

Japan

Summary

Japan GEOTRACES has been steadily progressing this last year, although Japan is in a very difficult situation after the 11 March disaster. In the coming years, Japanese GEOTRACES expertise should be brought to bear to making the most of this unintentional, globe-spanning experiment.

During the second ASIAN GEOTRACES cruise by the R/V Hakuho Maru (KH-11-07), the radio nuclides released from the Fukushima Nuclear Plant were assessed. These are becoming remarkable as new tracers for environmental assessment; some of the work during the associated cruise was intended to lay a solid foundation for using these tracers in the future. The next Hakuho Maru zonal cruise along 47N in the North Pacific (GP02) will sail in late August 2012. A new 1400 ton ship is being built now and will be available in late 2013.

Meetings

- A national GEOTRACES symposium was held on 8-9 March, 2012, at AORI, Chiba. Twenty two talks were given; recent research activities of GEOTRACES and future research/cruise plans were discussed by 45 participants.

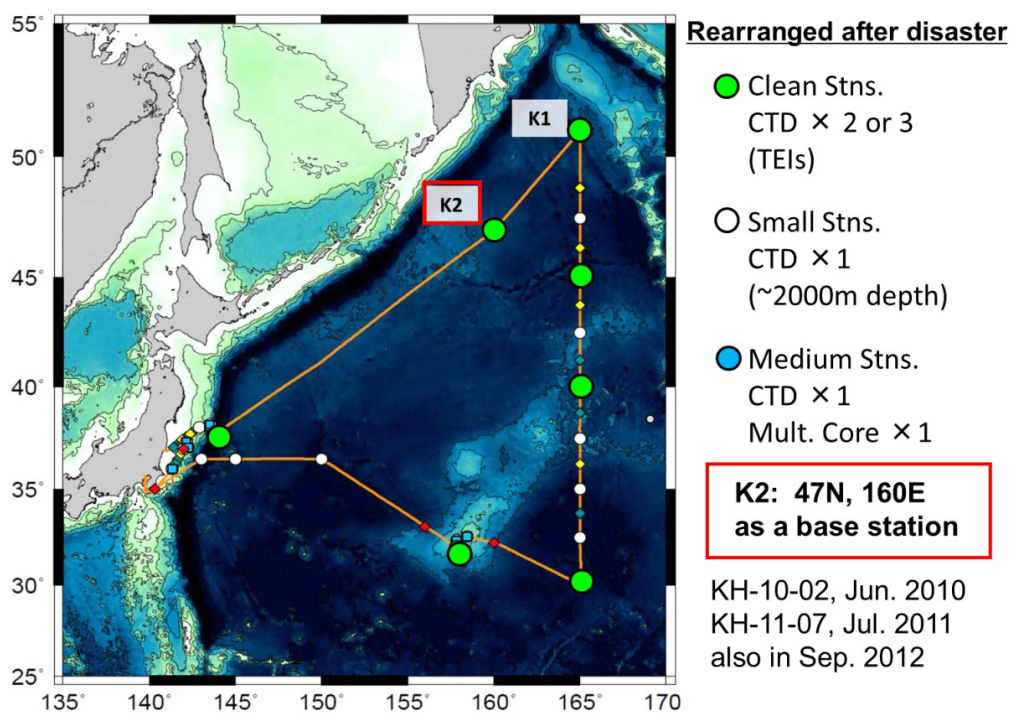


Figure 5: R/V Hakuho-Mar KH11-07 Cruise Plan (Jul16-Aug04)

Cruises completed

- KH-11-07 cruise by the R/V Hakuho Maru (Figure 5 and Figure 6).

The Japanese GEOTRACES cruise (GP18), “Marine biogeochemical studies and behavior of trace elements and isotopes in the Western North Pacific”, 16 July – 4 August 2011 (PI: J. Zhang), was completed. Because of the 11 March disaster, the original cruise plan of GEOTRACES section GP18 was modified: the section on 165E was with lower resolution for GEOTRACES, and the focus shifted to process studies including those focusing on cold seep biogeochemistry and earthquake mechanisms/ocean radionuclide impact studies off NE Japan and Fukushima area, as well as GEOTRACES. The clean stations covered the clean work and key parameters of GEOTRACES.

A total of thirty-one scientists, graduate students took part in the cruise to pursue international/regional collaborative studies on GEOTRACES. These scientists came from eighteen institutions in four countries. There were 30 individual projects, including GEOTRACES and related projects. As during the previous KH-10-2 cruise in 2010, we conducted a water sampling workshop for more than forty chemical analyses, to educate young scientists from Asia, and four seminars (Science Coffee in Hakuho-Maru).

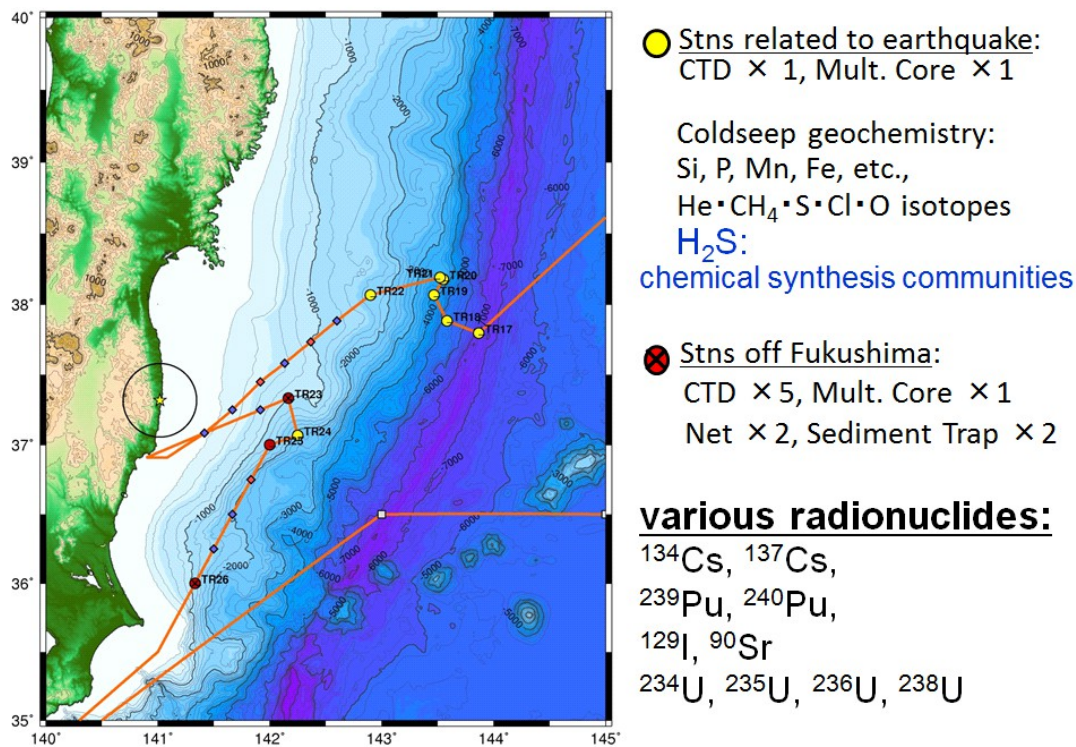


Figure 6: Observations off Fukushima and NE Japan

Coordinating Activities

- During the 2012 ASLO Aquatic Sciences Meeting, tentative agreements between several east Asian countries (Jing Zhang, Yoshiki Sohrin, Min-Han Dai and Tung-Yuan Ho) were made to coordinate activities of the regional GEOTRACES studies in the regional marginal seas. In the upcoming 2015 field effort in the East China Sea, Japan, China, and Taiwan will run simultaneous cruises to complete the regional GEOTRACES sections. These activities strengthened the cooperation of the Asian regional marine biogeochemical and ocean/environmental sciences community.

Cruise Planning:

- Cruise by the R/V Hakuho Maru.

GEOTRACES section GP02, zonal GEOTRACES cruise in the North Pacific along 47N (Figure 7) from Tokyo to Vancouver (August 23 – October 3, 2012) (PI: T. Gamo) will sail soon. There will be 33 participants from 15 institutions in four countries.

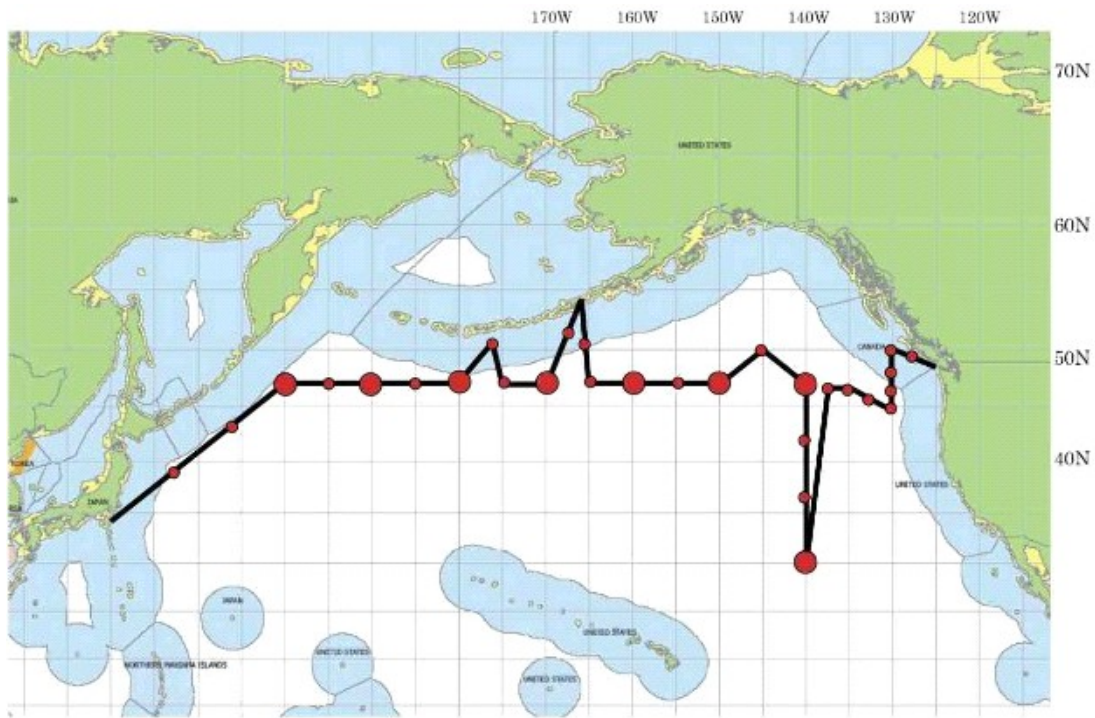


Figure 7: *R/V Hakuho-Maru KH12-04 Cruise Plan (Aug 23-Oct 03)*

Future Cruises:

- Cruises by R/V Hakuho Maru.
- GEOTRACES section GP10 and GP19, meridional GEOTRACES cruise in the Pacific, planned for winter 2014 (PI: T. Gamo).
- GEOTRACES section GP06, regional GEOTRACES cruise in the East China Sea, planned for fall 2015 (PI: J. ZHANG).

New ship building

- After 11 March, a 1400 ton new ship R/V Shinsei-maru was commissioned on a “fast-track” production schedule. It will have a large deck area for eight containerized laboratories including clean rooms, ten winches including clean Kevlar winch, etc. Acceptance testing will start in summer and training cruises in late 2013.

Submitted by: Jing Zhang