

Recent Magnetic Observations in the Philippines

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Abstract. Two magnetic variometers have been continuously operated at comparable longitudes at Baguio and Cebu, Philippines, 900 and 300 km north of the magnetic equator, respectively. An attempt has been made to separate the electrojet contributions to the monthly mean of the daily range in H and Z . The jet appears to change its form with the season. The overhead disturbance currents appear north of Cebu at night, but south of Cebu during the day. Micropulsations, of peak-to-peak amplitude of 1γ or greater, have a nonzero occurrence probability at any hour, with a maximum at local noon and a secondary maximum about midnight. The Johnston Island July 9, 1962, disturbance effects on the Philippine magnetic traces are presented.

Introduction. Diurnal and seasonal variations of the geomagnetic field in the equatorial regions are influenced by the geographic and magnetic (or dip) equator. Bartels and Johnston [1940] and Johnston *et al.* [1948] present a number of years' data from a single equatorial station, Huancayo. More recently, Onwumechilli [1959] has studied in detail 1 week's observation of geomagnetic variations at each of 10 locations clustered about the magnetic equator in Nigeria. As an alternative approach, two magnetic variometers have been operated over a 1-year period in the Philippines, at comparable longitudes but differing latitudes. This report presents a preliminary survey of the data obtained.

Two identical Askania three-component geomagnetic variographs, model Gv3, with thermostatic control, were employed, one at Baguio and the other at Cebu, approximately 900 and 300 km north of the magnetic equator, respectively (see Figure 1). Simultaneous records have been obtained since July 1, 1961. The positions of the instruments are as follows:

	Baguio	Cebu
Geographic latitude	16°25'N	10°20'N
Geographic longitude	120°35'E	123°54'E
Inclination	18.5°N	6°N

Mean values. Hourly values for H , Z , and D were scaled from the variograph records of each station for the 10 least-disturbed days of each month. For each month the mean hourly departures, in gammas, from the monthly mean of the 3-hour period centered at local midnight were computed. These results, for H and Z , are

plotted on contour charts, after Gettemy [1962], as shown in Figures 2, 3, 4, and 5. The declination, D , averaged over 2-month intervals, is presented in Figure 6. The yearly means of the hourly values of H and Z at the two stations are shown in Figures 7 and 8.

The declination at either station is less than

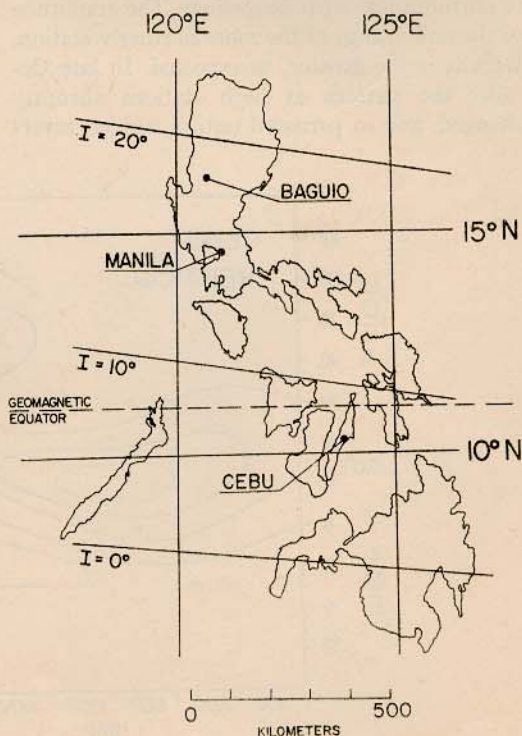


Fig. 1. Map of the Philippines showing locations and magnetic conditions.