OASIS

Oceanic Seamounts: An Integrated Study
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Poseidon-Cruise Pos309

Short Cruise Report

25.03.2004-08.04.2004

OASIS

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OASIS cruise

Cruise Report R.V. Poseidon, cruise POS 309

Funchal 25.03.04 - Las Palmas 08.04.04

Principal scientist: Dr. Bernd Christiansen, Universität Hamburg

Scope of the cruise

The cruise was one of a series of cruises in the framework of the EU-project OASIS (Oceanic seamounts: an integrated study) which studies the functioning ecology of seamounts in the NE-Atlantic. The research programme during the cruise included measurements of the physical properties of the water column (temperature and salinity), the sampling of particulate organic matter, measurements of primary production and export fluxes, the sampling of zooplanktonand benthos and seafloor photography.

Cruise narratives

The departure of Poseidon which was scheduled for 25 March, was delayed for two days due to bad weather conditions. Finally Poseidon left the port of Funchal on 27 March. The first station (southern far field station) was reached on 28 March, and the scientific work started with a series of CTD/Rosette casts and a haul with the $1m^2$-Double-MOCNESS. The CTD/rosette casts was used for measuring temperature and salinity and sampling water for the analysis of organic particles. This gear was combined with a pump system which filters water for organic particles. Water sampling was also performed for the measurement of dissolved organic carbon, oxygen, and nutrients. The Double-MOCNESS is a multiple plankton net with a total 20 nets which can be opened and closed sequentially to sample zooplankton at different depths.

Poseidon then sailed to Seine Seamount, where it arrived in the morning of 29 March. After a test of the acoustic releases for the current meter moorings, the routine sampling programme was continued including further MOCNESS hauls, CTD/Rosette casts and VanVeen grab hauls at several locations on and around the seamount. The grab was used to sample sediment at the flanks of the seamount. Several hauls failed because the grab either hit hard substrate or did not reach the bottom, but three sediment samples were retrieved and sieved on board. On 30 March, two current meter arrays were deployed on

the southwestern flank of the summit and on the northeastern slope, respectively, both at a water depth of ca 1400 m.

On 1 April the 45 ft otter trawl was prepared and deployed on the summit plateau of the seamount. The first haul, towed at 3 knots and with a maximum of 500 m wire out, did not hit the bottom. During the second haul, 600 m of wire were paid out and a successful sample of benthopelagic fish was retrieved. The predominating species in the catch was the snipe fish *Macroamphosus scolopax*.

The DOS (Deep-sea Observation System, a camera sled) was used twice on the summit and upper flank of the seamount and yielded a total of ca 1600 frames. The DOS was towed at a speed of 0.5-1 kn, the bottom distance was ca 3 m. During the first haul on 3 April the camera was triggered at fixed intervals of 6 seconds. At the second deployment on 5 April we used the DOS in "yoyo mode", a bottom contact switch triggering the camera every time a weight which was hanging under the gear at a 3 m long line touched the bottom.

Primary production was measured during the cruise in deck incubators exposed to the daylight. The incubators were made of clear plastic tube. Water samples from different water depths were incubated for 24 h, and the the oxygen production was measured. Different light levels were simulated by wrapping filter foil around the tubes.

Most of the time the weather was fair, but high swell often made the work uncomfortable. Station work was finished on Wednesday, 7 April; then we sailed to Las Palmas where we arrived on 8 April.

Annex1: POS 309: List of participants

1	Christiansen (principal scientist)	Bernd	UHH/IHF
2	Furey	Tom	NUIG
3	Gutierrez Lobato	Carlos	ULPGC
4	Hirch	Stefanie	UHH/IHF
5	Kiriakoulakis	Kostas	ULIV
6	Martin	Bettina	UHH/IHF
8	Mendonça	Ana	IMAR/DOP
7	Philipps-Bussau	Kathrin	UHH/IHF
9	Springer	Barbara	URO
10	Vilas Español	Juán Carlos	ULPGC
11	Werk	Stephan	URO

IMAR/DOP: Instituto do Mar/Departamento de Oceanografia e Pescas, Universidade dos Açores, Portugal
NUIG: National University of Ireland, Galway, Ireland
UHH/IHF: Universität Hamburg/Institut für Hydrobiologie und Fischereiwissenschaft, Germany
ULPGC: Universidad de Las Palmas de Gran Canaria, Spain
URO: Universität Rostock, Germany
ULIV: University of Liverpool, UK

Annex 2: List of stations

Station #	Location	Date	Time (UTC)	Latitude °N	Longitude °W	Water depth	Activity
1	I	29.03.04	3:55	33°20.0	014°00.0	4200	3 CTD/Rosette
2		29.03.04	9:13	33°20.0	014°00.0	4406	D-MOC
3	I	29.03.04	16:10	33°19.9	013°59.9	4400	CTD/Rosette w. SAPS
4		30.03.04	6:20	33°42.5	014°27.0	916	Release test
5		30.03.04	13:24	33°41.4	014°25.5	955	D-MOC
6	A	30.03.04	17:20	33°46.0	014°22.0	175	4 CTD/Rosette w. SAPS
7		30.03.04	23:02	33°41.1	014°26.0	1038	D-MOC
8		31.03.04	9:24	33°39.4	014°27.5	2386	Deployment current meter mooring
9		31.03.04	14:32	33°47.6	014°20.8	183	Deployment current meter mooring
10	F	31.03.04	21:20	33°48.0	014°40.1	4008	7 CTD/Rosette w. SAPS
11		01.04.04	12:12	33°41.2	014°25.7	701	OT
12		01.04.04	14:16	33°41.3	014°25.5	907	2 OT
13	E	01.04.04	19:56	33°32.1	014°29.9	4117	2 CTD/Rosette w. SAPS
14	E1	02.04.04	4:05	33°40.7	014°22.8	1779	CTD/Rosette
15		02.04.04	8:50	33°39.1	014°24.5	2403	D-MOC
16	F1	02.04.04	14:13	33°45.9	014°31.0	2479	2 CTD/Rosette
17		02.04.04	17:01	33°46.8	014°24.9	312	2 VanVeen grab
18		02.04.04	19:20	33°39.5	014°24.7	1976	D-MOC
19	C	03.04.04	2:45	33°44.8	014°03.1	4408	6 CTD/Rosette w. SAPS
20		03.04.04	19:53	33°20.4	014°00.5	4412	D-MOC
21	I	04.04.04	2:00	33°19.7	013°59.5	4401	3 CTD/Rosette
22	D	04.04.04	7:36	33°36.0	014°12.0	4405	CTD/Rosette
23		04.04.04	13:08	33°46.3	014°22.3	174	DOS
24		04.04.04	15:42	33°48.0	014°24.2	421	VanVeen grab
25		04.04.04	19:35	33°48.6	014°14.5	2908	D-MOC
26	D	05.04.04	3:08	33°35.7	014°12.0	4451	CTD/Rosette w. SAPS
27		05.04.04	10:33	33°48.0	014°14.2	2628	D-MOC
28	H	05.04.04	18:38	34°15.0	014°00.1	4076	6 CTD/Rosette
29		06.04.04	8:46	33°46.6	014°21.2	173	2 DOS
30		06.04.04	15:58	33°48.2	014°19.5	405	2 VanVeen grab
31	C1	06.04.04	17:46	33°46.3	014°14.2	2497	CTD/Rosette
32		06.04.04	21:15	33°41.2	014°21.3	1705	D-MOC
33	G	07.04.04	2:40	33°59.1	014°27.0	4002	2 CTD/Rosette
34		07.04.04	7:55	33°41.1	014°21.7	1690	D-MOC
35		07.04.04	11:25	33°45.6	014°15.1	2155	light attenuation
36		07.04.04	13:06	33°48.6	014°19.4	437	2 VanVeen grab

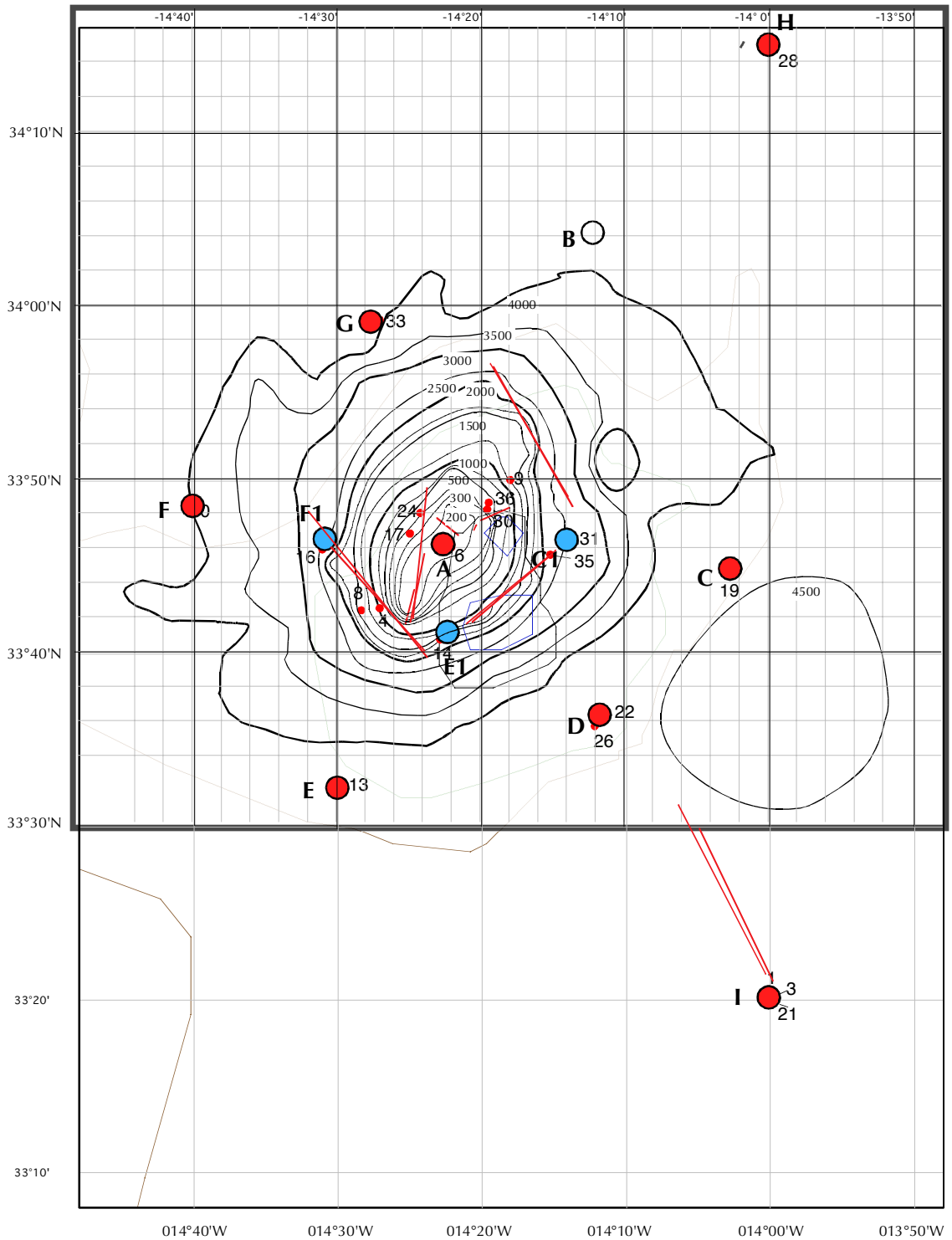
CTD: conductivity and temperature probe (with water bottles)

DOS: deep-sea observation system (camera sled)

D-MOC: Double MOCNESS, large multiple opening and closing plankton net

SAPS: stand-alone pump system

Annex 3: Map of study location



Map of Seine Seamount showing sampling stations (numbers correspond to stations in the table in Annex 2) and MOCNESS cruise tracks (red lines).