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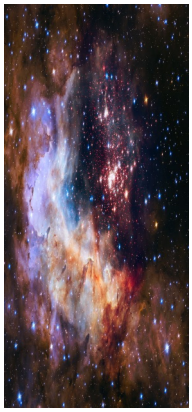

AMSAT SA Space Symposium 2019

16 March 2019
The Premier Hotel Midrand

08:30 **Registration**

09:00 **Welcoming address**

Hans van de Groenendaal ZS6AKV

09:10 **Keynote address :**

Current activities in the ITU with respect to small satellites

Speaker: Linden Petzer, Chief Director: Radio & Satellite Communication DTPS

The genesis of small satellites was in the amateur-satellite service. However today these satellites are being used for a wide variety of missions and applications, including remote sensing, space weather research, astronomy, communications, technology demonstration and education, as well as commercial applications, and therefore may operate under various radiocommunication services. Nevertheless, these satellites are still being registered as "amateur satellites".

The ITU has issued 2 reports pertaining to small satellites.

A simplified regulatory regime for the co-ordination, notification and recording procedures for frequency assignments pertaining to non-GSO Satellites with short duration missions is required.

There is also work underway within the ITU-R Study Groups on the TT&C Spectrum Requirements for non-GSO Satellites with short duration missions.

These latter two issues will be discussed at the forthcoming ITU World Radiocommunication Conference in Egypt in November 2019.

Session 1

Session Chairman: Ray Webber ZS6RSW

09:40 **The SatNOGS opensource ground station and network**
Speaker: Tom van den Bon ZR6TG

The SatNOGS system is completely opensource and allows you to develop and build on it. All Satellite ground station owners also have access to other stations around the world. Using nothing more than antenna, SDR and Raspberry PI you can build your own DIY Satellite Ground Station that can be used to track and decode various telemetry/data from different satellites that pass over South Africa.

10:10 **Artificial Intelligence to identify satellite signals**
Speaker: Anton Janovsky ZR6AIC

10:30 Refreshment Break

Session 2

Chairman: Brian Jacobs ZS6YZ

11:00 **ES'hailSat— Amateur Radio's first geostationary satellite**

Speaker: Hannes Coetzee ZS6BZP

Es'Hail-2, has been placed in a geostationary orbit. It carries an AMSAT linear transponder as a secondary payload, been named Qatar Oscar 100 (QO100), giving amateurs for the first time access to a geostationary satellite. The presentation will provide the background and how to set up a ground station without breaking the bank. ***Make a live contact from the conference***

12:00 **Build an educational CubeSat that can be used for experimentation and teaching in the classroom.**

Speaker Tom van den Bon ZR6TG

CubeSats are becoming very popular as a great space research tool. Unfortunately, education on CubeSats (especially in South Africa) only starts at a university level. We need a tool to promote and teach about CubeSats and create a new generation of space researchers (and enthusiasts of all ages) excited about launching their own CubeSats.

12:30 The third generation AMSAT SA space frame

Speaker: Frik Wolf ZS6FZ

AMSAT progressed from a first generation space frame development which was designed and home constructed by Deon Coetzee ZR1DX. This space frame fuelled the imagination of engineering student at Stellenbosch University, Francois Oberholzer who graduated with a master's degree developing the space frame as a modular unit. The theses two developments were the basis of the third generation developed by Frik Wolf and being prototyped at the Vaal University of Technology. This generation includes solar panels and antenna deployment.

13:15 Lunch

SESSION 3 Made in South Africa

Chairman: Nico van Rensburg ZS6QL

14:00 ZACube-2

Speaker: Leon Steenkamp, F'Sati

14:20 A SDR transponder for AfriCUBE

Speaker: Anton Janovsky ZR6AIC

14:40 Operate Satellite with the AMSAT SA Dual band Yagi

Speaker: Hans van de Groenendaal ZS6AKV

15:00 Refreshment break

15:15 Developing a reverse beacon network

Speaker: Brian Jacobs ZS6YZ

The Reverse Beacon Network has evolved to become a powerful tool with many Amateur Radio applications, mostly on the HF bands. The RBN concept also provides unique opportunities for real time propagation awareness on VHF and UHF. During his presentation he will demonstrate the concept with some practical examples

15:35 The versatility of WSPR in Amateur Radio and application for Balloon flights

Speaker: Leon Lessing ZS6LMG

With payloads on Balloon Carrying Amateur Radio (BACAR) projects becoming more sophisticated, and costly retrieval of the payload is becoming more important.

16:05 Review KLETSKOUS

Moderated by Hannes Coetzee ZS6BZP and the Kletskous team

16:35 Open forum

16.50 Attendance draw

Attendance prizes

SAM's Radio Shack

- Mirage KP2-440 Masthead Pre–amp valued at R3650
- Diamond VX-50 2m/70cm Dual Band vertical antenna valued at R1300
- Quansheng 70cm UHF Portable valued at R1300

Seeed Studio LoRa LoRaWAN Gateway-868MHz Kit with Raspberry Pi 3 868MHz for RHF0M301 for Raspberry Pi 3 valued over R6000