

UGANDA WARMING UP TO HOST ISWI WORKSHOP IN 2021

(Script by Dr. Florence M. D'ujanga, Assoc. Prof., Physics Dept., Makerere University.)

Uganda announces the workshop on “Equatorial and Low Latitude Ionosphere” to take place in 2021 where aspects of research and techniques on the dynamics of equatorial and low latitude ionosphere as well as space weather will be discussed. The main objective will be to build a stronger space weather and ionospheric research network on the African continent. It is also intended to keep participants abreast of new developments and research progress within the country.

The equatorial region is characterized by high levels of dynamics which result in phenomena such as spread-F, ionospheric anomaly, equatorial electrojet and equatorial plasma fountain. The impact of such phenomena on telecommunications, navigation and other space-based technologies has made the region a point of international collaborative focus in scientific research. Uganda's position on the equator makes the pursuance of space research very relevant as the country is well suited as a launch-pad for satellites into the geostationary orbit.

Uganda was introduced to space weather research during the International Heliophysical Year (IHY)-Africa workshop held in Addis Ababa, Ethiopia in November 2007 and in the subsequent workshops that followed. Research was then started at two universities in the country, viz. Makerere University and Mbarara University of Science and Technology (MUST). At Makerere University, GPS and VHF receivers have been installed on the roof-top of the Physics Department as shown in the picture below, and at MUST a space science laboratory at the Faculty of Science has been constructed and a GPS receiver installed. Space physics courses have also been introduced in both the undergraduate and graduate curricula.



GPS and VHF receivers at Makerere University

The GPS and VHF receivers were obtained out of a partnership between the Ugandan universities and the International Centre for Theoretical Physics (ICTP) in Italy, together with Boston College and the Air Force Research Laboratory (AFRL) in the USA. Since then, a lot of ionospheric research has been going on, corroborating the results with data from the VIPIR ionosonde at Maseno, in Kenya (*shown below*).



VIPIR Ionosonde at Maseno, Kenya.

At the national level, the Ministry of Science, Technology and Innovation (MoSTI) is making efforts to set up a Space Program in order to develop Uganda’s space capability to leverage space science and technology for sustainable development. This was spiced by the visit of Dr. George Maeda from KyuTech and ISWI Newsletter Editor, who gave a talk to the Department of Physics on “Old Space and New Space” in June 2019. He later had a meeting with the Minister of MoSTI together with the Physics members of staff, at the Ministry headquarters (*pictured*).



Dr. George Maeda of KyuTec with the Minister of MoSTI, Hon. Elioda Tumwesigye