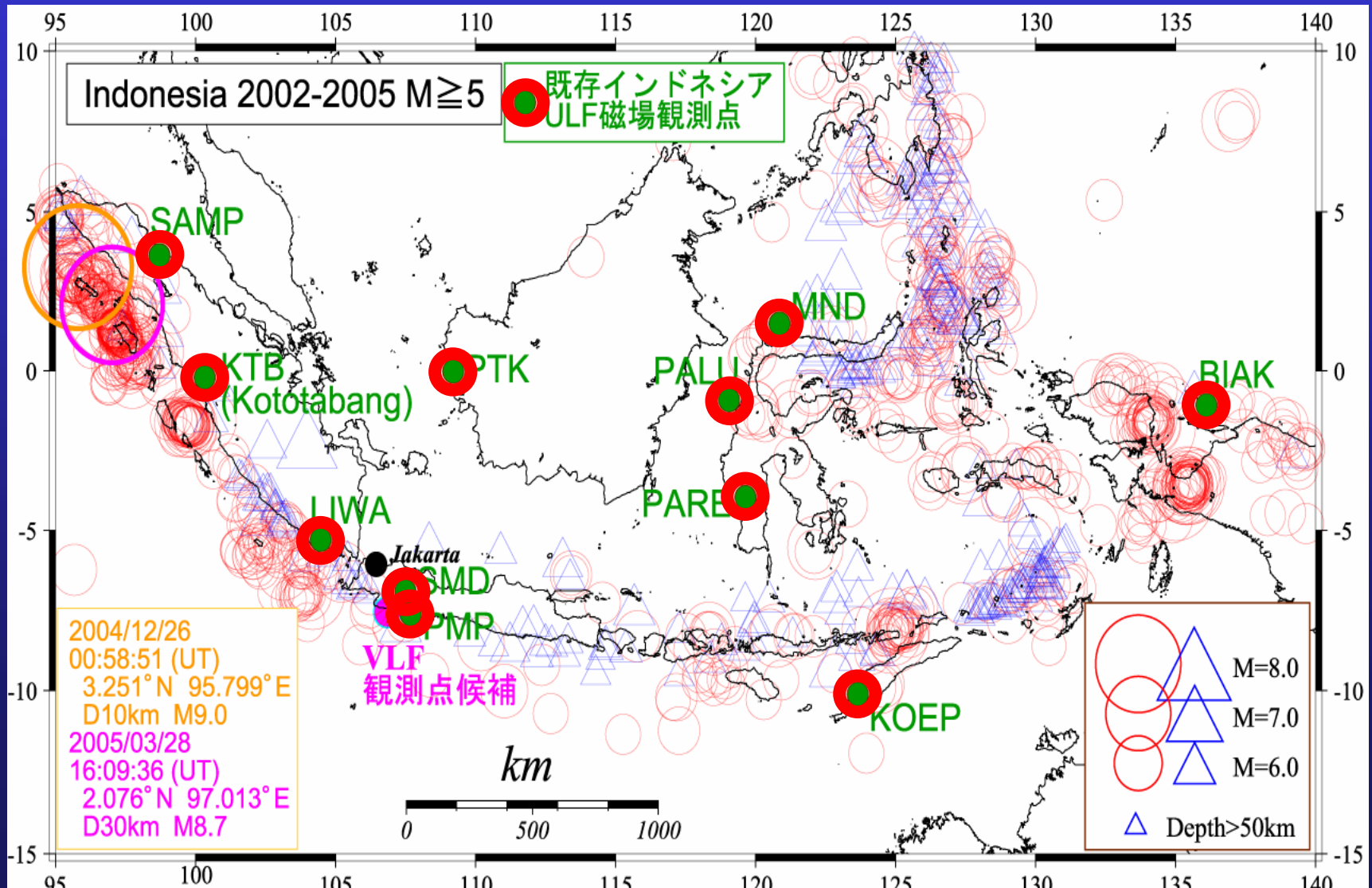
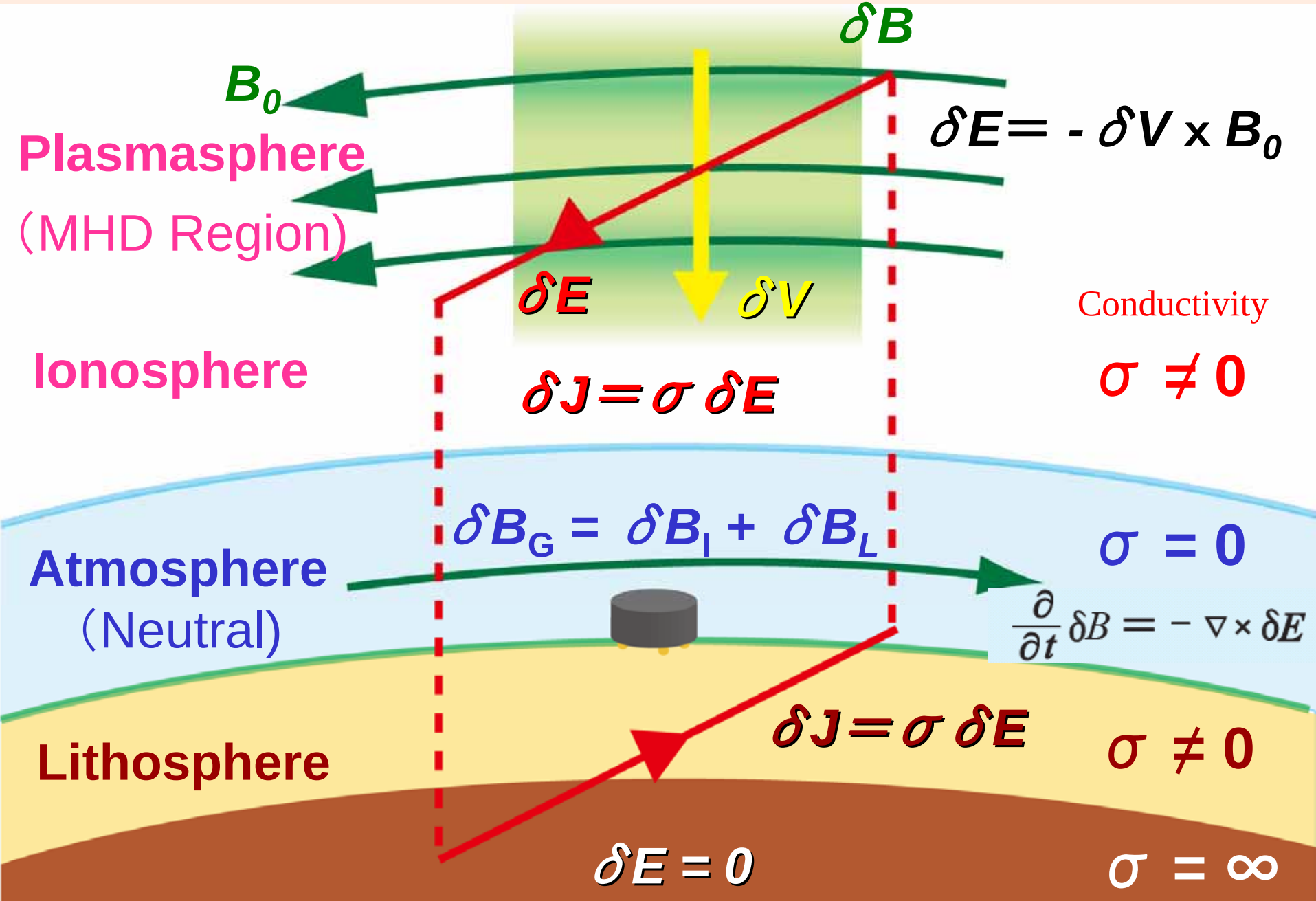
3-1. ULF-Wave Observation Network to Monitor Long-Term Change of Lithosphere Conductivity,

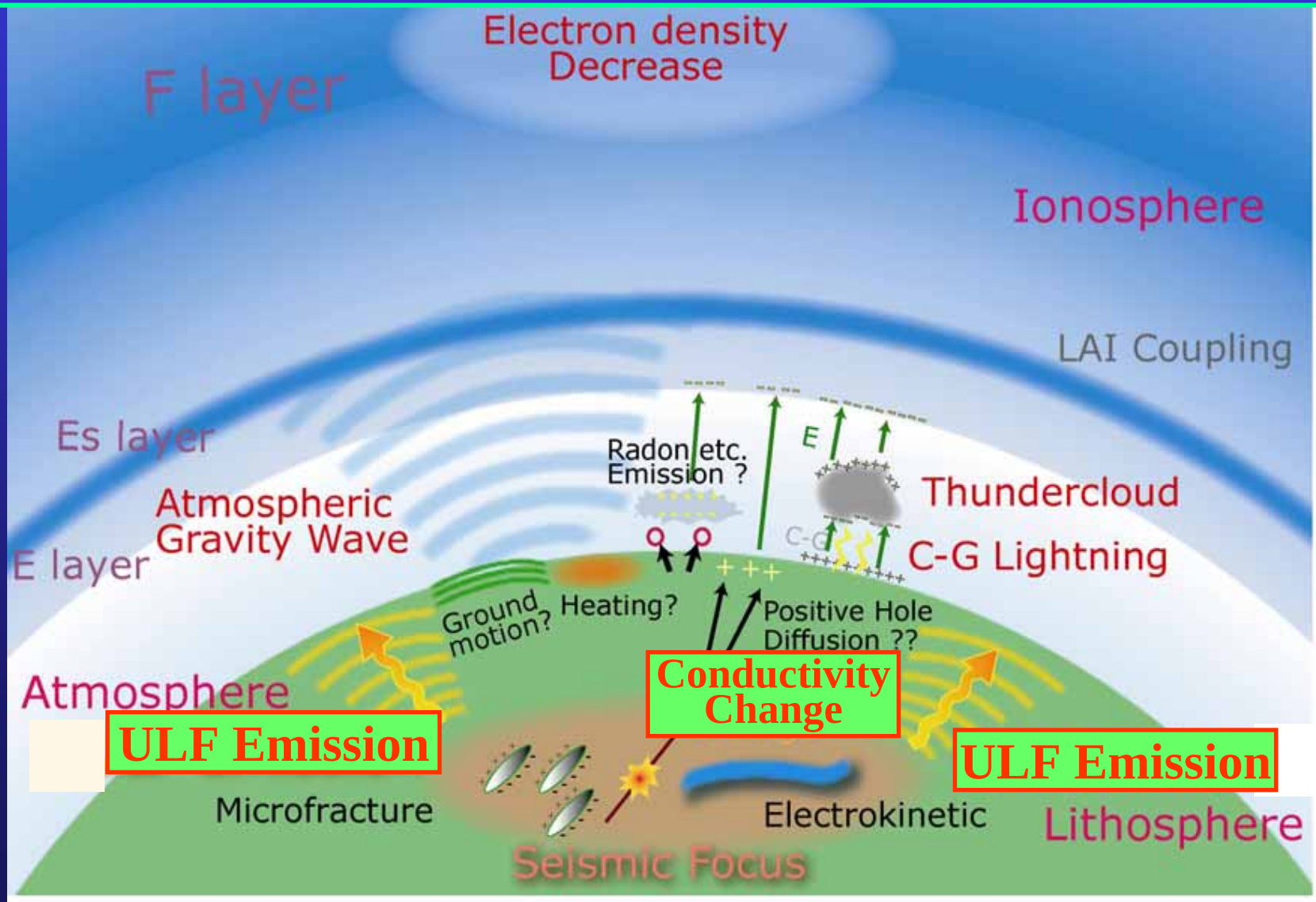
because the skin depth of ULF (10-150 sec) magnetic pulsations is comparable to the depth where crustal disturbances take place.



Electromagnetic Coupling of P-I-A-L-sphere



3-2. 200 km Mesh Magnetometer Network for Detection of ULF Emissions Associated with Great Earthquakes



Space and Lithosphere Environment Studies in Indonesia

4. Conclusion

(1) Japanese and Indonesian institutes execute MAGDAS project during the IHY period.

(2) 200 km-mesh magnetometer network to monitor electromagnetic changes in geospace and lithosphere, and to examine if we can detect ULF emissions associated with massive earthquakes.

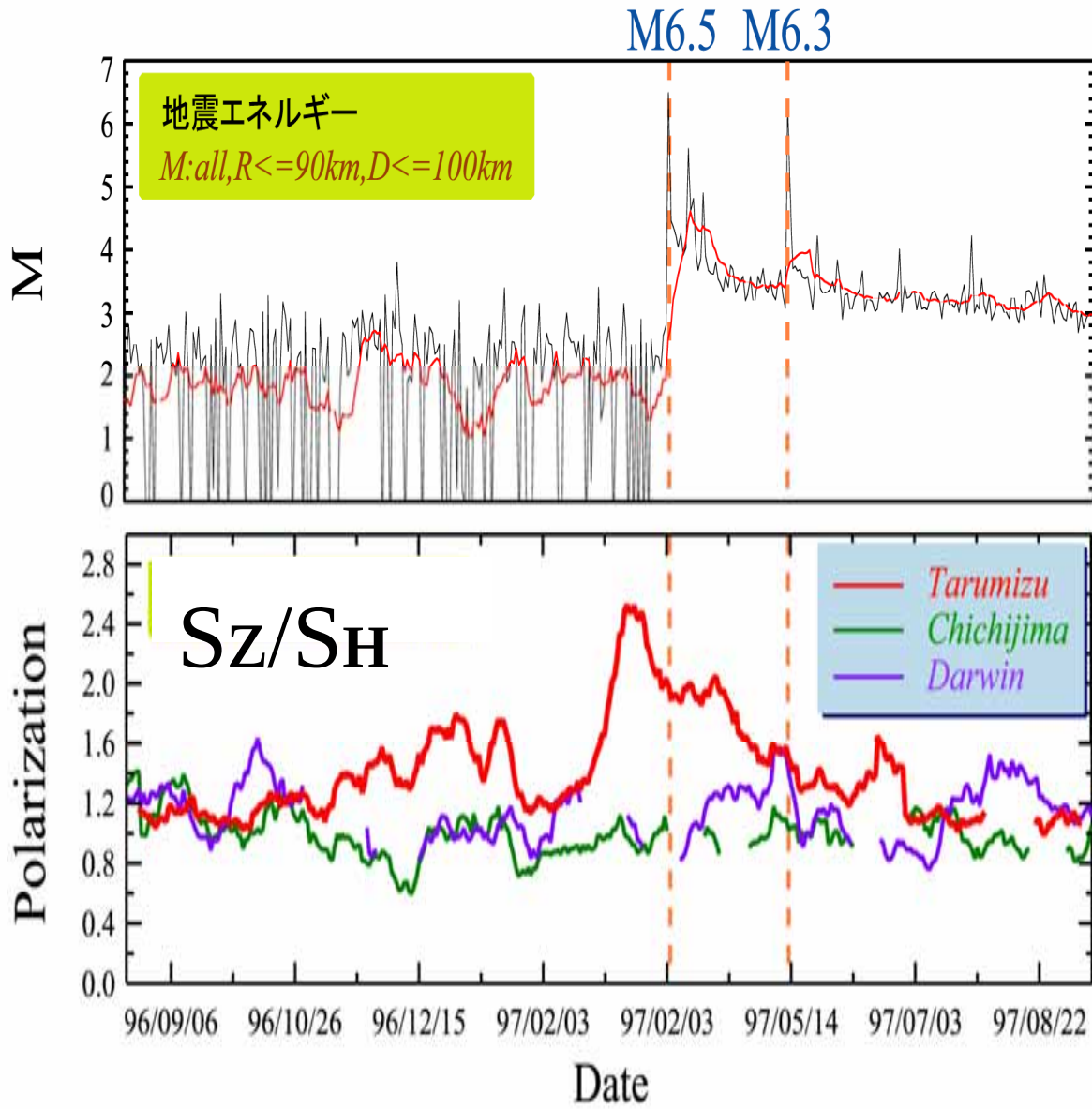
SERC: http://www.serc.kyushu-u.ac.jp/
MAGDAS: http://www.serc.kyushu-u.ac.jp/magdas/index.html
IHY: http://www2.nict.go.jp/y/y223/sept/IHY/IHY-e.html

SCA Preparatory Meeting
March 20, 2007

- Argument on Earthquake Prediction;
- But, there are many scientific results of ULF emissions associated with the great earthquakes. In our new proposal we will examine if we can detect such ULF emissions associated with massive earthquakes.

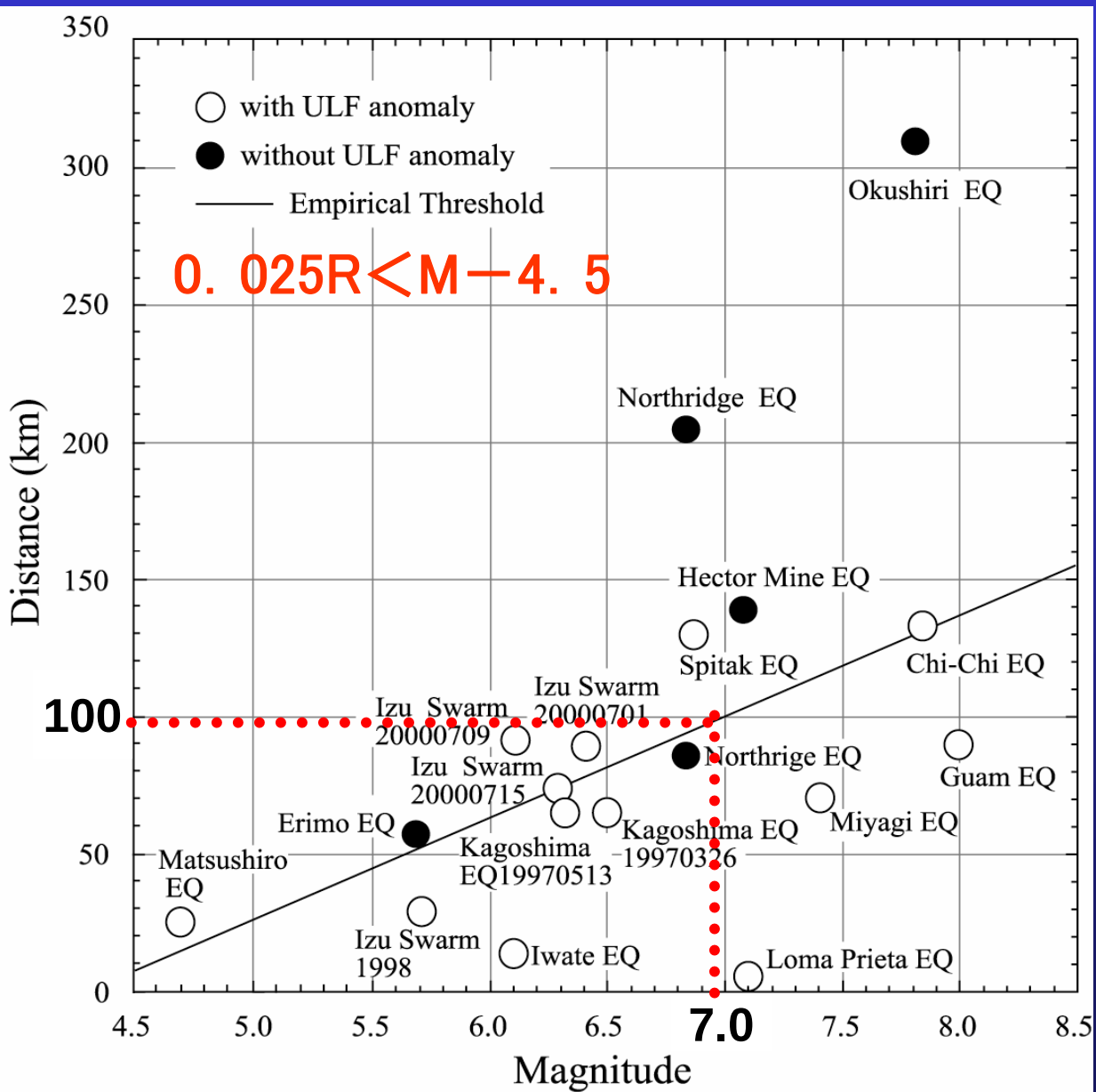
3-2.2 Polarization Method to detect ULFemission of 1997 Kagoshima EQs M=6.5& 6.3 (Hayakawa et al., 2001)

Fig.1-2 The relation between epicentral region and remote statio



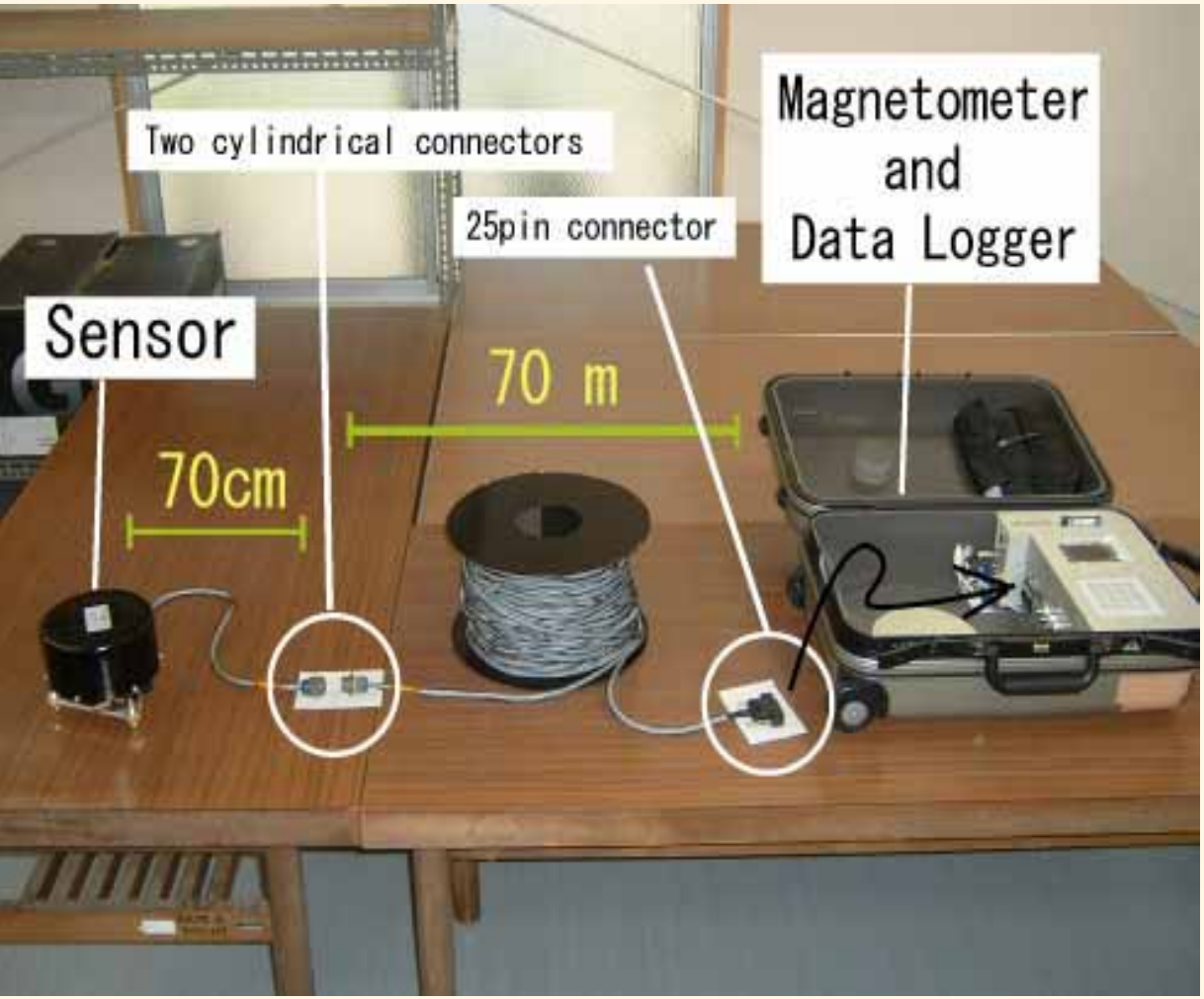
3-2.3 ULF Emission Associated with EQs

(based on spectral density ratio analysis, Hattori et al., 2005)



In order to detect ULF-emission precursor of EQ's (M> 7), 200-km mesh network is needed.

1-2. MAGDAS Magnetometer



- **Tiltmeter of sensor**
  Range: ±１°,
  Resolusion: 0.2 arc-sec
- **Thermometer of sensor**
  Range: ±60℃,
  Resolusion: 0.002℃
- **Observation ranges**
  ±1000nT, ±2000nT,
  (±65000nT)
- **16bit A/D converter**
  0.031nT/dig, 0.061nT/dig
- **Sampling rate**
  1-sec, 1-min
- **Estimated noise level**
  0.02nTp-p
- **Total weight**
  14.5 kg

MAGDAS-A: Fluxgate magnetometer system
with data logging and transfer units.

1-3. MAGDAS Data Acquisition & Monitoring System

MAGDAS-B: The data obtained at the overseas stations are transferred to the SERC, Japan, by using three possible ways: Internet, Telephone line or Satellite phone line.

1-4. MAGDAS Installation

Manado (Indonesia)

MLAT = -8.3°

2005/07/26

Sensor House

MAGDAS
Main Body

SERC, Kyushu Univ. set MAGDAS magnetometers

Parepare (Indonesia) 2005/07/24
MLAT = -14.0°

MAGDAS Main Body

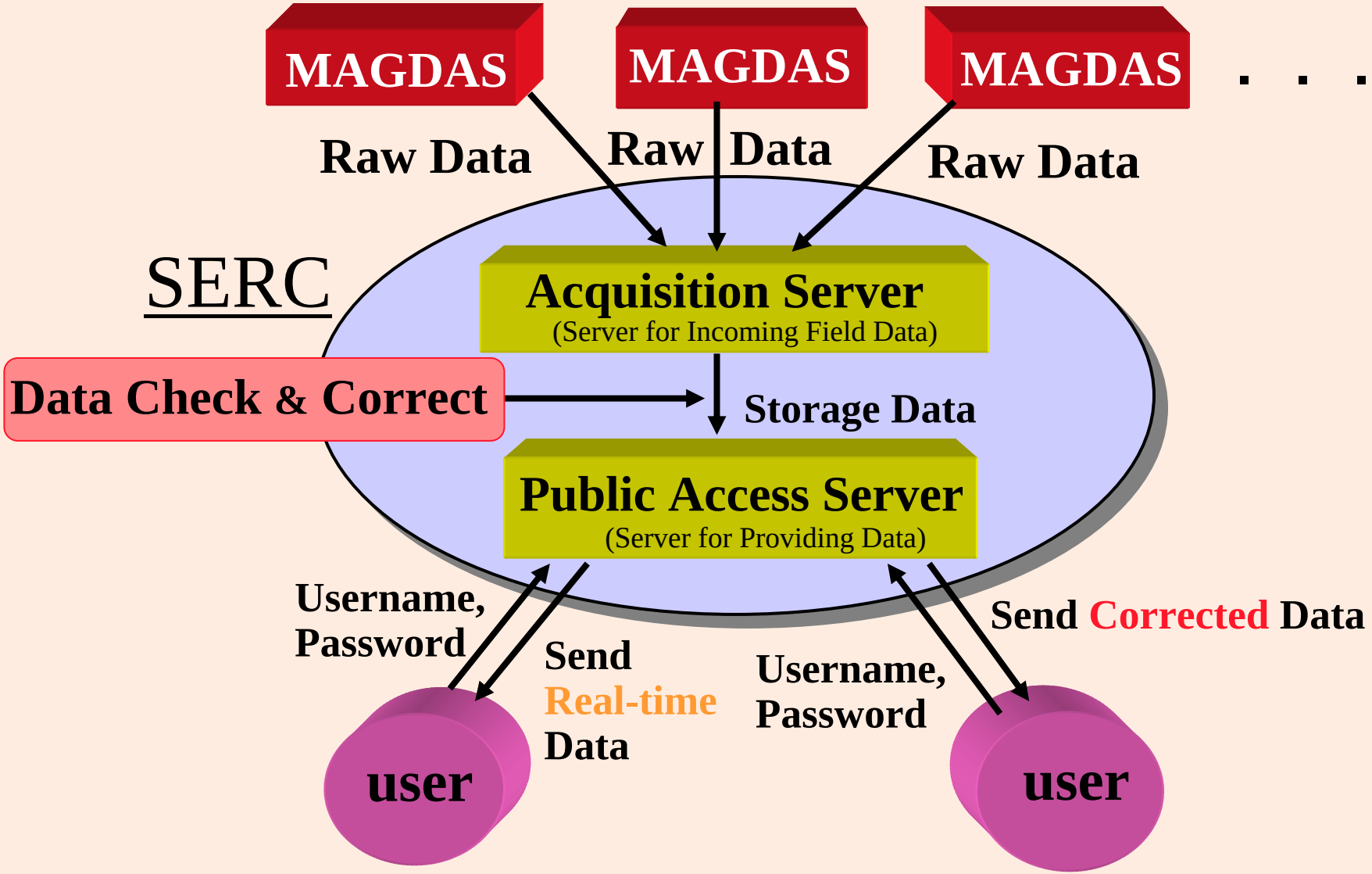
Sensor Hut

Kupang (Philippine) (Glat=10.1S) 2006/07/21

5-1. Local Education and Global Outreach

Every day space weather “now casting” to train and educate KU students for space weather forecasters in the future, and to globally disseminate space weather information from SERC as a service to the scientific community and the general public.

5-2. Schematic Diagram of MAGDAS Database Service



5-3. MAGDAS Outreach through SERC Home Page

http://magdas.serc.kyushu-u.ac.jp

MAGDAS DATA ARCHIVE SERVER - Mozilla Firefox

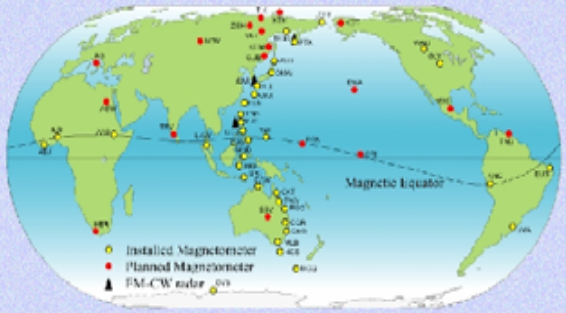
http://magdas.serc.kyushu-u.ac.jp/

Welcome to SERC
MAGDAS Data Archive

Notice:
This homepage is a preliminary.

- About MAGDAS
- Station Map and List
- Realtime Quick Look
- Corrected Data List
- Corrected Data Request for third party
- Rules for Data Usage
- Link

MAGDAS/CPMN
(MAGnetic Data Acquisition System/Circum-pan Pacific Magnetometer Network)



Supporting Information

This MAGDAS observation was made by the financial supports of Japan Society for the Promotion of Science (JSPS) as Grant-in-Aid for Overseas Scientific Survey (15253005, 18253005).
This database was made by the financial supports of Japan Society for the Promotion of Science (JSPS) as Grant-in-Aid for Publication of Scientific Research Results(188068), and National Institute of Information and Communications Technology(NICT) as the funded research.

Space Environment Research Center
Kyushu University 53
6-10-1 Hakozaki Higashi-ku Fukuoka
Postal Code 812-8581

完了

MAGDAS MAP and STATIONS - Mozilla Firefox

http://magdas.serc.kyushu-u.ac.jp/station/index.html

Details of Each Station

Russia

Abbrev.	Station Name	Nation	GG Lat.	GG Lon.	GM Lat.	GM Lon.	L	Dip Lat.	Install
CST	Cape Schmidt	Russia							-under construction-
MGD	Magadan	Russia							-under construction-
PTK	Paratunka	Russia	52.94	158.25	46.18	226.21	2.09		05/11/07

Japan

Abbrev.	Station Name	Nation	GG Lat.	GG Lon.	GM Lat.	GM Lon.	L	Dip Lat.	Install
ASB	Ashibetsu	Japan	43.46	142.17	36.43	213.39	1.54		05/02/15
ONW	Onagawa	Japan	38.44	141.48	31.27	212.72	1.37		05/02/28
KUJ	Kuju	Japan	33.06	131.23	26.13	202.96	1.24		05/02/22
AMA	Amami-Oh-shima	Japan	28.17	129.33	21.11	200.88	1.15		05/10/25

Pacific and Asia

Abbrev.	Station Name	Nation	GG Lat.	GG Lon.	GM Lat.	GM Lon.	L	Dip Lat.	Install
HLN	Hualien	Taiwan	23.90	121.55	16.86	193.05	1.09		05/05/01
MUT	Muntinlupa	Philippine	14.37	121.02	6.79	192.25	1.01	6.79	05/05/15
TGG	Tuguegarao	Philippine	17.66	121.76	10.26	193.05	1.03		05/05/16
CEB	Cebu	Philippine	10.36	123.91	2.53	195.06	1.00	2.73	05/06/26
DAV	Davao	Philippine	7.00	125.40	-1.02	196.54	1.00	-0.65	05/06/28
YAP	Yap Island	FSM	9.50	138.08	1.49	209.06	1.00	1.51	06/07/29
LKW	Langkawi	Malaysia	6.30	99.78	-2.32	171.29	1.00	1.88	06/09/08
MND	Manado	Indonesia	1.44	124.84	-6.91	196.06	1.01		05/07/26
PRP	Pare Pare	Indonesia	-3.60	119.40	-12.38	190.75	1.05		05/07/24
KPG	Kupang	Indonesia	-10.20	123.40	-19.58	194.95	1.13		06/07/21

完了