Variability of the Sun and Its Terrestrial Impact (VarSITI)
SEE / ISEST-Minimax24 / SPeCIMEN / ROSMIC
http://www.varsiti.org/

Vol. 2, July 2014

VarSITI Newsletter

Inside this issue

Project SEE/ISEST/ROSMIC

Article 1:

Coordinated investigations of solar, planetary radio emission, solar wind and Earth's ionosphere carried out in Ukraine with the world's largest radio telescopes

A. A. Konovalenko[1], N. N. Kalinichenko[1], O. A. Lytvynenko[2], V. V. Dorovskii[1], V. N. Melnik[1], A. I. Brazhenko[3], V. V. Zakharenko[1], A. A. Stanislavskii[1], and V. A. Shepelev[1]

[1]Institute of Radio Astronomy of NASU, Kharkov, Ukraine
[2]Observatory URAN-4 of Institute of Radio Astronomy NASU, Odessa, Ukraine
[3]Poltava gravimetrical observatory of institute geophysics NASU, Poltava, Ukraine

Konovalenko Alexander | Kalinichenko Nikolay | Lytvynenko Oleg | Dorovskii Vladimir | Melnik Valentin | Brazhenko Anatoly | Zakharenko Vyacheslav | Stanislavskii Alexander | Shepelev Valery

Ukraine has a substantial experimental base of radio remote sensing for research of VarSITI problems. First of all the base includes the largest in the world decameter radio telescope UTR-2 and the URAN system of radio telescopes (Figure 1).

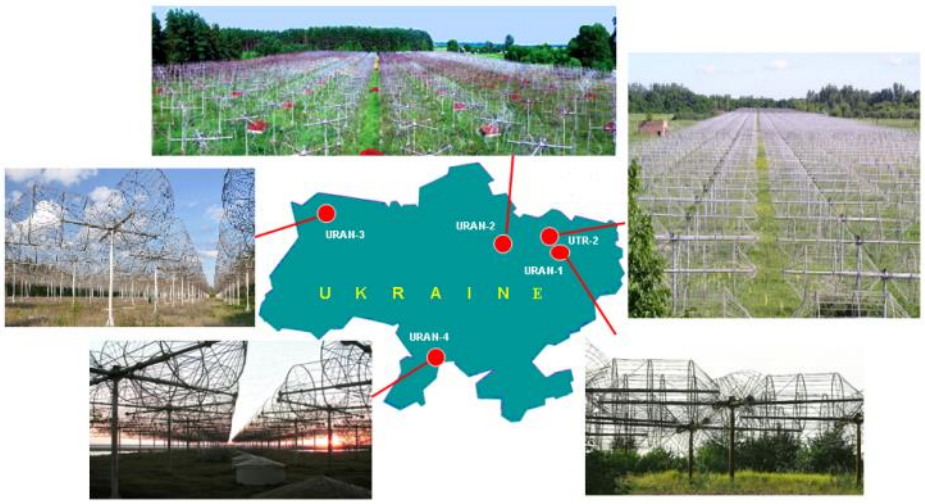

Figure 1. URAN decameter radio telescopes system on Ukraine map: Radio telescopes UTR-2 URAN-1, URAN-2, URAN-3 and URAN-4. They operate at the frequencies from 9 to 32 MHz.

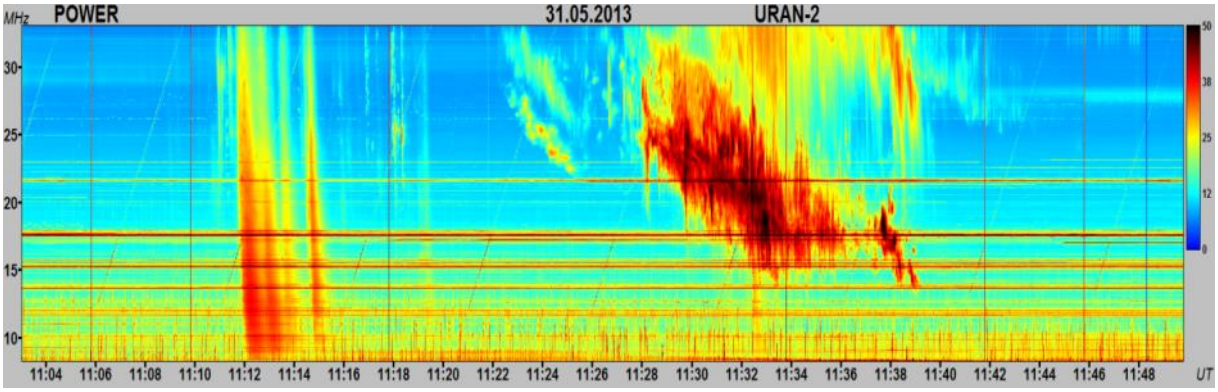

Figure 2. II type radio burst with fir-tree structure associated with CME and flash in active area NOAA 11761 was registered by UTR-2 and URAN-2 radio telescopes on May 31, 2013 from 11:23 to 11:40 UT and moved to the Earth.

Coordinated investigations of the solar wind, solar, planetary radio emission and Earth's ionosphere are being carried out in Ukraine with radio telescopes UTR-2, URAN-2 and URAN-4 for space weather applications. The plan of these experiments is the following. Monitoring of the sporadic solar radio emission is synchronously carried out with two radio telescopes during summer months. If type II or IV solar radio bursts are registered the monitoring of the interplanetary plasma and Earth's ionosphere by using observations of scintillations of cosmic radio sources are immediately started with three radio telescopes.

The use in observations of several spatially separated points allows us to decrease substantially the harmful effects: manmade interference, ionospheric effects, and to use some criteria for separation of useful and harmful effects to increase the efficiency of the investigations. Data interpretation includes information obtained synchronously by the spacecrafts STEREO, SOHO, Wind and others. The experiments must answer the question "Can appearance of some type of solar radio bursts be used for prediction of the changes in space weather: appearance of large scale solar wind or ionospheric disturbances? What parameters of the solar radio bursts should be analyzed in this case? For example radio bursts that have fir-tree structure (Figure 2) we explain as a result of CME movement in the Earth's direction.

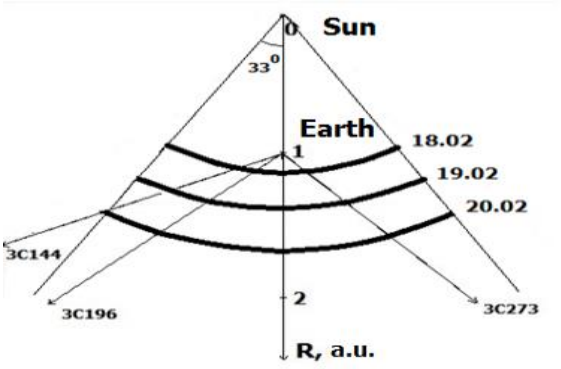

Figure 3. Dynamic of the February 15 2011 CME beyond the Earth's orbit from February 18 to February 20 2011. Arrows are lines of sight to some observed radio sources (3C144, 3C196, 3C273).

As an example Figure 3 shows the dynamics of an ICME associated with the Valentine's day CME on February 15 2011 beyond the Earth's orbit. It was found that the Valentine's day CME continued slowing at distances more than 1 a.u. while its angular size remained constant.

Radio telescope URAN-4 has been monitoring ionospheric scintillation of cosmic radio sources 3S144, 3S274, 3S405, 3S461. This monitoring provides information about the intensity of ionospheric irregularities with dimensions from tens of meters to several kilometers. Identification of solar transient effects on single records was failed. These effects are masked by the scintillations, which are associated with other factors. Figure 4 shows the statistical result. We can see that the intensity of ionospheric scintillation decreases 6 days after the maximum of the fluence of electrons >0,6 Mev in geospace.

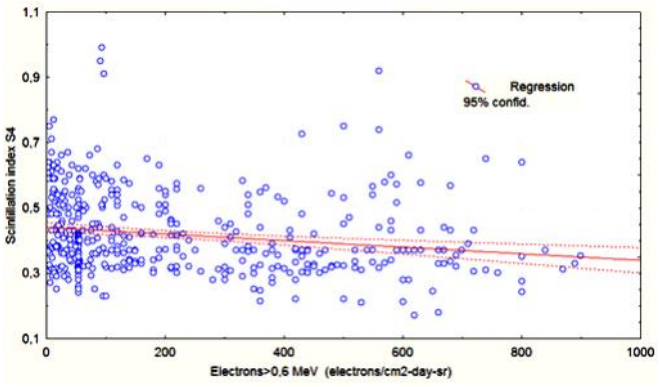

Figure 4. Dependence of the ionospheric scintillation intensity on the electron fluence at geostationary orbit with a lag of 6 days.

In future such observations could be carried out in cooperation with other large decameter radio telescopes of new generation such as LOFAR, SKA and others.

Article 2:

Installation of RENOIR at the Oukaïmeden Observatory, Morocco

J. J. Makela[1] and Z. Benkhaldoun[2]
[1]Department of Electrical and Computer Engineering,
Universtiy of Illinois at Urbana-Champaign, Urbana, IL, USA
[2]Oukaïmeden Observatory, LPHEA, Université Cadi Ayyad , Morocco


Jonathan J. Makela


Zouhair Benkhaldoun

In November of 2013, a team of students and scientists from the University of Illinois at Urbana-Champaign in the United States deployed a suite of optical instruments at the Oukaïmeden Observatory in the Atlas Mountains, outside of Marrakech, Morocco. They collaborated with colleagues from Université Cadi Ayyad to install two instruments: an imaging Fabry-Perot interferometer (FPI) and wide-angle imaging system. These instruments comprise the Remote Equatorial Nighttime Observatory of Ionospheric Regions (RENOIR) experiment and represent the development of new ionospheric and thermospheric observing capabilities in northern Africa. After the installation, the two teams participated in a training workshop held at the Université Cadi Ayyad (see Figure 1).

Figure 1. Participants in the RENOIR workshop held at Université Cadi Ayyad.

The scientific goals of RENOIR are to study the coupled thermosphere/ionosphere system by making long-term measurements of important parameters to better understand the climatology of the thermospheric neutral winds and temperatures as well as to study the occurrence of ionospheric structures, such as equatorial plasma bubbles (EPBs). The FPI provides high-temporal observations of the nighttime 630.0-nm emission caused by the dissociation of O_2^+, an emission arising from the thermosphere at an altitude of approximately 250 km. Analysis of data from this instrument provides estimates of the thermospheric neutral motion (winds) and temperature. A dual-axis sky scanning system allows the instrument to take measurements from different look directions in the sky, allowing for spatial properties of these parameters to be obtained. The wide-angle imaging system provides two-dimensional observations of the same 630.0-nm emission, from which the spatial distribution of ionospheric structures can be obtained. Given the location of the observatory (31° 12' 23.3" N, 7° 51' 58.8" W), at the traditional boundary between mid-latitude and low-latitude regions, it is expected that both EPBs and medium-scale traveling ionospheric disturbances will be observed in the data. The images will allow for the determination of the occurrence statistics, as well as properties (e.g., wavelength, velocity), of these structures in the African region.

Example data from these instruments are provided in Figure 2 and 3. Here, neutral wind observations obtained in the cardinal directions are provided on the night of 28 Feb-01 Mar 2014. The zonal neutral winds

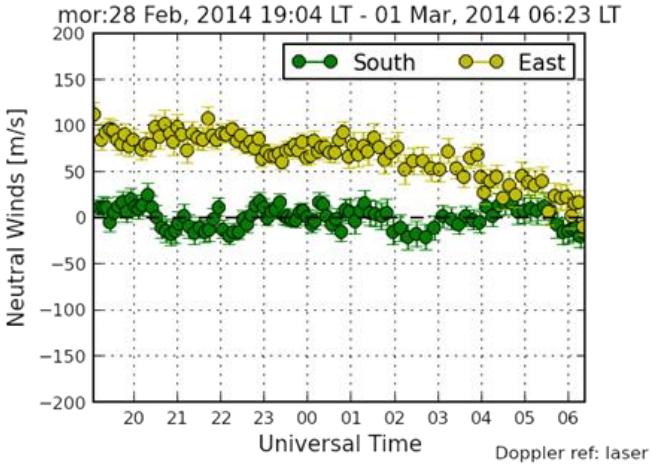

Figure 2. Example neutral winds obtained by the FPI on the night of 28 Feb-01 Mar 2014. The zonal (yellow) and meridional (green) winds are shown.

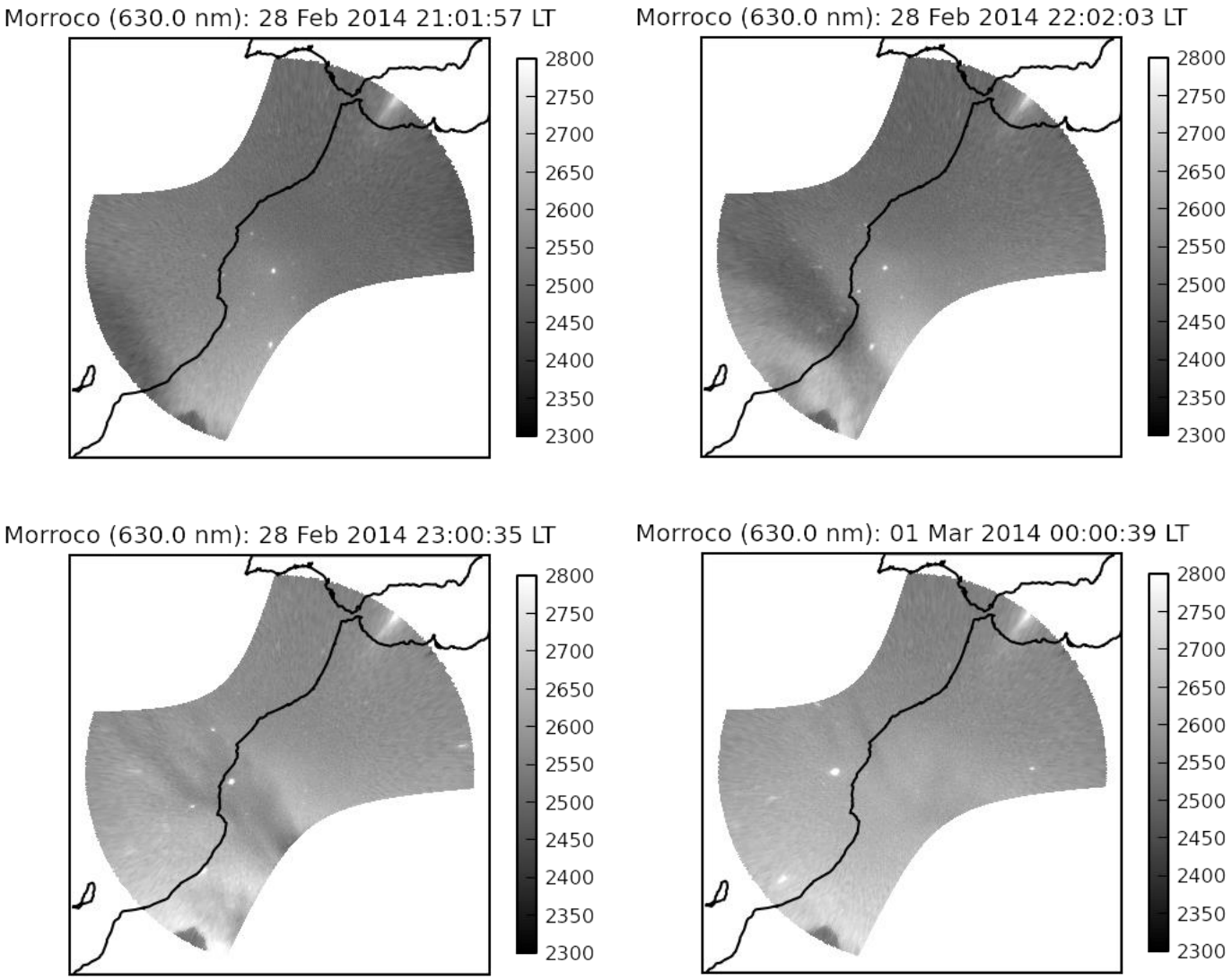

Figure 3. Sequence of the 630.0-nm images showing the propagation of an equatorial plasma bubble from west to east.

(Figure 2, yellow) show a flow of the thermosphere towards the east for the duration of the night, with a maximum flow of ~100 m/s. The meridional winds (Figure 2, green) show minimal flow in the north-south direction. Coincident observations from the wide-angle imaging system are shown in Figure 3. The signatures of equatorial plasma bubbles are seen in the southwest corner of the observed region. These dark bubbles are observed to drift to the east over the course of the night, in line with the neutral winds presented in Figure 2.

The RENOIR instruments will continue to operate at the observatory for several years, providing critical long-term observations of the thermosphere/ionosphere system from the African region. These instruments will also provide valuable training and educational opportunities to students from Université Cadi Ayyad as they analyze and publish results from the instruments. As such, the RENOIR experiment will catalyze the further participation of these scientists into the international research community.

Calculation of whistler-mode chorus wave intensity from low-altitude electron precipitation

Wen Li
Department of Atmospheric and Oceanic Sciences,
University of California, Los Angeles, CA, USA

Wen Li

Whistler-mode chorus waves are fundamentally important for accelerating seed electron population to highly relativistic energies and causing energetic electron precipitation into the upper atmosphere. Therefore, understanding the actual dynamic evolution of chorus wave intensity on a global scale is crucial in quantitatively evaluating the role of chorus waves in radiation belt electron dynamics. Recently, we have developed a physics-based technique to infer whistler-mode chorus wave intensity from the two-directional electron measurements made by low-altitude Polar Orbiting Environmental Satellite (POES) satellites. We applied this technique to construct the global distribution of chorus wave intensity over a broad region during a few interesting events with an example (17 March 2013 storm) shown in Figure 1. This work of providing global chorus wave distribution is highly relevant to the SPeCIMEN project, where quantifying the role of chorus waves in radiation belt dynamics is a key science question. This work also directly contributes to the new focus group of "Quantitative Accesment of Radition Belt Modeling" in the Geospace Environmental Modeling (GEM) workshop, where I am a co-chair over 2014-2018. In this focus group, current state-of-art models for acceleration, transport, and loss processes in radiation belts will be brought together to quantatively assess the role of each component in raditaion belt electron dynamics by comparing againt the unprecedented high-quanlity wave and particle measurements from multiple satellites.

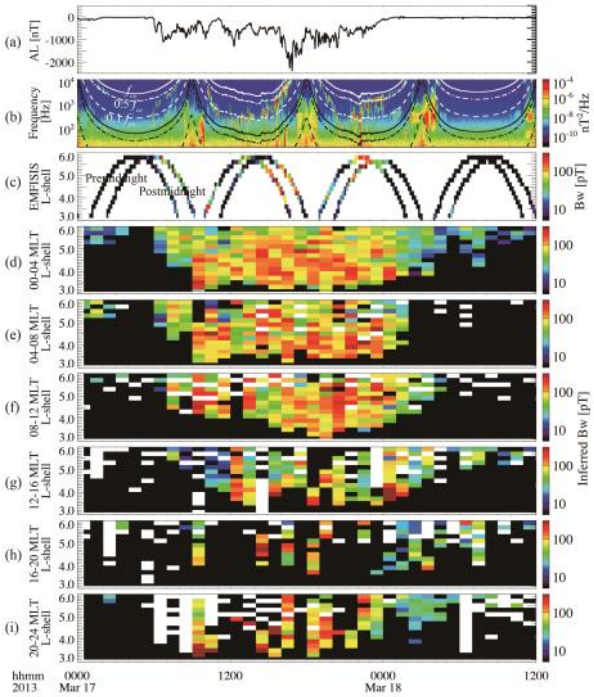

Figure 1. The evolution of the chorus wave distribution during the 17 March 2013 storm. (a) AL index, (b) frequency-time spectrogram of magnetic field spectral density observed by Van Allen Probe B along its trajectory. White lines in panel (b) indicate fce (solid), 0.5 fce (dash-dotted), and 0.1 fce (dashed) and black lines represent fLHR (solid) and 0.5 fLHR (dash-dotted), where fce and fLHR are the electron cyclotron frequency and lower hybrid resonance frequency, respectively. (c) Lower-band chorus wave amplitudes integrated over 0.05-0.5 fce as a function of L-shell observed by both Van Allen Probes, where the outbound (inbound) corresponds to the premidnight (postmidnight) sector. (d)-(i) Global distribution of chorus wave amplitudes inferred from the 30-100 keV electron population measured by multiple POES satellites over various MLT ranges. (Adapted from Li et al., 2014)

Reference

Li, W., et al. (2014), Radiation belt electron acceleration by chorus waves during the 17 March 2013 storm, J. Geophys. Res. Space Physics, 119, doi:10.1002/2014JA019945.

Highlight on Young Scientists 2:

Research of solar and thunderstorm modulation effects posed on the secondary cosmic ray fluxes

Tigran Karapetyan

Tigran Karapetyan
A. I. Alikhanyan National Science Laboratory (Yerevan Physics Institute), Cosmic Ray Division, Yerevan, Armenia.

My research focuses on investigation of both solar and thunderstorm modulation effects posed on the secondary cosmic ray fluxes. Since 2008, I have been working at Cosmic Ray Division on studies of Ground Level Enhancements (GLE), Forbush decreases, Geomagnetic storms as well as the high-energy processes takes place in the terrestrial atmosphere during thunderstorm activity, using different types of secondary cosmic ray fluxes with energy thresholds starting from a few MeV till muon fluxes with energies higher than 5 GeV measured by the particle detectors of Aragats Space Environmental Centre (ASEC) located at altitudes 3200, 2000 and 1000 m above sea level.

In 2013 I defended my dissertation titled "Research of solar and thunderstorm modulation effects posed on the secondary cosmic ray fluxes". I have investigated Forbush decreases, Geomagnetic affects as well as Thunderstorm Ground Enhancements (TGEs) using data registered by the particle detectors of ASEC during 2008-2012 years. I have

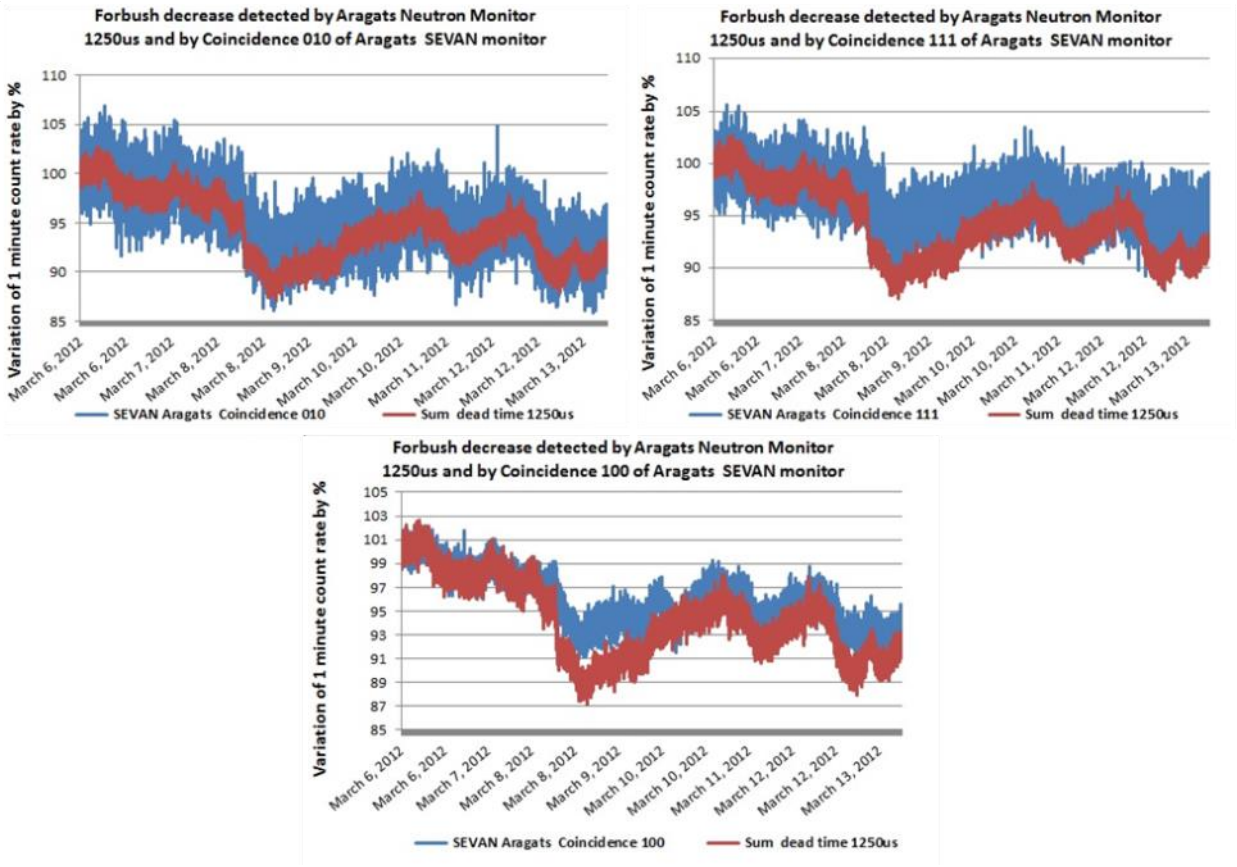

Figure 1. (Top left) Forbush decrease detected in March 2014, by Aragats Neutron Monitor(ArNM) and neutral particles registered by SEVAN Aragats monitor. (Top right) Forbush decrease detected in March 2014, by ArNM and high energy muons E>250 MeV detected by SEVAN Aragats monitor. (Bottom) Forbush decrease detected in March 2014,by ArNM and low energy charged particle (E<100 MeV) of SEVAN Aragats monitor.

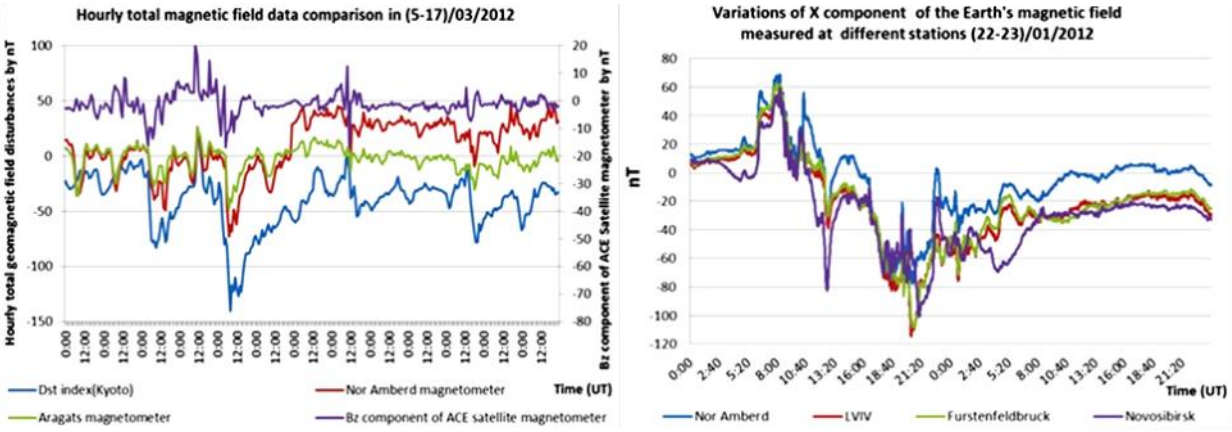

Figure 2. (Right) Comparison of Bx component of the geomagnetic field by Nor Amberd, Lviv, Furstenfeldbruck and Novosibirsk magnetometers. (Left) Total magnetic field comparison measured by the Nor Amberd magnetometer and Aragats magnetometer with Kyoto Dst index and Bz component measured by facilities of ACE satellite (March 5 - March 17 2012).

performed the statistical analysis of more than 300 TGE events registered by the ASEC detectors during 2008-2012; I have analysed the seasonal and daily variations and their dependence on TGE amplitude, as well as TGE duration distributions. We have observed and explained the existence of neutron flux in coincidence of gamma ray burst in Nor Amberd neutron monitor data during thunderstorms. I have calculated the barometric coefficients for ASEC particle detectors and the dependencies of obtained barometric coefficients on the cutoff rigidities, altitudes and solar cycle phase have obtained. In 2009 and 2011 I have installed 2 magnetometers on the slope of mountain Aragats (Armenia) at 2000m and 3200m above sea level and for the first time monitoring of geomagnetic field started in Armenia, with main goals to investigate both solar terrestrial connections and the disturbances of the geomagnetic field during thunderstorm activity. In Figure 1 are shown the Forbush decreases in the particle fluxes with different energy thresholds. In Figure 2 the comparison of data Aragats and Nor Amberd magnetometers with geomagnetic Dst index and with world data during different geomagnetic storms are depicted.

Project SEE/ISEST/ROSMIC

Highlight on Young Scientists 3:

Space Weather Studies in Middle latitudes

Famil Mustafa
Shamakhy Astrophysical Observatory named after N.Tusi,
Azerbaijan National Academy of Science, Baku, Azerbaijan Republic


Famil Mustafa

My research focuses on the space weather effects on the biological, ecological systems and as well as on ionosphere. Since 2006, I have worked in Shamakhy Astrophysical Observatory named after N.Tusi in a group space weather study, which this small group was very good collaboration with other space weather studies groups around the world. In 2006, I got a grant (INTAS – Young Scientist Fellowship Collaborative Call with Azerbaijan) from INTAS, and I worked for 2 months in Bulgaria and 2 months in Turkey with this grant. It was a great opportunity for new collaboration. In 2008, I got an AWESOME VLF receiver from Stanford University. Ground based observations of Extremely Low Frequency (ELF) / Very Low Frequency (VLF) (300 Hz-30 kHz) waves are considered as an important remote sensing tool for the investigation of the ionosphere and the magnetosphere. VLF receiver enables handling of data that is used by researchers conducting ionospheric and space weather

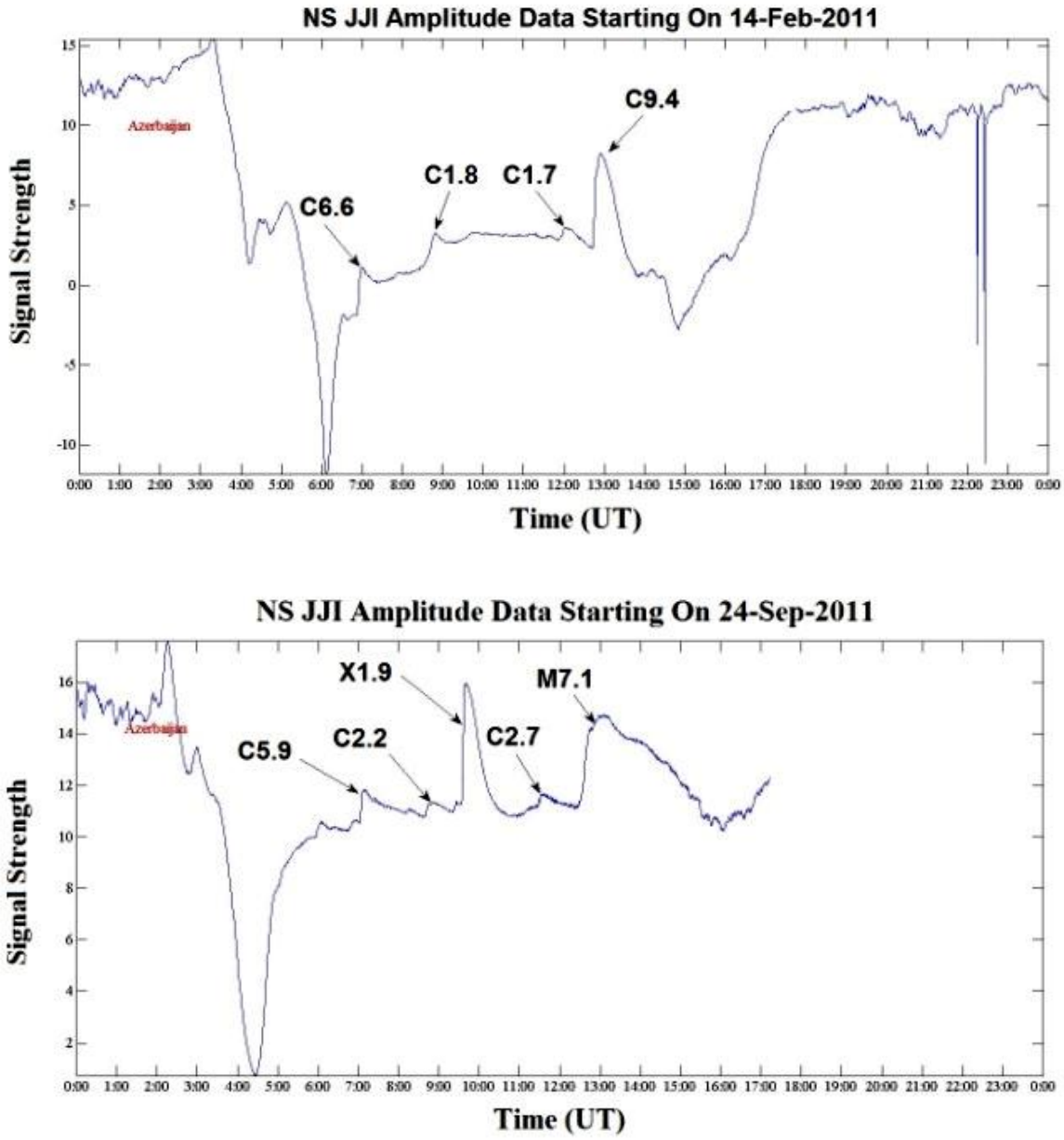

Figure 1. This graphics represents 24 hours on February 14, 2011 and September 24 2011 plotting the received signal strength vs. time. The arrows show solar flare's effect on ionosphere.

research. Figures 1 shows an example of solar x-ray flares effects on ionospheric D region (Azerbaijan data). An important goal of this research is to improve our understanding about space weather and its effects on terrestrial life.

Project ROSMIC

Meeting Report 1:

HEPPA/SOLARIS 2014

Gabriele Stiller
Karlsruhe Institute of Technology
Karlsruhe, Germany

Gabriele Stiller

Figure 1. Participants at the HEPPA-SOLARIS-2014 workshop held on 5-9 May, 2014 in Baden-Baden, Germany.

The 5th HEPPA/SOLARIS-2014 workshop (http://www.imk-asf.kit.edu/english/HEPPA_SOLARIS_2014.php), held in Baden-Baden, Germany, on 5-9 May 2014 was the 5th meeting in a series focussing on the mechanisms by which energetic particles and solar irradiance affect the atmosphere and climate. Since 2012, the workshop has been organized in conjunction with the SPARC/SOLARIS-HEPPA community. The topics covered were: i) variability of energetic particle precipitation and solar irradiance; ii) uncertainties in their measurements; iii) observed and modelled impacts of solar forcing on the atmosphere (thermosphere to surface) and climate; and iv) predictions for future scenarios under a weakening sun.

One of the scientific highlights was the finding that the impact of energetic particle precipitation on regional North Atlantic climate can be similar in magnitude as solar irradiance forcing, which means that energetic particle precipitation needs to be included in climate modelling. HEPPA/SOLARIS-2014 was attended by 72 participants from 13 countries. All contributed papers were presented as posters, while 12 overview talks provided introductions to the topics. The next HEPPA/SOLARIS workshop will be held in about two years in Helsinki, Finland.

Project SEE/VarSITI

Meeting Report 2:

SEE kick-off meeting and BBC meeting

Boian Kirov
Space Research and Technologies Institute, Bulgarian Academy of Sciences, Sofia, Bulgaria

Boian Kirov

Two SCOSTEP/VarSITI funded meetings were held from 26 to 30 May 2014 in Sunny Beach, Bulgaria: the VarSITI SEE project kick-off meeting, and the meeting of the Balkan, Black Sea and Caspian Sea ("BBC") regional Network for Space Weather Studies. Both took place during the regular Sixth Workshop on Solar Influences on the Magnetosphere, Ionosphere and Atmosphere (http://ws-sozopol.stil.bas.bg/) which was beneficial for both the two VarSITI meetings and for the regular workshop. 40 participants from 14 countries were present, and more than 50 presentations were made. Almost all presentations are freely available at http://ws-sozopol.stil.bas.bg. The SEE working groups and their leaders were defined, and the project's working plan was discussed. The BBC Regional network decided to join VarSITI, and various joint activities were proposed. Olga Malandraki from Greece was elected as the BBC coordinator, and Venera Dobrica from Romania was elected as the new deputy editor-in-chief of the BBC journal Sun and Geosphere (www.sungeosphere.org) where the proceedings of the meetings will be published after peer review.

Figure 1. Group photograph of participants at SEE kick-off meeting and BBC meeting.

Meeting Report 3:

VarSITI Session at AGS

Babatunde Rabiu
Centre for Atmospheric Research, National Space Research and Development, Anyigba, Nigeria

Babatunde Rabiu

The 1st Annual Conference of African Geophysical Society was held in Abuja, Nigeria between 2nd and 6th June 2014. Eighty two (82) of the 121 invited participants attended the conference from 11 African Countries, UK, Japan, and India. Thirty seven oral presentations and 24 posters were presented in the entire conference. Ten orals and five posters were presented in the VarSITI session on 4th June 2014. Some of the papers in VarSITI session discussed topics such as variability of equatorial ionosphere, cosmic noise absorption, variability of TEC, ionospheric modulation by solar fare, effect of solar wind turbulence on geomagnetic activity. The opening plenary paper titled "Planetary ionospheres and its effects on radio-propagation", was delivered on 3rd June 2014 by Professor Sandro. M. Radicella of the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy. The Conference was hosted by the Centre for Atmospheric Research of the Nigerian Space Research and Development Agency, and benefited from support of the Japan Society for the Promotion of Science, Solar-Terrestrial Environment Laboratory, Nagoya University, Japan, Scientific Committee on Solar Terrestrial Physics SCOSTEP; and SCOSTEP Variability of the Sun and Its Terrestrial Impact VarSITI program. Award of fellowship of AGS were presented to the following six distinguished scientists in recognition of their great contributions to the development of earth and Space Science in Africa: Prof. Cyril A. Onwumechili (Nigeria), Prof. Sandro M. Radicella (Argentina/Italy), Prof. Kiyohumi Yumoto (Japan), Prof. Ousseini Fambitakoye (France, Post Humus), Prof. Patricia H. Doherty (USA), and Dr. Endawoke Yizengaw (Ethiopia/USA).

Figure 1. Group photograph of a section of the participants at AGS.

Meeting Report 4:

VarSITI Session at JpGU

Kazuo Shiokawa
Solar-Terrestrial Environment Laboratory, Nagoya University, Nagoya, Japan

Kazuo Shiokawa

The VarSITI session was held at the Japan Geoscience Union (JpGU) in Yokohama, Japan on April 28-29, 2014. Forty-four oral presentations were made in this session, forming one of the longest sessions in the JpGU 2014 Meeting. This session gave a forum to discuss on-going and planned scientific projects related to VarSITI, in order to make coordination of various projects between the sun and the earth. The presentations covered the field of ground and satellite observations, theory, modeling, and applications for space weather forecast, as well as capacity building. The project names discussed in this session were, for example, Hinode, Solar-C/D, DESTINY, ERG, Geotail, Akebono, ISS/IMAP, Sounding Rockets, MU/EAR, MAGDAS, CHAIN, NICT Space Weather, SuperDARN, EISCAT_3D, OMTI, GAIA, WDS, and IUGONET.

Figure 1. The VarSITI Session at JpGU.

Project ROSMIC

Meeting Report 5:

Kick-off meeting of the German ROMIC project

Franz–Josef Lübken
Leibniz Institute of Atmospheric Physics, Kühlungsborn, Germany

Franz-Josef Lübken

Figure 1. Group photograph of participants at the kick-off meeting of the German ROMIC project (Photo by Luiza Budner, Bergische Universitat Wuppertal).

On July 3/4 2014 a kickoff-meeting of the German ROMIC project took place at the Bergische Universität in Wuppertal. ROMIC (Role Of the Middle atmosphere In Climate) is a research initiative funded by the German Federal Ministry of Education and Research. It involves approximately 15 research institutes in Germany and strongly encourages international cooperations. Several research projects cover a wide range of solar/terrestrial physics focusing on climate issues. Science topics include the variability of solar radiation and its effect on the Earth's atmosphere, trends in the middle atmosphere, coupling by gravity waves and tides, trends in atmospheric circulation patterns, long term variations in stratospheric aerosols and ozone. ROMIC is currently scheduled for 3 years and is closely related to the ROSMIC project of VarSITI.

VarSITI

Meeting Report 6:

An African School on Space Science

Jean Uwamahoro
Mathematics and Physics Department, College of Education, University of Rwanda, Kigali, Rwanda

Jean Uwamahoro

Figure 1. Group photograph of participants at African School on Space Science.

An African School on Space Science took place in Rwanda, Kigali City from 30th June to 11th July 2014. The School was jointly organized by the Abdus Salam International Centre for Theoretical Physics (ICTP, Italy), the Institute of Scientific Research of Boston College (B.C, USA) and the University of Rwanda (UR) College of Science and Technology (CST). The school obtained financial support from various space science programs including the VarSITI / SCOSTEP program.

The school gathered 63 participants including Lecturers and students from all over the world, with the majority of students coming from the East-African Region. The School covered topics related to the physical phenomena of the solar-magnetosphere - ionospheric coupling and their impact on the near-Earth space environment. The school created an opportunity for senior and young space scientists to interact and share knowledge in space science. On the other hand, the school strengthened the vision and understanding of the importance of research in space science and its applications for the development of mankind (i.e. GPS use for research, practical applications and scientific exploration). The closing ceremonies of the African School on Space Science were honored by the Minister of Education in Rwanda.

Upcoming meetings related to VarSITI

Conference	Date	Location	Contact Information
8th IAGA/ICMA/SCOSTEP Workshop on Long-Term Changes and Trends in the Atmosphere	Jul. 28-31, 2014	Cambridge, UK	www.antarctica.ac.uk/trends2014
Asia Osceania Geosciences Society (AOGS) 11th Annual Meeting	Jul. 28- Aug. 1, 2014	Sapporo, Japan	http://www.asiaoceania.org/aogs2014/
40th COSPAR Scientific Assembly	Aug. 2-10, 2014	Moscow, Russia	https://www.cospar-assembly.org/
5th IAGA/ICMA/SCOSTEP Workshop on Vertical Coupling in the Atmosphere-Ionosphere System	Aug. 11-15, 2014	Antalya, Turkey	http://5thiagaworkshop.akdeniz.edu.tr/en
31st URSI General Assembly and Scientific Symposium	Aug. 16-23, 2014	Beijing, China	http://www.chinaursigass.com/
12th Asia-Pacific Regional IAU Meeting (APRIM 2014)	Aug. 19-22, 2014	Daejeon, Korea	http://www.aprim2014.org/
AGU Chapman Conference on Low-Frequency Waves in Space Plasmas	Aug. 31- Sep. 5, 2014	Juju Island, Korea	http://chapman.agu.org/spaceplasmas/waves-spaceplasmas/
14th European Solar Physics Meeting	Sep. 8-12, 2014	Trinity College, Dublin, Ireland	http://www.espm14.ie/
International Conference on "Geospace Revisited"	Sep. 15-20, 2014	Rhodes, Greece	http://geospacerev.space.noa.gr/
2nd ANGWIN Workshop	Sep. 22-24, 2014	Logan, UT, USA	
SCOSTEP's 13th Quadrennial Solar-Terrestrial Physics Symposium (STP 13)	Oct. 12-17, 2014	Xi'an, Shanxi, China	http://stp13.csp.escience.cn/dct/page/1
New Challenges in the Study of the Impact of Solar Variability and on Climate	Oct. 13-17, 2014	Trieste, Italy	
12th International Conference on Substorms (ICS-12)	Nov. 10-14, 2014	Ise-Shima, Japan	http://www.stelab.nagoya-u.ac.jp/ICS-12/
International School on Space Weather, GNSS, GIS Internet and Data base	Nov. 10-21, 2014	University of Koudougou, Burkina Faso	

Short News 1:

Interest of the BBC SWS Regional Network to join VarSITI

Olga Malandraki
IAASARS, National Observatory
of Athens, Athens, Greece

Olga Malandraki

The Balkan, Black Sea and Caspian Sea Regional Network on Space Weather Studies (BBC SWS Regional Network) has been very active in the framework of the IHY and ISWI. It publishes its own international peer-reviewed journal 'SUN and GEOSPHERE' (http://www.sungeosphere.org/). We comprise Armenia, Azerbaijan, Bosnia/Herzegovina, Bulgaria, Croatia, Georgia, Greece, Romania, Russia, Serbia, Turkey, and Ukraine (http://www.bbc-spaceweather.org/). We are interested in joining VarSITI and considering various ways to contribute e.g. studies of the ionosphere, magnetosphere and solar-terrestrial coupling, online data on the variation of neutral and charged secondary fluxes, studies of the CME propagation, contributions of flare and maximum CME indices and Solar Energetic Particles to the MiniMax24 database and analysis for campaign events.

The purpose of the VarSITI newsletter is to promote communication among scientists related to the four VarSITI Projects (SEE, ISEST/MiniMax24, SPeCIMEN, and ROSMIC).

The editors would like to ask you to submit the following articles to the VarSITI newsletter.

Our newsletter has five categories of the articles:

1. Articles— Each article has a maximum of 500 words length and four figures/photos (at least two figures/photos). With the writer's approval, the small face photo will be also added.

   On campaign, ground observations, satellite observations, modeling, etc.

2. Meeting reports—Each meeting report has a maximum of 150 words length and one photo from the meeting.

   On workshop/conference/ symposium report related to VarSITI

   With the writer's approval, the small face photo will be also added.

3. Highlights on young scientists— Each highlight has a maximum of 200 words length and two figures. With the writer's approval, the small face photo will be also added.

   On the young scientist's own work related to VarSITI

4. Short news— Each short news has a maximum of 100 words length with one photo and a caption.

   Announcements of campaign, workshop, etc.

5. Meeting schedule

Category 3 (Highlights on young scientists) helps both young scientists and VarSITI members to know each other. Please contact the editors if you know any recommended young scientists who are willing to write an article on this category.

TO SUBMIT AN ARTICLE

Articles/figures/photos can be emailed to the Newsletter Secretary, Ms. Mai Asakura (asakura_at_stelab.nagoya-u.ac.jp). If you have any questions or problem, please do not hesitate to ask us.

SUBSCRIPTION - VarSITI MAILING LIST

The PDF version of the VarSITI Newsletter is distributed through the VarSITI mailing list. The mailing list is created for each of the four Projects with an integrated list for all Projects. If you want to be included in the mailing list to receive future information of VarSITI, please send e-mail to "asakura_at_stelab.nagoya-u.ac.jp" (replace "_at_" by "@") with your full name, country, e-mail address to be included, and the name of the Project you are interested.

Editors:

Kazuo Shiokawa (shiokawa_at_stelab.nagoya-u.ac.jp)
Solar-Terrestrial Environment Laboratory, Nagoya University,
Nagoya, Japan
Tel: +81-52-747-6419, Fax: +81-52-747-6323

Katya Georgieva (kgeorg_at_bas.bg)
Space Research and Technologies Institute, Bulgarian Academy of Sciences,
Sofia, Bulgaria
Tel: +359-2-979-23-28

Newsletter Secretary:

Mai Asakura (asakura_at_stelab.nagoya-u.ac.jp)
Solar-Terrestrial Environment Laboratory, Nagoya University,
Nagoya, Japan
Tel: +81-52-747-6417, Fax: +81-52-747-6323