

Observatorium Geomagnetik Lombok



(Kebanggaan Lombok untuk Masyarakat International)



*Sosialisasi bersama Pemda & Tokoh Masyarakat
Lombok Tengah
19.08.2015*

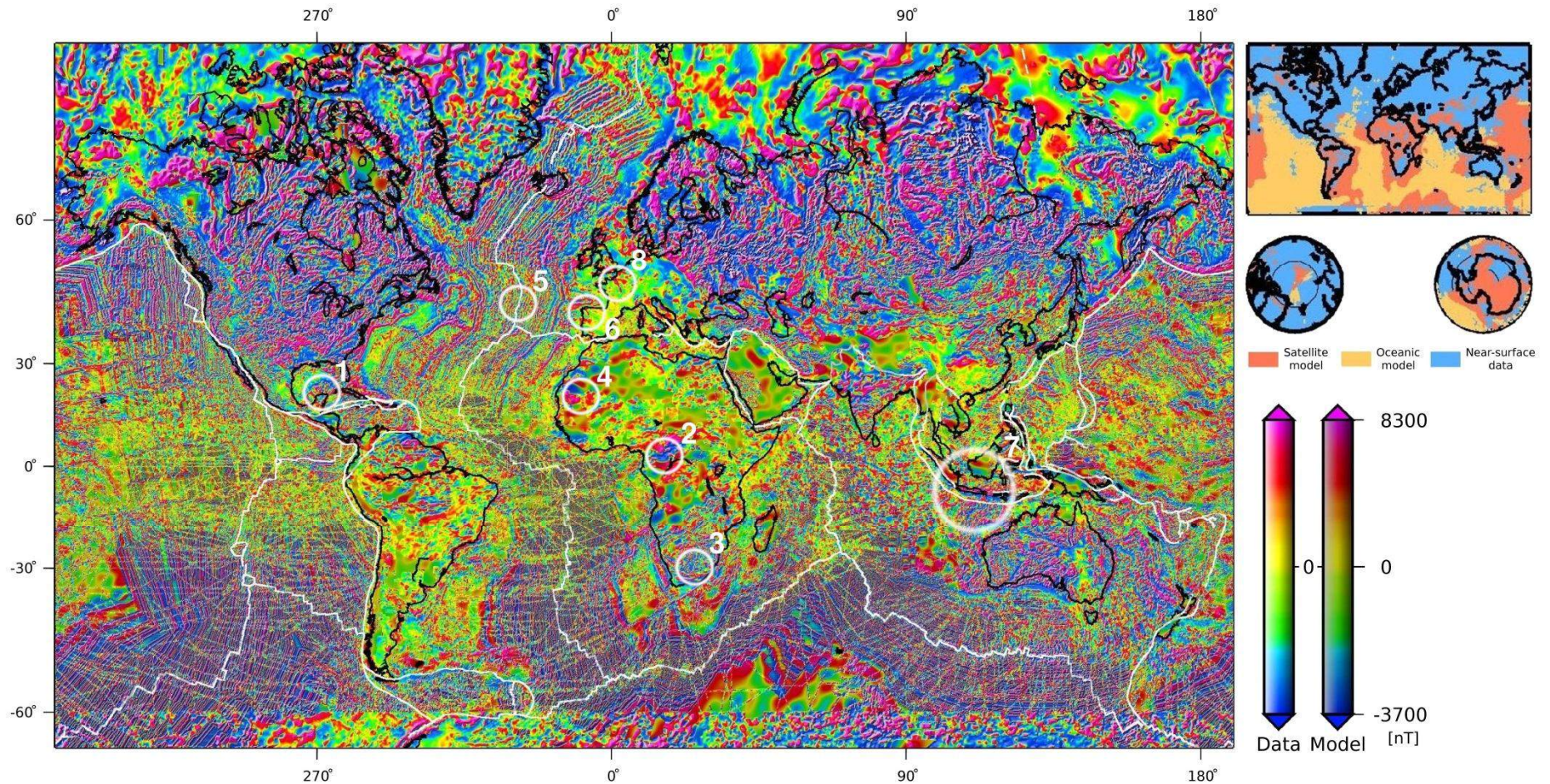
Motivasi

Anomali Geomagnetik Lombok:

→ Potensi dan Tantangan

Model Global Medan Magnet Bumi

the WDMAM (World Digital Magnetic Anomaly Map)



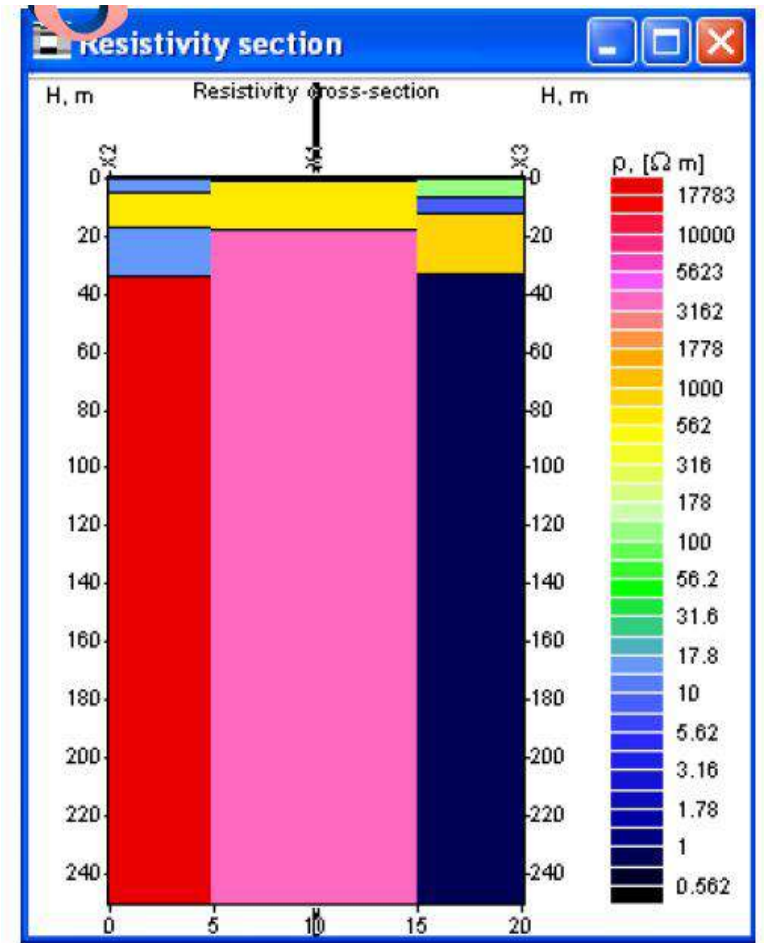
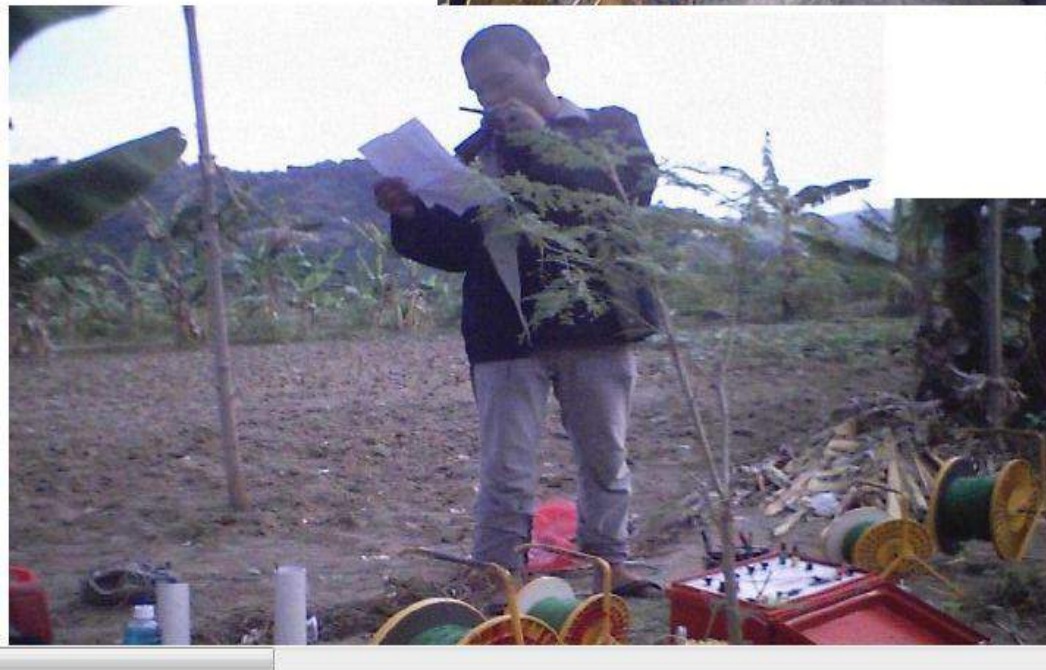
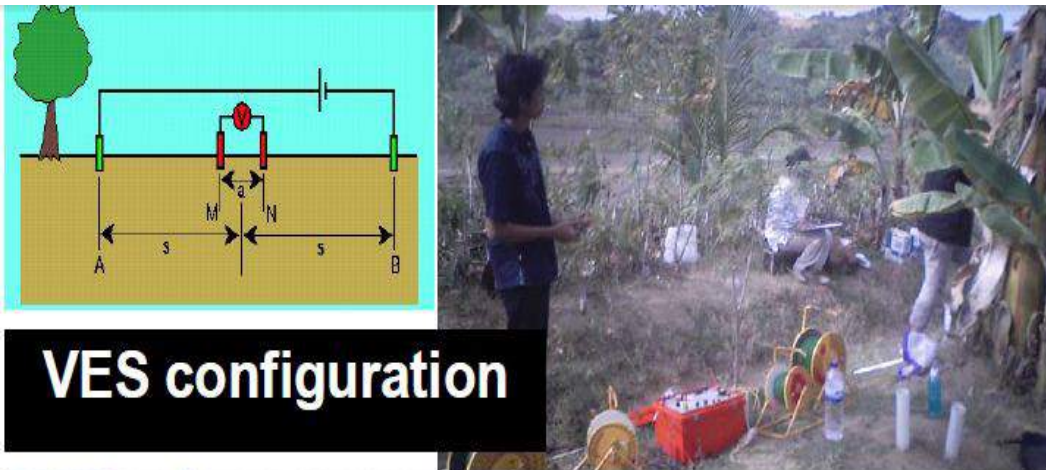
(Mandea & Thebault, 2007)

Daerah sepanjang barat dan selatan kepulauan Indonesia termasuk dalam 8 anomali magnetik terbesar di dunia yang dicirikan oleh pasangan anomali positif-negatif berdampingan



Survey Geomagnetik Regional (2004 – 2008)

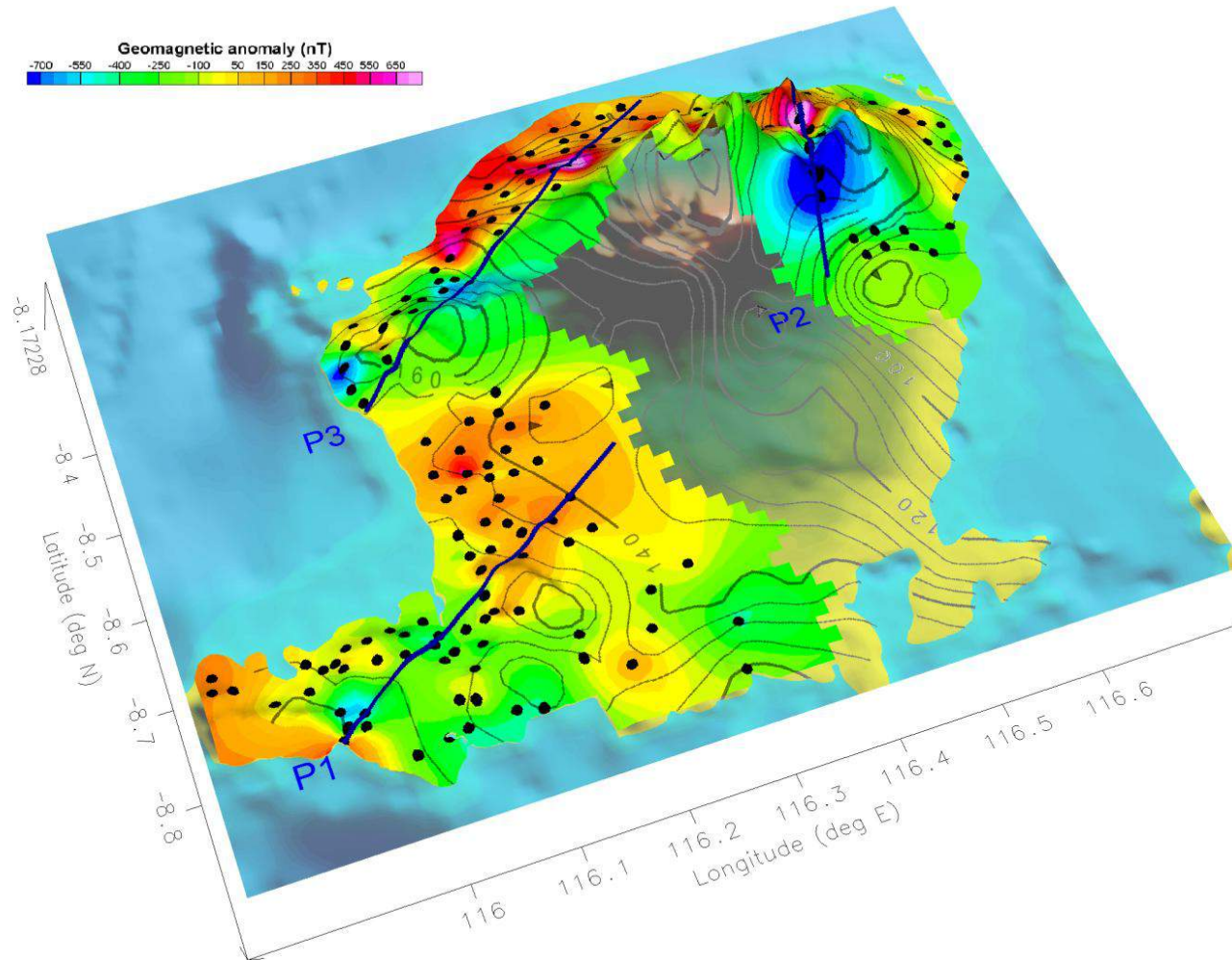
Survey Geolistrik Regional



*Hibah Pekerti 2006 – 2007
dng ITS dan ITB*

Kompilasi Hasil Survey

2006-2010, PhD at the Helmholtz Centre Potsdam
German Research Centre for Geosciences GFZ





3/11/2010



24/01/2011



25/01/2011



20/02/2013

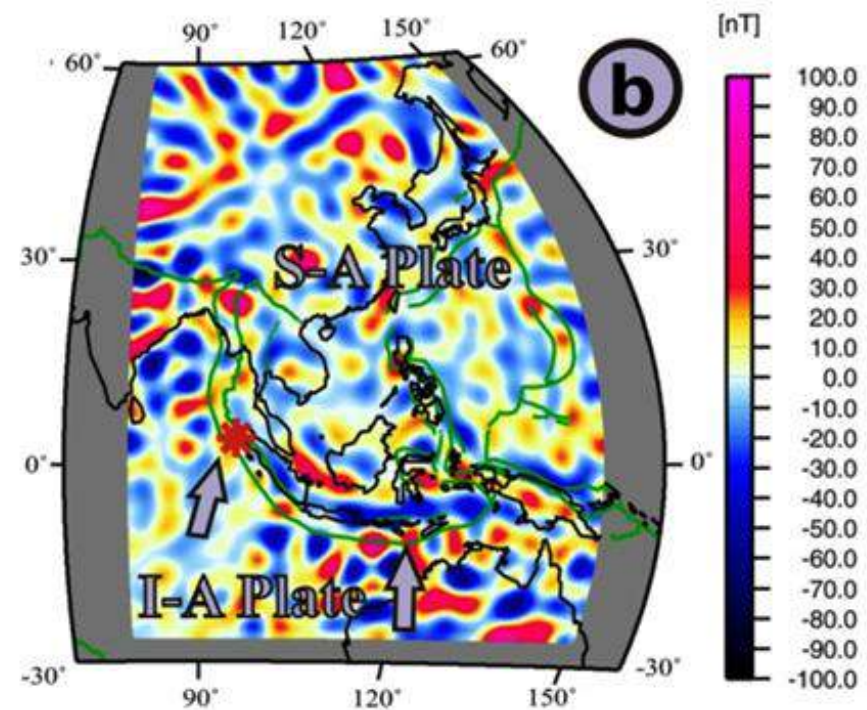
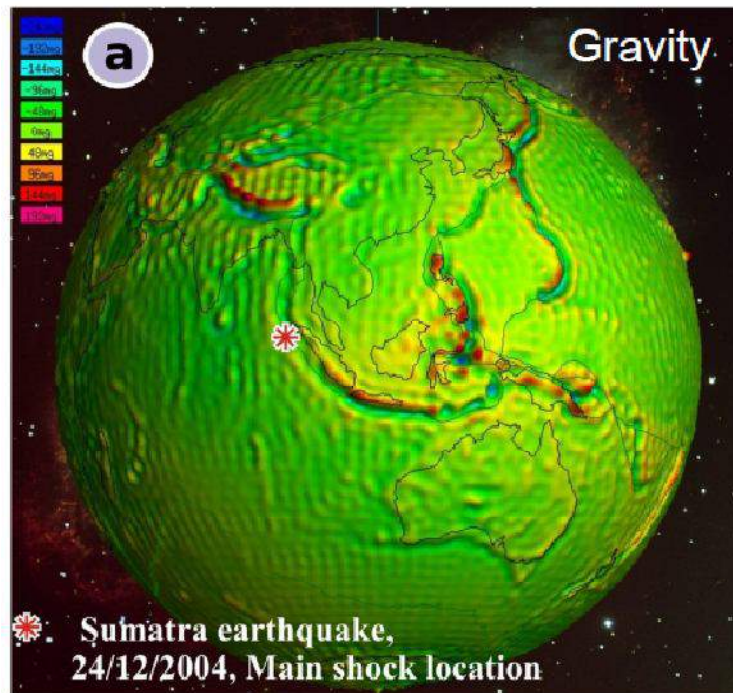




Manfaat & Tantangan

- Mitigasi Bencana Alam
- Sumber Energi Baru Terbarukan
- Navigasi Udara dan Laut
- Teknologi Satelit dan Radar
- Antisipasi Gejala Pembalikan Kutub Magnet

Observasi Geomagnetik untuk Mitigasi Gempa

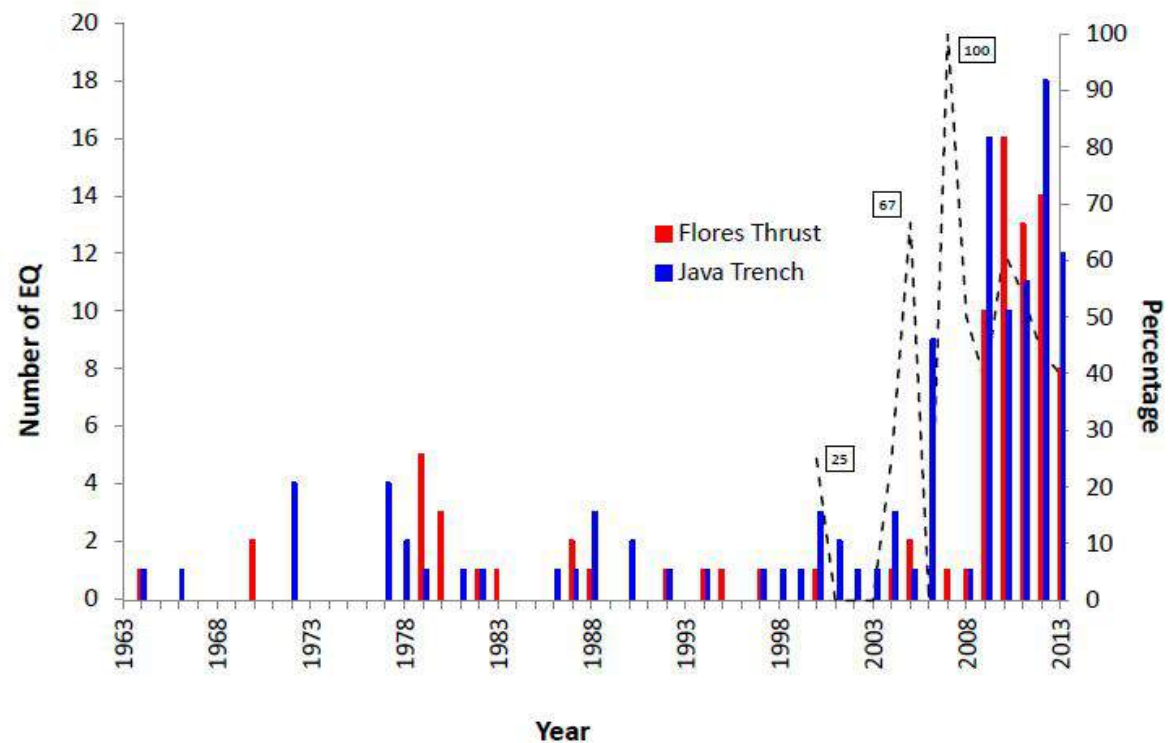
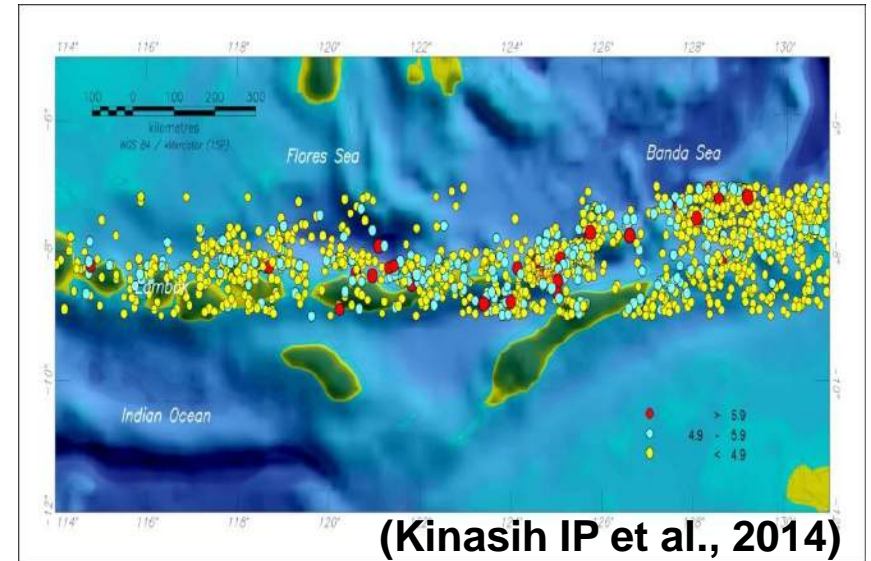


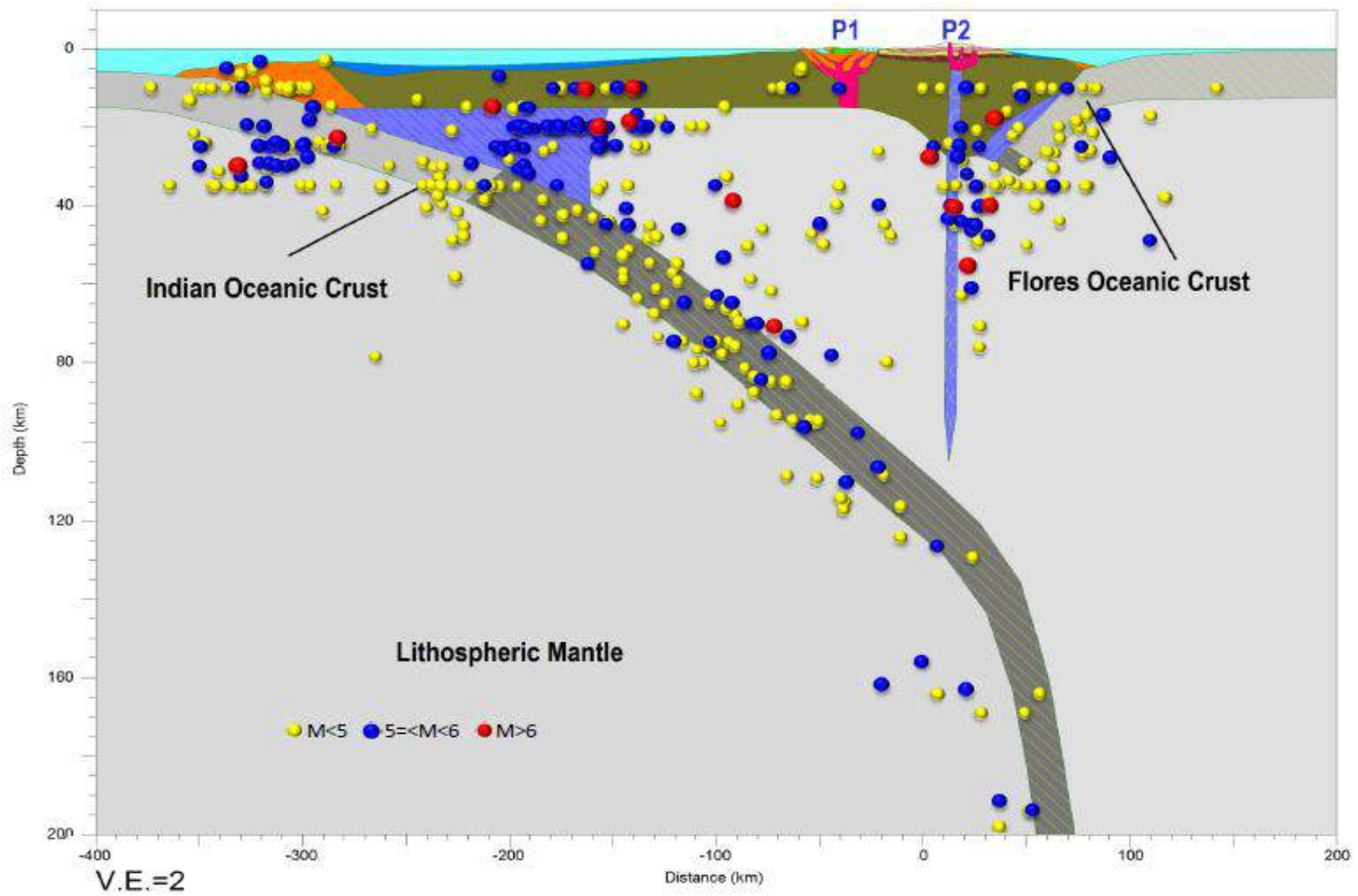
(Mandea & Thebault, 2007)

- *Zona Subduksi ditandai dengan anomali geomagnetik & gravitasi*
- *Pemodelan geomagnetik + gravity + seismik dapat memberi informasi kondisi tektonik regional yang akurat*

Potensi Gempa Bumi Tektonik Wilayah Indonesia Timur

- Jumlah gempa besar ($M > 6$) meningkat tajam pada dasawarsa terakhir
- Terbagi dalam dua kluster dengan kecenderungan wilayah utara lebih aktif dari selatan
- Perlu pemantauan geomagnetik di kedua wilayah secara simultan

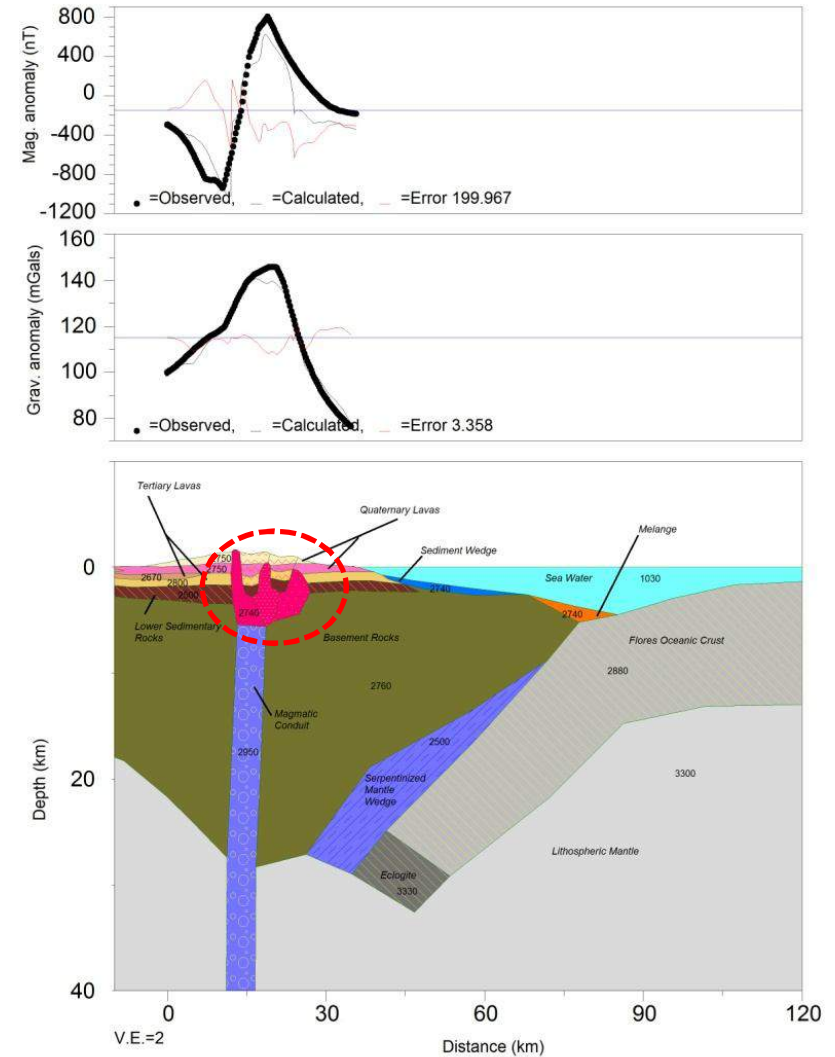




(Zubaidah et al, 2014)

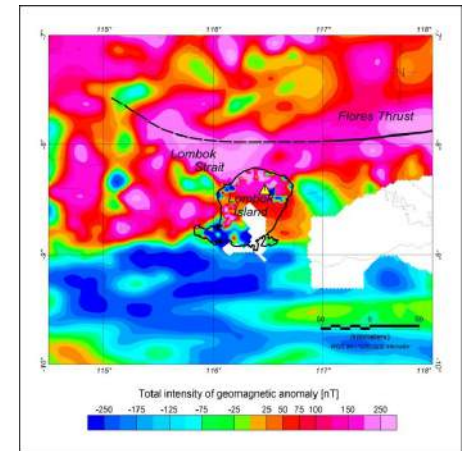
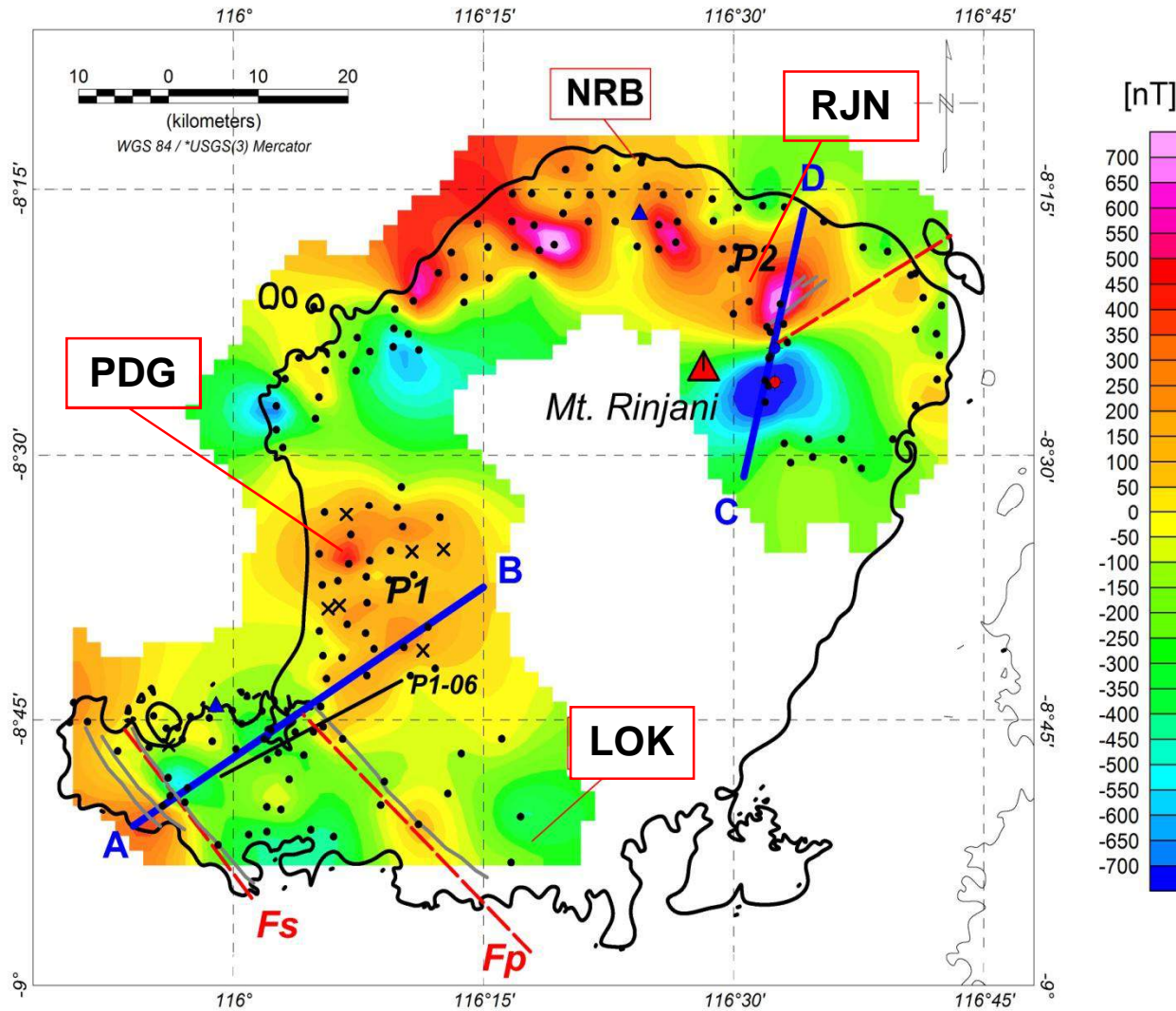
Potensi Geothermal di Sembalun

Model sementara
 → perlu survey detail



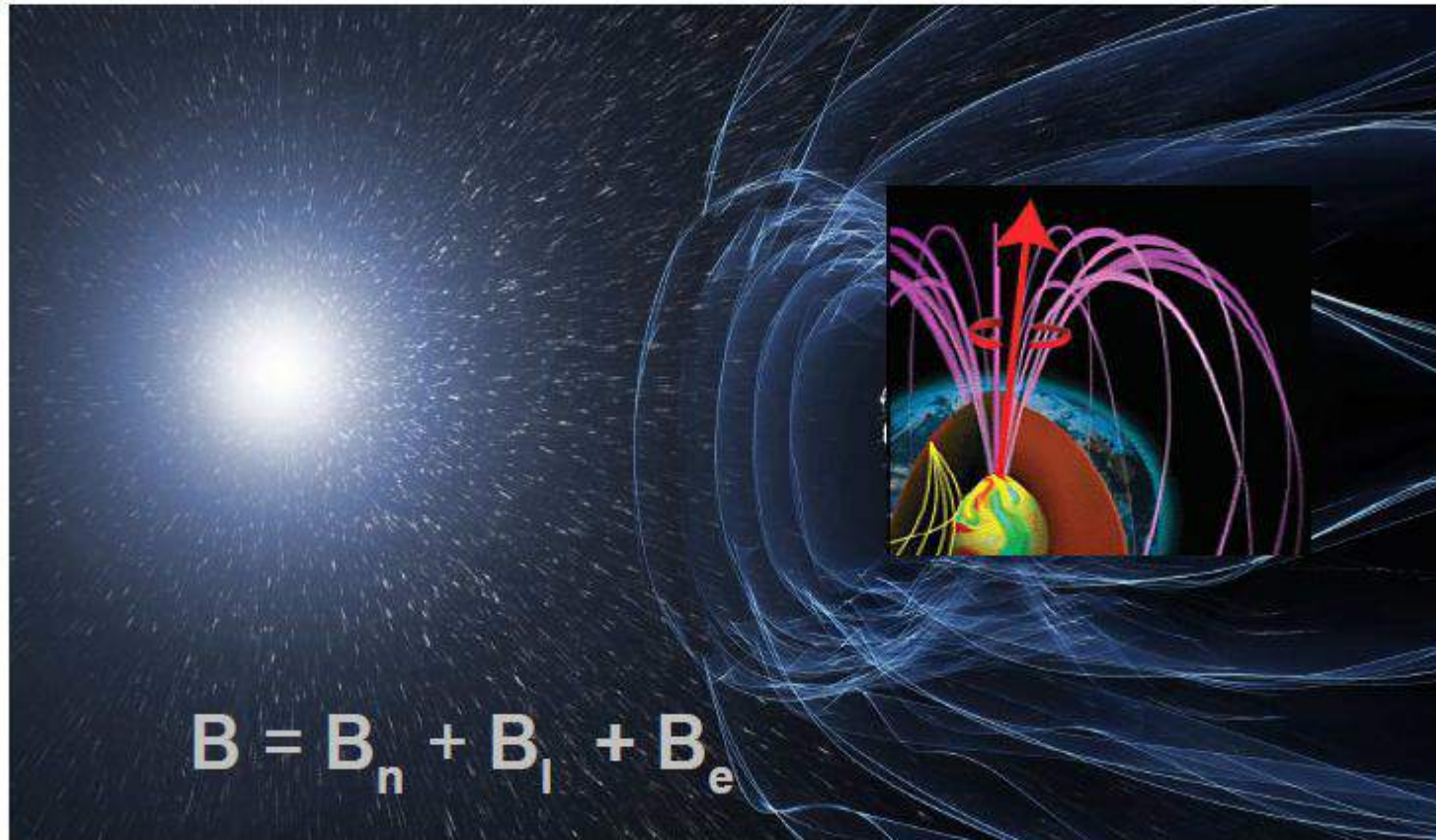
(Zubaidah et al, 2014)

Konsep Observasi Geomagnetik di pulau Lombok untuk mitigasi bencana gempa Bumi tektonik regional Indonesia Timur



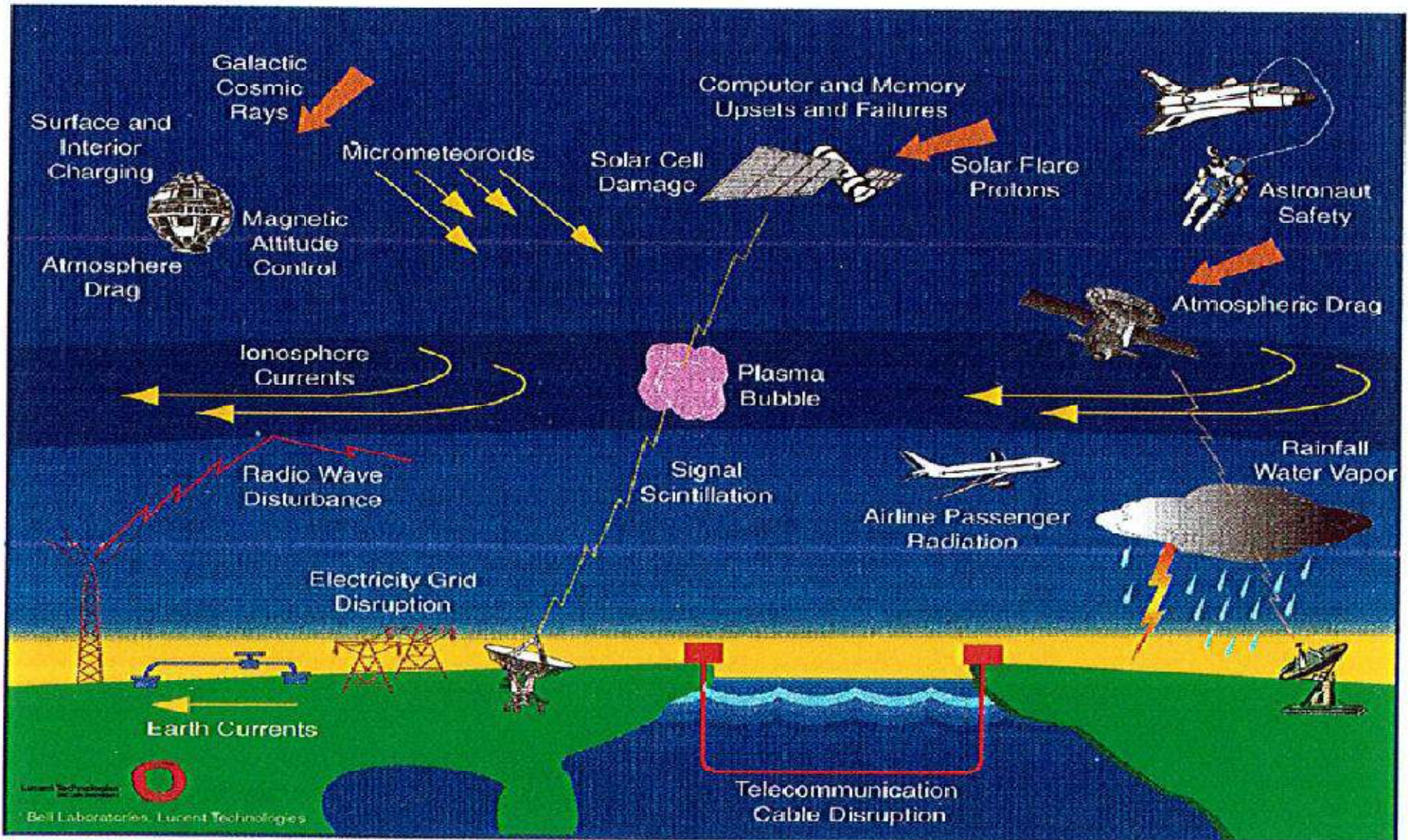
- LOK**: Observatorium Geomagnetik Lombok
- NRB**: Stasiun Geomagnetik Nurul Bayan
- RJN**: Stasiun Vulkanologi Gn. Rinjani, Sembalun
- PDG**: Pangkalan Data Geomagnetik Unram

Introduction

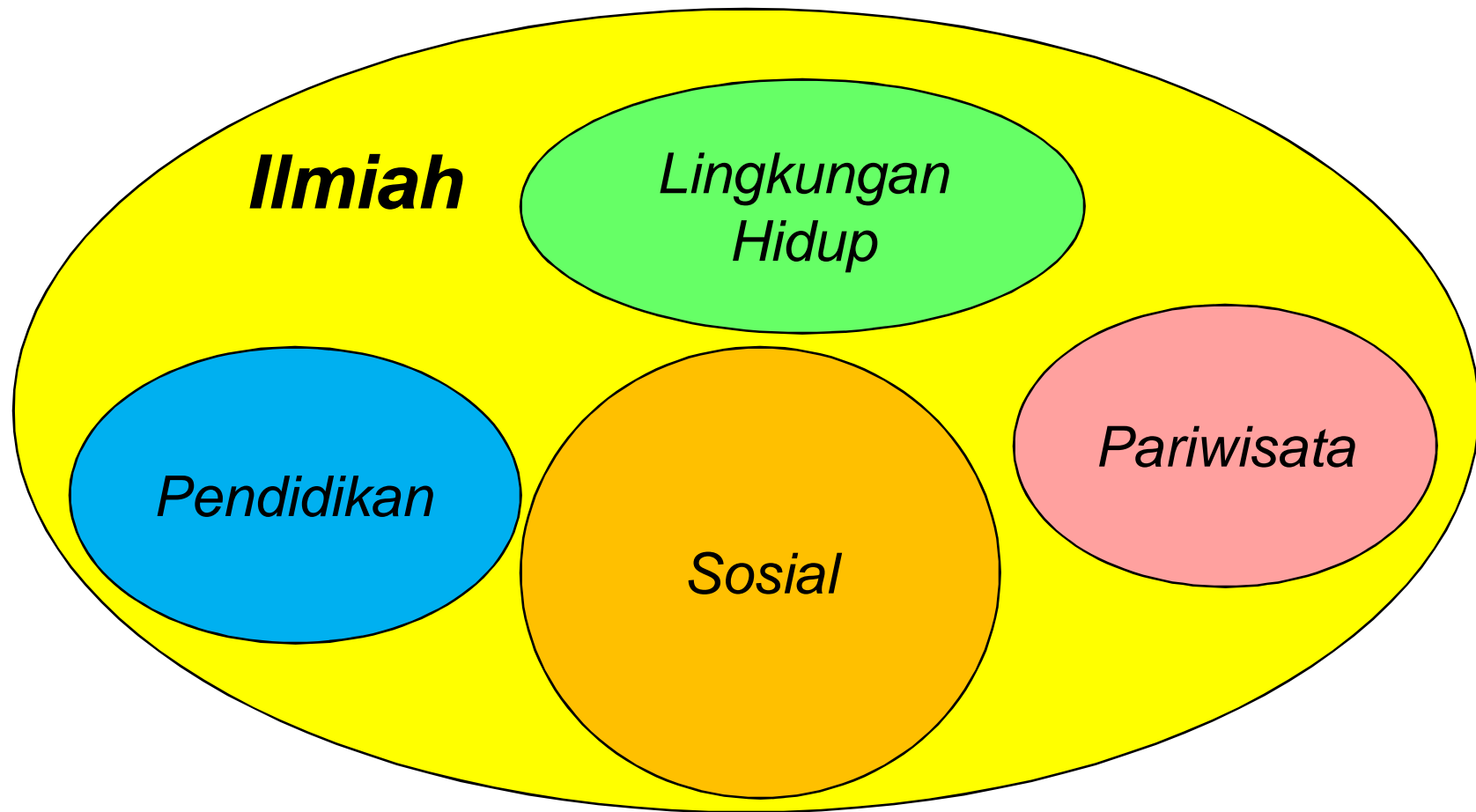


http://www.esa.int/Our_Activities/Observing_the_Earth/The_Living_Planet_Programme/Earth_Explorers/Swarm/

Pengaruh Badai Geomagnetik pada kehidupan berteknologi modern



Fungsi Observatorium



Training sebagai Teknisi Junior



Penghijauan bersama Ekspedisi NKRI



Anak Asuh Forum Dosen Muslimah Unram di Desa Rembitan





Buka Puasa bersama Anak Asuh Forum Dosen Muslimah Unram di Observatorium



Tour QiR (13 Agustus 2015)



Cinderamata untuk Prof. Masaki Otsu (Fukui University-JAPAN)
dan Prof. Dedy Priadi (Universitas Indonesia)



Peserta Tour QiR Mengunjungi Absolute House

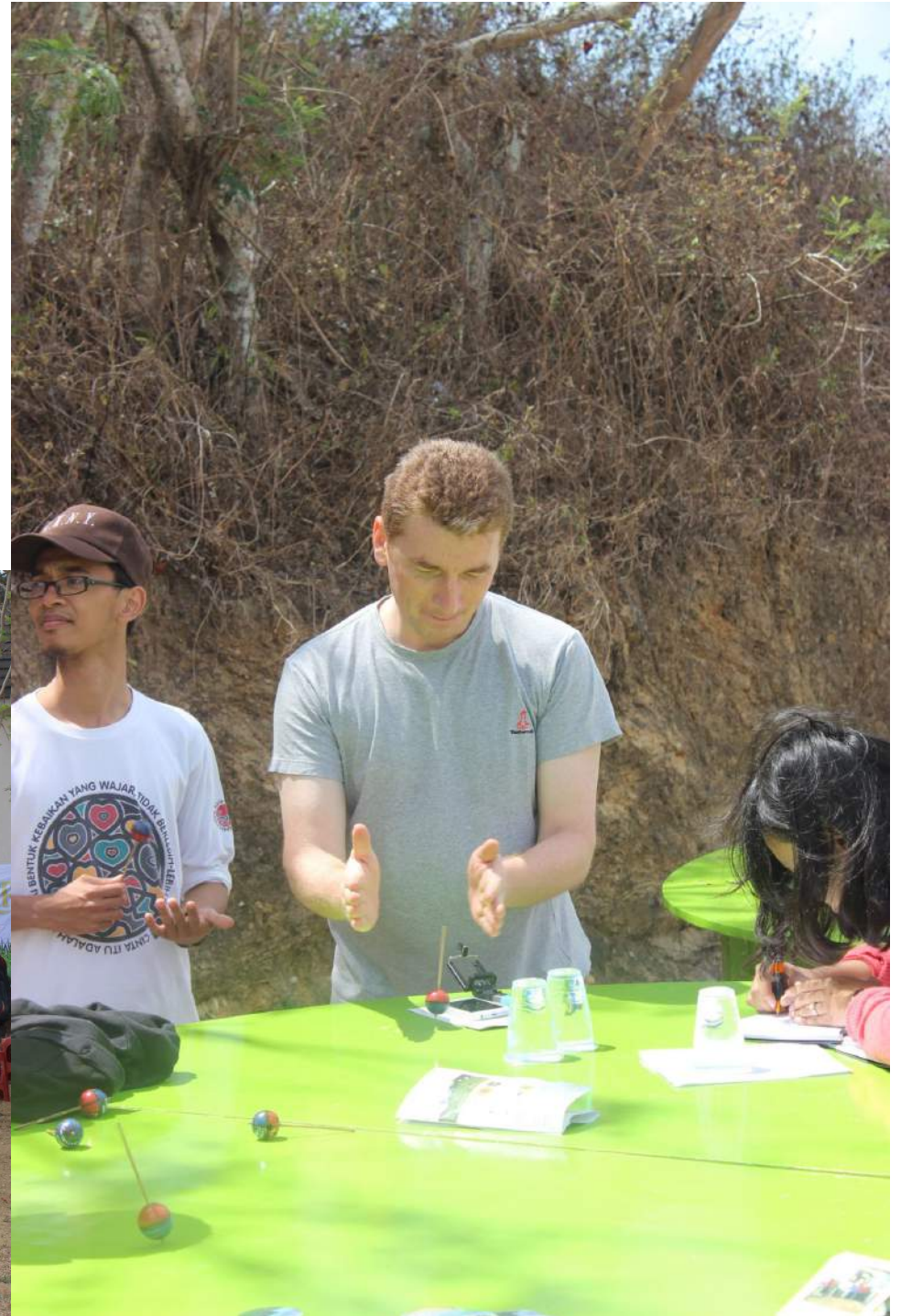




Foto bersama Rombongan UTM Malaysia



Stand Souvenir



Rombongan dari KAIST Korea





2015년 8월 13일

북쪽 방문의 이후 재일본에 재보고장이다.

2015年8月13日

近藤 淳

2015. 8. 13 Michiharu Tate

August 13, 2015 Yoichiro Nakamishi 中西洋一郎

Handy: Nice place

Didik: Nice to meet you

Pupri: perlu ada jalan masuk yg.
memasuk!!

Erni: jalan masuk diperbaiki

Kenji: 幸せが来ますように!

M. Nagatsu: Wonderful day!



13th August 2015

Very beautiful scenery and very enjoyable explanations.

Good luck with your future studies and challenges.

All the best,

Daniel Moraru
(Shizuoka Univ.)





1. Eko T. Rahardjo (UM)

Exciting → Kita bisa berkolaborasi
untuk meneliti
geomagnetik di lokasi

Tetap semangat untuk mendukung
penelitian di bidang geomagnetik
& aplikasinya.

Peresmian Observatorium Geomagnetik Lombok



11.04.2014



Berita Peresmian Observatorium Geomagnetik Lombok



GFZ
Helmholtz-Zentrum
POTSDAM

Volltextsuche

Startseite | Datenschutz | Impressum | English

HELMHOLTZ-ZENTRUM POTSDAM
**DEUTSCHES
GEOFORSCHUNGSZENTRUM**

Zentrum | Forschung | Scientific Services | Karriere | Medien & Kommunikation

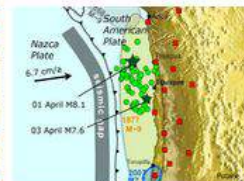


ERÖFFNUNG EINES NEUEN GEOMAGNETISCHEN OBSERVATORIUMS AUF DER INSEL LOMBOK, INDONESIA
Am 10. April wurde das kurz zuvor fertig gestellte geomagnetische Observatorium auf der Insel Lombok in Indonesien... [WEITERLESEN](#)

Pressemitteilungen



► **Neue Informationsplattform zu Erde und Umwelt**
10.05.2014 | Die



► **Erdbeben in Chile: keine Entwarnung**
04.04.2014 | Nach dem starken Erdbeben in ...



► **Biologische Prozesse formen Landschaft**
01.04.2014 | Mikroorganismen bilden



► **Starke Erdbeben, Wasser unter Druck, hohes Risiko**
28.03.2014 | Die

Informationen für

- Unternehmen
- Medien
- Schulen
- Besuchergruppen
- Freunde & Förderer

Service

- Bibliothek
- Stellenangebote

Observatorium Geomagnetik Lombok telah dikenal secara internasional


Spam - tetizubaidah@te.ff x Google Terjemahan x CET: Central European Tim x GFZ Lombok - Helmholtz Cent x

www.gfz-potsdam.de/en/research/organizational-units/departments/department-2/earths-magnetic-field/infrastructure/observatories/lombok/

- Observatories
 - Niemegk
 - Wingst
 - Villa Remedios
 - Panagyurishte
 - Keetmanshoop
 - Yakutsk
 - Magadan
 - St. Helena
 - Alibag
 - Hyderabad
 - Surlari
 - Paratunka (Petrovavlovsk)
 - Santa Maria/Azoren
 - Pantanal
 - Odessa
 - Lombok**

Home ▶ Research ▶ Organizational Units ▶ Departments of the GFZ ▶ Department 2 ▶ Earth's Magnetic Field ▶ Infrastructure ▶ Observatories ▶ **Lombok**

Geomagnetic Observatory Lombok (LOK*)



Variation building, absolute house and main building (from left to right)

The Geomagnetic Observatory Lombok (LOK*) is run in co-operation of the Faculty of Engineering, Mataram University and the GFZ since the year 2014. The geomagnetic field intensity and directions are continuously recorded at the observatory.

(* provisional identification)

Location: Indonesia

Geographic Coordinates:
Latitude: 8.83 S Longitude: 116.29 E


Geomagnetic Coordinates:
Latitude: 18.65 S Longitude: 171.13 W

The geomagnetic Coordinates refer to IGRF-11 for 2010.

Data:

Geomagnetic data are available on request.

Contact



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Germany

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F: + 49 33843 62423

[▶ Email](#)

Cooperation partner

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Lombok - Nusa Tenggara Barat
Indonesia

Phone +62 370-636126/
636755
Fax +62 370-636523

[▶ Email](#)



Paris, 16/05/2014

**IAGA Supporting Letter for
The Lombok Geomagnetic Observatory**

Dear the Governor of West Nusa Tenggara Province and the Regent of Central Lombok District,

I am writing to congratulate the members and staff of the Lombok observatory on the occasion of inauguration of the Lombok geomagnetic observatory, located in the region of your rule. This observatory will dramatically contribute to the international efforts to measure the geomagnetic field and provide data indispensable for environmental monitoring and disaster mitigations. Thus it will be a major contribution for science and humanity.

The quality of the resulting data depends on environmental conditions. The observatory needs to be away from anthropogenic disturbances. The main interferences are primarily from the dense residential, built-up areas and facilities which using electrical power source and wireless communication.

I very much hope that the surrounding environment will be maintained in the current clean conditions, without development and modernization. Utilization of government-owned lands should take care not to be massive and excessive which will affect the quality of the observatory data.

I am sure, if the high quality of the data can be maintained, then the Lombok observatory will be an international-class one, contributing to the international reputation of your region.

With my warmest personal regards,


Mioara Mandea
Secretary General of IAGA

IAGA Executive Committee
President: K.A. Whaler
Vice President: E. Petrovski
Secretary General: M. Mandea
Members: A. Bhattacharyya, I. Cairns, J. Poizat, T. Iyemori, M. Korte, L. Igarashi, A. Yau

"I am sure, if the high quality of the data can be maintained, then the Lombok observatory will be an international-class one, contributing to the international reputation of your region."

Supporting Letter from **Prof. Mioara Mandea (IAGA General Secretary)** to the Governor of West Nusa Tenggara Province



**Diseminasi Observatorium Geomagnetik Lombok
di LAPAN-Bandung, 21.05.2014**

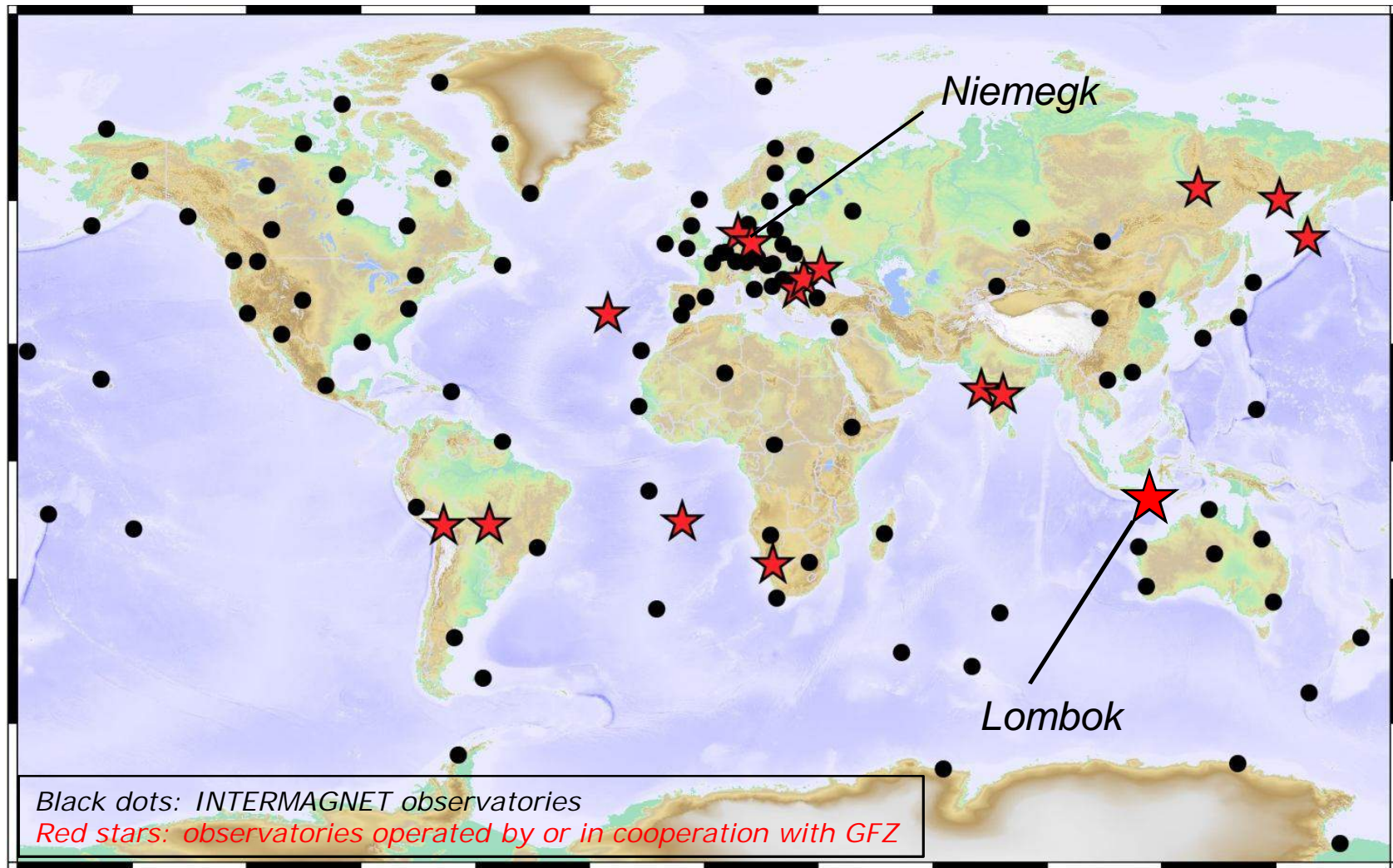


**Seminar Nasional Sains Atmosfer-Antariksa
di LAPAN-Bandung, 25 November 2014**



Diseminasi di BMKG, 09.02.2013

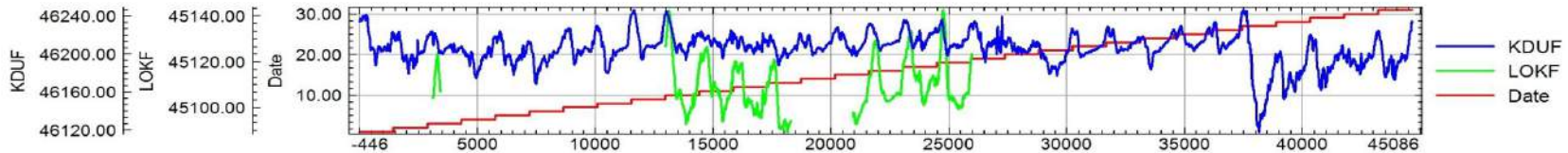
Observatorium Geomagnetik Lombok akan terintegrasi dalam **INTERMAGNET***



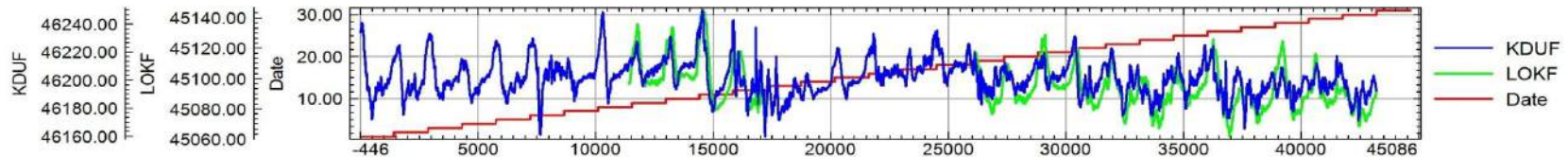
Training Staff LOK di Observatorium Niemegk-Germany



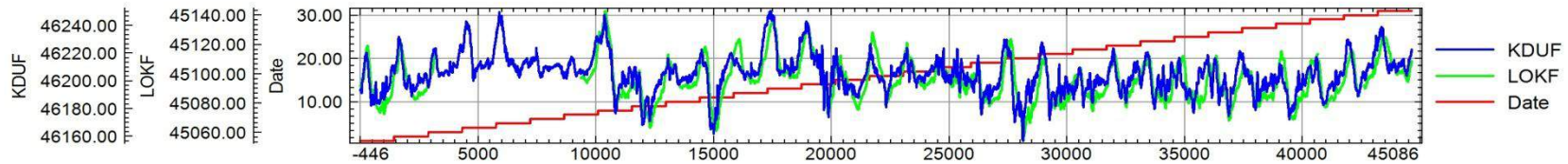
LOK- KDU Agustus 2014



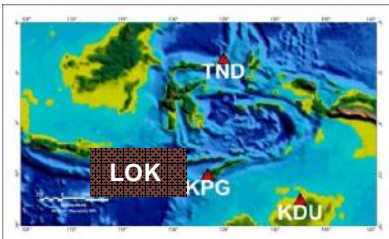
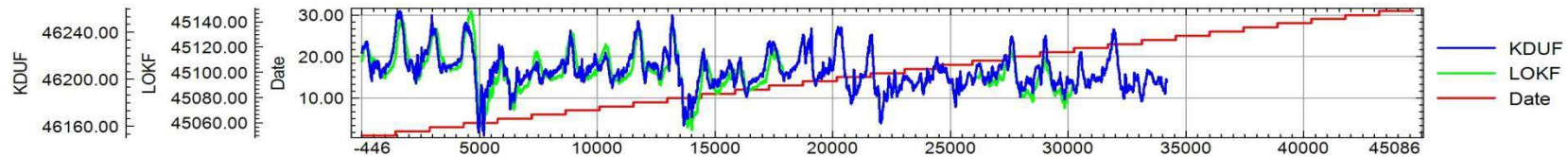
LOK- KDU September 2014



LOK- KDU Oktober 2014

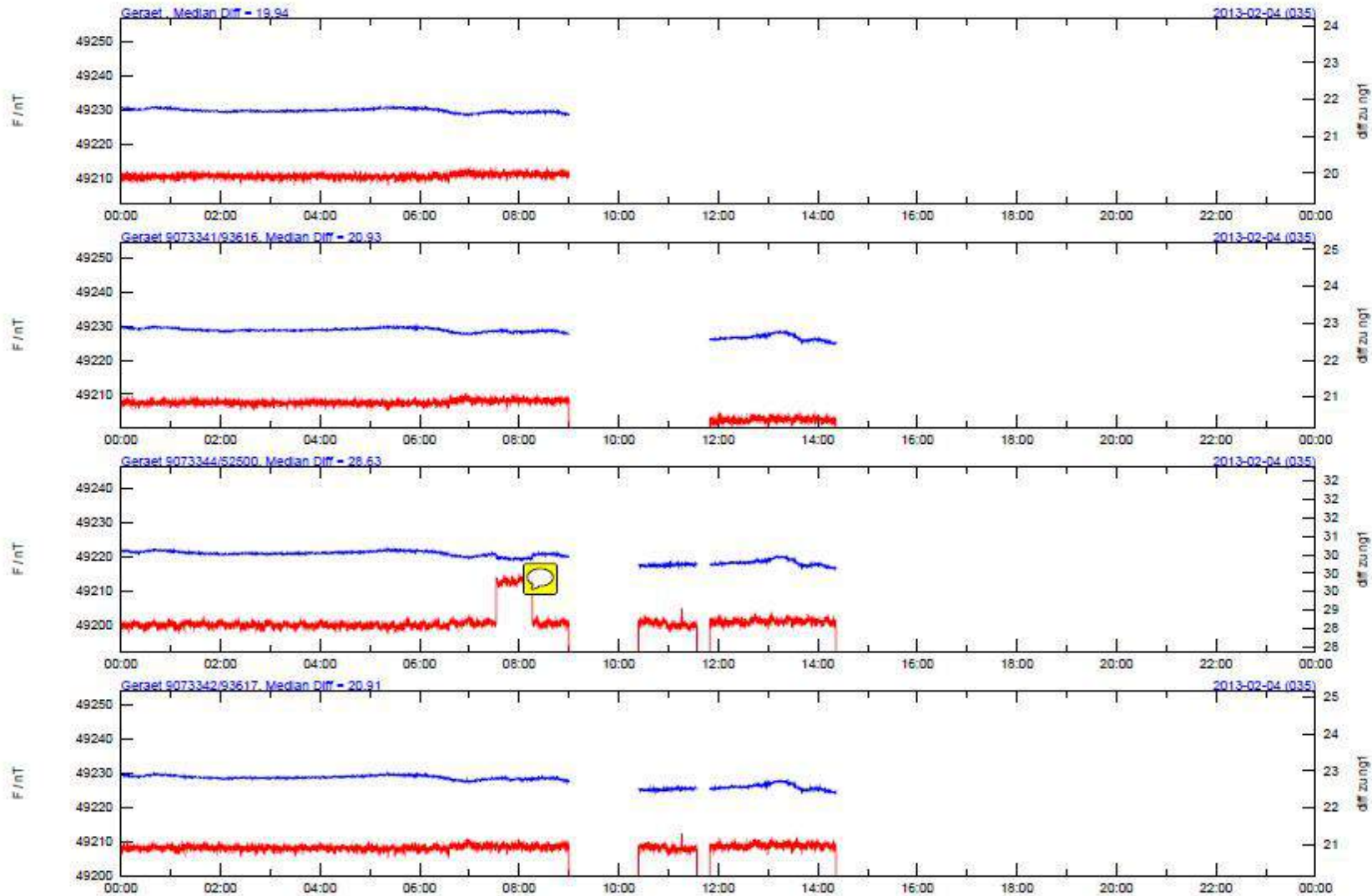


LOK- KDU November 2014

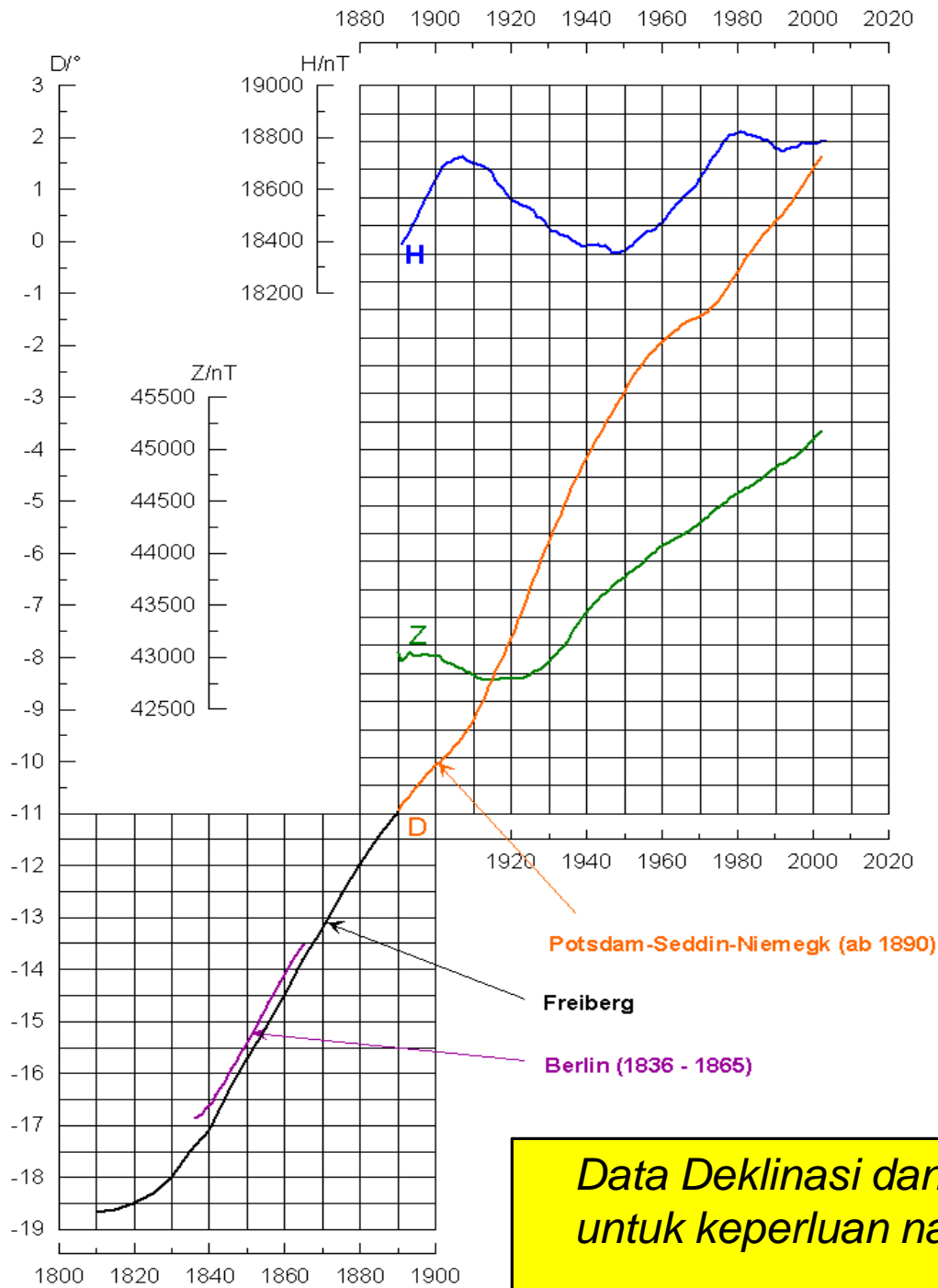


Data yang berkualitas hanya akan didapatkan jika lingkungan sekitar terbebas dari sumber interferensi antropogenik. (Mioara Mandea, Sekjen IAGA)

Pengaruh Material/Lingkungan pada Kualitas Data



Pengukuran Absolute



Deklinasi berubah $\sim 20^\circ$ dalam 200 tahun terakhir di Potsdam

Data Deklinasi dan Inklinasi yang kontinyu sangat penting untuk keperluan navigasi udara dan laut

Dukungan yang Diharapkan dari Masyarakat dan Pemda NTB-Loteng

- Membantu menjaga kualitas lingkungan sekitar Observatorium
→ sebagai amanat UU dan Perda Penanggulangan Bencana
- Memberi dukungan untuk pengelolaan lingkungan & masyarakat sekitar Observatorium:
 - Sinergi pemanfaatan fasilitas Pemda di sekitar Observatorium
 - Program ***community development*** :
 - edukasi
 - energi terbarukan
 - perbaikan kualitas lahan kering
 - penyediaan air bersih

Menyampaikan surat dari IAGA kepada Gubernur NTB

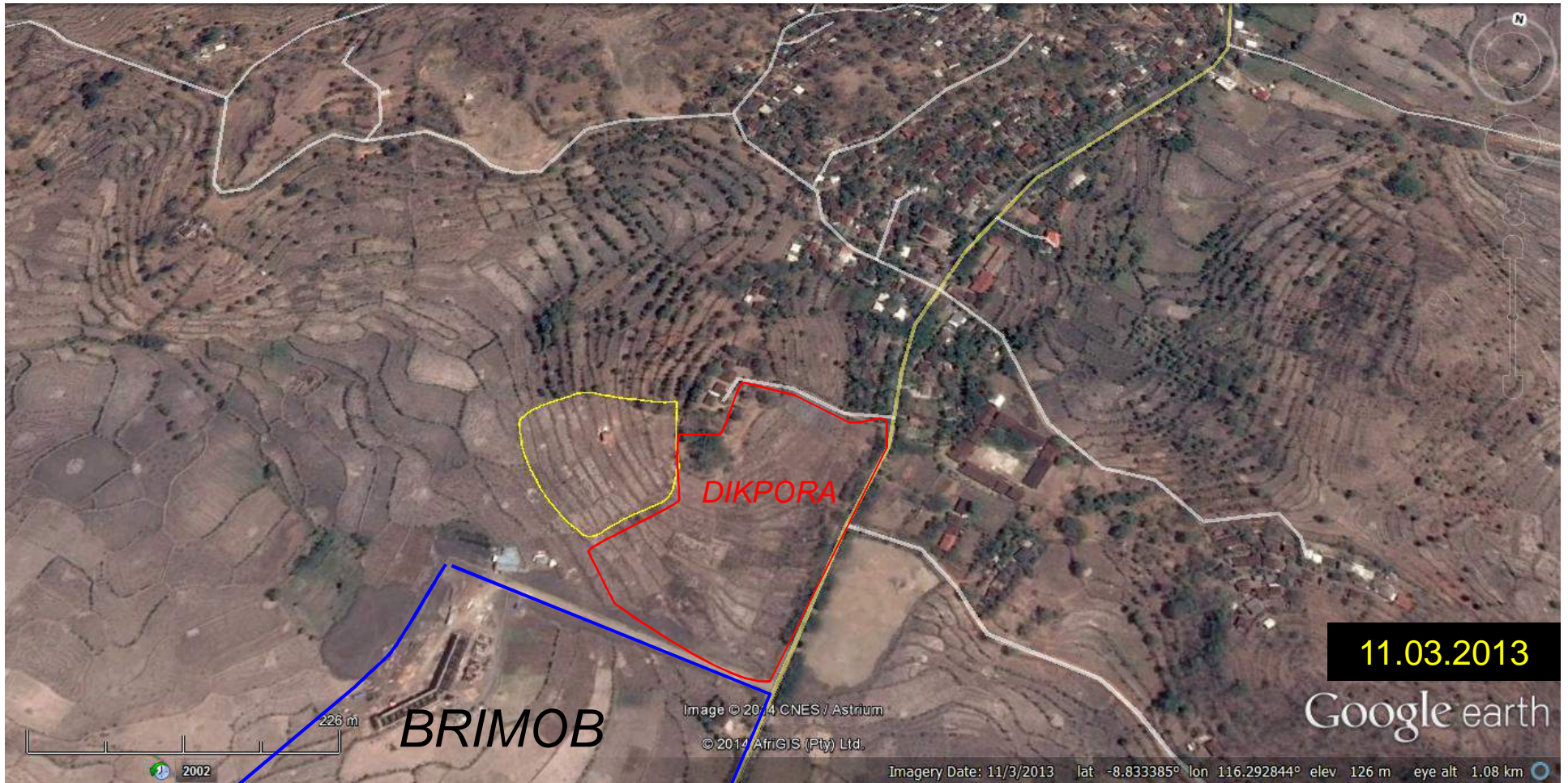


Keberlanjutan Observatorium dalam Jangka Panjang



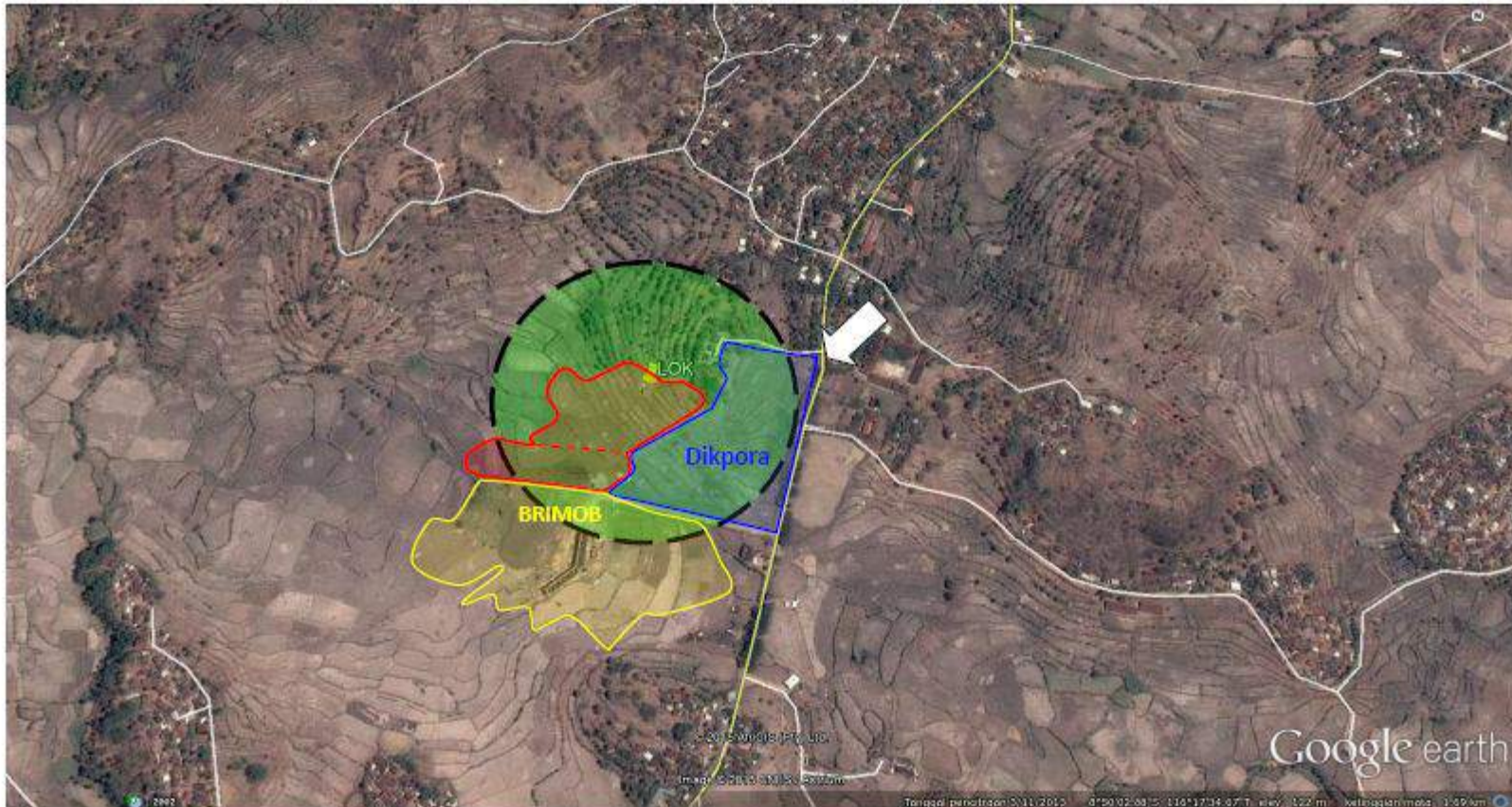
*Lingkungan sekitar observatorium harus tetap dipertahankan dalam keadaan se-
"bersih" saat ini. (Mioara Manda, Sekjen IAGA)*

Keberlanjutan Observatorium dalam Jangka Panjang



Pemanfaatan lahan dan fasilitas di sekitarnya harus secara sangat berhati-hati agar tidak terlalu massive dan berlebihan. (Mioara Manda, Sekjen IAGA)

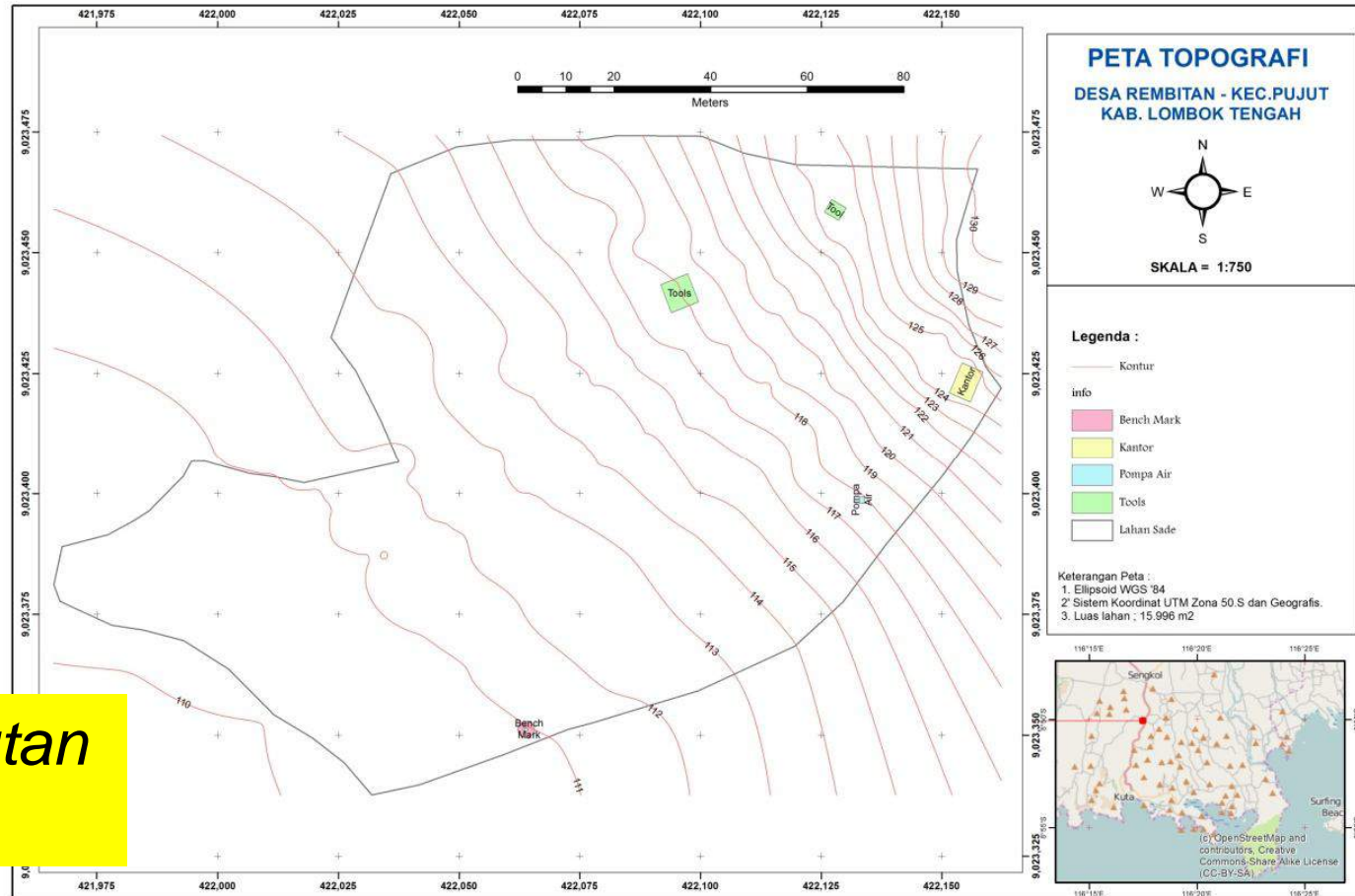
Usulan Penataan Lingkungan Sekitar disampaikan ke Gubernur NTB



Environmental Layout of the Lombok Geomagnetic Observatory as Regional Protected Area

A clearance with radius of 200 m from the main sensors (dotted black circle) is required to maintain the quality of data produced by the Lombok Geomagnetic Observatory (LOK). In this free space is not allowed for building constructions and vehicles using lots of iron and steel, as well as excessive using of electrical power (current). A definitive fencing along red line is essential to keep the exact location area of LOK.

Hasil Pemetaan Lahan Observatorium oleh Tim Distamben NTB



Penyusutan lahan??

IAGA* Observatories

(open: 154, closed: 493, provisional: 13)

