

## **Ocean Observations**

Between September 25 and October 25 there were a total of 69 CTD casts with the NBP's 24 bottle rosette system deployed from ship's baltic room ('Baltic CTD') and 14 casts with a sensor-only CTD package deployed from the stern A-frame ('Stern CTD') when conditions or work on the ice did not allow starboard-side access to the water (see Table 1 for list of CTD casts). These are both Sea-Bird 911-plus CTD systems, but the Baltic room system includes a 24-place rosette frame with bullister-type rosette bottles of slightly less than 10 liter capacity each. Data acquisition for these two CTD systems as well as the Trace Metal Clean (TMC) CTD took place on an NBP Windows XP computer running Sea-Bird's Seasave software. Electronics problems and computer software freeze-ups required repeated re-terminations of the CTD cables and at least one change of CTD computer during the course of NBP07-09. All three CTD packages included dual temperature, salinity, and oxygen sensors, while the Baltic and TMC packages additionally carried transmissometers, fluorometers, and PAR sensors (the latter being depth-rated to 1000m, it was removed from the Baltic CTD frame for deep casts).

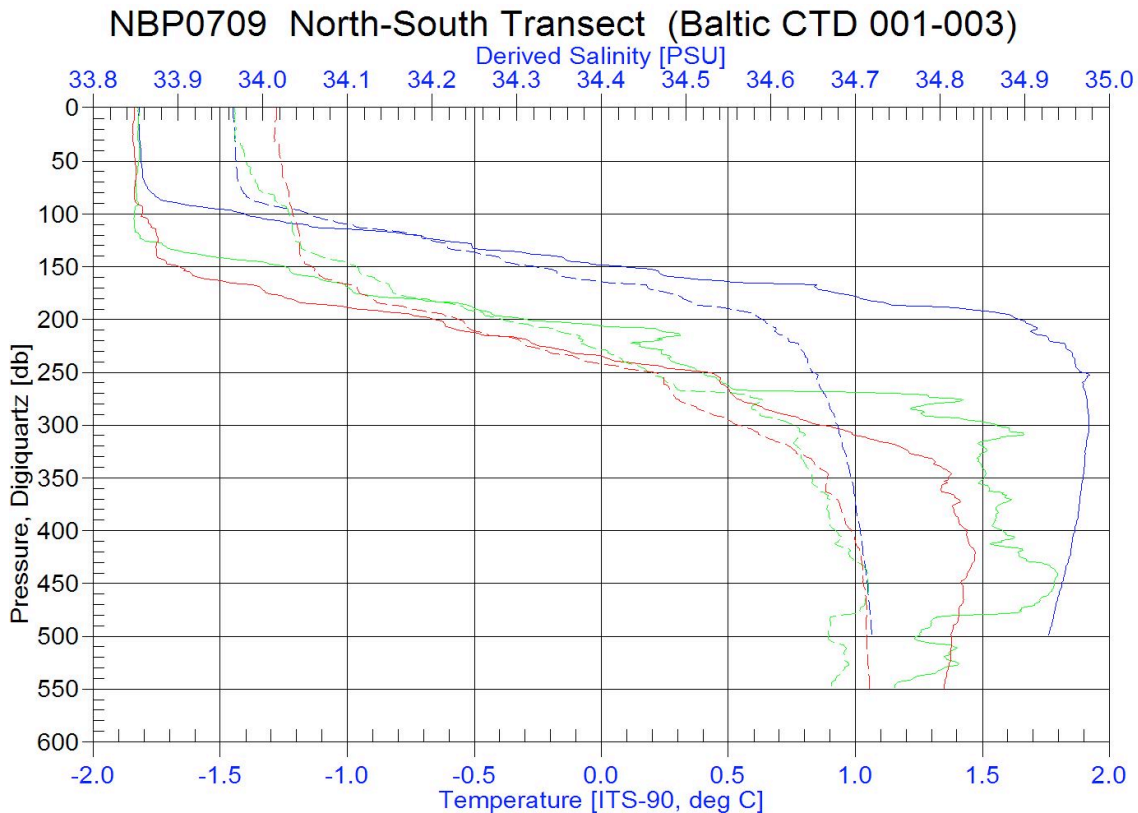
Sensors used on all three CTD fish during NBP0709 (except the transmissometer from the TMC rosette) will be returned to Sea-Bird for post-cruise calibrations. The post-cruise calibrations will then be applied to the CTD data to take into account any changes in sensor performance between pre- and post-cruise calibrations. Additionally, dissolved oxygen (winkler method) and salinity values determined via laboratory analysis of water collected from rosette bottles following the Baltic and TMC casts will be used to correct for any drift that may be detected in the cast data. Other laboratory analyses of water samples collected from rosette bottles included DMS, pH, total pH, DIC, total alkalinity, nutrients, and chlorophyll. Depending on water column characteristics such as temperature, salinity, and (later in the cruise / season), fluorescence, niskin bottles were triggered at various (between two and 23) depths during the CTD up-cast. Additional water sampling was conducted from the NBP's uncontaminated seawater line, both for salinity analyses and for total CO<sub>2</sub>, which will be analyzed at the Lamont-Doherty Earth Observatory in conjunction with the ongoing Takahashi pCO<sub>2</sub> surface observation project.

### ***North-South Transect Followed by Westward Drift (Sep 25-Oct 4)***

Leading up to and during week 1 of field work (Sep 23-29) seventeen expendable bathythermographs (XBTs) were deployed in conjunction with 17 Argo floats between 62 south and 69S (see Table 2 for list of XBT drops). Our first three Baltic CTD casts to 500-550m were acquired over a north-south transect from southeast of Peter 1 Island (70 16S), to the most southerly CTD location of the cruise (70 38 S).

All three CTD casts showed characteristic winter profiles with a cold (-1.8C), fresh (33.96-34.02ppt) surface mixed layer down to 90m, 120m and 150m (from north to south), overlying warm (1.4-1.9C), salty (34.68-34.72ppt) Upper Circumpolar Deep

Waters (**Figure 1**). The surface mixed layer decreased in freshness from north to south, as expected given the greater freshwater contribution from sea ice melting to the north. The first (blue line) and third (red line) profiles were relatively smooth, while the second (green line) profile showed many small scale (20-40m) features that were persistent during both the down and up (not shown) casts.



**Figure 1.** Temperature (solid) and salinity (dotted) downcast profiles from Baltic CTD casts 001 (blue), 002 (green) and 003 (red). See Table 1 for GMT time, location and maximum depths.

The continuation of this north-south transect onto the continental shelf, was thwarted by severe weather conditions and strong easterly winds September 28 – 29, which led to a 79km westward drift. Baltic CTD 004 to 1000m took place on the 29<sup>th</sup>, followed by TMC CTD 002, also to 1000m. The winds and westward drift continued, and on September 30 there was a full depth Baltic CTD cast (005) to 2323m (in 2335m of water), approximately 19 hours and 25.5 km west of CTD 004 where water depth increased from 1508m to 2335m.

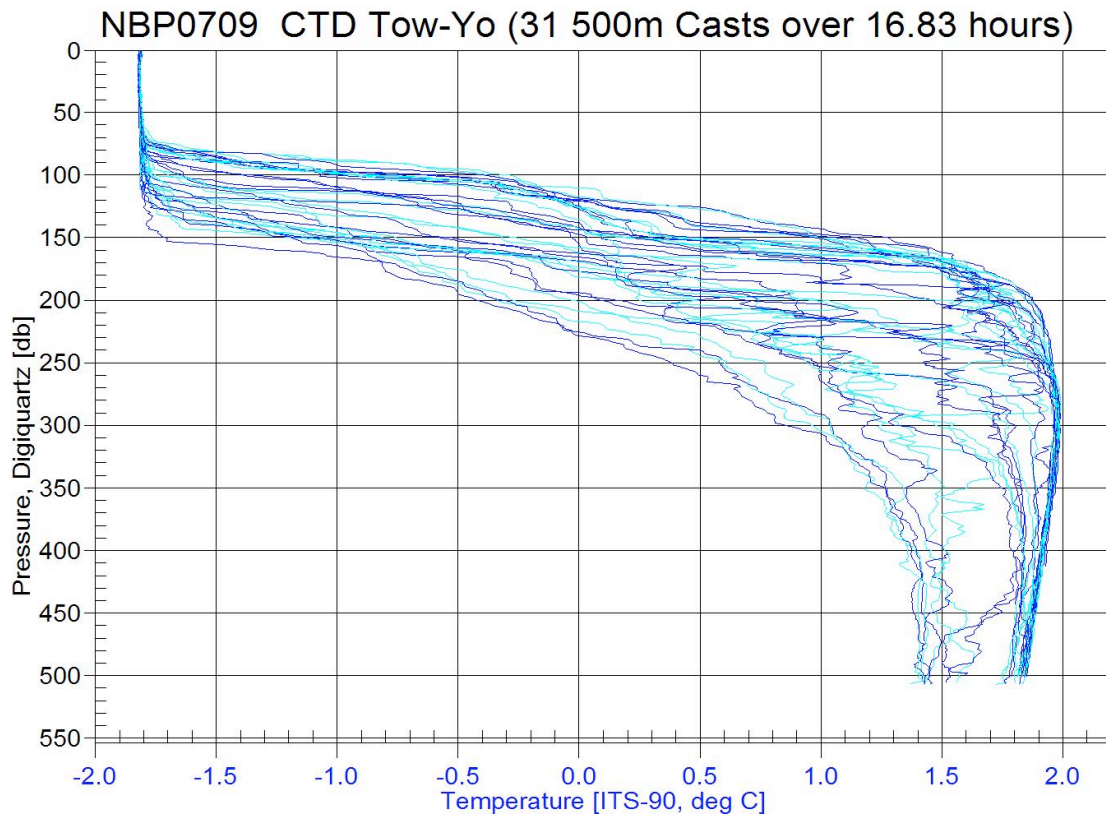
After Baltic CTD 005 field activities on the ice prevented Baltic CTD casts for the next 4 days. On October 4 the ship pulled away from the ice floe for another full depth Baltic CTD cast (006) to 2772m (in 2782m of water), 48.7 km northwest of CTD 005 with water depth increased from 2335m to 2782km.

Since both Baltic and TMC CTD casts required open water to starboard for deployment (either through the Baltic room or for the TMC CTD via the starboard A-frame), opportunities for starboard CTD casts were limited by field sampling activities and/or weather conditions. Given the probability that ice and weather conditions would prevent the ship from moving away from the ice floe for starboard-side CTD operations, a sensor-only CTD fish was assembled for deployments from the stern A-frame. To address calibration concerns, we immediately deployed the Stern CTD fish after Baltic CTD 006 so that the water collected with the Baltic CTD rosette package could be compared with sensor values on both the Baltic and Stern CTDs. TMC CTD cast 003 followed Stern CTD 001, allowing water for dissolved oxygen and salinity analyses to be collected from that rosette as well.

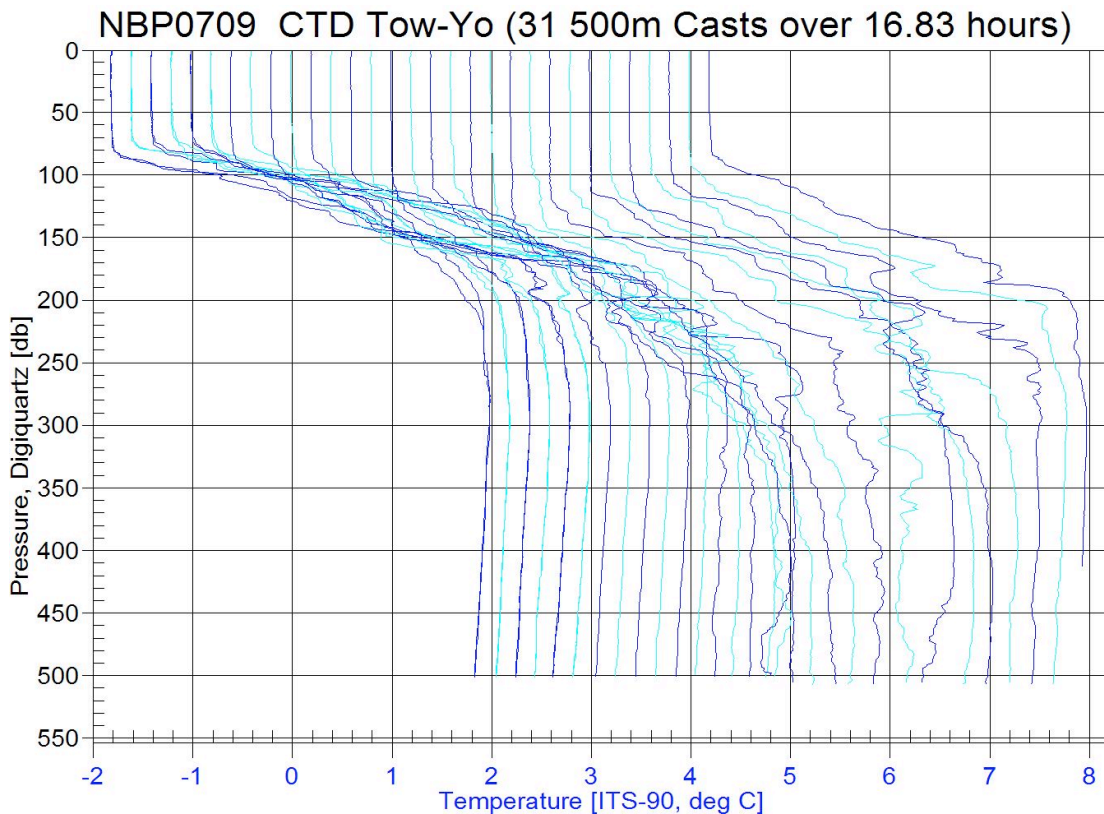
### ***Baltic CTD Tow-Yo During Eastward Drift (Oct 5-6)***

On Oct 5, weather conditions caused ice operations to be curtailed early. The NBP pulled away from the ice floe to allow use of the Baltic CTD rosette package for a 16.83 hour “tow-yo” deployment of the Baltic CTD. This involved repeated casts down to 500m and back to the surface, during which drift speeds to the east were between 0.3 and 1 knot. The first of these “tow-yo” casts was approximately 12.2 km to the east of CTD 006 in 2847m of water. There were 31 down/up casts (Baltic CTD 007-038, excluding 028, which was not archived), with water collection on the last cast for dissolved O<sub>2</sub> and salinity analyses. During the tow-yo, the straight-line drift was 18.8 km to the east and water depth increased to 3030m.

Over the course of 16.83 hours there was a large range in mixed layer depth (MLD) and depth and temperature of T<sub>max</sub> (maximum temperature below the pycnocline) and subsequently a range in pycnocline gradients (**Figure 2a and 2b**). The casts began in the afternoon (14:40 local time), continued overnight and ended the next morning (06:29 local time). As shown in Figure 2b the mixed layer deepened from approximately 80-90m to 130-140m by early morning (e.g. cast 029 at 02:08 local) then became shallow again. When the MLD was shallow, T<sub>max</sub> was 1.9-2.0 degC and approximately at 300m. When the MLD deepened, T<sub>max</sub> was as cool as 1.4 degC and deepened, up to 450m.



**Figure 2a.** Temperature downcast profiles (superimposed) for Baltic CTD 007-038 (excluding 028) showing range in MLD and depth and temperature of Tmax.

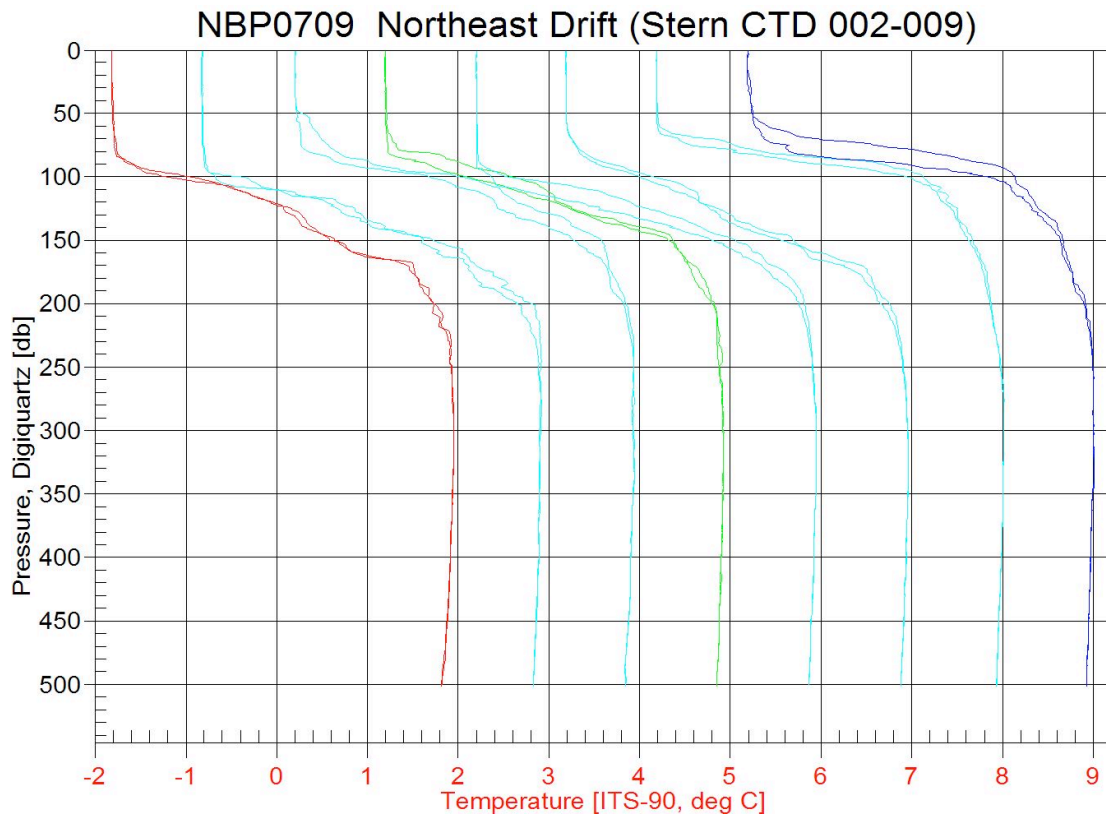


**Figure 2b.** Temperature downcast profiles (stepped at 0.2 deg C) for Baltic CTD 007-038 (excluding 028) showing range in MLD and depth and temperature of Tmax. Baltic CTD 007 is shown on a true temperature scale; each subsequent profile is increased by 0.2 degC.

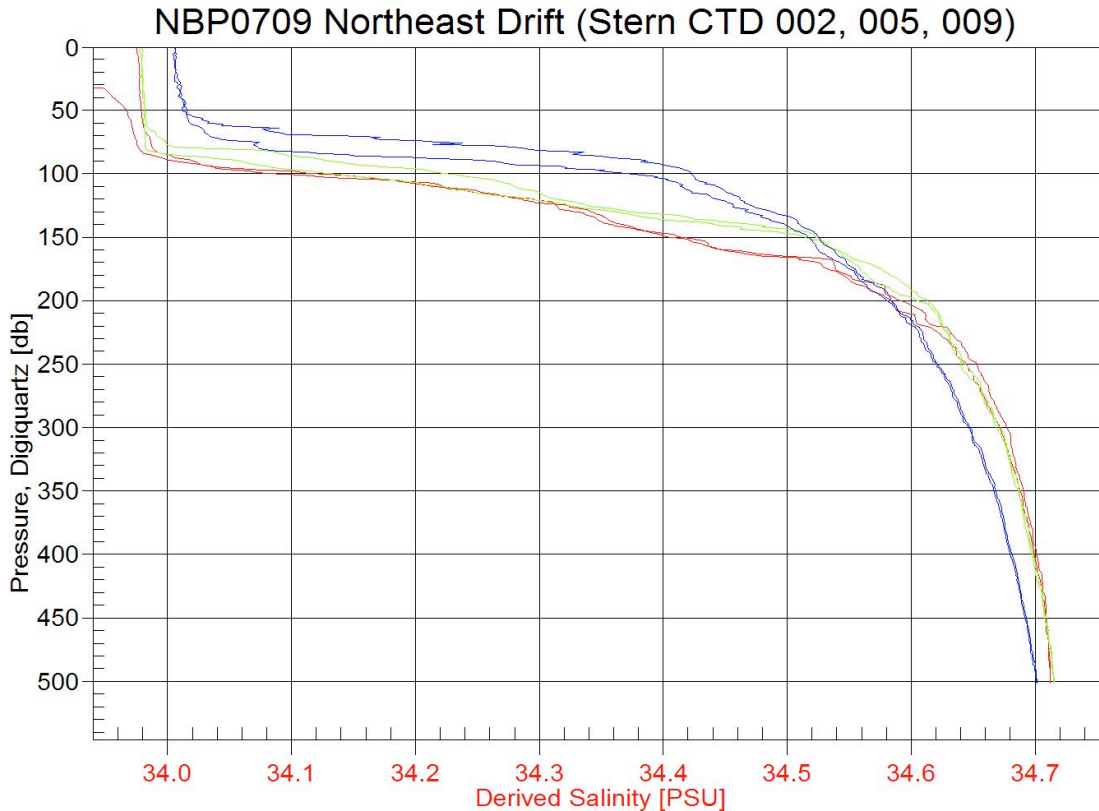
On the evening of October 6, approximately 14 hours and 6.2 km from our last Baltic CTD cast during the “tow-yo” deployment (CTD 038), stern CTD cast (002) was conducted to 500m in 3200m water depth. The tentative plan (weather permitting) at this point in the cruise was to deploy the Stern CTD package every evening that conditions did not allow use of the Baltic CTD rosette package.

### *Northeast Drift (Oct 7-11)*

Following the nearly straight-line eastward drift October 5-6, at speeds as high as 1.3 knots, the drift course turned northeastward and slowed to 0.1-0.3 knots. The drift’s northeastward trajectory from Oct 7-11 brought the NBP to a region of shallower and fresher mixed layers (**Figure 3a and 3b**) with a slightly warmer and saltier Tmax (e.g. Stern CTD 009, blue line), in latitudes that were nearly ice-free during the earlier voyage south. These casts included some of the first noticeable values from the CTD’s transmissometer and fluorometer, while C. Fritsen filtrations found increasing amounts of chlorophyll in the water column, suggesting the arrival of spring in the Bellingshausen.



**Figure 3a.** Temperature down/up casts of Stern CTD 002-009 (stepped 1 deg C). Salinity profiles for Stern CTD 002 (red), 005 (green) and 009 (blue) are shown in **Figure 3b**.

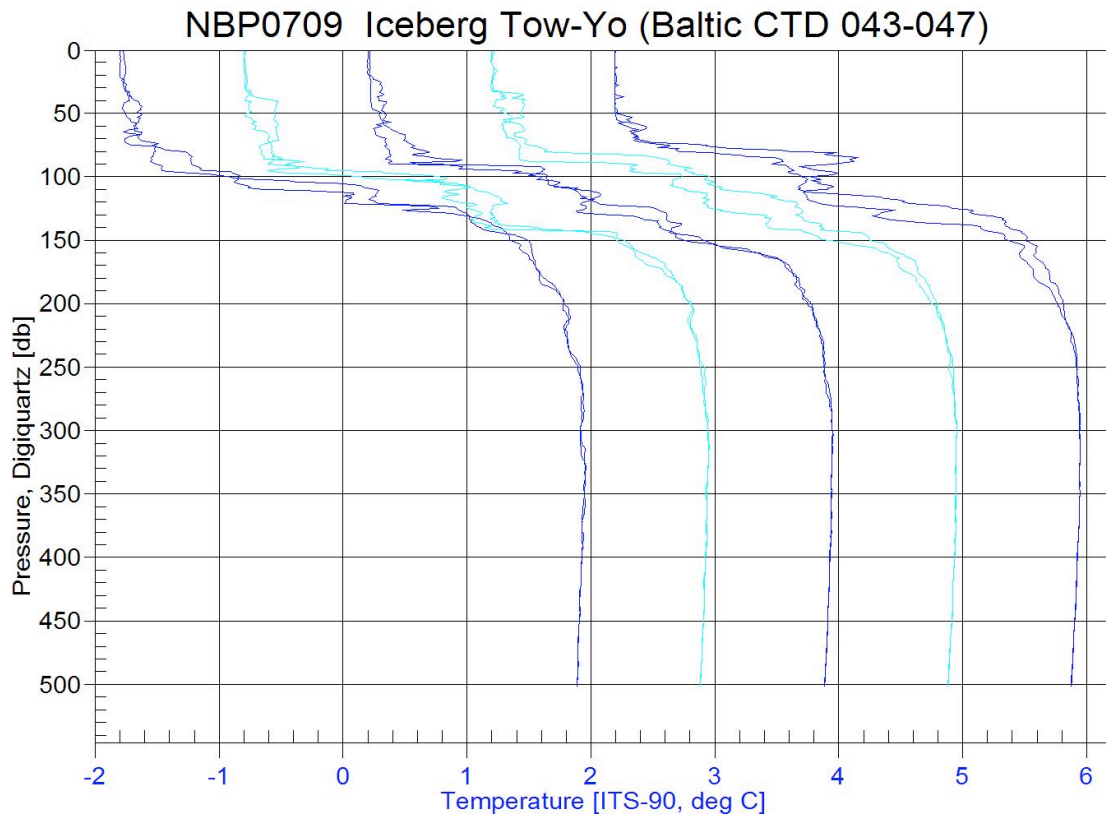


**Figure 3b.** Salinity profiles of down/up casts (superimposed) for Stern CTD 002 (red), 005 (green), and 009 (blue).

### *Southwest Drift & CTD Tow-Yo near Iceberg (Oct 16-21)*

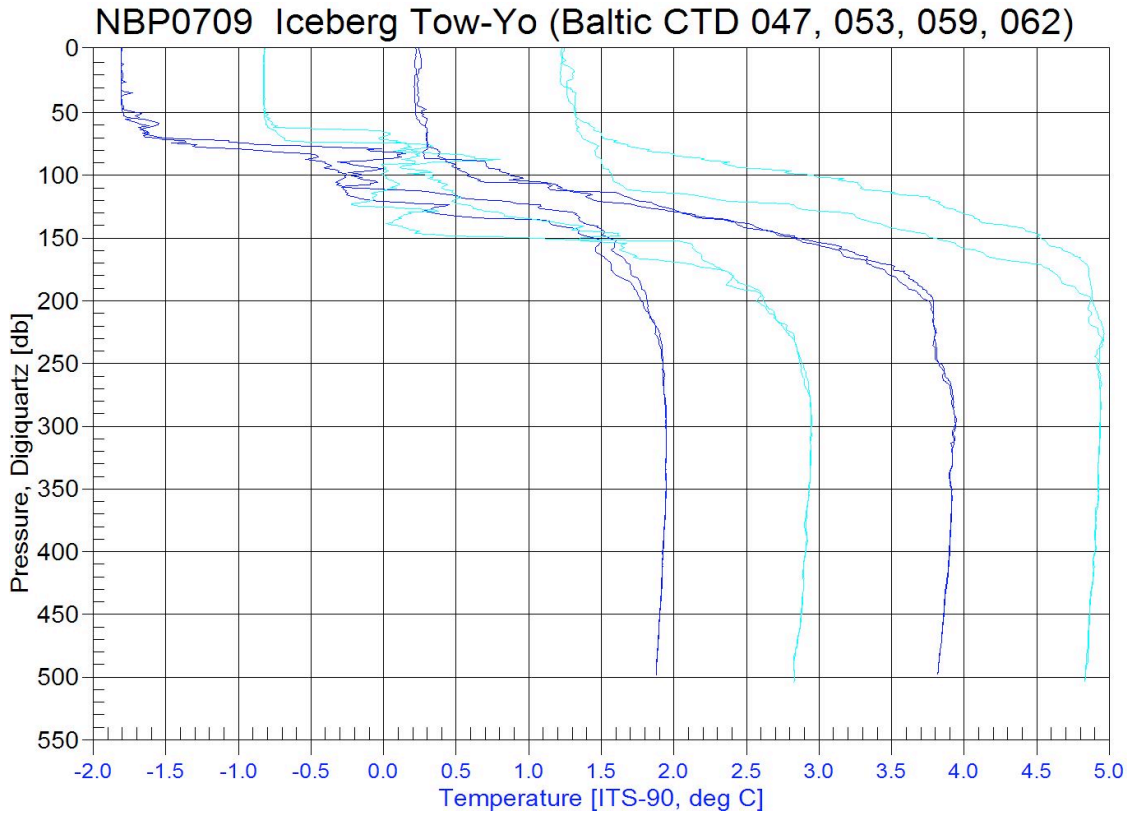
Between October 12 and 15, our drift was westward, then southwestward from Oct 16-21. On the morning of October 16, an iceberg arrived and parked itself approximately 1/3 nautical mile to the southwest of the NBP. Our first CTD cast following the berg's arrival (Stern CTD 012) did not show any evidence of its influence on the water column, but a cast on the evening of the 17<sup>th</sup> (Baltic CTD 042) demonstrated some disruption in the mixed layer and pycnocline, prompting a series of short tow-yo casts approximately every 6 hours during the course of a strong northeasterly wind event that drove the berg, ship, and ice floe to the southwest at approximately one knot. An initial set of five consecutive casts during the first Iceberg Tow-Yo (Baltic CTD 043-047) helped establish a sense of the range and magnitude of the disturbance to the water column (**Figure 4a**). This was followed by six Tow-Yo's of three casts each over the next 3 days (**Figure 4b**). The first 4 Iceberg Tow-Yo's showed the greatest amount of disturbance, which declined in the final three sets as winds and drift speeds diminished.





**Figure 4a.** Temperature down/up casts (stepped by 1 degC) for the first Iceberg Tow-Yo (Baltic CTD 043-047) on Oct 18.





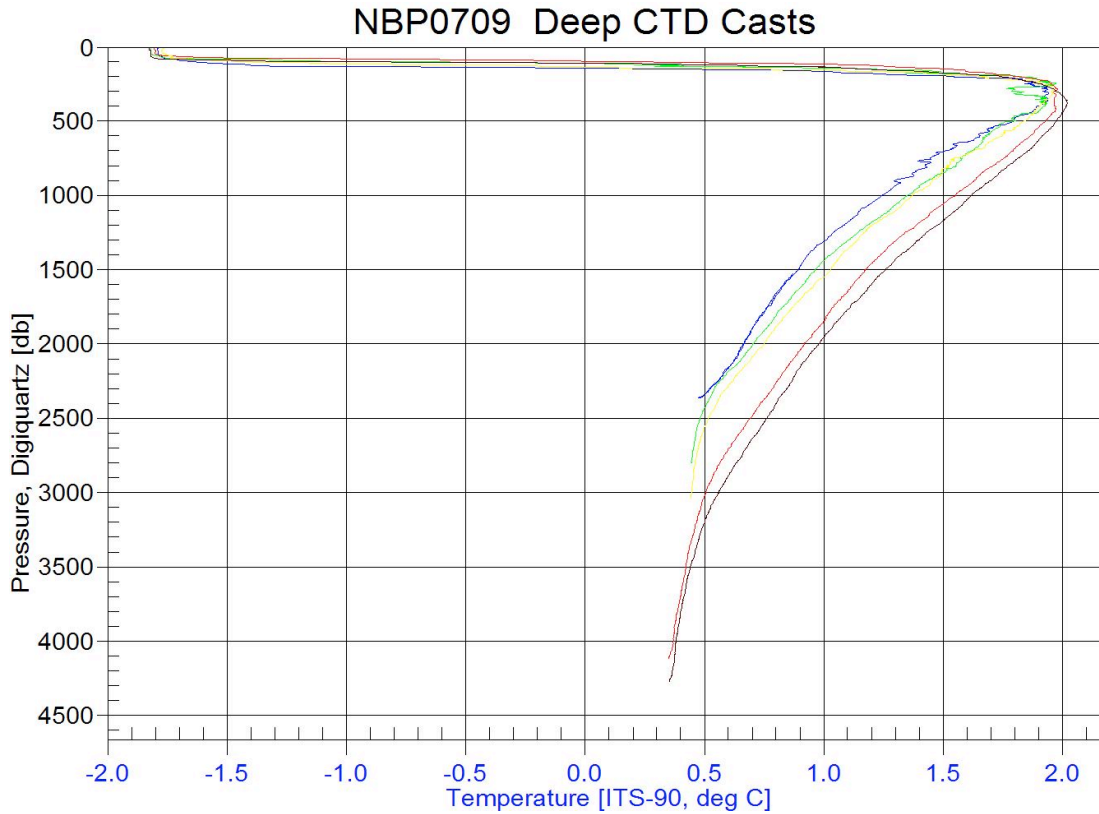
**Figure 4b.** Temperature down/up casts (stepped by 1 degC) for the third (last) cast of 4 Iceberg Tow-Yo's: Baltic CTD 047 (Oct 18), 053 (Oct 19), 059 (Oct 20) and 062 (Oct 20, 11.5 hours after 059).

### *Deep CTD Casts Throughout Cruise NBP07-09*

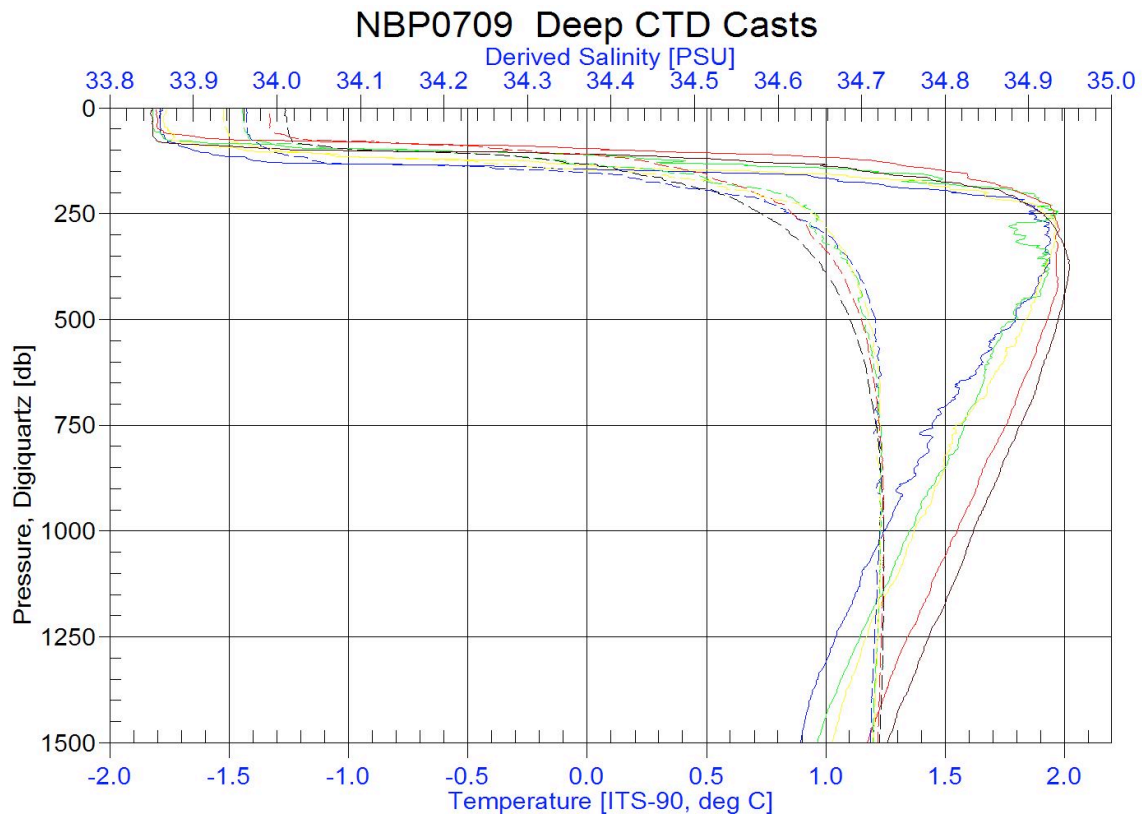
The final week of field activities (Oct 22-26) saw the completion of the ice drift phase of the Simba cruise, when the NBP proceeded northeastward to Peter 1 Island. Two deep Baltic CTD casts were made during this week, one at the ice drift camp (067) and one in a trough southwest of Peter 1 Island (069). In total, there were 5 deep Baltic CTD casts that punctuated the length of our cruise track (**Figure 5a and 5b**). Two were on the first westward drift trajectory (005 and 006, blue and green lines, respectively), one at the northward apex between the northeast and southwest trajectories (041, red line), one at the end of the southwest trajectory, just preceding our departure for Peter 1 Island (067, yellow line) and the last deep Baltic CTD cast was just southwest of Peter 1 Island (069, black line).

The five casts show notable differences in the depth and temperature of T<sub>max</sub>, as well as the temperature profile below T<sub>max</sub> (**Figure 5a**). There were differences in the MLD, not surprising given the range of locations and times of sampling (**Figure 5b**). The two northernmost casts (041/red and 069/black) showed saltier mixed layers than the 3 casts to the south (005/blue, 006/green, 067/yellow), with the westernmost cast (067/yellow)

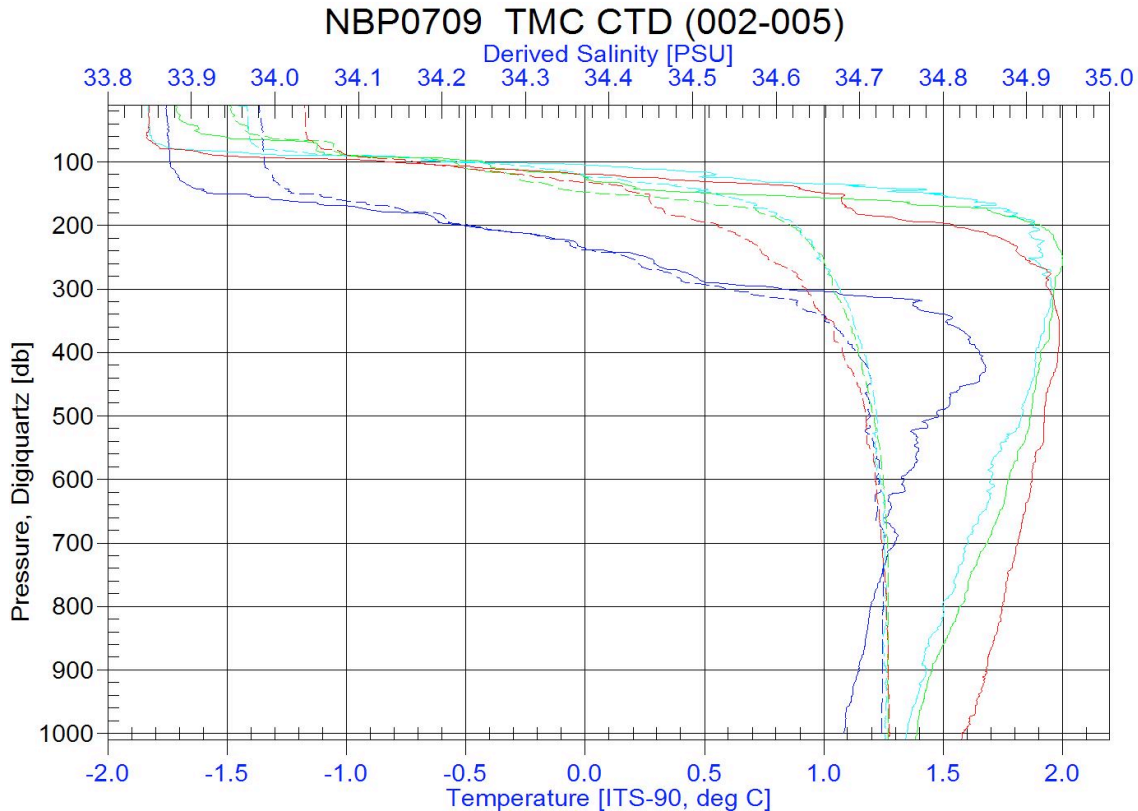
showing the freshest mixed layer. These mixed layer salinity differences suggest different ice growth and ablation histories, and await further interpretation in light of the seasonal sea ice variability at the five cast locations. Similar temporal and spatial differences in mixed layer salinity and the depth and temperature of T<sub>max</sub> were observed for TMC CTDs 002-005 (**Figure 5c**), which suggests a range of distinctly different sampling environments for the trace metal water column chemistry.



**Figure 5a.** Temperature downcasts of five Baltic CTD deep casts: 005 (blue), 006 (green), 041 (red), 067 (yellow), and 069 (black).



**Figure 5b.** Temperature (solid) and salinity (dotted) downcasts of five Baltic CTD deep casts: 005 (blue), 006 (green), 041 (red), 067 (yellow), and 069 (black). Shown are the profiles to 1500 only to emphasize the differences in surface characteristics, MLD and T<sub>max</sub>.



**Figure 5c.** Temperature and salinity downcasts of TMC CTD 002 (blue), 003 (light blue), 004 (green), and 005 (red).

### *Closing Remarks*

Numerous technical difficulties (some due to fire-related damage) occurred in the course of oceanographic operations during NBP07-09. Of particular note were the recurring electrical problems with the water sampler on the TMC rosette, ongoing grounding troubles with the XBT hand-launcher system, and the many computer issues with both CTD and XBT control / data logging systems, many of them brought about by soot damage. The creation of an entirely new sensor-only CTD package for stern deployment was a huge help in allowing us to collect data under challenging ice and weather conditions. Among the challenges encountered in learning to use the new stern CTD package was keeping the package warm while it was briefly on deck before and after the cast. Evidence of the conductivity cells' cold sensitivity can be seen in figure 3b, when the the primary sensor did not thaw and begin to provide appropriate readings until approximately 80m into the down-cast. MTs Erik Johnson, Jeremy Lucke, and Ben McKee, MPC Stian Alessandrini, ETs Victor Shen and Greg Watson, and MST Lindsey Eckern are due many thanks for the time and dedication they showed to overcoming all of the above problems, and for the many hours they spent tending the various CTDs and launching XBTs during NBP07-09.

**Table 1: NBP0709 CTD Cast Log****Filename Conventions:**

Baltic CTD: p0709001 - p0709069

TMC CTD: p0709tmc001 - p0709tmc005

Stern CTD: p0709aft001 - p0709aft014

cast/file p07090028 is missing (was not saved during data acquisition)

CTD	Dep	Time	Start of Cast				Max
	Smp'd	Sers	UTC Date	UTC Time	Latitude	Longitude	Depth
p0709001	11	-	Sep 25 2007	23:01:42	70 15.60 S	090 05.84 W	500.72
p0709002	16	-	Sep 26 2007	16:58:07	70 25.08 S	090 32.93 W	550.55
p0709003	13	-	Sep 27 2007	9:14:36	70 37.86 S	090 47.43 W	502.11
p0709004	14	-	Sep 29 2007	18:39:16	70 33.29 S	092 54.25 W	999.35
p0709005	17	-	Sep 30 2007	13:58:35	70 28.92 S	093 32.36 W	2364.14
p0709006	19	-	Oct 04 2007	10:46:50	70 10.65 S	094 30.92 W	2810.07
p0709007	-	1	Oct 05 2007	18:40:20	70 11.55 S	094 11.96 W	501.05
p0709008	-	2	Oct 05 2007	19:16:17	70 11.45 S	094 10.94 W	500.19
p0709009	-	3	Oct 05 2007	19:47:36	70 11.36 S	094 10.07 W	500.67
p0709010	-	4	Oct 05 2007	20:17:23	70 11.29 S	094 09.28 W	500.34
p0709011	-	5	Oct 05 2007	20:45:54	70 11.24 S	094 08.56 W	500.98
p0709012	-	6	Oct 05 2007	21:16:22	70 11.20 S	094 07.80 W	500.44
p0709013	-	7	Oct 05 2007	21:44:36	70 11.17 S	094 07.10 W	500.98
p0709014	-	8	Oct 05 2007	22:15:50	70 11.15 S	094 06.36 W	500.64
p0709015	-	9	Oct 05 2007	22:47:20	70 11.16 S	094 05.59 W	500.65
p0709016	-	10	Oct 05 2007	23:16:34	70 11.19 S	094 04.85 W	500.50
p0709017	-	11	Oct 05 2007	23:46:01	70 11.24 S	094 04.07 W	500.25
p0709018	-	12	Oct 06 2007	0:14:34	70 11.32 S	094 03.28 W	500.03
p0709019	-	13	Oct 06 2007	0:43:31	70 11.42 S	094 02.42 W	500.36
p0709020	-	14	Oct 06 2007	1:12:52	70 11.53 S	094 01.48 W	500.34
p0709021	-	15	Oct 06 2007	1:44:10	70 11.66 S	094 00.39 W	500.42
p0709022	-	16	Oct 06 2007	2:12:44	70 11.78 S	093 59.35 W	500.13
p0709023	-	17	Oct 06 2007	2:43:29	70 11.91 S	093 58.18 W	499.78
p0709024	-	18	Oct 06 2007	3:14:54	70 12.05 S	093 56.93 W	499.87
p0709025	-	19	Oct 06 2007	4:00:59	70 12.22 S	093 54.99 W	505.96
p0709026	-	20	Oct 06 2007	4:34:42	70 12.33 S	093 53.53 W	507.30
p0709027	-	21	Oct 06 2007	5:06:08	70 12.41 S	093 52.16 W	506.33
p0709029	-	22	Oct 06 2007	6:08:19	70 12.53 S	093 49.51 W	506.37
p0709030	-	23	Oct 06 2007	6:37:40	70 12.56 S	093 48.30 W	506.10
p0709031	-	24	Oct 06 2007	7:06:52	70 12.58 S	093 47.14 W	505.72
p0709032	-	25	Oct 06 2007	7:35:30	70 12.60 S	093 46.07 W	505.77
p0709033	-	26	Oct 06 2007	8:04:21	70 12.61 S	093 45.06 W	506.11
p0709034	-	27	Oct 06 2007	8:33:22	70 12.61 S	093 44.10 W	506.47
p0709035	-	28	Oct 06 2007	9:02:50	70 12.57 S	093 43.19 W	506.12
p0709036	-	29	Oct 06 2007	9:31:39	70 12.41 S	093 42.45 W	506.23
p0709037	-	30	Oct 06 2007	10:01:01	70 12.22 S	093 41.84 W	506.17
p0709038	3	31	Oct 06 2007	10:29:55	70 12.05 S	093 41.37 W	412.67
p0709039	13	-	Oct 13 2007	4:46:09	69 41.70 S	091 58.96 W	505.56

CTD	Dep	Time	Start of Cast			Max	
	Smp'd	Sers	UTC Date	UTC Time	Latitude	Longitude	Depth
p0709040	2	-	Oct 14 2007	2:05:18	69 41.89 S	092 12.02 W	500.58
p0709041	19	-	Oct 15 2007	10:03:29	69 37.48 S	092 19.12 W	4116.69
p0709042	15	-	Oct 17 2007	23:37:01	69 33.73 S	092 29.57 W	500.30
p0709043	-	1	Oct 18 2007	17:16:55	69 42.63 S	092 42.39 W	500.40
p0709044	-	2	Oct 18 2007	17:50:57	69 42.90 S	092 42.89 W	500.56
p0709045	-	3	Oct 18 2007	18:20:37	69 43.14 S	092 43.32 W	500.65
p0709046	-	4	Oct 18 2007	18:49:43	69 43.39 S	092 43.72 W	500.40
p0709047	7	5	Oct 18 2007	19:19:06	69 43.63 S	092 44.11 W	500.23
p0709048	-	1	Oct 19 2007	1:39:49	69 46.78 S	092 48.80 W	500.43
p0709049	-	2	Oct 19 2007	2:12:28	69 47.05 S	092 49.38 W	500.30
p0709050	4	3	Oct 19 2007	2:41:58	69 47.29 S	092 49.93 W	500.31
p0709051	-	1	Oct 19 2007	9:54:28	69 51.44 S	092 59.87 W	504.89
p0709052	-	2	Oct 19 2007	10:30:20	69 51.74 S	093 00.71 W	505.98
p0709053	12	3	Oct 19 2007	10:58:29	69 51.96 S	093 01.41 W	506.99
p0709054	-	1	Oct 19 2007	18:11:23	69 55.32 S	093 12.70 W	500.00
p0709055	-	2	Oct 19 2007	18:46:58	69 55.65 S	093 13.59 W	500.40
p0709056	2	3	Oct 19 2007	19:17:21	69 55.92 S	093 14.30 W	500.22
p0709057	-	1	Oct 19 2007	23:00:24	69 57.68 S	093 16.32 W	500.31
p0709058	-	2	Oct 19 2007	23:32:57	69 57.85 S	093 16.20 W	500.39
p0709059	4	3	Oct 20 2007	0:02:33	69 57.99 S	093 16.06 W	500.32
p0709060	-	1	Oct 20 2007	10:05:26	69 59.78 S	093 20.34 W	506.14
p0709061	-	2	Oct 20 2007	10:49:04	69 59.97 S	093 20.73 W	506.05
p0709062	2	3	Oct 20 2007	11:21:33	70 00.11 S	093 21.00 W	506.17
p0709063	-	1	Oct 20 2007	23:00:49	70 03.43 S	093 32.05 W	510.48
p0709064	-	2	Oct 20 2007	23:34:13	70 03.54 S	093 32.26 W	500.26
p0709065	2	3	Oct 21 2007	0:03:02	70 03.59 S	093 32.43 W	500.14
p0709066	4	-	Oct 22 2007	1:10:20	70 03.02 S	093 43.62 W	500.35
p0709067	16	-	Oct 24 2007	1:59:22	70 01.74 S	094 28.86 W	3044.65
p0709068	2	-	Oct 24 2007	5:57:30	70 01.28 S	094 34.74 W	303.63
p0709069	23	-	Oct 25 2007	16:38:56	69 12.97 S	092 04.27 W	4279.13
p0709tmc001	-	-	Sep 27 2007	10:31:04	70 37.78 S	090 48.41 W	50.00
p0709tmc002	12	-	Sep 29 2007	20:49:57	70 32.70 S	092 59.19 W	997.41
p0709tmc003	12	-	Oct 04 2007	15:27:55	70 10.45 S	094 29.43 W	1011.96
p0709tmc004	12	-	Oct 24 2007	9:07:46	70 00.70 S	094 39.35 W	1010.00
p0709tmc005	12	-	Oct 26 2007	16:09:33	68 42.64 S	090 48.15 W	1014.92
p0709aft001	-	-	Oct 04 2007	14:02:54	70 10.44 S	094 29.98 W	506.21
p0709aft002	-	-	Oct 07 2007	0:39:45	70 08.98 S	093 32.64 W	500.72
p0709aft003	-	-	Oct 07 2007	22:59:19	70 03.73 S	093 11.36 W	500.24
p0709aft004	-	-	Oct 09 2007	0:21:18	69 54.36 S	092 48.04 W	500.22
p0709aft005	-	-	Oct 09 2007	3:12:01	69 53.88 S	092 45.27 W	500.01
p0709aft006	-	-	Oct 09 2007	23:53:18	69 52.59 S	092 20.49 W	499.63
p0709aft007	-	-	Oct 10 2007	23:04:59	69 49.25 S	092 10.87 W	500.50
p0709aft008	-	-	Oct 11 2007	23:52:40	69 43.69 S	092 02.17 W	500.29
p0709aft009	-	-	Oct 12 2007	23:22:00	69 41.49 S	091 58.31 W	500.72
p0709aft010	-	1	Oct 15 2007	14:04:45	69 37.00 S	092 19.22 W	506.74

CTD	Dep Smp'd	Time Sers	UTC Date	UTC Time	Start of Cast Latitude	Longitude	Max Depth
p0709aft011	-	2	Oct 15 2007	14:47:56	69 36.91 S	092 19.19 W	506.59
p0709aft012	-	-	Oct 17 2007	1:26:32	69 30.82 S	092 23.51 W	500.01
p0709aft013	-	1	Oct 23 2007	0:43:56	70 03.89 S	093 59.48 W	500.37
p0709aft014	-	2	Oct 23 2007	1:17:11	70 03.91 S	093 59.73 W	500.39



**Table 2: NBP0709 XBT Log**

A total of 22 Argo floats were deployed for Steve Riser in a water depth greater than 2500m. The first seven were deployed before or shortly after the fire; no XBT data exist for those deployments.

A total of 10 Solo floats were deployed within the sea ice zone; a few coincided with XBTs; others with CTDs.

Filename	Date (GMT)	Time (GMT)	Lat	Long	XBT Type	Float Dep'd	Quality
T6_00108	9/8/07	22:20	64 50.20459 S	64 4.27197 W	T6		okay?
T6_00109	9/9/07	1:17	64 53.45898 S	64 27.59229 W	T6		good data
T7_00110	9/9/07	14:29	63 11.43457 S	65 26.91406 W	T7		good data
T7_00111	9/23/07	14:54	62 0.46924 S	83 38.36523 W	T7	A	okay?
T7_00112	9/23/07	17:22	62 27.15381 S	84 6.33496 W	T7		okay?
T7_00113	9/23/07	17:28	62 27.62012 S	84 6.81641 W	T7	A	good? data -warm surface
T7_00114	9/23/07	19:52	62 53.88281 S	84 35.05566 W	T7	A	okay?
T7_00115	9/23/07	22:19	63 21.31689 S	85 5.15137 W	T7	A	good data
T7_00116	9/24/07	0:46	63 48.8457 S	85 35.18945 W	T7	A	good to 575m
T7_00117	9/24/07	3:19	64 16.14844 S	86 6.56836 W	T7	A	some good first 200m?
T7_00118	9/24/07	5:51	64 43.7915 S	86 37.6582 W	T7	A	good to 360, bad after
T7_00119	9/24/07	8:14	65 9.84473 S	87 7.65234 W	T7		good to 555, bad after
T7_00120	9/24/07	8:23	65 10.98682 S	87 8.81055 W	T7	A	okay?
T7_00121	9/24/07	10:37	65 36.13965 S	87 38.88184 W	T7	A	good data
T7_00122	9/24/07	13:08	66 4.00586 S	88 12.71387 W	T7	A	good data
T7_00123	9/24/07	15:45	66 32.99707 S	88 48.20312 W	T7	A	good data
T7_00124	9/24/07	18:10	67 0.27148 S	89 21.90332 W	T7	A	good background?
T7_00125	9/24/07	20:37	67 27.03662 S	89 56.24805 W	T7	A	good to 398m, bad after
T7_00126	9/24/07	23:06	67 57.69922 S	89 56.28223 W	T7	A	highly questionable
T7_00127	9/25/07	6:28	69 17.49658 S	89 56.62012 W	T7		good to 200m
T7_00128	9/25/07	6:31	69 17.76172 S	89 56.62207 W	T7		good to 100m
T7_00129	9/25/07	6:34	69 18.07324 S	89 56.63281 W	T7		good to 200m
T7_00130	9/25/07	6:42	69 18.62158 S	89 56.06641 W	T7		good to 300m, bad after that
T7_00131	9/25/07	6:48	69 18.750 S	89 56.11133 W	T7	A	questionable
T7_00132	9/25/07	13:03	69 46.752 S	90 01.122 W	T7		nice clean profile, no nav data
T5_00133	10/2/07	16:49	70 19.09912 S	94 26.9834 W	T5	S	good data
T5_00134	10/7/07	10:46	70 7.29053 S	93 20.83105 W	T5		good to 200m
T5_00135	10/7/07	10:49	70 7.27197 S	93 20.77344 W	T5		good to 100m
T6_00136	10/9/07	6:16	69 53.875 S	92 42.06836 W	T6	S	questionable
T7_00137	10/15/07	2:26	69 38.79883 S	92 20.49805 W	T7		questionable
T7_00138	10/15/07	2:29	69 38.7959 S	92 20.49121 W	T7		spiky data, but reasonable background profile
T6_00139	10/18/07	0:38	69 34.25391 S	92 29.83398 W	T6		questionable
T6_00140	10/18/07	0:41	69 34.27979 S	92 29.85254 W	T6		good data: iceberg?
T5_00141	10/21/07	9:06	70 3.47266 S	93 39.48828 W	T5		bad launch
T5_00142	10/21/07	9:13	70 3.47754 S	93 39.52344 W	T5	S	spiky data, but reasonable background profile
T6_00143	10/24/07	15:04	69 59.86279 S	94 27.22266 W	test?		no data whatsoever
T6_00144	10/24/07	15:09	69 59.99707 S	94 26.85352 W	test?		no data whatsoever
T6_00145	10/24/07	15:49	70 0.83984 S	94 21.81836 W	T6		spiky mess
T6_00146	10/24/07	15:55	70 0.84326 S	94 20.51953 W	T6		spiky mess
T6_00147	10/24/07	18:57	70 1.75098 S	94 0.50293 W	test		good clean test data
T6_00148	10/24/07	22:53	69 56.74561 S	93 51.41699 W	test		good clean test data
T6_00149	10/24/07	23:21	69 56.02979 S	93 50.11914 W	test		spiky ungrounded test
T6_00150	10/24/07	23:23	69 56.02246 S	93 50.17285 W	test		spiky ungrounded test
T6_00151	10/25/07	0:58	69 52.86133 S	93 40.72168 W	test		ungrounded halfway through
T6_00152	10/25/07	1:07	69 52.76855 S	93 40.80957 W	T6		spiky data, but reasonable background profile
T6_00153	10/25/07	3:05	69 49.75977 S	93 31.35449 W	T6		spiky mess
T6_00154	10/25/07	3:35	69 48.375 S	93 27.46973 W	test		good clean test data
T7_00155	10/25/07	3:45	69 48.02734 S	93 26.52441 W	test		spiky ungrounded test
T7_00156	10/25/07	4:03	69 47.62939 S	93 25.57422 W	test		good clean test data
T7_00157	10/25/07	5:39	69 42.77393 S	93 17.56836 W	test		bad test
T7_00158	10/25/07	7:03	69 40.61621 S	93 12.41699 W	test		spiky ungrounded test
T7_00159	10/25/07	7:09	69 40.4751 S	93 12.28906 W	T7		broke at 200m
T7_00160	10/25/07	7:12	69 40.46582 S	93 12.3125 W	T7		a little spiky
T7_00161	10/25/07	9:12	69 37.24561 S	93 5.08203 W	T7		bad launch
T7_00162	10/25/07	9:17	69 37.22754 S	93 5.12305 W	T7		good data
T6_00163	10/25/07	11:05	69 33.71436 S	92 54.12305 W	T6		good data
T6_00164	10/25/07	12:36	69 27.46143 S	92 41.6875 W	T6		good data

Filename	Date (GMT)	Time (GMT)	Lat	Long	XBT Type	Float Dep'd	Quality
T6_00165	10/25/07	13:54	69 21.846 S	92 29.76 W			nice clean profile, no nav data
T6_00166	10/25/07	14:51	69 16.94678 S	92 16.83008 W	T6		questionable
T6_00167	10/25/07	21:56	69 9.79541 S	91 37.99219 W	T6		good data
T6_00168	10/25/07	22:55	69 8.5835 S	91 23.93262 W	T6		good data
T6_00169	10/25/07	23:52	69 7.38672 S	91 10.08789 W	T6		good to 160m
T6_00170	10/25/07	23:55	69 7.35889 S	91 10.10352 W	T6		good data
T6_00171	10/26/07	0:49	69 06.06 S	90 57.018 W	T6		good to 295, questionable after, nav data bad
T6_00172	10/26/07	1:44	69 04.374 S	90 44.31 W	T6		good profile data but nav data bad
T7_00173	10/26/07	3:02	69 02.94 S	90 29.826 W	T7		good profile data but nav data bad
T7_00174	10/26/07	3:58	69 02.682 S	90 15.546 W	T6		good T6, accidentally logged as a T7, nav data bad
T6_00175	10/26/07	9:26	68 57.462 S	90 16.92 W	T6		okayish to 300m, then bad. No nav data
T6_00176	10/26/07	9:29	68 57.186 S	90 16.602 W	T6		nice clean profile, no nav data
T6_00177	10/26/07	10:15	68 52.716 S	90 11.97 W	T6		nice clean profile, no nav data
T6_00178	10/26/07	11:08	68 47.34 S	90 16.164 W	T6		nice clean profile, no nav data
T6_00179	10/26/07	12:03	68 43.08 S	90 27.414 W	T6		nice clean profile, no nav data
T6_00180	10/26/07	12:43	68 40.56 S	90 38.436 W	T6		nice clean profile, no nav data
T6_00181	10/26/07	17:52	68 37.728 S	90 48.168 W	T6		nice clean profile, no nav data
T6_00182	10/26/07	18:25	68 32.556 S	90 48.262 W	T6		good data, nav data bad

Problems w/ WinMK21 getting nav data, so used hand launcher & software (AMERSEAS) for the rest of the XBT drops

X071026N01	10/26/07	19:16	68 26.94 S	090 43.29 W	T6		good to 315m
X071026N02	10/26/07	19:58	68 20.93 S	090 43.03 W	T6		good to 145m
X071026N03	10/26/07	20:01	68 20.40 S	090 43.02 W	T6		good to 130m
X071026N04	10/26/07	20:33	68 15.63 S	090 42.85 W	T6		good
X071026N05	10/26/07	21:08	68 10.54 S	090 42.80 W	T6		good until bird's wing caught the wire around 155m
X071026N06	10/26/07	21:10	68 10.39 S	090 42.77 W	T6		good
X071026N07	10/26/07	22:15	68 00.57 S	090 42.48 W	T7		good
X071026N08	10/26/07	23:37	67 50.78 S	090 35.14 W	T6		good
X071027N01	10/27/07	0:43	67 40.58 S	090 29.66 W	T6		good
X071027N02	10/27/07	1:57	67 30.91 S	090 24.63 W	T6		okay
X071027N03	10/27/07	3:08	67 21.35 S	090 20.26 W	T7		good
X071027N04	10/27/07	4:24	67 11.57 S	090 15.72 W	T7		questionable and only to 310m
X071027N05	10/27/07	4:28	67 11.33 S	090 15.74 W	T7		questionable and only to 220m
X071027N06	10/27/07	5:43	67 01.72 S	090 12.50 W	T7		good
X071027N07	10/27/07	6:53	66 52.05 S	090 10.35 W	T7		good
X071027N08	10/27/07	7:59	66 42.52 S	090 05.45 W	T7		good to 170m
X071027N09	10/27/07	8:03	66 42.13 S	090 05.32 W	T7		good to 420m, questionable to 760?m
X071027N10	10/27/07	8:55	66 33.50 S	089 55.96 W	T7		good
X071027N11	10/27/07	19:31	64 35.73 S	087 24.92 W	T7		good?
X071028N01	10/28/07	16:14	60 55.97 S	83 08.07 W	T7		bad
X071028N02	10/28/07	16:20	60 55.59 S	83 07.97 W	T7		good? Fairly homogeneous, 2-2.5 degC