

CRUISE REPORT

ORV SAGAR KANYA

Cruise No. 128A

23 Oct. to 10 Nov., 1997



राष्ट्रीय समुद्र विज्ञान
संस्थान

**NATIONAL INSTITUTE
OF
OCEANOGRAPHY**

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Cruise No. 128A

(23 Oct. to 10 Nov., 1997)

NATIONAL INSTITUTE OF OCEANOGRAPHY

(Council of Scientific and Industrial Research)

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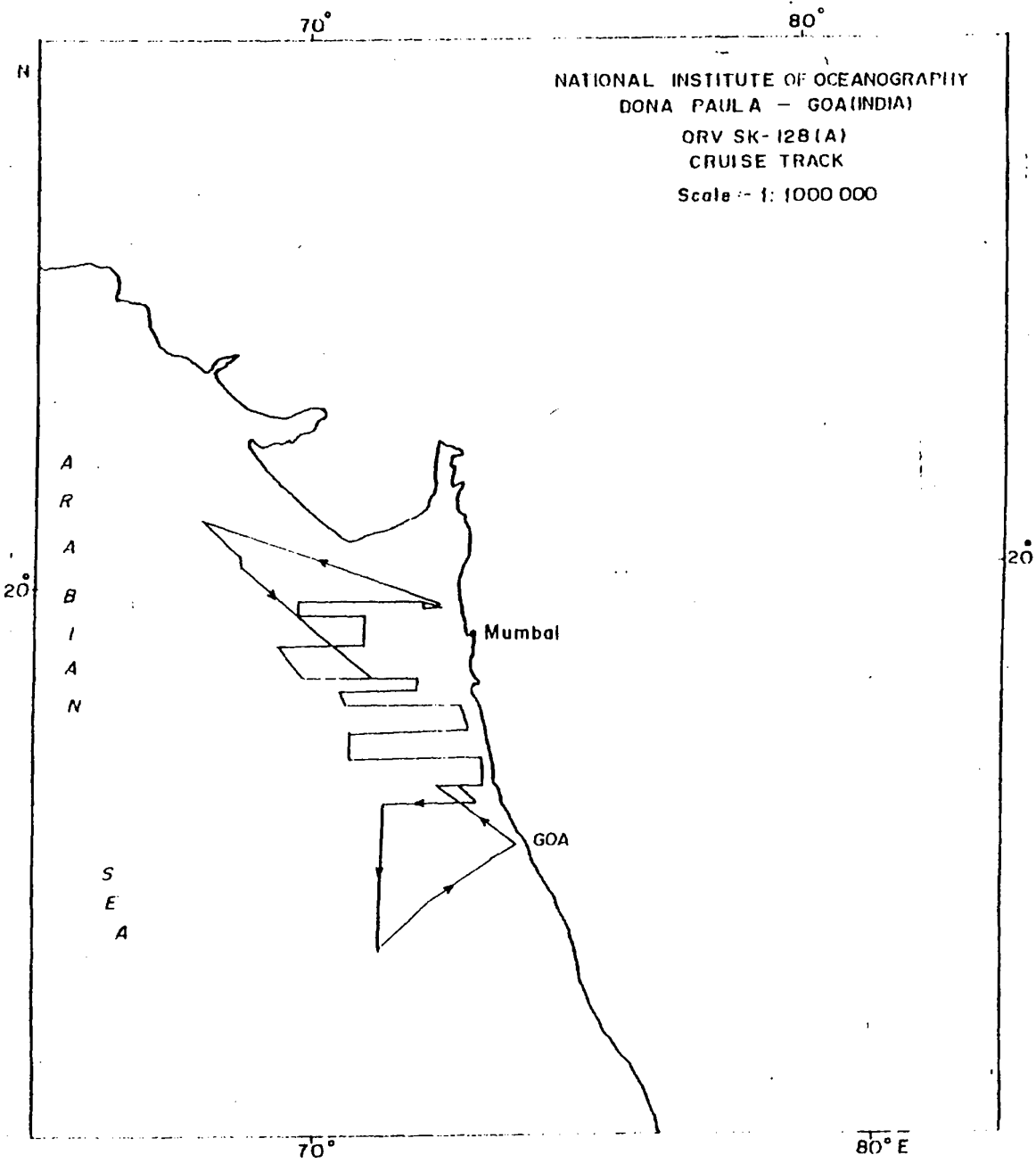
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REPORT ON THE 128A OCEANOGRAPHIC CRUISE OF ORV SAGAR KANYA

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2. CRUISE SUMMARY

The cruise was a part of ongoing campaign for collection of sub-bottom data and sediments sampling for palaeoclimatic studies of the continental margins of India. The scientists and research students from the Antarctica Study Centre, Vasco-da Gama and Mangalore University also participated in the cruise.

Scientific work consisted of bathymetric, gravity and magnetic surveys along E-W and N-S lines between Ratnagiri and Diu off the western continental margin of India. Sixteen cores and 18 grab locations were also covered to collect samples. The area of operation was on all the physiographic units of the continental margins of India. SST observations were also carried out on all the sampling locations.

The ship left Mormugao harbour on 23 October, 97 with 9 scientific participants and three Engineers from M/s NORINCO, Goa. Though the cruise was planned to cover 900 lkm of underway data and 6 sampling stations, it ultimately collected over 1400 lkm of underway data, 16 core and 18 additional grab locations. The cruise ended at Mormugao on 10 November, 1997.

3. PARTICIPANTS

3.1. Scientific Components

Onkar S. Chauhan, Chief Scientist)	
A. R. Gujar)	
P.G. Mislanker)	
S.S. Gaonker)	NIO
N.P. Sukumaran)	
M.M. Subramanyam)	
N. Khare)	Antarctic Study Centre,
A. Shivaji)	Vasco-da-Gama
C.S. Prabhu)	Mangalore University
K.M. Jayakrishna)	
J. Negali)	M/s NORINCO, Goa
P. Rodrigues)	

3.2 Ship's Complement

Captain N. Sreekumar	—	Master
S.S. Sahoo	—	Chief Officer
A.Home	—	Chief Engineer
G. Ganguli	—	2nd Engineer
P. Sreedharan	—	Electrical Officer
J. Jose	—	Medical Officer
G.S. Nagarencar	—	Radio Officer
G.C. Jacques	—	Purser
I.R. Vaz	—	Catering Officer

4. INTRODUCTION

The cruise was part of ongoing campaign for palaeoclimate and palaeoenvironmental studies of the continental margins of India. The main objective of the cruise was to collect the underway data and the surface and subsurface samples from the continental shelf, slope and rise along the western continental margins and from the Lakshadweep sea. The sampling was also planned on the marginal high for identification of offshore phosphorite deposits.

5. CRUISE DETAILS

The cruise track was planned to cover the entire physiographic sub-units of the western continental margin of India, between Ratangiri and Bombay High. In all 3 E-W lines extending from the shallow water depths (40 m) to the base of the slope were planned. Six coring locations along the slope from the water depths of 100-1500 m were also planned.

However, nine E-W lines were taken for underway data. The bathymetry, magnetic and gravity data were collected along the lines to delineate the buried structures on the margin. Sixteen coring stations were covered from the marginal high OMZ and lower slope. The coring location also included the site in the deep sea for collection of turbidity free subbottom samples for paleoclimatological studies. Based upon the preliminary studies of the echosounding data, some grab stations were also added to identify the subbottom, and understand the geologic processes which have contributed for the reshaping of the shelf between Ratnagiri and Bombay High area. Basic training in subsampling of the cores for paleoclimatological studies was also imparted to some participants.

At all the sampling stations SST measurements were carried out. Instruments used in the cruise were :

Deep and shallow echosounder, Proton magnetometer, Gravimeter, INS system, Bucket SST, Peterson Grab, Box Corer and Deep sea winch

The weather was fine during the cruise, and except for few malfunctioning of the echosounder and deep sea pinger, all equipment worked satisfactorily. The cruise came to an end on 10 November, 1997 after completing all the assigned task and additional cores and underway data.

6. SUGGESTIONS

Due to the malfunctioning of deep sea pinger, no recovery of sediments was possible in one location. It is suggested that necessary action may be taken up to protect this device in the sampling cruises.

The narrow beam echosounder was not functioning at all, and it was informed that it was out of order for quite some time. The precision sounding data could have added much more to the bathymetric, magnetic and gravity surveys. Similarly, the Multibeam Swath bathymetry system was not functioning. Simultaneous acquisition of the data of Multibeam system could have enhanced many folds the interpretation and scientific outcome of the cruise.

7. ACKNOWLEDGEMENT

The participants of the cruise are thankful to the Department of Ocean Development for making ORV Sagar Kanya available for the palaeoclimatic studies. Thanks are also due to the Master and the crew of the vessel for their excellent cooperation.

Station Locations

S.N.	Operation	Position (deg min sec)	Depth (m)
1	Core	Lat 18 29 96 N Long 67 47 46E	2500
2	Core	Lat 21 29 50 N Long 67 48 26E	570
3	Core	Lat 20 41 05N Long 68 39 06E	2865
4	Core	Lat 20 30 96N Long 68 37 83 E	2900
5	Grab	Lat 18 31 02 N Long 71 06 14E	80
6	Grab	Lat 18 30 29 N Long 71 22 42 E	82
7	Grab	Lat 18 29 49 N Long 71 59 17 E	70
8	Grab	Lat 18 16 22 N Long 71 55 69 E	80
9	Grab	LAT 18 16 23N Long 71 36 13 E	88
10	Core	Lat 18 15 48N Long 70 59 98E	95
11	Core	Lat 18 00 77N Long 70 40 28E	800
12	Grab	Lat 18 00 45N Long 70 05 34E	100
13	Core	Lat 17 35 43N Long 70 49 83E	590
14	Grab	Lat 18 01 84N Long 71 20 58E	80
15	Grab	Lat 18 00 72N Long 71 49 56 E	90
16	Grab	Lat 18 00 09N Long 72 03 91E	90
17	Core	Lat 18 00 35N Long 72 13 92 E	65
18	Core	Lat 17 21 76N Long 71 29 27 E	550
19	Core	Lat 17 00 52N Long 71 29 77E	1400
20	Grab	Lat 17 01 52N Long 71 33 70E	170
21	Grab	Lat 17 00 56N Long 72 48 75E	60
22	Grab	Lat 17 00 94N Long 73 07 12E	30
23	Grab	Lat 16 46 44N Long 73 08 73E	30
24	Grab	Lat 16 35 82N Long 73 08 44E	35
25	Grab	Lat 16 30 33N Long 73 04 97E	15
26	Grab	Lat 16 29 54N Long 72 44 82E	70
27	Grab	Lat 16 31 33N Long 72 28 90E	80
28	Core	Lat 16 10 21N Long 72 23 12E	250
29	Core	Lat 16 10 58N Long 71 15 19E	2240
30	Core	Lat 15 02 65N Long 71 41 30E	2000
31	Core	Lat 13 16 15N Long 71 00 02E	2400
32	Core	Lat 14 24 95N Long 72 10 09E	2000
33	Core	Lat 14 50 55N long 72 39 67 E	330