

## **GEOMAGNETIC SURVEY AT SEA**

This is a continuation of the report of geomagnetic surveys at sea by the Hydrographic and Oceanographic Department. This report gives brief summary of three cruises, Kikai Caldera in 2006,2007 and 2008.

Key word: marine geomagnetic survey.

### **1. Surveys**

The total magnetic intensity at sea surface was measured by a proton precession magnetometer of PMM-200 installed on the survey vessel Meiyo of the Hydrographic and Oceanographic Department (JHOD). The sensor was towed about 300m behind the vessel. The data from the sensor were sampled every 20 seconds.

### **2. Data processing and Results**

The measured total magnetic intensity includes components of external field variation. The correction of the external field variation was carried out based on the continuous magnetic observations at a reference magnetic observatory close to the survey area. The details on the compiled magnetic surveys, the name of the reference magnetic observatory, the reference values for external field correction and the epoch year of data processing are listed in Table 1.

For calculations of the total intensity magnetic anomaly values, the IGRF model was used as the core field model in accordance with the recommendation of the IAGA.

Geomagnetic total intensity anomaly maps are shown in Fig. 1 .

Reduction and compilation of this report were made by S.Kato and K.Koyama belong to the Geodesy and Geophysics Office.

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### **References**

The results of geomagnetic surveys at sea for preceding years are found in the following publication series.

Data Report of Hydrographic Observations, Series of Astronomy and Geodesy, No.18, 1984,

Ibid. , No.19, 1985,

Ibid. , No.20, 1986,

Ibid. , No.21, 1987,

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Ibid. , No.28, 1994,

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Ibid. , No.31, 1997,

Ibid. , No.32, 1998,

Ibid. , No.33, 1999,

Ibid. , No.35, 2001,

Ibid. , No.37, 2003,

Ibid. , No.38, 2004,

Table 1. Details on the compiled magnetic surveys at sea

Cruise index	KC06 KC07 KC08
Area	Kikai Caldera
Period	Jan-Feb, 2006 Aug, 2007 May-Jun, 2008
Vessel	Meiyo
Magnetometer	PMM200
Positioning	Integrated Navigation System
Track lines	0.5 naut. Mile
Anomaly map	Fig. 1
Scale of original map	1/150000
Map projection	TM
Reference Magnetic Observatory	Kanoya (31° 25.'2 N, 130° 52.'9 E)
Reference value for an External field correction	46337.5nT
Core field model	IGRF2005
Contour interval	50nT
Epoch year	2007.8

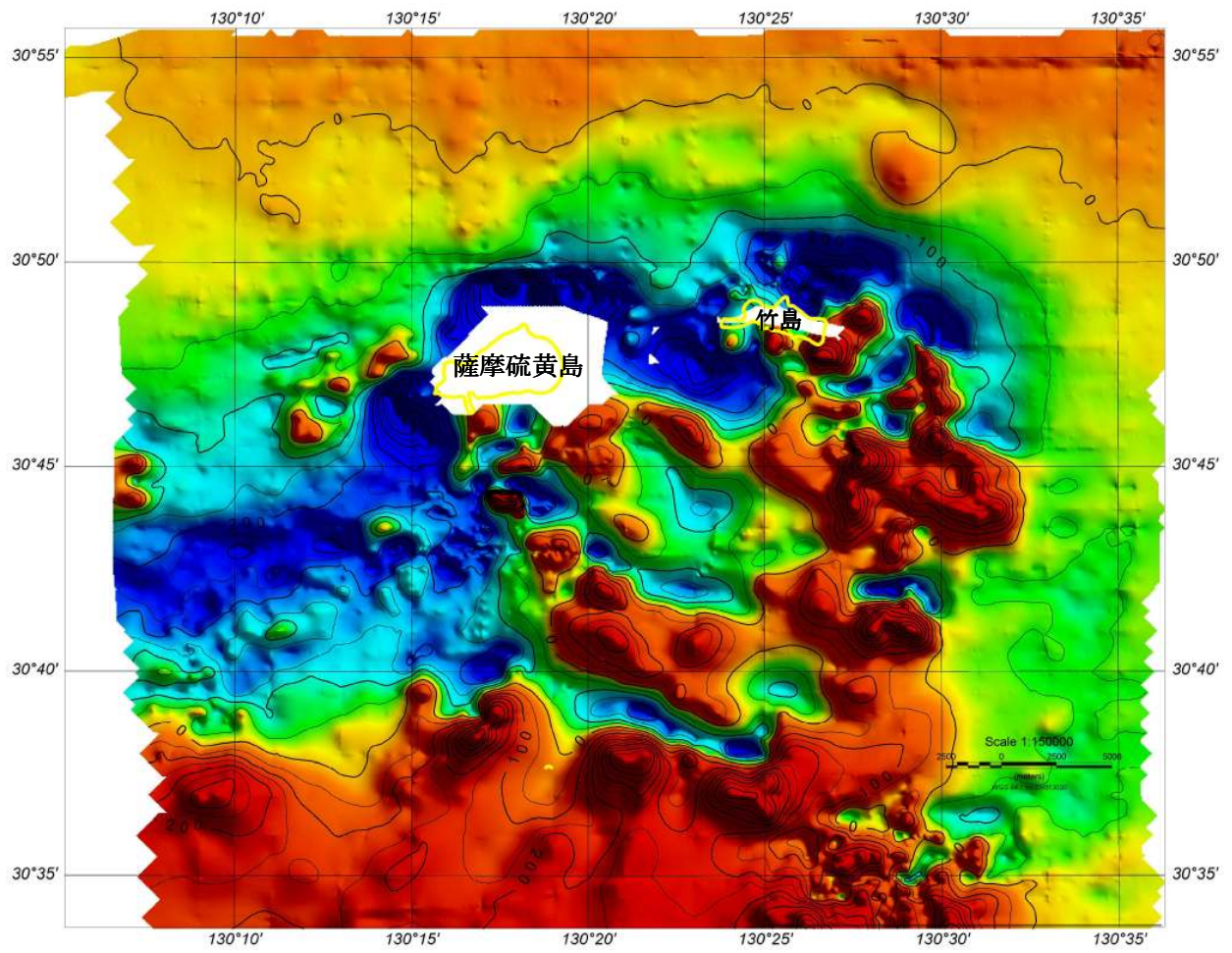


Fig.1 Geomagnetic total intensity anomaly map in and around Kikai Caldera.