

How the daily range varies with magnetic dip is shown by the next table. The best indication of approach to the magnetic pole is given by the increase in the value of the magnetic dip or inclination, and hence the column of dip values has been added. For Fort Conger, where the dip is 85°, the diurnal range amounts to 1° 39'.

That the diurnal range increases as we proceed towards the magnetic pole is due to the fact that the magnetic force which acts on the compass needle diminishes with approach to the pole, and hence the deflecting forces which cause the diurnal variation have a more powerful effect near the pole than farther away.

TABLE IV.

Showing the variation in the diurnal range of the declination with approach to magnetic pole.

Station.	Lat.	Long. W. of Gr.	Magnetic Dip.	Range.	Years of observations.
Key West.....	24° 33'	81° 48'	54° 32'	4.7	1860.2-'66.2
Los Angeles.....	34 03	118 15	59 30	5.8	1882.8-'89.8
Washington.....	38 54	77 01	71 19	7.5	1840.5-'42.5
Philadelphia.....	39 58	75 10	71 58	7.8	1840.5-'45.5
Madison.....	43 04	89 24	73 56	6.7	1877.2-'78.2
Toronto.....	43 39	79 24	75 15	8.8	1842.5-'48.5
Sitka.....	57 03	135 20	75 55	10.6	1848-'62
Uglaamie Point.....	71 18	156 40	81 24	40.1	1882.7-'83.6
Plover Point.....	71 21	156 16	81 36	38.6	1852-'54
Fort Rae.....	62 39	115 14	82 54	41.4	1882.8-'83.7
Kingua Fiord.....	66 36	67 19	83 51	43.7	1882.8-'83.7
Fort Conger.....	81 44	64 44	85 01	98.8	1881.7-'82.6

The times when the declination reaches its extreme values, or when it reaches its average value, as will be evident from Table I, are subject to fluctuations in the course of the year, being generally retarded about a half-hour or more during the months when the sun is south of the equator. These changes, which undergo a complete cycle in the course of one year, likewise manifest themselves in the magnitude of the diurnal range as already pointed out.

The approximate local mean time when the mean declination is reached in the morning is, on the average for the year, as follows:

	H.	M.
At Toronto	10	17 A. M.
Philadelphia	10	20
Washington	10	25
Key West	10	51
Madison	10	43
Los Angeles	10	35