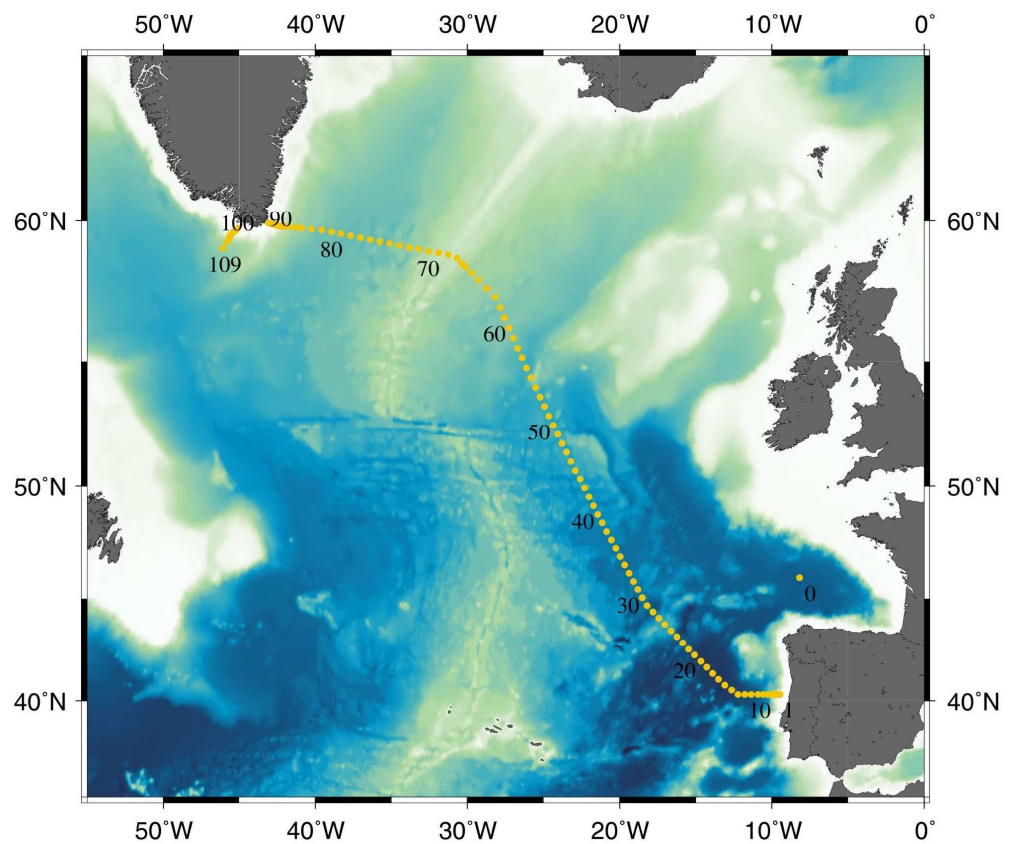


# OVIDE 2010

## CTD-O2 Cruise report

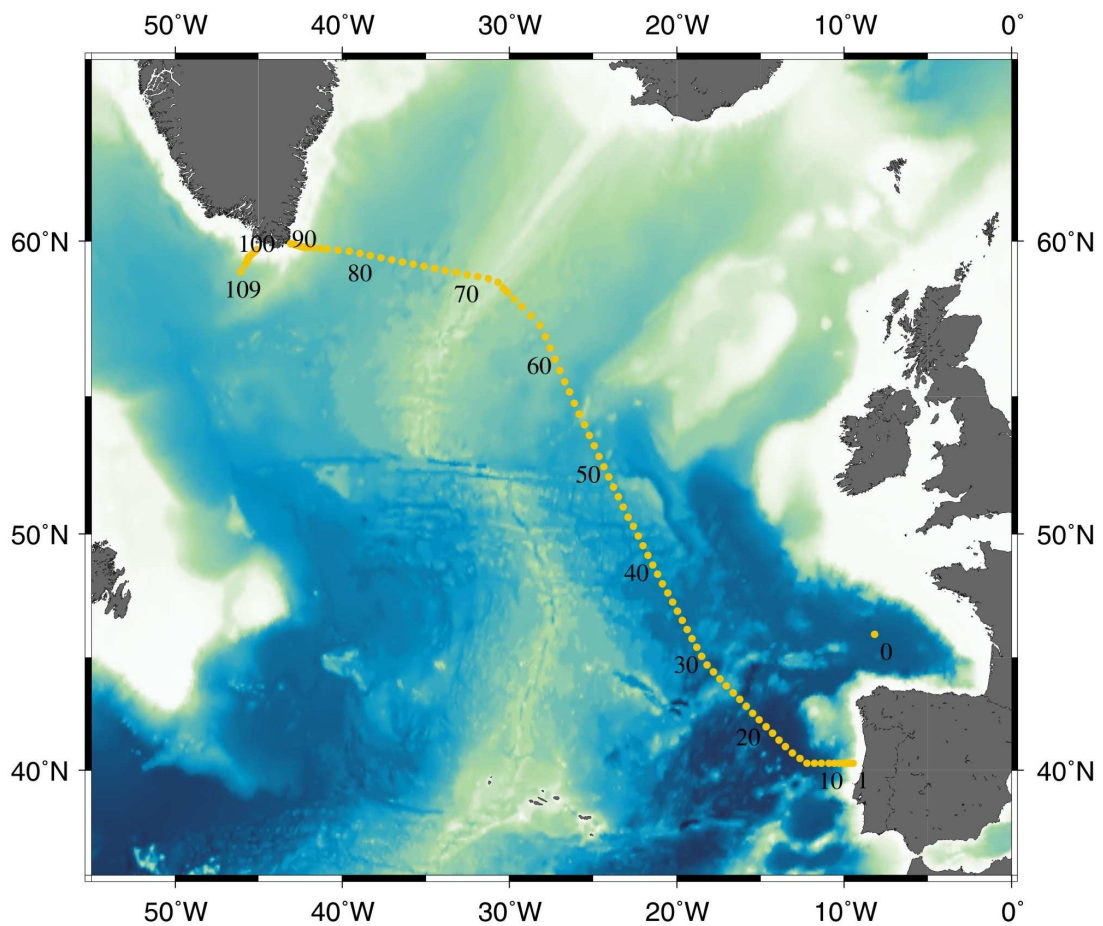




# OVIDE 2010 Cruise

Observatoire de la Variabilité Interannuelle à DEcennale en Atlantique Nord

N/O Thalassa from 07/06/2010 to 08/07/2010





## **ABSTRACT**

The Ovide 5 cruise was carried out from the 7<sup>th</sup> of June to the 8<sup>th</sup> of July 2010 on board the N/O Thalassa. It was the fifth and last occurrence of the Ovide hydrological section that was performed in June 2002, 2004, 2006 and 2008, as part of the CLIVAR program under the name of A25. It is mainly funded by Ifremer, INSU (LEFE-IDAO) and UBO. The Ovide Principal Investigator is Herlé Mercier. A Greenland-Portugal section was previously performed in 1997 under the leadership of S. Bacon (NOCS), slightly south of the Ovide path. The Ovide route is redundant with AR7E (called also A1) on its western part. It begins at Cape Hoppe (southeast tip of Greenland), runs through the Irminger Sea, crosses the Reykjanes Ridge (300 miles north of Charlie-Gibbs Fracture Zone), runs through the Iceland Basin and the West European Basin (without having to sample on top of the complex Mid-Atlantic Ridge) and ends near Lisbon (Portugal). The objective of this repeated hydrological section is to monitor the variability of water mass properties and main current transports in the basin, complementing the international observation array relevant for climate studies.

The hydrological section includes 98 surface-bottom stations from coast to coast, collecting profiles of temperature, salinity, oxygen and currents, spaced by 1 to 25 Nm depending on the steepness of the topography. In addition, three test stations and 11 stations in the Labrador Sea were performed. From the 28 bottles closed at various depth at each stations, samples of sea water are used for salinity and oxygen calibration, and for measurements of biogeochemical components that are not reported here. Ovide 5 is the second of the Ovide cruises to implement the new Seabird CTD (SBE911+). The software SBE data processing was used after decoding and cleaning the raw data. Then, data were binned and calibrated as it was done for the previous Ovide cruises, using on the one hand pre and post cruise calibration results for the pressure and temperature sensors and on the other hand the water samples of the 28 bottles of the rosette at each station for the salinity and dissolved oxygen data. A new software, written in matlab, has been used for the data calibration. A final accuracy of 0.001°C, 0.002 psu and 0.05 ml/l was obtained on final profiles of temperature, salinity and dissolved oxygen, compatible with international requirements issued from the WOCE program.

## RESUME

La campagne Ovide 5, réalisée du 7 juin au 8 juillet 2010 sur le N/O Thalassa, est la dernière d'une série de 5 campagnes océanographiques dont le but est d'établir un observatoire de la variabilité climatique du tourbillon subpolaire de l'océan Atlantique Nord. Le projet Ovide est dirigé par Herlé Mercier et il est principalement financé par l'Ifremer, l'INSU (LEFE-IDAO) et l'UBO. Les quatre premières campagnes Ovide ont été réalisées à la même période de l'année en 2002, 2004, 2006 et 2008 et le long du même trajet entre l'extrémité sud-est du Groenland et la Péninsule Ibérique (section Ovide, également appelée A25 dans le programme CLIVAR) via la Mer d'Irmingier, le Bassin d'Islande et le Bassin Ouest Européen, légèrement au nord de la section FourEx d'août 1997 réalisée par S. Bacon (UK) pour éviter de longer la Dorsale Médio-Atlantique. La répétition de la section Ovide tous les deux ans pendant une période de 10 ans permet de documenter l'évolution des caractéristiques des masses d'eau, et de résoudre les fluctuations interannuelles de la cellule méridienne de circulation ainsi que du transport de chaleur et de traceurs vers l'Europe et l'Arctique. La partie nord-ouest du trajet est identique à la section CLIVAR AR7E (ou A1E).

En 2010, des mesures d'hydrologie, biogéochimie et courant ont été réalisées en 112 stations, dont 98 stations le long de la section Ovide, 11 stations en Mer du Labrador et 3 stations tests. Ce rapport détaille le traitement des données de la sonde CTDO<sub>2</sub> immergée jusqu'au fond à chaque station afin d'obtenir des profils continus de température, salinité et oxygène dissous. Les stations ont été positionnées géographiquement sur la base de l'échantillonnage d'Ovide 2002, où la distance entre stations avait été ajustée pour permettre de résoudre les tourbillons de moyenne échelle. Ovide 5 est la seconde campagne Ovide où la nouvelle sonde SBE911+ du LPO a été mise en œuvre, en série avec un capteur d'oxygène dissous SBE43. La chaîne de traitement "SBE data processing" a été utilisée après un premier nettoyage des données brutes. Les données ont ensuite été réduites et calibrées à l'aide d'une nouvelle chaîne de calibration (écrit en matlab) utilisée pour la première fois pour cette campagne. Cette chaîne, écrite en matlab, est conforme à la procédure habituelle du LPO qui utilise d'une part les calibrations pré et post-campagne des capteurs de température et de pression pour corriger les mesures de température et pression de la sonde et d'autre part les prélèvements d'eau des 28 bouteilles de la rosette pour corriger les données salinité et oxygène dissous de la sonde. La précision finale respective des données de température, salinité et oxygène dissous (0.001 °C, 0.002 psu et 0.05 ml/l) est compatible avec les normes internationales WOCE.

# TABLE OF CONTENTS

<b>1. THE OVIDE PROGRAM .....</b>	<b>9</b>
1.1. SCIENTIFIC THEME AND SPECIFIC OBJECTIVES OF THIS CRUISE .....	9
1.2. RESULTS OBTAINED WITH THE DATA FROM PREVIOUS CRUISES .....	10
1.2.1. <i>Variability of the meridional circulation cell intersected by the OVIDE section</i> .....	10
1.2.2. <i>Variability of the properties of the North Atlantic subpolar mode waters</i> .....	10
1.2.3. <i>Variability of the anthropogenic CO2 sink in the North Atlantic</i> .....	11
1.2.4. <i>Variability of the western boundary current transport in the Irminger Sea</i> .....	11
1.2.5. <i>Diagnostic modeling</i> .....	12
<b>2. THE OVIDE 2010 CRUISE .....</b>	<b>13</b>
<b>3. CTD-O<sub>2</sub> MEASUREMENT CALIBRATION .....</b>	<b>19</b>
3.1. CTD-O <sub>2</sub> DATA ACQUISITION .....	19
3.1.1. <i>Description of the cruise</i> .....	19
3.1.2. <i>Technical summary</i> .....	21
3.1.3. <i>Data processing</i> .....	22
3.2. SAMPLING AT SEA .....	23
3.3. ANALYSIS OF SALINITY AND DISSOLVED OXYGEN SAMPLES .....	25
3.3.1. <i>Standardization of salinometers</i> .....	25
3.3.2. <i>Salinity</i> .....	26
3.3.3. <i>Dissolved oxygen</i> .....	29
3.4. NEW CTD-O <sub>2</sub> DATA CALIBRATION SOFTWARE .....	32
3.5. DATA PREPARATION BEFORE CALIBRATION .....	33
3.5.1. <i>Data cleaning with Hydro_net</i> .....	33
3.5.2. <i>Correction for hysteresis</i> .....	34
3.5.3. <i>Processing with the Seabird routines</i> .....	34
3.6. CALIBRATION OF PRESSURE MEASUREMENTS .....	35
3.6.1. <i>Calibration of the sensor under laboratory conditions at 20°C</i> .....	35
3.6.2. <i>Influence of the static temperature</i> .....	35
3.6.3. <i>Influence of the dynamic temperature effect</i> .....	38
3.6.4. <i>Correction of the pressure measurement on the CTD profiles</i> .....	38
3.6.5. <i>Validation of the CTD pressure measurement</i> .....	38
3.7. CALIBRATION OF THE TEMPERATURE MEASUREMENT .....	42
3.7.1. <i>Operating mode</i> .....	42
3.7.2. <i>Validation of the CTD temperature measurement</i> .....	44

3.8.	CALIBRATION OF THE CONDUCTIVITY .....	46
3.8.1.	<i>Operating mode</i> .....	46
3.8.2.	<i>Analysis of the initial results and strategy adopted</i> .....	46
3.8.3.	<i>Assessment of the calibration of the conductivity profiles</i> .....	48
3.8.4.	<i>Validation of the results</i> .....	52
3.9.	CALIBRATION OF DISSOLVED OXYGEN PROFILES .....	56
3.9.1.	<i>Operating mode</i> .....	56
3.9.2.	<i>Dissolved oxygen units</i> .....	57
3.9.3.	<i>Station grouping strategy</i> .....	57
3.9.4.	<i>Assessment of the calibration of the dissolved oxygen profiles</i> .....	57
3.9.5.	<i>Validation of the results</i> .....	63
3.10.	DATA REDUCTION .....	67
3.11.	VALIDATION OF THE PROFILES.....	68
3.11.1.	<i>Validation of the oxygen</i> .....	68
3.11.2.	<i>Density inversions</i> .....	69
3.12.	ACCURACY OF THE OVIDE 2010 MEASUREMENTS .....	70
3.13.	CORRECTION OF OVIDE 2010 PROFILES .....	71
<b>4.</b>	<b>BIBLIOGRAPHY.....</b>	<b>73</b>
<b>5.</b>	<b>LISTINGS AND FIGURES OF THE CTD PARAMETERS.....</b>	<b>77</b>
5.1.	REMARKS .....	77



# 1. The OVIDE program

## 1.1. Scientific theme and specific objectives of this cruise

The OVIDE 5 cruise is the last in a series of five oceanographic cruises, whose goal is to establish an observatory of climate variability in the subpolar gyre of the North Atlantic Ocean. Hydrology, geochemistry and current measurements were performed between the southeast tip of Greenland (Cape Hoppe) and the Iberian Peninsula (Cape Mendocino). The repetition of cruises along this route every two years for a period of 10 years makes it possible to document the evolution of the water mass properties, and to resolve the interannual fluctuations of the meridional overturning cell and of heat and tracers transport towards Europe.

The distance between stations was comprised between 2 and 25 nautical miles in order to resolve the medium scale eddies. A fine resolution is necessary on the continental shelves, where a high spatio-temporal variability is observed. A resolution of 25 Nm was chosen in the center of the basins, where the topography is relatively smooth. The sampling of 2002 was generally respected.

In each station, continuous profiles of temperature, salinity and dissolved oxygen were measured from the surface to the bottom (CTDO<sub>2</sub>). Geochemical analyses carried out on the water samples were used to determine the nutrients concentrations (nitrates, phosphates and silicates), pH and alkalinity (allowing calculation of the anthropogenic carbon) and the Freon (CFCs and CCl<sub>4</sub>) levels. These measurements were complemented by current profiles, carried out using acoustic current meters from the surface to the bottom (L-ADCP), as well as on a water column from 0 to 600 meters along the ship's route (VM-ADCP). The temperature, salinity, chlorophyll level and CO<sub>2</sub> fugacity in the surface waters were continuously measured using the onboard thermosalinometer and fluorometer, as well as the GASPAR system from our collaborators in Vigo. Sampling was also carried out to determine the isotope ratio of <sup>18</sup>O and of <sup>13</sup>C, the composition of volatile halogenated organic compounds at the surface, the first determination of the methylmercury concentration in the water column at 3 points of the section and surface chlorophyll, tritium and cesium-137 measurements at several points along the section. Fourteen Argo profiling floats equipped with oxygen sensors (PROVOR-DO) were deployed during the cruise, as well as 5 SVP-B and 5 SVP-BS. On the return route, 56 XBTs were launched. A VMP (Vertical Micro-Profiler) should also have been deployed during the cruise, but it was lost on the second deployment.

The quality of the data was monitored constantly on board and is as good as or better than that required by the international standards issued during the WOCE experiment.

In addition to the cruise data and the Lagrangian profiler data from the Argo project, the OVIDE project includes the analysis of spatial altimetry data (JASON, TOPEX/POSEIDON, ERS, etc.), a high resolution, realistic modeling program (Drakkar project) and assimilation of the data in a lower resolution model.

The project is part of the LEFE-IDAO program (Fluid Envelopes and the Environment, Interactions and Dynamics of the Atmosphere and Ocean), contributes to the international Clivar (Climate Variability and Predictability) program and complements the work planned for this region (mainly) by Germany, Great Britain and Canada.

The hydrographic section allowed us to sample a wide variety of water masses, originating in the Nordic seas, in the Labrador Sea, in the Mediterranean Sea and even around the Antarctic Peninsula, and to accurately measure the variations of their properties.

A web site, maintained from the vessel and on shore, allowed colleagues, friends or parents to follow the progress of the cruise: <http://www.ifremer.fr/lpo/ovide>. Numerous documents related to the OVIDE

project are also available on this site.

## 1.2. Results obtained with the data from previous cruises

We illustrate below some results of the analyses of the data collected during the first OVIDE cruises. These analyses are far from complete and will go on until 2014.

### 1.2.1. Variability of the meridional circulation cell intersected by the OVIDE section

One of the objectives of the OVIDE project is to estimate the interannual transport variability of the meridional overturning cell intersected by the Greenland-Portugal hydrographic section. The quantification and understanding of the mechanisms of intra-decadal variability in the amplitude of the meridional overturning cell is a necessary prerequisite for the verification of the potential long-term decreasing trend suggested by the IPCC models. We have shown that, at the latitudes of the OVIDE section, the meridional overturning cell should be calculated in density coordinates in order to effectively separate the upper warm branch from the lower cold branch. Note that by calculating the meridional overturning cell in density coordinates, its variability is correlated with that of the heat transport across the section (which is not the case if we calculate this cell in  $z$  coordinates). Of the 5 results analyzed (1997 to 2008), the amplitude of the meridional overturning cell showed a maximum of 19 Sv in August 1997 and a minimum of 11 Sv in June 2006 (uncertainty estimate  $\sim 2$  Sv). An argument showing the relationship between the horizontal circulation variability and the meridional overturning cell variability (the current transport in the North Atlantic is a good proxy for the transport of the upper branch of the meridional overturning cell) allowed the estimation of the meridional overturning cell amplitude based on systematic observations (altimetry and Argo).

*Publications on this subject:* Lherminier et al. (2007); Lherminier et al. (2010); Gourcuff et al. (2011); Mercier et al. (2013), Desbruyères et al. (2013)

### 1.2.2. Variability of the properties of the North Atlantic subpolar mode waters

The analysis of all temperature and salinity profiles (ARGO/Gyroscope floats and oceanographic cruises including the OVIDE 2002 cruise) measured in the Iceland Basin between 2002 and 2004 shows the presence of several varieties of subpolar mode water. We were particularly interested in the variety of mode water located on the Reykjanes Ridge that has warmed by 1.5°C since the mid-1990s. Understanding the mechanisms of this variability (much higher than the anthropogenic warming of the ocean surface layers) was the subject of E. de Boisséson's thesis. The ORCA025-G70 model served as a basis for this work. It was shown that, at low frequency, the main cause of the variability in the subpolar mode water properties is the convection intensity in the Iceland Basin, linked to the North Atlantic oscillation. During periods of deep convection (beginning of the 1990s, positive North Atlantic oscillation index), the mixed layer, where the mode water forms, incorporates a substantial portion of intermediate water, which causes a decrease of its temperature. When the mixed layers are shallower (since 1996, a period of neutral North Atlantic Oscillation index), the mixed layer temperature is higher and the mode water temperature increases. Superimposed on this mechanism, the proportions of water of subtropical and subpolar origins transported by the North Atlantic current also play a role. Thus, since the beginning of the 1990s, the proportion of subtropical water has increased from 50% to 65%, further reinforcing the

mode water warming.

The thesis of E. de Boisséson also reviewed the method of calculation of the mixed layer heat budget from the Argo data. In particular, it was shown that the classical method (balance between the heat flux at the air-sea interface and evolution of the heat content in the mixed layer), applied to the Iceland Basin, could lead to biases of the order of  $20 \text{ W m}^{-2}$  in summer, due to the contribution of the vertical mixing at the base of the mixed layer, non-negligible at this time of year when the mixed layers are shallow. An *ad hoc* method, where the calculation is performed on a water column of greater thickness, was successfully proposed.

*Publications on this subject:* Thierry et al. (2008); de Boisséson et al. (2010); de Boisséson et al. (2012)

### 1.2.3. Variability of the anthropogenic CO<sub>2</sub> sink in the North Atlantic

The ocean helps to moderate climate change by absorbing a little more than a quarter of the carbon dioxide emitted by human activity. The OVIDE data analyzed conjointly with historical data (collaboration IIM Vigo/LPO) allowed an estimation of the interannual variation of the inventory of anthropogenic carbon in the Irminger Sea. The period of intense deep convection, linked to a positive North Atlantic oscillation situation in the early 1990s, is associated with a capture rate of anthropogenic carbon dioxide in the ocean two to three times higher than in neutral or negative North Atlantic oscillation situations (other periods).

*Publications on this subject:* Pérez et al. (2008); Pérez et al. (2010).

### 1.2.4. Variability of the western boundary current transport in the Irminger Sea

A decade ago, the analysis of observations showed a rapid decrease in the salinity of the deep western boundary current in the Irminger Sea (Dickson et al., Nature 2002) and suggested that the transport of this current was decreasing (Bacon, Nature 1999). These observations had fuelled the discussion about a possible slowdown of the thermohaline circulation. In parallel, the surface circulation of the Atlantic subpolar gyre slowed (Hakkinen and Swarovs, Science, 2004). The OVIDE project (certain analyses have been conducted in collaboration with A. Sarafanov and A. Falina of SIO, Moscow and K. Vage of WHOI) provided additional observations, which showed that:

The salinity of the deep western boundary current at the southern tip of Greenland (60°N) has stopped decreasing since 2006 and the trend is currently increasing. We have linked the increase in the salinity of the surface layers in the Iceland Basin to the salinity increase of the deep western boundary current. Indeed, immediately after crossing the sills separating the Nordic seas from the North Atlantic, the waters of the surface layers are drawn into the deep western boundary current and contribute to the evolution of its properties.

The baroclinic transport of the deep western boundary current at 60°N increased between the 1990s and the 2000s. By combining these hydrological observations with altimetry observations, we have also shown that the trends were the same for the total transport (considering that only the baroclinic component of the transport is historic and linked to the absence of velocity measurements at the level of the reference used for the geostrophic calculations).

The five currentmeter moorings deployed in the East Greenland current between 2004 and 2006 were used to quantify, for the first time, the transport of this current and to characterize its variability, which

showed a peak for the periods ~10 days. We showed a good correlation between the observed variability and the wind stress curl at the center of the Irminger Sea. It also seemed interesting to reconstruct a temporal series of the East Greenland current transport over a longer period (1992-2009), by combining the vertical structure obtained from the moorings with the variability from satellite altimetry. This approach was validated using independent data and showed that no significant trend was detectable for the variation in the East Greenland current transport (the western boundary of the subpolar gyre) between 1992-2009, even though the decrease in the intensity of the subpolar gyre highlighted by Hakkinen and Rhines (2004) is clearly visible in the second part of the 1990s.

*Publications on this subject:* Daniault et al. (2011a), Daniault et al. (2011b), Sarafanov et al. (2009), Sarafanov et al. (2010a), Sarafanov et al. (2010b), Vage et al. (2011).

### 1.2.5. Diagnostic modeling

The variational assimilation of the ARGO temperature and salinity profiles was conducted in a North Atlantic configuration with resolution  $1^\circ$  (Thesis of G. Forget). The period studied extends from spring 2002 to spring 2003 and includes the OVIDE 2002 period. The resulting circulation is validated with reference to independent data that demonstrate the realism of the model and validate this system as a diagnostic tool for the analysis of low frequency and large-scale oceanic variability. We confirm the water mass variability already highlighted: warming and salinity increase of surface water masses, cooling and salinity decrease of intermediate waters. It has also been shown that the assimilation of the Argo data (alone) allowed a very significant improvement of the restitution of the meridional overturning cell in the North Atlantic, although these observations are limited to the first 2000 meters.

C. Gourcuff's thesis was an opportunity to show that the recent progress in the estimation of the mean surface circulation (M.H. Rio team at CLS) could now be used to constrain, with altimetry, the inverse model used to estimate the circulation from the OVIDE section and to render a similar circulation variability to that diagnosed from in situ observations alone.

*Publications on this subject:* Ferron (2011), Forget et al. (2008a); Forget et al. (2008b), Gourcuff et al. (2011).

## 2. The OVIDE 2010 cruise

The fifth cruise of the OVIDE program took place on board the N/O Thalassa, from 7th June to 8th July 2010, starting and finishing in Brest (France). The following operations were carried out during this mission (for more details, see the cruise report):

- One hundred twelve ctd casts, which are the object of this data report:
  - . 3 test casts (casts 0, 110 and 111)
  - . 98 casts corresponding to the OVIDE section (casts 1-98)
  - . 11 casts corresponding to the West Greenland section (casts 99-109)
- Deployment of 14 PROVOR Lagrangian profilers equipped with oxygen sensors.
- Deployment of 5 SVP-B drifters and 5 SVP-BS drifters (P Atm-salinity).
- Implementation of a microstructure profiler (VMP 6000) at two casts.
- 56 XBT casts (T7).
- Underway measurements: hull-mounted ADCP, thermosalinometer, fluorometer.



*The scientific team for the Ovide 2010 cruise*

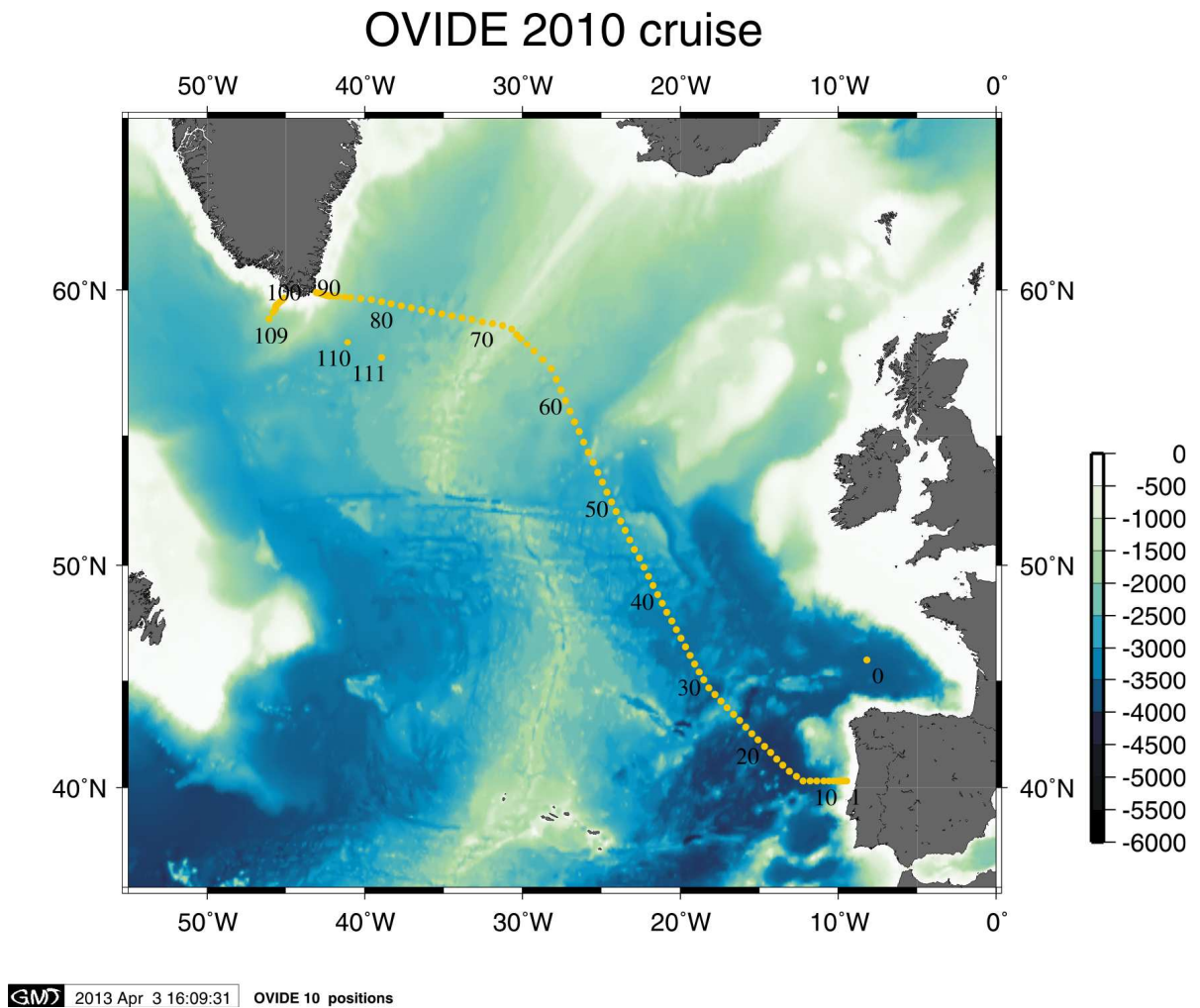
## List of participants

	H/F	Name	Institut	Function
1	F	Thierry Virginie	LPO/Ifremer	Chief scientist
2	H	Branellec Pierre	LPO/Ifremer	Chemical coordinator (S, O <sub>2</sub> )
3	F	Carracedo Segade Lidia	IIM/CSIC Vigo	CTD watch (8-12)
4	H	Desbruyères Damien	LPO/Ifremer	Salinity
5	H	Ferron Bruno	LPO/CNRS	VMP + CTD sampling
6	H	Hamon Michel	LPO/Ifremer	CTD watch (8-12) + LADCP
7	F	Kermabon Catherine	LPO/Ifremer	CTD watch (4-8)
8	H	Khatir Noredine	IRD	CTD watch (4-8)
9	H	Kokoszka Florian	LPO/Ifremer	CTD watch (0-4)
10	F	Le Bihan Caroline	IC/Ifremer	Oxygen
11	H	Leizour Stéphane	LPO/Ifremer	CTD watch (0-4) + Provor + VMP
12	F	Lherminier Pascale	LPO/Ifremer	Post processing SADCP + LADCP
13	H	Le Steun Mathieu	LPO/Ifremer	CTD watch (4-8)
14	H	Macé Eric	LCM Roscoff	Freon sampling
15	H	Mercier Herlé	LPO/CNRS	CTD watch (8-12)
16	F	Mevel Geneviève	LCM Roscoff	Nutrients
17	H	Morin Pascal	LCM Roscoff	Chemical coordinator (Nutrients, Freon)
18	H	Raimund Stefan	LCM Roscoff	Freon
19	F	Ribas Ribas Mariana	IIM/CSIC Vigo	pH, alcalinity, pO <sub>2</sub> , pCO <sub>2</sub>
20	F	Rios Aida	IIM/CSIC Vigo	Chemical coordinator (pH, alcalinity, pO <sub>2</sub> , pCO <sub>2</sub> )
21	F	Sevin Laure	LCM Roscoff	Freon
22	H	Swingedouw Didier	LSCE/CNRS	CTD watch (0-4)
23	H	Vazquez-Rodriguez Marcos	IIM/CSIC Vigo	pH, alcalinity, pO <sub>2</sub> , pCO <sub>2</sub>
24	H	Vernet Marc	LCM Roscoff	Analyses Fréons

### Institutes :

IC : Service Instrumentation et Capteurs (RDT/IC) Ifremer Brest  
 IIM : Instituto de Investigaciones Marinas, Vigo (Espagne)  
 LCM : Laboratoire de Chimie Marine, Roscoff et IUEM Brest  
 LPO : Laboratoire de Physique des Océans, UMR 6523 (CNRS, Ifremer, IRD, UBO) Brest  
 LSCE : Laboratoire des Sciences du Climat et de l'Environnement, UMR 8212, Saclay

Figure 1 shows the geographical position of the CTD casts carried out during the OVIDE 2010 cruise. The OVIDE section itself corresponds to casts 1 to 98, the West Greenland section corresponds to casts 99-109. The 'test' casts are 0, 110, 111.



**Figure 1 :** Geographic position of the 112 CTD-O<sub>2</sub> casts of the OVIDE 2010 cruise.

The table below shows the date and the position of each CTD cast :

Cast	Date	Time	Latitude	Longitude	Depth (m)	Max. pres. (dbar)
0	9/ 6/10	03-43-32	N 45 57.65	W 8 9.80	4852	4818
1	10/ 6/10	19-26-50	N 40 19.98	W 9 27.56	155	143
2	10/ 6/10	21-08-23	N 40 20.00	W 9 38.59	432	422
3	10/ 6/10	23-05-47	N 40 20.02	W 9 46.04	819	812
4	11/ 6/10	01-39-18	N 40 20.03	W 9 48.13	1277	1275
5	11/ 6/10	04-33-42	N 40 19.86	W 9 52.60	2408	2425
6	11/ 6/10	08-58-18	N 40 20.06	W 9 56.65	3428	3466
7	11/ 6/10	13-30-56	N 40 20.08	W 10 2.16	3523	3564
8	11/ 6/10	18-09-49	N 40 20.09	W 10 18.14	3894	3947
9	11/ 6/10	23-05-39	N 40 20.23	W 10 34.65	4372	4434
10	12/ 6/10	04-21-28	N 40 19.88	W 10 54.32	4855	4935
11	12/ 6/10	09-54-13	N 40 19.95	W 11 20.41	5102	5183
12	12/ 6/10	15-33-05	N 40 20.04	W 11 46.76	5220	5308
13	12/ 6/10	21-11-16	N 40 19.94	W 12 13.17	5262	5352
14	13/ 6/10	03-27-12	N 40 33.12	W 12 38.80	5311	5407
15	13/ 6/10	09-43-38	N 40 47.23	W 13 5.99	5338	5432
16	13/ 6/10	16-13-06	N 41 5.12	W 13 29.52	5351	5449
17	13/ 6/10	22-25-37	N 41 22.98	W 13 53.26	5347	5439
18	14/ 6/10	09-19-05	N 41 40.96	W 14 16.63	5339	5433
19	14/ 6/10	15-31-59	N 41 58.95	W 14 40.35	5333	5430
20	14/ 6/10	21-50-07	N 42 16.91	W 15 3.95	5307	5399
21	15/ 6/10	04-09-35	N 42 34.88	W 15 27.68	4989	5075
22	15/ 6/10	09-57-59	N 42 52.80	W 15 51.03	4201	4260
23	15/ 6/10	15-54-45	N 43 10.89	W 16 14.72	5128	5218
24	15/ 6/10	21-51-05	N 43 28.69	W 16 38.18	4174	4233
25	16/ 6/10	03-18-11	N 43 46.76	W 17 1.87	4007	4065
26	16/ 6/10	08-34-39	N 44 4.60	W 17 25.47	3789	3840
27	16/ 6/10	13-53-20	N 44 22.60	W 17 49.01	4959	5044
28	16/ 6/10	19-35-49	N 44 40.45	W 18 12.67	4849	4929
29	17/ 6/10	01-30-15	N 45 3.04	W 18 30.29	4557	4631
30	17/ 6/10	07-18-17	N 45 25.33	W 18 47.82	4575	4649
31	17/ 6/10	12-56-32	N 45 47.60	W 19 5.44	4519	4593
32	17/ 6/10	18-37-02	N 46 10.19	W 19 22.85	4605	4682
33	18/ 6/10	00-15-22	N 46 32.65	W 19 40.32	4526	4597
34	18/ 6/10	05-59-21	N 46 54.98	W 19 58.19	4505	4577
35	18/ 6/10	11-40-13	N 47 17.39	W 20 15.71	4516	4588
36	18/ 6/10	17-51-35	N 47 39.90	W 20 33.22	4355	4424
37	18/ 6/10	23-22-51	N 48 2.33	W 20 50.83	4458	4541
38	19/ 6/10	05-05-56	N 48 24.77	W 21 8.50	4341	4408
39	19/ 6/10	10-33-48	N 48 47.13	W 21 25.94	4078	4135
40	19/ 6/10	17-09-06	N 49 9.53	W 21 43.58	4344	4412
41	19/ 6/10	23-17-05	N 49 31.84	W 22 1.04	4227	4289
42	20/ 6/10	05-39-33	N 49 54.28	W 22 18.75	4003	4062
43	20/ 6/10	11-35-27	N 50 16.67	W 22 36.28	4134	4194
44	20/ 6/10	17-52-22	N 50 38.46	W 22 54.13	3741	3792
45	20/ 6/10	23-43-15	N 51 1.78	W 23 11.43	3937	3993
46	21/ 6/10	05-21-48	N 51 24.07	W 23 28.87	3285	3328
47	21/ 6/10	10-55-24	N 51 46.26	W 23 46.51	3857	3914
48	21/ 6/10	17-22-05	N 52 8.88	W 24 4.36	3906	3962
49	21/ 6/10	22-46-34	N 52 31.22	W 24 21.49	3601	3646
50	22/ 6/10	04-57-29	N 52 53.51	W 24 39.44	3601	3647
51	22/ 6/10	10-18-59	N 53 15.99	W 24 57.03	3527	3572
52	22/ 6/10	16-00-17	N 53 38.37	W 25 14.19	3592	3641
53	22/ 6/10	21-33-43	N 54 0.86	W 25 31.99	3069	3105
54	23/ 6/10	02-45-44	N 54 23.24	W 25 49.63	3060	3095
55	23/ 6/10	07-53-50	N 54 45.65	W 26 7.33	3611	3663
56	23/ 6/10	13-38-18	N 55 8.93	W 26 24.51	3379	3422
57	23/ 6/10	20-17-15	N 55 30.34	W 26 42.63	3234	3273
58	24/ 6/10	02-18-09	N 55 52.97	W 26 59.91	2886	2919
59	24/ 6/10	08-07-55	N 56 15.13	W 27 17.55	2741	2770



Cast	Date	Time	Latitude	Longitude	Depth (m)	Max. pres.. (dbar)
60	24/ 6/10	13-23-54	N 56 37.69	W 27 34.80	2721	2749
61	24/ 6/10	18-16-18	N 57 0.23	W 27 52.71	2755	2783
62	24/ 6/10	22-48-31	N 57 22.64	W 28 10.30	2613	2637
63	25/ 6/10	03-45-58	N 57 40.49	W 28 43.80	2461	2482
64	25/ 6/10	08-49-48	N 57 58.27	W 29 16.73	2140	2156
65	25/ 6/10	13-05-01	N 58 12.46	W 29 43.49	2222	2240
66	25/ 6/10	17-15-29	N 58 24.57	W 30 6.13	2182	2198
67	25/ 6/10	21-04-39	N 58 33.00	W 30 21.71	1592	1598
68	26/ 6/10	00-17-14	N 58 43.45	W 30 41.83	1452	1454
69	26/ 6/10	03-58-32	N 58 50.56	W 31 15.95	1454	1456
70	26/ 6/10	07-45-47	N 58 54.57	W 31 54.57	1686	1692
71	26/ 6/10	11-39-04	N 58 58.39	W 32 33.33	1865	1876
72	26/ 6/10	15-44-52	N 59 2.44	W 33 11.79	2283	2305
73	26/ 6/10	20-01-46	N 59 6.13	W 33 49.67	2273	2303
74	27/ 6/10	00-16-01	N 59 9.80	W 34 28.49	2490	2513
75	27/ 6/10	04-46-03	N 59 14.07	W 35 7.27	2988	3025
76	27/ 6/10	09-36-40	N 59 17.98	W 35 45.72	3101	3138
77	27/ 6/10	15-59-38	N 59 21.78	W 36 23.79	3096	3134
78	27/ 6/10	20-52-17	N 59 25.65	W 37 2.33	3119	3157
79	28/ 6/10	03-37-38	N 59 29.48	W 37 40.83	3113	3152
80	28/ 6/10	09-00-59	N 59 33.41	W 38 18.98	3043	3080
81	28/ 6/10	13-44-55	N 59 37.42	W 38 57.46	2928	2963
82	28/ 6/10	18-27-35	N 59 41.11	W 39 35.93	2797	2828
83	28/ 6/10	22-51-37	N 59 43.38	W 40 15.16	2660	2685
84	29/ 6/10	03-23-38	N 59 45.46	W 40 54.26	2275	2297
85	29/ 6/10	06-40-04	N 59 46.39	W 41 17.78	2039	2054
86	29/ 6/10	09-32-35	N 59 47.68	W 41 43.80	1847	1856
87	29/ 6/10	12-23-25	N 59 47.95	W 42 0.17	1725	1731
88	29/ 6/10	15-07-53	N 59 48.53	W 42 14.19	1201	1202
89	29/ 6/10	17-01-45	N 59 48.95	W 42 16.47	892	888
90	29/ 6/10	18-37-44	N 59 49.09	W 42 18.76	574	565
91	29/ 6/10	19-53-04	N 59 49.36	W 42 23.93	309	297
92	29/ 6/10	20-55-53	N 59 49.86	W 42 31.19	231	220
93	29/ 6/10	23-33-14	N 59 54.77	W 43 4.42	169	158
94	30/ 6/10	00-21-51	N 59 54.27	W 43 0.23	175	160
95	30/ 6/10	01-16-50	N 59 53.43	W 42 54.36	186	172
96	30/ 6/10	02-13-07	N 59 52.59	W 42 47.74	188	174
97	30/ 6/10	03-05-15	N 59 51.61	W 42 42.13	189	177
98	30/ 6/10	03-58-36	N 59 50.78	W 42 36.78	202	189
99	30/ 6/10	16-14-08	N 59 44.18	W 45 7.08	141	129
100	30/ 6/10	17-31-59	N 59 40.57	W 45 14.79	145	132
101	30/ 6/10	19-50-01	N 59 37.40	W 45 21.58	170	158
102	30/ 6/10	20-54-56	N 59 33.80	W 45 29.84	223	210
103	30/ 6/10	21-54-36	N 59 30.75	W 45 35.77	398	386
104	30/ 6/10	22-59-13	N 59 30.12	W 45 37.23	507	498
105	1/ 7/10	00-08-02	N 59 28.01	W 45 38.94	1026	1021
106	1/ 7/10	01-44-27	N 59 26.01	W 45 40.18	1593	1600
107	1/ 7/10	03-46-54	N 59 23.15	W 45 40.08	1974	1987
108	1/ 7/10	06-15-58	N 59 16.78	W 45 48.46	2115	2140
109	1/ 7/10	10-01-38	N 59 3.99	W 46 4.92	2477	2500
110	2/ 7/10	06-30-00	N 58 16.94	W 41 06.39	3226	520
111	2/ 7/10	14-19-00	N 57 44.95	W 38 57.16	3285	520



### 3. CTD-O<sub>2</sub> Measurement Calibration

#### 3.1. CTD-O<sub>2</sub> data acquisition

##### 3.1.1. Description of the cruise

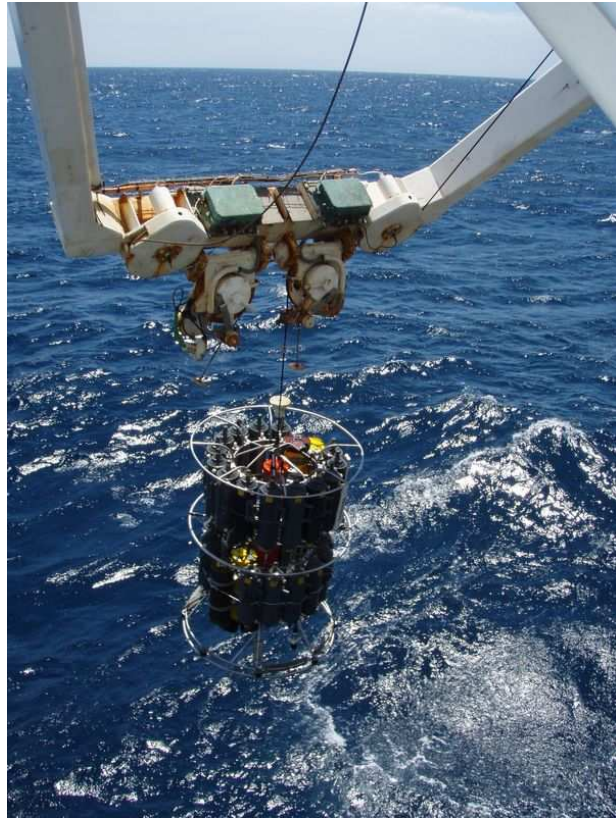
One hundred and twelve casts were measured during the OVIDE 2010 cruise with a Seabird SBE911+ probe on board the Ifremer's N/O Thalassa.



*N/O Thalassa*

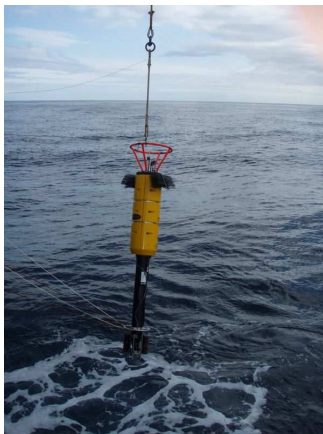
The cruise started in Brest (France) on 7th June 2010, with the taking on board of all the equipment necessary for the mission (containers and miscellaneous equipment), and ended in Brest on 8th July 2010.

The ship departed on June 8th at 8 A.M. towards the point of the deep CTD test cast (Seabird CTD test, cast 0, 4000 m) carried out in the early morning of the 9th, followed by a test profile up to 3000 m for the VMP and then transit to the start of the OVIDE section. On the evening of the 10th, arrival on the plateau off Portugal to start the OVIDE section (CTD cast n° 1, 155m).



*Loading of our CTD frame*

In the late morning of June 11th, the first VMP cast and CTD cast n° 6 were realized but the VMP did not resurface. On the morning of June 12th, after the CTD cast n° 9, the first Provor was launched. In the evening of June 13th, after the cast CTD n° 16, the first SVP was launched. On June 14th at about 8:30 A.M., an unsuccessful search was made for a Carioca buoy for the Vigo IIM laboratory.



*Launching of the VMP 6000*



*Launching of a Provor*

From June 14th to 19th, continuation of the section, CTD casts n° 18 to 39, Provor 2 and 3 launched, SVP 2, 3 and 4.



*SVP drifter*

*XBT  
launching*



The Provor n° 4 was launched after the cast 39 and XBT casts were then started (~ every 4 CTD casts). The last Provor (n° 14) was lowered, followed by a drifter n° 9, late in the afternoon of June 28th. The OVIDE section ended at the CTD cast 98 at a depth of 100m, at 7 A.M. on June 30th.

The Thalassa then passed west of the tip of Greenland to carry out a small CTD section towards the southwest, CTD casts 99 to 109. This section is followed by a thermosalinometer section and hull ADCP between the casts 109 and 110. This CTD cast 110 is a special cast for the chemists analyzing the CFCs. The CTD cast 111 was used to test the LPO's second SBE911+ probe.

The return transit began immediately, 46 XBT casts (~ every 2 hours) were carried out during the return journey. The arrival in Brest was made in the afternoon of July 7th. The equipment was unloaded on the morning of July 8th.

### 3.1.2. Technical summary

The same Seabird 911+ CTD probe (s/n. 813) was used throughout the cruise. It was equipped with two sets of T, C, and O<sub>2</sub> sensors.

The CTD sensors used are as follows:

	Primary sensors	Secondary sensors
Temperature (SBE3+)	s/n 2911	s/n 4594
Conductivity (SBE4c)	s/n 3194	s/n 3166
Oxygen (SBE43)	s/n 1402	s/n 530

Electronics mounted on the LPO frame:

PASH 6000 Rosette, top	s/n 461	PASH 6000 Rosette, bottom	s/n 462
IXSEA Pinger	s/n 530	Benthos Altimeter	s/n 47741
Downward-looking ADCP:	RDI 150 kHz Broadband (s/n 1515)		
Upward-looking ADCP:	RDI 300 kHz WorkHorse (s/n 12492)		

The CTD casts start with a round trip at a depth of 30m to remove the air bubbles in the 2 circuits of the sensors. The CTD profile then begins from the surface to a distance of 15 meters from the bottom. At each cast, the electro-mechanical cable is unwound, then wound at a speed of 1 meter per second (0.5 m/s for the surface 100 meters).

The downcast of the probe is monitored on a screen with the Sepia software that traces the echoes of the pinger mounted on the frame, allowing a continuous positioning of the probe relative to the bottom. The final bottom approach is performed using the Benthos altimeter, as soon as it has 'latched' the bottom at a distance of 60-80 m.

During the upcast, the frame is stopped at predefined levels of closure of the 28 sampling bottles.

In addition to these instruments, two ADCP (Acoustic Doppler Current Profiler) are mounted on the frame to obtain vertical profiles of current velocity, a downward-looking 150 kHz BroadBand and an upward-looking 300 kHz WorkHorse.



*Upward-looking WH300  
with the battery container on the side*

During the cruise, the cable connecting the SBE911 to the primary temperature sensor was changed after cast 5 (noise in the measurements) and the WH300 ADCP (s/n 12492) was replaced on June 11th after cast 6, by the WH300 (s/n 2002).

### 3.1.3. Data processing

The CTD-O<sub>2</sub> sensor signals are transmitted to the LPO's Hydrology acquisition system. This system is designed to run on a PC running Windows XP for acquisition, visualization and preprocessing with the manufacturer's software (Seabird), and a Linux PC for reduction, data processing with the LPO's in-house software (see "*Refonte de l'hydrologie*". C. Kermabon, internal report OPS/LPO 08-04) and backups.

This system allows the real time visualization of the different parameters measured and calculated on the profiles, while controlling the quality of the signal transmitted by the probe. All of the data transmitted by the probe, at the rate of 24 cycles per second, is saved to disk.

On board, the probe data were pre-calibrated with the old LPO calibration suite developed in Fortran. The final calibration of the data was performed with the new MATLAB suite (see section III.4).

### 3.2. Sampling at sea

The PASH 6000 sampling rosette used here was conceived at the LPO. Originally developed in 1984 to support 16 bottles, it was fitted with a second sampling shelf in 1992, thus increasing its capacity to 32 8-liter bottles. The number of bottles is limited to 28 when the frame is equipped with two ADCP, which is the case for OVIDE 2010 (bottles numbered from 3 to 30). The carousel motor electronics were completely redesigned in 2007 in order to be perfectly compatible with our new probes.

The bottles are closed during the upcast of the probe after stopping at the sampling levels. These levels are distributed over the full height of the profile in order to sample all the water masses: 28 bottles were systematically closed at each cast. The goal of the onboard chemists was to sample the upper layer of the ocean more densely. It was therefore necessary to establish an acceptable compromise in order to have, at each cast, sampling levels distributed over the entire water column to calibrate the salinity and dissolved oxygen profiles.

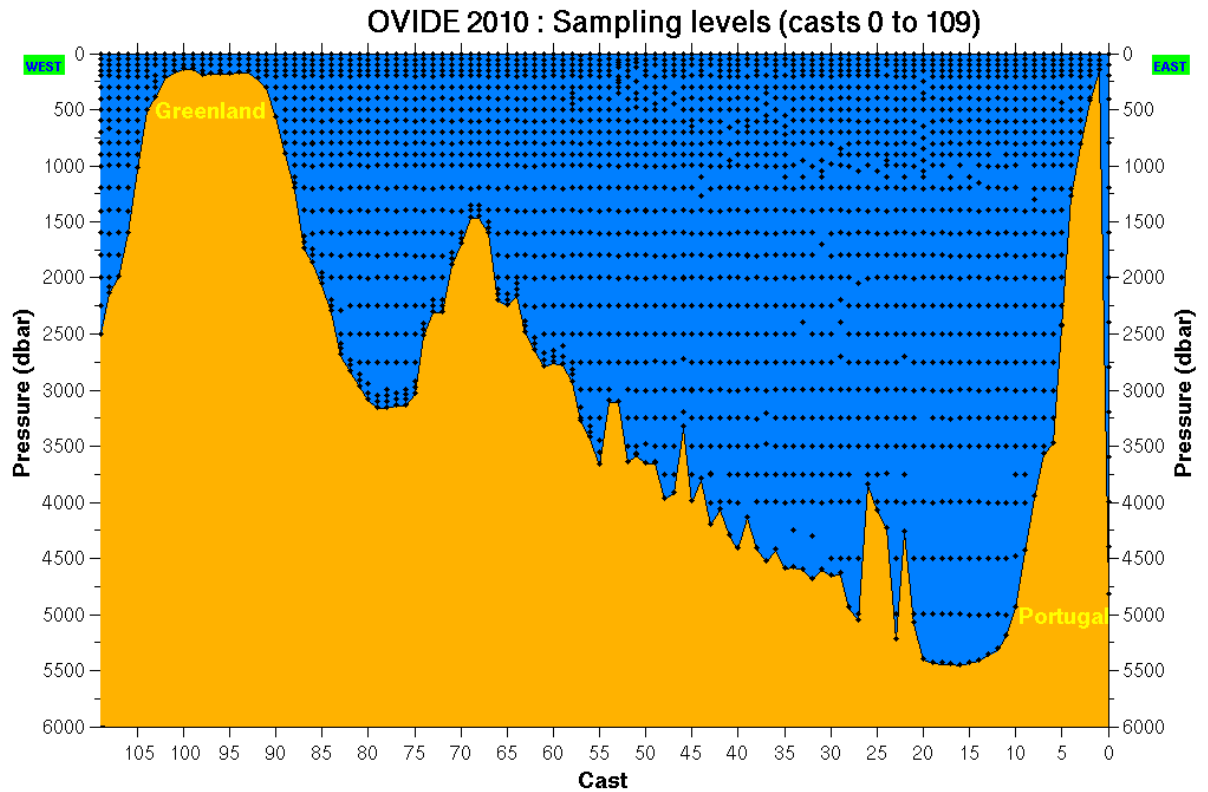
As soon as they reach the surface, the samples were taken from each bottle for the numerous analyses performed on board, in the order recommended by the WOCE instructions. The bottles were sampled according to their chronology from 3 to 30.



*LPO's CTD frame*

To estimate the error of the analytical methods, replicates were conducted at some casts by triggering the closure of two bottles at the same sampling level. We thus have 76 salinity and oxygen replicates.

Figure 2 shows all the sampling levels where salinity and dissolved oxygen were measured.



**Figure 2 :** Synoptic chart indicating the sampling levels at each cast of the OVIDE 2010 cruise.

During the cruise, 110 CTD cast samplings were carried out (except 110 and 111 casts), 2445 bottles were closed, 2348 salinity measurements and 2335 dissolved oxygen measurements were analyzed on board.



### 3.3. Analysis of salinity and dissolved oxygen samples

All the salinity and dissolved oxygen samples are analyzed on board, during the cruise, in the LPO's chemical analysis container, which has Metrohm 798 titrinos and Portasal salinometers from Guildline. Air conditioning allows regulation of the room temperature ( $20^{\circ}\text{C}$  at  $\pm 0.5^{\circ}\text{C}$ ).



*LPO's chemistry container*

The daily standardization of the measuring instruments (salinometers and tritinos) was performed by Pierre Branellec, all salinity analyses were performed by Damien Desbruyères, and oxygen analyses by Caroline Le Bihan.

#### 3.3.1. Standardization of salinometers

All salinity measurements taken during the OVIDE cruise were performed on the same Portasal salinometer (serial n°: 62302).

This salinometer was standardized using a set of natural water bottles (IAPSO Standard Seawater): batch P150 manufactured on 22/05/2008,  $K_{15} = 0.99978$ ,  $S = 34.991$ . The standardization was verified every morning and after analysis of two casts (56 samples). The standardization results were recorded on salinity analysis sheets. The salinometer was very stable throughout the cruise and the standardization was adjusted only rarely.



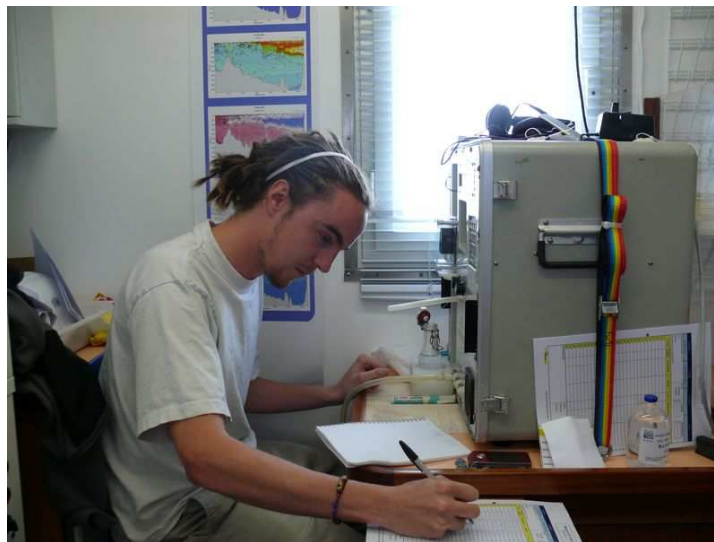
*Standard seawater bottle*

### 3.3.2. Salinity

The samples are collected after three successive rinses in 125 ml bottles, whose watertightness is guaranteed by a rubber seal. As soon as the collection is finished, the samples are placed in the analysis container with a controlled temperature set to 20°C ( $\pm 0.5^\circ\text{C}$ ). The samples are analyzed 20 to 30 hours after collection to allow them to achieve a thermal equilibrium.

The salinity of the samples is determined according to the equation PSS 78 (UNESCO 1981). Throughout the cruise, the temperature of the thermostat bath is fixed at 21°C.

For each sample, three successive rinses of the cell are performed before making three readings separated each time by a rinse.



*Salinity analysis post*

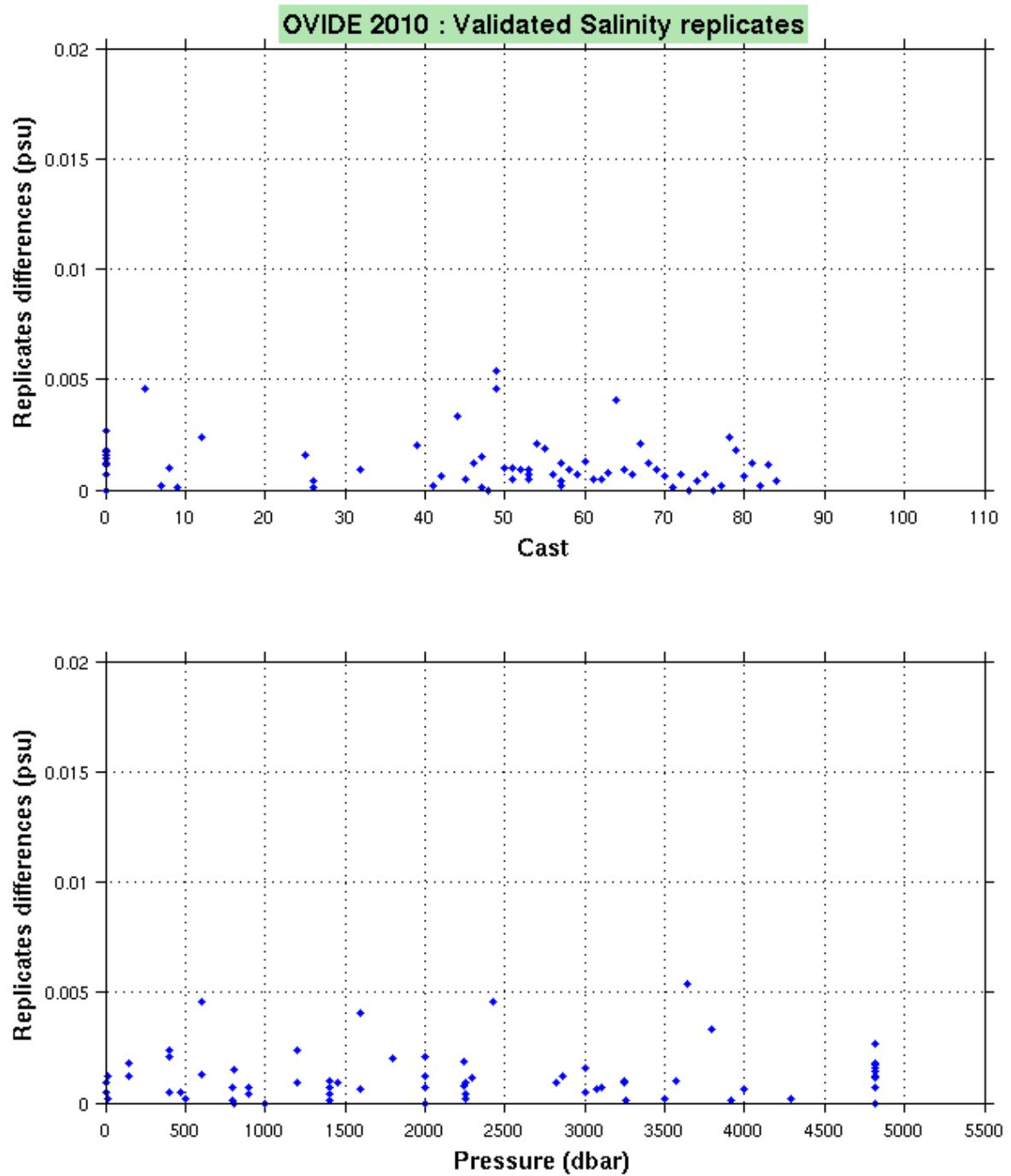
The salinity samples were analyzed on a single salinometer n° 62302. The stability of the salinometer was very satisfactory for the duration of the cruise.

Figure 3 shows the differences in salinity obtained on the replicates validated by the calibration. They were performed at sampling levels between the surface and the bottom and were collected at casts distributed over the duration of the cruise.

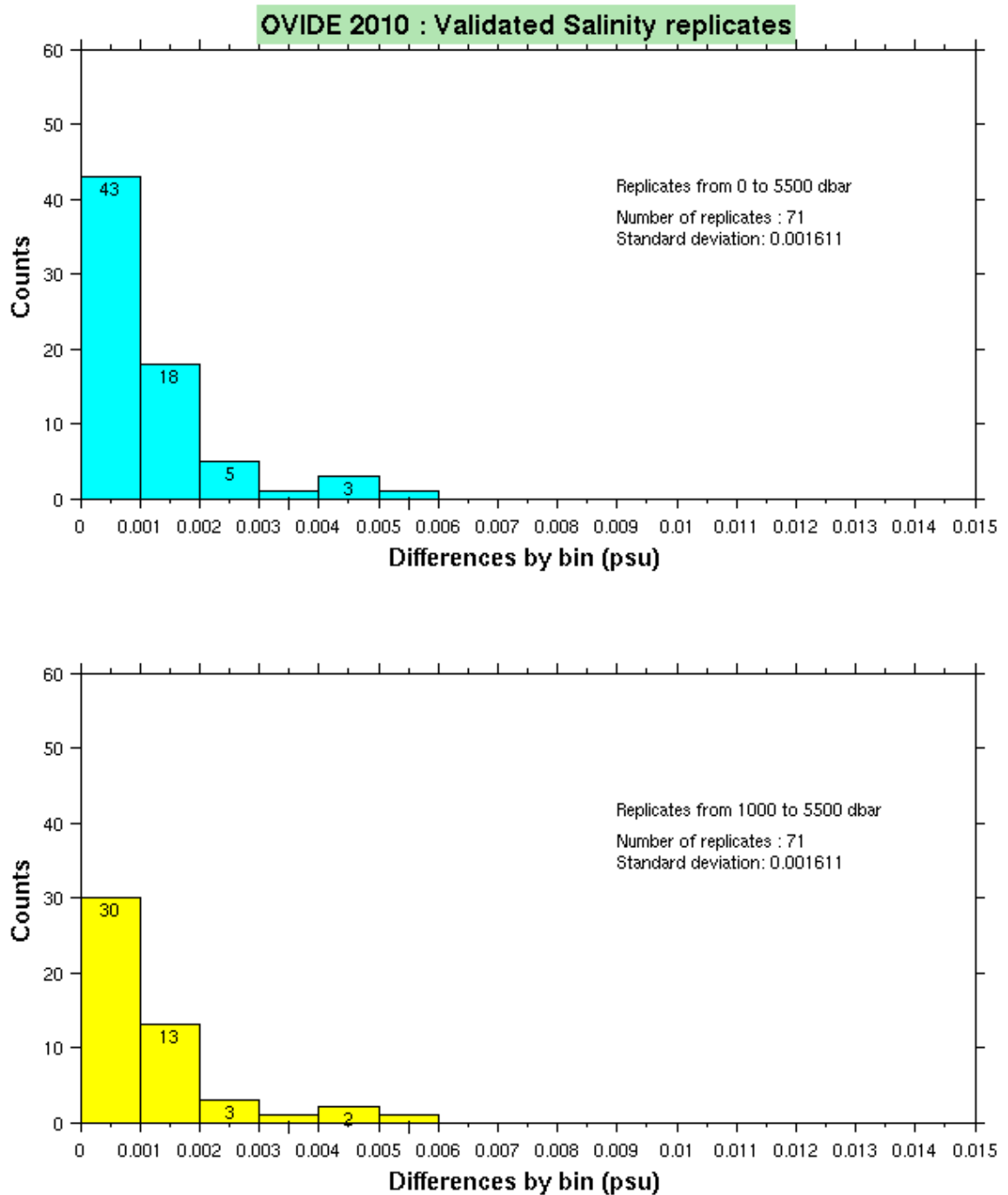
The differences between two salinity measurements were studied for 71 validated replicates: figure 4 shows the histogram.

We observe that, in 60.6% of the cases, the difference in salinity measured on the two bottles is less than 0.001 and in 93.0% of the cases it is less than 0.003.

The standard deviation is 0.0016 for all validated replicates, and considering only the replicates performed at a pressure greater than 980 dbar, the standard deviation is 0.0017.



**Figure 3 :** Differences in salinity between two bottles closed at the same level :  
a) as a function of the cast number where the replicate was performed,  
b) as a function of the pressure at which the replicate was performed.



**Figure 4 :** Histogram of the salinity differences on the replicates :  
 a) for the 71 validated replicates of the cruise,  
 b) for the 50 validated replicates performed at a pressure greater than 980 dbar.

### 3.3.3. Dissolved oxygen

To analyze the dissolved oxygen, the samples are collected in 120 ml bottles with a plunger cap. After filling the bottle, the temperature of the sample is recorded during overflowing a volume of water three times equivalent of the bottle.

Two reagents ( $\text{MnCl}_2$  and  $\text{NaOH-NaI}$ ) are then added successively and the bottle is capped. Finally, the bottle is shaken for 30 seconds to capture the oxygen in the seawater in the precipitate. Once all the samples are completed, the bottles are inverted one by one to resuspend the precipitate.

The samples are stored in the laboratory container at a temperature of  $20^\circ\text{C}$  and analyzed within a period of 4 to 24 hours. The Seabird oxygen sensor mounted on the probe is rinsed after each cast with a solution of diluted Triton XT100 (0.1%) as recommended by the manufacturer (Seabird Application Note n° 64).

The operating conditions and the analysis method conform to the recommendations of WOCE (WOCE Operations Manual, 1991). After acidification in the sampling bottle, the liberated iodine is dosed with a solution of sodium thiosulfate whose normality is of the order of 0.02 N. This is prepared in a sufficient quantity for the analysis of one hundred casts. Its normality is determined daily, before the start of the analysis series, by comparison to a potassium iodate solution, whose normality, obtained by weighing, is 0.020008.

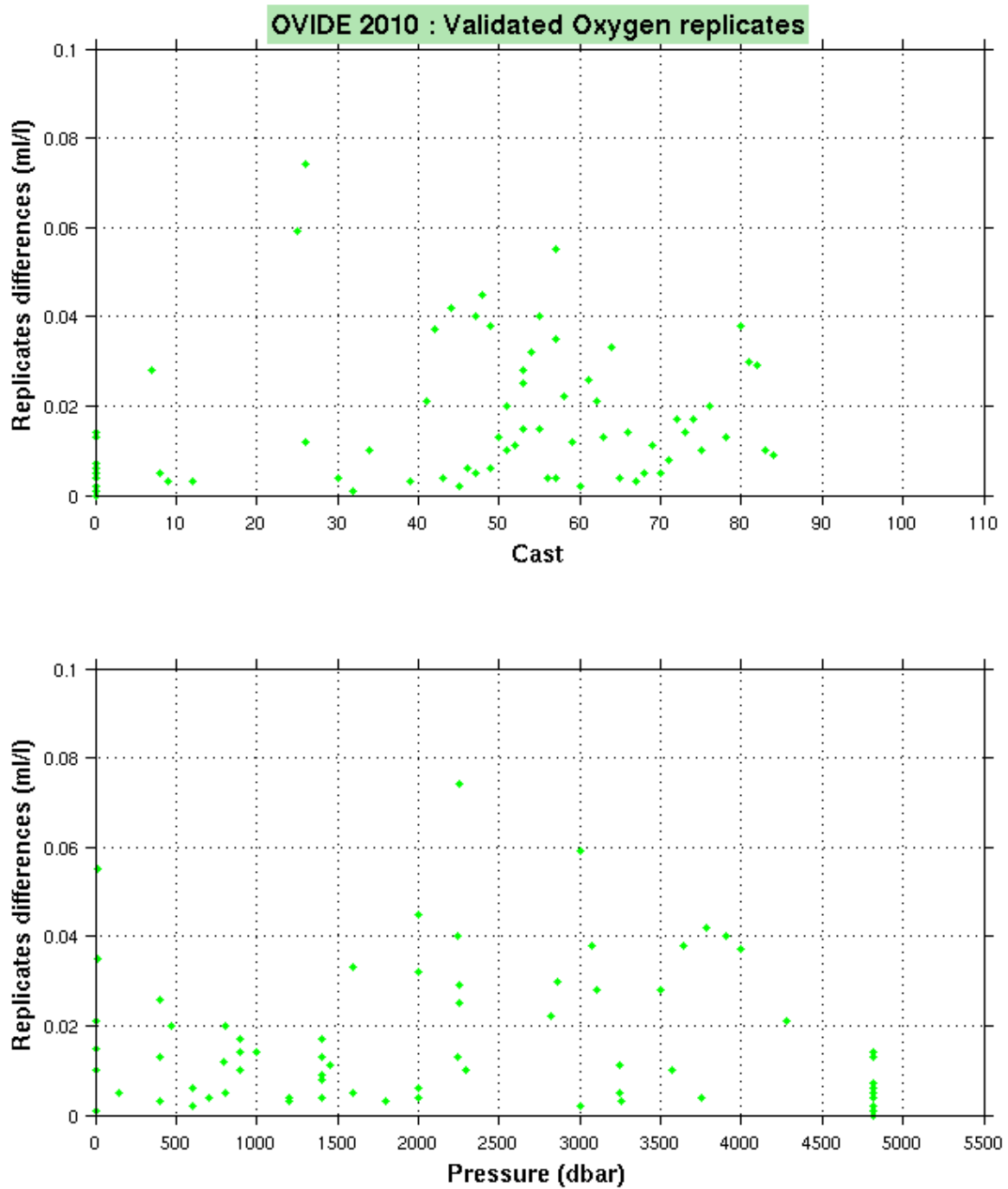
The dosage is controlled by a 798 Metrohm titrino, a platinum titrode measures the reaction potential and a 20ml burette delivers the sodium thiosulfate. The volume of thiosulphate necessary for the reduction of the iodine is subtracted from the automatic determination of the inflection point on the potential curve at equivalence.



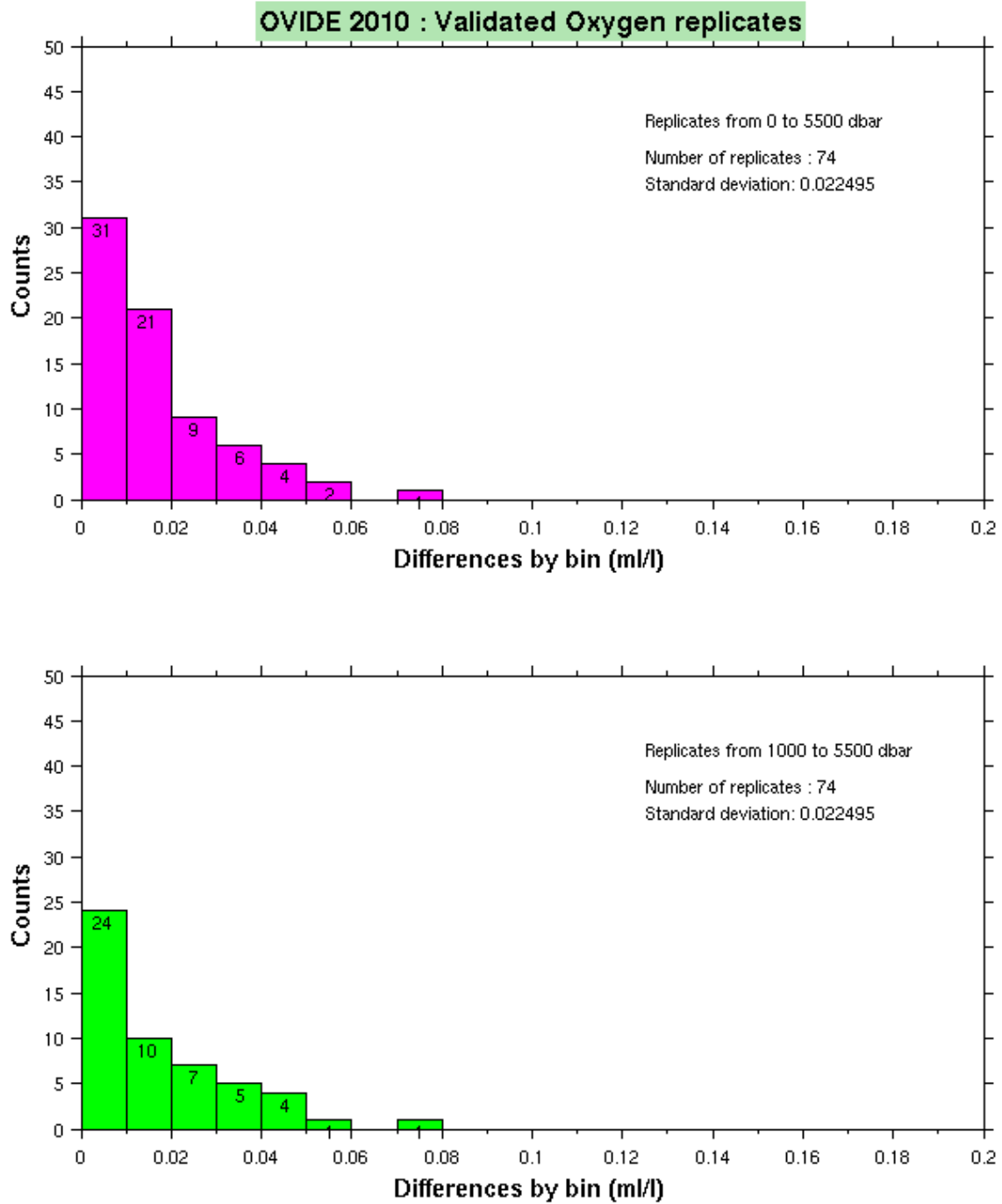
*Dissolved oxygen analysis post*

Figure 5 shows the differences obtained between the measurements performed on the 74 validated replicates and figure 6 shows the histograms.

For all the replicates collected between the bottom and the surface, 41.9% of the differences are less than 0.01 ml/l and 70.3% are less than 0.02 ml/l for a standard deviation of 0.0231 ml/l. By eliminating the levels between the surface and 980 dbar, the standard deviation is 0.024 ml/l.



**Figure 5 :** Differences in oxygen between two bottles closed at the same level :  
a) as a function of the cast number where the replicate was performed,  
b) as a function of the pressure at which the replicate was performed.



**Figure 6 :** Histogram of the oxygen differences on the replicates:

- a) for the 74 validated replicates of the cruise,
- b) for the 52 validated replicates performed at a pressure greater than 980 dbar.

### 3.4. New CTD-O<sub>2</sub> data calibration software

After the hardware redesign of the CTD acquisition system (see "*Refonte de l'hydrologie*", internal report OPS/LPO 08-04), the LPO has continued to consider ways to also improve the software part of the CTD measurement processing. A working group was established in 2011 to carry this out based on the recommendations of the GO-SHIP experts. The old calibration suite written in Fortran has been replaced by three new modules developed in MATLAB:

- . Hydro\_net: software that: 1) cleans the probe measurements, mainly pressure, by thresholding and median deviation testing, 2) corrects the oxygen for hysteresis, 3) regenerates a bottle file from the corrected sensor measurements. (see Hydro\_net: CTD data cleaning software).
- . Hydro\_cal: software that: 1) readjusts the CTD measurements according to laboratory calibrations and chemistry measurements, 2) reduces the processed data. (see Hydro\_cal: CTD data calibration software).
- . Hydro\_val: CTD measurement validation software that: 1) eliminates the oxygen peaks, 2) corrects the density inversions, (see Hydro\_val: CTD data validation software).

One of the main innovations is that the processing is performed on the complete data (24 Hz), rather than reduced data.

The different calibration stages are now:

- . Cleaning of the probe measurements with Hydro\_net. Calculation of the hysteresis on the oxygen sensor.
- . Processing of the measurements with the Seabird post-processing software.
- . Readjustment of the sensor measurements with Hydro\_cal according to the reference laboratory calibrations and chemistry measurements.
- . Reduction of the measurements to 1 Hz.
- . Cleaning, if necessary, of the oxygen peaks and density inversions with Hydro\_val.



### 3.5. Data preparation before calibration

#### 3.5.1. Data cleaning with Hydro\_net

The Hydro\_net software is used primarily to correct aberrant pressure measurements in the .cnv files. The measurements are cleaned with respect to thresholds, then using a median deviation test. The values chosen for OVIDE 2010 are shown in the following figure. Hydro\_net is applied to the probe measurements after decoding by datcnv: ov10st...T1.cnv

Figure 1: Chaîne Hydrologie : Mise au propre des données avant calibration

Information generale   Nettoyage des données   Regeneration des fichiers .ros   Hysteresis   Autres

Nettoyage

Selection du repertoire de donnees  
/home/archaden/pbran/bathys/ovid10/data\_cruise\_ov10   Rep...

Selection du repertoire resultat  
/home/archaden/pbran/bathys/ovid10-hydro\_cal-final/hydro   Rep...

Choix de l'extension  
File...   Liste des fichiers

Pause inter\_fichier   Sauvegarde figures (fig) ▾

Seuillage	Pression	Temperature	Oxygene	Conductivite
Min.	0	-5	0	0
Max.	7000	30	5	70

Ecart à la médiane	Pression	Temperature	Oxygene	Conductivite
Taille de la fenetre	25	10	10	20
Nb std	2.8	3	2.8	2.8
Ecart min	1.5	0.05	0.01	0.01
Ecart max	10	0.4	0.3	0.4
Iteration	2	2	3	3

Valider   Annuler

**Hydro\_net** : options chosen for OVIDE 2010.

### 3.5.2. Correction for hysteresis

The principle of hysteresis correction on the SBE 43 sensor from Seabird is described in the application note SBE 64-3.

The hysteresis correction depends on three coefficients:  $H_1$ ,  $H_2$  and  $H_3$ . The default values of these coefficients are provided by Seabird. However, the coefficients  $H_1$  and  $H_3$  can be adjusted by minimizing the difference between the downcast and upcast profiles (see Bradley et al., 2010).

Using Hydro\_net, new coefficients were estimated for OVIDE 2010:

	Primary sensor	Secondary sensor
H1	-0.025	-0.021
H2	5000	5000
H3	1350	4625

The oxygen data were corrected using these coefficients.

### 3.5.3. Processing with the Seabird routines

Seabird has developed a certain number of routines in its Seasoft V2 (SBEDataPostprocessing) software suite in order to improve the recorded probe measurements. The sequence of programs chosen by the LPO is the result of a study performed on the 2008 CTD cruises (see C. Kermabon, M. Arhan, "Validation et Réduction des données de la sonde 9+", June 2008). The Seabird programs are applied on the measurements output from Hydro\_net. The input files from hydro\_net are called: ov10st...T1\_trait\_hyst.cnv.

#### *Seabird processing*

**Filter:** filters the pressure measurements.

Low pass filter B, time constant (s) = 0.15

**Alignctd:** applies a delay of 4 seconds on the primary and secondary oxygen measurements.

**Celltm:** takes into account the effect of the thermal mass of the conductivity cell using a recursive filter.

Thermal anomaly amplitude (alpha) = 0.03

Thermal anomaly time constant (1/beta) = 7

**Loopedit:** flags the cycles compared to the speed of the probe.

Minimum velocity type = fixed minimum velocity

Minimum CTD velocity (m/s) = 0

Remove surface soak = not selected

Exclude scans marked bad = selected

## **3.6. Calibration of pressure measurements**

The SBE9+ probe is equipped with a Paroscientific digiquartz pressure sensor, whose accuracy is claimed by the manufacturer to be 0.015% of the full scale (10000 psi), or in our case  $\pm 1.5$  psi or  $\pm 1.0$  dbar, the claimed resolution being 0.001%, i.e. 0.1 psi or 0.07 dbar.

In general, the pressure sensor was calibrated before and after the cruise at the IFREMER laboratory of metrology, authorized by the "Bureau National de Métrologie" (B.N.M.). The sensor is connected to a Desgranges and Huot bench-top balance, which delivers a reference pressure with a maximum error of 0.75 dbar at the 6000 dbar level.

### **3.6.1. Calibration of the sensor under laboratory conditions at 20°C**

Three cycles of increasing and decreasing pressure, by successive increments of 600 dbar, from 0 to 6000 dbar, are performed at laboratory temperature, i.e. 20°C ( $\pm 1^\circ\text{C}$ ). The results obtained are shown in figure 7, in the form of mean differences between the reference pressure delivered by the bench-top balance and the equivalent pressure indicated by the sensor in the increasing pressure cycles (downcast profile of the probe) and decreasing pressure (upcast profile).

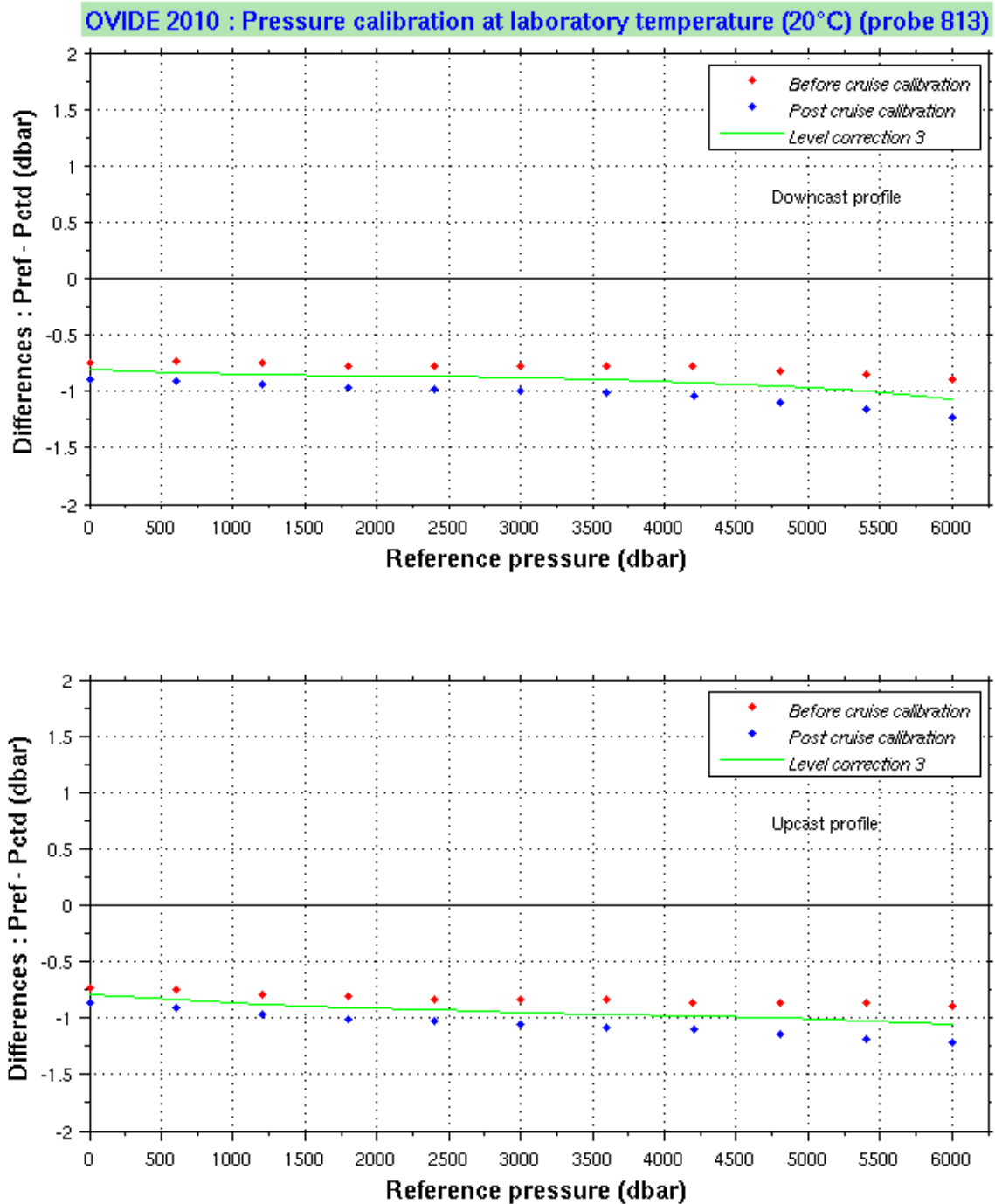
The distribution of points resulting from the pre- and post-cruise calibrations can be corrected by a polynomial of degree 3. These results highlight an excellent stability of the sensor: compared to the polynomial correction, the maximum difference observed (pre-and post-cruise; downcast and upcast) is 0.17 dbar at 20°C.

### **3.6.2. Influence of the static temperature**

The response of the pressure sensor can be influenced by the outside temperature (see figure 8). The ocean temperature shows differences above 20°C between the surface and the bottom. The static effect of the temperature on the pressure sensor is studied in the laboratory by immersing the probe in a water bath at different temperatures. After stabilization of the bath temperature, we perform a cycle of increasing then decreasing pressure, recording the indication of the pressure sensor at separate increments of 1000 dbar. This operation is repeated at four different temperature points between -1 and 25°C.

The maximum difference observed between all temperature ranges is 0.21 dbar and the maximum difference relative to the calibration at 20°C in air is 0.31 dbar.

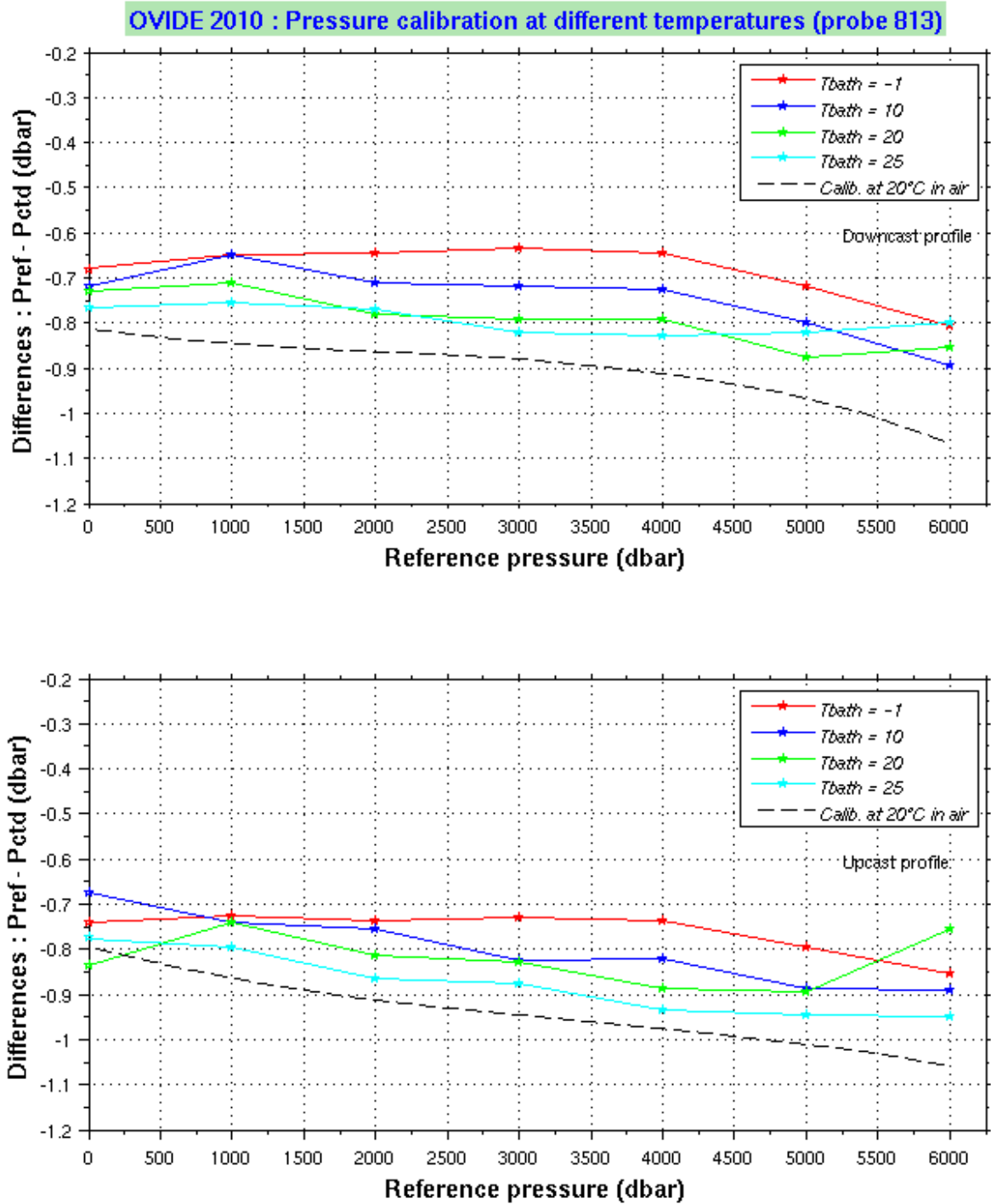
Considering the low impact of temperature changes on the pressure sensor and the strong temperature variations between the cruise casts, we do not apply specific static correction for OVIDE 2010.



**Figure 7 :** Distribution of the mean differences, every 600 dbar, between the reference pressure and the pressure indicated by the Seabird sensor during pre-and post-cruise calibrations at laboratory temperature (20°C) :

- a) increasing pressure cycles (downcast profile),
- b) decreasing pressure cycles (upcast profile).

The curve of degree 3 that reduces the differences is represented.



**Figure 8 :** Response of the Paroscientific pressure sensor as a function of the temperature.

### 3.6.3. Influence of the dynamic temperature effect

The crossing of the thermocline, during the downcast and the upcast, causes an abrupt variation in temperature. This thermal shock, called the dynamic temperature effect, is simulated in the laboratory in order to study the behavior of the pressure sensor, which depends mainly on the quality of its insulation.

The sensor was submitted to a series of thermal shocks by suddenly immersing the probe, after a certain period at a given temperature, in a hotter or colder bath as appropriate. The parameters transmitted by the sensor (pressure, in situ temperature and internal temperature of the pressure sensor) were recorded during a time period sufficiently long to study the behavior of the sensor after this phenomenon (see Technical Note LPO-GT09-01, P. Branellec, M. Hamon).

These experiments allow us to conclude that the response of the Paroscientific pressure sensor is not influenced by this thermal shock. Consequently, no dynamic correction is made.

### 3.6.4. Correction of the pressure measurement on the CTD profiles

Taking into account the results of the laboratory calibrations, the pressure sensor is corrected by a pressure polynomial of degree 3 (fig 7).

Finally, we can consider that the uncertainty in the pressure measurement is of the order of the sensor accuracy: 1 dbar.

### 3.6.5. Validation of the CTD pressure measurement

#### *3.6.5.1. Monitoring of the pressure sensor*

The CTD pressure sensor reading was taken at different levels (in air before the launching, at the start of the downcast, at the end of the upcast), at each cast, in order to detect any potential variation during the cruise.

Figure 9 shows the values of the pressure sensor taken :

- . in air at the start of the cast. We record the frequency value indicated by the onboard instrument.
- . at the surface, at the start of the downcast (mean = 5.3) and at the end of the upcast (mean = 3.5).

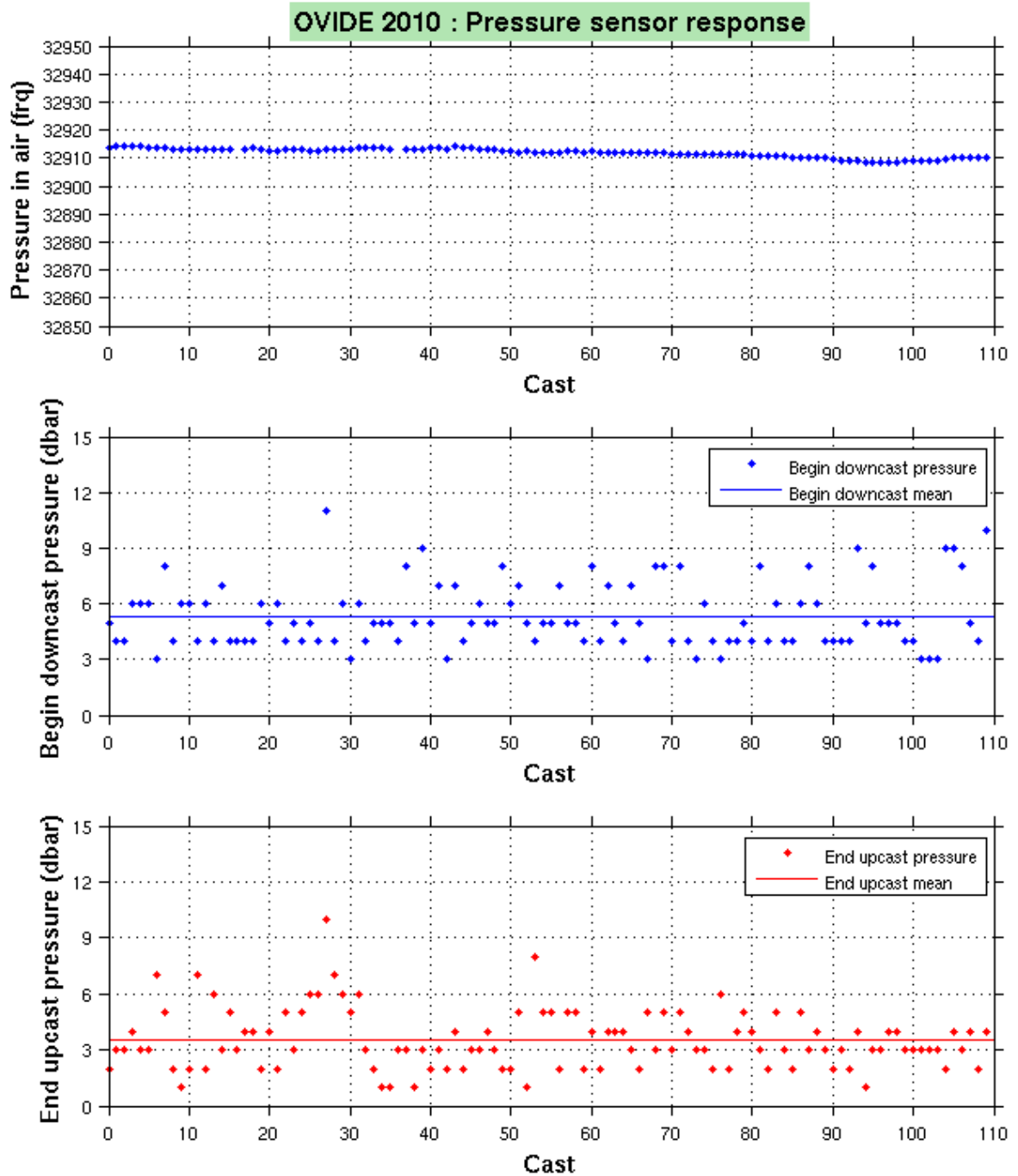
These readings confirm the good stability of the pressure sensor during the cruise.

### ***3.6.5.2. Differences between SIS pressure meters and pressure sensor***

Bottles 3 and 5 were fitted with a SIS reversing pressure meter (RPM 6000X). The measurement of the pressure meter is taken when the bottle is closed and is fixed until it is read on deck. The accuracy claimed by the manufacturer is 0.1% of the full scale (6000 dbar), or 6 dbar. The pressure meters were not calibrated before the cruise.

The pressure meter n° 6660 was installed on bottle 3, pressure meter n° 6661 on bottle 5.

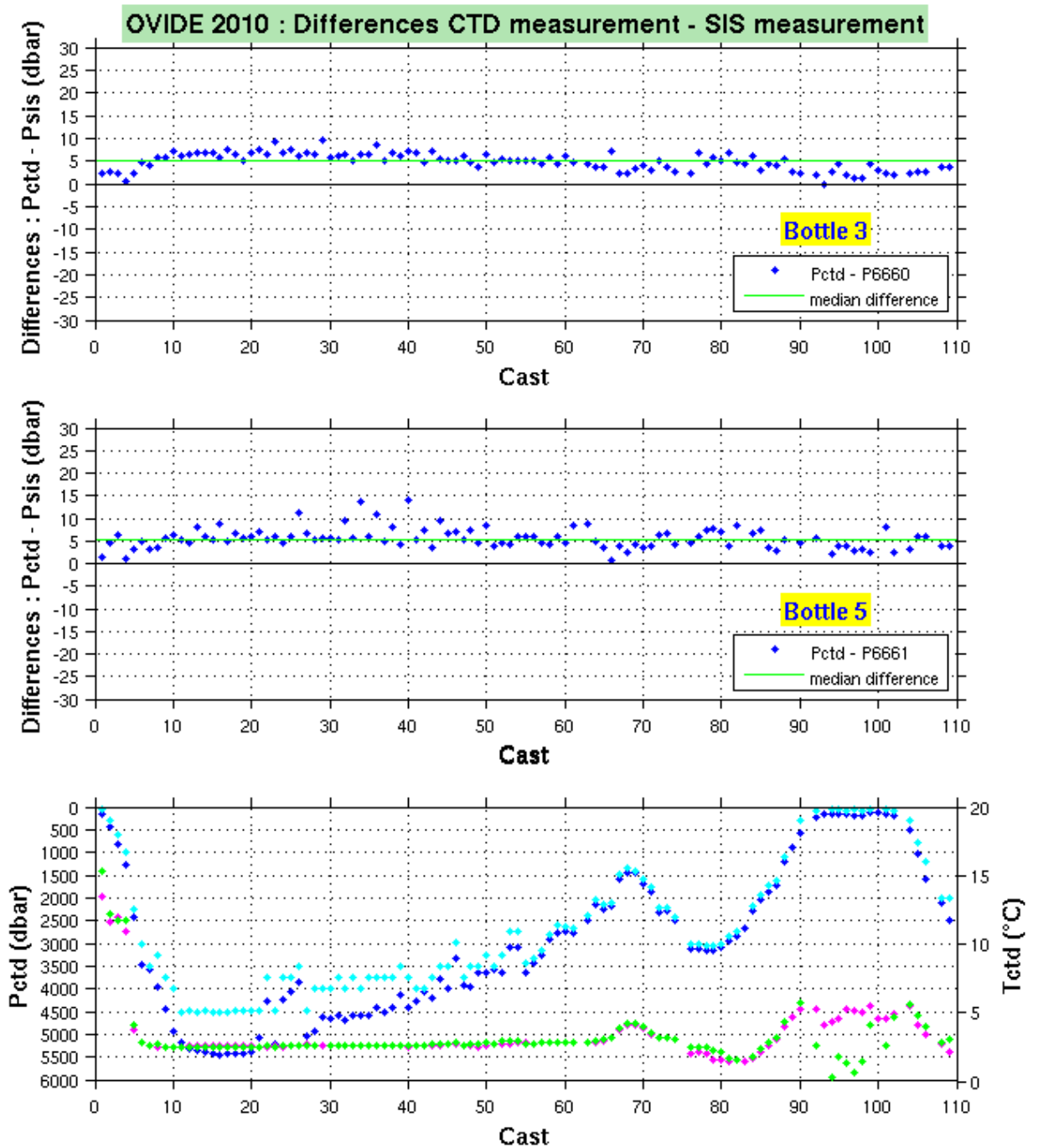
The differences between the readings of the pressure meters and the CTD pressure sensor were recorded at each cast. Figure 10 shows all the differences, which remained stable throughout the cruise. Median differences (bt3 = 4.95 dbar; bt5 = 5.53), represented by a solid line on the graphs, are consistent considering the accuracy of the pressure meters.



**Figure 9 :** Monitoring of the pressure sensor readings :

- a) in air at the start of the cast (value in Hertz),
- b) at the start of the downcast (the mean value is shown as a solid line),
- c) at the end of the upcast (the mean value is shown as a solid line).





**Figure 10 :** Monitoring of the differences between the SIS pressure meters and the CTD pressure sensor. The bottom graph specifies the pressure and temperature values upon closure of bottles 3 and 5.

### 3.7. Calibration of the temperature measurement

Our SBE9+ probes are equipped with two sets of T and C sensors. The temperature sensors are SBE3+ sensors from Seabird, the measurement resolution is 0.0003°C and the accuracy claimed by the manufacturer is 0.001°C.

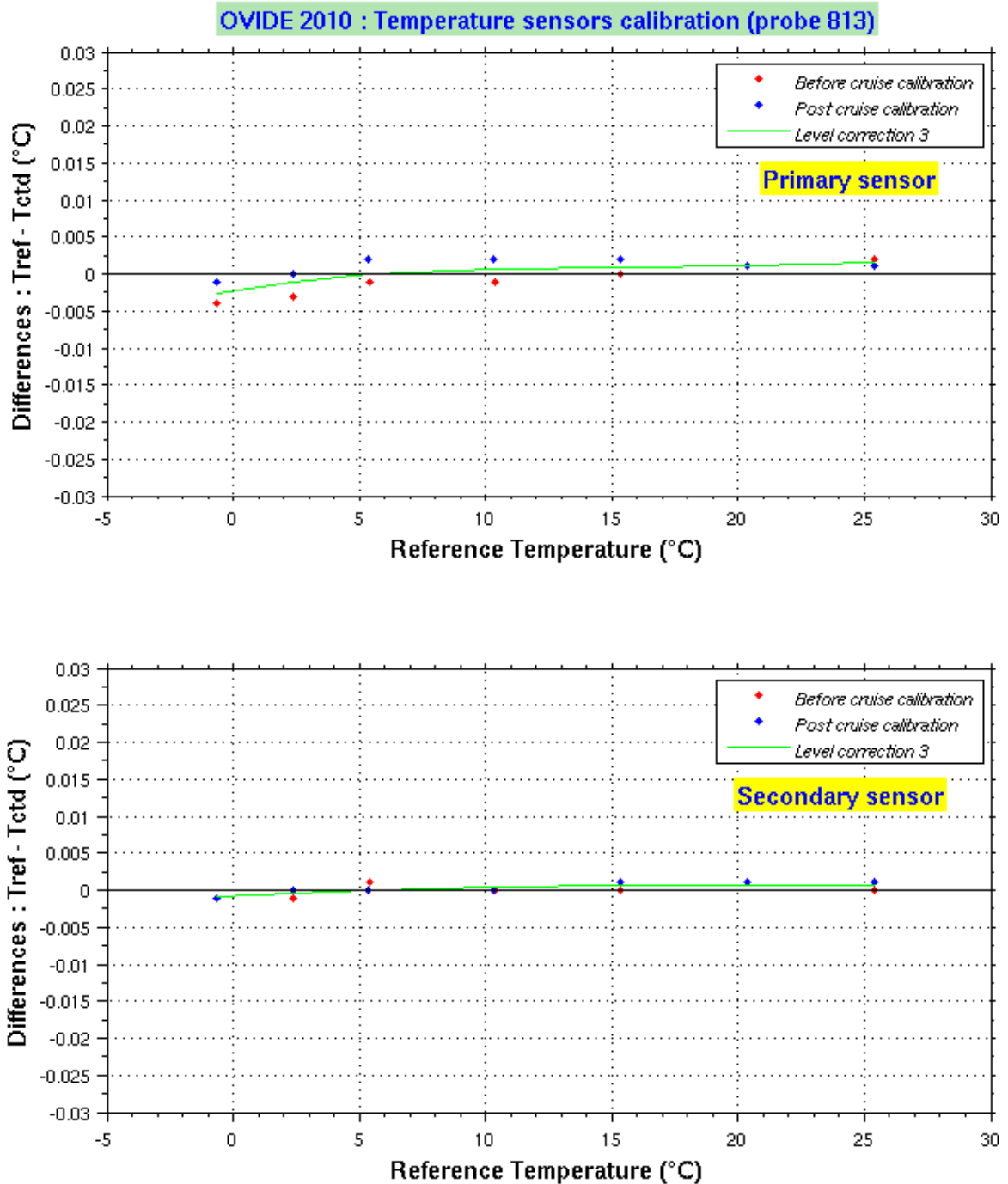
#### 3.7.1. Operating mode

The LPO's probes are regularly calibrated in the IFREMER laboratory of metrology, before and after each cruise. The probe is fully immersed in a thermostat water bath whose temperature stability is strictly controlled. The reference temperature of the bath is provided by a Rosemount-type platinum resistance, placed in close proximity to the CTD sensor. This thermometer is periodically checked and certified by the "*Laboratoire National de Métrologie et d'Essais*" (LNE). The measured temperature is expressed on the EIT 90 scale. Several measurement points are thus tested by recording the temperature indicated by the CTD and comparing it to the reference temperature of the bath at several points between -1 and 25°C.

The choice between the primary ( $T_0$ ) and secondary ( $T_1$ ) temperature is made by visualizing the raw measurements of the probe at 24 Hz. The reduced files only conserve a single temperature. In the case of the OVIDE 2010 cruise, the choice was made to use the secondary temperature ( $T_1$ ) for the complete calibration phase.

The temperature measurements obtained on the cruise profiles are corrected by applying a polynomial of degree 3, whose curve is shown in figure 11. This curve minimizes the differences (reference temperature - probe temperature) obtained during the calibrations performed before and after the cruise: the maximum error on the secondary sensor is  $\pm 0.0010^\circ\text{C}$  and the standard deviation is  $0.0005^\circ\text{C}$ .

Finally, we consider that the uncertainty in the temperature measurement is of the order of the sensor accuracy:  $0.001^\circ\text{C}$ .



**Figure 11 :** Differences between the reference temperature and the temperature measured by the SBE3+ sensor (primary and secondary) during pre-and post-cruise calibrations. The optimal correction (degree 3) is shown as a solid line.

### 3.7.2. Validation of the CTD temperature measurement

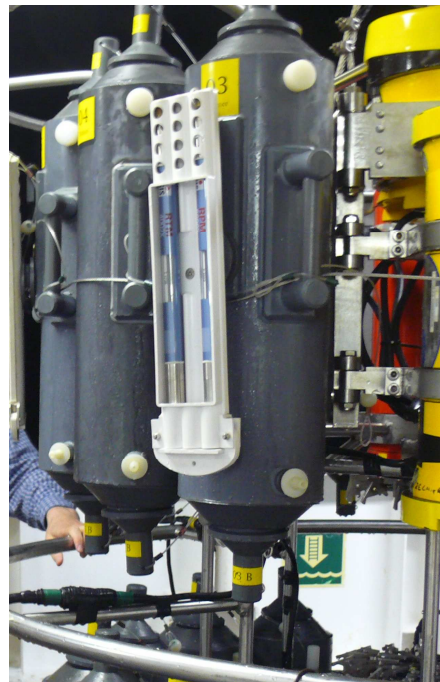
SIS thermometers (RTM 4002 X; accuracy =  $\pm 0.003^{\circ}\text{C}$ ) were installed on the sample bottles (bt3: T1751 and bt5: T1752). The SIS thermometer takes a reading at the time of bottle closure, then the display is fixed until it is read on deck after the upcast of the probe.

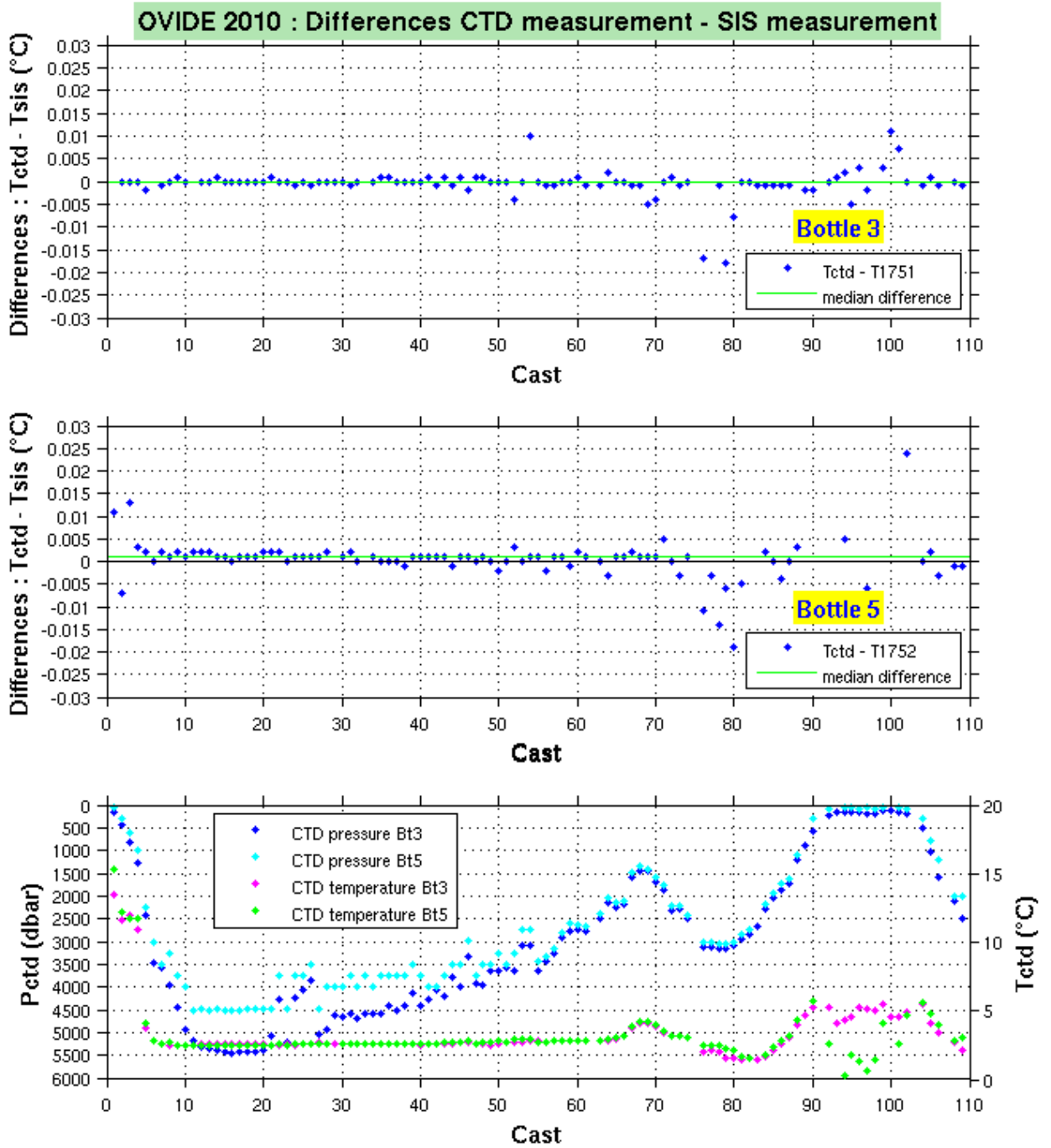
The differences in readings between these thermometers and the CTD measurement, at the level of bottle closure at each cast, are shown in figure 12.

We noted a greater dispersion of differences after the cast 74, which is perhaps related to the reduction in pressure at the time of bottle closure, leading to a greater variability. The median difference is equal to 0 for the bottle 3 and equal to 0.005 for the bottle 5.

The differences are generally very stable, demonstrating a good stability of the sensors.

*Electronic reversing pressure  
meter and thermometer in their  
supporting case.*





**Figure 12 :** Differences obtained, at each cast, between the SIS thermometer (1751 and 1752) readings and the temperature indicated by the Seabird probe. The bottom graph specifies the pressure and temperature values at the time of closure of bottles 3 and 5.

### 3.8. Calibration of the conductivity

The SBE9+ probe is equipped with two SBE4 conductivity sensors, with a range of measurements from 0 to 70 mS/cm. The accuracy claimed by the manufacturer is 0.003 mS/cm and the resolution 0.0004 mS/cm. The serial numbers of the sensors, used during the cruise, are given in section III.1.2 Technical summary.

The choice between the primary ( $C_0$ ) and secondary ( $C_1$ ) conductivity is made before, by visualizing the raw measurements of the probe at 24 Hz. The reduced files only conserve a single conductivity. In the case of the OVIDE 2010 cruise, the choice was made to use the secondary conductivity ( $C_1$ ).

#### 3.8.1. Operating mode

The new calibration procedure for the conductivity measurements (COs), written according to the recommendations of the Go-Ship group, first involves the conversion of the chemical salinity to chemical conductivity ( $CO_H$ ) using the corrected values of the pressure and temperature sensors, at the sampling level.

The different corrections to be applied are calculated to minimize the differences  $\Delta C = CO_H - CO_S$ :

- . Correction as a function of time to take into account a potential slow drift of the conductivity sensor.
- . Correction as a function of the conductivity. The selected coefficients result from successive iterations on the considered group of samples. The process is stopped when no additional sample is removed at the end of the current iteration. It follows that, at the end of the last iteration, all the differences  $\Delta C$  are lower than the value:  $\Delta C_{\max} = 2.8 * \text{standard-deviation}$ , for the samples used in the calculation process.
- . Correction as a function of the pressure on the conductivity or the salinity.

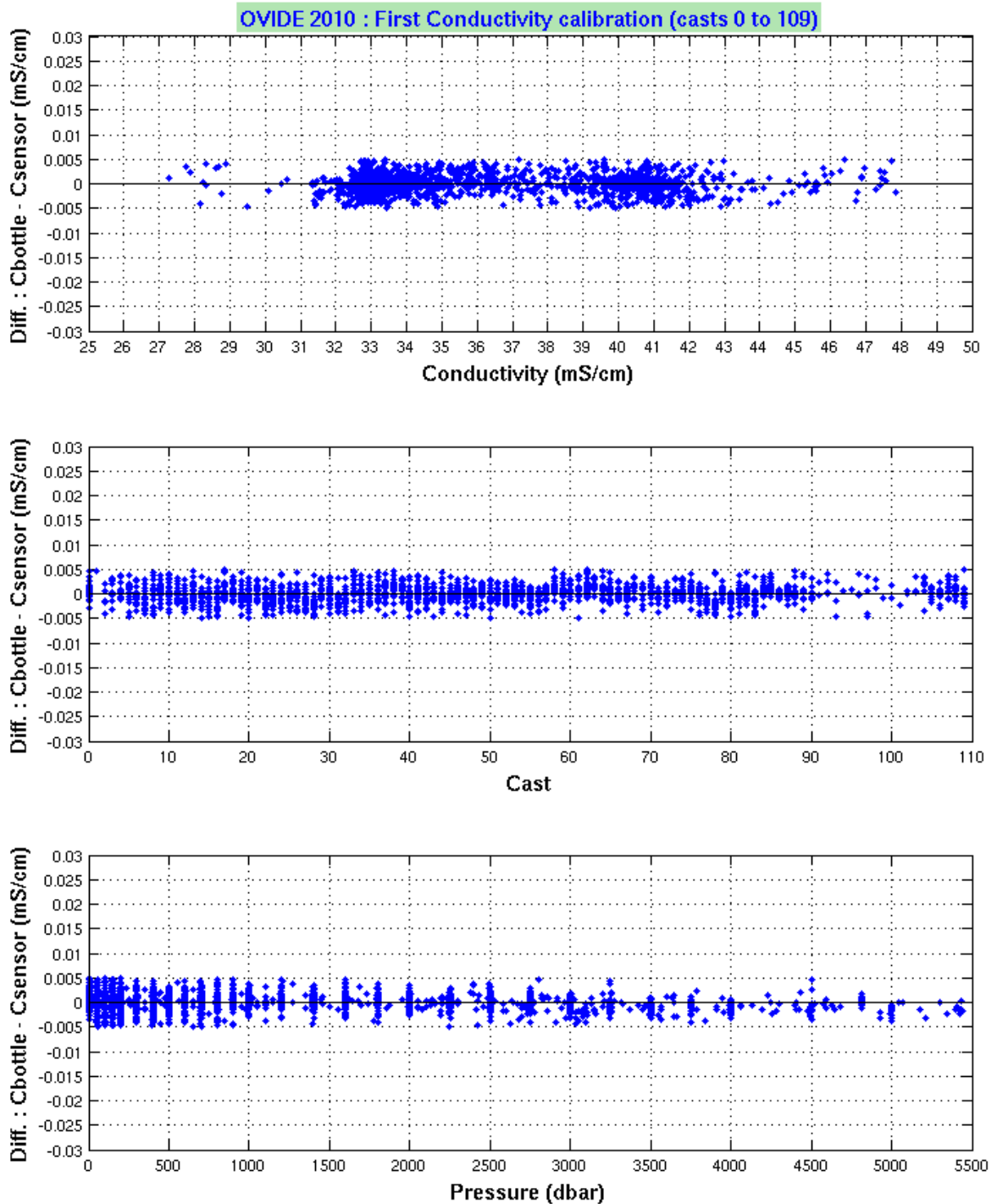
#### 3.8.2. Analysis of the initial results and strategy adopted

To maintain a good stability of the conductivity measurement for the duration of the cruise, periodic cleaning of the cell was performed to remove deposits, in accordance with the Seabird application note n° 2D.

No slow drift of the conductivity sensor was observed, consequently no correction as a function of time is applied.

Concerning the correction as a function of the conductivity, a first iteration is performed on all the cruise casts. Figure 13 shows the remaining differences after recalibration of the CTD measures by the same conductivity polynomial (degree 1) for all casts. A detailed observation of the distribution of differences and the results listing shows that dividing the casts into groups does not improve anything. The theta-S diagrams confirm that the calibration on all casts is the most appropriate.

A correction of the pressure effect on the conductivity by application of a degree 1 pressure polynomial improves the differences (see figure 14).



**Figure 13 :** Differences between the conductivity of the samples and corrected probe conductivity at each sampling level:

- a) as a function of the conductivity,
- b) as a function of the number of the cast concerned,
- c) as a function of the pressure at the sampling level.

These differences are the result of a conductivity calibration on all the cruise samples, without temporal correction, without grouping casts and without pressure correction.

### 3.8.3. Assessment of the calibration of the conductivity profiles

The table below shows the results of the calibration of the conductivity measurements for the OVIDE 2010 cruise:

Cast or group	Number of samples considered	Number of samples conserved in the calculation	Standard deviation (0-5500 dbar)
0 - 109	2348	2052 (87,4%)	0.00172

The table shows, for each group of casts or isolated cast, the number of samples used for the calculation, the number of samples conserved by the process, as well as the resulting standard deviation for the group considered.

During the cruise, salinity was measured on 2348 samples. The calculation process validated 2052 of them, i.e. 87.39%.

No temporal correction was applied.

A detailed study of the differences and the theta-S shows that dividing the casts into groups does not improve the conductivity calibration. All of the casts in OVIDE 2010 were calibrated with the same conductivity polynomial degree (1).

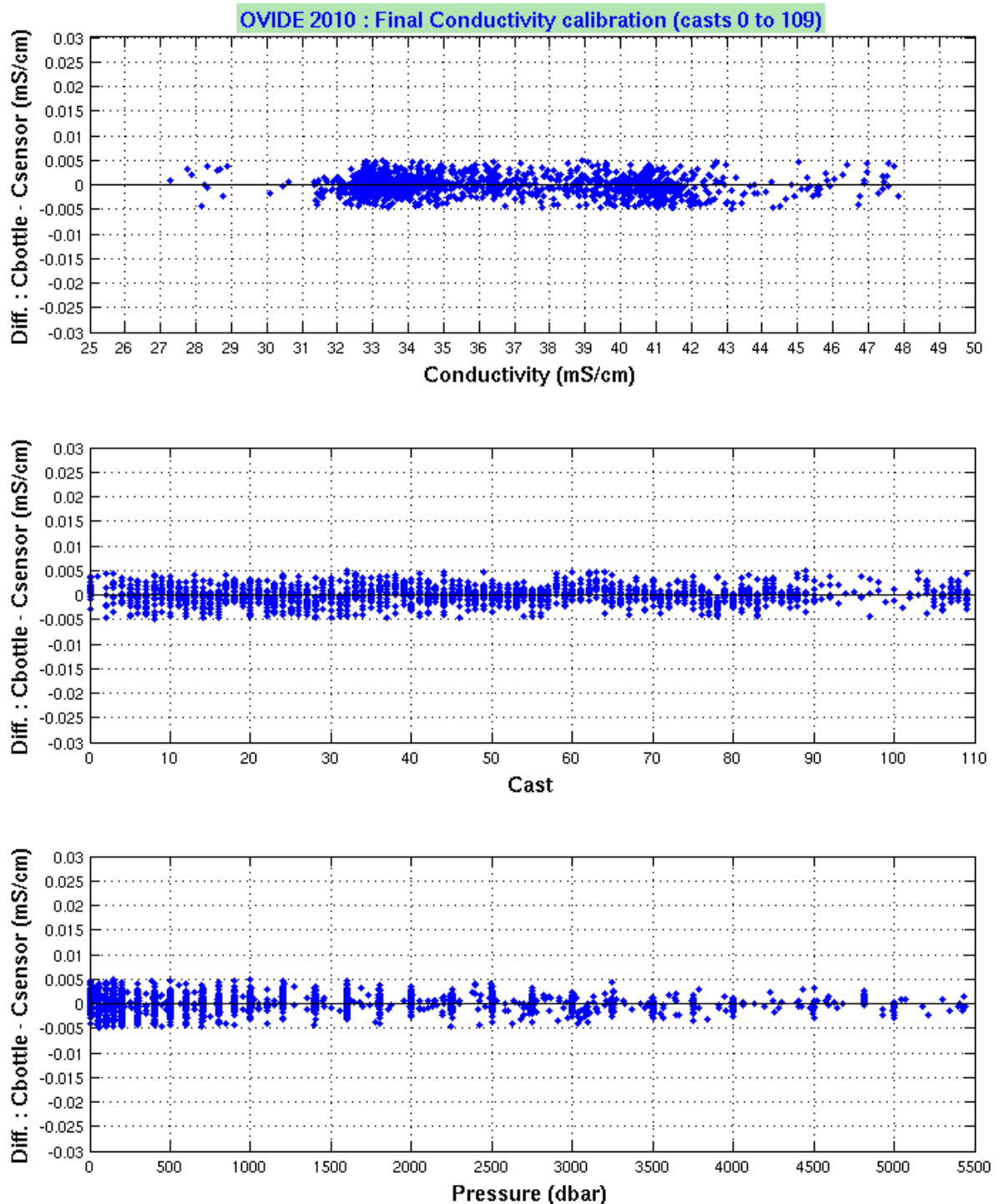
Figure 14 shows the remaining differences in conductivity after conductivity calibration of all casts and correction of the pressure effect (polynomial of degree 1).

The histograms in figure 15 confirm that the distribution of the differences is satisfactory. In 49.4% of cases, the differences in conductivity are lower than 0.001 mS/cm, while in 89.9%, they are less than 0.003 mS/cm.

The overall assessment can be established as follows: the conductivity values of 2052 validated samples indicate a standard deviation between the sensor data and the chemistry data, for the whole cruise, of 0.0017 mS/cm.

The histograms of differences in salinity after optimization are shown in figure 16: the standard deviation in salinity is 0.0019 psu.

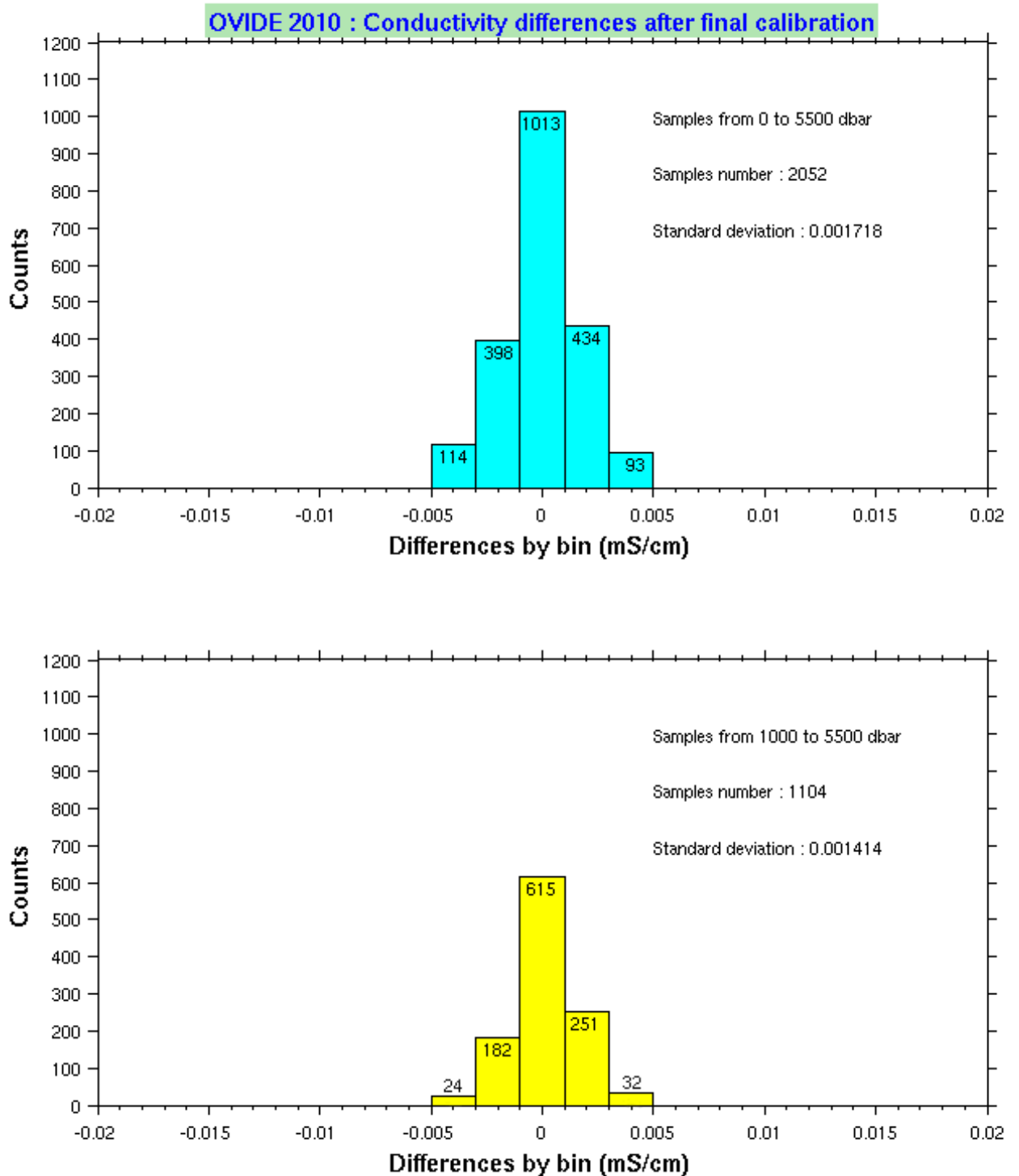




**Figure 14 :** Differences between the conductivity of 2052 validated samples and the probe conductivity corrected at each sampling level:

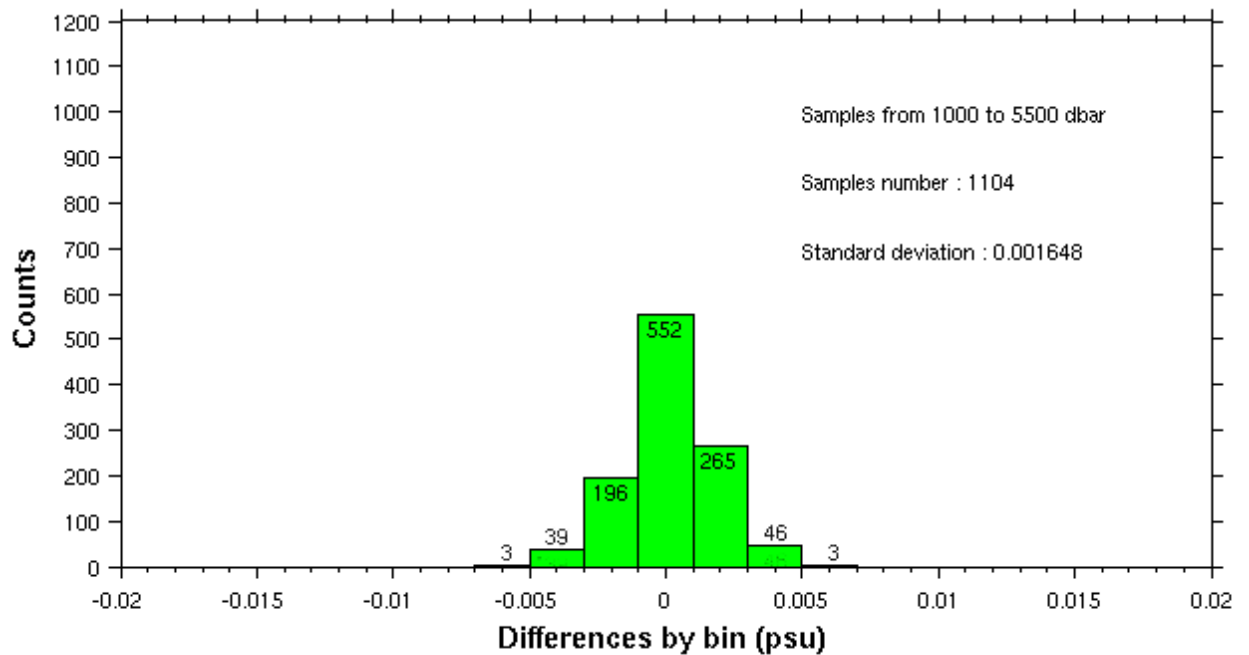
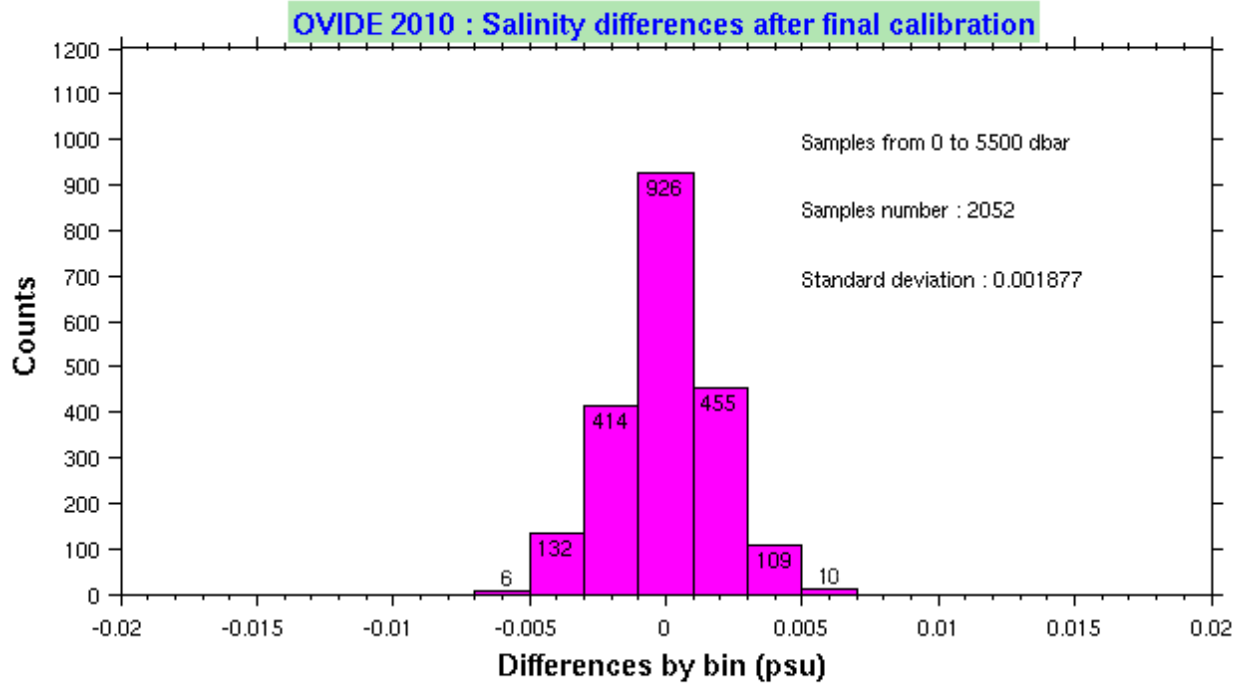
- a) as a function of the conductivity
- b) as a function of the number of the cast concerned,
- c) as a function of the pressure at the sampling level.

These differences are the result of a conductivity calibration on all the cruise samples, without temporal correction, without grouping but with correction of the pressure effect (polynomial of degree 1).



**Figure 15 :** Histograms of the differences between the conductivity of the validated samples and the ctd conductivity at the sampling level :

- for all the 2052 validated cruise samples,
- for the 1104 validated samples collected at a pressure greater than 980 dbar.



**Figure 16** : Same legend as figure 15, but for the salinity differences.

### 3.8.4. Validation of the results

Figure 17 shows all the theta-S diagrams of the downcast profiles of the OVIDE 2010 cruise in deep waters. We observe a good repeatability of the diagrams that overlap in an acceptable way.

Saunders (1986) established a relationship between potential temperature and salinity in the Northeast Atlantic deep water masses. This relationship ( $S = 34.698 + 0.098 * \theta$ ) is marked in red in figure 17.

Figure 18 shows the theta-S diagrams of CTD casts carried out at the same points during the different OVIDE cruises:

Point 1: N 40 33.06 W 012 38.78

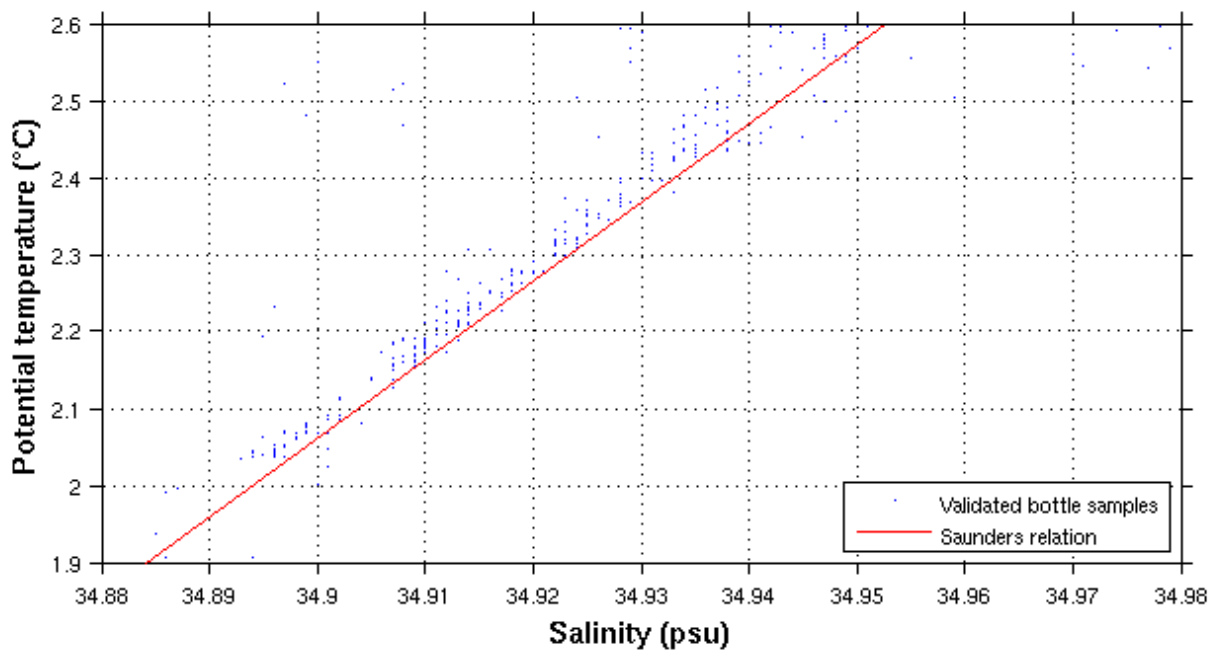
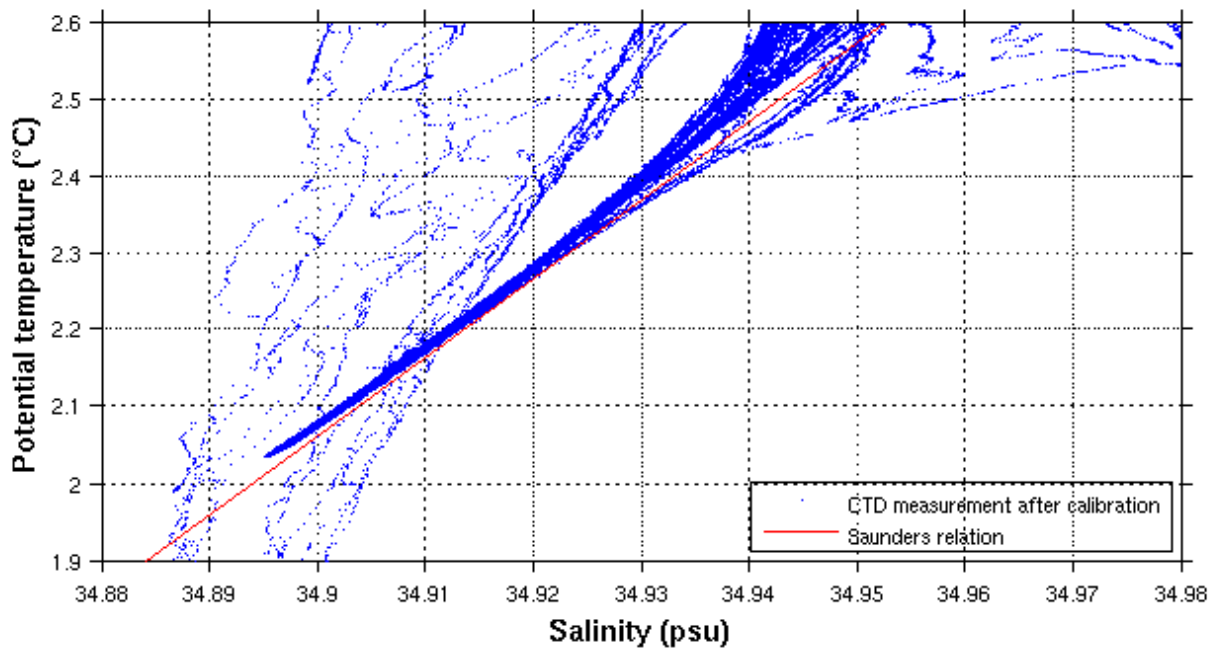
Point 2: N 47 39.78 W 020 33.23

OVIDE 2010 cast 14  
 OVIDE 2008 cast 16  
 OVIDE 2006 cast 17  
 OVIDE 2004 cast 105  
 OVIDE 2002 cast 83

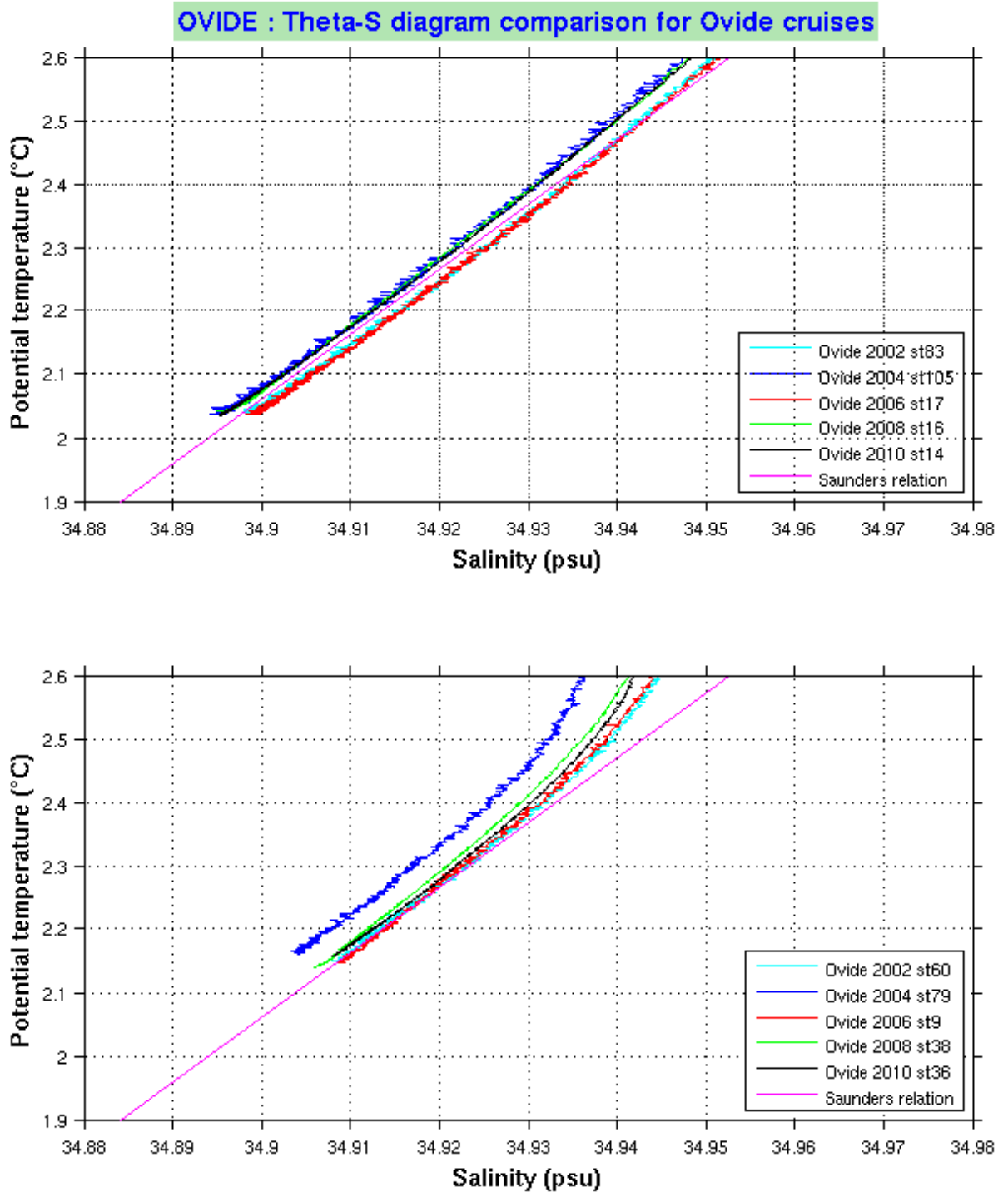
OVIDE 2010 cast 36  
 OVIDE 2008 cast 38  
 OVIDE 2006 cast 39  
 OVIDE 2004 cast 79  
 OVIDE 2002 cast 60

Figure 19 shows all the theta-S of the cruise, the colorimetry of the profiles changes gradually from blue to red, from cast 0 to cast 109.

### OVIDE 2010 : Theta-S diagram from CTD measurement after calibration



**Figure 17** : All theta-S diagrams of the casts of the OVIDE 2010 :  
 a) top graph, probe measurements on the downcast profiles,  
 b) bottom graph, 'bottle' salinity combined with the CTD potential temperature.  
 The line indicates the relationship proposed by Saunders (1986).



**Figure 18 :** Comparison of theta-S diagrams between the different OVIDE cruises.

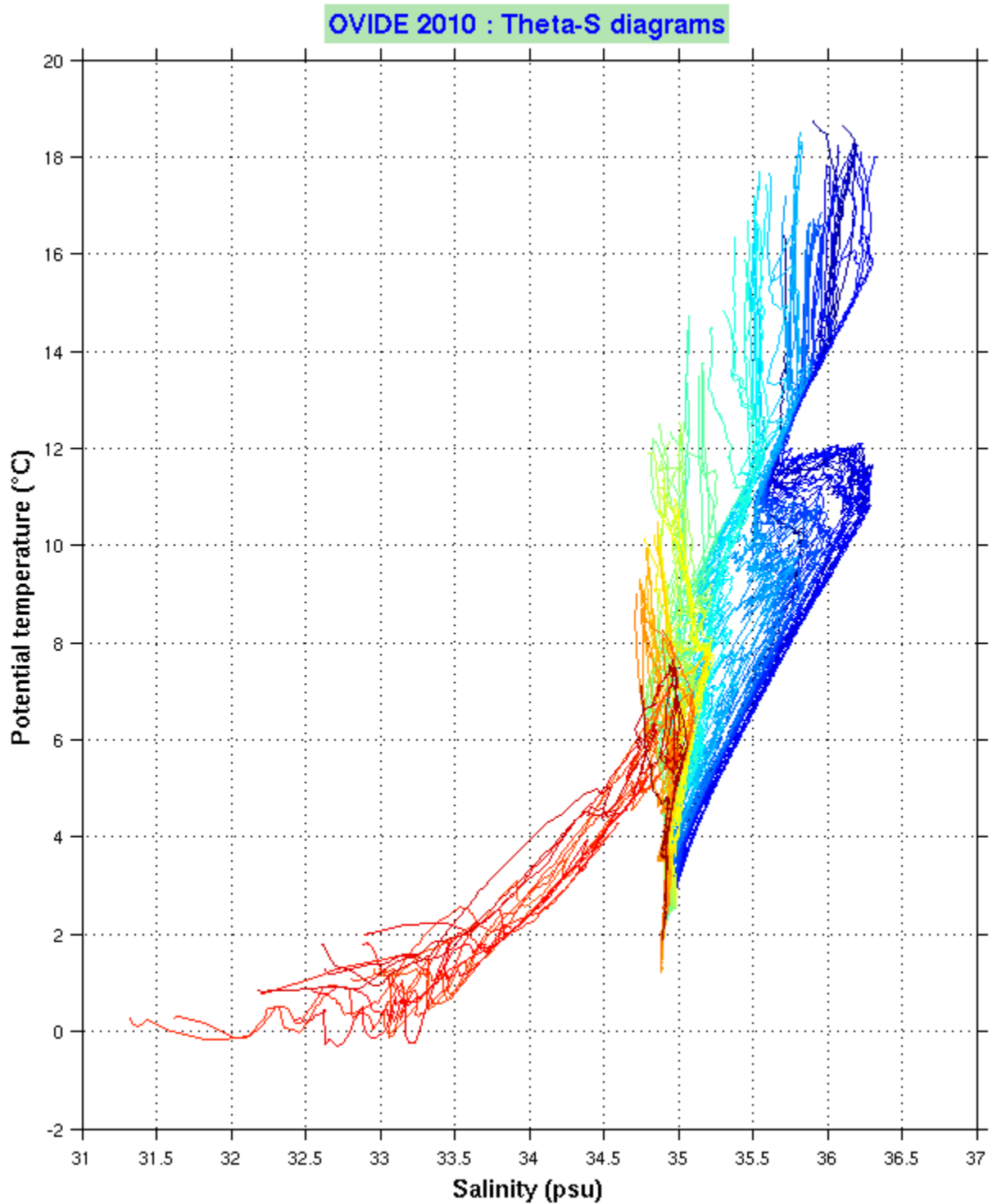


Figure 19 : Theta-S diagrams of casts 0 to 109 of the OVIDE 2010 cruise.

### 3.9. Calibration of dissolved oxygen profiles

The SBE9+ probe is equipped with two SBE43 dissolved oxygen sensors with a range of measurements from 0 to 120% of the surface saturation. The accuracy claimed by the manufacturer is 2% of the saturation. The serial numbers of the sensors, used during the cruise, are given in the section III.1.2 Technical summary.

The choice between the primary ( $Ox_0$ ) and secondary ( $Ox_1$ ) oxygen is made before calibration by visualizing the raw measurements of the probe at 24 Hz. The reduced files only conserve a single oxygen measurement. In the case of the OVIDE 2010 cruise, the choice was made to use the secondary oxygen ( $Ox_1$ ).

#### 3.9.1. Operating mode

The dissolved oxygen content, OXYSBE, expressed in ml/l, is calculated from the  $V_r$  information transmitted by the sensor using the formula proposed by Millard (1982).

$$OXYSBE \text{ (ml/l)} = soc * (V_r + V_{offset} + \tau(T, P) * \delta V / \delta t) * oxsol(T, S) \\ * (1.0 + A * T + B * T^2 + C * T^3) * e^{(E * P / K)}$$

$V_r$ :  $O_2$  measurement in volts  
 $\delta V / \delta t$ : derivative of the signal SBE43 (volt/sec)  
 Oxsol: function for the calculation of the oxygen solubility (Garcia & Gordon 1992)  
 P: probe pressure (Daryl)  
 T: probe temperature ( $^{\circ}$  C)  
 K: probe temperature ( $^{\circ}$  K)  
 S: probe salinity (psu)  
 Soc, Voffset, A, B, C, E, tau: characteristics of the Seabird sensor

In practice, the term associated with tau is neglected because, in some cases, it adds noise (see Application note). The goal of the calibration is the determination of a new Soc and Voffset.

The oxygen in volts is corrected for hysteresis by the Hydro\_net program. For the calibration, the probe oxygen (OXYS) is obtained by calculating a mean on a water column of 15 dbar on the downcast profile, at the sampling level, based on the probe measurements in volts.

The method used for the calibration of the probe measurements from the chemistry measurements (OXYC in ml/l) involves the determination of the coefficients M and B of the equation below to minimize the differences between (OXYC / phi) and (OXYS \* M + B).

$$OXYC \text{ (ml/l)} / \phi = OXYS \text{ (volt)} * M + B$$

where:

- .  $\phi = Oxsol(T, S) * (1.0 + A * T + B * T^2 + C * T^3) * e^{(E * P / K)}$
- .  $M = soc$
- .  $B = Voffset * soc$       thus       $Voffset = B / soc$

The Soc and Voffset coefficients (deduced from the values of M and B) of the Seabird sensor characteristics are determined for a set of samples, using successive iterations based on a principle similar to that for the conductivity.



### 3.9.2. Dissolved oxygen units

The unit used in the calibration procedure and in the graphical representations of this report is the milliliter per liter (ml/l).

The water temperature, at the time of sampling from the bottles, was taken with an Ebro thermometer (accuracy =  $\pm 0.3^{\circ}\text{C}$ ) before fixing of the oxygen by the reagents. We then deduce the density of the seawater sample, and the dissolved oxygen content can be converted to micromoles per kilogram ( $\mu\text{mol/kg}$ ) (see Mercier et al. 1992).

The dissolved oxygen data of the SBE43 sensor are therefore provided in both units.

### 3.9.3. Cast grouping strategy

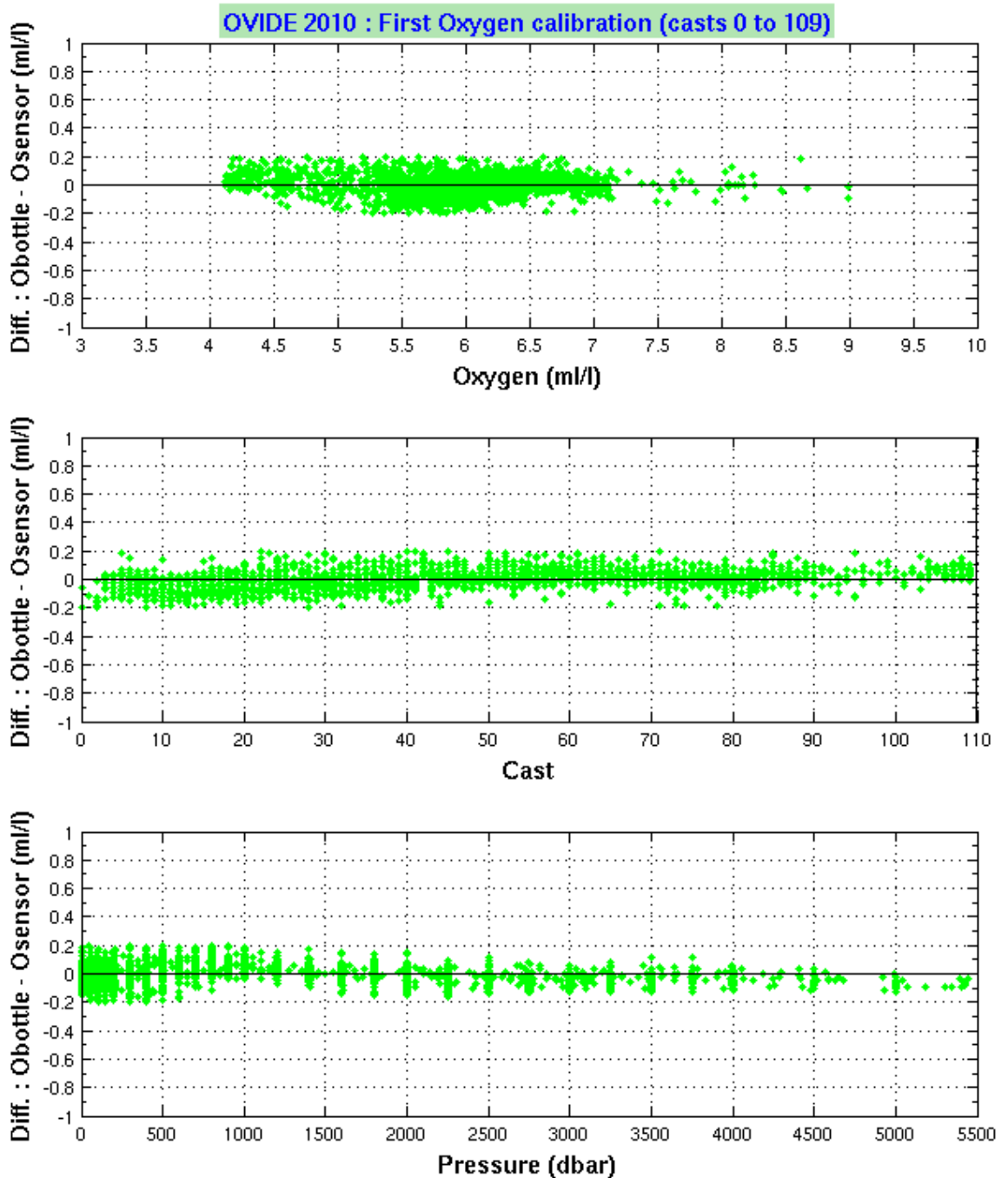
An initial determination of the sensor "characteristics" on all cruise samples allows an observation of the different successive phases of its behavior.

Figure 20 shows the distribution of the differences obtained after this initial global determination of Soc and Voffset coefficients.

A detailed analysis shows that dividing the casts into groups would improve the distribution of differences. Thus, each of these phases should be considered separately. Their identification and then a specific calculation is used to obtain, for each cast, a dissolved oxygen profile that fits well on the oxygen values obtained by chemical analysis.

### 3.9.4. Assessment of the calibration of the dissolved oxygen profiles

The table (page 59) groups all of the characteristic values of the coefficients used to calibrate the cruise profiles. This table shows, for each group of casts, the number of samples considered, the number of validated samples and the standard deviation in three pressure intervals, as well as the characteristic parameters of the sensor.



**Figure 20 :** Differences between the oxygen values measured on the samples and that of the ctd downcast profile at the sampling pressure :

- a) as a function of the oxygen,
- b) as a function of the number of the cast concerned,
- c) as a function of the pressure at the sampling level.

These differences are the result of a calculation performed on all the cruise samples with no grouping and no correction for a pressure effect.

### Assessment of the calibration of the dissolved oxygen profiles of the OVIDE 2010 cruise

Cast or group of casts	Number of samples considered	Number of samples conserved in the calculation	Standard deviation			Coefficients	
			0 à 5500	0 à 1000	1000 à 5500	Soc	Voffset
0	27	26	0.124	0.113	0.121	0.581351E+00	-0.633607E+00
1-7	107	103	0.069	0.067	0.072	0.567287E+00	-0.533762E+00
8-13	164	156	0.057	0.061	0.050	0.566971E+00	-0.543220E+00
14-23	272	258	0.061	0.063	0.058	0.570577E+00	-0.543926E+00
24-41	493	471	0.071	0.081	0.056	0.571661E+00	-0.538185E+00
42	27	26	0.073	0.079	0.051	0.595816E+00	-0.556834E+00
43-49	187	179	0.048	0.056	0.035	0.582793E+00	-0.555877E+00
50-109	1058	995	0.046	0.049	0.040	0.586038 E+00	-0.558266E+00
0 - 109	2335	2214 (94.8 %)	0.054		0.043		

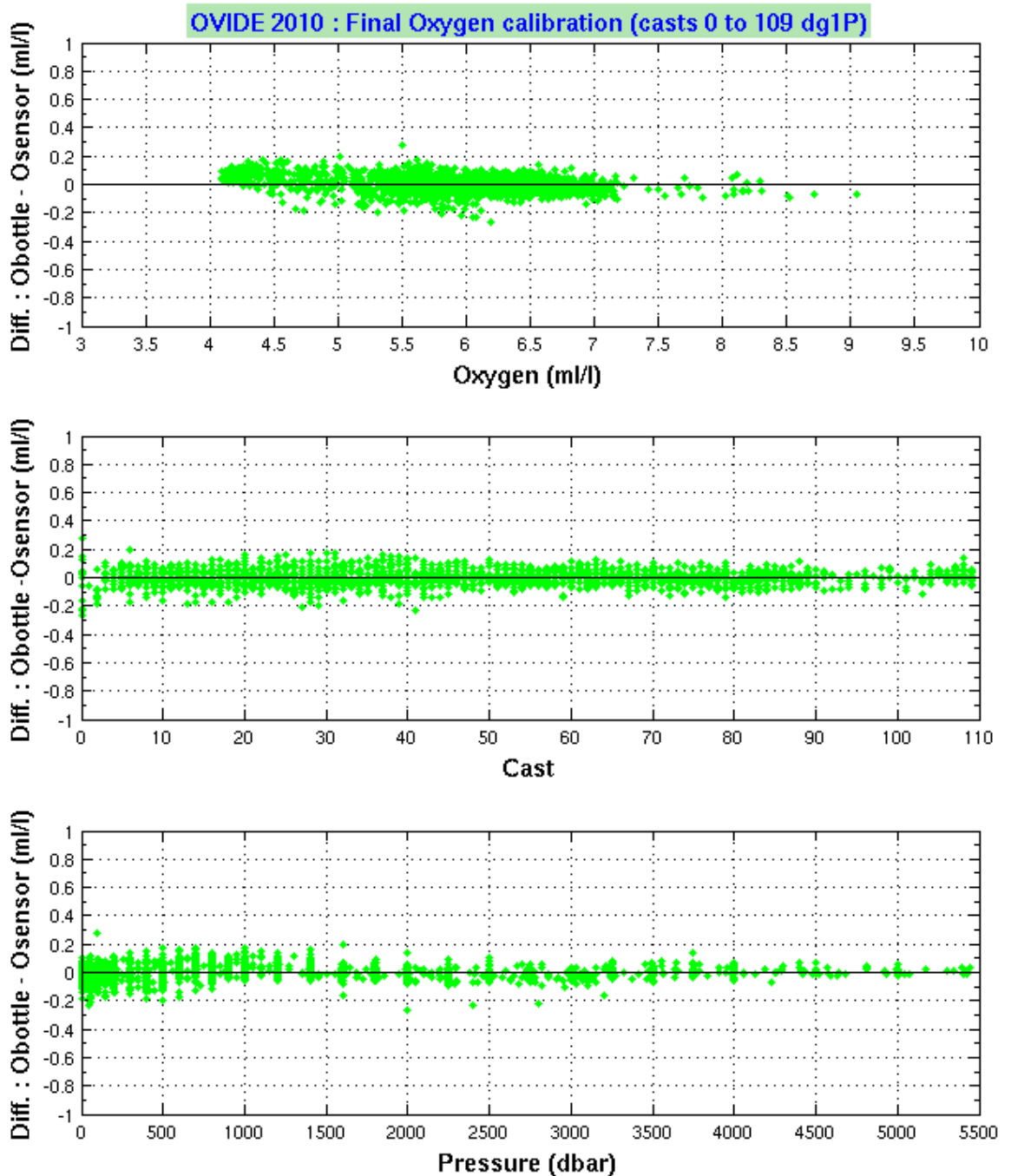
Figure 21 shows the final differences, after calibration of the profiles and application of a correction factor of degree 1 depending on the pressure, between the oxygen values obtained by analysis of the samples and those provided by the downcast profile at the sampling level. The distribution of these differences is correctly centered and acceptable for each of the cruise casts. The distribution of the differences presented as a function of the pressure shows that it is also acceptable for all sampling levels.

The histograms in figure 22 allow us to visualize the distribution of differences in a different way and to verify that their distribution is properly centered.

For the complete OVIDE 2010 cruise, 2214 samples among the 2335 analyzed, i.e. 94.8%, were validated and used to calibrate the ctd dissolved oxygen profiles. The differences in oxygen are less than 0.025 ml/l in 40.8 % of cases and less than 0.075 ml/l for 85.9 %, giving a standard deviation of 0.054 ml/l.

Considering only the part of the oxygen profile greater than 980 dbar, i.e. 1136 samples, the differences are less than 0.025 ml/l for 49.6 % and less than 0.075 ml/l for 93.0 %. The resulting standard deviation is 0.043 ml/l.

Figure 23 shows the same histograms for oxygen, in  $\mu\text{mol/kg}$ . The differences in oxygen are less than 1  $\mu\text{mol/kg}$  in 38.7 % of cases and less than 3  $\mu\text{mol/kg}$  for 82.4 %, giving a standard deviation of 2.33  $\mu\text{mol/kg}$ .

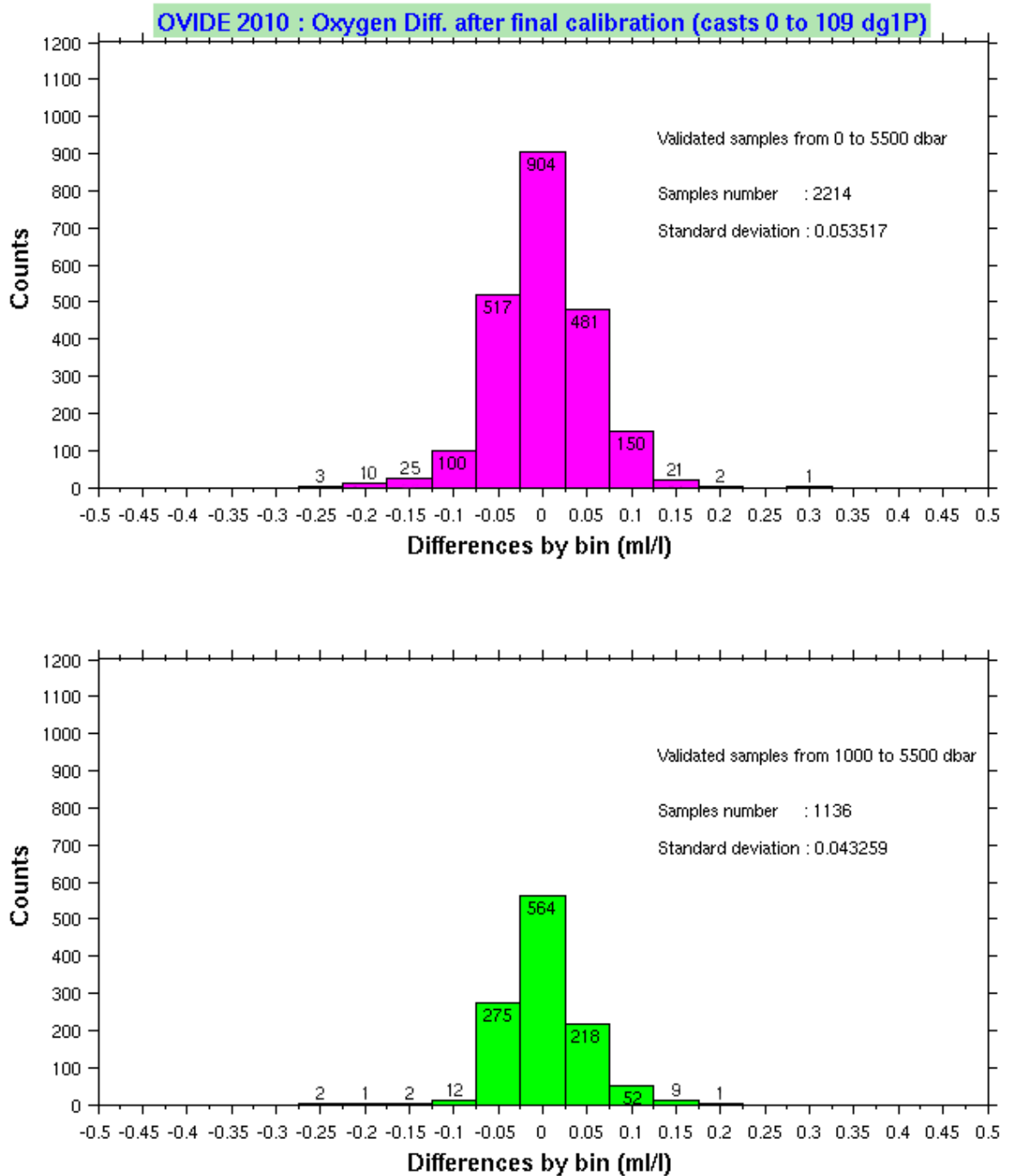


**Figure 21 :** Differences between the oxygen value measured on the 2214 validated samples and that of the ctd downcast profile at the sampling pressure:

- a) as a function of the oxygen
- b) as a function of the number of the cast concerned,
- c) as a function of the pressure at the sampling level.

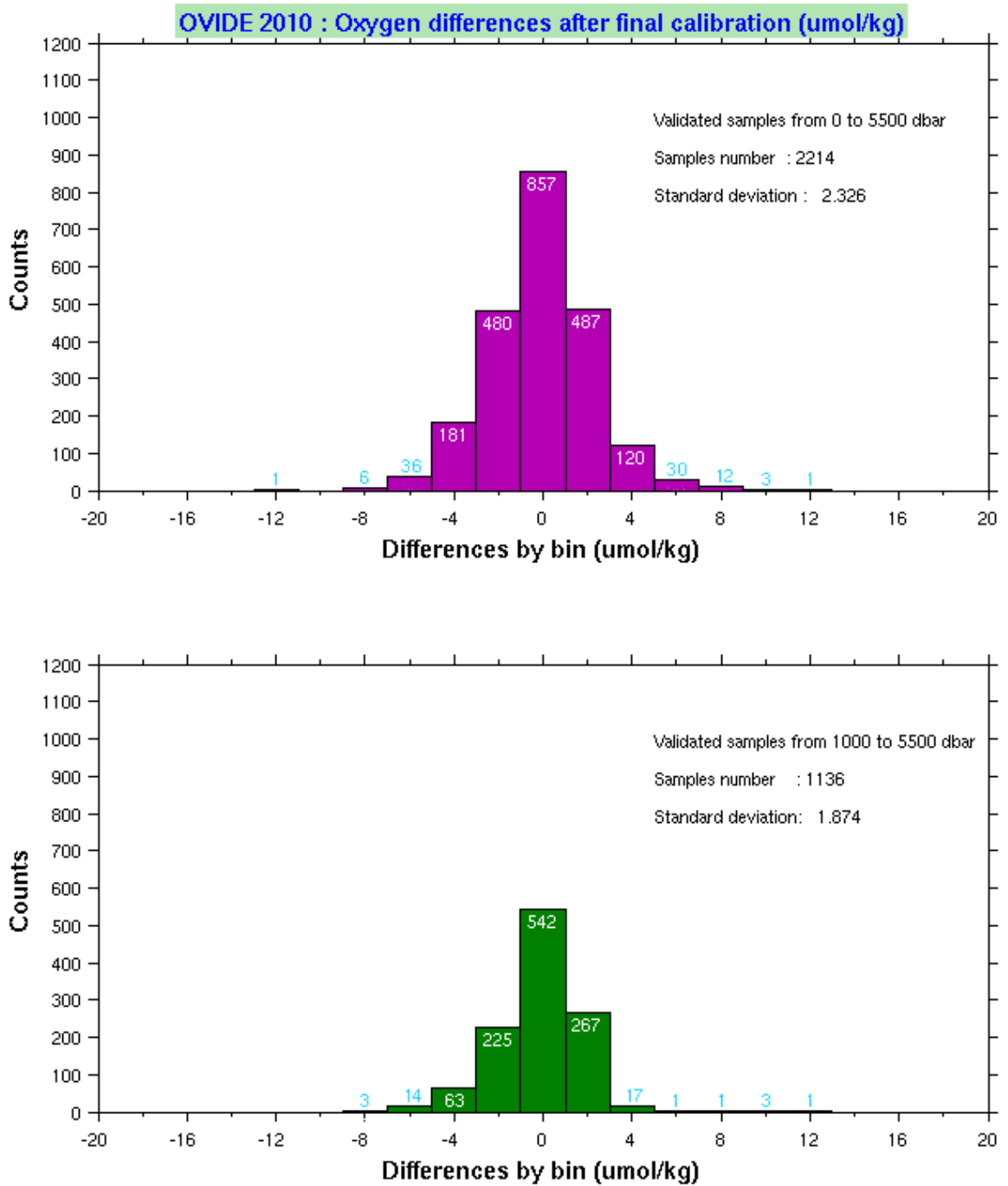
These differences are obtained after a specific calculation performed by cast or group of casts (a polynomial of degree 1 eliminates the dependence of the differences on the pressure).

The ctd measurements are averaged on a water column of 15 dbar.



**Figure 22 :** Histograms of differences in oxygen (ml/l) between the value measured on the validated samples and that of the ctd downcast profile at the sampling pressure (final measurements) :

- for all the 2214 validated samples on the cruise,
- for the 1136 validated samples collected at a pressure greater than 980 dbar.



**Figure 23 :** Histograms of the differences in oxygen ( $\mu\text{mol/kg}$ ) between the value measured on the validated samples and that of the ctd downcast profile at the sampling pressure (final measurements) :

- a) for all the 2214 validated samples on the cruise,
- b) for the 1136 validated samples collected at a pressure greater than 980 dbar.

### 3.9.5. Validation of the results

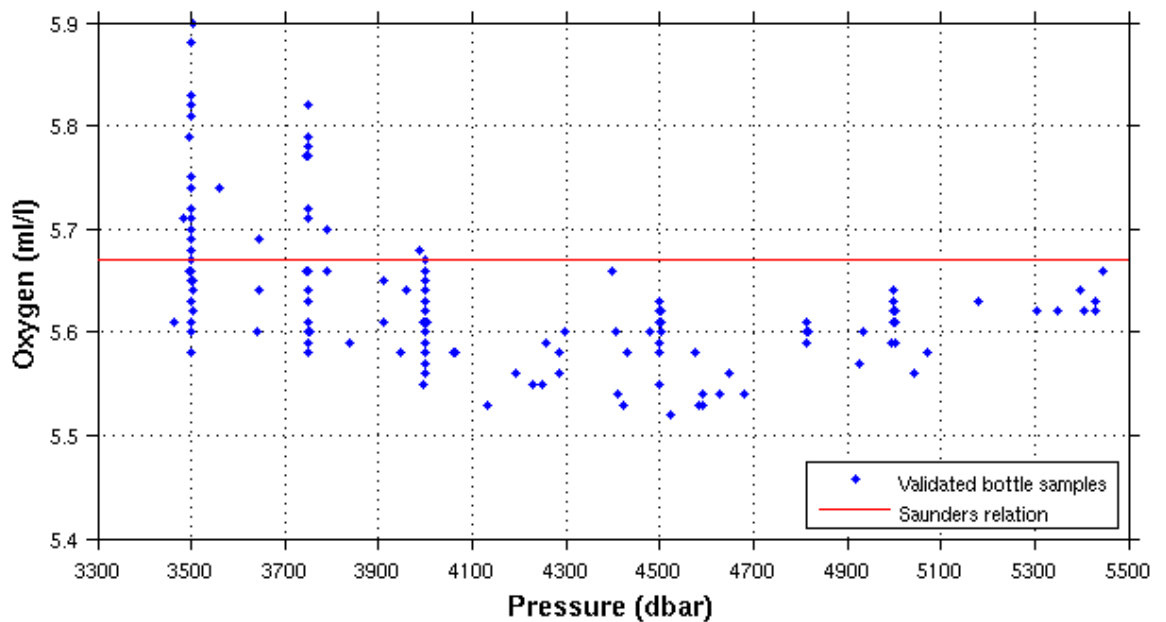
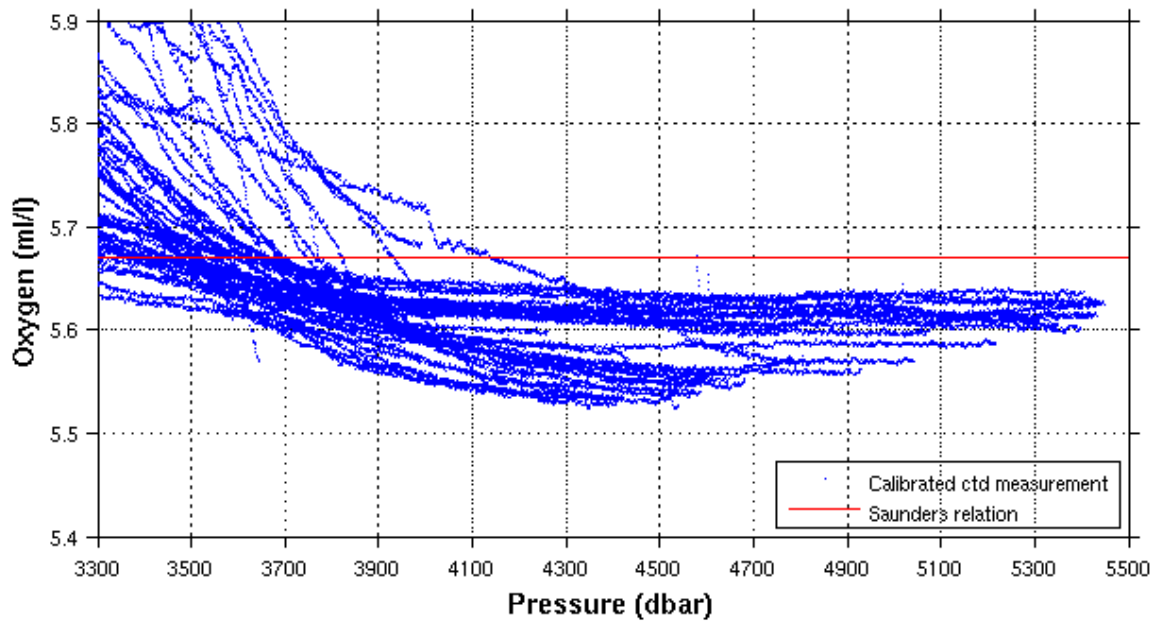
Saunders (1986) suggests that the dissolved oxygen concentration is almost uniform in the Northeast Atlantic, at a pressure greater than 3500 dbar, with a value of  $5.67 \pm 0.02$  ml/l. However, he states that this concentration can be lower by 0.010 ml/l in the eastern part of the basin.

Figure 24 shows all dissolved oxygen measurements obtained by the Winkler method on the samples, as well as the calibrated dissolved oxygen profiles of the OVIDE 2010 cruise. From the results of this cruise, at a pressure greater than 3500 dbar and for the casts carried out in the same geographical zone as the previous cruises, the mean value of the dissolved oxygen measurements is close to that of Saunders.

Figure 25 shows the theta-O<sub>2</sub> profiles of the CTD casts carried out at the same points during the different OVIDE cruises.

Figure 26 shows all the theta-O<sub>2</sub> diagrams for the OVIDE 2010 cruise. The color of the profiles changes gradually from blue to red, from cast 0 to 109.

### OVIDE 2010 : Oxygen-Pressure diagrams after calibration

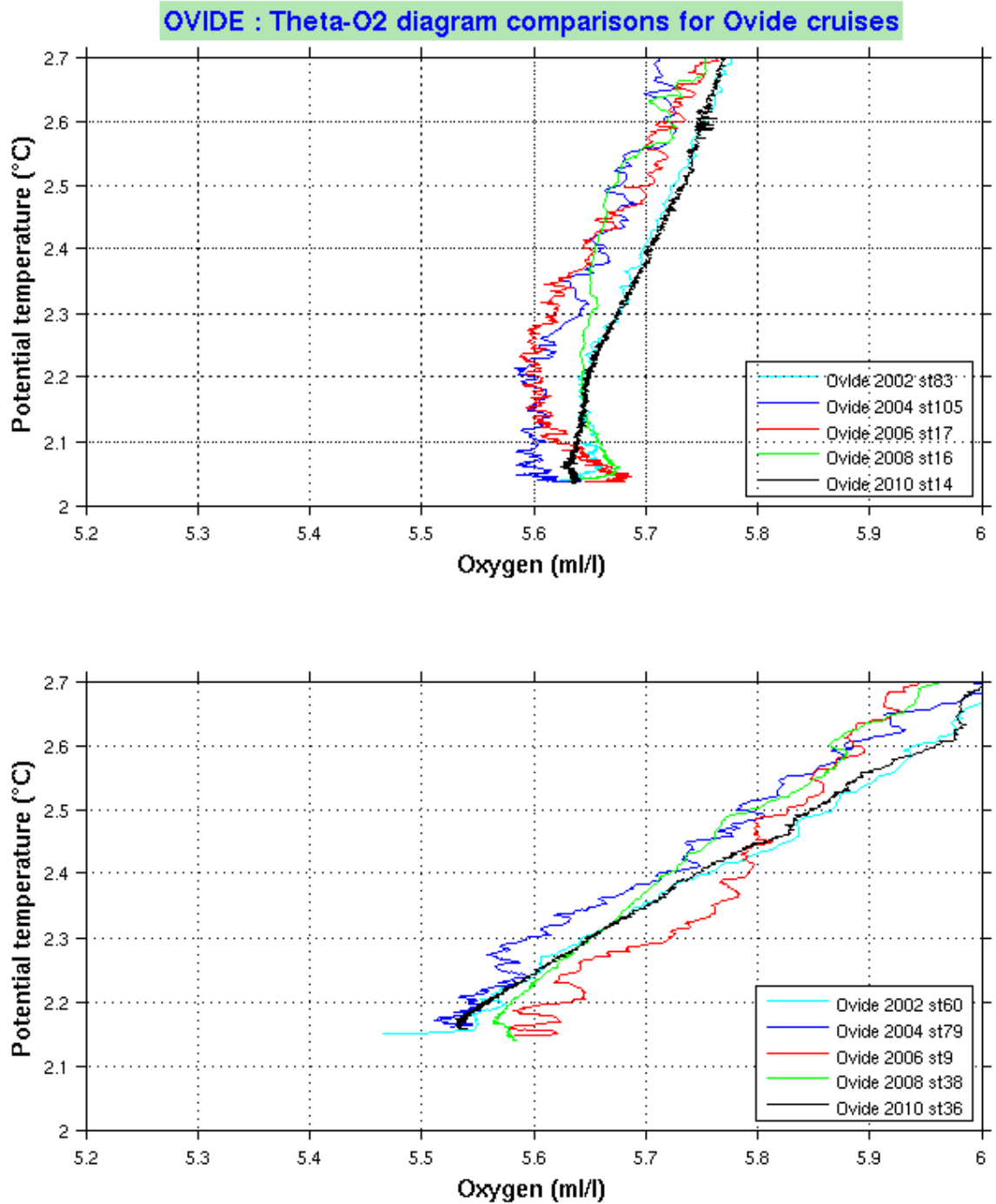


**Figure 24 :** All dissolved oxygen measurements for the OVIDE 2010 cruise at a pressure greater than 3300 dbar:

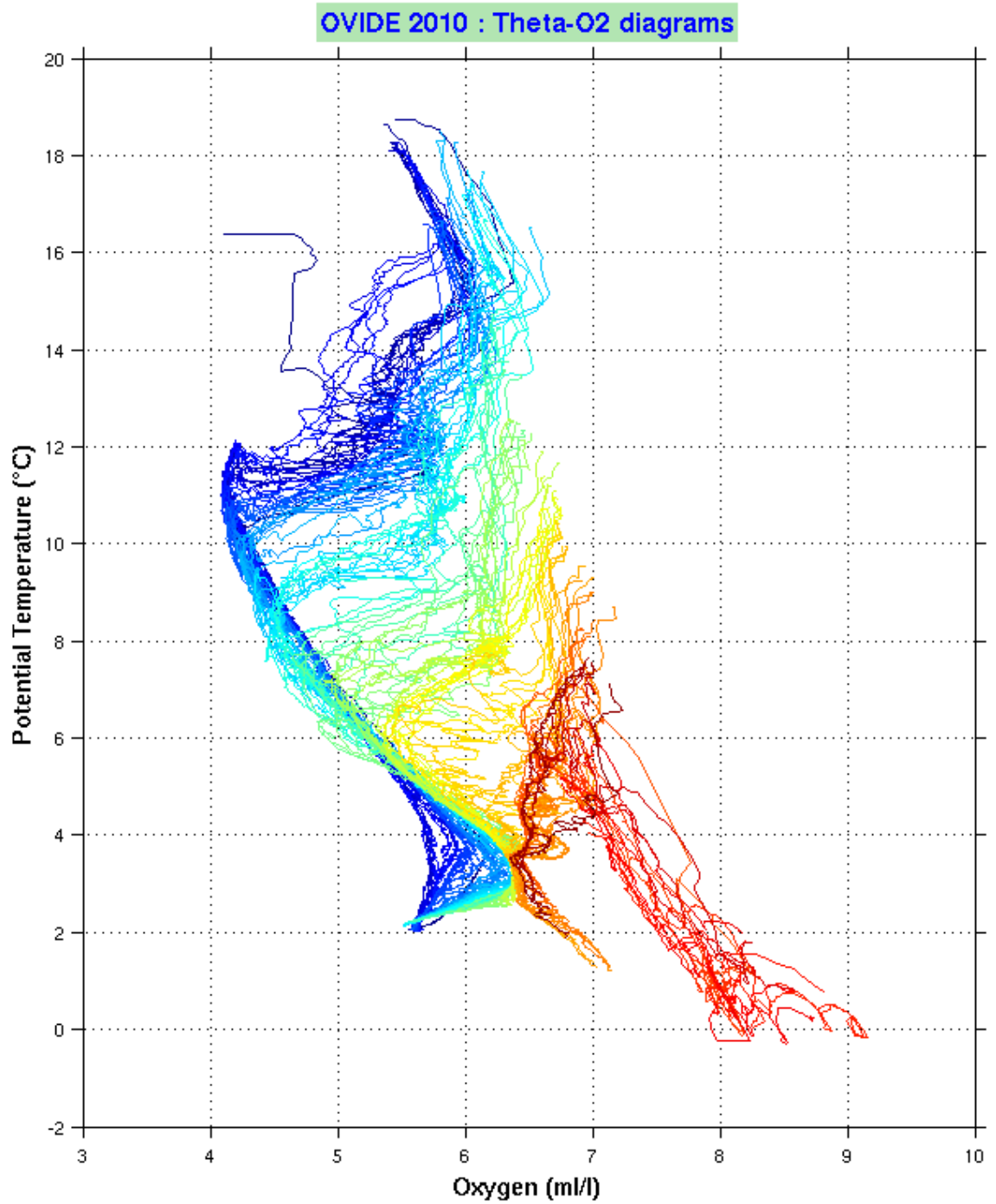
- continuous measurements on the probe downcast profiles,
- “chemistry” measurements obtained on the samples.

The line represents the reference value proposed by Saunders (1986) in the Northeast Atlantic.





**Figure 25 :** Comparison of theta-O<sub>2</sub> profiles carried out at the same points during the different OVIDE cruises.



**Figure 26 :** Theta-O<sub>2</sub> diagrams for casts 0 to 109 of the OVIDE 2010 cruise.

### 3.10. Data reduction

All of the calibration part of the data processing is done based on the total probe measurements at 24 Hz. The data are then reduced to one measurement per decibar and we conserve only the set of sensors (primary or secondary) used during the calibration.

The elimination of non-validated cycles and the data reduction was carried out using the parameter gradients as elimination criteria:

$$\text{abs}((\text{ParamCycle}(N)-\text{ParamCycle}(N-1))/(\text{PressionCycle}(N)-\text{PressionCycle}(N-1)))$$

A cycle is validated if the values of the gradients are lower than the selected thresholds. Initially, a determination of the gradient histograms allows us to choose threshold values beyond which the parameters will be rejected. After removal of non-validated cycles, the decimation of the data is performed by calculating, for each integer pressure value, the mean of the parameters on 1 dbar-width interval centered on this value.

The set of criteria allowing to reduce the probe measurements is described in the document: "Validation et Réduction des données de la sonde SBE9+", C. Kermabon, M. Arhan, Nov 2008.

The options used for the OVIDE 2010 cruise are shown below:

Threshold values for casts 0 to 89 and 103 to 109 :

Echant.	1	Nb val min	6
Seuil P	0.5		
Seuil T, C surf	1.6	Seuil T,C fond	0.5
Seuil O (Volt) surf	0.6	Seuil O (Volt) fond	0.4

Threshold values for casts 90 to 102 :

Echant.	1	Nb val min	6
Seuil P	0.5		
Seuil T, C surf	2.2	Seuil T,C fond	0.5
Seuil O (Volt) surf	0.6	Seuil O (Volt) fond	0.4

The downcast and upcast files were generated in netcdf format:

. ov10d..._cli.nc	for the downcasts
. ov10a..._cli.nc	for the upcasts

### 3.11. Validation of the profiles

The Hydro\_val software (see Hydro\_val: CTD data validation software) first allows to flag as 'bad' (QC = 4) the small number of oxygen peaks which were not eliminated during the data reduction.

The second function of hydro\_val is to analyze the density inversions in order to flag the corresponding T, S, O<sub>2</sub> data as bad, if necessary.

#### 3.11.1. Validation of the oxygen

The window on the right shows the options used to validate the dissolved oxygen profiles from casts 0 to 109. The downcasts and upcasts are corrected.

Figure 27 shows a zoom on cast 11 before and after data flagging.

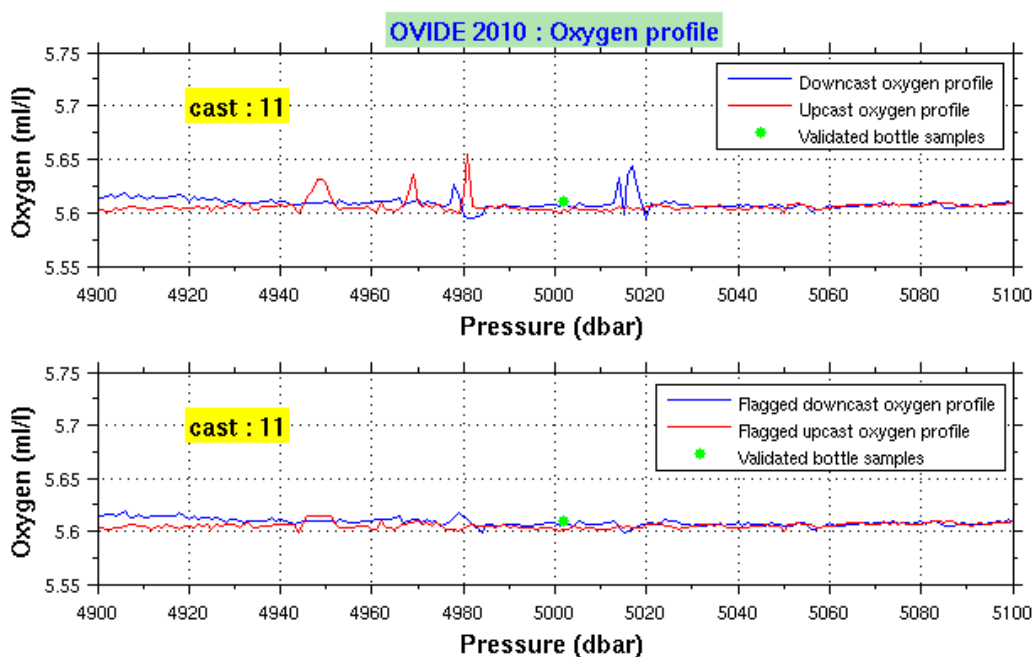
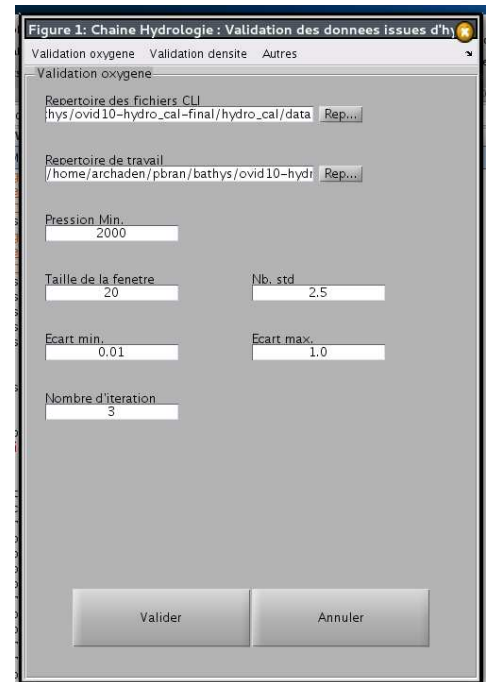


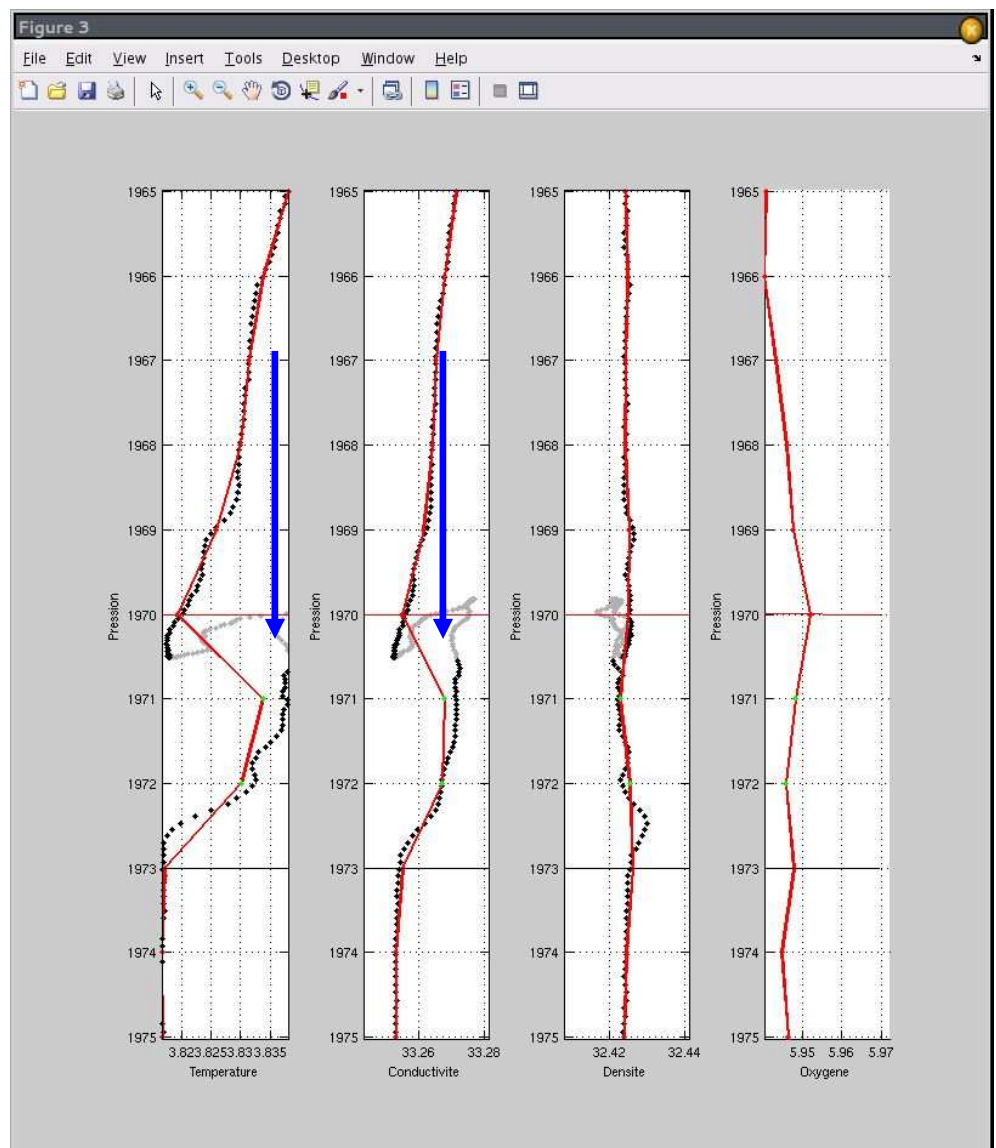
Figure 27 : Example of invalidations of oxygen measures by hydro\_val.

### 3.11.2. Density inversions

By superposing the reduced file, the adjusted file at 24 Hz and the file before loopedit at 24 Hz on the same graph (figure 27), we can detect density inversions linked to the drag of the probe.

We can see on the graph below (figure 28) that the peak at 1971 and 1972 dbar in T and C corresponds to the measurements recorded by the probe 3.0 dbar previously. This crossed water (blue arrows) was drawn in by the frame and pollutes the sensors when the probe slows down. These inversions are not at all physical: they must be identified and the quality flag is set to 4 (QC = 4) for all the parameters. During the transfer to the .clc.nc files (intermediate format before the multi-cast format), a linear interpolation will be performed at these locations.

The reduced profile is shown in red, the adjusted data at 24 Hz in black, and the data at 24 Hz before loopedit in grey.



**Figure 28** : Example of invalidation of density inversions.

### 3.12. Accuracy of the OVIDE 2010 measurements

The calibration phases of the CTD measurements allow us to determine the accuracy of the different types of measurements (probe, chemistry). The table below shows the accuracies obtained for OVIDE 2010.

Figure 1: Chaîne hydrologie – Ajustage des données CTD sondes SBE

Menu A propos

Precision de la mesure

Configuration

Calcul du polynome de Pression

Calcul du polynome de tempe...

Concatenation des fichiers bo...

Application des polynomes P,T

Calcul du polynome de condu...

Correction des fichiers CNV (P...

Generation du fichier chimie/...

Calcul du polynome d'oxygene

Calcul oxygene en ml/l dans l...

Creation du fichier chimie final

Reduction des donnees

Precision de la mesure

Selectionnez les fichiers CLI a modifier

PRES	1.0	CHPSALB	0.0016
TEMP	0.001	CHOXYLB	0.022
COND	0.0017	CHOXYKB	0.98
PSAL	0.0019	CHTMPOB	0.3
OXYL	0.054		
OXYK	2.33		

Validation Annuler

### 3.13. Correction of OVIDE 2010 profiles

. cast 0: replacement of downcast salinity measurements from 5 dbar to 110 dbar by the upcast salinity measurements. The quality flag remains at 1.





## 4. BIBLIOGRAPHY

Bacon S., Snaith H., Yelland M., 1999. An evaluation of some recent batches of IAPSO standard seawater. *Journal of Atmospheric and Oceanic Technology*: Vol. 17, No. 6, pp. 854–861.

Benson, B.B. and D. Krause, Jr., 1984. The concentration and isotopic fractionation of oxygen dissolved in freshwater and seawater in equilibrium with the atmosphere. *Limnol. Oceanogr.*, 29 (3), 620-632.

C. Kermabon, M. Arhan. Validation et réduction des données de la sonde SBE9+. Rapport interne OPS/LPO, 2008.

C. Kermabon, P. Le Bot, V. Thierry, P. Lherminier. Logiciel de nettoyage des données CTD : Hydro\_net. Rapport interne ODE/LPO, 2012.

C. Kermabon, P. Le Bot, V. Thierry, P. Lherminier, P. Branellec. Logiciel d'ajustage des données CTD : Hydro\_cal. Rapport interne ODE/LPO, 2012.

C. Kermabon, P. Le Bot, V. Thierry, P. Lherminier. Logiciel de validation des données CTD : Hydro\_val. Rapport interne ODE/LPO, 2012

Daniault, N. H. Mercier, P. Lherminier, **2011**: The 1992-2009 transport variability at the south east tip of Greenland from in situ measurements and altimetry. *Geophysical Research Letters*, 38, L07601, [doi:10.1029/2011GL046863](https://doi.org/10.1029/2011GL046863), Open Access Version <http://archimer.ifremer.fr/doc/00033/14467/11763.pdf>. Selected as a research spotlight by AGU.

Daniault, N., P. Lherminier, H. Mercier, **2011**: Circulation and transport at the south east tip of Greenland. *J. Phys. Oceanogr.*, 41, 437-457. [doi:10.1175/2010JPO4428.1](https://doi.org/10.1175/2010JPO4428.1).

De Boisséson, E., V. Thierry, H. Mercier, **2010**: Mixed layer heat budget in the Iceland Basin from Argo. *J. Geophys. Res. Oceans*, 115, C10055, [doi:10.1029/2010JC006283](https://doi.org/10.1029/2010JC006283). Open Access Version <http://archimer.ifremer.fr/doc/00017/12807/9761.pdf>.

De Boisséson, E., V. Thierry, H. Mercier, G. Caniaux, and D. Desbryères (2012), Origin, formation and variability of the Subpolar Mode Water located over the Reykjanes Ridge, *J. Geophys. Res.*, 117, C12005, [doi:10.1029/2011JC007519](https://doi.org/10.1029/2011JC007519).

Desbryères, D., V. Thierry, and H. Mercier (2013), Simulated decadal variability of the meridional overturning circulation across the A25-Ovide section, *J. Geophys. Res. Oceans*, 118, [doi:10.1029/2012JC008342](https://doi.org/10.1029/2012JC008342).

Ferron, B., **2011**: A 4D-variational approach applied to an eddy-permitting North Atlantic configuration: Synthetic and real data assimilation of altimeter observations. *Ocean Modelling*, 39, 370-385, [doi:10.1016/j.ocemod.2011.06.001](https://doi.org/10.1016/j.ocemod.2011.06.001)

Forget, G., B. Ferron, H. Mercier, **2008**: Combining ARGO profiles with a general circulation model in the North Atlantic. Part I: estimation of hydrography and circulation anomalies from synthetic profiles over a year. *Ocean Modelling*, [doi:10.1016/j.ocemod.2007.06.001](https://doi.org/10.1016/j.ocemod.2007.06.001) or Open Access Version <http://archimer.ifremer.fr/doc/2008/publication-3721.pdf>.

Forget, G., B. Ferron, H. Mercier, **2008**: Combining ARGO profiles with a general circulation model in the North Atlantic. Part II: realistic transports and improved hydrography between spring 2002 and spring 2003. [doi:10.1016/j.ocemod.2007.06.002](https://doi.org/10.1016/j.ocemod.2007.06.002) or Open Access Version <http://archimer.ifremer.fr/doc/2008/publication-3920.pdf>.

Fornier, Sandra, 2005 : Utilisation des CFC et du CCL4 dans l'étude de la circulation profonde de l'Atlantique Nord. Manuscrit de thèse de doctorat de 3eme cycle, Université de Bretagne Occidentale, IUEM/LCM, Brest, France.

Gourcuff, C., P. Lherminier, H. Mercier, P. Y. LeTraon, **2011**: Altimetry combined with hydrography for ocean transport estimation. J. Atmosph. Ocean. Tech., 28, 1324-1337, [doi: 10.1175/2011JTECHO818.1](https://doi.org/10.1175/2011JTECHO818.1).

H. Mercier, A. Billant, P. Branellec. OVIDE 2002, rapport de données CTD-O<sub>2</sub>. Rapport interne DRO/DOPS/LPO 04-01.

Lherminier Pascale, Herlé Mercier, Claire Gourcuff, Marta Alvarez, Sheldon Bacon, Catherine Kermabon, **2007**: Transports across the 2002 Greenland-Portugal OVIDE section and comparison with 1997. J. Geophys. Res., 112(C7), C07003, [doi:10.1029/2006JC003716](https://doi.org/10.1029/2006JC003716) or Open Access Version <http://archimer.ifremer.fr/doc/2007/publication-3296.pdf>.

Lherminier Pascale, Herlé Mercier, Thierry Huck, C. Gourcuff, F. F. Perez, P. Morin, A. Sarafanov, 2010: The Atlantic meridional overturning circulation and the subpolar gyre observed at the A25-Ovide section in June 2002 and 2004. Deep Sea Res. I. Publisher's official version : <http://dx.doi.org/10.1016/j.dsr.2010.07.009>, Open Access Version : <http://archimer.ifremer.fr/doc/00011/12272/>

Mantyla A. W., 1993. The treatment of inconsistencies in Atlantic deep water salinity data. Deep-Sea Res., 41, 1387–1405.

Mercier H., Billant A., Branellec P., Morin P., Messias M.J., Memery L., Thomas C, Honnorez J. Campagne Manche 1 : Données CTD-O<sub>2</sub>, Chimie et Bathymétrie. Rapport Interne LPO 92-02.

Mercier Herle; Pascale Lherminier; Artem Sarafanov; Fabienne Gaillard; Nathalie Danialt; Damien Desbroyeres; Anastasia Falina; Bruno Ferron; Claire Gourcuff; Thierry Huck; Virginie Thierry, 2013 : Variability of the meridional overturning circulation at the Greenland-Portugal Ovide section from 1993 to 2010, submitted to Progress in Oceanography.

Millard, R.C., 1982. CTD calibration and data processing techniques at WHOI using the 1978 practical salinity scale. International STD Conference and Workshop, San Diego (8-11 February 1982).

P. Branellec, P. Lherminier . Campagne OVIDE 2006, rapport de données CTD-O<sub>2</sub>. Rapport interne DRO/DOPS/LPO 09-03.

P. Branellec, B. Ferron, P. Lherminier. Campagne OVIDE 2008, rapport de données CTD-O<sub>2</sub>. Rapport interne ODE/OPS/LPO 11-03.

Pérez F. F., M. Vázquez-Rodríguez, H. Mercier, A. Velo, P. Lherminier, and A. F. Ríos, **2010** : Trends of anthropogenic CO<sub>2</sub> storage in North Atlantic water masses. Biogeosciences, 7, 1789-1807, [doi:10.5194/bg-7-1789-2010](https://doi.org/10.5194/bg-7-1789-2010) or <http://archimer.ifremer.fr/doc/00006/11706/8362.pdf>.

- Pérez, F. F., M. Vazquez-Rodriguez, E. Louarn, X. A. Padin, H. Mercier, A. Rios, **2008**: Temporal trends of the anthropogenic CO<sub>2</sub> storage in the Irminger Sea. *Biogeosciences*, 5, 1669-1679, [doi:10.5194/bg-5-1669-2008](https://doi.org/10.5194/bg-5-1669-2008) or <http://archimer.ifremer.fr/doc/2008/publication-5925.pdf>.
- Sarafanov, A. H. Mercier, A. Falina, A. Sokov, P. Lherminier, **2010**: Cessation and partial reversal of deep water freshening in the northern North Atlantic: observation-based estimates and attribution. *Tellus A*, **62A**, 80-90, [doi:10.1111/j.1600-0870.2009.00418.x](https://doi.org/10.1111/j.1600-0870.2009.00418.x) Open Access Version <http://archimer.ifremer.fr/doc/2010/publication-7325.pdf>.
- Sarafanov, A., A. Falina, P. Lherminier, H. Mercier, A. Sokov, C. Gourcuff, **2010**: Assessing decadal changes in the deep western boundary current absolute transports southeast of of Cape Farewell (Greenland) from hydrography and altimetry. *J. Geophys. Res. Oceans*, 115, C11003, [doi:10.1029/2009JC005811](https://doi.org/10.1029/2009JC005811). Open Access Version <http://archimer.ifremer.fr/doc/00017/12855/9820.pdf>.
- Sarafanov, A., A. Falina, H. Mercier, P. Lherminier, A. Sokov, **2009**: Recent changes in the Greenland-Scotland overflow-derived water transport inferred from hydrographic observations in the southern Irminger Sea. *Geophysical Research Letters*, 36, L13707, [doi:10.1029/2009GL038041](https://doi.org/10.1029/2009GL038041). Open Access Version <http://archimer.ifremer.fr/doc/2009/publication-6633.pdf>.
- Saunders, P.M., 1986. The accuracy of measurement of salinity, oxygen and temperature in the deep ocean. *J. Phys. Oceanogr.*, 16, 189-195.
- The GO-SHIP Repeat Hydrography Manual : A Collection of Expert Reports and Guidelines. IOCCP Report No. 14, ICPO Publication Series No. 134, Version 1, 2010
- Thierry, Virginie, Eric de Boisséson, Herlé Mercier **2008**: Interannual variability of the Subpolar Mode Water properties over the Reykjanes Ridge during 1990-2006. *J. Geophys. Res.*, 113, C04016, [doi:10.1029/2007JC004443](https://doi.org/10.1029/2007JC004443) or Open Access Version <http://archimer.ifremer.fr/doc/2007/publication-3487.pdf>.
- T. Huck, A. Billant, P. Branellec. OVIDE 2004, rapport de données CTD-O<sub>2</sub>. Rapport interne DRO/DOPS/LPO 06-01.
- Treguier, A. M., C. Gourcuff, P. Lherminier, H. Mercier, B. Barnier, G. Madec, J. M. Molines, T. Penduff, L. Czeschel, C. Böning, 2005 : Internal and forced variability along a section between Greenland and Portugal in the CLIPPER Atlantic model. *Soumis à Ocean Dynamics*.
- UNESCO, 1981. Background papers and supporting data on the Practical Salinity Scale, 1978. UNESCO Technical Papers in Marine Science, n° 37, 144 p.
- Vage, K., Robert S. Pickart, Artem Sarafanov, Øyvind Knutsen, Herlé Mercier, Pascale Lherminier, Hendrik M. van Aken, Jens Meincke, Detlef Quadfasel, **2011** : The Irminger gyre : circulation, convection and interannual variability. *Deep Sea Res. I.*, 58, 590-614, [doi:10.1016/j.dsr.2011.03.001](https://doi.org/10.1016/j.dsr.2011.03.001).
- WOCE Operations Manual - Volume 3 : The Observational Programme Section 3.1 WOCE Hydrographic Programme - Part 3.1.3 : WHP Operations and Methods. WOCE Report n° 68/91 - July 1991. Part 3.1.2 : Requirements for WHP Data Reporting – May 1994.

**LPO technical notes :**

C. Kermabon. Mise en place du post-processing des données CTD (oct. 2007).

M. Hamon, L. Marié, J.P. Gouillou. Documentation technique de la carte Rosette (janv. 2008).

P. Branellec, M. Hamon. Etude d'un choc thermique sur le capteur de pression d'une sonde CTD SBE911+, (nov 2009)

## 5. LISTINGS AND FIGURES OF THE CTD PARAMETERS

Figures of the various sections generated from the cruise data are presented below, followed by listings and detailed figures cast by cast.

### 5.1. Remarks

#### a) Description of the casts :

1. The latitude and longitude indicate the positioning of the ship at the beginning of the descent profile.
2. The depth is the raw measurement of the sounder of the N/O Thalassa at the beginning of the downcast profile for a speed of sound at 1500m/s or an estimate obtained by summing the maximum pressure (in meters) reached by the CTD and the bottom-pinger distance.

b) The temperature, salinity and dissolved oxygen measurements come from the downcast profile of the ctd.

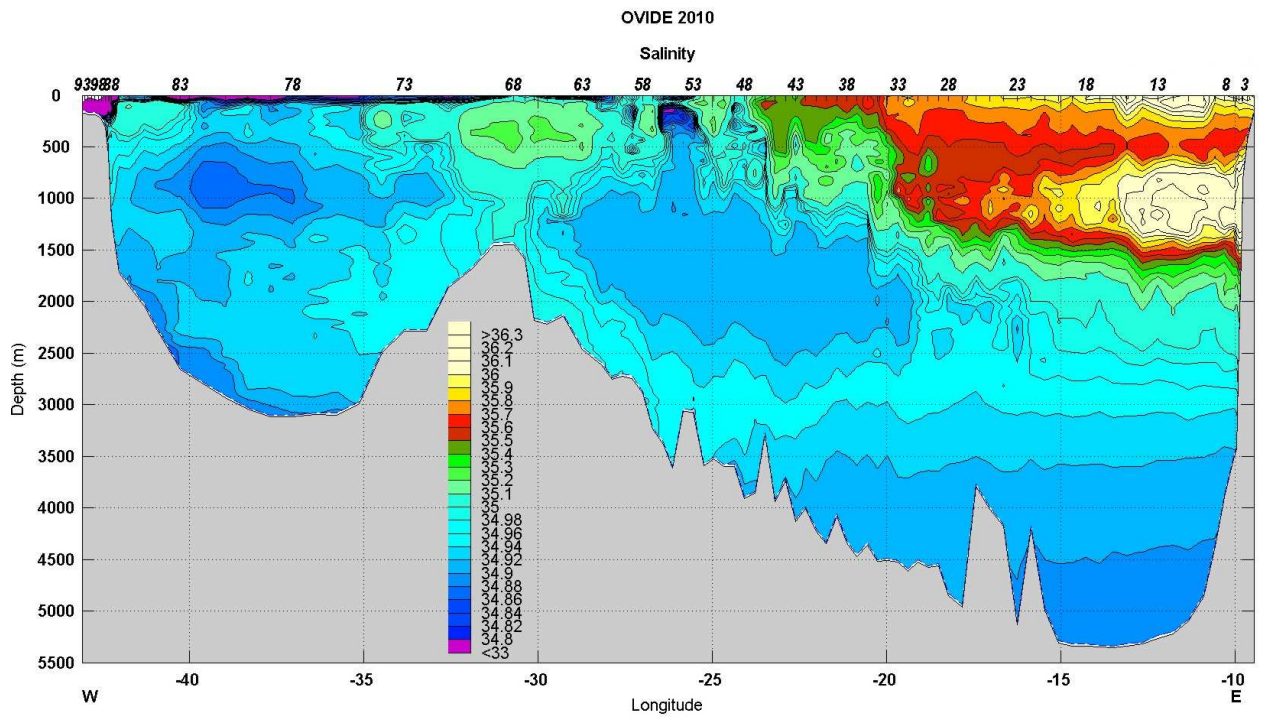
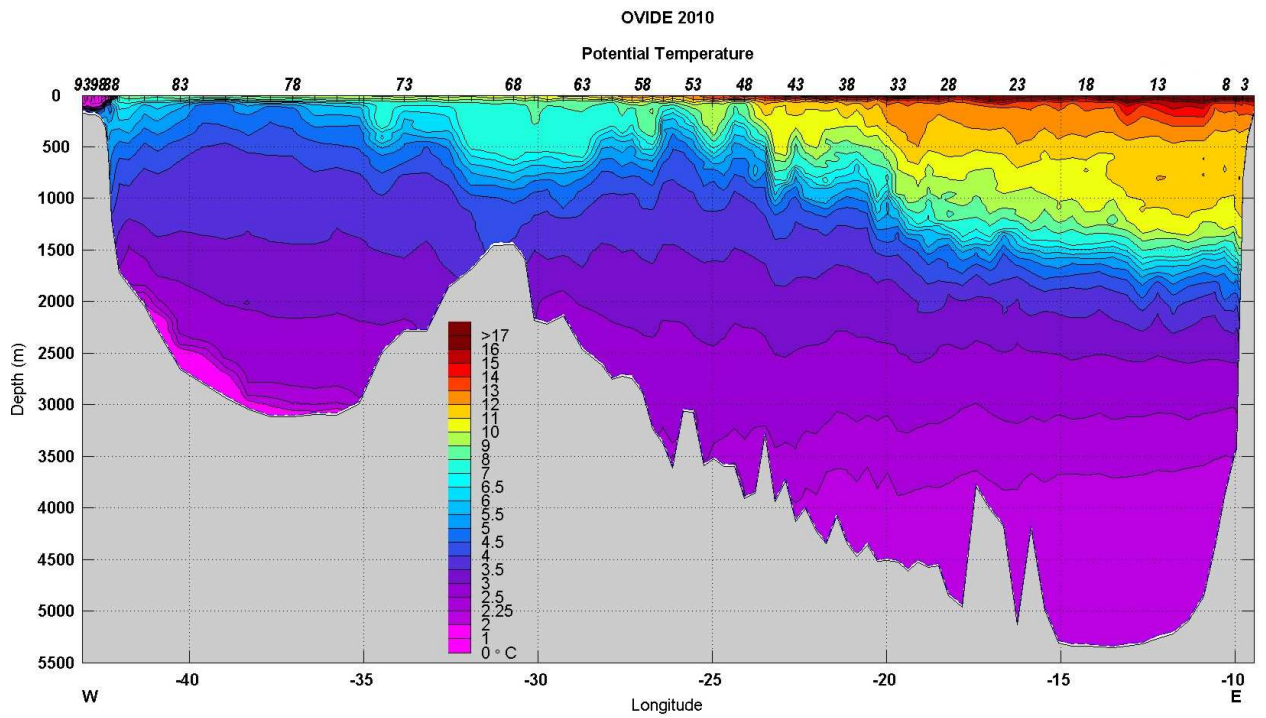
c) The measurements shown are extracted from the files of type **\_clt.nc**, the listed levels are:

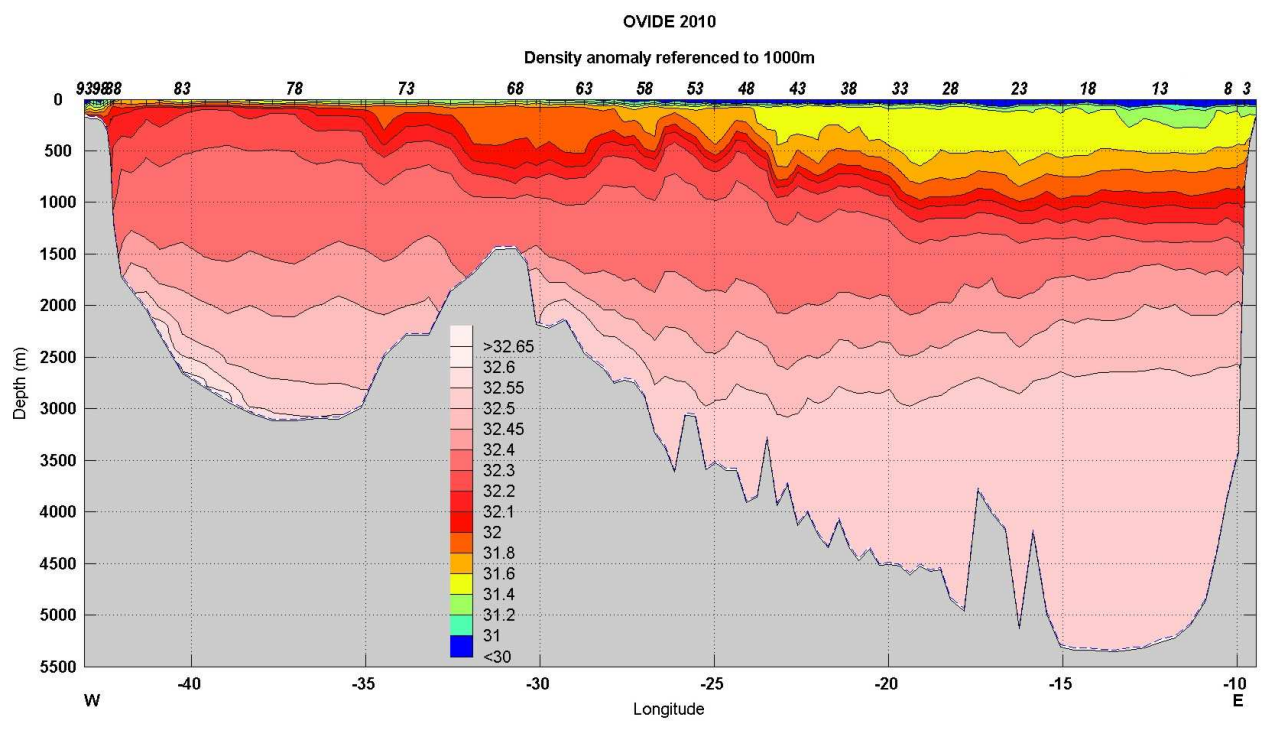
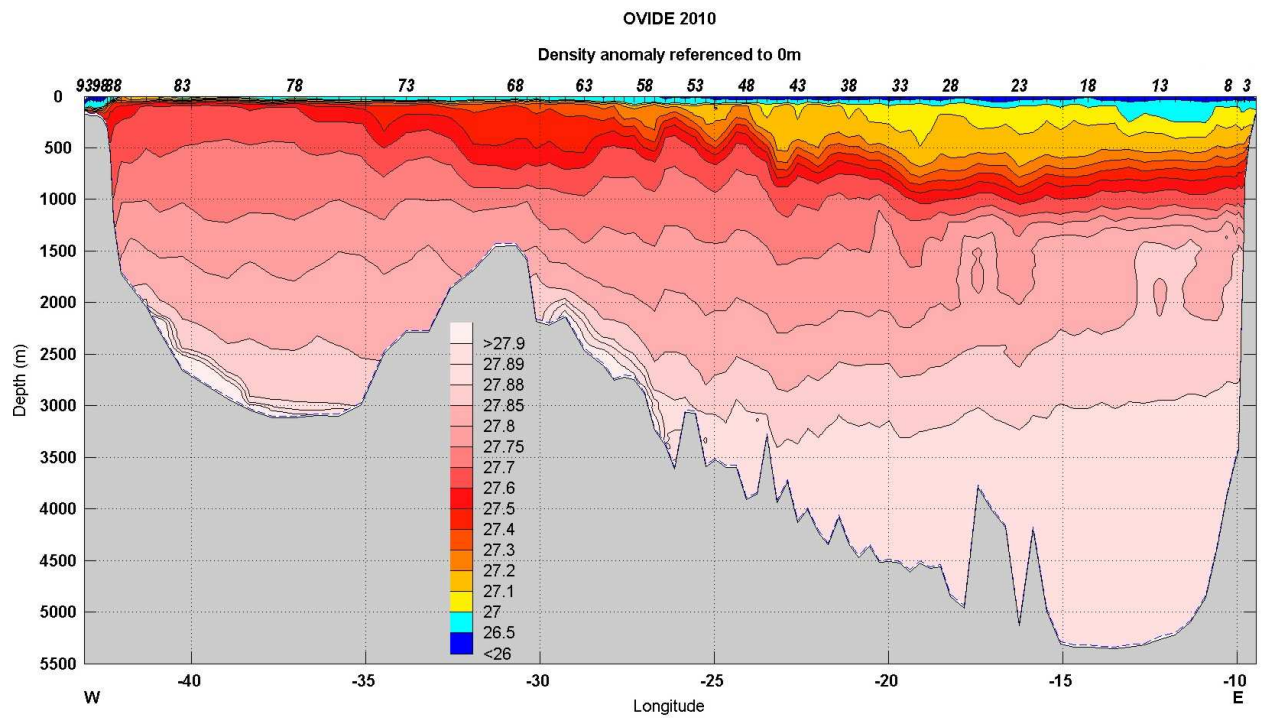
- . the first level
- . every 10 dbar up to 50 dbar
- . every 50 dbar from 50 dbar to the bottom
- . the last level

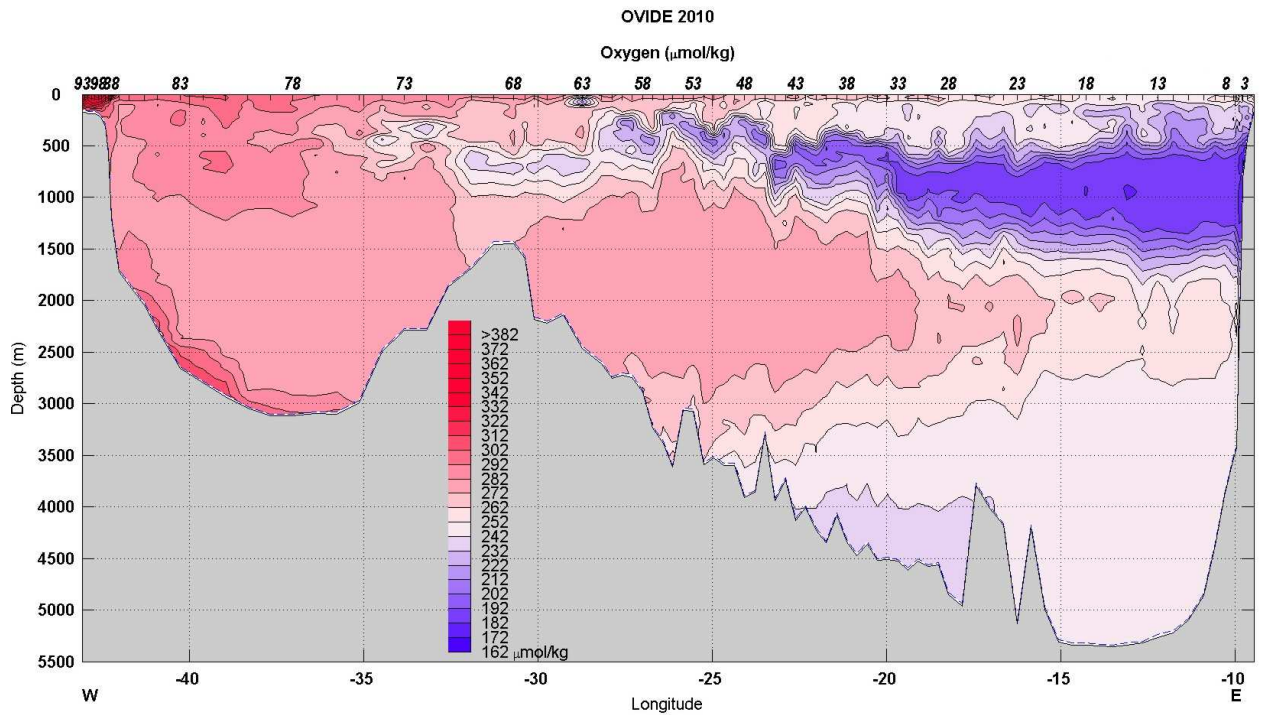
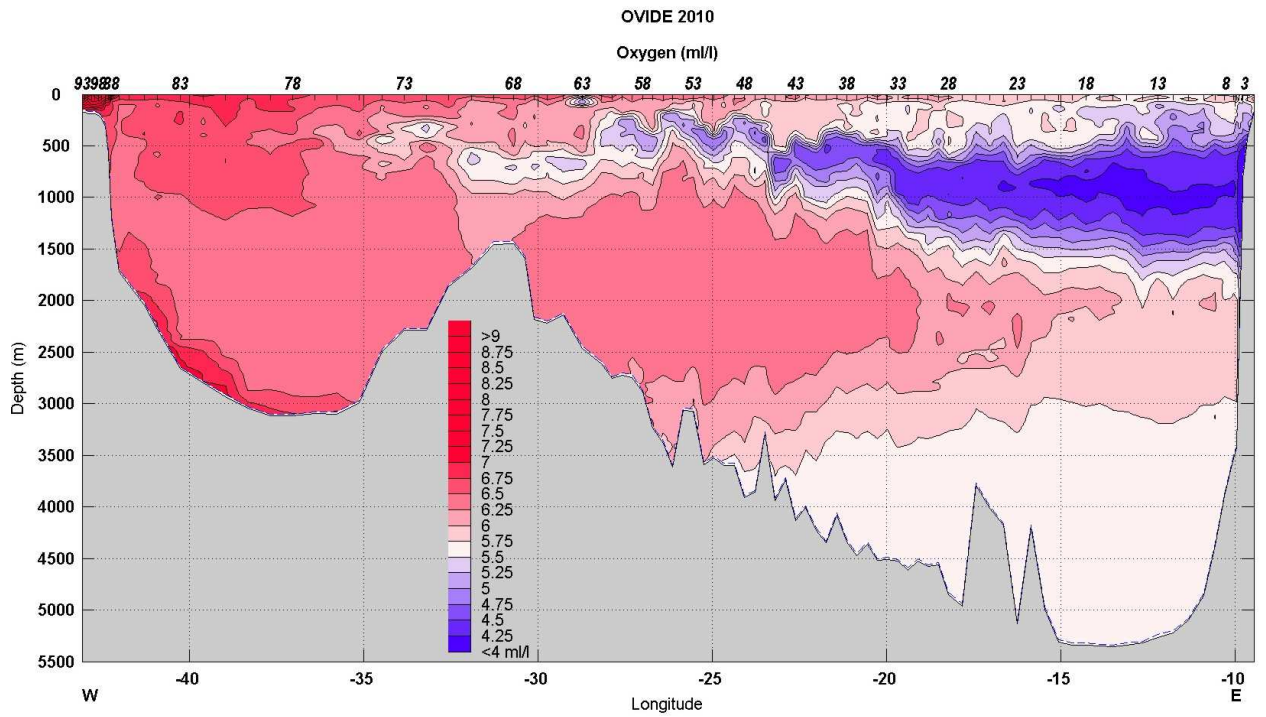
d) For the missing pressure levels (mean not calculated in the data acquisition), the measurements are interpolated. Near the surface, the measures are extrapolated up to level 1 by copying those of the first reduced level.

e) Listings and plots show the results as a function of the pressure (expressed in dbar).

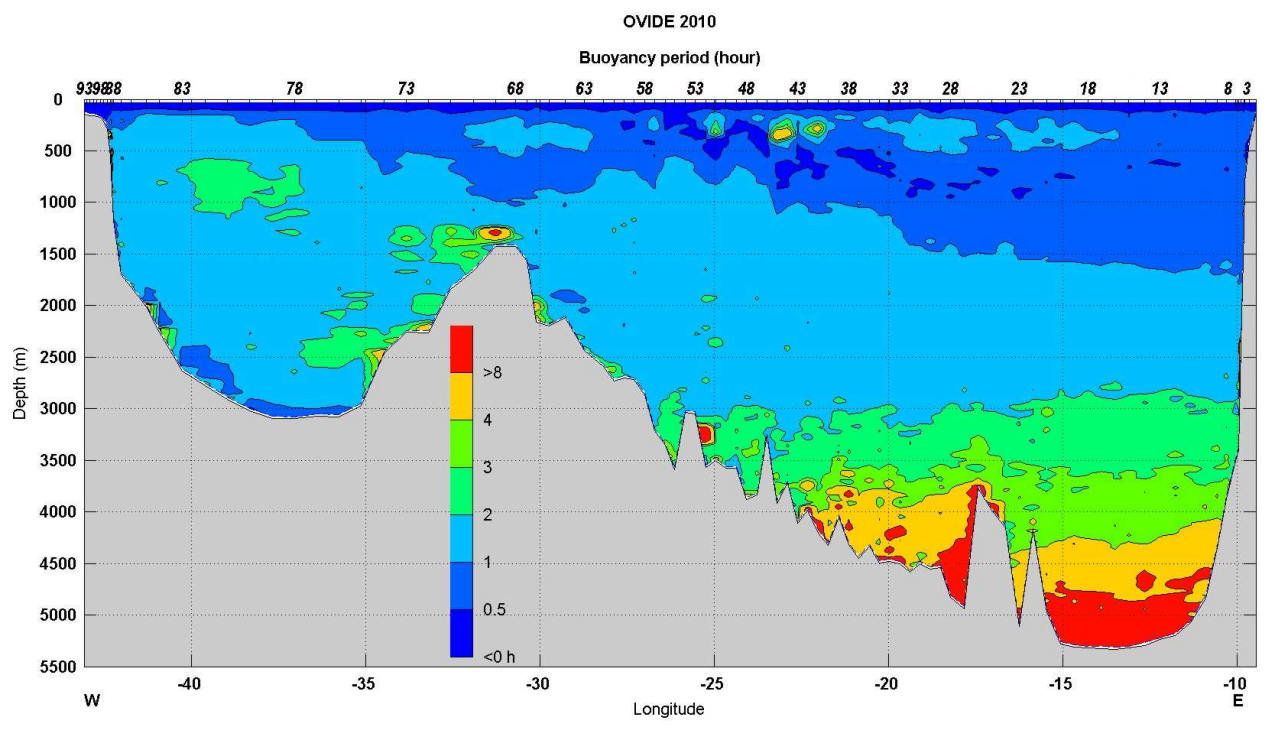
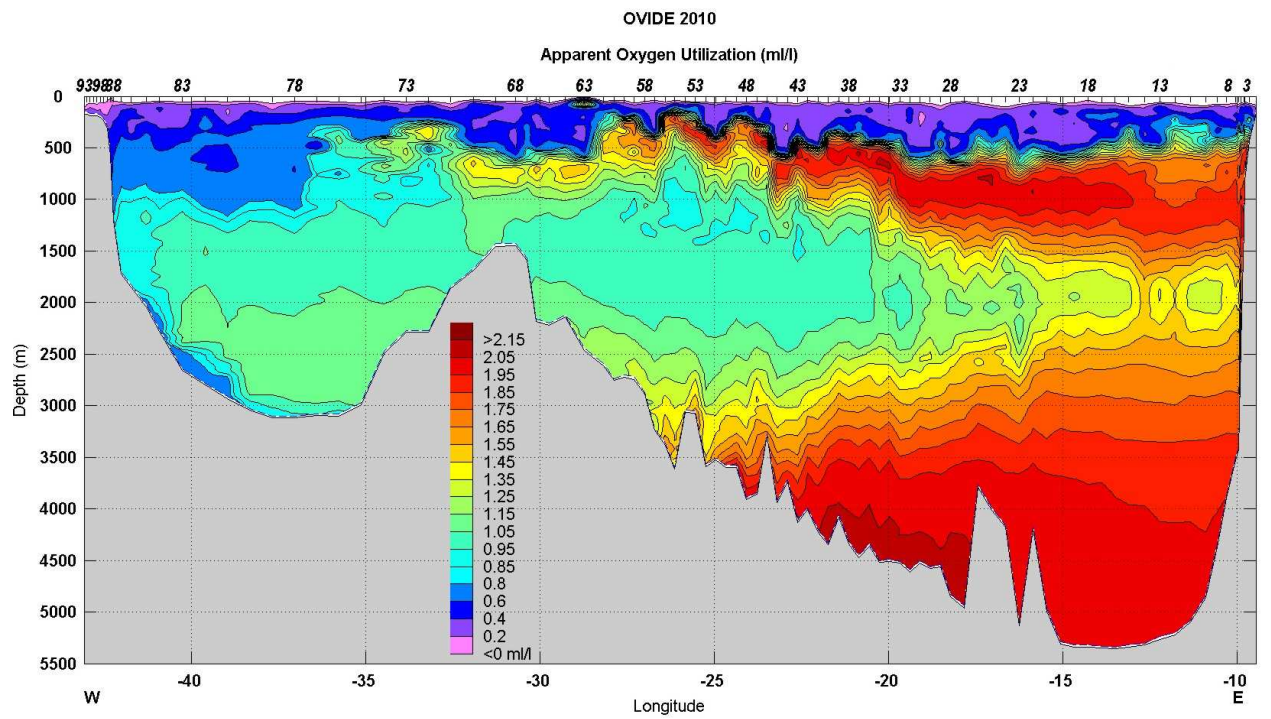
f) The casts are numbered sequentially from 0 to 109 and the hydrology section corresponds to cast 1 to 98.









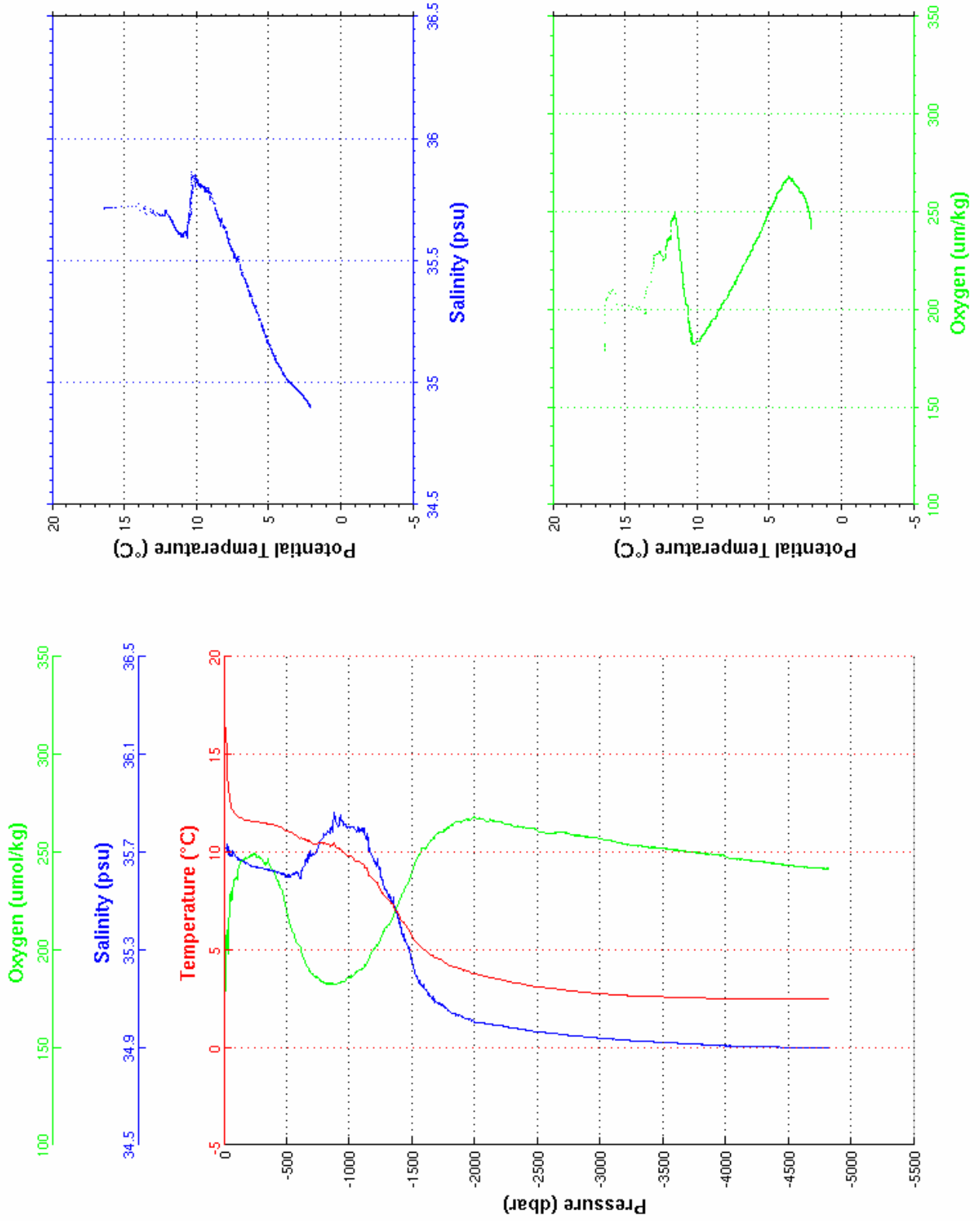


```

-----
Cast      : 0           Cruise   : OVIDE 2010
Date     : 09/06/2010 Ship     : N/O THALASSA
Depth    : 4852 m      Organism : IFREMER
Position : N 45 57.65
          W 008 9.80
-----

```

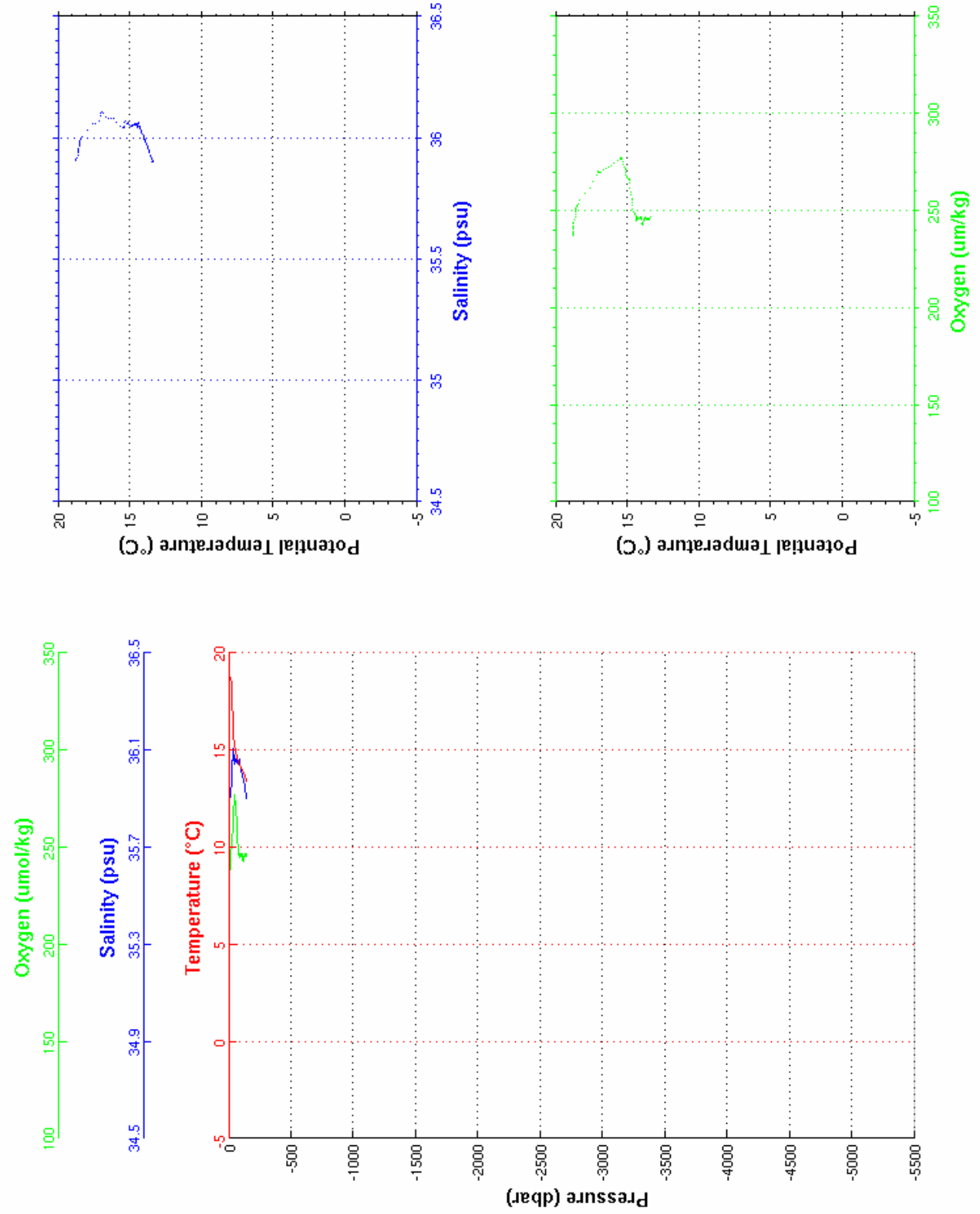
PRESSURE	TEMPERA-	SALINITY	DISSOLV.	POTENT.	PRESSURE	TEMPERA-	SALINITY	DISSOLV.	POTENT.
dbar	TURE	psu	OXYGEN	TEMP.	dbar	TURE	psu	OXYGEN	TEMP.
	deg.cels.		umol/kg	deg.cels.		deg.cels.		umol/kg	deg.cels.
1.0	16.396	35.714	202.1	16.395	3050.0	2.729	34.936	256.1	2.479
10.0	16.395	35.714	178.8	16.393	3100.0	2.711	34.934	255.7	2.456
20.0	15.829	35.717	210.3	15.826	3150.0	2.685	34.932	254.7	2.426
30.0	13.569	35.722	198.0	13.565	3200.0	2.659	34.929	254.1	2.395
40.0	13.042	35.696	222.0	13.036	3250.0	2.644	34.927	253.6	2.375
50.0	12.647	35.690	229.3	12.641	3300.0	2.634	34.926	253.5	2.360
100.0	11.874	35.677	236.0	11.861	3350.0	2.622	34.925	252.9	2.342
150.0	11.705	35.663	245.5	11.686	3400.0	2.612	34.924	252.5	2.328
200.0	11.605	35.648	247.1	11.580	3450.0	2.601	34.922	252.1	2.311
250.0	11.554	35.641	248.6	11.522	3500.0	2.589	34.921	252.1	2.294
300.0	11.506	35.634	245.9	11.467	3550.0	2.576	34.919	251.6	2.276
350.0	11.451	35.629	245.3	11.406	3600.0	2.564	34.918	251.1	2.259
400.0	11.385	35.623	239.2	11.334	3650.0	2.558	34.917	250.7	2.247
450.0	11.270	35.610	230.8	11.213	3700.0	2.549	34.916	250.2	2.233
500.0	11.084	35.601	218.6	11.021	3750.0	2.537	34.914	250.0	2.216
550.0	10.967	35.610	208.6	10.897	3800.0	2.527	34.912	249.6	2.200
600.0	10.692	35.600	202.0	10.618	3850.0	2.519	34.910	249.1	2.187
650.0	10.626	35.664	192.5	10.545	3900.0	2.509	34.909	249.0	2.172
700.0	10.472	35.687	187.3	10.386	3950.0	2.501	34.908	248.6	2.159
750.0	10.486	35.724	185.6	10.393	4000.0	2.498	34.907	248.3	2.150
800.0	10.449	35.770	183.2	10.350	4050.0	2.490	34.906	246.7	2.136
850.0	10.319	35.797	182.6	10.214	4100.0	2.486	34.905	246.5	2.126
900.0	10.174	35.816	182.8	10.063	4150.0	2.488	34.905	246.0	2.122
950.0	9.968	35.818	183.6	9.853	4200.0	2.487	34.904	245.7	2.116
1000.0	9.796	35.801	185.9	9.675	4250.0	2.485	34.903	245.3	2.108
1050.0	9.552	35.783	188.7	9.428	4300.0	2.483	34.902	245.0	2.100
1100.0	9.467	35.796	190.2	9.336	4350.0	2.483	34.902	244.6	2.095
1150.0	8.953	35.737	195.2	8.821	4400.0	2.483	34.901	244.1	2.089
1200.0	8.488	35.665	201.1	8.353	4450.0	2.484	34.900	243.8	2.083
1250.0	8.004	35.609	206.7	7.868	4500.0	2.485	34.900	243.3	2.079
1300.0	7.586	35.538	212.6	7.448	4550.0	2.488	34.900	242.9	2.075
1350.0	7.304	35.502	217.0	7.163	4600.0	2.492	34.900	242.4	2.073
1400.0	6.706	35.411	225.5	6.566	4650.0	2.496	34.899	242.2	2.071
1450.0	6.229	35.332	232.7	6.089	4700.0	2.501	34.899	242.0	2.069
1500.0	5.683	35.257	240.2	5.543	4750.0	2.506	34.899	241.8	2.068
1550.0	5.237	35.171	248.3	5.098	4800.0	2.511	34.899	241.8	2.067
1600.0	4.986	35.139	252.1	4.844	4817.0	2.513	34.899	241.6	2.067
1650.0	4.740	35.106	256.1	4.596					
1700.0	4.564	35.082	259.7	4.418					
1750.0	4.401	35.069	260.8	4.252					
1800.0	4.213	35.047	263.5	4.062					
1850.0	4.093	35.031	265.7	3.939					
1900.0	3.982	35.027	265.9	3.824					
1950.0	3.880	35.016	266.8	3.719					
2000.0	3.773	35.005	267.9	3.609					
2050.0	3.688	35.000	267.1	3.520					
2100.0	3.618	34.997	265.9	3.446					
2150.0	3.546	34.993	266.0	3.371					
2200.0	3.483	34.989	265.6	3.304					
2250.0	3.407	34.984	264.5	3.224					
2300.0	3.332	34.979	263.7	3.146					
2350.0	3.277	34.976	263.1	3.087					
2400.0	3.216	34.972	262.3	3.022					
2450.0	3.144	34.967	262.2	2.946					
2500.0	3.094	34.963	260.9	2.893					
2550.0	3.063	34.961	260.0	2.857					
2600.0	3.030	34.959	259.6	2.820					
2650.0	2.994	34.956	259.7	2.779					
2700.0	2.951	34.953	260.3	2.732					
2750.0	2.903	34.949	259.3	2.680					
2800.0	2.867	34.947	258.5	2.639					
2850.0	2.839	34.945	258.3	2.607					
2900.0	2.809	34.942	257.9	2.572					
2950.0	2.781	34.940	257.4	2.540					
3000.0	2.752	34.938	256.7	2.506					



**Cast : 0**

Cast	: 1	Cruise	: OVIDE 2010
Date	: 10/06/2010	Ship	: N/O THALASSA
Depth	: 0155 m	Organism	: IFREMER
Position	: N 40 19.98 W 009 27.56		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.739	35.907	237.1	18.739
10.0	18.739	35.910	241.5	18.737
20.0	18.547	35.954	251.4	18.543
30.0	17.432	36.056	264.7	17.427
40.0	16.149	36.081	273.1	16.143
50.0	15.218	36.060	272.6	15.210
100.0	14.061	36.011	246.5	14.047
142.0	13.418	35.904	246.4	13.398



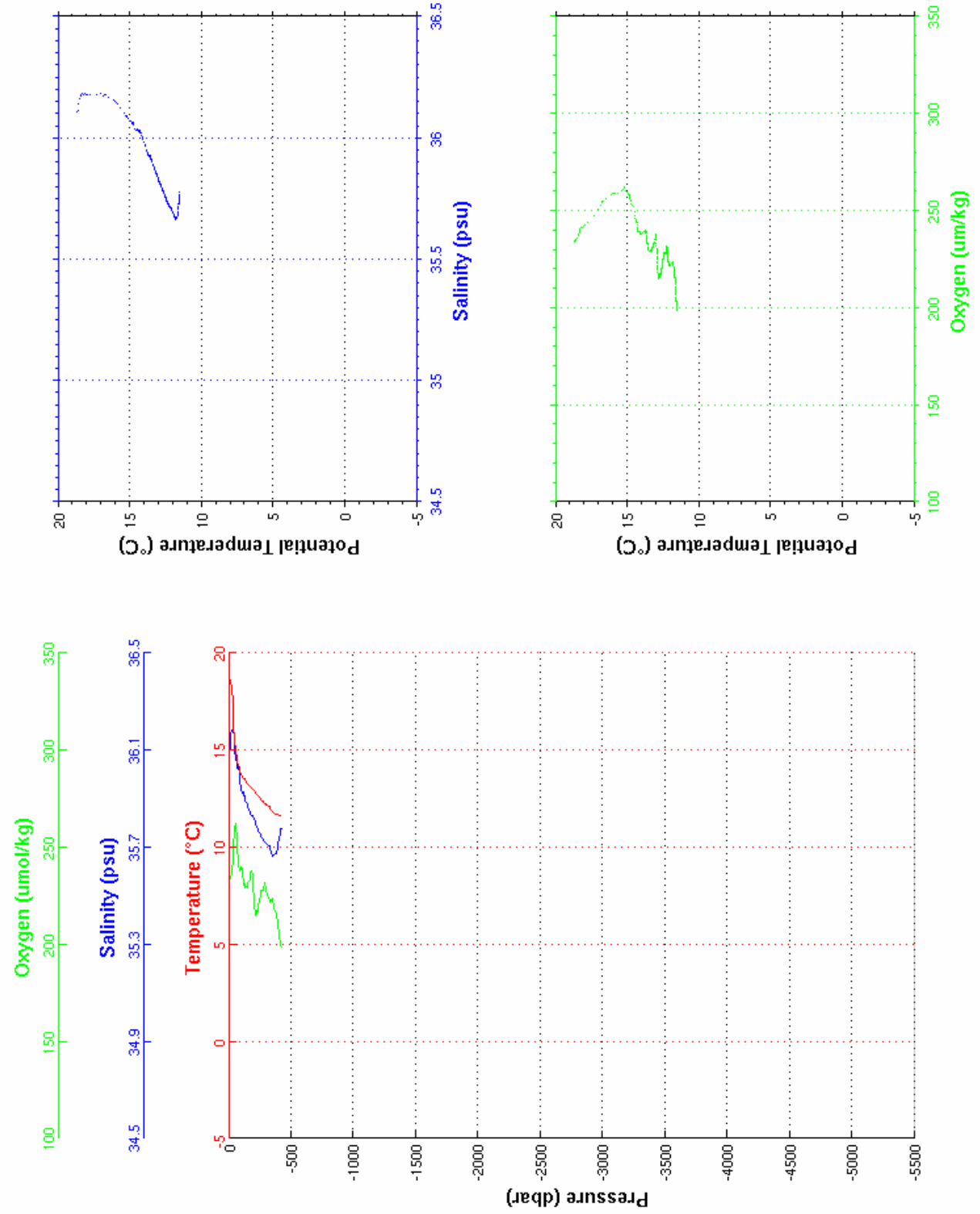
Cast : 1

```

-----
Cast      : 2           Cruise   : OVIDE 2010
Date     : 10/06/2010  Ship    : N/O THALASSA
Depth    : 0432 m     Organism : IFREMER
Position : N 40 20.00
          W 009 38.59
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.641	36.106	233.5	18.640
10.0	18.642	36.107	234.1	18.640
20.0	18.347	36.182	238.3	18.344
30.0	18.079	36.177	241.7	18.074
40.0	16.520	36.167	256.0	16.513
50.0	15.217	36.087	261.7	15.209
100.0	13.742	35.933	239.1	13.727
150.0	13.240	35.866	231.3	13.219
200.0	12.937	35.816	223.8	12.909
250.0	12.533	35.755	224.7	12.499
300.0	12.208	35.713	227.2	12.168
350.0	11.827	35.665	222.7	11.782
400.0	11.637	35.729	205.0	11.585
421.0	11.628	35.774	198.3	11.574



**Cast : 2**

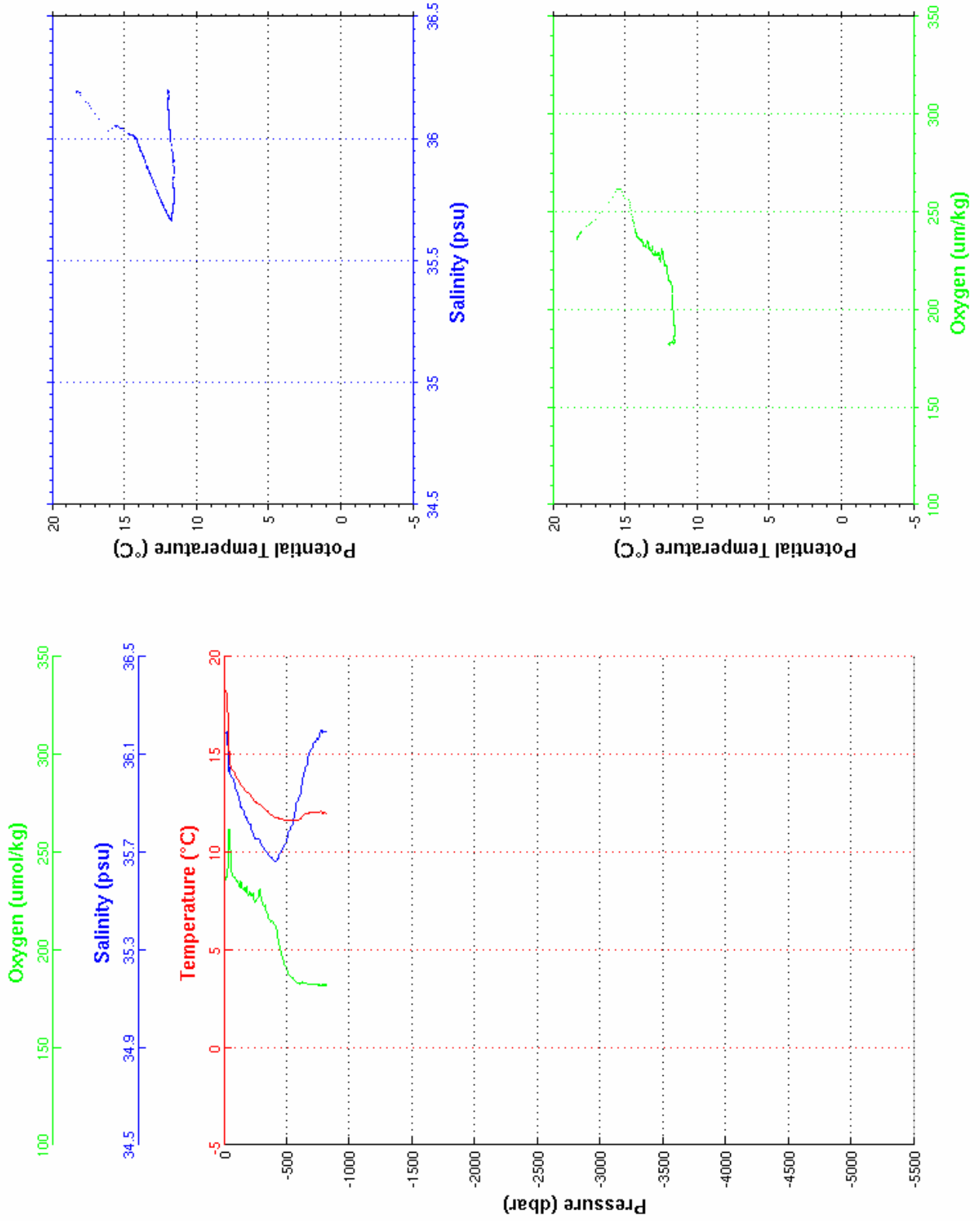
```

-----
Cast       :    3           Cruise    : OVIDE 2010
Date       : 10/06/2010    Ship     : N/O THALASSA
Depth      : 0819 m        Organism  : IFREMER
Position   : N 40 20.02
            W 009 46.04
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.269	36.193	235.7	18.269
10.0	18.275	36.194	236.5	18.274
20.0	18.221	36.192	237.5	18.218
30.0	17.406	36.136	243.7	17.401
40.0	15.403	36.047	261.6	15.397
50.0	14.524	36.014	248.6	14.517
100.0	13.884	35.953	235.1	13.870
150.0	13.323	35.870	231.7	13.302
200.0	12.966	35.815	229.0	12.938
250.0	12.561	35.757	225.2	12.527
300.0	12.318	35.723	225.1	12.278
350.0	12.068	35.692	217.6	12.021
400.0	11.825	35.667	212.6	11.772
450.0	11.720	35.699	199.3	11.661
500.0	11.621	35.758	189.1	11.556
550.0	11.650	35.838	185.1	11.578
600.0	11.698	35.931	182.8	11.619
650.0	11.952	36.048	182.8	11.865
700.0	12.042	36.123	182.3	11.948
750.0	12.036	36.164	182.1	11.934
800.0	12.007	36.196	182.0	11.898
812.0	12.003	36.196	182.0	11.893





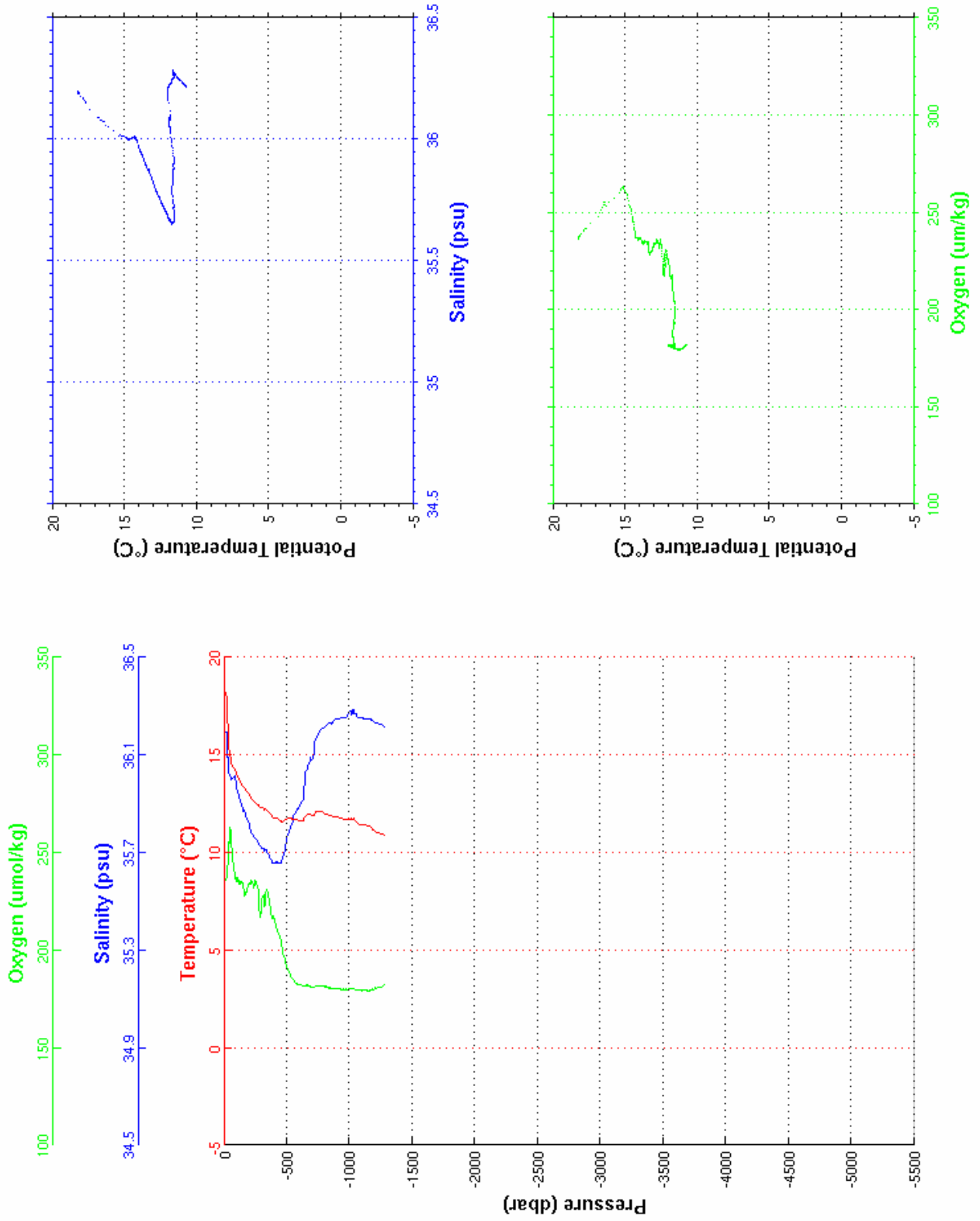
**Cast : 3**

```

-----
Cast       :    4           Cruise    : OVIDE 2010
Date       : 11/06/2010   Ship      : N/O THALASSA
Depth      : 1277 m       Organism  : IFREMER
Position   : N 40 20.03
            W 009 48.13
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.221	36.190	236.2	18.221
10.0	18.224	36.198	236.1	18.222
20.0	18.143	36.191	237.5	18.140
30.0	16.763	36.088	249.5	16.758
40.0	15.420	36.016	259.8	15.414
50.0	15.047	36.014	261.2	15.040
100.0	14.072	35.985	235.9	14.058
150.0	13.362	35.872	233.7	13.341
200.0	12.988	35.820	234.1	12.961
250.0	12.555	35.754	235.2	12.521
300.0	12.285	35.720	226.0	12.245
350.0	12.117	35.695	227.8	12.071
400.0	11.757	35.654	215.7	11.705
450.0	11.654	35.659	205.6	11.596
500.0	11.708	35.765	190.6	11.643
550.0	11.720	35.828	184.5	11.648
600.0	11.659	35.891	182.3	11.580
650.0	11.914	36.038	181.6	11.827
700.0	11.894	36.084	181.0	11.800
750.0	12.103	36.187	181.7	12.001
800.0	12.052	36.213	181.3	11.943
850.0	11.894	36.230	180.6	11.779
900.0	11.841	36.247	180.3	11.720
950.0	11.734	36.252	180.0	11.606
1000.0	11.762	36.280	180.4	11.627
1050.0	11.578	36.266	179.7	11.438
1100.0	11.417	36.251	179.6	11.271
1150.0	11.379	36.248	179.4	11.227
1200.0	11.090	36.233	180.6	10.932
1250.0	10.970	36.225	181.3	10.807
1275.0	10.892	36.217	182.2	10.726



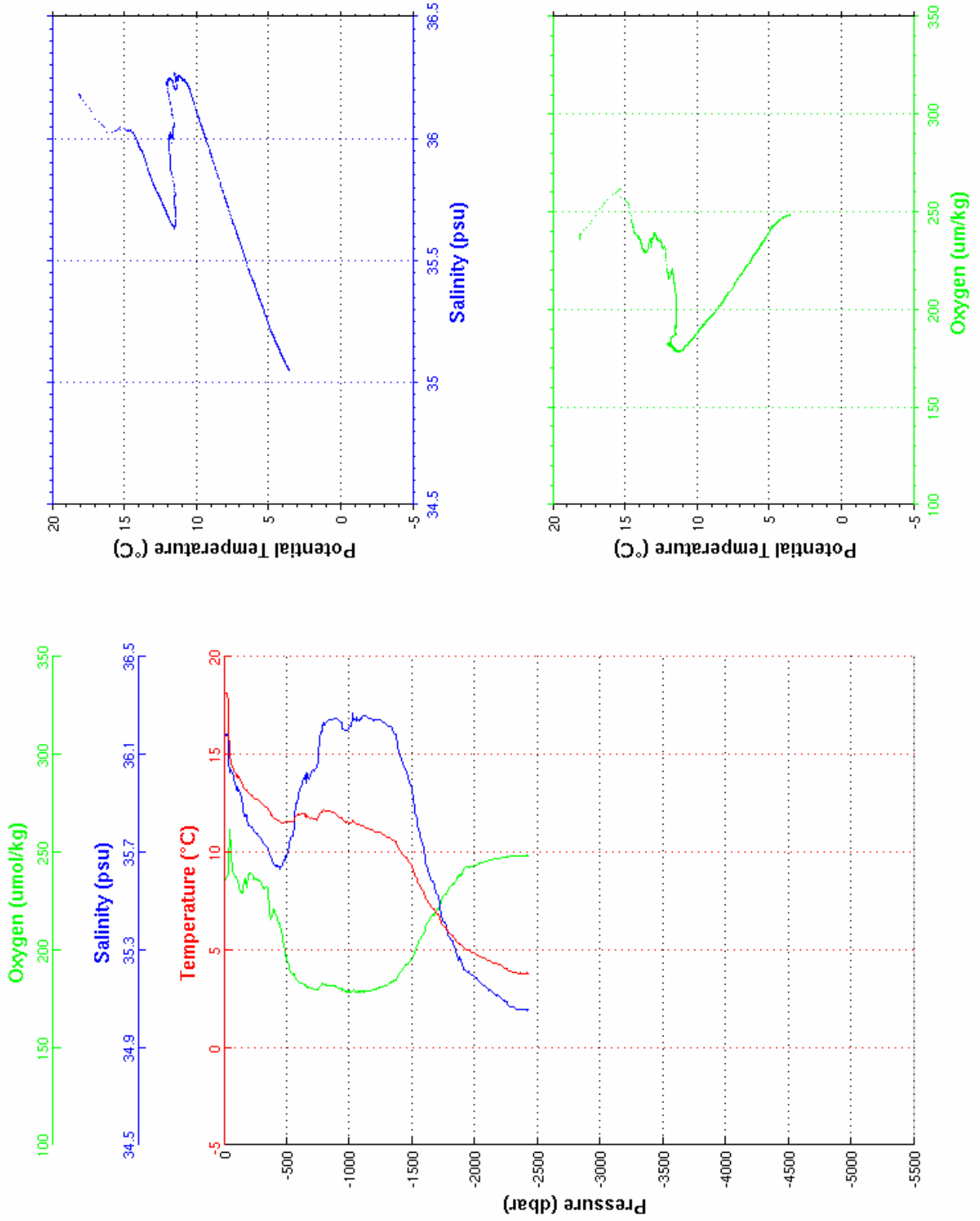
**Cast : 4**

```

-----
Cast       : 5           Cruise    : OVIDE 2010
Date      : 11/06/2010  Ship     : N/O THALASSA
Depth     : 2408 m      Organism  : IFREMER
Position  : N 40 19.86
           W 009 52.60
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.153	36.181	236.2	18.153
10.0	18.152	36.181	236.3	18.150
20.0	18.148	36.180	237.5	18.144
30.0	18.032	36.173	238.5	18.027
40.0	16.377	36.049	255.0	16.371
50.0	14.898	36.036	255.4	14.890
100.0	13.926	35.961	235.8	13.911
150.0	13.385	35.876	231.9	13.364
200.0	12.972	35.811	238.4	12.944
250.0	12.724	35.779	236.2	12.690
300.0	12.465	35.745	232.8	12.424
350.0	12.228	35.714	229.2	12.182
400.0	11.752	35.647	220.1	11.699
450.0	11.554	35.639	211.0	11.496
500.0	11.509	35.692	194.3	11.445
550.0	11.548	35.769	187.7	11.476
600.0	11.936	35.950	183.0	11.856
650.0	11.936	36.017	181.9	11.849
700.0	11.743	36.032	180.2	11.650
750.0	11.761	36.095	180.0	11.661
800.0	12.113	36.226	182.0	12.004
850.0	12.034	36.237	181.6	11.919
900.0	11.875	36.241	180.7	11.754
950.0	11.601	36.205	179.2	11.474
1000.0	11.496	36.216	178.7	11.363
1050.0	11.480	36.236	178.6	11.340
1100.0	11.382	36.258	178.5	11.236
1150.0	11.213	36.252	178.8	11.062
1200.0	11.073	36.243	179.7	10.916
1250.0	10.972	36.237	181.1	10.808
1300.0	10.781	36.220	182.2	10.613
1350.0	10.582	36.191	184.3	10.409
1400.0	10.120	36.102	188.4	9.945
1450.0	9.722	36.034	192.2	9.544
1500.0	9.232	35.948	196.3	9.053
1550.0	8.366	35.788	204.1	8.190
1600.0	7.832	35.690	209.7	7.656
1650.0	7.212	35.584	216.9	7.038
1700.0	6.848	35.523	221.2	6.673
1750.0	6.235	35.415	228.0	6.062
1800.0	5.824	35.349	232.4	5.650
1850.0	5.465	35.290	235.9	5.292
1900.0	5.153	35.235	239.7	4.978
1950.0	4.961	35.207	242.3	4.784
2000.0	4.819	35.187	243.5	4.639
2050.0	4.639	35.162	244.5	4.456
2100.0	4.484	35.141	245.7	4.299
2150.0	4.335	35.121	246.5	4.147
2200.0	4.228	35.107	246.9	4.036
2250.0	4.069	35.087	247.4	3.875
2300.0	3.874	35.064	248.0	3.678
2350.0	3.790	35.054	248.2	3.590
2400.0	3.803	35.055	248.2	3.598
2424.0	3.801	35.055	248.3	3.593



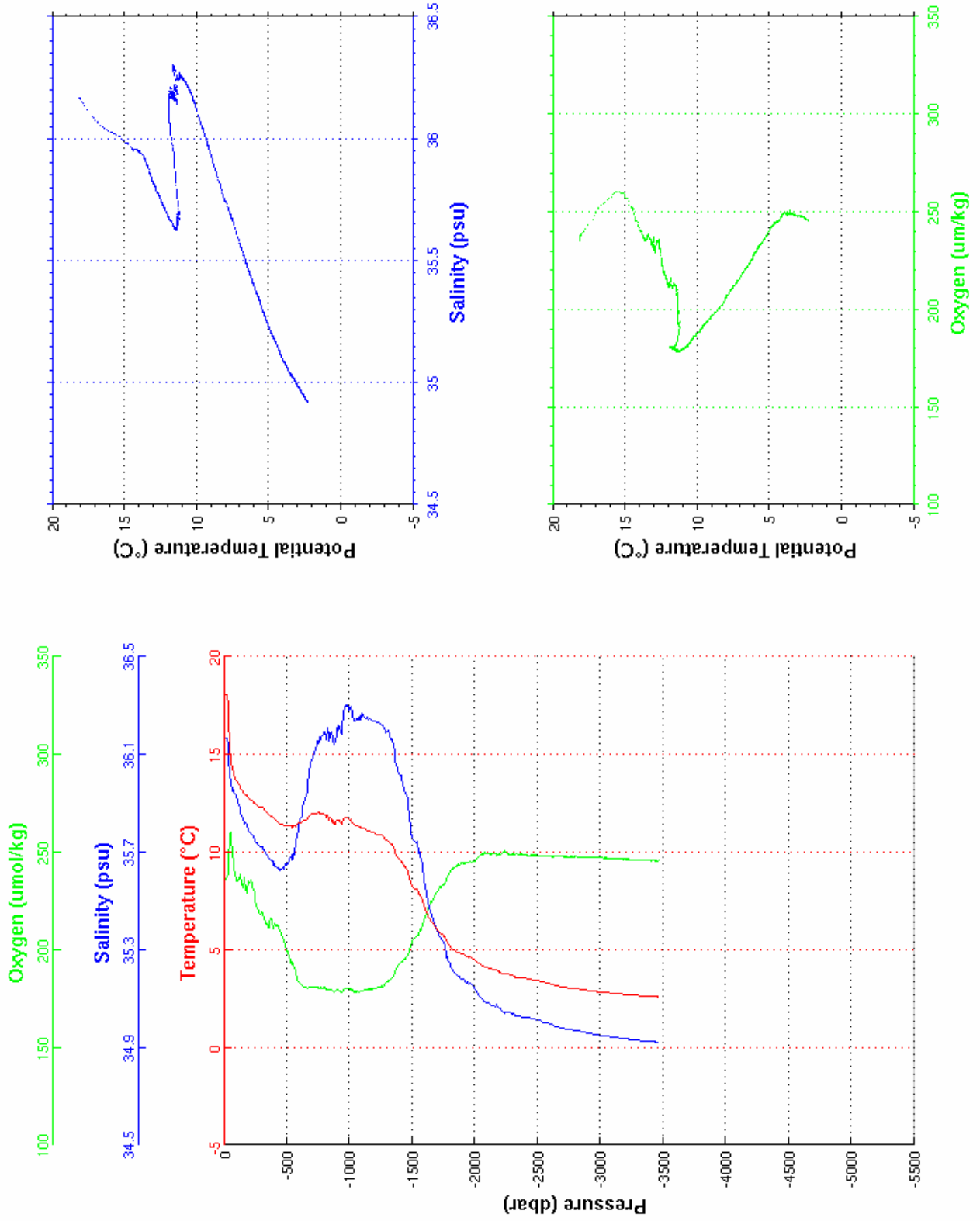
**Cast : 5**

```

-----
Cast       :    6           Cruise    : OVIDE 2010
Date       : 11/06/2010   Ship      : N/O THALASSA
Depth      : 3428 m       Organism  : IFREMER
Position   : N 40 20.06
            W 009 56.65
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.092	36.168	235.2	18.092	3050.0	2.814	34.947	246.8	2.562
10.0	18.095	36.169	236.3	18.093	3100.0	2.766	34.942	246.7	2.510
20.0	18.091	36.169	237.0	18.087	3150.0	2.735	34.938	246.5	2.474
30.0	17.920	36.152	239.2	17.915	3200.0	2.707	34.935	246.3	2.442
40.0	16.516	36.045	254.2	16.510	3250.0	2.680	34.932	246.2	2.410
50.0	15.294	36.010	259.6	15.286	3300.0	2.655	34.929	246.0	2.381
100.0	13.603	35.917	235.4	13.588	3350.0	2.626	34.926	245.9	2.347
150.0	13.116	35.836	232.4	13.095	3400.0	2.611	34.924	245.9	2.327
200.0	12.732	35.780	234.7	12.705	3450.0	2.595	34.922	245.6	2.306
250.0	12.457	35.742	223.3	12.423	3465.0	2.582	34.921	245.8	2.291
300.0	12.312	35.723	218.6	12.272					
350.0	11.991	35.682	211.8	11.944					
400.0	11.682	35.646	213.0	11.630					
450.0	11.443	35.628	208.8	11.385					
500.0	11.357	35.649	199.4	11.293					
550.0	11.336	35.694	192.1	11.265					
600.0	11.526	35.827	182.5	11.448					
650.0	11.641	35.924	180.7	11.555					
700.0	11.971	36.083	181.2	11.877					
750.0	11.978	36.147	180.8	11.877					
800.0	11.916	36.189	180.6	11.808					
850.0	11.672	36.180	179.6	11.559					
900.0	11.639	36.209	179.6	11.519					
950.0	11.661	36.259	179.7	11.534					
1000.0	11.658	36.287	179.9	11.524					
1050.0	11.370	36.242	178.6	11.231					
1100.0	11.289	36.267	179.1	11.144					
1150.0	11.090	36.247	179.9	10.939					
1200.0	10.980	36.236	180.3	10.823					
1250.0	10.856	36.225	181.4	10.694					
1300.0	10.613	36.200	183.8	10.446					
1350.0	10.251	36.138	187.1	10.080					
1400.0	9.598	36.016	193.3	9.428					
1450.0	9.194	35.939	196.2	9.021					
1500.0	8.279	35.761	204.3	8.110					
1550.0	7.953	35.714	208.2	7.781					
1600.0	7.152	35.568	217.0	6.984					
1650.0	6.470	35.448	224.6	6.305					
1700.0	6.026	35.373	230.2	5.861					
1750.0	5.749	35.330	233.5	5.582					
1800.0	5.229	35.243	239.7	5.063					
1850.0	4.928	35.199	243.1	4.761					
1900.0	4.787	35.180	244.2	4.618					
1950.0	4.630	35.158	244.9	4.458					
2000.0	4.487	35.140	245.5	4.312					
2050.0	4.234	35.100	249.0	4.057					
2100.0	4.083	35.082	249.5	3.904					
2150.0	3.979	35.070	249.3	3.796					
2200.0	3.876	35.060	249.0	3.690					
2250.0	3.754	35.046	249.8	3.566					
2300.0	3.676	35.039	249.0	3.484					
2350.0	3.605	35.032	248.7	3.408					
2400.0	3.539	35.024	248.8	3.339					
2450.0	3.479	35.019	248.4	3.275					
2500.0	3.430	35.013	248.3	3.222					
2550.0	3.334	35.003	248.3	3.122					
2600.0	3.272	34.997	247.9	3.057					
2650.0	3.168	34.985	247.9	2.949					
2700.0	3.102	34.978	247.9	2.880					
2750.0	3.057	34.973	247.8	2.831					
2800.0	3.010	34.968	247.7	2.780					
2850.0	2.987	34.966	247.3	2.752					
2900.0	2.923	34.959	247.3	2.685					
2950.0	2.881	34.954	247.4	2.637					
3000.0	2.840	34.950	247.1	2.592					



Cast : 6

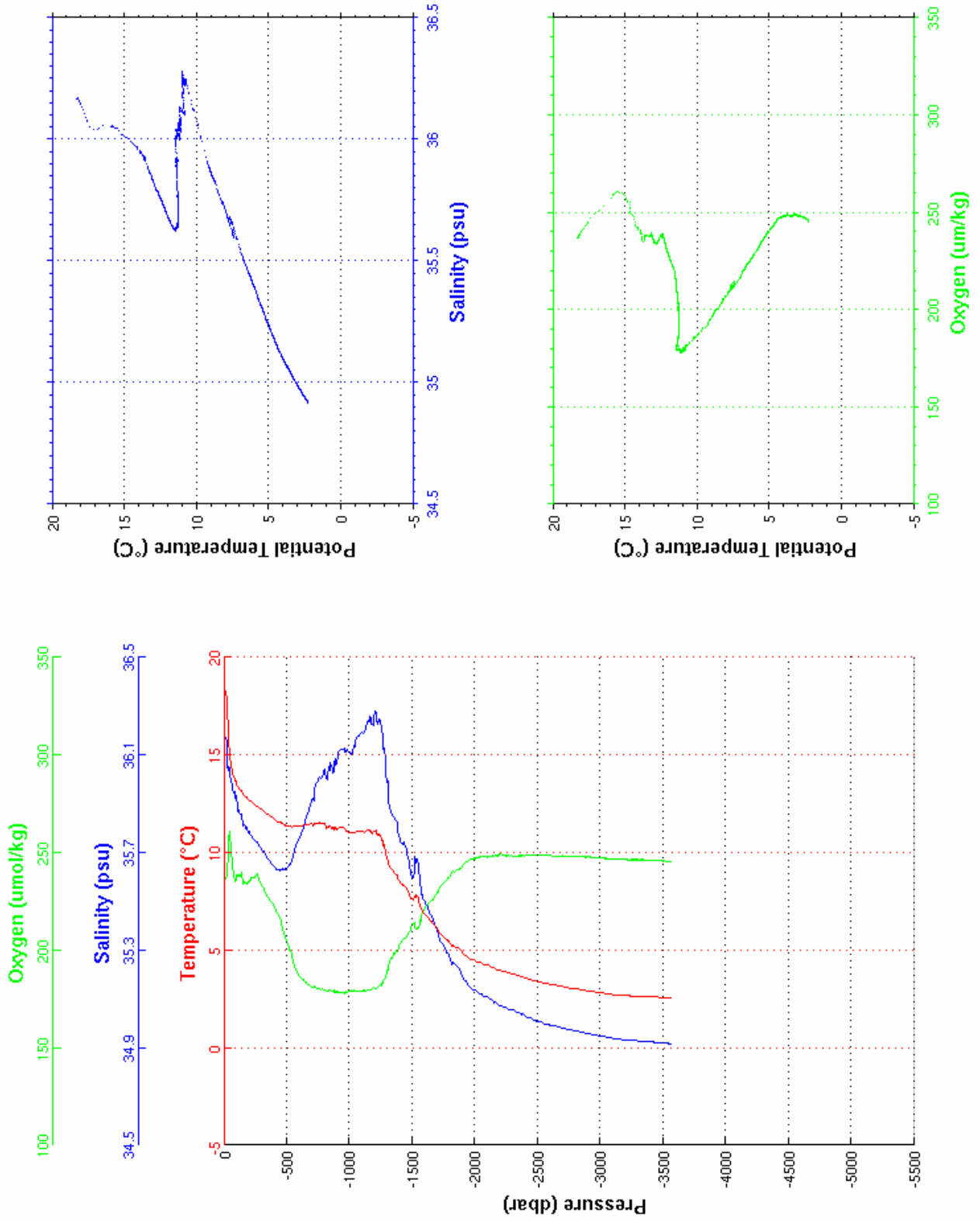
```

-----
Cast      :    7           Cruise   : OVIDE 2010
Date     : 11/06/2010   Ship    : N/O THALASSA
Depth    : 3523 m       Organism : IFREMER
Position : N 40 20.08
          W 010 2.16
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.263	36.168	237.1	18.263	3050.0	2.768	34.943	247.1	2.517
10.0	18.256	36.170	236.8	18.254	3100.0	2.722	34.938	246.8	2.467
20.0	18.103	36.157	239.1	18.099	3150.0	2.691	34.934	246.6	2.431
30.0	17.150	36.042	248.8	17.145	3200.0	2.671	34.932	246.4	2.407
40.0	15.599	36.048	260.4	15.593	3250.0	2.650	34.929	246.3	2.381
50.0	14.790	36.007	255.3	14.782	3300.0	2.638	34.928	246.3	2.364
100.0	13.623	35.930	238.0	13.608	3350.0	2.626	34.926	246.3	2.346
150.0	13.009	35.825	234.4	12.988	3400.0	2.609	34.924	246.3	2.324
200.0	12.707	35.783	235.1	12.679	3450.0	2.591	34.922	246.0	2.301
250.0	12.432	35.747	238.5	12.399	3500.0	2.573	34.920	245.7	2.278
300.0	12.217	35.713	232.8	12.177	3550.0	2.554	34.917	245.5	2.255
350.0	11.946	35.672	226.5	11.900	3563.0	2.548	34.916	245.3	2.248
400.0	11.709	35.641	221.9	11.657					
450.0	11.518	35.627	215.3	11.460					
500.0	11.371	35.641	203.6	11.307					
550.0	11.333	35.690	194.2	11.262					
600.0	11.376	35.763	186.4	11.299					
650.0	11.425	35.831	183.4	11.340					
700.0	11.491	35.920	181.3	11.400					
750.0	11.524	35.998	180.1	11.425					
800.0	11.506	36.040	179.4	11.401					
850.0	11.388	36.066	178.9	11.276					
900.0	11.160	36.065	178.8	11.043					
950.0	11.261	36.126	178.2	11.136					
1000.0	11.022	36.108	179.0	10.893					
1050.0	11.023	36.151	179.5	10.887					
1100.0	11.086	36.190	179.1	10.943					
1150.0	11.127	36.241	179.5	10.976					
1200.0	11.127	36.268	180.2	10.969					
1250.0	10.830	36.228	182.1	10.667					
1300.0	9.755	35.990	190.4	9.597					
1350.0	9.039	35.844	197.5	8.881					
1400.0	8.490	35.758	203.3	8.332					
1450.0	8.222	35.721	206.5	8.059					
1500.0	7.540	35.594	213.8	7.380					
1550.0	7.653	35.649	211.6	7.485					
1600.0	6.847	35.498	221.5	6.683					
1650.0	6.470	35.442	225.7	6.305					
1700.0	6.059	35.376	229.8	5.894					
1750.0	5.685	35.317	234.7	5.519					
1800.0	5.381	35.269	237.9	5.214					
1850.0	5.148	35.235	240.7	4.978					
1900.0	4.869	35.192	243.2	4.698					
1950.0	4.603	35.152	246.3	4.431					
2000.0	4.472	35.136	247.0	4.297					
2050.0	4.347	35.120	247.5	4.169					
2100.0	4.230	35.107	247.8	4.049					
2150.0	4.086	35.088	248.1	3.902					
2200.0	3.957	35.071	249.1	3.770					
2250.0	3.867	35.063	248.4	3.676					
2300.0	3.780	35.054	248.2	3.586					
2350.0	3.674	35.042	248.1	3.476					
2400.0	3.556	35.028	248.4	3.355					
2450.0	3.479	35.019	248.8	3.275					
2500.0	3.385	35.008	248.9	3.178					
2550.0	3.304	35.000	248.7	3.094					
2600.0	3.244	34.993	248.5	3.029					
2650.0	3.188	34.988	248.2	2.969					
2700.0	3.131	34.981	248.3	2.908					
2750.0	3.060	34.973	248.1	2.833					
2800.0	3.015	34.969	248.0	2.784					
2850.0	2.963	34.963	247.9	2.729					
2900.0	2.916	34.958	247.8	2.677					
2950.0	2.862	34.953	247.5	2.619					
3000.0	2.824	34.948	247.3	2.577					





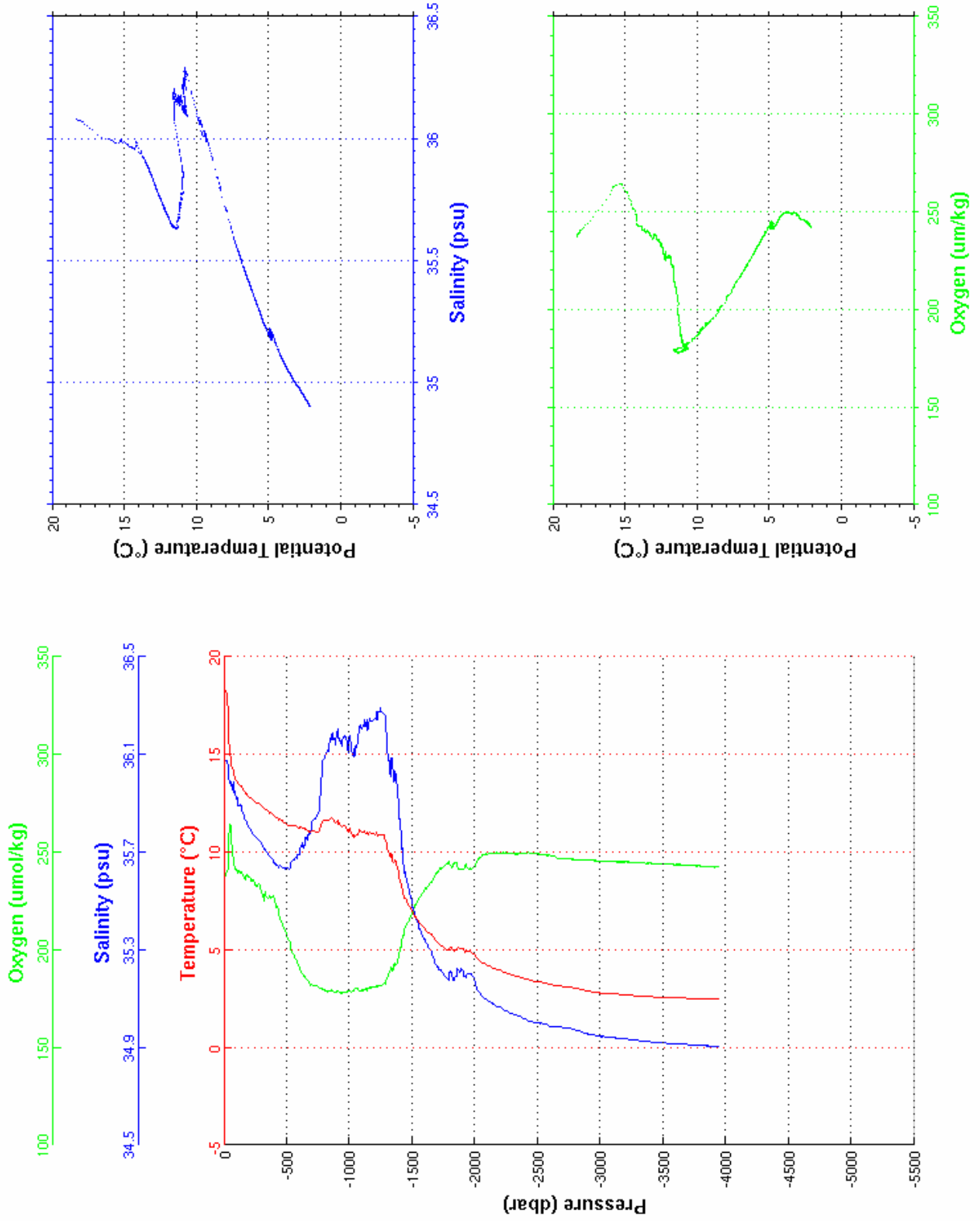
Cast : 7

```

-----
Cast       :      8           Cruise    : OVIDE 2010
Date       : 11/06/2010     Ship     : N/O THALASSA
Depth      : 3894 m         Organism  : IFREMER
Position   : N 40 20.09
            W 010 18.14
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.273	36.078	237.1	18.273	3050.0	2.780	34.944	245.2	2.529
10.0	18.269	36.078	238.4	18.268	3100.0	2.749	34.940	245.1	2.493
20.0	18.131	36.075	240.5	18.127	3150.0	2.721	34.937	244.9	2.461
30.0	17.772	36.058	243.1	17.767	3200.0	2.703	34.935	244.9	2.438
40.0	15.802	35.993	262.9	15.796	3250.0	2.665	34.931	244.8	2.395
50.0	15.145	35.984	262.3	15.138	3300.0	2.642	34.928	244.5	2.368
100.0	13.662	35.923	240.8	13.647	3350.0	2.617	34.925	244.5	2.338
150.0	13.215	35.858	237.9	13.194	3400.0	2.597	34.923	244.2	2.313
200.0	12.839	35.799	237.5	12.811	3450.0	2.572	34.920	244.1	2.283
250.0	12.561	35.759	232.3	12.527	3500.0	2.557	34.918	243.9	2.263
300.0	12.385	35.734	229.9	12.345	3550.0	2.547	34.917	243.9	2.248
350.0	12.067	35.687	226.7	12.021	3600.0	2.537	34.915	243.7	2.232
400.0	11.824	35.654	225.7	11.771	3650.0	2.525	34.913	243.5	2.215
450.0	11.648	35.642	214.8	11.589	3700.0	2.510	34.911	243.4	2.196
500.0	11.434	35.631	206.9	11.370	3750.0	2.498	34.910	243.1	2.178
550.0	11.400	35.664	197.9	11.329	3800.0	2.489	34.908	242.9	2.163
600.0	11.236	35.691	190.6	11.159	3850.0	2.478	34.907	242.7	2.147
650.0	11.190	35.758	185.1	11.107	3900.0	2.471	34.905	242.5	2.134
700.0	11.104	35.821	181.7	11.014	3946.0	2.464	34.904	242.5	2.123
750.0	11.030	35.861	181.0	10.934					
800.0	11.644	36.087	179.3	11.538					
850.0	11.704	36.162	179.1	11.591					
900.0	11.606	36.184	178.6	11.486					
950.0	11.369	36.171	178.1	11.244					
1000.0	11.245	36.178	178.5	11.113					
1050.0	10.916	36.139	179.6	10.780					
1100.0	11.017	36.203	179.2	10.874					
1150.0	10.887	36.209	180.5	10.738					
1200.0	10.918	36.246	181.1	10.762					
1250.0	10.979	36.289	181.6	10.815					
1300.0	10.406	36.167	184.9	10.241					
1350.0	9.462	35.988	192.2	9.300					
1400.0	8.704	35.836	199.6	8.543					
1450.0	7.569	35.596	212.6	7.413					
1500.0	6.981	35.491	218.8	6.827					
1550.0	6.453	35.403	225.6	6.299					
1600.0	6.064	35.340	231.0	5.909					
1650.0	5.795	35.296	234.7	5.638					
1700.0	5.381	35.231	240.1	5.224					
1750.0	5.142	35.197	242.5	4.983					
1800.0	5.124	35.209	243.2	4.960					
1850.0	4.980	35.190	244.0	4.813					
1900.0	5.055	35.215	241.1	4.882					
1950.0	4.938	35.203	241.8	4.761					
2000.0	4.741	35.173	243.0	4.562					
2050.0	4.358	35.112	248.0	4.180					
2100.0	4.214	35.093	249.1	4.033					
2150.0	4.064	35.076	249.4	3.880					
2200.0	3.970	35.066	249.3	3.782					
2250.0	3.816	35.049	249.6	3.626					
2300.0	3.703	35.036	249.4	3.510					
2350.0	3.615	35.028	249.3	3.419					
2400.0	3.514	35.015	249.6	3.315					
2450.0	3.421	35.006	249.4	3.218					
2500.0	3.366	35.000	249.3	3.159					
2550.0	3.314	34.997	248.5	3.103					
2600.0	3.229	34.988	248.3	3.014					
2650.0	3.174	34.985	247.1	2.956					
2700.0	3.129	34.981	246.6	2.907					
2750.0	3.099	34.978	246.5	2.871					
2800.0	3.043	34.972	246.2	2.812					
2850.0	2.969	34.964	246.2	2.734					
2900.0	2.889	34.956	246.1	2.650					
2950.0	2.840	34.950	245.8	2.597					
3000.0	2.788	34.945	245.4	2.542					



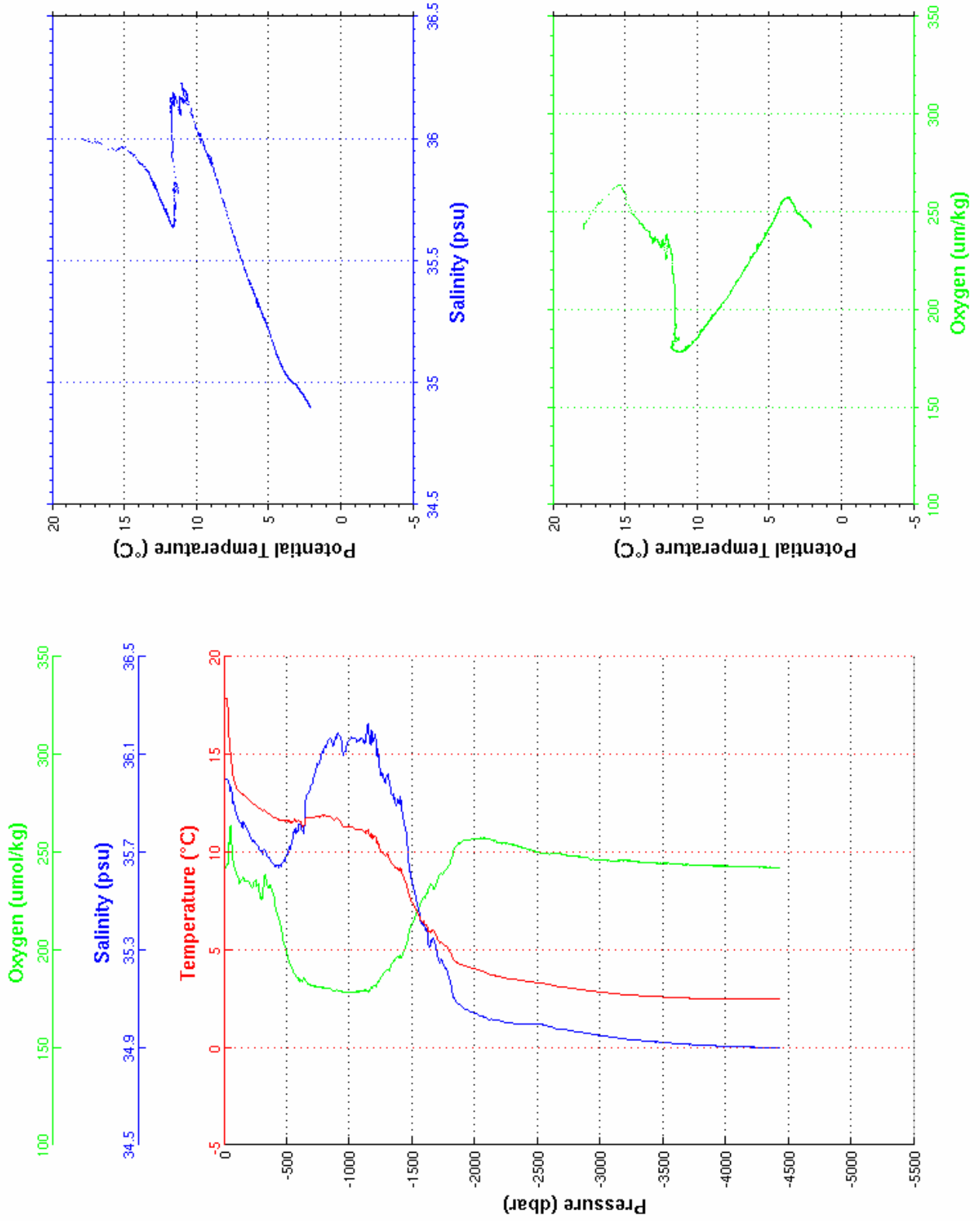
**Cast : 8**

```

-----
Cast       :    9           Cruise    : OVIDE 2010
Date       : 11/06/2010   Ship      : N/O THALASSA
Depth      : 4372 m       Organism  : IFREMER
Position   : N 40 20.23
            W 010 34.65
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.834	35.998	241.5	17.834	3050.0	2.799	34.945	245.7	2.547
10.0	17.835	35.998	242.3	17.833	3100.0	2.763	34.941	245.6	2.507
20.0	17.835	35.998	243.7	17.832	3150.0	2.734	34.938	245.7	2.474
30.0	17.634	35.992	245.4	17.629	3200.0	2.700	34.934	245.8	2.435
40.0	16.562	35.976	256.1	16.556	3250.0	2.681	34.932	245.5	2.411
50.0	15.267	35.962	263.6	15.259	3300.0	2.660	34.930	245.0	2.385
100.0	13.290	35.859	239.2	13.276	3350.0	2.631	34.927	244.8	2.352
150.0	12.922	35.808	236.9	12.901	3400.0	2.612	34.924	244.5	2.328
200.0	12.677	35.775	233.8	12.650	3450.0	2.602	34.923	244.3	2.312
250.0	12.411	35.735	235.4	12.377	3500.0	2.587	34.921	244.4	2.292
300.0	12.162	35.701	227.6	12.122	3550.0	2.570	34.919	244.2	2.270
350.0	12.010	35.681	232.5	11.964	3600.0	2.548	34.916	243.8	2.244
400.0	11.760	35.643	226.3	11.708	3650.0	2.540	34.915	243.8	2.230
450.0	11.623	35.639	212.4	11.565	3700.0	2.523	34.913	243.6	2.208
500.0	11.563	35.685	197.5	11.498	3750.0	2.507	34.911	243.5	2.187
550.0	11.624	35.776	188.7	11.552	3800.0	2.496	34.909	243.2	2.170
600.0	11.588	35.814	184.6	11.509	3850.0	2.490	34.908	243.1	2.159
650.0	11.721	35.907	183.6	11.635	3900.0	2.485	34.907	243.0	2.149
700.0	11.743	35.979	181.8	11.650	3950.0	2.482	34.906	242.9	2.140
750.0	11.830	36.063	181.2	11.729	4000.0	2.478	34.905	242.9	2.130
800.0	11.874	36.133	180.4	11.767	4050.0	2.473	34.904	242.8	2.120
850.0	11.841	36.167	179.9	11.727	4100.0	2.469	34.903	242.7	2.110
900.0	11.679	36.170	179.0	11.559	4150.0	2.465	34.902	242.7	2.100
950.0	11.249	36.101	178.2	11.125	4200.0	2.463	34.901	242.4	2.093
1000.0	11.315	36.162	178.4	11.184	4250.0	2.464	34.901	242.4	2.088
1050.0	11.222	36.168	178.5	11.084	4300.0	2.465	34.900	242.3	2.083
1100.0	11.123	36.165	178.8	10.980	4350.0	2.467	34.900	242.3	2.079
1150.0	11.098	36.207	178.7	10.947	4400.0	2.468	34.899	242.2	2.074
1200.0	10.782	36.171	181.6	10.627	4433.0	2.466	34.899	241.8	2.068
1250.0	10.054	36.020	186.4	9.899					
1300.0	9.891	36.012	188.9	9.731					
1350.0	9.348	35.928	194.0	9.186					
1400.0	9.067	35.895	197.1	8.903					
1450.0	8.488	35.786	202.5	8.323					
1500.0	7.444	35.581	214.0	7.285					
1550.0	6.825	35.471	221.3	6.666					
1600.0	6.333	35.393	226.9	6.175					
1650.0	5.927	35.329	233.3	5.768					
1700.0	5.585	35.281	235.8	5.426					
1750.0	5.275	35.235	239.7	5.114					
1800.0	4.977	35.185	243.9	4.815					
1850.0	4.386	35.087	253.4	4.227					
1900.0	4.234	35.066	255.2	4.073					
1950.0	4.115	35.051	256.3	3.951					
2000.0	4.019	35.040	256.9	3.851					
2050.0	3.896	35.028	257.2	3.725					
2100.0	3.785	35.018	257.2	3.611					
2150.0	3.698	35.012	256.0	3.520					
2200.0	3.624	35.008	254.7	3.443					
2250.0	3.532	34.999	254.4	3.347					
2300.0	3.495	34.999	253.8	3.306					
2350.0	3.431	34.997	252.9	3.238					
2400.0	3.382	34.994	251.9	3.185					
2450.0	3.349	34.995	250.8	3.148					
2500.0	3.320	34.994	250.1	3.114					
2550.0	3.266	34.991	249.3	3.056					
2600.0	3.201	34.984	249.1	2.987					
2650.0	3.128	34.976	249.3	2.911					
2700.0	3.087	34.973	248.7	2.866					
2750.0	3.046	34.969	248.3	2.820					
2800.0	2.998	34.965	248.1	2.768					
2850.0	2.963	34.961	247.6	2.729					
2900.0	2.917	34.957	246.8	2.679					
2950.0	2.879	34.954	246.1	2.636					
3000.0	2.835	34.949	246.0	2.588					



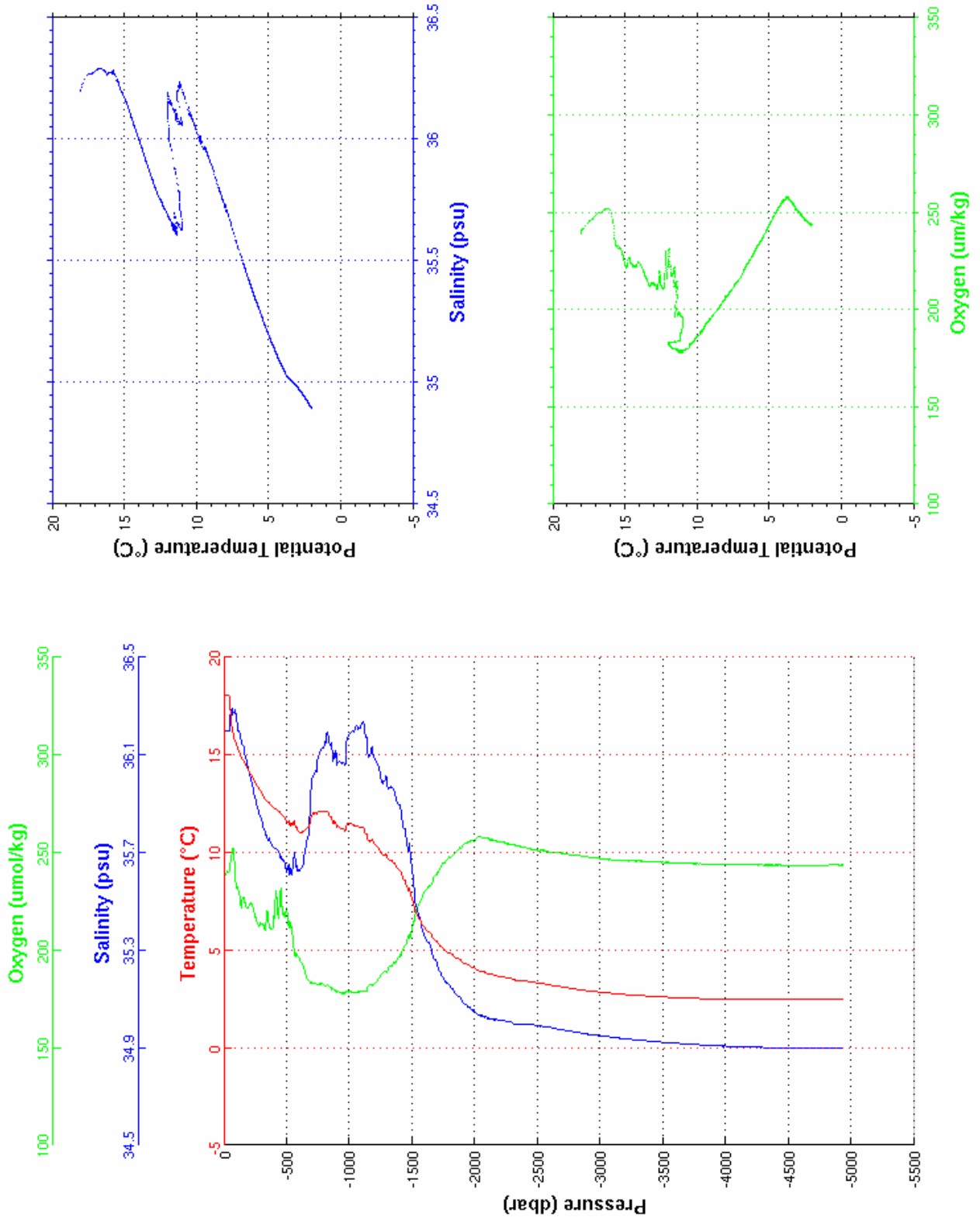
**Cast : 9**

```

-----
Cast       : 10           Cruise    : OVIDE 2010
Date       : 12/06/2010  Ship     : N/O THALASSA
Depth      : 4855 m      Organism  : IFREMER
Position   : N 40 19.88
            W 010 54.32
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.049	36.198	238.6	18.048	3050.0	2.820	34.946	246.6	2.568
10.0	18.053	36.198	239.3	18.051	3100.0	2.780	34.942	246.2	2.523
20.0	18.054	36.199	240.3	18.051	3150.0	2.752	34.939	246.0	2.490
30.0	18.054	36.199	240.5	18.048	3200.0	2.721	34.936	245.8	2.456
40.0	18.048	36.200	240.8	18.041	3250.0	2.697	34.934	245.8	2.427
50.0	17.451	36.270	245.7	17.442	3300.0	2.674	34.931	245.6	2.398
100.0	15.533	36.256	232.1	15.517	3350.0	2.657	34.929	245.4	2.377
150.0	14.772	36.135	226.9	14.749	3400.0	2.630	34.926	245.4	2.345
200.0	14.175	36.030	223.4	14.146	3450.0	2.615	34.924	245.2	2.325
250.0	13.568	35.920	216.4	13.532	3500.0	2.599	34.922	245.0	2.304
300.0	13.056	35.829	212.9	13.014	3550.0	2.586	34.920	244.9	2.286
350.0	12.581	35.758	215.1	12.533	3600.0	2.571	34.919	244.9	2.266
400.0	12.299	35.721	216.9	12.245	3650.0	2.559	34.917	244.7	2.249
450.0	11.989	35.677	231.2	11.929	3700.0	2.547	34.915	244.6	2.231
500.0	11.623	35.630	219.8	11.557	3750.0	2.534	34.914	244.4	2.213
550.0	11.472	35.646	204.5	11.400	3800.0	2.517	34.911	244.2	2.191
600.0	11.084	35.626	195.6	11.008	3850.0	2.507	34.910	244.2	2.176
650.0	11.224	35.722	186.8	11.141	3900.0	2.500	34.908	244.1	2.163
700.0	11.960	35.997	183.1	11.866	3950.0	2.493	34.907	244.0	2.150
750.0	12.102	36.090	182.9	12.000	4000.0	2.489	34.906	244.0	2.141
800.0	12.068	36.141	182.1	11.960	4050.0	2.485	34.905	244.0	2.132
850.0	11.826	36.141	180.6	11.712	4100.0	2.479	34.904	243.8	2.120
900.0	11.310	36.062	178.8	11.193	4150.0	2.474	34.903	243.8	2.109
950.0	11.197	36.068	177.9	11.073	4200.0	2.472	34.902	243.9	2.101
1000.0	11.493	36.186	178.4	11.360	4250.0	2.471	34.902	243.8	2.095
1050.0	11.424	36.222	178.8	11.285	4300.0	2.470	34.901	243.6	2.088
1100.0	11.316	36.232	178.8	11.171	4350.0	2.470	34.900	243.6	2.082
1150.0	10.620	36.097	181.7	10.473	4400.0	2.470	34.900	243.6	2.076
1200.0	10.440	36.085	183.4	10.288	4450.0	2.471	34.899	243.6	2.070
1250.0	9.962	36.002	187.6	9.808	4500.0	2.473	34.899	243.5	2.067
1300.0	9.848	36.001	188.8	9.689	4550.0	2.476	34.898	243.4	2.064
1350.0	9.493	35.956	193.1	9.331	4600.0	2.478	34.898	243.3	2.060
1400.0	9.099	35.893	196.8	8.934	4650.0	2.483	34.898	243.0	2.058
1450.0	8.439	35.770	203.5	8.274	4700.0	2.488	34.897	243.0	2.056
1500.0	7.587	35.617	211.8	7.426	4750.0	2.492	34.897	243.2	2.054
1550.0	6.670	35.448	223.3	6.514	4800.0	2.495	34.897	243.5	2.051
1600.0	6.129	35.354	230.5	5.973	4850.0	2.498	34.897	243.8	2.047
1650.0	5.852	35.310	233.9	5.695	4900.0	2.501	34.896	243.7	2.044
1700.0	5.400	35.235	239.6	5.243	4934.0	2.505	34.896	243.5	2.044
1750.0	5.062	35.183	244.6	4.905					
1800.0	4.853	35.153	247.7	4.693					
1850.0	4.614	35.118	250.9	4.452					
1900.0	4.407	35.090	253.6	4.243					
1950.0	4.242	35.068	255.4	4.075					
2000.0	4.053	35.044	256.5	3.884					
2050.0	3.937	35.032	257.6	3.765					
2100.0	3.816	35.021	257.5	3.641					
2150.0	3.722	35.015	256.3	3.544					
2200.0	3.639	35.011	255.6	3.457					
2250.0	3.591	35.008	254.6	3.405					
2300.0	3.509	35.001	254.1	3.319					
2350.0	3.451	34.998	253.4	3.258					
2400.0	3.408	34.996	252.5	3.210					
2450.0	3.363	34.994	251.8	3.161					
2500.0	3.308	34.990	251.0	3.102					
2550.0	3.268	34.986	251.1	3.058					
2600.0	3.218	34.983	250.2	3.004					
2650.0	3.163	34.977	250.0	2.945					
2700.0	3.116	34.973	249.7	2.894					
2750.0	3.060	34.969	248.9	2.833					
2800.0	3.013	34.964	248.7	2.783					
2850.0	2.966	34.960	248.2	2.731					
2900.0	2.915	34.955	247.8	2.676					
2950.0	2.874	34.952	247.3	2.631					
3000.0	2.853	34.950	247.0	2.605					



**Cast : 10**

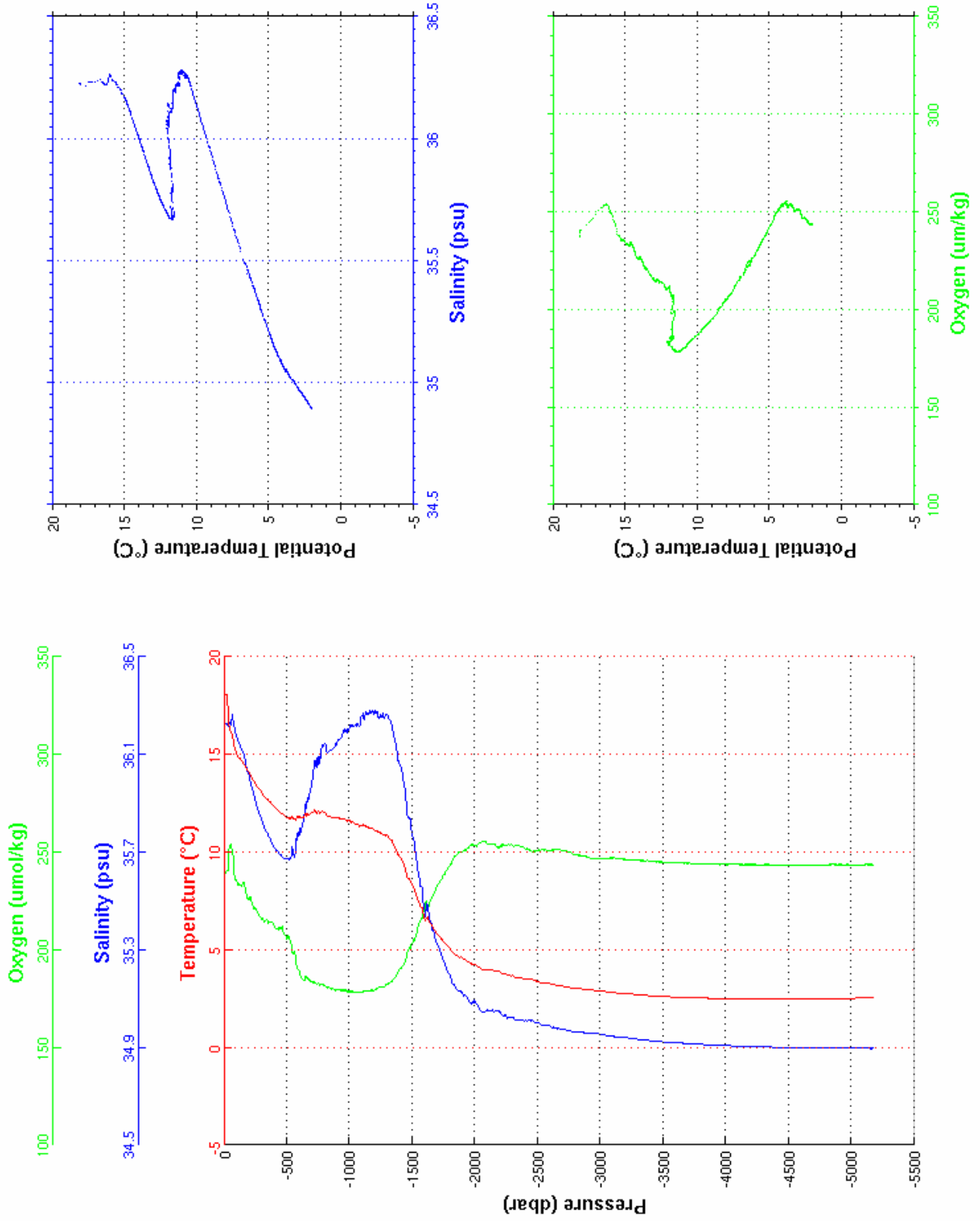
```

-----
Cast       : 11           Cruise    : OVIDE 2010
Date       : 12/06/2010  Ship     : N/O THALASSA
Depth      : 5102 m      Organism : IFREMER
Position   : N 40 19.95
            W 011 20.41
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.099	36.226	237.0	18.099	3050.0	2.852	34.950	246.6	2.599
10.0	18.099	36.228	239.8	18.097	3100.0	2.810	34.945	247.0	2.553
20.0	18.096	36.228	240.6	18.092	3150.0	2.782	34.942	246.7	2.521
30.0	17.667	36.215	243.5	17.662	3200.0	2.763	34.940	246.2	2.497
40.0	16.464	36.233	252.9	16.458	3250.0	2.729	34.936	245.9	2.457
50.0	16.297	36.219	253.8	16.289	3300.0	2.697	34.933	245.9	2.421
100.0	15.012	36.171	234.5	14.996	3350.0	2.669	34.930	245.5	2.389
150.0	14.615	36.111	233.9	14.593	3400.0	2.643	34.927	245.4	2.358
200.0	14.059	36.010	225.8	14.030	3450.0	2.618	34.924	245.1	2.328
250.0	13.490	35.907	220.6	13.455	3500.0	2.602	34.923	244.9	2.307
300.0	13.056	35.830	215.5	13.014	3550.0	2.590	34.921	244.6	2.289
350.0	12.663	35.766	214.3	12.615	3600.0	2.574	34.919	244.6	2.269
400.0	12.283	35.716	212.0	12.229	3650.0	2.566	34.918	244.4	2.256
450.0	12.053	35.690	211.1	11.993	3700.0	2.554	34.916	244.4	2.238
500.0	11.778	35.669	205.8	11.712	3750.0	2.544	34.914	244.3	2.223
550.0	11.676	35.686	198.6	11.604	3800.0	2.531	34.913	244.0	2.205
600.0	11.771	35.774	188.3	11.692	3850.0	2.522	34.911	243.9	2.190
650.0	11.885	35.888	185.7	11.798	3900.0	2.514	34.910	243.9	2.177
700.0	12.001	35.988	182.9	11.906	3950.0	2.505	34.908	243.8	2.162
750.0	11.990	36.062	182.3	11.889	4000.0	2.501	34.908	243.7	2.152
800.0	12.070	36.144	181.7	11.961	4050.0	2.495	34.906	243.8	2.141
850.0	11.801	36.118	179.9	11.687	4100.0	2.491	34.905	243.7	2.131
900.0	11.765	36.150	179.4	11.644	4150.0	2.484	34.904	243.7	2.119
950.0	11.719	36.195	179.3	11.592	4200.0	2.483	34.903	243.7	2.112
1000.0	11.578	36.209	178.6	11.444	4250.0	2.482	34.903	243.5	2.105
1050.0	11.448	36.221	178.2	11.309	4300.0	2.480	34.902	243.5	2.097
1100.0	11.440	36.262	178.9	11.294	4350.0	2.480	34.901	243.5	2.092
1150.0	11.258	36.267	179.1	11.106	4400.0	2.479	34.901	243.4	2.085
1200.0	11.156	36.280	179.7	10.998	4450.0	2.480	34.900	243.4	2.080
1250.0	10.992	36.266	180.7	10.829	4500.0	2.482	34.900	243.3	2.076
1300.0	10.839	36.264	182.2	10.670	4550.0	2.483	34.899	243.4	2.070
1350.0	10.433	36.188	185.3	10.261	4600.0	2.486	34.899	243.3	2.067
1400.0	9.753	36.058	190.4	9.581	4650.0	2.489	34.898	243.3	2.064
1450.0	9.056	35.922	195.7	8.885	4700.0	2.492	34.898	243.3	2.061
1500.0	8.300	35.774	203.7	8.131	4750.0	2.497	34.898	243.2	2.059
1550.0	7.491	35.617	212.7	7.325	4800.0	2.501	34.898	243.4	2.057
1600.0	6.621	35.447	221.5	6.459	4850.0	2.506	34.897	243.4	2.055
1650.0	6.342	35.418	226.1	6.178	4900.0	2.510	34.897	243.6	2.053
1700.0	5.803	35.322	233.1	5.641	4950.0	2.512	34.897	243.5	2.049
1750.0	5.415	35.256	238.6	5.252	5000.0	2.517	34.896	243.4	2.047
1800.0	5.071	35.198	243.4	4.907	5050.0	2.521	34.896	243.3	2.045
1850.0	4.737	35.142	248.3	4.573	5100.0	2.525	34.896	243.4	2.042
1900.0	4.598	35.123	250.2	4.431	5150.0	2.530	34.896	243.5	2.040
1950.0	4.353	35.090	252.6	4.185	5182.0	2.534	34.896	243.6	2.040
2000.0	4.268	35.084	253.1	4.096					
2050.0	4.026	35.049	255.4	3.853					
2100.0	3.992	35.052	254.1	3.814					
2150.0	3.907	35.043	253.7	3.726					
2200.0	3.869	35.044	252.6	3.683					
2250.0	3.778	35.034	253.2	3.589					
2300.0	3.687	35.025	253.3	3.495					
2350.0	3.572	35.011	253.3	3.376					
2400.0	3.515	35.010	252.0	3.316					
2450.0	3.477	35.009	250.8	3.274					
2500.0	3.388	35.000	250.7	3.181					
2550.0	3.305	34.990	251.2	3.095					
2600.0	3.266	34.987	250.8	3.051					
2650.0	3.187	34.978	251.3	2.968					
2700.0	3.134	34.974	250.9	2.912					
2750.0	3.071	34.968	250.2	2.844					
2800.0	3.028	34.966	248.8	2.797					
2850.0	2.992	34.963	248.3	2.757					
2900.0	2.952	34.959	247.6	2.712					
2950.0	2.925	34.958	246.7	2.681					
3000.0	2.892	34.954	246.8	2.644					





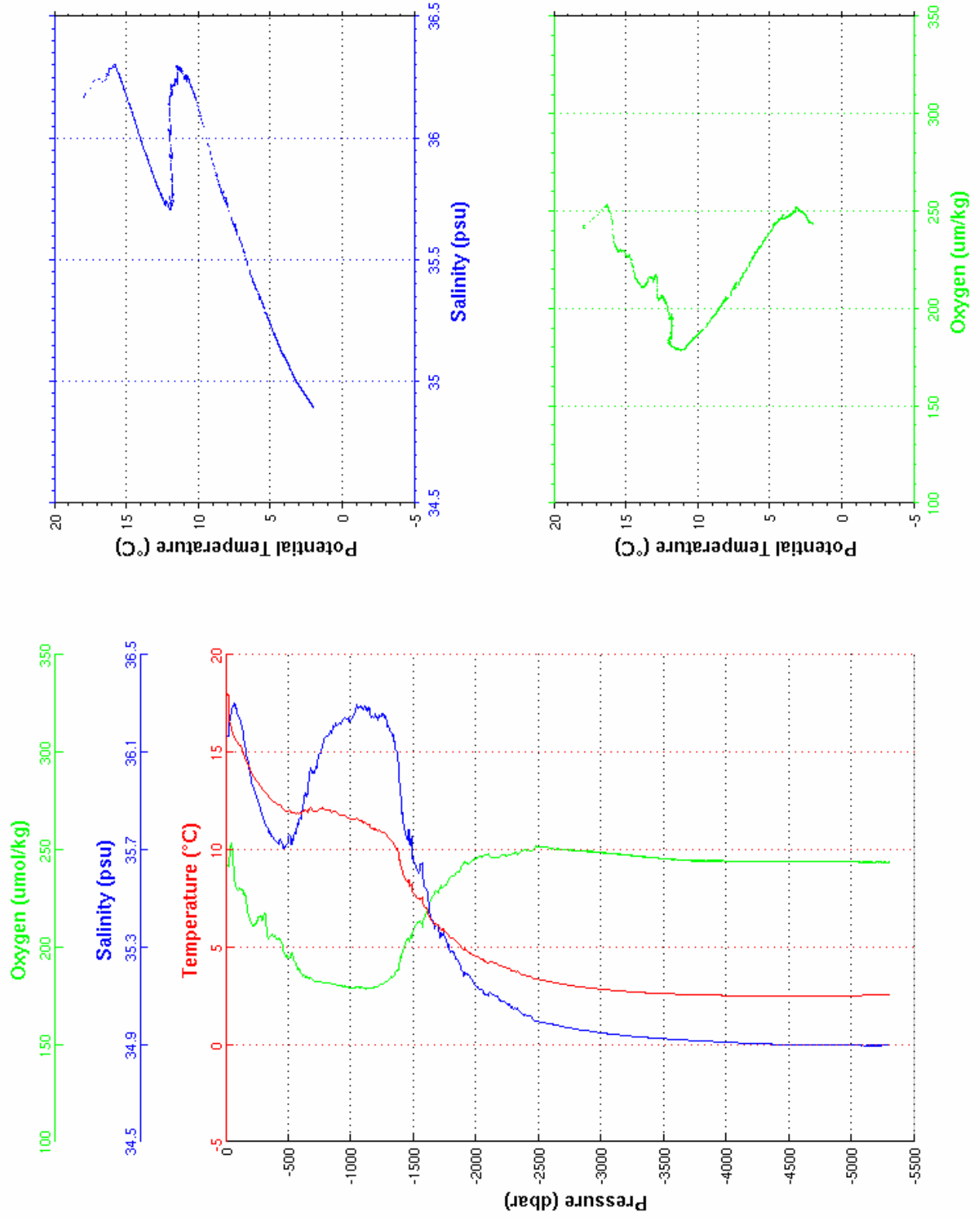
Cast : 11

```

-----
Cast       : 12           Cruise    : OVIDE 2010
Date       : 12/06/2010  Ship     : N/O THALASSA
Depth      : 5220 m      Organism  : IFREMER
Position   : N 40 20.04
            W 011 46.76
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.966	36.165	241.8	17.966	3050.0	2.804	34.944	248.2	2.552
10.0	17.967	36.165	242.0	17.965	3100.0	2.781	34.942	248.0	2.524
20.0	17.944	36.167	242.4	17.941	3150.0	2.746	34.938	247.7	2.485
30.0	16.855	36.241	249.2	16.850	3200.0	2.719	34.936	247.1	2.453
40.0	16.316	36.263	253.1	16.310	3250.0	2.698	34.933	246.9	2.428
50.0	16.168	36.284	250.1	16.160	3300.0	2.679	34.931	246.5	2.404
100.0	15.449	36.251	230.0	15.434	3350.0	2.661	34.929	246.4	2.380
150.0	14.777	36.134	227.4	14.755	3400.0	2.635	34.927	246.1	2.350
200.0	14.029	35.996	212.3	14.000	3450.0	2.621	34.925	245.8	2.331
250.0	13.531	35.912	213.7	13.495	3500.0	2.610	34.923	245.4	2.315
300.0	13.047	35.828	216.1	13.005	3550.0	2.599	34.922	245.2	2.299
350.0	12.633	35.770	205.5	12.586	3600.0	2.587	34.920	244.8	2.281
400.0	12.380	35.734	204.1	12.326	3650.0	2.577	34.919	244.6	2.266
450.0	12.169	35.726	201.0	12.109	3700.0	2.566	34.917	244.6	2.250
500.0	12.049	35.750	195.3	11.982	3750.0	2.560	34.916	244.4	2.238
550.0	11.872	35.771	191.7	11.799	3800.0	2.555	34.915	244.3	2.228
600.0	11.860	35.829	186.4	11.781	3850.0	2.540	34.913	244.4	2.207
650.0	11.915	35.925	184.7	11.828	3900.0	2.533	34.912	244.3	2.195
700.0	11.980	36.018	182.6	11.886	3950.0	2.523	34.910	244.1	2.179
750.0	12.085	36.096	182.2	11.984	4000.0	2.514	34.909	244.2	2.166
800.0	12.069	36.162	181.7	11.960	4050.0	2.506	34.908	244.0	2.152
850.0	11.955	36.193	181.0	11.840	4100.0	2.498	34.906	243.9	2.139
900.0	11.841	36.218	180.4	11.720	4150.0	2.492	34.905	243.7	2.127
950.0	11.749	36.242	180.0	11.621	4200.0	2.488	34.904	243.8	2.117
1000.0	11.550	36.235	179.2	11.417	4250.0	2.483	34.903	243.9	2.106
1050.0	11.608	36.293	179.3	11.467	4300.0	2.477	34.902	244.0	2.095
1100.0	11.388	36.275	178.9	11.242	4350.0	2.478	34.901	244.0	2.089
1150.0	11.284	36.283	178.7	11.132	4400.0	2.477	34.900	244.0	2.083
1200.0	11.028	36.249	179.6	10.872	4450.0	2.477	34.900	244.0	2.076
1250.0	10.927	36.255	181.0	10.764	4500.0	2.477	34.899	244.0	2.071
1300.0	10.611	36.207	183.2	10.444	4550.0	2.478	34.899	243.9	2.066
1350.0	10.147	36.120	186.6	9.978	4600.0	2.479	34.898	243.8	2.060
1400.0	9.220	35.920	194.8	9.053	4650.0	2.482	34.898	244.0	2.057
1450.0	8.319	35.741	204.3	8.156	4700.0	2.485	34.897	244.0	2.053
1500.0	7.747	35.650	209.9	7.584	4750.0	2.488	34.897	244.0	2.050
1550.0	7.459	35.615	213.5	7.294	4800.0	2.493	34.897	243.9	2.049
1600.0	7.017	35.538	217.8	6.851	4850.0	2.497	34.897	244.1	2.047
1650.0	6.331	35.409	226.5	6.168	4900.0	2.502	34.896	244.1	2.045
1700.0	6.094	35.378	228.2	5.928	4950.0	2.507	34.896	244.2	2.043
1750.0	5.830	35.342	231.7	5.662	5000.0	2.512	34.896	244.0	2.042
1800.0	5.460	35.282	236.4	5.292	5050.0	2.516	34.896	243.9	2.040
1850.0	5.202	35.243	238.8	5.032	5100.0	2.522	34.896	243.6	2.040
1900.0	4.877	35.189	243.0	4.707	5150.0	2.529	34.896	243.5	2.039
1950.0	4.751	35.178	243.3	4.577	5200.0	2.536	34.896	243.6	2.039
2000.0	4.517	35.141	245.9	4.342	5250.0	2.542	34.896	243.6	2.039
2050.0	4.361	35.121	246.6	4.182	5300.0	2.549	34.896	243.4	2.039
2100.0	4.239	35.107	247.8	4.058	5307.0	2.550	34.896	243.7	2.039
2150.0	4.167	35.101	245.9	3.981					
2200.0	4.017	35.079	247.3	3.829					
2250.0	3.913	35.067	247.2	3.721					
2300.0	3.759	35.046	248.7	3.565					
2350.0	3.645	35.033	248.7	3.448					
2400.0	3.528	35.018	249.7	3.329					
2450.0	3.422	35.005	250.0	3.219					
2500.0	3.336	34.994	251.3	3.130					
2550.0	3.273	34.988	251.2	3.063					
2600.0	3.218	34.985	250.5	3.004					
2650.0	3.147	34.978	250.5	2.929					
2700.0	3.089	34.972	250.1	2.867					
2750.0	3.033	34.967	249.8	2.807					
2800.0	2.988	34.962	249.5	2.758					
2850.0	2.943	34.958	249.3	2.709					
2900.0	2.916	34.955	249.2	2.677					
2950.0	2.872	34.951	248.9	2.629					
3000.0	2.841	34.948	248.5	2.593					



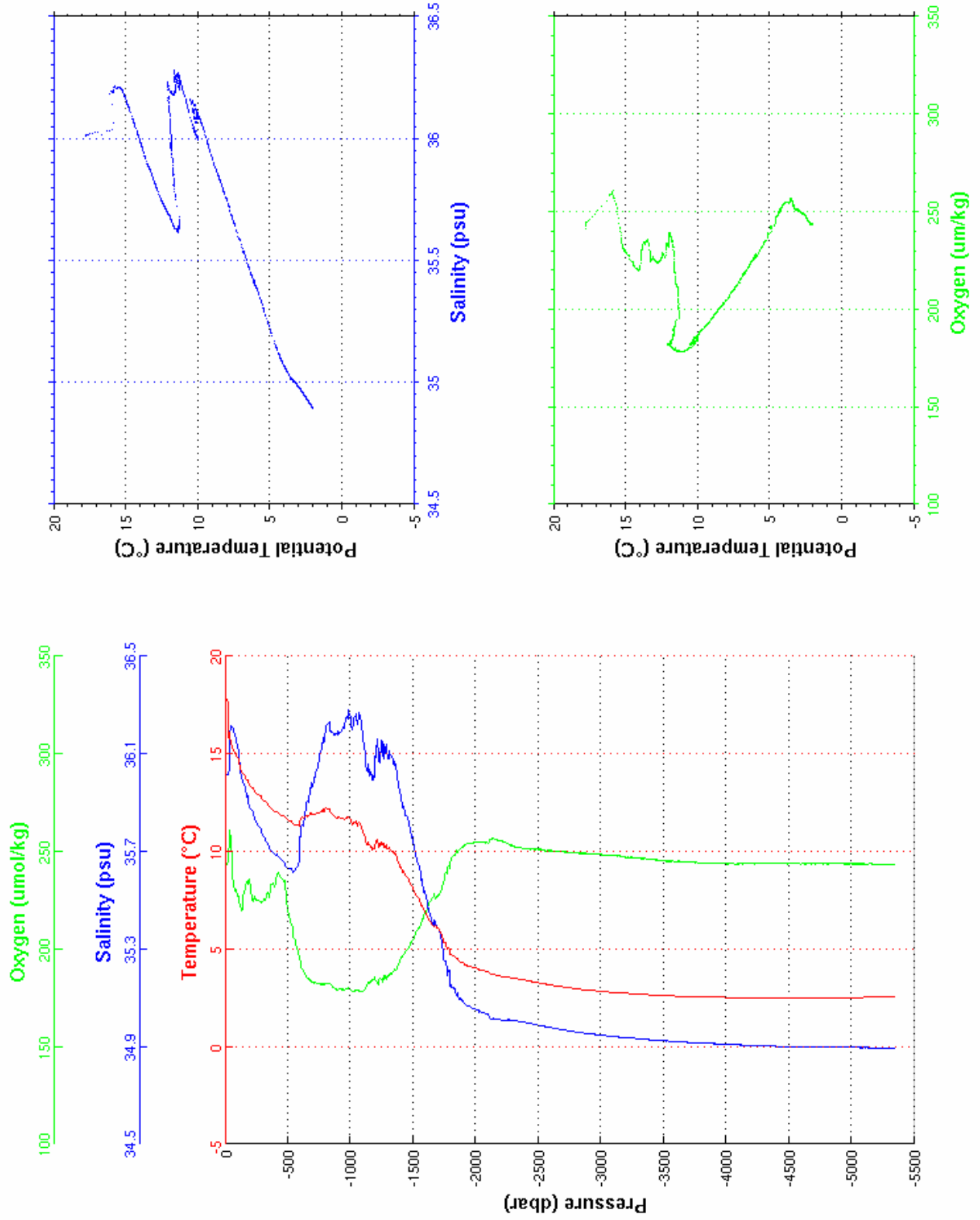
**Cast : 12**

```

-----
Cast       : 13           Cruise    : OVIDE 2010
Date       : 12/06/2010  Ship     : N/O THALASSA
Depth      : 5262 m      Organism  : IFREMER
Position   : N 40 19.94
            W 012 13.17
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.798	36.011	241.0	17.798	3050.0	2.798	34.944	248.2	2.546
10.0	17.792	36.013	243.5	17.791	3100.0	2.768	34.941	248.0	2.512
20.0	17.743	36.015	244.5	17.739	3150.0	2.747	34.939	247.5	2.486
30.0	16.110	36.029	258.2	16.105	3200.0	2.732	34.937	246.9	2.466
40.0	15.809	36.199	257.1	15.803	3250.0	2.708	34.935	247.0	2.437
50.0	15.543	36.209	248.5	15.535	3300.0	2.687	34.932	246.6	2.412
100.0	14.770	36.123	227.2	14.755	3350.0	2.668	34.930	246.3	2.387
150.0	13.925	35.973	230.0	13.903	3400.0	2.646	34.928	245.8	2.360
200.0	13.353	35.871	230.7	13.324	3450.0	2.628	34.926	245.6	2.338
250.0	12.998	35.816	225.2	12.963	3500.0	2.611	34.924	245.4	2.316
300.0	12.668	35.763	224.9	12.627	3550.0	2.600	34.922	245.0	2.300
350.0	12.298	35.713	226.5	12.251	3600.0	2.585	34.920	244.8	2.280
400.0	12.027	35.684	233.8	11.974	3650.0	2.574	34.919	244.7	2.263
450.0	11.876	35.664	236.0	11.817	3700.0	2.563	34.917	244.6	2.247
500.0	11.638	35.630	218.5	11.573	3750.0	2.553	34.916	244.3	2.231
550.0	11.389	35.622	204.9	11.318	3800.0	2.546	34.914	244.2	2.219
600.0	11.633	35.763	192.1	11.554	3850.0	2.539	34.913	244.1	2.207
650.0	11.804	35.900	185.1	11.717	3900.0	2.533	34.912	243.9	2.196
700.0	11.912	35.978	182.9	11.819	3950.0	2.526	34.911	244.0	2.183
750.0	11.989	36.073	182.2	11.888	4000.0	2.518	34.909	243.8	2.169
800.0	12.229	36.212	182.2	12.119	4050.0	2.512	34.908	243.7	2.158
850.0	11.955	36.193	180.9	11.840	4100.0	2.506	34.907	243.6	2.146
900.0	11.728	36.183	179.4	11.607	4150.0	2.500	34.906	243.7	2.134
950.0	11.651	36.209	179.1	11.524	4200.0	2.495	34.905	243.8	2.124
1000.0	11.678	36.254	179.1	11.544	4250.0	2.490	34.904	243.7	2.113
1050.0	11.387	36.234	178.4	11.248	4300.0	2.486	34.903	243.8	2.103
1100.0	10.981	36.162	179.0	10.838	4350.0	2.481	34.902	243.8	2.093
1150.0	10.335	36.029	182.5	10.190	4400.0	2.481	34.901	243.7	2.087
1200.0	10.395	36.086	183.7	10.243	4450.0	2.480	34.900	243.8	2.079
1250.0	10.501	36.154	183.9	10.342	4500.0	2.479	34.900	243.8	2.072
1300.0	10.144	36.094	186.7	9.981	4550.0	2.480	34.899	243.7	2.067
1350.0	9.911	36.066	189.3	9.745	4600.0	2.482	34.898	243.7	2.063
1400.0	9.230	35.932	195.1	9.063	4650.0	2.484	34.898	243.7	2.059
1450.0	8.718	35.845	200.0	8.551	4700.0	2.487	34.898	243.7	2.055
1500.0	8.125	35.747	204.8	7.958	4750.0	2.489	34.897	243.8	2.052
1550.0	7.566	35.640	211.5	7.399	4800.0	2.493	34.897	243.7	2.049
1600.0	6.873	35.523	218.5	6.709	4850.0	2.496	34.897	244.0	2.046
1650.0	6.249	35.411	226.4	6.086	4900.0	2.500	34.896	243.8	2.043
1700.0	6.059	35.388	227.3	5.894	4950.0	2.505	34.896	243.6	2.042
1750.0	5.258	35.238	237.7	5.097	5000.0	2.511	34.896	243.6	2.041
1800.0	4.761	35.154	245.9	4.602	5050.0	2.515	34.896	243.7	2.039
1850.0	4.494	35.112	250.5	4.333	5100.0	2.520	34.896	243.5	2.038
1900.0	4.287	35.084	252.4	4.125	5150.0	2.526	34.896	243.5	2.036
1950.0	4.160	35.068	254.0	3.995	5200.0	2.531	34.895	243.5	2.035
2000.0	4.019	35.051	254.9	3.851	5250.0	2.538	34.895	243.4	2.035
2050.0	3.912	35.040	254.7	3.741	5300.0	2.545	34.895	243.3	2.035
2100.0	3.816	35.031	254.3	3.641	5350.0	2.551	34.895	243.3	2.035
2150.0	3.673	35.015	256.0	3.496	5351.0	2.551	34.895	243.6	2.035
2200.0	3.596	35.009	255.3	3.415					
2250.0	3.548	35.008	254.2	3.363					
2300.0	3.496	35.006	252.7	3.307					
2350.0	3.444	35.001	252.3	3.251					
2400.0	3.387	34.998	251.3	3.190					
2450.0	3.335	34.994	251.3	3.134					
2500.0	3.268	34.987	251.1	3.063					
2550.0	3.216	34.983	250.7	3.007					
2600.0	3.155	34.978	250.4	2.942					
2650.0	3.107	34.973	250.1	2.890					
2700.0	3.054	34.968	249.9	2.832					
2750.0	3.006	34.964	249.6	2.780					
2800.0	2.960	34.960	249.3	2.731					
2850.0	2.920	34.956	249.0	2.686					
2900.0	2.886	34.953	248.9	2.648					
2950.0	2.860	34.950	248.7	2.617					
3000.0	2.830	34.947	248.4	2.583					



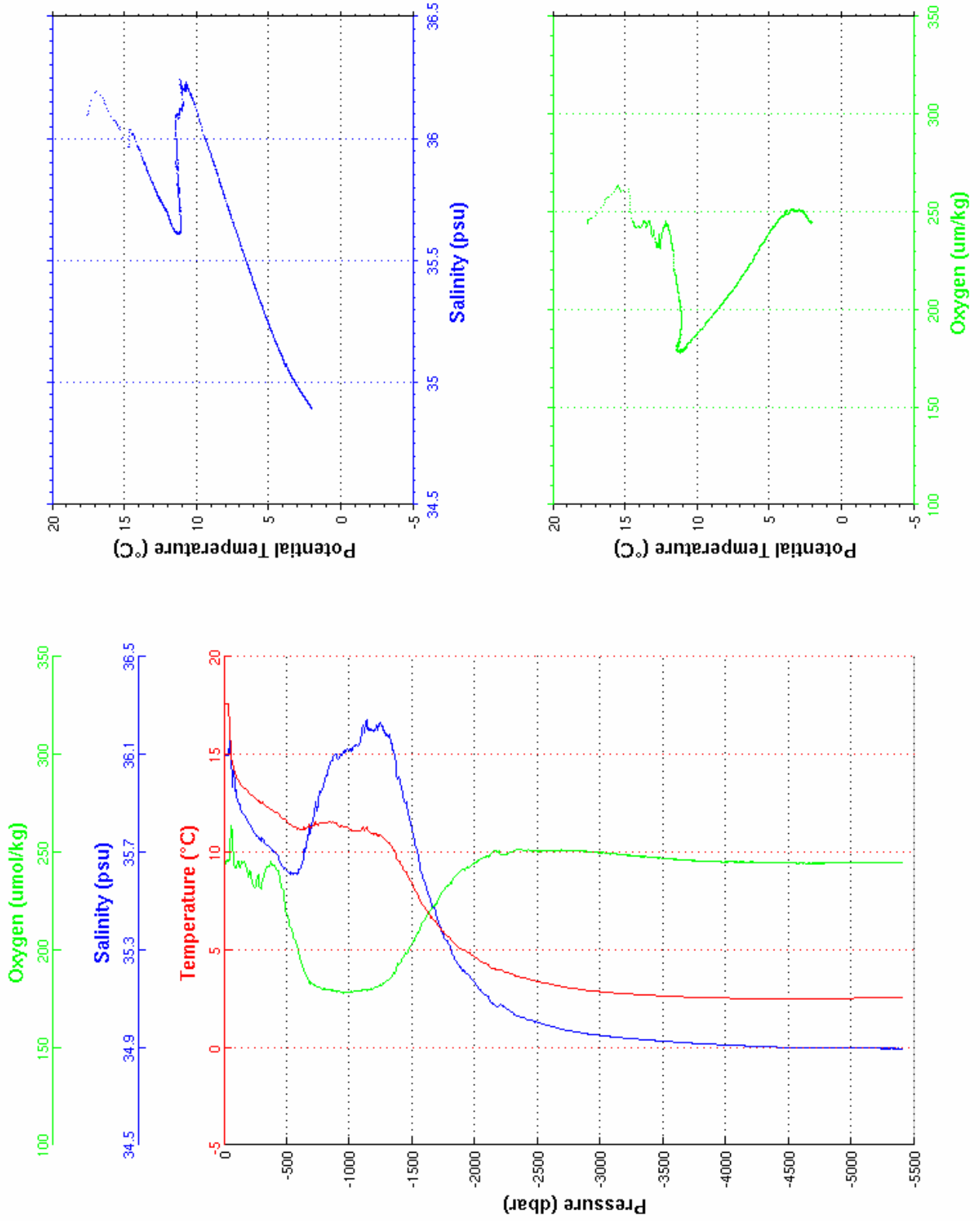
Cast : 13

```

-----
Cast       : 14           Cruise    : OVIDE 2010
Date       : 13/06/2010  Ship     : N/O THALASSA
Depth      : 5311 m      Organism  : IFREMER
Position   : N 40 33.12
            W 012 38.80
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.557	36.095	244.1	17.556	3050.0	2.826	34.946	249.5	2.574
10.0	17.563	36.096	244.9	17.561	3100.0	2.793	34.943	249.2	2.537
20.0	17.563	36.096	245.5	17.560	3150.0	2.766	34.940	249.0	2.505
30.0	17.564	36.096	245.8	17.559	3200.0	2.745	34.938	248.5	2.478
40.0	17.371	36.136	246.7	17.364	3250.0	2.728	34.936	248.3	2.456
50.0	16.116	36.113	257.5	16.108	3300.0	2.703	34.934	247.9	2.427
100.0	13.864	35.940	242.7	13.850	3350.0	2.691	34.932	247.6	2.410
150.0	13.334	35.854	245.2	13.313	3400.0	2.668	34.929	247.5	2.382
200.0	13.025	35.813	239.6	12.997	3450.0	2.650	34.928	247.1	2.359
250.0	12.728	35.770	232.8	12.694	3500.0	2.633	34.925	246.9	2.338
300.0	12.589	35.761	234.1	12.548	3550.0	2.619	34.924	246.7	2.318
350.0	12.300	35.723	243.5	12.253	3600.0	2.605	34.922	246.3	2.299
400.0	12.095	35.700	243.2	12.041	3650.0	2.593	34.920	246.0	2.282
450.0	11.809	35.652	233.6	11.750	3700.0	2.579	34.918	245.9	2.262
500.0	11.574	35.622	217.8	11.509	3750.0	2.567	34.917	245.7	2.246
550.0	11.337	35.611	206.6	11.266	3800.0	2.560	34.916	245.3	2.232
600.0	11.180	35.629	196.1	11.103	3850.0	2.548	34.914	245.3	2.216
650.0	11.174	35.703	187.3	11.091	3900.0	2.538	34.913	245.2	2.200
700.0	11.334	35.815	182.5	11.243	3950.0	2.532	34.911	245.1	2.189
750.0	11.373	35.898	181.0	11.275	4000.0	2.525	34.910	245.0	2.176
800.0	11.486	35.990	179.9	11.380	4050.0	2.518	34.909	245.2	2.163
850.0	11.545	36.072	179.5	11.432	4100.0	2.513	34.908	245.0	2.153
900.0	11.375	36.084	178.9	11.257	4150.0	2.507	34.907	245.1	2.141
950.0	11.319	36.109	178.1	11.194	4200.0	2.501	34.905	244.9	2.129
1000.0	11.193	36.121	178.3	11.062	4250.0	2.495	34.904	244.8	2.118
1050.0	11.099	36.138	178.7	10.962	4300.0	2.492	34.904	244.8	2.109
1100.0	11.240	36.209	179.1	11.095	4350.0	2.486	34.902	244.7	2.097
1150.0	11.111	36.208	179.4	10.960	4400.0	2.481	34.901	244.7	2.087
1200.0	10.924	36.203	180.6	10.768	4450.0	2.484	34.901	244.5	2.083
1250.0	10.865	36.227	181.8	10.703	4500.0	2.483	34.900	244.6	2.076
1300.0	10.563	36.182	184.3	10.396	4550.0	2.484	34.899	244.4	2.071
1350.0	10.162	36.115	187.9	9.992	4600.0	2.484	34.899	244.3	2.065
1400.0	9.535	36.000	193.4	9.366	4650.0	2.488	34.899	244.5	2.063
1450.0	8.982	35.905	198.2	8.812	4700.0	2.493	34.898	244.4	2.062
1500.0	8.392	35.796	203.3	8.222	4750.0	2.498	34.898	244.1	2.060
1550.0	7.776	35.684	209.0	7.607	4800.0	2.502	34.898	244.4	2.058
1600.0	7.142	35.574	215.9	6.975	4850.0	2.507	34.898	244.6	2.056
1650.0	6.663	35.491	220.8	6.496	4900.0	2.511	34.897	244.5	2.054
1700.0	6.307	35.429	225.1	6.138	4950.0	2.514	34.897	244.5	2.051
1750.0	5.930	35.365	230.3	5.761	5000.0	2.519	34.897	244.6	2.049
1800.0	5.627	35.316	233.6	5.456	5050.0	2.522	34.897	244.6	2.046
1850.0	5.241	35.254	238.3	5.071	5100.0	2.528	34.896	244.7	2.045
1900.0	4.997	35.216	241.0	4.825	5150.0	2.532	34.896	244.7	2.042
1950.0	4.855	35.195	242.2	4.680	5200.0	2.537	34.896	244.7	2.041
2000.0	4.655	35.165	244.3	4.477	5250.0	2.542	34.896	244.7	2.039
2050.0	4.406	35.129	246.6	4.227	5300.0	2.547	34.896	244.6	2.038
2100.0	4.257	35.109	247.5	4.075	5350.0	2.554	34.896	244.6	2.037
2150.0	4.044	35.076	250.2	3.860	5400.0	2.559	34.895	244.6	2.036
2200.0	3.985	35.075	248.9	3.797	5406.0	2.560	34.895	244.7	2.036
2250.0	3.864	35.060	248.9	3.673					
2300.0	3.744	35.043	250.2	3.551					
2350.0	3.609	35.026	251.1	3.413					
2400.0	3.538	35.019	250.8	3.338					
2450.0	3.449	35.010	250.8	3.246					
2500.0	3.372	35.003	250.3	3.165					
2550.0	3.293	34.994	250.8	3.083					
2600.0	3.249	34.989	250.6	3.034					
2650.0	3.168	34.981	250.6	2.950					
2700.0	3.099	34.973	250.9	2.877					
2750.0	3.054	34.969	250.5	2.828					
2800.0	3.009	34.964	250.8	2.778					
2850.0	2.967	34.960	250.6	2.733					
2900.0	2.918	34.955	250.2	2.679					
2950.0	2.887	34.952	250.0	2.644					
3000.0	2.854	34.949	249.6	2.607					



Cast : 14

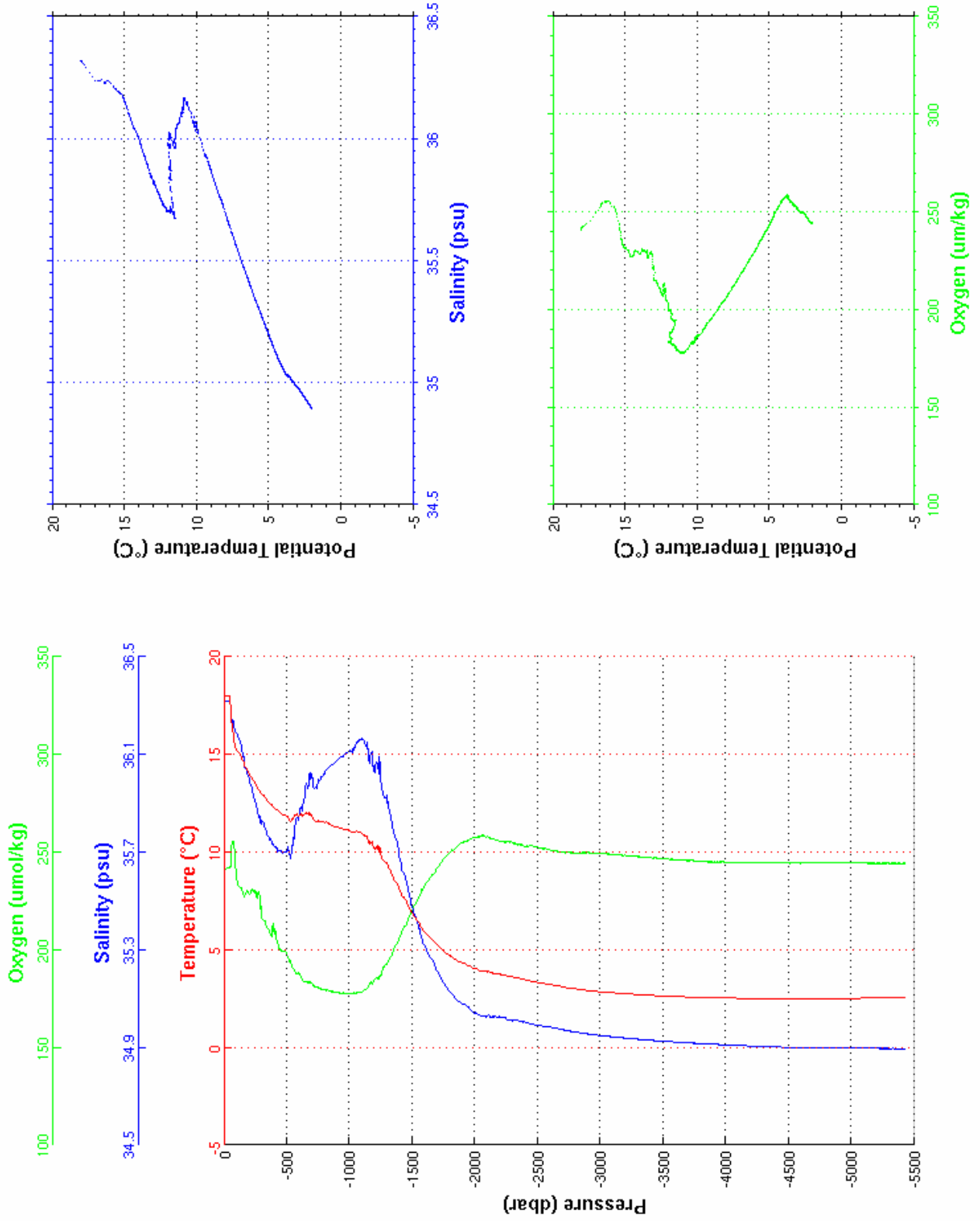
```

-----
Cast       : 15           Cruise    : OVIDE 2010
Date       : 13/06/2010  Ship     : N/O THALASSA
Depth      : 5338 m      Organism  : IFREMER
Position   : N 40 47.23
            W 013  5.99
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.992	36.319	240.3	17.992	3050.0	2.825	34.946	249.1	2.572
10.0	17.993	36.319	241.3	17.992	3100.0	2.795	34.943	248.9	2.538
20.0	17.997	36.319	241.9	17.993	3150.0	2.769	34.941	248.6	2.507
30.0	17.997	36.319	242.1	17.992	3200.0	2.748	34.938	248.2	2.482
40.0	17.987	36.318	242.2	17.980	3250.0	2.732	34.937	247.7	2.461
50.0	17.837	36.305	242.6	17.828	3300.0	2.709	34.934	247.7	2.433
100.0	15.235	36.184	235.8	15.220	3350.0	2.687	34.932	247.4	2.406
150.0	14.671	36.095	228.3	14.648	3400.0	2.668	34.929	247.2	2.382
200.0	14.002	35.997	228.3	13.973	3450.0	2.651	34.927	247.0	2.360
250.0	13.509	35.905	229.7	13.473	3500.0	2.639	34.926	246.7	2.343
300.0	13.017	35.829	215.9	12.975	3550.0	2.627	34.924	246.3	2.326
350.0	12.589	35.764	210.0	12.541	3600.0	2.608	34.922	246.2	2.302
400.0	12.255	35.719	209.6	12.202	3650.0	2.594	34.920	245.9	2.283
450.0	12.007	35.706	199.7	11.947	3700.0	2.584	34.919	245.6	2.267
500.0	11.832	35.712	196.8	11.766	3750.0	2.573	34.917	245.5	2.251
550.0	11.721	35.733	189.8	11.648	3800.0	2.565	34.916	245.3	2.238
600.0	11.905	35.858	187.8	11.825	3850.0	2.555	34.915	245.1	2.223
650.0	12.048	35.978	183.6	11.960	3900.0	2.546	34.913	245.1	2.208
700.0	11.912	36.020	182.5	11.818	3950.0	2.538	34.912	245.0	2.195
750.0	11.590	35.986	180.7	11.491	4000.0	2.530	34.911	244.9	2.181
800.0	11.536	36.026	179.6	11.431	4050.0	2.525	34.909	244.8	2.170
850.0	11.413	36.055	178.7	11.302	4100.0	2.519	34.908	244.9	2.158
900.0	11.285	36.077	178.1	11.167	4150.0	2.512	34.907	244.7	2.146
950.0	11.180	36.093	177.7	11.056	4200.0	2.505	34.906	244.8	2.133
1000.0	11.119	36.116	177.5	10.989	4250.0	2.496	34.904	244.7	2.119
1050.0	11.042	36.140	178.1	10.905	4300.0	2.492	34.903	244.8	2.109
1100.0	10.968	36.163	178.7	10.826	4350.0	2.489	34.902	244.6	2.100
1150.0	10.640	36.121	181.5	10.494	4400.0	2.486	34.901	244.7	2.092
1200.0	10.183	36.031	185.3	10.034	4450.0	2.486	34.901	244.6	2.085
1250.0	10.016	36.029	186.6	9.861	4500.0	2.485	34.900	244.4	2.078
1300.0	9.433	35.925	193.4	9.278	4550.0	2.488	34.900	244.5	2.075
1350.0	8.690	35.788	200.4	8.535	4600.0	2.488	34.899	244.4	2.069
1400.0	8.035	35.674	207.0	7.881	4650.0	2.489	34.899	244.5	2.064
1450.0	7.548	35.589	212.7	7.393	4700.0	2.492	34.898	244.6	2.061
1500.0	6.885	35.475	221.0	6.732	4750.0	2.495	34.898	244.4	2.057
1550.0	6.406	35.397	226.8	6.253	4800.0	2.498	34.898	244.5	2.054
1600.0	5.898	35.315	233.3	5.745	4850.0	2.501	34.897	244.6	2.050
1650.0	5.562	35.262	238.0	5.408	4900.0	2.504	34.897	244.5	2.047
1700.0	5.228	35.210	242.2	5.073	4950.0	2.509	34.897	244.7	2.045
1750.0	4.916	35.162	246.9	4.761	5000.0	2.513	34.896	244.5	2.043
1800.0	4.701	35.129	250.1	4.543	5050.0	2.518	34.896	244.5	2.042
1850.0	4.485	35.099	253.1	4.325	5100.0	2.523	34.896	244.4	2.040
1900.0	4.337	35.079	254.9	4.174	5150.0	2.529	34.896	244.5	2.040
1950.0	4.205	35.063	256.0	4.039	5200.0	2.536	34.896	244.3	2.039
2000.0	4.036	35.042	257.7	3.868	5250.0	2.542	34.896	244.4	2.039
2050.0	3.920	35.029	258.4	3.748	5300.0	2.548	34.896	244.2	2.039
2100.0	3.869	35.028	258.0	3.694	5350.0	2.554	34.895	244.4	2.037
2150.0	3.804	35.026	256.7	3.624	5400.0	2.560	34.895	244.3	2.036
2200.0	3.750	35.025	255.3	3.566	5430.0	2.564	34.895	244.3	2.036
2250.0	3.655	35.015	255.1	3.468					
2300.0	3.607	35.012	254.6	3.416					
2350.0	3.540	35.009	253.5	3.345					
2400.0	3.471	35.003	253.1	3.272					
2450.0	3.391	34.995	253.4	3.189					
2500.0	3.327	34.990	252.5	3.121					
2550.0	3.275	34.987	251.8	3.065					
2600.0	3.226	34.984	251.0	3.012					
2650.0	3.164	34.978	250.4	2.946					
2700.0	3.100	34.973	250.0	2.879					
2750.0	3.040	34.967	249.7	2.814					
2800.0	3.002	34.964	249.4	2.772					
2850.0	2.948	34.958	249.7	2.714					
2900.0	2.910	34.955	249.6	2.672					
2950.0	2.879	34.951	249.5	2.636					
3000.0	2.848	34.948	249.3	2.601					





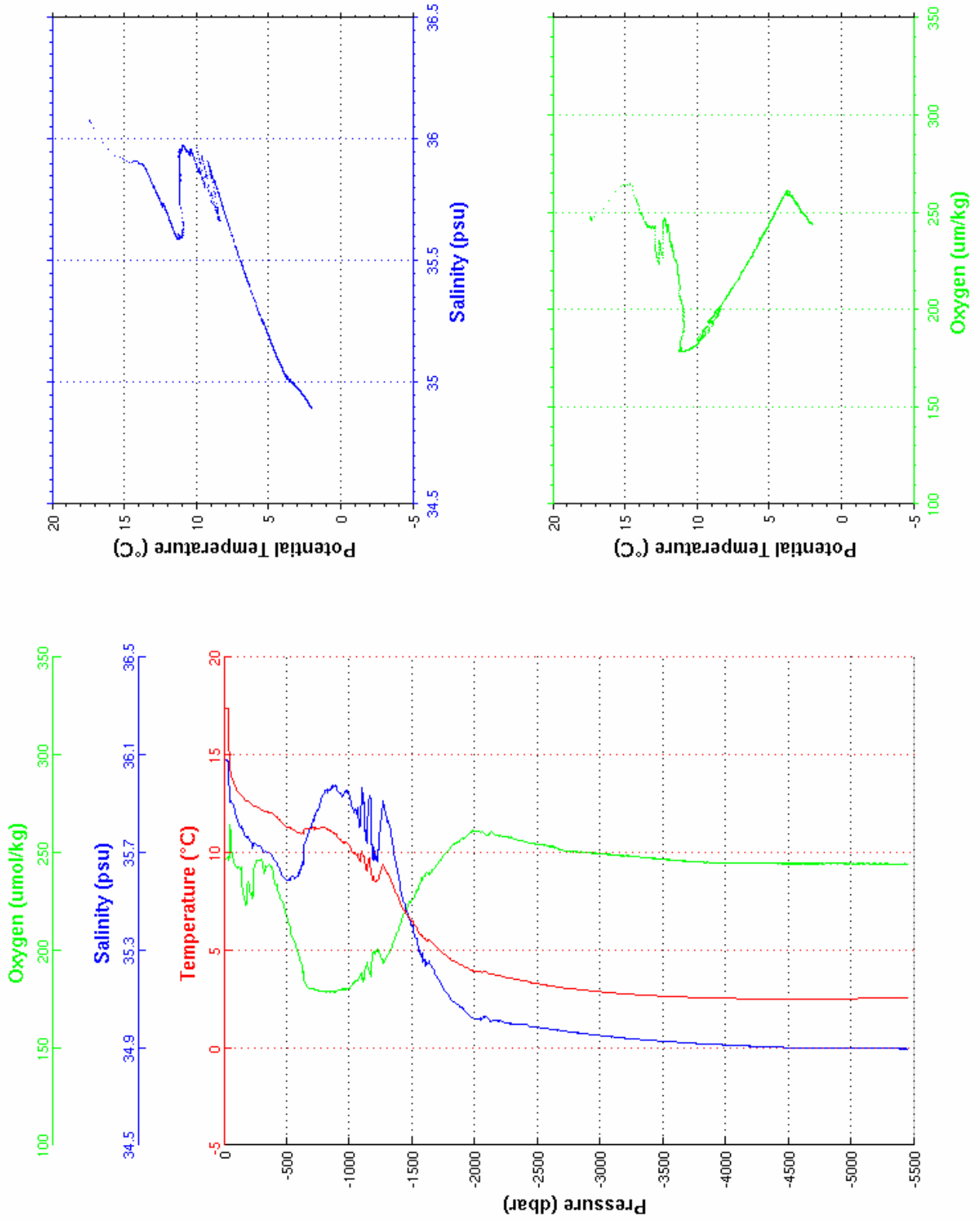
**Cast : 15**

```

-----
Cast       : 16           Cruise    : OVIDE 2010
Date       : 13/06/2010  Ship      : N/O THALASSA
Depth      : 5351 m      Organism  : IFREMER
Position   : N 41  5.12
            W 013 29.52
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.394	36.080	246.1	17.394	3050.0	2.838	34.947	249.2	2.585
10.0	17.392	36.080	247.3	17.391	3100.0	2.807	34.944	249.0	2.550
20.0	17.392	36.079	247.6	17.388	3150.0	2.783	34.941	248.5	2.521
30.0	17.378	36.075	248.0	17.373	3200.0	2.757	34.939	248.5	2.491
40.0	16.160	35.960	255.8	16.153	3250.0	2.729	34.936	248.2	2.458
50.0	14.380	35.909	258.4	14.373	3300.0	2.710	34.934	247.9	2.434
100.0	13.232	35.841	242.2	13.218	3350.0	2.690	34.932	247.5	2.409
150.0	12.839	35.789	228.9	12.819	3400.0	2.674	34.930	247.2	2.388
200.0	12.563	35.753	232.1	12.536	3450.0	2.656	34.928	246.8	2.365
250.0	12.355	35.735	245.1	12.322	3500.0	2.641	34.926	246.5	2.345
300.0	12.242	35.723	246.2	12.202	3550.0	2.627	34.925	246.3	2.326
350.0	12.083	35.701	243.9	12.037	3600.0	2.616	34.923	246.0	2.310
400.0	11.902	35.668	234.7	11.849	3650.0	2.600	34.921	245.8	2.288
450.0	11.619	35.623	225.5	11.560	3700.0	2.588	34.919	245.6	2.271
500.0	11.335	35.589	216.6	11.271	3750.0	2.575	34.918	245.3	2.253
550.0	11.181	35.600	205.2	11.111	3800.0	2.569	34.917	245.1	2.241
600.0	11.009	35.617	196.0	10.933	3850.0	2.559	34.915	245.0	2.226
650.0	11.240	35.748	182.2	11.157	3900.0	2.553	34.914	244.7	2.214
700.0	11.262	35.817	180.2	11.171	3950.0	2.542	34.913	244.8	2.198
750.0	11.221	35.877	179.4	11.125	4000.0	2.533	34.911	244.6	2.184
800.0	11.307	35.952	178.9	11.202	4050.0	2.526	34.910	244.7	2.171
850.0	11.097	35.956	178.7	10.987	4100.0	2.518	34.909	244.7	2.158
900.0	10.867	35.961	178.7	10.752	4150.0	2.512	34.907	244.7	2.146
950.0	10.541	35.937	179.8	10.421	4200.0	2.509	34.906	244.6	2.137
1000.0	10.353	35.933	180.8	10.229	4250.0	2.505	34.906	244.5	2.128
1050.0	9.925	35.869	184.3	9.797	4300.0	2.498	34.904	244.6	2.115
1100.0	10.102	35.963	184.6	9.966	4350.0	2.494	34.903	244.5	2.105
1150.0	9.507	35.865	190.9	9.370	4400.0	2.489	34.902	244.4	2.094
1200.0	8.713	35.705	197.9	8.577	4450.0	2.487	34.901	244.5	2.086
1250.0	9.107	35.843	195.9	8.960	4500.0	2.487	34.900	244.3	2.080
1300.0	8.905	35.823	197.9	8.754	4550.0	2.487	34.900	244.2	2.074
1350.0	8.295	35.717	204.4	8.144	4600.0	2.488	34.900	244.3	2.069
1400.0	7.534	35.581	212.9	7.385	4650.0	2.490	34.899	244.3	2.064
1450.0	6.936	35.476	220.1	6.788	4700.0	2.492	34.899	244.4	2.060
1500.0	6.479	35.400	226.5	6.330	4750.0	2.496	34.898	244.3	2.058
1550.0	5.967	35.314	232.4	5.819	4800.0	2.499	34.898	244.3	2.055
1600.0	5.621	35.263	238.3	5.471	4850.0	2.503	34.898	244.4	2.052
1650.0	5.432	35.239	240.1	5.280	4900.0	2.507	34.898	244.4	2.050
1700.0	5.123	35.190	244.4	4.970	4950.0	2.511	34.897	244.3	2.048
1750.0	4.828	35.143	248.6	4.673	5000.0	2.516	34.897	244.3	2.046
1800.0	4.564	35.105	252.3	4.407	5050.0	2.520	34.897	244.3	2.044
1850.0	4.391	35.083	254.9	4.232	5100.0	2.525	34.896	244.2	2.042
1900.0	4.256	35.066	257.1	4.094	5150.0	2.531	34.896	244.2	2.041
1950.0	4.036	35.033	259.7	3.872	5200.0	2.536	34.896	244.3	2.040
2000.0	3.900	35.015	261.4	3.734	5250.0	2.542	34.896	244.2	2.039
2050.0	3.864	35.017	260.9	3.693	5300.0	2.548	34.896	244.3	2.038
2100.0	3.859	35.024	258.8	3.684	5350.0	2.554	34.896	244.1	2.038
2150.0	3.745	35.011	259.8	3.566	5400.0	2.560	34.896	244.2	2.037
2200.0	3.692	35.011	258.6	3.510	5448.0	2.566	34.896	244.2	2.036
2250.0	3.602	35.002	258.2	3.416					
2300.0	3.543	34.999	257.6	3.353					
2350.0	3.479	34.997	256.2	3.285					
2400.0	3.428	34.995	255.5	3.230					
2450.0	3.338	34.986	254.9	3.137					
2500.0	3.269	34.981	254.2	3.064					
2550.0	3.220	34.978	253.8	3.011					
2600.0	3.171	34.975	253.3	2.957					
2650.0	3.121	34.972	252.1	2.903					
2700.0	3.070	34.968	251.0	2.848					
2750.0	3.033	34.965	250.6	2.808					
2800.0	2.998	34.962	250.5	2.768					
2850.0	2.965	34.959	250.3	2.731					
2900.0	2.929	34.956	250.1	2.690					
2950.0	2.892	34.952	249.8	2.649					
3000.0	2.861	34.950	249.5	2.614					



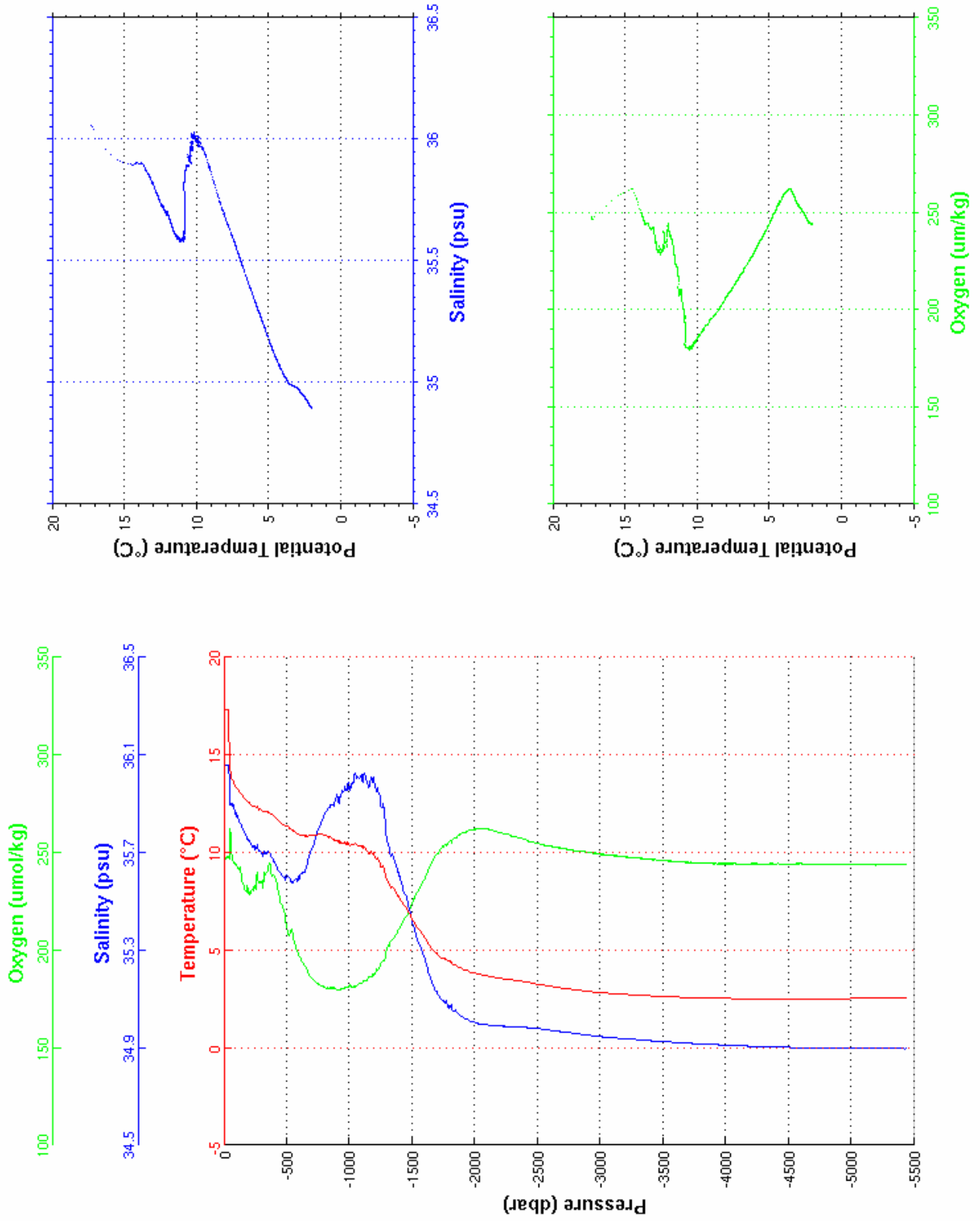
**Cast : 16**

```

-----
Cast       : 17           Cruise    : OVIDE 2010
Date       : 13/06/2010  Ship     : N/O THALASSA
Depth      : 5347 m      Organism  : IFREMER
Position   : N 41 22.98
            W 013 53.26
-----

```

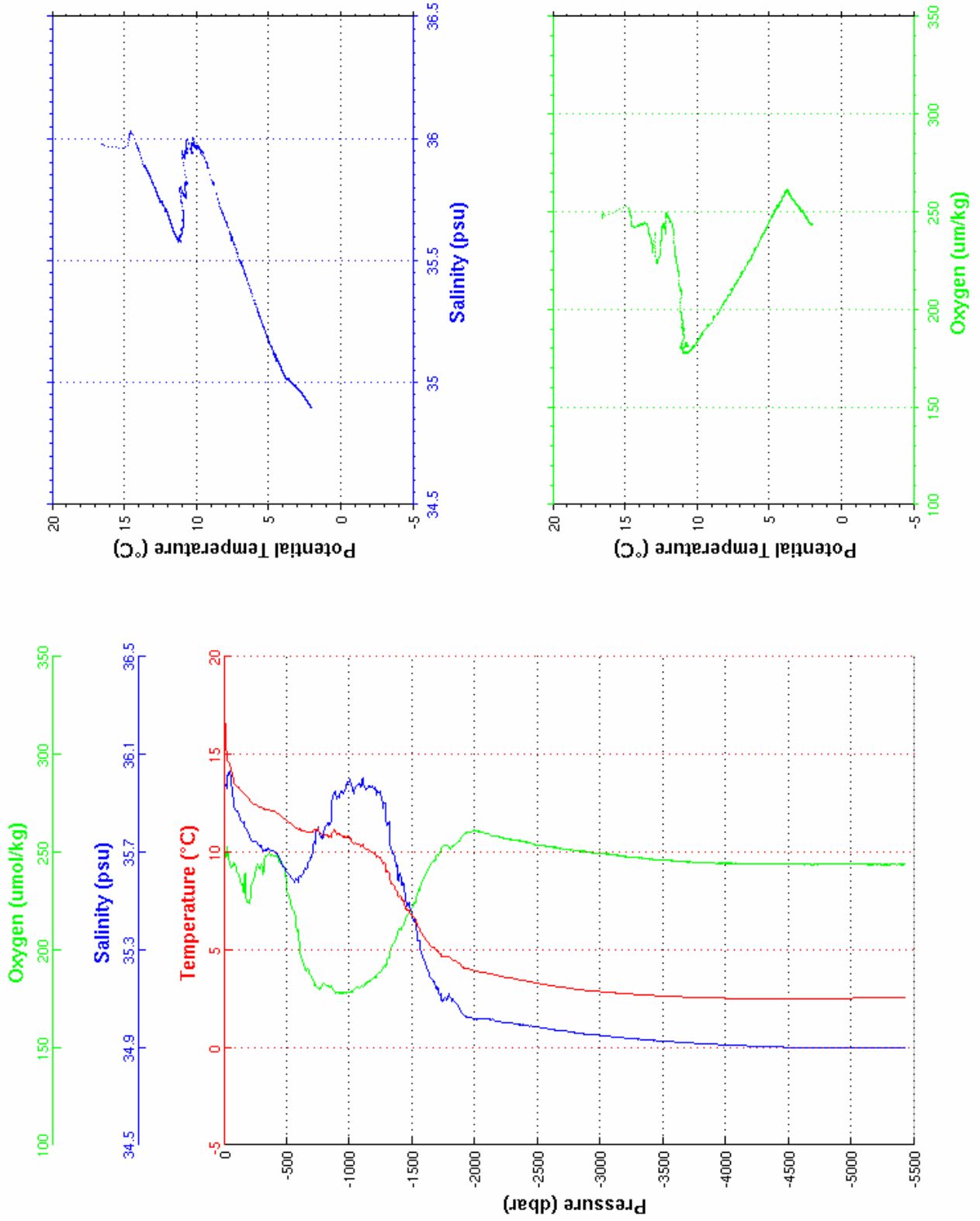
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.292	36.055	246.4	17.292	3050.0	2.794	34.943	248.9	2.542
10.0	17.294	36.056	247.5	17.293	3100.0	2.769	34.941	248.5	2.513
20.0	17.300	36.056	247.8	17.297	3150.0	2.748	34.939	248.2	2.487
30.0	17.303	36.056	247.8	17.298	3200.0	2.729	34.937	247.8	2.463
40.0	16.716	36.005	250.1	16.710	3250.0	2.710	34.935	247.4	2.439
50.0	14.272	35.899	258.4	14.265	3300.0	2.696	34.933	247.2	2.420
100.0	13.322	35.855	242.5	13.308	3350.0	2.676	34.931	246.7	2.395
150.0	12.873	35.793	234.6	12.853	3400.0	2.657	34.929	246.5	2.371
200.0	12.555	35.745	229.0	12.528	3450.0	2.634	34.926	246.2	2.344
250.0	12.311	35.714	231.8	12.277	3500.0	2.623	34.925	245.9	2.328
300.0	12.146	35.697	235.1	12.106	3550.0	2.612	34.923	245.8	2.312
350.0	12.077	35.703	242.6	12.031	3600.0	2.595	34.921	245.5	2.289
400.0	11.846	35.660	237.3	11.793	3650.0	2.581	34.919	245.1	2.270
450.0	11.554	35.615	223.7	11.495	3700.0	2.570	34.918	244.9	2.254
500.0	11.340	35.600	210.2	11.276	3750.0	2.564	34.917	244.8	2.242
550.0	11.127	35.583	206.4	11.057	3800.0	2.556	34.916	244.7	2.229
600.0	10.934	35.596	196.5	10.859	3850.0	2.547	34.914	244.6	2.214
650.0	10.851	35.630	191.1	10.769	3900.0	2.540	34.913	244.4	2.202
700.0	10.881	35.716	184.9	10.793	3950.0	2.531	34.912	244.4	2.187
750.0	10.950	35.796	182.7	10.855	4000.0	2.524	34.910	244.2	2.175
800.0	10.891	35.858	180.9	10.789	4050.0	2.519	34.909	244.3	2.164
850.0	10.739	35.889	180.6	10.632	4100.0	2.512	34.908	244.2	2.152
900.0	10.671	35.934	179.5	10.557	4150.0	2.509	34.907	244.2	2.143
950.0	10.528	35.951	180.3	10.409	4200.0	2.505	34.906	244.2	2.134
1000.0	10.366	35.955	182.2	10.242	4250.0	2.501	34.905	244.2	2.124
1050.0	10.429	36.015	181.9	10.297	4300.0	2.498	34.904	244.0	2.115
1100.0	10.333	36.014	182.7	10.196	4350.0	2.495	34.903	244.4	2.106
1150.0	9.983	35.971	186.4	9.842	4400.0	2.495	34.903	244.1	2.100
1200.0	9.869	35.984	187.9	9.722	4450.0	2.492	34.902	244.0	2.091
1250.0	9.278	35.887	193.8	9.130	4500.0	2.494	34.901	244.1	2.087
1300.0	8.609	35.758	200.5	8.461	4550.0	2.494	34.901	244.2	2.080
1350.0	8.180	35.686	206.0	8.030	4600.0	2.495	34.900	244.2	2.076
1400.0	7.652	35.600	211.7	7.502	4650.0	2.495	34.900	244.0	2.070
1450.0	7.201	35.524	217.4	7.050	4700.0	2.498	34.899	244.1	2.066
1500.0	6.570	35.415	224.5	6.421	4750.0	2.500	34.899	243.9	2.062
1550.0	6.058	35.329	231.4	5.909	4800.0	2.503	34.898	244.1	2.059
1600.0	5.660	35.265	236.5	5.510	4850.0	2.507	34.898	244.1	2.056
1650.0	5.122	35.177	244.4	4.974	4900.0	2.511	34.898	244.1	2.054
1700.0	4.803	35.127	249.6	4.654	4950.0	2.516	34.898	244.0	2.053
1750.0	4.576	35.092	253.2	4.425	5000.0	2.521	34.898	244.1	2.051
1800.0	4.368	35.065	256.2	4.215	5050.0	2.525	34.897	244.0	2.049
1850.0	4.241	35.050	257.7	4.085	5100.0	2.531	34.897	243.9	2.047
1900.0	4.051	35.026	260.0	3.893	5150.0	2.537	34.897	243.7	2.047
1950.0	3.928	35.014	260.9	3.767	5200.0	2.543	34.897	243.8	2.047
2000.0	3.812	35.001	262.0	3.647	5250.0	2.549	34.897	243.9	2.045
2050.0	3.738	34.996	262.0	3.570	5300.0	2.553	34.896	244.0	2.043
2100.0	3.682	34.994	261.8	3.509	5350.0	2.557	34.896	243.9	2.040
2150.0	3.613	34.991	261.0	3.437	5400.0	2.561	34.896	244.1	2.037
2200.0	3.566	34.989	260.1	3.386	5438.0	2.566	34.896	244.3	2.037
2250.0	3.516	34.987	259.4	3.332					
2300.0	3.472	34.986	258.4	3.283					
2350.0	3.421	34.984	257.6	3.228					
2400.0	3.367	34.983	256.6	3.171					
2450.0	3.326	34.982	255.6	3.125					
2500.0	3.250	34.978	254.6	3.045					
2550.0	3.202	34.975	253.9	2.993					
2600.0	3.147	34.972	253.3	2.934					
2650.0	3.102	34.969	252.8	2.885					
2700.0	3.045	34.964	252.2	2.824					
2750.0	3.003	34.961	251.5	2.778					
2800.0	2.952	34.957	250.9	2.723					
2850.0	2.924	34.955	250.6	2.690					
2900.0	2.887	34.951	250.1	2.649					
2950.0	2.850	34.948	249.7	2.608					
3000.0	2.821	34.946	249.4	2.574					



Cast : 17

Cast	: 18	Cruise	: OVIDE 2010
Date	: 14/06/2010	Ship	: N/O THALASSA
Depth	: 5339 m	Organism	: IFREMER
Position	: N 41 40.96 W 014 16.63		

PRESSURE	TEMPERATURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERATURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.569	35.975	246.8	16.569	3050.0	2.830	34.946	249.2	2.577
10.0	16.571	35.975	248.4	16.570	3100.0	2.799	34.943	248.7	2.543
20.0	15.567	35.965	250.5	15.564	3150.0	2.772	34.941	248.3	2.511
30.0	14.646	36.019	248.2	14.641	3200.0	2.751	34.939	247.6	2.484
40.0	14.567	36.033	244.5	14.561	3250.0	2.729	34.936	247.3	2.458
50.0	14.421	36.017	242.4	14.413	3300.0	2.703	34.934	247.3	2.427
100.0	13.380	35.867	240.0	13.366	3350.0	2.686	34.932	246.7	2.405
150.0	13.078	35.823	231.0	13.057	3400.0	2.668	34.930	246.4	2.382
200.0	12.723	35.770	224.9	12.696	3450.0	2.647	34.928	246.1	2.356
250.0	12.450	35.743	241.1	12.416	3500.0	2.633	34.926	245.9	2.337
300.0	12.280	35.723	243.9	12.240	3550.0	2.618	34.924	245.7	2.317
350.0	12.181	35.714	249.2	12.134	3600.0	2.602	34.922	245.4	2.296
400.0	12.082	35.699	247.4	12.029	3650.0	2.590	34.920	245.3	2.278
450.0	11.891	35.664	245.1	11.831	3700.0	2.578	34.919	245.0	2.261
500.0	11.601	35.613	230.0	11.536	3750.0	2.566	34.917	244.8	2.244
550.0	11.358	35.584	219.4	11.287	3800.0	2.558	34.916	244.8	2.231
600.0	11.233	35.605	200.3	11.156	3850.0	2.548	34.914	244.5	2.216
650.0	11.052	35.631	189.3	10.969	3900.0	2.539	34.913	244.4	2.201
700.0	11.003	35.692	185.1	10.914	3950.0	2.529	34.912	244.4	2.186
750.0	11.200	35.800	180.1	11.103	4000.0	2.520	34.910	244.3	2.171
800.0	10.881	35.797	182.3	10.780	4050.0	2.514	34.909	244.3	2.159
850.0	10.743	35.816	181.3	10.636	4100.0	2.509	34.908	244.2	2.148
900.0	10.934	35.921	177.9	10.819	4150.0	2.507	34.907	244.1	2.141
950.0	10.792	35.941	178.0	10.671	4200.0	2.501	34.906	244.1	2.130
1000.0	10.761	35.994	178.4	10.633	4250.0	2.497	34.905	244.0	2.120
1050.0	10.434	35.968	180.4	10.302	4300.0	2.493	34.904	243.9	2.110
1100.0	10.400	36.002	181.0	10.262	4350.0	2.490	34.903	243.9	2.101
1150.0	10.117	35.965	183.8	9.975	4400.0	2.489	34.902	243.8	2.094
1200.0	9.923	35.957	186.1	9.776	4450.0	2.487	34.901	243.9	2.086
1250.0	9.686	35.939	189.1	9.534	4500.0	2.487	34.901	243.9	2.080
1300.0	9.024	35.820	195.2	8.872	4550.0	2.490	34.900	243.8	2.076
1350.0	8.321	35.694	203.4	8.170	4600.0	2.490	34.900	243.8	2.071
1400.0	7.798	35.614	210.1	7.646	4650.0	2.493	34.899	243.7	2.067
1450.0	7.143	35.499	217.1	6.993	4700.0	2.495	34.899	243.6	2.064
1500.0	6.773	35.444	222.0	6.621	4750.0	2.498	34.899	243.8	2.060
1550.0	6.144	35.336	230.6	5.994	4800.0	2.502	34.898	243.9	2.058
1600.0	5.638	35.252	237.8	5.488	4850.0	2.505	34.898	243.8	2.054
1650.0	5.191	35.180	244.5	5.041	4900.0	2.510	34.898	243.9	2.052
1700.0	4.942	35.145	248.1	4.790	4950.0	2.515	34.898	243.8	2.052
1750.0	4.616	35.097	253.5	4.464	5000.0	2.520	34.897	243.8	2.050
1800.0	4.608	35.106	251.6	4.452	5050.0	2.524	34.897	243.8	2.048
1850.0	4.426	35.080	254.2	4.267	5100.0	2.530	34.897	243.8	2.047
1900.0	4.127	35.036	258.6	3.967	5150.0	2.535	34.897	243.7	2.045
1950.0	4.034	35.027	260.1	3.871	5200.0	2.540	34.897	243.8	2.044
2000.0	3.915	35.015	261.2	3.749	5250.0	2.545	34.897	243.7	2.041
2050.0	3.847	35.014	260.4	3.677	5300.0	2.551	34.896	243.9	2.041
2100.0	3.779	35.011	259.6	3.605	5350.0	2.557	34.896	243.7	2.041
2150.0	3.727	35.011	258.1	3.549	5400.0	2.563	34.896	243.8	2.040
2200.0	3.653	35.005	257.8	3.472	5432.0	2.567	34.896	243.7	2.039
2250.0	3.588	35.002	256.8	3.402					
2300.0	3.539	34.999	256.3	3.349					
2350.0	3.468	34.994	256.0	3.274					
2400.0	3.429	34.992	255.2	3.231					
2450.0	3.352	34.988	254.4	3.150					
2500.0	3.283	34.984	253.6	3.078					
2550.0	3.226	34.979	253.2	3.017					
2600.0	3.173	34.975	252.9	2.960					
2650.0	3.124	34.971	252.1	2.906					
2700.0	3.081	34.968	251.6	2.859					
2750.0	3.043	34.965	251.3	2.817					
2800.0	2.990	34.961	250.9	2.760					
2850.0	2.944	34.957	250.4	2.710					
2900.0	2.915	34.954	250.1	2.676					
2950.0	2.886	34.952	249.6	2.643					
3000.0	2.858	34.949	249.3	2.610					



Cast : 18

```

-----
Cast       : 19           Cruise    : OVIDE 2010
Date       : 14/06/2010  Ship     : N/O THALASSA
Depth      : 5333 m      Organism  : IFREMER
Position   : N 41 58.95
            W 014 40.35
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.712	35.903	250.8	16.712	3050.0	2.828	34.946	249.0	2.575
10.0	16.711	35.903	251.6	16.709	3100.0	2.803	34.943	248.7	2.546
20.0	16.682	35.905	252.4	16.679	3150.0	2.779	34.941	248.4	2.517
30.0	16.565	35.913	251.0	16.560	3200.0	2.759	34.939	247.9	2.492
40.0	14.473	35.836	262.4	14.467	3250.0	2.735	34.937	247.5	2.464
50.0	13.623	35.823	259.6	13.615	3300.0	2.710	34.934	247.3	2.434
100.0	12.827	35.779	247.0	12.814	3350.0	2.686	34.932	246.9	2.406
150.0	12.568	35.751	243.7	12.548	3400.0	2.668	34.930	246.5	2.382
200.0	12.375	35.734	245.4	12.348	3450.0	2.651	34.928	246.1	2.361
250.0	12.223	35.709	251.6	12.190	3500.0	2.631	34.926	245.9	2.336
300.0	12.141	35.698	251.3	12.102	3550.0	2.618	34.924	245.6	2.317
350.0	12.091	35.696	250.2	12.044	3600.0	2.602	34.922	245.1	2.296
400.0	11.986	35.678	247.1	11.933	3650.0	2.588	34.920	245.0	2.276
450.0	11.751	35.637	249.3	11.692	3700.0	2.575	34.919	244.8	2.259
500.0	11.590	35.612	240.3	11.525	3750.0	2.564	34.917	244.7	2.243
550.0	11.390	35.592	229.9	11.319	3800.0	2.559	34.916	244.5	2.231
600.0	11.150	35.568	216.8	11.074	3850.0	2.546	34.914	244.5	2.214
650.0	10.989	35.583	202.8	10.906	3900.0	2.536	34.912	244.3	2.198
700.0	10.799	35.600	194.6	10.711	3950.0	2.532	34.912	244.2	2.189
750.0	10.908	35.690	187.4	10.813	4000.0	2.527	34.911	244.1	2.178
800.0	10.787	35.745	180.8	10.686	4050.0	2.519	34.909	244.0	2.165
850.0	10.598	35.769	180.3	10.491	4100.0	2.514	34.908	244.1	2.154
900.0	10.607	35.845	180.1	10.494	4150.0	2.509	34.907	244.0	2.143
950.0	10.406	35.847	180.6	10.288	4200.0	2.505	34.906	243.8	2.133
1000.0	10.245	35.862	180.9	10.122	4250.0	2.501	34.905	243.9	2.123
1050.0	9.857	35.834	184.1	9.730	4300.0	2.496	34.904	243.9	2.113
1100.0	9.580	35.812	187.3	9.448	4350.0	2.495	34.904	243.8	2.106
1150.0	9.361	35.814	190.4	9.225	4400.0	2.493	34.903	243.9	2.098
1200.0	9.046	35.775	194.3	8.906	4450.0	2.493	34.902	243.7	2.092
1250.0	8.788	35.756	197.4	8.645	4500.0	2.493	34.901	243.6	2.086
1300.0	8.275	35.679	203.7	8.130	4550.0	2.494	34.901	243.7	2.081
1350.0	7.775	35.596	209.9	7.630	4600.0	2.495	34.900	243.7	2.076
1400.0	7.841	35.640	209.2	7.689	4650.0	2.498	34.900	243.7	2.072
1450.0	7.481	35.589	212.9	7.327	4700.0	2.500	34.900	243.6	2.068
1500.0	6.723	35.450	222.6	6.571	4750.0	2.503	34.899	243.6	2.065
1550.0	6.227	35.371	228.9	6.076	4800.0	2.507	34.899	243.8	2.062
1600.0	5.551	35.249	238.9	5.403	4850.0	2.510	34.898	243.7	2.059
1650.0	5.176	35.187	245.5	5.027	4900.0	2.514	34.898	243.7	2.057
1700.0	4.909	35.146	248.5	4.758	4950.0	2.518	34.898	243.8	2.054
1750.0	4.773	35.132	249.4	4.619	5000.0	2.522	34.898	243.7	2.052
1800.0	4.535	35.095	253.6	4.379	5050.0	2.527	34.898	243.6	2.051
1850.0	4.273	35.052	258.2	4.116	5100.0	2.533	34.897	243.7	2.050
1900.0	4.165	35.040	258.6	4.005	5150.0	2.538	34.897	243.6	2.048
1950.0	3.927	35.006	262.9	3.766	5200.0	2.544	34.897	243.5	2.047
2000.0	3.832	34.997	264.3	3.667	5250.0	2.549	34.897	243.5	2.046
2050.0	3.841	35.010	261.3	3.671	5300.0	2.554	34.897	243.5	2.044
2100.0	3.801	35.010	260.3	3.627	5350.0	2.560	34.897	243.6	2.043
2150.0	3.729	35.007	259.9	3.551	5400.0	2.566	34.896	243.7	2.042
2200.0	3.607	34.992	260.9	3.426	5429.0	2.569	34.896	243.8	2.041
2250.0	3.605	34.997	259.6	3.419					
2300.0	3.510	34.989	259.8	3.320					
2350.0	3.442	34.985	259.2	3.249					
2400.0	3.434	34.990	256.1	3.236					
2450.0	3.376	34.984	256.3	3.174					
2500.0	3.336	34.983	256.0	3.130					
2550.0	3.267	34.979	255.5	3.057					
2600.0	3.208	34.975	254.3	2.995					
2650.0	3.143	34.970	253.8	2.926					
2700.0	3.091	34.967	252.9	2.869					
2750.0	3.043	34.964	252.2	2.817					
2800.0	2.999	34.960	251.7	2.769					
2850.0	2.957	34.957	250.6	2.722					
2900.0	2.917	34.953	250.3	2.678					
2950.0	2.883	34.951	250.0	2.640					
3000.0	2.854	34.948	249.4	2.606					

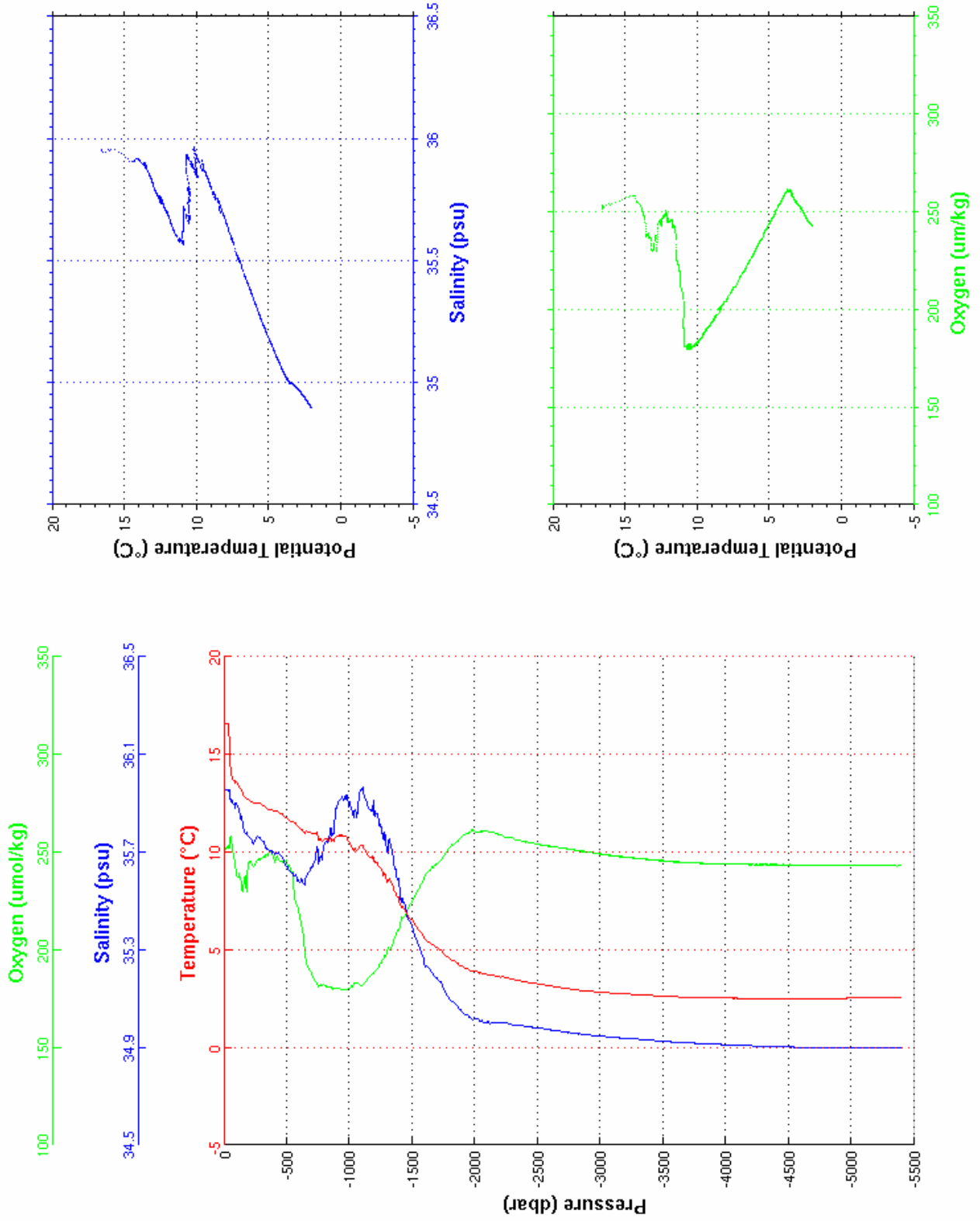




Cast : 19

Cast	: 20	Cruise	: OVIDE 2010
Date	: 14/06/2010	Ship	: N/O THALASSA
Depth	: 5307 m	Organism	: IFREMER
Position	: N 42 16.91 W 015 3.95		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.589	35.956	251.6	16.588	3050.0	2.801	34.944	248.6	2.550
10.0	16.584	35.956	251.7	16.582	3100.0	2.780	34.942	248.3	2.523
20.0	16.586	35.956	252.4	16.582	3150.0	2.758	34.940	247.7	2.496
30.0	16.589	35.957	252.5	16.584	3200.0	2.738	34.937	247.5	2.472
40.0	16.267	35.945	253.4	16.260	3250.0	2.720	34.936	247.2	2.449
50.0	14.502	35.906	258.5	14.495	3300.0	2.700	34.933	246.8	2.424
100.0	13.548	35.895	237.5	13.534	3350.0	2.676	34.931	246.5	2.395
150.0	13.044	35.816	231.2	13.023	3400.0	2.661	34.929	246.2	2.376
200.0	12.675	35.761	245.4	12.647	3450.0	2.643	34.927	245.9	2.352
250.0	12.527	35.755	244.8	12.494	3500.0	2.627	34.925	245.7	2.331
300.0	12.442	35.750	246.7	12.401	3550.0	2.613	34.923	245.3	2.312
350.0	12.221	35.712	249.3	12.174	3600.0	2.593	34.921	245.1	2.287
400.0	12.106	35.695	245.3	12.053	3650.0	2.585	34.920	244.9	2.274
450.0	11.990	35.684	245.2	11.930	3700.0	2.573	34.918	244.4	2.257
500.0	11.760	35.643	244.0	11.694	3750.0	2.568	34.918	244.5	2.246
550.0	11.537	35.608	237.5	11.465	3800.0	2.555	34.916	244.4	2.228
600.0	11.246	35.578	217.2	11.169	3850.0	2.548	34.915	244.2	2.216
650.0	11.018	35.592	195.3	10.935	3900.0	2.542	34.913	244.1	2.204
700.0	10.978	35.637	187.0	10.889	3950.0	2.534	34.912	243.9	2.190
750.0	10.799	35.684	181.9	10.705	4000.0	2.531	34.911	244.0	2.182
800.0	10.670	35.733	181.7	10.569	4050.0	2.521	34.910	243.9	2.167
850.0	10.725	35.798	180.1	10.618	4100.0	2.519	34.909	243.8	2.158
900.0	10.821	35.891	180.2	10.706	4150.0	2.511	34.908	243.7	2.145
950.0	10.814	35.916	179.8	10.692	4200.0	2.508	34.907	243.7	2.136
1000.0	10.507	35.906	180.4	10.381	4250.0	2.506	34.906	243.7	2.128
1050.0	10.154	35.864	182.2	10.024	4300.0	2.502	34.905	243.7	2.119
1100.0	10.318	35.960	182.1	10.181	4350.0	2.497	34.904	243.7	2.108
1150.0	9.780	35.876	186.0	9.640	4400.0	2.496	34.903	243.6	2.101
1200.0	9.470	35.847	189.4	9.326	4450.0	2.495	34.902	243.4	2.094
1250.0	9.187	35.813	193.2	9.040	4500.0	2.493	34.901	243.5	2.086
1300.0	8.512	35.702	200.2	8.365	4550.0	2.494	34.901	243.5	2.081
1350.0	8.235	35.681	203.7	8.084	4600.0	2.495	34.900	243.4	2.076
1400.0	7.476	35.550	211.7	7.328	4650.0	2.497	34.900	243.4	2.072
1450.0	6.977	35.468	218.9	6.828	4700.0	2.499	34.899	243.2	2.068
1500.0	6.516	35.397	224.9	6.367	4750.0	2.502	34.899	243.3	2.064
1550.0	6.025	35.317	231.4	5.876	4800.0	2.506	34.899	243.3	2.062
1600.0	5.522	35.236	238.3	5.374	4850.0	2.509	34.898	243.4	2.059
1650.0	5.317	35.207	241.5	5.166	4900.0	2.514	34.898	243.4	2.057
1700.0	5.122	35.180	244.4	4.968	4950.0	2.519	34.898	243.3	2.055
1750.0	4.819	35.138	248.3	4.664	5000.0	2.524	34.898	243.4	2.053
1800.0	4.526	35.096	252.9	4.370	5050.0	2.528	34.897	243.4	2.051
1850.0	4.358	35.074	255.2	4.200	5100.0	2.533	34.897	243.3	2.049
1900.0	4.154	35.046	258.2	3.994	5150.0	2.539	34.897	243.2	2.049
1950.0	4.004	35.027	259.9	3.841	5200.0	2.545	34.897	243.2	2.048
2000.0	3.908	35.019	260.3	3.742	5250.0	2.551	34.897	243.2	2.048
2050.0	3.802	35.010	260.5	3.632	5300.0	2.558	34.897	243.2	2.048
2100.0	3.733	35.004	260.7	3.559	5350.0	2.564	34.897	243.0	2.047
2150.0	3.681	35.003	260.0	3.503	5398.0	2.571	34.897	243.2	2.047
2200.0	3.598	34.996	259.4	3.417					
2250.0	3.577	35.000	257.5	3.391					
2300.0	3.484	34.993	257.0	3.295					
2350.0	3.429	34.990	256.0	3.236					
2400.0	3.368	34.987	255.2	3.171					
2450.0	3.311	34.984	254.7	3.110					
2500.0	3.263	34.981	254.1	3.058					
2550.0	3.204	34.977	253.5	2.995					
2600.0	3.140	34.972	253.0	2.928					
2650.0	3.101	34.969	252.7	2.884					
2700.0	3.041	34.964	252.0	2.820					
2750.0	2.997	34.961	251.6	2.772					
2800.0	2.958	34.957	251.1	2.729					
2850.0	2.914	34.954	250.5	2.680					
2900.0	2.887	34.952	250.1	2.649					
2950.0	2.854	34.949	249.6	2.612					
3000.0	2.832	34.946	249.0	2.585					



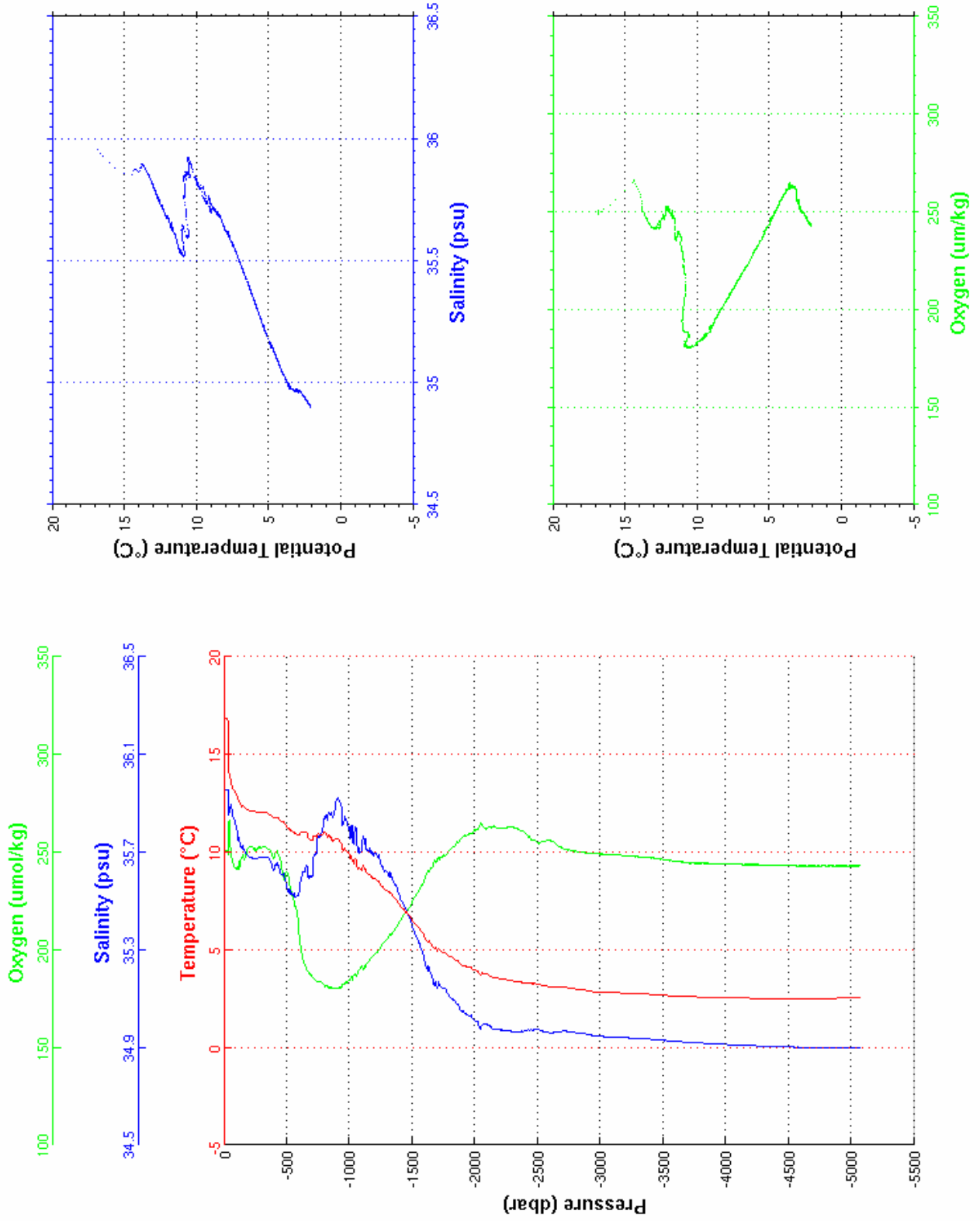
**Cast : 20**

```

-----
Cast       : 21           Cruise    : OVIDE 2010
Date       : 15/06/2010  Ship     : N/O THALASSA
Depth      : 4989 m      Organism  : IFREMER
Position   : N 42 34.88
            W 015 27.68
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.841	35.957	250.1	16.841	3050.0	2.809	34.944	248.8	2.557
10.0	16.844	35.957	250.5	16.842	3100.0	2.803	34.943	248.7	2.546
20.0	16.845	35.957	250.8	16.842	3150.0	2.792	34.942	248.5	2.530
30.0	16.847	35.957	249.0	16.842	3200.0	2.772	34.940	248.1	2.505
40.0	14.324	35.875	264.2	14.318	3250.0	2.760	34.938	247.9	2.488
50.0	13.803	35.896	251.7	13.796	3300.0	2.749	34.937	247.6	2.472
100.0	12.940	35.796	242.0	12.926	3350.0	2.738	34.936	247.4	2.455
150.0	12.392	35.727	248.2	12.372	3400.0	2.714	34.933	247.2	2.427
200.0	12.141	35.681	252.8	12.115	3450.0	2.688	34.931	246.6	2.397
250.0	12.080	35.675	251.0	12.047	3500.0	2.669	34.929	246.2	2.373
300.0	12.031	35.675	252.5	11.991	3550.0	2.645	34.926	245.7	2.344
350.0	11.992	35.673	251.6	11.945	3600.0	2.632	34.924	245.3	2.326
400.0	11.753	35.634	247.9	11.700	3650.0	2.621	34.923	245.1	2.309
450.0	11.603	35.611	245.6	11.544	3700.0	2.602	34.921	244.4	2.285
500.0	11.338	35.563	239.6	11.274	3750.0	2.592	34.919	244.2	2.270
550.0	11.023	35.523	226.2	10.954	3800.0	2.583	34.918	244.3	2.255
600.0	10.920	35.544	206.1	10.844	3850.0	2.569	34.916	244.1	2.236
650.0	11.053	35.639	190.8	10.971	3900.0	2.560	34.915	244.1	2.222
700.0	10.585	35.597	186.3	10.498	3950.0	2.552	34.913	243.9	2.208
750.0	10.938	35.759	183.6	10.843	4000.0	2.544	34.912	244.0	2.195
800.0	10.998	35.845	181.4	10.895	4050.0	2.537	34.911	243.9	2.182
850.0	10.777	35.865	180.3	10.670	4100.0	2.535	34.910	243.8	2.174
900.0	10.692	35.920	180.2	10.578	4150.0	2.527	34.909	243.8	2.160
950.0	10.091	35.813	183.2	9.975	4200.0	2.518	34.907	243.7	2.146
1000.0	9.871	35.800	184.4	9.750	4250.0	2.514	34.906	243.7	2.136
1050.0	9.662	35.801	186.4	9.536	4300.0	2.511	34.905	243.5	2.127
1100.0	9.238	35.749	191.0	9.109	4350.0	2.507	34.904	243.3	2.118
1150.0	8.890	35.707	194.4	8.758	4400.0	2.504	34.903	243.3	2.109
1200.0	8.648	35.694	198.0	8.512	4450.0	2.501	34.903	243.3	2.100
1250.0	8.316	35.652	201.7	8.177	4500.0	2.499	34.902	243.3	2.092
1300.0	8.018	35.616	205.8	7.876	4550.0	2.499	34.901	243.1	2.086
1350.0	7.708	35.577	209.8	7.563	4600.0	2.502	34.901	243.0	2.083
1400.0	7.319	35.521	214.7	7.173	4650.0	2.504	34.900	243.0	2.078
1450.0	6.946	35.464	219.5	6.797	4700.0	2.508	34.900	243.0	2.076
1500.0	6.515	35.398	224.5	6.366	4750.0	2.511	34.900	242.9	2.073
1550.0	6.134	35.335	230.3	5.984	4800.0	2.514	34.899	243.1	2.069
1600.0	5.624	35.250	236.6	5.474	4850.0	2.517	34.899	243.0	2.066
1650.0	5.341	35.207	241.4	5.190	4900.0	2.522	34.899	243.0	2.065
1700.0	4.961	35.144	246.5	4.810	4950.0	2.527	34.898	243.0	2.063
1750.0	4.869	35.141	248.3	4.714	5000.0	2.532	34.898	243.0	2.061
1800.0	4.631	35.108	251.5	4.474	5050.0	2.538	34.898	243.0	2.061
1850.0	4.441	35.078	254.3	4.282	5074.0	2.540	34.898	243.0	2.060
1900.0	4.237	35.047	257.6	4.075					
1950.0	4.100	35.031	259.3	3.935					
2000.0	3.950	35.012	261.3	3.783					
2050.0	3.751	34.984	264.5	3.582					
2100.0	3.742	34.992	262.1	3.569					
2150.0	3.587	34.975	263.3	3.411					
2200.0	3.513	34.972	262.2	3.333					
2250.0	3.464	34.969	262.5	3.280					
2300.0	3.400	34.964	262.8	3.212					
2350.0	3.345	34.965	261.6	3.153					
2400.0	3.323	34.969	259.5	3.127					
2450.0	3.284	34.971	256.4	3.084					
2500.0	3.246	34.974	254.9	3.041					
2550.0	3.176	34.965	255.5	2.968					
2600.0	3.102	34.960	255.9	2.890					
2650.0	3.107	34.965	253.4	2.890					
2700.0	3.098	34.968	251.6	2.876					
2750.0	3.047	34.965	251.0	2.821					
2800.0	2.988	34.960	250.4	2.758					
2850.0	2.962	34.958	250.0	2.728					
2900.0	2.898	34.953	249.5	2.660					
2950.0	2.845	34.948	249.3	2.603					
3000.0	2.820	34.945	249.1	2.573					



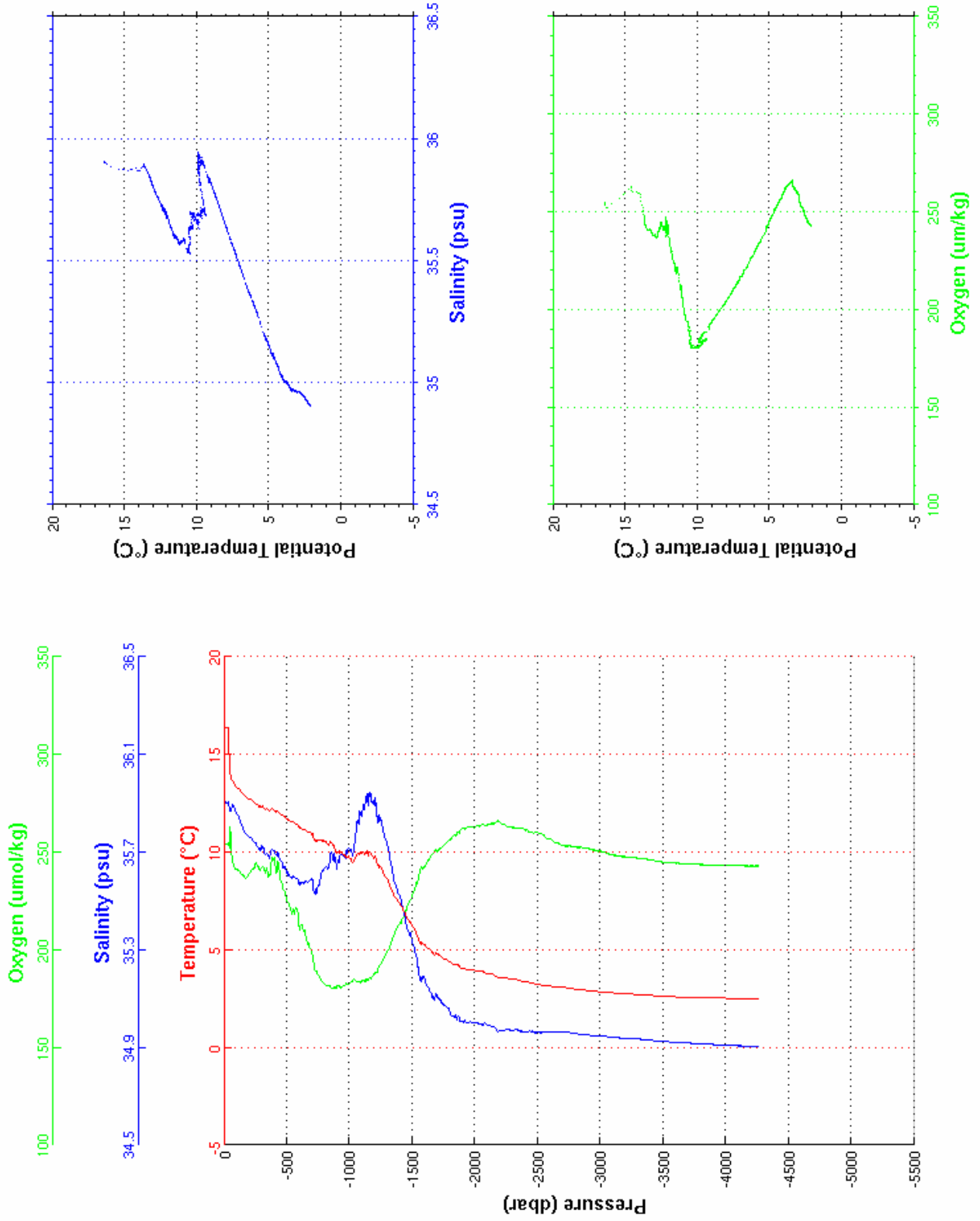
**Cast : 21**

```

-----
Cast      : 22           Cruise   : OVIDE 2010
Date      : 15/06/2010 Ship      : N/O THALASSA
Depth     : 4201 m      Organism : IFREMER
Position  : N 42 52.80
           W 015 51.03
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.401	35.904	253.4	16.401	3050.0	2.827	34.944	249.7	2.575
10.0	16.402	35.904	254.4	16.400	3100.0	2.791	34.942	248.6	2.534
20.0	16.395	35.904	254.6	16.392	3150.0	2.765	34.939	248.0	2.503
30.0	16.390	35.904	254.6	16.385	3200.0	2.749	34.938	247.6	2.483
40.0	15.914	35.883	254.2	15.908	3250.0	2.729	34.936	247.3	2.458
50.0	14.106	35.871	259.9	14.099	3300.0	2.715	34.934	246.9	2.439
100.0	13.329	35.855	240.7	13.315	3350.0	2.692	34.932	246.5	2.411
150.0	12.951	35.793	238.3	12.931	3400.0	2.659	34.929	245.9	2.373
200.0	12.747	35.763	239.3	12.720	3450.0	2.637	34.926	245.5	2.347
250.0	12.531	35.738	244.7	12.497	3500.0	2.623	34.925	245.1	2.327
300.0	12.391	35.726	242.2	12.351	3550.0	2.607	34.923	244.8	2.307
350.0	12.173	35.688	237.5	12.126	3600.0	2.584	34.920	244.4	2.279
400.0	12.193	35.706	247.1	12.139	3650.0	2.582	34.919	244.2	2.271
450.0	11.957	35.661	235.0	11.897	3700.0	2.571	34.918	244.0	2.255
500.0	11.685	35.612	224.1	11.620	3750.0	2.561	34.916	243.8	2.239
550.0	11.544	35.600	220.1	11.473	3800.0	2.552	34.915	243.7	2.225
600.0	11.256	35.565	210.3	11.179	3850.0	2.541	34.913	243.4	2.208
650.0	11.128	35.576	206.6	11.045	3900.0	2.533	34.912	243.3	2.195
700.0	10.958	35.591	198.6	10.870	3950.0	2.528	34.911	243.2	2.184
750.0	10.587	35.562	186.4	10.494	4000.0	2.519	34.910	243.3	2.171
800.0	10.569	35.636	182.3	10.469	4050.0	2.507	34.908	243.2	2.153
850.0	10.525	35.699	180.6	10.419	4100.0	2.501	34.907	243.1	2.141
900.0	9.915	35.628	181.6	9.806	4150.0	2.497	34.906	243.0	2.132
950.0	9.877	35.687	181.5	9.762	4200.0	2.495	34.905	243.0	2.124
1000.0	9.705	35.710	183.0	9.586	4250.0	2.490	34.904	242.9	2.113
1050.0	9.712	35.761	184.2	9.586	4260.0	2.491	34.904	243.1	2.113
1100.0	9.934	35.859	183.8	9.799					
1150.0	10.035	35.937	184.4	9.893					
1200.0	9.682	35.892	188.1	9.537					
1250.0	9.230	35.834	192.8	9.083					
1300.0	8.619	35.732	199.3	8.471					
1350.0	7.860	35.599	207.1	7.713					
1400.0	7.380	35.520	213.6	7.233					
1450.0	6.846	35.428	220.1	6.699					
1500.0	6.223	35.329	228.2	6.077					
1550.0	5.624	35.229	237.1	5.480					
1600.0	5.280	35.179	242.8	5.134					
1650.0	4.920	35.120	248.5	4.774					
1700.0	4.791	35.109	250.6	4.642					
1750.0	4.569	35.075	253.8	4.418					
1800.0	4.365	35.043	256.5	4.212					
1850.0	4.195	35.021	259.0	4.040					
1900.0	4.068	35.008	262.0	3.910					
1950.0	3.993	35.006	262.8	3.831					
2000.0	3.929	35.002	263.0	3.763					
2050.0	3.868	34.996	263.5	3.698					
2100.0	3.787	34.989	264.0	3.613					
2150.0	3.735	34.985	264.6	3.556					
2200.0	3.584	34.968	265.0	3.403					
2250.0	3.555	34.974	263.1	3.370					
2300.0	3.499	34.972	262.6	3.310					
2350.0	3.420	34.965	262.5	3.228					
2400.0	3.359	34.965	261.7	3.162					
2450.0	3.307	34.966	259.9	3.107					
2500.0	3.221	34.961	259.9	3.017					
2550.0	3.169	34.962	258.5	2.961					
2600.0	3.131	34.962	256.6	2.918					
2650.0	3.104	34.963	255.0	2.887					
2700.0	3.077	34.964	253.4	2.855					
2750.0	3.037	34.961	253.0	2.811					
2800.0	2.985	34.957	252.7	2.755					
2850.0	2.945	34.953	252.4	2.711					
2900.0	2.907	34.950	251.9	2.669					
2950.0	2.880	34.949	251.1	2.637					
3000.0	2.852	34.946	250.3	2.604					



Cast : 22

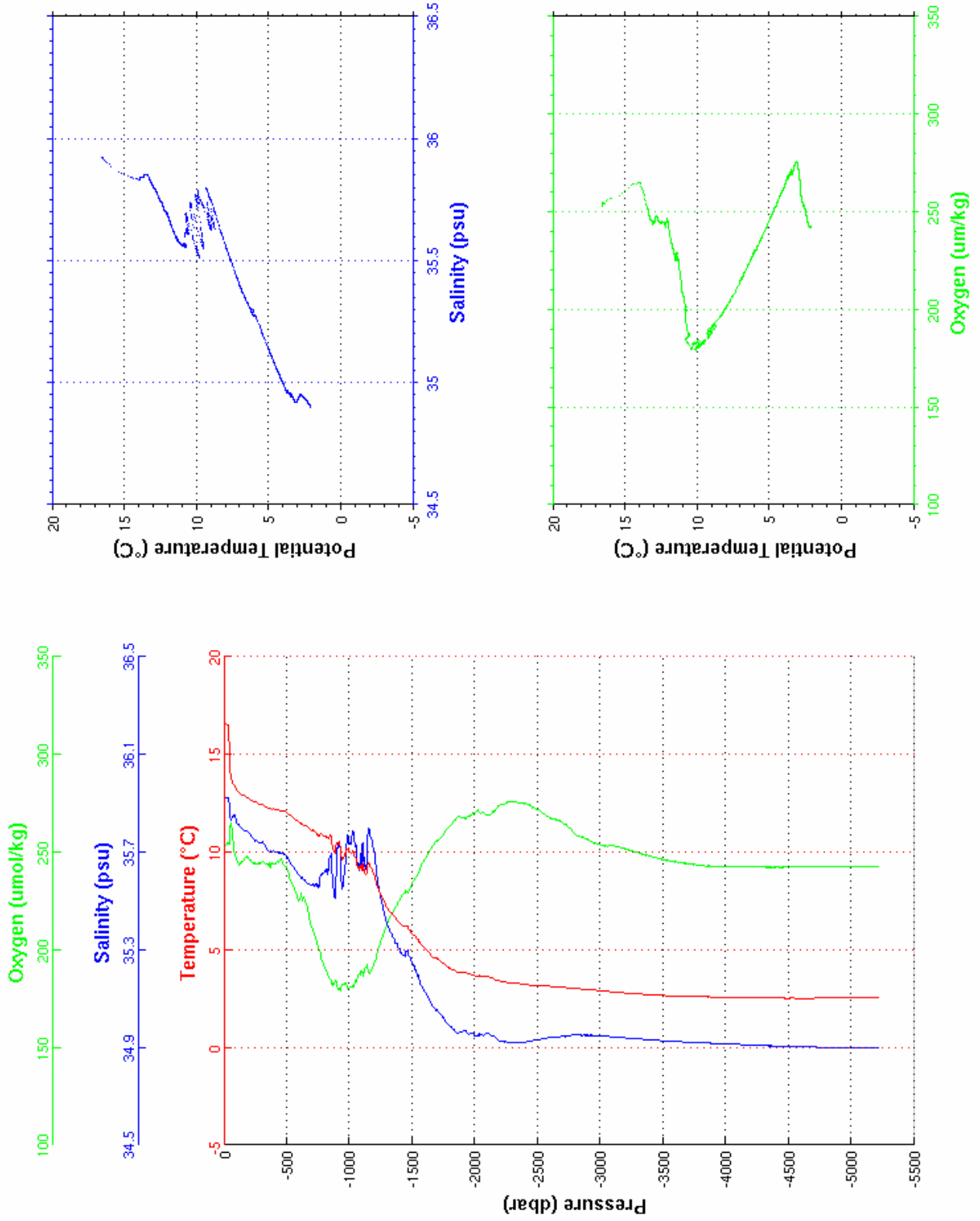
```

-----
Cast      : 23          Cruise   : OVIDE 2010
Date     : 15/06/2010 Ship      : N/O THALASSA
Depth    : 5128 m     Organism : IFREMER
Position : N 43 10.89
          W 016 14.72
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.610	35.924	253.1	16.610	3050.0	2.881	34.946	253.2	2.628
10.0	16.603	35.923	254.2	16.601	3100.0	2.842	34.943	253.4	2.584
20.0	16.585	35.923	254.5	16.582	3150.0	2.814	34.941	252.5	2.552
30.0	16.550	35.922	254.4	16.545	3200.0	2.785	34.939	251.7	2.518
40.0	16.216	35.902	256.4	16.209	3250.0	2.757	34.937	250.5	2.485
50.0	14.341	35.837	264.3	14.333	3300.0	2.739	34.935	249.8	2.463
100.0	13.183	35.825	245.8	13.169	3350.0	2.717	34.933	248.8	2.435
150.0	12.900	35.791	245.9	12.880	3400.0	2.690	34.930	247.9	2.404
200.0	12.742	35.773	246.0	12.714	3450.0	2.673	34.929	247.0	2.382
250.0	12.559	35.748	243.8	12.525	3500.0	2.659	34.927	246.1	2.363
300.0	12.457	35.743	245.0	12.416	3550.0	2.643	34.925	245.5	2.342
350.0	12.262	35.707	243.8	12.215	3600.0	2.633	34.924	244.9	2.327
400.0	12.193	35.702	243.1	12.140	3650.0	2.624	34.923	244.5	2.312
450.0	12.125	35.697	246.6	12.065	3700.0	2.611	34.921	244.0	2.294
500.0	12.006	35.677	240.9	11.939	3750.0	2.602	34.920	243.6	2.279
550.0	11.780	35.640	232.5	11.708	3800.0	2.592	34.919	243.3	2.264
600.0	11.528	35.600	226.3	11.449	3850.0	2.590	34.918	243.0	2.256
650.0	11.359	35.581	223.1	11.275	3900.0	2.582	34.917	242.7	2.243
700.0	11.138	35.563	211.1	11.049	3950.0	2.580	34.916	242.6	2.235
750.0	10.846	35.558	201.0	10.752	4000.0	2.573	34.915	242.5	2.222
800.0	10.825	35.627	190.8	10.724	4050.0	2.565	34.914	242.5	2.209
850.0	10.864	35.689	184.6	10.756	4100.0	2.557	34.912	242.5	2.196
900.0	10.449	35.686	180.9	10.337	4150.0	2.548	34.911	242.5	2.181
950.0	9.672	35.575	183.2	9.559	4200.0	2.544	34.910	242.5	2.171
1000.0	9.977	35.732	181.0	9.856	4250.0	2.536	34.909	242.5	2.158
1050.0	9.639	35.720	184.1	9.514	4300.0	2.533	34.908	242.5	2.148
1100.0	9.240	35.688	188.5	9.112	4350.0	2.527	34.907	242.3	2.137
1150.0	9.379	35.784	188.5	9.243	4400.0	2.525	34.906	242.3	2.129
1200.0	8.835	35.693	193.9	8.697	4450.0	2.522	34.905	242.3	2.120
1250.0	7.786	35.506	205.5	7.652	4500.0	2.519	34.904	242.3	2.111
1300.0	7.155	35.403	213.8	7.021	4550.0	2.520	34.903	242.4	2.106
1350.0	6.752	35.348	220.4	6.617	4600.0	2.518	34.902	242.5	2.098
1400.0	6.395	35.302	225.7	6.258	4650.0	2.519	34.902	242.4	2.093
1450.0	6.199	35.291	229.4	6.059	4700.0	2.520	34.901	242.5	2.087
1500.0	5.803	35.238	234.5	5.662	4750.0	2.522	34.901	242.5	2.083
1550.0	5.502	35.194	239.5	5.359	4800.0	2.525	34.900	242.5	2.080
1600.0	5.070	35.128	246.6	4.927	4850.0	2.530	34.900	242.5	2.079
1650.0	4.765	35.085	251.9	4.621	4900.0	2.532	34.900	242.5	2.074
1700.0	4.558	35.055	255.7	4.412	4950.0	2.535	34.899	242.4	2.071
1750.0	4.308	35.019	259.3	4.161	5000.0	2.538	34.899	242.5	2.067
1800.0	4.079	34.988	263.6	3.930	5050.0	2.543	34.899	242.6	2.066
1850.0	3.885	34.963	267.5	3.734	5100.0	2.548	34.899	242.5	2.064
1900.0	3.857	34.964	267.8	3.702	5150.0	2.555	34.899	242.3	2.064
1950.0	3.765	34.957	269.1	3.606	5200.0	2.560	34.899	242.6	2.063
2000.0	3.653	34.946	270.1	3.490	5217.0	2.563	34.899	242.5	2.063
2050.0	3.632	34.950	270.1	3.465					
2100.0	3.636	34.958	269.0	3.464					
2150.0	3.532	34.945	270.6	3.357					
2200.0	3.405	34.927	274.0	3.227					
2250.0	3.343	34.921	275.1	3.162					
2300.0	3.289	34.919	275.9	3.103					
2350.0	3.266	34.921	275.1	3.076					
2400.0	3.214	34.923	274.8	3.020					
2450.0	3.183	34.927	273.5	2.985					
2500.0	3.167	34.932	271.6	2.964					
2550.0	3.149	34.937	269.7	2.941					
2600.0	3.125	34.941	267.5	2.913					
2650.0	3.096	34.941	266.6	2.879					
2700.0	3.068	34.944	265.1	2.846					
2750.0	3.049	34.947	262.8	2.823					
2800.0	3.034	34.951	259.2	2.803					
2850.0	2.992	34.950	258.2	2.756					
2900.0	2.964	34.950	256.5	2.724					
2950.0	2.931	34.949	254.6	2.687					
3000.0	2.905	34.948	253.7	2.656					





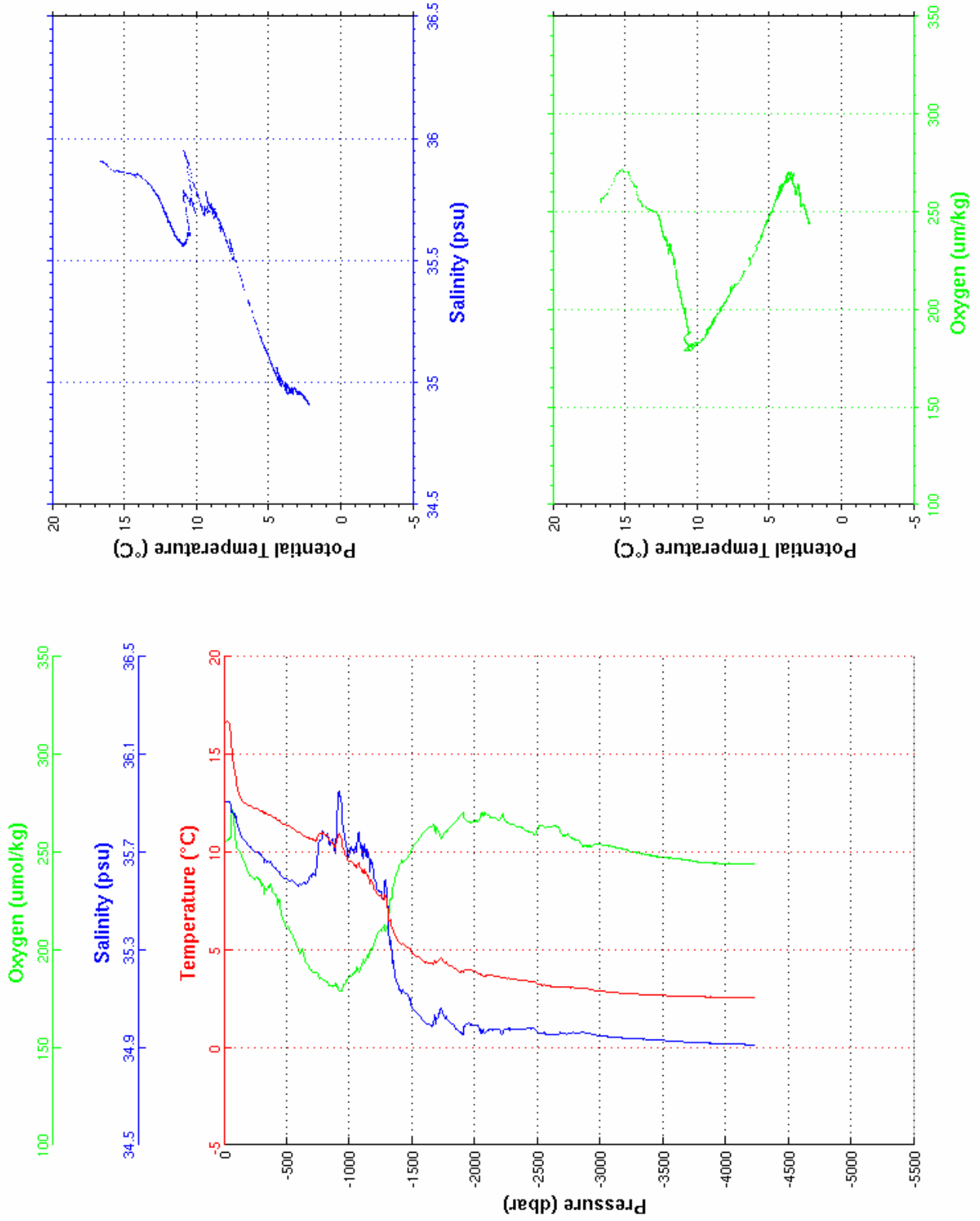
Cast : 23

```

-----
Cast       : 24           Cruise    : OVIDE 2010
Date       : 15/06/2010  Ship     : N/O THALASSA
Depth      : 4174 m      Organism  : IFREMER
Position   : N 43 28.69
            W 016 38.18
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.667	35.904	254.8	16.667	3050.0	2.854	34.945	253.6	2.601
10.0	16.675	35.904	255.5	16.674	3100.0	2.815	34.943	252.7	2.557
20.0	16.677	35.905	256.1	16.673	3150.0	2.788	34.940	252.2	2.526
30.0	16.677	35.905	256.6	16.672	3200.0	2.766	34.938	251.3	2.499
40.0	16.575	35.906	256.6	16.568	3250.0	2.743	34.937	250.3	2.472
50.0	16.379	35.899	258.0	16.371	3300.0	2.724	34.935	249.6	2.447
100.0	13.571	35.831	252.5	13.557	3350.0	2.712	34.934	248.8	2.430
150.0	12.579	35.752	245.6	12.559	3400.0	2.699	34.932	248.4	2.412
200.0	12.367	35.721	238.2	12.340	3450.0	2.674	34.930	247.7	2.383
250.0	12.238	35.703	237.2	12.205	3500.0	2.664	34.928	247.3	2.368
300.0	12.092	35.680	233.1	12.052	3550.0	2.650	34.927	247.1	2.348
350.0	11.950	35.661	232.1	11.904	3600.0	2.639	34.925	246.7	2.332
400.0	11.773	35.636	228.5	11.721	3650.0	2.624	34.923	246.4	2.312
450.0	11.530	35.604	220.5	11.472	3700.0	2.613	34.921	245.8	2.296
500.0	11.379	35.589	212.2	11.315	3750.0	2.599	34.919	245.3	2.276
550.0	11.191	35.578	206.2	11.121	3800.0	2.590	34.918	244.8	2.262
600.0	10.993	35.568	198.0	10.917	3850.0	2.588	34.918	244.5	2.255
650.0	10.779	35.570	193.3	10.698	3900.0	2.586	34.917	244.3	2.247
700.0	10.670	35.612	188.9	10.583	3950.0	2.579	34.916	244.2	2.234
750.0	10.829	35.709	186.9	10.734	4000.0	2.576	34.915	244.2	2.225
800.0	10.914	35.769	184.1	10.812	4050.0	2.573	34.914	244.1	2.217
850.0	10.541	35.750	181.5	10.435	4100.0	2.565	34.913	244.1	2.203
900.0	10.532	35.811	181.3	10.420	4150.0	2.561	34.912	244.0	2.193
950.0	10.224	35.801	181.8	10.107	4200.0	2.545	34.910	244.0	2.172
1000.0	9.511	35.696	186.8	9.393	4232.0	2.526	34.908	244.0	2.150
1050.0	9.348	35.717	188.9	9.224					
1100.0	9.089	35.710	192.1	8.962					
1150.0	8.716	35.681	197.4	8.585					
1200.0	8.061	35.586	205.1	7.931					
1250.0	7.755	35.537	209.9	7.621					
1300.0	7.547	35.526	211.8	7.409					
1350.0	6.039	35.253	232.6	5.911					
1400.0	5.347	35.135	243.8	5.221					
1450.0	5.193	35.118	246.8	5.064					
1500.0	4.854	35.065	252.2	4.724					
1550.0	4.616	35.033	256.7	4.484					
1600.0	4.396	35.002	261.0	4.262					
1650.0	4.286	34.989	263.2	4.149					
1700.0	4.424	35.026	261.0	4.280					
1750.0	4.402	35.028	259.2	4.253					
1800.0	4.192	35.002	263.1	4.042					
1850.0	3.991	34.976	266.4	3.838					
1900.0	3.827	34.955	269.5	3.672					
1950.0	4.009	35.001	265.1	3.847					
2000.0	3.898	34.990	265.8	3.732					
2050.0	3.685	34.960	270.1	3.517					
2100.0	3.682	34.967	269.4	3.510					
2150.0	3.646	34.972	267.5	3.469					
2200.0	3.585	34.969	266.8	3.404					
2250.0	3.549	34.975	265.4	3.364					
2300.0	3.482	34.972	264.5	3.293					
2350.0	3.449	34.975	262.8	3.256					
2400.0	3.410	34.977	261.4	3.213					
2450.0	3.377	34.978	259.9	3.175					
2500.0	3.263	34.963	262.2	3.058					
2550.0	3.201	34.959	263.1	2.993					
2600.0	3.132	34.953	262.9	2.919					
2650.0	3.097	34.951	263.2	2.880					
2700.0	3.116	34.961	258.6	2.894					
2750.0	3.077	34.960	258.1	2.851					
2800.0	3.058	34.959	256.4	2.826					
2850.0	3.047	34.963	253.7	2.811					
2900.0	2.994	34.958	253.0	2.754					
2950.0	2.923	34.951	253.9	2.679					
3000.0	2.886	34.948	253.9	2.638					



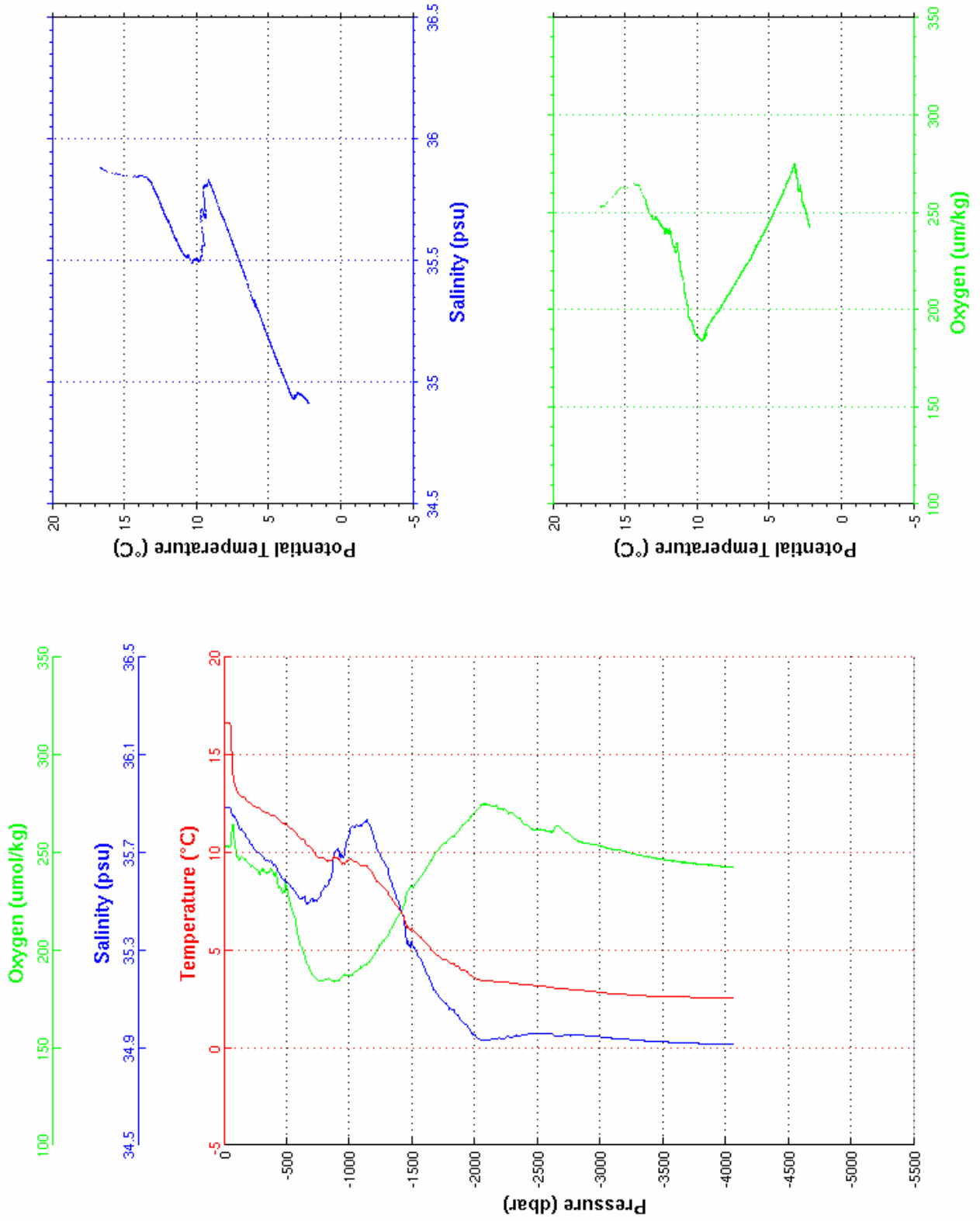
**Cast : 24**

```

-----
Cast       : 25           Cruise    : OVIDE 2010
Date      : 16/06/2010  Ship     : N/O THALASSA
Depth     : 4007 m      Organism : IFREMER
Position  : N 43 46.76
           W 017 1.87
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.649	35.885	252.7	16.649	3050.0	2.796	34.941	252.4	2.544
10.0	16.649	35.885	252.7	16.647	3100.0	2.767	34.939	251.7	2.511
20.0	16.653	35.885	253.0	16.650	3150.0	2.749	34.937	251.1	2.488
30.0	16.655	35.885	253.1	16.650	3200.0	2.725	34.935	250.4	2.459
40.0	16.654	35.885	253.0	16.647	3250.0	2.699	34.932	249.5	2.428
50.0	16.576	35.879	253.5	16.568	3300.0	2.679	34.931	248.8	2.404
100.0	13.207	35.827	247.9	13.193	3350.0	2.660	34.929	248.1	2.380
150.0	12.838	35.783	247.2	12.817	3400.0	2.643	34.927	247.5	2.358
200.0	12.577	35.744	244.0	12.550	3450.0	2.632	34.925	246.9	2.341
250.0	12.335	35.707	241.4	12.302	3500.0	2.619	34.924	246.4	2.324
300.0	12.178	35.684	240.5	12.138	3550.0	2.610	34.923	245.9	2.310
350.0	12.015	35.666	240.8	11.968	3600.0	2.604	34.922	245.6	2.298
400.0	11.883	35.650	238.8	11.830	3650.0	2.596	34.920	244.9	2.285
450.0	11.622	35.607	231.7	11.563	3700.0	2.591	34.919	244.8	2.274
500.0	11.387	35.579	231.3	11.323	3750.0	2.582	34.918	244.4	2.260
550.0	11.142	35.549	218.2	11.072	3800.0	2.575	34.917	244.1	2.248
600.0	10.762	35.513	204.0	10.687	3850.0	2.571	34.916	243.8	2.238
650.0	10.437	35.493	194.2	10.358	3900.0	2.567	34.915	243.6	2.229
700.0	10.201	35.507	187.6	10.116	3950.0	2.562	34.914	243.2	2.218
750.0	9.786	35.511	184.5	9.697	4000.0	2.562	34.913	242.5	2.212
800.0	9.690	35.561	184.8	9.596	4050.0	2.568	34.913	242.5	2.212
850.0	9.605	35.592	184.9	9.505	4064.0	2.569	34.913	242.6	2.212
900.0	9.767	35.711	184.1	9.659					
950.0	9.438	35.684	187.3	9.327					
1000.0	9.606	35.776	186.9	9.487					
1050.0	9.521	35.814	189.0	9.397					
1100.0	9.346	35.818	191.6	9.216					
1150.0	9.202	35.817	193.7	9.068					
1200.0	8.755	35.750	198.5	8.618					
1250.0	8.333	35.682	203.1	8.194					
1300.0	7.998	35.634	207.5	7.856					
1350.0	7.468	35.549	213.7	7.325					
1400.0	7.063	35.484	219.0	6.919					
1450.0	6.315	35.353	227.8	6.174					
1500.0	6.087	35.330	231.8	5.943					
1550.0	5.714	35.272	236.5	5.569					
1600.0	5.420	35.225	240.9	5.273					
1650.0	5.051	35.166	246.1	4.904					
1700.0	4.770	35.122	250.9	4.621					
1750.0	4.549	35.088	254.5	4.398					
1800.0	4.341	35.058	257.6	4.188					
1850.0	4.198	35.037	260.2	4.042					
1900.0	3.966	35.003	264.1	3.809					
1950.0	3.796	34.978	267.1	3.636					
2000.0	3.602	34.951	270.8	3.440					
2050.0	3.450	34.931	274.4	3.286					
2100.0	3.406	34.930	274.9	3.238					
2150.0	3.384	34.935	273.2	3.211					
2200.0	3.345	34.937	271.9	3.168					
2250.0	3.336	34.942	271.4	3.155					
2300.0	3.290	34.943	270.1	3.104					
2350.0	3.261	34.949	267.8	3.071					
2400.0	3.236	34.954	264.5	3.041					
2450.0	3.203	34.957	262.6	3.004					
2500.0	3.169	34.957	261.7	2.966					
2550.0	3.137	34.956	261.4	2.930					
2600.0	3.106	34.956	260.7	2.894					
2650.0	3.021	34.946	263.8	2.806					
2700.0	3.011	34.950	261.5	2.791					
2750.0	2.993	34.951	259.8	2.768					
2800.0	2.962	34.952	256.7	2.732					
2850.0	2.934	34.951	255.2	2.700					
2900.0	2.902	34.949	254.7	2.664					
2950.0	2.869	34.946	254.0	2.627					
3000.0	2.837	34.944	253.4	2.589					



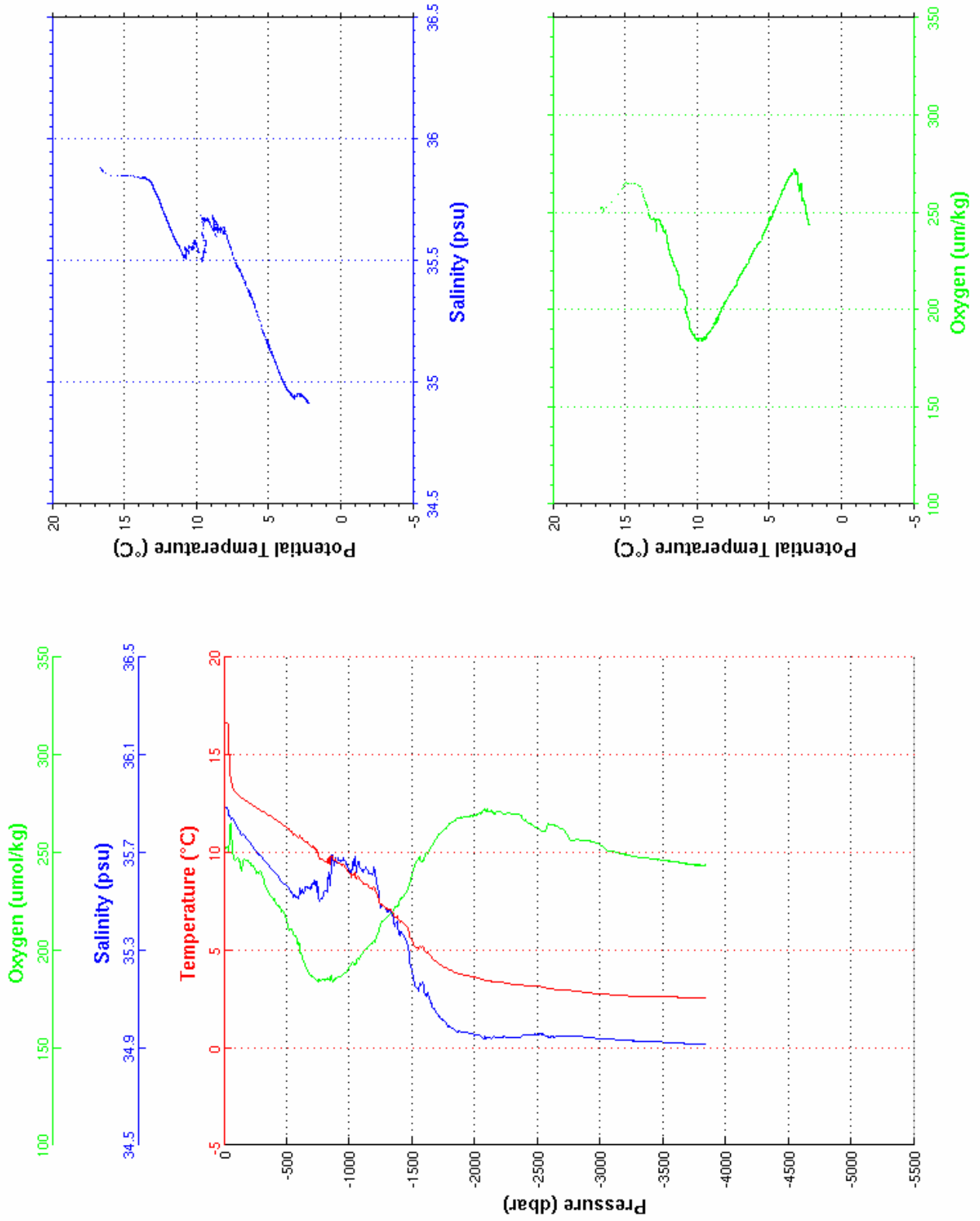
Cast : 25

```

-----
Cast      : 26           Cruise   : OVIDE 2010
Date      : 16/06/2010 Ship      : N/O THALASSA
Depth     : 3789 m      Organism : IFREMER
Position  : N 44  4.60
           W 017 25.47
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.643	35.885	251.5	16.643	3050.0	2.737	34.937	251.3	2.486
10.0	16.640	35.885	252.3	16.638	3100.0	2.706	34.934	250.8	2.452
20.0	16.641	35.885	252.7	16.638	3150.0	2.682	34.932	249.6	2.422
30.0	16.595	35.876	252.5	16.590	3200.0	2.666	34.930	249.1	2.401
40.0	15.227	35.849	261.8	15.221	3250.0	2.648	34.929	248.2	2.379
50.0	14.298	35.848	264.6	14.291	3300.0	2.637	34.927	247.7	2.363
100.0	13.008	35.805	247.1	12.994	3350.0	2.626	34.926	247.3	2.347
150.0	12.778	35.775	246.6	12.757	3400.0	2.621	34.925	246.9	2.337
200.0	12.568	35.745	244.7	12.541	3450.0	2.615	34.924	246.5	2.325
250.0	12.347	35.708	240.3	12.314	3500.0	2.604	34.923	246.1	2.309
300.0	12.159	35.681	238.4	12.119	3550.0	2.599	34.922	245.7	2.299
350.0	11.965	35.650	229.7	11.919	3600.0	2.589	34.920	245.2	2.283
400.0	11.755	35.619	226.0	11.703	3650.0	2.570	34.918	244.6	2.259
450.0	11.505	35.584	220.9	11.447	3700.0	2.560	34.917	244.1	2.244
500.0	11.282	35.560	213.6	11.219	3750.0	2.559	34.916	243.9	2.238
550.0	10.960	35.519	208.4	10.891	3800.0	2.558	34.915	243.6	2.231
600.0	10.795	35.529	202.7	10.720	3839.0	2.562	34.915	243.7	2.230
650.0	10.589	35.556	191.2	10.509					
700.0	10.290	35.563	187.1	10.204					
750.0	9.995	35.552	184.8	9.905					
800.0	9.619	35.542	184.9	9.525					
850.0	9.467	35.583	186.9	9.367					
900.0	9.534	35.663	185.8	9.428					
950.0	9.372	35.677	187.5	9.261					
1000.0	8.916	35.621	192.1	8.802					
1050.0	8.856	35.658	193.0	8.737					
1100.0	8.516	35.630	198.6	8.393					
1150.0	8.315	35.626	201.7	8.187					
1200.0	8.188	35.632	204.0	8.056					
1250.0	7.326	35.477	214.3	7.196					
1300.0	7.130	35.459	217.4	6.997					
1350.0	6.889	35.430	220.7	6.752					
1400.0	6.482	35.368	226.0	6.344					
1450.0	6.232	35.338	229.8	6.092					
1500.0	5.476	35.204	239.9	5.338					
1550.0	5.084	35.140	246.8	4.946					
1600.0	4.935	35.122	248.1	4.794					
1650.0	4.678	35.085	253.1	4.535					
1700.0	4.340	35.033	258.6	4.197					
1750.0	4.177	35.013	261.5	4.031					
1800.0	3.979	34.986	264.7	3.831					
1850.0	3.825	34.968	267.2	3.674					
1900.0	3.759	34.964	268.0	3.604					
1950.0	3.688	34.959	268.5	3.530					
2000.0	3.589	34.950	270.0	3.427					
2050.0	3.507	34.945	270.3	3.343					
2100.0	3.435	34.942	271.6	3.267					
2150.0	3.404	34.945	270.1	3.231					
2200.0	3.344	34.942	271.0	3.168					
2250.0	3.288	34.940	270.6	3.107					
2300.0	3.255	34.944	269.7	3.071					
2350.0	3.208	34.942	269.6	3.019					
2400.0	3.188	34.948	266.9	2.995					
2450.0	3.173	34.953	264.3	2.974					
2500.0	3.138	34.954	262.8	2.936					
2550.0	3.108	34.955	261.0	2.901					
2600.0	3.013	34.945	264.7	2.803					
2650.0	2.978	34.945	263.7	2.763					
2700.0	2.946	34.946	261.8	2.727					
2750.0	2.943	34.951	257.2	2.719					
2800.0	2.903	34.947	256.4	2.675					
2850.0	2.863	34.945	255.7	2.631					
2900.0	2.819	34.942	255.9	2.582					
2950.0	2.786	34.940	255.5	2.545					
3000.0	2.756	34.938	254.0	2.510					



Cast : 26

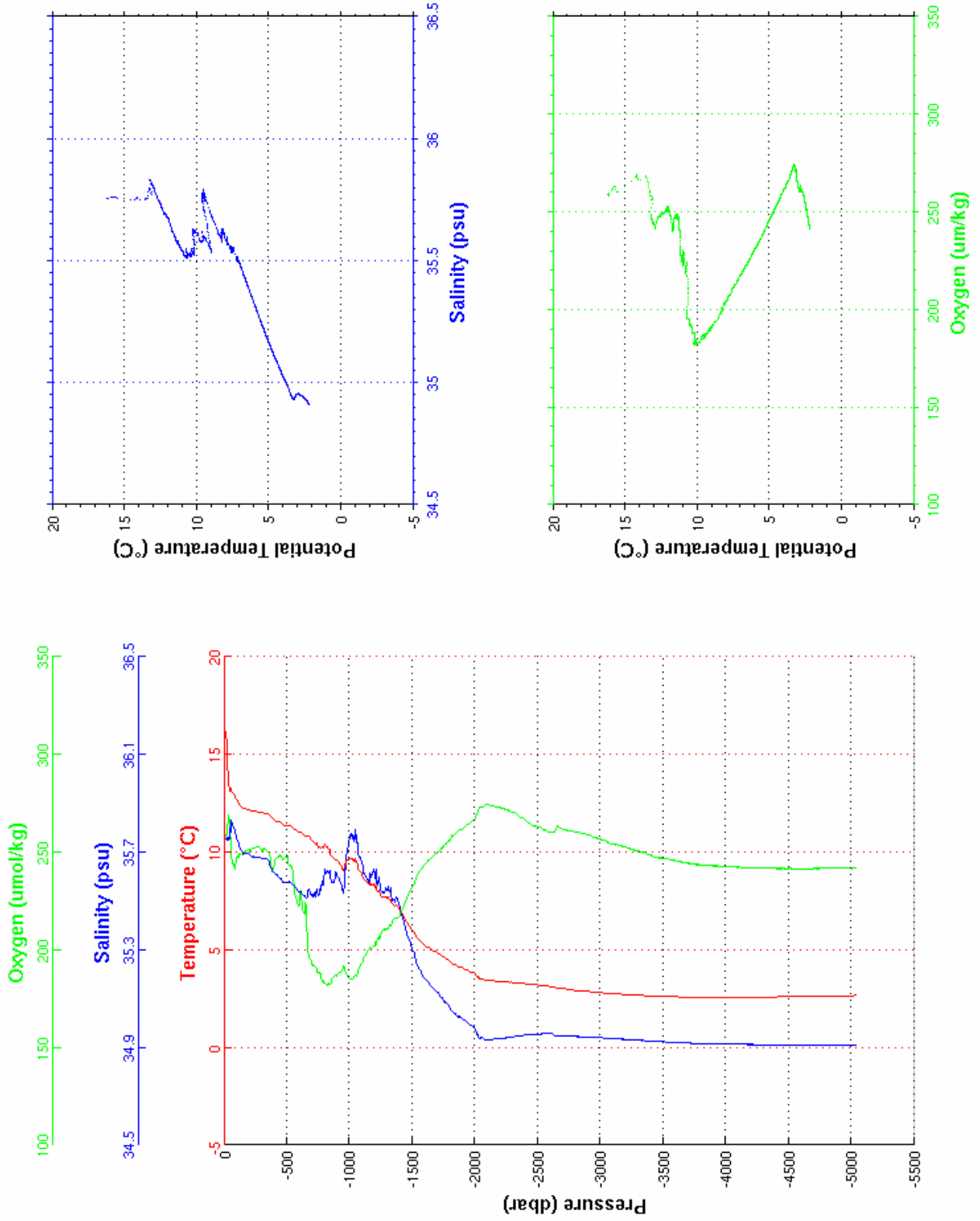
```

-----
Cast       : 27           Cruise    : OVIDE 2010
Date       : 16/06/2010  Ship     : N/O THALASSA
Depth      : 4959 m      Organism  : IFREMER
Position   : N 44 22.60
            W 017 49.01
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.158	35.754	258.9	16.158	3050.0	2.770	34.938	255.5	2.519
10.0	16.158	35.754	258.9	16.157	3100.0	2.744	34.936	254.2	2.488
20.0	15.862	35.761	261.5	15.859	3150.0	2.729	34.934	253.5	2.468
30.0	14.218	35.753	268.5	14.213	3200.0	2.716	34.933	252.7	2.450
40.0	13.385	35.756	264.8	13.379	3250.0	2.696	34.932	251.5	2.426
50.0	13.131	35.773	256.9	13.124	3300.0	2.673	34.930	250.5	2.398
100.0	12.707	35.754	247.1	12.694	3350.0	2.659	34.928	249.7	2.378
150.0	12.280	35.696	249.7	12.260	3400.0	2.636	34.926	248.5	2.351
200.0	12.163	35.690	251.0	12.137	3450.0	2.621	34.924	247.4	2.331
250.0	12.080	35.682	252.6	12.047	3500.0	2.614	34.923	246.8	2.319
300.0	12.018	35.674	251.1	11.979	3550.0	2.600	34.922	246.1	2.300
350.0	11.958	35.668	250.6	11.911	3600.0	2.591	34.920	245.5	2.285
400.0	11.652	35.613	245.0	11.601	3650.0	2.582	34.919	244.8	2.271
450.0	11.506	35.594	248.3	11.448	3700.0	2.574	34.918	244.3	2.258
500.0	11.370	35.575	248.5	11.306	3750.0	2.567	34.917	244.0	2.245
550.0	11.256	35.564	238.5	11.186	3800.0	2.562	34.915	243.4	2.235
600.0	11.042	35.541	225.8	10.966	3850.0	2.562	34.915	243.3	2.229
650.0	10.763	35.510	222.9	10.682	3900.0	2.563	34.914	243.0	2.225
700.0	10.577	35.524	192.5	10.490	3950.0	2.562	34.914	242.8	2.218
750.0	10.273	35.523	187.6	10.181	4000.0	2.564	34.913	242.7	2.214
800.0	10.342	35.614	182.8	10.244	4050.0	2.565	34.913	242.5	2.209
850.0	9.961	35.602	182.8	9.858	4100.0	2.566	34.912	242.3	2.205
900.0	9.561	35.597	187.1	9.455	4150.0	2.569	34.912	242.1	2.201
950.0	9.059	35.534	191.2	8.950	4200.0	2.571	34.912	242.0	2.197
1000.0	9.707	35.757	185.0	9.587	4250.0	2.574	34.912	241.8	2.195
1050.0	9.606	35.781	186.3	9.481	4300.0	2.579	34.911	241.8	2.193
1100.0	8.884	35.659	193.9	8.759	4350.0	2.582	34.911	241.7	2.190
1150.0	8.345	35.583	200.1	8.218	4400.0	2.587	34.911	241.7	2.189
1200.0	8.287	35.616	202.1	8.155	4450.0	2.592	34.911	241.6	2.188
1250.0	7.771	35.545	208.5	7.637	4500.0	2.596	34.911	241.6	2.186
1300.0	7.686	35.547	210.8	7.547	4550.0	2.601	34.910	241.5	2.185
1350.0	7.308	35.505	215.5	7.167	4600.0	2.607	34.910	241.4	2.184
1400.0	7.073	35.478	218.1	6.929	4650.0	2.613	34.910	241.4	2.183
1450.0	6.490	35.381	225.9	6.346	4700.0	2.617	34.910	241.6	2.181
1500.0	6.027	35.307	232.4	5.883	4750.0	2.621	34.910	241.6	2.179
1550.0	5.517	35.226	239.7	5.374	4800.0	2.627	34.910	241.8	2.178
1600.0	5.227	35.180	244.3	5.082	4850.0	2.633	34.910	241.8	2.178
1650.0	5.051	35.154	247.0	4.904	4900.0	2.640	34.910	241.7	2.178
1700.0	4.882	35.130	249.7	4.732	4950.0	2.646	34.910	241.8	2.178
1750.0	4.630	35.093	253.3	4.478	5000.0	2.653	34.910	241.7	2.178
1800.0	4.413	35.062	256.6	4.259	5044.0	2.659	34.910	241.7	2.179
1850.0	4.206	35.033	260.1	4.050					
1900.0	4.079	35.019	262.0	3.920					
1950.0	3.928	34.998	264.5	3.767					
2000.0	3.754	34.973	267.3	3.591					
2050.0	3.529	34.940	273.1	3.364					
2100.0	3.435	34.933	274.3	3.266					
2150.0	3.402	34.935	273.7	3.229					
2200.0	3.376	34.936	273.0	3.199					
2250.0	3.346	34.939	271.8	3.165					
2300.0	3.329	34.943	270.4	3.143					
2350.0	3.303	34.948	268.6	3.112					
2400.0	3.266	34.951	266.5	3.071					
2450.0	3.246	34.955	263.9	3.046					
2500.0	3.200	34.954	263.1	2.996					
2550.0	3.158	34.956	261.5	2.950					
2600.0	3.113	34.956	260.3	2.901					
2650.0	3.035	34.946	262.7	2.819					
2700.0	3.006	34.948	261.9	2.786					
2750.0	2.963	34.947	261.0	2.739					
2800.0	2.915	34.945	260.4	2.686					
2850.0	2.889	34.944	259.7	2.656					
2900.0	2.866	34.943	258.8	2.629					
2950.0	2.833	34.941	257.8	2.591					
3000.0	2.804	34.940	256.7	2.557					

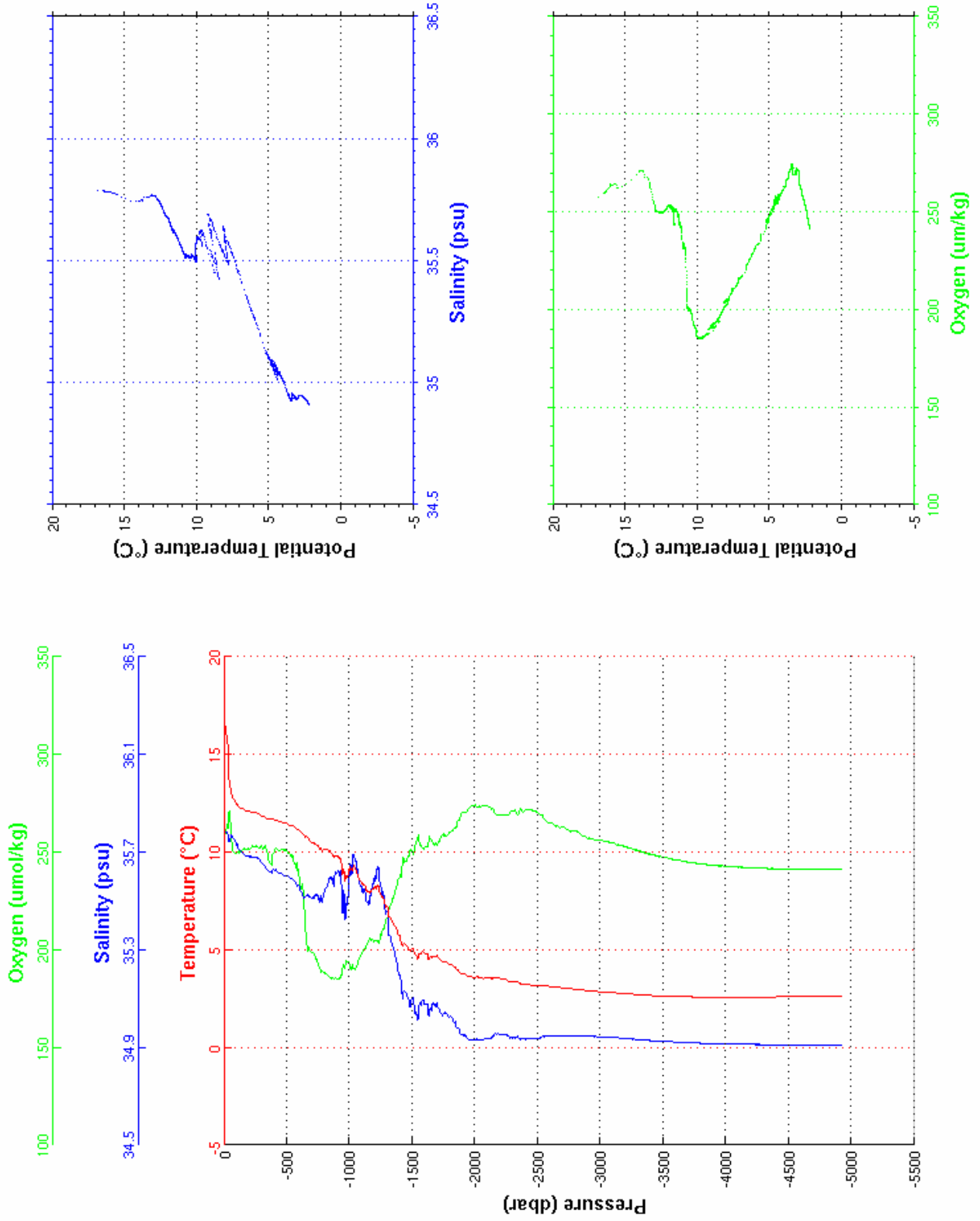




Cast : 27

Cast	: 28	Cruise	: OVIDE 2010
Date	: 16/06/2010	Ship	: N/O THALASSA
Depth	: 4849 m	Organism	: IFREMER
Position	: N 44 40.45 W 018 12.67		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.811	35.788	257.7	16.811	3050.0	2.826	34.942	255.4	2.574
10.0	16.458	35.786	259.6	16.456	3100.0	2.805	34.940	254.6	2.548
20.0	16.003	35.781	264.0	16.000	3150.0	2.781	34.939	253.5	2.519
30.0	15.569	35.773	263.4	15.564	3200.0	2.753	34.937	252.8	2.487
40.0	13.845	35.748	271.3	13.839	3250.0	2.728	34.935	251.9	2.457
50.0	13.296	35.762	264.4	13.289	3300.0	2.705	34.932	251.0	2.429
100.0	12.480	35.731	250.1	12.466	3350.0	2.684	34.930	249.9	2.403
150.0	12.209	35.694	251.2	12.189	3400.0	2.660	34.928	248.9	2.374
200.0	12.077	35.680	251.8	12.051	3450.0	2.645	34.926	248.1	2.354
250.0	12.021	35.680	252.9	11.989	3500.0	2.635	34.925	247.4	2.339
300.0	11.879	35.655	252.9	11.840	3550.0	2.623	34.924	246.7	2.322
350.0	11.684	35.620	247.0	11.639	3600.0	2.611	34.922	246.1	2.305
400.0	11.660	35.627	250.6	11.608	3650.0	2.599	34.920	245.5	2.288
450.0	11.550	35.615	251.3	11.492	3700.0	2.592	34.919	244.9	2.275
500.0	11.468	35.604	250.6	11.404	3750.0	2.587	34.918	244.5	2.264
550.0	11.338	35.587	247.0	11.267	3800.0	2.581	34.917	244.0	2.253
600.0	11.130	35.558	236.6	11.053	3850.0	2.577	34.917	243.7	2.244
650.0	10.794	35.520	208.6	10.713	3900.0	2.574	34.916	243.3	2.236
700.0	10.514	35.515	198.5	10.427	3950.0	2.572	34.915	243.0	2.228
750.0	10.309	35.517	192.5	10.217	4000.0	2.572	34.914	242.8	2.222
800.0	10.134	35.539	188.1	10.037	4050.0	2.573	34.914	242.5	2.217
850.0	9.985	35.588	185.4	9.882	4100.0	2.572	34.913	242.4	2.210
900.0	9.838	35.614	185.1	9.730	4150.0	2.573	34.913	242.1	2.206
950.0	9.059	35.517	191.5	8.950	4200.0	2.575	34.912	242.0	2.201
1000.0	9.117	35.607	191.3	9.002	4250.0	2.577	34.912	242.0	2.198
1050.0	9.112	35.665	191.4	8.990	4300.0	2.581	34.912	241.7	2.195
1100.0	8.387	35.550	198.5	8.265	4350.0	2.585	34.912	241.6	2.193
1150.0	7.961	35.496	204.2	7.837	4400.0	2.588	34.911	241.5	2.190
1200.0	8.135	35.581	204.0	8.003	4450.0	2.592	34.911	241.4	2.188
1250.0	7.842	35.560	208.0	7.708	4500.0	2.597	34.911	241.3	2.187
1300.0	7.248	35.464	215.9	7.114	4550.0	2.602	34.911	241.2	2.186
1350.0	6.350	35.302	227.7	6.219	4600.0	2.608	34.911	241.3	2.185
1400.0	5.733	35.199	237.6	5.603	4650.0	2.613	34.911	241.2	2.184
1450.0	5.251	35.121	245.4	5.121	4700.0	2.618	34.910	241.4	2.183
1500.0	5.065	35.103	249.3	4.933	4750.0	2.624	34.910	241.3	2.182
1550.0	4.557	35.017	259.0	4.426	4800.0	2.631	34.910	241.4	2.182
1600.0	4.771	35.077	253.0	4.633	4850.0	2.637	34.910	241.2	2.182
1650.0	4.602	35.054	256.1	4.460	4900.0	2.644	34.910	241.4	2.182
1700.0	4.594	35.064	254.0	4.447	4928.0	2.647	34.910	241.4	2.182
1750.0	4.395	35.039	259.0	4.247					
1800.0	4.270	35.027	259.9	4.118					
1850.0	4.115	35.002	262.3	3.961					
1900.0	3.768	34.947	270.7	3.613					
1950.0	3.649	34.934	272.6	3.491					
2000.0	3.594	34.930	274.2	3.432					
2050.0	3.555	34.933	273.7	3.389					
2100.0	3.535	34.937	273.4	3.365					
2150.0	3.562	34.954	271.1	3.387					
2200.0	3.530	34.954	269.1	3.351					
2250.0	3.464	34.951	268.9	3.280					
2300.0	3.358	34.939	271.1	3.171					
2350.0	3.298	34.937	269.9	3.107					
2400.0	3.239	34.934	271.6	3.045					
2450.0	3.187	34.935	271.6	2.989					
2500.0	3.159	34.938	270.2	2.957					
2550.0	3.159	34.946	266.9	2.952					
2600.0	3.121	34.946	264.8	2.909					
2650.0	3.086	34.948	263.3	2.869					
2700.0	3.038	34.947	262.9	2.817					
2750.0	3.006	34.948	261.1	2.781					
2800.0	2.962	34.946	261.0	2.733					
2850.0	2.942	34.947	258.9	2.708					
2900.0	2.914	34.947	257.3	2.675					
2950.0	2.873	34.945	256.2	2.631					
3000.0	2.847	34.943	256.3	2.600					



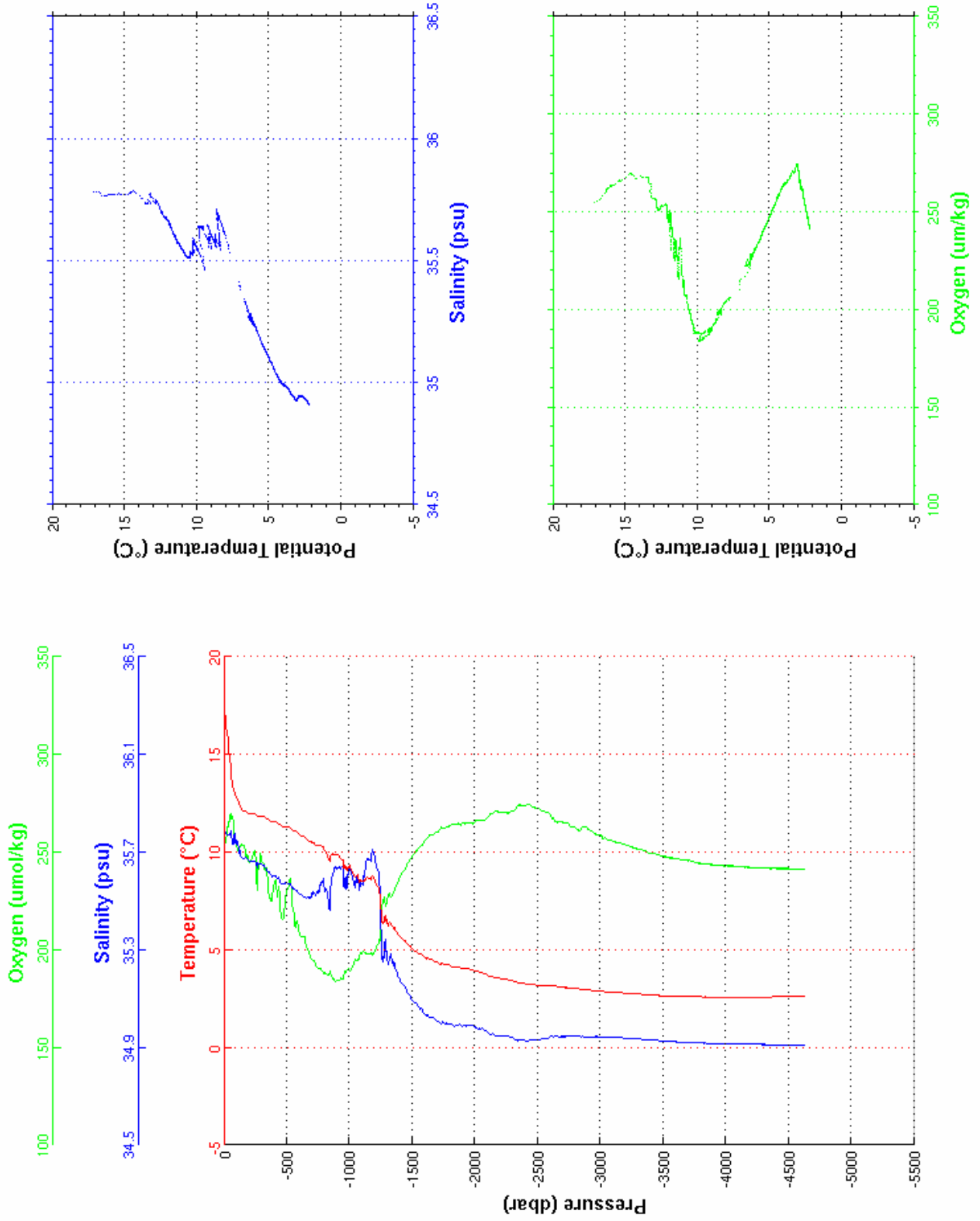
Cast : 28

```

-----
Cast       : 29           Cruise    : OVIDE 2010
Date       : 17/06/2010  Ship     : N/O THALASSA
Depth      : 4557 m      Organism  : IFREMER
Position   : N 45 3.04
              W 018 30.29
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.072	35.783	255.1	17.072	3050.0	2.853	34.943	256.9	2.600
10.0	17.077	35.783	254.8	17.076	3100.0	2.823	34.941	255.4	2.566
20.0	16.296	35.764	260.6	16.293	3150.0	2.804	34.940	254.8	2.542
30.0	15.984	35.771	263.3	15.980	3200.0	2.781	34.938	253.8	2.514
40.0	15.350	35.775	265.4	15.344	3250.0	2.756	34.936	252.6	2.484
50.0	14.610	35.778	269.8	14.603	3300.0	2.733	34.934	251.6	2.456
100.0	12.831	35.748	252.4	12.817	3350.0	2.710	34.932	250.5	2.428
150.0	12.133	35.673	253.4	12.113	3400.0	2.685	34.930	249.5	2.399
200.0	11.992	35.661	244.4	11.965	3450.0	2.672	34.929	248.8	2.380
250.0	11.941	35.659	246.6	11.908	3500.0	2.649	34.926	247.9	2.353
300.0	11.858	35.650	245.3	11.818	3550.0	2.637	34.925	247.2	2.336
350.0	11.698	35.620	232.0	11.652	3600.0	2.623	34.923	246.5	2.316
400.0	11.555	35.603	234.5	11.504	3650.0	2.616	34.922	246.3	2.304
450.0	11.379	35.573	219.1	11.321	3700.0	2.609	34.921	245.7	2.292
500.0	11.291	35.573	231.9	11.227	3750.0	2.597	34.919	244.9	2.274
550.0	11.121	35.551	220.7	11.051	3800.0	2.589	34.918	244.3	2.261
600.0	10.918	35.531	207.5	10.843	3850.0	2.586	34.917	244.0	2.253
650.0	10.727	35.517	202.9	10.646	3900.0	2.582	34.916	243.5	2.243
700.0	10.514	35.529	195.4	10.428	3950.0	2.582	34.916	243.3	2.237
750.0	10.290	35.533	190.3	10.199	4000.0	2.582	34.915	243.0	2.231
800.0	10.077	35.553	188.1	9.980	4050.0	2.583	34.915	242.9	2.227
850.0	9.783	35.558	187.3	9.682	4100.0	2.580	34.914	242.6	2.218
900.0	9.870	35.634	184.5	9.762	4150.0	2.580	34.913	242.4	2.212
950.0	9.504	35.609	186.1	9.393	4200.0	2.580	34.913	242.1	2.206
1000.0	9.341	35.648	189.0	9.224	4250.0	2.582	34.912	242.0	2.202
1050.0	8.813	35.583	194.6	8.694	4300.0	2.584	34.912	241.9	2.198
1100.0	8.445	35.566	198.7	8.322	4350.0	2.587	34.912	241.7	2.195
1150.0	8.674	35.664	197.3	8.544	4400.0	2.591	34.911	241.7	2.193
1200.0	8.606	35.684	199.2	8.470	4450.0	2.592	34.911	241.6	2.188
1250.0	7.143	35.399	214.9	7.015	4500.0	2.597	34.911	241.4	2.187
1300.0	6.412	35.273	225.4	6.286	4550.0	2.602	34.911	241.4	2.185
1350.0	6.113	35.234	230.6	5.984	4600.0	2.607	34.910	241.2	2.184
1400.0	5.699	35.178	237.1	5.569	4630.0	2.611	34.910	241.3	2.184
1450.0	5.415	35.142	242.2	5.284					
1500.0	5.041	35.092	248.4	4.908					
1550.0	4.829	35.067	252.3	4.695					
1600.0	4.615	35.038	256.3	4.478					
1650.0	4.508	35.028	258.3	4.367					
1700.0	4.377	35.012	260.5	4.233					
1750.0	4.273	35.001	262.4	4.125					
1800.0	4.193	34.996	263.3	4.042					
1850.0	4.115	34.990	264.4	3.961					
1900.0	4.060	34.988	264.9	3.901					
1950.0	4.022	34.992	264.6	3.859					
2000.0	3.892	34.979	265.7	3.726					
2050.0	3.834	34.977	266.4	3.664					
2100.0	3.690	34.961	268.4	3.518					
2150.0	3.585	34.950	270.3	3.409					
2200.0	3.536	34.949	270.6	3.356					
2250.0	3.482	34.947	270.2	3.298					
2300.0	3.399	34.939	271.1	3.211					
2350.0	3.308	34.928	274.1	3.117					
2400.0	3.252	34.928	273.9	3.057					
2450.0	3.213	34.930	273.6	3.015					
2500.0	3.192	34.933	272.5	2.989					
2550.0	3.171	34.936	271.0	2.963					
2600.0	3.155	34.942	269.2	2.943					
2650.0	3.139	34.948	265.3	2.921					
2700.0	3.073	34.944	265.4	2.851					
2750.0	3.066	34.948	264.1	2.840					
2800.0	3.031	34.948	262.4	2.800					
2850.0	2.976	34.944	262.5	2.741					
2900.0	2.943	34.944	262.1	2.704					
2950.0	2.910	34.944	259.6	2.666					
3000.0	2.881	34.943	258.7	2.633					



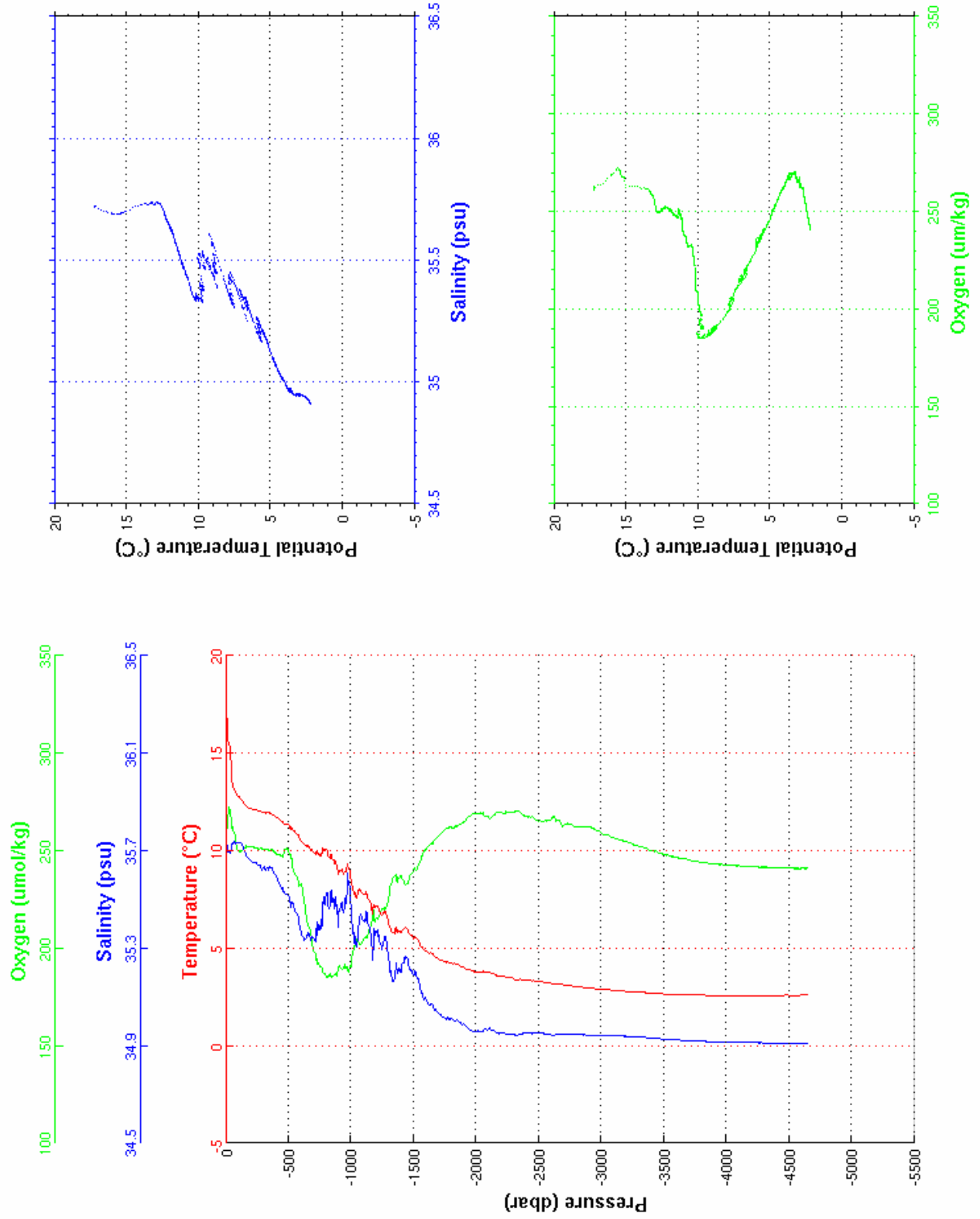
**Cast : 29**

```

-----
Cast       : 30           Cruise    : OVIDE 2010
Date       : 17/06/2010  Ship     : N/O THALASSA
Depth      : 4575 m      Organism  : IFREMER
Position   : N 45 25.33
            W 018 47.82
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.185	35.719	260.9	17.185	3050.0	2.871	34.943	257.9	2.618
10.0	16.922	35.714	263.8	16.921	3100.0	2.838	34.942	256.4	2.580
20.0	15.650	35.690	271.7	15.647	3150.0	2.813	34.940	255.6	2.550
30.0	15.370	35.692	270.3	15.365	3200.0	2.788	34.939	254.6	2.520
40.0	15.053	35.702	263.8	15.046	3250.0	2.761	34.937	253.3	2.489
50.0	13.659	35.732	261.7	13.652	3300.0	2.747	34.936	252.4	2.470
100.0	12.786	35.736	249.5	12.773	3350.0	2.731	34.934	251.5	2.449
150.0	12.396	35.698	251.7	12.375	3400.0	2.703	34.932	250.1	2.416
200.0	12.148	35.655	251.9	12.122	3450.0	2.678	34.929	249.4	2.386
250.0	12.061	35.643	251.3	12.028	3500.0	2.653	34.927	248.0	2.357
300.0	11.979	35.632	250.8	11.940	3550.0	2.643	34.925	247.3	2.341
350.0	11.938	35.633	250.6	11.892	3600.0	2.634	34.924	246.7	2.327
400.0	11.741	35.595	248.4	11.689	3650.0	2.619	34.922	246.0	2.307
450.0	11.451	35.537	247.0	11.393	3700.0	2.605	34.921	245.1	2.288
500.0	11.358	35.519	249.9	11.294	3750.0	2.595	34.919	244.5	2.272
550.0	10.958	35.450	238.1	10.889	3800.0	2.590	34.918	244.0	2.262
600.0	10.509	35.366	232.3	10.435	3850.0	2.583	34.917	243.6	2.249
650.0	10.231	35.350	213.1	10.152	3900.0	2.577	34.916	243.3	2.238
700.0	9.920	35.341	198.7	9.837	3950.0	2.576	34.915	243.0	2.232
750.0	9.739	35.378	191.1	9.651	4000.0	2.574	34.915	242.8	2.224
800.0	10.088	35.525	185.8	9.991	4050.0	2.575	34.914	242.5	2.219
850.0	9.565	35.491	185.8	9.465	4100.0	2.573	34.913	242.2	2.211
900.0	8.785	35.391	189.9	8.684	4150.0	2.574	34.913	242.0	2.206
950.0	9.008	35.503	190.1	8.899	4200.0	2.575	34.912	241.8	2.201
1000.0	8.601	35.475	192.4	8.489	4250.0	2.578	34.912	241.6	2.198
1050.0	7.586	35.308	205.1	7.477	4300.0	2.581	34.912	241.6	2.195
1100.0	7.769	35.407	204.7	7.653	4350.0	2.584	34.911	241.5	2.192
1150.0	7.432	35.381	210.5	7.312	4400.0	2.586	34.911	241.4	2.188
1200.0	7.119	35.363	215.4	6.997	4450.0	2.587	34.910	241.3	2.183
1250.0	6.762	35.314	221.0	6.638	4500.0	2.588	34.910	241.2	2.178
1300.0	6.362	35.261	226.4	6.236	4550.0	2.587	34.909	241.1	2.171
1350.0	5.750	35.176	237.4	5.625	4600.0	2.590	34.909	240.8	2.167
1400.0	5.818	35.204	236.7	5.687	4648.0	2.593	34.908	241.0	2.165
1450.0	5.999	35.259	233.0	5.861					
1500.0	5.501	35.186	240.4	5.364					
1550.0	5.250	35.149	244.7	5.110					
1600.0	4.868	35.086	250.9	4.728					
1650.0	4.749	35.073	253.6	4.606					
1700.0	4.478	35.034	258.2	4.333					
1750.0	4.301	35.010	261.0	4.154					
1800.0	4.258	35.012	261.7	4.106					
1850.0	4.164	35.003	262.7	4.009					
1900.0	4.050	34.990	264.6	3.891					
1950.0	3.885	34.966	267.8	3.724					
2000.0	3.837	34.965	268.9	3.672					
2050.0	3.766	34.960	269.4	3.597					
2100.0	3.784	34.973	266.9	3.610					
2150.0	3.639	34.956	268.7	3.463					
2200.0	3.569	34.952	269.4	3.389					
2250.0	3.498	34.949	269.6	3.313					
2300.0	3.454	34.947	269.8	3.266					
2350.0	3.404	34.949	269.4	3.212					
2400.0	3.374	34.951	267.7	3.177					
2450.0	3.325	34.950	267.1	3.124					
2500.0	3.309	34.954	265.4	3.103					
2550.0	3.250	34.950	265.4	3.040					
2600.0	3.181	34.944	266.6	2.968					
2650.0	3.159	34.948	264.9	2.941					
2700.0	3.114	34.947	263.4	2.892					
2750.0	3.072	34.945	263.8	2.845					
2800.0	3.040	34.947	262.3	2.809					
2850.0	3.000	34.946	261.7	2.765					
2900.0	2.951	34.944	262.3	2.712					
2950.0	2.922	34.944	261.1	2.678					
3000.0	2.896	34.944	259.1	2.647					



**Cast : 30**

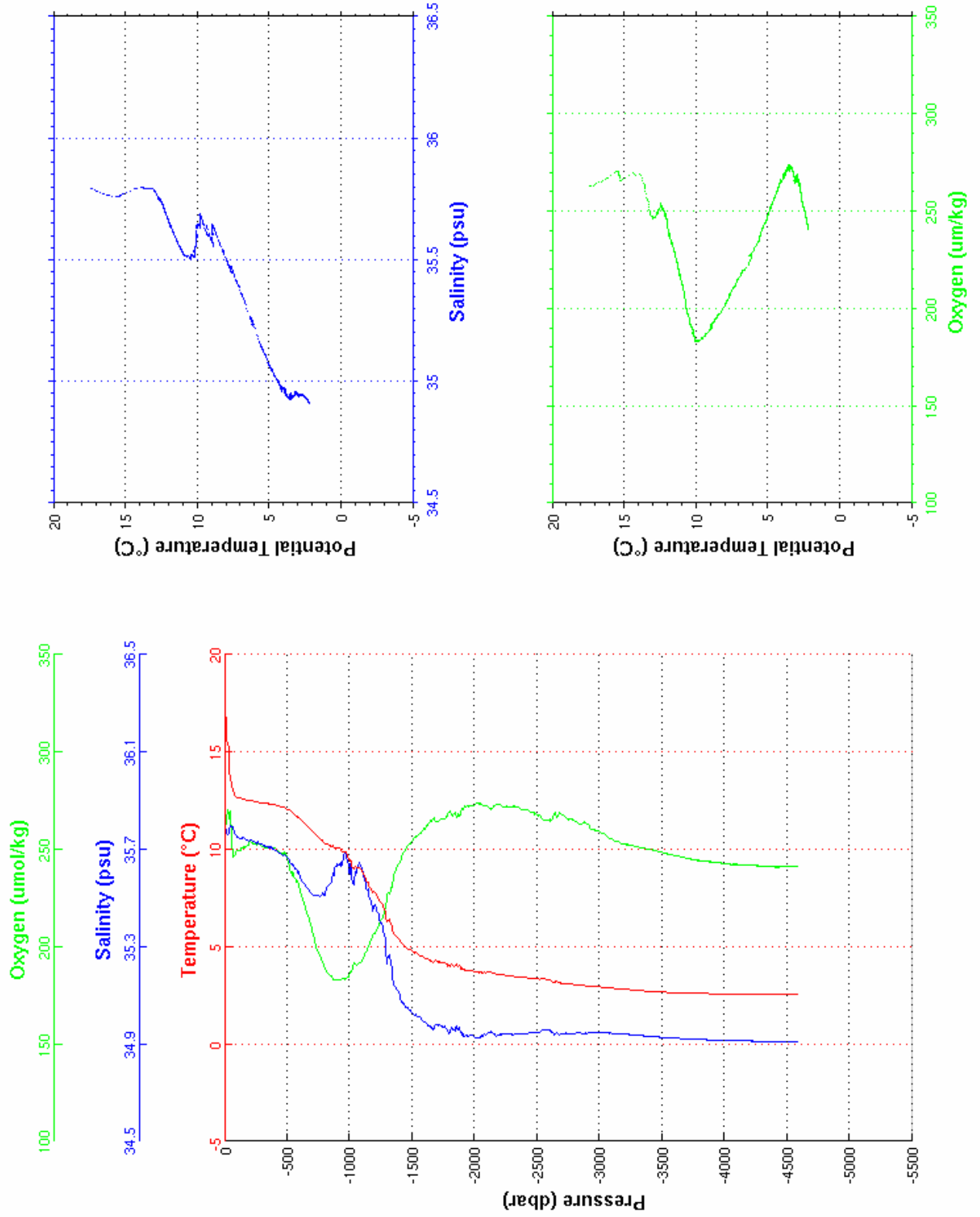
```

-----
Cast       : 31           Cruise    : OVIDE 2010
Date      : 17/06/2010  Ship     : N/O THALASSA
Depth     : 4519 m      Organism  : IFREMER
Position  : N 45 47.60
           W 019 5.44
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.390	35.794	262.8	17.389	3050.0	2.900	34.945	256.9	2.646
10.0	16.926	35.780	264.1	16.925	3100.0	2.868	34.944	255.1	2.610
20.0	15.550	35.760	270.3	15.547	3150.0	2.840	34.942	253.8	2.577
30.0	15.337	35.765	268.5	15.332	3200.0	2.810	34.940	252.6	2.542
40.0	14.276	35.795	268.9	14.270	3250.0	2.787	34.938	252.2	2.515
50.0	13.536	35.793	261.5	13.529	3300.0	2.754	34.936	251.4	2.477
100.0	12.687	35.754	248.7	12.673	3350.0	2.730	34.934	250.8	2.448
150.0	12.577	35.746	251.1	12.557	3400.0	2.710	34.932	250.1	2.423
200.0	12.513	35.741	254.2	12.486	3450.0	2.681	34.929	249.3	2.390
250.0	12.431	35.724	251.9	12.397	3500.0	2.664	34.927	248.3	2.367
300.0	12.389	35.719	251.5	12.349	3550.0	2.651	34.926	247.4	2.349
350.0	12.343	35.711	251.1	12.296	3600.0	2.636	34.924	246.8	2.329
400.0	12.281	35.698	250.4	12.227	3650.0	2.624	34.922	246.1	2.312
450.0	12.189	35.682	247.5	12.128	3700.0	2.614	34.921	245.4	2.297
500.0	12.089	35.667	245.0	12.023	3750.0	2.601	34.920	244.8	2.279
550.0	11.853	35.630	236.6	11.781	3800.0	2.595	34.918	244.2	2.267
600.0	11.556	35.587	228.8	11.478	3850.0	2.590	34.918	243.9	2.256
650.0	11.242	35.547	217.9	11.159	3900.0	2.583	34.916	243.4	2.244
700.0	10.905	35.516	207.6	10.816	3950.0	2.579	34.916	243.1	2.235
750.0	10.630	35.510	196.7	10.536	4000.0	2.576	34.914	242.7	2.226
800.0	10.289	35.511	188.8	10.191	4050.0	2.575	34.914	242.5	2.219
850.0	10.181	35.567	184.8	10.077	4100.0	2.576	34.913	242.3	2.214
900.0	10.098	35.632	183.0	9.988	4150.0	2.576	34.913	242.0	2.208
950.0	9.943	35.669	183.5	9.828	4200.0	2.577	34.912	241.8	2.203
1000.0	9.394	35.600	186.8	9.276	4250.0	2.575	34.912	241.7	2.196
1050.0	9.090	35.607	190.7	8.969	4300.0	2.579	34.911	241.5	2.193
1100.0	8.869	35.617	193.3	8.743	4350.0	2.580	34.911	241.2	2.188
1150.0	8.258	35.527	200.1	8.131	4400.0	2.583	34.911	241.1	2.185
1200.0	7.776	35.471	207.1	7.648	4450.0	2.587	34.910	241.1	2.183
1250.0	7.247	35.391	214.2	7.118	4500.0	2.584	34.910	241.1	2.174
1300.0	6.256	35.227	226.8	6.131	4550.0	2.581	34.909	241.1	2.165
1350.0	5.736	35.153	235.5	5.611	4592.0	2.579	34.908	241.1	2.158
1400.0	5.373	35.106	243.1	5.247					
1450.0	4.967	35.051	250.6	4.840					
1500.0	4.773	35.029	254.4	4.644					
1550.0	4.613	35.013	257.8	4.481					
1600.0	4.458	34.993	260.5	4.323					
1650.0	4.298	34.972	264.5	4.160					
1700.0	4.262	34.979	264.4	4.120					
1750.0	4.181	34.973	265.9	4.035					
1800.0	4.005	34.947	269.5	3.857					
1850.0	4.087	34.974	267.3	3.932					
1900.0	3.858	34.938	270.9	3.702					
1950.0	3.783	34.933	272.1	3.623					
2000.0	3.691	34.926	273.2	3.528					
2050.0	3.665	34.931	273.5	3.498					
2100.0	3.680	34.943	272.2	3.508					
2150.0	3.616	34.940	272.1	3.439					
2200.0	3.555	34.937	273.0	3.375					
2250.0	3.525	34.941	271.9	3.340					
2300.0	3.481	34.939	272.3	3.292					
2350.0	3.450	34.942	271.3	3.257					
2400.0	3.419	34.943	270.5	3.221					
2450.0	3.380	34.946	269.1	3.178					
2500.0	3.358	34.951	267.5	3.151					
2550.0	3.352	34.957	265.0	3.141					
2600.0	3.289	34.955	265.5	3.074					
2650.0	3.198	34.946	267.8	2.979					
2700.0	3.127	34.940	268.0	2.905					
2750.0	3.102	34.944	265.2	2.875					
2800.0	3.055	34.944	264.8	2.824					
2850.0	3.024	34.945	262.9	2.789					
2900.0	2.987	34.944	263.2	2.747					
2950.0	2.962	34.945	260.5	2.717					
3000.0	2.929	34.945	258.8	2.680					





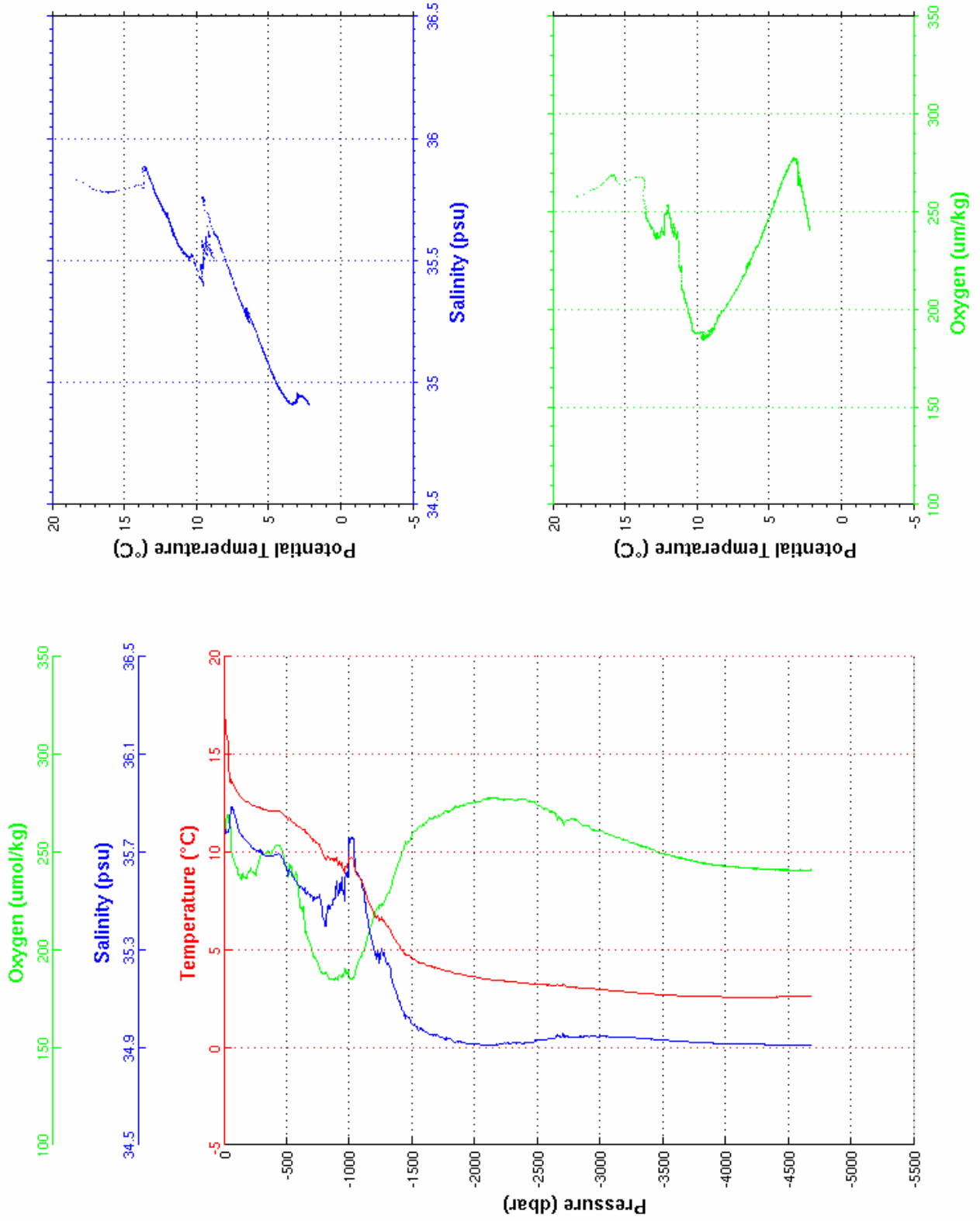
**Cast : 31**

```

-----
Cast       : 32           Cruise    : OVIDE 2010
Date       : 17/06/2010  Ship     : N/O THALASSA
Depth      : 4605 m      Organism  : IFREMER
Position   : N 46 10.19
            W 019 22.85
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.277	35.832	258.4	18.277	3050.0	2.935	34.945	259.4	2.680
10.0	16.902	35.789	262.5	16.900	3100.0	2.901	34.944	258.3	2.642
20.0	15.980	35.781	268.6	15.977	3150.0	2.881	34.943	257.3	2.617
30.0	15.728	35.781	268.8	15.724	3200.0	2.842	34.941	256.1	2.574
40.0	14.636	35.801	266.6	14.630	3250.0	2.823	34.940	254.8	2.549
50.0	13.661	35.845	262.0	13.654	3300.0	2.790	34.938	253.8	2.512
100.0	13.154	35.823	241.2	13.140	3350.0	2.769	34.936	252.7	2.486
150.0	12.719	35.757	237.0	12.698	3400.0	2.736	34.934	251.6	2.448
200.0	12.523	35.733	240.0	12.496	3450.0	2.713	34.932	250.4	2.421
250.0	12.334	35.706	238.2	12.300	3500.0	2.694	34.930	249.2	2.396
300.0	12.231	35.696	248.8	12.191	3550.0	2.674	34.928	248.5	2.372
350.0	12.122	35.682	250.2	12.075	3600.0	2.659	34.926	247.6	2.351
400.0	12.086	35.689	252.5	12.033	3650.0	2.649	34.925	247.0	2.336
450.0	12.066	35.688	252.4	12.006	3700.0	2.636	34.923	246.1	2.318
500.0	11.786	35.633	240.6	11.720	3750.0	2.619	34.921	245.4	2.296
550.0	11.530	35.594	236.8	11.459	3800.0	2.608	34.920	244.6	2.280
600.0	11.295	35.560	223.3	11.218	3850.0	2.603	34.919	244.1	2.269
650.0	11.026	35.535	209.1	10.943	3900.0	2.593	34.917	243.6	2.253
700.0	10.673	35.514	199.5	10.586	3950.0	2.589	34.916	243.2	2.244
750.0	10.434	35.516	192.0	10.342	4000.0	2.583	34.915	242.8	2.233
800.0	9.725	35.417	188.0	9.631	4050.0	2.582	34.915	242.5	2.225
850.0	9.649	35.480	185.4	9.548	4100.0	2.581	34.914	242.3	2.219
900.0	9.721	35.576	184.1	9.614	4150.0	2.579	34.913	242.0	2.211
950.0	9.092	35.529	188.6	8.983	4200.0	2.580	34.913	241.8	2.206
1000.0	9.676	35.747	185.1	9.556	4250.0	2.581	34.912	241.6	2.202
1050.0	9.000	35.628	190.0	8.879	4300.0	2.584	34.912	241.5	2.198
1100.0	8.416	35.554	198.6	8.294	4350.0	2.585	34.911	241.1	2.193
1150.0	7.521	35.408	208.3	7.401	4400.0	2.587	34.911	241.1	2.189
1200.0	6.813	35.295	218.2	6.693	4450.0	2.591	34.911	241.0	2.187
1250.0	6.586	35.285	223.6	6.463	4500.0	2.590	34.910	240.9	2.180
1300.0	6.220	35.240	228.6	6.096	4550.0	2.593	34.910	240.8	2.176
1350.0	5.651	35.154	237.3	5.527	4600.0	2.591	34.909	240.8	2.168
1400.0	5.199	35.089	246.2	5.074	4650.0	2.593	34.909	240.7	2.164
1450.0	4.800	35.034	254.4	4.675	4682.0	2.591	34.908	241.0	2.158
1500.0	4.500	34.989	259.7	4.375					
1550.0	4.347	34.970	263.4	4.218					
1600.0	4.257	34.966	264.8	4.124					
1650.0	4.158	34.956	267.1	4.022					
1700.0	4.070	34.948	268.6	3.930					
1750.0	3.957	34.936	270.4	3.814					
1800.0	3.909	34.935	270.8	3.763					
1850.0	3.805	34.926	273.2	3.655					
1900.0	3.732	34.922	273.6	3.578					
1950.0	3.653	34.914	275.2	3.496					
2000.0	3.612	34.915	275.4	3.451					
2050.0	3.541	34.909	276.5	3.376					
2100.0	3.488	34.909	277.5	3.318					
2150.0	3.452	34.909	277.8	3.278					
2200.0	3.426	34.913	277.3	3.248					
2250.0	3.387	34.915	277.3	3.205					
2300.0	3.371	34.919	277.1	3.184					
2350.0	3.317	34.919	276.8	3.127					
2400.0	3.281	34.918	277.1	3.086					
2450.0	3.253	34.921	276.1	3.053					
2500.0	3.246	34.927	274.1	3.041					
2550.0	3.221	34.933	272.2	3.012					
2600.0	3.195	34.936	270.7	2.982					
2650.0	3.216	34.948	268.1	2.997					
2700.0	3.204	34.955	265.6	2.980					
2750.0	3.101	34.941	266.7	2.874					
2800.0	3.070	34.942	266.6	2.839					
2850.0	3.054	34.944	264.1	2.818					
2900.0	3.020	34.945	262.9	2.779					
2950.0	3.003	34.946	261.3	2.757					
3000.0	2.961	34.945	260.9	2.711					



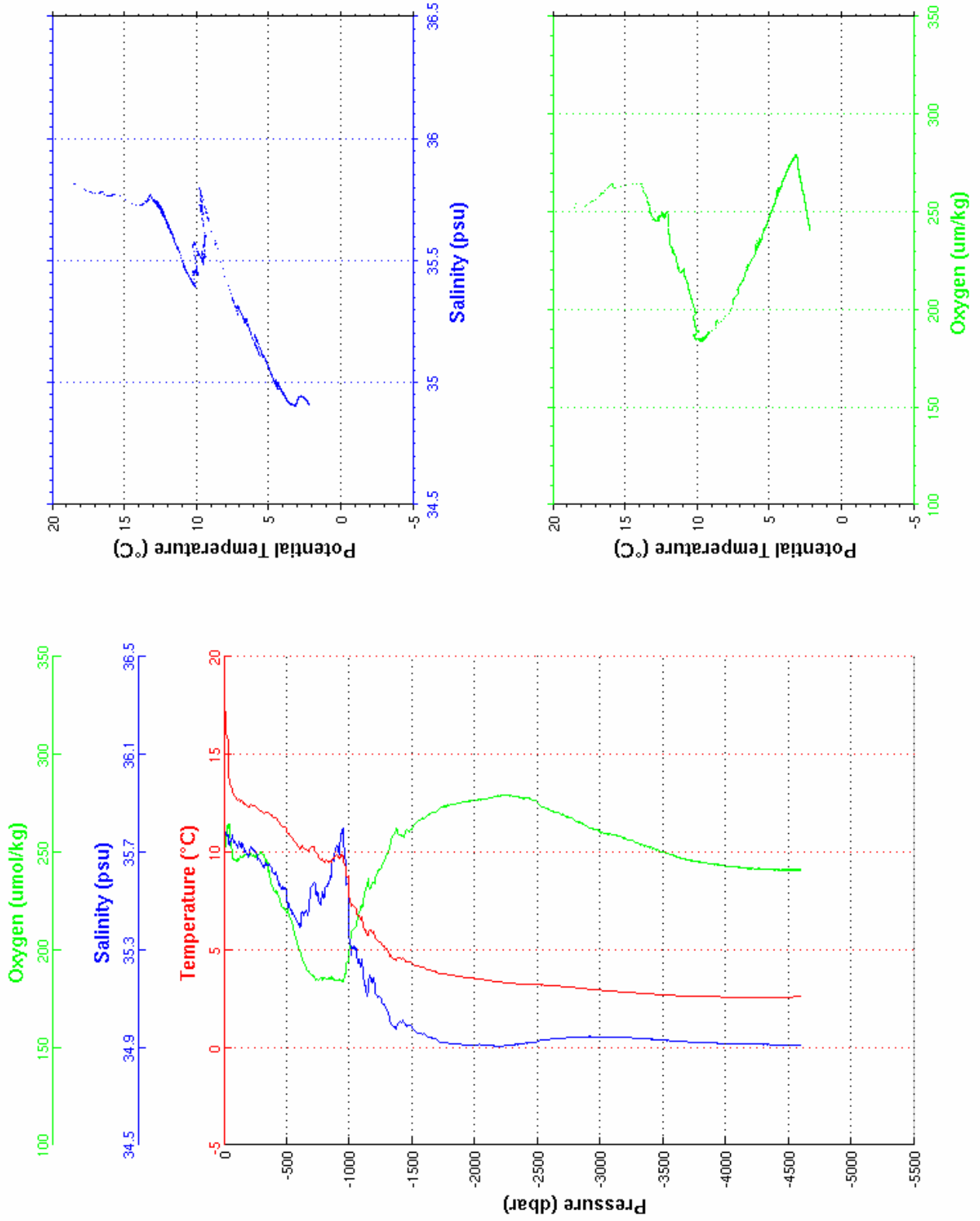
Cast : 32

```

-----
Cast      : 33          Cruise   : OVIDE 2010
Date     : 18/06/2010 Ship      : N/O THALASSA
Depth    : 4526 m     Organism : IFREMER
Position : N 46 32.65
          W 019 40.32
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.505	35.816	252.4	18.505	3050.0	2.906	34.943	259.4	2.652
10.0	17.289	35.781	255.4	17.287	3100.0	2.878	34.942	258.9	2.619
20.0	16.095	35.765	263.0	16.092	3150.0	2.850	34.941	258.1	2.586
30.0	15.818	35.769	263.7	15.813	3200.0	2.830	34.940	257.0	2.562
40.0	13.823	35.726	264.0	13.818	3250.0	2.810	34.939	256.0	2.537
50.0	13.456	35.744	255.7	13.449	3300.0	2.780	34.937	254.6	2.502
100.0	12.712	35.726	245.8	12.699	3350.0	2.756	34.935	253.4	2.474
150.0	12.594	35.729	247.6	12.574	3400.0	2.743	34.934	252.4	2.455
200.0	12.343	35.688	248.4	12.316	3450.0	2.718	34.932	251.1	2.425
250.0	12.316	35.696	248.5	12.283	3500.0	2.694	34.930	250.0	2.396
300.0	12.086	35.651	249.3	12.046	3550.0	2.675	34.928	249.0	2.372
350.0	12.021	35.653	240.2	11.975	3600.0	2.655	34.926	247.9	2.348
400.0	11.786	35.615	229.5	11.734	3650.0	2.640	34.924	246.7	2.328
450.0	11.406	35.553	223.5	11.348	3700.0	2.620	34.922	245.9	2.303
500.0	11.152	35.520	219.2	11.089	3750.0	2.617	34.921	245.5	2.294
550.0	10.667	35.448	210.8	10.599	3800.0	2.609	34.920	244.7	2.281
600.0	10.245	35.406	199.2	10.172	3850.0	2.598	34.918	244.2	2.264
650.0	10.177	35.454	191.0	10.099	3900.0	2.597	34.918	243.8	2.257
700.0	10.309	35.561	186.6	10.223	3950.0	2.593	34.917	243.5	2.248
750.0	9.840	35.520	184.6	9.751	4000.0	2.581	34.915	242.8	2.230
800.0	9.477	35.519	185.8	9.383	4050.0	2.576	34.914	242.5	2.220
850.0	9.501	35.601	185.3	9.402	4100.0	2.576	34.914	242.3	2.214
900.0	9.853	35.729	183.6	9.745	4150.0	2.568	34.912	241.8	2.201
950.0	9.809	35.784	183.8	9.695	4200.0	2.573	34.912	241.6	2.200
1000.0	7.616	35.343	203.5	7.512	4250.0	2.577	34.912	241.5	2.197
1050.0	7.167	35.308	212.3	7.061	4300.0	2.582	34.912	241.5	2.197
1100.0	6.645	35.260	221.8	6.538	4350.0	2.581	34.911	241.3	2.189
1150.0	5.770	35.125	236.5	5.665	4400.0	2.582	34.911	240.8	2.184
1200.0	5.827	35.162	234.3	5.717	4450.0	2.584	34.911	240.8	2.180
1250.0	5.388	35.103	242.0	5.276	4500.0	2.585	34.910	240.9	2.175
1300.0	5.013	35.051	249.1	4.901	4550.0	2.589	34.909	240.9	2.173
1350.0	4.561	34.984	259.3	4.448	4596.0	2.594	34.910	241.0	2.172
1400.0	4.590	35.005	258.1	4.473					
1450.0	4.409	34.983	261.3	4.288					
1500.0	4.301	34.978	262.3	4.178					
1550.0	4.158	34.960	266.0	4.032					
1600.0	4.049	34.950	267.6	3.919					
1650.0	3.943	34.939	269.8	3.809					
1700.0	3.843	34.928	271.7	3.706					
1750.0	3.758	34.920	273.5	3.618					
1800.0	3.704	34.916	274.3	3.560					
1850.0	3.655	34.914	274.8	3.507					
1900.0	3.603	34.912	275.5	3.451					
1950.0	3.569	34.911	276.2	3.412					
2000.0	3.536	34.912	276.5	3.376					
2050.0	3.488	34.911	276.9	3.324					
2100.0	3.435	34.910	277.6	3.267					
2150.0	3.376	34.907	278.4	3.204					
2200.0	3.342	34.906	278.9	3.165					
2250.0	3.308	34.907	279.1	3.128					
2300.0	3.286	34.911	278.7	3.100					
2350.0	3.259	34.914	278.2	3.069					
2400.0	3.247	34.918	277.5	3.053					
2450.0	3.222	34.920	276.4	3.023					
2500.0	3.208	34.927	274.7	3.004					
2550.0	3.196	34.931	272.7	2.988					
2600.0	3.170	34.933	271.6	2.957					
2650.0	3.143	34.934	270.9	2.925					
2700.0	3.120	34.937	269.2	2.898					
2750.0	3.094	34.940	267.8	2.868					
2800.0	3.059	34.942	266.3	2.828					
2850.0	3.019	34.943	265.0	2.784					
2900.0	2.989	34.944	263.0	2.749					
2950.0	2.967	34.944	261.8	2.722					
3000.0	2.934	34.944	260.2	2.685					



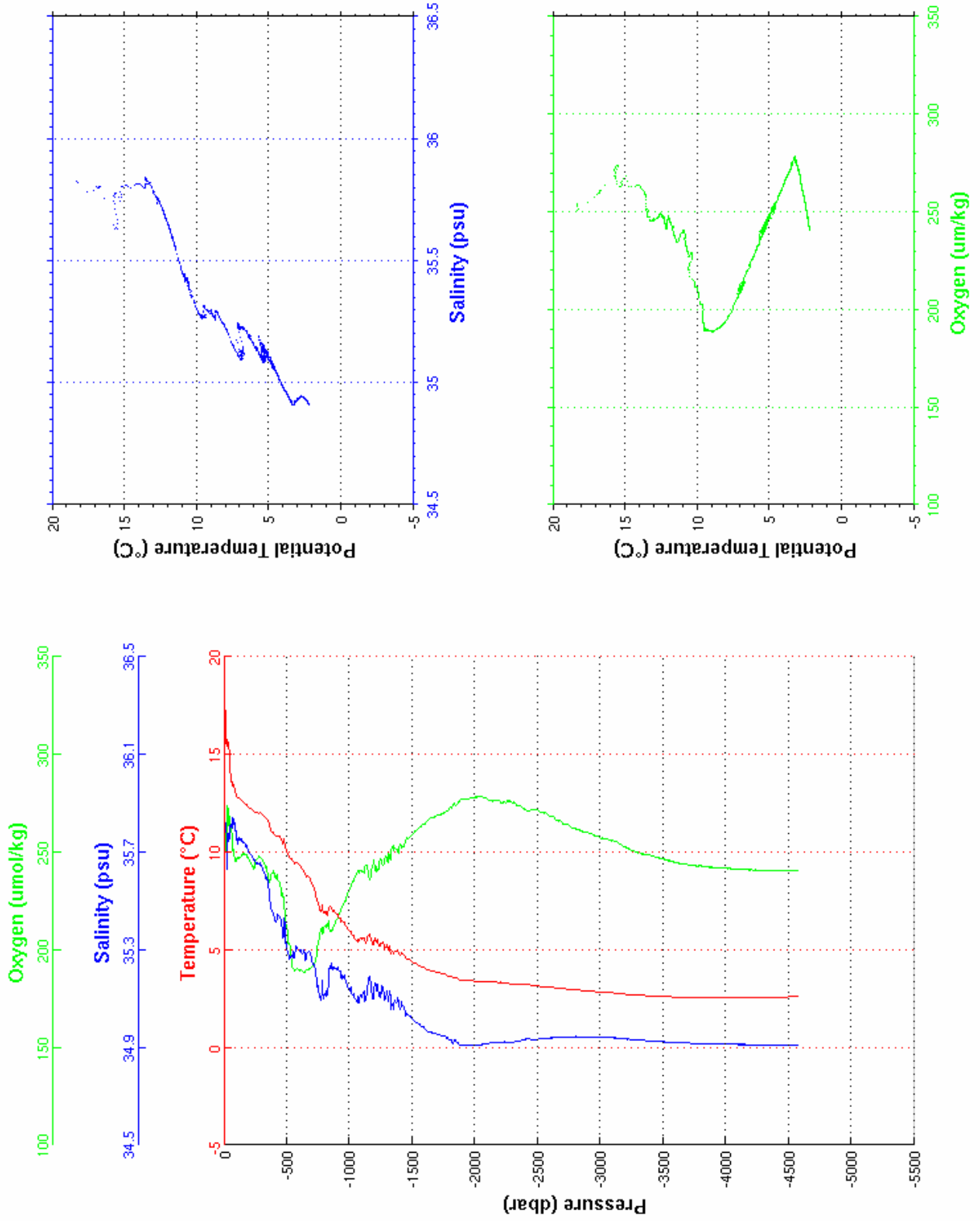
**Cast : 33**

```

-----
Cast       : 34           Cruise    : OVIDE 2010
Date       : 18/06/2010  Ship     : N/O THALASSA
Depth      : 4505 m      Organism  : IFREMER
Position   : N 46 54.98
            W 019 58.19
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	18.306	35.823	253.5	18.306	3050.0	2.816	34.941	256.6	2.564
10.0	17.545	35.779	255.0	17.543	3100.0	2.794	34.939	255.8	2.537
20.0	15.762	35.649	268.2	15.759	3150.0	2.764	34.937	254.6	2.502
30.0	15.748	35.765	270.8	15.743	3200.0	2.726	34.935	252.7	2.460
40.0	15.227	35.762	263.6	15.221	3250.0	2.693	34.932	251.1	2.423
50.0	14.289	35.811	263.3	14.282	3300.0	2.672	34.930	250.0	2.397
100.0	12.934	35.783	245.8	12.921	3350.0	2.658	34.928	249.0	2.378
150.0	12.581	35.742	248.9	12.560	3400.0	2.639	34.926	248.3	2.354
200.0	12.281	35.696	245.5	12.254	3450.0	2.624	34.924	247.4	2.334
250.0	12.043	35.656	246.0	12.010	3500.0	2.611	34.923	246.6	2.316
300.0	11.946	35.641	246.1	11.907	3550.0	2.595	34.921	245.7	2.295
350.0	11.617	35.578	237.7	11.571	3600.0	2.584	34.920	244.5	2.279
400.0	10.915	35.436	239.0	10.866	3650.0	2.574	34.918	244.0	2.263
450.0	10.747	35.420	231.5	10.692	3700.0	2.569	34.918	243.5	2.253
500.0	10.047	35.305	211.4	9.987	3750.0	2.561	34.916	243.2	2.240
550.0	9.516	35.273	189.9	9.452	3800.0	2.562	34.916	242.8	2.235
600.0	9.341	35.298	189.5	9.273	3850.0	2.558	34.915	242.4	2.225
650.0	8.771	35.258	189.7	8.699	3900.0	2.557	34.914	242.2	2.218
700.0	8.394	35.260	191.3	8.319	3950.0	2.557	34.914	242.0	2.213
750.0	7.417	35.137	203.9	7.342	4000.0	2.556	34.913	241.7	2.207
800.0	6.935	35.119	211.9	6.857	4050.0	2.556	34.913	241.4	2.200
850.0	7.158	35.226	209.9	7.074	4100.0	2.557	34.912	241.3	2.196
900.0	6.851	35.228	216.0	6.763	4150.0	2.559	34.912	241.1	2.192
950.0	6.394	35.187	224.0	6.304	4200.0	2.562	34.911	240.9	2.189
1000.0	5.967	35.139	231.0	5.875	4250.0	2.566	34.911	240.7	2.186
1050.0	5.550	35.095	238.8	5.457	4300.0	2.571	34.911	240.8	2.185
1100.0	5.570	35.121	239.7	5.471	4350.0	2.576	34.911	240.7	2.185
1150.0	5.725	35.174	239.3	5.620	4400.0	2.579	34.911	240.6	2.181
1200.0	5.528	35.153	242.5	5.420	4450.0	2.584	34.910	240.6	2.180
1250.0	5.307	35.124	245.9	5.197	4500.0	2.589	34.910	240.5	2.179
1300.0	5.265	35.131	246.2	5.150	4550.0	2.593	34.910	240.5	2.177
1350.0	4.788	35.058	251.9	4.673	4576.0	2.596	34.910	240.7	2.177
1400.0	4.728	35.057	253.9	4.609					
1450.0	4.520	35.032	256.5	4.398					
1500.0	4.386	35.016	259.2	4.261					
1550.0	4.229	34.997	262.1	4.102					
1600.0	4.050	34.975	264.9	3.920					
1650.0	3.937	34.963	267.4	3.804					
1700.0	3.847	34.953	268.8	3.710					
1750.0	3.771	34.947	270.0	3.631					
1800.0	3.643	34.930	272.9	3.500					
1850.0	3.551	34.921	274.2	3.404					
1900.0	3.463	34.909	277.2	3.313					
1950.0	3.431	34.908	277.5	3.277					
2000.0	3.397	34.908	278.1	3.239					
2050.0	3.359	34.908	278.5	3.197					
2100.0	3.365	34.913	277.5	3.197					
2150.0	3.367	34.920	276.0	3.195					
2200.0	3.341	34.923	275.5	3.164					
2250.0	3.275	34.920	275.7	3.095					
2300.0	3.248	34.921	275.6	3.064					
2350.0	3.232	34.926	274.1	3.042					
2400.0	3.224	34.934	271.8	3.029					
2450.0	3.173	34.932	271.8	2.975					
2500.0	3.137	34.934	271.4	2.934					
2550.0	3.108	34.936	270.2	2.901					
2600.0	3.081	34.939	268.6	2.869					
2650.0	3.048	34.941	266.5	2.832					
2700.0	3.005	34.943	264.9	2.785					
2750.0	2.972	34.944	263.4	2.748					
2800.0	2.951	34.944	262.2	2.722					
2850.0	2.921	34.944	260.7	2.687					
2900.0	2.892	34.943	260.0	2.654					
2950.0	2.863	34.943	258.5	2.621					
3000.0	2.833	34.941	257.4	2.585					



**Cast : 34**

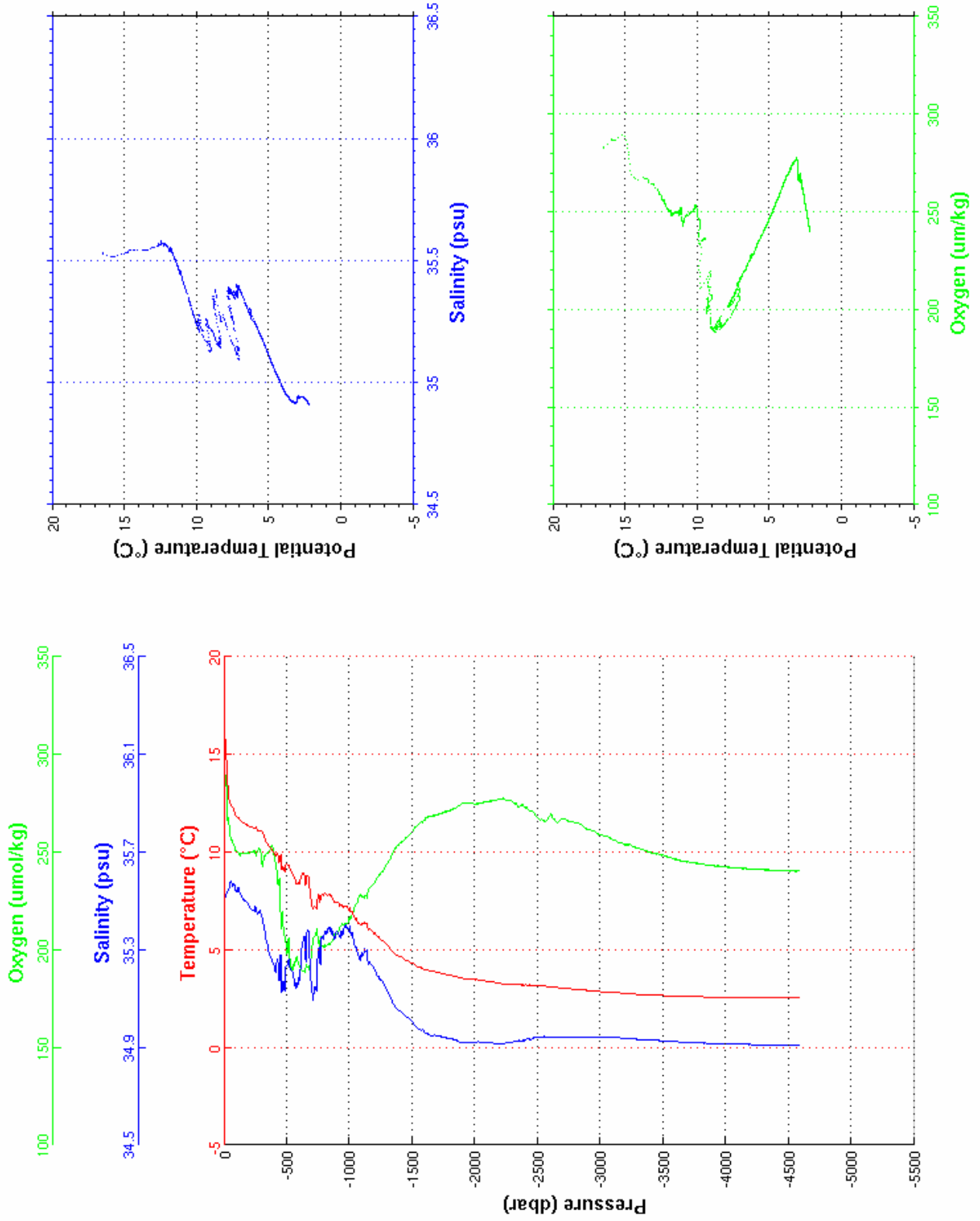
```

-----
Cast       : 35           Cruise    : OVIDE 2010
Date       : 18/06/2010  Ship     : N/O THALASSA
Depth      : 4516 m      Organism  : IFREMER
Position   : N 47 17.39
            W 020 15.71
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.514	35.532	283.5	16.514	3050.0	2.832	34.941	258.0	2.579
10.0	15.834	35.515	286.9	15.832	3100.0	2.812	34.940	256.7	2.555
20.0	14.723	35.539	279.0	14.720	3150.0	2.794	34.939	255.0	2.532
30.0	13.588	35.543	266.9	13.584	3200.0	2.768	34.937	253.8	2.501
40.0	12.865	35.556	262.0	12.859	3250.0	2.747	34.936	253.3	2.475
50.0	12.487	35.578	256.7	12.850	3300.0	2.720	34.933	251.9	2.443
100.0	11.827	35.540	250.2	11.814	3350.0	2.702	34.932	251.0	2.421
150.0	11.514	35.507	249.6	11.495	3400.0	2.685	34.930	249.9	2.398
200.0	11.319	35.474	250.0	11.294	3450.0	2.672	34.928	249.0	2.381
250.0	11.290	35.475	248.6	11.259	3500.0	2.658	34.927	248.3	2.362
300.0	11.054	35.435	244.5	11.017	3550.0	2.643	34.925	247.3	2.341
350.0	10.385	35.307	250.0	10.343	3600.0	2.624	34.923	246.4	2.318
400.0	9.971	35.233	246.9	9.924	3650.0	2.611	34.922	245.6	2.299
450.0	9.869	35.275	218.9	9.817	3700.0	2.602	34.920	245.0	2.285
500.0	9.363	35.240	198.2	9.306	3750.0	2.597	34.919	244.4	2.275
550.0	8.830	35.193	190.9	8.770	3800.0	2.590	34.918	243.9	2.262
600.0	8.420	35.180	191.6	8.356	3850.0	2.585	34.917	243.5	2.251
650.0	8.337	35.248	191.4	8.267	3900.0	2.584	34.917	243.2	2.245
700.0	7.386	35.134	201.3	7.316	3950.0	2.579	34.916	242.9	2.235
750.0	7.634	35.268	204.2	7.557	4000.0	2.576	34.915	242.7	2.225
800.0	7.914	35.373	201.7	7.830	4050.0	2.573	34.914	242.1	2.217
850.0	7.704	35.367	204.0	7.616	4100.0	2.573	34.913	241.9	2.211
900.0	7.488	35.375	208.4	7.395	4150.0	2.570	34.912	241.6	2.202
950.0	7.194	35.368	213.7	7.098	4200.0	2.570	34.912	241.3	2.196
1000.0	7.054	35.372	216.9	6.954	4250.0	2.571	34.911	241.2	2.192
1050.0	6.569	35.305	223.8	6.467	4300.0	2.572	34.911	241.0	2.187
1100.0	6.310	35.276	227.5	6.206	4350.0	2.571	34.910	240.8	2.180
1150.0	6.066	35.246	230.7	5.959	4400.0	2.568	34.910	240.5	2.170
1200.0	5.844	35.218	234.9	5.734	4450.0	2.569	34.909	240.3	2.165
1250.0	5.538	35.178	239.8	5.425	4500.0	2.569	34.908	240.3	2.160
1300.0	5.222	35.131	244.4	5.107	4550.0	2.575	34.908	240.4	2.159
1350.0	4.852	35.076	250.8	4.737	4587.0	2.579	34.908	240.5	2.158
1400.0	4.645	35.047	254.7	4.527					
1450.0	4.493	35.028	257.4	4.372					
1500.0	4.316	35.004	260.8	4.192					
1550.0	4.127	34.978	264.4	4.001					
1600.0	3.972	34.957	267.0	3.843					
1650.0	3.898	34.949	268.5	3.765					
1700.0	3.854	34.948	269.1	3.718					
1750.0	3.761	34.941	270.4	3.621					
1800.0	3.703	34.937	271.4	3.559					
1850.0	3.627	34.930	272.7	3.480					
1900.0	3.533	34.919	274.9	3.382					
1950.0	3.497	34.919	275.4	3.342					
2000.0	3.486	34.924	274.6	3.326					
2050.0	3.432	34.921	275.2	3.268					
2100.0	3.382	34.919	275.9	3.214					
2150.0	3.337	34.917	276.5	3.166					
2200.0	3.279	34.915	277.2	3.103					
2250.0	3.249	34.918	276.5	3.069					
2300.0	3.233	34.923	275.6	3.049					
2350.0	3.231	34.929	273.1	3.041					
2400.0	3.206	34.933	273.0	3.012					
2450.0	3.173	34.933	271.3	2.975					
2500.0	3.187	34.943	267.2	2.984					
2550.0	3.158	34.944	266.0	2.950					
2600.0	3.076	34.936	269.3	2.865					
2650.0	3.086	34.944	264.9	2.870					
2700.0	3.032	34.940	267.0	2.812					
2750.0	3.004	34.941	266.3	2.779					
2800.0	2.971	34.942	265.0	2.741					
2850.0	2.951	34.942	264.0	2.716					
2900.0	2.922	34.943	261.7	2.684					
2950.0	2.890	34.943	260.8	2.647					
3000.0	2.856	34.942	258.9	2.608					





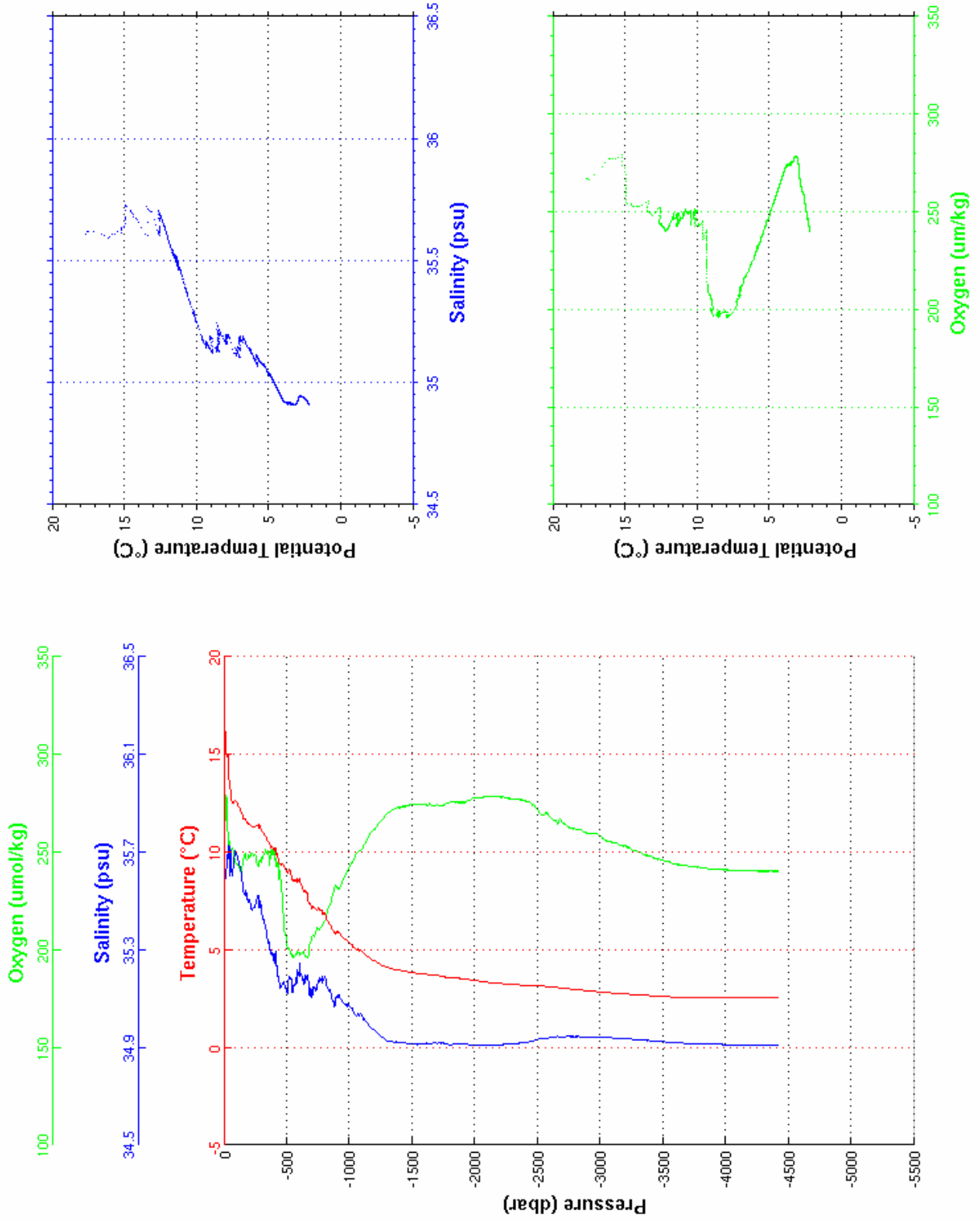
**Cast : 35**

```

-----
Cast       : 36           Cruise    : OVIDE 2010
Date       : 18/06/2010  Ship     : N/O THALASSA
Depth      : 4355 m      Organism  : IFREMER
Position   : N 47 39.90
            W 020 33.22
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.657	35.608	266.7	17.657	3050.0	2.808	34.940	255.8	2.556
10.0	16.382	35.601	275.3	16.381	3100.0	2.784	34.939	254.9	2.528
20.0	15.033	35.636	272.4	15.030	3150.0	2.760	34.937	253.8	2.499
30.0	14.935	35.708	257.9	14.930	3200.0	2.739	34.936	253.0	2.473
40.0	14.076	35.667	252.8	14.070	3250.0	2.712	34.934	251.4	2.441
50.0	13.362	35.710	250.2	13.355	3300.0	2.694	34.932	250.2	2.419
100.0	12.536	35.690	243.3	12.523	3350.0	2.669	34.929	248.6	2.388
150.0	11.821	35.560	245.1	11.802	3400.0	2.644	34.927	247.9	2.358
200.0	11.456	35.503	247.8	11.430	3450.0	2.621	34.925	246.6	2.331
250.0	11.306	35.480	247.8	11.275	3500.0	2.609	34.923	245.8	2.313
300.0	11.139	35.459	246.5	11.101	3550.0	2.591	34.921	245.0	2.291
350.0	10.479	35.327	250.7	10.437	3600.0	2.572	34.919	243.9	2.267
400.0	10.061	35.248	250.9	10.014	3650.0	2.562	34.918	243.3	2.252
450.0	9.368	35.148	235.8	9.317	3700.0	2.555	34.916	242.9	2.239
500.0	8.987	35.128	202.2	8.932	3750.0	2.549	34.915	242.4	2.228
550.0	8.528	35.132	195.9	8.468	3800.0	2.546	34.914	242.0	2.219
600.0	8.439	35.190	198.5	8.375	3850.0	2.540	34.913	241.6	2.208
650.0	8.016	35.193	195.7	7.948	3900.0	2.539	34.913	241.3	2.201
700.0	7.067	35.103	206.9	6.998	3950.0	2.540	34.912	241.3	2.196
750.0	7.093	35.167	210.9	7.019	4000.0	2.540	34.911	240.9	2.190
800.0	6.860	35.185	215.0	6.783	4050.0	2.540	34.911	240.6	2.185
850.0	6.274	35.127	224.5	6.196	4100.0	2.543	34.911	240.6	2.182
900.0	5.943	35.109	231.0	5.862	4150.0	2.547	34.910	240.5	2.180
950.0	5.629	35.083	236.7	5.545	4200.0	2.550	34.910	240.5	2.177
1000.0	5.340	35.065	242.6	5.253	4250.0	2.553	34.910	240.3	2.174
1050.0	5.017	35.029	249.0	4.928	4300.0	2.555	34.909	240.3	2.170
1100.0	4.908	35.027	251.8	4.815	4350.0	2.558	34.909	240.3	2.167
1150.0	4.629	34.993	258.1	4.535	4400.0	2.554	34.908	240.3	2.157
1200.0	4.453	34.970	262.0	4.355	4423.0	2.556	34.908	240.5	2.156
1250.0	4.250	34.946	266.5	4.150					
1300.0	4.084	34.928	270.1	3.981					
1350.0	4.006	34.922	271.7	3.900					
1400.0	3.959	34.922	272.6	3.849					
1450.0	3.889	34.917	273.7	3.775					
1500.0	3.835	34.914	274.4	3.717					
1550.0	3.777	34.913	274.5	3.655					
1600.0	3.755	34.914	274.4	3.628					
1650.0	3.697	34.912	274.7	3.567					
1700.0	3.690	34.920	273.9	3.555					
1750.0	3.639	34.917	274.1	3.500					
1800.0	3.564	34.911	275.6	3.422					
1850.0	3.551	34.913	275.5	3.405					
1900.0	3.529	34.915	275.4	3.378					
1950.0	3.474	34.911	276.5	3.319					
2000.0	3.416	34.907	277.8	3.257					
2050.0	3.380	34.907	278.0	3.217					
2100.0	3.336	34.907	278.5	3.169					
2150.0	3.308	34.908	278.7	3.136					
2200.0	3.281	34.910	278.4	3.105					
2250.0	3.249	34.913	277.7	3.070					
2300.0	3.219	34.915	277.5	3.035					
2350.0	3.200	34.917	277.0	3.011					
2400.0	3.179	34.920	276.2	2.986					
2450.0	3.168	34.926	274.6	2.970					
2500.0	3.154	34.933	271.4	2.951					
2550.0	3.133	34.938	268.9	2.926					
2600.0	3.096	34.940	267.5	2.884					
2650.0	3.081	34.944	265.4	2.865					
2700.0	3.037	34.943	264.7	2.816					
2750.0	3.002	34.945	262.6	2.777					
2800.0	2.970	34.945	261.9	2.740					
2850.0	2.942	34.944	261.0	2.708					
2900.0	2.912	34.944	259.7	2.673					
2950.0	2.870	34.943	259.6	2.627					
3000.0	2.836	34.942	258.1	2.589					



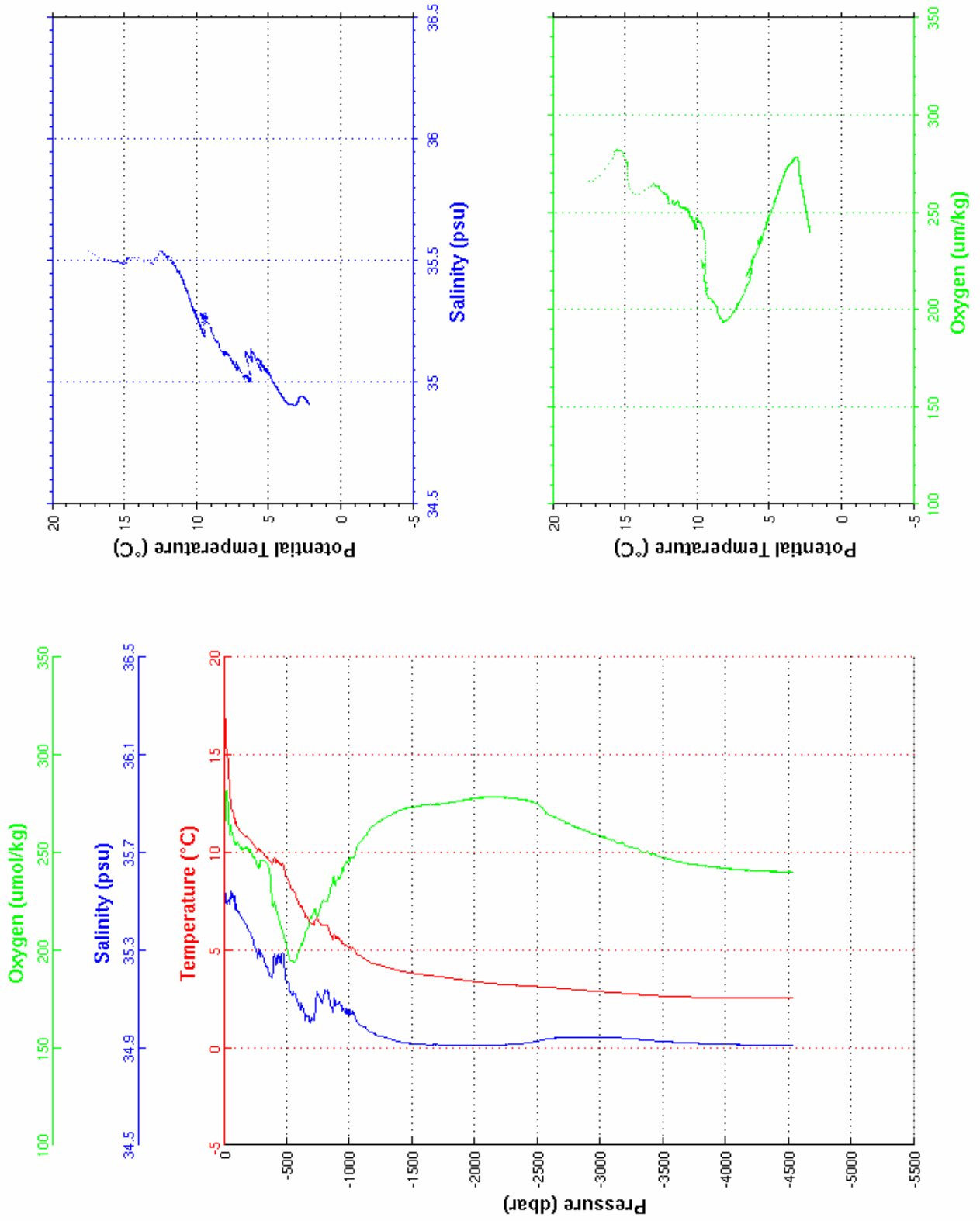
**Cast : 36**

```

-----
Cast       : 37           Cruise    : OVIDE 2010
Date       : 18/06/2010  Ship     : N/O THALASSA
Depth      : 4458 m      Organism  : IFREMER
Position   : N 48  2.33
              W 020 50.83
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.446	35.540	266.1	17.446	3050.0	2.848	34.942	257.4	2.596
10.0	16.996	35.525	267.1	16.995	3100.0	2.815	34.940	256.7	2.558
20.0	15.456	35.498	281.7	15.453	3150.0	2.801	34.940	255.0	2.539
30.0	14.847	35.501	274.8	14.843	3200.0	2.776	34.938	253.8	2.509
40.0	14.474	35.514	260.3	14.468	3250.0	2.749	34.936	252.6	2.477
50.0	12.887	35.510	263.6	12.880	3300.0	2.729	34.934	251.6	2.452
100.0	11.356	35.460	255.7	11.344	3350.0	2.704	34.932	250.2	2.422
150.0	10.971	35.423	251.8	10.952	3400.0	2.679	34.930	249.4	2.393
200.0	10.669	35.373	251.5	10.645	3450.0	2.658	34.927	248.6	2.367
250.0	10.319	35.311	245.6	10.290	3500.0	2.643	34.926	247.3	2.347
300.0	10.085	35.286	246.9	10.050	3550.0	2.627	34.924	246.6	2.326
350.0	9.694	35.219	243.0	9.654	3600.0	2.610	34.922	245.6	2.304
400.0	9.726	35.279	224.9	9.680	3650.0	2.600	34.920	244.9	2.289
450.0	9.455	35.270	212.3	9.404	3700.0	2.592	34.919	244.3	2.275
500.0	8.673	35.165	200.9	8.619	3750.0	2.585	34.918	243.7	2.262
550.0	8.076	35.126	194.1	8.018	3800.0	2.578	34.917	243.4	2.251
600.0	7.337	35.060	200.8	7.278	3850.0	2.572	34.916	242.9	2.239
650.0	6.730	35.020	210.0	6.668	3900.0	2.567	34.915	242.5	2.229
700.0	6.340	35.014	217.6	6.275	3950.0	2.565	34.914	242.1	2.220
750.0	6.575	35.120	218.2	6.505	4000.0	2.562	34.913	241.9	2.212
800.0	6.271	35.122	225.1	6.197	4050.0	2.560	34.913	241.6	2.204
850.0	5.774	35.075	232.3	5.698	4100.0	2.559	34.912	241.2	2.198
900.0	5.637	35.083	236.5	5.558	4150.0	2.558	34.911	240.9	2.191
950.0	5.327	35.054	242.0	5.245	4200.0	2.559	34.911	240.8	2.186
1000.0	5.210	35.055	245.6	5.124	4250.0	2.560	34.910	240.7	2.181
1050.0	4.901	35.019	251.3	4.813	4300.0	2.562	34.910	240.5	2.176
1100.0	4.646	34.990	256.7	4.555	4350.0	2.564	34.910	240.4	2.172
1150.0	4.435	34.968	261.2	4.342	4400.0	2.566	34.909	240.2	2.169
1200.0	4.299	34.955	264.5	4.203	4450.0	2.570	34.909	240.0	2.167
1250.0	4.204	34.947	266.4	4.105	4500.0	2.573	34.909	240.1	2.164
1300.0	4.117	34.938	268.3	4.014	4539.0	2.574	34.908	239.9	2.159
1350.0	4.018	34.930	270.2	3.911					
1400.0	3.938	34.923	271.7	3.828					
1450.0	3.867	34.919	272.7	3.753					
1500.0	3.817	34.916	273.4	3.699					
1550.0	3.784	34.915	273.7	3.662					
1600.0	3.726	34.912	274.4	3.600					
1650.0	3.677	34.911	274.8	3.547					
1700.0	3.650	34.912	274.8	3.516					
1750.0	3.615	34.911	274.8	3.477					
1800.0	3.561	34.910	275.5	3.419					
1850.0	3.513	34.909	276.2	3.366					
1900.0	3.473	34.908	276.6	3.323					
1950.0	3.425	34.907	277.4	3.271					
2000.0	3.371	34.907	277.9	3.213					
2050.0	3.347	34.907	278.2	3.184					
2100.0	3.313	34.907	278.4	3.146					
2150.0	3.272	34.909	278.4	3.101					
2200.0	3.257	34.910	278.4	3.082					
2250.0	3.233	34.912	278.1	3.054					
2300.0	3.214	34.914	277.8	3.030					
2350.0	3.196	34.916	277.4	3.007					
2400.0	3.184	34.918	277.1	2.990					
2450.0	3.165	34.921	276.2	2.967					
2500.0	3.133	34.926	274.6	2.930					
2550.0	3.124	34.933	271.8	2.917					
2600.0	3.093	34.937	269.3	2.882					
2650.0	3.065	34.939	267.8	2.849					
2700.0	3.038	34.941	266.2	2.817					
2750.0	3.010	34.943	264.9	2.785					
2800.0	2.977	34.944	263.2	2.747					
2850.0	2.951	34.944	262.1	2.717					
2900.0	2.926	34.944	260.8	2.687					
2950.0	2.901	34.943	259.3	2.658					
3000.0	2.875	34.943	258.4	2.627					



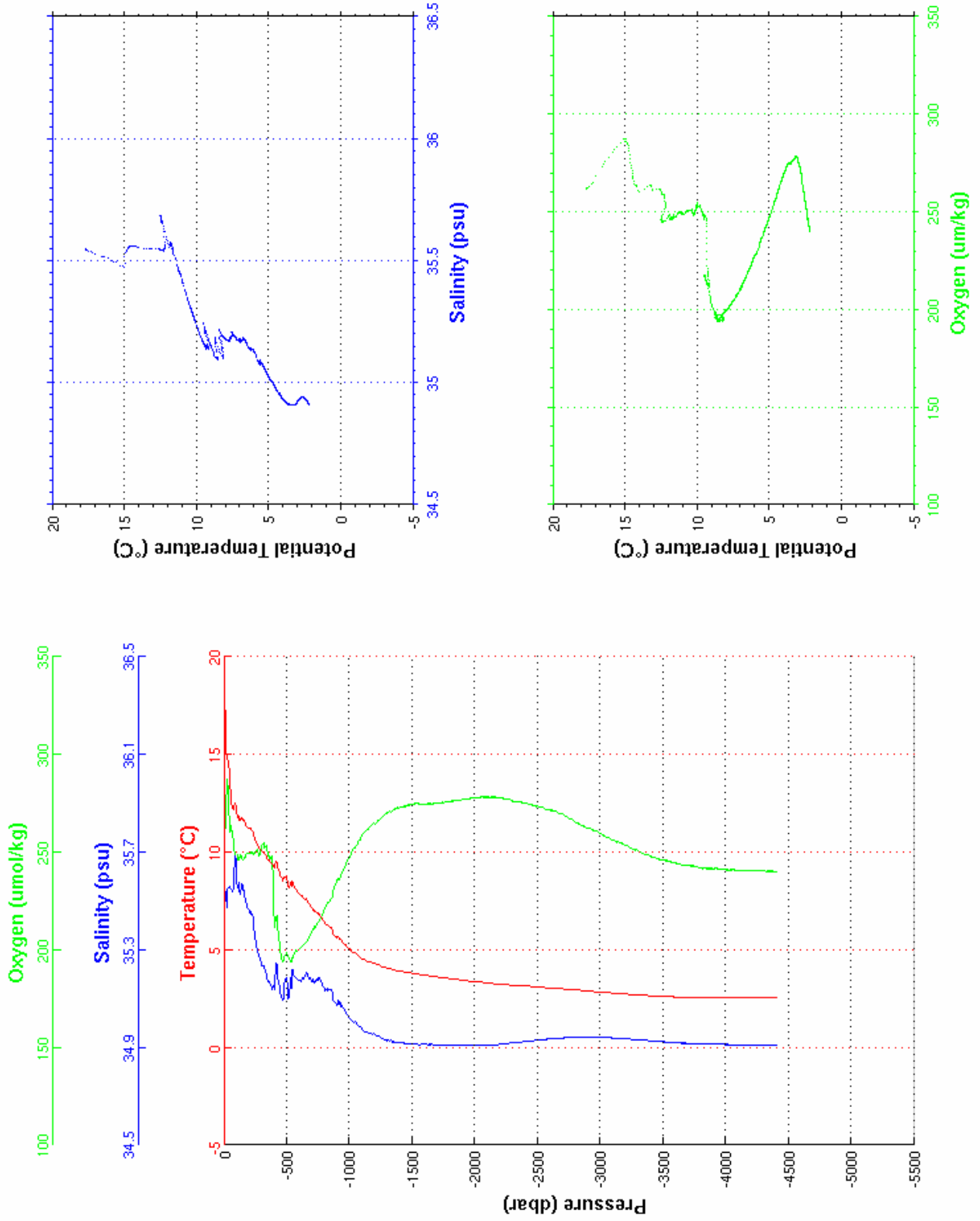
**Cast : 37**

```

-----
Cast       : 38           Cruise    : OVIDE 2010
Date      : 19/06/2010  Ship     : N/O THALASSA
Depth     : 4341 m      Organism  : IFREMER
Position  : N 48 24.77
           W 021 8.50
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.688	35.547	261.9	17.688	3050.0	2.807	34.940	257.7	2.555
10.0	17.343	35.536	264.0	17.342	3100.0	2.783	34.939	256.2	2.526
20.0	15.304	35.481	285.4	15.300	3150.0	2.756	34.937	255.0	2.494
30.0	14.703	35.554	281.2	14.699	3200.0	2.734	34.935	253.7	2.468
40.0	14.428	35.560	266.7	14.422	3250.0	2.704	34.933	251.7	2.433
50.0	13.274	35.548	263.5	13.267	3300.0	2.685	34.931	250.8	2.410
100.0	12.108	35.596	246.4	12.095	3350.0	2.663	34.929	249.0	2.383
150.0	11.631	35.542	246.8	11.612	3400.0	2.640	34.926	247.9	2.355
200.0	11.246	35.461	249.5	11.221	3450.0	2.620	34.924	246.8	2.330
250.0	10.624	35.341	250.5	10.594	3500.0	2.610	34.923	246.1	2.315
300.0	10.064	35.243	253.4	10.029	3550.0	2.598	34.921	245.2	2.297
350.0	9.618	35.169	248.3	9.578	3600.0	2.583	34.920	244.7	2.278
400.0	9.219	35.139	213.3	9.174	3650.0	2.563	34.917	243.5	2.252
450.0	8.843	35.119	198.0	8.794	3700.0	2.563	34.917	243.1	2.247
500.0	8.756	35.183	198.4	8.701	3750.0	2.558	34.916	242.9	2.237
550.0	8.416	35.208	196.3	8.357	3800.0	2.542	34.914	241.9	2.215
600.0	7.854	35.173	201.1	7.792	3850.0	2.540	34.913	241.6	2.208
650.0	7.627	35.205	203.9	7.561	3900.0	2.544	34.913	241.5	2.206
700.0	7.096	35.172	210.0	7.028	3950.0	2.547	34.913	241.5	2.203
750.0	6.867	35.186	214.2	6.794	4000.0	2.544	34.912	241.2	2.194
800.0	6.425	35.143	221.1	6.350	4050.0	2.543	34.911	240.9	2.188
850.0	6.168	35.137	226.1	6.089	4100.0	2.545	34.911	240.8	2.184
900.0	5.633	35.076	235.8	5.554	4150.0	2.549	34.911	240.6	2.182
950.0	5.346	35.056	241.2	5.264	4200.0	2.553	34.911	240.4	2.180
1000.0	5.034	35.019	247.8	4.949	4250.0	2.558	34.910	240.5	2.179
1050.0	4.797	35.001	253.0	4.709	4300.0	2.561	34.910	240.4	2.176
1100.0	4.534	34.971	258.9	4.445	4350.0	2.563	34.910	240.3	2.172
1150.0	4.398	34.957	262.4	4.306	4400.0	2.565	34.909	240.2	2.168
1200.0	4.291	34.950	264.7	4.194	4407.0	2.566	34.909	240.2	2.168
1250.0	4.170	34.939	267.6	4.070					
1300.0	4.057	34.928	270.2	3.954					
1350.0	3.964	34.923	271.9	3.857					
1400.0	3.900	34.919	273.0	3.790					
1450.0	3.854	34.917	273.6	3.740					
1500.0	3.797	34.913	274.2	3.679					
1550.0	3.741	34.912	274.8	3.620					
1600.0	3.712	34.914	274.6	3.586					
1650.0	3.651	34.912	274.8	3.521					
1700.0	3.608	34.911	275.0	3.474					
1750.0	3.561	34.910	275.6	3.424					
1800.0	3.523	34.910	275.9	3.382					
1850.0	3.481	34.909	276.3	3.335					
1900.0	3.435	34.908	277.0	3.285					
1950.0	3.396	34.908	277.4	3.243					
2000.0	3.362	34.908	278.0	3.204					
2050.0	3.338	34.908	278.1	3.175					
2100.0	3.302	34.909	278.2	3.136					
2150.0	3.264	34.910	278.3	3.093					
2200.0	3.237	34.913	277.9	3.062					
2250.0	3.209	34.916	277.2	3.030					
2300.0	3.188	34.920	276.2	3.004					
2350.0	3.172	34.921	275.8	2.983					
2400.0	3.148	34.924	275.0	2.955					
2450.0	3.123	34.927	274.3	2.926					
2500.0	3.095	34.930	273.3	2.893					
2550.0	3.070	34.932	272.6	2.864					
2600.0	3.042	34.935	271.4	2.832					
2650.0	3.023	34.937	270.6	2.808					
2700.0	2.997	34.939	269.3	2.777					
2750.0	2.976	34.940	267.3	2.751					
2800.0	2.945	34.942	265.7	2.716					
2850.0	2.923	34.943	263.9	2.689					
2900.0	2.897	34.943	262.5	2.659					
2950.0	2.859	34.942	261.1	2.616					
3000.0	2.836	34.941	259.6	2.589					



Cast : 38

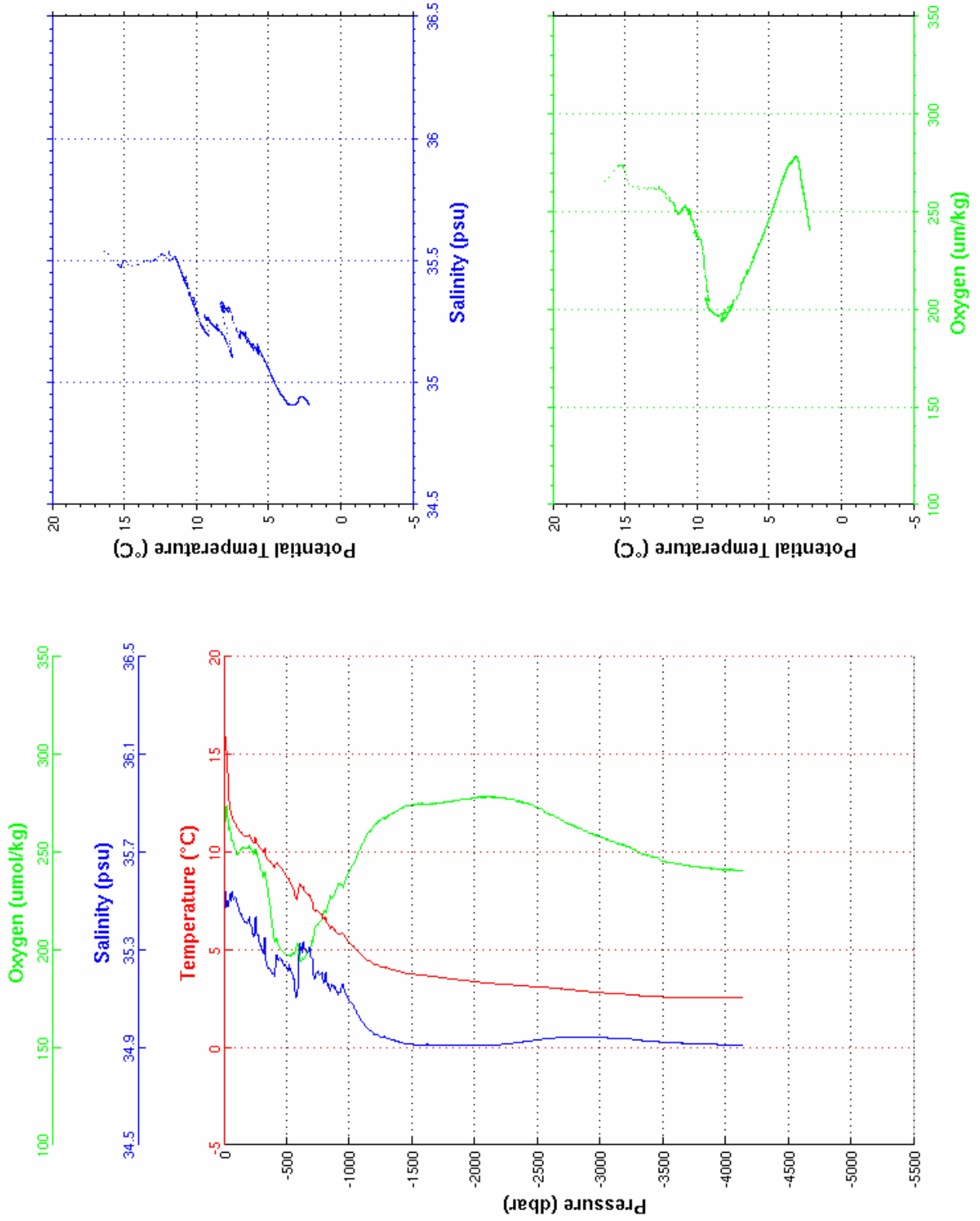
```

-----
Cast      : 39           Cruise   : OVIDE 2010
Date      : 19/06/2010  Ship    : N/O THALASSA
Depth     : 4078 m      Organism : IFREMER
Position  : N 48 47.13
           W 021 25.94
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.383	35.537	265.6	16.383	3050.0	2.783	34.939	256.5	2.532
10.0	16.146	35.529	267.9	16.144	3100.0	2.761	34.938	255.4	2.505
20.0	15.169	35.482	273.8	15.166	3150.0	2.737	34.936	254.2	2.476
30.0	14.485	35.480	263.2	14.480	3200.0	2.725	34.935	253.1	2.460
40.0	12.791	35.507	261.8	12.786	3250.0	2.705	34.933	252.2	2.435
50.0	12.219	35.520	259.5	12.213	3300.0	2.659	34.929	250.2	2.384
100.0	11.333	35.497	248.9	11.321	3350.0	2.647	34.928	248.8	2.367
150.0	10.903	35.424	252.3	10.885	3400.0	2.632	34.926	247.9	2.347
200.0	10.891	35.435	252.5	10.866	3450.0	2.623	34.925	247.2	2.333
250.0	10.761	35.432	251.4	10.730	3500.0	2.584	34.921	245.5	2.289
300.0	10.114	35.302	240.2	10.079	3550.0	2.578	34.920	244.6	2.278
350.0	9.613	35.226	229.3	9.573	3600.0	2.571	34.918	244.1	2.266
400.0	9.189	35.191	205.0	9.145	3650.0	2.563	34.917	243.7	2.252
450.0	9.225	35.263	200.0	9.175	3700.0	2.560	34.917	243.1	2.244
500.0	8.723	35.224	197.3	8.669	3750.0	2.552	34.915	242.8	2.231
550.0	8.182	35.196	198.4	8.124	3800.0	2.543	34.914	242.2	2.217
600.0	8.298	35.298	195.5	8.234	3850.0	2.542	34.913	241.9	2.210
650.0	7.973	35.303	197.5	7.905	3900.0	2.541	34.913	241.5	2.203
700.0	7.559	35.262	204.3	7.488	3950.0	2.536	34.911	241.3	2.192
750.0	6.980	35.209	213.2	6.907	4000.0	2.534	34.911	240.8	2.184
800.0	6.555	35.172	220.2	6.479	4050.0	2.541	34.911	240.8	2.186
850.0	6.161	35.148	227.3	6.083	4100.0	2.542	34.910	240.8	2.181
900.0	5.832	35.120	232.3	5.752	4135.0	2.544	34.910	240.7	2.179
950.0	5.805	35.147	232.8	5.719					
1000.0	5.350	35.089	241.3	5.263					
1050.0	5.057	35.053	246.7	4.968					
1100.0	4.689	35.005	254.4	4.598					
1150.0	4.437	34.973	260.1	4.344					
1200.0	4.258	34.954	264.2	4.162					
1250.0	4.136	34.942	267.0	4.036					
1300.0	4.058	34.938	268.0	3.955					
1350.0	3.972	34.931	270.0	3.866					
1400.0	3.882	34.922	271.8	3.773					
1450.0	3.792	34.914	273.6	3.679					
1500.0	3.751	34.912	274.2	3.634					
1550.0	3.713	34.911	274.5	3.592					
1600.0	3.677	34.910	274.9	3.552					
1650.0	3.631	34.911	274.8	3.502					
1700.0	3.605	34.911	275.0	3.472					
1750.0	3.567	34.910	275.4	3.429					
1800.0	3.519	34.909	275.8	3.378					
1850.0	3.477	34.908	276.4	3.331					
1900.0	3.434	34.907	277.0	3.284					
1950.0	3.409	34.907	277.5	3.255					
2000.0	3.363	34.907	278.0	3.205					
2050.0	3.325	34.907	278.1	3.163					
2100.0	3.295	34.908	278.3	3.129					
2150.0	3.269	34.910	278.2	3.098					
2200.0	3.243	34.912	278.0	3.068					
2250.0	3.225	34.914	277.4	3.046					
2300.0	3.197	34.917	277.0	3.013					
2350.0	3.165	34.921	276.1	2.977					
2400.0	3.141	34.924	275.3	2.948					
2450.0	3.120	34.927	274.4	2.923					
2500.0	3.092	34.931	272.9	2.891					
2550.0	3.077	34.935	270.7	2.871					
2600.0	3.055	34.937	269.1	2.844					
2650.0	3.025	34.940	267.7	2.809					
2700.0	2.991	34.942	266.0	2.771					
2750.0	2.957	34.943	264.5	2.733					
2800.0	2.926	34.943	263.0	2.698					
2850.0	2.897	34.943	261.6	2.664					
2900.0	2.864	34.943	260.3	2.626					
2950.0	2.837	34.942	259.0	2.595					
3000.0	2.823	34.941	258.1	2.576					





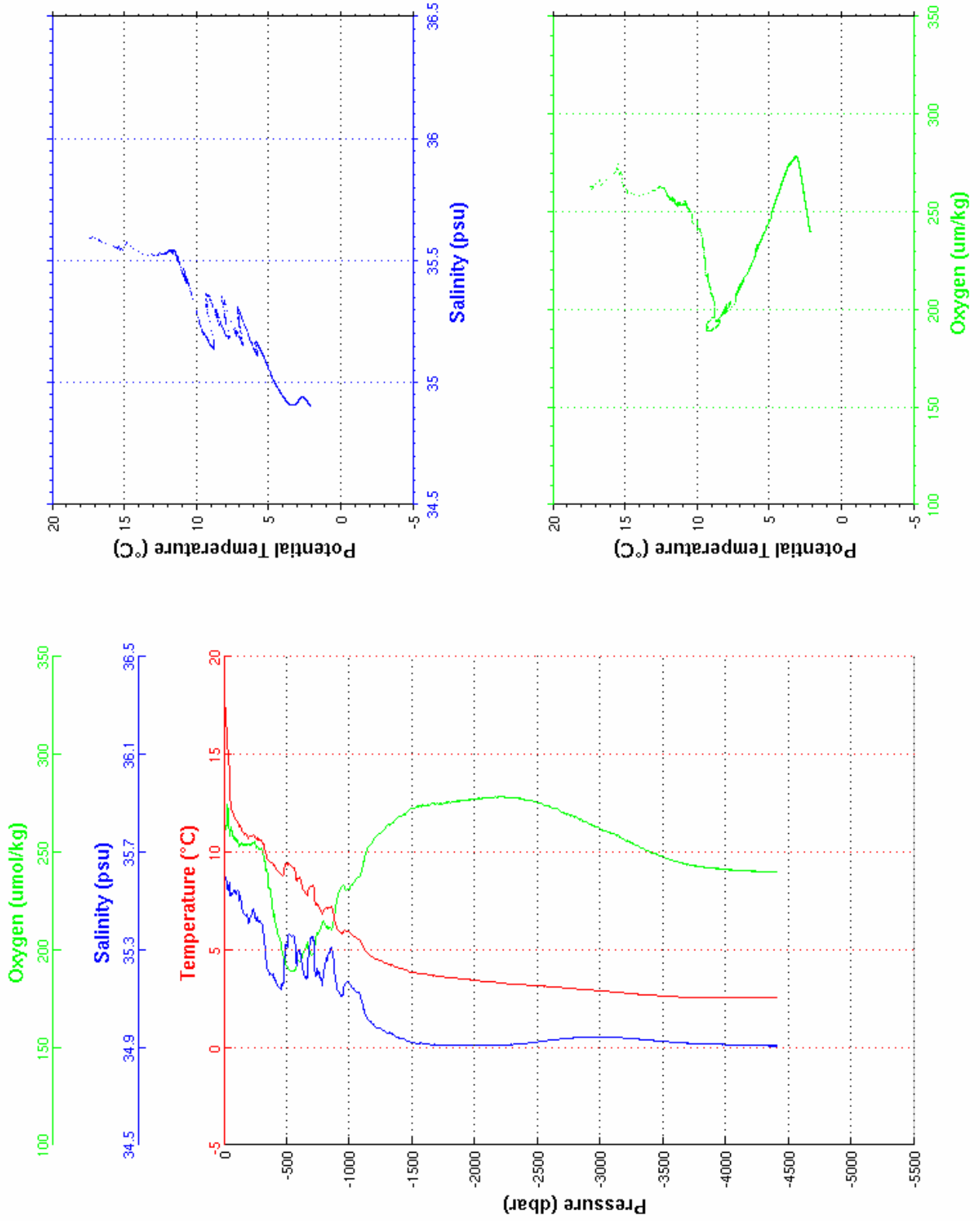
Cast : 39

```

-----
Cast       : 40           Cruise    : OVIDE 2010
Date       : 19/06/2010  Ship     : N/O THALASSA
Depth      : 4344 m      Organism  : IFREMER
Position   : N 49  9.53
            W 021 43.58
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.405	35.591	262.9	17.405	3050.0	2.871	34.942	260.2	2.618
10.0	17.411	35.590	263.0	17.409	3100.0	2.849	34.942	259.5	2.591
20.0	16.627	35.581	263.8	16.623	3150.0	2.818	34.940	258.0	2.556
30.0	15.341	35.554	269.4	15.337	3200.0	2.785	34.938	256.2	2.517
40.0	14.870	35.576	260.3	14.864	3250.0	2.757	34.936	254.8	2.485
50.0	12.771	35.521	262.0	12.765	3300.0	2.726	34.934	253.1	2.450
100.0	11.607	35.536	256.2	11.594	3350.0	2.700	34.932	251.5	2.419
150.0	10.983	35.450	254.1	10.965	3400.0	2.672	34.929	249.9	2.386
200.0	10.805	35.432	253.8	10.781	3450.0	2.655	34.927	248.8	2.364
250.0	10.748	35.433	253.0	10.717	3500.0	2.637	34.925	247.6	2.341
300.0	10.575	35.401	251.5	10.539	3550.0	2.611	34.923	246.3	2.311
350.0	9.618	35.210	234.4	9.578	3600.0	2.595	34.921	245.3	2.289
400.0	9.273	35.175	217.3	9.229	3650.0	2.583	34.919	244.4	2.272
450.0	8.847	35.138	203.8	8.798	3700.0	2.569	34.917	243.3	2.252
500.0	9.324	35.317	190.8	9.268	3750.0	2.561	34.916	243.0	2.239
550.0	9.225	35.358	188.8	9.162	3800.0	2.557	34.915	242.6	2.230
600.0	8.701	35.297	194.1	8.636	3850.0	2.550	34.914	242.1	2.218
650.0	7.857	35.183	201.6	7.789	3900.0	2.548	34.913	241.9	2.210
700.0	8.280	35.351	197.6	8.205	3950.0	2.545	34.913	241.3	2.201
750.0	7.225	35.203	209.3	7.151	4000.0	2.541	34.912	241.3	2.192
800.0	7.057	35.225	213.0	6.978	4050.0	2.536	34.911	240.9	2.181
850.0	7.255	35.312	210.5	7.170	4100.0	2.536	34.910	240.7	2.175
900.0	6.093	35.138	226.7	6.010	4150.0	2.536	34.910	240.7	2.170
950.0	5.867	35.128	232.9	5.781	4200.0	2.531	34.908	240.3	2.159
1000.0	5.874	35.160	231.7	5.783	4250.0	2.531	34.908	240.1	2.152
1050.0	5.615	35.129	236.3	5.521	4300.0	2.530	34.907	240.0	2.146
1100.0	5.282	35.087	241.9	5.186	4350.0	2.532	34.907	239.9	2.142
1150.0	4.770	35.012	253.0	4.674	4400.0	2.537	34.906	239.9	2.141
1200.0	4.543	34.984	257.7	4.444	4411.0	2.539	34.906	240.2	2.141
1250.0	4.433	34.977	259.9	4.331					
1300.0	4.283	34.960	263.4	4.178					
1350.0	4.196	34.954	265.3	4.087					
1400.0	4.057	34.938	268.5	3.946					
1450.0	3.958	34.930	270.1	3.843					
1500.0	3.860	34.921	272.4	3.742					
1550.0	3.793	34.916	273.6	3.671					
1600.0	3.755	34.915	273.9	3.629					
1650.0	3.684	34.911	274.8	3.554					
1700.0	3.654	34.911	274.9	3.520					
1750.0	3.605	34.910	275.0	3.467					
1800.0	3.568	34.909	275.4	3.426					
1850.0	3.538	34.909	276.0	3.392					
1900.0	3.505	34.908	276.2	3.355					
1950.0	3.477	34.908	276.7	3.323					
2000.0	3.434	34.908	277.1	3.275					
2050.0	3.398	34.908	277.5	3.235					
2100.0	3.367	34.908	278.0	3.199					
2150.0	3.340	34.909	277.9	3.169					
2200.0	3.301	34.910	278.2	3.126					
2250.0	3.266	34.911	278.1	3.086					
2300.0	3.244	34.912	277.8	3.060					
2350.0	3.227	34.914	277.5	3.038					
2400.0	3.202	34.916	277.0	3.008					
2450.0	3.182	34.920	276.2	2.983					
2500.0	3.164	34.923	275.5	2.961					
2550.0	3.135	34.926	274.3	2.927					
2600.0	3.113	34.929	273.4	2.901					
2650.0	3.086	34.932	272.2	2.869					
2700.0	3.062	34.935	270.6	2.841					
2750.0	3.027	34.938	269.0	2.802					
2800.0	3.000	34.940	268.0	2.770					
2850.0	2.971	34.941	266.4	2.736					
2900.0	2.947	34.942	264.9	2.707					
2950.0	2.921	34.942	263.6	2.678					
3000.0	2.897	34.943	261.9	2.648					



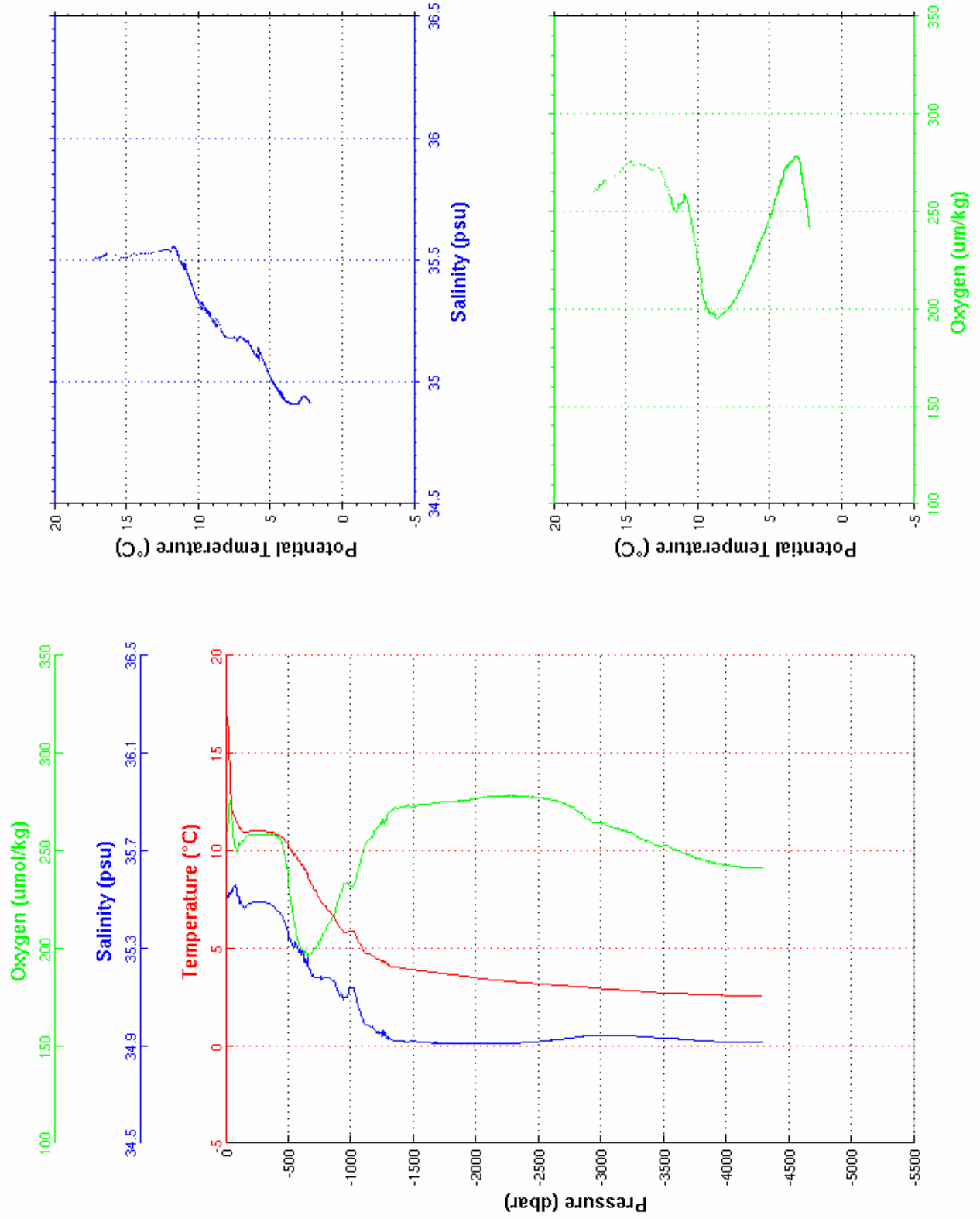
**Cast : 40**

```

-----
Cast       : 41           Cruise    : OVIDE 2010
Date      : 19/06/2010  Ship     : N/O THALASSA
Depth     : 4227 m      Organism  : IFREMER
Position  : N 49 31.84
           W 022  1.04
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	17.156	35.509	261.5	17.156	3050.0	2.904	34.943	262.7	2.650
10.0	16.921	35.508	261.8	16.919	3100.0	2.879	34.943	261.8	2.620
20.0	16.460	35.523	266.4	16.457	3150.0	2.857	34.942	261.0	2.594
30.0	14.692	35.519	275.9	14.688	3200.0	2.838	34.942	260.0	2.570
40.0	13.313	35.529	271.8	13.308	3250.0	2.819	34.941	259.1	2.545
50.0	12.235	35.545	263.7	12.228	3300.0	2.793	34.938	256.8	2.515
100.0	11.346	35.512	253.9	11.334	3350.0	2.771	34.937	255.1	2.489
150.0	10.940	35.460	256.1	10.921	3400.0	2.746	34.935	254.3	2.458
200.0	11.000	35.486	258.3	10.975	3450.0	2.721	34.933	252.6	2.429
250.0	11.002	35.489	258.2	10.971	3500.0	2.716	34.933	252.6	2.418
300.0	11.001	35.488	258.3	10.963	3550.0	2.699	34.931	251.9	2.396
350.0	10.965	35.480	258.3	10.922	3600.0	2.683	34.929	250.5	2.375
400.0	10.862	35.458	257.5	10.812	3650.0	2.664	34.926	249.0	2.351
450.0	10.697	35.431	252.8	10.642	3700.0	2.654	34.925	248.0	2.335
500.0	10.205	35.350	233.3	10.145	3750.0	2.636	34.923	246.6	2.312
550.0	9.832	35.328	212.1	9.767	3800.0	2.621	34.921	245.6	2.292
600.0	9.325	35.276	200.2	9.257	3850.0	2.607	34.919	244.5	2.273
650.0	8.800	35.228	197.2	8.729	3900.0	2.598	34.918	243.6	2.259
700.0	8.007	35.179	199.4	7.933	3950.0	2.591	34.916	243.2	2.246
750.0	7.572	35.187	204.3	7.496	4000.0	2.584	34.915	242.7	2.233
800.0	7.160	35.185	209.5	7.080	4050.0	2.576	34.914	242.1	2.219
850.0	6.730	35.162	216.3	6.649	4100.0	2.575	34.913	241.6	2.213
900.0	6.207	35.123	224.9	6.123	4150.0	2.573	34.912	241.3	2.205
950.0	5.871	35.105	232.6	5.785	4200.0	2.578	34.912	241.3	2.204
1000.0	5.938	35.139	231.8	5.847	4250.0	2.584	34.912	241.3	2.204
1050.0	5.453	35.073	238.9	5.360	4288.0	2.588	34.912	241.2	2.203
1100.0	4.897	34.999	250.3	4.805					
1150.0	4.697	34.980	256.4	4.602					
1200.0	4.469	34.956	261.4	4.371					
1250.0	4.273	34.939	266.1	4.172					
1300.0	4.161	34.935	269.1	4.058					
1350.0	4.027	34.920	272.2	3.921					
1400.0	3.990	34.920	272.2	3.879					
1450.0	3.930	34.916	273.3	3.815					
1500.0	3.917	34.920	272.7	3.798					
1550.0	3.847	34.915	274.0	3.724					
1600.0	3.817	34.915	273.8	3.690					
1650.0	3.758	34.911	274.6	3.627					
1700.0	3.726	34.911	274.9	3.591					
1750.0	3.681	34.909	275.2	3.542					
1800.0	3.640	34.910	275.3	3.497					
1850.0	3.609	34.910	275.3	3.461					
1900.0	3.581	34.910	275.5	3.429					
1950.0	3.528	34.909	276.2	3.372					
2000.0	3.477	34.908	276.5	3.317					
2050.0	3.425	34.907	277.4	3.261					
2100.0	3.395	34.907	277.8	3.227					
2150.0	3.369	34.907	278.0	3.197					
2200.0	3.341	34.908	278.0	3.164					
2250.0	3.305	34.908	278.1	3.124					
2300.0	3.275	34.910	278.2	3.089					
2350.0	3.252	34.911	277.9	3.063					
2400.0	3.218	34.914	277.8	3.024					
2450.0	3.201	34.916	277.5	3.003					
2500.0	3.179	34.917	277.3	2.976					
2550.0	3.157	34.919	276.7	2.949					
2600.0	3.127	34.923	276.1	2.914					
2650.0	3.112	34.925	275.6	2.895					
2700.0	3.083	34.928	274.3	2.861					
2750.0	3.056	34.931	272.8	2.830					
2800.0	3.041	34.936	270.6	2.810					
2850.0	3.018	34.939	269.0	2.782					
2900.0	2.989	34.941	266.5	2.748					
2950.0	2.961	34.943	264.5	2.717					
3000.0	2.929	34.943	264.0	2.680					



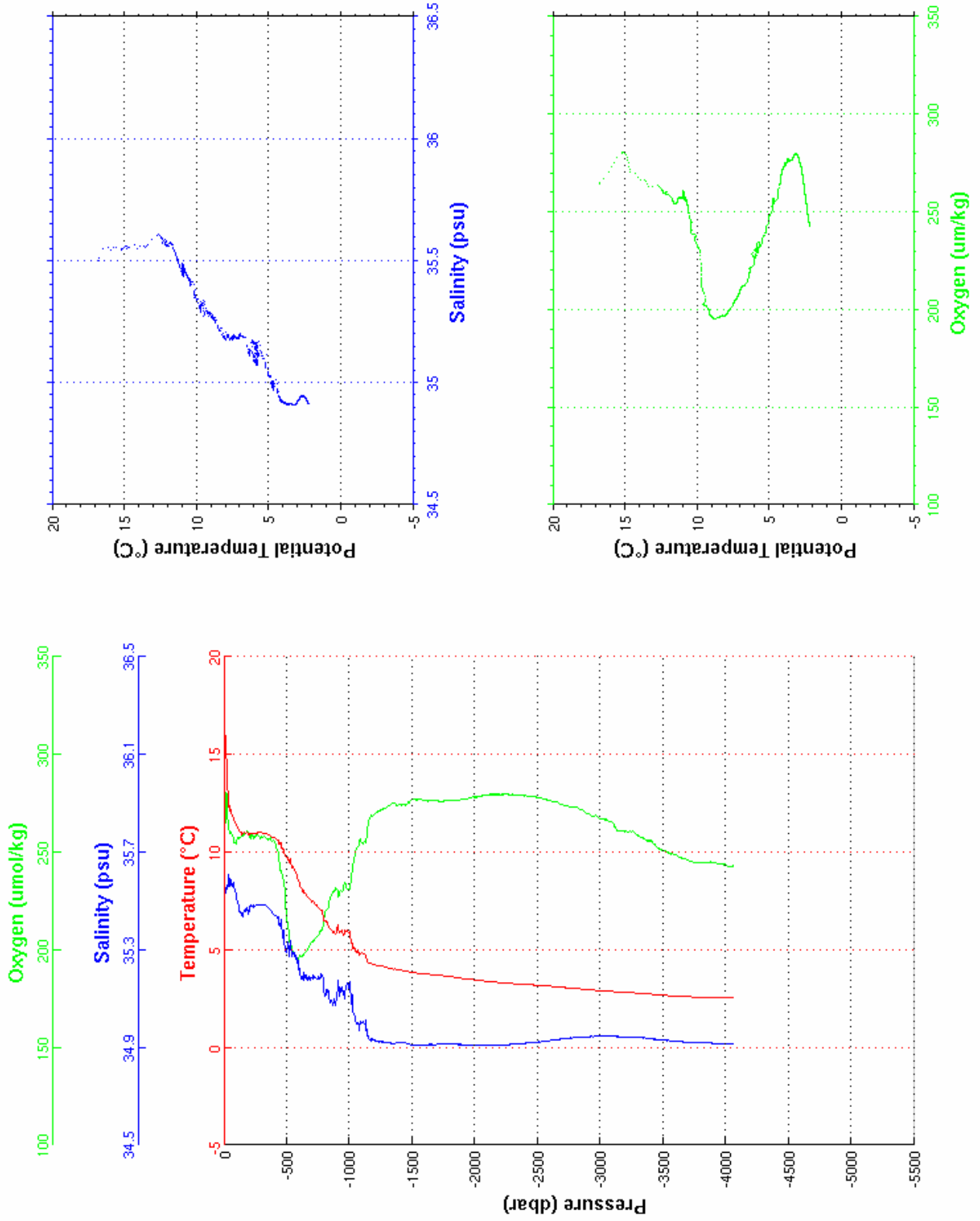
**Cast : 41**

```

-----
Cast       : 42           Cruise    : OVIDE 2010
Date       : 20/06/2010  Ship     : N/O THALASSA
Depth      : 4003 m      Organism  : IFREMER
Position   : N 49 54.28
            W 022 18.75
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.783	35.498	264.1	16.783	3050.0	2.890	34.946	266.4	2.636
10.0	16.117	35.556	270.4	16.115	3100.0	2.864	34.946	264.7	2.606
20.0	14.786	35.549	276.6	14.783	3150.0	2.833	34.944	260.8	2.571
30.0	13.439	35.560	264.5	13.435	3200.0	2.824	34.943	260.7	2.556
40.0	12.425	35.591	260.8	12.419	3250.0	2.809	34.943	260.7	2.536
50.0	12.123	35.565	260.2	12.116	3300.0	2.785	34.941	258.7	2.507
100.0	11.362	35.513	255.9	11.349	3350.0	2.747	34.939	256.6	2.465
150.0	10.977	35.449	258.5	10.958	3400.0	2.729	34.938	255.9	2.441
200.0	10.916	35.459	257.8	10.891	3450.0	2.691	34.932	252.3	2.399
250.0	10.967	35.479	258.6	10.936	3500.0	2.674	34.930	251.0	2.377
300.0	10.990	35.487	258.2	10.953	3550.0	2.650	34.927	249.5	2.349
350.0	10.911	35.471	256.5	10.867	3600.0	2.629	34.925	248.6	2.323
400.0	10.751	35.444	255.4	10.702	3650.0	2.613	34.923	247.0	2.301
450.0	10.443	35.399	240.2	10.389	3700.0	2.593	34.921	245.8	2.276
500.0	9.759	35.303	215.3	9.701	3750.0	2.584	34.919	244.7	2.262
550.0	9.216	35.288	198.2	9.154	3800.0	2.585	34.919	244.8	2.257
600.0	8.476	35.212	196.6	8.412	3850.0	2.587	34.918	244.8	2.254
650.0	7.899	35.196	199.3	7.832	3900.0	2.580	34.917	244.7	2.241
700.0	7.467	35.180	204.5	7.397	3950.0	2.571	34.916	244.1	2.227
750.0	7.175	35.183	208.0	7.100	4000.0	2.565	34.915	243.4	2.215
800.0	6.453	35.121	218.1	6.378	4050.0	2.564	34.914	242.8	2.208
850.0	6.022	35.085	227.6	5.945	4061.0	2.566	34.914	243.1	2.208
900.0	5.970	35.093	231.0	5.888					
950.0	5.800	35.121	232.2	5.714					
1000.0	5.942	35.165	231.4	5.850					
1050.0	4.873	35.003	250.8	4.786					
1100.0	4.833	35.004	254.1	4.741					
1150.0	4.331	34.941	265.0	4.239					
1200.0	4.234	34.927	269.5	4.139					
1250.0	4.174	34.922	271.6	4.075					
1300.0	4.090	34.921	273.0	3.987					
1350.0	4.007	34.915	274.8	3.901					
1400.0	3.982	34.919	274.3	3.871					
1450.0	3.926	34.918	274.2	3.811					
1500.0	3.839	34.910	277.2	3.721					
1550.0	3.793	34.909	277.4	3.671					
1600.0	3.761	34.911	276.4	3.634					
1650.0	3.728	34.912	276.4	3.597					
1700.0	3.702	34.913	275.6	3.567					
1750.0	3.667	34.912	276.2	3.529					
1800.0	3.624	34.913	276.5	3.481					
1850.0	3.579	34.912	276.4	3.432					
1900.0	3.527	34.911	277.1	3.376					
1950.0	3.487	34.911	277.7	3.332					
2000.0	3.460	34.910	278.2	3.301					
2050.0	3.418	34.909	279.0	3.254					
2100.0	3.375	34.909	279.3	3.207					
2150.0	3.350	34.909	279.5	3.178					
2200.0	3.328	34.910	279.7	3.152					
2250.0	3.302	34.911	279.9	3.122					
2300.0	3.266	34.913	279.6	3.081					
2350.0	3.244	34.915	279.1	3.054					
2400.0	3.227	34.917	278.9	3.033					
2450.0	3.203	34.920	278.6	3.005					
2500.0	3.181	34.922	278.1	2.978					
2550.0	3.164	34.924	277.2	2.957					
2600.0	3.137	34.928	276.4	2.925					
2650.0	3.106	34.931	275.6	2.889					
2700.0	3.075	34.935	274.1	2.854					
2750.0	3.046	34.938	273.4	2.821					
2800.0	3.021	34.941	272.8	2.790					
2850.0	2.983	34.943	271.6	2.748					
2900.0	2.950	34.944	269.8	2.710					
2950.0	2.928	34.945	268.5	2.684					
3000.0	2.909	34.945	267.2	2.660					



Cast : 42

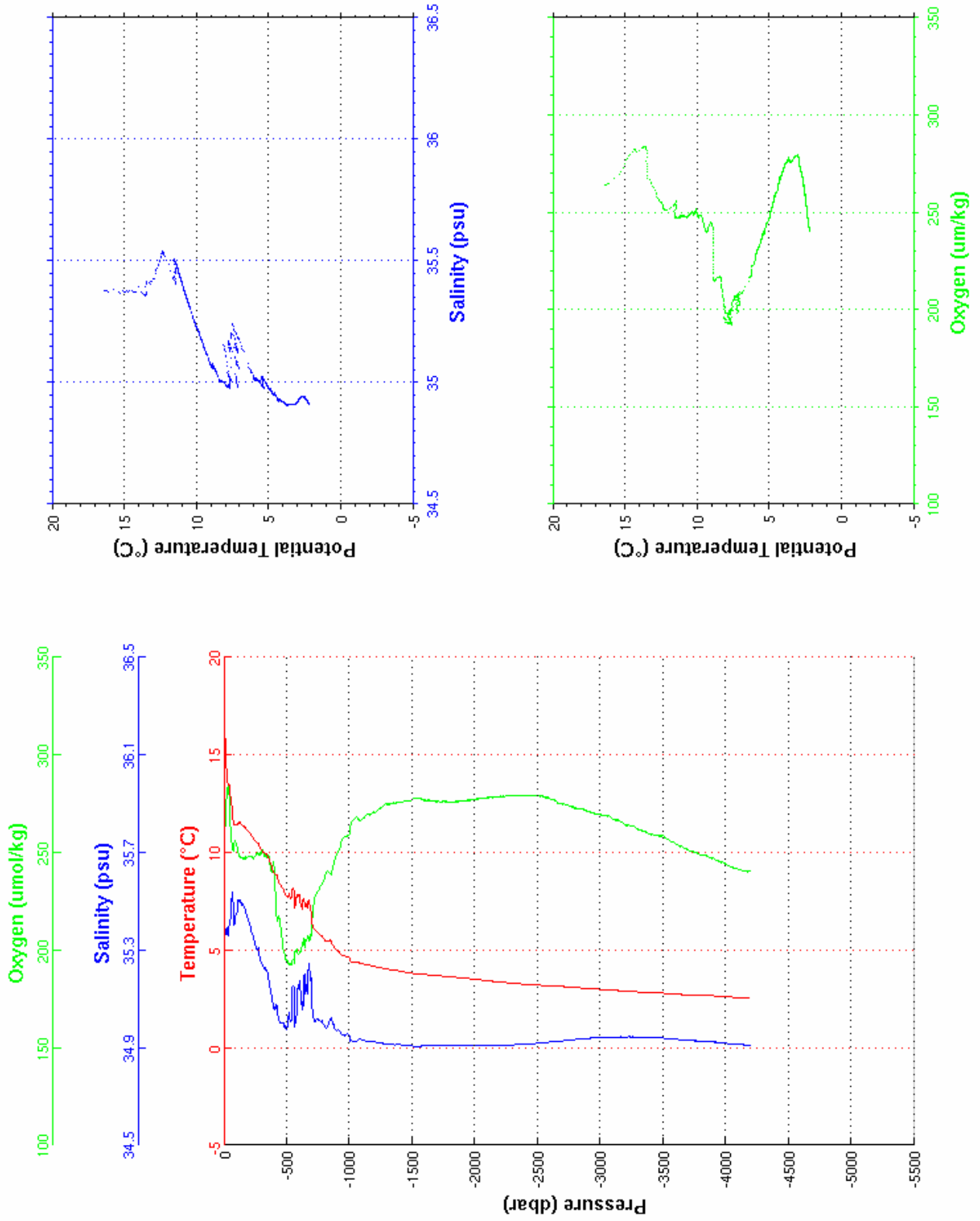
```

-----
Cast       : 43           Cruise    : OVIDE 2010
Date       : 20/06/2010  Ship      : N/O THALASSA
Depth      : 4134 m      Organism  : IFREMER
Position   : N 50 16.67
            W 022 36.28
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.361	35.379	263.9	16.360	3050.0	2.964	34.943	269.0	2.709
10.0	16.098	35.375	264.9	16.096	3100.0	2.938	34.943	267.2	2.678
20.0	14.441	35.380	281.2	14.438	3150.0	2.924	34.944	266.5	2.659
30.0	13.579	35.358	283.7	13.575	3200.0	2.897	34.944	263.9	2.628
40.0	13.500	35.404	274.8	13.495	3250.0	2.880	34.944	263.8	2.606
50.0	12.970	35.427	262.4	12.963	3300.0	2.853	34.943	261.9	2.573
100.0	11.472	35.451	253.3	11.459	3350.0	2.837	34.942	261.0	2.552
150.0	11.401	35.484	247.0	11.382	3400.0	2.815	34.940	259.4	2.525
200.0	11.033	35.411	248.2	11.009	3450.0	2.799	34.940	258.9	2.504
250.0	10.554	35.319	248.9	10.524	3500.0	2.792	34.939	258.4	2.492
300.0	10.113	35.241	251.3	10.078	3550.0	2.764	34.937	256.4	2.460
350.0	9.812	35.197	248.3	9.771	3600.0	2.745	34.935	254.6	2.435
400.0	8.927	35.055	239.7	8.883	3650.0	2.725	34.933	253.0	2.411
450.0	8.337	35.004	211.5	8.290	3700.0	2.708	34.931	251.4	2.388
500.0	7.724	34.977	195.1	7.674	3750.0	2.692	34.928	250.2	2.367
550.0	8.164	35.154	195.6	8.106	3800.0	2.681	34.927	248.8	2.351
600.0	7.792	35.157	199.2	7.731	3850.0	2.676	34.926	248.2	2.340
650.0	7.280	35.131	204.8	7.216	3900.0	2.658	34.924	247.0	2.317
700.0	6.459	35.077	214.3	6.394	3950.0	2.641	34.921	245.5	2.294
750.0	5.890	35.015	230.5	5.823	4000.0	2.617	34.919	244.3	2.265
800.0	5.555	34.991	236.9	5.485	4050.0	2.590	34.915	242.5	2.233
850.0	5.513	35.024	238.8	5.439	4100.0	2.576	34.913	241.4	2.214
900.0	4.980	34.968	250.1	4.905	4150.0	2.566	34.912	240.5	2.198
950.0	4.708	34.951	257.7	4.630	4193.0	2.568	34.912	240.6	2.196
1000.0	4.591	34.948	260.3	4.510					
1050.0	4.342	34.924	268.2	4.259					
1100.0	4.318	34.932	267.2	4.231					
1150.0	4.224	34.927	269.5	4.133					
1200.0	4.162	34.923	270.8	4.067					
1250.0	4.086	34.920	272.9	3.988					
1300.0	4.017	34.915	274.7	3.915					
1350.0	3.963	34.912	275.5	3.857					
1400.0	3.938	34.913	275.3	3.827					
1450.0	3.866	34.909	276.6	3.752					
1500.0	3.832	34.908	277.0	3.714					
1550.0	3.786	34.906	277.6	3.664					
1600.0	3.756	34.908	276.6	3.629					
1650.0	3.732	34.908	276.7	3.601					
1700.0	3.694	34.909	276.1	3.560					
1750.0	3.659	34.909	276.1	3.520					
1800.0	3.640	34.910	275.9	3.497					
1850.0	3.604	34.910	276.1	3.456					
1900.0	3.575	34.910	276.6	3.423					
1950.0	3.538	34.911	276.9	3.382					
2000.0	3.505	34.911	277.2	3.345					
2050.0	3.468	34.910	277.7	3.304					
2100.0	3.433	34.910	278.2	3.265					
2150.0	3.395	34.910	278.5	3.223					
2200.0	3.367	34.910	279.0	3.190					
2250.0	3.334	34.911	279.1	3.152					
2300.0	3.297	34.912	279.1	3.111					
2350.0	3.278	34.913	279.2	3.088					
2400.0	3.250	34.914	279.2	3.056					
2450.0	3.226	34.916	279.2	3.027					
2500.0	3.203	34.918	279.1	3.000					
2550.0	3.187	34.921	278.6	2.979					
2600.0	3.162	34.923	277.5	2.950					
2650.0	3.149	34.926	275.9	2.931					
2700.0	3.133	34.928	274.9	2.911					
2750.0	3.103	34.931	274.0	2.876					
2800.0	3.077	34.934	272.9	2.846					
2850.0	3.055	34.936	272.4	2.818					
2900.0	3.030	34.938	271.3	2.789					
2950.0	3.007	34.940	270.2	2.762					
3000.0	2.986	34.941	269.3	2.736					





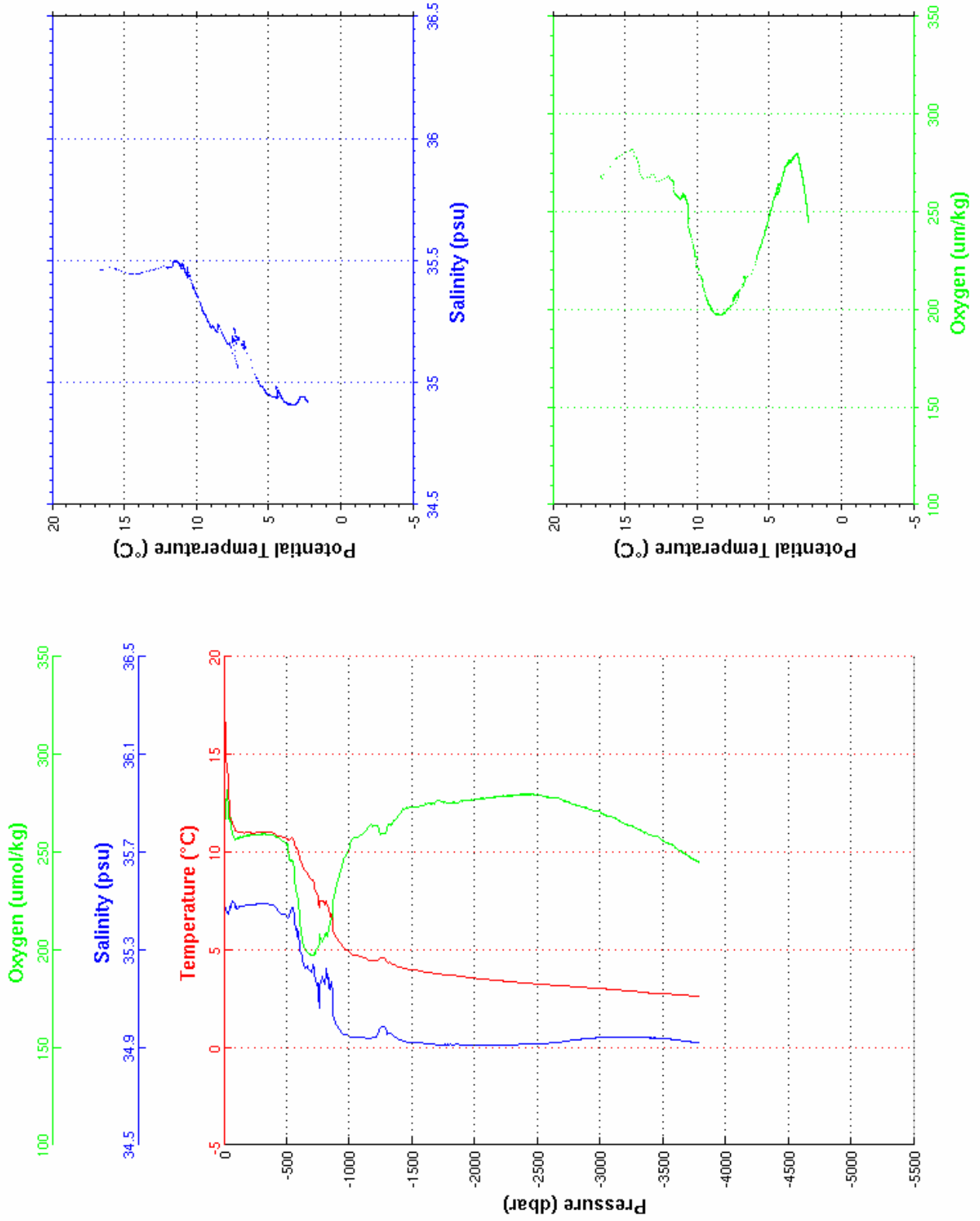
**Cast : 43**

```

-----
Cast       : 44           Cruise    : OVIDE 2010
Date      : 20/06/2010  Ship     : N/O THALASSA
Depth     : 3741 m      Organism  : IFREMER
Position  : N 50 38.46
           W 022 54.13
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	16.668	35.463	267.5	16.668	3050.0	2.996	34.942	268.7	2.740
10.0	16.664	35.464	268.5	16.662	3100.0	2.960	34.944	267.9	2.699
20.0	14.893	35.450	280.2	14.890	3150.0	2.938	34.943	265.9	2.672
30.0	14.052	35.447	273.7	14.048	3200.0	2.904	34.943	264.3	2.634
40.0	12.980	35.462	269.2	12.974	3250.0	2.873	34.943	263.7	2.598
50.0	11.873	35.474	267.3	11.866	3300.0	2.846	34.942	261.7	2.567
100.0	11.069	35.472	257.0	11.056	3350.0	2.817	34.941	260.2	2.533
150.0	10.980	35.476	258.1	10.962	3400.0	2.789	34.939	258.7	2.500
200.0	10.994	35.486	258.4	10.969	3450.0	2.786	34.939	258.4	2.492
250.0	10.990	35.486	258.8	10.958	3500.0	2.749	34.936	255.9	2.451
300.0	11.000	35.489	259.0	10.963	3550.0	2.729	34.934	254.3	2.425
350.0	10.997	35.487	258.7	10.953	3600.0	2.705	34.931	252.5	2.397
400.0	10.946	35.476	258.2	10.896	3650.0	2.678	34.928	250.2	2.364
450.0	10.798	35.450	256.3	10.742	3700.0	2.661	34.926	248.4	2.342
500.0	10.661	35.432	253.8	10.600	3750.0	2.624	34.922	245.9	2.301
550.0	10.701	35.472	244.3	10.633	3791.0	2.604	34.919	244.9	2.277
600.0	9.810	35.325	216.9	9.739					
650.0	9.018	35.226	199.6	8.945					
700.0	8.559	35.208	197.3	8.483					
750.0	7.779	35.159	201.9	7.701					
800.0	7.349	35.163	207.3	7.269					
850.0	6.744	35.145	215.7	6.662					
900.0	5.580	34.985	234.7	5.501					
950.0	5.108	34.952	246.3	5.028					
1000.0	4.881	34.944	252.7	4.798					
1050.0	4.729	34.943	257.6	4.642					
1100.0	4.620	34.942	259.5	4.529					
1150.0	4.495	34.935	263.0	4.402					
1200.0	4.427	34.940	264.4	4.330					
1250.0	4.569	34.982	259.3	4.466					
1300.0	4.359	34.959	262.4	4.254					
1350.0	4.257	34.948	266.0	4.148					
1400.0	4.127	34.933	269.8	4.014					
1450.0	4.023	34.923	272.5	3.908					
1500.0	3.982	34.921	273.2	3.862					
1550.0	3.918	34.919	273.6	3.794					
1600.0	3.856	34.915	274.6	3.728					
1650.0	3.818	34.915	275.0	3.686					
1700.0	3.753	34.909	276.6	3.618					
1750.0	3.732	34.912	275.5	3.592					
1800.0	3.709	34.913	275.2	3.565					
1850.0	3.673	34.913	275.2	3.525					
1900.0	3.621	34.911	276.2	3.469					
1950.0	3.578	34.911	276.6	3.421					
2000.0	3.541	34.910	277.1	3.380					
2050.0	3.501	34.909	277.5	3.336					
2100.0	3.473	34.910	277.9	3.304					
2150.0	3.459	34.910	278.1	3.285					
2200.0	3.420	34.909	278.4	3.242					
2250.0	3.394	34.911	278.8	3.211					
2300.0	3.366	34.912	278.9	3.180					
2350.0	3.317	34.912	279.5	3.126					
2400.0	3.284	34.913	279.5	3.088					
2450.0	3.268	34.914	279.5	3.069					
2500.0	3.250	34.915	279.3	3.045					
2550.0	3.218	34.916	278.7	3.010					
2600.0	3.197	34.918	278.1	2.984					
2650.0	3.178	34.919	277.6	2.960					
2700.0	3.156	34.923	276.8	2.933					
2750.0	3.133	34.927	275.6	2.905					
2800.0	3.102	34.931	274.3	2.870					
2850.0	3.083	34.934	273.2	2.846					
2900.0	3.062	34.935	272.3	2.820					
2950.0	3.039	34.938	271.0	2.793					
3000.0	3.023	34.940	270.6	2.772					



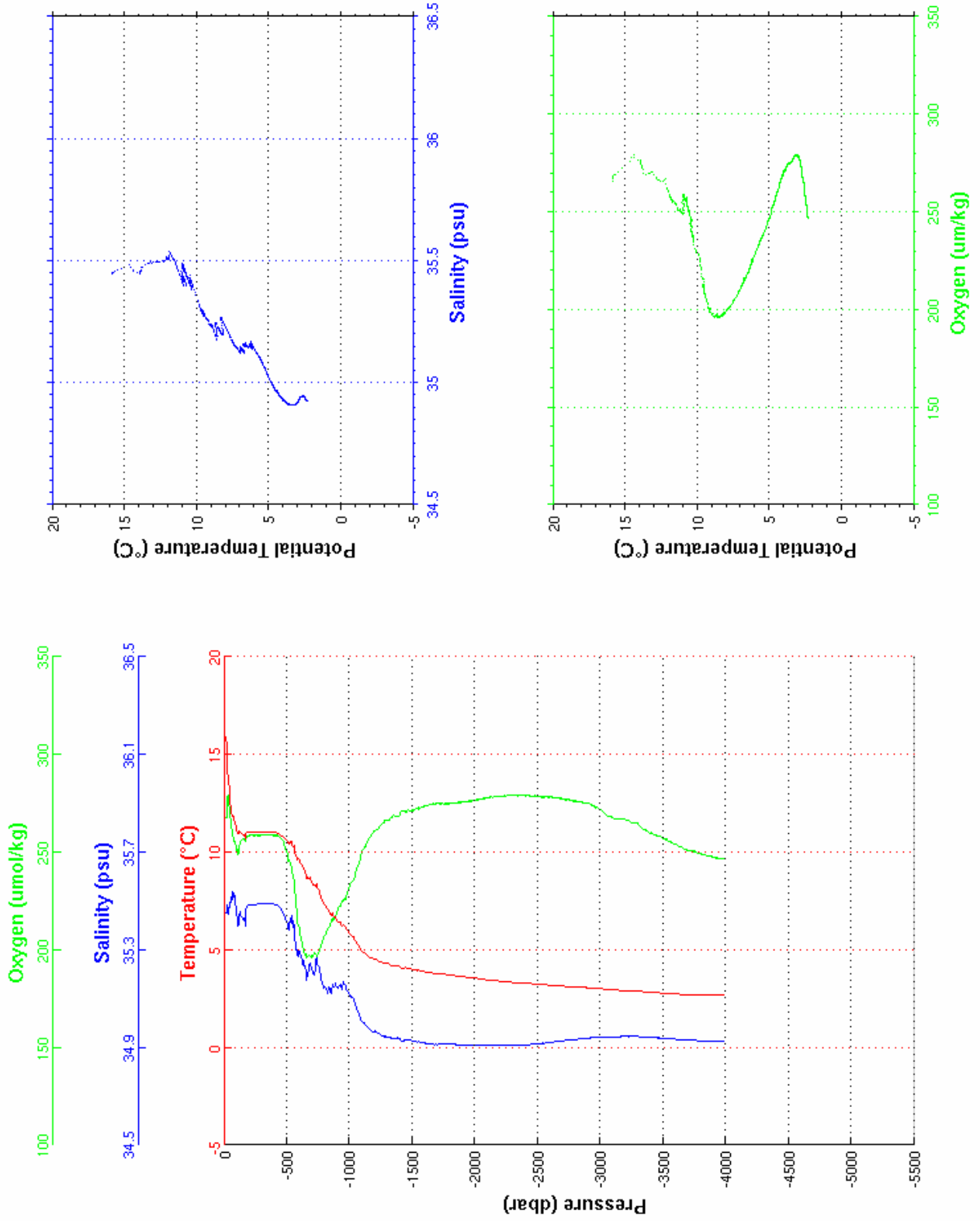
Cast : 44

```

-----
Cast       : 45           Cruise    : OVIDE 2010
Date       : 20/06/2010  Ship      : N/O THALASSA
Depth      : 3937 m      Organism  : IFREMER
Position   : N 51  1.78
            W 023 11.43
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	15.872	35.447	265.7	15.872	3050.0	2.968	34.943	268.6	2.713
10.0	15.868	35.450	267.8	15.866	3100.0	2.943	34.943	267.7	2.683
20.0	15.863	35.450	268.3	15.860	3150.0	2.923	34.944	266.8	2.658
30.0	14.137	35.449	276.8	14.132	3200.0	2.907	34.945	266.5	2.637
40.0	13.763	35.474	271.7	13.757	3250.0	2.886	34.945	265.1	2.611
50.0	12.721	35.495	266.6	12.714	3300.0	2.876	34.945	264.9	2.596
100.0	11.197	35.446	250.6	11.185	3350.0	2.850	34.942	261.8	2.565
150.0	10.892	35.426	256.4	10.874	3400.0	2.830	34.941	259.8	2.540
200.0	11.005	35.484	258.5	10.980	3450.0	2.808	34.939	258.5	2.513
250.0	10.993	35.486	258.8	10.962	3500.0	2.779	34.938	257.2	2.480
300.0	11.003	35.489	258.7	10.965	3550.0	2.752	34.935	255.4	2.448
350.0	11.009	35.490	258.8	10.965	3600.0	2.735	34.933	254.0	2.425
400.0	10.997	35.486	258.3	10.947	3650.0	2.716	34.931	252.3	2.402
450.0	10.897	35.466	256.7	10.841	3700.0	2.701	34.929	251.0	2.381
500.0	10.589	35.415	249.7	10.527	3750.0	2.697	34.929	250.5	2.372
550.0	10.288	35.392	236.9	10.222	3800.0	2.684	34.927	249.2	2.353
600.0	9.588	35.289	210.2	9.518	3850.0	2.679	34.926	248.2	2.343
650.0	8.986	35.233	196.8	8.913	3900.0	2.669	34.925	247.6	2.328
700.0	8.444	35.212	197.0	8.369	3950.0	2.665	34.924	246.9	2.318
750.0	8.077	35.229	198.9	7.998	3992.0	2.663	34.923	246.7	2.311
800.0	7.333	35.149	207.2	7.253					
850.0	6.827	35.126	214.5	6.745					
900.0	6.509	35.144	219.9	6.423					
950.0	6.282	35.163	225.2	6.193					
1000.0	5.847	35.117	232.5	5.756					
1050.0	5.394	35.065	240.3	5.302					
1100.0	4.922	35.002	250.6	4.830					
1150.0	4.671	34.977	256.7	4.576					
1200.0	4.523	34.966	260.8	4.425					
1250.0	4.371	34.951	264.3	4.270					
1300.0	4.296	34.945	266.2	4.191					
1350.0	4.193	34.938	268.7	4.084					
1400.0	4.156	34.936	268.8	4.044					
1450.0	4.073	34.931	270.5	3.957					
1500.0	4.001	34.926	271.5	3.881					
1550.0	3.961	34.925	272.5	3.837					
1600.0	3.876	34.917	273.7	3.748					
1650.0	3.816	34.914	274.6	3.684					
1700.0	3.770	34.912	274.9	3.635					
1750.0	3.742	34.913	274.6	3.602					
1800.0	3.705	34.913	274.9	3.561					
1850.0	3.654	34.912	275.3	3.506					
1900.0	3.623	34.911	275.6	3.470					
1950.0	3.586	34.910	276.0	3.429					
2000.0	3.544	34.909	276.5	3.383					
2050.0	3.502	34.908	277.3	3.338					
2100.0	3.456	34.908	277.9	3.287					
2150.0	3.423	34.907	278.3	3.250					
2200.0	3.391	34.907	278.6	3.214					
2250.0	3.360	34.908	279.0	3.179					
2300.0	3.325	34.908	279.2	3.139					
2350.0	3.306	34.909	279.1	3.115					
2400.0	3.280	34.911	279.0	3.085					
2450.0	3.267	34.913	279.0	3.068					
2500.0	3.235	34.915	278.7	3.031					
2550.0	3.206	34.918	278.2	2.998					
2600.0	3.188	34.920	278.2	2.975					
2650.0	3.160	34.924	277.9	2.942					
2700.0	3.142	34.926	277.4	2.920					
2750.0	3.117	34.930	276.8	2.890					
2800.0	3.101	34.932	276.2	2.869					
2850.0	3.078	34.936	275.6	2.841					
2900.0	3.059	34.938	274.9	2.817					
2950.0	3.033	34.940	273.4	2.787					
3000.0	3.005	34.942	271.7	2.754					



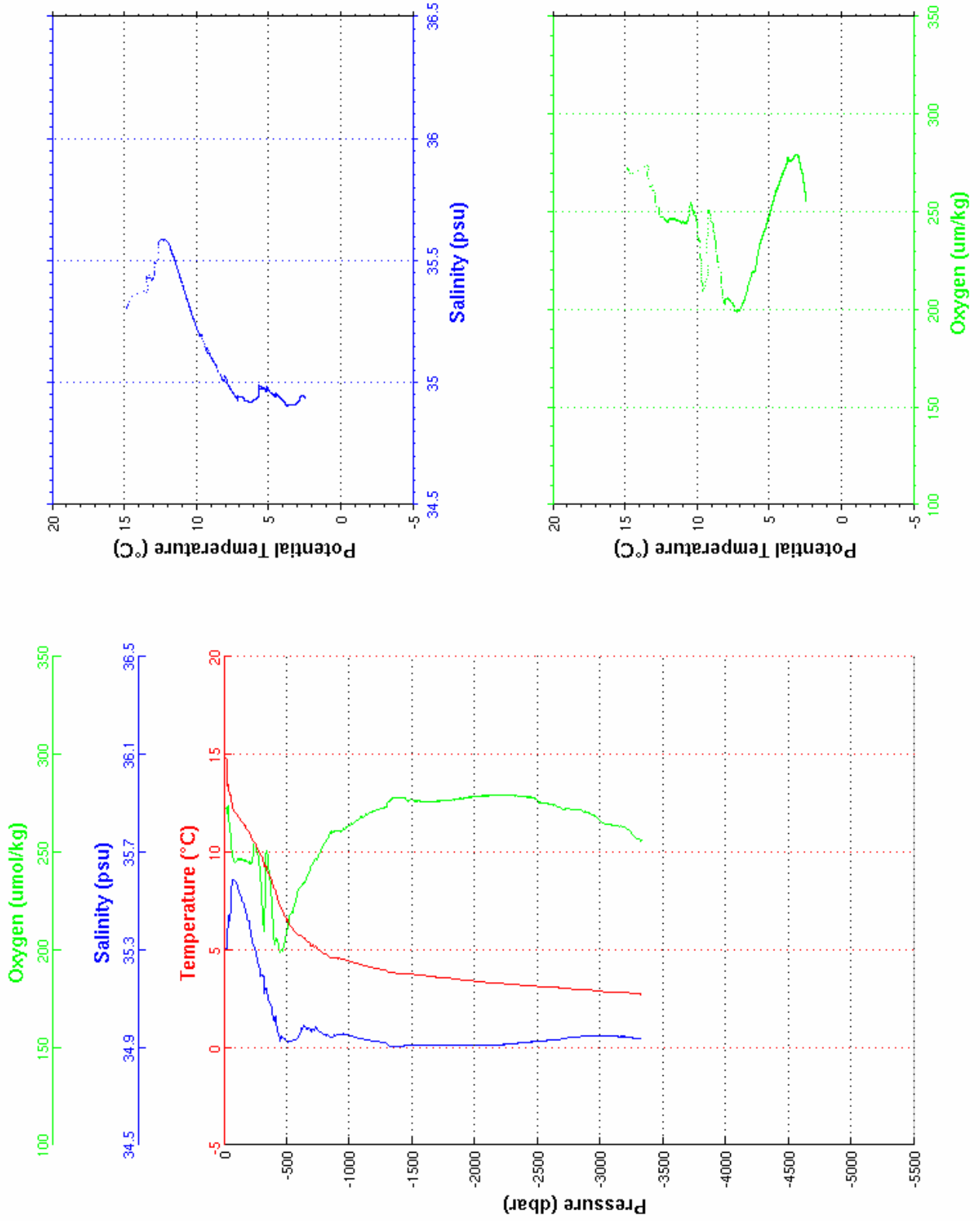
Cast : 45

```

-----
Cast       : 46           Cruise    : OVIDE 2010
Date      : 21/06/2010  Ship     : N/O THALASSA
Depth     : 3285 m      Organism  : IFREMER
Position  : N 51 24.07
           W 023 28.87
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	14.832	35.305	271.9	14.832	3050.0	2.843	34.945	264.5	2.590
10.0	14.829	35.306	272.3	14.828	3100.0	2.829	34.945	263.9	2.571
20.0	14.823	35.307	272.0	14.820	3150.0	2.820	34.945	263.2	2.557
30.0	13.403	35.398	271.4	13.399	3200.0	2.808	34.944	262.7	2.540
40.0	13.077	35.416	263.3	13.071	3250.0	2.774	34.940	259.2	2.502
50.0	12.909	35.446	258.2	12.902	3300.0	2.739	34.937	256.9	2.462
100.0	11.931	35.571	246.1	11.918	3328.0	2.720	34.935	256.1	2.441
150.0	11.462	35.492	245.4	11.443					
200.0	11.060	35.417	244.5	11.035					
250.0	10.408	35.294	253.8	10.378					
300.0	9.716	35.189	225.1	9.682					
350.0	8.949	35.098	243.9	8.911					
400.0	8.145	35.006	203.5	8.104					
450.0	7.140	34.928	200.1	7.097					
500.0	6.572	34.924	209.9	6.526					
550.0	6.016	34.930	220.1	5.967					
600.0	5.750	34.956	232.1	5.697					
650.0	5.570	34.983	235.9	5.514					
700.0	5.239	34.972	244.1	5.180					
750.0	5.014	34.966	248.9	4.952					
800.0	4.798	34.954	255.0	4.733					
850.0	4.626	34.944	259.8	4.558					
900.0	4.584	34.953	260.2	4.512					
950.0	4.510	34.953	261.9	4.434					
1000.0	4.410	34.947	263.5	4.330					
1050.0	4.314	34.942	265.8	4.231					
1100.0	4.225	34.936	268.0	4.139					
1150.0	4.144	34.930	269.6	4.053					
1200.0	4.059	34.926	271.1	3.965					
1250.0	3.993	34.922	272.3	3.895					
1300.0	3.893	34.912	274.4	3.792					
1350.0	3.817	34.905	277.7	3.713					
1400.0	3.785	34.906	277.9	3.676					
1450.0	3.776	34.909	276.8	3.663					
1500.0	3.746	34.909	276.7	3.629					
1550.0	3.706	34.909	276.0	3.585					
1600.0	3.674	34.910	275.9	3.549					
1650.0	3.632	34.910	276.0	3.503					
1700.0	3.596	34.910	276.2	3.462					
1750.0	3.569	34.911	276.4	3.432					
1800.0	3.542	34.911	276.7	3.401					
1850.0	3.501	34.910	277.1	3.355					
1900.0	3.461	34.909	277.6	3.311					
1950.0	3.426	34.909	278.0	3.272					
2000.0	3.394	34.909	278.4	3.236					
2050.0	3.365	34.908	278.7	3.202					
2100.0	3.330	34.909	278.8	3.163					
2150.0	3.296	34.910	279.2	3.125					
2200.0	3.277	34.911	279.2	3.102					
2250.0	3.252	34.913	279.2	3.072					
2300.0	3.225	34.915	279.0	3.041					
2350.0	3.199	34.918	278.6	3.011					
2400.0	3.175	34.919	278.4	2.982					
2450.0	3.153	34.923	278.1	2.955					
2500.0	3.121	34.925	276.3	2.919					
2550.0	3.094	34.927	275.3	2.887					
2600.0	3.082	34.928	274.5	2.871					
2650.0	3.070	34.932	273.6	2.854					
2700.0	3.047	34.935	272.2	2.826					
2750.0	3.012	34.940	272.1	2.787					
2800.0	2.984	34.943	271.7	2.754					
2850.0	2.963	34.945	271.4	2.729					
2900.0	2.950	34.945	270.3	2.711					
2950.0	2.913	34.946	268.7	2.669					
3000.0	2.870	34.946	265.9	2.622					



Cast : 46

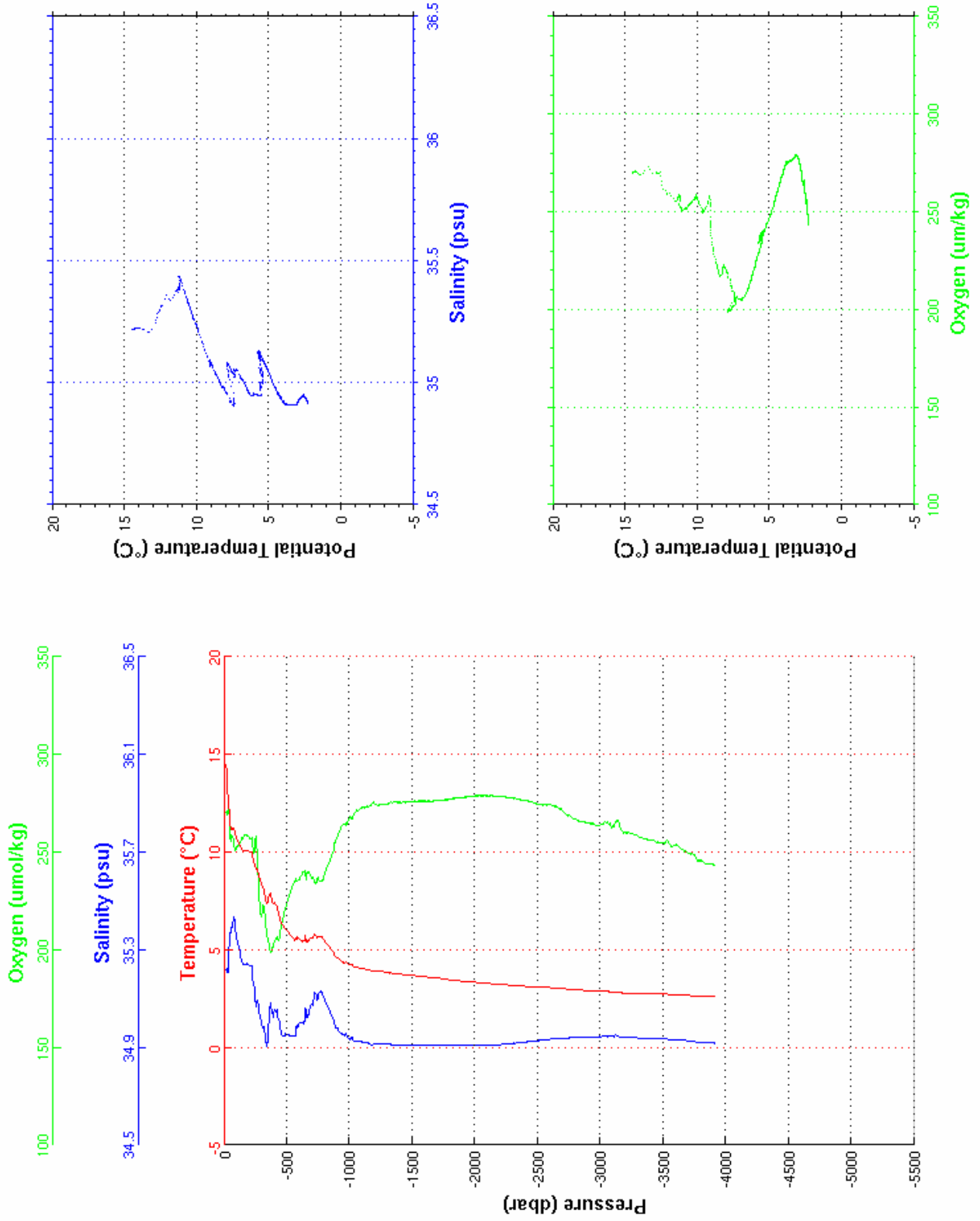
```

-----
Cast       : 47           Cruise    : OVIDE 2010
Date      : 21/06/2010  Ship     : N/O THALASSA
Depth     : 3857 m      Organism : IFREMER
Position  : N 51 46.26
           W 023 46.51
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	14.471	35.219	269.5	14.470	3050.0	2.866	34.947	265.2	2.612
10.0	14.486	35.220	270.0	14.485	3100.0	2.843	34.946	263.7	2.585
20.0	14.302	35.220	271.0	14.299	3150.0	2.814	34.944	265.0	2.551
30.0	13.232	35.206	272.0	13.228	3200.0	2.789	34.941	259.7	2.522
40.0	12.441	35.314	263.5	12.436	3250.0	2.781	34.940	259.5	2.509
50.0	11.395	35.377	256.2	11.388	3300.0	2.759	34.938	258.3	2.482
100.0	10.680	35.347	252.3	10.668	3350.0	2.746	34.937	256.6	2.464
150.0	10.078	35.239	258.2	10.061	3400.0	2.738	34.936	256.2	2.450
200.0	10.012	35.234	257.7	9.988	3450.0	2.728	34.935	255.2	2.435
250.0	9.186	35.087	258.1	9.158	3500.0	2.724	34.934	254.6	2.425
300.0	8.332	34.993	217.6	8.300	3550.0	2.707	34.933	254.1	2.403
350.0	7.401	34.932	204.6	7.367	3600.0	2.703	34.933	254.2	2.395
400.0	7.434	35.053	204.4	7.395	3650.0	2.677	34.930	251.6	2.363
450.0	6.494	34.970	210.8	6.453	3700.0	2.658	34.927	249.6	2.340
500.0	5.965	34.953	224.6	5.921	3750.0	2.645	34.925	248.6	2.321
550.0	5.572	34.946	234.0	5.525	3800.0	2.618	34.921	245.5	2.289
600.0	5.568	35.001	236.6	5.517	3850.0	2.601	34.919	244.1	2.267
650.0	5.716	35.062	237.1	5.659	3900.0	2.592	34.918	243.7	2.252
700.0	5.634	35.077	236.7	5.573	3913.0	2.592	34.917	243.4	2.251
750.0	5.687	35.118	236.3	5.621					
800.0	5.471	35.096	239.3	5.402					
850.0	5.030	35.038	247.5	4.959					
900.0	4.610	34.981	257.9	4.537					
950.0	4.369	34.951	263.8	4.294					
1000.0	4.221	34.934	268.2	4.143					
1050.0	4.109	34.926	271.2	4.028					
1100.0	4.057	34.925	272.4	3.971					
1150.0	3.983	34.917	273.6	3.894					
1200.0	3.927	34.915	274.6	3.834					
1250.0	3.887	34.915	274.3	3.790					
1300.0	3.841	34.914	274.7	3.740					
1350.0	3.780	34.909	275.7	3.675					
1400.0	3.751	34.910	275.5	3.643					
1450.0	3.723	34.910	275.6	3.610					
1500.0	3.684	34.909	275.9	3.568					
1550.0	3.652	34.909	276.0	3.531					
1600.0	3.621	34.910	276.1	3.496					
1650.0	3.586	34.910	276.2	3.457					
1700.0	3.560	34.910	276.3	3.427					
1750.0	3.515	34.910	276.5	3.378					
1800.0	3.461	34.908	277.1	3.320					
1850.0	3.427	34.907	277.7	3.283					
1900.0	3.386	34.907	278.0	3.237					
1950.0	3.360	34.907	278.4	3.206					
2000.0	3.336	34.907	278.7	3.178					
2050.0	3.303	34.908	278.7	3.141					
2100.0	3.281	34.909	278.9	3.114					
2150.0	3.251	34.911	278.8	3.081					
2200.0	3.231	34.912	278.5	3.057					
2250.0	3.204	34.914	278.1	3.025					
2300.0	3.178	34.917	277.7	2.995					
2350.0	3.154	34.919	277.3	2.966					
2400.0	3.130	34.922	276.6	2.937					
2450.0	3.110	34.925	275.6	2.913					
2500.0	3.095	34.928	274.6	2.894					
2550.0	3.078	34.931	274.2	2.872					
2600.0	3.060	34.934	274.3	2.849					
2650.0	3.040	34.936	273.3	2.824					
2700.0	3.003	34.937	270.6	2.783					
2750.0	2.974	34.939	268.7	2.749					
2800.0	2.953	34.940	266.8	2.724					
2850.0	2.932	34.941	265.5	2.698					
2900.0	2.904	34.942	265.0	2.666					
2950.0	2.890	34.943	264.4	2.647					
3000.0	2.870	34.944	264.2	2.622					





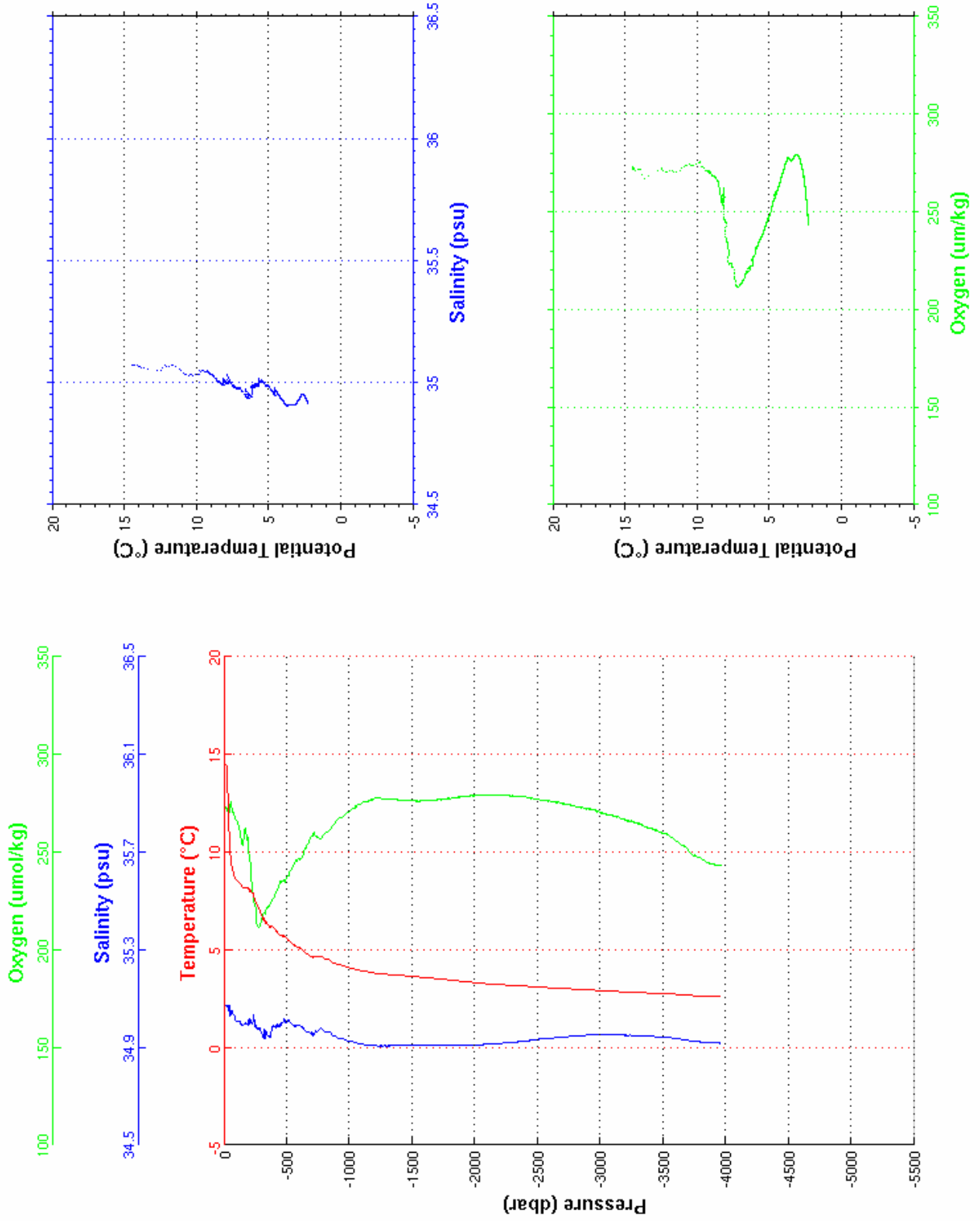
**Cast : 47**

```

-----
Cast       : 48           Cruise    : OVIDE 2010
Date      : 21/06/2010  Ship     : N/O THALASSA
Depth     : 3906 m      Organism : IFREMER
Position  : N 52  8.88
           W 024  4.36
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	14.457	35.071	271.9	14.457	3050.0	2.892	34.952	269.4	2.638
10.0	14.457	35.071	272.6	14.456	3100.0	2.881	34.951	268.7	2.622
20.0	14.455	35.072	272.6	14.453	3150.0	2.858	34.951	267.5	2.594
30.0	13.676	35.059	267.3	13.672	3200.0	2.839	34.950	266.6	2.571
40.0	11.587	35.073	270.5	11.582	3250.0	2.833	34.950	265.9	2.559
50.0	10.235	35.029	273.7	10.229	3300.0	2.814	34.948	264.6	2.535
100.0	8.546	35.006	265.5	8.536	3350.0	2.798	34.946	263.2	2.515
150.0	8.208	34.989	254.8	8.192	3400.0	2.784	34.945	262.2	2.495
200.0	8.139	35.015	246.6	8.118	3450.0	2.771	34.944	261.0	2.477
250.0	7.480	34.983	221.5	7.455	3500.0	2.764	34.942	259.9	2.465
300.0	6.716	34.952	216.6	6.689	3550.0	2.750	34.940	258.5	2.446
350.0	6.266	34.939	222.1	6.235	3600.0	2.725	34.937	256.1	2.416
400.0	6.060	34.985	227.6	6.025	3650.0	2.703	34.933	253.8	2.389
450.0	5.762	34.993	234.8	5.724	3700.0	2.666	34.928	251.2	2.347
500.0	5.567	35.006	237.3	5.524	3750.0	2.650	34.926	248.4	2.326
550.0	5.253	34.988	243.5	5.208	3800.0	2.624	34.923	246.9	2.295
600.0	5.127	34.990	246.1	5.078	3850.0	2.601	34.919	244.8	2.267
650.0	4.863	34.969	252.6	4.811	3900.0	2.596	34.918	243.9	2.256
700.0	4.641	34.952	259.2	4.586	3950.0	2.595	34.917	243.3	2.250
750.0	4.662	34.970	257.5	4.602	3961.0	2.595	34.917	243.4	2.248
800.0	4.557	34.965	259.7	4.493					
850.0	4.432	34.957	262.4	4.366					
900.0	4.268	34.941	266.5	4.198					
950.0	4.174	34.934	268.7	4.101					
1000.0	4.081	34.926	271.4	4.004					
1050.0	3.989	34.918	273.4	3.908					
1100.0	3.924	34.913	275.1	3.840					
1150.0	3.866	34.909	276.4	3.778					
1200.0	3.804	34.906	277.3	3.712					
1250.0	3.774	34.907	277.4	3.679					
1300.0	3.742	34.907	277.3	3.642					
1350.0	3.713	34.907	277.0	3.609					
1400.0	3.692	34.908	276.5	3.584					
1450.0	3.671	34.909	276.7	3.559					
1500.0	3.639	34.909	276.4	3.523					
1550.0	3.607	34.910	276.2	3.487					
1600.0	3.581	34.910	276.3	3.457					
1650.0	3.551	34.911	276.4	3.423					
1700.0	3.512	34.911	276.8	3.380					
1750.0	3.478	34.911	277.1	3.341					
1800.0	3.446	34.910	277.6	3.306					
1850.0	3.415	34.911	277.9	3.270					
1900.0	3.379	34.910	278.5	3.230					
1950.0	3.356	34.910	278.7	3.203					
2000.0	3.323	34.911	279.0	3.165					
2050.0	3.296	34.912	279.2	3.134					
2100.0	3.259	34.913	279.4	3.093					
2150.0	3.230	34.915	279.1	3.060					
2200.0	3.215	34.916	279.1	3.041					
2250.0	3.196	34.918	279.0	3.017					
2300.0	3.174	34.921	278.8	2.990					
2350.0	3.156	34.923	278.6	2.968					
2400.0	3.138	34.925	278.3	2.946					
2450.0	3.109	34.929	277.5	2.912					
2500.0	3.084	34.933	276.9	2.883					
2550.0	3.068	34.935	276.3	2.861					
2600.0	3.048	34.938	276.1	2.838					
2650.0	3.036	34.940	275.5	2.820					
2700.0	3.018	34.943	274.8	2.798					
2750.0	3.003	34.945	274.3	2.778					
2800.0	2.983	34.947	273.3	2.753					
2850.0	2.967	34.949	272.9	2.733					
2900.0	2.944	34.951	271.9	2.704					
2950.0	2.929	34.951	271.5	2.685					
3000.0	2.906	34.952	270.1	2.657					



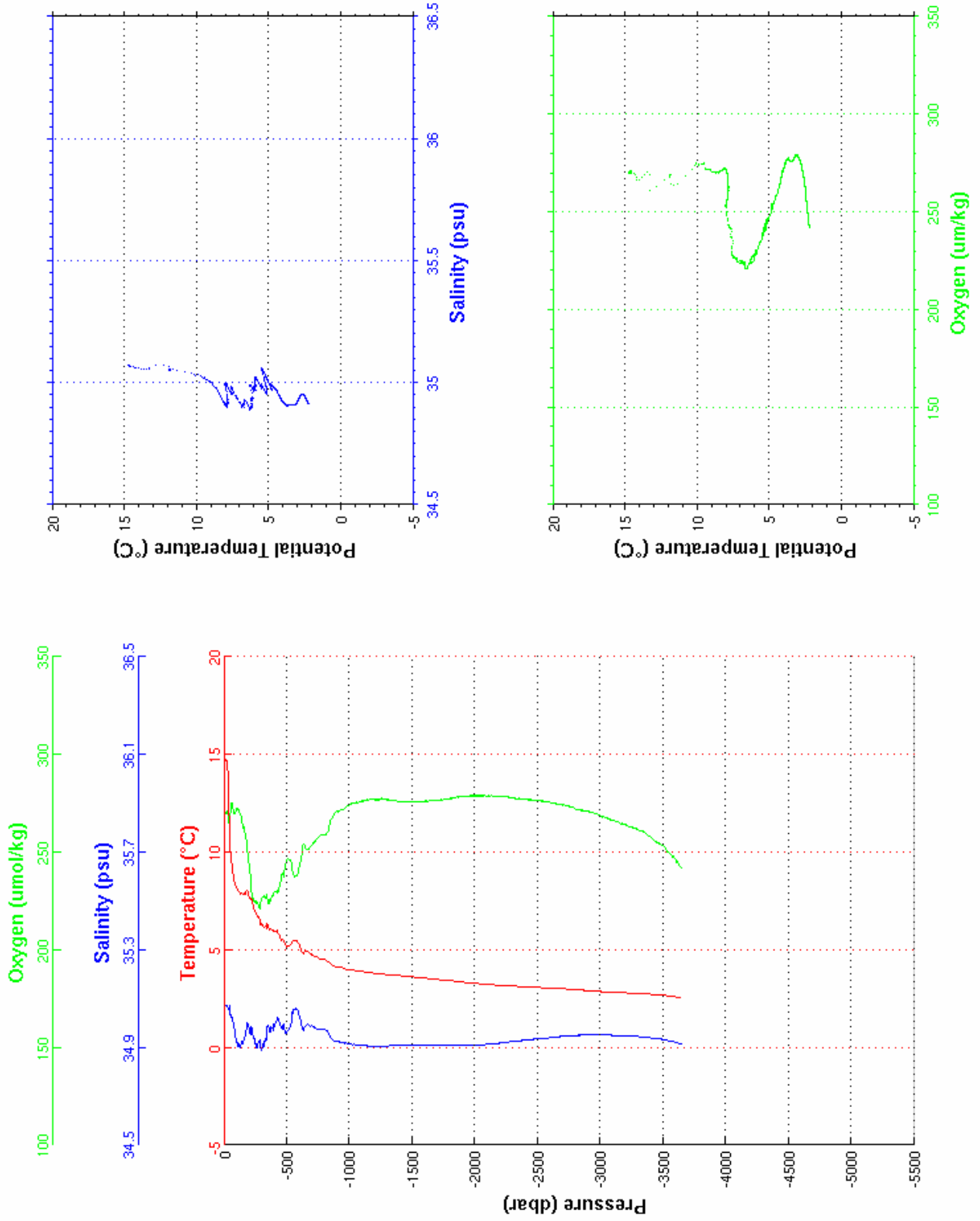
Cast : 48

```

-----
Cast       : 49           Cruise    : OVIDE 2010
Date      : 21/06/2010  Ship     : N/O THALASSA
Depth     : 3601 m      Organism  : IFREMER
Position  : N 52 31.22
           W 024 21.49
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	14.712	35.070	270.1	14.712	3050.0	2.847	34.951	267.4	2.594
10.0	14.713	35.070	270.2	14.712	3100.0	2.825	34.950	266.2	2.567
20.0	14.719	35.070	269.8	14.716	3150.0	2.810	34.949	265.2	2.547
30.0	14.305	35.063	268.9	14.300	3200.0	2.794	34.947	264.1	2.527
40.0	12.297	35.073	266.0	12.292	3250.0	2.779	34.946	262.9	2.507
50.0	10.131	35.034	273.6	10.126	3300.0	2.769	34.945	261.8	2.491
100.0	8.160	34.923	272.1	8.150	3350.0	2.753	34.943	260.2	2.471
150.0	7.838	34.921	262.7	7.823	3400.0	2.720	34.939	257.4	2.433
200.0	7.764	34.974	241.9	7.744	3450.0	2.703	34.936	255.1	2.411
250.0	6.996	34.919	223.6	6.972	3500.0	2.679	34.933	253.2	2.382
300.0	6.223	34.894	226.7	6.197	3550.0	2.633	34.927	249.4	2.331
350.0	6.290	34.989	224.1	6.259	3600.0	2.580	34.920	246.0	2.274
400.0	5.919	34.987	230.0	5.884	3645.0	2.534	34.915	241.8	2.225
450.0	5.620	34.988	235.0	5.582					
500.0	5.160	34.960	246.6	5.119					
550.0	5.510	35.053	239.2	5.463					
600.0	5.231	35.027	243.3	5.182					
650.0	4.898	34.991	251.7	4.845					
700.0	4.768	34.987	253.8	4.712					
750.0	4.618	34.977	257.6	4.558					
800.0	4.526	34.974	259.1	4.463					
850.0	4.238	34.936	266.9	4.172					
900.0	4.134	34.926	270.9	4.065					
950.0	4.057	34.921	272.2	3.985					
1000.0	3.974	34.913	274.7	3.898					
1050.0	3.929	34.911	275.5	3.849					
1100.0	3.889	34.909	276.2	3.805					
1150.0	3.835	34.906	276.9	3.747					
1200.0	3.807	34.906	276.9	3.716					
1250.0	3.757	34.904	277.6	3.661					
1300.0	3.732	34.906	276.9	3.633					
1350.0	3.702	34.908	276.4	3.599					
1400.0	3.678	34.909	276.0	3.571					
1450.0	3.650	34.911	275.7	3.538					
1500.0	3.610	34.910	275.6	3.494					
1550.0	3.583	34.911	275.8	3.463					
1600.0	3.551	34.911	276.0	3.427					
1650.0	3.509	34.909	276.4	3.381					
1700.0	3.475	34.909	276.4	3.343					
1750.0	3.438	34.908	277.0	3.302					
1800.0	3.413	34.909	277.5	3.273					
1850.0	3.373	34.909	278.0	3.229					
1900.0	3.344	34.908	278.5	3.196					
1950.0	3.317	34.909	278.8	3.165					
2000.0	3.286	34.910	278.9	3.129					
2050.0	3.257	34.911	278.8	3.096					
2100.0	3.231	34.914	279.0	3.066					
2150.0	3.203	34.915	278.3	3.033					
2200.0	3.186	34.917	278.5	3.012					
2250.0	3.173	34.922	278.3	2.995					
2300.0	3.148	34.924	277.8	2.965					
2350.0	3.124	34.927	277.5	2.937					
2400.0	3.109	34.929	277.2	2.917					
2450.0	3.086	34.933	276.8	2.890					
2500.0	3.072	34.935	276.4	2.871					
2550.0	3.051	34.938	276.1	2.845					
2600.0	3.034	34.940	275.4	2.823					
2650.0	3.019	34.943	274.6	2.804					
2700.0	3.001	34.945	274.1	2.781					
2750.0	2.981	34.948	273.4	2.756					
2800.0	2.958	34.949	272.4	2.729					
2850.0	2.934	34.950	271.4	2.701					
2900.0	2.917	34.951	270.9	2.679					
2950.0	2.896	34.952	269.9	2.652					
3000.0	2.867	34.951	268.5	2.619					



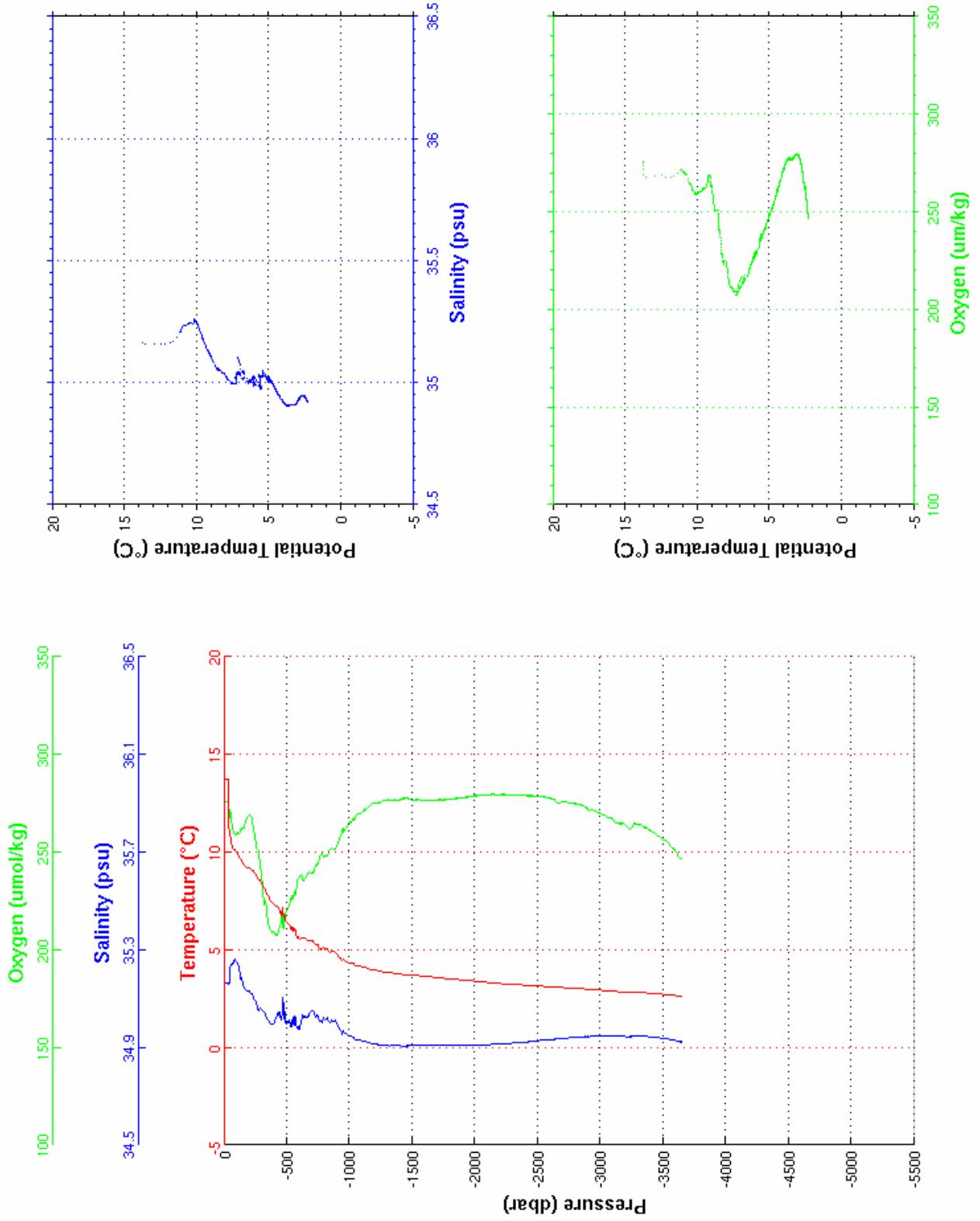
**Cast : 49**

```

-----
Cast       : 50           Cruise    : OVIDE 2010
Date       : 22/06/2010  Ship      : N/O THALASSA
Depth      : 3601 m      Organism  : IFREMER
Position   : N 52 53.51
              W 024 39.44
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	13.749	35.165	275.4	13.749	3050.0	2.908	34.947	268.4	2.654
10.0	13.751	35.165	275.3	13.750	3100.0	2.876	34.946	266.6	2.618
20.0	13.752	35.166	274.9	13.749	3150.0	2.855	34.946	264.8	2.591
30.0	13.752	35.165	275.3	13.748	3200.0	2.829	34.944	263.7	2.561
40.0	11.851	35.163	267.5	11.846	3250.0	2.817	34.944	262.9	2.543
50.0	10.872	35.233	269.9	10.866	3300.0	2.817	34.947	264.4	2.538
100.0	9.986	35.244	259.8	9.974	3350.0	2.792	34.945	263.0	2.509
150.0	9.453	35.164	262.3	9.436	3400.0	2.773	34.943	261.3	2.484
200.0	9.184	35.129	269.0	9.162	3450.0	2.748	34.940	258.9	2.455
250.0	8.862	35.088	255.0	8.835	3500.0	2.723	34.937	256.6	2.425
300.0	8.404	35.052	237.3	8.373	3550.0	2.697	34.933	254.0	2.394
350.0	7.788	35.011	213.7	7.752	3600.0	2.648	34.927	250.4	2.341
400.0	7.292	35.001	208.2	7.253	3646.0	2.609	34.923	246.7	2.298
450.0	6.884	35.018	213.8	6.842					
500.0	6.429	35.007	220.7	6.383					
550.0	6.139	35.020	226.4	6.090					
600.0	5.559	34.976	238.3	5.508					
650.0	5.549	35.026	237.3	5.493					
700.0	5.495	35.050	239.4	5.435					
750.0	5.248	35.028	243.9	5.184					
800.0	5.039	35.013	248.3	4.973					
850.0	4.904	35.005	251.9	4.834					
900.0	4.777	34.996	253.9	4.703					
950.0	4.515	34.967	261.0	4.439					
1000.0	4.344	34.947	265.3	4.265					
1050.0	4.211	34.931	269.0	4.129					
1100.0	4.129	34.927	270.5	4.043					
1150.0	4.023	34.918	273.4	3.933					
1200.0	3.972	34.916	274.5	3.878					
1250.0	3.896	34.911	275.5	3.799					
1300.0	3.832	34.907	277.0	3.731					
1350.0	3.797	34.908	276.8	3.693					
1400.0	3.762	34.907	276.7	3.653					
1450.0	3.724	34.906	277.4	3.611					
1500.0	3.705	34.908	276.8	3.588					
1550.0	3.675	34.908	276.7	3.554					
1600.0	3.651	34.909	276.6	3.526					
1650.0	3.612	34.910	276.4	3.483					
1700.0	3.573	34.910	276.8	3.440					
1750.0	3.545	34.910	277.0	3.408					
1800.0	3.513	34.910	277.3	3.371					
1850.0	3.484	34.910	277.6	3.339					
1900.0	3.456	34.910	277.8	3.307					
1950.0	3.420	34.910	278.4	3.266					
2000.0	3.387	34.910	278.8	3.229					
2050.0	3.357	34.911	279.1	3.195					
2100.0	3.326	34.911	279.3	3.159					
2150.0	3.294	34.913	279.4	3.123					
2200.0	3.271	34.914	279.4	3.096					
2250.0	3.244	34.915	279.3	3.064					
2300.0	3.227	34.917	279.3	3.043					
2350.0	3.208	34.919	279.2	3.019					
2400.0	3.186	34.922	279.0	2.992					
2450.0	3.164	34.924	278.8	2.966					
2500.0	3.147	34.927	278.7	2.945					
2550.0	3.129	34.929	278.2	2.922					
2600.0	3.103	34.932	277.6	2.892					
2650.0	3.076	34.934	275.9	2.860					
2700.0	3.063	34.937	275.7	2.842					
2750.0	3.048	34.940	275.2	2.822					
2800.0	3.030	34.942	274.7	2.799					
2850.0	3.009	34.944	274.0	2.774					
2900.0	2.980	34.944	272.1	2.740					
2950.0	2.959	34.947	271.2	2.715					
3000.0	2.935	34.947	269.9	2.685					



Cast : 50

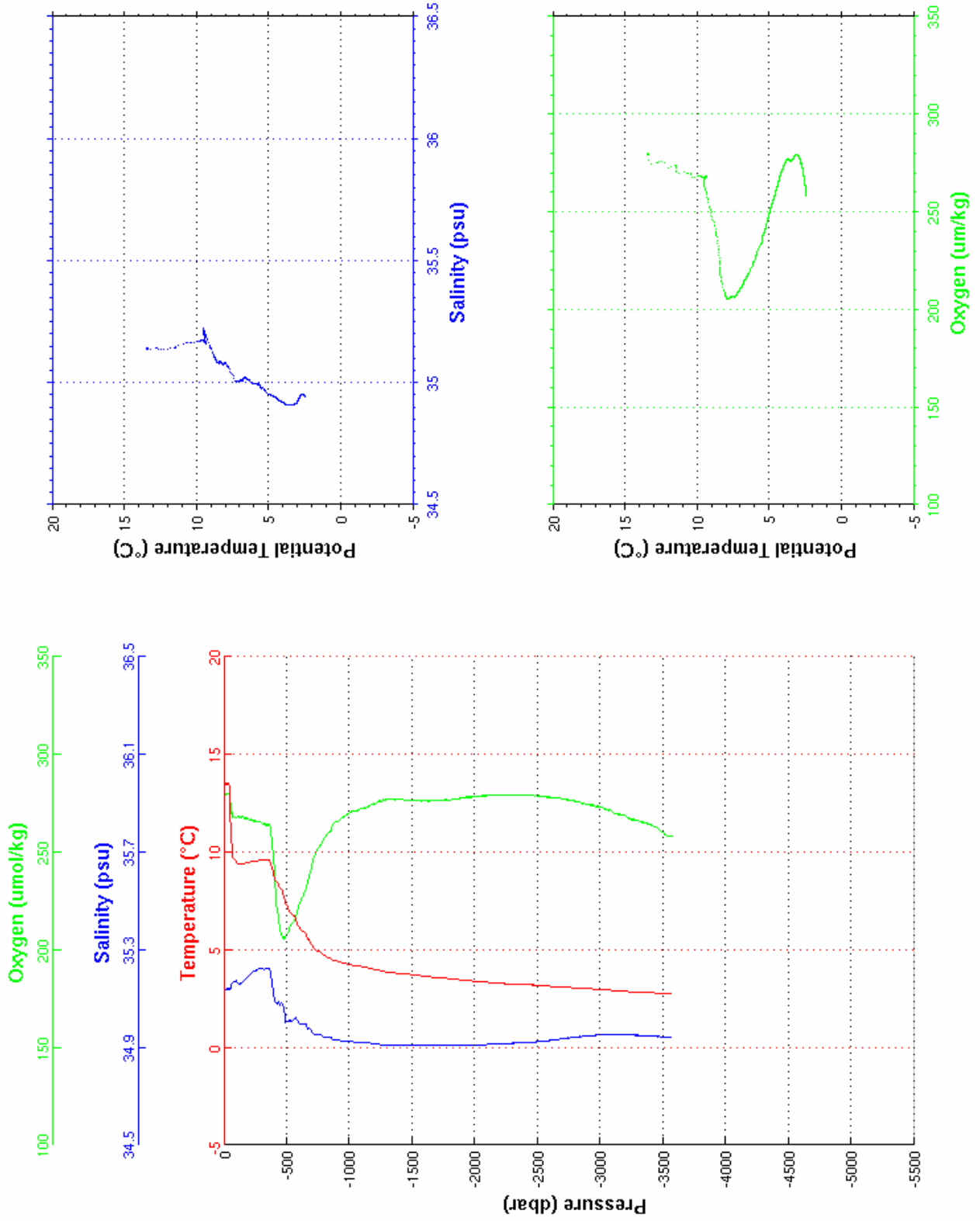
```

-----
Cast       : 51           Cruise    : OVIDE 2010
Date       : 22/06/2010  Ship      : N/O THALASSA
Depth      : 3527 m      Organism  : IFREMER
Position   : N 53 15.99
            W 024 57.03
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	13.497	35.139	279.8	13.496	3050.0	2.934	34.952	271.8	2.679
10.0	13.497	35.139	279.7	13.496	3100.0	2.908	34.952	270.5	2.648
20.0	13.498	35.139	280.0	13.495	3150.0	2.893	34.952	269.5	2.628
30.0	13.498	35.139	279.9	13.493	3200.0	2.875	34.952	268.6	2.606
40.0	13.433	35.140	279.7	13.427	3250.0	2.839	34.950	266.7	2.565
50.0	11.983	35.138	272.6	11.976	3300.0	2.828	34.950	266.1	2.549
100.0	9.479	35.171	267.9	9.467	3350.0	2.817	34.949	265.1	2.533
150.0	9.395	35.171	267.6	9.378	3400.0	2.806	34.948	264.2	2.516
200.0	9.494	35.198	266.8	9.472	3450.0	2.784	34.945	262.5	2.490
250.0	9.557	35.215	265.9	9.529	3500.0	2.757	34.942	260.1	2.458
300.0	9.591	35.225	265.0	9.557	3550.0	2.750	34.941	258.4	2.446
350.0	9.589	35.224	263.8	9.549	3571.0	2.752	34.941	258.3	2.445
400.0	8.760	35.102	239.9	8.717					
450.0	8.138	35.080	208.5	8.091					
500.0	7.253	35.005	208.4	7.205					
550.0	6.802	35.014	214.5	6.750					
600.0	6.182	34.997	223.7	6.128					
650.0	5.816	34.993	231.2	5.759					
700.0	5.234	34.961	243.9	5.175					
750.0	4.922	34.951	252.6	4.861					
800.0	4.715	34.944	257.5	4.651					
850.0	4.575	34.942	261.0	4.507					
900.0	4.420	34.929	266.0	4.349					
950.0	4.329	34.927	268.0	4.255					
1000.0	4.240	34.924	270.1	4.161					
1050.0	4.184	34.922	271.4	4.102					
1100.0	4.132	34.921	272.2	4.046					
1150.0	4.069	34.919	273.3	3.980					
1200.0	4.002	34.915	274.8	3.909					
1250.0	3.921	34.911	276.1	3.824					
1300.0	3.869	34.909	276.9	3.768					
1350.0	3.824	34.909	277.0	3.719					
1400.0	3.788	34.908	277.0	3.679					
1450.0	3.754	34.909	276.7	3.641					
1500.0	3.728	34.910	276.8	3.611					
1550.0	3.684	34.911	276.3	3.563					
1600.0	3.637	34.911	276.3	3.512					
1650.0	3.602	34.911	276.4	3.473					
1700.0	3.572	34.912	276.4	3.439					
1750.0	3.550	34.912	276.7	3.412					
1800.0	3.513	34.911	276.9	3.371					
1850.0	3.489	34.911	277.2	3.343					
1900.0	3.439	34.911	277.7	3.290					
1950.0	3.417	34.911	278.2	3.263					
2000.0	3.393	34.911	278.5	3.234					
2050.0	3.358	34.911	278.8	3.196					
2100.0	3.333	34.912	279.0	3.166					
2150.0	3.306	34.913	279.0	3.135					
2200.0	3.283	34.914	279.4	3.107					
2250.0	3.261	34.916	279.3	3.081					
2300.0	3.241	34.917	279.3	3.057					
2350.0	3.224	34.918	279.3	3.035					
2400.0	3.216	34.919	279.2	3.022					
2450.0	3.206	34.920	279.1	3.007					
2500.0	3.179	34.923	278.9	2.976					
2550.0	3.156	34.926	278.5	2.948					
2600.0	3.131	34.929	278.0	2.919					
2650.0	3.112	34.932	277.7	2.895					
2700.0	3.091	34.935	277.3	2.869					
2750.0	3.068	34.939	276.7	2.841					
2800.0	3.048	34.942	276.3	2.817					
2850.0	3.026	34.945	275.1	2.790					
2900.0	3.006	34.947	274.4	2.765					
2950.0	2.986	34.949	273.8	2.741					
3000.0	2.965	34.952	273.2	2.715					





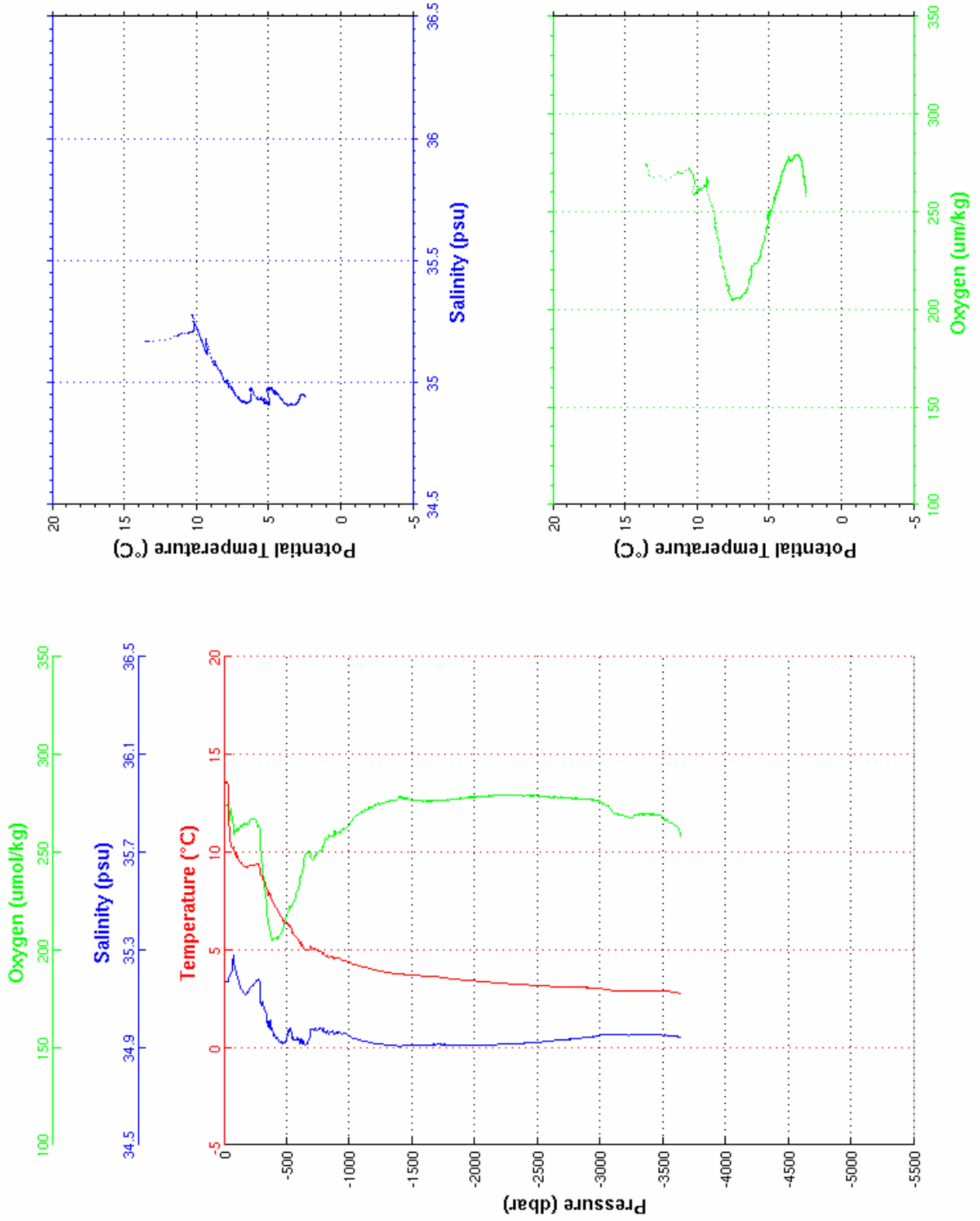
Cast : 51

```

-----
Cast       : 52           Cruise    : OVIDE 2010
Date      : 22/06/2010  Ship     : N/O THALASSA
Depth     : 3592 m      Organism : IFREMER
Position  : N 53 38.37
           W 025 14.19
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	13.579	35.169	274.5	13.579	3050.0	2.966	34.952	273.8	2.710
10.0	13.571	35.169	274.1	13.569	3100.0	2.894	34.951	269.9	2.635
20.0	13.565	35.169	274.3	13.562	3150.0	2.882	34.952	269.2	2.618
30.0	13.482	35.170	273.7	13.478	3200.0	2.873	34.952	268.4	2.604
40.0	11.518	35.189	268.9	11.513	3250.0	2.879	34.951	267.5	2.604
50.0	10.575	35.201	272.1	10.569	3300.0	2.899	34.953	269.3	2.619
100.0	9.869	35.207	261.5	9.857	3350.0	2.906	34.952	269.4	2.619
150.0	9.352	35.126	264.0	9.335	3400.0	2.921	34.951	269.4	2.629
200.0	9.268	35.135	265.4	9.246	3450.0	2.915	34.952	269.3	2.618
250.0	9.368	35.169	266.3	9.340	3500.0	2.893	34.950	267.2	2.590
300.0	8.766	35.069	244.9	8.734	3550.0	2.866	34.949	265.7	2.558
350.0	7.985	35.001	212.7	7.949	3600.0	2.826	34.947	263.8	2.514
400.0	7.287	34.949	206.2	7.248	3640.0	2.752	34.940	258.0	2.438
450.0	6.757	34.924	208.4	6.715					
500.0	6.266	34.938	218.6	6.221					
550.0	5.847	34.937	224.6	5.799					
600.0	5.431	34.927	234.2	5.380					
650.0	5.006	34.913	249.5	4.953					
700.0	5.155	34.976	246.0	5.097					
750.0	4.940	34.974	250.5	4.879					
800.0	4.696	34.957	255.7	4.632					
850.0	4.679	34.970	257.3	4.610					
900.0	4.567	34.960	259.7	4.495					
950.0	4.480	34.957	261.9	4.405					
1000.0	4.365	34.949	264.3	4.286					
1050.0	4.232	34.935	268.5	4.150					
1100.0	4.128	34.927	270.9	4.042					
1150.0	4.035	34.920	272.7	3.945					
1200.0	3.968	34.916	274.2	3.874					
1250.0	3.907	34.913	275.1	3.810					
1300.0	3.852	34.910	275.9	3.751					
1350.0	3.800	34.908	276.5	3.696					
1400.0	3.753	34.905	278.1	3.645					
1450.0	3.733	34.907	277.6	3.621					
1500.0	3.704	34.909	276.6	3.587					
1550.0	3.679	34.910	276.5	3.558					
1600.0	3.651	34.911	276.3	3.526					
1650.0	3.626	34.911	276.3	3.497					
1700.0	3.608	34.912	276.3	3.475					
1750.0	3.569	34.912	276.6	3.431					
1800.0	3.531	34.911	276.9	3.389					
1850.0	3.492	34.911	277.4	3.346					
1900.0	3.446	34.911	277.6	3.296					
1950.0	3.428	34.910	278.1	3.274					
2000.0	3.417	34.911	278.1	3.258					
2050.0	3.386	34.912	278.3	3.224					
2100.0	3.347	34.911	278.6	3.180					
2150.0	3.319	34.910	279.1	3.147					
2200.0	3.288	34.913	279.0	3.112					
2250.0	3.270	34.914	279.1	3.089					
2300.0	3.248	34.915	279.0	3.063					
2350.0	3.231	34.916	279.0	3.042					
2400.0	3.216	34.918	279.0	3.022					
2450.0	3.185	34.920	278.9	2.987					
2500.0	3.172	34.922	278.7	2.969					
2550.0	3.142	34.924	278.7	2.935					
2600.0	3.128	34.926	278.2	2.916					
2650.0	3.115	34.929	278.1	2.898					
2700.0	3.106	34.930	278.0	2.884					
2750.0	3.093	34.933	277.7	2.866					
2800.0	3.089	34.935	277.6	2.857					
2850.0	3.073	34.938	277.3	2.836					
2900.0	3.062	34.941	277.0	2.821					
2950.0	3.049	34.944	276.6	2.803					
3000.0	3.009	34.950	275.8	2.758					



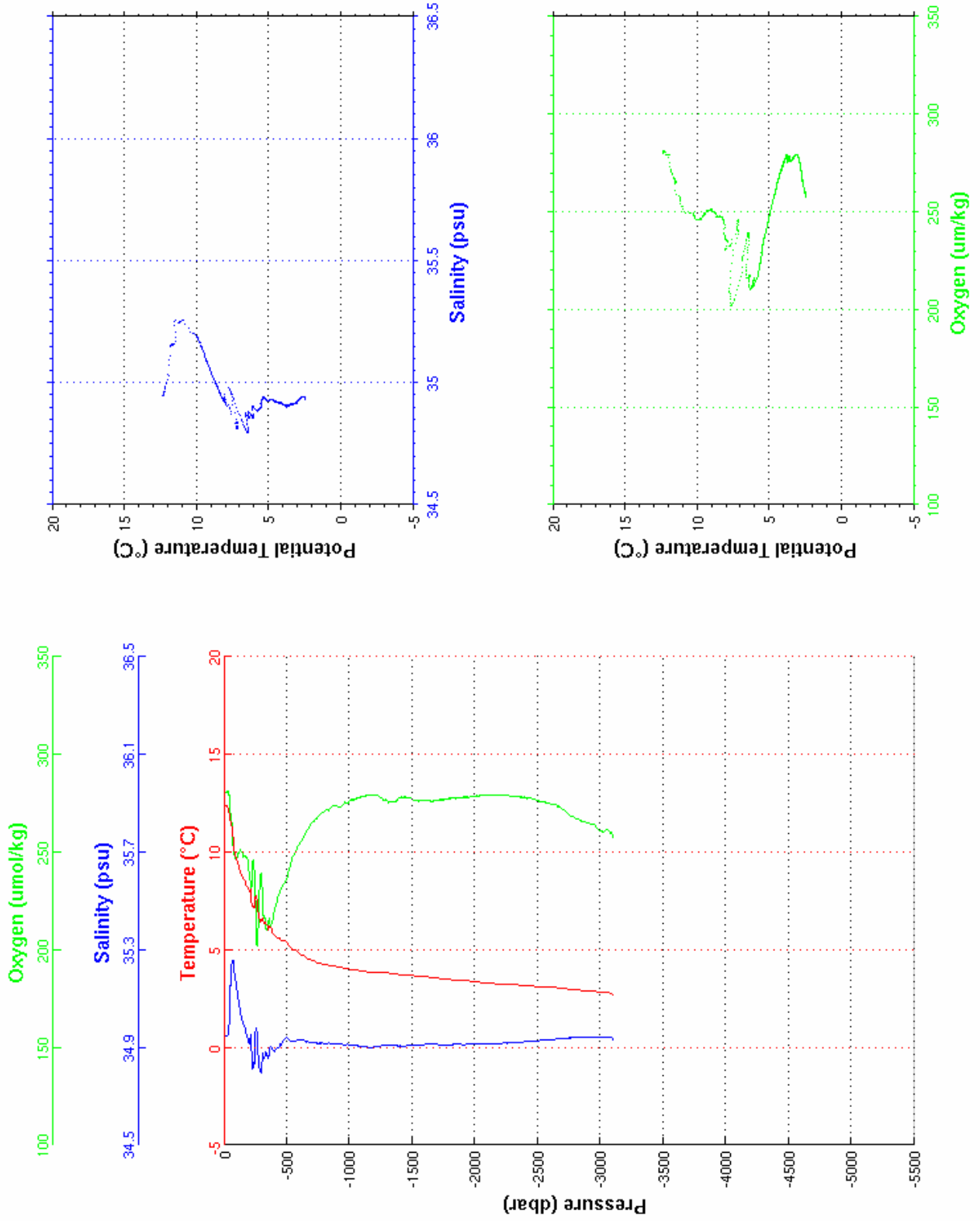
**Cast : 52**

```

-----
Cast       : 53           Cruise    : OVIDE 2010
Date      : 22/06/2010  Ship      : N/O THALASSA
Depth     : 3069 m      Organism  : IFREMER
Position  : N 54 0.86
           W 025 31.99
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.344	34.947	280.0	12.344	3050.0	2.809	34.943	261.5	2.557
10.0	12.343	34.947	280.8	12.342	3100.0	2.685	34.932	257.8	2.430
20.0	12.346	34.947	280.6	12.344	3104.0	2.682	34.932	NaN	2.428
30.0	12.276	34.952	280.3	12.272					
40.0	12.101	34.993	278.9	12.096					
50.0	11.697	35.157	268.8	11.690					
100.0	9.644	35.146	247.2	9.633					
150.0	8.725	35.004	247.6	8.709					
200.0	8.090	34.931	237.2	8.070					
250.0	7.718	34.966	219.8	7.693					
300.0	6.459	34.813	234.9	6.432					
350.0	6.150	34.860	213.3	6.119					
400.0	5.769	34.885	219.7	5.735					
450.0	5.485	34.909	231.2	5.447					
500.0	5.368	34.939	237.3	5.326					
550.0	5.015	34.925	248.4	4.971					
600.0	4.811	34.933	254.7	4.763					
650.0	4.609	34.924	260.4	4.558					
700.0	4.467	34.920	265.3	4.412					
750.0	4.337	34.918	268.9	4.280					
800.0	4.242	34.914	271.3	4.181					
850.0	4.177	34.914	273.1	4.112					
900.0	4.141	34.916	273.0	4.072					
950.0	4.067	34.911	274.8	3.994					
1000.0	4.007	34.907	276.7	3.930					
1050.0	3.971	34.907	277.3	3.890					
1100.0	3.914	34.904	278.4	3.830					
1150.0	3.850	34.900	279.2	3.762					
1200.0	3.835	34.903	279.2	3.743					
1250.0	3.828	34.906	278.1	3.732					
1300.0	3.822	34.912	275.9	3.722					
1350.0	3.788	34.910	276.0	3.684					
1400.0	3.737	34.907	277.9	3.629					
1450.0	3.708	34.907	278.1	3.595					
1500.0	3.681	34.910	277.0	3.565					
1550.0	3.646	34.911	276.2	3.525					
1600.0	3.614	34.912	276.3	3.489					
1650.0	3.588	34.913	276.4	3.459					
1700.0	3.556	34.912	276.6	3.424					
1750.0	3.518	34.911	276.8	3.381					
1800.0	3.475	34.910	277.5	3.334					
1850.0	3.457	34.912	277.5	3.312					
1900.0	3.422	34.910	278.0	3.273					
1950.0	3.404	34.915	278.2	3.250					
2000.0	3.364	34.914	278.7	3.206					
2050.0	3.331	34.915	278.9	3.169					
2100.0	3.298	34.914	279.3	3.132					
2150.0	3.267	34.915	279.2	3.097					
2200.0	3.251	34.916	279.3	3.076					
2250.0	3.233	34.918	279.0	3.054					
2300.0	3.209	34.919	278.6	3.025					
2350.0	3.196	34.920	278.3	3.008					
2400.0	3.173	34.923	278.1	2.980					
2450.0	3.147	34.926	277.5	2.949					
2500.0	3.124	34.927	276.3	2.922					
2550.0	3.104	34.930	275.7	2.897					
2600.0	3.084	34.932	274.7	2.872					
2650.0	3.060	34.935	274.0	2.844					
2700.0	3.020	34.938	272.0	2.800					
2750.0	2.989	34.939	269.3	2.764					
2800.0	2.957	34.940	267.5	2.728					
2850.0	2.926	34.941	266.0	2.692					
2900.0	2.902	34.941	264.9	2.664					
2950.0	2.875	34.941	264.0	2.633					
3000.0	2.816	34.940	260.9	2.569					



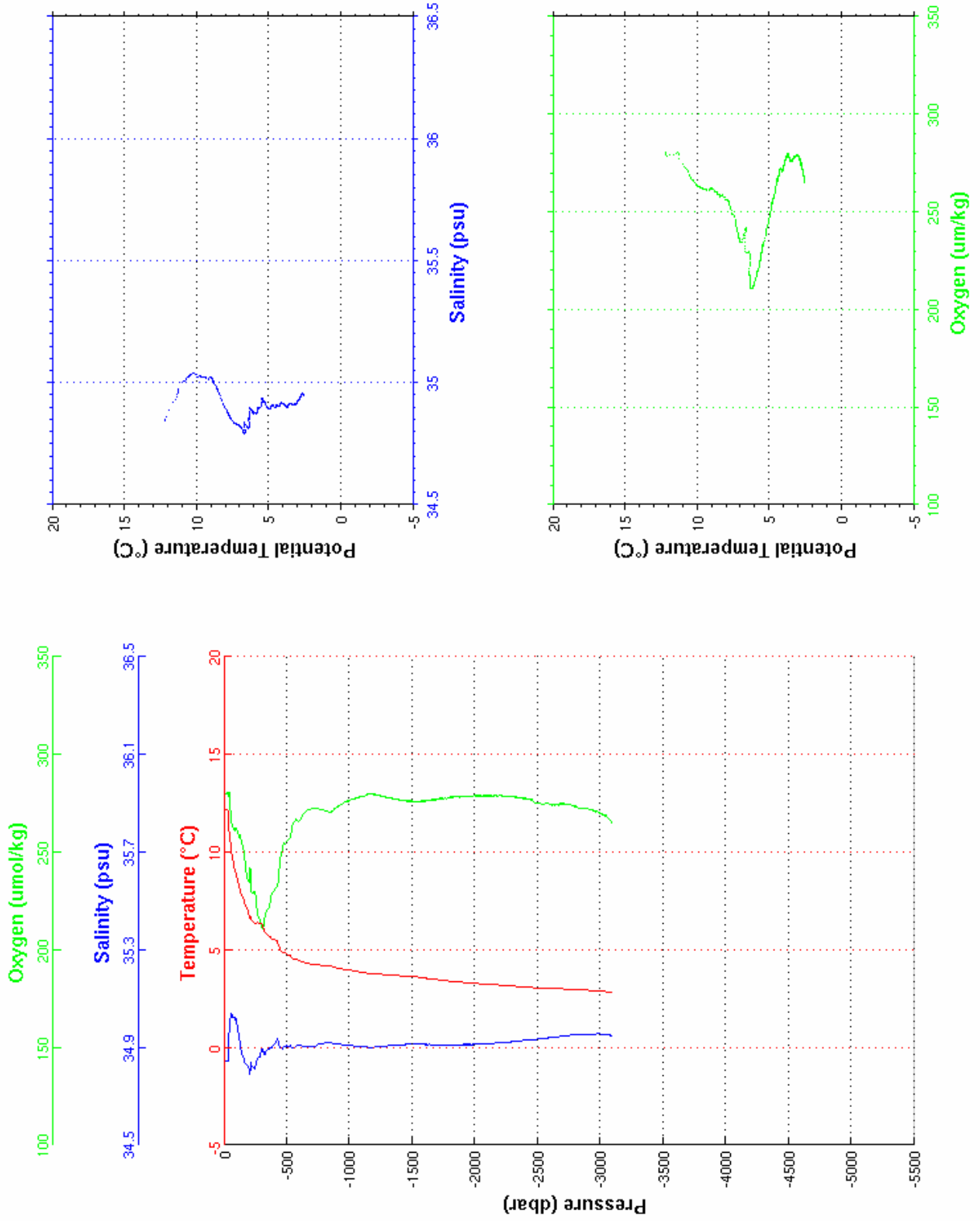
Cast : 53

```

-----
Cast      : 54           Cruise   : OVIDE 2010
Date     : 23/06/2010  Ship    : N/O THALASSA
Depth    : 3060 m      Organism : IFREMER
Position : N 54 23.24
          W 025 49.63
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.152	34.847	280.0	12.151	3050.0	2.852	34.952	268.2	2.600
10.0	12.151	34.846	280.2	12.150	3094.0	2.813	34.950	265.4	2.556
20.0	12.152	34.846	280.3	12.149					
30.0	12.151	34.846	279.9	12.147					
40.0	11.275	34.962	279.8	11.270					
50.0	10.576	35.022	270.2	10.570					
100.0	8.812	35.005	261.1	8.802					
150.0	7.667	34.859	251.8	7.653					
200.0	6.767	34.800	237.7	6.749					
250.0	6.352	34.828	227.3	6.330					
300.0	6.370	34.898	210.5	6.343					
350.0	5.745	34.895	221.1	5.715					
400.0	5.521	34.917	230.8	5.487					
450.0	4.971	34.891	248.2	4.936					
500.0	4.776	34.906	256.0	4.736					
550.0	4.537	34.898	264.9	4.494					
600.0	4.452	34.908	266.7	4.406					
650.0	4.328	34.901	270.9	4.279					
700.0	4.255	34.904	272.4	4.202					
750.0	4.227	34.911	272.3	4.170					
800.0	4.207	34.918	270.9	4.146					
850.0	4.164	34.919	270.7	4.099					
900.0	4.067	34.913	273.4	3.998					
950.0	4.005	34.910	275.1	3.933					
1000.0	3.961	34.908	276.7	3.885					
1050.0	3.897	34.905	277.8	3.817					
1100.0	3.844	34.904	278.4	3.760					
1150.0	3.785	34.900	279.7	3.698					
1200.0	3.761	34.901	279.6	3.670					
1250.0	3.743	34.904	278.7	3.648					
1300.0	3.717	34.906	278.2	3.617					
1350.0	3.686	34.908	277.3	3.582					
1400.0	3.672	34.910	276.7	3.565					
1450.0	3.650	34.912	276.2	3.538					
1500.0	3.624	34.913	276.0	3.508					
1550.0	3.597	34.914	275.9	3.477					
1600.0	3.558	34.913	276.0	3.434					
1650.0	3.499	34.910	276.8	3.371					
1700.0	3.477	34.909	277.1	3.345					
1750.0	3.441	34.909	277.5	3.305					
1800.0	3.390	34.909	278.0	3.250					
1850.0	3.354	34.910	278.5	3.210					
1900.0	3.331	34.912	278.4	3.183					
1950.0	3.303	34.912	278.7	3.150					
2000.0	3.281	34.912	278.8	3.125					
2050.0	3.252	34.913	278.9	3.092					
2100.0	3.234	34.915	279.0	3.069					
2150.0	3.207	34.917	279.0	3.037					
2200.0	3.190	34.919	278.8	3.016					
2250.0	3.172	34.921	278.6	2.994					
2300.0	3.146	34.923	278.4	2.963					
2350.0	3.117	34.927	277.9	2.930					
2400.0	3.096	34.930	277.6	2.904					
2450.0	3.072	34.933	276.9	2.876					
2500.0	3.050	34.934	275.1	2.849					
2550.0	3.032	34.937	274.7	2.827					
2600.0	3.017	34.940	274.3	2.807					
2650.0	3.004	34.942	273.9	2.789					
2700.0	2.996	34.948	274.8	2.776					
2750.0	2.978	34.949	274.3	2.754					
2800.0	2.963	34.954	273.5	2.734					
2850.0	2.950	34.955	272.4	2.716					
2900.0	2.932	34.954	272.1	2.693					
2950.0	2.902	34.955	271.2	2.659					
3000.0	2.878	34.954	269.8	2.630					



**Cast : 54**

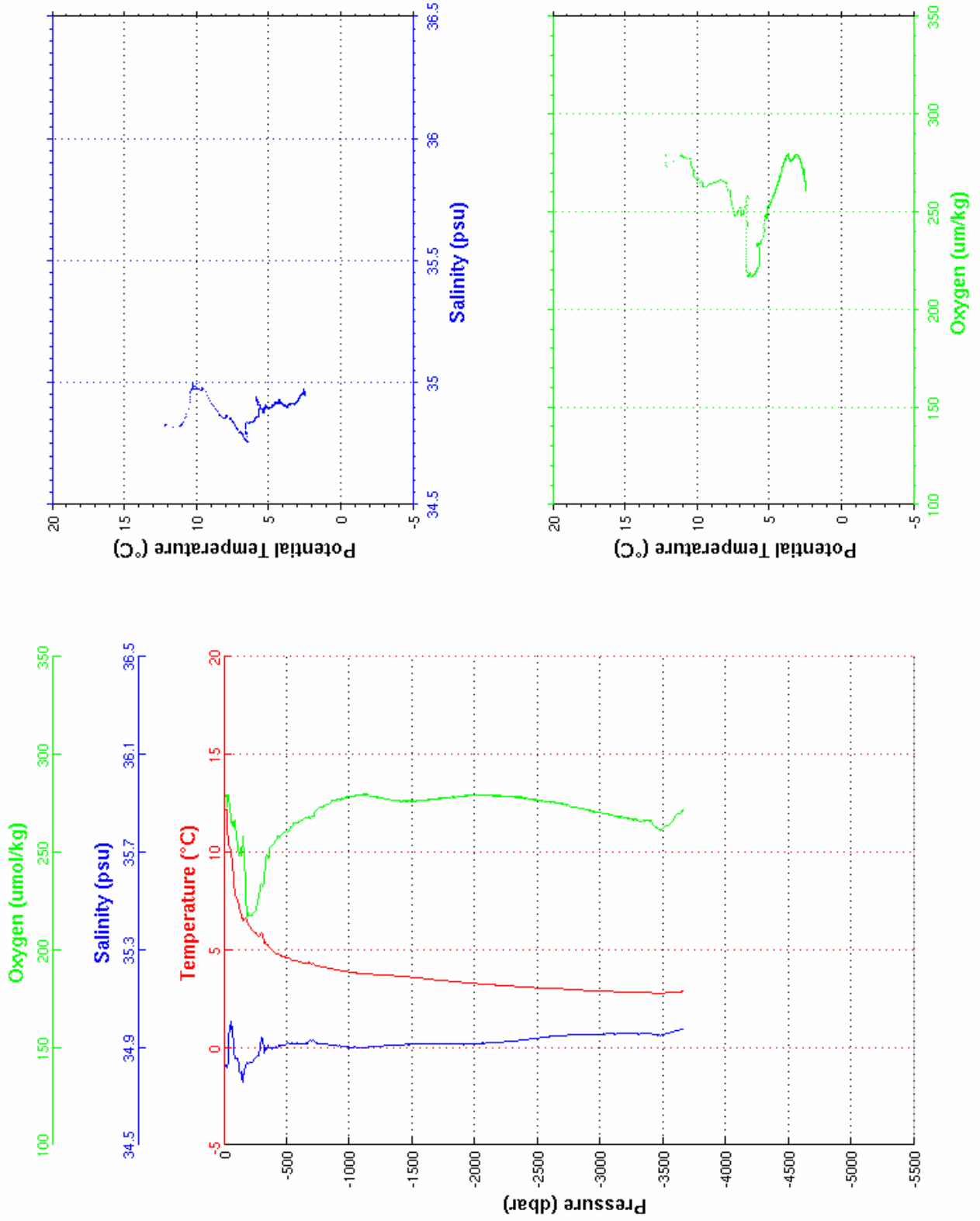
```

-----
Cast       : 55           Cruise    : OVIDE 2010
Date      : 23/06/2010  Ship     : N/O THALASSA
Depth     : 3611 m      Organism : IFREMER
Position  : N 54 45.65
           W 026  7.33
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.193	34.825	278.8	12.193	3050.0	2.887	34.956	269.5	2.634
10.0	12.193	34.826	278.7	12.191	3100.0	2.863	34.956	268.7	2.604
20.0	12.196	34.826	278.5	12.193	3150.0	2.856	34.957	268.1	2.592
30.0	10.987	34.832	278.1	10.983	3200.0	2.841	34.957	267.6	2.573
40.0	10.397	34.963	273.7	10.393	3250.0	2.827	34.956	266.8	2.554
50.0	10.259	34.993	269.1	10.253	3300.0	2.816	34.955	266.1	2.537
100.0	7.650	34.855	256.0	7.640	3350.0	2.824	34.958	265.9	2.540
150.0	6.524	34.760	258.3	6.511	3400.0	2.818	34.959	266.1	2.529
200.0	6.242	34.839	216.8	6.225	3450.0	2.773	34.951	262.2	2.479
250.0	5.849	34.859	220.7	5.828	3500.0	2.786	34.955	262.6	2.487
300.0	5.877	34.937	233.1	5.852	3550.0	2.804	34.959	264.4	2.499
350.0	5.229	34.905	247.1	5.201	3600.0	2.842	34.969	268.5	2.530
400.0	4.869	34.898	255.1	4.837	3650.0	2.860	34.974	270.9	2.541
450.0	4.707	34.906	258.7	4.672	3663.0	2.863	34.975	271.8	2.543
500.0	4.629	34.917	260.4	4.590					
550.0	4.462	34.914	264.6	4.420					
600.0	4.402	34.918	265.4	4.357					
650.0	4.307	34.917	267.5	4.258					
700.0	4.297	34.929	268.3	4.243					
750.0	4.166	34.919	272.2	4.109					
800.0	4.110	34.916	273.7	4.050					
850.0	4.016	34.907	276.0	3.952					
900.0	3.978	34.907	276.8	3.910					
950.0	3.906	34.903	277.4	3.835					
1000.0	3.864	34.901	278.5	3.789					
1050.0	3.815	34.900	278.9	3.736					
1100.0	3.779	34.899	279.3	3.696					
1150.0	3.754	34.901	279.1	3.667					
1200.0	3.734	34.903	278.3	3.643					
1250.0	3.721	34.905	277.8	3.626					
1300.0	3.702	34.907	277.0	3.602					
1350.0	3.674	34.910	276.5	3.571					
1400.0	3.648	34.911	276.3	3.541					
1450.0	3.623	34.912	276.1	3.511					
1500.0	3.586	34.913	276.1	3.471					
1550.0	3.553	34.912	276.3	3.433					
1600.0	3.522	34.913	276.6	3.398					
1650.0	3.485	34.913	276.9	3.358					
1700.0	3.452	34.913	277.4	3.320					
1750.0	3.423	34.913	277.8	3.287					
1800.0	3.394	34.913	278.1	3.254					
1850.0	3.360	34.913	278.4	3.216					
1900.0	3.329	34.913	278.5	3.181					
1950.0	3.301	34.914	279.0	3.148					
2000.0	3.276	34.916	279.0	3.119					
2050.0	3.246	34.917	279.0	3.085					
2100.0	3.227	34.918	278.9	3.062					
2150.0	3.203	34.919	278.9	3.033					
2200.0	3.187	34.922	278.8	3.013					
2250.0	3.156	34.924	278.6	2.977					
2300.0	3.137	34.927	278.4	2.955					
2350.0	3.110	34.929	278.2	2.923					
2400.0	3.089	34.931	277.5	2.898					
2450.0	3.065	34.935	277.3	2.869					
2500.0	3.058	34.938	276.9	2.857					
2550.0	3.040	34.942	276.0	2.835					
2600.0	3.029	34.945	275.5	2.819					
2650.0	3.004	34.946	275.3	2.789					
2700.0	2.995	34.949	274.8	2.776					
2750.0	2.972	34.950	274.0	2.747					
2800.0	2.948	34.951	273.1	2.719					
2850.0	2.933	34.952	272.4	2.699					
2900.0	2.919	34.954	271.5	2.680					
2950.0	2.904	34.953	270.6	2.661					
3000.0	2.888	34.955	270.2	2.640					





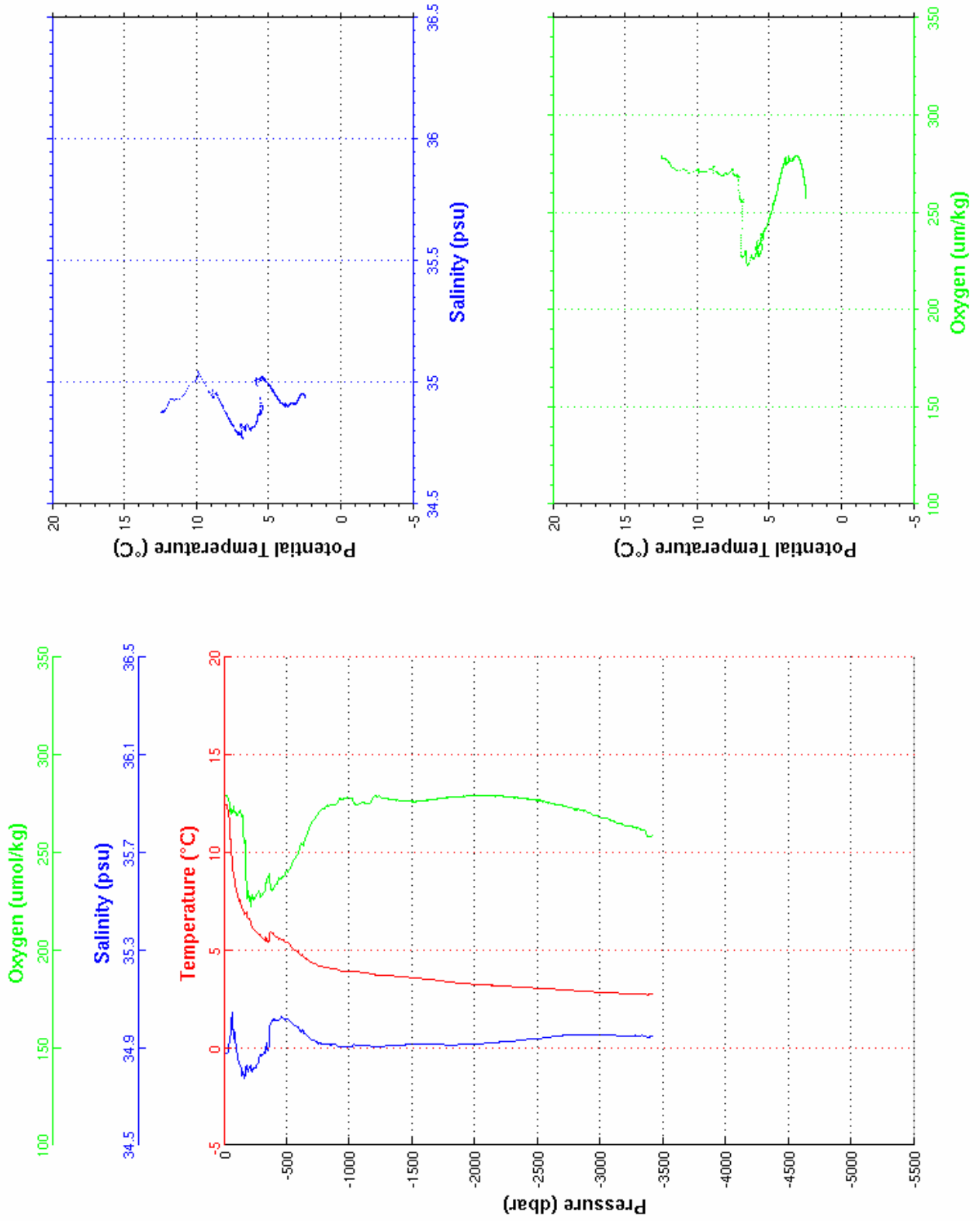
**Cast : 55**

```

-----
Cast       : 56           Cruise    : OVIDE 2010
Date      : 23/06/2010  Ship     : N/O THALASSA
Depth     : 3379 m      Organism : IFREMER
Position  : N 55 8.93
           W 026 24.51
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.488	34.876	278.5	12.488	3050.0	2.828	34.952	267.4	2.576
10.0	12.483	34.876	279.1	12.482	3100.0	2.813	34.951	266.3	2.556
20.0	12.463	34.877	278.6	12.461	3150.0	2.791	34.949	265.0	2.529
30.0	12.236	34.882	277.4	12.232	3200.0	2.780	34.948	263.9	2.513
40.0	11.872	34.923	274.9	11.867	3250.0	2.775	34.949	263.3	2.503
50.0	10.899	34.948	272.0	10.893	3300.0	2.764	34.949	262.2	2.487
100.0	8.035	34.884	270.0	8.025	3350.0	2.756	34.948	261.7	2.474
150.0	7.118	34.799	261.6	7.104	3400.0	2.737	34.945	257.8	2.449
200.0	6.618	34.819	226.3	6.600	3422.0	2.741	34.945	259.1	2.451
250.0	5.965	34.818	228.2	5.943					
300.0	5.693	34.869	228.3	5.668					
350.0	5.405	34.894	238.5	5.376					
400.0	5.763	35.013	232.9	5.729					
450.0	5.568	35.023	236.9	5.530					
500.0	5.418	35.021	239.8	5.376					
550.0	5.076	34.997	245.9	5.032					
600.0	4.827	34.973	251.9	4.779					
650.0	4.593	34.951	258.2	4.542					
700.0	4.368	34.931	265.9	4.314					
750.0	4.203	34.917	270.9	4.146					
800.0	4.132	34.915	272.6	4.071					
850.0	4.074	34.912	274.5	4.009					
900.0	3.999	34.907	275.9	3.931					
950.0	3.912	34.902	277.6	3.841					
1000.0	3.891	34.905	277.5	3.816					
1050.0	3.913	34.913	274.6	3.833					
1100.0	3.842	34.908	275.8	3.758					
1150.0	3.806	34.909	275.2	3.718					
1200.0	3.736	34.902	279.1	3.645					
1250.0	3.721	34.905	278.5	3.626					
1300.0	3.702	34.907	277.6	3.603					
1350.0	3.676	34.909	277.1	3.573					
1400.0	3.647	34.910	276.5	3.540					
1450.0	3.617	34.912	276.3	3.506					
1500.0	3.597	34.914	276.1	3.481					
1550.0	3.553	34.914	276.4	3.433					
1600.0	3.527	34.915	276.7	3.403					
1650.0	3.486	34.914	276.9	3.358					
1700.0	3.448	34.913	277.6	3.317					
1750.0	3.414	34.913	277.6	3.278					
1800.0	3.368	34.912	278.4	3.229					
1850.0	3.327	34.910	278.7	3.183					
1900.0	3.311	34.914	278.8	3.163					
1950.0	3.277	34.913	278.9	3.125					
2000.0	3.251	34.914	279.1	3.095					
2050.0	3.233	34.916	279.1	3.073					
2100.0	3.214	34.918	279.1	3.049					
2150.0	3.202	34.921	279.1	3.032					
2200.0	3.179	34.923	278.9	3.006					
2250.0	3.151	34.924	278.7	2.973					
2300.0	3.128	34.927	278.3	2.946					
2350.0	3.115	34.931	278.0	2.927					
2400.0	3.089	34.933	277.6	2.897					
2450.0	3.076	34.936	277.2	2.879					
2500.0	3.046	34.938	276.8	2.845					
2550.0	3.025	34.941	276.0	2.820					
2600.0	3.009	34.944	275.3	2.799					
2650.0	2.993	34.948	274.7	2.779					
2700.0	2.972	34.950	274.1	2.752					
2750.0	2.943	34.951	273.0	2.719					
2800.0	2.923	34.951	272.1	2.695					
2850.0	2.909	34.953	271.6	2.676					
2900.0	2.886	34.952	270.8	2.648					
2950.0	2.860	34.952	269.1	2.618					
3000.0	2.846	34.952	268.3	2.599					



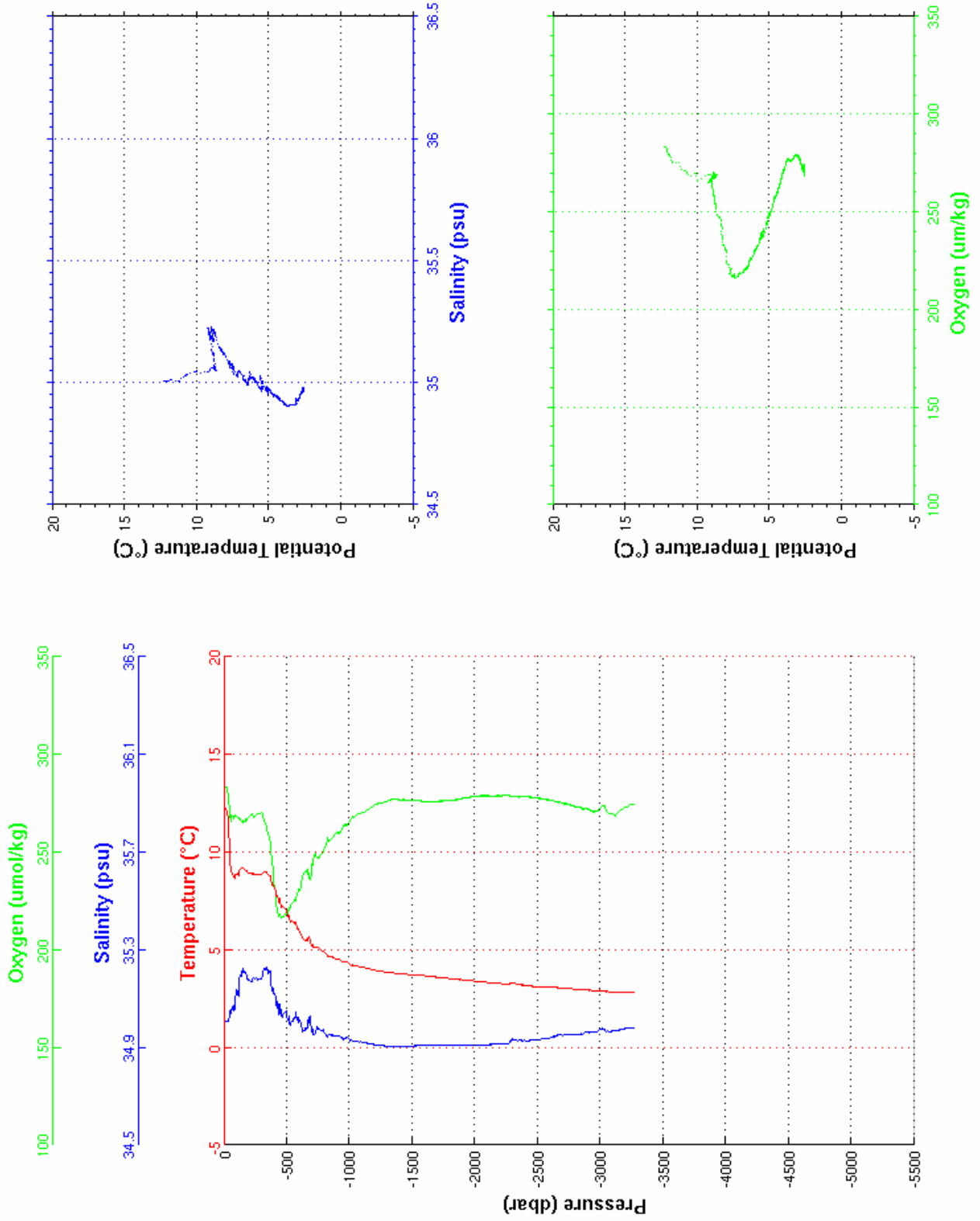
Cast : 56

```

-----
Cast       : 57           Cruise    : OVIDE 2010
Date       : 23/06/2010  Ship      : N/O THALASSA
Depth      : 3234 m      Organism  : IFREMER
Position   : N 55 30.34
            W 026 42.63
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.252	35.008	283.3	12.252	3050.0	2.856	34.966	270.7	2.603
10.0	12.229	35.008	283.5	12.228	3100.0	2.827	34.965	269.6	2.569
20.0	12.129	35.006	283.2	12.127	3150.0	2.823	34.971	271.0	2.560
30.0	11.910	35.008	278.9	11.907	3200.0	2.817	34.977	273.0	2.549
40.0	10.919	35.023	271.2	10.914	3250.0	2.815	34.980	274.4	2.541
50.0	9.958	35.046	265.7	9.952	3272.0	2.814	34.980	274.5	2.538
100.0	8.945	35.133	267.5	8.934					
150.0	9.193	35.219	265.3	9.176					
200.0	8.889	35.171	268.7	8.867					
250.0	8.902	35.184	269.0	8.874					
300.0	8.859	35.182	269.9	8.826					
350.0	8.864	35.210	258.3	8.826					
400.0	8.145	35.115	233.3	8.104					
450.0	7.412	35.050	216.6	7.367					
500.0	6.960	35.037	218.4	6.912					
550.0	6.415	35.009	224.8	6.364					
600.0	5.966	35.013	230.8	5.913					
650.0	5.514	34.978	239.8	5.458					
700.0	5.228	34.968	244.0	5.169					
750.0	5.117	34.981	246.9	5.055					
800.0	4.833	34.957	252.5	4.768					
850.0	4.680	34.951	256.6	4.611					
900.0	4.531	34.946	260.0	4.460					
950.0	4.361	34.932	263.9	4.287					
1000.0	4.263	34.929	265.9	4.184					
1050.0	4.182	34.925	268.8	4.100					
1100.0	4.112	34.921	270.4	4.026					
1150.0	4.036	34.917	272.1	3.947					
1200.0	3.960	34.911	273.9	3.867					
1250.0	3.905	34.908	275.4	3.808					
1300.0	3.853	34.905	276.2	3.752					
1350.0	3.809	34.904	277.2	3.705					
1400.0	3.781	34.905	276.6	3.673					
1450.0	3.748	34.905	276.6	3.635					
1500.0	3.714	34.906	276.4	3.597					
1550.0	3.691	34.907	276.2	3.570					
1600.0	3.668	34.909	275.8	3.543					
1650.0	3.635	34.910	275.9	3.506					
1700.0	3.600	34.910	275.9	3.466					
1750.0	3.566	34.911	276.4	3.428					
1800.0	3.527	34.910	276.5	3.385					
1850.0	3.492	34.910	276.9	3.346					
1900.0	3.455	34.911	277.5	3.305					
1950.0	3.425	34.911	278.0	3.271					
2000.0	3.389	34.910	278.5	3.231					
2050.0	3.357	34.911	278.7	3.195					
2100.0	3.327	34.912	278.9	3.161					
2150.0	3.296	34.913	278.8	3.125					
2200.0	3.274	34.915	278.9	3.099					
2250.0	3.247	34.916	279.0	3.068					
2300.0	3.290	34.933	278.6	3.104					
2350.0	3.233	34.931	278.4	3.044					
2400.0	3.173	34.928	278.4	2.980					
2450.0	3.132	34.929	278.1	2.935					
2500.0	3.115	34.931	277.6	2.913					
2550.0	3.095	34.936	277.0	2.888					
2600.0	3.074	34.939	276.3	2.863					
2650.0	3.061	34.946	275.8	2.844					
2700.0	3.039	34.949	275.1	2.818					
2750.0	3.011	34.952	274.6	2.786					
2800.0	2.982	34.953	273.3	2.753					
2850.0	2.962	34.955	272.8	2.727					
2900.0	2.923	34.958	271.8	2.685					
2950.0	2.900	34.961	270.8	2.656					
3000.0	2.927	34.975	273.2	2.678					



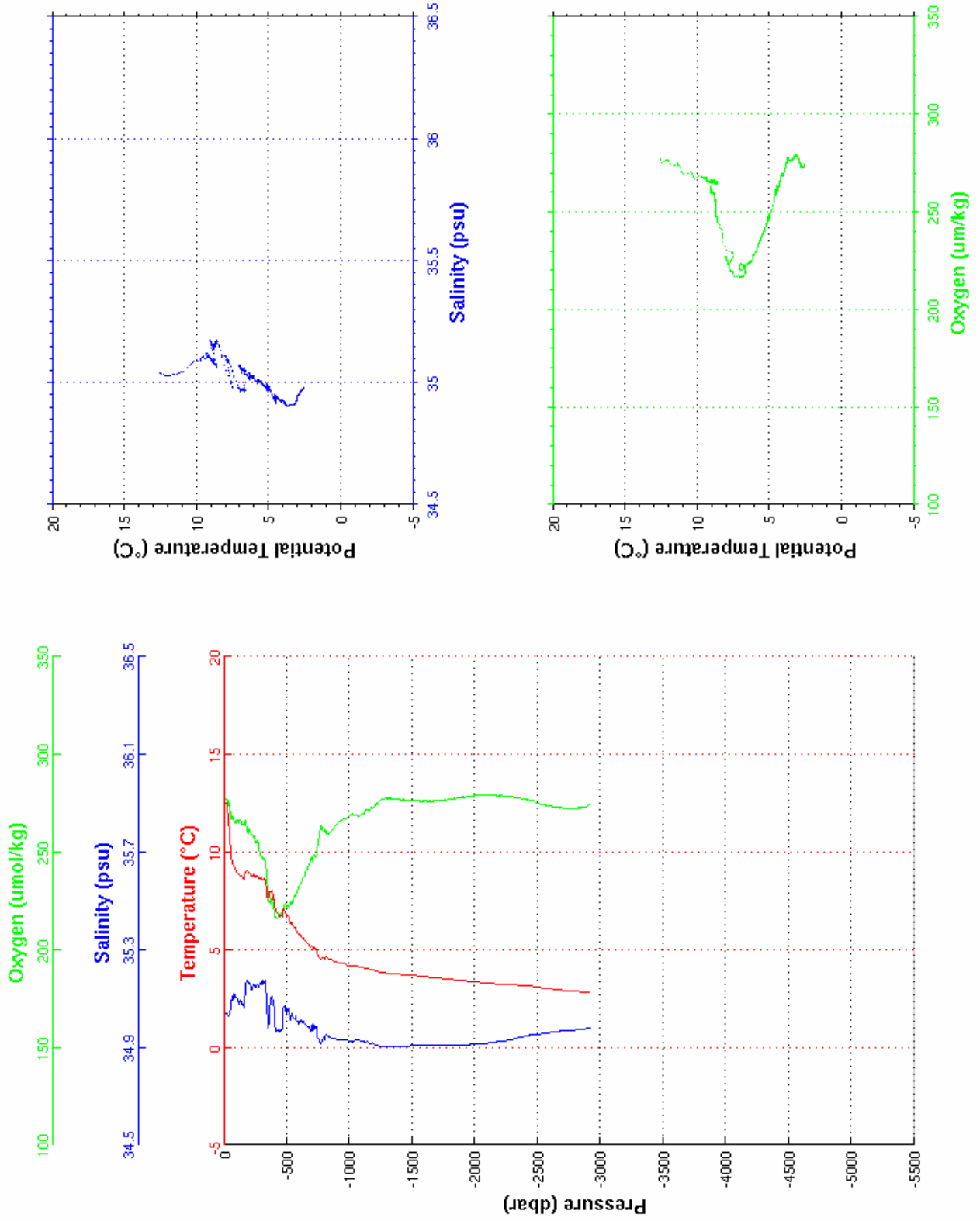
Cast : 57

```

-----
Cast      : 58           Cruise   : OVIDE 2010
Date     : 24/06/2010  Ship    : N/O THALASSA
Depth    : 2886 m      Organism : IFREMER
Position : N 55 52.97
          W 026 59.91
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.527	35.039	276.7	12.527
10.0	12.527	35.040	277.0	12.526
20.0	12.505	35.039	277.0	12.502
30.0	12.099	35.029	276.4	12.095
40.0	11.350	35.032	274.0	11.345
50.0	10.909	35.046	269.3	10.903
100.0	9.031	35.099	266.0	9.020
150.0	8.679	35.072	264.7	8.663
200.0	8.961	35.162	260.5	8.940
250.0	8.760	35.152	255.5	8.733
300.0	8.657	35.163	247.3	8.624
350.0	7.532	34.982	228.2	7.497
400.0	7.577	35.052	219.7	7.537
450.0	6.724	34.972	218.4	6.682
500.0	6.678	35.033	222.3	6.631
550.0	6.189	35.017	226.1	6.140
600.0	5.795	35.004	233.4	5.742
650.0	5.400	34.988	240.3	5.345
700.0	5.207	34.995	245.3	5.149
750.0	4.705	34.937	256.7	4.645
800.0	4.566	34.936	260.5	4.503
850.0	4.506	34.942	260.7	4.439
900.0	4.360	34.931	264.8	4.289
950.0	4.305	34.933	266.4	4.230
1000.0	4.206	34.926	268.9	4.128
1050.0	4.182	34.931	269.0	4.100
1100.0	4.102	34.928	269.6	4.016
1150.0	4.018	34.921	271.3	3.928
1200.0	3.913	34.911	274.0	3.821
1250.0	3.847	34.905	276.6	3.750
1300.0	3.799	34.903	277.5	3.699
1350.0	3.765	34.903	277.4	3.661
1400.0	3.741	34.904	276.8	3.633
1450.0	3.714	34.905	276.6	3.601
1500.0	3.684	34.907	276.5	3.568
1550.0	3.661	34.908	276.4	3.540
1600.0	3.630	34.909	276.2	3.505
1650.0	3.594	34.911	276.2	3.466
1700.0	3.561	34.910	276.4	3.428
1750.0	3.524	34.911	276.8	3.387
1800.0	3.484	34.911	277.1	3.343
1850.0	3.456	34.911	277.6	3.311
1900.0	3.416	34.911	278.1	3.267
1950.0	3.393	34.912	278.4	3.239
2000.0	3.357	34.913	278.9	3.199
2050.0	3.329	34.915	279.1	3.166
2100.0	3.298	34.917	279.3	3.131
2150.0	3.266	34.921	279.2	3.095
2200.0	3.246	34.924	278.9	3.071
2250.0	3.230	34.929	278.7	3.050
2300.0	3.214	34.934	278.3	3.030
2350.0	3.191	34.941	277.7	3.002
2400.0	3.164	34.946	277.1	2.971
2450.0	3.135	34.951	276.4	2.938
2500.0	3.093	34.955	275.3	2.891
2550.0	3.034	34.958	274.2	2.828
2600.0	3.009	34.962	273.7	2.799
2650.0	2.973	34.965	273.2	2.759
2700.0	2.924	34.967	272.5	2.706
2750.0	2.894	34.969	272.4	2.671
2800.0	2.873	34.971	272.5	2.645
2850.0	2.847	34.974	272.9	2.615
2900.0	2.805	34.979	273.9	2.569
2918.0	2.804	34.979	274.4	2.566



Cast : 58

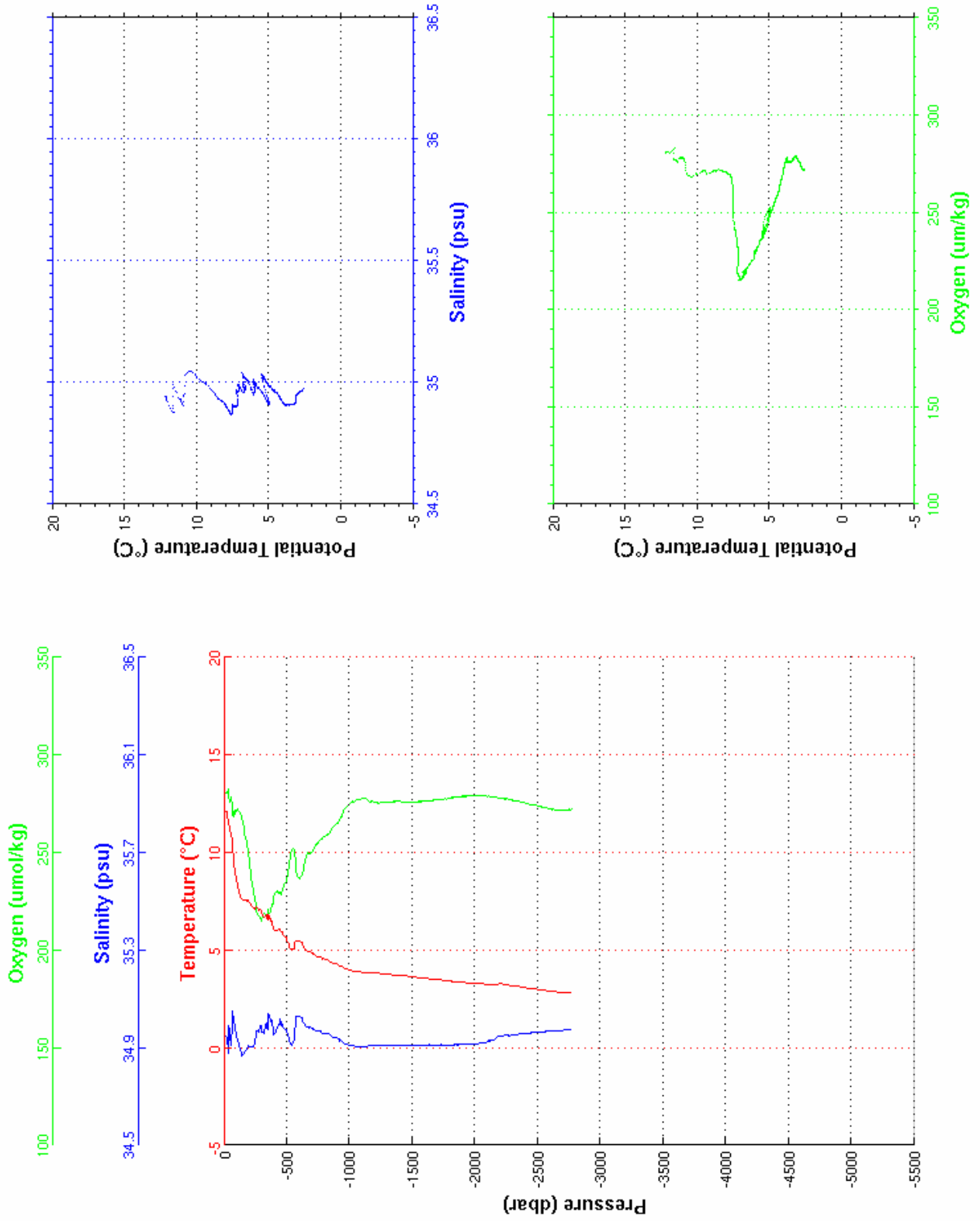
```

-----
Cast       : 59           Cruise    : OVIDE 2010
Date      : 24/06/2010  Ship     : N/O THALASSA
Depth     : 2741 m      Organism  : IFREMER
Position  : N 56 15.13
           W 027 17.55
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.145	34.944	280.2	12.145
10.0	12.146	34.945	280.6	12.145
20.0	12.139	34.944	281.1	12.137
30.0	11.925	34.907	280.6	11.921
40.0	11.523	34.979	277.0	11.518
50.0	11.088	34.931	278.1	11.082
100.0	8.580	34.943	271.6	8.570
150.0	7.565	34.870	265.0	7.551
200.0	7.464	34.904	245.1	7.445
250.0	7.140	34.934	223.9	7.116
300.0	6.940	34.973	215.7	6.912
350.0	6.607	34.981	220.6	6.575
400.0	6.031	34.956	228.6	5.996
450.0	6.073	35.012	228.6	6.033
500.0	5.547	34.966	236.8	5.505
550.0	5.029	34.924	251.7	4.985
600.0	5.499	35.029	236.8	5.448
650.0	5.049	34.988	247.3	4.995
700.0	4.865	34.980	250.9	4.808
750.0	4.664	34.965	255.6	4.604
800.0	4.535	34.960	258.1	4.472
850.0	4.372	34.947	261.5	4.306
900.0	4.278	34.939	265.1	4.208
950.0	4.083	34.917	271.2	4.010
1000.0	3.972	34.909	275.3	3.896
1050.0	3.907	34.905	276.8	3.827
1100.0	3.869	34.904	277.8	3.786
1150.0	3.858	34.908	276.2	3.771
1200.0	3.843	34.909	275.7	3.751
1250.0	3.795	34.909	275.6	3.699
1300.0	3.760	34.908	275.8	3.661
1350.0	3.728	34.908	276.0	3.624
1400.0	3.694	34.908	276.2	3.586
1450.0	3.674	34.908	275.6	3.562
1500.0	3.636	34.911	275.9	3.520
1550.0	3.590	34.911	276.2	3.470
1600.0	3.556	34.911	276.3	3.432
1650.0	3.520	34.912	276.7	3.392
1700.0	3.486	34.912	277.1	3.354
1750.0	3.462	34.912	277.4	3.325
1800.0	3.420	34.911	277.9	3.280
1850.0	3.393	34.912	278.4	3.248
1900.0	3.356	34.913	278.8	3.207
1950.0	3.327	34.914	279.1	3.175
2000.0	3.306	34.916	279.2	3.149
2050.0	3.270	34.920	278.9	3.109
2100.0	3.250	34.925	278.9	3.085
2150.0	3.243	34.933	278.4	3.073
2200.0	3.269	34.947	277.9	3.093
2250.0	3.234	34.951	277.4	3.054
2300.0	3.174	34.952	276.8	2.991
2350.0	3.133	34.957	276.3	2.946
2400.0	3.073	34.959	275.3	2.882
2450.0	3.031	34.961	274.4	2.835
2500.0	2.985	34.964	273.8	2.786
2550.0	2.939	34.966	273.1	2.736
2600.0	2.891	34.967	272.3	2.683
2650.0	2.863	34.968	271.8	2.651
2700.0	2.838	34.971	271.9	2.621
2750.0	2.811	34.974	272.0	2.590
2769.0	2.813	34.974	272.4	2.589





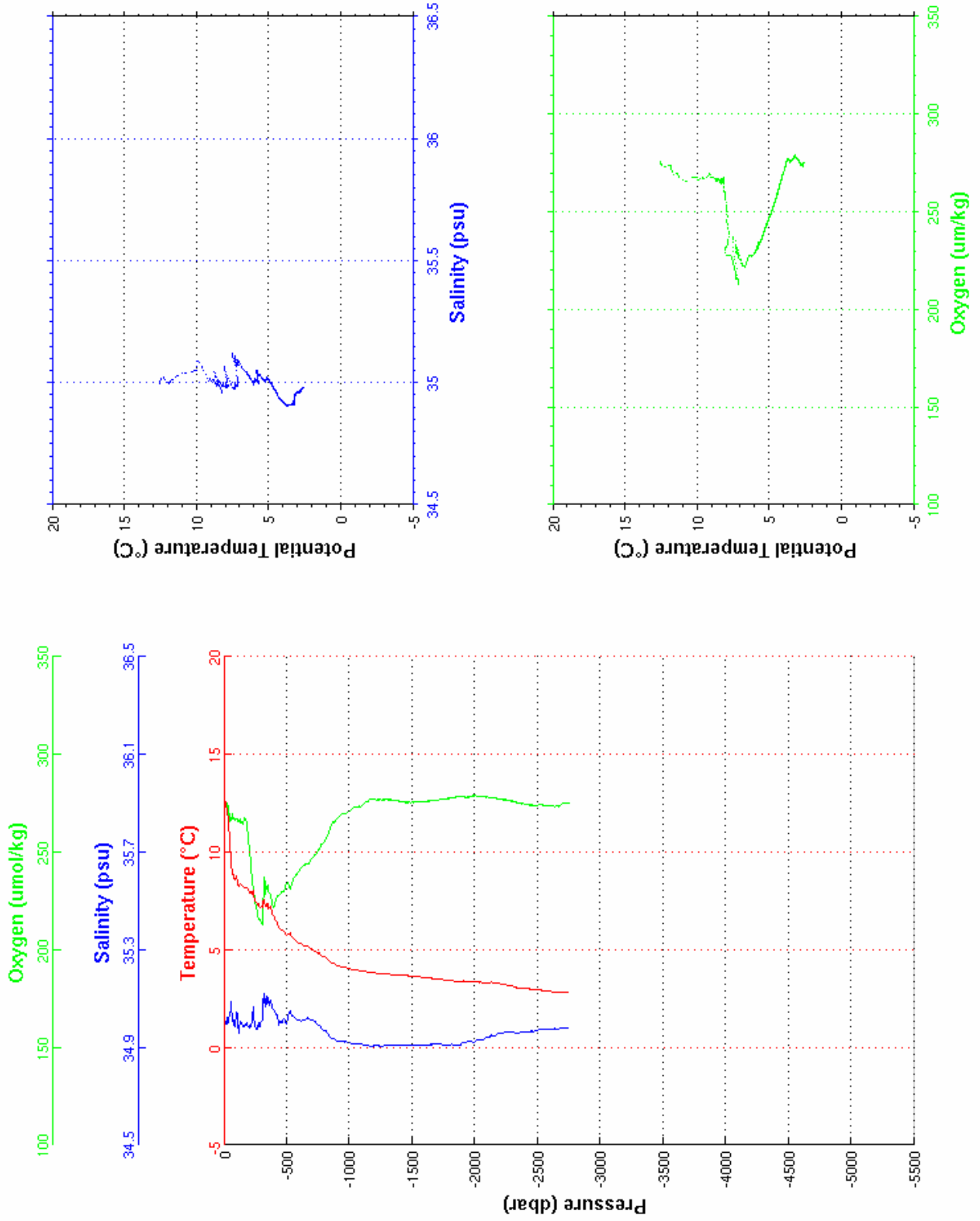
**Cast : 59**

```

-----
Cast       : 60           Cruise    : OVIDE 2010
Date       : 24/06/2010  Ship      : N/O THALASSA
Depth      : 2721 m      Organism  : IFREMER
Position   : N 56 37.69
            W 027 34.80
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	12.566	34.998	276.0	12.566
10.0	12.566	34.998	275.8	12.565
20.0	12.421	35.019	273.9	12.418
30.0	11.844	35.000	273.3	11.840
40.0	11.323	35.027	269.2	11.318
50.0	10.080	35.051	267.7	10.074
100.0	8.762	35.046	267.2	8.752
150.0	8.223	34.988	266.0	8.208
200.0	7.984	34.983	251.5	7.963
250.0	7.476	34.979	222.6	7.452
300.0	7.199	35.009	212.8	7.171
350.0	7.352	35.104	232.9	7.318
400.0	6.682	35.048	222.4	6.645
450.0	6.061	35.002	228.8	6.021
500.0	5.739	35.003	234.6	5.696
550.0	5.546	35.022	236.1	5.499
600.0	5.333	35.009	241.1	5.283
650.0	5.211	35.015	243.8	5.157
700.0	5.038	35.011	247.3	4.980
750.0	4.840	34.992	251.3	4.779
800.0	4.628	34.971	256.0	4.565
850.0	4.329	34.937	263.9	4.262
900.0	4.199	34.929	267.4	4.130
950.0	4.105	34.923	269.7	4.032
1000.0	4.028	34.919	271.0	3.952
1050.0	3.968	34.914	273.0	3.888
1100.0	3.905	34.912	274.6	3.821
1150.0	3.844	34.906	276.6	3.757
1200.0	3.811	34.907	277.0	3.720
1250.0	3.794	34.906	276.9	3.698
1300.0	3.756	34.907	276.9	3.656
1350.0	3.730	34.908	276.5	3.626
1400.0	3.705	34.909	276.0	3.598
1450.0	3.685	34.910	275.4	3.573
1500.0	3.647	34.910	275.3	3.531
1550.0	3.607	34.911	275.7	3.487
1600.0	3.582	34.911	275.9	3.458
1650.0	3.545	34.912	276.4	3.417
1700.0	3.515	34.913	276.6	3.382
1750.0	3.466	34.911	277.3	3.329
1800.0	3.435	34.912	277.6	3.295
1850.0	3.385	34.911	278.3	3.241
1900.0	3.395	34.919	278.5	3.246
1950.0	3.387	34.925	278.4	3.233
2000.0	3.327	34.923	278.9	3.169
2050.0	3.332	34.933	278.4	3.170
2100.0	3.324	34.940	278.1	3.157
2150.0	3.315	34.950	277.7	3.144
2200.0	3.265	34.956	277.1	3.089
2250.0	3.201	34.966	276.8	3.021
2300.0	3.132	34.965	276.1	2.949
2350.0	3.046	34.960	275.0	2.860
2400.0	3.016	34.965	274.6	2.826
2450.0	2.988	34.966	274.2	2.793
2500.0	2.968	34.972	274.3	2.768
2550.0	2.915	34.974	274.1	2.712
2600.0	2.867	34.976	273.7	2.660
2650.0	2.833	34.976	273.6	2.622
2700.0	2.825	34.981	274.9	2.609
2748.0	2.818	34.981	275.1	2.597



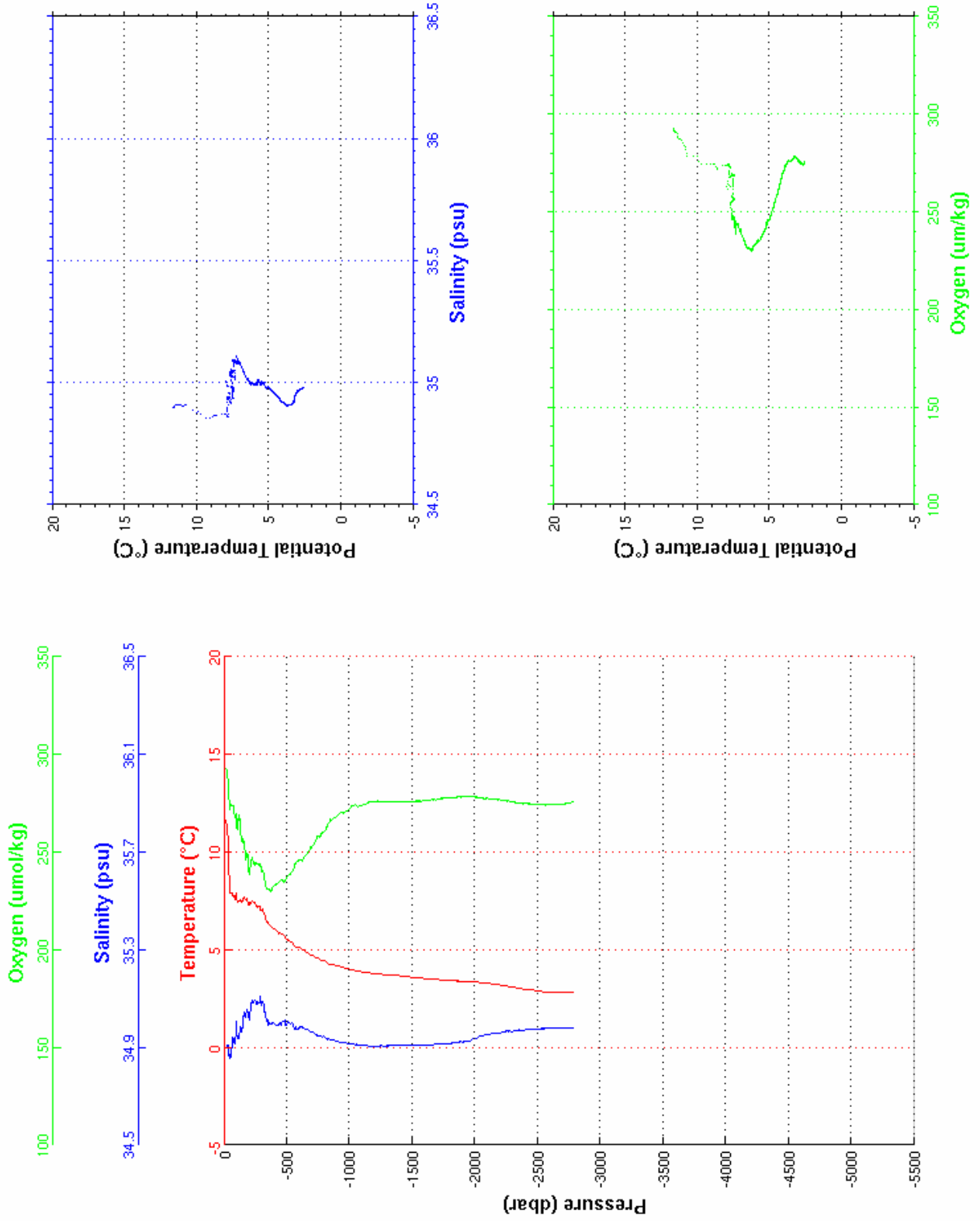
**Cast : 60**

```

-----
Cast       : 61           Cruise    : OVIDE 2010
Date      : 24/06/2010  Ship      : N/O THALASSA
Depth     : 2755 m      Organism  : IFREMER
Position  : N 57 0.23
           W 027 52.71
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.663	34.898	292.5	11.663
10.0	11.663	34.896	292.8	11.662
20.0	11.570	34.900	291.2	11.568
30.0	10.990	34.904	285.1	10.987
40.0	9.325	34.857	274.4	9.320
50.0	7.983	34.870	274.0	7.978
100.0	7.926	35.007	262.9	7.916
150.0	7.584	35.006	254.8	7.569
200.0	7.356	35.028	238.6	7.337
250.0	7.355	35.091	244.2	7.330
300.0	7.031	35.078	240.2	7.002
350.0	6.393	35.008	230.9	6.362
400.0	6.060	34.994	232.7	6.025
450.0	5.795	34.993	235.4	5.756
500.0	5.547	34.992	238.2	5.505
550.0	5.341	34.996	240.7	5.295
600.0	5.125	34.981	245.5	5.075
650.0	4.923	34.976	248.8	4.871
700.0	4.733	34.964	253.0	4.677
750.0	4.567	34.951	257.6	4.508
800.0	4.430	34.942	260.8	4.368
850.0	4.258	34.930	266.6	4.193
900.0	4.185	34.924	268.6	4.116
950.0	4.095	34.920	270.0	4.022
1000.0	4.004	34.914	272.7	3.928
1050.0	3.926	34.912	273.9	3.846
1100.0	3.869	34.909	274.3	3.785
1150.0	3.810	34.906	275.5	3.723
1200.0	3.776	34.905	275.9	3.685
1250.0	3.746	34.906	275.6	3.650
1300.0	3.722	34.907	275.7	3.622
1350.0	3.696	34.907	275.6	3.593
1400.0	3.672	34.908	275.7	3.564
1450.0	3.631	34.909	275.8	3.520
1500.0	3.592	34.910	275.9	3.477
1550.0	3.558	34.910	276.2	3.439
1600.0	3.527	34.910	276.5	3.404
1650.0	3.489	34.910	276.9	3.362
1700.0	3.472	34.913	277.2	3.340
1750.0	3.448	34.915	277.6	3.312
1800.0	3.422	34.917	277.9	3.282
1850.0	3.404	34.920	278.3	3.259
1900.0	3.370	34.924	278.5	3.222
1950.0	3.339	34.927	278.6	3.187
2000.0	3.345	34.937	278.1	3.187
2050.0	3.316	34.947	277.8	3.154
2100.0	3.288	34.953	277.4	3.122
2150.0	3.235	34.957	277.2	3.065
2200.0	3.200	34.960	276.8	3.025
2250.0	3.150	34.966	276.5	2.971
2300.0	3.092	34.966	275.8	2.910
2350.0	3.024	34.971	275.1	2.839
2400.0	2.983	34.972	275.0	2.793
2450.0	2.933	34.973	274.5	2.739
2500.0	2.885	34.976	274.4	2.687
2550.0	2.836	34.977	274.2	2.634
2600.0	2.821	34.979	274.4	2.614
2650.0	2.814	34.979	274.5	2.603
2700.0	2.812	34.980	274.6	2.596
2750.0	2.812	34.980	275.1	2.590
2782.0	2.803	34.982	275.8	2.578



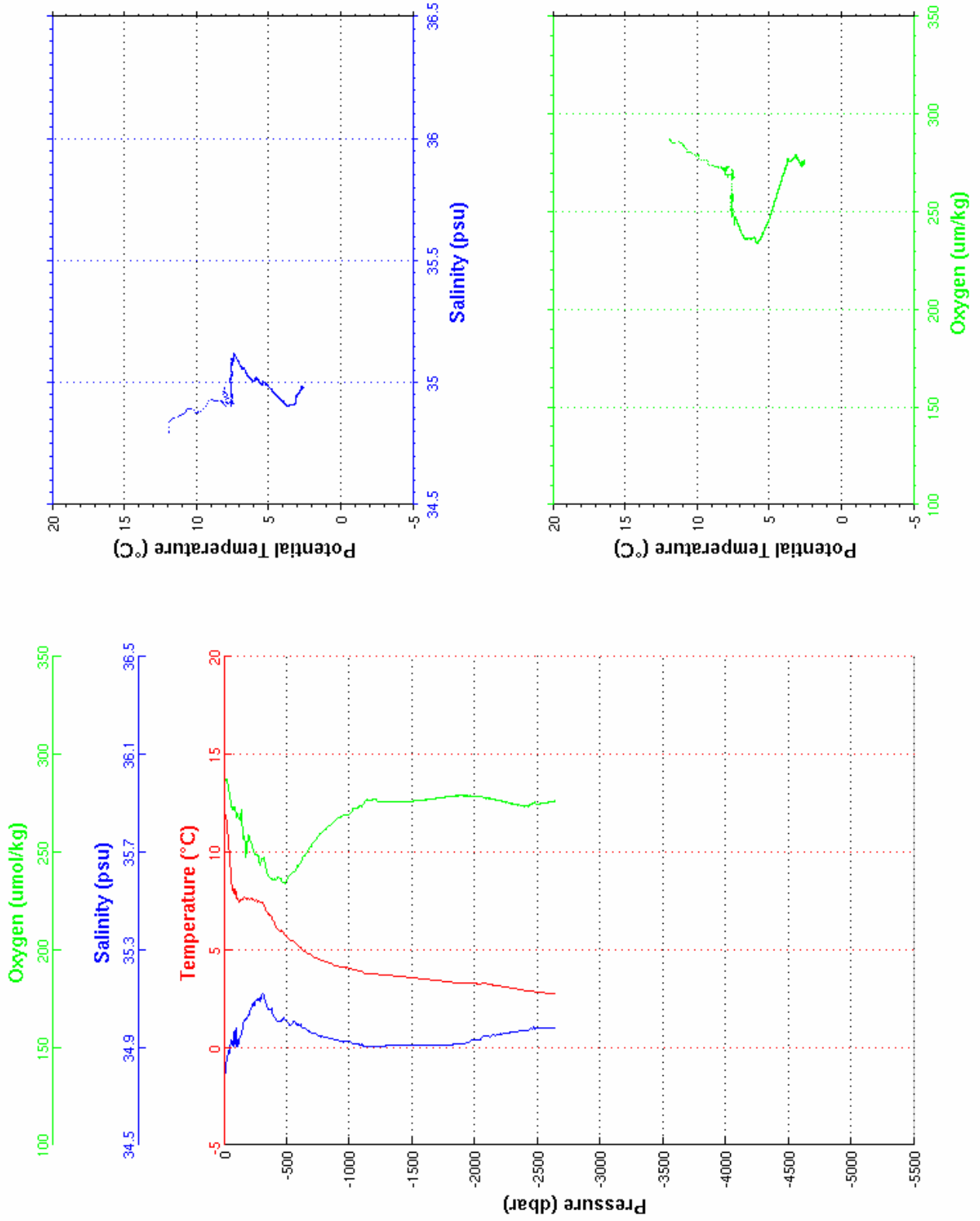
**Cast : 61**

```

-----
Cast       : 62           Cruise    : OVIDE 2010
Date       : 24/06/2010  Ship      : N/O THALASSA
Depth      : 2613 m      Organism  : IFREMER
Position   : N 57 22.64
            W 028 10.30
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.900	34.797	286.9	11.900
10.0	11.901	34.795	287.0	11.900
20.0	11.804	34.845	286.0	11.801
30.0	10.945	34.871	284.2	10.941
40.0	10.437	34.891	280.9	10.433
50.0	9.340	34.904	276.8	9.334
100.0	7.816	34.937	268.8	7.806
150.0	7.626	34.988	257.2	7.612
200.0	7.556	35.035	257.0	7.536
250.0	7.573	35.093	248.1	7.549
300.0	7.435	35.117	246.7	7.406
350.0	6.857	35.058	238.0	6.824
400.0	6.390	35.024	236.4	6.354
450.0	5.982	35.009	236.4	5.942
500.0	5.658	35.003	235.9	5.615
550.0	5.443	35.005	239.4	5.397
600.0	5.170	34.992	244.1	5.120
650.0	4.908	34.976	249.6	4.855
700.0	4.692	34.960	254.5	4.636
750.0	4.532	34.950	258.5	4.473
800.0	4.406	34.943	261.7	4.343
850.0	4.296	34.937	264.3	4.230
900.0	4.185	34.929	267.0	4.116
950.0	4.101	34.923	268.8	4.028
1000.0	4.048	34.923	269.8	3.971
1050.0	3.957	34.917	272.2	3.877
1100.0	3.863	34.910	273.8	3.779
1150.0	3.785	34.904	276.7	3.698
1200.0	3.751	34.904	276.6	3.660
1250.0	3.728	34.905	275.8	3.633
1300.0	3.697	34.906	275.8	3.598
1350.0	3.666	34.908	275.7	3.562
1400.0	3.640	34.909	275.8	3.533
1450.0	3.605	34.909	275.9	3.494
1500.0	3.573	34.910	276.0	3.458
1550.0	3.535	34.911	276.4	3.415
1600.0	3.489	34.910	276.8	3.366
1650.0	3.459	34.910	277.2	3.332
1700.0	3.423	34.911	277.7	3.292
1750.0	3.379	34.910	278.0	3.244
1800.0	3.345	34.911	278.7	3.206
1850.0	3.319	34.913	279.0	3.175
1900.0	3.294	34.916	278.9	3.147
1950.0	3.269	34.920	278.9	3.117
2000.0	3.289	34.932	278.4	3.132
2050.0	3.272	34.938	278.3	3.110
2100.0	3.263	34.948	277.3	3.097
2150.0	3.180	34.950	277.0	3.010
2200.0	3.136	34.954	276.3	2.963
2250.0	3.086	34.958	275.5	2.909
2300.0	3.034	34.961	274.7	2.852
2350.0	2.985	34.966	274.2	2.800
2400.0	2.909	34.969	273.3	2.720
2450.0	2.904	34.979	275.1	2.711
2500.0	2.813	34.977	274.6	2.617
2550.0	2.792	34.980	275.3	2.590
2600.0	2.778	34.981	275.8	2.572
2636.0	2.768	34.982	276.2	2.559



Cast : 62

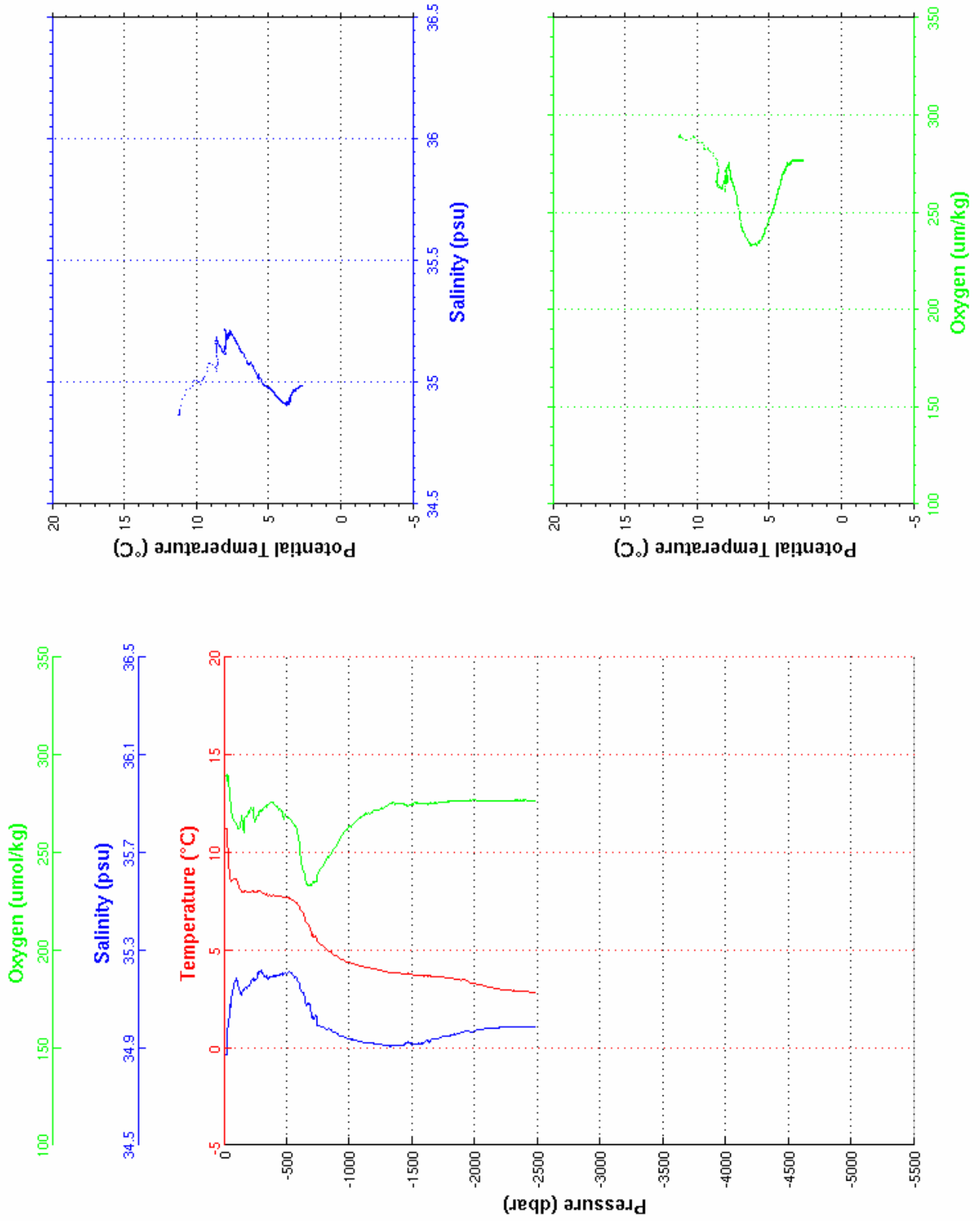
```

-----
Cast      : 63           Cruise   : OVIDE 2010
Date     : 25/06/2010  Ship     : N/O THALASSA
Depth    : 2461 m      Organism  : IFREMER
Position : N 57 40.49
          W 028 43.80
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.209	34.866	288.8	11.209
10.0	11.210	34.866	289.0	11.209
20.0	11.198	34.876	289.9	11.196
30.0	10.246	34.989	289.1	10.243
40.0	9.417	35.026	282.6	9.413
50.0	8.589	35.058	275.1	8.584
100.0	8.652	35.186	264.2	8.641
150.0	8.049	35.136	262.2	8.034
200.0	7.978	35.156	270.2	7.958
250.0	7.924	35.177	267.3	7.899
300.0	7.993	35.210	271.9	7.962
350.0	7.793	35.184	275.0	7.758
400.0	7.789	35.192	274.7	7.748
450.0	7.755	35.199	271.5	7.709
500.0	7.701	35.204	267.4	7.650
550.0	7.578	35.198	264.9	7.522
600.0	7.240	35.161	254.2	7.181
650.0	6.505	35.077	234.9	6.445
700.0	5.837	35.024	234.1	5.775
750.0	5.390	34.991	239.8	5.326
800.0	5.137	34.978	244.8	5.070
850.0	4.897	34.972	249.7	4.827
900.0	4.671	34.956	254.5	4.598
950.0	4.488	34.943	259.9	4.412
1000.0	4.368	34.937	263.0	4.288
1050.0	4.266	34.930	266.0	4.183
1100.0	4.172	34.923	268.8	4.086
1150.0	4.095	34.920	270.2	4.005
1200.0	4.030	34.917	271.0	3.936
1250.0	3.949	34.912	272.6	3.852
1300.0	3.886	34.909	273.9	3.785
1350.0	3.832	34.907	275.6	3.727
1400.0	3.810	34.908	274.9	3.701
1450.0	3.831	34.922	274.2	3.718
1500.0	3.749	34.916	274.5	3.632
1550.0	3.686	34.916	275.4	3.565
1600.0	3.677	34.923	275.1	3.552
1650.0	3.678	34.934	275.2	3.548
1700.0	3.615	34.934	275.7	3.482
1750.0	3.607	34.948	275.6	3.468
1800.0	3.568	34.950	276.2	3.425
1850.0	3.524	34.956	276.3	3.378
1900.0	3.471	34.965	276.5	3.320
1950.0	3.399	34.969	276.4	3.245
2000.0	3.271	34.969	276.9	3.114
2050.0	3.234	34.974	276.6	3.073
2100.0	3.111	34.979	276.5	2.948
2150.0	3.042	34.982	276.4	2.875
2200.0	2.992	34.983	276.5	2.821
2250.0	2.952	34.984	276.6	2.777
2300.0	2.925	34.985	276.7	2.745
2350.0	2.908	34.986	277.1	2.724
2400.0	2.881	34.986	276.9	2.693
2450.0	2.850	34.984	276.6	2.657
2481.0	2.842	34.984	276.8	2.647





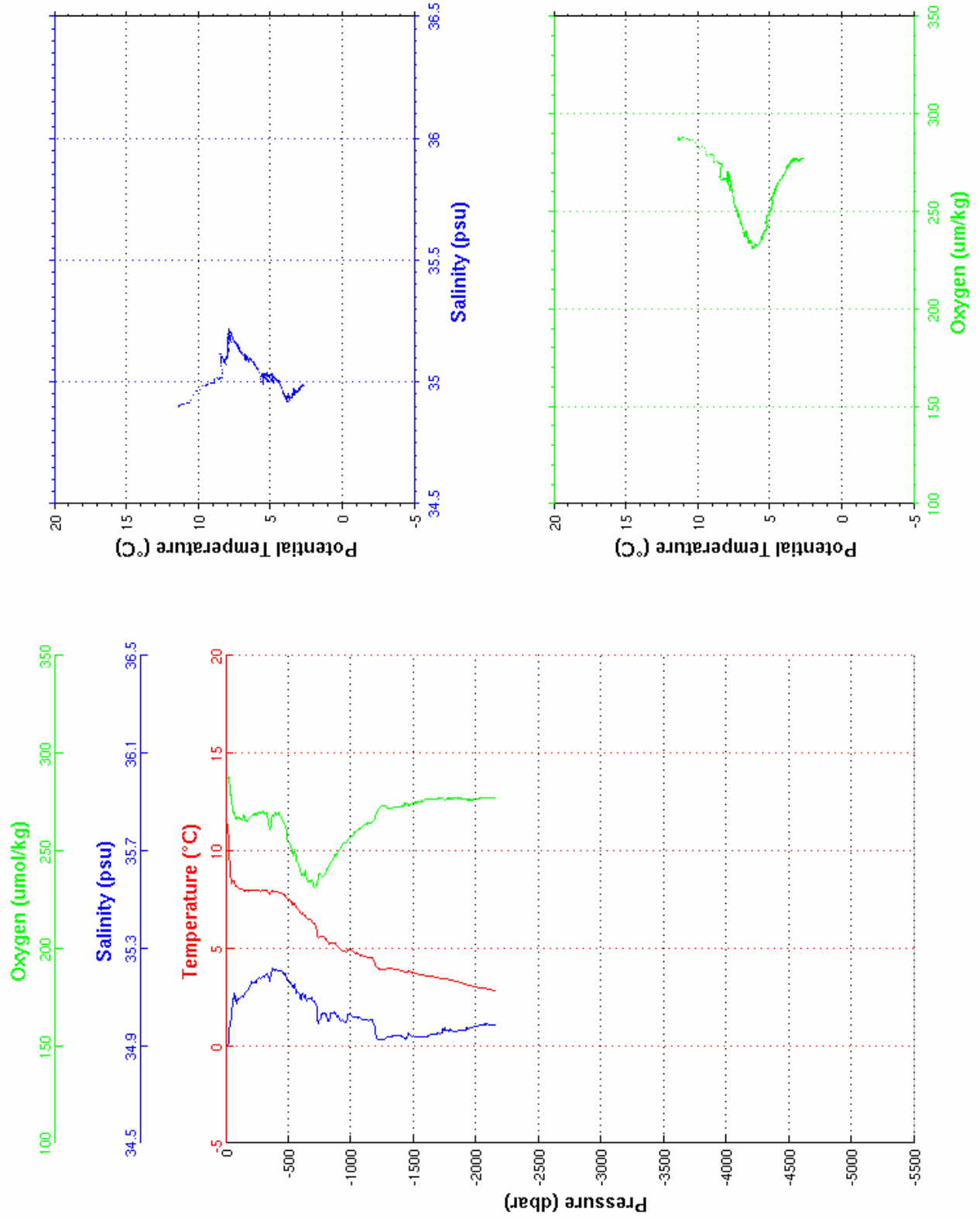
**Cast : 63**

```

-----
Cast       : 64           Cruise    : OVIDE 2010
Date       : 25/06/2010  Ship      : N/O THALASSA
Depth      : 2140 m      Organism  : IFREMER
Position   : N 57 58.27
            W 029 16.73
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.377	34.901	287.8	11.377
10.0	11.376	34.901	287.4	11.375
20.0	11.092	34.910	288.0	11.089
30.0	9.656	34.982	283.0	9.653
40.0	8.878	35.005	276.0	8.874
50.0	8.360	35.050	272.8	8.355
100.0	8.097	35.093	266.6	8.087
150.0	7.942	35.114	265.4	7.927
200.0	7.958	35.154	267.5	7.937
250.0	7.969	35.175	269.4	7.943
300.0	7.922	35.183	270.1	7.892
350.0	7.792	35.176	261.1	7.756
400.0	7.892	35.210	268.6	7.852
450.0	7.791	35.202	265.7	7.745
500.0	7.517	35.165	254.1	7.467
550.0	7.267	35.146	250.3	7.213
600.0	6.758	35.088	238.3	6.701
650.0	6.553	35.091	234.3	6.492
700.0	6.275	35.083	231.6	6.210
750.0	5.577	35.012	237.7	5.512
800.0	5.490	35.030	239.0	5.421
850.0	5.291	35.030	245.4	5.218
900.0	5.045	35.015	250.4	4.970
950.0	4.863	35.000	254.1	4.784
1000.0	4.925	35.026	257.2	4.841
1050.0	4.746	35.016	260.4	4.660
1100.0	4.602	35.008	263.0	4.512
1150.0	4.543	35.007	264.3	4.449
1200.0	4.083	34.943	269.1	3.989
1250.0	3.883	34.918	273.2	3.786
1300.0	3.957	34.937	272.1	3.856
1350.0	3.929	34.941	272.4	3.824
1400.0	3.856	34.939	273.1	3.747
1450.0	3.789	34.937	274.1	3.675
1500.0	3.714	34.935	274.3	3.597
1550.0	3.647	34.937	275.3	3.526
1600.0	3.571	34.938	276.2	3.447
1650.0	3.561	34.951	276.1	3.432
1700.0	3.476	34.949	276.8	3.344
1750.0	3.530	34.976	276.1	3.392
1800.0	3.364	34.964	276.7	3.224
1850.0	3.279	34.961	277.0	3.136
1900.0	3.180	34.963	276.6	3.034
1950.0	3.088	34.976	276.2	2.939
2000.0	3.015	34.980	276.4	2.862
2050.0	2.958	34.986	277.0	2.801
2100.0	2.875	34.987	277.3	2.715
2150.0	2.826	34.987	277.3	2.662
2155.0	2.827	34.987	277.3	2.663



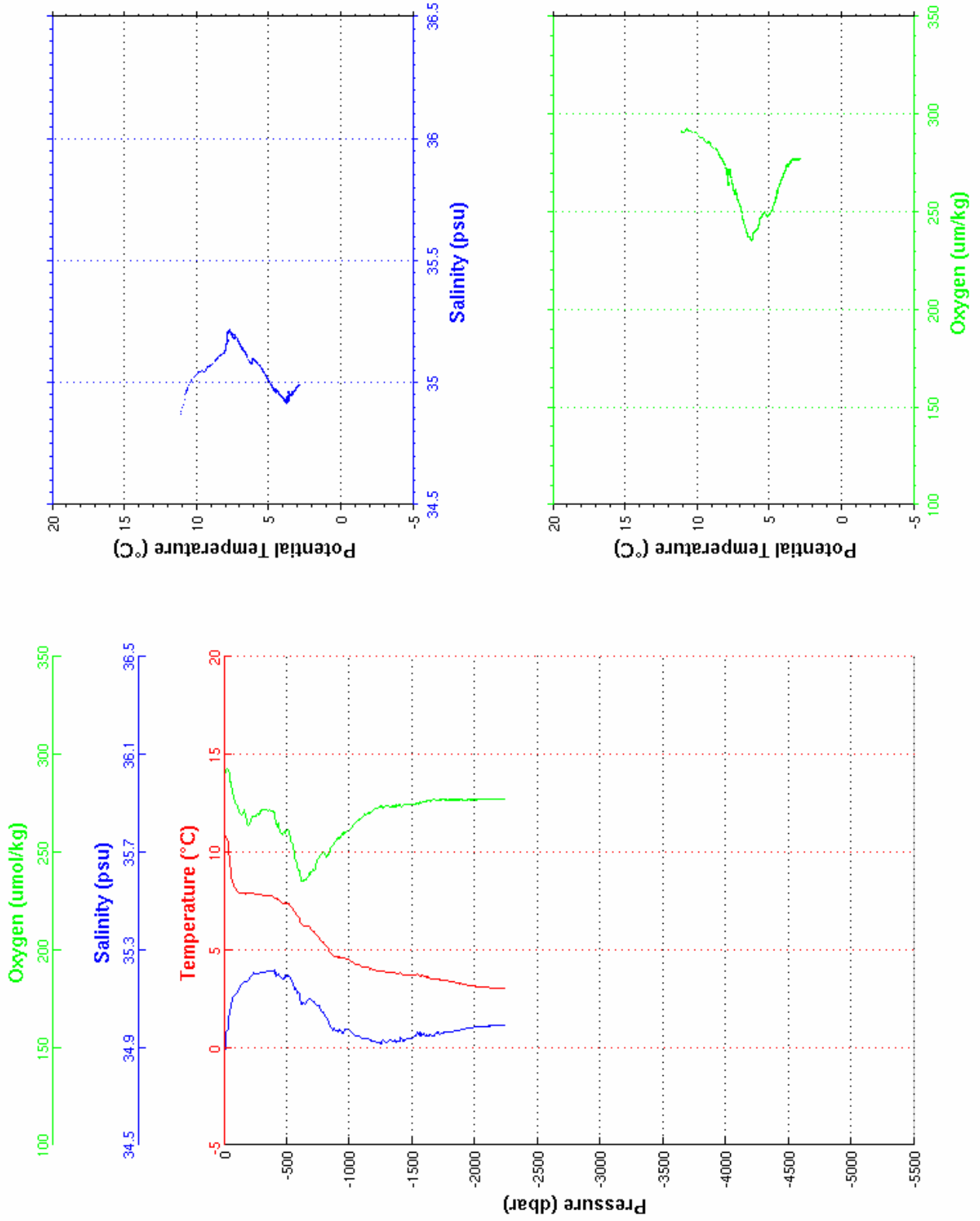
**Cast : 64**

```

-----
Cast      : 65           Cruise   : OVIDE 2010
Date     : 25/06/2010  Ship    : N/O THALASSA
Depth    : 2222 m      Organism : IFREMER
Position : N 58 12.46
          W 029 43.49
-----

```

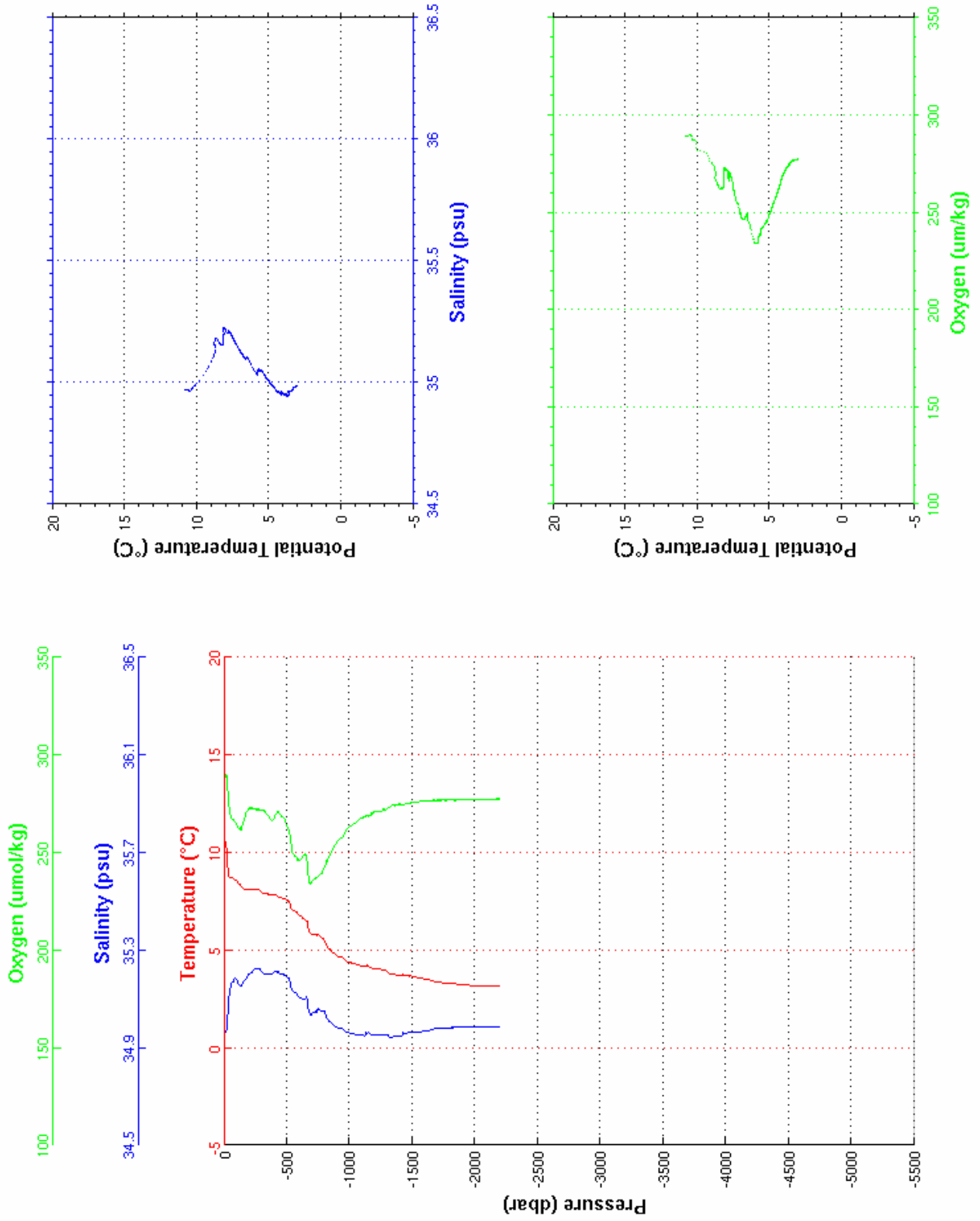
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	11.105	34.871	291.6	11.105
10.0	10.927	34.909	290.7	10.925
20.0	10.684	34.970	292.5	10.682
30.0	10.639	34.975	291.4	10.635
40.0	9.987	35.036	289.9	9.982
50.0	9.312	35.057	285.5	9.306
100.0	8.064	35.124	273.7	8.054
150.0	7.919	35.163	270.4	7.904
200.0	7.882	35.187	265.2	7.862
250.0	7.860	35.204	268.8	7.835
300.0	7.816	35.208	271.6	7.785
350.0	7.761	35.213	271.3	7.726
400.0	7.734	35.219	270.3	7.694
450.0	7.472	35.185	259.8	7.428
500.0	7.372	35.193	261.8	7.322
550.0	7.047	35.156	252.7	6.994
600.0	6.604	35.117	239.7	6.548
650.0	6.207	35.082	235.9	6.148
700.0	5.991	35.091	240.4	5.928
750.0	5.688	35.073	246.9	5.623
800.0	5.270	35.033	248.8	5.202
850.0	4.798	34.980	252.8	4.728
900.0	4.583	34.961	256.8	4.511
950.0	4.511	34.963	259.6	4.436
1000.0	4.469	34.968	261.6	4.389
1050.0	4.259	34.946	265.4	4.176
1100.0	4.131	34.938	268.3	4.045
1150.0	4.074	34.936	269.6	3.984
1200.0	3.949	34.923	272.0	3.856
1250.0	3.869	34.917	273.5	3.773
1300.0	3.850	34.920	273.7	3.750
1350.0	3.854	34.932	273.3	3.749
1400.0	3.764	34.928	274.5	3.656
1450.0	3.705	34.930	274.6	3.592
1500.0	3.712	34.941	274.5	3.595
1550.0	3.699	34.954	274.8	3.578
1600.0	3.631	34.950	275.6	3.506
1650.0	3.545	34.949	276.4	3.416
1700.0	3.532	34.961	276.3	3.400
1750.0	3.443	34.961	277.0	3.307
1800.0	3.367	34.962	276.9	3.227
1850.0	3.323	34.968	276.8	3.179
1900.0	3.261	34.973	276.5	3.114
1950.0	3.186	34.980	276.7	3.035
2000.0	3.135	34.983	277.0	2.980
2050.0	3.101	34.985	276.9	2.943
2100.0	3.070	34.988	277.1	2.907
2150.0	3.040	34.988	277.2	2.873
2200.0	3.026	34.989	277.2	2.854
2239.0	3.004	34.989	277.3	2.829



**Cast : 65**

Cast	: 66	Cruise	: OVIDE 2010
Date	: 25/06/2010	Ship	: N/O THALASSA
Depth	: 2182 m	Organism	: IFREMER
Position	: N 58 24.57 W 030 6.13		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.752	34.971	289.4	10.752
10.0	10.517	34.967	290.0	10.516
20.0	10.301	34.973	287.4	10.299
30.0	9.326	35.047	280.4	9.323
40.0	8.748	35.118	271.5	8.744
50.0	8.708	35.144	269.0	8.703
100.0	8.539	35.176	263.5	8.529
150.0	8.178	35.170	265.4	8.163
200.0	8.112	35.200	272.8	8.092
250.0	8.129	35.226	272.2	8.103
300.0	7.980	35.212	271.7	7.949
350.0	7.873	35.202	268.7	7.837
400.0	7.822	35.210	268.3	7.781
450.0	7.698	35.203	268.9	7.653
500.0	7.549	35.188	263.1	7.499
550.0	7.051	35.131	249.0	6.998
600.0	6.804	35.108	246.6	6.746
650.0	6.577	35.102	248.6	6.516
700.0	5.808	35.036	235.3	5.747
750.0	5.779	35.058	238.2	5.712
800.0	5.506	35.047	242.5	5.437
850.0	4.979	35.001	250.1	4.909
900.0	4.716	34.981	255.7	4.643
950.0	4.588	34.972	258.1	4.512
1000.0	4.380	34.960	263.2	4.301
1050.0	4.269	34.953	265.6	4.186
1100.0	4.186	34.950	267.9	4.100
1150.0	4.181	34.961	268.6	4.090
1200.0	4.032	34.951	270.8	3.938
1250.0	4.024	34.951	271.0	3.926
1300.0	3.911	34.953	272.5	3.809
1350.0	3.757	34.946	274.2	3.652
1400.0	3.702	34.948	274.8	3.594
1450.0	3.698	34.959	275.2	3.585
1500.0	3.645	34.965	275.6	3.529
1550.0	3.569	34.965	276.3	3.450
1600.0	3.519	34.968	276.5	3.395
1650.0	3.459	34.973	276.7	3.331
1700.0	3.382	34.978	276.9	3.251
1750.0	3.323	34.981	277.0	3.189
1800.0	3.283	34.982	277.0	3.144
1850.0	3.260	34.983	276.9	3.117
1900.0	3.222	34.985	277.2	3.076
1950.0	3.198	34.986	277.3	3.047
2000.0	3.193	34.986	277.4	3.038
2050.0	3.195	34.986	277.2	3.035
2100.0	3.195	34.987	277.3	3.030
2150.0	3.192	34.987	277.2	3.023
2197.0	3.193	34.987	277.5	3.019



Cast : 66

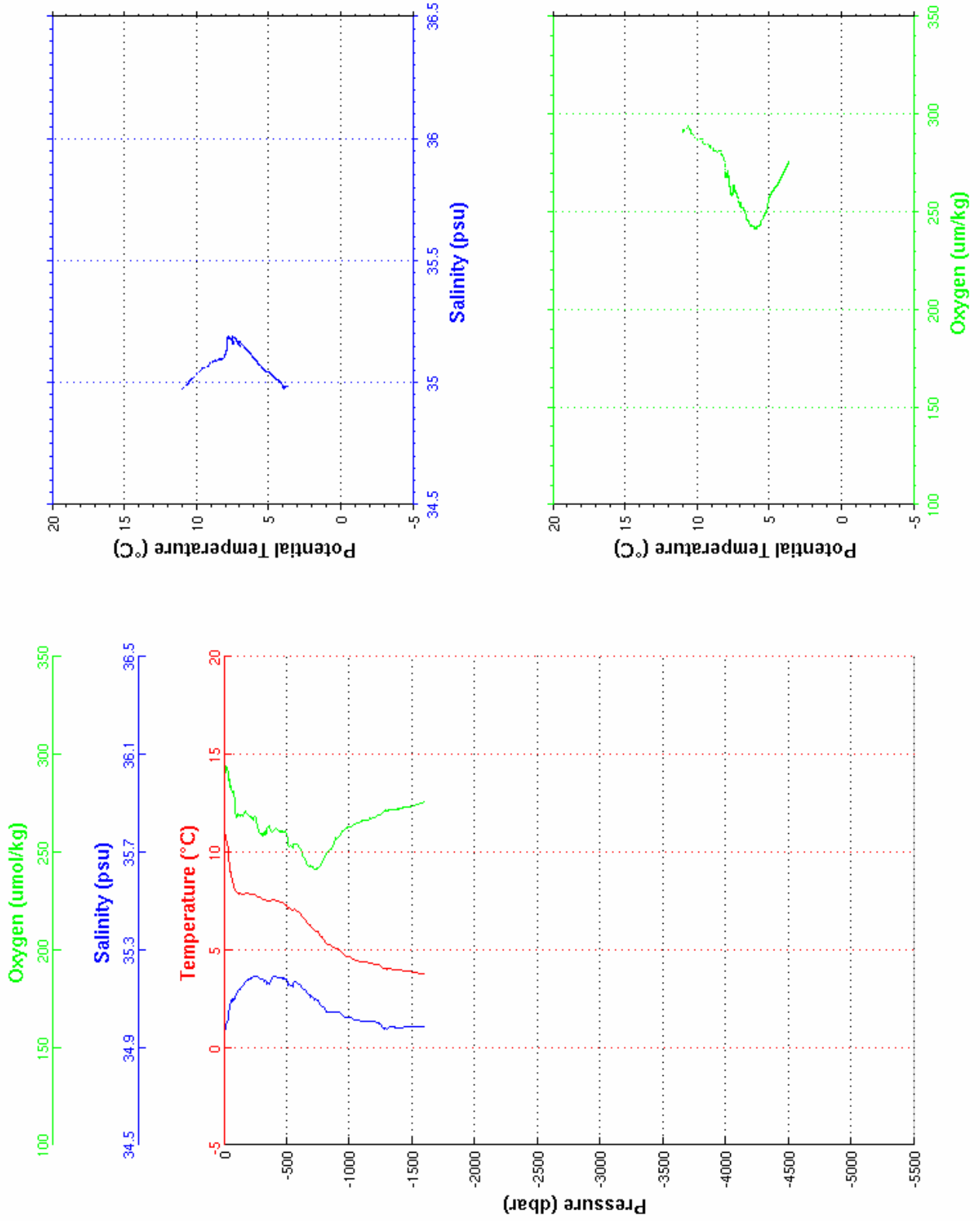
```

-----
Cast       : 67           Cruise    : OVIDE 2010
Date       : 25/06/2010  Ship      : N/O THALASSA
Depth      : 1592 m      Organism  : IFREMER
Position   : N 58 33.00
            W 030 21.71
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.910	34.978	292.1	10.910
10.0	10.958	34.975	290.4	10.957
20.0	10.535	35.001	293.0	10.532
30.0	10.391	35.010	290.3	10.387
40.0	9.591	35.057	285.9	9.587
50.0	9.032	35.079	283.4	9.027
100.0	7.948	35.123	268.5	7.938
150.0	7.859	35.158	269.2	7.844
200.0	7.856	35.178	268.3	7.836
250.0	7.807	35.190	267.1	7.782
300.0	7.638	35.180	259.2	7.608
350.0	7.475	35.160	263.3	7.441
400.0	7.555	35.192	261.9	7.516
450.0	7.446	35.184	260.5	7.402
500.0	7.265	35.175	258.5	7.216
550.0	7.034	35.152	253.1	6.981
600.0	6.892	35.157	252.0	6.835
650.0	6.493	35.131	245.0	6.433
700.0	6.155	35.107	242.5	6.091
750.0	5.927	35.091	242.3	5.860
800.0	5.454	35.058	247.6	5.385
850.0	5.212	35.044	251.6	5.140
900.0	5.052	35.044	257.6	4.976
950.0	4.795	35.030	260.9	4.717
1000.0	4.635	35.021	262.7	4.554
1050.0	4.459	35.012	264.9	4.374
1100.0	4.367	35.007	266.3	4.279
1150.0	4.326	35.007	266.7	4.234
1200.0	4.263	35.004	267.9	4.167
1250.0	4.153	34.990	269.3	4.054
1300.0	4.006	34.976	271.7	3.904
1350.0	3.995	34.983	271.8	3.889
1400.0	3.968	34.982	272.2	3.857
1450.0	3.924	34.984	273.0	3.809
1500.0	3.853	34.984	273.9	3.734
1550.0	3.798	34.984	274.5	3.676
1597.0	3.745	34.987	275.9	3.619





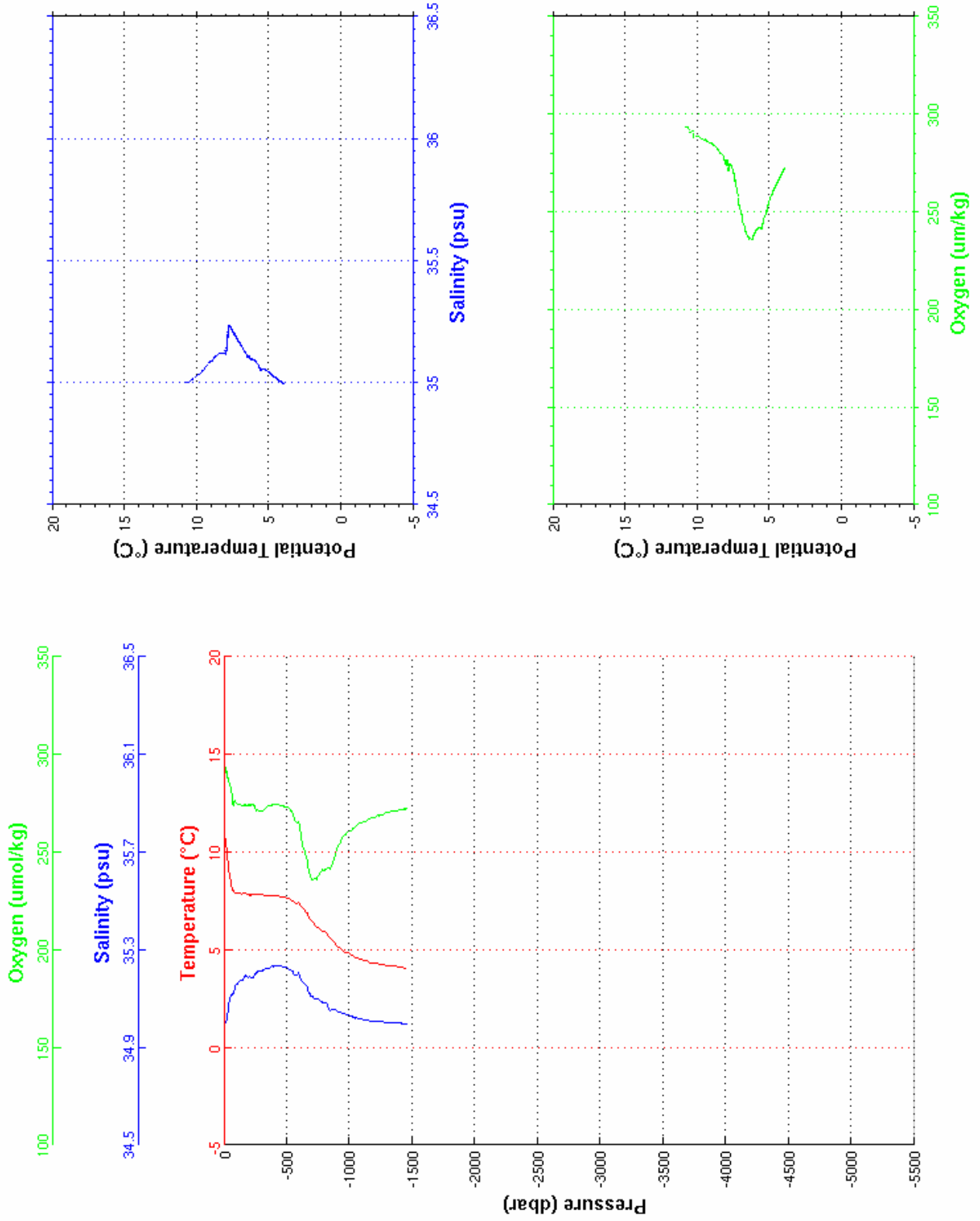
**Cast : 67**

```

-----
Cast       : 68           Cruise    : OVIDE 2010
Date       : 26/06/2010  Ship      : N/O THALASSA
Depth      : 1452 m      Organism  : IFREMER
Position   : N 58 43.45
            W 030 41.83
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.767	35.002	293.5	10.767
10.0	10.708	35.003	293.4	10.706
20.0	10.265	35.013	291.5	10.263
30.0	9.627	35.047	287.4	9.624
40.0	9.024	35.086	285.1	9.020
50.0	8.662	35.108	283.0	8.656
100.0	7.901	35.160	274.8	7.891
150.0	7.875	35.179	274.0	7.860
200.0	7.844	35.192	273.9	7.824
250.0	7.857	35.209	271.3	7.832
300.0	7.814	35.216	271.3	7.784
350.0	7.781	35.224	273.4	7.746
400.0	7.774	35.235	274.2	7.733
450.0	7.726	35.233	274.0	7.681
500.0	7.664	35.227	273.4	7.614
550.0	7.492	35.206	268.8	7.437
600.0	7.350	35.195	263.8	7.291
650.0	6.944	35.153	248.3	6.882
700.0	6.467	35.106	236.3	6.402
750.0	6.139	35.096	238.1	6.070
800.0	5.913	35.083	240.9	5.842
850.0	5.564	35.055	242.5	5.489
900.0	5.194	35.049	252.4	5.117
950.0	4.938	35.037	258.7	4.858
1000.0	4.807	35.030	261.0	4.724
1050.0	4.601	35.020	263.7	4.516
1100.0	4.486	35.015	265.3	4.397
1150.0	4.397	35.011	266.5	4.304
1200.0	4.306	35.007	268.0	4.210
1250.0	4.268	35.006	268.9	4.167
1300.0	4.194	35.003	270.3	4.090
1350.0	4.162	35.002	270.8	4.053
1400.0	4.127	35.000	271.5	4.014
1450.0	4.076	34.998	272.2	3.960
1453.0	4.077	34.998	272.1	3.960



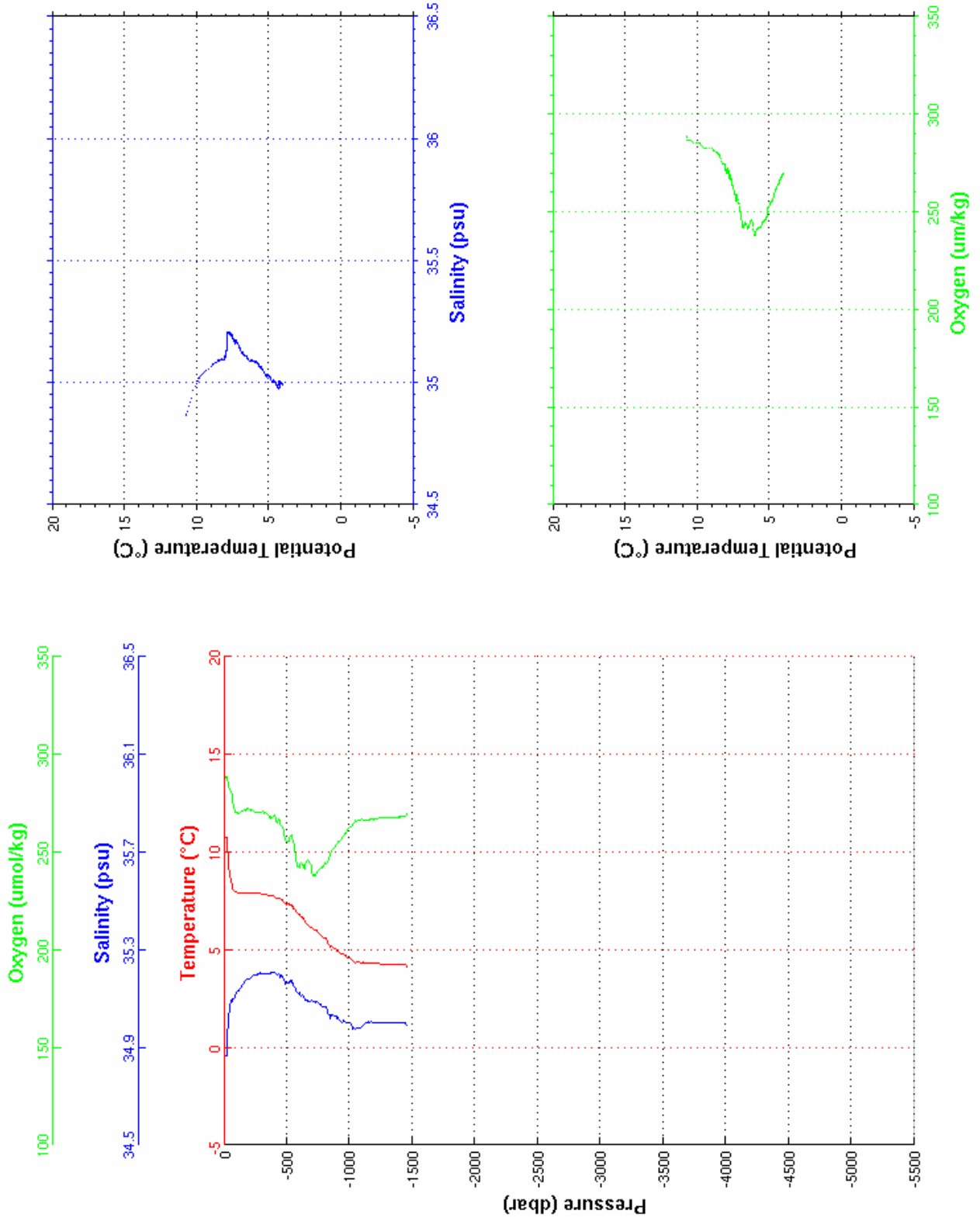
**Cast : 68**

```

-----
Cast       : 69           Cruise    : OVIDE 2010
Date       : 26/06/2010  Ship      : N/O THALASSA
Depth      : 1454 m      Organism  : IFREMER
Position   : N 58 50.56
            W 031 15.95
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.730	34.867	288.5	10.730
10.0	10.730	34.867	288.2	10.729
20.0	10.733	34.867	288.5	10.730
30.0	10.066	34.988	285.3	10.062
40.0	9.412	35.044	282.3	9.407
50.0	8.781	35.078	281.0	8.775
100.0	7.944	35.126	269.7	7.934
150.0	7.907	35.161	271.2	7.892
200.0	7.904	35.182	271.9	7.884
250.0	7.890	35.198	270.7	7.865
300.0	7.850	35.203	270.8	7.819
350.0	7.797	35.204	268.6	7.761
400.0	7.735	35.205	269.0	7.695
450.0	7.574	35.189	263.4	7.529
500.0	7.334	35.162	255.2	7.285
550.0	7.240	35.165	255.8	7.186
600.0	6.831	35.122	242.1	6.774
650.0	6.377	35.087	244.7	6.317
700.0	6.135	35.090	240.0	6.072
750.0	5.874	35.083	241.0	5.807
800.0	5.591	35.063	244.1	5.522
850.0	5.147	35.026	250.1	5.075
900.0	4.982	35.021	254.5	4.907
950.0	4.779	35.008	258.4	4.701
1000.0	4.598	35.000	262.2	4.517
1050.0	4.368	34.981	266.2	4.284
1100.0	4.336	34.991	266.5	4.249
1150.0	4.350	35.004	266.2	4.257
1200.0	4.308	35.003	267.0	4.212
1250.0	4.266	35.002	267.7	4.165
1300.0	4.269	35.002	267.7	4.164
1350.0	4.268	35.001	267.7	4.159
1400.0	4.267	35.001	268.0	4.153
1450.0	4.180	34.994	268.9	4.063
1456.0	4.143	34.992	269.9	4.025



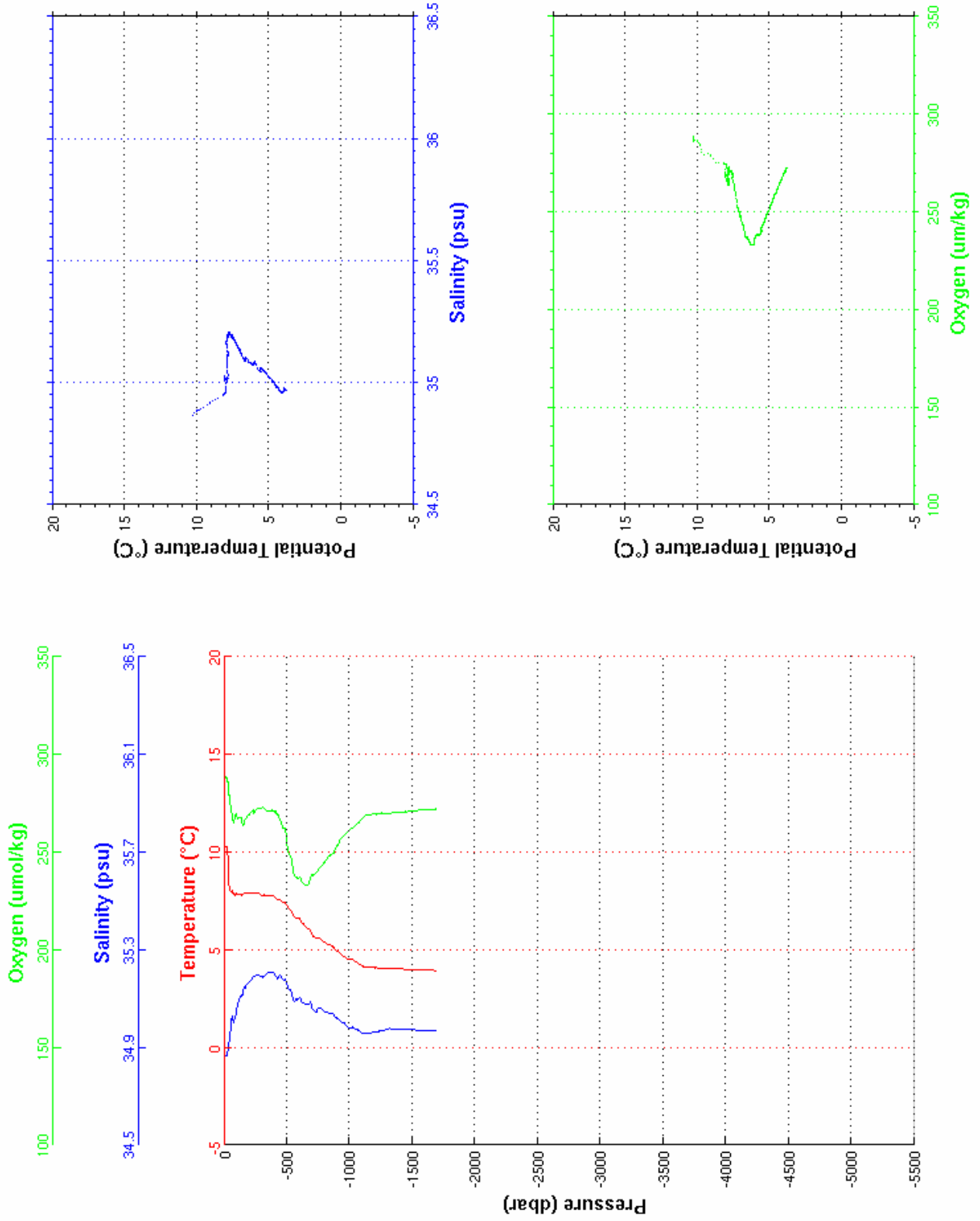
**Cast : 69**

```

-----
Cast       : 70           Cruise    : OVIDE 2010
Date       : 26/06/2010  Ship      : N/O THALASSA
Depth      : 1686 m      Organism  : IFREMER
Position   : N 58 54.57
            W 031 54.57
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.284	34.866	288.2	10.284
10.0	10.283	34.866	288.3	10.282
20.0	10.249	34.866	288.3	10.246
30.0	9.884	34.887	285.2	9.881
40.0	8.861	34.924	276.9	8.857
50.0	7.976	34.965	273.5	7.971
100.0	7.907	35.065	268.3	7.897
150.0	7.835	35.124	263.6	7.820
200.0	7.906	35.169	269.9	7.886
250.0	7.900	35.194	272.0	7.875
300.0	7.811	35.190	272.9	7.780
350.0	7.823	35.205	270.7	7.787
400.0	7.739	35.204	271.0	7.699
450.0	7.541	35.191	265.5	7.496
500.0	7.280	35.158	254.5	7.231
550.0	6.775	35.098	240.4	6.723
600.0	6.599	35.105	237.3	6.543
650.0	6.196	35.074	232.9	6.137
700.0	5.806	35.058	238.3	5.744
750.0	5.607	35.060	241.4	5.542
800.0	5.411	35.050	245.1	5.343
850.0	5.217	35.038	248.7	5.145
900.0	4.969	35.020	253.3	4.894
950.0	4.706	35.002	258.8	4.629
1000.0	4.501	34.980	261.8	4.420
1050.0	4.392	34.977	264.3	4.308
1100.0	4.192	34.960	267.1	4.106
1150.0	4.097	34.960	269.0	4.007
1200.0	4.079	34.963	269.6	3.985
1250.0	4.060	34.968	269.7	3.961
1300.0	4.057	34.974	269.9	3.955
1350.0	4.038	34.974	270.2	3.931
1400.0	4.022	34.974	270.4	3.911
1450.0	3.998	34.972	270.7	3.883
1500.0	3.991	34.972	270.8	3.871
1550.0	3.970	34.970	271.6	3.846
1600.0	3.956	34.968	271.8	3.827
1650.0	3.951	34.970	271.8	3.818
1691.0	3.921	34.969	272.5	3.784



Cast : 70

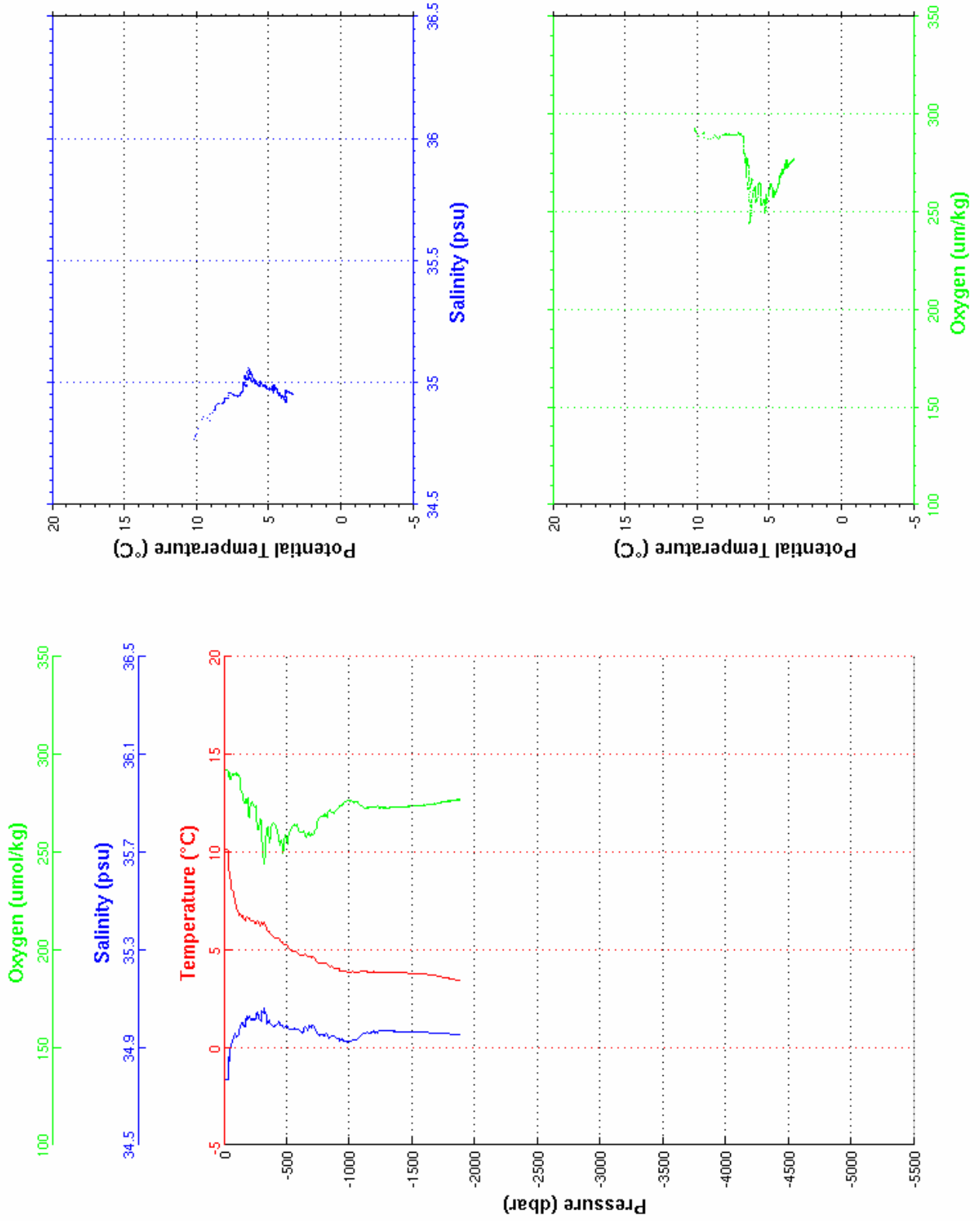
```

-----
Cast       : 71           Cruise    : OVIDE 2010
Date       : 26/06/2010  Ship      : N/O THALASSA
Depth      : 1865 m      Organism  : IFREMER
Position   : N 58 58.39
            W 032 33.33
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.174	34.767	292.9	10.174
10.0	10.175	34.767	292.3	10.174
20.0	10.150	34.767	292.1	10.148
30.0	10.127	34.771	291.1	10.124
40.0	9.217	34.853	287.3	9.213
50.0	8.664	34.905	289.0	8.658
100.0	7.141	34.946	290.4	7.132
150.0	6.652	34.994	276.6	6.638
200.0	6.614	35.029	268.9	6.596
250.0	6.382	35.015	273.6	6.359
300.0	6.393	35.049	256.4	6.366
350.0	5.959	35.002	260.2	5.928
400.0	5.600	34.988	264.1	5.567
450.0	5.391	34.983	256.1	5.354
500.0	5.229	34.988	255.1	5.188
550.0	4.935	34.971	264.3	4.891
600.0	4.773	34.967	260.4	4.725
650.0	4.763	34.983	257.5	4.711
700.0	4.658	34.988	259.3	4.603
750.0	4.331	34.951	267.3	4.273
800.0	4.270	34.950	268.6	4.209
850.0	4.155	34.947	270.3	4.090
900.0	4.038	34.940	272.4	3.969
950.0	3.932	34.928	275.1	3.860
1000.0	3.872	34.927	276.4	3.797
1050.0	3.827	34.932	275.9	3.748
1100.0	3.917	34.956	272.8	3.833
1150.0	3.875	34.958	273.0	3.787
1200.0	3.844	34.963	272.7	3.752
1250.0	3.848	34.968	272.6	3.752
1300.0	3.841	34.968	272.9	3.740
1350.0	3.824	34.966	273.0	3.719
1400.0	3.813	34.966	273.3	3.704
1450.0	3.809	34.966	273.4	3.695
1500.0	3.794	34.965	273.5	3.676
1550.0	3.775	34.963	273.8	3.653
1600.0	3.754	34.962	274.0	3.627
1650.0	3.705	34.960	274.5	3.574
1700.0	3.636	34.957	275.3	3.502
1750.0	3.593	34.957	275.6	3.455
1800.0	3.537	34.955	276.1	3.396
1850.0	3.453	34.954	276.6	3.308
1876.0	3.450	34.954	276.9	3.302





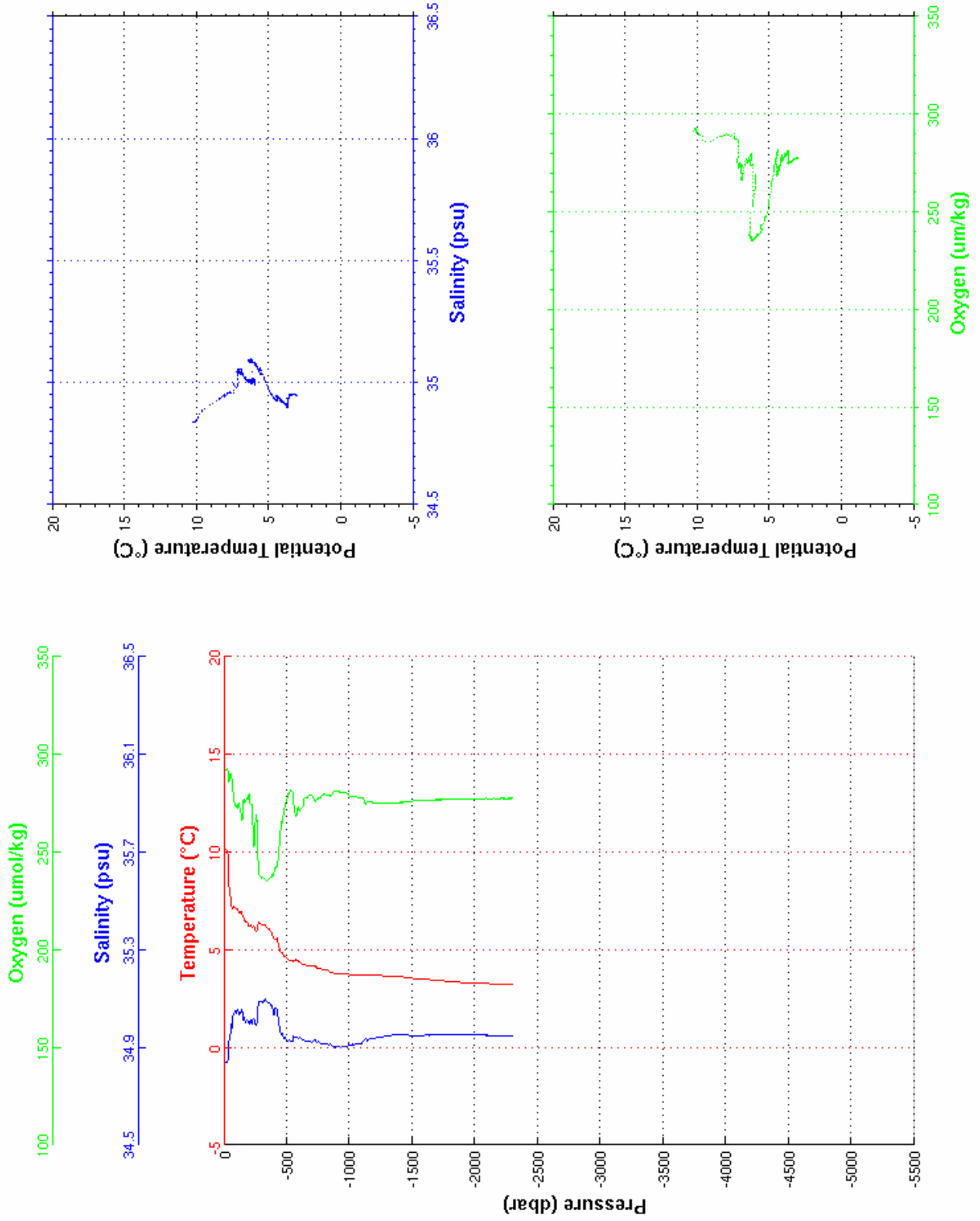
Cast : 71

```

-----
Cast       : 72           Cruise    : OVIDE 2010
Date      : 26/06/2010  Ship     : N/O THALASSA
Depth     : 2283 m      Organism  : IFREMER
Position  : N 59  2.44
           W 033 11.79
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.188	34.838	291.9	10.188
10.0	10.136	34.839	292.3	10.135
20.0	10.108	34.840	292.6	10.105
30.0	9.990	34.848	290.5	9.986
40.0	8.431	34.930	288.7	8.427
50.0	7.911	34.955	289.2	7.906
100.0	7.102	35.055	272.7	7.093
150.0	6.694	35.024	273.9	6.681
200.0	6.260	35.003	278.0	6.243
250.0	5.967	34.993	266.8	5.946
300.0	6.325	35.091	236.7	6.298
350.0	6.081	35.083	236.1	6.050
400.0	5.543	35.035	240.8	5.510
450.0	4.875	34.956	261.7	4.839
500.0	4.561	34.930	277.5	4.522
550.0	4.440	34.931	279.3	4.398
600.0	4.398	34.942	271.0	4.352
650.0	4.210	34.926	278.0	4.161
700.0	4.155	34.924	278.8	4.102
750.0	4.048	34.920	277.8	3.992
800.0	3.963	34.914	279.4	3.903
850.0	3.868	34.908	279.4	3.804
900.0	3.795	34.904	280.7	3.728
950.0	3.757	34.903	280.8	3.687
1000.0	3.738	34.910	278.8	3.664
1050.0	3.713	34.914	278.5	3.635
1100.0	3.701	34.919	277.7	3.619
1150.0	3.703	34.929	276.0	3.617
1200.0	3.699	34.938	275.1	3.608
1250.0	3.685	34.942	274.9	3.590
1300.0	3.662	34.947	275.1	3.564
1350.0	3.665	34.953	275.1	3.562
1400.0	3.635	34.954	275.3	3.528
1450.0	3.592	34.952	275.7	3.481
1500.0	3.534	34.948	276.1	3.419
1550.0	3.501	34.949	276.5	3.382
1600.0	3.485	34.950	276.5	3.362
1650.0	3.464	34.951	276.8	3.336
1700.0	3.437	34.950	276.8	3.306
1750.0	3.407	34.951	276.9	3.271
1800.0	3.381	34.951	277.2	3.241
1850.0	3.364	34.951	277.1	3.220
1900.0	3.320	34.951	277.2	3.171
1950.0	3.306	34.951	277.3	3.153
2000.0	3.296	34.951	277.4	3.139
2050.0	3.284	34.950	277.4	3.122
2100.0	3.272	34.950	277.3	3.106
2150.0	3.243	34.949	277.4	3.073
2200.0	3.216	34.948	277.4	3.041
2250.0	3.214	34.947	277.3	3.035
2300.0	3.215	34.947	277.6	3.031
2305.0	3.214	34.947	277.6	3.029



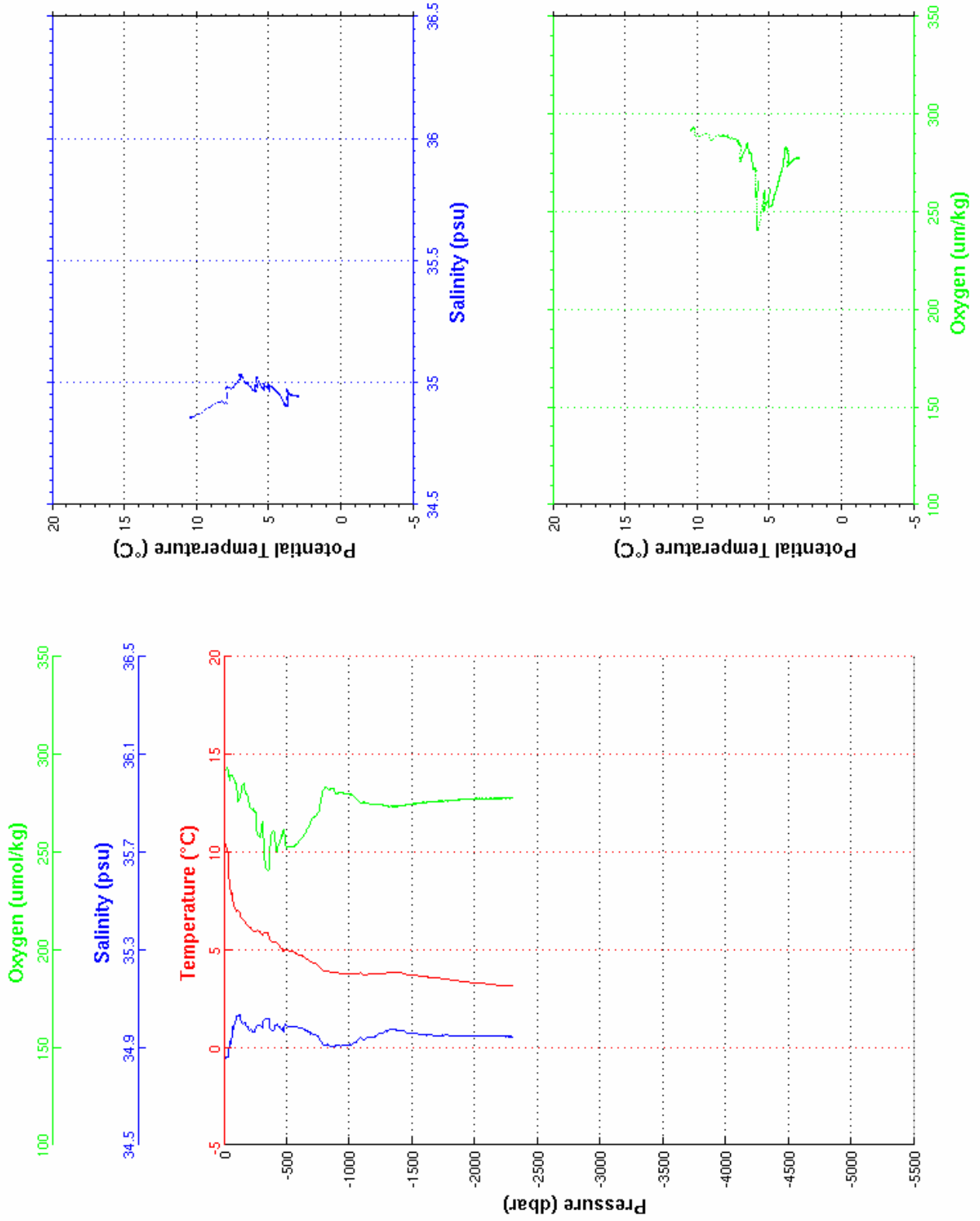
Cast : 72

```

-----
Cast       : 73           Cruise    : OVIDE 2010
Date      : 26/06/2010  Ship     : N/O THALASSA
Depth     : 2273 m      Organism  : IFREMER
Position  : N 59  6.13
           W 033 49.67
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.455	34.858	291.4	10.454
10.0	10.427	34.858	291.9	10.426
20.0	10.227	34.859	292.9	10.224
30.0	10.132	34.861	289.6	10.129
40.0	9.003	34.902	286.7	8.999
50.0	8.180	34.920	289.3	8.175
100.0	6.973	35.015	283.2	6.964
150.0	6.513	34.997	285.3	6.499
200.0	6.145	34.973	274.2	6.127
250.0	5.934	34.974	269.2	5.913
300.0	5.754	34.981	263.9	5.729
350.0	5.825	35.021	240.6	5.795
400.0	5.325	34.977	259.5	5.292
450.0	5.097	34.976	256.6	5.061
500.0	5.024	34.990	252.4	4.984
550.0	4.892	34.986	252.7	4.848
600.0	4.754	34.980	256.3	4.706
650.0	4.589	34.972	260.5	4.538
700.0	4.371	34.955	267.0	4.317
750.0	4.194	34.942	270.8	4.137
800.0	3.932	34.910	283.0	3.872
850.0	3.841	34.904	282.5	3.778
900.0	3.835	34.910	280.5	3.768
950.0	3.781	34.911	280.1	3.710
1000.0	3.741	34.912	279.6	3.666
1050.0	3.749	34.922	277.5	3.671
1100.0	3.763	34.936	275.2	3.681
1150.0	3.761	34.943	274.8	3.674
1200.0	3.743	34.945	274.6	3.652
1250.0	3.778	34.959	274.0	3.682
1300.0	3.818	34.967	273.6	3.718
1350.0	3.834	34.973	273.4	3.729
1400.0	3.813	34.970	273.6	3.704
1450.0	3.747	34.961	274.2	3.634
1500.0	3.706	34.959	274.5	3.589
1550.0	3.665	34.954	275.1	3.544
1600.0	3.627	34.951	275.4	3.502
1650.0	3.582	34.951	275.8	3.453
1700.0	3.545	34.949	275.9	3.412
1750.0	3.508	34.950	276.1	3.372
1800.0	3.466	34.949	276.5	3.325
1850.0	3.421	34.948	276.6	3.276
1900.0	3.374	34.947	277.0	3.225
1950.0	3.340	34.946	277.3	3.187
2000.0	3.298	34.946	277.4	3.141
2050.0	3.282	34.948	277.5	3.120
2100.0	3.258	34.948	277.4	3.092
2150.0	3.210	34.946	277.5	3.040
2200.0	3.172	34.945	277.6	2.998
2250.0	3.146	34.944	277.6	2.968
2300.0	3.136	34.944	277.8	2.953
2303.0	3.136	34.944	277.9	2.953



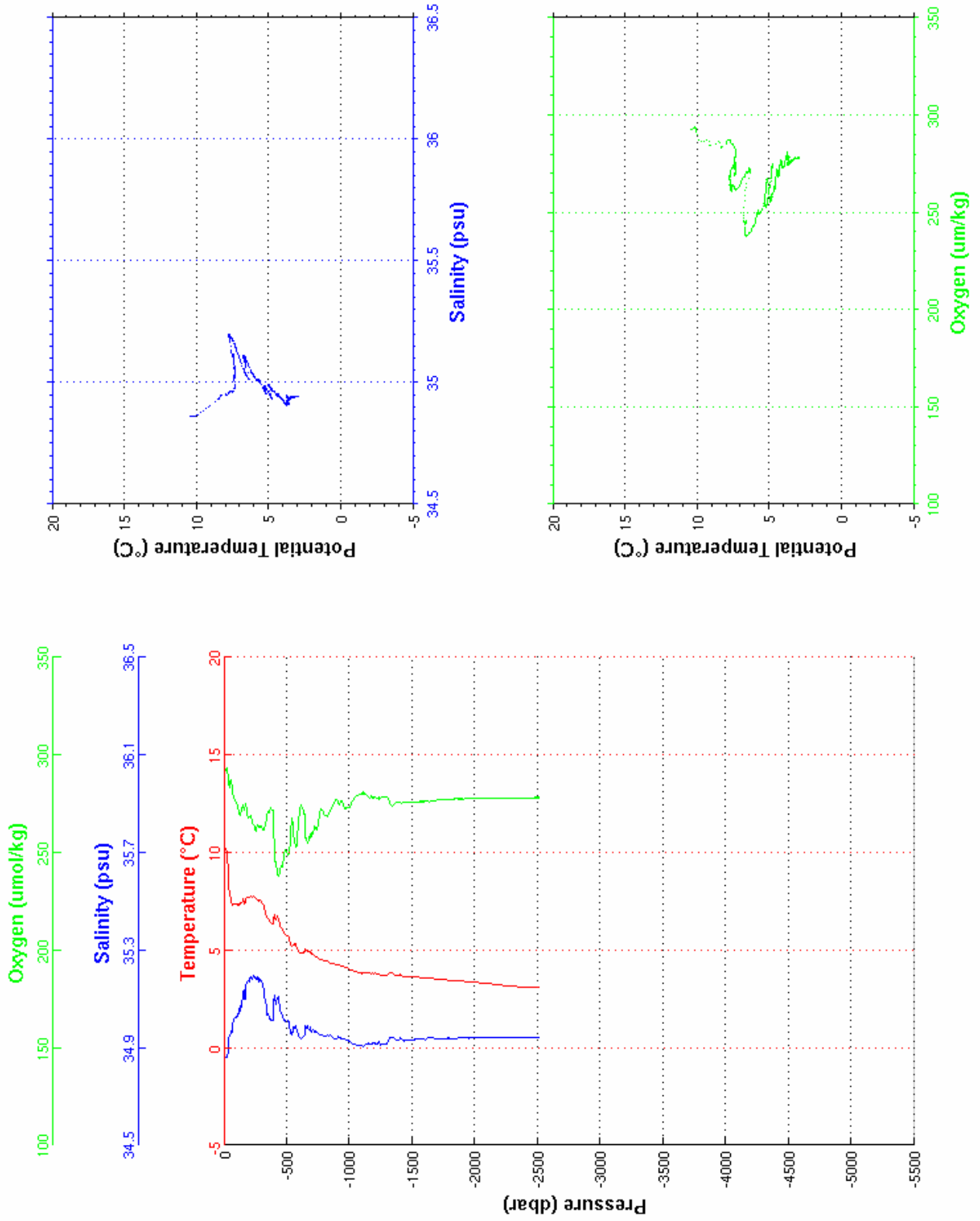
Cast : 73

```

-----
Cast       : 74           Cruise    : OVIDE 2010
Date      : 27/06/2010  Ship      : N/O THALASSA
Depth     : 2490 m      Organism  : IFREMER
Position  : N 59  9.80
           W 034 28.49
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	10.407	34.861	292.5	10.407
10.0	10.296	34.863	292.8	10.295
20.0	10.112	34.861	293.4	10.110
30.0	9.728	34.876	286.5	9.724
40.0	8.348	34.945	283.7	8.344
50.0	7.768	34.957	287.4	7.763
100.0	7.355	35.022	275.9	7.346
150.0	7.586	35.128	272.9	7.571
200.0	7.711	35.176	268.9	7.691
250.0	7.655	35.183	261.0	7.630
300.0	7.460	35.170	262.6	7.431
350.0	6.594	35.035	270.3	6.562
400.0	6.818	35.112	248.3	6.781
450.0	6.178	35.038	242.7	6.137
500.0	5.776	35.013	249.7	5.733
550.0	5.254	34.969	262.6	5.208
600.0	4.895	34.941	270.3	4.847
650.0	5.017	34.985	256.7	4.964
700.0	4.812	34.972	260.0	4.756
750.0	4.593	34.958	266.2	4.534
800.0	4.444	34.947	268.5	4.381
850.0	4.372	34.948	272.2	4.306
900.0	4.251	34.940	276.6	4.181
950.0	4.152	34.935	272.9	4.079
1000.0	4.045	34.927	273.5	3.968
1050.0	3.903	34.912	278.7	3.823
1100.0	3.814	34.905	280.6	3.731
1150.0	3.841	34.916	278.6	3.753
1200.0	3.807	34.917	278.2	3.716
1250.0	3.719	34.913	278.6	3.624
1300.0	3.702	34.917	278.3	3.603
1350.0	3.798	34.941	274.5	3.693
1400.0	3.734	34.938	275.4	3.626
1450.0	3.640	34.929	275.9	3.528
1500.0	3.630	34.933	275.8	3.514
1550.0	3.611	34.934	275.9	3.491
1600.0	3.561	34.932	276.5	3.437
1650.0	3.570	34.941	276.2	3.441
1700.0	3.503	34.935	277.0	3.371
1750.0	3.482	34.936	277.2	3.345
1800.0	3.460	34.939	277.1	3.319
1850.0	3.414	34.937	277.7	3.269
1900.0	3.412	34.942	277.6	3.262
1950.0	3.367	34.938	278.0	3.214
2000.0	3.344	34.940	278.0	3.186
2050.0	3.318	34.943	277.7	3.156
2100.0	3.289	34.944	277.9	3.123
2150.0	3.255	34.944	277.7	3.084
2200.0	3.209	34.944	277.9	3.035
2250.0	3.180	34.944	277.8	3.002
2300.0	3.151	34.944	277.9	2.968
2350.0	3.124	34.942	277.9	2.937
2400.0	3.117	34.942	277.9	2.925
2450.0	3.103	34.942	278.1	2.906
2500.0	3.103	34.942	278.2	2.901
2512.0	3.103	34.942	278.3	2.900



**Cast : 74**

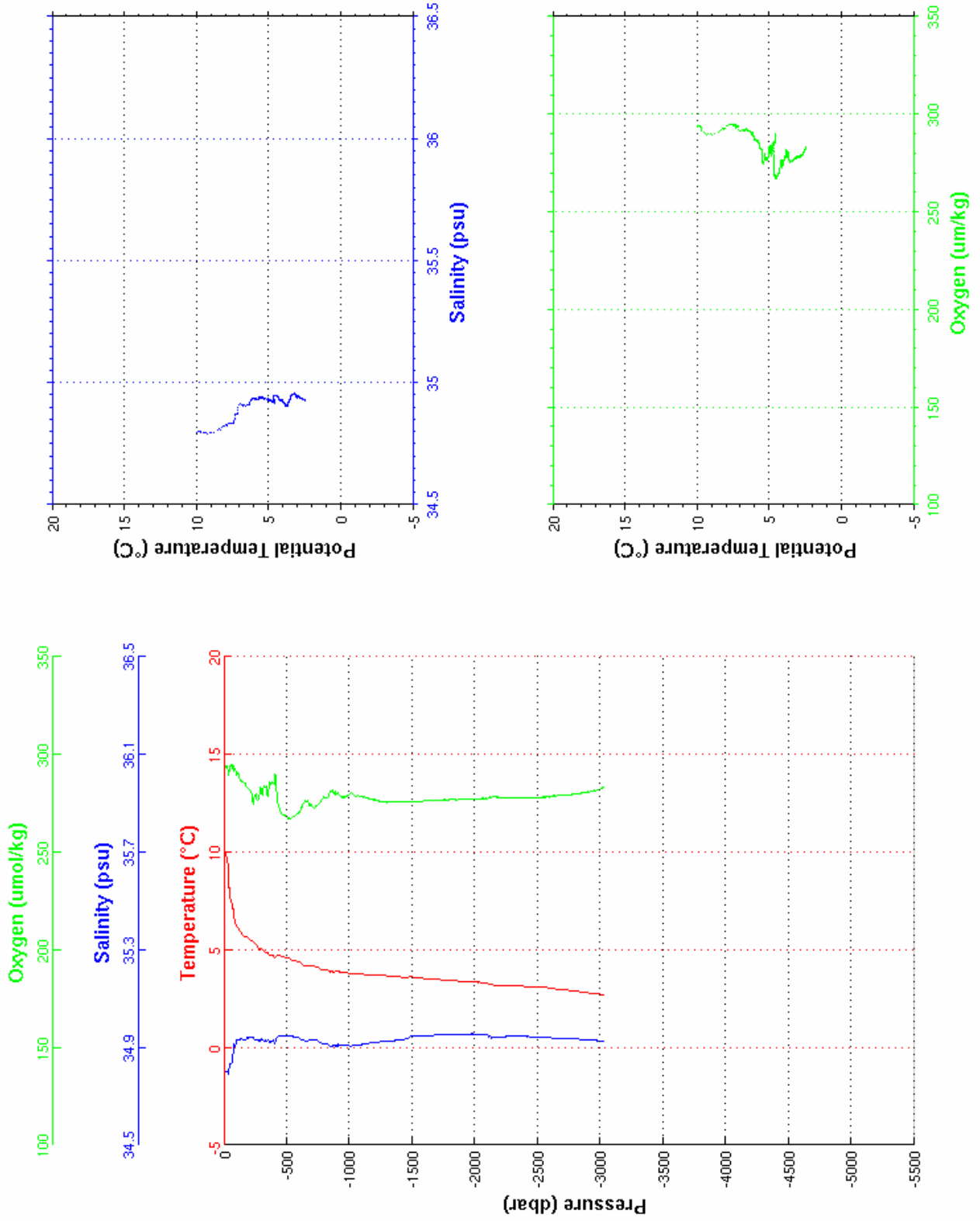
```

-----
Cast       : 75           Cruise    : OVIDE 2010
Date       : 27/06/2010  Ship      : N/O THALASSA
Depth      : 2988 m      Organism  : IFREMER
Position   : N 59 14.07
            W 035  7.27
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.956	34.795	293.7	9.956	3025.0	2.696	34.926	283.1	2.449
10.0	9.958	34.795	293.8	9.957					
20.0	9.785	34.800	294.4	9.782					
30.0	9.544	34.796	290.9	9.540					
40.0	8.203	34.817	292.8	8.199					
50.0	7.671	34.833	294.9	7.666					
100.0	6.188	34.927	290.3	6.180					
150.0	5.754	34.932	285.7	5.742					
200.0	5.542	34.937	281.6	5.525					
250.0	5.304	34.935	280.0	5.284					
300.0	5.042	34.935	279.3	5.018					
350.0	4.830	34.929	279.0	4.803					
400.0	4.608	34.917	286.1	4.578					
450.0	4.677	34.947	270.7	4.642					
500.0	4.583	34.949	267.6	4.544					
550.0	4.472	34.945	268.2	4.430					
600.0	4.353	34.938	270.7	4.308					
650.0	4.201	34.927	276.2	4.152					
700.0	4.185	34.933	273.6	4.132					
750.0	4.086	34.926	274.7	4.030					
800.0	3.991	34.916	278.0	3.931					
850.0	3.860	34.902	281.3	3.797					
900.0	3.867	34.907	279.8	3.800					
950.0	3.853	34.910	278.3	3.782					
1000.0	3.772	34.903	279.9	3.698					
1050.0	3.765	34.908	278.7	3.686					
1100.0	3.743	34.912	278.4	3.660					
1150.0	3.725	34.916	277.5	3.638					
1200.0	3.714	34.920	276.8	3.624					
1250.0	3.689	34.924	275.9	3.594					
1300.0	3.665	34.926	275.6	3.567					
1350.0	3.635	34.927	275.7	3.532					
1400.0	3.607	34.931	275.8	3.501					
1450.0	3.586	34.936	275.9	3.475					
1500.0	3.603	34.946	275.7	3.488					
1550.0	3.564	34.947	276.0	3.445					
1600.0	3.522	34.947	276.2	3.399					
1650.0	3.496	34.946	276.6	3.369					
1700.0	3.494	34.953	276.5	3.362					
1750.0	3.460	34.951	276.8	3.324					
1800.0	3.430	34.951	277.0	3.290					
1850.0	3.413	34.953	276.9	3.268					
1900.0	3.382	34.953	277.0	3.233					
1950.0	3.376	34.955	277.1	3.222					
2000.0	3.352	34.955	277.3	3.194					
2050.0	3.325	34.953	277.3	3.163					
2100.0	3.267	34.948	277.5	3.101					
2150.0	3.189	34.938	278.7	3.019					
2200.0	3.191	34.945	278.0	3.016					
2250.0	3.156	34.944	278.0	2.978					
2300.0	3.156	34.946	277.7	2.972					
2350.0	3.151	34.946	277.8	2.963					
2400.0	3.126	34.945	277.9	2.933					
2450.0	3.113	34.944	277.8	2.916					
2500.0	3.097	34.942	278.1	2.895					
2550.0	3.077	34.942	278.2	2.871					
2600.0	3.050	34.941	278.5	2.839					
2650.0	2.985	34.936	278.9	2.770					
2700.0	2.951	34.935	278.9	2.732					
2750.0	2.918	34.935	279.3	2.694					
2800.0	2.877	34.934	279.7	2.649					
2850.0	2.841	34.933	280.2	2.609					
2900.0	2.797	34.931	280.8	2.561					
2950.0	2.767	34.929	281.4	2.527					
3000.0	2.728	34.927	282.3	2.483					





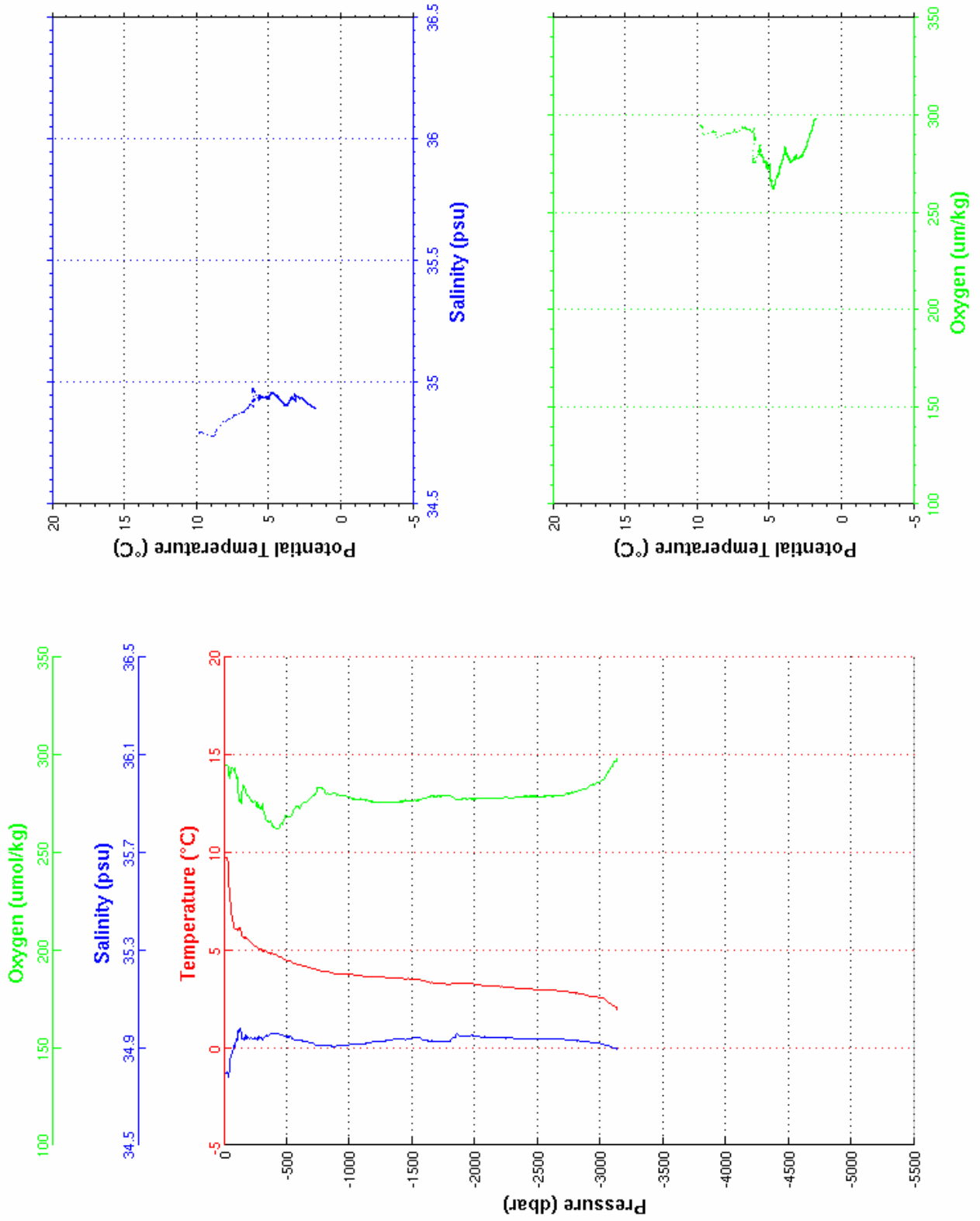
Cast : 75

```

-----
Cast       : 76           Cruise    : OVIDE 2010
Date       : 27/06/2010  Ship      : N/O THALASSA
Depth      : 3101 m      Organism  : IFREMER
Position   : N 59 17.98
            W 035 45.72
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.807	34.791	294.5	9.806	3050.0	2.385	34.908	290.3	2.143
10.0	9.790	34.792	294.7	9.789	3100.0	2.162	34.899	295.3	1.919
20.0	9.763	34.794	294.6	9.760	3137.0	1.976	34.895	NaN	1.734
30.0	9.637	34.797	293.0	9.634					
40.0	8.613	34.802	288.9	8.609					
50.0	7.439	34.861	292.2	7.435					
100.0	6.033	34.930	288.3	6.024					
150.0	5.660	34.929	284.2	5.648					
200.0	5.466	34.939	278.2	5.449					
250.0	5.219	34.938	275.5	5.199					
300.0	4.974	34.933	273.8	4.950					
350.0	4.892	34.951	266.0	4.865					
400.0	4.794	34.957	262.8	4.762					
450.0	4.641	34.953	264.7	4.606					
500.0	4.472	34.945	268.7	4.434					
550.0	4.322	34.934	272.0	4.280					
600.0	4.250	34.932	272.7	4.204					
650.0	4.160	34.925	275.8	4.111					
700.0	4.070	34.920	278.7	4.018					
750.0	3.949	34.907	283.8	3.893					
800.0	3.926	34.908	281.8	3.867					
850.0	3.868	34.909	279.7	3.805					
900.0	3.807	34.907	279.5	3.740					
950.0	3.763	34.907	279.0	3.692					
1000.0	3.756	34.913	278.0	3.682					
1050.0	3.720	34.915	277.4	3.641					
1100.0	3.676	34.915	277.4	3.594					
1150.0	3.660	34.920	276.5	3.574					
1200.0	3.645	34.924	276.1	3.555					
1250.0	3.624	34.927	275.7	3.530					
1300.0	3.593	34.929	275.9	3.495					
1350.0	3.583	34.934	275.9	3.480					
1400.0	3.560	34.936	276.2	3.454					
1450.0	3.505	34.932	276.9	3.395					
1500.0	3.524	34.943	276.8	3.409					
1550.0	3.482	34.940	276.7	3.364					
1600.0	3.407	34.934	277.9	3.285					
1650.0	3.335	34.928	278.7	3.209					
1700.0	3.317	34.929	278.9	3.187					
1750.0	3.279	34.927	279.1	3.145					
1800.0	3.243	34.928	279.2	3.105					
1850.0	3.363	34.956	277.3	3.219					
1900.0	3.296	34.948	277.5	3.149					
1950.0	3.271	34.947	277.7	3.119					
2000.0	3.261	34.949	277.6	3.104					
2050.0	3.205	34.944	277.7	3.045					
2100.0	3.180	34.944	277.8	3.015					
2150.0	3.163	34.944	277.8	2.994					
2200.0	3.129	34.942	278.1	2.956					
2250.0	3.092	34.939	278.2	2.914					
2300.0	3.096	34.943	277.7	2.914					
2350.0	3.042	34.936	278.6	2.856					
2400.0	3.016	34.934	278.8	2.825					
2450.0	2.998	34.935	278.9	2.803					
2500.0	2.985	34.936	278.9	2.785					
2550.0	2.970	34.937	278.7	2.766					
2600.0	2.949	34.936	278.9	2.740					
2650.0	2.928	34.936	279.0	2.715					
2700.0	2.905	34.935	279.3	2.687					
2750.0	2.851	34.931	280.2	2.629					
2800.0	2.806	34.930	281.2	2.580					
2850.0	2.747	34.927	282.3	2.518					
2900.0	2.678	34.924	283.2	2.445					
2950.0	2.614	34.920	285.0	2.376					
3000.0	2.550	34.917	286.4	2.309					



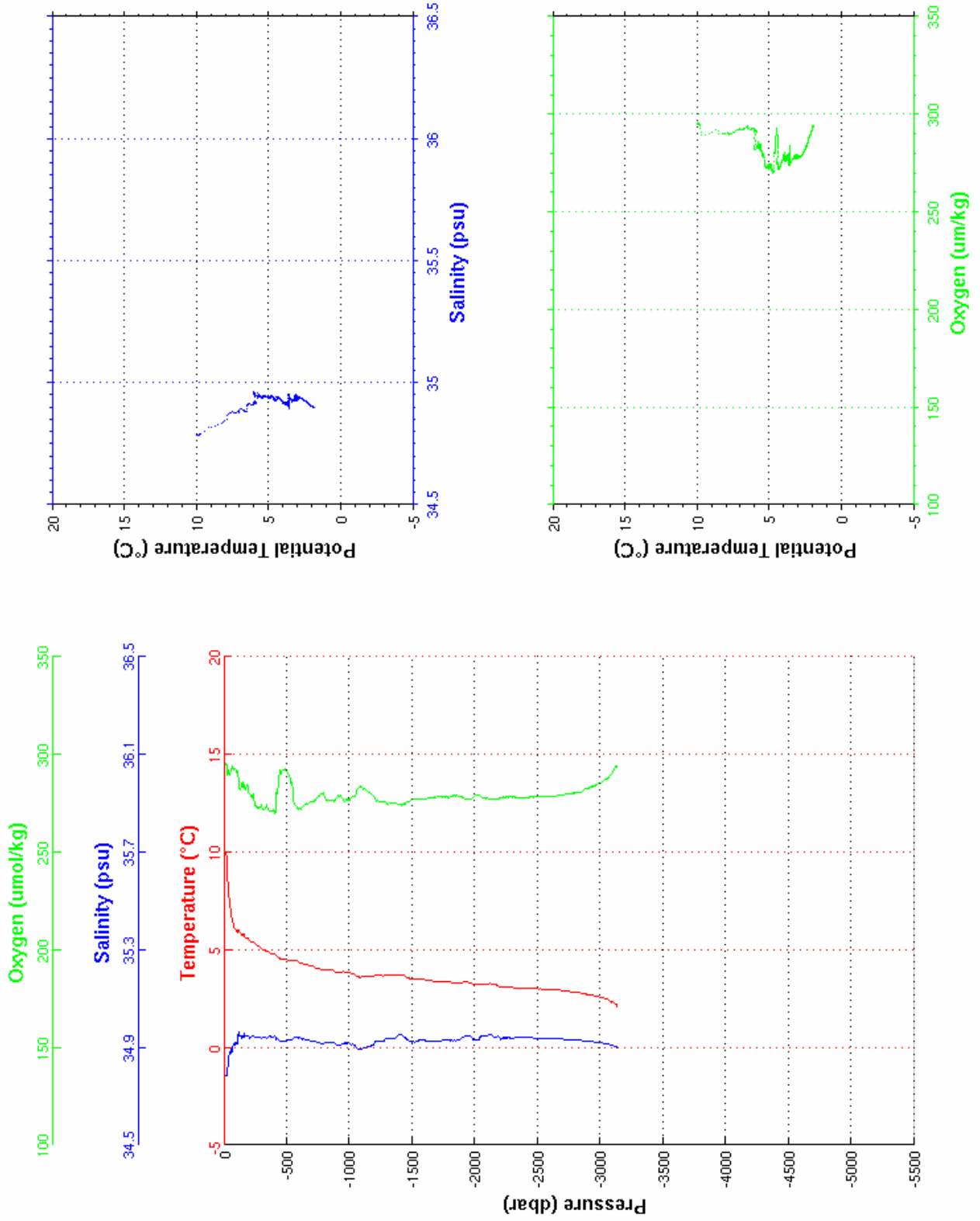
**Cast : 76**

```

-----
Cast       : 77           Cruise    : OVIDE 2010
Date       : 27/06/2010 Ship       : N/O THALASSA
Depth      : 3096 m      Organism  : IFREMER
Position   : N 59 21.78
            W 036 23.79
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.938	34.786	295.1	9.938	3050.0	2.491	34.915	287.5	2.246
10.0	9.917	34.786	295.0	9.916	3100.0	2.309	34.907	291.3	2.063
20.0	9.822	34.786	294.7	9.819	3133.0	2.097	34.900	NaN	1.853
30.0	8.650	34.823	292.1	8.647					
40.0	7.808	34.870	289.9	7.804					
50.0	7.292	34.879	291.2	7.288					
100.0	5.930	34.915	291.8	5.921					
150.0	5.763	34.947	283.5	5.751					
200.0	5.501	34.937	279.4	5.484					
250.0	5.294	34.945	273.5	5.274					
300.0	5.091	34.944	272.5	5.067					
350.0	4.881	34.942	271.6	4.854					
400.0	4.777	34.946	270.8	4.746					
450.0	4.531	34.925	290.2	4.497					
500.0	4.487	34.930	290.9	4.449					
550.0	4.465	34.941	278.6	4.423					
600.0	4.357	34.939	272.1	4.311					
650.0	4.249	34.931	274.7	4.200					
700.0	4.152	34.925	276.3	4.100					
750.0	4.063	34.920	278.4	4.007					
800.0	4.020	34.919	278.1	3.960					
850.0	3.965	34.918	276.5	3.901					
900.0	3.858	34.909	278.6	3.791					
950.0	3.880	34.920	276.5	3.809					
1000.0	3.813	34.916	276.8	3.738					
1050.0	3.715	34.905	279.5	3.637					
1100.0	3.626	34.897	282.7	3.544					
1150.0	3.626	34.901	280.8	3.540					
1200.0	3.698	34.920	277.5	3.607					
1250.0	3.688	34.924	275.5	3.593					
1300.0	3.720	34.938	274.8	3.620					
1350.0	3.664	34.935	275.1	3.561					
1400.0	3.722	34.950	274.3	3.614					
1450.0	3.593	34.933	275.4	3.482					
1500.0	3.499	34.923	276.8	3.384					
1550.0	3.491	34.927	277.1	3.372					
1600.0	3.468	34.929	277.1	3.345					
1650.0	3.412	34.926	277.9	3.285					
1700.0	3.374	34.925	278.3	3.244					
1750.0	3.373	34.930	278.1	3.238					
1800.0	3.344	34.930	278.3	3.205					
1850.0	3.289	34.927	279.0	3.146					
1900.0	3.294	34.935	278.2	3.147					
1950.0	3.328	34.947	277.4	3.175					
2000.0	3.188	34.926	279.4	3.033					
2050.0	3.247	34.944	277.9	3.086					
2100.0	3.249	34.950	277.5	3.084					
2150.0	3.206	34.946	277.4	3.036					
2200.0	3.121	34.935	278.2	2.948					
2250.0	3.112	34.939	278.1	2.934					
2300.0	3.072	34.938	278.1	2.890					
2350.0	3.055	34.941	277.8	2.869					
2400.0	3.034	34.940	278.0	2.844					
2450.0	3.016	34.939	278.1	2.820					
2500.0	2.996	34.938	278.5	2.796					
2550.0	2.989	34.938	278.4	2.784					
2600.0	2.972	34.937	278.7	2.763					
2650.0	2.946	34.936	279.0	2.733					
2700.0	2.905	34.934	279.2	2.687					
2750.0	2.865	34.932	279.8	2.643					
2800.0	2.833	34.931	280.3	2.606					
2850.0	2.781	34.929	281.0	2.550					
2900.0	2.710	34.925	282.6	2.476					
2950.0	2.639	34.922	284.0	2.401					
3000.0	2.578	34.919	285.4	2.336					



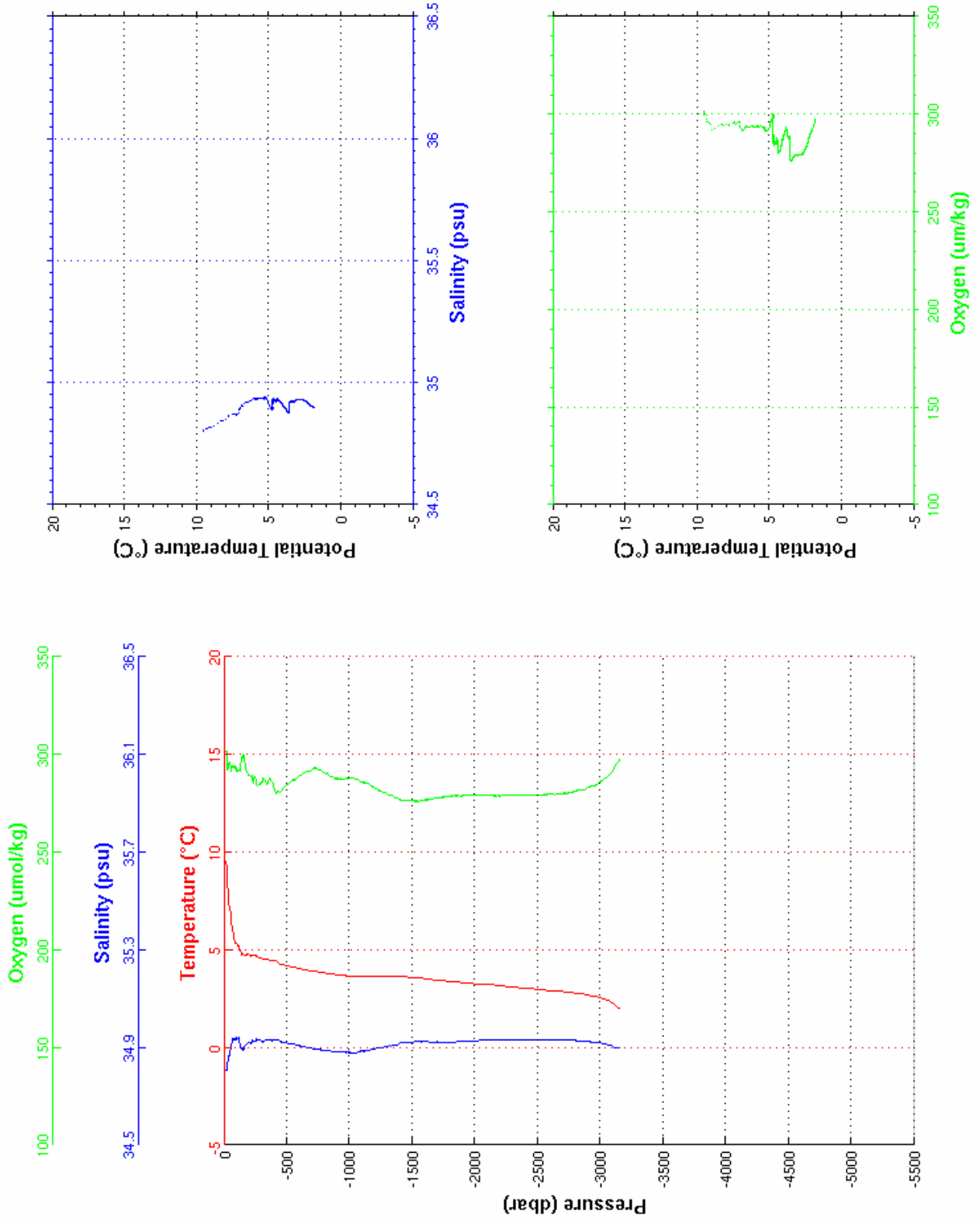
**Cast : 77**

```

-----
Cast       : 78           Cruise    : OVIDE 2010
Date       : 27/06/2010  Ship     : N/O THALASSA
Depth      : 3119 m      Organism  : IFREMER
Position   : N 59 25.65
            W 037 2.33
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.532	34.803	300.9	9.532	3050.0	2.435	34.911	288.4	2.192
10.0	9.534	34.804	301.5	9.533	3100.0	2.270	34.904	292.0	2.025
20.0	9.509	34.804	299.2	9.507	3150.0	2.039	34.897	297.1	1.794
30.0	8.294	34.845	294.8	8.291	3156.0	2.025	34.897	297.8	1.780
40.0	7.390	34.873	295.3	7.386					
50.0	7.005	34.892	293.4	7.000					
100.0	5.339	34.944	291.7	5.331					
150.0	4.773	34.898	298.5	4.762					
200.0	4.735	34.918	289.1	4.720					
250.0	4.667	34.928	287.3	4.648					
300.0	4.557	34.927	285.6	4.535					
350.0	4.504	34.932	287.2	4.478					
400.0	4.443	34.937	281.4	4.413					
450.0	4.280	34.924	281.2	4.247					
500.0	4.180	34.917	284.7	4.143					
550.0	4.115	34.913	287.0	4.074					
600.0	4.049	34.908	289.0	4.005					
650.0	3.964	34.901	291.3	3.916					
700.0	3.907	34.895	292.2	3.856					
750.0	3.859	34.892	292.1	3.804					
800.0	3.814	34.889	290.6	3.755					
850.0	3.763	34.885	288.9	3.701					
900.0	3.727	34.883	287.6	3.661					
950.0	3.695	34.881	287.2	3.625					
1000.0	3.656	34.879	287.1	3.582					
1050.0	3.616	34.879	287.3	3.539					
1100.0	3.617	34.884	285.8	3.536					
1150.0	3.618	34.888	284.9	3.532					
1200.0	3.630	34.894	283.2	3.540					
1250.0	3.624	34.900	281.3	3.530					
1300.0	3.628	34.905	279.7	3.530					
1350.0	3.634	34.909	278.5	3.531					
1400.0	3.642	34.916	276.8	3.535					
1450.0	3.616	34.918	276.4	3.505					
1500.0	3.584	34.919	276.6	3.469					
1550.0	3.573	34.923	276.2	3.454					
1600.0	3.523	34.922	276.8	3.400					
1650.0	3.489	34.922	277.2	3.361					
1700.0	3.448	34.923	277.8	3.317					
1750.0	3.413	34.921	278.2	3.277					
1800.0	3.370	34.920	278.7	3.231					
1850.0	3.351	34.923	278.8	3.207					
1900.0	3.321	34.925	278.9	3.173					
1950.0	3.290	34.924	279.3	3.138					
2000.0	3.257	34.925	279.4	3.100					
2050.0	3.251	34.930	279.0	3.090					
2100.0	3.215	34.929	279.2	3.050					
2150.0	3.200	34.932	278.9	3.031					
2200.0	3.168	34.932	278.9	2.994					
2250.0	3.123	34.931	279.1	2.945					
2300.0	3.093	34.931	279.1	2.911					
2350.0	3.056	34.930	279.2	2.870					
2400.0	3.037	34.931	279.2	2.846					
2450.0	3.009	34.931	279.2	2.814					
2500.0	2.975	34.931	279.3	2.776					
2550.0	2.944	34.931	279.3	2.740					
2600.0	2.903	34.931	279.8	2.695					
2650.0	2.884	34.932	279.8	2.672					
2700.0	2.859	34.931	280.1	2.642					
2750.0	2.832	34.930	280.4	2.610					
2800.0	2.783	34.928	281.2	2.558					
2850.0	2.741	34.927	282.0	2.511					
2900.0	2.677	34.924	282.8	2.443					
2950.0	2.630	34.922	284.0	2.392					
3000.0	2.547	34.918	285.8	2.306					



**Cast : 78**

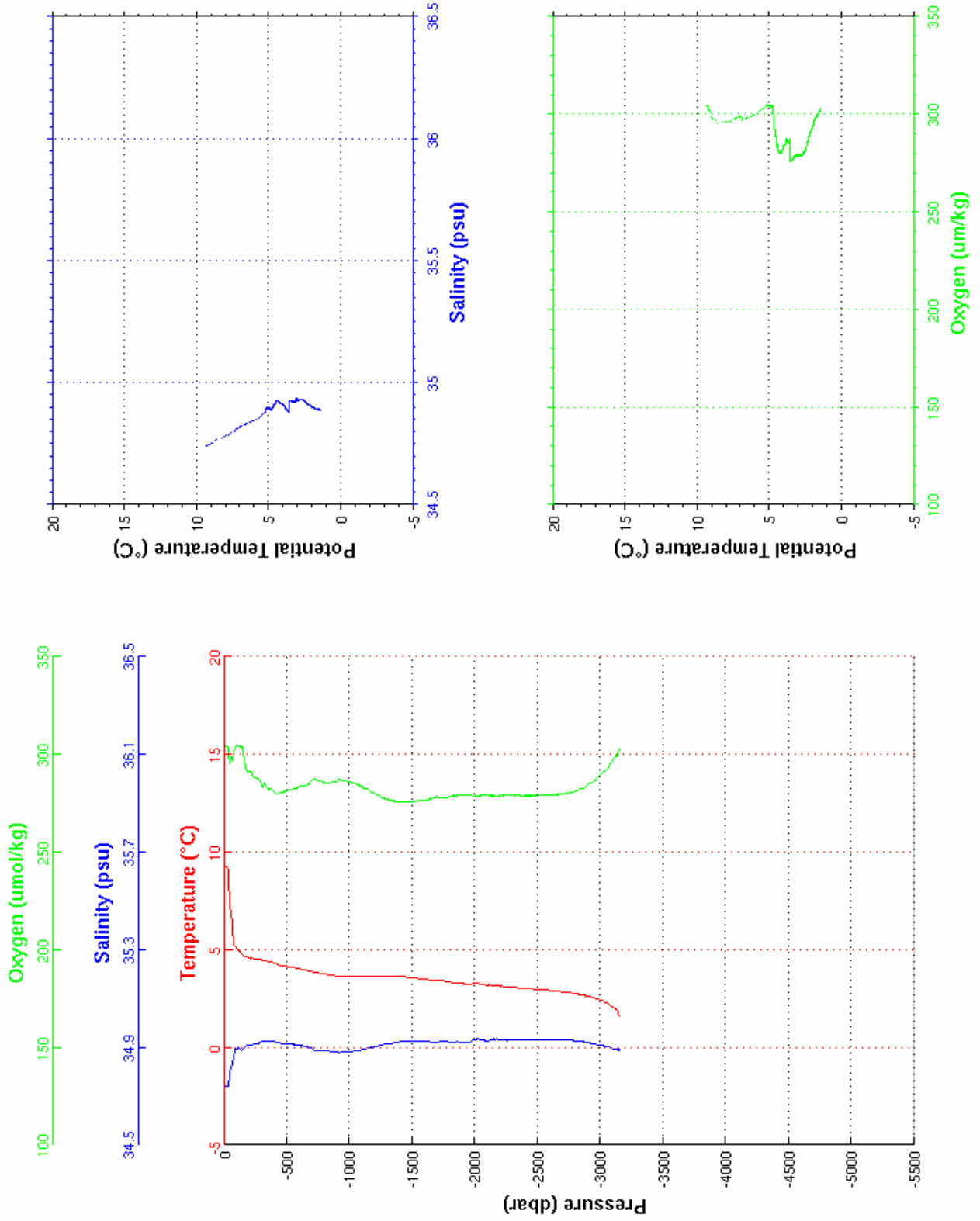
```

-----
Cast      : 79           Cruise   : OVIDE 2010
Date     : 28/06/2010  Ship    : N/O THALASSA
Depth    : 3113 m      Organism : IFREMER
Position : N 59 29.48
          W 037 40.83
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.288	34.739	304.3	9.288	3050.0	2.275	34.903	292.6	2.035
10.0	9.289	34.739	304.0	9.288	3100.0	2.084	34.895	297.1	1.843
20.0	9.283	34.740	304.1	9.281	3150.0	1.663	34.890	302.9	1.427
30.0	9.239	34.743	302.6	9.236	3151.0	1.617	34.890	NaN	1.382
40.0	8.595	34.768	295.3	8.591					
50.0	7.197	34.809	298.3	7.193					
100.0	5.058	34.899	304.4	5.050					
150.0	4.726	34.896	300.8	4.715					
200.0	4.582	34.908	290.7	4.567					
250.0	4.525	34.916	288.2	4.507					
300.0	4.494	34.923	283.7	4.472					
350.0	4.415	34.926	282.2	4.389					
400.0	4.321	34.923	280.1	4.291					
450.0	4.197	34.917	280.6	4.164					
500.0	4.146	34.914	281.7	4.109					
550.0	4.086	34.912	282.5	4.045					
600.0	4.028	34.908	283.5	3.984					
650.0	3.965	34.904	284.2	3.918					
700.0	3.876	34.896	286.8	3.825					
750.0	3.808	34.891	286.1	3.753					
800.0	3.750	34.887	285.5	3.692					
850.0	3.697	34.883	285.8	3.635					
900.0	3.647	34.880	286.4	3.582					
950.0	3.626	34.881	286.6	3.557					
1000.0	3.621	34.883	285.6	3.548					
1050.0	3.625	34.887	284.8	3.548					
1100.0	3.626	34.892	283.4	3.544					
1150.0	3.637	34.899	281.6	3.551					
1200.0	3.645	34.904	279.9	3.555					
1250.0	3.645	34.910	278.2	3.551					
1300.0	3.648	34.914	277.0	3.549					
1350.0	3.639	34.920	276.1	3.536					
1400.0	3.625	34.923	275.7	3.518					
1450.0	3.602	34.925	275.8	3.490					
1500.0	3.579	34.926	275.9	3.464					
1550.0	3.534	34.925	276.3	3.414					
1600.0	3.509	34.927	276.6	3.386					
1650.0	3.448	34.922	277.5	3.321					
1700.0	3.411	34.921	278.0	3.280					
1750.0	3.418	34.927	277.6	3.283					
1800.0	3.341	34.921	278.7	3.202					
1850.0	3.323	34.923	278.9	3.179					
1900.0	3.268	34.921	279.3	3.120					
1950.0	3.247	34.921	279.3	3.095					
2000.0	3.260	34.929	278.8	3.104					
2050.0	3.227	34.930	278.9	3.067					
2100.0	3.186	34.927	279.2	3.021					
2150.0	3.188	34.933	278.7	3.018					
2200.0	3.142	34.930	278.9	2.969					
2250.0	3.094	34.928	279.2	2.917					
2300.0	3.074	34.930	279.2	2.892					
2350.0	3.050	34.931	278.9	2.864					
2400.0	3.027	34.932	278.8	2.836					
2450.0	3.001	34.933	278.8	2.806					
2500.0	2.974	34.932	279.0	2.774					
2550.0	2.947	34.932	279.1	2.743					
2600.0	2.919	34.932	279.1	2.711					
2650.0	2.885	34.932	279.5	2.672					
2700.0	2.852	34.931	279.8	2.636					
2750.0	2.809	34.930	280.4	2.587					
2800.0	2.759	34.928	281.1	2.533					
2850.0	2.691	34.924	282.6	2.462					
2900.0	2.617	34.919	284.6	2.385					
2950.0	2.532	34.914	286.5	2.296					
3000.0	2.429	34.908	289.8	2.190					





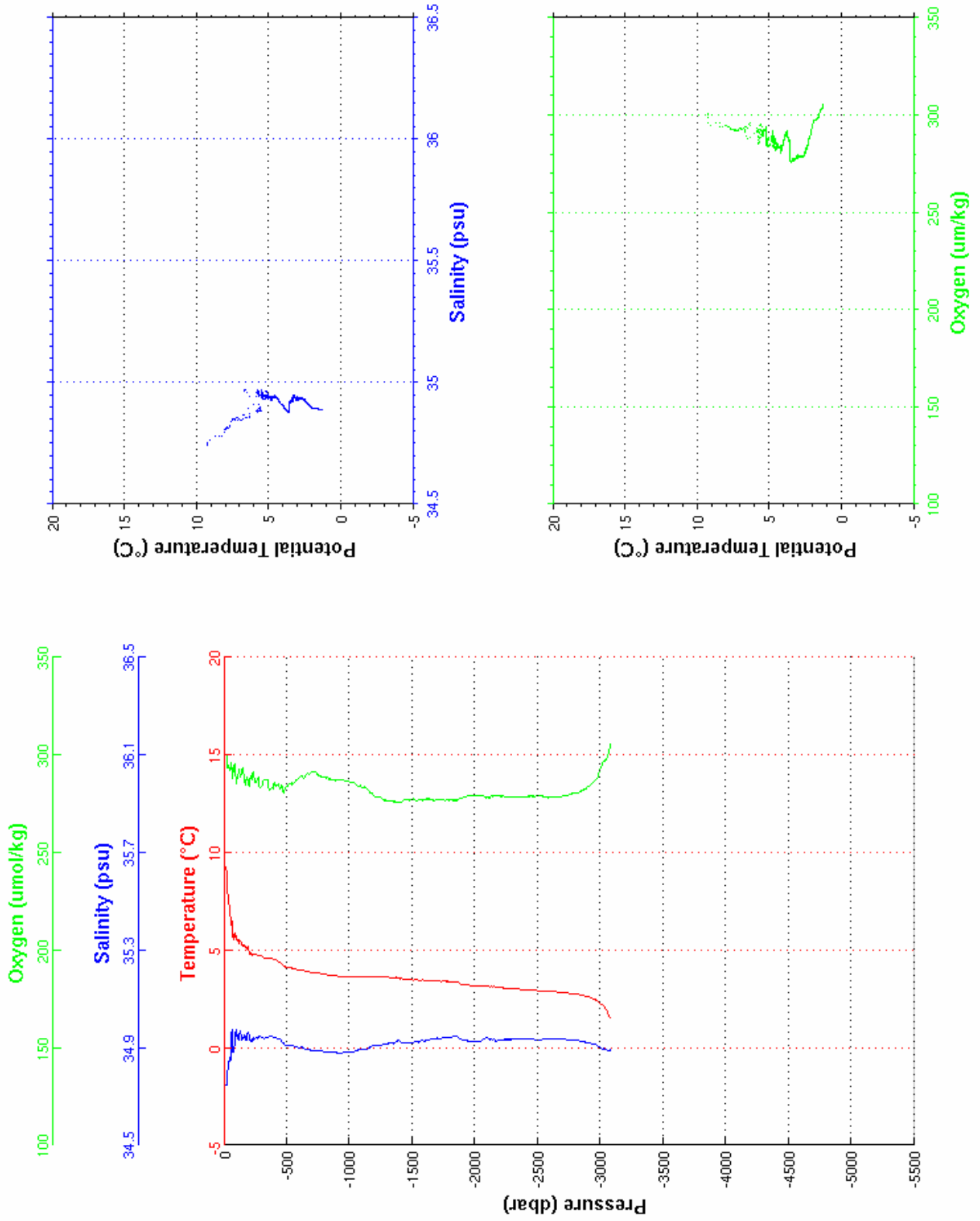
Cast : 79

```

-----
Cast      : 80           Cruise   : OVIDE 2010
Date      : 28/06/2010 Ship      : N/O THALASSA
Depth     : 3043 m     Organism : IFREMER
Position  : N 59 33.41
           W 038 18.98
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.	PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.	dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.248	34.742	299.9	9.248	3050.0	1.926	34.894	297.8	1.694
10.0	9.250	34.743	300.3	9.248	3079.0	1.526	34.890	305.3	1.300
20.0	9.247	34.745	298.9	9.245					
30.0	7.916	34.812	294.7	7.913					
40.0	7.411	34.850	292.6	7.407					
50.0	6.889	34.847	292.8	6.885					
100.0	5.679	34.963	285.9	5.671					
150.0	5.240	34.941	291.4	5.228					
200.0	4.983	34.943	284.7	4.967					
250.0	4.776	34.940	286.5	4.757					
300.0	4.668	34.940	284.4	4.645					
350.0	4.591	34.943	286.2	4.564					
400.0	4.501	34.941	285.5	4.471					
450.0	4.358	34.932	283.6	4.324					
500.0	4.135	34.911	284.0	4.098					
550.0	4.067	34.908	285.7	4.026					
600.0	3.952	34.897	289.1	3.909					
650.0	3.903	34.893	290.2	3.855					
700.0	3.833	34.888	291.7	3.782					
750.0	3.810	34.888	289.7	3.755					
800.0	3.754	34.884	288.8	3.696					
850.0	3.710	34.882	287.6	3.648					
900.0	3.676	34.880	287.0	3.610					
950.0	3.652	34.881	286.8	3.583					
1000.0	3.632	34.882	286.1	3.558					
1050.0	3.621	34.886	284.9	3.544					
1100.0	3.607	34.889	283.7	3.525					
1150.0	3.640	34.900	281.2	3.555					
1200.0	3.661	34.909	278.9	3.571					
1250.0	3.631	34.911	277.8	3.536					
1300.0	3.629	34.919	276.4	3.531					
1350.0	3.569	34.917	276.4	3.467					
1400.0	3.583	34.925	276.0	3.476					
1450.0	3.513	34.920	277.0	3.403					
1500.0	3.467	34.921	277.2	3.353					
1550.0	3.444	34.922	277.1	3.326					
1600.0	3.462	34.932	277.1	3.339					
1650.0	3.463	34.939	276.6	3.335					
1700.0	3.433	34.939	277.0	3.301					
1750.0	3.426	34.945	277.0	3.291					
1800.0	3.386	34.944	276.8	3.246					
1850.0	3.369	34.946	277.0	3.225					
1900.0	3.261	34.932	278.3	3.114					
1950.0	3.204	34.927	279.1	3.053					
2000.0	3.165	34.926	279.5	3.010					
2050.0	3.150	34.929	279.4	2.991					
2100.0	3.189	34.940	278.0	3.024					
2150.0	3.133	34.937	278.7	2.964					
2200.0	3.075	34.932	278.9	2.903					
2250.0	3.047	34.934	278.4	2.871					
2300.0	3.026	34.935	278.7	2.845					
2350.0	3.002	34.934	278.6	2.817					
2400.0	2.973	34.934	278.8	2.784					
2450.0	2.959	34.935	278.7	2.765					
2500.0	2.919	34.932	279.2	2.721					
2550.0	2.913	34.936	278.6	2.709					
2600.0	2.894	34.937	278.3	2.687					
2650.0	2.861	34.936	278.6	2.649					
2700.0	2.829	34.935	278.9	2.612					
2750.0	2.788	34.932	279.7	2.568					
2800.0	2.743	34.930	280.7	2.518					
2850.0	2.695	34.926	281.6	2.466					
2900.0	2.609	34.921	283.8	2.377					
2950.0	2.505	34.913	287.0	2.270					
3000.0	2.276	34.901	293.1	2.041					



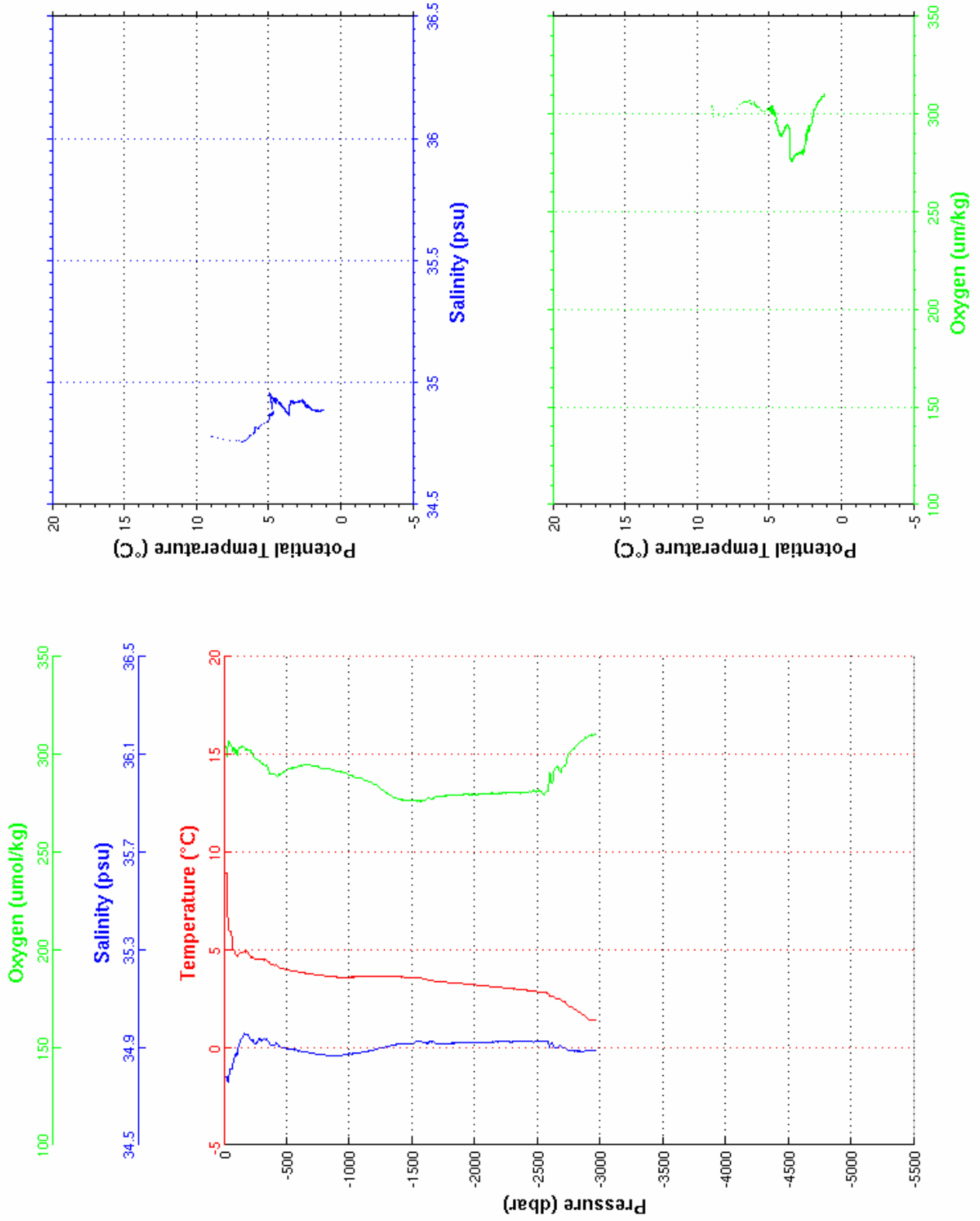
**Cast : 80**

```

-----
Cast      : 81           Cruise   : OVIDE 2010
Date     : 28/06/2010  Ship    : N/O THALASSA
Depth    : 2928 m      Organism : IFREMER
Position : N 59 37.42
          W 038 57.46
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.006	34.778	303.5	9.006
10.0	8.971	34.778	303.7	8.970
20.0	8.922	34.780	303.3	8.920
30.0	6.787	34.758	306.5	6.785
40.0	6.023	34.792	306.2	6.020
50.0	5.956	34.811	304.9	5.952
100.0	4.713	34.873	300.4	4.705
150.0	4.880	34.944	303.8	4.868
200.0	4.743	34.937	302.2	4.727
250.0	4.518	34.919	298.1	4.499
300.0	4.497	34.928	294.9	4.474
350.0	4.396	34.925	292.6	4.370
400.0	4.189	34.908	289.8	4.159
450.0	4.074	34.902	290.1	4.042
500.0	3.977	34.894	292.2	3.941
550.0	3.915	34.891	293.1	3.875
600.0	3.841	34.885	294.1	3.797
650.0	3.803	34.882	294.5	3.756
700.0	3.750	34.877	294.3	3.699
750.0	3.692	34.871	293.9	3.638
800.0	3.661	34.869	293.0	3.603
850.0	3.627	34.867	292.3	3.566
900.0	3.604	34.867	291.4	3.539
950.0	3.596	34.869	290.8	3.527
1000.0	3.609	34.874	289.4	3.536
1050.0	3.612	34.878	288.3	3.535
1100.0	3.610	34.880	287.4	3.528
1150.0	3.612	34.885	286.0	3.526
1200.0	3.620	34.891	284.7	3.530
1250.0	3.633	34.898	282.3	3.539
1300.0	3.636	34.904	280.2	3.538
1350.0	3.630	34.910	278.0	3.527
1400.0	3.611	34.914	277.2	3.504
1450.0	3.596	34.917	276.6	3.485
1500.0	3.563	34.917	276.4	3.448
1550.0	3.573	34.926	275.9	3.454
1600.0	3.518	34.926	276.5	3.394
1650.0	3.442	34.920	277.4	3.315
1700.0	3.377	34.915	278.5	3.247
1750.0	3.352	34.917	278.9	3.218
1800.0	3.322	34.916	279.2	3.183
1850.0	3.297	34.918	279.1	3.154
1900.0	3.266	34.919	279.3	3.119
1950.0	3.233	34.919	279.6	3.082
2000.0	3.207	34.921	279.5	3.052
2050.0	3.172	34.921	279.7	3.012
2100.0	3.135	34.922	279.7	2.971
2150.0	3.105	34.923	280.2	2.937
2200.0	3.075	34.923	280.1	2.903
2250.0	3.039	34.923	280.3	2.863
2300.0	3.007	34.923	280.5	2.826
2350.0	2.968	34.923	280.3	2.783
2400.0	2.923	34.924	280.7	2.734
2450.0	2.892	34.925	280.8	2.699
2500.0	2.855	34.924	281.2	2.657
2550.0	2.841	34.931	279.5	2.640
2600.0	2.645	34.907	290.4	2.442
2650.0	2.518	34.900	293.3	2.312
2700.0	2.377	34.900	293.9	2.169
2750.0	2.121	34.888	301.0	1.914
2800.0	1.930	34.884	304.1	1.722
2850.0	1.736	34.884	306.8	1.528
2900.0	1.487	34.889	309.1	1.279
2950.0	1.424	34.887	310.1	1.212
2962.0	1.425	34.887	310.3	1.212



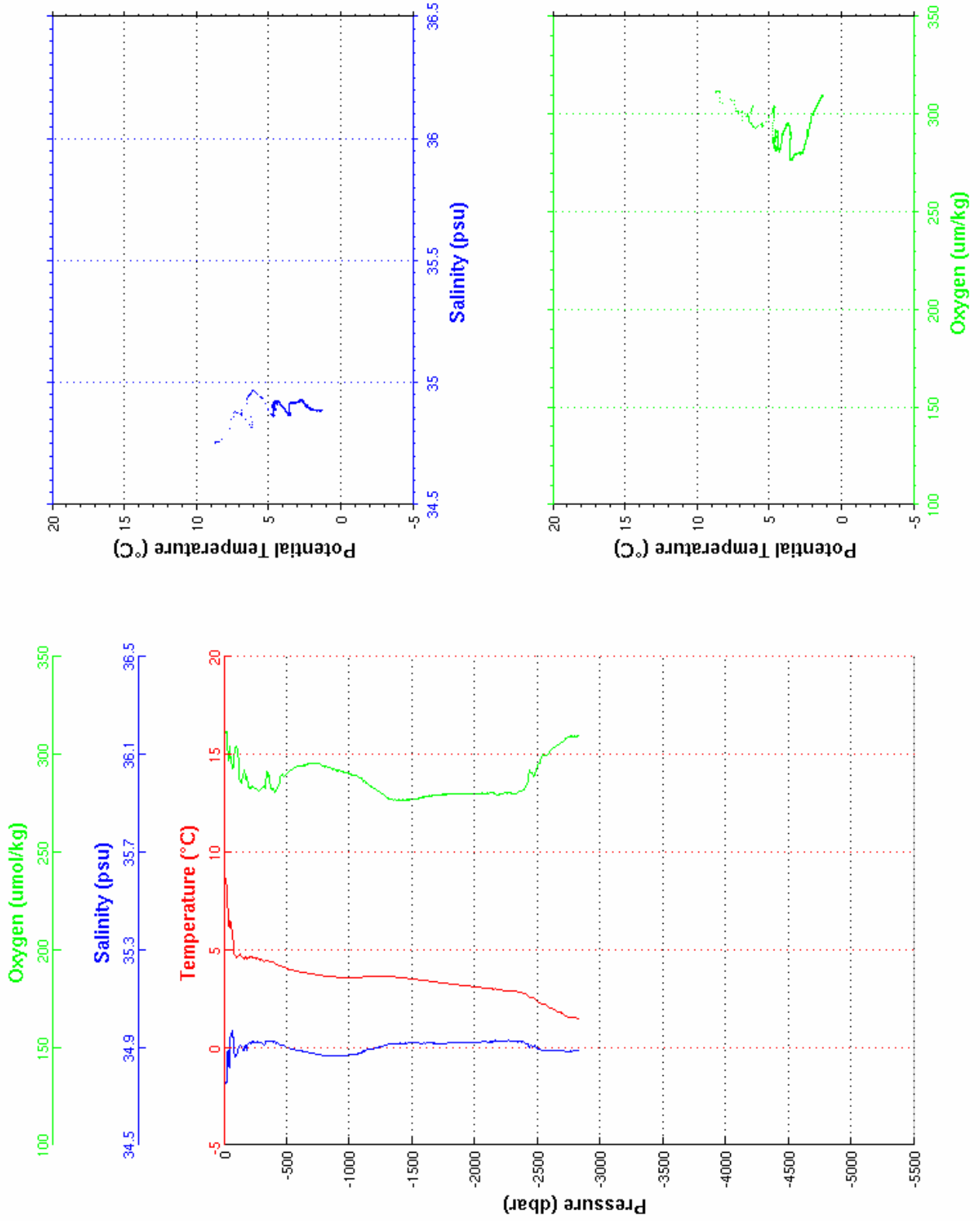
Cast : 81

```

-----
Cast      : 82           Cruise   : OVIDE 2010
Date     : 28/06/2010 Ship     : N/O THALASSA
Depth    : 2797 m      Organism : IFREMER
Position : N 59 41.11
          W 039 35.93
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.701	34.754	311.2	8.701
10.0	8.697	34.755	311.4	8.696
20.0	8.429	34.757	308.6	8.426
30.0	7.141	34.878	301.8	7.138
40.0	6.231	34.816	301.6	6.227
50.0	6.421	34.945	298.2	6.417
100.0	4.628	34.873	302.8	4.620
150.0	4.582	34.890	290.1	4.571
200.0	4.663	34.920	282.7	4.648
250.0	4.559	34.919	282.8	4.540
300.0	4.470	34.919	282.8	4.448
350.0	4.426	34.923	289.1	4.400
400.0	4.344	34.924	280.9	4.314
450.0	4.152	34.909	289.1	4.119
500.0	4.045	34.900	290.7	4.009
550.0	3.938	34.892	292.6	3.898
600.0	3.869	34.887	294.1	3.825
650.0	3.822	34.883	294.6	3.775
700.0	3.760	34.876	295.6	3.710
750.0	3.715	34.872	295.2	3.661
800.0	3.659	34.867	294.0	3.601
850.0	3.620	34.864	292.8	3.559
900.0	3.603	34.865	291.8	3.538
950.0	3.591	34.866	291.2	3.522
1000.0	3.590	34.869	290.2	3.517
1050.0	3.584	34.873	289.2	3.507
1100.0	3.605	34.880	287.5	3.524
1150.0	3.645	34.892	284.4	3.559
1200.0	3.642	34.898	282.5	3.552
1250.0	3.632	34.902	280.6	3.537
1300.0	3.652	34.912	278.0	3.554
1350.0	3.619	34.914	276.8	3.516
1400.0	3.585	34.916	276.7	3.479
1450.0	3.549	34.917	276.6	3.438
1500.0	3.507	34.918	277.0	3.393
1550.0	3.466	34.918	277.4	3.347
1600.0	3.417	34.916	278.3	3.294
1650.0	3.384	34.918	279.0	3.257
1700.0	3.340	34.917	279.1	3.210
1750.0	3.293	34.917	279.5	3.159
1800.0	3.247	34.916	279.8	3.110
1850.0	3.214	34.919	279.9	3.072
1900.0	3.169	34.919	280.0	3.023
1950.0	3.139	34.920	279.9	2.989
2000.0	3.107	34.921	280.2	2.953
2050.0	3.058	34.923	280.0	2.900
2100.0	3.022	34.923	280.2	2.860
2150.0	2.986	34.925	280.2	2.820
2200.0	2.953	34.926	279.7	2.783
2250.0	2.916	34.926	280.3	2.741
2300.0	2.867	34.924	280.7	2.689
2350.0	2.814	34.925	281.3	2.632
2400.0	2.741	34.920	283.0	2.556
2450.0	2.541	34.905	290.7	2.354
2500.0	2.376	34.897	294.3	2.187
2550.0	2.219	34.890	299.5	2.029
2600.0	2.041	34.888	301.9	1.850
2650.0	1.881	34.885	304.4	1.688
2700.0	1.697	34.886	307.0	1.503
2750.0	1.541	34.885	309.0	1.346
2800.0	1.510	34.885	309.4	1.311
2827.0	1.501	34.886	309.7	1.300



**Cast : 82**

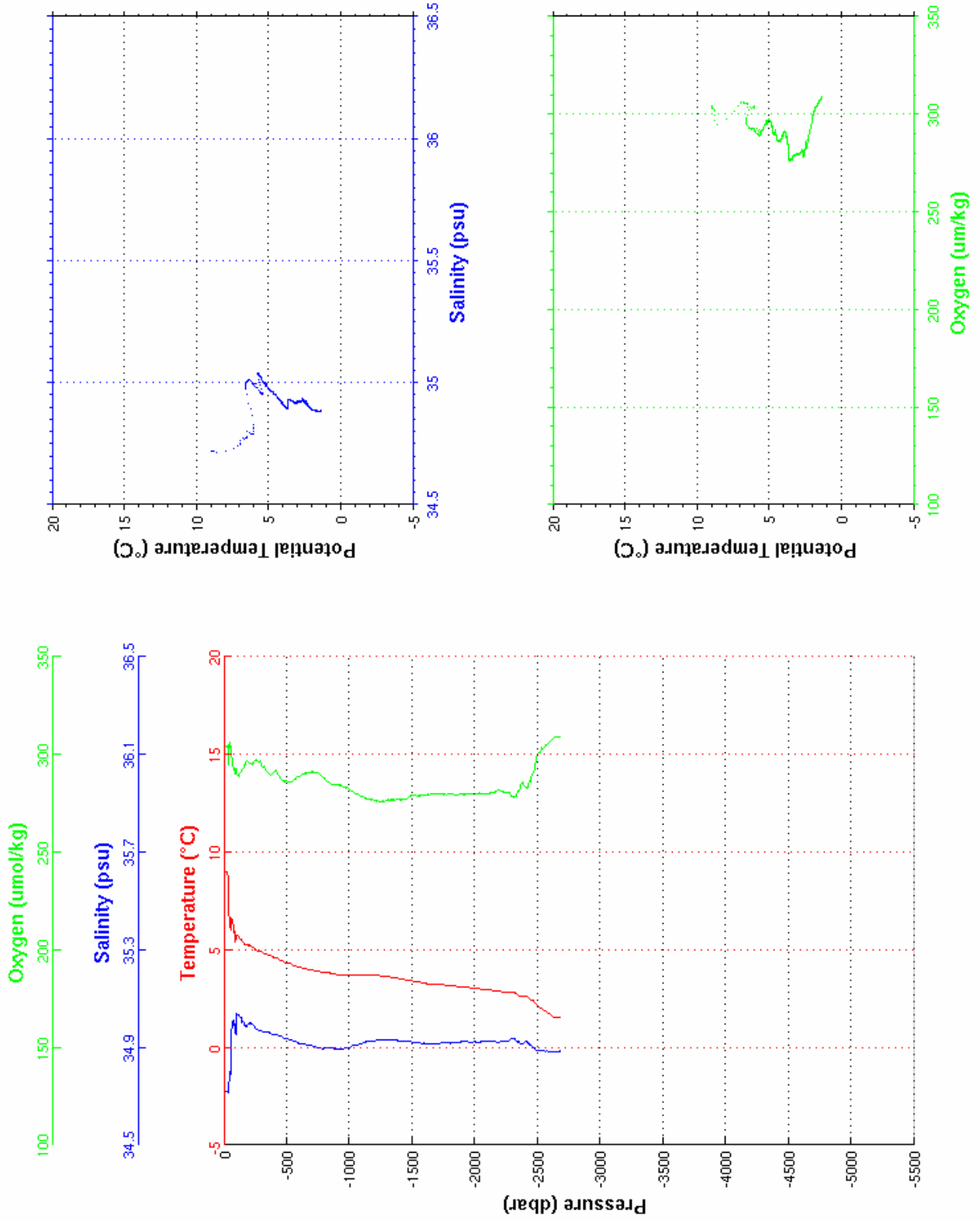
```

-----
Cast      : 83           Cruise   : OVIDE 2010
Date     : 28/06/2010  Ship    : N/O THALASSA
Depth    : 2660 m      Organism : IFREMER
Position : N 59 43.38
          W 040 15.16
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	9.002	34.720	303.8	9.002
10.0	8.998	34.720	304.0	8.997
20.0	9.006	34.721	304.2	9.004
30.0	8.821	34.719	302.1	8.818
40.0	6.960	34.761	305.8	6.956
50.0	6.109	34.789	303.4	6.105
100.0	5.745	35.034	289.8	5.736
150.0	5.387	35.006	293.4	5.375
200.0	5.235	34.999	295.7	5.219
250.0	5.027	34.976	297.2	5.007
300.0	4.896	34.970	293.7	4.872
350.0	4.748	34.962	290.7	4.721
400.0	4.613	34.953	291.9	4.582
450.0	4.483	34.945	287.3	4.448
500.0	4.342	34.935	285.9	4.305
550.0	4.216	34.926	286.7	4.175
600.0	4.109	34.918	288.9	4.064
650.0	4.037	34.912	290.3	3.989
700.0	3.963	34.906	291.1	3.911
750.0	3.887	34.899	290.4	3.832
800.0	3.835	34.896	287.7	3.777
850.0	3.805	34.898	285.0	3.743
900.0	3.725	34.891	284.8	3.659
950.0	3.708	34.895	283.7	3.638
1000.0	3.700	34.901	282.1	3.626
1050.0	3.708	34.909	280.0	3.630
1100.0	3.723	34.918	278.3	3.641
1150.0	3.725	34.925	276.9	3.639
1200.0	3.701	34.928	276.4	3.610
1250.0	3.663	34.929	275.9	3.569
1300.0	3.629	34.930	276.6	3.530
1350.0	3.578	34.930	276.8	3.476
1400.0	3.528	34.928	277.0	3.422
1450.0	3.461	34.924	277.4	3.351
1500.0	3.402	34.922	278.2	3.289
1550.0	3.362	34.922	278.7	3.245
1600.0	3.295	34.917	279.2	3.174
1650.0	3.237	34.915	279.7	3.112
1700.0	3.212	34.916	279.9	3.084
1750.0	3.198	34.920	279.7	3.066
1800.0	3.153	34.917	280.1	3.017
1850.0	3.131	34.921	279.4	2.990
1900.0	3.107	34.924	279.6	2.962
1950.0	3.066	34.922	279.9	2.917
2000.0	3.027	34.923	279.9	2.874
2050.0	2.990	34.923	280.1	2.833
2100.0	2.958	34.924	280.4	2.797
2150.0	2.913	34.923	280.7	2.748
2200.0	2.863	34.924	281.3	2.694
2250.0	2.825	34.926	280.7	2.652
2300.0	2.832	34.937	278.1	2.654
2350.0	2.707	34.925	281.8	2.527
2400.0	2.620	34.924	283.3	2.437
2450.0	2.434	34.905	288.3	2.249
2500.0	2.135	34.887	300.3	1.951
2550.0	1.915	34.885	303.8	1.731
2600.0	1.706	34.884	306.7	1.521
2650.0	1.546	34.884	309.0	1.360
2684.0	1.519	34.885	309.3	1.330





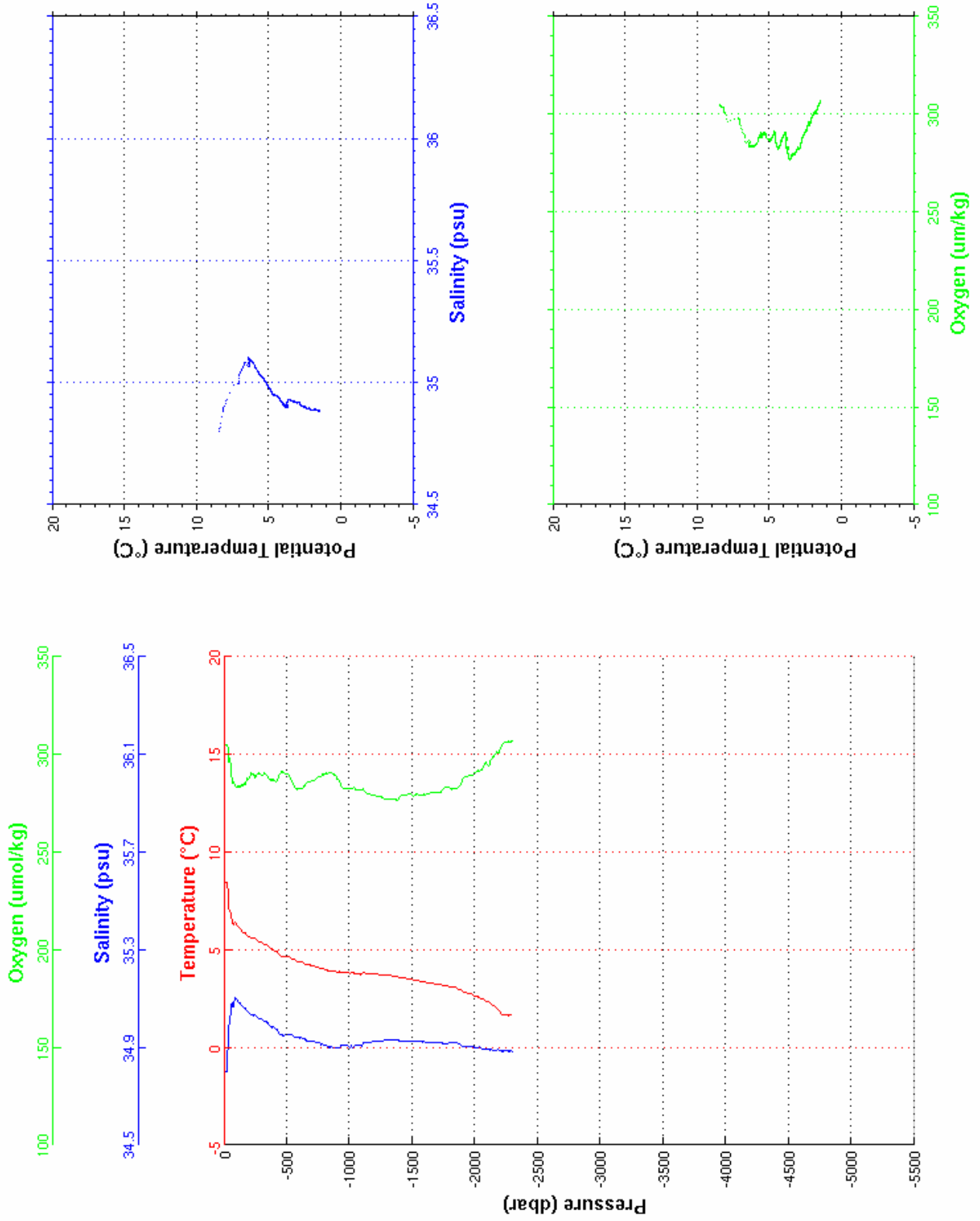
Cast : 83

```

-----
Cast       : 84           Cruise    : OVIDE 2010
Date      : 29/06/2010  Ship      : N/O THALASSA
Depth     : 2275 m      Organism  : IFREMER
Position  : N 59 45.46
           W 040 54.26
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.429	34.800	305.1	8.429
10.0	8.431	34.800	304.9	8.430
20.0	8.423	34.802	305.0	8.421
30.0	8.156	34.894	302.3	8.153
40.0	7.105	34.994	297.8	7.101
50.0	7.022	35.034	295.4	7.017
100.0	6.290	35.096	283.7	6.281
150.0	5.892	35.062	285.1	5.879
200.0	5.679	35.040	288.9	5.662
250.0	5.538	35.028	288.5	5.517
300.0	5.371	35.016	289.4	5.347
350.0	5.180	34.998	287.4	5.152
400.0	4.989	34.981	286.5	4.957
450.0	4.665	34.949	290.9	4.630
500.0	4.627	34.951	290.3	4.588
550.0	4.524	34.948	284.3	4.482
600.0	4.413	34.941	282.0	4.367
650.0	4.247	34.928	285.2	4.198
700.0	4.203	34.926	286.4	4.150
750.0	4.097	34.919	288.4	4.041
800.0	3.988	34.908	290.3	3.928
850.0	3.927	34.901	290.6	3.864
900.0	3.866	34.898	287.6	3.799
950.0	3.862	34.907	282.6	3.791
1000.0	3.783	34.900	283.3	3.708
1050.0	3.776	34.904	282.4	3.697
1100.0	3.753	34.905	282.3	3.670
1150.0	3.790	34.919	279.9	3.703
1200.0	3.764	34.924	279.0	3.673
1250.0	3.731	34.927	278.4	3.636
1300.0	3.709	34.930	277.3	3.610
1350.0	3.669	34.932	276.7	3.565
1400.0	3.572	34.927	278.7	3.466
1450.0	3.531	34.926	279.5	3.420
1500.0	3.483	34.926	279.0	3.369
1550.0	3.404	34.924	279.4	3.286
1600.0	3.350	34.922	279.5	3.229
1650.0	3.292	34.921	280.7	3.167
1700.0	3.243	34.922	280.7	3.114
1750.0	3.160	34.916	283.0	3.028
1800.0	3.107	34.920	282.6	2.971
1850.0	3.047	34.920	282.2	2.908
1900.0	2.855	34.904	287.3	2.714
1950.0	2.760	34.903	289.3	2.615
2000.0	2.654	34.901	290.6	2.507
2050.0	2.533	34.899	292.1	2.383
2100.0	2.354	34.898	294.7	2.203
2150.0	2.131	34.888	299.3	1.979
2200.0	1.790	34.886	303.2	1.639
2250.0	1.645	34.885	306.5	1.492
2296.0	1.641	34.885	306.8	1.484



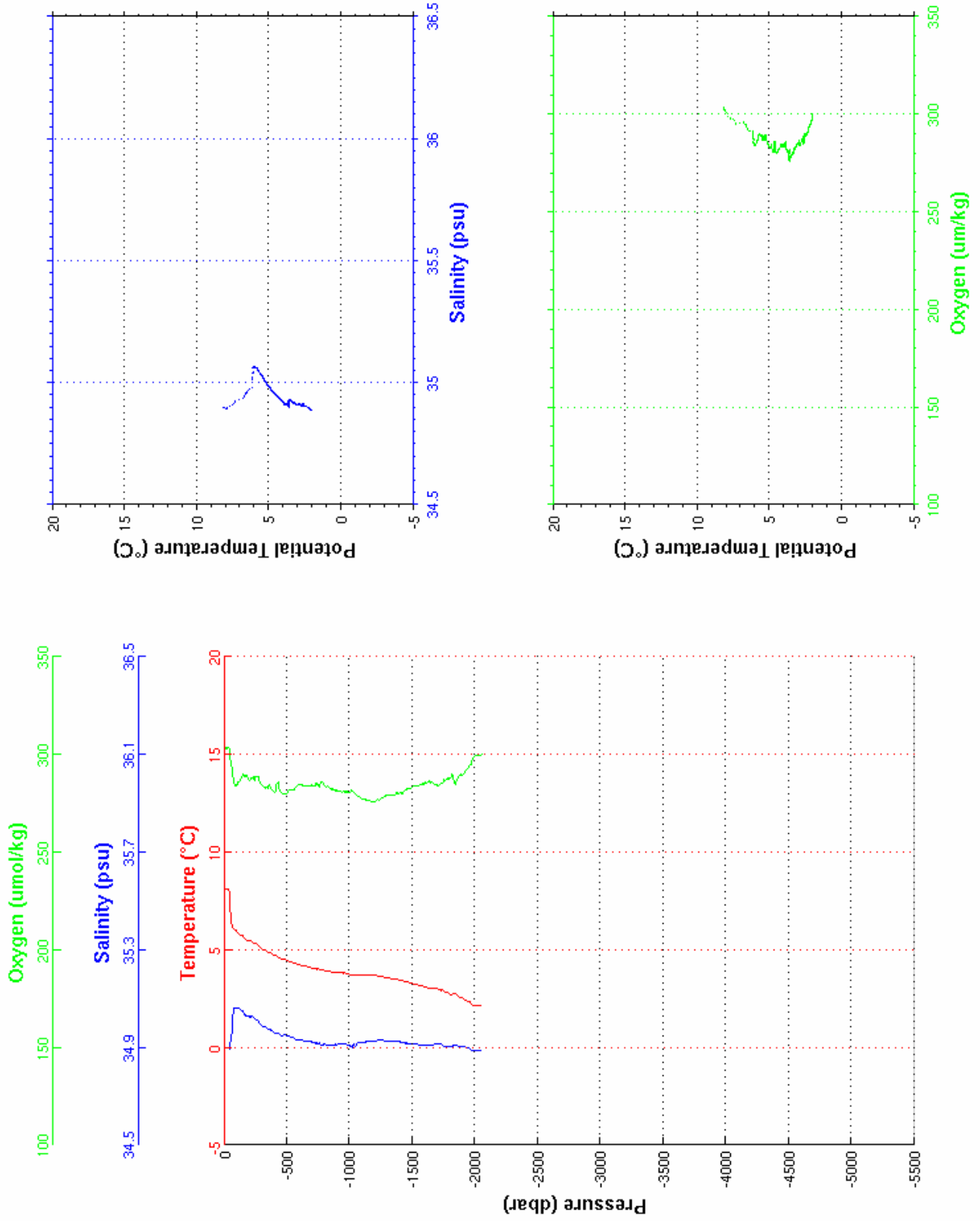
Cast : 84

```

-----
Cast       : 85           Cruise    : OVIDE 2010
Date       : 29/06/2010  Ship      : N/O THALASSA
Depth      : 2039 m      Organism   : IFREMER
Position   : N 59 46.39
            W 041 17.78
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.106	34.898	302.9	8.105
10.0	8.107	34.898	303.1	8.106
20.0	8.108	34.898	303.0	8.106
30.0	8.108	34.898	303.1	8.105
40.0	8.097	34.898	302.1	8.093
50.0	7.340	34.919	295.6	7.335
100.0	5.953	35.067	284.6	5.945
150.0	5.699	35.050	290.1	5.686
200.0	5.463	35.026	286.7	5.447
250.0	5.348	35.016	289.3	5.327
300.0	5.058	34.988	283.9	5.034
350.0	4.908	34.977	283.9	4.880
400.0	4.723	34.962	280.4	4.692
450.0	4.559	34.951	280.3	4.525
500.0	4.463	34.948	280.5	4.425
550.0	4.337	34.940	281.8	4.295
600.0	4.224	34.930	284.8	4.179
650.0	4.168	34.929	283.8	4.119
700.0	4.077	34.923	284.2	4.024
750.0	4.019	34.919	284.3	3.963
800.0	3.940	34.913	284.0	3.881
850.0	3.870	34.909	282.4	3.807
900.0	3.849	34.913	281.5	3.782
950.0	3.826	34.917	280.8	3.755
1000.0	3.736	34.909	280.3	3.662
1050.0	3.695	34.910	279.5	3.616
1100.0	3.709	34.921	277.4	3.627
1150.0	3.683	34.922	276.4	3.596
1200.0	3.678	34.926	275.8	3.587
1250.0	3.630	34.929	277.4	3.535
1300.0	3.572	34.926	279.1	3.474
1350.0	3.511	34.925	279.2	3.409
1400.0	3.451	34.922	280.4	3.345
1450.0	3.360	34.917	282.2	3.251
1500.0	3.272	34.914	283.4	3.161
1550.0	3.179	34.911	284.4	3.064
1600.0	3.116	34.910	285.0	2.997
1650.0	3.018	34.909	285.5	2.896
1700.0	2.998	34.914	284.4	2.873
1750.0	2.878	34.906	286.6	2.750
1800.0	2.784	34.905	288.0	2.652
1850.0	2.701	34.909	286.4	2.566
1900.0	2.511	34.903	290.0	2.375
1950.0	2.358	34.896	293.8	2.219
2000.0	2.135	34.887	299.3	1.996
2050.0	2.133	34.887	299.8	1.990
2053.0	2.133	34.887	300.1	1.989



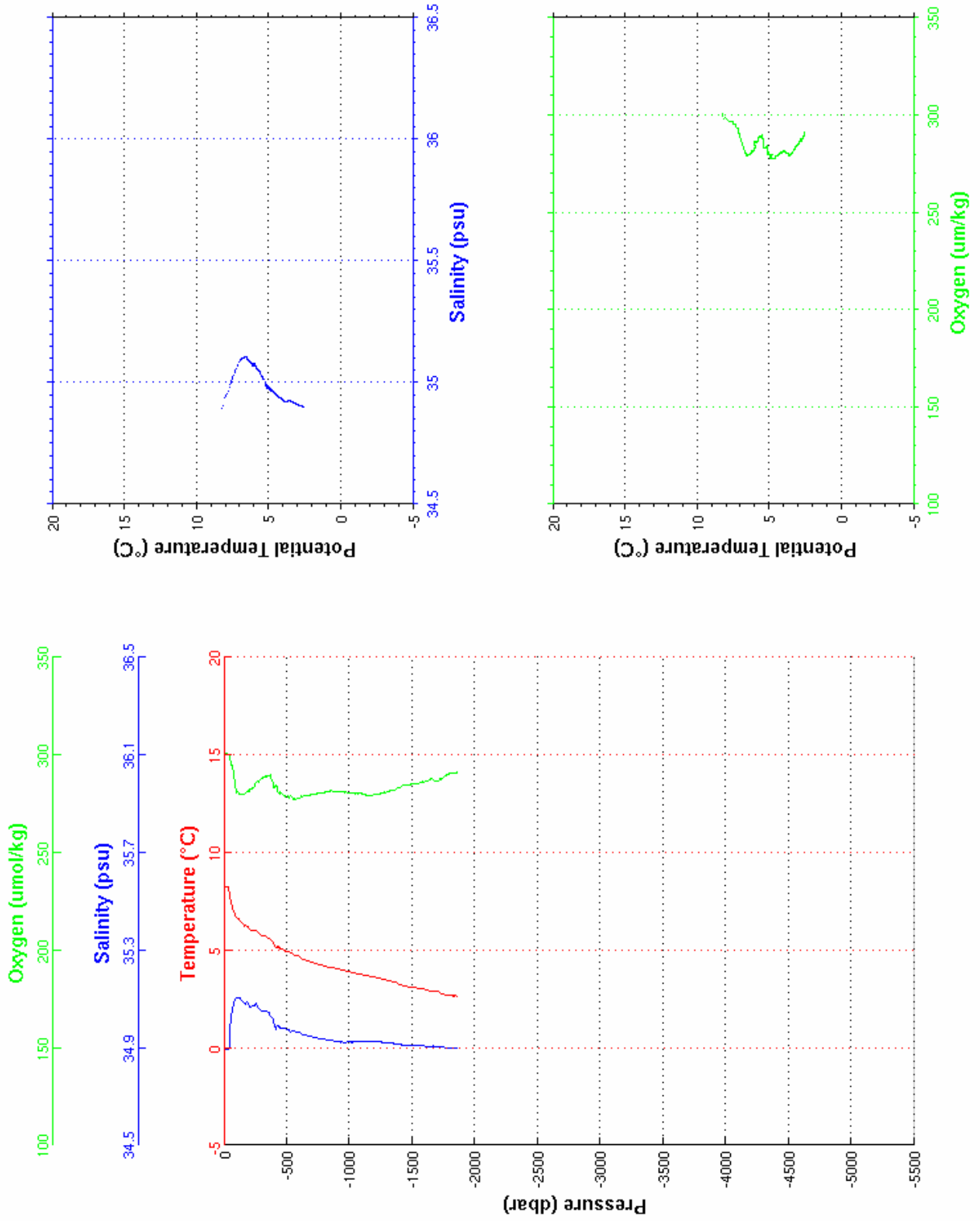
**Cast : 85**

```

-----
Cast       : 86           Cruise    : OVIDE 2010
Date       : 29/06/2010  Ship      : N/O THALASSA
Depth      : 1847 m      Organism  : IFREMER
Position   : N 59 47.68
            W 041 43.80
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.249	34.894	300.2	8.249
10.0	8.248	34.893	300.4	8.247
20.0	8.239	34.893	300.7	8.237
30.0	8.237	34.893	300.5	8.234
40.0	8.190	34.905	298.3	8.186
50.0	7.639	34.997	296.8	7.634
100.0	6.679	35.104	281.0	6.670
150.0	6.358	35.087	279.9	6.345
200.0	6.110	35.069	281.1	6.093
250.0	6.030	35.081	286.0	6.008
300.0	5.764	35.053	288.1	5.739
350.0	5.655	35.046	288.7	5.625
400.0	5.254	34.994	283.8	5.221
450.0	5.082	34.982	280.3	5.046
500.0	4.936	34.973	279.2	4.896
550.0	4.812	34.970	277.6	4.768
600.0	4.670	34.962	277.8	4.623
650.0	4.492	34.951	279.2	4.441
700.0	4.379	34.944	279.9	4.325
750.0	4.252	34.937	280.6	4.195
800.0	4.199	34.934	281.0	4.138
850.0	4.111	34.929	281.6	4.047
900.0	4.031	34.925	281.3	3.963
950.0	3.954	34.922	281.0	3.882
1000.0	3.885	34.923	280.6	3.810
1050.0	3.811	34.923	280.3	3.732
1100.0	3.745	34.924	280.2	3.662
1150.0	3.685	34.927	279.3	3.599
1200.0	3.616	34.926	279.9	3.526
1250.0	3.524	34.923	280.2	3.431
1300.0	3.460	34.921	280.9	3.364
1350.0	3.360	34.918	282.2	3.260
1400.0	3.256	34.914	283.4	3.153
1450.0	3.139	34.911	284.6	3.033
1500.0	3.087	34.910	285.0	2.978
1550.0	3.038	34.908	285.7	2.924
1600.0	2.984	34.906	286.6	2.867
1650.0	2.915	34.904	287.6	2.794
1700.0	2.881	34.907	286.9	2.757
1750.0	2.730	34.901	288.9	2.604
1800.0	2.678	34.900	290.4	2.548
1850.0	2.655	34.899	290.9	2.521
1856.0	2.655	34.899	291.1	2.521



**Cast : 86**

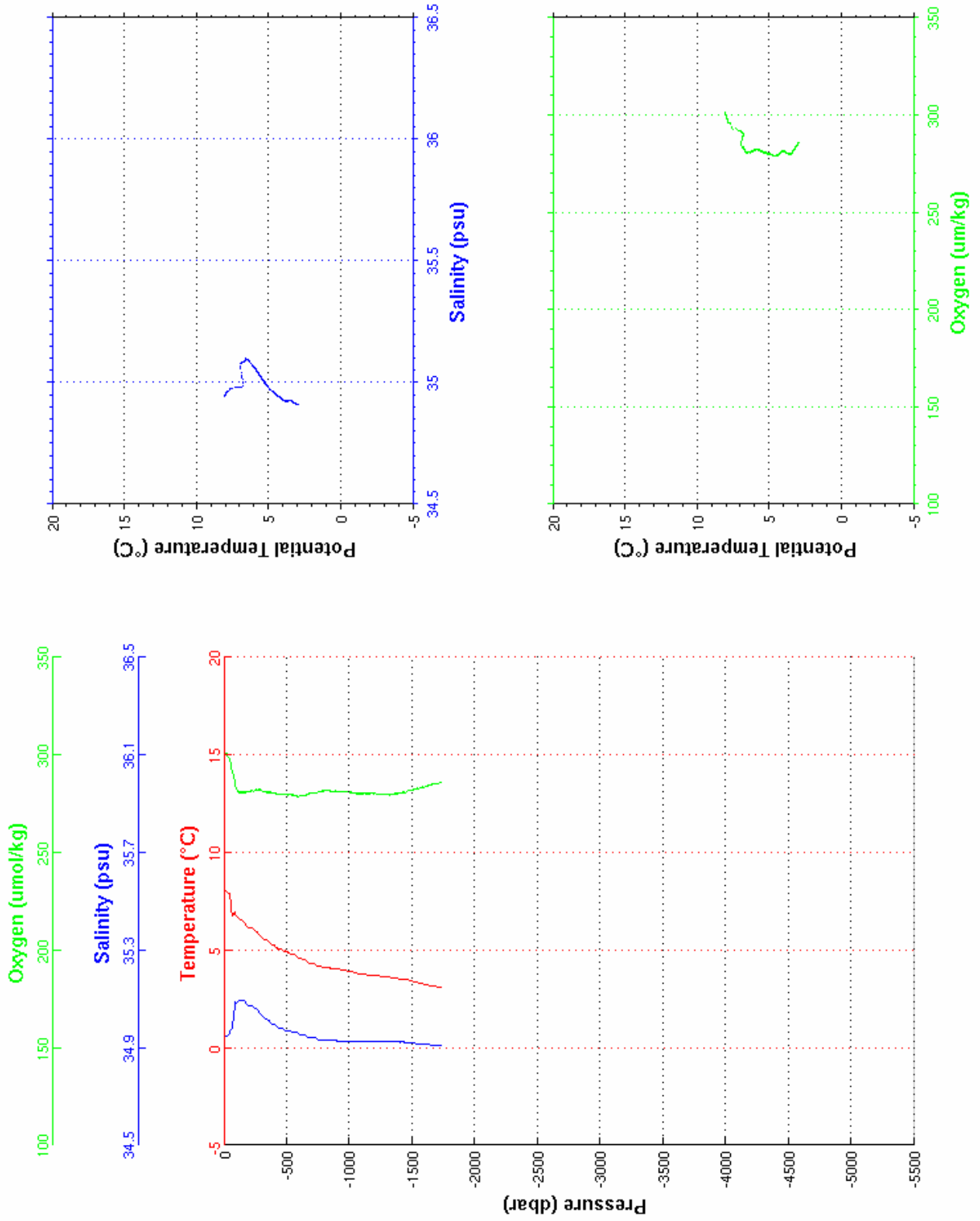
```

-----
Cast      : 87           Cruise   : OVIDE 2010
Date     : 29/06/2010  Ship     : N/O THALASSA
Depth    : 1725 m      Organism : IFREMER
Position : N 59 47.95
          W 042 0.17
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	8.030	34.946	300.8	8.030
10.0	8.025	34.946	301.0	8.024
20.0	8.025	34.946	300.6	8.023
30.0	7.966	34.953	299.0	7.963
40.0	7.941	34.957	298.1	7.937
50.0	7.684	34.972	295.7	7.679
100.0	6.688	35.086	282.3	6.679
150.0	6.504	35.097	280.8	6.491
200.0	6.141	35.072	281.6	6.124
250.0	5.999	35.062	282.1	5.977
300.0	5.619	35.028	281.5	5.594
350.0	5.440	35.012	280.8	5.411
400.0	5.255	34.996	280.4	5.223
450.0	5.047	34.980	280.0	5.011
500.0	4.894	34.970	279.7	4.854
550.0	4.787	34.965	279.5	4.743
600.0	4.577	34.956	279.1	4.530
650.0	4.474	34.950	279.4	4.424
700.0	4.302	34.941	280.4	4.248
750.0	4.180	34.934	281.2	4.123
800.0	4.118	34.930	281.7	4.057
850.0	4.079	34.929	281.5	4.014
900.0	4.039	34.928	281.5	3.971
950.0	3.961	34.924	281.2	3.889
1000.0	3.905	34.924	281.0	3.829
1050.0	3.827	34.924	280.4	3.748
1100.0	3.780	34.925	280.1	3.697
1150.0	3.733	34.924	280.3	3.646
1200.0	3.710	34.924	280.3	3.620
1250.0	3.663	34.925	280.1	3.569
1300.0	3.643	34.927	279.8	3.545
1350.0	3.573	34.926	279.9	3.471
1400.0	3.521	34.924	280.4	3.415
1450.0	3.505	34.923	281.0	3.395
1500.0	3.405	34.919	282.2	3.292
1550.0	3.312	34.916	282.9	3.195
1600.0	3.253	34.914	284.0	3.132
1650.0	3.168	34.911	284.8	3.044
1700.0	3.118	34.910	285.6	2.991
1730.0	3.094	34.910	285.9	2.965





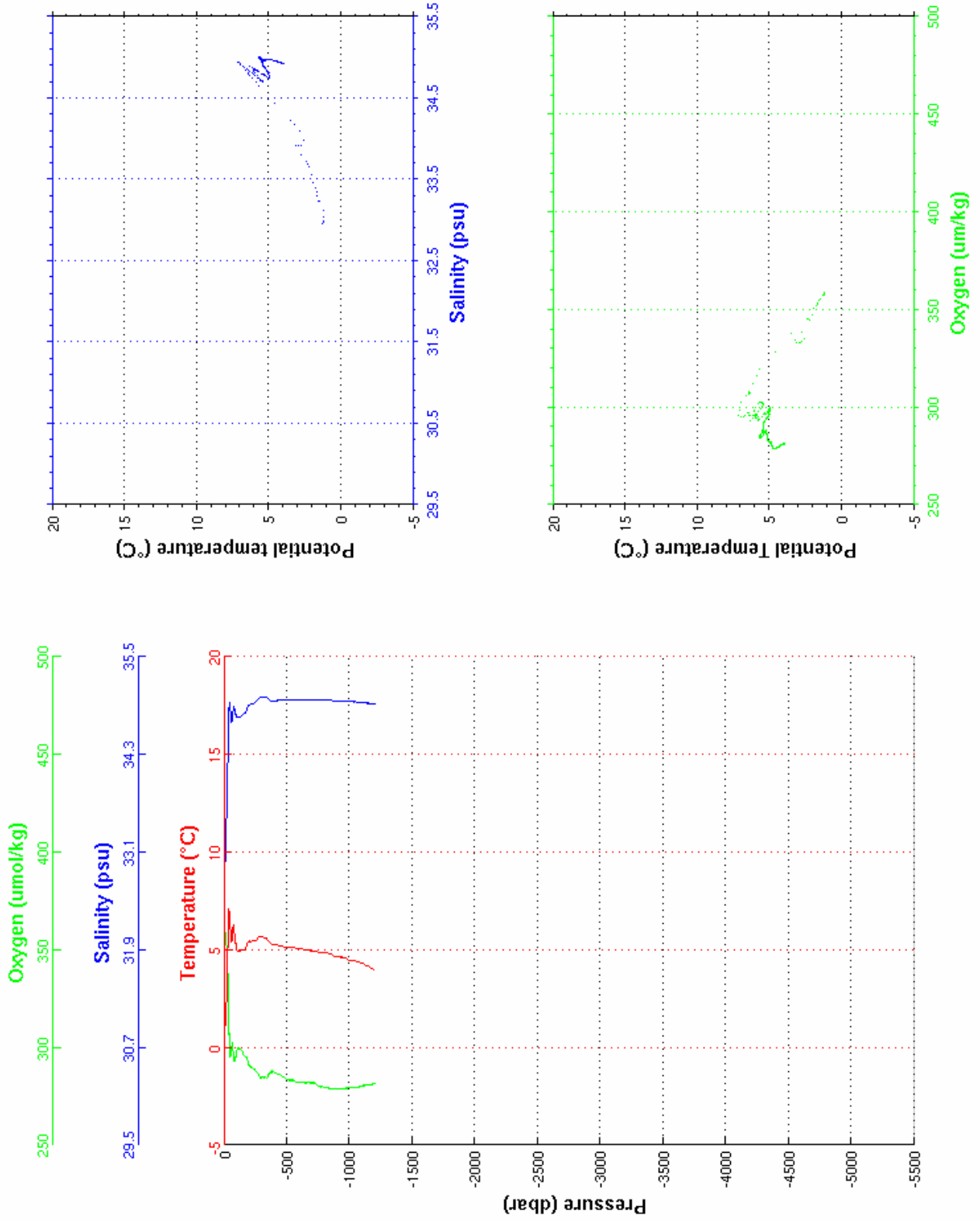
**Cast : 87**

```

-----
Cast       : 88           Cruise    : OVIDE 2010
Date       : 29/06/2010  Ship      : N/O THALASSA
Depth      : 1201 m      Organism  : IFREMER
Position   : N 59 48.53
            W 042 14.19
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	1.276	32.959	357.6	1.276
10.0	1.160	32.995	358.2	1.160
20.0	2.208	33.647	344.3	2.207
30.0	3.442	34.231	337.8	3.440
40.0	6.915	34.908	302.2	6.911
50.0	6.392	34.839	295.8	6.387
100.0	5.093	34.755	297.6	5.086
150.0	4.995	34.805	296.2	4.983
200.0	5.428	34.917	290.1	5.412
250.0	5.447	34.951	287.6	5.427
300.0	5.661	35.002	284.6	5.636
350.0	5.413	34.972	286.0	5.384
400.0	5.273	34.959	287.3	5.240
450.0	5.194	34.965	285.8	5.157
500.0	5.149	34.973	283.6	5.109
550.0	5.124	34.973	283.0	5.079
600.0	5.047	34.972	282.2	4.998
650.0	5.013	34.970	281.9	4.960
700.0	4.947	34.966	281.9	4.890
750.0	4.882	34.966	280.2	4.821
800.0	4.844	34.966	279.6	4.779
850.0	4.797	34.965	278.9	4.727
900.0	4.658	34.958	279.0	4.585
950.0	4.604	34.955	278.9	4.527
1000.0	4.472	34.948	279.5	4.392
1050.0	4.432	34.946	279.4	4.348
1100.0	4.303	34.939	280.4	4.215
1150.0	4.157	34.931	280.8	4.067
1200.0	4.008	34.924	281.3	3.914
1201.0	3.977	34.923	281.5	3.884



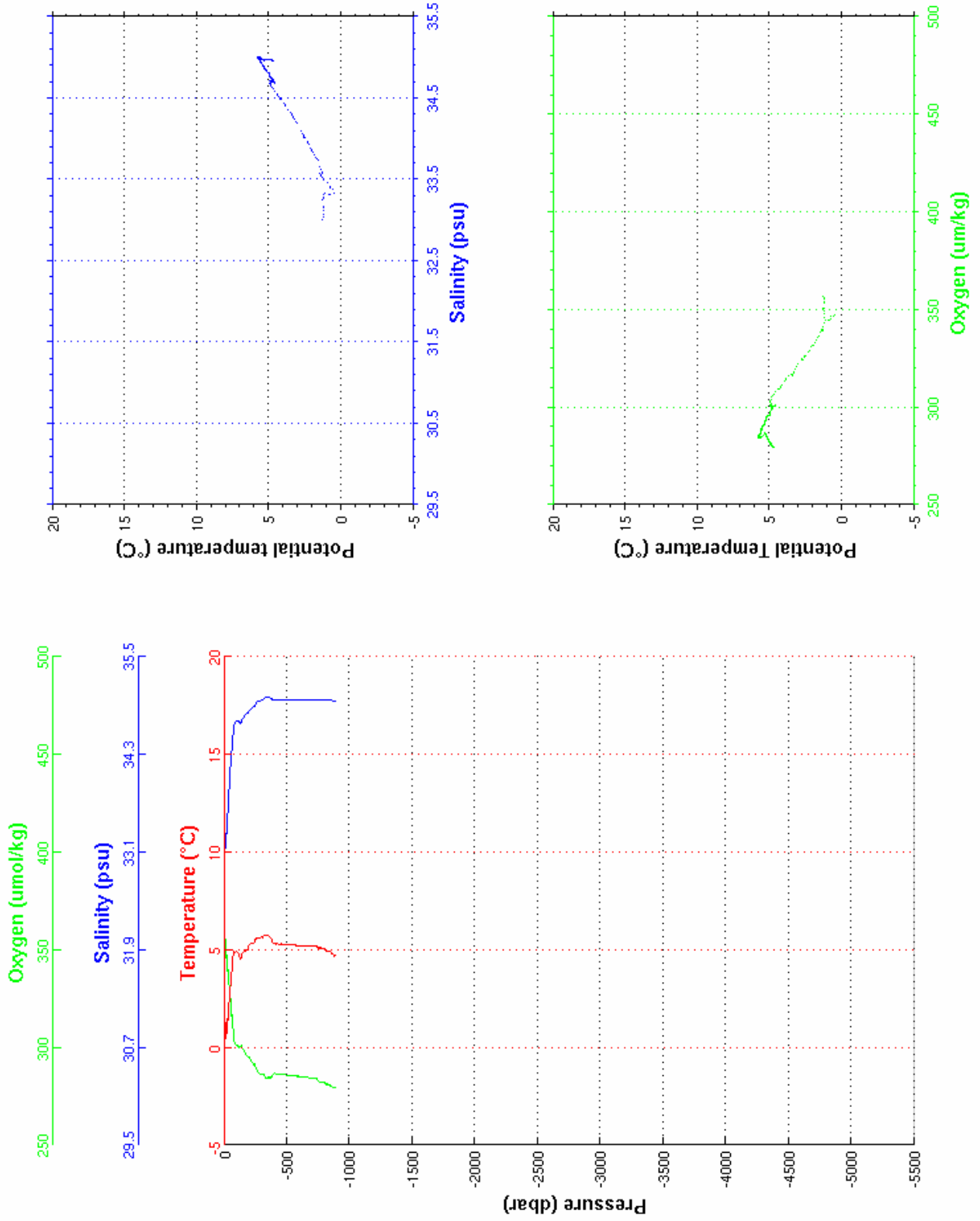
Cast : 88

```

-----
Cast      : 89           Cruise   : OVIDE 2010
Date      : 29/06/2010 Ship      : N/O THALASSA
Depth     : 0892 m     Organism : IFREMER
Position  : N 59 48.95
           W 042 16.47
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	1.277	32.997	357.0	1.277
10.0	1.200	33.171	353.3	1.199
20.0	0.577	33.375	346.7	0.576
30.0	1.265	33.593	339.9	1.264
40.0	2.072	33.882	330.9	2.070
50.0	2.748	34.097	324.7	2.745
100.0	4.900	34.713	300.4	4.893
150.0	4.847	34.754	298.4	4.836
200.0	5.247	34.854	294.2	5.231
250.0	5.516	34.925	289.6	5.496
300.0	5.644	34.967	286.3	5.619
350.0	5.744	35.003	284.4	5.714
400.0	5.316	34.960	286.8	5.283
450.0	5.298	34.965	286.1	5.261
500.0	5.242	34.964	285.7	5.201
550.0	5.245	34.964	285.5	5.200
600.0	5.219	34.966	285.2	5.169
650.0	5.204	34.967	284.8	5.150
700.0	5.193	34.967	284.2	5.135
750.0	5.096	34.969	282.4	5.034
800.0	5.034	34.967	282.1	4.968
850.0	4.871	34.965	280.4	4.801
887.0	4.703	34.958	279.4	4.631



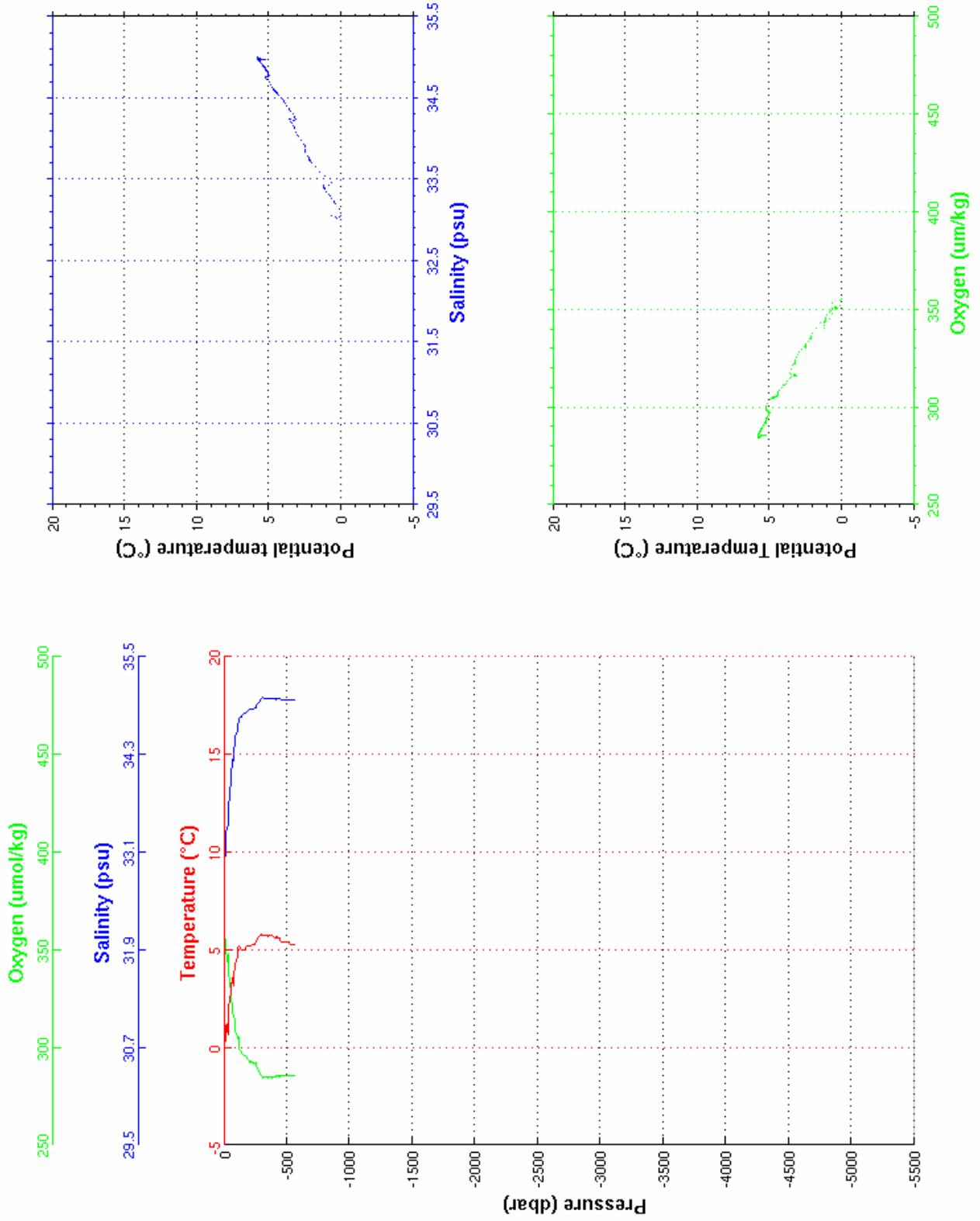
**Cast : 89**

```

-----
Cast       : 90           Cruise    : OVIDE 2010
Date       : 29/06/2010  Ship      : N/O THALASSA
Depth      : 0574 m      Organism  : IFREMER
Position   : N 59 49.09
            W 042 18.76
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	0.602	33.050	353.1	0.601
10.0	0.109	33.127	354.4	0.109
20.0	1.112	33.391	344.8	1.111
30.0	1.139	33.426	340.2	1.138
40.0	2.152	33.743	335.0	2.150
50.0	2.442	33.899	330.8	2.439
100.0	4.425	34.559	305.7	4.417
150.0	5.011	34.791	296.3	4.999
200.0	5.221	34.857	292.8	5.205
250.0	5.276	34.870	292.3	5.256
300.0	5.773	34.998	284.7	5.748
350.0	5.730	34.995	284.5	5.700
400.0	5.662	34.988	285.1	5.628
450.0	5.476	34.972	285.6	5.438
500.0	5.375	34.965	285.4	5.333
550.0	5.292	34.964	285.7	5.246
564.0	5.286	34.964	285.9	5.239



**Cast : 90**

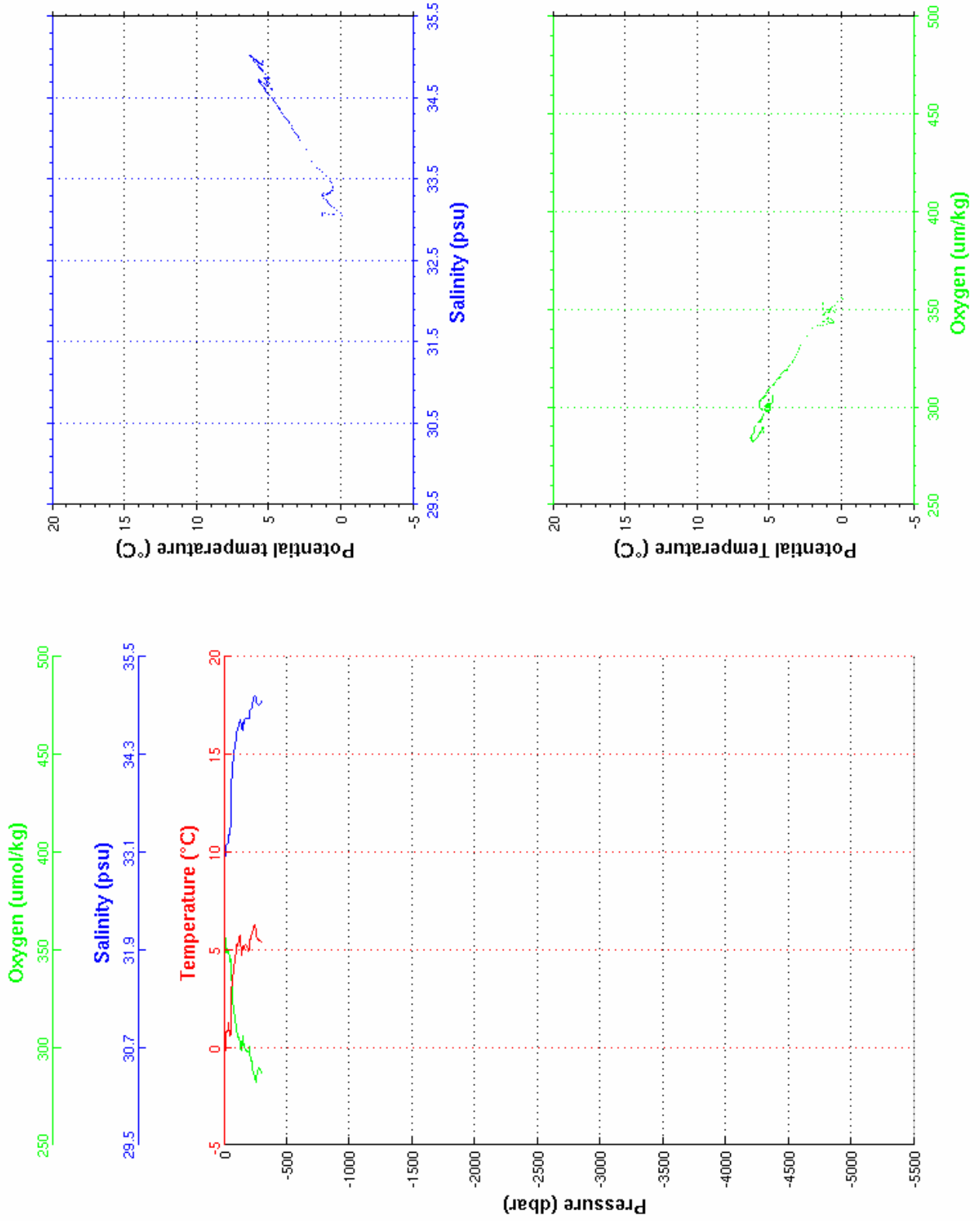
```

-----
Cast       : 91           Cruise    : OVIDE 2010
Date       : 29/06/2010  Ship      : N/O THALASSA
Depth      : 0309 m      Organism  : IFREMER
Position   : N 59 49.36
            W 042 23.93
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	1.243	33.059	352.9	1.243
10.0	0.549	33.072	349.2	0.549
20.0	0.828	33.199	349.3	0.827
30.0	0.891	33.219	348.4	0.890
40.0	1.202	33.322	343.7	1.200
50.0	0.583	33.399	342.8	0.581
100.0	5.089	34.560	308.4	5.081
150.0	5.172	34.690	301.5	5.160
200.0	4.964	34.748	299.8	4.949
250.0	6.186	35.010	282.7	6.164
296.0	5.375	34.951	286.7	5.351





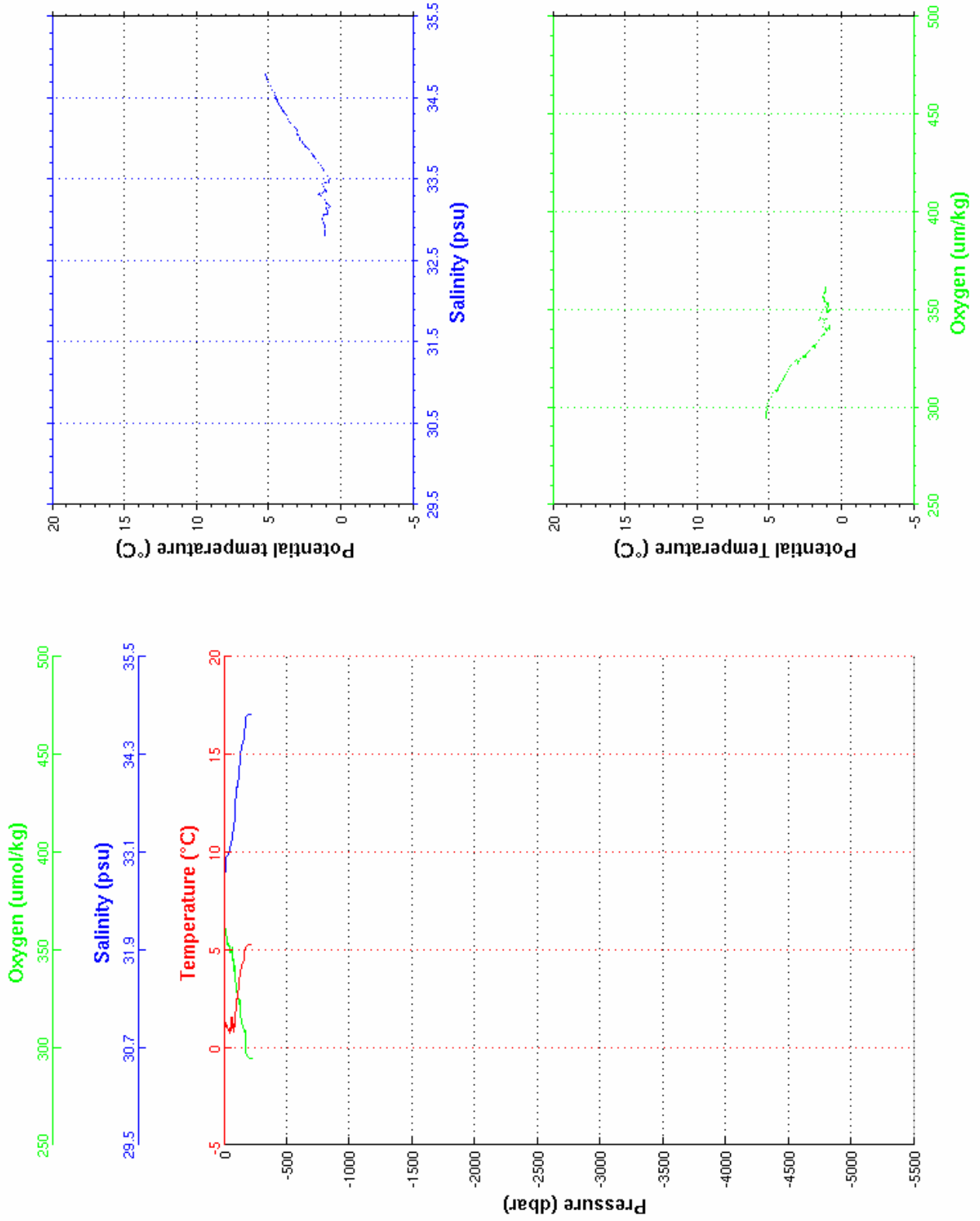
Cast : 91

```

-----
Cast      : 92           Cruise   : OVIDE 2010
Date     : 29/06/2010  Ship    : N/O THALASSA
Depth    : 0231 m      Organism : IFREMER
Position : N 59 49.86
          W 042 31.19
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	1.081	32.809	361.2	1.081
10.0	1.051	32.866	360.6	1.050
20.0	1.171	33.059	355.4	1.170
30.0	0.912	33.065	353.4	0.910
40.0	0.892	33.106	352.3	0.891
50.0	0.781	33.176	349.5	0.779
100.0	2.312	33.881	328.4	2.306
150.0	4.379	34.450	310.1	4.369
200.0	5.262	34.795	294.4	5.246
219.0	5.269	34.798	294.5	5.252



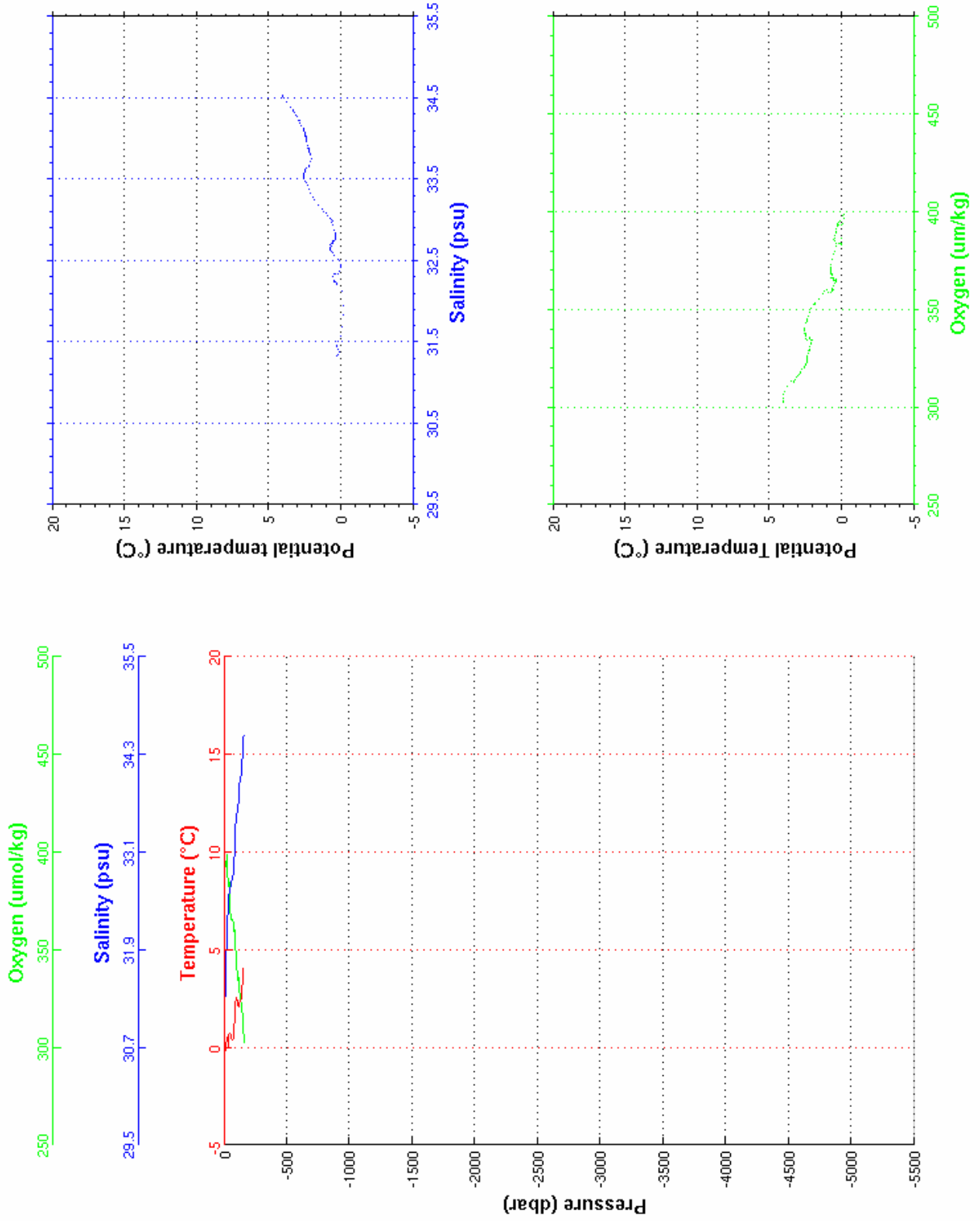
**Cast : 92**

```

-----
Cast       : 93           Cruise    : OVIDE 2010
Date       : 29/06/2010  Ship      : N/O THALASSA
Depth      : 0169 m      Organism  : IFREMER
Position   : N 59 54.77
             W 043 4.42
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	0.271	31.324	392.9	0.271
10.0	0.145	31.349	394.6	0.144
20.0	-0.107	32.120	398.1	-0.108
30.0	0.424	32.333	385.5	0.423
40.0	0.569	32.595	378.1	0.568
50.0	0.672	32.673	368.0	0.670
100.0	2.554	33.528	339.6	2.548
150.0	3.337	34.348	313.2	3.327
157.0	4.055	34.531	302.7	4.044



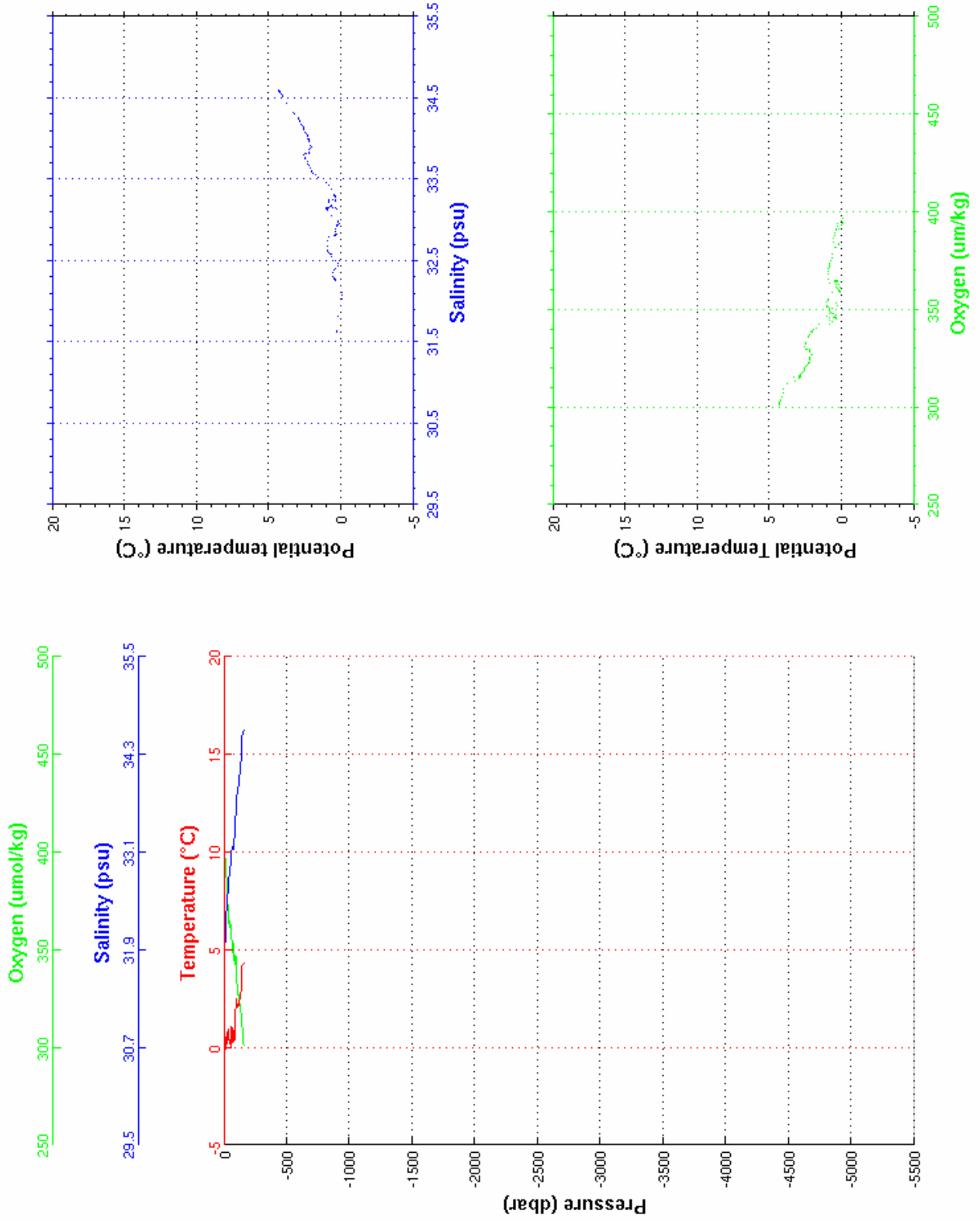
Cast : 93

```

-----
Cast      : 94           Cruise   : OVIDE 2010
Date     : 30/06/2010  Ship     : N/O THALASSA
Depth    : 0175 m      Organism : IFREMER
Position : N 59 54.27
          W 043 0.23
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	0.268	31.616	393.7	0.268
10.0	-0.128	32.069	394.4	-0.129
20.0	0.343	32.406	381.5	0.343
30.0	0.791	32.595	371.9	0.790
40.0	0.357	32.812	364.8	0.356
50.0	0.184	32.936	360.1	0.182
100.0	2.320	33.719	335.7	2.315
150.0	4.265	34.585	302.2	4.254
159.0	4.309	34.596	301.0	4.297



**Cast : 94**

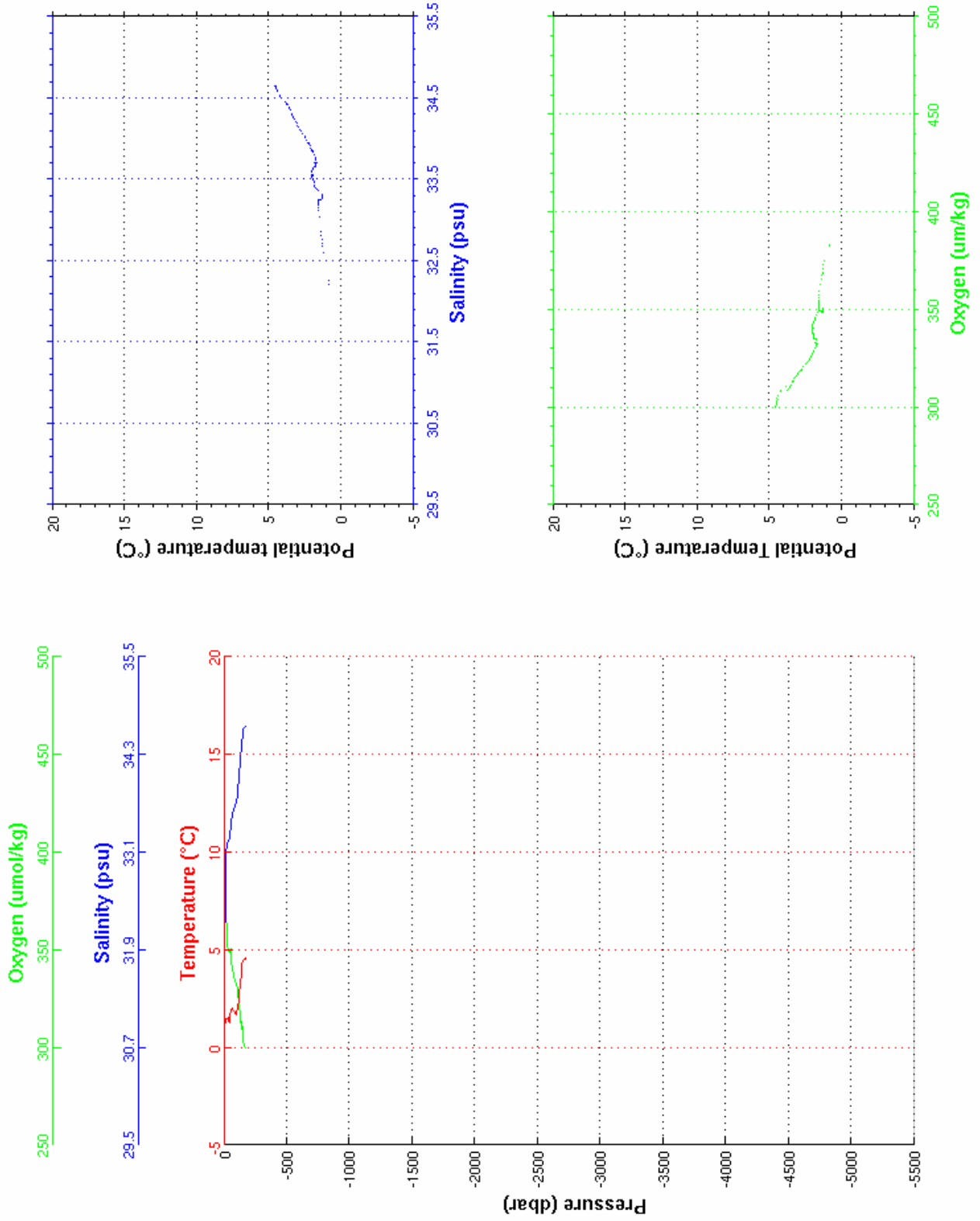
```

-----
Cast       : 95           Cruise    : OVIDE 2010
Date       : 30/06/2010  Ship      : N/O THALASSA
Depth      : 0186 m      Organism  : IFREMER
Position   : N 59 53.43
            W 042 54.36
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	0.776	32.203	383.2	0.776
10.0	1.163	32.594	375.0	1.162
20.0	1.562	33.182	355.7	1.561
30.0	1.542	33.227	350.1	1.541
40.0	1.310	33.267	348.9	1.309
50.0	1.517	33.357	349.4	1.515
100.0	1.701	33.730	331.9	1.696
150.0	4.422	34.599	303.9	4.411
172.0	4.562	34.650	NaN	4.550





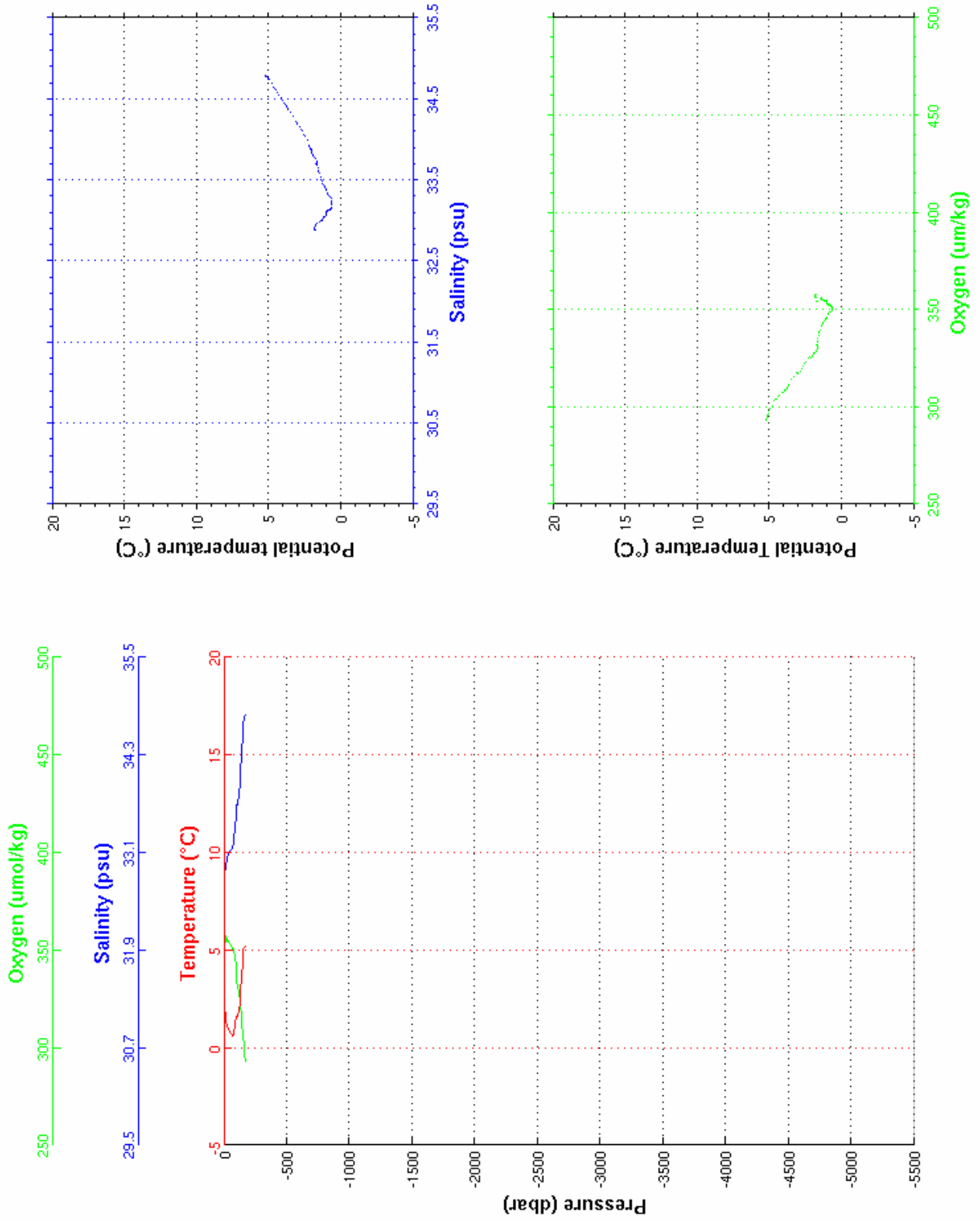
**Cast : 95**

```

-----
Cast      : 96           Cruise   : OVIDE 2010
Date     : 30/06/2010  Ship     : N/O THALASSA
Depth    : 0188 m      Organism : IFREMER
Position : N 59 52.59
          W 042 47.74
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	1.774	32.889	357.4	1.774
10.0	1.806	32.900	357.1	1.806
20.0	1.317	33.002	354.8	1.316
30.0	0.989	33.069	354.6	0.987
40.0	0.898	33.121	353.0	0.896
50.0	0.788	33.125	352.2	0.786
100.0	1.671	33.687	334.2	1.666
150.0	4.291	34.551	305.9	4.280
173.0	5.219	34.790	293.1	5.206



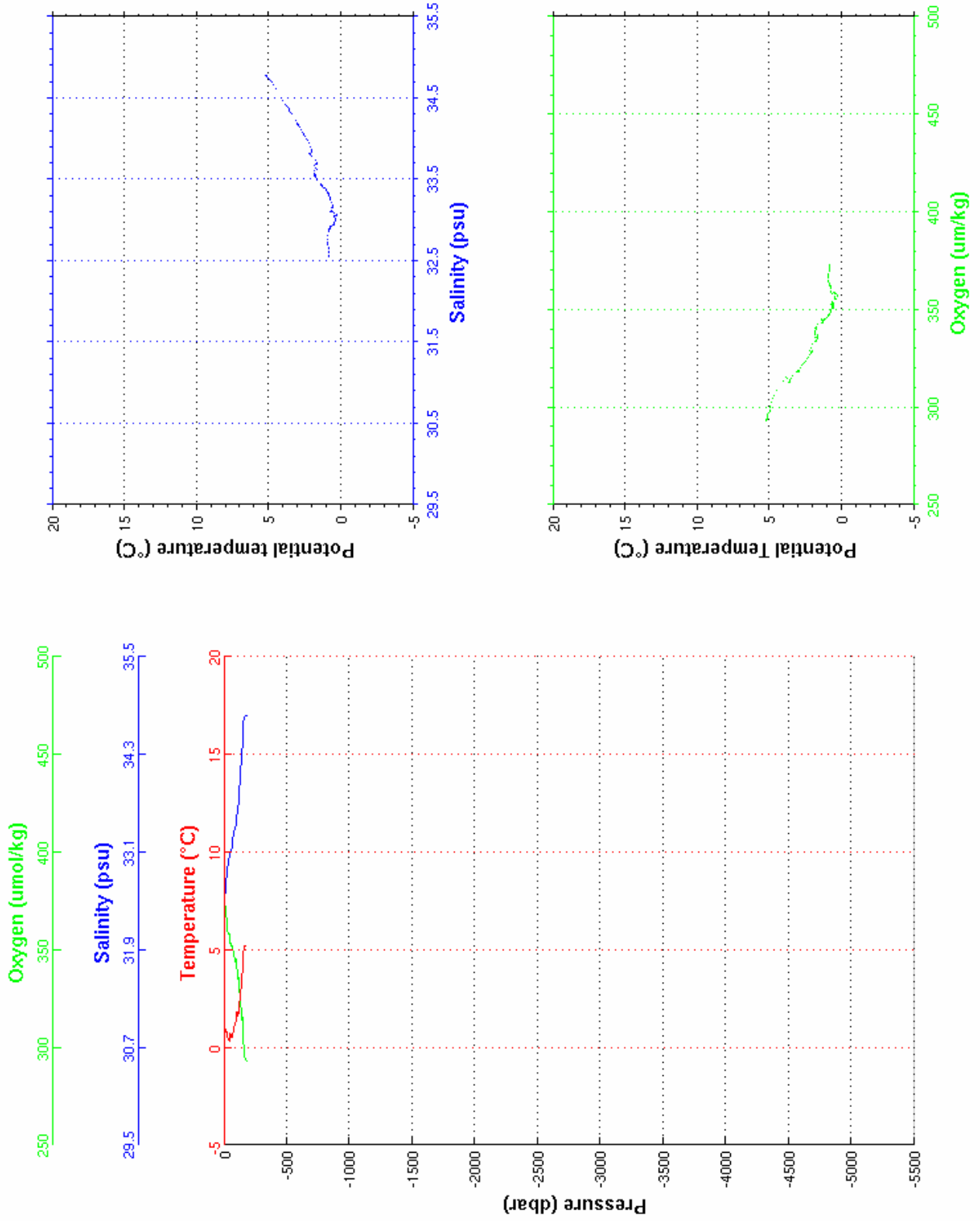
**Cast : 96**

```

-----
Cast       : 97           Cruise    : OVIDE 2010
Date       : 30/06/2010  Ship      : N/O THALASSA
Depth      : 0189 m      Organism  : IFREMER
Position   : N 59 51.61
            W 042 42.13
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	0.844	32.546	372.6	0.844
10.0	0.779	32.617	370.6	0.779
20.0	0.819	32.850	363.3	0.819
30.0	0.577	32.935	358.4	0.576
40.0	0.468	33.039	356.1	0.467
50.0	0.699	33.105	352.9	0.697
100.0	1.792	33.547	340.4	1.787
150.0	4.504	34.606	308.8	4.493
177.0	5.188	34.783	293.3	5.174



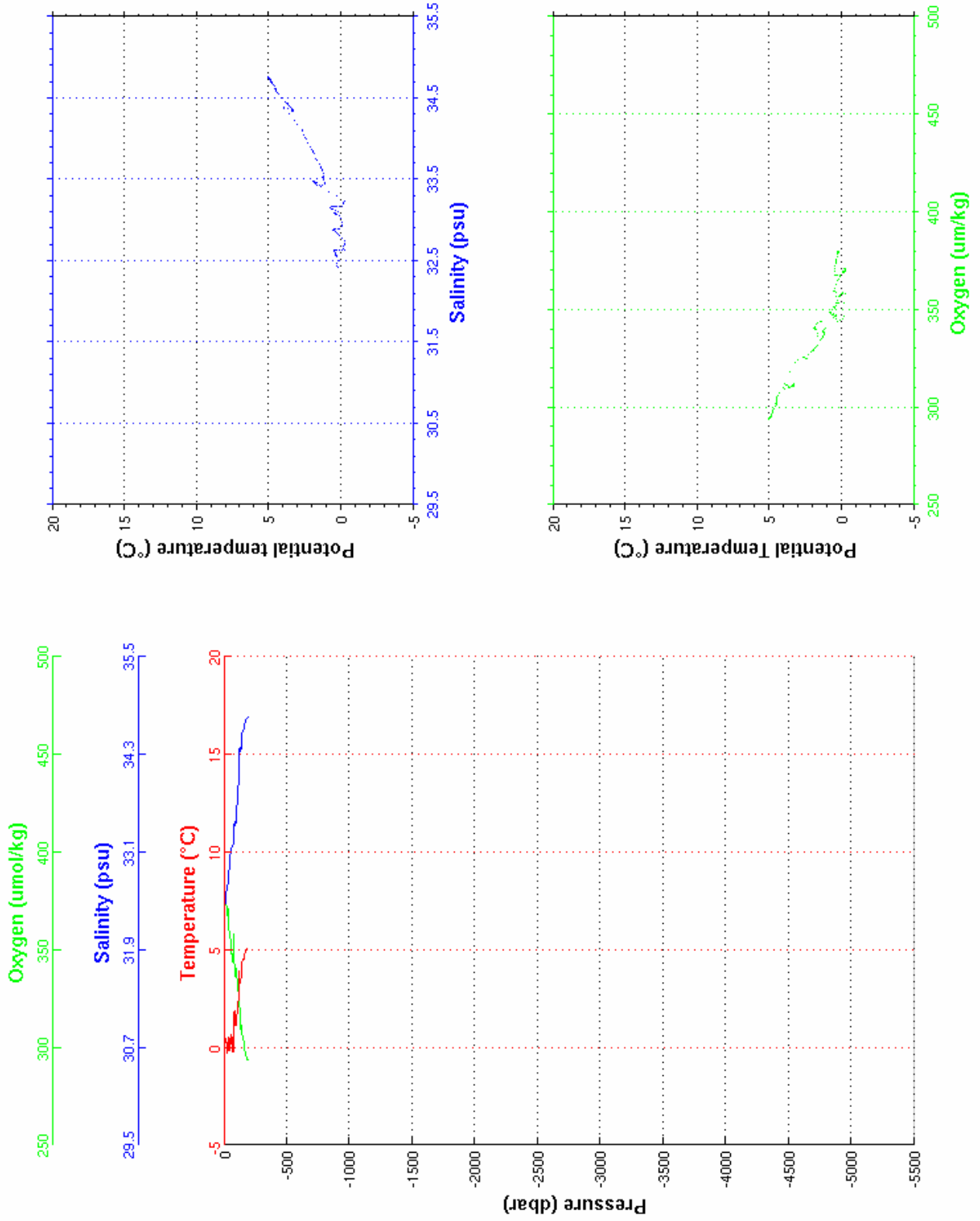
**Cast : 97**

```

-----
Cast       : 98           Cruise    : OVIDE 2010
Date       : 30/06/2010  Ship      : N/O THALASSA
Depth      : 0202 m      Organism  : IFREMER
Position   : N 59 50.78
            W 042 36.78
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	0.204	32.420	379.5	0.204
10.0	0.187	32.495	379.2	0.187
20.0	0.429	32.628	367.7	0.428
30.0	-0.308	32.714	370.3	-0.309
40.0	0.356	32.883	358.5	0.355
50.0	0.382	33.074	353.4	0.380
100.0	1.260	33.608	336.3	1.256
150.0	4.491	34.584	304.0	4.480
188.0	5.051	34.757	293.5	5.036



**Cast : 98**

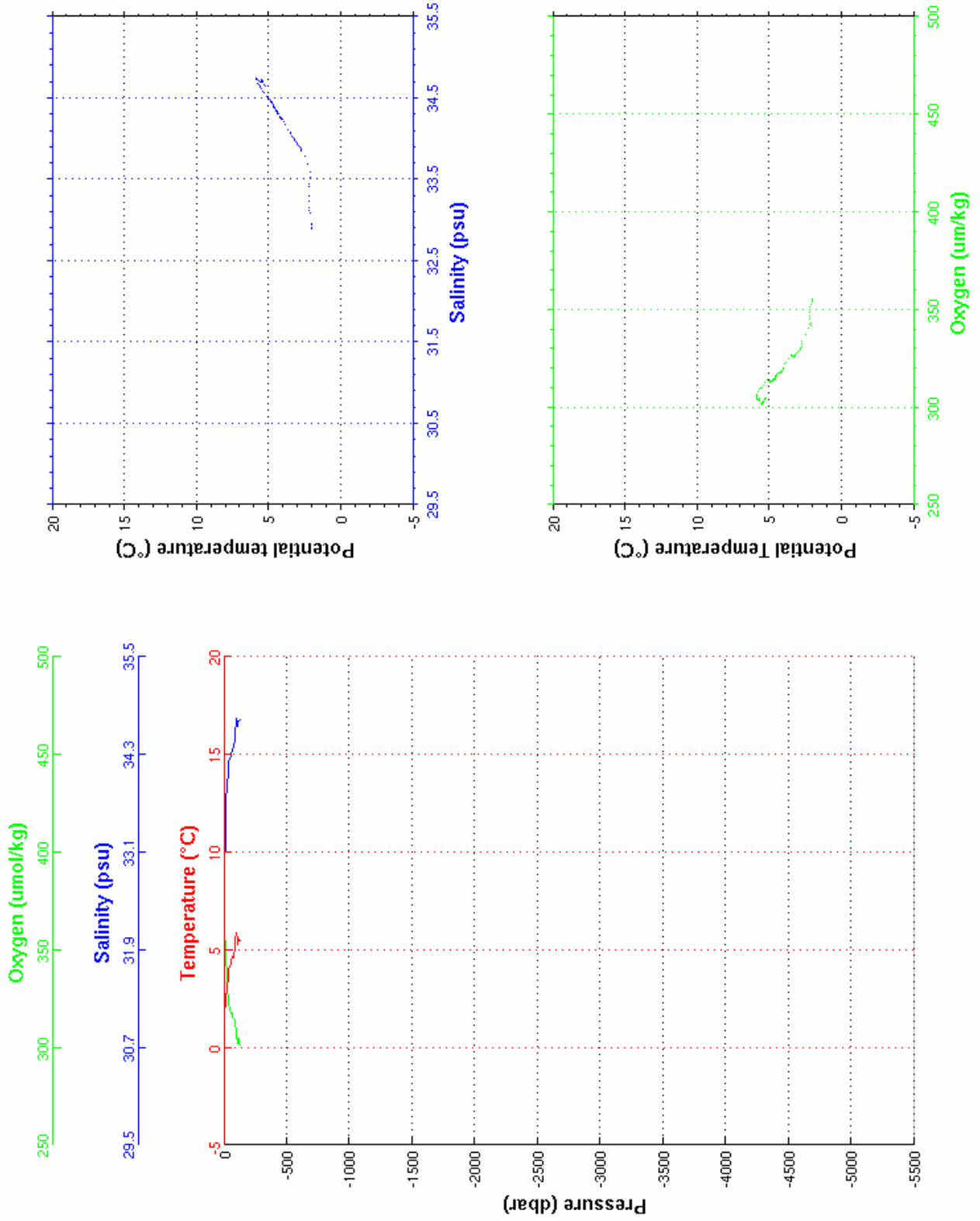
```

-----
Cast      : 99           Cruise   : OVIDE 2010
Date     : 30/06/2010  Ship    : N/O THALASSA
Depth    : 0141 m      Organism : IFREMER
Position : N 59 44.18
          W 045  7.08
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	2.026	32.933	354.3	2.026
10.0	2.185	33.155	350.2	2.185
20.0	2.729	33.860	332.3	2.728
30.0	3.271	34.006	325.8	3.269
40.0	4.048	34.235	319.3	4.046
50.0	4.192	34.266	317.8	4.189
100.0	5.833	34.736	303.8	5.825
128.0	5.498	34.726	301.2	5.487





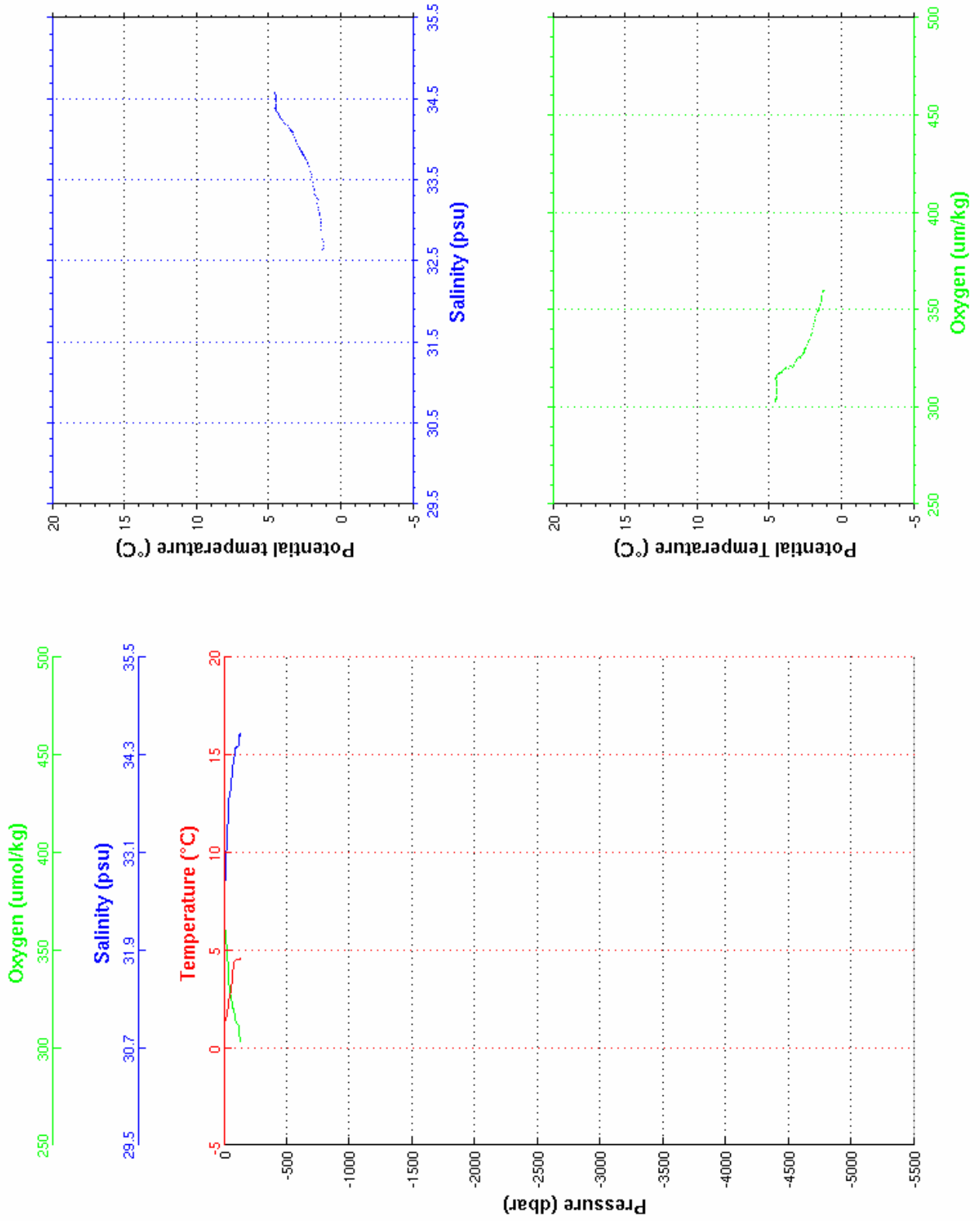
Cast : 99

```

-----
Cast      : 100           Cruise   : OVIDE 2010
Date     : 30/06/2010   Ship     : N/O THALASSA
Depth    : 0145 m       Organism : IFREMER
Position : N 59 40.57
          W 045 14.79
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	1.277	32.631	359.4	1.277
10.0	1.361	32.888	357.3	1.360
20.0	1.575	33.160	350.1	1.575
30.0	1.915	33.475	341.6	1.914
40.0	2.509	33.787	330.1	2.507
50.0	2.702	33.849	326.5	2.699
100.0	4.461	34.394	312.5	4.454
131.0	4.564	34.573	302.9	4.555



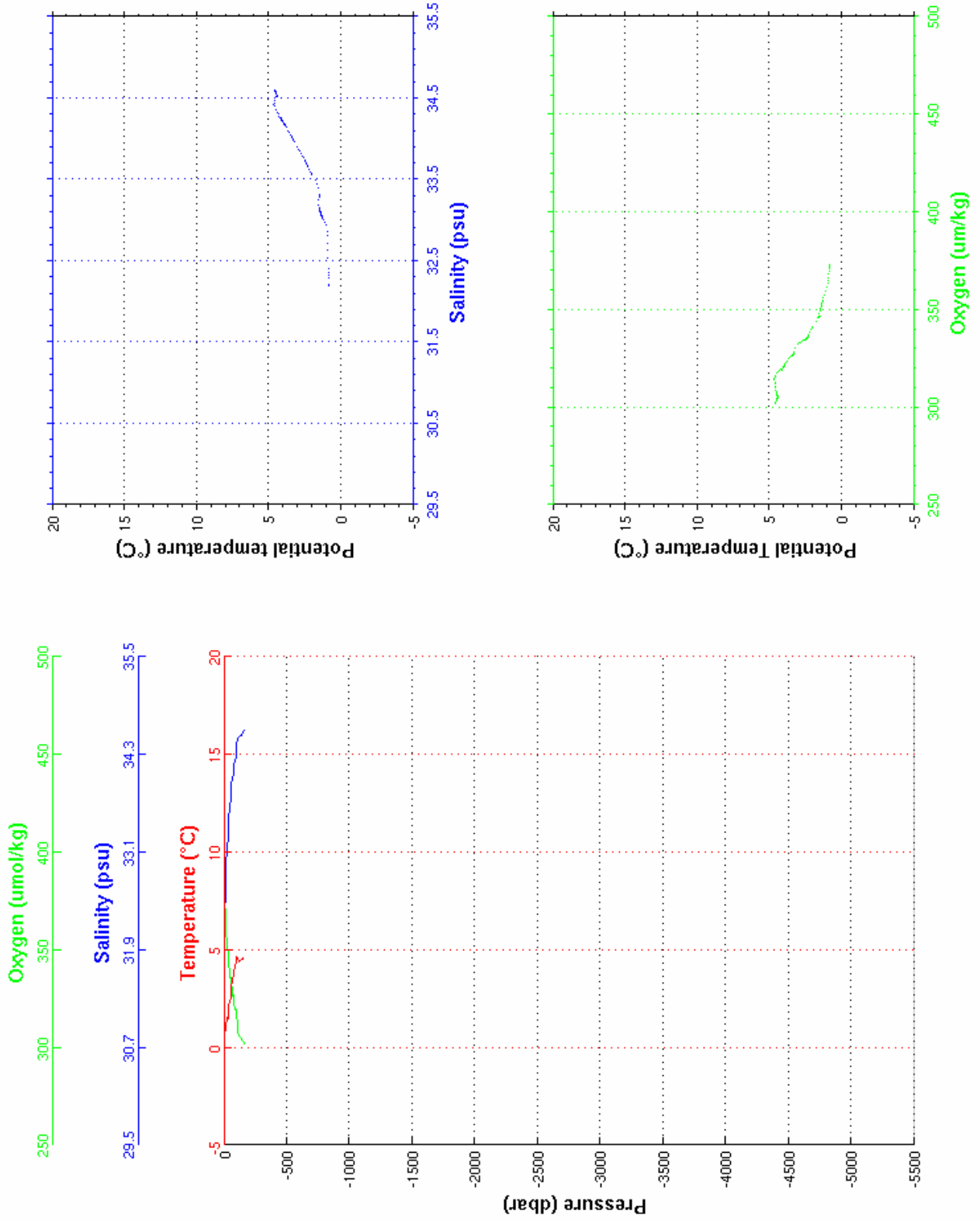
**Cast : 100**

```

-----
Cast       : 101           Cruise    : OVIDE 2010
Date       : 30/06/2010   Ship      : N/O THALASSA
Depth      : 0170 m       Organism   : IFREMER
Position   : N 59 37.40
            W 045 21.58
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	0.854	32.185	372.4	0.854
10.0	0.915	32.628	366.3	0.915
20.0	1.330	33.056	353.2	1.329
30.0	1.543	33.244	346.7	1.542
40.0	2.099	33.597	339.5	2.097
50.0	2.420	33.706	334.9	2.417
100.0	4.632	34.414	314.8	4.624
150.0	4.518	34.577	303.0	4.507
157.0	4.588	34.596	301.9	4.576



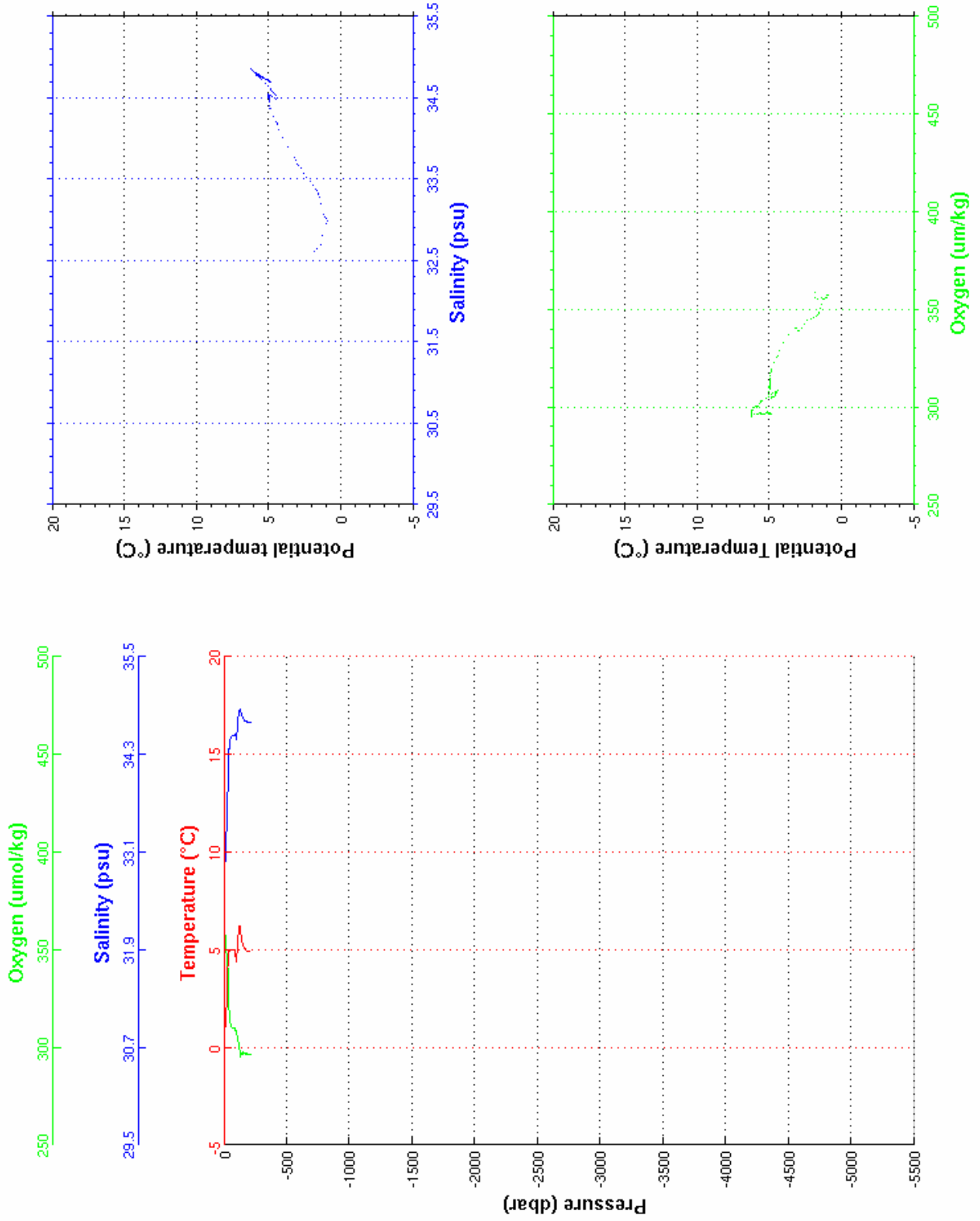
Cast : 101

```

-----
Cast       : 102           Cruise    : OVIDE 2010
Date       : 30/06/2010   Ship      : N/O THALASSA
Depth      : 0223 m       Organism   : IFREMER
Position   : N 59 33.80
            W 045 29.84
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	1.798	32.613	358.5	1.798
10.0	0.989	33.016	356.3	0.988
20.0	1.769	33.381	346.6	1.768
30.0	3.628	33.900	337.4	3.626
40.0	4.897	34.373	317.2	4.894
50.0	4.914	34.496	312.1	4.910
100.0	4.496	34.527	307.5	4.489
150.0	5.232	34.731	296.9	5.221
200.0	4.898	34.699	296.6	4.882
209.0	4.910	34.703	296.4	4.894



Cast : 102

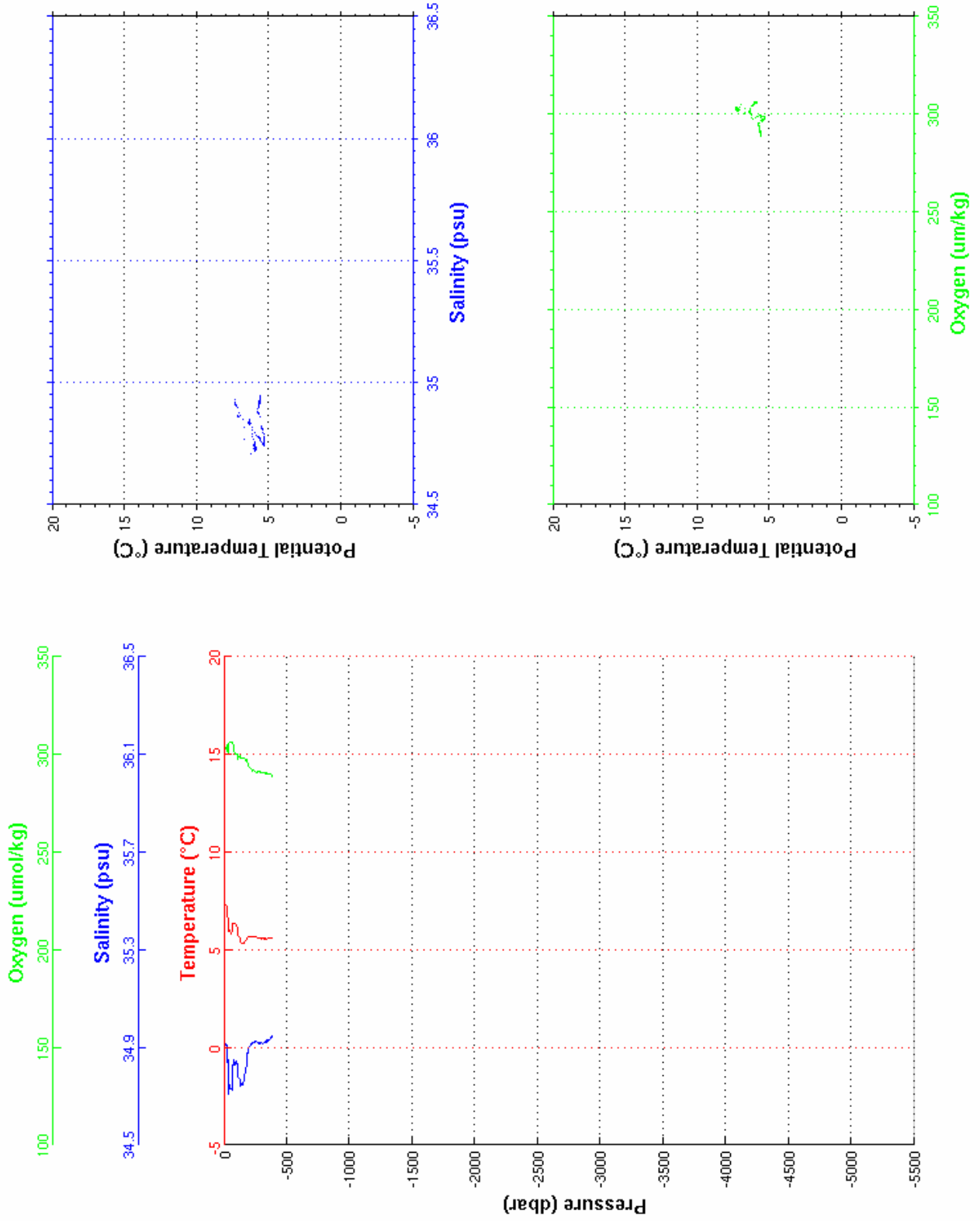
```

-----
Cast       : 103           Cruise    : OVIDE 2010
Date       : 30/06/2010   Ship      : N/O THALASSA
Depth      : 0398 m       Organism   : IFREMER
Position   : N 59 30.75
            W 045 35.77
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.270	34.911	303.4	7.270
10.0	7.296	34.917	303.1	7.295
20.0	7.240	34.905	303.5	7.238
30.0	6.683	34.815	302.6	6.680
40.0	5.948	34.734	306.6	5.944
50.0	5.904	34.731	305.8	5.900
100.0	6.304	34.843	299.9	6.295
150.0	5.311	34.755	298.5	5.299
200.0	5.699	34.905	293.0	5.683
250.0	5.657	34.923	291.2	5.636
300.0	5.569	34.917	290.9	5.544
350.0	5.575	34.928	290.1	5.546
385.0	5.617	34.945	289.1	5.584





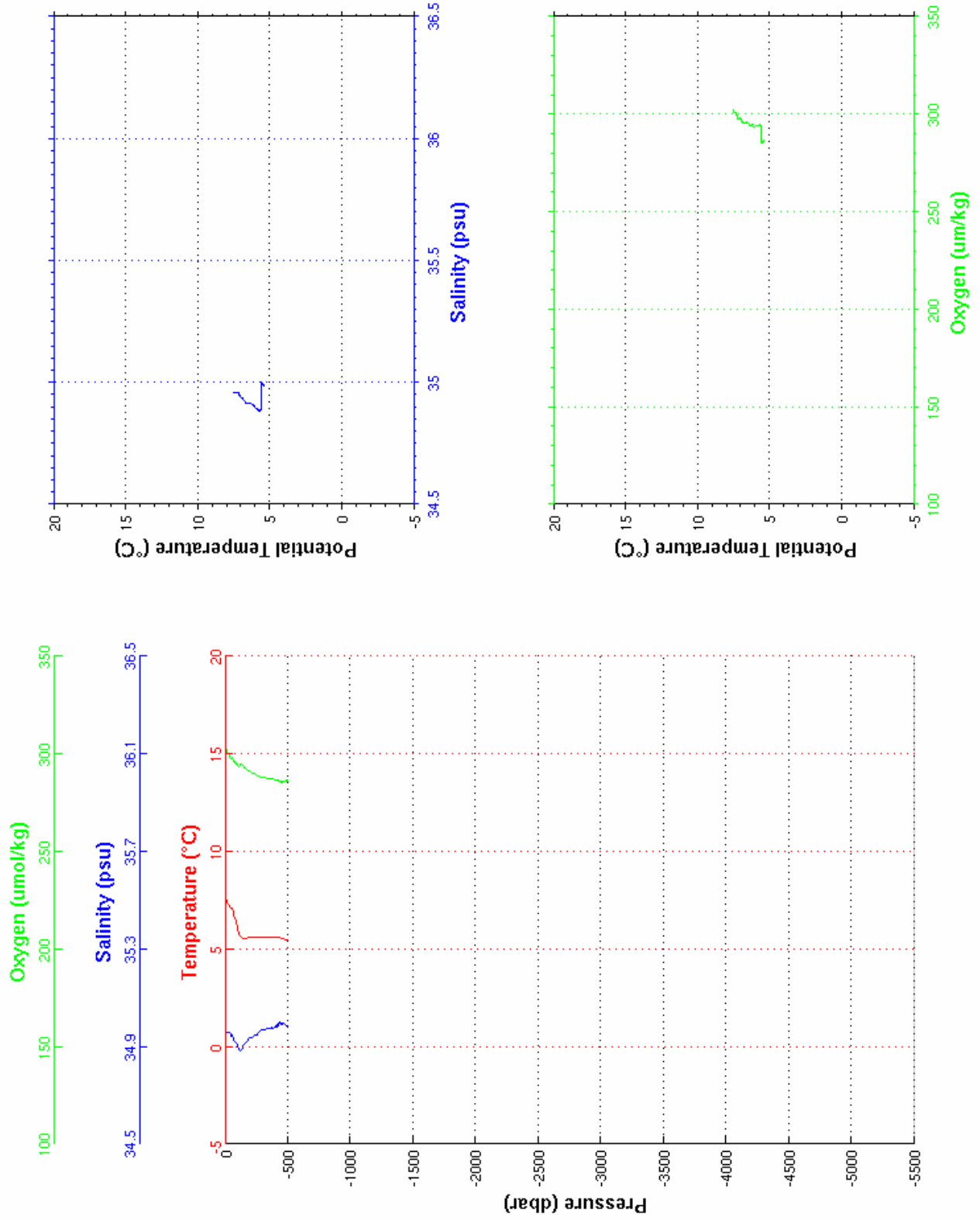
Cast : 103

```

-----
Cast       : 104           Cruise    : OVIDE 2010
Date       : 30/06/2010   Ship      : N/O THALASSA
Depth      : 0507 m       Organism  : IFREMER
Position   : N 59 30.12
            W 045 37.23
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.497	34.957	301.3	7.497
10.0	7.467	34.958	302.1	7.466
20.0	7.299	34.959	300.1	7.297
30.0	7.225	34.959	298.5	7.222
40.0	7.167	34.955	297.4	7.163
50.0	7.073	34.945	297.9	7.068
100.0	6.147	34.906	293.6	6.138
150.0	5.547	34.909	293.1	5.534
200.0	5.589	34.935	290.6	5.572
250.0	5.596	34.948	289.2	5.575
300.0	5.619	34.969	287.9	5.594
350.0	5.626	34.975	287.3	5.596
400.0	5.601	34.980	286.9	5.567
450.0	5.535	34.994	285.6	5.497
497.0	5.451	34.987	286.3	5.410



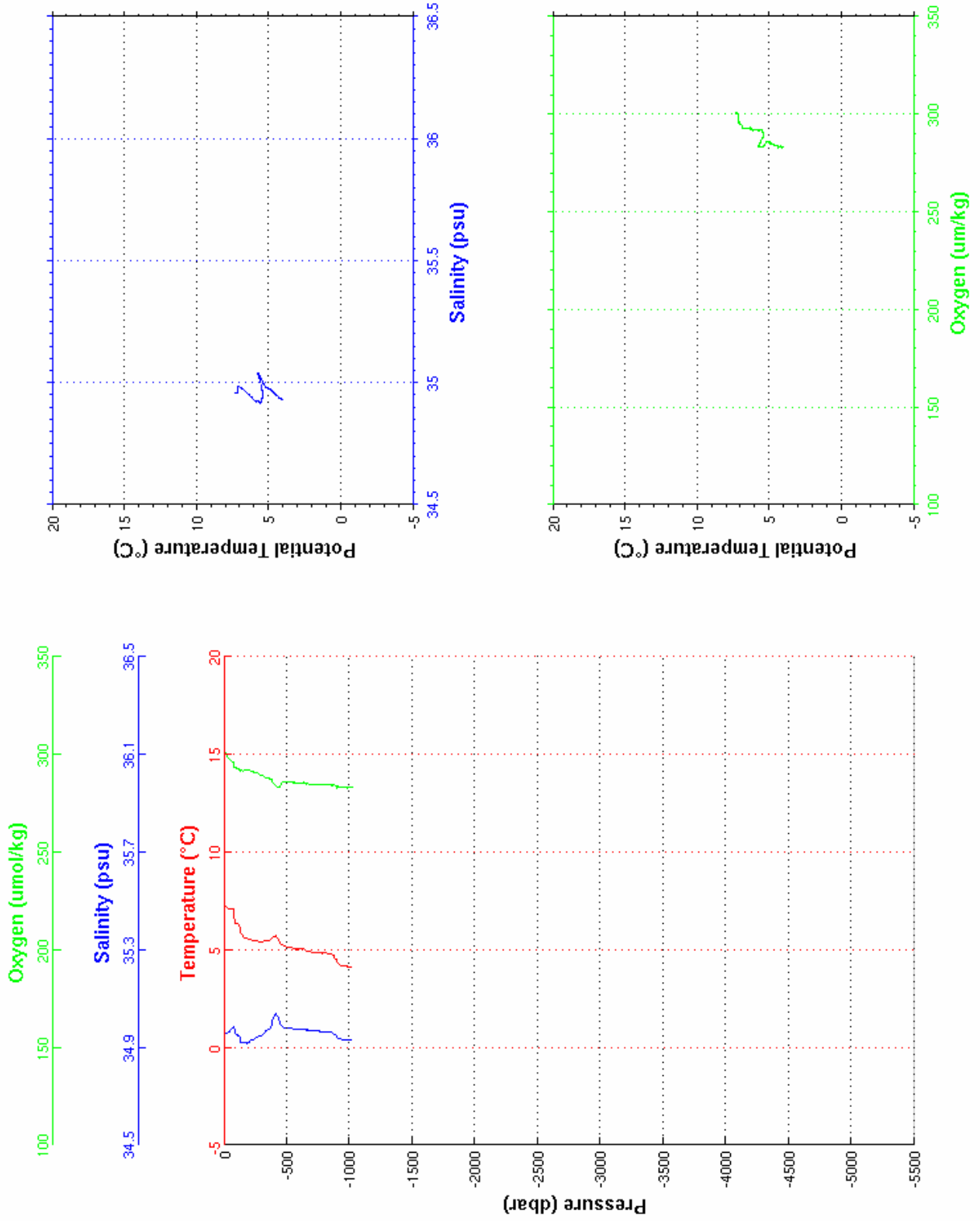
**Cast : 104**

```

-----
Cast      : 105           Cruise   : OVIDE 2010
Date     : 01/07/2010   Ship     : N/O THALASSA
Depth    : 1026 m       Organism  : IFREMER
Position : N 59 28.01
          W 045 38.94
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.331	34.958	300.3	7.330
10.0	7.274	34.958	300.6	7.274
20.0	7.187	34.957	300.0	7.185
30.0	7.109	34.963	298.2	7.106
40.0	7.108	34.966	297.5	7.105
50.0	7.108	34.975	296.7	7.103
100.0	6.352	34.951	292.6	6.343
150.0	5.688	34.922	291.8	5.676
200.0	5.523	34.923	291.8	5.507
250.0	5.463	34.937	290.6	5.442
300.0	5.421	34.950	289.5	5.396
350.0	5.487	34.973	288.0	5.458
400.0	5.729	35.030	284.3	5.695
450.0	5.353	34.994	284.4	5.316
500.0	5.159	34.979	286.2	5.118
550.0	5.042	34.976	285.6	4.997
600.0	5.031	34.976	285.5	4.982
650.0	4.951	34.972	285.2	4.899
700.0	4.877	34.969	284.6	4.820
750.0	4.837	34.966	284.6	4.776
800.0	4.825	34.965	284.6	4.760
850.0	4.771	34.962	284.5	4.702
900.0	4.485	34.947	282.9	4.414
950.0	4.201	34.933	283.2	4.127
1000.0	4.129	34.929	283.1	4.051
1020.0	4.127	34.929	283.0	4.048



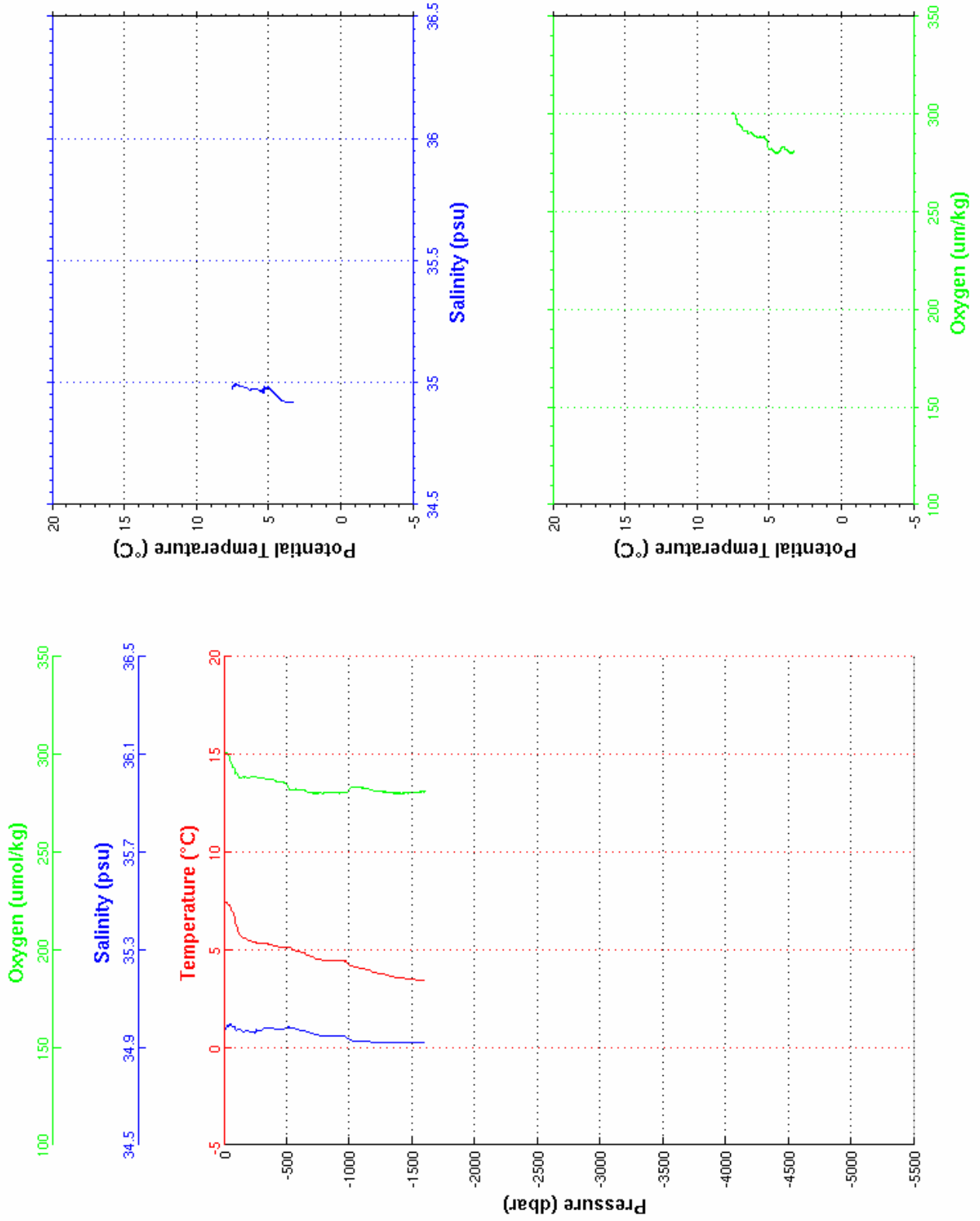
Cast : 105

```

-----
Cast      : 106           Cruise   : OVIDE 2010
Date     : 01/07/2010  Ship     : N/O THALASSA
Depth    : 1593 m      Organism : IFREMER
Position : N 59 26.01
          W 045 40.18
-----

```

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.518	34.973	301.2	7.518
10.0	7.507	34.975	301.0	7.506
20.0	7.468	34.986	300.6	7.466
30.0	7.323	34.989	299.4	7.320
40.0	7.292	34.994	298.0	7.288
50.0	7.238	34.995	295.8	7.233
100.0	6.228	34.973	290.3	6.219
150.0	5.620	34.966	288.2	5.608
200.0	5.450	34.965	288.5	5.434
250.0	5.357	34.965	288.7	5.337
300.0	5.335	34.972	287.8	5.310
350.0	5.296	34.983	287.1	5.268
400.0	5.195	34.975	286.5	5.163
450.0	5.147	34.975	285.9	5.111
500.0	5.123	34.980	283.7	5.082
550.0	5.060	34.979	281.9	5.015
600.0	4.903	34.971	282.3	4.855
650.0	4.765	34.964	281.3	4.713
700.0	4.632	34.957	280.4	4.577
750.0	4.525	34.951	280.3	4.466
800.0	4.460	34.947	280.4	4.397
850.0	4.452	34.947	280.5	4.385
900.0	4.445	34.946	280.5	4.374
950.0	4.432	34.945	280.3	4.357
1000.0	4.220	34.930	282.9	4.142
1050.0	4.097	34.924	283.5	4.016
1100.0	4.019	34.923	282.9	3.934
1150.0	3.986	34.923	282.4	3.897
1200.0	3.823	34.920	281.4	3.731
1250.0	3.779	34.920	281.0	3.683
1300.0	3.719	34.920	280.8	3.620
1350.0	3.609	34.922	280.4	3.506
1400.0	3.568	34.922	280.2	3.461
1450.0	3.517	34.922	280.3	3.407
1500.0	3.478	34.922	280.4	3.364
1550.0	3.434	34.921	280.7	3.316
1599.0	3.442	34.921	280.9	3.319

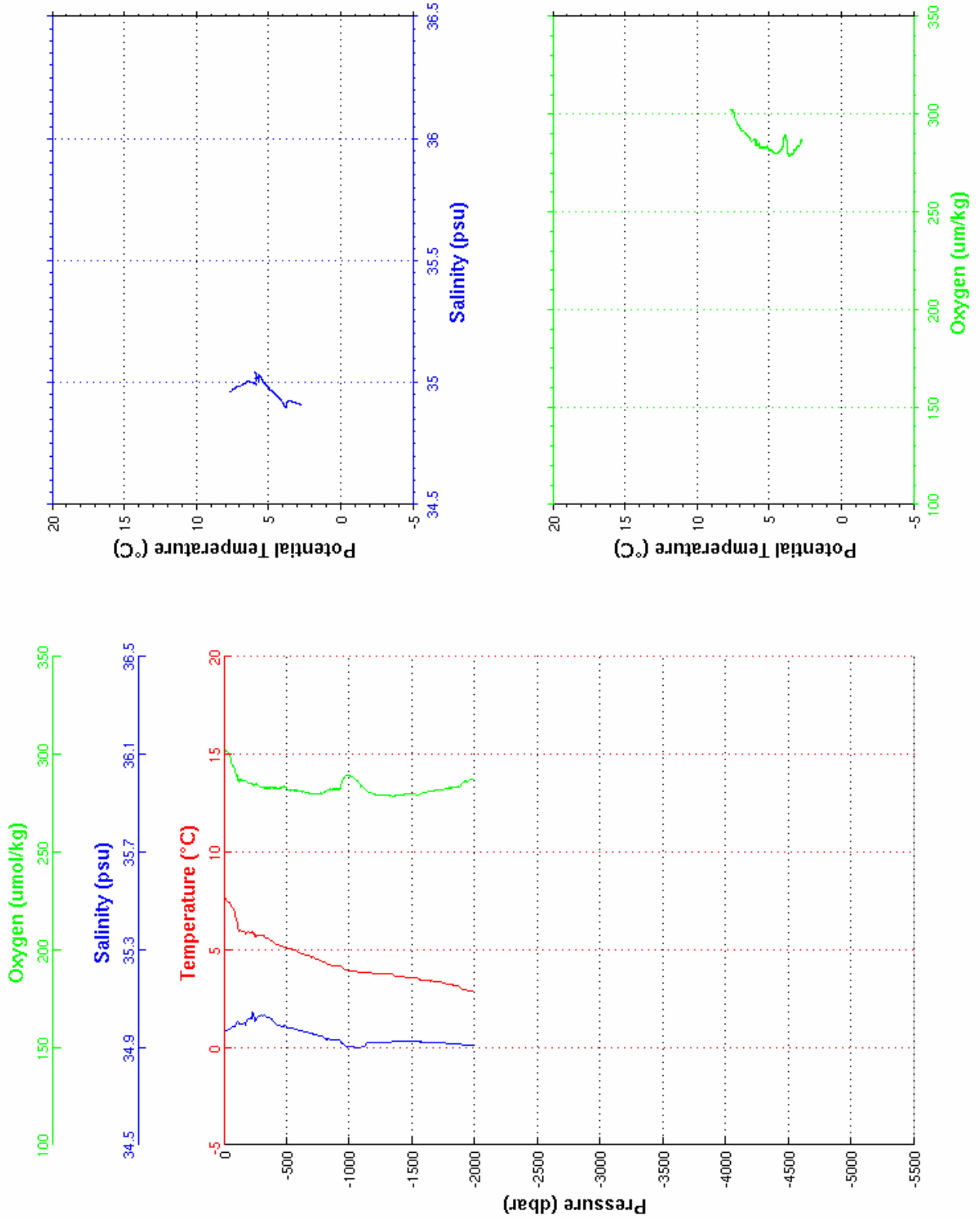


**Cast : 106**

Cast	: 107	Cruise	: OVIDE 2010
Date	: 01/07/2010	Ship	: N/O THALASSA
Depth	: 1974 m	Organism	: IFREMER
Position	: N 59 23.15 W 045 40.08		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.658	34.964	302.5	7.658
10.0	7.653	34.964	302.1	7.652
20.0	7.489	34.970	301.5	7.487
30.0	7.469	34.973	301.1	7.466
40.0	7.412	34.975	299.5	7.408
50.0	7.349	34.977	297.4	7.344
100.0	6.502	35.003	289.1	6.493
150.0	5.935	34.999	286.7	5.922
200.0	5.902	35.019	285.5	5.885
250.0	5.702	35.010	285.3	5.681
300.0	5.734	35.031	283.3	5.709
350.0	5.582	35.023	282.9	5.553
400.0	5.349	35.000	283.0	5.316
450.0	5.193	34.987	283.0	5.157
500.0	5.096	34.982	282.2	5.055
550.0	5.009	34.976	281.5	4.964
600.0	4.852	34.968	281.4	4.804
650.0	4.752	34.963	280.7	4.701
700.0	4.656	34.958	280.2	4.600
750.0	4.484	34.949	280.0	4.425
800.0	4.363	34.941	280.8	4.301
850.0	4.211	34.931	282.3	4.146
900.0	4.201	34.931	282.3	4.132
950.0	4.070	34.915	287.7	3.997
1000.0	3.936	34.902	289.0	3.860
1050.0	3.888	34.900	287.1	3.808
1100.0	3.839	34.905	283.1	3.756
1150.0	3.836	34.919	280.8	3.748
1200.0	3.780	34.921	279.7	3.688
1250.0	3.779	34.921	279.3	3.683
1300.0	3.777	34.922	279.1	3.677
1350.0	3.705	34.925	278.6	3.601
1400.0	3.653	34.925	279.3	3.545
1450.0	3.590	34.924	279.7	3.479
1500.0	3.561	34.924	279.8	3.446
1550.0	3.524	34.925	279.3	3.405
1600.0	3.440	34.922	280.5	3.318
1650.0	3.398	34.920	281.2	3.272
1700.0	3.353	34.919	281.9	3.223
1750.0	3.284	34.917	282.2	3.150
1800.0	3.239	34.917	283.0	3.101
1850.0	3.161	34.915	283.7	3.019
1900.0	2.975	34.912	285.5	2.832
1950.0	2.873	34.909	287.1	2.727
1986.0	2.872	34.909	287.5	2.723





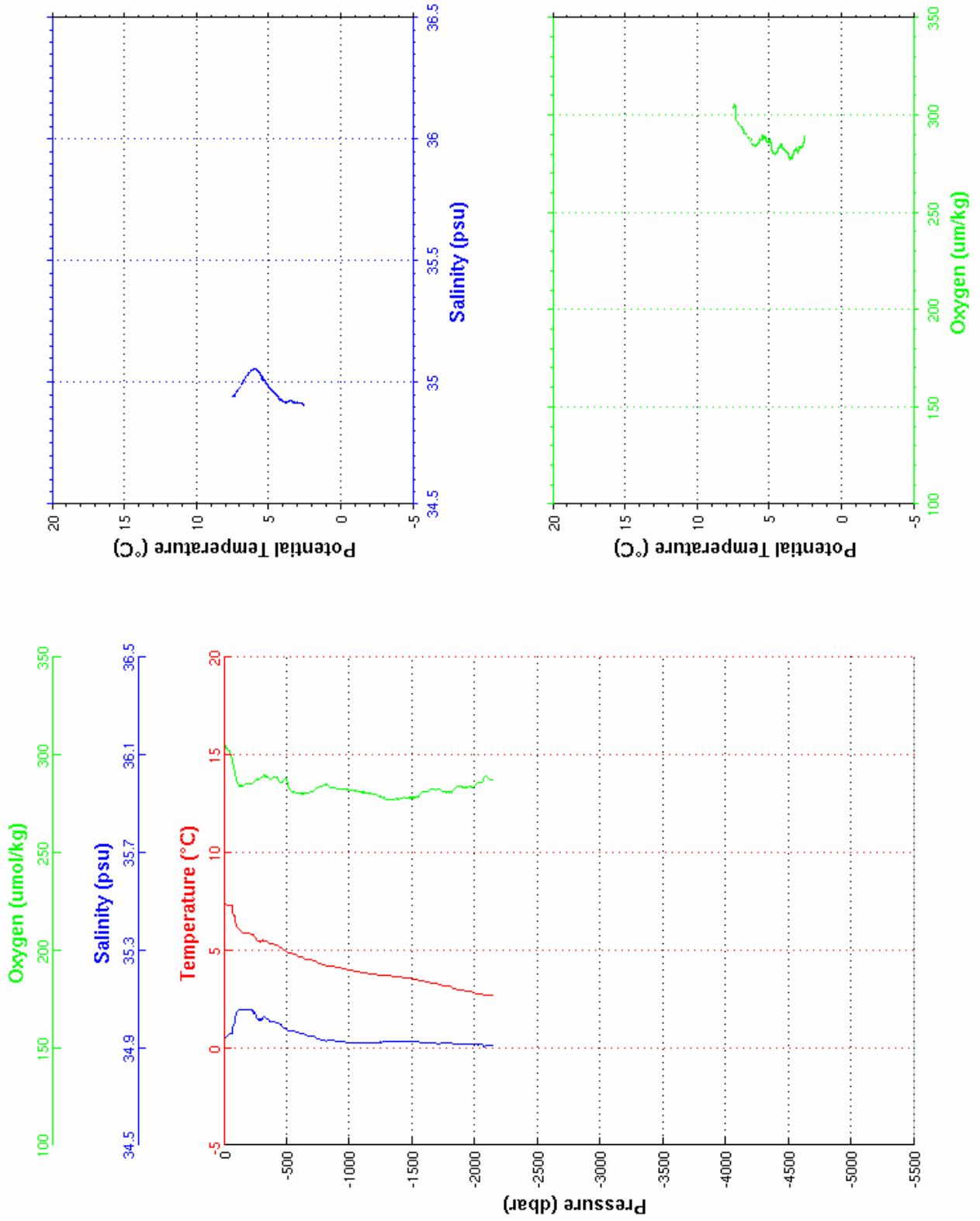
**Cast : 107**

```

-----
Cast      : 108           Cruise   : OVIDE 2010
Date     : 01/07/2010  Ship     : N/O THALASSA
Depth    : 2115 m       Organism : IFREMER
Position : N 59 16.78
          W 045 48.46
-----

```

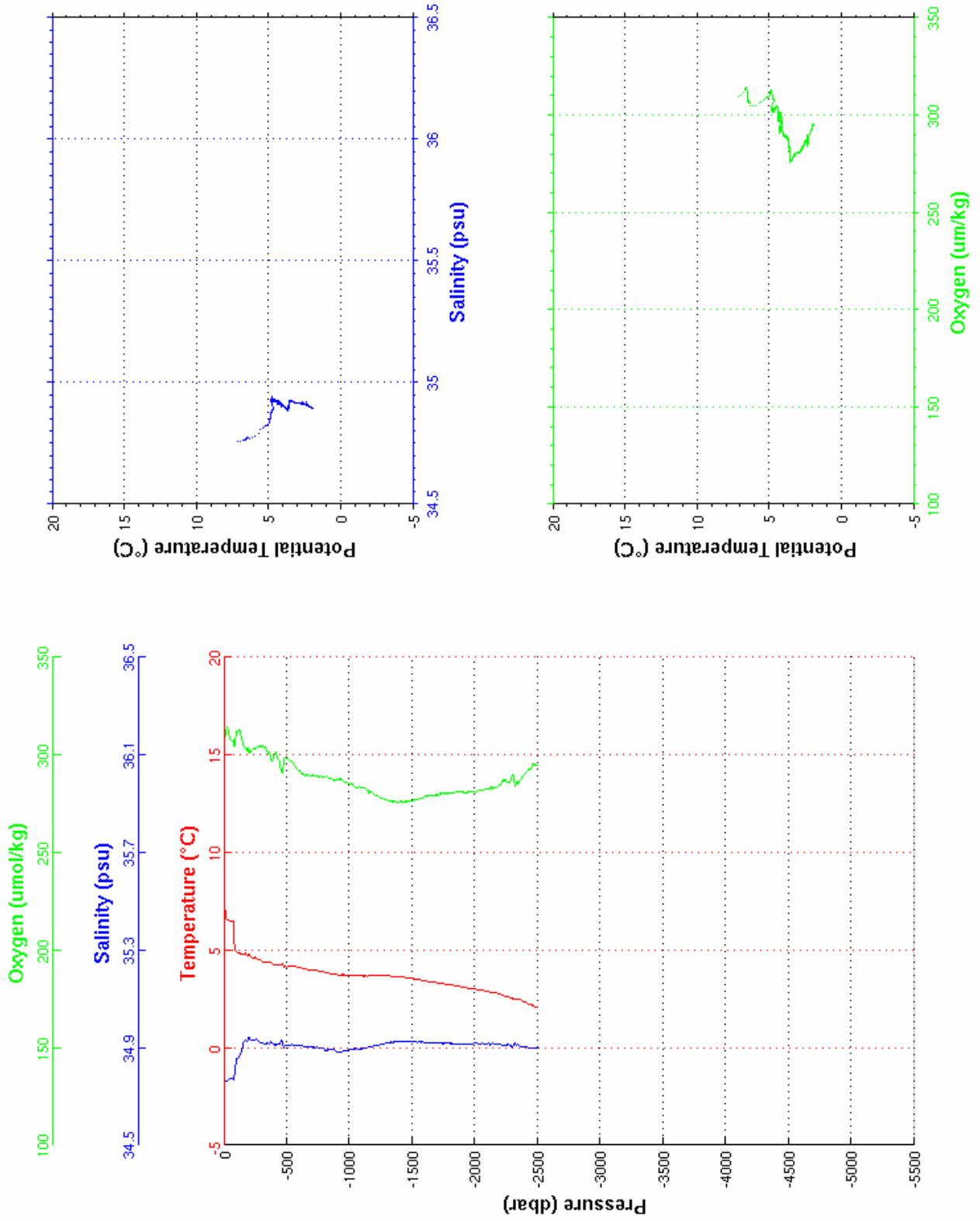
PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.533	34.945	303.8	7.533
10.0	7.446	34.943	304.2	7.445
20.0	7.325	34.949	303.3	7.323
30.0	7.316	34.952	302.3	7.314
40.0	7.310	34.955	301.8	7.306
50.0	7.297	34.956	300.0	7.293
100.0	6.223	35.047	287.2	6.214
150.0	5.900	35.057	284.5	5.888
200.0	5.843	35.055	285.3	5.826
250.0	5.641	35.038	287.4	5.620
300.0	5.482	35.024	288.5	5.457
350.0	5.400	35.016	288.6	5.372
400.0	5.272	35.006	288.6	5.239
450.0	5.151	34.994	285.8	5.114
500.0	4.942	34.975	286.6	4.902
550.0	4.806	34.968	280.9	4.762
600.0	4.683	34.960	280.4	4.636
650.0	4.562	34.951	280.4	4.511
700.0	4.484	34.947	281.2	4.429
750.0	4.318	34.935	283.6	4.261
800.0	4.244	34.930	284.5	4.182
850.0	4.184	34.930	283.4	4.119
900.0	4.132	34.927	282.9	4.063
950.0	4.056	34.924	282.7	3.983
1000.0	3.975	34.921	282.0	3.899
1050.0	3.897	34.919	281.5	3.817
1100.0	3.860	34.919	280.8	3.776
1150.0	3.802	34.921	280.4	3.714
1200.0	3.751	34.922	279.8	3.660
1250.0	3.712	34.923	278.8	3.617
1300.0	3.682	34.925	277.1	3.583
1350.0	3.649	34.927	277.5	3.546
1400.0	3.618	34.927	277.7	3.511
1450.0	3.562	34.926	278.4	3.452
1500.0	3.534	34.926	278.2	3.419
1550.0	3.461	34.923	279.0	3.342
1600.0	3.401	34.920	281.3	3.279
1650.0	3.328	34.918	282.4	3.202
1700.0	3.254	34.917	282.7	3.125
1750.0	3.170	34.918	281.4	3.038
1800.0	3.139	34.919	280.9	3.003
1850.0	3.014	34.915	283.6	2.874
1900.0	2.956	34.916	283.6	2.813
1950.0	2.893	34.915	284.0	2.747
2000.0	2.792	34.914	284.5	2.643
2050.0	2.740	34.913	286.0	2.587
2100.0	2.675	34.909	288.3	2.518
2139.0	2.690	34.910	287.4	2.529



**Cast : 108**

Cast	: 109	Cruise	: OVIDE 2010
Date	: 01/07/2010	Ship	: N/O THALASSA
Depth	: 2477 m	Organism	: IFREMER
Position	: N 59 3.99 W 046 4.92		

PRESSURE	TEMPERA- TURE	SALINITY	DISSOLV. OXYGEN	POTENT. TEMP.
dbar	deg.cels.	psu	umol/kg	deg.cels.
1.0	7.114	34.755	309.7	7.114
10.0	7.114	34.755	309.7	7.113
20.0	6.598	34.765	314.4	6.596
30.0	6.543	34.768	312.8	6.540
40.0	6.526	34.772	309.2	6.522
50.0	6.499	34.775	307.5	6.495
100.0	4.898	34.853	312.0	4.890
150.0	4.782	34.911	306.0	4.771
200.0	4.777	34.940	301.5	4.762
250.0	4.611	34.934	303.6	4.593
300.0	4.466	34.919	304.9	4.444
350.0	4.360	34.915	300.5	4.334
400.0	4.263	34.911	300.9	4.234
450.0	4.319	34.927	292.9	4.285
500.0	4.143	34.905	298.2	4.106
550.0	4.157	34.913	295.2	4.116
600.0	4.117	34.911	291.5	4.072
650.0	4.030	34.905	289.5	3.982
700.0	3.992	34.903	289.3	3.940
750.0	3.933	34.901	288.9	3.877
800.0	3.861	34.894	288.5	3.802
850.0	3.798	34.890	288.0	3.735
900.0	3.745	34.886	287.2	3.679
950.0	3.730	34.887	286.6	3.659
1000.0	3.707	34.888	285.2	3.633
1050.0	3.714	34.896	283.2	3.636
1100.0	3.680	34.896	283.1	3.598
1150.0	3.699	34.905	281.4	3.613
1200.0	3.676	34.908	279.6	3.585
1250.0	3.679	34.913	278.1	3.585
1300.0	3.676	34.919	276.8	3.577
1350.0	3.655	34.923	276.2	3.552
1400.0	3.632	34.925	276.2	3.525
1450.0	3.591	34.926	276.2	3.479
1500.0	3.550	34.925	276.7	3.435
1550.0	3.487	34.923	277.5	3.369
1600.0	3.424	34.922	278.7	3.302
1650.0	3.369	34.920	279.3	3.243
1700.0	3.325	34.919	279.5	3.195
1750.0	3.273	34.917	280.3	3.139
1800.0	3.231	34.918	280.1	3.093
1850.0	3.171	34.916	281.1	3.030
1900.0	3.100	34.916	281.0	2.955
1950.0	3.034	34.916	281.0	2.886
2000.0	3.004	34.918	280.8	2.852
2050.0	2.949	34.917	282.1	2.793
2100.0	2.899	34.917	282.5	2.739
2150.0	2.823	34.916	283.2	2.659
2200.0	2.749	34.913	284.9	2.582
2250.0	2.636	34.912	286.4	2.467
2300.0	2.520	34.906	289.7	2.348
2350.0	2.472	34.909	286.3	2.296
2400.0	2.337	34.902	290.7	2.159
2450.0	2.195	34.898	293.2	2.014
2500.0	2.090	34.897	294.9	1.907



Cast : 109

