

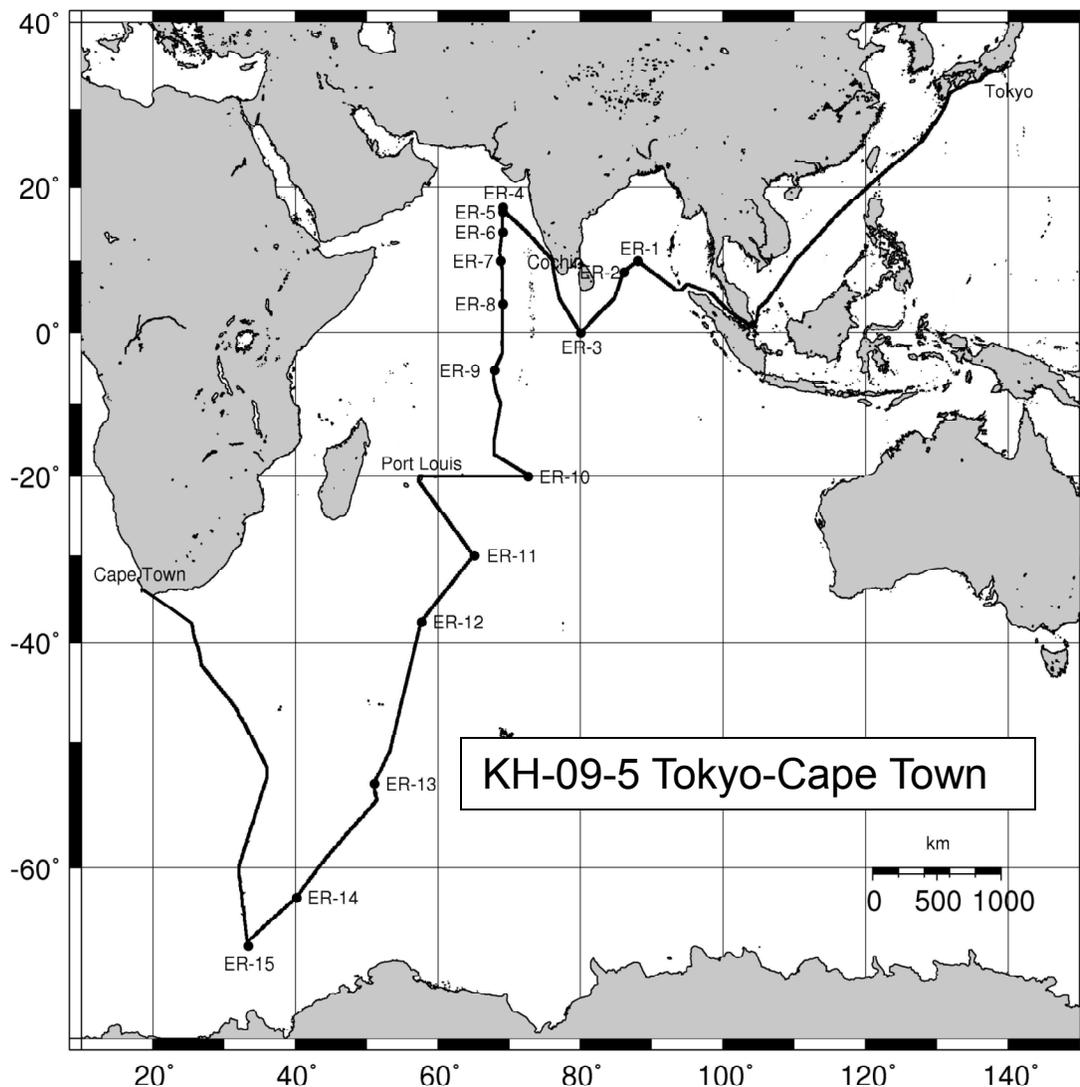
## **Japan**

The first three legs of the *Hakuho Maru* KH-09-5 cruise were successfully conducted as a GEOTRACES cruise as shown below from 6 November 2009 to 10 January 2010 (66 days in total) in the north and western Indian Ocean including the Antarctic Sea.

Leg-1: Tokyo, Japan (6 Nov. 2009) to Cochin, India (24 Nov. 2009)

Leg-2: Cochin, India (27 Nov. 2009) to Port Louis, Mauritius (16 Dec. 2009)

Leg-3: Port Louis, Mauritius (16 Dec. 2009) to Cape Town, South Africa (10 Jan. 2010)



The main study theme of this cruise was marine geochemical observations in the northern (chiefly in the Bengal Bay) and western Indian Ocean from the Arabian Sea to the Antarctic Sea along a meridional line along 65°E. It is a pity that we had to slightly modify the planned course, because of i) the threat of Somalian pirates in the Arabian Sea, ii) an approaching cyclone in the southern equatorial region, and iii) severe weather condition in the Antarctic Sea. The Indian Ocean occupies a vast area of the world ocean, but little is known about the marine biogeochemical cycles on trace elements and isotopes (TEIs). Thus, it is important to understand the role of the Indian Ocean in the global carbon cycle including its temporal variations recorded

in marine sediments. We occupied 15 stations to conduct CTD-hydrocast, large volume water sampling, multiple coring, piston coring etc. TEIs measurements were partly done on board the ship and most of them are now ongoing in shore-based laboratories in Japan and other countries.

We conducted intercalibration studies during the cruise, by comparing the GEOTRACES-recommended Kevlar wire hydrocast with the R/V Hakuho Maru's titanium wire hydrocast. We have also established a GEOTRACES baseline station at (20°S, 72°33'E) in the central Indian Basin, taking seawater samples not only for shipboard scientists but also for other international scientists who will measure in future some of the GEOTRACES key parameters for intercomparisons.

Forty three scientists (including graduate students) from various universities and research institutes in Japan, three technical supporting staffs from Marine Work Japan Ltd., one scientist from U.S.A., one scientist from Canada, two scientists from China, and three scientists from India, total 53 scientists took part in the cruise to pursue international collaborative studies on GEOTRACES. We hope that the obtained data by this cruise will play an important role in the GEOTRACES program as its first accomplishment in the Indian Ocean.

Toshitaka Gamo (Chief Scientist of the Leg-2 and -3)

Hajime Obata (Chief Scientist of the Leg-1)