



**United Nations / Japan
Workshop on Space Weather
“Science and Data Products from ISWI Instruments”**

Programme

**The Luigans Spa & Resort
Fukuoka, Japan**

Hosted by



International Center for Space Weather Science and Education,
Kyushu University, on behalf of the Government of Japan

Co-sponsored by

Japan Society for the Promotion of Science (JSPS),
National Institute of Information and Communications Technology (NICT),
Tohoku University, Nagoya University,
and Fukuoka Convention & Visitors Bureau

2 - 6 March 2015

Honorary Committee:

Prof. Ciharu Kubo	President, Kyushu University, Japan
Ms. Simonetta Di Pippo	Director, Office for Outer Space Affairs, United Nations
Dr. Takao Doi	UN Expert on Space Applications, Office for Outer Space Affairs, United Nations

Scientific Organizing Committee (SOC):

Dr. Nat Gopalswamy	NASA, ISWI, SCOSTEP, United States (Chair)
Dr. Akimasa Yoshikawa	Kyushu University, Japan (Co-Chair)
Dr. Werner Balogh	Office for Outer Space Affairs, United Nations (Co-Chair)
Dr. Christine Amory	University Pierre and Marie Curie, France
Dr. Fairos Asillam	ANGKASA, Malaysia
Dr. Vafi Doumbia	l'Université Felix Houphouët-Boigny, Cote d'Ivoire
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Dr. Jose Ishitsuka	IGP, Peru
Dr. Kanya Kusano	Nagoya University, Japan
Dr. Ian Mann	University of Alberta, Canada
Dr. P.K. Manoharan	NCRA, India
Dr. Christian Monstein	ETH Zurich, Switzerland
Dr. Takahiro Obara	Tohoku University, Japan
Dr. Young-deuk Park	KASI, Republic of Korea
Dr. Babatunde Rabi	NASRDA, Nigeria
Dr. Kazuo Shiokawa	Nagoya University, Japan
Dr. Manuela Temmer	University of Graz, Austria
Dr. Satoru Ueno	Kyoto University, Japan
Dr. Rami Vainio	University of Turku, Finland

Local Organizing Committee (LOC):

Dr. Tsutomu Nagatsuma	NICT, Japan
Dr. Satoru Ueno	Kyoto University, Japan

ICSWSE, Kyushu University, Japan:

Dr. Akimasa Yoshikawa (Chair)	Dr. Hideaki Kawano	Dr. Masakazu Watanabe,
Dr. Huixin Liu	Dr. Shuji Abe	Dr. Teiji Uozumi
Dr. Maria Gracita Cardinal	Dr. Akiko Fujimoto	
Mr. George Maeda	Ms. Kayo Goto	Ms. Chieko Furukawa

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Monday, 2 March 2015

Morning

08:00 **Registration**

09:00 **Opening Ceremony**

Tohru Hada, Director of ICSWSE, Kyushu University, Japan

09:00 Welcome / Opening Remarks

- *Chiharu Kubo, President, Kyushu University, Japan*
- *Representative, Government of Japan (MEXT)*
- *Takao Doi, United Nations Expert on Space Applications, United Nations Office for Outer Space Affairs*
- *Nat Gopalswamy, Chair of SOC, Executive Director of ISWI, NASA, United States*

10:00 **Keynote Addresses**

Chairperson: Tohru Hada, Director of ICSWSE, Kyushu University, Japan

10:00 ICSWSE and the MAGDAS Project

*Akimasa Yoshikawa
ICSWSE, Kyushu University
Japan*

10:30 NASA's effort to characterize, understand and predict space weather events and international cooperation in space weather

*Madhulika Guhathakurta
NASA Heliophysics
United States*

11:00 *Coffee/Tea Break – Group Photo*

11:30 **Symposium Introduction**

11:30 United Nations Programme on Space Applications, Symposium Objectives and Practical Arrangements

*Werner Balogh
United Nations Office for Outer Space Affairs*

12:15 *Lunch*

Afternoon

13:15 **Session 1: Space Weather Instrumentation**

*Chairperson: Takao Doi, United Nations Office for Outer Space Affairs
Rapporteur: Maria Gracita Cardinal, Philippines*

13:15 Solar radio spectrometer network e-Callisto

*Christian Monstein
ETH Zurich
Switzerland*

13:30 Current status of the space weather study using the Global Muon Detector Network (GMDN)

*Kazuoki Munakata
Shinshu University
Japan*

13:45	The MITRA as a solar and ionospheric instrument	<i>Girish Beeharry Mauritius Radio Telescope/Physics Dept. University of Mauritius Mauritius</i>
14:00	The TNU-SuperSID teaching module: enhancing student's knowledge in space science	<i>Tan Le Department of Physics TayNguyen University Vietnam</i>
14:15	CHAIN project: Typical Solar Active Phenomena Obtained with CHAIN's Instruments and a New Solar Station in Saudi Arabia	<i>Satoru Ueno Kyoto University Japan</i>
14:30	Role of the ISWI - MAGDAS Bac Lieu Observatory in the space weather studies in Vietnam	<i>Ha Duyen Chau Institute of Geophysics Viet Nam</i>
14:45	e-CALLISTO Station in Sri Lanka	<i>Janaka Adassuriya Arthur C Clarke Institute for Modern Technologies Sri Lanka</i>
15:00	<i>Coffee/Tea Break</i>	
15:30	Contributions of the Nobeyama Radioheliograph to space weather research	<i>Satoshi Masuda Solar-Terrestrial Environment Laboratory Nagoya University Japan</i>
15:45	Using the NASA Heliophysics Virtual Observatories (VxOs) to Distribute ISWI Instrument Data	<i>Shing Fung NASA Goddard Space Flight Center United States</i>
16:10	Recent MAGDAS Activities in Australia	<i>Richard Marshall Bureau of Meterology Australia</i>
16:15	Panel Discussion 1: ISWI Instrument Network and Future of ISWI	<i>Chair:</i> <ul style="list-style-type: none"> • <i>Nat Gopalswamy, NASA, United States</i> <i>Participants:</i> <ul style="list-style-type: none"> • <i>Christine Amory, University Pierre and Marie Curie, France</i> • <i>Juan Americo Gonzalez Esparza, SCIESMEX, Mexico</i> • <i>Hans Haubold, United Nations Office for Outer Space Affairs (retired)</i> • <i>Christian Monstein, ETH Zurich, Switzerland</i> • <i>Akimasa Yoshikawa, ICSWSE, Kyushu University, Japan</i>

18:30 *Ice Breaker Reception*

Tuesday, 3 March 2015

Morning

09:00 Session 2: Solar Weather/National Activities

Chairperson: Terry Onsager, NOAA, United States

Rapporteur: Emad M. H.Takla, Egypt

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| 09:00 | Report of Space Weather Expert Group of Long-Term Sustainability Working Group under UN COPUOS | <i>Takahiro Obara
Tohoku University
Japan</i> |
| 09:15 | An overview of National Space Agency of Malaysia (ANGKASA) Space Weather Research Activities: Past, Present and Future | <i>Nyanasegari Bhoo Pathy
National Space Agency of Malaysia (ANGKASA)
Malaysia</i> |
| 09:30 | Current Status of Space Weather Program in Indonesia | <i>Clara Yono Yatini
LAPAN Space Science Center
National Institute of Aeronautics and Space
Indonesia</i> |
| 09:45 | Variability of the Sun and Its Terrestrial Impact (VarSITI): SCOSTEP's scientific program in 2014-2018 | <i>Kazuo Shiokawa
Solar-Terrestrial Environment Laboratory
Nagoya University
Japan</i> |
| 10:00 | The Mexican Space Weather Service (SCIESMEX) | <i>Juan Gonzalez Esparza
Mexican Space Weather Service – SCIESMEX
Mexico</i> |
| 10:15 | International Space Weather Initiative in Africa: Benefits, implications and some new scientific results | <i>Babatunde Rabi
Center for Atmospheric Research CAR
National Space Research and Development Agency NASRDA, Nigeria</i> |
| 10:30 | Network and products of the INPE's Space Weather program (EMBRACE) | <i>Joaquim Eduardo Rezende Costa
INPE- National Institute for Space Research
Brazil</i> |
| 10:45 | <i>Coffee/Tea Break</i> | |

11:15	<u>Session 3: Weak Solar Activity</u> <i>Chairperson: Madhulika Guhathakurta, NASA Heliophysics, United States</i> <i>Rapporteur: Magdi Elfadil Yousif Suliman, Sudan</i>	
11:15	Solar energetic particles and accompanied solar phenomena - statistical studies in solar cycle 23 and the rising half of solar cycle 24	<i>Rositsa Miteva</i> <i>Space Research and Technology Institute</i> <i>Bulgarian Academy of Sciences</i> <i>Bulgaria</i>
11:30	Declining Solar Polar Fields and their Signatures in the Solar Wind: Implications to near Earth Space	<i>Janardhan Padmanabhan</i> <i>Physical Research Laboratory</i> <i>India</i>
11:45	Weak Solar Activity in Cycle 24	<i>Nat Gopalswamy</i> <i>NASA Goddard Space Flight Center</i> <i>United States</i>
12:00	93 Years of Geomagnetic Data Acquisition at Huancayo Observatory	<i>Jose Kaname Ishitsuka</i> <i>Geophysical Institute of Peru</i> <i>Peru</i>
12:15	<u>Session 4: Coupling Processes</u> <i>Chairperson: Young-deuk Park, Korea Astronomy & Space Science Institute(KASI), Republic of Korea</i> <i>Rapporteur: Mohamad Huzaimy Jusoh, Malaysia</i>	
12:15	Sun impacts on ionized layers and transient variations of the Earth magnetic field	<i>Christine Amory</i> <i>University Pierre and Marie Curie</i> <i>France</i>
12:30	Observations of Equatorial Ionization Anomaly over Africa during a year of deep minimum	<i>Segun Olawale Bolaji</i> <i>University of Lago</i> <i>Nigeria</i>
12:45	TEC Variability of Low Latitude Ionosphere and Role of Dynamical Coupling: Quiet and Storm time Characteristics	<i>Gebregiorgis Fikade</i> <i>Mekelle University</i> <i>Ethiopia</i>
13:00	Coordinated optical, radio and magnetic investigations of wave dynamics in the daytime upper atmosphere	<i>Deepak Karan</i> <i>Physical Research Laboratory</i> <i>India</i>
13:15	<i>Lunch</i>	

Afternoon

14:00 **Session 5: Magnetosphere, Ionosphere and Atmosphere**

Chairperson: Ian Robert Mann, The University of Alberta, Canada

Rapporteur: Nurul Shazana binti Abdul Hamid, Malaysia

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| 14:00 | Role of ULF Waves in Ultra-relativistic Radiation Belt Dynamics: Explaining the 3rd belt | <i>Ian Robert Mann
The University of Alberta
Canada</i> |
| 14:15 | On the Correlation between Geo-Electric Fields and GPS Positioning errors | <i>Paul Baki Olande
Technical University of Kenya
Kenya</i> |
| 14:30 | Characteristics of TEC perturbations observed over the mid-to-low latitude regions during geomagnetic storms | <i>Patrick Sibanda
University of Zambia
Zambia</i> |
| 14:45 | Problems associated with ionosphere study by using tiny satellite | <i>Koichiro Oyama
National Cheng Kung University/Kyushu University
Japan</i> |
| 15:00 | Spheric Scintillations and Tec Characteristics at Solar Minimum in a West African Equatorial Region Using GPS Data | <i>Jean-Baptiste Ackah
University of Felix Houphouët Boigny
Ivory Coast</i> |
| 15:15 | Some variations of the ionospheric scintillation in Vietnam | <i>Tran Lan
Institute of Geophysics
Vietnam</i> |
| 15:30 | <i>Coffee/Tea Break</i> | |
| 16:00 | Signatures of solar event at middle and low latitudes in the Europe-African sector, during geomagnetic storms, October2013' | <i>Ilyasse Azzouzi
Laboratoire de Physique des Plasmas (LPP)
Ecole Polytechnique, Paris
Morocco</i> |
| 16:15 | Semiannual Variations of Ionospheric Chaoticity and Dynamical Complexity over the Equatorial Ionization Anomaly Region | <i>Babalola Ogunsua
Department of Physics
Federal University of Technology, Akure
Nigeria</i> |
| 16:30 | Geomagnetic Field Variations, EEJ and Sq Current Over the Philippines Using Six MAGDAS Stations | <i>Clint Dominic Bennett
Physics Department
Ateneo de Manila University
The Philippines</i> |
| 16:45 | Geospace Exploration Project ERG | <i>Yoshizumi Miyoshi
Solar-Terrestrial Environment Laboratory
Nagoya University
Japan</i> |

- 17:00 **Panel Discussion 2:**
International Cooperation in Space Weather
- Chair:*
- *Terry Onsager, NOAA, United States*
- Participants :*
- *Babatunde Rabiou, Nigeria*
 - *Ivan Dorotovic, Slovakia*
 - *Madhulika Guhathakurta, Office of Space Science, NASA, United States*
 - *Koichiro Oyama, National Cheng Kung University/Kyushu University*
 - *Joaquim Rezende Costa, Brazil*
- 18:30 *Adjourn*

Wednesday, 4 March 2015

Morning

09:00-18:00 Full Day Workshop: Solar-Terrestrial Environment Data Analysis

The solar-terrestrial environment (STE) data analysis workshop is promoting collaborative analyses of observation and simulation data to study the cause-effect activities from the Sun to the Earth using latest space weather events. The workshop is held twice a year in Japan. We select three or four scientifically interesting events during the periods for detailed analysis. Presentations of analysis on the past remarkable geoeffective events are also welcome.

18:00 *Adjourn/Banquet*

Thursday, 5 March 2015

Morning

09:00 Session 6: Space Weather Impact and Awareness

Chairperson: Hans Haubold, United Nations Office for Outer Space Affairs (retired)

Rapporteur: Estelle Dirand, France

- 09:00 Geomagnetic disturbance effects in the geo-electric field variations at low latitude
- Doumbia Vafi*
UFR SSMT
Universite Felix Houphouet Boigny
Ivory Coast
- 09:15 Magnetic and ionospheric observations in the Russian far East region during the magnetic storm of 5 April 2010
- Dimitry Baishev*
Yu.G.Shafer Institute of Cosmophysical Research and Aeronomy SB RAS
Russian Federation
- 09:30 Implementation of the space weather Peruvian system
- Walter Guevara Day*
Comision Nacional de Investigacion y Desarrollo Aeroespacial-CONIDA
Space Agency of Peru
Peru

09:45	Forecasting the electron fluxes at geosynchronous orbits via latitudinal global-mode Pc 5 pulsations: A statistical analyses comparison study	<i>Magdi Elfadil Yousif Suliman Sudan University of Science and Technology Sudan</i>
10:00	The role of MAGDAS-Sumatra to study Earthquake Precursors In Sumatra	<i>Suaidi Ahadi STMKG Meteorological Climatological and Geophysical Agency Indonesia</i>
10:15	Possible Physical Mechanism between Solar Activity and Earthquake Events	<i>Mohamad Huzaimy bin Jusoh Universiti Teknologi MARA Malaysia</i>
10:30	<i>Coffee/Tea Break</i>	
11:00	Solar wind modelling for operational applications	<i>Ljubomir Nikolic Natural Resources Canada Canada</i>
11:15	Nonadditive Entropies: From Einstein to Space Weather	<i>Constantino Tsallis National Institute of Science and Technology for Complex Systems Brazil</i>
11:30	Panel Discussion 3 Space Weather Data Utilization and Operational Use	<i>Chair:</i> • <i>Shing Fung, NASA</i> <i>Participants:</i> • <i>Mamoru Ishii, NICT, Japan</i> • <i>Richard Marshall, Bureau of Meteorology, Australia</i> • <i>Satoshi Masuda, Nagoya University, Japan</i> • <i>Christian Andreas Monstein, ETH Zurich, Switzerland</i>
13:00	<i>Lunch</i>	
<i>Afternoon</i>	<i>Cultural Event – Excursion/Free Afternoon</i>	

Friday, 6 March 2015

Morning

9:00

Session 7: Sun to Earth Space Weather Modeling

Chairperson: Akimasa Yoshiakwa, ICSWSE, Kyushu University, Japan

Rapporteur: Elijah Olukayode Falayi, Tai Solarin University of Education, Nigeria

9:00

Statistical study of the relationship between the solar energetic particle events and associated solar phenomena

*Susan Stefan
NRIAG
Egypt*

9:15

The Development of LEO-NEqO Trapped Particles Forecasting System

*Gusrizal
Space Science Center
Universiti Kebangsaan Malaysia
Indonesia*

9:30

Session 8: Hands-On Workshop organized by ICSWSE

Lecturer:

Shuji Abe (ICSWSE, Kyushu University), Norio Umemura, Tomoaki Hori (STEL, Nagoya University), Satoru Ueno (Kwasan and Hida Observatories, Kyoto University), Shun Imajo (Kyushu University) and students of Kyushu University

09:30

Introduction to the IUGONET

09:50

How to install SPEDAS

10:10

How to operate SPEDAS VM – Part 1

11:00

How to operate SPEDAS VM – Part 2

11:50

Free discussion

12:30

Lunch

Afternoon

13:30

Session 9: Observations, Recommendations and the Way Forward

Chairperson: Nat Gopalswamy, NASA, United States

13:30

Workshop Review, Observations and Recommendations

All Workshop Participants

15:00

Coffee/Tea Break

15:30

Discussion of Future Space Weather Activities

All Workshop Participants

16:00

Closing Session

Master of Ceremony: Akimasa Yoshikawa, Kyushu University, Japan

Closing Remarks by the organizers

- *ICSWSE*
- *ISWI*
- *United Nations Office for Outer Space Affairs*

17:00

Adjourn - Transfer to the hotel and end of the Workshop

Poster Presentations

Chairperson: George Maeda, ICSWSE, Kyushu University, Japan

No.	Name	First Name	Institution	Country	Poster Title
UN-01	Abdul Hamid	Nurul Shazana	National University of Malaysia	Malaysia	Local Time and Longitudinal Dependence of Equatorial Electrojet Calculated from Ground-based Magnetometer
UN-02	Ahmad	Siti Noor	Universiti Teknologi Mara (UiTM)	Malaysia	Characteristics of Ultra Low Frequency (ULF) and Very Low Frequency (VLF) due to the Space Weather Conditions
UN-03	Ahmed Abdalla	Ahmed	King Saud University, Faculty of Science	Saudi Arabia	Installation of the Flare Monitoring Telescope in Saudi Arabia as a New Member of CHAIN Project (Continuous H-alpha Imaging Network Project)
UN-04	Ayaka	Tano	Dept. of Earth and Planetary Sciences, Kyushu University	Japan	The Comparison Between Champ Data and Gaia Model about Electron Density in the Ionosphere
UN-05	Cabezas	Denis	Centre for Radio Astronomy and Astrophysics, Sao Paulo	Peru	A "Dandelion" Filament Eruption and Coronal Waves Associated with the 2011 February 16th Solar Flare
UN-06	Dorotovic	Ivan	Slovak Central Observatory, Hurbanovo	Slovakia	Solar Radio Spectrometers in Slovakia Status Report
UN-07	Estelle	Dirand	ENSTA ParisTech	France	Computer simulation on formation of ionospheric current system accompanied by the incidence of shear Alfvén waves to the ionosphere
UN-08	Falayi	Elijah Olukayode	Tai Solarin University of Education	Nigeria	A Study of variation in horizontal geomagnetic field during geomagnetic substorms at different latitudes
UN-09	Gogje	Tsegaye	Bahir Dar University, Washera Geospace and Radar Science Laboratory	Ethiopia	Spatio-temporal characteristics of the Equatorial Ionization Anomaly (EIA) in the East African region via ionospheric tomography during the year 2012
UN-10	Grodji	Oswald Didier	Université Félix Houphouët Boigny de Cocody	Ivory Coast	Study of the Equatorial Electrojet (EEJ) effects along 210° meridian magnetic, comparison results in West Africa (meridian 5°W)
UN-11	Hasanudin	Hasanudin	BMKG	Indonesia	Magnetic Calculator

No.	Name	First Name	Institution	Country	Poster Title
UN-12	Hiroki	Matsushita	Dept. of Earth and Planetary Sciences, Kyushu University	Japan	The features of vertical component of daily geomagnetic field during geomagnetic storm
UN-13	Kaisei	Akimoto	Dept. of Earth and Planetary Sciences, Kyushu University	Japan	Characteristics of equatorial Pc 5 during electron flux enhancement
UN-14	Keiichiro	FUKAZAWA	Kyoto University	Japan	Optimization of MHD Simulation for Space Weather to Many Core Processor
UN-15	Kryakunova	Olga	Institute of Ionosphere	Kazakhstan	Ground-based experimental complex for Space Weather study in Kazakhstan: science and data product
UN-16	Minobu	Iwaki	Dept. of Earth and Planetary Sciences, Kyushu University	Japan	The terrestrial magnetosphere under the solar wind with no interplanetary magnetic field
UN-17	Mohanty	Pravata	Tata Institute of Fundamental Research	India	Probing electromagnetic state of interplanetary space through measurements of cosmic ray diurnal anisotropy with GRAPES-3 tracking muon detector
UN-18	Mohd. Kasran	Farah Adilah	Universiti Teknologi Mara (UiTM)	Malaysia	Correlation between Extra-terrestrial and Geophysical Effects
UN-19	Moiseev	Aleksei	Yu.G. Shafer Institute of Cosmophysical Research and Aeronomy SB RAS	Russian Federation	Features of long-period geomagnetic pulsations excitation at high latitudes penetrating from the interplanetary medium during an impact of interplanetary shock on the Earth's magnetosphere
UN-20	Musafar Kilowasid	La Ode Muhammad	National Institute of Aeronautics and Space (LAPAN)	Indonesia	Usage of MAGDAS data for space weather science in Indonesia: study of outer electron belt acceleration
UN-21	Nozomu	Nishitani	STEL, Nagoya University	Japan	SuperDARN HOKkaido Pair of (HOP) radars: accomplishments, present status and future perspectives
UN-22	Pranoto	Setyanto Cahyo	National Institute of Aeronautics and Space (LAPAN)	Indonesia	Study of Pc3 Magnetic Pulsations
UN-23	Shuji	Abe	ICSWSE, Kyushu University	Japan	The IUGONET and its products for space weather study

No.	Name	First Name	Institution	Country	Poster Title
UN-24	Shun	Imajo	Dept. of Earth and Planetary Sciences, Kyushu University	Japan	Nature of dayside ionospheric current system of Pi2 pulsations: Comparison between equivalent currents and numerical simulation
UN-25	Sugon	Quirino Jr.	Manila Observatory	The Philippines	EEJ / CEEJ current distributions from Philippine MAGDAS data
UN-26	Suzuki	Shin	Solar-Terrestrial Environment Laboratory, Nagoya University	Japan	CHAMP and ground-based airglow measurements of plasma density perturbations in the top-/bottom-side ionosphere associated with MSTID
UN-27	Takla	Emad	National Research Institute of Astronomy and Geophysics	Egypt	Latitudinal dependence of Pc 3-4 amplitude in the African sector using MAGDAS data
UN-28	Ward	Jonathan	South African National Space Agency	South Africa	SupderDarn or e-Callisto

Publication Plan

The papers to be presented at the UN/Japan Workshop on Space Weather: Science and Data Products from ISWI Instruments will be published in "Sun and Geosphere" as a special issue. The papers will undergo the usual peer-refereeing process and published in Volume 10, Number 2 of the Journal.

The submission deadline is June 30, 2015. Since we are planning to have the issue brought out within 2015, please adhere to the deadline. There is no page limit. On-line submission can be made starting June 1, 2015 at the web site: <http://sungeosphere.org/>. Detailed information on the manuscript preparation and submission can be found on this web site.

Kindly note that /Sun and Geosphere/ has published papers from previous ISWI workshops.