

# Inner-Magnetospheric Array for Geospace Science: iMAGS

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# Outline

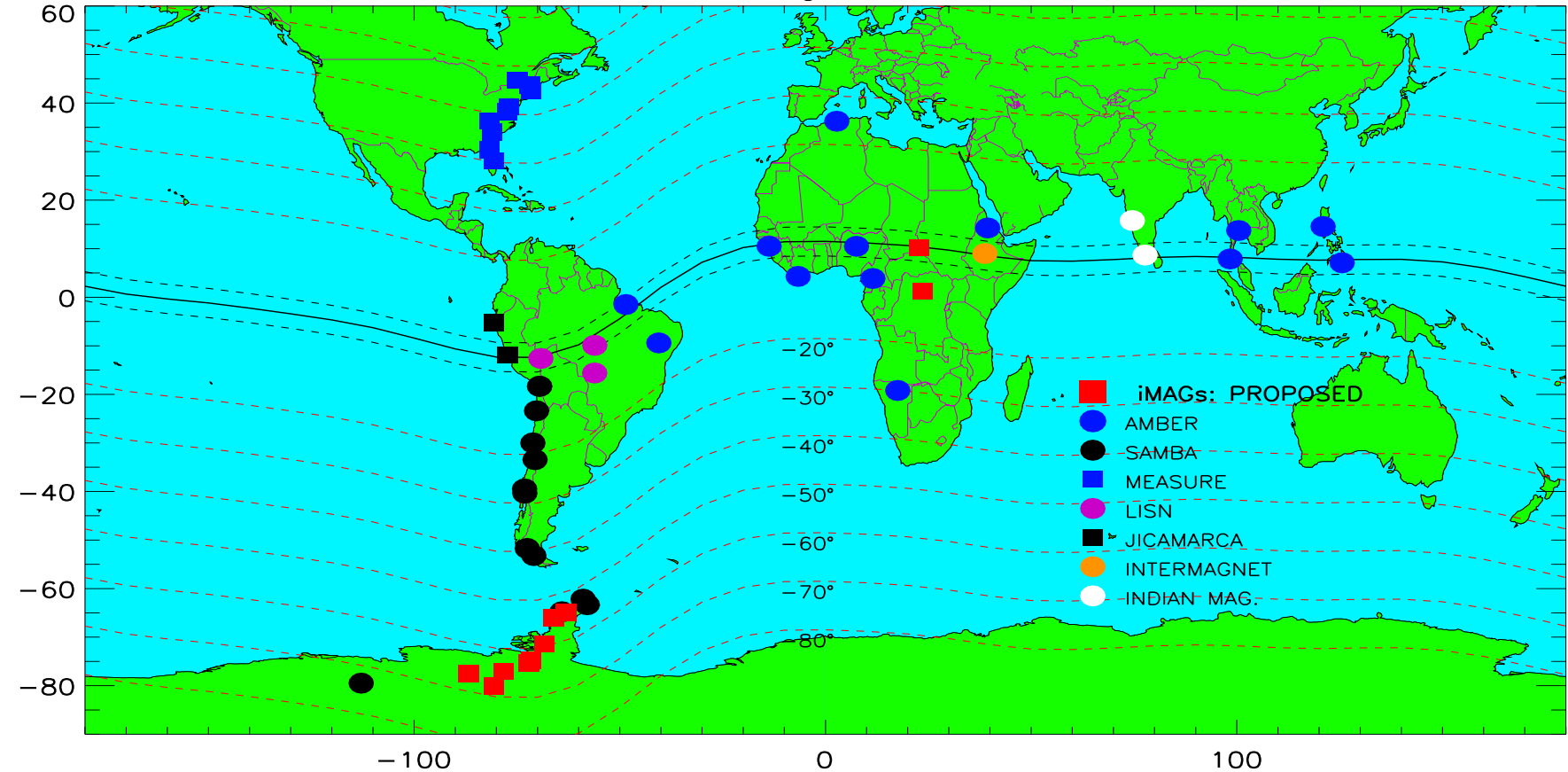


- **iMAGS Magnetometer Network**
- **Sciences using iMAGS network**
  - **Equatorial Electrodynamics**
  - **Energy Transfer from the SUN through MI coupling**
  - **Lunar tide impact on electrodynamic**
  - **GIC impact at high and low-latitudes**

# iMAGS (Inner-Magnetospheric Array for Geospace Science) (Merging and Expanding AMBER, SAMBA & MEASURE arrays)

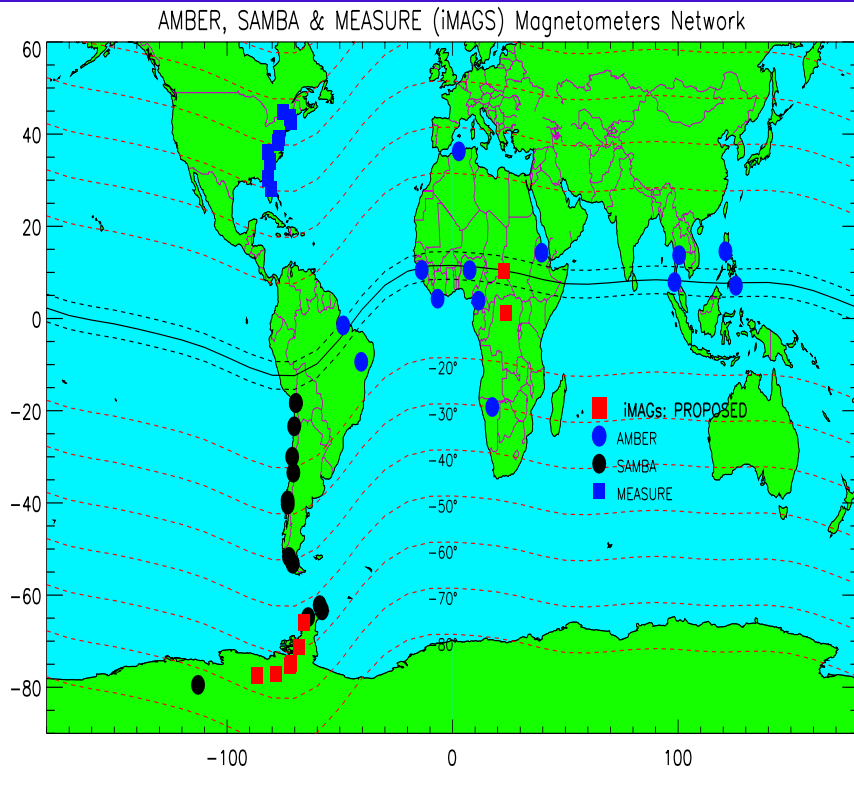
## AMBER, SAMBA, MEASURE (iMAGS) Magnetometer Networks

iMAGs & other Magnetometers Network



**Team members:** E. Yizengaw (PI, BC), E. Zesta (Co-I, NASA), M. Moldwin (Co-I, UM), A. Boudouridis (SSI); M. Magoun (BC)

# Objective of iMAGS magnetometer Array



→ To understand the processes governing electrodynamics of the equatorial ionosphere as a function of local time, longitude, magnetic activity, and season

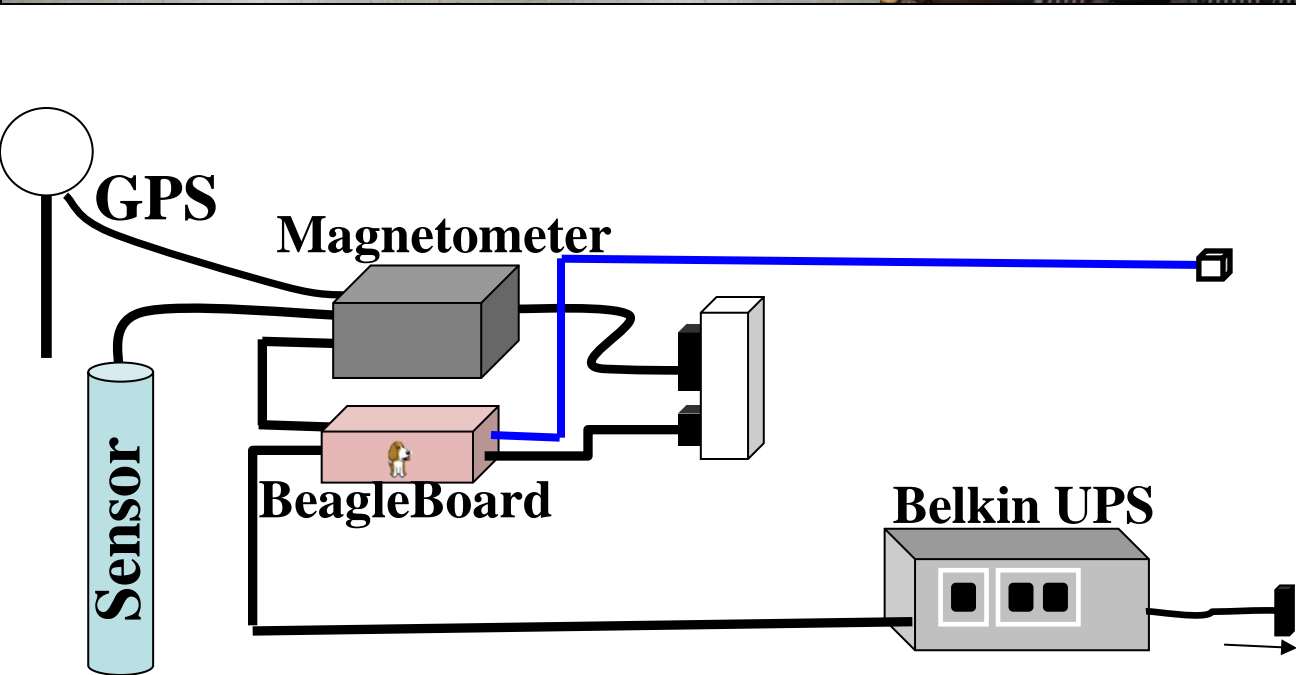
→ To understand the Solar Wind – Magnetosphere – Ionosphere coupling impact on the equatorial density distributions that important for the communication and navigation systems

→ To estimate the plasmasphere mass density

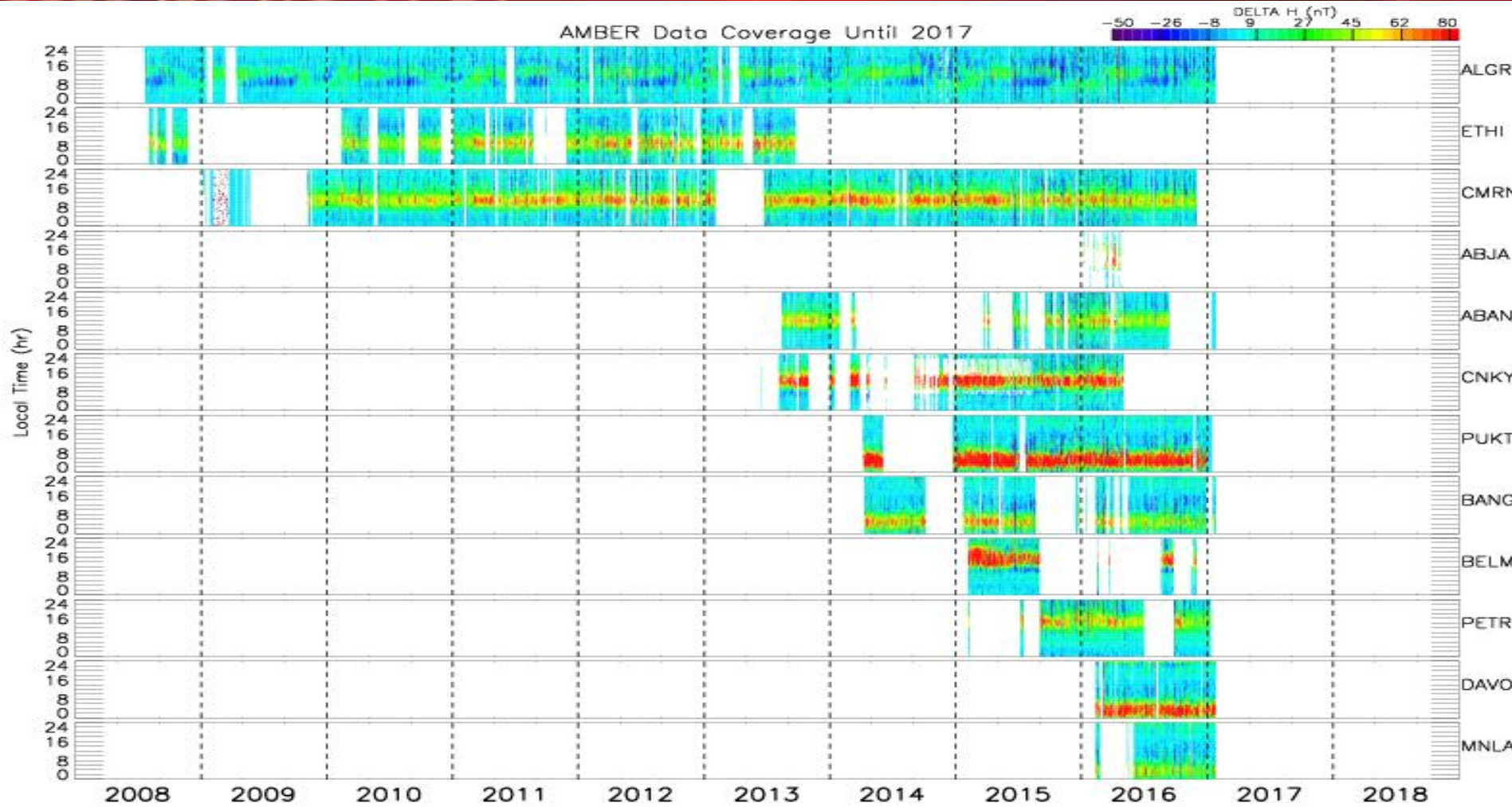
→ To monitor the GIC currents not only at high latitudes but also at the equatorial region where the GIC get amplified by EEJ in the same it gets amplified by AE at high latitudes



# Instrument & its Setup at the site



# AMBER data coverage until Yesterday

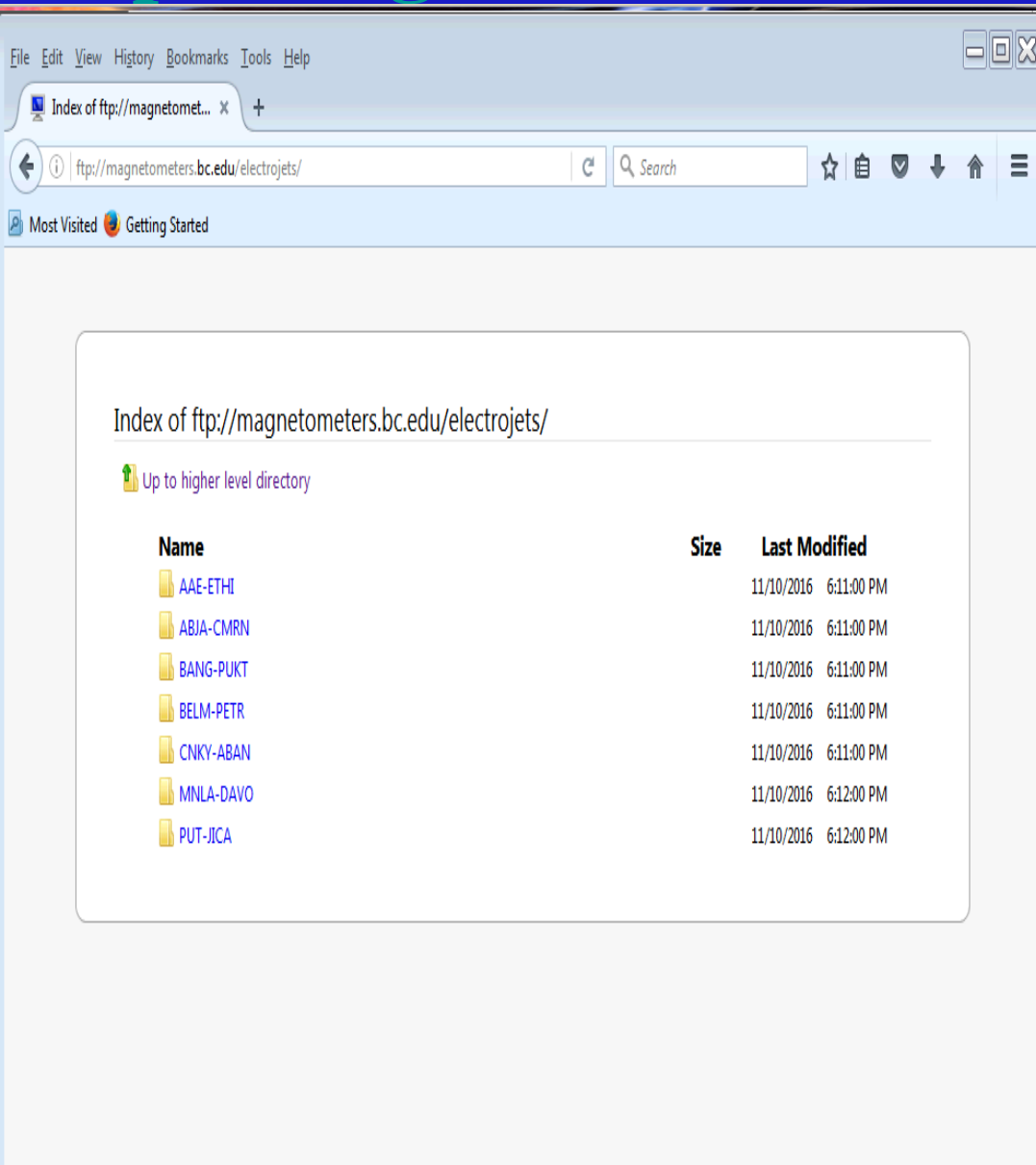


## Two prominent problems

- ➔ **Power fluctuation issue:** Lack of funding to augment it with solar panel
- ➔ **Internet Connectivity issue:** Expensive to use other alternative options

# Our Database

<http://magnetometers.bc.edu/>



→ You can search by days, by station

→ You can download ASCII data (1 min, 1 sec, and half sec resolution)

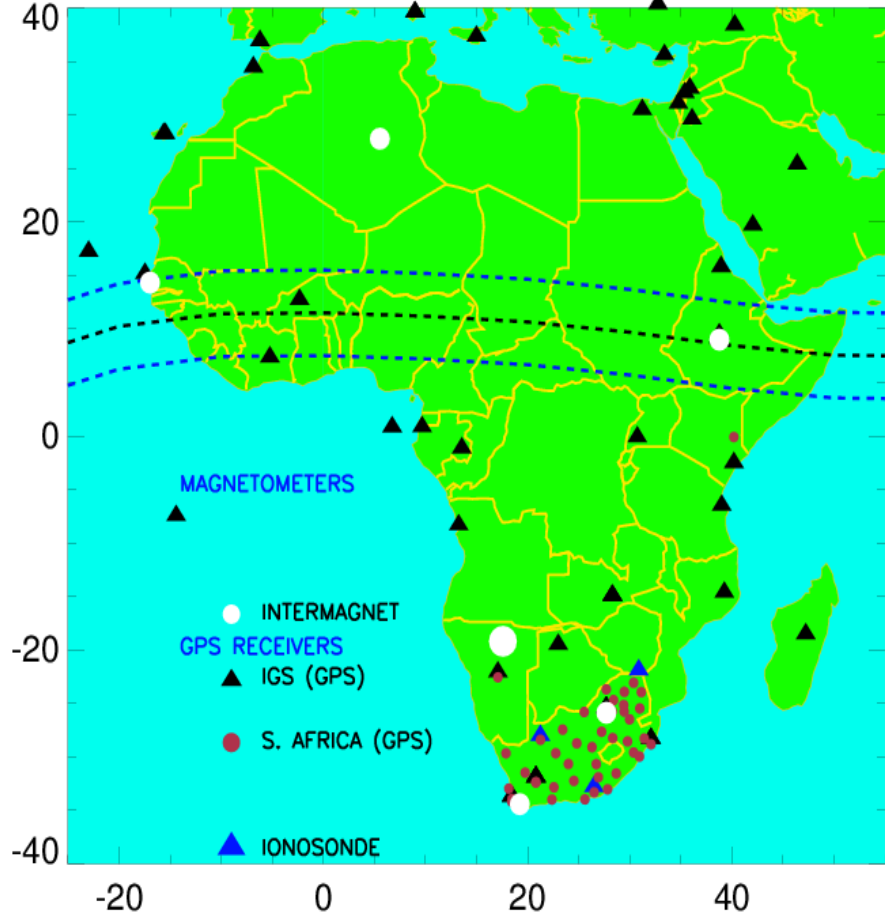
→ You can download daily summary plots for a quick look!

→ SuperMag

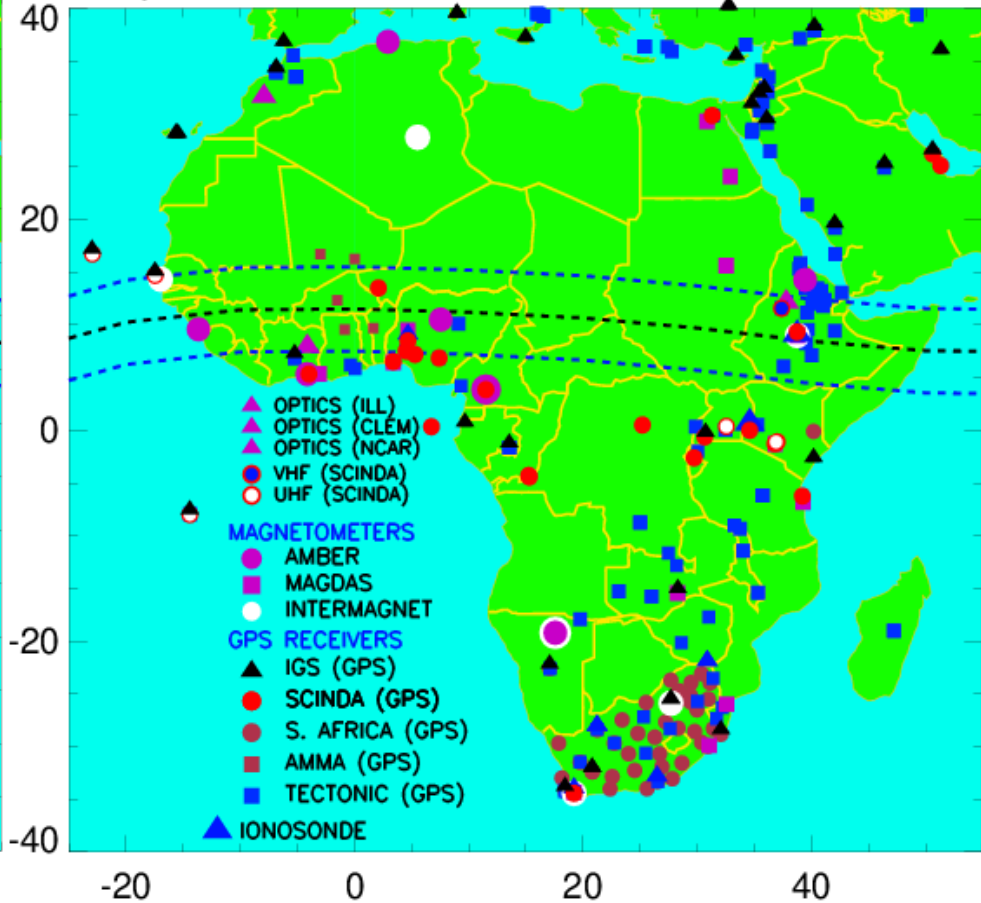


# General Instrumentation in Africa

Space Science Instruments in Africa: 5 years ago



Space Science Instruments in Africa: Now



Eight Years ago

One Year ago!

Thank You!