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Installation of Space Weather Observatories in Argentina

Bernardo E. Eylenstein
Laboratorio de Meteorología Espacial, Atmósfera terrestre, Geodesia, Geodinámica, diseño Instrumental y Astrometría (MAGGIA-UNLP)
Observatorio Geofísico de Trelew, UNLP

Abstract

The study of Space Weather involves the measurement of several variables related to the Sun-Earth connection. Some of these variables are measured in space, however, there are some parameters that can be measured from the ground too. Ground-based measurements are essential for understanding how space weather events impact the Earth's environment, life, and infrastructure.

Among the values related to Space Weather that can be observed from the surface are disturbances in the geomagnetic field, spatial distribution of Total Electronic Content (TEC) in the ionosphere, intensity of UV radiation reaching the surface, precipitation of solar wind particles, physical parameters of ionospheric plasma, etc.

These measurements are especially important for our country because we are located in the South Atlantic Magnetic Anomaly (SAMA). This is an area where the geomagnetic field is weaker and therefore with higher gradients than in other regions of the world. This makes us more vulnerable to space weather events.

Currently, there are some Geomagnetic Observatories in our country that can be used as a basis for Space Weather Observatories, but they are not enough. We propose to expand and upgrade our network of Geomagnetic Observatories to include more instruments for space weather monitoring. This will help us to improve our scientific knowledge and our preparedness for space weather hazards.