

GEOMAGNETIC OBSERVATIONS DURING THE SUMMER OF 1986-1987 AUSTRAL

AJAY DHAR

Indian Institute of Geomagnetism
Colaba, Bombay 400 005

A magnetic variation station was established, in the campus of Dakshin Gangotri permanent station. A fluxgate magnetometer enclosed in a thermally insulated wooden chamber was buried under the ice and the outputs taken through cable to a Porta Cabin. The fluxgate magnetometer provided continuous data of variation in X (Geographic north), Y (Geographic East) and Z (Vertical) components. These were transferred to :

1. A strip chart recorder with 3 cm/hr speed for regular daily variation.
2. A strip chart recorder through a pass-band filter (10 to 20110 periodicity pass) with 12 cm/hour for registering magnetic pulsations.
3. All the six channels (1) and (2) above together with total field values from a proton precession magnetometer and time information were passed on to a 10-channel digital data logger with cassette device at 10 sec sampling interval.

In addition to this, a Riometer for monitoring the ionospheric absorption at 39 MHz frequency was installed. The data was available to both strip chart recorder and on digital-cassettes.

Part of the data covering the period January 8, 1987 to February 14, 1987 have been sent through the summer team returning to India and received at Bombay. While the fluxgate magnetometer output looks good, there seems to be severe interference problem with the riometer records. As NPL also operated a riometer at the same frequency in previous expedition and perhaps also in the present expedition, the two can be compared to find out the cause.

Cursory examination of the data sent (Jan-Feb 1987) indicate that magnetometer data are reliable and useful. It was a remarkable period of geomagnetic calm with no day having Ap index greater than 18. (Usually Ap 20 are considered representative of geomagnetic disturbances). The data will be used to provide the daily variation pattern and its day to day variability. In addition, magnetic pulsations occurring during quiet geomagnetic conditions will be studied.