

IAF SPACE EXPLORATION SYMPOSIUM (A3)
Solar System Exploration including Ocean Worlds (5)

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DECAMETRIC AND METRIC SPECTRAL SOLAR RADIO OBSERVATIONS USING THE
LOW-FREQUENCY RADIO TELESCOPE IN SAASST

Abstract

The 25th solar cycle became more active in late 2021, the number of sunspots increased, and the associated radio emission within a vast frequency range also increased. The solar radio spectrometer at the Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST) recorded this rising activity as direct radio bursts in metric and decametric wavelengths in the form of Type II and Type III solar storms. The indirect effect came as a change in the ionospheric ion density and, in some extreme cases, a radio blackout. This study covers one year of observations from January to December 2022, accomplished through two radio spectrometers covering the 15-45 MHz range. SAASST's radio spectrometers consist of a four elements antenna array for the decametric waves and an inverted-V antenna for the lower metric wavelengths. The system collects data daily from 02:00 to 14:00 UTC. The majority of the detected radio events are confirmed from the National Oceanic and Atmospheric Administration's (NOAA) data, while the others are only local events, which could be represented as complimentary essential data for space weather studies.