

YOKOSUKA YK18-07 Total Magnetic Intensity (TMI)

Last Modified: 2020-06-24

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

Cruise ID: **YK18-07**

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

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/YK18-07_all.pdf

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)

2018-06-21 09:56 – 2018-06-22 21:29

Instrument

Instrument:

Proton magnetometer (YK07-01 -)



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. and Tierra Technica Ltd.

Type : PM-217

Measurement range : 30,000 - 70,000 nT

Resolution : 0.01 nT

Accuracy : less than 0.1 nT

Location : No.1 Study Room

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)

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 ± 4000 nT
- Spatial gradient of the total geomagnetic field intensity anomaly exceeding ± 300 nT/km

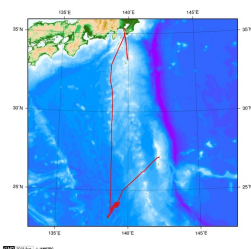
Note

- (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

[Cruise Data](#) [Dive Data](#)

YOKOSUKA YK18-07 Cruise Track



[Enlarge Image](#)

YK18-07

Ship Name: YOKOSUKA
Period: 2018-06-14 - 2018-06-24
Chief Scientist: Kyoko Okino (The University of Tokyo)
Proposal MOWALL-PVB: Moho Observation along transform fault WALLs in the Parece Vela backarc
Title: spreading axis

Update History

2020-06-24	An observation data was registered.
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[Amount of Public Info.](#)

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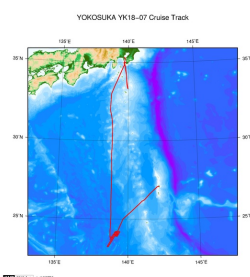
Data Policy: [JAMSTEC](#)

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

[Cruise Data](#) [Dive Data](#)



1000 10000 100000

[Enlarge Image](#)

YK18-07

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Period: 2018-06-14 - 2018-06-24

Chief Scientist: Kyoko Okino (The University of Tokyo)

Proposal MOWALL-PVB: Moho Observation along transform fault WALLs in the Parece Vela backarc spreading axis

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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

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Go to a Cruise Information

Cruise ID:

Go to a Dive Information

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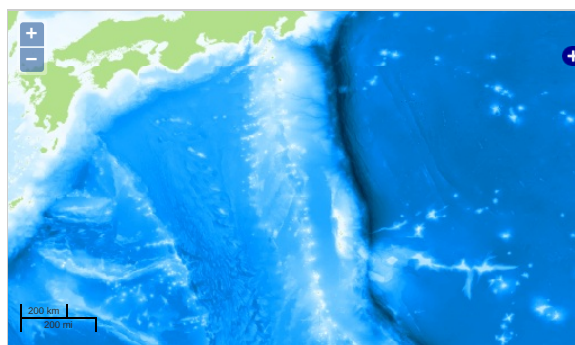
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Observation Map



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

Imagery reproduced from ...

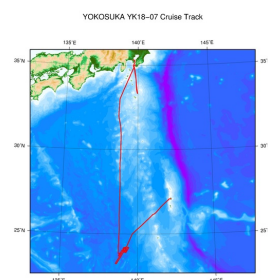
Data List

File names

☐ YK18-07_corr.tmag

Related Information

☒ Cruise Data ☐ Dive Data



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[Amount of Public Info.](#)

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Cruise ID:

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