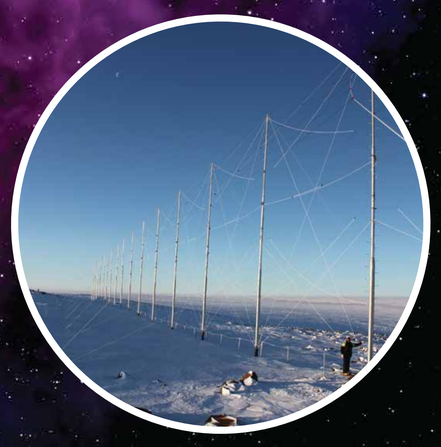
# SANSA
## ANTARCTIC SCIENCE



SANSA operates space monitoring instruments located at the South African base SANAE IV in Antarctica. Through the support of the Department of Environmental Affairs and the National Research Foundation, SANSA sends two teams to Antarctica every year who maintain the instruments and ensure that the data is distributed to various global networks.

### SuperDARN HF Radar
**Function:** measure the location and speed of plasma in the Earth's ionosphere
**Use**: space weather and space physics research

### RIOmeters
**Function**: measure the intensity of radio signals from cosmic sources.
**Use**: determine the radio opacity of the ionosphere due to absorption linked to space weather.

### Magnetometers
**Function**: measure the strength, direction as well as long and short term variability of the Earth's magnetic field
**Use**: geomagnetic research and solar storm impact

### Ozone Radiometer
**Function**: measure the total mesospheric ozone content at microwave frequencies.
**Use**: determine the total mesospheric ozone variation to study the impact of space weather on the Earth's atmosphere.

### VLF Monitors
**Function**: Measure intensity and phase of very low frequency (VLF; 1-30 kHz) signals generated by lightning strikes.
**Use**: Lightning detection and characterisation, space weather monitoring, ionospheric and magnetospheric research.

### Aurora Australis (Southern Lights)
Aurora are regularly observed from the Antarctic base. These natural light displays are created when charged particles from the Sun interact with oxygen and nitrogen in the Earth's atmosphere.

### Ionospheric Scintillation Monitors
**Function**: measure the fluctuations in GPS signal intensity and phase due to rapid ionospheric electron density variations as well as measuring the GPS signal delay at two L-band frequencies.
**Use**: GPS accuracy warning systems and ionospheric characterization studies

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