

The total change between the morning and afternoon extremes, as will be noticed from the bottom row of figures of the table, is about 11' in mid-summer and about half this amount in mid-winter. It is a quantity then that should be taken into consideration for precise work. In Germany, mine surveying has been brought to such an art that some of the principal mines maintain small magnetic observatories where the declination is recorded continuously throughout the day by photographic means. The mine surveyor then uses the value of the declination to the nearest minute as prevailing at the very time of day when he is running his line. The land surveyor generally ignores the diurnal variation, though it is a quantity that may at times make itself appreciably felt in his work. In the determination of the declination or in the comparison of compasses the diurnal variation should be taken into account. Below is a table giving the correction to be applied to a declination observed at any time between 6 A. M. and 6 P. M., in order to reduce it to the mean value for the day (24 hours). Apply the tabular quantities to the observed westerly declination with the sign as affixed.

TABLE II.

Correction of an observed declination for diurnal variation.

Month.	6 A. M.	7	8	9	10	11	Noon.	1	2	3	4	5	6 P. M.
Jan.	-0'.1	+0'.2	+1'.0	+2'.1	+2'.4	+1'.2	-1'.1	-2'.5	-2'.6	-2'.1	-1'.3	-0'.2	+0'.2
Feb.	+0.6	+0.7	+1.5	+1.9	+1.4	-0.1	-1.5	-2.1	-2.5	-2.0	-1.2	-0.8	-0.4
March.	+1.2	+2.0	+3.0	+2.8	+1.6	-0.6	-2.5	-3.4	-3.7	-3.3	-2.3	-1.2	-0.5
April.	+2.5	+3.1	+3.4	+2.6	+0.8	-2.1	-4.0	-4.1	-4.2	-3.6	-2.3	-1.2	-0.2
May.	+3.0	+3.8	+3.9	+2.6	+0.1	-2.4	-4.0	-5.0	-4.5	-3.6	-2.3	-0.9	+0.1
June.	+2.9	+4.4	+4.4	+3.3	+1.1	-2.0	-3.6	-4.5	-4.5	-3.8	-2.6	-1.2	-0.2
July.	+3.1	+4.6	+4.9	+3.9	+1.8	-1.2	-3.4	-4.4	-4.7	-4.2	-2.8	-1.3	-0.3
August.	+2.9	+4.9	+5.4	+3.7	+0.4	-2.8	-4.7	-5.1	-4.9	-3.7	-1.9	-0.6	+0.3
Sept.	+1.8	+2.8	+3.4	+2.5	+0.3	-2.7	-4.4	-4.6	-4.2	-4.0	-1.4	-0.3	-0.1
Oct.	+0.5	+1.6	+3.1	+2.8	+1.4	-1.0	-2.7	-3.3	-3.4	-2.4	-1.3	-0.4	-0.4
Nov.	+0.5	+1.2	+1.7	+1.8	+1.1	-0.5	-2.0	-2.7	-2.6	-1.8	-1.0	-0.2	+0.2
Dec.	+0.2	+0.3	+0.8	+1.8	+1.8	0.0	-1.6	-2.4	-2.3	-1.8	-1.1	-0.3	+0.1

These figures represent the mean results of the continuous magnetic observations made at the old site of the Washington Magnetic Observatory—the old Naval Observatory Grounds—during the four years 1888-91. The hours are for the seventy-fifth meridian, or Eastern time, which is 8 minutes and 12.09 seconds fast of Washington