

KAIREI KR02-01 Total Magnetic Intensity (TMI)

Last Modified: 2019-06-25

[ReadMe](#) [Observation Data](#) [Data Format](#)

Cruise ID: **KR02-01**

Total Magnetic Intensity (TMI): Processed (DMO)-Corrected

Data Policy: [JAMSTEC](#)

Observation Items: Total magnetic field intensity

Science Keywords:

OCEANS > MARINE GEOPHYSICS > MARINE
MAGNETICS
SOLID EARTH > GEOMAGNETISM

For Using Data

Principal Investigator

Data Management Office

Use Constraints

See [Terms and Conditions](#) about constrain of use.

Data Citation

See [Terms and Conditions](#) about data citation.

Period (UTC)

2002-01-13 00:35 – 2002-01-26 21:48

Instrument

Instrument:

Proton magnetometer



Overview

The proton precession magnetometer measures the total magnetic field intensity as the frequency of electric current which is generated by the proton precession. In order to avoid the ship's magnetization, the instrument is towed by the vessel about 200 - 300m. As a quality control, data of low reliability was removed (see section 5. for quality control criteria). Synthetic geomagnetic field values were calculated from IGRF models.

Measurement System

Manufacturer : Kawasaki Geological Engineering Co. Ltd.

Type : PROTO10

Measurement range : 30,000 - 65,000 nT

Resolution : 0.01 nT

Accuracy : 0.1 nT

Location : Dry Laboratory

Data processing

The following corrections and calculations were performed.

(1) International Geomagnetic Reference Field (IGRF)

Synthetic geomagnetic field values are calculated from IGRF 12th generation models by using navigation data ; latitude, longitude and date.

Reference: IAGA Division V-MOD Geomagnetic Field Modeling[<http://www.ngdc.noaa.gov/IAGA/vmod/igrf.html>]

(2) Calculation of the geomagnetic field anomaly

$An = F - Figrf$

An: Total geomagnetic field intensity anomaly

F: Observed total geomagnetic field intensity

Figrf: Synthetic total geomagnetic field intensity from IGRF

(3) Output of the data

Time (UTC)

Latitude (degree)

Longitude (degree)

Observed total magnetic field intensity (nT)

Total geomagnetic field intensity anomaly (nT)

The following corrections and calculations were performed.

(1) International Geomagnetic Reference Field (IGRF)

Synthetic geomagnetic field values are calculated from IGRF 11th generation models by using navigation data ; latitude, longitude and date.

Reference: IAGA Division V-MOD Geomagnetic Field Modeling[<http://www.ngdc.noaa.gov/IAGA/vmod/igrf.html>]

(2) Calculation of the geomagnetic field anomaly

$An = F - Figrf$

An: Total geomagnetic field intensity anomaly

F: Observed total geomagnetic field intensity

Figrf: Synthetic total geomagnetic field intensity from IGRF

(3) Output of the data

Time (UTC)

Latitude (degree)

Longitude (degree)

Observed total magnetic field intensity (nT)
Total geomagnetic field intensity anomaly (nT)

Quality control of data

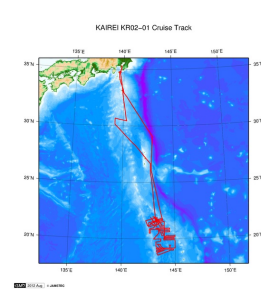
Following criteria were used for removal of data of low reliability:

- Time error (inversion of time, continuation of same timestamps)
- Ground speed of the ship below 1knot or exceeding 20knot
- Total geomagnetic field intensity anomaly exceeding $\pm 4000\text{nT}$
- Spatial gradient of the total geomagnetic field intensity anomaly exceeding $\pm 300\text{nT/km}$

Note

- (1) File naming rule: Cruise_ID_corr.tmag
- (2) Sampling rate: 20 seconds(It depends on geomagnetic field intensity and inclination)
- (3) Geodetic system: WGS84
- (4) If you would like the raw data set, please contact us from "Contact Us" above.

Related Information



[Enlarge Image](#)

KR02-01

Ship Name: KAIKEI
Period: 2002-01-09 - 2002-01-30
Chief Scientist: Makoto Arima (Yokohama National University)

Update History

2019-06-25	An observation data was registered.
2018-06-29	An observation data was registered.
2012-12-25	An observation data was registered.

JAMSTEC

[Site Policy](#)
[Privacy Policy](#)
[Application for Data and Samples](#)
[Data Policy](#)

What's New

[Update History](#)
[Feeds](#)

Lists

[Publication List](#)
[Amount of Public Info.](#)

Data

[Map Search](#)
[Data Tree](#)
[Detailed Search](#)

Information of the Ships

[NATSUSHIMA](#)
[KAIYO](#)
[YOKOSUKA](#)
[MIRAI](#)
[KAIKEI](#)
[CHIKYU](#)
[KAIKEI](#)
[SHINSEI MARU](#)
[HAKUHO MARU](#)

Information of the Submersibles

[KAIKO](#)
[SHINKAI 2000](#)
[SHINKAI 6500](#)
[DEEP TOW](#)
[HYPER-DOLPHIN](#)
[URASHIMA](#)
[YOKOSUKA DEEP TOW](#)
[6K Camera DEEP TOW](#)
[6K Sonar DEEP TOW](#)
[KM-ROV](#)
[POWER GRAB](#)
[SAMPLER \(SHELL\)](#)
[POWER GRAB](#)
[SAMPLER \(CLOW\)](#)
[BMS](#)

Go to a Cruise Information

Cruise ID:

Go to a Dive Information

Dive ID:

Copyright 2011 Japan Agency for Marine-Earth Science and Technology

JAMSTEC 国立研究開発法人 海洋研究開発機構
JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

KAIREI KR02-01 Total Magnetic Intensity (TMI)

Last Modified: 2019-06-25

[ReadMe](#) [Observation Data](#) [Data Format](#)

Cruise ID: **KR02-01**

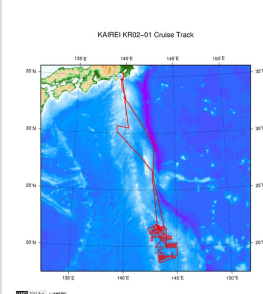
Total Magnetic Intensity (TMI): Processed (DMO)-Corrected

Data Policy: [JAMSTEC](#)

TMI Corrected

No.	Column	Content	Format	Unit	Remarks
1	1 - 8	Date	i4,i2,i2		YYYYMMDD (UTC)
2	10 -15	Time	i2,i2,i2		hhmmss (UTC)
3	17 -25	Latitude	f9.5	degree	No sign for the northern hemisphere. Negative for the southern hemisphere.
4	27 -36	Longitude	f10.5	degree	No sign for eastern hemisphere. Negative for the western hemisphere.
5	38 -45	Observed total geomagnetic field intensity	f8.1	nT	
6	46 -53	Total geomagnetic field intensity anomaly	f7.1	nT	

Related Information



KR02-01

Ship Name: KAIKEI

Period: 2002-01-09 - 2002-01-30

Chief Scientist: Makoto Arima (Yokohama National University)

[Enlarge Image](#)

Update History

2019-06-25	An observation data was registered.
2018-06-29	An observation data was registered.
2012-12-25	An observation data was registered.

JAMSTEC
[Site Policy](#)
[Privacy Policy](#)
[Application for Data and Samples](#)
[Data Policy](#)
What's New
[Update History](#)
[Feeds](#)

Lists
[Publication List](#)
[Amount of Public Info.](#)

Data
[Map Search](#)
[Data Tree](#)
[Detailed Search](#)

Information of the Ships
[NATSUSHIMA](#)
[KAIYO](#)
[YOKOSUKA](#)
[MIRAI](#)
[KAIREI](#)
[CHIKYU](#)
[KAIMEI](#)
[SHINSEI MARU](#)
[HAKUHO MARU](#)

Information of the Submersibles
[KAICO](#)
[SHINKAI 2000](#)
[SHINKAI 6500](#)
[DEEP TOW](#)
[HYPER-DOLPHIN](#)
[URASHIMA](#)
[YOKOSUKA DEEP TOW](#)
[6K Camera DEEP TOW](#)
[6K Sonar DEEP TOW](#)
[KM-ROV](#)
[POWER GRAB SAMPLER \(SHELL\)](#)
[POWER GRAB SAMPLER \(CLOW\)](#)
[BMS](#)

Go to a Cruise Information

Cruise ID:

Go to a Dive Information

Dive ID:

KAIREI KR02-01 Total Magnetic Intensity (TMI)

Last Modified: 2019-06-25

[ReadMe](#) [Observation Data](#) [Data Format](#)

Cruise ID: [KR02-01](#)

Total Magnetic Intensity (TMI): Processed (DMO)-Corrected

Data Policy: [JAMSTEC](#)

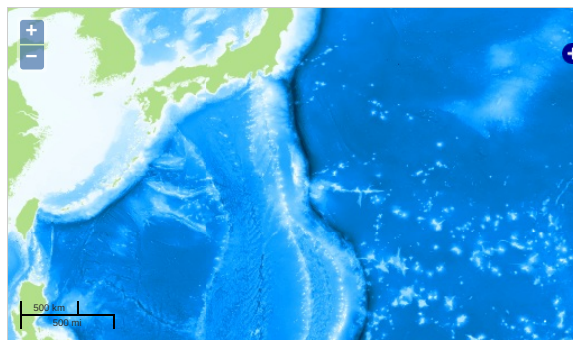
Observation Items: Total magnetic field intensity

Science Keywords:

OCEANS > MARINE GEOPHYSICS > MARINE MAGNETICS

SOLID EARTH > GEOMAGNETISM

Observation Map



— ... Observation Line — ... Navigation ● ... Observation, Dive Point, Hole

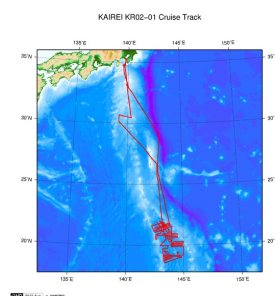
Imagery reproduced from ...

Data List

File names

☐ KR02-01_corr.tmag

Related Information



[Enlarge Image](#)

KR02-01

Ship Name: KAIREI

Period: 2002-01-09 - 2002-01-30

Chief Scientist: Makoto Arima (Yokohama National University)

Update History

2019-06-25	An observation data was registered.
2018-06-29	An observation data was registered.
2012-12-25	An observation data was registered.

JAMSTEC

[Site Policy](#)
[Privacy Policy](#)
[Application for Data and Samples](#)
[Data Policy](#)

[What's New](#)
[Update History](#)
[Feeds](#)

Lists

[Publication List](#)
[Amount of Public Info.](#)

Data

[Map Search](#)
[Data Tree](#)
[Detailed Search](#)

Information of the Ships

[NATSUSHIMA](#)
[KAIYO](#)
[YOKOSUKA](#)
[MIRAI](#)
[KAIREI](#)
[CHIKYU](#)
[KAIMEI](#)
[SHINSEI MARU](#)
[HAKUHO MARU](#)

Information of the Submersibles

[KAIKO](#)
[SHINKAI 2000](#)
[SHINKAI 6500](#)
[DEEP TOW](#)
[HYPER-DOLPHIN](#)
[URASHIMA](#)
[YOKOSUKA DEEP TOW](#)
[6K Camera DEEP TOW](#)
[6K Sonar DEEP TOW](#)
[KM-ROV](#)
[POWER GRAB SAMPLER \(SHELL\)](#)
[POWER GRAB SAMPLER \(CLOW\)](#)
[BMS](#)

Go to a Cruise Information

Cruise ID:

Go to a Dive Information

Dive ID: