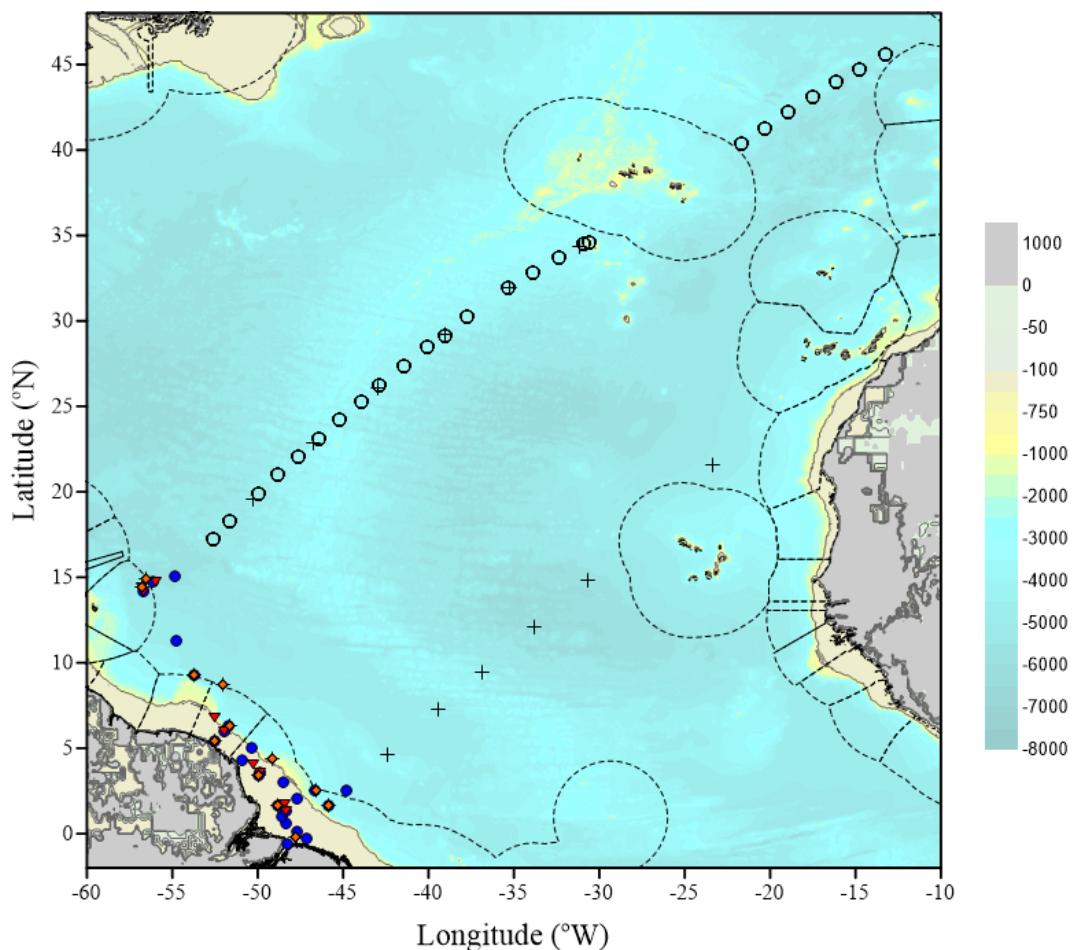


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**R/V METEOR**  
**Short Cruise Report**  
**Cruise M174**

**Las Palmas - Emden**  
**April 12 2021 - May 30 2021**  
**Chief Scientist: Maren Voss**  
**Captain: Rainer Hammacher**



## Objectives

The Amazon-N cruise was planned to provide a comprehensive overview over nitrogen cycling processes in surface waters of the largest river outflow on earth combined with in-depth physical process measurements on (turbulent) mixing and transport. Considering wind and tidal forced mixing processes are essential to understand the changes of water mass properties along the coastlines of Brazil and French Guyana. The role of allochthonous and autochthonous nutrients and organic matter sources need to be identified through the analysis of nutrient species and their isotopic composition. Dedicated experiments of nutrient uptake rates under simulated in-situ conditions ensure a detailed understanding of how the phytoplankton communities change along the plume, how much carbon is assimilated and which nutrients they prefer.

This approach will allow us to understand the CO<sub>2</sub> drawdown in the plume under different growth limiting conditions (Fig. 1).

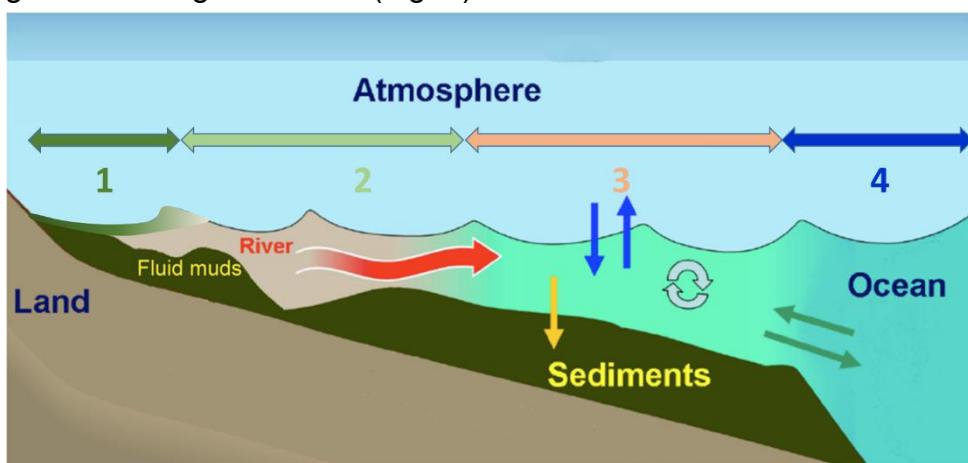


Fig. 1 zonation of our study region (1) light limited (2) nutrient replete, diatom dominated (3) nitrate limited, phosphate and silicate present (4) nutrient limited

Moreover, the transfer of nitrogen from different food sources into higher trophic levels such as zooplankton, fish larvae, and gelatinous species will be evaluated. We hypothesize that the water properties and nitrogen fluxes vary significantly and reflect zones with decreasing plume impact on nitrogen cycling processes when moving from the river mouth northward along the coast. To which degree the different phytoplankton community support zooplankton communities and which role nitrogen fixing organisms play can be identified by amino acid analysis in particulate matter and zooplankton size classes.

To accomplish our objectives a mix of station work along predefined transects with drift stations where a water mass is marked with drifting buoys allows time resolved developments of autotrophic and heterotrophic communities. Our target areas shall be daily defined by satellite images of chlorophyll or dissolved organic matter concentrations (KN490).

The research will advance the knowledge of the interactions between tropical rivers and oceans and is relevant to many other low latitude river-ocean systems, many of which are undergoing profound changes as a result of population growth and development in major river basins. In detail we want to achieve an in-depth understanding of the composition of water masses, the productivity regimes and how they support higher trophic levels. Understanding the links between tropical rivers and oceans will be a critical component of any attempts to address the health and productivity of these systems in the future.

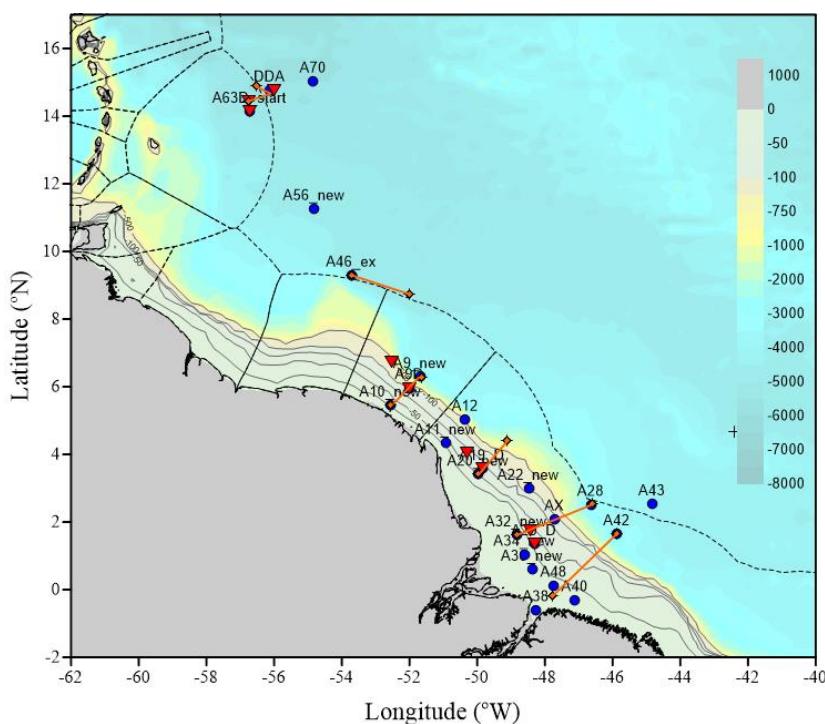
## Narrative

We were fortunate to be part of the longest sail (8,747 nm) R/V METEOR has ever done which intended to start from April 10 to May 30, 2021. However, due to the corona pandemic all the participants of the M174 cruise were undergone a 10 days long quarantine from 1 to 10 of April, 2021. We embarked R/V METEOR on 10<sup>th</sup> of April and unpacking and setting up the laboratory were done the very next day. We have also attended the usual safety instructions and other briefings offered by the ship officers. On April 12<sup>th</sup> we started sailing toward the mouth of the Para and Amazon River with some underway CTD and radiometer (RM) stations to test equipment and to collect some samples to establish all. There were regular meetings on each day for the planning of stations and water requirements. Stations were selected based on the recent satellite image as our main aim was to incorporate the plume pattern.

The main plan of the cruise was to perform experiments to estimate nutrient uptake rates, nitrifications rates, bulk and cell specific nitrogen fixation rates, nitrogen sources for zooplankton and the fate of phosphate along the plume. It was great that we could also equip our CTD with an underwater particle system (UVP) to log underwater particles and a SUNA sensor for nitrate concentration measurement. The UVP data will be evaluated by our Brazilian partners who unfortunately, could not join the cruise due to corona restrictions. The first scanfish deployment was performed from the station M174\_8 (A42) till the station A48 in the Brazilian EEZ from midnight to the next morning. Six scanfish transects provided temperature, salinity, turbidity, and chlorophyll data in great spatial resolution so that we could better see the larger scale plume impact and decide upon drift/process stations. The first scanfish tow from 21<sup>st</sup> to 23<sup>rd</sup> of April 2021 was done from beyond the shelf to only 30m water depth. It clearly identified the sediment load of the river plume at the surface and bottom waters. As the station A38 was very close the Amazon River mouth the salinity observed there was only 3 PSU (Fig. 1). Three other scanfish tows across the shelf made the dilution of plume properties visible and evaluate the potential role of upwelling off French Guiana, while the fourth was done parallel to the coast in international waters. It had minor plume signatures but will help us evaluate water masses and the Brazil current strength along the shelf. One last scanfish tow in Bajan waters was used to identify waters of a more aged plume where we hoped to find diatom diazotroph assemblages (DDA).

At station A40, our only station in the southern hemisphere, we performed all experiments like nutrient uptake, nitrification, and nitrogen fixation rates and other cruise participants also collected samples for their respective research. The preliminary physical data confirmed that A40 station had low turbidity by river water compared to the stations located in the north of the equator. Our freshwater end member from the Amazon was found at stations A36, A34, and A32 which we had to move into deeper water and a bit away from the river mouth. We wanted to deploy drifters for so-called process stations where we planned to stay for 48 hours in the same water mass. However, the stations A32, A36 and A34 were still too shallow for the drifter and hence, we started the first drift station, A29D after evaluation of a scanfish transect. That first process station was moved a bit from original position as per the advice of our Brazilian observer and a drifter was deployed. Work for 48 hours kept everyone busy as it involved microstructure (MSS) profiles every

second hour and CTDs, RM, GOFLO-bottle, other optical measurements and multicorer deployment. The physical and nutrients groups worked in shifts to manage the work load. The process stations were sampled twice for food web study which involved twice a day the multinet (MSN) operations to capture the mesozooplankton population at day and at night. Food sources for zooplankton and food webs are studied based on 34 MSN tows. Samples were preserved for the Brazilian partners and split into size fraction to measure bulk and amino acid isotopevalues to determine the trophic fractionation factors (TEF) in the different habitats. Although, we had many incubators, we had to fix places for each one's samples as the process stations demanded extra incubations. Apart from the routine nutrient rate experiments, most people did set up extra experiments at the process stations. After two days the drifter was recovered which always went extremely smoothly and professionally. Understanding the role of the sediments as source of nutrients was one main interest and the multicorer worked very well at all shelf station because the sediment had a certain percentage of clay. No fluidized mud was found which can be certainly due to the fact that the river outflow was strong enough to sweep all loose components off the shelf.



*Fig. 1. Station and activity chart of R/V METEOR Cruise M174. Blue dots are normal stations, orange lines are scanfish transects, red triangles depict the deployment or recovery points of the drifter.*

Our second process station (A19D) from May 1<sup>st</sup> to May 3<sup>rd</sup> followed the same layout as the first. After the drifter was recovered two more stations were sampled and with that our observations in Brazilian waters were completed and we headed toward the French Guyana waters. The 3rd drift station in more diluted river plume waters was done near

station A09 (A09D) at May 5-6 only for 30 hours which was long enough to have a sufficient resolution of the mixing and tidal processes. After finishing the 4<sup>th</sup> drift station at May 10<sup>th</sup>, and two more stations (A46, A56) in the international waters we hoped for DDAs further north. Since we received clearance for Bajan waters just in time we could do the 5<sup>th</sup> drift station in these waters and indeed found DDAs for albeit in less density as we hoped. The very last station was in international water down to 2000m water depth to provide context for water mass identification.

Apart from the experiments at the stations, there were underway sampling done on the way back to Emden as we decided to use the long trip (15°N to 45°N) for generating a data set including nutrient concentrations, bulk N<sub>2</sub> fixation, nitrate uptake rates, and DNA analysis. Daily presentations, report writing and first data evaluation was done while steaming. On 30<sup>th</sup> May, we left the ship after 50 days of sailing and intensive research activities with a satisfaction of completing the tasks we planned.

## Acknowledgements

The captain and crew of R/V METEOR cruise M174 was the friendliest and most professional crew one could have. We thank Rainer, Derk, Benjamin and Magnus from the bridge for their flexibility, the professional support whether sailing in very shallow or deep waters. We also thank the bosun Alex and his deck crew who all were indispensable for our work, always extremely helpful and with fresh coffee at every night hour. Stefan, Heinz and Cathie always were available to help with hard- and software issues. Björn, Henning, Johann and the crew below the main deck made sure that we could sail smoothly and always had the wonderful sinus pump at service. Finally, Mike and Patrick indulged us with great dishes for vegetarian as much as for all-eaters. Our Brazilian observer friendly supported our scientific work and had helpful advice while navigating through the estuary of the Amazon. The cruise would not have happened without the most professional support of the German Research Fleet Coordination Centre at the University of Hamburg and the German Science Foundation. We thank the shipping company Briese Research for selecting a great quarantine hotel and making the travel to Las Palmas possible.

## List of Participants

	<b>Name</b>	<b>Institute</b>	<b>Discipline</b>
1	Voss, Maren, Prof.	IOW	Chief Scientist / Marine Biogeochemistry
2	Borbar, Cesar	Brazil. Navy	Observer, Brazil
3	Burmeister, Christian	IOW	Nutrient chemistry
4	Burtscher, Emma	UB	Nitrous oxide concentrations and origin
5	Choisnard, Noémie	IOW	Nitrification, $^{15}\text{N}-\text{NO}_3^-$ , sediments
6	Fernández Carrera, Ana, Dr.	IOW	Zooplankton food sources, POM filtration
7	Fröhberg, Nico	JU	Trace metals
8	Heene, Toralf	IOW	Physical Oceanography, CTD, Drifter
9	Hehl, Uwe	IOW	Technical Support Multinet, Multicorer
10	Hinz, Anina-Kaja	IOW	Physical Oceanography, CTD
11	Hollister, Adrienne	JU	Trace Metal ligands
12	Klett, Angelina	IOW	$\text{NH}_4$ determination, Filtration
13	Kreuzer, Lars	IOW	Nutrient Chemistry, Oxygen
14	Lee-Peterson, Drake	Georgia Tech	Filtration
15	Loick-Wilde, Natalie Dr.	IOW	Zooplankton Aminoacids
16	Mars, Robert	IOW	Physical Oceanography, CTD, Scanfish
17	Mohrholz, Volker, Dr.	IOW	Physical Oceanography, Scanfish, MSS
18	Montoya, Joseph, Prof. Dr.	Georgia Tech	Marine Biogeochemistry, N-fixation
19	Panthalil, Bhavya, Dr.	IOW	Biological Oceanography, N-release
20	Schmidt, Ina	IOW	Biol. Oceanogr., filtration, zooplankton
21	Stelzer, Martin	DWD	Technical Engineer Meteorology
22	Subramaniam, Ajit, Prof. Dr.	LDEO	Bio-optics, Pigments, Satellite Images
23	Umbrecht, Jacqueline	IOW	Marine Biogeochemistry, nutrient uptake
24	Waggoner, Emily	U Arizona	P-compounds, experiments

## Stationsliste

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth
METEOR	IOW Alias	2021		[UTC]	[°]	[°]	[m]
M174_1-1	LPA1	14.04.	CTD	08:55	21° 19.67'N	022° 48.00'W	4636.6
M174_1-2	LPA1	14.04.	BUCKET	09:11	21° 19.67'N	022° 48.00'W	4874.6
M174_1-3	LPA1	14.04.	Pump	09:26	21° 19.67'N	022° 48.00'W	4634.6
M174_1-4	LPA1	14.04.	RM	09:39	21° 19.59'N	022° 48.10'W	4633.6
M174_2-1	LAP2	16.04.	CTD	11:08	14° 48.22'N	030° 38.51'W	5570.6
M174_2-2	LAP2	16.04.	BUCKET	11:16	14° 48.22'N	030° 38.51'W	5575.6
M174_2-3	LAP2	16.04.	Pump	11:19	14° 48.22'N	030° 38.51'W	5559.6
M174_2-4	LAP2	16.04.	RM	11:52	14° 48.22'N	030° 38.51'W	5572.6
M174_2-5	LAP2	16.04.	CTD	12:44	14° 48.22'N	030° 38.51'W	5569.6
M174_2-6	LAP2	16.04.	MSN	13:31	14° 48.22'N	030° 38.51'W	5565.6
M174_3-1	LPA3	17.04.	CTD	11:03	12° 05.60'N	033° 49.34'W	6093.6
M174_3-2	LPA3	17.04.	Pump	11:35	12° 05.61'N	033° 49.34'W	6099.6
M174_3-3	LPA3	17.04.	RM	11:46	12° 05.60'N	033° 49.34'W	6102.6
M174_3-4	LPA3	17.04.	CTD	12:14	12° 05.60'N	033° 49.34'W	6098.6
M174_3-5	LPA3	17.04.	MSN	13:12	12° 05.60'N	033° 49.34'W	6098.6
M174_4-1	LPA4	18.04.	CTD	11:01	09° 28.53'N	036° 51.85'W	4451.6
M174_4-2	LPA4	18.04.	Pump	11:11	09° 28.53'N	036° 51.85'W	4455.6
M174_4-3	LPA4	18.04.	BUCKET	11:14	09° 28.53'N	036° 51.86'W	4452.6
M174_4-4	LPA4	18.04.	RM	11:44	09° 28.53'N	036° 51.85'W	4455.6
M174_4-5	LPA4	18.04.	CTD	12:26	09° 28.53'N	036° 51.85'W	4453.6
M174_4-6	LPA4	18.04.	CTD	13:59	09° 28.53'N	036° 51.85'W	4453.6
M174_4-7	LPA4	18.04.	MSN	14:41	09° 28.53'N	036° 51.85'W	4452.6
M174_4-8	LPA4	18.04.	GOFLO	16:16	09° 30.14'N	036° 50.83'W	4409.6
M174_5-1	LPA5	19.04.	MSN	10:07	07° 14.00'N	039° 27.05'W	4534.6
M174_5-2	LPA5	19.04.	BUCKET	11:37	07° 16.13'N	039° 25.55'W	4430.6
M174_5-3	LPA5	19.04.	CTD	11:55	07° 16.12'N	039° 25.55'W	4433.6
M174_5-4	LPA5	19.04.	Pump	12:13	07° 16.12'N	039° 25.55'W	4429.6
M174_5-5	LPA5	19.04.	ACS	12:26	07° 16.12'N	039° 25.55'W	4430.6
M174_5-6	LPA5	19.04.	RM	13:01	07° 16.12'N	039° 25.55'W	4433.6
M174_5-7	LPA5	19.04.	CTD	13:27	07° 16.16'N	039° 25.52'W	4434.6
M174_5-8	LPA5	19.04.	GOFLO	14:14	07° 16.16'N	039° 25.52'W	4433.6
M174_6-1	LPA6	20.04.	Pump	10:53	04° 39.41'N	042° 24.33'W	4458.6
M174_6-2	LPA6	20.04.	RM	11:06	04° 39.41'N	042° 24.33'W	4459.6
M174_7-1	A43	21.04.	MSN	04:04	02° 31.80'N	044° 49.73'W	4285.6
M174_7-2	A43	21.04.	CTD	05:52	02° 33.26'N	044° 48.70'W	4310.6
M174_7-3	A43	21.04.	CTD	07:13	02° 33.26'N	044° 48.70'W	4033.6
M174_7-4	A43	21.04.	Pump	07:21	02° 33.26'N	044° 48.70'W	4032.6
M174_7-5	A43	21.04.	GOFLO	07:51	02° 33.26'N	044° 48.70'W	4032.6
M174_8-1	A42	21.04.	MSN	15:09	01° 39.12'N	045° 52.06'W	3014.6
M174_8-2	A42	21.04.	CTD	16:39	01° 38.29'N	045° 51.20'W	3017.6
M174_8-3	A42	21.04.	RM	17:12	01° 38.40'N	045° 51.20'W	3021.6
M174_8-4	A42	21.04.	ACS	17:43	01° 38.36'N	045° 51.19'W	3030.6
M174_8-5	A42	21.04.	ACS	18:13	01° 38.52'N	045° 51.22'W	3025.6
M174_8-6	A42	21.04.	CTD	18:45	01° 38.81'N	045° 51.27'W	3205.6
M174_8-7	A42	21.04.	Pump	18:53	01° 38.83'N	045° 51.27'W	3023.6
M174_8-8	A42	21.04.	GOFLO	19:44	01° 39.39'N	045° 51.38'W	3032.6
M174_8-9	A42	21.04.	MSS	20:06	01° 39.55'N	045° 51.43'W	3036.6
M174_8-10	A42	21.04.	SCF	22:36	01° 40.87'N	045° 50.85'W	3034.6
M174_9-1	A48	23.04.	MSN	05:05	00° 07.29'S	047° 43.61'W	38.6
M174_9-2	A48	23.04.	CTD	06:20	00° 07.31'S	047° 43.85'W	39.6
M174_9-3	A48	23.04.	ACS	06:56	00° 07.30'S	047° 43.87'W	39.6
M174_9-4	A48	23.04.	MSS	07:14	00° 07.30'S	047° 43.87'W	39.6
M174_9-5	A48	23.04.	GOFLO	07:57	00° 07.30'S	047° 43.87'W	39.6
M174_9-6	A48	23.04.	CTD	08:14	00° 07.30'S	047° 43.87'W	39.6
M174_9-7	A48	23.04.	Pump	08:16	00° 07.30'S	047° 43.87'W	39.6
M174_9-8	A48	23.04.	MUC	09:05	00° 07.30'S	047° 43.87'W	38.6
M174_9-9	A48	23.04.	MUC	09:36	00° 07.31'S	047° 43.89'W	38.6
M174_10-1	A38	23.04.	MSN	14:40	00° 35.85'S	048° 15.63'W	17.6
M174_10-2	A38	23.04.	CTD	15:15	00° 35.85'S	048° 15.63'W	17.6
M174_10-3	A38	23.04.	RM	16:06	00° 35.85'S	048° 15.63'W	17.6

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth
METEOR	IOW Alias	2021		[UTC]	[°]	[°]	[m]
M174_10-4	A38	23.04.	MSS	16:18	00° 35.85'S	048° 15.63'W	17.6
M174_10-5	A38	23.04.	GOFLO	16:43	00° 35.85'S	048° 15.63'W	18.6
M174_10-6	A38	23.04.	CTD	17:06	00° 35.85'S	048° 15.63'W	18.6
M174_10-7	A38	23.04.	BUCKET	17:11	00° 35.85'S	048° 15.63'W	18.6
M174_10-8	A38	23.04.	Pump	17:13	00° 35.85'S	048° 15.63'W	18.6
M174_10-9	A38	23.04.	MUC	17:36	00° 35.85'S	048° 15.63'W	18.6
M174_11-1	A40	24.04.	CTD	01:25	00° 18.01'S	047° 06.36'W	27.6
M174_11-2	A40	24.04.	ACS	01:41	00° 18.04'S	047° 06.36'W	27.6
M174_11-3	A40	24.04.	MSS	01:52	00° 18.04'S	047° 06.36'W	27.6
M174_12-1	A36	24.04.	MSN	10:32	00° 35.85'N	048° 22.59'W	19.6
M174_12-2	A36	24.04.	CTD	11:25	00° 35.81'N	048° 22.42'W	18.6
M174_12-3	A36	24.04.	BUCKET	11:34	00° 35.81'N	048° 22.44'W	18.6
M174_12-4	A36	24.04.	ACS	11:44	00° 35.82'N	048° 22.43'W	19.6
M174_12-5	A36	24.04.	MSS	11:56	00° 35.82'N	048° 22.43'W	19.6
M174_12-6	A36	24.04.	GOFLO	12:29	00° 35.82'N	048° 22.39'W	18.6
M174_12-7	A36	24.04.	RM	12:54	00° 35.82'N	048° 22.40'W	19.6
M174_13-1	A34	24.04.	MSN	15:50	01° 02.84'N	048° 35.27'W	18.6
M174_13-2	A34	24.04.	GOFLO	16:43	01° 03.00'N	048° 35.06'W	18.6
M174_13-3	A34	24.04.	CTD	17:18	01° 03.00'N	048° 35.06'W	19.6
M174_13-4	A34	24.04.	BUCKET	17:21	01° 02.99'N	048° 35.06'W	19.6
M174_13-5	A34	24.04.	ACS	17:44	01° 03.01'N	048° 35.04'W	19.6
M174_13-6	A34	24.04.	RM	17:59	01° 02.95'N	048° 35.08'W	20.6
M174_13-7	A34	24.04.	MSS	18:09	01° 03.03'N	048° 35.07'W	20.6
M174_13-8	A34	24.04.	GOFLO	18:30	01° 03.05'N	048° 35.03'W	19.6
M174_13-9	A34	24.04.	MUC	19:01	01° 03.05'N	048° 35.03'W	20.6
M174_13-10	A34	24.04.	MSS	19:11	01° 03.05'N	048° 35.05'W	20.6
M174_13-11	A34	24.04.	MUC	19:35	01° 03.05'N	048° 35.05'W	20.6
M174_14-1	A32	24.04.	MSN	23:14	01° 36.73'N	048° 50.41'W	19.6
M174_14-2	A32	25.04.	CTD	00:16	01° 36.76'N	048° 50.37'W	18.6
M174_14-3	A32	25.04.	ACS	00:35	01° 36.74'N	048° 50.31'W	18.6
M174_14-4	A32	25.04.	MSS	00:46	01° 36.73'N	048° 50.30'W	18.6
M174_14-5	A32	25.04.	GOFLO	01:04	01° 37.04'N	048° 50.09'W	18.6
M174_14-6	A32	25.04.	SCF	01:44	01° 36.87'N	048° 49.96'W	18.6
M174_15-1	A28	26.04.	CTD	06:13	02° 31.21'N	046° 38.43'W	2934.6
M174_15-2	A28	26.04.	ACS	06:59	02° 31.53'N	046° 38.55'W	2929.6
M174_16-1	AX	26.04.	CTD	13:11	02° 04.70'N	047° 42.56'W	83.6
M174_16-2	AX	26.04.	ACS	13:42	02° 04.71'N	047° 42.58'W	83.6
M174_16-3	AX	26.04.	MSS	14:00	02° 04.71'N	047° 42.58'W	83.6
M174_16-4	AX	26.04.	RM	14:19	02° 04.71'N	047° 42.58'W	83.6
M174_16-5	AX	26.04.	GOFLO	14:51	02° 04.72'N	047° 42.58'W	84.6
M174_16-6	AX	26.04.	BUCKET	15:03	02° 04.72'N	047° 42.58'W	83.6
M174_17-1	A29D	26.04.	CTD	19:57	01° 21.02'N	048° 18.90'W	36.6
M174_17-2	A29D	26.04.	DRIFT	20:35	01° 20.97'N	048° 18.99'W	36.6
M174_17-3	A29D	26.04.	MSS	22:01	01° 20.18'N	048° 21.17'W	33.6
M174_17-4	A29D	26.04.	MSN	22:36	01° 20.18'N	048° 21.41'W	33.6
M174_17-5	A29D	27.04.	MSS	00:30	01° 20.72'N	048° 21.24'W	33.6
M174_17-6	A29D	27.04.	CTD	00:54	01° 20.74'N	048° 21.22'W	32.6
M174_17-7	A29D	27.04.	ACS	01:12	01° 20.75'N	048° 21.18'W	32.6
M174_17-8	A29D	27.04.	MSS	02:03	01° 22.13'N	048° 22.49'W	31.6
M174_17-9	A29D	27.04.	MSS	04:00	01° 25.82'N	048° 20.84'W	35.6
M174_17-10	A29D	27.04.	CTD	04:37	01° 26.80'N	048° 20.79'W	35.6
M174_17-11	A29D	27.04.	MSS	06:01	01° 28.49'N	048° 20.10'W	38.6
M174_17-12	A29D	27.04.	MSS	08:00	01° 27.62'N	048° 21.38'W	38.6
M174_17-13	A29D	27.04.	CTD	08:31	01° 26.64'N	048° 22.03'W	36.6
M174_17-14	A29D	27.04.	MSS	10:03	01° 25.81'N	048° 25.06'W	32.6
M174_17-15	A29D	27.04.	CTD	10:34	01° 25.65'N	048° 25.17'W	32.6
M174_17-16	A29D	27.04.	CTD	11:34	01° 25.62'N	048° 26.43'W	30.6
M174_17-17	A29D	27.04.	Pump	11:43	01° 25.66'N	048° 26.61'W	30.6
M174_17-18	A29D	27.04.	MSS	11:57	01° 25.78'N	048° 26.93'W	29.6
M174_17-19	A29D	27.04.	CTD	12:30	01° 25.93'N	048° 27.13'W	29.6
M174_17-20	A29D	27.04.	RM	13:06	01° 26.50'N	048° 27.51'W	28.6

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth
METEOR	IOW Alias	2021		[UTC]	[°]	[°]	[m]
M174_17-21	A29D	27.04.	MSS	13:59	01° 27.49'N	048° 27.04'W	29.6
M174_17-22	A29D	27.04.	MSN	14:32	01° 28.13'N	048° 26.46'W	28.6
M174_17-23	A29D	27.04.	MSS	16:01	01° 32.06'N	048° 24.16'W	34.6
M174_17-24	A29D	27.04.	CTD	16:32	01° 32.93'N	048° 23.60'W	35.6
M174_17-25	A29D	27.04.	MUC	17:03	01° 33.95'N	048° 23.36'W	37.6
M174_17-26	A29D	27.04.	MSS	17:58	01° 34.23'N	048° 23.51'W	37.6
M174_17-27	A29D	27.04.	GOFLO	18:39	01° 33.99'N	048° 23.64'W	37.6
M174_17-28	A29D	27.04.	MSS	19:59	01° 35.30'N	048° 24.02'W	38.6
M174_17-29	A29D	27.04.	CTD	20:36	01° 35.20'N	048° 24.31'W	38.6
M174_17-30	A29D	27.04.	MSS	22:02	01° 33.94'N	048° 26.01'W	36.6
M174_17-31	A29D	28.04.	MSS	00:00	01° 32.91'N	048° 29.00'W	30.6
M174_17-32	A29D	28.04.	CTD	00:31	01° 33.12'N	048° 29.02'W	30.6
M174_17-33	A29D	28.04.	MSS	00:53	01° 33.30'N	048° 29.01'W	30.6
M174_17-34	A29D	28.04.	MSS	02:00	01° 33.97'N	048° 28.77'W	30.6
M174_17-35	A29D	28.04.	MSN	02:29	01° 34.09'N	048° 28.47'W	30.6
M174_17-36	A29D	28.04.	MSS	04:02	01° 36.14'N	048° 27.78'W	32.6
M174_17-37	A29D	28.04.	CTD	04:30	01° 37.33'N	048° 27.05'W	34.6
M174_17-38	A29D	28.04.	MSS	06:02	01° 39.70'N	048° 25.93'W	37.6
M174_17-39	A29D	28.04.	MSS	08:01	01° 40.37'N	048° 25.12'W	41.6
M174_17-40	A29D	28.04.	CTD	08:30	01° 40.25'N	048° 25.18'W	41.6
M174_17-41	A29D	28.04.	MSS	10:00	01° 38.57'N	048° 27.14'W	37.6
M174_17-42	A29D	28.04.	CTD	10:35	01° 38.49'N	048° 27.54'W	36.6
M174_17-43	A29D	28.04.	CTD	11:43	01° 37.64'N	048° 29.34'W	33.6
M174_17-44	A29D	28.04.	MSS	12:08	01° 37.65'N	048° 29.92'W	32.6
M174_17-45	A29D	28.04.	CTD	12:31	01° 37.68'N	048° 29.91'W	31.6
M174_17-46	A29D	28.04.	RM	13:09	01° 37.85'N	048° 29.98'W	31.6
M174_17-47	A29D	28.04.	MSS	13:59	01° 38.15'N	048° 29.66'W	31.6
M174_17-48	A29D	28.04.	CTD	14:29	01° 38.26'N	048° 29.20'W	32.6
M174_17-49	A29D	28.04.	MSN	14:50	01° 38.96'N	048° 28.95'W	32.6
M174_17-50	A29D	28.04.	CTD	16:22	01° 41.47'N	048° 27.07'W	35.6
M174_17-51	A29D	28.04.	CTD	18:32	01° 45.00'N	048° 25.96'W	42.6
M174_17-52	A29D	28.04.	MSS	18:48	01° 45.30'N	048° 25.85'W	43.6
M174_17-53	A29D	28.04.	GOFLO	19:22	01° 46.03'N	048° 25.32'W	45.6
M174_18-1	A22	29.04.	CTD	06:28	02° 59.37'N	048° 28.68'W	105.6
M174_18-2	A22	29.04.	ACS	07:09	02° 59.71'N	048° 28.93'W	107.6
M174_18-3	A22	29.04.	MSN	07:30	02° 59.99'N	048° 29.00'W	108.6
M174_18-4	A22	29.04.	CTD	09:24	02° 59.34'N	048° 28.69'W	106.6
M174_18-5	A22	29.04.	GOFLO	09:47	02° 59.51'N	048° 28.79'W	106.6
M174_18-6	A22	29.04.	MUC	10:16	02° 59.74'N	048° 28.92'W	107.6
M174_18-7	A22	29.04.	MUC	10:42	02° 59.61'N	048° 28.96'W	106.6
M174_19-1	A20	29.04.	RM	18:36	03° 24.82'N	049° 58.03'W	64.6
M174_19-2	A20	29.04.	CTD	19:02	03° 24.81'N	049° 58.07'W	61.6
M174_19-3	A20	29.04.	ACS	19:34	03° 25.16'N	049° 58.39'W	65.6
M174_19-4	A20	29.04.	MSN	19:50	03° 25.41'N	049° 58.52'W	63.6
M174_19-5	A20	29.04.	CTD	22:00	03° 24.72'N	049° 57.99'W	63.6
M174_19-6	A20	29.04.	Pump	22:06	03° 24.74'N	049° 57.99'W	64.6
M174_19-7	A20	29.04.	GOFLO	22:21	03° 24.76'N	049° 58.00'W	64.6
M174_19-8	A20	29.04.	MUC	22:38	03° 24.79'N	049° 58.01'W	66.6
M174_19-9	A20	29.04.	MUC	22:54	03° 24.80'N	049° 58.01'W	66.6
M174_19-10	A20	29.04.	MUC	23:13	03° 24.80'N	049° 58.01'W	62.6
M174_19-11	A20	29.04.	SCF	23:30	03° 24.84'N	049° 57.93'W	64.6
M174_20-1	SF3_end	30.04.	MSS	13:13	04° 24.35'N	049° 07.29'W	1413.6
M174_20-2	SF3_end	30.04.	CTD	14:25	04° 24.35'N	049° 07.29'W	1414.6
M174_20-3	SF3_end	30.04.	ACS	15:30	04° 24.35'N	049° 07.29'W	1412.6
M174_20-4	SF3_end	30.04.	CTD	16:08	04° 24.35'N	049° 07.29'W	1412.6
M174_20-5	SF3_end	30.04.	Pump	16:16	04° 24.35'N	049° 07.29'W	1412.6
M174_20-6	SF3_end	30.04.	MSN	16:40	04° 24.26'N	049° 07.22'W	1409.6
M174_20-7	SF3_end	30.04.	GOFLO	18:31	04° 23.12'N	049° 06.69'W	1354.6
M174_21-1	A19D	01.05.	DRIFT	08:01	03° 34.37'N	049° 50.98'W	84.6
M174_21-2	A19D	01.05.	MSS	08:08	03° 34.37'N	049° 50.94'W	84.6
M174_21-3	A19D	01.05.	CTD	08:43	03° 34.34'N	049° 50.93'W	85.6

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth
METEOR	IOW Alias	2021		[UTC]	[°]	[°]	[m]
M174_21-4	A19D	01.05.	MSS	10:02	03° 33.83'N	049° 52.69'W	94.6
M174_21-5	A19D	01.05.	CTD	10:39	03° 33.35'N	049° 53.26'W	92.6
M174_21-6	A19D	01.05.	CTD	11:40	03° 33.26'N	049° 54.05'W	90.6
M174_21-7	A19D	01.05.	Pump	11:54	03° 33.17'N	049° 54.20'W	87.6
M174_21-8	A19D	01.05.	MSS	12:01	03° 33.11'N	049° 54.26'W	89.6
M174_21-9	A19D	01.05.	CTD	12:44	03° 33.52'N	049° 54.96'W	88.6
M174_21-10	A19D	01.05.	RM	13:19	03° 33.68'N	049° 55.27'W	88.6
M174_21-11	A19D	01.05.	MSS	14:01	03° 34.16'N	049° 55.76'W	88.6
M174_21-12	A19D	01.05.	MSN	14:39	03° 35.14'N	049° 56.16'W	87.6
M174_21-13	A19D	01.05.	MSS	16:04	03° 36.94'N	049° 55.95'W	92.6
M174_21-14	A19D	01.05.	CTD	16:44	03° 37.59'N	049° 55.95'W	91.6
M174_21-15	A19D	01.05.	MUC	17:19	03° 38.49'N	049° 55.91'W	88.6
M174_21-16	A19D	01.05.	MUC	17:43	03° 38.81'N	049° 55.87'W	88.6
M174_21-17	A19D	01.05.	MUC	18:01	03° 38.93'N	049° 55.83'W	88.6
M174_21-18	A19D	01.05.	MSS	18:10	03° 38.93'N	049° 55.83'W	88.6
M174_21-19	A19D	01.05.	GOFLO	18:43	03° 39.16'N	049° 56.00'W	86.6
M174_21-20	A19D	01.05.	MSS	19:59	03° 40.36'N	049° 56.89'W	85.6
M174_21-21	A19D	01.05.	CTD	20:32	03° 40.31'N	049° 57.41'W	86.6
M174_21-22	A19D	01.05.	MSS	21:58	03° 41.07'N	049° 59.07'W	86.6
M174_21-23	A19D	01.05.	MSS	23:59	03° 40.70'N	050° 00.94'W	85.6
M174_21-24	A19D	02.05.	CTD	00:29	03° 40.72'N	050° 00.98'W	85.6
M174_21-25	A19D	02.05.	MSS	01:57	03° 40.67'N	050° 01.98'W	78.6
M174_21-26	A19D	02.05.	MSN	02:37	03° 40.76'N	050° 02.46'W	79.6
M174_21-27	A19D	02.05.	MSS	04:01	03° 42.53'N	050° 03.14'W	81.6
M174_21-28	A19D	02.05.	CTD	04:38	03° 42.96'N	050° 03.01'W	81.6
M174_21-29	A19D	02.05.	MSS	06:01	03° 45.03'N	050° 03.50'W	70.6
M174_21-30	A19D	02.05.	MSS	08:07	03° 47.04'N	050° 03.90'W	88.6
M174_21-31	A19D	02.05.	CTD	08:36	03° 46.94'N	050° 03.95'W	88.6
M174_21-32	A19D	02.05.	MSS	09:58	03° 47.83'N	050° 05.17'W	89.6
M174_21-33	A19D	02.05.	CTD	10:36	03° 47.79'N	050° 05.23'W	89.6
M174_21-34	A19D	02.05.	CTD	11:30	03° 48.11'N	050° 06.60'W	95.6
M174_21-35	A19D	02.05.	BUCKET	11:50	03° 48.04'N	050° 06.88'W	94.6
M174_21-36	A19D	02.05.	MSS	11:58	03° 48.00'N	050° 07.02'W	94.6
M174_21-37	A19D	02.05.	CTD	12:35	03° 48.16'N	050° 07.18'W	95.6
M174_21-38	A19D	02.05.	RM	13:09	03° 48.31'N	050° 07.38'W	97.6
M174_21-39	A19D	02.05.	MSS	14:00	03° 48.76'N	050° 07.92'W	111.6
M174_21-40	A19D	02.05.	MSN	14:37	03° 48.90'N	050° 08.23'W	101.6
M174_21-41	A19D	02.05.	MSS	16:04	03° 50.32'N	050° 08.34'W	88.6
M174_21-42	A19D	02.05.	CTD	16:45	03° 51.32'N	050° 08.42'W	81.6
M174_21-43	A19D	02.05.	ACS	17:16	03° 51.79'N	050° 08.38'W	80.6
M174_21-44	A19D	02.05.	MSS	17:59	03° 52.49'N	050° 08.37'W	83.6
M174_21-45	A19D	02.05.	GOFLO	18:57	03° 54.02'N	050° 08.77'W	87.6
M174_21-46	A19D	02.05.	MSS	20:00	03° 55.31'N	050° 08.91'W	80.6
M174_21-47	A19D	02.05.	CTD	20:30	03° 55.69'N	050° 08.81'W	79.6
M174_21-48	A19D	02.05.	MSS	22:04	03° 56.02'N	050° 10.00'W	80.6
M174_21-49	A19D	03.05.	MSS	00:02	03° 56.58'N	050° 12.75'W	83.6
M174_21-50	A19D	03.05.	CTD	00:32	03° 56.63'N	050° 12.82'W	82.6
M174_21-51	A19D	03.05.	MSS	02:01	03° 56.73'N	050° 14.07'W	74.6
M174_21-52	A19D	03.05.	MSN	02:36	03° 57.52'N	050° 14.60'W	88.6
M174_21-53	A19D	03.05.	MSS	03:59	03° 58.30'N	050° 15.55'W	98.6
M174_21-54	A19D	03.05.	CTD	04:35	03° 58.92'N	050° 15.54'W	94.6
M174_21-55	A19D	03.05.	MSS	06:03	04° 00.15'N	050° 16.44'W	93.6
M174_21-56	A19D	03.05.	MSS	07:59	04° 02.45'N	050° 17.51'W	82.6
M174_21-57	A19D	03.05.	CTD	08:32	04° 03.25'N	050° 18.03'W	87.6
M174_22-1	A11	03.05.	CTD	12:55	04° 20.16'N	050° 56.10'W	37.6
M174_22-2	A11	03.05.	BUCKET	13:10	04° 20.16'N	050° 56.04'W	38.6
M174_22-3	A11	03.05.	ACS	13:17	04° 20.15'N	050° 56.07'W	38.6
M174_22-4	A11	03.05.	RM	13:30	04° 20.15'N	050° 56.06'W	38.6
M174_22-5	A11	03.05.	GOFLO	14:01	04° 20.13'N	050° 56.07'W	37.6
M174_22-6	A11	03.05.	MSS	14:19	04° 20.13'N	050° 56.06'W	43.6
M174_23-1	A12	03.05.	CTD	19:48	05° 01.84'N	050° 21.01'W	419.6

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth
METEOR	IOW Alias	2021		[UTC]	[°]	[°]	[m]
M174_23-2	A12	03.05.	BUCKET	19:53	05° 01.88'N	050° 21.03'W	420.6
M174_23-3	A12	03.05.	ACS	20:22	05° 02.30'N	050° 21.44'W	418.6
M174_23-4	A12	03.05.	MSS	20:43	05° 02.72'N	050° 21.90'W	415.6
M174_24-1	A10	04.05.	CTD	08:00	05° 27.22'N	052° 33.47'W	34.6
M174_24-2	A10	04.05.	ACS	08:31	05° 27.23'N	052° 33.47'W	39.6
M174_24-3	A10	04.05.	GOFLO	08:51	05° 27.23'N	052° 33.47'W	56.6
M174_24-4	A10	04.05.	MSS	09:04	05° 27.25'N	052° 33.50'W	56.6
M174_24-5	A10	04.05.	CTD	09:34	05° 27.23'N	052° 33.49'W	33.6
M174_24-6	A10	04.05.	MSN	10:05	05° 27.23'N	052° 33.49'W	34.6
M174_24-7	A10	04.05.	RM	11:18	05° 27.08'N	052° 33.31'W	35.6
M174_24-8	A10	04.05.	MUC	11:51	05° 27.22'N	052° 33.46'W	36.6
M174_24-9	A10	04.05.	MUC	12:10	05° 27.20'N	052° 33.44'W	34.6
M174_24-10	A10	04.05.	MUC	12:29	05° 27.20'N	052° 33.43'W	34.6
M174_24-11	A10	04.05.	SCF	12:49	05° 27.46'N	052° 33.41'W	37.6
M174_25-1	A9	05.05.	CTD	02:03	06° 16.50'N	051° 39.28'W	2607.6
M174_25-2	A9	05.05.	ACS	03:24	06° 16.50'N	051° 39.28'W	2612.6
M174_25-3	A9	05.05.	MSS	03:55	06° 16.50'N	051° 39.28'W	2615.6
M174_25-4	A9	05.05.	GOFLO	05:06	06° 17.60'N	051° 40.61'W	2650.6
M174_25-5	A9	05.05.	Pump	05:06	06° 17.60'N	051° 40.61'W	2654.6
M174_25-6	A9	05.05.	CTD	05:26	06° 17.59'N	051° 40.61'W	2645.6
M174_25-7	A9	05.05.	MSN	06:24	06° 17.74'N	051° 40.74'W	2654.6
M174_26-1	A9D	05.05.	DRIFT	10:34	05° 58.09'N	051° 59.88'W	82.6
M174_26-2	A9D	05.05.	MSS	10:42	05° 58.38'N	051° 59.96'W	82.6
M174_26-3	A9D	05.05.	CTD	11:31	05° 59.05'N	052° 00.45'W	228.6
M174_26-4	A9D	05.05.	MSS	12:02	05° 59.89'N	052° 01.25'W	84.6
M174_26-5	A9D	05.05.	CTD	12:33	06° 00.21'N	052° 01.48'W	84.6
M174_26-6	A9D	05.05.	ACS	13:05	06° 01.10'N	052° 02.38'W	84.6
M174_26-7	A9D	05.05.	GOFLO	13:28	06° 01.81'N	052° 03.08'W	85.6
M174_26-8	A9D	05.05.	MSS	14:03	06° 02.92'N	052° 04.09'W	84.6
M174_26-9	A9D	05.05.	CTD	14:39	06° 03.57'N	052° 04.57'W	85.6
M174_26-10	A9D	05.05.	Pump	14:45	06° 03.82'N	052° 04.81'W	85.6
M174_26-11	A9D	05.05.	RM	15:17	06° 05.07'N	052° 06.00'W	83.6
M174_26-12	A9D	05.05.	MSS	16:00	06° 05.98'N	052° 07.12'W	83.6
M174_26-13	A9D	05.05.	MSN	16:34	06° 07.16'N	052° 08.28'W	82.6
M174_26-14	A9D	05.05.	MSS	18:01	06° 10.04'N	052° 09.74'W	83.6
M174_26-15	A9D	05.05.	MUC	18:13	06° 10.34'N	052° 09.84'W	83.6
M174_26-16	A9D	05.05.	MUC	18:33	06° 10.62'N	052° 09.80'W	84.6
M174_26-17	A9D	05.05.	MSS	18:59	06° 11.09'N	052° 10.12'W	85.6
M174_26-18	A9D	05.05.	MSS	20:06	06° 13.62'N	052° 11.53'W	88.6
M174_26-19	A9D	05.05.	CTD	20:34	06° 14.03'N	052° 11.72'W	89.6
M174_26-20	A9D	05.05.	ACS	20:56	06° 14.58'N	052° 12.00'W	90.6
M174_26-21	A9D	05.05.	MSS	22:00	06° 17.35'N	052° 13.52'W	95.6
M174_26-22	A9D	05.05.	MSS	23:58	06° 19.68'N	052° 16.27'W	99.6
M174_26-23	A9D	06.05.	MSS	02:02	06° 22.57'N	052° 19.16'W	117.6
M174_26-24	A9D	06.05.	MSS	03:56	06° 25.62'N	052° 21.68'W	120.6
M174_26-25	A9D	06.05.	MSN	04:49	06° 26.75'N	052° 23.01'W	110.6
M174_26-26	A9D	06.05.	MSS	05:59	06° 28.06'N	052° 22.77'W	116.6
M174_26-27	A9D	06.05.	MSS	07:57	06° 32.79'N	052° 25.17'W	147.6
M174_26-28	A9D	06.05.	CTD	08:33	06° 33.50'N	052° 25.31'W	172.6
M174_26-29	A9D	06.05.	BUCKET	08:40	06° 33.68'N	052° 25.41'W	176.6
M174_26-30	A9D	06.05.	MSS	09:58	06° 36.40'N	052° 26.87'W	204.6
M174_26-31	A9D	06.05.	CTD	10:43	06° 37.00'N	052° 27.19'W	209.6
M174_26-32	A9D	06.05.	ACS	11:14	06° 37.69'N	052° 27.53'W	216.6
M174_26-33	A9D	06.05.	MSS	11:59	06° 38.97'N	052° 28.23'W	232.6
M174_26-34	A9D	06.05.	CTD	12:47	06° 39.38'N	052° 28.43'W	236.6
M174_26-35	A9D	06.05.	RM	13:23	06° 39.91'N	052° 28.67'W	242.6
M174_26-36	A9D	06.05.	MSS	14:01	06° 40.88'N	052° 29.15'W	253.6
M174_27-1	SF5_start	07.05.	SCF	01:39	08° 44.42'N	052° 00.17'W	4684.6
M174_28-1	SF5_start	07.05.	CTD	18:40	09° 17.78'N	053° 42.92'W	4644.6
M174_28-2	SF5_start	07.05.	Pump	19:02	09° 17.89'N	053° 42.98'W	4651.6
M174_28-3	SF5_start	07.05.	MSS	19:42	09° 17.89'N	053° 42.96'W	4657.6

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth
METEOR	IOW Alias	2021		[UTC]	[°]	[°]	[m]
M174_28-4	SF5_start	07.05.	ACS	20:40	09° 17.89'N	053° 42.96'W	4647.6
M174_28-5	SF5_start	07.05.	BUCKET	20:47	09° 17.89'N	053° 42.96'W	4656.6
M174_28-6	SF5_start	07.05.	CTD	21:07	09° 17.89'N	053° 42.96'W	4645.6
M174_28-7	SF5_start	07.05.	GOFLO	21:34	09° 18.08'N	053° 42.97'W	4660.6
M174_28-8	SF5_start	07.05.	CTD	22:01	09° 18.30'N	053° 42.96'W	4666.6
M174_28-9	SF5_start	07.05.	MSN	22:20	09° 18.43'N	053° 42.95'W	4671.6
M174_29-1	A56	08.05.	CTD	11:30	11° 15.84'N	054° 48.61'W	4700.6
M174_29-2	A56	08.05.	RM	12:30	11° 15.84'N	054° 48.61'W	4688.6
M174_29-3	A56	08.05.	MSS	12:46	11° 15.83'N	054° 48.64'W	4862.6
M174_29-4	A56	08.05.	CTD	14:00	11° 16.02'N	054° 47.45'W	4703.6
M174_29-5	A56	08.05.	BUCKET	14:03	11° 16.02'N	054° 47.45'W	4700.6
M174_29-6	A56	08.05.	ACS	14:40	11° 16.02'N	054° 47.45'W	4699.6
M174_29-7	A56	08.05.	GOFLO	15:13	11° 16.02'N	054° 47.45'W	4983.6
M174_30-1	A63D	09.05.	DRIFT	10:00	14° 08.59'N	056° 43.39'W	5113.6
M174_30-2	A63D	09.05.	MSS	10:46	14° 08.65'N	056° 43.32'W	5114.6
M174_30-3	A63D	09.05.	CTD	12:03	14° 08.51'N	056° 42.47'W	5118.6
M174_30-4	A63D	09.05.	BUCKET	12:21	14° 08.51'N	056° 42.47'W	5116.6
M174_30-5	A63D	09.05.	MSS	13:06	14° 08.51'N	056° 42.47'W	5136.6
M174_30-6	A63D	09.05.	CTD	14:03	14° 08.65'N	056° 42.68'W	5123.6
M174_30-7	A63D	09.05.	RM	14:40	14° 09.27'N	056° 42.87'W	5126.6
M174_30-8	A63D	09.05.	MSS	15:06	14° 09.79'N	056° 42.86'W	5130.6
M174_30-9	A63D	09.05.	MSN	15:55	14° 10.46'N	056° 42.54'W	5147.6
M174_30-10	A63D	09.05.	MSS	18:01	14° 13.64'N	056° 38.76'W	5188.6
M174_30-11	A63D	09.05.	CTD	18:38	14° 14.46'N	056° 38.34'W	5191.6
M174_30-12	A63D	09.05.	Pump	18:42	14° 14.52'N	056° 38.36'W	5191.6
M174_30-13	A63D	09.05.	GOFLO	19:05	14° 14.89'N	056° 38.49'W	5180.6
M174_30-14	A63D	09.05.	MSS	19:16	14° 15.07'N	056° 38.54'W	5180.6
M174_30-15	A63D	09.05.	CTD	20:00	14° 15.94'N	056° 38.07'W	5191.6
M174_30-16	A63D	09.05.	ACS	20:41	14° 16.55'N	056° 38.30'W	5199.6
M174_30-17	A63D	09.05.	MSS	21:06	14° 16.99'N	056° 38.37'W	5198.6
M174_30-18	A63D	09.05.	CTD	22:42	14° 16.53'N	056° 47.45'W	5176.6
M174_30-19	A63D	09.05.	MSS	23:06	14° 16.69'N	056° 47.46'W	5166.6
M174_30-20	A63D	09.05.	GOFLO	23:44	14° 16.69'N	056° 47.46'W	5166.6
M174_30-21	A63D	10.05.	ACS	00:28	14° 16.69'N	056° 47.46'W	5173.6
M174_30-22	A63D	10.05.	MSS	00:48	14° 16.69'N	056° 47.46'W	5176.6
M174_30-23	A63D	10.05.	MSN	01:56	14° 16.68'N	056° 47.40'W	5169.6
M174_30-24	A63D	10.05.	MSS	03:04	14° 15.93'N	056° 44.82'W	5224.6
M174_30-25	A63D	10.05.	CTD	03:59	14° 15.80'N	056° 44.30'W	5221.6
M174_30-26	A63D	10.05.	MSS	05:01	14° 15.79'N	056° 44.30'W	5221.6
M174_30-27	A63D	10.05.	MSS	07:03	14° 16.66'N	056° 45.52'W	5163.6
M174_30-28	A63D	10.05.	CTD	08:00	14° 17.85'N	056° 45.20'W	5151.6
M174_30-29	A63D	10.05.	MSS	09:01	14° 18.77'N	056° 45.56'W	5180.6
M174_30-30	A63D	10.05.	CTD	10:02	14° 20.03'N	056° 45.33'W	5239.6
M174_30-31	A63D	10.05.	MSS	10:57	14° 20.99'N	056° 45.65'W	5286.6
M174_30-32	A63D	10.05.	ACS	11:56	14° 22.24'N	056° 44.92'W	5338.6
M174_30-33	A63D	10.05.	RM	12:23	14° 22.66'N	056° 45.09'W	5374.6
M174_30-34	A63D	10.05.	MSS	12:57	14° 23.00'N	056° 45.68'W	5383.6
M174_30-35	A63D	10.05.	CTD	14:04	14° 24.44'N	056° 44.74'W	5416.6
M174_30-36	A63D	10.05.	MSS	14:52	14° 25.09'N	056° 44.93'W	5405.6
M174_30-37	A63D	10.05.	MSN	15:35	14° 25.60'N	056° 43.83'W	5418.6
M174_30-38	A63D	10.05.	MSS	16:59	14° 26.52'N	056° 39.96'W	5462.6
M174_30-39	A63D	10.05.	CTD	18:01	14° 27.07'N	056° 40.02'W	5471.6
M174_30-40	A63D	10.05.	GOFLO	18:38	14° 27.39'N	056° 40.05'W	5468.6
M174_30-41	A63D	10.05.	MSS	19:03	14° 27.63'N	056° 39.87'W	5465.6
M174_30-42	A63D	10.05.	SCF	20:50	14° 26.63'N	056° 45.48'W	5398.6
M174_31-1	DDA	11.05.	DRIFT	11:07	14° 46.36'N	056° 07.96'W	5509.6
M174_31-2	DDA	11.05.	MSS	11:13	14° 46.36'N	056° 07.96'W	5538.6
M174_31-3	DDA	11.05.	CTD	12:00	14° 46.39'N	056° 08.08'W	5513.6
M174_31-4	DDA	11.05.	MSS	13:05	14° 46.94'N	056° 08.18'W	5504.6
M174_31-5	DDA	11.05.	CTD	14:04	14° 47.09'N	056° 09.25'W	5508.6
M174_31-6	DDA	11.05.	RM	14:56	14° 47.52'N	056° 09.32'W	5514.6

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth
METEOR	IOW Alias	2021		[UTC]	[°]	[°]	[m]
M174_31-7	DDA	11.05.	MSS	15:14	14° 47.64'N	056° 09.48'W	5504.6
M174_31-8	DDA	11.05.	MSN	15:55	14° 48.12'N	056° 09.20'W	5507.6
M174_31-9	DDA	11.05.	MSS	17:14	14° 48.28'N	056° 06.67'W	5760.6
M174_31-10	DDA	11.05.	CTD	17:58	14° 48.36'N	056° 06.81'W	5508.6
M174_31-11	DDA	11.05.	Pump	18:11	14° 48.49'N	056° 06.81'W	5509.6
M174_31-12	DDA	11.05.	GOFLO	18:39	14° 48.59'N	056° 06.80'W	5758.6
M174_31-13	DDA	11.05.	MSS	19:01	14° 48.70'N	056° 06.78'W	5510.6
M174_31-14	DDA	11.05.	CTD	20:00	14° 48.93'N	056° 06.71'W	5755.6
M174_31-15	DDA	11.05.	ACS	20:33	14° 49.16'N	056° 06.68'W	5513.6
M174_31-16	DDA	11.05.	MSS	20:56	14° 49.31'N	056° 06.67'W	5511.6
M174_31-17	DDA	11.05.	CTD	22:34	14° 51.98'N	056° 17.72'W	5513.6
M174_31-18	DDA	11.05.	MSS	23:00	14° 52.41'N	056° 17.83'W	5507.6
M174_31-19	DDA	11.05.	GOFLO	23:48	14° 52.42'N	056° 17.83'W	5507.6
M174_31-20	DDA	12.05.	ACS	00:21	14° 52.47'N	056° 17.81'W	5507.6
M174_31-21	DDA	12.05.	MSS	00:50	14° 52.49'N	056° 17.80'W	5507.6
M174_31-22	DDA	12.05.	MSN	01:58	14° 52.65'N	056° 17.47'W	5507.6
M174_31-23	DDA	12.05.	MSS	03:14	14° 52.53'N	056° 14.76'W	5509.6
M174_31-24	DDA	12.05.	CTD	04:00	14° 52.68'N	056° 14.47'W	5515.6
M174_31-25	DDA	12.05.	MSS	04:59	14° 53.02'N	056° 14.41'W	5509.6
M174_31-26	DDA	12.05.	MSS	06:59	14° 54.23'N	056° 15.65'W	5764.6
M174_31-27	DDA	12.05.	CTD	07:59	14° 54.61'N	056° 15.05'W	5513.6
M174_31-28	DDA	12.05.	MSS	09:00	14° 55.10'N	056° 15.04'W	5509.6
M174_31-29	DDA	12.05.	CTD	10:01	14° 55.46'N	056° 15.68'W	5504.6
M174_31-30	DDA	12.05.	MSS	11:00	14° 55.60'N	056° 15.69'W	5505.6
M174_31-31	DDA	12.05.	ACS	11:58	14° 55.51'N	056° 15.28'W	5510.6
M174_31-32	DDA	12.05.	RM	12:29	14° 55.54'N	056° 15.27'W	5508.6
M174_31-33	DDA	12.05.	MSS	13:00	14° 55.74'N	056° 15.47'W	5505.6
M174_31-34	DDA	12.05.	CTD	14:04	14° 55.64'N	056° 15.10'W	5507.6
M174_31-35	DDA	12.05.	MSS	14:59	14° 55.63'N	056° 15.05'W	5506.6
M174_31-36	DDA	12.05.	MSN	15:43	14° 55.41'N	056° 14.17'W	5509.6
M174_31-37	DDA	12.05.	MSS	17:07	14° 54.45'N	056° 10.62'W	5516.6
M174_31-38	DDA	12.05.	CTD	18:01	14° 54.50'N	056° 10.80'W	5513.6
M174_31-39	DDA	12.05.	MSS	18:49	14° 54.80'N	056° 10.75'W	5514.6
M174_31-40	DDA	12.05.	ACS	19:41	14° 54.60'N	056° 10.05'W	5516.6
M174_31-41	DDA	12.05.	MSS	20:58	14° 59.49'N	056° 16.64'W	5515.6
M174_31-42	DDA	12.05.	MSS	23:02	15° 01.06'N	056° 20.86'W	5519.6
M174_31-43	DDA	12.05.	GOFLO	23:41	15° 01.10'N	056° 20.45'W	5520.6
M174_31-44	DDA	12.05.	CTD	23:57	15° 01.10'N	056° 20.45'W	5519.6
M174_31-45	DDA	13.05.	MSS	00:50	15° 01.08'N	056° 21.17'W	5516.6
M174_31-46	DDA	13.05.	MSN	01:40	15° 01.08'N	056° 20.64'W	5524.6
M174_31-47	DDA	13.05.	MSS	03:03	15° 01.85'N	056° 17.62'W	5525.6
M174_31-48	DDA	13.05.	CTD	04:03	15° 01.89'N	056° 18.17'W	5528.6
M174_31-49	DDA	13.05.	MSS	05:00	15° 01.82'N	056° 18.16'W	5524.6
M174_31-50	DDA	13.05.	MSS	07:00	15° 01.54'N	056° 20.02'W	5523.6
M174_31-51	DDA	13.05.	CTD	07:58	15° 02.24'N	056° 19.53'W	5525.6
M174_31-52	DDA	13.05.	CTD	08:33	15° 02.55'N	056° 20.88'W	5520.6
M174_31-53	DDA	13.05.	CTD	09:09	15° 02.69'N	056° 20.88'W	5520.6
M174_32-1	A70	13.05.	RM	19:24	15° 02.10'N	054° 50.34'W	5480.6
M174_32-2	A70	13.05.	CTD	19:40	15° 02.37'N	054° 50.37'W	5732.6
M174_32-3	A70	13.05.	GOFLO	20:20	15° 03.08'N	054° 50.50'W	5658.6
M174_32-4	A70	13.05.	MSS	20:47	15° 03.58'N	054° 50.33'W	5487.6
M174_32-5	A70	13.05.	CTD	21:57	15° 04.81'N	054° 49.42'W	5491.6
M174_32-6	A70	13.05.	Pump	21:57	15° 04.82'N	054° 49.43'W	5488.6
M174_32-7	A70	13.05.	ACS	22:27	15° 05.20'N	054° 49.48'W	5494.6
M174_32-8	A70	13.05.	CTD	23:00	15° 05.66'N	054° 49.55'W	5482.6
M174_33-1	AE1	15.05.	RM	11:32	19° 33.86'N	050° 17.64'W	3784.6
M174_33-2	AE1	15.05.	BUCKET	11:33	19° 33.87'N	050° 17.64'W	3782.6
M174_33-3	AE1	15.05.	Pump	11:39	19° 33.88'N	050° 17.63'W	3788.6
M174_33-4	AE1	15.05.	MSS	12:12	19° 33.91'N	050° 17.61'W	3788.6
M174_33-5	AE1	15.05.	GOFLO	14:03	19° 34.33'N	050° 16.28'W	3828.6
M174_34-1	AE2	16.05.	RM	15:01	22° 53.60'N	046° 42.40'W	4071.6

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth
METEOR	IOW Alias	2021		[UTC]	[°]	[°]	[m]
M174_34-2	AE2	16.05.	Pump	15:03	22° 53.60'N	046° 42.40'W	4088.6
M174_35-1	AE3	17.05.	BUCKET	14:54	26° 06.06'N	042° 59.42'W	3542.6
M174_35-2	AE3	17.05.	RM	15:00	26° 06.15'N	042° 59.26'W	3461.6
M174_35-3	AE3	17.05.	Pump	15:02	26° 06.18'N	042° 59.25'W	3497.6
M174_36-1	AE4	18.05.	RM	14:59	29° 09.83'N	039° 00.65'W	3415.6
M174_36-2	AE4	18.05.	Pump	15:04	29° 09.86'N	039° 00.67'W	3446.6
M174_36-3	AE4	18.05.	MSS	15:16	29° 09.89'N	039° 00.74'W	3403.6
M174_37-1	AE5	19.05.	RM	15:01	31° 56.16'N	035° 16.03'W	3717.6
M174_37-2	AE5	19.05.	Pump	15:01	31° 56.16'N	035° 16.04'W	3715.6
M174_37-3	AE5	19.05.	BUCKET	15:12	31° 56.25'N	035° 16.06'W	3714.6
M174_37-4	AE5	19.05.	MSS	15:18	31° 56.29'N	035° 16.12'W	3719.6
M174_38-1	AE6	20.05.	RM	14:58	34° 18.51'N	031° 10.91'W	2402.6
M174_38-2	AE6	20.05.	BUCKET	15:00	34° 18.50'N	031° 10.94'W	2399.6
M174_38-3	AE6	20.05.	Pump	15:07	34° 18.44'N	031° 11.01'W	2398.6