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Short Cruise Report Maria S. Merian MSM62

Kiel (Germany) – Kiel (Germany)

08.03.2017 – 27.03.2017

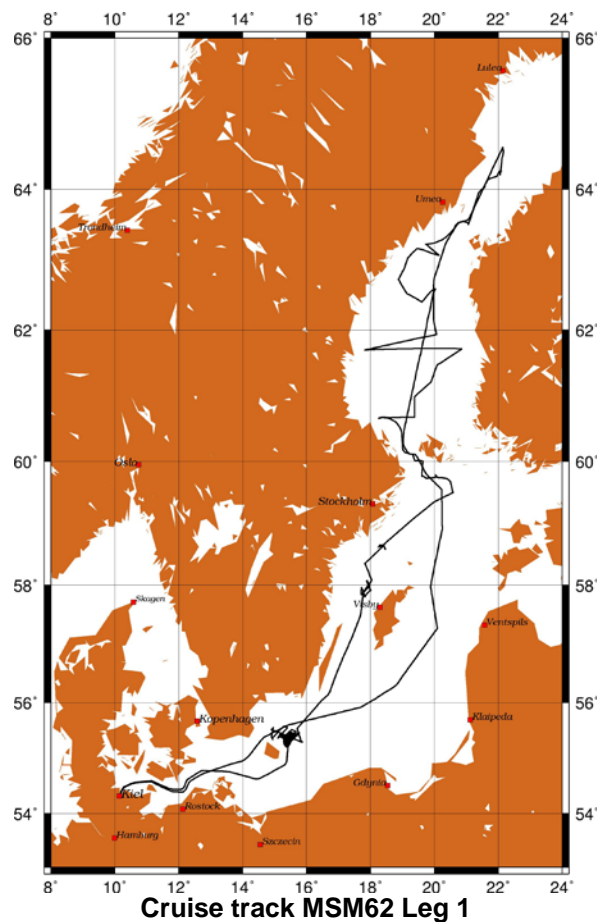
Chief Scientist: Prof. Dr. Ralph Schneider

Captain: Ralf Schmidt

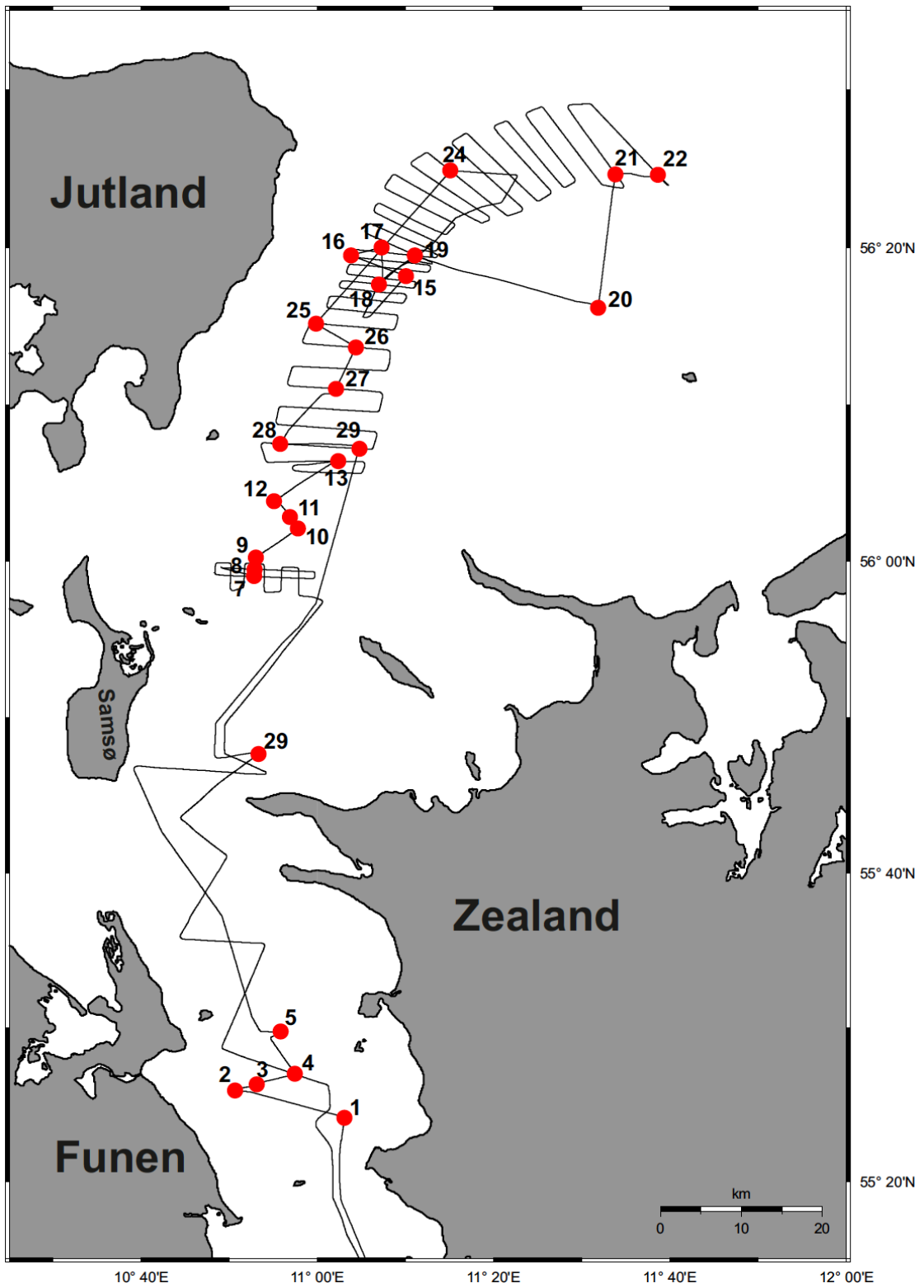
Cruise MSM 62 was subdivided in 2 Legs:

Leg 1: Kiel 08.03.2017 – Kiel 22.03.2017

Leg 2: Kiel 23.03.2017 – Kiel 27.03.2017



Cruise track MSM62 Leg 2



Objectives

Cruise MSM62 into the western, central and northern Baltic Sea was executed as a follow-up scientific program that could not be fully accomplished during cruise MSM51 in spring 2016 due to technical reasons. It aimed to perform hydroacoustic surveys, sampling of Holocene sediments and to investigate the water column wintertime mixing close to sea-ice limits and within sea-ice cover in the Botnian Sea. These surveys should improve our understanding of variations in the ventilation of the deeper Baltic, considering not only external climate forcing but also the effects of postglacial sea-level rise and isostatic uplift. In particular, we aim to investigate in detail the impact of the Littorina transgression on the inflow of saline waters into the western Baltic and assess the potential for future diminution of ventilation in the central and northern deeper basins due to isostatic uplift. As the influence of saline water inflow into these basins is likely to decrease in the future, the role of wintertime deep mixing for oxygenation of the northern deeper basins shall be studied in more detail. Moreover, the western and northeastern regions actually experience increasing erosion of early to mid-Holocene sediments that are transported into the deeper central basins. The response of deeper ventilation and overall ecosystem conditions to such an erosional activity, e.g. organic matter re-suspension and transport of contaminants cannot be predicted with available data and models. This new sampling and surveying campaign in the northeastern basins during maximum sea ice cover and the deployment of the vibrocorer system in silty-sandy sediment drifts and transgressive deposits along the Great Belt as well as with gravity coring close to the deeper basins in the central and northern basins was therefore important for a quantitative assessment of Holocene water and sediment budgets as well as to account for the impact of budget changes on the Baltic Sea ecosystem during the Littorina Stage.

MSM62 was separated into 2 Legs (see separate cruise tracks above) to allow for an exchange of scientific personnel, guest scientists from Baltic countries and Canada, as well as switching the coring gears according to the different needs for the northeastern and western working areas. For this purpose after the first 14 days an extra port call at Kiel was executed on March, 22nd. Our sampling program during the cruise included water and sediment sampling after detailed hydroacoustic surveying with hull-mounted multibeam bathymetry (EM 1002) and sediment echosounder (PARASOUND) systems. Water column structure and properties (i.e., temperature, salinity, oxygen) were studied by detailed CTD profiling in order to assess the role of the winter time mixing and sea ice cover on formation of deep waters. Based on the obtained CTD profiles, individual water samples were taken along depth profiles and frozen or stored cold for a variety of biogeochemical analyses. Sediment sampling collected surface and sub-surface material using a multi-corer and Frahm-corer. Long sediment cores were retrieved using a gravity corer (GC up to 18 m) and a vibro corer (VC 6 m). The cores were stored and archived in the Kiel and Warnemünde core repositories.

Narrative

On Wednesday, March 8, the vessel left the port of Kiel heading to the Gotland Basin to start the water and seafloor sampling program. Meanwhile all sampling gears and laboratories aboard the vessel were set up for an immediate start of research activities after 30 hours of transit. On Friday, March 10, the first working area in the eastern Gotland Basin was reached. Here the scientific program began with 3 coring stations in water depths between 200 and 250 m chosen from hydroacoustic surveys lines taken the year before on cruise MSM51. Coring and water sampling in the Gotland Basin was continued on Saturday, March 11. All sampling stations provided recent surface sediments and complete alternating sediment sequences of oxygen depleted and well ventilated periods since the Littorina Transgression. CTD profiles and water samples were also taken,

providing clear evidence for very low oxygenation already below the halocline. The work in the Gotland Basin was followed by a transit towards the Botnian Wiek, that was nearly completely covered by sea ice at about 64°36'N our northernmost sampling location reached Sunday morning, March 12. Here sea-ice samples, about 40 cm in thickness, were taken by hand-drilling and CTD profiles measured underneath the ice through the drill holes. After sea-ice and CTD sampling at 2 further stations in the Botnian Wiek, the week from Monday, March 13 to Saturday, March 18, was dedicated to complete our geological and water sampling program southward again, from the Botnian Sea back to the western Gotland Basin. This sampling array was comprised of 28 CTD stations in the Botnian Sea well into the Aland Deep, 6 more on the way to the Landsort Deep, and one more in the western Gotland Basin. The goal was to assess the status of wintertime mixing of cold, well-ventilated water masses to deeper levels. The water sampling was accompanied by several geological coring stations in the northern Botnian Sea and all deeper basins, Aland, Landsort and western Gotland, where up to 12 m long gravity cores containing complete Holocene sediment sequences could be retrieved in water depths between 100 and 270 m, next to successful deployments of the Multicorer and Frahm corer to grab undisturbed near-surface sediments. While in the Botnian Sea and Aland Deep "Contourite" type of Holocene sediment deposits were the major target, the coring in the Landsort Deep and western Gotland Basin retrieved well-laminated sediment packages characteristic of the anoxic conditions that prevailed in deeper waters during the warm climate periods during the Late Holocene for decades to centuries. The successful coring was again guided by hydroacoustic surveys that enabled the identification of the best coring locations in terms of sediment thickness and depositional continuity. The last hydroacoustic survey and sampling area of MSM62, Leg 1, the Bornholm Basin, was reached Sunday morning, March 19. The Bornholm Basin was extensively surveyed with multibeam swath bathymetry and PARASOUND sediment echosounder profiling, as well as sampled with CTD, water bottles, and sediment coring during Monday and Tuesday, March 20 and 21, respectively. This sampling program was again very successfully accomplished in order to fill sampling gaps still existing from previous cruises. Wednesday, March 22, Kiel port was reached and part of the scientific crew disembarked immediately. New scientific equipment from Kiel University was uploaded. On Tuesday morning, March 23, Leg 2 of MSM62 begun with heading towards the Great Belt, mainly dedicated to the deployment of the vibrocoring to sample early to mid Holocene transgressive sediment layers deposited during the Littorina Stage of the Baltic Sea. Vibrocoring started immediately after passing the Belt Bridge (see map MSM62, Leg 2) and continued throughout the next three days until Sunday noon, March 26. All planned 27 stations with vibrocoring deployments were accomplished very successfully with core lengths of more than 5 m on average, accompanied by extra surface sediment sampling with the Multicorer at selected stations. In addition, three short multibeam swath bathymetry and PARASOUND echosounder surveys were executed, in areas where existing hydroacoustic survey information was insufficient in order to finally fix the best coring locations. The sediment cores were stored away safely and the vessel returned to the port of Kiel, where the cruise MSM62 ended Monday morning, March 27 and the scientific crew disembarked the same day.

Acknowledgements

On behalf of all scientific crew members I would like to thank all the authorities and the Ship Coordination Office (Leitstelle) at the Institute of Marine Science, Hamburg University, involved in the planning and execution of the cruise, as well as the crew of RV Maria S. Merian and BRIESE Research for their strong engagement and support, which has made cruise MSM62 a very successful scientific venture.

Participant List, MSM62-1

1. Schneider, Ralph	<i>Chief Scientist</i>	CAU
2. Desrochers, Claude	Micropaleontology, foraminifers	UQAM
3. Dobosz, Slawomir	Micropaleontology, diatoms	US Poland
4. Frahm, Andreas	Sediment sampling & coring	IOW
5. Kniebusch, Madline	CTD, oceanography	IOW
6. Leipe, Thomas	Geochemistry	IOW
7. Moros, Matthias	Paleoceanography	IOW
8. Mücke, Isabell	Hydroacoustics	CAU
9. Neumann, Thomas	CTD, oceanography, modeling	IOW
10. Neumann, Daniel	Water chemistry	IOW
11. Paulsen, Maria	Paleoceanography	CAU
12. Perner, Kerstin	Micropaleontology, foraminifers	IOW
13. Roßkopf, Alexandra	Sedimentology	CAU
14. Scherff, Ines	Geochemistry, nutrients	IOW
15. Schuffenhauer, Ingo	CTD	IOW
16. Siegel, Herbert	Remote sensing	IOW
17. Sirdeys, Naïs	Paleoceanography	UQUAR
18. Trottier, Annie-Pier	Hydroacoustics, sediments	LAVAL
19. Wirdum, Falkje van	Micropaleontology, diatoms	SU Sweden
20. Wiers, Steffen	Paleoceanography	UU Sweden

Participant List, MSM62-2

1. Schneider, Ralph	<i>Chief Scientist</i>	CAU
2. Balzereit, Friedrike	Media documentation	CAU
3. Bennike, Ole	Seabed mapping, sedimentology	GEUS
4. Blanz, Thomas	Paleoceanography	CAU
5. Eriksen, Lasse	Seabed mapping, sedimentology	GEUS
6. Frahm, Andreas	Coring operations	IOW
7. Heinrich, Sven	Coring operations	CAU
8. Jämlich, Heiko	Coring operations	CAU
9. Jensen, Jørn Bo	Seabed mapping, sedimentology	GEUS
10. Krastel, Sebastian	Hydroacoustics	CAU
11. Lindhorst, Katja	Hydroacoustics	CAU
12. Marquardt, Kevin	Hydroacoustics	CAU
13. Moros, Matthias	Paleoceanography	IOW
14. Neumann, Thomas	Oceanography, modeling	IOW
15. Nørgaard-Petersen, Niels	Seabed mapping, sedimentology	GEUS
16. Paulsen, Maria	Paleoceanography	CAU
17. Rhode-Krossa, Veronika	Sedimentology	CAU
18. Roßkopf, Alexandra	Sediment sampling	CAU
19. Schwarz, Jan-Philippe	Coring operations	CAU
20. Steen, Eric	Coring operations	CAU
21. Trottier, Annie-Pier	Hydroacoustics, sediments	LAVAL

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Station List

Station List Maria S. Merian cruise MSM62, Leg 1 and 2:

MB/PS: Multibeam & PARASOUND (start/end position),

CTD/RO: Rosette Watersampler with CTD, MUC: Multicorer, FC: Frahm corer, GC: Gravity corer, VC: Vibro corer

Datum 2017	UTC	MSM-62 Station Number Science	Vessel	Gear	Latitude	Longitude	Water (m) Depth
10.03.17	03:51	MSM62-1-01-1	MSM62/502-1	CTD/RO	57° 16,83' N	20° 5,87' E	252,3
10.03.17	04:44	MSM62-1-01-2	MSM62/502-2	CTD/RO	57° 16,83' N	20° 5,87' E	252,3
10.03.17	05:07	MSM62-1-01-3	MSM62/502-3	MUC	57° 16,83' N	20° 5,87' E	252,2
10.03.17	05:39	MSM62-1-01-4	MSM62/502-4	MUC	57° 16,83' N	20° 5,87' E	252,3
10.03.17	10:13	MSM62-1-02-1	MSM62/503-1	CTD/RO	57° 59,86' N	19° 52,84' E	205,5
10.03.17	10:48	MSM62-1-02-2	MSM62/503-3	MUC	57° 59,87' N	19° 52,84' E	205,5
10.03.17	15:56	MSM62-1-03-1	MSM62/504-1	CTD/RO	58° 54,98' N	20° 14,75' E	192,3
10.03.17	16:25	MSM62-1-03-2	MSM62/504-3	MUC	58° 54,98' N	20° 14,74' E	192,2
10.03.17	16:46	MSM62-1-03-3	MSM62/504-4	MUC	58° 54,98' N	20° 14,74' E	192,3
10.03.17	17:13	MSM62-1-03-4	MSM62/504-5	MUC	58° 55,00' N	20° 14,70' E	190,4
10.03.17	17:43	MSM62-1-03-5	MSM62/504-6	GC	58° 55,00' N	20° 14,70' E	190,2
11.03.17	01:15	MSM62-1-04-1	MSM62/505-1	MB+PS	60° 6,65' N	19° 25,55' E	167,1
11.03.17	02:02	MSM62-1-04-1	MSM62/505-1	MB+PS	60° 7,04' N	19° 13,02' E	222,3
11.03.17	14:03	MSM62-1-05-1	MSM62/506-1	CTD/RO	62° 31,96' N	19° 58,08' E	126,5
11.03.17	14:41	MSM62-1-06-1	MSM62/507-1	MB+PS	62° 32,66' N	19° 58,37' E	101,1
11.03.17	15:22	MSM62-1-06-2	MSM62/507-1	MB+PS	62° 38,09' N	19° 58,41' E	143,4
12.03.17	07:42	MSM62-1-07-1	MSM62/508-1	CTD/RO	64° 34,54' N	22° 8,70' E	123,4
12.03.17	08:40	MSM62-1-08-1	MSM62/508-3	ICE	64° 32,09' N	22° 9,29' E	121,2
12.03.17	14:07	MSM62-1-09-1	MSM62/509-1	ICE	64° 15,11' N	22° 4,84' E	113,5
12.03.17	15:26	MSM62-1-09-2	MSM62/509-2	CTD/RO	64° 15,29' N	22° 3,73' E	116,0
12.03.17	17:40	MSM62-1-10-1	MSM62/510-1	ICE	64° 7,81' N	21° 40,35' E	118,6
12.03.17	18:57	MSM62-1-10-2	MSM62/510-2	CTD/RO	64° 7,61' N	21° 39,81' E	111,9
12.03.17	19:09	MSM62-1-10-3	MSM62/510-3	CTD/RO	64° 7,61' N	21° 39,81' E	111,9
13.03.17	00:25	MSM62-1-11-1	MSM62/511-1	CTD/RO	63° 31,35' N	21° 4,19' E	48,1
13.03.17	03:04	MSM62-1-12-1	MSM62/512-1	CTD/RO	63° 20,18' N	20° 22,31' E	98,7
13.03.17	03:58	MSM62-1-13-1	MSM62/513-1	CTD/RO	63° 18,19' N	20° 16,17' E	113,2
13.03.17	05:24	MSM62-1-14-1	MSM62/514-1	CTD/RO	63° 15,19' N	19° 59,84' E	107,8
13.03.17	06:38	MSM62-1-15-1	MSM62/515-1	CTD/RO	63° 13,97' N	19° 45,26' E	133,0
13.03.17	08:29	MSM62-1-16-1	MSM62/516-1	CTD/RO	63° 4,72' N	20° 9,78' E	92,9
13.03.17	09:38	MSM62-1-17-1	MSM62/517-1	CTD/RO	63° 6,98' N	19° 52,63' E	106,7
13.03.17	10:46	MSM62-1-18-1	MSM62/518-1	CTD/RO	63° 9,52' N	19° 39,20' E	144,8
13.03.17	11:52	MSM62-1-19-1	MSM62/519-1	CTD/RO	63° 10,58' N	19° 27,71' E	162,3
13.03.17	13:27	MSM62-1-20-1	MSM62/520-1	CTD/RO	63° 2,63' N	19° 10,37' E	143,9
13.03.17	15:32	MSM62-1-21-1	MSM62/521-1	CTD/RO	62° 52,16' N	19° 2,54' E	218,3
13.03.17	15:52	MSM62-1-21-2	MSM62/521-2	MUC	62° 52,16' N	19° 2,54' E	218,4
13.03.17	16:21	MSM62-1-21-3	MSM62/521-3	GC	62° 52,15' N	19° 2,54' E	218,4
13.03.17	17:36	MSM62-1-22-1	MSM62/522-1	MUC	62° 51,10' N	19° 0,77' E	212,1
13.03.17	18:06	MSM62-1-22-2	MSM62/522-2	GC	62° 51,09' N	19° 0,77' E	212,5
13.03.17	20:49	MSM62-1-23-1	MSM62/523-1	CTD/RO	62° 44,15' N	18° 52,98' E	204,5
13.03.17	21:01	MSM62-1-23-2	MSM62/523-2	CTD/RO	62° 44,15' N	18° 52,97' E	204,3
13.03.17	21:29	MSM62-1-23-3	MSM62/523-3	CTD/RO	62° 44,16' N	18° 52,98' E	203,8
13.03.17	23:06	MSM62-1-24-1	MSM62/524-1	CTD/RO	62° 32,61' N	19° 7,57' E	165,0
14.03.17	00:52	MSM62-1-25-1	MSM62/525-1	CTD/RO	62° 24,60' N	19° 36,62' E	126,7
14.03.17	02:16	MSM62-1-26-1	MSM62/526-1	MB+PS	62° 34,62' N	19° 55,08' E	121,2
14.03.17	02:56	MSM62-1-26-1	MSM62/526-1	MB+PS	62° 36,15' N	20° 3,10' E	86,3

Datum 2017	UTC	MSM-62 Station Number Science	Vessel	Gear	Latitude	Longitude	Water (m) Depth
14.03.17	03:37	MSM62-1-26-1	MSM62/526-1	MB+PS	62° 32,65' N	19° 59,14' E	101,0
14.03.17	04:35	MSM62-1-26-1	MSM62/526-1	MB+PS	62° 38,15' N	19° 59,24' E	148,8
14.03.17	05:20	MSM62-1-27-1	MSM62/527-1	MUC	62° 36,81' N	19° 58,44' E	162,9
14.03.17	05:41	MSM62-1-27-2	MSM62/527-2	MUC	62° 36,81' N	19° 58,44' E	161,8
14.03.17	06:13	MSM62-1-27-3	MSM62/527-3	GC	62° 36,80' N	19° 58,43' E	162,3
14.03.17	08:50	MSM62-1-28-1	MSM62/528-1	CTD/RO	62° 35,34' N	19° 58,86' E	215,1
14.03.17	09:16	MSM62-1-28-2	MSM62/528-2	GC	62° 35,34' N	19° 58,86' E	215,2
14.03.17	10:02	MSM62-1-28-3	MSM62/528-3	MUC	62° 35,34' N	19° 58,86' E	215,2
14.03.17	13:29	MSM62-1-29-1	MSM62/529-1	CTD/RO	62° 10,90' N	19° 58,24' E	149,1
14.03.17	15:18	MSM62-1-30-1	MSM62/530-1	CTD/RO	61° 56,09' N	20° 4,15' E	145,3
14.03.17	21:10	MSM62-1-31-1	MSM62/531-1	CTD/RO	61° 42,50' N	17° 50,74' E	66,5
14.03.17	22:50	MSM62-1-32-1	MSM62/532-1	CTD/RO	61° 42,89' N	18° 25,11' E	81,8
15.03.17	00:22	MSM62-1-33-1	MSM62/533-1	CTD/RO	61° 43,24' N	18° 54,77' E	43,8
15.03.17	02:00	MSM62-1-34-1	MSM62/534-1	CTD/RO	61° 43,44' N	19° 27,20' E	79,1
15.03.17	03:34	MSM62-1-35-1	MSM62/535-1	CTD/RO	61° 43,63' N	19° 56,19' E	115,9
15.03.17	05:14	MSM62-1-36-1	MSM62/536-1	CTD/RO	61° 43,60' N	20° 27,61' E	119,0
15.03.17	06:42	MSM62-1-37-1	MSM62/537-1	CTD/RO	61° 43,26' N	20° 52,02' E	68,5
15.03.17	09:21	MSM62-1-38-1	MSM62/538-1	CTD/RO	61° 28,79' N	20° 5,39' E	125,5
15.03.17	11:06	MSM62-1-39-1	MSM62/539-1	CTD/RO	61° 13,58' N	19° 53,92' E	110,6
15.03.17	13:16	MSM62-1-40-1	MSM62/540-1	CTD/RO	61° 0,07' N	19° 22,75' E	125,1
15.03.17	15:13	MSM62-1-41-1	MSM62/541-1	CTD/RO	60° 41,24' N	19° 22,43' E	77,1
15.03.17	16:38	MSM62-1-42-1	MSM62/542-1	CTD/RO	60° 41,22' N	18° 58,90' E	101,2
15.03.17	17:59	MSM62-1-43-1	MSM62/543-1	CTD/RO	60° 40,86' N	18° 35,74' E	55,4
15.03.17	19:11	MSM62-1-44-1	MSM62/544-1	CTD/RO	60° 40,15' N	18° 15,22' E	54,1
16.03.17	01:24	MSM62-1-45-1	MSM62/545-1	CTD/RO	60° 6,93' N	19° 17,92' E	257,0
16.03.17	01:53	MSM62-1-45-2	MSM62/545-2	MUC	60° 6,93' N	19° 17,92' E	256,9
16.03.17	02:27	MSM62-1-45-3	MSM62/545-3	GC	60° 6,93' N	19° 17,91' E	256,9
16.03.17	03:34	MSM62-1-46-1	MSM62/546-1	GC	60° 6,88' N	19° 19,48' E	264,8
16.03.17	04:20	MSM62-1-46-2	MSM62/546-2	MUC	60° 6,89' N	19° 19,47' E	264,8
16.03.17	05:39	MSM62-1-47-1	MSM62/547-1	CTD/RO	60° 0,98' N	19° 23,20' E	123,0
16.03.17	06:51	MSM62-1-48-1	MSM62/548-1	CTD/RO	60° 0,63' N	19° 38,06' E	231,4
16.03.17	08:27	MSM62-1-49-1	MSM62/549-1	CTD/RO	59° 46,20' N	19° 36,43' E	88,5
16.03.17	10:11	MSM62-1-50-1	MSM62/550-1	CTD/RO	59° 47,10' N	20° 2,84' E	210,8
16.03.17	12:44	MSM62-1-51-1	MSM62/551-1	CTD/RO	59° 30,64' N	20° 35,12' E	58,4
16.03.17	14:38	MSM62-1-52-1	MSM62/552-1	CTD/RO	59° 21,83' N	20° 0,04' E	55,3
16.03.17	20:39	MSM62-1-53-1	MSM62/553-1	MUC	58° 40,29' N	18° 24,55' E	364,6
16.03.17	21:22	MSM62-1-53-2	MSM62/553-2	MUC	58° 40,29' N	18° 24,54' E	364,6
16.03.17	21:56	MSM62-1-53-3	MSM62/553-3	MUC	58° 40,29' N	18° 24,54' E	364,6
16.03.17	22:29	MSM62-1-53-4	MSM62/553-4	GC	58° 40,29' N	18° 24,54' E	364,6
16.03.17	23:53	MSM62-1-54-1	MSM62/554-1	MUC	58° 35,84' N	18° 28,04' E	190,9
17.03.17	00:06	MSM62-1-54-2	MSM62/554-2	MUC	58° 35,84' N	18° 28,03' E	190,6
17.03.17	00:37	MSM62-1-54-3	MSM62/554-3	CTD/RO	58° 35,75' N	18° 27,93' E	194,6
17.03.17	01:49	MSM62-1-55-1	MSM62/555-1	CTD/RO	58° 39,44' N	18° 25,25' E	298,2
17.03.17	02:41	MSM62-1-56-1	MSM62/556-1	CTD/RO	58° 40,32' N	18° 24,59' E	364,3
17.03.17	04:12	MSM62-1-57-1	MSM62/557-1	CTD/RO	58° 38,36' N	18° 15,92' E	458,9
17.03.17	05:11	MSM62-1-57-2	MSM62/557-2	CTD/RO	58° 38,37' N	18° 15,92' E	458,7
17.03.17	07:13	MSM62-1-57-3	MSM62/557-3	MUC	58° 38,36' N	18° 15,91' E	459,2
17.03.17	08:03	MSM62-1-57-4	MSM62/557-4	MUC	58° 38,36' N	18° 15,91' E	459,4
17.03.17	08:58	MSM62-1-57-5	MSM62/557-6	MUC	58° 38,35' N	18° 15,86' E	460,6

Datum 2017	UTC	MSM-62 Station Number Science	Vessel	Gear	Latitude	Longitude	Water (m) Depth
17.03.17	09:55	MSM62-1-57-6	MSM62/557-7	GC	58° 38,34' N	18° 15,87' E	461,9
17.03.17	12:00	MSM62-1-57-7	MSM62/557-8	GC	58° 38,34' N	18° 15,85' E	459,9
17.03.17	13:43	MSM62-1-58-1	MSM62/558-1	GC	58° 39,42' N	18° 25,24' E	299,4
17.03.17	14:55	MSM62-1-58-2	MSM62/558-2	GC	58° 39,42' N	18° 25,23' E	299,4
17.03.17	15:47	MSM62-1-58-3	MSM62/558-3	MUC	58° 39,42' N	18° 25,22' E	298,7
17.03.17	18:37	MSM62-1-59-1	MSM62/559-1	CTD/RO	58° 21,90' N	17° 50,07' E	112,2
17.03.17	19:02	MSM62-1-59-2	MSM62/559-2	FC	58° 21,90' N	17° 50,07' E	112,2
17.03.17	19:19	MSM62-1-59-3	MSM62/559-3	FC	58° 21,90' N	17° 50,07' E	113,1
17.03.17	19:35	MSM62-1-59-4	MSM62/559-4	MUC	58° 21,90' N	17° 50,07' E	112,9
17.03.17	22:04	MSM62-1-59-5	MSM62/559-5	MB+PS	58° 5,07' N	18° 2,73' E	144,9
18.03.17	07:48	MSM62-1-59-5	MSM62/559-5	MB+PS	58° 5,10' N	17° 52,78' E	178,7
18.03.17	09:38	MSM62-1-60-1	MSM62/560-1	CTD/RO	57° 58,75' N	17° 57,56' E	202,8
18.03.17	10:00	MSM62-1-60-2	MSM62/560-3	MUC	57° 58,74' N	17° 57,56' E	202,8
18.03.17	11:10	MSM62-1-60-3	MSM62/560-3	GC	57° 58,73' N	17° 57,56' E	203,1
18.03.17	12:26	MSM62-1-60-4	MSM62/560-4	GC	57° 58,64' N	17° 57,37' E	218,6
19.03.17	04:20	MSM62-1-61-1	MSM62/561-1	CTD/RO	55° 18,96' N	15° 50,03' E	111,5
19.03.17	05:55	MSM62-1-61-2	MSM62/561-2	CTD/RO	55° 17,63' N	15° 52,57' E	102,4
19.03.17	06:18	MSM62-1-62-1	MSM62/562-1	MB+PS	55° 18,12' N	15° 50,67' E	103,2
20.03.17	03:02	MSM62-1-63-1	MSM62/563-1	MB+PS	55° 27,07' N	15° 41,27' E	96,8
20.03.17	10:47	MSM62-1-63-1	MSM62/563-1	MB+PS	55° 24,57' N	15° 24,60' E	100,3
20.03.17	11:45	MSM62-1-64-1	MSM62/564-1	CTD/RO	55° 27,66' N	15° 30,54' E	84,5
20.03.17	12:01	MSM62-1-64-2	MSM62/564-3	MUC	55° 27,66' N	15° 30,54' E	84,7
20.03.17	12:32	MSM62-1-64-3	MSM62/564-4	GC	55° 27,66' N	15° 30,54' E	84,6
20.03.17	13:49	MSM62-1-65-1	MSM62/565-1	GC	55° 27,67' N	15° 38,35' E	89,7
20.03.17	14:35	MSM62-1-65-2	MSM62/565-2	MUC	55° 27,67' N	15° 38,34' E	89,8
20.03.17	15:47	MSM62-1-66-1	MSM62/566-1	MB+PS	55° 22,13' N	15° 34,27' E	110,9
21.03.17	03:50	MSM62-1-66-1	MSM62/566-1	MB+PS	55° 20,69' N	15° 17,27' E	93,0
21.03.17	04:41	MSM62-1-67-1	MSM62/567-1	MB+PS	55° 26,86' N	15° 15,90' E	101,2
21.03.17	07:57	MSM62-1-67-1	MSM62/567-1	MB+PS	55° 27,68' N	15° 12,18' E	104,3
21.03.17	09:48	MSM62-1-68-1	MSM62/568-1	CTD/RO	55° 16,65' N	15° 26,16' E	89,8
21.03.17	10:03	MSM62-1-68-2	MSM62/568-3	MUC	55° 16,65' N	15° 26,15' E	92,2
21.03.17	10:31	MSM62-1-68-3	MSM62/568-4	GC	55° 16,64' N	15° 26,13' E	92,4
23.03.17	14:23	MSM62-2-01-1	MSM62/570-1	VC	55° 24,15' N	11° 3,08' E	24,0
23.03.17	15:40	MSM62-2-02-1	MSM62/571-1	VC	55° 25,93' N	10° 50,64' E	19,8
23.03.17	16:32	MSM62-2-03-1	MSM62/572-1	VC	55° 26,32' N	10° 53,09' E	30,0
23.03.17	17:44	MSM62-2-04-1	MSM62/573-1	VC	55° 27,00' N	10° 57,44' E	21,6
23.03.17	18:35	MSM62-2-05-1	MSM62/574-1	VC	55° 29,75' N	10° 55,80' E	21,6
23.03.17	19:04	MSM62-2-05-2	MSM62/574-2	MUC	55° 29,75' N	10° 55,80' E	21,7
23.03.17	19:24	MSM62-2-06-1	MSM62/575-1	MB+PS	55° 29,75' N	10° 55,80' E	21,7
24.03.17	06:29	MSM62-2-06-1	MSM62/575-1	MB+PS	55° 59,58' N	10° 49,54' E	21,2
24.03.17	07:10	MSM62-2-07-1	MSM62/576-1	MUC	55° 59,07' N	10° 52,78' E	22,9
24.03.17	07:38	MSM62-2-07-2	MSM62/576-2	VC	55° 59,08' N	10° 52,79' E	23,2
24.03.17	08:37	MSM62-2-08-1	MSM62/577-1	VC	55° 59,50' N	10° 52,87' E	22,9
24.03.17	09:13	MSM62-2-09-1	MSM62/578-1	VC	56° 0,25' N	10° 52,99' E	25,4
24.03.17	10:17	MSM62-2-10-1	MSM62/579-1	VC	56° 2,12' N	10° 57,79' E	20,7
24.03.17	11:40	MSM62-2-11-1	MSM62/580-1	VC	56° 2,83' N	10° 56,85' E	23,7
24.03.17	12:23	MSM62-2-12-1	MSM62/581-1	VC	56° 3,86' N	10° 55,08' E	26,9
24.03.17	13:34	MSM62-2-13-1	MSM62/582-1	VC	56° 6,40' N	11° 2,33' E	23,6
24.03.17	13:58	MSM62-2-13-2	MSM62/582-2	MUC	56° 6,39' N	11° 2,33' E	23,5

Datum 2017	UTC	MSM-62 Station Number Science	Vessel	Gear	Latitude	Longitude	Water (m) Depth
24.03.17	14:32	MSM62-2-14-1	MSM62/583-1	MB+PS	56° 5,80' N	10° 57,65' E	24,9
24.03.17	15:37	MSM62-2-14-1	MSM62/583-1	MB+PS	56° 6,42' N	11° 0,61' E	23,3
25.03.17	06:17	MSM62-2-14-1	MSM62/583-1	MB+PS	56° 15,83' N	11° 5,37' E	24,9
25.03.17	07:06	MSM62-2-15-1	MSM62/584-1	MUC	56° 18,19' N	11° 10,04' E	25,1
25.03.17	07:28	MSM62-2-15-2	MSM62/584-2	VC	56° 18,19' N	11° 10,03' E	25,0
25.03.17	08:26	MSM62-2-16-1	MSM62/585-1	VC	56° 19,50' N	11° 3,79' E	21,5
25.03.17	09:05	MSM62-2-17-1	MSM62/586-1	VC	56° 20,00' N	11° 7,30' E	22,0
25.03.17	10:18	MSM62-2-18-1	MSM62/587-1	VC	56° 17,66' N	11° 7,00' E	27,6
25.03.17	11:37	MSM62-2-19-1	MSM62/588-1	VC	56° 19,48' N	11° 11,04' E	26,6
25.03.17	13:24	MSM62-2-20-1	MSM62/589-1	VC	56° 16,18' N	11° 31,88' E	33,2
25.03.17	14:41	MSM62-2-21-1	MSM62/590-1	VC	56° 24,63' N	11° 33,83' E	21,9
25.03.17	15:18	MSM62-2-22-1	MSM62/591-1	VC	56° 24,61' N	11° 38,65' E	30,5
25.03.17	15:37	MSM62-2-22-2	MSM62/591-2	MUC	56° 24,61' N	11° 38,65' E	30,5
25.03.17	16:15	MSM62-2-23-1	MSM62/592-1	MB+PS	56° 24,10' N	11° 39,53' E	28,8
26.03.17	06:01	MSM62-2-24-1	MSM62/593-1	MUC	56° 24,87' N	11° 15,05' E	22,8
26.03.17	06:25	MSM62-2-24-2	MSM62/593-2	VC	56° 24,87' N	11° 15,05' E	22,8
26.03.17	08:03	MSM62-2-25-1	MSM62/594-1	VC	56° 15,17' N	10° 59,83' E	22,5
26.03.17	08:47	MSM62-2-26-1	MSM62/595-1	VC	56° 13,66' N	11° 4,35' E	24,6
26.03.17	09:29	MSM62-2-27-1	MSM62/596-1	VC	56° 11,02' N	11° 2,11' E	29,6
26.03.17	10:28	MSM62-2-28-1	MSM62/597-1	VC	56° 7,52' N	10° 55,79' E	21,1
26.03.17	11:22	MSM62-2-29-1	MSM62/598-1	VC	56° 7,21' N	11° 4,74' E	24,0
26.03.17	11:45	MSM62-2-29-2	MSM62/598-2	MUC	56° 7,21' N	11° 4,75' E	24,1