

**CHEETA (Changing Holocene Environments of the
Eastern Tropical Atlantic)**

Coring Cruise

R/V Oceanus

July 5-24, 2007

Lisbon, Portugal to Praia, Cape Verdes



CHEETA Science Party

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Purpose and Scope of the CHEETA Project

The *CHEETA* project ((**Changing Holocene Environments of the Eastern Tropical Atlantic**)) aims to develop high-resolution records of terrestrial climate and surface ocean variability for the eastern Atlantic from the mid-latitudes to the subtropics. The project builds upon recent research that demonstrated significant century-scale variations in North Atlantic SSTs throughout the Holocene that were evidently paced by solar variability (Bond et al., 2001; Bond et al., 1997; deMenocal et al., 2000b). These 1-3°C variations are coherent across the North Atlantic and western Europe and suggest a large sensitivity of earth climate to centennial-millennial climate forcing. The CHEETA coring program represents a series of high sedimentation rate (10-40 cm/ka) targets along the SW European and NW African margins spanning the mid-latitudes (Portuguese margin; 40°N) to the tropics (Senegalese margin at 15°N).

CHEETA addresses three interlinked main research objectives:

One goal is to quantify the amplitude of past subtropical and tropical SST and SSS changes associated with known climate forcing. This work bases on validation and improved calibration of different SST and SSS proxies including planktic foraminiferal $\delta^{18}\text{O}$, Ba/Ca, Mg/Ca, alkenone-based SST, chrenarchaeota-based Tex86-SST (Schouten et al. 2007) taking advantage of a new and dense set of core top sediments from the latitudinal CHEETA transect. Offsets in SST reconstruction have been identified for alkenone, Mg/Ca, and TEX86 based SST estimations (Nurnberg et al., 2000; Zachos et al., 2006) arguing for a multi-proxy approach to achieve reliable paleo SST reconstructions. Recent work has also shown that joint measurements of Mg/Ca and $\delta^{18}\text{O}$ of foraminifera can be used to estimate surface ocean $\delta^{18}\text{O}$ seawater as a proxy for reconstructing salinity.

A second objective is to define the timing and amplitude of past ITCZ shifts and related NW African climate and vegetation changes during LGM-late Holocene interval (ca. last 25 ka BP). Prior work has shown that the Atlantic ITCZ was far south of its position during the LGM and that it was far north of its modern position during the warm early Holocene. Transitions between these states were very abrupt in some places. A particular research focus is the timing and regional extent of the African Humid period, a period of enhanced monsoonal activity over NW Africa that led to greatly increased vegetation cover, large permanent lakes, and human cultural activity in the now hyperarid Saharan desert. The humid-to-arid transition at the end of the AHP near 5.5 ka BP appears to have been very abrupt, occurring within a century or two despite the very gradual orbital precession forcing that caused it (Claussen et al., 1999; deMenocal et al., 2000a; deMenocal et al., 2000b; Kuhlmann et al., 2004). The onset of drier conditions near 5-6 ka BP led to the depopulation of the central Saharan region and a migration to the permanent water supply in the eastern Sahara, the Nile. This diaspora has been linked to the emergence of complex, stratified, urban pharaonic cultures in Egypt (Kuper and Kröpelin, 2006). Questions remain about whether the transition was gradual or abrupt, and what parts of North Africa were most impacted.

A third major CHEETA objective will be to employ a host of organic biomarkers to track Holocene changes in terrestrial vegetation ($\delta^{13}\text{C}$ of plant wax compounds) including indices of biomass burning (black carbon), river runoff (bulk organic $\delta^{13}\text{C}$, DGDG-based BIT index (Hopmanns et al., 2004; Weijers et al., 2007), soil-specific biohopanoids (Cook et al. 2007), and ocean nutrient utilization ($\delta^{15}\text{N}$).

Growing evidence from organic geochemical work on sediments from late Quaternary deep sea fans in front of large tropical Africa rivers confirm the close relationships between the thermal and hydrological history of African climate and marine sedimentation and chemistry since the last glaciation (Weijers et al., 2007). Past hydrological changes in Africa have been linked to various climatic processes, depending on region and timescale. The longer term changes in precipitation in Africa have been influenced by the evolving monsoons which are primarily determined by the position of the ITCZ and controlled through time by precessional variations in summer insolation (Schefuss et al., 2005). Cyclic fluctuations in orbital insolation and solar forcing impacted on nutrient availability and marine productivity in the tropical eastern Atlantic and the export of terrestrial organic matter, in particular from soils, to the tropical continental margin (Wagner et al., 2004, Holtvoeth et al., 2005; Schefuss et al., 2005) and to the central Equatorial Atlantic (Wagner, 2000; Wagner et al., 2004). Similar dynamic relationships between continental hydrology, supply of terrestrial organic and mineral matter, ocean SST and primary productivity are still to be explored off NW Africa providing a focal point for research. One study area of particular interest to address this objective is the corridor between Cape Blanc and Cape Timitris where exceptionally high marine productivity occurred adjacent to (paleo) river outflow further south.

Coring Strategy

The aim has been to core high accumulation rate sites along the upper slope and rise regions of the SW European and NW African continental margin. Many high-accumulation rate coring sites are known from the literature and the sedimentation rates are expected to range between 10-40 cm/ka, with one site with potentially 100+ cm/ka. These accumulation rates afford decadal-resolution sampling that can be used to established detailed late Holocene paleoceanographic and paleoclimatic records.

The CHEETA core sites define a meridional transect along the eastern Atlantic margin from 40°-15°N and multicore top samples can be used to calibrate specific analytical proxy measurements against known oceanographic, climatic, and ecological gradients.

A cluster of core sites north and south of ODP Site 658 (20°N off Cap Blanc) will be used to test the timing and rates of change of past shifts in the ITCZ position associated with the onset and termination of the AHP. A significant question is whether these climatic shifts were synchronous or time-transgressive (deMenocal et al., 2000a; Jung et al., 2004; Kuper and Kröpelin, 2006).

Water depth core transects off the Portuguese and Senegalese margins are used to reconstruct Holocene changes in ocean circulation between 0-2500 m. Several studies have demonstrated large and abrupt changes in deep water circulation during the last termination (McManus et al., 2004; Oppo and Fairbanks, 1987). Recent research has highlighted the importance of shallow subsurface circulation changes as possible amplifiers of climate sensitivity to orbital forcing (Marchitto et al., 2007; Marchitto and DeMenocal, 2002; Oppo et al., 2003).

Main Research Questions

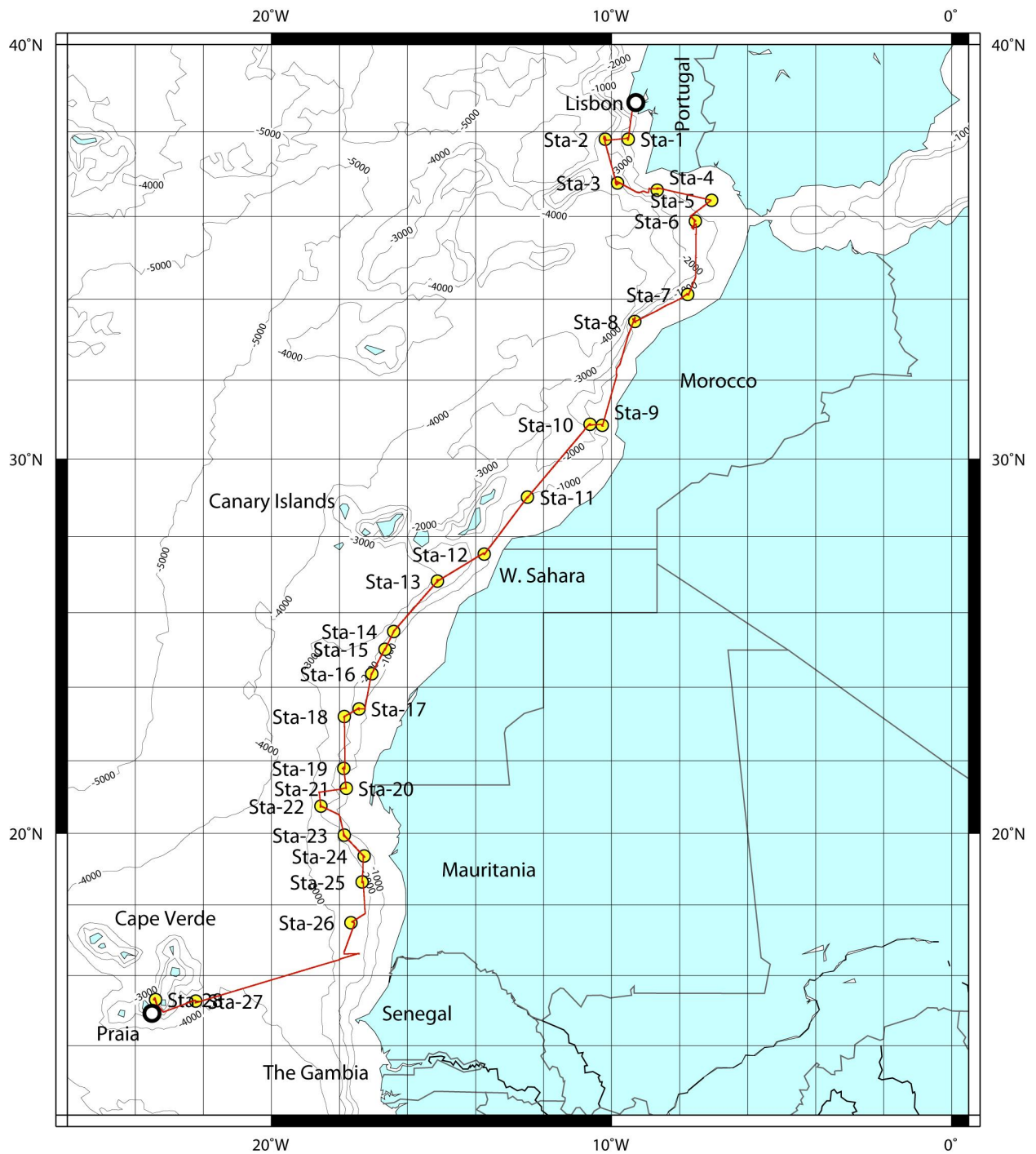
1. How large were late Holocene subtropical-tropical SST variations and were they coherent with the North Atlantic and solar variability?
2. Were ITCZ shifts related to the onset and termination of the AHP abrupt and synchronous along the entire NW African margin? How did North African vegetation and river runoff respond to these shifts?
3. What is the timing and latitudinal evolution of Holocene NW African runoff? Is there a succession of runoff events linked to general climate trends finally causing the erosional structures along the continental margin? How did that impact on downslope transport processes and sediment mass budgets?
4. Associated with continental runoff, is there evidence for periods of enhanced continental export of terrestrial organic matter, in particular from soils; if so how do they relate to fluctuations in continental hydrology and vegetation?

References

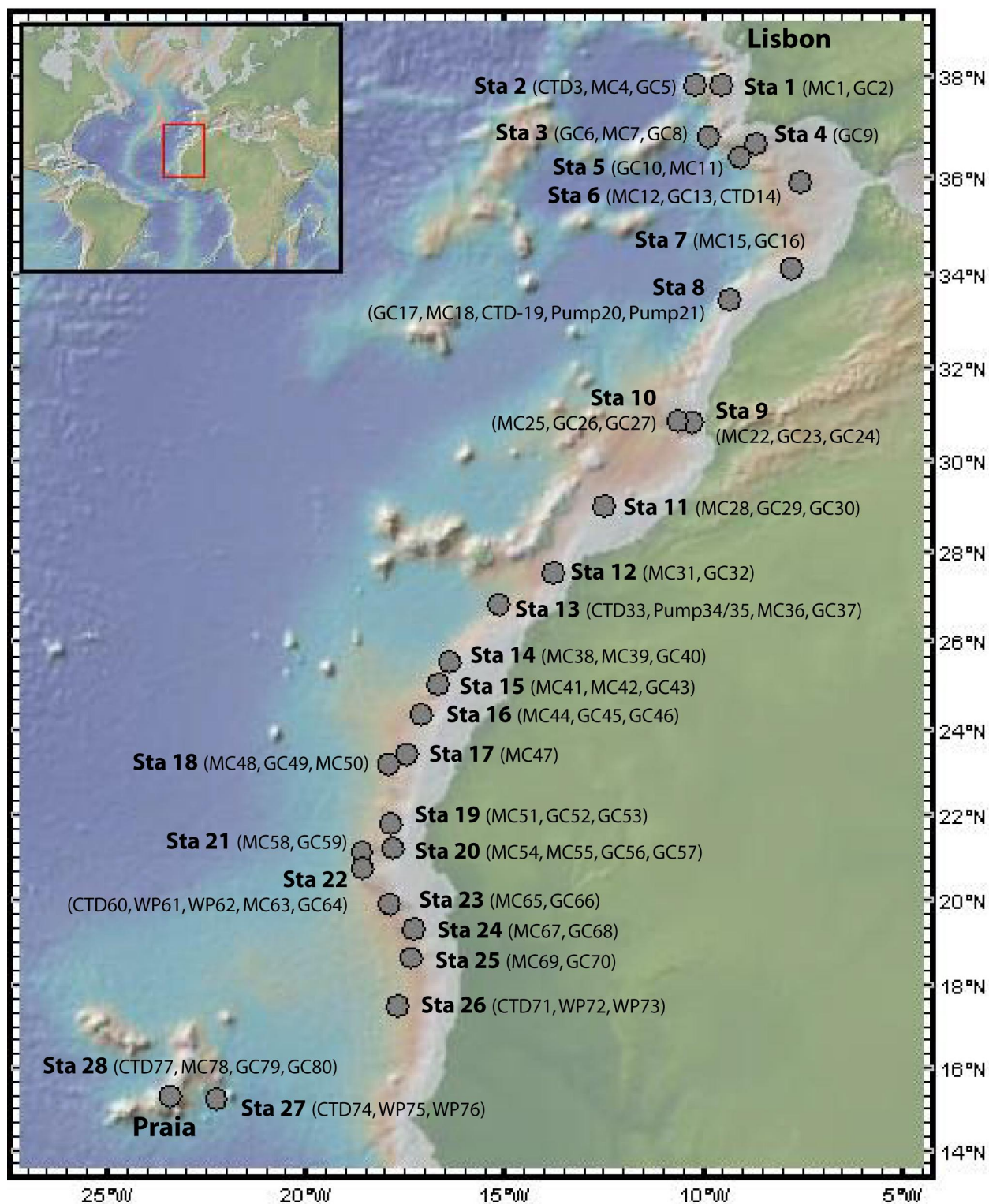
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Station Map



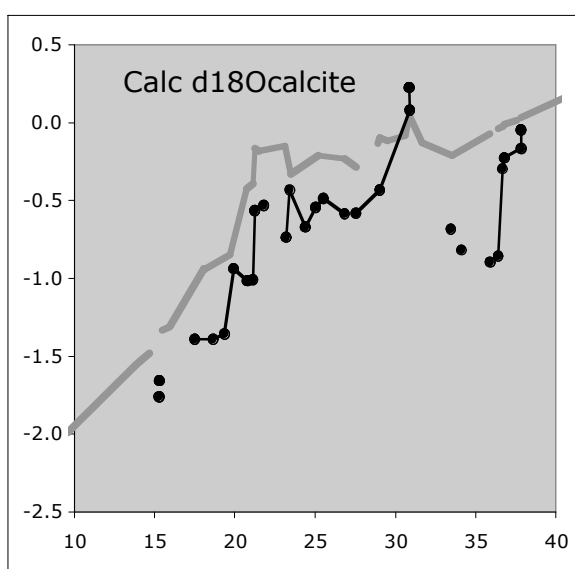
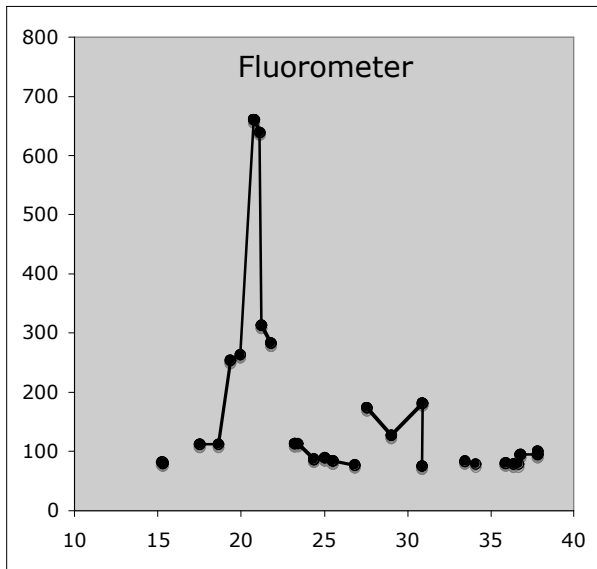
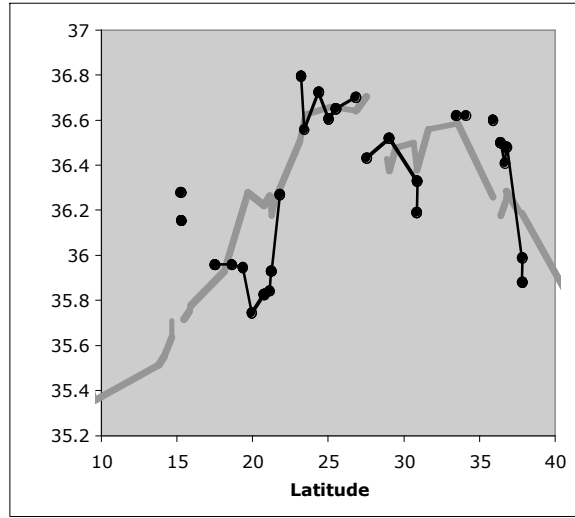
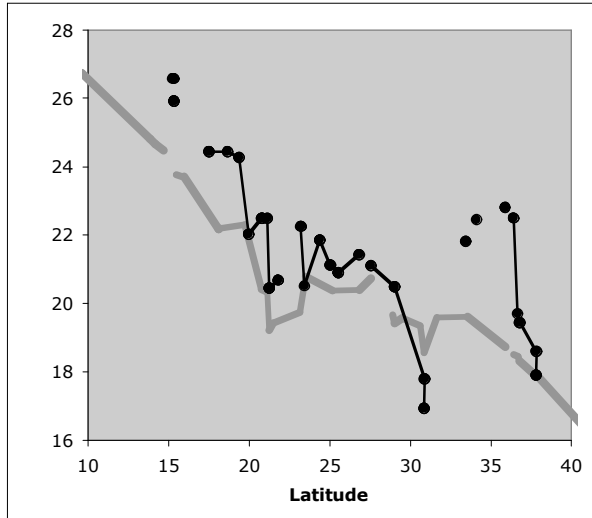
OC437-7 Station List



Station list

Station	Event Name	lat	lon	Depth(m)	Date Taken	SST (2m)	Salinity	Region
1	OC437-7 MC-01	37.83	-9.63	1123	5-Jul	17.90	35.88	Port Margin
1	OC437-7 GC-02	37.83	-9.63	1128	6-Jul	17.90	35.88	Port Margin
2	OC437-7 CTD-03	37.82	-10.63	3240	6-Jul	17.90	35.88	Port Margin
2	OC437-7 MC-04	37.84	-10.63	3146	7-Jul	18.60	35.99	Port Margin
2	OC437-7 GC-05	37.81	-10.63	3148	7-Jul	18.60	35.99	Port Margin
3	OC437-7 GC-06	37.81	-10.63	2645	7-Jul	19.45	36.48	Port Margin
3	OC437-7 MC-07	37.81	-10.63	2735	7-Jul	19.45	36.48	Port Margin
3	OC437-7 GC-08	36.77	-9.61	1428	7-Jul	19.45	36.48	Port Margin
4	OC437-7 GC-09	36.66	-8.61	731	8-Jul	19.70	36.41	Port Margin
5	OC437-7 GC-10	36.39	-7.61	585	8-Jul	22.50	36.50	Port Margin
5	OC437-7 MC-11	36.39	-9.61	596	8-Jul	22.50	36.50	Port Margin
6	OC437-7 MC-12	35.89	-7.60	1184	8-Jul	22.80	36.60	Gulf of Cadiz
6	OC437-7 GC-13	35.89	-7.60	1184	8-Jul	22.80	36.60	Gulf of Cadiz
6	OC437-7 CTD-14	35.89	-7.60	1184	8-Jul	22.80	36.60	Gulf of Cadiz
7	OC437-7 MC-15	34.12	-7.57	388	9-Jul	22.45	36.62	Morocco
7	OC437-7 GC-16	34.12	-7.57	388	9-Jul	22.45	36.62	Morocco
8	OC437-7 GC-17	33.45	-9.56	855	10-Jul	21.81	36.62	Morocco
8	OC437-7 MC-18	33.45	-9.56	835	10-Jul	21.81	36.62	Morocco
8	OC437-7 CTD-19	33.45	-9.56	835	11-Jul	21.81	36.62	Morocco
9	OC437-7 MC-22	30.86	-10.51	835	12-Jul	16.94	36.19	Morocco
9	OC437-7 GC-23	30.85	-10.51	923	12-Jul	16.94	36.19	Morocco
9	OC437-7 GC-24	30.85	-10.51	889	12-Jul	16.94	36.19	Morocco
10	OC437-7 MC-25	30.89	-10.51	1244	12-Jul	17.80	36.33	Morocco
10	OC437-7 GC-26	30.87	-10.51	1277	12-Jul	17.80	36.33	Morocco
10	OC437-7 GC-27	30.88	-10.51	1258	12-Jul	17.80	36.33	Morocco
11	OC437-7 MC-28	29.02	-12.48	776	13-Jul	20.48	36.52	Morocco
11	OC437-7 GC-29	29.01	-12.48	773	13-Jul	20.48	36.52	Morocco
11	OC437-7 GC-30	29.02	-12.48	775	13-Jul	20.48	36.52	Morocco
12	OC437-7 MC-31	27.54	-13.46	1029	13-Jul	21.11	36.43	West Sahara
12	OC437-7 GC-32	27.54	-13.46	1078	13-Jul	21.11	36.43	West Sahara
13	OC437-7 CTD-33	26.83	-15.45	2812	14-Jul	21.11	36.43	West Sahara
13	OC437-7 WP-34	26.83	-15.45	2812	14-Jul	21.11	36.43	West Sahara
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14	OC437-7 MC-39	25.50	-16.42	1780	15-Jul	20.90	36.65	West Sahara
14	OC437-7 GC-40	25.50	-16.43	1769	15-Jul	20.90	36.65	West Sahara
15	OC437-7 MC-41	25.03	-16.42	1441	16-Jul	21.12	36.61	West Sahara
15	OC437-7 MC-42	25.02	-16.42	1401	16-Jul	21.12	36.61	West Sahara
15	OC437-7 GC-43	25.02	-16.42	1404	16-Jul	21.12	36.61	West Sahara
16	OC437-7 MC-44	24.37	-17.41	1662	16-Jul	21.86	36.72	West Sahara
16	OC437-7 GC-45	24.37	-17.41	1661	16-Jul	21.86	36.72	West Sahara
16	OC437-7 GC-46	24.37	-17.41	1659	16-Jul	21.86	36.72	West Sahara
17	OC437-7 MC-47	23.42	-17.39	1344	17-Jul	20.52	36.56	West Sahara
18	OC437-7 MC-48	23.20	-17.39	2298	17-Jul	22.26	36.80	West Sahara
18	OC437-7 GC-49	23.21	-17.39	2303	17-Jul	22.26	36.80	West Sahara
18	OC437-7 MC-50	23.21	-17.39	2295	17-Jul	22.26	36.80	West Sahara
19	OC437-7 MC-51	21.80	-17.36	1276	18-Jul	20.68	36.27	West Sahara
19	OC437-7 GC-52	21.80	-17.36	1281	18-Jul	20.68	36.27	West Sahara
19	OC437-7 GC-53	21.80	-17.36	1280	18-Jul	20.68	36.27	West Sahara
20	OC437-7 MC-54	21.24	-17.35	799	18-Jul	20.45	35.93	Cap Blanc
20	OC437-7 MC-55	21.24	-17.35	798	18-Jul	20.45	35.93	Cap Blanc
20	OC437-7 GC-56	21.24	-17.35	795	18-Jul	20.45	35.93	Cap Blanc
20	OC437-7 GC-57	21.24	-17.35	797	18-Jul	20.45	35.93	Cap Blanc
21	OC437-7 MC-58	21.13	-18.35	2765	19-Jul	22.49	35.84	Cap Blanc
21	OC437-7 GC-59	21.13	-18.35	2777	19-Jul	22.49	35.84	Cap Blanc
22	OC437-7 CTD-60	20.79	-18.35	2263	19-Jul	22.49	35.83	Cap Blanc
22	OC437-7 WP-61	20.79	-18.35	2263	19-Jul	22.49	35.83	Cap Blanc
22	OC437-7 WP-62	20.79	-18.35	2263	19-Jul	22.49	35.83	Cap Blanc
22	OC437-7 MC-63	20.75	-18.35	2106	19-Jul	22.49	35.83	Cap Blanc
22	OC437-7 GC-64	20.75	-18.35	2103	19-Jul	22.49	35.83	Cap Blanc
23	OC437-7 MC-65	19.94	-17.33	1455	20-Jul	22.02	35.75	Mauritania
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25	OC437-7 MC-69	18.64	-17.31	2282	21-Jul	24.44	35.96	Mauritania
25	OC437-7 GC-70	18.65	-17.31	2260	21-Jul	24.44	35.96	Mauritania
26	OC437-7 CTD-71	17.51	-17.29	2560	21-Jul	26.58	36.28	Mauritania
26	OC437-7 WP-72	17.51	-17.29	2560	21-Jul	26.58	36.28	Mauritania
26	OC437-7 WP-73	17.51	-17.29	2560	21-Jul	26.58	36.28	Mauritania
27	OC437-7 CTD-74	15.24	-22.25	2900	23-Jul	26.58	36.28	Cap Verde
27	OC437-7 WP-75	15.24	-22.25	2900	23-Jul	26.58	36.28	Cap Verde
27	OC437-7 WP-76	15.24	-22.25	2900	23-Jul	26.58	36.28	Cap Verde
28	OC437-7 CTD-77	15.31	-23.26	950	24-Jul	25.93	36.15	Cap Verde
28	OC437-7 MC-78	15.31	-23.26	950	24-Jul	25.93	36.15	Cap Verde
28	OC437-7 GC-79	15.32	-23.26	944	24-Jul	25.93	36.15	Cap Verde
28	OC437-7 GC-80	15.32	-23.55	948	24-Jul	25.93	36.15	Cap Verde

Coring station surface hydrographic data (Grey = mean annual values at proposed core sites; Symbols = measured values at actual core sites. Calculated $\delta^{18}\text{O}$ of calcite based on Bemis et al. (1998) equation ($\delta^{18}\text{O}_{\text{calcite}} = \delta^{18}\text{OSW} + (14.9 - T)/4.8 - 0.27$, using the regional $\delta^{18}\text{O}$ -salinity relation ($\delta^{18}\text{O}_{\text{sw}} = 0.238 * \text{salinity} - 7.69$); LeGrande and Schmidt, 2006)



OC437-7: Station 1

Location: Off Portugal Margin

Surface temperature: 17.92°C, Salinity: 35.88 psu

Date & Time (GMT): July 6, 2007, 00.03

Primary core site reference (if any): MD95-2041 (Thouveny et al. 2000, EPSI)

Estimated sedimentation rate (if known): 18cm/ka

Estimate basal age from shipboard MST: unknown

Core: MC-01

Date: July 5, 2007

Time: 21.24

Lat: 37°49.67 N

Lon: 9°30.77 W

Depth: 1123 m

Number of cores: 8

Core: GC-02

Date: July 6, 2007

Time: 01.17

Lat: 37°49.77 N

Lon: 9°30.86 W

Depth: 1128 m

Core length: 329 cm

Multicore lengths and allocation:

A (49/50.5 cm) Lamont 1cm slices in bags

B (52 cm) WHOI 1cm slices in jar

C (22/25 cm) WHOI 1cm slices in bags

D (39 cm) WHOI 1cm slices in bags

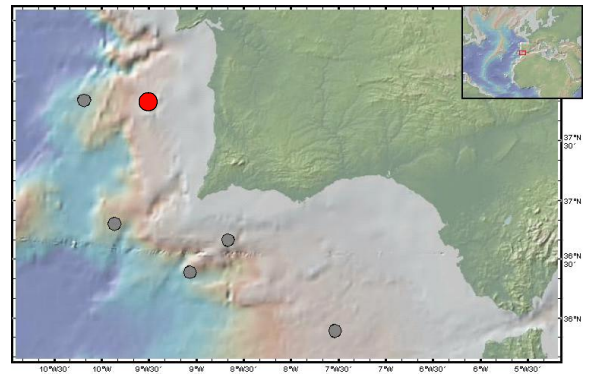
E (51.5 cm) Lamont, Archive (0-1 cm split, Ncl)

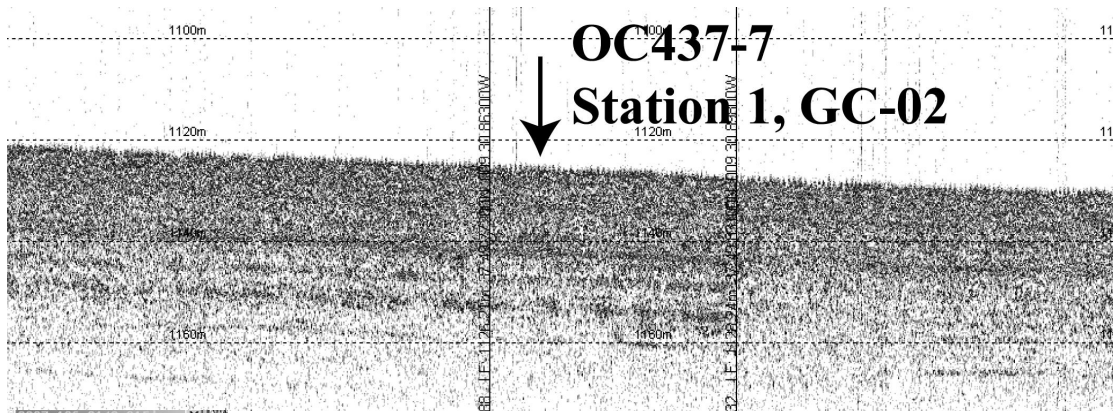
F (54 cm) Lamont 1cm slices in bags

G (51/54.5 cm) WHOI 1cm slices in bags

H (30 cm) WHOI 1cm slices in bags

3.5 kHz profile at site



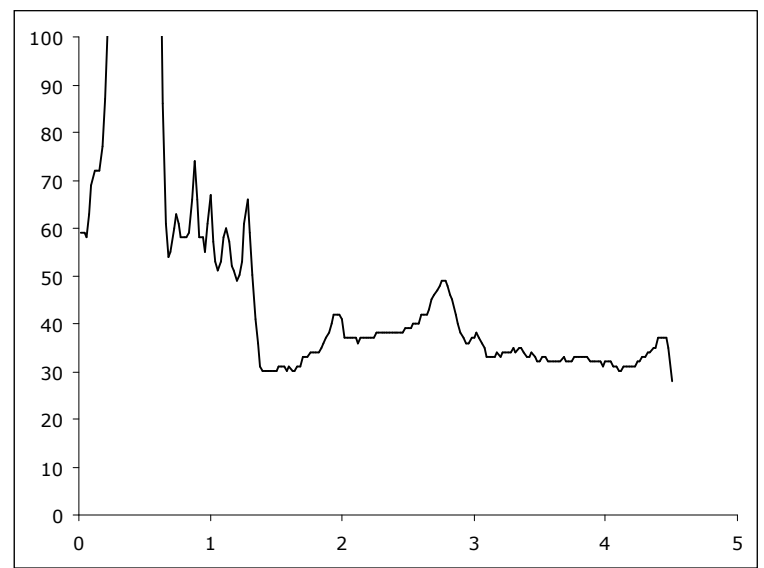
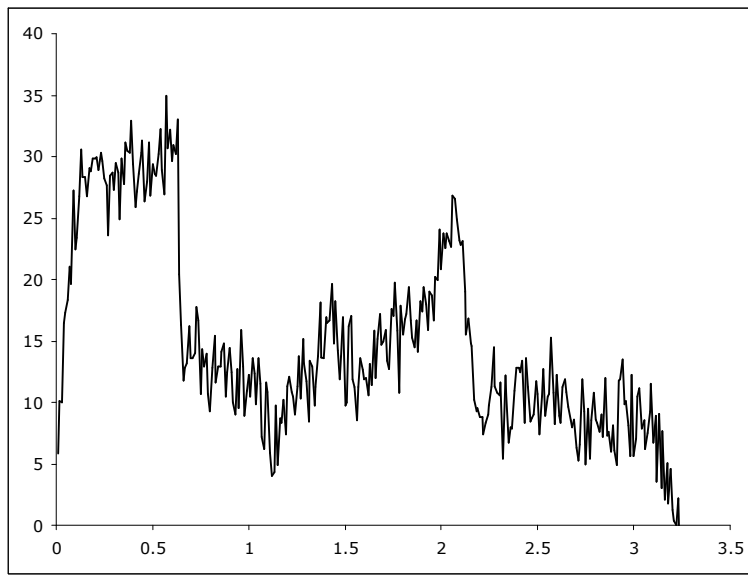
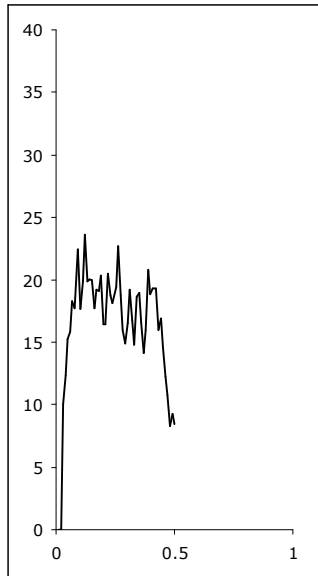
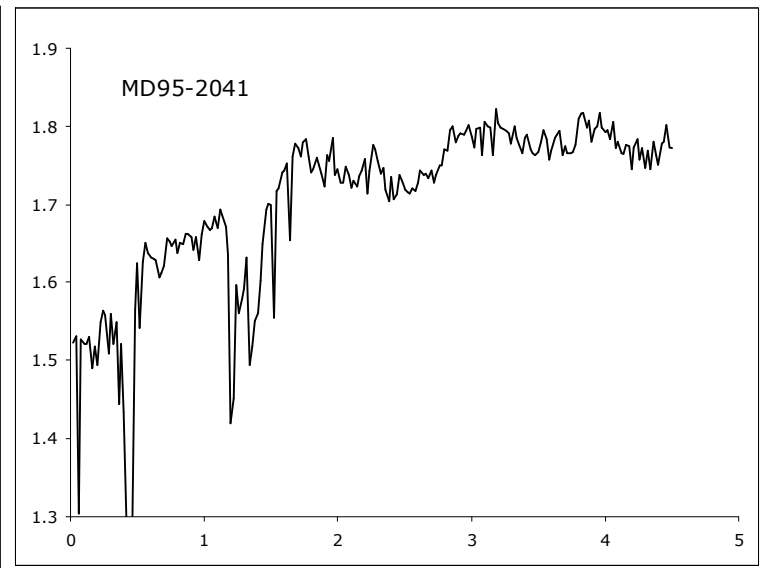
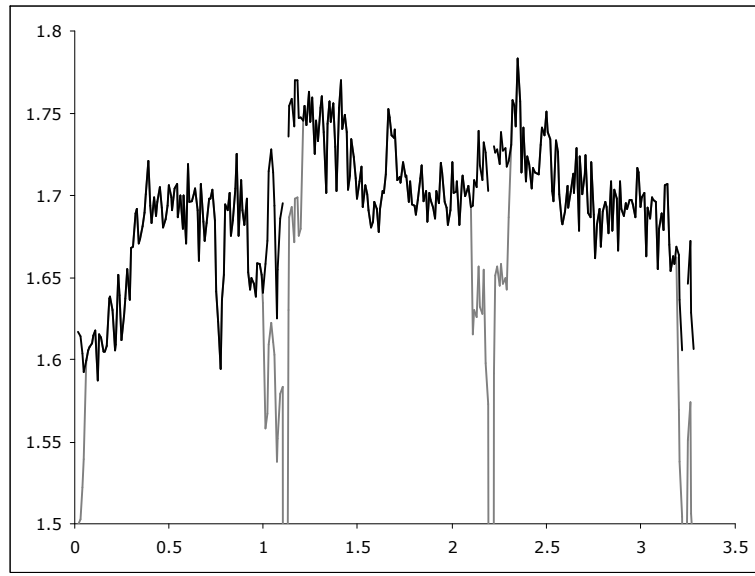
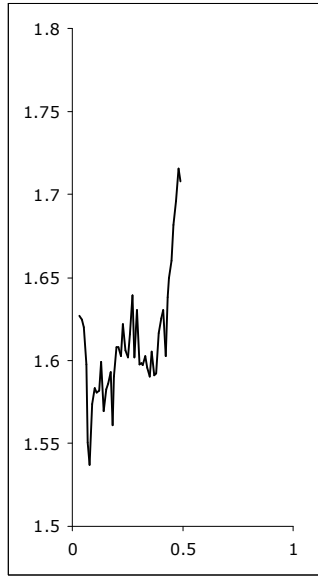


2007_186_2149_015.ke	
Record #:	29140
Time Stamp:	23:23:45.173
Working Units:	meters
Sound Speed:	1500 m/s
Window Limits:	1000 - 1200 m
Primary Channel:	HF
Fix Status:	None
Fix Number:	00472
Heave:	0.00 m
Latitude:	37 49.86694 N
Longitude:	009 30.91198 W

SounderSuite files: 2007-186-1240-014.keb (bottom mark MC-01: P00465); 2007-186-2149-015.keb (bottom mark GC-02: P00491)

Comments:

OC437-7: Station 1, Shipboard MST data (MC-1, GC-2)



OC437-7: Station 2

Location: Off Portugal Margin

Surface temperature: 18.61°C, Salinity: 35.99 psu

Date & Time (GMT): July 6, 2007, 07.20

Primary core site reference (if any): MD95-2042 (Thouveny et al. 2000, EPSL)

Estimated sedimentation rate (if known): 30 cm/ka

Estimate basal age from shipboard MST: about 11 Ka

Core: MC-04

Date: July 6, 2007

Time: 11.06

Lat: 37°50.23 N

Lon: 10°11.04 W

Depth: 3146 m

Number of cores: 5

Core: GC-05

Date: July 6, 2007

Time: 15.05

Lat: 37°48.39 N

Lon: 10°10.02 W

Depth: 3148 m

Core length: 337 cm

CTD cast: CTD-03

Date: July 6, 2007

Time: 07.00

Lat: 37°49.27 N

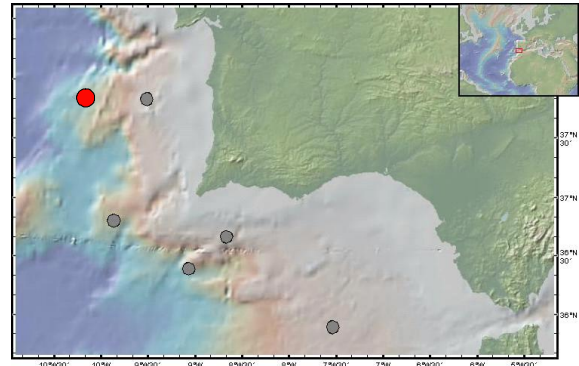
Lon: 9°30.86 W

File name: OC427001.dat

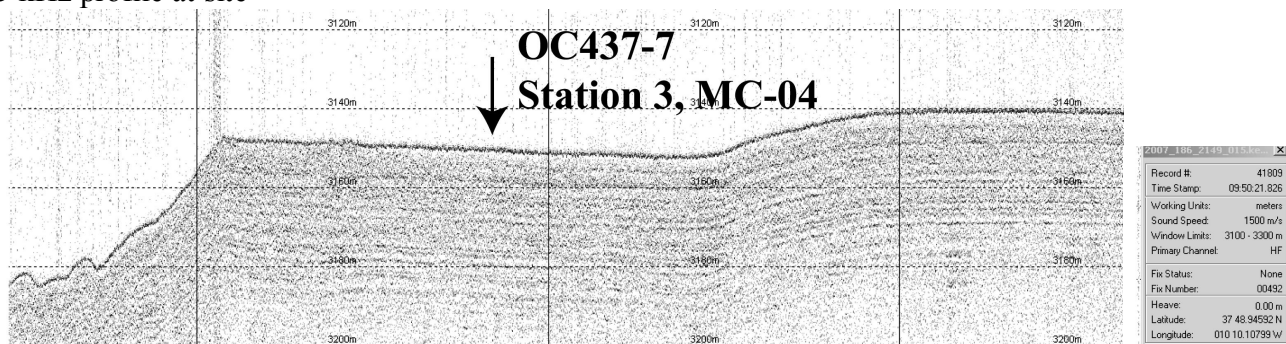
Numb. water samples: none

Multicore lengths and allocation:

- A (27/25 cm) WHOI 1cm slices in bags
- B (25 cm) Lamont, Archive (0-1 cm split, Ncl)
- C (30 cm) WHOI 1cm slices in bags
- D (28 cm) Lamont 1cm slices in bags
- E (38 cm) Lamont, 1cm slices in bags



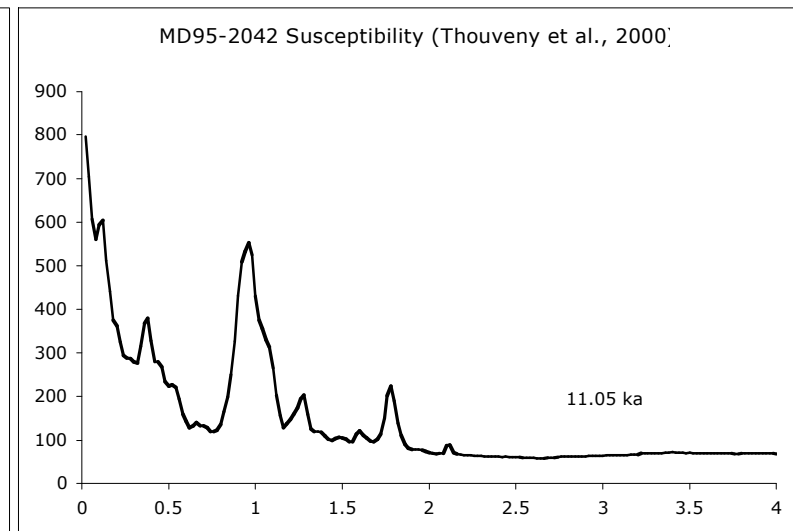
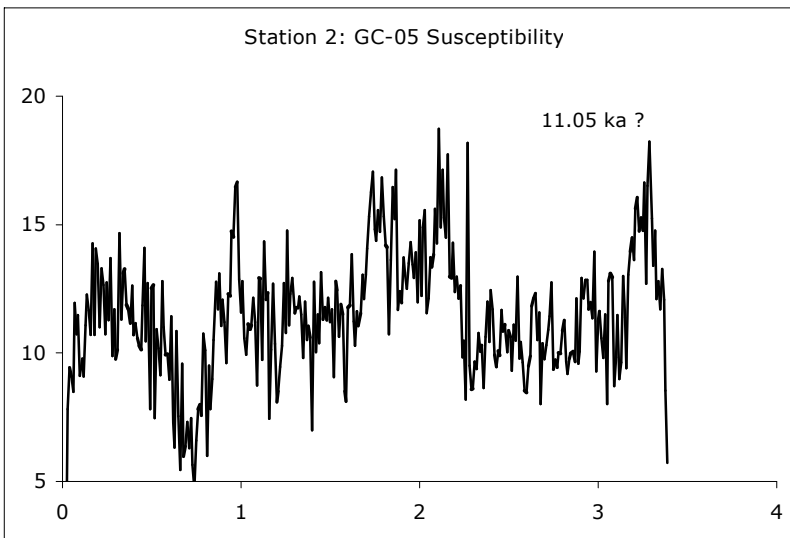
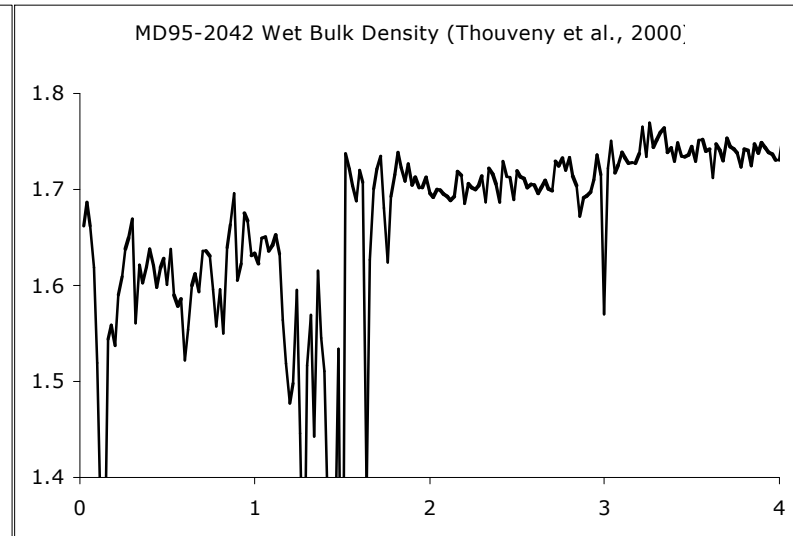
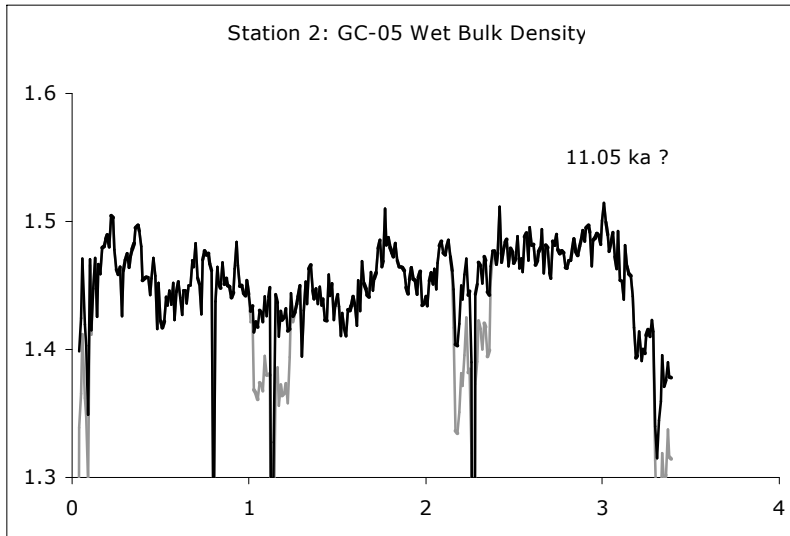
3.5 kHz profile at site



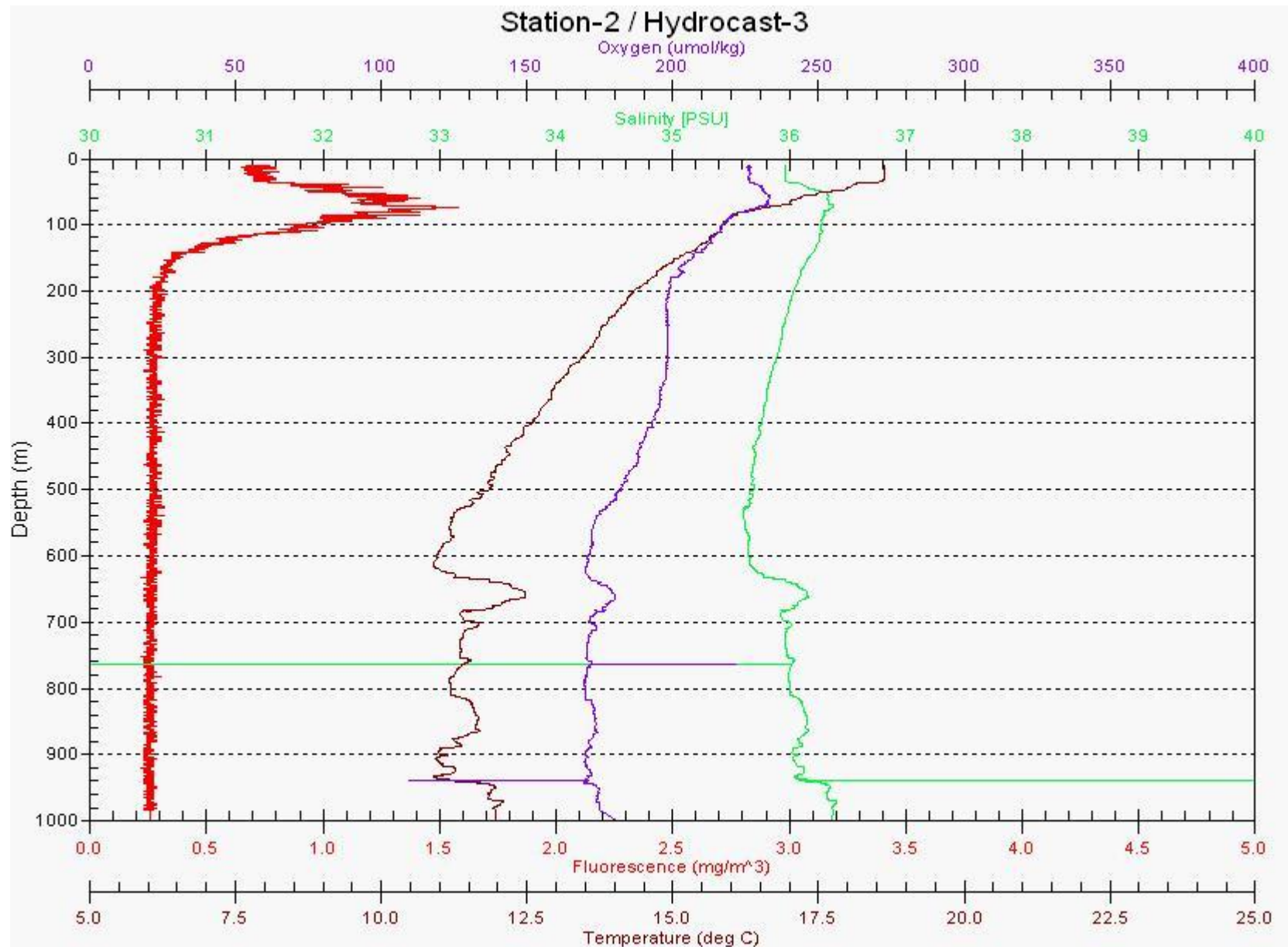
SounderSuite files: 2007-186-2149-015.keb (MC-04); 2007-186-2149-015.keb (GC-05)

Comments:

OC437-7: Station 2, Shipboard MST data (GC-2)



OC437-7: Station 2, Shipboard CTD



OC437-7: Station 3

Location: Off Portugal Margin

Surface temperature: 19.45 °C (digits not provided), Salinity: 36.48 psu

Date & Time (GMT): July 7, 2007, 09.00

Primary core site reference (if any): SU81-14 (Bard et al., 1987)

Estimated sedimentation rate (if known): 20 cm/ka

Estimate basal age from shipboard MST: about 18 ka (H1)

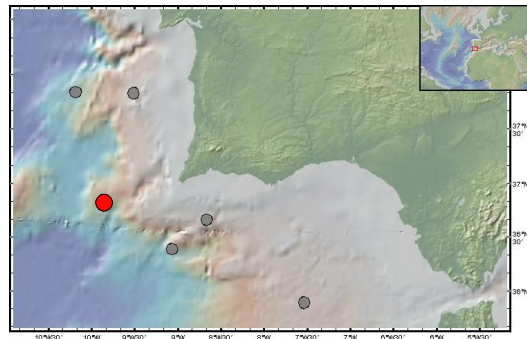
Core: MC-07
Date: July 7, 2007
Time: 09.53
Lat: 36°46.33 N
Lon: 9°52.03 W
Depth: 2735 m
Number of cores: 5

Core: GC-06
Date: July 7, 2007
Time: 05.54
Lat: 36°48.07 N
Lon: 9°51.76 W
Depth: 2645 m
Core length: 230 cm

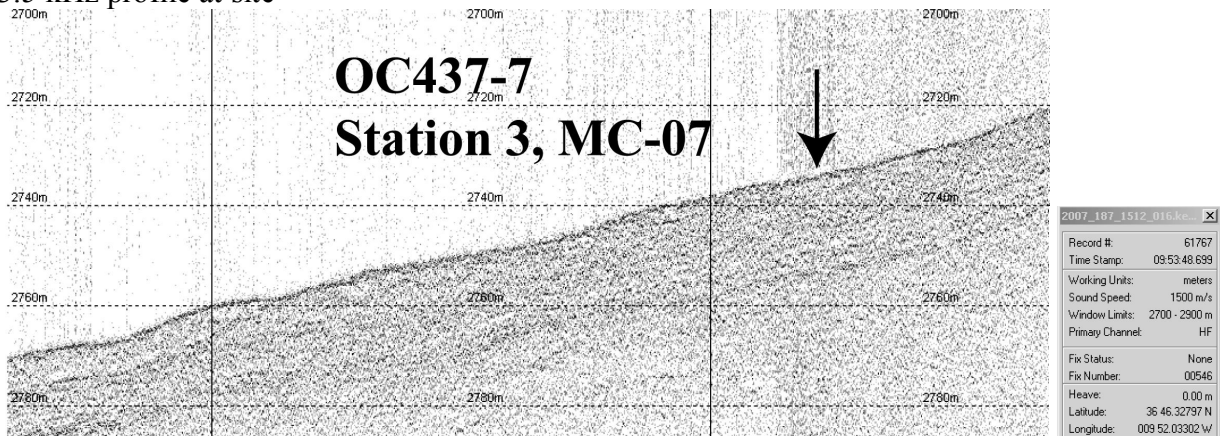
Core: GC-08
Date: July 7, 2007
Time: 14.28
Lat: 36°46.97 N
Lon: 9°51.62 W
Depth: 2645 m
Core length: 0 - barrel broken

Multicore lengths and allocation:

A (37 cm)	Lamont, 1cm slices in bags
B (35/37 cm)	Lamont, 1cm slices in bags
C (36/38 cm)	WHOI 1cm slices in bags
D (35.5 cm)	WHOI 1cm slices in jars
E (33/36 cm)	Lamont, Archive (0-1 cm split, Ncl)



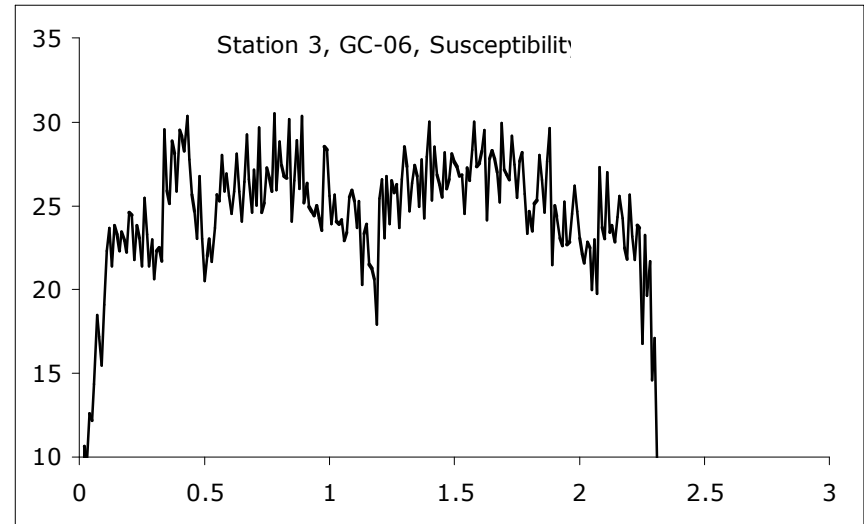
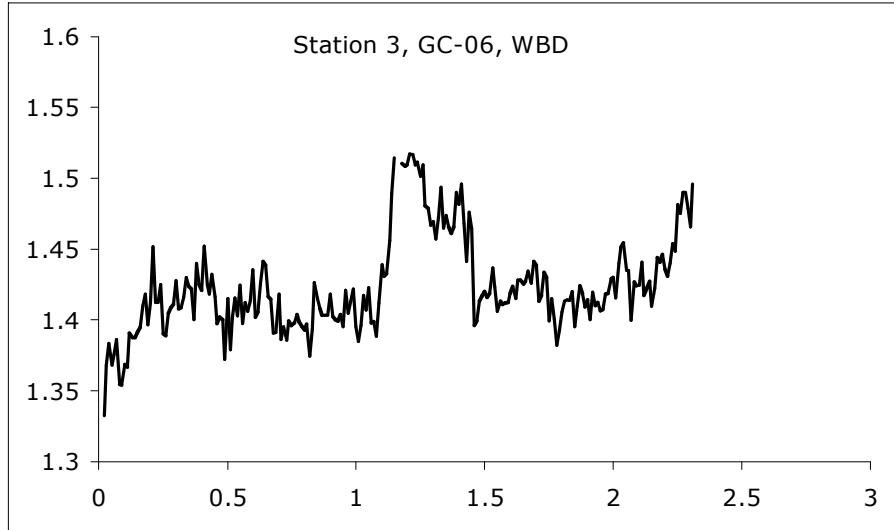
3.5 kHz profile at site



SounderSuite files: 2007-187-1512-016.keb (bottom mark MC-07: T00546); 2007-187-1512-016.keb (bottom mark GC-06: T00536); 2007-187-1512-016.keb (bottom mark GC-08: T00553)

Comments:

OC437-7: Station 3, Shipboard MST data (GC-06)

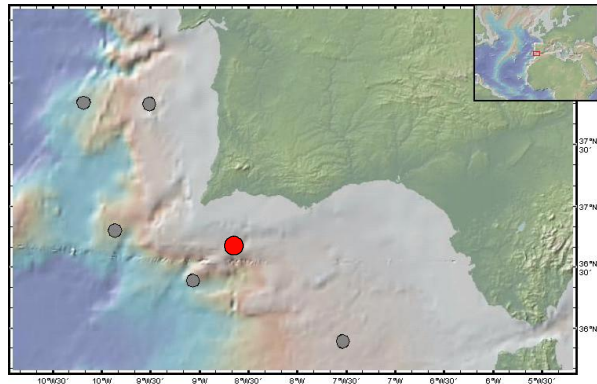


OC437-7: Station 4

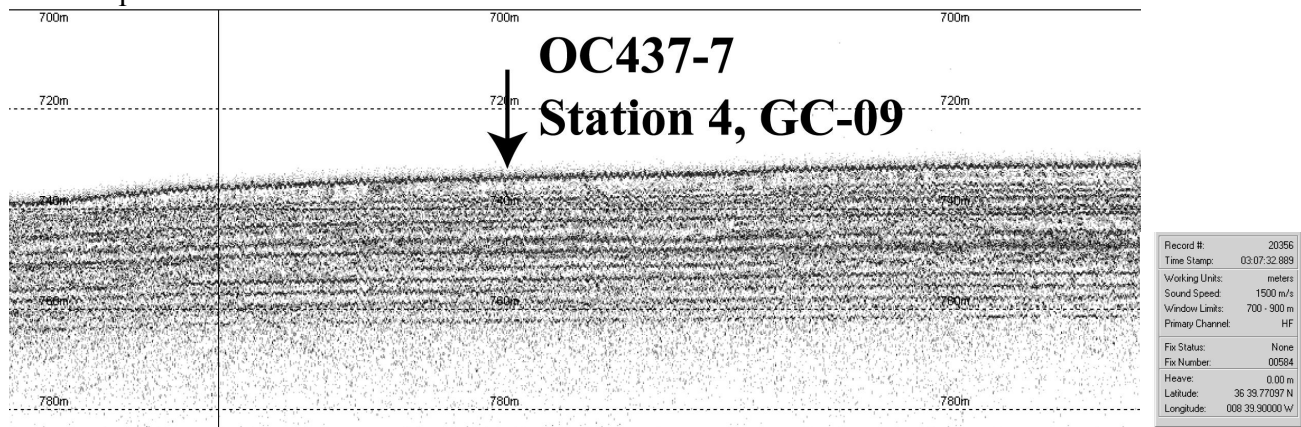
Location: Off South Portugal Margin

Surface temperature: 19.69°C, Salinity: 36.41 psu
Date & Time (GMT): July 8, 2007, 00.54
Primary core site reference (if any): none
Estimated sedimentation rate (if known): none
Estimate basal age from shipboard MST: unknown

Core: GC-09
Date: July 8, 2007
Time: 02.47
Lat: 36°39.77 N
Lon: 8°39.90 W
Depth: 731 m
Core length: 84 cm (sandy contourite,
barrel bent)



3.5 kHz profile at site

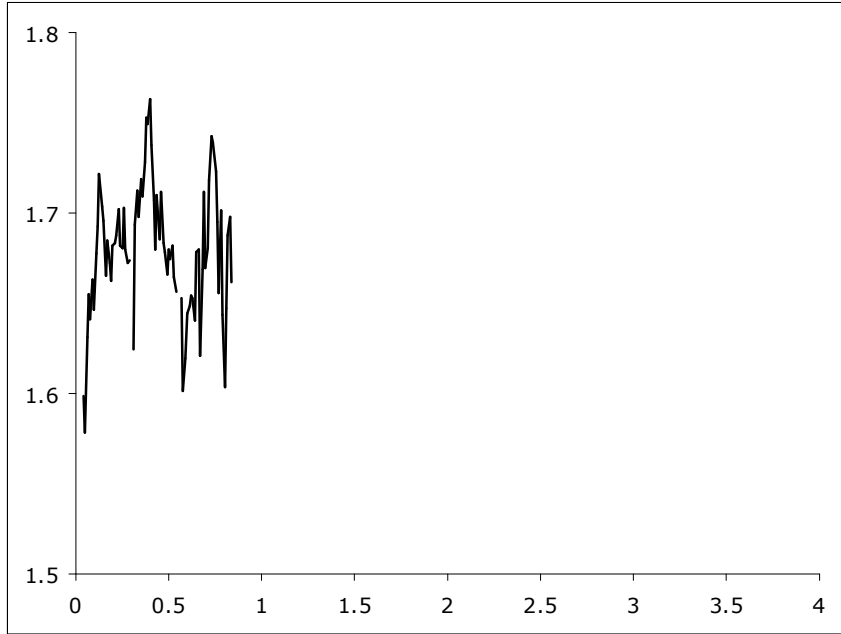


SounderSuite files: 2007-188-1442-017.keb (bottom mark GC-09: T00584)

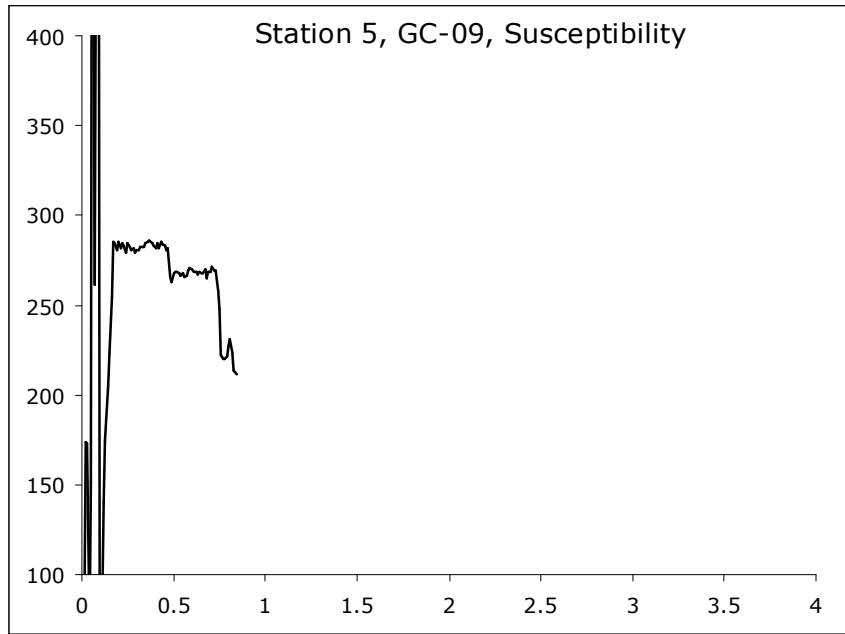
Comments:

OC437-7: Station 4, Shipboard MST data (GC-09)

Wet bulk density



Station 5, GC-09, Susceptibility



OC437-7: Station 5

Location: Off South Portugal Margin

Surface temperature: 22.47°C

Salinity: 36.50 psu

Date & Time (GMT): July 8, 2007, 12.21

Primary core site reference (if any): MD99-2341 (Tocanne et al., 2007)

Estimated sedimentation rate (if known): 28 cm/ka

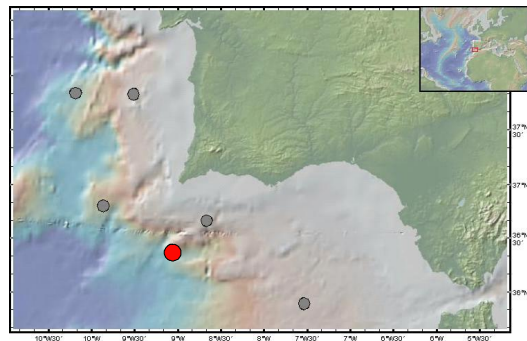
Estimate basal age from shipboard MST: about 11 ka

Core: MC-11
Date: July 8, 2007
Time: 14.07
Lat: 36°23.407 N
Lon: 7°3.917 W
Depth: 576.5m
Number of cores: 5

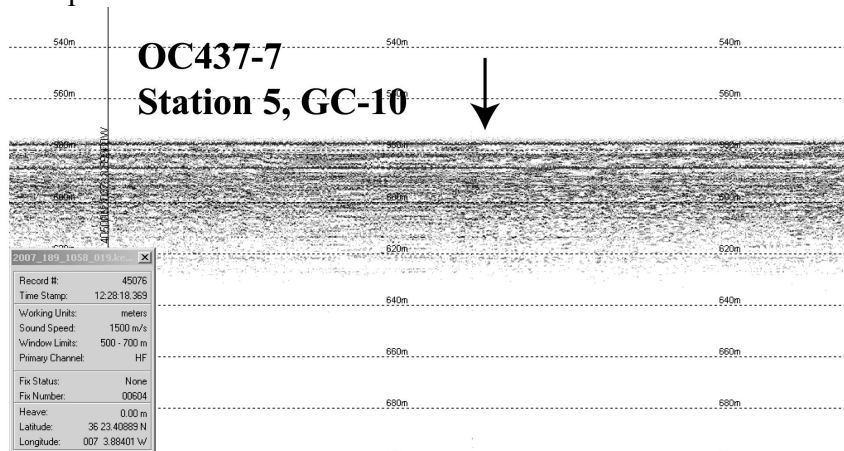
Core: GC-10
Date: July 8, 2007
Time: 12.28
Lat: 36°23.40 N
Lon: 7°3.88 W
Depth: 589.8m
Core length: 338 cm

Multicore lengths and allocation:

A (31 cm) Lamont, 1cm slices in bags
B (31/33 cm) Lamont, 1cm slices in bags
C (24 cm) WHOI 1cm slices in bags
D (34/32 cm) WHOI 1cm slices in jars
E (34/29 cm) Lamont, Archive (0-1 cm split, Ncl)



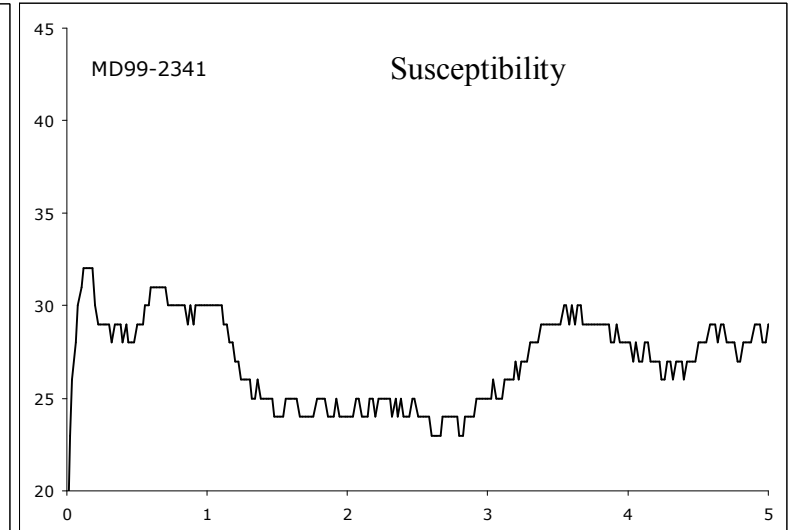
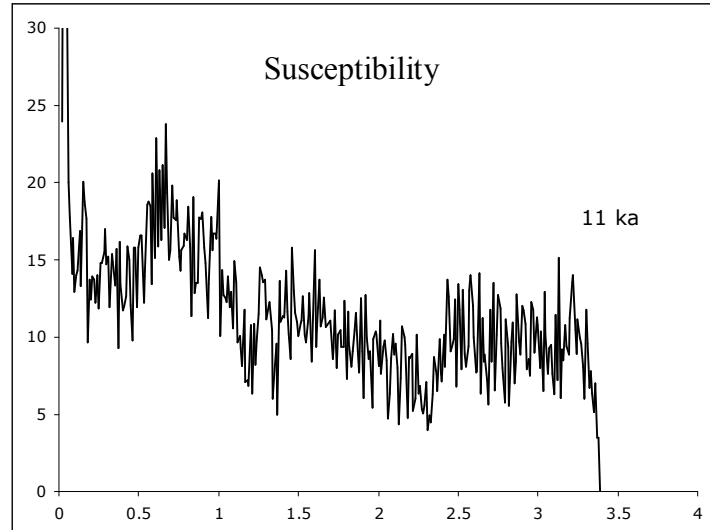
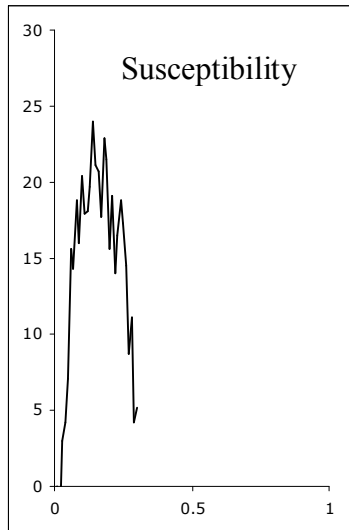
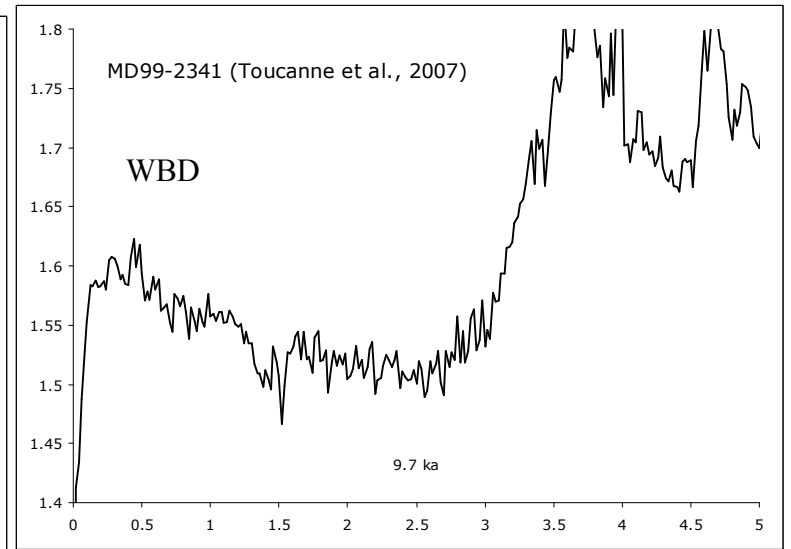
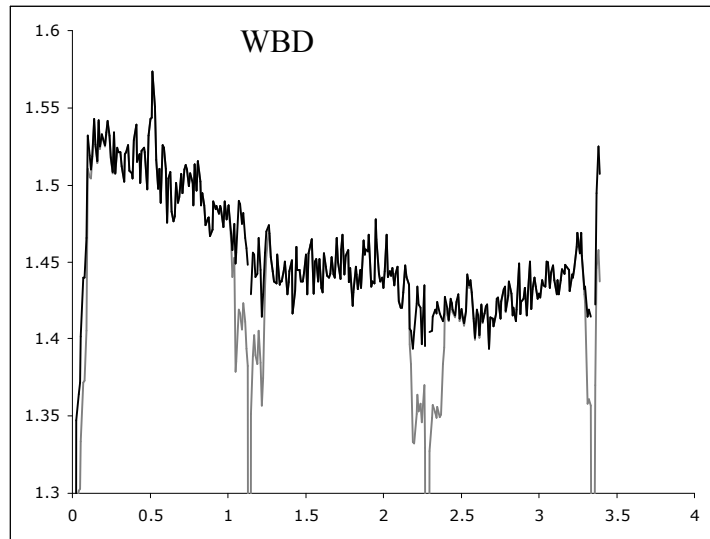
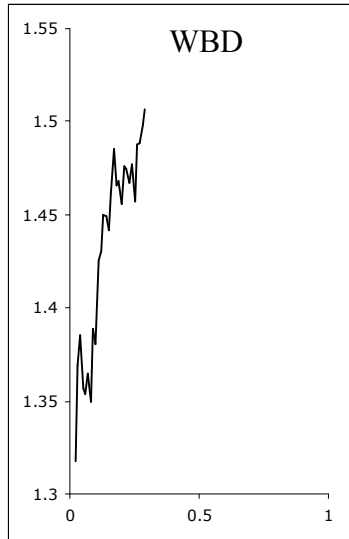
3.5 kHz profile at site



SounderSuite files: 2007-189-1058-019.keb (bottom mark GC-10: T00604); 2007-189-1058-019.keb (bottom mark MC-11: T00607)

Comments:

OC437-7: Station 5, Shipboard MST data (MC-11; GC-10)



OC437-7: Station 6

Location: Gulf of Cadiz

Surface temperature: 22.28°C, Salinity: 36.59 psu

Date & Time (GMT): July 8, 2007, 20.25

Primary core site reference (if any): MD99-2339 (Voelker et al., 2006)

Estimated sedimentation rate (if known): 36 cm/ka

Estimate basal age from shipboard MST: about 20 ka

Core: MC-12
Date: July 8, 2007
Time: 20.24
Lat: 35°53.417 N
Lon: 7°31.888 W
Depth: 1184 m
Number of cores: 5

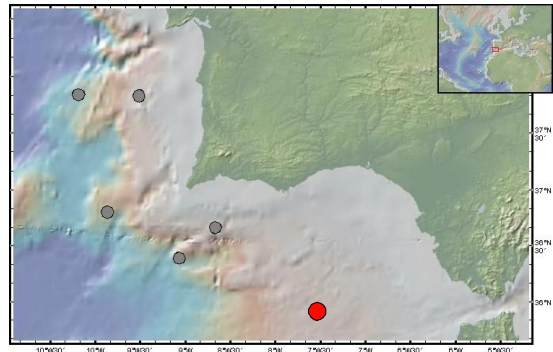
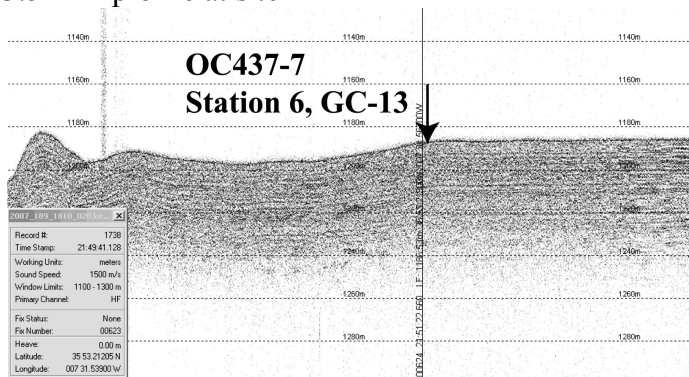
Core: GC-13
Date: July 8, 2007
Time: 22.12
Lat: 35°53.393 N
Lon: 7°31.802 W
Depth: 1184 m
Core length: 308 cm

Core: CTD-14
Date: July 8, 2007
Time: 22.12
Lat: 35°53.393 N
Lon: 7°31.802 W
File Name: OC437002.dat/OC437002a.dat
Numb. water samples: 4

Multicore lengths and allocation:

A (31 cm) Lamont, 1cm slices in bags
B (31/33 cm) Lamont, 1cm slices in bags
C (24 cm) WHOI 1cm slices in bags
D (34/23 cm) WHOI 1cm slices in jars
E (34/29 cm) Lamont, Archive (0-1 cm split, Ncl)

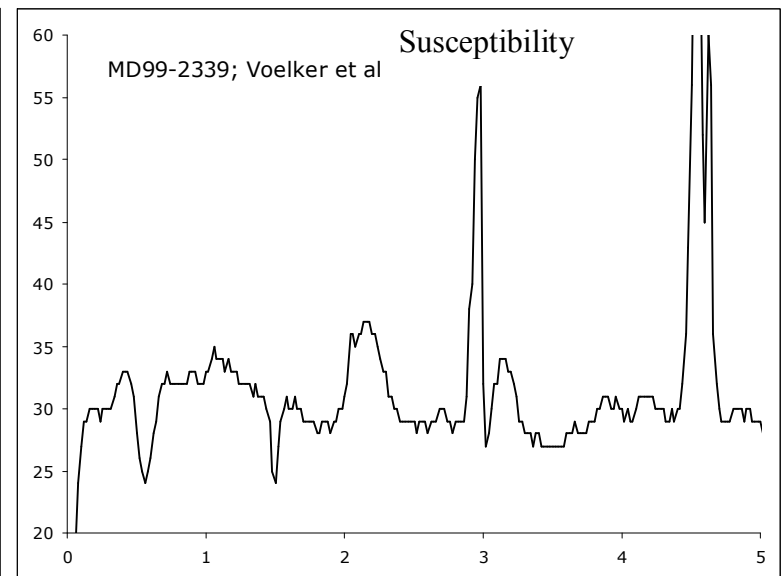
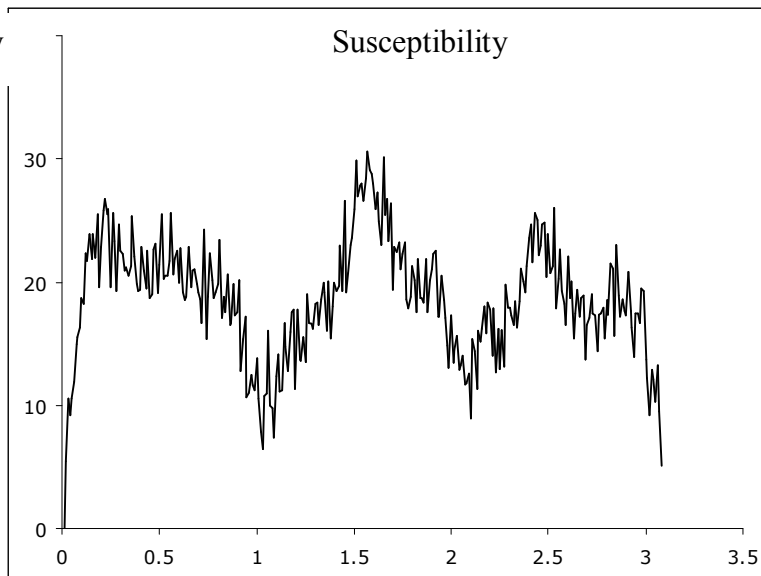
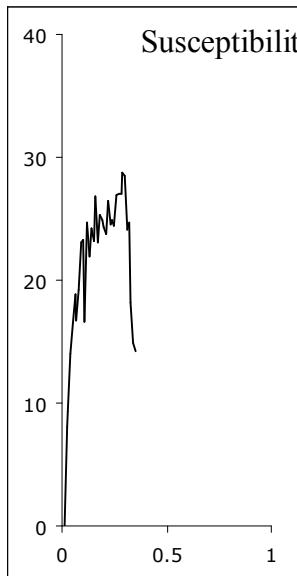
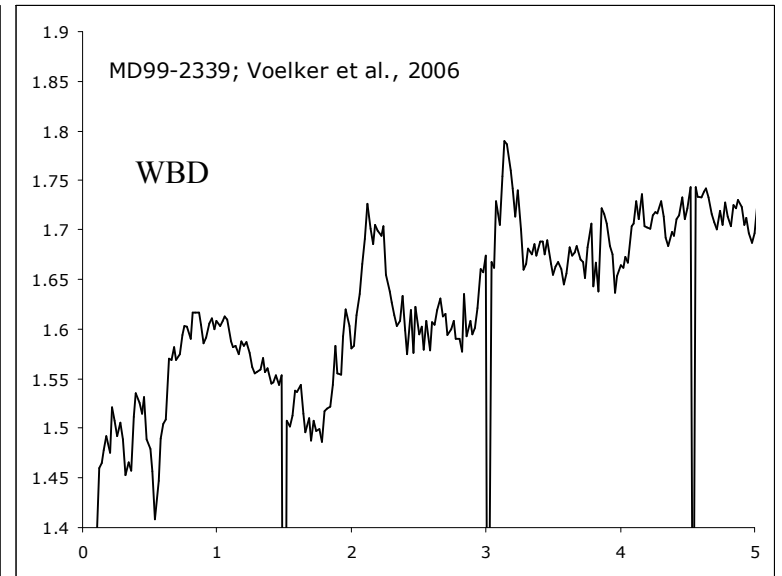
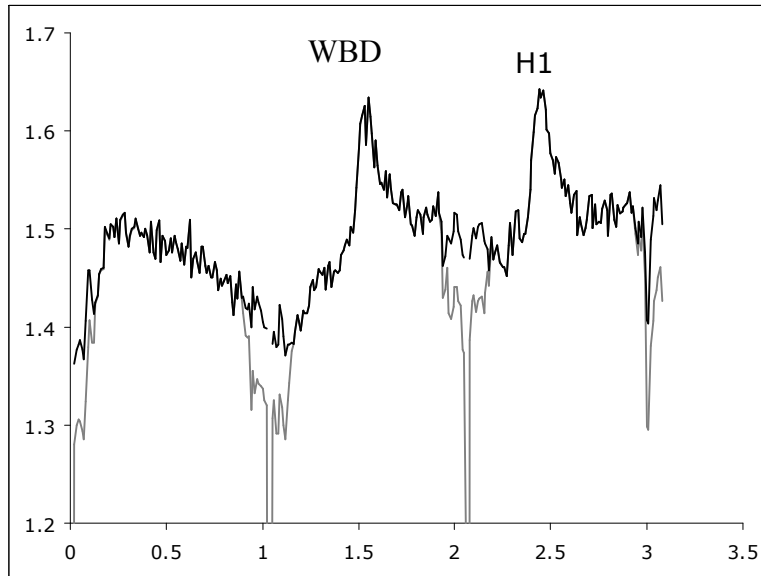
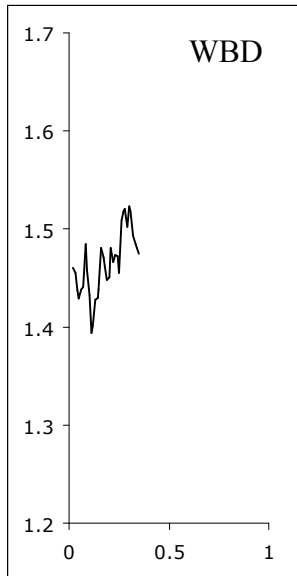
3.5 kHz profile at site



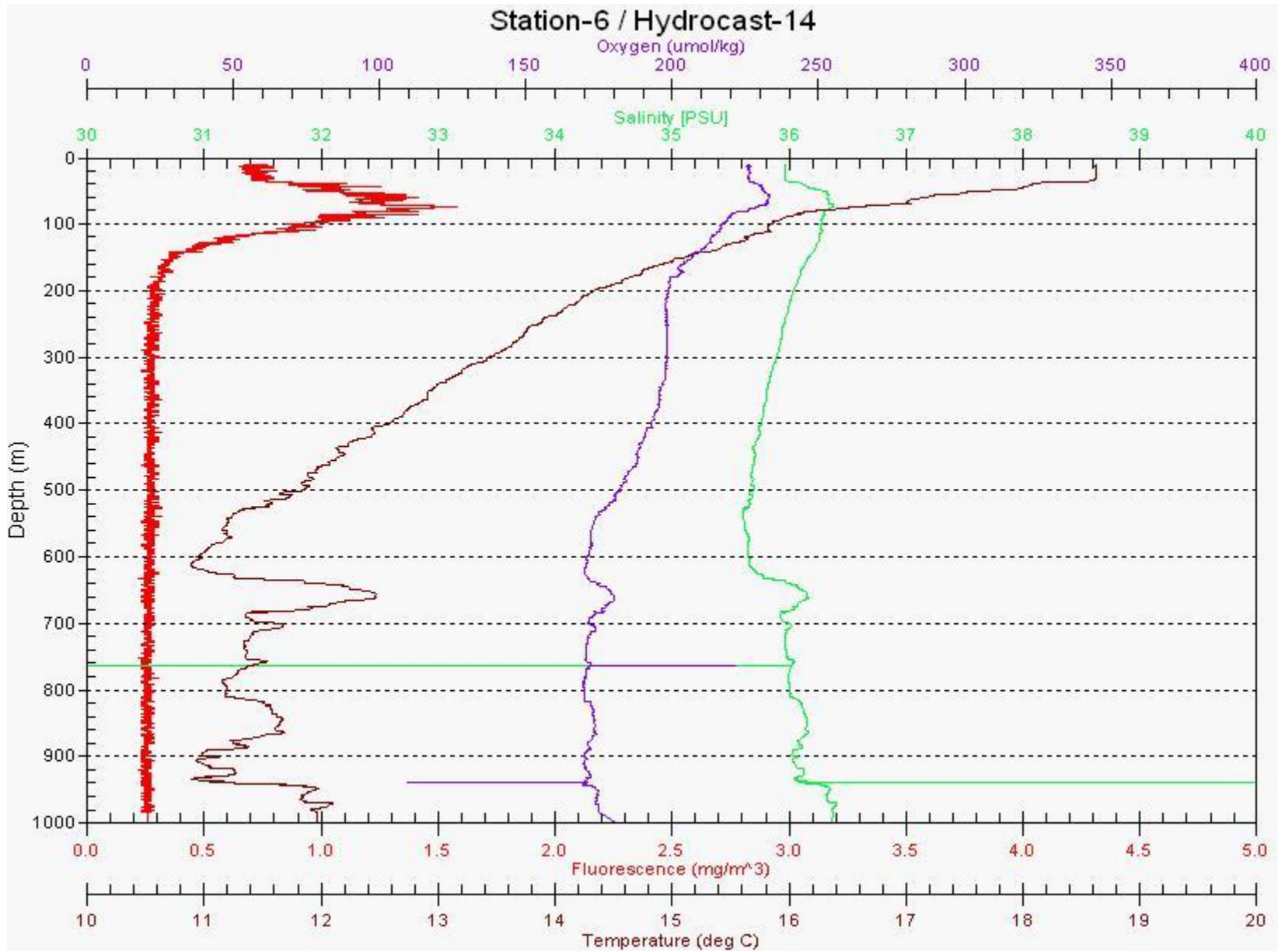
SounderSuite files: 2007-189-1810-020.keb (bottom mark MC-12: P00620); 2007-189-1810-020.keb (bottom mark GC-13: T00624)

Comments:

OC437-7: Station 6, Shipboard MST data (MC-12, GC-13)



OC437-7: Station 6, Shipboard CTD data



OC437-7: Station 7

Location: Off North Morocco

Surface temperature: 22.18°C

Salinity: 36.63 psu

Date & Time (GMT): July 9, 2007, 19.05

Primary core site reference (if any):

Estimated sedimentation rate (if known):

Estimate basal age from shipboard MST:

Core: MC-15

Core: GC-16

Date: July 9, 2007

Date: July 9, 2007

Time: 18.08

Time: 19.54

Lat: 34°6.713 N

Lat: 34°6.945 N

Lon: 7°45.50 W

Lon: 7°45.978 W

Depth: 366 m

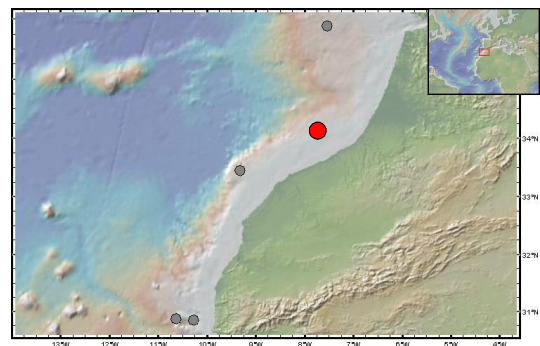
Depth: 390.7 m

Number of cores: 8

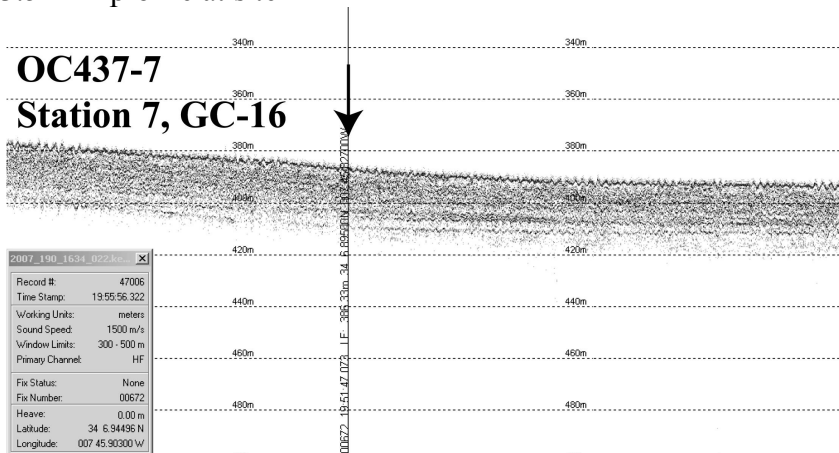
Core length: empty

Multicore lengths and allocation:

A (22/23 cm)	Lamont 1cm slices in bags
B (19/20 cm)	Lamont 1cm slices in bags
C (20 cm)	WHOI 1cm slices in bags
D (23 cm)	WHOI 1cm slices in jars
E (18 cm)	WHOI 1cm slices in bags
F (13 cm)	WHOI 1cm slices in bags
G (19 cm)	Lamont 1cm slices in bags
H (16 cm)	Lamont, Archive (0-1 cm split, Ncl)



3.5 kHz profile at site



SounderSuite files: 2007-190-1634-022.keb (bottom mark MC-15: T00669); 2007-190-1634-022.keb (bottom mark GC-16: T00672)

Comments:

OC437-7: Station 8

Location: Off Mid Morocco

Surface temperature: 21.81°C

Salinity: 36.62 psu

Date & Time (GMT): July 10, 2007, 06.19

Primary core site reference (if any): M8-020-2 (Thiede, 2006)

Estimated sedimentation rate (if known): 14.3 cm/ka

Estimate basal age from shipboard MST: about 21 ka

Core: MC-18

Date: July 10, 2007

Time: 08.18

Lat: 33°26.908 N

Lon: 9°18.888 W

Depth: 835 m

Number of cores: 8

Core: GC-17

Date: July 10, 2007

Time: 06.39

Lat: 33°27.043 N

Lon: 9°19.287 W

Depth: 855 m

Core length: 299 cm

CTD cast: CTD-19;

Date: July 10, 2007

Time: 07.00

Lat: 33°27.043 N

Lon: 9°19.287 W

File name: OC437003.dat

No. water samples: 5

WP-20:

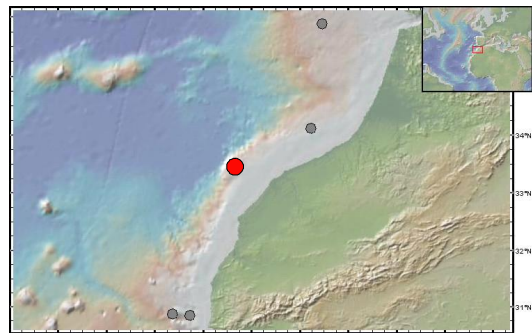
5 Membrane filters

WP-2:

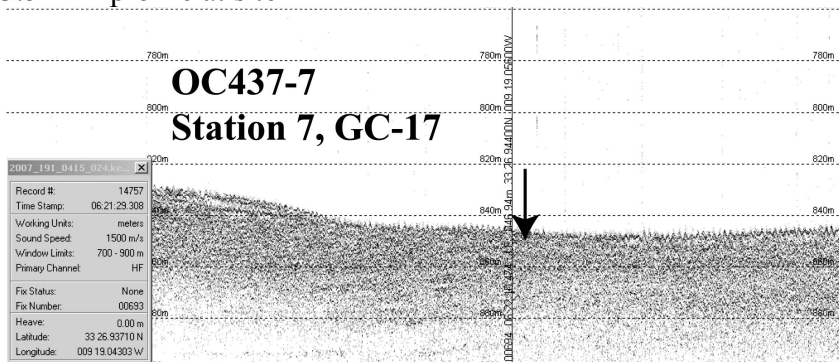
4 Quartz filters

Multicore lengths and allocation:

A (25 cm)	Lamont 1cm slices in bags
B (10 cm)	WHOI 0-1cm slice in bag
C (25 cm)	Lamont 1cm slices in bags
D (22 cm)	WHOI 1cm slices in bags
E (23 cm)	WHOI 1cm slices in bags
F (17 cm)	Lamont, Archive (0-1 cm split, Ncl)
G (25)	WHOI 1cm slices in jars
G (10)	WHOI 1cm slices in bags



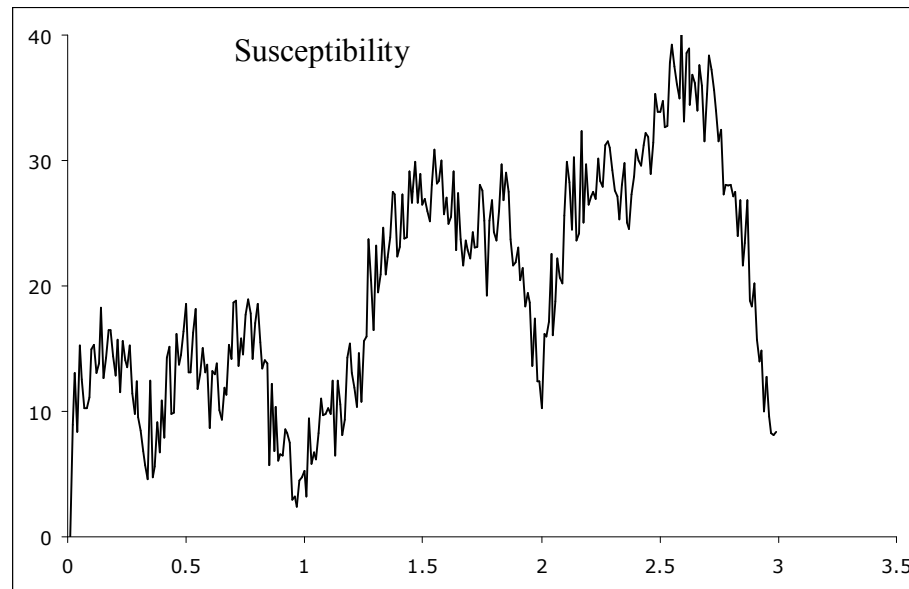
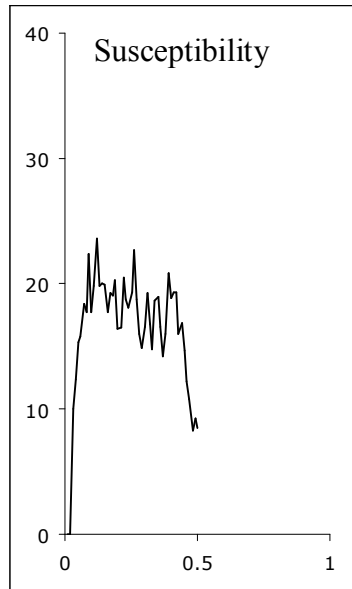
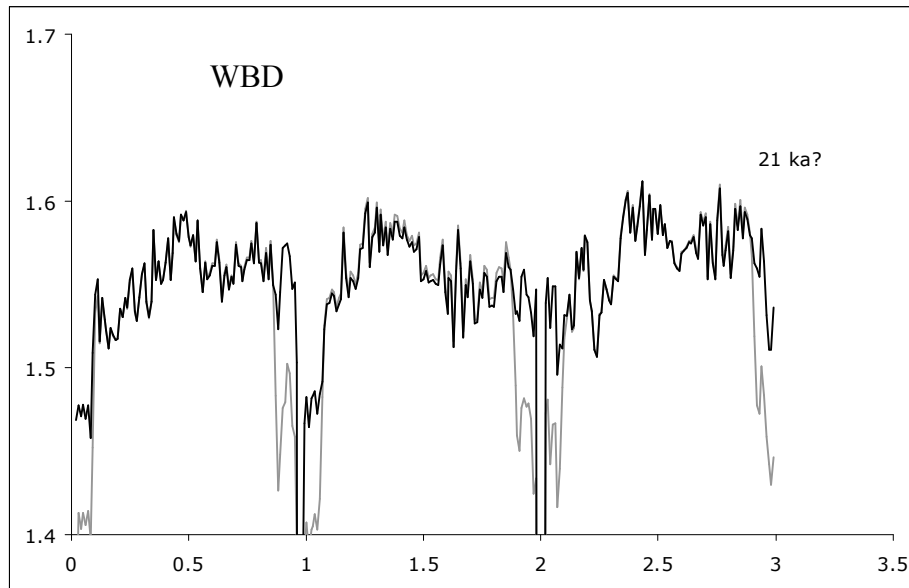
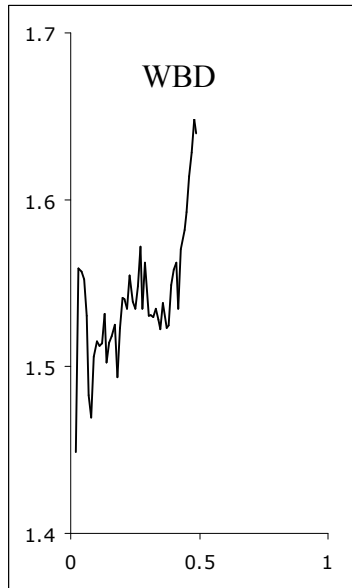
3.5 kHz profile at site



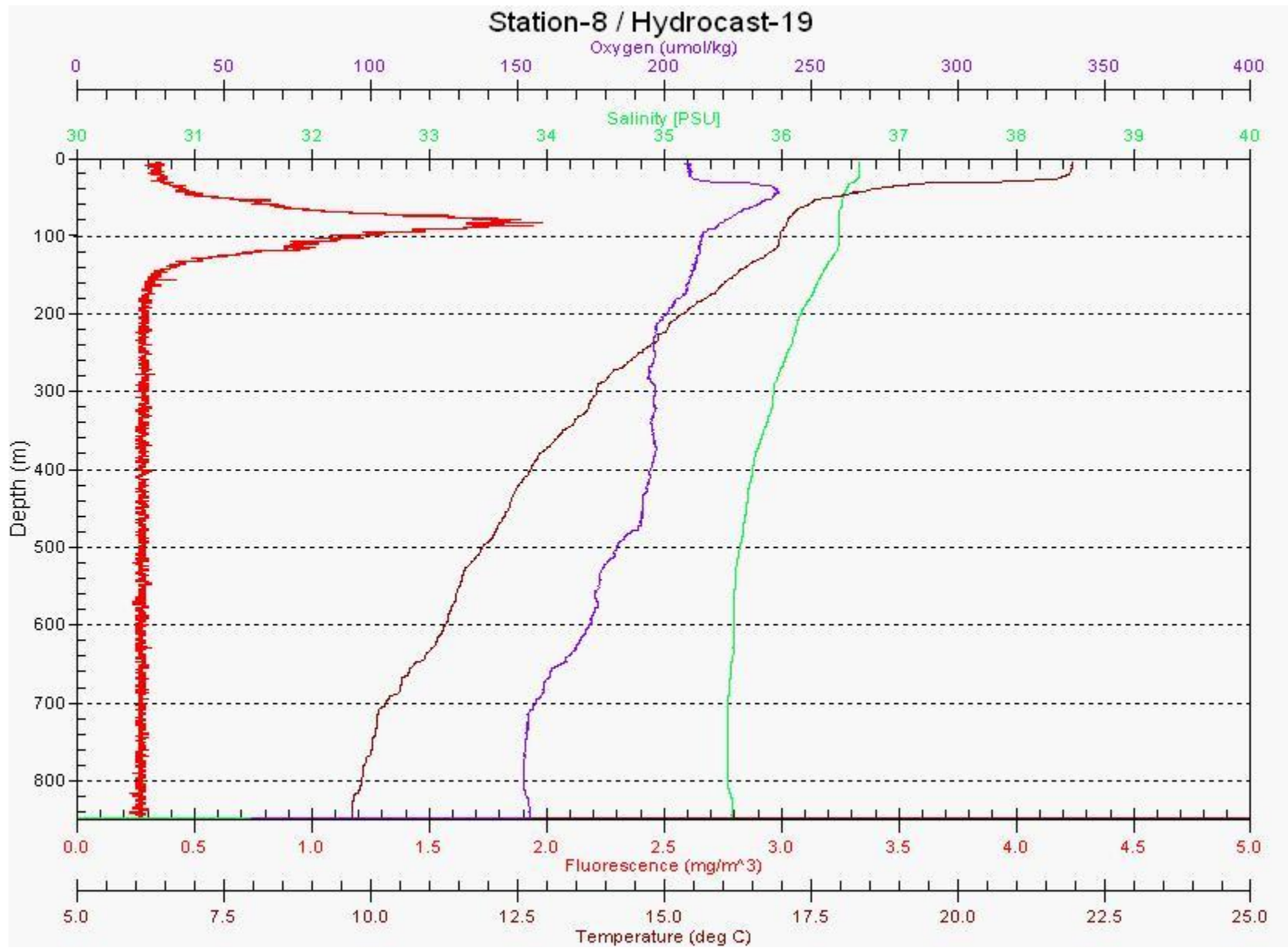
SounderSuite files: 2007-191-0415-024.keb (bottom mark GC-17: T00694); 2007-191-0415-024.keb (bottom mark GC-18: T00697)

Comments:

OC437-7: Station 8, Shipboard MST data (MC-17, GC-18)



OC437-7: Station 8, Shipboard CTD data



OC437-7: Station 9

Location: Off South Morocco

Surface temperature: 16.94°C

Salinity: 36.19 psu

Date & Time (GMT): July 11, 2007, 22.57

Primary core site reference (if any): GeoB 6007 (Kuhlemann Diss; Kim et al., 2007)

Estimated sedimentation rate (if known): 70-160 cm/ka

Estimate basal age from shipboard MST: about 5 ka

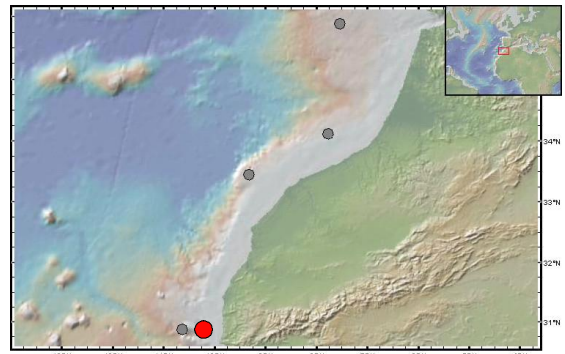
Core: MC-22
Date: July 12, 2007
Time: 01.22
Lat: 30°51.698 N
Lon: 10°16.974 W
Depth: 835 m
Number of cores: 8

Core: GC-23
Date: July 12, 2007
Time: 02.57
Lat: 30°50.952 N
Lon: 10°16.357 W
Depth: 923 m
Core length: 208 cm

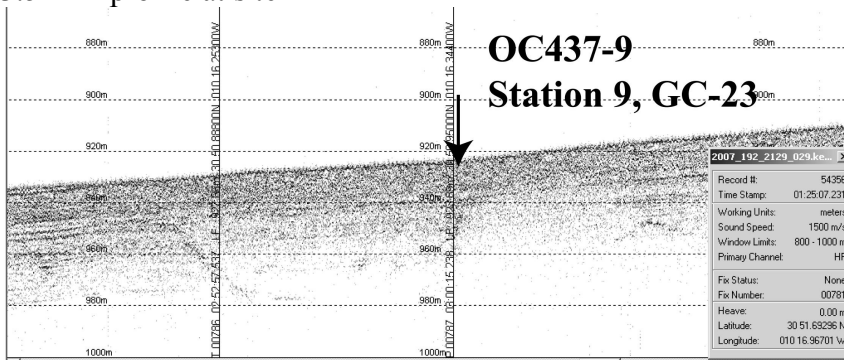
Core: GC-24
Date: July 12, 2007
Time: 05.13
Lat: 30°51.213 N
Lon: 10°16.349 W
Depth: 889 m
Core length: 312 cm

Multicore lengths and allocation:

- A (40 cm) Lamont 1cm slices in bags
- B (40 cm) WHOI 0-1cm slice in bags
- C (42 cm) Lamont 1cm slices in bags
- D (42 cm) WHOI 1cm slices in jars
- E (36 cm) WHOI 1cm slices in bags
- F (37 cm) WHOI 1cm slices in bags
- G (36) WHOI 1-10 cm slices in bags
- G (36) Lamont, Archive (0-1 cm split, Ncl)



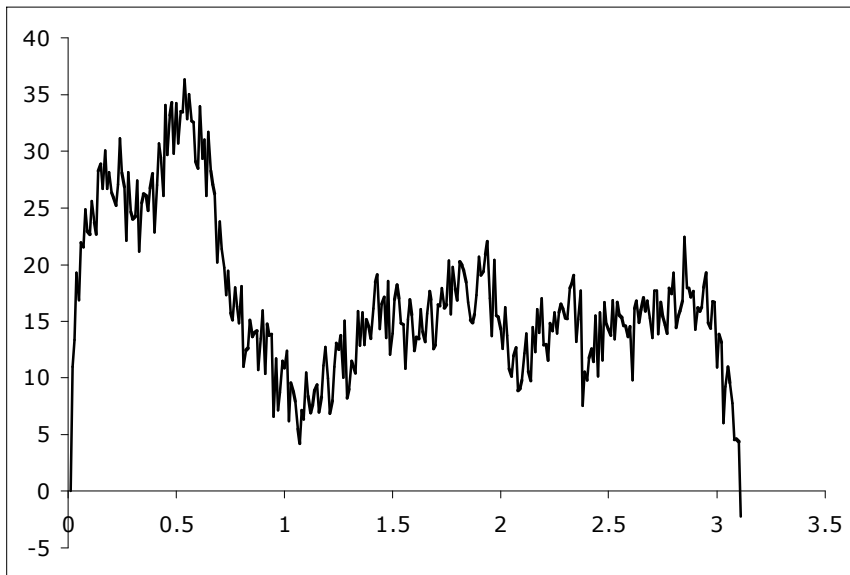
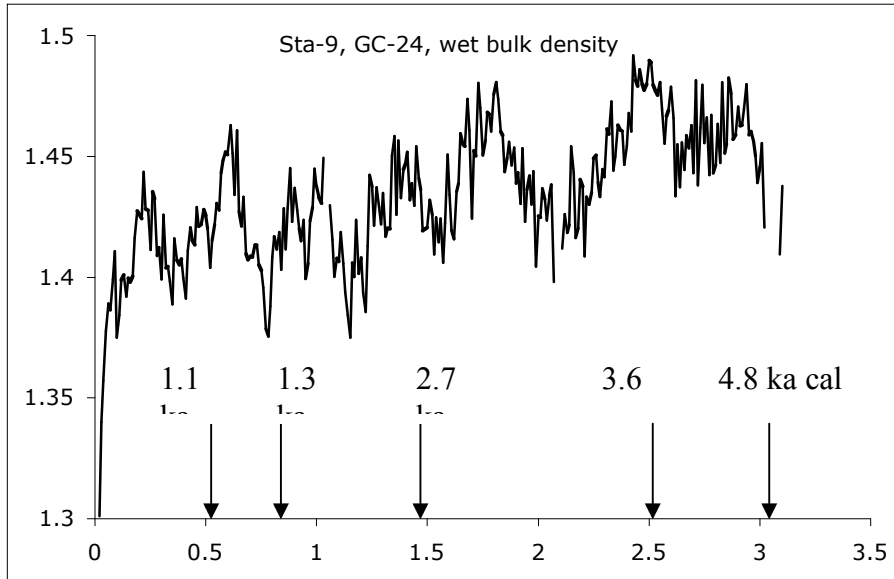
3.5 kHz profile at site



SounderSuite files: 2007-192-2129-029.keb (bottom mark MC-22: T00782); 2007-192-2129-029.keb (bottom mark GC-23: P00787)

Comments:

OC437-7: Station 9, Shipboard MST data (GC-24)



OC437-7: Station 10

Location: Off South Morocco

Surface temperature: 17.80°C

Salinity: 36.33 psu

Date & Time (GMT): July 12, 2007, 12.50

Primary core site reference (if any): GeoB 6001 (Kuhlemann Diss)

Estimated sedimentation rate (if known):

Estimate basal age from shipboard MST: >20 ka

Core: MC-25

Date: July 12, 2007

Time: 09.45

Lat: 30°53.290 N

Lon: 10°37.970 W

Depth: 1244 m

Number of cores: 6

Core: GC-26

Date: July 12, 2007

Time: 11.35

Lat: 30°52.060 N

Lon: 10°37.720 W

Depth: 1277 m

Core length: 201 cm

Core: GC-27

Date: July 12, 2007

Time: 13.23

Lat: 30°52.790 N

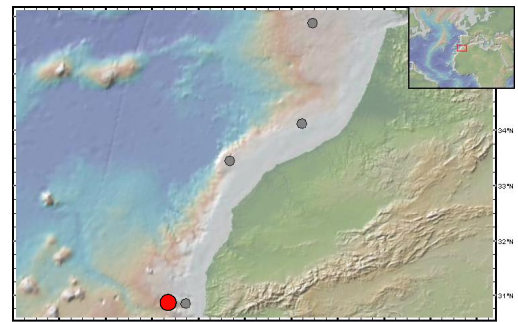
Lon: 10°37.790 W

Depth: 1258 m

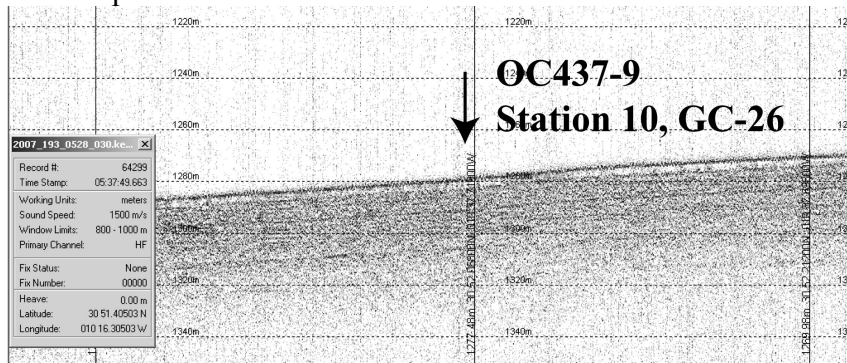
Core length: 218 cm

Multicore lengths and allocation:

- A (21 cm) Lamont 1cm slices in bags
- B (23 cm) WHOI 0-1cm slice in jars
- C (20 cm) Lamont 1cm slices in bags
- D (16 cm) Lamont, Archive (0-1 cm split, Ncl)
- E (19 cm) WHOI 1cm slices in bags
- F (15 cm) WHOI 1cm slices in bags



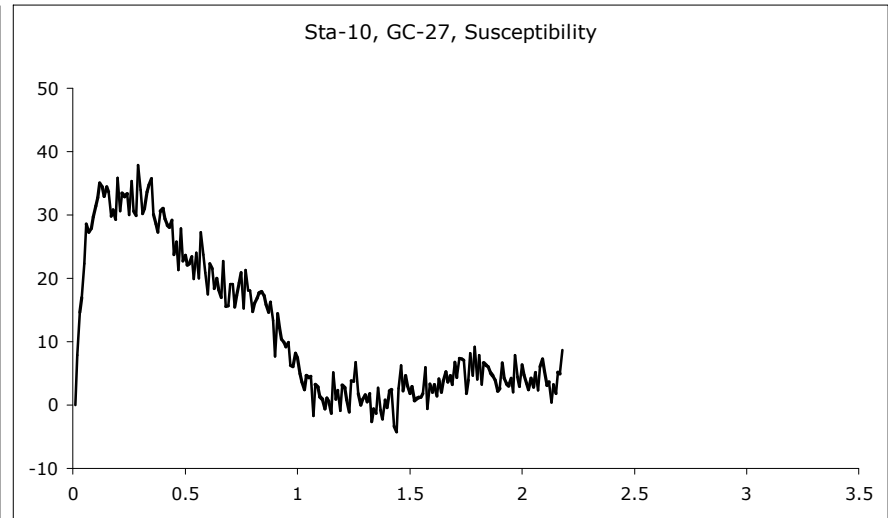
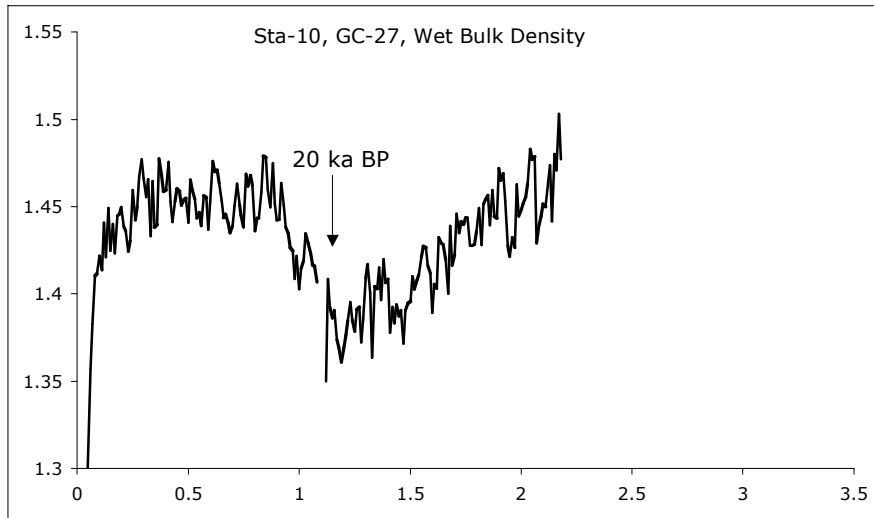
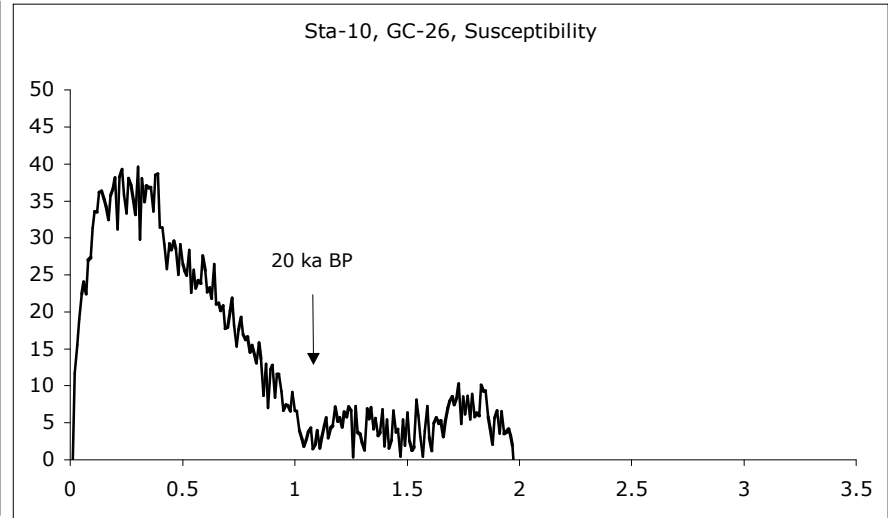
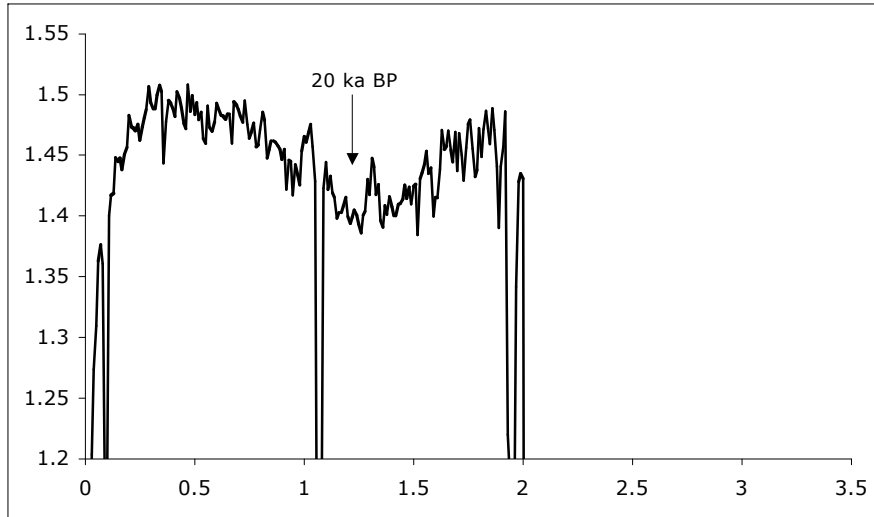
3.5 kHz profile at site



SounderSuite files: 2007-192-2129-029.keb (bottom mark GC-24: P00792); 2007-193-0528-030.keb (bottom mark MC-25: P00802); 2007-193-0528-030.keb (bottom mark GC-26: P00807)

Comments:

OC437-7: Station 10, Shipboard MST data (GC-26, GC-27)



OC437-7: Station 11

Location: Off South Morocco

Surface temperature: 20.48°C

Salinity: 36.52 psu

Date & Time (GMT): July 12, 2007, 12.50

Primary core site reference (if any): GeoB 4223 (Kuhlemann Dissertation Bremen, 2003)

Estimated sedimentation rate (if known): 20+ cm/ka

Estimate basal age from shipboard MST: about 24 ka (H2)

Core: MC-28

Date: July 13, 2007

Time: 05.45

Lat: 29°01.083 N

Lon: 12°28.016 W

Depth: 776 m

Number of cores: 7

Core: GC-29

Date: July 13, 2007

Time: 07.44

Lat: 29°00.854 N

Lon: 12°28.015 W

Depth: 773 m

Core length: 240 cm

Core: GC-30

Date: July 13, 2007

Time: 09.05

Lat: 29°01.090 N

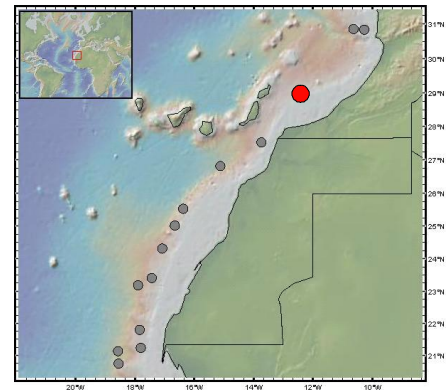
Lon: 12°28.009 W

Depth: 775 m

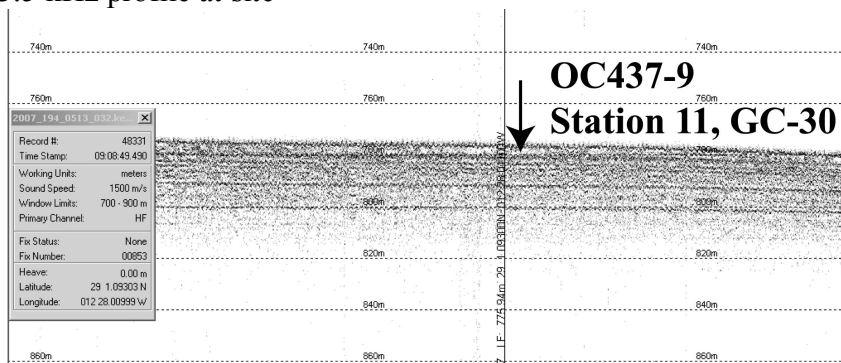
Core length: 306 cm

Multicore lengths and allocation:

- A (33 cm) Lamont 1cm slices in bags
- B (31 cm) WHOI 0-1cm slice in bags
- C (21 cm) Lamont, Archive (0-1 cm split, Ncl)
- D (34/36 cm) Lamont 1cm slices in bags
- E (30 cm) WHOI 1cm slices in bags
- F (35 cm) WHOI 0-1cm slice in jars
- G (36 cm) WHOI 1cm slices in bags



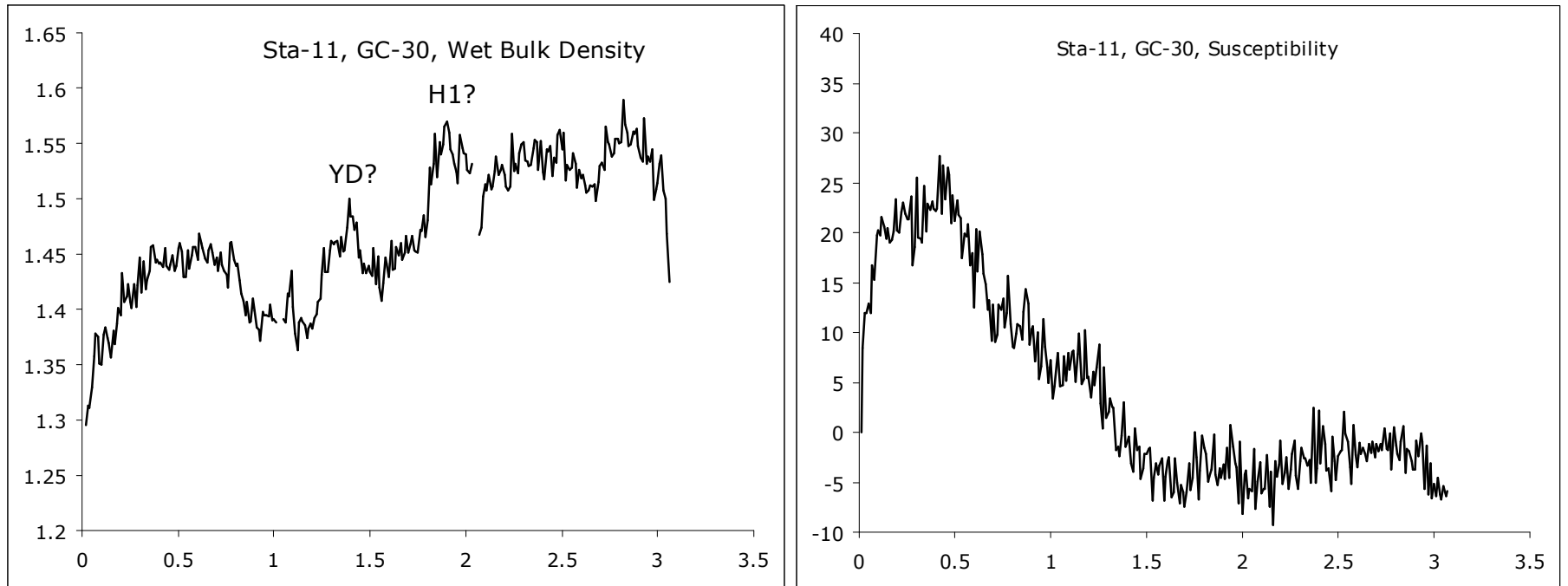
3.5 kHz profile at site



SounderSuite files: 2007-194-0513-032.keb (bottom mark MC-28: P00846); 2007-194-0513-032.keb (bottom mark GC-29: P00850); 2007-194-0513-032.keb (bottom mark GC-30: P00854)

Comments:

OC437-7: Station 11, Shipboard MST data (GC-30)



OC437-7: Station 12

Location: Off West Sahara

Surface temperature: 21.10°C; Salinity: 36.45 psu

Date & Time (GMT): July 13, 2007,

Primary core site reference (if any): GeoB 5546 (Kuhlemann et al. 2004))

Estimated sedimentation rate (if known): 24 cm/ka

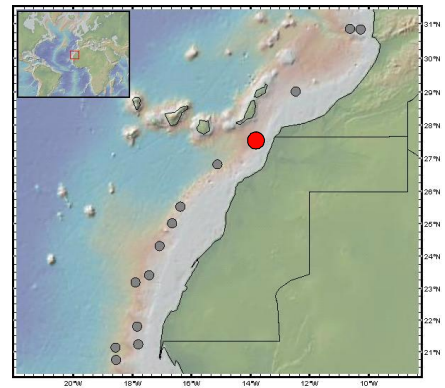
Estimate basal age from shipboard MST: about 18 Ka (H1)

Core: MC-31
Date: July 13, 2007
Time: 21.54
Lat: 27°32.226 N
Lon: 13°44.448 W
Depth: 1090 m
Number of cores: 7

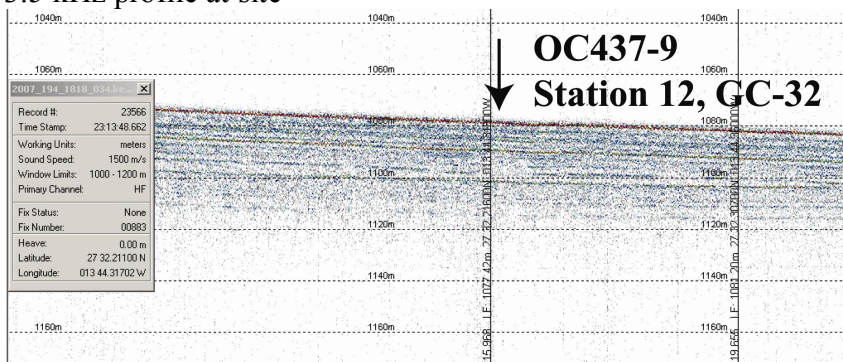
Core: GC-32
Date: July 13, 2007
Time: 23.11
Lat: 27°32.21 N
Lon: 13°44.32 W
Depth: 1078 m
Core length: 297 cm

Multicore lengths and allocation:

A (19 cm)	Lamont 1cm slices in bags
B (19 cm)	WHOI 0-1cm slice in jars
C (21 cm)	Lamont 1cm slices in bags
D (20/18 cm)	WHOI 1cm slices in bags
E (18 cm)	WHOI 0-1 cm slices in bags
F (18/16 cm)	WHOI 0-10 cm in slice in bags
G (16 cm)	Lamont, Archive (0-1 cm split, Ncl)



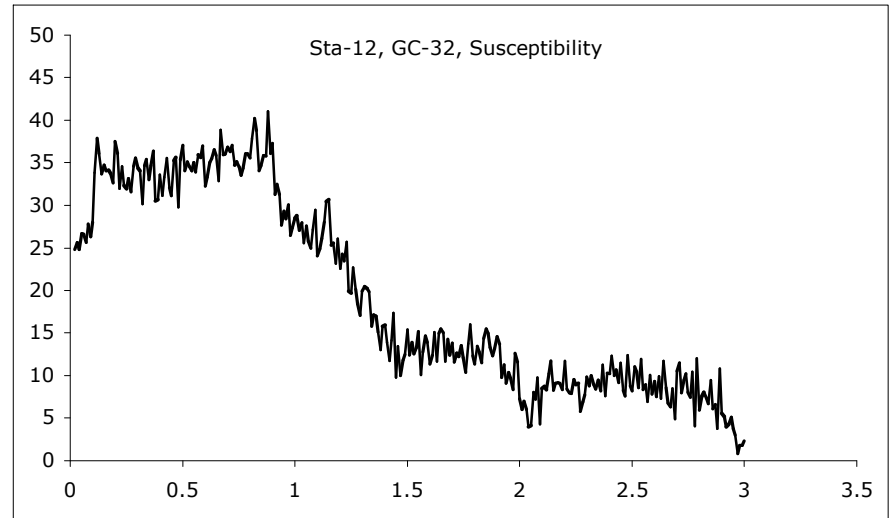
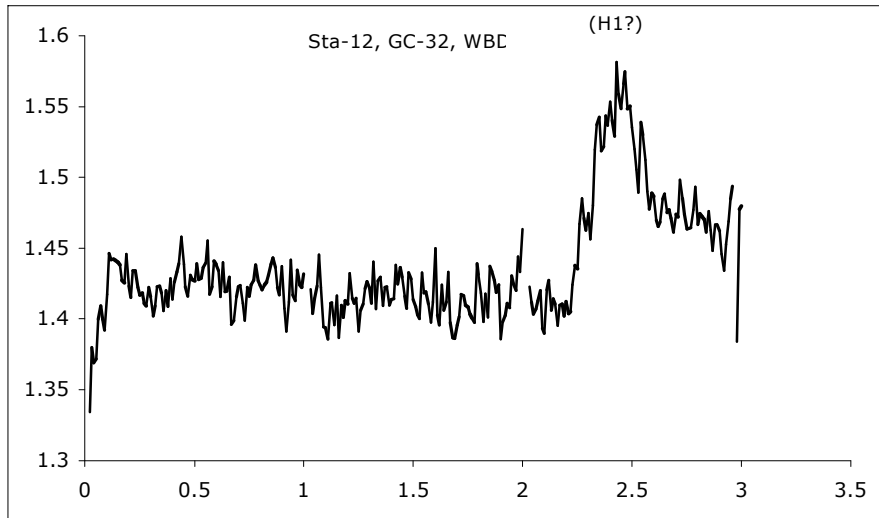
3.5 kHz profile at site



SounderSuite files: 2007-194-1818-034.keb (bottom mark MC-31: P00880); 2007-194-1818-034.keb (bottom mark GC-32: P00884)

Comments:

OC437-7: Station 12, Shipboard MST data (GC-32)



OC437-7: Station 13

Location: Off West Sahara

Surface Temperature: 21.43 °C; Salinity: 36.7 psu

Date & Time (GMT): July 14, 2007, 21.30

Primary core site reference (if any): 12309 (Vogelsang et al. 2001)

Estimated sedimentation rate (if known): 10 cm/ka

Estimate basal age from shipboard MST: unknown

Core: MC-36

Core: GC-37

CTD: CTD-33

WP-34:

Date: July 14, 2007

Date: July 14, 2007

Date: July 14, 2007

4 quartz filters

Lat: 26°49.640 N

Lat: 26°48.975 N

Lat: 26°5.77 N

WP-35:

Lon: 15°7.205 W

Lon: 15°7.063 W

Lon: 15°7.053 W

7 membrane filters

Depth: 2812 m

Depth: 2771 m

file name: OC437004.dat

Number of cores: 6

Core length: 310 cm

no of samples: 5

Multicore lengths and allocation:

A (13 cm)

WHOI 1cm slices in bags

B (15 m)

WHOI 0-1cm slice in bags

C (15 cm)

Lamont 1cm slices in bags

D (12 cm)

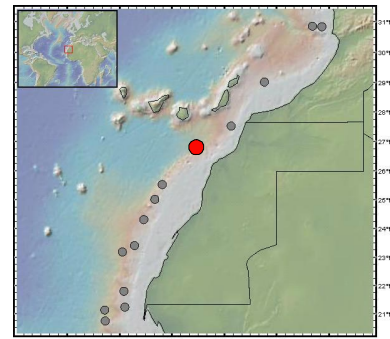
Lamont, Archive (0-1 cm split, Ncl)

E (15 cm)

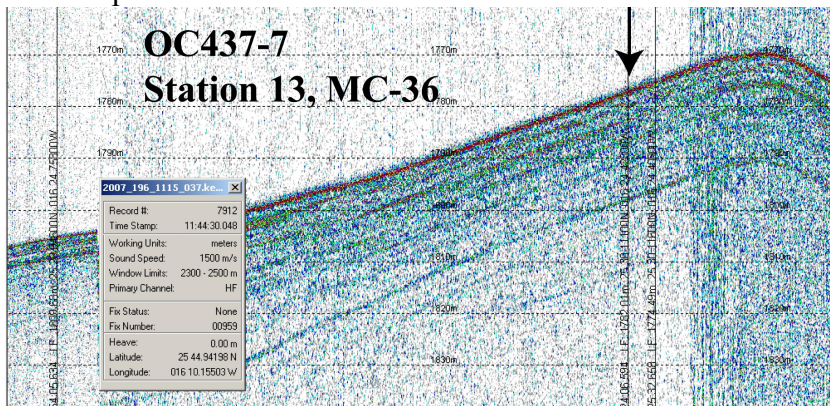
WHOI 0-1 cm slices in jars

F (14 cm)

Lamont 1cm slices in bags



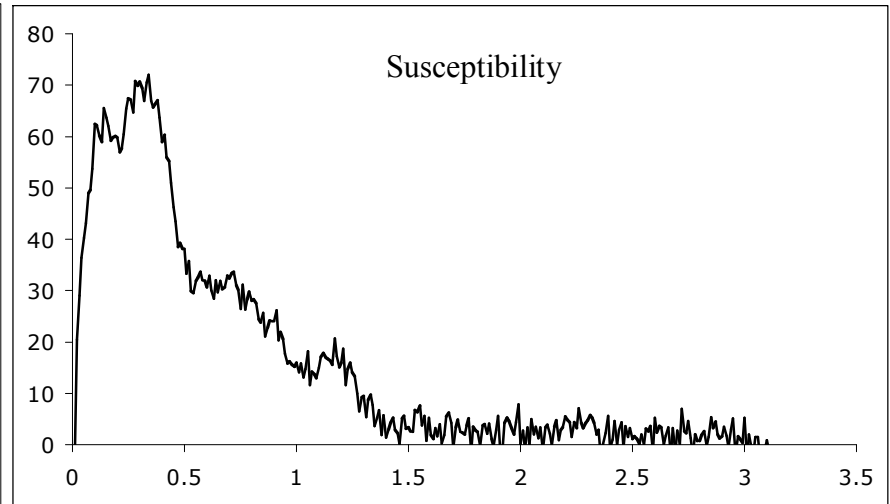
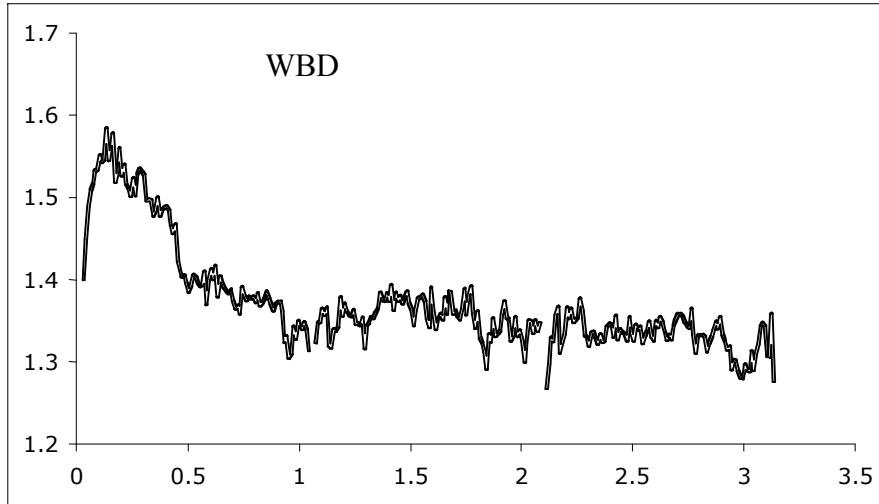
3.5 kHz profile at site GC-



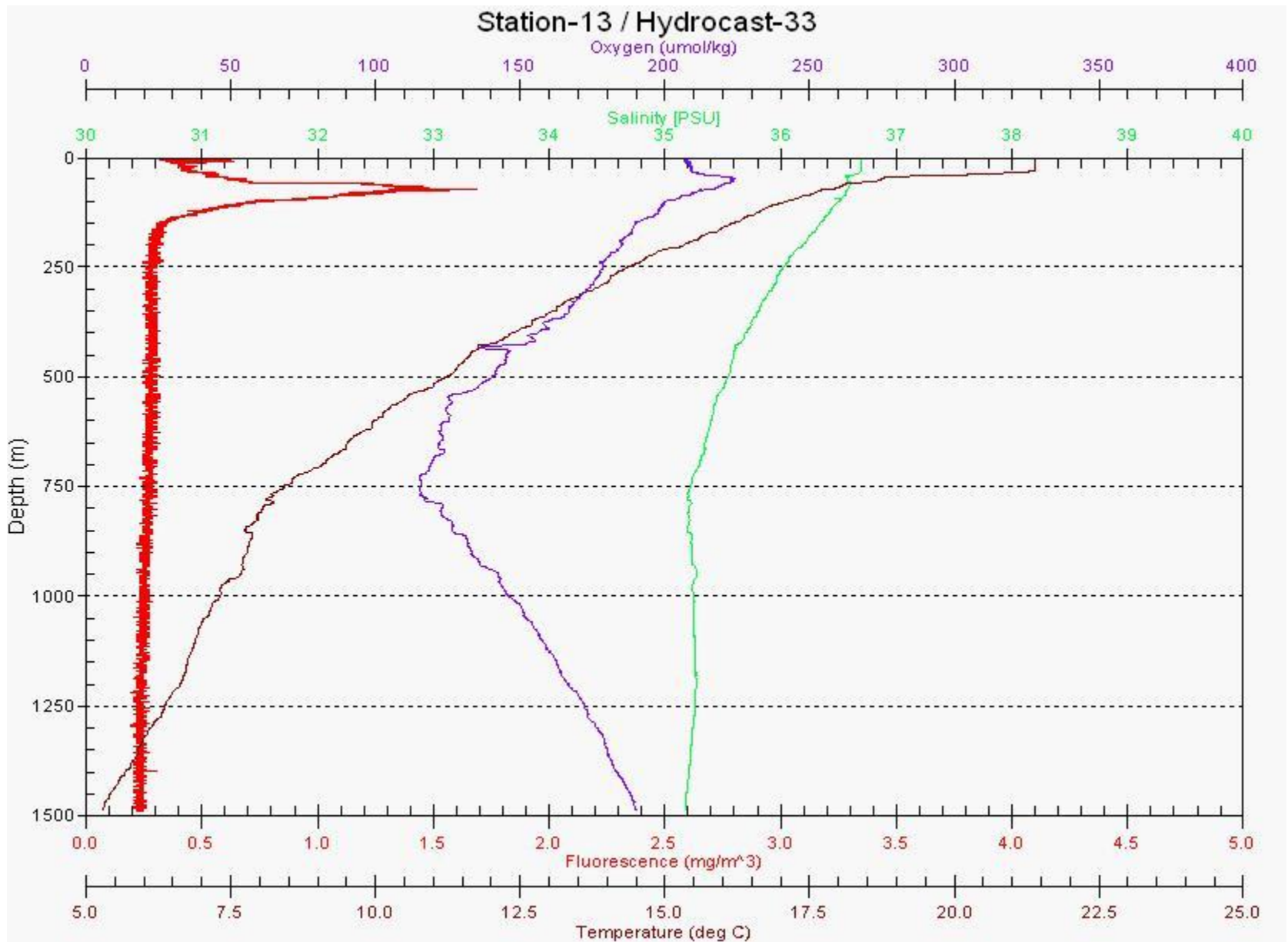
SounderSuite files: 2007-195-1417-036.keb (bottom mark MC-36: P00930); 2007-195-1417-036.keb (bottom mark GC-37: P00938)

Comments:

OC437-7: Station 13, Shipboard MST data (GC-37)



OC437-7: Station 13, Shipboard CTD data



OC437-7: Station 14

Location: Off West Sahara

Surface Temperature: 20.9 °C; Salinity: 36.65 psu

Date & Time (GMT): July 14, 2007, 16.55

Primary core site reference (if any):

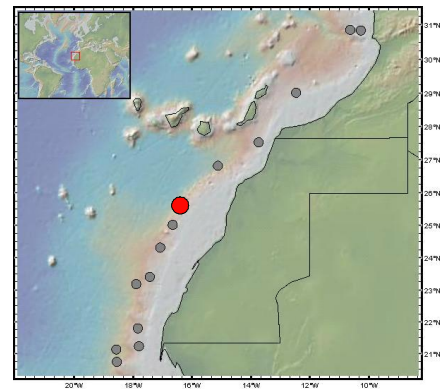
Estimated sedimentation rate (if known):

Estimate basal age from shipboard MST: about 20 ka

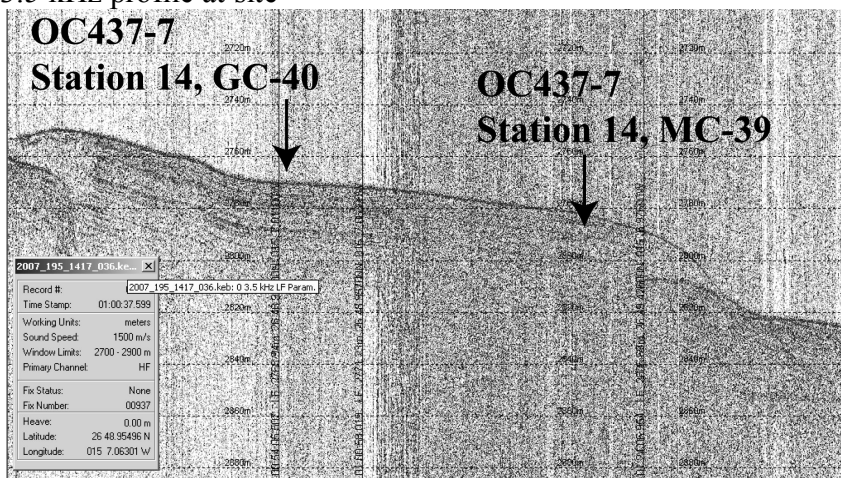
Core: MC-38	Core: MC-39	Core: GC-40
Date: July 15, 2007	Date: July 15, 2007	Date: July 15, 2007
Lat: 25°30.114 N	Lat: 25°29.956 N	Lat: 25°30.060 N
Lon: 16°24.418 W	Lon: 16°24.486 W	Lon: 16°24.410 W
Depth: 1774 m	Depth: 1780 m	Depth: 1768 m
Number of cores: 0	Number of cores: 8	Core length: 322 cm

Multicore lengths and allocation:

A (17 cm)	WHOI 1-10 cm slices in bags
B (14 m)	Lamont, Archive (0-1 cm split, Ncl)
C (16.5 cm)	WHOI 1cm slices in bags
D (16/17.5 cm)	Lamont 1cm slices in bags
E (119.5/22 cm)	Lamont 1cm slices in bags
F (20/21 cm)	WHOI 0-1 cm slices in jars
G (19 cm)	WHOI 1cm slices in bags
H (15 cm)	WHOI 0-1cm slice in bags



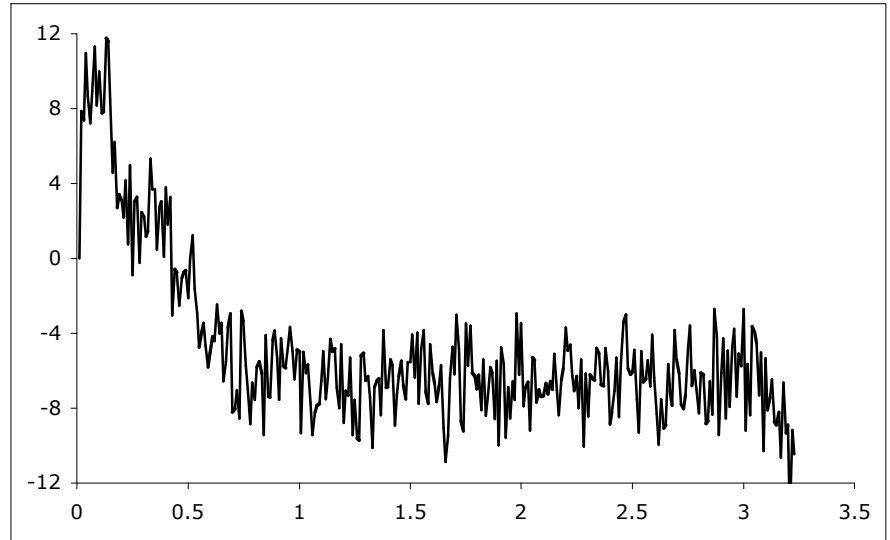
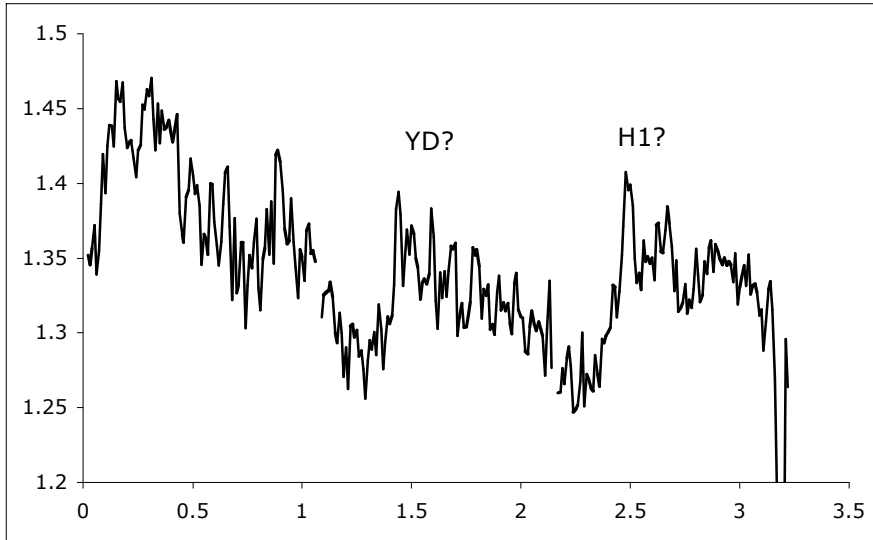
3.5 kHz profile at site



SounderSuite files: 2007-196-1115-037.keb (bottom mark MC-38: P00969); 2007-196-1115-037.keb (bottom mark MC-39: P00975); 2007-196-1115-037.keb (bottom mark GC-40: T00980)

Comments: MC-38 tilted when recovered to ship deck, no cores.

OC437-7: Station 14, Shipboard MST data (GC-40)



OC437-7: Station 15

Location: Off West Sahara

Surface Temperature: 21.12 °C; Salinity: 36.605 psu

Date & Time (GMT): July 16, 2007, 03.40

Primary core site reference (if any): 20kB (Martinez et al., 1999)

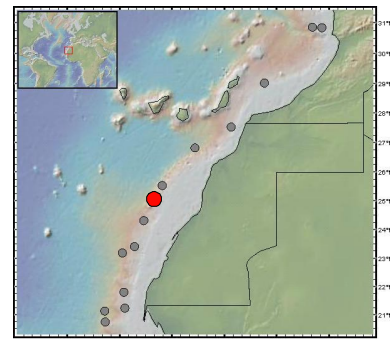
Estimated sedimentation rate (if known): 9 cm/ka

Estimate basal age from shipboard MST: about 20 ka

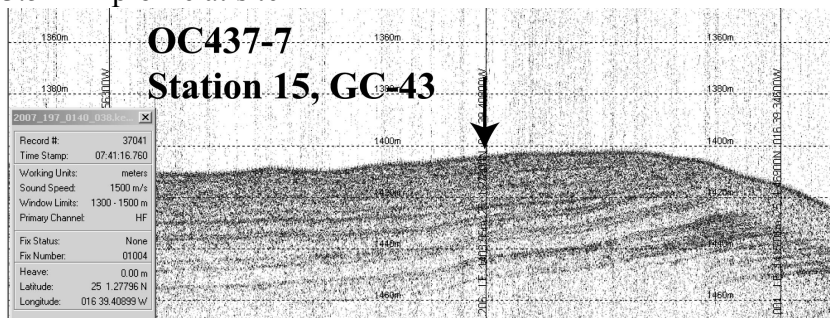
Core: MC-41	Core: MC-42	Core: GC-43
Date: July 16, 2007	Date: July 16, 2007	Date: July 16, 2007
Lat: 25°01.190 N	Lat: 25°00.703 N	Lat: 25°1.271 N
Lon: 16°39.420 W	Lon: 16°39.622 W	Lon: 16°39.42 W
Depth: 1398 m	Depth: 1425 m	Depth: 1404 m
Number of cores: 0	Number of cores: 6	Core length: 298.5 cm

Multicore lengths and allocation:

A (19 cm)	Lamont 1 cm slices in bags
B (17 m)	WHOI 1 cm slices in jars
C (11 cm)	Lamont, Archive (0-1 cm split, Ncl)
D (18/20 cm)	Lamont 1cm slices in bags
E (11 cm)	WHOI 1cm slices in bags
F (12/14 cm)	WHOI 1 cm slices in bags



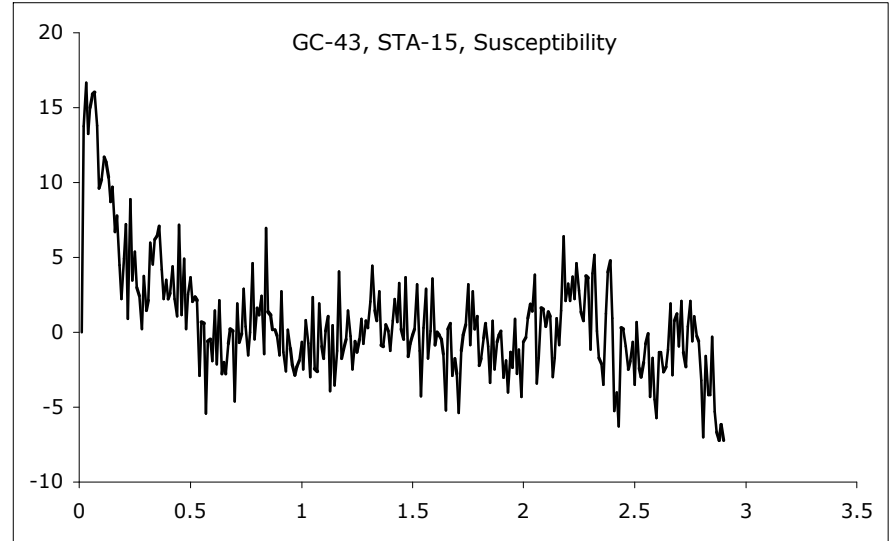
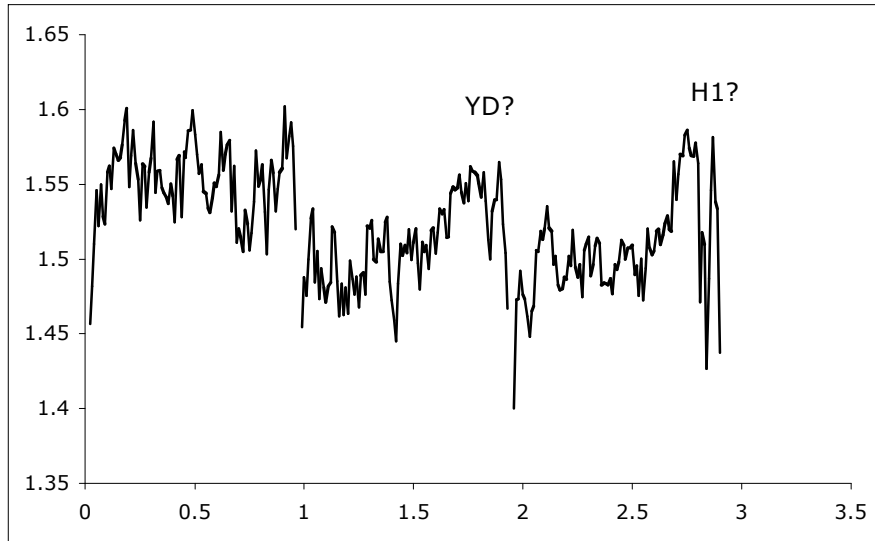
3.5 kHz profile at site



SounderSuite files: 2007-197-0140-038.keb (bottom mark MC-38: P00996); 2007-197-0140-038.keb (bottom mark MC-42: none); 2007-197-0140-038.keb (bottom mark GC-40: P01005)

Comments: MC-41 no trigger, no cores.

OC437-7: Station 15, Shipboard MST data (GC-43)



OC437-7: Station 16

Location: Off West Sahara

Surface Temperature: 21.86 °C; Salinity: 36.724 psu

Date & Time (GMT): July 16, 2007, 14.32

Primary core site reference (if any):

Estimated sedimentation rate (if known):

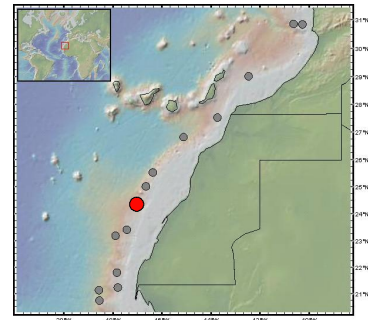
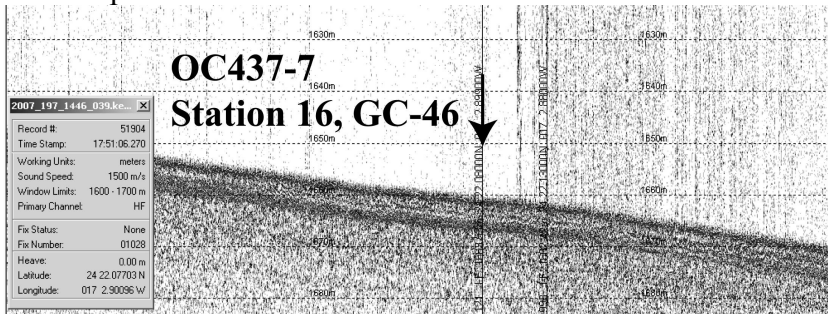
Estimate basal age from shipboard MST: about 18 ka (H1)

Core: MC-44	Core: GC-45	Core: GC-46
Date: July 16, 2007	Date: July 16, 2007	Date: July 16, 2007
Lat: 24°21.619 N	Lat: 24°22.088 N	Lat: 24°22.074 N
Lon: 17°3.100 W	Lon: 17°2.895 W	Lon: 17°2.891 W
Depth: 1646 m	Depth: 1661 m	Depth: 1659 m
Number of cores: 5	Core length: 194 cm	Core length: 201 cm

Multicore lengths and allocation:

A (15/16 cm)	Lamont 1cm slices in bags
B (16.5 cm)	Lamont 1cm slices in bags
C (16.5/15 cm)	WHOI 1 cm slices in jars
D (17/15 cm)	WHOI 1cm slices in bags
E (11 cm)	Lamont, Archive (0-1 cm split, Ncl)

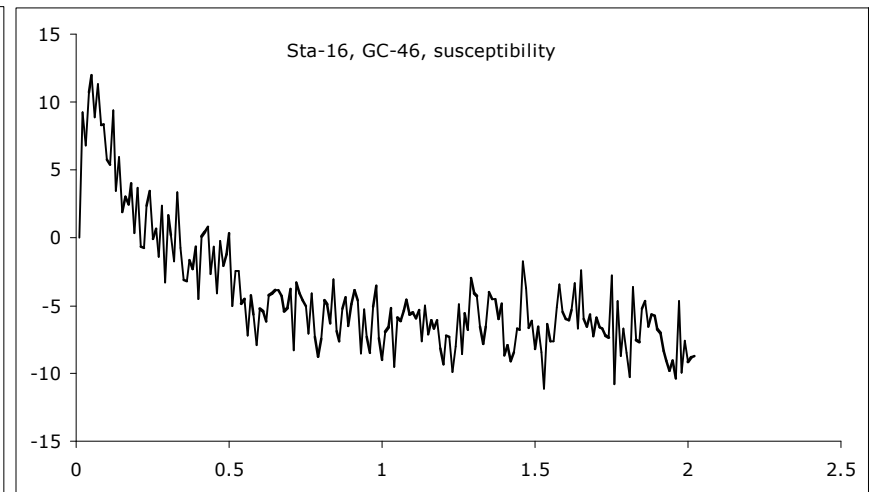
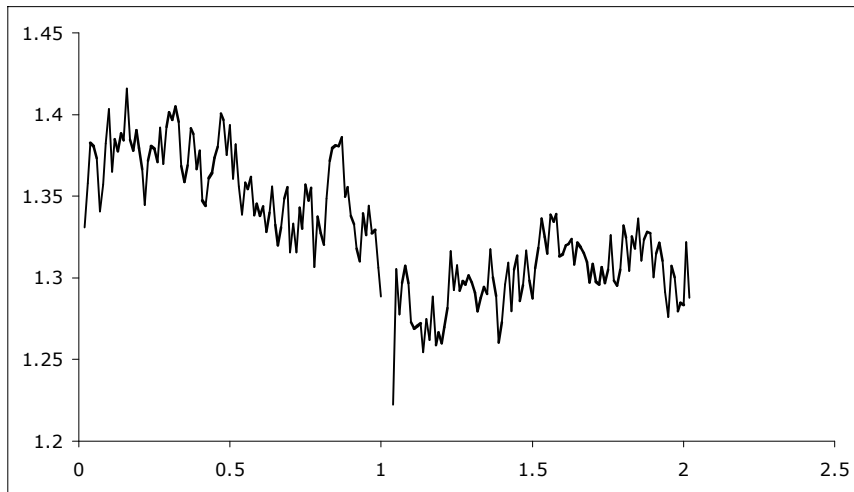
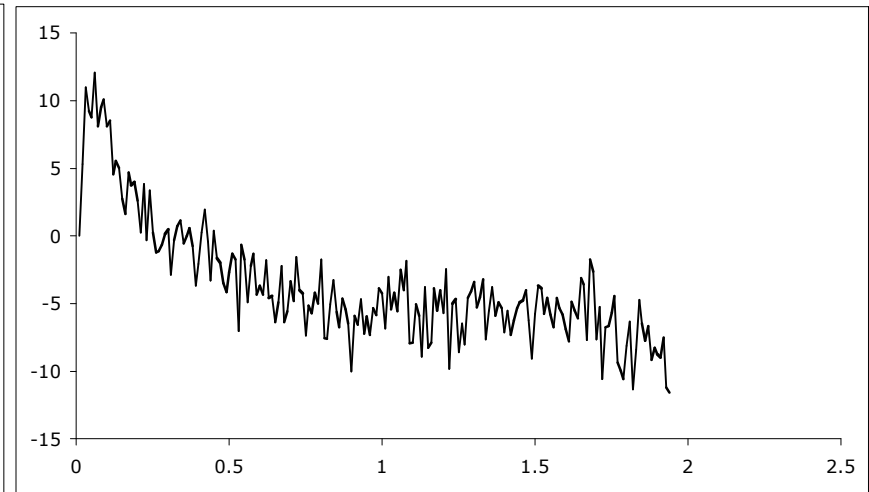
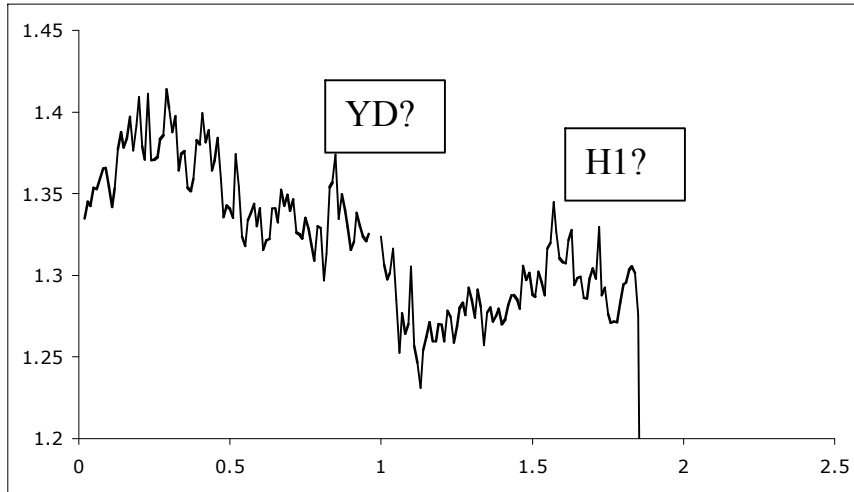
3.5 kHz profile at site



SounderSuite files: 2007-197-1446-039.keb (bottom mark MC-44: P01023); 2007-197-1446-039.keb (bottom mark GC-45: P01029); 2007-197-1446-039.keb (bottom mark GC-46: P01034)

Comments: GC-45 core pipe bend at about 2 m.

OC437-7: Station 16, Shipboard MST data (GC-45 and GC-46)



OC437-7: Station 17

Location: Off West Sahara

Surface Temperature: 20.24 °C; Salinity: 36.39 psu

Date & Time (GMT): July 17, 2007, 06.16

Primary core site reference (if any):

Estimated sedimentation rate (if known):

Estimate basal age from shipboard MST:

Core: MC-47

Date: July 17, 2007

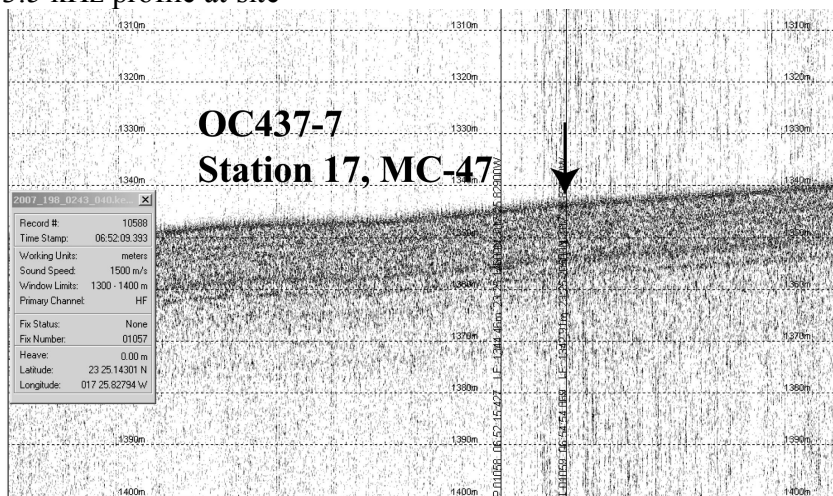
Lat: 23°25.139 N

Lon: 17°25.828 W

Depth: 1344 m

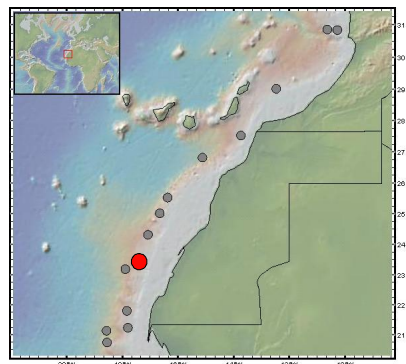
Number of cores: 0

3.5 kHz profile at site



SounderSuite files: 2007-198-0243-040.keb (bottom mark MC-47: P01058)

Comments: no penetration, no cores



OC437-7: Station 18

Location: Off West Sahara

Surface Temperature: 22.26 °C; Salinity: 36.795 psu

Date & Time (GMT): July 17, 2007, 11.38

Primary core site reference (if any):

Estimated sedimentation rate (if known):

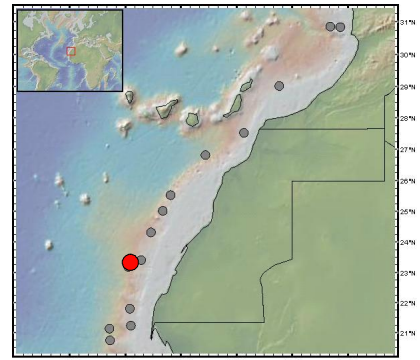
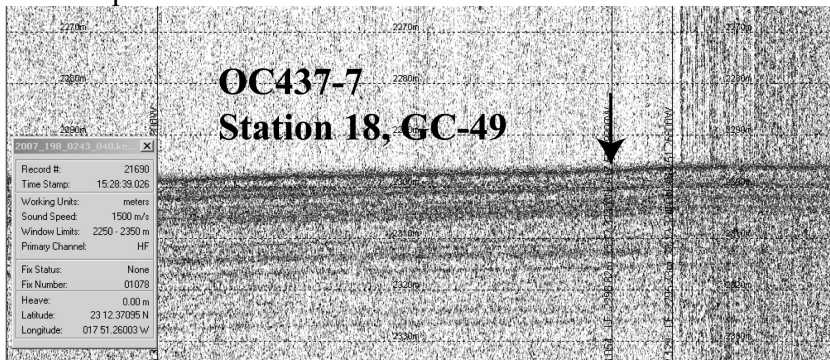
Estimate basal age from shipboard MST: unknown

Core: MC-48	Core: GC-49	Core: MC-50
Date: July 17, 2007	Date: July 17, 2007	Date: July 17, 2007
Lat: 23°12.0 N	Lat: 23°12.37 N	Lat: 23°12.425 N
Lon: 17°51. W	Lon: 17°51.25 W	Lon: 17°51.25 W
Depth: 2298 m	Depth: 2303 m	Depth: 1659 m
Number of cores: 0	Core length: 339 cm	Number of cores: 4

Multicore lengths and allocation:

A (22 cm)	WHOI 1cm slices in bags
B (39 cm)	Lamont 1cm slices in bags (0-1cm split, Ncl)
C (41 cm)	WHOI 1cm slices in jars
D (42 cm)	Lamont 1cm slices in bags

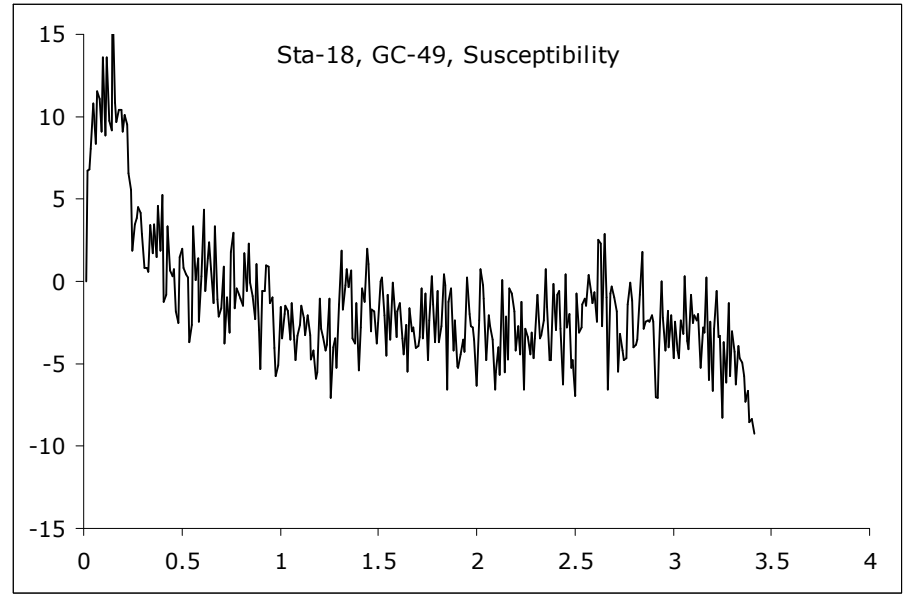
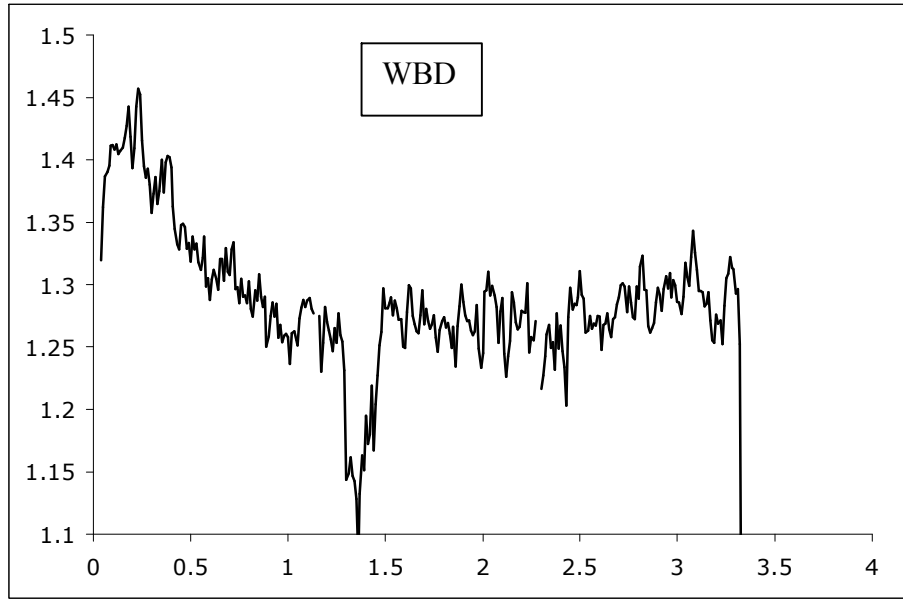
3.5 kHz profile at site



SounderSuite files: 2007-198-0243-040.keb (bottom mark MC-48: P01072); 2007-198-0243-040.keb (bottom mark GC-49: P01079); 2007-198-1535-041.keb (bottom mark MC-50: P01085)

Comments: MC-50, add weight on multicorer spider and 4 multicorer tubes only to enhance core recovery

OC437-7: Station 18, Shipboard MST data (GC-49)



OC437-7: Station 19

Location: Off West Sahara

Surface Temperature: 20.68 °C; Salinity: 36.269 psu

Date & Time (GMT): July 18, 2007, 6.43

Primary core site reference (if any):

Estimated sedimentation rate (if known):

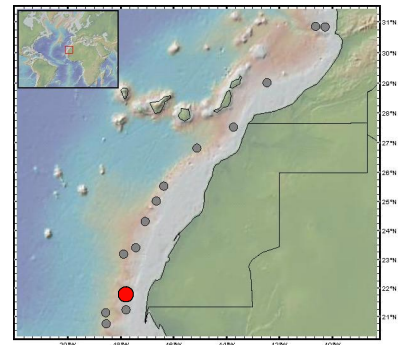
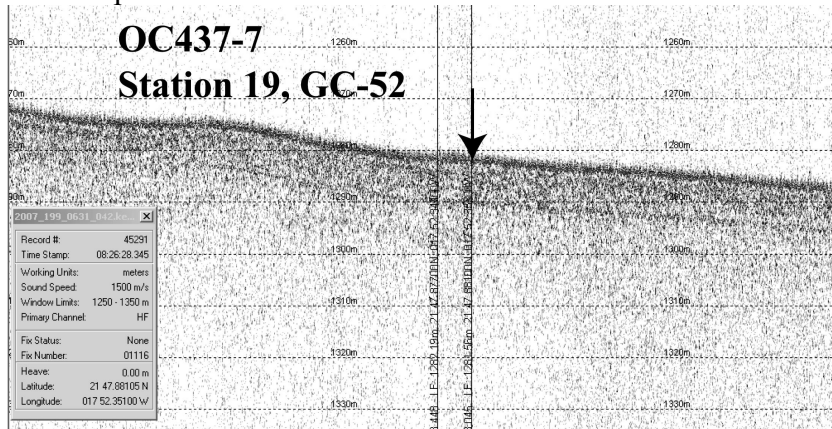
Estimate basal age from shipboard MST: about 25 ka (?)

Core: MC-51	Core: GC-52	Core: GC-53
Date: July 18, 2007	Date: July 18, 2007	Date: July 18, 2007
Lat: 21°47.819 N	Lat: 21°47.885 N	Lat: 21°47.88 N
Lon: 17°52.245 W	Lon: 17°52.353 W	Lon: 17°52.331 W
Depth: 1276 m	Depth: 1281 m	Depth: 1280 m
Number of cores: 5	Core length: 169.5 cm	Core length: 286 cm

Multicore lengths and allocation:

A (35/30 cm)	WHOI 1cm slices in bags
B (36/35 cm)	Lamont 1cm slices in bags
C (35 cm)	Lamont 1cm slices in bags
D (26 cm)	Lamont Archive (0-1cm split, Ncl)
E (35 cm)	WHOI 1cm slices in jars

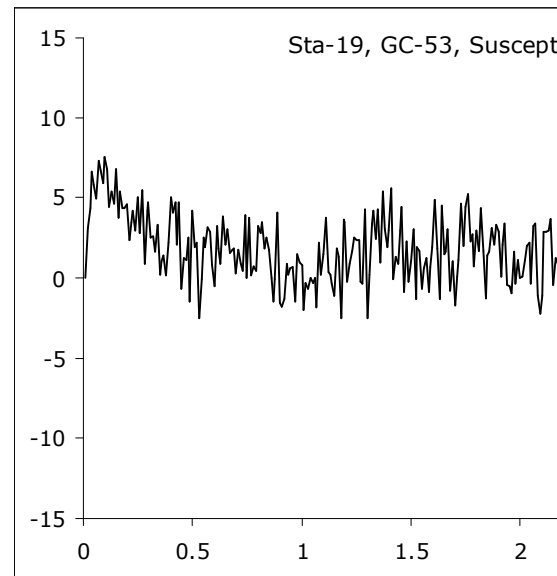
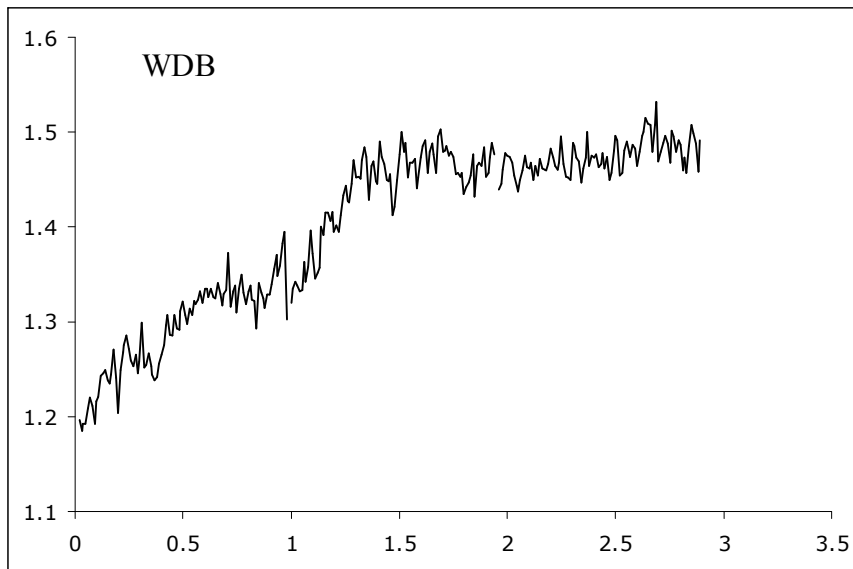
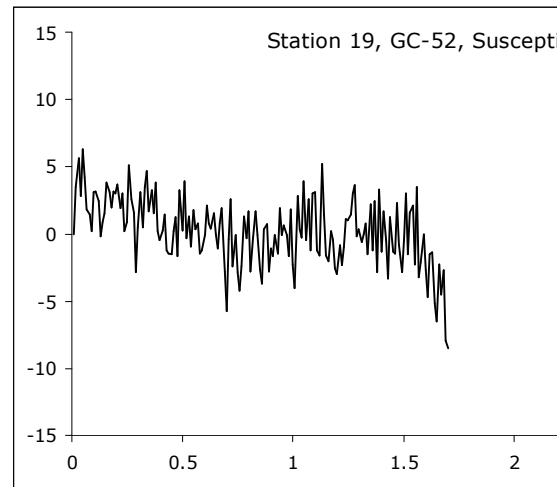
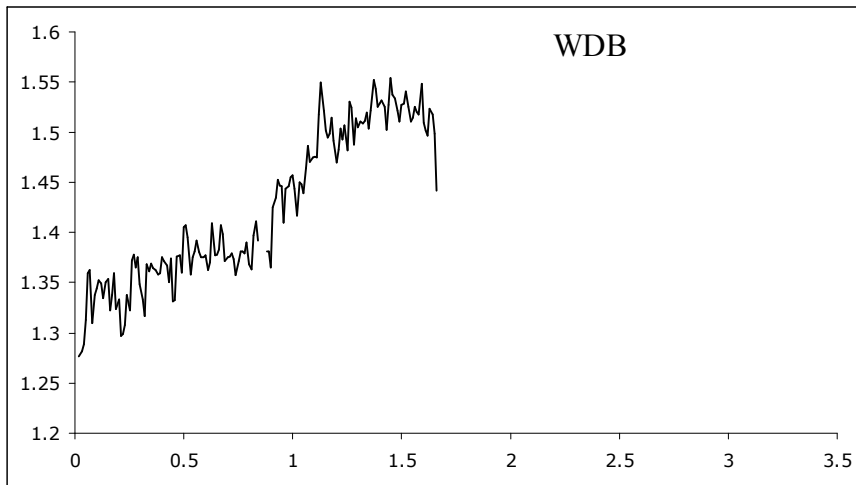
3.5 kHz profile at site



SounderSuite files: 2007-199-0631-042.keb (bottom mark MC-51: P01112); 2007-199-0631-042.keb (bottom mark GC-52: P01117); 2007-199-0631-042.keb (bottom mark GC-50: P01121)

Comments: lost one multicorer tube; GC-52 pipe bend at about 2 m; GC expanded by 2.5 cm (GC-53) and 3 cm (GC-53), respectively, due to high gas content after recovery

OC437-7: Station 19, Shipboard MST data (GC-52, GC-53)



OC437-7: Station 20

Location: Off Cape Blanc

Surface Temperature: 20.45 °C; Salinity: 35.93 psu

Date & Time (GMT): July 18, 2007, 14.22

Primary core site reference (if any): 16017 (Vogelsang et al., 2001)

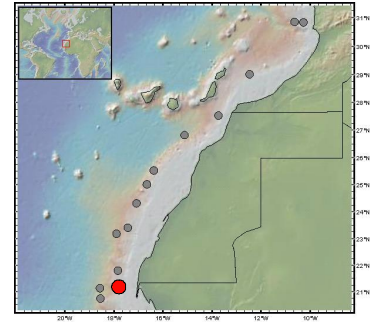
Estimated sedimentation rate (if known): 12.8 cm/ka

Estimate basal age from shipboard MST: unknown

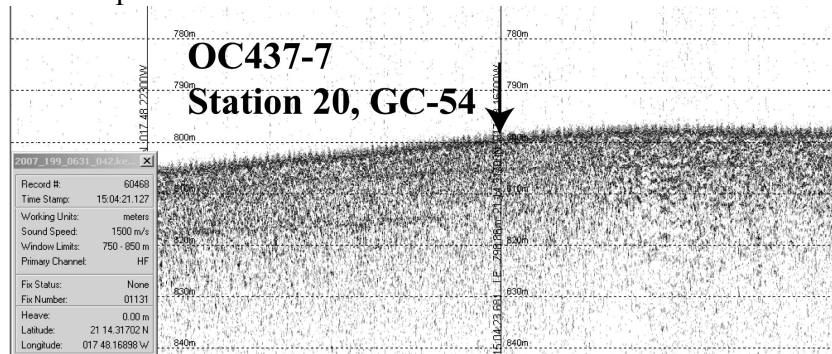
Core: MC-54	Core: MC-55	Core: GC-56/ GC-57
Date: July 18, 2007	Date: July 18, 2007	Date: July 18, 2007
Lat: 21°14.316 N	Lat: 21°14.36 N	Lat: 21°14.39 N
Lon: 17°48.168 W	Lon: 17°48.167 W	Lon: 17°17°48.15 W
Depth: 799 m	Depth: 798 m	Depth: 795/795 m
Number of cores: 0	Number of cores: 7	Core length: 0 / 68 cm

Multicore lengths and allocation:

A (23 cm)	Lamont Archive (0-1cm split, Ncl)
B (27/26 cm)	Lamont 1cm slices in bags
C (19/18 cm)	WHOI 1-10 cm slices in bags
D (23/24 cm)	WHOI 1cm slices in bags
E (25 cm)	WHOI 1cm slices in bags
F (24 cm)	Lamont 1cm slices in bags
G (26 cm)	WHOI 1cm slices in jars



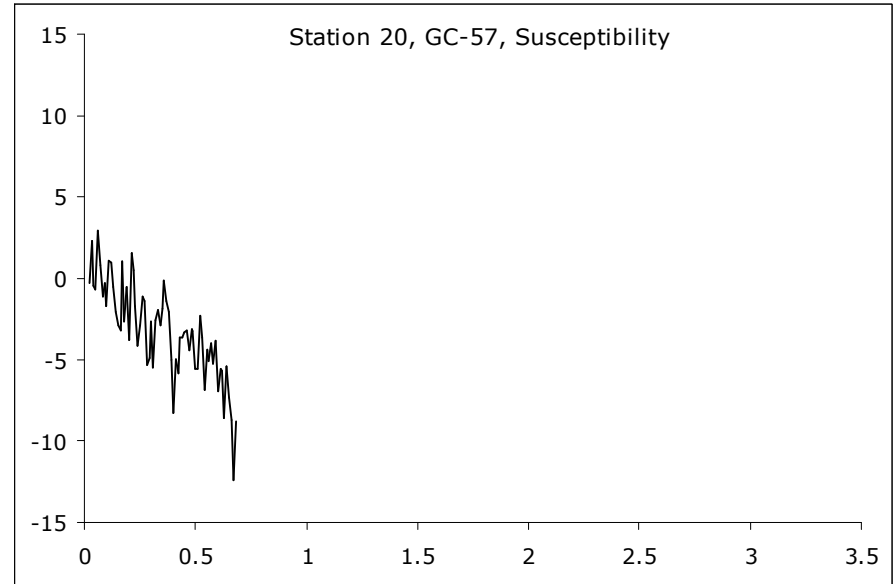
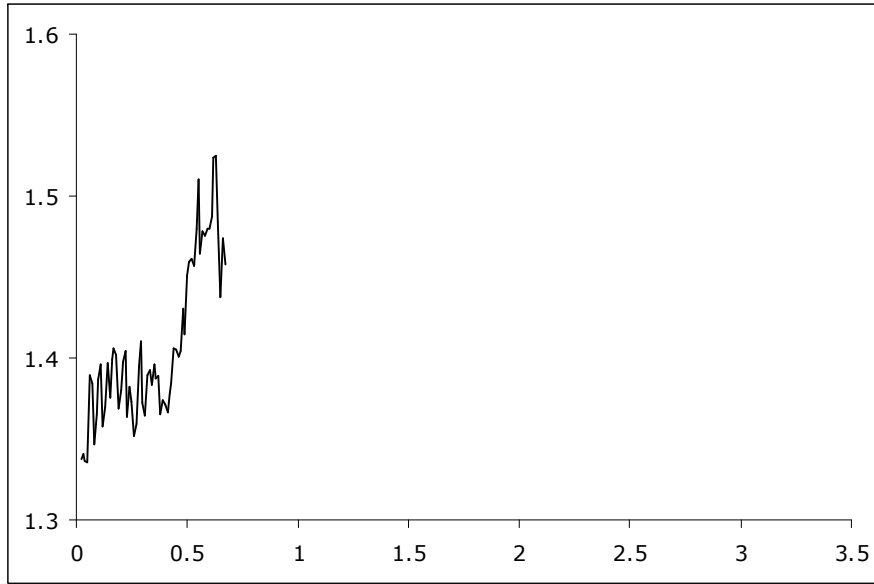
3.5 kHz profile at site



SounderSuite files: 2007-199-0631-042.keb (bottom mark MC-54: P01132); 2007-199-1529-043.keb (bottom mark MC-55: P01135); 2007-199-1529-043 (bottom mark GC-56: P01138; GC-57; no mark)

Comments: MC-54 did not trip, no cores; BC-56 and GC-57 barrel broken

OC437-7: Station 20, Shipboard MST data (GC-57)



OC437-7: Station 21

Location: Off Cape Blanc

Surface Temperature: 22.49 °C; Salinity: 35.843 psu

Date & Time (GMT): July 19 2007,

Primary core site reference (if any):12328 (Vogelsang et al., 2001)

Estimated sedimentation rate (if known): 13.2 cm/ka

Estimate basal age from shipboard MST: about 25 ka

Core: MC-58

Core: GC-59

Date: July 19, 2007

Date: July 19, 2007

Lat: 21°7.962 N

Lat: 21°7.85 N

Lon: 18°35.537 W

Lon: 18°35.413 W

Depth: 2784 m

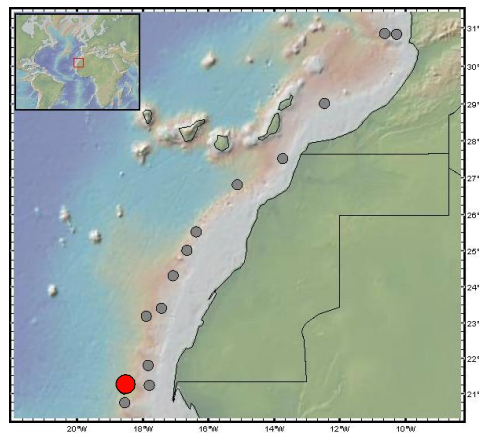
Depth: 2777 m

Number of cores: 7

Core length: 344 m

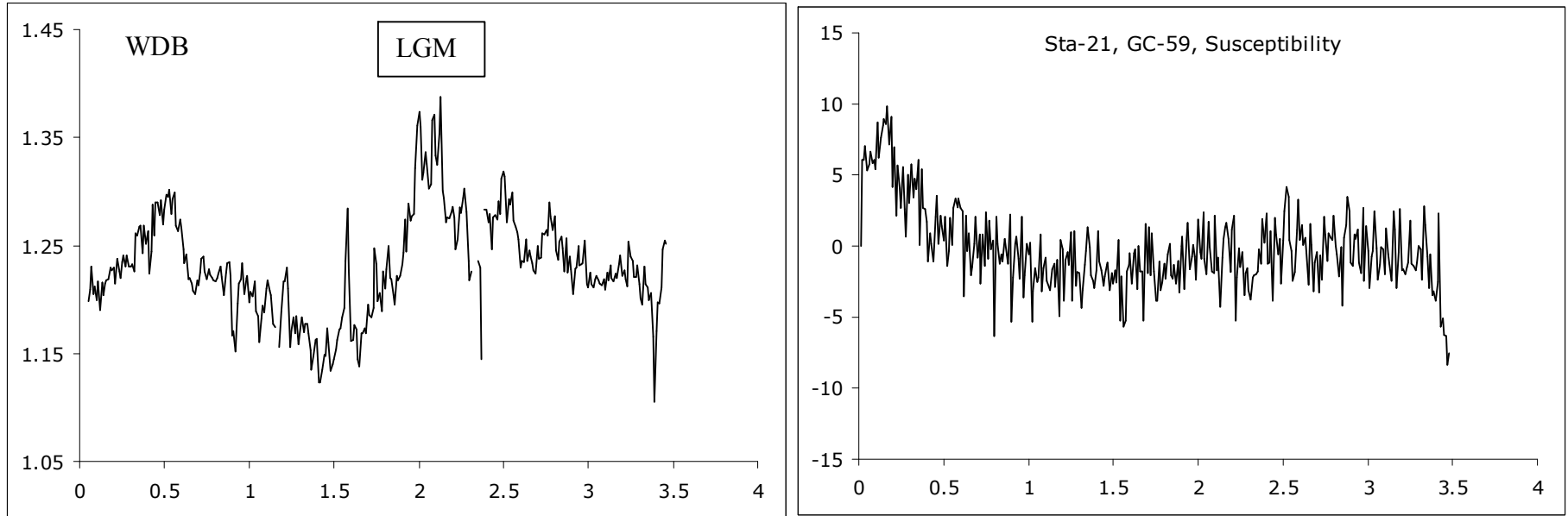
Multicore lengths and allocation:

A (45 cm)	WHOI 1 cm slices in bags
B (46 cm)	Lamont 1cm slices in bags
C (43 cm)	Lamont 1cm slices in bags
D (32 cm)	Lamont Archive (0-1cm split, Ncl)
E (42 cm)	WHOI 1cm slices in bags
F (41 cm)	WHOI 1cm slices in bags
G (29 cm)	WHOI 1-10 cm in bags



Comments: Echo sounder files not recorded due to power failure

OC437-7: Station 21, Shipboard MST data (GC-59)



OC437-7: Station 22

Location: Off Cape Blanc

Surface Temperature: 22.49 °C; Salinity: 35.843 psu

Date & Time (GMT): July 19 2007, 00.54

Primary core site reference (if any): ODP 658 (deMenocal et al., 2000)

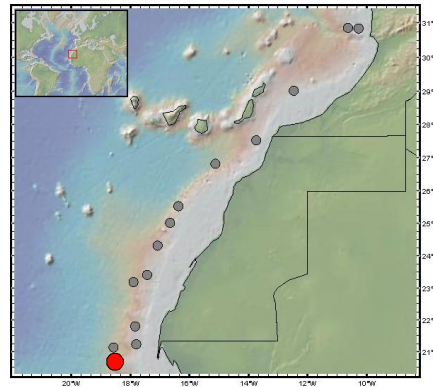
Estimated sedimentation rate (if known): 18.0 cm/ka

Estimate basal age from shipboard MST: about 25 ka

Core: MC-63	Core: GC-64	CTD: CTD-60	WP-61:
Date: July 19, 2007	Date: July 19, 2007	Date: July 19, 2007	4 quartz filters
Lat: 20°44.78 N	Lat: 20°44.78 N	Lat: 20°44.82 N	WP-62:
Lon: 18°33.07 W	Lon: 18°33.07 W	Lon: 18°33.06 W	7 membrane filters
Depth: 2106 m	Depth: 2106 m	file name: OC437005.dat	
Number of cores: 8	Core length: 341 cm	no of samples: 4	

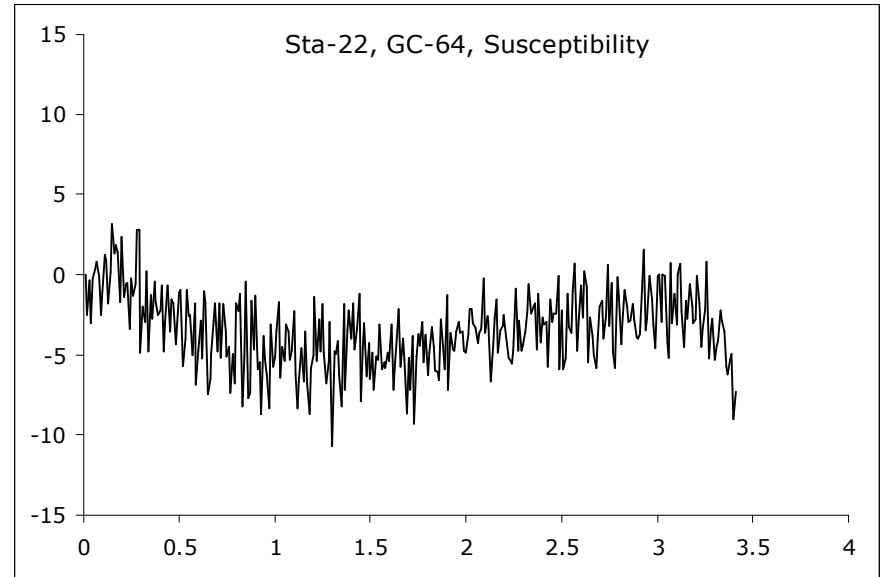
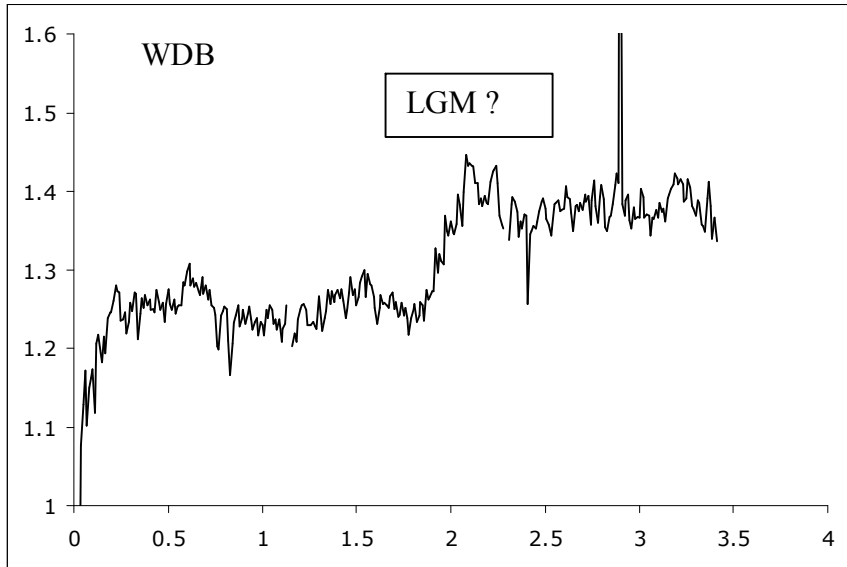
Multicore lengths and allocation:

A (38 cm)	WHOI 1cm slices in bags
B (38 cm)	WHOI 1cm slices in bags
C (21.5 cm)	WHOI 1-10 cm slices in bags
D (39 cm)	Lamont 1cm slices in bags
E (40 cm)	Lamont 1cm slices in bags
F (36 cm)	WHOI 1cm slices in bags
G (27.5 cm)	Lamont Archive (0-1cm split, Ncl)
H (39 cm)	WHOI 1cm slices in jars



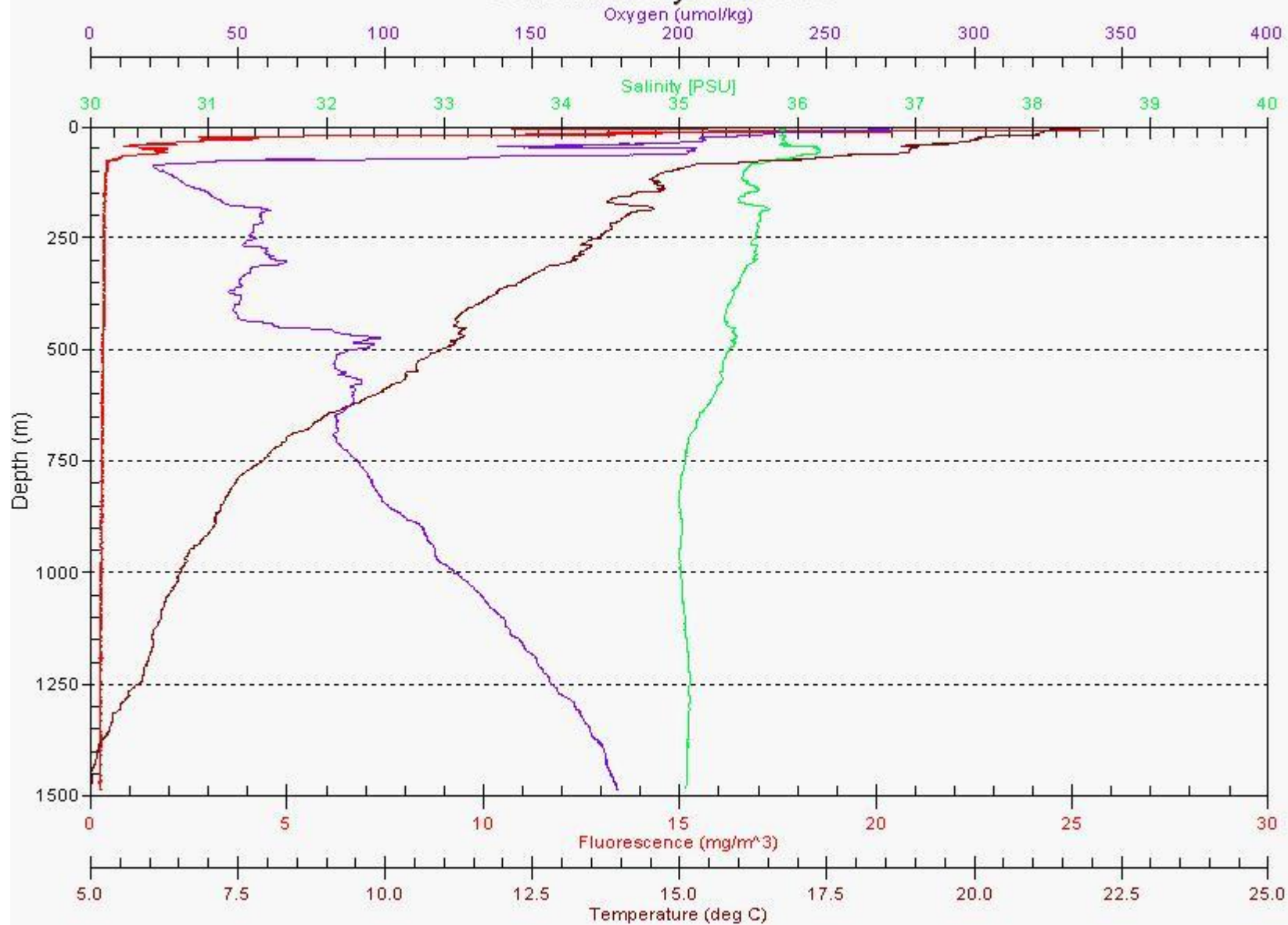
Comments: Echo sounder files not recorded due to power failure

OC437-7: Station 22, Shipboard MST data (GC-64)



OC437-7: Station 22, Shipboard CTD data (CTD-60)

Station-22 / Hydrocast-60



OC437-7: Station 23

Location: Off Mauritania

Surface Temperature: 22.2 °C; Salinity: 35.745 psu

Date & Time (GMT): July 20 2007, 07.50

Primary core site reference (if any):

Estimated sedimentation rate (if known):

Estimate basal age from shipboard MST: about 30 ka (?)

Core: MC-65

Date: July 20, 2007

Lat: 19°7.56.604 N

Lon: 17°51.642 W

Depth: 1455 m

Number of cores: 8

Core: GC-66

Date: July 20, 2007

Lat: 19°7.56.604 N

Lon: 17°51.642 W

Depth: 1454 m

Core length: 276 cm

Multicore lengths and allocation:

A (23 cm) Lamont Archive (0-1cm split, Ncl)

B (27/26 cm) Lamont 1cm slices in bags

C (19/18 cm) WHOI 1-10 cm slices in bags

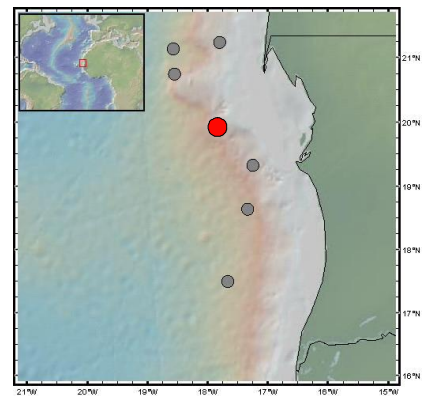
D (23/24 cm) WHOI 1cm slices in bags

E (25 cm) WHOI 1cm slices in bags

F (24 cm) Lamont 1cm slices in bags

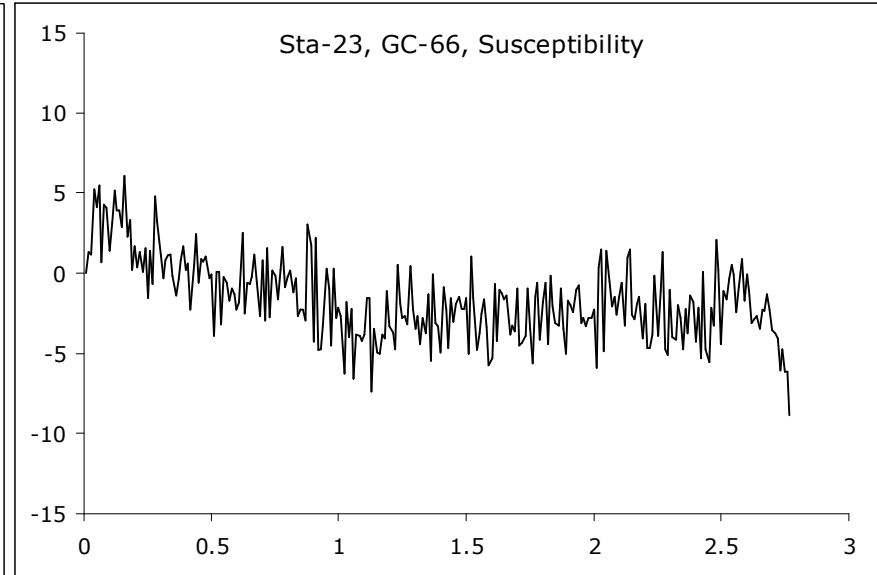
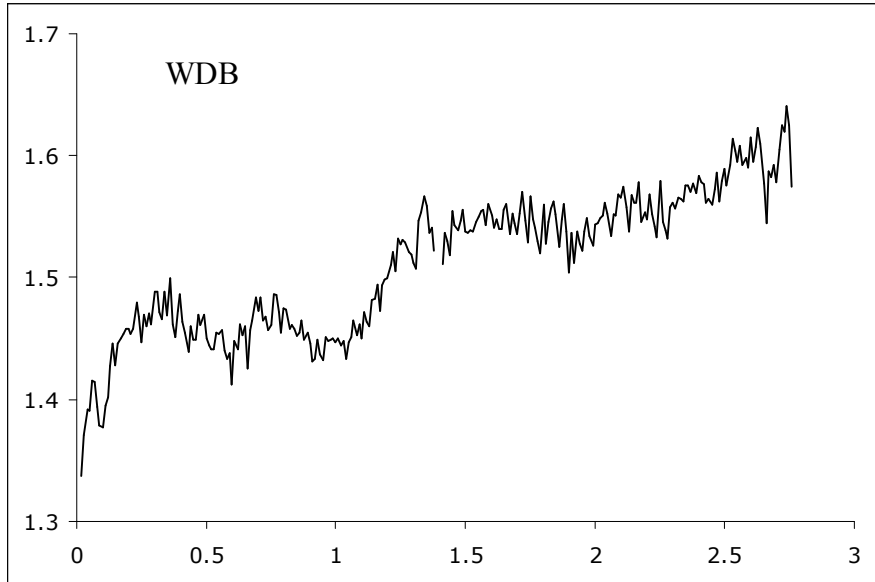
G (26 cm) WHOI 1cm slices in jars

H (26 cm) WHOI 1cm slices in jars



Comments: Echo sounder files not recorded due to power failure

OC437-7: Station 23, Shipboard MST data (GC-66)



OC437-7: Station 24

Location: Off South Mauritania

Surface Temperature: 24.26 °C; Salinity: 35.945 psu

Date & Time (GMT): July 20 2007,

Primary core site reference (if any):

Estimated sedimentation rate (if known):

Estimate basal age from shipboard MST: about 30 ka (?)

Core: MC-67

Date: July 20, 2007

Lat: 19°21.732 N

Lon: 17°17.007 W

Depth: 1400 m

Number of cores: 7

Core: GC-68

Date: July 20, 2007

Lat: 19°21.78 N

Lon: 17°16.94 W

Depth: 1396 m

Core length: 312 cm

Multicore lengths and allocation:

A (26 cm) Lamont Archive (0-1cm split, Ncl)

B (21 cm) WHOI 1-10 cm slices in bags

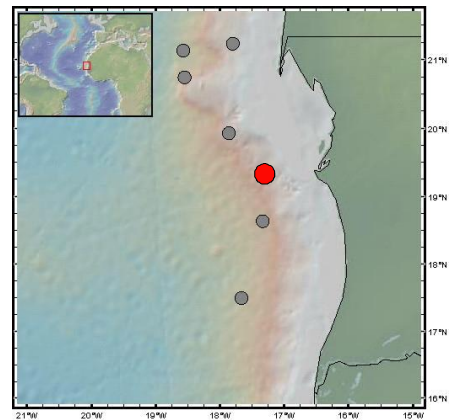
C (32/30 cm) WHOI 1cm slices in bags

D (31 cm) Lamont 1cm slices in bags

E (28/30 cm) Lamont 1cm slices in bags

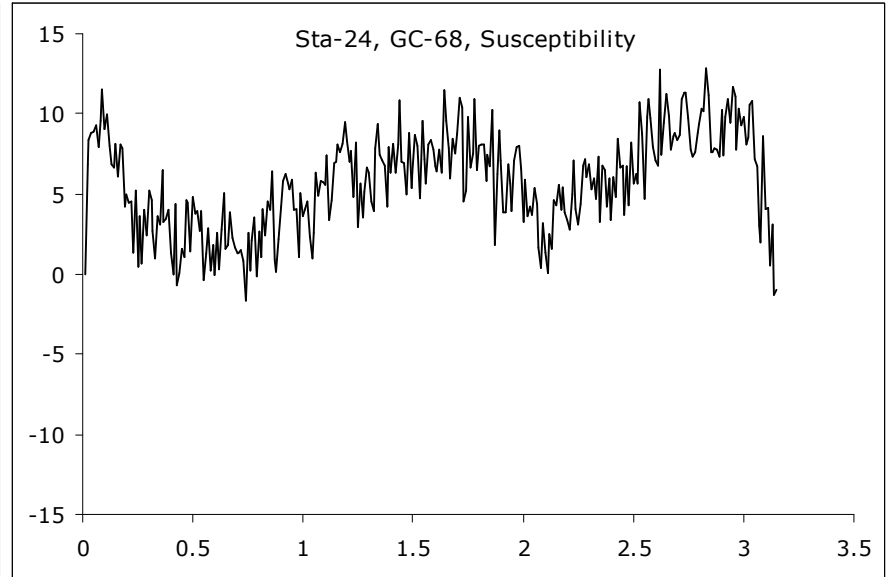
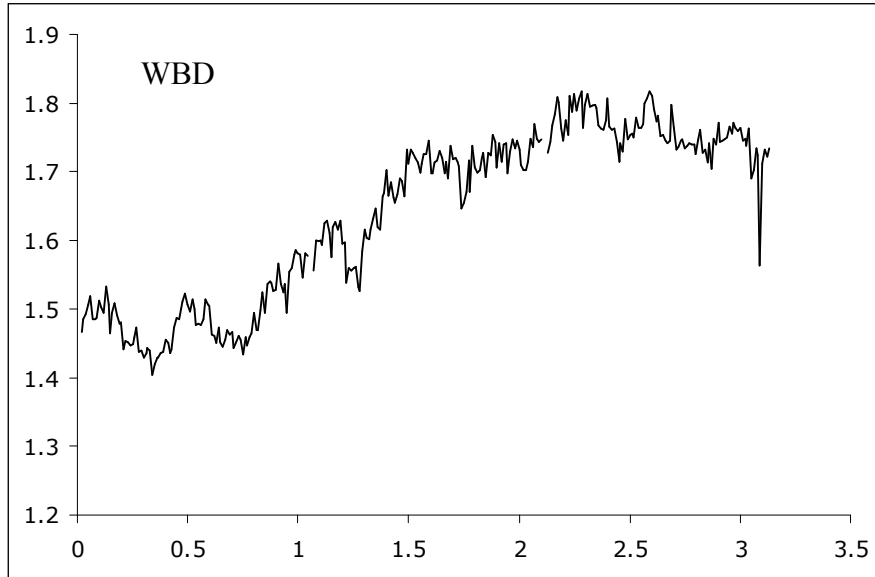
F (30/31 cm) WHOI 1cm slices in jars

G (29 cm) WHOI 1cm slices in bags



Comments: Echo sounder files not recorded due to power failure

OC437-7: Station 24, Shipboard MST data (GC-68)



OC437-7: Station 25

Location: Off South Mauritania

Surface Temperature: 24.44 °C; Salinity: 35.9592 psu

Date & Time (GMT): July 21 2007,

Primary core site reference (if any):

Estimated sedimentation rate (if known):

Estimate basal age from shipboard MST: unknown

Core: MC-69

Core: GC-70

Date: July 21, 2007

Date: July 21, 2007

Lat: 18°38.328 N

Lat: 18°38.833 N

Lon: 17°20.089 W

Lon: 17°19.399 W

Depth: 2282 m

Depth: 2260 m

Number of cores:

Core length: cm

Multicore lengths and allocation:

A (26 cm) Lamont Archive (0-1cm split, Ncl)

B (21 cm) WHOI 1-10 cm slices in bags

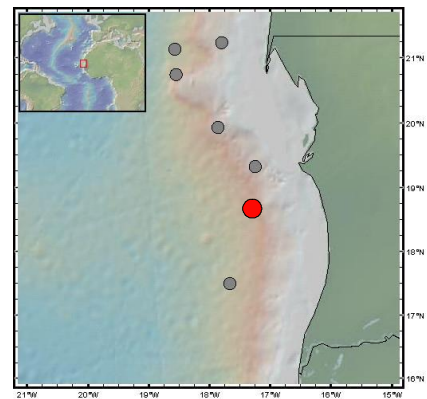
C (32/30 cm) WHOI 1cm slices in bags

D (31 cm) Lamont 1cm slices in bags

E (28/30 cm) Lamont 1cm slices in bags

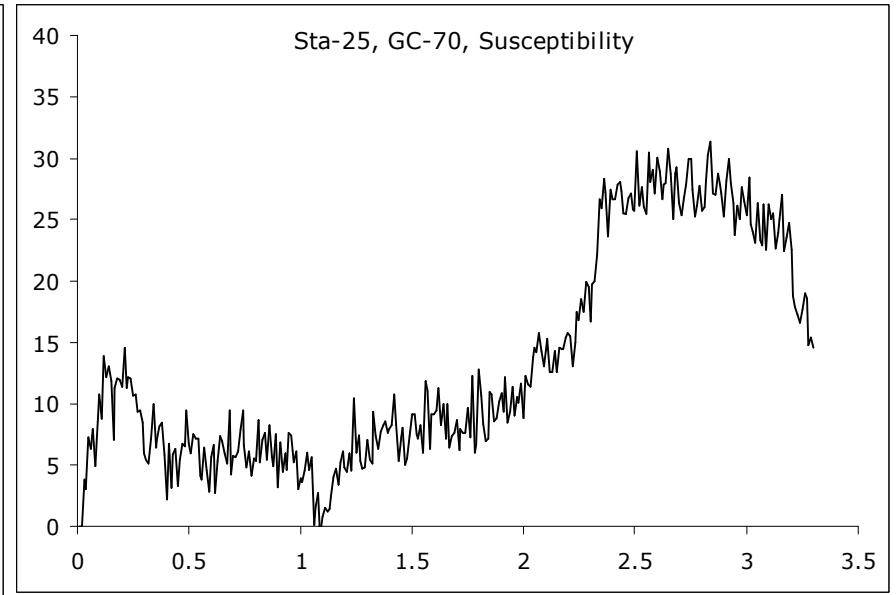
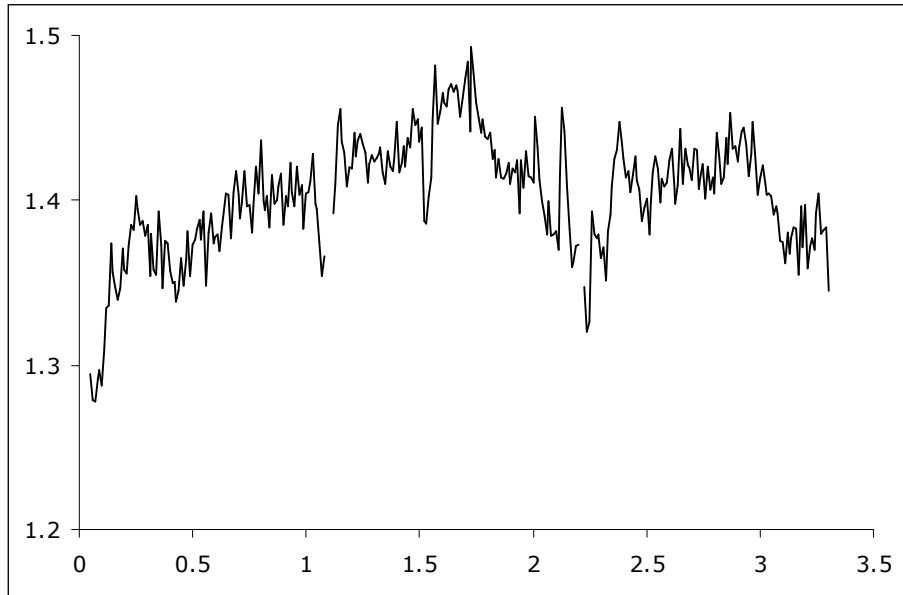
F (30/31 cm) WHOI 1cm slices in jars

G (29 cm) WHOI 1cm slices in bags



Comments: Echo sounder files not recorded due to power failure

OC437-7: Station 25, Shipboard MST data (GC-70)



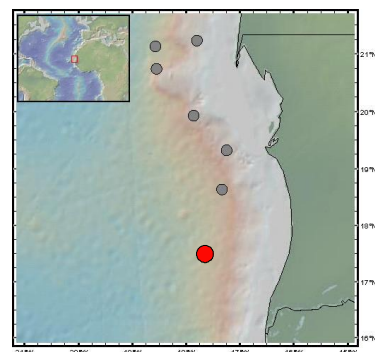
OC437-7: Station 26

Location: Off South Mauritania

Surface Temperature: 24.44 °C; Salinity: 35.9592 psu
Date & Time (GMT): July 21 2007, 16.01

CTD: CTD-71
Date: July 21, 2007
Lat: 17°30.779 N
Lon: 17°38.750 W
Water Depth: 2560 m
file name: OC437006.dat
no of samples: 4

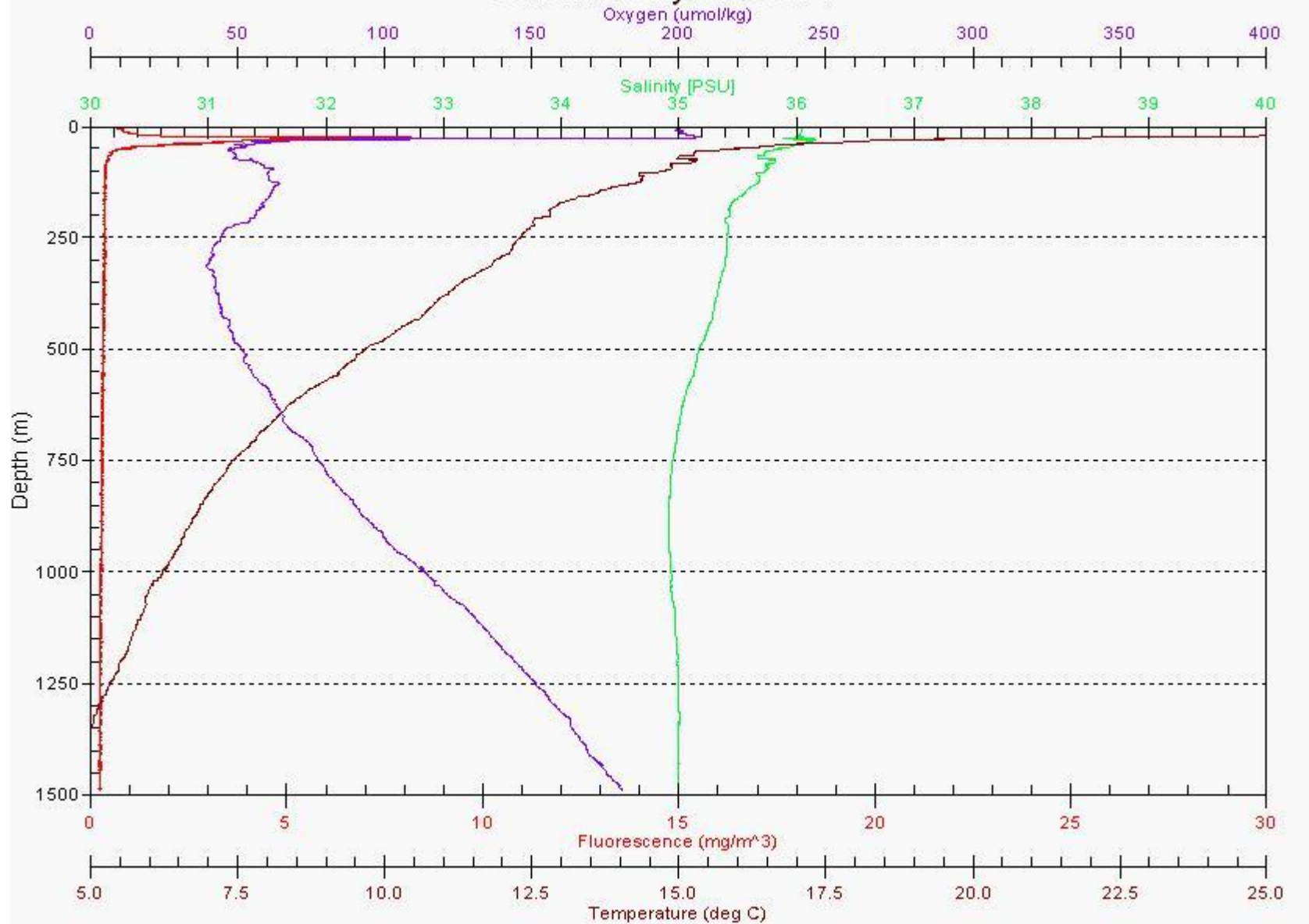
WP-72:
4 quartz filters
WP-73:
7 membrane filters



Comments:

OC437-7: Station 26, Shipboard CTD data (CTD-71)

Station-26 / Hydrocast-71



OC437-7: Station 27

Location: Off Cape Verde

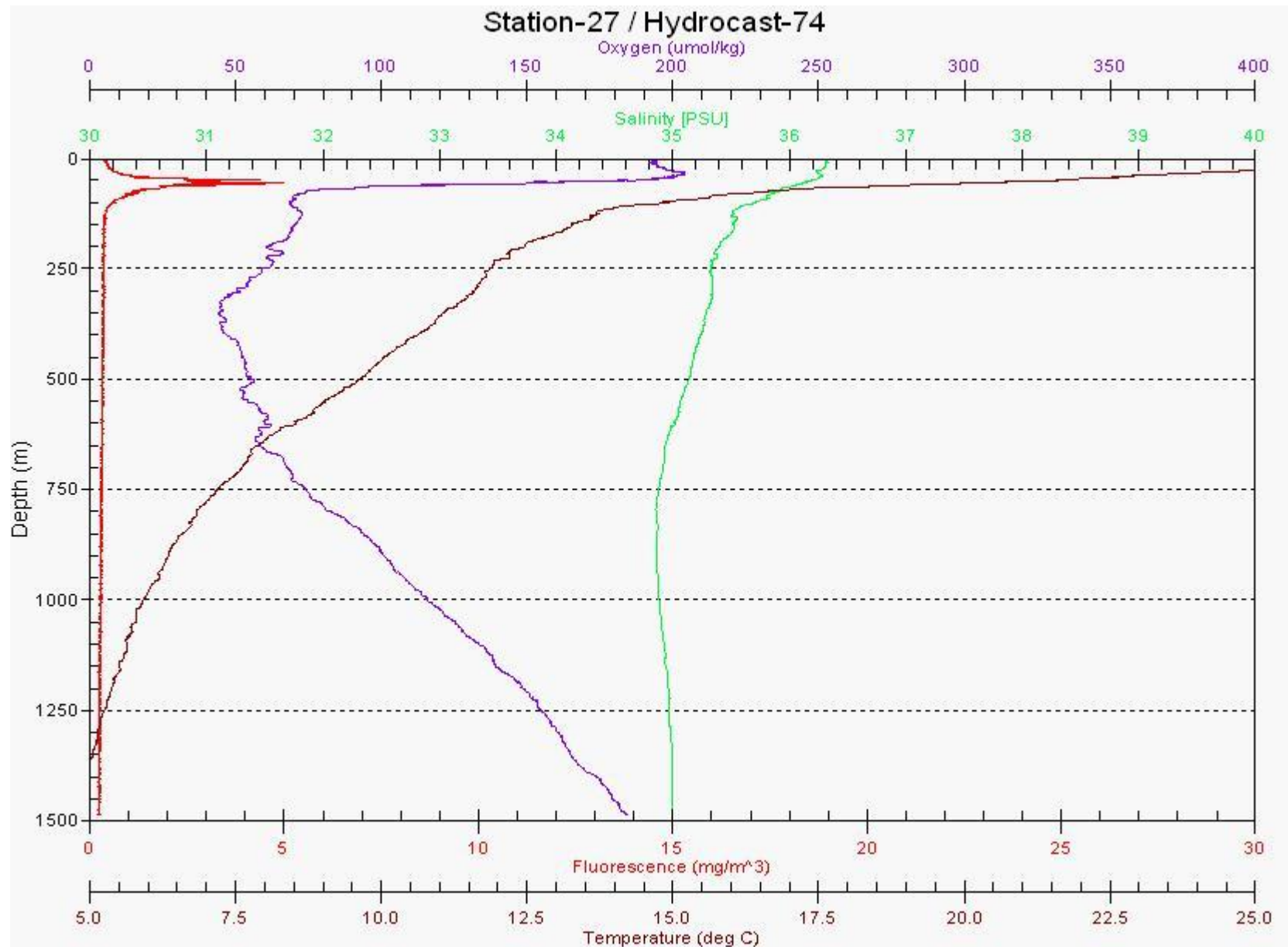
Surface Temperature: 26.58 °C; Salinity: 36.28psu
Date & Time (GMT): July 21 2007, 14.00

CTD: CTD-74
Date: July 23, 2007
Lat: 15° 14.54 N
Lon: 22° 14.08 W
Water depth: 2900 m
file name: OC437.dat
no of samples: 4

WP-75:
4 quartz filters
WP-76:
7 membrane filters

Comments:

OC437-7: Station 27, Shipboard CTD data (CTD-74)



OC437-7: Station 28

Location: Off Cape Verde

Surface Temperature: 25.95 °C; Salinity: 36.11 psu

Date & Time (GMT): July 24 2007, 05.30

Primary core site reference (if any):

Estimated sedimentation rate (if known):

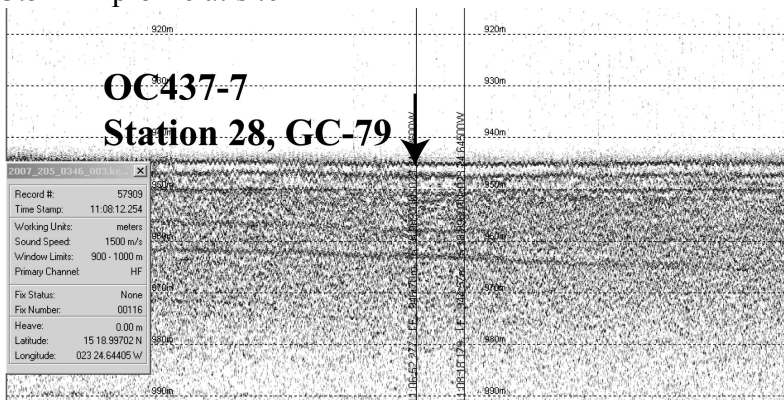
Estimate basal age from shipboard MST: unknown

Core: CTD-77	Core: MC-78	Core: GC-79	Core: GC-80
Date: July 24, 2007	Date: July 24, 2007	Date: July 24, 2007	Date: July 24, 2007
Lat: 15°18.46 N	Lat: 15°18.602 N	Lat: 15°18.995 N	Lat: 15°19.11 N
Lon: 17°20.089 W	Lon: 17°24.793 W	Lon: 23°26.641 W	Lon: 23°24.81 W
Name of file:	Depth: 944 m	Depth: 944 m	Depth: 948 m
Number of samples:	Number of cores: 6	Core length: 160 cm	Core length: 161.5 cm

Multicore lengths and allocation:

A (35 cm)	WHOI 1-10 cm slices in bags
B (31 cm)	Lamont Archive (0-1cm split, Ncl)
C (38 cm)	Lamont 1cm slices in bags
D (37 cm)	WHOI 1cm slices in jars
E (33 cm)	WHOI 1cm slices in bags
F (24 cm)	Lamont 1cm slices in bags

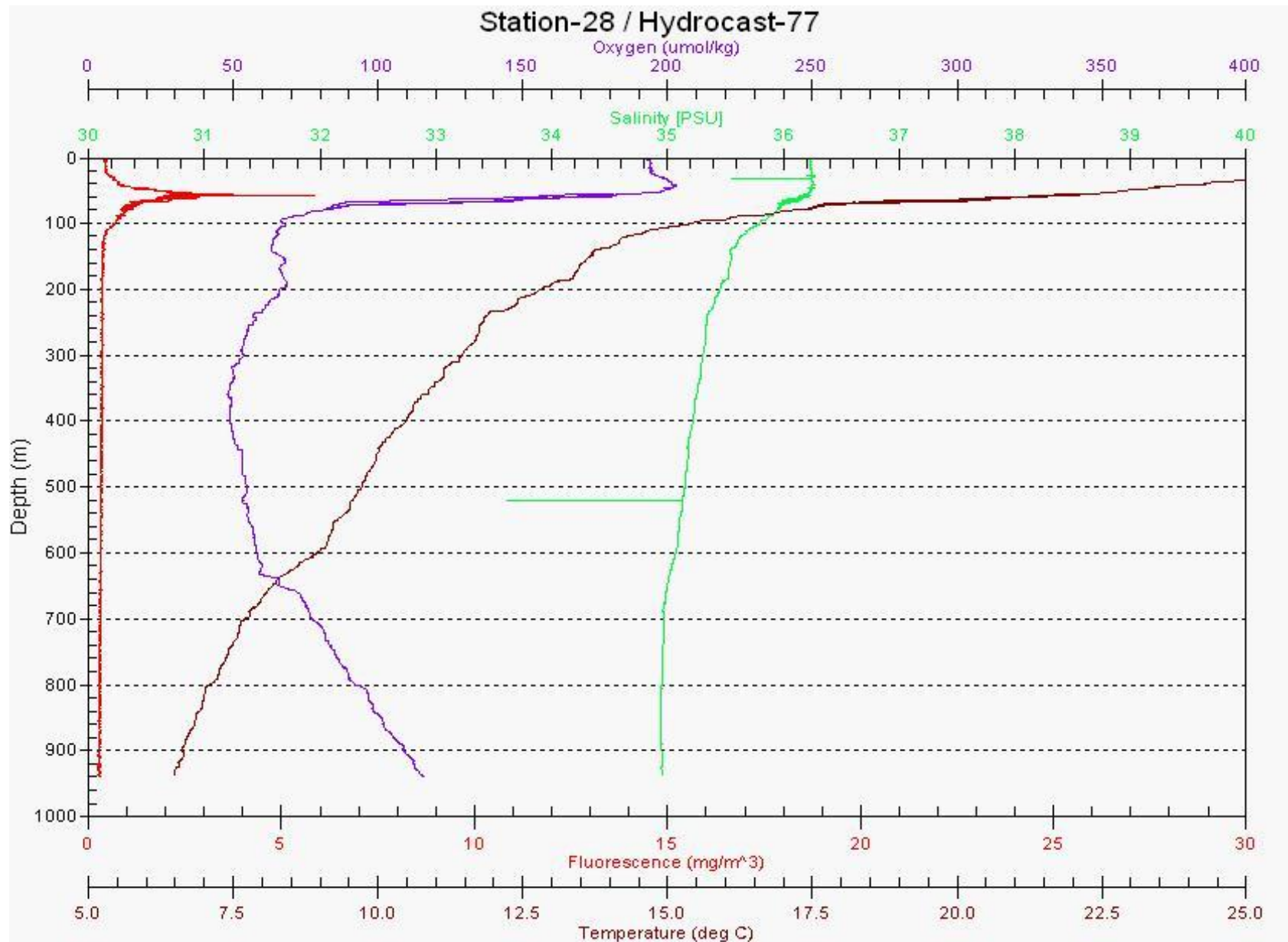
3.5 kHz profile at site



SounderSuite files: 2007-205-0346-003.keb (bottom mark MC-78: P00111); 2007-205-0346-003.keb (bottom mark GC-79: P00117); 2007-205-0346-003.keb (bottom mark GC-80: P00121)

Comments: GC-79 and GC-80, core pipe bend and broken at approx 2 m

OC437-7: Station 28, Shipboard CTD data (CTD-77)



OC437-7: Station 28, Shipboard MST data (GC-79, GC-80)

