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Short Cruise Report RV METEOR cruise M187

Walvis Bay, Namibia - Walvis Bay, Namibia
25.01.2023 – 04.03.2023
Chief Scientist: Dr. Thomas Browning
Captain: Detlef Korte

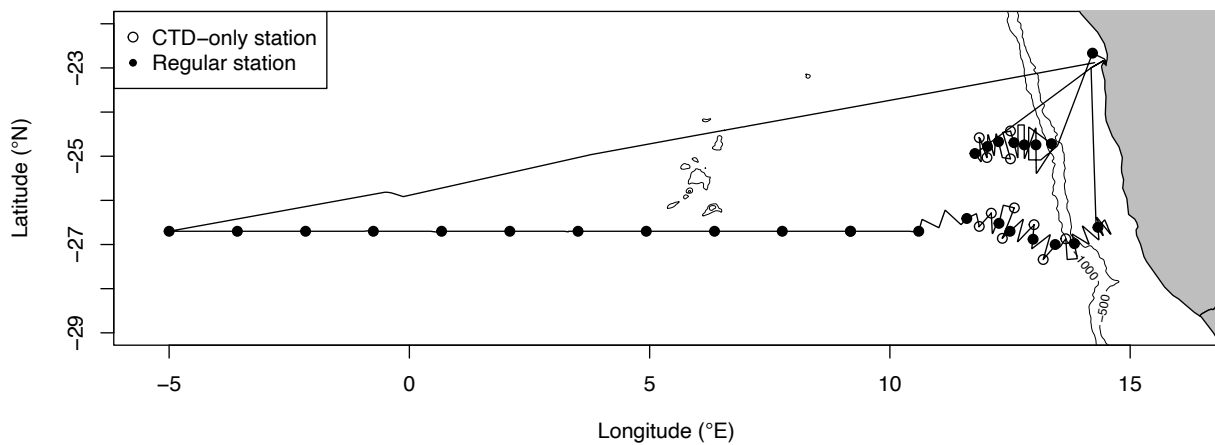


Fig. 1: cruise track of RV METEOR cruise M187.

Objectives

Phytoplankton are the base of marine food webs and sequester atmospheric carbon. Previous research in the Southeast Atlantic has shown that phytoplankton growth is limited by a sequence of nutrients, including 'co-limitation' of phytoplankton growth by multiple nutrients at the same time. However, the causative mechanisms of this are poorly constrained. This restricts our ability to understand and model how ocean biology will change in response to climate change and other anthropogenic pressures.

This research cruise M187 aims to trace upwelled ocean filaments as they are advected from the Namibian coast towards the South Atlantic Gyre. Upwelled filaments, distinguished by their colder temperatures, often show offshore velocities of up to 30 cm s^{-1} , have meridional extents of tens of km, depths of 50–100 m, can reach extents of 1000 km offshore, and constitute the major mechanism for offshore transport of upwelled water. Offshore flowing upwelling filaments in the Benguela are mainly focussed north west of Lüderitz (24–26°S). The waters that are upwelled originate from depths of 200–300 m and therefore bring with them elevated concentrations of nutrients, nitrate, phosphate, and silicate, and also essential micronutrients such as iron. When the upwelled water reaches the sunlit surface, these nutrients are used by phytoplankton to grow. As the upwelled filaments move offshore, phytoplankton growth, alongside other processes, leads to depletion of these nutrients and probably shifts in the phytoplankton community composition to those that are better adapted to lower nutrient conditions. Along the pathway of the filaments, the amount of phytoplankton photosynthesis and organic carbon that sinks into the deeper ocean likely also varies.

We investigated the key physical, chemical and biological factors interacting to regulate ocean phytoplankton growth and carbon export in this region. We combined (i) Quasi-lagrangian tracking of upwelling filaments as they interact with the subtropical gyre, and (ii) observations along a high-resolution transect from upwelling sites to the subtropical gyre.

Major questions being addressed are:

1. What physical and biogeochemical properties define where the boundaries in phytoplankton nitrogen limitation, iron limitation, and nitrogen-iron co-limitation occur and are locations accurately predicted by the dissolved concentrations of these nutrients? Can serial cobalt or vitamin B₁₂ limitation be relieved by supply of zinc or cadmium? Does serial cobalt limitation impact phytoplankton growth or community structure in situ?
2. How do concentrations and speciation of nutrients and micronutrients vary with age and mixing following deep (200–300 m) upwelling of waters enriched in inorganic nutrients and micronutrients? Does phytoplankton diversity scale with nutrient heterogeneity? Are waters with high phytoplankton and nutrient diversity characterized by nitrogen-iron co-limitation of phytoplankton growth?
3. Do aerosols from the African continent significantly alter nutrient budgets of upwelled filaments as they are advected offshore?
4. Does the contact of upwelled water with shelf sediments significantly alter the micronutrient content within filaments and/or influence the nutrient limitation status of phytoplankton communities?
5. What is the fate of nutrients and micronutrients transported to the surface in upwelling filaments? Specifically, what is the fraction of utilized vs. unutilized (subducted) nutrients? What is the nutrient supply flux from filaments to the subtropical gyre?
6. Do different nutrient limitation provinces coincide with altered modes of carbon and major nutrient export to the deeper ocean?

Narrative

On Wednesday, January 25, we left the port of Walvis Bay in Namibia at 20:00 local time. This marked the beginning of a 38-day cruise in the South East Atlantic, studying the physics, chemistry and biology of upwelled filaments. Using a wide variety of approaches, the goal was to track filaments as they moved offshore from a region of high biological productivity nearer the Namibian coast outwards towards the less productive South Atlantic. These filaments are a crucial mechanism for regulating exchange between the near-coast and offshore systems. Our scientific team included physicists, chemists and biologists from GEOMAR, Hereon, the University of Oldenburg, and one participant from Chelsea Technologies Group (UK).

Before our departure, we had a briefing from the ship's officers describing life on board the research vessel as well as a safety briefing. Following our departure, we sailed for approximately 3 hours offshore, where we undertook our first sampling station. This station served two purposes. Firstly, it was a 'Test station', where we could test the functioning of the CTD-rosette package. Secondly, it provided a valuable opportunity to collect water from a setting that was biologically highly productive at the surface and host to very low oxygen concentrations in deep waters; both of interest to some of the research teams on board.

Following the Test station, we set sail to the southwest, where we had identified a strong and persistent filament in satellite images of sea surface temperature. On route we had our first safety drill and then deployed the tow fish. This is a device that we towed alongside the research vessel for the cruise duration and it provided us with a constant supply uncontaminated surface seawater to sample for chemical and biological parameters.

On reaching the filament region (around 24-25 °S) we undertook a survey to locate the filament centre. This was identified by surface seawater temperatures (typically coldest in the filament centre). After locating the approximate filament centre on January 27, we proceeded with a full range of activities at our first filament station. This included deploying drifters that flowed with the filament current, conducting CTDs for sampling the chemistry and biology of the seawater at a range of water depths and measurements of the underwater light field.

Between January 27 and February 2 we continued observations of this first filament. This filament was a major and persistent feature in satellite images over the weeks prior to the cruise, extending more than 200 km from the main upwelling region off Namibia outwards into the Southeast Atlantic. A total of seven stations located in the centre of the filament were conducted, each with multiple deployments measuring physical, chemical and biological parameters throughout the water column. Stations were occupied daily, starting at around 08:30 ship time and lasting through to 15:30–17:00. Each station involved deployment of deep (1000 m) and shallow (100-120 m) CTD casts to collect water for a range of analyses including salinity, oxygen, nutrients (nitrate, phosphate, silicate, dissolved organic nutrients), trace gases (methane, nitrous oxide), nitrate isotopes, dissolved carbon, particulate carbon, phytoplankton concentrations, microbial genomics, and phytoplankton physiology. These were supplemented with the deployment of trace-metal-clean sampling Go-Flo bottles for collection of contamination-prone nutrient elements, such as iron, cobalt and zinc, as well as pumps deployed at 6-8 depths, which collect high particle loads for further chemical and biological analyses. Finally, hyperspectral light profiles and Secchi disk deployments were conducted to measure optical properties of the water.

Following each of the daily stations, we continued sailing in a zigzag through the filament, to map many of these parameters across and outside of the filament. At 16:00 ship time on January 31, we deployed the Scanfish for the first time. The Scanfish is a device deployed off the A-frame at the aft of the ship, connected via a conducting cable to a winch fitted to the ship's deck. Via movement of its wings, the device moves up and down through the water column between the surface and ~130 m whilst the ship is sailing. The Scanfish is equipped with several sensors including temperature, salinity, oxygen, and chlorophyll fluorescence. Deployments therefore allow for high resolution, depth-resolved observations whilst sailing across the filament. The Scanfish was successfully deployed and operated for several hours. However, at around 23:30 ship time the Scanfish winch failed, resulting in the cable rapidly unwinding and eventual breaking from the winch, resulting in loss of the Scanfish. The exact cause of the winch failure is still being investigated

On Thursday, February 2, the daily station was ended early, as one of the ship's crew had fallen sick and it was necessary to return to Walvis Bay for a medical evacuation. Whilst disappointing not to finish the observations of the first filament, we had nevertheless occupied it to a very late stage and data will still provide excellent biogeochemical characterization of the filament. We arrived in Walvis Bay early on February 3 and waited for a replacement crew member to join the ship. At around ~18:00 local time on February 7 we set sail with the replacement crew member on board.

On leaving port we headed south to a new filament identified in recent satellite images of sea surface temperature. This second filament was located further to the south east than the first filament, with an origin around 70 km offshore from the Namibian coastal town of Lüderitz. We arrived in the region on the evening of February 8, performed an overnight survey to identify the filament centre, then started the first main station at 08:30 (ship time) on February 9. We continued our study of the second filament, conducting daily stations to sample the water column and then using the remainder of the day and night for intensive underway sampling of surface seawater, until February 16. We then began the final phase of our cruise programme, which was to conduct a transect outwards to the central South Atlantic in order to cross the full biogeochemical gradient from upwelling to subtropical gyre conditions. Stations were conducted each day, with a spacing of 1.4 degrees (~140 km) until 5°W. In between stations underway sampling continued, but at a lower spatial resolution than in the filaments.

On February 27 we had our last station and began the journey back to Walvis Bay, using the time to finish experiments that were running and to clean and pack equipment into shipping containers. We arrived in the port of Walvis Bay early in the morning of March 4.

Acknowledgements

All the members of the M187 science team are very grateful to the German Research Foundation (DFG), the German Research Fleet Coordination Centre at the Universität Hamburg, the shipping company BRIESE Research and LPL Projects + Logistics GmbH for their support to both science and ship logistics. We thank NOAA for providing us with drifters deployed on the research cruise. Finally, we would also like to sincerely thank the captain, officers and crew of the RV METEOR, who provided excellent support in making the cruise both successful and enjoyable.

Participant list

1	Browning	Thomas John	Chief scientist	GEOMAR
2	Achterberg	Eric Pieter	Deputy chief scientist/trace elements/in situ pumps	GEOMAR
3	Bogner	Boie	Nutrients/logistics/dangerous goods	GEOMAR
4	von Keitz	Tabea Elena	Oxygen/nutrients assistant	GEOMAR
5	Hu	Zhendong	Drifter deployments/physical oceanography	GEOMAR
6	Melzer	Hannah	CTD winch/physical oceanography	GEOMAR
7	Warlo	Niklas	Ammonium	GEOMAR
8	Kopetzky	Frank Raimo	Scanfish	Hereon
9	Nicolas	Angèle	Trace elements	GEOMAR
10	Guo	Jinqiang	In situ pumps/biological carbon pump	GEOMAR
11	Blanke	Jana Francesca	Thorium 234/Carbon export	GEOMAR
12	Liu	Haoran	Phytoplankton/Bioassays	GEOMAR
13	Kraft	Lena Zoe	Phytoplankton/Bioassays	GEOMAR
14	Wen	Zuozhu	N2 fixation/Primary production	GEOMAR
15	Chen	Ze	N2 fixation/Primary production	GEOMAR
16	Qiu	Li	Carbonate chemistry sensors	GEOMAR
17	Eisnecker	Paula	Nitrogen cycle/trace gases	GEOMAR
18	Garaba	Shungudzemwoyo Pascal	Ocean optics	University Oldenburg
19	Voß	Daniela	Ocean optics	University Oldenburg
20	Robinson	Tiera-Brandy	Ocean optics	GEOMAR
21	Norbisrath	Mona	Radium/carbonate chemistry	Hereon
22	Eckmann	Charlotte Ann	Genomics/flow cytometry	GEOMAR
23	Spezzano	Rachele	Genomics/flow cytometry/UVP	GEOMAR
24	Dash	Pratyasha	Genomics/flow cytometry	GEOMAR
25	Stobbe	Tim Beneke	Organic complexation trace elements	GEOMAR
26	Fernandes de Gois Cardoso	Cláudio Roberto	ADCP/Satellite obs/physical oceanography	Hereon
27	Schuback	Nina	Active fluorometry	Chelsea Technologies
28	Stelzner	Martin	Bordwetterdienst	DWD

Institutes

DWD

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Station list

ADCP= Acoustic Doppler Current Profiler; CTD= METEOR CTD; Pump= tow-fish; DRIFT= SVP Drifter; GOFLO= Go-flo bottle deployment; LIOP= Underwater light measurements; SD= Secchi disk; ISP= in situ pumps; SF= Scanfish.

Station	Device Operation	Device Operation Label	Event Time	Latitude	Longitude	Seafloor depth (m)
	M187_0_Underway-1	ADCP	25/01/2023 19:00	22° 49.150' S	014° 28.605' E	67
	M187_0_Underway-1	ADCP	03/02/2023 01:40	22° 59.933' S	014° 11.205' E	
1	M187 1-1	CTD	25/01/2023 20:52	22° 39.759' S	014° 12.881' E	99
1	M187 1-1	CTD	25/01/2023 21:02	22° 39.747' S	014° 12.862' E	99
1	M187 1-1	CTD	25/01/2023 21:10	22° 39.727' S	014° 12.837' E	101
	M187 2-1	Pump	26/01/2023 11:33	24° 44.396' S	013° 29.667' E	
	M187 2-1	Pump	27/01/2023 06:54	24° 42.942' S	013° 21.751' E	788
	M187 2-2	CTD	26/01/2023 13:03	24° 54.216' S	013° 20.353' E	
	M187 2-2	CTD	26/01/2023 13:11	24° 54.218' S	013° 20.357' E	969
	M187 2-2	CTD	26/01/2023 13:17	24° 54.218' S	013° 20.357' E	972
2	M187 3-1	DRIFT	27/01/2023 06:45	24° 42.567' S	013° 21.295' E	790
2	M187 3-2	DRIFT	27/01/2023 06:47	24° 42.647' S	013° 21.393' E	790
2	M187 3-3	DRIFT	27/01/2023 06:51	24° 42.827' S	013° 21.612' E	788
2	M187 3-4	CTD	27/01/2023 07:04	24° 43.202' S	013° 22.111' E	780
2	M187 3-4	CTD	27/01/2023 07:23	24° 43.205' S	013° 22.111' E	779
2	M187 3-4	CTD	27/01/2023 07:46	24° 43.206' S	013° 22.112' E	779
2	M187 3-5	GOFLO	27/01/2023 08:10	24° 43.206' S	013° 22.111' E	778
2	M187 3-5	GOFLO	27/01/2023 09:04	24° 43.205' S	013° 22.111' E	779
2	M187 3-5	GOFLO	27/01/2023 09:37	24° 43.206' S	013° 22.110' E	779
2	M187 3-6	CTD	27/01/2023 09:47	24° 43.205' S	013° 22.109' E	778
2	M187 3-6	CTD	27/01/2023 09:57	24° 43.205' S	013° 22.111' E	778
2	M187 3-6	CTD	27/01/2023 10:10	24° 43.206' S	013° 22.112' E	778
2	M187 3-7	LIOP	27/01/2023 10:21	24° 43.205' S	013° 22.111' E	779
2	M187 3-7	LIOP	27/01/2023 10:56	24° 43.623' S	013° 22.110' E	787
2	M187 3-8	SD	27/01/2023 10:57	24° 43.624' S	013° 22.109' E	785
2	M187 3-8	SD	27/01/2023 11:00	24° 43.623' S	013° 22.107' E	786
2	M187 3-9	ISP	27/01/2023 11:45	24° 43.624' S	013° 22.109' E	785
2	M187 3-9	ISP	27/01/2023 11:55	24° 43.624' S	013° 22.108' E	785
2	M187 3-9	ISP	27/01/2023 12:05	24° 43.624' S	013° 22.108' E	786
2	M187 3-9	ISP	27/01/2023 12:13	24° 43.623' S	013° 22.109' E	786
2	M187 3-9	ISP	27/01/2023 12:20	24° 43.623' S	013° 22.108' E	786
2	M187 3-9	ISP	27/01/2023 12:25	24° 43.625' S	013° 22.109' E	786
2	M187 3-9	ISP	27/01/2023 12:29	24° 43.623' S	013° 22.110' E	785
2	M187 3-9	ISP	27/01/2023 12:34	24° 43.624' S	013° 22.108' E	787
2	M187 3-9	ISP	27/01/2023 12:39	24° 43.624' S	013° 22.109' E	786

2	M187 3-9	ISP	27/01/2023 12:40	24° 43.623' S	013° 22.109' E	786
2	M187 3-9	ISP	27/01/2023 14:41	24° 43.624' S	013° 22.108' E	788
2	M187 3-9	ISP	27/01/2023 14:43	24° 43.623' S	013° 22.109' E	787
2	M187 3-9	ISP	27/01/2023 14:45	24° 43.624' S	013° 22.108' E	788
2	M187 3-9	ISP	27/01/2023 14:47	24° 43.624' S	013° 22.107' E	786
2	M187 3-9	ISP	27/01/2023 14:50	24° 43.624' S	013° 22.107' E	786
2	M187 3-9	ISP	27/01/2023 14:53	24° 43.624' S	013° 22.109' E	788
2	M187 3-9	ISP	27/01/2023 14:58	24° 43.624' S	013° 22.109' E	786
2	M187 3-9	ISP	27/01/2023 15:02	24° 43.623' S	013° 22.109' E	788
2	M187 3-9	ISP	27/01/2023 15:08	24° 43.623' S	013° 22.109' E	785
2	M187 3-9	ISP	27/01/2023 15:12	24° 43.624' S	013° 22.108' E	785
	M187 4-1	Pump	27/01/2023 15:21	24° 43.669' S	013° 22.135' E	785
	M187 4-1	Pump	28/01/2023 05:38	24° 44.426' S	013° 02.319' E	1551
5	M187 5-1	CTD	28/01/2023 06:44	24° 44.426' S	013° 02.319' E	1554
5	M187 5-1	CTD	28/01/2023 07:14	24° 44.427' S	013° 02.318' E	1550
5	M187 5-1	CTD	28/01/2023 07:28	24° 44.427' S	013° 02.320' E	1547
5	M187 5-2	GOFLO	28/01/2023 07:34	24° 44.427' S	013° 02.319' E	1549
5	M187 5-2	GOFLO	28/01/2023 08:25	24° 44.426' S	013° 02.320' E	1549
5	M187 5-2	GOFLO	28/01/2023 08:50	24° 44.426' S	013° 02.320' E	1548
5	M187 5-3	CTD	28/01/2023 08:57	24° 44.426' S	013° 02.318' E	1545
5	M187 5-3	CTD	28/01/2023 09:07	24° 44.427' S	013° 02.320' E	1548
5	M187 5-3	CTD	28/01/2023 09:17	24° 44.428' S	013° 02.320' E	1549
5	M187 5-4	LIOP	28/01/2023 09:42	24° 44.427' S	013° 02.320' E	1546
5	M187 5-4	LIOP	28/01/2023 10:05	24° 44.573' S	013° 02.346' E	1544
5	M187 5-5	SD	28/01/2023 10:07	24° 44.573' S	013° 02.345' E	1545
5	M187 5-5	SD	28/01/2023 10:14	24° 44.572' S	013° 02.346' E	1544
5	M187 5-6	ISP	28/01/2023 11:16	24° 44.572' S	013° 02.345' E	1544
5	M187 5-6	ISP	28/01/2023 11:27	24° 44.571' S	013° 02.345' E	1543
5	M187 5-6	ISP	28/01/2023 11:39	24° 44.572' S	013° 02.347' E	1545
5	M187 5-6	ISP	28/01/2023 11:44	24° 44.573' S	013° 02.344' E	1543
5	M187 5-6	ISP	28/01/2023 11:47	24° 44.571' S	013° 02.345' E	1547
5	M187 5-6	ISP	28/01/2023 11:54	24° 44.573' S	013° 02.343' E	1545
5	M187 5-6	ISP	28/01/2023 11:58	24° 44.572' S	013° 02.345' E	1545
5	M187 5-6	ISP	28/01/2023 11:59	24° 44.571' S	013° 02.345' E	1544
5	M187 5-6	ISP	28/01/2023 14:17	24° 44.573' S	013° 02.344' E	1544
	M187 6-1	Pump	28/01/2023 14:22	24° 44.567' S	013° 02.341' E	
	M187 6-1	Pump	28/01/2023 21:01	24° 33.905' S	012° 57.858' E	
	M187 6-1	Pump	29/01/2023 06:30	24° 44.438' S	012° 47.658' E	2206
4	M187 7-1	DRIFT	29/01/2023 06:30	24° 44.434' S	012° 47.649' E	2207
4	M187 7-2	CTD	29/01/2023 06:40	24° 44.449' S	012° 47.608' E	2207
4	M187 7-2	CTD	29/01/2023 07:04	24° 44.515' S	012° 47.704' E	2206
4	M187 7-2	CTD	29/01/2023 07:26	24° 44.576' S	012° 47.766' E	2202
4	M187 7-3	GOFLO	29/01/2023 07:31	24° 44.578' S	012° 47.765' E	2203
4	M187 7-3	GOFLO	29/01/2023 08:19	24° 44.576' S	012° 47.765' E	2202

4	M187 7-3	GOFLO	29/01/2023 08:48	24° 44.576' S	012° 47.762' E	2202
4	M187 7-4	CTD	29/01/2023 08:54	24° 44.578' S	012° 47.765' E	2203
4	M187 7-4	CTD	29/01/2023 09:02	24° 44.577' S	012° 47.764' E	2202
4	M187 7-4	CTD	29/01/2023 09:12	24° 44.577' S	012° 47.765' E	2202
4	M187 7-5	LIOP	29/01/2023 09:41	24° 44.598' S	012° 47.775' E	2202
4	M187 7-5	LIOP	29/01/2023 10:10	24° 44.832' S	012° 47.934' E	2196
4	M187 7-6	SD	29/01/2023 10:13	24° 44.835' S	012° 47.933' E	2198
4	M187 7-6	SD	29/01/2023 10:17	24° 44.836' S	012° 47.932' E	2198
4	M187 7-7	ISP	29/01/2023 10:33	24° 44.833' S	012° 47.934' E	2198
4	M187 7-7	ISP	29/01/2023 10:41	24° 44.835' S	012° 47.934' E	2196
4	M187 7-7	ISP	29/01/2023 10:47	24° 44.836' S	012° 47.934' E	2196
4	M187 7-7	ISP	29/01/2023 10:51	24° 44.838' S	012° 47.933' E	2197
4	M187 7-7	ISP	29/01/2023 10:54	24° 44.835' S	012° 47.934' E	2198
4	M187 7-7	ISP	29/01/2023 10:57	24° 44.836' S	012° 47.934' E	2197
4	M187 7-7	ISP	29/01/2023 10:58	24° 44.836' S	012° 47.935' E	2198
4	M187 7-7	ISP	29/01/2023 11:01	24° 44.837' S	012° 47.935' E	2196
4	M187 7-7	ISP	29/01/2023 13:21	24° 44.836' S	012° 47.935' E	2197
	M187 8-1	Pump	29/01/2023 13:25	24° 44.835' S	012° 47.934' E	2197
	M187 8-1	Pump	30/01/2023 06:30	24° 41.536' S	012° 34.857' E	
5	M187 9-1	CTD	30/01/2023 06:32	24° 41.536' S	012° 34.857' E	2583
5	M187 9-1	CTD	30/01/2023 06:56	24° 41.537' S	012° 34.857' E	2583
5	M187 9-1	CTD	30/01/2023 07:16	24° 41.537' S	012° 34.856' E	2583
5	M187 9-2	GOFLO	30/01/2023 07:25	24° 41.537' S	012° 34.859' E	2583
5	M187 9-2	GOFLO	30/01/2023 08:05	24° 41.536' S	012° 34.857' E	2583
5	M187 9-2	GOFLO	30/01/2023 08:34	24° 41.537' S	012° 34.857' E	2583
5	M187 9-3	CTD	30/01/2023 08:42	24° 41.536' S	012° 34.856' E	2583
5	M187 9-3	CTD	30/01/2023 08:51	24° 41.537' S	012° 34.856' E	2583
5	M187 9-3	CTD	30/01/2023 09:01	24° 41.536' S	012° 34.858' E	2583
5	M187 9-4	SD	30/01/2023 09:07	24° 41.537' S	012° 34.857' E	2583
5	M187 9-4	SD	30/01/2023 09:11	24° 41.536' S	012° 34.858' E	2584
5	M187 9-5	LIOP	30/01/2023 09:35	24° 41.541' S	012° 34.859' E	2584
5	M187 9-5	LIOP	30/01/2023 10:01	24° 41.782' S	012° 34.948' E	2586
5	M187 9-6	ISP	30/01/2023 10:24	24° 41.787' S	012° 34.948' E	2586
5	M187 9-6	ISP	30/01/2023 10:32	24° 41.788' S	012° 34.948' E	2585
5	M187 9-6	ISP	30/01/2023 10:38	24° 41.787' S	012° 34.948' E	2587
5	M187 9-6	ISP	30/01/2023 10:42	24° 41.786' S	012° 34.948' E	2586
5	M187 9-6	ISP	30/01/2023 10:46	24° 41.787' S	012° 34.948' E	2586
5	M187 9-6	ISP	30/01/2023 10:49	24° 41.787' S	012° 34.948' E	2586
5	M187 9-6	ISP	30/01/2023 10:53	24° 41.787' S	012° 34.948' E	2586
5	M187 9-6	ISP	30/01/2023 10:56	24° 41.787' S	012° 34.949' E	2587
5	M187 9-6	ISP	30/01/2023 10:59	24° 41.787' S	012° 34.948' E	2586
5	M187 9-6	ISP	30/01/2023 10:59	24° 41.786' S	012° 34.949' E	2586
5	M187 9-6	ISP	30/01/2023 14:04	24° 41.787' S	012° 34.949' E	2586
	M187 10-1	Pump	30/01/2023 14:19	24° 42.166' S	012° 34.439' E	2605

	M187 10-1	Pump	30/01/2023 17:11	24° 25.688' S	012° 30.585' E	2393
6	M187 11-1	CTD	30/01/2023 17:12	24° 25.687' S	012° 30.585' E	2393
6	M187 11-1	CTD	30/01/2023 17:31	24° 25.690' S	012° 30.585' E	2393
6	M187 11-1	CTD	30/01/2023 17:44	24° 25.690' S	012° 30.585' E	2393
	M187 12-1	Pump	30/01/2023 17:49	24° 25.702' S	012° 30.577' E	2394
	M187 12-1	Pump	31/01/2023 01:28	25° 03.590' S	012° 30.596' E	
7	M187 13-1	CTD	31/01/2023 01:29	25° 03.589' S	012° 30.593' E	
7	M187 13-1	CTD	31/01/2023 01:45	25° 03.590' S	012° 30.593' E	
7	M187 13-1	CTD	31/01/2023 01:57	25° 03.590' S	012° 30.592' E	
	M187 14-1	Pump	31/01/2023 02:00	25° 03.590' S	012° 30.592' E	
	M187 14-1	Pump	31/01/2023 07:22	24° 40.189' S	012° 15.605' E	3031
8	M187 15-1	CTD	31/01/2023 07:23	24° 40.194' S	012° 15.604' E	3028
8	M187 15-1	CTD	31/01/2023 07:48	24° 40.194' S	012° 15.607' E	3028
8	M187 15-1	CTD	31/01/2023 08:09	24° 40.194' S	012° 15.606' E	3029
8	M187 15-2	GOFLO	31/01/2023 08:19	24° 40.194' S	012° 15.607' E	3028
8	M187 15-2	GOFLO	31/01/2023 08:56	24° 40.194' S	012° 15.607' E	3029
8	M187 15-2	GOFLO	31/01/2023 09:20	24° 40.194' S	012° 15.607' E	3027
8	M187 15-3	CTD	31/01/2023 09:26	24° 40.194' S	012° 15.607' E	3027
8	M187 15-3	CTD	31/01/2023 09:34	24° 40.194' S	012° 15.606' E	3029
8	M187 15-3	CTD	31/01/2023 09:44	24° 40.194' S	012° 15.606' E	3029
8	M187 15-4	LIOP	31/01/2023 09:55	24° 40.232' S	012° 15.607' E	3035
8	M187 15-4	LIOP	31/01/2023 10:17	24° 40.388' S	012° 15.685' E	3030
8	M187 15-5	SD	31/01/2023 10:19	24° 40.386' S	012° 15.683' E	3027
8	M187 15-5	SD	31/01/2023 10:24	24° 40.388' S	012° 15.683' E	3030
8	M187 15-6	DRIFT	31/01/2023 10:48	24° 40.386' S	012° 15.628' E	3029
8	M187 15-7	DRIFT	31/01/2023 10:51	24° 40.386' S	012° 15.628' E	3029
8	M187 15-8	DRIFT	31/01/2023 10:54	24° 40.386' S	012° 15.629' E	3028
8	M187 15-9	ISP	31/01/2023 10:58	24° 40.386' S	012° 15.629' E	3029
8	M187 15-9	ISP	31/01/2023 11:07	24° 40.387' S	012° 15.629' E	3029
8	M187 15-9	ISP	31/01/2023 11:12	24° 40.386' S	012° 15.629' E	3030
8	M187 15-9	ISP	31/01/2023 11:16	24° 40.386' S	012° 15.629' E	3029
8	M187 15-9	ISP	31/01/2023 11:19	24° 40.386' S	012° 15.629' E	3030
8	M187 15-9	ISP	31/01/2023 11:24	24° 40.387' S	012° 15.629' E	3029
8	M187 15-9	ISP	31/01/2023 11:27	24° 40.387' S	012° 15.628' E	3028
8	M187 15-9	ISP	31/01/2023 11:29	24° 40.386' S	012° 15.629' E	3029
8	M187 15-9	ISP	31/01/2023 13:44	24° 40.387' S	012° 15.630' E	3030
	M187 16-1	Pump	31/01/2023 13:57	24° 40.399' S	012° 15.619' E	3027
	M187 16-1	Pump	01/02/2023 06:25	24° 46.796' S	012° 01.704' E	3375
	M187 17-1	SCF	31/01/2023 17:09	24° 36.397' S	012° 11.996' E	
	M187 17-1	SCF	31/01/2023 21:22	24° 58.644' S	012° 10.317' E	
9	M187 18-1	CTD	01/02/2023 06:26	24° 46.800' S	012° 01.697' E	3374
9	M187 18-1	CTD	01/02/2023 06:50	24° 46.818' S	012° 01.666' E	3376
9	M187 18-1	CTD	01/02/2023 07:10	24° 46.830' S	012° 01.654' E	3377
9	M187 18-2	GOFLO	01/02/2023 07:21	24° 46.830' S	012° 01.655' E	3377

9	M187 18-2	GOFLO	01/02/2023 08:07	24° 46.810' S	012° 01.675' E	3374
9	M187 18-2	GOFLO	01/02/2023 08:37	24° 46.801' S	012° 01.686' E	3375
9	M187 18-3	CTD	01/02/2023 08:41	24° 46.801' S	012° 01.686' E	3377
9	M187 18-3	CTD	01/02/2023 08:52	24° 46.794' S	012° 01.693' E	3375
9	M187 18-3	CTD	01/02/2023 09:01	24° 46.794' S	012° 01.693' E	3376
9	M187 18-4	SD	01/02/2023 09:07	24° 46.795' S	012° 01.691' E	3376
9	M187 18-4	SD	01/02/2023 09:13	24° 46.797' S	012° 01.689' E	3375
9	M187 18-5	LIOP	01/02/2023 09:41	24° 46.817' S	012° 01.691' E	3376
9	M187 18-5	LIOP	01/02/2023 10:01	24° 46.932' S	012° 01.814' E	3371
9	M187 18-6	SD	01/02/2023 10:04	24° 46.934' S	012° 01.816' E	3370
9	M187 18-6	SD	01/02/2023 10:08	24° 46.934' S	012° 01.816' E	3369
9	M187 18-7	ISP	01/02/2023 10:13	24° 46.934' S	012° 01.816' E	3370
9	M187 18-7	ISP	01/02/2023 10:20	24° 46.934' S	012° 01.816' E	3370
9	M187 18-7	ISP	01/02/2023 10:26	24° 46.933' S	012° 01.817' E	3370
9	M187 18-7	ISP	01/02/2023 10:31	24° 46.934' S	012° 01.817' E	3370
9	M187 18-7	ISP	01/02/2023 10:36	24° 46.934' S	012° 01.817' E	3371
9	M187 18-7	ISP	01/02/2023 10:39	24° 46.934' S	012° 01.816' E	3372
9	M187 18-7	ISP	01/02/2023 10:42	24° 46.933' S	012° 01.816' E	3374
9	M187 18-7	ISP	01/02/2023 10:46	24° 46.934' S	012° 01.816' E	3370
9	M187 18-7	ISP	01/02/2023 10:48	24° 46.933' S	012° 01.816' E	3370
9	M187 18-7	ISP	01/02/2023 10:49	24° 46.933' S	012° 01.816' E	3372
9	M187 18-7	ISP	01/02/2023 13:39	24° 46.933' S	012° 01.817' E	3370
	M187 19-1	Pump	01/02/2023 13:46	24° 46.954' S	012° 01.824' E	3373
	M187 19-1	Pump	01/02/2023 16:37	25° 01.715' S	012° 01.040' E	3440
10	M187 20-1	CTD	01/02/2023 16:37	25° 01.716' S	012° 01.039' E	3437
10	M187 20-1	CTD	01/02/2023 16:52	25° 01.661' S	012° 01.056' E	3440
10	M187 20-1	CTD	01/02/2023 17:03	25° 01.594' S	012° 01.030' E	3438
	M187 21-1	Pump	01/02/2023 17:30	25° 01.184' S	012° 00.784' E	3445
	M187 21-1	Pump	01/02/2023 22:19	24° 34.780' S	011° 51.606' E	
11	M187 22-1	CTD	01/02/2023 22:23	24° 34.781' S	011° 51.605' E	
11	M187 22-1	CTD	01/02/2023 22:40	24° 34.782' S	011° 51.605' E	
11	M187 22-1	CTD	01/02/2023 22:51	24° 34.782' S	011° 51.605' E	
	M187 23-1	Pump	01/02/2023 23:08	24° 34.619' S	011° 51.615' E	
	M187 23-1	Pump	02/02/2023 06:34	24° 56.357' S	011° 46.070' E	
12	M187 24-1	CTD	02/02/2023 06:35	24° 56.356' S	011° 46.065' E	
12	M187 24-1	CTD	02/02/2023 06:59	24° 56.355' S	011° 46.070' E	3694
12	M187 24-1	CTD	02/02/2023 07:19	24° 56.356' S	011° 46.071' E	3696
12	M187 24-2	GOFLO	02/02/2023 07:26	24° 56.356' S	011° 46.070' E	3695
12	M187 24-2	GOFLO	02/02/2023 08:01	24° 56.427' S	011° 46.004' E	3695
12	M187 24-2	GOFLO	02/02/2023 08:33	24° 56.538' S	011° 45.896' E	3693
12	M187 24-3	CTD	02/02/2023 08:38	24° 56.563' S	011° 45.875' E	3694
12	M187 24-3	CTD	02/02/2023 08:46	24° 56.603' S	011° 45.837' E	3696
12	M187 24-3	CTD	02/02/2023 08:55	24° 56.644' S	011° 45.801' E	3699
12	M187 24-4	SD	02/02/2023 09:13	24° 56.689' S	011° 45.756' E	3700

12	M187 24-4	SD	02/02/2023 09:16	24° 56.695' S	011° 45.749' E	3699
	M187 25-1	DRIFT	02/02/2023 11:38	24° 44.875' S	012° 00.962' E	3404
	M187 25-2	DRIFT	02/02/2023 11:39	24° 44.787' S	012° 01.072' E	3406
	M187 25-3	DRIFT	02/02/2023 11:40	24° 44.664' S	012° 01.225' E	3398
	M187_0_Underway-2	VMADCP 38kHz	07/02/2023 17:20	22° 59.829' S	014° 11.309' E	0
	M187 26-1	Pump	08/02/2023 07:06	25° 35.882' S	014° 15.699' E	8
	M187 26-1	Pump	09/02/2023 06:27	26° 36.623' S	014° 19.663' E	343
13	M187 27-1	CTD	09/02/2023 06:29	26° 36.623' S	014° 19.668' E	343
13	M187 27-1	CTD	09/02/2023 06:42	26° 36.623' S	014° 19.668' E	343
13	M187 27-1	CTD	09/02/2023 06:58	26° 36.624' S	014° 19.667' E	343
13	M187 27-2	GOFLO	09/02/2023 07:03	26° 36.624' S	014° 19.668' E	343
13	M187 27-2	GOFLO	09/02/2023 07:28	26° 36.623' S	014° 19.668' E	343
13	M187 27-2	GOFLO	09/02/2023 07:53	26° 36.624' S	014° 19.667' E	343
13	M187 27-3	CTD	09/02/2023 07:59	26° 36.623' S	014° 19.668' E	343
13	M187 27-3	CTD	09/02/2023 08:08	26° 36.623' S	014° 19.669' E	343
13	M187 27-3	CTD	09/02/2023 08:17	26° 36.623' S	014° 19.668' E	343
13	M187 27-4	LIOP	09/02/2023 08:23	26° 36.682' S	014° 19.684' E	343
13	M187 27-4	LIOP	09/02/2023 08:44	26° 36.869' S	014° 19.740' E	343
13	M187 27-5	SD	09/02/2023 08:46	26° 36.882' S	014° 19.744' E	343
13	M187 27-5	SD	09/02/2023 08:49	26° 36.882' S	014° 19.746' E	343
13	M187 27-6	ISP	09/02/2023 09:02	26° 36.881' S	014° 19.745' E	343
13	M187 27-6	ISP	09/02/2023 09:09	26° 36.881' S	014° 19.744' E	343
13	M187 27-6	ISP	09/02/2023 09:13	26° 36.881' S	014° 19.744' E	343
13	M187 27-6	ISP	09/02/2023 09:17	26° 36.882' S	014° 19.744' E	343
13	M187 27-6	ISP	09/02/2023 09:20	26° 36.881' S	014° 19.743' E	343
13	M187 27-6	ISP	09/02/2023 09:24	26° 36.881' S	014° 19.746' E	344
13	M187 27-6	ISP	09/02/2023 09:25	26° 36.881' S	014° 19.744' E	343
13	M187 27-6	ISP	09/02/2023 11:22	26° 36.882' S	014° 19.743' E	343
	M187 28-1	Pump	09/02/2023 11:33	26° 36.927' S	014° 19.743' E	343
	M187 28-1	Pump	10/02/2023 06:26	26° 58.756' S	013° 50.386' E	687
	M187 29-1	DRIFT	10/02/2023 06:26	26° 58.757' S	013° 50.386' E	687
14	M187 29-2	CTD	10/02/2023 06:33	26° 58.786' S	013° 50.399' E	688
14	M187 29-2	CTD	10/02/2023 06:52	26° 58.786' S	013° 50.397' E	688
14	M187 29-2	CTD	10/02/2023 07:08	26° 58.786' S	013° 50.396' E	689
14	M187 29-3	GOFLO	10/02/2023 07:14	26° 58.787' S	013° 50.395' E	689
14	M187 29-3	GOFLO	10/02/2023 07:51	26° 58.786' S	013° 50.396' E	688
14	M187 29-3	GOFLO	10/02/2023 08:16	26° 58.786' S	013° 50.395' E	688
14	M187 29-4	CTD	10/02/2023 08:22	26° 58.786' S	013° 50.397' E	689
14	M187 29-4	CTD	10/02/2023 08:31	26° 58.786' S	013° 50.397' E	687
14	M187 29-4	CTD	10/02/2023 08:43	26° 58.787' S	013° 50.397' E	687
14	M187 29-5	LIOP	10/02/2023 08:47	26° 58.789' S	013° 50.399' E	687
14	M187 29-5	LIOP	10/02/2023 09:16	26° 59.352' S	013° 50.410' E	711
14	M187 29-6	SD	10/02/2023 09:18	26° 59.380' S	013° 50.410' E	712

14	M187 29-6	SD	10/02/2023 09:20	26° 59.383' S	013° 50.411' E	710
14	M187 29-7	ISP	10/02/2023 09:38	26° 59.382' S	013° 50.412' E	710
14	M187 29-7	ISP	10/02/2023 09:53	26° 59.381' S	013° 50.413' E	710
14	M187 29-7	ISP	10/02/2023 09:59	26° 59.381' S	013° 50.413' E	710
14	M187 29-7	ISP	10/02/2023 10:05	26° 59.380' S	013° 50.414' E	710
14	M187 29-7	ISP	10/02/2023 10:10	26° 59.381' S	013° 50.415' E	712
14	M187 29-7	ISP	10/02/2023 10:14	26° 59.383' S	013° 50.411' E	711
14	M187 29-7	ISP	10/02/2023 10:18	26° 59.381' S	013° 50.410' E	711
14	M187 29-7	ISP	10/02/2023 10:20	26° 59.381' S	013° 50.412' E	711
14	M187 29-7	ISP	10/02/2023 10:23	26° 59.381' S	013° 50.409' E	710
14	M187 29-7	ISP	10/02/2023 10:23	26° 59.382' S	013° 50.411' E	710
14	M187 29-7	ISP	10/02/2023 12:42	26° 59.381' S	013° 50.411' E	710
	M187 30-1	Pump	10/02/2023 12:46	26° 59.382' S	013° 50.412' E	710
	M187 30-1	Pump	10/02/2023 22:38	26° 52.212' S	013° 39.615' E	937
15	M187 31-1	CTD	10/02/2023 22:39	26° 52.211' S	013° 39.615' E	935
15	M187 31-1	CTD	10/02/2023 22:55	26° 52.211' S	013° 39.611' E	935
15	M187 31-1	CTD	10/02/2023 23:08	26° 52.212' S	013° 39.611' E	937
	M187 32-1	Pump	10/02/2023 23:18	26° 52.221' S	013° 39.595' E	936
	M187 32-1	Pump	11/02/2023 03:49	26° 59.914' S	013° 26.361' E	1727
16	M187 33-1	CTD	11/02/2023 06:35	26° 59.997' S	013° 26.396' E	1727
16	M187 33-1	CTD	11/02/2023 06:59	26° 59.997' S	013° 26.396' E	1727
16	M187 33-1	CTD	11/02/2023 07:19	26° 59.996' S	013° 26.397' E	1725
16	M187 33-2	GOFLO	11/02/2023 07:27	26° 59.997' S	013° 26.397' E	1725
16	M187 33-2	GOFLO	11/02/2023 08:02	26° 59.997' S	013° 26.397' E	1726
16	M187 33-2	GOFLO	11/02/2023 08:39	27° 00.041' S	013° 26.392' E	1706
16	M187 33-3	CTD	11/02/2023 09:07	26° 58.991' S	013° 26.243' E	1674
16	M187 33-3	CTD	11/02/2023 09:16	26° 58.992' S	013° 26.243' E	1675
16	M187 33-3	CTD	11/02/2023 09:23	26° 58.993' S	013° 26.243' E	1673
16	M187 33-4	LIOP	11/02/2023 09:41	26° 59.007' S	013° 26.248' E	1674
16	M187 33-4	LIOP	11/02/2023 10:08	26° 59.430' S	013° 26.372' E	1684
16	M187 33-5	SD	11/02/2023 10:08	26° 59.429' S	013° 26.372' E	1684
16	M187 33-5	SD	11/02/2023 10:10	26° 59.430' S	013° 26.373' E	1684
16	M187 33-6	ISP	11/02/2023 10:29	26° 59.429' S	013° 26.374' E	1685
16	M187 33-6	ISP	11/02/2023 10:37	26° 59.429' S	013° 26.374' E	1685
16	M187 33-6	ISP	11/02/2023 10:42	26° 59.429' S	013° 26.373' E	1685
16	M187 33-6	ISP	11/02/2023 10:47	26° 59.428' S	013° 26.374' E	1685
16	M187 33-6	ISP	11/02/2023 10:52	26° 59.428' S	013° 26.374' E	1684
16	M187 33-6	ISP	11/02/2023 10:55	26° 59.428' S	013° 26.374' E	1685
16	M187 33-6	ISP	11/02/2023 10:58	26° 59.428' S	013° 26.374' E	1684
16	M187 33-6	ISP	11/02/2023 11:00	26° 59.428' S	013° 26.373' E	1684
16	M187 33-6	ISP	11/02/2023 11:03	26° 59.428' S	013° 26.373' E	1684
16	M187 33-6	ISP	11/02/2023 11:03	26° 59.428' S	013° 26.374' E	1684
16	M187 33-6	ISP	11/02/2023 11:03	26° 59.428' S	013° 26.374' E	1684
16	M187 33-6	ISP	11/02/2023 13:14	26° 59.428' S	013° 26.373' E	1687
	M187 34-1	Pump	11/02/2023 13:30	26° 59.435' S	013° 26.376' E	1687

	M187 34-1	Pump	11/02/2023 17:44	27° 20.353' S	013° 11.448' E	2646
17	M187 35-1	CTD	11/02/2023 17:46	27° 20.360' S	013° 11.449' E	2647
17	M187 35-1	CTD	11/02/2023 18:01	27° 20.360' S	013° 11.448' E	2646
17	M187 35-1	CTD	11/02/2023 18:12	27° 20.372' S	013° 11.456' E	2648
	M187 36-1	Pump	11/02/2023 18:24	27° 20.158' S	013° 11.452' E	2642
	M187 36-1	Pump	12/02/2023 06:22	26° 52.951' S	012° 58.779' E	
18	M187 37-1	DRIFT	12/02/2023 06:27	26° 52.564' S	012° 58.828' E	
18	M187 37-2	DRIFT	12/02/2023 06:30	26° 52.414' S	012° 58.849' E	
18	M187 37-3	DRIFT	12/02/2023 06:32	26° 52.282' S	012° 58.868' E	
18	M187 37-4	CTD	12/02/2023 06:55	26° 52.830' S	012° 58.595' E	2611
18	M187 37-4	CTD	12/02/2023 07:19	26° 52.830' S	012° 58.596' E	2613
18	M187 37-4	CTD	12/02/2023 07:38	26° 52.831' S	012° 58.593' E	2611
18	M187 37-5	GOFLO	12/02/2023 07:45	26° 52.830' S	012° 58.594' E	2612
18	M187 37-5	GOFLO	12/02/2023 08:22	26° 52.829' S	012° 58.595' E	2611
18	M187 37-5	GOFLO	12/02/2023 08:54	26° 52.829' S	012° 58.594' E	2611
18	M187 37-6	CTD	12/02/2023 09:03	26° 52.829' S	012° 58.595' E	2612
18	M187 37-6	CTD	12/02/2023 09:12	26° 52.830' S	012° 58.593' E	2610
18	M187 37-6	CTD	12/02/2023 09:21	26° 52.828' S	012° 58.593' E	2610
18	M187 37-7	LIOP	12/02/2023 09:44	26° 52.871' S	012° 58.577' E	2614
18	M187 37-7	LIOP	12/02/2023 10:20	26° 53.506' S	012° 58.319' E	2637
18	M187 37-8	SD	12/02/2023 10:22	26° 53.523' S	012° 58.312' E	2638
18	M187 37-8	SD	12/02/2023 10:25	26° 53.524' S	012° 58.313' E	2639
18	M187 37-9	ISP	12/02/2023 10:29	26° 53.524' S	012° 58.314' E	2639
18	M187 37-9	ISP	12/02/2023 10:39	26° 53.524' S	012° 58.314' E	2636
18	M187 37-9	ISP	12/02/2023 10:44	26° 53.525' S	012° 58.314' E	2640
18	M187 37-9	ISP	12/02/2023 10:50	26° 53.522' S	012° 58.311' E	2637
18	M187 37-9	ISP	12/02/2023 10:56	26° 53.522' S	012° 58.312' E	2639
18	M187 37-9	ISP	12/02/2023 11:00	26° 53.523' S	012° 58.313' E	2637
18	M187 37-9	ISP	12/02/2023 11:04	26° 53.522' S	012° 58.312' E	2639
18	M187 37-9	ISP	12/02/2023 11:07	26° 53.522' S	012° 58.312' E	2638
18	M187 37-9	ISP	12/02/2023 11:10	26° 53.522' S	012° 58.311' E	2637
18	M187 37-9	ISP	12/02/2023 11:10	26° 53.522' S	012° 58.312' E	2638
18	M187 37-9	ISP	12/02/2023 13:54	26° 53.521' S	012° 58.313' E	2639
	M187 38-1	Pump	12/02/2023 14:00	26° 53.522' S	012° 58.312' E	2639
	M187 38-1	Pump	12/02/2023 17:27	26° 33.115' S	013° 00.153' E	2253
19	M187 39-1	CTD	12/02/2023 17:33	26° 32.982' S	013° 00.019' E	2255
19	M187 39-1	CTD	12/02/2023 17:50	26° 32.982' S	013° 00.020' E	2255
19	M187 39-1	CTD	12/02/2023 18:01	26° 32.981' S	013° 00.021' E	2255
	M187 40-1	Pump	12/02/2023 18:07	26° 32.978' S	012° 59.956' E	2258
	M187 40-1	Pump	13/02/2023 06:29	26° 42.024' S	012° 29.896' E	3393
20	M187 41-1	CTD	13/02/2023 06:31	26° 42.021' S	012° 29.868' E	3395
20	M187 41-1	CTD	13/02/2023 06:55	26° 41.979' S	012° 29.708' E	3401
20	M187 41-1	CTD	13/02/2023 07:18	26° 41.952' S	012° 29.606' E	3403
20	M187 41-2	GOFLO	13/02/2023 07:24	26° 41.948' S	012° 29.588' E	3403

20	M187 41-2	GOFLO	13/02/2023 08:00	26° 41.915' S	012° 29.471' E	3405
20	M187 41-2	GOFLO	13/02/2023 08:30	26° 41.887' S	012° 29.383' E	3404
20	M187 41-3	CTD	13/02/2023 08:37	26° 41.882' S	012° 29.368' E	3404
20	M187 41-3	CTD	13/02/2023 08:45	26° 41.870' S	012° 29.331' E	3406
20	M187 41-3	CTD	13/02/2023 08:53	26° 41.859' S	012° 29.296' E	3402
20	M187 41-4	SD	13/02/2023 08:58	26° 41.879' S	012° 29.288' E	3406
20	M187 41-4	SD	13/02/2023 09:01	26° 41.884' S	012° 29.286' E	3404
20	M187 41-5	LIOP	13/02/2023 09:34	26° 41.918' S	012° 28.811' E	3413
20	M187 41-5	LIOP	13/02/2023 10:03	26° 42.247' S	012° 28.361' E	3422
20	M187 41-6	ISP	13/02/2023 10:17	26° 42.249' S	012° 28.314' E	3425
20	M187 41-6	ISP	13/02/2023 10:29	26° 42.248' S	012° 28.314' E	3424
20	M187 41-6	ISP	13/02/2023 10:34	26° 42.248' S	012° 28.314' E	3424
20	M187 41-6	ISP	13/02/2023 10:40	26° 42.248' S	012° 28.313' E	3423
20	M187 41-6	ISP	13/02/2023 10:45	26° 42.248' S	012° 28.314' E	3423
20	M187 41-6	ISP	13/02/2023 10:48	26° 42.248' S	012° 28.314' E	3424
20	M187 41-6	ISP	13/02/2023 10:52	26° 42.248' S	012° 28.313' E	3425
20	M187 41-6	ISP	13/02/2023 10:54	26° 42.248' S	012° 28.313' E	3425
20	M187 41-6	ISP	13/02/2023 10:57	26° 42.248' S	012° 28.314' E	3425
20	M187 41-6	ISP	13/02/2023 10:58	26° 42.248' S	012° 28.313' E	3423
20	M187 41-6	ISP	13/02/2023 13:47	26° 42.243' S	012° 28.354' E	3423
	M187 42-1	Pump	13/02/2023 13:59	26° 42.291' S	012° 28.278' E	3424
	M187 42-1	Pump	13/02/2023 16:01	26° 51.471' S	012° 20.598' E	3629
21	M187 43-1	CTD	13/02/2023 16:05	26° 51.486' S	012° 20.509' E	3628
21	M187 43-1	CTD	13/02/2023 16:20	26° 51.461' S	012° 20.440' E	3628
21	M187 43-1	CTD	13/02/2023 16:31	26° 51.446' S	012° 20.398' E	3626
	M187 44-1	Pump	13/02/2023 16:39	26° 51.168' S	012° 20.216' E	3625
	M187 44-1	Pump	13/02/2023 23:39	26° 10.185' S	012° 35.397' E	
22	M187 45-1	CTD	13/02/2023 23:40	26° 10.184' S	012° 35.399' E	
22	M187 45-1	CTD	13/02/2023 23:58	26° 10.186' S	012° 35.397' E	
22	M187 45-1	CTD	14/02/2023 00:11	26° 10.186' S	012° 35.397' E	
	M187 46-1	Pump	14/02/2023 00:22	26° 10.413' S	012° 35.147' E	
	M187 46-1	Pump	14/02/2023 06:20	26° 31.153' S	012° 16.131' E	3546
23	M187 47-1	CTD	14/02/2023 06:26	26° 31.195' S	012° 16.034' E	3551
23	M187 47-1	CTD	14/02/2023 06:49	26° 31.191' S	012° 15.896' E	3552
23	M187 47-1	CTD	14/02/2023 07:09	26° 31.189' S	012° 15.752' E	3557
23	M187 47-2	GOFLO	14/02/2023 07:15	26° 31.188' S	012° 15.695' E	3559
23	M187 47-2	GOFLO	14/02/2023 07:55	26° 31.167' S	012° 15.426' E	3564
23	M187 47-2	GOFLO	14/02/2023 08:27	26° 31.151' S	012° 15.207' E	3569
23	M187 47-3	CTD	14/02/2023 08:35	26° 31.150' S	012° 15.156' E	3572
23	M187 47-3	CTD	14/02/2023 08:45	26° 31.143' S	012° 15.087' E	3570
23	M187 47-3	CTD	14/02/2023 08:54	26° 31.139' S	012° 15.044' E	3573
23	M187 47-4	SD	14/02/2023 08:58	26° 31.133' S	012° 15.016' E	3573
23	M187 47-4	SD	14/02/2023 09:03	26° 31.128' S	012° 14.988' E	3573
23	M187 47-5	LIOP	14/02/2023 09:37	26° 31.226' S	012° 14.712' E	3581

23	M187 47-5	LIOP	14/02/2023 10:16	26° 32.002' S	012° 13.927' E	3600
23	M187 47-6	ISP	14/02/2023 10:30	26° 32.026' S	012° 13.794' E	3603
23	M187 47-6	ISP	14/02/2023 10:39	26° 32.026' S	012° 13.783' E	3605
23	M187 47-6	ISP	14/02/2023 10:44	26° 32.026' S	012° 13.785' E	3606
23	M187 47-6	ISP	14/02/2023 10:49	26° 32.026' S	012° 13.773' E	3607
23	M187 47-6	ISP	14/02/2023 10:55	26° 32.027' S	012° 13.770' E	3606
23	M187 47-6	ISP	14/02/2023 10:58	26° 32.026' S	012° 13.770' E	3606
23	M187 47-6	ISP	14/02/2023 11:01	26° 32.026' S	012° 13.768' E	3606
23	M187 47-6	ISP	14/02/2023 11:04	26° 32.026' S	012° 13.767' E	3606
23	M187 47-6	ISP	14/02/2023 11:06	26° 32.026' S	012° 13.768' E	3606
23	M187 47-6	ISP	14/02/2023 11:07	26° 32.027' S	012° 13.766' E	3605
23	M187 47-6	ISP	14/02/2023 13:59	26° 32.024' S	012° 13.235' E	3617
	M187 48-1	Pump	14/02/2023 14:00	26° 32.023' S	012° 13.227' E	3618
	M187 48-1	Pump	14/02/2023 20:56	26° 17.349' S	012° 06.542' E	3712
	M187 49-1	DRIFT	14/02/2023 15:02	26° 37.210' S	012° 11.297' E	
	M187 49-2	DRIFT	14/02/2023 15:05	26° 37.469' S	012° 11.202' E	
	M187 49-3	DRIFT	14/02/2023 15:08	26° 37.754' S	012° 11.094' E	
	M187 50-1	DRIFT	14/02/2023 18:54	26° 30.023' S	012° 07.158' E	
	M187 50-2	DRIFT	14/02/2023 18:57	26° 29.767' S	012° 07.148' E	
	M187 50-3	DRIFT	14/02/2023 18:59	26° 29.553' S	012° 07.139' E	
24	M187 51-1	CTD	14/02/2023 21:02	26° 17.350' S	012° 06.595' E	3707
24	M187 51-1	CTD	14/02/2023 21:17	26° 17.341' S	012° 06.552' E	3712
24	M187 51-1	CTD	14/02/2023 21:31	26° 17.322' S	012° 06.462' E	3710
	M187 52-1	Pump	14/02/2023 21:32	26° 17.323' S	012° 06.464' E	3713
	M187 52-1	Pump	15/02/2023 01:01	26° 35.404' S	011° 51.506' E	
25	M187 53-1	CTD	15/02/2023 01:04	26° 35.411' S	011° 51.454' E	
25	M187 53-1	CTD	15/02/2023 01:22	26° 35.460' S	011° 51.304' E	3969
25	M187 53-1	CTD	15/02/2023 01:35	26° 35.491' S	011° 51.209' E	3971
	M187 54-1	Pump	15/02/2023 01:41	26° 35.586' S	011° 51.148' E	3974
	M187 54-1	Pump	15/02/2023 06:30	26° 24.599' S	011° 35.904' E	
26	M187 55-1	CTD	15/02/2023 06:35	26° 24.599' S	011° 35.886' E	4122
26	M187 55-1	CTD	15/02/2023 06:57	26° 24.597' S	011° 35.932' E	4121
26	M187 55-1	CTD	15/02/2023 07:18	26° 24.596' S	011° 35.953' E	4121
26	M187 55-2	GOFLO	15/02/2023 07:28	26° 24.595' S	011° 35.946' E	4120
26	M187 55-2	GOFLO	15/02/2023 08:04	26° 24.601' S	011° 35.875' E	4121
26	M187 55-2	GOFLO	15/02/2023 08:37	26° 24.599' S	011° 35.908' E	4122
26	M187 55-3	CTD	15/02/2023 08:43	26° 24.599' S	011° 35.906' E	4123
26	M187 55-3	CTD	15/02/2023 08:51	26° 24.599' S	011° 35.896' E	4122
26	M187 55-3	CTD	15/02/2023 09:00	26° 24.599' S	011° 35.896' E	4120
26	M187 55-4	SD	15/02/2023 09:05	26° 24.599' S	011° 35.896' E	4122
26	M187 55-4	SD	15/02/2023 09:09	26° 24.599' S	011° 35.892' E	4121
26	M187 55-5	LIOP	15/02/2023 09:36	26° 24.611' S	011° 35.875' E	4122
26	M187 55-5	LIOP	15/02/2023 10:08	26° 25.003' S	011° 35.921' E	4124
26	M187 55-6	ISP	15/02/2023 10:23	26° 25.015' S	011° 35.903' E	4122

26	M187 55-6	ISP	15/02/2023 10:31	26° 25.015' S	011° 35.905' E	4122
26	M187 55-6	ISP	15/02/2023 10:36	26° 25.014' S	011° 35.907' E	4125
26	M187 55-6	ISP	15/02/2023 10:39	26° 25.014' S	011° 35.908' E	4124
26	M187 55-6	ISP	15/02/2023 10:47	26° 25.014' S	011° 35.911' E	4123
26	M187 55-6	ISP	15/02/2023 10:51	26° 25.013' S	011° 35.914' E	4124
26	M187 55-6	ISP	15/02/2023 10:54	26° 25.013' S	011° 35.915' E	4122
26	M187 55-6	ISP	15/02/2023 10:57	26° 25.013' S	011° 35.918' E	4124
26	M187 55-6	ISP	15/02/2023 10:59	26° 25.012' S	011° 35.920' E	4124
26	M187 55-6	ISP	15/02/2023 11:00	26° 25.012' S	011° 35.921' E	4125
26	M187 55-6	ISP	15/02/2023 13:49	26° 25.012' S	011° 35.931' E	4123
	M187 56-1	Pump	15/02/2023 13:53	26° 25.033' S	011° 35.910' E	4123
	M187 56-1	Pump	16/02/2023 06:27	26° 41.945' S	010° 35.989' E	4605
27	M187 57-1	CTD	16/02/2023 06:31	26° 41.979' S	010° 35.939' E	4606
27	M187 57-1	CTD	16/02/2023 06:55	26° 42.034' S	010° 35.780' E	4606
27	M187 57-1	CTD	16/02/2023 07:15	26° 42.055' S	010° 35.736' E	4602
27	M187 57-2	GOFLO	16/02/2023 07:22	26° 42.061' S	010° 35.726' E	4604
27	M187 57-2	GOFLO	16/02/2023 08:15	26° 42.064' S	010° 35.720' E	4601
27	M187 57-2	GOFLO	16/02/2023 08:44	26° 42.075' S	010° 35.699' E	4602
27	M187 57-3	CTD	16/02/2023 08:51	26° 42.075' S	010° 35.699' E	4604
27	M187 57-3	CTD	16/02/2023 09:00	26° 42.079' S	010° 35.688' E	4603
27	M187 57-3	CTD	16/02/2023 09:09	26° 42.077' S	010° 35.693' E	4603
27	M187 57-4	LIOP	16/02/2023 09:45	26° 42.116' S	010° 35.708' E	4603
27	M187 57-4	LIOP	16/02/2023 10:23	26° 42.631' S	010° 36.091' E	4607
27	M187 57-5	SD	16/02/2023 10:25	26° 42.624' S	010° 36.086' E	4604
27	M187 57-5	SD	16/02/2023 10:30	26° 42.587' S	010° 36.026' E	4605
27	M187 57-6	ISP	16/02/2023 10:47	26° 42.587' S	010° 36.017' E	4606
27	M187 57-6	ISP	16/02/2023 11:05	26° 42.579' S	010° 36.033' E	4606
27	M187 57-6	ISP	16/02/2023 11:13	26° 42.570' S	010° 36.050' E	4603
27	M187 57-6	ISP	16/02/2023 11:19	26° 42.563' S	010° 36.061' E	4602
27	M187 57-6	ISP	16/02/2023 11:25	26° 42.561' S	010° 36.065' E	4603
27	M187 57-6	ISP	16/02/2023 11:30	26° 42.558' S	010° 36.074' E	4604
27	M187 57-6	ISP	16/02/2023 11:33	26° 42.552' S	010° 36.083' E	4603
27	M187 57-6	ISP	16/02/2023 11:39	26° 42.548' S	010° 36.092' E	4605
27	M187 57-6	ISP	16/02/2023 11:40	26° 42.546' S	010° 36.096' E	4605
27	M187 57-6	ISP	16/02/2023 14:27	26° 42.608' S	010° 35.975' E	4604
	M187 58-1	Pump	16/02/2023 14:31	26° 42.639' S	010° 35.969' E	4602
	M187 58-1	Pump	17/02/2023 05:51	26° 41.844' S	009° 10.947' E	
28	M187 59-1	CTD	17/02/2023 06:31	26° 41.900' S	009° 10.733' E	4879
28	M187 59-1	CTD	17/02/2023 06:54	26° 41.890' S	009° 10.775' E	4885
28	M187 59-1	CTD	17/02/2023 07:15	26° 41.882' S	009° 10.816' E	4872
28	M187 59-2	GOFLO	17/02/2023 07:22	26° 41.877' S	009° 10.835' E	4872
28	M187 59-2	GOFLO	17/02/2023 07:57	26° 41.880' S	009° 10.817' E	4875
28	M187 59-2	GOFLO	17/02/2023 08:34	26° 41.864' S	009° 10.881' E	4872
28	M187 59-3	CTD	17/02/2023 08:45	26° 41.871' S	009° 10.855' E	4871

28	M187 59-3	CTD	17/02/2023 08:54	26° 41.874' S	009° 10.843' E	4875
28	M187 59-3	CTD	17/02/2023 09:03	26° 41.876' S	009° 10.835' E	4876
28	M187 59-4	SD	17/02/2023 09:07	26° 41.877' S	009° 10.835' E	4878
28	M187 59-4	SD	17/02/2023 09:14	26° 41.876' S	009° 10.833' E	4878
28	M187 59-5	LIOP	17/02/2023 09:38	26° 41.890' S	009° 10.827' E	4871
28	M187 59-5	LIOP	17/02/2023 10:14	26° 42.482' S	009° 11.127' E	4872
28	M187 59-6	ISP	17/02/2023 10:27	26° 42.488' S	009° 11.157' E	4873
28	M187 59-6	ISP	17/02/2023 10:36	26° 42.480' S	009° 11.188' E	4875
28	M187 59-6	ISP	17/02/2023 10:41	26° 42.479' S	009° 11.193' E	4876
28	M187 59-6	ISP	17/02/2023 10:46	26° 42.479' S	009° 11.200' E	4876
28	M187 59-6	ISP	17/02/2023 10:51	26° 42.475' S	009° 11.210' E	4875
28	M187 59-6	ISP	17/02/2023 10:56	26° 42.473' S	009° 11.221' E	4875
28	M187 59-6	ISP	17/02/2023 10:59	26° 42.472' S	009° 11.226' E	4874
28	M187 59-6	ISP	17/02/2023 11:03	26° 42.469' S	009° 11.234' E	4876
28	M187 59-6	ISP	17/02/2023 11:04	26° 42.467' S	009° 11.236' E	4876
28	M187 59-6	ISP	17/02/2023 14:06	26° 42.450' S	009° 11.308' E	4871
	M187 60-1	Pump	17/02/2023 14:12	26° 42.496' S	009° 11.257' E	4879
	M187 60-1	Pump	18/02/2023 05:34	26° 41.918' S	007° 45.580' E	
29	M187 61-1	CTD	18/02/2023 06:30	26° 41.918' S	007° 45.581' E	4903
29	M187 61-1	CTD	18/02/2023 06:53	26° 41.918' S	007° 45.580' E	4903
29	M187 61-1	CTD	18/02/2023 07:13	26° 41.918' S	007° 45.581' E	4903
29	M187 61-2	GOFLO	18/02/2023 07:21	26° 41.918' S	007° 45.580' E	4903
29	M187 61-2	GOFLO	18/02/2023 07:58	26° 41.918' S	007° 45.581' E	4904
29	M187 61-2	GOFLO	18/02/2023 08:33	26° 41.918' S	007° 45.581' E	4904
29	M187 61-3	CTD	18/02/2023 08:39	26° 41.918' S	007° 45.581' E	4904
29	M187 61-3	CTD	18/02/2023 08:47	26° 41.918' S	007° 45.580' E	4903
29	M187 61-3	CTD	18/02/2023 08:56	26° 41.919' S	007° 45.581' E	4903
29	M187 61-4	SD	18/02/2023 08:58	26° 41.920' S	007° 45.581' E	4905
29	M187 61-4	SD	18/02/2023 09:05	26° 41.919' S	007° 45.581' E	4903
29	M187 61-5	LIOP	18/02/2023 09:42	26° 42.001' S	007° 45.628' E	4904
29	M187 61-5	LIOP	18/02/2023 10:05	26° 42.311' S	007° 45.813' E	4906
29	M187 61-6	ISP	18/02/2023 10:19	26° 42.329' S	007° 45.823' E	4905
29	M187 61-6	ISP	18/02/2023 10:38	26° 42.327' S	007° 45.823' E	4905
29	M187 61-6	ISP	18/02/2023 10:44	26° 42.329' S	007° 45.822' E	4907
29	M187 61-6	ISP	18/02/2023 10:50	26° 42.327' S	007° 45.822' E	4906
29	M187 61-6	ISP	18/02/2023 10:56	26° 42.329' S	007° 45.823' E	4905
29	M187 61-6	ISP	18/02/2023 11:00	26° 42.329' S	007° 45.822' E	4905
29	M187 61-6	ISP	18/02/2023 11:04	26° 42.327' S	007° 45.825' E	4906
29	M187 61-6	ISP	18/02/2023 11:05	26° 42.328' S	007° 45.824' E	4906
29	M187 61-6	ISP	18/02/2023 13:49	26° 42.328' S	007° 45.823' E	4905
	M187 62-1	Pump	18/02/2023 13:58	26° 42.330' S	007° 45.821' E	4904
	M187 62-1	Pump	19/02/2023 06:23	26° 41.938' S	006° 20.935' E	4685
30	M187 63-1	CTD	19/02/2023 06:26	26° 41.937' S	006° 20.935' E	4684
30	M187 63-1	CTD	19/02/2023 06:50	26° 41.937' S	006° 20.935' E	4684

30	M187_63-1	CTD	19/02/2023 07:10	26° 41.938' S	006° 20.934' E	4684
30	M187_63-2	GOFLO	19/02/2023 07:15	26° 41.938' S	006° 20.935' E	4685
30	M187_63-2	GOFLO	19/02/2023 07:57	26° 41.937' S	006° 20.935' E	4685
30	M187_63-2	GOFLO	19/02/2023 08:27	26° 41.937' S	006° 20.933' E	4686
30	M187_63-3	CTD	19/02/2023 08:36	26° 41.937' S	006° 20.934' E	4685
30	M187_63-3	CTD	19/02/2023 08:48	26° 41.937' S	006° 20.934' E	4685
30	M187_63-3	CTD	19/02/2023 08:55	26° 41.938' S	006° 20.933' E	4686
30	M187_63-4	SD	19/02/2023 08:57	26° 41.936' S	006° 20.934' E	4685
30	M187_63-4	SD	19/02/2023 09:02	26° 41.938' S	006° 20.935' E	4685
30	M187_63-5	LIOP	19/02/2023 09:39	26° 41.942' S	006° 20.936' E	4685
30	M187_63-5	LIOP	19/02/2023 10:08	26° 42.423' S	006° 21.130' E	4704
30	M187_63-6	ISP	19/02/2023 10:17	26° 42.443' S	006° 21.139' E	4706
30	M187_63-6	ISP	19/02/2023 10:28	26° 42.443' S	006° 21.137' E	4705
30	M187_63-6	ISP	19/02/2023 10:33	26° 42.442' S	006° 21.138' E	4706
30	M187_63-6	ISP	19/02/2023 10:38	26° 42.442' S	006° 21.138' E	4706
30	M187_63-6	ISP	19/02/2023 10:43	26° 42.442' S	006° 21.138' E	4709
30	M187_63-6	ISP	19/02/2023 10:49	26° 42.443' S	006° 21.138' E	4707
30	M187_63-6	ISP	19/02/2023 10:52	26° 42.442' S	006° 21.138' E	4708
30	M187_63-6	ISP	19/02/2023 10:55	26° 42.443' S	006° 21.138' E	4707
30	M187_63-6	ISP	19/02/2023 10:56	26° 42.443' S	006° 21.138' E	4706
30	M187_63-6	ISP	19/02/2023 13:58	26° 42.443' S	006° 21.139' E	4707
	M187_64-1	Pump	19/02/2023 14:03	26° 42.469' S	006° 21.156' E	4702
	M187_64-1	Pump	20/02/2023 06:29	26° 41.995' S	004° 55.815' E	2510
31	M187_65-1	CTD	20/02/2023 06:30	26° 41.996' S	004° 55.810' E	2507
31	M187_65-1	CTD	20/02/2023 06:55	26° 41.997' S	004° 55.812' E	2508
31	M187_65-1	CTD	20/02/2023 07:15	26° 41.997' S	004° 55.813' E	2508
31	M187_65-2	GOFLO	20/02/2023 07:25	26° 41.996' S	004° 55.813' E	2508
31	M187_65-2	GOFLO	20/02/2023 08:02	26° 41.996' S	004° 55.813' E	2507
31	M187_65-2	GOFLO	20/02/2023 08:31	26° 41.996' S	004° 55.812' E	2508
31	M187_65-3	CTD	20/02/2023 08:35	26° 41.996' S	004° 55.812' E	2508
31	M187_65-3	CTD	20/02/2023 08:45	26° 41.996' S	004° 55.813' E	2508
31	M187_65-3	CTD	20/02/2023 08:54	26° 41.997' S	004° 55.813' E	2508
31	M187_65-4	SD	20/02/2023 08:58	26° 41.997' S	004° 55.812' E	2508
31	M187_65-4	SD	20/02/2023 09:03	26° 41.997' S	004° 55.813' E	2509
31	M187_65-5	ISP	20/02/2023 10:04	26° 41.997' S	004° 55.813' E	2509
31	M187_65-5	ISP	20/02/2023 10:16	26° 41.997' S	004° 55.813' E	2509
31	M187_65-5	ISP	20/02/2023 10:22	26° 41.997' S	004° 55.812' E	2509
31	M187_65-5	ISP	20/02/2023 10:28	26° 41.997' S	004° 55.812' E	2509
31	M187_65-5	ISP	20/02/2023 10:32	26° 41.996' S	004° 55.813' E	2509
31	M187_65-5	ISP	20/02/2023 10:37	26° 41.997' S	004° 55.812' E	2509
31	M187_65-5	ISP	20/02/2023 10:40	26° 41.997' S	004° 55.812' E	2509
31	M187_65-5	ISP	20/02/2023 10:43	26° 41.996' S	004° 55.813' E	2509
31	M187_65-5	ISP	20/02/2023 10:45	26° 41.997' S	004° 55.812' E	2509
31	M187_65-5	ISP	20/02/2023 14:01	26° 41.996' S	004° 55.812' E	2510

	M187 66-1	Pump	20/02/2023 14:05	26° 41.997' S	004° 55.814' E	2510
	M187 66-1	Pump	21/02/2023 06:26	26° 41.990' S	003° 30.626' E	2482
32	M187 67-1	CTD	21/02/2023 06:28	26° 42.001' S	003° 30.624' E	2482
32	M187 67-1	CTD	21/02/2023 06:51	26° 42.000' S	003° 30.625' E	2482
32	M187 67-1	CTD	21/02/2023 07:11	26° 42.003' S	003° 30.626' E	2482
32	M187 67-2	GOFLO	21/02/2023 07:27	26° 42.001' S	003° 30.627' E	2481
32	M187 67-2	GOFLO	21/02/2023 07:59	26° 42.001' S	003° 30.625' E	2481
32	M187 67-2	GOFLO	21/02/2023 08:35	26° 42.001' S	003° 30.625' E	2481
32	M187 67-3	CTD	21/02/2023 08:52	26° 42.000' S	003° 30.625' E	2481
32	M187 67-3	CTD	21/02/2023 09:02	26° 42.001' S	003° 30.626' E	2481
32	M187 67-3	CTD	21/02/2023 09:11	26° 42.001' S	003° 30.628' E	2481
32	M187 67-4	SD	21/02/2023 09:34	26° 42.000' S	003° 30.625' E	2481
32	M187 67-4	SD	21/02/2023 09:40	26° 42.001' S	003° 30.626' E	2481
32	M187 67-5	ISP	21/02/2023 10:07	26° 42.001' S	003° 30.628' E	2481
32	M187 67-5	ISP	21/02/2023 10:16	26° 42.001' S	003° 30.625' E	2481
32	M187 67-5	ISP	21/02/2023 10:22	26° 42.001' S	003° 30.627' E	2482
32	M187 67-5	ISP	21/02/2023 10:27	26° 42.001' S	003° 30.625' E	2482
32	M187 67-5	ISP	21/02/2023 10:32	26° 42.001' S	003° 30.626' E	2482
32	M187 67-5	ISP	21/02/2023 10:37	26° 42.001' S	003° 30.625' E	2482
32	M187 67-5	ISP	21/02/2023 10:40	26° 42.001' S	003° 30.626' E	2482
32	M187 67-5	ISP	21/02/2023 10:44	26° 42.001' S	003° 30.624' E	2482
32	M187 67-5	ISP	21/02/2023 10:45	26° 42.000' S	003° 30.625' E	2482
32	M187 67-5	ISP	21/02/2023 14:09	26° 42.001' S	003° 30.626' E	2483
32	M187 67-6	LIOP	21/02/2023 14:15	26° 41.999' S	003° 30.627' E	2483
32	M187 67-6	LIOP	21/02/2023 14:36	26° 42.008' S	003° 30.419' E	2483
	M187 68-1	Pump	21/02/2023 14:43	26° 42.072' S	003° 30.204' E	2483
	M187 68-1	Pump	22/02/2023 06:23	26° 42.048' S	002° 05.440' E	4828
33	M187 69-1	CTD	22/02/2023 06:28	26° 42.018' S	002° 05.439' E	4829
33	M187 69-1	CTD	22/02/2023 06:52	26° 41.995' S	002° 05.440' E	4828
33	M187 69-1	CTD	22/02/2023 07:12	26° 41.996' S	002° 05.439' E	4828
33	M187 69-2	GOFLO	22/02/2023 07:18	26° 41.996' S	002° 05.441' E	4828
33	M187 69-2	GOFLO	22/02/2023 07:58	26° 41.995' S	002° 05.438' E	4828
33	M187 69-2	GOFLO	22/02/2023 08:35	26° 41.995' S	002° 05.439' E	4827
33	M187 69-3	CTD	22/02/2023 08:43	26° 41.995' S	002° 05.438' E	4827
33	M187 69-3	CTD	22/02/2023 08:53	26° 41.995' S	002° 05.440' E	4827
33	M187 69-3	CTD	22/02/2023 09:03	26° 41.994' S	002° 05.438' E	4828
33	M187 69-4	SD	22/02/2023 09:37	26° 41.995' S	002° 05.440' E	4828
33	M187 69-4	SD	22/02/2023 09:45	26° 41.996' S	002° 05.440' E	4828
33	M187 69-5	LIOP	22/02/2023 09:55	26° 42.123' S	002° 05.440' E	4828
33	M187 69-5	LIOP	22/02/2023 10:52	26° 42.296' S	002° 04.677' E	4830
33	M187 69-6	ISP	22/02/2023 11:00	26° 42.298' S	002° 04.666' E	4831
33	M187 69-6	ISP	22/02/2023 11:08	26° 42.298' S	002° 04.665' E	4830
33	M187 69-6	ISP	22/02/2023 11:13	26° 42.297' S	002° 04.665' E	4830
33	M187 69-6	ISP	22/02/2023 11:19	26° 42.298' S	002° 04.665' E	4830

33	M187_69-6	ISP	22/02/2023 11:24	26° 42.298' S	002° 04.666' E	4831
33	M187_69-6	ISP	22/02/2023 11:30	26° 42.298' S	002° 04.665' E	4831
33	M187_69-6	ISP	22/02/2023 11:33	26° 42.299' S	002° 04.667' E	4831
33	M187_69-6	ISP	22/02/2023 11:36	26° 42.297' S	002° 04.665' E	4830
33	M187_69-6	ISP	22/02/2023 11:37	26° 42.297' S	002° 04.664' E	4831
33	M187_69-6	ISP	22/02/2023 15:07	26° 42.297' S	002° 04.665' E	4831
	M187_70-1	Pump	22/02/2023 15:11	26° 42.312' S	002° 04.663' E	4833
	M187_70-1	Pump	23/02/2023 06:25	26° 42.043' S	000° 40.183' E	4538
34	M187_71-1	CTD	23/02/2023 06:27	26° 42.045' S	000° 40.174' E	4538
34	M187_71-1	CTD	23/02/2023 06:51	26° 42.013' S	000° 40.200' E	4538
34	M187_71-1	CTD	23/02/2023 07:12	26° 42.013' S	000° 40.203' E	4537
34	M187_71-2	GOFLO	23/02/2023 07:21	26° 42.013' S	000° 40.202' E	4538
34	M187_71-2	GOFLO	23/02/2023 07:59	26° 42.013' S	000° 40.201' E	4539
34	M187_71-2	GOFLO	23/02/2023 08:29	26° 42.013' S	000° 40.202' E	4539
34	M187_71-3	CTD	23/02/2023 08:34	26° 42.014' S	000° 40.201' E	4539
34	M187_71-3	CTD	23/02/2023 08:45	26° 42.013' S	000° 40.203' E	4538
34	M187_71-3	CTD	23/02/2023 08:55	26° 42.013' S	000° 40.201' E	4538
34	M187_71-4	SD	23/02/2023 08:57	26° 42.013' S	000° 40.201' E	4537
34	M187_71-4	SD	23/02/2023 09:04	26° 42.013' S	000° 40.201' E	4537
34	M187_71-5	LIOP	23/02/2023 09:42	26° 42.139' S	000° 40.144' E	4538
34	M187_71-5	LIOP	23/02/2023 10:20	26° 42.842' S	000° 39.389' E	4558
34	M187_71-6	ISP	23/02/2023 10:31	26° 42.894' S	000° 39.284' E	4560
34	M187_71-6	ISP	23/02/2023 10:40	26° 42.893' S	000° 39.291' E	4566
34	M187_71-6	ISP	23/02/2023 10:46	26° 42.891' S	000° 39.293' E	4561
34	M187_71-6	ISP	23/02/2023 10:51	26° 42.892' S	000° 39.294' E	4560
34	M187_71-6	ISP	23/02/2023 10:56	26° 42.893' S	000° 39.288' E	4567
34	M187_71-6	ISP	23/02/2023 11:02	26° 42.892' S	000° 39.292' E	4562
34	M187_71-6	ISP	23/02/2023 11:05	26° 42.892' S	000° 39.292' E	4560
34	M187_71-6	ISP	23/02/2023 11:09	26° 42.892' S	000° 39.294' E	4572
34	M187_71-6	ISP	23/02/2023 11:10	26° 42.891' S	000° 39.296' E	4571
34	M187_71-6	ISP	23/02/2023 14:51	26° 42.968' S	000° 39.072' E	4668
	M187_72-1	Pump	23/02/2023 14:58	26° 42.970' S	000° 39.066' E	4671
	M187_72-1	Pump	24/02/2023 06:28	26° 42.005' S	000° 45.057' W	
35	M187_73-1	CTD	24/02/2023 06:33	26° 41.973' S	000° 45.056' W	
35	M187_73-1	CTD	24/02/2023 06:58	26° 41.977' S	000° 45.056' W	
35	M187_73-1	CTD	24/02/2023 07:17	26° 41.979' S	000° 45.054' W	5990
35	M187_73-2	GOFLO	24/02/2023 07:23	26° 41.978' S	000° 45.055' W	5991
35	M187_73-2	GOFLO	24/02/2023 08:02	26° 41.976' S	000° 45.055' W	5990
35	M187_73-2	GOFLO	24/02/2023 08:36	26° 41.977' S	000° 45.056' W	5990
35	M187_73-3	CTD	24/02/2023 08:45	26° 41.977' S	000° 45.055' W	5990

35	M187 73-3	CTD	24/02/2023 08:56	26° 41.977' S	000° 45.055' W	5990
35	M187 73-3	CTD	24/02/2023 09:06	26° 41.976' S	000° 45.055' W	5990
35	M187 73-4	SD	24/02/2023 09:34	26° 41.974' S	000° 45.055' W	5990
35	M187 73-4	SD	24/02/2023 09:42	26° 41.977' S	000° 45.055' W	5990
35	M187 73-5	LIOP	24/02/2023 09:51	26° 41.955' S	000° 44.987' W	5990
35	M187 73-5	LIOP	24/02/2023 10:15	26° 41.760' S	000° 44.346' W	5987
35	M187 73-6	ISP	24/02/2023 10:22	26° 41.745' S	000° 44.291' W	5988
35	M187 73-6	ISP	24/02/2023 10:33	26° 41.743' S	000° 44.292' W	5986
35	M187 73-6	ISP	24/02/2023 10:47	26° 41.743' S	000° 44.291' W	5988
35	M187 73-6	ISP	24/02/2023 10:53	26° 41.742' S	000° 44.292' W	5986
35	M187 73-6	ISP	24/02/2023 10:58	26° 41.742' S	000° 44.291' W	5986
35	M187 73-6	ISP	24/02/2023 11:03	26° 41.741' S	000° 44.292' W	5988
35	M187 73-6	ISP	24/02/2023 11:06	26° 41.743' S	000° 44.291' W	5986
35	M187 73-6	ISP	24/02/2023 11:10	26° 41.743' S	000° 44.291' W	5986
35	M187 73-6	ISP	24/02/2023 11:11	26° 41.742' S	000° 44.292' W	5986
35	M187 73-6	ISP	24/02/2023 14:46	26° 41.741' S	000° 44.291' W	5988
	M187 74-1	Pump	24/02/2023 14:50	26° 41.739' S	000° 44.293' W	5987
	M187 74-1	Pump	25/02/2023 06:23	26° 41.896' S	002° 09.608' W	4458
36	M187 75-1	CTD	25/02/2023 06:32	26° 41.949' S	002° 09.643' W	4464
36	M187 75-1	CTD	25/02/2023 06:56	26° 41.877' S	002° 09.713' W	4463
36	M187 75-1	CTD	25/02/2023 07:18	26° 41.842' S	002° 09.747' W	4463
36	M187 75-2	GOFLO	25/02/2023 07:23	26° 41.845' S	002° 09.744' W	4462
36	M187 75-2	GOFLO	25/02/2023 08:08	26° 41.853' S	002° 09.736' W	4496
36	M187 75-2	GOFLO	25/02/2023 08:44	26° 41.760' S	002° 09.808' W	4506
36	M187 75-3	CTD	25/02/2023 08:54	26° 41.726' S	002° 09.833' W	4510
36	M187 75-3	CTD	25/02/2023 09:04	26° 41.751' S	002° 09.814' W	4506
36	M187 75-3	CTD	25/02/2023 09:16	26° 41.774' S	002° 09.794' W	4504
36	M187 75-4	SD	25/02/2023 09:37	26° 41.767' S	002° 09.802' W	4511
36	M187 75-4	SD	25/02/2023 09:42	26° 41.760' S	002° 09.810' W	4509
36	M187 75-5	LIOP	25/02/2023 09:51	26° 41.703' S	002° 09.776' W	4500
36	M187 75-5	LIOP	25/02/2023 10:25	26° 41.083' S	002° 09.040' W	4394

36	M187 75-6	ISP	25/02/2023 10:37	26° 41.061' S	002° 09.022' W	4390
36	M187 75-6	ISP	25/02/2023 10:45	26° 41.068' S	002° 09.010' W	4388
36	M187 75-6	ISP	25/02/2023 10:51	26° 41.064' S	002° 09.017' W	4393
36	M187 75-6	ISP	25/02/2023 10:56	26° 41.060' S	002° 09.021' W	4391
36	M187 75-6	ISP	25/02/2023 11:02	26° 41.059' S	002° 09.023' W	4389
36	M187 75-6	ISP	25/02/2023 11:07	26° 41.055' S	002° 09.029' W	4393
36	M187 75-6	ISP	25/02/2023 11:10	26° 41.054' S	002° 09.031' W	4389
36	M187 75-6	ISP	25/02/2023 11:14	26° 41.058' S	002° 09.026' W	4391
36	M187 75-6	ISP	25/02/2023 11:15	26° 41.061' S	002° 09.023' W	4392
36	M187 75-6	ISP	25/02/2023 14:57	26° 41.202' S	002° 08.831' W	4303
	M187 76-1	Pump	25/02/2023 15:01	26° 41.177' S	002° 08.837' W	
	M187 76-1	Pump	26/02/2023 06:25	26° 41.992' S	003° 34.836' W	4604
37	M187 77-1	CTD	26/02/2023 06:29	26° 41.962' S	003° 34.823' W	4601
37	M187 77-1	CTD	26/02/2023 06:53	26° 41.968' S	003° 34.820' W	4601
37	M187 77-1	CTD	26/02/2023 07:14	26° 42.007' S	003° 34.812' W	4603
37	M187 77-2	GOFLO	26/02/2023 07:19	26° 42.005' S	003° 34.813' W	4602
37	M187 77-2	GOFLO	26/02/2023 08:03	26° 42.005' S	003° 34.813' W	4602
37	M187 77-2	GOFLO	26/02/2023 08:33	26° 42.006' S	003° 34.812' W	4604
37	M187 77-3	CTD	26/02/2023 08:44	26° 42.007' S	003° 34.812' W	4604
37	M187 77-3	CTD	26/02/2023 08:55	26° 42.006' S	003° 34.813' W	4603
37	M187 77-3	CTD	26/02/2023 09:04	26° 42.006' S	003° 34.813' W	4603
37	M187 77-4	SD	26/02/2023 09:46	26° 42.005' S	003° 34.812' W	4604
37	M187 77-4	SD	26/02/2023 09:53	26° 42.006' S	003° 34.812' W	4604
37	M187 77-5	LIOP	26/02/2023 09:57	26° 42.006' S	003° 34.813' W	4600
37	M187 77-5	LIOP	26/02/2023 10:22	26° 41.941' S	003° 34.344' W	4644
37	M187 77-6	ISP	26/02/2023 10:29	26° 41.941' S	003° 34.343' W	4641
37	M187 77-6	ISP	26/02/2023 10:37	26° 41.942' S	003° 34.344' W	4642
37	M187 77-6	ISP	26/02/2023 10:42	26° 41.943' S	003° 34.343' W	4640
37	M187 77-6	ISP	26/02/2023 10:47	26° 41.942' S	003° 34.344' W	4642
37	M187 77-6	ISP	26/02/2023 10:52	26° 41.942' S	003° 34.344' W	4646
37	M187 77-6	ISP	26/02/2023 10:57	26° 41.942' S	003° 34.343' W	4642

37	M187 77-6	ISP	26/02/2023 11:00	26° 41.943' S	003° 34.343' W	4640
37	M187 77-6	ISP	26/02/2023 11:04	26° 41.943' S	003° 34.343' W	4641
37	M187 77-6	ISP	26/02/2023 11:05	26° 41.943' S	003° 34.343' W	4642
37	M187 77-6	ISP	26/02/2023 14:48	26° 41.943' S	003° 34.343' W	4640
	M187 78-1	Pump	26/02/2023 14:51	26° 41.937' S	003° 34.337' W	4645
	M187 78-1	Pump	27/02/2023 06:26	26° 42.111' S	005° 00.068' W	4804
38	M187 79-1	CTD	27/02/2023 06:33	26° 42.021' S	005° 00.023' W	4803
38	M187 79-1	CTD	27/02/2023 06:57	26° 42.024' S	005° 00.022' W	4803
38	M187 79-1	CTD	27/02/2023 07:18	26° 42.024' S	005° 00.023' W	4804
38	M187 79-2	GOFLO	27/02/2023 07:26	26° 42.023' S	005° 00.021' W	4806
38	M187 79-2	GOFLO	27/02/2023 07:57	26° 42.024' S	005° 00.021' W	4803
38	M187 79-2	GOFLO	27/02/2023 08:28	26° 42.023' S	005° 00.021' W	4802
38	M187 79-3	CTD	27/02/2023 08:33	26° 42.022' S	005° 00.022' W	4802
38	M187 79-3	CTD	27/02/2023 08:44	26° 42.024' S	005° 00.022' W	4800
38	M187 79-3	CTD	27/02/2023 08:53	26° 42.024' S	005° 00.021' W	4803
38	M187 79-4	SD	27/02/2023 08:57	26° 42.025' S	005° 00.022' W	4802
38	M187 79-4	SD	27/02/2023 09:03	26° 42.025' S	005° 00.022' W	4804
38	M187 79-5	LIOP	27/02/2023 09:38	26° 42.025' S	005° 00.002' W	4799
38	M187 79-5	LIOP	27/02/2023 10:11	26° 42.035' S	004° 59.770' W	4769
38	M187 79-6	ISP	27/02/2023 10:26	26° 42.036' S	004° 59.765' W	4768
38	M187 79-6	ISP	27/02/2023 10:35	26° 42.035' S	004° 59.765' W	4768
38	M187 79-6	ISP	27/02/2023 10:40	26° 42.036' S	004° 59.765' W	4770
38	M187 79-6	ISP	27/02/2023 10:46	26° 42.036' S	004° 59.766' W	4768
38	M187 79-6	ISP	27/02/2023 10:51	26° 42.036' S	004° 59.767' W	4768
38	M187 79-6	ISP	27/02/2023 10:57	26° 42.035' S	004° 59.766' W	4770
38	M187 79-6	ISP	27/02/2023 11:00	26° 42.036' S	004° 59.765' W	4768
38	M187 79-6	ISP	27/02/2023 11:04	26° 42.034' S	004° 59.765' W	4768
38	M187 79-6	ISP	27/02/2023 11:05	26° 42.035' S	004° 59.766' W	4770
38	M187 79-6	ISP	27/02/2023 14:35	26° 42.036' S	004° 59.765' W	4768
	M187 80-1	Pump	27/02/2023 14:40	26° 42.036' S	004° 59.749' W	4768