



2nd International
Indian Ocean
Expedition
2015-2020

Newsletter

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(A basin-wide research program co-sponsored by IOC-UNESCO, SCOR and IOGOOS)

To advance our understanding of interactions between geologic, oceanic and atmospheric processes that give rise to the complex physical dynamics of the Indian Ocean region, and to determine how those dynamics affect climate, extreme events, marine biogeochemical cycles, ecosystems and human populations.

The origin of 85°E Ridge and its role in the plate tectonic history of the Bay of Bengal (85ERBB)

The 85°E Ridge is a prominent seismic buried ridge in the Bay of Bengal, Northeastern Indian Ocean. Several hypotheses have been proposed for the origin of this ridge, ranging from continental sliver to abandoned spreading center, volcanic trace etc. The latest hypothesis by Talwani et al (2016) suggests that it is largely a transform fault (fracture zone), but does not explain the ridge's extraordinary width nor associated negative gravity anomaly. Talwani et al. have also characterised the nature of the crust in the Bay of Bengal and onshore Bangladesh as oceanic in nature. In contrast, Sibuet et al (2016) have inferred from a seismic experiment that the crust beneath the northern Bay of Bengal is thick. They did so purely on the basis of the large thickness of the crust even though the resolved crustal velocities were typical of a newly formed oceanic crust.

A major challenge for the Bay of Bengal tectonic plate models is to accommodate this thick crust and provide enough space for the oceanic crust generated during the period 120 - 84 Ma whilst keeping other boundary conditions unchanged. Solutions for such relatively small-scale tectonic problems also need to be incorporated into the complete plate circuit. Thus it is necessary to obtain new seismic refraction and reflection data as the available refraction/sonobuoy data are inadequate to resolve the discrepancies.

We envisage a two-ship multinational seismic reflection and refraction project on the 85°E Ridge as well as on the two basins in the Bay of Bengal. The proposed studies are expected to throw light on the structure of the 85°E Ridge as well as the evolution and nature of the Bay of Bengal crust. In addition, questions about the nature of the crust of Bangladesh which is hypothesised as the sediment covered northern extension of the eastern basin of the Bay of Bengal will also be sought to be answered.

Region of Study:

The region of study is the northern Bay of Bengal, off the East Coast of India (between 81°E to 92°E longitudes and 6°N to 19°N latitudes). Our field experiment planned for 2020 will consist of Ocean Bottom Seismometer (OBS) deployment in two regions (shown by rectangles in Fig-2) for a period of 4 years. Additionally multichannel seismic data will be collected from these regions as well as along two E-W transects. Indian/foreign research vessels may be used for data collection. We welcome IIOE-2 colleagues and students having similar interests to support our field experiments.

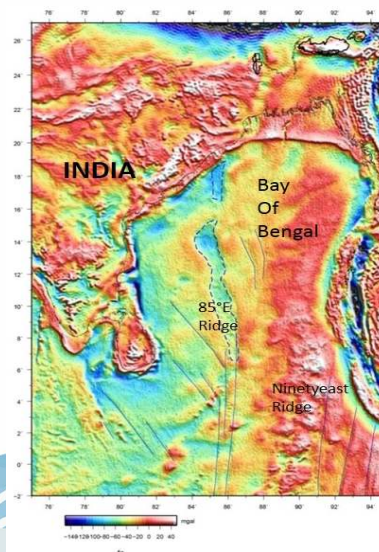


Fig-1. Satellite gravity picture of the Bay of Bengal

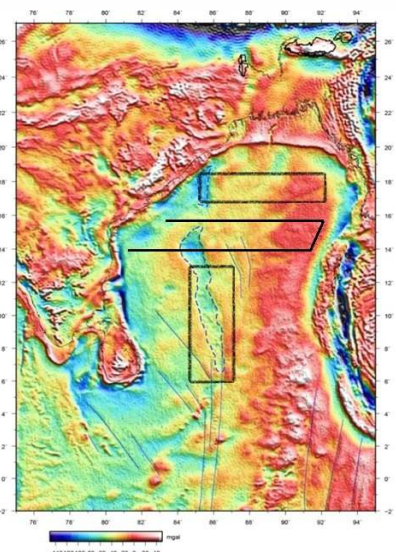


Fig-2. Proposed Cruise tracks in the Bay of Bengal

[Report Courtesy: S. Maria Ana Desa, CSIR-NIO, Goa, India. E-mail: mdesa@nio.org]

Handing over the International Indian Ocean Expedition (IIOE-2) Flag



At the IIOE-2 Steering Committee meeting in Port Elizabeth in March 2019, Dr. Satheesh Shenoi (IOGOOS) and Dr. Peter Burkill (SCOR) presented Prof. Lynnath Beckley, Chief Scientist of the upcoming RV Investigator voyage, with the International Indian Ocean Expedition flag. The voyage which leaves from Fremantle on 14th May, 2019 will be repeating the 110°E line in the south-east Indian Ocean that was last occupied in 1962/1963 by Australian scientists aboard the HMAS Diamantina or HMAS Gascoyne during the first IIOE.

[Report Courtesy: Lynnath Beckley, Environmental & Conservation Sciences, Murdoch University, Western Australia and Photo Courtesy: Raleigh Hood, University of Maryland, USA.]

Early announcement: International Indian Ocean Science Conference-2020 (IIOSC-2020)

The "International Indian Ocean Science Conference 2020 (IIOSC-2020)" sponsored by Ministry of Earth Sciences (MoES), Govt. of India, will be held during 16-20 March 2020 at Goa India co-hosted by National Institute of Oceanography (NIO) Goa, National Centre for Polar Ocean Research (NCPOR) Goa, Goa University and Indian National Centre for Ocean Information Services (INCOIS) Hyderabad, India. The conference aims at assessing the progress and scientific knowledge gained during the last 4 years of IIOE-2 (during 2016-2020). It is also an opportunity for scientists working on different facets of the Indian Ocean to present their ideas and discuss the outstanding issues, identify the knowledge gaps and plan a way forward to address such issues.

Scientists and colleagues who are interested in the Indian Ocean may kindly take note of this and freeze their dates for the conference. A detailed announcement will be available for distribution soon.

Endorse your projects in IIOE-2

Don't miss the opportunity to network, collaborate, flesh out your research project and participate in IIOE-2 cruises!!

The endorsement of your scientific proposal or a scientific activity focusing on the Indian Ocean region is a recognition of the proposal's or activity's alignment with the mission and objectives of IIOE-2, of its potential for contributing to an increased multi-disciplinary understanding of the dynamics of the Indian Ocean, and of its contribution to the achievement of societal objectives within the Indian Ocean region. Over 35 international, multi-disciplinary scientific projects have already been endorsed to date by the IIOE-2. Yours could be the next one!

Visit <http://www.iioe-2.incois.gov.in/IIOE-2/EndorsementForm.jsp> for further details and for projects already endorsed by IIOE-2.

Some Upcoming Events

- ☞ "Ocean sustainability for the benefit of society: Understanding, challenges, and solutions", 17-21 June 2019, Brest, France. Call for Sessions and Workshops at the Second Open Science Conference of the Integrated Marine Biosphere Research (IMBeR) Project.
<http://www.imber.info/en/events/osc-imber-open-science-conference/osc-2019/2019-imber-open-science-conference>
- ☞ 14th International Conference on Copepoda (ICOC) during 14-19 June 2020, at Kruger Park, South Africa.
http://abevents.co.za/WEB_ICOC2020/index.html

CLIVAR April 2019 Bulletin is available online



The International CLIVAR Project Office distributes a monthly bulletin with announcements, funding opportunities, meeting notifications relevant to the ocean/climate science community.

The latest CLIVAR Bulletin April, 2019 is available at:
<https://mailchi.mp/clivar.org/clivar-april-2019-bulletin?e=0e7979fd09>

Call for Contributions

Informal articles/short notes of general interest to the IIOE-2 community are invited for the next (May-end) issue of the IIOE-2 Newsletter. Contributions referring IIOE-2 endorsed projects, cruises, conferences, workshops, "plain language summary" of published papers focused on the Indian Ocean etc. are welcome. Articles may be up to 500 words in length (Word files) accompanied by suitable figures, photos.(separate.jpg files).

Deadline: **25 May, 2019**



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<http://www.iioe-2.incois.gov.in/IIOE-2/Bubble.jsp>



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