

**A WELCOME ADDRESS PRESENTED BY DR. B. I. OKERE, Ag.
DIRECTOR, NASRDA-CENTRE FOR BASIC SPACE SCIENCE, NSUKKA**

**FEDERAL MINISTRY OF SCIENCE AND TECHNOLOGY ON THE
OCCASION OF THE COMMISSIONING OF NASRDA-CBSS
OBSERVATORY COMPLEX (4TH MAY, 2019)**

PROTOCOLS:

The Honorable Minister of Science and Technology, His Excellency Dr
Ogbonnaya Onu

The Executive Governor of Enugu State, His Excellency, Rt Honorable Ifeanyi
Ugwuanyi

Senator Ike Ekweremadu, Deputy Senate President

Senator (Prof) Ajayi Borofice, Senate Committee Chairman on Science and
Technology and the Pioneer DG of NASRDA

Senator Chukwuka Utazi, Senate Committee Chairman on Anti-Corruption

Hon Beni Lar, House of Representative Chairperson on Science and Technology

Members of the House of Representatives

The Director-General/CEO NASRDA, Prof S.O. Mohammed

House of Assembly Members

The Vice Chancellor University of Nigeria, Nsukka

Members of the Academic Community

All Directors of NASRDA

Ndi Igwe

The Management and Staff of CBSS

It is with great joy and pleasure that I welcome you all on behalf of the Management and Staff of CBSS to this epoch-making event of the commissioning of the National Space Research and Development Agency (NASRDA)-Center for Basic Space Science Astronomy Observatory Complex. CBSS is one of the pioneer activity Centers of NASRDA, Federal Ministry of Science and Technology. It was established in 2002 with Prof P.N. Okeke as the pioneer Director. Afterwards in 2004, CBSS was officially inaugurated by the pioneer DG of NASRDA Senator (Prof) Ajayi Borofice with the following thematic research areas; Radio Astronomy, Atmospheric Sciences, Solar Physics, Optical Astronomy and Solar Terrestrial Interaction studies. At the expiration of Prof P. N. Okeke's tenure in 2012, late Prof F.E. Opara was then appointed as the Director of CBSS a post he occupied until his demise in 2017. Subsequently in 2017, Dr B.I. Okere was appointed the Acting Director till date.

Our key mandates include

Following the establishment of CBSS it was saddled with the following responsibilities:

- The development of skills and knowledge of researchers through training and retraining of personnel.
- Enhancement of collaboration with other Centres with similar interests both national and international, in well-defined projects, in such a way that Nigerian Scientists and Engineers must ab-initio be involved in the development process.
- Promotion of the introduction of Astronomy into the curricula at all levels of our educational systems
- Design, fabrication and patenting of space technology instruments and products, as well as appropriate hardware and software in order to support education and research in Basic Space Science.

- Promotion of outreach and awareness programs capable of exciting young minds and disseminating to the general public the tremendous benefits derivable from Space Science and Technology.
- Encouragement of relevant activities in other Centres to provide the much-needed physics required for a thorough understanding of studies and problems in other areas of space science applications.
- To serve the distinct advisory and policy-making – roles to governmental and non-governmental agencies.

In line with these mandates, our vision as a Centre is to play strategic roles in the development of Space Science and Technology as a driving force and engine of economic growth and as a major ingredient for human resources and infrastructural development.

Further to this, our mission is to carry out studies, research, and development in Basic Space Science, nationally (Nigerian Universities and Research Institutes) and internationally (other world Space Agencies and Institutions) for the benefit of Nigeria, Africa and the world in general. Therefore, today's occasion will no doubt remain indelible in the minds of every member of the NASRDA family because the impossible has been made possible by President and Commander-in-Chief, Muhamadu Buhari GCFR, through Hon. Minister of Science and Technology, Dr. Ogbonnaya Onu and our able Director-General/CEO of NASRDA Prof. S.O Mohammed. These are the completion of the first Observatory Complex in Nigeria with the state-of-the-art equipment like the Lunt Solar Telescope, radio telescope, a well-equipped proto typing laboratory with CNC and 3D printing machines, all funded by the Federal Government.

Also, we want to acknowledge the efforts of His Excellence distinguished Senator (Prof) Ike Ekweremadu (Ikeoha) who magnanimously donated the Mechatronics workshop to CBSS which will also be commissioned today by the Honorable Minister. Sir this workshop will further enhance the R&D output of our Center we say thank you.

Our achievements

Research and Publications

In line with our mandate, CBSS science officers have been able to turn out large chunks of research articles numbering over 100. These research articles have appeared in reputable peer reviewed journals with good impact factors such as Elsevier, Springer, NJSR etc. These scientific research publications are clear manifestation of the contribution of our Centre to global scientific body of knowledge.

Research and Development

The Space Centre through her Research & Development (R & D) programs has succeeded in developing a number of scientific instruments for the socio-economic development of Nigeria and mankind at large. Interestingly, these equipment are produced in line with international best practices and they are on display at our exhibition stand. They include:

- The environmental Pollution and Soil Monitoring Station (EPSM) and Wireless Telemetry Console
- GPS Car Tracking Device (Speed Limiter Integrated)
- 3-Axis (D,H,I) Magnetometer with a wireless console
- Infrared Temperature Thermometer
- Automated Irrigation System (AIS)
- High Precision GPS Receiver System
- Multi-Level Temperature Monitoring Device
- Small Experimental Rover for Terrain Characterization (SERT-X)
- Intrusion Detection System with voice recorder

Most importantly, three of these scientific tools are at various stages of being patented by National Office for Technology Acquisition and Promotion (NOTAP).

Capacity Building

Knowledge acquisition through capacity building/education occupies the center stage in all our developmental efforts aimed at restoring the dignity of mankind. The essential element of development in any nation is its level of literacy, which is tied to the quality of opportunities/exposures made available to her students/citizenry. Thus, there is no doubt that education is a key to the technological development of any society. For these, we have encouraged a good number of the members of staff of the Space Centre to pursue post-graduate courses in various fields of endeavor. The resultant effect of this singular action in NASRDA-CBSS is the high number of doctoral degree holders, as well as greater number of those pursuing their PhD programs. With the increasing level in human capital development, our Centre has been collaborating with various universities, research institutes as well as many non-governmental organizations from all over the world in order to bridge the educational gap for the sustainable development of our dear country. It should be noted that at the inception, CBSS had only 1 PhD holder (Prof P.N. Okeke) but presently she can boast of 6 PhD holders, 25 M.Sc holders, 10 PhD in view and 20 M.Sc in view.

International Involvement

Through the effort of the Centre for Basic Space Science, Nigeria was chosen as the host of the West African Regional Office of Astronomy for Development (WAROAD). This office which is located at our Centre represents the International Astronomical Union (IAU)'s Office of Astronomy for Development (OAD). The main objective of setting up this Regional Office of Astronomy for Development is for us to use Astronomy to drive the sustainable development goal of the United Nations Organization. To achieve the set mandates, NASRDA-CBSS has successfully organized several astronomy and basic space science workshops, seminars and summer schools for students, teachers and the public within and outside Nigeria (other West African Countries).

Furthermore, CBSS has for the past 6 years now been organizing summer schools for young astronomers and astronomy enthusiast within the West African Sub region. So far, over over 1000 students have attended this program. It is on note

that all the attendees to our summer school were fully sponsored by CBSS and her partners. The next summer school will be held this year in October at the NASRDA Headquarters Abuja.

Public Private Partnership

Recently, in an effort to drive the human capital development of this great nation and Africa at large, our Centre has gone into Public-Private-Partnership with many corporate bodies and reputable individuals in Nigeria. This is a right decision coming at the right time since research has shown that all over the world, Government alone cannot fund scientific research. Hence, we decided to go into these partnerships so as to drive the human capital development and our research output in Basic Space Science to the next level. One of such partnership is the “Engr. Chukwuka Cosmas Ezema Research Grant”. This research grant is targeted at Post-graduate students of Engineering and Space Science from all over Africa. This grant is wholly funded by a Nigerian citizen, Engr. Chukwuka Cosmas Ezema, while NASRDA-CBSS manages the fund for the benefit of Nigeria and Africa in general.

Our Collaborators

CBSS has entered into collaborations with over 10 Institutions and groups both within and outside Nigeria. These Institutions have in one way or the other contributed to our success story and we are still open for further collaborations.

Short, medium- and long-term goals

As a growing organization, our Centre aims at achieving the following milestone within the shortest possible time;

- Manpower development in space science and astronomy
- Development of facilities for space science and astronomy research
- Roll out more R&D products to address Sustainable Development Goals (SDGs)

- Carryout more research works in space science and astronomy
- Infrastructure Development such as Planetarium
- Research Facility development
- Establishment of an Astro-lab
- Acquisition of a Solarterrella
- Host the 2019 WAISSYA

Our Immediate Needs

For us to fully achieve our mandate and vision we still need a good number of equipment which will further put Nigeria on the front page of Astronomy faring Nations and on the same pedestals with world class Agencies like ESA, NASA, SANSA etc.

Such equipment includes:

- A befitting Planetarium which is synonymous with every Astronomical Observatory in the World.
- Radio Telescopes of different sizes to be mounted at various parts of the country in other for us to conduct baseline interferometry to enhance our view of the deep Cosmos.
- Optical telescopes of larger capacity to enhance our research in the hunt for Potential Hazardous Asteroids (PHAs), which is the main threat to human civilization now.
- Operational vehicles
- Finally CBSS in order to accommodate her upcoming infrastructures such as the Astro lab, planetarium, maintenance workshops is in need of more land space in and around Eburumiri.

Therefore, what makes today's occasion tick is because if we can achieve all these with limited resources how much more when the resources are increased.

In view of these, we are beckoning on well-meaning individuals, groups and organizations to come to our rescue. The assistance can be in form of equipment or cash donations, research/ grant sponsorship, institution of endowment funds etc. we are assuring you that any assistance rendered to us will be highly appreciated and funds properly accounted for to the later.

On a final note, I strongly believe that since Space is limitless, there is no limit to the number of new discoveries we can achieve through Basic Space Science given the right knowledge, tools and environment. With these, I must commend the tireless efforts of our President and Commander-in-Chief, Muhamadu Buhari GCFR, the Hon. Minister of Science and Technology, Dr. Ogbonnaya Onu and the Director-General/CEO of NASRDA Prof. S.O Mohammed, distinguished senators, Prof Ike Ekweremadu, Prof Ajayi Borofice, Barr Chuka Utazi whom we have their listening ears. Thank you for your encouragements and invaluable contributions towards the development Basic Space Science in Nigeria. Like the Shakespearean Oliver Twist we still need some more.

Also, I wish to thank the Executive Governor of Enugu State, Distinguished Members of the Federal House of Representatives, Members of Enugu State House of Assembly, Commissioners, Traditional Rulers, Professors, Members of Owerri Forum, Umukashi Community, NASRDA Directors, Management and Staff of CBSS for your role in making today a reality.

Thank you all! Dalu nu! Unu emela o! De eje nu o!

Dr. B. I. Okere
Ag. Director, NASRDA-CBSS