SARL National Technical Symposium

Saturday 11 April 2026

08:00 – 14:00 UTC (10:00- 16:00 SAST)

Amateur Radio a techno experience with no limits

Presented on the AMSAT SA WEBEX video platform. [Click here for free registration]




Nico van Rensburg Dr Nathaniel Frissell Derek Gravett Stewart Clark

10:00 Welcoming address by SARL President Nico van Rensburg ZS6QL

10:30 Keynote address

Why science in Amateur Radio is important to drive the future

Speaker: Dr Nathaniel Frissell W2NAF

Dr Nathaniel Frissell, Ph.D., is an Associate Professor of Physics and Engineering at The University of Scranton. Dr. Frissell's research interests include space weather and radio science, with a focus on traveling ionospheric disturbances and High Frequency (HF) radio propagation.

11:00 ***EME on 23cm with a solar cooker.***

Speaker: Derek Gravett ZS5Y

EME, call it EARTH Moon-Earth or moon bounce communication, it has a long history in Amateur Radio but for many decades required large expensive antenna arrays. I this presentation Derek introduces a simple easy way using a modified solar cooker as the antenna,

11:45 Telemetry via Repurposed WSPR for Amateur Radio Pico balloons as they travel around the World

Speaker: Stewart Clark ZS1WT

Stewart is a retired software engineer whose interest in electronics and radio began at around the age of ten. He entered university intending to pursue physics and mathematics, but was ultimately drawn into computer science, where he developed a deep and enduring fascination with logic and low-level hardware programming.

His paper describes why WSPR, developed by Joe Taylor, is used as a telemetry system for amateur radio Pico balloons carried globally by jet streams. Typical Pico balloon payload hard-ware is described along with the most common telemetry data and how it is encoded into valid WSPR packets. In conclusion, the science that can be extracted from this telemetry that is transmitted every 10 minutes.

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12:30 Make Meteor Scatter Communication your next Amateur Radio Project with Derek Gravett ZS5Y

Speaker: Derek Gravett ZS5Y

Derek Gravett ZS5Y will be introducing you to MSK144, one of the most effective digital modes designed specifically for this purpose. MSK144 is part of the WSJT-X suite developed by Nobel laureate Joe Taylor, K1JT. It uses fast, efficient minimum-shift keying to capture those fleeting bursts of reflected signals from meteor trails—bursts that may last only fractions of a second! With this mode, VHF and UHF operators can achieve contacts of 500 to 2,000 kilometres or more, even when the bands seem completely dead.

13:15 REFRESHMENT BREAK

Owen J. Ruzanski Brian Jacobs

13:45 Development of a contesting and DXing dashboard for the HamSCI personal space weather station.

Speaker: Owen J. Ruzanski KD3ALD, Computer Engineering Student, The University of Scranton, USA

Aspiring Network Engineer / RF Engineer with hands-on experience in IT administration, networking, and RF experimentation. Passionate about embedded systems, computer engineering, and applied problem-solving.

The HamSCI Personal Space Weather Station is a multi-instrument system designed to measure space weather for both scientific research and amateur radio operations. The core of the PSWS is the RX-888/ KA9Q-radio WSPR Daemon-Grape HF SDR. While most PSWS development efforts thus far have focused on strictly scientific objectives, this project aims to make the data available and useful in real time for radio amateurs. The dashboard has a goal of enhancing real-time HF propagation assessments for Radio Amateurs.

14:45 Technology in providing effective HAMNET emergency communication

Speaker: Brian Jacobs ZS6YZ Hamnet National Director

It is all about using the best technology available and having a plan B for when technology fails. As "Communication Specialists" we provide what works best and have a whole bag of tricks that we can fall back on when needed. Gone are the days of the Bakkie and Baofeng brigade.

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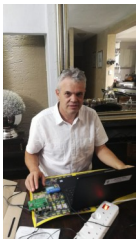

Anton Janovsky

15:15 The SARL Noise monitoring Project
Speaker: Anton Janovsky ZR6AIC

The SARL HF noise monitoring system takes a 12 x 1MHz bandwidth sample every 2 minutes using the RTL power utility and saves the measurements in a CVS file.

The 2-minute scheduling is done with a Crontab calling a script in the HF-noise directory. The RF samples are taken at a 1MHz bandwidth from 1MHz to 30MHz, therefore 29 of CVS files are created and get appended as the measurements are made.

15:45 The final word