

\*\* Dear Colleagues,

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\*\* Welcome on board SW-NICONET Newsletter!!!

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\*\* Editorial

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Welcome to the 7th edition of the Space Weather Nigerian Communication Network: SW -NICONET Newsletter.  
A Platform where all issues pertaining to Space weather and ionospheric research in Nigeria and UN-ISWI activities are made known to us. The objective of this initiative is to build a stronger space weather and ionospheric research network in Nigeria. It is also intended to keep us abreast of new developments and research progress in Nigeria. The platform will also continually feature experiences of senior and mid career researchers in the field of Ionospheric and space weather research from Nigeria. This would help young researchers in the field build their research directions. It will also help reduce research repetition but rather help build up on existing works. SW-NICONET is in collaboration with the International Geophysical Research Group /Europe-Africa (IGRGEA).

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\*\* SCIENTIFIC ACTIVITIES IN NIGERIA  
(1ST, 2ND & 3RD QUARTER OF 2019 AT A GLANCE)

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- i. INTERNATIONAL WORKSHOP ON EQUATORIAL SUPERDARN, BOWEN UNIVERSITY,  
IWO, OSUN STATE, NIGERIA

The Centre for Atmospheric Research, National Space Research and Development Agency, Nigeria in collaboration with the Bowen University, Iwo, Osun State, Nigeria and Virginia Tech (VT) SuperDARN Research group, USA jointly organised an International Workshop on equatorial SuperDARN on Thursday 6th June, 2019 at Bowen University, Iwo, Osun State, Nigeria. The program started with registration at 8:30am prompt and ended at about 4:00 pm.

The Super Dual Auroral Radar Network (SuperDARN) is an international consortium of ground-based high frequency (HF) radar observations for lower, middle and upper atmospheric sciences, and space weather. The network consists of more than 30 low-power HF radars that look into Earth's upper atmosphere beginning at mid-latitudes and extending into the Polar Regions. The radars operate continuously and observe the motion of charged particles (plasma) in the ionosphere and

other effects that provide scientists with information on Earth's space environment and space weather in general. The analysis of observations made using SuperDARN has improved our understanding of ionospheric irregularities and space weather hazards including radiation exposure for high-altitude travellers and disruptions to communication networks, navigation systems (GPS), and electrical power grids; among other phenomena.

This workshop exposed participants to the prospects of SuperDARN in low latitudes and in Nigeria in particular. Of particular emphasis during the workshop was the prospect of SuperDARN to the broad scientific community with interest in a wide variety of ionospheric, magnetospheric, space weather, low and middle atmospheric phenomena.

It is worthy of note that prior to the workshop, the VT Group has concluded plan to set up the first ever SuperDARN radar in low latitude region at Bowen University at Iwo (7.63° N, 4.18° E), Nigeria. The principal investigator of this project in Nigeria is Dr. O. S. Bolaji.

In attendance were over 70 participants with foremost researchers in the field of ionospheric research such as Professor Babatunde Rabi, the convener of the workshop and Director of Center for Atmospheric Research, NASRDA; Prof. Wayne Scales, Virginia Tech (VT), USA; Prof. J. O. Adeniyi, Landmark University, Omu-Aran, Nigeria; Dr. Olawale S. Bolaji, University of Lagos, Nigeria; and a host of others.

#### ii. 2019 NATIONAL AIR QUALITY WORKSHOP & 3RD EKUNDAYO E. BALOGUN NATIONAL SYMPOSIUM

The Centre for Atmospheric Research organised 2019 National Air Quality Workshop in conjunction with the Bowen University, Iwo, Nigeria on the 29th August 2019. This 3rd National workshop on Air Quality was merged with the 3rd Annual Professor Ekundayo E. Balogun National Symposium on Atmospheric Research.

Again, this year's edition was organised to: analyze the present air quality scenario in Nigeria; chart and implement a sustainable National Air Quality Observation Network; ensure sustainable research capacity in the field of air quality monitoring and health impact assessment; and develop an effective information flow between empirical results and the general populace. The one-day symposium featured several eye opening paper presentations by a number of topmost scientists in the field of atmospheric research such as Prof Babatunde Rabi, (the Convener and Director/CEO Centre for Atmospheric Research, NASRDA), Prof C. O. Akoshile of University of Ilorin, Dr. Rose A. Alani of University of Lagos, Dr Rabia Said of Bayero University as well as invited paper on the life and contributions of Professor Ekundayo E Balogun to atmospheric research. Over 100 participants were in attendance for the one day workshop and symposium.

A compendium detailing all the featured presentation is available at <https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=3f5badc278&e=56393be7dc>

#### iii. THE INTERNATIONAL COLLOQUIUM ON EQUATORIAL AND LOW LATITUDE IONOSPHERE

The International Colloquium on Equatorial and Low-Latitude Ionosphere (ICELLI) organized by the Centre for Atmospheric Research, NASRDA and Network of Space-Earth Environmentalists "NSEE" took place at the University of Lagos, Akoka, Nigeria on 9-13 September, 2019 with forty (40) participants in attendance. Six (6) lecturers: Prof. Babatunde Rabi, Prof. Victor Chukwuma, Prof. Renato Filjar, Dr. Daniel Okoh, Dr. E. O. Falayi and Dr. A. O. Olawepo took the participants through rigorous sessions of learning.

The opening program commenced at about 10:00 am with an opening remark by the host, the Dean, Faculty of Science, University of Lagos as he declares the meeting opened after which a welcome address was given by the Director, Centre for Atmospheric Research, NASRDA and convener of the colloquium, Professor Babatunde Rabi.

The lectures commenced officially with a tutorial by Prof. Babatunde Rabi who took the participants through the Equatorial Ionosphere which was followed by an invited paper on Ionospheric Physics research and creative confidence by Prof Victor Chukwuma. A host of other lectures were delivered during the colloquium, exposing the participants to the dynamics of equatorial and low latitude ionosphere while some of the participants presented their research and results during the technical sessions. Among the lectures delivered was on 'Self-adaptive GNSS position estimation process improves mitigation of GNSS ionospheric effects' via skype by Prof. Renato Filjar from the University of Rijeka, Croatia.

The closing session featured questions and interaction time with positive feedbacks from the

participants and guest speakers. The Colloquium officially came to a close at about 3:30pm with a visit to the lagoon; a few distance from the venue of the meeting for sight-seeing.

The Colloquium was supported by Centre for Atmospheric Research (CAR) NASRDA; Centre for Satellite Technology Development, CSTD, NASRDA; Centre for Basic Space Science CBSS, NASRDA; Popularisation of Emerging Science and Technology Initiative, University of Lagos and American Geophysical Society AGU.

To download the full lecture notes of the Colloquium, Please visit:  
<https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=7f03f960bd&e=56393be7dc>

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## \*\* CALL FOR MANUSCRIPT SUBMISSION

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The Centre for Atmospheric Research is hereby making an open call to all and sundry to submit full manuscripts of research papers for probable publication in 2019 Monograph of Atmospheric Research.

Areas of interest include, physics of lower atmosphere (Meteorology), ionospheric studies, air quality research, atmospheric chemistry, environmental research and space weather. This edition is also soliciting submission of full manuscripts of all papers presented during the National Air Quality Workshop that took place in Bowen University, 28 - 29 August 2019 and the International Colloquium on Equatorial and Low Latitude Ionosphere which held at University of Lagos, 9-13 September 2019. Participants who were unable to make presentation due to reasons beyond their control but whose papers are relevant to the themes of the workshop are also welcome.

Submitted manuscripts will undergo rigorous peer reviews (double blinded). All accepted manuscripts will be collected in a single volume as a special issue (Monograph) and published in 2019 Monograph of Atmospheric Research

### Deadlines for Manuscripts

Submission opens: Tuesday 01 October, 2019

Submission closes: Monday 06 January, 2020 by 11: 59pm local time.

Peer reviews begins immediately an article is submitted and passed the CONFORMITY CHECK  
Published Monograph will be ready by Monday 02 March 2020

For manuscript submission guidelines, visit:

<https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=c9b7f40a38&e=56393be7dc>

Samples of previous articles and article FORMAT COMPLIANCE, visit:

<https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=ae4e19282c&e=56393be7dc>

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## \*\* SCOSTEP' s 15th QUADRENNIAL SOLAR-TERRESTRIAL PHYSICS SYMPOSIUM (STP-15), ALIBAG, INDIA FEBRUARY 21-25, 2022

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The Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) organizes the Solar-Terrestrial Physics (STP) symposium once every four years. SCOSTEP is engaged in three major activities: long-term scientific programs, capacity building and public outreach. The scientific programs are of interdisciplinary nature involving scientists from around the world. They are designed to advance our understanding of the solar-terrestrial relationship using space- and ground-based observations, cutting-edge models and theory. Under what ways the Sun affects the Earth and its environment over various time scales is the underlying theme of the scientific programs pursued under SCOSTEP. Having addressed the variability component during the recently concluded Variability of the Sun and its Terrestrial Impact (VarSITI) program, the new program of SCOSTEP, Predictability of the variable Solar-Terrestrial Coupling (PRESTO, 2020-2024, <https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=b44c4ae04a&e=56393be7dc>

592906717714.pdf.), address the predictability component of those phenomena that have impact on the Sun-Earth system as a whole in various time scales.

The STP-15 will aim to gather eminent scientists from solar, magnetospheric, ionospheric and atmospheric physics communities to discuss and deliberate on the cutting-edge sciences pertaining to STP. STP-15 will address the predictability as a focus area in each of the traditional topics deliberated upon during the earlier STP meetings, namely, the mass and radiation chains and intra-atmospheric coupling.

Please put the date of STP-15 into your calendar, and prepare to join in with the new SCOSTEP program PRESTO.

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#### \*\* AGU' S JOURNAL OF SPACE WEATHER TO BECOME OPEN ACCESS

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The American Geophysical Union (AGU) has announced AGU' s Journal Space Weather to Become Open Access as she celebrates her Centennial year. AGU strives to promote and support the Earth and space sciences, and this includes increasing access to journal content. Starting 17 October, the AGU journal Space Weather: The International Journal of Research and Applications (SWE), devoted to the understanding and forecasting of space weather, will transition to an open access model with all articles accepted after that date accessible free of charge to readers. Space Weather will become a fully open access journal by January of 2020 when all articles will be freely accessible to read, download and share.

The focus, aims, and scope of the journal will remain unchanged and the editorial team will continue to apply the same rigorous standards of peer review and acceptance criteria.

AGU is a proud supporter of open science, which seeks to make scientific research and its dissemination more accessible to all. Articles in open access publications are more widely read and used. With this shift, Space Weather will join AGU' s five fully open-access journals: AGU Advances, Earth' s Future, Earth and Space Science, GeoHealth, and Journal of Advances in Modeling Earth Systems. In addition to increasing the number of open access journals to six, AGU has increased access to journal content including opening all papers within two years after publication for our subscription journals, offering open access options for all of our journals, allowing authors to deposit accepted manuscripts into preprint servers including our own ESSOAr, and permitting authors to post the "version of record" into their institutional repository after six months. AGU currently has 100,000 freely available articles and our content is continuously expanding.

For more information on AGU Journal of Space weather, Please visit,  
<https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=385c86e7f7&e=56393be7dc>

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#### \*\* SCOSTEP NEW LEADERSHIP ANNOUNCEMENT

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The elections for the new SCOSTEP executives took place during the IUGG assembly in Montreal, Canada on July 13, 2019. The new leadership is as follows:

Professor Kazuo Shiokawa, Nagoya University, Japan – President.  
Professor Daniel Marsh, National Center for Atmospheric Research (USA) & the University of Leeds (UK) – Vice President.  
Professor Nat Gopalswamy, NASA/GSFC – Past-President.  
Professor Patricia Doherty, Boston College, USA – Scientific Secretary

The Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) is an interdisciplinary body of the International Council for Science (ICSU). It promotes ICSU' s mission to strengthen international science for the benefit of society. SCOSTEP runs international interdisciplinary scientific programs and promotes solar-terrestrial physics research by providing the necessary scientific framework for international collaboration and dissemination of the derived scientific knowledge in collaboration with other ICSU bodies. SCOSTEP is a permanent observer at the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) and it is tasked to organize long-term scientific programs in solar terrestrial physics.

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**\*\* SCOSTEP PRESTO**

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The Scientific Committee on Solar–Terrestrial Physics (SCOSTEP) has announced its The Next Scientific Program PRESTO. The SCOSTEP program between 2020–2024 is Variability and Predictability of the Solar–Terrestrial Coupling (PRESTO). PRESTO was defined based on a community effort with numerous white papers submitted to the Committee for Definition of the Next Scientific Program (NSP) and two organized by the International Space Science Institute (ISSI) in Beijing in 2018 and in Bern in February 2019. PRESTO’s goals are to “address the predictability of (1) space weather on timescales from seconds to days and months, including processes at the Sun, in the heliosphere and in the Earth’s magnetosphere, ionosphere and atmosphere, and (2) sub-seasonal to decadal and centennial variability of the Sun–Earth system, with a special focus on climate impacts and a link to the World Climate Research Program (WCRP) Grand Challenge Near–Term Climate Predictions as well as the IPCC.” It is to be noted that PRESTO is formed to replace the just concluded SCOSTEP VarSITI program which officially ended in 2018.

The mission of PRESTO is to identify “predictability” of the variable solar–terrestrial coupling and its performance metrics through modeling, measurements, and data analysis, and to strengthen the communication between scientists and users. The new program PRESTO is billed to start fully in 2020 under SCOSTEP.

Details of PRESTO is available at <https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=810f2c6084&e=56393be7dc>.

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**\*\* POST DOCTORAL POSITIONS**

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**THE COOPERATIVE PROGRAMS FOR THE ADVANCEMENT OF EARTH SYSTEM SCIENCE (CPAESS) POSTDOCFELLOWSHIP IN HELIOPHYSICS**

The University Corporation for Atmospheric Research (UCAR) is pleased to announce the 2020 call for applications for the Jack Eddy Postdoctoral Fellowship Program sponsored by NASA’s Living with a Star (LWS) program. These fellowships are designed to train the next generation of researchers in the emerging field of heliophysics.

Heliophysics embraces all aspects of the Sun–Solar System, and includes many of the basic physical processes found in the laboratory, the solar system, and throughout the universe. These processes generally involve the interactions of ionized gases (plasmas) with gravitational and electro–magnetic fields, and with neutral matter. The physical domain of heliophysics ranges from deep inside the Sun to the Earth’s upper atmosphere.

Jack Eddy Fellowships provide a unique opportunity to go where few have gone before! Fellows are UCAR employees and receive a fixed annual salary, UCAR’s extensive benefits package, and allowances for relocation, travel and publications.

To apply for the fellowship and for more information and please visit: <https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=8a047ab919&e=56393be7dc>

Application Deadline: January 17, 2020

Appointments: Successful candidate will be announced by April 1, 2020.

For more information, please visit <https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=95a6483645&e=56393be7dc>

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**\*\* SPECIAL FEATURE OF THIS ISSUE– Dr. ANDREW AKALA**

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This issue features one of our very own, a seasoned mid career Scientist, teacher, administrator researcher and mentor.

Meet Dr Andrew Akala.....

Dr. Andrew Akala is the recipient of 2019 Africa Award for Research Excellence in Space Science. He is scheduled to receive the Award on the 11th of December, 2019 during the American Geophysical Union (AGU) Fall Meeting in San Francisco, California.

The AGU' s Africa Award for Research Excellence in Space Science was initiated by a great couple and international Space Science experts, Santimay Basu (late) and Sunanda Basu. The duo have unparalleled passion for expansion of frontiers of Space Science knowledge in developing nations. The main objective of this Award is to recognize outstanding contributions in Space Science research and community services by an early career scientist from the African continent.

Dr. Akala holds a Bachelor of Technology degree in Physics Electronics from the Federal University of Technology, Akure, M.Sc. and Ph.D. degrees in Ionospheric and Radio Propagation Physics from University of Lagos. At the verge of the completion of his Thesis, Andrew joined the services of the University of Lagos as an Assistant Lecturer, after working at the airport for 8 years. He was upgraded to the position of Lecturer Grade I in 2009 after the completion of his Ph.D. degree. He rose through the rank to the position of a Senior Lecturer in 2015.

Andrew' s current research includes, analysis of Global Navigation Satellite System (GNSS) error sources, with special interest on ionospheric-induced errors (range delays and scintillations, space weather and their implications on man-made technologies, ways of improving the quality of services of radio signals propagating through stochastic medium, Quantum Mechanics and Classical Electrodynamics. He has supervised many Undergraduate and Masters' Theses in Space Physics, and one Ph.D. Thesis. Currently, Andrew is supervising 6 Ph.D. students.

Dr. Akala' s researches have been supported in the past by many national and international organizations, such as his home institution, University of Lagos, Boston College, Boston, USA, Fulbright Scholarship Board, The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, United Nations Office of Outer Space Affairs (UNOOSA), Vienna, Austria, Committee for Space Research (COSPAR), International Space Weather Initiative (ISWI), AGU and Nigerian Airspace Management Agency (NAMA).

He has scores of academic articles in reputable journals and monographs to his credit and he has traveled widely to present his research outputs at conferences/symposia. He is a reviewer for over 15 Class-A scientific journals. He was a Consultant Space Scientist to Nigerian aviation industry in 2011-2013.

In the aspect of teaching, Andrew teaches the listed subjects at both undergraduate and graduate levels at the Department of Physics, University of Lagos: Space & Plasma Physics (Ionospheric and Radio Propagation Physics), Electricity and Electromagnetism, Classical Electrodynamics, Mathematical Methods in Physics, Computational Physics, Quantum Mechanics, High Energy Physics, Introductory Physics for Fresh Students.

Administratively, at the University of Lagos, Andrew is a member of the University Senate. the immediate past Sub Dean of the Faculty of Science and now the Deputy Director, Academics Planning and Development of the Distance Learning Institute of the University. He has also served on various Committees. As a member of the Committee that supported the establishment of Maritime Institute in the University, Andrew introduced GNSS as a subject in the curriculum for Postgraduate Diploma Programme in Maritime Communications, which he has been teaching since inception, and efforts are on top gear to start a Master degree option. Professionally, Andrew is a member of the American Institute of Navigation (ION), American Geophysical Union (AGU), European Geosciences Union (EGU), African Geophysical Society (AGS), Nigerian Union of Radio Science (NURS) and Nigerian Institute of Navigation (NION). He is the pioneer President of the Nigerian Institute of Navigation (NION) and the General Secretary of the African Geophysical Society (AGS).

In the case of external linkages, Andrew had served as external examiner for 2 Ph.D. Theses at the Department of Physics, University of Ilorin (2016, 2017). He is currently providing unofficial external support/guidance for some African graduate students in Space Physics in Uganda; Ethiopia, Lagos State University, University of Nigeria, Nsukka, GFZ, Helmholtz-Zentrum Postdam, Germany, amongst others.

Amongst his notable previous awards are; Fulbright Scholarship, Institute for Scientific

Research, Boston College, USA (2010-2011) and Regular Associate, International Centre for Theoretical Physics, Trieste, Italy (2015-2020). Andrew enjoys reading, singing and photography in his leisure hours. He is happily married to Salomey, and their union is blessed with children.

He is billed to be celebrated at the Union's Annual Honours Ceremony and Banquet during the AGU fall meeting scheduled to hold in December 2019 .

Congratulations!

Dr Andrew Akala

AGU's 2019 Africa Award for Research Excellence in Space Science

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Header Image is an artist illustration of events on the sun changing the conditions in Near-Earth space.

Credits: NASA

(<https://niggs.us20.list-manage.com/track/click?u=6444fef62afb8ddf44ae305c7&id=e943d20bc8&e=56393be7dc>)

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Please feel free to share any information that may be of benefit for all.

For more on the network,

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