

ARK XXI/1a

21 July 2005 - 13 August 2005
Bremerhaven - Longyearbyen

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1. ZUSAMMENFASSUNG UND FAHRTVERLAUF

Gereon Budéus

Der erste Fahrtabschnitt der 21. *Polarstern*-Expedition in die Arktis begann am 21.7.2005 in Bremerhaven. Das Forschungsschiff *Polarstern* nahm direkt Kurs auf das westliche Ende eines Langzeit-Schnittes über den Grönlandsee-Wirbel und lief bei der Shannon Insel dicht vor der Grönländischen Küste in eisbedeckte Gewässer. Dort wurde eine mehrfache Querung des Ostgrönlandstroms vermessen. Auf diesen sowie auf einem zonalen Schnitt entlang dem 75. Breitenkreis wurde eine Vielzahl von chemischen, optischen, biologischen und physikalischen Untersuchungen durchgeführt. Dieser große Zonalschnitt verlief von der Küste Grönlands bis zur Bäreninsel. Er wurde unterbrochen durch die Auswechslung von autonom profilierenden Tiefsee-Verankerungen mit einem integrierten akustischen Experiment sowie durch eine Exkursion zu einem kleinskaligen (Durchmesser 20 km), langlebigen, kohärenten Wirbel, der zunächst gefunden werden mußte. Das Einlaufen im Hafen von Longyearbyen fand am 13. August statt.

Die Forschungsaktivitäten waren überwiegend wasserbezogen. Die chemischen Arbeiten umfassten sowohl üblichere Untersuchungen der Wassersäule als auch spezialisierte geochemische Analysen. Die Bestimmungen von Nährstoff- und Sauerstoffkonzentrationen standen in engem Zusammenhang mit den hydrographischen und planktologischen Untersuchungen. Zum einen spiegeln die Nährsalz- und Sauerstoffkonzentrationen die Entwicklung des Phytoplanktons wieder, und zum anderen eignen sie sich als "Tracer" für die Identifizierung und Verfolgung von Wassermassen, insbesondere für die Bestimmung von Pazifischen Wasseranteilen im Ostgrönlandstrom. Die geochemischen Forschungen untersuchten den Kreislauf des klimarelevanten Methans und nutzen die Elemente Radon und Radium um die Süßwasserzirkulation in der Arktik detailliert zu bestimmen. Die bio-optischen Messungen werden der Validierung der Farbsensorik auf SeaWiFS und MoDIS dienen, welche Biomassenkonzentrationen und physiologische Parameter im Ozean vom Weltraum aus messen. Während die bis hierher genannten Untersuchungen die gesamte Wassersäule bis zum Meeresboden beproben, nutzten Studien zur paläontologischen Proxy-Validierung unter Verwendung von Foraminiferen und Coccolithophoren die Seewasserversorgung des Schiffes, um die Hauptwassermassen entlang des Schiffsweges zu beproben. Die Verteilung von Seevögeln und marinen Säugern wurde ebenfalls entlang des Schiffsweges in der Grönlandsee bestimmt.

Die vier Schnitte über das grönländische Schelf und den Ostgrönlandstrom wurden unter guten Bedingungen und vergleichsweise moderaten Eiskonzentrationen durchgeführt. Das Fehlen von Pazifischen Wassermassen, die durch die Beringstraße in die Arktis einströmen, durch die Framstraße in die Grönlandsee gelangen und dort in den 90er Jahren ein deutliches Signal bildeten, ist ein erstes Resultat. Der Schnitt entlang 75°N wird seit einigen Jahren jährlich wiederholt, da man erkannt hat, daß auch die Arktischen Gewässer durch hohe Dynamik gekennzeichnet sind und die komplexen Veränderungen, bedingt durch Konvektion und Austausch mit den Randwassermassen, nur mit Hilfe langer Zeitreihen konsistenter Qualität richtig erklärt werden können. Geringe Konvektionstiefen und

fast statische Bedingungen im tiefen Wasser sind hier als erstes aktuelles Ergebnis zu nennen. Alle Verankerung wurden intakt geborgen und wieder ausgelegt. Die Suche nach einer Wirbelstruktur gestaltete sich aufwendig. Nach mehrtägiger Suche gelang jedoch eine sehr detaillierte Vermessung. Auch im Wirbelkern ist eine sehr geringe Konvektionstiefe zu konstatieren, so dass der Wirbel im Winter nicht rehomogenisiert und damit neu angetrieben wurde.

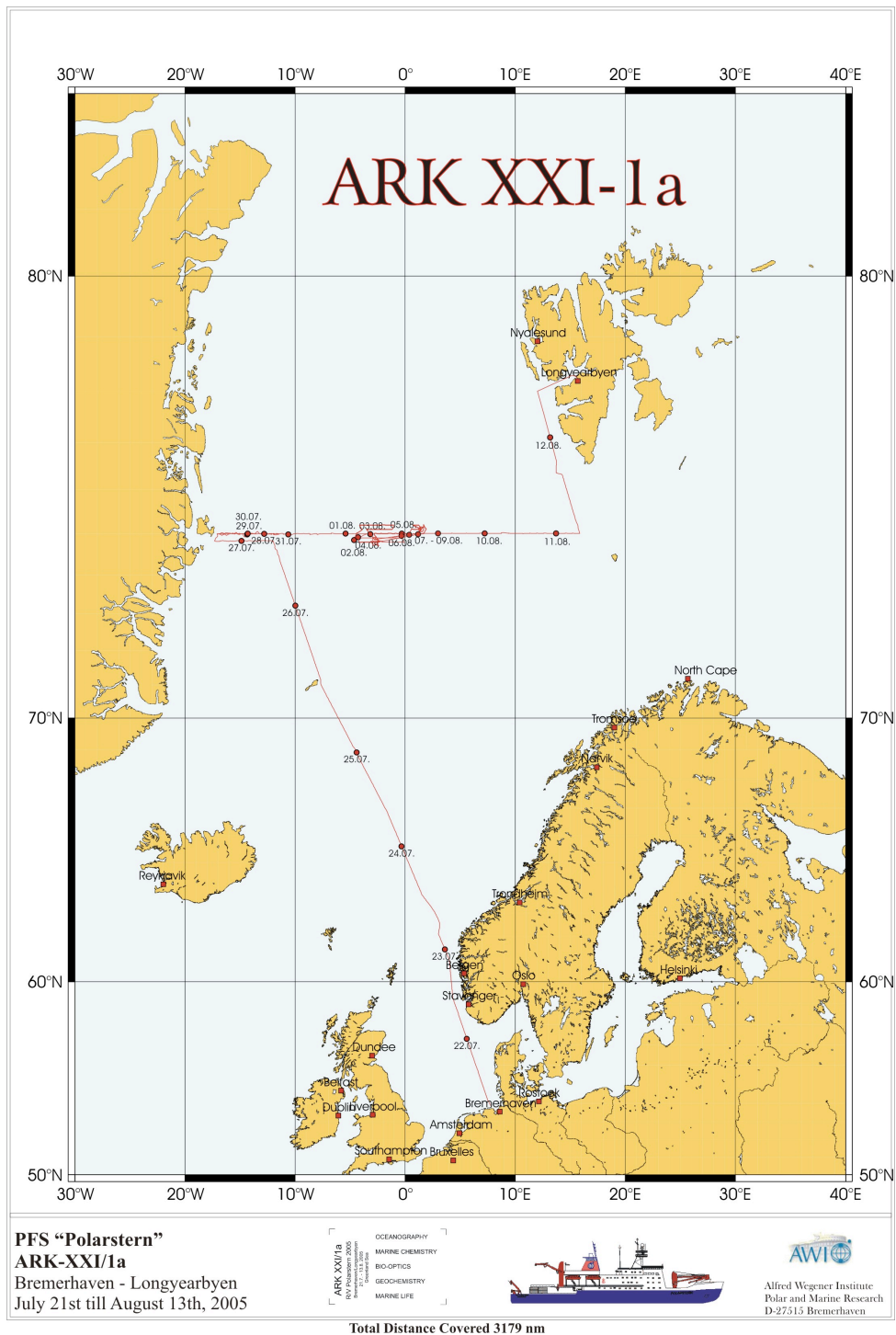


Abb. 1.1: Karte des Fahrtgebiets und Fahrtroute der FS Polarstern-Reise ARK XXI/1a vom 21. Juli 2005 - 13. August 2005

Fig. 1.1: Map of the area of observations and cruise track during RV Polarstern leg ARK XXI/1a from 21 July 2005 - 13 August 2005

CRUISE SUMMARY AND ITINERARY

The start of the first leg of the 21st *Polarstern* expedition to the Arctic was on July 21st, 2005. The ship headed directly to the western end of a long term transect in the Greenland Sea and entered ice covered waters close to Shannon Island and the Greenland coast. A quadruple crossing of the East Greenland Current was performed there. On these transects, as well as on the following stations, a large number of chemical, optical, biological, and physical measurements was performed. A long zonal transect extended from the Greenland coast to Bear Island. It was interrupted by the exchange of autonomously profiling deep sea moorings with integrated acoustics and by an excursion to a small scale (20 km diameter) long lived coherent eddy that first had to be found. We called at the port of Longyearbyen on August 13th .

Research activities were mainly related to water properties. The chemical work comprised familiar research in the water column as well as specialized geochemical investigations. The determinations of nutrients and oxygen are closely connected with the physical and planktological investigations. Also, nutrients and oxygen are very suitable as tracers for the identification of water masses, in particular for the detection of Pacific Waters in the East Greenland Current. Geochemical research investigated the important methane pathways in the subarctic, and used radon and radium concentrations to identify freshwater circulation. Bio-optics will contribute to the validation of remote sensing algorithms applied to the colour sensors on SeaWiFS and MoDIS for deriving biomass concentrations and physiological parameters from space. While the above investigations all used water from full ocean depth, proxy validation studies by sampling of foraminifera and coccolithophores used the ship's sea water supply to acquire on track samples of the main water masses present in the region. The distribution of higher trophic levels (seabirds and marine mammals) was also quantified at sea as a function of the main hydrological parameters.

The four transects across the Greenland shelf and the East Greenland Current were performed under good conditions and relatively low ice concentrations. The complete absence of Pacific waters which flow into the central Arctic through the Bering Strait and used to exit it through Fram Strait is a first result. During the 90s this was a prominent signal within the East Greenland Current. The transect at 75° N has been repeated annually for a number of years as it has been recognised that the Arctic waters experience highly dynamic changes and that complex modifications by convection and exchange with the surrounding waters can be correctly explained only with the aid of high quality, consistent, long term time series. Shallow convection depths and almost static conditions in the deep waters can be stated as an actual first result. All moorings were recovered without loss and redeployed. The search for the eddy structure was time consuming. After several days a very detailed survey was performed. In the eddy core, too, a very shallow convection depth was identified, showing that the eddy was not rehomogenised and newly forced during the last winter.

2. METEOROLOGICAL CONDITIONS

Erdmann, Buldt

After leaving Bremerhaven the weather was dominated by the rear of a strong low which moved from South Norway to the south-eastern Baltic. In consequence north-westerly gale was noticed all over German Bight with sometimes heavy rain, low ceiling and poor visibility. On July 22nd the pressure gradient decreased what caused the wind to become light to moderate. The weather turned more anticyclonic and the sun came out. Near Svinöy a strong northerly low-level flow took influence to RV *Polarstern* with intermediate high sea.

North of 62°N the wind turned northeast and decreased again. Some showers were observed within the unstable layered cold air mass of polar origin.

A strong anticyclone over Greenland moved slowly eastward. Approaching the Isle of Jan Mayen the pressure gradient became little stronger and the wind increased up to Bft 6.

In the evening of July 26th, RV *Polarstern* passed the ice edge east of Greenland and the air temperature went below 0° C. Fog patches dominated the weather within the ice between 75°N12W and Shannon Island. Due to most anticyclonic influence the light to moderate wind varied from northwest to southwest during the following days. Warm advection draw near the research area in the upper levels of the troposphere caused by a strong cyclonic vortex over Svalbard and Barents Sea. That's why snowfall and poor visibility was observed.

On July 31st RV *Polarstern* crossed the ice edge to open water again close to 75°N10°W with westerly winds of Bft 4 and fog patches due to remaining light anticyclonic influence. During the next four days the weather stayed mostly light anticyclonic as the dominating lows remained far away over Svalbard. On board RV *Polarstern* only moderate westerly winds of Bft 3 to 5 were measured along with mainly good visibility and sea state about 2 m. Sometimes the sun came out and the air temperature increased above 5° C.

A new strong high developed over Iceland on August 6th and moved slowly northeast. The research area near 75°N02°W was influenced by this anticyclone. Due to this the weather changed sunny for nearly one day with very good visibility and light winds and seas.

It remained calmed as the main part of that high pressure area moved to Northeast-Scandinavia and Barents Sea. As the wind changed most southerly with Bft 2 to 3 moist air influenced the Greenland Sea more and more. In the consequence low level laid stratus with intermediate fog was noticed on board.

On August 9th the vessel passed 0 degrees longitude to the east and slight sea.

In the meantime a new low developed little east of Poland separating warm and moist air in the east and cold air of polar origin over Central Europe. The low started to move north but slowly and the pressure gradient strengthened mainly between North Scandinavia and Bear Island. Therefore the easterly wind increased bft 4 to 6 at the operation area of RV *Polarstern* northwest of Bear Island where the transact finished.

The weather turned more anticyclonic again when the cruise ended at Longyearbyen.

3. LONG TERM VARIABILITY OF THE HYDROGRAPHIC STRUCTURE, CONVECTION AND TRANSPORTS THE GREENLAND SEA

Budéus, Ronski, Plugge, Greil, Hans, L. Kattner, Nauels, Poppe, Wischnewski, Kaletzky

Bottom water renewal in the Greenland Sea by deep convection in interplay with ice coverage and atmospheric forcing is a major element of the water mass modification in the Arctic Mediterranean. Effects influence both the central Arctic Ocean and the overflow waters into the Atlantic. Since the hydrographic observations became more frequent in the late 1980s, no bottom water renewal by winter convection took place, however. Under these conditions, the deep water properties change towards higher temperatures and salinities. Furthermore, the doming structure in the Greenland Gyre, as it was observed in the mid-80s, was superseded by an essentially 2-layered water mass arrangement with a marked density step separating the two layers presently at about 1800 m. The specific objectives of the project are to investigate the relative importance of atmospheric forcing parameters for winter convection, to clarify whether or not ice formation is needed for deep convection, to build a long term observational basis about deep water changes in the Greenland Gyre, and to contribute to the decision which deep water exchange mechanisms are at work under the absence of bottom reaching winter convection. A special focus is put on the observations of a long lived Coherent Vortex (CV) in an international cooperation. Within these eddies, winter convection penetrates usually to considerably greater depths (about 2600 m) than in the surrounding waters. The CVs possess a diameter of only 20 km, and as they show no surface signal during summer they are difficult to detect.

Work at sea

On the East Greenland shelf three transects have been performed across the East Greenland current in order to investigate temporal variability. Thereafter, a long term zonal CTD transect at 75° N has been performed across the central Greenland Sea with a regular station spacing of 10 nautical miles. This distance has not been reduced at frontal zones in order to gain time for a couple of stations dedicated to the search and investigation of the CV. CTD and water sampler (SBE 911+ with duplicate sensors, SBE Carousel 24 bottles of 12 l each) worked faultlessly. Additional sensors were attached for oxygen concentrations, transmission, chlorophyll fluorescence, and Gelbstoff fluorescence.

It is not possible to describe the full details of calibration and data procedures here. A few hints may suffice to give an idea about the general procedure. We use the same sensors already for a number of years and checked for their performance with respect to unwanted cross dependencies. According to this, one of the temperature sensors shows a pressure sensitivity of roughly 1.5 mK/4000 dbar while no unspecified pressure or temperature dependence of the conductivity sensors could be found. To identify the latter is close to impossible in the field (within the polar

oceans) because of the high gradients in the upper water column where suitable temperature differences occur. The locations of in-situ comparisons for temperature and salinity have been chosen carefully by checking for each data point whether a comparison is allowed or inhibited. Time alignment has been optimized for each flow path separately and will be applied together with final post cruise calibration. The difference between pre-cruise and post-cruise calibration is normally in the range of a few mK and a few 1/1000 in salinity. Bottle sample salinities were determined immediately on board. Salinities have been corrected by 0.004. Oxygen samples were taken regularly. Also routinely, water samples were used for nutrient analysis. Occasionally, water was used for a number of additional investigations, which are described in the chapters of their own.

The three in house developed EP/CC (externally powered/compressibility compensated) Jojo-moorings have been exchanged and the time series was thus successfully extended. A shallow water jojo (APV), which had been attached to the top buoyancy of one mooring was lost. This type of instrument will not be used in the future, and a different approach is planned to be used in order to monitor the uppermost 100 m of the water column. On one mooring, a sound source was included, and two additional moorings were redeployed which host hydrophones to apply the shadowgraph technique newly developed by DAMTP, Uni-Cambridge.

The search for the CV was performed in two areas. At first an area close to the zero meridian was surveyed by a triangle XBT grid, but with no positive result. But at least this action provided enough time to allow an inspection of the recorded mooring profiles. These showed an eddy passing through the mooring a number of times. Consequently, we performed a second search grid in the vicinity of this mooring and in fact detected the CV there. After having found its centre, we performed a transect across it with a station distance of only 1.2 miles, appropriate for the size of the structure. The complete set of water analysis expertise on board was in use. Apart from the physical parameters, different nutrients, oxygen, bacteriae, plankton and various tracers were investigated. The research time within the eddy was limited by the remaining part of the large zonal transect, but we were happy enough to be able to perform stations over the full diameter of the eddy. The eddy core was located at about 74° 49 min N, 02° 39 min W on 07-Aug-2005.

First results

The general situation was characterized by summer conditions with a relatively warm surface layer. The subsurface layer was heavily influenced by Atlantic water with extended areas filled with salinities exceeding 34.9. The layer above the intermediate temperature maximum showed higher temperatures than in 2004. Since the winter ventilation introduced colder waters in a mixed layer like ventilation process (visible in the autonomous profiler data), this increase must be attributed to lateral advective processes. At first sight, convection seems to have affected only the upper 700 m what is even less than the 1000 m of the preceding year. The bottom water temperature increase continued, and amounts again to about 10 mK between 2004 and 2005. The most outstanding single feature of the survey was certainly the Coherent Vortex. These features represent the deepest convection level observed in recent years. The eddy structure we observed was not vertically homogeneous but

showed several vertical layers probably indicating the convection depth of several preceding winters. The eddy core was definitely not rehomogenized during the last winter. This finding gives a hint about the much discussed lifetime of the CV, which amounts to several years if our first interpretation is correct.

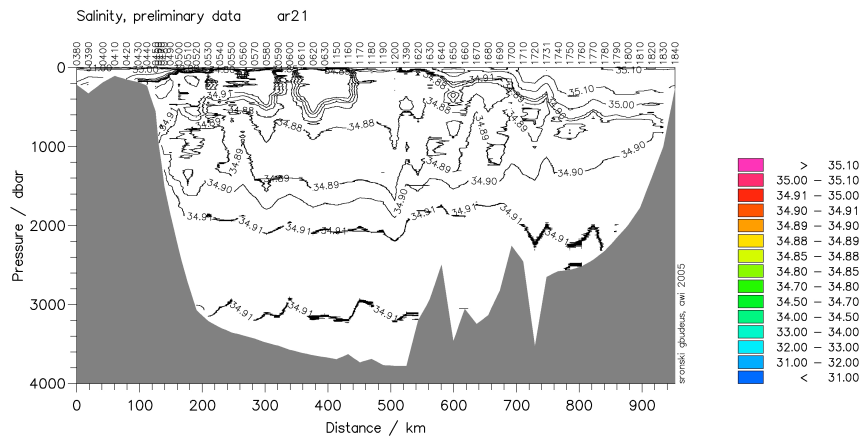


Fig. 3.1: Salinity on the zonal transect on 75°N

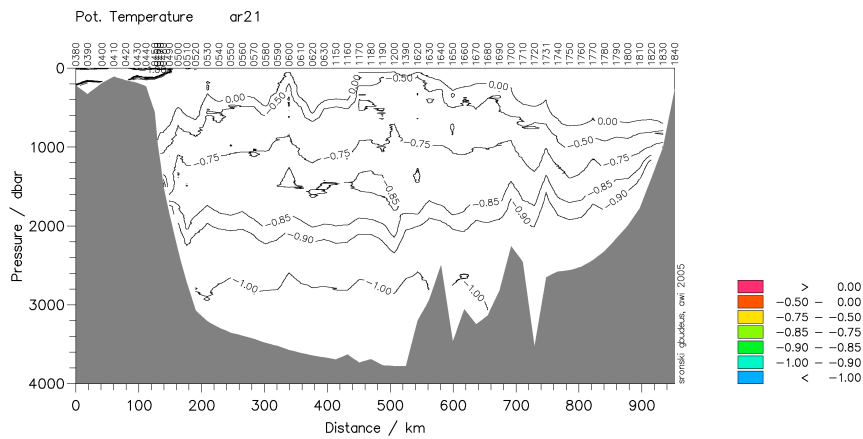


Fig. 3.2: Potential temperature on the zonal transect on 75°N

4. BIOGEOCHEMISTRY

4.1 Recent change in the Arctic: feedbacks to geochemical pathways in seawater

Vöge, Liebehentschel, Klassen

4.1.1 Air-sea flux of methane in an eddy structure

Recent change in the Arctic may have profound effect on natural biogeochemical cycles in seawater. Especial feedback effects to pathways of climatically relevant biogases like methane will loom large in the equation of change. The present marine methane cycle is influenced by atmospheric methane transported by downward diffusion and convective ventilation into the deeper ocean, by fossil methane released from gas venting sites at the sea floor, microbial in-situ methane production in the upper ocean and microbial oxidation in the whole water column. With this expedition we expect to expand the knowledge about the flux of atmospheric methane in an eddy structure to the upper water column. The methane inventory in the eddy structure and in the laterally stratified water column will be estimated.

Work at sea

Methane concentrations were measured at the eddy station and a reference station as well. Water samples were collected in Niskin bottles mounted on a rosette sampler from bottom water depths up to the surface (0.5 m). The dissolved gases were immediately extracted from the water and were analysed for methane by gas chromatograph equipped with a flame ionization detector (FID) on board ship. Gas samples were stored for investigations of the $\delta^{13}\text{C}_{\text{CH}_4}$ values in the home laboratory. Furthermore at both station samples for the analyses of DMSP (p), DMSP (d), $\text{d}^{13}\text{C}_{\text{DIC}}$ and $\text{d}^{18}\text{O}_{\text{H}_2\text{O}}$ were taken, which will be analyzed in the home lab.

Preliminary results

In surface water at both stations the methane concentrations are in equilibrium with the atmosphere while in water depths greater 200 m the methane concentration starts to be different between both stations. At the reference station the concentration is decreasing up to 2000 m up to more than 50% related to the surface concentration, in the eddy structure the concentration remains in equilibrium with the atmosphere down to 2000 m water depth. These data show that an eddy structure may create a pathway for flux of atmospheric methane to the deeper ocean.

4.1.2 Tracing water masses with natural radionuclides

Within the realm of the GEOTRACES initiative, we aimed to use natural radionuclides as tracers for water masses in the East Greenland current during ARK XXI/1a. We tested whether the $^{228}\text{Ra}/^{226}\text{Ra}$ activity ratio can be used as a tracer for

identifying the input of freshwater from the Greenland glaciers versus the freshwater input from the Arctic into the East Greenland current. Commonly, the $^{228}\text{Ra}/^{226}\text{Ra}$ activity ratio used as a tracer for identifying river water hundreds to thousands of kilometres from its riverine source. ^{228}Ra is supplied by desorption from river-borne particles and by release from river and shelf sediments (half-life 5.7 years). ^{226}Ra is primarily supplied by desorption from river-borne particles. Shelf sediments are a negligible source because of the time required to generate new ^{226}Ra (half-life 1600 years). Unlike their precursors ^{232}Th and ^{230}Th which are common in rocks and sediments, $^{228}\text{Ra}/^{226}\text{Ra}$ are soluble in seawater. As in the river, the contact of ice and water with rocks and sediments on the downside of the glacier is supposed to be a source of radium. Then, when the water leaves continent and shelf, the ratio will only change by decay of ^{228}Ra and mixing. Hence, we expect a decrease of the $^{228}\text{Ra}/^{226}\text{Ra}$ ratio with increasing salinity and distance from the meltwater input. In other words, we expect the $^{228}\text{Ra}/^{226}\text{Ra}$ ratio to decrease with decreasing percentage of glacier melt water.

Sampling was done within the East Greenland current as close as possible to the vicinity of Greenland. Ice samples and a glacier ice sample was taken to get source values for Radium. Surface water samples were taken from the ship's sea water supply, passed through a pre-filter and MnO_2 coated cartridge absorbers. 200 l to 800 l were passed through the absorbers. The cartridges were put in plastic bags, sealed and transported to the AWI lab for further analysis. In parallel, 20 l water samples were taken to measure the precise Radium concentration to calibrate the absorber's efficiency. Radium in the water samples was co-precipitated with BaSO_4 by adding a few drops of H_2SO_4 and a standard amount of BaCl_2 . The BaSO_4 precipitate was taken to AWI for further processing and measuring ^{228}Ra and ^{226}Ra by gamma spectroscopy. Since the leaching of the cartridges and the gamma counting are time consuming procedures, first results are expected in about one year's time from sampling time.

Table 4.1: Sampling list

station	mon/day/yr	hh:mm	Lon (°E)	Lat (°N)
PS68/002	07/26/2005	23:27	12.05610	74.49841
PS68/005	07/27/2005	05:45	13.20372	74.50003
PS68/008	07/27/2005	11:34	14.50012	74.49906
PS68/011	07/27/2005	17:11	16.21261	74.49947
PS68/013	07/27/2005	20:08	17.19443	74.49857
PS68/014	07/27/2005	22:01	17.54530	74.59939
PS68/016	07/28/2005	02:33	15.40697	75.03210
PS68/020	07/28/2005	11:03	13.86220	74.59984
PS68/023	07/28/2005	14:34	12.20025	74.59913
PS68/028	07/28/2005	02:01	12.92220	75.00340
PS68/031	07/29/2005	06:06	12.43954	74.59741
PS68/034	07/29/2005	12:07	14.19704	74.59962
PS680/32-3	07/29/2005	07:58	13.95300	74.59760

station	mon/day/yr	hh:mm	Lon (°E)	Lat (°N)
PS680/35-4	07/29/2005	16:00	15.25100	74.59170
PS68/37	07/29/2005	21:00	16.24997	74.59570
PS68/38	07/30/2005	00:10	17.49200	75.00500
PS68/41	07/30/2005	07:36	15.22540	75.04090
PS68/44	07/30/2005	17:00	13.92060	75.00550
Glacier ice		12.25730	78.52474	

4.2 Nutrients, oxygen and dissolved organic matter

Falck, G. Kattner, Ludwichowski, Ridder, Vogel

The determinations of nutrients and oxygen are closely connected with the physical and biological processes, and therefore these parameters are well suited as tracers for the identification of water masses. One major objective was to trace water masses of Pacific origin which are known to exit the Arctic Ocean through the Canadian Archipelago and the Fram Strait with the East Greenland Current. Especially the nitrate to phosphate ratio is a good tracer to follow the outflow of Pacific water along the Greenland continental shelf and slope. In addition, Upper Halocline Water is especially rich in silicate compared to Atlantic waters. In the 1980s and 1990s water masses of Pacific origin occurred usually in the shelf and slope regions of the Fram Strait and further south on the shelf of the Greenland Sea. Because this water mass was not found in 2004 in the Fram Strait we were especially interested to see whether the disappearance was only restricted to last year.

The distribution of nutrients and oxygen of the entire Greenland Sea transect along 75°N will be compared with similar transects in former years to determine the seasonal and interannual variability. The data from this expedition will show whether there are further modifications of the water masses exiting the Arctic Ocean.

In addition, dissolved organic matter (DOM), extracted from seawater, will be taken for chemical characterisation and determination of sources and modifications. DOM in the oceans contains about the same amount of carbon as the global biomass or atmospheric CO₂ and exhibits an average age of several thousand years. Source, diagenesis and preservation mechanisms of DOM remain elemental questions in contemporary marine sciences and represent a missing link in models of global elemental cycles. High amounts of terrestrial organic matter are discharged by the huge Russian Rivers into the Arctic Ocean and are partially transported via the Transpolar Drift towards the Fram Strait and further south along the Greenland shelf.

Work at sea

From all water samples taken with the rosette sampler at different depth, the nutrients - nitrate, nitrite, phosphate and silicate - were determined immediately on board with an Autoanalyser-system (Alliance, France) according to standard seawater methods. Oxygen was measured by the Winkler method.

On the Greenland shelf large volume water samples were taken at station 42 which was representative to follow the outflow of water masses transporting terrestrial organic matter from the Siberian rivers. Sampling was decided from results of the fluorescence profiles. In the Greenland Sea samples were taken from the different water layers. 100 to 120 l of seawater were particle-free filtered and extracted with a PPL adsorber (polystyrene cross-linked with divinylbenzene) and eluted with methanol. The chemical characterisation of DOM will be performed at the home labs in Bremerhaven.

Preliminary results

The change in nutrient and oxygen concentrations was followed during the Greenland Sea transect, especially across the Greenland shelf and slope. Four transects on the Greenland shelf were conducted to monitor the variability of the water masses transported with the East Greenland Current southwards. The preliminary results show that the variability in time and space was small. As in 2004, there was again no sign of Pacific Water at 75°N (Fig. x). We will repeat this study further north during the next leg. Low silicate values in about 75 m depth might be due to a layer of water of Atlantic origin, perhaps Knee Water, which is one of the water masses belonging to the Polar Water. This finding has however to be confirmed with the detailed hydrographical data. Another water body which was characterized by a clear signal of the fluorescence probe was sampled for detailed chemical analyses. These so-called “yellow substances” are indicative of a riverine freshwater contribution to the polar water.

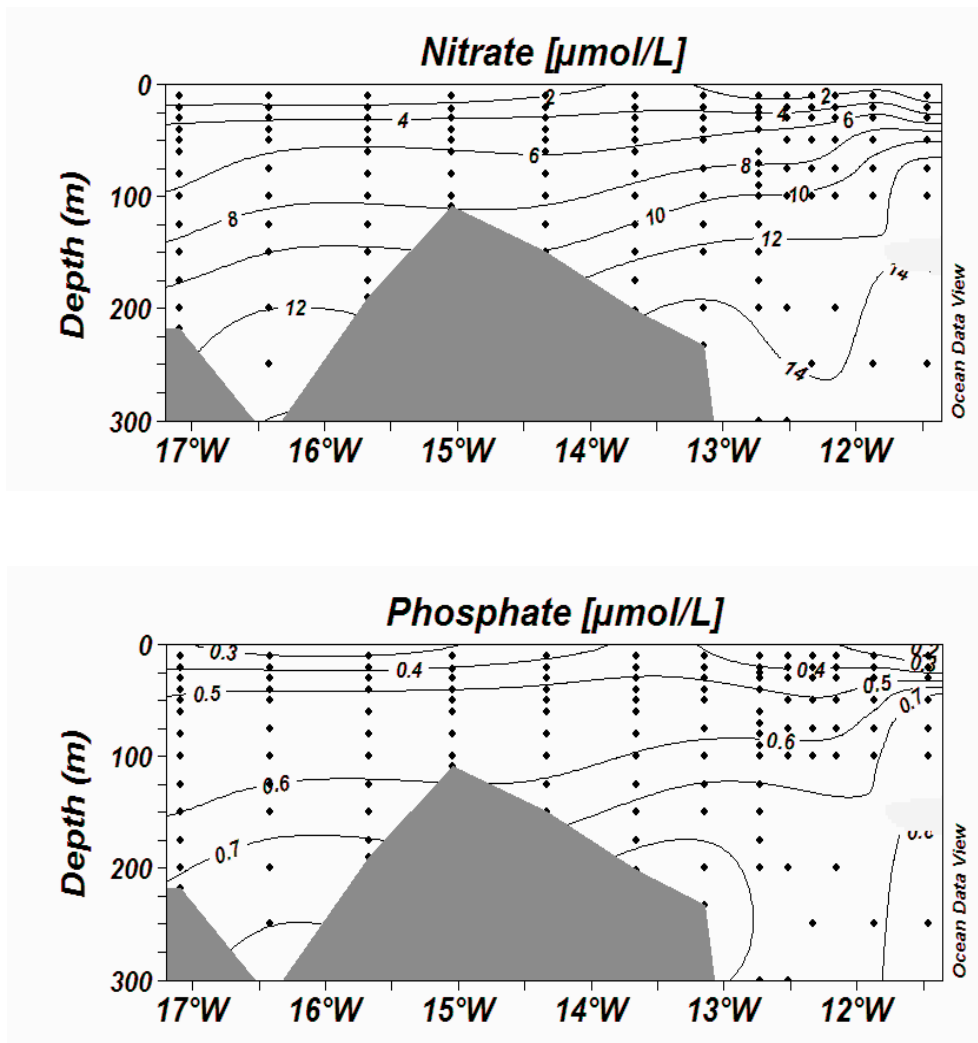


Fig. 4.1.: Distribution of nutrients and the proportion of Pacific water along the second transect (75°N) on the Greenland shelf (preliminary data).

5. OCEAN OPTICS

Schwarz, v. Seggern, Klassen, Wohlenberg, Liebehentschel,
L. Kattner, Ridder

The variability in optically active parameters (OAPs) is being investigated with the aim of improving algorithms for retrieval of parameters such as concentrations of chlorophyll-a, particulate and dissolved organic carbon and inorganic sediment in polar waters. Given a good knowledge of this variability for different seasons and different biogeochemical provinces, forward bio-optical models can be adapted to the region, and model inversion applied to generate satellite algorithms.

During this cruise leg, the variability in OAPs in the marginal ice zone and central Greenland Sea during the summer was expanded, complementing existing datasets from spring and early summer (2003/2004).

Additionally, a fast repetition rate fluorometer (FRRF) was deployed. The FRRF provides a measure of the physiological state of the phytoplankton community, from which total primary production can be calculated. For this purpose, the FRRF also measures photosynthetically active radiation (PAR, 400 to 700 nm).

Finally, two secchi discs were deployed, with the aim of comparing secchi depth to the depth at which irradiance reaches 1% of its surface value, and against the attenuation coefficient, both of which can be calculated from the PAR data. The first ('Italian', constructed on R.R.S Discovery) disc was a black/white chequered disc which, deployed with a heavy weight, was most consistently measured in strong currents with no angle on the rope. The second ('German' – belonging to RV *Polarstern*) disc was a larger, white disc with a ring of holes offset 10 cm from the centre. The depth at which the disc disappeared was estimated to the nearest 0.5 m, always with 2 observers conferring. Typically, the German disc was visible 1.5 to 2.0 metres deeper than the Italian disc. Table 1 includes the Italian Secchi depths.

Samples collected for analysis in the home laboratory were:

- Phytoplankton pigments (HPLC: high performance liquid chromatography)
- Absorption by pigments/non-pigmented particles (Aphy: spectrophotometry)
- Particulate organic carbon (POC)
- Dissolved organic carbon (DOC)
- Absorption by dissolved substances (Acdom: spectrophotometry)
- Excitation-Emission Matrices for dissolved substances (EEM: spectrofluorometry)
- Total organic/inorganic suspended particulates (SPM: weight)
- Particle size distribution (PSD: Coulter counter)
- Phytoplankton taxonomy (TAX: light/electron microscope)

Table 1: List of samples taken

Station	Depth	HPLC	Aphy	POC	DOC/ Acdom/ EEM	SPM	PSD/ TAX	FRRF	Secchi Depth
1	10	X	X	X	X	X	X		
	50	X							
	75	X							
2	10	X	X	X	X	X			
	16	X	X				X		
3	10	X	X	X	X	X			
	30	X	X	X	X		X		
4	10	X		X	X				
5	10	X	X	X	X	X			
6	10	X	X	X	X	X			
7	10	X	X	X	X	X			6.5
8	10	X	X	X	X	X			7.5
9	10	X	X	X	X				7.0
10	10	X	X	X	X	X	X		7.0
11	10	X		X	X	X			7.5
12	10	X	X	X	X	X			8.0
13	10	X	X	X	X	X			9.0
	25	X		X			X		
14	10	X	X	X	X	X			
	15	X		X					
15	10	X	X	X	X	X			
	20	X		X					
16	10	X	X	X	X	X			
	20	X	X	X	X				
	30	X	X	X	X		X		
	50	X	X	X	X				
	80	X	X	X	X				
17	10	X	X	X	X				
	22	X							
18	10	X		X		X			8.0
	Cmax	X							
19	10	X	X	X	X	X	X		6.5
20	10	X	X	X	X	X			
21	10	X	X	X	X	X			11.5
	25	X							
22	10	X	X	X	X	X	X		12.0
23	10	X		X	X	X			9.5
	20	X		X					
	30	X							
	50	X							
	75	X							
	100	X							
24	10	X	X	X	X	X			9.5
	20	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
25	10	X	X	X	X	X			9.5
	20	X		X					
	125	X		X					
26	10	X	X	X	X	X			11.0
	20	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
27	10	X	X	X	X	X			
	30	X		X					
28	10	X	X	X	X	X			
	30	X		X					
29	10	X		X	X	X			
30	10	X	X	X	X	X			
	30	X		X					
31	10	X	X	X	X	X			10.0

Station	Depth	HPLC	Aphy	POC	DOC/ Acdom/ EEM	SPM	PSD/ TAX	FRRF	Secchi Depth
	25	X		X					
32	10	X	X	X	X	X			9.0
	Cmax	X		X					
33	10	X		X	X				9.0
34	10	X	X	X	X	X	X		12.0
	15	X		X					
	30	X		X					
	50	X		X					
35	10	X	X	X	X	X		X	10.0
	25	X		X					
	30	X		X					
	50	X		X					
	80	X		X					
	100	X		X					
36	10	X	X	X	X	X			6.5
	20	X		X					
	40	X		X					
	30	X		X					
	50	X		X					
	60	X		X					
37	10	X	X	X	X	X			
	20	X		X					
	40	X		X					
38	10	X	X	X	X	X		X	10.0
	25	X		X			X		
	50	X		X					
39	10	X	X	X	X	X		X	7.5
	20	X		X					
	30	X		X					
	40	X		X					
40	10	X	X	X	X	X			
	20	X		X					
	40	X		X					
	60	X		X					
	100	X		X					
41	10	X	X	X	X	X	X		8.0
	25	X		X					
	30	X		X					
	50	X		X					
	80	X		X					
	100	X		X					
42	10	X	X	X	X	X		X	11.0
	20	X		X					
	30	X		X					
	50	X		X					
	80	X		X					
	100	X		X					
43	10	X	X	X	X	X		X	9.0
	20	X		X					
44	10	X	X	X	X	X		X	9.5
	25	X		X					
	50	X		X					
45	10	X	X	X	X	X		X	8.0
46	10	X	X	X	X	X		X	9.0
	20	X		X			X		
47	10	X	X	X	X	X		X	9.0
	20	X		X					
	50	X		X					
48	10	X	X		X	X		X	9.0
	20	X							
50	10	X	X	X	X	X			
	30	X		X			X		
	50	X		X					
51	10	X	X	X	X	X		X	10.5
	25	X		X					
	300	X		X					
52	10	X	X	X	X	X			11.5
	20	X		X					
53	10	X	X	X	X	X		X	12.0

Station	Depth	HPLC	Aphy	POC	DOC/ Acdom/ EEM	SPM	PSD/ TAX	FRRF	Secchi Depth
	40	X		X			X		
	50	X		X					
54	10	X	X	X	X	X		X	12.5
	30	X		X					
	50	X		X					
55	10	X	X	X	X	X		X	9.0
	Cmax	X		X					
56	10	X	X	X	X	X		X	10.0
57	10	X	X	X	X	X		X	
58	10	X	X	X	X	X			14.0
59	10	X	X	X	X	X			12.5
60	10	X	X	X	X	X	X	X	9.5
61	10	X	X	X	X	X			10.0
62	10	X	X	X	X	X		X	10.5
63	10	X	X	X	X	X		X	
115	10	X	X	X	X	X		X	
	30	X		X			X		
116	10	X	X	X	X	X		X	9.0
117	10	X	X	X	X	X		X	8.5
118	10	X	X	X	X	X		X	13.5
119	10	X	X	X	X	X	X	X	14.0
120	10	X	X	X	X	X		X	12.5
139	10	X	X	X	X	X	X	X	
140	10	X	X	X	X	X		X	12.0
	20	X		X					
	30	X		X					
	50	X		X					
141	10	X	X	X	X	X		X	
	40	X		X					
142	10	X	X	X	X	X		X	11.0
	20	X		X					
143	10	X		X				X	11.0
	20	X		X					
144	10	X		X				X	11.0
	20	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
145	10	X	X	X	X	X		X	10.0
	20	X		X					
	30	X		X					
	50	X		X					
146	10	X	X	X	X	X		X	10.0
147	10	X		X				X	
	20	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
152	10	X		X				X	12.0
	20	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
153	10	X		X				X	11.5
	25	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
154	10	X		X				X	10.0
	15	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
155	10	X		X				X	11.5

Station	Depth	HPLC	Aphy	POC	DOC/ Acdom/ EEM	SPM	PSD/ TAX	FRRF	Secchi Depth
	20	X		X					
	30	X		X					
	40	X		X					
	75	X		X					
	100	X		X					
156	10	X		X				X	12.0
	20	X		X			X		
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
157	10	X		X				X	11.0
	20	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
158	10	X		X				X	11.0
	20	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
159	10	X		X				X	10.5
	20	X		X					
	30	X		X					
	50	X		X					
	75	X		X					
	100	X		X					
162	10	X	X		X	X			10.5
	20	X		X					
163	10	X	X	X	X	X		X	
164	Cmax	X		X					
164	10	X	X	X	X	X		X	
	15	X		X			X		
165	10	X	X	X	X	X		X	9.0
	25	X		X					
166	10	X	X	X	X	X		X	9.5
	25	X		X					
167	10	X	X	X	X	X		X	
	40	X		X					
168	10	X	X	X	X	X		X	12.0
	40	X		X					
169	10	X	X	X	X	X		X	14.0
	40	X		X					
170	10	X	X	X	X	X		X	13.0
	30	X		X					
171	10	X	X	X	X	X		X	
	35	X		X					
172	10	X	X	X	X	X		X	
173	10	X	X	X	X	X		X	13.5
	20	X		X					
174	10	X	X	X	X	X		X	
	20	X		X					
175	10	X	X	X	X	X		X	10.5
	30	X		X					
176	10	X	X	X	X	X		X	
	20	X		X					
177	10	X	X	X	X	X		X	11.0
	20	X		X					
178	10	X	X	X	X	X		X	10.0
	20	X		X					
179	10	X	X	X	X	X		X	10.0
	20	X		X					
	30	X		X					
180	10	X	X	X	X	X		X	10.0
	20	X		X					
181	10	X	X	X	X	X		X	9.0
	25	X		X					

Station	Depth	HPLC	Aphy	POC	DOC/ Acdom/ EEM	SPM	PSD/ TAX	FRRF	Secchi Depth
182	10	X	X	X	X	X		X	9.5
	25	X		X					
183	10	X	X	X	X	X		X	8.0
	20	X		X					
	30	X		X					
	40	X		X					
	50	X		X					
	75	X		X					
184	10	X	X	X	X	X	X	X	7.0
	20	X		X					
	30	X		X					
	40	X		X					
	50	X		X					
	70	X		X					

7. SAMPLING OF PLANKTONIC FORAMINIFERA AND COCCOLITOPHORES FOR PROXY VALIDATION STUDIES

Martínez Botí, Martínez Garcia

During the *Polarstern* Expedition ARK XXI/1a, a set of samples of planktonic foraminifera and coccolithophores was successfully taken from the ship's sea water supply, covering a wide range of sea water conditions (temperature, salinity, nutrients). The method used has enabled sampling of large volumes of water from different water masses in the Nordic Seas, paying special attention to the transition across the Arctic and Polar Fronts.

This set of samples will allow the study of the spatial variability of algal lipid (alkenones) and coccolithophore distributions, in order to improve the calibration of biomarker proxies for reconstruction of past sea surface temperature (SST) and salinity (SSS) in high latitude oceanic settings.

Moreover, it will allow the refinement of the planktonic foraminiferal-based geochemical proxies (Mg/Ca and Sr/Ca ratios) against temperature and potentially against other variables (especially nutrient availability).

Alkenones and Mg/Ca are two of the most successfully used proxies for the reconstruction of past climatic and oceanographic conditions. Nevertheless, their use in high latitudes (low temperatures) presents several difficulties in both proxies: non-linear response in the relationship between alkenone composition and SST, and low sensitivity of Mg/Ca and Sr/Ca composition. Thus, calibration studies in the Nordic Seas, as in the present project, are of great importance for paleo-oceanographic studies and will improve the knowledge of the different factors that affect these paleothermometers.

8. HIGHER TROPHIC LEVELS: AT-SEA DISTRIBUTION OF SEABIRDS AND MARINE MAMMALS

Joiris, Briga, Gielen

Transect counts were realized on a continuous basis, i.e. when RV *Polarstern* was moving, resulting in more than 500 half hour counts. Other snap shot counts were also obtained by stationary ship, but will of course be treated separately.

The general conclusion is confirming the very low numbers encountered in open sea: basically fulmars and a few kittiwakes, often accompanying the ship.

Some observations, mainly noted in limited areas only, deserve attention. It is important to note that items 1 to 3 were confirmed by different, independent, observations:

1. In the pack ice during the short transects at 74°50 and 75°N, 12° to 17°W, a clear structure appeared in the distribution, mainly with high concentrations of little auk and seals (harp, hooded and ringed) in the outer marginal ice zone (OMIZ). This was especially obvious at the eastern end of the transect, but also detectable at the western one. Logically, polar bears were also present, with a total of 12 animals: this very high density is probably to be explained by the poor ice conditions, causing their grouping on a reduced surface of pack ice.

2. At different occasions, an important flux of little auks flying from the Jan Mayen breeding grounds towards the pack ice was detected towards E Greenland and the Spitsbergen area respectively, concerning hundreds of birds per half-hour and a distance of hundreds of nmiles. This might reflect that they massively were leaving Jan Mayen after a reproduction failure, e.g. due to the abnormally long distances between colony and feeding grounds in the OMIZ.

3. As far as cetaceans are concerned, the observations were also obtained from limited zones: sperm whales and orca's near to station 01 (6 individuals and 5 pods of 4 to 6 individuals respectively). A huge feeding ground for large baleen whales was detected between 75° and 75°.10N, and 00°.30 and 03°.30E (stations 122 to 139). They were met again on the large 75°N transect (stations 162 to 165), with total figures as high as 5 blue whales, 45 fin whales, and a few minke whales.

4. More East, data concerned more than 15 minke whales, as well as a large group of 100+ white-sided dolphins just before the front between the arctic and Atlantic domains (east of station 169).

A more detailed discussion and interpretation of these data will include the fronts detected from salinity and water temperature, but also with data obtained by the other teams: O₂, chlorophyll and nutrients, and possibly bathymetry in the case of the whale feeding ground (at the slope between depths of 3700 and 2000 m). Preliminary contacts reflect indeed very fruitful comparisons.

Other species regularly encountered in small numbers were: ivory gull in pack ice, alcids (Brünnich's guillemot, puffin, black guillemot), arctic tern, the 4 skua species, and glaucous gull at the end of the long transect.

Curiosities for the ornithologist: 2 contacts with sooty shearwater, far north of its expected range (75°N: stations 118 and 127), and 2 very rare Sabine's gulls, an adult and a juvenile.

APPENDIX

A.1 Participating Institutions

A.2 Scientific Participants

A.3 Ship's Crew

A.4 Station List

A.1 PARTICIPATING INSTITUTIONS

	Address
AWI	Stiftung Alfred-Wegener-Institut für Polar- und Meeresforschung in der Helmholtz-Gemeinschaft Postfach 12 01 61 27515 Bremerhaven
DWD	Deutscher Wetterdienst Bernhard-Nocht Str. 76 20359 Hamburg
HeliTransair	HeliTransair GmbH Flugplatz 63329 Egelsbach
RWTH Aachen	RWTH Aachen Templergraben 55 52056 Aachen
UAB	Institute of Environmental Science and Technology Universitat Autònoma de Barcelona Edifici CN, Torre C5 Parells Planta 4, Sala de Becaris 08193 Bellaterra BCN /Spain
University of Bergen	University of Bergen P.O. Box 7800 N-5020 Bergen /Norway
University of Cambridge	University of Cambridge Dept. of Applied Mathematics and Theoretical Physics, Cambridge CB30WA/England
VUB Brüssel	Laboratory for Ecotoxicology and Polar Ecology Free University of Brussels (VUB) Pleinlaan 2, B-1050 Brussels /Brussels

A.2 SCIENTIFIC PARTICIPANTS

Fahrtleiter: Gereon Budéus
Bremerhaven - Longyearbyen

Name	Vorname/ First Name	Institut/ Institute	Beruf / Profession
Briga	Michael	VUB Brüssel	Student
Budéus	Gereon	AWI	Chief Scientist
Büchner	Jürgen	HeliTransair	Pilot
Buldt	Klaus	DWD	Technician
Erdmann	Hilger	DWD	Meteorologist
Falck	Eva	Uni Bergen	Scientist
Fuhs	Elisabeth	HeliTransair	Inspector
Gielen	Robin	VUB Brüssel	Student
Greil	Florian	AWI	Student
Hans	Kerstin	AWI	Student
Heckmann	Hans Hilmar	HeliTransair	Pilot
Joiris	Claude	VUB Brüssel	Biologist
Kaletzky	Arthur	Uni Cambridge	Engineer
Kattner	Gerhard	AWI	Scientist
Kattner	Lisa	AWI	Student
Klassen	Niko	AWI	Apprentice
Liebehentschel	Meike	AWI	Apprentice
Ludwichowski	Kai-Uwe	AWI	Engineer
Martinez Botí	Miguel Angél	UAB	Student
Martinez Garcia	Alfredo	UAB	Student
Nauels	Alexander	AWI	Student
Plugge	Rainer	AWI	Technician
Poppe	Ulrike	AWI	Student
Ridder	Theo	AWI	Student
Ronski	Stephanie	AWI	Scientist
Schwarz	Jill	AWI	Scientist

Name	Vorname/ First Name	Institut/ Institute	Beruf / Profession
Seggern, von	Beeke	AWI	CTA
Stimac	Mihael	HeliTransair	Inspector
Vöge	Ingrid	AWI	CTA
Vogel	Ines	AWI	CTA
Wischnewski	Juliane	AWI	Student
Wohlenberg	Jürgen	exRWTH Aachen	Prof. em.

A.3 SHIP'S CREW ARK XXI/1A

Besatzungsliste Reise ARK XXI/1a
Nationality : GERMAN Bremerhaven - Longyearbyen

No.	Name	Rank
01.	Schwarze, Stefan	Master
02.	Grundmann, Uwe	1.Offc.
03.	Farysch, Bernd	Ch. Eng.
04.	Fallei, Holger	2. Offc.
05.	Peine, Lutz	2.Offc.
06.	Wunderlich, Thomas	2.Offc.
07.	Uhlig, Heinz-Jürgen	Doctor
08.	Hecht, Andreas	R.Offc.
09.	Erreth, Gyula	1.Eng.
10.	Minzlaff, Hans-Ulrich	2.Eng.
11.	Sümnicht, Stefan	3.Eng.
12.	Scholz, Manfred	Elec.Tech.
13.	Feiertag, Thomas	ELO
13.	Nasis, Ilias	ELO
14.	Schulz, Harry	ELO
15.	Verhoeven, Roger	ELO
16.	Loidl, Reiner	Boatsw.
17.	Reise, Lutz	Carpenter
18.	Bäcker, Andreas	A.B.
19.	Guse, Hartmut	A.B.
20.	Hagemann, Manfred	A.B.
21.	Hartwig-Labahn, Andreas	A.B.
22.	Lamm, Gerd	A.B.
23.	Schmidt, Uwe	A.B.
24.	Vehlow, Ringo	A.B.
25.	Winkler, Michael	A.B.
26.	Preußner, Jörg	Storek.
27.	Elsner, Klaus	Mot-man
28.	Grafe, Jens	Mot-man
29.	Hartmann,Ernst-Uwe	Mot-man
30.	Ipsen, Michael	Mot-man
31.	Voy, Bernd	Mot-man
32.	Müller-Homburg, Ralf-Dieter	Cook
33.	Silinski, Frank	Cooksmate
34.	Völske, Thomas	Cooksmate
35.	Jürgens, Monika	1.Stwdess
36.	Wöckener, Martina	Stwdss/KS
39.	Czyborra, Bärbel	2.Stwdess
40.	Gaude, Hans-Jürgen	2.Steward
41.	Huang, Wu-Mei	2.Steward
42.	Möller, Wolfgang	2.Steward
43.	Silinski, Carmen	2.Stwdess
44.	Yu, Kwok Yuen	Laundrym.

A.4 STATION LIST

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/001-1	25.07.05	08:07	68° 52,09' N	4° 22,58' W	3619,2	CTD/RO
PS68/001-1	25.07.05	09:13	68° 52,22' N	4° 22,08' W	3620,4	CTD/RO
PS68/001-1	25.07.05	11:20	68° 52,57' N	4° 21,66' W	3611,6	CTD/RO
PS68/002-1	26.07.05	23:20	74° 49,89' N	12° 0,38' W	2226,4	CTD/RO
PS67/251-2	26.07.05	23:32	74° 49,77' N	12° 0,70' W	2226,4	FRRF
PS67/251-2	26.07.05	23:42	74° 49,66' N	12° 0,80' W	2230,0	FRRF
PS67/251-2	26.07.05	23:52	74° 49,54' N	12° 0,97' W	2230,8	FRRF
PS68/002-1	27.07.05	00:05	74° 49,44' N	12° 0,89' W	2235,6	CTD/RO
PS68/002-1	27.07.05	00:46	74° 48,97' N	12° 1,77' W	2234,4	CTD/RO
PS68/003-1	27.07.05	01:42	74° 50,06' N	12° 26,83' W	1712,8	CTD/RO
PS68/003-1	27.07.05	02:17	74° 49,94' N	12° 28,67' W	1689,2	CTD/RO
PS68/003-1	27.07.05	02:50	74° 49,69' N	12° 30,56' W	1668,8	CTD/RO
PS68/004-1	27.07.05	03:55	74° 50,22' N	12° 50,51' W	1182,0	CTD/RO
PS68/004-1	27.07.05	04:18	74° 50,20' N	12° 50,90' W	1174,4	CTD/RO
PS68/004-1	27.07.05	04:41	74° 50,16' N	12° 51,03' W	1175,2	CTD/RO
PS68/005-1	27.07.05	05:44	74° 50,01' N	13° 20,38' W	460,0	CTD/RO
PS68/005-1	27.07.05	05:54	74° 49,97' N	13° 20,41' W	459,6	CTD/RO
PS68/005-1	27.07.05	06:09	74° 49,95' N	13° 20,42' W	459,6	CTD/RO
PS68/006-1	27.07.05	07:26	74° 49,95' N	13° 49,66' W	204,8	CTD/RO
PS68/006-1	27.07.05	07:36	74° 49,88' N	13° 49,53' W	210,4	CTD/RO
PS68/006-1	27.07.05	07:44	74° 49,88' N	13° 49,44' W	211,6	CTD/RO
PS68/007-1	27.07.05	09:18	74° 49,57' N	14° 19,33' W	178,0	CTD/RO
PS68/007-1	27.07.05	09:24	74° 49,56' N	14° 19,12' W	177,6	CTD/RO
PS68/007-1	27.07.05	09:31	74° 49,54' N	14° 18,90' W	176,8	CTD/RO
PS68/008-1	27.07.05	11:28	74° 49,97' N	14° 50,20' W	192,4	CTD/RO
PS68/008-2	27.07.05	11:33	74° 49,92' N	14° 50,12' W	191,6	SD
PS68/008-1	27.07.05	11:36	74° 49,91' N	14° 50,02' W	191,6	CTD/RO
PS68/008-2	27.07.05	11:39	74° 49,89' N	14° 49,96' W	193,2	SD
PS68/008-1	27.07.05	11:46	74° 49,84' N	14° 49,93' W	192,0	CTD/RO
PS68/009-1	27.07.05	13:27	74° 49,99' N	15° 20,23' W	202,4	CTD/RO
PS68/009-2	27.07.05	13:31	74° 50,00' N	15° 20,27' W	202,4	SD
PS68/009-1	27.07.05	13:34	74° 50,00' N	15° 20,29' W	202,8	CTD/RO
PS68/009-2	27.07.05	13:37	74° 49,98' N	15° 20,36' W	202,4	SD
PS68/009-1	27.07.05	13:42	74° 49,97' N	15° 20,47' W	203,2	CTD/RO
PS68/010-1	27.07.05	15:23	74° 49,82' N	15° 50,76' W	273,2	CTD/RO
PS68/010-2	27.07.05	15:27	74° 59,79' N	15° 50,80' W	273,6	SD
PS68/010-2	27.07.05	15:29	74° 49,84' N	15° 50,81' W	274,4	SD
PS68/010-1	27.07.05	15:31	74° 49,84' N	15° 50,79' W	274,8	CTD/RO
PS68/010-1	27.07.05	15:41	74° 49,79' N	15° 50,63' W	274,0	CTD/RO
PS68/011-1	27.07.05	17:15	74° 49,86' N	16° 21,68' W	346,4	CTD/RO
PS68/011-2	27.07.05	17:18	74° 49,84' N	16° 21,63' W	346,4	SD

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/011-1	27.07.05	17:26	74° 49,78' N	16° 21,60' W	346,0	CTD/RO
PS68/011-2	27.07.05	17:27	74° 49,78' N	16° 21,60' W	346,0	SD
PS68/011-1	27.07.05	17:40	74° 49,70' N	16° 21,44' W	346,0	CTD/RO
PS68/012-1	27.07.05	18:42	74° 49,89' N	16° 49,94' W	399,6	CTD/RO
PS68/012-1	27.07.05	18:54	74° 49,79' N	16° 49,84' W	398,8	CTD/RO
PS68/012-1	27.07.05	19:10	74° 49,71' N	16° 49,84' W	400,0	CTD/RO
PS68/013-1	27.07.05	20:09	74° 49,86' N	17° 19,94' W	341,2	CTD/RO
PS68/013-1	27.07.05	20:20	74° 49,87' N	17° 19,80' W	340,4	CTD/RO
PS68/013-1	27.07.05	20:34	74° 49,90' N	17° 19,67' W	340,0	CTD/RO
PS68/014-1	27.07.05	21:54	74° 59,94' N	17° 5,37' W	238,4	CTD/RO
PS68/014-1	27.07.05	22:02	74° 59,94' N	17° 5,45' W	238,0	CTD/RO
PS68/014-1	27.07.05	22:13	74° 59,99' N	17° 5,49' W	236,8	CTD/RO
PS68/015-1	28.07.05	00:12	74° 59,98' N	16° 25,03' W	337,6	CTD/RO
PS68/015-1	28.07.05	00:22	74° 59,98' N	16° 25,44' W	335,6	CTD/RO
PS68/015-1	28.07.05	00:34	74° 59,99' N	16° 25,72' W	336,8	CTD/RO
PS68/016-1	28.07.05	02:28	75° 0,27' N	15° 40,52' W	205,2	CTD/RO
PS68/016-1	28.07.05	02:35	75° 0,32' N	15° 40,70' W	206,0	CTD/RO
PS68/016-1	28.07.05	02:47	75° 0,43' N	15° 40,86' W	206,4	CTD/RO
PS68/017-1	28.07.05	05:56	75° 0,18' N	15° 2,45' W	125,2	CTD/RO
PS68/017-1	28.07.05	06:00	75° 0,20' N	15° 2,39' W	124,0	CTD/RO
PS68/017-1	28.07.05	06:05	75° 0,22' N	15° 2,40' W	120,8	CTD/RO
PS68/018-1	28.07.05	07:52	74° 59,95' N	14° 20,11' W	163,2	CTD/RO
PS68/018-1	28.07.05	07:59	74° 59,96' N	14° 20,27' W	162,8	CTD/RO
PS68/018-1	28.07.05	08:06	75° 0,04' N	14° 20,10' W	162,0	CTD/RO
PS68/019-1	28.07.05	09:44	75° 0,27' N	13° 39,44' W	202,8	CTD/RO
PS68/019-1	28.07.05	09:52	75° 0,19' N	13° 39,15' W	202,0	CTD/RO
PS68/019-1	28.07.05	09:59	75° 0,16' N	13° 38,93' W	200,4	CTD/RO
PS68/020-1	28.07.05	11:04	74° 59,98' N	13° 8,62' W	248,4	CTD/RO
PS68/020-2	28.07.05	11:07	74° 59,96' N	13° 8,60' W	248,8	SD
PS68/020-2	28.07.05	11:11	74° 59,95' N	13° 8,54' W	249,2	SD
PS68/020-1	28.07.05	11:11	74° 59,95' N	13° 8,54' W	249,2	CTD/RO
PS68/020-1	28.07.05	11:21	74° 59,88' N	13° 8,33' W	253,6	CTD/RO
PS68/021-1	28.07.05	12:11	74° 60,00' N	12° 43,67' W	455,6	CTD/RO
PS68/021-2	28.07.05	12:13	75° 0,00' N	12° 43,61' W	488,8	SD
PS68/021-2	28.07.05	12:19	75° 0,01' N	12° 43,50' W	405,2	SD
PS68/021-1	28.07.05	12:30	74° 59,97' N	12° 43,42' W	426,0	CTD/RO
PS68/021-1	28.07.05	12:49	74° 59,88' N	12° 43,30' W	404,0	CTD/RO
PS68/022-1	28.07.05	13:22	75° 0,04' N	12° 31,00' W	1010,4	CTD/RO
PS68/022-1	28.07.05	13:44	74° 59,89' N	12° 30,94' W	1024,8	CTD/RO
PS68/022-2	28.07.05	13:47	74° 59,86' N	12° 30,99' W	1024,8	SD
PS68/022-2	28.07.05	13:53	74° 59,81' N	12° 31,14' W	1022,8	SD
PS68/022-1	28.07.05	14:03	74° 59,72' N	12° 31,13' W	1031,2	CTD/RO
PS68/023-1	28.07.05	14:39	74° 59,88' N	12° 20,08' W	1293,6	CTD/RO
PS68/023-2	28.07.05	14:49	74° 59,79' N	12° 20,18' W	1297,6	SD

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/023-2	28.07.05	14:56	74° 59,73' N	12° 20,20' W	1300,0	SD
PS68/023-1	28.07.05	15:05	74° 59,63' N	12° 20,41' W	1304,8	CTD/RO
PS68/023-1	28.07.05	15:33	74° 59,38' N	12° 21,02' W	1316,4	CTD/RO
PS68/024-1	28.07.05	16:13	74° 59,94' N	12° 9,27' W	1538,0	CTD/RO
PS68/024-2	28.07.05	16:26	74° 59,73' N	12° 9,63' W	1545,6	SD
PS68/024-2	28.07.05	16:29	74° 59,69' N	12° 9,71' W	1547,6	SD
PS68/024-1	28.07.05	16:47	74° 59,50' N	12° 10,41' W	1544,0	CTD/RO
PS68/024-1	28.07.05	17:18	74° 59,16' N	12° 11,60' W	1538,8	CTD/RO
PS68/025-1	28.07.05	18:21	74° 59,78' N	11° 52,41' W	1914,4	CTD/RO
PS68/025-2	28.07.05	18:33	74° 59,59' N	11° 52,57' W	1924,8	SD
PS68/025-2	28.07.05	18:38	74° 59,51' N	11° 52,59' W	1928,0	SD
PS68/025-1	28.07.05	19:01	74° 59,24' N	11° 52,79' W	1931,6	CTD/RO
PS68/025-1	28.07.05	19:35	74° 58,89' N	11° 53,23' W	1936,4	CTD/RO
PS68/026-1	28.07.05	20:54	74° 59,93' N	11° 27,81' W	2342,0	CTD/RO
PS68/026-2	28.07.05	21:16	74° 59,83' N	11° 27,84' W	2344,8	SD
PS68/026-2	28.07.05	21:22	74° 59,82' N	11° 27,89' W	2344,0	SD
PS68/026-1	28.07.05	21:41	74° 59,73' N	11° 27,83' W	2348,4	CTD/RO
PS68/026-1	28.07.05	22:20	74° 59,51' N	11° 27,75' W	2359,6	CTD/RO
PS68/027-1	28.07.05	23:39	74° 59,94' N	11° 52,23' W	1905,6	CTD/RO
PS68/027-1	29.07.05	00:18	74° 59,31' N	11° 53,15' W	1922,0	CTD/RO
PS68/027-1	29.07.05	00:55	74° 58,65' N	11° 53,75' W	1940,4	CTD/RO
PS68/028-1	29.07.05	01:56	75° 0,14' N	12° 9,12' W	1528,8	CTD/RO
PS68/028-1	29.07.05	02:28	74° 59,70' N	12° 9,18' W	1555,6	CTD/RO
PS68/028-1	29.07.05	02:55	74° 59,36' N	12° 9,08' W	1582,4	CTD/RO
PS68/029-1	29.07.05	03:47	74° 59,87' N	12° 22,49' W	1236,4	CTD/RO
PS68/029-1	29.07.05	04:13	74° 59,67' N	12° 22,81' W	1246,0	CTD/RO
PS68/029-1	29.07.05	04:34	74° 59,53' N	12° 23,20' W	1250,8	CTD/RO
PS68/030-1	29.07.05	04:59	75° 0,16' N	12° 31,48' W	988,0	CTD/RO
PS68/030-1	29.07.05	05:20	75° 0,02' N	12° 31,79' W	991,6	CTD/RO
PS68/030-1	29.07.05	05:37	74° 59,92' N	12° 32,21' W	986,0	CTD/RO
PS68/031-1	29.07.05	06:06	74° 59,74' N	12° 43,91' W	644,8	CTD/RO
PS68/031-1	29.07.05	06:21	74° 59,69' N	12° 44,21' W	638,0	CTD/RO
PS68/031-1	29.07.05	06:39	74° 59,67' N	12° 44,74' W	622,0	CTD/RO
PS68/031-2	29.07.05	06:40	74° 59,67' N	12° 44,73' W	622,4	SD
PS68/031-2	29.07.05	06:44	74° 59,63' N	12° 44,65' W	628,4	SD
PS68/032-1	29.07.05	07:42	74° 59,81' N	13° 9,65' W	246,4	CTD/RO
PS68/032-2	29.07.05	07:43	74° 59,81' N	13° 9,65' W	246,4	SD
PS68/032-2	29.07.05	07:48	74° 59,79' N	13° 9,59' W	247,6	SD
PS68/032-1	29.07.05	07:49	74° 59,79' N	13° 9,58' W	247,6	CTD/RO
PS68/032-1	29.07.05	07:58	74° 59,76' N	13° 9,53' W	248,4	CTD/RO
PS68/032-3	29.07.05	07:58	74° 59,76' N	13° 9,53' W	248,4	EF
PS68/032-3	29.07.05	08:19	74° 59,79' N	13° 9,60' W	247,2	EF
PS68/033-1	29.07.05	10:26	74° 59,97' N	13° 40,01' W	201,2	CTD/RO
PS68/033-2	29.07.05	10:27	74° 59,96' N	13° 40,05' W	202,4	SD

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/033-1	29.07.05	10:37	74° 59,90' N	13° 39,93' W	202,4	CTD/RO
PS68/033-2	29.07.05	10:38	74° 59,89' N	13° 39,90' W	202,0	SD
PS68/033-1	29.07.05	10:47	74° 59,83' N	13° 39,75' W	202,0	CTD/RO
PS68/034-1	29.07.05	12:09	74° 59,93' N	14° 19,66' W	165,6	CTD/RO
PS68/034-2	29.07.05	12:10	74° 59,92' N	14° 19,62' W	163,2	SD
PS68/034-1	29.07.05	12:15	74° 59,89' N	14° 19,46' W	164,8	CTD/RO
PS68/034-2	29.07.05	12:22	74° 59,85' N	14° 19,17' W	166,0	SD
PS68/034-1	29.07.05	12:23	74° 59,85' N	14° 19,15' W	165,6	CTD/RO
PS68/035-1	29.07.05	15:04	74° 59,55' N	15° 2,00' W	124,8	CTD/RO
PS68/035-2	29.07.05	15:08	74° 59,53' N	15° 1,97' W	124,4	SD
PS68/035-2	29.07.05	15:10	74° 59,52' N	15° 1,94' W	123,2	SD
PS68/035-1	29.07.05	15:10	74° 59,52' N	15° 1,94' W	123,2	CTD/RO
PS68/035-1	29.07.05	15:17	74° 59,50' N	15° 1,77' W	120,0	CTD/RO
PS68/035-3	29.07.05	15:24	74° 59,48' N	15° 1,72' W	119,6	FRRF
PS68/035-3	29.07.05	15:43	74° 59,36' N	15° 1,61' W	124,0	FRRF
PS68/035-3	29.07.05	15:50	74° 59,31' N	15° 1,65' W	116,0	FRRF
PS68/035-4	29.07.05	16:00	74° 59,17' N	15° 2,51' W	124,4	EF
PS68/035-4	29.07.05	16:33	74° 59,10' N	15° 2,52' W	118,0	EF
PS68/036-1	29.07.05	18:41	75° 0,01' N	15° 40,15' W	202,4	CTD/RO
PS68/036-2	29.07.05	18:42	75° 0,01' N	15° 40,17' W	202,8	SD
PS68/036-1	29.07.05	18:49	74° 60,00' N	15° 40,22' W	206,0	CTD/RO
PS68/036-2	29.07.05	18:50	74° 60,00' N	15° 40,22' W	208,0	SD
PS68/036-1	29.07.05	18:59	74° 59,95' N	15° 40,16' W	209,6	CTD/RO
PS68/037-1	29.07.05	20:57	74° 59,62' N	16° 24,69' W	333,2	CTD/RO
PS68/037-1	29.07.05	21:08	74° 59,53' N	16° 25,21' W	331,2	CTD/RO
PS68/037-1	29.07.05	21:20	74° 59,37' N	16° 25,63' W	329,2	CTD/RO
PS68/038-1	30.07.05	00:11	75° 0,06' N	17° 4,80' W	234,4	CTD/RO
PS68/038-1	30.07.05	00:19	75° 0,05' N	17° 4,92' W	236,8	CTD/RO
PS68/038-1	30.07.05	00:30	75° 0,05' N	17° 5,00' W	236,0	CTD/RO
PS68/038-2	30.07.05	00:36	75° 0,03' N	17° 5,35' W	235,2	FRRF
PS68/038-2	30.07.05	00:45	74° 59,96' N	17° 5,74' W	236,4	FRRF
PS68/038-3	30.07.05	00:45	74° 59,96' N	17° 5,74' W	236,4	SD
PS68/038-3	30.07.05	00:49	74° 59,92' N	17° 5,80' W	240,8	SD
PS68/038-2	30.07.05	00:52	74° 59,90' N	17° 5,88' W	238,0	FRRF
PS68/039-1	30.07.05	02:18	74° 59,98' N	16° 24,58' W	346,8	CTD/RO
PS68/039-1	30.07.05	02:28	74° 59,98' N	16° 24,71' W	345,6	CTD/RO
PS68/039-1	30.07.05	02:41	74° 59,95' N	16° 24,85' W	340,0	CTD/RO
PS68/039-2	30.07.05	02:46	74° 59,95' N	16° 24,94' W	339,6	FRRF
PS68/039-3	30.07.05	02:54	74° 59,93' N	16° 24,88' W	339,6	SD
PS68/039-3	30.07.05	02:59	74° 59,95' N	16° 24,99' W	338,0	SD
PS68/039-2	30.07.05	03:00	74° 59,94' N	16° 24,99' W	337,6	FRRF
PS68/039-2	30.07.05	03:04	74° 59,93' N	16° 24,92' W	338,8	FRRF
PS68/040-1	30.07.05	05:03	75° 0,66' N	15° 40,00' W	199,2	CTD/RO
PS68/040-1	30.07.05	05:14	75° 0,66' N	15° 39,99' W	198,8	CTD/RO

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/040-1	30.07.05	05:22	75° 0,65' N	15° 40,04' W	200,0	CTD/RO
PS68/040-2	30.07.05	05:32	75° 0,63' N	15° 40,19' W	200,0	FRRF
PS68/040-2	30.07.05	05:45	75° 0,62' N	15° 40,12' W	200,4	FRRF
PS68/040-2	30.07.05	05:49	75° 0,65' N	15° 40,10' W	199,6	FRRF
PS68/041-1	30.07.05	07:37	75° 0,41' N	15° 2,28' W	224,0	CTD/RO
PS68/041-1	30.07.05	07:42	75° 0,40' N	15° 2,22' W	120,0	CTD/RO
PS68/041-1	30.07.05	07:47	75° 0,39' N	15° 2,17' W	120,8	CTD/RO
PS68/041-2	30.07.05	07:50	75° 0,38' N	15° 2,14' W	120,4	SD
PS68/041-2	30.07.05	07:54	75° 0,38' N	15° 2,11' W	118,4	SD
PS68/042-1	30.07.05	10:52	74° 59,96' N	14° 20,23' W	162,0	CTD/RO
PS68/042-2	30.07.05	10:53	74° 59,95' N	14° 20,27' W	163,2	SD
PS68/042-2	30.07.05	10:59	74° 59,88' N	14° 20,46' W	165,2	SD
PS68/042-1	30.07.05	10:59	74° 59,88' N	14° 20,46' W	165,2	CTD/RO
PS68/042-1	30.07.05	11:08	74° 59,78' N	14° 20,82' W	166,4	CTD/RO
PS68/042-1	30.07.05	11:33	74° 59,53' N	14° 21,54' W	162,0	EF
PS68/042-1	30.07.05	12:09	74° 59,19' N	14° 22,22' W	162,8	EF
PS68/042-1	30.07.05	12:26	74° 59,10' N	14° 22,71' W	162,4	CTD/RO
PS68/042-1	30.07.05	12:33	74° 59,03' N	14° 22,99' W	163,6	CTD/RO
PS68/042-1	30.07.05	12:41	74° 58,94' N	14° 23,32' W	165,2	CTD/RO
PS68/042-4	30.07.05	12:47	74° 58,85' N	14° 23,55' W	168,8	FRRF
PS68/042-4	30.07.05	12:59	74° 58,71' N	14° 24,03' W	173,6	FRRF
PS68/042-4	30.07.05	13:04	74° 58,64' N	14° 24,22' W	172,4	FRRF
PS68/043-1	30.07.05	15:18	74° 59,77' N	13° 40,53' W	201,2	CTD/RO
PS68/043-2	30.07.05	15:21	74° 59,79' N	13° 40,44' W	201,2	SD
PS68/043-2	30.07.05	15:25	74° 59,77' N	13° 40,44' W	200,0	SD
PS68/043-1	30.07.05	15:25	74° 59,77' N	13° 40,44' W	200,0	CTD/RO
PS68/043-1	30.07.05	15:35	74° 59,74' N	13° 40,39' W	200,4	CTD/RO
PS68/043-3	30.07.05	15:41	74° 59,73' N	13° 40,31' W	201,2	FRRF
PS68/043-3	30.07.05	15:51	74° 59,72' N	13° 40,30' W	200,4	FRRF
PS68/043-3	30.07.05	15:53	74° 59,71' N	13° 40,29' W	200,0	FRRF
PS68/044-1	30.07.05	17:02	75° 0,04' N	13° 9,21' W	0,0	CTD/RO
PS68/044-2	30.07.05	17:05	75° 0,03' N	13° 9,24' W	0,0	SD
PS68/044-1	30.07.05	17:10	75° 0,02' N	13° 9,25' W	0,0	CTD/RO
PS68/044-2	30.07.05	17:11	75° 0,02' N	13° 9,24' W	0,0	SD
PS68/044-1	30.07.05	17:21	75° 0,10' N	13° 9,22' W	241,6	CTD/RO
PS68/044-3	30.07.05	17:25	75° 0,12' N	13° 9,24' W	240,4	FRRF
PS68/044-3	30.07.05	17:37	75° 0,03' N	13° 9,46' W	240,8	FRRF
PS68/044-3	30.07.05	17:40	75° 0,05' N	13° 9,48' W	240,8	FRRF
PS68/045-1	30.07.05	18:44	75° 0,21' N	12° 44,56' W	584,4	CTD/RO
PS68/045-2	30.07.05	18:48	75° 0,19' N	12° 44,77' W	580,4	FRRF
PS68/045-3	30.07.05	18:52	75° 0,19' N	12° 44,91' W	577,2	SD
PS68/045-3	30.07.05	18:57	75° 0,18' N	12° 45,08' W	574,8	SD
PS68/045-2	30.07.05	18:58	75° 0,17' N	12° 45,11' W	572,8	FRRF
PS68/045-2	30.07.05	19:00	75° 0,16' N	12° 45,14' W	570,8	FRRF

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/045-1	30.07.05	19:00	75° 0,16' N	12° 45,14' W	570,8	CTD/RO
PS68/045-1	30.07.05	19:18	75° 0,09' N	12° 45,69' W	560,0	CTD/RO
PS68/046-1	30.07.05	20:11	75° 0,06' N	12° 31,69' W	991,6	CTD/RO
PS68/046-2	30.07.05	20:12	75° 0,06' N	12° 31,76' W	989,6	FRRF
PS68/046-3	30.07.05	20:19	74° 59,99' N	12° 32,09' W	987,2	SD
PS68/046-3	30.07.05	20:24	74° 59,94' N	12° 32,29' W	981,6	SD
PS68/046-2	30.07.05	20:27	74° 59,92' N	12° 32,41' W	977,6	FRRF
PS68/046-2	30.07.05	20:29	74° 59,88' N	12° 32,50' W	976,0	FRRF
PS68/046-1	30.07.05	20:33	74° 59,85' N	12° 32,59' W	976,0	CTD/RO
PS68/046-1	30.07.05	20:55	74° 59,57' N	12° 33,12' W	994,4	CTD/RO
PS68/047-1	30.07.05	21:26	75° 0,07' N	12° 21,91' W	1231,6	CTD/RO
PS68/047-2	30.07.05	21:29	75° 0,03' N	12° 22,06' W	1232,4	FRRF
PS68/047-3	30.07.05	21:35	74° 60,00' N	12° 22,24' W	1232,8	SD
PS68/047-3	30.07.05	21:40	74° 59,93' N	12° 22,39' W	1234,4	SD
PS68/047-2	30.07.05	21:49	74° 59,86' N	12° 22,61' W	1235,6	FRRF
PS68/047-2	30.07.05	21:53	74° 59,88' N	12° 22,75' W	1232,0	FRRF
PS68/047-1	30.07.05	21:54	74° 59,88' N	12° 22,79' W	1230,8	CTD/RO
PS68/047-1	30.07.05	22:22	74° 59,72' N	12° 23,65' W	1223,2	CTD/RO
PS68/048-1	30.07.05	23:06	75° 0,03' N	12° 8,88' W	1542,4	CTD/RO
PS68/048-2	30.07.05	23:09	75° 0,02' N	12° 9,00' W	1540,0	FRRF
PS68/048-3	30.07.05	23:14	74° 59,98' N	12° 9,24' W	1536,4	SD
PS68/048-3	30.07.05	23:19	74° 59,98' N	12° 9,50' W	1530,0	SD
PS68/048-2	30.07.05	23:29	74° 59,89' N	12° 9,86' W	1528,8	FRRF
PS68/048-2	30.07.05	23:32	74° 59,87' N	12° 9,99' W	1528,0	FRRF
PS68/048-1	30.07.05	23:38	74° 59,82' N	12° 10,34' W	1525,6	CTD/RO
PS68/048-1	31.07.05	00:10	74° 59,55' N	12° 12,09' W	1499,6	CTD/RO
PS68/049-1	31.07.05	00:57	74° 59,97' N	11° 52,91' W	1892,4	CTD/RO
PS68/049-2	31.07.05	01:00	74° 59,95' N	11° 53,11' W	1890,8	FRRF
PS68/049-2	31.07.05	01:19	74° 59,69' N	11° 54,11' W	1887,2	FRRF
PS68/049-2	31.07.05	01:23	74° 59,65' N	11° 54,34' W	1882,4	FRRF
PS68/049-1	31.07.05	01:37	74° 59,52' N	11° 55,20' W	1866,8	CTD/RO
PS68/049-1	31.07.05	02:14	74° 59,03' N	11° 57,40' W	1848,8	CTD/RO
PS68/050-1	31.07.05	04:00	74° 59,36' N	11° 28,60' W	2354,4	CTD/RO
PS68/050-1	31.07.05	04:45	74° 59,06' N	11° 31,01' W	2337,6	CTD/RO
PS68/050-1	31.07.05	05:22	74° 58,79' N	11° 33,17' W	2302,0	CTD/RO
PS68/051-1	31.07.05	07:10	74° 59,48' N	11° 2,07' W	2757,2	CTD/RO
PS68/051-2	31.07.05	07:14	74° 59,45' N	11° 2,28' W	2756,0	SD
PS68/051-2	31.07.05	07:18	74° 59,45' N	11° 2,44' W	2754,0	SD
PS68/051-3	31.07.05	07:23	74° 59,46' N	11° 2,68' W	2750,8	FRRF
PS68/051-3	31.07.05	07:35	74° 59,45' N	11° 3,17' W	2742,8	FRRF
PS68/051-3	31.07.05	07:37	74° 59,45' N	11° 3,33' W	2740,4	FRRF
PS68/051-1	31.07.05	08:02	74° 59,32' N	11° 4,53' W	2724,8	CTD/RO
PS68/051-1	31.07.05	08:44	74° 59,14' N	11° 6,40' W	2697,2	CTD/RO
PS68/052-1	31.07.05	10:10	74° 59,89' N	10° 36,19' W	3073,6	CTD/RO

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/052-2	31.07.05	10:17	74° 59,84' N	10° 36,47' W	3074,8	SD
PS68/052-2	31.07.05	10:23	74° 59,79' N	10° 36,65' W	3075,6	SD
PS68/052-1	31.07.05	11:07	74° 59,46' N	10° 36,97' W	3086,0	CTD/RO
PS68/052-1	31.07.05	11:56	74° 59,09' N	10° 37,33' W	3097,2	CTD/RO
PS68/053-1	31.07.05	13:20	75° 0,07' N	9° 56,64' W	3220,8	CTD/RO
PS68/053-2	31.07.05	13:22	75° 0,07' N	9° 56,50' W	3220,8	SD
PS68/053-3	31.07.05	13:34	75° 0,03' N	9° 56,56' W	3222,4	FRRF
PS68/053-2	31.07.05	13:36	75° 0,02' N	9° 56,54' W	3222,0	SD
PS68/053-3	31.07.05	13:44	75° 0,01' N	9° 56,40' W	3222,4	FRRF
PS68/053-3	31.07.05	13:46	75° 0,01' N	9° 56,36' W	3222,4	FRRF
PS68/053-1	31.07.05	14:21	75° 0,04' N	9° 55,64' W	3221,6	CTD/RO
PS68/053-1	31.07.05	15:16	75° 0,02' N	9° 55,80' W	3222,0	CTD/RO
PS68/054-1	31.07.05	16:24	74° 59,84' N	9° 18,88' W	3299,6	CTD/RO
PS68/054-2	31.07.05	16:43	74° 59,85' N	9° 19,01' W	3298,8	FRRF
PS68/054-2	31.07.05	17:01	74° 59,82' N	9° 18,93' W	3300,0	FRRF
PS68/054-2	31.07.05	17:03	74° 59,82' N	9° 18,94' W	3300,0	FRRF
PS68/054-3	31.07.05	17:07	74° 59,81' N	9° 18,97' W	3300,4	SD
PS68/054-3	31.07.05	17:15	74° 59,83' N	9° 19,18' W	3298,4	SD
PS68/054-1	31.07.05	17:30	74° 59,84' N	9° 19,09' W	3298,8	CTD/RO
PS68/054-1	31.07.05	18:25	74° 59,87' N	9° 19,81' W	3295,2	CTD/RO
PS68/055-1	31.07.05	19:31	75° 0,07' N	8° 40,04' W	3360,8	CTD/RO
PS68/055-2	31.07.05	19:36	75° 0,03' N	8° 39,90' W	3361,2	SD
PS68/055-2	31.07.05	19:41	75° 0,01' N	8° 39,83' W	3361,2	SD
PS68/055-3	31.07.05	19:45	74° 59,99' N	8° 39,79' W	3361,6	FRRF
PS68/055-3	31.07.05	20:00	74° 59,88' N	8° 39,64' W	3362,0	FRRF
PS68/055-3	31.07.05	20:03	74° 59,85' N	8° 39,63' W	3362,0	FRRF
PS68/055-1	31.07.05	20:38	74° 59,59' N	8° 39,54' W	3364,0	CTD/RO
PS68/055-1	31.07.05	21:37	74° 58,93' N	8° 39,33' W	3367,2	CTD/RO
PS68/056-1	31.07.05	22:45	75° 0,05' N	8° 1,04' W	3399,6	CTD/RO
PS68/056-2	31.07.05	23:01	74° 59,84' N	8° 1,04' W	3399,6	FRRF
PS68/056-3	31.07.05	23:03	74° 59,82' N	8° 1,04' W	3399,6	SD
PS68/056-3	31.07.05	23:05	74° 59,82' N	8° 0,99' W	3399,6	SD
PS68/056-2	31.07.05	23:15	74° 59,78' N	8° 0,77' W	3399,6	FRRF
PS68/056-2	31.07.05	23:18	74° 59,74' N	8° 0,77' W	3399,6	FRRF
PS68/056-1	31.07.05	23:53	74° 59,42' N	8° 0,68' W	3398,8	CTD/RO
PS68/056-1	01.08.05	00:50	74° 59,04' N	8° 0,87' W	3396,0	CTD/RO
PS68/057-1	01.08.05	02:12	75° 0,03' N	7° 21,91' W	3438,8	CTD/RO
PS68/057-2	01.08.05	02:19	75° 0,04' N	7° 21,93' W	3438,8	FRRF
PS68/057-2	01.08.05	02:34	75° 0,04' N	7° 21,90' W	3438,8	FRRF
PS68/057-2	01.08.05	02:37	75° 0,04' N	7° 21,91' W	3438,8	FRRF
PS68/057-1	01.08.05	03:14	75° 0,09' N	7° 22,01' W	3438,8	CTD/RO
PS68/057-1	01.08.05	04:13	75° 0,12' N	7° 22,83' W	3438,0	CTD/RO
PS68/058-1	01.08.05	05:29	75° 0,05' N	6° 42,87' W	3488,4	CTD/RO
PS68/058-1	01.08.05	06:36	75° 0,09' N	6° 42,89' W	3488,4	CTD/RO

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/058-201.08.05		07:00	75° 0,13' N	6° 43,07' W	3488,4	SD
PS68/058-201.08.05		07:06	75° 0,14' N	6° 43,16' W	3488,4	SD
PS68/058-101.08.05		07:31	75° 0,20' N	6° 43,33' W	3488,0	CTD/RO
PS68/059-101.08.05		08:43	74° 59,99' N	6° 4,07' W	3524,4	CTD/RO
PS68/059-201.08.05		08:48	74° 59,94' N	6° 4,06' W	3526,8	SD
PS68/059-201.08.05		08:54	74° 59,92' N	6° 4,15' W	3520,4	SD
PS68/059-101.08.05		09:50	74° 59,80' N	6° 4,69' W	3525,6	CTD/RO
PS68/059-101.08.05		10:47	74° 59,87' N	6° 5,01' W	3525,2	CTD/RO
PS68/060-101.08.05		12:03	75° 0,20' N	5° 24,70' W	3576,4	CTD/RO
PS68/060-201.08.05		12:05	75° 0,19' N	5° 24,57' W	3576,7	SD
PS68/060-301.08.05		12:13	75° 0,19' N	5° 24,17' W	3576,8	FRRF
PS68/060-201.08.05		12:19	75° 0,16' N	5° 23,89' W	3577,2	SD
PS68/060-301.08.05		12:33	75° 0,18' N	5° 23,30' W	3577,6	FRRF
PS68/060-301.08.05		12:35	75° 0,17' N	5° 23,19' W	3576,7	FRRF
PS68/060-101.08.05		13:13	75° 0,17' N	5° 23,74' W	3577,6	CTD/RO
PS68/060-101.08.05		14:14	75° 0,20' N	5° 24,90' W	3576,0	CTD/RO
PS68/061-101.08.05		15:40	75° 0,05' N	4° 46,94' W	3613,6	CTD/RO
PS68/061-201.08.05		16:12	75° 0,11' N	4° 46,94' W	3613,2	SD
PS68/061-201.08.05		16:18	75° 0,13' N	4° 46,95' W	3613,2	SD
PS68/061-101.08.05		16:49	75° 0,14' N	4° 46,80' W	3613,2	CTD/RO
PS68/061-101.08.05		17:50	75° 0,24' N	4° 45,95' W	3614,0	CTD/RO
PS68/062-101.08.05		19:08	75° 0,01' N	4° 8,22' W	3641,6	CTD/RO
PS68/062-201.08.05		19:13	75° 0,02' N	4° 8,25' W	3641,6	SD
PS68/062-201.08.05		19:17	75° 0,02' N	4° 8,21' W	3641,6	SD
PS68/062-301.08.05		19:21	75° 0,01' N	4° 8,17' W	3641,6	FRRF
PS68/062-301.08.05		19:33	74° 60,00' N	4° 8,19' W	3641,6	FRRF
PS68/062-301.08.05		19:36	74° 60,00' N	4° 8,23' W	3642,0	FRRF
PS68/062-101.08.05		20:16	74° 59,94' N	4° 8,88' W	3641,6	CTD/RO
PS68/062-101.08.05		21:08	74° 59,77' N	4° 9,00' W	3640,8	CTD/RO
PS68/063-101.08.05		22:32	74° 59,96' N	3° 30,50' W	3667,2	CTD/RO
PS68/063-201.08.05		22:36	74° 59,97' N	3° 30,59' W	3667,2	SD
PS68/063-201.08.05		22:42	74° 59,95' N	3° 30,63' W	3667,2	SD
PS68/063-301.08.05		22:46	74° 59,93' N	3° 30,59' W	3667,2	FRRF
PS68/063-301.08.05		23:05	74° 59,89' N	3° 30,69' W	3667,2	FRRF
PS68/063-301.08.05		23:08	74° 59,89' N	3° 30,75' W	3667,2	FRRF
PS68/063-101.08.05		23:39	74° 59,89' N	3° 31,46' W	3666,4	CTD/RO
PS68/063-102.08.05		00:39	74° 59,93' N	3° 32,23' W	3665,6	CTD/RO
PS68/064-102.08.05		02:32	74° 52,95' N	4° 24,74' W	3625,6	CTD/RO
PS68/064-102.08.05		02:58	74° 52,86' N	4° 25,46' W	3624,8	CTD/RO
PS68/064-102.08.05		03:19	74° 52,78' N	4° 25,83' W	3624,4	CTD/RO
PS68/065-102.08.05		04:04	74° 51,16' N	4° 37,54' W	3617,2	MOR
PS68/065-102.08.05		04:07	74° 51,14' N	4° 37,49' W	3617,2	MOR
PS68/065-102.08.05		04:14	74° 51,14' N	4° 37,66' W	3617,2	MOR
PS68/065-102.08.05		04:24	74° 51,11' N	4° 37,57' W	3617,2	MOR

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/065-1	02.08.05	04:27	74° 51,08' N	4° 37,45' W	3617,2	MOR
PS68/065-1	02.08.05	04:30	74° 51,06' N	4° 37,39' W	3617,2	MOR
PS68/066-1	02.08.05	04:48	74° 53,19' N	4° 37,63' W	3615,2	MOR
PS68/066-1	02.08.05	04:50	74° 53,21' N	4° 37,64' W	3614,8	MOR
PS68/066-1	02.08.05	04:51	74° 53,20' N	4° 37,65' W	3614,8	MOR
PS68/066-1	02.08.05	04:52	74° 53,20' N	4° 37,64' W	3615,2	MOR
PS68/066-1	02.08.05	05:06	74° 53,19' N	4° 38,45' W	3614,4	MOR
PS68/066-1	02.08.05	05:27	74° 53,14' N	4° 38,13' W	3614,8	MOR
PS68/066-1	02.08.05	05:48	74° 53,12' N	4° 37,96' W	3615,2	MOR
PS68/066-1	02.08.05	06:03	74° 53,10' N	4° 37,98' W	3615,2	MOR
PS68/065-2	02.08.05	06:37	74° 51,34' N	4° 38,23' W	3616,8	MOR
PS68/065-2	02.08.05	06:39	74° 51,33' N	4° 38,23' W	3616,8	MOR
PS68/066-3	02.08.05	06:44	74° 51,33' N	4° 38,28' W	3616,8	SD
PS68/066-3	02.08.05	06:46	74° 51,34' N	4° 38,29' W	3617,3	SD
PS68/065-2	02.08.05	06:52	74° 51,37' N	4° 38,27' W	3617,2	MOR
PS68/067-1	02.08.05	07:45	74° 54,97' N	4° 37,60' W	3613,9	MOR
PS68/067-1	02.08.05	07:49	74° 54,96' N	4° 37,77' W	3614,1	MOR
PS68/067-1	02.08.05	07:50	74° 54,95' N	4° 37,80' W	3613,9	MOR
PS68/067-1	02.08.05	07:52	74° 54,94' N	4° 37,84' W	3614,4	MOR
PS68/067-1	02.08.05	08:01	74° 55,03' N	4° 38,44' W	3613,6	MOR
PS68/067-1	02.08.05	08:08	74° 55,01' N	4° 38,52' W	3613,6	MOR
PS68/067-1	02.08.05	08:15	74° 54,99' N	4° 38,40' W	3613,6	MOR
PS68/067-1	02.08.05	08:50	74° 54,93' N	4° 39,10' W	3613,7	MOR
PS68/065-3	02.08.05	09:34	74° 51,56' N	4° 38,45' W	3618,4	MOR
PS68/065-3	02.08.05	09:57	74° 51,25' N	4° 37,98' W	3618,1	MOR
PS68/065-3	02.08.05	10:30	74° 51,30' N	4° 38,07' W	3618,1	MOR
PS68/065-3	02.08.05	10:49	74° 51,12' N	4° 38,36' W	3617,9	MOR
PS68/065-3	02.08.05	10:58	74° 51,21' N	4° 38,21' W	3617,1	MOR
PS68/065-3	02.08.05	11:03	74° 51,22' N	4° 38,19' W	3617,3	MOR
PS68/065-3	02.08.05	11:18	74° 51,16' N	4° 38,56' W	3616,8	MOR
PS68/065-3	02.08.05	11:43	74° 51,13' N	4° 38,63' W	3617,2	MOR
PS68/065-3	02.08.05	11:59	74° 51,18' N	4° 38,65' W	3616,7	MOR
PS68/065-3	02.08.05	12:37	74° 51,40' N	4° 38,81' W	3616,7	MOR
PS68/065-3	02.08.05	13:06	74° 51,35' N	4° 38,90' W	3616,9	MOR
PS68/065-3	02.08.05	13:08	74° 51,34' N	4° 38,90' W	3616,8	MOR
PS68/065-3	02.08.05	13:45	74° 51,09' N	4° 38,99' W	3616,3	MOR
PS68/065-3	02.08.05	13:53	74° 51,08' N	4° 38,96' W	3616,7	MOR
PS68/065-3	02.08.05	14:00	74° 50,99' N	4° 39,04' W	3616,5	MOR
PS68/065-3	02.08.05	14:40	74° 50,82' N	4° 38,00' W	3618,0	MOR
PS68/065-3	02.08.05	15:01	74° 50,90' N	4° 37,90' W	3617,3	MOR
PS68/065-3	02.08.05	15:04	74° 50,90' N	4° 37,91' W	3617,1	MOR
PS68/065-3	02.08.05	15:04	74° 50,90' N	4° 37,91' W	3617,1	MOR
PS68/068-1	02.08.05	15:57	74° 54,02' N	4° 22,49' W	3628,3	XBT
PS68/069-1	02.08.05	16:03	74° 54,05' N	4° 20,36' W	3630,8	XBT

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/070-1	02.08.05	16:39	74° 54,04' N	3° 58,72' W	3638,4	XBT
PS68/071-1	02.08.05	17:24	74° 54,04' N	3° 31,42' W	3666,8	XBT
PS68/072-1	02.08.05	18:12	74° 54,04' N	3° 3,46' W	3683,2	XBT
PS68/073-1	02.08.05	18:59	74° 54,04' N	2° 37,16' W	3698,8	XBT
PS68/074-1	02.08.05	19:47	74° 54,02' N	2° 9,45' W	3714,0	XBT
PS68/075-1	02.08.05	20:34	74° 54,03' N	1° 43,51' W	3553,6	XBT
PS68/076-1	02.08.05	21:24	74° 54,05' N	1° 15,06' W	3755,2	XBT
PS68/077-1	02.08.05	22:10	74° 54,04' N	0° 49,69' W	3757,2	XBT
PS68/078-1	02.08.05	23:00	74° 54,06' N	0° 21,89' W	3766,4	XBT
PS68/079-1	02.08.05	23:51	74° 48,28' N	0° 8,04' W	3702,8	XBT
PS68/080-1	03.08.05	00:46	74° 47,96' N	0° 32,70' W	3660,4	XBT
PS68/080-2	03.08.05	00:52	74° 47,95' N	0° 34,67' W	3765,2	XBT
PS68/081-1	03.08.05	01:39	74° 47,97' N	0° 59,91' W	3754,8	XBT
PS68/082-1	03.08.05	02:42	74° 47,98' N	1° 30,77' W	3688,0	XBT
PS68/083-1	03.08.05	03:30	74° 47,95' N	1° 56,44' W	3682,4	XBT
PS68/084-1	03.08.05	04:27	74° 50,28' N	2° 28,50' W	3698,8	MOR
PS68/084-1	03.08.05	04:29	74° 50,27' N	2° 28,61' W	3698,8	MOR
PS68/084-1	03.08.05	04:31	74° 50,24' N	2° 28,64' W	3698,8	MOR
PS68/084-1	03.08.05	04:31	74° 50,24' N	2° 28,64' W	3698,8	MOR
PS68/084-1	03.08.05	04:40	74° 50,27' N	2° 28,72' W	3698,8	MOR
PS68/084-1	03.08.05	04:45	74° 50,19' N	2° 28,73' W	3699,2	MOR
PS68/084-1	03.08.05	04:47	74° 50,18' N	2° 28,73' W	3698,8	MOR
PS68/084-1	03.08.05	05:27	74° 49,78' N	2° 28,96' W	3698,4	MOR
PS68/084-1	03.08.05	05:28	74° 49,77' N	2° 28,96' W	3697,6	MOR
PS68/084-1	03.08.05	05:30	74° 49,75' N	2° 28,97' W	3698,0	MOR
PS68/085-1	03.08.05	06:38	74° 50,36' N	2° 28,55' W	3699,2	MOR
PS68/085-1	03.08.05	06:43	74° 50,38' N	2° 28,50' W	3699,2	MOR
PS68/085-1	03.08.05	07:48	74° 50,38' N	2° 28,59' W	3699,6	MOR
PS68/085-1	03.08.05	08:06	74° 50,38' N	2° 28,56' W	3699,6	MOR
PS68/085-1	03.08.05	08:10	74° 50,37' N	2° 28,57' W	3699,2	MOR
PS68/085-1	03.08.05	08:10	74° 50,37' N	2° 28,57' W	3699,2	MOR
PS68/086-1	03.08.05	08:30	74° 51,45' N	2° 28,79' W	3701,6	CTD/RO
PS68/086-1	03.08.05	09:26	74° 51,40' N	2° 28,55' W	3702,0	CTD/RO
PS68/086-1	03.08.05	10:11	74° 51,47' N	2° 28,21' W	3702,0	CTD/RO
PS68/087-1	03.08.05	10:41	74° 51,42' N	2° 44,20' W	3696,8	XBT
PS68/087-2	03.08.05	10:46	74° 51,43' N	2° 45,74' W	3695,2	XBT
PS68/088-1	03.08.05	12:48	75° 4,88' N	3° 26,96' W	3668,8	MOR
PS68/088-1	03.08.05	12:49	75° 4,88' N	3° 26,97' W	3668,8	MOR
PS68/088-1	03.08.05	12:50	75° 4,88' N	3° 26,96' W	3668,8	MOR
PS68/088-1	03.08.05	12:51	75° 4,87' N	3° 26,94' W	3668,8	MOR
PS68/088-1	03.08.05	13:00	75° 4,94' N	3° 27,03' W	3668,4	MOR
PS68/088-1	03.08.05	13:02	75° 4,94' N	3° 27,00' W	3668,8	MOR
PS68/088-1	03.08.05	13:08	75° 4,88' N	3° 26,91' W	3668,8	MOR
PS68/088-1	03.08.05	13:55	75° 4,45' N	3° 26,40' W	3670,4	MOR

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/088-1	103.08.05	13:58	75° 4,43' N	3° 26,42' W	3670,4	MOR
PS68/088-1	103.08.05	14:02	75° 4,38' N	3° 26,46' W	3670,4	MOR
PS68/088-1	103.08.05	14:03	75° 4,37' N	3° 26,47' W	3670,8	MOR
PS68/089-1	103.08.05	14:36	75° 4,95' N	3° 27,19' W	3668,4	MOR
PS68/089-1	103.08.05	14:40	75° 4,95' N	3° 27,13' W	3668,4	MOR
PS68/089-1	103.08.05	15:58	75° 4,93' N	3° 27,22' W	3668,0	MOR
PS68/089-1	103.08.05	16:13	75° 4,93' N	3° 27,13' W	3668,0	MOR
PS68/089-1	103.08.05	16:15	75° 4,93' N	3° 27,09' W	3668,0	MOR
PS68/089-1	103.08.05	16:20	75° 4,93' N	3° 27,16' W	3668,0	MOR
PS68/089-1	103.08.05	16:21	75° 4,93' N	3° 27,15' W	3668,0	MOR
PS68/089-1	103.08.05	16:22	75° 4,93' N	3° 27,13' W	3668,0	MOR
PS68/090-1	103.08.05	16:43	75° 5,41' N	3° 29,68' W	3665,6	XBT
PS68/091-1	103.08.05	17:36	75° 6,04' N	3° 3,53' W	3683,6	XBT
PS68/092-1	103.08.05	17:42	75° 6,01' N	3° 1,53' W	3684,8	XBT
PS68/093-1	103.08.05	18:26	75° 5,88' N	2° 36,11' W	3616,8	XBT
PS68/094-1	103.08.05	19:13	75° 6,03' N	2° 9,60' W	3681,2	XBT
PS68/095-1	103.08.05	20:08	75° 6,05' N	1° 41,82' W	3730,8	XBT
PS68/096-1	103.08.05	20:55	75° 6,03' N	1° 16,68' W	3738,0	XBT
PS68/096-2	103.08.05	21:07	75° 5,98' N	1° 12,96' W	3738,4	XBT
PS68/097-1	103.08.05	21:59	75° 11,85' N	1° 3,62' W	3748,4	XBT
PS68/098-1	103.08.05	22:42	75° 11,97' N	1° 27,65' W	3688,4	XBT
PS68/099-1	103.08.05	23:35	75° 12,12' N	1° 55,03' W	3732,0	XBT
PS68/100-1	104.08.05	00:24	75° 11,98' N	2° 20,75' W	3729,2	XBT
PS68/101-1	104.08.05	01:13	75° 11,96' N	2° 48,06' W	3696,8	XBT
PS68/102-1	104.08.05	02:04	75° 11,95' N	3° 15,85' W	3677,6	XBT
PS68/103-1	104.08.05	02:52	75° 11,97' N	3° 42,05' W	3660,0	XBT
PS68/104-1	104.08.05	03:36	75° 12,01' N	4° 6,45' W	3638,0	XBT
PS68/105-1	104.08.05	04:25	75° 6,43' N	3° 58,10' W	3647,6	XBT
PS68/106-1	104.08.05	05:38	75° 0,37' N	4° 26,21' W	3627,2	XBT
PS68/107-1	104.08.05	06:34	74° 54,95' N	4° 33,39' W	3618,0	MOR
PS68/107-1	104.08.05	06:41	74° 54,96' N	4° 33,41' W	3617,2	MOR
PS68/107-1	104.08.05	07:42	74° 55,03' N	4° 32,94' W	3618,8	MOR
PS68/107-1	104.08.05	07:51	74° 55,02' N	4° 32,98' W	3618,8	MOR
PS68/107-1	104.08.05	08:08	74° 55,00' N	4° 32,98' W	3618,4	MOR
PS68/107-1	104.08.05	08:11	74° 55,01' N	4° 32,99' W	3618,4	MOR
PS68/107-1	104.08.05	08:14	74° 55,00' N	4° 32,98' W	3618,4	MOR
PS68/108-1	104.08.05	08:44	74° 55,03' N	4° 24,83' W	3626,0	MOR
PS68/108-1	104.08.05	09:53	74° 55,01' N	4° 25,24' W	3626,0	MOR
PS68/108-1	104.08.05	10:02	74° 55,02' N	4° 25,31' W	3625,6	MOR
PS68/108-1	104.08.05	10:27	74° 55,02' N	4° 25,37' W	3625,6	MOR
PS68/108-1	104.08.05	10:27	74° 55,02' N	4° 25,37' W	3625,6	MOR
PS68/108-1	104.08.05	10:34	74° 55,00' N	4° 25,37' W	3625,6	MOR
PS68/108-1	104.08.05	10:40	74° 54,98' N	4° 25,60' W	3625,6	MOR
PS68/109-1	104.08.05	11:31	74° 55,01' N	4° 17,57' W	3634,0	MOR

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/109-104.08.05		11:34	74° 55,02' N	4° 17,55' W	3634,4	MOR
PS68/109-104.08.05		12:44	74° 55,01' N	4° 17,68' W	3634,0	MOR
PS68/109-104.08.05		12:51	74° 55,01' N	4° 17,65' W	3634,0	MOR
PS68/109-104.08.05		13:05	74° 55,01' N	4° 17,60' W	3634,0	MOR
PS68/109-104.08.05		13:06	74° 55,01' N	4° 17,59' W	3634,4	MOR
PS68/109-104.08.05		13:13	74° 55,01' N	4° 17,66' W	3634,0	MOR
PS68/109-104.08.05		13:15	74° 55,00' N	4° 17,64' W	3634,0	MOR
PS68/109-104.08.05		13:15	74° 55,00' N	4° 17,64' W	3634,0	MOR
PS68/110-104.08.05		14:03	74° 48,35' N	4° 10,55' W	3637,6	XBT
PS68/111-104.08.05		14:56	74° 48,05' N	3° 44,98' W	3654,4	XBT
PS68/112-104.08.05		15:50	74° 48,04' N	3° 16,24' W	3677,2	XBT
PS68/113-104.08.05		16:38	74° 48,05' N	2° 51,29' W	3687,6	XBT
PS68/114-104.08.05		17:36	74° 48,12' N	2° 22,27' W	3696,8	XBT
PS68/115-104.08.05		19:20	75° 0,01' N	2° 51,31' W	3692,4	CTD/RO
PS68/115-204.08.05		19:46	75° 0,05' N	2° 50,73' W	3692,0	FRRF
PS68/115-204.08.05		20:06	75° 0,07' N	2° 50,26' W	3692,0	FRRF
PS68/115-204.08.05		20:08	75° 0,07' N	2° 50,22' W	3692,0	FRRF
PS68/115-104.08.05		20:28	75° 0,09' N	2° 49,84' W	3692,0	CTD/RO
PS68/115-104.08.05		21:20	75° 0,11' N	2° 48,80' W	3692,4	CTD/RO
PS68/116-104.08.05		22:27	75° 0,08' N	2° 13,18' W	3638,4	CTD/RO
PS68/116-204.08.05		22:36	75° 0,10' N	2° 13,09' W	3635,6	FRRF
PS68/116-204.08.05		22:54	75° 0,16' N	2° 12,92' W	3630,8	FRRF
PS68/116-204.08.05		22:56	75° 0,16' N	2° 12,91' W	3631,2	FRRF
PS68/116-304.08.05		23:02	75° 0,15' N	2° 12,93' W	3631,6	SD
PS68/116-304.08.05		23:04	75° 0,15' N	2° 12,94' W	3631,6	SD
PS68/116-104.08.05		23:35	75° 0,25' N	2° 13,09' W	3632,4	CTD/RO
PS68/116-105.08.05		00:33	75° 0,41' N	2° 12,94' W	3611,2	CTD/RO
PS68/117-105.08.05		01:40	75° 0,03' N	1° 35,10' W	3731,2	CTD/RO
PS68/117-205.08.05		01:47	75° 0,06' N	1° 34,98' W	3731,2	FRRF
PS68/117-305.08.05		01:52	75° 0,06' N	1° 35,03' W	3731,2	SD
PS68/117-305.08.05		01:54	75° 0,06' N	1° 35,01' W	3731,2	SD
PS68/117-205.08.05		02:07	75° 0,01' N	1° 34,95' W	3731,2	FRRF
PS68/117-205.08.05		02:09	75° 0,02' N	1° 34,95' W	3731,2	FRRF
PS68/117-105.08.05		02:49	75° 0,21' N	1° 35,45' W	3730,8	CTD/RO
PS68/117-105.08.05		03:44	75° 0,36' N	1° 35,71' W	3730,8	CTD/RO
PS68/118-105.08.05		04:56	75° 0,05' N	0° 55,97' W	3683,6	CTD/RO
PS68/118-205.08.05		05:03	75° 0,07' N	0° 56,03' W	3681,6	FRRF
PS68/118-205.08.05		05:16	75° 0,05' N	0° 56,22' W	3678,8	FRRF
PS68/118-205.08.05		05:18	75° 0,05' N	0° 56,25' W	3672,0	FRRF
PS68/118-305.08.05		05:25	75° 0,04' N	0° 56,31' W	3670,8	SD
PS68/118-305.08.05		05:30	75° 0,05' N	0° 56,35' W	3668,4	SD
PS68/118-105.08.05		06:06	74° 59,97' N	0° 56,79' W	3656,0	CTD/RO
PS68/118-105.08.05		07:13	75° 0,07' N	0° 57,35' W	3630,8	CTD/RO
PS68/119-105.08.05		08:19	74° 59,93' N	0° 18,10' W	3764,8	CTD/RO

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/119-205.08.05		08:24	74° 59,97' N	0° 18,02' W	3764,8	SD
PS68/119-205.08.05		08:30	74° 59,98' N	0° 18,05' W	3764,8	SD
PS68/119-305.08.05		08:34	74° 59,99' N	0° 18,06' W	3764,8	FRRF
PS68/119-305.08.05		08:48	75° 0,04' N	0° 18,09' W	3764,8	FRRF
PS68/119-305.08.05		08:52	75° 0,07' N	0° 18,10' W	3764,8	FRRF
PS68/119-105.08.05		10:16	75° 0,48' N	0° 18,83' W	3764,4	CTD/RO
PS68/119-405.08.05		10:44	75° 0,08' N	0° 18,11' W	3765,2	CTD/RO
PS68/119-405.08.05		11:39	75° 0,27' N	0° 18,44' W	3765,2	CTD/RO
PS68/119-405.08.05		12:26	75° 0,35' N	0° 18,57' W	3764,8	CTD/RO
PS68/120-105.08.05		13:31	75° 0,08' N	0° 20,82' E	3773,2	CTD/RO
PS68/120-205.08.05		13:47	75° 0,01' N	0° 21,23' E	3773,6	SD
PS68/120-205.08.05		13:53	74° 59,97' N	0° 21,31' E	3773,6	SD
PS68/120-305.08.05		13:57	74° 59,94' N	0° 21,37' E	3773,6	FRRF
PS68/120-305.08.05		14:12	74° 59,97' N	0° 21,43' E	3773,6	FRRF
PS68/120-305.08.05		14:15	74° 59,99' N	0° 21,43' E	3773,2	FRRF
PS68/120-105.08.05		14:33	74° 59,92' N	0° 21,56' E	3773,6	CTD/RO
PS68/120-105.08.05		15:32	74° 59,79' N	0° 22,35' E	3773,6	CTD/RO
PS68/121-105.08.05		16:24	75° 6,11' N	0° 33,27' E	3773,2	CTD
PS68/122-105.08.05		17:14	75° 6,02' N	1° 0,62' E	3773,2	XBT
PS68/123-105.08.05		17:55	75° 6,03' N	1° 25,18' E	3058,4	XBT
PS68/124-105.08.05		18:51	75° 11,95' N	1° 13,14' E	3293,6	XBT
PS68/125-105.08.05		19:34	75° 11,97' N	0° 47,51' E	3772,4	XBT
PS68/126-105.08.05		21:08	75° 6,07' N	1° 26,85' E	3109,2	XBT
PS68/127-105.08.05		22:00	75° 0,05' N	1° 13,54' E	3777,2	XBT
PS68/128-105.08.05		22:46	75° 0,04' N	1° 39,32' E	3074,0	XBT
PS68/129-105.08.05		23:37	75° 5,76' N	1° 53,23' E	2140,8	XBT
PS68/130-106.08.05		00:28	75° 11,58' N	1° 41,22' E	2112,0	XBT
PS68/130-206.08.05		00:36	75° 12,07' N	1° 40,05' E	2178,4	XBT
PS68/131-106.08.05		01:29	75° 6,40' N	1° 40,66' E	2664,0	XBT
PS68/132-106.08.05		01:56	75° 3,32' N	1° 34,59' E	3078,8	XBT
PS68/133-106.08.05		02:24	75° 3,03' N	1° 21,65' E	3570,8	XBT
PS68/134-106.08.05		02:51	75° 5,73' N	1° 13,97' E	3322,0	XBT
PS68/135-106.08.05		03:22	75° 9,00' N	1° 20,52' E	3134,0	XBT
PS68/136-106.08.05		03:45	75° 9,07' N	1° 32,38' E	2538,0	XBT
PS68/137-106.08.05		04:07	75° 9,00' N	1° 40,40' E	1792,8	CTD/RO
PS68/137-106.08.05		04:37	75° 9,04' N	1° 40,43' E	1792,4	CTD/RO
PS68/137-106.08.05		05:00	75° 9,04' N	1° 40,49' E	1789,2	CTD/RO
PS68/138-106.08.05		05:36	75° 5,98' N	1° 26,85' E	3140,0	CTD/RO
PS68/138-106.08.05		06:27	75° 5,85' N	1° 26,90' E	3160,0	CTD/RO
PS68/138-106.08.05		07:04	75° 5,90' N	1° 26,31' E	3135,2	CTD/RO
PS68/139-106.08.05		08:04	74° 59,93' N	0° 59,10' E	3775,2	CTD/RO
PS68/139-106.08.05		09:03	74° 59,72' N	0° 58,84' E	3775,6	CTD/RO
PS68/139-106.08.05		09:57	74° 59,64' N	0° 57,97' E	3775,6	CTD/RO
PS68/140-106.08.05		15:51	74° 51,48' N	2° 45,85' W	3694,4	CTD/RO

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/140-2	06.08.05	16:05	74° 51,38' N	2° 45,36' W	3694,4	FRRF
PS68/140-2	06.08.05	16:25	74° 51,28' N	2° 44,31' W	3695,2	FRRF
PS68/140-2	06.08.05	16:29	74° 51,28' N	2° 44,08' W	3695,2	FRRF
PS68/140-3	06.08.05	16:30	74° 51,27' N	2° 44,02' W	3695,2	SD
PS68/140-3	06.08.05	16:35	74° 51,26' N	2° 43,74' W	3695,2	SD
PS68/140-1	06.08.05	16:49	74° 51,22' N	2° 43,70' W	3695,2	CTD/RO
PS68/140-1	06.08.05	17:37	74° 51,16' N	2° 43,79' W	3694,8	CTD/RO
PS68/141-1	06.08.05	18:07	74° 54,42' N	2° 38,60' W	3698,0	CTD/RO
PS68/141-2	06.08.05	18:14	74° 54,38' N	2° 38,34' W	3698,0	FRRF
PS68/141-2	06.08.05	18:33	74° 54,30' N	2° 38,04' W	3698,0	FRRF
PS68/141-2	06.08.05	18:35	74° 54,30' N	2° 38,00' W	3698,0	FRRF
PS68/141-1	06.08.05	19:10	74° 54,31' N	2° 38,56' W	3697,6	CTD/RO
PS68/141-1	06.08.05	19:55	74° 54,17' N	2° 38,75' W	3697,2	CTD/RO
PS68/142-1	06.08.05	20:28	74° 54,50' N	2° 52,58' W	3690,8	CTD/RO
PS68/142-2	06.08.05	20:37	74° 54,49' N	2° 52,58' W	3690,8	FRRF
PS68/142-3	06.08.05	20:46	74° 54,48' N	2° 52,70' W	3690,8	SD
PS68/142-3	06.08.05	20:50	74° 54,46' N	2° 52,77' W	3690,8	SD
PS68/142-2	06.08.05	20:58	74° 54,43' N	2° 52,92' W	3690,8	FRRF
PS68/142-2	06.08.05	21:01	74° 54,43' N	2° 52,97' W	3690,8	FRRF
PS68/142-1	06.08.05	21:32	74° 54,31' N	2° 53,59' W	3690,0	CTD/RO
PS68/142-1	06.08.05	22:18	74° 54,23' N	2° 53,35' W	3690,4	CTD/RO
PS68/143-1	06.08.05	22:48	74° 51,52' N	3° 0,09' W	3687,2	CTD/RO
PS68/143-2	06.08.05	22:56	74° 51,52' N	3° 0,02' W	3687,2	FRRF
PS68/143-3	06.08.05	23:06	74° 51,49' N	3° 0,03' W	3687,2	SD
PS68/143-2	06.08.05	23:12	74° 51,50' N	2° 59,97' W	3687,2	FRRF
PS68/143-3	06.08.05	23:14	74° 51,50' N	2° 59,95' W	3687,6	SD
PS68/143-2	06.08.05	23:16	74° 51,50' N	2° 59,93' W	3687,6	FRRF
PS68/143-1	06.08.05	23:52	74° 51,47' N	3° 0,10' W	3687,2	CTD/RO
PS68/143-1	07.08.05	00:34	74° 51,52' N	2° 59,51' W	3687,6	CTD/RO
PS68/144-1	07.08.05	01:04	74° 48,56' N	2° 53,11' W	3687,2	CTD/RO
PS68/144-2	07.08.05	01:14	74° 48,58' N	2° 53,21' W	3687,2	FRRF
PS68/144-3	07.08.05	01:16	74° 48,58' N	2° 53,29' W	3687,2	SD
PS68/144-3	07.08.05	01:20	74° 48,57' N	2° 53,41' W	3687,2	SD
PS68/144-2	07.08.05	01:35	74° 48,62' N	2° 53,48' W	3687,2	FRRF
PS68/144-2	07.08.05	01:37	74° 48,63' N	2° 53,47' W	3687,2	FRRF
PS68/144-1	07.08.05	01:42	74° 48,67' N	2° 53,40' W	3687,2	CTD/RO
PS68/144-1	07.08.05	02:15	74° 48,70' N	2° 52,81' W	3687,6	CTD/RO
PS68/144-4	07.08.05	02:36	74° 48,40' N	2° 52,00' W	3688,0	CTD/RO
PS68/144-4	07.08.05	03:31	74° 48,63' N	2° 52,97' W	3687,2	CTD/RO
PS68/144-4	07.08.05	04:28	74° 48,80' N	2° 53,01' W	3687,2	CTD/RO
PS68/145-1	07.08.05	05:02	74° 48,48' N	2° 38,66' W	3692,4	CTD/RO
PS68/145-1	07.08.05	05:58	74° 48,48' N	2° 38,97' W	3691,6	CTD/RO
PS68/145-2	07.08.05	06:03	74° 48,48' N	2° 39,06' W	3691,6	FRRF
PS68/145-2	07.08.05	06:14	74° 48,48' N	2° 39,18' W	3691,6	FRRF

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/145-2	07.08.05	06:16	74° 48,48' N	2° 39,20' W	3691,6	FRRF
PS68/145-3	07.08.05	06:22	74° 48,47' N	2° 39,27' W	3691,6	SD
PS68/145-3	07.08.05	06:26	74° 48,46' N	2° 39,34' W	3691,6	SD
PS68/145-1	07.08.05	06:57	74° 48,39' N	2° 39,75' W	3691,2	CTD/RO
PS68/146-1	07.08.05	07:35	74° 48,48' N	2° 24,42' W	3697,2	CTD/RO
PS68/146-2	07.08.05	07:42	74° 48,43' N	2° 24,46' W	3696,8	FRRF
PS68/146-2	07.08.05	07:55	74° 48,36' N	2° 24,03' W	3696,0	FRRF
PS68/146-2	07.08.05	07:57	74° 48,34' N	2° 23,97' W	3696,4	FRRF
PS68/146-3	07.08.05	08:01	74° 48,32' N	2° 23,96' W	3696,4	SD
PS68/146-3	07.08.05	08:04	74° 48,31' N	2° 24,01' W	3696,4	SD
PS68/146-1	07.08.05	08:28	74° 48,17' N	2° 24,76' W	3696,0	CTD/RO
PS68/146-1	07.08.05	09:24	74° 47,93' N	2° 24,70' W	3695,2	CTD/RO
PS68/147-1	07.08.05	09:59	74° 46,02' N	2° 35,37' W	3691,6	CTD/RO
PS68/147-2	07.08.05	10:35	74° 46,00' N	2° 35,86' W	3691,6	FRRF
PS68/147-2	07.08.05	10:48	74° 46,00' N	2° 36,03' W	3692,0	FRRF
PS68/147-2	07.08.05	10:50	74° 46,00' N	2° 36,05' W	3692,0	FRRF
PS68/147-1	07.08.05	10:56	74° 46,00' N	2° 36,14' W	3691,6	CTD/RO
PS68/147-1	07.08.05	11:51	74° 46,06' N	2° 36,86' W	3691,6	CTD/RO
PS68/148-1	07.08.05	12:27	74° 45,40' N	2° 32,56' W	3690,4	CTD/RO
PS68/148-1	07.08.05	13:25	74° 45,26' N	2° 33,02' W	3689,6	CTD/RO
PS68/148-2	07.08.05	14:00	74° 45,28' N	2° 33,14' W	3690,0	SD
PS68/148-2	07.08.05	14:04	74° 45,31' N	2° 33,13' W	3690,0	SD
PS68/148-1	07.08.05	14:22	74° 45,31' N	2° 33,27' W	3690,4	CTD/RO
PS68/149-1	07.08.05	15:03	74° 42,36' N	2° 25,01' W	3690,0	CTD/RO
PS68/149-2	07.08.05	15:11	74° 42,36' N	2° 25,23' W	3690,0	SD
PS68/149-2	07.08.05	15:17	74° 42,37' N	2° 25,25' W	3690,0	SD
PS68/149-1	07.08.05	15:58	74° 42,34' N	2° 25,63' W	3690,0	CTD/RO
PS68/149-1	07.08.05	16:53	74° 42,25' N	2° 25,89' W	3690,0	CTD/RO
PS68/150-1	07.08.05	18:19	74° 45,51' N	2° 45,72' W	3686,4	CTD/RO
PS68/150-2	07.08.05	18:49	74° 45,56' N	2° 46,30' W	3686,0	SD
PS68/150-2	07.08.05	18:53	74° 45,57' N	2° 46,30' W	3686,0	SD
PS68/150-1	07.08.05	19:18	74° 45,58' N	2° 46,48' W	3686,0	CTD/RO
PS68/150-1	07.08.05	20:11	74° 45,63' N	2° 47,28' W	3686,0	CTD/RO
PS68/151-1	07.08.05	20:44	74° 42,45' N	2° 53,12' W	3679,2	CTD/RO
PS68/151-1	07.08.05	21:43	74° 42,60' N	2° 53,38' W	3680,0	CTD/RO
PS68/151-1	07.08.05	22:40	74° 42,73' N	2° 53,45' W	3680,4	CTD/RO
PS68/152-1	07.08.05	23:14	74° 45,49' N	3° 0,15' W	3681,6	CTD/RO
PS68/152-2	07.08.05	23:36	74° 45,60' N	3° 0,26' W	3682,0	FRRF
PS68/152-3	07.08.05	23:36	74° 45,60' N	3° 0,26' W	3682,0	SD
PS68/152-3	07.08.05	23:41	74° 45,63' N	3° 0,24' W	3682,0	SD
PS68/152-2	07.08.05	23:50	74° 45,69' N	3° 0,24' W	3682,0	FRRF
PS68/152-2	07.08.05	23:52	74° 45,70' N	3° 0,24' W	3682,4	FRRF
PS68/152-1	08.08.05	00:13	74° 45,76' N	3° 0,35' W	3682,4	CTD/RO
PS68/152-1	08.08.05	01:08	74° 45,91' N	3° 0,37' W	3683,6	CTD/RO

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/153-1	08.08.05	01:40	74° 48,49' N	3° 7,09' W	3683,6	CTD/RO
PS68/153-2	08.08.05	01:49	74° 48,54' N	3° 7,08' W	3683,2	FRRF
PS68/153-3	08.08.05	01:51	74° 48,55' N	3° 7,08' W	3683,6	SD
PS68/153-3	08.08.05	01:57	74° 48,61' N	3° 7,05' W	3683,6	SD
PS68/153-2	08.08.05	02:04	74° 48,69' N	3° 6,98' W	3683,6	FRRF
PS68/153-2	08.08.05	02:09	74° 48,72' N	3° 6,94' W	3683,6	FRRF
PS68/153-1	08.08.05	02:38	74° 48,84' N	3° 6,80' W	3684,0	CTD/RO
PS68/153-1	08.08.05	03:39	74° 49,09' N	3° 5,30' W	3684,4	CTD/RO
PS68/154-1	08.08.05	04:06	74° 48,42' N	3° 2,25' W	3486,4	CTD/RO
PS68/154-2	08.08.05	04:13	74° 48,46' N	3° 2,17' W	3493,2	SD
PS68/154-3	08.08.05	04:13	74° 48,46' N	3° 2,17' W	3493,2	FRRF
PS68/154-2	08.08.05	04:20	74° 48,45' N	3° 2,13' W	3491,2	SD
PS68/154-3	08.08.05	04:23	74° 48,49' N	3° 2,11' W	3490,4	FRRF
PS68/154-3	08.08.05	04:26	74° 48,51' N	3° 2,07' W	3502,4	FRRF
PS68/154-1	08.08.05	05:00	74° 48,60' N	3° 1,69' W	3522,8	CTD/RO
PS68/154-1	08.08.05	05:52	74° 48,63' N	3° 2,21' W	3576,0	CTD/RO
PS68/155-1	08.08.05	06:16	74° 48,66' N	2° 57,43' W	3296,8	CTD/RO
PS68/155-2	08.08.05	06:28	74° 48,70' N	2° 57,15' W	3252,4	FRRF
PS68/155-3	08.08.05	06:30	74° 48,69' N	2° 57,14' W	3271,6	SD
PS68/155-3	08.08.05	06:34	74° 48,66' N	2° 57,09' W	3282,8	SD
PS68/155-2	08.08.05	06:44	74° 48,64' N	2° 57,04' W	3336,0	FRRF
PS68/155-1	08.08.05	07:12	74° 48,57' N	2° 56,96' W	3483,2	CTD/RO
PS68/155-1	08.08.05	08:01	74° 48,54' N	2° 56,69' W	3469,2	CTD/RO
PS68/156-1	08.08.05	08:32	74° 48,51' N	2° 47,97' W	3688,4	CTD/RO
PS68/156-2	08.08.05	08:53	74° 48,46' N	2° 47,96' W	3688,0	FRRF
PS68/156-3	08.08.05	08:54	74° 48,46' N	2° 47,97' W	3688,4	SD
PS68/156-3	08.08.05	08:59	74° 48,46' N	2° 47,98' W	3688,0	SD
PS68/156-2	08.08.05	09:06	74° 48,47' N	2° 47,99' W	3688,0	FRRF
PS68/156-2	08.08.05	09:09	74° 48,46' N	2° 48,00' W	3688,0	FRRF
PS68/156-1	08.08.05	09:29	74° 48,42' N	2° 48,24' W	3688,4	CTD/RO
PS68/156-1	08.08.05	10:26	74° 48,35' N	2° 48,06' W	3688,4	CTD/RO
PS68/157-1	08.08.05	10:59	74° 48,50' N	2° 43,88' W	3690,8	CTD/RO
PS68/157-2	08.08.05	11:02	74° 48,50' N	2° 43,78' W	3690,4	SD
PS68/157-2	08.08.05	11:08	74° 48,50' N	2° 43,70' W	3690,4	SD
PS68/157-3	08.08.05	11:17	74° 48,52' N	2° 43,43' W	3690,8	FRRF
PS68/157-3	08.08.05	11:33	74° 48,52' N	2° 43,65' W	3690,4	FRRF
PS68/157-3	08.08.05	11:35	74° 48,52' N	2° 43,63' W	3690,4	FRRF
PS68/157-1	08.08.05	11:59	74° 48,53' N	2° 43,37' W	3690,8	CTD/RO
PS68/157-1	08.08.05	13:00	74° 48,58' N	2° 43,91' W	3691,2	CTD/RO
PS68/158-1	08.08.05	14:09	74° 48,53' N	2° 34,01' W	3694,8	CTD/RO
PS68/158-2	08.08.05	14:13	74° 48,54' N	2° 34,02' W	3694,8	SD
PS68/158-2	08.08.05	14:18	74° 48,54' N	2° 34,02' W	3694,4	SD
PS68/158-3	08.08.05	14:21	74° 48,54' N	2° 33,99' W	3694,8	FRRF
PS68/158-3	08.08.05	14:37	74° 48,58' N	2° 33,83' W	3694,4	FRRF

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/158-3	08.08.05	14:38	74° 48,58' N	2° 33,82' W	3694,8	FRRF
PS68/158-1	08.08.05	15:08	74° 48,55' N	2° 33,44' W	3694,8	CTD/RO
PS68/158-1	08.08.05	16:15	74° 48,48' N	2° 33,97' W	3694,4	CTD/RO
PS68/159-1	08.08.05	16:50	74° 48,48' N	2° 29,59' W	3696,4	CTD/RO
PS68/159-2	08.08.05	16:58	74° 48,46' N	2° 29,55' W	3696,4	SD
PS68/159-2	08.08.05	17:02	74° 48,44' N	2° 29,55' W	3696,4	SD
PS68/159-3	08.08.05	17:16	74° 48,42' N	2° 29,39' W	3696,4	FRRF
PS68/159-3	08.08.05	17:31	74° 48,39' N	2° 29,06' W	3696,4	FRRF
PS68/159-3	08.08.05	17:34	74° 48,36' N	2° 29,06' W	3696,4	FRRF
PS68/159-1	08.08.05	17:48	74° 48,17' N	2° 29,14' W	3695,2	CTD/RO
PS68/159-1	08.08.05	18:47	74° 48,06' N	2° 29,25' W	3695,2	CTD/RO
PS68/160-1	08.08.05	19:16	74° 48,45' N	2° 20,15' W	3699,2	CTD/RO
PS68/160-1	08.08.05	20:16	74° 48,37' N	2° 20,38' W	3698,8	CTD/RO
PS68/160-1	08.08.05	21:38	74° 48,18' N	2° 20,74' W	3698,4	CTD/RO
PS68/161-1	08.08.05	22:00	74° 48,45' N	2° 15,61' W	3700,8	CTD/RO
PS68/161-1	08.08.05	23:02	74° 48,35' N	2° 15,73' W	3700,8	CTD/RO
PS68/161-1	09.08.05	00:11	74° 48,29' N	2° 16,62' W	3701,2	CTD/RO
PS68/162-1	09.08.05	06:19	75° 0,12' N	1° 38,25' E	3117,1	CTD/RO
PS68/162-2	09.08.05	06:30	75° 0,11' N	1° 38,07' E	3125,9	SD
PS68/162-2	09.08.05	06:35	75° 0,09' N	1° 37,92' E	3131,2	SD
PS68/162-1	09.08.05	07:13	75° 0,13' N	1° 38,06' E	3128,0	CTD/RO
PS68/162-1	09.08.05	08:27	75° 0,25' N	1° 38,32' E	3113,5	CTD/RO
PS68/163-1	09.08.05	12:30	74° 60,00' N	2° 17,11' E	2953,2	CTD/RO
PS68/163-2	09.08.05	12:39	75° 0,02' N	2° 17,08' E	2951,6	FRRF
PS68/163-2	09.08.05	12:56	74° 59,99' N	2° 17,25' E	2953,3	FRRF
PS68/163-2	09.08.05	12:59	75° 0,01' N	2° 17,29' E	2950,0	FRRF
PS68/163-1	09.08.05	13:16	75° 0,01' N	2° 17,33' E	2948,4	CTD/RO
PS68/163-1	09.08.05	14:08	75° 0,05' N	2° 17,41' E	2942,1	CTD/RO
PS68/164-1	09.08.05	15:24	75° 0,04' N	2° 56,09' E	2513,5	CTD/RO
PS68/164-2	09.08.05	15:34	75° 0,05' N	2° 56,05' E	2512,8	FRRF
PS68/164-2	09.08.05	15:51	75° 0,03' N	2° 55,96' E	2514,4	FRRF
PS68/164-2	09.08.05	15:52	75° 0,03' N	2° 55,95' E	2516,4	FRRF
PS68/164-1	09.08.05	16:08	75° 0,05' N	2° 56,04' E	2512,4	CTD/RO
PS68/164-1	09.08.05	16:53	75° 0,06' N	2° 56,59' E	2518,0	CTD/RO
PS68/165-1	09.08.05	18:04	74° 59,94' N	3° 34,65' E	3475,2	CTD/RO
PS68/165-2	09.08.05	18:12	74° 59,92' N	3° 34,65' E	3474,8	SD
PS68/165-3	09.08.05	18:15	74° 59,92' N	3° 34,62' E	3474,8	FRRF
PS68/165-2	09.08.05	18:20	74° 59,93' N	3° 34,53' E	3474,8	SD
PS68/165-3	09.08.05	18:29	74° 59,94' N	3° 34,42' E	3472,4	FRRF
PS68/165-3	09.08.05	18:32	74° 59,95' N	3° 34,39' E	3472,4	FRRF
PS68/165-1	09.08.05	18:59	74° 59,93' N	3° 34,42' E	3472,4	CTD/RO
PS68/165-1	09.08.05	19:53	74° 59,80' N	3° 34,39' E	3472,4	CTD/RO
PS68/166-1	09.08.05	21:06	75° 0,21' N	4° 13,80' E	3073,6	CTD/RO
PS68/166-2	09.08.05	21:16	75° 0,27' N	4° 13,56' E	3068,0	FRRF

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/166-3	09.08.05	21:18	75° 0,27' N	4° 13,47' E	3068,8	SD
PS68/166-3	09.08.05	21:24	75° 0,27' N	4° 13,34' E	3067,6	SD
PS68/166-2	09.08.05	21:30	75° 0,27' N	4° 13,29' E	3067,2	FRRF
PS68/166-2	09.08.05	21:34	75° 0,26' N	4° 13,28' E	3067,6	FRRF
PS68/166-1	09.08.05	21:54	75° 0,20' N	4° 13,44' E	3075,6	CTD/RO
PS68/166-1	09.08.05	22:44	75° 0,21' N	4° 13,28' E	3075,2	CTD/RO
PS68/167-1	09.08.05	23:59	75° 0,04' N	4° 51,71' E	3244,8	CTD/RO
PS68/167-2	10.08.05	00:05	75° 0,06' N	4° 51,76' E	3243,2	FRRF
PS68/167-2	10.08.05	00:22	75° 0,02' N	4° 51,87' E	3240,4	FRRF
PS68/167-2	10.08.05	00:26	75° 0,01' N	4° 51,87' E	3240,8	FRRF
PS68/167-1	10.08.05	00:51	75° 0,03' N	4° 52,01' E	3238,0	CTD/RO
PS68/167-1	10.08.05	01:43	74° 59,93' N	4° 52,17' E	3232,0	CTD/RO
PS68/168-1	10.08.05	02:55	75° 0,06' N	5° 30,13' E	3123,2	CTD/RO
PS68/168-2	10.08.05	03:02	75° 0,06' N	5° 30,17' E	3124,8	FRRF
PS68/168-2	10.08.05	03:14	75° 0,08' N	5° 30,18' E	3125,6	FRRF
PS68/168-2	10.08.05	03:18	75° 0,08' N	5° 30,26' E	3129,2	FRRF
PS68/168-1	10.08.05	03:42	75° 0,08' N	5° 30,49' E	3137,6	CTD/RO
PS68/168-1	10.08.05	04:33	75° 0,00' N	5° 30,85' E	3152,0	CTD/RO
PS68/169-1	10.08.05	05:38	75° 0,02' N	6° 7,92' E	2842,8	CTD/RO
PS68/169-2	10.08.05	06:01	75° 0,08' N	6° 8,02' E	2833,2	FRRF
PS68/169-3	10.08.05	06:01	75° 0,08' N	6° 8,02' E	2833,2	SD
PS68/169-3	10.08.05	06:09	75° 0,08' N	6° 7,97' E	2835,6	SD
PS68/169-2	10.08.05	06:14	75° 0,10' N	6° 7,98' E	2833,2	FRRF
PS68/169-2	10.08.05	06:16	75° 0,11' N	6° 7,99' E	2832,0	FRRF
PS68/169-1	10.08.05	06:23	75° 0,14' N	6° 8,00' E	2830,0	CTD/RO
PS68/169-1	10.08.05	07:07	75° 0,03' N	6° 7,39' E	2861,6	CTD/RO
PS68/170-1	10.08.05	08:13	75° 0,09' N	6° 46,75' E	2273,6	CTD/RO
PS68/170-2	10.08.05	08:27	75° 0,12' N	6° 46,86' E	2261,2	FRRF
PS68/170-3	10.08.05	08:29	75° 0,12' N	6° 46,86' E	2261,2	SD
PS68/170-3	10.08.05	08:34	75° 0,13' N	6° 46,83' E	2263,6	SD
PS68/170-2	10.08.05	08:40	75° 0,14' N	6° 46,79' E	2262,0	FRRF
PS68/170-2	10.08.05	08:42	75° 0,14' N	6° 46,78' E	2262,0	FRRF
PS68/170-1	10.08.05	08:50	75° 0,15' N	6° 46,72' E	2264,0	CTD/RO
PS68/170-1	10.08.05	09:26	75° 0,22' N	6° 46,64' E	2255,6	CTD/RO
PS68/171-1	10.08.05	10:31	74° 59,99' N	7° 25,54' E	2478,8	CTD/RO
PS68/171-2	10.08.05	10:43	75° 0,09' N	7° 25,53' E	2477,2	FRRF
PS68/171-3	10.08.05	10:49	75° 0,08' N	7° 25,47' E	2477,6	SD
PS68/171-3	10.08.05	10:51	75° 0,08' N	7° 25,44' E	2477,2	SD
PS68/171-2	10.08.05	11:00	75° 0,10' N	7° 25,33' E	2477,6	FRRF
PS68/171-2	10.08.05	11:02	75° 0,10' N	7° 25,31' E	2477,6	FRRF
PS68/171-1	10.08.05	11:13	75° 0,11' N	7° 25,14' E	2478,4	CTD/RO
PS68/171-1	10.08.05	11:59	75° 0,24' N	7° 24,49' E	2480,4	CTD/RO
PS68/172-1	10.08.05	13:08	74° 60,00' N	8° 4,92' E	3533,6	CTD/RO
PS68/172-2	10.08.05	13:17	74° 59,94' N	8° 5,09' E	3533,2	FRRF

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/172-2	10.08.05	13:37	74° 59,82' N	8° 5,40' E	3530,4	FRRF
PS68/172-2	10.08.05	13:40	74° 59,79' N	8° 5,47' E	3530,0	FRRF
PS68/172-1	10.08.05	14:05	74° 59,81' N	8° 5,51' E	3530,4	CTD/RO
PS68/172-1	10.08.05	15:04	74° 59,71' N	8° 5,54' E	3528,8	CTD/RO
PS68/173-1	10.08.05	16:12	75° 0,13' N	8° 44,02' E	2670,8	CTD/RO
PS68/173-3	10.08.05	16:20	75° 0,19' N	8° 43,92' E	2670,4	FRRF
PS68/173-2	10.08.05	16:21	75° 0,20' N	8° 43,91' E	2670,0	SD
PS68/173-2	10.08.05	16:26	75° 0,27' N	8° 43,91' E	2670,0	SD
PS68/173-3	10.08.05	16:38	75° 0,33' N	8° 44,09' E	2670,4	FRRF
PS68/173-3	10.08.05	16:41	75° 0,32' N	8° 44,04' E	2670,0	FRRF
PS68/173-1	10.08.05	17:03	75° 0,31' N	8° 43,80' E	2669,6	CTD/RO
PS68/173-1	10.08.05	17:55	75° 0,55' N	8° 43,21' E	2666,8	CTD/RO
PS68/173-4	10.08.05	18:13	75° 0,31' N	8° 43,27' E	2668,0	CTD/RO
PS68/173-4	10.08.05	18:46	75° 0,64' N	8° 43,39' E	2666,4	CTD/RO
PS68/173-4	10.08.05	19:15	75° 0,89' N	8° 42,78' E	2662,0	CTD/RO
PS68/174-1	10.08.05	20:26	75° 0,06' N	9° 21,78' E	2596,0	CTD/RO
PS68/174-2	10.08.05	20:36	75° 0,17' N	9° 21,71' E	2596,8	FRRF
PS68/174-2	10.08.05	20:51	75° 0,15' N	9° 21,98' E	2596,0	FRRF
PS68/174-2	10.08.05	20:54	75° 0,16' N	9° 21,98' E	2596,0	FRRF
PS68/174-1	10.08.05	21:09	75° 0,27' N	9° 21,77' E	2597,2	CTD/RO
PS68/174-1	10.08.05	21:52	75° 0,37' N	9° 21,82' E	2598,0	CTD/RO
PS68/175-1	10.08.05	23:03	75° 0,03' N	9° 59,71' E	2579,2	CTD/RO
PS68/175-2	10.08.05	23:14	75° 0,07' N	9° 59,86' E	2578,8	FRRF
PS68/175-3	10.08.05	23:14	75° 0,07' N	9° 59,86' E	2578,8	SD
PS68/175-3	10.08.05	23:21	75° 0,09' N	9° 59,97' E	2578,4	SD
PS68/175-2	10.08.05	23:27	75° 0,04' N	9° 59,97' E	2578,8	FRRF
PS68/175-2	10.08.05	23:29	75° 0,02' N	9° 59,96' E	2578,8	FRRF
PS68/175-1	10.08.05	23:45	75° 0,07' N	9° 59,82' E	2578,8	CTD/RO
PS68/175-1	11.08.05	00:33	74° 60,00' N	9° 59,28' E	2580,8	CTD/RO
PS68/176-1	11.08.05	01:44	74° 59,93' N	10° 38,96' E	2535,6	CTD/RO
PS68/176-2	11.08.05	01:53	74° 59,87' N	10° 39,44' E	2535,2	FRRF
PS68/176-2	11.08.05	02:06	74° 59,81' N	10° 39,82' E	2534,4	FRRF
PS68/176-2	11.08.05	02:08	74° 59,80' N	10° 39,89' E	2534,0	FRRF
PS68/176-1	11.08.05	02:27	74° 59,74' N	10° 40,37' E	2533,6	CTD/RO
PS68/176-1	11.08.05	03:14	74° 59,43' N	10° 41,43' E	2532,4	CTD/RO
PS68/177-1	11.08.05	04:18	75° 0,11' N	11° 18,11' E	2455,6	CTD/RO
PS68/177-2	11.08.05	04:28	75° 0,14' N	11° 18,20' E	2455,2	FRRF
PS68/177-3	11.08.05	04:30	75° 0,16' N	11° 18,23' E	2454,8	SD
PS68/177-3	11.08.05	04:34	75° 0,18' N	11° 18,28' E	2454,4	SD
PS68/177-2	11.08.05	04:45	75° 0,17' N	11° 18,41' E	2454,4	FRRF
PS68/177-2	11.08.05	04:47	75° 0,18' N	11° 18,43' E	2454,0	FRRF
PS68/177-1	11.08.05	04:59	75° 0,22' N	11° 18,62' E	2452,8	CTD/RO
PS68/177-1	11.08.05	05:41	75° 0,40' N	11° 18,82' E	2451,2	CTD/RO
PS68/178-1	11.08.05	06:50	75° 0,05' N	11° 55,59' E	2335,6	CTD/RO

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/178-2	11.08.05	07:01	75° 0,09' N	11° 55,77' E	2334,8	FRRF
PS68/178-3	11.08.05	07:02	75° 0,09' N	11° 55,79' E	2334,8	SD
PS68/178-3	11.08.05	07:08	75° 0,11' N	11° 55,86' E	2334,8	SD
PS68/178-2	11.08.05	07:14	75° 0,11' N	11° 55,89' E	2334,4	FRRF
PS68/178-2	11.08.05	07:15	75° 0,11' N	11° 55,89' E	2334,4	FRRF
PS68/178-1	11.08.05	07:35	75° 0,12' N	11° 55,98' E	2334,0	CTD/RO
PS68/178-1	11.08.05	08:13	75° 0,19' N	11° 56,37' E	2333,2	CTD/RO
PS68/179-1	11.08.05	09:20	75° 0,03' N	12° 34,66' E	2181,2	CTD/RO
PS68/179-2	11.08.05	09:29	75° 0,08' N	12° 34,66' E	2180,4	FRRF
PS68/179-3	11.08.05	09:31	75° 0,09' N	12° 34,63' E	2180,4	SD
PS68/179-3	11.08.05	09:35	75° 0,12' N	12° 34,57' E	2180,8	SD
PS68/179-2	11.08.05	09:45	75° 0,19' N	12° 34,55' E	2180,0	FRRF
PS68/179-2	11.08.05	09:48	75° 0,21' N	12° 34,60' E	2179,6	FRRF
PS68/179-1	11.08.05	10:03	75° 0,30' N	12° 34,80' E	2178,8	CTD/RO
PS68/179-1	11.08.05	10:39	75° 0,53' N	12° 34,27' E	2175,6	CTD/RO
PS68/180-1	11.08.05	11:50	74° 59,99' N	13° 12,64' E	2015,2	CTD/RO
PS68/180-2	11.08.05	12:20	74° 60,00' N	13° 12,86' E	2014,0	FRRF
PS68/180-3	11.08.05	12:24	74° 59,99' N	13° 12,93' E	2014,0	SD
PS68/180-3	11.08.05	12:27	74° 59,99' N	13° 12,96' E	2014,0	SD
PS68/180-1	11.08.05	12:30	74° 59,98' N	13° 12,96' E	2014,0	CTD/RO
PS68/180-2	11.08.05	12:31	74° 59,98' N	13° 12,95' E	2014,0	FRRF
PS68/180-2	11.08.05	12:33	74° 59,98' N	13° 12,93' E	2014,0	FRRF
PS68/180-1	11.08.05	13:03	75° 0,01' N	13° 13,24' E	2011,2	CTD/RO
PS68/181-1	11.08.05	14:13	75° 0,06' N	13° 52,02' E	1799,6	CTD/RO
PS68/181-2	11.08.05	14:19	75° 0,07' N	13° 52,04' E	1799,2	FRRF
PS68/181-3	11.08.05	14:21	75° 0,07' N	13° 52,03' E	1799,2	SD
PS68/181-3	11.08.05	14:27	75° 0,07' N	13° 52,03' E	1799,2	SD
PS68/181-2	11.08.05	14:31	75° 0,06' N	13° 52,12' E	1799,2	FRRF
PS68/181-2	11.08.05	14:35	75° 0,06' N	13° 52,24' E	1799,2	FRRF
PS68/181-1	11.08.05	14:47	75° 0,08' N	13° 52,28' E	1799,2	CTD/RO
PS68/181-1	11.08.05	15:20	75° 0,13' N	13° 52,82' E	1795,2	CTD/RO
PS68/182-1	11.08.05	16:26	75° 0,12' N	14° 30,93' E	1426,4	CTD/RO
PS68/182-2	11.08.05	16:36	75° 0,16' N	14° 30,87' E	1425,2	FRRF
PS68/182-3	11.08.05	16:37	75° 0,17' N	14° 30,89' E	1425,2	SD
PS68/182-3	11.08.05	16:43	75° 0,19' N	14° 30,98' E	1422,4	SD
PS68/182-2	11.08.05	16:49	75° 0,22' N	14° 31,09' E	1420,4	FRRF
PS68/182-2	11.08.05	16:51	75° 0,23' N	14° 31,14' E	1418,8	FRRF
PS68/182-1	11.08.05	16:53	75° 0,24' N	14° 31,21' E	1417,6	CTD/RO
PS68/182-1	11.08.05	17:25	75° 0,38' N	14° 31,22' E	1414,0	CTD/RO
PS68/183-1	11.08.05	18:37	74° 59,99' N	15° 9,90' E	1026,8	CTD/RO
PS68/183-2	11.08.05	18:45	75° 0,04' N	15° 10,02' E	1023,2	FRRF
PS68/183-3	11.08.05	18:46	75° 0,05' N	15° 10,03' E	1023,2	SD
PS68/183-3	11.08.05	18:50	75° 0,07' N	15° 10,04' E	1022,0	SD
PS68/183-2	11.08.05	18:56	75° 0,10' N	15° 10,06' E	1020,4	FRRF

Station	Date	Time (UTC)	Position Lat	Position Lon	Depth [m]	Gear Abbreviation
PS68/183-1	11.08.05	18:58	75° 0,11' N	15° 10,07' E	1020,0	CTD/RO
PS68/183-2	11.08.05	18:58	75° 0,11' N	15° 10,07' E	1020,0	FRRF
PS68/183-1	11.08.05	19:18	75° 0,18' N	15° 10,31' E	1013,6	CTD/RO
PS68/184-1	11.08.05	20:36	75° 0,05' N	15° 49,58' E	271,6	CTD/RO
PS68/184-2	11.08.05	20:42	75° 0,06' N	15° 49,72' E	268,4	FRRF
PS68/184-3	11.08.05	20:43	75° 0,06' N	15° 49,74' E	266,8	SD
PS68/184-3	11.08.05	20:45	75° 0,06' N	15° 49,78' E	265,6	SD
PS68/184-1	11.08.05	20:45	75° 0,06' N	15° 49,78' E	265,6	CTD/RO
PS68/184-2	11.08.05	20:55	75° 0,07' N	15° 49,87' E	264,0	FRRF
PS68/184-2	11.08.05	20:58	75° 0,06' N	15° 49,92' E	264,0	FRRF
PS68/184-1	11.08.05	21:00	75° 0,06' N	15° 49,96' E	264,8	CTD/RO