



MAGDAS/CPMN Magnetometers in Peru

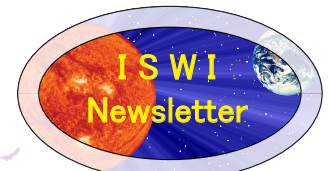
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Talk Outline

- History of Magnetometers installed in Peru
- MAGDAS Magnetometers
- Operation of MAGDAS
- Troubles since installation
- Future projects



- History of Magnetometers installed in Peru

Geomagnetic measurement in Peru began in 1919 with the construction of Huancayo Observatory by the Department of Terrestrial Magnetism of Carnegie Institution of Washington. In March 1st of 1922 started continuous photographic recording with a magnetograph.



Photographic recordings were done with a Eschenhagen magnetograph DTM CIW N° 2 and measured declination, horizontal-intensity, and vertical-intensity with one photographic recorder.



- History of Magnetometers installed in Peru

In 1985 the first magnetometer of Kyushu University was installed in Huancayo Observatory, then it was moved after to Ancon Observatory that have the same latitude of Huancayo. This magnetometer measures H,D and Z and is an Askania Variograph. Records on a 70 mm film, it was part of the Equatorial Magnetic Observation Network (PI: Prof. T. Kitamura), then it become into Circum-pan Pacific Magnetometer Network (PI of CPMN; Prof. K. Yumoto)





- Ancon Observatory

Located at 40 km north from Lima and 210 km west from Huancayo Observatory. Ancon Observatory was installed in 1961 by NASA for satellite tracking purposes. Then in 1966 a geomagnetic station was installed in Ancon, as part of the geomagnetic network, deployed along the total solar eclipse path occurred on November 12 of 1966. Askania Variographs were installed.





- GRL Magnetometer in Peru



The Geophysics Research Laboratory (GRL) of the Tokyo University of Japan, have developed high sensitivity and very stable Fluxgate magnetometers using latest electronic technology. The first Fluxgate magnetometer was installed at Huancayo Observatory in 1984 by Dr. T. Araki. A data logger with 1 sec sampling rate was used, recording on commercial cassette tape. Finally this magnetometer was installed in Ancon in 1990.

- GRL + WDC-Kyoto Magnetometer in Peru



A second fluxgate magnetometer was built at GRL in 1987, improving the first design, the analogue output was between ± 10 volts equivalent to ± 500 nT. After recording test made at Kakioka Magnetic Observatory this Magnetometer was installed at Huancayo Observatory in March of 1988. Recording on a PC based data acquisition system equipped with a 12 bits ADC and an own software developed for data acquisition. Actually it is working at Ancon Observatory.



Recently electronics were renewed thanks to WDC-Kyoto support, since that also barometric pressure data is available (PI: Dr. T. Iyemori).



•MAGDAS Magnetometer installation

In October 13th of 2006 the Space Environment Research Center – SERC of Kyushu University installed a new Magnetic Data Acquisition System MAGDAS (PI: Prof. K. Yumoto) in Ancon Observatory, it is working stable since the installation.



Location of Geomagnetic Stations and Observatories in Peru



1 Huancayo Geomagnetic Observatory:
G.L. -12.04° G.Lg. -75.82°
Gm.L(2005). -2.07° Gm. Lg(2005): 356.97°

2 Ancon Observatory(MAGDAS):
G.L. -11.79° G.Lg. -77.16°
Gm(2000). L. 3.10° Gm. Lg.(2000): 354.66°

3 Cañete Station

4 Guadalupe Station Ica

6 ESI-Ica

5 Characato Station - Arequipa

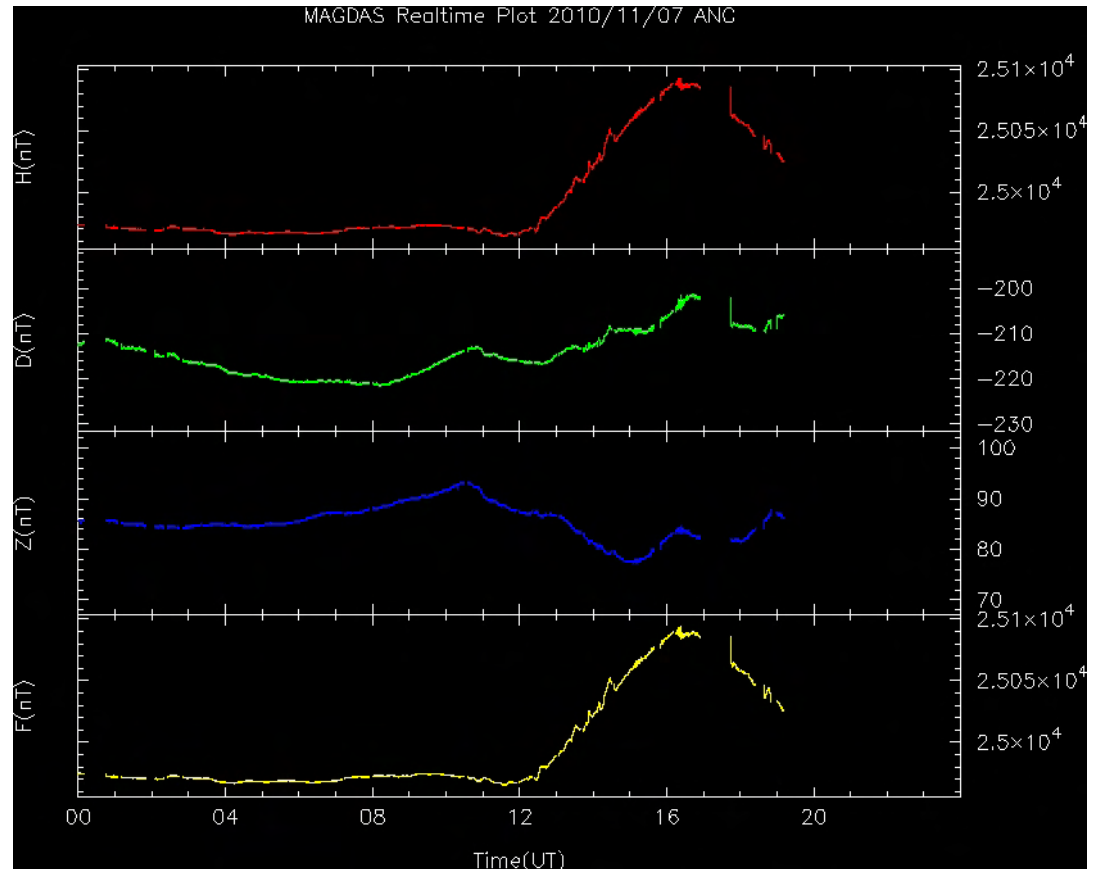
- Active
- No Active
- Future



• Operation of MAGDAS

The system of acquisition works very well.

I think that MAGDAS of Ancon Observatory is stable in real-time.





• Troubles since installation



Our first problem was the wi-fi access point that immediately was replaced for others



In 2009 MAGSTOR failed then it was replaced for other that SERC sent us



- Troubles since installation

Actually the monitor is not working but we are using an external monitor to display MAGDAS menu





•Future projects

- Put in real-time magnetic data of magnetometer installed in Characato Station in Arequipa
- Install a Magnetometer in Ica Solar Station (ESI) of Geophysical Institute of Peru and Ica University and put data in real-time.
- Reinstall a magnetometer at Cañete Station, that actually is tested in Ancon Observatory, also put data in real-time.





Thank you very much for your attention

Hope to see you some time in Peru!

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