



Scientific Committee on Solar-Terrestrial Physics



REPORT ON THE ISWI/SCOSTEP SCHOOL ON SPACE SCIENCES, OCTOBER 21- NOVEMBER 1, 2013, NAIROBI, KENYA

Website: www.tukenya.ac.ke/conferences then click on "SPACE SCIENCE" for more details.

VENUE: KENYA INSTITUTE OF EDUCATION

Directors: Nat Gopalswamy (NASA/GSFC) & Paul Baki (Technical University of Kenya)

A. BACKGROUND

The International Space Weather Initiative (ISWI) and the Scientific Committee on Solar Terrestrial Physics (SCOSTEP) have been running advanced school in the area of solar terrestrial physics and space weather for a number of years, starting with the IHY 2007. This is a capacity building activity to introduce space science to as many countries as possible in the world and create favorable conditions for joint research and training especially for graduate students and young scientists from developing countries. The primary focus is how the variability of the Sun affects Earth's space environment and life on Earth. The 2013 school is designated as the African School and will take place in Nairobi, Kenya. African scientists have been heavily involved in ISWI instruments, data, and research. In order to maximize the benefits from the ISWI instruments and the current data available from space and ground based instruments, a high level training of young students and researchers is very crucial. The African Space science School in 2013 will follow the tradition of previous schools held in Ethiopia, Slovakia, and Indonesia in providing quality training in space science by experts from the SCOSTEP and ISWI communities.

B. SPONSORS

1. Scientific Committee on Solar-Terrestrial Physics (SCOSTEP)
2. Committee on Space Research (COSPAR)
3. Technical University of Kenya (TUK)
4. Japanese Society for Promotion of Science (JSPS)
5. United Nations Office for Outer Space Affairs (UNOOSA)
6. International Centre for Space Weather Science and Education (ICSWSE)
7. Lecturers (Who paid for their own airfares to come and give lectures at this School)
8. Centre for Atmospheric Science (NASRDA), Nigeria

C. APPLICANTS

There were **153** applicants to this School and out of this only 45 were invited. Those who eventually participated in the School were **39**. Most of the applicants were not invited due to financial constraints as some would be sponsors failed to respond even after giving assurance of their support. Consequently, participants from Kenya and Uganda had their transport sponsorship withdrawn and some invitation letters also withdrawn as a last minute cost-cutting measure.

D. LECTURERS

There were a total of 17 Lecturers

E. TOPICS

- Solar Interior
- Solar Dynamo
- Solar Atmosphere
- Solar Flares and Coronal Mass ejections
- Solar Wind and Interplanetary medium
- Cosmic Rays
- Magnetospheric Physics

- Ionospheric Physics
- Atmospheric Physics
- Space Weather
- Teacher/students workshop
- Instrument workshop
- Participants Seminars

F. PROGRAMME

Date	Activities
21/10/2013	8.30- 9.00 Registration
	<p>9.00- 9.30 Opening Ceremony</p> <p>Welcoming Remarks – Prof. Paul Baki, Technical University of Kenya (Chair, LoC /Director)</p> <p>Introductory Remarks- Prof. Nat Gopalswamy (NASA Goddard/President of SCOSTEP/Director)</p> <p>Opening Address: Prof. Dr. Francis O. Aduol, Vice Chancellor, Technical University of Kenya</p>

	<p>SESSION I: Chair- Nat. Gopalswamy/ John Raymond</p> <p>9.30 – 10.30 Sun in the Universe - Prof. Legesse Kebede</p> <p>10.30- 10.45 HEALTH BREAK</p> <p>10.45 - 13.15 Solar Interior – Dr. Jesper Schou + exercises</p> <p>13.15- 14.15 LUNCH BREAK</p> <p>14. 15 - 15:45 Solar Dynamo – Prof. Mark Miesch</p> <p>15.45 – 16.00 HEALTH BREAK</p> <p>16.00- 17.00 Solar Dynamo exercises</p>
<p>22/10/2013</p>	<p>SESSION II: Chair: Hashim Nadir/Nikolai Ostgaard</p> <p>8.30- 10.00 Solar Atmosphere – Prof. John Raymond</p> <p>10.00- 10.15 HEALTH BREAK</p> <p>10.15 – 11:15 Solar Atmosphere Exercises – Prof. John Raymond</p> <p>11:15 to 13.00 CORONAL Mass Ejections, Solar Flares – Prof. Nat Gopalswamy</p> <p>13.00- 14.00 LUNCH</p> <p>14.00- 15.00 Solar Wind Exercises – Prof. John Raymond</p> <p>15.00- 16.00 CMEs & Flares Exercises – Prof. Nat Gopalswamy</p> <p>16.00- 16.30 HEALTH BREAK</p> <p>16.30- 17.00 DISCUSSIONS</p>
<p>23/10/2013</p>	<p>SESSION III: Chair: Jean Uwamahoro/Hashim Nadir</p> <p>8.30 – 10.30 Solar Energetic Particles + Exercises - Prof. Dalmiro Maia</p> <p>10.30- 10.45 HEALTH BREAK</p> <p>10.45 – 13.00 Regions, currents and energy flow in the solar wind-magnetosphere-ionosphere System & Exercises – Prof. Nikolai Ostgaard</p> <p>13.00- 14.00 LUNCH</p>

	<p>14.00- 16.00 Space weather & Dynamo – Prof. Christine Amory Mazaudier</p> <p>16.00- 16.30 HEALTH BREAK</p> <p>16.30 – 17.30 Space weather & Dynamo Exercises – Prof. Christine Amory Mazaudier</p>
24/10/2013	<p>SESSION IV : Chair: Dalmiro Maia/Christine Amory</p> <p>8.30 - 10.30 Cosmic rays & Exercises - Dr. Hashim Nadir</p> <p>10.30- 11.00 HEALTH BREAK</p> <p>11.00- 13.00 Lecturer – Student interaction (ALL)</p> <p>13.00- 14.00 LUNCH</p> <p>14.00- 16.00 Data Processing in Ionospheric Studies (Ionosondes, GPS, Radars)- Dr. Andrew Akala</p> <p>16.00- 16.30 HEALTH BREAK</p> <p>16:30 – 17:30 Discussion</p>
25/10/2013	<p>SESSION V: Chair: Dr. Jared Ndeda</p> <p>8.30- 10.30 Basics of Ionospheric Physics – Prof. Paul Baki</p> <p>10.30- 11.00 HEALTH BREAK</p> <p>11.00- 13.00 Ionosphere and GNSS & Exercises - Dr. Florence D’Ujanga</p> <p>13.00- 14.00 LUNCH</p> <p>14.00- 16.00 Equatorial Ionosphere & Exercises - Prof. Rabi Babatunde</p> <p>16.00 - 16:30 HEALTH BREAK</p> <p>16:30 – 17:30 Data Analysis techniques - Prof Farzad Kamalabadi</p>
28/10/2013	<p>SESSION VI: Chair: Deborah Scherrer</p> <p>8.30 - 10.30 Atmospheric Physics- Prof. Franz-Josef Luebken</p> <p>10.30 -11.00 HEALTH BREAK</p>

	<p>11.00 – 13.00 Sun and Climate – Dr. Chris Oludhe</p> <p>13.00 – 14.00 LUNCH</p> <p>14.00 – 15.00 Atmospheric Physics Exercises - Prof. Franz-Josef Leubken 15:00 – 1600 African Geophysical Society (AGS)- Prof. Rabiun Babatunde</p> <p>16.00 -16.30 HEALTH BREAK</p> <p>16:30 – 17:30 Cosmic Rays and climate - Dr. Hashim Nadir</p>
29/10/2013	<p>SESSION VII: Chair: Dr. Ndinya</p> <p>8.30- 9.30 VarSITI – Prof. Franz- Josef Lubken</p> <p>9.30- 10.30 ROSMIC Program – Prof. Franz-Josef Luebken</p> <p>10.30- 11.00 HEALTH BREAK</p> <p>11.00- 12.00 African Geo-Space Society – Prof. Rabiun Babatunde 12.00 – 13.00 Discussion on Participation of African scientists in international programs (SCOSTEP, ISWI, ILWS)</p> <p>13.00- 14.00 LUNCH</p> <p>14:00 – 1600 Participant seminars</p> <p>16.00- 16.30 HEALTH BREAK</p> <p>16:30 – 17:30 Discussion</p>
30/10/2013	<p>SESSION: Chair: Dr. Andrew Akala/ Legesse Kebede</p> <p>8.30 - 10.30 Instrument Workshop - Prof. Chirstine Amory Mazaudier, Prof. Deborah Scherrer, Dalmiro Maia, Babatunde Rabiun)</p> <p>10.30- 11.00 HEALTH BREAK</p> <p>11.00 – 13.00 Instrument Workshop</p> <p>13.00- 14.00 LUNCH</p> <p>14.00 – 16.00 Instrument Workshop</p> <p>16.00- 16.30 HEALTH BREAK</p>

	16.30- 17.00 Discussions
31/10/2013	<p>SESSION X : Chair: Florence D’ujanga/Rabiu Babatunde</p> <p>8.30- 10.30 Participants Seminar</p> <p>10.30- 11.00 HEALTH BREAK</p> <p>11.00 – 13.00 Participants Seminar</p> <p>13.00- 14.00 LUNCH</p> <p>14.00- 16.00 Participants Seminar</p> <p>16.00 - 16.30 HEALTH BREAK</p> <p>16.00 - 17.00 Discussion</p>
01/11/2013	<p>SESSION XI: Chair: Rabiu Babatunde</p> <p>9.00 – 10.30 School Evaluation/Feedback</p> <p>10.30- 11.00 HEALTH BREAK</p> <p>11.00- 12.00 CLOSING AND ISSUANCE OF CERTIFICATES</p> <ul style="list-style-type: none"> • Prof. Christine Amory Mazaudier • Prof. Akeem Rabiu Babatunde • Dr. Dalmirio Maia • Prof. Paul Baki <p>13.00-1400 LUNCH</p>

Prepared by: Paul Baki