VMP was operated from the sea ice during selected A-stations and longer ice stations at the North Pole and in the Makarov, Amundsen, and Nansen basins. The VMP was deployed through an opening made from four overlapping 10-inch auger holes. The profiling site was typically located a few hundred meters upstream of the ship to ensure sampling of relatively undisturbed waters. At selected ice stations, profiling was instead carried out from the edge of the ice floe into a natural lead to sample a wider range of boundary-layer conditions. A manual winch was set up at the profiling site, and three casts were typically performed during each session. During longer ice stations, several profiling sessions were conducted each day. For an overview of the ice conditions, auxiliary measurements, and individual station maps, see Section “Ice Station Overviews”. A complete overview of casts is provided in Table 13.

Profiling from the ship

During B-stations and A-stations without an ice station, the VMP was deployed from the starboard side of the ship through the “small” CTD hangar. A motor-driven winch was mounted on the railing, with the cable running through a smooth-running block suspended from the CTD frame. The frame was extended away from the ship during deployment and recovery to prevent the instrument and cable from contacting the ship’s side. During the downcast, the cable was paid out rapidly to maintain a slack tether, allowing the instrument to free-fall and minimizing the transfer of vibrations from the winch and block to the profiler. One cast to approximately 300 m was performed at each station. VMP profiling was always carried out immediately upon arrival at the station, with a small opening in the sea ice on the starboard side of the ship and the ship drifting towards port, away from the profiler. All propellers and thrusters were switched off before and during profiling to minimize ship-induced disturbance and the risk of cable entanglement. Due to the depth of the ship’s keel, data from the upper 12 m of each ship-cast should be excluded from the dissipation estimates.

Probe configuration and profile QC

Profile kinematics were generally optimal during profiling from the sea ice, but somewhat less favourable for ship-based profiles. During periods of strong drift, it was difficult to pay out the cable rapidly enough at the beginning of the cast, occasionally resulting in cable tension, increased vibrations, and a less uniform sinking rate.

The VMP-250 appeared to perform well throughout the cruise, with no obvious physical damage to the instrument or sensors. However, some shear probes experienced sudden “jumps” in estimated dissipation levels; these were investigated through probe swaps, bench tests, and cross-probe comparisons in close contact with Rockland Scientific. The reason for these changes remains unclear, also to Rockland Scientific. All changes in probe configuration and QC assessments are documented in VMP_log_probe_QC.xlsx, the associated email communication has been archived, and all shear probes will be returned to Rockland for post-cruise laboratory analysis and recalibration.

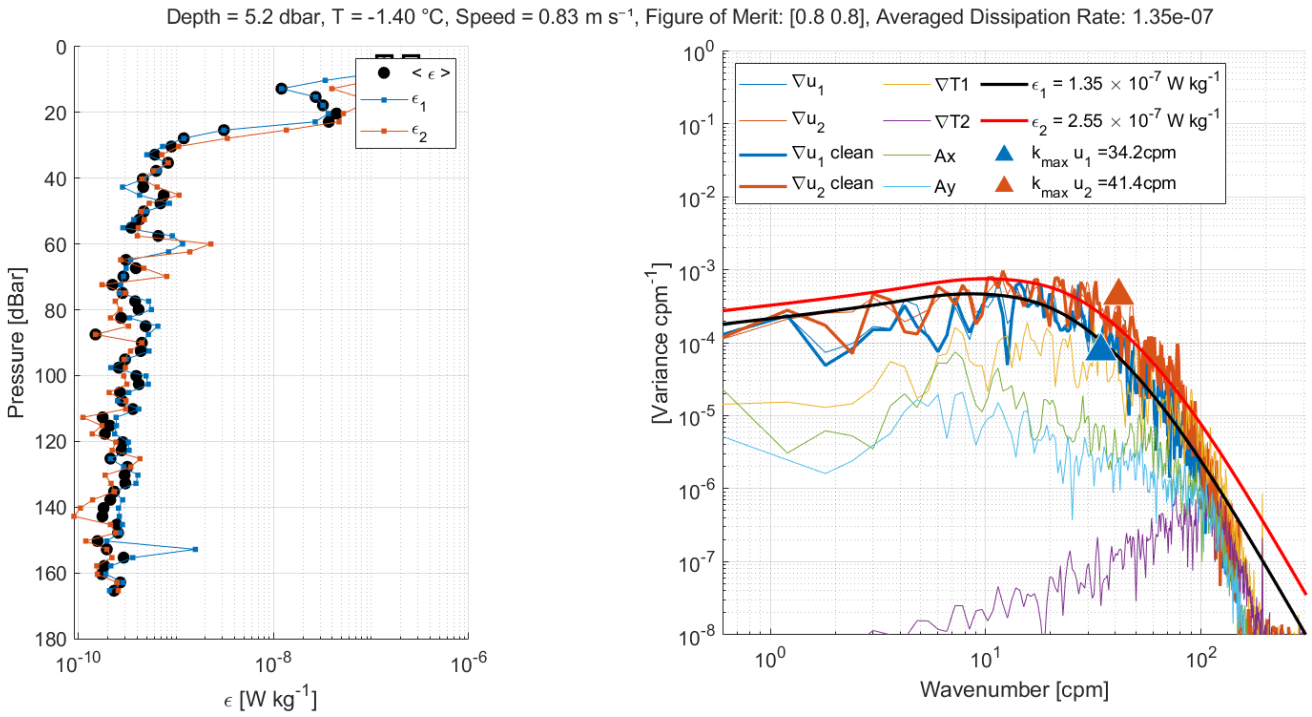


Figure 41. Example of dissipation profile and spectra from the uppermost bin at North Pole station (before T2 was included), processed using Rockland's Zissou.

Table 13. Overview of the totally 68 VMP profiles obtained during EBT2026. Dates and times are given in UTC. Stations NP=Northpole, AB=Amundsen Basin, NB=Nansen Basin. All profiles were operated by Morven Muilwijk except nr 32 (by Håkon Sandven).

Session	Station name	# of casts	Date		Start Time		Latitude, N		Longitude, E		Ship or Ice	Filename	Comments
			mm	dd	HH	MM	deg	min	deg	min			
1	N	3	7	30	8	15	89	54.15	063	47.12	ice	data_0004.p	Strong wind/drift, 1km diameter floe
2	NP	2	7	30	16	30	89	49.20	051	07.30	ice	data_0005.p	Even stronger wind
3	60C	3	8	7	11	0	86	28.78	-072	00.45	ice	data_0006.p	100% 3m ice cover (Makarov Basin Ice Station 10)
4	60C	3	8	7	19	30	86	29.20	-071	07.80	ice	data_0007.p	100% 3m ice cover (Makarov Basin, Ice station 10)
5	59B	2	8	8	6	30	86	36.34	-070	48.59	ship	data_0008.p	First ship deployment. Fall rate not constant. Too slow spooling.
6	57A	3	8	11	13	30	86	39.20	-065	04.83	ice	data_0009.p	Slow drift. Thick compact ice. (Makarov Basin, Ice station 12)
7	55B	1	8	14	8	30	86	31.97	-060	33.47	ship	data_0010.p	Little wind. Tiny open pool, 99% ice cover. 320m
8	E3B	1	8	16	0	30	88	13.12	-049	14.58	ship	data_0011.p	Added T2. Little drift. 90% ice cover. (not main transect)
9	E5A	3	8	16	16	30	88	14.25	-040	07.70	ice	data_0012.p	1.8m thick ice, no open water. (not main transect due to detour)
10	E7B	1	8	17	4	49	88	23.73	-029	25.34	ship	data_0013.p	Little drift. 90% ice cover. (not main transect due to detour)
11	E9A	1	8	17	14	18	88	11.59	-021	30.98	ship	data_0014.p	Some wind. 80% ice cover.
12	E11B	1	8	18	6	5	87	53.58	-017	58.02	ship	data_0015.p	Replaced Sh1 M3504 with M3466 because of suspicious data.
13	E13A	3	8	18	17	0	87	34.89	-015	01.05	ice	data_0016.p	Replaced Sh1 M3466 with M3465 Open lead, 10m wide
na												data_0017.p	Bench test. See probe log.
14	E15B	1	8	19	5	11	87	15.61	-013	22.02	ship	data_0018.p	Swapped sh1 and sh2. sh1 now M3503 and sh2 now M3465.
15	E17A	3	8	19	13	25	86	56.55	-011	55.13	ice	data_0019.p	floe edge. Big open lead (a few hundreds of meters.
16	E19B	1	8	20	1	4	86	41.38	-010	13.82	ship	data_0020.p	From ship. Ok kinematics.

17	AB	3	8	22	15	54	86	32.88	-005	57.94	ice	data_0021.p	Thick ice, draining meltpond.
18	AB	3	8	23	8	12	86	31.05	-006	24.81	ice	data_0022.p	Thick ice. Draining meltpond (strong flow)
19	AB	3	8	23	16	55	86	29.34	-006	16.03	ice	data_0023.p	Swapped swapped M3503 with M3466. Draining meltpond
20	35B	1	8	27	6	30	86	19.66	-001	11.67	ship	data_0024.p	Very strong drift. Difficult to pay out fast enough
21	33A	1	8	27	13	33	86	06.29	002	56.31	ship	data_0025.p	Medium drift, away from ship, under big floe.
22	31B	0	8	28	2	31	85	52.50	006	18.71	ship	data_0026.p	ABORTED due to winch issue.
23	29A	3	8	28	13	57	85	36.83	009	29.17	ice	data_0027.p	Big open lead. From floe edge
24	27B	1	8	29	10	20	85	22.66	011	57.21	ship	data_0028.p	Good kinematics
25	25A	1	8	29	21	51	85	06.26	014	34.24	ship	data_0029.p	Good kinematics
26	23B	1	8	30	10	18	84	49.76	016	47.61	ship	data_0030.p	Very calm conditions.
27	21A	1	8	30	17	18	84	32.28	018	48.23	ship	data_0031.p	Very calm open lead
28	19B	1	8	31	4	37	84	15.34	020	29.82	ship	data_0032.p	Complete open water. 1m waves + strong (1.8kn) drift
29	NB	3	9	1	17	35	83	50.64	021	51.35	ice	data_0033.p	Big floe, medium drift, thinner flat ice.
30	NB	3	9	2	14	53	83	56.21	021	19.61	ice	data_0034.p	Little drift.
31	NB	3	9	3	4	47	83	57.45	020	53.38	ice	data_0035.p	Strong wind.
32	15B	1	9	4	0	45	83	39.89	023	41.28	ship	data_0036.p	
33	13A	1	9	4	5	52	83	21.96	025	01.43	ship	data_0037.p	Relatively calm conditions.
34	11B	1	9	5	4	54	83	03.41	026	14.31	ship	data_0038.p	Strong drift
35	9A	1	9	5	12	33	82	44.94	027	20.54	ship	data_0039.p	Open water, some wind
36	7B	1	9	6	2	13	82	26.70	028	21.95	ship	data_0040.p	Open water, no wind. Sh2 suddenly deviates. Removed for calibration.
37	5A	1	9	6	7	42	82	07.61	029	19.86	ship	data_0041.p	Only T1 and T2
38	3B	1	9	7	12	10	81	36.86	030	42.54	ship	data_0042.p	Only T1 and T2
39	1A	1	9	7	15	46	81	29.89	031	00.75	ship	data_0043.p	Only T1 and T2. Beyond ice edge.

Optical Profiler

Contact person: Mats Granskog (mats@npolar.no)
Responsible persons on board: Håkon Sandven (hakon.sandven@uib.no)

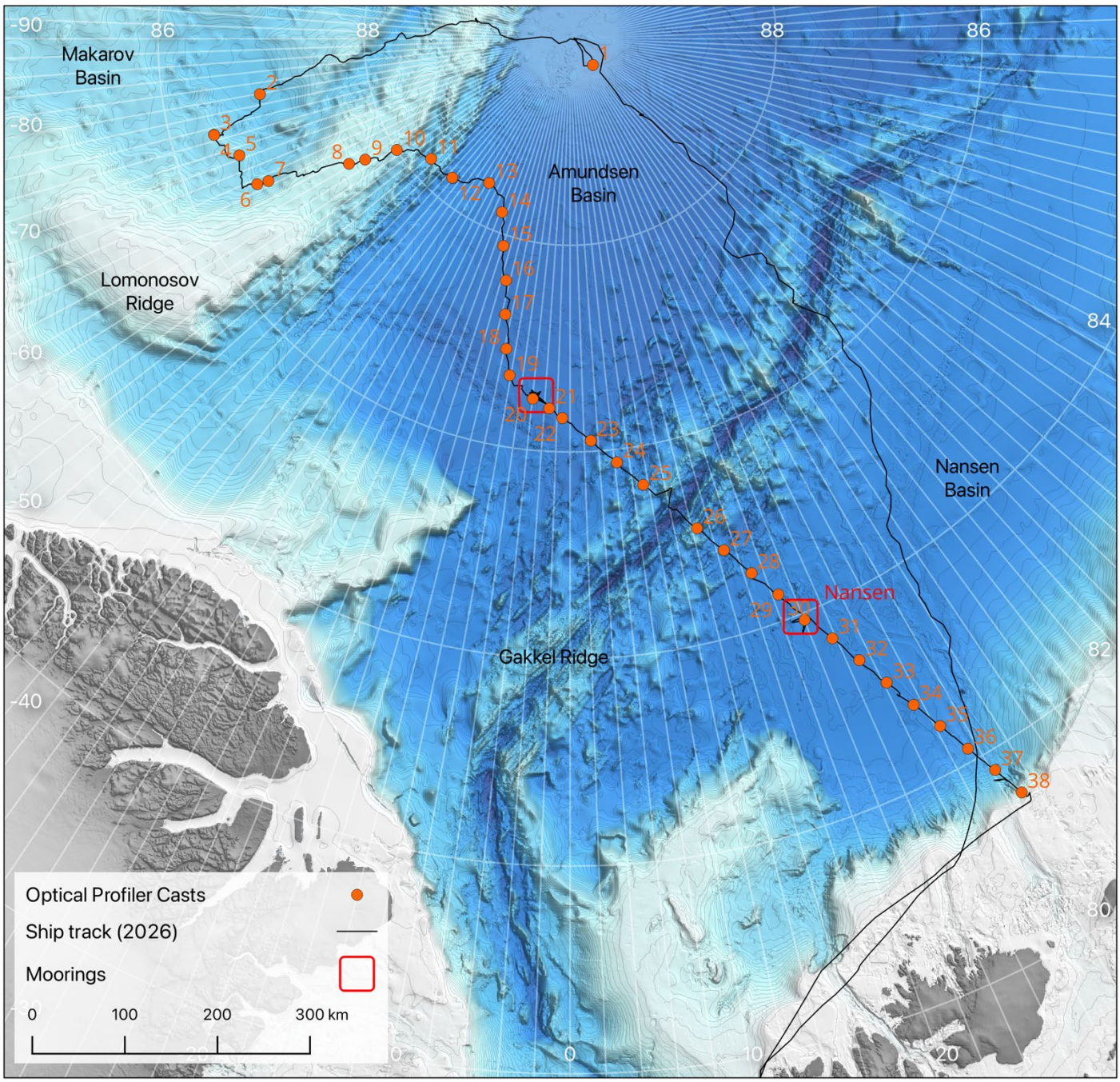


Figure 42. Overview map showing stations where the optical profiler was deployed. Background bathymetric and topographic data from IBCAO 4.

An instrument package was deployed from the small CTD-hangar to profile optical, biogeochemical and hydrographical properties of the upper ocean. The nominal depth of the profiles was 200 m, but several profiles were extended to deeper depths, down to a maximum of 320 m. First, we lowered the instruments to 20 m for five minutes for debubbling and thermal stabilization, before beginning the profile from the surface. Descent speed was 0.3-0.4 m/s. The instrument package consisted of a SeaBird ac-s (NPI, SN 311), a RBR Tridente (NPI, SN-20177), a Seabird SUNA V2 (NPI, SN-1618) and a SBE37 CTD (NPI, SN 20177). For these instruments, the data was logged simultaneously by a SeaBird DH4 datalogger (UiB-IFT, SN-608) and powered by a SeaBird aluminium battery pack (UiB-IFT, 15V). The battery consumption was very high due to the ac-s and SUNA power draw, and the cold temperatures; four sets of 30 D-cell batteries were needed to complete the cruise.

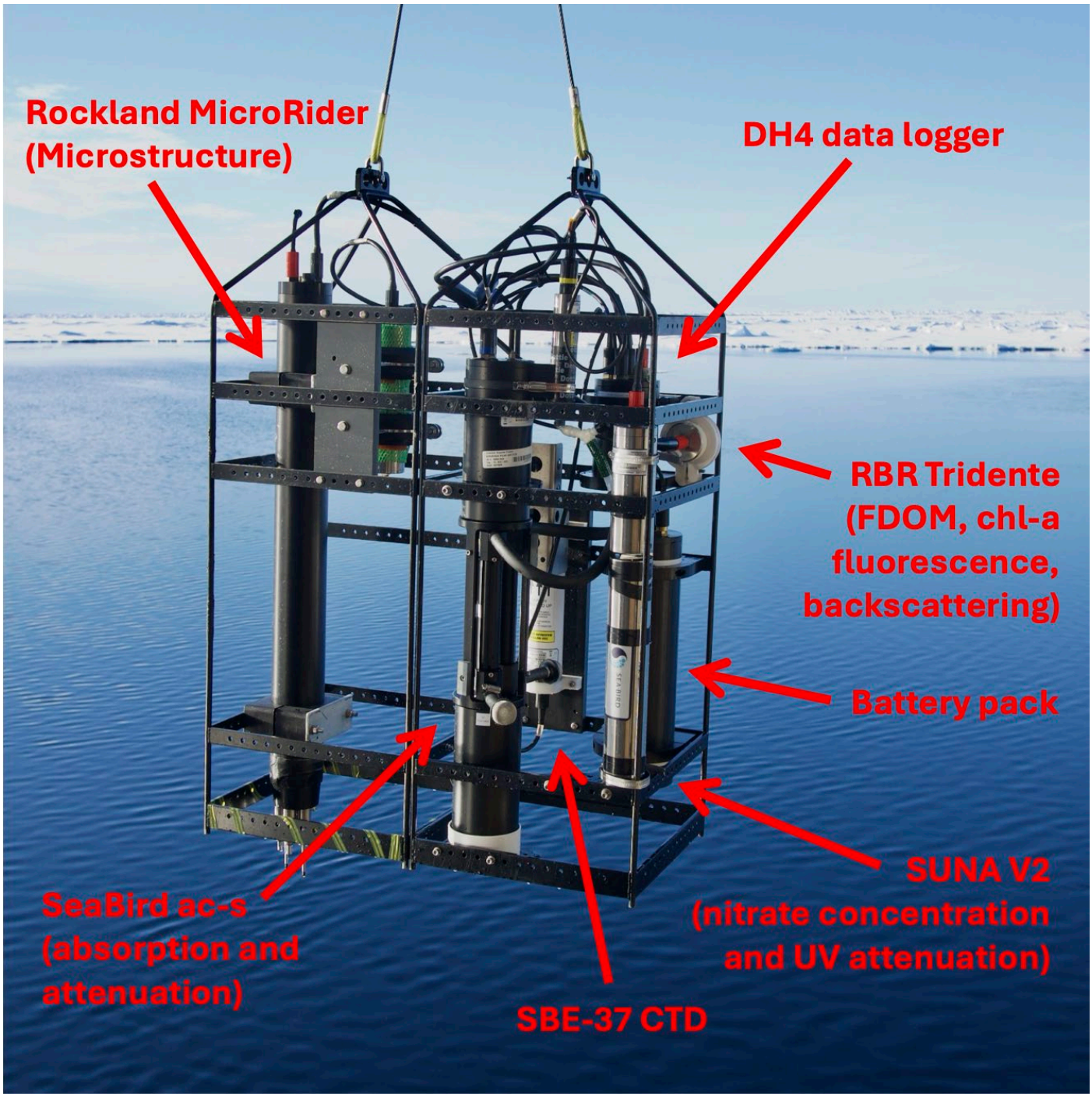


Figure 43. The optical profiler. © Håkon Sandven

Additionally, a Rockland MicroRider (UiB-GFI) was deployed on the profiler, with internal logging and external battery. All instruments were mounted on two identical metal frames screwed together. Some biogeochemical instruments, deployed on the moorings, were also placed on the frame on selected stations for testing and cross calibration.

The Seabird ac-s measures the spectral absorption and beam attenuation coefficient, which can be used to estimate light extinction in water (how fast does light levels decrease with depth). These properties are also closely related to biogeochemical properties like phytoplankton biomass and freshwater composition. The RBR Tridente measures fluorescent dissolved organic matter, Chl-a fluorescence, and optical backscattering at 700nm. This sensor gave a factor 10 overestimate of the Chl-a fluorescence (confirmed by the manufacturer). The SUNA measures UV attenuation, which is used to derive nitrate concentration.

Table 14. Overview of all optical stations conducted during the cruise.

Station ID	Date	Time (UTC)	Datalogger Filename	Microrider Filename	CTD Cast #	Latitude	Longitude	Max Depth (dbar)
Optics01	31/07/2026	06:17	*.000	NaN	277	89.6621	41.1134	215
Optics02	04/08/2026	14:40	*.003	DAT_006.p	281	86.940751	-79.819112	282
Optics03	06/08/2026	17:05	*.006	DAT_008.p	285	86.4213676	-74.903605	315
Optics04	08/08/2026	09:18	*.007	DAT_009.p	291	86.5968	-70.6331	212
Optics05	11/08/2026	10:47	*.008	DAT_010.p	296	86.6516149	-65.139547	203
Optics06	12/08/2026	11:17	*.009	DAT_011.p	297	86.7635452	-64.803084	203
Optics07	14/08/2026	08:21	*.010	DAT_013.p	299	87.5349474	-60.561711	202
Optics08	14/08/2026	17:44	*.011	DAT_014.p	300	87.6914943	-59.537193	319
Optics09	15/08/2026	08:40	*.012	DAT_015.p	302	88.0008385	-57.309849	203
Optics10	16/08/2026	00:46	*.013	DAT_018.p	305	88.2187	-49.2430	204
Optics11	16/08/2026	12:33	*.014	DAT_019.p	307	88.2334894	-40.353289	320
Optics12	17/08/2026	05:17	*.015	DAT_020.p	312	88.3968842	-29.386991	266
Optics13	17/08/2026	14:45	*.017	DAT_021.p	314	88.1950594	-21.485461	201
Optics14	18/08/2026	06:40	*.018	DAT_022.p	318	87.8930202	-17.887568	319
Optics15	18/08/2026	20:18	*.019	DAT_024.p	320	87.5789688	-14.874592	202
Optics16	19/08/2026	05:55	*.020	DAT_026.p	324	87.2584203	-13.269277	318
Optics17	19/08/2026	16:45	*.021	DAT_027.p	326	86.9346679	-11.662293	203
Optics18	20/08/2026	01:27	*.022	DAT_029.p	330	86.6897801	-10.230468	320
Optics19	21/08/2026	14:13	*.023	DAT_030.p	333	86.4956241	-5.9251274	321
Optics20	26/08/2026	10:41	*.024	DAT_032.p	337	86.4159859	-3.2343303	203
Optics21	27/08/2026	06:39	*.025	DAT_034.p	338	86.3266991	-1.1749375	264
Optics22	27/08/2026	13:39	*.026	DAT_035.p	340	86.1042124	2.9634738	202
Optics23	28/08/2026	02:39	*.027	DAT_039.p	344	85.8745787	6.32458857	319
Optics24	28/08/2026	09:17	*.028	DAT_040.p	348	85.6250144	9.345662	202
Optics25	29/09/2026	10:28	*.029	DAT_044.p	351	85.3776438	11.9394058	201
Optics26	29/09/2026	21:48	*.030	DAT_045.p	354	85.104604	14.5724686	202
Optics27	30/08/2026	10:44	*.031	DAT_047.p	358	84.8305977	16.78258	320
Optics28	30/08/2026	17:27	*.032	DAT_048.p	360	84.5372411	18.8024036	202
Optics29	31/08/2026	04:53	*.033	DAT_049.p	364	84.2550051	20.5903689	39
Optics30	31/08/2026	14:02	*.035	DAT_053.p	368	83.9331307	22.0238201	228
Optics31	04/09/2026	00:51	*.036	DAT_054.p	373	83.6653807	23.6852731	285
Optics32	04/09/2026	05:56	*.037	DAT_055.p	375	83.366143	25.0250616	204
Optics33	05/09/2026	05:05	*.039	DAT_056.p	379	83.0560991	26.2442337	310
Optics34	05/09/2026	18:47	*.040	DAT_057.p	381	82.7469316	27.3436886	203
Optics35	06/09/2026	02:24	*.041	DAT_058.p	385	82.4462694	28.368143	316
Optics36	06/09/2026	07:48	*.042	DAT_060.p	387	82.1257687	29.3337947	203
Optics37	07/09/2026	00:20	*.043	DAT_061.p	397	81.8170677	30.2355224	346
Optics38	07/09/2026	16:26	*.044	DAT_062.p	406	81.499571	31.0029636	344

Microstructure measurements on optical profiler

Contact person: Ilker Fer (ilker.fer@uib.no)
Responsible persons on board: Håkon Sandven (hakon.sandven@uib.no)

The Rockland MicroRider was deployed on all casts along the transect (after the North Pole). Using an improvised pallet and probe guard setup, the probes could be installed so that they could protrude beneath the instrument frame, improving measurements quality. The shear probes did not work properly and were removed after cast 25. One of the temperature probes also did not give valid data.

Niskin Bottle Samples

Dissolved oxygen measurement by Winkler titrations (WIN)

Contact person: Paul A. Dodd (paul.dodd@mnpolar.no)
Responsible persons on board: Tobi Ehmen, Florian Heinze and Paul A. Dodd

Laboratory dissolved oxygen measurements are used to validate the dissolved oxygen sensors on the CTD. Samples were collected at selected depths and stations. Triplicate samples were collected from each sampling depth in 3 x 125 ml volume-calibrated glass sample bottles. Samples were immediately preserved with Winkler reagents, stored under water, and in the dark for > 24 hours before potentiometric titration with Sodium Thiosulphate using a Metrohm 916 Ti-touch titrator. A pre-prepared 0.01 M NaI reference solution from OSIL Scientific was used as a standard. This standard was measured before each set of 24 samples.

CFC-12 and SF6 (CFC)

Contact person: Are Olsen (Are.Olsen@uib.no)
Responsible persons on board: Florian Heinze, Tobi Ehmen

Samples for the transient tracers dichlorodifluoromethane (CFC-12) and sulfur hexafluoride (SF6) were collected from the CTD casts. Samples were collected for the full water column in a staggered pattern along the transect across all A and B stations excluding the North Pole. Transient tracers such as CFC-12 and SF6 provide complementary information on ocean circulation and ventilation. They are anthropogenic gases with well known atmospheric concentration histories and enter the ocean through air-sea gas exchange. Their distribution can thus be used to identify water masses and estimate the water-mass age. The information will provide the basis for estimating the transport and storage of anthropogenic carbon within the Arctic Ocean.

The transient tracer samples were drawn first from the Niskins using ~300 ml glass ampoules in combination with a dedicated metal tubing construction to ensure no contact of the sample with the atmosphere. A nitrogen headspace has been set before flame sealing the glass. Samples are stored at room temperature until analysed at the Geomar in Kiel, Germany.

Alkalinity and DIC (DIC)

Contact person: Are Olsen (Are.Olsen@uib.no)
Responsible persons on board: Florian Heinze, Tobi Ehmen

Samples for dissolved inorganic carbon (DIC) and total alkalinity (AT) were collected from the CTD casts. Samples were collected for the full water column for all standard depths across all A and B stations. DIC describes the sum of dissolved CO2, carbonic acid, bicarbonate- and carbonate ions in seawater, while AT is a measure of the capacity of the ocean to neutralize acids and resist sudden changes in pH levels. Together, they can be used to provide information on the state of the marine carbonate system.

The DIC/AT samples were drawn first from the Niskins, unless transient tracer samples or dissolved oxygen were sampled at the depth. Samples were taken using establish techniques for the sampling of gases into 250 ml glass bottles and preserved with 50 µl Mercury Chloride and stored in the cool and dark for post-cruise analysis. They are analysed at the Geophysical Institute of the University of Bergen.

A total of 90 duplicates were collected at selected stations (37A, 33A, 25A, 17A, 9A and 1A) for Laboratory comparison. The duplicates are analysed at the CO2 lab, Institute of Marine Research, Fram Centre (Tromsø).

CDOM & FDOM (CDO)

Contact person: Mats Granskog (mats.granskog@npolar.no)
Responsible persons on board: Mats Granskog

DOM is a ubiquitous component of aquatic systems, present in all natural waters, representing a major carbon reservoir. During the EBT2026 cruise, samples for the analysis of different fractions of the DOM-pool were collected from water samples. Those samples were destined for both quantification and characterization of DOM with optical spectroscopy. Coloured (CDOM) and fluorescent (FDOM) DOM samples were directly gravity filtered through 0.22 µm pore size membrane filter cartridges (Millipore Opticap XL 2, Durapore membrane) into acid-washed, pre-combusted amber glass vials/bottles and stored at +4C in the dark.

CDOM is the DOM fraction that is colored (i.e., absorbs light) and can often be used as a proxy to describe the amount of DOM in natural waters (by a wavelength-specific absorption coefficient measured with a spectrophotometer). FDOM is the CDOM fraction that can further emit light at longer wavelengths (i.e., fluoresc) after excitation with ultraviolet and/or visible light. FDOM is often used to describe the composition of DOM based on the different fluorophores identified in the respective water samples (from so-called excitation-emission matrices or EEMs).

CDOM and FDOM samples were collected from type A and B CTD casts (at all standard sampling depths shallower than 400 m, at nearly all A and B stations north of the Nansen Basin mooring site). The plan after the cruise is to measure the samples (on a spectrophotometer for spectral absorbance and spectrofluorometer for spectral fluorescence) on board RV *Kronprins Haakon* during the cruise following the EBT2026 cruise in October (NPI cruise to Fram Strait, measured by C. Stedmon (DTU) & team).

DOC (DOC)

Contact person: Eva Lisa Doting (eva.doting@nina.no)
Responsible persons on board: Mats Granskog

DOM is a ubiquitous component of aquatic systems, present in all natural waters, representing a major carbon reservoir. During the EBT2026 cruise, samples for the analysis of dissolved organic carbon (DOC) were collected from water samples. DOC samples were directly gravity filtered through 0.22 µm pore size membrane filter cartridges, the same filter that was used for CDOM/FDOM. DOC samples were collected into 40 mL pre-combusted (550 °C, 5h) amber glass vials with acid-washed PTFE-lined caps. DOC samples were acidified to pH 2 using hydrochloric acid (37%, EMSURE) and stored cold (4 °C) and dark until analysis.

DOC samples were collected from type A and B CTD casts (at all standard sampling depths shallower than 400 m, at nearly all A and B stations north of the Nansen Basin mooring site), because we ran out of sample vials no DOC samples were collected south of the 15B station. All DOC samples were collected together with CDOM/FDOM samples.

DOC concentrations will be determined on a Shimadzu TOC analyser via high-temperature catalytic oxidation with infrared detection (lab tbd). This is a collaboration within RT1 in Arctic Ocean 2050 (Eva Lisa Doting, Amanda Poste and Mats Granskog). Data will be used to assess terrigenous DOM inputs into the Arctic Ocean (together with CDOM/FDOM and DOM analyses) and provide insight into the transport, mixing and cycling of terrestrial carbon within Arctic water masses, contributing to an improved understanding of the role of land-ocean interactions in Arctic Ocean carbon cycling.

Nutrients (NUT)

Contact person: Paul A. Dodd (paul.dodd@npolar.no)
Responsible persons on board: Mats Granskog, Morven Muilwijk

Samples for determination of the inorganic nutrients nitrate, nitrite, phosphate and silicate in seawater were collected at A and C stations. Samples were preserved with 250 µl Chloroform and stored at (+4°C) in the dark for post cruise analysis.

δ18O (O18)

Contact person: Paul A. Dodd (paul.dodd@npolar.no)
Responsible persons on board: Mats Granskog, Morven Muilwijk, Paul A. Dodd

The parameter δ18O describes the ratio of 18O to 16O isotopes in the H2O molecule. δ18O is a tracer for water which has at some point evaporated and is useful to separate sea ice meltwater from river input & precipitation. Seawater δ18O samples will be measured ashore using a dual-inlet mass spectrometer.

δD (DEU)

Contact person: Harald Sodemann (harald.sodemann@uib.no)
Responsible persons on board: Mats Granskog, Morven Muilwijk, Paul A. Dodd.

The parameter δD describes the ratio of Deuterium to Hydrogen isotopes in the H2O molecule. δD can be used as an additional climatic tracer together with δ18O, to gain further insight into the original sources of freshwater. Seawater δD samples will be measured ashore by cavity ring-down spectroscopy.

Laboratory salinity (SAL)

Contact person: Contact: Paul A. Dodd (paul.dodd@npolar.no)
Responsible persons on board: Morven Muilwijk, Florian Heinze, Tobi Ehmen, Paul A. Dodd

Laboratory salinity measurements are used to validate and (if necessary) calibrate conductivity sensors on the CTD. Salinity samples were collected at all depths on all casts from the primary CTD package and at selected depths from the auxiliary CTD package, but where multiple Niskin bottles were closed at a single depth only one was sampled. 250 ml glass sample bottles were filled from Niskin bottles and analysed onboard using a Guildline Portasal salinometer (SN 70177). The air temperature remained at 21 +/- 2 °C for the duration of the cruise and the bath temperature was set at 23 degrees for the entire cruise. Samples were stored next to the salinometer for at least 24 hours before analysis and the salinometer was standardised with OSIL P-Series reference seawater before and after each batch of 24 samples.

Ice nucleating particles (INP)

Contact person: Robert Oscar David (r.o.david@geo.uio.no)
Responsible persons on board: Tim Carlsen (tim.carlsen@geo.uio.no)

Ice-nucleating particles (INPs) are aerosol particles that strongly influence the climate system. They act as seeds for ice crystals to form and grow into snow and rain, help determine cloud lifetimes, and affect how clouds interact with solar radiation. Despite their importance, the sources, abundance and atmospheric residence time of INPs remain poorly constrained.

During the cruise, INP samples were collected from type A CTD casts, typically covering approximately 16 standard depths per cast from the surface to the bottom of the ocean. The water samples were frozen onboard and will be analyzed offline at the University of Oslo using the DRoplet Ice Nuclei Counter Oslo (DRINCO), which employs a drop-freezing technique. The ice-nucleating ability of surface water samples will be compared to INP concentrations measured in air (collected with a liquid impinger). In addition, deep-water samples will be used in an attempt to reconstruct a historical record of atmospheric INP concentrations.

Imaging flow cytometry (CTB)

Contact person: Glaucia Fragoso (glaucia.fragoso@sintef.no)
Responsible person on board: Natalie Summers

Samples of 40mL were collected at the chl a max from niskin bottles from the shallow CTD and fixed in glutaraldehyde (final concentration of 0.25%). Two samples of 40mL were taken at each A stations and station 36C. Extra sampled from the phytoplankton net were also taken at stations 37A, 36C, 33A, 29A, 21A, 17A. 13A, 9A, 5A and 1A. These samples will be analysed with a particle Scanning and Imaging Flow Cytometry (Cytosub from CytoBuoy, Netherlands) at SINTEF lab in Trondheim, Norway.

Photosynthesis parameters

Contact person: Geir Johnsen (geir.johnsen@ntnu.no)
Responsible person on board: Natalie Summers

To measure the physiological state of phytoplankton communities we sampled water from the Niskin bottles at Chl-a max and surface (1m) at all A stations (except 57A) and station 36C. Samples were analysed using a bench top Fast Repetition Rate Fluorometry using the FastOcean sensor with the Act2 system from Chelsea. This instrument gives us photosynthetic parameters such as the maximum quantum yield of dark acclimated cells, photosynthetic efficiency and rapid light curves, thus providing us information about health state and acclimation state of the algae.

Flow cytometry (FCM)

Contact person: Oliver Müller (Oliver.Muller@uib.no)
Responsible persons on board: Katrine Åmdal Sundt

FCM is used to determine abundance and size of bacteria, virus, pico, and nanoplankton. Sea water was collected from both A- and B-stations. At A-stations, seawater from 12 depths were collected (1, 10, 25, Chl-a max, 50, 75,100, 250, 400, 1500, 3000 and bottom). At B stations, water from 8 depths were collected (10, 25, 50, 75, 100, 250, 400 and 1500). Sea water was sampled from Niskin bottles. Four replicates of 1.8 ml were added to cryo tubes and fixed with 38 µl of 25% Glutaraldehyde. The samples were incubated at ~4°C for two hours before flash freezing in liquid nitrogen. The samples were stored in -80°C before being sent for analysis at the University of Bergen.

Bacterial production (BPR)

Contact person: Oliver Müller (Oliver.Muller@uib.no)
Responsible persons on board: Katrine Åmdal Sundt

Bacterial production of carbon biomass (gC per volume per unit time) estimated from incorporation of tritiated leucine. Sea water was collected from 10 depths at A-stations (1, 10, 25, Chl max, 50, 100, 250, 1500, 3000 and bottom). The water was sampled directly from Niskin bottles. For each depth there were three replicates and a control sample. The samples had 1.5 ml of seawater and 15 µl of diluted isotope (ca. 1:4), before incubating for 2 hours at in situ temperature (the control was added 80 µl 100% TCA prior to adding isotope). At the end of the incubation, the rest of the samples were added 80 µl TCA and placed in a fridge. The samples were sent for analysis at the University of Bergen

Fixed samples for phytoplankton taxonomy (PHT)

Contact person: Philipp.Assmy (Philipp.Assmy@npolar.no)
Responsible persons on board: Natalie Summers

Samples from niskin bottles were taken at each A station from depth of 100m, 50m, 25, Chl max, 10m and 1m. Samples from 25m deep were taken only if the Chla max was more than 5m shallower or deeper. Each sample consisted of 190mL fixed with 0.8 ml 25% Gluteraldehyde and + 10 ml hexamine-buffered formaldehyde 20%. The taxonomy samples will be analysed using an inverted microscope at IOPAN (Sopot, Poland).

Phytoplankton microscopy

Contact person: Anna Vader (annav@unis.no)
Responsible persons on board: Natalie Summers, Anna Vader

Phytoplankton nets (5 µm mesh) were taken at stations 37A, 36C, 33A, 29A, 25A, 21A, 17A, 13A, 9A, 5A and 1A. Samples were run in a flow through microscope called planktonscope, that takes continuous images and then segments each object in the view. On this cruise, the planktonscope was used as qualitative tool, supplemented by light microscope images, to get an overall view of the species presents in the phytoplankton community. Phytoplankton net samples were supplemented with samples taken from the Bongo net which was often more concentrated though larger cells tended to be more damaged.

PFAS (PFA)

Contact person: Ingeborg Hallanger (Ingeborg.hallanger@npolar.no)
Responsible persons on board: Vegard Stürzinger

At the Nansen mooring site, water was collected for PFAS concentration in the water column. Triplicate samples were taken from 1 m, 20 m (chlorophyll a maximum), 100 m, 250 m, 1500 m, 3000 m and near-bottom. At each depth except 100 m, the triplicates were drawn from three separate Niskin bottles.

Dissolved organic matter (DOM)

Contact person: Eva Lisa Doting (eva.doting@nina.no)
Responsible persons on board: Mats Granskog

DOM is a ubiquitous component of aquatic systems, present in all natural waters, representing a major carbon reservoir. During the EBT2026 cruise, samples for the analysis of dissolved organic matter (DOM) characterization were collected from water samples from the CTD rosette. DOM samples were directly gravity filtered through 0.22 µm pore size membrane filter cartridges, the same ones that was used for CDOM/FDOM and DOC (see Section 5.05 and %.06). DOM samples were collected into acid-washed (1.2M HCl, 24h) 1L polycarbonate bottles. All samples were acidified to pH 2 using hydrochloric acid (37%, EMSURE) and stored cold (4 °C) and dark until analysis. The DOM sample was collected right after the CDOM and DOC samples were collected from the same Niskin bottle.

DOM samples were collected from 11 type A or B CTD casts, at two depths at each station, typically at 15 and 50 m, to target the seasonal surface mixed layer and the subsurface layer of Polar Water in the Makarov, Amundsen and Nansen basins

DOM samples will be solid phase extracted prior to analysis by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry with electrospray ionization for molecular-level characterization of DOM composition. Data will be used to assess terrigenous DOM inputs into the Arctic Ocean and provide insight into the transport, mixing and cycling of terrestrial carbon within Arctic water masses, contributing to an improved understanding of the role of land-ocean interactions in Arctic Ocean carbon cycling.

Chlorophyll-A (CHL)

Contact person: Anna Vader (annav@unis.no)
Responsible persons on board: Natalie Summers & Anna Vader

Algal biomass and degradation status was determined by measuring the concentration of chlorophyll a and phaeopigments in the upper 100m of the water column. Water was collected from 6-7 standard depths (100m, 75m, 50m, 25m, 10m, 1m and Chl a maximum, when the latter deviated by more than 5m from one of the standard depths) from Niskin bottles on the CTD rosette from all A stations of the transect. From each depth, 1000 ml of water was filtered onto a GF/F filter under subdued light using gentle vacuum, before extracting pigments in 5 ml 90% acetone for 20-24 hours in the dark at 4oC. Concentrations were measured at room temperature on a calibrated Turner Trilogy fluorometer, using 90% acetone as a blank. Measurements were made both before and after the addition of 2 drops 5% HCl (to degrade chlorophyll to phaeopigments), and are reported as acid-corrected Chl a and acid-corrected phaeopigment concentrations.

POC and PON (POC)

Contact: Anna Vader (annav@unis.no)
Collected by: Natalie Summers

Water samples for particulate organic carbon (POC) and particulate organic nitrogen (PON) analysis were collected from niskin bottle at all A stations and stations E3B, 36C at depths of 100m, 75m, 50m, 25m, Chl max, 10m, 1m. Samples from 25m were skipped if Cha max was with 5m. Additional samples were taken using a hand pump from meltpond water at stations 60C (ice station 10), E5A (ice station 15), E17A (ice station 20), 37A (ice station 21), 29A (ice station 23), 17A (ice station 24), and 9A (ice station 25). The water samples were filtered through pre combusted GF/F filters (whatmann, >0.7 µm) and then stored at -20C.

In-vivo optics (IVO)

Contact person: Geir Johnsen (geir.johnsen@ntnu.no)
Responsible persons on board: Natalie Summers

From these measurements we will get information about optical properties of the phytoplankton community through the optical signature of the algal pigments (including Chl a). Reflectance measurements also serve as ground truthing for hyperspectral satellites and drones. Optical properties of phytoplankton communities were measured using a spectrometer (QE-Pro from ocean optics) with the ocean view software. The instrument has two set ups: reflectance where reflected light is measured at a 45° angle and absorbance mode, which is measured at 180° from the light source (light goes through the filter) Water was collected at all A stations as well as 36C and filtered through GF/C for the first two stations, and subsequently through GF/F (whatmann, >0.7 µm). Additional measurements were done for meltpond water, meltpond crust and the bottom of the meltpond (top of ice) at sea ice stations: 10, 15, 21, 23, 24, and 25.

Particle absorption (ABS)

Contact person: Mats Granskog (mats@npolar.no)
Responsible persons on board: Håkon Sandven (hakon.sandven@uib.no)

Particle absorption is how much light is absorption by particulate matter in the water column, such as phytoplankton or run-off from land. Further, one can measure pigmented and non-pigmented absorption. Particle absorption is measured, with high spectral resolution, by filtering water samples from CTD casts, using Whatman GF/F 0.7 µm fiberglass filters (diameter of 25 mm). We sampled two depths on each A (1m and chl-max) and B station (10m and 50m) along the transect. Nominally, we filtered up to 4 litres for each sample, adjusting according to the particulate content of the water (monitoring the coloration of each filter). Filtration was done within a few hours of the cast, usually immediately after. If necessary, the sample containers were stored in a dark cool room prior to filtration. The filtration was done in a dimly lit room, and the filters were frozen in a -80C freezer immediately after. After the cruise, the filters will be transported to Bergen and subsequently Institute of Oceanology Polish Academy of Sciences in Sopot, Poland, where they will be analysed.

HPLC (HPC)

Contact person: Mats Granskog (mats@npolar.no)
Responsible persons on board: Håkon Sandven (hakon.sandven@uib.no)

High-performance liquid chromatography (HPLC) quantifies pigments and other chemical compounds in particulate matter suspended in the water column. We conduct practically identical filtrations of CTD water samples as for particulate absorption (sect. 5.21). The sampled depths and sampling numbers are identical. These measurements will also be analysed at Institute of Oceanology Polish Academy of Sciences in Sopot, Poland, by Joanna Stoń-Egiert according to adopted HPLC methodology described in: Stoń-Egiert J., Kosakowska A., 2005, RP-HPLC determination of phytoplankton pigments – comparison of calibration results for two columns, Mar. Biol., 147, 251-260.

Metabarcoding (DNA)

Contact person: Anna Vader (annav@unis.no)
Responsible person on board: Anna Vader

To survey biodiversity of microbes (protists and prokaryotes) within different pelagic environments, samples for DNA were obtained by filtration of water. The collected samples will also be used to determine which microbes are metabolically active, to quantify targeted microbial activities and to assess biodiversity of larger organisms (e.g. fish and marine mammals) via eDNA. The activity is central for Arctic Ocean 2050 task 2.4.1 “Mi-crobial biodiversity” and contributes to other tasks within T2.3, T2.4 and T2.5. Sampling aimed to cover vertically resolved water masses, as well as potential differences between the Makarov, Amundsen and Nansen ba-sins. Environmental DNA (eDNA) and RNA will subsequently be extracted from the filters and used for metabar-coding and quantitative PCR.



Figure 44. Sterivex filtration in KPH Filtration lab. © Anna Vader

Water samples were collected at all A stations along the transect from seven standard depths (bottom, 3000m, 1500m, 250m, 100m, Chl a maximum and 1m). In addition, water was collected from selected depths at some B stations and from bottom and 3000m at the Gakkel Rift station (see CTD bottle file for overview). In total, 440 samples were obtained and 3.3 tons of water was filtered.

Sampling Protocol

- Sea water was collected from the CTD rosette into containers cleaned with tap water. From each depth, approximately 25L was procured from 3 Niskin bottles.
- Each sample was filtered onto 3 parallel 0.22 um Sterivex filters using a peristaltic pump, approximately 7L per filter.
- Tap water was filtered as a blank.
  After filtration and removal of excess water, filters were plugged and bagged in a zip lock bag, before immediately freezing them at -80°C.
- The filters were transported to UNIS for storage and processing.

Microbial activity (MBA)

Contact person: Anna Vader (annav@unis.no)
Responsible person on board: Anna Vader

To measure microbial expression of genes involved in the nitrogen cycle, water samples were collected from 250m depth at selected B stations (see CTD bottle file for overview) following the same protocol as for metabarcoding (detailed in section 5.25). In total, 12 samples were collected. Samples will be shipped to Catarina Magalhaes, CIIMAR, Portugal for further processing. Expression of targeted genes will be examined by quantitative PCR after RNA extraction. This activity contributes to Task 2.4.1 “Microbial biodiversity” in Arctic Ocean 2050.

Virus diversity (VIR)

Contact person: Ruth-Anne Sandaa (Ruth.Sandaa@uib.no)
Responsible persons on board: Katrine Åmdal Sundt

Iron chloride precipitation of viruses to concentrate viruses from large volumes of seawater. 40 L (2x20 L) of seawater from Chl-max and 1500 m was collected from 5 selected stations. Each 20 L sample was filtered through a 0.45 µm, 142 mm Durapore filter, and 2x 1 ml $FeCl_3$ solution (10 g/L) was added to the filtered water. The treated water is left at room temperature for 1 hour before being filtered again using 1.0 µm, 142 mm polycarbonate (PC) membrane on top of a 0.8 µm, 142 mm Supor filter. The PC filters used for 20 L of sample is placed in Falcon tubes with 20 mL 0.1M EDTA-0.2M Ascorbate buffer (pH 6.0-6.5) and placed on a rotor at 4°C over night. The liquid was then transferred to clean Falcon tubes and stored at -80 °C. The samples were sent for analysis at the University of Bergen.

^{129}I (IOD)

Contact person: Hilde Elise Heldal (Hilde.Elise.Haldal@hi.no)
Responsible persons on board: Mats Granskog, Morven Muilwijk

Iodine-129 is an anthropogenic radionuclide released into the North Sea by reprocessing facilities in France and the UK. Releases are well documented, so the parameter can be used to trace Atlantic water entering the Arctic Ocean. Samples were collected at selected depths at A stations. Samples were sent to Jixin Qiao at DTU for analysis.

Microbial Experiments (MIC)

Contact person: Oliver Müller (Oliver.Muller@uib.no)
Responsible persons on board: Katrine Åmdal Sundt

Experiments over six days to assess microbial community response to additions of N, Si and Fe in Arctic surface waters from 3 locations (Makarov Basin (MB), Amundsen Basin (AB) and Nansen Basin (NB)) and mixing of water masses.

10 L of water from Chl-max was collected from Niskin bottles, and the experiments were set up as in Table 15 using 500 ml bottles. Once water and nutrients were added, they were kept at 4 °C with a low light cycle appropriate for Arctic summer (~10-30 µmol photons m-2s-1). Once the experiment was set up, 500 ml of the remaining water was used to take 3 FCM samples (see section 5.13), and the rest was filtered on a 0.2 µm Durapore filter. The filter was placed in a cryo tube at -80 °C. With experiment 1 and 2, 1 L of sample water was kept cool in the dark for mixing in the next experiment. On day 3 of the experiment, 2 FCM samples were taken from each of the bottles. Two more FCM samples were taken on day 6, and the remaining water from the bottles was filtered in the same manner as day 0. Further analysis were done at the University of Bergen.

Table 15. Setup of Microbial experiments with nutrient limitation tests.

Treatment	Replicates (bottles)	Volume	Nutrient addition	Notes
Control	3	500 ml	--	Tracks background dynamics
+N	3	500 ml	25 µl N	N limitation test
+Si	3	500 ml	50 µl Si	Si limitation test
+Fe	3	500 ml	20 µl Fe	Fe limitation test
**Mix Experiment 2*	*3*	*250 ml MB + 250 ml AB*	--	*Water mass mixing: inoculates B community to A chemistry*
**Mix Experiment 3*	*3*	*250 ml AB + 250 ml NB*	--	*Water mass mixing: inoculates B community to A chemistry*

Geophysical Acoustics

Overview of periods without ice breaking

Contact person: Paul Dodd (paul.dodd@npolar.no)
Responsible person on board: Tobias Ehmen (tobias.ehmen@uib.no)

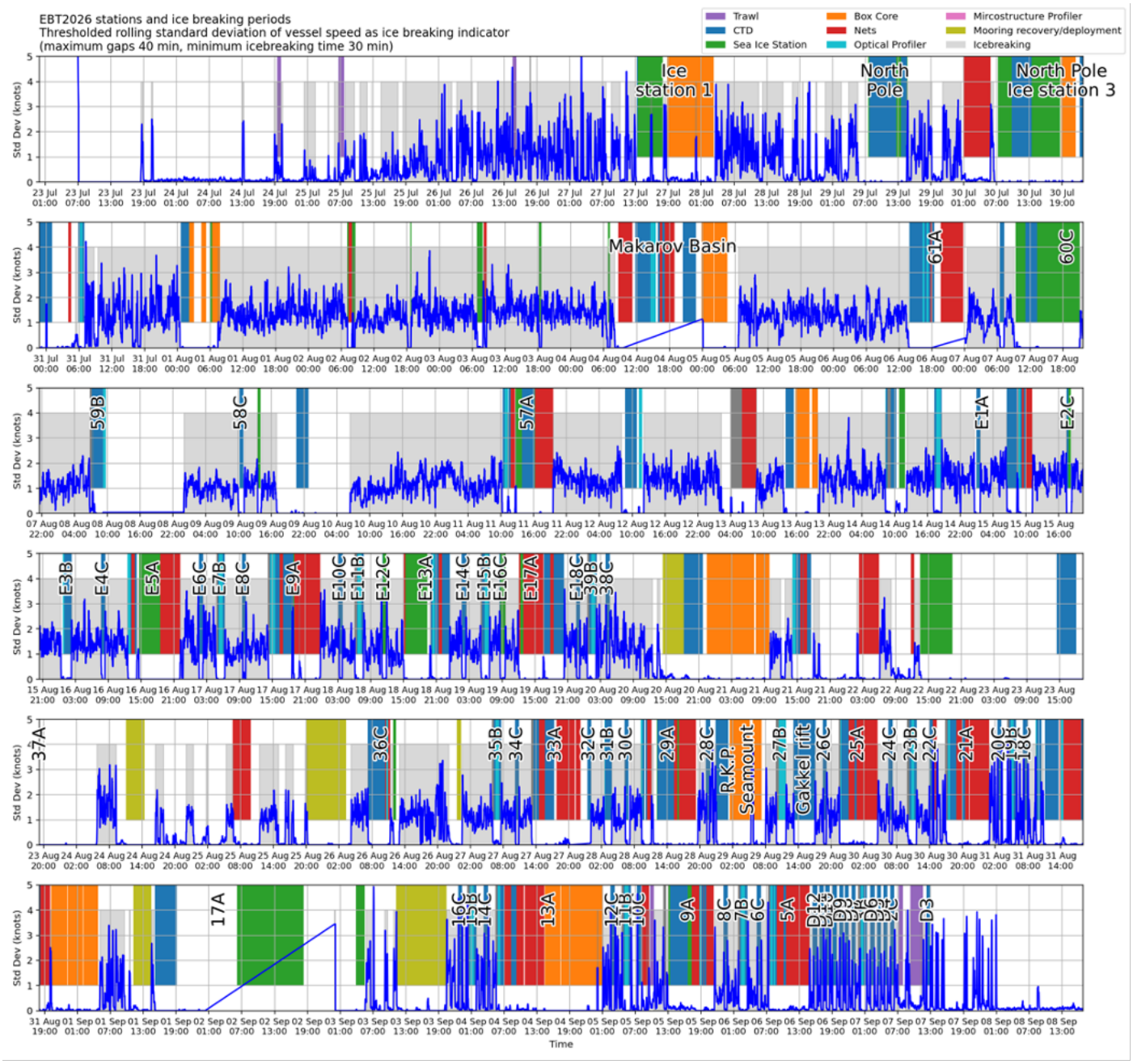


Figure 45. Time series of running standard deviation (blue line) with identified ice breaking periods (grey) and activities as extracted from the activity log (colours see legend).

Vessel navigation data were used to identify periods of potential icebreaking activity and, subsequently, candidate periods without apparent icebreaking that may be more suitable for acoustic data analysis, i.e. periods where acoustic observations may be less affected by vessel-ice interactions and associated noise.

A running standard deviation of vessel speed was calculated using a 10-minute window, and periods where the standard deviation exceeded a threshold of 0.5 knots were classified as icebreaking. This worked well for identifying periods where the vessel was not ice breaking, but created lots of small, fragmented periods over

the whole timeline which may not be practical. Instead, short gaps of up to 40 minutes within otherwise continuous icebreaking periods were filled, while icebreaking periods shorter than 30 minutes were excluded. The parameters were optimised to match station activities.

Table 16. Extracted start and stop times (in UTC) without icebreaking with duration. Station and activity were extracted from the activity log where available.

Start	End	Duration (hours)	Start	End	Duration (hours)
23/07/2026 00:00	24/07/2026 18:55	42.92	19/08/2026 05:08	19/08/2026 06:41	1.55
24/07/2026 20:26	25/07/2026 00:22	3.93	19/08/2026 08:39	19/08/2026 09:34	0.92
25/07/2026 02:26	25/07/2026 05:57	3.52	19/08/2026 12:00	19/08/2026 20:21	8.35
25/07/2026 06:45	25/07/2026 07:51	1.08	20/08/2026 00:37	20/08/2026 02:12	1.58
25/07/2026 09:38	25/07/2026 10:34	0.93	20/08/2026 12:32	21/08/2026 10:02	21.5
25/07/2026 11:54	25/07/2026 14:27	2.55	21/08/2026 12:01	21/08/2026 12:47	0.77
25/07/2026 17:36	25/07/2026 18:29	0.88	21/08/2026 14:01	21/08/2026 17:57	3.93
26/07/2026 03:28	26/07/2026 04:15	0.78	21/08/2026 19:05	22/08/2026 06:05	11
26/07/2026 07:13	26/07/2026 08:02	0.82	22/08/2026 08:12	22/08/2026 12:25	4.22
27/07/2026 07:37	27/07/2026 08:35	0.97	22/08/2026 13:17	24/08/2026 05:44	40.45
27/07/2026 10:11	27/07/2026 11:05	0.9	24/08/2026 09:16	24/08/2026 16:25	7.15
27/07/2026 13:02	28/07/2026 03:35	14.55	24/08/2026 17:55	24/08/2026 22:01	4.1
28/07/2026 11:30	28/07/2026 12:11	0.68	24/08/2026 23:22	25/08/2026 05:24	6.03
28/07/2026 16:03	28/07/2026 17:42	1.65	25/08/2026 06:41	25/08/2026 11:29	4.8
28/07/2026 18:48	28/07/2026 23:39	4.85	25/08/2026 14:56	25/08/2026 16:09	1.22
29/07/2026 02:39	29/07/2026 03:56	1.28	25/08/2026 17:41	26/08/2026 04:11	10.5
29/07/2026 05:43	29/07/2026 14:34	8.85	26/08/2026 07:19	26/08/2026 11:21	4.03
29/07/2026 19:12	29/07/2026 21:10	1.97	26/08/2026 11:57	26/08/2026 13:01	1.07
30/07/2026 00:35	30/07/2026 05:54	5.32	26/08/2026 22:06	27/08/2026 00:31	2.42
30/07/2026 06:30	31/07/2026 07:08	24.63	27/08/2026 06:07	27/08/2026 07:35	1.47
31/07/2026 08:51	31/07/2026 09:31	0.67	27/08/2026 13:12	28/08/2026 00:04	10.87
01/08/2026 00:30	01/08/2026 07:25	6.92	28/08/2026 02:29	28/08/2026 03:53	1.4
02/08/2026 07:09	02/08/2026 07:55	0.77	28/08/2026 06:23	28/08/2026 07:11	0.8
02/08/2026 08:30	02/08/2026 08:30	0	28/08/2026 09:22	28/08/2026 19:38	10.27
03/08/2026 06:51	03/08/2026 07:55	1.05	28/08/2026 23:01	29/08/2026 08:00	8.98
04/08/2026 08:01	05/08/2026 06:37	22.6	29/08/2026 09:59	29/08/2026 11:45	1.76
06/08/2026 13:42	07/08/2026 00:25	10.72	29/08/2026 13:13	29/08/2026 17:03	3.83
07/08/2026 06:20	07/08/2026 07:11	0.85	29/08/2026 21:33	30/08/2026 04:31	6.97
07/08/2026 09:01	07/08/2026 21:08	12.12	30/08/2026 10:01	30/08/2026 11:36	1.58
08/08/2026 07:26	09/08/2026 00:01	16.58	30/08/2026 17:03	31/08/2026 00:58	7.92
09/08/2026 09:58	09/08/2026 11:02	1.07	31/08/2026 03:19	31/08/2026 04:12	0.88
09/08/2026 13:31	09/08/2026 14:11	0.67	31/08/2026 04:53	31/08/2026 05:45	0.87
09/08/2026 16:58	10/08/2026 06:24	13.43	31/08/2026 09:28	01/09/2026 05:04	19.6
11/08/2026 10:12	11/08/2026 19:30	9.3	01/09/2026 09:37	03/09/2026 05:47	44.17
12/08/2026 08:06	12/08/2026 12:08	4.03	03/09/2026 07:14	03/09/2026 09:09	1.92
13/08/2026 02:20	13/08/2026 08:39	6.32	03/09/2026 09:43	03/09/2026 10:45	1.03
13/08/2026 13:44	13/08/2026 19:59	6.25	03/09/2026 11:22	03/09/2026 20:26	9.07
14/08/2026 08:18	14/08/2026 12:12	3.9	04/09/2026 00:24	04/09/2026 01:53	1.48
14/08/2026 17:09	14/08/2026 18:34	1.42	04/09/2026 05:33	05/09/2026 01:02	19.48
15/08/2026 00:36	15/08/2026 01:38	1.03	05/09/2026 04:40	05/09/2026 09:01	4.35
15/08/2026 06:32	15/08/2026 11:13	4.67	05/09/2026 09:38	05/09/2026 10:21	0.72
15/08/2026 17:26	15/08/2026 18:24	0.97	05/09/2026 12:55	05/09/2026 21:26	8.52
16/08/2026 00:20	16/08/2026 02:14	1.9	06/09/2026 01:57	06/09/2026 03:29	1.53
16/08/2026 07:42	16/08/2026 08:22	0.67	06/09/2026 07:22	06/09/2026 14:48	7.43
16/08/2026 12:33	16/08/2026 22:07	9.56	06/09/2026 19:06	06/09/2026 19:47	0.68
17/08/2026 01:35	17/08/2026 02:16	0.68	07/09/2026 00:00	07/09/2026 01:17	1.28
17/08/2026 04:42	17/08/2026 06:19	1.62	07/09/2026 07:18	07/09/2026 08:23	1.08
17/08/2026 14:17	17/08/2026 23:47	9.5	07/09/2026 09:19	07/09/2026 11:07	1.8
18/08/2026 06:06	18/08/2026 07:39	1.55	07/09/2026 15:30	07/09/2026 19:07	3.62
18/08/2026 11:02	18/08/2026 11:51	0.82	07/09/2026 19:42	07/09/2026 20:43	1.02
18/08/2026 15:02	18/08/2026 23:25	8.38	07/09/2026 22:38	07/09/2026 23:29	0.85
19/08/2026 01:41	19/08/2026 02:20	0.65	08/09/2026 01:05	08/09/2026 16:50	15.75

The identified non-icebreaking periods were compiled into Table 16 including their start and end times, duration, and any cruise stations and associated activity types occurring during the period. Station information was based on the cruise activity log, with individual activities grouped into broader categories such as CTD, trawl, nets, Box Core, Sea Ice Station, and Optical Profiler. This provides an overview of the activities conducted during candidate low-noise periods. The same classification was visualised together with the cruise activity schedule to provide an overview of the temporal relationship between vessel speed variability, icebreaking, and scientific activities throughout the cruise (Figure 45).

Vessel-mounted acoustic Doppler current profilers (VMADCP)

Contact person: Morven Muilwijk (Morven.Muilwijk@npolar.no)
Responsible persons on board: Morven Muilwijk & Paul Dodd

Acoustic Doppler Current Profilers (ADCPs) measure water velocity by analyzing frequency shifts in sound waves reflected from particles in the water. The profile length depends on the transmitted frequency and the concentration of scattering particles: lower frequencies reach greater depths but provide coarser vertical resolution. Sparse particles weaken the return signal, leading to increased uncertainty or data gaps. Typically, ADCPs rely on internal magnetic compasses for direction. Near the magnetic poles, compass errors can degrade data quality. Vessel-mounted ADCPs (VMADCPs) avoid this issue by determining heading from the ship's motion reference unit (MRU) and 3D GPS. VMADCP data are generally preferred for upper-ocean studies due to higher heading accuracy and continuous operation, allowing for greater averaging and reduced noise compared with LADCP data collected only during CTD casts.

RV *Kronprins Haakon* is equipped with 150 kHz and 38 kHz VMADCPs, providing typical depth ranges of approximately 250 m and 750 m, respectively. During this cruise, the 38 kHz system was not operational and would also have interfered with the 38 kHz fisheries echo sounder if run continuously. Consequently, only the 150 kHz VMADCP was operated, running continuously for the duration of the cruise. Data were processed on board using UHDAS+CODAS (https://currents.soest.hawaii.edu/docs/adcp_doc/).

During active icebreaking, VMADCP data quality is poor due to ice beneath the hull, rapid back-and-forth motion of the ship, and frequent sharp turns, combined with generally low current velocities in the Arctic Ocean. It is therefore highly recommended to primarily use VMADCP data collected while the ship is stationary at stations or transiting in open water. However, an attempt will also be made to clean and retain usable data from periods of active icebreaking. Final data processing will be carried out by the Norwegian Polar Institute, and a cleaned dataset will be published on data.npolar.no soon after the cruise.

Table 17. Summary of the positioning of ADCP transducers and MRU's installed on RV Kronprins Haakon. This information is from the Parker Survey completed from 11 January to 25 February 2017 in La Spezia (Parker Document reference 1606090-17000028) and is needed for accurate VMADCP data processing. Positioning of ADCP transducers if relative to centre MRU (centre MRU is connected to sea path system).

		Transducer position relative to centre MRU measured in meters		
	Transducer Depth (ED)	X (+FWD)	Y (+STB)	Z (+DOWN)
ADCP 38 kHz Flush Mount	8.4	27.432	0.658	9.670
ADCP 150 kHz Flush Mount	8.4	28.789	0.661	9.661
ADCP 38 kHz Drop keel	11.8	18.46	-1.089	13.114
ADCP 150 kHz Drop keel	11.8	16.549	1.029	13.181

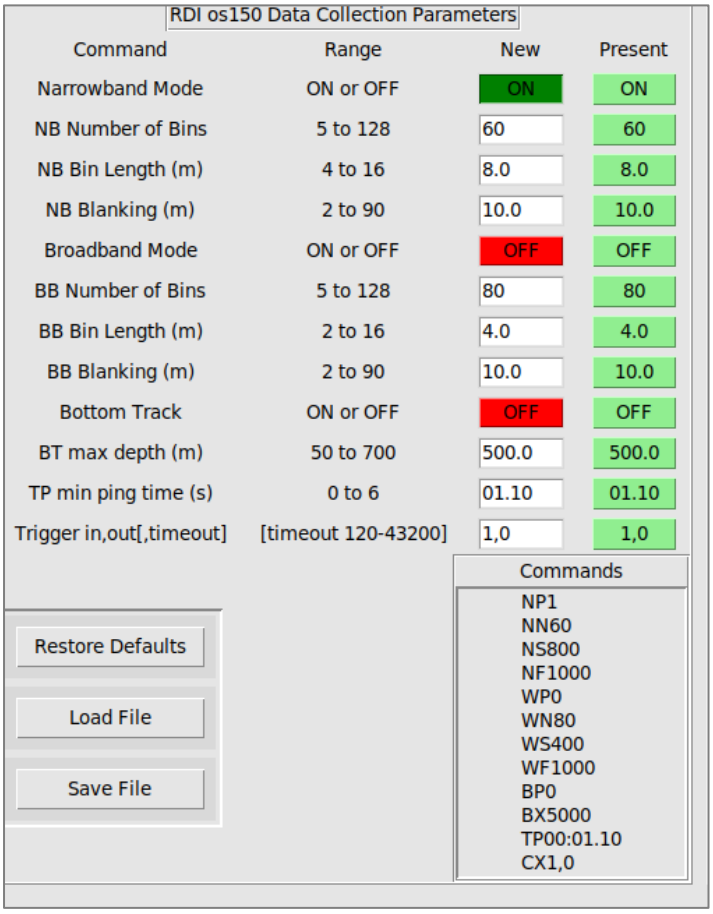


Figure 46. Configuration of 150kHz ADCP during EBT2026

Sub-Bottom Profiler Measurements

Contact person: Paul A. Dodd (paul.dodd@npolar.no)
Responsible persons on board: Paul A. Dodd

Sub-bottom profiles were collected using a Kongsberg SBP300 MK2 instrument using the mounted flush transducer. Noise from breaking renders the measurements unusable so the SBP300 was only switched on when the vessel was drifting. Most of the usable data was collected close to the Nansen and Amundsen Mooring sites where the vessel drifted for longer periods while moorings were prepared for redeployment and while drifting during sea ice stations.

The system was configured to send a linear chirp between 2.7 and 7 kHz with a 20 ms delay. Raw data were acquired using the Kongsberg SPB300 acquisition software and stored in both the Kongsberg raw format and as processed SEG-Y files (*.sgy, Society of exploration geophysicists). Figures 47 and 48 below show sample data acquired close t the Amundsen and Nansen Sites.

Example profiles from the central Amundsen Basin

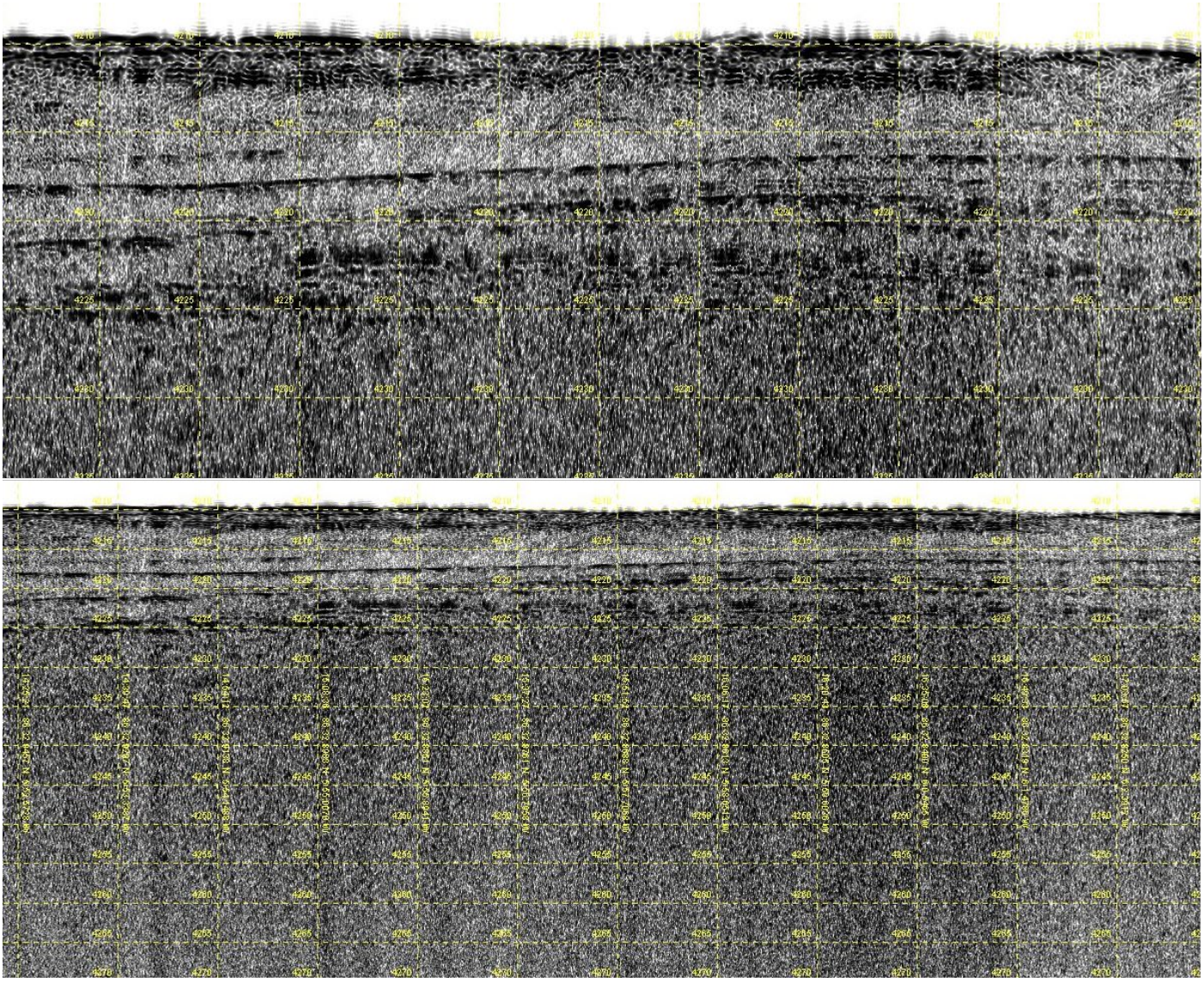


Figure 47. Example SBP300 profiles in the vicinity of the Amundsen Basin mooring site. The upper and lower panels show the same data, but the lower panel includes a greater depth range. The Y-axis indicates meters below the surface, and the X-axis indicates time. Vessel positions are also indicated on the lower panel.

Example profiles from the central Nansen Basin

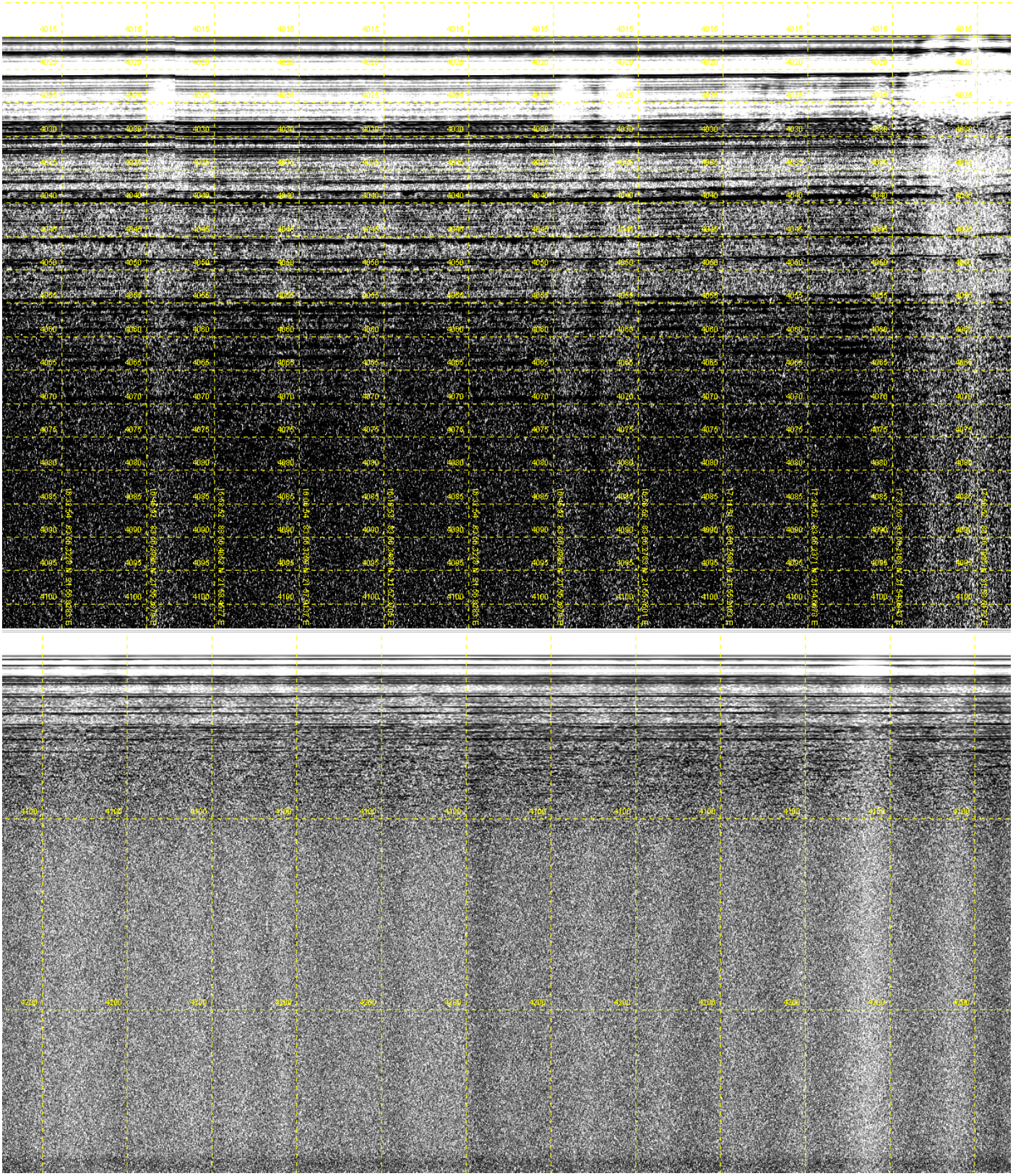


Figure 48. Example SBP300 profiles in the vicinity of the Nansen Basin mooring site. The upper and lower panels show the same data, but the lower panel includes a greater depth range. The Y-axis indicates meters below the surface, and the X-axis indicates time. Vessel positions are also indicated on the upper panel.

Mooring Operations

Contact person: Paul A. Dodd (paul.dodd@npolar.no)
Responsible person(s) on board: Paul A. Dodd, Marius Bratrein, Hans Erik Alterskjær, Morven Muijlwijk

Overview of the Central Nansen and Amundsen Basin mooring program

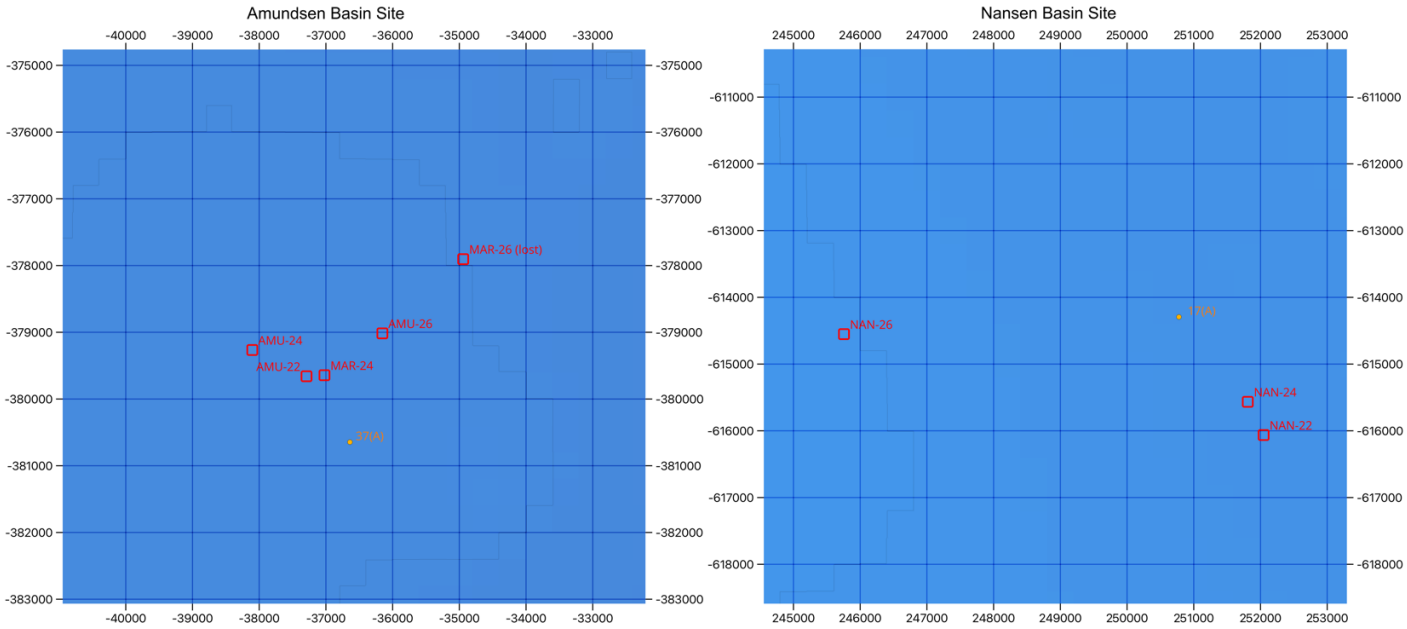


Figure 49. Overview of deployments at the Amundsen and Nansen basin mooring sites on a UTM grid with grid lines drawn at 1 km intervals, cf. Figure 1 for all site locations within the Central Arctic Ocean. Orange dots show repeated observation sites along the Eurasian Basin Transect.

In August 2022 two moorings, *Amundsen-22* and *Nansen-22* were deployed in the central Amundsen and Nansen basins (Figure 49) for an initial deployment period of two years. A near-identical instrument set-up at both sites was intended to facilitate comparison between the two basins.

In August 2024 *Amundsen-22* and *Nansen-22* were recovered and two similar moorings named *Amundsen-24* and *Nansen-24* were deployed for a second 2-year period. An additional mooring *Marie-24* equipped with a McLane moored profiler operating between 50 and 500 m was deployed close to *Amundsen-24* in 2024. A separate mooring was required to support this profiler, which would be unable to pass fixed instrumentation at depths between 50 and 500 m on *Amundsen-24*.

Moorings at these sites are named after the year in which they are is deployed. The configuration of *Amundsen-22* and *Nansen-22* is described in the AO2022 cruise report (https://hdl.handle.net/11250/3013026). The configuration of *Amundsen-24, Nansen-24* and *Marie-24* is described in the AO2024 cruise report (https://hdl.handle.net/11250/3145717). The configuration of *Amundsen-26, Nansen-26* and *Marie-26* is described in this cruise report.

Recovery of Mooring Marie_80 (MAR-24)

MAR-24 was recovered on 20th August 2026 (Release command sent to upper releaser at 14:28 UTC). The operation began with an echo sounder survey around the deployment position. Subsurface floats at 594 m were identified on the 18 kHz echo sounder. A transponder on a releaser at 40 m depth allowed the top of the mooring to be precisely located (closest ping distance before recovery was 84 m).

Recovery was initiated by commanding the releaser at 40 m to release a float attached to a 100 m coil of line stored in a bin immediately below. The 40 m releaser activated, the rope uncoiled as indented, and the float surfaced around 20 m from the vessel after around a minute. The entire mooring (including anchor weight) was recovered by attaching a recovery line attached to the released float.

Recovery of Mooring Amundsen_80 **(AMU-24)**

AMU-24 was recovered on 22nd August 2026 (Release command sent to upper releaser at 08:34 UTC). The operation began with an echo sounder survey around the deployment position. Subsurface floats at 504 m were identified on the 18 kHz echo sounder. A transponder on a releaser at 58 m depth allowed the top of the mooring to be precisely located (closest ping distance before recovery was 124 m).

Recovery was initiated by commanding the release at 58 m to release a float attached to a 100 m coil of line stored in a container immediately below. The upper releaser activated, and the upper section surfaced around 40 m from the vessel after around a minute.

A line was attached to the top float, but only the upper part of the mooring was recovered this way. During recovery the mooring separated between the acoustic release at 58 m and the instrument cage for the SUNA deployed at 56 m due failure of a stainless-steel shackle pin. With the buoyant upper part of the mooring detached, the releaser sank (trailing the uncoiled 100 m line behind it) until the line became taught a depth of about 158 m. At this point the ping distance to the transponder on the upper releaser was 210 m.

A single attempt was made to ping a lower releaser at 4216 m. No response was received by a hydrophone at ca. 5 m depth. This is consistent with the recovery of AMU-22, when responses from the lower releaser at ca. 4200 m were not received. A single ‘arm’ command was sent to the lower releaser on AMU-24, followed by repeated ‘release’ commands over a period of 19 minutes. After this, alternate ‘arm’ and ‘release’ commands were sent. No response was received from the lower releaser. However, at 09:20 UTC, shortly after switching to a sequence of alternate ‘arm’ and ‘release’ commands a float deployed at 62 m surfaced, indicating that the lower releaser had released the anchor. The lower part of AMU-24 was then recovered via a line attached to the 62 m float. The anchor remains on the seabed.

Figure 50 shows the state of the failed shackle and adjacent connections immediately after recovery. The shackle most likely failed during the recovery operation when tension was applied to the top of the mooring to raise the anchor from the seabed. During deployment the load across the shackle would have been of the order 100 kg-force exerted by the buoyant floats above, while during recovery the load would have been on the order of 500 kg-force exerted by the weight-in-water of the anchor, hardware and instruments below the shackle, minus the buoyancy attached to the lower part of the mooring.

Hard plastic electrical isolation was fitted between the pin of the adjacent shackle and the lower eye of the instrument cage for the SUNA. There was no isolation between the failed shackle and the swivel or releaser. The failed shackle was many years old at the time of deployment but was not thought to have been used in seawater before deployment on AMU-24.

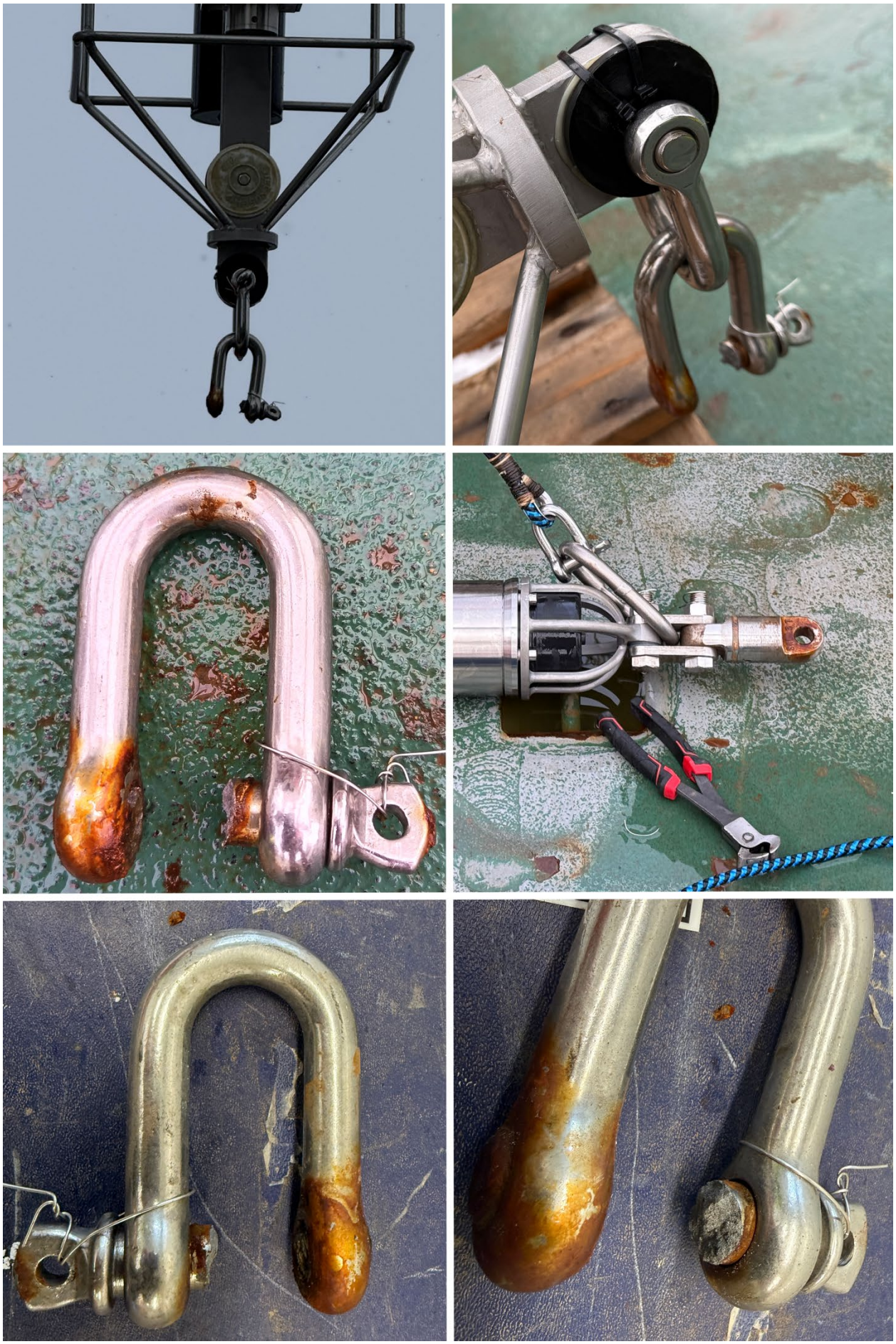


Figure 50. Shackle that failed during recovery of AMU-24 and adjacent mooring hardware. Photo montage: Paul A. Dodd, © Marius Bratrein

CTD measurements from Amundsen-24

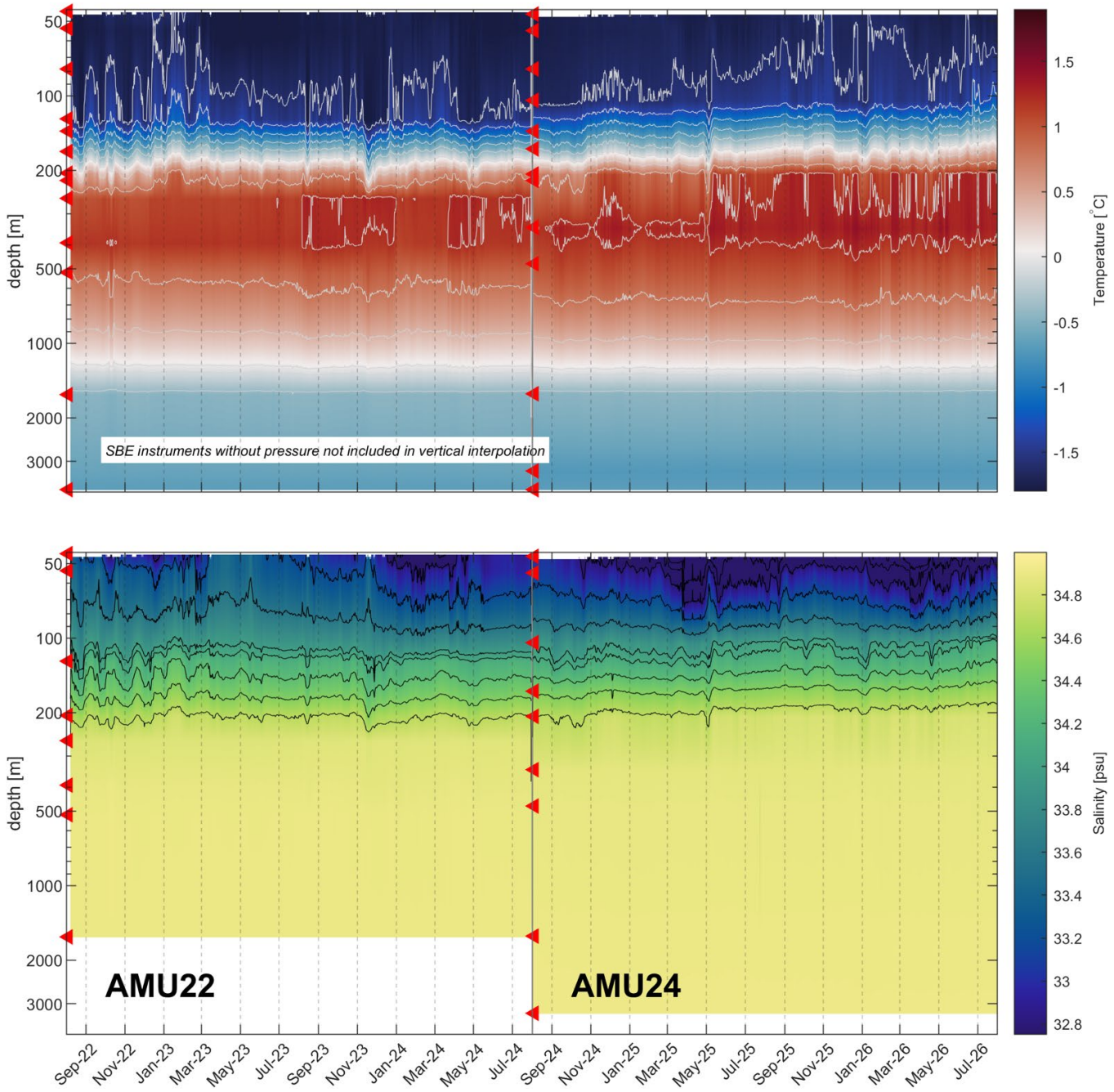


Figure 51. Hovmöller plot showing 4-year time series of temperature and salinity measurements recovered from Amundesn-24 together with similar measurements from Amundsen-22. Red triangles indicate instrument depths.

Current measurements from Amundsen-24

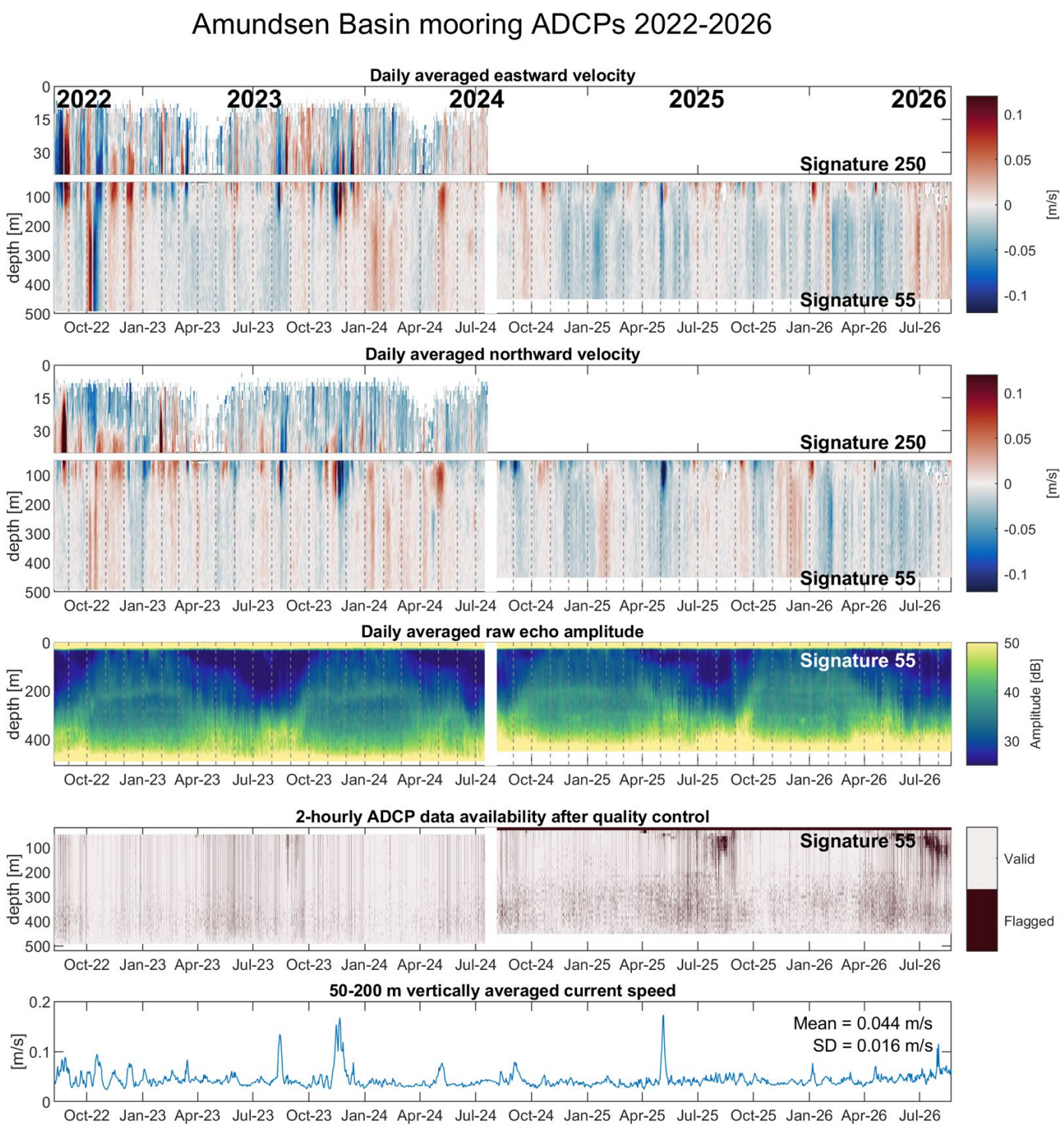


Figure 52. Current and backscatter measurements derived from ADCPs at 50 m and 500 m recovered from Amundsen-24, together with similar measurements from Amundsen-22.

Recovery of Mooring Nansen-24 (NAN-24)

Nansen-24 was recovered on 1st September 2026 (Release command sent to upper releaser at 11:10 UTC). The operation began by pinging the releaser deployed at 52 m as the vessel approached the deployment position, which was covered by an ice floe of ca. 2 km diameter. Stops were made to ping the upper releaser as the vessel broke through the floe. The first ping distance at 08:25 was 126 m. At this point the vessel was still 300 m from the recorded deployment position. Recovery could not be attempted from within the ice floe, so the vessel continued towards the deployment position, pinging the upper releaser and drawing intersecting range rings on the chart after each ping to verify the position of the mooring top. At 09:07 a float supporting the ADCP at 486 m was observed on the 18 kHz echo sounder. At this depth the beam diameter is just 56 m. A range ring of 28 m radius was drawn on the chart plotter and fell close to the intersecting rings of releaser pings. In this case, the 18 kHz echo sounder provided the most precise position.

After localising the mooring, the vessel moved to the up-drift side of the flow, around 1.4 km from the top of the mooring and waited for the floe to drift away. The edge of the floe cleared the mooring at 11:02. The recovery environment was a lead 600 m wide and several nautical miles long, with a consistent drift of 0.4 kts at 16°. Recovery was initiated by commanding the releaser at 52 m to release a float attached to a 100 m coil of line stored in a bin immediately below. The 52 m releaser activated, the rope uncoiled as indented, and the float surfaced around 25 m from the vessel after around 15 seconds. The entire mooring (including anchor weight) was recovered by attaching a recovery line attached to the released float.

During recovery line initially coiled in the bin at 100 m was secured to a cleat inside and below the ships rail. This line briefly became taught as the ship drifted away from the mooring anchor and was bent over the small radius of the rail.

The anchor was lifted clear of the seabed at 11:38. At this point the tension resisted on the winch dropped from around 850 kg-force to 400 kg-force, suggesting a pull of around 450 kg was required to free the anchor weight from soft sediment. The anchor had been deployed with a pallet tied underneath with the aim of reducing settling into the sediment reducing loads upon retrieval.

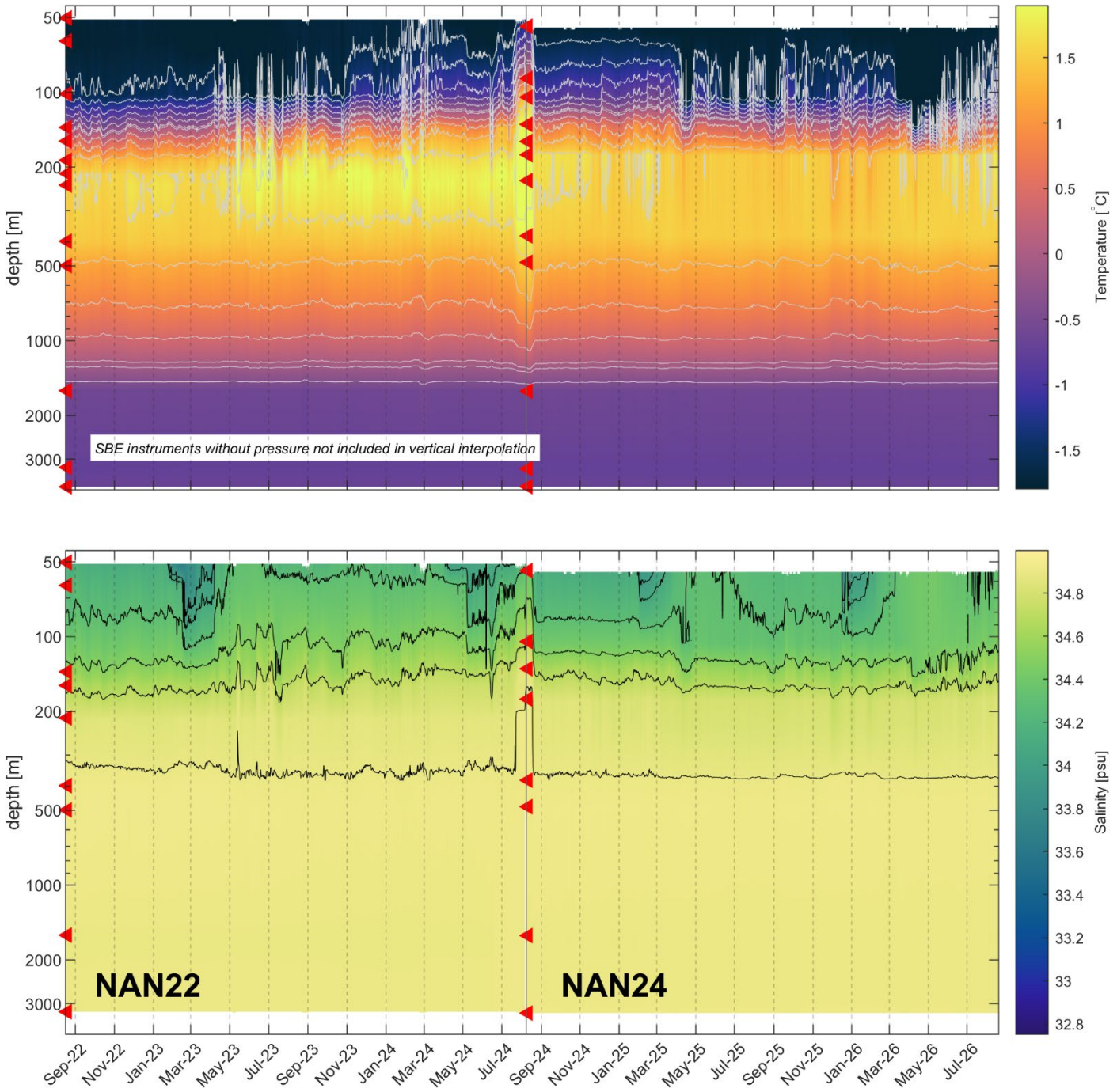


Figure 53. Hovmöller plot showing 4-year time series of temperature and salinity measurements recovered from Nansen-24 together with similar measurements from Nansen-22. Red triangles indicate instrument depths.

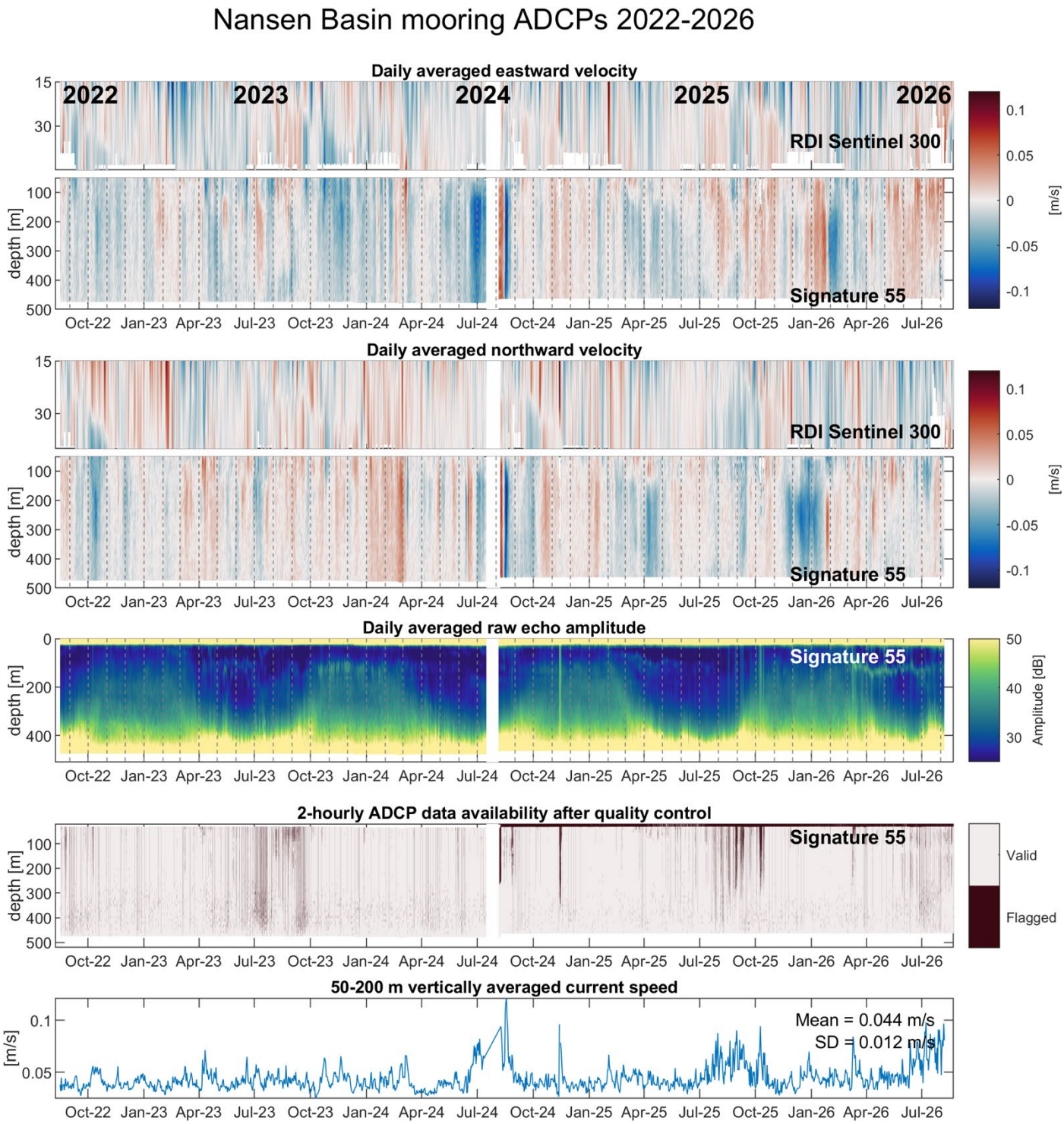


Figure 54.Current and backscatter measurements derived from ADCPs at 50 m and 500 m recovered from Nansen-24, together with similar measurements from Nansen-22.

Deployment of Mooring Marie_8❷**(MAR-26)**

The planned configuration for MAR-26 is summarised at the end of this section (Figure 56). The deployment environment was a natural lead of ca. 500 m diameter with the port side of the vessel held against the downwind side of the lead by the wind. The vessel had a consistent drift to port of 0.3 kts with a course over ground of 145° degrees. The mooring was deployed anchor-first over the starboard side.

The operation began by deploying the mooring hardware (without instruments) to verify the correct length of the mooring when under load. During this phase an Ocean Space Acoustics A/S Ping-Me device that transmits pressure measurements over an acoustic link was attached to the upper end of a 550 m plastic-coated wire at depth of 44 m (Figure 56). This wire was intended for the McLane Moored Profiler (MMP) to run on.

With the mooring line hanging vertically and the anchor resting on the bottom, the Ping Me returned a pressure of 60 m. At this point the mooring was retrieved down to a depth of 594 m so that an additional 20 m length of line could be inserted below the 550 m wire. This would raise the top of the wire adequately close to the target depth of 40 m.

An additional 20 m length of Kevlar was inserted as planned and instruments were attached to the mooring as it was redeployed. The MMP and lower bumper were attached at lower end of the 550 m wire. While the remainder of this wire was being paid out, a length of 12 mm Kevlar line connecting the upper end of the wire to the deployment winch drum failed. The mooring sank rapidly to the seabed at 14:10 UTC on 24-August-2026 in position N 86° 32.6577', W 005° 16.9506'

The line that failed was not intended to be part of the mooring but was used for the deployment (Figure 55). When the deployment line failed, the connection between the upper end of the 550 m wire and deployment line was a few meters above the sea surface. The deployment line failed between the winch used for the operation (Winch 9) and the first turning block on the stern A-frame.

Alternate 'arm' and 'release' commands were sent to command the lower releaser to release the anchor weight within a minute of the deployment line failing in the hope that part of the mooring would surface.

However, the partially deployed mooring had insufficient buoyancy to support the attached hardware and instruments. The only floats deployed at this time were two Nautilus spheres providing 48 kg of buoyancy at a depth of 2690 m (1526 m above the seabed, see Figure 56). These floats were intended to support the lower releaser and were insufficient to support the 550 m wire (weight in water of over 100 kg). The mooring would have been dragged downwards by the 550 m wire until most of the wire lay on the seabed. It is assumed that 1500 m of slack Kevlar line below the releaser and a short section of the 550 m wire remained a short distance above the seabed, lifted by the Nautilus floats, however these could not be detected on any echo sounder when surveying the site.

No response was received from the transponder on the releaser after the release command was sent or during subsequent pinging attempts. Assuming the releaser sank rapidly, this is consistent with previous operations at this site where responses were not received from transponders close to the seabed. Experience from previous operations suggests that although no response was revived, the releaser would have received and executed the release command, releasing the anchor weight.

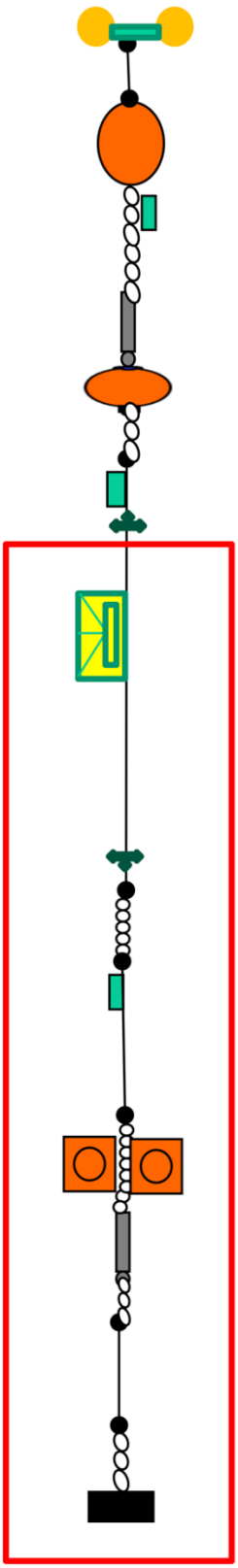
Vessel manoeuvrability was limited by ice conditions, however the prevailing ice drift allowed for a linear dredging operation and the 1500 m of slack line close to the seabed represented a reasonable target. Two attempts were made to salvage MAR-26 by dragging 5000 m of wire, terminating in a chain of 7 grappling hooks over the site while drifting with the sea ice. Neither attempt was successful, and MAR-26 was abandoned at ca. 0000 UTC on 24-August-2026.



Figure 55. The end of the line left attached to the winch after the failure during deployment of MAR-26. Top left: The line end on deck, immediately after failure. Bottom: Pulling the exposed end of the core allowed a (ca. 20 cm long) section of detached core to be removed from the cover. In this image, the detached section of the core is laid out to the left of the remainder of the line. The cover has been upbraided to inspect the point at which the detached section of core separated. Top right: upbraiding the core further towards the winch after the detached section revealed a few broken strands. © Marius Bratrein (top-left panel), Paul A. Dodd (other panels & montage)

MAR-26

Lost : 24.Aug. 2026, 14:10 UTC in position 86° 32.6577', W 005° 16.9506'



ICECAT SNR.21023 **25**

12 m Wire – Inductive / Jacketed

Float **37**

IM Datalogger Sound9 - SN: TBD

1 m Galv. Chain

AR861 R1 Acoustic Release «Top» - SN: TBD

Foam float with 100m Kevlar rope **44**

1 m Galv. Chain.

SBE37 – CTD **SN. 15252** **47**

Equipment in this box lost 24.08.2026

McLane Moored Profiler (MMP)
SN: ML-15532

550 m 5/16 Jacketed
Wire rope

1 m Galv. Chain

SBE37 CTD **SNR. 15085** **594**

Kevlar «1/2 Øverst» **2084** (T:c+**20**+c+40+c+503+502+502+504)

2 Nautilus Vitrex Glass Spheres **2690**

AR861 Acoustic Release «Mid» SN: **2REL100851**

0,5 m Galv. Chain

Kevlar «2/2 Nederst» (T: 507+508+506) **1521 m** Kevlar

2 m Galv Chain.

Anchor (1000/**850**)kg **4216**

Figure 56. Planned configuration of mooring Marie-26.

Deployment of Mooring Amundsen_8❷**(AMU-26)**

The final configuration for AMU-26 is summarised in Table 18 and Figure 57. The deployment environment was a natural lead of approximately 300 m diameter with the port side of the vessel was held against the downwind side of the lead by the wind. The vessel had a consistent drift forward and to port of 0.5 kts with a course over ground of 141-145°. The mooring was deployed anchor-first over the starboard side.

The operation began by deploying the mooring hardware and attaching instruments during the process. The mooring initially hung vertically in the water, however the 0.5 knot drift and drag of several instruments (including 3 sediment traps) caused the line angle to increase, with the anchor weight was some distance aft and to starboard of the vessel. When the lower 4000 m of the mooring was in the water an Ocean Space Acoustics A/S Ping-Me device that transmits pressure measurements over an acoustic link was attached to the mooring to investigate the line angle. The Ping-Me was added 1 m from the end of a 50 m length of Kevlar deployment line attached to the top of the mooring and the remainder of that 50 m line was then paid out. The Ping-Me reported a depth of 47 m, with 49 m of line below the surface, indicating a wire-angle of 16.4°. A further 86 m of deployment line (2 x 42 m lines and 2 m of chain) was then paid out. The Ping-Me then reported a depth of 132.5 m with 135 m of line below the surface, indicating a wire angle of 11.0° degrees. This assessment suggested the mooring cable was following a catenary though the water column rather than a straight line. Uncertainty in the length and shape of this centenary would make it difficult to assess if the mooring was the correct length using the planned method of placing the anchor on the bottom and checking the depth of the top float. Due to the small lead and rapid drift, it would have been impractical to pay out enough deployment line to allow the top of mooring to rise while still connected to the vessel by a slack line.

AMU-26 uses a mooring cable composed of a mix of used and unused Kevlar lines of 10- and 12-mm diameter. Lengths had been measured (dry, ashore) and a 1 % factor added to account for stretch under load. When this approach was used during the deployment of MAR-26 that mooring was initially 20 m too short. Although the mix of line ages and diameters was different for AMU-26, recent experience of deploying MAR-26 in the same environment was used as a best available guide.

AMU-26 was released with all instruments attached in the pre-planned configuration at 03:10 UTC on 26-Aug-2026 in position N 86° 31.641’ W 005° 33.991’, with the expectation that the mooring would be shorter than planned and that upper instruments would be around 20 m deeper than planned. Drift at the time of release was 0.5 kts with a course over ground of 145°.

A Ping-Me device located 18 m below the top of the AMU-26 reported a pressure of 44.3 m at 03:26 UTC, rising to 33.9 m by 04:02 UTC, placing the top of the AMU-26 at around 16 m depth (27 m *shallower* than planned). At this depth, the top of mooring would likely be hit by multiple sea ice ridge keels during the planned deployment period, leading to almost certain entanglement and loss.

At this point the deployment team had used all the available working hours before a mandatory rest period. The vessel moved 10 nm southwest of the mooring to complete other tasks while the deployment team rested. The vessel returned to the deployment site ca. 14 hours later at 17:30 UTC and begin relocating the mooring by pinging the upper releaser.

The 11° wire angle noted before release suggested the anchor weight may have landed about 800 m up-drift of the ships position when the mooring was released. In this case that calculation provided a good estimate of the mooring position. The upper release was continually pinged as the vessel approached the estimated anchor weight position and multiple intersecting range rings were used to localise the upper releaser to within 100 m. The Ping-Me confirmed that the top of the mooring was still at about 16 m depth and recovery was initiated. The recovery environment was a natural lead of ca. 1500 m by 500 m drifting towards the mooring location at 0.3 kts with a course over ground of 95°.

Recovery was initiated by commanding the upper releaser to release a float attached to a 100 m coil of line stored in a bin immediately below. The release command was sent at a ping distance of 102 m. The upper releaser activated, the rope uncoiled as intended, and the float surfaced around 30 m from the vessel after a few seconds. A recovery line attached to the released float was used to bring the upper 200 m of AMU-26

onboard so that a 40 m section of Kevlar line between 200 and 160 m could be replaced with a 10 m section to correct the length of the mooring.

The 100-m coiled release line was replaced with a new, unused line due to concerns that it may have been sharply bent over the rail during recovery. The PingMe was moved to the IPS at the very top of the mooring so that depth measurements would be more intuitive. The mooring was then redeployed. AMU-26 was released in final configuration at 00:15 UTC on 27 August 2026 in position N 86° 31.99145', W 005° 26.91948. The PingMe reported the top of the mooring was at a depth of 54 m upon release, rising to 49.8 m by 00:28 UTC.

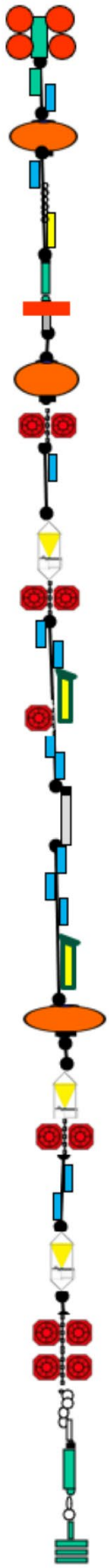
Deployment Summary

Table 18. Scientific instrumentation on the Amundsen-26 mooring with serial numbers, estimated deployment depth, and programmed sampling interval.

Release Time	26-AUG-2026, 00:15:36 UTC
Vessel latitude at release	N 86° 31.99145'
Vessel longitude at release	W 005° 26.91948'
Speed over ground at release	0.3 kts
Course over ground at release	95°
Wire angle at release	5-10° (Visual estimate only)
Echo sounder depth at release	4215 m

Instrument	**Serial No.**	**Depth (m)**	**Sampling Interval**
ASL Env. Sci. IPS5	51064	49	Continuous w/ 2 sec ping period, in target detection mode
Biospherical MPE-PAR	3689	49	See LISST-logger
LISST-logger	1102	49	20sec MPE-PAR, every 5 minutes
Ping Me	10291	49	N/A
NORTEK Signature250 ADCP, upward looking (narrow bandwidth)	108399	54	2 hr (ensembles of 60 pings) NoCells=32;CellSize=3m;BlankDist=0.5m
RBR Concerto	213817	56	Average of 10 samples, every 60 minutes
RBR Tridente	231950	56	N/A
Seabird SUNA V2 Nitrate Sensor	2096	61	4 hours
RBR Concerto	242901	75	Average of 10 samples, every 30 minutes
RBR Tridente	242778	75	N/A
McLane ParFlux Sediment trap (PST21)	ML-14449-01	81	1x500 ml sample every 2-8 week (in total 21 sampling events. See programming log for details)
RBR Concerto	238393	100	Average of 20 samples, every 5 minutes
RBR Concerto	238393	125	Average of 20 samples, every 5 minutes
WBAT (70kHz + 200kHz)	287957	130	2-4 CW & FM pings, every 2 hours, 30 minutes past the hour
RBR Concerto	238395	152	Average of 20 samples, every 5 minutes
RBR Concerto	232534	200	Average of 20 samples, every 5 minutes
MTE AURAL-M3	MTEAM 3121 70725RR096	184	10 min recording every 60 min, 15 minutes past the hour
RBR Concerto	60593	250	Average of 20 samples, every 5 minutes
RBR Concerto	242128	380	Average of 20 samples, every 5 minutes
RBR Concerto	201146	500	Average of 20 samples, every 5 minutes
WBAT (70kHz + 200kHz)	287939	585	2-4 CW & FM pings, every 2 hours, 35 minutes past the hour
NORTEK Signature55 3-beam ADCP,upward looking (narrow bandwidth)	200181	689	2 hr (ensembles of 51 pings); NoCells=70; CellSize=12m;BlankDist=4m
McLane ParFlux Sediment trap (PST21)	ML-916770-01	995	1x500 ml sample every 2-8 week (in total 21 sampling events. See programming log for details)

RBR Concerto	239957	1600	Average of 20 samples, every 5 minutes
RBR Concerto	240002	3800	Average of 20 samples, every 5 minutes
McLane ParFlux Sediment trap (PST21)	ML12289-02	3855	1x500 ml sample every 2-8 week (in total 21 sampling events. See programming log for details)



AMU-26 Depth: 4217m

IPS Snr. 51064 49

MPE-PAR + DL Snr: PAR: 3689 | LISST-logger: 1102 49
PingMe SN: 10291
Kevlar 5m
ADCP Sign 250 Snr: 108399 54

Concerto TriDent +PAR Snr: 213817 TriD: 213950 56

Kevlar 2m + chain + 2m

SUNA (N2) Snr: 2096 61
AR861 R5 SNR: 23050**192**, ARM: 35E1, Rel: 3555 62

Float w/100 m Kevlar coil 64

Kevlar 2m
Float DWB 36|-inch 750m 68

2 Nautilus floats 71

RBR Concerto + TriD SNR: 242901 TriD: 242778 75

Kevlar 10m (adjusted from 40 to 10 in deployment)

Sediment trap (100) SNR: ML-14449-01 **81**

2 Nautilus floats
RBR Concerto SNR: 238393 100
RBR Concerto SNR: 232534 125
Kevlar 42m
WBAT (150) SNR: 287957 **130**
1 Nautilus float
RBR Concerto SNR: 238395 152
RBR Concerto SNR: 238399 200
Kevlar 50m
AURAL (200) SNR: MTEAM 312170725RR096 **184**

RBR Concerto SNR: 60593 250
RBR Concerto SNR: 242128 380
RBR Concerto SNR: 201146 500
Kevlar 390m (40,50,200,100)
WBAT (600) SNR: 287939 **585**
Kevlar 100m
Signature 55 (700) SNR: 200181 **689**

Kevlar 300m (198,100)
Sediment trap (1000) SNR: ML-916770-01 **995**

2 Nautilus floats
RBR Concerto SNR: 239957 1600
RBR Concerto SNR: 240002 3800
Kevlar 12mm 2800m (503,505,503,504,533,212,50)
Sediment trap (3800) SNR: ML-12289-02 **3855**

Kevlar 340m (212, 108, 20)

4 Nautilus floats 4208

AR861 Snr. ***2REL100850*** Arm: 8D90
Release: 8D55
Ping on: 8D47
Kevlar 2m, Chain 2 m

Anchor 1000(850) kg **4217**

Figure 57. Configuration of mooring Amundsen-26

Deployment of Nansen-26 (NAN-26)

The final configuration for NAN-26 is summarised in Table 19 and Figure 60.

The initial deployment environment was a very large natural lead approximately 1 nm wide and more than 10 nm long with the port side of the vessel held against the downwind side of the lead by a 5-7 ms-1 breeze from 75-85°. Initial drift was 0.2-0.3 kts with a course over ground of 244°. The mooring was deployed anchor-first over the starboard side. Deployment began at 11:20 UTC with the plan that the vessel would drift until the mooring was almost complete and then maintain position using dynamic positioning while the mooring length was checked by placing it on the seabed.

At 13:30 UTC, after the lower part of the mooring and more than 1500 m of line had been deployed, several loops of exposed core were noticed protruding through the cover of a 500 m length of Kevlar line that was intended to form part of NAN-26 (Figure 58). The defect was around 3 m from the end of the line and at least a meter beyond of the buried tail of the eye splice. At this point the line was supporting the anchor weight.

The defective line was purchased in 2022 and had been used for one previous deployment when it formed part of NAN-22. After recovery of NAN-22 in August 2024 the line was stored ashore and spooled onto a drum at NPI in Tromsø in May/June 2026 ready for deployment as part of NAN-26. The defect was not detected during previous deployment, recovery or spooling operations.

The defective line was exchanged with a similar line recovered from NAN-24. There had been no plan to disconnect the loaded mooring cable at this point and the defective line was connected to the line below with a single shackle rather than a section of chain. Disconnection required inserting two additional shackles into the existing shackle to secure the line below to the vessel and also allow for connection of a new line above. With the replacement line connected, the eye of the defective line was cut off and free from the shackle securing the mooring to the vessel (Figure 58). The process of evaluating the need to replace the line, working out a plan and executing it took several hours. Normal deployment was resumed at 1600 UTC.

At 1704 UTC the vessel attempted to engage dynamic positioning (DP) to maintain position while the mooring was placed on the seabed to check the length of the mooring cable. To avoid entangling the cable, the starboard propellor (nearest to the mooring) was disabled. This required the port azipod to rapidly turn back and forth though 180 degrees to maintain position. The DP system on the vessel shuts down if one of the azipods does not turn quickly enough, and a persistent fault meant that the vessel was unable to maintain position using a single propellor. After several attempts with one propellor, both propellors were used to maintain position. With the vessel maintaining position, the length of the mooring was checked using both a calibrated line and an Ocean Space Acoustics A/S Ping-Me device that transmits pressure measurements over an acoustic link attached to the mooring. The test revealed that the mooring was around 10 m too long, requiring the cable to be recovered down to 200 m so that a 40 m section could be replaced with a 10 m and 20 m section.

During the length adjustment a small section with loops of exposed core protruding through the cover was noticed on the Kevlar line being for deployment (Figure 59).

At 2000 UTC, ice began to drift into the deployment area and the vessel had to resume drifting with the ice to avoid ice hitting the partially deployed mooring. Nansen-26 was released on 03 September 2026 at 2017 UTC , in position 83° 58.615 N, 021° 47.777 E while the vessel was drifting at 0.34 kts with a course over ground of 305°. The Ping Me reported that the top of the mooring was at a depth of 43 m upon release, sinking to 45.3 m by 20:22 UTC, presumably as the anchor weight sunk into soft sediment, after 2022 the depth remained stable.



Figure 58. Loops of exposed core protruding though the cover of a 500 m length of Kevlar line intended to be part of NAN-24. The far-left panel shows the defect before the dry line entered the water, panels on the right show the defect as the wet line was retrieved. © Marius Bratrein (far-left panel), Paul A. Dodd (other panels & montage)

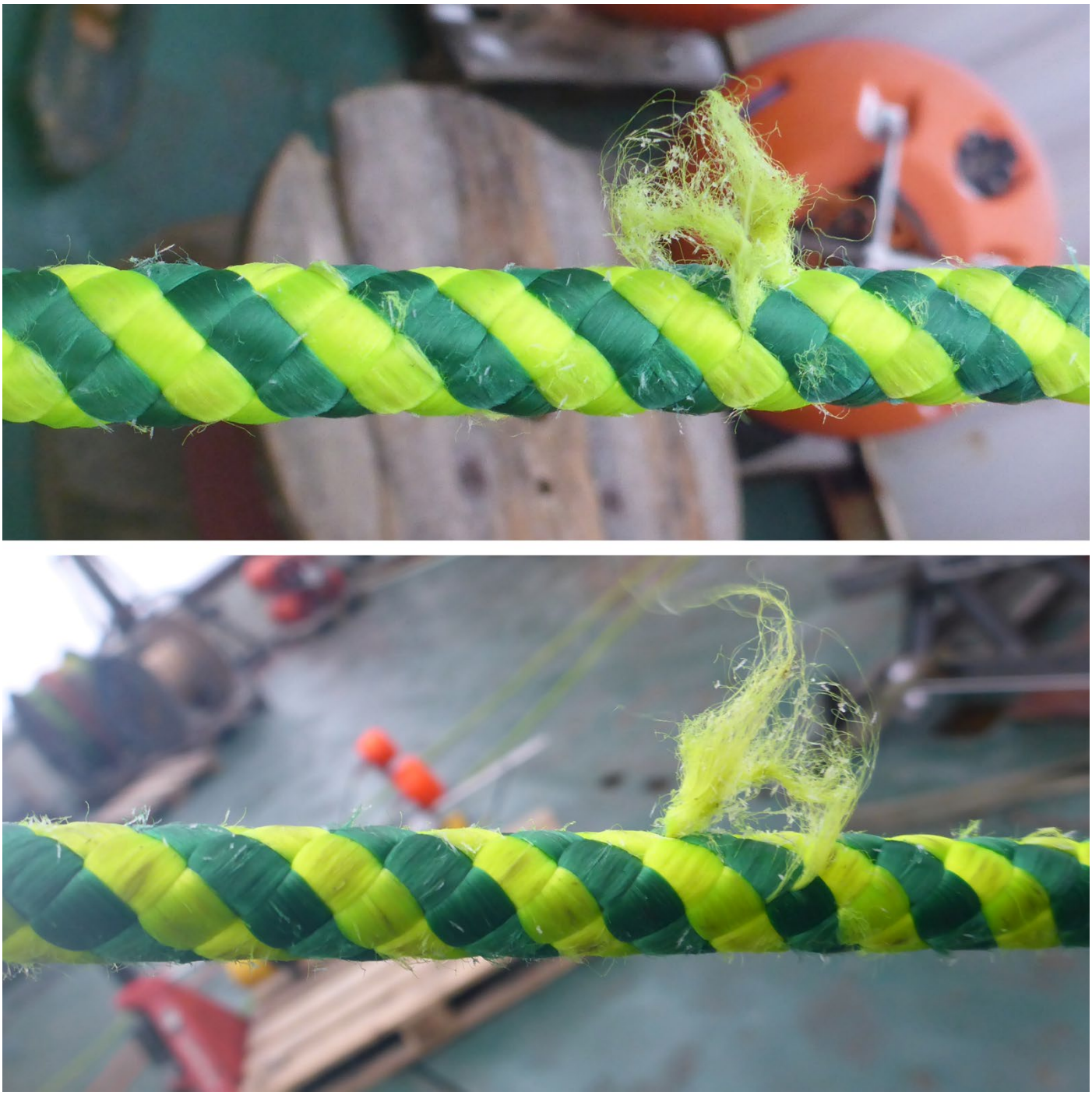


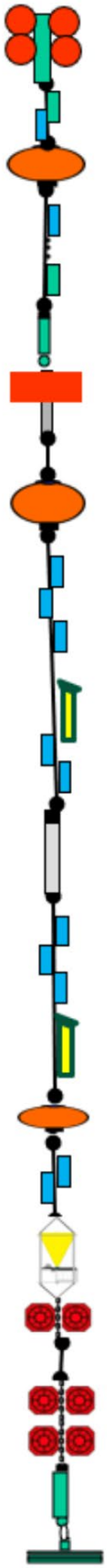
Figure 59. Minor damage to 500 m length of Kevlar line used for deployment of NAN-26. © Morven Muilwijk

Table 19. Scientific instrumentation on the Nansen-26 mooring with serial numbers, estimated deployment depth, and programmed sampling interval.

Release Time	03-SEP-2026, 20:17:00 UTC
Vessel latitude at release	83° 58.615 N
Vessel longitude at release	021° 47.777 E
Speed over ground at release	0.34 kts
Course over ground at release	305°
Wire angle at release	Vertical (Visual estimate only)
Echo sounder depth at release	4021 m

Instrument	Serial No.	Depth (m)	Sampling Interval
ASL Env. Sci. IPS5	51127	43	Continuous w/ 2 sec ping period, in target detection mode
RBR Solo (mounted in IPS cage)	233002	43	1 sample per minute
MPE-PAR with LISST Datalogger	PAR: 3688 DL: 1103	43	20 sec every 5 minutes
PingMe	10255	45	N/A
RDI ADCP 300	24485	50	1 hr (ensembles of 45 pings over 1 hour. 1m20s between ping) NoCells=30; CellSize=4m; BlankDist=0.5m
RBR Concerto with Tridente & PAR	232539 Tri: 239772 PAR: 239332	47	Average of 10 samples, every 1 hour
Seabird SUNA V2 Nitrate Sensor	1909	55	4 hours
RBR Concerto	60599	75	Average of 20 samples, every 5 minutes
RBR Concerto	238398	100	Average of 20 samples, every 5 minutes
RBR Concerto	201403	125	Average of 20 samples, every 5 minutes
WBAT (70kHz + 200kHz)	242708	150	2-4 CW & FM pings, every 2 hours, 30 minutes past the hour
RBR Concerto	201405	150	Average of 20 samples, every 5 minutes
MTE AURAL-M3	MTEAU00YYY LF304	205	10 min recording every 60 min
RBR Concerto	201414	250	Average of 20 samples, every 5 minutes
RBR Concerto	239735	380	Average of 20 samples, every 5 minutes
RBR Concerto	201413	500	Average of 20 samples, every 5 minutes
WBAT (70kHz + 200kHz)	242716	600	2-4 CW & FM pings, every 2 hours, 30 minutes past the hour
NORTEK Signature55 3-beam ADCP, upward looking (narrow bandwidth)	200188	693	2 hr (ensembles of 51 pings); NoCells=70; CellSize=12m;BlankDist=4m
RBR Concerto	239956	1570	Average of 20 samples, every 5 minutes
RBR Concerto	240001	3195	Average of 20 samples, every 5 minutes
McLane ParFlux Sediment trap (PST21)	NO SERIAL!	3795	1x500 ml sample every 2-8th week (in total 21 sampling events)

NAN-26



			Depth
IPS S/N. 51127 – RBR Solo S/N: 233002			43
MPE-PAR S/N: 3688 + DL S/N: 1103			43
PingMe S/N: 10255			45
Kevlar 5m			
ADCP RDI 300	S/N: 24485		50
RBR Concerto + TriD	S/N: 239760		53
Kevlar 2m+chain+2m			
SUNA S/N: 1909			55
AR861 R1 «TOP»	S/N: 3315	Arm: 1CFB Rel: 1C55	57
Float with 100 m Kevlar coiled up			59
Kevlar 2m			
Float DWB 36-inch 750m			63
RBR 75	S/N: 60599		75
RBR 100	S/N: 238398		100
RBR 125	S/N: 201403		125
Kevlar 82m			
WBAT 150	S/N: 242708		**149**
RBR 150	S/N: 201405		150
Kevlar 52m			
RBR 200	S/N: 239734		**204**
AURAL 200 +2m K	S/N: MTEAU00YYYLF304		**205**
Kevlar 377m			
RBR 250	S/N: 201414		250
RBR 380	S/N: 239735		380
RBR 500	S/N: 201413		500
WBAT 600	S/N: 242716		**590**
Kevlar 99m			
ADCP Signature 55	S/N: 200188		**693**
RBR 1570	S/N: 239956		1570
Kevlar 3076m			
RBR 3195	S/N: 240001		3195
Sediment trap 3800	S/N: 14449-02		**3798**
2 Nautilus spheres			
Kevlar 206m			
4 Nautilus spheres			4015
AR861	S/N. 3313	Arm: 1CF9 Rel: 1C55	
Anchor 1000(850) kg			**4022**

Figure 60. Configuration of mooring Nansen-26

Sediment Sampling

Overview and general approach

A giant box core (50cm x 50 cm x 60 cm) was used for taking sediment from seven locations (Figure 61 and Table 20). Three replicate box cores were taken at all locations with the exception of the Makarov Basin location (winch trouble prevented the third sample from being taken). At the mooring location in the Nansen Basin, three box cores were taken but failed to be used since the sediment was extremely soft and overflowed out from the box corer. Upon retrieval on deck, overlying water was siphoned away gently using tubes in order to access (undisturbed) surface sediment. Three pseudo replicates for all sample types were taken from the first box core (to allow for multiple samples to be obtained in case subsequent coring attempts failed) and either one or three pseudo replicates were taken from the other box cores (Table 20) for details on numbers of pseudo and real replicate samples taken per sample type).

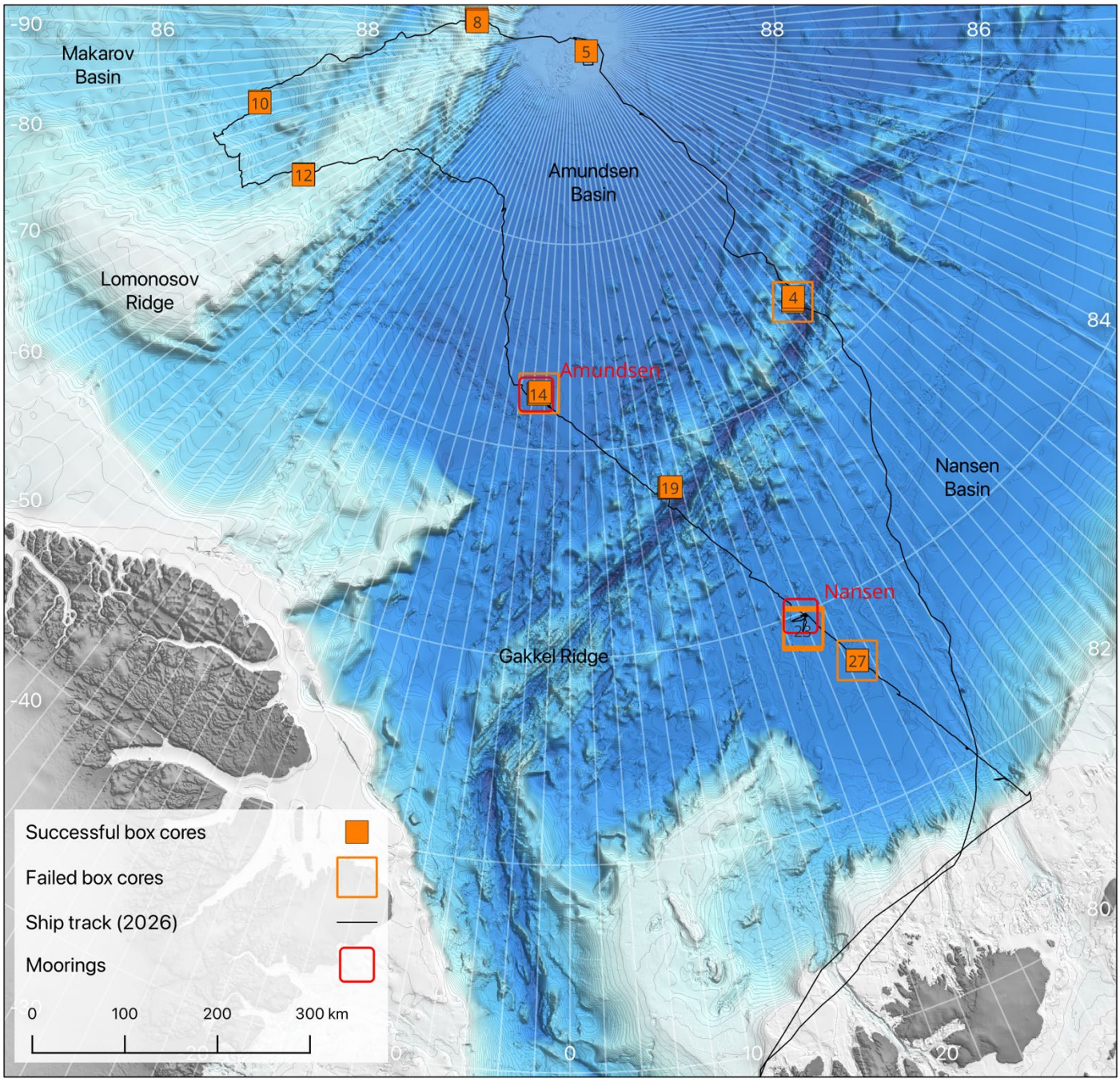


Figure 61. Overview of box coring sites. Background bathymetric and topographic data from IBCAO 4.

Table 20. Metadata of box coring sites, including the station number in cruise logger, the number of the box core, the name of the site based on geographic location, date and time, latitude and longitude, depth, and whether the coring operation was successful (i.e. usable sample could be taken). N.S.: no samples were taken at this site, so a name was not assigned.

Cruise logger station	Box core	Station name	Date/time (UTC)					Lat (°N)	Lon (°E)	Depth (m)	Success
			YYYY	MM	DD	HH	MM				
6	1	Gakkel	2026	7	27	18	52	86.6532	40.2277	1871	No
7	2	Gakkel	2026	7	27	19	57	86.6555	40.2994	1964	Yes
8	3	Gakkel	2026	7	27	22	8	86.6664	40.4733	2422	Yes
9	4	Gakkel	2026	7	28	1	12	86.6869	40.8423	3032	Yes
11	6	Lomonosov	2026	8	1	2	16	89.0714	-101.845	1091.93	Yes
12	7	Lomonosov	2026	8	1	4	29	89.0798	-100.923	1107.16	Yes
13	8	Lomonosov	2026	8	1	6	29	89.0858	-100.073	1162.18	Yes
14	9	Makarov	2026	8	4	23	55	86.9238	-78.4672	2747.12	Yes
15	10	Makarov	2026	8	5	2	18	86.9234	-78.2398	2752.09	Yes
16	11	Lomonosov 2	2026	8	13	15	57	87.0965	-62.9856	1223.1	Yes
17	12	Lomonosov 3	2026	8	13	17	19	87.0939	-62.9356	1227.41	Yes
18	13	Lomonosov 4	2026	8	13	18	56	87.0908	-62.8876	1227.13	Yes
19	14	Amundsen	2026	8	20	22	34	86.5409	-5.1387	4219.81	Yes
20	15	Amundsen	2026	8	21	2	2	86.5412	-4.9957	4156.05	Yes
21	16	Amundsen	2026	8	21	4	40	86.5473	-4.9791	4220.77	No
22	17	Amundsen	2026	8	21	7	26	86.5607	-4.8872	4222.45	Yes
23	18	Gakkel 2	2026	8	29	1	32	85.5376	12.4427	1881.26	Yes
24	19	Gakkel 2	2026	8	29	3	0	85.5425	12.5704	1850.96	Yes
25	20	Gakkel 2	2026	8	29	5	46	85.5446	12.7115	2013.42	Yes
26	21	N. S.	2026	8	31	20	14	83.8668	21.7025	4045.05	No
27	22	N. S.	2026	8	31	23	16	83.85	21.5491	4047.33	No
28	23	N. S.	2026	9	1	2	8	83.8397	21.4914	4047	No
29	24	Nansen	2026	9	4	14	33	83.3658	24.8302	4011.7	Yes
30	25	Nansen	2026	9	4	17	29	83.3658	24.8302	4011.8	Yes
31	26	Nansen	2026	9	4	19	52	83.3658	24.8302	4011.2	No
32	27	Nansen	2026	9	4	22	16	83.8659	24.8318	4011.9	Yes

Overview of sediment samples collected for analysis ashore

Contact person: Arunima Sen (arunimas@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

*Table 21. Summary of all samples taken from the box cores. Numbers refer to the number of subsamples taken from each box core, from left to right (box core 1, box core 2, box core 3). Meiofauna community and microbes samples were sliced at 3 depths: 0–2 cm, 2–5 cm, 5–10 cm. For meiofauna diets and incubations, the first 10 cm of 50ml syringes were pooled together without slicing. * Two moss samples were found in box core 2 from the Nansen Basin location and will be given to UNIS terrestrial biologists.*

	Station						
Type of sample	Gakkel Ridge1	Lomonosov Ridge1	Makarov Basin	Lomonosov Ridge2	Amundsen Basin	Gakkel Ridge2	Nansen Basin
eDNA	3 1 1	3 1 1	3 1 -	3 1 1	3 1 1	3 1 1	3 1 1
Organic contaminants	3 3 3	3 3 3	3 3 -	3 3 3	3 3 3	3 3 3	3 3 3
Inorganic contaminants	3 3 3	3 3 3	3 3 -	3 3 3	3 3 3	3 3 3	3 3 3
Meiofauna community	3 3 3	3 3 3	3 3 -	3 3 3	3 3 3	3 3 3	3 3 3
Microbes	3 3 3	3 3 3	3 3 -	3 3 3	3 3 3	3 3 3	3 3 3
Benthic foraminimera	1 1 1	1 1 1	1 1 -	1 1 1	1 1 1	1 1 1	1 1 1
TOC-TN-grain size	3 1 1	3 1 1	3 1 -	3 1 1	3 1 1	3 1 1	3 1 1
Pigments	3 1 1	3 1 1	3 1 -	3 1 1	3 1 1	3 1 1	3 1 1
Sediment stable isotopes	3 1 1	3 1 1	3 1 -	3 1 1	3 1 1	3 1 1	3 1 1
Meiofauna diets	1 1 1	1 1 1	1 1 -	1 1 1	1 1 1	1 1 1	1 1 1
Porewater	1 1 -	1 1 -	1 1 -	1 1 -	1 - 1	1 1 -	1 - 1
Incubation experiments							
Macrofauna incubations	3 3 3	3 3 3	3 6 -	3 3 3	3 - 6	3 3 3	3 - 6
Meiofauna incubations	3 3 3	3 3 3	3 6 -	3 3 3	3 - 6	3 3 3	3 - 6
Fauna stable isotopes/ contaminants	3 2 2	8 6 7	4 1 -	8 11 12	2 1 2	11 10 9	4 8* 5

eDNA

Contact person: Miriam Brandt (mibr@norceresearch.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Surface sediment samples (three pseudo replicates from the first box core and one replicate from the next two box cores) for environmental DNA (eDNA) analyses were collected by filling 50ml Falcon tubes about halfway with clean, disposable plastic spoons and frozen at -80°C.

Organic contaminants

Contact person: Ida Beathe Øverjordet (ida.beathe.overjordet@sintef.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Three surface sediment samples from each box core were taken for organic contaminants analysis. This was done by filling three aluminium tins using a methanol rinsed metal spoon and covering with aluminium foil. Samples were then frozen at -20°C and upon freezing, each individual tin sample was covered with aluminium foil and placed in individual plastic bags.

Inorganic contaminants

Contact person: Tomasz Maciej Ciesielski (tomaszc@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Three surface sediment samples from each box core were taken for inorganic contaminants analysis. This was done by filling 50ml Falcon tubes two-thirds full with clean, disposable plastic spoons and freezing at -20°C.

Palaeoceanography (planktic and benthic foraminifera)

Contact person: Adele Westgård (adele.westgard@uit.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

One surface sediment sample from each box core was taken for palaeoceanographic analyses (planktic and benthic forams) by using a metal spoon to fill a small plastic bag with undisturbed surface sediment. Samples were stored at 4°C.

Meiofauna communities

Contact person: Andreas Altenburger (andreas.altenburger@uit.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Three sediment samples were taken from each box core for quantifying meiofauna communities. This was done by using cutoff 60ml syringes and slicing at the following intervals: 0-2 cm, 2-5 cm and 5-10 cm. Slices were preserved in absolute ethanol and stored at 4°C.

Microbe communities

Contact person: Arunima Sen (arunimas@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Three sediment samples were taken from each box core for quantifying sediment microbes communities. This was done by using cutoff 60ml syringes and slicing at the following intervals: 0-2 cm, 2-5 cm and 5-10 cm (same intervals as meiofauna samples). Slices were frozen at -80°C.

Sediment isotopes

Contact person: Amanda Ziegler (azi@akvaplan.niva.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Three sediment samples were taken from the first box core and one from the subsequent box cores for analyzing carbon and nitrogen stable isotopes in the sediment. Samples were taken with a cutoff 60ml syringe, where the first 2 cm of sediment was preserved. Samples were frozen at -20°C.

TOC, TN & grain size

Contact person: Arunima Sen (arunimas@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Three sediment samples were taken from the first box core and one from the subsequent box cores for analyzing total organic carbon (TOC), total nitrogen (TN) and grain size in the sediment. Samples were taken with a cutoff 60ml syringe, where the first 2 cm of sediment was preserved. Samples were frozen at -20°C.

Sediment pigments

Contact person: Arunima Sen (arunimas@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Three sediment samples were taken from the first box core and one from the subsequent box cores for analyzing chlorophyll *a* and phaeopigments in the sediment. Samples were taken with a cutoff 60ml syringe, where the first 2 cm of sediment was preserved. Samples were wrapped in aluminium foil and frozen at -20°C.

Meiofauna diets

Contact person: Arunima Sen (arunimas@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Three sediment samples were taken from each box core to analyze via DNA metabarcoding the food sources and diets of sediment meiofauna. Samples were taken with a cutoff 60ml syringe, where the first 5 cm of sediment was preserved. All three pseudo replicates were pooled into a plastic Kautex jar and preserved in absolute ethanol. Samples were stored at -20°C.

Sediment porewater chemistry

Contact person: Arunima Sen (arunimas@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

One 9 cm diameter core was inserted into the sediment of the first two box cores at each station from which porewater was retrieved to analyze sediment geochemistry. Rhizons were inserted into the core every 2 cm and extracted water was divided into three aliquots: 1ml was mixed with 1ml of zinc acetate and frozen at -20°C for measuring sulfide concentrations and the remaining water was divided into 2 (when possible) where one portion was frozen at -20°C (for anions, nutrients and DIC) and one portion was preserved at 4°C (for cations).

Macrofauna incubations

Contact person: Arunima Sen (arunimas@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Three 9 cm diameter cores were inserted into each box core at each station (6 at the second box core at the Makarov Basin location where only two box cores were possible and 6 in the third box core at the Nansen basin station because the surface was very disturbed in the second box core) for incubations to measure sediment oxygen demand (SOD) (see section 10.03 for details on incubations). After the incubation period, the top 10 cm of each core was sieved over a 250µm mesh and remaining material was preserved in absolute ethanol to identify and quantify macrofauna communities.

Meiofauna incubations

Contact person: Arunima Sen (arunimas@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

Upon termination of the incubations, a cutoff 60 ml syringe was inserted into each incubation core and the top 10 cm was preserved in absolute ethanol to identify and quantify the meiofauna community in each incubation core.

Fauna stable isotopes (benthic food webs)

Contact person: Amanda Ziegler (azi@akvaplan.niva.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

After all subsamples were taken from each box core, the top 10 cm of sediment was sieved over a 250µm mesh sieve. Remaining material was sorted and identified on board till lowest taxonomic order possible (usually family level) and preserved at -20°C. Samples will be subjected to carbon and nitrogen stable isotope analyses to investigate benthic food webs.

Contaminants in macrofauna

Contact person: Tomasz Maciej Ciesielski (tomaszc@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo, Ivan Cautain

After all subsamples were taken from each box core, the top 10 cm of sediment was sieved over a 250µm mesh sieve. Remaining material was sorted and identified on board till lowest taxonomic order possible (usually family level) and preserved at -20°C. Samples will be used to identify contaminants in macrozoobenthos.

Sediment Oxygen Demand Incubations

Contact person: Arunima Sen (arunimas@unis.no)
Responsible persons on board: Arunima Sen, Carla López Mateo (carlam@unis.no), Ivan Cautain (icautain@proton.me)

At each site, sediment community oxygen consumption was measured as a rate (mmol O2/m2) in incubation experiments.

Before each box core site, 100 L of bottom water was collected with Niskin bottles. Bottom water temperature was recorded, and a cold room set at that temperature. Three 9cm diameter cores were inserted into each box core at each station (6 at the second box core at the Makarov Basin location where only two box cores were possible and 6 on the third box core at the Nansen Basin station where the second box core's surface was highly disturbed) for incubations. Incubation cores were taken out after all other samples were collected, by using hands to dig in the sediment and remove cores from the bottom, ensuring it was covered and with minimal disturbance. Core bottom was attached, and the core cleaned on deck.

In the lab, bottom water from the Niskin bottles was gently added into each core, ensuring minimal sediment disturbance. Core tops were put on, and cores were put in tubs of water in the cold room, and plastic tubes attached to bubblers inserted, to oxygenate water for 12 hours. After this period, bubbler tubes were removed, additional water was added to remove any air bubbles, and core tops were sealed. On core tops were metallic stirrers and spots for measuring oxygen concentration. Magnetic stirrers were placed on top of the cores to slowly rotate stirrers in cores. An initial oxygen measurement was taken using a PreSens Fibox 4, and then measurements were taken every four hours, until either 15% of oxygen was consumed or after 72 hours. Following this, subsamples for meiofauna were taken with a 60ml cutoff syringe (the top 10 cm were preserved in absolute ethanol). The cores were then extruded and the top 10 cm of the cores were sieved over a 250µm mesh sieve and preserved in absolute ethanol to quantify the macrofauna.

Zooplankton Survey

Gear Configuration and Overview

Contact person: Anette Wold (anette.wold@npolar)
Responsible persons on board: Anette Wold, Sünnje Basedow, Khuong Dinh, Bergfrid Høgås Skjæveland

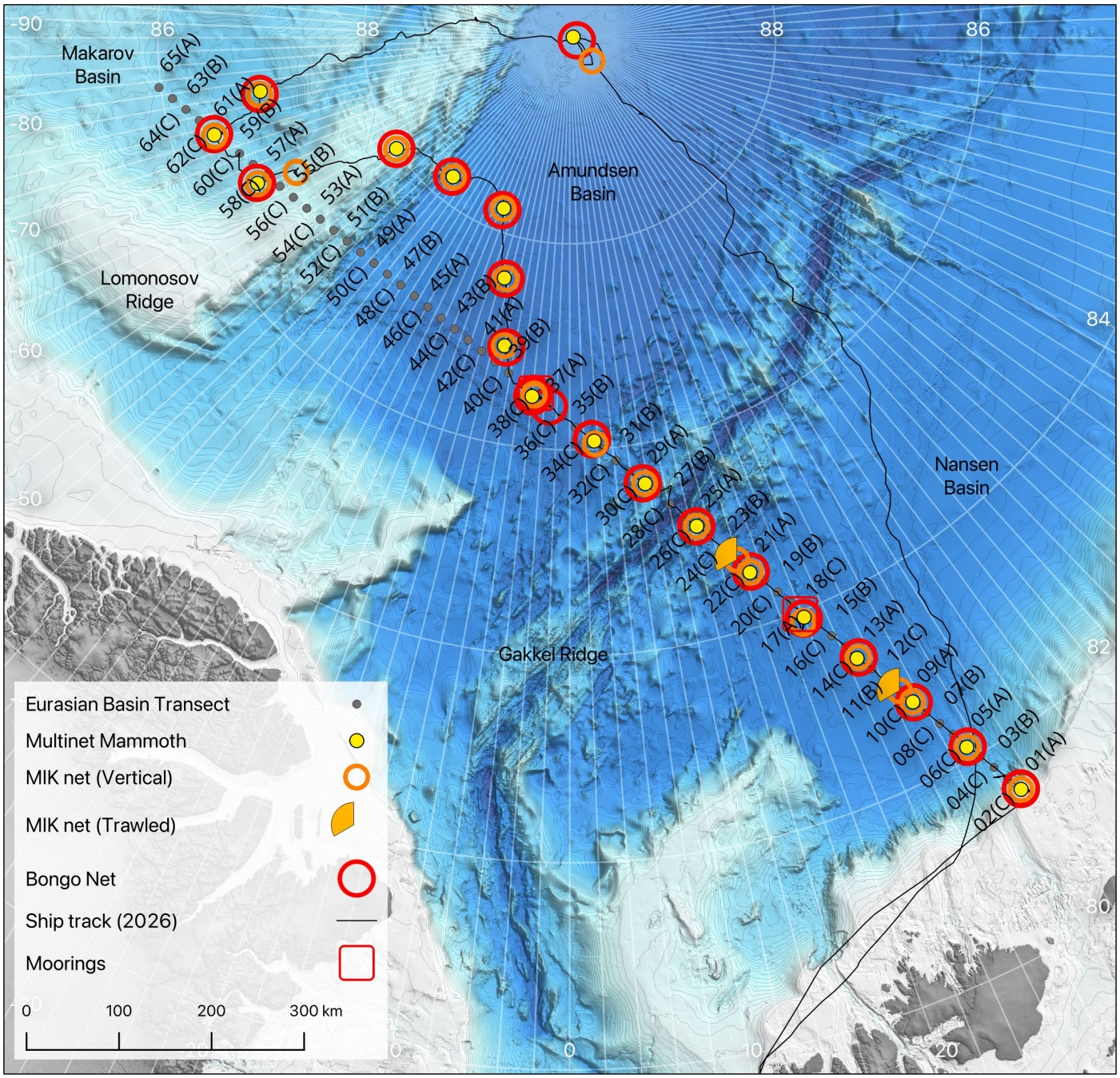


Figure 62. Overview of net casting/ trawling sites. Background bathymetric and topographic data from IBCAO 4.

Multinet Mammoth

The Multinet Mammoth was used to collect samples for taxonomic and genetic analyses.
(Hydro-Bios, opening 1m2, 9 nets, length 550 cm, mesh size 180 µm)
Sampling depths: Bottom-1600-800-200-50-20-0m

Bongonet

Samples were collected with the 180 µm mesh net at all stations. The 64 µm mesh net was deployed at selected stations when time permitted.

(Hydro-Bios, diam. 60 cm, opening 0.2827 m^2, 2 nets, length 250 cm, mesh size 180 µm and 64 µm)
Sampling depths: 50-0m (200/100-0 m at selected station)
The Bongo net was used to collect samples in surface waters for taxonomic/genetic analyses, Calanus phenology studies, and experimental work.

MIK net

MIK net was used to collect samples for taxonomy and genetics. Each sample was split into:

- Taxonomy subsample (1/2)
- Genetics EtOH subsample (1/4)
- Genetics TES-buffer subsample (1/4)

Additional MIK net hauls were conducted at 1–2 stations per basin to collect samples for contaminant and metabolic analyses. The net was then deployed as deep as time permitted (1200, 1500 & 1600 m) to increase number of Amphipods and deep sea shripms.

(Method-Isaac-Kidd net): opening 3.14 m^2 (diameter 2 m), length 13 m, mesh size 1.6 mm (500 µm mesh in the last meter)
Sampling depths: 800-0 m

Table 22. Overview of zooplankton sampling conducted, including sampling gear, depth strata, sample types, and stations where samples were collected.

Gear	Sampling depths	Sample type	Stations
Multinet Mammoth 180 µm	Bottom–1600, 1600–800, 800–200, 200–50, 50–20, 20–0 m	Mesozooplankton taxonomy and genetics	All A-stations
Bongo net 180 µm	50-0 m	Mesozooplankton taxonomy, genetics, biomass (C/N)	All A-stations
	50-0 m	*Calanus* phenology	All A-stations
	50-0 m	Multiple Stressors experiments, CT experiment, Egg production	All A-stations
Bongo net 64 µm	100-0 m	Small mesozooplankton taxonomy and genetics	E5A, 37A, 36C, 33A, 29A, 25A, 21A, 17A, 13A, 9A, 5A, 1A
MIK net 1.5 mm	800-0 m	Macrozooplankton taxonomy and genetics	All A-stations and 2 trawl stations
	1500-0 m	Zooplankton contaminants Macrozooplankton metabolic	61A, CTD 298, 37A, 17A and 2 trawl stations

Table 23. Overview of zooplankton samples collected, including sample labels, total number, and responsible institutions and personnel.

Sample type	Gear	Labels	Samples	Analysis Responsible institution	Responsible person
Mesozooplankton taxonomy	Multinet	ZOT 1-111	111	IOPAN	**Anette Wold**
	Bongo net 180 µm	ZOT 201-231	19	UNIS	**Janne Søreide**
Mesozooplankton genetics (EtOH)	Multinet	ZOG 1-111	111		
	Bongo net 180 µm	ZOG 201-231	19		
Meso and macrozooplankton genetics (TES buffer)	Multinet	ZGT 1-320	320		
	MIK net	ZGT 321-374	54		
Mesozooplankton Biomass	Bongo net 180 µm	ZOB 1-18	18		
Small mesozoopl. taxonomy	Bongo net 64 µm	ZOT/ZOG: 207, 212, 213, 214, 217, 218, 221, 222, 225, 226, 229, 230	12	UiT	**Camilla Svensen**
Small mesozoopl. genetic					
Macrozooplankton taxonomy	MIK net	MZT 1-21	21	IOPAN	**Anette Wold**
Macrozooplankton genetics		MZG 1-21	21	UNIS	**Janne Søreide**
Gelatinous zooplankton		GEL 1-152	152	Akvaplan	**Sanna Majaneva**
Macrozooplankton metabolic	MIK net	ZME 1-57	57	NTNU	**Jose Landeira**
Zooplankton contaminants		ZET 1-106	106	SINTEF	**Ida Beathe Øverjordet**
Zooplankton pigments	Bongo net 180 µm	ZHP 1-7	7	UiT	**Sünnje Basedow**
Calanus Carbon & Nitrogen		CAC 1-74	74	UNIS	**Janne Søreide**
Calanus genetic		CAG 1- 1573	1573		
Calanus lipid pictures		Pictures with stereomicroscope		UNIS	**Bergfrid Høgås Skjæveland**
Thermal tolerance	Bongo net 64 µm	Onboard measurements	1372	UiO	**Khoung Dinh**
Multiple stressor experiment		Onboard experiments	180		
Live samples of Calanus hyperboreus & C. glacialis		Experiments UiO, UNIS and AWI	1390		

Mesozooplankton taxonomy and genetics

Contact person: Anette Wold (anette.wold@npolar.no)
Responsible persons on board: Anette Wold, Sünnje Basedow, Bergfrid Høgås Skjæveland, Khuong Dinh

Sampling procedures

Mesozooplankton taxonomy and genetic was sampled from Multinet Mammoth and Bongo nets at all A-stations.

The Multinet Mammoth sampled the entire water column (bottom-1600-800-200-50-20-0 m). Each sample was split into:

- Taxonomy subsample (1/2)
- Genetics EtOH subsample (1/4)
- Genetics TES-buffer subsample (1/4)

The Bongo net sampled the upper 50–0 m layer using a 180 µm mesh at all stations. Additional samples from 100–0 m using a 64 µm mesh were collected for small mesozooplankton when time permitted. Each Bongo sample was divided into:

- Taxonomy subsample (1/2)
- Genetics EtOH subsample (1/2)

After retrieval, nets were rinsed thoroughly and the entire sample was photographed. Large gelatinous zooplankton and macrozooplankton were removed and processed separately. The remaining sample was filtered through a 180 µm sieve homogenized and divided into subsamples using a Folsom splitter.

Taxonomy subsamples

Taxonomy subsamples were transferred to 125 mL bottles containing seawater and preserved with 10 mL of 37% acid-free formaldehyde. Samples were stored at room temperature or 4°C.

Genetic subsamples

Genetic subsamples were preserved either in ethanol or TES buffer. Ethanol subsamples were filtered through a 180 µm sieve and preserved in 96% ethanol at a ratio of approximately 1:10 (sample:ethanol). TES-buffer subsamples (Multinet only) were filtered through a 180 µm sieve, rinsed with freshwater, homogenized, and aliquoted into cryovials containing equal volumes of sample homogenate and TES buffer (2 mL + 2 mL). To minimize cross-contamination, all equipment used for TES samples was cleaned and decontaminated between samples and stations. Equipment, freshwater, and seawater negative controls were collected twice during the cruise following the same cleaning procedures as routine samples.

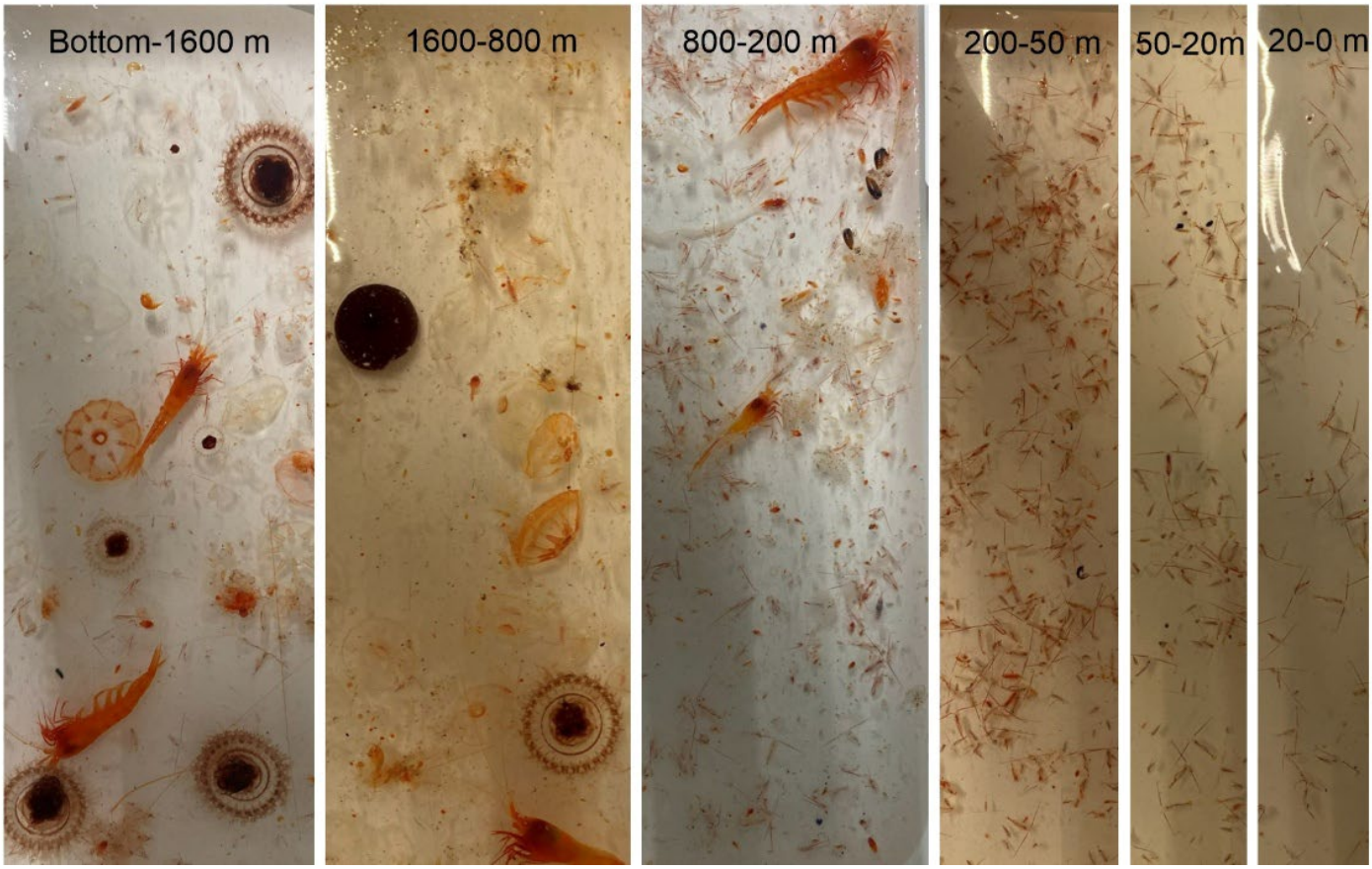


Figure 63. Total catch of each Multinet layer at Amundsen Basin mooring station (37A). © Anette Wold

Analysis

Taxonomy samples will be analysed at the Institute of Oceanology of the Polish Academy of Sciences (IOPAN), where organisms will be identified and counted following standard zooplankton procedures. Abundance data (ind. m^{-3}) will be published through the NPI Plankton Database (https://data.npolar.no/plankton).

Genetic samples will be processed and DNA extracted at the University Centre in Svalbard (UNIS) and sequenced in Oslo, Norway. Resulting OTU tables will be published as a separate dataset with its own DOI. Metabarcoding results will be compared with the morphological taxonomy data to assess consistency between molecular and traditional taxonomic methods.

Macrozooplankton taxonomy and genetics

Contact person: Anette Wold (anette.wold@npolar.no)
Responsible persons on board: Anette Wold, Sünnje Basedow, Bergfrid Høgås Skjæveland, Khuong Dinh

Sampling procedures

Macrozooplankton samples for taxonomy and genetic analyses were collected with the MIK net at all A-stations from 800–0 m.

Each sample was split into:

- Taxonomy subsample (1/2)
- Genetics EtOH subsample (1/4)
- Genetics TES-buffer subsample (1/4)

After retrieval, nets were rinsed thoroughly and the entire sample examined in a large tray and large gelatinous zooplankton were removed and stored separately for subsequent genetic analyses. The remaining sample was sieved through a 500 µm mesh, homogenized and divided into subsamples using a Folsom splitter.

Taxonomy and Genetic subsamples were further processed and analysed similar as for mesozooplankton (see section 11.3)

Gelatinous zooplankton genetics

Gelatinous zooplankton specimens were kept submerged in seawater during processing and identified to the lowest possible taxonomic level. All specimens were counted and photographed, and up to ten individuals per taxon were measured for body length and wet weight. Specimens were preserved in 96% ethanol (approximately 1:10 biomass-to-ethanol ratio) and stored at −20°C for subsequent molecular diversity analyses.

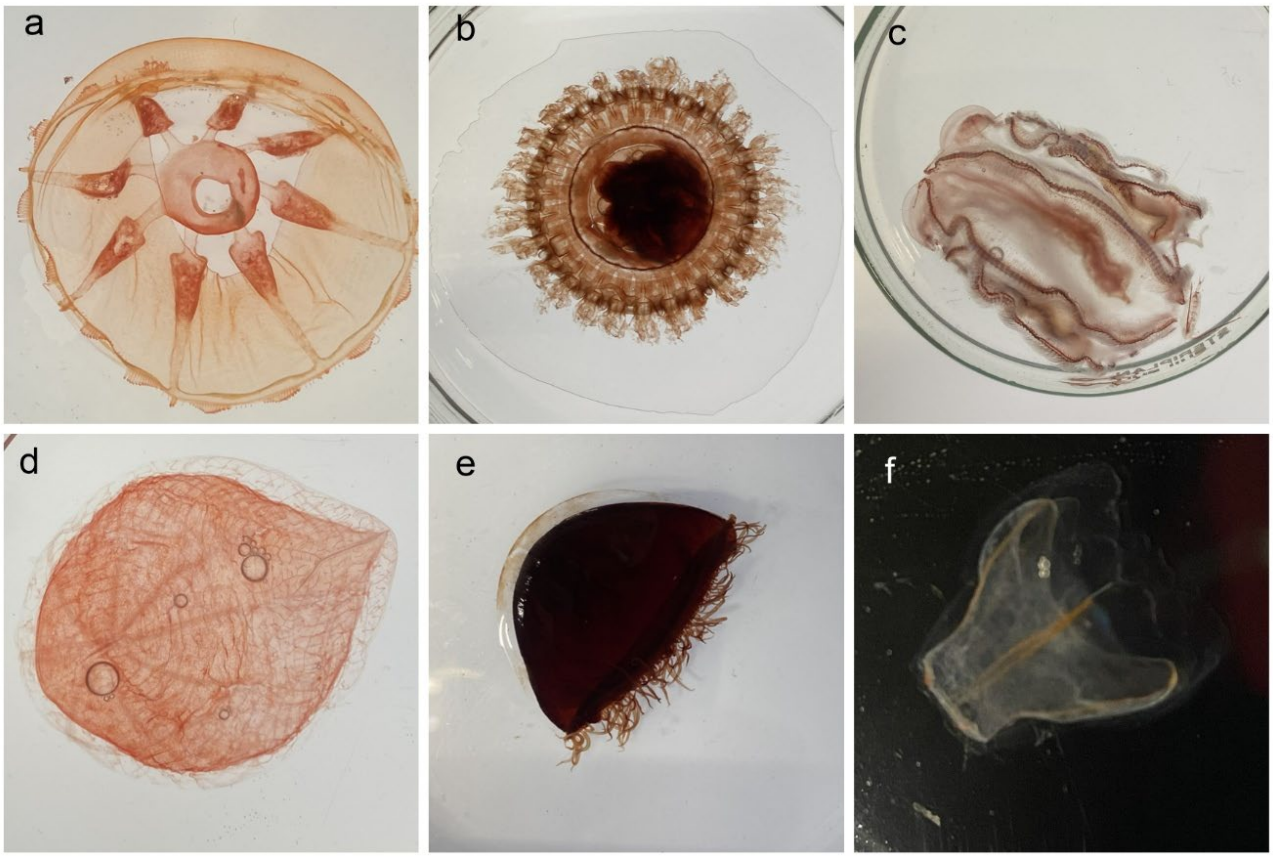


Figure 64. Photo of all the gelatinous zooplankton species collected from MIK nets listed in the order of registrations: a) Botrynema brucei ellinorae, b) Atolla sp., c) Mertensia ovum, d) Beroe sp., e) Crossata sp., d). Siphonophorae indet. (Aglantha digitale not included in picture). © Anette Wold

Macrozooplankton Metabolics

Contact person: Jose Landeira Sanchez (jose.landeira.sanchez@ntnu.no)
Responsible persons on board: Anette Wold, Sünnje Basedow, Bergfrid Høgås Skjæveland, Khuong Dinh

Sampling

The most abundant macrozooplankton species were collected from MIK net samples at one station in the Makarov Basin (61A), one station in the Amundsen Basin (37A), and one station in the Nansen Basin (17A), as well as from MIK trawl catches, to assess the metabolic status of pelagic krill and amphipods.

Specimens were sorted from the samples as soon as possible after collection and kept in filtered seawater on crushed ice to maintain temperatures close to in situ conditions. Individuals were measured for approximate body length and transferred individually or in small groups of the same species and size class to cryovials. Samples were then placed directly in a −80°C freezer located adjacent to the sorting area and stored at −80°C until analysis.

Macrozooplankton abundance was generally low at all stations, and catches were dominated by juvenile stages. Consequently, both the number of individuals and total biomass were limited, and some samples may need to be pooled prior to analysis.

Analysis

Samples will be analysed at NTNU, Trondheim, to determine lipid content, electron transport system (ETS) activity, citrate synthase activity, ATP production, and total protein content.

Table 24. Macrozooplankton specimens collected for metabolic analyses. The table shows station coordinates, sampling depth strata, species selected for analysis, and the number of individuals processed (n).

Station	Latitude (°N)	Longitude (°E)	Depth strata	Species	*n*
61A	86.4205	-74.5774	800-0 m	*Clione limacina*	1
				Themisto libelulla	3
				Themisto abyssorum	4
				Eusirius holmi	2
				Cyclocaris guilelmi	1
				Hymenodora glacialis	1
ship stopped due to ice condition and fog	87.0396	-63.7451	1200-0 m	*Hymenodora glacialis*	6
				Themisto abyssorum	2
				Cyclocaris guilelmi	1
				Eusirius holmi	1
				Clione limacina	2
37A	86.5239	-5.6838	1500-0 m	*Hymenodora glacialis*	5
				Eusirius holmi	2
				Themisto abyssorum	1
				Cyclocaris guilelmi	2
				Themisto libelulla	2
MIK trawl 1	84.6810	17.7603	40-0 m	*Thysanoessa longicaudata*	1
				Themisto abyssorum	1
				Themisto libelulla	1
17A	83.8828	21.7214	800-0 m	*Hymenodora glacialis*	3
				Themisto libelulla	2
				Thysanoessa longicaudata	2
				Themisto abyssorum	2
				Cyclocaris guilelmi	1
				Eusirius holmi	1
MIK trawl 2	82.9044	26.8056	110-0m	*Thysanoess inermis/longicaudata*	3
				Themisto libelulla	3

Ecotoxicology samples

Contact person: Ida Beathe Øverjordet (Ida.Beathe.Overjordet@sintef.no)
Responsible persons on board: Khuong V. Dinh, Bergfrid Høgås Skjæveland, Sünnje L. Basedow, Anette Wold

Samples were collected to analyze the baseline pollutant concentrations in different zooplankton groups/species.

Table 25. Overview of samples for ecotoxicological analyses. Samples were kept at -20°C until analysis.

	Station/Location ID						
	285	**61A**	**26**	**37A**	**87**	**17A**	**110**
Fish	10						
Clione limacina			1				
Shrimps		2	3	4		6	
Krill	3				1	1	1
Themisto libellula	3	1	1	1	1		
Themisto abyssorum		1	1			1	
Eusirus holmi		1					
Cyclocaris guilelmi			1	1		1	
Calanus hyperboreus		3	3	3	3	3	
Paraeuchaeta spp.		1		1	3	2	
Jellyfish		1	1				
Arrow worms		1	1	3		2	
Bulk zooplankton		6	6	6	6	6	

Multiple stressor experiment

Contact person: Khuong V. Dinh (van.k.dinh@ibv.uio.no)
Responsible persons on board: Khuong V. Dinh, Bergfrid Høgås Skjæveland, Sünnje L. Basedow, Anette Wold

Aim: To assess the effects of temperature, microplastic exposure, and species composition on *Calanus hyperboreus* and *C. glacialis*.

Objective: To determine how inter- and intra-specific interaction shapes the response of Calanus hyperboreus and C. glacialis to microplastics under warming.

Zooplankton sampling

Zooplankton were collected near the North Pole on 30 July 2026 using a Bongo net (mesh size = 180 µm). Two sampling events were conducted at stations located at approximately 89.93°N, 70.32°E and 89.93°N, 69.67°E, where the local bottom depth was approximately 4,240 m. Sampling was conducted to a maximum depth of 50 m. Following collection, live *Calanus* spp. were sorted from the samples and transferred to appropriate seawater conditions for subsequent experimental use.

Microplastics and preparation

The test microplastics consisted of spherical polystyrene microspheres with a nominal diameter of 30 µm. The calibrated mean particle diameter was 29.50 µm. Exposure solutions were prepared in seawater by direct dilution of the original microsphere stock. For exposure, 100 µL of the appropriate working suspension was added to each 250 mL exposure bottle, resulting in nominal final concentrations of 0.1, and 10 particles mL^{-1}, respectively. Control bottles received 100 µL of particle-free seawater.

Experimental design and setup

A fully factorial experimental design was used to evaluate the interactive effects of temperature, microplastic exposure, and species composition on *Calanus* spp. Two nominal temperature treatments (1 and 4 °C) were crossed with three nominal microplastic concentrations (0, 0.1, and 10 particles mL^{-1}) and three species-composition treatments. The species-composition treatments consisted of monospecific groups of four *C. hyperboreus*, monospecific groups of four *C. glacialis*, and mixed-species groups containing two *C. hyperboreus* and two *C. glacialis*. This resulted in a total of 18 treatment combinations (2 temperatures × 3 microplastic concentrations × 3 species compositions). Each treatment combination was replicated five times, giving a total of 90 experimental bottles. Each bottle contained two copepods in 250 mL of seawater and represented an independent experimental unit.

Individual body size was recorded to account for variation in size and biomass. Copepods were fed *Thalassiosira gravida* ad libitum, and fecal pellet and egg production were measured every two days over the 28-day experimental period.

Table 26. Fully factorial experimental design showing temperature (1 and 4°C), microplastic concentration (0, 0.1, and 10 particles mL^{-1}), and Calanus species composition treatments.

		Temperatures (°C)					
		1	4	1	4	1	4
Microplastics (particles mL^{-1})	0	2 CH	2 CH	2 CG	2 CG	1 CH + 1 CG	1 CH + 1 CG
	0.1	2 CH	2 CH	2 CG	2 CG	1 CH + 1 CG	1 CH + 1 CG
	10	2 CH	2 CH	2 CG	2 CG	1 CH + 1 CG	1 CH + 1 CG

Thermal tolerance (CTmax) tests

Contact person: Khuong V. Dinh (van.k.dinh@ibv.uio.no)
Responsible persons on board: Khuong V. Dinh, Bergfrid Høgås Skjæveland, Sünnje L. Basedow, Anette Wold

Aim: To determine the thermal tolerance thresholds (CTmax) of Arctic zooplankton species across the sampling transect.

Objectives: To assess interspecific and spatial variation in CTmax and evaluate differences among developmental stages and sexes where sufficient individuals were available.

Zooplankton sampling

Experimental animals were collected using Bongo nets (64 and 180 µm) from the depths of 50 or 200 m. Invertebrates were identified to the lowest practical taxonomic level and, where possible, classified according to developmental stage and sex. Only apparently healthy individuals displaying normal swimming behaviour were selected for experiments. Animals were maintained near the collection temperature between capture and experimentation and were tested within as soon as practically possible (typically within 1-4 days). Collection time and experimental starting time were recorded for each experimental group so that pre-experimental holding duration could subsequently be quantified.

Thermal tolerant (CTmax) assays

Individual zooplankton were placed in separate 70-mL flasks containing filtered seawater and submerged (~90%) in a programmable circulating water bath (JULABO F34-HE). Temperature was increased continuously from ~1°C to 30°C at 0.15°C min^{-1}. Behaviour was assessed at 10-min intervals from 0–100 min, 5-min intervals from 100–150 min, and 2-min intervals thereafter until all individuals reached CTmax. CTmax was defined as the temperature at which an individual lost coordinated swimming and began drifting or moving uncontrollably, indicating loss of normal neuromuscular function.

Following the CTmax assay, all tested invertebrates were transferred to an incubator at 1°C for a 24-h recovery period. Survival and normal behaviour were then assessed. Subsequently, all individuals were photographed for morphological analyses and stored at −80°C for subsequent physiological analyses or species identification, if required.

Calanus phenology

Contact person: Sünnje Basedow (sunnje.basedow@uit.no)
Responsible persons on board: Sünnje Basedow, Bergfrid Høgås Skjæveland

There are three *Calanus* species in the Arctic Ocean, which have a central position in Arctic food webs: *C. hyperboreus, C. glacialis* and *C. finmarchicus*. Their phenology is adapted to their core habitats, but climate change can alter this and lead e.g. to mismatches between the development of local phytoplankton blooms and cohorts of developing copepods. Three indicators of phenology were sampled on this cruise.

Calanus spp. were sampled from the upper 50 meters of the water column with a Bongo net (180µm mesh size) at all stations. To keep the copepods in good condition, the net was not rinsed and the cod end was emptied into a bucket with cold filtered sea water. These samples were used to photograph individual *Calanus* spp. for later lipid analyses (section 66). From selected stations *C. glacialis* females were selected from the Bongo net samples to measure their egg production (section 11.9.1). After photographing and after the end of the egg production experiments, individual copepods were frozen in pre-weighed tin cups at -20°C for dry weight analyses at UNiS, label CAC.

Table 27. Distribution of zooplankton taxa tested across Arctic sampling stations. Numbers indicate the number of individuals tested for each species and developmental stage/sex. Species abbreviations are: CH, Calanus hyperboreus; CG, Calanus glacialis; CF, Calanus finmarchicus; ML, Metridia longa; PG, Paraeuchaeta glacialis; TL, Themisto libellula; TA, Themisto abyssorum; LH, Limacina helicina; Os, Ostracoda; GB, Gaetanus brevispinus; and SM, Scaphocalanus magnus. Developmental stage/sex abbreviations are: F, female; CV, copepodite stage V; CIV, copepodite stage IV; and J, juvenile.

Stations	*CH*			*CG*		*CF*		*ML*	*PG*		*TL*	*TA*	*LH*	Os	*GB*		*SM*	
	F	CV	CIV	F	CV	F	CV	F	F	CV	J	J			F	CV	F	CV
North Pole		30		30				9	4	3	15							
Transit (MB)	15	15	15	15	15			20	9	14		19	14	1				
61A	16	14						15	5	10		14	6	1				
57A	15	15	15	15				15	5	10		10		12				2
Extra (57A+)															12	3	12	3
E1-A			15		15													
E5-A	15	15	15	15	15			15	8	5		12	5					
E9-A											15			2	3		9	
A13-A														7	11	4	6	2
37A	15	15		15	15			15	5	12	15			17	15	2	8	9
33A	15	15	7	15	15			15	8	7	9	10		15	14	5	7	4
21A	15	15	15	15	1	18	14	15	3	12		18			2		13	
17A																		
13A																		
5A																		
1A																		

Egg production

The reproductive performance of *Calanus glacialis* is particularly unknown in the Arctic Ocean and was measured during the cruise as an index of their phenology. 15-24 healthy females were collected from the Bongo net samples and placed individually in false-bottom cups (100 mL) filled with filtered (0.2 µm) seawater (Table 28). In situ temperature in the upper 50 m at all stations was ca. -1.6 °C and females were incubated at 1°C. They were fed daily with a solution of *Melosira arctica* in filtered (0.2 µm) seawater. Every 2 days (first week) to 3 days (subsequent weeks) the copepods were moved to a new cup with seawater and algae, and eggs and fecal pellets were counted from the bottom fraction of the false-bottom cups. Development of eggs was monitored to deduce hatching success.

In general, egg production by *C. glacialis* was very low, and the females needed many days with food to produce eggs.



Figure 65. Preparing C. glacialis females for a stay in 'Hotel Copepodia'. © Sünnje Basedow

Table 28. Egg production by C. glacialis and hatching success of their eggs

Station	Date (dd/mm/yy)	# females	# females which produced eggs	Days kept	Eggs produced	Day first egg production	Hatching success
North pole	30/07/26	24	0	17			
Makarov basin	08/04/26	20	0	23			
61A	08/06/26	15	1	20	51	20	24%
57A	08/11/26	19	3	17	30	17	36%
E1A	15/08/26	19	2	17	68	12	35%
E5A	16/08/26	20	0	21			
E13A	18/08/26	20	2	17	141	11	tbd
33A	27/08/26	20	0	11			

Calanus lipid analyses

From a known fraction of the Bongo net sample, at least 50 live *C. hyperboreus* (copepodite stage CIII to adult) and *C. glacialis* (copepodite stage CIV to adult) were picked out and photographed in lateral view. Other copepodite stages and dead individuals were counted. The older, alive copepods were rinsed and put in pre-weighed tin cups and frozen at -20°C. The tin cups will be transported to UNIS (University Centre in Svalbard), to be freeze dried and weighed to measure the dry weight of the individual *Calanus*. The pictures will be analysed using the computer program ImageJ to measure the prosome length and the area of the lipid sack. The total amount of lipids in each individual will be calculated from the lipid sack area according to Vogedes et al. 2010. *Calanus finmarchicus* (copepodite stage CIV to adult) were instead put in ethanol for genetic analysis (section 11.9.3), except for station 5A and 1A, where they comprised most of the sample and were also put into tin cups.

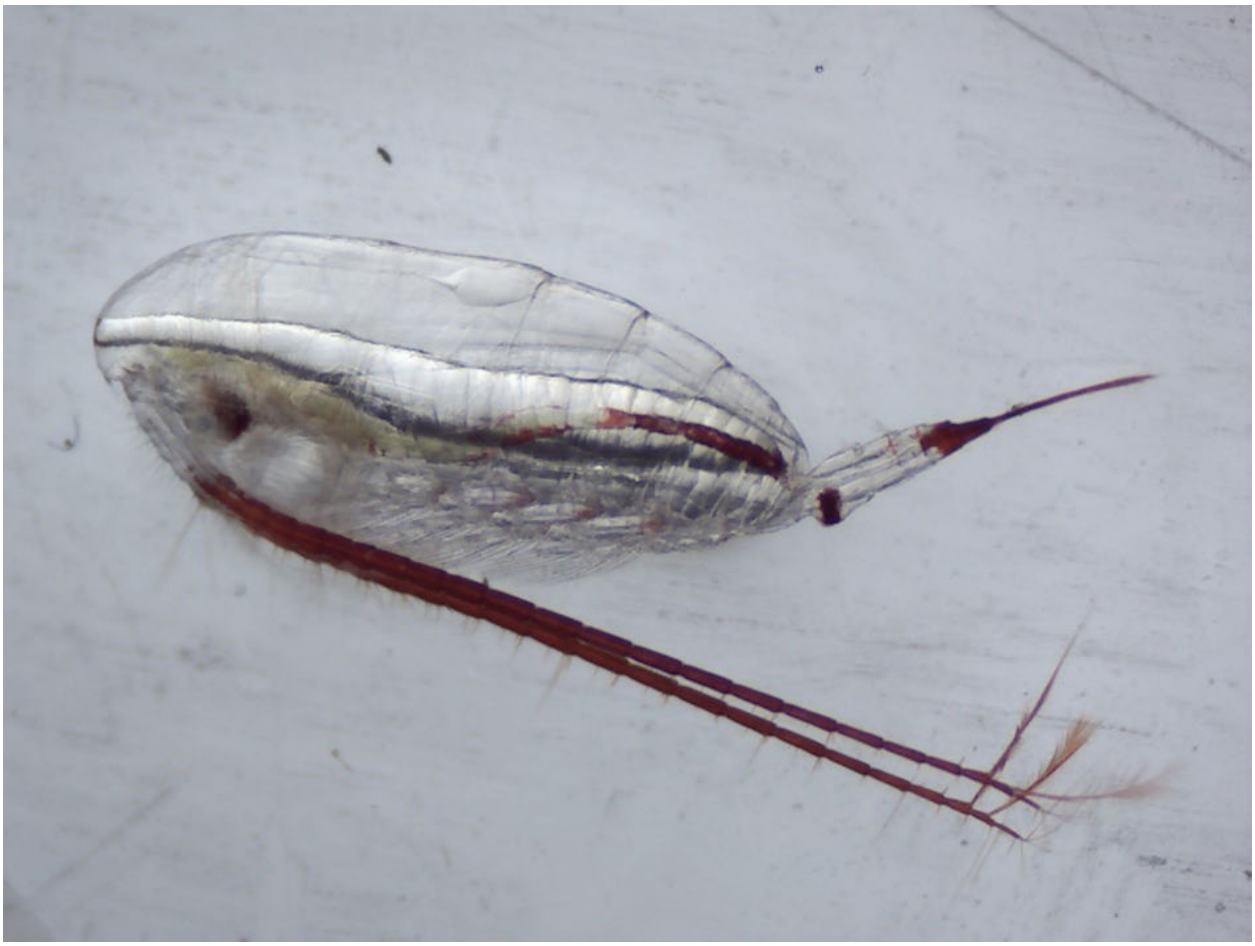


Figure 66. A female Calanus hyperboreus in lateral view, with a visible lipid sack and green guts. © Bergfrid Høgås Skjæveland

Calanus genetics

Calanus finmarchicus and *C. glacialis* are very similar in appearance and can be difficult to distinguish morphologically. Size classes are the common way to distinguish the two species, but *C. glacialis* has a wide size range and can overlap in size with the smaller *C. finmarchicus*. If individuals of *Calanus finmarchicus* were found in the sample (66), they were also photographed and then put in a cryotube with ethanol and frozen at -20°C. These will later be identified correctly to species genetically at UNIS. Some *C. glacialis* were also preserved in this way. No *C. finmarchicus* were preserved in ethanol at station 5A and 1A, because all were kept for dry weight.

Zooplankton pigments

Contact person: Sünnje Basedow (sunnje.basedow@uit.no)
Responsible persons on board: Sünnje Basedow, Khuong Van Dinh

Samples of coloured zooplankton in surface waters (upper 50 m) were collected as part of an initiative to establish a database of zooplankton pigment (astaxanthin) content and to support the development of ocean-colour remote sensing for zooplankton detection. Throughout the study area, *Calanus* spp. was dominating in the surface layer and few other individuals with pigments were observed, therefore samples were only taken from *Calanus* spp. (Table 29). All samples were picked from the Bongo net, which was deployed vertically from 50 m to surface. Unusually blueish pigmented *Calanus* spp. were observed in large quantities, most of these north of 85°N. Samples were frozen at -80°C and will be stored at UiT for later HPLC analyses.

Table 29. Zooplankton sampled for pigment analyses.

Date	Station	Species	Life stage	Colour	# individuals	Label
30.07.2026	Northpole	*Calanus glacialis*	AF	normal	30	ZHP1
30.07.2026	Northpole	*Calanus glacialis*	AF	blueish	30	ZHP2
30.07.2026	Northpole	*Calanus hyperboreus*	CV	normal	30	ZHP3
30.07.2026	Northpole	*Calanus hyperboreus*	CIV	normal	30	ZHP4
11.08.2026	57A	*Calanus hyperboreus*	CIV	blueish	29	ZHP5
11.08.2026	57A	*Calanus hyperboreus*	CV	blueish	17	ZHP6
11.08.2026	57A	*Calanus glacialis*	CV	blueish	32	ZHP7

Pelagic Survey

Overview

Contact person: Haakon Hop (Haakon.hop@npolar.no)
Responsible persons on board: Vegard Stürzinger

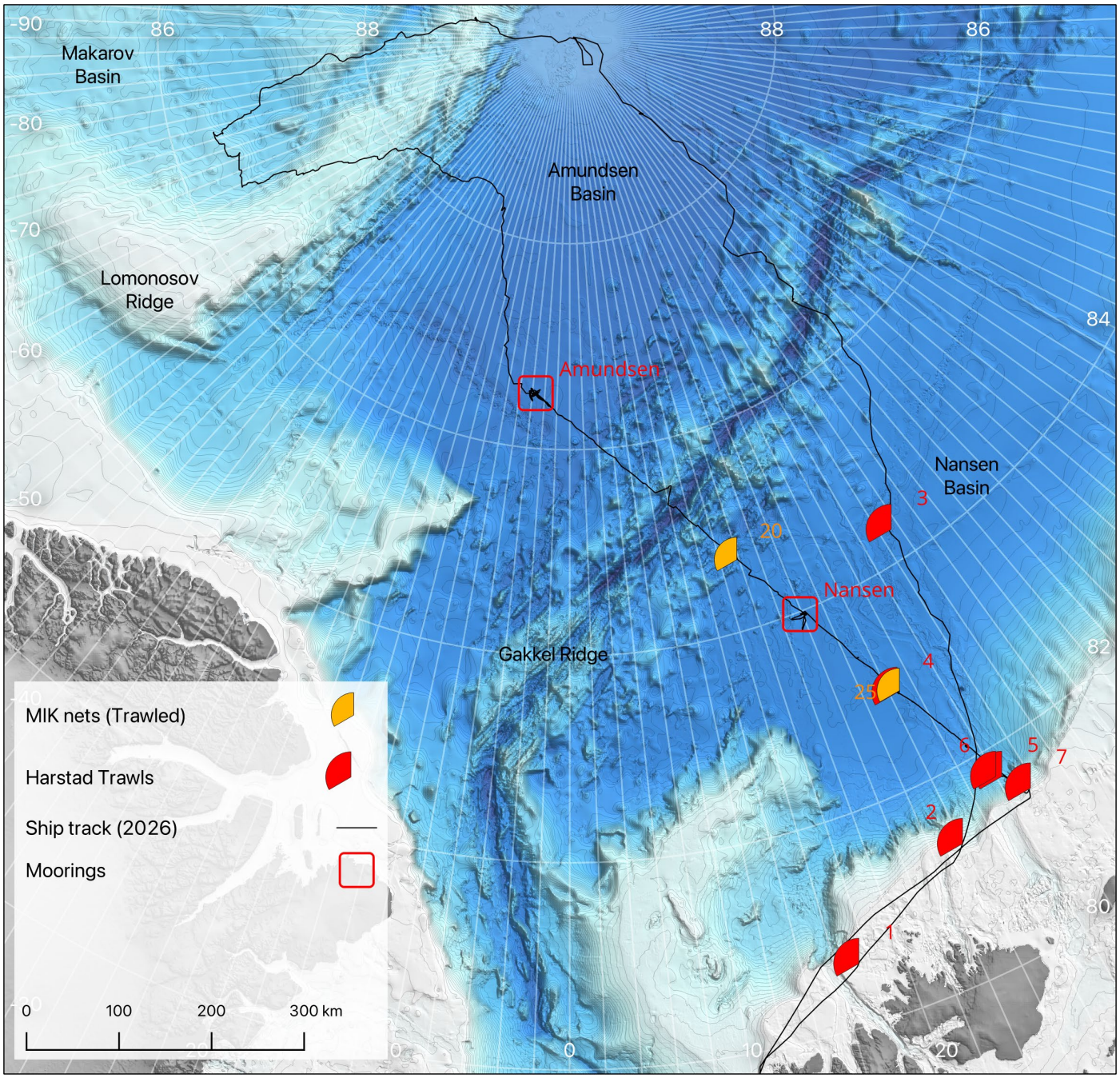


Figure 67. Overview of pelagic trawling sites. Background bathymetric and topographic data from IBCAO 4.

Table 30. Overview of trawl hauls , with date, time, coordinates and target depth.

Trawl	Date/Time (UTC)					Lat, N	Lon, E	Target depth (m)
	yyyy	mm	dd	HH	MM			
Harstad 1	2026	7	24	19	35	80,6007	17,3562	70
Harstad 2	2026	7	25	06	45	81,3079	25,9998	50
Harstad 3	2026	7	26	14	35	84,2980	33,1971	1000
Harstad 4	2026	9	5	09	45	82,8989	26,5806	1000
Harstad 5	2026	9	7	7	15	81,7016	30,3363	150
Harstad 6	2026	9	7	9	45	81,7306	29,9803	200
Harstad 7	2026	9	7	22	40	81,4622	31,5649	60
MIK 1	2026	8	30	14	42	84,6810	17,7603	1000
MIK 2	2026	9	5	17	24	82,9045	26,8056	1000

RV *Kronprins Haakon* is equipped with a Simrad EK80 echosounder, which was run continuously for acoustic surveying along the complete cruise track from Longyearbyen to the northeastern corner of the Canadian EEZ and back to Longyearbyen. The EK80 operates at six frequencies (18, 38, 70, 120, 200 and 333 kHz). However, during icebreaking the acoustic signal is frequently degraded by noise, leaving many sections of the track unreadable. In open leads, reliable data can be obtained, and these are post-processed using the Large Scale Survey System (LSSS). In the central Arctic Ocean, few strong scattering layers appear on the EK80; those that do are largely zooplankton in the upper 150 m of the water column, as confirmed by trawling. Close to and on the shelf, stronger backscatter is recorded, reflecting more schooling fish and denser zooplankton aggregations.

Pelagic trawl sampling was conducted to validate echosounder observations from the Simrad EK80. A modified Harstad trawl was used in ice-covered waters, as it is easier to handle and reduces the risk of catching sea ice during retrieval. In the central Arctic Ocean, catches consisted primarily of amphipods, krill, arrow worms and *Calanus*, whereas on the shelf areas the catches included more juvenile fish in addition to zooplankton.

To test whether more representative catches of macrozooplankton could be obtained in the central Arctic basins, horizontal MIK trawls were deployed, targeting layers visible on the EK80. First impressions from comparing the two are that the MIK trawl catches the same organisms as the Harstad trawl but additionally retains smaller microzooplankton.

Harstad trawl catches were sorted, and measurements were taken from fish and from zooplankton groups. Stable isotope samples were collected from all fish species caught and from selected zooplankton taxa. Genetic samples were taken from all fish species, and stomach samples from the larger fish species. *Benthosema glaciale* were frozen whole for otolith analysis.

Sea Ice Stations

Overview

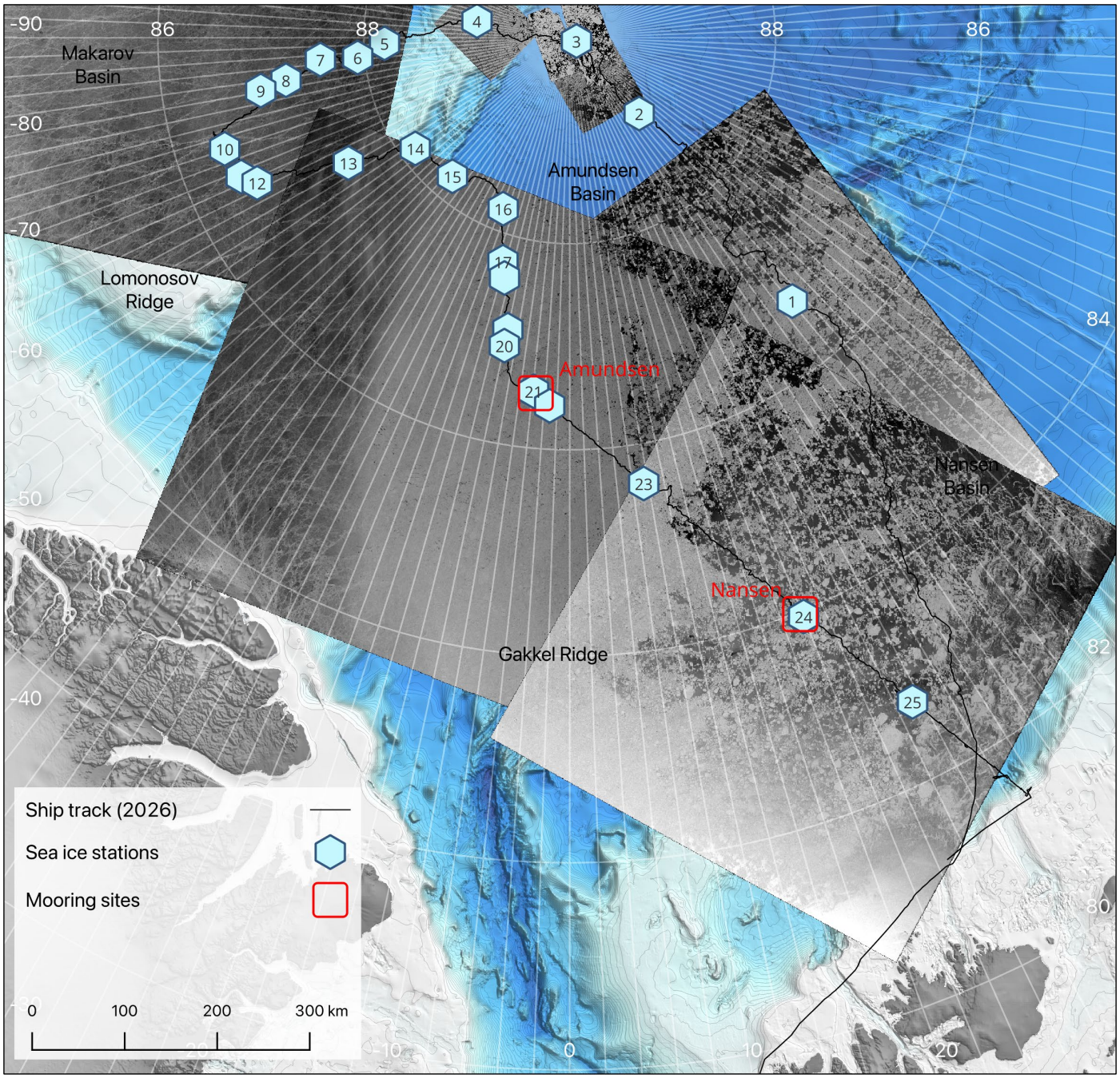


Figure 68. Overview of sea ice stations completed during EBT2026 and mosaic of Radarsat II ScanSAR wide and high latitude (HL) scenes acquired at the following times (anti-clockwise, from bottom left): 01-Aug-2026 09:30 (Wide), 02-Aug-2026 03:59 (HL) 05-Aug-2026 22:39 (HL) 05-Aug-2026 20:59 (HL), 06-Aug-2026 18:48 (Wide), 17-Aug-2026 13:25 (Wide) and 02-Sep-2026 13:57 (Wide). All scenes are HH polarisation.

Table 31. Overview of sea ice stations completed during EBT2026

Station #	Name	Start time	Start position	End time	End Position
1	Gakkel Ridge	27-Jul-2026 13:40 UTC	N 86° 39.119' E 040° 13.500'	27-Jul-2026 19:50 UTC	N 86° 39.582' E 040° 32.087
2	Melosira	29-Jul-2026 07:37 UTC	N 89° 00.073' E 042° 30.850'	29-Jul-2026 13:40 UTC	N 89° 00.075' E 042° 32.930'
3	North Pole	30-Jul-2026 07:08 UTC	N 89° 55.688' E 064° 23.754'	30-Jul-2026 18:32 UTC	N 89° 48.174' E 051° 06.690'
4	Transit-A	01-Aug-2026 07:10 UTC	N 89° 5.148', W 100° 55.632	01-Aug-2026 Ca. 07:45 UTC	N 89° 05.138', W 100° 01.223
5	Transit-B	02-AUG-2026 07:08 UTC	N 88° 11.990' W 088° 18.052'	02-AUG-2026 Ca. 08:00 UTC	N 88° 12.240' W 088° 51.894'
6	Transit-C	02-AUG-2026 18:15 UTC	N 87° 55.862' W 84° 41.232'	99-AUG-2026 Ca. 18:41 UTC	N 87° 57.078' W 084° 19.704'
7	Transit-D	03-AUG-2026 06:51 UTC	N 87° 34.125' W 084° 59.446'	03-AUG-2026 07:45 UTC	N 87° 34.161' W 084° 56.427'
8	Transit-E	03-AUG-2026 18:11 UTC	N 87° 12.798' W 081° 28.949'	03-AUG-2026 18:32 UTC	N 87° 12.802' W 081° 28.438'
9	Transit-F	04-AUG-2026 06:51 UTC	N 86° 57.330' W 080° 18.300'	04-AUG-2026 07:04 UTC	N 86° 57.325' W 080° 17.973'
10	EBT-60	07-AUG-2026 09:47 UTC	N 86° 28.786' W 072° 07.114'	07-AUG-2026 20:57 UTC	N 86° 29.264' W 070° 58.370'
11	Transit-G	09-AUG-2026 13:33 UTC	N 86° 32.149' W 067° 04.849'	09-AUG-2026 19:59 UTC	N 86° 32.107' W 067° 04.849'
12	EBT-57	11-AUG-2026 13:02 UTC	N 86° 39.189' W 065° 05.445'	11-AUG-2026 17:00 UTC	N 86° 39.317' W 064° 05.908'
13	EBT-55	14-AUG-2026 10:30 UTC	N 87° 31.882' W 060° 32.197'	14-AUG-2026 11:45 UTC	N 87° 31.756', W 060 29.003'
14	E2	15-AUG-2026 17:50 UTC	N 88° 9.270', W 054° 36.012'	15-AUG-2026 18:05 UTC	N 88° 09.220' W 054° 21.835'
15	E5	16-AUG-2026 14:44 UTC	N 88 ° 14.232', W 040 ° 44.586'	16-AUG-2026 21:35 UTC	N 88° 14.436' W 039° 47.553'
16	E9	17-AUG-2026 18:56 UTC	N 88 ° 12.312', W 021 ° 42.258'	17-AUG-2026 19:30 UTC	N 88° 13.282' W 021° 13.790
17	E12	18-AUG-2026 11:17 UTC	N 87 ° 43.872', W 016 ° 24.222'	18-AUG-2026 11:44 UTC	N 87° 43.866' W 016° 36.490'
18	E13	18-AUG-2026 15:24 UTC	N 87 ° 43.872', W 016 ° 24.222'	18-AUG-2026 19:14 UTC	N 87° 34.716' W 014° 48.901'
19	E16	19-AUG-2026 08:45 UTC	N 87 ° 6.168', W 011 ° 1.224'	19-AUG-2026 09:27 UTC	N 87° 06.037' W 011° 54.495'
20	E17	19-AUG-2026 12:28 UTC	N 86 ° 56.622', W 011 ° 0.972'	19-AUG-2026 15:10 UTC	N 86° 56.379' W 011° 46.743'
21	EBT37 (Amundsen Mooring)	22-AUG-2026 13:21 UTC	N 86 ° 33.024', W 005 ° 9.942'	23-AUG-2026 00:32 UTC	N 86° 27.181' W 005° 50.401'
22	EBT-36	26-AUG-2026 11:57UTC	N 86 ° 25.290', W 003 ° 53.298'	26-AUG-2026 12:17 UTC	N 86° 25.253' W 003° 04.650'
23	EBT-29	28-AUG-2026 13:00 UTC	N 85 ° 36.840 ', **E** 009 ° 26.028'	28-AUG-2026 19:02 UTC	N 85° 35.901' **E** 009° 44.405'
24	EBT-17 (Nansen Mooring)	01-SEP-2026 15:26 UTC	N 83 ° 56.473', **E** 021 ° 59.498'	03-SEP-2026 05::22 UTC	N 83° 57.457' **E** 020° 51.694'
25	EBT-09	05-SEP-2026 13:02 UTC	N 82 ° 45.072', **E** 027 ° 19.092'	05-SEP-2026 17:02 UTC	N 82° 45184' **E** 027° 19.031'

Ice Station 1 (Gakkel Ridge)

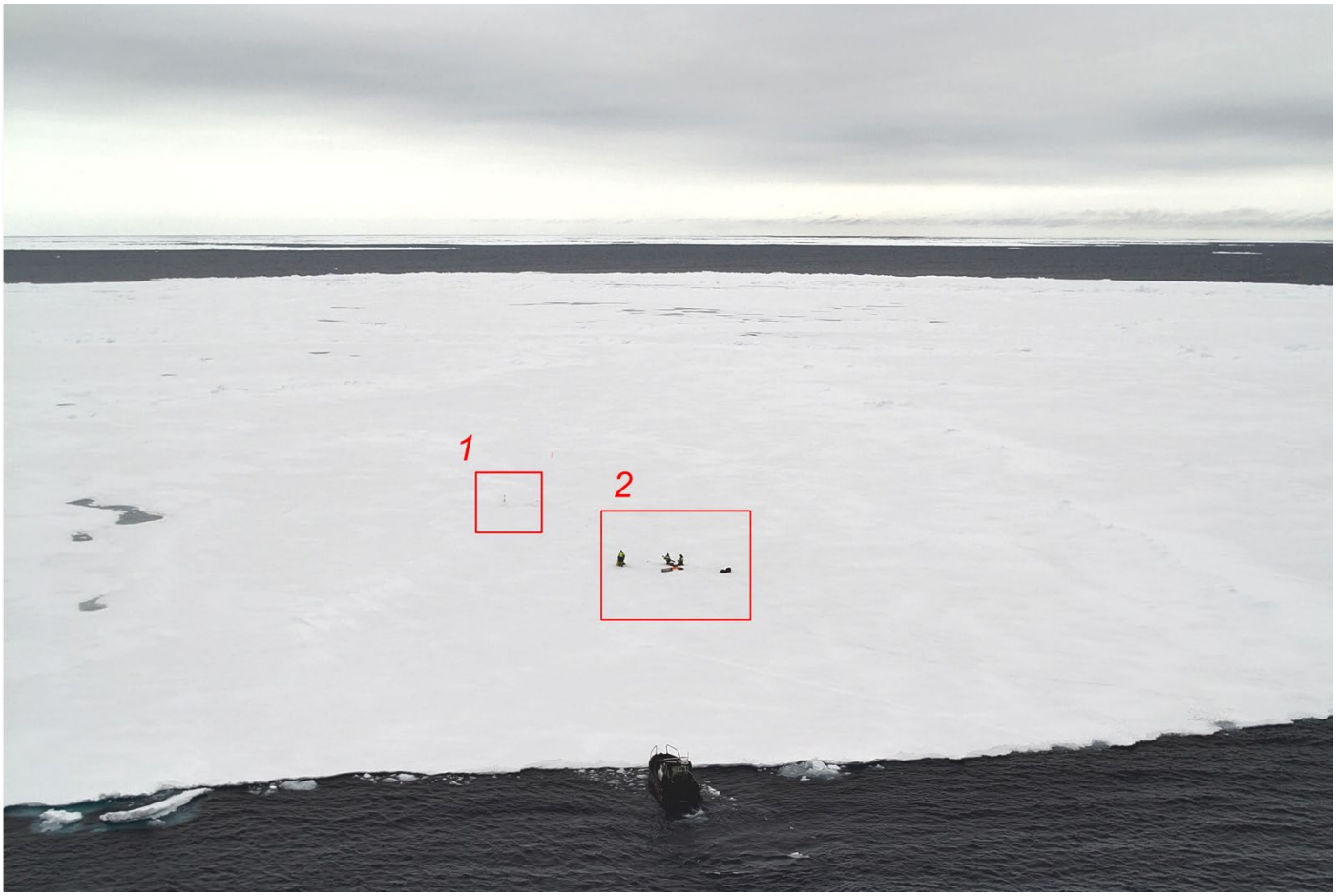


Figure 69.Gakkel Ridge Station overview. © Ivan Savelyev

Table 32. Summary of activity at sea ice station 1. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy	1	27-Jul	13:20	IMEI: 301434061211400
Equipment installed temporarily				
PAR Sensor	2	27-Jul	16:44	RBR Solo SN: 242982
LiCOR 2pi sensor	2	27-Jul	16:48	Upwelling & Downwelling Quantum SN: Q110764
Cameras / Imagers				
GoPro	2	27-Jul	17:30	Stick-mounted deployment though core-hole
Hyperspectral Irradiance	Deck	27-Jul	13:20	Satlantic sensor on helideck started at 13:20
Drone Flights				
Harris Aerial	-	27-Jul	15:30	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed)
Skydio	-	27-Jul	16:00	RGB and Thermal Camera (FLIR)
Harris Aerial	-	27-Jul	18:00	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed, Polarimetry)
Snow				
Snowpit	1	27-Jul	15:00	Simplified snow pit
Snow Sample	1	27-Jul	15:00	1 sample of 2 cm wind slab for salinity & d18O

Ice cores				
Temperature	1	27-Jul	13:30	Full core, top 5 cm, then 10 cm increments
Salinity & d18O	1	27-Jul	13:40	Full core, top 5 cm, then 10 cm increments
Density & Stratigraphy	1	27-Jul	13:50	Whole core shipped to NPI in Tromsø
Archive Core	1	27-Jul	14:00	Whole core shipped to NPI in Tromsø
Nutrients	2	27-Jul	17:30	Bottom 5 cm only
Live meiofauna	2	27-Jul	17:30	Bottom 5 cm only
Microscopy	2	27-Jul	17:30	Bottom 5 cm only
Transects				
Thickness from drill & core holes	1	27-Jul	14:30	Using Kovacs thickness tape
Snow and/or SSL thickness	1	27-Jul	14:30	Using Snow stake
Water Samples				
Water for filtered seawater	2	27-Jul	17:00	0-10 cm below Ice/water (interface)

Ice Station 2 (Melosira)



Figure 70. Station overview. © Paul Dodd

Table 33. Summary of activity at sea ice station 2. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (UiT)	1	29-Jul	07:55	IMEI: 300534065854560
Equipment installed temporarily				
PAR Sensor	1	29-Jul	18:24	RBR Solo SN: 242982
LiCOR 2pi sensor	1	29-Jul	08:14	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	1	29-Jul	08:14	Under Ice Transmittance SN: SPQA5949
Cameras / Imagers		29-Jul		
GoPro	1	29-Jul	11:30	Stick-mounted deployment though core-hole
Drone Flights		29-Jul		
Skydio	-	29-Jul	07:00	RGB and Thermal Camera (FLIR)
Harris Aerial	-	29-Jul	08:00	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed, Polarimetry)
Harris Aerial	-	29-Jul	10:00	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed)
Snow				
Snowpit	1	29-Jul	08:30	Simplified snow pit
Snow Sample	1	29-Jul	08:30	2 samples of new snow / melted layer below for salinity & d18O
Ice cores				
Temperature	1	29-Jul	08:15	Full core, top 5 cm, then 10 cm increments
Salinity & d18O	1	29-Jul	08:15	Full core, top 5 cm, then 10 cm increments
Density & Stratigraphy	1	29-Jul	08:20	Whole core shipped to NPI in Tromsø

Archive Core	1	29-Jul	08:25	Whole core shipped to NPI in Tromsø
Nutrients	1	29-Jul	07:30	Full Core, bottom 5 cm, 5–10 cm, 10–20 cm, then 20 cm increments
POC, PON, FCM, CHL-A, PP, BP	1	29-Jul	07:50	Core 1/3: bottom 5cm, 20–40 cm, 80–100 cm; all 3 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	29-Jul	08:00	Core 2/3: bottom 5cm & 20–40 cm, 80–100 cm; all 3 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	29-Jul	10:00	Core 3/3: bottom 5cm; 20–40 cm, 80–100 cm; all 3 cores pooled
DNA	1	29-Jul	10:00	Core 1/2: bottom 5cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA	1	29-Jul	10:00	Core 2/2: bottom 5cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA Sal	1	29-Jul	10:00	Core 1/1: 1 cm rounds at 2cm, 30 cm, 90 cm for rapid salinity melt
Transects				
Thickness from drill & core holes	1	29-Jul	08:45	Using Kovacs thickness tape
Snow and/or SSL thickness	1	29-Jul	08:45	Using Snow stake
Water Samples		29-Jul		
POC, PON, FCM, CHL-A, PP, BP, DIC	1	29-Jul	10:00	0-10 cm below Ice/water interface, also used for filtered seawater

Ice Station 3 (North Pole)

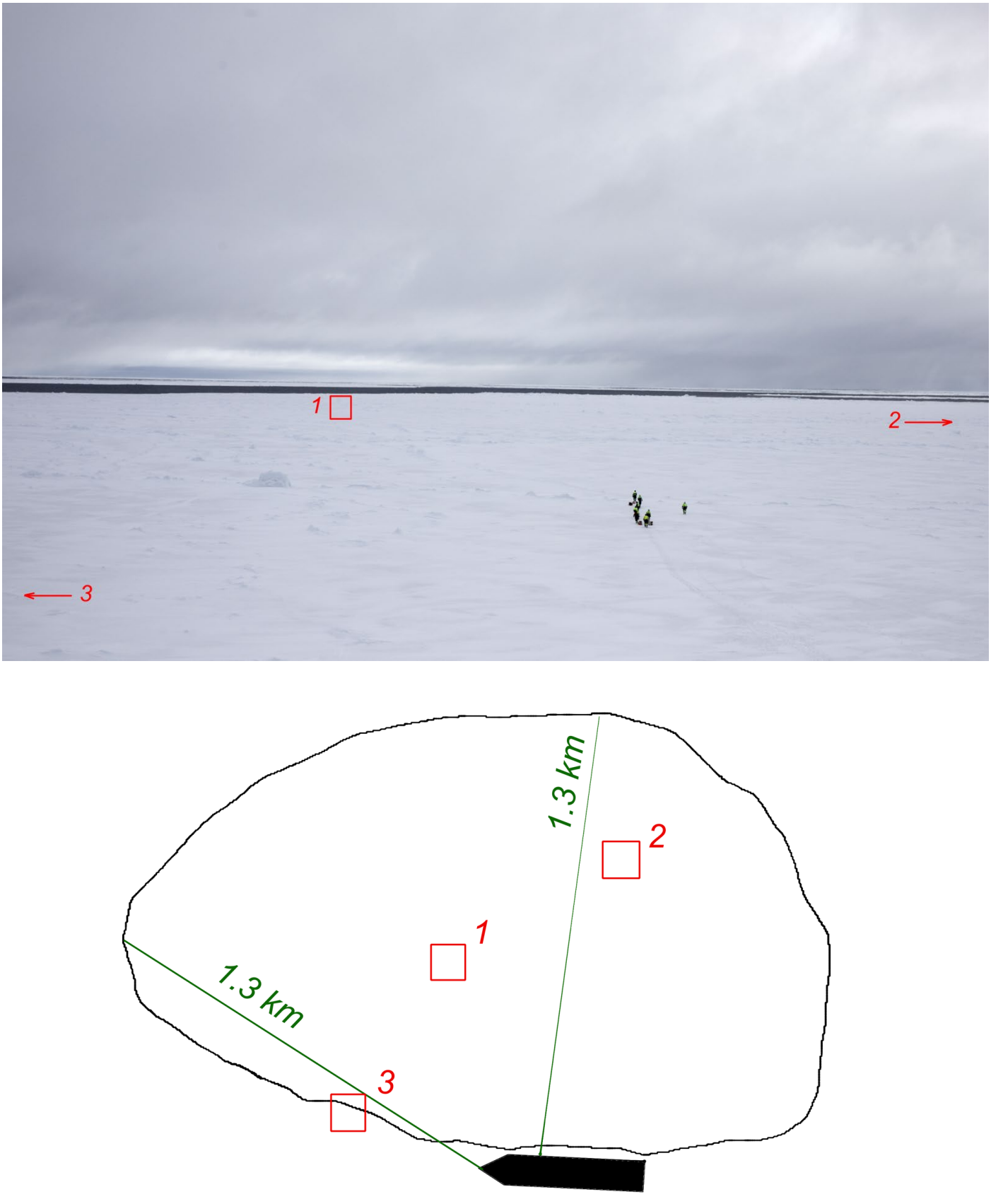


Figure 71. Station overview. © Paul Dodd

Table 34. Summary of activity at sea ice station 3. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (MET) #9	1	30-Jul	07:40	IMEI: 301434061217390
SIMBA	1	30-Jul	08:00	IMEI: 300534068095690
Profilers				
VMP250 Turbulence session 1	1	30-Jul	08:15	3 casts. File data_0004.p
VMP250 Turbulence session 2	1	30-Jul	16:30	2 casts. File data_0005.p
Equipment installed temporarily				
ADCP Signature 1000	1	30-Jul	07:53	SN: 108156. Recovered 17:00
UVP6	1	30-Jul	09:00	SN: 000317HF, Mode: Auto, 4 m depth, Recovered 16:00.
Amphipod Traps	1	30-Jul	09:30	ca 5 m below ice, recovered ca. 17:00
PAR Sensor	1	30-Jul	12:20	RBR Solo SN: 242982
LiCOR 2pi sensor	1	30-Jul	12:00	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	1	30-Jul	12:00	Under Ice Transmittance SN: SPQA5949
Handheld CTD	1	30-Jul	14:20	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
YSI	2	30-Jul	11:00	Temperature, salinity, turbidity, lat long in melt pond
PAR Sensor	3	30-Jul	12:20	RBR Solo SN: 242982
LiCOR 2pi sensor	3	30-Jul	12:00	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	3	30-Jul	12:00	Under Ice Transmittance SN: SPQA5949
Handheld CTD	3	30-Jul	14:20	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
YSI	3	30-Jul	14:30	Temperature, salinity, turbidity, lat long in melt pond
In-Situ Optics				
ASD	2	30-Jul	11:00	Hyperspectral light (upwelling, downwelling and reflectance)
Polarimetry	2	30-Jul	11:00	Light polarisation
Cameras / Imagers				
GoPro	1	30-Jul	11:00	Stick-mounted deployment though core-hole
GoPro	3	30-Jul	15:00	Stick-mounted deployment though core-hole and by lead edge
Drone Flights				
Harris Aerial	-	29-Jul	09:00	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed)
USV				
PAMELA with irradiance and radiance	2	30-Jul	14:30	Hyperspectral light (downwelling, upwelling) on melt pond
Snow				
Snowpit	1	30-Jul	11:15	Simplified snow pit
Snow Sample	1	30-Jul	11:16	1 sample of new snow/melted layer below for salinity & d18O

Ice cores

Temperature, Salinity & d18O	1	30-Jul	10:30	Full core, top 5 cm, then 10 cm increments
Density & Stratigraphy	1	30-Jul	10:45	Whole core shipped to NPI in Tromsø
Archive Core	1	30-Jul	11:00	Whole core shipped to NPI in Tromsø
AP, CP, AcDOM, SPM, PSD, Holo	2	30-Jul	14:00	Crust sample and bottom of the pond sample with Kovacs ice corer
Nutrients	1	30-Jul	10:00	Full Core, bottom 5 cm, 5–10 cm, 10–20 cm, then 20 cm increments
POC, PON, FCM, CHL-A, PP, BP	1	30-Jul	10:30	Core 1/7: bottom 5cm, 20–40 cm, 80–100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	30-Jul	10:40	Core 2/7: bottom 5cm, 20–40 cm, 80-100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	30-Jul	10:50	Core 3/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	30-Jul	11:00	Core 4/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	30-Jul	11:10	Core 5/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	30-Jul	11:20	Core 6/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	30-Jul	11:30	Core 7/7: bottom 5cm; all 7 cores pooled
DNA	1	30-Jul	12:00	Core 1/2: bottom 5cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA	1	30-Jul	12:10	Core 2/2: bottom 5cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA Sal	1	30-Jul	12:20	Core 1/1: 1 cm rounds at 2cm, 30 cm, 90 cm for rapid salinity melt
Virus	1	30-Jul	12:30	Core 1/1: bottom 5 cm, frozen for processing on land
POC, PON, CHLA, IVO	2	30-Jul	14:30	Water from Melt Pond
DNA	2	30-Jul	14:30	Water from Melt Pond
AP, CP, AcDOM, SPM, PSD, Holo	2	30-Jul	14:30	Water from Melt Pond
DNA MicroSHIFT, FCM	2	30-Jul	14:30	Water from Melt Pond
Nutrients	3	30-Jul	16:30	Core 1/1: bottom 5 cm
POC, PON, FCM, CHL-A, PP	3	30-Jul	18:00	Core 1/3: bottom 5 cm; all 3 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	3	30-Jul	18:10	Core 2/3: bottom 5 cm; all 3 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	3	30-Jul	18:20	Core 3/3: bottom 5 cm; all 3 cores pooled, 5 m from lead
Transects				
Thickness from drill & core holes	1	30-Jul	10:30	Using Kovacs thickness tape
Snow and/or SSL thickness	1	30-Jul	11:05	Using Snow stake
Snow/slush/crust/water depth	2	30-Jul	13:30	Survey of refrozen melt pond
Ship-mounted EM31 calibration	-	30-Jul	11:30	Kovacs drill holes under ship-mounted EM31
Water Samples				
POC, PON, FCM, CHL-A, PP, BP, DIC	1	30-Jul	10:00	0–10 cm below Ice/water interface, also used for filtered seawater
Virus	1	30-Jul	10:00	0–10 cm below Ice/water interface, stored at 4C for analysis on shore
DNA	1	30-Jul	10:00	0–10 cm below Ice/water interface
POC, PON, FCM, CHL-A, PP, DIC	3	30-Jul	14:00	lead surface and 0–10 cm below Ice/water interface at 5m from lead
POC, PON, FCM, CHL-A, PP, DIC	3	30-Jul	18:00	lead surface and 0–10 cm below Ice/water interface at 5m from lead

Ice Station 4 (Transit A: Lomonosov Ridge)



Figure 72. Station overview. © Polona Itkin

Table 35. Summary of activity at sea ice station 4. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
iSVP (MET UK), #1 of 6	1	01-Aug	06:56	IMEI: 300534068090860
Snow				
Snow Sample	1	01-Aug	07:10	1 sample of new snow for salinity & d18O
Snow pit	1	01-Aug	07:10	SWE and depth measurements for bulk density
Transects				
Thickness from drill & core holes	1	01-Aug	07:05	Using Kovacs thickness tape
Snow and/or SSL thickness	1	01-Aug	07:05	Using Snow stake

Ice Station 5 (Transit B)

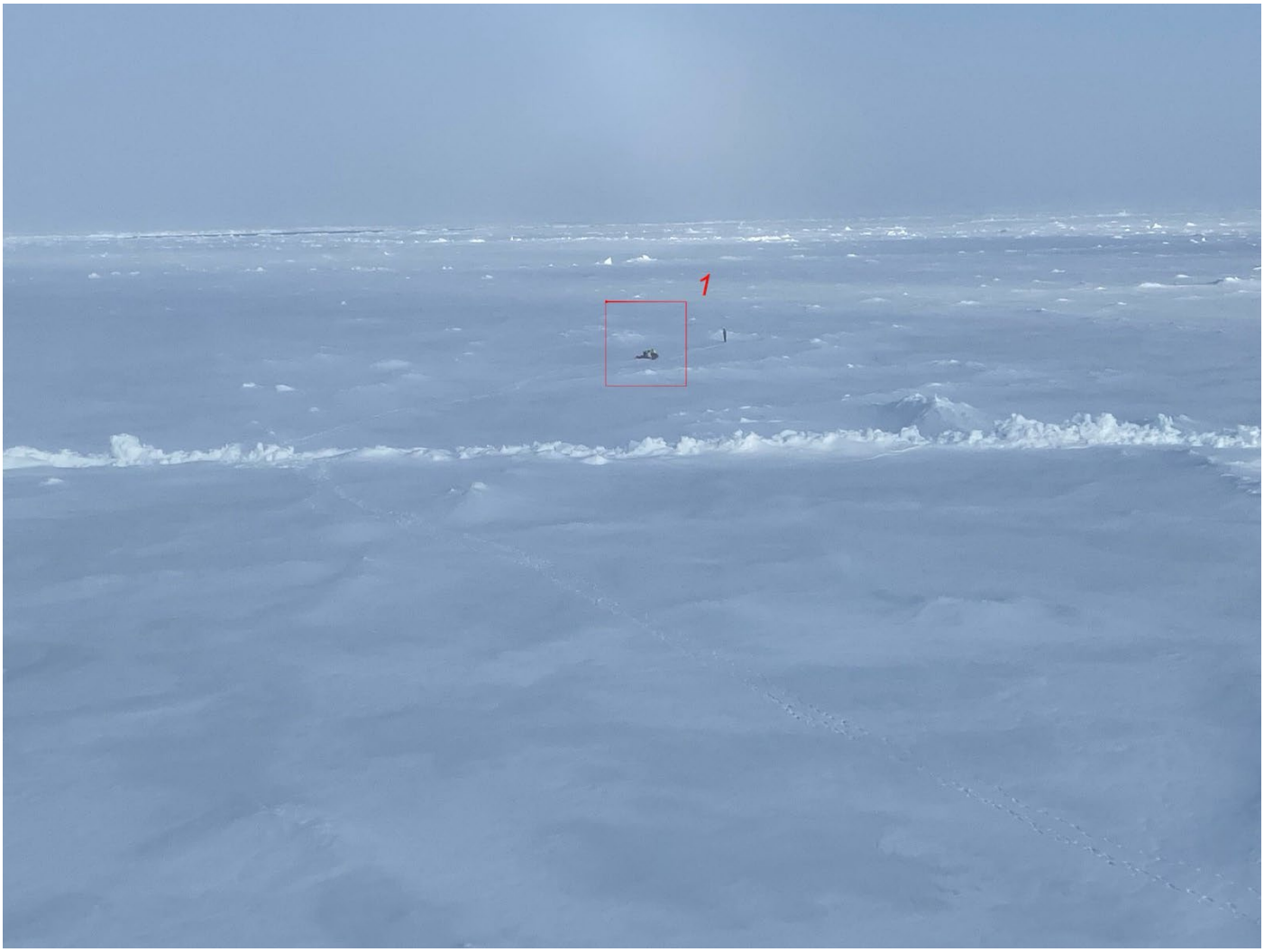


Figure 73. Station overview. © Anette Wold

Table 36. Summary of activity at sea ice station 5. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
iSVP (MET UK), #2 of 6	1	02-Aug	07:23	IMEI: 300534068097790
Snow				
Snow Sample	1	02-Aug	07:30	1 sample of new snow for salinity & d18O
Snow pit	1	02-Aug	07:30	SWE and depth measurements for bulk density
Transects				
Thickness from drill & core holes	1	02-Aug	07:25	Using Kovacs thickness tape
Snow and/or SSL thickness	1	02-Aug	07:26	Using Snow stake

Ice Station 6 (Transit C)

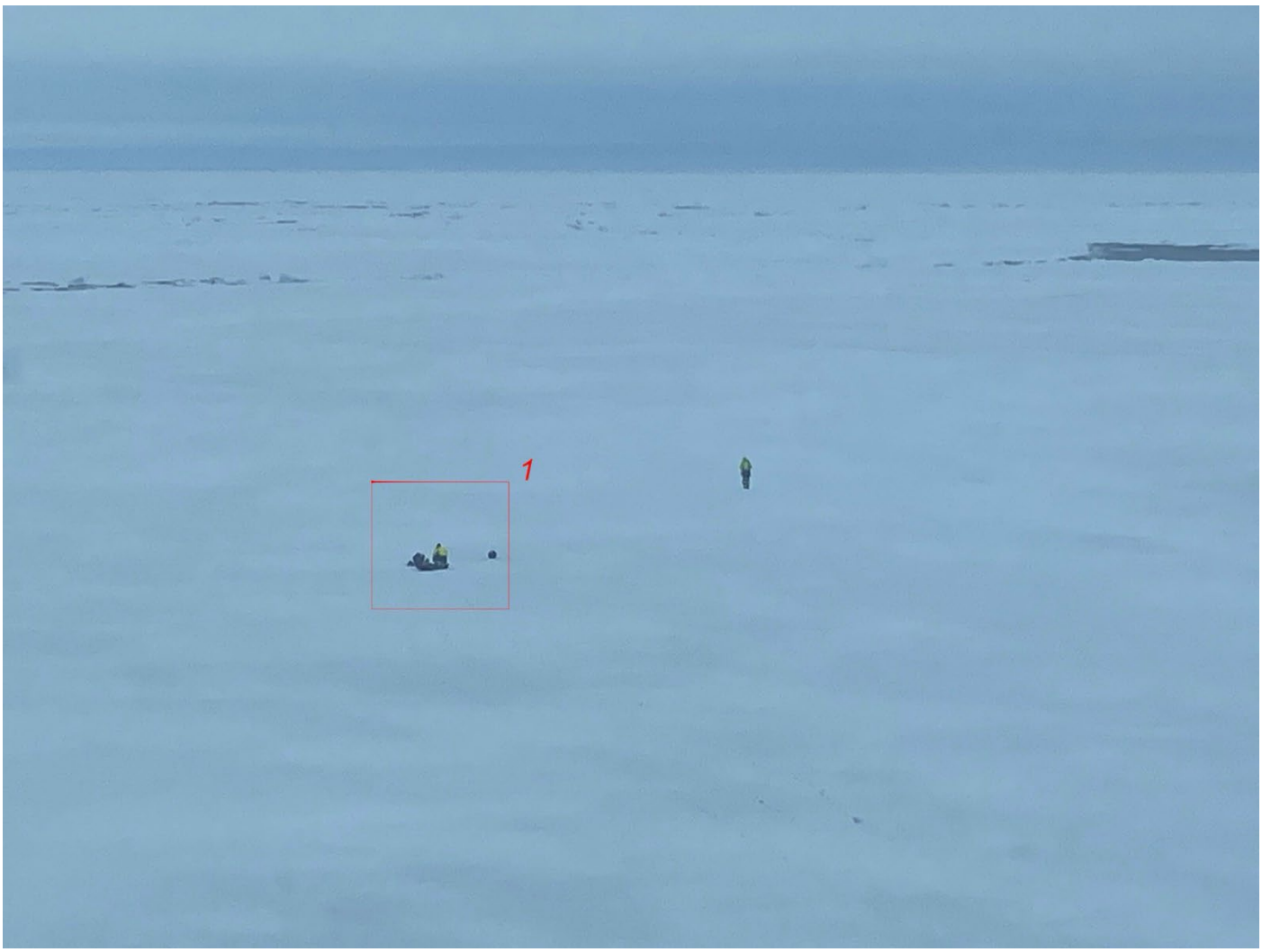


Figure 74. Station overview. © Anette Wold

Table 37. Summary of activity at sea ice station 6. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
iSVP (MET UK), #3 of 6	1	02-Aug	18:20	IMEI: 300534068095850
Snow				
Snow Sample	1	02-Aug	18:30	1 sample of new snow for salinity & d18O
Snow pit	1	02-Aug	18:35	SWE and depth measurements for bulk density
Transects				
Thickness from drill	1	02-Aug	18:25	Using Kovacs thickness tape
Snow and/or SSL thickness	1	02-Aug	18:25	Using Snow stake

Ice Station 7 (Transit D)



Figure 75. Station overview. © Paul A. Dodd

Table 38. Summary of activity at sea ice station 7. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
SIMBA FMI 0606	1	03-Aug	07:10	IMEI: 300234068703800
Snow				
Snow Sample	1	03-Aug	07:30	1 sample of snow for salinity & d18O
Snow pit	1	03-Aug	07:30	SWE and depth measurements for bulk density
Transects				
Thickness from drill	1	03-Aug	07:15	Using Kovacs thickness tape
Snow and/or SSL thickness	1	03-Aug	07:20	Using Snow stake
Ice cores				
Salinity & d18O	1	03-Aug	07:20	Full core (to be processed onboard)
Drone Flights				
Harris Aerial	-	03-Aug	07:30	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed)
Harris Aerial	-	03-Aug	07:30	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed, Polarimetry)

Ice Station 8 (Transit E)

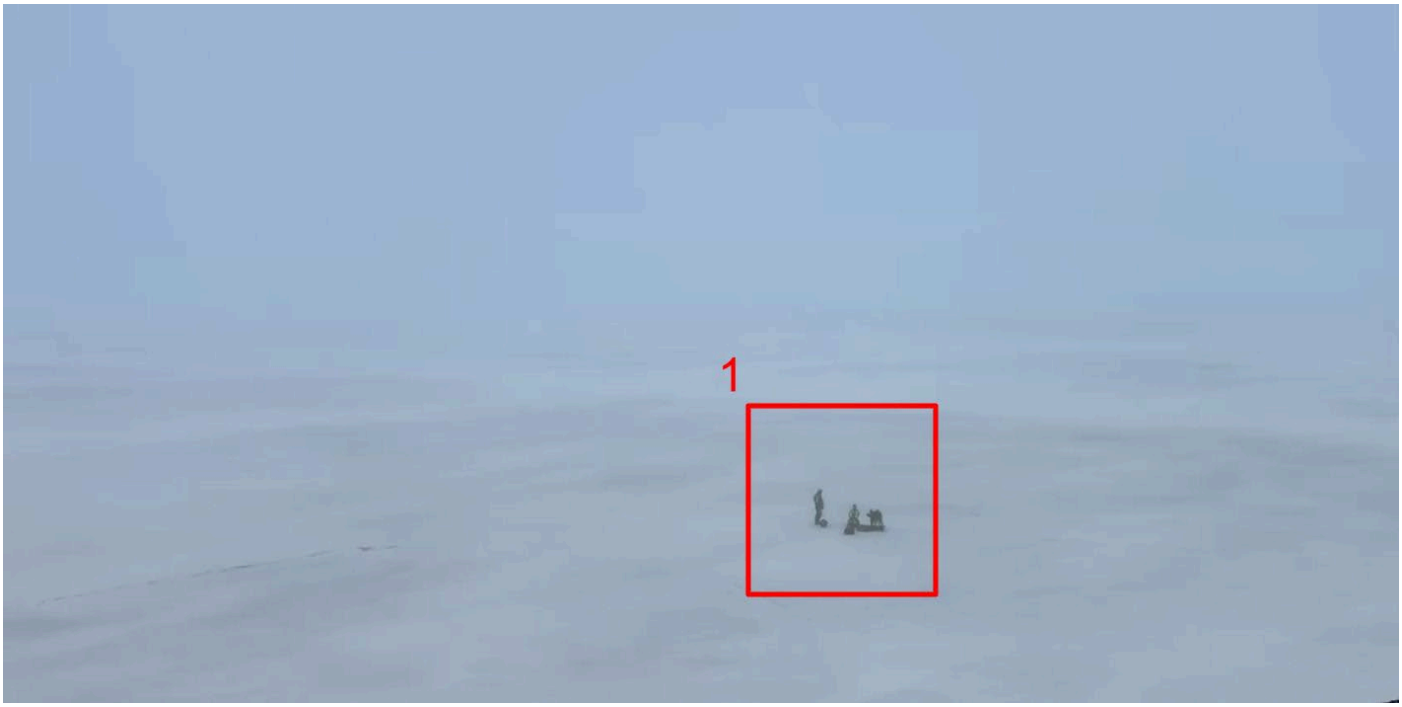


Figure 76. Station overview. © Tim Carlsen

Table 39. Summary of activity at sea ice station 8. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
iSVP #4	1	03-Aug	18:14	IMEI 300534068091850
Snow				
Snow Sample	1	03-Aug	18:30	1 sample of snow for salinity & d18O and 1 sample for toxins (SSL with sediment)
Snow pit	1	03-Aug	18:30	SWE and depth measurements for bulk density
Transects				
Thickness from drill	1	03-Aug	18:15	Using Kovacs thickness tape
Snow and/or SSL thickness	1	03-Aug	18:20	Using Snow stake
Drone Flights				
Harris Aerial	-	03-Aug	18:30	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed)

Ice Station 9 (Transit F)



Figure 77. Station overview. © Vegard Stürzinger

Table 40. Summary of activity at sea ice station 9. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
iSVP #5	1	04-Aug	06:57	IMEI: 300534068096830
Transects				
Thickness from drill	1	04-Aug	07:00	Using Kovacs thickness tape
Snow and/or SSL thickness	1	04-Aug	07:05	Using Snow stake
Drone Flights				
Harris Aerial	-	04-Aug	14:00	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed)
Skydio	-	04-Aug	14:30	RGB and Thermal Camera (FLIR)
Harris Aerial	-	04-Aug	15:00	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed, Polarimetry)

Ice Station 10 (EBT60C)

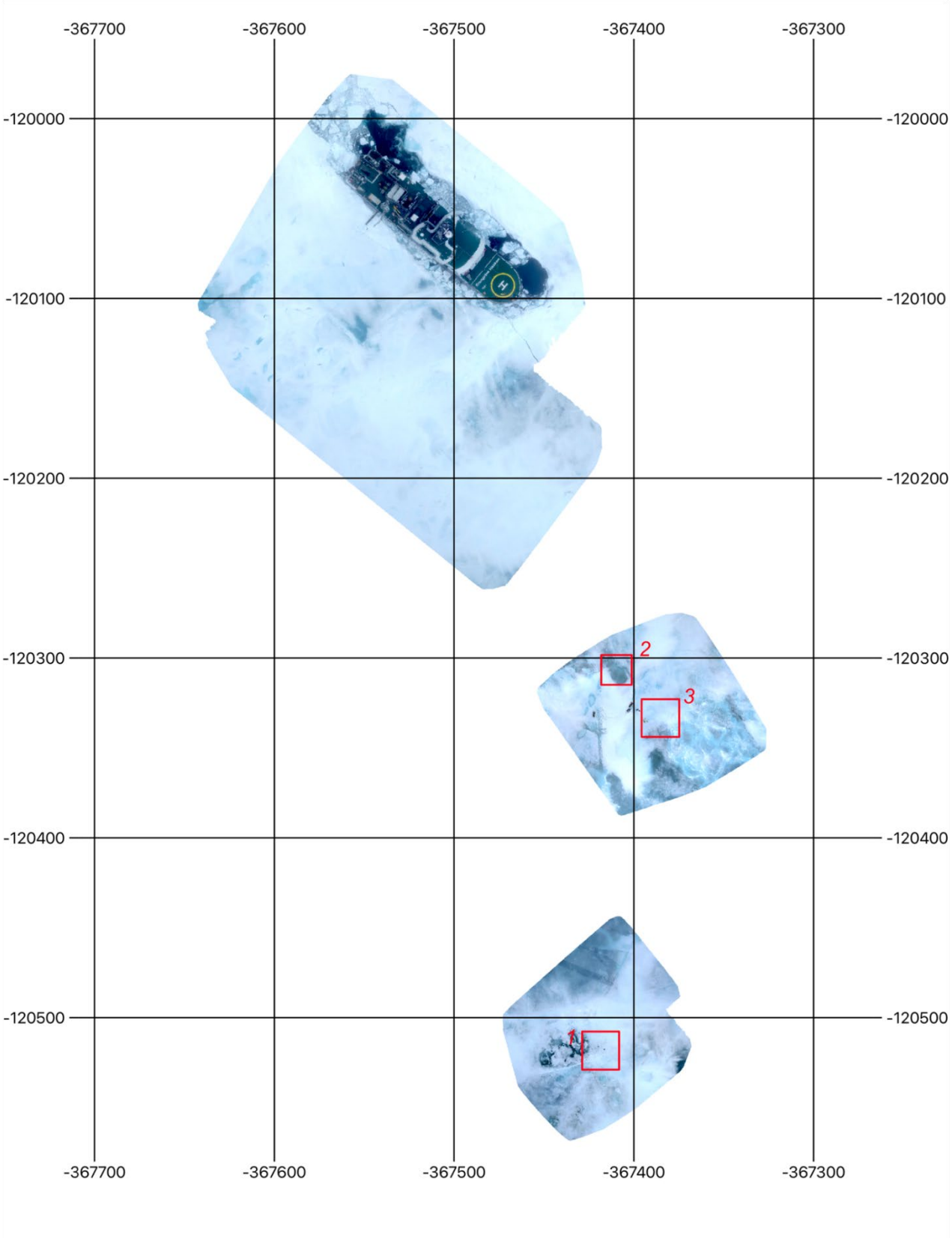


Figure 78. Station overview. Black lines are a UTM grid with units are meters. © Vegard Stürzinger

Table 41. Summary of activity at sea ice station 10. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times. AP = Particulate Absorption, AC = Particulate Attenuation, PSD = Particle Size Distribution, Holo = water samples for holographic imagery IVO = in vitro optics (absorbance and reflectance on filters).

	Site	Date	Time	Configuration
Equipment installed and left behind				
MicroSHIFT buoy (UiT LS-0001, UiT-LT-0001)	3	07-Aug	18:00	2xRamses+PARchain + Hydrocat + OPUS + under-ice-camera (IMEIs: 300534068848220,300534068746650)
SIMBA NTNU 0202	3	07-Aug	11:26	IMEI: 300534068090710
SnoTatos	3	07-Aug	12:00	Server 12
Profilers				
VMP250 Turbulence session 1	1	07-Aug	11:00	3 casts. File data_0006.p
VMP250 Turbulence session 2	1	07-Aug	19:30	3 casts. File data_0007.p
Equipment installed temporarily				
ADCP Signature1000	1	07-Aug	10:30	SN: 108156. Recovered 20:00
Short Term Sediment Traps	1	07-Aug	10:30	ca 5 m below ice, recovered ca. 20:00
PAR Sensor	3	07-Aug	14:24	RBR Solo SN: 242982, deployed for full ice station (finish 19:16)
LiCOR 2pi sensor	3	07-Aug	14:10	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	3	07-Aug	14:00	Under Ice Transmittance SN: SPQA5949
Handheld CTD	3	07-Aug	16:49	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
YSI (Temperature, salinity, turbidity)	2	07-Aug	16:30	Xylem YSI-DSS probe, deployed in melt pond ca. 20 mins, 5 locations in pond water.
In-Situ Optics				
ASD	2	07-Aug	13:00	Hyperspectral light (upwelling, downwelling and reflectance)
Polarimetry	2	07-Aug	13:00	Light polarisation
Cameras / Imagers				
GoPro	3	07-Aug	16:50	Stick-mounted deployment though core-hole
Drone Flights				
No flights				
USV				
PAMELA with irradiance and radiance	2	07-Aug	16:30	Hyperspectral light (downwelling, upwelling) on melt pond
Snow				
Snowpit	3	07-Aug	11:15	Simplified snow pit
Snow Sample	3	07-Aug	11:16	1 sample of new snow / melted layer below SSL and 1 sample of ridge snow for salinity & d18O
Snow sample	3	07-Aug	11:18	3 samples for PFAS
Ice cores				
Temperature, Salinity & d18O	3	07-Aug	13:51	Full core, top 5 cm, then 10 cm increments
Density & Stratigraphy	3	07-Aug	14:00	Whole core shipped to NPI in Tromsø
Archive Core	3	07-Aug	14:10	Whole core shipped to NPI in Tromsø
Pigment Core	3	07-Aug	14:30	Full Core, processed in bulk for total CHL-A and HPLC
Chemistry core	3	07-Aug	14:30	Whole core shipped to NPI in Tromsø
Temperature, Salinity & d18O	2	07-Aug	15:30	Full core, top 5 cm, then 10 cm increments, melt pond
AP, CP, CDOM, SPM, PSD, Holo	2	07-Aug	15:00	5 Crust samples from pond
AP, CP, CDOM, SPM, PSD, Holo, Chla, IVO	2	07-Aug	15:15	5 Pond bottom samples
AP, CP, CDOM, SPM, PSD, Holo	2	07-Aug	16:00	5cm ice bottom from under the melt pond
Nutrients	3	07-Aug	14:30	Full Core, bottom 5, 5–10, 10–20, 20 cm increments thereafter

Chl-A	3	07-Aug	14:40	Full Core: bottom 5, 5–10, 10–20, 20 cm increments thereafter
POC, PON, FCM, CHL-A, PP, BP	3	07-Aug	14:50	Core 1/7: bottom 5cm, 20–40 cm, 80–100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	3	07-Aug	15:00	Core 2/7: bottom 5cm, 20–40 cm, 80–100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	3	07-Aug	15:10	Core 3/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	3	07-Aug	15:20	Core 4/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	3	07-Aug	15:30	Core 5/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	3	07-Aug	15:40	Core 6/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	3	07-Aug	15:50	Core 7/7: bottom 5cm; all 7 cores pooled
DNA	3	07-Aug	16:10	Core 1/2: bottom 5cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA	3	07-Aug	16:20	Core 2/2: bottom 5cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA Sal	3	07-Aug	16:30	Core 1/1: 1 cm rounds at 2 cm, 30 cm, 90 cm for rapid salinity melt
Virus	3	07-Aug	15:30	Core 1/1: bottom 5 cm, frozen for processing on land
Meiofauna	3	07-Aug	17:50	Core 1/6: bottom 5, 5–10,10–30 cm; 3x pooled cores of 2
Meiofauna	3	07-Aug	18:00	Core 2/6: bottom 5, 5–10,10–30 cm; 3x pooled cores of 2
Meiofauna	3	07-Aug	18:10	Core 3/6: bottom 5, 5–10,10–30 cm; 3x pooled cores of 2
Meiofauna	3	07-Aug	18:20	Core 4/6: bottom 5, 5–10,10–30 cm; 3x pooled cores of 2
Meiofauna	3	07-Aug	18:30	Core 5/6: bottom 5, 5–10,10–30 cm; 3x pooled cores of 2
Meiofauna	3	07-Aug	18:40	Core 6/6: bottom 5, 5–10,10–30 cm; 3x pooled cores of 2
Meiofauna DNA	3	07-Aug	18:50	Core 1/2: bottom 30cm, 5–10, 10–30 cm; 2 cores pooled
Meiofauna DNA	3	07-Aug	19:00	Core 1/2: bottom 30cm, 5–10, 10–30 cm; 2 cores pooled
Transects				
Thickness from drill & core holes	3	07-Aug	10:30	Using Kovacs thickness tape
Thickness from drill & core holes	2	07-Aug	17:30	Melt pond, using Kovacs thickness tape
Snow and/or SSL thickness	3	07-Aug	11:05	Using Snow stake
EM transect for sea ice thickness	1,2,3	07-Aug	19:00	GEM-2 623
Melt pond transect	2	07-Aug	16:30	Snow/slush/water depth on the frozen pond, crust thickness, water
Water Samples				
POC, PON, FCM, CHL-A, PP, BP, DIC	3	07-Aug	14:30	0–10 cm below Ice/water interface, also used for filtered seawater
POC, PON, FCM, CHL-A, DIC	3	07-Aug	19:00	1 m
POC, PON, FCM, CHL-A, DIC	3	07-Aug	17:30	5 m, additional water for nutrients collected twice for buoy calibration
POC, PON, FCM, CHL-A, DIC	3	07-Aug	18:30	10 m
Temperature, Salinity, Oxygen	3	07-Aug	18:00	3 m, collected twice for buoy calibration
Virus	3	07-Aug	15:00	0–10 cm below Ice/water interface, stored at 4C for analysis on shore
DNA MicroSHIFT	3	07-Aug	15:30	0–10 cm below Ice/water interface
DNA MicroSHIFT	3	07-Aug	17:40	5 m
DNA Vader	3	07-Aug	15:40	0–10 cm below ice/water interface
DNA Vader	3	07-Aug	18:00	5 m
POC, PON, CHLA, IVO	3	07-Aug	14:30	Water from Melt Pond
AP, CP, CDOM, SPM, PSD, Holo	3	07-Aug	14:30	Water from Melt Pond

Ice Station 11 (Transit G)



Figure 79. Station overview. © Paul A. Dodd

Table 42. Summary of activity at sea ice station 11. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
iSVP #6	1	09-Aug	13:37	IMEI: 300534069703080
Transects				
Thickness from drill	1	09-Aug	13:40	Using Kovacs thickness tape
Snow and/or SSL thickness	1	09-Aug	13:55	Using Snow stake
Ice cores				
Salinity and O18 ice core	1	09-Aug	13:50	Bagged whole, processed onboard
Snow				
Snow sample	1	09-Aug	13:51	Bag, melted onboard
Snow pit	1	09-Aug	13:52	Simplified

Ice Station 12 (EBT57A)

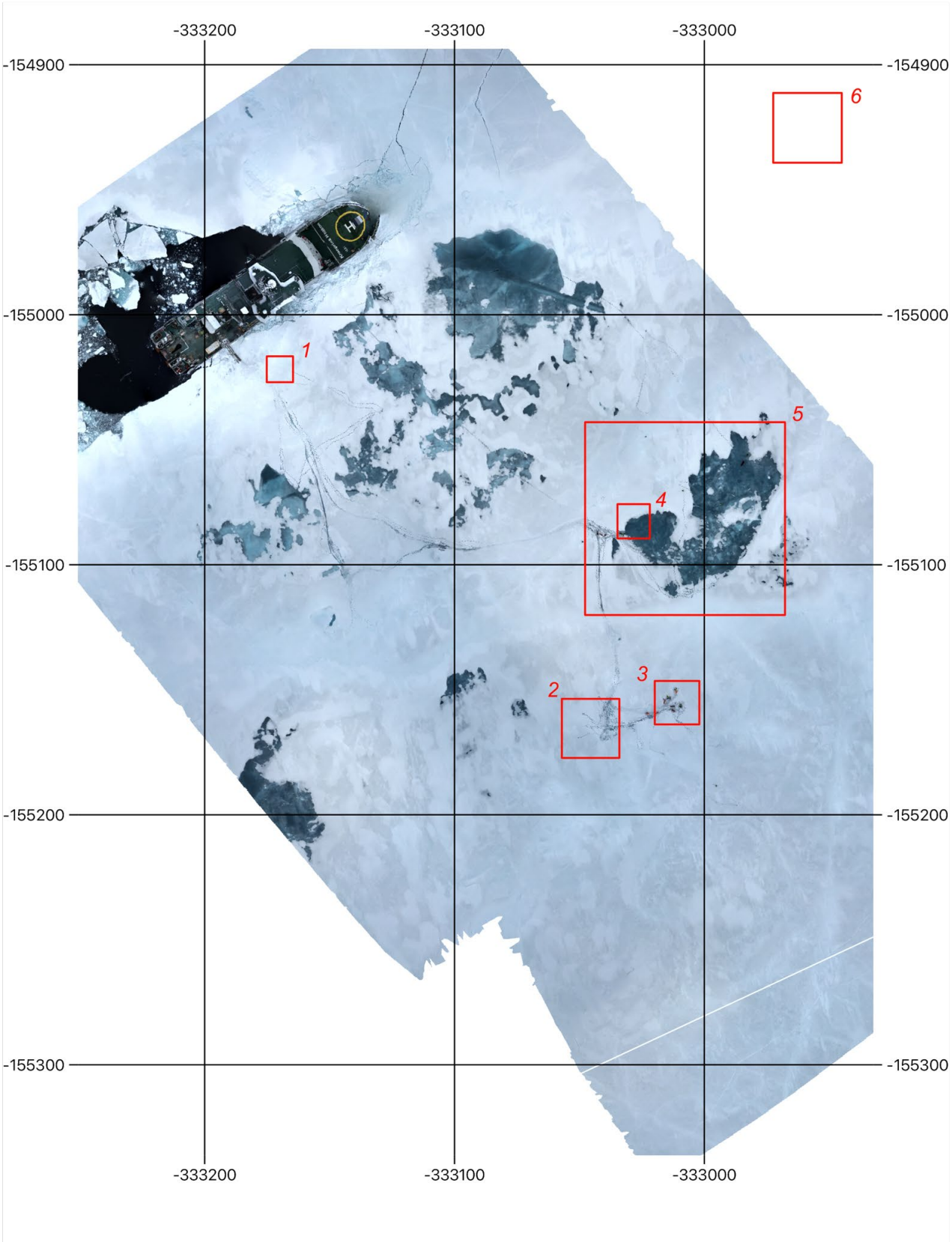


Figure 80. Station overview. Black lines are a UTM grid with units are meters. © Vegard Stürzinger

Table 43. Summary of activity at sea ice station 12. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (MET) #4	2	11-Aug	14:00	IMEI: **301434061116400**
Profilers				
VMP250 Turbulence session 1	3	11-Aug	13:30	3 casts. File data_0009.p
Equipment installed temporarily				
PAR Sensor	3	11-Aug	14:33	RBR Solo SN: 242982
LiCOR 2pi sensor	3	11-Aug	14:22	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	3	11-Aug	14:22	Under Ice Transmittance SN: SPQA5949
Handheld CTD	3	11-Aug	15:15	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
PAR Sensor	6	11-Aug	16:44	RBR Solo SN: 242982
In-Situ Optics				
ASD	4	11-Aug	13:30	Hyperspectral light (upwelling, downwelling and reflectance)
Polarimetry	4	11-Aug	13:30	Light polarisation
Cameras / Imagers				
GoPro	3	11-Aug	16:00	Stick-mounted deployment though core-hole
Drone Flights				
Harris Aerial	-	11-Aug	13:00	7x Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed)
Harris Aerial	-	11-Aug	13:00	Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed, Polarimetry)
Skydio	-	11-Aug	13:00	2x RGB and Thermal Camera (FLIR)
Snow				
Snowpit	2	11-Aug	14:15	Simplified snow pit
Snow Sample	2	11-Aug	14:20	1 sample of full snow layer for salinity & d18O
Ice cores				
Salinity & d18O	3	11-Aug	16:30	Full core, top 5 cm, then 10 cm increments
Density & Stratigraphy	3	11-Aug	16:45	Whole core shipped to NPI in Tromsø
Temperature, Salinity & d18O	4	11-Aug	17:30	Full core, top 5 cm, then 10 cm increments, melt pond
AP, CP, AcDOM, SPM, PSD, Holo	4	11-Aug	17:30	Crust sample of melt pond, collected by hand
Nutrients	3	11-Aug	15:30	Full Core, bottom 5, 5–10, 10–20, 20 cm increments thereafter
POC, PON, FCM, CHL-A, PP, BP	3	11-Aug	14:40	Core 1/4: bottom 5 cm, 20–40 cm, 80–100 cm; all 4/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	3	11-Aug	14:50	Core 2/4: bottom 5 cm, 20–40 cm, 80–100 cm; all 4/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	3	11-Aug	15:00	Core 3/4: bottom 5 cm; all 4cores pooled, upper sections used for DNA Sal
POC, PON, FCM, CHL-A, PP, BP	3	11-Aug	15:12	Core 4/4: bottom 5 cm; all 4 cores pooled
DNA	3	11-Aug	16:00	Core 1/2: bottom 5cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA	3	11-Aug	16:10	Core 2/2: bottom 5cm, 20–40 cm, 80–100 cm; 2 cores pooled
Transects				
Thickness from drill & core holes	1,2,3,4	11-Aug	14:10	Using Kovacs thickness tape
Snow and/or SSL thickness	2	11-Aug	14:15	Using Snow stake
Snow/slush/crust/water depth	4,5	11-Aug	15:00	Survey of melt pond with snow stake and GPS
Sea ice thickness and snow/melt pond depth	entire area	11-Aug	15:00	GEM-2 and Magnaprobe
GEM-2 calibration	1	11-Aug	16:30	Kovacs drill holes and GEM-2
Water Samples				
POC, PON, FCM, CHL-A, PP, BP, DIC	3	11-Aug	15:00	0–10 cm below Ice/water interface, also used for filtered seawater
DNA	3	11-Aug	15:30	0–10 cm below Ice/water interface
POC, PON, FCM, CHL-A, PP, BP, DIC	6	11-Aug	16:30	Water collected from lead surface
DNA	6	11-Aug	16:30	Water collected from lead surface
AP, CP, AcDOM, SPM, PSD, Holo	4	11-Aug	15:30	Water from Melt Pond
DNA MicroSHIFT, FCM, PP, BP	4	11-Aug	15:30	Water from Melt Pond

Ice Station 13 (EBT55B)

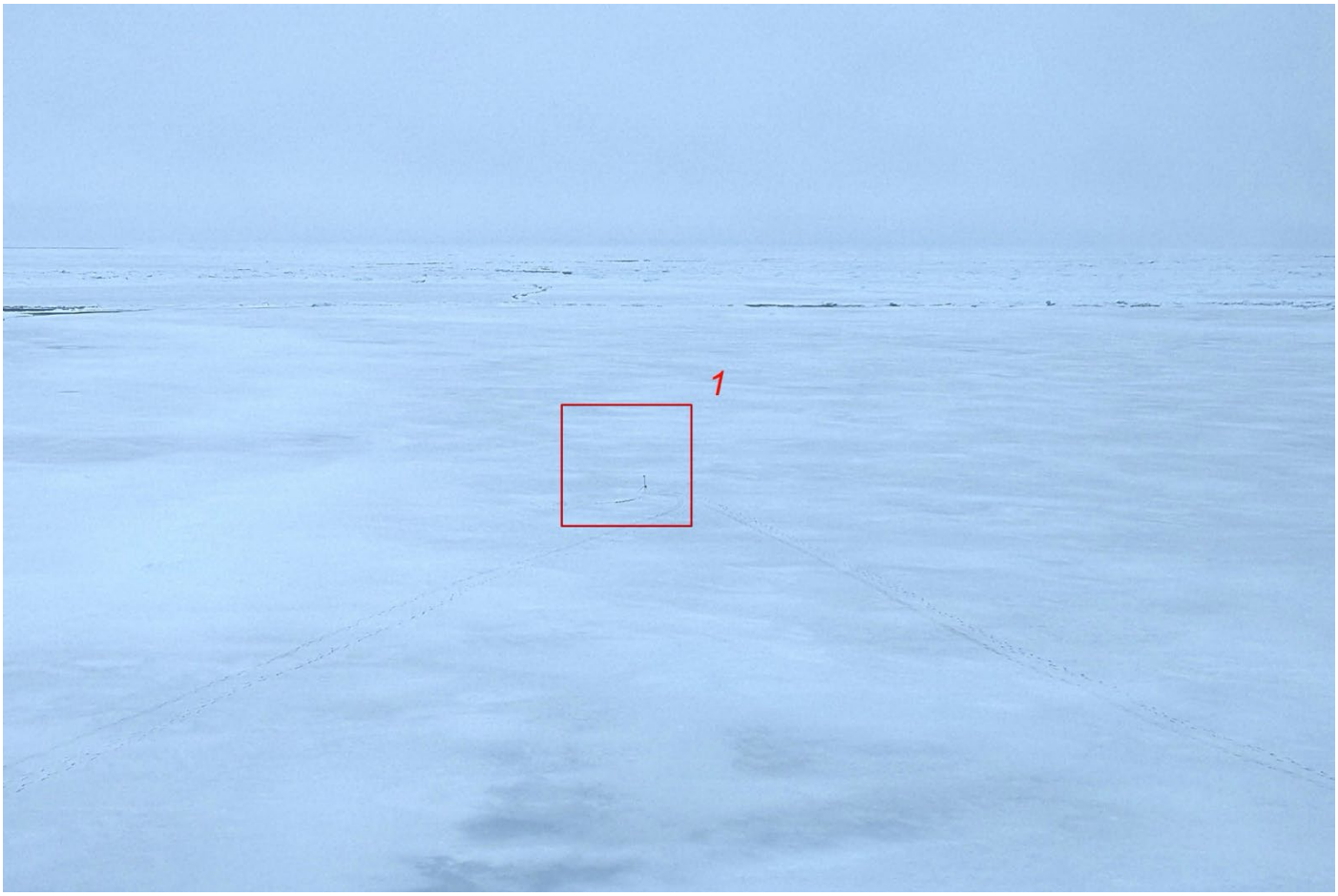


Figure 81. Station overview © Vegard Stürzinger

Table 44. Summary of activity at sea ice station 13. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (MET) #3	1	14-Aug	11:08	IMEI: **301434061210420**
Snow				
Snowpit	1	14-Aug	11:15	Simplified snow pit
Snow Sample	1	14-Aug	11:20	1 sample of top snow layer for salinity & d18O
Transects				
Thickness from drill hole	1	14-Aug	11:00	Using Kovacs thickness tape
Snow and/or SSL thickness	1	14-Aug	11:10	Using Snow stake
EM31 calibration	ship	14-Aug	11:30	Drill holes and Kovacs thickness tape

Ice Station 14 (E2C)

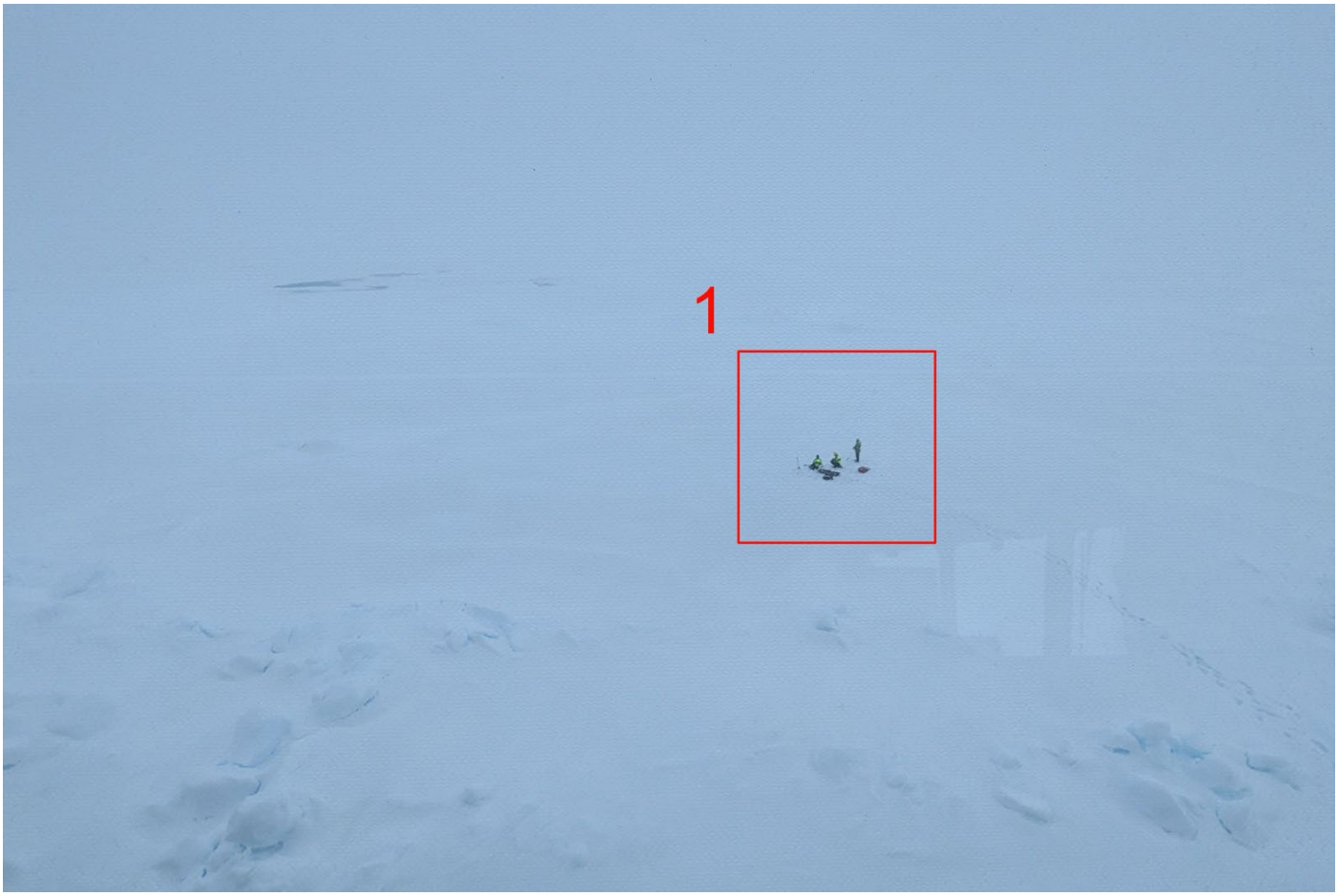


Figure 82. Station overview. © Vegard Stürzinger

Table 45. Summary of activity at sea ice station 14. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (MET) #1	1	15-Aug	17:48	IMEI: **301434061119530**
Snow				
Snowpit	1	15-Aug	18:15	Simplified snow pit
Snow Sample	1	15-Aug	18:20	1 sample of top snow layer for salinity & d18O
Transects				
Thickness from drill & core holes	1	15-Aug	18:00	Using Kovacs thickness tape
Snow and/or SSL thickness	1	15-Aug	18:05	Using Snow stake

Ice Station 15 (E5A)

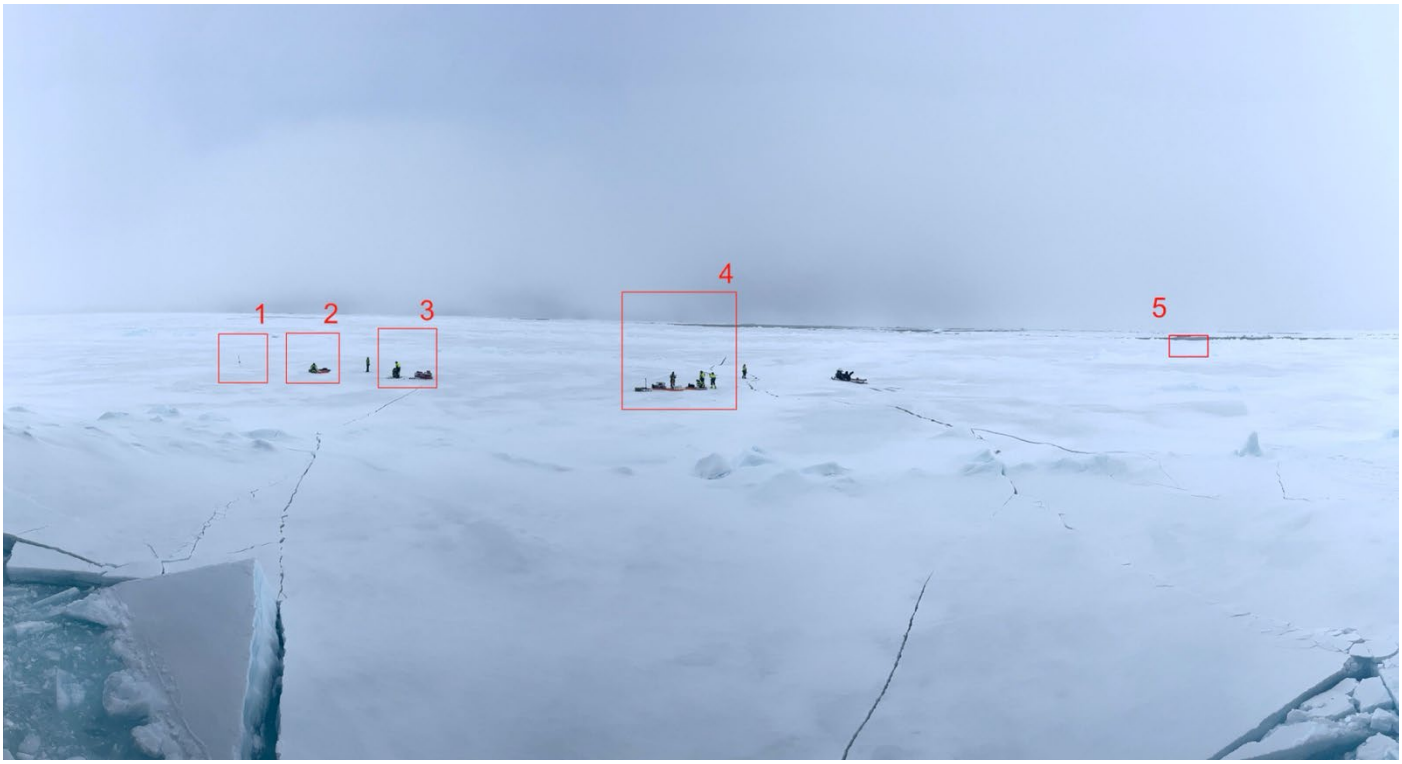


Figure 83. Station overview. Note that site 6 is not visible in this overview. © Paul A. Dodd

Table 46. Summary of activity at sea ice station 15. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Profilers				
VMP250 Turbulence session 1	3	16-Aug	16:30	3 casts. File data_0012.p
Equipment installed temporarily				
PAR Sensor	4	16-Aug	17:20	RBR Solo SN: 242982
LiCOR 2pi sensor	4	16-Aug	17:05	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	4	16-Aug	16:58	Under Ice Transmittance SN: SPQA5949
Handheld CTD	4	16-Aug	18:15	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
PAR Sensor	5	16-Aug	20:22	RBR Solo SN: 242982
LiCOR 2pi sensor	5	16-Aug	19:50	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	5	16-Aug	19:40	Under Ice Transmittance SN: SPQA5949
Handheld CTD	5	16-Aug	20:57	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
PAR Sensor	5	16-Aug	20:09	RBR Solo SN: 242982, deployed in lead
LiCOR 2pi sensor	5	16-Aug	19:55	Upwelling & Downwelling Quantum SN: Q110764, deployed in lead
LiCOR 4pi sensor	5	16-Aug	19:45	Under Ice Transmittance SN: SPQA5949, deployed in lead
Handheld CTD	5	16-Aug	20:47	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268, in lead
Cameras / Imagers				
GoPro	4	16-Aug	18:20	Stick-mounted deployment though core-hole
GoPro	5	16-Aug	20:30	Stick-mounted deployment though core-hole and in lead
Drone Flights				
Harris Aerial	-	16-Aug	-	7x Hyperspectral Camera (Hyspex MJOLNIR Visible, Near InfraRed)

Snow				
Snowpit	2	16-Aug	16:15	Simplified snow pit
Snow Sample	2	16-Aug	16:20	1 sample of top snow layer for salinity & d18O
Ice cores				
Temperature, salinity & d18O	2	16-Aug	16:30	Full core, top 5 cm, then 10 cm increments
Density & Stratigraphy	2	16-Aug	16:45	Whole core shipped to NPI in Tromsø
Temperature, Salinity & d18O	6	16-Aug	17:30	Full core, top 5 cm, then 10 cm increments, melt pond
AP, CP, AcDOM, SPM, PSD, Holo, IVO	6	16-Aug	17:30	Crust sample of melt pond x8
AP, CP, AcDOM, SPM, PSD, Holo, IVO	6	16-Aug	17:30	5cm top of the bottom of melt pond x8
Nutrients	4	16-Aug	17:21	Full Core, bottom 5, 5-10, 10–20 cm, then 20 cm increments
Chl-A	3	16-Aug	18:20	Full Core, bottom 5, 5–10, 10–20 cm, then 20 cm increments
POC, PON, FCM, CHL-A, PP, BP	4	16-Aug	17:25	Core 1/7: bottom 5, 20–40, 80–100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	16-Aug	17:30	Core 2/7: bottom 5, 20–40, 80–100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	16-Aug	17:35	Core 3/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	16-Aug	17:40	Core 4/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	16-Aug	17:45	Core 5/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	16-Aug	17:50	Core 6/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	16-Aug	17:55	Core 7/7: bottom 5cm; all 7 cores pooled
DNA	4	16-Aug	18:00	Core 1/2: bottom 5, 20–40, 80–100 cm; 2 cores pooled
DNA	4	16-Aug	18:05	Core 2/2: bottom 5, 20–40, 80–100 cm; 2 cores pooled
DNA Sal	4	16-Aug	18:10	Core 1/1: 1 cm rounds at 2, 30, 90 cm for rapid salinity melt
Virus	4	16-Aug	18:15	Core 1/1: bottom 5 cm, frozen for processing on land
Nutrients	5	16-Aug	20:30	Core 1/1: bottom 5 cm
Gas	5	16-Aug	20:40	Core 1/1: full core in 30 cm increments, frozen for processing on land
POC, PON, FCM, CHL-A, PP	5	16-Aug	20:50	Core 1/4: bottom 5 cm; all 3 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	5	16-Aug	21:00	Core 2/4: bottom 5 cm; all 3 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	5	16-Aug	21:10	Core 3/4: bottom 5cm; all 3 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	5	16-Aug	21:20	Core 4/4: bottom 5cm; all 3 cores pooled, 5 m from lead
FCM, BP, CHL-A, Fungi,	6	16-Aug	15:30	Ice from bottom of Melt Pond
Transects				
Thickness from drill & core holes	1,2,6	16-Aug	16:10	Using Kovacs thickness tape
Snow/slush/crust/water depth	6	16-Aug	15:00	Survey of melt pond with snow stake and GPS
Sea ice thickness and snow	entire area	16-Aug	17:00	GEM-2 and Magnaprobe
Water Samples				
POC, PON, FCM, CHL-A, PP, BP, DIC	4	16-Aug	17:45	0–10 cm below Ice/water interface, also used for filtered seawater
POC, PON, FCM, CHL-A, DIC	4	16-Aug	18:05	1 m
POC, PON, FCM, CHL-A, DIC	4	16-Aug	18:05	5 m
POC, PON, FCM, CHL-A, DIC	4	16-Aug	18:15	10 m
Virus	4	16-Aug	17:50	0–10 cm below Ice/water interface, stored at 4C for analysis on shore
DNA MicroSHIFT	4	16-Aug	17:55	0–10 cm below Ice/water interface and 5 m
Water for pond Team	4	16-Aug	18:00	0–10 cm below Ice/water interface
DNA, POC, PON, FCM, CHL-A, PP, DIC	5	16-Aug	20:30	Water collected from lead surface
POC, PON, FCM, CHL-A, PP, DIC	5	16-Aug	20:39	Collected 5 m from lead, from 0–10 cm below Ice/water interface and 5 m below ice
DNA MicroSHIFT, FCM, PP, BP	6	16-Aug	15:30	Water collected from meltpond
AP, CP, AcDOM, SPM, PSD, Holo, IVO	6	16-Aug	15:30	Water from melt pond

Ice Station 16 (E9A)



Figure 84. Station overview. © Polona Itkin

Table 47. Summary of activity at sea ice station 16. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (MET) #5	1	17-Aug	19:08	IMEI: **301434061110530**
Snow				
Snowpit	1	17-Aug	19:15	Simplified snow pit
Snow Sample	1	17-Aug	19:20	1 sample of full snow layer for salinity & d18O
Transects				
Thickness from drill hole	1	17-Aug	19:10	Using Kovacs thickness tape
Snow and/or SSL thickness	2	17-Aug	19:15	Using Snow stake

Ice Station 17 (E12C)

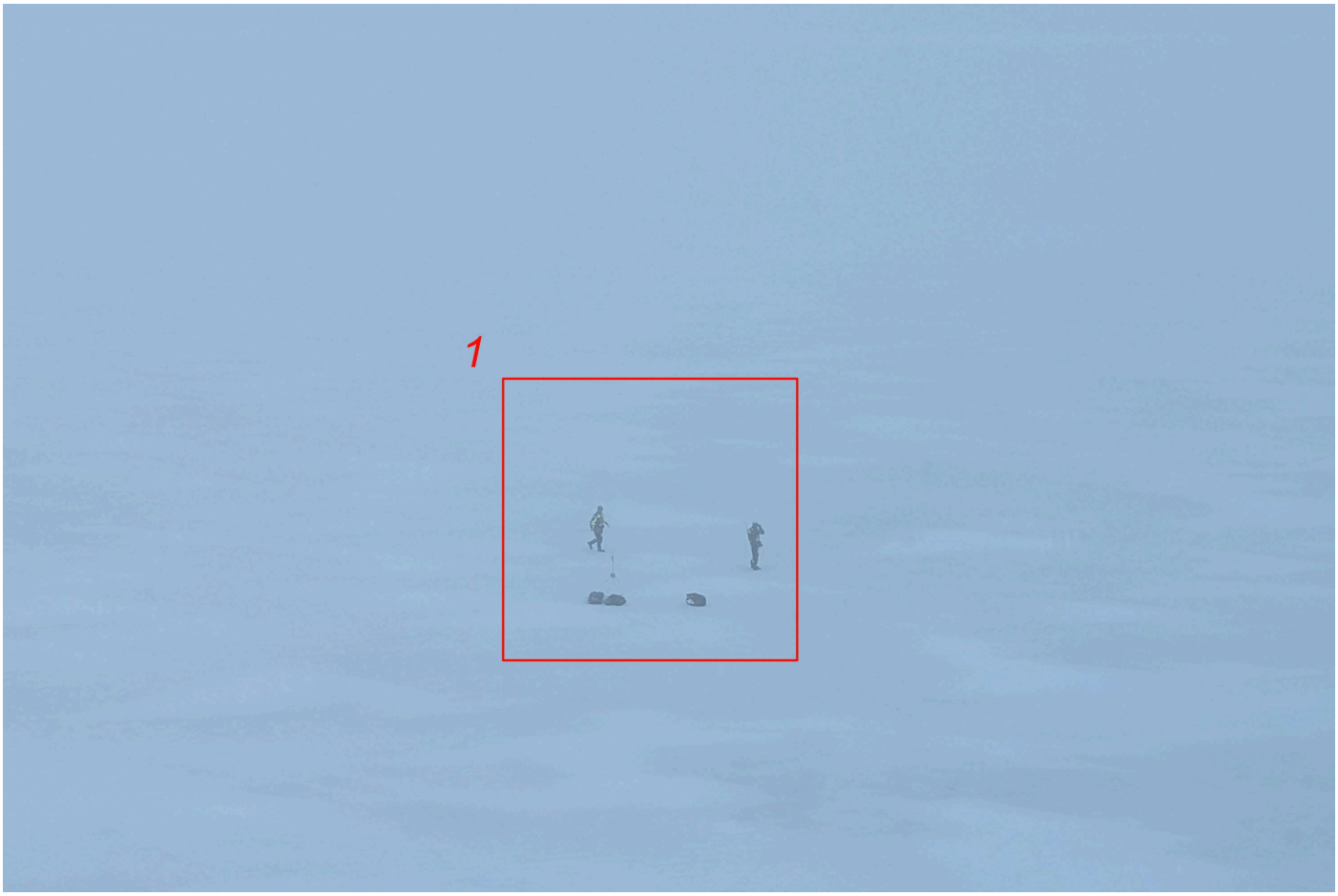


Figure 85. Station overview. © Vegard Stürzinger

Table 48. Summary of activity at sea ice station 17. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (MET) #7	1	18-Aug	11:52	IMEI: **301434061116520**
Snow				
Snowpit	1	18-Aug	12:15	Simplified snow pit
Snow Sample	1	18-Aug	12:20	1 sample of full snow layer for salinity & d18O
Transects				
Thickness from drill holes	1	18-Aug	12:10	Using Kovacs thickness tape
Snow and/or SSL thickness	1	18-Aug	12:15	Using Snow stake

Ice Station 18 (E13A)

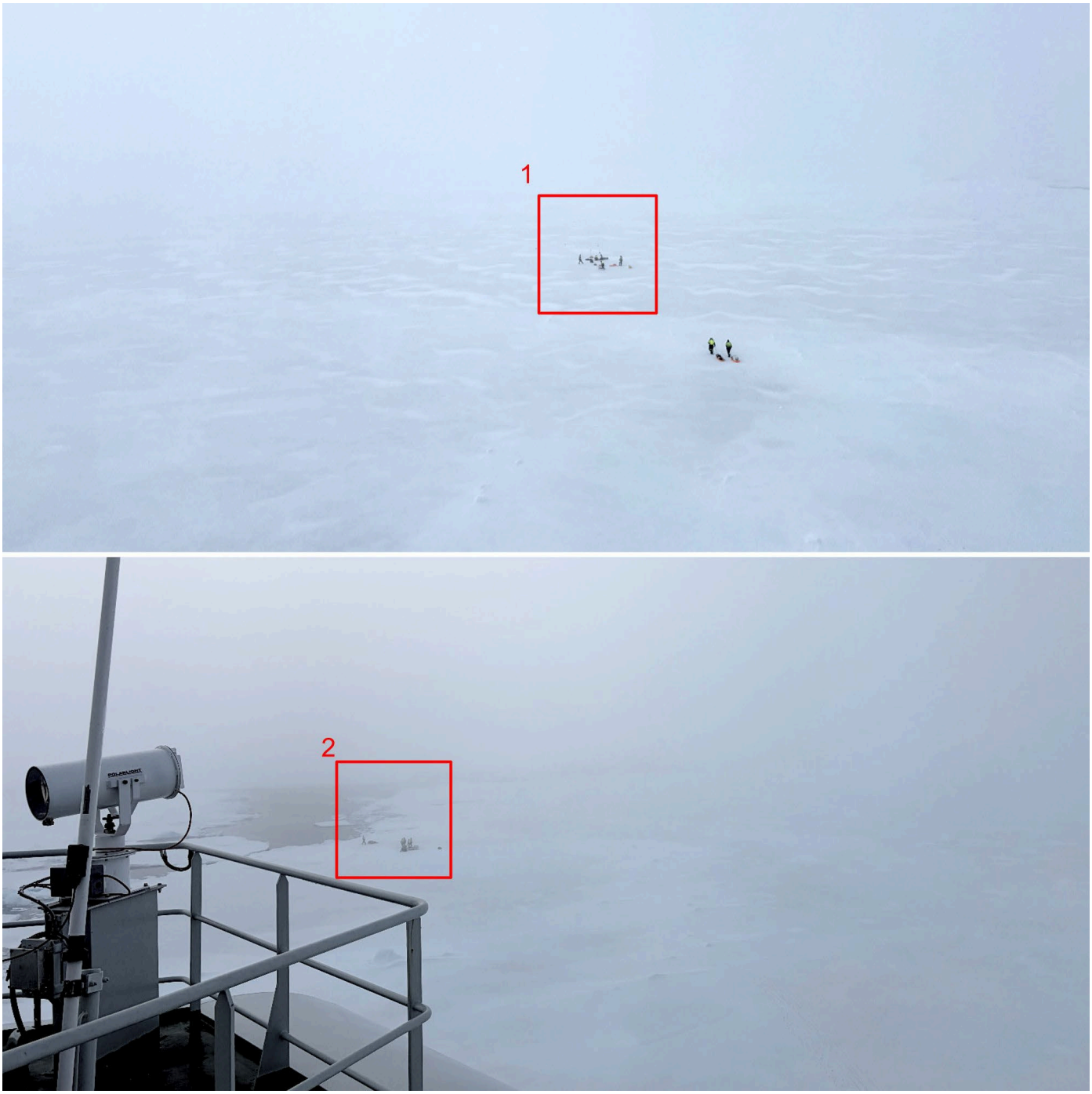


Figure 86. Station overview. © Tim Carlsen

Table 49. Summary of activity at sea ice station 18. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
SIMBA FMI 0904	1	18-Aug	16:37	IMEI: 300534061783900
SnoTatos (3 nodes)	1	18-Aug	16:38	IMEI: 300434064481510
OMB UiT #2	1	18-Aug	16:39	IMEI: 300534065851560
Equipment installed temporarily				
PAR Sensor	2	18-Aug	17:04	RBR Solo SN: 242982, deployed in lead
LiCOR 2pi sensor	1	18-Aug	17:05	Upwelling & Downwelling Quantum SN: Q110764
Cameras / Imagers				
GoPro	1	18-Aug	19:30	Stick-mounted deployment though core-hole
GoPro	2	18-Aug	17:10	Stick-mounted deployment in lead
Snow				
Snowpit	gangway	18-Aug	17:15	Simplified snow pit
Snow Sample	gangway	18-Aug	17:20	1 sample of top snow layer for salinity & d18O
Ice cores				
Temperature, salinity & d18O	1	18-Aug	17:00	Full core, top 5 cm, then 10 cm increments
Density & Stratigraphy	1	18-Aug	17:05	Whole core shipped to NPI in Tromsø
Nutrients	1	18-Aug	19:00	bottom 5 cm, 20-40 cm, 80-100 cm
POC, PON, FCM, CHL-A, PP, BP	1	18-Aug	17:30	Core 1/6: bottom 5, 20-40, 80-100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	18-Aug	17:40	Core 2/6: bottom 5, 20-40, 80-100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	18-Aug	17:50	Core 3/6: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	18-Aug	18:00	Core 4/6: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	18-Aug	18:10	Core 5/6: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP	1	18-Aug	18:20	Core 6/6: bottom 5cm; all 7 cores pooled
DNA	1	18-Aug	18:30	Core 1/2: bottom 5, 20-40, 80-100 cm; 2 cores pooled
DNA	1	18-Aug	18:40	Core 2/2: bottom 5, 20-40, 80-100 cm; 2 cores pooled
DNA Sal	1	18-Aug	18:50	Core 1/1: 1 cm rounds at 2, 30, 90 cm for rapid salinity melt
Transects				
Thickness from drill & core holes	1	18-Aug	14:10	Using Kovacs thickness tape
Snow and/or SSL thickness	1	18-Aug	14:15	Using Snow stake
Sea ice, snow thickness	1	18-Aug	15:00	GEM-2 and Magnaprobe
Water Samples				
POC, PON, FCM, CHL-A, PP, BP, DIC	1	18-Aug	17:15	0–10 cm below Ice/water interface, also used for filtered seawater
DNA	1	18-Aug	18:00	0–10 cm below Ice/water interface
POC, PON, FCM, CHL-A, PP, DIC	2	18-Aug	17:20	water collected from lead surface
POC, PON, FCM, CHL-A, PP, DIC	2	18-Aug	17:20	water collected from 0–10 cm below Ice/water interface 5 m from lead
USV				
PAMELA with 20 micron net	2	18-Aug		test run in the lead

Ice Station 19 (E16C)



Figure 87. Montage of images giving an overview of ice station 19. © Polona Itkin

Table 50. Summary of activity at sea ice station 19. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (MET) #6	1	19-Aug	09:05	IMEI: **301434061210410**
Snow				
Snowpit	1	19-Aug	09:15	Simplified snow pit
Snow Sample	1	19-Aug	09:20	1 sample of full snow layer for salinity & d18O
Transects				
Thickness from drill holes	1	19-Aug	09:10	Using Kovacs thickness tape
Snow and/or SSL thickness	2	19-Aug	09:15	Using Snow stake

Ice Station 20 (E17A)



Figure 88. Station overview. © Paul A. Dodd

Table 51. Summary of activity at sea ice station 20. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Profilers				
VMP250 Turbulence session 1	2	19-Aug	13:25	3 casts. File data_0019.p
Ice cores				
Optics	1	19-Aug	18:30	Clean core for Ahmed, salinity will be measured at the end
AP, CP, AcDOM, SPM, PSD, Holo	1	19-Aug	18:15	Crust sample of melt pond
Transects				
Thickness from drill & core holes	1	19-Aug	16:10	Using Kovacs thickness tape
Snow/slush/crust/water depth	1	19-Aug	15:00	Survey of melt pond with snow stake and GPS

Ice Station 21 (Amundsen Mooring Site)

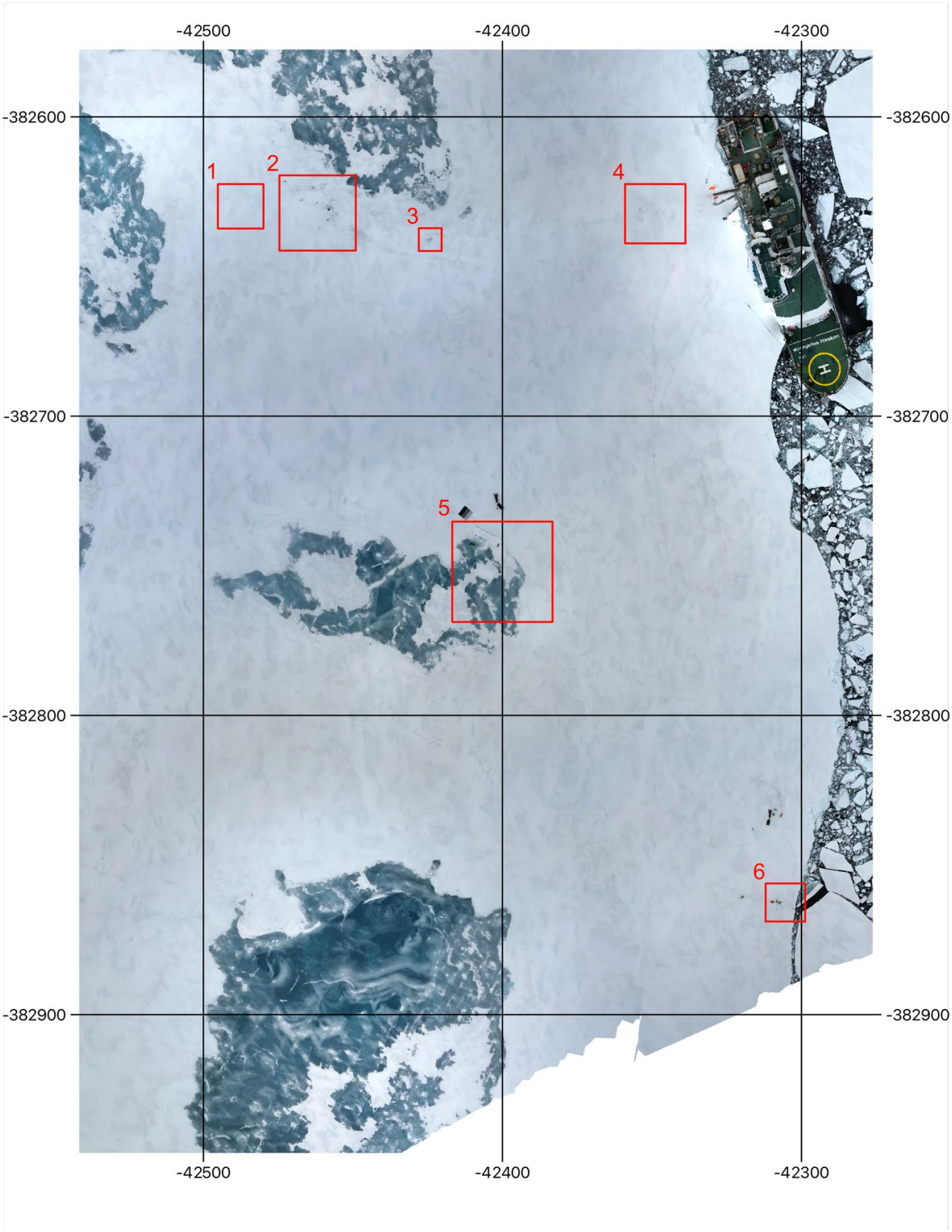


Figure 89. Station overview. Black lines are a UTM grid with units are meters. © Vegard Stürzinger

Table 52. Summary of activity at sea ice station 21. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (MET) #8	1	23-Aug	14:48	IMEI: 301434060191540
Profilers				
VMP250 Turbulence session 1	2	22-Aug	15:54	3 casts. File data_0021.p
VMP250 Turbulence session 2	2	23-Aug	08:12	3 casts. File data_0022.p
VMP250 Turbulence session 3	2	23-Aug	16:55	3 casts. File data_0023.p
Equipment installed temporarily				
ADCP Signature 1000	2	22-Aug	15:30	SN: 108156. Recovered 24-Aug 04:30
UVP6 session 1	2	22-Aug	18:40	ca. 7 m below ice, recovered & battery change 23-Aug 08:00
UVP6 session 2	2	23-Aug	09:00	ca. 7 m below ice, recovered & battery change 23-Aug 16:45
UVP6 session 3	2	23-Aug	17:40	ca. 7 m below ice, recovered 24-Aug 04:30
Amphipod Traps	2	22-Aug	15:30	ca 5 m below ice, Recovered 24-Aug 05:00
Sediment Traps	2	22-Aug	15:30	ca 5 m below ice, Recovered 24-Aug 05:00
LiCOR 2pi sensor	4	23-Aug	06:57	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	4	23-Aug	06:57	Under Ice Transmittance SN: SPQA5949
Handheld CTD	4	23-Aug	07:22	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
PAR Sensor	6	23-Aug	12:35	RBR Solo SN: 242982
LiCOR 2pi sensor	6	23-Aug	15:27	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	6	23-Aug	15:27	Under Ice Transmittance SN: SPQA5949
Handheld CTD	6	23-Aug	15:35	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
Cameras / Imagers				
GoPro	2	22-Aug	17:30	Stick-mounted deployment though core-hole
GoPro	3	22-Aug	17:40	Stick-mounted deployment though core-hole
Blueye	2	22-Aug	18:30	Under-ice drone survey though auger-made hole
GoPro	4	23-Aug	14:00	Stick-mounted deployment though core-hole and by lead edge
GoPro	6	23-Aug	18:30	Stick-mounted deployment though core-hole and by lead edge
Snow				
Snowpit	5	22-Aug	14:30	On level ice and in a drift at a ridge
Snowpit	4	23-Aug	12:30	Simplified
Snow Sample	5	22-Aug	14:30	All layers
Ice cores				
Salinity & d18O	4	23-Aug	09:20	Cut in 10 cm increments on ice
Density & Stratigraphy	4	23-Aug	09:25	Whole core shipped to NPI in Tromsø
Chemistry Core	4	23-Aug	09:35	Whole core shipped to NPI in Tromsø
Archive Core	4	23-Aug	09:35	Whole core shipped to NPI in Tromsø
Temperature & Salinity Core	4	23-Aug	09:47	5cm at top and bottom, ice cut for salinity in lab
Superimposed ice	4	23-Aug	12:35	Core top (~12cm) shipped to NPI in Tromsø
Nutrients	2	22-Aug	18:00	Full Core, bottom 5, 5–10, 10–20, then 20 cm increments
Chl-A	2	22-Aug	18:15	Full Core, bottom 5, 5–10, 10–20, then 20 cm increments
Virus	2	22-Aug	18:30	Core 1/1: bottom 5 cm, frozen for processing on land
Meiofauna	2	22-Aug	14:30	Core 1/6: bottom 5 cm , 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna	2	22-Aug	14:40	Core 2/6: bottom 5 cm , 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna	2	22-Aug	14:40	Core 3/6: bottom 5 cm , 5–10 cm, 10–30 cm; 3x pooled cores of 2

Meiofauna	2	22-Aug	14:50	Core 4/6: bottom 5 cm , 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna	2	22-Aug	15:00	Core 5/6: bottom 5 cm , 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna	2	22-Aug	15:10	Core 6/6: bottom 5 cm , 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna DNA	2	22-Aug	15:20	Core 1/2: bottom 30 cm, 5–10 cm, 10–30 cm; 2 cores pooled
Meiofauna DNA	2	22-Aug	15:30	Core 2/2: bottom 30 cm, 5–10 cm, 10–30 cm; 2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	23-Aug	07:30	Core 1/8: bottom 5 cm, 20–40 cm, 80–100 cm; all 8/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	23-Aug	07:40	Core 2/8: bottom 5 cm, 20–40 cm, 80–100 cm; all 8/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	23-Aug	07:50	Core 3/8: bottom 5 cm; all 8 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	23-Aug	08:00	Core 4/8: bottom 5 cm; all 8 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	23-Aug	08:10	Core 5/8: bottom 5 cm; all 8 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	23-Aug	08:20	Core 6/8: bottom 5 cm; all 8 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	23-Aug	08:30	Core 7/8: bottom 5 cm; all 8 cores pooled
POC, PON, FCM, CHL-A, PP, BP	4	23-Aug	08:40	Core 8/8: bottom 5 cm; all 8 cores pooled
DNA	4	23-Aug	08:50	Core 1/2: bottom 5 cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA	4	23-Aug	09:00	Core 2/2: bottom 5 cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA Sal	4	23-Aug	09:10	Core 1/1: 1 cm rounds at 2 cm, 30 cm, 90 cm for rapid salinity melt
POC, PON, FCM, CHL-A, PP, BP	5	23-Aug	14:30	Water from Melt Pond
POC, PON, FCM, CHL-A, PP, BP	5	23-Aug	14:30	Ice from Melt Pond
Nutrients	6	23-Aug	18:55	Core 1/1: bottom 5 cm, 5 m from lead
POC, PON, FCM, CHL-A, PP	6	23-Aug	19:00	Core 1/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	6	23-Aug	19:05	Core 2/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	6	23-Aug	19:10	Core 3/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	6	23-Aug	19:15	Core 4/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
Gas	6	23-Aug	19:25	Core 1/1: whole core bagged, 5 m from lead, to be processed in Tromsø
Nutrients	6	23-Aug	19:45	Core 1/1: bottom 5 cm; 5 m from lead
POC, PON, FCM, CHL-A, PP	6	23-Aug	20:00	Core 1/4: bottom 5 cm; all 4 cores pooled, 20 m from lead
POC, PON, FCM, CHL-A, PP	6	23-Aug	20:05	Core 2/4: bottom 5 cm; all 4 cores pooled, 20 m from lead
POC, PON, FCM, CHL-A, PP	6	23-Aug	20:10	Core 3/4: bottom 5 cm; all 4 cores pooled, 20 m from lead
POC, PON, FCM, CHL-A, PP	6	23-Aug	20:15	Core 4/4: bottom 5 cm; all 4 cores pooled, 20 m from lead
Gas	6	23-Aug	20:25	Core 1/1: whole core bagged, 20 m from lead, to be processed in Tromsø

Transects

Thickness from drill & core holes	2	22-Aug	16:00	Using Kovacs thickness tape
Thickness from drill & core holes	4	23-Aug	09:20	Using Kovacs thickness tape
Thickness from drill & core holes	6	23-Aug	20:30	Using Kovacs thickness tape
Snow and/or SSL thickness	1-5	22-Aug	15:45	Magnaprobe
Sea ice thickness	1-5	22-Aug	15:45	GEM-2
Snow/slush/crust/water depth	2	23-Aug	15:30	Survey of refrozen melt pond
GEM-2 calibration	4	22-Aug	15:30	GEM-2 and Kovacs thickness drill and tape

Water Samples

POC, PON, FCM, CHL-A, PP, BP, DIC	4	23-Aug	08:00	0–10 cm below Ice/water interface, also used for filtered seawater
Virus	2	22-Aug	16:00	0–10 cm below Ice/water interface, stored at 4C for analysis on shore
DNA	4	23-Aug	09:00	0–10 cm below Ice/water interface
POC, PON, FCM, CHL-A, PP, DIC	6	23-Aug	15:00	lead surface and 0–10 cm below Ice/water interface at 5m from lead
POC, PON, FCM, CHL-A, PP, DIC	6	23-Aug	16:00	0–10 cm below Ice/water interface at 20m from lead

Ice Station 22 (EBT26C)



Figure 90. Station overview. © Paul A. Dodd

Table 53. Summary of activity at sea ice station 22. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Thickness from Kovacs ice tape	1	26-Aug	12:09	Drilling holes, for ship-mounteed GEM-2 calibration
Ship-mounted GEM-2	1	26-Aug	12:30	Calibration over drill holes

Ice Station 23 (EBT29A)

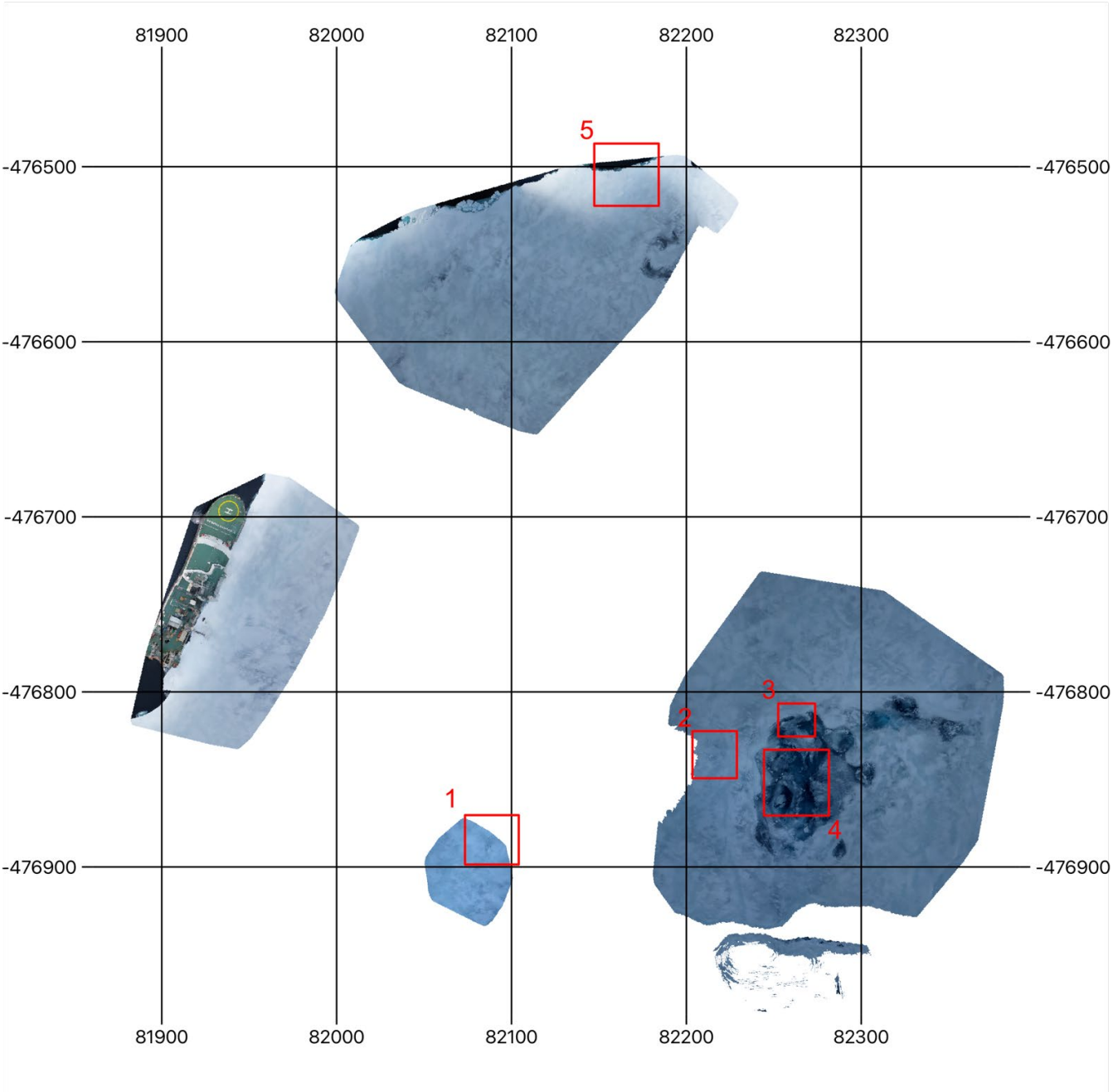


Figure 91. Station overview Black lines are a UTM grid with units are meters. © Vegard Stürzinger

Table 54. Summary of activity at sea ice station 23. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed and left behind				
OpenMetBouy (MET) #10	1	28-Aug	13:17	IMEI: **301434061114510**
Profilers				
VMP250 Turbulence session 1	5	28-Aug	13:57	3 casts. File data_0027.p
Equipment installed temporarily				
LiCOR 2pi sensor	2	28-Aug	16:14	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	2	28-Aug	16:14	Under Ice Transmittance SN: SPQA5949
Handheld CTD	2	28-Aug	16:29	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
PAR Sensor	5	28-Aug	13:24	RBR Solo SN: 242982
LiCOR 2pi sensor	5	28-Aug	13:20	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	5	28-Aug	13:20	Under Ice Transmittance SN: SPQA5949
Handheld CTD	5	28-Aug	14:27	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
Cameras / Imagers				
GoPro	2	28-Aug	16:30	Stick-mounted deployment though core-hole
Blueye	2	28-Aug	14:00	Under-ice drone survey by lead edge
GoPro	5	28-Aug	14:30	Stick-mounted deployment though core-holes and by lead edge
Snow				
Snowpit	4	28-Aug	14:00	Simplified
Ice cores				
Salinity & d18O	4	28-Aug	14:00	Cut in 10 cm increments on ice
Density & Stratigraphy	4	28-Aug	14:00	Whole core shipped to NPI in Tromsø
Temperature & Salinity Core	4	28-Aug	14:00	5cm at top and bottom, ice cut for salinity in lab core
Nutrients	2	28-Aug	16:30	Full Core, bottom 5, 5–10, 10–20, 20 cm increments thereafter
Virus	2	28-Aug	16:40	Core 1/1: bottom 5 cm, frozen for processing on land
POC, PON, FCM, CHL-A, PP, BP	2	28-Aug	16:50	Core 1/7: bottom 5 cm, 20–40 cm, 80–100 cm; all 8/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	2	28-Aug	17:00	Core 2/7: bottom 5 cm, 20–40 cm, 80–100 cm; all 8/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP	2	28-Aug	17:10	Core 3/7: bottom 5 cm; all 8 cores pooled
POC, PON, FCM, CHL-A, PP, BP	2	28-Aug	17:20	Core 4/7: bottom 5 cm; all 8 cores pooled
POC, PON, FCM, CHL-A, PP, BP	2	28-Aug	17:30	Core 5/7: bottom 5 cm; all 8 cores pooled
POC, PON, FCM, CHL-A, PP, BP	2	28-Aug	17:40	Core 6/7: bottom 5 cm; all 8 cores pooled
POC, PON, FCM, CHL-A, PP, BP	2	28-Aug	17:50	Core 7/7: bottom 5 cm; all 8 cores pooled
DNA	2	28-Aug	18:00	Core 1/2: bottom 5 cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA	2	28-Aug	18:10	Core 2/2: bottom 5 cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA Sal	2	28-Aug	18:20	Core 1/1: 1 cm rounds at 2 cm, 30 cm, 90 cm for rapid salinity melt
POC, PON, FCM, CHL-A, PP, BP	4	28-Aug	14:30	Water from Melt Pond
POC, PON, FCM, CHL-A, PP, BP	4	28-Aug	14:30	Ice from Melt Pond
POC, PON, FCM, CHL-A, PP, BP	5	28-Aug	14:30	Rafted ice near lead
POC, PON, FCM, CHL-A, PP	5	28-Aug	14:00	Core 1/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	5	28-Aug	14:05	Core 2/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	5	28-Aug	14:10	Core 3/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP	5	28-Aug	14:15	Core 4/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
Gas	5	28-Aug	14:25	Core 1/1: whole core bagged, 5 m from lead, to be processed in Tromsø

Nutrients	5	28-Aug	14:45	Core 1/1: bottom 5 cm; 5 m from lead
Transects				
Thickness from drill & core holes	4	28-Aug	15:20	Using Kovacs thickness tape
Water Samples				
POC, PON, FCM, CHL-A, PP, BP, DIC	2	28-Aug	16:35	0–10 cm below Ice/water interface, also used for filtered seawater
POC, PON, FCM, CHL-A,	2	28-Aug	16:50	1 m, 5 m, and 10 m depth below ice
Virus	2	28-Aug	16:45	0–10 cm below Ice/water interface, stored at 4C for analysis on shore
DNA	2	28-Aug	16:55	0–10 cm below Ice/water interface
POC, PON, FCM, CHL-A, PP, DIC	5	28-Aug	14:40	lead surface
POC, PON, FCM, CHL-A, PP, DIC, etc	5	28-Aug	14:50	0–10 cm below Ice/water interface at 5 m from lead
POC, PON, FCM, CHL-A,	5	28-Aug	15:00	5 m depth below ice at 5 m from lead
POC, PON, FCM, CHL-A, PP, BP, DIC	5	28-Aug	15:00	void water between rafted ice near lead

Ice Station 24 (Nansen Mooring Site)

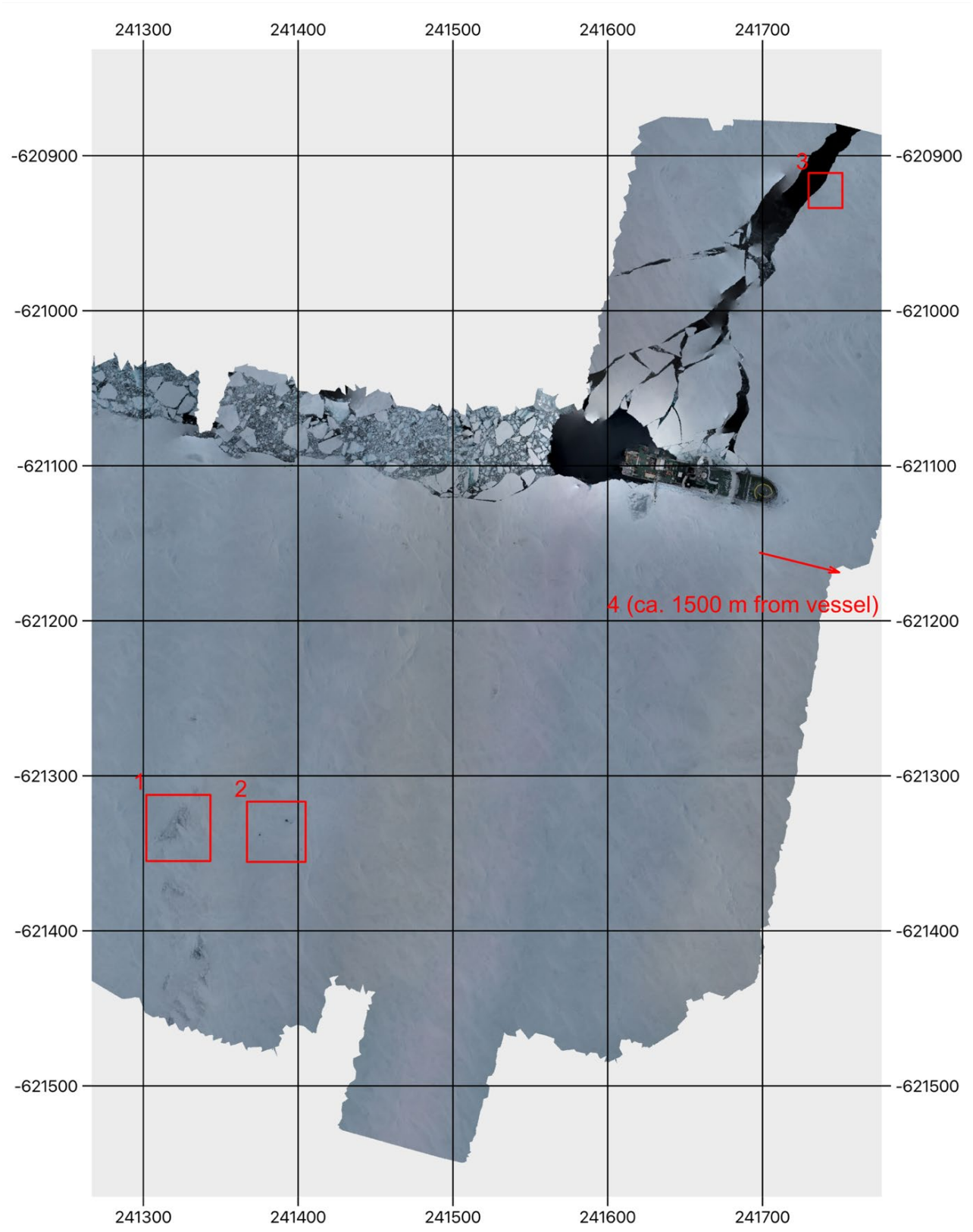


Figure 92. Station overview. Station overview Black lines are a UTM grid with units are meters. © Vegard Stürzinger

Table 55. Summary of activity at sea ice station 24. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Profilers				
VMP250 Turbulence session 1	2	01-Sep	17:35	3 casts. File data_0033.p
VMP250 Turbulence session 2	2	02-Sep	14:53	3 casts. File data_0034.p
VMP250 Turbulence session 3	2	03-Sep	04:47	3 casts. File data_0035.p
Equipment installed temporarily				
ADCP Signature 1000	2	01-Sep	17:15	SN: 108156. Recovered 03-Sep 04:55
UVP6 session 1	2	02-Sep	06:57	ca. 7 m below ice, recovered & battery change
UVP6 session 2	2	02-Sep	14:53	ca. 7 m below ice, recovered & battery change
Amphipod Traps	2	02-Sep	15:30	ca 5 m below ice, Recovered 03-Sep 04:00
Sediment Traps	2	02-Sep	15:30	ca 5 m below ice, Recovered 03-Sep 04:00
PAR Sensor	2	02-Sep	07:37	RBR Solo SN: 242982
LiCOR 2pi sensor	2	02-Sep	06:52	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	2	02-Sep	06:52	Under Ice Transmittance SN: SPQA5949
Handheld CTD	2	02-Sep	07:01	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
PAR Sensor	4	02-Sep	10:59	RBR Solo SN: 242982
LiCOR 2pi sensor	4	02-Sep	11:10	Upwelling & Downwelling Quantum SN: Q110764
LiCOR 4pi sensor	4	02-Sep	11:10	Under Ice Transmittance SN: SPQA5949
Handheld CTD	4	02-Sep	11:14	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
Cameras / Imagers				
GoPro	2	02-Sep	08:00	Stick-mounted deployment though core-hole
GoPro	2	01-Sep	18:30	Stick-mounted deployment though core-hole
Blueye	2	01-Sep	18:30	Under-ice drone survey though auger-made hole
Blueye	3	02-Sep	15:20	Under-ice drone survey at lead edge
GoPro	4	02-Sep	11:00	Stick-mounted deployment though core-hole and by lead edge
Snow				
Snowpit	1	02-Sep	06:30	On level ice
Snow Sample	1	02-Sep	07:15	All layers
Ice cores				
Salinity & d18O	1	01-Sep	17:20	Cut in 10 cm increments on ice
Density & Stratigraphy	1	01-Sep	17:25	Whole core shipped to NPI in Tromsø
Chemistry Core	1	01-Sep	17:35	Whole core shipped to NPI in Tromsø
Archive Core	1	01-Sep	17:40	Whole core shipped to NPI in Tromsø
Temperature & Salinity Core	1	01-Sep	17:50	5 cm at top and bottom, ice cut for salinity in lab
AP, CP, AcDOM, SPM, PSD, Holo	2	02-Sep	14:00	Crust sample and bottom of the pond sample with Kovacs ice corer
Meiofauna	2	01-Sep	16:30	Core 1/6: bottom 5 cm, 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna	2	01-Sep	16:40	Core 2/6: bottom 5 cm, 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna	2	01-Sep	16:40	Core 3/6: bottom 5 cm, 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna	2	01-Sep	16:50	Core 4/6: bottom 5 cm, 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna	2	01-Sep	17:00	Core 5/6: bottom 5 cm, 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna	2	01-Sep	17:10	Core 6/6: bottom 5 cm, 5–10 cm, 10–30 cm; 3x pooled cores of 2
Meiofauna DNA	2	01-Sep	17:20	Core 1/2: bottom 30 cm, 5–10 cm, 10–30 cm; 2 cores pooled
Meiofauna DNA	2	01-Sep	17:30	Core 2/2: bottom 30 cm, 5–10 cm, 10–30 cm; 2 cores pooled
Nutrients	2	02-Sep	07:00	Full Core, bottom 5, 5–10, 10–20 cm, then 20 cm increments
Chl-A	2	02-Sep	07:10	Full Core, bottom 5, 5–10, 10–20 cm, then 20 cm increments
Virus	2	02-Sep	07:20	Core 1/1: bottom 5 cm, frozen for processing on land

POC, PON, FCM, CHL-A, PP, BP, etc.	4	02-Sep	07:30	Core 1/7: bottom 5 cm, 20–40 cm, 80–100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP, etc.	4	02-Sep	07:40	Core 2/7: bottom 5 cm, 20–40 cm, 80–100 cm; all 7/2 cores pooled
POC, PON, FCM, CHL-A, PP, BP, etc.	4	02-Sep	07:50	Core 3/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP, etc.	4	02-Sep	08:00	Core 4/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP, etc.	4	02-Sep	08:10	Core 5/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP, etc.	4	02-Sep	08:20	Core 6/7: bottom 5cm; all 7 cores pooled
POC, PON, FCM, CHL-A, PP, BP, etc.	4	02-Sep	08:30	Core 7/7: bottom 5cm; all 7 cores pooled
DNA	4	02-Sep	08:50	Core 1/2: bottom 5 cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA	4	02-Sep	09:00	Core 2/2: bottom 5 cm, 20–40 cm, 80–100 cm; 2 cores pooled
DNA Sal	4	02-Sep	09:10	Core 1/1: 1 cm rounds at 2cm, 30 cm, 90 cm for rapid salinity melt
POC, PON, CHLA, IVO	2	02-Sep	14:30	Water from Melt Pond
DNA	2	02-Sep	14:30	Water from Melt Pond
AP, CP, AcDOM, SPM, PSD, Holo	2	02-Sep	14:30	Water from Melt Pond
POC, PON, FCM, CHL-A, PP, BP, etc.	1	02-Sep	14:30	Water from Melt Pond
POC, PON, FCM, CHL-A, PP, BP, etc.	1	02-Sep	14:30	Ice from Melt Pond
Nutrients	4	02-Sep	10:55	Core 1/1: bottom 5 cm; 5 m from lead
POC, PON, FCM, CHL-A, PP, etc.	4	02-Sep	11:00	Core 1/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP, etc.	4	02-Sep	11:05	Core 2/4: bottom 5 cm; all 4 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP, etc.	4	02-Sep	11:10	Core 3/4: bottom 5cm; all 4 cores pooled, 5 m from lead
POC, PON, FCM, CHL-A, PP, etc.	4	02-Sep	11:15	Core 4/4: bottom 5cm; all 4 cores pooled, 5 m from lead
Chemistry	4	02-Sep	11:25	Core 1/1: whole core bagged, 5 m from lead, to be processed in Tromsø
Nutrients	4	02-Sep	11:45	Core 1/1: bottom 5 cm; 5 m from lead
POC, PON, FCM, CHL-A, PP, etc.	4	02-Sep	12:00	Core 1/4: bottom 5 cm; all 4 cores pooled, 20 m from lead
POC, PON, FCM, CHL-A, PP, etc.	4	02-Sep	12:05	Core 2/4: bottom 5 cm; all 4 cores pooled, 20 m from lead
POC, PON, FCM, CHL-A, PP, etc.	4	02-Sep	12:10	Core 3/4: bottom 5cm; all 4 cores pooled, 20 m from lead
POC, PON, FCM, CHL-A, PP, etc.	4	02-Sep	12:15	Core 4/4: bottom 5cm; all 4 cores pooled, 20 m from lead
Chemistry	4	02-Sep	12:25	Core 1/1: whole core bagged, 20 m from lead, to be processed in Tromsø
POC, PON, FCM, CHL-A, PP, etc.	4	02-Sep	11:30	Slush ice collection from lead
POC, PON, FCM, CHL-A, PP, etc.	3	02-Sep	15:30	Slush ice collection from ship´s crack/lead
FCM, CHL-A, PP, DNA, etc.	3	02-Sep	15:30	Ice Aggregate

Transects

Thickness from drill & core holes	1	01-Sep	17:00	Using Kovacs thickness tape
Thickness from drill & core holes	2	02-Sep	14:00	Using Kovacs thickness tape
Snow and/or SSL thickness	1–2	02-Sep	08:45	Magnaprobe
Sea ice thickness	1–2	02-Sep	08:45	GEM-2
Snow/slush/crust/water depth	2	02-Sep	17:00	Survey of refrozen melt pond

Water Samples

POC, PON, FCM, CHL-A, PP, BP, DIC, etc.	2	02-Sep	07:10	0–10 cm below Ice/water interface, also used for filtered seawater
POC, PON, FCM, CHL-A, etc.	2	02-Sep	07:30	1 m, 5 m, and 10m depth below ice
Virus	2	02-Sep	07:40	0–10 cm below Ice/water interface, stored at 4C for analysis on shore
DNA	2	02-Sep	07:40	0–10 cm below Ice/water interface and 5 m
POC, PON, FCM, CHL-A, PP, DIC, etc.	4	02-Sep	11:00	lead surface, 0–10 cm below Ice/water interface, and 5 m at 5 m from lead
POC, PON, FCM, CHL-A, PP, DIC, etc.	4	02-Sep	11:30	0–10 cm below Ice/water interface and 5 m at 20 m from lead
POC, PON, FCM, CHL-A, etc.	3	02-Sep	15:00	water from crack/lead near ship

Ice Station 25 (EBT09A)



Figure 93. Station overview © Paul A. Dodd

Table 56. Summary of activity at sea ice station 25. Times and dates are UTC 'start' times when equipment began logging or transects / casts were started. See the overview image above for site locations. Absolute positions may be extracted from the KPH's position log using deployment start times.

	Site	Date	Time	Configuration
Equipment installed temporarily				
PAR Sensor	2	05-Sep	13:35	RBR Solo SN: 242982
Handheld CTD	2	05-Sep	13:47	Temperature, Salinity, & Fluorescence, RBR Concerto 3 SN:206268
Cameras / Imagers				
GoPro	2	05-Sep	13:50	Stick-mounted deployment though core-hole and floe edge
Snow				
Snowpit	2	05-Sep	14:30	On refrozen FYI melt pond
Snow Sample	2	05-Sep	14:30	All layers
Ice cores				
Density & Stratigraphy	2	05-Sep	13:25	Whole core shipped to NPI in Tromsø
Temperature & Salinity & d18O Core	2	05-Sep	13:47	5 cm at top and bottom, ice cut for salinity in lab
Density & Stratigraphy	3	05-Sep	14:25	Whole core shipped to NPI in Tromsø
Salinity & d18O	3	05-Sep	14:47	5 cm at top and bottom, ice cut for salinity in lab
AP, CP, AcDOM, SPM, PSD, Holo	1	05-Sep	15:00	Crust sample and bottom of the pond sample with Kovacs ice corer
Nutrients	2	05-Sep	13:30	Full Core, bottom 5, 5–10, 10–20 cm, then 20 cm increments
POC, PON, FCM, CHL-A, PP, BP, etc.	2	05-Sep	13:40	Core 1/4: bottom 5 cm, 20–40 cm, 80–100 cm; all 4/1 cores pooled
POC, PON, FCM, CHL-A, PP, BP, etc.	2	05-Sep	13:50	Core 2/4: bottom 5 cm; all 4 cores pooled
POC, PON, FCM, CHL-A, PP, BP, etc.	2	05-Sep	14:00	Core 3/4: bottom 5 cm; all 4 cores pooled
POC, PON, FCM, CHL-A, PP, BP, etc.	2	05-Sep	14:10	Core 4/4: bottom 5 cm; all 4 cores pooled
DNA	2	05-Sep	14:20	Core 1/1: bottom 5 cm
POC, PON, CHLA, IVO	1	05-Sep	15:30	Water from Melt Pond
AP, CP, AcDOM, SPM, PSD, Holo	1	05-Sep	15:30	Water from Melt Pond

Transects				
Thickness from drill & core holes	1,2,3	05-Sep	13:00	Using Kovacs thickness tape
Snow and/or SSL thickness	1,2,3	05-Sep	14:45	Snow stake
Snow/slush/crust/water depth	1	05-Sep	15:30	Survey of refrozen melt pond
Water Samples				
POC, PON, FCM, CHL-A, PP, BP, DIC, etc.	2	05-Sep	03:35	0–10 cm below Ice/water interface, also used for filtered seawater
DNA	2	05-Sep	13:40	0–10 cm below Ice/water interface

Sea ice optics

Contact person: Karley Campbell (karley.lynn.campbell@uit.no)
Responsible persons on board: Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

Data on photosynthetically active radiation (PAR) was collected as instantaneous (Table 57) measurements using Li-COR sensors with Li-COR datalogger (Data contact Karley Campbell; karley.lynn.campbell@uit.no) and an RBR (Data contact; Zoe Koenig zoe.c.koenig@uit.no). Sensors were deployed beneath the sea ice (i.e. below the ocean–ice interface) or 10 cm below the water surface (i.e. below the ocean–air interface) via a mechanical arm, or 1 m above the air–ice interface. Instantaneous measurements were completed immediately prior to ice sample collection at biological coring locations and adjacent lead (when sampled). This was done at every microbiological coring station (see section 14.XX)

Table 57. Summary of sensors used for irradiance measurements

Sensor ID	Serial No.	Location of sensor	Description
LiCOR 2pi sensor	Q110764	Above ice/water (upward looking)	Downwelling irradiance (i.e. incoming irradiance) (30 sec sampling interval, usually over 2 minutes)
LiCOR 2pi sensor	Q110764	Above ice/water (downward looking)	Upwelling irradiance (30 sec sampling interval, usually over 2 minutes)
LiCOR 4pi sensor	SPQA5949	Below ice/water (upward looking)	Transmitted irradiance (30 sec sampling interval, usually over 2 minutes)
RBR Solo 3	242982	Below ice/water (upward looking)	Transmitted irradiance (2 sec sampling interval, usually over 2 minutes)

Under Ice UVP6 camera images

Contact person: Sünnje Basedow (sunnje.basedow@uit.no)
Responsible persons on board: Sünnje Basedow, Vegard Stürzinger, Morven Muilwijk, Håkon Sandven

To get an overview of the under ice zooplankton community and particle composition, on a few locations during the cruise the UVP6 was mounted on a custom-made frame and deployed a few meters under the ice (Figure 94). Deployments lasted for several hours, and also overnight with battery changes in-between (Table 58). The frame measures 30x43 cm, and the hole in the ice had to be made quite large. A constant depth was chosen for deployments during this cruise. Future cruises may consider bringing a tripod and wheel for profiling deployments.

At the first location, at the North pole, sampling frequency was set to 25 Hz, the same as for the CTD deployments, which on subsequent deployments was adjusted to 0.5 Hz. At the second deployment, at station 37A (Amundsen mooring), accidentally data were saved as raw images instead of the usual saving as vignettes. So far, it has not been possible to download those raw images from the sensor, it is work in progress.

Data from the North pole (iceA) and from station 17A (iceC) have been processed using the UVPapp, and are published on Ecotaxa, under the same project name as the data from the CTD deployments (section 4.9), “UVP6_SN000317HF_2026_ArcticOcean”.

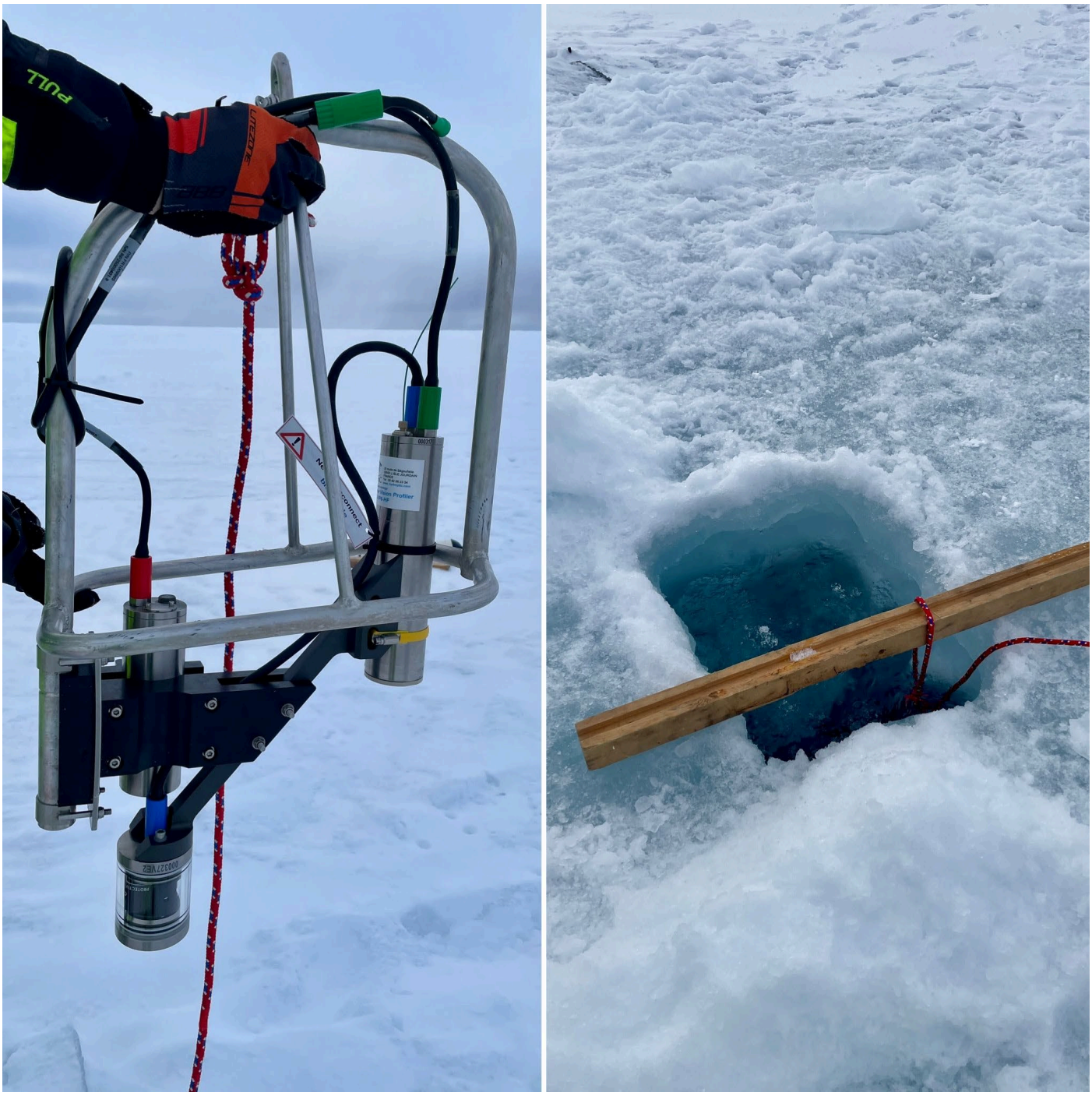


Figure 94. The UVP6 was deployed on a custom-made frame under the ice. © Sünnje Basedow

During the long deployments, many needle-like particles were collected, at the moment it is uncertain what they are. Other images included copepods and amphipods (Figure 95).

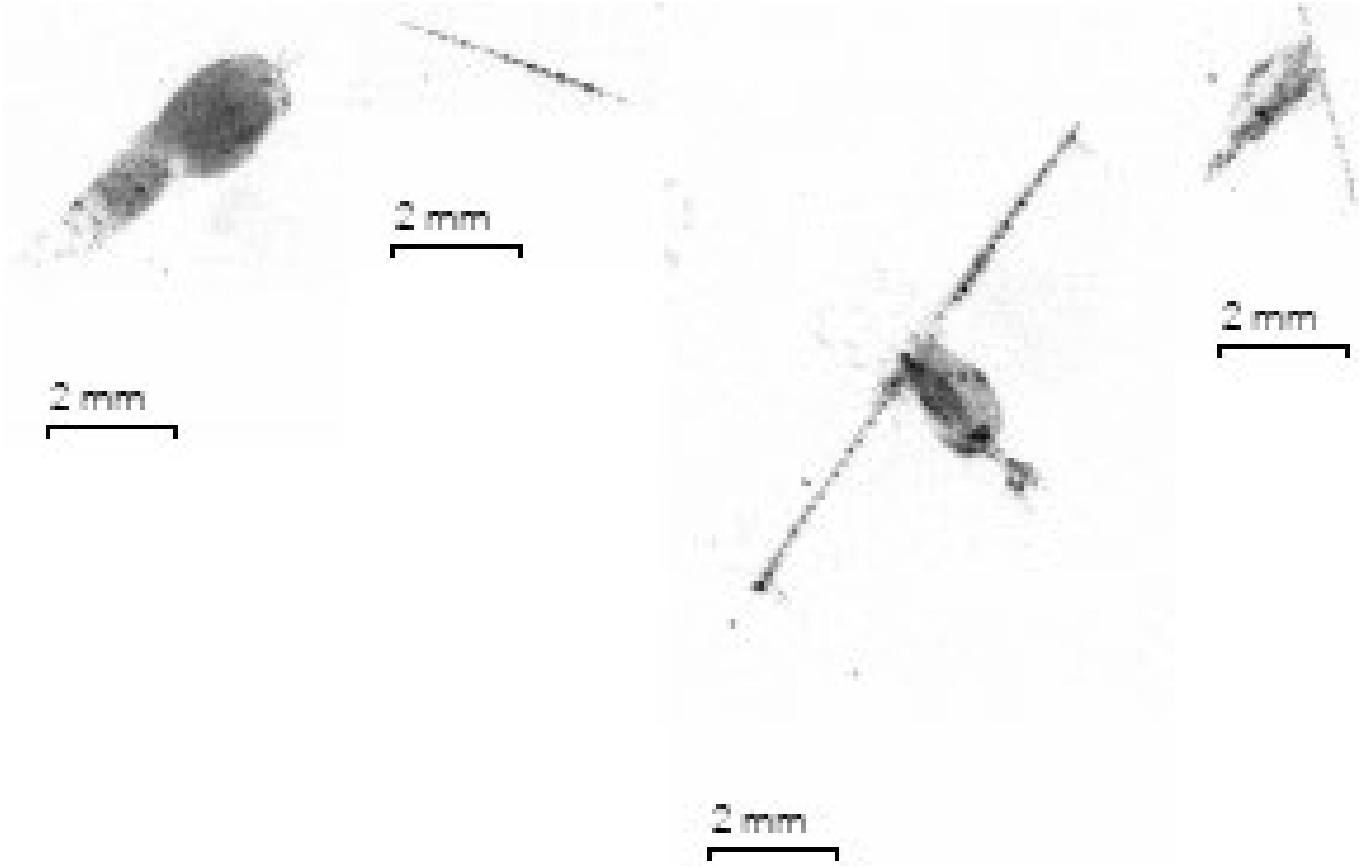


Figure 95. A few examples from images collected by the UVP6 under the ice: amphipods (top left), many needle like particles, and copepods.

*Table 58. Deployments of the UVP6 at the longer ice stations. * next day*

Station	Date (yyyymmdd)	Start Time UTC	End Time UTC	Latitude (N)	Longitude (E)	Bottom depth (m)	Sampling depth (pressure)	Filename
North pole	20260730	9:14	13:05	89.91	63.07	4244	4	ebt2026_iceA
37A	20260822	18:38	07:30*	86.55	-6.13	4223	8	ebt2026_iceB_01
37A	20260823	8:12	16:30	86.52	-6.41	4161	8	ebt2026_iceB_02
37A	20260823	17:05	04:30*	86.50	-5.93	4223	8	ebt2026_iceB_03
17A	20260902	6:57	14:08	83.93	21.44	4014	8	ebt2026_iceC_01
17A	20260902	14:53	4:11*	83.94	21.33	4022	8	ebt2026_iceC_02

Under ice amphipod traps

Contact person: Janne Søreide (jannes@unis.no)
Responsible persons on board: Vegard Stürzinger, Anette Wold, Bergfrid Høgås Skjæveland

The under ice amphipod traps are designed to catch ice amphipods that live under and within the sea ice, and samples would be used to investigate their life cycles, their distribution (which amphipod species are found where) in addition to food web interactions and sympagic-pelagic coupling combined with contaminant studies.

An amphipod trap is made up of a tube with a funnel on one side as an entrance for the amphipods, and a mesh on the other side to trap them. Inside the trap there was a bait (a pork chop that had been left out on deck to rot). The trap was deployed under the ice through a 10-inch auger hole and secured to the ice with an ice skrew through a chain and a rope. A shackle is attached to the trap as weight. The traps were deployed at the longer ice stations, nr. 10, 21 and 24, and were out for the whole duration of the ice station. Three traps were deployed at each station. No ice-amphipods were collected at any station.

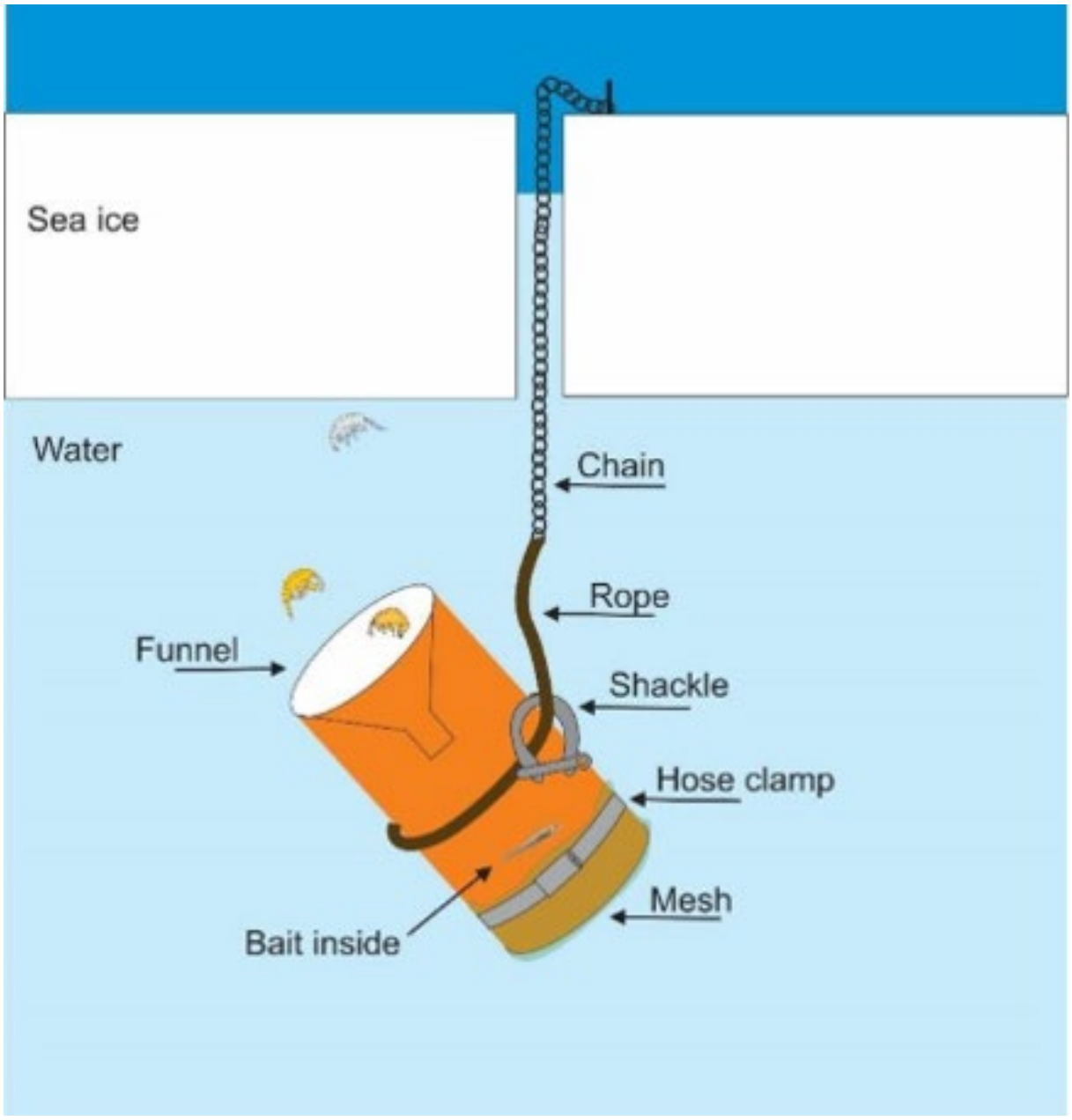


Figure 96. Amphipod trap under the ice. Illustration: Malin Daase

Under ice sediment traps (short term)

Contact person: Janne Søreide (jannes@unis.no)
Responsible persons on board: Vegard Stürzinger, Anette Wold, Bergfrid Høgås Skjæveland

The aim of the under ice short term sediment traps is to estimate the flux of organic matter from sea ice to the water column below. The parameters measured are particulate Organic Carbon (POC) and nitrogen (PON) flux (mg m-2 day-1) and stable C and N isotope composition (12C/13C and 14N/15N), for food web analyses, community composition by morphology (microscope) and metabarcoding (18S and CO1).

The Hydro-Bios sediment trap was deployed 5 meter under the ice through a 10-inch auger hole and secured to the ice with two ice skrews through a chain and a rope, with a weight at the end of the rope. At the bottom of the sediment trap was a 250 ml sample bottle filled with GFF (0.7 µm) filtered seawater. Three sediment traps were deployed per ice station. The traps were deployed at the longer ice stations, nr. 10, 21 and 24, and were out for the whole duration of the ice station.

From each trap the sample in the 250 ml sample bottle was mixed well and then filtered for chlorophyll a and POC/PON. 50 ml was filtered onto GFF 25 mm filter (frozen at -80°C) for chlorophyll a and 100 ml was filtered on pre-combusted GFF 25 mm filters (frozen at -20°C) for POC/PON. The remaining samples from all sediment traps were pooled together. 100 ml of the pooled sample was filtered onto 0.45 µm polycarbonate filter for later metabarcoding (18S and CO1), stored on a petri dish at -80°C. For morphological analysis of the protist community and fecal pellets 100 ml of the pooled sample was preserved in GLA-formalin in dark bottles at fridge temperature.

Under ice visual observations

Contact persons: Karley Campbell (karley.lynn.campbell@uit.no)
Responsible persons on board: Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek, Vegard Stürzinger

At each biological coring event during ice station work, a GoPro HERO9 camera (SN: C3441324832493) was deployed through a hole in the ice or from the floe edge to capture video footage of the under-ice environment. Gopro ‘Main Site’ videos show a 360 view of under the ice through a randomly selected core or auger hole at the primary biological coring location. Gopro ‘Lead Site’ videos contain a compilation of 360 views from under the ice from both the floe edge (lead) and through a randomly selected core or auger hole at 5m and 20m from the lead edge whenever ice was sampled at these locations.

Additionally, two Blueye ROV devices were brought on the cruise equipped with upward looking cameras to aid sampling site selection by providing visual references for submerged ice structures and potential targeted sampling of algae. These were deployed through a man-made hole in the ice or from the floe edge at 4 of the ice stations. ROV videos contain surveys of the under-ice environment below the biological sea ice coring sies and/or nearby interesting sea ice features. Only one Blueye ROV was used for the duration of the expedition; UiT device X3_01)

Table 59. Deployed devices, dates, and sites for under ice video footage.

Camera Devices	Ice Station	Deployment date	Sites deployed	Filenames (*.mov)
Gopro HERO9	1	Jul 27 2026	Main (Site 2)	IceStation1_Gopro_MS
Gopro HERO9	2	Jul 29 2026	Main (Site 1)	IceStation2_Gopro_MS
Gopro HERO9	3	Jul 30 2026	Main (Site 1) Lead (Site 3)	IceStation3_Gopro_MS IceStation3_Gopro_Lead
Gopro HERO9	10	Aug 7 2026	Main (Site 3)	IceStation10_Gopro_MS
Gopro HERO9	12	Aug 11 2026	Main (Site 3)	IceStation12_Gopro_MS
Gopro HERO9	15	Aug 16 2026	Main (Site 4) Lead (Site 5)	IceStation15_Gopro_MS IceStation15_Gopro_Lead
Gopro HERO9	18	Aug 18 2026	Main (Site 1) Lead (Site 2)	IceStation18_Gopro_MS IceStation18_Gopro_Lead
Gopro HERO9 Blueye ROV X3_01	21	Aug 22 2026 Aug 23 2026	Main 1 (Site 2/3) Main 2 (Site 4) Lead (Site 6)	IceStation21_Gopro_MS1 IceStation21_Gopro_MS2 IceStation21_Gopro_Lead IceStation21_Blueye_MS1
Gopro HERO9 Blueye ROV X3_01	23	Aug 28 2026	Main (Site 2) Lead (Site 5)	IceStation23_Gopro_MS IceStation23_Gopro_Lead IceStation23_Blueye_Lead
Gopro HERO9 Blueye ROV X3_01	24	Sep 1 2026 Sep 2 2026	Main (Site 2) Lead (Site 4) Crack (Site 3)	IceStation24_Gopro_MS IceStation24_Gopro_Lead IceStation24_Blueye_MS IceStation24_Blueye_Crack
Gopro HERO9	25	Sep 5 2026	Main (Site 1)	IceStation25_Gopro_MS

Under-ice ADCP measurements

Contact: Zoe Koenig (zoe.c.koenig@uit.no)
Collected by: Morven Muilwijk

A Signature 1000 ADCP (SN100009) was deployed through one 10-inch auger hole at the longer ice stations at the North Pole and in the Makarov, Amundsen, and Nansen basins. The instrument measured upper-ocean velocities at high temporal and vertical resolution over approximately the upper 20 m of the water column, with the aim of providing information on under-ice currents and mixing. The ADCP was mounted in a downward-looking orientation, suspended from two M8 threaded rods (secured with additional rope) approximately 10 cm below the bottom of the sea ice.

The ADCP was configured using a concurrent measurement plan combining average and burst measurements using all five beams. One-minute averaged measurements were collected at 5-minute intervals with a 1 m cell size (range approximately 20 m). In addition, bursts of 4097 samples at 4 Hz (approximately 17 min per burst) were collected every 30 min, using a 0.3 m cell size and a profiling range of approximately 10 m.

The ADCP x-axis was aligned with the ship's heading, except at the North Pole station. Average is recorded in ENU and burst measurements were recorded in BEAM coordinates, but both be transformed to XYZ coordinates using Sig4beam_transform.m from Nortek's Signature Principles of Operation. Given the proximity of the deployments to the geographic and magnetic North Pole, the ADCP compass measurements should be treated with caution. The ship's navigational data should be used to provide an external heading reference where required. The configuration file was AD2CP_1000kHz_900002_EBT2026.deploy. See the "Ice Station Overviews" chapter for station maps, deployment/recovery times, ice conditions, and an overview of accompanying measurements.



Figure 97. Overview of under-ice ADCP deployment setup during EBT2026. © Morven Muilwijk

Sea ice physical properties

Contact person: Polona Itkin (polona.itkin@npolar.no)
Responsible person on board: Polona Itkin

At 14 sea ice stations, we collected 9 cm ice cores using a Kovacs ice corer. Typically, the first core was collected to measure temperature and salinity profiles. Sea ice temperature was measured using a thermistor probe (Hanna Checktemp EM13485) in holes drilled at 5 cm from the top and bottom of the core and with 10 cm spacing in the rest of the core. The same core was then transported on board and frozen to -20 to prevent further brine leakage. Then it was cut into 5-10 cm long pieces on board and put into cups for melting. Once melted in, bulk salinity of melted sections was measured using a conductivity meter (Cond 3110 SET3). Salinity is reported on the practical salinity scale (dimensionless). On shorter stations, temperature was not measured and on longer stations, we took replicate cores that were distributed into melting cups on the ice to understand if any brine was lost from the cores that were transported on the ship and cut there. Replicate cores show similar salinity values. Any breaks in the cores were recorded and can be used to quality flag adjacent measurements.

The results from the temperature and salinity ice core profiles are shown in Figure 98 and Figure 99. The sampled cores were close to the freezing temperature for their respective salinity values. Consequently, the ice was permeable with its top desalinized. At this point of the season, it is therefore not possible to distinguish between young and old ice types any longer. Some stations with cold air temperatures had a subsurface temperature maximum indicating near past warm weather and the beginning of the freeze-up period.

The salinity profiles indicate that the first two stations were in the more saline first-year ice regime, while the rest of the cruise sampled older or nearly completely desalinated ice. Ponded ice is more desalinated than the non-ponded ice. The last stations have a more saline top (5 cm) that again indicated that they were again first-year ice. This is also supported in by the sea ice topography and the shape of the melt ponds found there. Many cores indicate presence of snow-ice at the top of the ice.

All the salinity samples were sub-sampled for the oxygen isotope analysis. These results will help us understand the origin (atmosphere/snow or ocean) of the water inside the samples. In total 300 samples of ice cores and 33 snow samples were measured and sub-sampled for the salinity and oxygen isotope ratios.

In addition, sea ice cores for density and texture analysis were collected at longer stations. These cores will provide valuable data on the sea ice growth and snow-ice layer presence. On several stations archive cores were collected. Cores for analysis of the chemical parameters were collected on Stations 10, 21 and 24. Some station had two sampling locations (more and less ponded ice). Cores not processed on board were transported to NPI in Tromsø for further analysis and/or archiving.

Table 60. Summary of cores collected for physical properties.

Sea Ice Station	Cores collected
1	Temperature core: discarded after measurements as the bottom 10 cm was lost Salinity core: melted, measured and sampled for oxygen isotopes Density and stratigraphy core: 2 pieces, Box 1 Archive core: 3 pieces, Box 1
2	Temperature and salinity core: melted, salinity measured and sampled for oxygen isotopes Density and stratigraphy core: 2 pieces, Box 1 Archive core: 3 pieces, Box 1
4	Temperature and salinity core: melted, salinity measured and sampled for oxygen isotopes Density and stratigraphy core: 2 pieces, Box 2 Archive core: 3 pieces: 1-2 in Box 2, 3 in Box 2
7	Salinity core: melted, salinity measured and sampled for oxygen isotopes
10	Temperature and salinity core: melted, measured and sampled for oxygen isotopes Density and stratigraphy core: 2 pieces, Box 3 Archive core: 3 pieces, Box 2 Chemistry core: 3 pieces, 1-2 in Box 2, 3 in Box 3 Temperature and salinity core in the melt pond: melted, measured and sampled for oxygen isotopes
11	Salinity core: melted, salinity measured and sampled for oxygen isotopes
12	Salinity core: melted, measured and sampled for oxygen isotopes Density and stratigraphy core: 3 pieces, Box 3 Temperature and salinity core: in the melt pond melted, measured and sampled for oxygen isotopes
15	Temperature and Salinity core: melted, measured and sampled for oxygen isotopes Density and stratigraphy core: 3 pieces, 1-2 in Box 3, 3 in Box 4 Temperature and salinity core: in the melt pond melted, measured and sampled for oxygen isotopes
18	Temperature and Salinity core: melted, measured and sampled for oxygen isotopes Density and stratigraphy core: 2 pieces, Box 4
20	Salinity, density and stratigraphy core in melt pond: 1 pc, Box 6
21	Salinity core distributed into cups on the ice Temperature and salinity to process on board Density and stratigraphy core: 2 pieces, Box 5 Archive core: 2 pieces, Box 4 Chemistry core: 2 pieces, Box 4 Superimposed ice in bag, Box 5 Superimposed ice in cup, Box 5
23	Temperature and salinity core to process on board Density and stratigraphy core: 2 pieces, Box 5 Archive core: 2 pieces, Box 5
24	Salinity core distributed into cups on the ice Temperature and salinity to process on board Density and stratigraphy core: 2 pieces, Box 5 Archive core: 2 pieces, Box 6 Chemistry core: 2 pieces, piece 1 Box 5, piece 2 in Box 4 Melt pond core for salinity to process on board Melt pond core for stratigraphy: 1 piece, Box 6
25	Temperature and salinity core to process on board Density and stratigraphy core: 1 pc, Box 6 Salinity on elevated place to process on board Density and stratigraphy on elevated place: 1 pc, Box 8

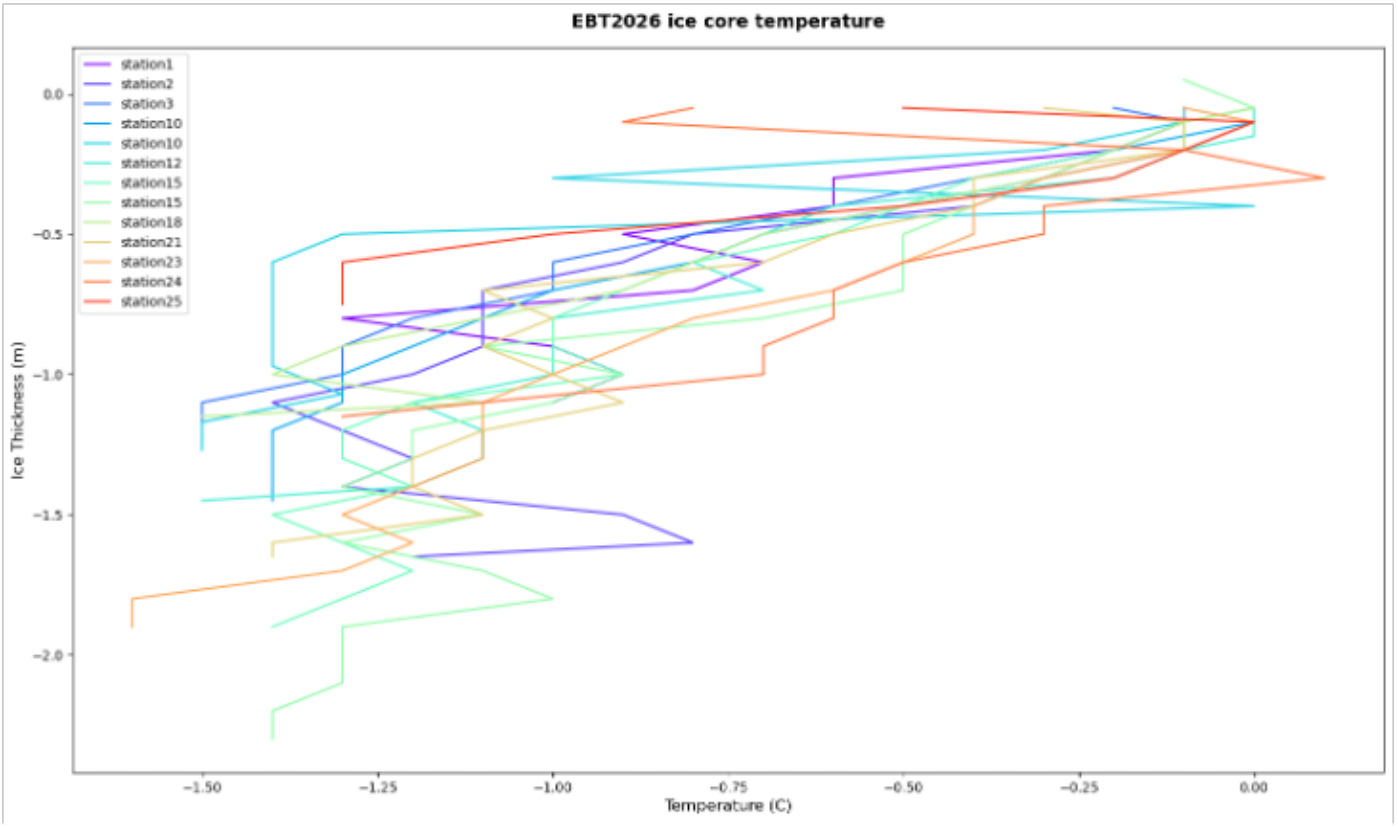


Figure 98. Sea ice temperature measured in ice cores on EBT2026.

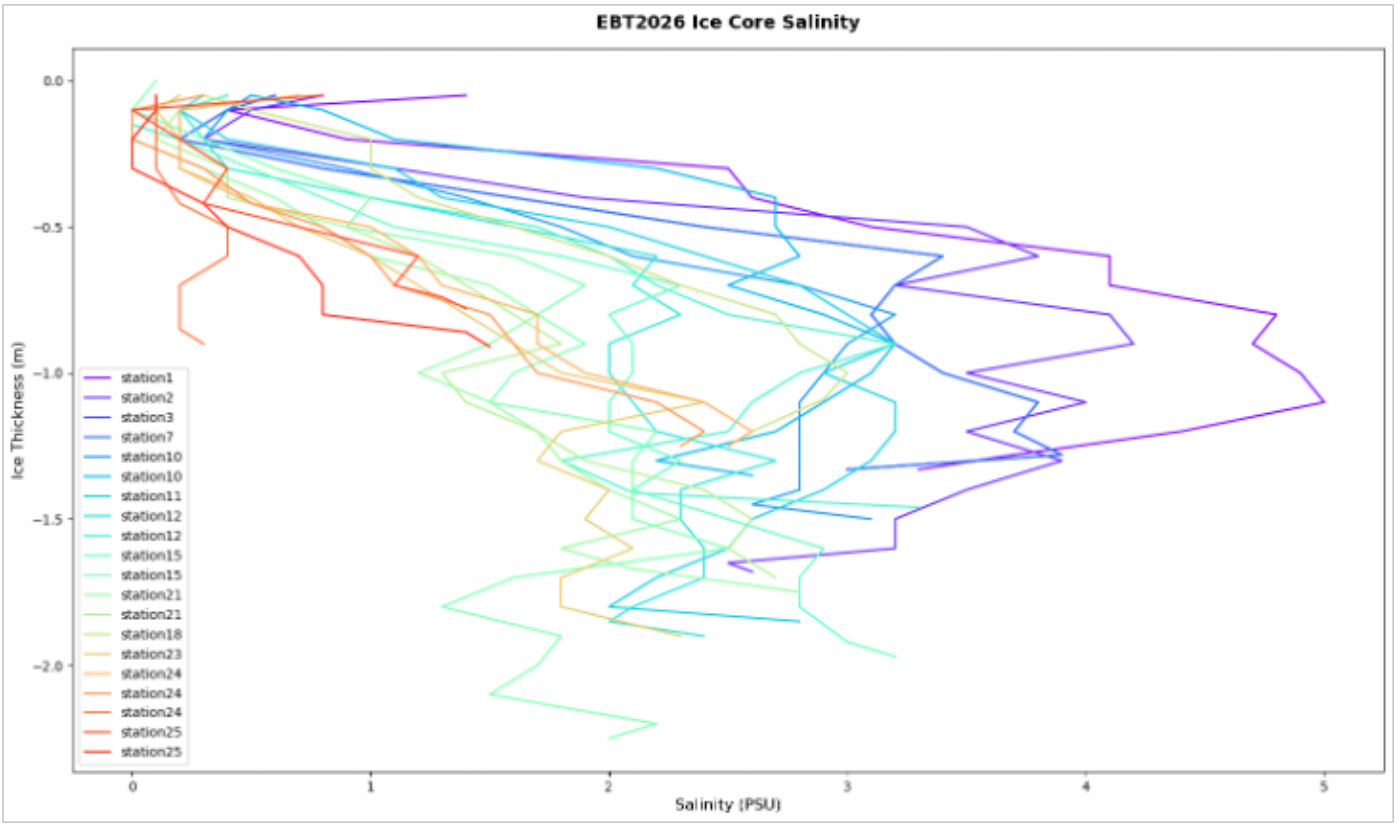


Figure 99. Sea ice salinity determined from ice cores on EBT2026.

Sea Ice, snow & meltpond thickness surveys

Contact person: Polona Itkin (polona.itkin@npolar.no)
Responsible person on board: Polona Itkin

Characterization of sea ice thickness and snow depth over level ice at the ice stations was done by point measurements in drill holes and along transect lines. At short stations typically only one hole was drilled. Holes were drilled by standard 2-inch Kovacs auger and water level, sea ice level and snow level measured by Kovacs thickness tape gauge. Snow depth along snow lines was measured by graded snow stake. At short stations 10-50 snow depth measurements were made, which is sufficient to estimate average snow depth over level ice and its standard deviation. Drilling and snow stake were also used to measure sea ice thickness, melt pond depth and ice crust thickness across melt pond transect lines. These point measurements were done with an approximate interval of 1-2 m. In total, we drilled and measured 289 drill holes.

Longer transect surveys over level ice, ridges and melt ponds we conducted by a multi-frequency EM instrument sensor GEM-2 (Geophex Ltd) towed in a sled. GEM-2 values were calibrated to sea ice thickness using empirical step ladder calibration as described in Itkin et al, 2023. All GEM-2 survey lines were accompanied by point measurements of snow depth by Magnaprobe (SnowHydro Ltd) snow stake. In total 6 surveys with GEM-2 and Magnaprobe were done (Stations 10, 12, 14, 18, 21 and 24).

Snow pits

Contact person: Polona Itkin (polona.itkin@npolar.no)
Responsible person on board: Polona Itkin

Snow properties were determined by excavating 6 detailed snow pits (Ice stations 1, 2, 22, 24 and 25). There snow temperature, hardness, density and grain type and size were measured. Temperature was measured at the interfaces and per layer or in deep pits in 5-10 cm depth intervals by thermistor probe Hanna Checktemp EM13485. All other properties were measured (or sampled) per stratigraphic layer. Salinity was measured in snow sample meltwater by conductivity meter Cond 3110 SET3 and reported on the practical salinity scale (dimensionless). All snow samples at EBT2026 were fresh with salinity value 0. Meltwater was also sub-sampled for oxygen isotope samples. Bulk snow density for the entire snow profile was also estimated by standard ETH 7cm Snow water equivalent (SWE) Cylinder. The cylinder has a calibrated spring gauge to read SWE in mm. In combination with snow depth SWE can be recalculated into bulk snow density. Snow pit data was recorded in machine-readable geojson files in NiViz standard.

At all of the stations where there was sufficient snow cover (over 3 cm) we took a snow sample (often just fresh precipitation) and made and snow depth line with 20-50 measurements to assess average snow depth and its standard deviation over level ice. There we also measured SWE. On longer stations we used Magnaprobe to collect over 500 snow depth measurements per station (See Section Transect).

In total we collected 19 snow lines and 73 bulk snow density measurements. 33 snow samples were measured and sub-sampled for the salinity and oxygen isotope ratios.

During EBT2026 we had snow layer at every ice station we sampled. We sampled no decaying ice (surface scattering layer). At the bottom of all snow pits was melt formation snow, often covered by fresh snow. Most of the ice cores exhibit a top layer that is likely snow-ice (frozen melting snow with densities close to 500 kg/m3).

Melt pond inherent optical properties

Contact: Ahmed El-Habashi (US-ONR)
Collected by: Ahmed El-Habashi, and Ivan B. Savelyev

Essential parameters that describe the inherent optical properties (IOPs) of Melt Pond Profile from crust, water, to Bottom of the core, such as temperature, salinity, turbidity, and IOPs) was measured at each ice station with melt ponds. IOPs included particulate backscattering (bbp), particulate absorption and attenuation spectra, and coloured dissolved organic matter (CDOM), and particle size distribution ranging from 1.25-2500um. Holographic imagery were taken for 25-2500um particles using the instruments LISST-100X and a LISST-HOLO2, which uses digital holography for improved sizing of large-sized particles. These measurements are done on small volumes of water samples (<1L). Using a YSI EXO2 Sonde, a small handheld sensor with >10m cable, we conduct temperature, salinity and turbidity. These measurements help relate optical properties to physical and biogeochemical characteristics and provide critical information needed for developing remote sensing algorithms specific to melt ponds.

To understand the biogeochemical and physical drivers altering the melt pond's optical properties, we conducted targeted water sampling to quantify suspended particulate matter (SPM) across distinct vertical zones. Water samples were systematically collected from three key structural layers: the surface crust meltwater, the main water column of the melt pond, and the boundary layer immediately above the pond floor (bottom). This stratified sampling strategy allows us to isolate how inorganic sediment, organic detritus, and microbial aggregates are distributed vertically within the pond structure. Characterizing SPM at these exact layers is critical for algorithm development; these suspended materials actively scatter and absorb light, creating localized turbidity gradients that can heavily bias bathymetric depth retrieval if left uncorrected. By integrating these localized SPM concentrations with our hand-held (Rrs) observations, we can parameterize the confounding effects of backscattering versus water volume absorption, drastically refining the accuracy of our depth retrieval algorithms

During our fieldwork, we collected handheld in situ remote sensing reflectance (Rrs) measurements of the melt pond using an Analytical Spectral Devices (ASD) FieldSpec spectroradiometer across 350-1000 nm spectral range. These optical data points were coupled directly with physical depth measurements taken inside the melt pond itself to build a comprehensive baseline dataset. Moving forward, we will utilize this combined spectral and physical dataset to calibrate and develop our bathymetric depth retrieval algorithms. To evaluate model performance and scalability, these localized ground-truth inputs will be rigorously compared against coincident drone-borne hyperspectral imagery and multi-spectral satellite data. This multi-tier framework allows us to assess sub-meter spatial variations and validate the robustness of the retrieval algorithms across expanding spatial resolutions.

Table 61. Summary of melt pond IOP data collections from sea ice stations

STATION #	YEAR	MM	DD	LATITUDE (N)	LONGITUDE (E)	COLLECTION	COMMENTS
3	2026	07	30	89.9267	63.9619	Y	
10	2026	08	07	86.4798	-72.1566	Y	
12	2026	08	11	86.6529	-65.0972	Y	
15	2026	08	16	88.2372	-40.256	Y	
20	2026	08	19	86.9437	-11.9838	Y	
21	2026	08	22	86.5504	-5.8343	Y	
	2026	08	23				
23	2026	08	28	85.614	9.4338	Y	
24	2026	09	01	83.9315	21.466	Y	
	2026	09	02				

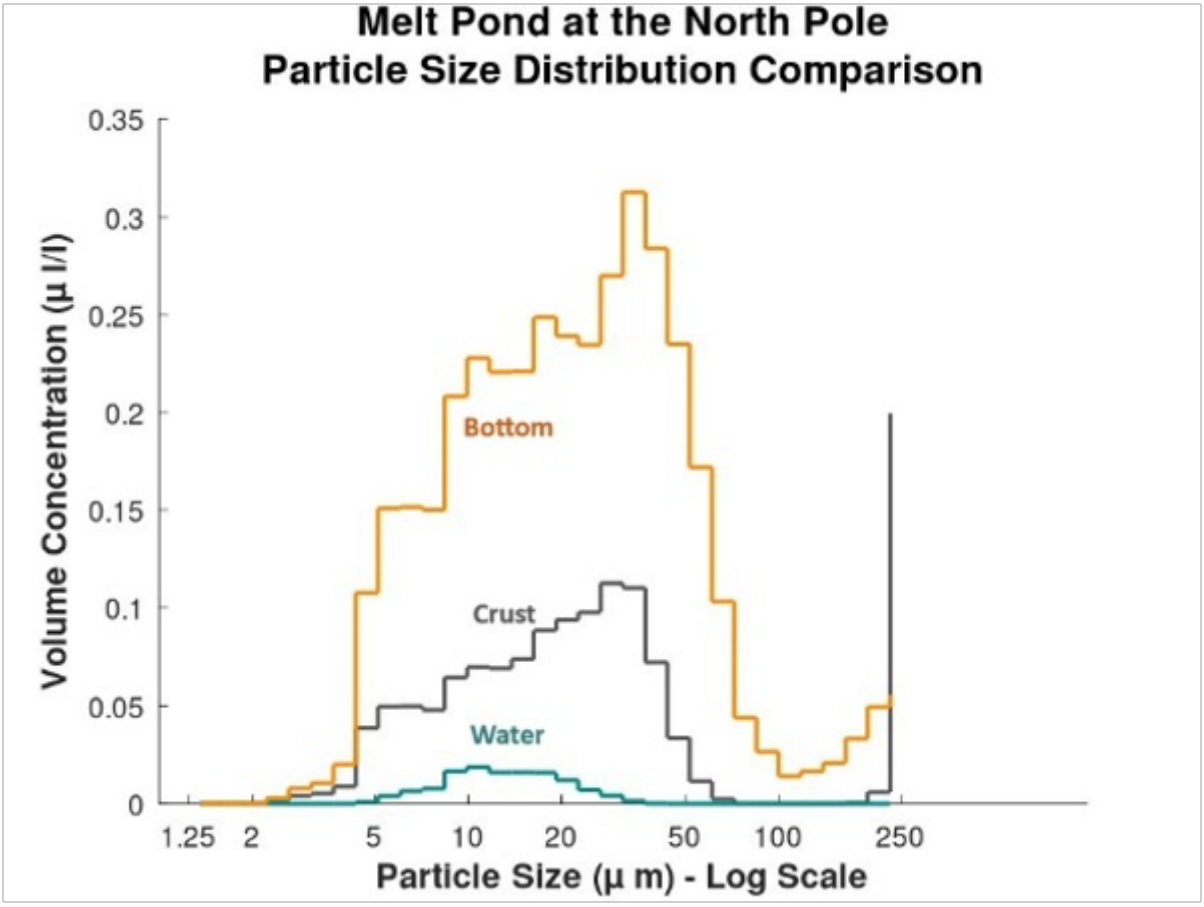


Figure 100. Particle size distributions of melt pond top crust, water, and bottom layers at the North Pole.

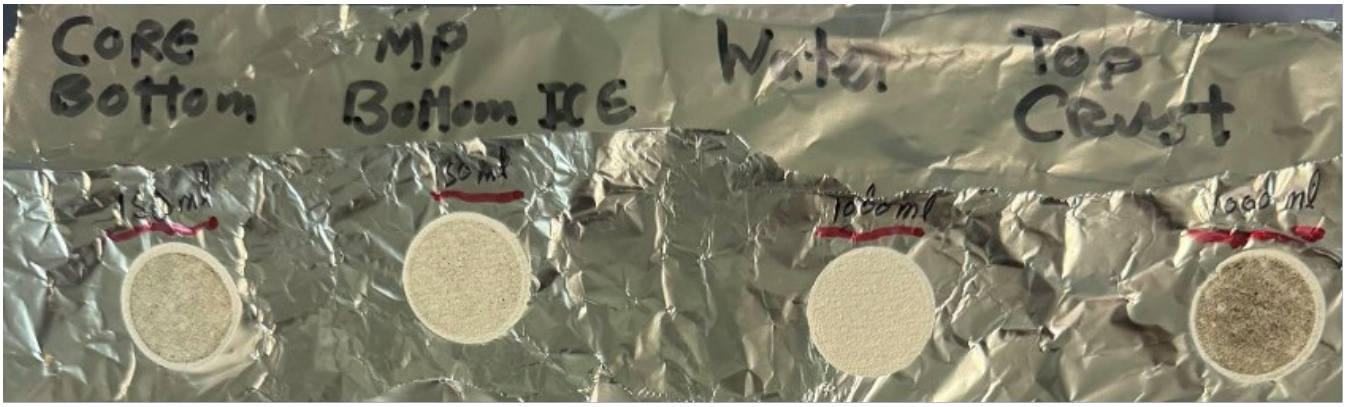


Figure 101. Suspended Particulate Matter (SPM) concentrations across melt pond layers: top crust, water column, bottom layers, and the bottom core at the sea surface interface. Filtration volumes were 1000 mL, 1000 mL, 150 mL, and 150 mL, respectively.

Melt pond irradiance and radiance

Contact person: Geir Johnsen (geir.johnsen@ntnu.no)
Responsible persons on board: Natalie Summers

Two light sensors (TRIOS) were fixed on a unmanned surface vehicle (Pamela from FZ solution) to measure downwelling irradiance (in air) and upwelling radiance from the meltpond. Since the meltponds were frozen over, the vehicle was put on the frozen crust at 180o from the sun to avoid any shadow on the sensors. This was done at the North pole station, ice station 10 and ice station 15.

Net drag by unmanned surface vehicle (USV)

Contact person: Geir Johnsen (geir.johnsen@ntnu.no)
Responsible persons on board: Natalie Summers

At sea ice station 18, the USV Pamela from FZ solution was set up with a phytoplankton net and driven in a lead as a test run. First test run was conducted with a safety line attached, then without. Compass checks had to be disabled, other than that no issues arose. The net mostly caught slush with too low phytoplankton biomass to process.

Light polarimetry

Contact: Ahmed El-Habashi (US-ONR)
Responsible persons on board: Ahmed El-Habashi, and Ivan B. Savelyev

Micro-Scale Characterization via Tripod-Mounted Hyperspectral Polarimeter: To provide a hyper-precise spectral baseline for our airborne assets, we concurrently deployed a hyperspectral polarized radiance polarimeter mounted on a stationary tripod positioned directly over individual melt ponds. While the drone polarimeter captures (Sec. 15) the macro-scale spatial architecture of the pond, this tripod-mounted system tracks the high-resolution, continuous spectral features of the polarized light field across a wide range of viewing geometries and illumination angles. Collecting hyperspectral polarized radiance allows us to resolve narrow-band polarization anomalies that are typically missed by broader multi-spectral sensors. These fine-scale optical signatures are directly influenced by water depth, bottom-ice topography, and the crystallization structure of the underlying melting ice matrix. By capturing these continuous polarization properties from a stable, controlled ground platform, we can isolate how different wavelengths interact with the pond's physical boundaries. Ultimately, these pioneering tripod-based measurements expect to provide dataset that will be used to optimize and tune our capability to retrieve melt pond depth and structural properties from future satellite-scale observation platforms.

Together, these drone, and tripod-based polarization configurations provide a dataset that can be used to optimize, tune, and improve next-generation remote sensing depth and ice-thickness retrieval models.

Table 62. Summary of polarimetry measurements

STATION #	YEAR	MM	DD	LATITUDE (N)	LONGITUDE (E)	COLLECTION	COMMENTS
3	2026	07	30	89.9267	63.9619	N	Incomplete collection due to limited time.
10	2026	08	07	86.4798	-72.1566	Y	
12	2026	08	11	86.6529	-65.0972	Y	
15	2026	08	16	88.2372	-40.256	Y	
20	2026	08	19	86.9437	-11.9838	Y	
21	2026	08	22	86.5504	-5.8343	Y	
	2026	08	23				
23	2026	08	28	85.614	9.4338	Y	
24	2026	09	01	83.9315	21.466	Y	
	2026	09	02				



Figure 102. Characterizing melt pond top crust measured by a hyperspectral polarimeter (1st design) on a stationary tripod. © Ivan Savelyev



Figure 103. Characterizing melt pond water measured by an upgraded hyperspectral polarimeter (2nd design) on a stationary tripod. © Ivan Savelyev

Under-ice WBAT measurements

Contact: Arild Sundfjord (Arild.Sundfjord@npolar.no)
Responsible persons on board: Morven Muilwijk

A test deployment using a Kongsberg WBAT (WideBand Autonomous Transceiver) was carried out at the Nansen Basin station. The WBAT measures acoustic backscatter in the upper ocean, providing information on the vertical distribution and temporal variability of biological scatterers beneath the sea ice. The instrument was equipped with 38 and 200 kHz transducers and suspended in a frame approximately 2 m below the sea ice, facing downward. The frame was attached to a 5 m Kevlar line suspended from a tripod anchored to the ice and deployed through an opening made from a 4 × 3 pattern of 10-inch auger holes (Figure 104). The WBAT sampled from 11:00 UTC on 2 September to 03:00 UTC on 3 September 2026.

The under-ice measurements also provide an opportunity for comparison with the ship-based EK80 echosounder and the WBAT instruments deployed on the moorings (Chapter 17). The under-ice WBAT was configured similarly to the moored instruments, but with a more frequent sampling interval (every 5 minutes). For comparison between the ship- and ice-based observations, the ship remained on station and collected EK80 measurements from 13:00 UTC on 1 September until 10:00 UTC on 2 September. The ship's echosounders were then switched off during the under-ice WBAT sampling period to avoid acoustic interference.

Both transducers alternated between active CW and FM transmissions and passive listening periods. CW transmissions were centred at 38 and 200 kHz with transmit powers of 450 and 150 W and configured ranges of 1000 and 500 m, respectively. FM transmissions covered 35–45 and 185–255 kHz with transmit powers of 225 and 75 W, respectively, and a configured range of 350 m for both transducers. A pulse duration of 1024 µs was used for both modes. Each sampling sequence consisted of four active CW pings at 4 s intervals and three active FM pings at 8 s intervals, followed by two passive CW and two passive FM recordings at 4 and 8 s intervals, respectively. See the “Ice Station Overviews” chapter for the station map and an overview of accompanying measurements.



Figure 104. WBAT deployment setup during EBT2026. © Morven Muilwijk

Handheld CTD

Contact person: Zoe Koenig (zoe.c.koenig@uit.no)
Responsible persons on board: Anna Miettinen

An RBR Concerto CTD with PAR and Chl a fluorescence sensors (CTD serial number 206268) was used for conducting profile measurements from the ice. The CTD sensor was deployed through either a 10" auger hole near sea ice coring site (sections for Sea Ice and Under-ice Water Collection for Microbiology) or from the edge of a lead/ice floe. The aim of the deployments was to capture the upper 10 m that the ship otherwise may disturb.

The CTD was deployed at a microbiology ice coring 'Main Site' (MS), and at each lead transect location (lead edge, 5m and 20m into the adjacent ice floe), depending on ice station length.

Table 63. List of handheld CTD deployments from ice during EBT2026

Date/Time (UTC)					Lat	Lon	Station #	Site within station
yyyy	mm	dd	HH	MM				
2026	7	30	14	21	89.9267	63.9623	North Pole	Main Site
2026	7	30	16	47	89.9267	63.9623	North Pole	Lead Transect 5m site
2026	8	7	16	49	86.4798	-72.1566	60C	Main Site
2026	8	7	16	57	86.4798	-72.1566	60C	Main Site
2026	8	11	15	15	86.6529	-65.0972	57A	Main Site
2026	8	16	18	15	88.2372	-40.2560	E5A	Main Site
2026	8	16	20	47	88.2372	-40.2560	E5A	Lead edge
2026	8	16	20	57	88.2372	-40.2560	E5A	Lead Transect 5m Site
2026	8	23	07	22	86.5504	-5.8343	37A	Main Site
2026	8	23	15	20	86.5504	-5.8343	37A	Lead Edge
2026	8	23	15	32	86.5504	-5.8343	37A	Lead Transect 5m Site
2026	8	23	15	35	86.5504	-5.8343	37A	Lead Transect 20m Site
2026	8	28	13	24	85.6140	9.4338	29A	Lead Edge
2026	8	28	14	04	85.6140	9.4338	29A	Lead Transect 5m Site
2026	8	28	16	29	85.6140	9.4338	29A	Main Site
2026	9	2	07	01	83.9315	21.4660	17A	Main Site
2026	9	2	11	14	83.9315	21.4660	17A	Lead Edge
2026	9	2	12	40	83.9315	21.4660	17A	Lead Transect 5m Site
2026	9	2	12	45	83.9315	21.4660	17A	Lead Transect 20m Site
2026	9	5	14	09	82.7512	27.3182	9A	Main Site



Figure 105. An RBR Concerto CTD deployed at station 60C. © Emelia Chamberlain

Sea ice and snow samples collected

Sympagic Meiofauna samples from sea ice cores

Contact person: Janne Søreide (jannes@unis.no)
Responsible persons on board: Bergfrid Høgås Skjæveland

Sympagic (ice-associated) meiofauna was collected from sea ice cores, sampled with a Kovacs ice corer (9 cm diameter). Samples were collected at sea ice station 10, 21 and 24. The cores were cut into sections with a saw, 0-5 cm, 5-10 cm and 10-30 cm, where 0 cm is the bottom of the ice core. For each station, 6 cores were taken, where two and two sections from different cores where pooled together into one sample. In addition, 0-30 cm of two cores were also sampled, not pooled together. The samples were thawed in 100 ml filtered sea water per 1 cm of ice core.

The sectioned ice core samples were filtered through a 20 µm sieve and fixed. One sample from each layer were fixed in ethanol for genetic analyses, the two others were fixed in 2% formaldehyde for taxonomy. The 0-30 cm samples were filtered for metabarcoding on either 0.22 m Sterivex filters or 0.22 µm Polycarbonate filters.

Particulate Organic Carbon and Nitrogen samples from sea ice cores

Contact persons: Karley Campbell (karley.lynn.campbell@uit.no)
Responsible persons on board: Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

Samples from the sea ice cores

Samples were collected for determination of Particulate Organic Carbon (POC) and Nitrogen (PON) from sea ice, under-ice water, and sea-ice microhabitats. Single or duplicate samples were filtered onto Whatmann GF/F filters previously burned for 6h at 450°C and stored in similarly burned tinfoil. Volumes of filtration varied, but strong colouration on filters was sought. Filters were frozen at -20 °C with analysis to be completed post-cruise at UiT The Arctic University of Norway. Periodic blanks were taken by spraying a burned GF/F with the filtered seawater used in the lab. Samples were kept dark after collection and filtered out of direct sunlight.

Ice samples for POC/N were always melted in the dark with a 3:1 0.2 µm filtered seawater dilution to prevent osmotic shock to cells during melt, except for melt pond ice samples which were diluted with 3:1 0.2 µm filtered pond water (fresh melt water). A full description of all biologic ice melt procedures is available in section 14.X Sea ice microbiology. Duplicate POC/N filters were collected from all pooled ice samples which were processed for a variety of microbiological and biogeochemical variables (section 14.X) in three stratified sections, where “Bottom Ice” refers to the bottom 0-5 cm from ocean-ice interface, “Mid Ice” refers to depths 20-40 cm from ocean-ice interface, and “Top Ice” refers to depths 80-100 cm from ocean-ice interface. At selected longer stations (stations 10, 15, 21, 24), an additional full-length ice core was collected and processed for single measurements of POC/N at higher vertical resolution, sectioned at 0-5 cm (ocean-ice interface), 5-10 cm, 10-20 cm and 20 cm sections thereafter. Microhabitat ice (e.g. meltpond ice, ridge ice, new slush ice, aggregates) were processed for single or duplicate POC/N as sample volumes allowed.

Additional water column samples

POC/N Water samples for POC/N, whether from the primary water column samples (0-10 cm below ice-water interface, 1 m, 5 m, and 10 m) or microhabitats (e.g. meltpond water), were stored in the dark at processed using a single filter as soon as possible following collection.

Additional POC/N samples from adjacent lead sites

Contact persons (samples of lead water): Zoe Koenig (zoe.c.koenig@uit.no)
Responsible persons on board (samples of lead water): Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

When leads were sampled, additional bottom ice (0-5 cm) and under-ice water (0-10 cm from ice-water interface and 5 m depth) were collected and processed for POC/N in duplicate.

Table 64. Summary of POC/N collections from sea ice and under-ice water

Station #	Collection Date	Station Site	Water Collections	Ice Collections
2	Jul 27 2026	Main (# 2)	- Interface water	- Pooled bottom, mid, and top
3	Jul 29 2026	Main (# 1)	- Interface water	- Pooled bottom, mid, and top
		Lead (# 3)	- Lead surface - Interface water at 5 m from lead	- Bottom ice at 5 m from lead
10	Aug 7 2026	Main (# 3)	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- Pooled bottom, mid, and top - Full core
12	Aug 11 2026	Main (# 3)	- Interface water	- Pooled bottom, mid, and top
		Lead (# 6)	- Lead surface	
		Pond (# 4)	- Meltpond water	
15	Aug 16 2026	Main (# 4)	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- Pooled bottom, mid, and top - Full core
		Lead (# 5)	- Lead surface - Interface water at 5 m from lead - 5m depth below ice at 5 m from lead	- Bottom ice at 5 m from lead
		Pond (# 6)	- Meltpond water	- Ice from bottom of meltpond
18	Aug 18 2026	Main (1)	- Interface water	- Pooled bottom, mid, and top
		Lead (2)	- Lead surface	
21	Aug 22 2026	Main 1 (# 2)	- Freshly melted interface water	- Full core
	Aug 23 2026	Main 2 (# 4) *Weather relocation*	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- Pooled bottom, mid, and top - 3 subsections - 0-5 cm from bottom - 20-40 cm from bottom - 80-100 cm from bottom - Ridge ice
		Lead (# 6)	- Lead surface - Interface water at 5m from lead - 5 m depth below ice at 5 m from lead - Interface water at 20 m from lead - 5 m depth below ice at 20 m from lead	- Bottom ice at 5 m from lead - Bottom ice at 20 m from lead

		Pond (# 5)	- Meltpond water	- Ice from bottom of melt pond
23	Aug 28 2026	Main (# 2)	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- Pooled bottom, mid, and top
		Lead (# 5)	- Lead surface - Interface water at 5m from lead - 5 m depth below ice at 5 m from lead - Void water between rafted ice floes	- Bottom ice at 5 m from lead - Rafted ice near lead edge
		Pond (# 3)	- Meltpond water	- Ice from bottom of melt pond
24	Sep 2 2026	Main (# 2)	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- Pooled bottom, mid, and top - Full core
		Lead (# 4)	- Lead surface - Interface water at 5m from lead - 5 m depth below ice at 5 m from lead - Interface water at 20 m from lead - 5 m depth below ice at 20 m from lead	- Bottom ice at 5 m from lead - Bottom ice at 20 m from lead - Slushy ice from lead
		Pond (# 1)	- Meltpond water	- Ice from bottom of melt pond
		Crack (# 3)	- Crack/Lead surface - Diluted aggregate	- New slushy ice
25	Sep 5 2026	Main (# 1)	- Interface water	- Pooled bottom, mid, and top

Nutrients and DOC samples from the sea ice cores

Contact person: Karley Campbell (karley.lynn.campbell@uit.no)
Responsible persons on board: Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

Samples were collected for analysis of nutrients (nitrate + nitrite, phosphate and silicic acid) and dissolved organic carbon (DOC) at UiT The Arctic University of Norway (Tromsø) from sectioned cores as well as water collected from under the ice. Water samples were processed immediately after collection and ice samples after melt; with pseudo-duplicate samples for nitrate + nitrite and phosphate filtered through burnt GF/F (450°C for 6h) and a singlet for silicic acid through a 0.22 µm polycarbonate sterivex into acid washed vials. Nitrate + nitrite and phosphate samples were stored at -20°C while silicic acid samples were stored at 4°C for later analysis (Seal analytical). The DOC the vials were pre-combusted (450°C for 6h) and the sample filtered through the same burnt GFF as the nutrients before being acidified with 2N HCl prior to storage. DOC vials were stored at 4°C for later analysis (Shimadzu TOC analyser DOC).

Samples from the sea ice cores

Full-length ice cores were collected for nutrient analysis. Cores were sectioned at 0–5 cm, 5–10 cm, 10–20 cm and 20 cm resolution thereafter. Sections were stored in sterile Whirlpack bags and melted in the dark at 4°C over approximately 2 days. Following undiluted melt, the samples were processed as above. Only ice sections from 0-5 cm, 20-40 cm, and 80-100 cm were processed for analysis of DOC.

Additional water column samples

Following water collection, samples were processed as soon as possible upon return to the ship, filtering interface water and 1 m, 5 m, 10 m below the ice as described above for nutrients. Only interface water samples were processed for analysis of DOC.

Lead Sites (nutrients only)

When leads were sampled, additional under-ice water (0-10 cm from ice-water inter-face and 5 m depth) and bottom ice (0-5 cm) were collected and processed for nutrients (nitrate + nitrite, phosphate) at 5m and, twice, 20 m distance from the lead edge. No DOC were collected at these sites. Processing followed the same procedures as described above for water and ice respectively. Data contact: Zoe Koenig (zoe.c.koenig@uit.no).

Ponds and other sea ice microhabitats (nutrients only)

Ice and water was collected from accessible sea-ice microhabitats (meltponds, ridges, aggregates, new slush ice, etc.) and measured for nutrients (nitrate + nitrite, phosphate and silicic acid). No DOC were collected at these sites. Water samples were processed as described above, although ice samples came from the general biologic sample pool, not an undiluted melt due to lack of volume of general sample material. However, all microhabitat ice samples were melted in a buffer solution with known nutrient concentrations.

Table 65. Summary of nutrient and DOC collections from sea ice and under-ice water

Station #	Collection Date	Station Site	Water Collections	Ice Collections
2	Jul 27 2026	Main (# 2)	- Interface water	- Full core
3	Jul 29 2026	Main (# 1)	- Interface water - Water column (interface water)	- Full core
		Lead (# 3)	- Lead surface - Interface water at 5 m from lead	- Bottom ice at 5 m from lead
10	Aug 7 2026	Main (# 3)	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- Full core
12	Aug 11 2026	Main (# 3)	- Interface water	- Full core
		Lead (# 6)	- Lead surface	
		Pond (# 4)	- Meltpond water	
15	Aug 16 2026	Main (# 4)	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- Full core
		Lead (# 5)	- Lead surface - Interface water at 5 m from lead - 5m depth below ice at 5 m from lead	- Bottom ice at 5 m from lead
		Pond (# 6)	- Meltpond water	- Ice from bottom of meltpond
18	Aug 18 2026	Main (1)	- Interface water	- 3 subsections due to weather - 0-5 cm from bottom - 20-40 cm from bottom - 80-100 cm from bottom
		Lead (2)	- Lead surface	
21	Aug 22 2026	Main 1 (# 2)	- Freshly melted interface water	- Full core
	Aug 23 2026	Main 2 (# 4) *Weather relocation*	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- 3 subsections - 0-5 cm from bottom - 20-40 cm from bottom - 80-100 cm from bottom

				- Ridge ice
		Lead (# 6)	- Lead surface - Interface water at 5m from lead - 5 m depth below ice at 5 m from lead - Interface water at 20 m from lead - 5 m depth below ice at 20 m from lead	- Bottom ice at 5 m from lead - Bottom ice at 20 m from lead
		Pond (# 5)	- Meltpond water	- Ice from bottom of melt pond
23	Aug 28 2026	Main (# 2)	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- Full core
		Lead (# 5)	- Lead surface - Interface water at 5m from lead - 5 m depth below ice at 5 m from lead - Void water between rafted ice floes	- Bottom ice at 5 m from lead - Rafted ice near lead edge
		Pond (# 3)	- Meltpond water	- Ice from bottom of melt pond
24	Sep 2 2026	Main (# 2)	- Interface water - 1 m depth below ice - 5 m depth below ice - 10 m depth below ice	- Full core
		Lead (# 4)	- Lead surface - Interface water at 5m from lead - 5 m depth below ice at 5 m from lead - Interface water at 20 m from lead - 5 m depth below ice at 20 m from lead	- Bottom ice at 5 m from lead - Bottom ice at 20 m from lead - Slushy ice from lead
		Pond (# 1)	- Meltpond water	- Ice from bottom of melt pond
		Crack (# 3)	- Crack/Lead surface - Diluted aggregate	- New slushy ice
25	Sep 5 2026	Main (# 1)	- Interface water	- Full core

Chlorophyll-a samples from sea ice cores

Contact persons: Karley Campbell (karley.lynn.campbell@uit.no)
Responsible persons on board: Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

Samples were collected for determination of Chl-a from sea ice, under-ice water, and sea-ice microhabitats and measured on-board using a fluorometer provided by UiT The Arctic University of Norway. Total chlorophyll was measured on 25 mm 0.7 µm Whatman GFF filters. For select ice sections and water depths, additional size fractionation of chl a was measured by filtering on 5 µm and 20 µm Nucleopore nylon mesh filters.

Chlorophyll samples were kept dark after collection and filtered out of direct sunlight. Water filtered ranged between 0.4 and 1 L depending on biomass concentration, essentially filtering until faint colouration on the filter was completed. Filters were transferred to disposable glass vials and extracted in 10 ml of 90% acetone for 18-20 hours (4°C) before measurement on a Turner Fluorometer with Chl-A unit. On the fluorometer, samples were measured both before and after the addition of two drops of 2N HCl to determine chl a and phaeophytin concentrations, respectively. These measurements were then used to calculate pigment concentrations following the equations of Holm-Hansen et al. (1965).

Samples from the sea ice cores

Total and size fractionated Chl-a. Ice samples for Chl-a were always melted in the dark with a 3:1 0.2 µm filtered seawater dilution to prevent osmotic shock to cells during melt, except for melt pond ice samples which were diluted with 3:1 0.2 µm filtered pond water (fresh melt water). A full description of all biologic ice melt procedures is provided in the Summary of Sea Ice Microbiology section. Duplicate total and size-fractionated chlorophyll was collected from most pooled ice samples which were processed for a variety of microbiological and biogeochemical variables in three stratified sections, where "Bottom Ice" refers to the bottom 0-5 cm from ocean-ice interface, "Mid Ice" refers to depths 20-40 cm from ocean-ice interface, and "Top Ice" refers to depths 80-100 cm from ocean-ice interface.

Total Chl-a. At select shorter stations, only total Chl-a concentration was measured from each pooled section due to time limitations. At select longer stations, an additional full-length ice core was collected and processed for single measurements of total Chl-a at higher vertical resolution, sectioned at 0-5 cm (ocean-ice interface), 5-10 cm, 10-20 cm and 20 cm sections thereafter. Microhabitat ice (e.g. meltpond ice, ridge ice, new slush ice, aggregates) were processed for single or duplicate total Chl-a as sample volumes allowed.

Additional water column samples

Water samples for total and size fractionated Chl-a were stored in the dark at processed in duplicate as soon as possible following collection. Primary samples from the under-ice water column (0-10 cm below ice-water interface, 1 m, 5 m, and 10 m) were processed for both total and size fractionated Chl-a concentrations whenever station length allowed. At shorter stations, only total Chl-a concentration was measured from the ice-water interface. Water from microhabitats (e.g. meltpond water) was similarly processed only for total Chl-a due to volume limitations.

Additional Chlorophyll-A samples from adjacent lead sites

Contact persons (samples of lead water): Zoe Koenig (zoe.c.koenig@uit.no)
Responsible persons on board (samples of lead water): Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

When leads were sampled, additional bottom ice (0-5 cm) and under-ice water (0-10 cm from ice-water interface and 5 m depth) were collected and processed for total Chl-a in duplicate.

Sea ice virus samples from sea ice cores

Contact person: Cindy Given (cindy.j.given@uit.no)
Responsible persons on board: Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

Samples for giant virus isolation were collected from the ice-water interface (interface water and bottom 0–5 cm ice) at sea ice stations 3, 10, 15, 21, 23, 24. Water samples (2 L) were stored in plastic bags at 4°C in the dark cooler room. The bottom ice sections were stored in Whirlpack bags in the dark at –20°C in the onboard freezer room. Both will be sent for later analysis at UiT The Arctic University of Norway (Tromsø).

Sea ice productivity samples from sea ice cores

Contact person: Karley Campbell (karley.lynn.campbell@uit.no)
Responsible persons on board: Rosalie McKay, Anna Miettinen, Patricia Mrazek

Incubations were completed using samples collected from two types of locations at each station, the 'Main Site' (MS) and lead transect (for a more detailed description of sites. MS incubations included interface water (IFW) and the meltwater of four to eight sea ice core sec-tions (bottom 5 cm, 20–40 cm, 80–100 cm), and the lead transect included lead surface water, bottom ice from four core sections (0-5cm) at 5m and 20m sites from the lead edge, and IFW from the 5m site, unless otherwise specified. Cores were melted in darkness with the addition of 0.2 µm filtered seawater (bottom sections; collected on-site at the ice-ocean interface) or 0.2 µm filtered artificial seawater (upper sections; made on-board) for approximately 24 h. The filtered seawater was added at a ratio of three parts water to one-part ice. Total volume and volume of seawater were recorded for all cores to correct subsequent measurements for dilution. Four types of incubations were potentially completed on these pooled samples. See Table 66 for outline of incubations completed per ice station.

Gross primary production (GPP) samples from sea ice cores

Twelve-60 ml Corning flasks (10 clear and two darkened) were incubated in temperature-controlled chamber, held at -1.5°C. The chamber permitted incubation of samples over a range of light intensities that were measured using Walz 4-pi microsensor, from which a photosynthesis-irradiance curve could be constructed. Prior to incubations each bottle was spiked with 1 ml ^{14}C (4uCi ml_{-1}) solution. Two of the twelve flasks were taped black and spiked with DCM. Subsamples of initial activity were completed before bottles were placed in the incubator for 3h. Sample bottles were then each filtered onto Whatman GF/F filters before acidification with 0.5 N HCl. Once filters were dried (approximately 24h) 10 ml of Ecolume scintillation cocktail was added. Measurements of CPM were completed after an additional 24h extraction time. Measurements of GPP were completed at all ice stations.

Net primary production (NPP)

For each sample, one clear 500mL Kautex vial was incubated in a cold room that was set to stay between +1.5 to 3.5 °C. Light bottles (Kautex) containing 250 mL sample were incubated at light intensities varying between 20 and 25 µmol photons m^{-2} s^{-1} for 24 h, with two 60mL Corning flasks taped black and spiked with DCMU. Prior to incubations each light bottle was spiked with 1.25 mL of ^{14}C solution (100 µCi mL^{-1}) and black bottles with 7.5 mL each with 4 µCi mL^{-1} ^{14}C solution. Subsamples of initial activity were completed before bottles were placed in the incubator for 24h. Sample bottles were then each filtered onto Whatman GF/F filters before acidification with 0.5 N HCl. Once filters were dried (approximately 24h) of 10 mL of Ecolume scintillation cocktail was added. Measurements of NPP were begun at Station #15.

Bacterial production (BP)

15 ml of sample were added to six-50 ml sterile falcon tubes and spiked with 3H-Leucine for a final concentration of 10 nM. Three were immediately killed with 50% trichloroacetic acid solution (1.5 ml). Samples were then incubated in darkness for 6h at -1.5C, after which time the remaining three samples were killed with the TCA solution. Filtration was then completed onto cellulose acetate filters. Filters were allowed to dry for 24h before dissolution using ethyl acetate and the addition of 10 ml of Ecolume scintillation cocktail. Measurements of CPM were completed after an additional 24h extraction time. Measurements of BP were completed at all ice stations.

Net community production (NCP)

The NCP of pooled ice samples was determined using oxygen optodes. Samples were transferred to glass bottles via peristaltic pump and incubated in a temperature-controlled photosynthesis-irradiance chamber similar to GPP described above. Each bottle was equipped with a Pyroscience robust O_2 optode that logged data at two-minute intervals. Incubations were run for approximately 72h. Measurements of NCP were completed at longer ice stations at the North Pole, Amundsen Basin and Nansen Basin.

Table 66. Summary of gross primary production (GPP), net primary production (NPP), bacterial production (BP) and net community production (NCP) incubations completed for cruise ice stations. (Y) indicates completion of incubation. MS stands for 'Main Site'.

Station #	Date	Sample Descriptions	GPP	NPP	BP	NCP
2	Jul 29 2026	1. Lead water 2. MS Interface water 3. Lead 5 m interface water 4. Lead 5 m bottom ice 5. MS Bottom ice 6. MS 20–40 cm ice 7. MS 80–100 cm ice	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y	1. N 2. N 3. N 4. N 5. N 6. N 7. N	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y	1. N 2. N 3. N 4. N 5. N 6. N 7. N
3	Jul 30 2026	1. Lead water 2. MS Interface water 3. Lead 5 m interface water 4. Lead 5 m bottom ice 5. MS Bottom ice 6. MS 20–40 cm ice 7. MS 80–100 cm ice	1. Y 2. Y 3. N 4. Y 5. Y 6. Y 7. Y	1. N 2. N 3. N 4. N 5. N 6. N 7. N	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y
10	Aug 7 2026	1. Lead water 2. MS Interface water 3. Lead 5 m interface water 4. Lead 5 m bottom ice 5. MS Bottom ice 6. MS 20–40 cm ice 7. MS 80–100 cm ice	1. N 2. Y 3. N 4. N 5. Y 6. Y 7. Y	1. N 2. N 3. N 4. N 5. N 6. N 7. N	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y
12	Aug 11 2026	1. Lead water 2. MS Interface water 3. Lead 5 m interface water 4. Lead 5 m bottom ice 5. MS Bottom ice 6. MS 20–40 cm ice 7. MS 80–100 cm ice 8. Melt pond water	1. Y 2. Y 3. Y 4. Y 5. Y 6. Y 7. Y 8. Y	1. N 2. N 3. N 4. N 5. N 6. N 7. N 8. N	1. N 2. N 3. N 4. 5. Y 6. Y 7. Y 8. Y	1. N 2. N 3. N 4. 5. N 6. N 7. N 8. N
15	Aug 16 2026	1. Lead water 2. MS Interface water 3. Lead 5 m interface water 4. MS Bottom ice 5. MS 20–40 cm ice 6. MS 80–100 cm ice 7. Melt pond water	1. N 2. N 3. N 4. Y 5. Y 6. Y 7. Y	1. Y 2. Y 3. Y 4. N 5. N 6. N 7. N	1. N 2. N 3. N 4. Y 5. Y 6. Y 7. Y	1. N 2. N 3. N 4. Y 5. Y 6. Y 7. N
18	Aug 18 2026	1. Lead water 2. MS Interface water 3. Lead 5 m interface water 4. Lead 5 m bottom ice 5. MS Bottom ice 6. MS 20–40 cm ice 7. MS 80–100 cm ice	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y	1. N 2. N 3. N 4. N 5. N 6. N 7. N	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y	1. N 2. N 3. N 4. N 5. N 6. N 7. N
21	Aug 23 2026	1. Lead water 2. MS Interface water 3. Lead 5 m interface water 4. Lead 5 m bottom ice 5. Lead 20 m bottom ice 6. MS Bottom ice 7. MS 20–40 cm ice 8. MS 80–100 cm ice 9. Melt pond ice 10. Melt pond water	1. N 2. N 3. N 4. Y 5. Y 6. Y 7. Y 8. Y 9. Y 10. Y	1. Y 2. Y 3. Y 4. N 5. N 6. N 7. N 8. N 9. N 10. N	1. N 2. N 3. N 4. N 5. N 6. Y 7. Y 8. Y 9. Y 10. Y	1. N 2. N 3. N 4. N 5. N 6. Y 7. Y 8. Y 9. N 10. N

23	Aug 28 2026	1. Lead water 2. Interface water 3. Lead 5 m interface water 4. Lead 5 m bottom ice 5. MS Bottom ice 6. MS 20–40 cm ice 7. MS 80–100 cm ice 8. Melt pond ice 9. Melt pond water 10. Rafted ice top 11. Rafted ice bottom 12. Raft ice water	1. N 2. N 3. N 4. Y 5. Y 6. Y 7. Y 8. Y 9. Y 10. Y 11. Y 12. Y	1. Y 2. Y 3. Y 4. N 5. N 6. N 7. N 8. N 9. N 10. N 11. N 12. N	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y 8. Y 9. Y 10. Y 11. Y 12. Y	1. N 2. N 3. N 4. N 5. Y 6. Y 7. Y 8. N 9. N 10. N 11. N 12. N
24	Sep 2 2026	1. Lead water 2. Interface water 3. Lead 5 m interface water 4. Lead 5 m bottom ice 5. Lead 20 m bottom ice 6. MS Bottom ice 7. MS 20–40 cm ice 8. MS 80–100 cm ice 9. Melt pond ice 10. Melt pond water 11. Lead slush ice 12. Crack slush ice	1. N 2. N 3. N 4. Y 5. Y 6. Y 7. Y 8. Y 9. Y 10. Y 11. Y 12. Y	1. Y 2. Y 3. Y 4. N 5. N 6. N 7. N 8. N 9. N 10. N 11. N 12. N	1. N 2. N 3. N 4. N 5. N 6. Y 7. Y 8. Y 9. Y 10. Y 11. Y 12. Y	1. N 2. N 3. N 4. N 5. N 6. Y 7. Y 8. Y 9. N 10. N 11. N 12. Y
25	Sep 5 2026	1. MS Bottom ice	1. Y	1. N	1. Y	1. N

Rotifer samples from sea ice cores

Contact person: Miriam Marquardt (miriam.marquardt@uit.no)
Responsible persons on board: Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

Opportunistic samples for rotifer identification were collected from bottom ice (0-5 cm; sea ice stations 1, 3, 10, 12, 15, 18, 21, 23, 24, 25) for analysis at UiT, The Arctic University of Norway (Tromsø) when sufficient volume remained from pooled samples collected for other analyses. Samples were sieved through a 20 µm mesh, and the concentrate was rinsed into a 1000 mL Kautex bottle with filtered seawater (FSW). Bottles were filled to the top and stored alive at 4°C in the onboard cooling room for later analysis.

Lipid samples from sea ice cores

Contact persons: Rebecca Duncan (Rebecca.Duncan@uts.edu.au)
Responsible persons on board: Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

Opportunistic samples for fatty acids and species-specific biomolecular content were collected from the pooled bottom ice (0-5 cm) samples at each long (multi-period) biological ice coring station (Stations 3, 10, 15, 21, 23, 24; biological coring Main Site). Samples for Fatty Acids were filtered onto Whatmann GF/F filters previously burned for 6h at 450°C and stored in similarly burned tinfoil before freezing at -80 ˚°C. For analysis of species-specific biomolecular content via FTIR, 225 mL of sample was fixed with 37% unbuffered formaldehyde (4% final concentration) and stored at 4°C. Final analysis to be completed at U Tech Sydney.

Summary of microbiology program at sea ice stations

Contact persons: Karley Campbell (karley.lynn.campbell@uit.no)
Responsible persons on board: Emelia Chamberlain, Rosalie McKay, Anna Miettinen, Patricia Mrazek

Sea ice cores

Sea ice cores for biological and biogeochemical variables were collected from one-three sites at each sea-ice station which was at least 1 period or 3 hours in duration (Table 67). The number of sites established, cores collected, and variables processed from each station was dependent on time allowances for ice work and weather conditions. Coring always took place following the measurement of under ice PAR with ice cores collected approx. 50 cm from one another under consistent snow thickness (measured prior to coring). Total ice thickness (via gauge) and freeboard were recorded for all sea ice cores collected.

Table 67. Overview of Biological Coring Sea Ice Stations

Station # and Type	Collection Date	Sites Sampled	Notes/Observations
2 (Short)	Jul 27 2026	Main Site (# 2)	Small first year ice floe.
3 (Long)	Jul 29 2026	Main Site (# 1)	Not a full long ice coring program or full water column program at either site due to weather delays.
		Lead Site (# 3)	
10 (Long)	Aug 7 2026	Main Site (# 3)	Deployment site of Biogeochemistry Buoy.
12 (Short)	Aug 11 2026	Main Site (# 3)	Freshwater lens beneath floe.
		Lead Site (# 6)	Lead water only due to short station length.
		Meltpond (# 4)	Meltpond water collected.
15 (Long)	Aug 16 2026	Main Site (# 4)	
		Lead Site (# 5)	Floe edge exposed when ship drove in.
		Meltpond (# 6)	Meltpond water and bottom ice collected.
18 (Short)	Aug 18 2026	Main Site (1)	Fog delay at end of station cut coring program short.
		Lead Site (2)	Lead water only due to short station length.
21 (Long)	Aug 22 2026	Main Site 1 (# 2)	Meiofauna, Chl-a, and nutrient cores collected. Floe was located above an actively draining meltpond.
	Aug 23 2026	Main Site 2 (# 4)	Relocated the main coring site much closer to the ship before continuing program due to fog.
		Lead Site (# 6)	5m and 20m site.
		Meltpond (# 5)	Meltpond water and bottom ice collected.
23 (Long)	Aug 28 2026	Main Site (# 2)	Nutrient cross-calibration with CTD samples occurred at this station.
		Lead Site (# 5)	Rafted ice selected for microhabitat sampling after ROV survey.
		Meltpond (# 3)	Meltpond water and bottom ice collected.
24 (Long)	Sep 2 2026	Main Site (# 2)	
		Lead Site (# 4)	Lead/edge on far side of floe.
		Meltpond (# 1)	Meltpond water and bottom ice collected.
		Crack Site (# 3)	Refrozen crack from when ship drove into floe.
25 (Short)	Sep 5 2026	Main Site (# 1)	Small first year ice floe.

Depending on the variables measured, cores were either individual or pooled together, melted without dilution, or melted with dilution from i) 0.2 µm filtered seawater (FSW) or fresh pond water (FFW), ii) artificial seawater (ArSW) or iii) hypersaline solution (Tables 68-71).

FSW represents under-ice water filtered through a Nucleopore 0.2µm filter via peristaltic pump and Millipore 147 mm filter holder. FFW represents melt pond water filtered through a Nucleopore 0.2µm filter via peristaltic pump and Millipore 147 mm filter holder or Nucleopore 47 mm filter holder.

ArSW represents sodium chloride (24.43 g per liter), magnesium chloride (5.2 g per liter), sodium sulfate (4.09 g per liter) and calcium chloride (1.16 g per liter) added to Milli-Q or reverse osmosis tap water (following critical failure of the onboard Milli-Q machine), which was then filter sterilized through a Nucleopore 0.2µm filter via peristaltic pump and Millipore 147 mm filter holder.

Hypersaline represents a LOW (42-49.5 g per liter) or HIGH (248-255 g per liter) salinity solution of NaCl added to Milli-Q or 0.2µm filtered reverse osmosis tap water (following critical failure of the onboard Milli-Q machine), which was then autoclaved for sterilization. Volume of hypersaline added was calculated at each station using the Cox and Weeks (1983) method to target approximate final melt salinities which match in situ brine concentrations for each section using the maximum in situ temperature of –2 °C and measured bulk salinity of the ice.

Salinities for each dilution solution (FSW, FFW, ArSW, LOW and HIGH Hypersaline) was recorded prior to use and stored in the dark at 2°C. Total volumes and final melt salinities were recorded for all samples prior to processing.

Main Sites

At each station, a ‘Main Site’ was established for the primary ice and under-ice water sampling of the site’s floe, with care taken to choose representative level ice with consistent snow coverage. This site was typically located near the physics coring and located approximately 50-300 m way from the ship depending on ice topography and weather allowance. Most ice cores from this site were processed in 3 stratified sections. “Bottom Ice” refers to the bottom 0-5 cm from ocean-ice interface, “Mid Ice” refers to depths 20-40 cm from ocean-ice interface, and “Top Ice” refers to depths 80-100 cm from ocean-ice interface. Sectioned ice was melted in dark insulated MQ clean containers at room temperature. Once melted, samples were kept dark at 2-4°C throughout processing time, which was generally completed 18-36 hr following collection on ice.

At all but one ice station, a full-length ice core was processed for nutrients, carbon content, and salinity (see section 14.11). At station 18, only the sections corresponding to the pooled Bottom, Mid, and Top ice sections were collected due to weather limitations.

At select longer stations, a full-length ice core was additionally processed for Chl *a* and POC/N and was sectioned as 0-5 cm (ocean-ice interface), 5-10 cm, 10-20 cm and 20 cm sections thereafter. Sections were melted in insulated containers and kept dark at 4°C until processing, which was generally completed 18-36 hr following collection on ice.

Table 68. Main Site coring at long sea ice stations (2 or more periods) FSW used for pooled cores including productivity measurements (Section 14.13) was always created from interface water collected the same day as ice collection from the site of ice collection.

Core ID	No. of cores	Sectioning	Dilution	Handling
BIO POOL	7-8, pooled	Bottom	FSW 3:1*	Melted in insulated dark containers at room temp
		Mid and Top	ArSW 3:1	
DNA	2, pooled	Bottom	LOW hypersaline	Melted in insulated dark containers at room temp
		Mid and Top	HIGH hypersaline	
CHL	1	Full core	FSW 3:1	Melted in insulated dark containers at 4°C
NUTRIENTS	1	Full core	None	See Section 14.11
VIRUS	1	Bottom	N/A	See Section 14.12

Table 69. Main Site coring at short sea ice stations (1 period). FSW used for pooled cores including productivity measurements (Section 14.13) was always created from interface water collected the same day as ice collection from the site of ice collection.

Core ID	No. of cores	Sectioning	Dilution	Handling
BIO POOL	4-6, pooled	Bottom	FSW 3:1*	Melted in insulated dark containers at room temp
		Mid and Top	ArSW 3:1	
DNA	2, pooled	Bottom	LOW hypersaline	Melted in insulated dark containers at room temp
		Mid and Top	HIGH hypersaline	
NUTRIENTS	1	Full core	None	See Section 14.11

Lead Sites

At longer stations, an additional site was established near an accessible natural lead or floe-edge. Here, additional bottom ice (0-5 cm from ocean-ice interface) for pooled biological parameters and a single full-length chemistry core were collected at 5 m distance from lead/floe edge. Longer mooring stations (21 and 24) additionally included the same cores collected at 20 m distance from lead/floe edge. Data contact for all lead data: Zoe Koenig (zoe.c.koenig@uit.no).

*Table 70. Lead Site coring at long sea ice stations (2 or more periods) *FSW used for pooled cores including productivity measurements (Section 14.13) was always created from interface water collected the same day as ice collection from the site of ice collection.*

Core ID	No. of cores	Sectioning	Dilution	Handling
BIO POOL	3-4, pooled	Bottom	FSW 3:1*	Melted in insulated dark containers at room temp
CHEMISTRY	1	Full core	FSW 3:1	Bagged and kept frozen at -20°C for analysis on land
NUTRIENTS	1	Bottom	None	See Section 14.11

Microhabitats

When accessible, additional ice samples were collected opportunistically from various ice microhabitats, including melt ponds (ice from bottom of pond), ridges, and rafted ice ledges.

Table 71. Summary of microhabitats collected. FSW or FFW used for pooled cores including productivity measurements (Section 14.13) was always created from interface water (FSW) or pond water (FFW) collected the same day as ice collection from the site of ice collection.

Ice Habitat	Ice	Sectioning	Dilution	Handling	Ice Stations Sampled
Meltpond Bottom Ice	1-3 cores, pooled	0-5 cm from top of the ice at the bottom of pond	FFW 3:1*	Melted in insulated dark containers at room temp	15,21,23,24
Ridge Ice	1 core, 8 sections	0-5 cm on either side of ridge voids	ArSW 3:1	Bagged and kept frozen at -20°C	21
Rafted Ice	2 cores, 2 sections	0-10 cm on either side of rafted ice void near lead	FSW 3:1*	See Section 14.11	23
Slushy Ice	2 collections	Sieved from lead edge in a cohesive cluster with blocks	FSW 3:1*	Melted in insulated dark containers at room temp	24
Algae Aggregate	1 collection	Targeted sampling using peristaltic pump	FSW 4:1*	Homogenized then processed immediately	24

Variables and Methods

There were several microbiological and biogeochemical parameters that were collected across sea ice sample types and ice stations. Sample collection and variable details are provided below (Table 72).

Table 72. Summary of microbiological and biogeochemical parameters collected from sea ice.

Variable	Description and remarks	Station # sampled	Sampled from (cores or environment)	Sections/ice sampled from
Chlorophyll *a*	Proxy for microalgal/photosynthetic biomass. Size fractionated [0.7µm (GF/F), 5µm and 20µm]. Extracted on board.	Short stations: 2, 12, 18, 25	Main Site BIO POOL	Bottom, Mid, Top (GF/F only)
		Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL CHL	Bottom, Mid, Top Full core (GF/F only)
			Lead Site BIO POOL	Bottom (GF/F only)
			Microhabitats Pond Ice Ridge Ice Rafted Ice Slush Ice Aggregate	Microhabitats (GF/F only)
High-Performance Liquid Chromatography (HPLC)	HPLC-based pigment composition of photoautotrophs. 200-500 mL filtered onto Whatman GF/F filters, folded into tin-foil pouches and stored at -80°C. Processed on land.	Short stations: 2, 12, 18, 25	Main Site BIO POOL	Bottom, Mid, Top
		Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL	Bottom, Mid, Top
			Lead Site BIO POOL	Bottom
			Microhabitats	Microhabitats when enough volume

			Pond Ice Rafted Ice Slush Ice	
Particulate Organic Carbon/Nitrogen (POC/PON)	Proxy for organic biomass. Burnt Whatmann GF/F filters (6h @ 450°C). Stored in similarly burntfoil at -20°C. Processed on land.	Short stations: 2, 12, 18, 25	Main Site BIO POOL	Bottom, Mid, Top
		Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL CHL Lead Site BIO POOL Microhabitats Pond Ice Rafted Ice Slush Ice Aggregate	Bottom, Mid, Top Bottom Microhabitats when enough volume
Exopolymeric substances (EPS)	Excreted particulate substance (> 0.4µm). Approx. 200 mL of sample filtered through 0.4µm polycarbonate filters (Nucleopore), folded into foil packets and frozen at -20°C. Analysis to be completed at UiT following phenol extraction protocol.	Short stations: 2, 12, 18, 25	Main Site BIO POOL	Bottom, Mid, Top
		Long stations: 3, 10, 15, 21, 23,2 4	Main Site BIO POOL Microhabitats Pond Ice Rafted Ice Slush Ice	Bottom, Mid, Top Microhabitats when enough volume
Mycosporine-like Amino acids (MAA) *Collected only when meltponds were also sampled*.	UV-absorbing compounds used by algae. Approx 200 mL of sample filtered through 0.7 µm Whatmann GFF filters, folded in foil and frozen at -80°C after filtration. Processed on land.	Long stations: 15, 21, 23, 24	Main Site BIO POOL Microhabitats Pond Ice	Bottom Pond associated samples
Fungal Abundance	Fixed samples for fungal abundance. Samples fixed at 2% Formaldehyde and stored at -20°C. Processed on land.	Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL Microhabitats Rafted Ice Ridge Ice Slush Ice	Bottom, Mid, Top Microhabitats when enough volume
(4',6-)Diamidino-2-phenylindole staining (DAPI)	Fixed samples for DAPI staining to observe association of bacteria with algal cells. Samples fixed at 1% Formaldehyde and stored at -20°C. Processed on land.	Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL Microhabitats Rafted Ice Ridge Ice Slush Ice	Bottom, Mid, Top Microhabitats when enough volume
Taxonomy, Lugol	Samples for firm bodied protist taxonomy via inverted light microscopy. Fixed to a final concentration of 0.1 % Acidic Lugol solution. Stored at 4°C and processed on land.	Short stations: 2,12,18,25	Main Site BIO POOL	Bottom, Mid, Top
		Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL Lead Site BIO POOL Microhabitats Pond Ice Rafted Ice	Bottom, Mid, Top Bottom Microhabitats when enough volume

			Ridge Ice Slush Ice Aggregate	
Taxonomy, Fixed	Samples for soft bodied protist taxonomy via inverted light microscopy. Fixed with 20 % buffered formaldehyde and 25% glutaraldehyde. Stored at 4°C and processed on land.	Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL Microhabitats Rafted Ice Ridge Ice Slush Ice	Bottom, Mid, Top Microhabitats when enough volume
Flow Cytometry	Cell enumeration; under 40µm. Samples taken in triplicate, pre-filtered through 40 µm mesh and fixed with glutaraldehyde to 0.5% concentration. Following dark incubation for 5-15 min, tubes flash frozen in liquid nitrogen and stored at -80°C. Analysis to be completed on land.	Short stations: 2, 12, 18, 25	Main Site BIO POOL	Bottom, Mid, Top
		Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL Lead Site BIO POOL Microhabitats Pond Ice Rafted Ice Ridge Ice Slush Ice Aggregate	Bottom, Mid, Top Bottom Microhabitats when enough volume
DNA	Metabarcoding (16S/18S amplicon sequencing) and select whole genome sequencing for size fractionate protist (>3µm) and prokaryote (>0.2µm) community composition. Size-fractionated filtration conducted at 2°C using 3 µm (MF nitrocellulose membrane filters, Merck Millipore) and 0.2 µm (Nucleopore™ track-etch membrane, Cytiva, Whatman™) filters in series.	Short stations: 2, 12, 18, 25	Main Site DNA	Bottom, Mid, Top
		Long stations: 3, 10, 15, 21, 23,24	Main Site DNA Microhabitats Rafted Ice Slush Ice Aggregate	Bottom, Mid, Top Microhabitats when enough volume
Gross Primary Production, Bacterial Production and Net Community Production	Pooled samples used for productivity incubations.	Short stations: 2, 12, 18, 25	Main Site BIO POOL	Bottom, Mid, Top
		Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL Lead Site BIO POOL Microhabitats Pond Ice Rafted Ice Slush Ice Aggregate	Bottom, Mid, Top Bottom Microhabitats when enough volume for productivity
Dissolved Inorganic Carbon (DIC) for Gross/Net Primary Production	Sum of dissolved CO2, carbonic acid, bicarbonate- and carbonate ions. Describes available DIC for uptake by photoautotrophic organisms and supports productivity incubations. Bottles overfilled and fixed	Short stations: 2, 12, 18, 25	Main Site BIO POOL	Bottom, Mid, Top
		Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL Lead Site BIO POOL	Bottom, Mid, Top Bottom

	with Mercuric Chloride. Stored at 4°C to be processed on land.		Microhabitats Pond Ice Rafted Ice Slush Ice Aggregate	Microhabitats when enough volume for productivity
Lipids	Samples for fatty acids and Fourier transform infrared spectroscopy (FTIR) collected from remaining bottom sample pools.	Long stations: 3, 10, 15, 21, 23, 24	Main Site BIO POOL	Bottom
Viruses	Frozen ice cores collected and stored at -20°C to be processed on land for viral isolation.	Long stations: 3, 10, 15, 21, 23, 24	Main Site VIRUS	Bottom

Under-ice water

Under-ice water sampling was conducted at the sea ice stations listed in Table 72, in connection with sea ice sampling. Sampling schemes were divided into long and short station sampling schemes as described below.

Water was collected in parallel or directly after sea ice sampling for microbiology at each sampling site within an ice station. Under-ice water (UIW) samples from the ice-ocean interface (IFW) and 1m depth below ice were collected using a portable peristaltic pump (Masterflex 757102), and those from 5m and 10m depths were collected using a Niskin-like handheld 3L Rutner water sampler (KC Denmark). A 10" auger hole was made for the water sampler, whereas sample collection with the peristaltic pump was done either through the auger or a coring hole. Meltpond and lead water samples were collected by gently filling sample containers directly from the surface. Before each station, all sample containers were MilliQ-rinsed onboard, three times sample rinsed prior to filling, and DNA-sample specific containers were additionally bleached.

Work at Main Sites

Level ice, typically near physics coring sites and 50-300m away from the ship. Standard sampling depths: IFW, 1m, 5m, 0m

Work at Meltponds

Lead/floe edge transect, sampled perpendicular to the ice edge. Collected from the lead edge, 5m into the ice floe, and at Nansen and Amundsen mooring sites, additionally 20m into the floe. Sampling depths are lead surface, IFW and 5m

Short station sampling consisted of sampling only the Main Site with water sampling depths reduced to IFW. IFW was collected using a peristaltic pump from an 8" or 10" auger hole, or a coring hole. For the variable list of short stations, please see Table 73 below.

Table 73. Summary of variables collected for under-ice water microbiology.

Variable	Description and remarks	Station # sampled	Sampling depths or types
Chlorophyll *a*	Proxy for microalgal/photosynthetic biomass. Size fractionated [0.7µm (GF/F), 5µm and 20µm]. Extracted on board.	Short stations: 2, 12 Long stations: 3, 10, 15, 21, 23, 24, 25	Under-ice water: Ice-ocean interface (IFW) 1m, 5m, 10m Meltpond water Lead transect water
High-Performance Liquid Chromatography (HPLC)	HPLC-based pigment composition of photoautotrophs. 200-500 mL filtered onto Whatman GF/F filters, folded	Long (moored) stations: 3, 10, 15, 21, 23, 24, 25	Lead transect water

	into tin-foil pouches and stored at -80°C. Processed on land.		
Particulate Organic Carbon/Nitrogen (POC/PON)	Proxy for organic biomass. Burnt Whatmann GF/F filters (6h @ 450°C). Stored in similarly burntfoil at -20°C. Processed on land.	Basket stations: 2, 12 Long (moored) stations: 3, 10, 15, 21, 23, 24, 25	Under-ice water: IFW, 1m, 5m, 10m Meltpond water Lead transect water
Taxonomy	Samples for firm bodied protist taxonomy via inverted light microscopy. Fixed to a final concentration of 0.1 % Acidic Lugol solution. Stored at 4°C and processed on land.	Basket stations: 2, 12 Long (moored) stations: 3, 10, 15, 21, 23, 24, 25	Under-ice water: IFW, 1m, 5m, 10m Meltpond water Lead transect water
Flow Cytometry	Cell enumeration; under 40µm. Samples taken in triplicate, pre-filtered through 40 µm mesh and fixed with glutaraldehyde to 0.5% concentration. Following dark incubation for 5-15 min, tubes flash frozen in liquid nitrogen and stored at -80°C. Analysis to be completed on land.	Basket stations: 2, 12 Long (moored) stations: 3, 10, 15, 21, 23, 24, 25	Under-ice water: IFW, 1m, 5m, 10m Meltpond water Lead transect water
DNA	Metabarcoding (16S/18S amplicon sequencing) and select whole genome sequencing for size fractionate protist (>3µm) and prokaryote (>0.2µm) community composition. Size-fractionated filtration conducted at 2°C using 3 µm (MF nitrocellulose membrane filters, Merck Millipore) and 0.2 µm (Nucleopore™ track-etch membrane, Cytiva, Whatman™) filters in series.	Basket stations: 2, 12 Long (moored) stations: 3, 10, 15, 21, 23, 24, 25	Under-ice water: IFW, 5m Meltpond water Lead transect water
Gross Primary Production, Net Primary Production	Water samples used for productivity incubations	Basket stations: 2, 12 Long (moored) stations: 3, 10, 15, 21, 23, 24, 25	Under-ice water: IFW Meltpond water Lead transect water (only lead surface and IFW)
Dissolved Inorganic Carbon (DIC) for Gross/Net Primary Production	Sum of dissolved CO2, carbonic acid, bicarbonate- and carbonate ions. Describes available DIC for uptake by photoautotrophic organisms and supports productivity incubations Bottles overfilled and fixed with Mercuric Chloride.	Long (moored) stations: 3, 10, 15, 21, 23, 24, 25	Under-ice water: IFW Meltpond water Lead transect water (only lead surface and IFW)

	Stored at 4°C to be processed on land.		
DIC and Total Alkalinity (TA)	DIC is the sum of dissolved CO2, carbonic acid, bicarbonate- and carbonate ions; Total Alkalinity is a measure of the buffer capacity of water towards acidic inputs. Bottles overfilled and fixed with Mercuric Chloride. Stored at 4°C to be processed on land.	Long (moored) stations: 3, 10, 15, 21, 23, 24, 25	Lead transect water (only lead surface and IFW)

Autonomous platforms deployed at sea ice stations

Overview

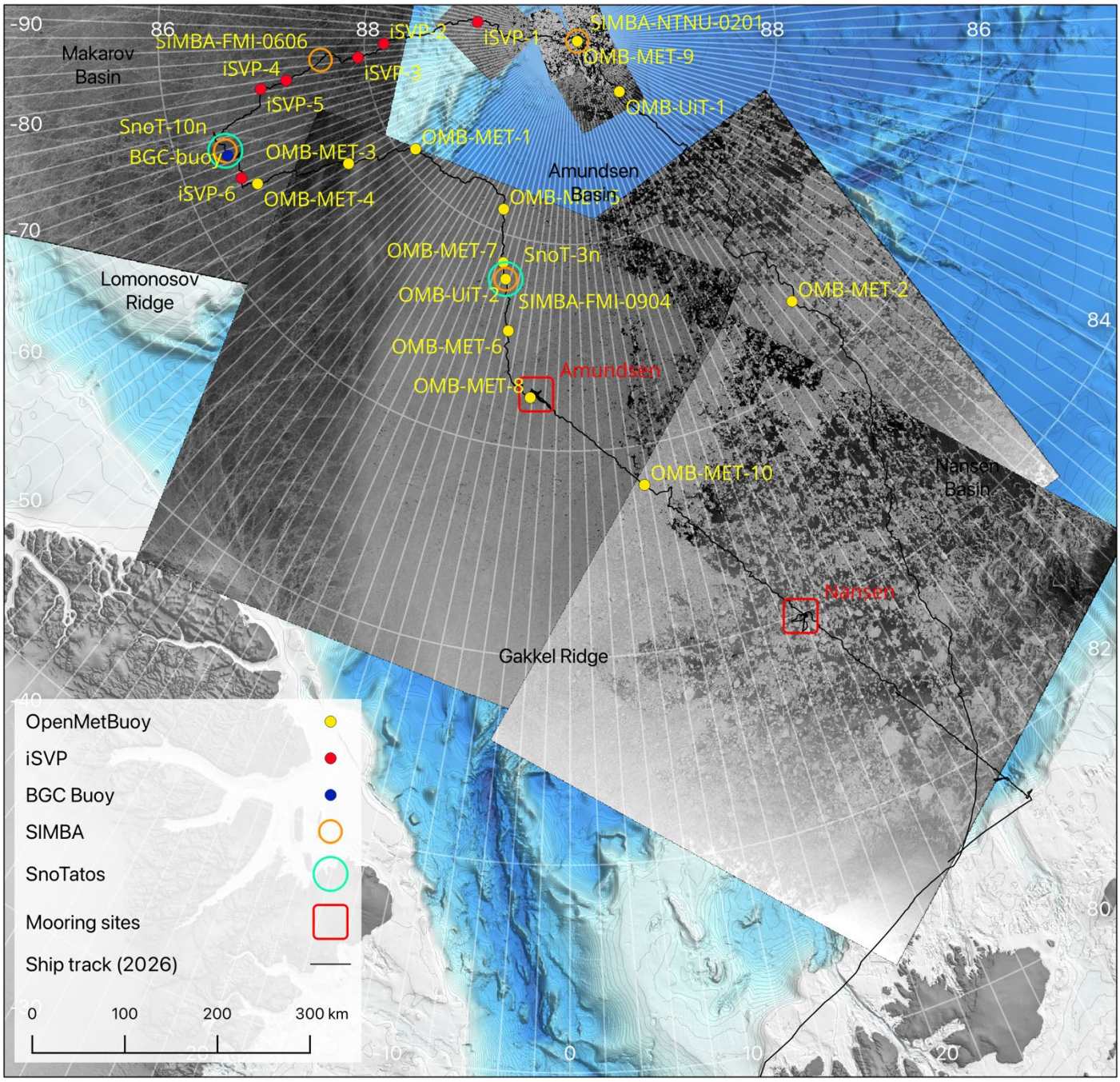


Figure 106. Overview of drifting platforms deployed

Table 74. Overview of drifting platforms deployed

Buoy	Date Deployed	Latitude (N)	Longitude (E)
iSVP-1	01-Aug-26	89.0887633	-99.778348
iSVP-2	02-Aug-26	88.188545	-88.310397
iSVP-3	02-Aug-26	87.9312333	-84.72642
iSVP-4	03-Aug-26	87.212715	-81.488
iSVP-5	04-Aug-26	86.955085	-80.63901
iSVP-6	09-Aug-26	86.5353667	-66.942012
OMB-MET-1	15-Aug-26	88.154224	-54.366994
OMB-MET-2	27-Jul-26	86.661388	40.1999317
OMB-MET-3	14-Aug-26	87.52907	-60.480913
OMB-MET-4	11-Aug-26	86.653741	-65.04756
OMB-MET-5	17-Aug-26	88.221339	-21.244286
OMB-MET-6	19-Aug-26	87.1016	-11.9407
OMB-MET-7	18-Aug-26	87.7314	-16.6183
OMB-MET-8	23-Aug-26	86.4958933	-6.3448933
OMB-MET-9	30-Jul-26	89.923208	65.4866783
OMB-MET-10	28-Aug-26	85.613479	9.479424
OMB-UiT-1	29-Jul-26	89.2933333	42.5949667
OMB-UiT-2	18-Aug-26	87.582572	-14.991946
SIMBA-FMI-0606	03-Aug-26	87.56725	-84.988223
SIMBA-FMI-0904	18-Aug-26	87.582572	-14.991946
SIMBA-NTNU-0201	30-Jul-26	89.923208	65.4866783
SIMBA-NTNU-0202	07-Aug-26	86.479693	-71.934124
BGC-buoy	07-Aug-26	86.486878	-71.072983
SnoT-10n	07-Aug-26	86.479693	-71.934124
SnoT-3n	18-Aug-26	87.58257	-14.991946

OMBs (Open Met Buoys)

Contact person for buoys provided by MET: Malte Muller (malte.muller@met.no)
Contact person for buoys provided by UiT: Jack Landy (jack.c.landy@uit.no)
Responsible person on board: Polona Itkin

OpenMetBuoys (OMBs) are simple drifters that are cheap and easy to produce and can provide valuable meteorological (pressure, temperature, relative humidity) and sea ice motion data for a limited duration (small battery pack). On EBT2026 we deployed 10 OMBs provided by MET Norway and 2 OMBS provided by UiT. The MET buoys included additional thermal IR sensor to measure skin temperature of snow and a thermistor chain to measure temperature profile through snow and sea ice. The UiT buoys included additional solar panels that can power the units during summer. Data can be viewed at https://openmetbuoy-arctic.com/arct-data/
Detailed deployment information for each unit is attached in the Appendix.

SIMBAs (Snow Ice Mass Balance Apparatus)

Contact person: Mats Granskog (mats.granskog@npolar.no)
Responsible persons on board: Mats Granskog, Polona Itkin

Four SIMBA (Snow Ice Mass Balance Apparatus, manufactured by SAMS Enterprise) buoys were deployed during the expedition.

Two (version Gen3) were provided by the Arctic Ocean 2050 programme and two (pre-Gen3) by the Finnish Meteorological Institute (PI: Bin Cheng). These were deployed on longer ice stations and then co-located with other buoys. For details see the relevant Ice Station descriptions. Table 75 lists the buoy IMEIs and deployment locations and time. Two units from Arctic Ocean 2050 (NTNU 0201 and 0202) had two temperature strings, an AWS (Campbell), a pyranometer (Apogee) and a snow depth pinger (Campbell). While the two units from FMI (FMI 0606 and FMI 0904) only had one temperature string.

Table 75. SIMBA deployments. Also see Appendix 1 for buoy specifics, and links to more information.

ID / IMEI	Position	Date	Deployment Time	Ice Station #	Meereisportal ID
NTNU 0201 / 300534068095690	89 55 N, 65 29 E	30 July 2026	0800 UTC	3	2026T152
NTNU 0202 / 300534068090710	86 28.7858 N, 71 54.2953 W	7 Aug 2026	1126 UTC	10	2026T153
FMI 0606 / 300234068703800	87 34.0350 N, 84 59.2934 W	3 Aug 2026	0710 UTC	7	2026T80
FMI 0904 / 300534061783900	87 34.9543 N, 14 59.5164 W	18 Aug 2026	1637 UTC	18	2026T154

Data from these SIMBA buoys are uploaded to the public Meereisportal / Seaice Dataportal in near real-time: Buoys | Data | Meereisportal.

iSVPs (Polar SVP by MetOcean Telematics)

Contact person: Jennifer Brooke (jennifer.brooke@metoffice.gov.uk)
Responsible persons on board: Mats Granskog, Polona Itkin

Six iSVP (Polar SVP by MetOcean Telematics) surface velocity profiles (drifters) were deployed during the expedition. These were provided by the UK MET Office (PIs: Jennifer Brooke and Dawn Harrison). These were typically deployed at short basket stations, where only a few ancillary measurements were collected (like snow and ice thickness). For details see the relevant Ice Station descriptions. Table 76 lists the buoy IMEIs and deployment locations and time. The data from these were relayed to GTS and thus assimilated into weather forecasts. Data can be requested from the MET Office contact.

Table 76. iSVP deployments

Ice Buoy–Met Ocean Product Code: SVP-I-BXGS-LP16				
IMEI	**Location**	**Deployment Date**	**Deployment Time**	**Ice Station**
300534068090860	89 05.3258 N, 099 46.7009 W	01-Aug-26	06:56 UTC (placed on the ice)	4
300534068097790	88 11.9727 N, 088 18.6238 W	02-Aug-26	07:23 UTC (placed on the ice)	5
300534068095850	87 55.8740 N, 087 43.5852 W	02-Aug-26	18:20 UTC (placed on the ice)	6
300534068091850	87 12.7629 N, 081 29.28 W	03-Aug-26	18:14 UTC (placed on the ice)	8
300534068096830	86 57.3030 N, 080 38.3406 W	04-Aug-26	06:57 UTC (placed on the ice)	9
300534069703080	86 32.1220 N, 067 03.4793 W	09-Aug-26	13:37 UTC (placed on the ice)	11

Biogeochemical buoy

Contact person: Karley Campbell (Karley.Campbell@uit.no)
Responsible persons on board: Morven Muilwijk & Mats Granskog

A biogeochemical ice-tethered buoy system (manufactured by Pacific Gyre, through Karley Campbell at UiT supported by the MicroShift project) consists of three individual parts that were co-deployed on Ice Station 10[MG1.1]. The ice thickness at the site was about 1.5 to 1.6 m, with a thin slushy/grainy surface scattering layer. Each part transfers their own data via Iridium (to the Pacific Gyre data portal). Unit UiT-LS-0001 has a string that measures temperature and PAR through the sea ice. UiT-Cam-0001 is a camera that captures underwater images, and the third unit (UiT-LS-0001 has two Ramses radiometers (one measuring incident, and one transmitted radiation), a Seabird Hydrocat (CTD, Chla, turbidity and dissolved oxygen), and a Trios OPUS nitrate sensor. In addition, a thickness gauge with markings was placed in the view of the underwater camera. SIMBA NTNU 0202 was deployed next to the installation (see Section 16.03). A SnoTatos group was deployed around the deployment site. The Diamond and MicroShift team collected ice and water samples right next to the buoy deployment site (see details in the ice station description in this report).

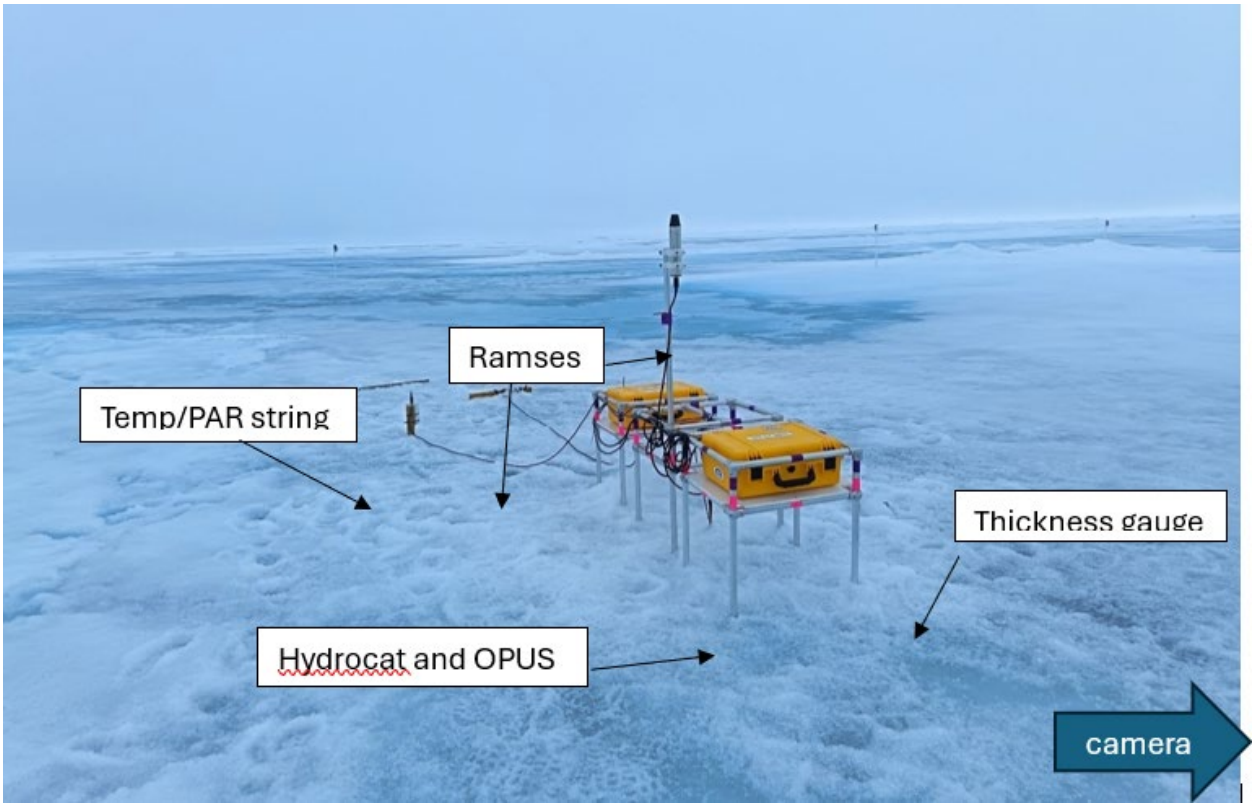


Figure 107. The Biogeochemical buoy system deployment site after deployment. The two yellow pelicases house electronics and batteries. The location of the underwater camera is to the right of the image. © Mats Granskog

SnoTatos(Snow Thickness and Temperature Observation System)

Contact person: Jack Landy
Responsible person on board: Polona Itkin

SnoTATOS (the Snow Thickness and Temperature Observation System) is an autonomous system that was developed to detect the diversity of snow depth development over several points at a deployment ice floe. A standard SnoTATOS network consists of several autonomous snow measurement stations (hereafter called “nodes”) linked to a central server by a LoRa radio network Each node is equipped with an ultrasonic rangefinder. The network is synchronized such that all nodes simultaneously collect samples and transmit their data back to the server at regular intervals, with random transmission jitter introduced to reduce packet collisions. The sampling frequency is programmable with a typical interval set at 4 h. We deployed two SnoTatos systems Station 10 and Station 18, where first had 10 nodes and latter 3. Detailed deployment information for each unit is attached in the Appendix.

Aerial Light Measurements

Melt pond aerial objectives and scope

Contact: Ahmed El-Habashi (US-ONR)
Collected by: Ivan B. Savelyev (drone pilot) and Ahmed El-Habashi

These observations were designed to connect meter-scale melt-pond and sea-ice properties with the spatial scales seen by airborne and satellite sensors. The main activity was repeated drone mapping with hyperspectral, visible, infrared, and polarimetric instruments. These surveys were coordinated with measurements on the ice so that melt-pond depth, ice thickness and freeboard, core properties, spectral reflectance, and optical water properties could be located on the drone mosaics. The Harris Aerial Hx8 carried a NEO HySpex Mjolnir V-1240 push-broom hyperspectral imager covering approximately sub-decimetre ground sampling under typical survey conditions. Skydio visible and infrared imagery supplied wider spatial context and repeatable mosaics of ponds, bare ice, snow, ridges, and leads.

Additionally, a small consumer drone Skydio X2D was flown during ice stations to support other measurements with mosaics of georectified RGB and thermal images.

Hyperspectral visible and near IR measurements

Contact: Ahmed El-Habashi (US-ONR)
Collected by: Ivan B. Savelyev (drone pilot) and Ahmed El-Habashi

Spatial Upscaling via Airborne Push-Broom Hyperspectral Imaging

Complementing our point-source ground truth, we deployed an airborne push-broom hyperspectral imaging system to bridge the scale gap between localized field measurements and satellite observations. We collected drone-based hyperspectral imaging (VNIR) of the melt ponds using HySpex push-broom cameras (manufactured by Norsk Elektro Optikk - NEO). The HySpex systems are high-performance hyperspectral imagers featuring spectral coverage of 400–1000 nm, capturing high-resolution spatial and spectral data line-by-line using a precise linear detector array. As the sensor moves over the melt pond scene via a specialized Unmanned Aerial Vehicle (UAV) platform, it sequentially builds a 3D "hypercube" in which every single pixel contains a continuous, high-fidelity spectral signature. This airborne push-broom configuration provides sub-decimeter spatial resolution that is instrumental for capturing the complex, highly variable horizontal gradients of melt ponds and surrounding ice matrices. By collecting these continuous 400–1000 nm hypercubes, we can map subtle shifts in melt pond radiance and bottom-ice albedo that are typically blurred by coarser satellite sensors. This dense spatial-spectral dataset serves as a critical intermediate validation layer; it allows us to test how our depth retrieval algorithms handle fine-scale features—such as submerged ice rims and varying pond floor topography—before upscaling the final models to spaceborne observation platforms.



Figure 108. NEO HySpex Mjolnir V-1240 hyperspectral system (left) and Harris Aerial Hx8 drone (right).

Flight program and mosaic production

Contact: Ivan B. Savelyev (US-ONR)
Collected by: Ivan B. Savelyev and Ahmed El-Habashi

Visible and infrared mosaics

Drone flights were completed on 27, 29 and 30 July; 3, 4, 7, 11, 15, 16, 18, 19, 22, 23 and 28 August; and 1 and 2 September 2026.

Skydio visible and infrared frames were separated into nadir and off-nadir groups, screened for duplicate or horizon-dominated scenes, and rectified to a local flat surface. Representative frames were then assembled without radiometric averaging so that the original image detail remained available. As of 31 August, before Station 24, the dashboard contained 40 switchable mosaic layers. Of 4,168 projectable scene assignments, 1,504 representative frames were used in 36 mosaic variants; 274 frames were excluded because the projected view crossed the horizon or exceeded a 2 km modelled footprint.

A sample of Harris Aerial trajectories were reconstructed from Applanix GPS time, deduplicated, and resampled along active flight intervals at 1 Hz. The 31 August processing snapshot contained 22 flight tracks and 10,202 one-second trajectory points. For ship-relative display, geographic positions were transformed into a local tangent plane centred on the ship. A centred 30-minute moving average was applied to ship latitude, longitude, and circular heading to suppress short-period navigation jitter while retaining the slow translation and rotation of the ice-attached vessel. Handheld GPS waypoints used on sea ice were not smoothed.

These products are intended for operational interpretation and collocation, not as survey-grade orthophotography. The mosaics use a flat-plane approximation and no ground-control-point adjustment; residual offsets can arise from camera attitude, relief, and navigation uncertainty.

Survey summary and data products

The cruise dashboard links the ship track, station classifications, drone trajectories, mosaics, and mapped field measurements. The operational map contained 18 mapped activities through 28 August.

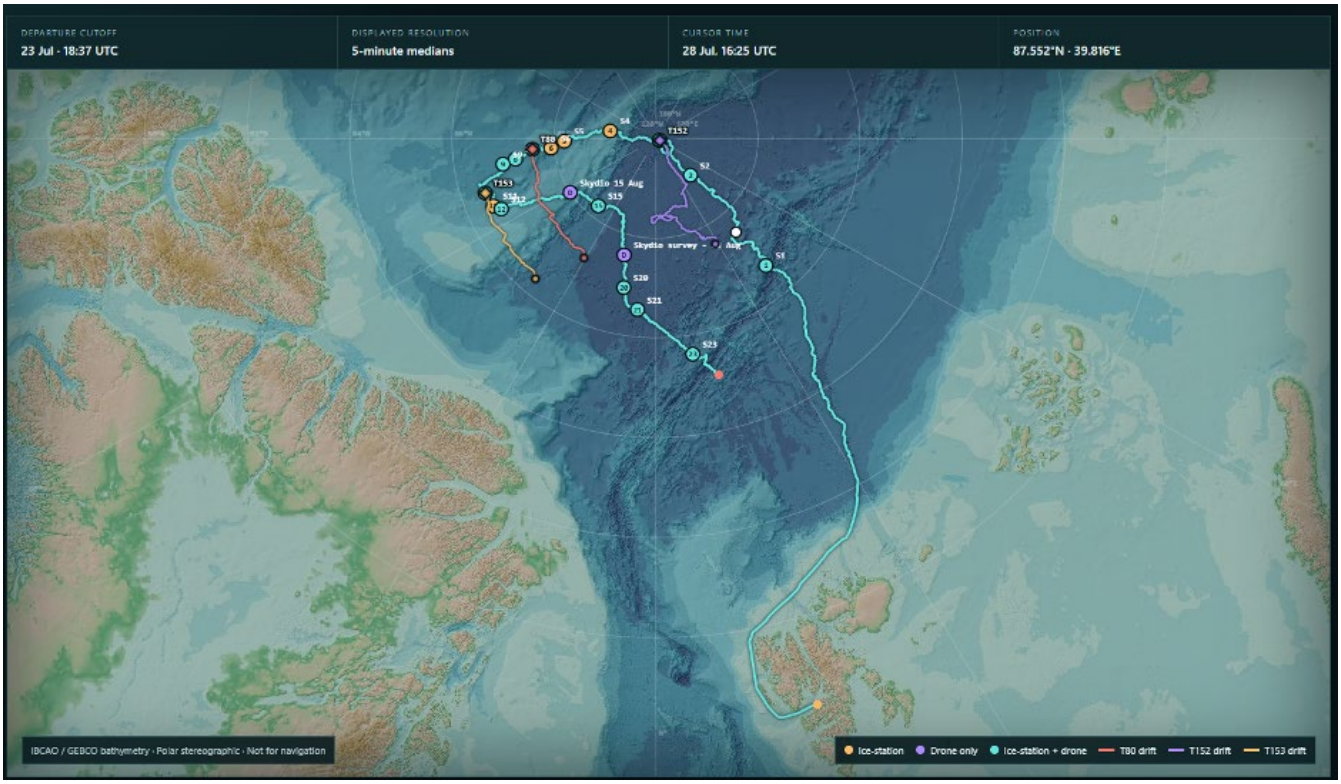


Figure 109. EBT2026 cruise overview and mapped operations through 1 September 2026, see Table 77 for details. In addition to the cruise trach, the map shows drifting track of sea ice buoys T80, T152, T153.

Sea-ice station mosaic portfolio

Figures 110–114 show the completed station and drone-survey mosaics available up to 31 August. Each map retains the common local metric grid and the applicable flight tracks or measurement waypoints.

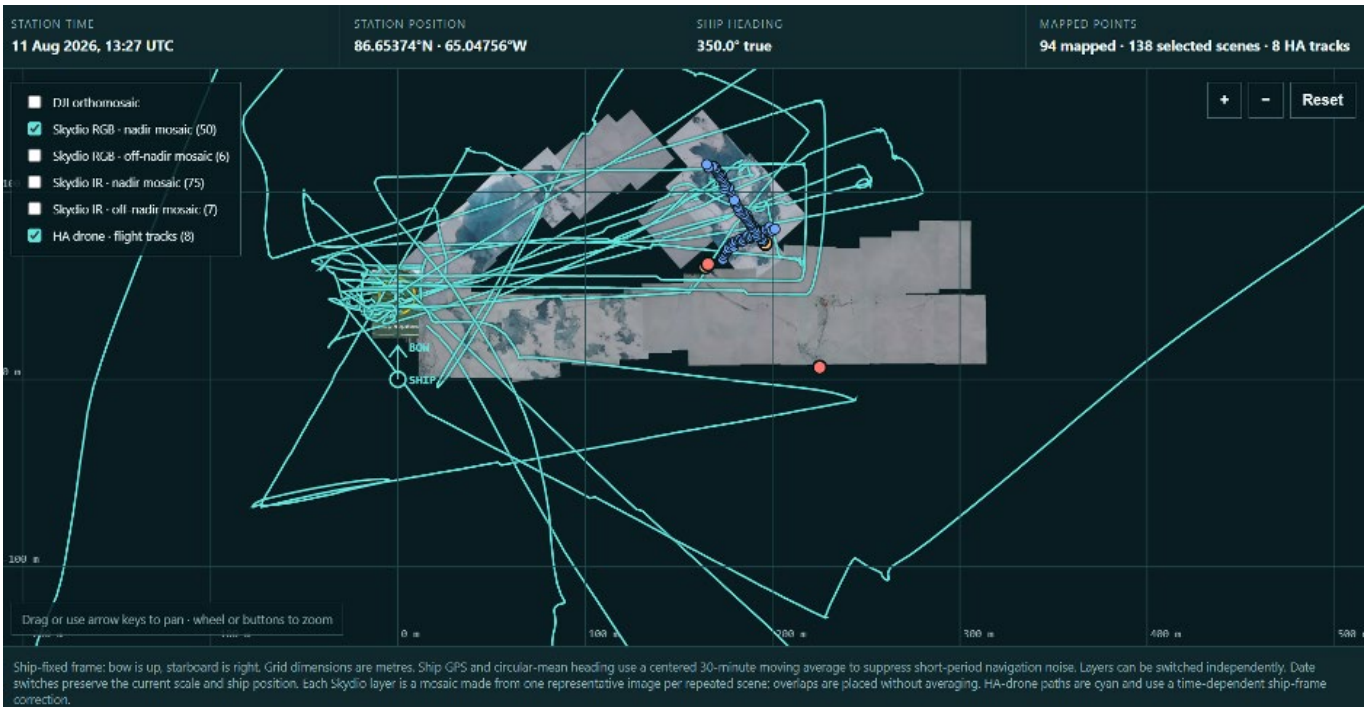


Figure 110. Station 12, Skydio visible/infrared survey, 11 August 2026. This mosaic shows an example of overlaid Harris Aerial flight track. Melt pond depth in-situ survey points are shown with blue circles, other in-situ assets shown with orange circles.

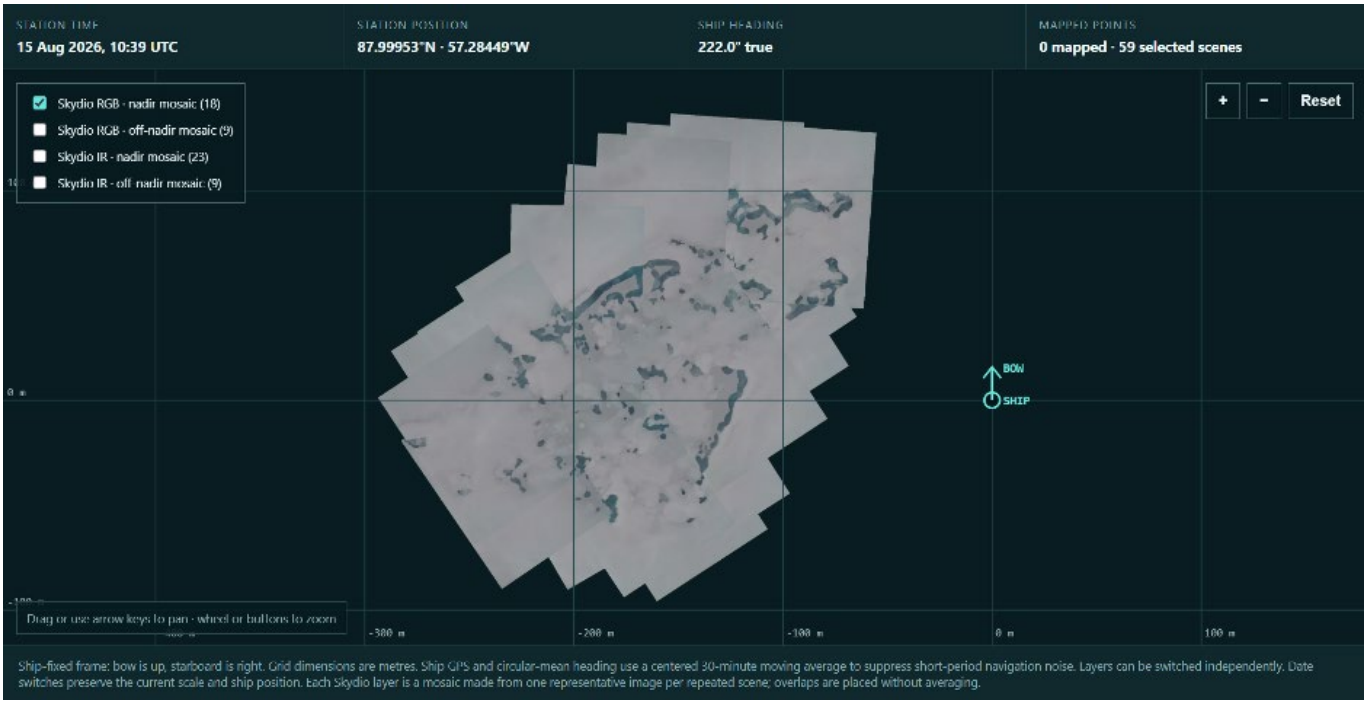


Figure 111. Drone-only survey; Skydio visible/infrared, 15 August 2026.

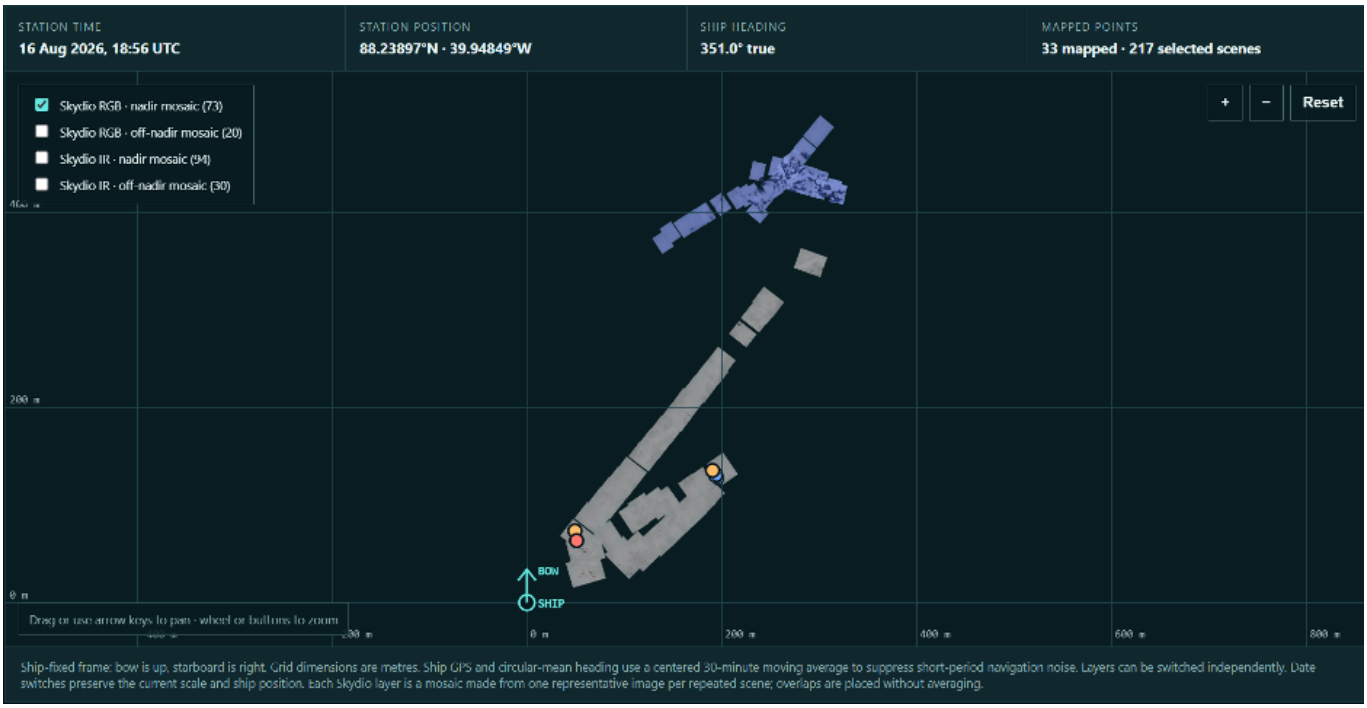


Figure 112. Station 15, Skydio visible/infrared survey, 16 August 2026. Melt pond depth in-situ survey points are shown with blue circles, other in-situ assets shown with orange circles.

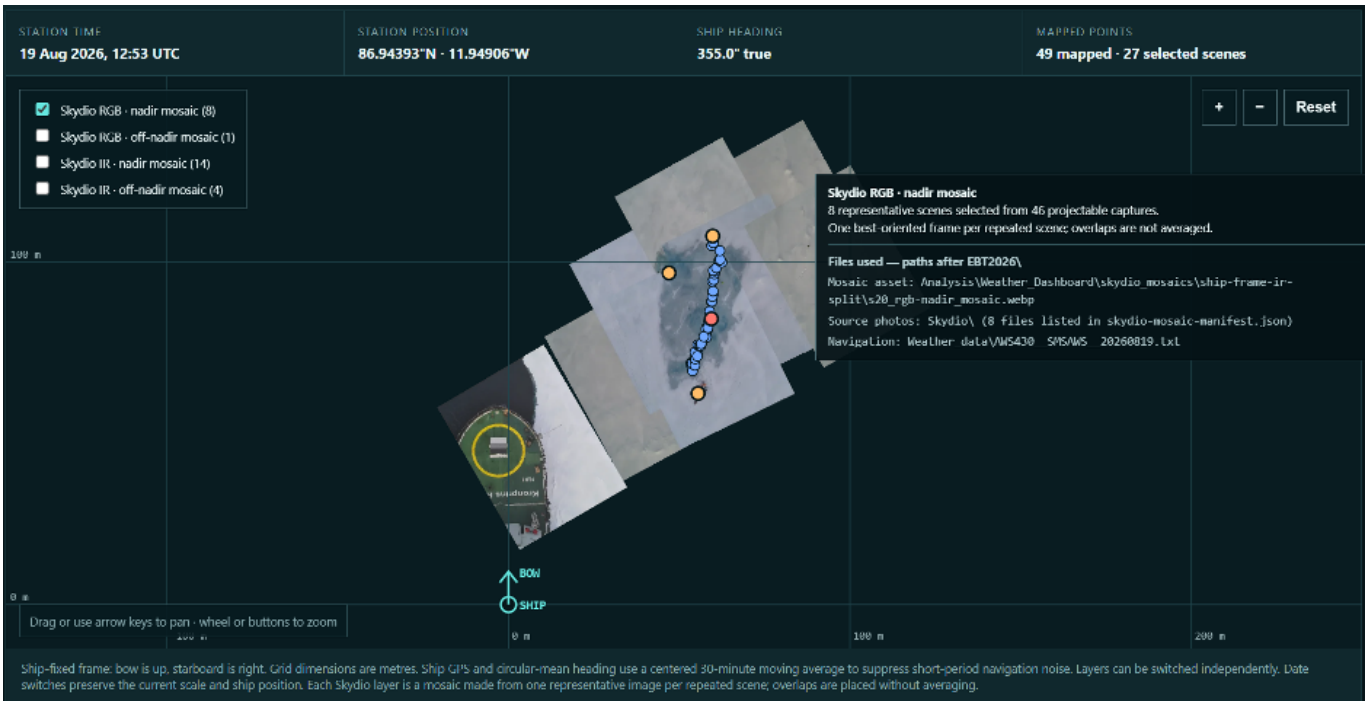


Figure 113. Station 20, Skydio visible/infrared survey, 19 August 2026. Melt pond depth in-situ survey points are shown with blue circles, other in-situ assets shown with orange circles.



Figure 114. Station 23, Skydio visible/infrared survey, 28 August 2026. Melt pond depth in-situ survey points are shown with blue circles, other in-situ assets shown with red circles.

Melt pond light polarimetry

Contact: Ahmed El-Habashi (US-ONR)
Collected by: Ahmed El-Habashi and Ivan B. Savelyev

Spatial Characterization via Airborne Multiband Imaging Polarimeter: Drone measurements were supported by Multiband Imaging Polarimeter to characterize the spatial variability of melt pond polarization features across a broader footprint, we deployed a drone equipped with a multiband imaging polarimeter during the ice stations. High-latitude field observations are frequently compromised by low sun angles, varying cloud cover, and surface sun glint, which mask the underlying water-leaving signal. By mapping the spatial distribution of the linear polarization state across the entire pond surface at multiple wavelengths, we can exploit the unique polarization properties of crust-reflected, water-reflected and ice-reflected light. This allows us to accurately decouple superficial sun glint, and diffuse sky reflections from the true subsurface upwelling radiance. Utilizing these airborne multiband polarization arrays represents a novel measurement framework specifically designed to isolate environmental noise, thereby enhancing our ability to evaluate spatial smoothing and drastically improving the signal-to-noise ratio of aerial inputs used in our bathymetric retrieval models.



Figure 115. Multiband Imaging Polarimeter with EO HySpex Mjolnir V-1240 hyperspectral system on Harris Aerial Hx8 drone (right).

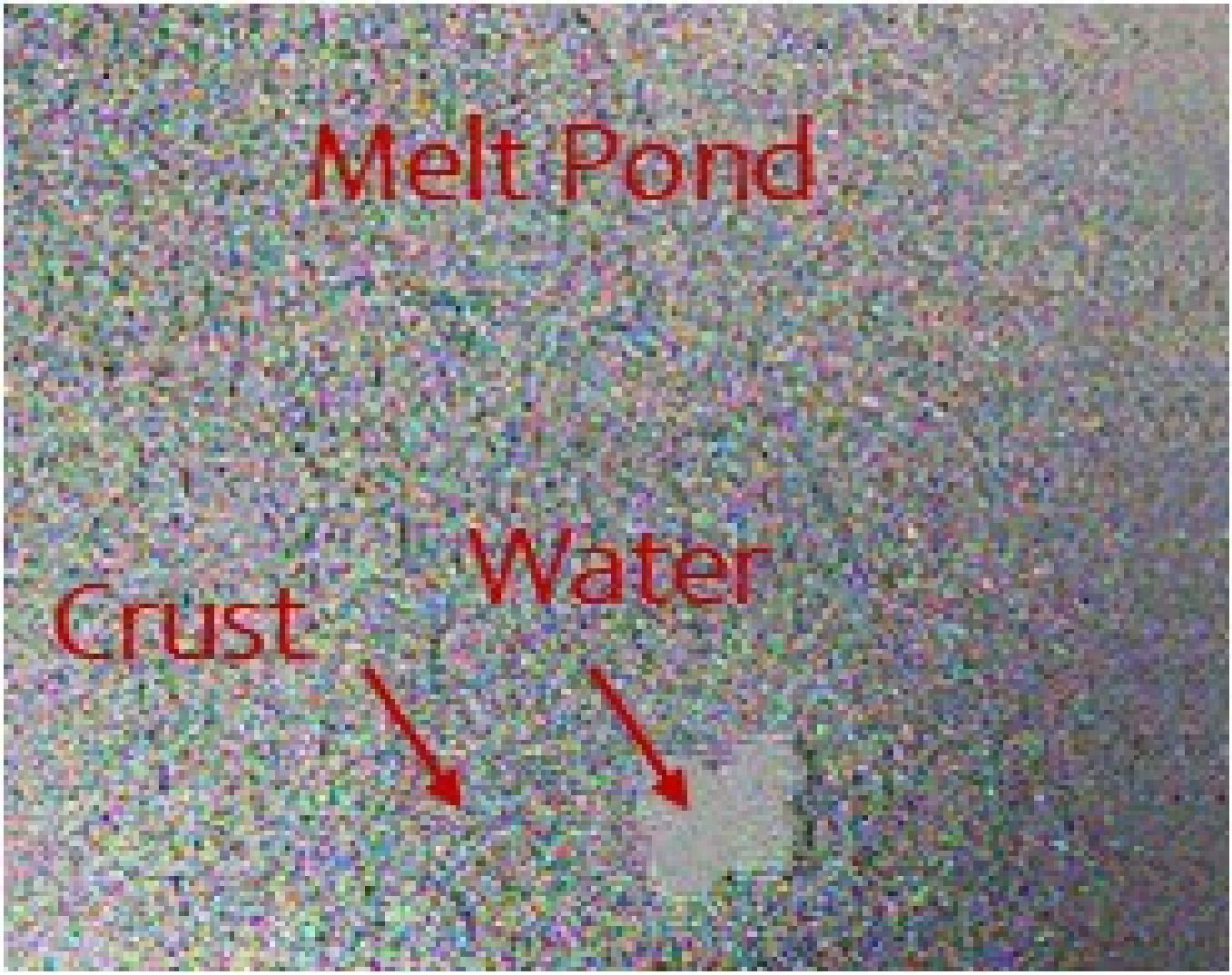


Figure 116. Polarization directionality showing signature differences between melt pond water and crust.



Figure 117. Degree of Polarization (left) distinguishes a melt pond crust texture from surrounding snow. Lighter pixels (left) represent higher linear polarization values. RGB imagery on the right.

Summary of melt pond data collections

The combined record provides a multiscale description of late-summer central Arctic sea ice. Drone mosaics document the spatial arrangement of ponds and ice types; hyperspectral and polarimetric measurements constrain their radiometric behaviour; and waypoint-linked field observations provide the physical and optical context needed to interpret the imagery. The resulting dataset is intended to support melt-pond classification, surface-albedo retrievals, and scaling of local measurements to airborne and satellite footprints.

Table 77. Summary of melt pond data collections from sea ice stations

Ice Station #	Year	Month	Day	Latitude (N)	Longitude (E)	Collections
1	2026	07	27	-	-	Harris Aerial flight; Polarimetry (Pol); Skydio RGB/IR
2	2026	07	29	89.0013	42.5238	Harris Aerial flight; Pol-RGB; Skydio RGB/IR
3	2026	07	30	89.9267	63.9619	Harris Aerial flight
7, 8	2026	08	03	87.5688, 87.2133	-84.9916, -81.4835	Harris Aerial flight; Pol-RGB
9	2026	08	04	-	-	Harris Aerial flight; Pol-RGB; Skydio RGB/IR
10	2026	08	07	86.4798	-72.1566	Harris Aerial flight; Skydio RGB/IR
12	2026	08	11	86.6529	-65.0972	Harris Aerial flight; Pol-RGB, Skydio/DJI mosaic
-	2026	08	15	-	-	Harris Aerial flight; Pol-RGB, Skydio RGB/IR mosaic
15	2026	08	16	88.2372	-40.256	Harris Aerial flight, Skydio RGB/IR mosaic;
-	2026	08	18	-	-	Harris Aerial flight, Skydio RGB/IR mosaic;
20	2026	08	19	86.9437	-11.9838	Harris Aerial flight; Pol-RGB, Skydio mosaic;
21	2026	08	22	86.5504	-5.8343	Harris Aerial flight; Pol-RGB; Skydio RGB/IR mosaic;
	2026	08	23			
23	2026	08	28	85.614	9.4338	Harris Aerial flight; Pol-RGB; Skydio RGB/IR mosaic;
24	2026	09	01	83.9315	21.466	Harris Aerial flight; Pol-RGB; Skydio RGB/IR mosaic
	2026	09	02			

Radarsat II Synthetic Aperture Radar Scenes

Contact person: Anca Cristea (anca.cristea@npolar.no)
Responsible persons on board: Paul A. Dodd

A comprehensive set of 60 Radarsat II ScanSAR images was ordered to coincide with the times and positions of planned activities, aid navigation, and put in-situ ice and snow measurements into a broader context. Images were processed at NPI in Tromsø and sent to the RV *Kronprins Haakon* via email within a few hours of acquisition so that they could also be used for navigation.

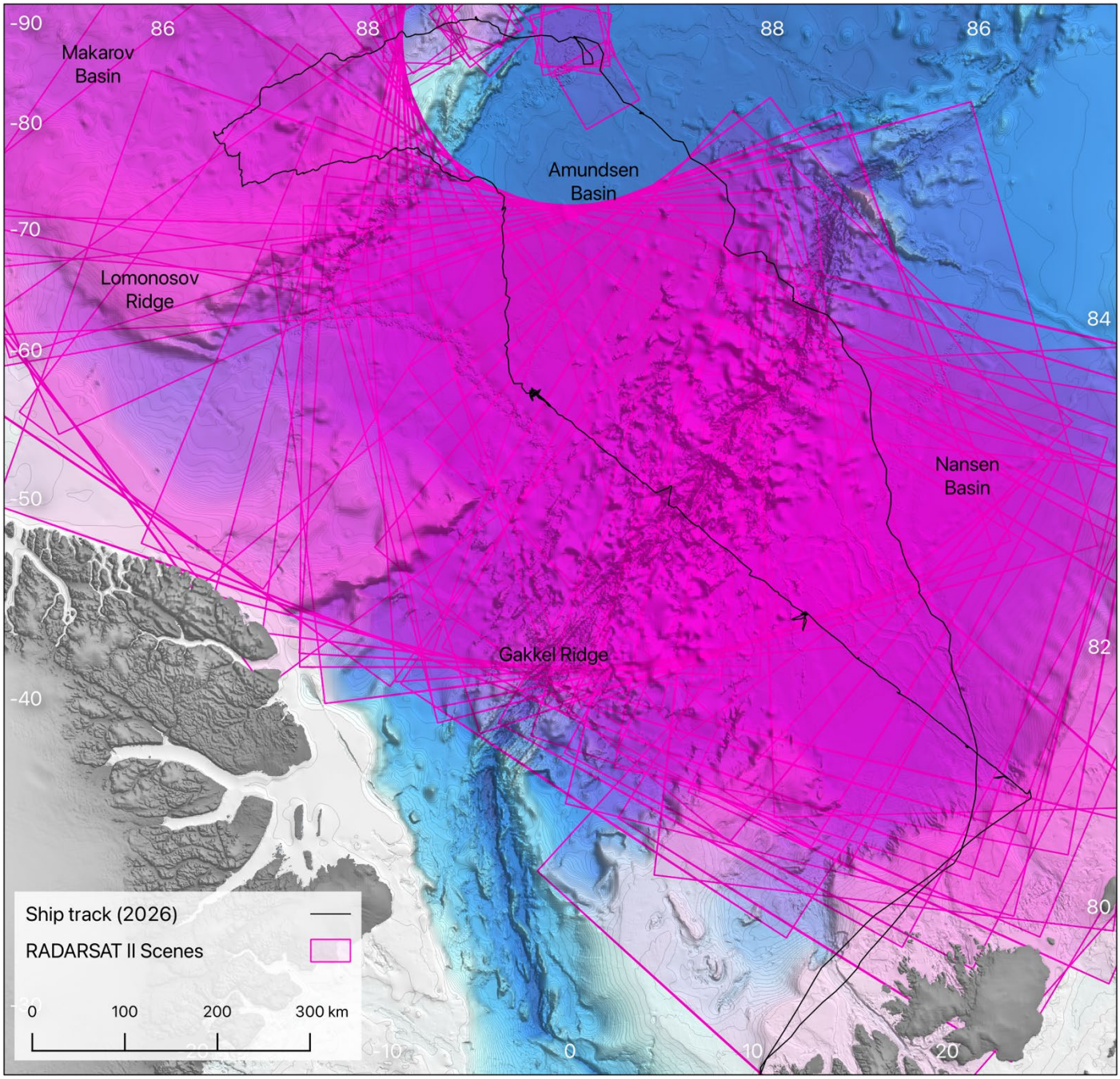


Figure 118. Overview map showing coverage of Radarsat II scenes ordered to provide coverage over the planned cruise track. ScanSAR wide scenes are only available up to approximately 88.3 N. ScanSAR standard and high-latitude mode scenes were ordered to provide coverage at higher latitudes (Narrower swaths).

Appendix 1: SIMBA buoy deployment reports

Deployment metadata sheets for the SIMBA thermistor buoys were downloaded from https://data.meereisportal.de/. For the latest updates and more information, please visit:

Buoy 2026T152, Buoy 2026T153 (Owner: Norwegian Polar Institute)

Buoy 2026T154, Buoy 2026T80 (Owner: Finnish Meteorological Institute)

Buoy Deployment Report

seaiceportal.de

Buoy information

Buoy name: 2026T152
IMEI: 300534068095690
Buoy type: Thermistor Buoy
Buoy owner: Norwegian Polar Institute

Deployment information

Date and Time (UTC): 30.07.2026 08:00
Position (Lat/Lon): 89.91667/65.48333
Region: Arctic Ocean (North Pole)
Contact:
Mats Granskog (NPI)
Polona Itkin (NPI)
Expedition name: Kronprins Haakon EBT 2026
Means of deployment: Ship - gangway

Snow and ice conditions

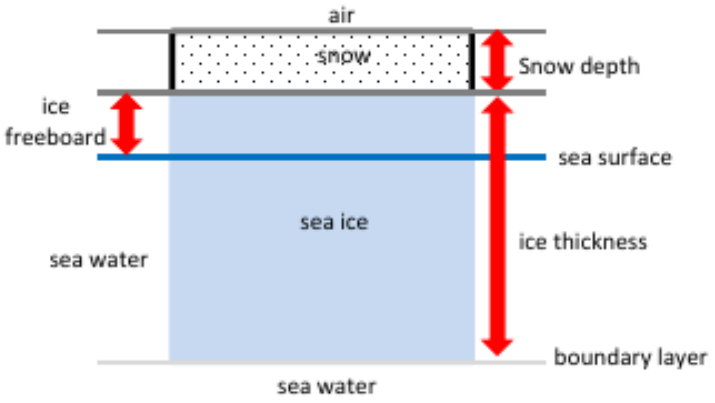
Snow depth: 0.03 m
Ice thickness: 1.33 m
Ice freeboard: 0.11 m
Ice types:
Unknown

Buoy-specific parameters

Sensor ice water (Sensor ID): 28
Sensor air snow (Sensor ID): 20
Chain length: 3.8 m
Sensor spacing: 0.02 m



Photo credits: Mats Granskog



Additional information *(comments, weather, topography, ice floe size, etc.)*

SIMBA has dual thermistor strings and a weather station (ClimaVUE50), pyranometer (Apogee CS-320) (incident radiation) and snow depth (SnowVU10) pinger as ancillary sensors. Snow pinger distance from surface 0.72 m at deployment (snow depth at site 0.05-0.07 m)..
SIMBA provided by the Arctic Ocean 2050 programme. Deployed from RV Kronprins Haakon during the Eurasian Basin Transect 2026 cruise. Co-deployed with an Open Met Buoy.
Data Chain 2: snow depth=0.03m, ice thickness=1.23m, ice freeboard=0.13m. sensor air-snow 21, sensor ice-water 28

Buoy Deployment Report

seaiceportal.de

Buoy information

Buoy name: 2026T153
IMEI: 300534068090710
Buoy type: Thermistor Buoy
Buoy owner: Norwegian Polar Institute

Deployment information

Date and Time (UTC): 07.08.2026 11:26
Position (Lat/Lon): 86.47976/-71.90492
Region: Arctic Ocean
Contact:
Mats Granskog (NPI)
Polona Itkin (NPI)
Expedition name: Kronprins Haakon EBT 2026
Means of deployment: Ship - gangway

Snow and ice conditions

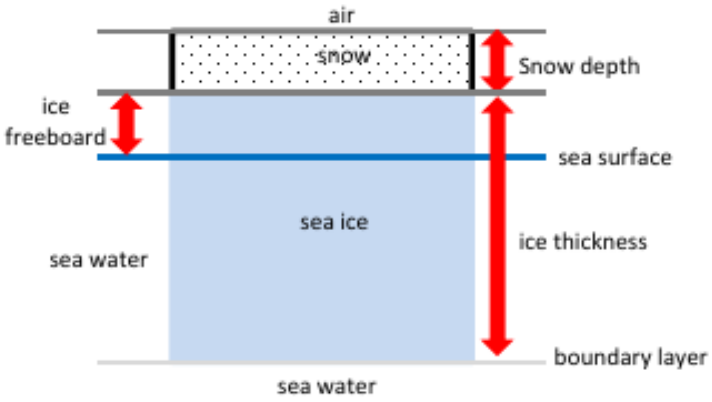
Snow depth: 0.02 m
Ice thickness: 3 m
Ice freeboard: 0.28 m
Ice types:
Unknown

Buoy-specific parameters

Chain length: 3.8 m
Sensor spacing: 0.02 m
Sensor sea surface (Sensor ID): 29
Sensor snow ice (Sensor ID): 17



Photo credits: Mats Granskog



Additional information *(comments, weather, topography, ice floe size, etc.)*

SIMBA has dual thermistor strings and a weather station (VUE), pyranometer (Apogee) and snow depth (Campbell) pinger as ancillary sensors. SIMBA provided by the Arctic Ocean 2050 programme. Deployed from RV Kronprins Haakon on the Eurasian Basin Transect 2026 (EBT26) expedition. Initial distance from snow pinger to surface 1.26 m (1-2 cm SSL). Co-deployed with SnoTatos and UiT BGC buoy.
Data Chain 2: snow depth=0.02m, ice thickness=2.09m, ice freeboard=0.14m. sensor snow-ice 22, sensor sea surface 30

Buoy Deployment Report

seaiceportal.de

Buoy information

Buoy name: 2026T154
IMEI: 300534061783900
Buoy type: Thermistor Buoy
Buoy owner: Finnish Meteorological Institute

Deployment information

Date and Time (UTC): 18.08.2026 17:19
Position (Lat/Lon): 87.58257/-14.99195
Region: Arctic Ocean
Contact:
Bin Cheng (FMI)
Mats Granskog (NPI)
Polona Itkin (NPI)
Expedition name: Kronprins Haakon EBT 2026
Means of deployment: Ship - gangway

Snow and ice conditions

Snow depth: 0.04 m
Ice thickness: 1.16 m
Ice freeboard: 0.09 m
Ice types:
SYI (Second Year Ice)

Buoy-specific parameters

Chain length: 5 m
Sensor spacing: 0.02 m

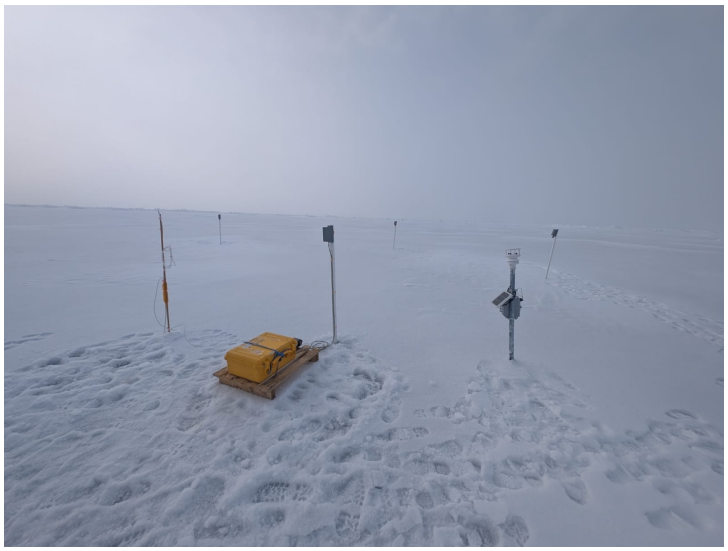
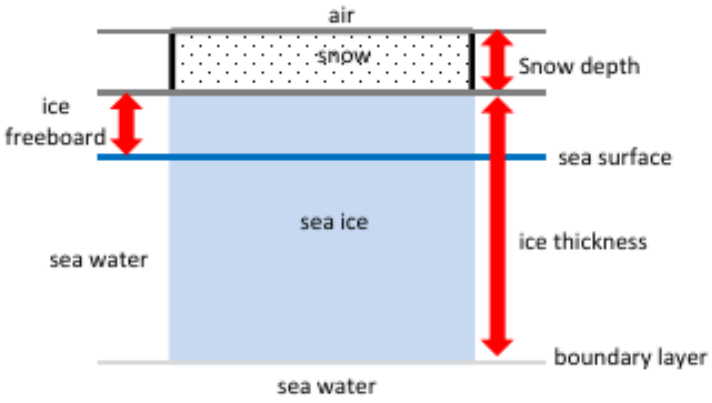


Photo credits: Polona Itkin



Additional information *(comments, weather, topography, ice floe size, etc.)*

SIMBA provided by FMI (Bin Cheng), deployment provided by the Arctic Ocean 2050 programme. Deployed from RV Kronprins Haakon on the Eurasian Basin Transect 2026 (EBT26) expedition. Co-deployed with an Open Met Buoy and SnoTatos (3 nodes).
Sensor numbers not recorded. Ice type SYI or desalinated FYI (level)

Buoy Deployment Report

seaiceportal.de

Buoy information

Buoy name: 2026T80
IMEI: 300234068703800
Buoy type: Thermistor Buoy
Buoy owner: Finnish Meteorological Institute

Deployment information

Date and Time (UTC): 03.08.2026 07:10
Position (Lat/Lon): 87.56725/-84.98822
Region: Arctic Ocean
Contact:
Bin Cheng (FMI)
Mats Granskog (NPI)
Polona Itkin (NPI)
Expedition name: Kronprins Haakon EBT 2026
Means of deployment: Ship - gangway

Snow and ice conditions

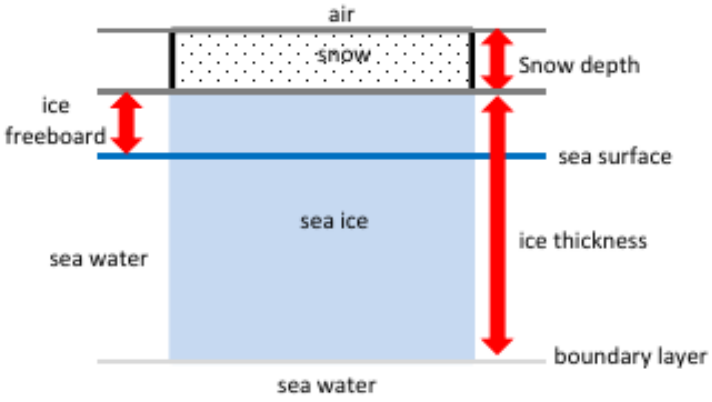
Snow depth: 0.04 m
Ice thickness: 1.92 m
Ice freeboard: 0.15 m
Ice types:
Unknown

Buoy-specific parameters

Chain length: 5 m
Sensor spacing: 0.02 m
Sensor sea surface (Sensor ID): 35
Sensor air snow (Sensor ID): 27



Photo credits: Mats Granskog



Additional information *(comments, weather, topography, ice floe size, etc.)*

SIMBA provided by the Finnish Meteorological Institute (Bin Cheng). Deployed from RV Kronprins Haakon during the Eurasian Basin Transect 2026 cruise.

Appendix 2: CTD & Water sampling logsheets

A paper log sheet was completed at each CTD station to record essential metadata and the running numbers of water samples taken from each Niskin bottle. Information from these log sheets has been incorporated into the published CTD data files. Scanned copies of the original log sheets are included here primarily as reference for the cruise participants to be used to verify the data entered.

For more information on the sampling programmes, please contact the contact persons listed in Section “Niskin Bottle Samples” (pp. 74–81).

CAST	0273	DATE	27-JUL-26
ECHO	1788	TIME	
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Lat	86 ° 39 - 12	Pmax	
Lon	40 ° 13 · 50	Alt	
E / W	E	Cam	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	BOT																									
2	BOT																									
3	BOT																									
4	BOT																									
5	BOT																									
6	BOT																									
7	BOT																									
8	BOT																									
9	BOT																									
10	BOT																									
11	BOT																									
12	BOT																									
13	BOT																									
14	BOT																									
15	BOT																									
16	BOT																									
17	BOT																									
18	BOT																									
19	BOT																									
20	BOT																									
21	BOT																									
22	BOT																									
23	BOT																									
24	BOT																									

KOP1

CAST	0274	DATE	29:07-26
ECHO	4300	TIME	07:56
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Lat	89 ° 08 082	Pmax	4440
Lon	42 ° 34 364	Alt	1.2
E / W	E	Cam	Sta0274-MH

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	Bot									1																
2	4000									2																
3	3500									3																
4	3000									4																
5	2500									5																
6	2000									6																
7	1500									7																
8	1000									8																
9	750									9																
10	500									10																
11	400									11																
12	300									/																
13	300									/																
14	300									/																
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	0275	DATE	28-0726
ECHO	4374	TIME	12:33
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Lat	88 °38.773	Pmax	
Lon	43 °52.581	Alt	
E / W	E	Cam	START ONLY.

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1000									12																
2	750									13																
3	500									14																
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	276	DATE	30/07/26
ECHO	4200	TIME	
MP/ØS	MP	~~15~~/24	24

NP deep Arctic Ocean

Copy – for work deck

Add sample numbers to this sheet!

Leak in #22 and #24

Lat	89 ° 56.399	Pmax	4330
Lon	65 ° 41.284	Alt	1.4
E / W	E	Cam	0276

definite leak 24 bots!

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

#1 salt ship 1547 | shift → Big

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	bot	?	—	*1✓	—	—	*1	*1	*1	*15	*1	—	*1-4	*1-4	—	—	—	—	—	—	—	—	*1			
2	bot																						*2✓			
3	bot																						*3✓			
4	3000	?		*2✓	—		*2✓	*2✓	*2✓	*16	*2✓	—	*5-8	*5-8									*4			
5	3000																						*5✓			
6	3000																						*6✓			
7	2000	?	—	*3✓	—		*3	*3	*3	*17	*3												—			
8	1500	—	—	*4✓	—	—	*4	*4	*4	*18	*4		*9-12	*9-12		*—							*7			
9	1500																						*8✓			
10	1500																						*9✓			
11	1000	—	—	*5✓	—		*5	*5	5	*19	*5	—			—	—							—			
12	750	?	—	*6✓	—		*6	*6	6	*20	*6	—			—	—							—			
13	400	—	—	*7✓	*1✓	*1✓	*7	*7	*7	*21	*7	—	*13-16	—									—			
14	250	—	—	*8✓	*2✓	*2✓	*8	*8	*8	[illegible]	*8	—	*17-20	*13-16	—	*—							*10			
15	250																						*11✓			
16	250																						*12✓			
17	200	—	—	*9✓	*3	*3	*9	*9	*9	*23	*9															
18	150	—	—	*10✓	*4	*4	*10	*10	*10	*24	*10															
19	100	—	—	*11✓	*5	*5	*11	*11	*11	*25	*11															
20	75	—	—	*12✓	*6	*6	*12	12	12	*26	*12															
21	50	—	—	*13✓	*7	*7	*13	*13	*13	*27	*13														*1	
22	25	—	—	*14✓	*8	*8	*14	*14	*14	*28	*14															
23	15	—	—	*15✓	*9	*9	*15	*15	*15	*29	*15		—	—											*2	
24	10	—	—	*16✓	*10	*10	*16	*16	*16	*30	*16															

no sample 22!

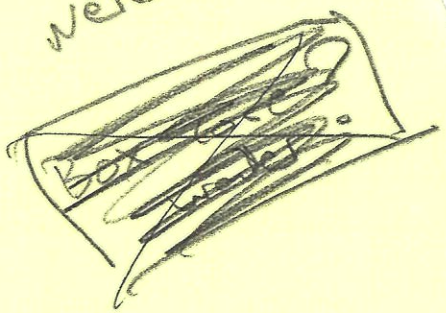
CAST	277	DATE	31 JUL
ECHO	4300	TIME	
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Lat	89° 44.12	Pmax	3999
Lon	49° 42.38	Alt	
E / W	?	Cam	CAMERA NOT REQUIRED

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	4000																									
2	2000																									
3	2000																									
4	2000																									
5	2000																									
6	300																									
7	300																									
8	300																									
9	300																									
10	300																									
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

What samples were taken??
Cast 277



CAST	278	DATE	310726
ECHO	4271	TIME	5:58
MP/OS	OS	12/24	12

NP shallow one (C) Kopi

Chl max @ 24 (C) m

Lat	89 ° 39,86	Pmax	—
Lon	41 ° 30,67	Alt	—
E / W	E	Cam	—

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

North Pole Copy Shallow #1 vegrd??. NOT

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100															* —							* 15			
2	100																						* 16			
3	100																						* 17			
4	Chl max	24	Chl max													* —				* 1	* 1					
5	Chl max	24																					* 18			
6	Chl max	24																					* 19			
7	Chl max	24																					* 20			
8	1															* —				*	*					
9	1																						* 21			
10	1																						* 22			
11	1																						* 23			
12																										
13																										
14																										
15																										
16												#3	lebbasic!													
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

Chl max sample lost

MUC PFA

take on next cast!

CAST	279	DATE	31/07/26
ECHO		TIME	
MP/OS	OS	12/24	12

NP Shallow 2 C COPY Chla max @ 24 m C

Lat	89 ° 39.53	Pmax	—
Lon	40 ° 39.22	Alt	—
E/W	E	Cam	—

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Shallow #2 Copy North Pole

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100	—											25-28	17-20		—	8	12								
2	75	—											29-32	—		—	7	13								
3	50	—											33-36	21-24	2	—	6	13								
4	25	—											37-40	25-28		—	5	11								
5	chl max 24			16	11	11	17	17	17	31	17		41-44	29-32												
6	chl max 24														3		4	8+9								
7	chl max 24											1-2							3							
8	10												45-48	33-36	4		3	6+7								
9	1	—		17	12	12	18	18	18	32	18		49-52	37-41												
10	1														5		2	4+5								
11	1																		2							
12	1																			2	2					
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	280	DATE	~~31/08/26~~
ECHO	NOT RECOVERED	TIME	0100 (ca.)
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Box core water

Lat	°	Pmax	
Lon	°	Alt	
E / W		Cam	Stn 280 · MEV

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	Bot																									
2	Bot																									
3	Bot																									
4	Bot																									
5	Bot																									
6	Bot																									
7	Bot																									
8	Bot																									
9	Bot																									
10	Bot																									
11	Bot																									
12	Bot																									
13	Bot																									
14	Bot																									
15	Bot																									
16	Bot																									
17	Bot																									
18	Bot																									
19	Bot																									
20	Bot																									
21	Bot																									
22	Bot																									
23	Bot																									
24	Bot																									

CAST	281	DATE	04/08/26
ECHO	2766	TIME	11:58
MP/~~08~~	MP	~~24~~	24

chl max ~ 25-30 m KOP1

Nrskin 24 bottles

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Transit Deep A cast ~2700 m depth

Lat	86 ° 56.709	Pmax	2822
Lon	80 ° 2.718	Alt	10.1
E/W	W	Cam	Sta0281

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	btm			18	—		19	19	19	33	19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
2	b				—								53-56	41-44									24			
3	b				—																		25			
4	b				—																		26			
5	2000			19	—		20	20	20	34	20															
6	1500			20	—		21	21	21	35	21					—										
7	1500				—								57-60	45-48									27			
8	1500				—																		28			
9	1500				—																		29			
10	1000			21	—		22	22	22	36	22															
11	950			22	—		23	23	23	37	23															
12	900			23	13	13	24	24	24	38	24		61-64													
13	850			24	14	14	25	25	25	39	25					—										
14	250				—								45-48	49-52									30			
15	250				—																		31			
16	250				—																		32			
17	200			25	15	15	26	26	26	40	26															
18	150			26	16	16	27	27	27	41	27															
19	100			27	17	17	28	28	28	42	28															
20	75			28	18	18	29	29	29	43	29															
21	50			29	19	19	30	30	30	44	30														3	
22	25			30	20	20	31	31	31	45	31															
23	15			31	21	21	32	32	32	46	32														4	
24	10			~~32~~	22	22	33	33	33	47	33			LEAK												

KOP1

CAST	282	DATE	4/8/26
ECHO	2721	TIME	16 05
MP/OS	05	12/24	12

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Shallow 1 transit station

Lat	86 ° 56.408	Pmax	—
Lon	79 ° 45.441	Alt	—
E / W	W	Cam	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100															*							*33			
2	100																						*34			
3	100																						*35			
4	25 max																						*36			
5	25 max																						*37			
6	25 max																						*38			
7	25 max															*				*3	*3					
8	1															*				*4	*4					
9	1																						*39			
10	1																						*40			
11	1																						*48			
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

KOP1

CAST	283	DATE	040826
ECHO	2750	TIME	16:49
MP/OS	OS	12/24	12

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

A Shallow 2 - transit station

Lat	86 °56.563	max	—
Lon	79 °41.394	Alt	—
E/W	W	Cam	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												69-72	53-56	6		9	19-20								
2	75												73-76				10	21-22								
3	50												77-80	57-60	7		11	23-24								
4	25												81-84	61-64												
5	25	Chl a max													8		12	25-26								
6	25											3-4							4-5							
7	23																									
8	10												85-88	65-68	9		13	27-28								
9	1												89-92	69-72	10		14	29-30								
10	1																		6-7							
11	1	—		28	23	23	34	34	34	48	34															
12	1			32																4	4					
13																										
14				chl max @ 25 m																						
15																										
16				25 m sampling not repeated																						
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	284	DATE	4/8/26
ECHO	2600	TIME	20 40
MP/OS	MP	12 / 24	24

(Box Core CTD (

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Lat	86°55'5	Pmax	2710
Lon	78°42'8	Alt	10
E / W	W	Cam	30 MIN CAMERA

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	BOT																									
2	BOT																									
3	BOT																									
4	BOT																									
5	BOT																									
6	BOT																									
7	BOT																									
8	BOT																									
9	BOT																									
10	BOT																									
11	BOT																									
12	BOT																									
13	BOT																									
14	BOT.																									
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

12+ flaskor på 10 m ovan bunn.

30 mins Camera på 1-1.5m ovan bunn.

CAST	285	DATE	060826
ECHO	2163	TIME	14:00
MP/OS	MP	1/24	24

Kopi

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

61A station deep

Lat	86 °25.29	Pmax	298
Lon	75 °8.706	Alt	10
E / W	W	Cam	Sta0285

I129

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	btm			33			35	35	35	49	35															
2	b												73-96	73-76									42			
3	b																						43			
4	b																						44			
5	2000		1.	34			36	36	36	50	36															
6	1500			35			37	37	37	51	37															
7	1500												97-103	77-80									45			
8	1500																						46			
9	1500																						47			
~~10~~	1000		~~12~~	36			38	38	38	52	38			NOT CLOSED!												
11	750		~~22~~	37			39	39	39	53	39															
12	400			38	24	24	40	40	40	54	40		101-104													1
13	250		3	39	25	25	41	41	41	55	41															
14	250												105-108	81-84									48			
15	250																						49			
16	250																						50			
17	200			40	26	26	42	42	42	56	42															2
18	150		4	41	27	27	43	43	43	57	43															3
19	100		5	42	28	28	44	44	44	58	44															4
20	75			43	29	29	45	45	45	59	45															
21	50			44	30	30	46	46	46	60	46														5	5
22	25			45	31	31	47	47	47	61	47		? leak													6
23	15			46	32	32	48	48	48	62	48														6	
24	10		6	47	33	38	49	49	49	63	49															7

CAST	266	DATE	060826
ECHO	2164	TIME	16'54
MP/OS	OS	12/24	12

(C Kopi (C

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

6/A shallow 1

Lat	86 °26.23	Pmax	—
Lon	74 °54.73	Alt	—
E/W	W	Cam	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100															—							~~48~~	51		
2	100																						~~49~~	52		
3	100																						~~50~~	53		
4	~~dh5~~																						51	54		
5	~~dh5~~	chl max 15m																					~~52~~	55		
6	~~dh5~~																						~~53~~	56		
7	~~dh5~~															—				~~5~~	~~5~~					
8	1															—				~~6~~	~~6~~					
9	1																						~~54~~	57		
10	1																						~~55~~	58		
11	1																						~~56~~	59		
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	287	DATE	060826
ECHO	2174	TIME	17 30
MP/OS	05	12/24	12

KOPI

Leak Niskin 3
Leak Niskin 12

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

61 A shallow 2

Lat	85 ° 25,27	Pmax	
Lon	74° 52.09	Alt	
E / W	W	Cam	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												109-112	85 88	11		15	32	37							
2	75												113-116				16	34	35							
~~3~~	~~50~~																				DID NOT CLOSE					
4	15			48	34	34	50	50	50	65	50		125-128	97-100												
5	15		chl max												14		19	40	41							
6	15											6-7							8-9							
7	15																									
8	10												129-132	101-104	15		20	42	43							
9	1												133-136	105-108	16		21	44	45							
10	1																		10-11							
11	1			49	35	35	51	51	51	64	51															
~~12~~	1			49	35	35	51	51	51	65	51		LEAK													
13																										
14																										
15																										
16																										
17				No 25m!																						
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	288	DATE	060526
ECHO	2176	TIME	18:13
MP/OS	05	12/24	12

KOP1

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

61A extra shallow 2

Lat	86 ° 25.27	Pmax	
Lon	74 ° 49.24	Alt	
~~EW~~	W	Cam	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	50												*117-120	*89-92	*12		*17	*36-37								
2	50																									
3	25												*121-124	*93-96												
4	25																									
5	25												*—	*—	*13		*18	*38-39								
6	25																									
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	289	DATE	070826
ECHO	2038	TIME	06:33
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

60C 750m

Lat	86 °29.423	Pmax	—
Lon	72 °52.876	Alt	—
E / W	W	Cam	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6									NO	SAMPLING																
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	290	DATE	070826
ECHO	2057	TIME	11:10
MP/OS	MP	12 / 24	24

(to bottom + camera (

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Extra cast for water, + camera survey

Lat	86 ° 28.776	Pmax	2070 m
Lon	71 ° 59.543	Alt	10.8 m
~~E/W~~	W	Cam	Sta 290.

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	btm	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~				
2	1500																							x 5		
3	1500																							* 6		
4	1500																							x 7		
5	1500																							x 8		
6	1500																							x		
7	1500																							x		
8	20	}																						x 1		
9	20																							x 2		
10	20	} chl max																						x 3		
11	20																							x 4		
12	20																							x		
13	20	}																				*1-64				
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

KOP1

~2000m

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

59B to bottom for camera!

CAST	291	DATE	080826
ECHO	1884	TIME	06:15
MP/~~OS~~	MP	~~1~~/24	24

Lat	86 °26.59	Pmax	1911
Lon	70 °47.44	Alt	2
E / W	W	Cam	

#1
1906
9.7

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	~~XMS~~	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	b			×36			×52	×52	×52	×66																
2	1300		×2	×50			×53	×53	53	×67			*137-140													
3	1000			×51			×54	×54	×54	×68																
4	750		×7	×52			×55	×55	×55	×69																
5	400		×8	×53	×36	×36	×56	×56	×56	×70			*141-144													
6	250			×54	×37	×37	×57	×57	×57	×71																
7	250												*145-148										*63			*62
8	200		×9	×55	×38	×38	×58	×58	×58	×72																
9	150			×56	×39	×39	×59	×59	×59	×73																
~~10~~	~~100~~		~~×10~~	~~×57~~	~~×40~~	~~×40~~	~~×60~~	~~×60~~	~~×60~~	~~×74~~				NOT CLOSED!												
11	100		*10	~~57~~	~~40~~	~~40~~	~~60~~	~~60~~	~~60~~	74			*149-152	shifted to 99									*64			
12	75			×58	×41	×41	×61	×61	×61	×75	1															
13	75												*153-156													
14	50		×11	×59	×42	×42	×62	×62	×62	×76	1															
15	50												*157-160							8	×8	*				
16	25			×60	×43	×43	×63	×63	×	×77	1															
17	25												*161-164										*65			
18	15			×61	×44	×44	×64	× ✓	× ✓	×78																
19	10			×62	×45	×45	×65	× ✓	× ✓	×79																
20	10												*165-168							9	×9	*				
21																										
22																										
23																										
24																										

CAST	292	DATE	090826
ECHO	2054	TIME	10:13
MP/~~OS~~	MP	~~12~~/24	24

58C 750 m

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Moonpool CTD

Lat	86 ° 31.88	Pmax	—
Lon	67 ° 19.310	Alt	—
~~E~~/W	W	Cam	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

KUN CTD til 750 m!

Location off the transect due to heavy ice.

CAST	293
ECHO	2104
MP/OS	MP

DATE	09-Aug-26
TIME	17:51
12 / 24	24

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Lat	86 °32.1010	Pmax	2120
Lon	06 °45.575	Alt	10
E / W	W	Cam	Sta 293. MKV

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

Copy

CAST	294	DATE	11/08/26
ECHO	2088	TIME	
MP/OS	OS	12/24	12

((chla max @ 21))

Lat	86 °31.298	Pmax	—
Lon	66 °21.4	Alt	—
E/W	W	Cam	—

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

57A shallow #1

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						*66			
2	100																						*67			
3	100																						*68			
4	21	}																					*69			
5	21	} chl max			@	21	m																*70			
6	21	}																					*71			
7	21	}																		*10	*10					
8	1																			*11	*11					
9	1																						*72			
10	1																						*73			
11	1																						*74			
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	295	DATE	11/08/26
ECHO	2042	TIME	11:32
MP/OS	05	12/24	12

KOP1

Chl max @ 21m

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

57A shallow #2

Lat	86 °39.113	Pmax	—
Lon	65 °07.294	Alt	—
~~E/W~~	W	Cam	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												x 185-188	x 121-124	x17		x26	x 53-54								
2	75												x 189-192				x27	x 55-56								
3	50												x 193-196	x 125-128	x18		x28	x 57-58								
4	21												x 197-200	x 129-132	x19		x29	x 59-60								
5	21	Chl max										x 7-8							x 15-16							
6	21			x 78	x 56	x 56	x 81	x 81	x 81	x 95	x 67															
7	10												x 201 x 204	x 133-136	x20		x30	x 61-62								
8	10																									
9	10																									
10	1												x 205-208	x 137-140	x21		x31	x 63-64	x 17-18							
11	1			x 79	x 57	x 57	x 82	x 82	x 82	x 96	x 68															
12	1																		17 18							
13																				some water taken from this bottle nro						
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	296	DATE	11/8/26
ECHO	2018	TIME	16:00
MP/OS	MP	12/24	24

Cast

Lat	86 °39.24	Pmax	2043
Lon	65 °4.088	Alt	10.6
E/W	W	Cam	?

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

57A deep cast

I129

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	~~MBA~~
1	bum												×169 −172	× 109-112									×75			
2	b																						×76			
3	b																						×77			
4	bum		×12	×63			×66	×66	×66	×80	×52															
5	2000			×64			×67	×67	×67	×81	×53															
6	1500			×65			×68	×68	×68	×82	×54															
7	1300												×173 −176	× 113 − 116									× 78			
8	1500																						×79			
9	1500																						×80			
10	1000		×13	×66			×69	×69	×69	×83	×55															
11	750			×69			×70	×70	×70	×84	×56															
12	400			×68	×46	×46	×71	×71	×71	×85	×57		×177 −180													
13	250		~~×11~~	×69	×47	×47	×72	×72	×72	×86	×58															×8
14	250		14										~~×181 −184~~	× 117 − 120									×81			
15	250																						×82			
16	250												×181 −184										×83			
17	200			×70	×48	×48	×75	×73	×73	×87	×59															×9
18	150		×15	×71	×49	×49	×74	×74	×74	×88	×60															×10
19	100			×72	×50	×50	×75	×75	×75	×89	×61															×11
20	75		×16	×73	×51	×51	×76	×76	×76	×90	×62															
21	50		~~×16~~	×74	×52	×52	×77	×77	×77	×91	×63						leaking								×7	×12
22	25			×75	×53	×53	×78	×78	×78	×92	×64						leaking									×13
23	15			×76	×54	×54	×79	×79	×79	×93	×65														×8	
24	10			×77	×55	×55	×80	×80	×80	×94	×66															×14

CAST	297	DATE	12-AUG-26
ECHO	2139	TIME	08:48
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

near "real" 57A location

Lat	86 °45.778	Pmax	2185
Lon	64 °51.564	Alt	11
E / W	W	Cam	Stn0297.MKV

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	BOC	1,2,3								97																
2	1250	4,5,6								98																
3	450	7,8,9								99																
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	298	DATE	13 - AUG - 2026
ECHO	1240	TIME	13 :38
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

56C 750 m ~~no sampling~~ POSSIBLE SEEP.

Lat	87 ° 06 . 061	Pmax	1240
Lon	063 ° 06 . 073	Alt:	10.
E/W?	W	Cam:	VG.

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	BOT ✓																									
2	BOT ✓																									
3	BOT ✓																									
4	BOT ✓																									
5	BOT ✓																									
6	BOT ✓																									
7	BOT ✓																									
8	BOT ✓																									
9	BOT ✓																									
10	BOT ✓																									
11	BOT ✓																						✓			
12	BOT ✓																						✓			
13	BOT ✓																						✓			
14	BOT ✓												✓					✓								
15	BOT ✓																									
16	BOT ✓																									
17	BOT ✓																									
18	BOT ✓																									
19	BOT ✓																									
20	BOT ✓																									
21	BOT ✓																									
22	1000	10/11,12																								
23	750	13, 14, 15																								
24	500	16, 17, 18, 19																								

KOP1

CAST	299	DATE	14/8/26
ECHO	1161	TIME	8:41
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

55B assuming <1500 m depth

Lat	87° 32.040	Pmax	
Lon	60° 37.468	Alt:	-
E/W?	W	Cam:	249 (yes)

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	bott												*209 -212										*84			
2	bott	*18 20,21	*17	*80			*83	*83	*83	*100											DIC after salinity					
3	1000	*224 23,24		*81			*84	*84	*84	*101																
4	750		*18	*82			*85	*85	*85	*102																
5	400	*25 26,27	*19	*83	*58	*58	*86	*86	*86	*103																
6	400												*213 -216										*			
7	250												*217 -220										*85			*86
8	250			*84	*59	*59	*87	*87	*87	*104																
9	200		*20	*85	*60	*60	*88	*88	*88	*105																
10	150			*86	*61	*61	*89	*89	*89	*106																
11	100		*21	*87	*62	*62	*90	*90	*90	*107																
12	100												*221 -224										*87			
13	75												*225 -228													
14	75			*88	*63	*63	*91	*91	*91	*108																
15	50			*89	*64	*64	*92	*92	*92	*109															*9	
16	50												*229 -232							*12	*12					
17	25			*90	*65	*65	*93	*93	*93	*110																
18	25												*233 -236										*88			
19	15			*91	*66	*66	*94	*94	*94	*111															*10	
20	10		*22	*92	*67	*67	*95	*95	*95	*112																
21	10																			*13	*13					
22	10												*237 240										*			
23																										
24																										

CAST	300	DATE	14/6/26
ECHO	1278	TIME	17:32
MP/~~OS~~	MP	~~12/24~~	24

[Clear chl max @ 33m C
no.8

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Xrta C station on Lomonosov ridge, to bottom

Lat	87 °41.546	Pmax	1285
Lon	59 °32.522	Alt:	9.1
E/W?	W	Cam:	yes, 15min

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7								NO SAMPLING, 15min camera																		
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	301	DATE	15/08/26
ECHO	1494	TIME	01:00 UTC
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

CTD Lomonosov Ridge to 750m

Lat	87 ° 50.186	Pmax	—
Lon	57 ° 16.176	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CTD no sampling - winch did not work so took some time

stopped for a while at ~20m, why?

CAST	302	DATE	15/8/26
ECHO	1648	TIME	06:04
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E1-A

Lat	87° 59.930	Pmax	
Lon	57° 32.221	Alt:	
E/W?	W	Cam:	yes

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	btm			x93			x96	x96	x96	113																
2	b												x241 -244	x141 -144									x89			
3	b																						x90			
4	b																						x91			
5	1500			x94			x97	x97	x97	114																
6	1500												x245 -248	x145 -148									x92			
7	1500																						x93			
8	1500																						x94			
9	1000		x23	x95			x98	x98	x98	115																
10	750			x96			x99	x99	x99	116																
11	400		x24	x97	x68	x68	x100	x100	x100	117			x249 -252													x15
12	250		x25	x98	x69	x69	x101	x101	x101	118																
13	250												x253 -256	x149 -152									x95			
14	250																						x96			
15	250																						x97			
16	200			x99	x70	x70	x102	x102	x102	119																x16
17	150		x26	x100	x71	x71	x103	x103	x103	x120																x17
18	100			x101	x72	x72	x104	x104	x104	x121																x18
19	75			x102	x73	x73	x105	x105	x105	x122																
20	50		x27	x103	x74	x74	x106	x106	x106	x123															x11	x19
21	25			x104	x75	x75	x107	x107	x107	x124																x20
22	15			x105	x76	x76	x108	x108	x108	x125															x12	
23	10			x106	x77	x77	x109	x109	x109	x126																x21
24																										

KOPI

CAST	Sta. 0303	DATE	15.08.26
ECHO	1668	TIME	09:07
MP/OS	05	12 / 24	12

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	68 ° 00.081	Pmax	—
Lon	57 ° 22.613	Alt:	—
E/W?	W	Cam:	—

E1-A ~~8/16~~ shallow #1

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						×95			
2	100																						×96			
3	100																						×97			
4	~~38~~																						×98			
5	~~38~~		chla max			38			m														×99			
6	~~38~~																						×100			
7	~~38~~																			×14 ×14						
8	1																			×15 ×15						
9	1																						×101			
10	1																						×102			
11	1																						×103			
12	1																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	304	DATE	15/8/26
ECHO	1670	TIME	09:43
MP/OS	OC	12/24	12

KOP1
chl max @ ~40m

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E1-A ~~[illegible]~~ shallow #2

Lat	88° 00.066	Pmax	—
Lon	57° 20.631	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												X 257 -260	X 153 -156	X 27		X 32	X 66-67								
2	75												X 261 -264				X 33	X 68-69								
3	50												X 265 -268	X 157 -160	X 28		X 34	X 70-71								
4	38		CFC max												X 29		X 35	X 72-73								
5	88			X 107								X 9-10	X 269 -272	X 161 -164					X 19-20							
6	38			~~X 107~~	X 78	X 78	X 110	X 110	X 110	X 127	X 83										leak					
7	25												X 273 -276	X 165 -168	X 30		X 36	X 74-75								
8	10																									
9	10												X 277 -280	X 169 -172	X 31		X 37	X 76-77								
10	1												X 281 -284	X 173 -176	X 32		X 38	X 78-79	X 21-22							
11	1			X 108	X 79	X 79	X 111	X 111	X 111	X 128	X 84															
12	1																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	305	DATE	15-Aug-2026
ECHO	2323	TIME	17 :33
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E2-C

Lat	88 ° 09.284	Pmax	
Lon	54 ° 23.99	Alt:	
E/W?	W	Cam:	Yes

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	750	31,32,33																								
2	500	28,29,30																								
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	306	DATE	16/8/26
ECHO	3103	TIME	00:54
MP/OS	MP	12/24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	88° 13.18	Pmax	—
Lon	49° 14.06	Alt:	—
E/W?	W	Cam:	—

E3 - B 1500 m

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500	bio	—	—	—	—	—	—	—	—			×285 −288										107			
2	1500		×28	×109	—	—	×112	×112	×112	×129																
3	1000			×110	—	—	×113	×113	×113	×130																
4	750		×29	×111	—	—	×114	×114	×114	×131																
5	400		×30	×112	×80	×80	×115	×115	×115	×132																
6	400	bio	—	—	—	—	—	—	—	—			×289 −292													
7	250	bio	—	—	—	—	—	—	—	—			×293 −296										108			*
8	250			×113	×81	×81	×116	×116	×116	×133																
9	200		×31	×114	×82	×82	×117	×117	×117	×134																
10	150			×115	×83	×83	×118	×118	×118	×135																
11	100		×32	×116	×84	×84	×119	×119	×119	×136							×39	×81								
12	100	bio	—	—	—	—	—	—	—	—			×297 −300										109			
13	75	bio	—	—	—	—	—	—	—	—			×301 −304													
14	75			×117	×85	×85	×120	×120	×120	×137							×40	×82								
15	50		×33	×118	×86	×86	×121	×121	×121	×138							×41	×83								
16	50	Håkon	—	—	—	—	—	—	—	—			×305 −308							×16	×16	—	—	—	—	—
17	25			×119	×87	×87	×122	×122	×122	×139							×42	×84	32-24							
18	25	bio	—	—	—	—	—	—	—	—		—	×309 −312										110			
19	25	Håkon	—	—	—	—	—	—	—	—			—							×17	×17					
20	15			×120	×88	×88	×123	×123	×123	×140																
21	10	Håkon	—	—	—	—	—	—	—	—		—								×18	×18					
22	10	bio	—	—	—	—	—	—	—	—			×313 −316													
23	6			×121	×89	×89	×124	×124	×124	×141																
24	10																×43	×85	32-24							

CAST	307	DATE	16/8/26
ECHO		TIME	:
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E4-C 750m

Lat	88° 12.43	Pmax	
Lon	44° 11.93	Alt:	
E/W?	W	Cam:	

CTD no sampling
(Sat no info on sheet!)

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	308	DATE	16/9/26
ECHO	2848	TIME	13 :05
MP/OS	05	12/24	12

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E5-A shallow #1

Lat	88 ° 14.000	Pmax	
Lon	40 ° 18.779	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						×113			
2	100																						×114			
3	100																						×115			
4	80																						×116			
5	30		chl max @ 30 m!																				×117			
6	30																						×118			
7	30																			*9	*14					
8	1																			×22	×20					
9	1																						×119			
10	1																						×120			
11	1																						×121			
12	1	spare			leak #12!																					
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	309	DATE	16/8/26
ECHO	2757	TIME	13 : 55
MP/OS	OS	12 / 24	12

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

ESA – shallow #2

Lat	88° 13.991	Pmax	—
Lon	40° 14.700	Alt:	—
~~EW?~~ W		Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												×317 -320	×~~177~~ -180	×33		×44	×87/88								
2	75												×321 -324				×45	×85/90								
3	50												×325 -328	×181 -184	×34		×46	×91/92								
4	30	}											×329 -332	×185 -188	×35		×47	×93/94								
5	30	}	Chl max @ 30m									×B-14							×27-28							
6	30	}																								
7	25												×333 -336	×~~189~~ -192	×36		48	×95/96								
8	10																									
9	10												×337 -340	×~~193~~ -196	×~~38~~		×49	×97/98								
10	1												×341 -344	×~~197~~ -200	×38		×50	×~~99/100~~	×29-30							
11	1			×~~122~~	×90	×~~100~~ 90	×~~77~~	×125	×125	×142	×85															
12	1																									
13																										
14				122																						
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

Chl A # corrected after cast!

Also corrected in Excel sheet.

CAST	310	DATE	16/8/26
ECHO	~3050	TIME	14:56
MP/OS	MP	12/24	24

new CDOM filter (came flow as old one)

3078

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E5 - A Deep

Lat	88 ° 14.231	Pmax	3147
Lon	40 ° 14.50	Alt:	10
~~EM~~?	W	Cam:	yes

1129

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	~~MBA~~
1	b			123			126	126	126	143	86															
2	b	bomb											345 348	201 204									122			
3	b																						123			
4	b																						124			
5	2000		34	124			127	127	127	144	87															
6	1500			125			128	128	128	145	86															
7	1500												349 352	205 208									125			
8	1500																						126			
9	1500																						127			
10	1000			126			129	129	129	146	89															
11	750			127			130	130	130	147	90															
12	400			128	91	91	131	131	131	148	91		353 356													22
13	250		35	129	92	92	132	132	132	149	92															
14	250												357 360	209 212									128			
15	250																						129			
16	250																						130			
17	200			130	93	93	133	133	133	150	93															23
18	150		36	131	94	94	134	134	134	151	94															24
19	100		37	132	95	95	135	135	135	152	95															25
20	75			133	96	96	136	136	136	153	96															
21	50			134	97	97	137	137	137	154	97														13	26
22	25			135	98	98	138	138	138	155	98															27
23	15			136	99	99	139	139	139	156	99														14	
24	10		38	137	100	100	140	140	140	157	100															28

CAST	312	DATE	170826
ECHO	4115	TIME	05:10
MP/OS	QMP	12/24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E7-B

1500 —

Lat	88 ° 23.785	Pmax	—
Lon	29 ° 25.882	Alt:	—
E/W?	W	Cam:	——

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500												*365 -368													
2	1500			*145	—		141	141	141	158	—															
3	1000		*39	*146	—		*142	*142	*142	*159																
4	750			*147	—		*143	*143	*143	*160																
5	400				101	101	*144	*144	*144	*161				leak												
6	400		*40	*148									*369 -372													
7	250												*373 -376													*133
8	250			*149	*102	*102	*145	*145	*145	*162																
9	200		*41	*150	*103	*103	*146	*146	*146	*163																
10	150			*151	*104	*104	*147	*147	*147	*164																
11	100		*42	*152	*105	*105	*148	*148	*148	*165																
12	100		—										*377 -380													
13	75												*381 -384													
14	75			*153	*106	*106	*149	*149	*149	*166																
15	50		*43	*154	*107	*107	*150	*150	*150	*167																
16	50												*385 -388	—	—	—	—	—	—	*21	*21					
17	25			*155	*108	*108	*151	*151	*151	*168																
18	25												*389 -392													
19	25																									
20	15			*156	*109	*109	*152	*152	*152	*169																
21	10			*157	*110	*110	*153	*153	*153	*170																
22	10												*393 -396	—	—	—	—	—	—	*22	*22					
23	10																									
24																										

CAST	0313	DATE	17.08.26
ECHO	4196	TIME	09 : 30
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E8-C 750m

Lat	88° 20.420	Pmax	750
Lon	24° 02.210	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	750																									
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	314	DATE	17/8/26
ECHO	4237	TIME	14:40
MP/OS	MP	12/24	24

314 Crashed at 1000m KOP1
314B has last 1000m upcast

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E9-A bottom deep

Lat	88° 11.679	Pmax	
Lon	21 29.539	Alt:	
E/W?	W	Cam:	

I129

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	b			x158*	|	|	x154	x154	x154	x171	x101											x135			
2	b		—	—	—	—	—	—	—	—	—	—	x397 -410	x213 -216									x136			
3	b		—	—	—	—	—	—	—	—	—	—											x137			
4	3000		x44	x159			x155	x155	x155	x172	x102												x138			
5	3000		—	—	—	—	—	—	—	—	—	—	x401 -404	x217 -220									x139			
6	3000		—	—	—	—	—	—	—	—	—	—											x140			
7	2000			x160*			x156	x156	x156	x173	x103															
8	1500			x161*			x157	x157	x157	x174	x104												x141			
9	1500		—	—	—	—	—	—	—	—	—	—	x405 -408	x221 -224									x142			
10	1500		—	—	—	—	—	—	—	—	—	—											x143			
11	1000			x162*			x158	x158	x158	x175	x105															
12	750			x163*			x159	x159	x159	x176	x106															
13	400			x164*	x111	x111	x160	x160	x160	x177	x107		x409 -412													x29
14	250		x45	x165	x112	x12	x161	x161	x161	x178	x108												x144			
15	250		—	—	—	—	—	—	—	—	—	—	x413 -416	x225 -228									x145			
16	250		—	—	—	—	—	—	—	—	—	—											x146			
17	200			x166*	x113	x113	x162	x162	x162	x179	x109															x30
18	150		x46	x167	x114	x114	x163	x163	x163	x180	x110															x31
19	100			x168*	x115	x115	x164	x167*	x164	x181	x111															x32
20	75		47	x169*	x116	x116	x165	x165	x165	x182	x112															
21	50		x48	x170	x117	x117	x166	x166	x166	x183	x113	Leaking.													x15	x33
22	25			x171*	x118	x118	x167	x167	x167	x184	x114															x34
23	15			x172*	x119	x119	x168	x168	x168	x185	x115														x16	
24	10			x173*	x120	x120	x169	x169	x169	x186	x116															x35

CAST	315	DATE	7/8/26
ECHO	4243	TIME	16:13
MP/OS	OS	12/24	12

KOPU

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

EG-A Shallow #1

Lat	88 ° 12 .104	Pmax	—
Lon	21 ° 21.674	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						×147			
2	100																						×148			
3	100																						×149			
4	~~25~~	}																					×150			
5	25	} chl max			@ 25m																		×151			
6	25	}																					×152			
7	25	}																		×23	×23✓					
8	1																			✓×24	×24✓					
9	1																						×153			
10	1																						×154			
11	1																						×155			
12	1																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	316	DATE	17/8/26
ECHO	4236	TIME	17 : 00
MP/OS	05	12 / 24	12

C KOP1 C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E9-A shallow #2

Lat	88 ° 12.319	Pmax	100
Lon	21 ° 17.547	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												X417 - 420	X229 -232	X39		X52	X 164-165								
2	75												X421 - 424				X53	X 166-167								
3	50												X425 - 428	X233 -236	X40		X54	X 168-169								
4	25												X429 - 432	X237 -240	X41		X55	X 180-181								
5	25											X13-16							X33-34							
6	25																									
7	25			25																						
8	10																									
9	10												X433 -436	X241 - 244	X42		X56	X 112-113								
10	1																									
11	1	leak		X174	X121	X121	X170	X170	X170	X187	X117															
12	1	leak											X437 -440	X245 -248	X43		X57	X 114-115	35-36							
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	317	DATE	18.08.26
ECHO	4278	TIME	03 : 11
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E10C 750 m

Lat	88° 02.767	Pmax	750
Lon	19° 41.610	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4								NO SAMPLING																		
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	318	DATE	16/8/26
ECHO	4302	TIME	06 : 36
MP/OS	MP	12 / 24	24

KOPI

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E11 B 1500 m sampling

Håkon

Lat	87° 53.586	Pmax	1500
Lon	17° 53.850	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500			—	—	—	—	—	—	—	—	✓	X 441 - 444										156			
2	1500		X 48	X 175			X 171	X 171	X 171	X 188																
3	1000			X 176			X 172	X 172	X 172	X 189																
4	750		X 49	X 177			X 173	X 173	X 173	X 190																
5	400		X 50	X 178	X 122	X 122	X 174	X 174	X 174	X 191																
6	400	bio	—	—	—	—	—	—	—	—	—	—	✓ X 445 - 448														
7	250	bio	—	—	—	—	—	—	—	—	—	—	✓ X 449 - 452										158				X 152 158
8	250			X 179	X 123	X 123	X 175	X 175	X 175	X 192																
9	200		X 51	X 180	X 124	X 124	X 176	X 176	X 176	X 193																
10	150			X 181	X 125	X 125	X 177	X 177	X 177	X 194																
11	100		X 52	X 182	X 126	X 126	X 178	X 178	X 178	X 195																
12	100	bio	—	—	—	—	—	—	—	—	—	—	✓ X 453 - 456										159				159
13	75	bio	—	—	—	—	—	—	—	—	—	—	✓ X 457 - 460														
14	75			X 183	X 127	X 127	X 179	X 179	X 179	X 196																
15	50			X 184	X 128	X 128	X 180	X 180	X 180	X 197																
16	50	Håkon	—	—	—	—	—	—	—	—	—	—	✓ X 461 - 464	—	—	—	—	—	—	X 25	X 25	X					
17	25			X 185	X 129	X 129	X 181	X 181	X 181	X 198																
18	25	bio	—	—	—	—	—	—	—	—	—	—	✓ X 465 - 468										160				160
19	25	Håkon	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	X 26	X 26	X					
20	15			X 186	X 130	X 130	X 182	X 182	X 182	X 199																
21	10	Håkon	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	X 27	X 27	X					
22	10	bio	—	—	—	—	—	—	—	—	—	—	✓ X 469 - 472														
23	10		X 53	X 187	X 131	X 131	X 183	X 183	X 183	X 200																
24	10	Håkon																								

CAST	319	DATE	18/8/26
ECHO	4323	TIME	11:15
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E12C 750 m

Lat	87° 43.8215	Pmax	750
Lon	16° 35.79	Alt:	←
E/W?	W	Cam:	———

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4									NO SAMPLING!																	
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

KOP 1

CAST	320	DATE	18/8/26
ECHO	4326.	TIME	20:05
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E13-A deep – bottom – camera

Lat	87 • 34.6985	Pmax	4391.3
Lon	14 • 52.67	Alt:	10.5
E/W?	W	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	b		54	188			184	184	184	201	118	OK											161	vent		
2	b												471 - 476	249 - 252									162			
3	b																						163			
4	3000			189			185	85	189	202	119												164	vent		
5	3000												477 - 480	253 - 256									165			
6	3000																						166			
7	2000		55	190			186	186	186	203	120															
8	1500			191			187	187	187	204	121												167	vent		
9	1500												481 - 484	257 - 260									168			
10	1500																						169			
11	1000			192			188	188	188	205	122															
12	750			193			189	189	189	206	123															
13	400			194	132	132	190	190	190	207	124		485 - 488	261 - 264	vent											36
14	250		56	195	133	133	191	191	191	208	125												170	vent		
15	250												489 - 491	265 - 268									171			
16	250																						172			
17	200			196	134	134	192	192	192	209	126															37
18	150		57	197	135	135	193	193	193	210	127															38
19	100			198	136	136	194	194	194	211	128															39
20	75		58	199	137	137	195	195	195	212	129															
21	50		58	200	138	138	196	196	196	213	130														17	40
22	25			201	139	139	197	197	197	214	131															41
23	15			202	140	140	198	198	198	215	132														18	
24	10			203	141	141	199	199	199	216	133															42

CAST	321	DATE	18/8/26
ECHO	4326	TIME	20:50
MP/OS	OS	12/24	12

C

Kopf

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E13-A Shallow #1

Lat	87° 34.73	Pmax	100
Lon	14° 52.05	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						×173			
2	100																						×174			
3	100					Rekkasjle #3																	×175			
4	chl																						×176			
5	chl	rhl max 15 m																					×177			
6	chl																						×178			
7	chl																			×28 ×28						
8	1																			×29 ×29						
9	1																						×179			
10	1																						×180			
11	1																						×181			
12	1		xtra																							
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

KOP1

CAST	322	DATE	18/8/26
ECHO	4326	TIME	20 :05
MP/OS	OS	12/24	12

Lat	87° 34.72'	Pmax	100
Lon	14° 51.80	Alt:	—
E/W?	W	Cam:	—

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E13-A Shallow #2

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												✗493 ✓496	✗265 -268	✗44		✗58	✗117/118								
2	75												✗497 ✓500				✗59	✗119-121	(no 120!)							
3	50												✗501 ✓504	✗269 -272	✗45		✗60	✗122-123								
4	25												✗505 -508	✗273 -276	✗46		✗61	✗124-125								
5	15	chk 2 @ 15m										✗17/18							✗39-40							
6	15	max																								
7	15												✗509 ✓512	✗277 -280	✗47		✗62	✗126-127								
8	10												✗513 ✓516	✗281 -284	✗45		✗63	✗128-129								
9	10									218																
10	1			✗204 ✓	✗148	149	✗200	✗200	✗200	~~✗217~~	134															
11	1												✗517 ✓520	✗285 -288	✗49		✗64	✗130 131	✗41 42							
12	1																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	323	DATE	19/8/26
ECHO	4323	TIME	1:45: UTC
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E14C 750 m

Lat	87 ° 25.44	Pmax	—
Lon	14 ° 7.55	Alt:	—
E/W?	W	Cam:	———

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2									NO			SAMPLING!														
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	324	DATE	19/8/26
ECHO	4267	TIME	05:55
MP/OS	MP	12/24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E15-B 1500m

Lat	86 ° 15.436	Pmax	—
Lon	13 ° 15.610	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500		—								—		X521 −524													
2	1500			X205	|	|	X201	X201	X201	X217	|															
3	1000		X59	X206	|	|	X202	X202	X202	X219	|															
4	750			X207	|	|	X203	X203	X203	—	|															
5	400		—									—	X525 −528													
6	400		X60	X208	X143	X143	X204	X204	X204	X220	|															
7	250			X209	144	144	X205	X205	X205	X221	|															
8	250		—								—	—	X529 −532													
9	200		X61	X210	X145	X145	X206	X206	X206	X222	|															
10	150			X211	X146	146	X207	X207	X207	X223	|															
11	100		X62	X212	147	147	X208	X208	X208	X224	|															
12	100		—								—	—	X533 −536													
13	75		—								—	—	X539 −540													
14	75			X213	X148	X148	X209	X209	X209	X225	|															
15	50		X63	X214	X149	149	210	X210	X210	X226	|															
16	50		—								—	—	X541 −544							X30	X30					
17	25		—								—	—	X546 −548							X	X (optional)					
18	25			X215	150	150	211	211	211	227	|															
19	15			X216	150	151	212	212	212	228	|															
20	10			X217	152	152	213	213	213	229	|															
21	10		—								—	—	X549 −552							X31	X31					
22	10																									
23																										
24																										

Layer 510 pt 6 depths 3 replicates

CAST	326	DATE	19/8/26
ECHO	4276	TIME	16 : 47
MP/OS	MP	12 / 24	24

C KaP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E17A - deep - bottom - camera.

Lat	86 ° 56.07	Pmax	4346
Lon	11 ° 39.5784	Alt:	10.8
E/W?	W	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA (10)
1	b			218			214	214	214	230	135												184			
2	b											✓	557 -560	289 -292									185			
3	b																						186			
4	3000			219			215	215	215	233	136												187			
5	3000											✓	561 -564	292 -296									188			
6	3000																						189			
7	2000		64	220			216	216	216	232	137															
8	1500			221			217	217	217	233	138												190			
9	1500											✓	565 -568	297 -300									191			
10	1500																						192			
11	1000			222			218	218	218	234	139															
12	750		65	223			219	219	219	235	140															
13	400			224	153	153	220	220	220	236	141		569 -572	~~301 -305~~												147
14	250		66	225	154	154	221	221	221	237	142												193			
15	250											✓	573 -576	301 -304									194			
16	250																						195			
17	200			226	155	155	222	222	222	238	143															44
18	150		67	227	156	156	223	223	223	239	144															45
19	100			228	157	157	224	224	224	240	145															46
20	75			229	158	158	225	225	225	241	146															
21	50	R O		230	159	159	226	226	226	242	147															47
22	25		23	235	160	160	227	227	227	243	148															48
23	15		7	232	161	161	228	228	228	244	149															
24	10			233	162	162	229	229	229	245	150															49

572 m ??

CAST	327	DATE	19/8/26
ECHO	4286	TIME	17 : 08
MP/OS	05	12 / 24	12

C

KOP1

Lat	86° 56.039	Pmax	
Lon	11 ° 35.17	Alt:	
E/W?	W	Cam:	

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E17A shallow #1

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						×196			
2	100																						×197			
3	100																						×198			
4	100																									
5	chl																						×199			
6	chl																						×200			
7	chl																						×201			
8	chl																			×32	×32					
9	1																			×33	×33					
10	1																						×202			
11	1																						×203			
12	1																						×204			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

chl max 20 m

CAST	328	DATE	19/8/26
ECHO	4289	TIME	17:35
MP/OS	05	12/24	12

C KOP1 C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E17A shallow ~~#2~~

Lat	~~86~~ 55.96	Pmax	—
Lon	1 ~~6~~ 36.31	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												x577 -580	x365 -368	x50		x65	x 133-134								
2	75												x581 -584	x —			x66	x 135-136								
3	50												x585 -588	x309 -312	x51		x67	x 137-138								
4	25												x589 -592	x313 -316	x52		x68	x 139-140								
5	20	}	Chlmax										x593 -596	x317 -320	x53		x69	x 141-142								
6	20											x19-26							x43-44							
7	20	}																								
8	10												x597 -600	x321 -324	x54		x70	x 143-144								
9	10																									
10	1			x234	x163	x167	x230	x230	x230	x246	x151															
11	1												x601 -604	x325 -328	x55		x71	x 145-145	x45-46							
12	1	→ leaking												↑												
13																										
14														horn jet !												
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	329	DATE	19/8/26
ECHO	4276	TIME	22:30 UTC
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E18C 750 m

Lat	86° 46.885	Pmax	
Lon	10° 43.560	Alt:	
~~EW?~~	W	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3								NO		SAMPLING																
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

KOP1

CAST	330	DATE	20/8/26
ECHO	4265	TIME	01:05 UTC
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

39B 1500 m

Lat	86 ° 41.44	Pmax	—
Lon	10 ° 15.28	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500	—											×605 −608													
2	1500		*68	×231			×231	×231	×231	×247																
3	1000			×236			×232	×232	×232	×248																
4	750			×237			×233	×233	×233	×249																
5	400	—											×609 −612													
6	400		*69	×238	×164	×164	×234	×234	×234	×250																
7	250			×239	×169	×165	×235	×235	×235	×251																
8	250	—											×613 −616													
9	200		70	×240	×166	×166	×236	×236	×236	×252																
10	150			×241	×167	×167	×237	×237	×237	×253																
11	100		71	×242	×168	×168	×238	×238	×238	×254																
12	100	—											×617 −620													
13	75	—									—		×621 −624													
14	75			×243	×169	×169	×239	×239	×239	×255																
15	50		*72	×244	×170	×170	×240	×240	×240	×256																
16	50	—											×625 −628							×34	×34	✓				
17	25	—									—		×629 −632							—	—	(optional)				
18	25			×245	×171	×171	×241	×241	×241	×257																
19	15			×246	×172	×172	×242	×242	×242	×258																
20	10			×247	×173	×173	×243	×243	×243	×259																
21	10	—																		×35	×35	✓				
22	10	—											×633 −636													
23																										
24																										

CAST 331	DATE
ECHO	TIME :
MP/OS	12 / 24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

38C 750 m

Lat ° .	Pmax
Lon ° .	Alt:
E/W?	Cam:

750 m no Sampling

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	332	DATE	20.AUG.26
ECHO		TIME	20:00
MP/OS	MP	12/24	29

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	86° 32.30	Pmax	4290
Lon	5° 18.00	Alt:	10.5
E/W?		Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	b oxcar ~~MBA~~
1	bot																									x
2	bot																									x
3	bot																									x
4	bot																									x
5	bot						Box core & MIC & VIR samples																			x
6	bot																									x
7	bot																									x
8	bot																									x
9	bot																									x
10	bot																									x
11	bot																									
12	bot																									
13	1500																						x 9			
14	1500																						x 10			
15	1500																						x 11			
16	1500																						x 12			
17	1500																						x -			
18	15																									
19	15																						x 13			
20	15																						x 14			
21	15																						x 15			
22	15																						x 16			
23	15																						x			
24	15																				x 65 -143					

CAST	333	DATE	21/8/26
ECHO	4212	TIME	14:13
MP/OS	UP	12/24	24

C KOP1 C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E37A – deep bottom

Lat	86° 29.737	Pmax	4303
Lon	5° 55.508	Alt:	1.5
~~EM?~~ W		Cam:	yes

I129

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	~~MBA~~
1	b			248			244	244	244	260	152												205			
2	b												637 -640	329 -332									206			
3	b																						207			
4	3000		73	249			245	245	245	261	153												208			
5	3000												641 -644	333 -386									209			
6	3000																						210			
7	2000			250			246	246	246	262	154															
8	1500			251			247	247	247	263	155												211			
9	1500												645 -648	337 -340									212			
10	1500																						213			
11	1000			252			248	248	248	264	156															
12	750			253			249	249	249	265	157															
13	400			254	174	174	250	250	250	266	158		649 -652												✓	50
14	250		74	255	175	175	251	251	251	267	159												214			
15	250												653 -656	341 -344									215			
16	250																						216			
17	200			256	176	176	252	252	252	268	160														✓	51
18	150		75	257	177	177	253	253	253	269	161														✓	52
19	100		76	258	178	178	254	254	254	270	162														✓	53
20	75			259	179	179	255	255	255	271	163															
21	50			260	180	180	256	256	256	272	164														✓	54
22	25			261	181	181	257	257	257	273	165														✓	55
23	15		77	262	182	182	258	258	258	274	166															
24	10		~~77~~	263	183	183	259	259	259	275	167		leak		in 24										✓	56

2nd set of DIC samples into Blue-lid 1NR bottles collected

CAST	334	DATE	2/18/26
ECHO	4224	TIME	14 :
MP/OS	OS	12 / 24	12

C Kop' C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E37A shallow #1

Lat	86° 29.814	Pmax	—
Lon	5° 55.847	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						x217			
2	100																						x218			
3	100																						x			
4	100																						x219			
5	20	chl max ≈20 m																					x220			
6	20																						x221			
7	20																						x222			
8	20																			x36	x36					
9	1																			x37	x37					
10	1																						x223			
11	1																						x224			
12	1																						x225			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	335	DATE	21/8/26
ECHO	4236	TIME	15:16
MP/OS	OS	12/24	12

C Kopl C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

E37A – Shallow #2

Lat 86 ° 29.83	Pmax —
Lon 5 ° 55.934	Alt: —
~~EAW?~~ W	Cam: —

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100											√	X657 -660	X345 -348	X56		X73	X150 151								
2	75											√	X661 -664				X74	X152 153								
3	50											√	X665 -668	X349 -352	X57		X75	X154 155								
4	50			=																X38	X38					
5	25		=									√	X669 -672	X353 -356	X58		X76	X156 157								
6	20	) check										√	X673 -676	X357 -360	X59		X77	X158 159								
7	20											X21-22							X							
8	10											√	X677 -680	X361 -364	X60		X78	X160 161	49-50							
9	1			X264	X184	X184	X200	X260	X260	X277	X168															
10	1			↑								√	X681 -684	X365 -368	X61		X79	X162 163								
11	1			Check		IMR													X51-52							
12	1																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	336	DATE	23-Aug-26.
ECHO	4305	TIME	14 :31
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	86 ° 29 .819	Pmax	4305
Lon	006 ° 19 .568	Alt:	1.5
E/W?	W	Cam:	Yes.

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	4305	~~34-36~~								✓																
2	3000	37 38 39			WINKLER					✓																
3	2000	40 41 42			ONLY.					✓																
4	1000	43, 44 45								✓																
5	500	46, 47 48								✓																
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	337	DATE	26.08.26
ECHO	3998	TIME	07:18
MP/OS	MP	12/24	24

C Kopi C

Lat	86 ° 25 . 567	Pmax	4007
Lon	3 ° 26 . 790	Alt:	1.5
E/W?	W	Cam:	stn. 0337

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

34C - but with bio sampling and to bottom

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	bot												x 689 -692													
2	bot																						x228			
3	3000												x 693 - 696													
4	3000																						x229			
5	1500												x 697 - 700													
6	1500																						x230			
7	250												x 701 - 704													
8	250																						x232			x231
9	200												x 705 - 708		x62		x84	x171-172								
10	100																						x233			
11	75												x 709 - 712				x85	x173 174								
12	50												x 713 - 716		63		x75	x175 176								
13	25											x 79 - 79	x 717 - 720		64		x87	x177 179	x57 51							
14	25																						x234			
15	25																									
16	10												x 721 - 724		65		x88	x179 180	59 x60							
17	10																			x39	39					
18	10																			x40	x40					
19																										
20																										
21																										
22																										
23																										
24																										

CAST	338	DATE	27/8/26
ECHO	3781	TIME	06 :31
MP/OS	MP	12/24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

358 1500 m

Lat	86° 19.67	Pmax	1500
Lon	001° 11.85	Alt:	—
E/W?	W	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500	—											X 725 - 728													
2	1500		X78	X265	|	|	261	261	261	276	169														
3	1000			X266	|	|	262	262	262	278	[illegible]														
4	750		X79	X267	|	|	263	263	263	279	17														
5	400		X80	X268	X185	X185	264	264	264	280	172															
6	400	—											X 729 - 732													
7	250												X 733 - 736										X236			X235
8	250			X269	Y86	X186	265	265	265	281	173															
9	200		X81	X270	X187	X187	266	266	266	282	174															
10	150			X271	X188	X188	267	267	267	283	175															
11	100		X82	X272	X189	X189	268	268	268	284	176															
12	100	—											X 737 - 740													
13	75	—											X 741 - 744													
14	75			X273	X190	X190	269	269	269	285	177															
15	50		X83	X274	X191	X191	270	270	270	286	178															
16	50	—											X 745 - 748							X42	X42					
17	25	—											X 749 - 752							X —	X —	(optional)				
18	25			X275	X192	X192	271	271	271	287	179															
19	15			X276	X193	X193	272	272	272	288	180															
20	10			X277	X194	X194	273	273	273	289	181															
21	10	—											X 753 - 756							X43	X43					
22	10	xtra	—																							
23																										
24																										

CAST	339	DATE	27/8/26
ECHO	4220	TIME	10 : 19
MP/OS	MP	12 / 24	27

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

34C – 750m – no sampling

Lat	86° 12.897	Pmax	750
Lon	000° 53.907	Alt:	—
~~EWT~~ E		Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	TVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5										NO		SAMPLING!														
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	340	DATE	27/8/26
ECHO	4168	TIME	13:40
MP/OS	MP	12/24	24

Salinity #2 off!! KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	86 ° 6.25	Pmax	4410
Lon	2 ° 57.65	Alt:	10
E/W?	E	Cam:	Sta 340

33A deep ~ bottom Salinity #2 off 1129

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	6		84	278			274	274	274	290	169												237			
2	6												757 - 760	369 - 372									238			
3	6																						239			
4	3000			279			275	275	275	291	170												240			
5	3000												761 - 764	375 - 376									241			
6	3000																						242			
7	2000		85	280			276	276	276	292	171															
8	1500			281			277	277	277	293	172												243			
9	1500												765 - 768	377 - 380									244			
10	1500					EMPTY																	245			
11	1000			282			278	278	278	294	173															
12	750			283			279	279	279	295	174															
13	400			284	195	195	280	280	280	296	175		769 - 772	381 - 384	vent!											57
14	250		86	285	196	196	281	281	281	297	176												246			
15	250												773 - 776	385 - 388									247			
16	250																						248			
17	200			286	197	197	282	282	282	298	177															58
18	156		87	287	198	198	283	283	283	299	178															59
19	100			288	199	199	284	284	284	300	179															60
20	75		88	289	200	200	285	285	285	301	180															
21	50			290	201	201	286	286	286	302	181															61
22	25			291	202	202	287	287	287	303	182															62
23	15			292	203	203	288	288	288	304	183		Leaking.													
24	10			293	204	204	289	289	289	305	184															63

CAST	341	DATE	27/8/26
ECHO	4285	TIME	14 :04
MP/OS	OS	12 / 24	12

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

33A shallow #1

Lat	86 ° 06 . 15	Pmax	
Lon	3 ° 01.73	Alt:	———
E/W?	E	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						×249	×		
2	100																						×250	×		
3	100																						×251	×		
4	100																									
5	18																						×252	×		
6	18		cnd max																				×253	×		
7	18		~~18~~ 18m																				×254	×		
8	18																			×45	×45					
9	1																			×46	×46					
10	1																						×255	×		
11	1																						×26	×		
12	1																						×257	×		
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	342	DATE	27/8/26
ECHO	4340	TIME	14 30
MP/OS	OS	12/24	12

C KOP1 C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

33A shallow #2 —100 m

Lat	86° 06.01	Pmax	
Lon	003° C .05	Alt:	
E/W?	E	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												x777 -780	x385 -388	x66		x89	x182 153								
2	75												x781 -784				x90	x184 185								
3	50												x785 -788	x389 -392	x67		x91	x186 187								
4	25												x789 -792	x393 -396	x68		x92	x188 189								
5	18																									
6	18	Chl max										x28 29							x61 62							
7	18												x793 -796	x397 -400	x69		x93	x190 191								
8	10												x797 -800	x401 -404	x70		x94	x192 193								
9	1			x294	x205	x205	x290	x290	x290	x306	x185															
10	1												x801 -804	x405 -408	x71		x95	x194 195								
11	1																		x63 64							
12	1	xtra																								
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	343	DATE	27/8/26
ECHO	3455	TIME	23:31
MP/OS	MP	12 / 24	21

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

32C - 750 m - no sampling

Lat	85° 59.367	Pmax	——
Lon	064° 34.500	Alt:	——
E/W?	E	Cam:	——

NO SAMPLING!

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

KOP1

CAST	344	DATE	28/8/26
ECHO	3681	TIME	02:43
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

31 B - 1500 m -

Lat	85° 52.46	Pmax	1500
Lon	6° 19.76	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500	—	—	—	—	—	—	—	—	—	—		×805 ×808													
2	1500			×295	|	|	×291	×291	×291	×307															
3	1000		×89	×296	|	|	×292	×292	×292	×308															
4	750			×297	|	|	×293	×293	×293	×309															
5	400		×90	×298	×206	×206	×294	×294	×294	×310																
6	400	—	—	—	—	—	—	—	—	—	—		×807 ×812													
7	250	—	—	—	—	—	—	—	—	—	—		×813 ×816													× ?
8	250			×299	×207	×207	×295	×295	×295	×311																
9	200		×91	×300	×208	×208	×296	×296	×296	×312																
10	150			×301	×209	×209	×297	×297	×297	×313																
11	100		×92	×302	×210	×210	×298	×298	×298	×314																
12	100	—	—	—	—	—	—	—	—	—	—		×817 ×820													
13	75	—	—	—	—	—	—	—	—	—	—		×821 ×824													
14	75			×303	×211	×211	×299	×299	×299	×315																
15	50			×304	×212	×212	×300	×300	×300	×316																
16	50	—	—	—	—	—	—	—	—	—	—		×825 ×828							×47	×47					
17	25	—	—	—	—	—	—	—	—	—	—		×829 ×832							×	×	(optional)				
18	25			×305	×213	×213	×301	×301	×301	×317																
19	15			×306	×214	×214	×302	×302	×302	×318																
20	10		×93	×307	×215	×215	×303	×303	×303	×319																
21	10	—	—	—	—	—	—	—	—	—	—		×833 ×836							×48	×48					
22	10																									
23																										
24																										

xtra

CAST	0345	DATE	28.08.26
ECHO		TIME	06 : 17
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

30C – 750 m – no sampling

Lat	85 ° 45.069	Pmax	750
Lon	7 ° 50.326	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	346	DATE	28/6/26
ECHO	3591	TIME	09:46
MP/OS	05	12/24	12

C KOP1 C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

29A – Shallow #1

Lat	85° 37.31	Pmax	100
Lon	9° 20.78	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						×270			
2	100																						×271			
3	100																						×272			
4	100																									
5	28																						×273			
6	28	Chl max																					×274			
7	28																						×275			
8	28																			×49	×49					
9	1																			×50	×50					
10	1																						×276			
11	1																						×277			
12	1																						×278			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	347	DATE	26/8/26
ECHO	3582	TIME	10:05
MP/OS	65	12/24	12

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

29A – shallow #2

Lat	85° 37.18	Pmax	100
Lon	9 19.96	Alt	—
E/W	E	Cam	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												×837 −840	×429 −432	×72		×96	×197 198								
2	75												×841 −844				×97	× 199 200								
3	50												×845 −848	×433 −436	×73		×98	× 201 202								
4	28												×849 −852	×437 −440	×74		×99	× 203 204								
5	28																									
6	28											×32 33							×65 66							
7	28												×853 −856	×441 −444			×100	× 205 206								
8	10												×857 −860	×445 −448	×75		×101	× 207 208								
9	1			×324	×216	×216	×304	×304	×304	×320	×															
10	1												×861 −864	×449 −452	×76		×102	× 209 210								
11	1										?								×67 68							
12	1																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

NOTE ALL CLOSED AT 28m

Sampled? INP here?

FCM # corrected!

CAST	348	DATE	28/8/26
ECHO	3534	TIME	12 : 20
MP/OS	MP	12 / 24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

29A – bottom (~3500 m)

Lat	85 ° 36.83	Pmax	2575
Lon	9 ° 26.10	Alt:	10
E/W?	E	Cam:	Sta0348

Nuts (Harley)

I129

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	FCHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	b			308			305	305	305	321	186						1						258			
2	b												865 - 868	413 - 416					for intercomparison				8	259		
3	b																						260			
4	3000		94	309			306	306	306	322	187						2						261			
5	3000												869 - 872	417 - 420									262			
6	3000																						263			
7	2000			310			307	307	307	323	188						3									
8	1500			311			308	308	308	324	189						4						264			
9	1500												873 - 876	421 - 424									265			
10	1500																						266			
11	1000			312			309	309	309	325	190						5									
12	750			313			310	310	310	326	191						6									
13	400			314	217	217	311	311	311	327	192		877 - 880	425 - 428	vent!		7									64
14	250		95	315	218	217	312	312	312	328	193						8						267			
15	250												881 - 884	429 - 432									268			
16	250																						269			
17	200			316	219	219	313	313	313	329	194						9									65
18	150		96	317	226	220	314	314	314	330	195						10									66
19	100			318	221	221	315	315	315	331	196						11									67
20	75		97	319	222	222	316	316	316	332	197						12									
21	50		98	320	223	223	317	317	317	333	198						13								19	68
22	25			321	224	224	318	318	318	334	199						14									69
23	15			322	225	225	319	319	319	335	200						15								20	
24	10			323	226	226	320	320	320	336	201						16									70

CAST 349	DATE
ECHO	TIME :
MP/OS	12 / 24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

28C 750 m no sampling

Lat ° .	Pmax
Lon ° .	Alt:
E/W?	Cam:

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	350	DATE	28-Aug-26
ECHO	1854	TIME	22 :00
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	85 °31 .651	Pmax	1930
Lon	012° 23 .554	Alt:	10
E/W?	E	Cam:	Yes

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	bot																							17		
2	bot																							18		
3	bot																							19		
4	bot																							20		
5	bot																									
6	bot																									
7	bot																									
8	bot																									
9	bot																									
10	bot																									
11	bot																									
12	1500																									
13	1500																									
14	1500																									
15	1500																									
16	1500																									
17	chl max																							21		
18	chl max																							22		
19	chl max																							23		
20	chl max																							24		
21	chl max																									
22																										
23																										
24																										

Box core CTD:

Katrine 1500m x 5
chl max x 5
#??

CAST	351	DATE	29/8/26
ECHO	3455	TIME	12 :30
MP/OS	MP	12 / 24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

275 – 1500 m

Lat	65 ° 22.65	Pmax	1500
Lon	11 ° 56.38	Alt:	—
E/W?	E	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500												X897 -900													
2	1500		98	X325	|	|	X321	X321	X321	X337																
3	1000			X326			X322	322	322	338																
4	750		99	X327			X323	323	323	339																
5	400		100	X328	X227	X227	X324	324	324	340																
6	400												X901 -904													
7	250												X905 -908										X282			X281
8	250			X329	228	228	X325	325	325	341																
9	200		101	X330	229	229	X326	326	326	342																
10	150			X331	230	230	X327	327	327	343																
11	100		102	X332	231	231	X328	328	328	344																
12	100												X909 -912													
13	75												X913 -916													
14	75			X333	232	232	X329	329	329	345																
15	50		103	X334	233	233	X330	330	330	346																
16	50												X917 -920							X51	X51					
17	25												X921 -924							X—	X—	(optional)				
18	25			X335	234	234	X331	331	331	347																
19	15			X336	235	235	X332	332	332	348																
20	10			X337	236	236	X333	333	333	349																
21	10												X925 -928							X51	X52					
22	10																									
23																										
24																										

CAST	352	DATE	27/8/26
ECHO	4958	TIME	12:09
MP/OS	MP	12 / 24	24

KOP1

Eurasian Bast Transect 2026 | CTD & Water Sampling Logsheet

Lat	85 ° 19.58	Pmax	5020
Lon	12 ° 30.18	Alt	1.0
~~E/W~~	E	Cam	yes

GASKEL Ret. 0.06 nm/1000m Drift = 0.3 nm

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	4946		104	338			334	334	334	350	202															
2	bot	501 511 60											929 932					212 213								
3	bot																						283			
4	bot																						284			
5	bot																						285			
6	bot																						286			
7	bot																						287			
8	bot																						288			
9	4500	52 53 54					335	335	335	351	203															
10	4000						336	336	336	352																
11	3500						338	337	337	353																
12	3000	56 57 58		339			338	338	338	354																
13	3000												—	—				—					289			
14	3000																						290			
15	3000																						291			
16	3000												933 936					214 215								
17	2500																									
18	2000																									
19	1000																									
20																										
21																										
22																										
23																										
24																										

CAST	353	DATE	29/8/26
ECHO	3831	TIME	18:34
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

26C – 750m – no sampling

Lat	85° 14.17	Pmax	750
Lon	13° 24.11	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3									750m – no sampling																	
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	354	DATE	29/8/26
ECHO	3312	TIME	21 :59
MP/OS	MP	12 / 24	24

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Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

25A deep – bottom ~3500 m

Lat	85 ° 06.21	Pmax	3346
Lon	14 ° 34.01	Alt:	10.4
E/W?	E	Cam:	?

I129

NISK	PRES	WIN	CFC	DIC	CDQ	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	b			340			339	339	339	355	204												292			
2	b												937 - 940	457 - 460									293			
3	b																						294			
4	3000			341			340	340	340	356	205												295			
5	3000												941 - 944	461 - 464									296			
6	3000		105																				297			
7	2000		~~105~~	~~342~~			~~341~~	~~341~~	~~341~~	~~357~~	~~206~~		NOT CLOSED ?													
8	1500			343			342	342	342	358	207												298			
9	1500												945 - 948	465 - 468									299			
10	1500																						300			
11	1000			344			343	343	343	359	208															
12	750			345			344	344	344	360	209															
13	460			346	237	237	345	345	345	361	210		949 - 952	469 - 472												71
14	250		106	347	238	238	346	346	346	362	211												301			
15	250												953 - 956	473 - 476									302			
16	250																						303			
17	200			348	239	239	347	347	347	363	212															72
18	150		107	349	240	240	348	348	348	364	213															73
19	100		108	350	241	241	349	349	349	365	214															74
20	75			351	242	242	350	350	350	366	215															
21	50		~~106~~	352	243	243	351	351	351	367	216		slight leak													75
22	25		~~105~~	353	244	244	352	352	352	368	217		leak													76
23	15		109	354	245	245	353	353	353	369	218															
24	10			355	246	246	354	354	354	370	219															77

CAST	355	DATE	29/8/26
ECHO	3309	TIME	22:26
MP/OS	OS	12 / 24	12

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

25A - shallow #1

Lat	85° 6.10	Pmax	
Lon	14° 50.46	Alt:	
E/W?	E	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						×304			
2	100																						×305			
3	100																						×306			
4	100																									
5	27																						×307			
6	27	chl max																					×308			
7	27																						×309			
8	27																			×53	×53					
9	1																			×54	×54					✓
10	1																						×310			
11	1																						×311			
12	1																						×312			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	356	DATE	29/8/26
ECHO	3311	TIME	22:55
MP/OS	05	12/24	12

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Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

25A – shallow #2

Lat	85 ° 06.09	Pmax	—
Lon	14 ° 32.62	Alt:	—
~~EWT~~ E		Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												X957 - 960	X 473 - 476	X 77		X 103	X 217 218								
2	75												X 961 - 964				X 104	X 219 220								
3	50												X 965 - 968	X 477 - 480	X 78		X 105	X 221								
4	27												X 969 - 972	X 481 - 484	X 79		X 106	X 224								
5	27	3x civil mid & 27																								
6	27											X 35 36							X 73 74							
7	25	3											X	X	X		X	X								
8	10												X 973 - 976	X 485 - 488	X 80		X 107	X 225 226								
9	1			X 356	X 247	X 247	X 355	X 355	X 355	X 371	X 220															
10	1												X 977 - 980	X 489 - 492	X 81		X 108	X 225 226	X 75 76							
11	1																									
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	0357	DATE	30.08.26
ECHO	3864	TIME	06 : 31
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

24C - 750m - no sampling

Lat	84° 57.806	Pmax	750
Lon	15° 39.210	Alt:	—
E/W?	E	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

→ Dry lab

KOPI

CAST	0358	DATE	30/8/26
ECHO	4000	TIME	10 : 25
MP/OS	MP	12 / 24	24

Lat	84 ° 49,80	Pmax	—
Lon	16 ° 47,46	Alt:	—
E/W?	E	Cam:	—

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

23B – 1500 m

? ?

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500												X 981 -984													
2	1500			357			356	356	356	372																
3	1080		110	358			357	357	357	373																
4	750			359			358	358	358	374																
5	400		111	360	248	248	354	359	359	375																
6	400												X985 -988													
7	250												X989 -992										314			315
8	250			361	249	249	360	360	360	376																
9	200		112	362	250	250	361	361	361	377																
10	150			363	251	251	362	362	362	378			NOT CLOSED!													
11	100		113	364	252	252	363	363	363	379																
12	100												X993 -996													
13	75												X997 -1000													
14	75			365	253	253	364	364	364	380																
15	50		114	366	254	254	365	365	365	381																
16	50												X1001 -1004							55	56					
17	25												X1005 -1008							—	—	(optional)				
18	25			367	255	255	366	366	366	382																
19	15			368	256	256	367	367	367	383																
20	10			369	257	257	368	368	368	384																
21	10												X1009 -1012							56	56					
22	10	x/m																								
23																										
24																										

CAST	359	DATE	30/8/26
ECHO	3920	TIME	13 :58
MP/OS	MP	12 / 24	24

KOPI

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	84 ° 41.25	Pmax	
Lon	17° 50.92	Alt:	—
E/W?	E	Cam:	—

22C – 750 m – no sampling

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4								NO SAMPLING																		
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	360	DATE	30/8/26
ECHO	4034	TIME	17 :24
MP/OS	MP	12/24	24

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Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

21A – deep

Lat	84 ° 32.25	Pmax	4083.9
Lon	18 ° 48.20	Alt:	10.3
E/W?	E	Cam:	?

IL29 D

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	b			370			369	369	369	385	221												315			
2	b												1013 – 1016	493 – 496									316			
3	b																						317			
4	3000		115	371			370	370	370	386	222												318			
5	2000												1017 – 1020	497 – 500									319			
6	3000																						320			
7	2000			372			371	371	371	387	223															
8	1300			373			372	372	372	388	224												321			
9	1500												1021 – 1024	501 – 504									322			
10	1500																									
11	1000			374			373	373	373	389	225															
12	750			375			374	374	374	390	226															
13	400			376	258	258	375	375	375	391	227		1025 – 1028	505 – 508												78
14	250		116	377	259	259	376	376	376	392	228												323			
15	250												1029 – 1032	509 – 512									324			
16	250																						325			
17	200			378	260	260	377	377	377	393	229															79
18	156		117	379	261	261	378	378	378	394	230															80
19	100			380	262	262	379	379	379	395	231															81
20	75		116	381	263	263	380	380	380	396	232															
21	50		118	382	264	264	381	381	381	397	233				Leak											82
22	25			383	265	265	382	382	382	398	234															83
23	15			384	266	266	383	383	383	399	235															
24	10			385	267	267	384	384	384	400	236															84

CAST	361	DATE	30/8/26
ECHO	4032	TIME	17 :52
MP/OS	OS	12/24	12

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

21A – shallow #1

Lat	84 ° 32.14	Pmax	
Lon	18 ° 47.60	Alt:	
E/W?	E	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																					X	X327			
2	100																					X	X328			
3	100																					X	X329			
4	100																									
5	35																					X	X330			
6	35																					X	X331			
7	35																					X	X332			
8	35																			X57	X57					
9	1																			X58	X58					
10	1																					X	X333			
11	1																					X	X334			
12	1																					X	X335			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

cut max 35 m

CAST	362	DATE	30/8/26
ECHO	4030	TIME	18 : 20
MP/OS	05	12/24	12

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

21A shallow #2

Lat	84 ° 32.026	Pmax	
Lon	18 ° 46.744	Alt:	———
E/W?	E	Cam:	———

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												X1033 -1036	X509 -517	X87		X109	X230 234								
2	75												X1037 -1040				X110	X235 233								
3	50												X1041 -1044	X513 -516	X83		X111	X234 235								
4	35												X1045 -1048	X517 -520	X84		X112	X235 237								
5	35																									
6	35											X38 39							77 X 75							
7	25												X1049 -1052	X521 -524	X85		X113	X238 238								
8	10												X1053 -1056	X525 -528	X86		X114	X240 240								
9	1			X386	X268	X268	X385	X385	X385	X401	X237															
10	1												X1057 -1060	X529 -532	X87		X115	X242 243	X78 80							
11	1																									
12	1																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

cut · max

CAST	363	DATE	31/8/26
ECHO	4004	TIME	02 :31
MP/OS	MP	12/24	24

C KOP1 C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	84 ° 23.99	Pmax	—
Lon	19 ° 43.07	Alt:	—
~~EAW?~~	E	Cam:	—

20C 750m no sampling

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4									NO	SAMPLING																
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	0364	DATE	31/8/26
ECHO	4017	TIME	04 : 39
MP/OS	MP	12/24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

19B – 1500 m

Lat	84 · 15 . 360	Pmax	1500
Lon	20° 35,418	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500	—											1105–1108													
2	1500		119	388			386	386	386	402																
3	1000			389			387			403																
4	750			390			388			404																
5	400		120	390	269	269	389			405																
6	400	—											1109–1112													
7	250	—											1113–1116													—
8	250		121	392	270		390			406																
9	200			393	271		391			407																
10	150			394	272		392			408																
11	100		122	395	273		393			409																
12	100	—											1117–1120													
13	75	—											1121–1124													
14	75			396	274		394			410																
15	50			397	275		395			411																
16	50	—											1125–1128							59	59					
17	25	—											1129–1132													
18	25			398	276		396			412																
19	15			399	277		397			413																
20	10		123	400	278		398			414																
21	10	—											1133–1136							60	60					
22	10																									
23																										
24																										

CAST	365	DATE	3/18/26
ECHO	4001	TIME	7 :13
MP/OS	MP	12 / 24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

18C - 750

Lat	84 ° 6 455	Pmax	
Lon	21 ° 24.775	Alt:	—
~~E/W?~~ E		Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	366---	DATE	31/8/26
ECHO	3965	TIME	09 :41
MP/OS	05	12/24	12

C KOP1 C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

17A shallow #1

Lat	83 . 58 . 26	Pmax	—
Lon	22 . 9 . 60	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						X348			
2	100																						X349			
3	100																						X350			
4	100																									
5	51																						X351			
6	51	chl = 50 n																					X352			
7	51																						X353			
8	51																			X63	X63					
9	1																			X64	X64					
10	1																						X354			
11	1																						X355			
12	1																						X356			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	367	DATE	21/8/26
ECHO	4042	TIME	10:06
MP/OS	OS	12/24	12

Kap1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

17A shallow #2

Lat	83° 57.64	Pmax	
Lon	22° 08.355	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												1081 1084				116	245 246								
2	75												1085 - 1088				117	247 248								
3	51												1089 - 1092				118	249 250								
4	51	258																								
5	51	Del bar														17	116									
6	51											41 42				18			81 82							
7	25												1093 - 1096				119	251 252								
8	10												1097 - 1100				120	253 254								
9	1			417	289	288	415	415	415	431	254					19										
10	1				289	289							1101 - 1104		92		121	255 256								
11	1															21			83 84							
12	1															20										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST 368	DATE 31-AUG-26
ECHO 4017	TIME 10 : 47
MP/OS 03	12/24 12

C KOPI C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

ETA Box Core water

Lat 83° 57.336	Pmax 4093
Lon 022° 10.851	Alt: 9.4
E/W? E	Cam: NO

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	Bot																									
2	Bot																									
3	Bot																									
4	Bot																									
5	Bot																									
6	Bot																									
7	Bot																									
8	Bot																									
9	Bot																									
10	Bot																									
11	Bot																									
12	Bot																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	369	DATE	31/8/26
ECHO	4049	TIME	17 :50
MP/OS	05	12/24	12

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Extra cast for Katrine chl a max

Lat 83 ° 53 . 67	Pmax
Lon 21 ° 48 . 49	Alt: —
E/W? E	Cam: —

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	C23																					(x) → MIC 144 – 222	→ Nasten tom flasks			
2	C23						chl. max @ 23 m															x				
3	C23																					x				
4	C23																									
5	C23																									
6	C23																									
7	C23																									
8	C23																									
9	C23																									
10	C23																									
11	C23																									
12	C23																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	~~370~~	DATE	01/09/26
ECHO	4058	TIME	15 11
MP/OS	MP	12/24	24

C KOP1 C

deployed later than indicated on sheet

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

17A deep —

Lat	83 ° 56 c.51	Pmax	4103
Lon	22 ° 00 . 095	Alt:	7
E/W?	E	Cam:	yes

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	iVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	b	}	X124	X401			399	399	399	415	X238					X1 ✓							X336			
2	b												X1061 -1064	X 533 -536		X2 ✓							X337			
3	b															X3 ✓							X338			
4	3000	}		X402			X400	400	400	416	X239					X4 ✓							X339			
5	3000												X1065 -1068	X537 -540		X5 ✓							X340			
6	3000															X6 ✓							X341			
7	2000		X125	X403			X401	X401	X401	X417	X246															
8	1500	}		X404			X402	X402	X402	X418	X247					X7 ✓							X342			
9	1500												X1069 -1070	X 541 -544		X8 ✓							X343			
10	1500															X9 ✓							X344			
11	1000			X405			X403	X403	X403	419	X242															
12	750			X406			X404	X404	X404	426	X249															
13	400			X407	279	279	X405	X405	405	421	X249		X1073 -1076	X 545 -548												85
14	250	}	X126	X408	280	280	X406	X406	X406	X422	X245					X10							X345			
15	250												X1077 -1080	X 545 -548		11							X346			
16	250															12							X347			
17	200			X409	281	281	X407	X407	X407	X423	X246															86
18	150	*	~~X127~~	X410	282	282	X408	X408	X408	X424	X247		leak													87
19	100		197	X411	283	283	X409	X409	X409	X425	X248					X13,14,15										88
20	75			X412	284	284	X410	X410	X410	X426	X249															
21	50		~~X128~~	X413	285	285	X411	X411	X411	X427	X250		leak												X2	89
22	25		=	X414	286	286	X412	X412	X412	X428	X251		small	leak												90
23	15			X415	287	287	X413	X413	X413	X429	X252														X22	
24	10			X416	288	288	X414	X414	X414	X430	X253															91

CAST	0371	DATE	03.09.26
ECHO	4024	TIME	04 : 00
MP/OS	MP	12 / 24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

VIRUS EXPERIMENT WATER COLLECTION

Lat	83 · 57.445	Pmax	1500
Lon	20 · 55.395	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500																							25		
2	1500																							26		
3	1500																							27		
4	1500																							28		
5	1500																									
6	1500																									
7	CHL MAX.																							29		
8	CHL MAX																							30		
9	CHL MAX.		32	ml																				31		
10	CHL MAX																							32		
11	CHL MAX																									
12	CHL MAX																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	372	DATE	3/9/26
ECHO	4024	TIME	22 :40
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	83 ° 48.856	Pmax	—
Lon	22 ° 58 .110	Alt:	—
E/W?	E	Cam:	—

16C – 750 m no sampling

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3				Sfc del-a on the CTD was very high at the top 10-20 m																						
4				~2, much higher than before. MLD ~ 20 m deep.																						
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	373	DATE	4/9/26
ECHO	4023	TIME	00 46
MP/OS	MP	12 / 24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

15B – 1500 m

Lat	83° 39.89	Pmax	—
Lon	23° 41.28	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500	—	—	—	—	—	—	—	—	—	—		X —													
2	1500			418	|	|	416	416	416	432															
3	1000		128	419	|	|	417	417	417	433															
4	750			420	|	|	418	418	418	434															
5	400		129	421	290	—	419	419	419	435																
6	400	—	—	—	—	—	—	—	—	—	—		X —													
7	250	—	—	—	—	—	—	—	—	—	—		X —												?	X
8	250			422	291	—	420	420	420	436																
9	200		130	423	292	292	421	421	421	437																
10	150			424	293	293	422	422	422	438																
11	100		131	425	294	294	423	423	423	439																
12	100	—	—	—	—	—	—	—	—	—	—		X —													
13	75	—	—	—	—	—	—	—	—	—	—		X —													
14	75			426	295	295	424	424	424	440																
15	50		132	427	296	296	425	425	425	441																
16	50	—	—	—	—	—	—	—	—	—	—		X —							65	65					
17	25	—	—	—	—	—	—	—	—	—	—		X —													
18	25			428	297	297	426	426	426	442																
19	15			429	298	298	427	427	427	443																
20	10			430	299	299	428	428	428	444																
21	10	—	—	—	—	—	—	—	—	—	—		X —							66	66					
22	10	Xtra																								
23																										
24																										

CAST	374	DATE	4/9/26
ECHO	4017	TIME	03 : 21
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

14C -750m no sampling

Lat	83 ° 30 . 838	Pmax	750
Lon	24 ° 21 . 354	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	750																									
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	375	DATE	04.09.26
ECHO	4009	TIME	05 : 50
MP/OS	MP	12 / 24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

13A deep

Lat	83° 21.962	Pmax	4088
Lon	25° 01.412	Alt:	1,4
EAW?	E	Cam:	0375

I129

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	
1	b			F431	—	—	F429	F429	F429	F445	F455												F359			
2	b												X 1141 - 1144	X 569 - 572	✓								X360			
3	b																						X361			
4	3000		X133	F432	—	—	F430	F430	F430	F446	X												X362			
5	3000												X 1145 - 1148	X 573 - 576									X363			
6	8000																						X364			
7	2000			F433	—	—	F431	F93	F431	F447	X															
8	1500			F434	—	—	F432	F432	F432	F448	X												X365			
9	1500												X 1149 - 1152	X 577 - 580									X366			
10	1500																						X367			
11	1000			F435	—	—	F433	F433	F433	F449	X															
12	750			F436	—	—	F434	F434	F434	F450	X															
13	400		X134	F437	F300	—	F435	F435	F435	F451	X		X 1153 - 1156													92
14	250		X135	F438	F301	—	F436	F436	F436	F452	X												X368			
15	250												X 1157 - 1160	X 581 - 584									X369			
16	250																						X370			
17	200			X439	F302	—	F437	F437	F437	F453	X															93
18	150		X136	F440	F303	—	F438	F438	F438	F454	X															94
19	100		X137	F441	F304	—	F439	F439	F439	F455	X															95
20	75			F442	F305	—	F440	F440	F440	F456	X															
21	50			F442	306	—	F441	F441	F441	F457	X	leak														96
22	25	surface		F446	307	—	F442	F442	F442	F458	X															97
23	15			F447	F306	—	F443	F443	F443	F459	X															
24	10		X138	F446	307	—	F444	F444	F444	F460	X															98

CAST	376	DATE	04/09/26
ECHO	4010	TIME	06 : 21
MP/OS	105	12/24	12

UTC?

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

L3A shallow #1

Lat	83 · 21 .968	Pmax	
Lon	25° 01 .497	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						×371			
2	100																						×372			
3	100																						×373			
4	100																									
5	chl																						×374			
6	chl																						×375			
7	do																						×376			
8	chl																			×67	×67					
9	1																			×68	×68					
10	1																						×377			
11	1																						×378			
12	1																						×379			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

chl max 36 m

CAST	377	DATE	04.09.26
ECHO	4011	TIME	06 :50
MP/OS	05	12 / 24	12

Rapi

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

13A Shallow #2

Lat	83° 21.967	Pmax	100
Lon	25° 01.497	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	106												x1161 - 1164	x585 - 588	x93		x126	x264 265								
2	75												x1165 - 1168				x127	x266 267								
3	56												x1169 - 1172	x589 - 592	x94		x128	x268 269								
4	36	)											x1173 - 1176	x593 - 596	x95		x129	x270 271								
5	36	)	cwl	~~x 1147~~ max x																						
6	36	)	x 25									x44 45							x89 90							
7	~~36~~ 25												x1177 - 1180	x597 - 600	x96		x130	x272 273								
8	90												x1181 - 1184	x601 - 604	x97		x131	x274 275								
9	1			x1147	x310	x —	x145	x46	x45	x61	x71															
10	1												x1185 - 1188	x605 - 608	x98		x132	x276 277								
11	1																		x91 92							
12	1																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	378	DATE	05.09.26
ECHO	4005	TIME	02 : 32
MP/OS	MP	12/24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	83° 12.792	Pmax	750
Lon	25° 38.622	Alt:	—
E/W?	E	Cam:	—

12C - 750 m no sampling

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	379	DATE	5.9.26
ECHO	3992	TIME	1604 577
MP/OS	MP	12 / 24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

11B - 1500 m

Lat	83 ° 03 . 383	Pmax	1500
Lon	26 ° 14 . 405	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500	—	139										X 1189 - 1192 ✓													
2	1500		~~139~~	448			446	446	446	462																
3	1000		—	449			447	447	447	463																
4	750		140	450			448	448	448	464																
5	400		141	451	311		449	449	449	465																
6	400		—	—	—	—	—	—	—	—	—	—	X 1193 - 1196 ✓													
7	250		—	—	—	—	—	—	—	—	—	—	X 1197 - 1200 ✓										X 383			X 382
8	250		142	452	312		450	450	450	466																
9	200		143	453	313		451	451	451	467																
10	150			454	314		452	452	452	468																
11	100		144	455	315		453	453	453	469																
12	100		—	—	—	—	—	—	—	—	—	—	X 1204 - 1204 ✓													
13	75		—	—	—	—	—	—	—	—	—	—	X 1205 - 1208 ✓													
14	75			456	316		454	454	454	470																
15	50		145	457	317		455	455	455	471																
16	50		—	—	—	—	—	—	—	—	—	—	X 1209 - 1212							X 69	X 69					
17	25		—	—	—	—	—	—	—	—	—	—	X 1213 - 1216 ✓													
18	25			458	318		456	456	456	472																
19	15			459	319		457	457	457	473																
20	10			460	~~320~~ 326		458	458	458	474																
21	10		—	—	—	—	—	—	—	—	—	—	X 1217 - 1220 ✓							X 70	X 70					
22	10	xfer																								
23	10																									
24	10																									

CAST	380	DATE	5.9.26
ECHO	3977	TIME	07 : 23
MP/OS	MP	12/~~24~~	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

Lat	82 ° 54.372	Pmax	750
Lon	26 ° 47.974	Alt:	—
E/W?	E	Cam:	—

10C – 750 m – no sampling

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	381	DATE	5/9/26
ECHO	3916	TIME	13 27
MP/OS	MP	12 / 24	24

KOB1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

9A deep - bottom - rosette

Lat	82° 45.09	Pmax	3953
Lon	27° 19.03	Alt:	1.0
E/W?	E	Cam:	Sta0381

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	b		146	461	—	—	459	459	459	475	272												384			
2	b												1221 - 1224	609 - 612									385			
3	b																						386			
4	3000			462	—	—	460	460	460	476	273												387			
5	3000												1225 - 1228	613 - 616									388			
6	3000																						389			
7	2000		147	463	—	—	461	461	461	477	274															
8	500			464	—	—	462	462	462	478	275												390			
9	1500												1229 - 1232	617 - 620									391			
10	1500																						392			
11	1000			465	—	—	463	463	463	479	276															
12	750		148	466	—	—	464	464	464	480	277															
13	400		149	467	321	—	465	465	465	481	278		1233 - 1236													
14	250		150	468	322	—	466	466	466	482	279												393			
15	250												1237 - 1240	621 624									394			
16	250																						395			
17	200			469	323	—	467	467	467	483	280															
18	150		151	470	324	—	468	468	468	484	281															
19	100		152	471	325	—	469	469	469	485	282															
20	75			472	326	—	470	470	470	486	283															
21	50		459	473	327	—	471	471	471	487	284															
22	25		153	474	328	—	472	472	472	488	285															
23	15			475	329	—	473	473	473	489	286															
24	10			476	330	—	474	474	474	490	287			Reel													

Shallow cast #2

CAST	382	DATE	5/9/26
ECHO	3914	TIME	19 :09
MP/OS	05	12/24	12

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

9A - shallow #1

Lat	82 ° 44.71	Pmax	100
Lon	27 21.065	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						X396			
2	100																						X397			
3	100																						X398			
4	100																									
5	chl	}																					X399			
6	chl	}	chl max @				23		m														X400			
7	chl	}																					X401			
8	chl	}																		X71	X72					
9	1																			X72	X73					
10	1																						X402			
11	1																						X403			
12	1																						X404			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	363	DATE	5/9/26
ECHO	3914	TIME	19 : 37
MP/OS	05	12/24	12

KOP1

Lat 82 ° 26.70	Pmax 100
Lon 28 ° 21.96	Alt: —
~~EW?~~ E	Cam: —

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

9A – shallow #2

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												×1241 – 1244	× 625 – 628	×99		×135	× 280 281								
2	75												×1245 – 1248				×136	× 282 283								
3	50												×1249 – 1252	× 629 – 632	×100		×137	× 284 285								
4	25												×1253 – 1256	× 633 – 636	×		×	×								
5	23	} chl max																								
6	23	} chl max @ ~27 m										×47 48							× 95 96							
7	23	}											×1257 – 1260	× 637 – 640	×101		×138	× 286 287								
8	10												×1261 – 1264	×641 – 644	×102		×139	× 288 289								
9	10			×476	×330	—	×474	×474	×474	×490	×287															
10	9			×477	×331	—	×475	×475	×475	×491	×288															
11	9												×1265 – 1268	×645 – 648	×103		×140	× 290 291								
12	9	LEAK!																	× 97 98							
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	384	DATE	5/5/26
~~ECHO~~ ~~3858~~	~~3865~~	TIME	23:11
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

~~88~~ 8C - CTD 750 m - no sampling

Lat	82 ° 35.80	Pmax	750
Lon	27 ° 52.47	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	385	DATE	6/9/26
ECHO	5785	TIME	02 : 15
MP/OS	MP	12 / 24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

7B – 1500 m

Lat	° .	Pmax
Lon	° .	Alt:
E/W? E	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500												1274	1266												
2	1500			478			476	476	476	492																
3	1000		159	471			477	477	477	493																
4	750			480			478	478	478	494																
5	400		155	481	332		479	479	479	495																
6	400												1281 – 1284													
7	250												1285 – 1288													
8	250		156	482	333		480	480	480	496																
9	200		157	483	334		481	481	481	497																
10	150			484	335		482	482	482	498																
11	106		158	485	336		483	483	483	499																
12	100												1289 – 1292													
13	75												1293 – 1296													
14	75			486	337		484	484	484	500																
15	50			487	338		485	485	485	501																
16	50												1297 – 1300							74	74					
17	25												1301 – 1304													
18	25			488	339		486	486	486	502																
19	15			489	340		487	487	487	502																
20	10		159	490	341		488	488	488	504																
21	10												1305 – 1308							76	75					
22	10																									
23	10																									
24	10																									

CAST	386	DATE	6/9/26
ECHO		TIME	:
MP/OS	MP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

6C - 750 m - no sampling!

Lat	° .	Pmax	
Lon	° .	Alt:	
E/W?	E	Cam:	

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	387	DATE	6/9/26
ECHO	2499	TIME	07:40
MP/OS	MP	12/24	24

KOP1

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

5A deep – bottom ~3500 m

Lat	82° 07.55	Pmax	3554
Lon	29° 20.027	Alt:	1.0
E/W?	E	Cam:	Sta0387

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	b			4974	—		4189	489	4189	505	289												407			
2	b												1309 / 1312	649 / 652									408			
3	b																						409			
4	3000		160	492	—		490	490	490	506	290												410			
5	3000												1313 / 1316	653 / 656									411			
6	3000																						412			
7	2000			493	—		491	491	491	507	291															
8	1500			494	—		492	492	492	508	292												413			
9	1500												1317 / 1320	657 / 660									414			
10	1500																						415			
11	1000			495	—		493	493	493	509	293															
12	750		161	496	—		494	494	494	510	294															
13	400		162	497	342	—	495	495	495	511	295		1321 / 1324													
14	250		163	498	343	—	496	496	496	512	296												416			
15	250												1325 / 1328	661 / 664									417			
16	250																						418			
17	200		164	499	344	—	497	497	497	513	297															
18	150		165	500	345	—	498	498	498	514	298															
19	100			501	346	—	499	499	499	515	299															
20	75			502	347	—	500	500	500	516	300															
21	50		166	503	348	—	501	501	501	517	301		slight leak													
22	25			504	349	—	502	502	502	518	302															
23	15			505	350	—	503	503	503	519	303															
24	10			506	351	—	504	504	504	520	304															

CAST	388	DATE	6/9/26
ECHO	399	TIME	8:12 :
MP/OS	OS	12/24	12

C - KOP1 C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

5A - shallow #1

Lat	82 ° 07 . 32	Pmax	100
Lon	29 ° 20 . 33	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						X419			
2	100																						X420			
3	100																						X421			
4	100																									
5	chl max @ 25 m																						X422			
6	chl																						X423			
7	chl																						X424			
8	chl																			76	X76					
9	1																			77	X77					
10	1																						X425			
11	1																						X426			
12	1																						X427			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	389	DATE	6/9/26
ECHO	3494	TIME	8 :42
MP/OS	OS	12/24	12

(Topi.)

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

5A shallow #2

Lat	82° 7.135	Pmax	100
Lon	27° 20.14	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100											√	X1329 -1332	X665 -668	X104		141	X293 294								
2	75											√	X1333 -1336				142	X295 296								
3	50											√	X1337 -1340	X669 -672	X105		X143	X297 298								
4	25											√	X1341 -1344	X673 -676	X106		X144	X299 300								
5	25	chl max & 25m																								
6	25											X50 51						X	X39 100							
7	25												X	X	X		X	X								
8	10											√	X1345 -1348	X677 -680	X107		X145	X301 302								
9	1			X507	X352	—	X505	X505	X505	X521	X305															
10	1											√	X1349 -1352	X681 -684	X108		X146	X30								
11	1																		X101 102							
12	1																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

~~2x chl max~~
~~2x 25m~~

CAST	393	DATE	6/9/26
ECHO	3326	TIME	19:12
MP/OS	RMP	12 / 24	24

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

HC - 750 m - no sampling

Lat	81 ° 58.409	Pmax	
Lon	29° 45.504	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	397	DATE	7/9/26
ECHO	3114	TIME	00:14
MP/OS	MP	12/24	24

Extra shallow cast @ KOP1 all max for VIR!

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

3B - 1500 m - with VIR!

Lat	81 ° 48,97	Pmax
Lon	30° 13,85	Alt: —
E/W?	E	Cam: —

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	1500												1353 - 1356											x		
2	1500																							x	33-34	
3	1500										Kathrine													x		
4	1500																							x	35-36	
5	1500																							x		
6	1500		167	508			506	506	506	522																
7	1000			509			507	507	507	523																
8	750		168	510			508	508	508	524																
9	400		169	511	353		509	509	509	515			1357 - 1360													
10	250			512	354		510	510	510	526										x	x	?				
11	250												1361 - 1364							78	78					x
12	200		170	513	355		511	511	511	527																
13	150		171	514	356		512	512	512	528																
14	100		178	515	357		513	513	513	529																
15	100												X													
16	75												X													
17	75			516	358		514	514	514	530																
18	50		173	517	359		515	515	515	531					1365 - 1368											
19	56												1373 - 1376		1369 - 1372					79	79					
20	85												1377 - 1380													
21	25			518	360		516	516	516	532																
22	15			519	361		517	517	517	533																
23	10			520	362		518	518	518	534																
24	10												1381 - 1384							80	80					

CAST	398	DATE	7/9/26
ECHO	3132	TIME	00:49
MP/OS	05	12 / 24	12

C KOP1 C

Lat	81 ° 49.194	Pmax	
Lon	30 ° 14.716	Alt:	—
E/W?	E	Cam:	—

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

3B extra Chla max for VIR

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	C	max																						x (37-38 VIR)		
2	C																							x		
3	C																							x		
4	C																							x (39-40 VIR)		
5	C																							x		
6	C																							x		
7	C	Chla max 24m																								
8	C																									
9	C																									
10	C																									
11	C																									
12	C																									
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																					—					

CAST	402	DATE	07.09.26
ECHO	2458	TIME	05:43
MP/OS	MP	12 / 24	24

C KOPI C

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

02C -750 no sampling

Lat	81° 39.481	Pmax	750
Lon	30° 36.178	Alt:	—
E/W?		Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

KOP1

CAST	406	DATE	7/9/26
ECHO	680	TIME	15 : 50
MP/OS	MP	12/24	24

Lat	81 ° 29.900	Pmax	—
Lon	31 ° 00.713	Alt:	—
E/W?	E	Cam:	no —

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

1A deep ~ 700 m — camera failed!

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	680												1385 - 1388	689 - 692									428			
2	600																						429			
3	600																						430			
4	600		520	521	—		519	519	519	535	306															
5	400		175	522	363		520	520	520	536	307															
6	400												1389 - 1392													
7	250												1393 - 1396	693 - 696									431			
8	250																						432			
9	250		176	523	—		521	521	521	537	308										vent		433			
10	200		177	524	364		522	522	522	538	309															
11	200																									
12	150		178	525	365		523	523	523	539	310															
13	150																									
14	100		179	526	366		524	524	524	540	311															
15	100																									
16	75			527	367		525	525	525	541	312															
17	75																									
18	50			528	368		526	526	526	542	313															
19	50																									
20	25			529	369		527	527	527	543	314															
21	25																									
22	15			530	—		528	528	528	544	315															
23	10		180	531	370		529	529	529	545	316															
24	10																									

CAST	407	DATE	7/9/26
ECHO	684	TIME	17:06
MP/OS	OS	12 / 24	12

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

1A shallow #1

Lat	81 ° 30.0	Pmax	—
Lon	31 ° 00.00	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100																						Y434			
2	100																						Y435			
3	100																						Y436			
4	100																									
5	chl																						Y437			
6	ch					chl max ×4 @ 20 m																	Y438			
7	ch																						X439			
8	ch																			X81	81					
9	1																			X82	82					
10	1																						X440			
11	1																						X441			
12	1																						X442			
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

CAST	408	DATE	7/9/26
ECHO	668	TIME	17:26
MP/OS	OS	12/24	12

KOPT

Eurasian Bast Transect 2026 CTD & Water Sampling Log Sheet

1A shallow #2

Lat	81 ° 30.00	Pmax	
Lon	31 ° 00.00	Alt:	—
E/W?	E	Cam:	—

NISK	PRES	WIN	CFC	DIC	CDO	DOC	NUT	O18	DEU	SAL	INP	CTB	FCM	BPR	PHT	PFA	CHL	POC	IVO	ABS	HPC	MIC	DNA	VIR	DCH	MBA
1	100												X 1397 - 1400	X 701 - 704	X 109		X 147	X 306 307								
2	75												~~X 1401 - 1404~~				X 148	X 308 309								
3	50					LEAK!							~~X 1405 - 1408~~	~~X 705 - 708~~	X 110		X 149	X 310 311								
4	25												X 1409 - 1417	X 709 - 712	X 111		X 150	X 312 313								
5	20	~~EX1~~																								
6	20	chl max X 3 20m.										X 53 54							X 103 104							
7	20												X 1413 - 1416	X 713 ~~- 716~~	X 112		X 151	X 314 315								
8	10												~~X 1417~~ - 1420	~~X 717~~ - 720	X 113		X 152	X 316 317								
9	1	leak		X —	—		X 530	X 530	X 530	X 546	X 317															
10	1			X 532									X 1421 - 1424	X 721 - 724	X 116		X 153	X 318 319								
11	1																		X 105 106							
12	1																									
13																										
14																										
15																										
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