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Attachment(s):
(1) "Advances in SW in Africa - 2 items", 1.5 MB pdf, 4 pages.

: Re:
: Advances in Space Weather in Africa
: (2-day mini-conference in Nigeria).
: Two summaries attached.
:

Dear ISWI Participant:

Please find attached some information pertaining to a 2-day
international conference that recently took place in Nigeria.

Increasingly, Space Weather is in the spotlight in Africa.

.....This should be occurring on other continents, too !
Please send in your space weather news. Let others know.

Your most humble space weather servant,
: George Maeda
: The Editor
: ISWI Newsletter

This pdf circulated in
Volume 4, Number 33,
on 30 March 2012.

Cover Sheet

Attached are two items: (1) newspaper article from Nigeria (dated 2 Feb 2012), and (2) commentary by Ayo Oyoze Baje (dated 14 Feb 2012).

Both discuss a two-day international mini-conference that took place in Nigeria earlier this year.

Both were sent to me by Prof. A. B. Rabiu, who is with the *National Space Research and Development Agency* (NASRDA) of Nigeria. Many thanks to him for this information.

Please note the presence of Prof. Christine Amory at this event; she is a very active (tireless) ISWI participant assisting both French-speaking Africa and English-speaking Africa.

The Editor.
ISWI Newsletter.
30 March 2012.

FEATURES

How research into space weather can solve man's problems –Scientists

The significance of space weather condition to human survival was the thrust of a two-day international mini conference last week at the Bells University of Technology, Ota, in Ogun State. Physicists and other space weather experts from various academic institutions in the country joined the renowned French Professor of space weather –Christine Amory-Mazaudier, to appraise the advances in space weather research in Africa. ***MOJEED ALABI,*** *who witnessed the opening session, reports:*

Vice-Chancellor, Bells University of Technology, Ota, Prof. Isaac Adeyemi (middle) and participants at the conference.

Like most people in Africa and other developing countries, Nigerians do not understand the influence of space weather on their daily living. In fact, on a global stage, experts have revealed that attention did not shift to space weather research until 1990s when the world scientists realised the need to discuss space weather activities, no longer as a branch of Physics or Aerononmy, but as a separate field of study.

However, within the last two decades or so, evidences have revealed the impressive progress recorded in the developed nations in the understanding and control of the happenings on the space, and the results are the advancements in technologies, economic activities and military affairs, among several others. Scientists cited the American military onslaught and eventual killing of late Osama Bin Laden, leader of al-Qaeda– a global broad-based militant Islamist terrorist organisation, as a product of the country's huge investment in space science.

Though Nigeria as a country is not lagging behind in her efforts to move along with the global trend in investing in space science, particularly with the successful launch of Nigeria Communication Satellite One and Two, space researchers strongly believe the country has a potential of doing better if her abundant resources were to be taken into consideration. And taking into cognisance the current spate of unrestricted violence being unleashed on Nigeria and her hapless people, space experts say the time can only be now.

Such need for a focused attention on African space informed the recent space research group brain-tasking academic conference jointly put together by the Bells University of Technology (BELLSTECH), Ota, in Ogun State, National Space Research and Development Agency (NASRDA) and the Space Physics Laboratory of the Federal University of Technology (FUTA), Akure, in Ondo State. The two-day research exercise which held at BELLSTECH drew participants from about 15 higher institutions of learning and other related research institutions in the country

The event, which was themed: "Advances in Space Weather Research in Africa," had Prof. Christine Amory-Mazaudier, the French space weather expert as the special guest, who, in her introductory graphic presentation analysed the effects of activities in the terrestrial weather on human life. She thus demanded for a much more focused study on the African space weather not only to improve the continent's agricultural investment but also to further enhance economic growth and development and to stem the rising tide of insecurity across Africa.

> 'STUDYING SPACE WEATHER IS CRUCIAL TO THE SURVIVAL OF OUR NATIONAL ECONOMY BECAUSE THESE RELEASED ENERGIES FROM THE SUN CAN AFFECT THE TECHNOLOGY WE HAVE BECOME SO DEPENDENT UPON IN OUR EVERYDAY LIVES'

In his welcome address, BELLSTECH's Vice-Chancellor, Prof. Isaac Adebayo Adeyemi, explained that the developments around the world have confirmed that the world has truly arrived the age of space and that "Nigeria cannot afford to be left behind."

He further disclosed that his university grabbed the idea of hosting the conference as a step to move higher in its investment in the study of space science "as we currently enjoy successful collaboration with the Nigeria Meteorological Agency (NIMET). This makes BELLSTECH one of the NIMET stations with the capacity to, at least for now, supply data like sunshine, wind and rainfall records which forms part of NIMET data bank."

The relevance of the scientific efforts, the VC explained was geared towards helping the country overcome the vagaries of climate change which he said would have strong negative effects on the country's and indeed the continent's food and nutrient security as an agrarian society that still depends on rain-fed agriculture.

In its practical sense, the Dean of the university's College of Natural and Applied Science, Prof. Isreal Babalola, explained in detail why human beings are bound to experience space weather effect as a result of the energies released from the sun towards the earth. He said this happens when these energies in form of solar storm travels through space and impact the earth magnetosphere.

"Studying space weather is crucial to the survival of our national economy because these released energies from the sun can affect the technology we have become so dependent upon in our everyday lives. These energies from the sun which come in solar storms, solar flares and coronal mass ejections can affect space and ground systems and terrestrial weather. Some of the effects on space systems include malfunction of spacecrafts, changing of space orbit and radiation on human in space while on the ground system the effects include disturbance of Global Positional System (GPS) and other space signals, disruption of long distance radio signals, cause radiation on humans at and near the ground level, induce geomagnetic currents that disrupt electrical transmissions and cause leakages on buried pipelines," the dean explained.

One of the participants threw a poser at his fellow colleagues on the theory of the earth expansion, which rattled the non-science-oriented participants. He said if the theory was true, it may affect the way sun reaches the planet earth which he said if it continues, a time may come when sun may no longer reach the earth and the inhabitant would "just perish." The consensus is that the theory has still not been proven beyond doubt, and according to Prof. Mazaudier, such include the work of researchers without exempting the gathering.

When asked how the research group would ensure the exercise does not end in futility, one of the Deputy Directors of the National Space Research and Development Agency (NASRDA) and an Associate Professor at the Federal University of Technology, Akure, Dr. Babatunde Rabiu, sharply responded that the involvement of NASRDA would guarantee the government endorsing the conference and would work on its findings.

Dr. Rabiu believes Nigeria's commitment to space research is not in doubt and that the country on constant basis reviews the work of her experts, who continue to research into the field and anchor the management of her investment in space. But he urged the Federal Government to pump more fund into space weather researches in order to update the events around it and guarantee the mitigation of their negative impacts on the country.

On his part, the Chairman of the Local Organising Committee and BELLSTECH Head of Department of Physical Sciences, Dr. Sunday Oluyamo, urged the participants and the world at large to continue to probe into space weather because with space, he said, "we can find out and learn more about other planets and see if we could live there in the future."

'Nigeria's academic environment inimical to quality research'

« CONTINUED FROM 20

tive to job seekers. Many take to teaching only as a last resort. People prefer to work in oil firms, in banks, in telecoms and in other industries considered to be lucrative where they would be paid fat salary and enjoyed fringe benefits and not as a teacher. This issue is a great contributor to the falling of standard of education in the country and if the foundation is weak, the structure can never be strong. So, the problem of Nigeria education sector starts from primary to secondary schools and move up the ladder to get to the university level. That is why some teachers are distracted from their original work and looking elsewhere to make complementary income at the expense of students and government. By that, there won't be quality service. To worsen the situation, many parents also encourage their wards in academic frauds.

Nevertheless, I would advise the governments across tiers to improve teachers' conditions of service and welfare and also provide necessary facilities that would make the environment academic friendly.

Ayo Oyoze Baje

TUESDAY, 14 FEBRUARY 2012

Advances in Space Weather research in Africa.

Advances in Space Weather research in Africa.

By Ayo Oyoze Baje

The increasing negative effects of powerful solar storms and flares on Planet Earth, characterized by freaky weather conditions that impact adversely on our rain-fed agriculture, as well as their debilitating influence on modern information and communication technology,(ICT) cannot be underestimated. In fact, they have informed the renewed global interest in the study of Space Weather. How Nigeria and indeed, the entire Africa continent would rise to this challenge, especially their effects on the continent's economic development inspired the recent international mini-conference on advances in space weather research in Africa.

Hosted by Nigeria's first private university of technology, BELLSTECH, Ota, Ogun State, there were representatives from 15 other universities in attendance. It was significant to note that the conference was the second of its kind in Anglophone Africa, after Egypt. And it provided the veritable platform for the combined cerebral cross-pollination of ideas by the globally acclaimed Professor of space physics, Christine Amory –Mazaudier of the Universite Pierre et Marie Cure Paris, France; Professor Jacob Adeniyi, the internationally renowned expert in the field of ionospheric and radio-propagation physics, as well as Dr. Babatunde Rabiu, a Director at the National Space Research and Development Agency(NASRDA). But more importantly, it forms the basis for what our policy makers should be doing now that the worrisome effects of climate change and the thinning of the ozone layer is here with us.

According to Professor Isaac Adeyemi, the Vice Chancellor of the host university, we are in the space age and Nigeria, as one of the developing countries in the world has become increasingly affected by the vagaries of climate change. What with the negative effects on our food and nutrient security. Developing human capacity to acquire the relevant technologies, to monitor and perhaps predict fluctuating weather conditions has therefore, become an imperative. The sudden increased attention to space weather studies is aimed at understanding the ever -expanding universe as well as the changing sun and its effects on the solar system, life and society at large.

In retrospect, prior to the 1990s Space Weather activities, were considered as part of physics, aeronomy or space exploration. As rightly highlighted by the Dean of the Department of Physical Sciences, BELLSTECH, Professor Israel Babalola studying Space weather is therefore, crucial to the survival of our national economy because these energies released by the sun affect the technology we depend upon in our everyday lives such as the internet, cell phone and ATM.

As Professor Amory-Mazaudier explained it takes only eight minutes for rays from the sun to reach the earth. But on their way through the stratosphere and troposphere they come in contact with the earth's magnetic field, creating sunspots and impactful energies. These energies include solar storms, solar flares and coronal mass ejections that impact on the performance of space systems, ground systems as well as terrestrial weather. When spacecrafts malfunction or space orbits change and there is unexpected radiation on humans in space these are the effects of space weather changes. Apart from damaging satellites space weather phenomena can interfere with radio signals from and to these satellites, cause damaging surges in long electrical transmissions lines and expose passengers and crews of aircraft travel to harmful radiation, especially on polar routes. On the ground system these impact negatively on our Global Positioning System(GPS) and other spacecraft signals.

Similarly, they induce geomagnetic currents which also distort electrical transmission and cause leakages on buried pipelines. More profoundly, they affect magnetic survey used for geophysical exploration and contribute to the total amount of energy entering the troposphere and stratosphere for meteorological studies. Over the years, the study of Space Weather has inspired the design and production of relevant instrument by the National Aeronautic Space Agency(NASA),USA Missions including SOHO,ACE,SORCE and CLUSTER. Nigeria has not been left out with the recent launch of NIGSAT-2 to complement the previous NIGSAT-1.

What became apparent after paradigm shift to space weather studies in the 1990s was the need for the commercial and military communities, who were mostly affected by weather changes to have more coordinated researches. Man now needs to know much more about communications satellites that are a vital part of global commerce. Weather satellites provide important information about terrestrial weather. The signals from satellites of the Global

ABOUT ME

Ayo Oyoze Baje

View my complete profile

BLOG ARCHIVE

▼ 2012 (9)
► March (4)
▼ February (5)
Nigeria's shameful poverty level
British Council's findings on The Next Generation
FIIRO's Industrial cassava flour production
Advances in Space Weather research in Africa.
THE WILL TO WIN
► 2011 (18)

Positioning System(GPS) are used in a wide variety of commercial products and processes.

For Nigeria in particular and Africa in general, the recent international conference is useful for space weather experts to discuss, debate and review positions on the effects of sudden weather changes on our health, agriculture, communications and commercial activities. But as pointed out by Professor Adeniyi, Nigeria must be ready for huge investment in space technology because the cost of satellite is astronomical. Mazaudier did also admit that strange events do happen that would need more researches. For instance, when the sun hibernated between 2008 and 2009 no one could offer plausible explanations. With the ozone layer of between 40 to 50 kilometers above the earth being depleted by emissions of harmful hydro-carbon gases,it is important for Nigeria and indeed Africa not to join industrialized western countries that contribute most of these gases.

To make progress in space weather research, Mazaudier has charged Nigeria to lead the development of knowledge network in Africa.Therefore,the laudable initiative of the collaboration between BELLSTECH and the Nigeria Meteorological Agency(NIMET) should be sustained. Its robust e-resources with 48,905 books and journals in space technology,28,229 in space weather research and 42,271 on space weather management would be handy in expanding the frontiers of our knowledge of space science. Therefore, as Professor Adeyemi has advised, developing the required human resources that would drive the process of understanding this new but complex science would prepare Nigeria for sudden weather changes to come.

Posted by Ayo Oyoze Baje at 08.34

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