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 差出人 George Maeda

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* ISWI Newsletter – Vol. 4 No. 119                      8 November 2012 *
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*           I S W I = International Space Weather Initiative      *
*                   (www.iswi-secretariat.org)                    *
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* Publisher:      Professor K. Yumoto, ICSWSE, Kyushu University, Japan *
* Editor-in-Chief: Mr. George Maeda, ICSWSE (maeda[at]serc.kyushu-u.ac.jp)*
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Attachment(s):

- (1) School\_Report\_v4, 3.3 MB pdf, 32 pages.
- (2) letgirgea49a, 140 KB pdf, 4 pages.

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:                               Re:
:                               (1) School Report (ISWI and MAGDAS School)
:                               (2) Correction to letgirgea49a
:
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Dear ISWI Participant:

Please find attached the official School Report for:

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:
:           "2012 ISWI and MAGDAS School on Space Science"
:           17-26 September 2012, Indonesia.
:
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This school was hosted by LAPAN (the national space agency of Indonesia) at a location near Bandung, West Java. I participated in it and I thought it was a tremendous success. The lecturers were outstanding. There were 68 students (majority were women) from 10 countries. All presentations can be downloaded from the school website (refer to the attached pdf).  
 --> This school makes a strong case for continuing ISWI schools and  
 : MAGDAS schools in the future.

I also attach a revised version of letgirgea49a -- the news letter put out by Dr Christine Amory's research group. (This letter was originally circulated in ISWI Newsletter Volume 4, Number 104, on 4 Oct 2012. This revision is issued by this newsletter at the request of the author to correct some errors; please discard the prior version of it.)

Cordially yours,

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:      George Maeda
:      The Editor
:      ISWI Newsletter
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ISWI & MAGDAS School  
on Space Science  
September 17-26, 2012  
Ciloto, West Java, Indonesia

<http://iswimagdas2012.bdg.lapan.go.id>

Nat Gopalswamy & Clara Yatini





# School Scientific Organization

- Dr. Nat Gopalswamy (ISWI/NASA), Director
- Clara Y. Yatini (LAPAN, Director)
- Dr. K. Yumoto (ICSWSE, Kyushu U., Japan), Director

## Science Committee

- »N. Gopalswamy (Chair), NASA/GSFC, Greenbelt, USA and ISWI
- »T. Djamaluddin, LAPAN Indonesia
- »K. Yumoto, ICSWSE Kyushu University, Japan
- »Philip Wilkinson, IPS Radio and Space Services, Australia
- »Hakim L. Malasan, ITB Indonesia
- »D. Herdiwijaya, ITB Indonesia
- »D. Pallamraju, Physical Research Laboratory, India
- »Wayan Suparta, Angkasa, UKM, Malaysia
- »Mamoru Yamamoto, RISH, Kyoto University, Japan



# Local Organizing Committee

- »Clara Yono Yatini (Chair), Space Science Center of LAPAN, Bandung
- »Timbul Manik (Co-chair), Space Science Center of LAPAN, Bandung
- »Mamat Ruhimat (Co-chair), Space Science Center of LAPAN, Bandung
- »Elyyani, Space Science Center of LAPAN, Bandung
- »Johan Muhamad, Space Science Center of LAPAN, Bandung
- »Irvan Fajar Syidik, Space Science Center of LAPAN, Bandung
- »Varuliantor Dear, Space Science Center of LAPAN, Bandung
- »Adi Purwono, Space Science Center of LAPAN, Bandung
- »Syahril, Space Science Center of LAPAN, Bandung
- »Budiyanto, Space Science Center of LAPAN, Bandung
- »Iwan Sodikin, Space Science Center of LAPAN, Bandung
- »Nurkhamdani, Space Science Center of LAPAN, Bandung

# Venue: Cilito near Bandung



Wisma Pendawa, Dept Sosial

2012.09.16



# Welcome address by LAPAN Chairman



Dr. Bambang Tedja Sukmana

# Welcome- ISWI



Dr. Nat Gopalswamy  
ISWI/NASA



# Welcome - LAPAN



Dr. Clara Yatini LAPAN



# Welcome - MAGDAS



Mr. George Maeda  
ICSWSE, Kyushu U.  
on behalf of Prof.  
K. Yumoto

# Thanking LAPAN officials





[illegible]

2012.09.16



# Big School!





# Lectures available online

[http://iswimagdas2012.dirgantara-lapan.or.id/list\\_course.html](http://iswimagdas2012.dirgantara-lapan.or.id/list_course.html)



# ISWI Lecturers

Dr. T. Djamaluddin (Indonesia)  
Dr. H. Malasan (Indonesia)  
Dr. D. Herdiwijaja (Indonesia)  
Dr. N. Gopalswamy (USA)  
Dr. Hannah Schunker (Germany)  
Dr. A. Munoz-Jaramilo (USA)  
Dr. M. A. Hidalgo (Spain)  
Dr. Y. Miyoshi (Japan)  
Dr. P. Makela (USA)  
Dr. T. Hada (Japan)  
Dr. M. Watanabe (Japan)  
Dr. E. Yizengaw (USA)  
Dr. T. Kikuchi (Japan)  
Dr. W. Suparta (Malaysia)

Dr. M. Yamamoto (Japan)  
Dr. M. Francis (Australia)  
Dr. S. Wing (USA)  
Dr. K. Georgieva (Bulgaria)  
Dr. S. Gurubaran (India)  
Dr. T. Tsuda (Japan)  
Dr. Y. D. Park (Republic of Korea)  
Dr. D. Scherrer (USA)  
Dr. C. Amory-Mauzadier (France)  
Dr. C. Monstein (Switzerland)  
Dr. K-I. Oyama (Taiwan)  
Dr. G. Vekstein (UK)  
Dr. K. Kusano (Japan)

27 lecturers from 14 countries!





# Lectures

0. Solar Variability & Consequences: Dr. Nat Gopalswamy
1. Solar Interior: From thermonuclear reactions to helioseismology: Dr. Hannah Schunker
2. Solar magnetism: solar dynamo, solar cycle: Dr. Andres Munoz-Jarmillo
3. Solar magnetohydrodynamics: Dr. Kanya Kusano
4. Solar Atmosphere: Photosphere, Chromosphere, Corona
5. Coronal Heating and Plasma Processes: Dr. Grigory Vekstein
6. Solar eruptions: Coronal mass ejections, eruptive flares, confined flares: Dr. Nat Gopalswamy
7. Interplanetary CMEs and shocks: Dr. Miguel Angel Hidalgo
8. Solar Energetic Particles: Dr. Pertti Mäkelä
9. Space plasma physics: Dr. Tohru Hada
10. Physics of the Geospace: Dr. Takashi Kikuchi
11. Earth's currents and energy system: Dr. Ch. Amory-Mazaudier
12. Magnetospheric Physics: Dr. Masakazu Watanabe
13. Magnetosphere-Ionosphere coupling: Dr. Endawoke Izengaw
14. Solar wind - Earth's magnetosphere coupling: Dr. Yoshizumi Miyoshi
15. Space weather and mitigation: Dr. Simon Wing
16. Measuring, modelling and forecasting Space Weather impacts on HF communications and trans-ionospheric propagation: Dr. Matthew Francis



# Lectures ...

- 17. Ionospheric Irregularities: Dr. Mamoru Yamamoto
- 18. Atmospheric Coupling processes I: Dr. S. Gurubaran
- 19. Atmospheric Coupling processes II: Dr. Toshitaka Tsuda
- 20. Upper and lower atmospheres in polar regions: Dr. Wayan Suparta
- 21. Earth-quake - ionosphere connection: Dr. K-I. Oyama
- 22. Sun-Climate Connection: Dr. Katya Georgieva
- 23. Ground based solar observations: Dr. Hakim L. Malasan
- 24. Space Weather Data Center for East Asia Region: Dr. Young-deuk Park
- 25. The SID Monitor: Dr. Deborah Scherrer
- 26. Earth's Current and Energy System Dr. C. Amory-Mazaudier
- 27. Space Weather/Space Science Activities in Indonesia Dr.T. Djamaluddin

# Students

- China -1
- Egypt - 1
- Japan - 1
- Indonesia - 40
- India - 2
- Malaysia - 11
- Pakistan - 2
- Philippines - 8
- Uganda - 1
- Vietnam -1

68 students from 10 countries  
Majority female!



# Instrument Sessions

- Instrument sessions included MAGDAS, GPS Receivers, and CALLISTO presentations
- GPS receiver: presentation & Discussion by C. Amory-Mauzadier
- CALLISTO: Presentation & Discussion by C. Monstein
- MAGDAS had an extended two-day session. Details follow

# MAGDAS Sessions

Speaker	Topic
A. Yoshikawa	Opening Remarks The Japan Society for the Promotion of Science (JSPS) Program and the International Center for Space Weather Science and Education (ICSWSE) Sq and Equatorial Electrojet 3D Model
M. Watanabe	Problem solving
G. Maeda	The World's Largest Magnetometer Array
H. Matsushita	An Overview of Kyushu University and An Overview of the Space and Earth Electromagnetism (SEE) Laboratory
N. Abdul Hamid	MAGDAS at Sumatra: Latest Installation and Possible Scientific Study
M. H. Jusoh	Application of MAGDAS Data in Long Term Analysis of Possible Solar-Seismicity Coupling
C. Y. Yatini	The History and Future of LAPAN's involvement in the MAGDAS project
Q. Sugon	Physics of motion of charges in EM fields for understanding MAGDAS and FMCW radar data
M. G. Cardinal	Equatorial MAGDAS data: Application in space weather studies JSPS Core-to-Core Program MAGDAS Data analysis, usage and request procedure Some exercises on data analysis and space weather

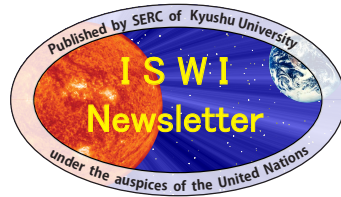
# MAGDAS Sessions....

Speaker	Topic
S. Abe	Space weather, Inter-university Upper atmosphere Global Observation NETwork (IUGONET) Project
T. Uozumi	Equatorial Electrojet Index: EE Index
S. Ahadi	Geomagnetic studies at BMKG
S. C. Pranoto	An Overview of MAGDAS Data Transfers And Data Processing in Indonesia
M. Z. H. Makmud	Universiti Malaysia Sabah: An Introduction
M. H. Jusoh	Application of MAGDAS Data in Long Term Analysis of Possible Solar-Seismicity Coupling
C.D. G. Bennett	Ionogram Simulations
A. M. Hasbi	Space Science Research at the Institute of Space Science (ANGKASA), UKM Part II
R. R. Violanda	Description of Interplanetary Magnetic Field during Magnetic Storms using Hurst Coefficient
M. K. K. Shariff	Using ELF/VLF radio to measure D-region weather conditions observed in Malaysia
A. A. Sulaiman	Investigation of the D-Region Ionosphere Characteristics at Palmer Station Antarctica using Tweek Atmospherics



# MAGDAS Sessions....

Speaker	Topic
S. Ismail	MAGDAS and Space weather Programmes in Malaysia
M. Zinampan	MAGDAS data transmission in the Philippines
M Commandante	XUERC and MAGDAS Station
IJD Mangampo	Legazpi City, MAGDAS Station: Learning and Re-learning
A. R. Quebral	Our MAGDAS station situation and other local issues



This pdf was circulated in  
Volume 4, Number 119,  
on 8 November 2012.

# In the Classroom





# Trip to Boscha Observatory



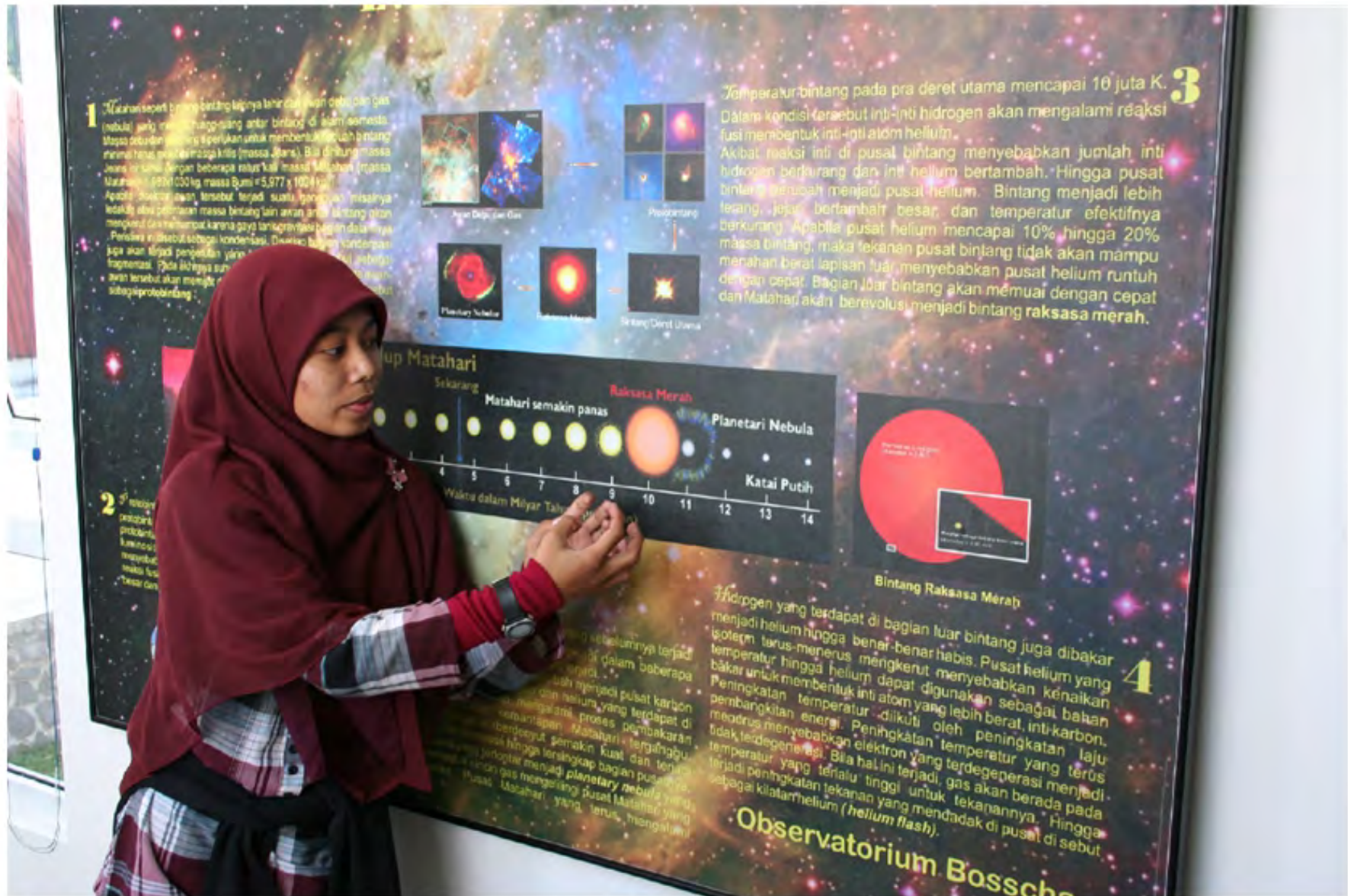


# 60 cm Telescope





# Astronomer explaining solar evolution





# Cultural visit: Visiting “Saung Angklung Ujo”





# Social Events: School Reception



## Teacher Workshop

- New addition to ISWI/SCOSTEP capacity building activity in the vicinity of the Space Science School
- Travel supported by SCOSTEP for workshop instructors (Debbie Scherrer and Dave Rodrigues for this workshop)
- Other expenses borne by the LOC of the Space Science School
- 35 teachers participated



# Science Teacher Workshop





# Other activities



Aerobics in the morning



At “Taman Bunga Nusantara” (Indonesian Flower Garden)



# Thank You

- Thanks to the scientific committee for suggesting topics and lecturers
- Thanks to the Lecturers for the inspiring talks
- Thanks to the Sponsors: LAPAN, ISWI, MAGDAS, SCOSTEP, NASA, JSPS, ICSWSE, Kyoto University,
- Additional Sponsors: IPS/ Australia, KASI/Korea, Alcala/Spain



# Sample Feedback

The 2012 ISWI @ MAGDAS school on Space Science was very successful. It had so many lectures and colorful activities, during which I obtained new knowledge and made friends with other participants.

I am happy to meet very accommodating LOCs, fellow participants, committed and intelligent lecturers/organizers and to know that many cares for what we have to know to understand the world/universe we live in.



Overall are great. Thanks for the LOC, lecturers, Nat, and everyone that I miss to mention. Thanks for your hardwork, ~~and~~ your time, ~~that~~ and your knowledge that you give for us students. Hope each time, ISWI / MAEDAS school is getting much much better.

I JUST WOULD LIKE TO THANK EVERYBODY WHO ORGANIZE THIS ~~LECTURE~~ SCHOOL AS IT GIVE ME KNOWLEDGE AND EXPERIENCE THAT I COULD ALSO SHARE TO OTHERS ESPECIALLY THE YOUNGER GENERATIONS.

**Thank you for your feedback – The Directors.**



# IGRGEA LETTER

International Geophysical Research Group /Europe-Africa  
International Geophysical Research Group /Europe-Asia

## IGRGEA

At the end of the IEEY, in 1995, IGRGEA (International Geophysical Research Group Europe Africa) has been organized to follow the research work initiated during IEEY (International Equatorial Electrojet Year), in 1992. Since January 2003 IGRGEA is developing at the Institute of Geophysics in Hanoi.

## BURKINA FASO

Prof Frederic OUATTARA is back from a 7 month visit to NCAR. He has been working on modeling with Dr Art RICHMOND on the ionosphere in Equatorial Africa through TIEGCM. He was financed by a Fulbright contract.

Jean-Louis Zerbo spent two months (April 15 - June 15) at Lab. of Plasma Physics, with Dr Christine AMORY-MAZAUDIER, terminating his PhD work about »Solar activity, Solar wind and equatorial ionosphere". He will read his PhD in October at Ouagadougou, Burkina Faso. He was financed by the French Ministry of Foreign Affairs.

## EGYPT

Three Egyptian PhD students are from September to November in French Laboratories. They are:

Amira SHIMEIS who works at LPP with Christine AMORY-MAZAUDIER on the equatorial fountain, Ibrahim FATHY who works at LPP on the variations of the Earth's magnetic Field (magnetospheric convection and

Disturbed Dynamo) and Safinaz KHALED who works at LATMOS with Dr Luc DAME on CMEs.

They have been financed by the French Ministry of Foreign Affairs.

## CÔTE D'IVOIRE

Prof. Vafi DOUMBIA is in Japan for a three-month research program at Nagoya University, in the Solar-Terrestrial Environment Laboratory STEL, to work on the variations of the equatorial electrojet in the Asian sector.

## France

Dr Rolland FLEURY and Dr Patrick LASSUDRIE-DUCHESNE Duchesne are preparing at the National School for Telecommunications (Brest) a training school on GPS studies of the ionosphere, October 26 to 30, 2012. This school will teach a limited number (7) of candidates all in PhD studies, coming from Algeria, Morocco, the Congolese Republic, RDC and Senegal.

## ALGERIA

Prof; Naima ZAOURAR, in charge of the Algerian ISWI is organizing a teaching session on Space Meteorology in Maghreb: Algeria, Mauritania, Morocco, and Tunisia. This School will be held from May 6 to 16 2013 at USTHB (Hari Boumedienne University of Science and Technology). The Program will be announced in the next letter.



## **NIGERIA**

Prof Babatunde RABIU and Christine AMORY-MAZAUDIER will develop a program on Space Meteorology in Bells University (Nigeria). They will be helped by many research persons who have agreed to participate to the training of Nigerian PhD Students (Dr Art RICHMOND from NCAR/USA, Dr Dieter BILITZA from NASA/USA and Dr Giannina POLETTO from INAF/Italy ).

## **VIETNAM/ USA**

Hong Thi Thu PHAM spent a month at SCAR (March 21 to April 21) with Prof. Art RICHMOND on modeling the Asian Equatorial ionosphere using the TIEGCM Model. This work concerns her PhD results on: "Regular Magnetic field variations in Vietnam and ionospheric variations"

Hong is due to read her PhD on next October 15 at the UPMC Paris University. Her work is financed by the program PNST / CNRS.

## **MOROCCO**

Contacts are being taken for installing GPS SCINDA (Ronald CATON) and MAGDAS magnetometers (Georg MAEDA) in Morocco. The Moroccan header for this program is Prof. Anas EMRAN from the Mohammed V. AGDAL University.

Following the school of last December in Morocco, two Moroccan students will prepare PhDs on the following subjects:

- Sun and High Energy particles
- Impacts of solar events on the ionized layers

## **RDC : Republic Democratic CONGO**

Following the September 2011 School, a research program is being elaborated for training 8 PhD students in the following domains:

- \*GPS - GNSS for ionospheric studies
- \*Earth's magnetic field
- \*Equatorial Electrojet
- \* High Energy Solar Particles
- \* Physical Geography: Forest dynamics
- \* Sun and Space Weather
- \* GPS for Geodesy
- \*Atmospheric electricity

Christine AMORY-MAZAUDIER was in RDC from August 26 to September 1 for the organization of this project. In the next letter we will present the participants to this project.

Contacts have been taken between Prof. ZANA (Kinshasa University) and Georg MAEDA (SRC) for installing magnetometers in RDC.

## **RC : Republic CONGO**

Bienvenue DINGA (GRSEN/ University Marien NBOUABI) spent two weeks at LPP from July 25 to August 9, 2012, to work with Dr Monique PETITIDIER. He presented his work on hydro meteorology and geo chemistry of the Congo River. He is finishing his PhD and several papers. He worked also on the use of SCINDA GPS data in RC.

## **RCA : Republic Centre AFRICA**

Tiburce CONDOMAT from University of Bangui obtained a scholarship from the French embassy at Bangui to be train in Space Weather. He will be trained by Prof. Arsène KOBÉA from the University of Cocody, Abidjan/ Côte d'Ivoire.



## NEXT MEETINGS

School ISWI-MAGDAS at Bandung in Indonesia from September 17 to September 26, 2012

ISWI conference at Quito/ Equator from October 8 to October 12, 2012

Chapman conference at Addis Ababa in Ethiopia from November 12 to November 16, 2012

## SOME PUBLICATIONS

### *Nigeria 2010-2012*

Adimula I.A., Rabiou, A.B., Yumoto, K., and the MAGDAS Group, 2011. Geomagnetic field variations from some equatorial electrojet stations. *Sun and Geosphere*, **6(2)**, 45 - 49

Bolaji, O. S., Rabiou, A. B., Adimula, I. A., Adeniyi, J. O., and Yumoto, K., 2010. Inter-hemispheric Trans-equatorial Field-aligned currents deduced from MAGDAS at equatorial zone. *Space Research Journal*, 1-10.

Bolaji, O.S., A.B. Rabiou, E.O. Oyeyemi and K. Yumoto, Climatology of the inter-hemispheric field aligned currents system over Nigeria ionosphere, *Journal of Atmospheric Research and Solar Terrestrial Phys.*, <http://dx.doi.org/10.1016/j.jastp.2007.07.08>.

Rabiou, A., B., K.Yumoto, E.O. Falayi, O.R.Bello, MAGDAS/CPMN Group, 2011. Ionosphere over Africa: Results from Geomagnetic Field Measurements During International Heliophysical Year IYH. *Sun and Geosphere*, **6(2)**, 63 - 66

Rabiou, A. B., Fayose, R.S., Oladosu, O.R., and Groves, K. 2011., Variation of total electron content and their effect on GNSS over Akure, Nigeria , *Proceedings of the 62nd International Astronautical Congress*, Cape Town, South Africa, 2011, IAC-11.B2.5.2

Rabiou, A.B., Adimula, I.A., Yumoto, K., Adeniyi, J.O., Maeda, G., 2009. Preliminary Results from the Magnetic Field Measurements Using MAGDAS at Ilorin, Nigeria. *Earth, Moon, and Planets*. DOI:10.1007/s11038-008-9290-7, **104**, 173-179

### *Girgea 2012*

*Burkina Faso, Egypt, France, Ivory-Coast, Sénégal, Vietnam*

Amory-Mazaudier, C., 2012, La science au service du développement, Editions l'Harmattan, ISBN 978-2-296-56969-0.

Amory-Mazaudier, C., the International Research Group in Geophysics, Europa Africa : a laboratory without borders in the Earth Science and Environment, 2012 , 6, pp 454-459.

Ndeye Thiam, Frédéric Ouattara, Gnabahou Allain, Christine Amory Mazaudier, Rolland Fleury, Patrick Lassudrie Duchesne, 2012, Variation of F2 layer critical frequency with solar cycle at Dakar station, *Vol. 11 N°2, 16-20 J. Sci. (in French)*

Ouattara, F., A. Gnabahou, C. Amory-Mazaudier, 2012, Seasonal, diurnal and solar-cycle variations of electron density at two West Africa equatorial ionization anomaly stations, *International Journal of Geophysics.*, Volume 2012, Article ID 640463, doi: 10.1155/2012/640463.

Ouattara Frédéric, Christian Zoundi, Christine Amory Mazaudier, Rolland Fleury, Patrick Lassudrie Duchesne, 2012, Determination of TEC by using pseudo range at Koudougou station in Burkina Faso, *Vol 11, N°1, 12-19, J. Sci. (in French)*

Ouattara F. and Amory-Mazaudier, 2012, Statistical study of the Equatorial F2 layer at Ouagadougou during solar cycles 20, 21, 22 using Legrand's and Simon's classification of geomagnetic activity, to appear in *Space Weather and Space Climate*.





Pham Thi Thu, H., C. Amory-Mazaudier, M. Le Huy, 2012, Model of ionospheric conductivities, to appear *Journal of Sciences of the Earth (in Vietnamese)*.

Shimeis, A., I. Fathy, C. Amory-Mazaudier, R.Fleury ,A.M. Mahrous, K. Yumoto, K. Groves, 2012, Signature of the Coronal Hole on near the North Crest Equatorial Anomaly over Egypt during the strong Geomagnetic Storm 5<sup>th</sup> April 2010, *J. Geophys. Res.*, doi:10.1029/2011JA017350, in press

Zerbo, J-L., C. Amory-Mazaudier, F. Ouattara, 2012, Solar wind and geomagnetism: Toward a standard classification of geomagnetic activity from 1868 to 2009, *Ann. Geophysicae*, 30, 421-426.

Zerbo, J-L., C. Amory-Mazaudier, F. Ouattara, Geomagnetism during solar cycle 23: Characteristics, 2012, to appear in *Journal of Advanced Research*.

Zoundi C., Ouattara F., Fleury R., Amory-Mazaudier C., Lassudrie Duchesne P, **Seasonal** TEC variability in West Africa equatorial anomaly region, *European Journal of Scientific Research*, Vol 77, n°3, pp309-319.