REPORT ON THE MAGNETIC OBSERVATIONS MADE DURING
THE TOTAL SOLAR ECLIPSE, MAY 17-18, 1901, AT THE
MAGNETIC OBSERVATORY, POTSDAM, GERMANY.

BY PROFESSOR MAX ESCHENHAGEN.

Besides the regular magnetic registrations of the Observatory, the following additional work was done in response to the appeal for international co-operation in the special magnetic work on the day of the eclipse:

A. Eye readings of the unifilar and bifilar magnetometers and of the balance every minute from 14^h 37^m to 22^h 30^m Greenwich mean astronomical time, May 17, 1901, the observers being Messrs. Lüdeling, Edler, Nippoldt, Bidlingmayer, Luyken, Warthmann, and Ott. The bifilar magnetometer was read on the full minute, the unifilar 10 seconds before, and the balance 10 seconds after, all by the same observer. The reduction formulæ,¹ the values of the base lines being provisional, are:

$$\begin{aligned} D &= 10^{\circ} 01'.2 \text{ W} - 1'.0 (n-150), \\ H &= 18830 + 2.63\gamma (n' - 60) + 3.35\gamma (t' - 20^{\circ}), \\ Z &= 43470 + 3.17 (n'' - 100) - 2\gamma (t'' - 20^{\circ}). \end{aligned}$$

B. Registration on the portable variometers, with increased sensitiveness, of the variations of the horizontal components, 1^{mm} of ordinate of declination trace being equal to 0.25 and of horizontal intensity, 0.6γ.

The Observatory is in latitude 52° 22'.9 N, and in longitude 0^h 52^m 15.4^s east of Greenwich.

¹ [With the aid of these formulæ the original scale readings were converted by us into absolute measure.—I. A. B.]

RESULT OF EYE READINGS OF THE MAGNETIC VARIATIONS AT POTSDAM, FROM 14^h 37^m
TO 22^h GREENWICH MEAN ASTRONOMICAL TIME, MAY 17, 1901.

DECLINATION ¹									HORIZONTAL INTENSITY									VERTICAL INTENSITY								
9° West plus tabular quantities.									18800 ⁷ plus tabular quantities									43300 ⁷ plus tabular quantities.								
M.	14 h	15 h	16 h	17 h	18 h	19 h	20 h	21 h	14 h	15 h	16 h	17 h	18 h	19 h	20 h	21 h	14 h	15 h	16 h	17 h	18 h	19 h	20 h	21 h		
	/	/	/	/	/	/	/	/	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ		
0	51.2	50.2	49.2	48.9	48.9	50.2	52.0		68.6	69.2	63.4	55.5	47.8	40.7	46.8		97.7	99.1	98.1	96.7	91.3	81.3	75.4			
1	51.2	50.2	49.2	48.9	48.9	50.4	52.1		68.6	69.3	63.4	55.3	47.7	40.9	47.5		97.7	98.9	98.1	96.7	91.3	81.2	75.4			
2	51.2	50.2	49.3	48.8	48.9	50.4	52.1		68.5	69.3	63.1	55.3	47.5	40.9	47.5		97.8	98.9	98.4	96.7	91.2	81.0	75.4			
3	51.2	50.2	49.2	48.8	48.9	50.4	52.2		68.4	69.0	63.4	55.0	47.5	40.9	47.6		97.8	99.1	98.1	96.6	91.0	81.0	75.4			
4	51.2	50.1	49.2	48.8	48.9	50.4	52.2		68.5	69.3	63.4	54.7	47.5	40.9	47.7		98.0	99.1	98.1	96.6	90.9	80.9	75.3			
5	51.2	50.0	49.2	48.8	49.0	50.4	52.2		68.4	69.2	63.4	54.5	46.9	40.9	47.9		98.1	99.2	98.4	96.6	90.7	80.5	75.1			
6	51.2	50.1	49.1	48.8	49.0	50.4	52.2		68.4	69.2	63.4	54.2	47.1	40.9	48.1		98.3	99.4	98.1	96.6	90.7	80.5	74.8			
7	51.1	50.0	49.2	48.8	49.0	50.5	52.3		68.5	69.2	62.8	54.2	47.4	41.2	48.1		98.4	99.4	98.1	96.6	90.6	80.4	74.5			
8	51.1	50.0	49.2	48.8	49.0	50.5	52.4		68.5	68.9	62.8	54.0	46.9	40.9	48.4		98.4	99.4	98.1	96.6	90.6	80.1	74.5			
9	51.1	49.9	49.2	48.8	49.0	50.6	52.4		68.4	69.2	62.0	53.8	46.3	40.7	48.7		98.5	99.5	98.1	96.5	90.3	80.1	74.5			
10	51.1	49.9	49.2	48.8	49.1	50.6	52.5		68.4	68.9	62.3	53.8	45.8	40.4	48.9		98.5	99.5	98.1	96.5	90.1	79.9	74.5			
11	51.1	49.9	49.2	48.9	49.1	50.6	52.5		68.4	68.9	62.0	53.5	45.8	40.4	48.4		98.5	99.7	97.8	96.5	90.1	79.9	74.5			
12	51.0	49.8	49.2	48.9	49.1	50.5	52.6		68.4	68.6	61.8	53.3	46.0	40.9	48.5		98.7	99.7	98.1	96.5	90.1	79.9	74.5			
13	51.0	49.9	49.2	49.0	49.1	50.6	52.7		68.6	68.6	61.5	53.0	45.8	41.2	49.1		98.9	99.7	98.1	96.5	90.1	79.8	74.5			
14	51.0	49.9	49.2	48.9	49.1	50.7	52.7		68.6	68.4	61.5	53.0	45.6	41.3	49.7		98.2	99.7	98.1	96.5	90.1	79.6	74.5			
15	51.0	49.9	49.2	48.8	49.2	50.7	52.8		68.6	68.1	61.0	53.0	45.2	41.2	50.2		98.2	99.7	98.1	96.4	89.9	79.5	74.5			
16	51.0	49.9	49.2	48.8	49.2	50.6	52.8		68.6	67.8	61.3	52.7	45.0	41.5	50.5		98.2	99.7	98.4	96.4	89.8	79.3	74.5			
17	50.9	49.7	49.1	48.8	49.2	50.6	52.9		68.6	67.9	61.3	52.7	44.8	41.5	50.9		98.2	99.7	98.1	96.4	89.3	79.0	74.5			
18	50.9	49.8	49.0	48.8	49.2	50.7	53.0		68.6	68.1	61.3	52.7	44.5	41.7	51.0		98.5	99.7	98.1	96.4	89.2	78.7	74.5			
19	50.8	49.8	49.0	48.6	49.2	50.7	53.1		68.6	68.1	61.3	52.7	44.5	41.7	51.4		98.5	99.7	98.1	96.3	89.0	78.5	74.5			
20	50.9	49.7	49.0	48.6	49.2	50.8	53.2		68.7	67.8	61.3	52.6	44.8	41.8	51.7		98.5	99.7	98.1	96.3	89.0	78.5	74.2			
21	51.0	49.7	49.0	48.6	49.2	50.8	53.2		68.6	68.1	61.3	52.6	44.9	42.1	51.7		98.6	99.7	98.1	96.3	89.0	78.5	74.0			
22	50.9	49.4	48.9	48.7	49.2	50.8	53.2		68.6	67.8	60.7	52.0	44.5	42.2	52.2		98.8	99.7	97.8	96.3	88.4	78.4	73.9			
23	50.9	49.4	48.8	48.7	49.3	50.8	53.3		68.6	67.6	60.7	52.0	44.0	42.1	52.9		98.6	99.7	97.8	96.3	88.4	78.4	73.9			
24	50.9	49.5	48.8	48.7	49.3	50.9	53.4		68.6	66.9	60.7	51.8	43.9	42.1	53.1		98.6	99.7	97.8	96.1	88.1	78.1	73.6			
25	50.7	49.5	48.8	48.7	49.3	50.9	53.4		68.6	66.9	60.7	51.8	44.0	42.5	53.1		98.6	99.7	97.8	96.0	87.9	78.1	73.6			
26	50.7	49.5	48.9	48.6	49.2	50.9	53.4		68.6	67.3	60.3	51.5	44.5	42.8	53.4		99.0	99.7	97.8	96.0	87.9	77.9	73.4			
27	50.6	49.3	48.9	48.6	49.2	50.9	53.5		68.6	67.3	60.3	51.5	44.5	42.8	53.7		98.6	99.7	97.8	96.0	87.6	77.8	73.4			
28	50.4	49.3	48.9	48.6	49.3	51.0	53.5		68.4	66.8	60.0	51.0	44.0	42.5	53.7		99.3	99.7	97.8	95.7	87.3	77.6	73.1			
29	50.4	49.7	49.0	48.7	49.4	51.0	53.6		68.4	67.1	59.7	51.0	43.7	42.5	53.7		99.4	99.7	97.8	95.7	87.1	77.6	72.8			
30	50.3	49.4	48.9	48.7	49.4	51.0	53.6		68.6	67.3	59.7	50.7	43.6	42.2	53.4		99.5	99.7	97.8	95.4	86.9	77.4	72.8			
31	50.3	49.4	48.9	48.7	49.4	51.0	53.7		68.4	67.1	59.4	50.7	43.6	42.2	53.4		99.5	99.7	97.4	95.4	86.6	77.4	72.7			
32	50.3	49.4	49.0	48.7	49.4	51.1	53.7		68.4	66.8	58.9	50.7	43.6	43.0	53.0		99.4	99.7	97.4	95.4	86.6	77.4	72.7			
33	50.3	49.4	49.0	48.7	49.5	51.2	53.8		68.1	66.5	58.7	50.7	43.5	43.0	53.4		99.7	99.7	97.4	95.1	86.3	77.3	72.5			
34	50.3	49.4	48.9	48.7	49.5	51.2	53.9		67.7	66.5	58.5	50.7	43.2	43.8	53.5		99.4	99.7	97.4	94.9	86.1	77.3	72.5			
35	51.7	50.2	49.3	48.8	48.7	49.5	51.2	54.0	66.8	67.7	66.5	58.5	50.5	42.9	43.8	53.7	97.8	99.5	97.7	97.4	94.7	86.0	77.1	72.4		
36	51.3	50.2	49.4	48.8	48.7	49.5	51.2	54.0	66.8	67.8	66.3	58.5	50.5	42.8	44.0	53.7	97.8	99.5	97.7	97.4	94.7	85.3	77.0	72.2		
37	51.3	50.2	49.3	48.7	48.8	49.7	51.2	54.0	66.8	67.8	66.3	58.2	50.5	42.4	44.0	54.3	97.8	99.4	97.4	97.4	94.4	85.3	77.0	72.1		
38	51.7	50.2	49.3	48.6	48.8	49.7	51.2	54.0	67.3	67.8	66.0	58.2	50.2	42.3	44.0	54.7	97.6	99.4	97.4	97.4	94.3	85.3	77.0	71.9		
39	51.7	50.2	49.3	48.6	48.8	49.7	51.2	54.1	67.6	68.1	66.3	58.2	50.1	42.1	44.0	55.4	97.5	99.4	97.4	97.0	94.0	85.0	76.8	71.6		
40	51.7	50.2	49.4	48.6	48.7	49.8	51.3	54.1	67.6	68.4	66.0	58.2	50.1	41.6	44.0	55.6	97.6	99.2	99.1	97.0	93.8	84.9	76.8	71.3		
41	51.2	50.2	49.4	48.6	48.7	49.8	51.3	54.2	67.6	68.4	66.0	57.9	50.2	41.4	44.0	55.8	97.6	99.2	99.4	97.0	93.5	84.7	76.7	71.3		
42	51.2	50.2	49.4	48.5	48.7	49.8	51.4	54.2	67.8	68.6	66.0	57.9	50.1	41.4	44.7	55.2	97.6	99.2	99.1	97.0	93.5	84.7	76.7	71.3		
43	51.2	50.2	49.4	48.6	48.7	49.8	51.4	54.3	68.1	68.6	66.3	57.7	50.1	41.4	44.9	54.7	97.6	99.1	99.1	96.9	93.4	84.6	76.5	71.3		
44	51.2	50.2	49.4	48.6	48.8	49.8	51.4	54.4	68.1	68.6	66.5	57.5	49.0	41.1	45.1	54.8	97.3	99.1	99.1	96.9	93.4	84.1	76.4	71.3		
45	51.2	50.2	49.4	48.6	48.8	49.8	51.5	54.4	68.4	68.6	66.5	57.3	49.1	40.8	45.5	55.4	97.3	99.2	99.1	96.9	93.2	83.8	76.5	71.3		
46	51.2	50.2	49.4	48.6	48.8	49.8	51.5	54.4	68.4	68.6	66.5	57.0	48.9	40.8	45.5	55.4	97.3	99.2	98.7	96.9	93.2	83.8	76.4	71.3		
47	51.2	50.2	49.4	48.6	48.8	49.8	51.5	54.4	68.4	68.6	66.5	57.0	48.6	40.8	45.5	55.6	97.3	99.2	98.7	96.9	93.2	83.5	76.2	71.1		
48	51.2	50.2	49.4	48.5	48.7	49.9	51.6	54.5	68.4	68.6	66.4	57.0	48.6	40.8	45.7	56.0	97.3	99.2	98.7	96.9	93.2	83.2	76.0	71.0		
49	51.2	50.2	49.4	48.6	48.8	49.9	51.6	54.5	68.1	68.4	66.4	56.7	48.6	40.8	45.9	56.4	97.4	99.2	98.7	96.8	93.0	83.2	76.0	71.0		
50	51.2	50.2	49.4	48.6	48.8	49.9	51.7	54.6	67.8	68.4	66.4	56.5	48.6	40.8	45.9	56.4	97.4	99.2	98.7	96.8	93.0	83.2	76.0	71.0		
51	51.2	50.2	49.4	48.6	48.8	50.0	51.7	54.7	67.3	68.5	66.4	56.2	48.6	40.6	46.1	56.8	97.7	99.2	98.7	97.1	92.9	82.9	75.9	70.4		
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