REPORT ON THE MAGNETIC OBSERVATIONS MADE IN CHRIST-
CHURCH, NEW ZEALAND, DURING THE TOTAL
SOLAR ECLIPSE, MAY 17-18, 1901.

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The observations—viz., declinations—were made May 17^d 14^h 8^m to 17^d 21^h Greenwich mean time (astronomical), corresponding to 18^d 1^h 39^m to 18^d 8^h 31^m New Zealand mean time, in a tent set up in approximate latitude 43° 31' 17" S. and in longitude 172° 38' 06" E. The instrument used was a Kew Magnetometer "N. A. Bc.," the property of the National Physical Laboratory Committee of the Royal Society. A new thread previously soaked in glycerine had been inserted and the plummet suspended for twenty-four hours. The twist in the thread had all disappeared after the plummet had been suspended for about three hours, and none was found in the thread either immediately before or immediately after the observations were made.

The scale reading of the magnet was noted, as accurately as possible, every minute during the interval. Great care was taken that there was nothing magnetic in the pockets, buttons, or boots of the observers, and there was no appreciable difference between the readings of the scale by the two observers. The irregularity between 4:30 and 4:40 N. Z. M. T. is possibly due to rather bad illumination of the scale which occurred at that time. The candles were lighted in the tent at about 4:30 and the illumination was hardly satisfactory till 4:40. The scale readings have been reduced to minutes of arc by the value of the scale division (1.8') supplied with the Kew certificate. As they were taken on the full minute local mean time, the corresponding Greenwich mean time would be 28 seconds after the full minute recorded in the tables.

The total decrease of easterly declination during the hours is slightly under 4'. The temperatures given were taken inside the tent, and are affected by the candle. Though an alteration of the position of the magnetic axis with temperature has frequently been looked for, in the magnet used none has been detected, and under varying conditions of travel the position of the axis remains practically constant at scale reading, 157. The scale on the magnet can be read with accuracy probably to .1 of a division = 11". Smaller differences than this are given, but are possibly due to uncertainties between two tenths. The observers were C. Coleridge Farr and H. T. Skey.

VARIATIONS OF MAGNETIC DECLINATION OBSERVED AT CHRISTCHURCH, NEW
ZEALAND, ON MAY 17, 1901, GREENWICH MEAN ASTRONOMICAL TIME.

[D₀ east + tabular quantity.]

Min.	<i>h</i> 14	<i>h</i> 15	<i>h</i> 16	<i>h</i> 17	<i>h</i> 18	<i>h</i> 19	<i>h</i> 20	Min.	<i>h</i> 14	<i>h</i> 15	<i>h</i> 16	<i>h</i> 17	<i>h</i> 18	<i>h</i> 19	<i>h</i> 20
0	'	8.55	7.38	6.75	5.40	5.40	5.22	30	8.91	7.92	7.11	5.49	5.40	5.40	5.04
1		8.55	7.38	6.66	5.40	5.40	5.22	31	8.91	7.74	7.20	5.49	5.31	5.40	5.04
2		8.64	7.29	6.66	5.40	5.40	5.22	32	9.00	7.74	7.11	5.49	5.31	5.40	5.04
3		8.64	7.38	6.48	5.40	5.40	5.22	33	8.91	7.74	7.11	5.49	5.31	5.40	5.04
4		8.64	7.29	6.48	5.40	5.40	5.22	34	8.91	7.56	7.11	5.49	5.31	5.40	5.13
5		8.55	7.29	6.30	5.40	5.40	5.22	35	8.91	7.56	7.11	5.49	5.40	5.40	5.13
6		8.55	7.29	6.57	5.40	5.40	5.22	36	8.82	7.56	7.11	5.49	5.31	5.40	5.13
7		8.55	7.29	6.57	5.40	5.40	5.22	37	8.82	7.56	7.02	5.49	5.31	5.40	5.13
8	8.91	8.46	7.29	6.30	5.40	5.40	5.22	38	8.82	7.56	7.02	5.49	5.31	5.40	5.13
9	8.91	8.46	7.29	6.30	5.40	5.40	5.22	39	8.82	7.56	7.02	5.49	5.31	5.40	5.13
10	8.82	8.46	7.29	6.12	5.40	5.40	5.22	40	8.73	7.65	7.02	5.49	5.31	5.40	5.22
11	8.91	8.64	7.29	6.12	5.40	5.40	5.04	41	8.82	7.74	7.02	5.49	5.40	5.40	5.13
12	9.00	8.46	7.29	6.03	5.40	5.40	5.04	42	8.82	7.74	7.02	5.49	5.40	5.40	5.22
13	9.00	8.46	7.29	6.03	5.40	5.40	5.22	43	8.73	7.74	7.02	5.49	5.31	5.40	5.22
14	9.00	8.46	7.29	5.94	5.40	5.40	5.04	44	8.73	7.65	6.84	5.40	5.31	5.40	5.13
15	9.00	8.46	7.29	6.03	5.40	5.40	5.04	45	8.82	7.65	6.84	5.40	5.40	5.40	5.13
16	8.82	8.46	7.20	5.94	5.40	5.40	5.04	46	8.73	7.65	6.84	5.49	5.40	5.40	5.13
17	8.91	8.28	7.20	5.94	5.40	5.40	5.04	47	8.64	7.56	6.84	5.40	5.40	5.40	5.13
18	8.82	8.10	7.20	5.85	5.40	5.40	5.04	48	8.73	7.56	6.84	5.40	5.40	5.40	5.13
19	8.82	8.10	7.20	5.76	5.40	5.40	5.04	49	8.64	7.56	6.84	5.40	5.40	5.31	5.13
20	8.91	8.10	7.20	5.67	5.40	5.40	5.04	50	8.64	7.56	6.84	5.40	5.40	5.40	5.13
21	8.91	8.10	7.20	5.67	5.40	5.40	5.04	51	8.64	7.47	6.84	5.40	5.40	5.40	5.13
22	8.91	8.10	7.20	5.67	5.40	5.40	5.04	52	8.64	7.47	6.66	5.40	5.40	5.31	5.22
23	8.91	8.19	7.20	5.58	5.40	5.40	5.04	53	8.64	7.47	6.75	5.40	5.40	5.31	5.13
24	8.91	8.10	7.20	5.67	5.40	5.40	5.04	54	8.64	7.38	6.66	5.40	5.40	5.31	5.22
25	8.91	8.10	7.20	5.58	5.40	5.40	5.04	55	8.64	7.38	6.48	5.40	5.31	5.31	5.13
26	8.91	8.10	7.11	5.58	5.40	5.40	5.04	56	8.73	7.38	6.48	5.40	5.31	5.31	5.13
27	9.00	7.92	7.20	5.49	5.40	5.31	5.04	57	8.64	7.38	6.48	5.40	5.31	5.31	5.13
28	9.00	7.92	7.11	5.49	5.40	5.31	5.04	58	8.64	7.47	6.48	5.40	5.40	5.22	5.13
29	8.91	7.92	7.11	5.49	5.40	5.40	5.04	59	8.64	7.38	6.30	5.40	5.40	5.22	5.13
30	8.91	7.92	7.11	5.49	5.40	5.40	5.04	60	8.55	7.38	6.75	5.40	5.40	5.22	

READINGS OF TEMPERATURE, IN DEGREES CENTIGRADE, AT CHRISTCHURCH
DURING DECLINATION READINGS.

Minute	14 <i>h</i>	15 <i>h</i>	16 <i>h</i>	17 <i>h</i>	18 <i>h</i>	19 <i>h</i>	20 <i>h</i>
0	°	°	°	°	°	°	°
5		14.6	12.7	11.5	13.7	11.8	11.6
10		14.4	12.5	11.5	13.5	12.0	11.7
15		13.7	12.4	12.1	13.4	11.8	11.7
20		13.7	12.3	12.7	13.0	11.6	11.7
25		13.7	11.9	13.7	12.9	11.7	11.8
30		13.5	11.6	13.7	12.7	11.6	11.9
35		13.4	11.6	13.8	12.6	11.6	12.1
40		13.3	11.6	13.8	12.6	11.5	12.4
45		13.0	11.4	13.7	12.5	11.5	12.7
50		12.8	11.3	13.7	12.5	11.4	12.7
55	14.7	12.7	11.1	13.7	12.3	11.3	12.8
60	14.7	12.7	11.1	13.7	11.9	11.5	12.9
	14.6	12.7	11.5	13.7	11.8	11.6	12.8