

Cruise Summary

1. Cruise Information

Cruise Number: NT08-18

Ship Name: Natsusima, Hyper Dolphin

Chief Scientist: Shoichi Kiyokawa (Kyushu Univ.)

Representative of Science Party: Shoichi Kiyokawa (Kyushu Univ.)

Cruise Period: 16 Aug 2008 – 20 Aug 2008

Port call: Kagoshima to Hakata

Research Area: Goto Submarine Canyon

2. Overview of Observation

3. Background

Goto submarine Canyon (GSC) is located at the northernmost edge of the Okinawa Trough Back-arc Basin. Age of the canyon is not clear so far.

According to our seismic reflection survey and field survey in the neighboring area, we reached a hypothesis of GSC forming that it is originally formed as a failed rift of Okinawa Trough rifting. Main objective of this cruise is to confirm the hypothesis. We observed topography and outcrops at the bottom of GSC using Hyper Dolphin.

4. Observations:

We had 2 dives at the middle of GSC. Sampling of mud, bedrocks, sand-pipes, measuring CTD was carried out on #894 and #895 Dives. We had topographic survey by SEABAT at night.

5. Research Results:

Rapid current flows at the bottom of the valley. Direction of flow varies according to location. Reverse current was observed. Four depressions are discovered through geometry survey. Each depression has 3 - 15 km length, and is deepest at the downstream edge. Sand, silt, and mud are deposited at the bottom of one of the depressions. Step-like terrace was found at the downstream edge of the depressions. Surface of terraces are flat with thin cover of deposits. Current-perpendicular ripples are found at the slope and bottom of the valley. Some sand chimneys were found in the middle of the valley.