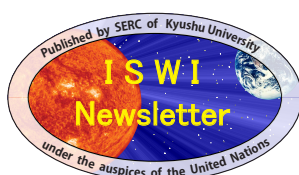




Centre for Space Science & Technology
Education in Asia and the Pacific (CSSTEAP)
(Affiliated to the United Nations)

..... on a mission of capacity building, under the initiative of the United Nations, for Asia and the Pacific Region in Space Science and Technology, through Excellence in Education, Training, and Research.



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MEGHA-TROPIQUES LAUNCH

MEGHA - TROPIQUES LAUNCHED



India's work horse Polar Satellite Launch Vehicle (PSLV-C18) successfully launched the Indo-French MEGHA-TROPIQUES Satellite on October 12, 2011. In its 19th successive successful flight, PSLV injected four satellites with a total payload mass of 1047 kg from Satish Dhawan Space Centre (SDSC, SHAR). These are Megha-Tropiques (India-France) weighing 1000 kg, JUGNU (IIT-Kanpur, India) weighing 3 kg, SRMSat (SRM University, Chennai, India) weighing 10.9 kg and VesselSat-1 from Luxembourg weighing 27.8 kg into an 867 km altitude intended Polar Sun-synchronous orbit. All the four satellites were placed in the

Wishing all the readers a Very Happy & Prosperous 2012

The valedictory function was organized on December 16, 2011. Dr. Anil Kumar Gupta, Director, Wadia Institute of Himalayan Geology, Dehradun was the Chief Guest on the function organized. He distributed the certificates to the participants and also delivered the valedictory address.

A formal feedback was taken from the participants. All the participants rated the course to be very informative and useful and were satisfied with the methodology and course material. The participants requested for future collaborations and bi-lateral research projects on RS & GIS technology applications with UN-ESCAP and CSSTEAP. The summary of the feedback was also provided to UN-ESCAP.

Dr. Yogesh Kant
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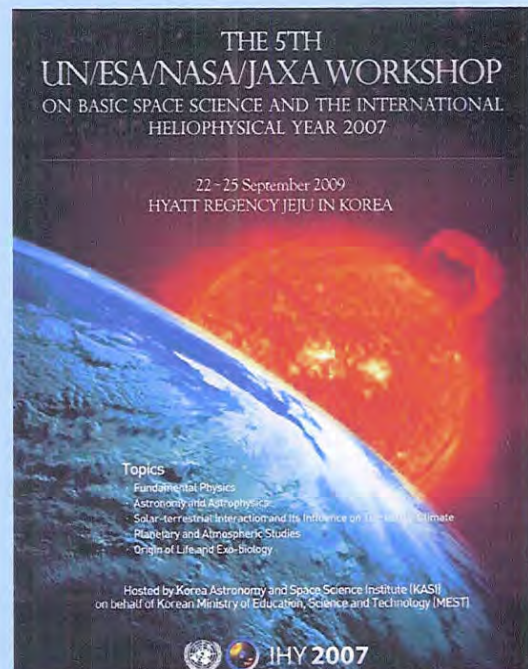
NEWS FROM UN-OOSA

THE UNITED NATIONS BASIC SPACE SCIENCE INITIATIVE (UBSSI)

The United Nations Basic Space Science Initiative (UBSSI) is a long-term effort for the development of astronomy and space science through regional and international cooperation. It covers an active transfer of technology and knowledge, and the role of education on a worldwide basis, particularly in developing nations. To address the status of astronomy in Asia and the Pacific, Latin America and the Caribbean, Africa, and Western Asia, a series of workshops on Basic Space Science (BSS) were carried out between 1991 and 2004 in the following countries: India (1991), Costa Rica and Colombia (1992), Nigeria (1993), Egypt (1994), Sri Lanka (1995), Germany (1996), Honduras (1997), Jordan (1999), France (2000), Mauritius (2001), Argentina (2002), and China (2004). Detailed information is available at (<http://neutrino.aquaphoenix.com/un-esa/>). In line with one of the major recommendations emanating from these workshops, the establishment of astronomical facilities in developing nations for research and education programmes at the university level was initiated.

Pursuant to resolutions of the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) and its Scientific and Technical Subcommittee, since 2005, these workshops focused on the International Heliophysical Year 2007 (IHY2007) and took place in the following countries: the United Arab Emirates (2005), India (2006), Japan (2007), Bulgaria (2008), the Republic of Korea (2009). More detailed information can be obtained from the website of the United Nations Office for Outer Space Affairs (UNOOSA) at: (<http://www.unoosa.org/oosa/SAP/bss/ihy2007/index.html>).

After deliberations at the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), beginning in 2010, the workshops focused on the International Space Weather Initiative (ISWI) as part of its three-year work plan. Detailed information is available at (<http://www.stil.bas.bg/ISWI/>). Workshops on the ISWI have been scheduled to be hosted by Egypt (2010) for the benefit of developing countries in Western Asia, Nigeria (2011) for



20 Years of United Nations Basic Space Science Initiative (1991-2012)

Africa, and Ecuador (2012) for Latin America and the Caribbean. Currently, 14 IHY/ISWI instrument arrays with more than 600 instruments are operational in 95 countries.

In addition, to aid the Global Navigation Satellite systems (GNSS) user community in dealing with the effects of space weather and ionospheric disturbances on GNSS performance, ISWI is supported by the programme on GNSS applications implemented by the United Nations Office for Outer Space Affairs in its capacity as the Executive Secretariat of the International Committee on GNSS (ICG). ICG is contributing to and co-sponsoring several of the ISWI activities. Detailed information is available at the ICG Information portal at (<http://www.icgsecretariat.org>).

Further to the achievements reported at and the negotiations undertaken during the UN/Egypt Workshop on ISWI, organized in 2010, the following Resolution was unanimously adopted by the participants of the UN/Nigeria Workshop on ISWI, hosted by Nigeria in 2011. First results of the implementation of the following Resolution will be reported at the UN/Ecuador Workshop on ISWI, hosted by Ecuador in 2012.

BUJA ISWI RESOLUTION

1. The United Nations should lead, with the active support of Japan and relevant scientific organizations, an international effort to establish an International Centre for Space Weather Science and Education in an existing national educational and research institution. Space 4 Environment Research Center (SERC) at Kyushu University (http://www.serc.kyushu-u.ac.jp/index_e.html), Japan, offered to host this Centre.
2. This Centre should grow into a network of national and regional centers, focusing on space weather, around the world all dedicated to advancement of space weather research and education.
3. The Centre would provide Capacity Building and technical guidance to nations that wish to engage in space weather science and education. Capacity Building consists of three main components:
 - (i) **Training/deployment on instrumentation.** Space weather monitoring, for either operations or research, requires continuous data recording. This data come from precision instruments, either on the ground or in space. Such instruments require proper maintenance. Recent reviews did show that the number of individuals skilled for operating and maintaining these specialized instruments is declining on a global scale.
 - (ii) **Training on data analysis.** Raw data must be inspected, corrected, calibrated, interpreted, transformed, and archived. Most of these activities require sophisticated software and long-term experience handling this data. Using software demands advanced training for users of the data.
 - (iii) **Education/training on space weather science.** With processed and archived data available, the final process is to perform scientific investigations

**INTERNATIONAL SPACE WEATHER INITIATIVE (ISWI) 2011
UN/NIGERIA WORKSHOP**
October 17th - 21st, 2011, Abuja, Nigeria

International Scientific Organizing Committee:

1. Amory Mazouzi, C. France
2. Chilingarian, A. Armenia
3. Cohen, W. USA
4. Donko, J. USA
5. Seongjoo, K. Bulgaria
6. Sloner, A. EU
7. Sepulveda, N. USA [Co-Chair]
8. Gomez, K. USA
9. Gudimov, S., United Nations [Co-Chair]
10. Mahrous, A. Egypt
11. Okeke, P. N. NIGERIA [Co-Chair]
12. Potgieter, M. South Africa
13. Rabiu, A. B., NIGERIA [Co-Chair]
14. Raulin, J. P. Brazil
15. Shibata, K. Japan
16. Wang, C. China
17. Watanabe, S. USA
18. Yamoto, K. Japan

Local Organizing Committee:

1. Ajeji, B.
2. Asekunhin, R. I.
3. Ayantunji, B. G.
4. Chazov, F.
5. Foley, E. O.
6. Falekun, S. E.
7. Hasbold, H. J. Germany
8. Henscho, A. A.
9. Inwelegba, J. O.
10. Mohammed, S. O.
11. Obasuyi, G.
12. Okesola, F. N.
13. Okeke, P. N. [Co-Chair]
14. Okene, B. I.
15. Omali, K. C.
16. Omwono, E.
17. Oronsaye, E.
18. Rabiu, A. B. [Co-Chair]

VENUE
REIZ CONTINENTAL HOTEL
Central District, Abuja.
www.reizcontinentalhotel.com

Hosted by: Centre for Basic Space Science (CBSS)

Logos: IAU, SERC, ICG, ISWI

UN/Nigeria Workshop on the International Space Weather Initiative, Abuja, Nigeria, 17-21 October 2011

based on this data, and to publish the research findings in the international scientific literature. The ability to perform this final process generally requires a Ph.D./M.Sc. level education, which can only be provided by supervisors who are experts in the space sciences at the university level.

4. Space weather work is roughly divided into two spheres:
 - (i) Operational activities, and
 - (ii) Research and educational activities.

Operational work can be handled by already existing national space related institutions.

Research and education is the domain of advanced research institutions and universities. The Centre, recommended in this "Abuja ISWI Resolution" must be part of such an advanced research institution or university. Moreover, a proven record of capacity building is an essential prerequisite for this Centre.

5. The Centre must be an institution with a proven record in organizing international activities. These activities include space weather schools, space weather workshops, observation campaigns, installation of instruments in different regions of the world, training of instrument host staff and students, and international outreach programmes. The Centre must possess experience in promoting and supporting international programmes such as ISWI.
6. The Centre would cooperate with the UN-affiliated Regional Centres for Space Science and Technology Education, located in India, Mexico/Brazil, Morocco, and Nigeria (<http://www.unoosa.org/oosa/en/SAP/centres/index.html>), and other centres of excellence in space science and technology education.
7. The Centre for Basic Space Science at the University of Nigeria (<http://www.cbssonline.com/>), Nsukka, Nigeria, offered to act as a Regional Centre for Space Weather Science and Education.

PRELIMINARY ANNOUNCEMENT FOR THE COMMEMORATION OF THE 10TH ANNIVERSARY OF THE ESTABLISHMENT OF SERC

The First Ten Years of Space Environment Research Centre (SERC) (2002-2012)

SERC was established at Kyushu University in 2002 as an Institute for the joint use of Kyushu University as a collaboration among the Faculty of Mathematics, the Faculty of Engineering Sciences, the Faculty of Engineering, the Faculty of Information Science and Electrical Engineering, and the Faculty of Sciences. It was decided that the first



Agenda

- Commemorate the 10th anniversary of SERC
 - Inaugurate the International Center for Space Weather Science and Education (ICSWSE)
 - Observe the significance of the 14th of March 2012
- The fundamental purpose of this event is to review where SERC has been, where it is today, and where it plans to go.



The commemoration function will take place in Fukuoka Japan on 14 March 2012.

Executive Director of SERC would be Professor Kiyohumi Yumoto.

In the beginning, this Center promoted the diagnosis of the geospace plasma environment and examined the problem of space debris. Additionally, this Center undertook research on electromagnetic disturbances that originated with the Sun. The tools for this research were ground-based magnetometers (to observe the Earth's magnetic field) and radars (to observe the ionosphere). These magnetometers formed a network called CPMN (Circum Pacific Magnetic Network).

Over the past ten years, this Center developed into two main areas of research activities. One was to pursue research on fundamental aspects of plasma physics, which covers space plasmas, fusion plasmas, and industrial applications of plasmas. Additionally, there was a need to develop the mathematical and informatic aspects of plasmas. This entire effort, therefore, was a major inter-disciplinary undertaking inside of Kyushu University.

The other main area of effort at SERC during the past ten years was the deployment of MAGDAS (MAGnetic Data Acquisition System) on a global scale. Unlike the CPMN system, each MAGDAS magnetometer sends its data in real time to SERC for continuous monitoring of the Earth's magnetic field. The first MAGDAS magnetometer started operating at Hualien, Taiwan, in May of 2005. Today there are 63 MAGDAS magnetometers in operation all over the world -- this is an expansion rate of 10 magnetometers per year, or nearly one per month. Thus MAGDAS is by far the largest real time magnetometer network in the world. In addition, as part of this real time observation effort, SERC maintains FM-CW radars in Russia, Japan, and the Philippines.

To summarize the first ten years of SERC: SERC concentrated on establishing a foundation for research into basic plasma physics and it concentrated on deploying the world's largest real time network of magnetometers. Note that this was mainly a domestic enterprise -- to shore up the essential skills and know-how of Japanese scientists and engineers. During the next ten years, SERC will extend this enterprise to a global scale.

IHY (International Heliophysical Year, from 2005 to 2009) and ISWI (International Space Weather Initiative, from 2010 to 2012)

[conducted under the auspices of the United Nations]

To ensure the success of the MAGDAS Project, SERC became heavily involved with IHY and ISWI, as a major purpose of IHY/ISWI is to get more developing nations involved in space science. Here, MAGDAS contributed enormously -- through the installation of instruments in Asia and the Pacific, Africa, and Latin America and the

Caribbean. SERC experts have trained local personnel (staff and students) to maintain MAGDAS instruments. SERC invited them to SERC for additional scientific and technical training. For this purpose, SERC conducted MAGDAS schools. Scholarships were provided to MAGDAS hosts so that they were able to attend IHY/ISWI workshops. All these efforts are part of SERC's Capacity Building agenda, which is also the agenda of IHY/ISWI.

The Next Ten Years beyond 2012

During the first ten years, SERC concentrated on two major areas of research activities as outlined above. During the next ten years, SERC will expand to the international stage. Accordingly, SERC will take the initiative on several new international enterprises that are being planned presently. Selected examples (five) are as follows:

1. The next stage of ISWI. The first stage of ISWI (2010-2012) will be concluded in 2012. This must be followed up with a new international program, which is still in the planning stages. SERC intends to take a leading role in the new program.
2. MAGDAS Schools. SERC conducted a major MAGDAS School in Nigeria during the summer of 2011 at Redeemer's University near Lagos. The next one is scheduled for Bandung, Indonesia, during the summer of 2012.
3. Capacity Building. In support of the MAGDAS Project, SERC will continue to push forward with Capacity Building, which involves teaching MAGDAS instrument hosts the skills needed for (1) instrument operation, (2) data analysis, and (3) doing world-class science with the collected MAGDAS data.
4. Establishment of ICSWSE. This is the International Center for Space Weather Science and Education. Details of this new center are contained in the Abuja ISWI Resolution, which was adopted by the participants of the "UN/Nigeria Workshop on ISWI" (October 2011). Here reference is made to the ISWI Newsletter Volume 3, Number 101.
5. Center of centers. One role of ICSWSE is to cooperate (in the field of space weather) with the UN-affiliated Regional Centres for Space Science and Technology Education (located in Nigeria, Morocco, India, Brazil, and Mexico).

The Significance of the 14th of March 2012

Albert Einstein (the man who created the Theories of Relativity) was born on 14 March 1879. It is well-known that in 1922 he undertook a tour of Japan with his wife, which included several speaking engagements, including a famous lecture at Kyoto University. But it is not well-known that he also visited Fukuoka and Kitakyushu, and gave a lecture at Kyushu University. During this 14th March 2012 event at SERC, it is being proposed to release



some documents (regarding Einstein's visit to Fukuoka in 1922) that have always existed in Japanese, but never in English.

Dr. Hans Haubold,
 UN-OOSA

CSSTEAP ALUMNI MEETS

CSSTEAP established in 1996 has till date trained 1033 students from 33 countries of Asia & the Pacific region. Sri Lanka is one of the member countries of CSSTEAP, GB and also used the facilities of CSSTEAP capacity building. The alumni meet brings together students of different courses from the same country on common platform and facilitate the centre to know about their achievements and how the Centre helped them in grooming their professional research career.

Based on the recommendations of CSSTEAP Governing Board to obtain more concrete feedback from the alumni of CSSTEAP, it was considered to organize alumni meets in the South-East Asia Pacific countries. This is be useful to obtain first hand feedback and understand the alumni role in promoting space science and technology in their home countries. The objective of the meet is the reunion of alumni and the Centre and to know experiences about their achievements and how the Centre helped them in grooming their professional research career. CSSTEAP has so far organized successfully four Alumni meet in Nepal (October, 2010), Bangladesh (June 2011), Sri Lanka (October 2011) and in Bhutan (November 2011).

Alumni Meet at Colombo, Sri Lanka

On an invitation from UN-OOSA, Dr. S. K. Saha, Course Director, RS & GIS, CSSTEAP and Head, AS&D, IIRS (ISRO), Dehradun visited Colombo, Sri Lanka during October 17 - 22, 2011, as a member of UN-OOSA International Technical Advisory Mission (TAM) of UN-SPIDER, to suggest the space inputs in Disaster Management in Sri Lanka.

Dr. S.K Saha, RS & GIS Course Director, CSSTEAP took an opportunity to conduct alumni meet in Colombo on October 21, 2011. CSSTEAP has 53 alumni from Sri Lanka under various courses (PG Course - 38 and Short Course -15) being organized at IIRS, SAC and PRL. Out of 53 alumni invited, 12 number of alumni from Disaster Management Centre (DMC); UNDP Regional Office, Arthur C Clarke Institute for Modern Technologies; Department of Meteorology (DOM); Survey & Mapping (SM); Sri Lanka Port Authority attended the meet. Most of Sri Lankan CSSTEAP Alumni were out of the country for higher studies and hence could not participate in the Alumni meet. Mr. S. Panawennage, Director, Arthur C Clark Centre of Modern Technology and GB Member, CSSTEAP was the Chief Guest of the function. Senior officials of DMC, DOM & SM also participated in the meet and made presentation on their organizational activities and suggested enhanced role of



Meeting with the CSSTEAP alumni in Colombo, Sri Lanka